

1 Connect to your VM by using putty then change the color to system color and font to 14.	1
➤ Connect to VM by using putty.	1
➤ Change the color and font 14.	5
2 Demonstrate the following commands (run it in your VM) mkdir, touch, mv, cp, rm, ls, ll, ifconfig, scp	6
3 Create a file by using vi and put some contents in it like "hello group x" x is your group number. Verify it by using cat command to show the content.	13
4 Use WinSCP to transfer a file to your Linux VM.....	14
5 Create a user with password then log in with new username by using sudo.	15
6 Create a file then modify the permission to full permission.	16
7 Download Hadoop by using wget then unzip it (any Hadoop version is fine).....	18
8 Install any package (like http) then remove it.	20
9 Create your local.repo and make sure its working .If already has been set up just show it .Explain why it's used.	21
10 From the command line upgrade your VM to GUI.	22

Objective: Run Few Basic Command in Linux

1 Connect to your VM by using putty then change the color to system color and font to 14.

- Connect to VM by using putty.

In (Figure 1) Firstly, I gave **ip addr** command in shell (REHEL 8) to check the **ip address** then I got some adaptor like **emp0s3** which is the network adaptor and got the **ip address**.

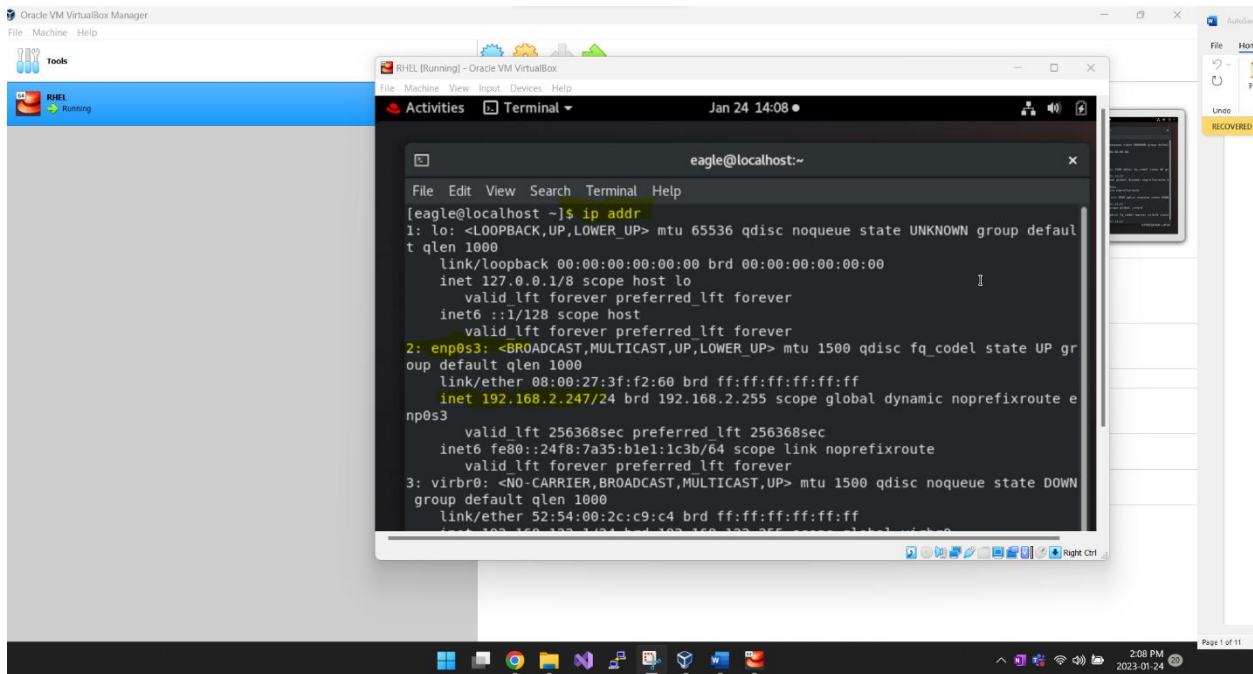


Figure 1 Connect to VM by using Putty.

In (Figure 2) Secondly, I quickly opened command prompt and gave a command with **ping** and **ip address**. After that I got replied from the virtual machine (VM).

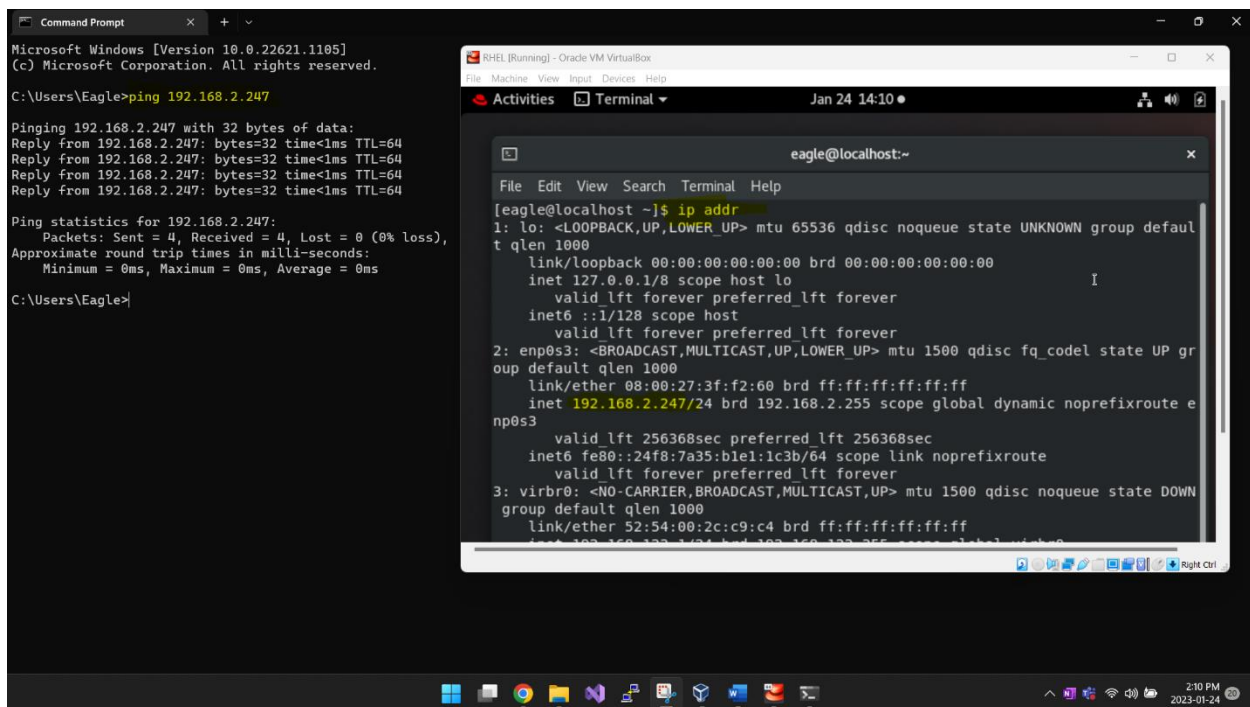


Figure 2 Command prompt (Window 11)

In (Figure 3) Thirdly, I opened putty and entered the **ip address** and got default port 22 for SSH then opened it.

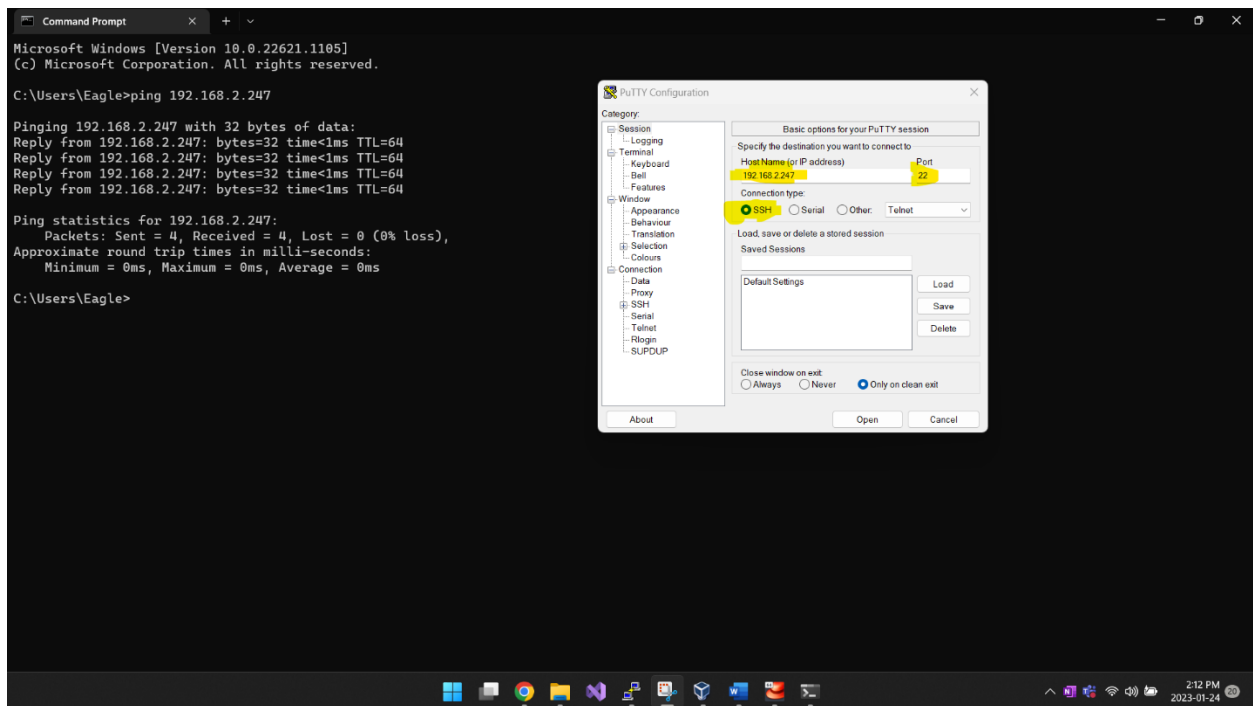


Figure (3) Open putty

Fourth, after opened I got login prompt and logged in with username and password.

