***к оглавлению***

***"C:\ihmg\Документация_\чтиво\Oracle Database Quick Installation 19c\Oracle Database Quick Installation 19c.pdf"***
в сети

https://docs.oracle.com/en/database/oracle/oracle-database/19/ntdbi/database-installation-guide-microsoft-windows.pdf

ссылка на этот документ размещена:
https://www.sql.ru/forum/1341794-a/perevod-database-installation-guide-oracle-database-19s

Мои вопросы

Мои закладки

***cmp1***

# Oracle® Database

# Database Installation Guide

19c for Microsoft Windows
E96293-08
January 2022


***cmp2***

***cmp3***

## ОГЛАВЛЕНИЕ

# Preface (Предисловие)

Learn how to install and configure Oracle Database, perform postinstallation tasks, and how to remove the database software.

The following topics are covered:

- Audience
- Documentation Accessibility
- Set Up Java Access Bridge to Implement Java Accessibility
- Related Documentation
- Conventions

# Audience (Аудитория)

This guide is intended for anyone responsible for installing Oracle Database 19c.

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 (Доступность документации)

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.

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.

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# Set Up Java Access Bridge to Implement Java Accessibility (Настройка Java Access Bridge для реализации специальных возможностей Java)

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

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# Related Documentation

For more information, see these Oracle resources:

- Oracle Database Concepts
- Oracle Database Examples Installation Guide
- Oracle Real Application Clusters 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 Administrator's Reference for Microsoft Windows
- Oracle Database Sample Schemas
- Oracle Database Error Messages
- Oracle Label Security Administrator's Guide

Oracle error message documentation is available only in HTML. If you only have access to the Oracle Database 19c Online Documentation Library, you can browse the error messages by range. Once you find the specific range, use your browser's "find in page" feature to locate the specific message. When connected to the Internet, you can search for a specific error message using the error message search feature of the Oracle online documentation.

Many books in the documentation set use the sample schemas of the seed database, which is installed by default when you install Oracle

To download free release notes, installation documentation, white papers, or other collateral, please visit the following website:

http://docs.oracle.com/en/database/database.html

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# Conventions (Соглашения)

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. |

# Changes in this Release for Oracle Database Installation Guide

Changes in Oracle Database Installation Guide for Oracle Database 19c.

- Changes in Oracle Database 19c

New features, deprecated features, and desupported features in this release.

# Changes in Oracle Database 19c

New features, deprecated features, and desupported features in this release.

The following are changes in Oracle Database Installation Guide for Oracle Database 19c:

- New Features

  Review new features available with Oracle Database installation in Oracle Database 19c.

- Deprecated Features
  Review features that are deprecated starting with Oracle Database 19c.

- Desupported Features for Oracle Database 19c

There are no desupported features at the time of release.

## New Features

Review new features available with Oracle Database installation in Oracle Database 19c.

- Simplified Image Based Oracle Database Client Installation

## Simplified Image Based Oracle Database Client Installation

Starting with Oracle Database 19c, the Oracle Database Client software is available as an image file for download and installation. ***You must extract the image software into a directory where you want your Oracle home to be located, and then run the runInstaller script to start the Oracle Database Client installation***. Oracle Database Client installation binaries continue to be available in the traditional format as non-image zip files.

As with Oracle Database and Oracle Grid Infrastructure image file installations, Oracle Database Client image installations simplify Oracle Database Client installations and ensure best practice deployments.

## Deprecated Features

Review features that are deprecated starting with Oracle Database 19c.

The following feature is deprecated in this release, and may be desupported in another release. For more information about deprecated and desupported features, parameters and views, refer to Oracle Database Upgrade Guide.

- Deprecation of clone.pl

The clone.pl script is deprecated in Oracle Database 19c. The functionality of performing a software-only installation, using the gold image, is available in the installer wizard.

The clone.pl script can be removed in a future release. Instead of using the clone.pl script, Oracle recommends that you install the extracted gold image as a home, using the installer wizard.

**Related Topics**

- Oracle Database Upgrade Guide

### Desupported Features for Oracle Database 19c

There are no desupported features at the time of release.

# Oracle Database Installation Checklist

Use checklists to review system requirements, and to plan and carry out Oracle Database installation.

Oracle recommends that you use checklists as part of your installation planning process. Using a checklist ensures that your server hardware and configuration meets minimum requirements for this release, and enables you to carry out a successful installation.

- Server Hardware Checklist for Oracle Database Installation

Use this checklist to check hardware requirements for Oracle Database.

- Operating System Checklist for Oracle Database Installation on Microsoft Windows

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

- Server Configuration Checklist for Oracle Database Installation

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

- Storage Checklist for Oracle Database Installation

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

- Oracle User Environment Configuration Checklist for Oracle Database Installation

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

- Installer Planning Checklist for Oracle Database Installation

Use the checklist to assist you to be prepared before starting Oracle Universal Installer

## Server Hardware Checklist for Oracle Database Installation

Use this checklist to check hardware requirements for Oracle Database.

