

# Oracle® Database

Client Quick Installation Guide

11g Release 2 (11.2) for IBM: Linux on System z

E24327-03

November 2016

---

This guide describes how to quickly install Oracle Database Client 11g Release 2 (11.2) on IBM: Linux on System z. It includes information about the following:

- [Reviewing Information About This Guide](#)
- [Logging In to the System as root](#)
- [Checking the Hardware Requirements](#)
- [Checking the Software Requirements](#)
- [Creating Required Operating System Groups and Users](#)
- [Creating Required Directories](#)
- [Configuring the oracle User's Environment](#)
- [Mounting the Product Disc](#)
- [Installing Oracle Database Client](#)
- [Performing an In-place Oracle Database Client Upgrade](#)
- [What to Do Next?](#)
- [Documentation Accessibility](#)

## 1 Reviewing Information About This Guide

This guide describes how to complete a default installation of Oracle Database Client on a system that does not have any Oracle software installed on it. It describes how to install one of the following installation types:

- **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.
- **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 as compared to the other Oracle Database Client installation types.

**See Also:** *Oracle Call Interface Programmer's Guide* for more information about Instant Client

This guide does not describe how to install the Custom installation type.

## Where to Get Additional Installation Information

For more detailed information about installing Oracle Database Client, refer to *Oracle Database Client Installation Guide for Linux*.

The product documentation for Oracle Database products is available in both HTML and PDF formats online:

<http://docs.oracle.com/>

## 2 Logging In to the System as root

Before you install the Oracle software, you must complete several tasks as the root user. To log in as the root user, complete one of the following procedures:

---

---

**Note:** Unless you intend to complete a silent-mode installation, you must install the software from an X Window System workstation, an X terminal, or a PC or other system with X server software installed.

---

---

- Following are the steps for installing the software from an X Window System workstation or X terminal:
  1. Start a local terminal session, for example, an X terminal (xterm).
  2. If you are not installing the software on the local system, then enter the following command to enable the remote host to display X applications on the local X server:

```
$ xhost fully_qualified_remote_host_name
```

For example:

```
$ xhost somehost.us.example.com
```

3. If you are not installing the software on the local system, then use the ssh, rlogin, or telnet command to connect to the system where you want to install the software:
4. If you are not logged in as the root user, then enter the following command to switch user to root:

```
$ telnet fully_qualified_remote_host_name
```

```
$ sudo sh
password:
#
```

- Following are the steps for installing the software from a PC or other system with X server software:

---

---

**Note:** If necessary, refer to your X server documentation for more information about completing this procedure. Depending on the X server software that you are using, you may have to complete the tasks in a different order.

---

---

1. Start the X server software.

2. Configure the security settings of the X server software to permit remote hosts to display X applications on the local system.
3. Connect to the remote system where you want to install the software and start a terminal session on that system, for example, an X terminal (`xterm`).
4. If you are not logged in as the `root` user on the remote system, then enter the following command to switch user to `root`:

```
$ sudo sh
password:
#
```

### 3 Checking the Hardware Requirements

The system must meet the following minimum hardware requirements:

- [Memory Requirements](#)
- [System Architecture](#)
- [Disk Space Requirements](#)

#### 3.1 Memory Requirements

The following are the memory requirements for installing Oracle Database 11g Release 2 (11.2):

- At least 256 MB of physical RAM.

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

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

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

- The following table describes the relationship between installed RAM and the configured swap space recommendation:

---

**Note:** On Linux, the HugePages feature allocates non-swappable memory for large page tables using memory-mapped files. If you enable HugePages, then you should deduct the memory allocated to HugePages from the available RAM before calculating swap space.

---

Available RAM	Swap Space Required
256 MB	3 times the size of RAM
Between 256 MB and 512 MB	2 times the size of RAM
Between 512 MB and 2 GB	1.5 times the size of RAM
Between 2 GB and 16 GB	Equal to the size of RAM
More than 16 GB	16 GB

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

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

---

---

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

---

---

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

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

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

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

```
# free
```

---

---

**IMPORTANT:**

- Oracle recommends that you take multiple values for the available RAM and swap space before finalizing a value. This is because the available RAM and swap space keep changing depending on the user interactions with the computer.
  - Contact your operating system vendor for swap space allocation guidance for your server. The vendor guidelines supersede the swap space requirements listed in this guide.
- 
- 

## 3.2 System Architecture

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

```
# uname -m
```

---

---

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

---

---

## 3.3 Disk Space Requirements

The following are the disk space requirements for installing Oracle Database 11g Release 2 (11.2):

- The minimum disk space requirement for a client install in the `/tmp` directory is 400 MB.