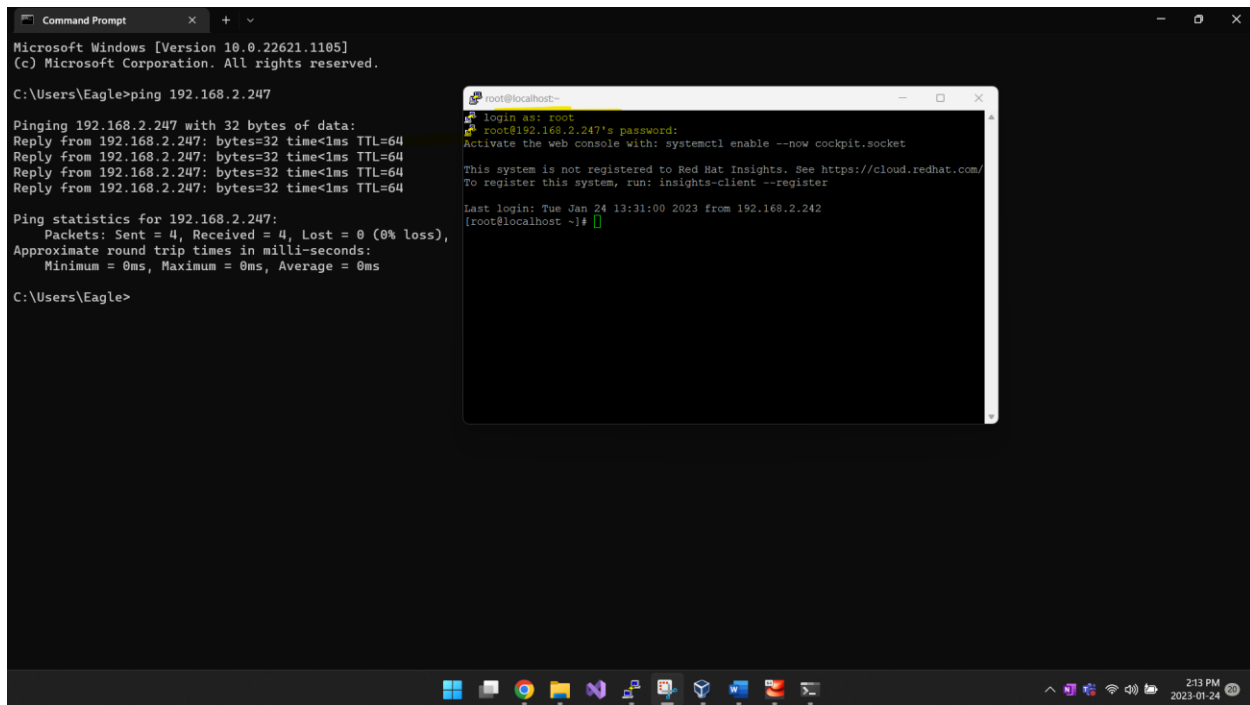


Figure (4) putty login with root user

In (Figure 5) At the end I have seen **ip address** with **ip addr** command and showed **ip address** of the same server which I was able to see the Linux console.

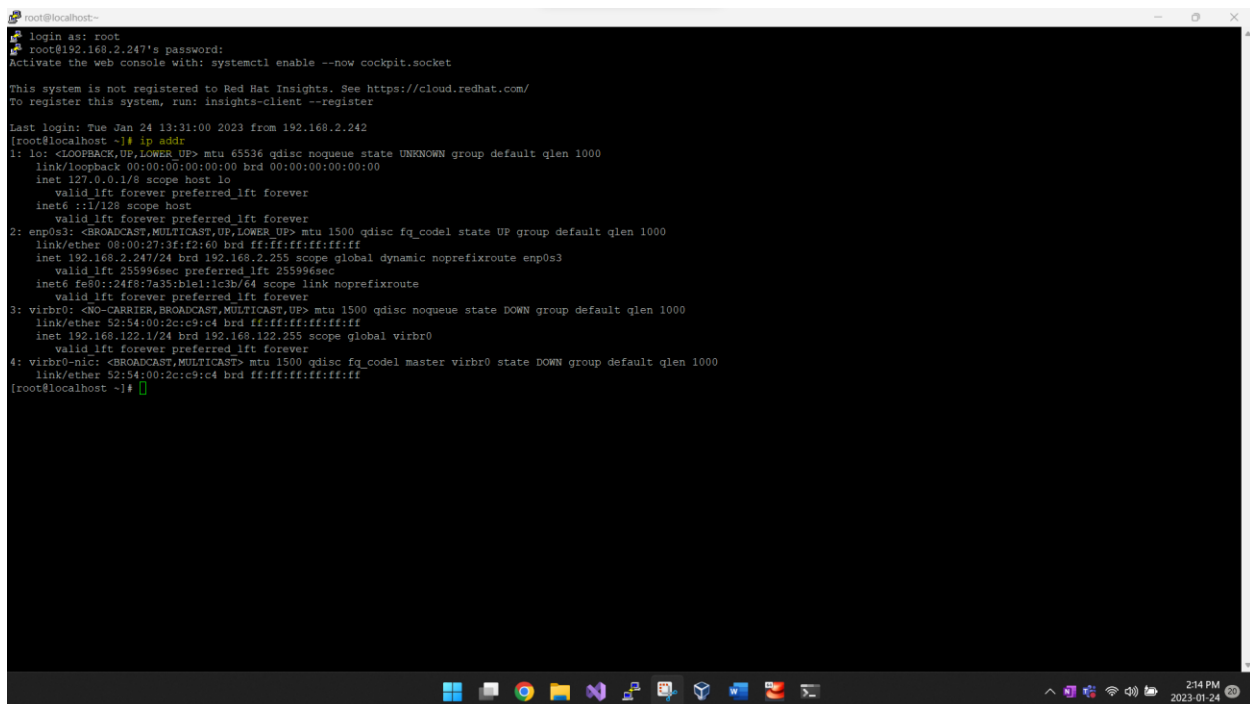
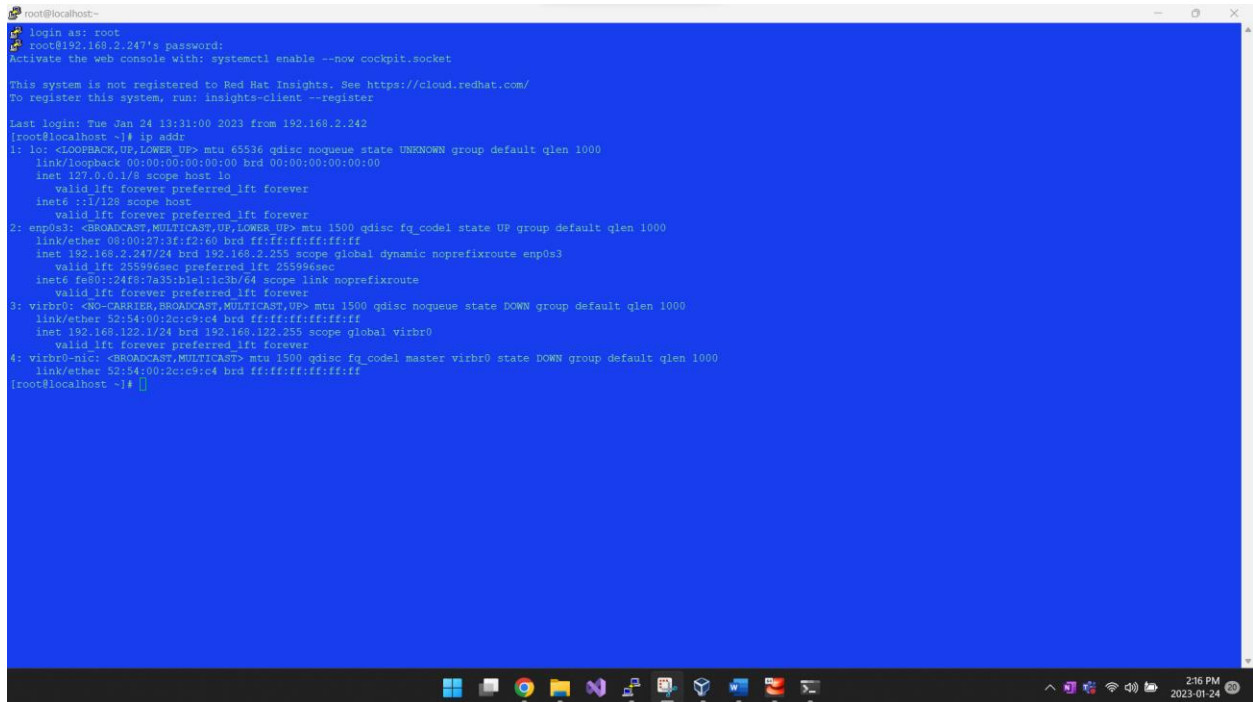


Figure (5) Login with root account and checked ip address.

➤ Change the color and font 14.

