2A. Managing Console and Gaining Privileges

1. Accessing the Console:
You can access the console in Red Hat Linux through terminal sessions such as tty or remote access tools like SSH.

To switch between console terminals, use:
a.Ctrl + Alt + F1 to F6 for console sessions.
b.Ctrl + Alt + F7 to return to the graphical interface (if available).

2. Gaining Root Privileges (Superuser Access):

To temporarily gain root privileges, use the su command:
#su -

This will prompt for the root password and give you root access.

Alternatively, you can use the sudo command to run individual commands with root privileges (if the user is configured in /etc/sudoers):
#sudo <command>

To safely edit the sudoers file, use:
#visudo

2B. Working with RPM :

To install an RPM package, use the following command:
#rpm -ivh <package.rpm>

To upgrade a package to a newer version, use:
#rpm -Uvh <package.rpm>

To remove an installed package:
#rpm -e <package-name>

To check if a package is installed:
#rpm -q <package-name>

For detailed information about a package:
#rpm -qi <package-name>

To verify the integrity of installed packages:
#rpm -V <package-name>

2C. Working with Yum :

Installing Packages with Yum:
#yum install <package-name>

To update all installed packages:
#yum update

To update a specific package:
#yum update <package-name>

To remove a package along with its dependencies:
#yum remove <package-name>

To search for a package by name or description:
#yum search <keyword>

To list all available packages:
#yum list available

To list all installed packages:
#yum list installed

Cleaning Yum Cache:
#yum clean all

3A. Configuring and Managing Storage :

-Partitioning :

Which type of installation would you like?

Use All Space
Removes all partitions on the selected device(s). This includes partitions created by other operating systems.

Tip: This option will remove data from the selected device(s). Make sure you have backups.

Replace Existing Linux System(s)
Removes only Linux partitions (created from a previous Linux installation). This does not remove other partitions you may have on your storage device(s) (such as VFAT or FAT32).

Tip: This option will remove data from the selected device(s). Make sure you have backups.

Shrink Current System
Shrinks existing partitions to create free space for the default layout.

Use Free Space
Retains your current data and partitions and uses only the unpartitioned space on the selected device(s), assuming you have enough free space available.

Create Custom Layout
Manually create your own custom layout on the selected device(s) using our partitioning tool.

☐ Encrypt system
☑ Review and modify partitioning layout

⬅ Back   ➡ Next

Please Select A Device

Device	Size (MB)	Mount Point/ RAID/Volume	Type	Format
▽ Hard Drives				
▽ sda (/dev/sda)				
Free	20473			

Create   Edit   Delete   Reset

⬅ Back   ➡ Next

Create Storage

Create Partition

- ● **Standard Partition**
  General purpose partition creation

Create Software RAID   Information

- ○ **RAID Partition**
  Create a RAID formated partition
- ○ RAID Device
  Requires at least 2 free RAID formated partitions

Create LVM   Information

- ○ LVM Volume Group
  Requires at least 1 free LVM formated partition
- ○ LVM Logical Volume
  Create a logical volume on selected volume group
- ○ **LVM Physical Volume**
  Create an LVM formated partition

[Cancel]   [Create]

Add Partition

Mount Point:	/boot ▾
File System Type:	ext4 ⇕
Allowable Drives:	☑ sda 20480 MB VMware, VMware Virtual S
Size (MB):	1000 ⇳

Additional Size Options
- ● Fixed size
- ○ Fill all space up to (MB): [1 ⇳]
- ○ Fill to maximum allowable size

☐ Force to be a primary partition
☐ Encrypt

[Cancel]   [OK]

Add Partition

Mount Point:	<Not Applicable> ▾
File System Type:	swap ⇕
Allowable Drives:	☑ sda 20480 MB VMware, VMware Virtual S
Size (MB):	7000 ⇳

Additional Size Options
- ● Fixed size
- ○ Fill all space up to (MB): [1 ⇳]
- ○ Fill to maximum allowable size

☐ Force to be a primary partition
☐ Encrypt

[Cancel]   [OK]

Add Partition

Mount Point: /

File System Type: ext4

Allowable Drives:
☑ sda   20480 MB   VMware, VMware Virtual S

Size (MB): 200

Additional Size Options
- ○ Fixed size
- ○ Fill all space up to (MB):   1
- ⦿ Fill to maximum allowable size

☐ Force to be a primary partition
☐ Encrypt

Cancel   OK

Format Warnings

⚠ The following pre-existing devices have been selected to be formatted, destroying all data.

