

Configuring Linux for the Installation of Oracle Database 10g

Purpose

This module describes how to configure Linux and prepare for the installation of Oracle Database 10g.

Topics

This lesson will discuss the following:

- [Overview](#)
- [Prerequisites](#)
- [Check Hardware Requirements](#)
- [Configure the kernel and create the oracle user](#)

Overview

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The lesson prepares the Linux operating system for the installation of Oracle Database 10g.

Prerequisites

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In order for this lesson to work successfully, you will need to have performed the following:

1. Install an Oracle Database 10g certified version of Linux onto a platform certified for that version of Linux. To see the latest certification information use [Metalink](#) and select **Certify & Availability** or use [OTN](#) .

Check the Hardware Requirements

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The following list contains the hardware requirements for the system that you install Linux on.

- 512 MB of physical random access memory (RAM)
- 1 GB of swap space (or twice the size of RAM)

- ☒ On systems with 2 GB or more of RAM, the swap space can be between one and two times the size of RAM
- ☒ 400 MB of disk space in the /tmp directory
- ☒ 2.1 GB of disk space for the Oracle software and Sample Schema Database

Configure the kernel and create the oracle user

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To configure the system, follow these steps:

Note these steps are written for Bourne, Korn, and bash shells.

Open a terminal window and login as the **root** user.

1.

The following local UNIX groups and user must exist on the system:

2.

- ☒ The oinstall, dba group
- ☒ The oracle user

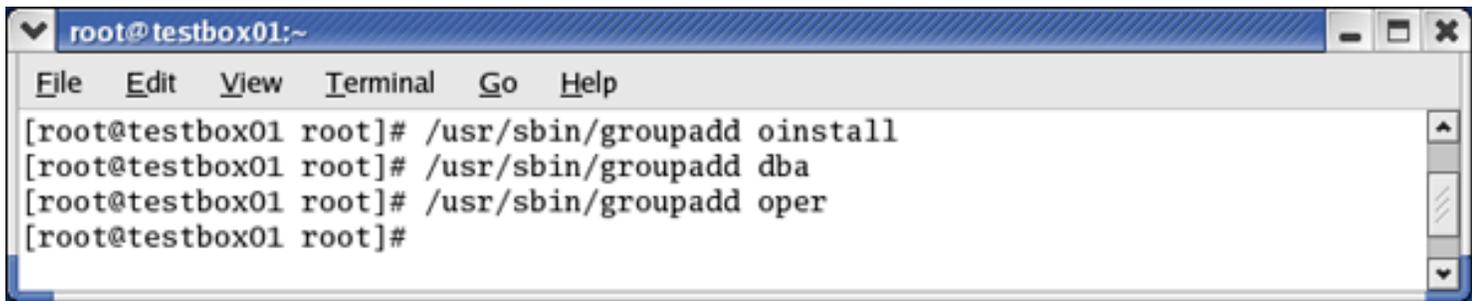
Optionally the oper group can be created.

- ☒ The oper group

We will be creating the optional oper group.

Create the groups oinstall, dba, and oper.

```
/usr/sbin/groupadd oinstall  
/usr/sbin/groupadd dba  
/usr/sbin/groupadd oper
```

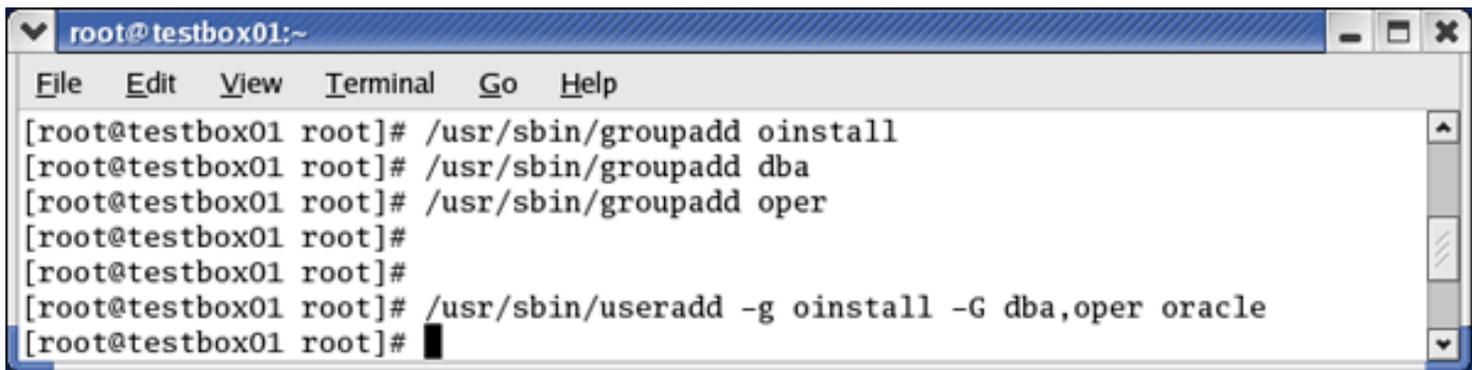
A terminal window titled 'root@testbox01:~' with a menu bar (File, Edit, View, Terminal, Go, Help). The terminal shows the following commands and their outputs:

```
[root@testbox01 root]# /usr/sbin/groupadd oinstall
[root@testbox01 root]# /usr/sbin/groupadd dba
[root@testbox01 root]# /usr/sbin/groupadd oper
[root@testbox01 root]#
```