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

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

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

- Delete unnecessary files from the `/tmp` directory to meet the disk space requirement.
- Set the `TMP` and `TMPDIR` environment variables when setting the `oracle` user's environment.

**See Also:** "[Configuring the oracle User's Environment](#) for more information about setting `TMP` and `TMPDIR`

- Extend the file system that contains the `/tmp` directory. If necessary, contact the system administrator for information about extending file systems.
- The following table describes the disk space requirements for software files for each installation type on Linux:

Installation Type	Requirement for Software Files
Instant Client	221 MB
Administrator	1.5 GB
Runtime	1.1 GB

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

```
# df -k
```

## 4 Checking the Software Requirements

Depending on the products that you intend to install, verify that the following software are installed on the system.

- [Operating System Requirements](#)
- [Kernel Requirements](#)
- [Package Requirements](#)
- [Compiler Requirements](#)
- [Additional Software Requirements](#)

---

**Note:** The platform-specific hardware and software requirements included in this guide were current when this guide was published. However, because new platforms and operating system software versions might be certified after this guide is published, review the certification matrix on the My Oracle Support website for the most up-to-date list of certified hardware platforms and operating system versions:

<https://support.oracle.com/>

---

## 4.1 Operating System Requirements

The following or later versions of the operating system are required for Oracle Database 11g Release 2 (11.2):

- Red Hat Enterprise Linux 7 Update 1
- Red Hat Enterprise Linux 6 Update 2
- Red Hat Enterprise Linux 4 Update 8
- Red Hat Enterprise Linux 5 Update 4
- SUSE Linux Enterprise Server 10 SP3
- SUSE Linux Enterprise Server 11 SP1

Starting with Oracle Database 11g Release 2 (11.2), the Security Enhanced Linux (SE Linux) feature is supported for Red Hat Enterprise Linux 4, and Red Hat Enterprise Linux 5.

---

---

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

---

---

To determine the distribution and version of Linux installed, enter the following command:

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

## 4.2 Kernel Requirements

The following are the Kernel requirements for Oracle Database 11g Release 2 (11.2)

- On Red Hat Enterprise Linux 7  
3.10.0-229 or later
- On Red Hat Enterprise Linux 6  
2.6.32-200 or later
- For Red Hat Enterprise Linux 4  
2.6.9 or later
- For Red Hat Enterprise Linux 5  
2.6.18 or later
- For SUSE Linux Enterprise Server 10  
2.6.16.60 or later
- For SUSE Linux Enterprise Server 11  
2.6.32.12 or later

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

```
# uname -r
```

The following is a sample output displayed by running this command on a Red Hat Enterprise Linux 4.0 system:

```
2.6.9-34.0.1.0.11.ELsmp
```

In this example, the output shows the kernel version (2.6.9) and errata level (34.0.1.0.11) on the system.

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

### 4.3 Package Requirements

The following, or later versions, packages are required for Oracle Database 11g Release 2 (11.2):

---

---

**Note:**

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

- Red Hat Enterprise Linux 4

```
binutils-2.15.92.0.2-25 (s390x)
compat-libstdc++-33-3.2.3-47.3 (s390)
compat-libstdc++-33-3.2.3-47.3 (s390x)
gcc-3.4.6-11 (s390x)
gcc-c++-3.4.6-11 (s390x)
glibc-2.3.4-2.43 (s390)
glibc-2.3.4-2.43 (s390x)
glibc-devel-2.3.4-2.43 (s390)
glibc-devel-2.3.4-2.43 (s390x)
libaio-0.3.105-2 (s390)
libaio-0.3.105-2 (s390x)
libaio-devel-0.3.105-2 (s390)
libaio-devel-0.3.105-2 (s390x)
libgcc-3.4.6-11 (s390)
libgcc-3.4.6-11 (s390x)
libstdc++-3.4.6-10.0.1
```

```
libstdc++-3.4.6-10.0.1 (32-bit)
libstdc++-devel-3.4.6-10.0.1
libstdc++-devel-3.4.6-10.0.1 (x86_64)
make-3.80
pdksh
sysstat-5.0.5-25.e14 (s390x)
```

