

RHEL9

Session 2 – 9th October 2022 Summary

> Command to check the network interface and IP Address in Linux

```
[root@localhost ~]# ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 150
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10
    inet6 fe80::a00:27ff:fea0:bb9c prefixlen 64 scope
    ether 08:00:27:a0:bb:9c txqueuelen 1000 (Ethernet
    RX packets 52 bytes 5674 (5.5 KiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 105 bytes 10393 (10.1 KiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 colli
```

> Command to check the size of the RAM

> Command to check the IP Address on Windows

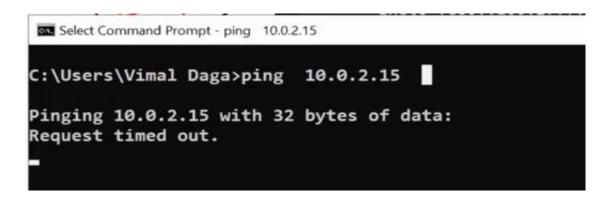
```
Command Prompt

Microsoft Windows [Version 10.0.19044.2006]

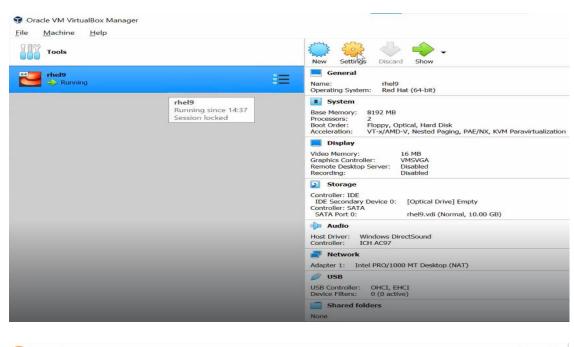
(c) Microsoft Corporation. All rights reserved.

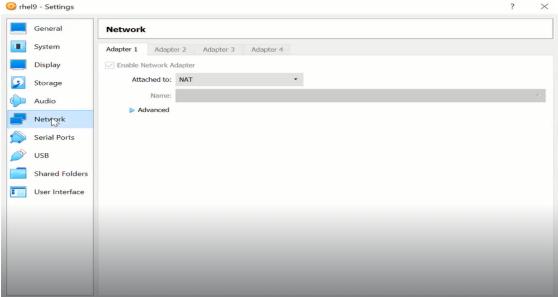
C:\Users\Vimal Daga>ipconfig _
```

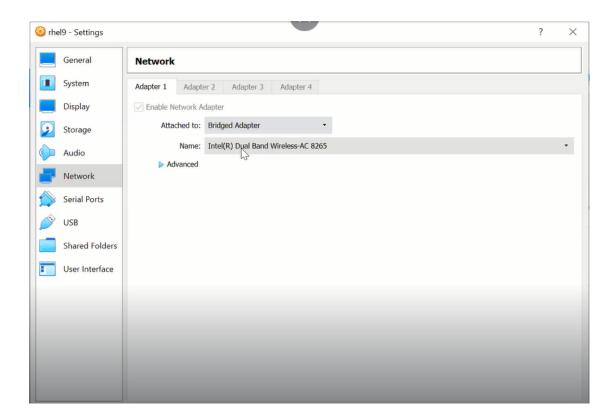
> Command to check the network connectivity between windows and linux



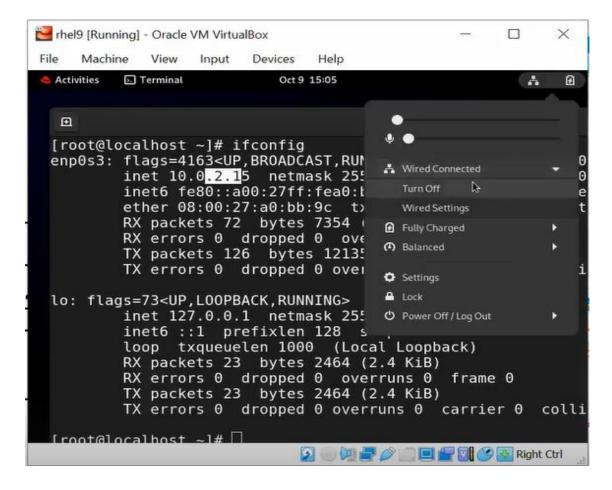
➤ Not able to connect because there is no common medium – for this

