

# 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

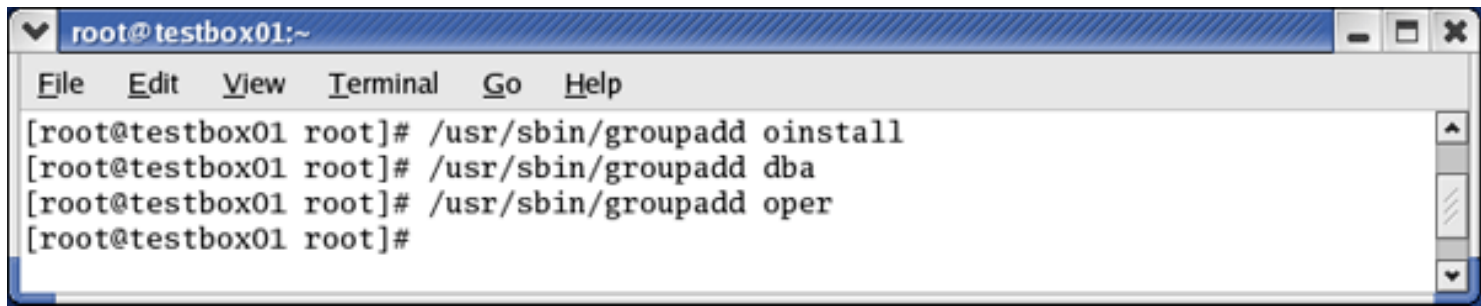
Optionally the oper group can be created.

- ☒ 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
```

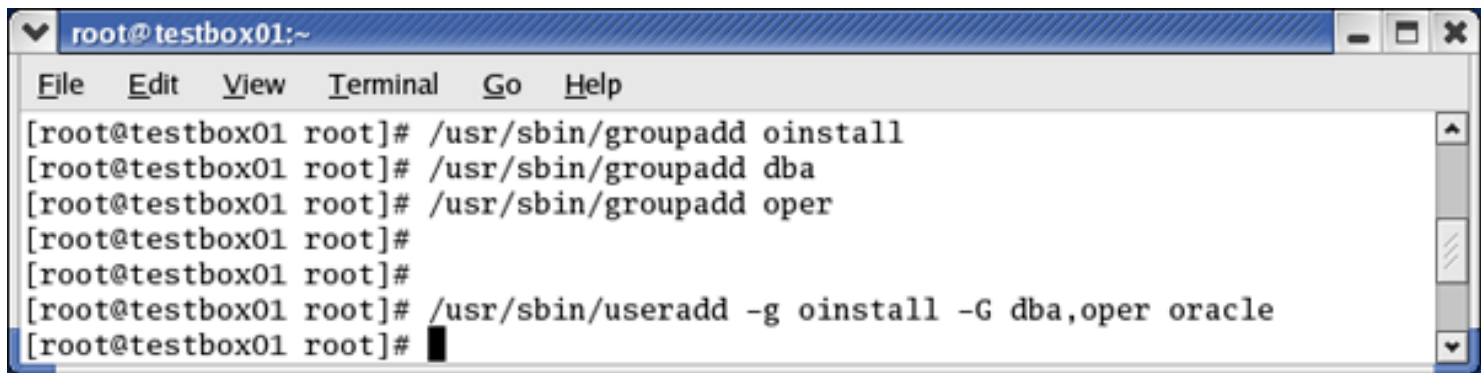
A terminal window titled 'root@testbox01:~' with a menu bar (File, Edit, View, Terminal, Go, Help). The terminal shows four commands being executed: `/usr/sbin/groupadd oinstall`, `/usr/sbin/groupadd dba`, `/usr/sbin/groupadd oper`, and the prompt `[root@testbox01 root]#`.