#### ■ Red Hat Enterprise Linux 5

```
binutils-2.17.50.0.6-12.e15 (s390x)
compat-libstdc++-33-3.2.3-61 (s390)
compat-libstdc++-33-3.2.3-61 (s390x)
gcc-4.1.2-46.e15 (s390x)
gcc-c++-4.1.2-46.e15 (s390x)
glibc-2.5-42 (s390)
glibc-2.5-42 (s390x)
glibc-devel-2.5-42 (s390)
glibc-devel-2.5-42 (s390x)
ksh
libaio-0.3.106-3.2 (s390)
libaio-0.3.106-3.2 (s390x)
libaio-devel-0.3.106-3.2 (s390)
libaio-devel-0.3.106-3.2 (s390x)
libgcc-4.1.2-46.e15 (s390)
libgcc-4.1.2-46.e15 (s390x)
libstdc++-4.1.2-46.e15 (s390)
libstdc++-4.1.2-46.e15 (s390x)
libstdc++-devel-4.1.2-46.e15 (s390x)
make-3.81
sysstat-7.0.2-3.e15 (s390x)
```

#### ■ Red Hat Enterprise Linux 6

```
binutils-2.20.51.0.2-5.28 (s390x)
compat-libstdc++-33-3.2.3-69.e16 (s390x)
gcc-4.4.6-3.e16 (s390x)
gcc-c++-4.4.6-3.e16 (s390x)
glibc-2.12-1.47.e16 (s390)
glibc-2.12-1.47.e16 (s390x)
glibc-devel-2.12-1.47.e16 (s390)
glibc-devel-2.12-1.47.e16 (s390x)
libaio-0.3.107-10.e16 (s390)
libaio-0.3.107-10.e16 (s390x)
libaio-devel-0.3.107-10.e16 (s390x)
libgcc-4.4.6-3.e16 (s390)
libgcc-4.4.6-3.e16 (s390x)
libstdc++-4.4.6-3.e16 (s390x)
libstdc++-devel-4.4.6-3.e16 (s390x)
make-3.81-19.e16 (s390x)
pdksh
sysstat-9.0.4-18.e16 (s390x)
```

#### ■ Red Hat Enterprise Linux 7

```
binutils-2.23.52.0.1-30.e17.s390x
compat-libcap1-1.10-7.e17.s390x
cpp-4.8.2-16.e17.s390x
gcc-4.8.3-9.e17.s390x
gcc-c++-4.8.3-9.e17.s390x
```

glibc-2.17-78.el7.s390  
glibc-2.17-78.el7.s390x  
glibc-devel-2.17-78.el7.s390  
glibc-devel-2.17-78.el7.s390x  
glibc-headers-2.17-55.el7.s390x  
ksh-20120801-22.el7.s390x  
libaio-0.3.109-12.el7.s390  
libaio-0.3.109-12.el7.s390x  
libaio-devel-0.3.109-12.el7.s390  
libaio-devel-0.3.109-12.el7.s390x  
libgcc-4.8.3-9.el7.s390  
libgcc-4.8.3-9.el7.s390x  
libstdc++-4.8.3-9.el7.s390  
libstdc++-4.8.3-9.el7.s390x  
libstdc++-devel-4.8.3-9.el7.s390  
libstdc++-devel-4.8.3-9.el7.s390x  
libXi-1.2.2-2.1.el7.s390  
libXi-1.2.2-2.1.el7.s390x  
libXtst-1.2.2-2.1.el7.s390  
libXtst-1.2.2-2.1.el7.s390x  
make-3.82-21.el7.s390x  
mpfr-3.1.1-4.el7.s390x  
sysstat-10.1.5-7.el7.s390x

- **SUSE Linux Enterprise Server 10**

binutils-32bit-2.16.91.0.5-23.34.33 (s390x)  
gcc-4.1.2\_20070115-0.29.6 (s390x)  
gcc-c++-4.1.2\_20070115-0.29.6 (s390x)  
glibc-2.4-31.74.1 (s390x)  
glibc-32bit-2.4-31.74.1 (s390x)  
glibc-devel-2.4-31.74.1 (s390x)  
glibc-devel-32bit-2.4-31.74.1 (s390x)  
ksh  
libaio-0.3.104-14.2 (s390x)  
libaio-32bit-0.3.104-14.2 (s390x)  
libaio-devel-0.3.104-14.2 (s390x)  
libaio-devel-32bit-0.3.104-14.2 (s390x)  
libstdc++-4.1.2\_20070115-0.29.6 (s390x)  
libstdc++-devel-4.1.2\_20070115-0.29.6 (s390x)  
make-3.80-202.2 (s390x)  
sysstat-8.0.4-1.7.27 (s390x)