Table 1-1 Server Hardware Checklist for Oracle Database Installation

| Check | Task |
|---|---|
| Server Make and Architecture | |
| | |
| | |
| | |
| | |

## Operating System Checklist for Oracle Database Installation on Microsoft Windows

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

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

| Item | Task |
|---|---|
| Operating system general requirements | Oracle Database for Windows x64 is supported on the following operating system versions:<br>•Windows 8.1 x64 - Pro and Enterprise editions<br>•Windows 10 x64 - Pro, Enterprise, and Education editions<br>•Windows 11 x64 - Pro, Enterprise, and Education editions<br>•Windows Server 2012 R2 x64 - Standard, Datacenter, Essentials, and Foundation editions<br>•Windows Server 2016 x64 - Standard, Datacenter, and Essentials editions<br>•Windows Server 2019 x64 - Standard, Datacenter, and Essentials editions<br>•Windows Server 2022 x64 - Standard, Datacenter, and Essentials editions |

## Server Configuration Checklist for Oracle Database Installation

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

*1-2*

Table 1-3 Server Configuration Checklist for Oracle Database

| Check | Task |
|---|---|
| Disk space allocated to the temporary file system | At least 1 GB of space in the temporary directory. Oracle recommends 2 GB or more At least 4 GB of space in the temporary directory for Oracle Restart |
| Swap space allocation relative to RAM | - If physical memory is between 2 GB and 16 GB, then set virtual memory to 1 times the size of the RAM<br>- If physical memory is more than 16 GB, then set virtual memory to 16 GB |
| 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. |
| 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 this guide |
| 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 must 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. |

## Storage Checklist for Oracle Database Installation

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

*1-3*

Table 1-4 Storage Checklist for Oracle Database

| Check | Task |
|---|---|
| Minimum local disk storage space for Oracle software | At least 6.5 GB for Oracle Database Enterprise Edition<br>At least 6.0 GB for Oracle Database Standard Edition 2<br>At least 7.0 GB for an Oracle Restart installation<br><br>Note:<br><br>Oracle recommends that you allocate approximately 100 GB to allow additional space for applying any future patches on top of the existing Oracle home. For specific patch-related disk space requirements, please refer to your patch documentation. |
| Recommended file system | Ensure that you have one of the following storage options available:<br><br>- Oracle ASM Cluster File System (Oracle ACFS)<br><br>- Oracle Automatic Storage Management (Oracle ASM)<br><br>- 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 |
| Select Database File Storage Option | Ensure that you have one of the following storage options available:<br><br>- File System<br>Oracle recommends that the file system be separate from the file systems used by the operating system or the Oracle software. The file system can be any of the following:<br>- -A file system on a disk that is physically attached to the system<br>-- A file system on a logical volume manager (LVM) volume or a redundant array of independent disks (RAID) device<br><br>-Oracle Automatic Storage Management (Oracle ASM)<br>Oracle ASM is installed as part of an Oracle Grid Infrastructure installation. If you plan to use Oracle ASM, then you must install Oracle Grid Infrastructure before you install and create the database. |
| Determine your recovery plan | Review the storage configuration sections of this document for more information about configuring recovery. |

## Oracle User Environment Configuration Checklist for Oracle Database Installation

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

***1-4***

Table 1-5 User Environment Configuration for Oracle Database

| Check | Task |
|---|---|
| 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.<br><br>Set resource limits settings and other requirements for Oracle software installation owners.<br><br>Group and user names must use only ASCII characters. |
| Unset Oracle Software Environment Variables | If you have had an existing installation on your system, and you are using 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. |
| Configure the Oracle Software Owner Environment | Set the TEMP environment variable. |
| Manage User Account Control | If you have enabled the User Account Control security feature, then Oracle Universal Installer prompts you for either your consent or your credentials when installing Oracle Database. Provide either the consent or your Windows Administrator credentials as appropriate |

## Installer Planning Checklist for Oracle Database Installation

Use the checklist to assist you to be prepared before starting Oracle Universal Installer.

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

| Check | Task |
|---|---|
| Review the Documentation | - Review the Oracle Database Release Notes, which is available at the following |

| | |
|---|---|
| | location: Oracle Database Release Notes<br><br>- Be familiar with the installation steps for Oracle RAC software and creating an Oracle RAC database. |
| Review the Licensing Information | You are permitted to use only those components in the Oracle Database media pack for which you have purchased licenses. For more information about licenses, refer to the following URL:<br>Oracle Database Licensing Information |
| 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:<br>https://support.oracle.com/ |
| Review Oracle Support Certification Matrix | New platforms and operating system software versions can 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:<br>https://support.oracle.com/<br><br>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. |
| Review online information to assist with installation | - Log on to My Oracle Support to access certifications for your installation for your platform.<br><br>- Refer to Oracle.com (http://www.oracle.com) for additional resources about planning for specific implementation scenarios, best practices, and other information that can help you with your installation plan. In particular, refer to the Oracle Real Application Clusters pages |

