

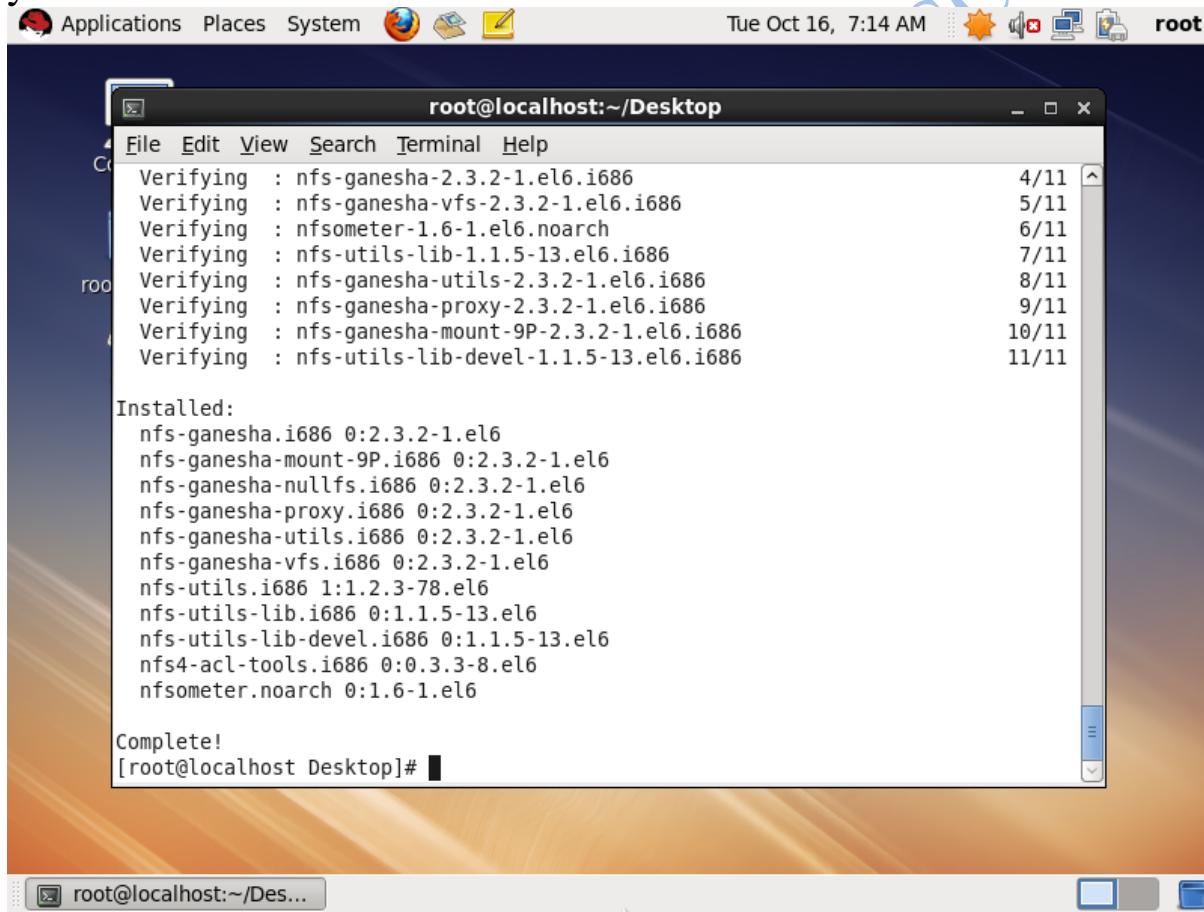
**VPM'S B.N.BANDODKAR COLLEGE OF SCIENCE  
THANE(W)  
DEPARTMENT OF IT  
TYBSc IT Sem5 LINUX SYSTEM ADMINISTRATION  
PRACTICAL MANUAL**

**Practical 6**

**6A) Configuring NFS Server and Client**

Run following command to install

`yum install nfs*`



The screenshot shows a terminal window titled "root@localhost:~/Desktop". The terminal displays the output of the "yum install nfs\*" command. The output shows the verification and installation of various NFS-related packages. The terminal window has a dark blue background and a light blue header bar. The desktop environment includes a top panel with icons for Applications, Places, System, and a date/time indicator (Tue Oct 16, 7:14 AM). The bottom of the screen shows a dock with several application icons.

```
root@localhost:~/Desktop
File Edit View Search Terminal Help
Verifying : nfs-ganesha-2.3.2-1.el6.i686 4/11
Verifying : nfs-ganesha-vfs-2.3.2-1.el6.i686 5/11
Verifying : nfsometer-1.6-1.el6.noarch 6/11
Verifying : nfs-utils-lib-1.1.5-13.el6.i686 7/11
Verifying : nfs-ganesha-utils-2.3.2-1.el6.i686 8/11
Verifying : nfs-ganesha-proxy-2.3.2-1.el6.i686 9/11
Verifying : nfs-ganesha-mount-9P-2.3.2-1.el6.i686 10/11
Verifying : nfs-utils-lib-devel-1.1.5-13.el6.i686 11/11

Installed:
nfs-ganesha.i686 0:2.3.2-1.el6
nfs-ganesha-mount-9P.i686 0:2.3.2-1.el6
nfs-ganesha-nullfs.i686 0:2.3.2-1.el6
nfs-ganesha-proxy.i686 0:2.3.2-1.el6
nfs-ganesha-utils.i686 0:2.3.2-1.el6
nfs-ganesha-vfs.i686 0:2.3.2-1.el6
nfs-utils.i686 1:1.2.3-78.el6
nfs-utils-lib.i686 0:1.1.5-13.el6
nfs-utils-lib-devel.i686 0:1.1.5-13.el6
nfs4-acl-tools.i686 0:0.3.3-8.el6
nfsometer.noarch 0:1.6-1.el6

Complete!
[root@localhost Desktop]#
```

## start services

```
Applications Places System Tue Oct 16, 7:20 AM root@localhost:~/Desktop
File Edit View Search Terminal Help
[root@localhost Desktop]# service nfs start
Starting NFS services: exportfs: No options for /redhat *: suggest *(sync) to avoid warning
exportfs: No host name given with /redhat (rw,sync), suggest *(rw,sync) to avoid warning
exportfs: incompatible duplicated export entries:
exportfs:      */redhat (0x424) [IGNORED]
exportfs:      */redhat (0x425)
[ OK ]
Starting NFS quotas: [ OK ]
Starting NFS mountd: [ OK ]
Starting NFS daemon: [ OK ]
Starting RPC idmapd: [ OK ]
[root@localhost Desktop]# chkconfig nfs on
[root@localhost Desktop]# service rpcbind status
rpcbind (pid 1017) is running...
[root@localhost Desktop]# sestatus
SELinux status:          enabled
SELinuxfs mount:         /selinux
Current mode:            permissive
Mode from config file:  permissive
Policy version:          24
Policy from config file: targeted
[root@localhost Desktop]#
```

## create directories

The screenshot shows a Linux desktop environment with a terminal window open. The terminal window title bar says "root@localhost:/". The terminal content shows the following command sequence:

```
[root@localhost /]# mkdir redhat
[root@localhost /]# vi /redhat/file.txt
[root@localhost /]# ls redhat
file.txt
[root@localhost /]# chmod 777 /redhat
[root@localhost /]# chmod 777 /redhat/file.txt
[root@localhost /]# ls
bin cgroup dev home lost+found mnt proc root selinux sys usr
boot data etc lib media opt redhat sbin srv tmp var
[root@localhost /]# chmod 777 data
[root@localhost /]# ls
bin cgroup dev home lost+found mnt proc root selinux sys usr
boot data etc lib media opt redhat sbin srv tmp var
[root@localhost /]#
```

The word "redhat" is highlighted in green in several of the directory listing commands.

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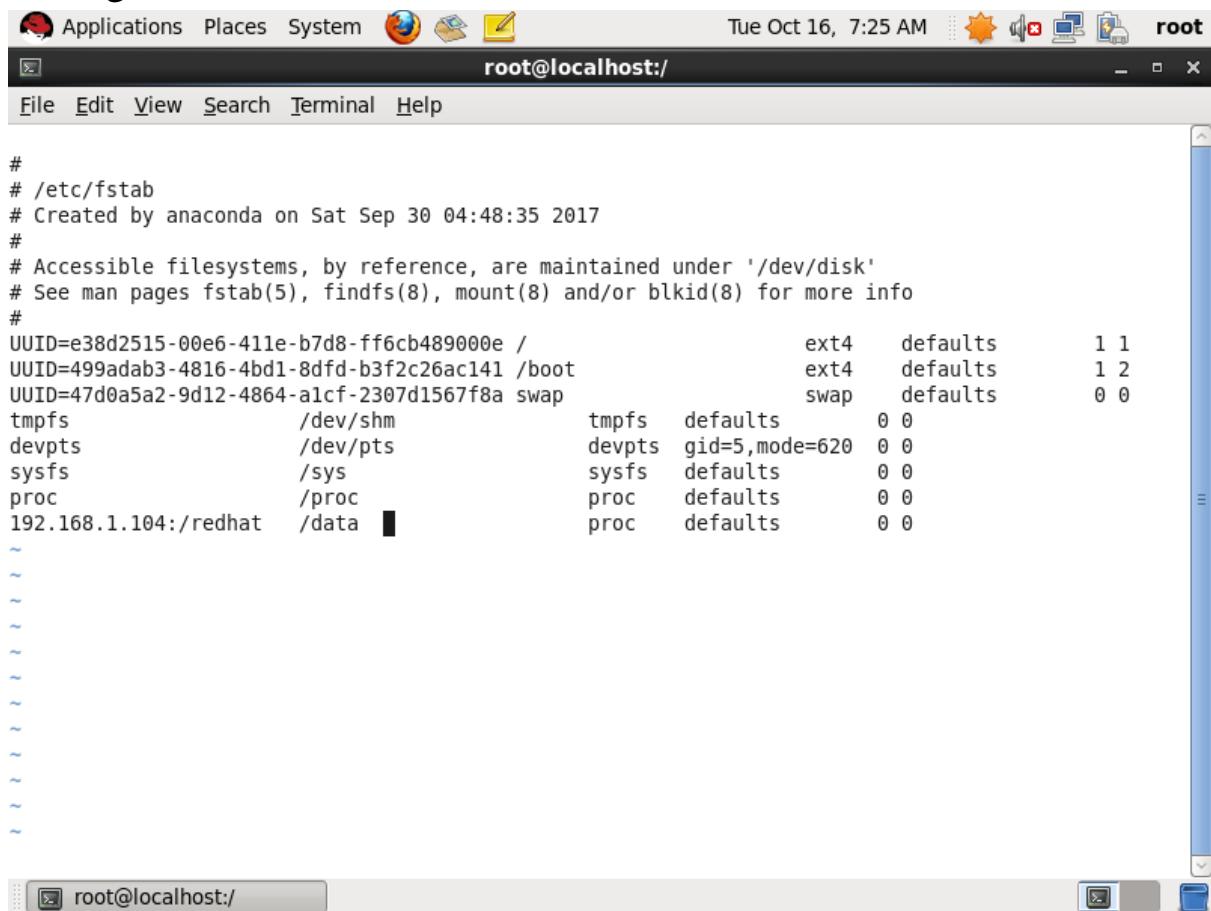
## Configure /etc/exports file