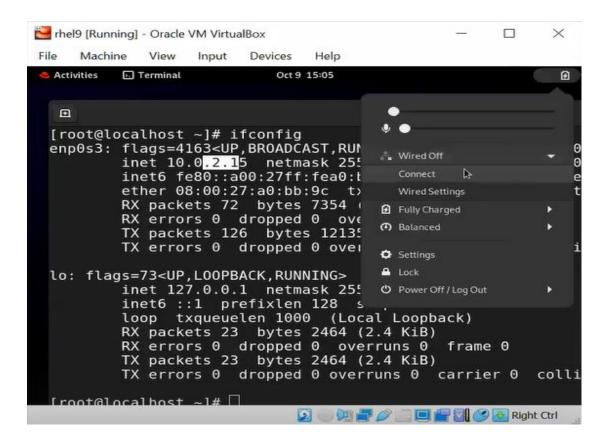




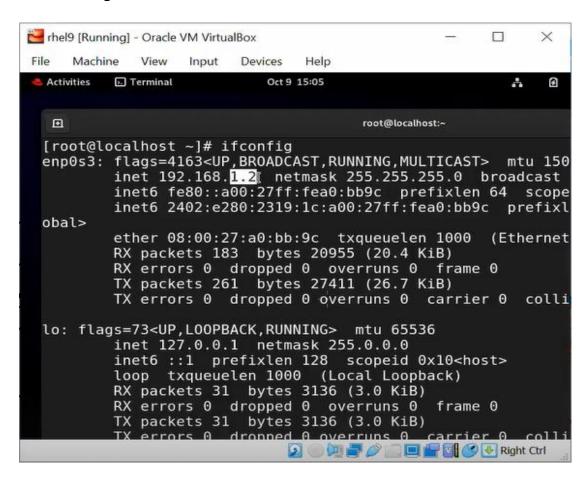


➤ To reload the settings – turn off and turn on the wired connection





➤ After this again check the IP Address



➤ Now ping with the IP Address

```
C:\Users\Vimal Daga>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time<1ms TTL=64

Reply from 192.168.1.2: bytes=32 time=1ms TTL=64

Reply from 192.168.1.2: bytes=32 time<1ms TTL=64
```

➤ Command for remote login – from window to linux

```
C:\Users\Vimal Daga>ssh -l root 192.168.1.2
The authenticity of host '192.168.1.2 (192.168.1.2)' can't be established.
ECDSA key fingerprint is SHA256:F7PdcjyIrrbGYoXk6g8Mx0YfN+EQwQMu7doT3gKV3Y0.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.1.2' (ECDSA) to the list of known hosts.
root@192.168.1.2's password:
Activate the web console with: systemctl enable --now cockpit.socket

Register this system with Red Hat Insights: insights-client --register
Create an account or view all your systems at https://red.ht/insights-dashboard
Last login: Sun Oct 9 15:18:29 2022 from 192.168.1.12
[root@localhost ~]#
[root@localhost ~]#
```

➤ Without login to linux, we can run the commands

```
[root@localhost ~]# exit
logout
Connection to 192.168.1.2 closed.

C:\Users\Vimal Daga>
C:\Users\Vimal Daga>ssh -1 root 192.168.1.2 date
root@192.168.1.2's password:
Sun Oct 9 03:23:28 PM IST 2022

C:\Users\Vimal Daga>
C:\Users\Vimal Daga>
C:\Users\Vimal Daga>
```

From single command prompt, we can run multiple commands

➤ Command to check the IP Address of a particular network interface – any IP Address having 4 bytes – is a valid IP Address

> Command to change the IP Address

```
[root@localhost ~]# ifconfig enp0s3 192.168.12345
```

Command to check local network is working

```
[root@localhost ~]# ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=60 time=28.6 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=60 time=27.0 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=60 time=31.4 ms
```

