RHCSA Boot Camp

INSTRUCTIONS

Configure the network as follows:
The IP address of your system should be: 172.25.X.10
Subnet Mask: 255.255.255.0
Name Server: 172.25.254.254
Gateway: 172.25.X.254
Note: X is your foundation number.

The password for the root user should be 'redhat123'.

All systems in the example.com DNS domain are in the 172.25.254.254/255.255.255.0 subnet, and all systems in that subnet are in example.com. Unless otherwise specified, any network services you are asked to implement should be accessible to systems in example.com

The hostname of your machine should be desktopX.example.com where X is your foundation number.

1) Changing target:

Permanent -> #systemctl set-default graphical.target
#reboot
After complete the exam -> #systemctl set-default multi-user.target

2) Setting IP:

Method 1: Network Manager

Go to network Manager icon -> Click on Network settings -> Click on Settings icon ->
go to ipv4 -> Change to manual -> set the corresponding IP, Subnet, gateway, name server/DNS server -> click on Apply
#systemctl restart network
#systemctl enable network
#ifconfig -> verify addresses

Method 2: nmtui

#nmtui -> edit a connection -> go to edit option
change the ipv4 address to static, set ipv4 & subnet in the same field, set gateway & DNS in corresponding field, navigate by using arrow key and press OK, press Quit
#systemctl restart network
#systemctl enable network
#ip addr show -> verify addresses

Method 3: nmcli

#nmcli connection show
#nmcli connection modify "System eth0" ipv4.addresses "172.25.0.10/24 172.25.0.254" ipv4.method manual ipv4.dns "172.25.254.254" connection.autoconnect yes
#systemctl restart network
#systemctl enable network
#ifconfig> verify addresses

Method 4: editing config file

#vim /etc/sysconfig/network-scripts/ifcfg-eth0

Set the corresponding ipv4, Prefix (network mask), gateway, DNS :wq!

#systemctl restart network

#systemctl enable network

#ip addr -> verify addresses

3) Breaking root password:

Press 'e' to edit the default kernel in grub menu

Go to the end of the line starting with linux16…….. UTX-8 **rd.break** and ctrl+x

#mount –o remount,rw /sysroot

#chroot /sysroot

#passwd root (set the password mentioned in instruction)

#touch /.autorelabel

#exit

#exit

4) Changing the hostname:

#hostname -> to view the existing hostname

#hostnamectl set-hostname desktopX.example.com (hostname mentioned in instruction)

#exec bash

#hostname -> desktopX.example.com

Questions & Answers:

1) CONFIGURE SELINUX

Configure the selinux mode of your system as enforcing

#vim /etc/sysconfig/selinux

SELINUX=enforcing (7th line)

#reboot

#getenforce -> enforcing

2) CONFIGURE YUM

Configure your machine such that you are able to download exam softwares from
http://content.example.com/rhel7.0/x86_64/dvd/

#vim /etc/yum.repos.d/exam.repo

[exam]

Name=rhel

baseurl=http://content.example.com/rhel7.0/x86_64/dvd -> will be given

gpgcheck=0

enabled=1 :wq!

#yum clean all

#yum repolist

#yum install –y nmap -> verification

3) CONFIGURE NTP

Configure your machine to be a NTP client of classroom.example.com

#timdatectl -> verify whether NTP is enabled if not then,
#timdatectl set-ntp yes -> ignore this command, if NTP is already enabled
#vim /etc/chrony.conf
Comment all the lines starting with server (line 3-6) and in the 7th line add
server classroom.example.com iburst :wq!
#systemctl restart chronyd.service
#systemctl enable chronyd.service
#timdatectl -> verification

4) CREATE USERS

Create a group sysadmin
Create a user brownie who has developers as supplementary group
Create a user hari who has developers as his supplementary group
Create a user achu who does not have an interactive shell nor does belong to the group developers

