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QUESTION NO: 1 CORRECT TEXT

Change the root Password to redtophat

Answer and Explanation: Boot the system in Single user mode Use the passwd command

QUESTION NO: 2 CORRECT TEXT

Dig Server1.example.com, Resolve to successfully through DNS Where DNS server is 172.24.254.254

Answer and Explanation:

```
#vi /etc/resolv.conf
```

```
nameserver 172.24.254.254
```

```
# dig server1.example.com
```

```
#host server1.example.com
```

DNS is the Domain Name System, which maintains a database that can help your computer translate domain names such as www.redhat.com to IP addresses such as 216.148.218.197. As no individual DNS server is large enough to keep a database for the entire Internet, they can refer requests to other DNS servers.

DNS is based on the named daemon, which is built on the BIND (Berkeley Internet Name Domain) package developed through the Internet Software Consortium

Users want to access by name so DNS will interpret the name into IP address. You need to specify the Address of DNS server in each and every client machine. In Redhat Enterprise Linux, you need to specify the DNS server into `/etc/resolv.conf` file.

After Specifying the DNS server address, you can verify using `host`, `dig` and `nslookup` commands.

QUESTION NO: 3 CORRECT TEXT

Create the partition having 100MB size and mount it on `/mnt/neo`

Answer and Explanation:

1. Use `fdisk /dev/hda` to create new partition.
2. Type `n` for New partitions
3. It will ask for Logical or Primary Partitions. Press `l` for logical.
4. It will ask for the Starting Cylinder: Use the Default by pressing Enter Key.
5. Type the Size: `+100M` to You can Specify either Last cylinder or Size here.
6. Press `P` to verify the partitions lists and remember the partitions name.
7. Press `w` to write on partitions table.

8. Either Reboot or use partprobe command.
9. Use mkfs -t ext3 /dev/hda? Where ? is your partition number
10. Or
11. mke2fs -j /dev/hda? à To create ext3 filesystem.
12. mkdir /mnt/neo
13. vi /etc/fstab
14. Write:
15. /dev/hda? /mnt/neo ext3 defaults 1 2
16. Verify by mounting on current Sessions also:
17. mount /dev/hda? /mnt/neo

QUESTION NO: 4 CORRECT TEXT

Your System is going use as a router for 172.24.0.0/16 and 172.25.0.0/16. Enable the IP Forwarding.

Answer and Explanation:

1. echo "1" >/proc/sys/net/ipv4/ip_forward
 2. vi /etc/sysctl.conf
- net.ipv4.ip_forward=1

/proc is the virtual filesystem, containing the information about the running kernel. To change the parameter of running kernel you should modify on /proc. From Next reboot the system, kernel will take the value from /etc/sysctl.conf.

QUESTION NO: 5 CORRECT TEXT

Some users home directory is shared from your system. Using showmount -e localhost command, the shared directory is not shown. Make access the shared users home directory.

Answer and Explanation:

1. Verify the File whether Shared or not ? : cat /etc/exports
2. Start the nfs service: service nfs start
3. Start the portmap service: service portmap start
4. Make automatically start the nfs service on next reboot: chkconfig nfs on
5. Make automatically start the portmap service on next reboot: chkconfig portmap on
6. Verify either sharing or not: showmount -e localhost

7. Check that default firewall is running on system ? if running flush the iptables using iptables -F and stop the iptables service.

QUESTION NO: 6 CORRECT TEXT

neo user tried by:

```
dd if=/dev/zero of=/home/neo/somefile bs=1024 count=70
```

files created successfully. Again neo tried to create file having 70K using following command:

```
dd if=/dev/zero of=/home/neo/somefile bs=1024 count=70
```

But he is unable to create the file. Make the user can create the file less than 70K.

Answer and Explanation:

Very Tricky question from redhat. Actually question is giving scenario to you to implement quota to neo user. You should apply the quota to neo user on /home that neo user shouldn't occupied space more than 70K.

1. vi /etc/fstab

LABEL=/home /home ext3 defaults,usrquota 0 0 → To enable the quota on filesystem you should mount the filesystem with usrquota for user quota and grpquota for group quota.

2. touch /home/aquota.user → Creating blank quota database file.

3. mount -o remount /home → Remounting the /home with updated mount options. You can verify that /home is mounted with usrquota options or not using mount command.

4. quotacheck -u /home → Initialization the quota on /home

5. edquota -u neo /home → Quota Policy editor

See the snapshot

Disk quotas for user neo (uid 500):

Filesystem blocks soft hard inodes soft hard

```
/dev/mapper/vo-myvol 2 30 70 1 0 0
```

Can you set the hard limit 70 and soft limit as you think like 30.

Verify using the repquota /home command.

QUESTION NO: 7 CORRECT TEXT

One Logical Volume is created named as myvol under vo volume group and is mounted. The Initial Size of that Logical Volume is 124MB. Make successfully that the size of Logical Volume 245MB without losing any data. The size of logical volume 240MB to 255MB will be acceptable.