/dev/sda   partition table (MSDOS)

Cancel   Format

Click on write changes to the disk

Writing storage configuration to disk

⚠ The partitioning options you have selected will now be written to disk. Any data on deleted or reformatted partitions will be lost.

Go back   Write changes to disk

-Listing Disks :

```
[root@www Desktop]# fdisk -l

Disk /dev/sda: 21.5 GB, 21474836480 bytes
255 heads, 63 sectors/track, 2610 cylinders
Units = cylinders of 16065 * 512 = 8225280 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x00010de9

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1   *           1         128     1024000   83  Linux
Partition 1 does not end on cylinder boundary.
/dev/sda2             128        1020     7168000   82  Linux swap / Solaris
Partition 2 does not end on cylinder boundary.
/dev/sda3            1020        2611    12778496   83  Linux
[root@www Desktop]# █
```

-Checking disk space :

```
[root@www Desktop]# df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/sda3        12G  2.4G  9.1G  21% /
tmpfs          1012M  608K 1011M   1% /dev/shm
/dev/sda1       985M   36M  899M   4% /boot
/dev/sr0        2.8G  2.8G     0 100% /media/RHEL_6.0 i386 Disc 1
[root@www Desktop]# █
```

-Checking directory size :

```
root@www:~/Desktop                                        _ □ ×
File  Edit  View  Search  Terminal  Help
[root@www Desktop]# du -sh /boot
19M     /boot
[root@www Desktop]# du -sh /etc
32M     /etc
[root@www Desktop]# du -sh /root
5.9M    /root
[root@www Desktop]# du -sh /home
236K    /home
[root@www Desktop]# du -sh /tmp
152K    /tmp
```
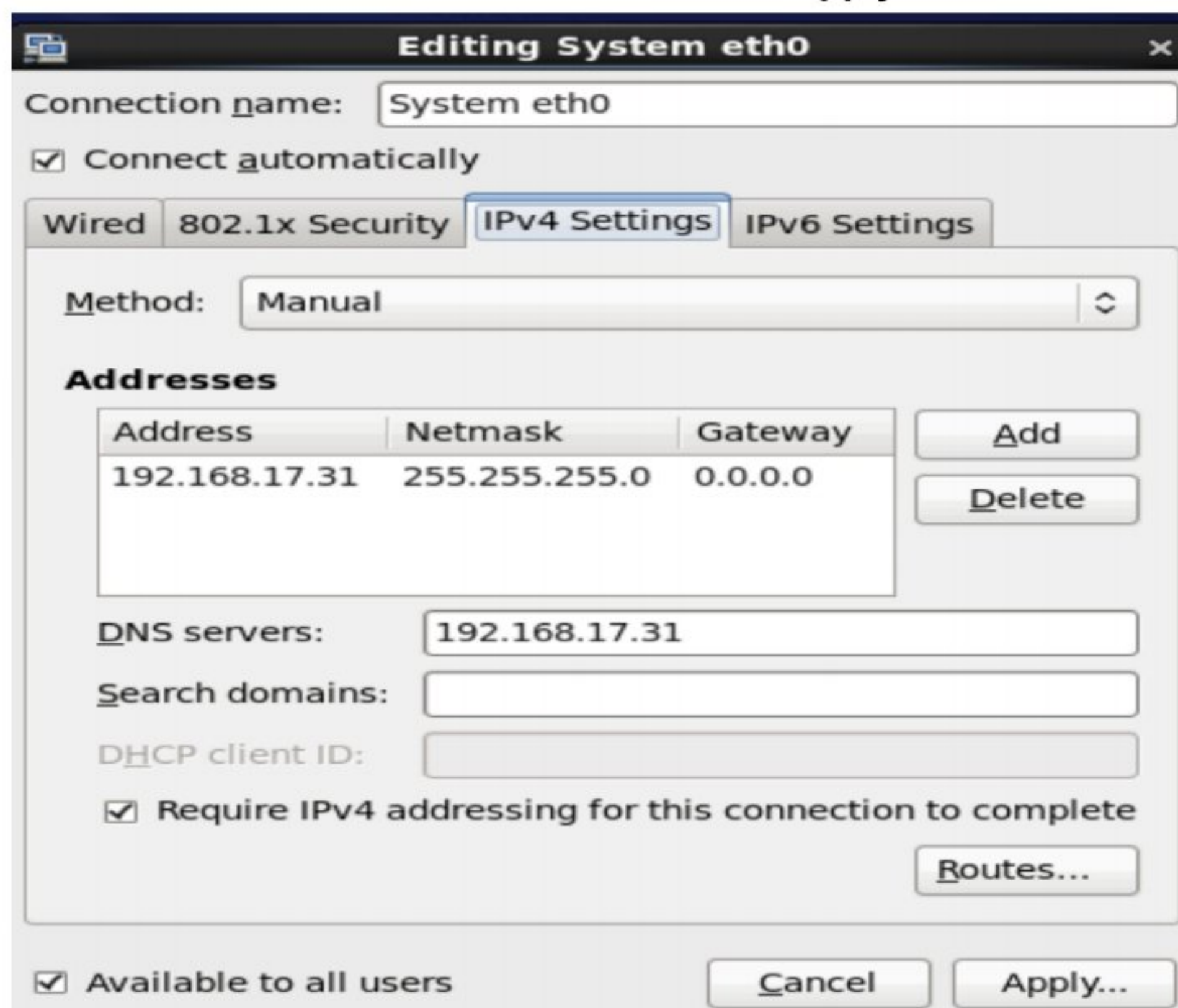
3B. Connecting to the Network:

-Configuring IP :

Select System eth0 and click on edit

Set the Address and netmask and click on apply

-Checking if the ip is set :

```
[x]                        root@www:~/Desktop                      _ □ ×
 File  Edit  View  Search  Terminal  Help
[root@www Desktop]# ifconfig
eth0      Link encap:Ethernet  HWaddr 00:0C:29:7B:AE:E6
          inet addr:192.168.17.31  Bcast:192.168.17.255  Mask:255.255.255.0
          inet6 addr: fe80::20c:29ff:fe7b:aee6/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:1392 errors:0 dropped:0 overruns:0 frame:0
          TX packets:612 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:237190 (231.6 KiB)  TX bytes:112251 (109.6 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:2078 errors:0 dropped:0 overruns:0 frame:0
          TX packets:2078 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:160163 (156.4 KiB)  TX bytes:160163 (156.4 KiB)
```

-Checking the connectivity :

```
[root@www Desktop]# ping 192.168.17.31
PING 192.168.17.31 (192.168.17.31) 56(84) bytes of data.
64 bytes from 192.168.17.31: icmp_seq=1 ttl=64 time=0.184 ms
64 bytes from 192.168.17.31: icmp_seq=2 ttl=64 time=0.049 ms
64 bytes from 192.168.17.31: icmp_seq=3 ttl=64 time=0.053 ms
64 bytes from 192.168.17.31: icmp_seq=4 ttl=64 time=0.053 ms
64 bytes from 192.168.17.31: icmp_seq=5 ttl=64 time=0.053 ms
64 bytes from 192.168.17.31: icmp_seq=6 ttl=64 time=0.054 ms
64 bytes from 192.168.17.31: icmp_seq=7 ttl=64 time=0.059 ms
64 bytes from 192.168.17.31: icmp_seq=8 ttl=64 time=0.054 ms
64 bytes from 192.168.17.31: icmp_seq=9 ttl=64 time=0.067 ms
64 bytes from 192.168.17.31: icmp_seq=10 ttl=64 time=0.055 ms
^Z
[1]+  Stopped                 ping 192.168.17.31
[root@www Desktop]# █
```

-Bringing Interfaces Up and Down :

```
[x]                        root@www:~/Desktop                      _ □ ×
 File  Edit  View  Search  Terminal  Help
[root@www Desktop]# ifdown eth0
Device state: 3 (disconnected)
[root@www Desktop]# ifup eth0
Active connection state: activated
Active connection path: /org/freedesktop/NetworkManager/ActiveConnection/7
[root@www Desktop]# █
```