```
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]#
```

Create the operating system user oracle:

3.

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

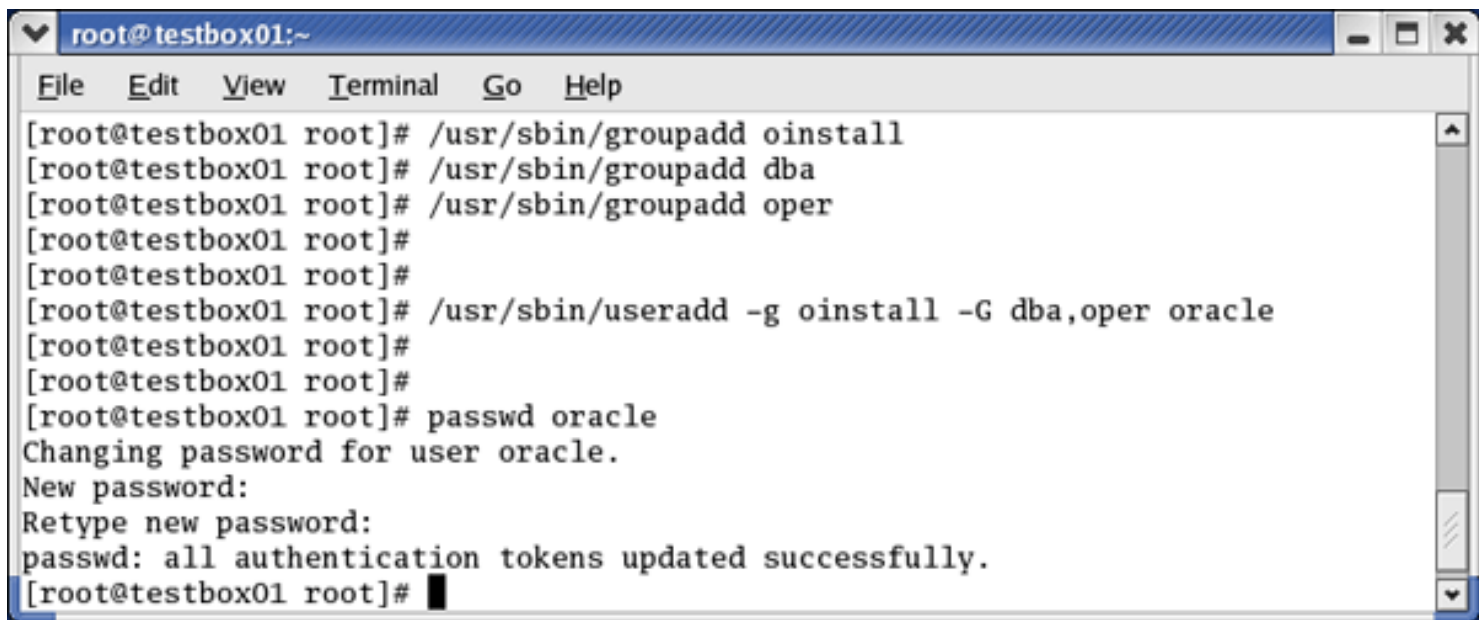
A terminal window titled 'root@testbox01:~' with a menu bar (File, Edit, View, Terminal, Go, Help). The terminal shows the same three group creation commands as before, followed by the user creation command `/usr/sbin/useradd -g oinstall -G dba,oper oracle`, and the prompt `[root@testbox01 root]#`.

```
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]#
```

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]#