The screenshot shows a terminal window titled "root@localhost:/". The window has a menu bar with "File", "Edit", "View", "Search", "Terminal", and "Help". The status bar at the bottom shows the path "/etc/exports" and the file statistics "1L, 20C". The main area of the terminal displays the contents of the /etc/exports file:

```
/redhat * (rw,sync)
```

The file contains a single line: "/redhat \* (rw,sync)". This line exports the directory "/redhat" to all IP addresses (\*), giving it read/write (rw) permissions and synchronizing writes (sync).

## Configure /etc/fstab



The screenshot shows a terminal window titled "root@localhost:/". The window displays the contents of the /etc/fstab file. The file contains the following entries:

```
#  
# /etc/fstab  
# Created by anaconda on Sat Sep 30 04:48:35 2017  
#  
# Accessible filesystems, by reference, are maintained under '/dev/disk'  
# See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info  
#  
UUID=e38d2515-00e6-411e-b7d8-ff6cb489000e / ext4 defaults 1 1  
UUID=499adab3-4816-4bd1-8dfd-b3f2c26ac141 /boot ext4 defaults 1 2  
UUID=47d0a5a2-9d12-4864-a1cf-2307d1567f8a swap swap defaults 0 0  
tmpfs /dev/shm tmpfs defaults 0 0  
devpts /dev/pts devpts gid=5,mode=620 0 0  
sysfs /sys sysfs defaults 0 0  
proc /proc proc defaults 0 0  
192.168.1.104:/redhat /data proc defaults 0 0
```

The terminal window has a title bar "root@localhost:/", a menu bar "File Edit View Search Terminal Help", and a toolbar with various icons. The bottom status bar shows the path "root@localhost:/".

## Restart nfs

The screenshot shows a terminal window titled 'root@localhost:/'. The window contains the following text:

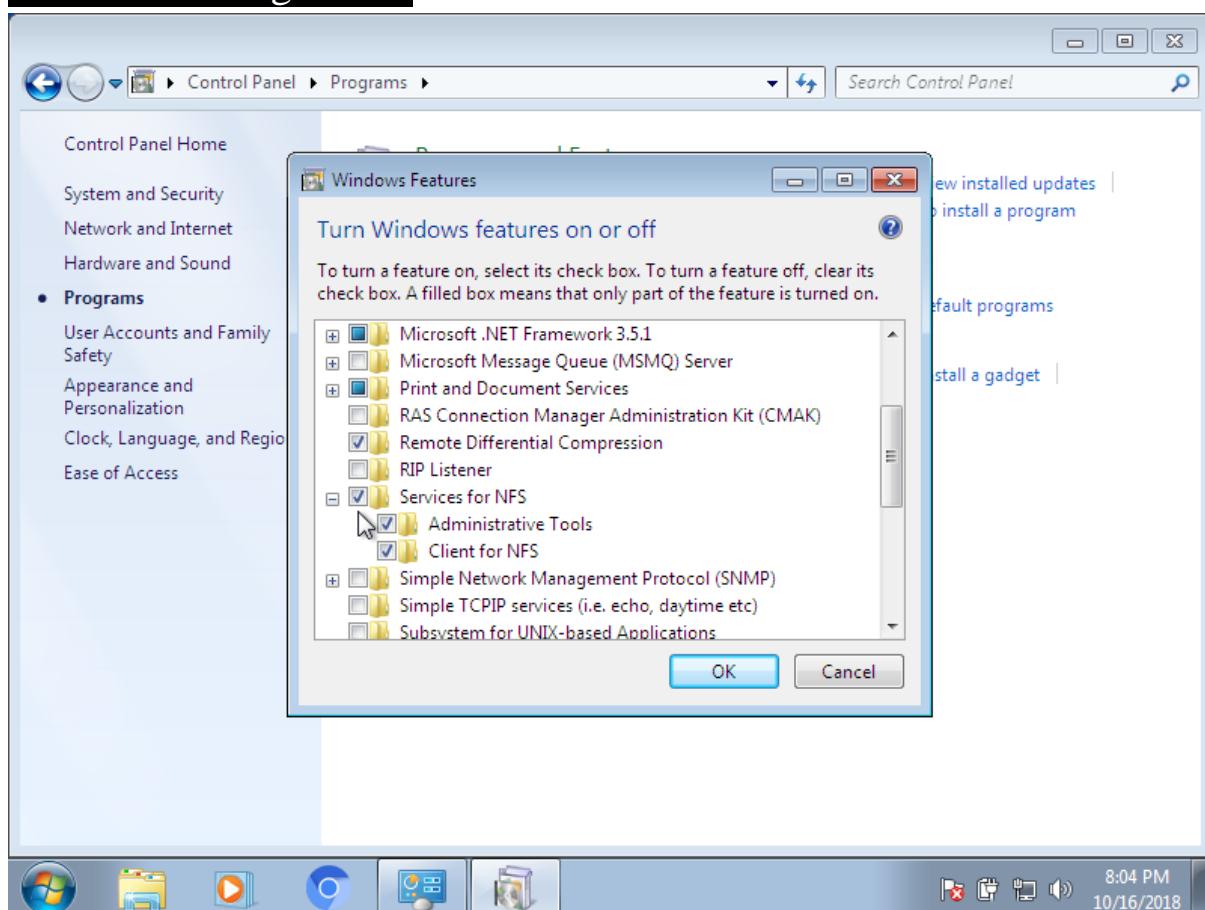
```
Tue Oct 16, 7:27 AM root@localhost:/ File Edit View Search Terminal Help Close Window
[root@localhost /]# service nfs restart
Shutting down NFS daemon: [ OK ]
Shutting down NFS mountd: [ OK ]
Shutting down NFS quotas: [ OK ]
Shutting down NFS services: [ OK ]
Shutting down RPC idmapd: [ OK ]
Starting NFS services: [ OK ]
Starting NFS quotas: [ OK ]
Starting NFS mountd: [ OK ]
Starting NFS daemon: [ OK ]
Starting RPC idmapd: [ OK ]
[root@localhost /]#
[root@localhost /]#
```