- **SUSE Linux Enterprise Server 11**

binutils-2.20.0-0.7.9 (s390x)  
gcc-4.3-62.198 (s390x)  
gcc-c++-4.3-62.198 (s390x)  
glibc-2.11.1-0.17.4 (s390x)  
glibc-32bit-2.11.1-0.17.4 (s390x)  
glibc-devel-2.11.1-0.17.4 (s390x)  
glibc-devel-32bit-2.11.1-0.17.4 (s390x)  
ksh  
libaio-0.3.109-0.1.46 (s390x)  
libaio-32bit-0.3.109-0.1.46 (s390x)  
libaio-devel-0.3.109-0.1.46 (s390x)  
libaio-devel-32bit-0.3.109-0.1.46 (s390x)  
libstdc++43-4.3.4\_20091019-0.7.35 (s390x)  
libstdc++43-32bit-4.3.4\_20091019-0.7.35 (s390x)  
libstdc++43-devel-4.3.4\_20091019-0.7.35 (s390x)

```
libstdc++43-devel-32bit-4.3.4_20091019-0.7.35 (s390x)
libgcc43-4.3.4_20091019-0.7.35 (s390x)
make-3.81
sysstat-8.1.5-7.9.56 (s390x)
```

See "[Oracle ODBC Drivers](#)" on page 1-10 for information on ODBC packages.

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

```
# rpm -q package_name
```

If a package is not installed, then install it from the Linux distribution media or download the required package version from the Linux vendor's website.

## 4.4 Compiler Requirements

The version of GNU C and C++ compilers listed under the "[Package Requirements](#)" are supported with these products.

## 4.5 Additional Software Requirements

Depending on the components you want to use, you must ensure that the following software are installed:

- [Oracle ODBC Drivers](#)
- [Oracle JDBC/OCI Drivers](#)
- [Linux-PAM Library](#)
- [Separate 32-Bit Client Software for 64-Bit Platforms](#)
- [Programming Languages](#)
- [Browser Requirements](#)

### 4.5.1 Oracle ODBC Drivers

You should install ODBC Driver Manager for UNIX. You can download and install the most recent ODBC Driver Manager from the following URL:

<http://www.unixodbc.org>

To use ODBC, you must also install the following additional ODBC RPMs, depending on your operating system:

- On Red Hat Enterprise Linux 4:
  - `unixODBC-2.2.11 (32-bit) or later`
  - `unixODBC-devel-2.2.11 (64-bit) or later`
  - `unixODBC-2.2.11 (64-bit) or later`
- On Red Hat Enterprise Linux 5:
  - `unixODBC-2.2.11 (32-bit) or later`
  - `unixODBC-devel-2.2.11 (64-bit) or later`
  - `unixODBC-2.2.11 (64-bit) or later`
- On Red Hat Enterprise Linux 6:

- unixODBC-2.2.14-11.el6 (32-bit) or later
- unixODBC-2.2.14-11.el6 (64-bit) or later
- uunixODBC-devel-2.2.14-11.el6 (64-bit) or later
- On Red Hat Enterprise Linux 7:
  - unixODBC-2.3.1-11 (32 bit) or later
  - unixODBC-2.3.1-11 (64 bit) or later
  - unixODBC-devel-2.3.1-11 (32 bit) or later
  - unixODBC-devel-2.3.1-11 (64 bit) or later
- On SUSE Linux Enterprise Server 10:
  - unixODBC-32 bit-2.2.11 (32-bit) or later
  - unixODBC-2.2.11 (64-bit) or later
  - unixODBC-devel-2.2.11 (64-bit) or later
- On SUSE Linux Enterprise Server 11:
  - unixODBC-2.2.12 or later
  - unixODBC-devel-2.2.12 or later
  - unixODBC-32bit-2.2.12 (32-bit) or later

#### 4.5.2 Oracle JDBC/OCI Drivers

You can use the following optional JDK versions with the Oracle JDBC/OCI drivers. However, these are not mandatory for the database installation.