```

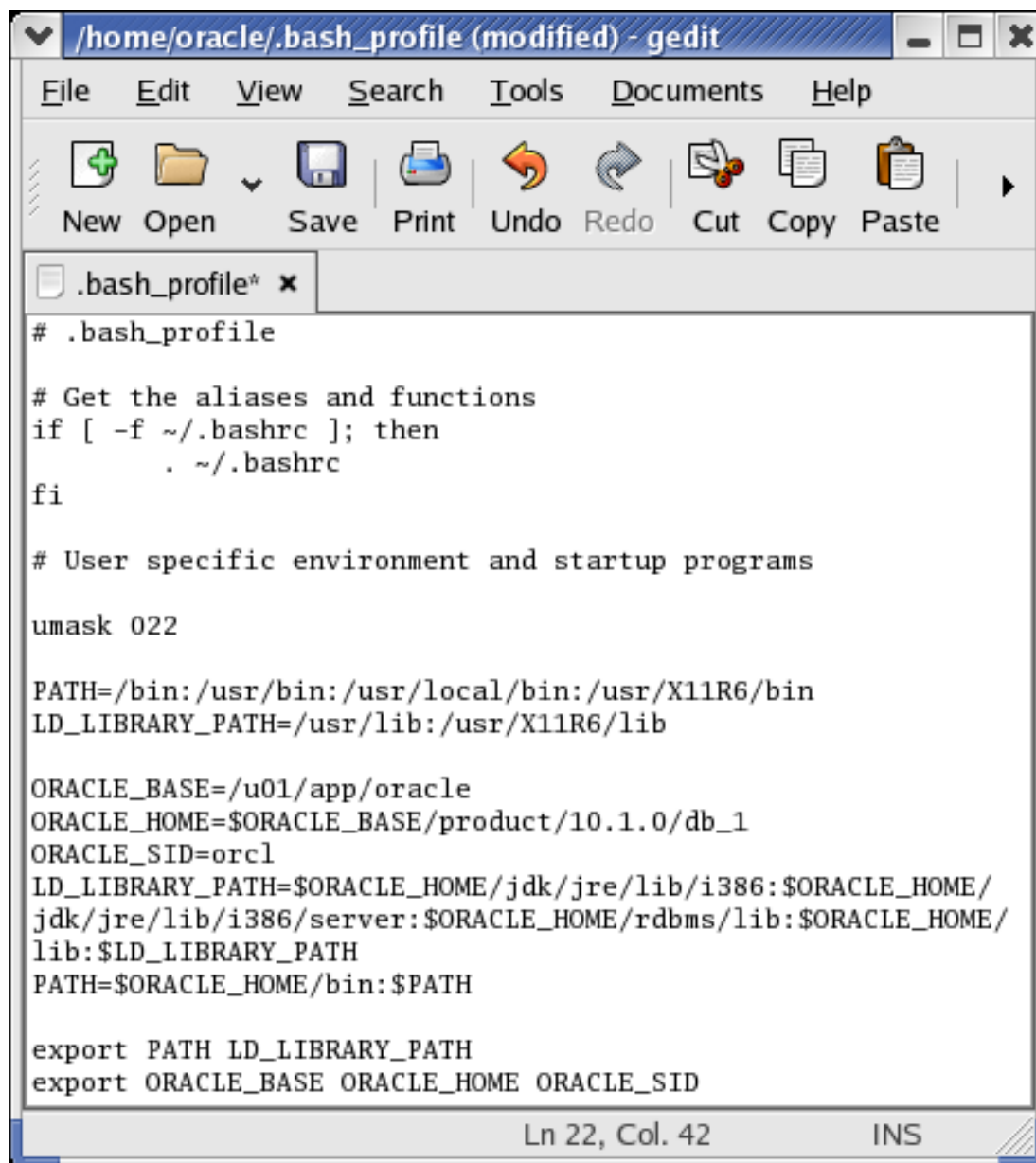
5. With an editor of your choosing, `/home/oracle/.bash_profile` If you are using another shell please add the entries to the appropriate file.

```
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/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
```



```

# .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

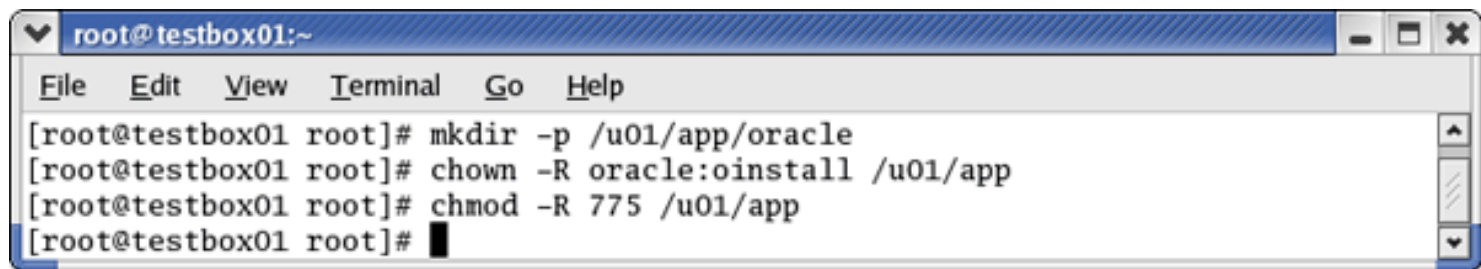
```