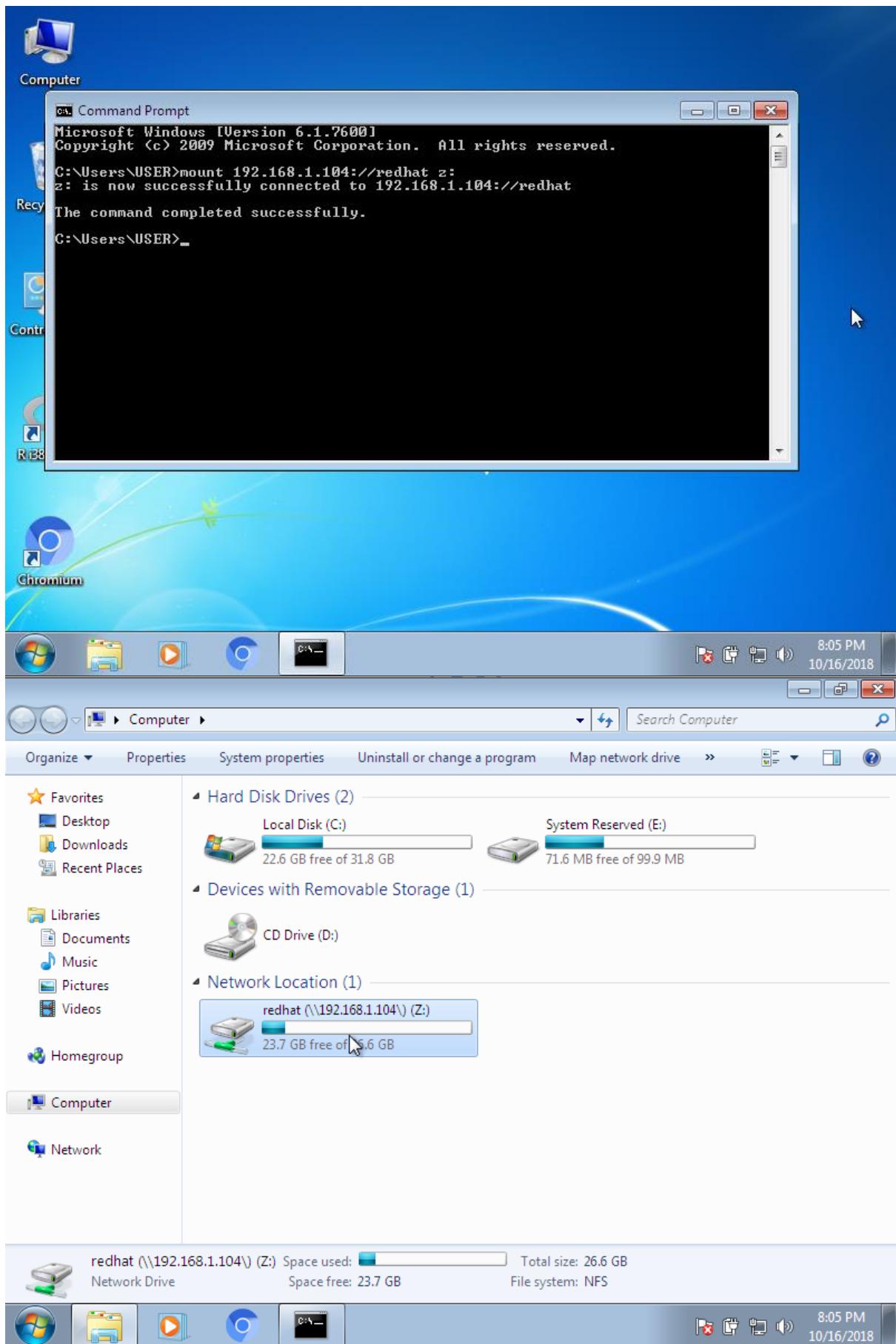
The terminal window has a standard Linux desktop interface with icons for Applications, Places, System, and various system status indicators at the top. The bottom of the window shows the desktop environment's taskbar.

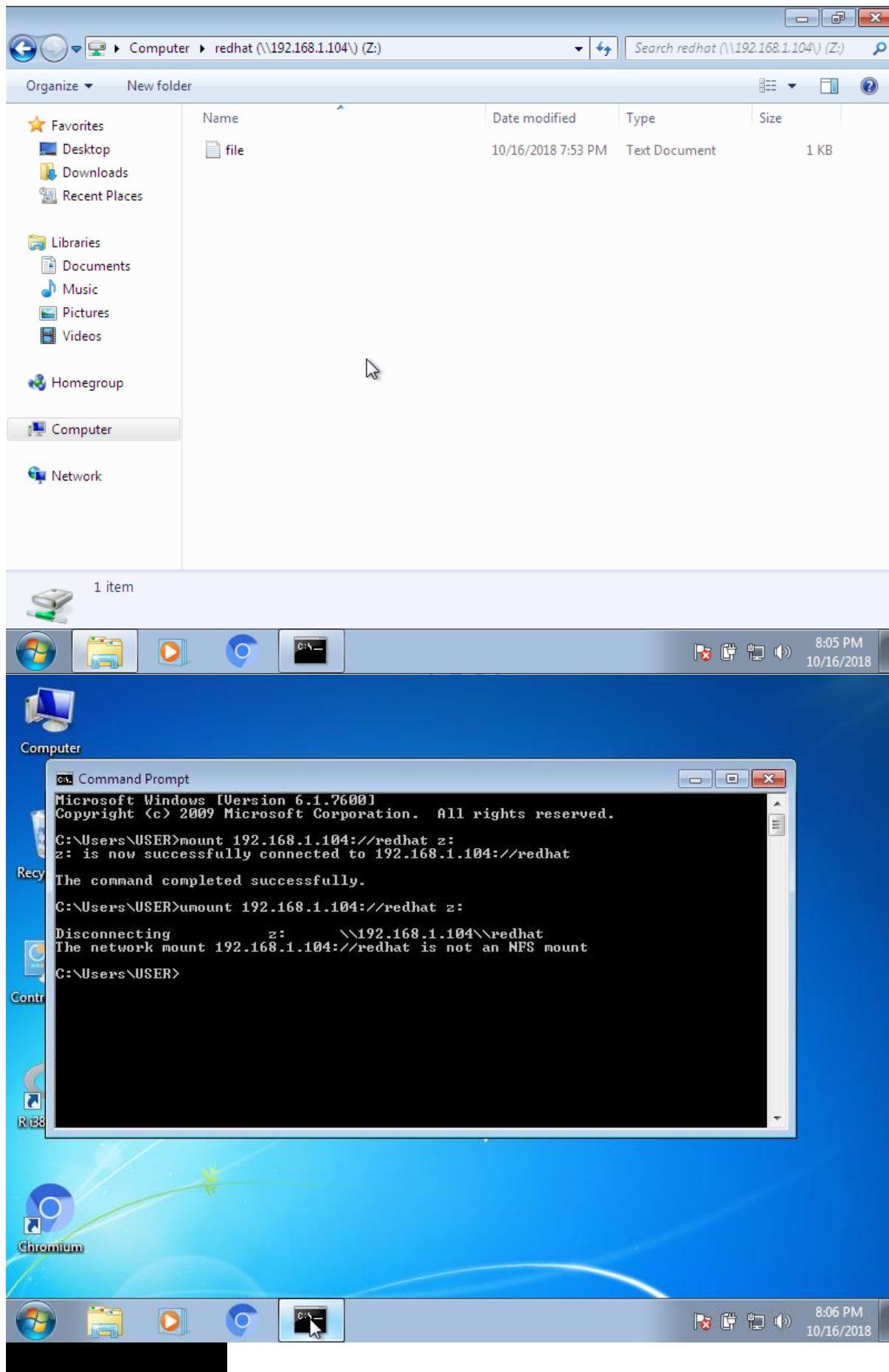
The screenshot shows a terminal window titled "root@localhost:/". The terminal displays the following command-line session:

```
[root@localhost ~]# service nfs restart
Shutting down NFS daemon: [ OK ]
Shutting down NFS mountd: [ OK ]
Shutting down NFS quotas: [ OK ]
Shutting down NFS services: [ OK ]
Shutting down RPC idmapd: [ OK ]
Starting NFS services: [ OK ]
Starting NFS quotas: [ OK ]
Starting NFS mountd: [ OK ]
Starting NFS daemon: [ OK ]
Starting RPC idmapd: [ OK ]
[root@localhost ~]#
[root@localhost ~]# mount 192.168.1.104:/redhat /data
[root@localhost ~]# ls redhat
file.txt
[root@localhost ~]# ls data
file.txt
[root@localhost ~]# umount 192.168.1.104:/redhat /data
umount.nfs: 127.0.0.1:/redhat on /data is not an NFS filesystem
[root@localhost ~]# ls redhat
file.txt
[root@localhost ~]# ls data
[root@localhost ~]#
```