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| | on the Oracle Technology Network at http://www.oracle.com/goto/rac |
| Run Oracle Universal Installer (OUI) with CVU and use fixup scripts | Oracle Universal Installer is fully integrated with Cluster Verification Utility (CVU), automating many CVU prerequisite checks. Oracle Universal Installer runs all prerequisite checks and creates fixup scripts when you run the installer. You can run OUI up to the Summary screen without starting the installation.<br><br>- Obtain the latest version of CVU at the following URL: http://www.oracle.com/technetwork/database/options/clustering/downloads/cvu-download-homepage-099973.html<br><br>Y- ou can also run CVU commands manually to check that your system is prepared for installation before you start an Oracle RAC installation.<br><br>If you have vendors performing hardware or operating system configuration steps, then ask the vendors to complete the relevant CVU checks of the cluster after they complete their work to ensure that your system is configured correctly.<br><br>- Run OUI and DBCA from a node where an Oracle RAC Oracle database instance is located.<br><br>- In case of an upgrade failure, follow common industry standards for data recovery planning, including backing up your existing database. |

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

| check | task |
|---|---|
| Download and run Oracle ORAchk for runtime and upgrade checks, or runtime health | The Oracle ORAchk utility provides system checks that can help to prevent issues before and after installation. These checks include kernel requirements, operating system resource allocations, and other system requirements. |

| | |
|---|---|
| checks | Use the Oracle ORAchk Upgrade Readiness Assessment to obtain an automated upgrade-specific system health check for upgrades to<br>1.2.0.3, 11.2.0.4, 12.1.0.1, 12.2, 18c, and 19c.<br><br>For example:<br><br>-Before you perform a fresh database installation:<br>%ORACLE-HOME%\suptools\orachk>orachk.bat -profile preinstall<br><br>-To upgrade your existing database to a higher version or release:<br>%ORACLE-HOME%\suptools\orachk>orachk.bat -o pre<br><br>The Oracle ORAchk Upgrade Readiness Assessment automates many of the manual pre- and post-upgrade checks described in Oracle upgrade documentation. Oracle ORAchk is supported on Windows 2008 and Windows 2012 on a Cygwin environment only.<br><br>For more information refer to the following URL:<br>https://support.oracle.com/rs?type=doc&id=1268927.1 |
| Verify if Oracle Grid Infrastructure is installed | - If you want to use Oracle ASM or Oracle Restart, then install Oracle Grid Infrastructure for a standalone server before you install and create the database. Otherwise, to use Oracle ASM, you must complete an Oracle Grid Infrastructure installation, and then manually register the database with Oracle Restart.<br><br>- To install Oracle Real Applications Cluster (Oracle RAC), you must have Oracle Grid Infrastructure (Oracle Clusterware and Oracle ASM) installed on your cluster. The Oracle Clusterware version must be equal to or greater than the Oracle RAC version that you plan to install.<br><br>- Currently, there are no supported clusterware products other than Oracle Clusterware for the Microsoft Windows platforms. If you intend to install Oracle RAC, then you must first install Oracle Grid Infrastructure for a cluster, which includes Oracle Clusterware. |
| Check running Oracle processes, and shut down if necessary | On a standalone database not using Oracle ASM: You do not need to shut down the database while you install Oracle Grid Infrastructure.<br><br>- On a standalone database using Oracle ASM: Stop the existing Oracle ASM instances. The Oracle ASM instances are restarted during installation. |

| | |
|---|---|
| | - On an Oracle RAC Database node: This installation requires an upgrade of Oracle Clusterware, as Oracle Clusterware is required to run Oracle RAC. As part of the upgrade, you must shut down the database one node at a time as the rolling upgrade proceeds from node to node. |

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

| check | task |
|---|---|
| Ensure Task Scheduler jobs do not run during installation | If the installer is running when daily scheduled jobs start, then you may encounter unexplained installation problems if your scheduled job is performing cleanup, and temporary files are deleted before the installation is finished. Oracle recommends that you complete installation before daily scheduled jobs are run, or disable daily scheduled jobs that perform cleanup until after the installation is completed. |
| Decide on an Oracle Database management tool | By default, Oracle Database is managed by Oracle Enterprise Manager Database Express.<br><br>If you have an existing Oracle Management Agent, and decide to use Oracle Enterprise Manager Cloud Control to centrally manage your database, then obtain the following information to enter during the database installation:<br><br>-OMS host<br>-OMS port<br>-EM admin username<br>-EM admin password<br>-Specify password of ASMSNMP user<br><br>You need a web browser to access documentation, to use Oracle Enterprise Manager Database Express, and to use Oracle Application Express. Web browsers must support JavaScript and the HTML 4.0 and Cascading Style Sheets (CSS) 1.0 standards. |
| Review memory allocation and Automatic Memory Management feature | You can enable automatic memory management either during, or after Oracle |

| | |
|---|---|
| | Database installation. If you enable automatic memory management after installation, then you must shut down and restart the database.<br><br>With Automatic Memory Management, Oracle Database instances automatically manage and tune memory. You choose a memory target, and the instance automatically distributes memory between the system global area (SGA) and the instance program global area (instance PGA).<br><br>As memory requirements change, the instance dynamically redistributes memory between the SGA and instance PGA. |

Related Topics

- Oracle Grid Infrastructure Installation and Upgrade Guide for Microsoft Windows x64 (64-Bit)

Related Topics

- Oracle Enterprise Manager Cloud Control Administrator's Guide

Related Topics

- Oracle Database Administrator’s Guide

Related Topics

- Oracle Clusterware Administration and Deployment Guide

# 2

# Oracle Database Preinstallation Tasks

Review the preinstallation tasks before you start Oracle Universal Installer.

