

# Oracle® Database

Client Quick Installation Guide

10g Release 2 (10.2) for IBM zSeries Based Linux

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This guide describes how to quickly install Oracle Database Client on IBM zSeries Based Linux systems. It includes information about the following:

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2. [Logging In to the System as root](#)
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## 1 Reviewing Information About this Guide

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**Note:** This guide describes how to install Oracle Client on a system that does not have any Oracle software installed on it. If there is an existing Oracle software installation on this system, then refer to *Oracle Database Client Installation Guide for IBM zSeries Based Linux* for more detailed installation instructions.

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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 the Instant Client feature

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 IBM zSeries Based Linux*.

This guide is available on the product disc. To access it, use a Web browser to open the `welcome.htm` file located in the top-level directory of the installation media, and then select the **Documentation** tab.

## 2 Logging In to the System as root

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

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**Note:** 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.

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- If you are installing the software from an X Window System workstation or X terminal, then:

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.acme.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:

```
$ telnet fully_qualified_remote_host_name
```

4. If you are not logged in as the `root` user, then enter the following command to switch user to `root`:

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

- If you are installing the software from a PC or other system with X server software installed, then:

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**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 need to complete the tasks in a different order.

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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:

- At least 1024 MB of physical RAM
- The following table describes the relationship between installed RAM and the configured swap space requirement.

RAM	Swap Space
Between 1024 MB and 2048 MB	1.5 times the size of RAM
Between 2049 MB and 8192 MB	Equal to the size of RAM
More than 8192 MB	0.75 times the size of RAM

- The minimum client installation `TMP` space required is 115 MB. The minimum disk space requirement in the `/tmp` directory depends on the installation type you have selected. The following table lists the minimum disk space requirements for the `/tmp` directory in each type of installation.

Installation Type	Disk Space Required for the /tmp Directory (MB)
Admin	850
Runtime	470
Custom (all components selected)	780
Instant	150

- Between 34 MB and 820 MB of disk space for the Oracle software, depending on the installation type

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

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

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

If the size of the physical RAM installed in the system is less than the specified value, then you must install more memory before continuing.

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

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

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

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

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

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

- Delete unnecessary files from the `/tmp` directory to meet the disk space requirement.
  - Set the `TEMP` and `TMPDIR` environment variables when setting the `oracle` user's environment (described later).
  - Extend the file system that contains the `/tmp` directory. If necessary, contact your system administrator for information about extending file systems.
4. To determine the amount of free disk space available on the system, enter the following command:

```
# df -k
```

The following table shows the approximate disk space requirements for software files for each installation type.

Installation Type	Requirement for Software Files (MB)
Instant Client	130
Administrator	850
Runtime	495
Custom (maximum)	790

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**Note:** If you want to configure only the Instant Client Light component of Instant Client, then you need 34 MB of disk space to store the related files.

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

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

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

## 4 Checking the Software Requirements

The system must meet the following minimum software requirements.

- The operating system must be one of the following:
  - Red Hat Enterprise Linux 4.0 (Update 2 or later)
  - SUSE Linux Enterprise Server (SLES) 9.0 (service pack 2 or later)
- The system must be running the following (or later) kernel version:
  - Red Hat Enterprise Linux 4.0  
2.6.9-22.EL
  - SUSE Linux Enterprise Server 9  
2.6.5-139

- The following packages (or later versions) must be installed:

- **Red Hat Enterprise 4.0:**

```
gcc-3.4.4-2
gcc-c++-3.4.4-2
libgcc-3.4.4-2
libstdc++-devel-3.4.4-2
compat-libgcc-295-2.95.3-81
compat-libstdc++-33-3.2.3-47.3
glibc-2.3.4-2.13
libaio-0.3.103-3
libaio-devel-0.3.103-3
libstdc++-devel 3.4.4-2
```

