RHCSA
EX200

Part 1 (On Node 1 Server)

1. Configuring Networking & Host Names and Name Resolution :

Set the hostname node1.network15.example.com and configure the network with ip=172.24.10.10/255.255.255.0 , gateway 172.24.10.254 & dns domain with the IP: 172.24.10.254

Solution:

```
# hostnamectl set-hostname node1.network15.example.com
# cat /etc/hostname
# nmcli con show
# nmcli con mod "enp0s3" ipv4.addresses "172.24.10.10/24"
# nmcli con mod "enp0s3" ipv4.gateway "172.24.10.254"
# nmcli con mod "enp0s3" ipv4.dns "172.24.10.254"
# nmcli con mod "enp0s3" ipv4.method manual
# nmcli con mod "enp0s3" connection.autoconnect yes
# nmcli con up "enp0s3"
# ip addr show
# route -n
# cat /etc/resolv.conf
```

2. Configure your system to use this location as a default repository:

```
http://utility.network15.example.com/BaseOS
http://utility.network15.example.com/AppStream
```
Solution:

```
# vim /etc/yum.repos.d/base.repo

        [BaseOS]
        name = This is the BaseOS repo
        baseurl = http://utility.network15.example.com/BaseOS
        enabled = 1
        gpgcheck = 0
```

```
# vim /etc/yum.repos.d/apps.repo
        [AppStream]
        name = This is the app stream repo
        baseurl = http://utility.network15.example.com/AppStream
        enabled = 1
        gpgcheck = 0
# yum clean all
# yum repolist
```

3. Create the following users, groups and group memberships:

i. A group named sharegrp

ii. A user harry who belongs to sharegrp as a secondary group

iii. A user natasha who also belongs to sharegrp as a secondary group

iv. A user copper who does not have access to an interactive shell on the system and who is not a member of sharegrp.

v. Harry, natasha and copper should have the password "kexdrams".

Solution:

```
# groupadd sharegrp
# tail /etc/group
# useradd -G sharegrp harry
# tail /etc/passwd
# tail /etc/group
# useradd -G sharegrp natasha
# tail /etc/passwd
# tail /etc/group
# useradd -s /sbin/nologin copper
# tail /etc/passwd
# tail /etc/group
# passwd harry
# passwd natasha
# passwd copper
```

4. Create collaborative directory /mnt/shares with the following characteristics:

i. Group ownership of /mnt/shares should be sharegrp.

ii. The directory should be readable, writable and accessible to member of sharegrp but not to any other user. (It is understood that root has access to all files and directories on the system)

iii. Files created in /mnt/shares automatically have group ownership set to the sharegrp group.

Solution:

mkdir -p /mnt/shares
ls -ld /mnt/shares
chown :sharegrp /mnt/shares
ls -ld /mnt/shares
chmod 770 /mnt/shares
ls -ld /mnt/shares
chmod g+s /mnt/shares
ls -ld /mnt/shares

5. Copy the file /etc/fstab to /var/tmp. Configure the following permissions on /var/tmp/fstab.

i. The file /var/tmp/fstab is owned by root user.

ii. The file /var/tmp/fstab is belongs to the root group.

iii. The file /var/tmp/fstab should be executable by anyone.

iv. The user harry is able to read and write on /var/tmp/fstab.

v. The user natasha can neither read or write on /var/tmp/fstab.

vi. All other users (Current or future) have the ability to read /var/tmp/fstab.

Solution:

cp -p /etc/fstab /var/tmp/

ls -l /var/tmp/fstab

chmod +x /var/tmp/fstab

ls -l /var/tmp/fstab

setfacl -m u:harry:rw- /var/tmp/fstab

getfacl /var/tmp/fstab

setfacl -m u:natasha:--- /var/tmp/fstab

getfacl /var/tmp/fstab

6. Find all lines in the file /usr/share/mime/packages/freedesktop.org.xml that contain the string ich. Put a copy of these lines in the original order in the file /root/lines. /root/lines should contain no empty lines and all lines must be exact copies of the original lines in /usr/share/mime/packages/freedesktop.org.xml

Solution:

grep ich /usr/share/mime/packages/freedesktop.org.xml > /root/lines
ls -l /root/lines
cat /root/lines

7. Find all the files owned by user "alex" and redirect the output to /red/hat/ directory.

Solution:

#mkdir –p /red/hat

find / -user alex -type f –exec cp –prf {} /red/hat/ \;

ls –l /red/hat

8. Create a user fred with a user ID 3945. Give the password kexdrams.

Solution:

useradd -u 3945 fred

tail /etc/passwd

passwd fred

9. Search the string "john" in the /etc/passwd file and save the output in /root/strings.

Solution:

    # grep john /etc/passwd > /root/strings

    # ls -l /root/strings

    # cat /root/strings

10. Configure your system so that it is an NTP client of utility.network15.example.com.

Solution:

yum install chrony -y
systemctl enable --now chronyd
vim /etc/chrony.conf
    *** Content omitted ***
    server utility.network15.example.com iburst
    *** Content omitted ***
systemctl restart chronyd
chronyc sources -v

11. The user andrew must configure a cron job that runs in everyday at 14:25 and executes logger

"RHCSA EXAM"

Solution:

    # systemctl status crond

    # systemctl enable --now crond

    # crontab -e -u andrew

        25 14 * * * /bin/echo "RHCSA EXAM"

    # crontab -l -u andrew

12. Configure autofs to automount the home directories of user remoteuser15. Note the following:

i. utility.network15.example.com (172.24.10.10), NFS-exports /netdir to your system, where user is remoteuser15

ii. remoteuser15's home directory is utility.network15.example.com:/netdir/remoteuser15

iii. remoteuser15's home directory should be auto mounted locally beneath /netdir as /netdir/remoteuser15

iv. Home directories must be writable by their users while you are able to login as any of the remoteuser15 only home directory that is accessible from your system.

