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Oracle Database 11g Release 2 (11.2) Installation On Oracle Linux 6

This article describes the installation of Oracle Database 11g Release 2 (11.2) (64-bit) on Oracle Linux 6 (64-bit). The article is based on a server installation with a minimum of 2G swap, with SELinux set to permissive and the firewall disabled. The following package groups were included for this installation.

- Base System > Base
- Base System > Client management tools
- Base System > Compatibility libraries
- Base System > Hardware monitoring utilities
- Base System > Large Systems Performance
- Base System > Network file system client
- Base System > Performance Tools
- Base System > Perl Support
- Servers > Server Platform
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- Desktops > Desktop Platform
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- Desktops > Graphical Administration Tools
- Desktops > Input Methods
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- Development > Additional Development
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- Applications > Internet Browser

An example of this type of Linux installations can be seen here. Alternative installations may require more packages to be loaded, in addition to the ones listed below.

- Download Software
- Unpack Files
- Hosts File
- Oracle Installation Prerequisites
    - Automatic Setup
    - Manual Setup
    - Additional Setup
- Installation
- Post Installation
- Common Errors

Download Software

Download the Oracle software from OTN or MOS depending on your support status.

- OTN: Oracle Database 11g Release 2 (11.2.0.1) Software (64-bit) - For unsupported installation.
- MOS: Oracle Database 11g Release 2 (11.2.0.3) Software (64-bit) - For supported installation.

Przetłumacz

Unpack Files

Unzip the files.

```
# 11.2.0.1
unzip linux.x64_11gR2_database_1of2.zip
unzip linux.x64_11gR2_database_2of2.zip

#11.2.0.2
unzip p10098816_112020_Linux-x86-64_1of7.zip
unzip p10098816_112020_Linux-x86-64_2of7.zip

#11.2.0.3
unzip p10404530_112030_Linux-x86-64_1of7.zip
unzip p10404530_112030_Linux-x86-64_2of7.zip

#11.2.0.4
unzip p13390677_112040_Linux-x86-64_1of7.zip
unzip p13390677_112040_Linux-x86-64_2of7.zip
```

You should now have a single directory called "database" containing installation files.

Hosts File

The "/etc/hosts" file must contain a fully qualified name for the server.

```
<IP-address>  <fully-qualified-machine-name>  <machine-name>
```

For example.

```
127.0.0.1       localhost.localdomain  localhost
192.168.0.181   ol6-112.localdomain    ol6-112
```

Oracle Installation Prerequisites

Perform either the Automatic Setup or the Manual Setup to complete the basic prerequisites. The Additional Setup is required for all installations.

Automatic Setup

If you plan to use the "oracle-rdbms-server-11gR2-preinstall" package to perform all your prerequisite setup, follow the instructions at http://public-yum.oracle.com to setup the yum repository for OL, then perform the following command.

```
# yum install oracle-rdbms-server-11gR2-preinstall
```

All necessary prerequisites will be performed automatically.

It is probably worth doing a full update as well, but this is not strictly speaking necessary.

```
# yum update
```

Manual Setup

If you have not used the "oracle-rdbms-server-11gR2-preinstall" package to perform all prerequisites, you will need to manually perform the following setup tasks.

Oracle recommend the following minimum parameter settings.

```
fs.suid_dumpable = 1
fs.aio-max-nr = 1048576
fs.file-max = 6815744
```

```
kernel.shmall = 2097152
kernel.shmmax = 536870912
kernel.shmmni = 4096
kernel.sem = 250 32000 100 128
net.ipv4.ip_local_port_range = 9000 65500
net.core.rmem_default = 262144
net.core.rmem_max = 4194304
net.core.wmem_default = 262144
net.core.wmem_max = 1048586
```

The current values can be tested using the following command.

```
/sbin/sysctl -a | grep <param-name>
```

Add or amend the following lines in the "/etc/sysctl.conf" file.

```
fs.suid_dumpable = 1
fs.aio-max-nr = 1048576
fs.file-max = 6815744
kernel.shmall = 2097152
kernel.shmmax = 536870912
kernel.shmmni = 4096
# semaphores: semmsl, semmns, semopm, semmni
kernel.sem = 250 32000 100 128
net.ipv4.ip_local_port_range = 9000 65500
net.core.rmem_default=4194304
net.core.rmem_max=4194304
net.core.wmem_default=262144
net.core.wmem_max=1048586
```

Run the following command to change the current kernel parameters.

```
/sbin/sysctl -p
```

Add the following lines to the "/etc/security/limits.conf" file.

```
oracle              soft    nproc   2047
oracle              hard    nproc   16384
oracle              soft    nofile  4096
oracle              hard    nofile  65536
oracle              soft    stack   10240
```

Install the following packages if they are not already present.

```
# From Oracle Linux 6 DVD
cd /media/cdrom/Server/Packages
rpm -Uvh binutils-2*x86_64*
rpm -Uvh glibc-2*x86_64* nss-softokn-freebl-3*x86_64*
rpm -Uvh glibc-2*i686* nss-softokn-freebl-3*i686*
rpm -Uvh compat-libstdc++-33*x86_64*
rpm -Uvh glibc-common-2*x86_64*
rpm -Uvh glibc-devel-2*x86_64*
rpm -Uvh glibc-devel-2*i686*
rpm -Uvh glibc-headers-2*x86_64*
rpm -Uvh elfutils-libelf-0*x86_64*
rpm -Uvh elfutils-libelf-devel-0*x86_64*
rpm -Uvh gcc-4*x86_64*
rpm -Uvh gcc-c++-4*x86_64*
rpm -Uvh ksh-*x86_64*
rpm -Uvh libaio-0*x86_64*
rpm -Uvh libaio-devel-0*x86_64*
rpm -Uvh libaio-0*i686*
rpm -Uvh libaio-devel-0*i686*
rpm -Uvh libgcc-4*x86_64*
rpm -Uvh libgcc-4*i686*
```

```
rpm -Uvh libstdc++-4*x86_64*
rpm -Uvh libstdc++-4*i686*
rpm -Uvh libstdc++-devel-4*x86_64*
rpm -Uvh make-3.81*x86_64*
rpm -Uvh numactl-devel-2*x86_64*
rpm -Uvh sysstat-9*x86_64*
rpm -Uvh compat-libstdc++-33*i686*
rpm -Uvh compat-libcap*
cd /
eject
```