- **SUSE Linux Enterprise Server 9:**

```
gcc-3.3.3-43.34
gcc-c++-3.3.3-43.34
glibc-2.3.3-98.47
glibc-2.3.3-98.28 (64-bit)
libgcc-3.3.3-43.34
libgcc (64 bit) unknown
libstdc++-3.3.3-43.34
libstdc++-devel-3.3.3-43.34
libaio-0.3.102-1.2
libaio-0.3.98-18.3 (64-bit)
libaio-devel-0.3.102-1.2
libaio-devel-0.3.98-18.3 (64-bit)
Gmake-3.80-184.1
```

For the Oracle products that you want to install, the system must meet the following product-specific requirements:

- Oracle Messaging Gateway

This product supports the integration of Oracle Streams Advanced Queuing (AQ) with the following software:

IBM WebSphere MQ V5.3, client and server:

MQSeriesClient  
MQSeriesServer  
MQSeriesRuntime

- PL/SQL native compilation, Pro\*C/C++, Oracle Call Interface, Oracle C++ Call Interface, Oracle XML Developer's Kit (XDK)

The version of GNU C and C++ compilers listed previously for the distribution are supported for use with these products.

- The following JDK versions are supported with this release but are not mandatory for the installation:
  - IBM SDK 1.5
  - IBM SDK 1.4.2 (64-Bit)
  - IBM SDK 1.3.1 (31-Bit)
  - IBM SDK 1.4.2 (31-Bit)

- Pro\*COBOL

The following products are certified for use with Pro\*COBOL:

- Acucorp ACUCOBOL-GT 6.2
- Micro Focus Server Express 4.0 SP2 (31 or 64-bit)

**See Also:** If you plan to use GNU Compiler Collection as the primary compiler, then refer to *Oracle Database Installation Guide for IBM zSeries Based Linux* for instructions on configuring the primary compiler

To ensure that the system meets these requirements:

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

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

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**Note:** Only the distributions and versions listed earlier in this section are supported. Do not install the software on other versions of Linux.

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

```
# uname -r  
2.6.9-22.EL
```

In this example, the output shows the kernel version (2.6.9) and errata level (22.EL) on the system.

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

3. To determine whether the required packages are installed, enter the following command:

```
# rpm -q package_name
```

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

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

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

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- The following operating system patches are required:
  - Red Hat 4.0 U2
  - SuSE SLES9 SP 2

## 5 Creating Required Operating System Group and User

The following local operating system group and user must exist on the system:

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

To determine if this group and user already exist, and if required, to create them, follow these steps:

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

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

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

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

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

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

2. If necessary, enter the following command 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:

```
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`, then enter a command similar to the following, where the `-g` option specifies `oinstall` as the primary group and the `-G` option specifies any existing groups to which the `oracle` user belongs:

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

- If the `oracle` user does not exist, then 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
- `dba` as an optional secondary group

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

```
# passwd oracle
```

## 6 Creating an Oracle Base Directory

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**Note:** You need *not* perform this procedure if an Oracle base directory already exists on the system. If you determine that the `oinstall` group exists, then, typically, the Oracle base directory is the parent directory of the Oracle Inventory directory.

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To create the Oracle base directory:

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

```
# df -k
```

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

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

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

5. When you configure the `oracle` user's environment, set the `ORACLE_BASE` environment variable to specify the Oracle base directory that you have created.

## 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
```

3. Complete one of the following steps:

- If the terminal session is not connected to the system where you want to install the software, then log in to that system as the `oracle` user.
- If the terminal session is connected to the system where you want to install the software, then switch user to `oracle`:

```
$ su - oracle
```

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

```
$ echo $SHELL
```

5. Open the `oracle` user's shell startup file in any text editor:

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**Note:** On Red Hat Linux, `.bash_profile` is the user startup file for the Bash shell.

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- Bourne shell (`sh`), Bash shell (`bash`), or Korn shell (`ksh`):

```
$ vi .bash_profile
```

- C shell (csh or tcsh):

```
% vi .login
```

6. Enter or edit the following line in the shell startup file, specifying a value of 022 for the default file mode creation mask:

```
umask 022
```

7. If the ORACLE\_SID, ORACLE\_HOME, or ORACLE\_BASE environment variable is set in the file, then remove the corresponding lines from the file.