Answer and Explanation:

1. First check the size of Logical Volume: `lvdisplay /dev/vg/myvol`
2. Increase the Size of Logical Volume: `lvextend -L+121M /dev/vg/myvol`
3. Make Available the size on online: `resize2fs /dev/vg/myvol`
4. Verify the Size of Logical Volume: `lvdisplay /dev/vg/myvol`
5. Verify that the size comes in online or not: `df -h`

We can extend the size of logical Volume using the `lvextend` command. As well as to decrease the size of Logical Volume, use the `lvresize` command. In LVM v2 we can extend the size of Logical Volume without unmount as well as we can bring the actual size of Logical Volume on online using `ext2online` command.

QUESTION NO: 8 CORRECT TEXT

Quota is implemented on `/data` but not working properly. Find out the Problem and implement the quota to user1 to have a soft limit 60 inodes (files) and hard limit of 70 inodes (files).

Answer and Explanation:

Quotas are used to limit a user's or a group of users' ability to consume disk space. This prevents a small group of users from monopolizing disk capacity and potentially interfering with other users or the entire system. Disk quotas are commonly used by ISPs, by Web hosting companies, on FTP sites, and on corporate file servers to ensure continued availability of their systems.

Without quotas, one or more users can upload files on an FTP server to the point of filling a filesystem. Once the affected partition is full, other users are effectively denied upload access to the disk. This is also a reason to mount different filesystem directories on different partitions. For example, if you only had partitions for your root (`/`) directory and swap space, someone uploading to your computer could fill up all of the space in your root directory (`/`). Without at least a little free space in the root directory (`/`), your system could become unstable or even crash.

You have two ways to set quotas for users. You can limit users by inodes or by kilobyte-sized disk blocks. Every Linux file requires an inode. Therefore, you can limit users by the number of files or by absolute space. You can set up different quotas for different filesystems. For example, you can set different quotas for users on the `/home` and `/tmp` directories if they are mounted on their own partitions.

Limits on disk blocks restrict the amount of disk space available to a user on your system. Older versions of Red Hat Linux included LinuxConf, which included a graphical tool to configure quotas. As of this writing, Red Hat no longer has a graphical quota configuration tool. Today, you can configure quotas on RHEL only through the command line interface.

1. `vi /etc/fstab`

```
/dev/hda11 /data ext3 defaults,usrquota 1 2
```

2. Either Reboot the System or remount the partition.

```
Mount -o remount /dev/hda11 /data
```

```
3. touch /data/aquota.user
```

```
4. quotacheck -ufm /data
```

```
5. quotaon -u /data
```

```
6. edquota -u user1 /data
```

and Specified the Soft limit and hard limit on opened file.

To verify either quota is working or not:

Soft limit specify the limit to generate warnings to users and hard limit can't cross by the user. Use the quota command or repquota command to monitor the quota information.

QUESTION NO: 9 CORRECT TEXT

One Logical Volume named lv1 is created under vg0. The Initial Size of that Logical Volume is 100MB. Now you required the size 500MB. Make successfully the size of that Logical Volume 500M without losing any data. As well as size should be increased online.

Answer and Explanation:

The LVM system organizes hard disks into Logical Volume (LV) groups. Essentially, physical hard disk partitions (or possibly RAID arrays) are set up in a bunch of equal-sized chunks known as Physical Extents (PE). As there are several other concepts associated with the LVM system, let's start with some basic definitions:

- * Physical Volume (PV) is the standard partition that you add to the LVM mix. Normally, a physical volume is a standard primary or logical partition. It can also be a RAID array.

- * Physical Extent (PE) is a chunk of disk space. Every PV is divided into a number of equal sized PEs. Every PE in a LV group is the same size. Different LV groups can have different sized PEs.

- * Logical Extent (LE) is also a chunk of disk space. Every LE is mapped to a specific PE.

- * Logical Volume (LV) is composed of a group of LEs. You can mount a filesystem such as /home and /var on an LV.

- * Volume Group (VG) is composed of a group of LVs. It is the organizational group for LVM. Most of the commands that you'll use apply to a specific VG.

```
1. Verify the size of Logical Volume: lvdisplay /dev/vg0/lv1
```

```
2. Verify the Size on mounted directory: df -h or df -h mounted directory name
```

```
3. Use : lvextend -L+400M /dev/vg0/lv1
```

```
4. resize2fs /dev/vg0/lv1 à to bring extended size online.
```

5. Again Verify using `lvdisplay` and `df -h` command.

QUESTION NO: 10 CORRECT TEXT

Create one partitions having size 100MB and mount it on `/data`.

Answer and Explanation:

1. Use `fdisk /dev/hda` à To create new partition.
2. Type `n` à For New partitions
3. It will ask for Logical or Primary Partitions. Press `l` for logical.
4. It will ask for the Starting Cylinder: Use the Default by pressing Enter Key.
5. Type the Size: `+100M` à You can Specify either Last cylinder or Size here.
6. Press `P` to verify the partitions lists and remember the partitions name.
7. Press `w` to write on partitions table.
8. Either Reboot or use `partprobe` command.
9. Use `mkfs -t ext3 /dev/hda?`

Or

`mke2fs -j /dev/hda?` à To create ext3 filesystem.