- JDK 6 SR16 FP1 or higher
- JDK 5 SR16 FP3 or higher

#### 4.5.3 Linux-PAM Library

Install the latest Linux-PAM (Pluggable Authentication Modules for Linux) library to enable the system administrator to choose how applications authenticate users.

#### 4.5.4 Separate 32-Bit Client Software for 64-Bit Platforms

Starting with Oracle Database 11g Release 2 (11.2), 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 into a separate Oracle home.

**See Also:** My Oracle Support note 883702.1 for more information:

<https://support.oracle.com/CSP/main/article?cmd=show&type=NOT&id=883702.1>

However, when you install the 32-bit client binaries on 64-bit platforms, the installer checks for the existence of 32-bit software such as the packages.

**See Also:** "Bit-Length Support for Client Applications" in *Oracle Database Administrator's Reference for Linux and UNIX-Based Operating Systems*

#### 4.5.5 Programming Languages

The following products are certified for use with:

- **Pro\* COBOL**  
Micro Focus Server Express 5.1

#### 4.5.6 Browser Requirements

You do not require a web browser to install Oracle Database. However, browsers are required to access documentation, and if you intend to use Oracle Enterprise Manager Database Control and Oracle Application Express. Web browsers must support JavaScript, and the HTML 4.0 and CSS 1.0 standards.

Oracle Enterprise Manager Database Control supports the following browsers:

- Microsoft Internet Explorer 10.0 (supports Oracle Enterprise Manager Database Control 11.2.0.3 and higher)
- Microsoft Internet Explorer 9.0
- Microsoft Internet Explorer 8.0
- Microsoft Internet Explorer 7.0 SP1
- Microsoft Internet Explorer 6.0 SP2
- Firefox 21.0 (supports Oracle Enterprise Manager Database Control 11.2.0.4)
- Firefox 17.0.6 ESR (supports Oracle Enterprise Manager Database Control 11.2.0.4)
- Firefox 3.6
- Firefox 3.5
- Firefox 3.0.7
- Firefox 2.0
- Safari 4.0.x
- Safari 3.2
- Safari 3.1
- Google Chrome 27.0 (supports Oracle Enterprise Manager Database Control 11.2.0.4)
- Google Chrome 4.0
- Google Chrome 3.0
- Netscape Navigator 9.0
- Netscape Navigator 8.1

**See Also:** *Oracle Application Express Installation Guide*

## 5 Creating Required Operating System Groups and Users

The following local operating system groups and users are required if you are installing Oracle Database:

- The Oracle Inventory group (typically, `oinstall`)
- The Oracle software owner (typically, `oracle`)

To determine whether these groups and users exist, and if necessary, to create them, follow these steps:

1. To determine whether the `oinstall` group exists, enter the following command:

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

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

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

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

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

2. If necessary, enter the following commands to create the `oinstall` group:

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

3. To determine whether the `oracle` user exists and belongs to the correct groups, enter the following command:

```
# id oracle
```

If the `oracle` user exists, then this command displays information about the groups to which the user belongs. The output should be similar to the following, indicating that `oinstall` is the primary group and `dba` is a secondary group:

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

4. If necessary, complete one of the following actions:

- If the `oracle` user exists, but its primary group is not `oinstall` or it is not a member of the `dba` group, then enter the following command:

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

- If the `oracle` user does not exist, enter the following command to create it:

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

This command creates the `oracle` user and specifies `oinstall` as the primary group and `dba` as the secondary group.

5. Enter the following command to set the password of the `oracle` user:

```
# passwd oracle
```

## 6 Creating Required Directories

---

---

**Note:** If you do not want to create a separate Oracle data file directory, then you can install the data files in a subdirectory of the Oracle base directory. However, this is not recommended for production databases.

---

---

To create the Oracle base directory:

1. Enter the following command to display information about all mounted file systems:

```
# df -h
```

This command displays information about all the file systems mounted on the system, including:

- The physical device name
  - The total amount, used amount, and available amount of disk space
  - The mount point directory for that file system
2. From the display, identify either one or two file systems that meet the disk space requirements mentioned earlier in this section.
  3. Note the name of the mount point directory for each file system that you identified.
  4. Enter commands similar to the following to create the recommended subdirectories in the mount point directory that you identified and set the appropriate owner, group, and permissions on them:

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

For example:

```
# mkdir -p /u01/app/  
# chown -R oracle:oinstall /u01/app/  
# chmod -R 775 /u01/app/
```

## 7 Configuring the oracle User's Environment

You run Oracle Universal Installer from the `oracle` account. However, before you start Oracle Universal Installer, you must configure the environment of the `oracle` user. To configure the environment, you must:

- Set the default file mode creation mask (`umask`) to `022` in the shell startup file.
- Set the `DISPLAY` environment variable.