Solution:

```
# showmount –e utility.network15.example.com
# yum install autofs -y
# systemctl enable --now autofs
# vim /etc/auto.master.d/nasir.autofs

        /netdir              /etc/nasir.demo

# vim /etc/nasir.demo

        remoteuser15        -rw,sync
utility.network15.example.com:/netdir/remoteuser15
# systemctl restart autofs
```

13. Create a tar names archive /root/archive.tar.bz2 which contain the contain of /usr/local. The tar archive must be compressed using bzip2.

Solution:

```
# tar cvjf /root/archive.tar.bz2 /usr/local
# ls -l /root/archive.tar.bz2
```

14. You will configure a web server running on your system serving content using a non-standard port (82).

Solution:

systemctl status httpd

systemctl restart httpd

man semanage port

semanage port -a -t http_port_t -p tcp 82

firewall-cmd --permanent --add-service=http

firewall-cmd --permanent --add-port=82/tcp

firewall-cmd --reload

systemctl restart httpd

systemctl enable httpd

Part 2 (On Node 2 Server)

1. Interrupt the boot process and reset the root password. Change it to "kexdrams" to gain access to the system.

Solution:

```
Reboot (Ctrl + Alt + Del)
e
rd.break
ctrl + x
# mount -o remount,rw /sysroot
# chroot /sysroot
# passwd root
# touch /.autorelabel
# exit
# exit
```

2. Configure your system to use this location as a default repository:

http://utility.network15.example.com/BaseOS

http://utility.network15.example.com/AppStream

Solution:

vim /etc/yum.repos.d/base.repo

[BaseOS]
name = This is the BaseOS repo
baseurl = http://utility.network15.example.com/BaseOS
enabled = 1
gpgcheck = 0
# vim /etc/yum.repos.d/apps.repo

[AppStream]
name = This is the app stream repo
baseurl = http://utility.network15.example.com/AppStream
enabled = 1
gpgcheck = 0
# yum clean all

yum repolist

3. Create a new volume group in the name of datavg and physical volume extent is 16 MB. Create a new logical volume in the name of datacopy with the size of 50 extents and file system must ext4 then the logical volume should be mounted automatically mounted under /datasource at system boot time.

Solution:

lsblk
fdisk /dev/sda
F
n
e
Enter
Enter
n
Enter
+1.5G
t
Enter

L

        8e

        w

        # reboot

        # pvcreate /dev/sda5

        # vgcreate --help

        # vgcreate -s 16M datavg /dev/sda5

        # vgdisplay datavg

        # lvcreate -n datacopy -L 800M datavg

        # lvdisplay datacopy

        # mkfs.ext4 /dev/datavg/datacopy

        # mkdir /datasource

        # vim /etc/fstab

            /dev/datavg/datacopy   /datasource   ext4   defaults   0   0

        # systemctl daemon-reload

        # mount -a

4. Resize the logical volume, datacopy and increase the filesystem by 400MB

        i. Make sure the the filesystem contents remain intact

        ii. (Note: partitions are seldom exactly the size requested, so anything within the range of 1100 MB to 1300 MB is acceptable)

Solution:

   # lvextend --help

   # lvextend -r -L +400M /dev/datavg/datacopy

   # lvdisplay /dev/datavg/datacopy

5. Add an additional swap partition of 756 MiB to your system. The swap partition should

automatically mount when your system boots. Do not remove or otherwise alter any existing swap partition on your system.

Solution:

> # swapon --show
>
> # free -m
>
> # lsblk
>
> # fdisk /dev/sda
>
>> F
>>
>> n
>>
>> Enter
>>
>> +756M
>>
>> t
>>
>> Enter
>>
>> L
>>
>> 82
>>
>> p
>>
>> w
>
> # mkswap /dev/sda7
> # swapon /dev/sda7
> # free -m
> # swapon --show
> # vim /etc/fstab
>> /dev/sda7   swap   swap   defaults   0   0
> # systemctl daemon-reload
> # mount -a

6. Add a new disk to your virtual machine with a size of 10 GiB. On this disk, create a VDO volume with a size of 50 GiB and mount it persistently on /vbread with xfs filesystem.

Solution:

    # yum install vdo kmod-kvdo
    # systemctl enable --now vdo
    # vdo create --name=vdo1 --device=/dev/vdd --vdoLogicalSize=50G
    # vdo status --name=vdo1
    # mkfs.xfs -K /dev/mapper/vdo1
    # udevadm settle
    # mkdir /vbread
    # vim /etc/fstab
            /dev/mapper/vdd   /vbread   xfs
defaults,x-systemd.requires=vdo.service   0   0
    # systemctl daemon-reload
    # mount -a

7. Set your server to use the recommended tuned profile.

Solution:

  1 systemctl status tuned
  2 systemctl enable --now tuned
  3 tuned-adm active
  4 tuned-adm recommend
  5 tuned-adm profile recommended_profile
  6 tuned-adm active

                        -    Good Luck   -