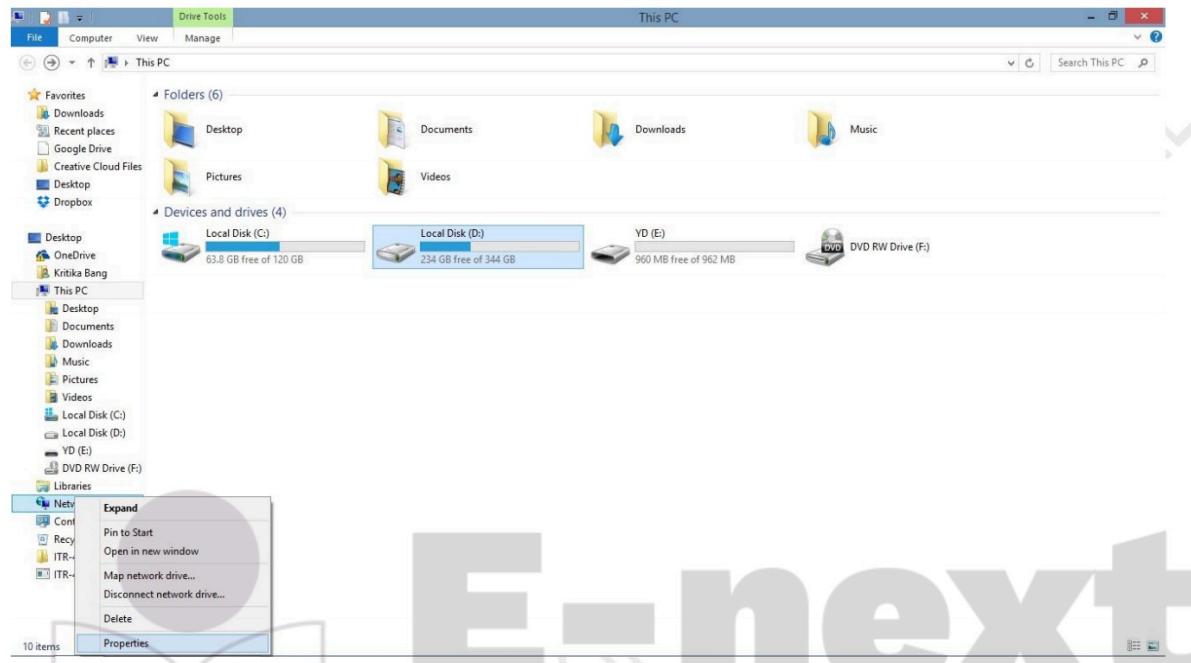


Linux Administration Practical Manual

Settings to be done in Windows

Go to “My Computer” -> “Network” -> Right Click on “Properties”

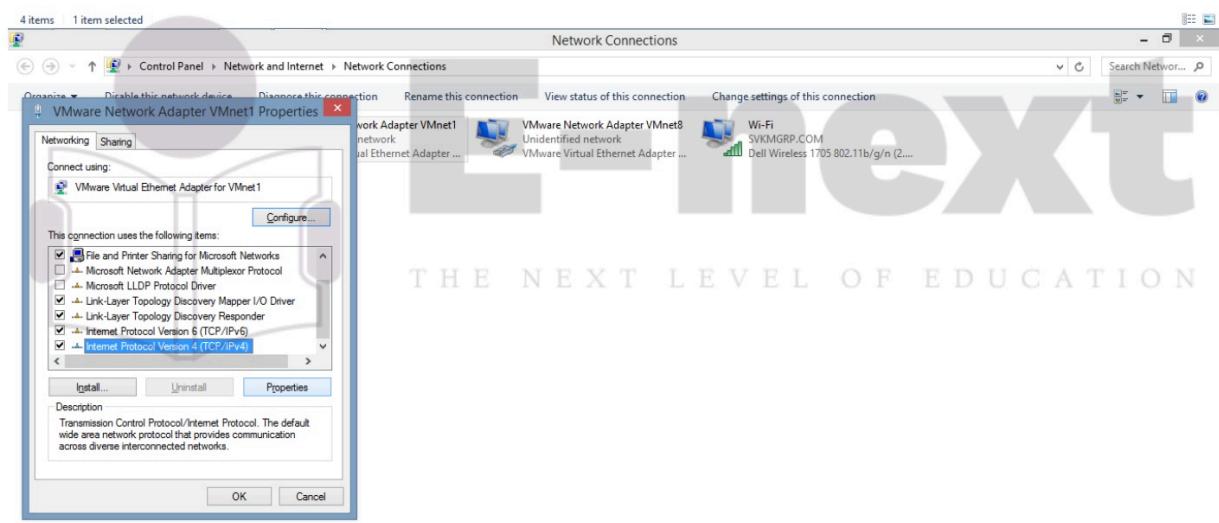


Go to the option “Change adapter settings” -> Right click on “VMWare Network Adapter VMnet1” -> Click “IPV4” -> Click on “Properties” button -> Set IP Address Example : 192.168.1.1 -> Click “OK” -> Click “Close”.

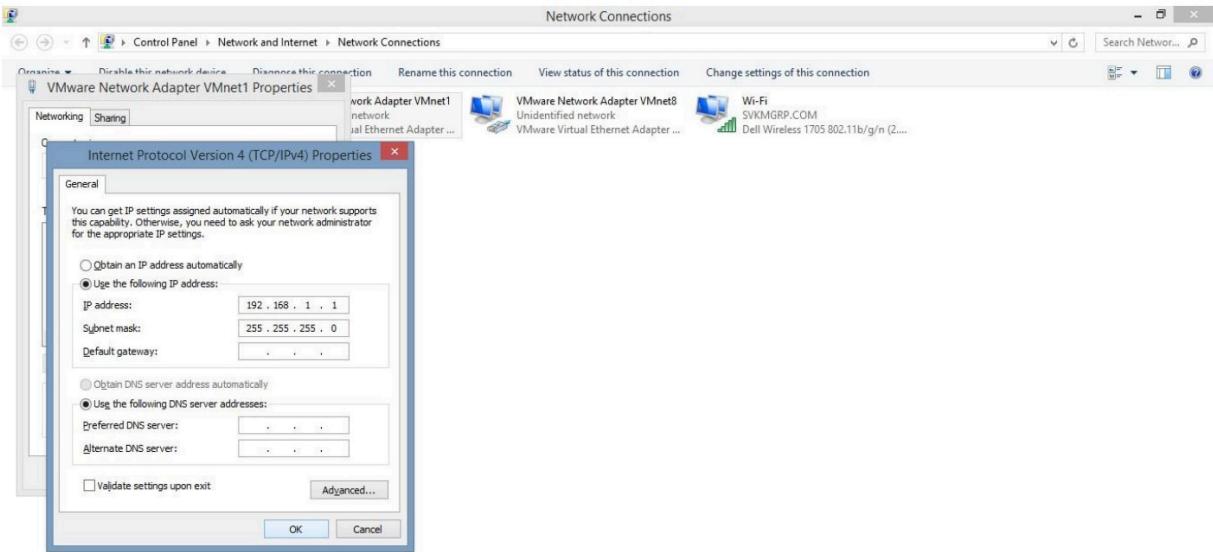
Linux Administration Practical Manual



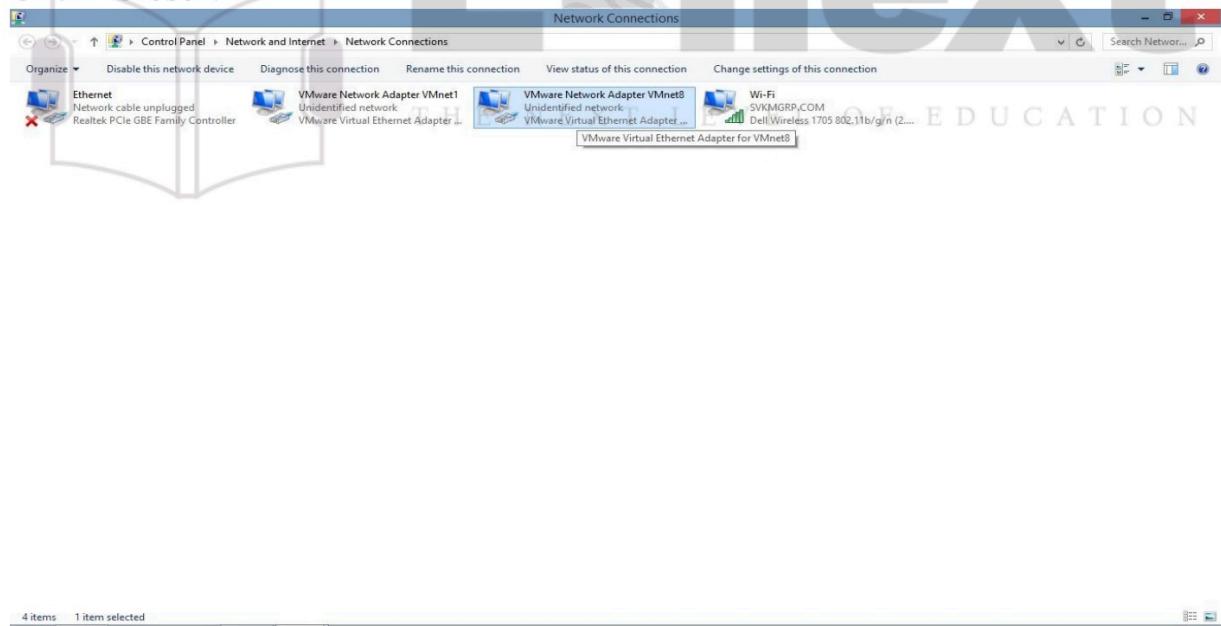
Linux Administration Practical Manual



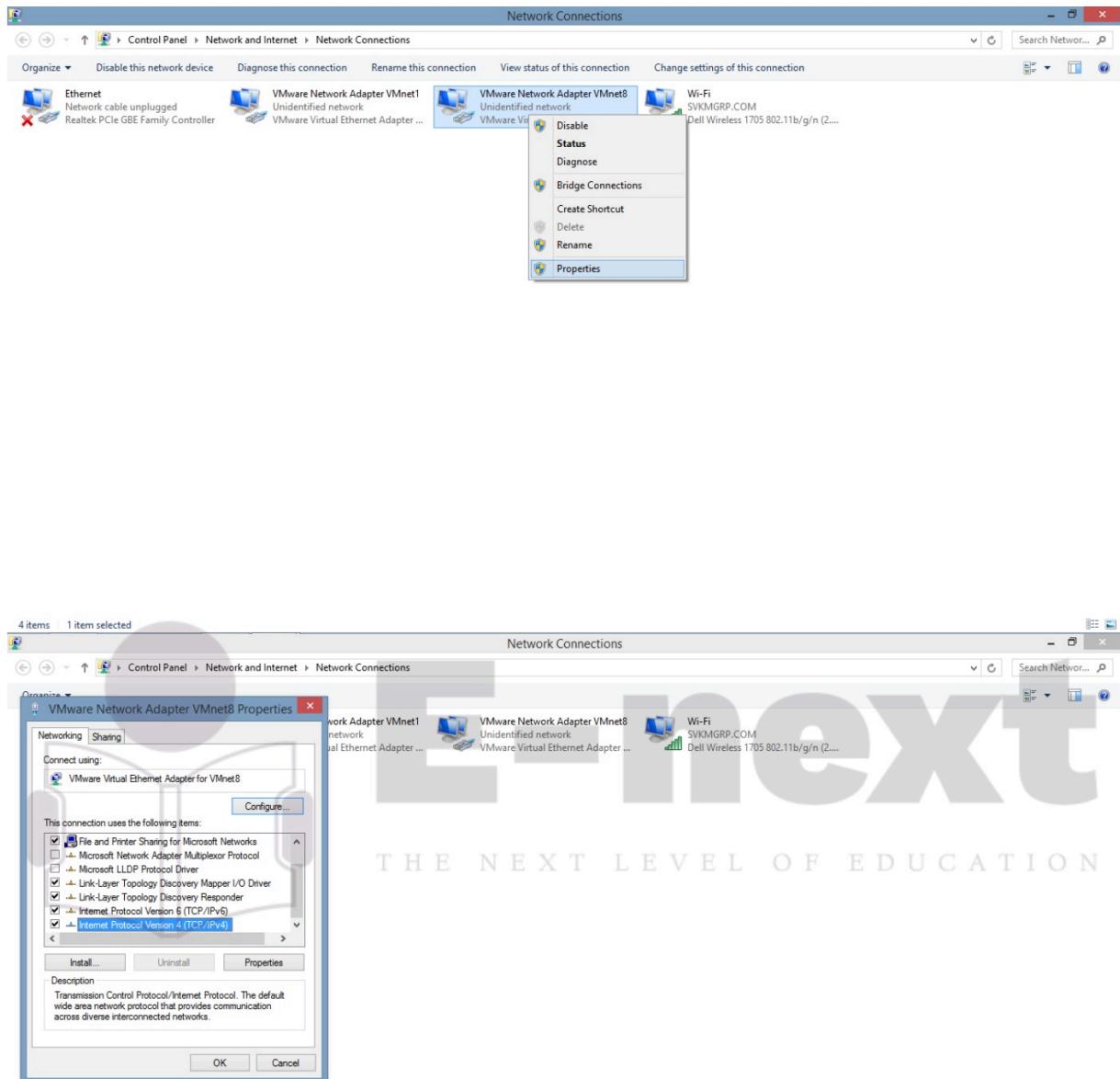
Linux Administration Practical Manual



Right click on “VMWare Network Adapter VMnet8” -> Click “IPV4” -> Click on “Properties” button -> Set IP Address Example : 192.168.1.2 -> Click “OK” -> Click “Close”.



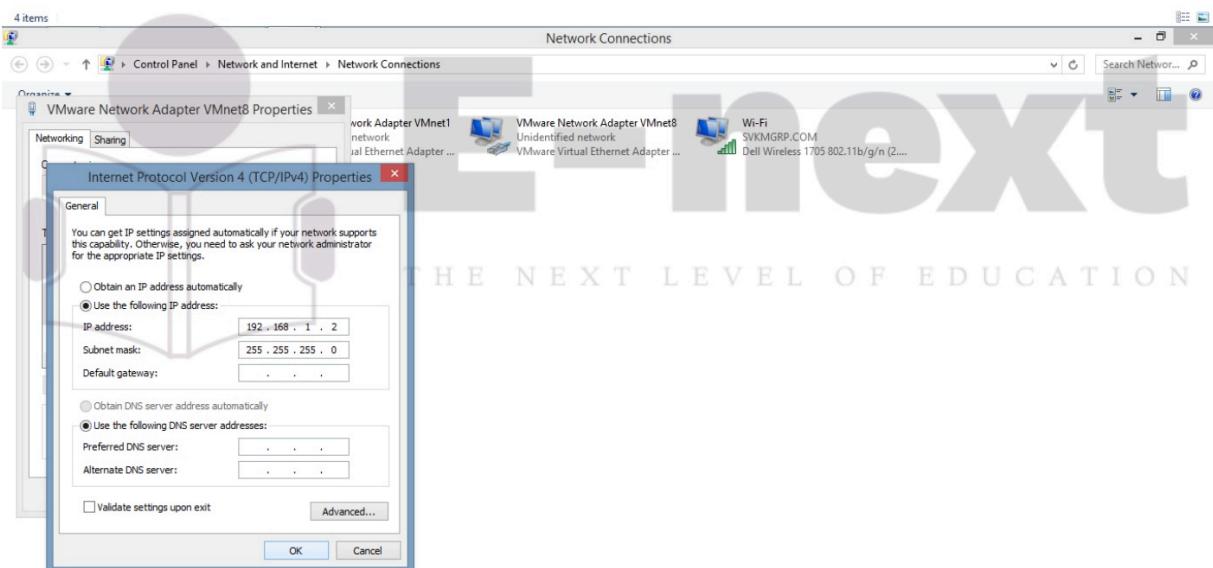
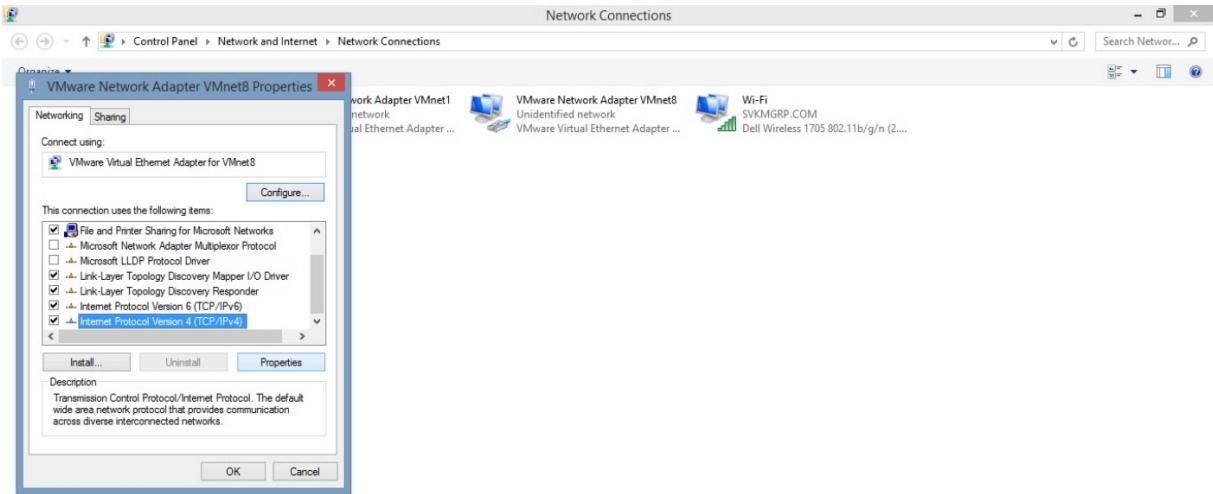
Linux Administration Practical Manual



THE NEXT LEVEL OF EDUCATION



Linux Administration Practical Manual



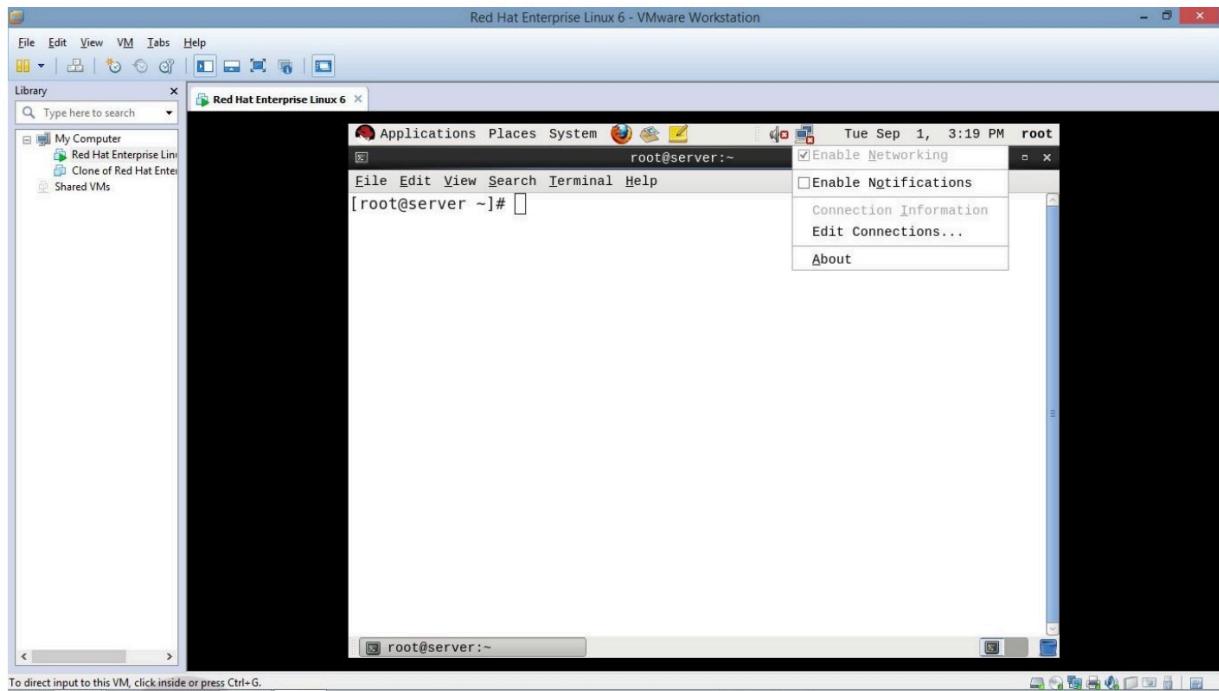
Now Open “VMWare”– Linux Virtual machine

