Setup an ip address for [serverb] virtual machine:

Password: TombigSmall
IP: 172.25.250.11/24
GW: 172.25.250.254
DNS: 172.25.250.220

**********Password break**********
Answer:

#reboot the vm. press ESC then select boot loader, press 'e' to enter grub mode.
then type: init=/bin/bash console=tty1 rw
Press Ctrl + x to start:
passwd root [give the password and re-type it.]
touch /.autorelabel
/usr/sbin/reboot -f

##2nd way password break

#reboot the vm. press ESC then select boot loader, press 'e' to enter grub mode.
then type: rd.break console=tty1 rw
Press Ctrl + x to start:
chroot /sysroot/
passwd root [give the password and re-type it.]
touch /.autorelabel
exit
exit
to logout.

01: Set the hostname on your virtual machine: nodeb.lab.example.com
Answer:
hostnamectl set-hostname nodeb.lab.example.com

02: Yum repository configuration on node1 machine:
- Packages are available at: url1= http://content.example.com/rhel9.0/x86_64/dvd/AppStream/
- Packages are available at: url2= http://content.example.com/rhel9.0/x86_64/dvd/BaseOS/

Answer:

vim /etc/yum.repos.d/appstream.repo
[app]
name=Appstream
baseurl=http://content.example.com/rhel9.0/x86_64/dvd/AppStream/
gpgcheck=0

[Base]
name=BaseOS
baseurl=http://content.example.com/rhel9.0/x86_64/dvd/BaseOS/
gpgcheck=0

Test:
#yum clean all
#yum repolist all

03: Set a recommended tuning profile for your system. (profile already available).

Answer:
yum install tuned -y
systemctl enable tuned.service
systemctl restart tuned.service
tuned-adm active [to see the active profile]
tuned-adm recommend [check which profile recommend to your system]
tuned-adm profile virtual-guest [set the profile]
systemctl restart tuned.service

04: Create a SWAP partition of 250 megabyte & make available at next reboot.

Answer:
fdisk /dev/vdb [Hex code (type L to list all codes): 82]
[Changed type of partition 'Linux' to 'Linux swap / Solaris'.]

lsblk
fdisk -l
mkswap /dev/vdb1
blkid
/dev/vdb1: UUID="b2337e16-691e-4a2a-92d1-35d5c1be3f18" TYPE="swap" PARTUUID="d8f3c21a-01"

# vim /etc/fstab
UUID="b2337e16-691e-4a2a-92d1-35d5c1be3f18" swap swap defaults 0 0

swapon -av

verification:
swapon -s
free -h

05: Create the volume group with name myvolume with 8MiB P.E. and create the lvm name mydatabase with the 100P.E. format this lvm with ext4 and create a directory /database & mount this lvm permanently on /database.

Answer:
fdisk /dev/vdb
Last sector, +sectors or +size{K,M,G,T,P} (514048-10485759, default 10485759): +850M
Hex code (type L to list all codes): 8e
Changed type of partition 'Linux' to 'Linux LVM'.
lsblk
fdisk -l

pvcreate /dev/vdb2
Physical volume "/dev/vdb2" successfully created.
pvdisplay

vgcreate myvolume -s 8M /dev/vdb2
Volume group "myvolume" successfully created
vgdisplay

lvcreate -n mydatabase -l 100 myvolume
lvdisplay

```
# mkfs.ext4 /dev/myvolume/mydatabase
or, # mkfs.ext4 /dev/mapper/myvolume-mydatabase
# blkid
/dev/mapper/myvolume-mydatabase: UUID="a747660c-8d14-4943-a227-a1320a31e943"
TYPE="ext4"

# vim /etc/fstab
UUID="a747660c-8d14-4943-a227-a1320a31e943"    /database      ext4    defaults       0      0

# mkdir /database
# mount -av
```

06: Extend or Resize the LVM partition /dev/myvolume/mydatabase into 500 MiB from the current size and mount the LVM /dev/myvolume/mydatabase to a mount point /database.
The extended partition size must be within approximately 450MiB to 550MiB.

Answer:

```
# lvresize -r -L 500M /dev/myvolume/mydatabase
# df -HT
```

08. Configure the rhcsa application so that when run as "pandora" it shows below message "Labla lbal lahs ksbhs".

Answer:

```
# vim /etc/bashrc
pandora ()
{
            (echo "Labla lbal lahs ksbhs")
}

save & exit

# source /etc/bashrc
# pandora
```

9.Customize user environment:
- Create a command called starton on your server.
- It should able to execute the following command (ps-eopid,tid,class,rtprio,ni,pri,psr,pcpu,stat,comm).

Answer:

```
# vim /etc/bashrc

starton ()
{
      (ps -eo pid,tid,class,rtprio,ni,pri,psr,pcpu,stat,comm)

};

# source /etc/bashrc    >>reload file
# starton
```

**********Container**********

1.Build image [NAME pdfconvert] from those
url=https://content.example.com/container/Containerfile
- Run a container named monitor using the newly created image.

2.Create a container using the image pdfconvert which have been created in question no:1.
- Run container named pdfconverter.
- Attche the volume /opt/input/ and /opt/processed/ with container /action/incoming/ and /action/outgoing/ respectively.

- Create a service container-pdfconverter.service
- Ensure that container-pdfconverter.service will run automatically at system boot.

$ vim Containerfile >> FROM nginx

[devuser1@stream8 ~]$
$ wget https://content.example.com/container/Containerfile

$ vim Containerfile >> FROM docker.io/openviewdev/pdfconverter
$ podman build . -t pdfconvert
$ podman images

$ podman run -dit --name monitor localhost/pdfconvert:latest
$ podman ps

$ podman exec -it monitor /bin/bash
bash-4.3# >> exit

---

loginctl enable-linger devuser1

mkdir /opt/input/ /opt/processed/
semanage fcontext -a -t container_file_t "/opt/processed(/.*)?"
semanage fcontext -a -t container_file_t "/opt/input(/.*)?"
restorecon -Rv /opt/

setfacl -m u:devuser1:rwx /opt/input/
setfacl -m u:devuser1:rwx /opt/processed/

[devuser1@stream8 ~]$ podman run -dit --name pdfconverter -v /opt/input/:/action/incoming/ -v /opt/processed/:/action/outgoing/ localhost/pdfconvert:latest

$ podman ps
$ podman exec -it pdfconverter /bin/bash
bash-4.3#
bash-4.3# cat /action/incoming/input.txt

bash-4.3# echo "test out" >/action/outgoing/out.txt

[devuser1@stream8 ~]$ echo input > /opt/input/input.txt

[devuser1@stream8 ~]$ cat /opt/processed/out.txt

[devuser1@stream8 ~]$ mkdir /home/devuser1/.config/systemd/user -p

[devuser1@stream8 ~]$ cd .config/systemd/user/

```
$ podman generate systemd pdfconverter -f -n
/home/devuser1/.config/systemd/user/container-pdfconverter.service

# ssh devuser1@stream8-clone -X
$ systemctl --user daemon-reload

$ systemctl --user status container-pdfconverter.service
```

**********END**********