After login **ip address** and opened it, I went to left side, clicked on the icon, went to >change settings > colors > default background > the modified it and applied. (Figure 6)



```
root@localhost:~  
login as: root  
root@192.168.2.247's password:  
Activate the web console With: systemctl enable --now cockpit.socket  
  
This system is not registered to Red Hat Insights. See https://cloud.redhat.com/  
To register this system, run: insights-client --register  
  
Last login: Tue Jan 24 13:31:00 2023 from 192.168.2.242  
[root@localhost ~]# ip addr  
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000  
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00  
    inet 127.0.0.1/8 scope host lo  
        valid_lft forever preferred_lft forever  
    inet6 ::1/128 scope host  
        valid_lft forever preferred_lft forever  
2: ens3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000  
    link/ether 08:00:27:3f:f2:60 brd ff:ff:ff:ff:ff:ff  
    inet 192.168.2.247/24 brd 192.168.2.255 scope global dynamic noprefixroute ens3  
        valid_lft 255996sec preferred_lft 255996sec  
    inet6 fe80::24fc:7a3b:b1e1:1c3b/64 scope link noprefixroute  
        valid_lft forever preferred_lft forever  
3: virbr0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default qlen 1000  
    link/ether 52:54:00:2c:c9:c4 brd ff:ff:ff:ff:ff:ff  
    inet 192.168.122.1/24 brd 192.168.122.255 scope global virbr0  
        valid_lft forever preferred_lft forever  
4: virbr0-nic: <BROADCAST,MULTICAST> mtu 1500 qdisc fq_codel master virbr0 state DOWN group default qlen 1000  
    link/ether 52:54:00:2c:c9:c4 brd ff:ff:ff:ff:ff:ff  
[root@localhost ~]#
```

Figure (6) Change the color of putty's background.

Went to change settings > appearance > font used in the terminal now > change > font size 14 > okay then applied. (Figure 7)

```
root@localhost:~# login as: root
root@192.168.2.247's password:
Activate the web console with: systemctl enable --now cockpit.socket

This system is not registered to Red Hat Insights. See https://cloud.redhat.com/
To register this system, run: insights-client --register

Last login: Tue Jan 24 13:31:00 2023 from 192.168.2.242
[root@localhost ~]# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:3f:f2:60 brd ff:ff:ff:ff:ff:ff
    inet 192.168.2.247/24 brd 192.168.2.255 scope global dynamic noprefixroute enp0s3
        valid_lft 255996sec preferred_lft 255996sec
    inet6 fe80::24f8:7a35:b1e1:1c3b/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
3: virbr0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc noqueue state DOWN group default qlen 1000
    link/ether 52:54:00:2c:c9:c4 brd ff:ff:ff:ff:ff:ff
    inet 192.168.122.1/24 brd 192.168.122.255 scope global virbr0
        valid_lft forever preferred_lft forever
4: virbr0-nic: <BROADCAST,MULTICAST> mtu 1500 qdisc fq_codel master virbr0 state DOWN group default qlen 1000
    link/ether 52:54:00:2c:c9:c4 brd ff:ff:ff:ff:ff:ff
[root@localhost ~]#
```

Figure (7) Font size 14

2 Demonstrate the following commands (run it in your VM) mkdir, touch, mv, cp, rm, ls, ll, ifconfig, scp

mkdir --- command which is used to create directory or multiple and subdirectory.

I used **pwd (present work directory) command** with the help of it I got that I am on slash board and created a folder.

```
root@localhost: ~]# pwd
/root
root@localhost ~]# mkdir BDAT01
root@localhost ~]# ls -la
total 0
dr-xr-x---. 19 root    root    271 Jan 24 15:34 .
dr-xr-xr-x. 17 root    root    224 Jan 19 11:05 ..
drwxr-xr-x.  2 root    root     6 Jan 24 15:34 BDAT01
drwx-----. 13 root    root   282 Jan 19 11:47 .cache
drwx-----. 15 root    root   278 Jan 19 12:01 .config
drwx-----.  3 root    root    25 Jan 19 11:06 .dbus
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Desktop
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Documents
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Downloads
drwxr-xr-x. 10 root    root   215 Jan 24 12:35 'hadoop-3.3 (1).4'
drwxr-xr-x. 10 BDAT1002 BDAT1002 215 Jul 29 09:44 hadoop-3.3.4
drwx-----.  3 root    root    19 Jan 19 11:24 .local
drwx-----.  5 root    root    66 Jan 19 11:47 .mozilla
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Music
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Pictures
drwxr-xr-x.  3 root    root    19 Jan 19 11:24 .pki
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Public
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Templates
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Videos
root@localhost ~]#
```

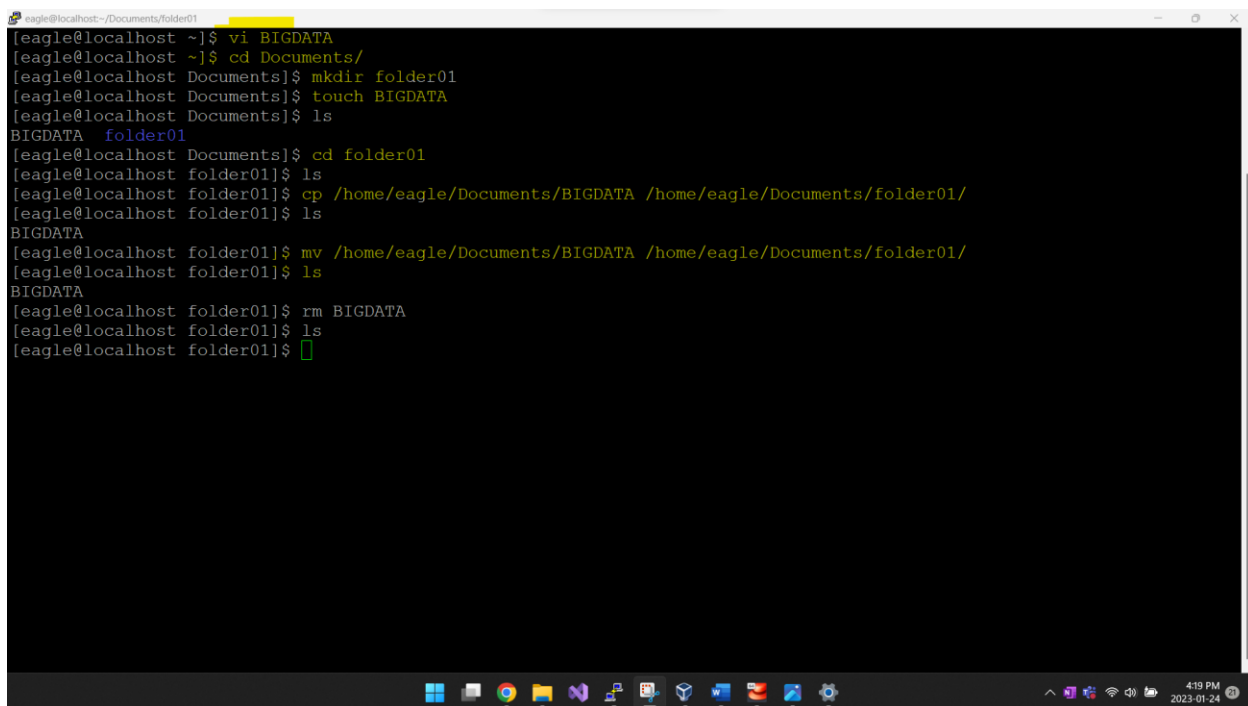
Figure (8) pwd command and mkdir command

```
root@localhost: ~/B1/B2/B3
root@localhost ~]# mkdir folder1
root@localhost ~]# ls -la
total 12
dr-xr-x---. 22 root    root   4086 Jan 24 15:50 .
dr-xr-xr-x. 17 root    root    872 Jan 24 15:49 ..
-rw-----.  1 root    root    16 Jan 24 15:49 .bash_history
drwxr-xr-x.  3 root    root    20 Jan 24 15:43 BDAT01
drwx-----. 13 root    root   282 Jan 19 11:47 .cache
drwx-----. 15 root    root   278 Jan 19 12:01 .config
drwx-----.  3 root    root    25 Jan 19 11:06 .dbus
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Desktop
drwxr-xr-x.  2 root    root     6 Jan 24 15:39 dirbd1
drwxr-xr-x.  2 root    root     6 Jan 24 15:39 dirbd2
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Documents
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Downloads
-rw-----.  1 root    root    16 Jan 24 15:50 .esd_auth
drwxr-xr-x.  2 root    root     6 Jan 24 15:50 folder1
drwxr-xr-x. 10 root    root   215 Jan 24 12:35 'hadoop-3.3 (1).4'
drwxr-xr-x. 10 BDAT1002 BDAT1002 215 Jul 29 09:44 hadoop-3.3.4
drwx-----.  3 root    root    19 Jan 19 11:24 .local
drwx-----.  5 root    root    66 Jan 19 11:47 .mozilla
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Music
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Pictures
drwxr-xr-x.  3 root    root    19 Jan 19 11:24 .pki
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Public
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Templates
drwxr-xr-x.  2 root    root     6 Jan 19 11:24 Videos
root@localhost ~]# mkdir dir1 dir2
root@localhost ~]# ls
BDAT01 Desktop dir1 dirbd1 dirbd2 Documents Downloads folder1 'hadoop-3.3 (1).4' hadoop-3.3.4 Music Pictures Public Templates Videos
root@localhost ~]# mkdir -p B1/B2/B3
root@localhost ~]# cd B1
root@localhost B1]# ls
B2
root@localhost B1]# cd B2
root@localhost B2]# ls
B3
root@localhost B2]# cd B3
root@localhost B3]# ls
root@localhost B3]#
```