Create the operating system user oracle:

3.

```
/usr/sbin/useradd -g oinstall -G dba,oper oracle
```

A terminal window titled 'root@testbox01:~' with a menu bar (File, Edit, View, Terminal, Go, Help). The terminal shows the following commands and their outputs:

```
[root@testbox01 root]# /usr/sbin/groupadd oinstall
[root@testbox01 root]# /usr/sbin/groupadd dba
[root@testbox01 root]# /usr/sbin/groupadd oper
[root@testbox01 root]#
[root@testbox01 root]#
[root@testbox01 root]# /usr/sbin/useradd -g oinstall -G dba,oper oracle
[root@testbox01 root]#
```

Enter the following command to set the password of the oracle user:

4.

```
/usr/bin/passwd oracle
```

```

root@testbox01:~
File Edit View Terminal Go Help
[root@testbox01 root]# /usr/sbin/groupadd oinstall
[root@testbox01 root]# /usr/sbin/groupadd dba
[root@testbox01 root]# /usr/sbin/groupadd oper
[root@testbox01 root]#
[root@testbox01 root]#
[root@testbox01 root]# /usr/sbin/useradd -g oinstall -G dba,oper oracle
[root@testbox01 root]#
[root@testbox01 root]#
[root@testbox01 root]# passwd oracle
Changing password for user oracle.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
[root@testbox01 root]#

```

5. With an editor of your choosing, `/home/oracle/.bash_profile` If you are using another shell please add the entries to the appropriate file.

```
umask 022
```

```
PATH=/bin:/usr/bin:/usr/local/bin:/usr/X11R6/bin
LD_LIBRARY_PATH=/usr/lib:/usr/X11R6/lib
```

```
ORACLE_BASE=/u01/app/oracle
ORACLE_HOME=$ORACLE_BASE/product/10.1.0/db_1
ORACLE_SID=orcl
LD_LIBRARY_PATH=$ORACLE_HOME/jdk/fre/lib/i386:
$ORACLE_HOME/jdk/jre/lib/i386/server:
$ORACLE_HOME/rdbms/lib:$ORACLE_HOME/lib:
$LD_LIBRARY_PATH
PATH=$ORACLE_HOME/bin:$PATH
```

```
export PATH LD_LIBRARY_PATH
export ORACLE_BASE ORACLE_HOME ORACLE_SID
```

```

# .bash_profile

# Get the aliases and functions
if [ -f ~/.bashrc ]; then
    . ~/.bashrc
fi

# User specific environment and startup programs

umask 022

PATH=/bin:/usr/bin:/usr/local/bin:/usr/X11R6/bin
LD_LIBRARY_PATH=/usr/lib:/usr/X11R6/lib

ORACLE_BASE=/u01/app/oracle
ORACLE_HOME=$ORACLE_BASE/product/10.1.0/db_1
ORACLE_SID=orcl
LD_LIBRARY_PATH=$ORACLE_HOME/jdk/jre/lib/i386:$ORACLE_HOME/
jdk/jre/lib/i386/server:$ORACLE_HOME/rdbms/lib:$ORACLE_HOME/
lib:$LD_LIBRARY_PATH
PATH=$ORACLE_HOME/bin:$PATH

export PATH LD_LIBRARY_PATH
export ORACLE_BASE ORACLE_HOME ORACLE_SID

```

6. Create the directory for the software installation and assign ownership to oracle:oinstall. In the example you will use /u01/app/oracle.

```

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

```

```

root@testbox01:~
File Edit View Terminal Go Help
[root@testbox01 root]# mkdir -p /u01/app/oracle
[root@testbox01 root]# chown -R oracle:oinstall /u01/app
[root@testbox01 root]# chmod -R 775 /u01/app
[root@testbox01 root]#

```

Set required kernel parameters.

7.