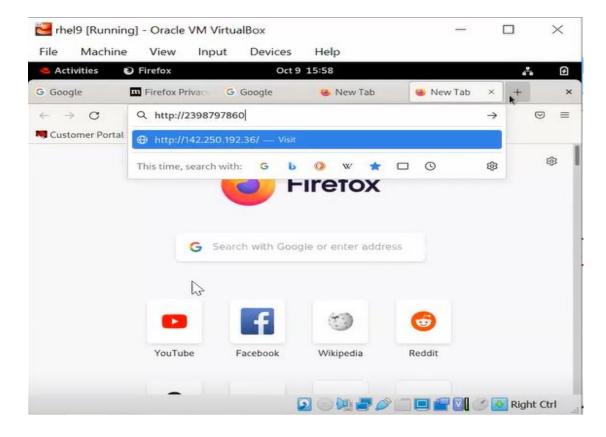
➤ Command to get the IP Address of a particular Website

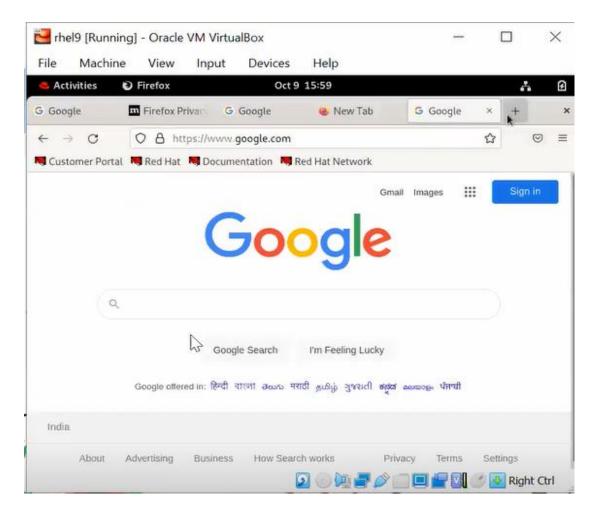
[root@localhost ~]# nslookup www.google.com
Server: 192.168.1.254
Address: 192.168.1.254#53

Non-authoritative answer:
Name: www.google.com
Address: 142.250.192.36
Name: www.google.com
Address: 2404:6800:4009:828::2004

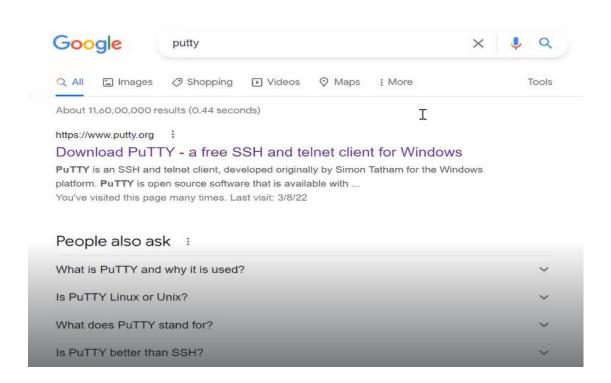
➤ To convert the IP Address of Google – 142.250.192.36 into one Octet

[root@localhost ~]# bc
bc 1.07.1
Copyright 1991-1994, 1997, 1998, 2000, 2004, 2006, 2008, 2
 Foundation, Inc.
This is free software with ABSOLUTELY NO WARRANTY.
For details type `warranty'.
142*2^24 + 250*2^16 + 192*2^8 + 36*2^0
2398797860