8. Save the file, and exit from the editor.

9. To run the shell startup script, enter the following command:

- Bash shell:

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

- Bourne or Korn shell:

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

- C shell:

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

10. If you are not installing the software on the local system, then enter a command similar to the following to direct X applications to display on the local system:

- Bourne, Bash, or Korn shell:

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

- C shell:

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

In this example, *local\_host* is the host name or IP address of the system that you want to use to display Oracle Universal Installer (your workstation or PC).

11. If you determined that the /tmp directory had insufficient free disk space when checking the hardware requirements, then identify a file system with the required amount of free space and set the TMP and TMPDIR environment variables as follows:

- a. Use the `df -k` command to identify a suitable file system with sufficient free space.

- 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
```

- 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
```

12. Enter commands similar to the following to set the `ORACLE_BASE` environment variable:

- Bourne, Bash, or Korn shell:

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

- C shell:

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

In these examples, `/u01/app/oracle` is the Oracle base directory that you created earlier.

13. 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
```

14. To verify that the environment has been set correctly, enter the following commands:

```
$ umask
$ env | more
```

Verify that the `umask` command displays a value of 22, 022, or 0022 and the environment variables that you set in this section have the correct values.

## 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, follow these steps to mount it:

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

- Red Hat:

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

- SUSE:

```
$ sudo eject /media/dvd
```

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

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

- Red Hat:

```
$ ls /mnt/dvd
```

- SUSE:

```
$ 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:

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

- SUSE:

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

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

5. If Oracle Universal Installer is displaying the Disk Location dialog box, enter the disc mount point directory path, for example:

```
/mnt/dvd
```

## 9 Installing Oracle Database Client

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

1. To start Oracle Universal Installer, complete one of the following steps depending on the location of the installation files:

- If the installation files are on disc, enter commands similar to the following, where `directory_path` is the path of the `db` directory on the DVD:

```
$ cd /tmp  
$ /directory_path/runInstaller
```

- If the installation files are on the hard disk, change directory to the `db` directory and enter the following command:

```
$ ./runInstaller
```

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

2. 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 if you want 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 Client Installation Guide for IBM zSeries Based Linux* for information about troubleshooting.

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

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Screen	Recommended Action
Welcome	Click <b>Next</b> .
Select Installation Type	Select <b>InstantClient, Administrator, or Runtime</b> . Then, click <b>Next</b> .
Specify Home Details	Specify the name and directory path of the Oracle home.
Product-Specific Prerequisite Checks	<p>Verify that all of the prerequisite checks have succeeded, and then click <b>Next</b>.</p> <p>Oracle Universal Installer checks the system to verify that it is configured correctly to run Oracle software. If you have completed all of the preinstallation steps in this guide, then all of the checks should pass.</p> <p>If a check fails, then review the cause of the failure listed for that check on the screen. If possible, rectify the problem and rerun the check. Alternatively, if you are satisfied that your system meets the requirements, then you can select the check box for the failed check to manually verify the requirement.</p>
Summary	Review the information displayed on this screen, and then click <b>Install</b> .
Install	This screen displays status information while the product is being installed.
Configuration Assistants	<p>This screen is displayed only if you select Administrator or Runtime on the Select Installation type screen.</p> <p>This screen displays status information for the Oracle Net Configuration Assistant that configures Oracle Net. When the message is displayed at the end of this process, click <b>OK</b> to continue.</p>
Oracle Net Configuration Assistant: Welcome	<p>This screen is displayed only if you select Administrator or Runtime on the Select Installation Type screen.</p> <p>Review the information on this screen, and then click <b>Next</b>.</p> <p>The Oracle Net Configuration Assistant configures the easy connect naming method. For more information about this naming method, click <b>Help</b>.</p>
Oracle Net Configuration Assistant: Done	Click <b>Finish</b> to continue.

Screen	Recommended Action
Execute Configuration Scripts	When prompted, read the instructions and then run the script mentioned on this screen. Click <b>OK</b> to continue.
End of Installation	To exit from Oracle Universal Installer, click <b>Exit</b> , and then click <b>Yes</b> .

## 10 What to Do Next?

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

## 11 Documentation Accessibility

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