#groupadd sysadmin
#useradd brownie
#getent group developers -> verify the group 'developers' exist. If there is no output, then the group does not exist; if it gives any output then the group exist).
#groupadd developers
#usermod –aG developers brownie
#id brownie -> verification
#usermod –aG developers hari
#id hari (or) getent group hari
#useradd –s /sbin/nologin achu

5) **LVM CREATION**

Create a logical volume 14 extends where one extend having the size of 16 MB
The logical volume has the name of mylv and volume group have the name of myvg
The logical volume should be mounted under the directory /mnt/database with the file system of ext3 and should be automatically available on reboot

#fdisk –l -> to list
#fdisk /dev/sda -> (3 primary partitions will be used and only 1 left. So create extended)
.cmd (m for help): n
.partition type (default e): enter (extended)
.first sector: enter
.last sector: enter
.cmd (m for help): n (logical)
.first sector: enter
.last sector: +500M
.cmd (m for help): t -> change partition id
.hexacode: 8e -> Linux LVM
.cmd (m for help): w
#partprobe

#pvcreate /dev/vdb5
#vgcreate –s 16M myvg /dev/vdb5
#lvcreate –L 14 –n mylv myvg
#pvdisplay -> verification
#mkfs.ext3 /dev/myvg/mylv
#mkdir /mnt/database
#vim /etc/fstab
/dev/myvg/mylv /mnt/database ext3 defaults 0 0
#mount –a
#df –h -> verification

6) COPY FILE

Copy the file /etc/passwd to /var/tmp/passwd
The file should belong to the user root and group root
The user brownie should be able to read and write on the file
The user achu should neither read nor write on the file
All other users should have read permissions on the file

#cp /etc/passwd /var/tmp/passwd
#ls /var/tmp/passwd -> to check whether the field is copied or not
#ll /var/tmp/passwd -> for checking the ownership
#getent passwd brownie -> Checking whether the user is exist or not
#setfacl –m u:brownie:rw /var/tmp/passwd
#getfacl /var/tmp/passwd -> verification
#setfacl –m u:achu:--- /var/tmp/passwd
#getfacl /var/tmp/passwd -> verification
#setfacl –m o::r /var/tmp/passwd

7) CREATE DIRECTORY

Create a directory /mnt/data
The user brownie and hari should be able to collaboratively work on this directory
The files and directories created within this directory should automatically belong to the group developers
All members of the group should have read and write access
All other users should not have any permission
Note: By default, root users will have read and write access on all files and directories

#mkdir –p /mnt/data
#chgrp developers /mnt/data
#chmod g+s /mnt/data
#touch /mnt/data/f1 -> verification
#ll /mnt/data
#chmod 775 /mnt/data
#chmod 770 /mnt/data (or)
#setfacl –m o::--- /mnt/data
#getfacl /mnt/data -> verification

8) UPDATE KERNEL

Update your kernel from http://content.example.com/rhel7.0/x86_64/errata/

#vim /etc/yum.repos.d/kernel.repo
[kernel]
Name = installing kernel
baseurl = http://content.example.com/rhel7.0/x86_64/errata
gpgcheck = 0
enabled = 1 :wq !
#yum clean all
#uname –r -> verify the current version of kernel
#yum repolist
#yum install –y kernel*

9) CRON JOB

Hari must set a job to run at 14:5 every day and the job is /bin/echo hi

#vim /etc/crontab -> to view the formats
#which echo -> where the (binary) path of echo
#crontab –e –u hari
5 14 * * * /usr/bin/echo "hi"
#systemctl restart crond
#systemctl enable crond
#crontab –l –u hari -> verification

10) CREATE USER

Create a user Tom with user id 5001

#useradd –u 5001 tom
#getent passwd tom (or) id tom -> verification

11) SWAP PARTITION

Create a swap partition of 250M on your system

#fdisk /dev/vdb
.cmd (m for help): n
.first sector: enter
.last sector: +250M
.cmd (m for help): t
.hexacode: 82
.cmd: w
#partprobe
#mkswap /dev/vdb6
#vim /etc/fstab
/dev/vdb6 swap swap defaults 0 0
#swapon –a
#swapon –s -> summary of swap
#free –m