10. `vi /etc/fstab`

Write:

`/dev/hda? /data ext3 defaults 1 2`

11. Verify by mounting on current Sessions also:

`mount /dev/hda? /data`

QUESTION NO: 11 CORRECT TEXT

You are new System Administrator and from now you are going to handle the system and your main task is Network monitoring, Backup and Restore. But you don't know the root password. Change the root password to `redhat` and login in default Runlevel.

Answer and Explanation:

When you Boot the System, it starts on default Runlevel specified in `/etc/inittab`:

`Id?:initdefault:`

When System Successfully boot, it will ask for username and password. But you don't know the root's password. To change the root password you need to boot the system into single user mode. You can pass the kernel arguments from the boot loader.

1. Restart the System.
2. You will get the boot loader GRUB screen.

3. Press a and type 1 or s for single mode
ro root=LABEL=/ rhgb quiet s
4. System will boot on Single User mode.
5. Use passwd command to change.
6. Press ctrl+d

QUESTION NO: 12 CORRECT TEXT

There are more than 400 Computers in your Office. You are appointed as a System Administrator. But you don't have Router. So, you are going to use your One Linux Server as a Router. How will you enable IP packets forward?

Answer and Explanation:

1. /proc is the virtual filesystem, we use /proc to modify the kernel parameters at running time.
echo "1" >/proc/sys/net/ipv4/ip_forward
2. /etc/sysctl.conf à when System Reboot on next time, /etc/rc.d/rc.sysinit scripts reads the file /etc/sysctl.conf. To enable the IP forwarding on next reboot also you need to set the parameter.
net.ipv4.ip_forward=1

Here 0 means disable, 1 means enable.

QUESTION NO: 13 CORRECT TEXT

You Completely Install the Redhat Enterprise Linux 5 on your System. While start the system, it's giving error to load X window System. How will you fix that problem and make boot successfully run X Window System.

Answer and Explanation:

Think while Problems occurred on booting System on Runlevel 5 (X Window). /tmp is full or notQuota is already reachedVideo card or resolution or monitor is misconfigured.xfs service is running or not.

Do These:

1. df -h /tmp à /tmp is full remove the unnecessary filequota username à if quota is already reached remove unnecessary file from home directory.Boot the System in runlevel 3.à you can pass the Kernel Argument from boot loader.Use command: system-config-display à It will display a dialog to configure the monitor, Video card, resolution etc.Set the Default Runlevel 5 in /etc/inittab id:5:initdefault:

6. Reboot the System you will get the GUI login Screen.

QUESTION NO: 14 CORRECT TEXT

There are two different networks, 192.168.0.0/24 and 192.168.1.0/24. Your System is in 192.168.0.0/24 Network. One RHEL 5 Installed System is going to use as a Router. All required configuration is already done on Linux Server. Where 192.168.0.254 and 192.168.1.254 IP Address are assigned on that Server. How will make successfully ping to 192.168.1.0/24 Network's Host?

Answer and Explanation:

```
1. vi /etc/sysconfig/network
GATEWAY=192.168.0.254
OR
vi /etc/sysconfig/network-scripts/ifcfg-eth0
DEVICE=eth0
BOOTPROTO=static
ONBOOT=yes
IPADDR=192.168.0.?
NETMASK=255.255.255.0
GATEWAY=192.168.0.254
2. service network restart
```

QUESTION NO: 15 CORRECT TEXT

Make a swap partition having 100MB. Make Automatically Usable at System Boot Time.

Answer and Explanation:

1. Use fdisk /dev/hda à To create new partition.
2. Type n à For New partition
3. It will ask for Logical or Primary Partitions. Press l for logical.
4. It will ask for the Starting Cylinder: Use the Default by pressing Enter Key.
5. Type the Size: +100M à You can Specify either Last cylinder or Size here.
6. Press P to verify the partitions lists and remember the partitions name. Default System ID is 83 that means Linux Native.
7. Type t to change the System ID of partition.

8. Type Partition Number
9. Type 82 that means Linux Swap.
10. Press w to write on partitions table.
11. Either Reboot or use partprobe command.
12. mkswap /dev/hda?à To create Swap File system on partition.
13. swapon /dev/hda?à To enable the Swap space from partition.
14. free -m à Verify Either Swap is enabled or not.
15. vi /etc/fstab
/dev/hda? swap swap defaults 0 0
16. Reboot the System and verify that swap is automatically enabled or not.

QUESTION NO: 16 CORRECT TEXT

You are a System administrator. Using Log files very easy to monitor the system. Now there are 50 servers running as Mail, Web, Proxy, DNS services etc. You want to centralize the logs from all servers into on LOG Server. How will you configure the LOG Server to accept logs from remote host ?

Answer and Explanation:

By Default system accept the logs only generated from local host. To accept the Log from other host configure:

1. vi /etc/sysconfig/syslog

SYSLOGD_OPTIONS="-m 0 -r"

Where

- m 0 disables 'MARK' messages.
- r enables logging from remote machines
- x disables DNS lookups on messages recieved with -r

2. service syslog restart

QUESTION NO: 17 CORRECT TEXT

You are giving the debug RHCT exam. The examiner told you that the password of root is redhat. When you tried to login displays the error message and redisplayed the login screen. You changed the root password, again unable to login as a root. How will you make Successfully Login as a root.