Figure (9) mkdir command for directory or subdirectory

➤ *Touch, mv, cp, rm, ls commands*

In the below figure where I run all commands, firstly, I made a new file with **vi command** and gave name BIGDATA. In next step I went to ipdocuments folder where I made a new folder while using directory (folder01) and transferred BIGDATA file into documents further used **ls command** where I got that in document folder, I have folder01 file. So having something in this folder I used **cp** (copy) command **cp /home/eagle/Documents/BIGDATA /home/eagle/Documents/folder01** in this bold line I used copy then I was on home/eagle page so copied BIGDATA file and gone into folder01. Moreover, I similarly, used mv (move) command to move my file into folder01. At the end used **rm command** to remove the file.



```
eagle@localhost:~/Documents/folder01
[eagle@localhost ~]$ vi BIGDATA
[eagle@localhost ~]$ cd Documents/
[eagle@localhost Documents]$ mkdir folder01
[eagle@localhost Documents]$ touch BIGDATA
[eagle@localhost Documents]$ ls
BIGDATA  folder01
[eagle@localhost Documents]$ cd folder01
[eagle@localhost folder01]$ ls
[eagle@localhost folder01]$ cp /home/eagle/Documents/BIGDATA /home/eagle/Documents/folder01/
[eagle@localhost folder01]$ ls
BIGDATA
[eagle@localhost folder01]$ mv /home/eagle/Documents/BIGDATA /home/eagle/Documents/folder01/
[eagle@localhost folder01]$ ls
BIGDATA
[eagle@localhost folder01]$ rm BIGDATA
[eagle@localhost folder01]$ ls
[eagle@localhost folder01]$
```

Figure (10) used cp, mv, ls,

- **ll command**--- I used **ll command** in root login to see the file along with the permission, date, time and size.


```
[root@localhost ~]# ll
total 4
drwxr-xr-x. 3 root root 16 Jan 24 15:52 B1
-rw-r--r--. 1 root root 22 Jan 24 16:03 BDAT
drwxr-xr-x. 3 root root 20 Jan 24 15:43 BDAT01
drwxr-xr-x. 2 root root 6 Jan 19 11:24 Desktop
drwxr-xr-x. 2 root root 6 Jan 24 15:51 dir1
drwxr-xr-x. 2 root root 6 Jan 24 15:51 dir2
drwxr-xr-x. 2 root root 6 Jan 24 15:39 dirbdat1
drwxr-xr-x. 2 root root 6 Jan 24 15:39 dirbdat2
drwxr-xr-x. 3 root root 44 Jan 24 16:04 Documents
drwxr-xr-x. 2 root root 6 Jan 19 11:24 Downloads
drwxr-xr-x. 2 root root 6 Jan 24 15:50 folder1
drwxr-xr-x. 10 root root 215 Jan 24 12:35 'hadoop-3.3 (1).4'
drwxr-xr-x. 10 BDAT1002 BDAT1002 215 Jul 29 09:44 hadoop-3.3.4
drwxr-xr-x. 2 root root 6 Jan 19 11:24 Music
drwxr-xr-x. 2 root root 6 Jan 19 11:24 Pictures
drwxr-xr-x. 2 root root 6 Jan 19 11:24 Public
drwxr-xr-x. 2 root root 6 Jan 19 11:24 Templates
drwxr-xr-x. 2 root root 6 Jan 19 11:24 Videos
[root@localhost ~]#
```

Figure (11) ll command

In figure12 I used *Ifconfig command* to check the assigned *ip address* of the server.

```
[root@localhost ~]# ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.2.247 netmask 255.255.255.0 broadcast 192.168.2.255
    inet6 fe80::24f8:7a35:ble1:1c3b prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:3f:f2:60 txqueuelen 1000 (Ethernet)
    RX packets 12175 bytes 1797720 (1.7 MiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 2750 bytes 412772 (403.0 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 48 bytes 4080 (3.9 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 48 bytes 4080 (3.9 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

virbr0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
    inet 192.168.122.1 netmask 255.255.255.0 broadcast 192.168.122.255
    ether 52:54:00:12:c9:c4 txqueuelen 1000 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[root@localhost ~]#
```

Figure (12) ifconfig command

➤ SCP Command:

Firstly, I just copied the file from my local user.

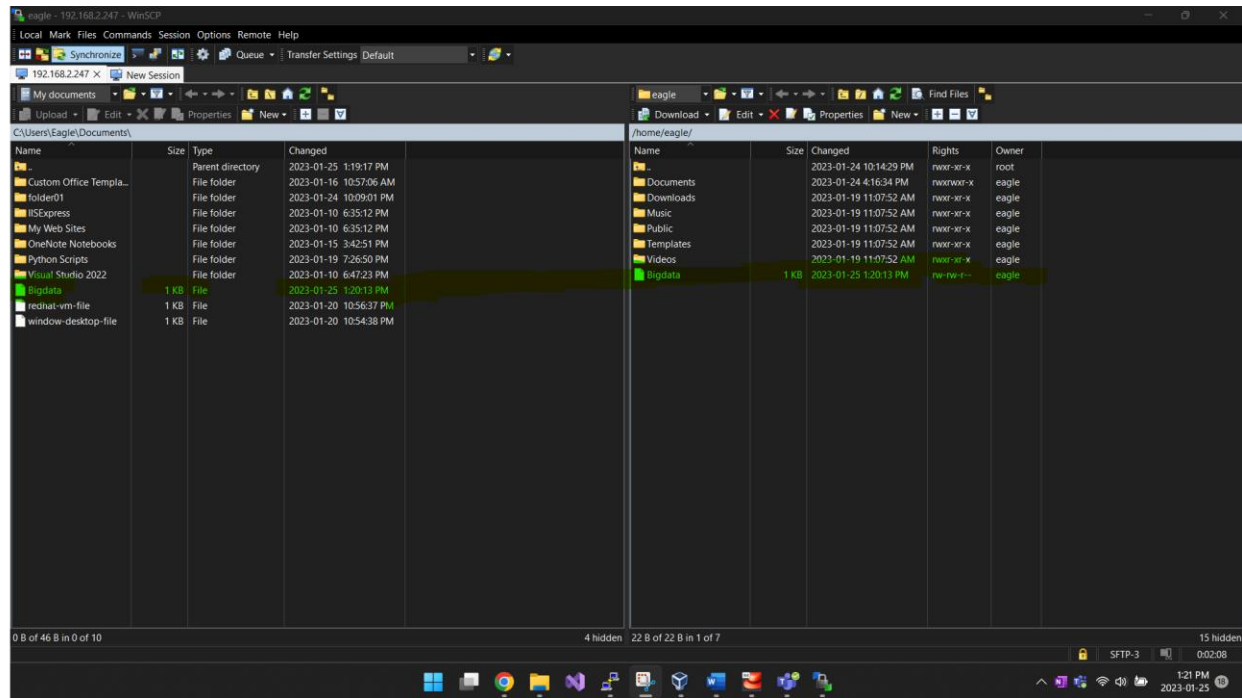
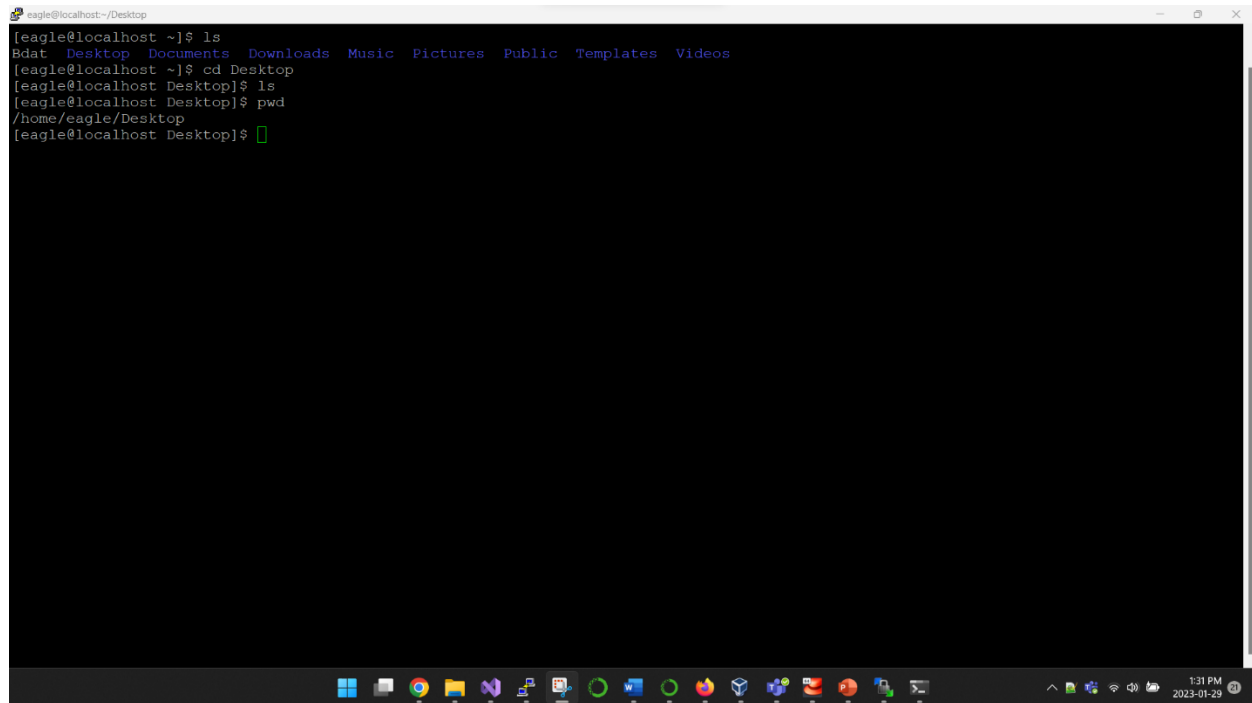


Figure (13) Copied file from local file

I ran ls, pwd, command to check where I have to move my file (figure 14)

A terminal window titled 'eagle@localhost ~/Desktop' is shown. The terminal output is as follows:

```
[eagle@localhost ~]$ ls
Bdat Desktop Documents Downloads Music Pictures Public Templates Videos
[eagle@localhost ~]$ cd Desktop
[eagle@localhost Desktop]$ ls
[eagle@localhost Desktop]$ pwd
/home/eagle/Desktop
[eagle@localhost Desktop]$
```

The terminal window is set against a dark background. The Windows taskbar is visible at the bottom, showing various application icons and the system clock indicating 1:31 PM on 2023-01-29.