Note. This will install all the necessary 32-bit packages for 11.2.0.1. From 11.2.0.2 onwards many of these are unnecessary, but having them present does not cause a problem.

Create the new groups and users.

```
groupadd -g 501 oinstall
groupadd -g 502 dba
groupadd -g 503 oper
groupadd -g 504 asmadmin
groupadd -g 506 asmdba
groupadd -g 505 asmoper

useradd -u 502 -g oinstall -G dba,asmdba,oper oracle
passwd oracle
```

Note. We are not going to use the "asm" groups, since this installation will not use ASM.

Additional Setup

Set the password for the "oracle" user.

```
passwd oracle
```

Amend the "/etc/security/limits.d/90-nproc.conf" file as described below. See MOS Note [ID 1487773.1]

```
# Change this
*          soft    nproc    1024

# To this
* - nproc 16384
```

Set secure Linux to permissive by editing the "/etc/selinux/config" file, making sure the SELINUX flag is set as follows.

```
SELINUX=permissive
```

Once the change is complete, restart the server.

If you have the Linux firewall enabled, you will need to disable or configure it, as shown here or here.

Create the directories in which the Oracle software will be installed.

```
mkdir -p /u01/app/oracle/product/11.2.0/db_1
chown -R oracle:oinstall /u01
chmod -R 775 /u01
```

Login as root and issue the following command.

```
xhost +<machine-name>
```

Login as the oracle user and add the following lines at the end of the ".bash_profile" file.

```
# Oracle Settings
TMP=/tmp; export TMP
TMPDIR=$TMP; export TMPDIR

ORACLE_HOSTNAME=ol6-112.localdomain; export ORACLE_HOSTNAME
ORACLE_UNQNAME=DB11G; export ORACLE_UNQNAME
ORACLE_BASE=/u01/app/oracle; export ORACLE_BASE
ORACLE_HOME=$ORACLE_BASE/product/11.2.0/db_1; export ORACLE_HOME
ORACLE_SID=DB11G; export ORACLE_SID

PATH=/usr/sbin:$PATH; export PATH
PATH=$ORACLE_HOME/bin:$PATH; export PATH

LD_LIBRARY_PATH=$ORACLE_HOME/lib:/lib:/usr/lib; export LD_LIBRARY_PATH
CLASSPATH=$ORACLE_HOME/jlib:$ORACLE_HOME/rdbms/jlib; export CLASSPATH
```

Installation

Log into the oracle user. If you are using X emulation then set the DISPLAY environmental variable.

```
DISPLAY=<machine-name>:0.0; export DISPLAY
```

Start the Oracle Universal Installer (OUI) by issuing the following command in the database directory.

```
./runInstaller
```

Proceed with the installation of your choice. The prerequisites checks will fail for the following version-dependent reasons:

- 11.2.0.1: The installer shows multiple "missing package" failures because it does not recognize several of the newer version packages that were installed. These "missing package" failures can be ignored as the packages are present. The failure for the "pdksh" package can be ignored because we installed the "ksh" package in its place.
- 11.2.0.2: The installer should only show a single "missing package" failure for the "pdksh" package. It can be ignored because we installed the "ksh" package in its place.
- 11.2.0.3: The installer shows no failures and continues normally.

You can see the type of installation I performed by clicking on the links below to see screen shots of each stage.

1. Configure Security Updates
2. Select Install Option
3. System Class
4. Node Selection
5. Select Install Type
6. Typical Install Configuration
7. Create Inventory
8. Perform Prerequisite Checks
9. Summary
10. Install Product
11. Database Configuration Assistant
12. Database Configuration Assistant 2
13. Execute Configuration Scripts
14. Finish

Post Installation

Edit the "/etc/oratab" file setting the restart flag for each instance to 'Y'.

```
DB11G:/u01/app/oracle/product/11.2.0/db_1:Y
```

Common Errors

- "error code 35" : The machine name in the "/etc/hosts" file is not correct. It needs an entry for the loopback

adapter (localhost) and the machine name. If you are using DNS for name resolution, you still need the loopback adapter reference in this file.

- "error code 37" : The DNS not working properly. You may also get this error is the "/etc/hosts" file is not configured correctly.

- "sqlplus: error while loading shared libraries: libclntsh.so.11.1" : The prerequisites have not been met. Work through them again. Specifically, make sure the "gcc" package has been installed.

- Listener fails to start - Typically this is due to incorrect name resolution. Make sure the "/etc/hosts" and/or DNS is configured correctly.

- Linking errors - Almost always due to missing prerequisites. Review the setup sections.

For more information see:

- Oracle Database Installation Guide 11g Release 2 (11.2) for Linux
- Automating Database Startup and Shutdown on Linux
- Oracle Universal Installer (OUI) Silent Installations

Hope this helps. Regards Tim...

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