To set the `oracle` user's environment:

1. Start a new terminal session, for example, an X terminal (`xterm`).
2. Enter the following command to ensure that X Window applications can display on this system:

```
$ xhost fully_qualified_remote_host_name
```

For example:

```
$ xhost somehost.us.example.com
```

3. If you are not logged in to the system where you want to install the software, then log in to that system as the `oracle` user.
4. If you are not logged in as the `oracle` user, then switch user to `oracle`:

```
$ su - oracle
```

5. To determine the default shell for the `oracle` user, enter the following command:

```
$ echo $SHELL
```

6. To run the shell startup script, enter one of the following commands:

- Bash shell:

```
$ . ~/.bash_profile
```

- Bourne or Korn shell:

```
$ . ~/.profile
```

- C shell:

```
% source ~/.login
```

7. If you are not installing the software on the local computer, then run the following command on the remote computer to set the `DISPLAY` variable:

- Bourne, Bash or Korn shell:

```
$ export DISPLAY=local_host:0.0
```

- C shell:

```
% setenv DISPLAY local_host:0.0
```

In this example, `local_host` is the host name or IP address of the local computer to use to display Oracle Universal Installer.

Run the following command on the remote computer to check if the shell and the `DISPLAY` environmental variable are set correctly:

```
echo $SHELL  
echo $DISPLAY
```

Now to enable X applications, run the following commands on the local computer:

```
$ xhost + fully_qualified_remote_host_name
```

To verify that X applications display is set properly, run a X11 based program that comes with the operating system such as `xclock`:

```
$ xclock
```

In this example, you can find `xclock` at `/usr/X11R6/bin/xclocks`. If the `DISPLAY` variable is set properly, then you can see `xclock` on your computer screen.

**See Also:** PC-X Server or operating system vendor documents for further assistance

8. If you determined that the `/tmp` directory has less than 1 GB of free disk space, then identify a file system with at least 1 GB of free space and set the `TMP` and `TMPDIR` environment variables to specify a temporary directory on this file system:

- a. To determine the free disk space on each mounted file system use the following command:

```
# df -h /tmp
```

- b. If necessary, enter commands similar to the following to create a temporary directory on the file system that you identified, and set the appropriate permissions on the directory:

```
$ sudo mkdir /mount_point/tmp
$ sudo chmod a+wr /mount_point/tmp
# exit
```

- c. Enter commands similar to the following to set the TMP and TMPDIR environment variables:

- \* Bourne, Bash, or Korn shell:

```
$ TMP=/mount_point/tmp
$ TMPDIR=/mount_point/tmp
$ export TMP TMPDIR
```

- \* C shell:

```
% setenv TMP /mount_point/tmp
% setenv TMPDIR /mount_point/tmp
```

9. Enter commands similar to the following to set the ORACLE\_BASE and ORACLE\_SID environment variables:

- Bourne, Bash, or Korn shell:

```
$ ORACLE_BASE=/u01/app/oracle
$ ORACLE_SID=sales
$ export ORACLE_BASE ORACLE_SID
```

- C shell:

```
% setenv ORACLE_BASE /u01/app/oracle
% setenv ORACLE_SID sales
```

In this example, /u01/app/oracle is the Oracle base directory that you created or identified earlier and sales is the name of the database (typically no more than five characters).

10. Enter the following commands to ensure that the ORACLE\_HOME and TNS\_ADMIN environment variables are not set:

- Bourne, Bash, or Korn shell:

```
$ unset ORACLE_HOME
$ unset TNS_ADMIN
```

- C shell:

```
% unsetenv ORACLE_HOME
% unsetenv TNS_ADMIN
```

---

---

**Note:** If the ORACLE\_HOME environment variable is set, then Oracle Universal Installer uses the value that it specifies as the default path for the Oracle home directory. However, if you set the ORACLE\_BASE environment variable, then Oracle recommends that you unset the ORACLE\_HOME environment variable and choose the default path suggested by Oracle Universal Installer.