## Windows configuration







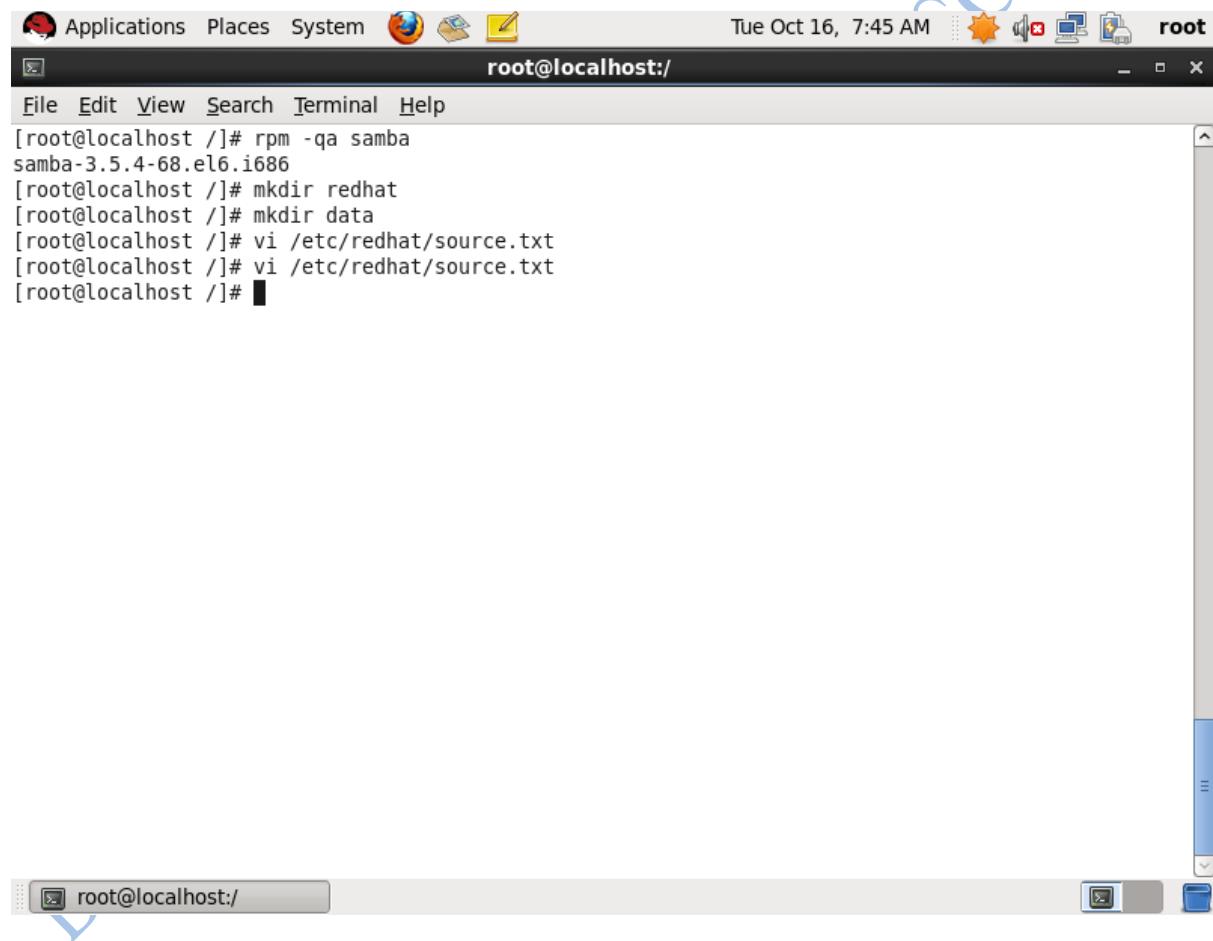
## 6b)Samba configuration

Install samba using following command

yum install samba\*

service smb start

chkconfig smb on



The screenshot shows a terminal window titled 'root@localhost:/'. The window has a dark blue header bar with icons for Applications, Places, System, and a browser. The title bar displays the date and time as 'Tue Oct 16, 7:45 AM' and the user as 'root@localhost:/'. The main area of the terminal shows the following command history:

```
[root@localhost /]# rpm -qa samba  
samba-3.5.4-68.el6.i686  
[root@localhost /]# mkdir redhat  
[root@localhost /]# mkdir data  
[root@localhost /]# vi /etc/redhat/source.txt  
[root@localhost /]# vi /etc/redhat/source.txt  
[root@localhost /]#
```

## create directories and files

The screenshot shows a terminal window titled "root@localhost:/". The terminal displays the following command-line session:

```
[root@localhost /]# rpm -qa samba
samba-3.5.4-68.el6.i686
[root@localhost /]# ls redhat
file1.txt
[root@localhost /]# chmod 777 redhat/file1.txt
[root@localhost /]# chmod 777 redhat
[root@localhost /]# chmod 777 data
[root@localhost /]# ls
bin cgroup dev home lost+found mnt proc root selinux sys usr
boot data etc lib media opt redhat sbin srv tmp var
[root@localhost /]#
```

The terminal window has a dark blue header bar with icons for Applications, Places, System, and a few others. The title bar says "root@localhost:/". The main area is a light gray scrollable window. The bottom bar is also dark blue with standard window control buttons.

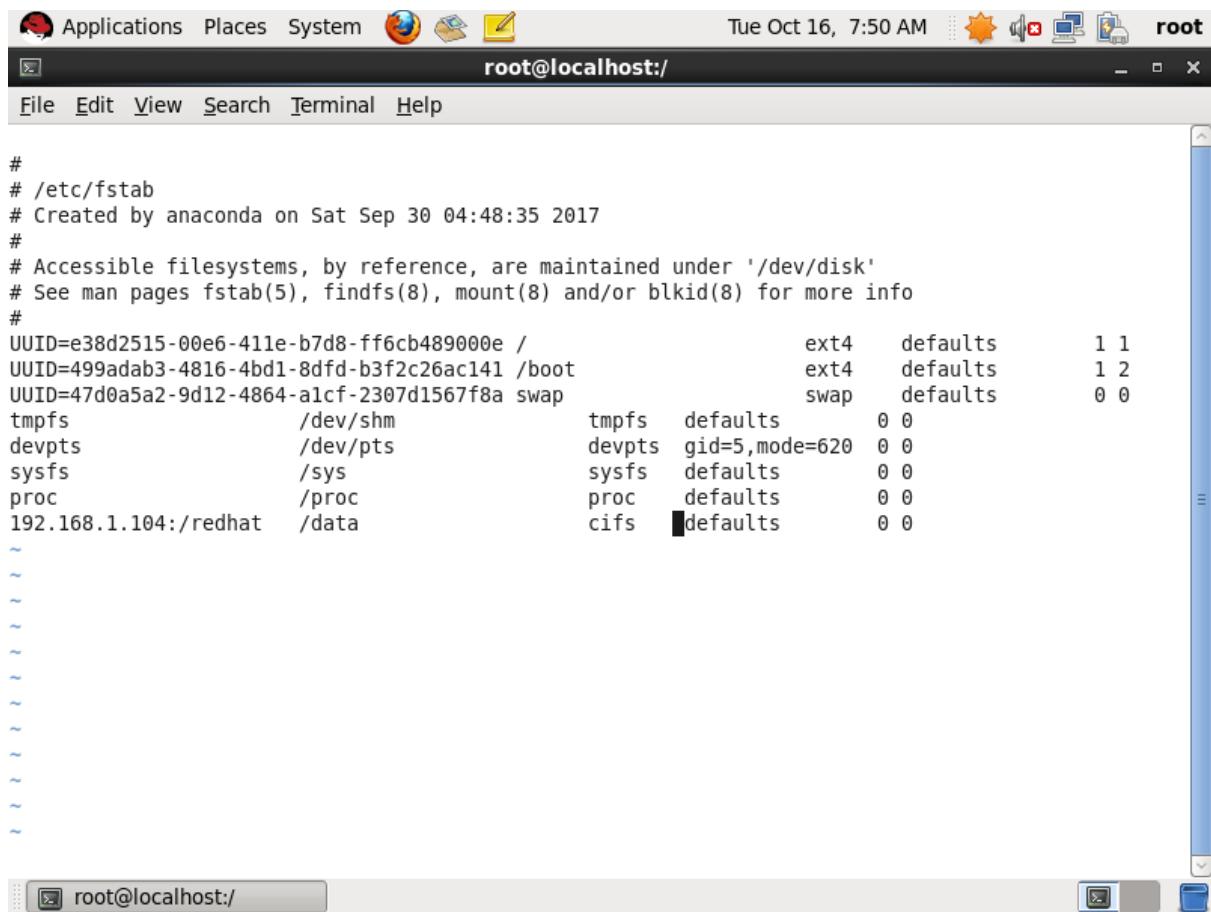
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vi /etc/samba/smb.conf

```
# the "staff" group
;         [public]
;         comment = Public Stuff
;         path = /home/samba
;         public = yes
;         writable = yes
;         printable = no
;         write list = +staff

[redhat]
comment=source content
path=/redhat
public=yes
writable=yes
printable=no
write list=admin
user list=admin
~
```

vi /etc/fstab



The screenshot shows a terminal window titled 'root@localhost:/'. The window contains the contents of the /etc/fstab file. The file is a configuration file for the Linux system's file system tables. It lists the locations of various file systems and the mount options for each. The terminal window has a standard Gnome-like interface with icons in the title bar and a scroll bar on the right.

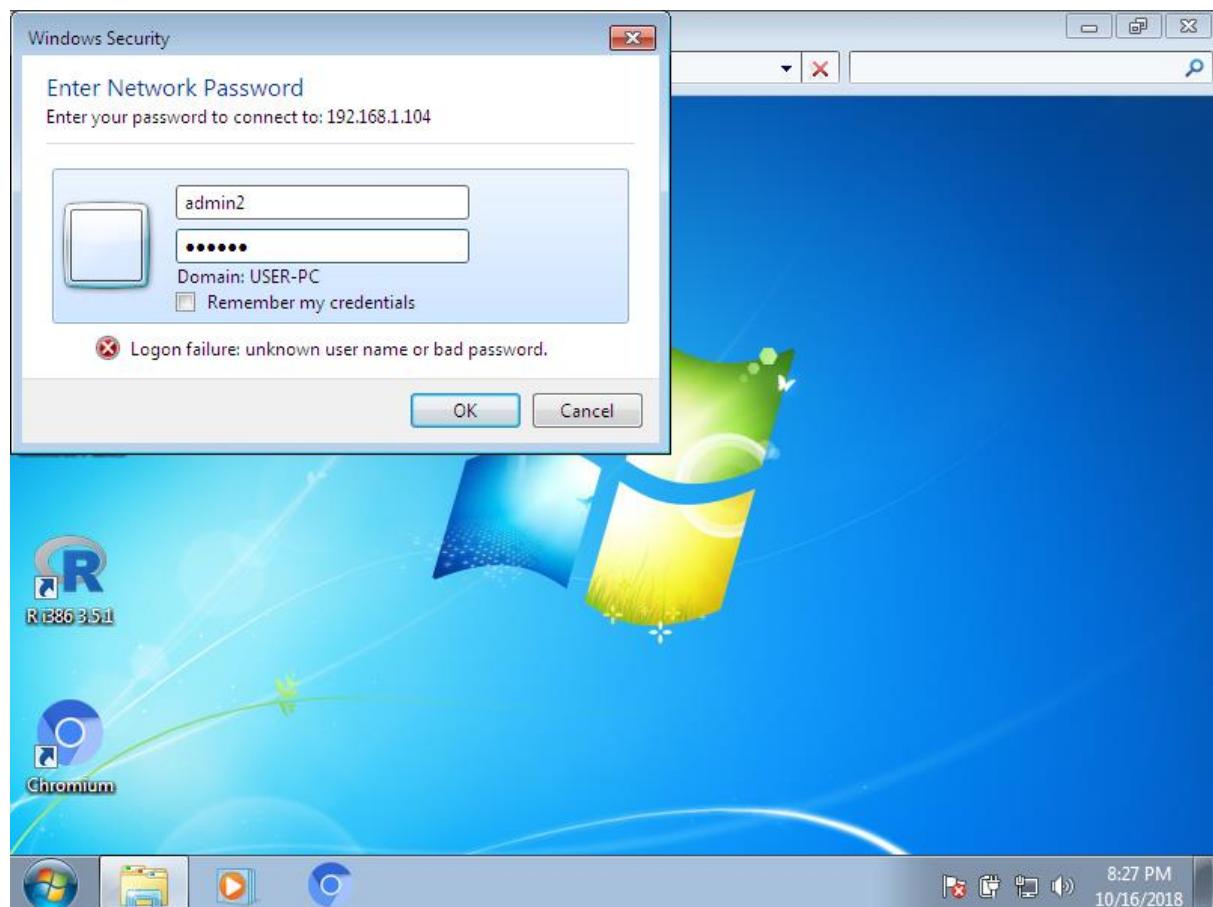
```
#  
# /etc/fstab  
# Created by anaconda on Sat Sep 30 04:48:35 2017  
#  
# Accessible filesystems, by reference, are maintained under '/dev/disk'  
# See man pages fstab(5), findfs(8), mount(8) and/or blkid(8) for more info  
#  
UUID=e38d2515-00e6-411e-b7d8-ff6cb489000e / ext4 defaults 1 1  
UUID=499adab3-4816-4bd1-8dfd-b3f2c26ac141 /boot ext4 defaults 1 2  
UUID=47d0a5a2-9d12-4864-a1cf-2307d1567f8a swap swap defaults 0 0  
tmpfs /dev/shm tmpfs defaults 0 0  
devpts /dev/pts devpts gid=5,mode=620 0 0  
sysfs /sys sysfs defaults 0 0  
proc /proc proc defaults 0 0  
192.168.1.104:/redhat /data cifs defaults 0 0  
~  
~  
~  
~  
~  
~  
~  
~  
~  
~
```