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
```

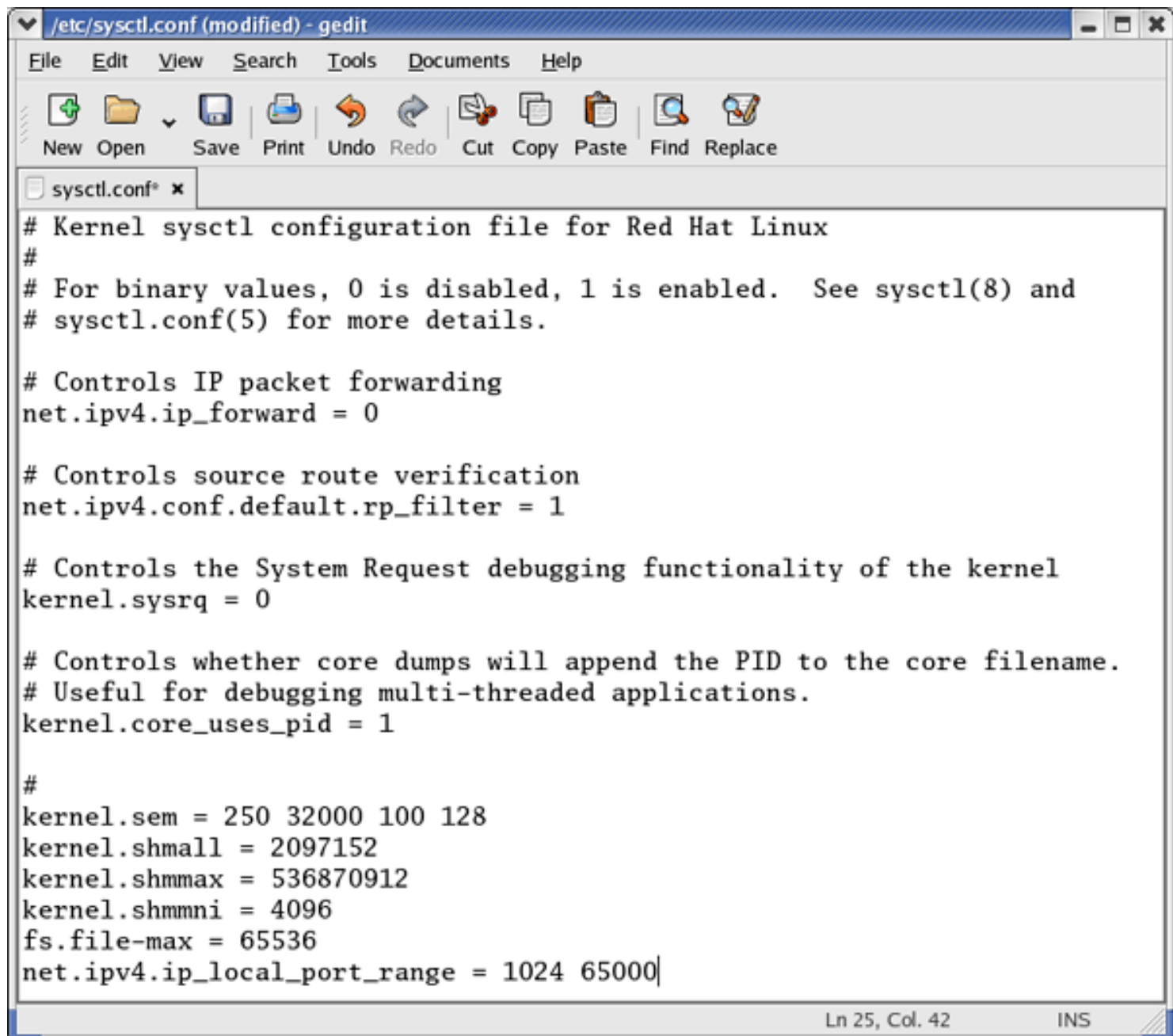
```
kernel.shmmax = 2147483648
```