Answer and Explanation:

When root unable to login into the system think:

1. Is password correct?
2. Is account expired?
3. Is terminal Blocked?

Do these Steps: Boot the System on Single user mode. Change the password. Check the account expire date by using `chage -l root` command.

If account is expired, set net expire date: `chage -E "NEVER" root`

1. Check the file `/etc/securetty` → Which file blocked to root login from certain terminal.
2. If terminal is deleted or commented write new or uncomment.
3. Reboot the system and login as a root.

QUESTION NO: 18 CORRECT TEXT

You are giving RHCT Exam and in your Exam paper there is a question written, make successfully ping to 192.168.0.254.

Answer and Explanation:

In Network problem thinks to check:

1. IP Configuration: use `ifconfig` command either IP is assigned to interface or not?
2. Default Gateway is set or not?
3. Hostname is set or not?
4. Routing problem is there?
5. Device Driver Module is loaded or not?
6. Device is activated or not?

Check In this way:

1. use `ifconfig` command and identify which IP is assigned or not.
2. `cat /etc/sysconfig/network` → What, What is written here. Actually here are these parameters.

NETWORKING=yes or no

GATEWAY=x.x.x.x

HOSTNAME=?

NISDOMAIN=?

- Correct the file

3. Use `vi /etc/sysconfig/network-scripts/ifcfg-eth0` and check the proper options

DEVICE=eth0

ONBOOT=yes

BOOTPROTO=static

IPADDR=x.x.x.x

NETMASK=x.x.x.x

GATEWAY=x.x.x.x

4. Use service network restart or start command

QUESTION NO: 19 CORRECT TEXT

Set the Hostname station?.example.com where ? is your Host IP Address.

Answer and Explanation:

1. hostname station?.example.com à This will set the host name only for current session. To set hostname permanently.
2. vi /etc/sysconfig/network
HOSTNAME=station?.example.com
3. service network restart

QUESTION NO: 20 CORRECT TEXT

The System you are using is for NFS (Network File Services). Some important data are shared from your system. Make automatically start the nfs and portmap services at boot time.

Answer and Explanation:

We can control the services for current session and for next boot time also. For current Session, we use service servicename start or restart or stop or status. For automatically on next reboot time:

1. chkconfig servicename on or off

eg: chkconfig nfs on

chkconfig portmap on

or

ntsysv

Select the nfs and portmap services.

2. Reboot the system and identify whether services are running or not.

QUESTION NO: 21 CORRECT TEXT

There is one partition /dev/hda14 mounted on /data. The owner of /data is root user and root group. And Permission is full to owner user, read and execute to group member and no permission to others. Now you should give the full permission to user user1 without changing pervious permission.

Answer and Explanation:

We know that every files/directories are owned by certain user and group. And Permissions are defines to owner user, owner group and other.

-rwxr-x--- à Full permission to owner user, read and write to owner group and no permission to others.

According to question: We should give the full permission to user user1 without changing the previous permission.

ACL (Access Control List), in ext3 file system we can give permission to certain user and certain group without changing previous permission. But that partition should mount using acl option.

Follow the steps

vi /etc/fstab
/dev/hda14 /data ext3 defaults,acl 0 1
Either Reboot or use: mount -o remount /data
setfacl -m u:user1:rwx /data
Verify using: getfacl /data

QUESTION NO: 22 CORRECT TEXT

There are two different networks 192.168.0.0/24 and 192.168.1.0/24. Where 192.168.0.254 and 192.168.1.254 IP Address are assigned on Server. Verify your network settings by pinging 192.168.1.0/24 Network's Host.

Answer and Explanation:

1. vi /etc/sysconfig/network

NETWORKING=yes

HOSTNAME=station?.example.com

GATEWAY=192.168.0.254

2. service network restart

Or

1. vi /etc/sysconfig/network-scripts/ifcfg-eth0

DEVICE=eth0

ONBOOT=yes

BOOTPROTO=static

IPADDR=X.X.X.X

NETMASK=X.X.X.X

GATEWAY=192.168.0.254

2. ifdown eth0

3. ifup eth0

QUESTION NO: 23 CORRECT TEXT

Your system is giving error while booting on Runlevel 5 . Make successfully boot your system in runlevel 5.

Answer and Explanation:

While you load the X Window System, you will get the problem. To troubleshoot follow the following steps:

1. Check the /tmp is full ?
2. Check your quota, hard limit is already crossed ?
3. Check xfs service is running ?
4. Boot the system on runlevel 3 and execute the system-config-display command
5. Edit the /etc/inittab to set default runlevel 5.

id:5:initdefault:

QUESTION NO: 24 CORRECT TEXT

Your System is configured in 192.168.0.0/24 Network and your nameserver is 192.168.0.254. Make successfully resolve to server1.example.com.

Answer and Explanation:

Very Easy question, nameserver is specified in question,

1. vi /etc/resolv.conf
nameserver 192.168.0.254
2. host server1.example.com

QUESTION NO: 25 CORRECT TEXT

One Package named zsh is dump on ftp://server1.example.com under /pub/updates directory and your FTP server is 192.168.0.254. Install the package zsh.