## configure samba

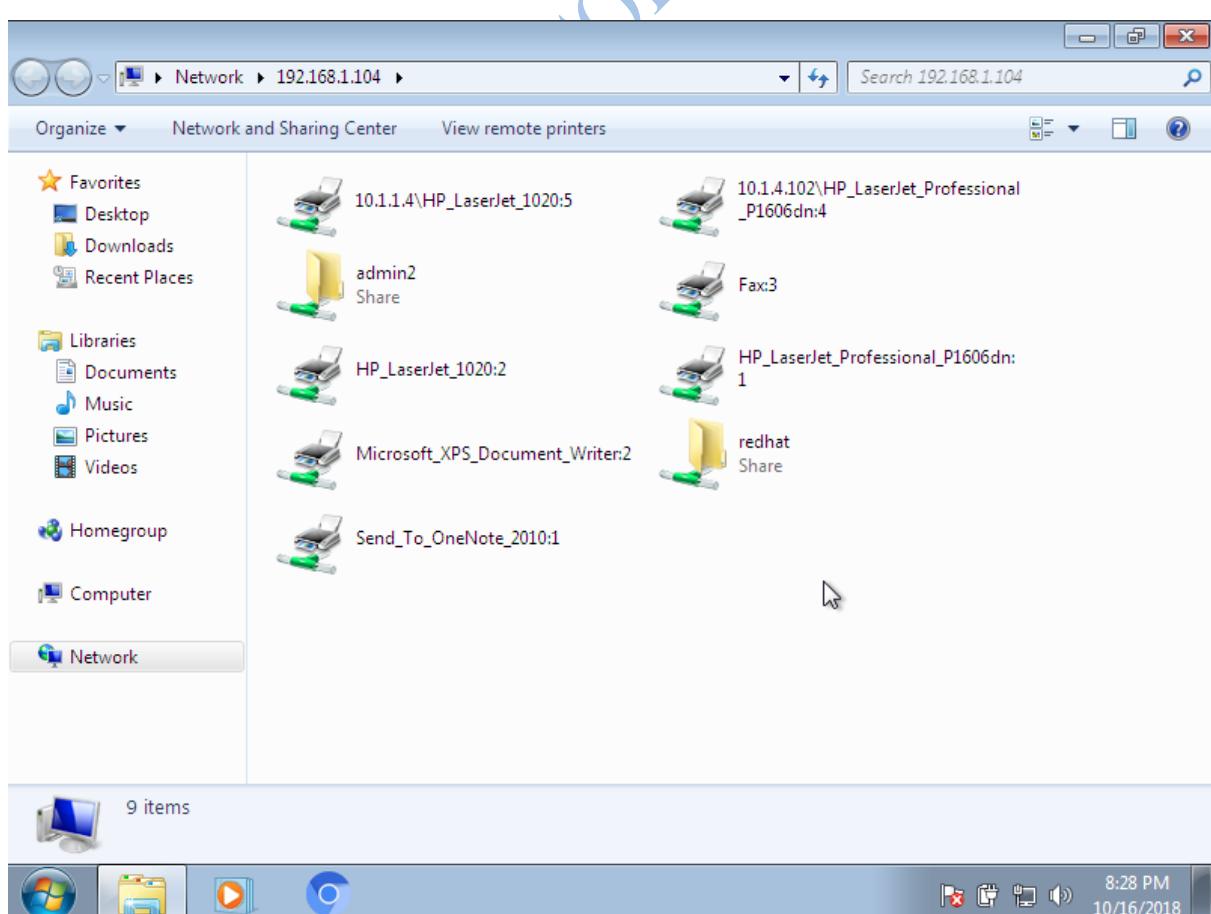
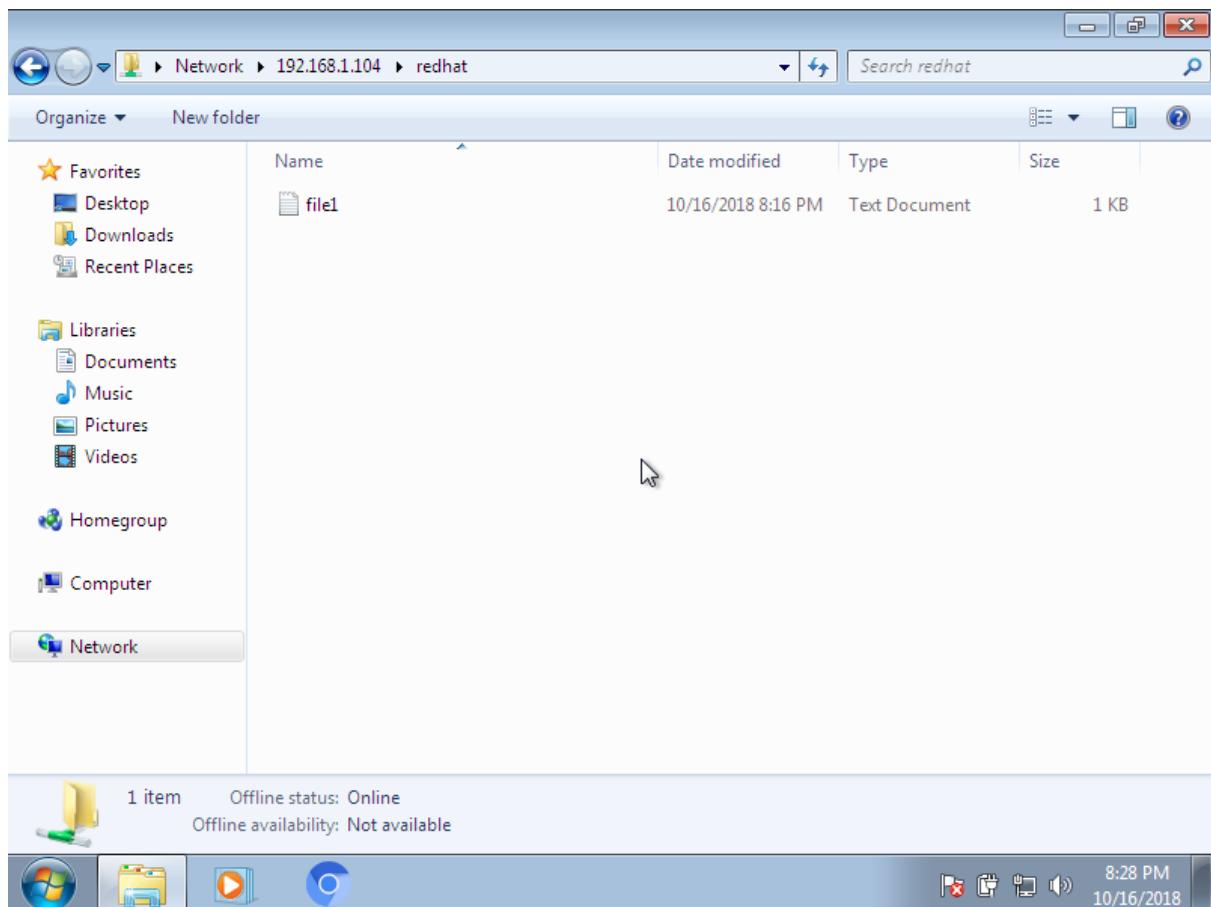
The screenshot shows a terminal window titled "root@localhost:/". The terminal displays the following command-line session:

```
[root@localhost /]# vi /etc/samba/smb.conf
[root@localhost /]# useradd admin2
[root@localhost /]# passwd admin2
Changing password for user admin2.
New password:
BAD PASSWORD: it is based on your username
Retype new password:
passwd: all authentication tokens updated successfully.
[root@localhost /]# service smb restart
Shutting down SMB services: [FAILED]
Starting SMB services: [ OK ]
[root@localhost /]# service smb restart
Shutting down SMB services: [ OK ]
Starting SMB services: [ OK ]
[root@localhost /]# smbpasswd -a admin2
New SMB password:
Retype new SMB password:
Mismatch - password unchanged.
Unable to get new password.
[root@localhost /]# smbpasswd -a admin2
New SMB password:
Retype new SMB password:
Added user admin2.
[root@localhost /]# chkconfig smb on
[root@localhost /]# chcon -t samba_share_t /redhat
[root@localhost /]#
```