Parameter	Value
kernel.semmsl	250
kernel.semms	3200
kernel.semopm	100
kernel.semni	128
kernel.shmall	2097152
kernel.shmmax	2147483648
kernel.shmmni	4096
fs.file-max	65536
net.ipv4.ip_local_port_range	1024 65000

Open the `/etc/sysctl.conf` file in any text editor and add lines similar to the following:

```
kernel.sem = 250 32000 100 128
```

```
kernel.shmall = 2097152
```

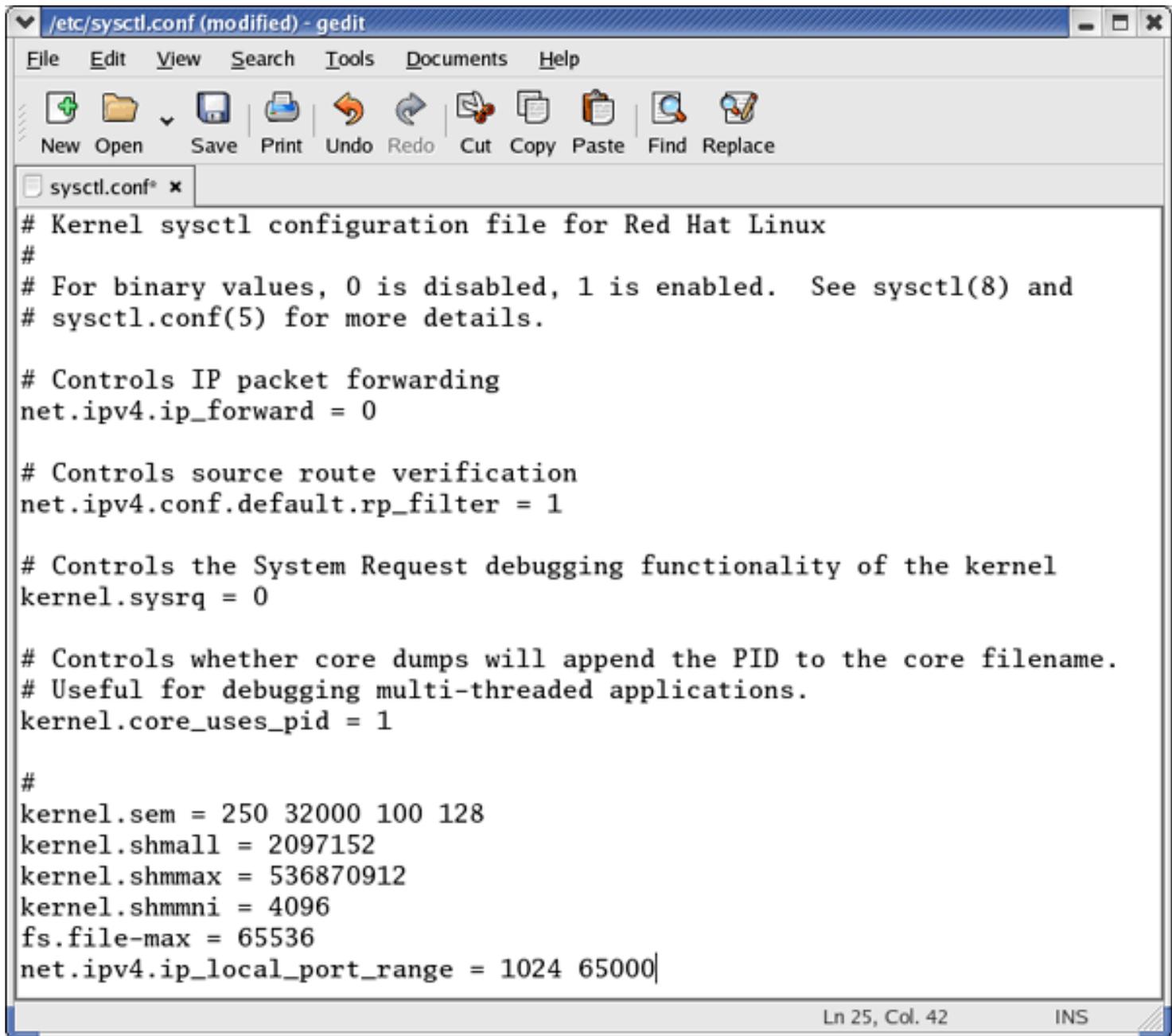
```
kernel.shmmax = 2147483648
```

```
kernel.shmmni = 4096
```

```
fs.file-max = 65536
```

```
net.ipv4.ip_local_port_range = 1024 65000
```