Figure (14) Used pwd command to get where is my user

I opened terminal of my window 11, where I used scp command and paste my file link, gave my user name along with ip address and gave command where I have to paste it (Figure 15).

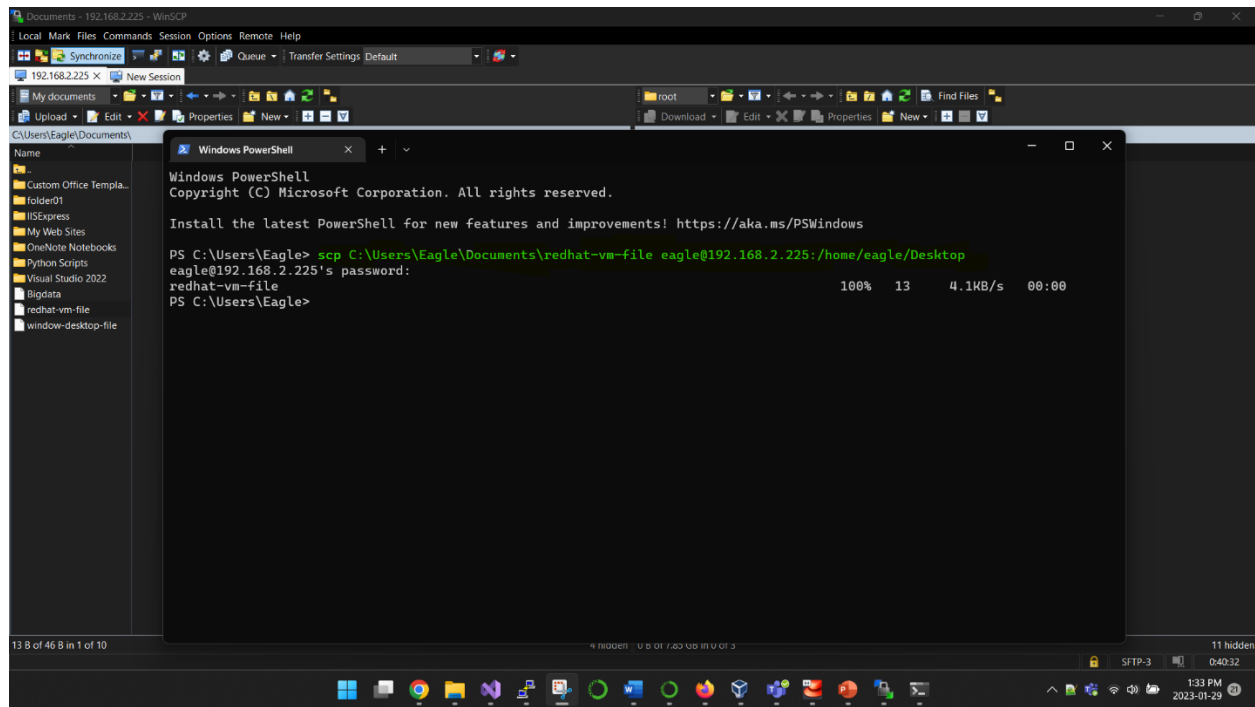
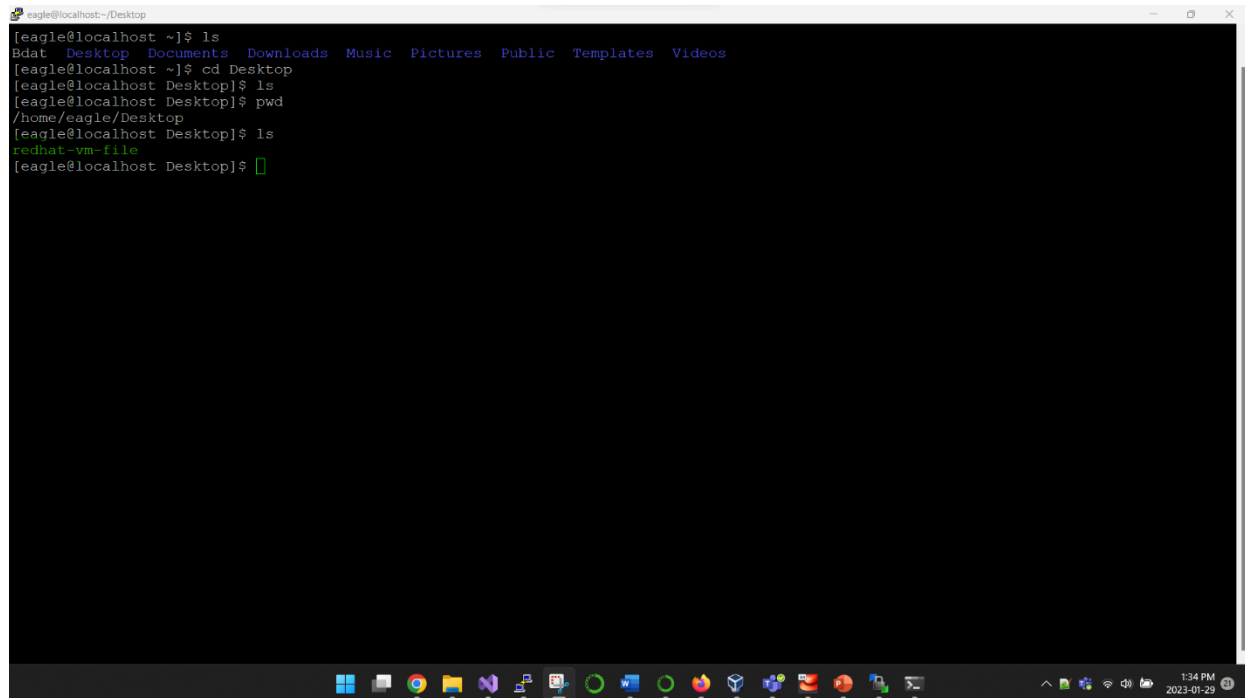


Figure (15) Used scp command

I showed in below figure I got my file on /home/eagle/Desktop. File name is redhat-vm- file (Figure 16).

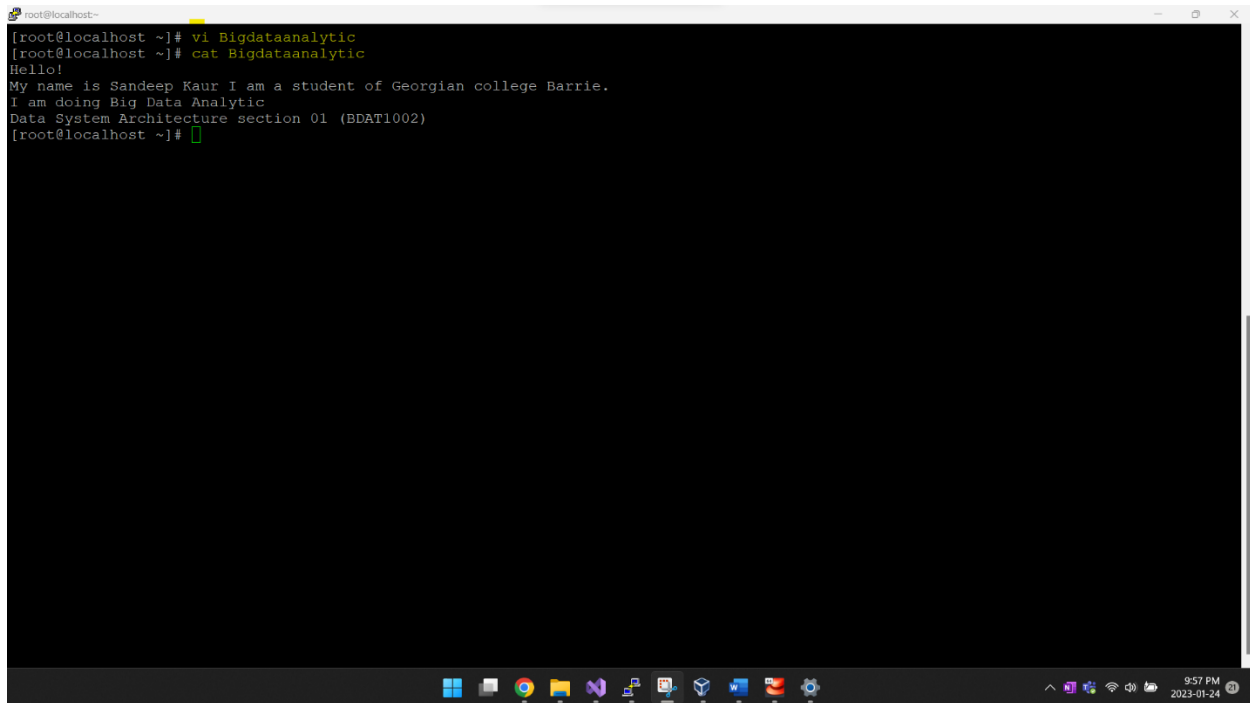
A terminal window titled 'eagle@localhost: ~/Desktop' with standard window controls. The terminal shows a series of commands and their outputs: 'ls' lists directory contents; 'cd Desktop' changes the directory; 'ls' lists the contents of the Desktop directory; 'pwd' shows the current path as '/home/eagle/Desktop'; and a second 'ls' command. A green prompt 'redhat-vm-file' is visible. The desktop environment at the bottom includes a taskbar with various application icons and a system tray showing the time as 1:34 PM on 2023-01-29.

```
eagle@localhost: ~/Desktop
[eagle@localhost ~]$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
[eagle@localhost ~]$ cd Desktop
[eagle@localhost Desktop]$ ls
[eagle@localhost Desktop]$ pwd
/home/eagle/Desktop
[eagle@localhost Desktop]$ ls
redhat-vm-file
[eagle@localhost Desktop]$
```

Figure (16) File from local to vm user

3 Create a file by using vi and put some contents in it like “hello group x” x is your group number. Verify it by using cat command to show the content.