Answer and Explanation:

1. rpm -ivh ftp://server1/example.com/pub/updates/zsh-*
or
1. Login to ftp server : ftp ftp://server1.example.com using anonymous user.
2. Change the directory: cd pub and cd updates
3. Download the package: mget zsh-*
4. Quit from the ftp prompt : bye
5. Install the package
6. rpm -ivh zsh-*
7. Verify either package is installed or not : rpm -q zsh

QUESTION NO: 26 CORRECT TEXT

Add a new logical partition having size 100MB and create the /data which will be the mount point for the new partition.

Answer and Explanation: Use `fdisk /dev/hda` to create new partition. Type `n` for New partitions. It will ask for Logical or Primary Partitions. Press `l` for logical. It will ask for the Starting Cylinder: Use the Default by pressing Enter Key. Type the Size: `+100M` to specify either Last cylinder or Size here. Press `P` to verify the partitions lists and remember the partitions name. Press `w` to write on partitions table. Either Reboot or use `partprobe` command. Use `mkfs -t ext3 /dev/hda?` to create ext3 filesystem. vi `/etc/fstab` Write: `/dev/hda? /data ext3 defaults 0 0` Verify by mounting on current Sessions also: `mount /dev/hda? /data`

QUESTION NO: 27 CORRECT TEXT

There is a server having 172.24.254.254 and 172.25.254.254. Your System lies on 172.24.0.0/16. Make successfully ping to 172.25.254.254 by Assigning following IP: 172.24.0.x Where x is your station number.

Answer and Explanation:

1. vi `/etc/sysconfig/network-scripts/ifcfg-eth0`

`DEVICE=eth0`

`BOOTPROTO=static`

`ONBOOT=yes`

`IPADDR=x.x.x.x`

`NETMASK=x.x.x.x`

2. Enter the IP Address as given station number by your examiner: example: 172.24.0.1

3. Enter Subnet Mask

4. Enter Default Gateway and primary name server

5. press on ok

6. `ifdown eth0`

7. `ifup eth0`

8. verify using `ifconfig`

In the lab server is playing the role of router, IP forwarding is enabled. Just set the Correct IP and gateway, you can ping to 172.25.254.254.

QUESTION NO: 28 CORRECT TEXT

Successfully resolve to server1.example.com where your DNS server is 172.24.254.254

Answer and Explanation:

1. vi /etc/resolv.conf
nameserver 172.24.254.254
2. host server1.example.com

QUESTION NO: 29 CORRECT TEXT

Make Successfully Resolve to server1.example.com where DNS Server is 192.168.0.254.

Answer and Explanation: 1. vi /etc/resolv.conf

Write : nameserver 192.168.0.254

QUESTION NO: 30 CORRECT TEXT

One Logical Volume is created named as myvol under vo volume group and is mounted. The Initial Size of that Logical Volume is 400MB. Make successfully that the size of Logical Volume 200MB without losing any data. The size of logical volume 200MB to 210MB will be acceptable.

Answer and Explanation:

1. First check the size of Logical Volume: `lvs /dev/vo/myvol`
2. Make sure that the filesystem is in a consistent state before reducing:

```
# fsck -f /dev/vo/myvol
```

3. Now reduce the filesystem by 200MB.

```
# resize2fs /dev/vo/myvol 200M
```

4. It is now possible to reduce the logical volume.

```
# lvreduce /dev/vo/myvol -L 200M
```

4. Verify the Size of Logical Volume: `lvs /dev/vo/myvol`

5. Verify that the size comes in online or not: `df -h`

QUESTION NO: 31 CORRECT TEXT

You are giving the RHCE exam. Now you should boot your System properly. When you started your System, You got one message that.

INIT Entering runlevel 9

INIT: no more processes left in this runlevel

How will you boot your System properly?

Answer and Explanation:

You should know about the `/etc/inittab` file, where default runlevel will define. And Much more runlevel specific Scripts are called here.

Actually that problem will occur if you don't specify the default runlevel.

1. Reboot the system
2. Boot the System on single user mode.

Except for a normal boot of Linux, single-user mode is the most commonly used option. This is the system maintenance mode for experienced Linux administrators. It allows you to perform clean backups and restores to any partitions as needed from local hardware. It also allows you to run administration commands, recover or repair password and shadow password files, run filesystem checks, and so forth.

3. vi `/etc/inittab` and Write
`id:runlevel:initdefault:`

Standard Runlevels in RedHat Enterprise Linux

QUESTION NO: 32 CORRECT TEXT

You are giving RHCE exam. You should boot the system in Run level 3. When you start the system after while it is going on runlevel 6 : like

INIT: Entering Run level 6

Sending TERM Single

Fix the problem and boot the system.

Answer and Explanation:

It is due to either default runlevel or runlevel specific scripts.

1. `id:?:initdefault:` à Where default runlevel is specified. It shouldn't be 6.
2. `l3:3:wait:/etc/rc.d/rc 6` à It reads the scripts of runlevel 6 while booting system on rulevel 3.

It should be like:

```
si::sysinit:/etc/rc.d/rc.sysinit
l0:0:wait:/etc/rc.d/rc 0
l1:1:wait:/etc/rc.d/rc 1
l2:2:wait:/etc/rc.d/rc 2
l3:3:wait:/etc/rc.d/rc 3 Should be like this
l4:4:wait:/etc/rc.d/rc 4
l5:5:wait:/etc/rc.d/rc 5
l6:6:wait:/etc/rc.d/rc 6
```

QUESTION NO: 33 CORRECT TEXT

You are giving RHCE exam. Examiner gave you the Boot related problem and told to you that make successfully boot the System. While booting system, you saw some error and stop the boot process by displaying some error messages.