By specifying values for these parameters in the `/etc/sysctl.conf` file, these values persist when you reboot the system.



```
# Kernel sysctl configuration file for Red Hat Linux
#
# For binary values, 0 is disabled, 1 is enabled.  See sysctl(8) and
# sysctl.conf(5) for more details.

# Controls IP packet forwarding
net.ipv4.ip_forward = 0

# Controls source route verification
net.ipv4.conf.default.rp_filter = 1

# Controls the System Request debugging functionality of the kernel
kernel.sysrq = 0

# Controls whether core dumps will append the PID to the core filename.
# Useful for debugging multi-threaded applications.
kernel.core_uses_pid = 1

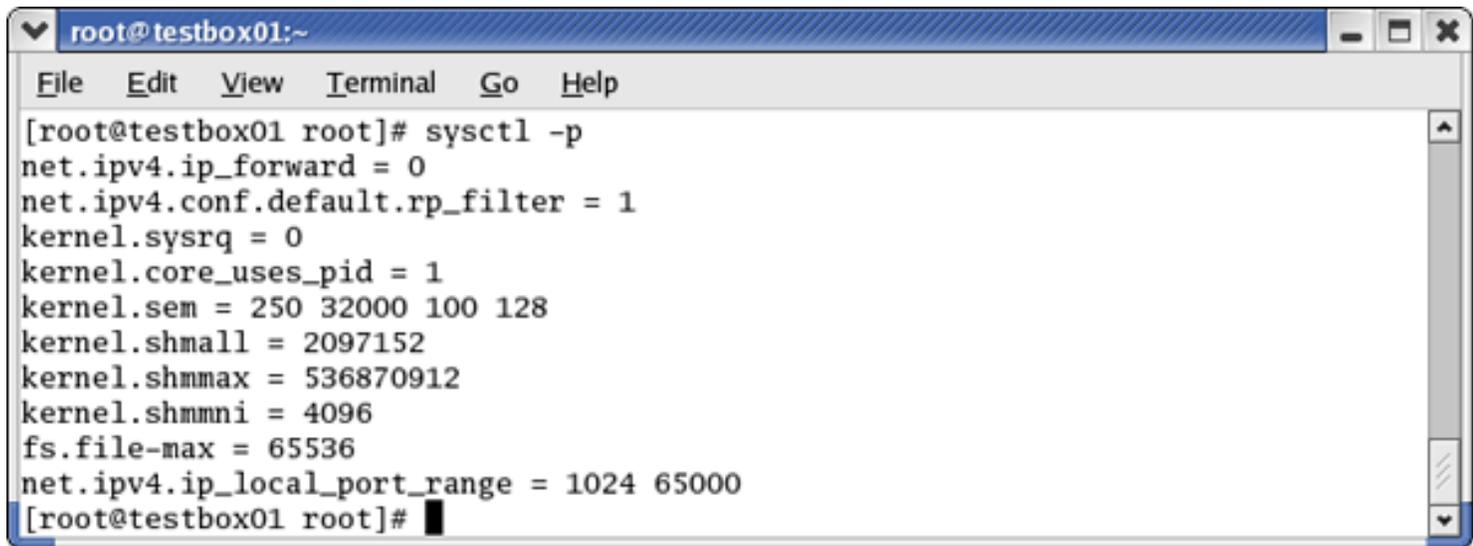
#
kernel.sem = 250 32000 100 128
kernel.shmall = 2097152
kernel.shmmax = 536870912
kernel.shmmni = 4096
fs.file-max = 65536
net.ipv4.ip_local_port_range = 1024 65000
```

The kernel changes made previously take effect with each reboot.

8.

Issue this command to set the kernel parameters:

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

A terminal window titled 'root@testbox01:~' with a menu bar containing 'File', 'Edit', 'View', 'Terminal', 'Go', and 'Help'. The terminal shows the command '[root@testbox01 root]# sysctl -p' and its output: 'net.ipv4.ip_forward = 0', 'net.ipv4.conf.default.rp_filter = 1', 'kernel.sysrq = 0', 'kernel.core_uses_pid = 1', 'kernel.sem = 250 32000 100 128', 'kernel.shmall = 2097152', 'kernel.shmmax = 536870912', 'kernel.shmmni = 4096', 'fs.file-max = 65536', and 'net.ipv4.ip_local_port_range = 1024 65000'. The prompt '[root@testbox01 root]#' is followed by a cursor.

```
root@testbox01:~  
File Edit View Terminal Go Help  
[root@testbox01 root]# sysctl -p  
net.ipv4.ip_forward = 0  
net.ipv4.conf.default.rp_filter = 1  
kernel.sysrq = 0  
kernel.core_uses_pid = 1  
kernel.sem = 250 32000 100 128  
kernel.shmall = 2097152  
kernel.shmmax = 536870912  
kernel.shmmni = 4096  
fs.file-max = 65536  
net.ipv4.ip_local_port_range = 1024 65000  
[root@testbox01 root]#
```

9. Login as operating system user oracle. 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.