Set the IP Address to 192.168.1.3

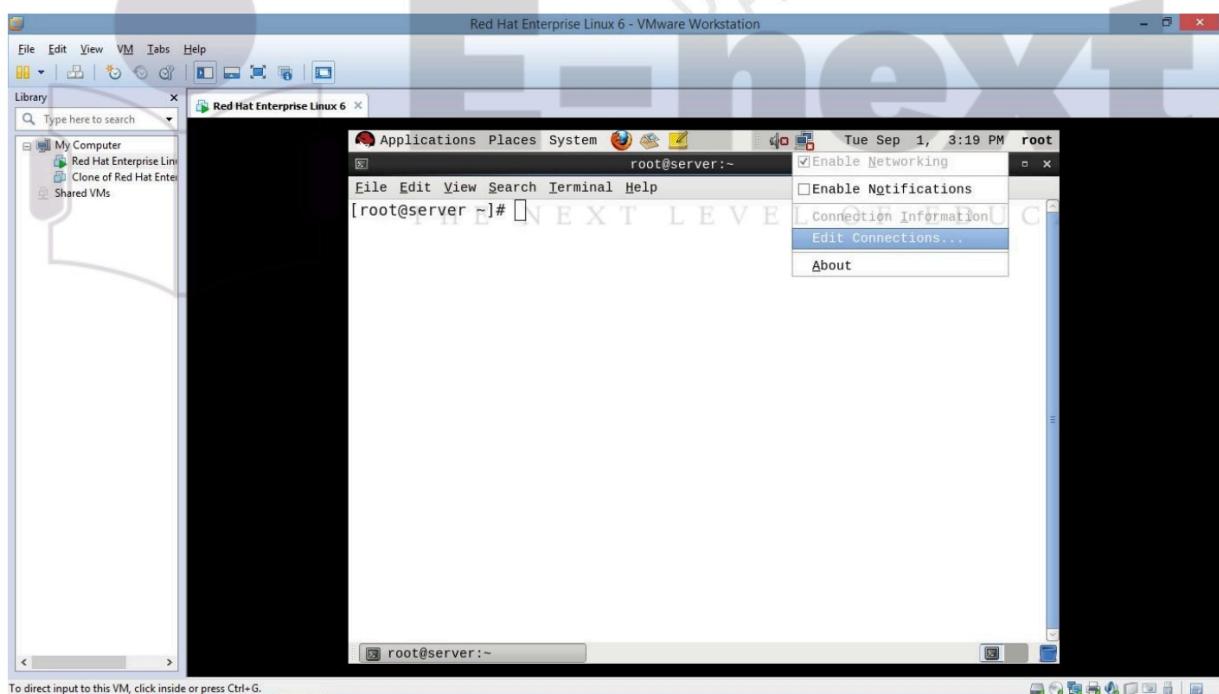
To do so follow the steps :

Right click on top of “Network symbol” -> Go to “Edit Connections” ->Select “eth0” ->Click on “Edit” button -> Select IPV4 - >Select “Manual” .

Linux Administration Practical Manual

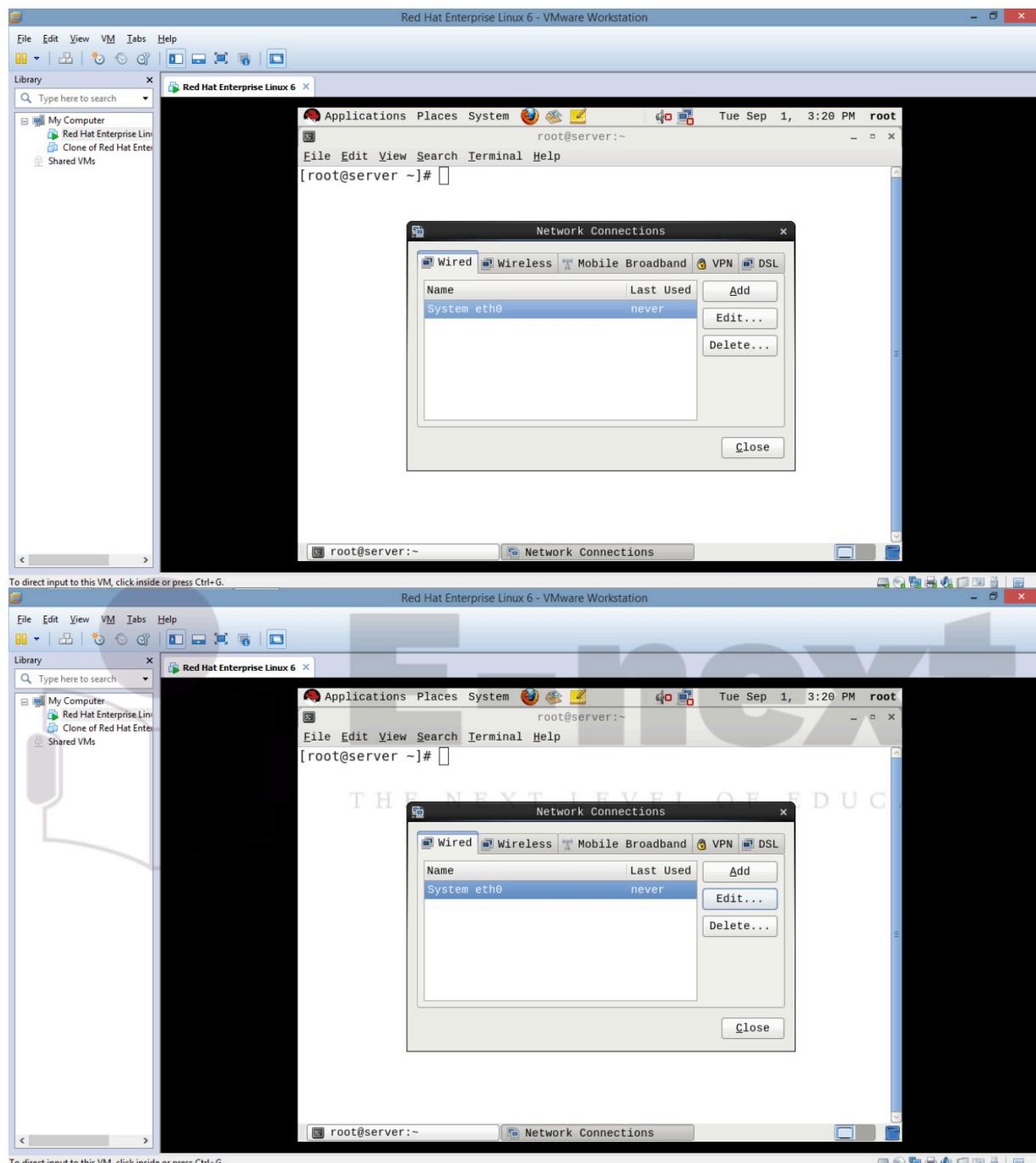


To direct input to this VM, click inside or press Ctrl+G.

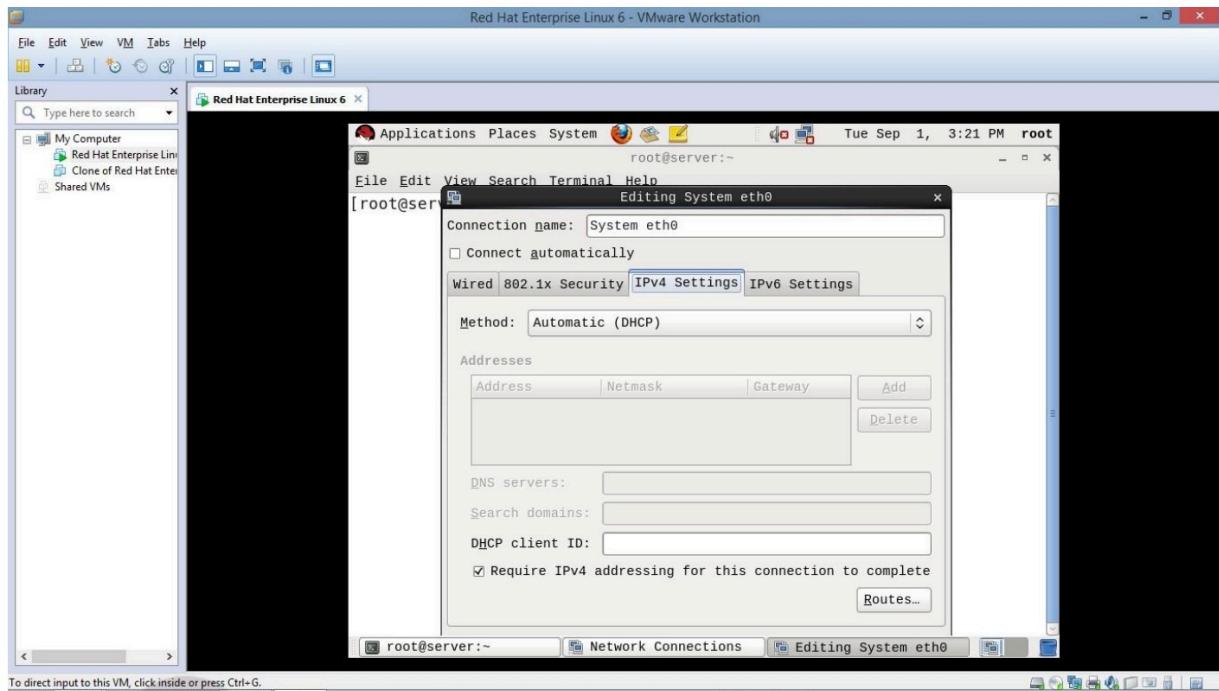


To direct input to this VM, click inside or press Ctrl+G.

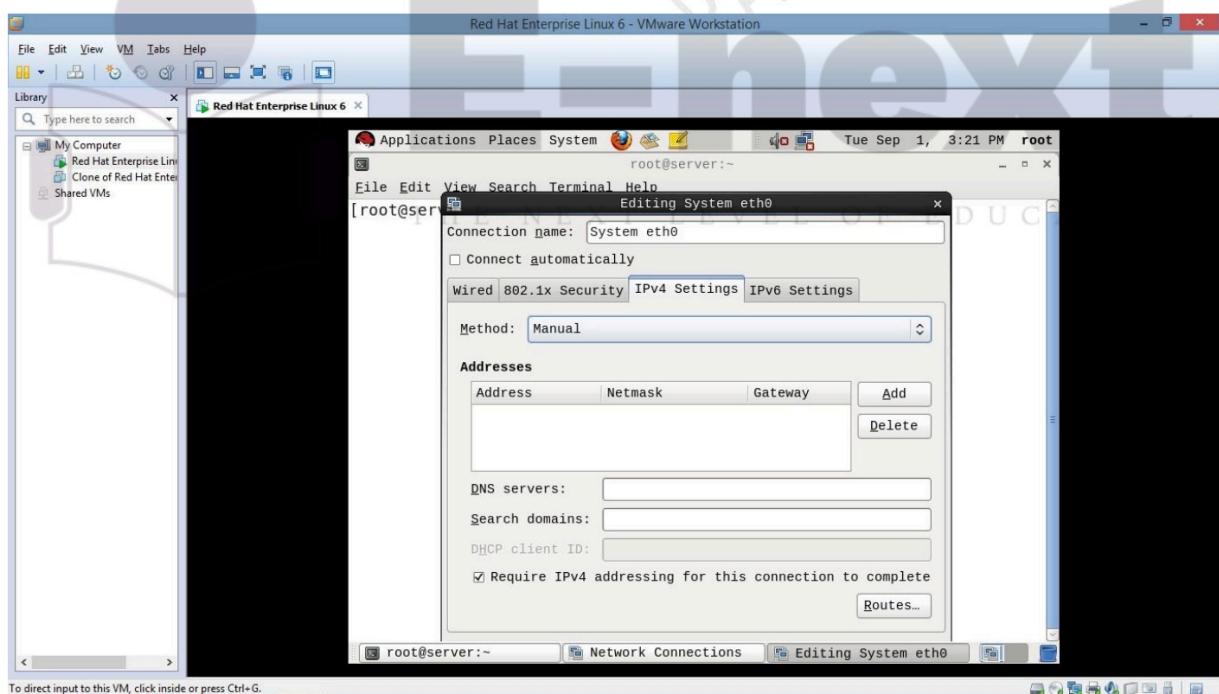
Linux Administration Practical Manual



Linux Administration Practical Manual

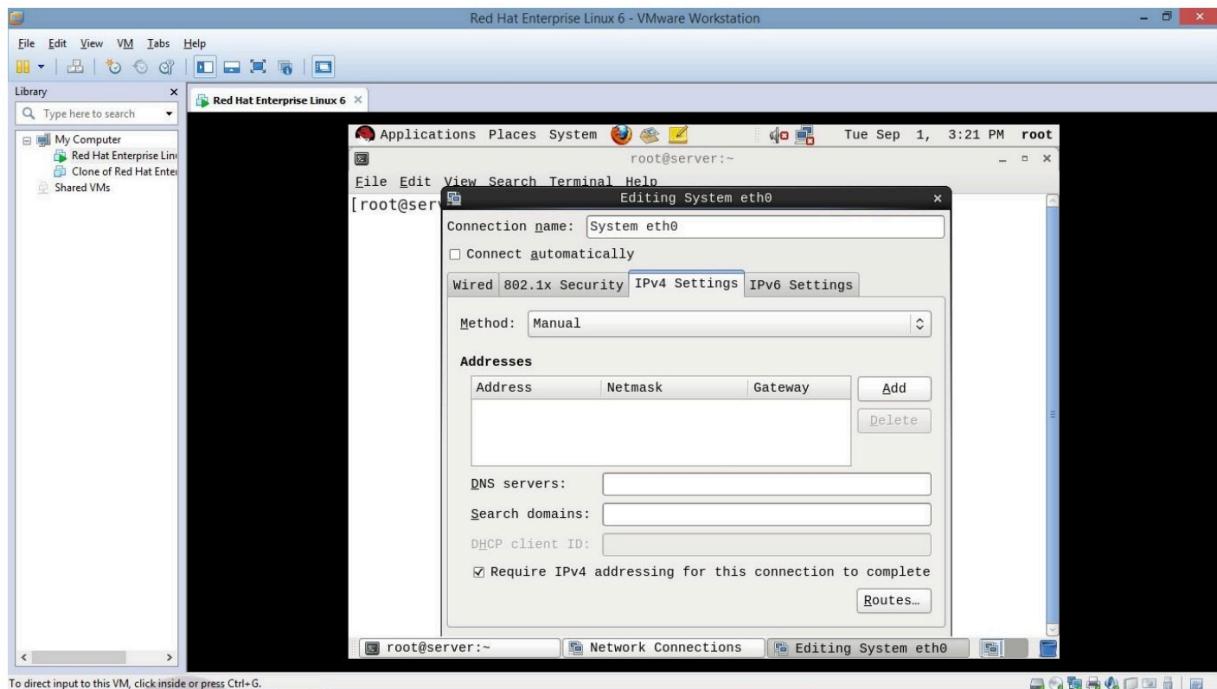


To direct input to this VM, click inside or press Ctrl+G.

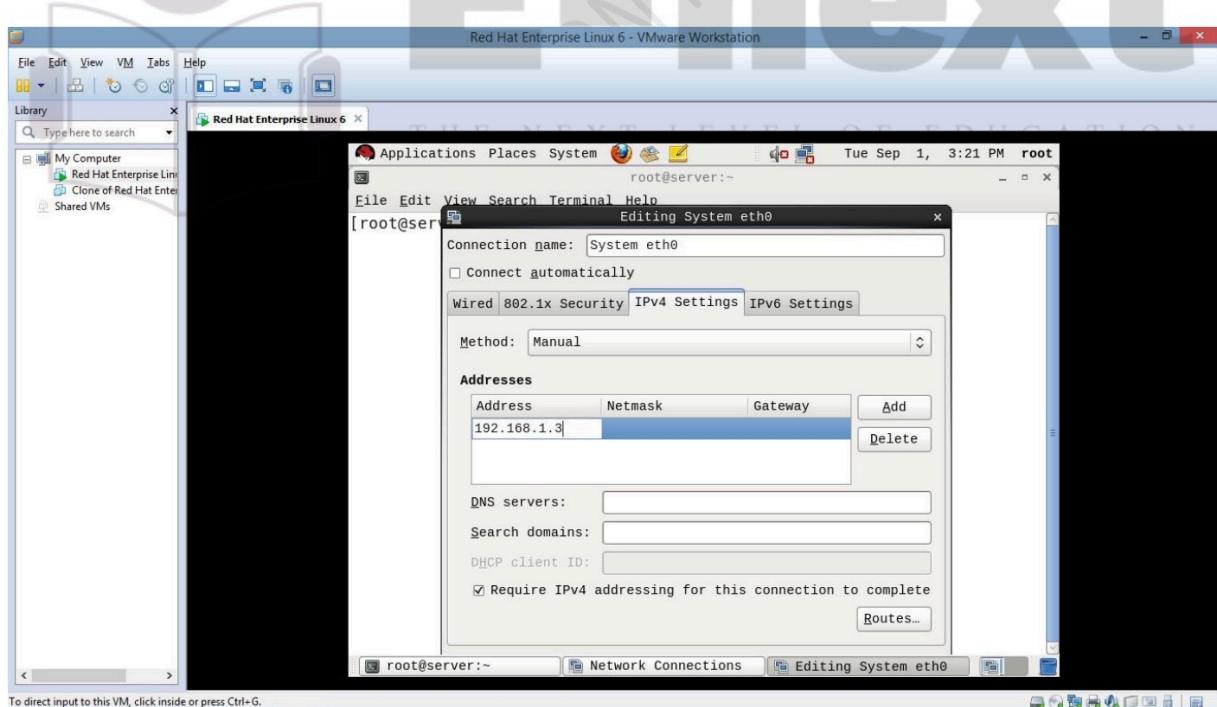


To direct input to this VM, click inside or press Ctrl+G.