Kernel Panic - not syncing: Attempted to kill init!
And no further boot process. What you will do to boot the system.

Answer and Explanation:

To understand the role of a boot loader, take a step back from Linux. When you boot your computer, the BIOS starts by detecting basic hardware, including your hard drives. Once it's done, it looks for the boot loader on the Master Boot Record of the first available disk. If you're working with an older PC, the BIOS can't find your boot loader unless it's located within the first 1,024 cylinders of the hard disk.

Newer BIOSes overcome this problem with Logical Block Addressing, which is also known as LBA mode. LBA mode reads 'logical' values for the cylinder, head, and sector, which allows the BIOS to 'see' a larger disk drive.

If you have multiple hard drives, there is one more caveat. If your drives are IDE hard drives, the /boot directory must be on a hard drive attached to the primary IDE controller. If your drives are all SCSI hard drives, the /boot directory must be located on a hard drive with SCSI ID 0 or ID 1. If you have a mix of hard drives, the /boot directory must be located on either the first IDE drive or a SCSI drive with ID 0. In other words, this is not an issue on the Red Hat exams unless the computer that you're tested on has more than two hard drives. And I believe that's less likely, as that would increase the cost of the exam.

If you are getting the Kernel panic error, it means it is boot loader related problem. Redhat Enterprise Linux uses the GRUB boot loader. You can pass the kernel parameter from the boot

loader as well as you can correct the kernel parameter passing from boot loader from GRUB screen at boot time.

GRUB boot loader configuration file is: `/etc/grub.conf`

And Correct Configuration is:

`default=0`

`timeout=5`

`splashimage=(hd0,0)/grub/splash.xpm.gz`

`hiddenmenu`

`title Red Hat Enterprise Linux ES (2.6.9-5.EL)`

`root (hd0,0)`

`kernel /vmlinuz-2.6.9-5.EL ro root=LABEL=/ rhgb quiet`

`initrd /initrd-2.6.9-5.EL.img`

Probably miss-configured the boot loader, so giving this problem. You can pass the correct parameter from GRUB prompt:

If you know all parameters and sequence of the boot loader you can enter in command prompt also.

Press c on GRUB screen.

Grub> root (hd0,0)

grub> kernel /vmlinuz-2.6.9-5.EL ro root=LABEL=/ rhgb quiet

grub> initrd /initrd-2.6.9-5.EL.img

grub>boot

QUESTION NO: 34 CORRECT TEXT

You are giving RHCE exam. Examiner gave you the Boot related problem and told to you that make successfully boot the System. When you started the system, System automatically asking the root password for maintenance. How will you fix that problem?

Answer and Explanation:

Maintenance mode also known as emergency mode. System boots on emergency mode when file system error occurred. It is due to unknown partition, bad filesystem specified in `/etc/fstab`. To solve follow the steps

1. Give the Root password
2. `fdisk -l` à Verify the Number of partitions.
3. Identify the Root partition, `e2label /dev/hda1`, `e2label /dev/hda2.....`
4. Remount the root partition on rw mode: `mount -o remount,defaults /dev/hda6 /`
5. `vi /etc/fstab`

Correct all partitions, mount point, mount options, file system etc.

6. Press ctrl+d

QUESTION NO: 35 CORRECT TEXT

You are working as an Administrator. There is a common data shared (/data) from 192.168.0.254 to all users in your local LAN. When user's system start, shared data should automatically mount on /common directory.

Answer and Explanation:

To automatically mount at boot time we use the /etc/fstab file. Because /etc/rc.d/rc.sysinit file reads and mount all file system specified in /etc/fstab. To mount Network Sharing Files also use the /etc/fstab but filesystem is nfs.

1. vi /etc/fstab

192.168.0.254:/data /common nfs defaults 0 0

2. reboot the system.

QUESTION NO: 36 CORRECT TEXT

Boot your System Successfully on runlevel 3.

Answer and Explanation:

This is boot related problem. There will be same questions repeated two times but problem is different.

First When you restart the system you will get the Error:

mount: error 15 mounting ext3

mount: error 2 mounting none

switchroot: mount failed: 22

umount /initrd/dev/: 2

Kernel Panic: no syncing: Attempted to kill init !

This error occurred in your system before showing welcome redhat linux. That means problem in grub boot loader.

Restart the System

Check the grub boot loader configuration by pressing e shortcut key.

You will see like:

```
root (hd0,0)
kernel /vmlinuz-2.6.9-5.EL ro root= / rhgb quiet
initrd /initrd-2.6.9-5.EL.img
```

OR

```
root (hd0,0)
kernel /vmlinuz-2.6.9-5.EL ro root=LABEL=/root rhgb quiet
initrd /initrd-2.6.9-5.EL.img
```

Then Edit Boot loader to make like

```
root (hd0,0)
kernel /vmlinuz-2.6.9-5.EL ro root=LABEL=/ rhgb quiet
initrd /initrd-2.6.9-5.EL.img
```

Check all lines and edit as same as above. Press b to boot the system

After booting the system you should correct the /etc/grub.conf file.