share on windows



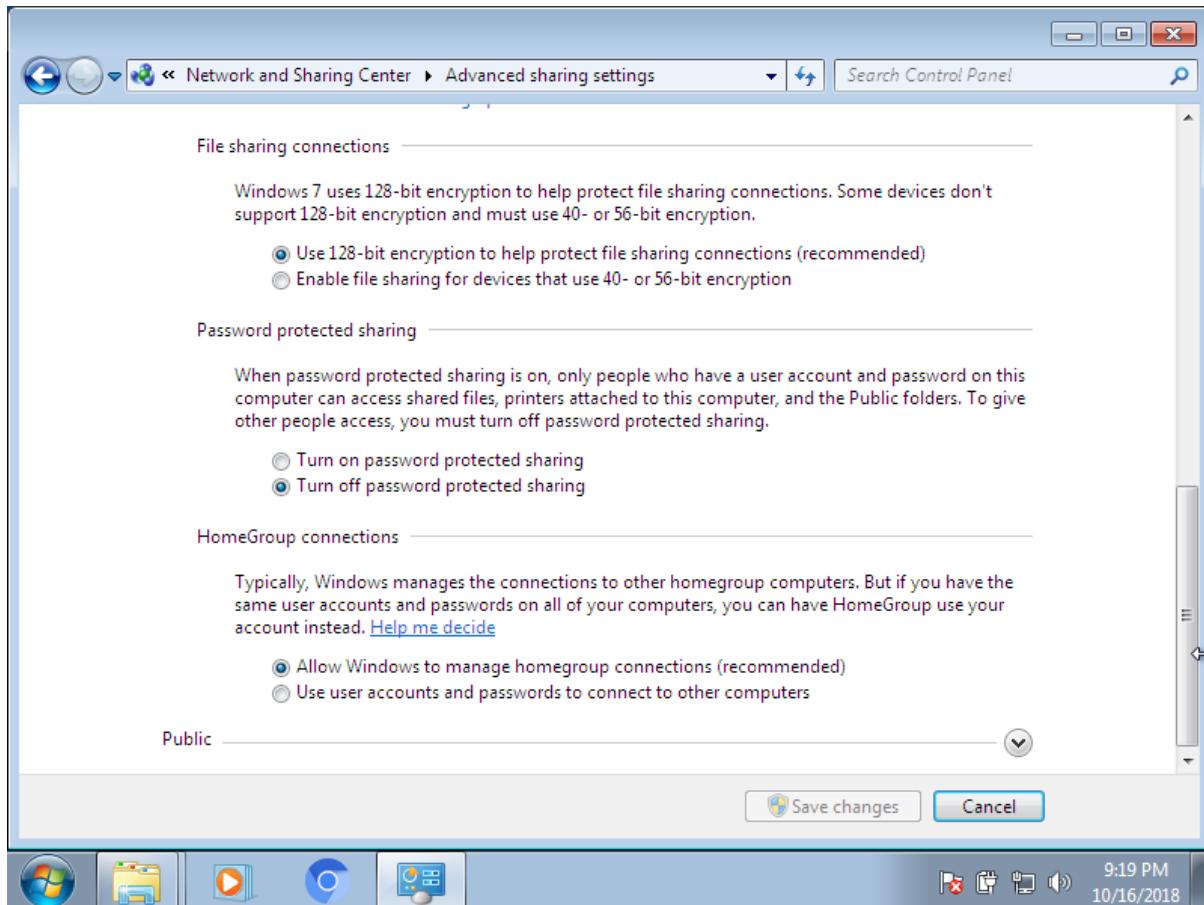
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## Samba share from windows to linux

Create folder in windows machine and click share it with everyone

Turn on file and printer sharing



Turn off password base sharing

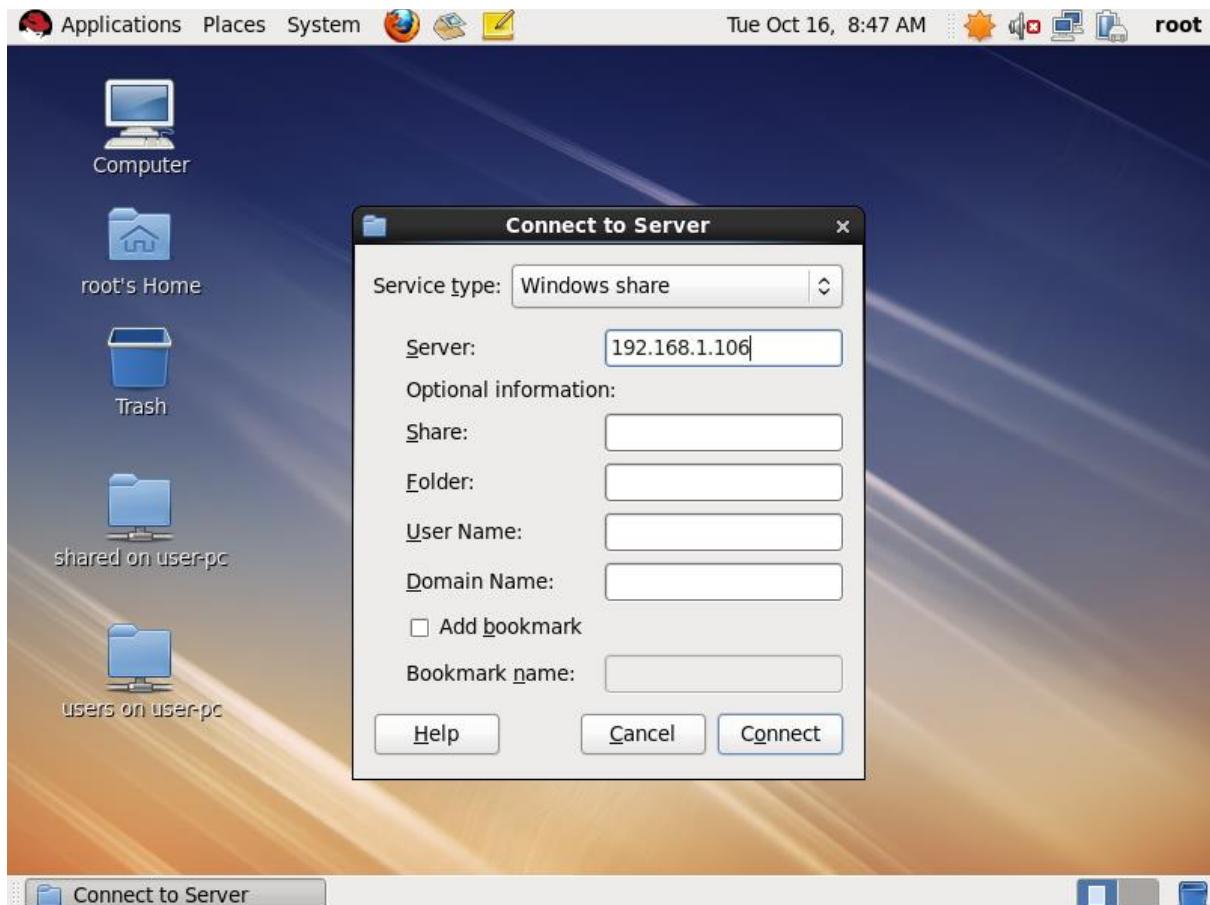
In linux –install samba client using following command  
yum install samba-client cifs-utils