Linux Administration Practical Manual

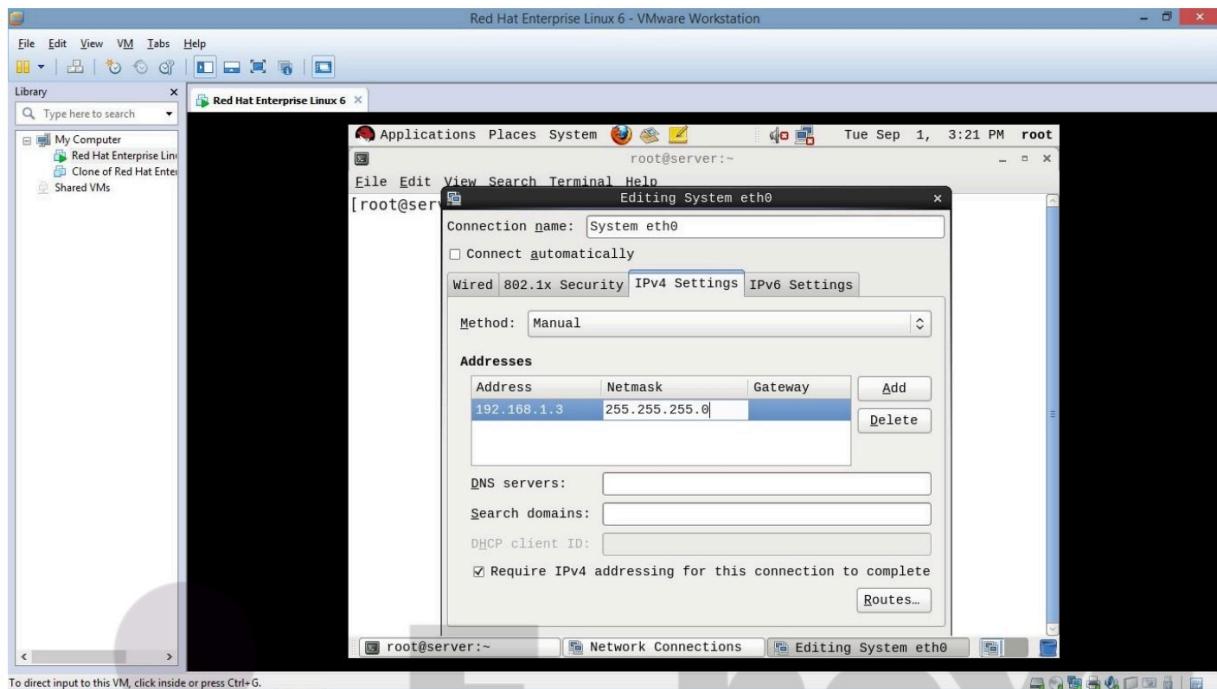


Now set IP Address to 192.168.1.3

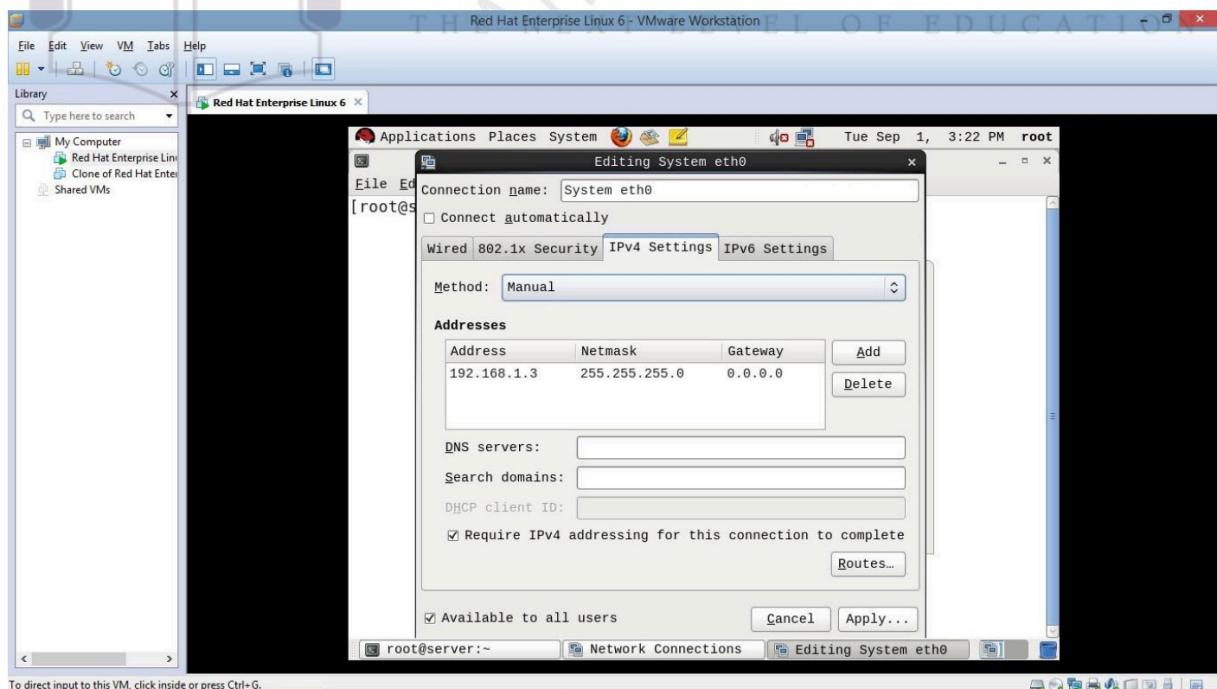


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Set the Netmask as 255.255.255.0

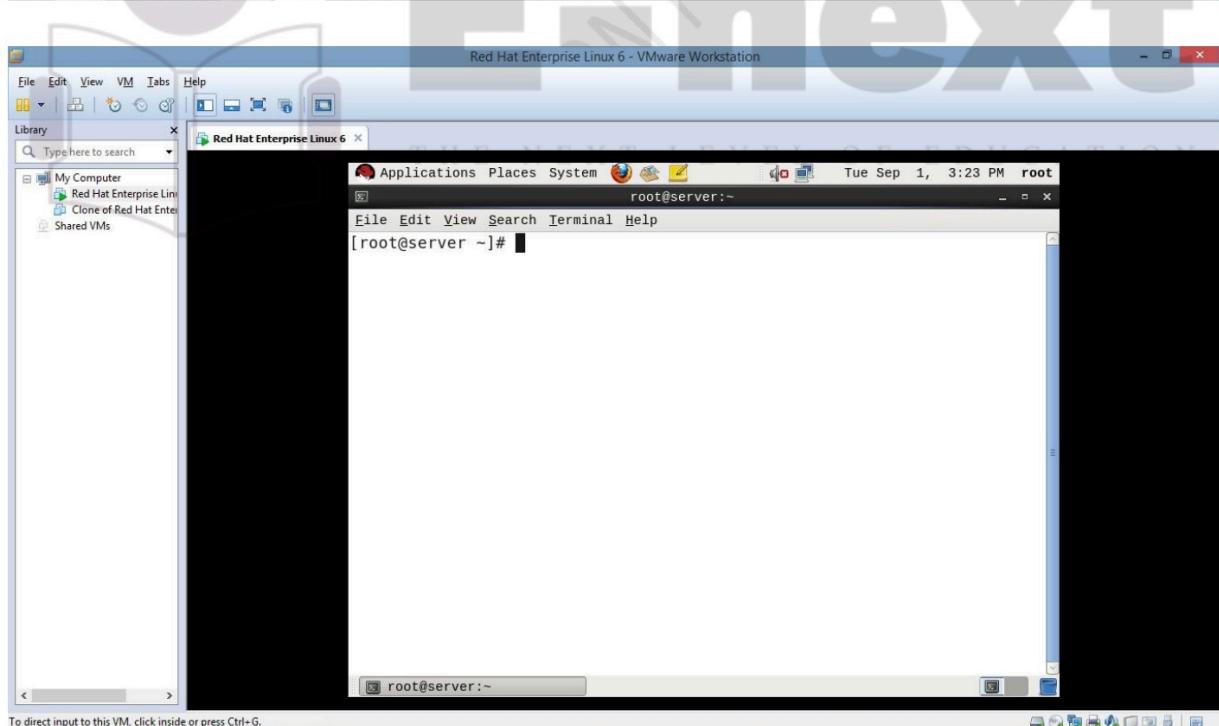
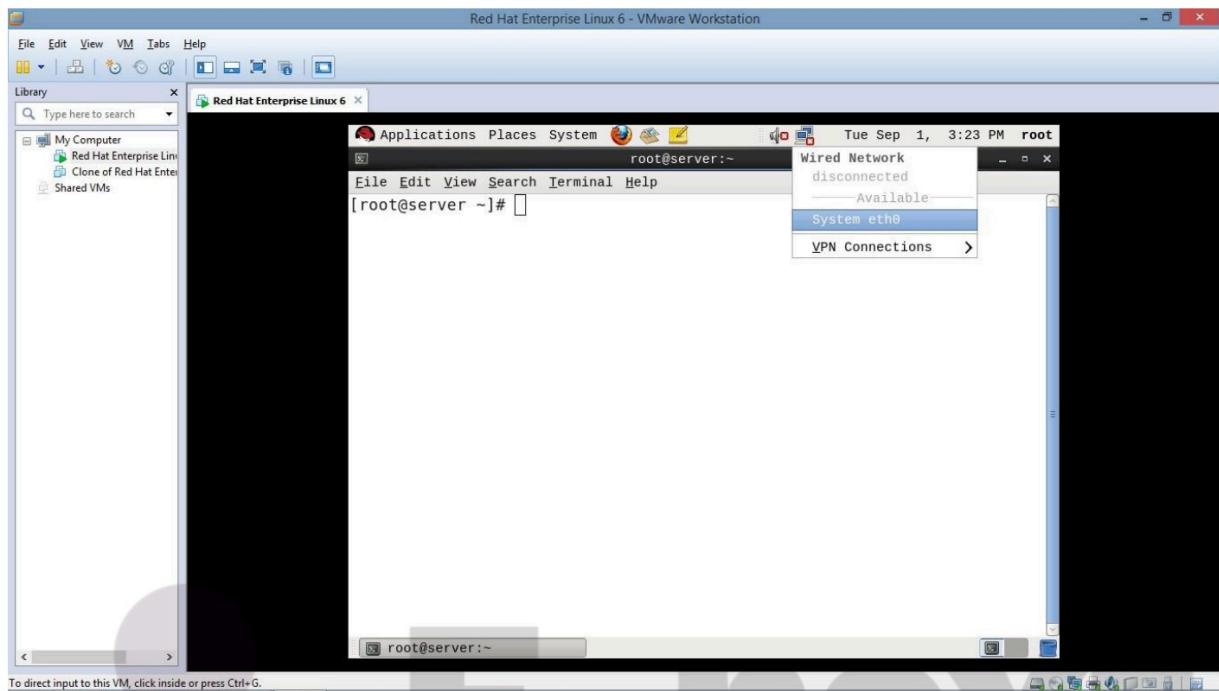


Click on “Apply” button -> Click on “Close” button.



Linux Administration Practical Manual

Now connect your network - > To do so double click on Network icon.



To check whether IP Address is set :

ifconfig

Linux Administration Practical Manual

The screenshot shows a VMware Workstation interface with a Red Hat Enterprise Linux 6 virtual machine. The terminal window displays the output of the 'ifconfig' command:

```
[root@server ~]# ifconfig
eth0      Link encap:Ethernet HWaddr 00:0C:29:A6:40:2D
          inet addr:192.168.1.3 Bcast:192.168.1.255 Mask:255.255.255.0
                  inet6 addr: fe80::20c:29ff:fea6:402d/64 Scope:Link
                      UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
                      RX packets:24 errors:0 dropped:0 overruns:0 frame:0
                      TX packets:51 errors:0 dropped:0 overruns:0 carrier:0
                      collisions:0 txqueuelen:1000
                      RX bytes:2208 (2.1 KiB) TX bytes:9681 (9.4 KiB)
                      Interrupt:19 Base address:0x2000

lo       Link encap:Local Loopback
          inet addr:127.0.0.1 Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
              UP LOOPBACK RUNNING MTU:16436 Metric:1
              RX packets:26 errors:0 dropped:0 overruns:0 frame:0
              TX packets:26 errors:0 dropped:0 overruns:0 carrier:0
              collisions:0 txqueuelen:0
              RX bytes:1460 (1.4 KiB) TX bytes:1460 (1.4 KiB)

[root@server ~]#
```

To install the samba package :

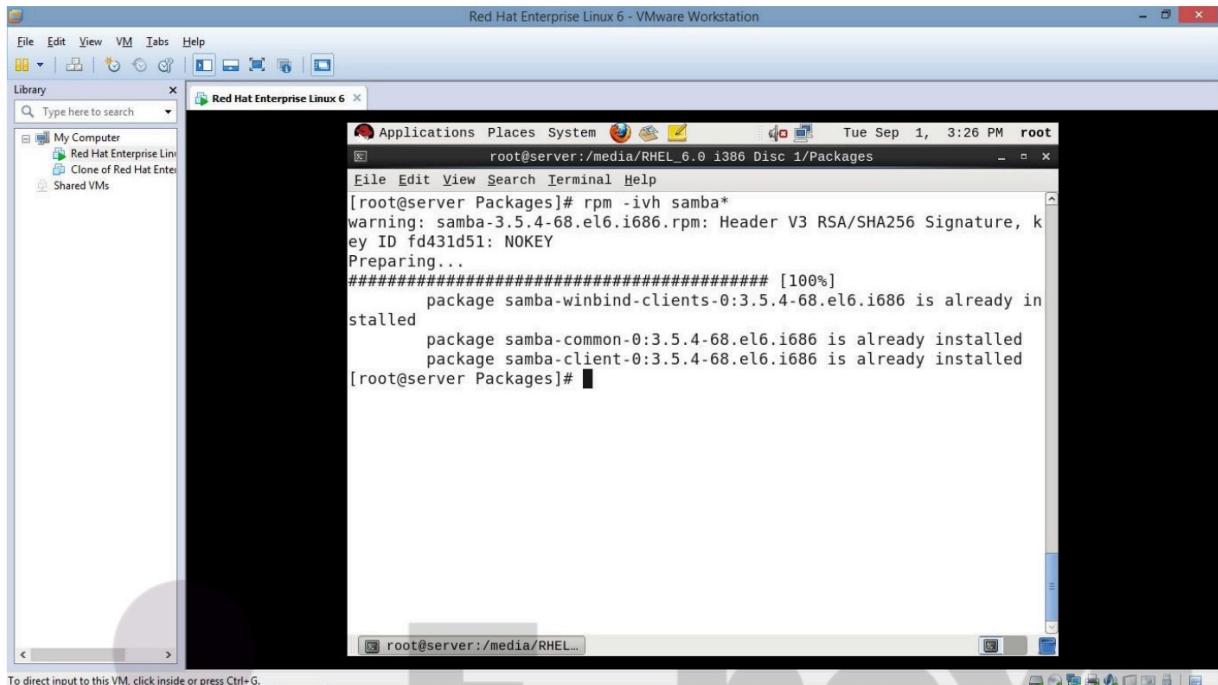
```
# cd /media/RHEL_6.0\i386\Disc\1/Packages
```

The screenshot shows a VMware Workstation interface with a Red Hat Enterprise Linux 6 virtual machine. The terminal window shows the user navigating to the 'Packages' directory:

```
root@server:/media/RHEL_6.0 i386 Disc 1/Packages
File Edit View Search Terminal Help
[root@server ~]# cd /media/RHEL_6.0\ i386\ Disc\ 1/Packages/
[root@server Packages]#
```

Linux Administration Practical Manual

Packages] # **rpm -ivh samba***



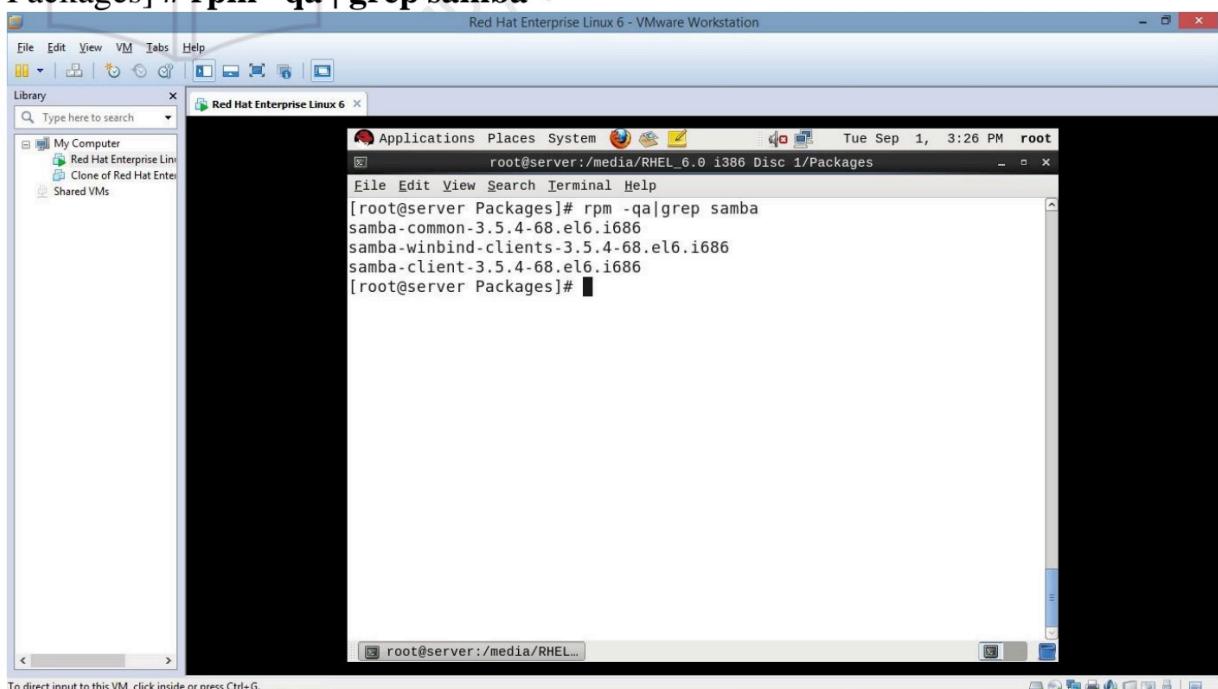
```
root@server Packages] # rpm -ivh samba*
warning: samba-3.5.4-68.el6.i686.rpm: Header V3 RSA/SHA256 Signature, k
ey ID fd431d51: NOKEY
Preparing...
#####
package samba-winbind-clients-0:3.5.4-68.el6.i686 is already in
stalled
package samba-common-0:3.5.4-68.el6.i686 is already installed
package samba-client-0:3.5.4-68.el6.i686 is already installed
[root@server Packages] #
```

To verify service package of samba

Packages] # **rpmquery -qa | grep samba**

OR

Packages] # **rpm -qa | grep samba**



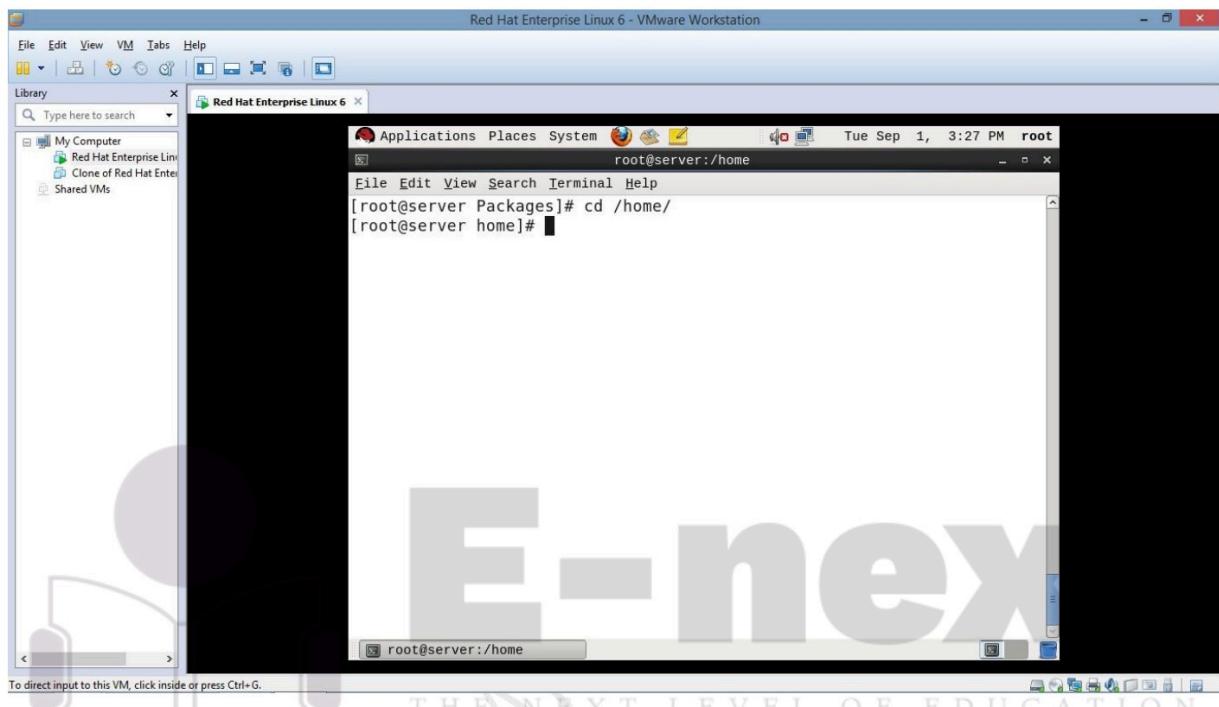
```
root@server Packages] # rpm -qa|grep samba
samba-common-3.5.4-68.el6.i686
samba-winbind-clients-3.5.4-68.el6.i686
samba-client-3.5.4-68.el6.i686
[root@server Packages] #
```

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The following package with the version number should be installed – “samba-3.5.4-68.el6.i686”.