Learn about the information required to install Oracle Database 19c. Ensure that you review information related to the platform on which you intend to install Oracle Database 19c.

- Oracle Database Minimum Hardware Requirements

Learn about the hardware component and hard disk space requirements.

- Oracle Database Software Requirements

The following table lists the software requirements for Oracle Database on Windows x64:

Windows Certification and Web Browser Support
Review the Windows Certification and Web Browser Support information.
•
Reviewing Operating System Security Common Practices
Secure operating systems are an important basis for general system security.
•
Confirming Host Name Resolution
Check to ensure that the host name for your server is resolvable.
•
Individual Component Requirements
Review the individual component requirements.
Oracle Database 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 on Windows x64.
•
Hard Disk Space Requirements
Learn about the system requirements for Windows platforms that use the NT File System (NTFS).
•
Verifying Hardware Requirements
Use this procedure to gather information about your server configuration.
Hardware Component Requirements for Windows x64
The following table lists the hardware components that are required for Oracle Database on Windows x64.
Table 2-1 Windows x64 Minimum Hardware Requirements
Requirement
Value

System Architecture
Processor: AMD64 and Intel EM64T
Physical memory (RAM)
2 GB minimum

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# Oracle Database Software Requirements

The following table lists the software requirements for Oracle Database on Windows x64:

***2-3***

Table 2-3 Windows x64 Software Requirements

| Requirement | Value |
|---|---|
| Operating System | Oracle Database for Windows x64 is supported on the following operating systems:<br><br>- Windows 8.1 x64 - Pro and Enterprise editions<br>- Windows 10 x64 - Pro, Enterprise, and Education editions<br>- Windows 11 x64 - Pro, Enterprise, and Education editions<br>- Windows Server 2012 R2 x64 - Standard, Datacenter,<br>- Essentials, and Foundation editions<br>- Windows Server 2016 x64 - Standard, Datacenter, and<br>- Essentials editions<br>- Windows Server 2019 x64 - Standard, Datacenter, and<br>- Essentials editions<br>- Windows Server 2022 x64 - Standard, Datacenter, and<br>- Essentials editions<br><br>Note:<br>- Windows Multilingual User Interface Pack is supported.<br>- The Server Core option is not supported.<br>- Windows 11 x64 - Pro, Enterprise, and Education editions and Windows Server 2022 x64 - Standard, Datacenter, and Essentials editions are supported starting with Oracle Database 19c Release Update (19.13) or later. |
| Virtualization | Oracle certifies the following virtualization technologies with Oracle Database on Windows:<br><br>- Oracle VM Server<br>- Microsoft Hyper-V<br><br>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 and SDK | The following component is supported only with Microsoft Visual C++ 2013 Update 5:<br><br>- Pro*C/C++: Use Microsoft Visual C++ 2013 to convert the Pro*C/C++ files into C/C++ files, and then use Microsoft Visual C++ 2017 Update 6 Version 15.6.3 or later to further build them.<br><br>The following components are supported with the compilers based on Microsoft Visual C++ 2017 Update 6 or later and Intel C++ 17.0 Update 8, and Microsoft Visual C++ 2017 Update 6 or later SDK:<br><br>- Oracle Call Interface (OCI)<br>- External callouts<br>- Oracle XML Developer's Kit (XDK)<br>- Oracle C++ Call Interface (OCCI)<br><br>Pro*COBOL supports:<br>- Micro Focus Visual COBOL Version 6 |

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Table 2-3 Windows x64 Software Requirements

| Requirement | Value |
|---|---|
| Network Protocol | The Oracle Net foundation layer uses Oracle protocol support to communicate with the following industry-standard network protocols:<br><br>-TCP/IP<br>- TCP/IP with SSL<br>- Named Pipes |
| Oracle Database Client | To connect to Oracle Database 19c, the following are required:<br><br>Oracle Database Client is version 11.2.0.4 or later.<br>If the earlier Oracle Database Client is running on the same computer as Oracle Database 19c, then you cannot use a bequeath connection.<br><br>Oracle recommends upgrading Oracle Database Client 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 |

| | |
|---|---|
| Unzip utility | Unzip 6.0 or later.<br>Unzip is required to extract the image files for Oracle Database and Oracle Grid Infrastructure installations |

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# Microsoft Windows Servicing Options

On Microsoft Windows 10 systems, new servicing options are available.
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.

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# Default Share Configuration Requirement

The prerequisite checks during Oracle Database 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.