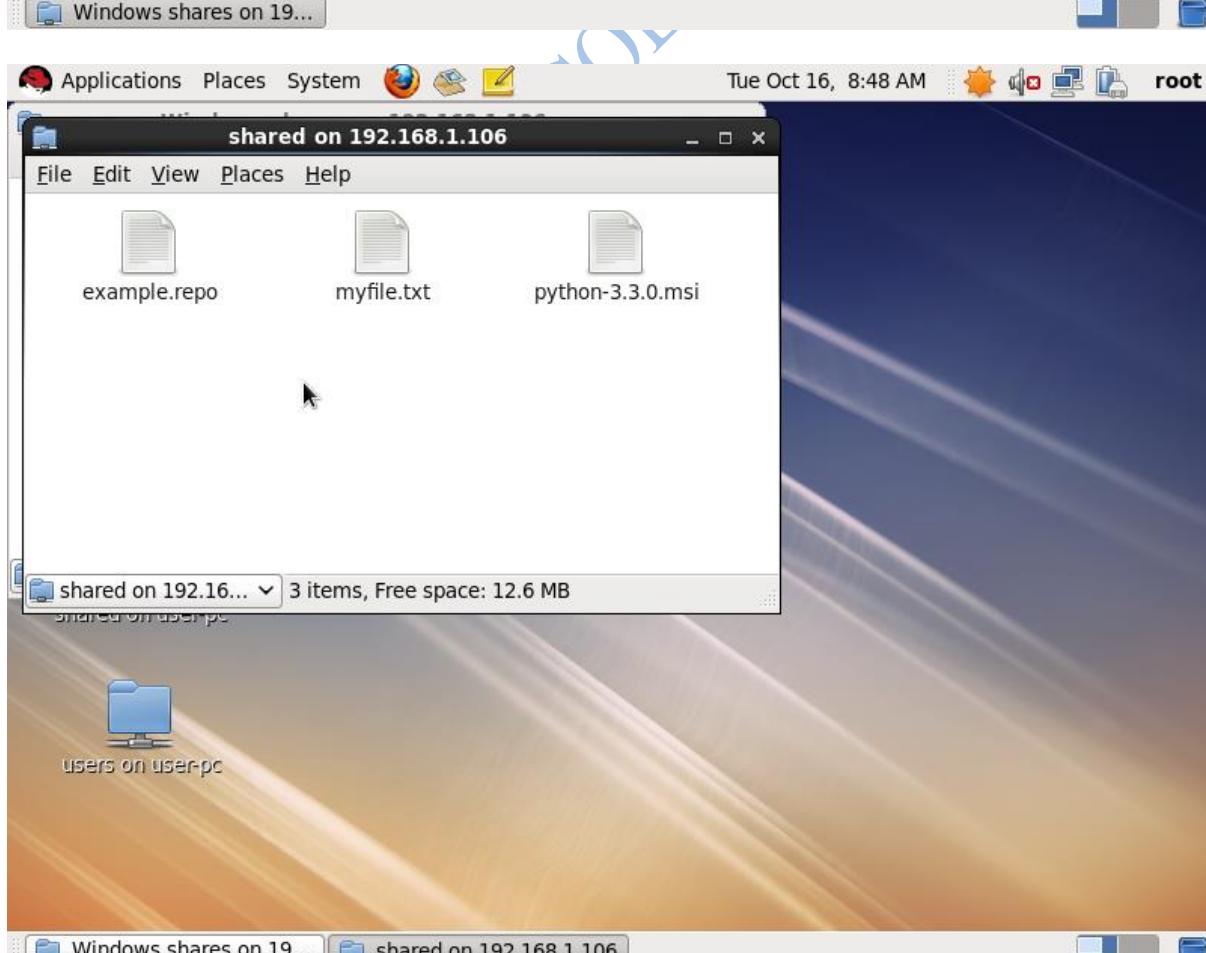
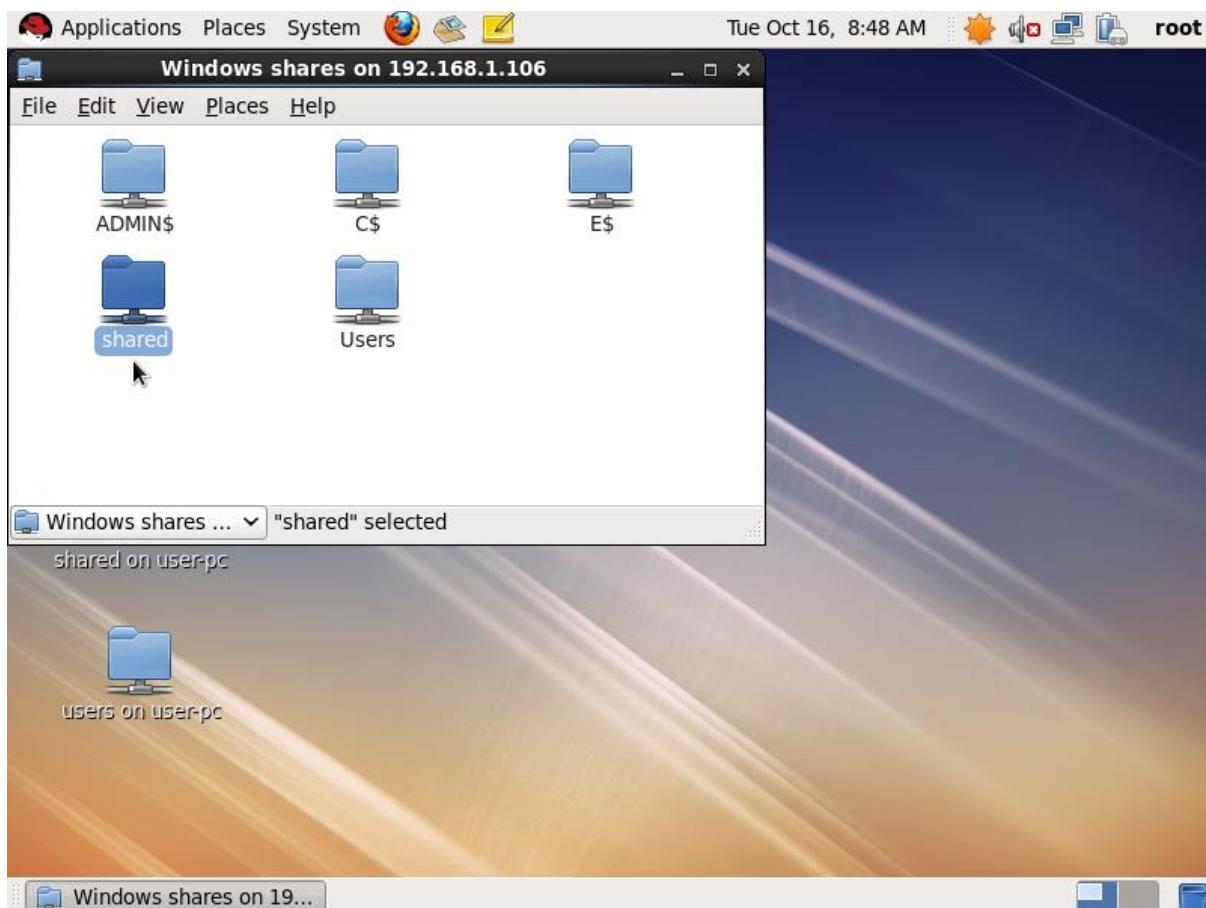
The screenshot shows a Linux desktop environment with a terminal window open. The terminal window title is "root@localhost:~/Desktop". The terminal content displays the output of the "yum install samba-client cifs-utils" command. The output shows the system is not registered with RHN, and it proceeds to set up the install process, resolve dependencies, and install various packages including cifs-utils, samba-client, samba-common, libevent, and libtdb.

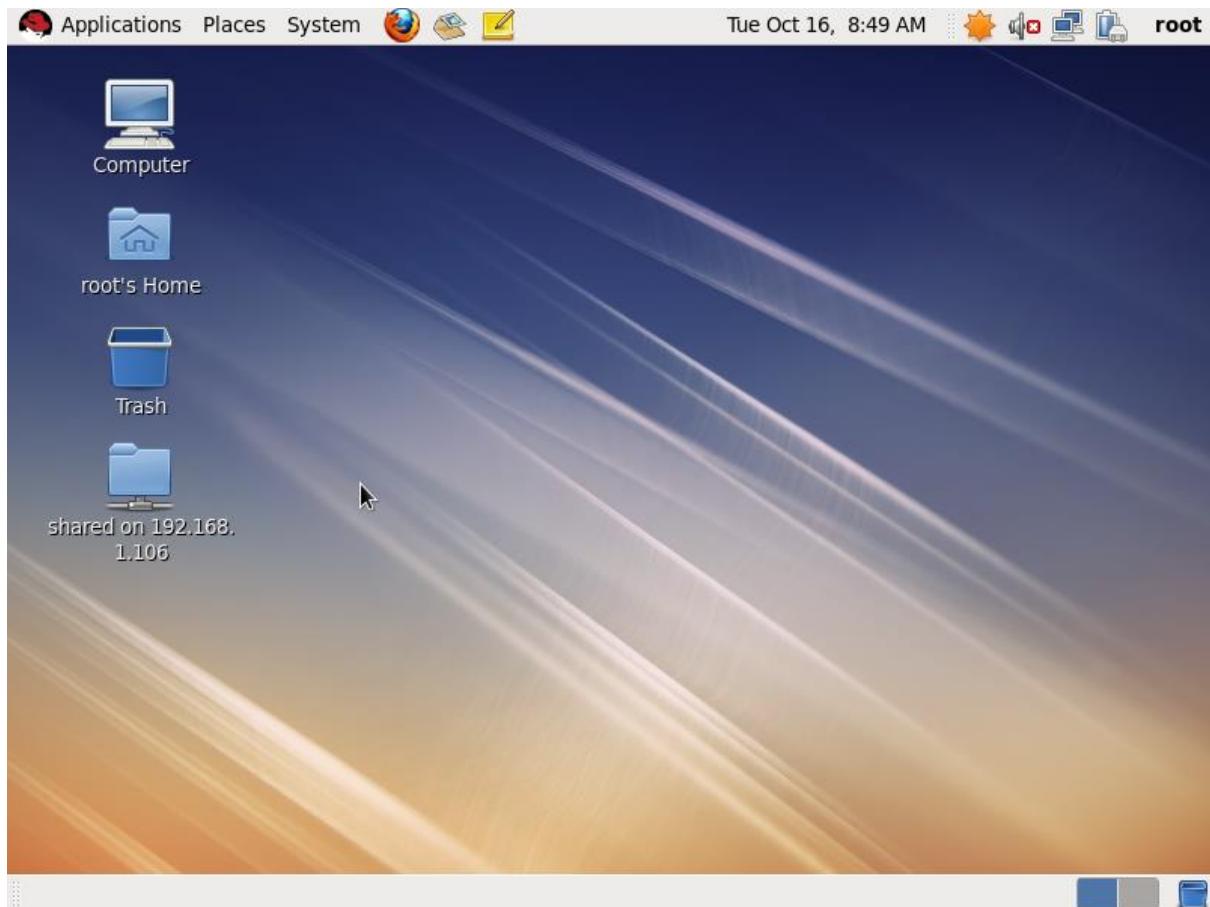
```
[root@localhost Desktop]# yum install samba-client cifs-utils
Loaded plugins: fastestmirror, refresh-packagekit, rhnplugin
This system is not registered with RHN.
RHN support will be disabled.
Setting up Install Process
Loading mirror speeds from cached hostfile
Resolving Dependencies
--> Running transaction check
--> Package cifs-utils.i686 0:4.8.1-20.el6 will be installed
--> Processing Dependency: libtalloc.so.2(TALLOC_2.0.2) for package: cifs-utils-4.8.1-20.el6.i686
--> Package samba-client.i686 0:3.5.4-68.el6 will be updated
--> Package samba-client.i686 0:3.6.23-51.el6 will be an update
--> Processing Dependency: samba-winbind-clients = 3.6.23-51.el6 for package: samba-client-3.6.23-51.el6.i686
--> Processing Dependency: samba-common = 3.6.23-51.el6 for package: samba-client-3.6.23-51.el6.i686
--> Processing Dependency: libevent.so.0(TEVENT_0.9.9) for package: samba-client-3.6.23-51.el6.i686
--> Processing Dependency: libevent.so.0 for package: samba-client-3.6.23-51.el6.i686
--> Processing Dependency: libtdb.so.1(TDB_1.2.5) for package: samba-client-3.6.23-51.el6.i686
--> Processing Dependency: libtdb.so.1(TDB_1.2.2) for package: samba-client-3.6.23-51.el6.i686
```