Now go to your home directory:

```
# cd /home
```



Linux Administration Practical Manual

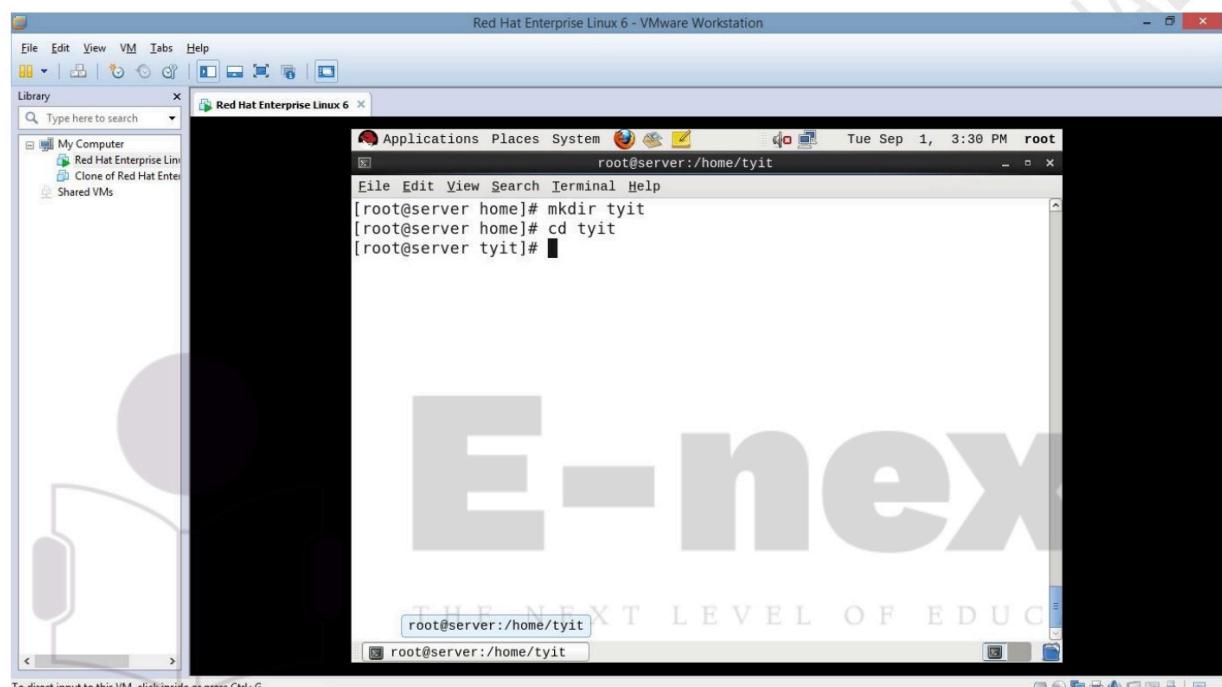
Now create a directory and create few files into it. You can also write the contents in the file.

This is a directory to be shared by samba.

mkdir tyit

Go inside tyit directory to create files into it

cd tyit (// change directory)



Linux Administration Practical Manual

touch f1 f2 f3 (creating 3 files with touch command – 3 files (f1 , f2, f3) with zero byte size will be created)

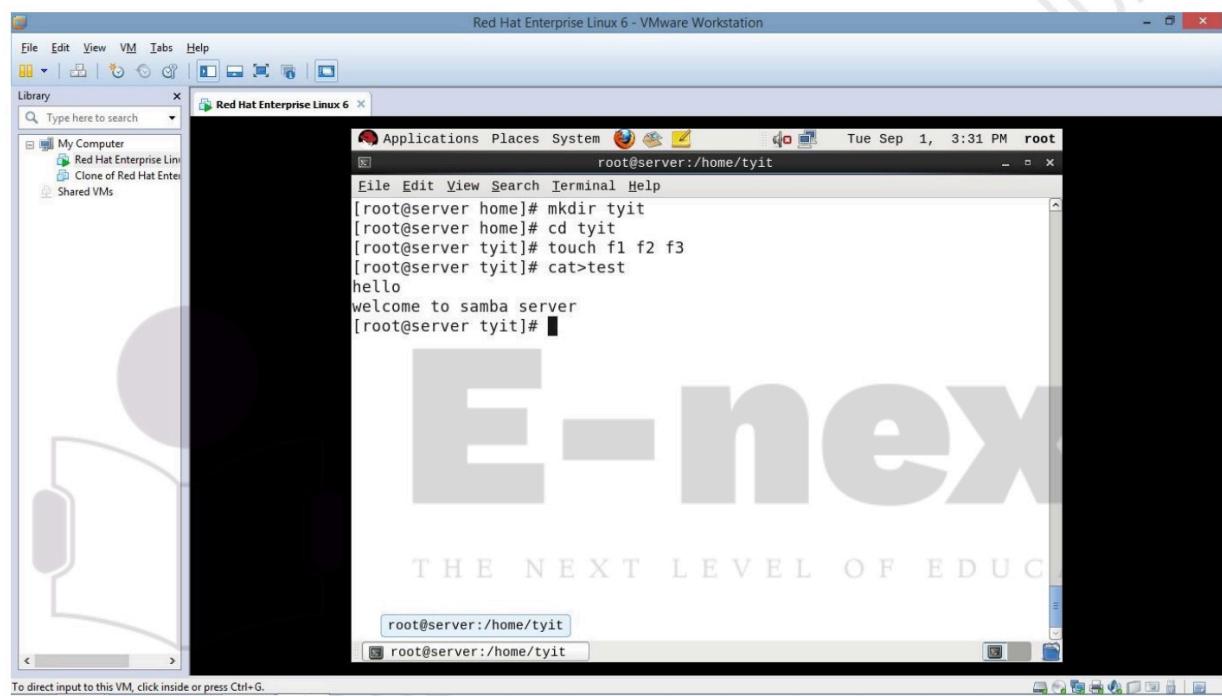
Creating a file named as ‘test’ with cat command

cat > test

// Write the contents

Hello my First Samba file to be shared

Press <ctrl+d> to save the file.



The screenshot shows a terminal window titled "Red Hat Enterprise Linux 6" running on a VMware Workstation interface. The terminal session is as follows:

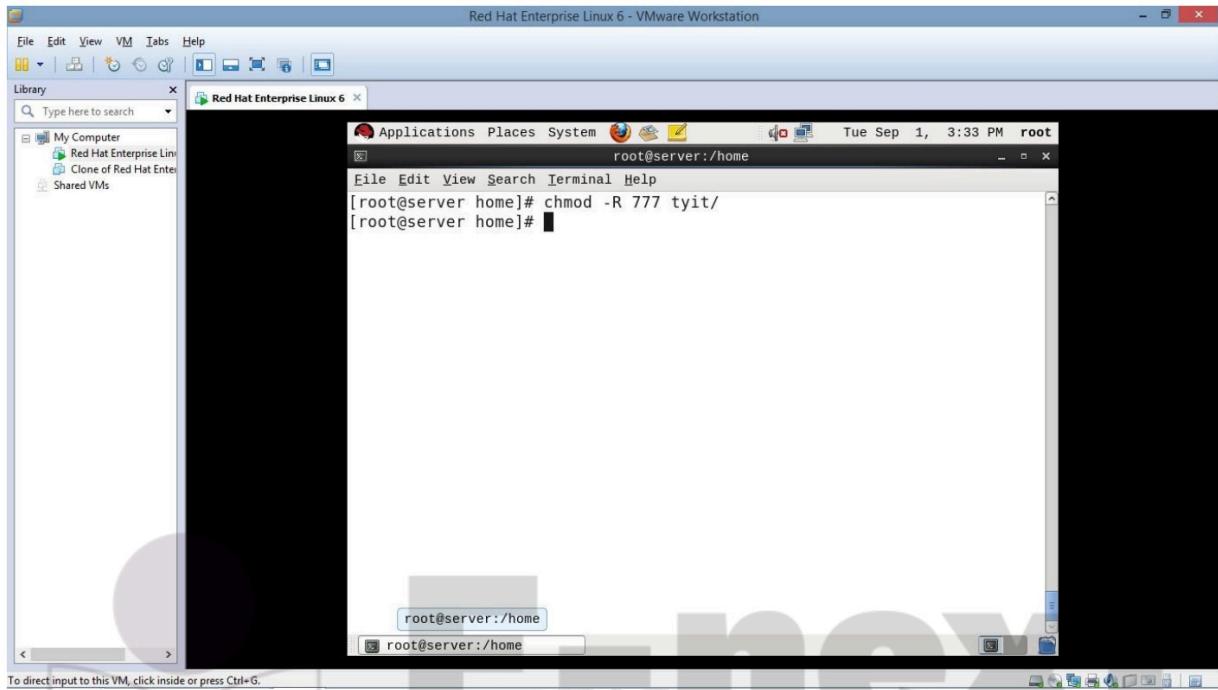
```
[root@server home]# mkdir tyit
[root@server home]# cd tyit
[root@server tyit]# touch f1 f2 f3
[root@server tyit]# cat>test
hello
welcome to samba server
[root@server tyit]#
```

The terminal window has a title bar with "Red Hat Enterprise Linux 6 - VMware Workstation". The menu bar includes "File", "Edit", "View", "VM", "Tabs", and "Help". The desktop environment shows a "Library" window on the left with icons for "My Computer", "Red Hat Enterprise Lin", and "Clone of Red Hat Ent". The desktop background features a large watermark for "E-next THE NEXT LEVEL OF EDUCATION".

Linux Administration Practical Manual

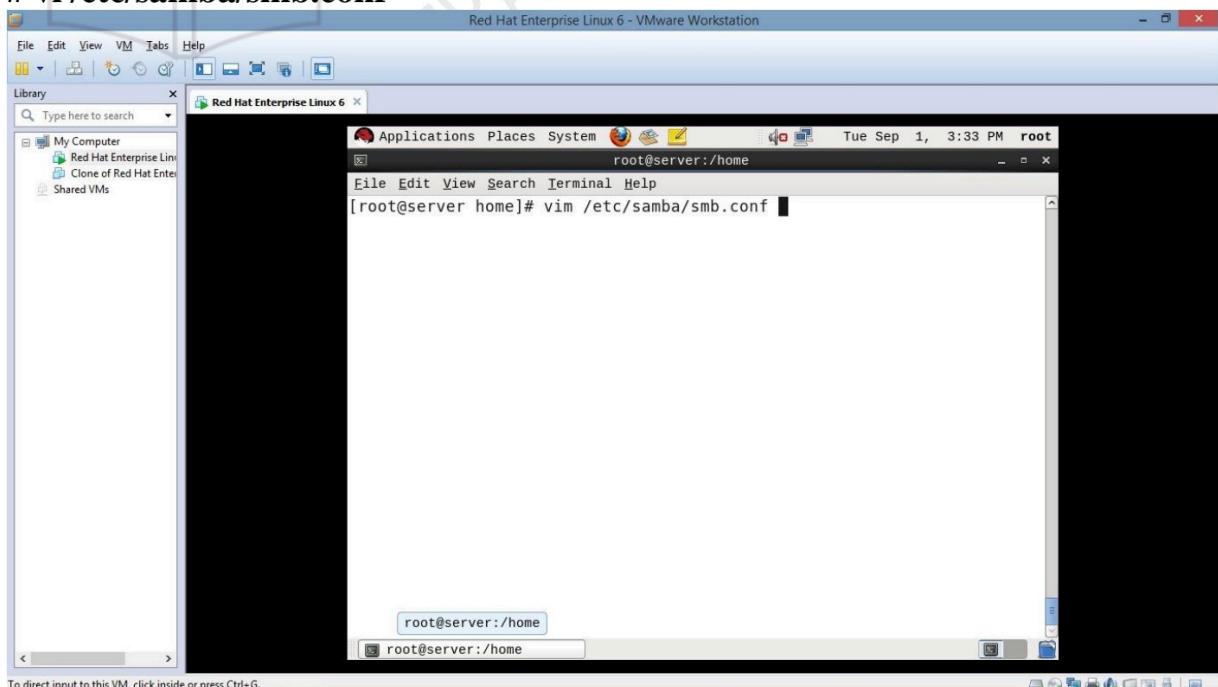
Also give this directory full permission.

chmod -R 777 /tyit/



Open the samba configuration file :

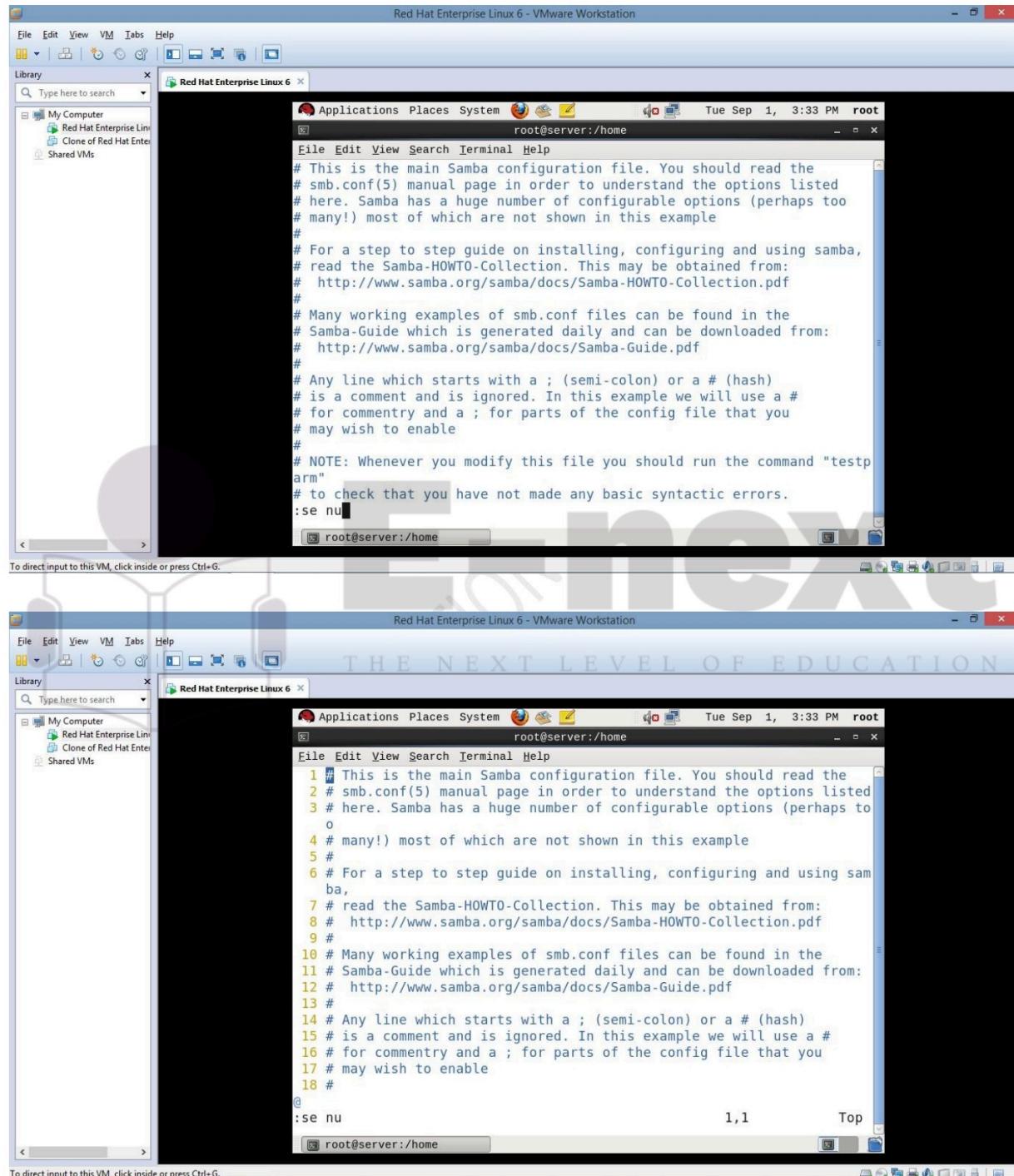
vi /etc/samba/smb.conf



Linux Administration Practical Manual

Make the following changes:

To set the line numbers - :se nu



```
# This is the main Samba configuration file. You should read the
# smb.conf(5) manual page in order to understand the options listed
# here. Samba has a huge number of configurable options (perhaps too
# many!) most of which are not shown in this example
#
# For a step to step guide on installing, configuring and using samba,
# read the Samba-HOWTO-Collection. This may be obtained from:
# http://www.samba.org/samba/docs/Samba-HOWTO-Collection.pdf
#
# Many working examples of smb.conf files can be found in the
# Samba-Guide which is generated daily and can be downloaded from:
# http://www.samba.org/samba/docs/Samba-Guide.pdf
#
# Any line which starts with a ; (semi-colon) or a # (hash)
# is a comment and is ignored. In this example we will use a #
# for commentary and a ; for parts of the config file that you
# may wish to enable
#
# NOTE: Whenever you modify this file you should run the command "testp
arm"
# to check that you have not made any basic syntactic errors.
:se nu
```

The terminal window shows the command ':se nu' entered at the bottom. The output shows the configuration file with line numbers 1 through 18. The status bar at the bottom right indicates '1,1 Top'.