12) LOCATE FILES

Find all files owned by the user larry and copy to /root/found directory

#find / -user larry –exec cp –ar {} /root/found \;

13) SEARCH WORDS

Display the matches for the words which begin with "ns" in the /usr/share/dict/words and save the output to a file /home/student/locate.txt

#grep ^ns /usr/share/dict/words > /home/student/locate.txt
#vim /home/student/locate.txt -> verification

14) RESIZE THE LOGICAL VOLUME

Resize the logical volume 'mylv' to 100M which belongs to the volume group 'myvg'. Any size between 150M to 170M is permissible.

Method 1: reduce the size

#df –h -> verify the volume is mounted
#umount /mnt/database
#e2fsck –f /dev/myvg/mylv
#resize2fs /dev/myvg/mylv 160M
#lvreduce –L 160M /dev/myvg/mylv :y -> say yes
#mount –a
#df –h -> verification

Method 2: extend the size

#lvextend –L 170M /dev/myvg/mylv
#resize2fs /dev/myvg/mylv
#df –h -> verification

15) BACKUP FILES

Create an archive /root/mybackup.tar.bz2 which stores the backup of /etc

#tar –cvjf /root/mybackup.tar.bz2 /etc [#tar –help]

1) c-> create;
2) v-> verbos;
3) j-> type of zip (z-> gzip, j-> bzip);
4) f->file

16) ACCESS NETWORK USERS

Bind your system to the LDAP server provided at classroom.example.com. The base DN is dc=example, dc=com. You can download the TLS certificate from http://classroom .example.com/pub/example-ca.crt. Use LDAP password for authentication and obtaining user information. Log in as ldapuserX (where X is your foundation number) which password 'password'.

#yum install –y authconfig-gtx.x86_64 sssd*
#autoconfig-gtk
User Account Database LDAP
LDAP Search Base DN dc=example,dc=com
LDAP Server classroom.example.com

✓ Use TLS to encrypt connections
Download CA certificate
Certificate URL:http://classroom.example.com/pub/example-ca.crt
Authentication Method LDAP Password -> Apply

#systemctl restart sssd
#systemctl enable sssd
#getent passwd ldapuser0
ldapuser0:*:1700:LDAP Test User 0:/home/guests/ldapuser0:/bin/bash
#su – ldapuser0
su:warning: cannot change directory to /home/guests/ldapuser0:No such file or directory
mkdir:cannot create directory '/home/guests' : permission denied
-bash -4.2$

17) AUTOFS

The home directory of LDAP users is shared via NFS. The classroom.example.com (172.25.254.254) shares home directory of ldapusers via NFS. Mount /home/guests/ldapuserX to your system, where X is your foundation number. The ldapuserX's home directory is at classroom.example.com:/home/guests/ldapuserX. The ldapuserX's home directory should be automatically beneath /home/guests. The home directories must be writable by their users.

#showmount –e 172.25.254.254
#yum install –y autofs.x86_64
#systemctl restart autofs
#systemctl enable autofs
#vim /etc/auto.master.d/new.autofs
/home/guests /etc/auto.misc :wq!
#vim /etc/auto.misc
ldapuser0 -rw classroom.example.com:/home/guests/ldapuser0

[* -rw caalssroom.example.com/home/& -> For all users]
#systemctl restart autofs
#systemctl enable autofs
#su – ldapuser0
$pwd -> verification

Recommended Order:
1) Changing target, Breaking root password, Setting IP, changing the hostname - Mandatory
2) (i) Configure SELINUX, YUM, Update Kernel (ii) LDAP & AUTOFS (iii) LVM creation, swap partition, resize the logical volume (iv) remaining questions.