click on connect to network option in places tab

Enter the ip address of samba shared file on windows and click ok to connect





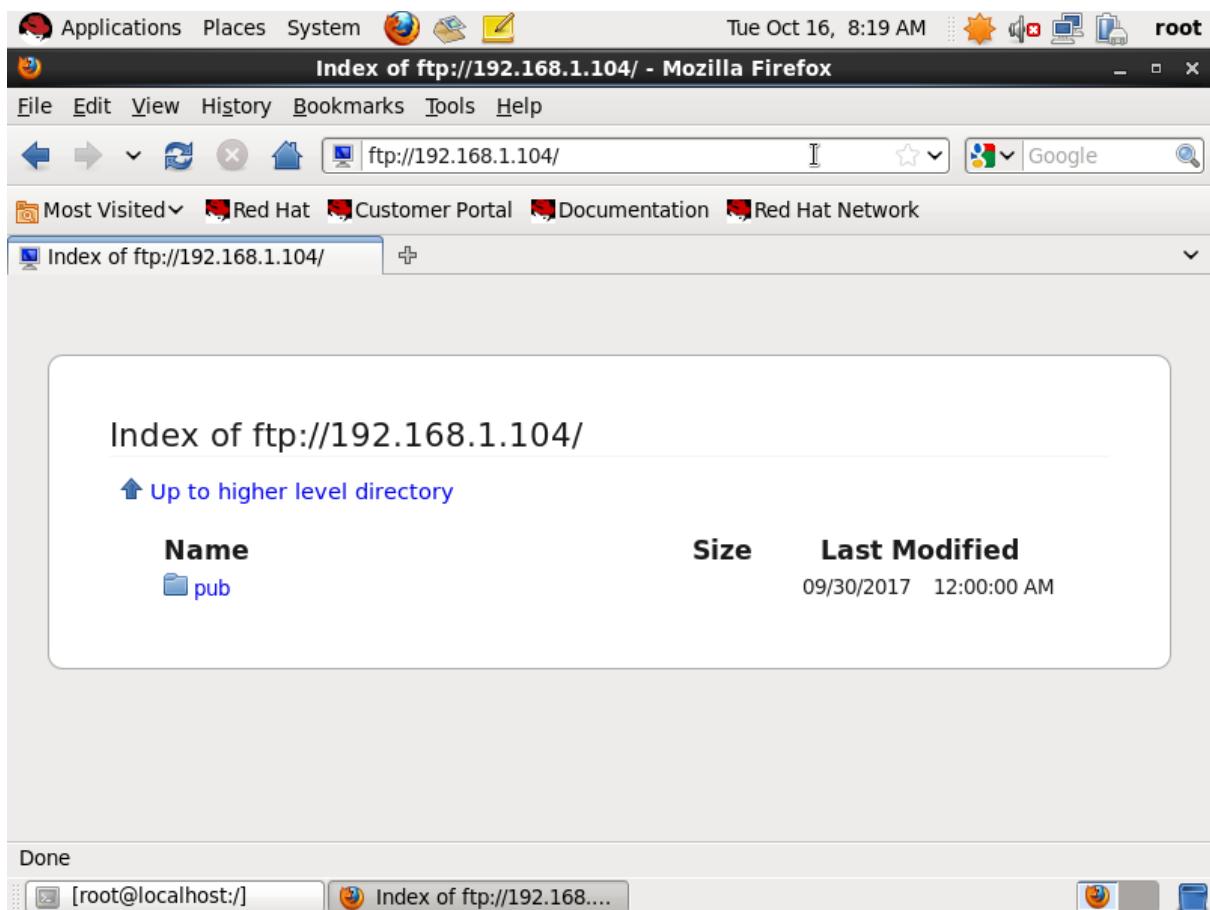


## 6C) Configuring FTP

Install and start the vsftpd services

```
Tue Oct 16, 8:19 AM Applications Places System root@localhost:/ File Edit View Search Terminal Help [root@localhost /]# rpm -qa vsftpd  
vsftpd-2.2.2-6.el6.i686 [root@localhost /]# [root@localhost /]# service vsftpd status vsftpd (pid 1269) is running... [root@localhost /]# chkconfig vsftpd on [root@localhost /]#
```

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Configure using  
vi /etc/vsftpd/vsftpd.conf

```
# Example config file /etc/vsftpd/vsftpd.conf
#
# The default compiled in settings are fairly paranoid. This sample file
# loosens things up a bit, to make the ftp daemon more usable.
# Please see vsftpd.conf.5 for all compiled in defaults.
#
# READ THIS: This example file is NOT an exhaustive list of vsftpd options.
# Please read the vsftpd.conf.5 manual page to get a full idea of vsftpd's
# capabilities.
#
# Allow anonymous FTP? (Beware - allowed by default if you comment this out).
anonymous_enable=NO
#
# Uncomment this to allow local users to log in.
local_enable=YES
#
# Uncomment this to enable any form of FTP write command.
write_enable=YES
#
# Default umask for local users is 077. You may wish to change this to 022,
# if your users expect that (022 is used by most other ftpd's)
local_umask=022
#
# Uncomment this to allow the anonymous FTP user to upload files. This only
# has an effect if the above global write enable is activated. Also, you will
# obviously need to create a directory writable by the FTP user.
anon_upload_enable=YES
#
"/etc/vsftpd/vsftpd.conf" 118L, 4493C
```

The screenshot shows a terminal window titled "root@localhost:/". The terminal displays the following command-line session:

```
[root@localhost ~]# rpm -qa vsftpd
vsftpd-2.2.2-6.el6.i686
[root@localhost ~]# service vsftpd status
vsftpd (pid 1269) is running...
[root@localhost ~]# chkconfig vsftpd on
[root@localhost ~]# vi /etc/vsftpd/vsftpd.conf
[root@localhost ~]# vi /etc/vsftpd/vsftpd.conf
[root@localhost ~]# service vsftpd restart
Shutting down vsftpd: [ OK ]
Starting vsftpd for vsftpd: [ OK ]
[root@localhost ~]#
```

## Login to ftp

The screenshot shows a terminal window titled "root@localhost:/". The window contains the following text:

```
[root@localhost /]# ftp 192.168.1.104
Connected to 192.168.1.104 (192.168.1.104).
220 (vsFTPd 2.2.2)
Name (192.168.1.104:root): admin
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> 
```

The terminal window has a standard Linux desktop interface with icons for Applications, Places, System, and a menu bar with File, Edit, View, Search, Terminal, and Help. The status bar at the bottom shows "root@localhost:/".

Applications Places System    Tue Oct 16, 8:24 AM    root@localhost:/

```
File Edit View Search Terminal Help
drwxr-xr-x 2 0 0 4096 Sep 30 2017 opt
drwxrwxrwx 168 0 0 0 Oct 16 14:03 proc
drwxrwxrwx 2 0 0 4096 Oct 16 14:46 redhat
dr-xr-x--- 28 0 0 4096 Oct 16 14:08 root
dr-xr-xr-x 2 0 0 12288 Oct 16 14:14 sbin
drwxr-xr-x 7 0 0 0 Oct 16 14:03 selinux
drwxr-xr-x 2 0 0 4096 Dec 04 2009 srv
drwxr-xr-x 13 0 0 0 Oct 16 14:03 sys
drwxrwxrwt 28 0 0 4096 Oct 16 14:27 tmp
drwxr-xr-x 12 0 0 4096 Sep 30 2017 usr
drwxr-xr-x 23 0 0 4096 Sep 30 2017 var
226 Directory send OK.
ftp> cd redhat
250 Directory successfully changed.
ftp> ls
227 Entering Passive Mode (192,168,1,104,164,76).
150 Here comes the directory listing.
-rwxrwxrwx 1 0 0 19 Oct 16 14:46 file1.txt
226 Directory send OK.
ftp> put file1.txt
local: file1.txt remote: file1.txt
local: file1.txt: No such file or directory
ftp> get file1.txt
local: file1.txt remote: file1.txt
227 Entering Passive Mode (192,168,1,104,121,12).
150 Opening BINARY mode data connection for file1.txt (19 bytes).
226 Transfer complete.
19 bytes received in 2e-05 secs (950.00 Kbytes/sec)
ftp> 
```

## FTP on windows