```
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

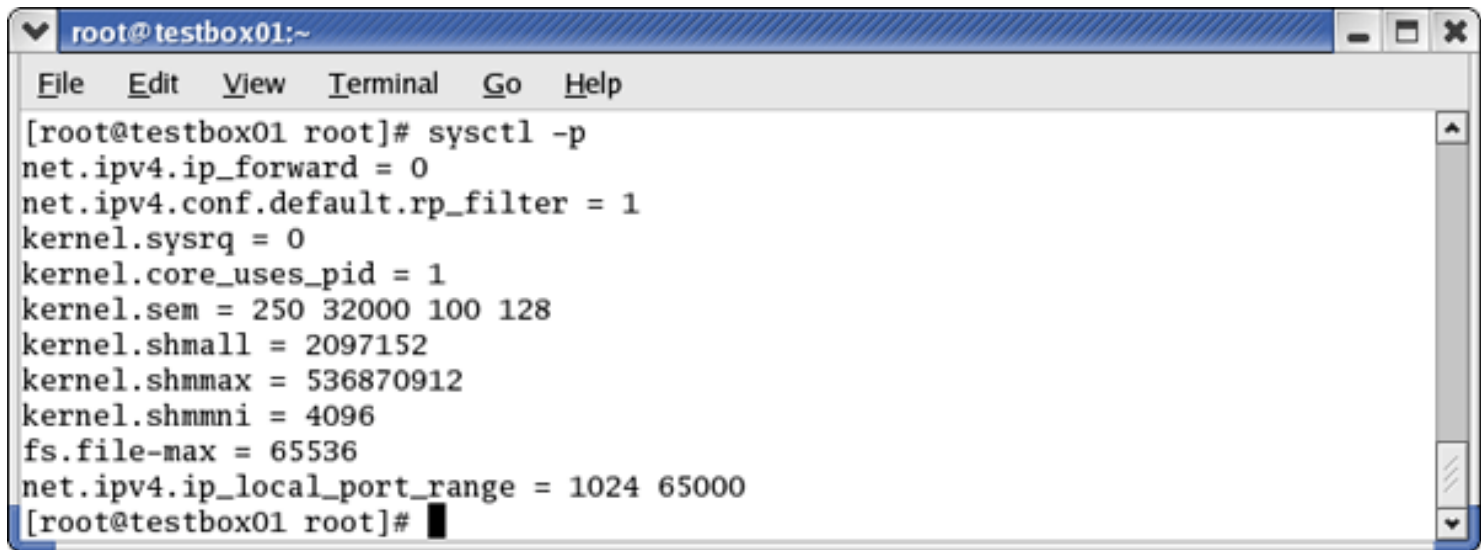
#
kernel.sem = 250 32000 100 128
kernel.shmall = 2097152
kernel.shmmax = 536870912
kernel.shmmni = 4096
fs.file-max = 65536
net.ipv4.ip_local_port_range = 1024 65000
```

The kernel changes made previously take affect 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 displays the output of the 'sysctl -p' command, showing various kernel and network parameters and their values. The prompt is '[root@testbox01 root]#'.

```
[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.