Linux Administration Practical Manual

- a) Line no 74: workgroup=MYGROUP To workgroup= WORKGROUP(windows workgroup)
- b) Line no 79: eth0 192.168.1.1/24 192.168.1.3/24
- c) Line no 80: 127. 192.168.1. 192.168.108.

The screenshot shows a VMware Workstation interface with a Red Hat Enterprise Linux 6 virtual machine running. A terminal window is open, displaying the contents of the `/etc/samba/smb.conf` file. The terminal title is "Red Hat Enterprise Linux 6" and the prompt is "root@server:/home". The file content includes comments about Samba configuration options and how to use semicolons and hash symbols. Line 74 is highlighted with a yellow background.

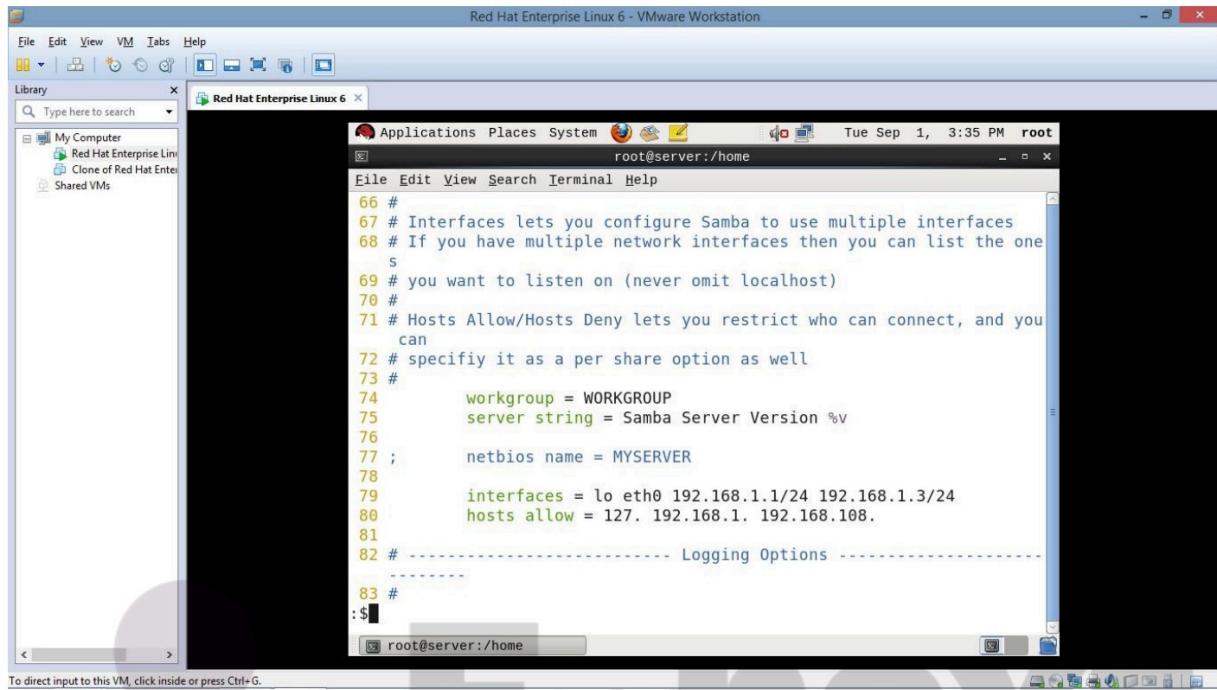
```
1 # This is the main Samba configuration file. You should read the
2 # smb.conf(5) manual page in order to understand the options listed
3 # here. Samba has a huge number of configurable options (perhaps to
4 # many!) most of which are not shown in this example
5 #
6 # For a step to step guide on installing, configuring and using sam-
7 # ba,
8 # read the Samba-HOWTO-Collection. This may be obtained from:
9 #   http://www.samba.org/samba/docs/Samba-HOWTO-Collection.pdf
10 # Many working examples of smb.conf files can be found in the
11 # Samba-Guide which is generated daily and can be downloaded from:
12 #   http://www.samba.org/samba/docs/Samba-Guide.pdf
13 #
14 # Any line which starts with a ; (semi-colon) or a # (hash)
15 # is a comment and is ignored. In this example we will use a #
16 # for commentary and a ; for parts of the config file that you
17 # may wish to enable
18 #
@:74#
```

The screenshot shows the continuation of the `/etc/samba/smb.conf` file from the previous screen. Lines 74 through 83 are displayed. Line 74 has "workgroup = WORKGROUP" and "server string = Samba Server Version %v" highlighted in green. Line 78 has "interfaces = lo eth0 192.168.1.1/24 192.168.1.3/24" highlighted in green. Line 79 has "hosts allow = 127. 192.168.1. 192.168.108." highlighted in green. The terminal prompt "root@server:/home" is visible at the bottom.

```
66 #
67 # Interfaces lets you configure Samba to use multiple interfaces
68 # If you have multiple network interfaces then you can list the one
69 # you want to listen on (never omit localhost)
70 #
71 # Hosts Allow/Hosts Deny lets you restrict who can connect, and you
72 # can
73 # specify it as a per share option as well
74 #   workgroup = WORKGROUP
75 #   server string = Samba Server Version %v
76 #
77 ;   netbios name = MYSERVER
78 #
79 #   interfaces = lo eth0 192.168.1.1/24 192.168.1.3/24
80 #   hosts allow = 127. 192.168.1. 192.168.108.
81 #
82 # ----- Logging Options -----
83 #
```

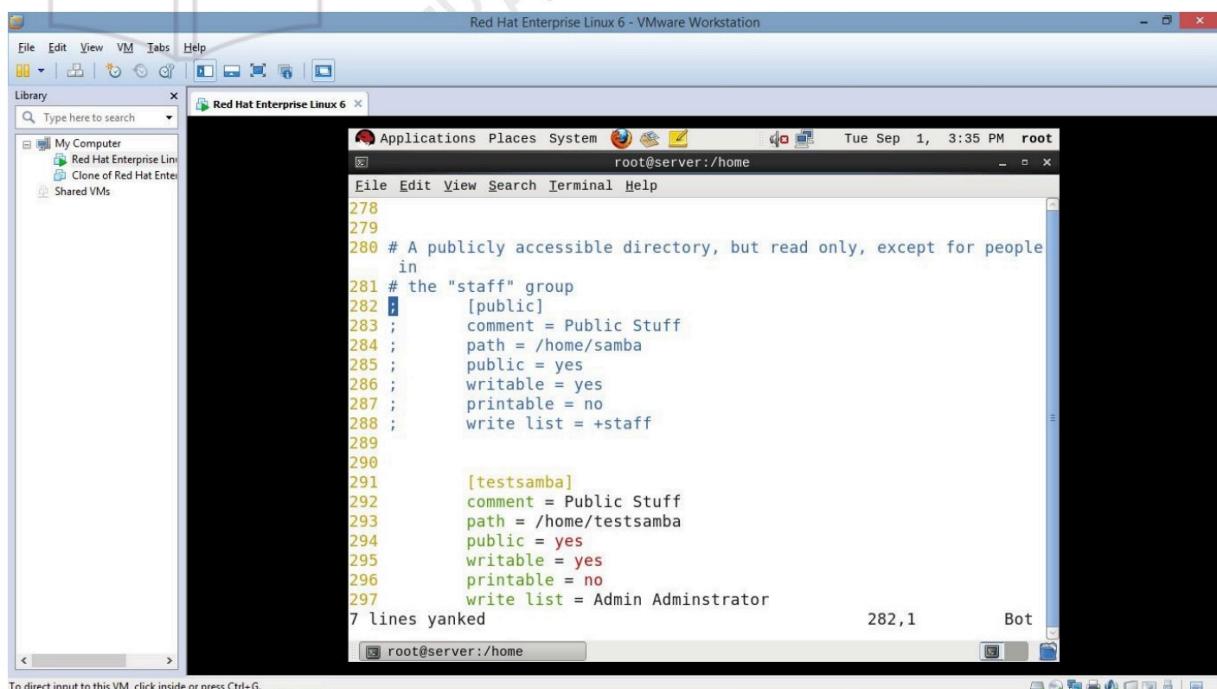
Linux Administration Practical Manual

Now go to end of the file -> Press Esc -> :\$



```
Red Hat Enterprise Linux 6 - VMware Workstation
File Edit View VM Tabs Help
Library Type here to search
My Computer Red Hat Enterprise Lin...
Clone of Red Hat Ente...
Shared VMs
Red Hat Enterprise Linux 6
Applications Places System root@server:/home Tue Sep 1, 3:35 PM root
File Edit View Search Terminal Help
66 #
67 # Interfaces lets you configure Samba to use multiple interfaces
68 # If you have multiple network interfaces then you can list the one
69 s
70 #
71 # Hosts Allow/Hosts Deny lets you restrict who can connect, and you
72 # can
73 # specify it as a per share option as well
74 workgroup = WORKGROUP
75 server string = Samba Server Version %v
76
77 ; netbios name = MYSERVER
78
79 interfaces = lo eth0 192.168.1.1/24 192.168.1.3/24
80 hosts allow = 127. 192.168.1. 192.168.108.
81
82 # ----- Logging Options -----
83 #
:$
```

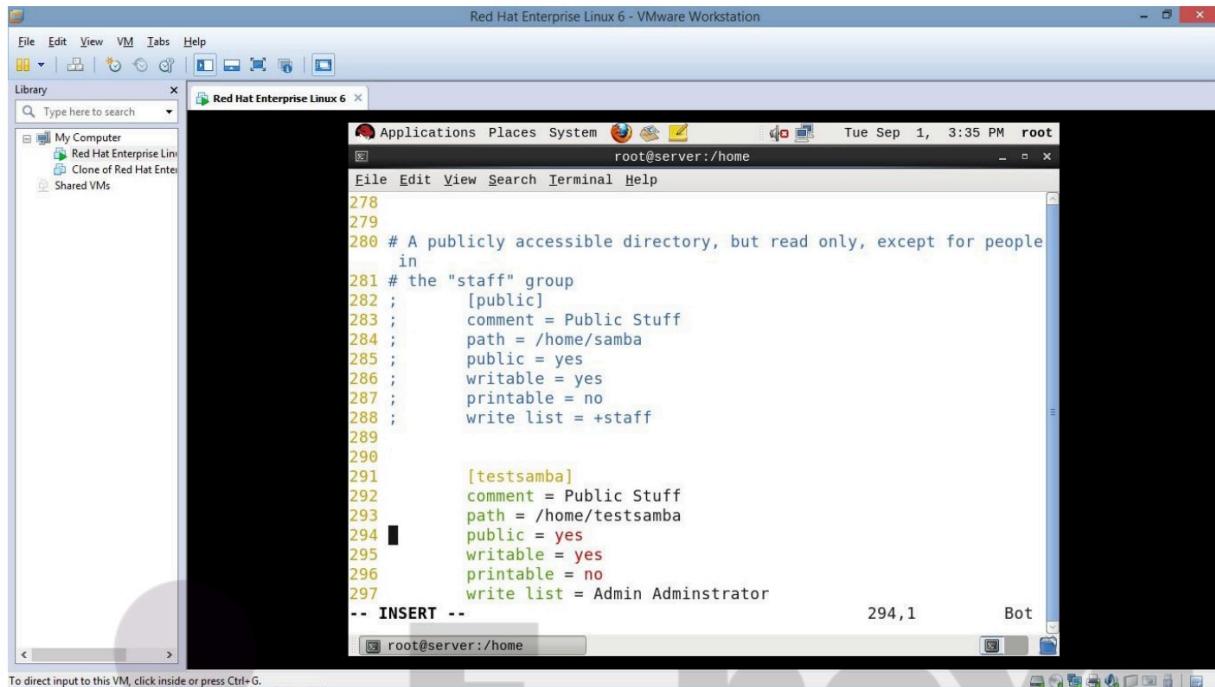
- d) At the end of the file copy 7 lines and paste it.
- e) To copy 7 lines - type 7yy



```
Red Hat Enterprise Linux 6 - VMware Workstation
File Edit View VM Tabs Help
Library Type here to search
My Computer Red Hat Enterprise Lin...
Clone of Red Hat Ente...
Shared VMs
Red Hat Enterprise Linux 6
Applications Places System root@server:/home Tue Sep 1, 3:35 PM root
File Edit View Search Terminal Help
278
279
280 # A publicly accessible directory, but read only, except for people
281 # in
282 ; [public]
283 ; comment = Public Stuff
284 ; path = /home/samba
285 ; public = yes
286 ; writable = yes
287 ; printable = no
288 ; write list = +staff
289
290
291 [testsamba]
292 comment = Public Stuff
293 path = /home/testsamba
294 public = yes
295 writable = yes
296 printable = no
297 write list = Admin Adminstrator
7 lines yanked 282,1 Bot
```

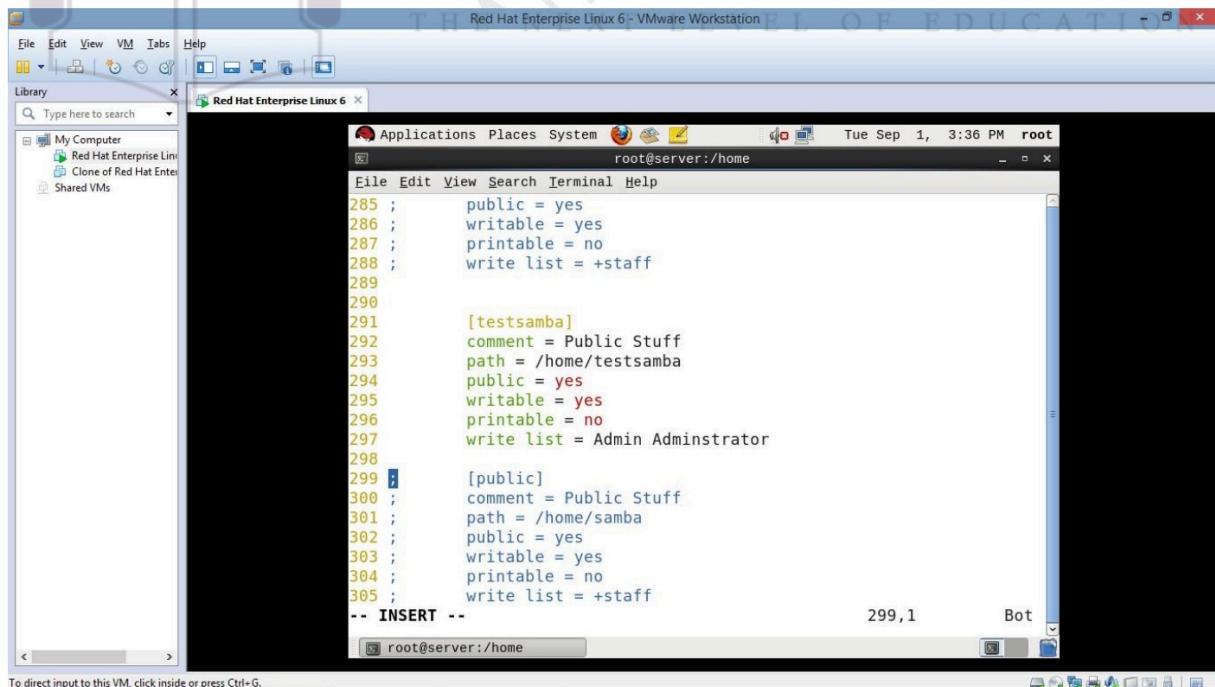
Linux Administration Practical Manual

Go to Insert mode -> press ‘ i ’ -> press Enter and now paste it at the end



```
Red Hat Enterprise Linux 6 - VMware Workstation
File Edit View VM Tabs Help
Library
Type here to search
My Computer
Red Hat Enterprise Lin
Clone of Red Hat Ente
Shared VMs
Red Hat Enterprise Linux 6
Applications Places System root@server:/home Tue Sep 1, 3:35 PM root
File Edit View Search Terminal Help
278
279
280 # A publicly accessible directory, but read only, except for people
in
281 # the "staff" group
282 ; [public]
283 ; comment = Public Stuff
284 ; path = /home/samba
285 ; public = yes
286 ; writable = yes
287 ; printable = no
288 ; write list = +staff
289
290
291 [testsamba]
292 comment = Public Stuff
293 path = /home/testsamba
294 ; public = yes
295 ; writable = yes
296 ; printable = no
297 ; write list = Admin Adminstrator
-- INSERT --
294,1 Bot
root@server:/home
To direct input to this VM, click inside or press Ctrl+G.
```

To paste come out of Insert Mode – Press Esc Key -> press ‘p’



```
Red Hat Enterprise Linux 6 - VMware Workstation
File Edit View VM Tabs Help
Library
Type here to search
My Computer
Red Hat Enterprise Lin
Clone of Red Hat Ente
Shared VMs
Red Hat Enterprise Linux 6
Applications Places System root@server:/home Tue Sep 1, 3:36 PM root
File Edit View Search Terminal Help
285 ; public = yes
286 ; writable = yes
287 ; printable = no
288 ; write list = +staff
289
290
291 [testsamba]
292 comment = Public Stuff
293 path = /home/testsamba
294 ; public = yes
295 ; writable = yes
296 ; printable = no
297 ; write list = Admin Adminstrator
298 ;
299 [public]
300 ; comment = Public Stuff
301 ; path = /home/samba
302 ; public = yes
303 ; writable = yes
304 ; printable = no
305 ; write list = +staff
-- INSERT --
299,1 Bot
root@server:/home
To direct input to this VM, click inside or press Ctrl+G.
```

Linux Administration Practical Manual

Uncomment all the 7 lines and make the following changes.