# Reviewing Operating System Security Common Practices

Secure operating systems are an important basis for general system security.
Ensure that your operating system deployment is in compliance with common security practices as described in your operating system vendor security guide.

# Confirming Host Name Resolution

Check to ensure that the host name for your server is resolvable.

Typically, the computer on which you want to install Oracle Database is connected to a network. Ensure that the computer host name is resolvable, either through a Domain Name System (DNS), a network information service (NIS), or a centrally-maintained TCP/IP host file, such as /etc/hosts. Use the ping command to ensure that your computer host name is resolvable.
For example:

ping myhostname
pinging myhostname.example.com [192.0.2.2] with 32 bytes of data:
Reply from 192.0.2.2: bytes=32 time=138ms TTL=56

# Individual Component Requirements

Review the individual component requirements.

- Configuring Disk Storage for Oracle Data Files and Recovery Files
  Learn about the storage options for storing Oracle data files and, optionally, Oracle database recovery files.
- Creating Directories for Oracle Data Files or Recovery Files
  If you decide to place the Oracle Database files on a file system, then use the following guidelines when deciding where to place them:
- Oracle Database Security Strong Authentication Requirements
  Ensure that you meet the hardware and software requirements so that you can use strong authentication (Kerberos, PKI) with Oracle Database.

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- Oracle Enterprise Manager Requirements
  All Oracle Enterprise Manager products must belong to the same release.

- Oracle-Managed Files Requirements
  If you choose the Advanced database creation option, then you can use the Oracle-managed files feature with the new database.

- Oracle Volume Shadow Copy Service (VSS) Writer
  Oracle Volume Shadow Copy Service Writer is supported on Windows Server operating systems

# Configuring Disk Storage for Oracle Data Files and Recovery Files

Learn about the storage options for storing Oracle data files and, optionally, Oracle database recovery files.

- Choosing a Storage Option for Oracle Database and Recovery Files

Oracle Database files include data files, control files, redo log files, the server parameter file, and the password file.

# Choosing a Storage Option for Oracle Database and Recovery Files

Oracle Database files include data files, control files, redo log files, the server parameter file, and the password file.

For all installations, you must choose the storage option to use for Oracle Database files. During the database installation, you must choose the storage option to use for recovery files (the fast recovery area). You do not have to use the same storage option for each file type

Note:
Database files and recovery files are supported on file systems and Oracle ASM.

The storage option that you choose for recovery files can be the same as or different to the option you choose for the data files. The recovery files must be placed on Oracle ASM if using Oracle ACFS; otherwise they can be placed on NTFS.

# Creating Directories for Oracle Data Files or Recovery Files

If you decide to place the Oracle Database files on a file system, then use the following guidelines when deciding where to place them:

- Guidelines for Placing Oracle Database Files on a File System or Logical Volume

Review the guidelines for placing Oracle Database files on a file system or logical volume.

- Guidelines for Placing Oracle Recovery Files on a File System

Use the guidelines listed in this section to place Oracle recovery files on a file system.

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# Guidelines for Placing Oracle Database Files on a File System or Logical Volume

Review the guidelines for placing Oracle Database files on a file system or logical volume.

- Oracle Universal Installer indicates that the default path for the database file directory is a subdirectory of the Oracle base directory.
- You can choose either a single file system or more than one file system to store the database files:
    - If you want to use a single file system, then choose a file system on a physical device that is dedicated to the database.
      For best performance and reliability, choose a RAID device or a logical volume on multiple physical devices and implement a stripe-and-mirror everything (SAME) storage policy.
    - If you want to use more than one file system, then choose file systems on separate physical devices that are dedicated to the database.
      This method enables you to distribute physical input-output operations and

create separate control files on different devices for increased reliability. It also enables you to fully implement Oracle Optimal Flexible Architecture (OFA) guidelines. Choose theAdvanced database creation option to implement this method.

- If you intend to create a preconfigured database during the installation, then the file system (or file systems) that you choose must have at least 2 GB of free disk space.

  For production databases, you must estimate the disk space requirement depending on the use of the database.

- For optimum performance, the file systems that you choose must be on physical devices that are used only by the database.

- The Oracle user running the Oracle Database installation must have write permissions to create the files in the path that you specify.

# Guidelines for Placing Oracle Recovery Files on a File System

Use the guidelines listed in this section to place Oracle recovery files on a file system.

NOTE: You must choose a location for recovery files only if you intend to enable automated backups during the installation.

If you place the Oracle recovery files on a file system, use the following guidelines when deciding where to place them:

- To prevent disk failure from making both the data files and the recovery files unavailable, place the recovery files in a file system on a different physical disk from the data files

***2-9***

NOTE: Alternatively, for both data files and recovery files, use an Oracle Automatic Storage Management disk group.

- The file system that you choose must have at least 2 GB of free disk space.

The disk space requirement is the default disk quota configured for the fast recovery area (specified by the DB_RECOVERY_FILE_DEST_SIZE initialization parameter).

If you choose the Advanced database configuration option, you can specify a different disk quota value. After you create the database, you can also use Oracle Enterprise Manager Cloud Control or Oracle Enterprise Manager Database Express to specify a different value.