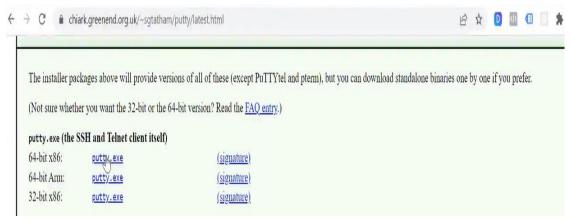


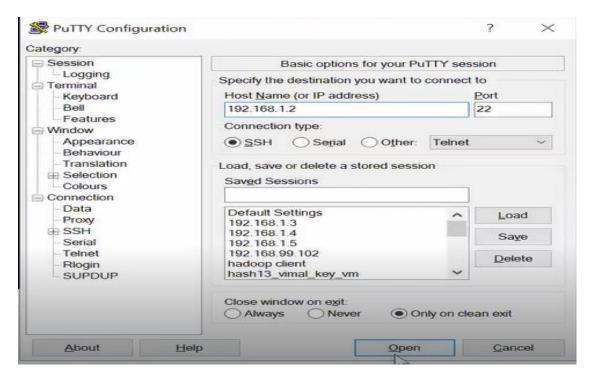


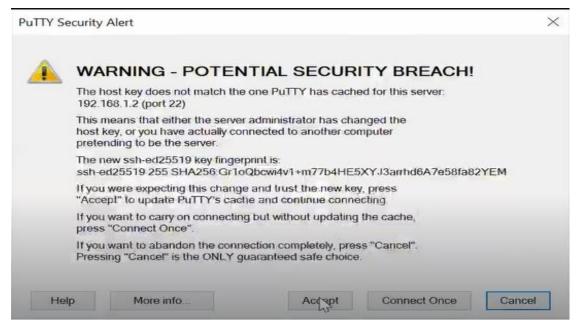
> Putty for Windows











```
login as: root
root@lo2.168.1.2's password:
Activate the web console with: systemctl enable --now cockpit.socket

Register this system with Red Hat Insights: insights-client --register
Create an account or view all your systems at https://red.ht/insights-dashboard
Last login: Sun Oct 9 14:41:57 2022
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]#
```

```
root@localhost:~
                                                                           root@192.168.1.2's password:
Activate the web console with: systemctl enable --now cockpit.socket
Register this system with Red Hat Insights: insights-client --register
Create an account or view all your systems at https://red.ht/insights-dashboard
Last login: Sun Oct 9 15:16:31 2022
[root@localhost ~]#
[root@localhost ~]#
[root@localhost ~]# firefox
Error: no DISPLAY environment variable specified
[root@localhost ~]# date
Sun Oct 9 03:19:14 PM IST 2022
[root@localhost ~]# cal 2 1234
   February 1234
Su Mo Tu We Th Fr Sa
         1 2 3 4
5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28
```

> Command to query a software installed or not

```
[root@localhost ~]# rpm -q firefox
firefox-91.8.0-1.el9_0.x86_64
```

> Command to check the manual of the "rpm" command

```
[root@localhost ~]# man rpm
```

> Command to check detailed information of firefox

```
[root@localhost ~]# rpm -q -i firefox

Name : firefox

Version : 91.8.0

Release : 1.el9_0

Architecture: x86_64

Install Date: Sat 08 Oct 2022 04:09:16 PM IST

Group : Unspecified

Size : 277491573

License : MPLv1.1 or GPLv2+ or LGPLv2+

Signature : RSA/SHA256, Wed 06 Apr 2022 11:40:08 AM IST, Ke

51

Source RPM : firefox-91.8.0-1.el9_0.src.rpm

Build Date : Tue 05 Apr 2022 05:43:45 PM IST

Build Host : x86-vm-56.build.eng.bos.redhat.com

Packager : Red Hat, Inc. <http://bugzilla.redhat.com/bugzi

Vendor : Red Hat, Inc.

URL : https://www.mozilla.org/firefox/
```

> Command to query all the software installed

```
[root@localhost ~]# rpm -q -a
```

Command to query the name of the software of a command

```
[root@localhost ~]# date
Sun Oct 9 04:26:11 PM IST 2022
[root@localhost ~]# which date
/usr/bin/date
[root@localhost ~]# rpm -q -f /usr/bin/date
coreutils-8.32-31.el9.x86_64
[root@localhost ~]# ■
```

Command to list the commands supported by a firefox

```
[root@localhost ~]# man firefox
[root@localhost ~]# rpm -q -l firefox
```

```
/usr/lib64/firefox/platform.ini
/usr/lib64/firefox/plugin-container
/usr/lib64/firefox/run-mozilla.sh
/usr/lib64/mozilla/extensions/{ec8030f7-c20a-464f-9b
/usr/share/appdata/firefox.appdata.xml
/usr/share/applications/firefox.desktop
/usr/share/icons/hicolor/16x16/apps/firefox.png
/usr/share/icons/hicolor/22x22/apps/firefox.png
/usr/share/icons/hicolor/24x24/apps/firefox.png
/usr/share/icons/hicolor/256x256/apps/firefox.png
/usr/share/icons/hicolor/32x32/apps/firefox.png
/usr/share/icons/hicolor/48x48/apps/firefox.png
/usr/share/icons/hicolor/symbolic/apps/firefox-symbo
/usr/share/man/man1/firefox.1.gz
/usr/share/mozilla/extensions/{ec8030f7-c20a-464f-9b
[root@localhost ~]#
```