I went on shell and gave **vi command** to create a new file. I created Bigdataanalytic file where I wrote some content inside this file. After that to come back from last shell, I used esc key and put sign of colon and gave **wq command** to get out from the shell. Finally, I gave cat command to show the content what I have written (Figure 17).

A screenshot of a terminal window titled 'root@localhost~'. The terminal shows the following commands and output:

```
[root@localhost ~]# vi Bigdataanalytic
[root@localhost ~]# cat Bigdataanalytic
Hello!
My name is Sandeep Kaur I am a student of Georgian college Barrie.
I am doing Big Data Analytic
Data System Architecture section 01 (BDAT1002)
[root@localhost ~]#
```

 The terminal window is running on a Windows desktop, as evidenced by the taskbar at the bottom showing icons for Windows, File Explorer, Google Chrome, and other applications. The system clock in the bottom right corner indicates the time is 9:57 PM on 2023-01-24.

Figure (17) vi command and cat command

4 Use WinSCP to transfer a file to your Linux VM.

I downloaded WinSCP after that I used **ip address** to attach with VM Linux. I made a file name of Bigdata and wrote some content. After doing all I dragged the file from local to Linux VM by using WinSCP (Figure 18).

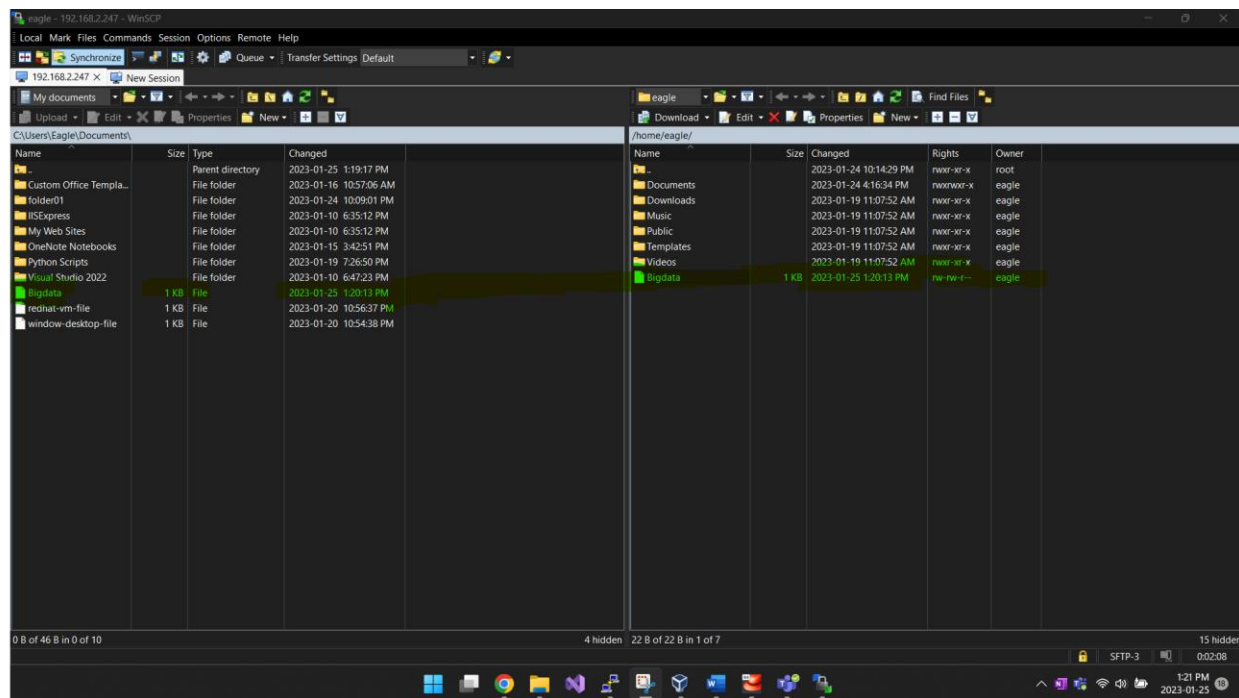
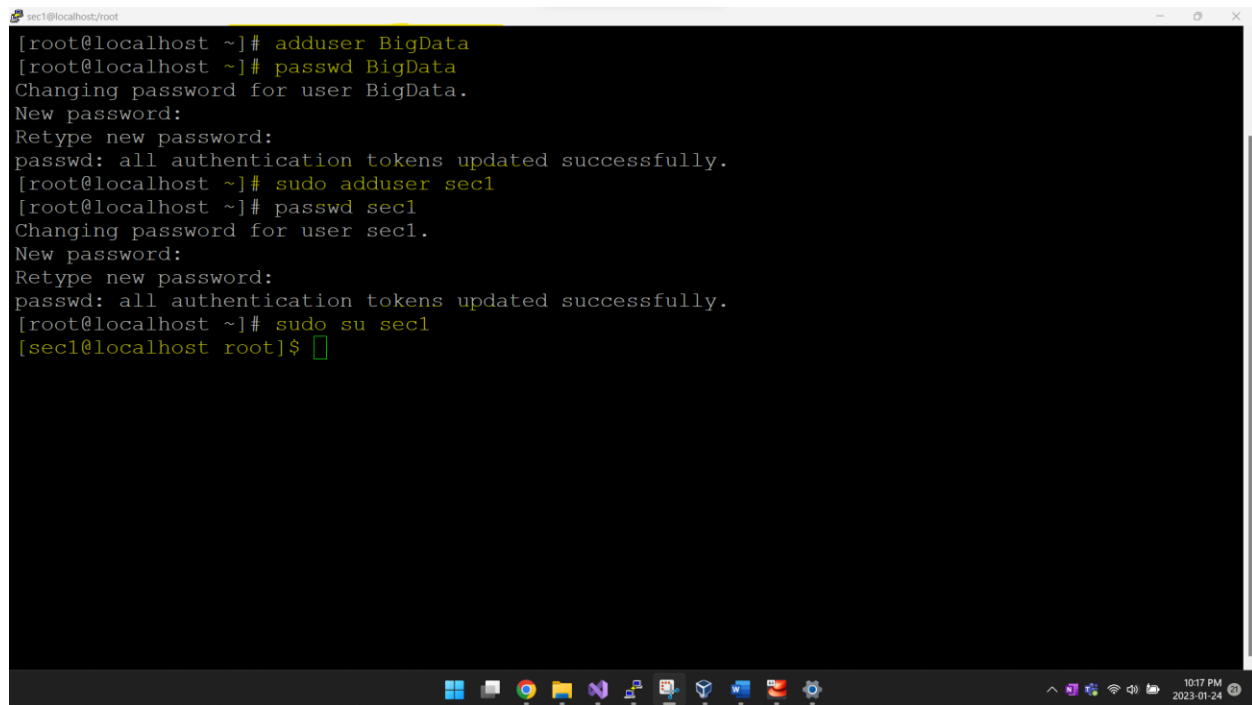


Figure (18) Sent file from WinSCP to Linux VM

5 Create a user with password then log in with new username by using sudo.

In this figure (Figure) firstly I added a user the name of the BigData then set a password then I used **sudo command** to add a new user and gave a same password and logged in with that user (sec1) by using Sudo command.

A terminal window titled 'sec1@localhost/root' with a dark background and light-colored text. The window shows a series of commands and their outputs. The commands are: 'adduser BigData', 'passwd BigData', 'sudo adduser sec1', 'passwd sec1', and 'sudo su sec1'. The outputs include prompts for passwords and confirmation messages from the 'passwd' utility. The terminal ends with a prompt for the 'sec1' user.

```
[root@localhost ~]# adduser BigData
[root@localhost ~]# passwd BigData
Changing password for user BigData.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
[root@localhost ~]# sudo adduser sec1
[root@localhost ~]# passwd sec1
Changing password for user sec1.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
[root@localhost ~]# sudo su sec1
[sec1@localhost root]$
```

Figure 19 sudo command

6 Create a file then modify the permission to full permission.

Well in this figure I created a new file by using **vi command** then to check my file I used **ls command** after that I used **ls -la command** to check the permission where I got to permission only read and write (Figure 20).


```
root@localhost~  
login as: root  
root@192.168.2.247's password:  
Activate the web console with: systemctl enable --now cockpit.socket  
  
This system is not registered to Red Hat Insights. See https://cloud.redhat.com/  
To register this system, run: insights-client --register  
  
Last login: Tue Jan 24 16:42:13 2023 from 192.168.2.242  
[root@localhost ~]# clear  
[root@localhost ~]# ls  
Bl      BDAT01      Desktop    dir2      dirbdat2    Downloads  'hadoop-3.3 (1).4'  Music    Public    Videos  
BDAT    Bigdataanalytic  dir1      dirbdat1  Documents  folder1    hadoop-3.3.4        Pictures  Templates  
[root@localhost ~]# ls -la  
total 20  
dr-xr-x---. 25 root    root    4096 Jan 24 21:55 .  
dr-xr-x---. 17 root    root    224 Jan 19 11:05 ..  
drwxr-xr-x. 3 root    root    16 Jan 24 15:52 Bl  
-rw-----. 1 root    root    1426 Jan 24 16:12 .bash_history  
-rw-r--r--. 1 root    root    22 Jan 24 16:03 BDAT  
drwxr-xr-x. 3 root    root    20 Jan 24 15:43 BDAT01  
-rw-r--r--. 1 root    root    152 Jan 24 21:55 Bigdataanalytic  
drwx-----. 13 root    root    282 Jan 19 11:47 .cache  
drwx-----. 15 root    root    278 Jan 19 12:01 .config  
drwx-----. 3 root    root    25 Jan 19 11:06 .dbus  
drwxr-xr-x. 2 root    root    6 Jan 19 11:24 Desktop  
drwxr-xr-x. 2 root    root    6 Jan 24 15:51 dir1  
drwxr-xr-x. 2 root    root    6 Jan 24 15:51 dir2  
drwxr-xr-x. 2 root    root    6 Jan 24 15:39 dirbdat1  
drwxr-xr-x. 2 root    root    6 Jan 24 15:39 dirbdat2  
drwxr-xr-x. 3 root    root    44 Jan 24 16:04 Documents  
drwxr-xr-x. 2 root    root    6 Jan 19 11:24 Downloads  
-rw-----. 1 root    root    16 Jan 24 15:50 .esd_auth  
drwxr-xr-x. 2 root    root    6 Jan 24 15:50 folder1  
drwxr-xr-x. 10 root    root    215 Jan 24 12:35 'hadoop-3.3 (1).4'  
drwxr-xr-x. 10 BDAT1002 BDAT1002 215 Jul 29 09:44 hadoop-3.3.4  
drwx-----. 3 root    root    19 Jan 19 11:24 .local  
drwx-----. 5 root    root    66 Jan 19 11:47 .mozilla  
drwxr-xr-x. 2 root    root    6 Jan 19 11:24 Music  
drwxr-xr-x. 2 root    root    6 Jan 19 11:24 Pictures
```