See also: Oracle Database Backup and Recovery User's Guide

- Oracle Universal Installer suggests that the default location for the database file directory is a subdirectory of the Oracle base directory. However, this default location is not recommended for production databases.

# Creating Required Directories

Use this procedure to create the required directories.

Note:
You must complete this procedure only to place the Oracle database or recovery files on a separate file system from the Oracle base directory.

To create directories for the Oracle database or recovery files on separate file systems from the Oracle base directory, follow these steps:

1. Use Windows Explorer to determine the free disk space on the file system.

2. From the display, identify the file systems to use:

| File Type | File System Requirements |
|---|---|
| Data files | Select one of the following:<br>- A single file system with at least 950 MB of free disk space<br>- Two or more file systems with at least 950 MB of free disk space in total |
| Recovery files | Choose a file system with at least 2 GB of free disk space |

If you are using the same file system for multiple types of files, then add the disk space requirements for each type to determine the total disk space requirement.
***2-10***

3. Note the names of the directories for the file systems that you identified

# Oracle Database Security Strong Authentication Requirements

Ensure that you meet the hardware and software requirements so that you can use strong authentication (Kerberos, PKI) with Oracle Database.

# Oracle Enterprise Manager Requirements

All Oracle Enterprise Manager products must belong to the same release.

Older versions of Enterprise Manager are not supported with the new release.

Oracle Enterprise Manager products are released on the Enterprise Manager Cloud Control installation media. Oracle Enterprise Manager Database Express is built into Oracle Database without any need for special installation or management.

See Also:
Oracle Enterprise Manager Cloud Control Basic Installation Guide and Oracle Enterprise Manager Cloud Control Advanced Installation and Configuration Guide

# Oracle-Managed Files Requirements

If you choose the Advanced database creation option, then you can use the Oracle-managed files feature with the new database.

If you use this feature, then specify only the database object name instead of file names when creating or deleting database files. You require configuration procedures to enable Oracle Managed Files.

Related Topics
- Oracle Database Administrator's Guide

# Oracle Volume Shadow Copy Service (VSS) Writer

Oracle Volume Shadow Copy Service Writer is supported on Windows Server operating systems.

See Also:
Oracle Database Platform Guide for Microsoft Windows

***2-11***

# Overview of Oracle Database Installation (Обзор установки базы данных Oracle)

Learn about the different installation types of Oracle Database and issues to consider before you install Oracle Database.

Installation Considerations
Learn about the information that you must consider before deciding how to install this product

Database Configuration Options
Review the different database configuration options

## Installation Considerations (Рекомендации по установке)

Learn about the different installation types of Oracle Database and issues to consider before you install Oracle Database.

Oracle Base Directory
If you install Oracle Database 19c on a computer with no other Oracle software installed, Oracle Universal Installer creates an Oracle base directory for you.

Oracle Home Directory

Learn about the Oracle Home directory.

Oracle Inventory Directory
The Oracle Inventory directory is the central inventory location for all Oracle software installed on a server.

Installing Oracle Database Vault in an Oracle Data Guard Environment

Starting with Oracle Database 12c, Oracle Database Vault is installed by default as part of the Oracle Database installation

Oracle Database Vault Default Audit Policy and Initialization Parameters
Oracle Database Vault installs a baseline database auditing policy.

Consider Memory Allocation and Automatic Memory Management

During a Typical installation, you create your database with Database Configuration Assistant (DBCA), and automatic memory management is enabled. If you choose advanced installation, then you can either specify memory allocation manually, or enable automatic memory management.

***3-1***

## Oracle Base Directory (Базовый каталог Oracle)

If you install Oracle Database 19c on a computer with no other Oracle software installed, Oracle Universal Installer creates an Oracle base directory for you.

If Oracle software is installed, then one or more Oracle base directories exist. In the latter case, Oracle Universal Installer offers you a choice of Oracle base directories to install Oracle Database.

The Oracle Home User has complete control over the Oracle base for a particular home. For security reasons, different Windows User Accounts used as Oracle Home Users for different Oracle homes are not allowed to share the same Oracle base.

However, to support Oracle Database upgrade, Oracle supports the sharing of an Oracle base between a Windows Built-in Account and a Windows User Account. This means that if you choose to reuse an Oracle base from an earlier release of Oracle Database in Oracle Database 19c, then the Oracle Home User of Oracle Database 19c Oracle home has complete control over the Oracle base of the earlier release.

See Also:
Oracle Database Platform Guide for Microsoft Windows

In a default Windows installation, the Oracle base directory appears as follows:
DRIVE_LETTER:\app\username

where username is the Oracle Installation User if you choose Windows Built-in Account, else it is the Oracle Home User (standard Windows User Account).

Caution:
After installing Oracle Database 19c with a Windows User Account used as the Oracle Home User, do not install older version of databases and share the same Oracle base directory. During the installation of older releases of Oracle Database, ACLs are reset corresponding to older releases. Thus Oracle Database 19c services may not be able to access the Oracle base directory and the files in it.