---

---

## 8 Mounting the Product Disc

On most Linux systems, the product disc mounts automatically when you insert it into the drive. If the disc does not mount automatically, then follow these steps to mount it:

1. Enter a command similar to the following to eject the currently mounted disc, then remove it from the drive:

- Red Hat Enterprise Linux:

```
$ sudo eject /mnt/dvd
```

- SUSE Linux Enterprise Server:

```
# eject /media/dvd
```

In these examples, `/mnt/dvd` and `/media/dvd` are the mount point directories for the disc drive.

2. Insert the DVD into the disc drive.
3. To verify that the disc mounted automatically, enter a command similar to the following:

- Red Hat Enterprise Linux:

```
# ls /mnt/dvd
```

- SUSE Linux Enterprise Server:

```
# ls /media/dvd
```

4. If this command fails to display the contents of the disc, then enter a command similar to the following:

- Red Hat Enterprise Linux:

```
# mount -t iso9660 /dev/dvd /mnt/dvd
```

- SUSE Linux Enterprise Server:

```
# mount -t iso9660 /dev/dvd /media/dvd
```

In these examples, `/mnt/dvd` and `/media/dvd` are the mount point directories for the disc drive.

## 9 Installing Oracle Database Client

After configuring the `oracle` user's environment, start Oracle Universal Installer and install Oracle Database as follows:

- To start Oracle Universal Installer, enter the following command:

```
$ /mount_point/db/runInstaller
```

If Oracle Universal Installer does not start, then refer to *Oracle Database Client Installation Guide for Linux* for information about how to troubleshoot X Window display problems.

- The following table describes the recommended action for each Oracle Universal Installer screen. Use the following guidelines to complete the installation:

- If you need more assistance, or to choose an option that is not a default, then click **Help** for additional information.
- If you encounter errors while installing or linking the software, then refer to *Oracle Database Installation Guide for Linux* for information about troubleshooting.

---

---

**Note:** If you have completed the tasks listed previously, then you can complete the installation by choosing the default values on most screens.

---

---

1. If you have an existing Oracle Database Client 11g Release 2 (11.2) installed on your system, the Select Installation Mode screen is displayed. Select **New Install** to install Oracle Database Client software in to a new location.

Starting with Oracle Database 11g Release 2 (11.2.0.2), if you want to upgrade an earlier release of Oracle Database Client, then select Upgrade and follow the instructions in "[Performing an In-place Oracle Database Client Upgrade](#)" on page 1-19

2. In the Select Installation Type screen, select the type of installation: Instant Client, Administrator, or Runtime and click **Next**.
3. Starting with Oracle Database 11. Release 2 (11.2.0.2), you can use the Software Updates feature to dynamically download and apply latest updatesIn the Download Software Updates screen, select one of the following options and click **Next**:
  - Use My Oracle Support credentials for download to download and apply the latest software updates.

Click **Proxy Settings** to configure a proxy for Oracle Universal Installer to use to connect to the Internet. Provide the proxy server information for your site, along with a user account that has access to the local area network through which the server is connecting. Starting with Oracle Database 11g Release 2 (11.2.0.3), you can enter the Proxy Realm information if required. The proxy realm information is case-sensitive.

Click **Test Connection** to ensure that your proxy settings are correctly entered, and the installer can download the updates.
  - Use pre-downloaded software updates to apply previously downloaded software updates.
  - Skip Software Updates if you do not want to apply any updates.
4. The Apply Software Updates screen is displayed if you select to download the software updates or provide the pre-downloaded software downloads location. If you selected Use My Oracle Support credentials for download in the previous screen, then select **Download and apply all updates**, and click **Next**. If you selected Use pre-downloaded software updates in the previous screen, then select **Apply all updates**, and click **Next**.
5. The Select Product Languages screen enables you to select the language in which you want to run the product.

Select the product language from the Available Languages list, transfer it to the Selected Languages list. Click **Next**.

This screen is not displayed if you select Instant Client as the type of installation in Step 2.

6. 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 Step 2.

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 should not contain spaces. Click **Next**.

7. In the Create Inventory screen, you are prompted by the installer to specify the directory path for central inventory the first time you install Oracle software on your computer. Select the **oraInventory Group Name of the operating system group that should own the Oracle Inventory directory (the Oracle Inventory group)**, and click **Next**.