Figure 20 created file which have only permission of read and write

I used **chmod command** to give full permission after having this command I got full permission for Bigdataanalytic, read, write and execute.

```
root@localhost:~# ls -la
total 20
drwxr-xr-x. 25 root root 4096 Jan 24 21:55 .
drwxr-xr-x. 17 root root 224 Jan 19 11:05 ..
drwxr-xr-x. 3 root root 16 Jan 24 15:52 B1
-rw-r--r--. 1 root root 1426 Jan 24 16:12 .bash_history
-rw-r--r--. 1 root root 22 Jan 24 16:03 BDAT
drwxr-xr-x. 3 root root 20 Jan 24 15:43 BDAT01
-rwxrwxrwx. 1 root root 152 Jan 24 21:55 Bigdataanalytic
drwxr-xr-x. 13 root root 282 Jan 19 11:47 .cache
drwxr-xr-x. 15 root root 278 Jan 19 12:01 .config
drwxr-xr-x. 3 root root 25 Jan 19 11:06 .dbus
drwxr-xr-x. 2 root root 6 Jan 19 11:24 Desktop
drwxr-xr-x. 2 root root 6 Jan 24 15:51 dir1
drwxr-xr-x. 2 root root 6 Jan 24 15:51 dir2
drwxr-xr-x. 2 root root 6 Jan 24 15:39 dirbd1
drwxr-xr-x. 2 root root 6 Jan 24 15:39 dirbd2
drwxr-xr-x. 3 root root 44 Jan 24 16:04 Documents
drwxr-xr-x. 2 root root 6 Jan 19 11:24 Downloads
-rw-r--r--. 1 root root 16 Jan 24 15:50 .esd_auth
drwxr-xr-x. 2 root root 6 Jan 24 15:50 folder1
drwxr-xr-x. 10 root root 215 Jan 24 12:35 'hadoop-3.3 (1).4'
drwxr-xr-x. 10 BDAT1002 BDAT1002 215 Jul 29 09:44 hadoop-3.3.4
drwxr-xr-x. 3 root root 19 Jan 19 11:24 .local
drwxr-xr-x. 5 root root 66 Jan 19 11:47 .mozilla
drwxr-xr-x. 2 root root 6 Jan 19 11:24 Music
drwxr-xr-x. 2 root root 6 Jan 19 11:24 Pictures
drwxr-xr-x. 3 root root 19 Jan 19 11:24 .pki
drwxr-xr-x. 2 root root 6 Jan 19 11:24 Public
drwxr-xr-x. 2 root root 6 Jan 19 11:24 Templates
drwxr-xr-x. 2 root root 6 Jan 19 11:24 Videos
root@localhost:~#
```

Figure 21 Bigdataanalytic file which have full permission to read,write and execute by using chmod command

7 Download Hadoop by using wget then unzip it (any Hadoop version is fine)

Firstly, I installed **wget** to download Hadoop. I downloaded this Hadoop version hadoop3.3 by using **wget** after download I used **tar xvf {file name}** to unzip it.

```
root@localhost:~# wget https://archive.apache.org/dist/hadoop/common/hadoop-3.3.4/hadoop-3.3.4.tar.gz
--2023-01-25 13:10:07-- https://archive.apache.org/dist/hadoop/common/hadoop-3.3.4/hadoop-3.3.4.tar.gz
Resolving archive.apache.org (archive.apache.org)... 138.201.131.134, 2a01:4f8:172:2ec5::2
Connecting to archive.apache.org (archive.apache.org)|138.201.131.134|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 695457782 (663M) [application/x-gzip]
Saving to: 'hadoop-3.3.4.tar.gz'

hadoop-3.3.4.tar.gz      100%[=====] 663.24M  4.90MB/s   in 2m 30s

2023-01-25 13:12:38 (4.43 MB/s) - 'hadoop-3.3.4.tar.gz' saved [695457782/695457782]

root@localhost ~# ls
BI      BDAT01      Desktop    dir2        dirbdatt2   Downloads  hadoop-3.3.4.tar.gz  Pictures  Templates
BDAT    Bigdataanalytic  dir1      dirbdatt1   Documents   folder1    Music                Public    Videos
root@localhost ~#
```

Figure 22 Hadoop downloaded by using Wget

```
root@localhost:~# ls
hadoop-3.3.4/share/doc/hadoop/hadoop-archives/images/icon_info_sml.gif
hadoop-3.3.4/share/doc/hadoop/hadoop-archives/images/logo_apache.jpg
hadoop-3.3.4/share/doc/hadoop/hadoop-archives/images/bg.jpg
hadoop-3.3.4/share/doc/hadoop/hadoop-archives/images/newwindow.png
hadoop-3.3.4/share/doc/hadoop/hadoop-archives/images/h3.jpg
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/project-reports.html
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/dependency-analysis.html
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/css/
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/css/maven-base.css
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/css/print.css
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/css/maven-theme.css
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/css/site.css
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/breadcrumbs.jpg
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/apache-maven-project-2.png
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/maven-logo-2.gif
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/collapsed.gif
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/logo_maven.jpg
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/icon_warning_sml.gif
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/logos/
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/logos/build-by-maven-black.png
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/logos/maven-feather.png
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/logos/build-by-maven-white.png
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/banner.jpg
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/h5.jpg
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/icon_error_sml.gif
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/icon_success_sml.gif
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/expanded.gif
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/external.png
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/icon_info_sml.gif
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/logo_apache.jpg
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/bg.jpg
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/newwindow.png
hadoop-3.3.4/share/doc/hadoop/hadoop-hdfs-nfs/images/h3.jpg
root@localhost ~# ls
BI      BDAT01      Desktop    dir2        dirbdatt2   Downloads  hadoop-3.3.4      Music  Public  Videos
BDAT    Bigdataanalytic  dir1      dirbdatt1   Documents   folder1    hadoop-3.3.4.tar.gz  Pictures  Templates
root@localhost ~#
```

Figure 23 Unzip Hadoop

8 Install any package (like http) then remove it.

Installing package, I used yum install command such as yum install -y {package name} (figure 21)

And to remove this package I used yum remove {package name} (figure 22)

```
eagle@localhost:~/etc/yum/repos.d
Package Architecture Version Repository Size
Installing:
vsftpd x86_64 3.0.3-31.el8 AppStream 180 k
Transaction Summary
=====
Install 1 Package
Total size: 180 k
Installed size: 343 k
Downloading Packages:
warning: /localrepo/AppStream/Packages/vsftpd-3.0.3-31.el8.x86_64.rpm: Header V3 RSA/SHA256 Signature, key ID fd431d51: NOKEY
AppStream-RHEL8 0.0 B/s | 0 B 00:00
Empty mirrorlist and no basepath specified!
[root@localhost yum.repos.d]# rpm -qa | grep vsftpd
[root@localhost yum.repos.d]# yum install -y ftp
Updating Subscription Management repositories.
Unable to read consumer identity
This system is not registered to Red Hat Subscription Management. You can use subscription-manager to register.
Last metadata expiration check: 0:05:42 ago on Sun 29 Jan 2023 12:06:10 PM IST.
Dependencies resolved.
Package Architecture Version Repository Size
Installing:
ftp x86_64 0.17-78.el8 AppStream 70 k
Transaction Summary
=====
Install 1 Package
Total size: 70 k
Installed size: 112 k
Downloading Packages:
warning: /localrepo/AppStream/Packages/ftp-0.17-78.el8.x86_64.rpm: Header V3 RSA/SHA256 Signature, key ID fd431d51: NOKEY
AppStream-RHEL8 0.0 B/s | 0 B 00:00
Empty mirrorlist and no basepath specified!
[root@localhost yum.repos.d]#
```