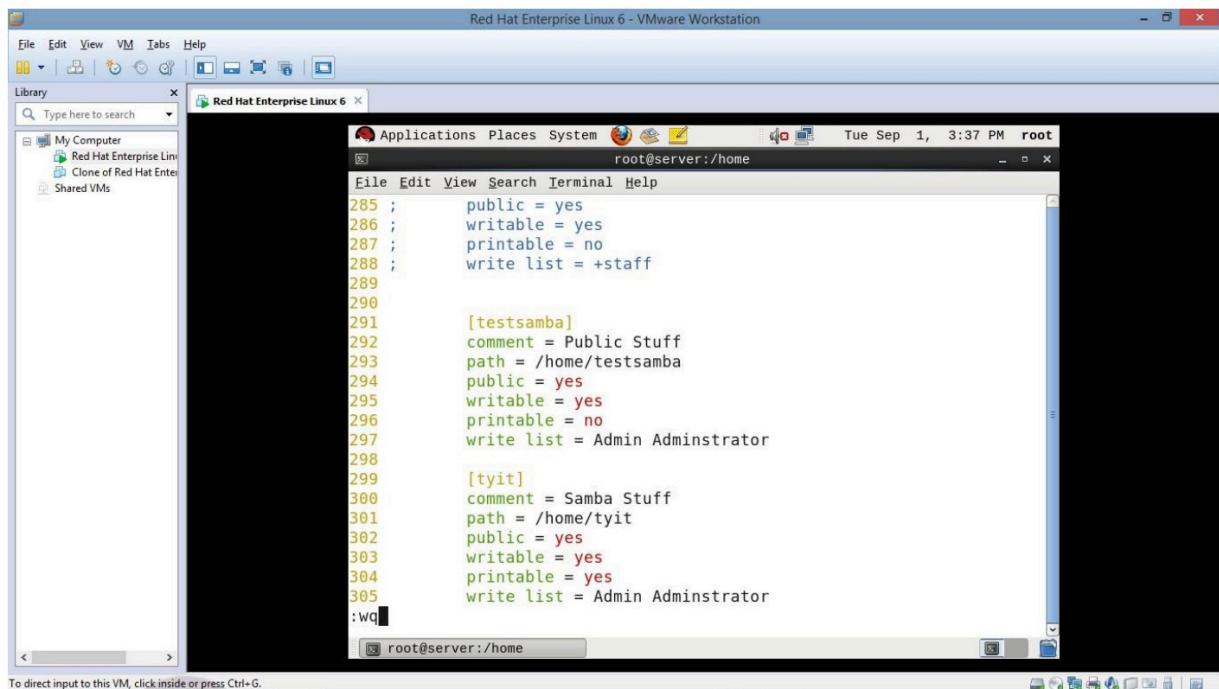
```
Red Hat Enterprise Linux 6 - VMware Workstation
File Edit View VM Tabs Help
Library Type here to search
My Computer
Red Hat Enterprise Lin
Clone of Red Hat Enter
Shared VMs
Red Hat Enterprise Linux 6
root@server:/home
root@server:/home
File Edit View Search Terminal Help
Tue Sep 1, 3:37 PM root
285 ; public = yes
286 ; writable = yes
287 ; printable = no
288 ; write list = +staff
289
290
291 [testsamba]
292 comment = Public Stuff
293 path = /home/testsamba
294 public = yes
295 writable = yes
296 printable = no
297 write list = Admin Administrator
298
299 [tyit]
300 comment = Samba Stuff
301 path = /home/tyit
302 public = yes
303 writable = yes
304 printable = yes
305 write list = Admin Administrator
-- INSERT --
305,33-40 Bot
root@server:/home
To direct input to this VM, click inside or press Ctrl+G.
```

After changes line should look as follows:

[tyit]
comment = samba stuff
path = /tyit
public=yes
writable =yes
;printable =yes
write list = Admin Administrator

Save the configuration file - > Press Esc Key and type :wq

Linux Administration Practical Manual



```
root@server:/home
[public]
public = yes
writable = yes
printable = no
write list = +staff

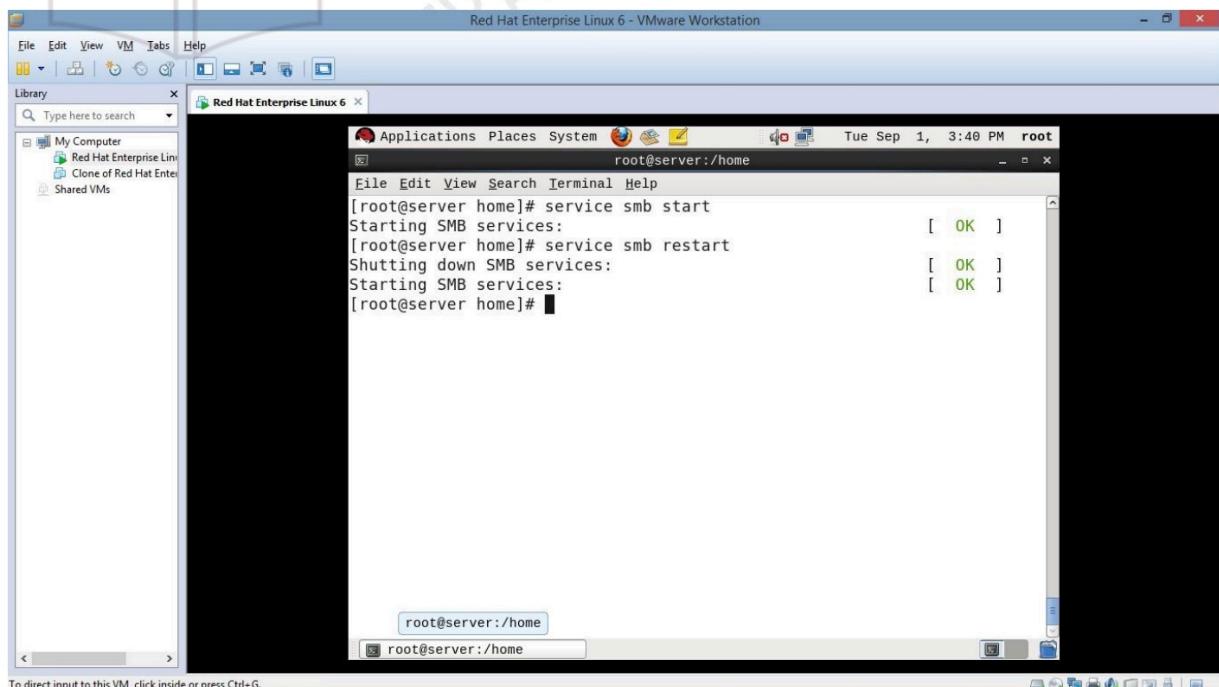
[public]
comment = Public Stuff
path = /home/test
public = yes
writable = yes
printable = no
write list = Admin Adminstrator

[tyit]
comment = Samba Stuff
path = /home/tyit
public = yes
writable = yes
printable = yes
write list = Admin Adminstrator

:wq
```

Now start the smb service

```
#] service smb start
#] service smb restart
```



```
[root@server home]# service smb start
Starting SMB services: [ OK ]
[root@server home]# service smb restart
Shutting down SMB services: [ OK ]
Starting SMB services: [ OK ]
[root@server home]#
```

Linux Administration Practical Manual

Execute the command testparm to test the parameters

```
[root@server ~]# testparm
Load smb config files from /etc/samba/smb.conf
rlimit_max: rlimit_max (1024) below minimum Windows limit (16384)
Processing section "[homes]"
Processing section "[printers]"
Processing section "[testsamba]"
Processing section "[tyit]"
Loaded services file OK.
Server role: ROLE_STANDALONE
Press enter to see a dump of your service definitions
[

[root@server ~]#
[root@server ~]# cat /etc/samba/smb.conf
[printers]
    comment = All Printers
    path = /var/spool/samba
    printable = Yes
    browseable = No

[testsamba]
    comment = Public Stuff
    path = /home/testsamba
    write list = Admin, Administrator
    read only = No
    guest ok = Yes

[tyit]
    comment = Samba Stuff
    path = /home/tyit
    write list = Admin, Administrator
    read only = No
    guest ok = Yes
    printable = Yes
[root@server ~]#
```

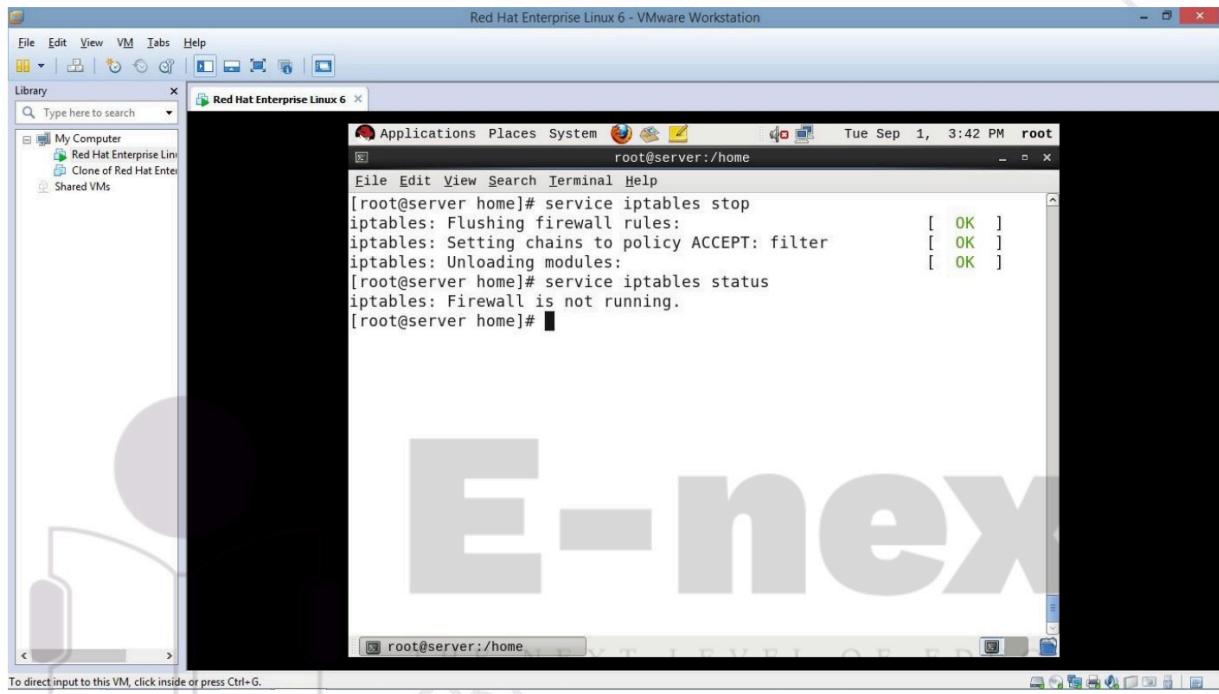
Linux Administration Practical Manual

Stop Firewalls

```
# service iptables stop
```

To check whether firewalls are stopped

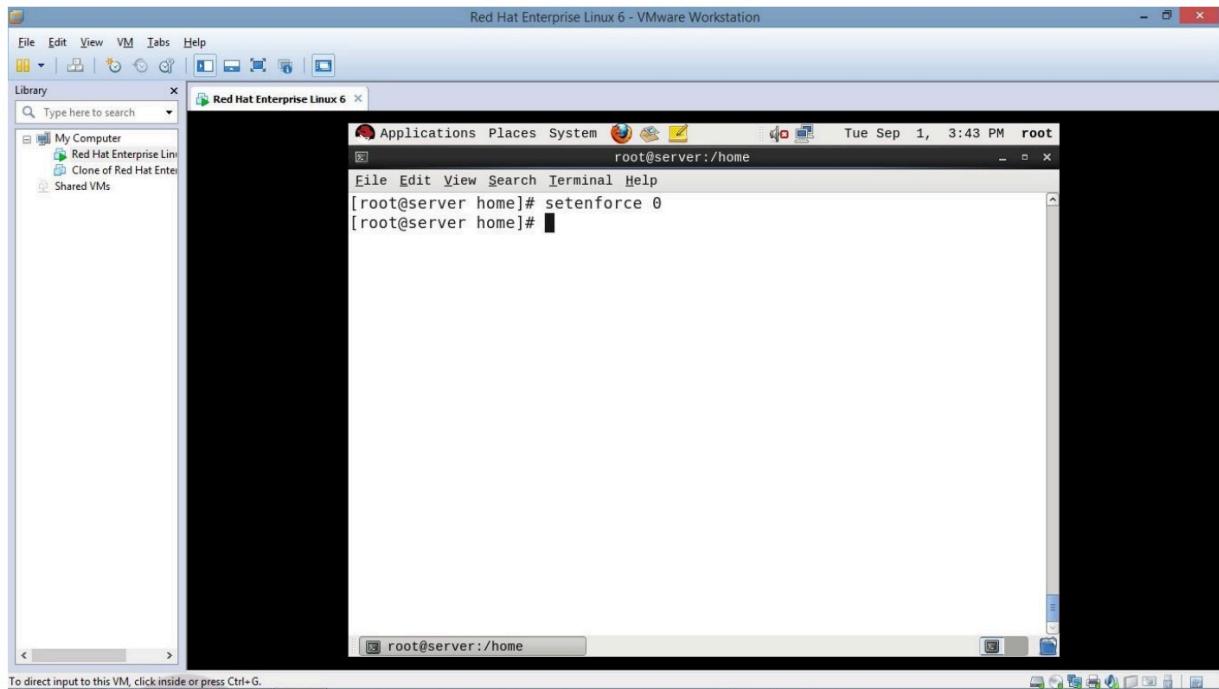
```
# service iptables status
```



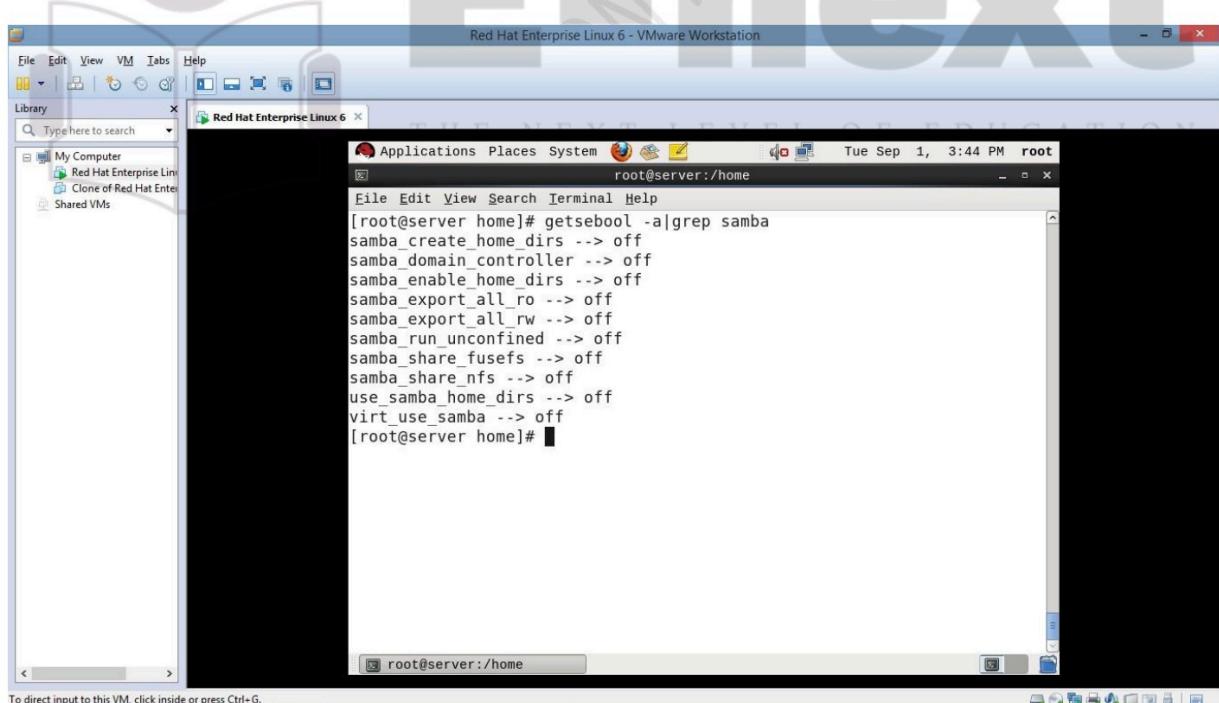
To give temporary read only permissions

```
# setenforce 0
```

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getsebool -a | grep samba

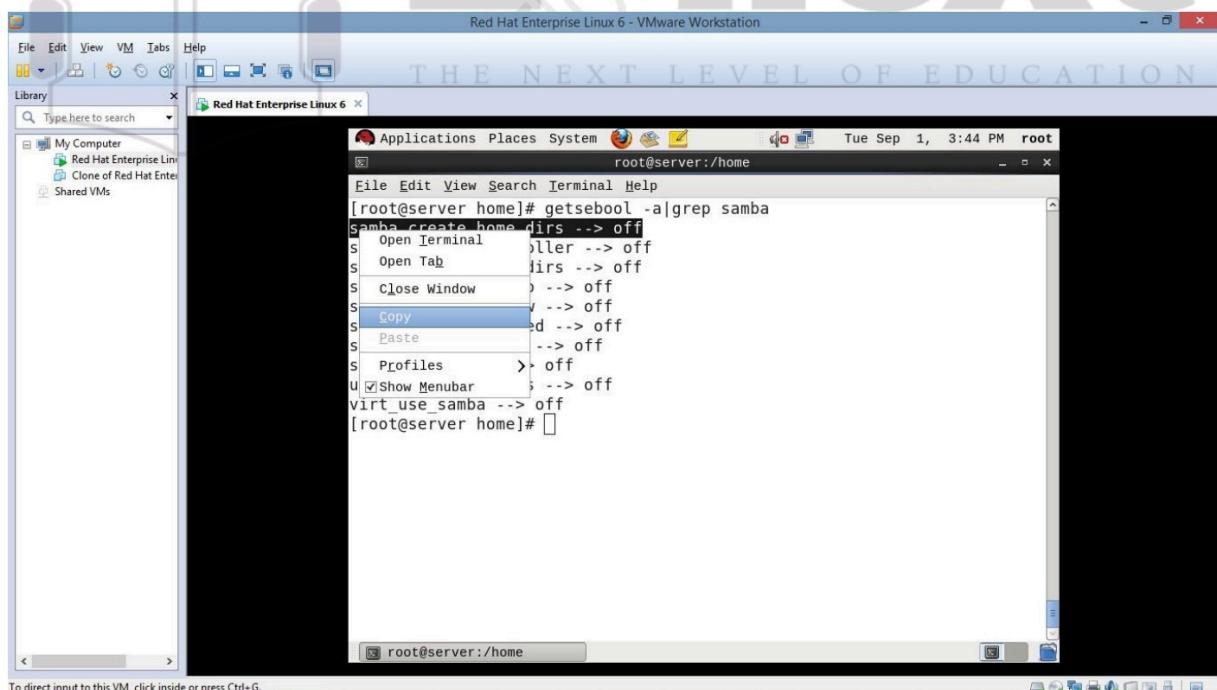
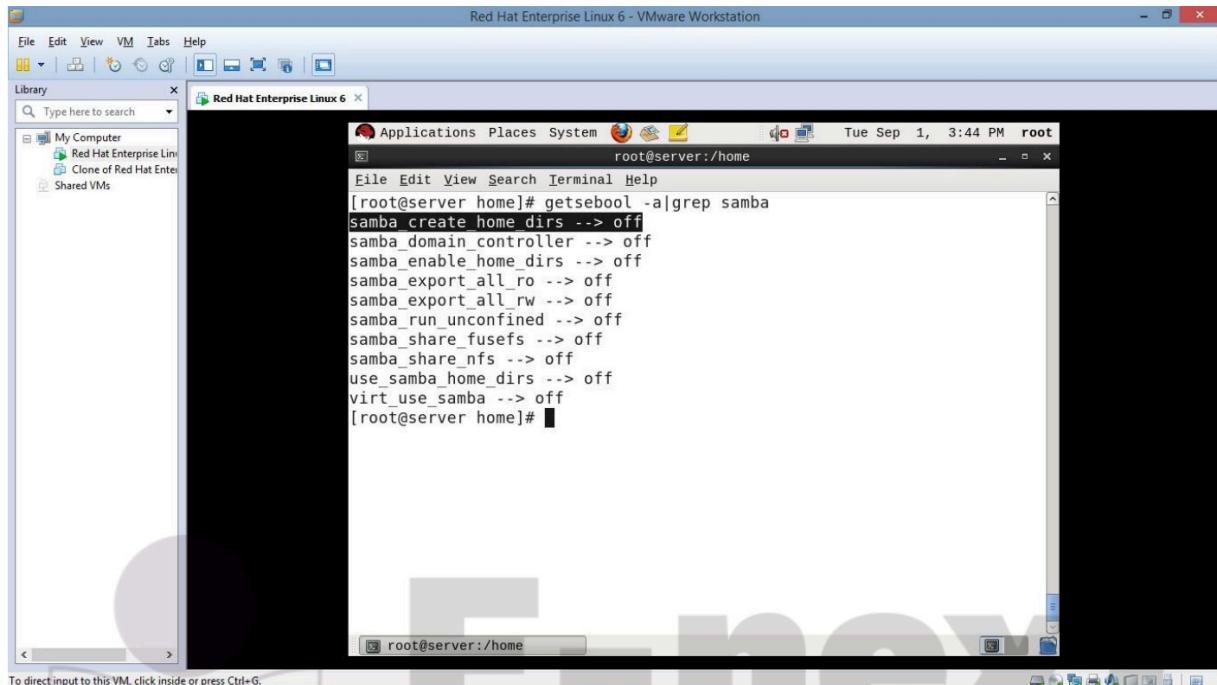