QUESTION NO: 37 CORRECT TEXT

Boot your System Successfully on run level 3.

Answer and Explanation:

After completing the Boot loader problem, you will boot the system, but it goes to emergency mode. Remember that if System boots on Emergency mode that means file system problem. You will get the Shell, remount the / filesystem with read and write mode.

1. First Find out the / filesystem using `e2label /dev/hda1`, `e2label /dev/hda2` etc
2. `mount -o remount,defaults /dev/hda? /`
3. `vi /etc/fstab`

You will get like:

```
/root / ext3 defaults 1 1
```

```
or / /root ext3 defaults 1 1
```

4. Edit the file like:

```
// ext3 defaults 1 1
```

5. Configure the /etc/grub.conf file if just booting system by editing grub from grub prompt.
6. Reboot the system.

QUESTION NO: 38 CORRECT TEXT

Boot your System Successfully on runlevel 3. (Next Question)

Answer and Explanation:

This is boot related problem. There will be same questions repeated two times but problem is different.

First When you restart the system you will get the Error:

File Not Found

mount: error 15 mounting ext3

mount: error 2 mounting none

switchroot: mount failed: 22

umount /initrd/dev/: 2

Kernel Panic: no syncing: Attempted to kill init !

Restart the System

Check the grub boot loader configuration by pressing e shortcut key.

You will see like:

root (hd0,0)

kernel /vmlinuz-2.6.9-5.EL ro root= / rhgb quiet

initrd /initrd-2.6.9-5.EL.img

OR

root (hd0,0)

kernel /vmlinuz-2.6.9-5.EL ro root=LABEL=/root rhgb quiet

initrd /initrd-2.6.9-5.EL.img

Then Edit Boot loader to make like

root (hd0,0)

kernel /vmlinuz-2.6.9-5.EL ro root=LABEL=/ rhgb quiet

initrd /initrd-2.6.9-5.EL.img

Check all lines and edit as same as above. Press b to boot the system

After booting the system you should correct the /etc/grub.conf file.

If still you are getting Error like File not found, it seems that either kernel file or initrd file is missing.

To troubleshoot with these problem, boot the system on rescue mode.

i. linux rescue

ii. chroot /mnt/sysimage

iii. Check the files on /boot, if not available install the kernel package from ftp or nfs server

iv. Create the initrd image file on boot using: mkinitrd initrd-2.6.9-5.EL.img `uname -r`

QUESTION NO: 39 CORRECT TEXT

Install the Redhat Linux RHEL 5 through NFS. Where your Server is server1.example.com having IP 172.24.254.254 and shared /var/ftp/pub. The size of the partitions are listed below:

/ à 1048

/home à 1028

/boot à 512

/var à 1028

/usr à 2048

Swap -> 1.5 of RAM Size

/storage à configure the RAID Level 0 of remaining all free space.

After completing the installation through NFS solve the following questions. There are two networks 172.24.0.0/16 and 172.25.0.0/16. As well as there are two domains example.com on 172.24.0.0/16 network and my133t.org on 172.25.0.0/16 network. Your system is based on example.com domain. SELinux should be in enforce mode.

Answer and Explanation:

1. Insert the CD on CD-ROM and start the system.
2. In Boot: Prompt type linux askmethod
3. It will display the language, keyboard selection.
4. It will ask you for the installation method.
5. Select the NFS Image from the list
6. It will ask the IP Address, Net mask, Gateway and Name Server. Select Use Dynamic IP Configuration: because DHCP Server will be configured in your exam lab.
7. It will ask for the NFS Server Name and Redhat Enterprise Linux Directory.
Specify the NFS Server: 172.24.254.254
Directory: /var/ftp/pub
8. After Connecting to the NFS Server Installation start in GUI. Go up to the partition screen by selecting the different Options.
9. Create the partition According to the Question because Size and what-partition should you create at installation time is specified in your question
10. Create the two RAID partitions having equal size of remaining all free space.
11. Click on RAID button
12. Type mount point /data
13. Select RAID Level 0
14. Click on ok
15. Then select the MBR Options, time zone and go upto package selections.
It is another Most Important Time of installation. Due to the time limit, you should care about the installation packages. At Exam time you these packages are enough.
X-Window System
GNOME Desktop
(these two packages are generally not required)
Administration Tools.
System Tools

Windows File Server

FTP Servers

Mail Servers

Web Servers

Network Servers

Editors

Text Based Internet

Server Configuration Tools

Base

Printing Supports

When installation will complete, your system will reboot. Jump for another Question.

QUESTION NO: 40 CORRECT TEXT

Create the group named sysusers.

Answer and Explanation:

1. groupadd sysusers

groupadd command is used to create the group and all group information is stored in /etc/group file.

QUESTION NO: 41 CORRECT TEXT

Create the user named jeff, marion, harold

Answer and Explanation:

1. useradd jeff

2. useradd marion

3. useradd harold

useradd command is used to create the user. All user's information stores in /etc/passwd and user's shadow password stores in /etc/shadow.