➤ Command to query about the Kernel software

```
[root@localhost /]# rpm -q kernel
kernel-5.14.0-70.22.1.el9 0.x86 64
[root@localhost /]# rpm -q -i kernel
Name
            : kernel
Version
            : 5.14.0
Release : 70.22.1.el9 0
Architecture: x86 64
Install Date: Sat 08 Oct 2022 04:09:19 PM IST
Group
            : Unspecified
Size
License
         : GPLv2 and Redistributable, no modification
           : RSA/SHA256, Fri 05 Aug 2022 03:35:22 AM
Signature
51
Source RPM
            : kernel-5.14.0-70.22.1.el9 0.src.rpm
Build Date : Tue 02 Aug 2022 07:03:41 PM IST
Build Host : x86-vm-08.build.eng.bos.redhat.com
           · Red Hat Inc <httn://hugzilla.redhat
Packager
```

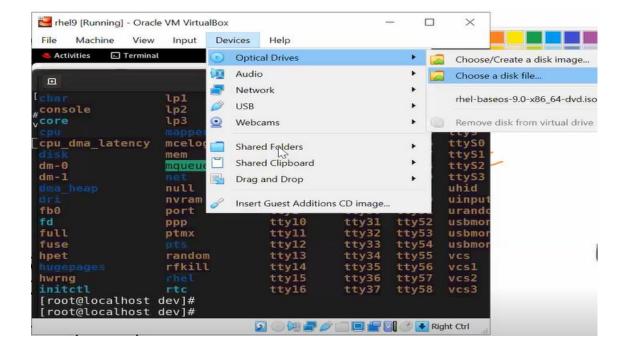
➤ All the devices in Linux OS is managed by /dev folder

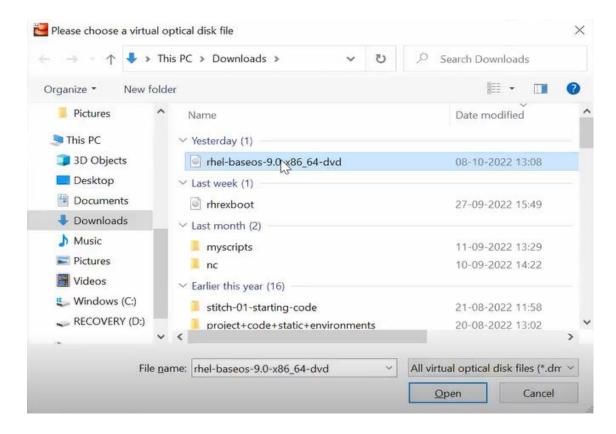
```
[root@localhost /]# cd /dev
[root@localhost dev]# ls
console
                    lp2
                                               tty22
                                                      tty43
                                              tty23
core
                    lp3
                                   snapshot
                                                      tty44
                                                              tty8
                                              tty24
                                                      tty45
                                                              tty9
                                      cpu dma latency
                    mcelog
                                   sro
                                                      tty46
                                               tty26
                                   stderr
                                                      tty47
                                                              ttyS1
                   mem
                   mqueue
                                               tty27
                                                      tty48
 dm-0
                                   stdin
                                              tty28
                                                              tty53
uhid
 dm-1
                                   stdout
                                                      tty49
                                               tty29
                                                      tty5
                    null
                                   tty
                                   ttye
                                                      tty50
                    nvram
                                                              uinpu
 fb0
                                   ttyl
                                               tty30
                                                      tty51
                    port
                                                              urande
 fd
                    ppp
                                   tty10
                                               tty31
                                                      tty52
                                                              usbmo
 full
                                   tty11
                                               tty32
                    ptmx
                                                              usbmo
                                   tty12
 fuse
                                                              usbmo
                                                      tty55
 hpet
                    random
                                   tty13
                                               tty34
                                                              VCS
                                              tty35
                    rfkill
                                                              vcs1
                                   tty15
                                               tty36
                                                      tty57
                                                              VCS2
 initctl
                    rtc
```