In this file home directory is off

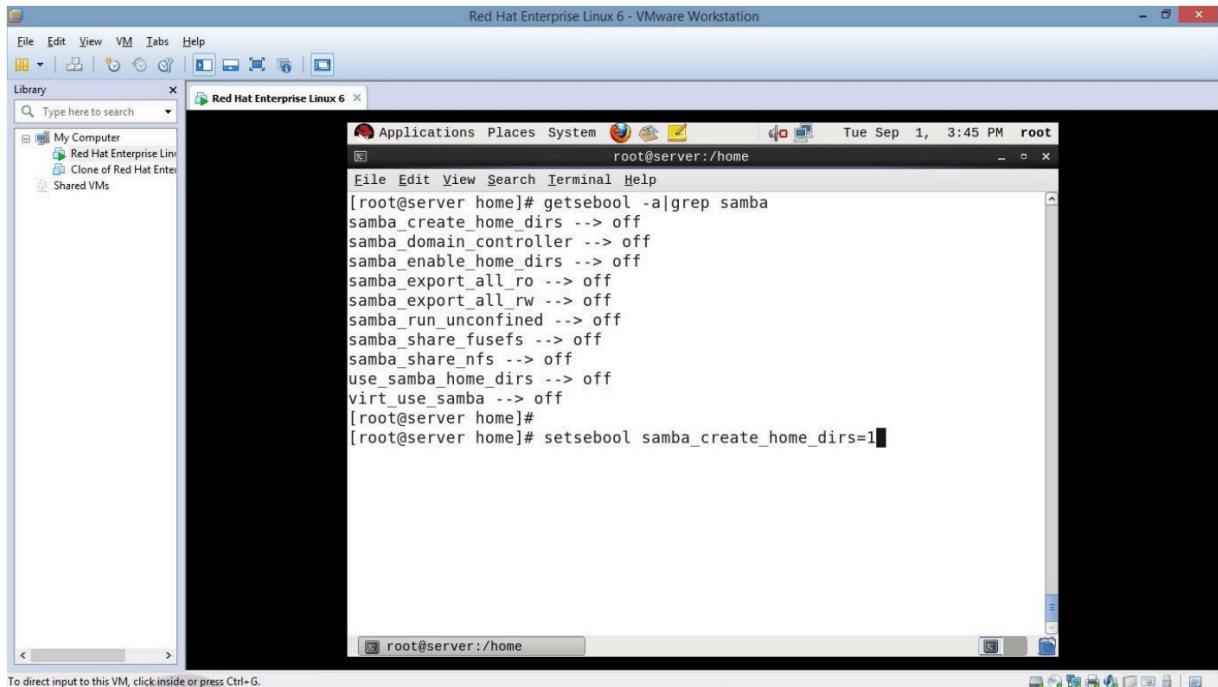
To make it on copy first line and paste with setsebool command as follows

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#setsebool samba_enable_home_dirs=1



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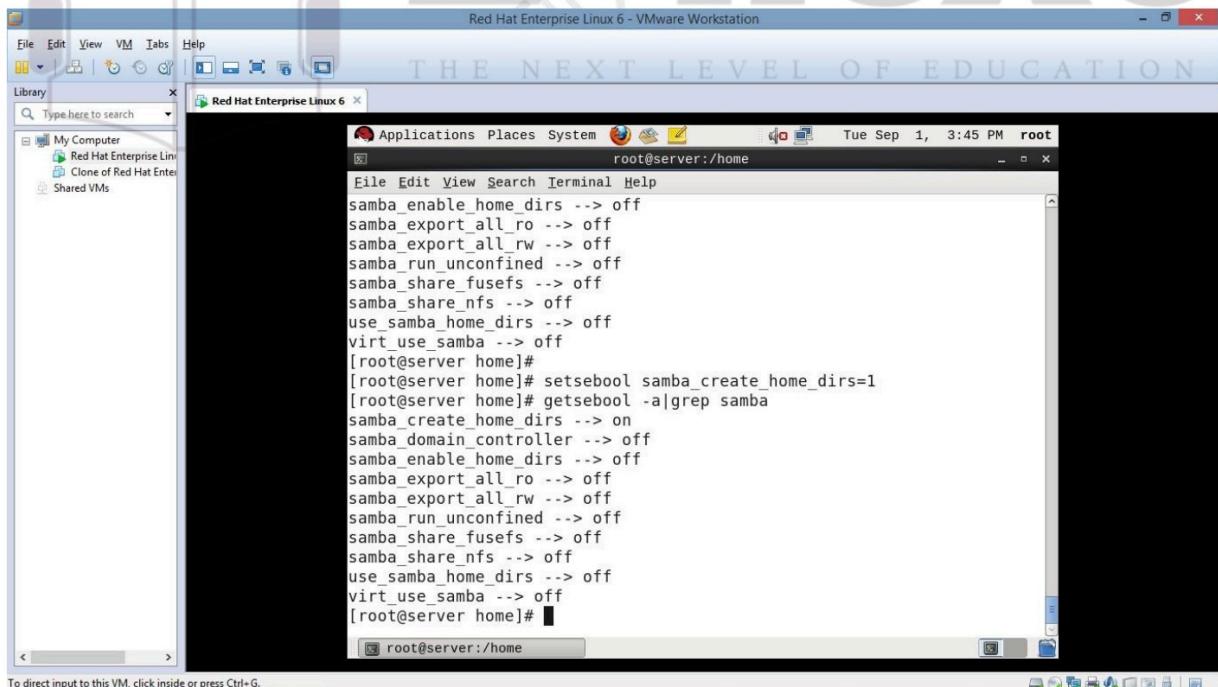


The screenshot shows a VMware Workstation interface with a Red Hat Enterprise Linux 6 virtual machine running. The terminal window displays the following command and its output:

```
[root@server home]# getsebool -a|grep samba
samba_create_home_dirs --> off
samba_domain_controller --> off
samba_enable_home_dirs --> off
samba_export_all_ro --> off
samba_export_all_rw --> off
samba_run_unconfined --> off
samba_share_fusefs --> off
samba_share_nfs --> off
use_samba_home_dirs --> off
virt_use_samba --> off
[root@server home]#
[root@server home]# setsebool samba_create_home_dirs=1
```

Now to check whether home directory is enabled:

getsebool -a | grep samba



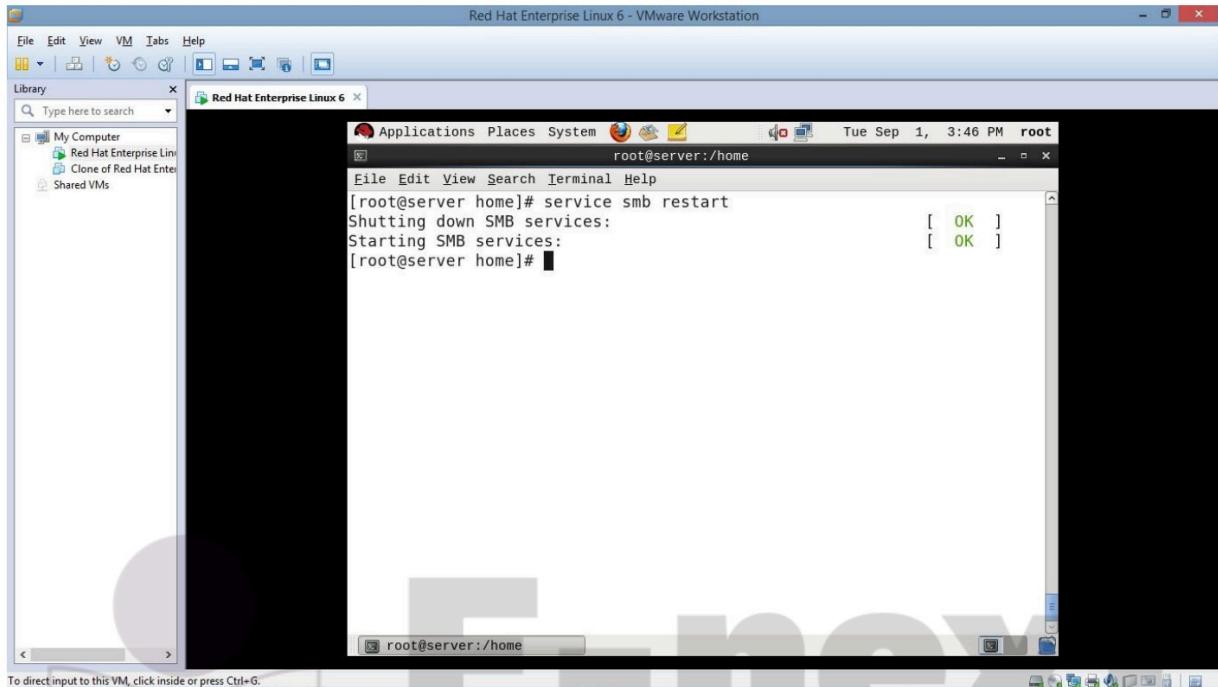
The screenshot shows a VMware Workstation interface with a Red Hat Enterprise Linux 6 virtual machine running. The terminal window displays the following command and its output, showing the state of the samba_create_home_dirs boolean variable:

```
root@server:~# getsebool -a|grep samba
samba_enable_home_dirs --> off
samba_export_all_ro --> off
samba_export_all_rw --> off
samba_run_unconfined --> off
samba_share_fusefs --> off
samba_share_nfs --> off
use_samba_home_dirs --> off
virt_use_samba --> off
[root@server home]#
[root@server home]# setsebool samba_create_home_dirs=1
[root@server home]# getsebool -a|grep samba
samba_create_home_dirs --> on
samba_domain_controller --> off
samba_enable_home_dirs --> off
samba_export_all_ro --> off
samba_export_all_rw --> off
samba_run_unconfined --> off
samba_share_fusefs --> off
samba_share_nfs --> off
use_samba_home_dirs --> off
virt_use_samba --> off
[root@server home]#
```

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Restart the samba service

```
# service smb restart
```



Create a samba user and assign password

```
# useradd test1
```

```
# smbpasswd -a test1
```

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Enter the password and confirm password

```
[root@server home]# useradd test1
[root@server home]# smbpasswd -a test1
New SMB password:
Retype new SMB password:
Added user test1.
[root@server home]#
```

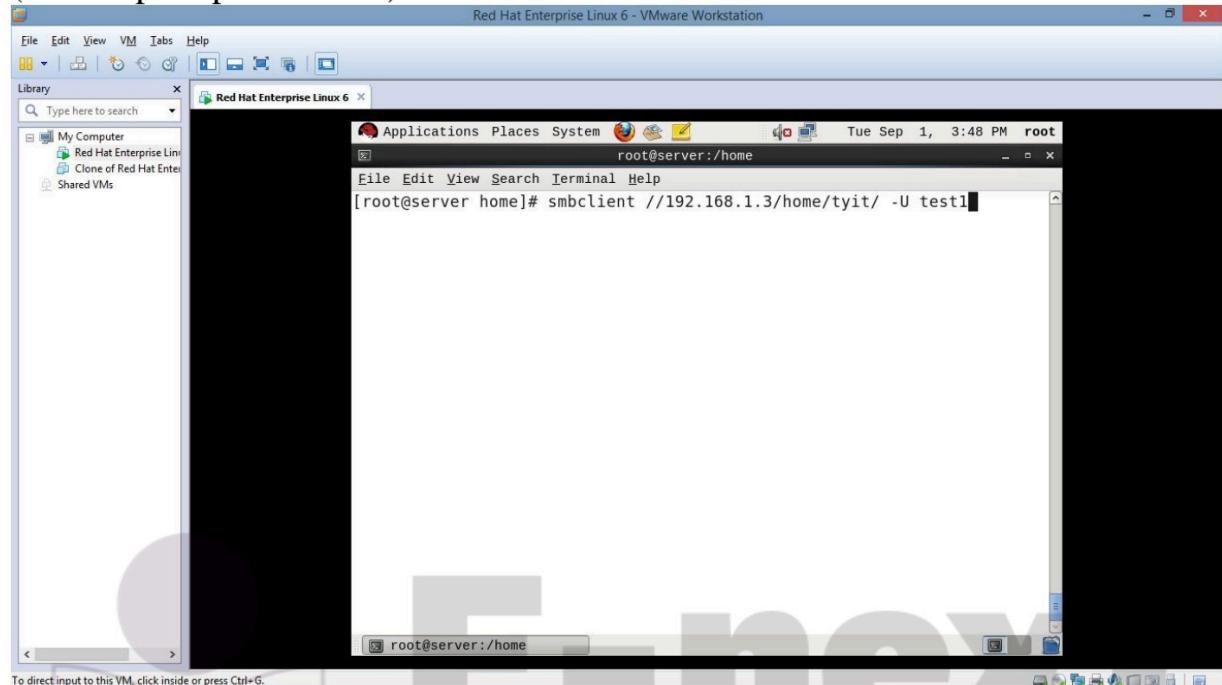
Restart the service
service smb restart

```
[root@server home]# service smb restart
Shutting down SMB services: [ OK ]
Starting SMB services: [ OK ]
[root@server home]#
```

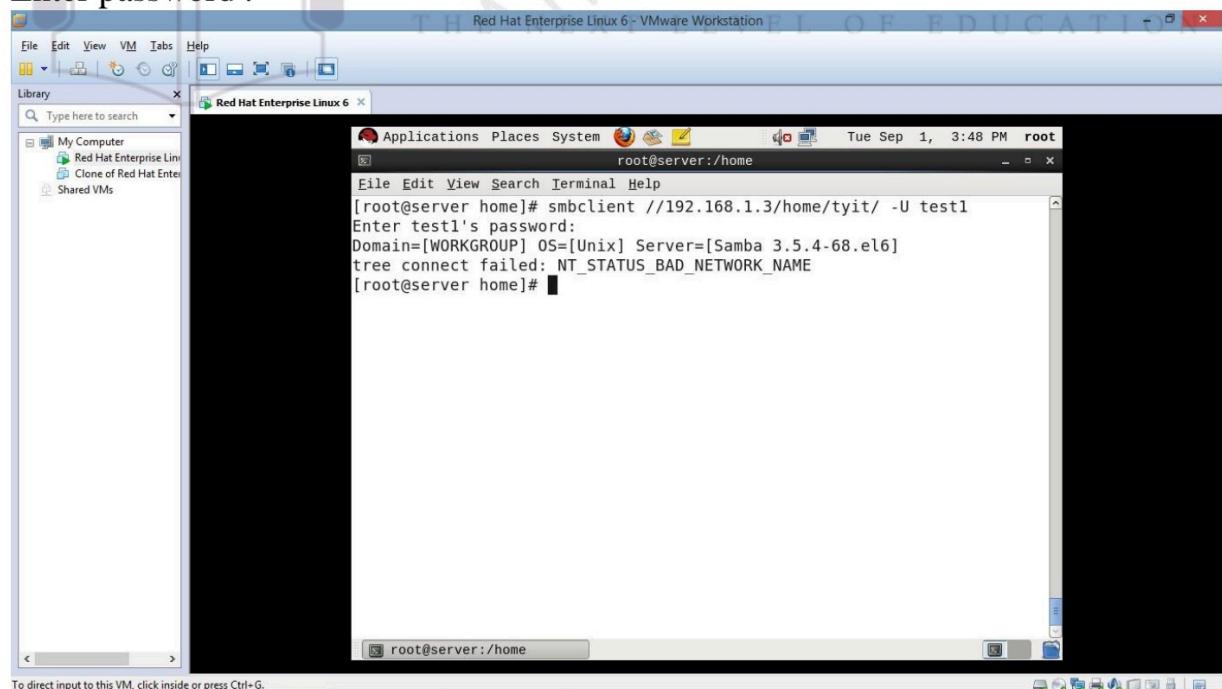
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#smbclient //192.168.1.3/home/tyit/ -U test1

(-U will prompt username)

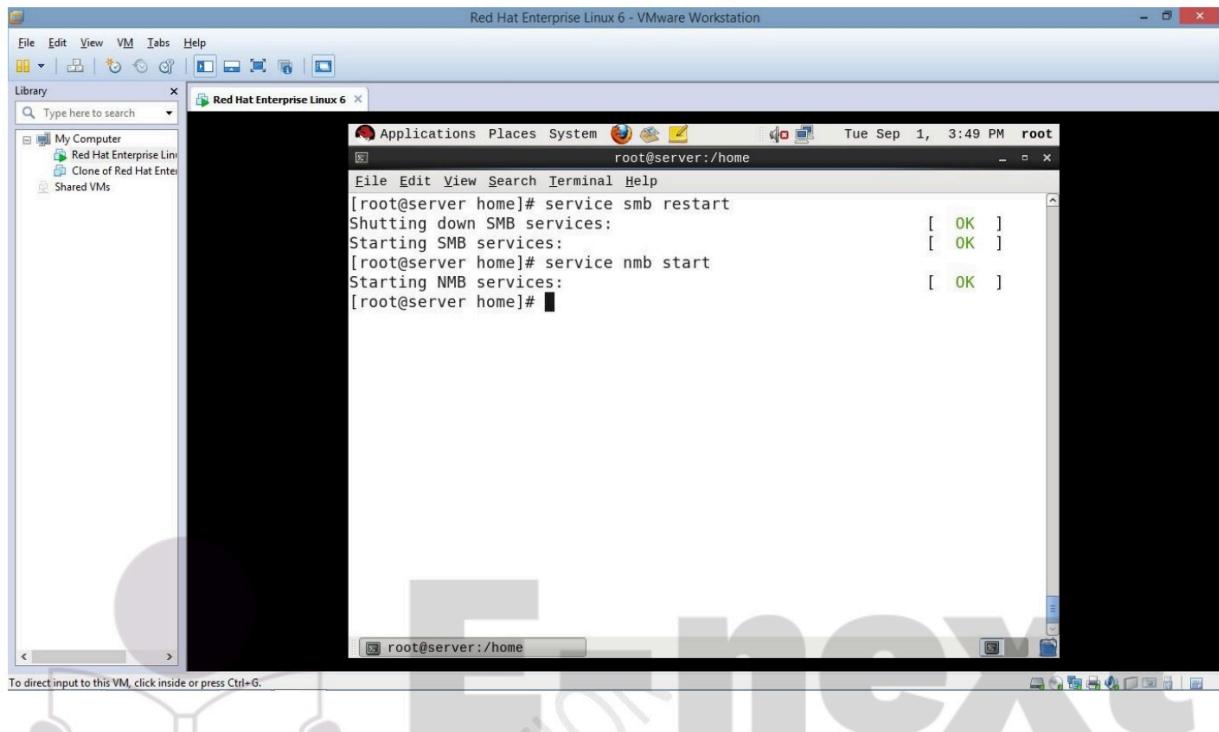


Enter password :



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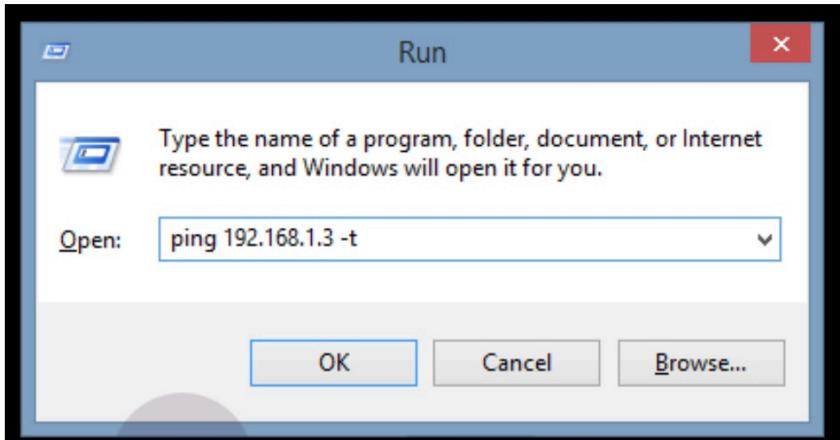
```
# service smb restart  
# service nmb start //start network services)
```



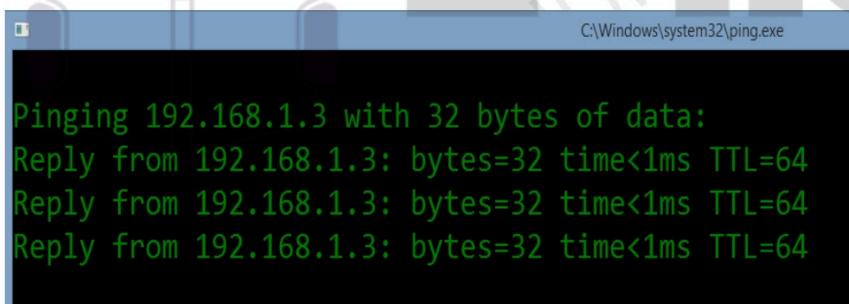
Go to Windows

Run Command

Type **ping 192.168.1.3 -t**



Check whether reply and response is working fine.