Figure 24 Packages of ftp

```
eagle@localhost/etc/yum.repos.d
BaseOS-RHEL8
Empty mirrorlist and no basepath specified!
[root@localhost yum.repos.d]# yum history
Updating Subscription Management repositories.
Unable to read consumer identity
This system is not registered to Red Hat Subscription Management. You can use subscription-manager to register.
ID      | Command line          | Date and time    | Action(s)    | Altered
-----|-----
5 | remove zsh            | 2023-01-29 13:22 | Removed      | 1
4 | remove httpd          | 2023-01-29 13:03 | Removed      | 12
3 | remove samba          | 2023-01-29 12:09 | Removed      | 3
2 | remove vsftpd         | 2023-01-29 12:09 | Removed      | 1
1 |                       | 2023-01-29 10:34 | Install      | 1814 EE
[root@localhost yum.repos.d]# yum history undo 5
Updating Subscription Management repositories.
Unable to read consumer identity
This system is not registered to Red Hat Subscription Management. You can use subscription-manager to register.
Last metadata expiration check: 0:47:54 ago on Sun 29 Jan 2023 12:55:38 PM IST.
Undoing transaction 5, from Sun 29 Jan 2023 01:22:01 PM IST
  Removed zsh-5.5.1-6.el8_1.2.x86_64 @@System
Dependencies resolved.
=====
Package                        Architecture      Version           Repository        Size
=====
Installing:
zsh                            x86_64            5.5.1-6.el8_1.2  BaseOS            2.9 M
Transaction Summary
-----
Install 1 Package

Total size: 2.9 M
Installed size: 7.2 M
Is this ok [y/N]: Y
Downloading Packages:
warning: /localrepo/BaseOS/Packages/zsh-5.5.1-6.el8_1.2.x86_64.rpm: Header V3 RSA/SHA256 Signature, key ID fd431d51: NOKEY
BaseOS-RHEL8
Empty mirrorlist and no basepath specified!
0.0 B/s | 0 B    00:00
[root@localhost yum.repos.d]#
```

Figure 25 Remove package of ftp

9 Create your local.repo and make sure its working. If already has been set up just show it. Explain why it's used.

Firstly, I made a directory of localrepo on the root user after that I just mounted it in iso image. I gave df -hT command to check my file is mounted or not. I found that repository files under etc/yum.repos.d . I made here local repo with (.)repo

extension, I wrote content such as I gave name and gave **metadata_expire** which will expire metadata after expiring because I set here then I used gpgcheck for having authentication, in other words to check package while enabling it. I enabled this repository and I gave path to install repos for example <file:///localrepo/BaseOS/> and gave key to check **gpg file:///etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release**. At the end I showed content which I have written in **local.repo** file. The uses of local repo to install software package and updates. As it is free network. (Figure 21) I installed one packages which I showed above in (figure 25)

```

[root@localhost eagle]# cd
[root@localhost ~]# mount /dev/sr0 /localrepo/
mount: /localrepo: WARNING: device write-protected, mounted read-only.
[root@localhost ~]# df -hT
Filesystem      Type      Size  Used Avail Use% Mounted on
devtmpfs        devtmpfs  1.9G   0 1.9G   0% /dev
tmpfs           tmpfs     1.9G   0 1.9G   0% /dev/shm
tmpfs           tmpfs     1.9G  9.6M 1.9G   1% /run
tmpfs           tmpfs     1.9G   0 1.9G   0% /sys/fs/cgroup
/dev/mapper/rhel-root xfs       36G   15G  22G  40% /
/dev/sdal        xfs      1014M  231M  784M  23% /boot
tmpfs           tmpfs     378M   1.2M 377M   1% /run/user/42
tmpfs           tmpfs     378M   5.7M 373M   2% /run/user/1000
/dev/sr0         iso9660    7.9G   7.9G   0 100% /localrepo
tmpfs           tmpfs     378M   4.0K 378M   1% /run/user/0
[root@localhost ~]# cd /etc/yum.repos.d/
[root@localhost yum.repos.d]# ls
redhat.repo
[root@localhost yum.repos.d]# vim local.repo
[root@localhost yum.repos.d]# cat local.repo
[BaseOS]
name=BaseOS-RHEL8
metadata_expire=-1
gpgcheck=1
enabled=1
baseurl=file:///localrepo/BaseOS/
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release

[AppStream]
name=AppStream-RHEL8
metadata_expire=-1
gpgcheck=1
enabled=1
baseurl=file:///localrepo/AppStream/
gpgkey=file:///etc/pki/rpm-gpg/RPM-GPG-KEY-redhat-release

[root@localhost yum.repos.d]# ls
local.repo  redhat.repo
[root@localhost yum.repos.d]#

```

Figure 26 local.repo file

10 From the command line upgrade your VM to GUI.

Certainty, I used **putty** to run command **systemctl isolate multi-user.target** switch to CLI to GUI and GUI to CLI.

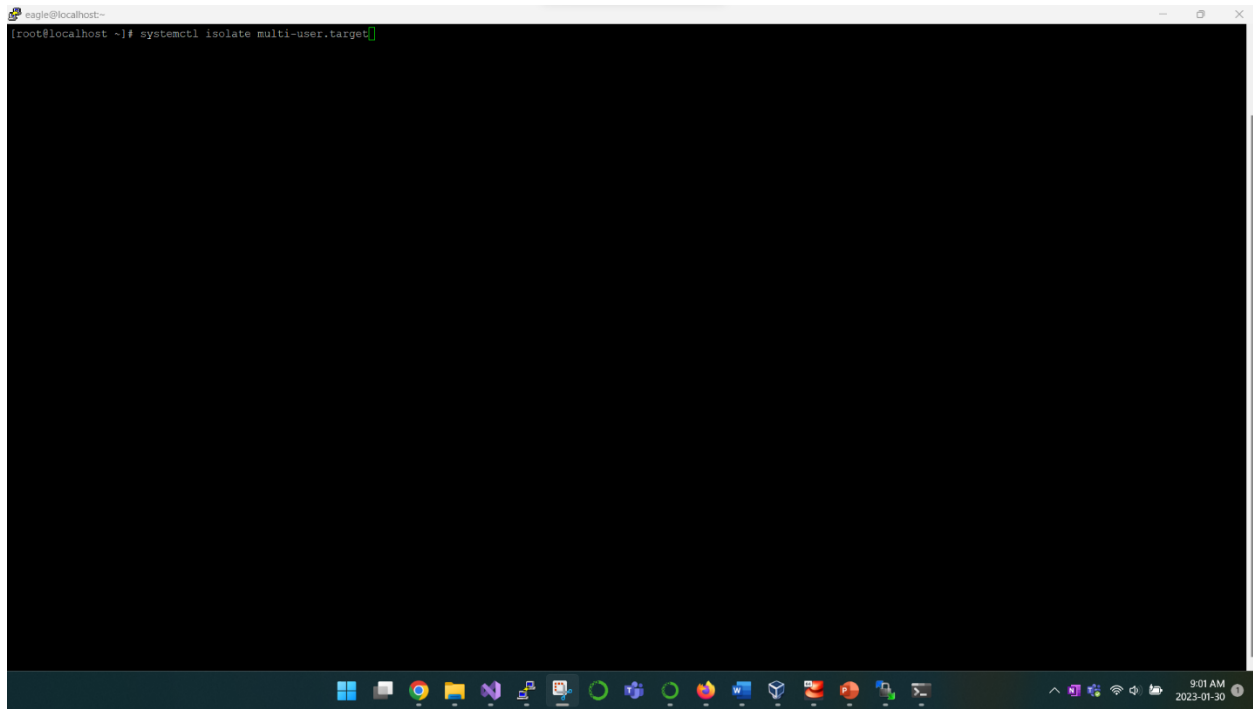


Figure 27 switch VM to GUI

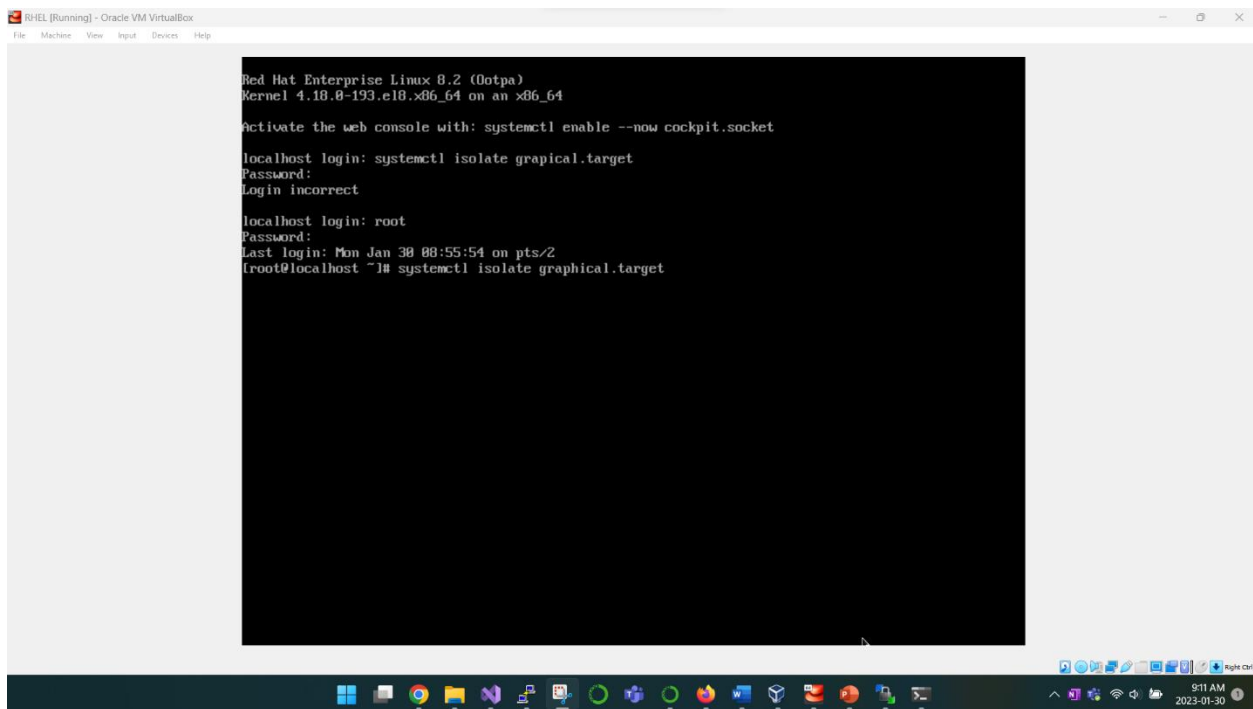


Figure 28 Switch GUI to VM