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

## Oracle Home Directory (Домашний каталог Oracle)

Learn about the Oracle Home directory.

Contents of the Oracle Home Environment
The Oracle home directory is located under the Oracle base directory.

Multiple Oracle Home Components

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

## Contents of the Oracle Home Environment

## (Содержимое окружения Oracle Home)

The Oracle home directory is located under the Oracle base directory.

For example, in a default Windows installation, if you name the Oracle home directory dbhome_1, it appears in the Oracle base directory as follows:

DRIVE_LETTER:\app\username\product\19.0.0\dbhome_1
where username is the installation user if you choose a Windows Built-in Account, else it is the Oracle Home User specified.

An Oracle home corresponds to the environment in which the Oracle components run. This environment includes the following:
- Location of the installed component files
- PATH variable pointing to the binary files of the installed components
- Registry entries
- Service names
- Program groups

Oracle homes also have a name associated with them, which is automatically assigned by the installer.

## Multiple Oracle Home Components (Несколько компонентов Oracle Home)

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.

## Oracle Inventory Directory (Каталог инвентаризации Oracle)

The Oracle Inventory directory is the central inventory location for all Oracle software installed on a server.

By default, the location of the Oracle Inventory directory is C:\Program Files\Oracle\Inventory. This directory is created by default the first time you install Oracle software on a Windows server.

## Installing Oracle Database Vault in an Oracle Data Guard Environment (Установка Oracle Database Vault в среде Oracle Data Guard)

Starting with Oracle Database 12c, Oracle Database Vault is installed by default as part of the Oracle Database installation.

If you plan to use Oracle Data Guard with Oracle Database Vault, then see "Integrating Oracle Database Vault with Oracle Data Guard" in Oracle Database Vault Administrator's Guide.

## Oracle Database Vault Default Audit Policy and Initialization Parameters (Политика аудита по умолчанию Oracle Database Vault и параметры инициализации)

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

When you install Oracle Database Vault, the security specific database initialization parameters are initialized with the default values.

See Also:
Oracle Database Vault Administrator's Guide

### Consider Memory Allocation and Automatic Memory Management (Рассмотрите распределение памяти и автоматическое управление памятью)

During a Typical installation, you create your database with Database Configuration Assistant (DBCA), and automatic memory management is enabled. If you choose advanced installation, then you can either specify memory allocation manually, or enable automatic memory management.

With automatic memory management, the Oracle Database instances automatically manage and tune memory for you. With automatic memory management, you choose a memory target, and the instance automatically distributes memory between the system global area (SGA) and the instance program global area (instance PGA). As memory requirements change, the instance dynamically redistributes memory between the SGA and instance PGA.

You can enable automatic memory management either during, or after the database installation. Enabling automatic memory management after installation involves a shutdown and restart of the database.

See Also:
Oracle Database Administrator's Guide

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# Database Configuration Options (Параметры конфигурации базы данных)

Review the different database configuration options.

You can create an Oracle database during the installation process. If you choose to create an Oracle database, Oracle Universal Installer uses Oracle Database Configuration Assistant to create it. You can create one of the preconfigured database types, which are designed for a variety of different applications, modify one of the preconfigured database types, or create a customized database to suit your own requirements.
- Creating a Database After Installation

You can create a database after installation by using Oracle Database Configuration Assistant (Oracle DBCA).

# Creating a Database After Installation
# (Создание базы данных после установки)

You can create a database after installation by using Oracle Database Configuration Assistant (Oracle DBCA).

If you decide not to create a database during the installation, then you can use Oracle Database Configuration Assistant (Oracle DBCA) to create one after you have installed the software.

Creating an Oracle Database on Direct NFS

Learn how to install and create an Oracle Database that uses Direct NFS (dNFS) for storage

# Creating an Oracle Database on Direct NFS
# (Создание базы данных Oracle на Direct NFS)

Learn how to install and create an Oracle Database that uses direct NFS (dNFS) for storage.

There are different configuration processes you must perform to use dNFS for your database file system. Following are the steps:

1. Perform a Software-Only Installation of Oracle Database
In a software-only installation, you install the Oracle Database software but do not create a database as part of the installation process. You can install only the database software by selecting the Install Database Software only option provided on the Select Installation Option screen.
2. Use Oracle Database Configuration Assistant to Create and Configure the Database
After the Prerequisite checks are complete, on the Summary screen, minimize the installation window. DO NOT click Finish at this point.
3. Enable the Direct NFS option.
Return to the DBCA window and click Finish.
4. Map a drive letter to a CIFS share on the NFS server that represents the location of the database files.
NET USE * \\filer\vol0\orcl
After you complete this step, both Oracle and the Windows operating system can access the location where the database files reside. Oracle is using DNFS, but the Windows OS uses CIFS to access the same location on the NFS server.
5. Verify that the Direct NFS is configured for the database.
a. Start SQL*Plus.
b. Connect to the newly created database as a DBA user.
c. Run the following SQL command:
***3-4***

```
SELECT * FROM v$dnfs_servers;
```

***3-5***

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# Configuring Users, Groups and Environments for Oracle Database

Learn about the users, groups, and environment settings to complete before you install Oracle Database and Grid Infrastructure for a standalone server.