---

---

**Note:** By default, the Oracle Inventory directory is not installed under the Oracle Base directory. This is because all Oracle software installations share a common Oracle Inventory, so there is only one Oracle Inventory for all users, whereas there is a separate Oracle Base for each user.

---

---

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 can install Oracle Database successfully.

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

---

---

**Note:** Starting with Oracle Database 11g Release 2 (11.2), 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 states the progress of a client installation. After Oracle Database Client is installed, execute the `root.sh` script as a `root` user to complete the installation, and click **OK**.

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

## 10 Performing an In-place Oracle Database Client Upgrade

Starting with Oracle Database 11g Release 2 (11.2.0.2), you can follow the instructions in this section to perform an in-place upgrade of Oracle Database Client 11g Release 2 (11.2):

---

---

**Note:** If you do not have an existing Oracle Database Client 11g Release 2 (11.2) upgradable home on your system, you cannot perform an in-place upgrade.

---

---

1. After configuring the `oracle` user's environment, start Oracle Universal Installer using the following command:

```
$ /mount_point/db/runInstaller
```

**See Also:** "Running Oracle Universal Installer" section in the *Oracle Database Client Installation Guide for Linux*

2. The Select Installation Mode screen is displayed only if you have an existing Oracle Database Client 11g Release 2 (11.2.0.1) or later installed on your system. Select **Upgrade** to upgrade the existing Oracle Database Client software to the latest version.
3. In the Specify Installation Location screen, accept the default Software Location value or enter the Oracle home directory path in which you want to install Oracle components. The directory path should not contain spaces. Click **Next**.
4. In the Download Software Updates screen, select one of the following options, and click **Next**:
  - Use My Oracle Support credentials for download
  - Use pre-downloaded software updates
  - Skip software updates

See Step 3 in "[Installing Oracle Database Client](#)" on page 17 for more information about the options in the Download Software Updates screen.

5. The Apply Software Updates screen is displayed if you select to download the software updates or provide the pre-downloaded software updates location. Select either **Download and apply all updates** or **Apply all updates**, as applicable, and click **Next**.

See Step 4 in "[Installing Oracle Database Client](#)" on page 17 for more information about the options in the Apply Software Updates screen.

6. The Select Product Languages screen enables you to select the language in which you want to run the product.

Select the product language from the Available Languages list, transfer it to the Selected Languages list. Click **Next**.

7. The Perform Prerequisite Checks screen verifies if your computer meets the minimum system requirements to install the desired product. Click **Next**.
8. Review the information displayed in the Summary screen, and click **Install**.
9. The Install Product screen displays the progress of the client upgrade.
10. Review the information in the Finish screen and click **Close** to exit Oracle Universal Installer.

**See Also:** "Updating the Existing Software with the Current Version" and "Performing an In-place Oracle Database Client Upgrade Using the Response File" sections in *Oracle Database Client Installation Guide for Linux*

## 11 What to Do Next?

After you have successfully installed Oracle Database Client, refer to *Oracle Database Client Installation Guide for Linux* for information about required and optional postinstallation steps.

## 12 Additional Information

This section contains information about the following:

- [Product Licenses](#)
- [Purchasing Licenses and Version Updates](#)
- [Contacting Oracle Support Services](#)
- [Review Oracle Support Certification Matrix](#)
- [Locating Product Documentation](#)

### Product Licenses

You are welcome to install and evaluate the products included in this media pack for 30 days under the terms of the Trial License Agreement. However, you must purchase a program license if you want to continue using any product after the 30 day evaluation period. See the following section for information about purchasing program licenses.

### Purchasing Licenses and Version Updates

You can purchase program licenses and updated versions of Oracle products from the Oracle Store website:

<https://shop.oracle.com>

### Contacting Oracle Support Services

If you have purchased Oracle Product Support, you can call Oracle Support Services for assistance 24 hours a day, seven days a week. For information about purchasing Oracle Product Support or contacting Oracle Support Services, go to the Oracle Support Services website:

<http://www.oracle.com/us/support/index.html>

### 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.

## Locating Product Documentation

Product documentation includes information about configuring, using, or administering Oracle products on any platform. The product documentation for Oracle Database products is available in both HTML and PDF formats online:

<http://docs.oracle.com/>

## 13 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.

---

Oracle Database Client Quick Installation Guide, 11g Release 2 (11.2) for IBM: Linux on System z  
E24327-03

Copyright © 2016, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.