Command which speaks for us

```
[[root@localhost dev]# cd snd/
#[root@localhost snd]# pwd
#/dev/snd
[[root@localhost snd]# ls
| by-path controlC0 pcmC0D0c pcmC0D0p pcmC0D1c seq timer
| [root@localhost snd]# espeak-ng
| hello
```

> To share a iso file





➤ Command to see the path or location of a package – from CLI

```
[root@localhost dev]# df -h
Filesystem
                               Used Avail Use% Mounted on
                         Size
devtmpfs
                         3.9G
                                  0
                                     3.9G
                                             0% /dev
tmpfs
                         3.9G
                                  0
                                     3.9G
                                             0% /dev/shm
tmpfs
                         1.6G
                               9.2M
                                     1.6G
                                             1% /run
/dev/mapper/rhel-root
                         8.0G
                               4.4G
                                     3.7G
                                            55% /
/dev/sdal
                        1014M
                               232M
                                     783M
                                            23% /boot
tmpfs
                         795M
                               132K
                                     794M
                                             1% /run/user/0
/dev/sr0
                         8.0G
                               8.0G
                                           100%
                                                /run/media/root/
86 64
[root@localhost dev]# cd /run/media/root/RHEL-9-0-0-BaseOS-x8
[root@localhost RHEL-9-0-0-BaseOS-x86 64]#
[root@localhost RHEL-9-0-0-BaseOS-x86 64]#
[root@localhost RHEL-9-0-0-BaseOS-x86 64]# pwd
/run/media/root/RHEL-9-0-0-BaseOS-x86 64
[root@localhost RHEL-9-0-0-BaseOS-x86 64]#
[root@localhost RHEL-9-0-0-Base0S-x86 64]# ls
                                           RPM-GPG-KEY-redhat-b
           EULA
                                           RPM-GPG-KEY-redhat-r
           extra files.json
           GPL
                              media.repo
[root@localhost RHEL-9-0-0-BaseOS-x86 64]#
[root@localhost RHEL-9-0-0-BaseOS-x86 64]#
```

➤ Command to go into one of the folder – it contains multiple software

```
[root@localhost RHEL-9-0-0-BaseOS-x86_64]# cd AppStream/
[root@localhost AppStream]# ls
[root@localhost AppStream]# cd Packages/
[root@localhost Packages]# ls
```

> Command to uninstall a software

```
[[root@localhost Packages]# rpm -q firefox
firefox-91.8.0-1.el9_0.x86_64

[root@localhost Packages]# rpm -e firefox
[root@localhost Packages]# rpm -q firefox

[package firefox is not installed
[root@localhost Packages]# firefox
bash: firefox: command not found...

[root@localhost Packages]# |
```

➤ Command to check a software contains a package — use Tab key for auto completion

```
[root@localhost Packages]# ls fire
firefox-91.8.0-1.el9 0.x86 64.rpm
firewall-applet-1.0.0-4.el9.noarch.rpm
firewall-config-1.0.0-4.el9.noarch.rpm
[root@localhost Packages]# ls firefox-91.8.0-1.el9_0.x86_6
firefox-91.8.0-1.el9_0.x86_64.rpm
[root@localhost Packages]#
[root@localhost Packages]#
[root@localhost Packages]#
[root@localhost Packages]#
```

> Command to install a software using rpm command

```
[root@localhost Packages]# rpm -i firefox-91.8.0-1.el9_0-warning: firefox-91.8.0-1.el9_0.x86_64.rpm: Header V3 RSA/S/ID fd431d51: NOKEY
[root@localhost Packages]# rpm -q firefox
firefox-91.8.0-1.el9_0.x86_64
[root@localhost Packages]#
```

➤ Command to see the detailed information of command output – with –v (verbosity) option – shows what is happening behind the scene

```
[root@localhost Packages]# rpm -i -v firefox-91.8.0-1.el
warning: firefox-91.8.0-1.el9_0.x86_64.rpm: Header V3 RSA/S
ID fd431d51: NOKEY
Verifying packages...
Preparing packages...
firefox-91.8.0-1.el9_0.x86_64
```

➤ Command to see the hashing information — with —h option

> Standard command in Linux to install any software or package