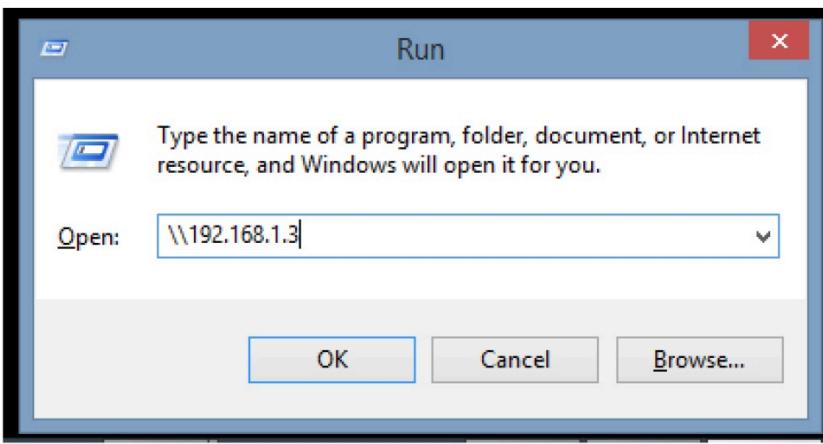


Close

Now to check whether files are been transferred from Samba to Windows

Run - > <\\192.168.1.3>

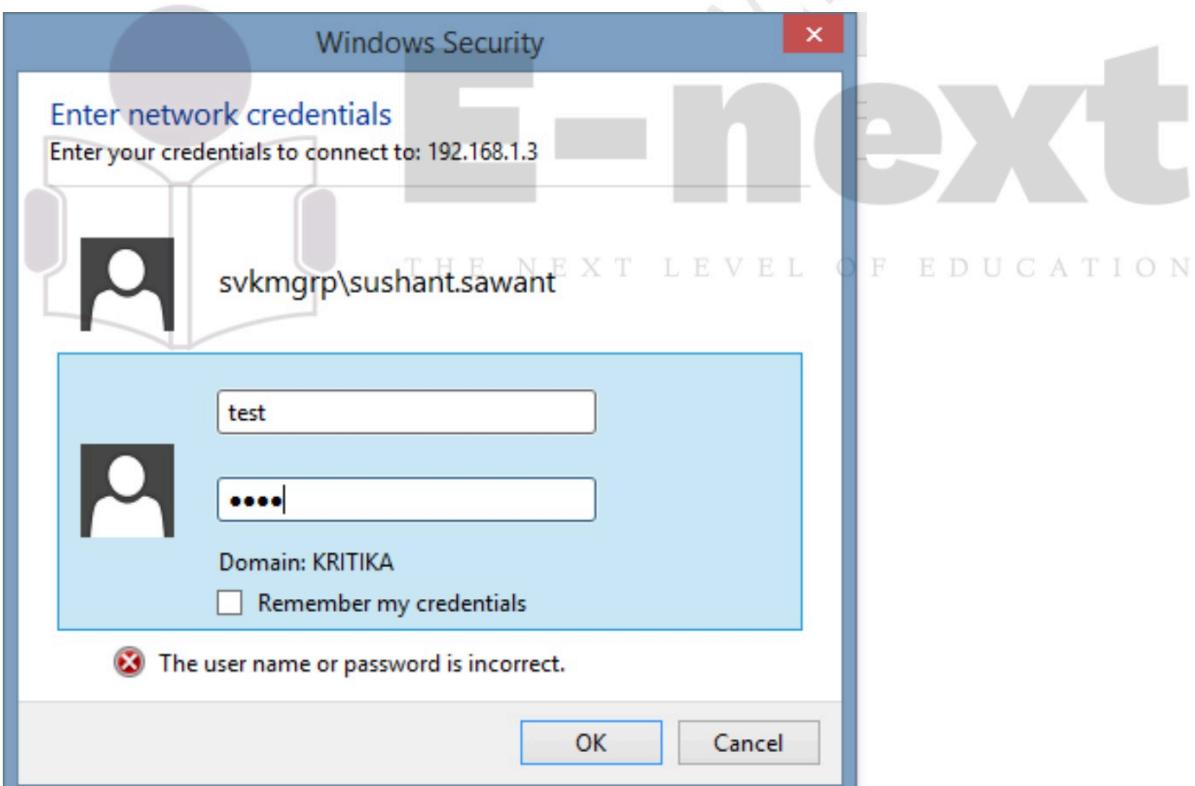
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It will prompt one dialog box asking for username and password

Enter Username – test1

Enter Password - *****

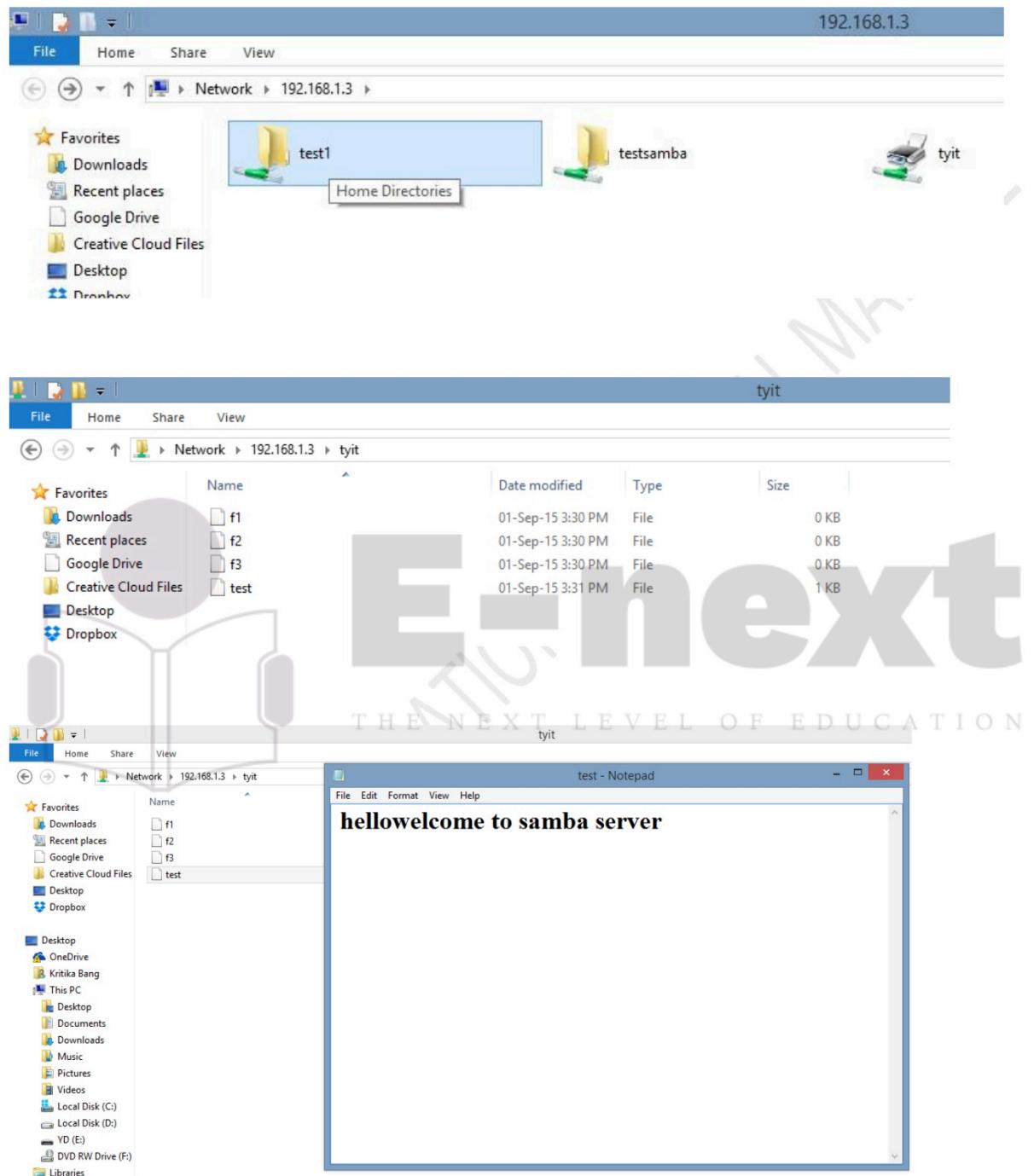


Now you will be able to see that files are transferred.

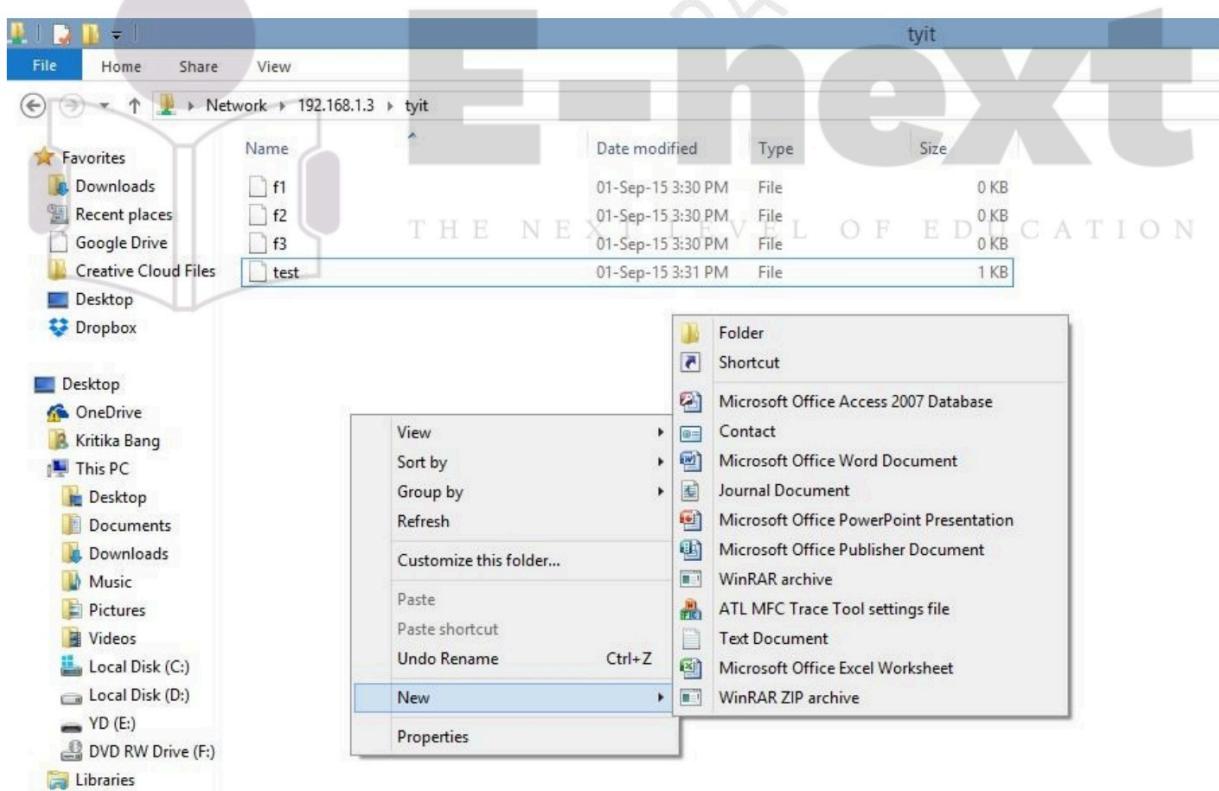
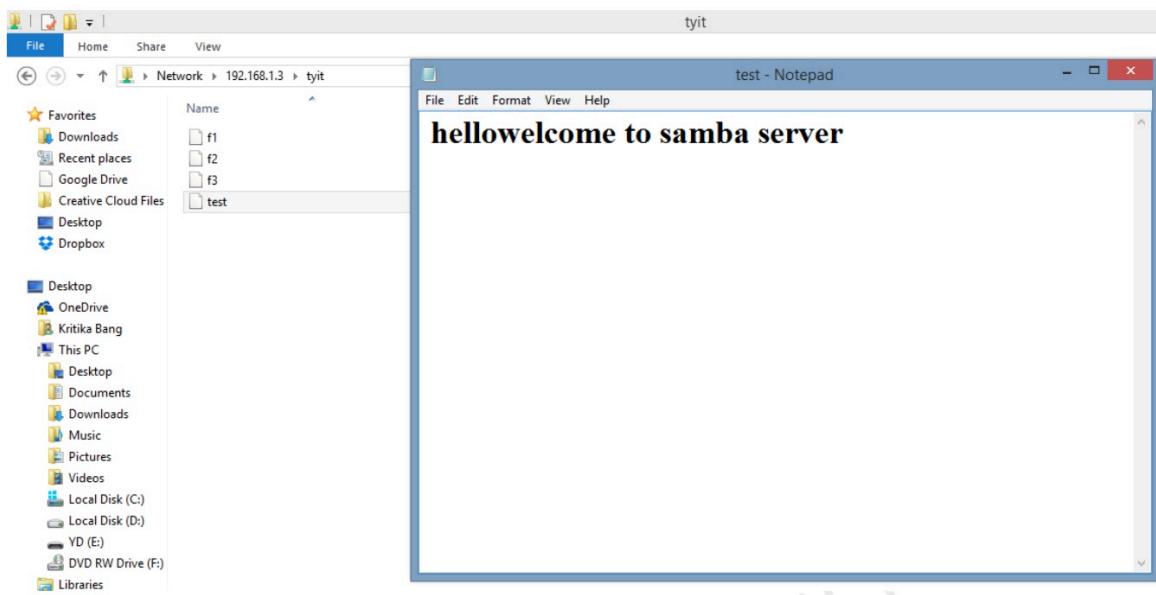
Now create a folder in Windows and check whether files from windows are

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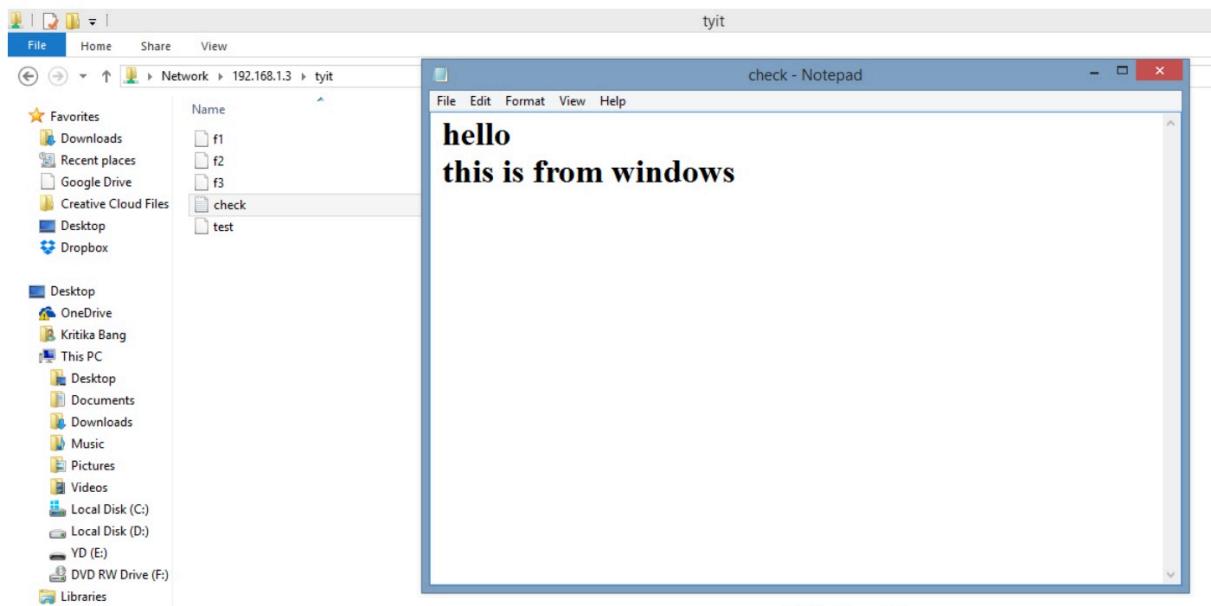
transferred to Linux



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In Linux – # ls

```
root@server:/home/tyit
File Edit View Search Terminal Help
[root@server tyit]# ls
check.txt f1 f2 f3 test
[root@server tyit]#
```

A screenshot of a Linux terminal window. The title bar shows 'root@server:/home/tyit'. The terminal prompt is '[root@server tyit]#'. The user runs the command 'ls', which lists files: 'check.txt', 'f1', 'f2', 'f3', and 'test'. The terminal window has a watermark 'E-NEXT PRACTICAL' and 'THE NEXT LEVEL OF EDUCATION'.

Files are transferred.

Summary : This practical shows how files are transferred from Linux to Windows and Windows to Linux.