- Creating Required Operating System Groups and Users
If you are installing Oracle software for the first time, then create operating system groups and users to grant Oracle Database system privileges.
- Stopping Existing Oracle Services
Learn how to stop all processes, including the listener and database, running in the Oracle home.
- Configuring User Accounts
During installation, you can specify an Oracle Home User.
- Creating Oracle Database Vault User Accounts
If you intend to use Oracle Database Vault by default, then you must create an Oracle Database Vault user account, and configure that user.

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

## Creating Required Operating System Groups and Users (Создание необходимых групп и пользователей операционной системы)

If you are installing Oracle software for the first time, then create operating system groups and users to grant Oracle Database system privileges.

You can choose to create one administrative user and use one group for operating system authentication for all system privileges on the storage and database tiers. For example, you can designate the oracle user to be the Oracle Installation user for all Oracle software and use only the ORA_DBA group for authentication. You can also create custom configuration groups and users based on job role separation that divide access privileges.

Log in as an Administrator user, and use the following instructions to create the Oracle Installation user for Oracle Database.

- About the Oracle Installation User
To install Oracle Restart or Oracle Database software, you must use either a local or a domain user that is also a member of the Administrators group.

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

- Understanding the Oracle Inventory Directory and the Oracle Inventory Group
The Oracle Inventory directory is the central inventory location for all Oracle software installed on a server.
- Operating System Groups Created During Oracle Database Installation
During installation, the user groups listed in the following table are created, if they do not already exist.
- Operating System Groups and Users for Job Role Separation
A job role separation configuration of Oracle Database and Oracle ASM is a configuration with groups and users to provide separate groups for operating system authentication.

See Also:
Oracle Database Platform Guide for Microsoft Windows

## About the Oracle Installation User
## (О пользователе установки Oracle)

To install Oracle Restart or Oracle Database software, you must use either a local or a domain user that is also a member of the Administrators group.

This user is the Oracle Installation User. The Oracle Installation User can be either a local user or a domain user.

## Creating Oracle Home User
## (Создание домашнего пользователя Oracle)

During Oracle Database 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 software.

Oracle home user can be a Windows Built-in Account (LocalSystem for Server and LocalService for Client), Virtual Account, or a regular (not an administrator) Windows account. 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.

## Understanding the Oracle Inventory Directory and the Oracle Inventory Group
## (Понимание Oracle Inventory Directory и группы Oracle Inventory Group.)

The Oracle Inventory directory is the central inventory location for all Oracle software installed on a server.

## Operating System Groups Created During Oracle Database Installation
## (Группы операционных систем, созданные во время установки базы данных Oracle.)

During installation, the user groups listed in the following table are created, if they do not already exist.

# Stopping Existing Oracle Services
# (Остановка существующих служб Oracle)

# Configuring User Accounts
# (Настройка учетных записей пользователей)

# Creating Oracle Database Vault User Accounts
# (Создание учетных записей пользователей Oracle Database Vault)

# Installing and Configuring Oracle Grid Infrastructure for a Standalone Server (Установка и настройка Oracle Grid Infrastructure для автономного сервера)

If you intend to use Oracle Automatic Storage Management (Oracle ASM), then you must install Oracle Restart before installing your database.

Oracle Grid Infrastructure for a standalone server is a version of Oracle Grid Infrastructure that supports single instance databases. This support includes volume management, file system, and automatic restart capabilities. Oracle Grid Infrastructure for a standalone server includes Oracle Restart and Oracle Automatic Storage Management. Oracle combined the two infrastructure products into a single set of binaries that is installed into an Oracle Restart home.

Oracle Restart is a feature provided as part of Oracle Grid Infrastructure. Oracle Restart monitors and can restart Oracle Database instances, Oracle Net Listeners, and Oracle ASM instances. Oracle Restart is currently restricted to manage single instance Oracle Databases
and Oracle ASM instances only, and is subject to desupport in future releases. Oracle continues to provide Oracle ASM as part of the Oracle Grid Infrastructure installation for a standalone server and Cluster deployments.

Oracle Automatic Storage Management is a volume manager and a file system for Oracle Database files that supports single-instance Oracle Database and Oracle Real Application Clusters (Oracle RAC) configurations. Oracle Automatic Storage Management also supports a general purpose file system for your application needs, including Oracle Database binaries.
Oracle Automatic Storage Management is Oracle's recommended storage management solution that provides an alternative to conventional volume managers and file systems.
Oracle Restart improves the availability of your Oracle database because of the following:

- When there is a hardware or a software failure, Oracle Restart automatically starts all Oracle components, including the Oracle database instance, Oracle Net Listener, database services, and Oracle ASM.
- Oracle Restart starts components in the proper order when the database host is restarted.
- Oracle Restart runs periodic checks to monitor the status of Oracle components. If a check operation fails for a component, then the component is shut down and restarted.

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