QUESTION NO: 42 CORRECT TEXT

Make Secondary belongs the jeff and marion users on sysusers group. But harold user should not belongs to sysusers group.

Answer and Explanation:

1. `usermod -G sysusers jeff`
2. `usermod -G sysuser marion`
3. Verify by reading `/etc/group` file

Using `usermod` command we can make user belongs to different group. There are two types of group one primary and another is secondary. Primary group can be only one but user can belongs to more than one group as secondary.

`usermod -g groupname username` → To change the primary group of the user

`usermod -G groupname username` → To make user belongs to secondary group.

QUESTION NO: 43 CORRECT TEXT

Create the directory `/storage` and group owner should be the `sysusers` group.

Answer and Explanation:

1. `chgrp sysusers /storage`
2. Verify using `ls -ld /storage` command. You should get like
`drwxr-x--- 2 root sysusers 4096 Mar 16 17:59 /storage`
`chgrp` command is used to change the group ownership of particular files or directory.
Another way you can use the `chown` command.
`chown root:sysusers /storage`

QUESTION NO: 44 CORRECT TEXT

Make on `/storage` directory that only the user owner and group owner member can fully access.

Answer and Explanation:

1. `chmod 770 /storage`
2. Verify using : `ls -ld /storage`

Preview should be like:

`drwxrwx--- 2 root sysusers 4096 Mar 16 18:08 /storage`

To change the permission on directory we use the `chmod` command. According to the question that only the owner user (`root`) and group member (`sysusers`) can fully access the directory so:
`chmod 770 /archive`

QUESTION NO: 45 CORRECT TEXT

Who ever creates the files/directories on /storage group owner should be automatically should be the same group owner of /storage.

Answer and Explanation:

1. `chmod g+s /storage`

2. Verify using: `ls -ld /storage`

Permission should be like:

`drwxrws--- 2 root sysusers 4096 Mar 16 18:08 /storage`

If SGID bit is set on directory then who every users creates the files on directory group owner automatically the owner of parent directory.

To set the SGID bit: `chmod g+s directory`

To Remove the SGID bit: `chmod g-s directory`

QUESTION NO: 46 CORRECT TEXT

Install the Cron Schedule for jeff user to display "Hello" on daily 5:30.

Answer and Explanation: Login as a root user `cat >schedule.txt`

`30 05 * * * /bin/echo "Hello"`

3. `crontab -u jeff schedule.txt`

4. `service crond restart`

The cron system is essentially a smart alarm clock. When the alarm sounds, Linux runs the commands of your choice automatically. You can set the alarm clock to run at all sorts of regular time intervals. Alternatively, the at system allows you to run the command of your choice once, at a specified time in the future.

Red Hat configured the cron daemon, crond. By default, it checks a series of directories for jobs to run, every minute of every hour of every day. The crond checks the `/var/spool/cron` directory for jobs by user. It also checks for scheduled jobs for the computer under `/etc/crontab` and in the `/etc/cron.d` directory.

Here is the format of a line in crontab. Each of these columns is explained in more detail:

`#minute, hour, day of month, month, day of week, command`

`* * * * * command`

QUESTION NO: 47 CORRECT TEXT

There is a NFS server 192.168.0.254 and all required packages are dumped in /var/ftp/pub of that server and the /var/ftp/pub directory is shared. Install the Redhat Enterprise Linux 5 by creating following partitions:

/ 1000

/boot 200

/home 1000

/var 1000

/usr 4000

swap 2X256 (RAM SIZE)

Answer and Explanation:

Note: Examiner will provide you the Installation startup CD. And here mentioned size may vary see on the exam paper.

1. Insert the CD on CD-ROM and start the system.
2. In Boot: Prompt type linux askmethod
3. It will display the language, keyboard selection.
4. It will ask you for the installation method.
5. Select the NFS Image from the list
6. It will ask the IP Address, Net mask, Gateway and Name Server. Select Use Dynamic IP Configuration: because DHCP Server will be configured in your exam lab.
7. It will ask for the NFS Server Name and Redhat Enterprise Linux Directory.
Specify the NFS Server: 192.168.0.254
Directory: /var/ftp/pub
8. After Connecting to the NFS Server Installation start in GUI. Go up to the partition screen by selecting the different Options.
9. Create the partition According to the Question because Size and what-partition should you create at installation time is specified in your question
10. Then select the MBR Options, time zone and go upto package selections.
It is another Most Important Time of installation. Due to the time limit, you should care about the installation packages. At Exam time you these packages are enough.
X-Window System
GNOME Desktop
(these two packages are generally not required)
Administration Tools.
System Tools
Windows File Server
FTP Servers
Mail Servers
Web Servers

Network Servers

Editors

Text Based Internet

Server Configuration Tools

Printing Supports

When installation will complete, your system will reboot. Jump for another Question.

QUESTION NO: 48 CORRECT TEXT

There is a FTP server 192.168.0.254 and all required packages are dumped in /var/ftp/pub of that server and anonymous login is enabled. Install the Redhat Enterprise Linux 5 as an anonymous by creating following partitions:

/ 1000

/boot 200

/home 1000

/var 1000

/usr 4000

swap 2X256 (RAM SIZE)

Answer and Explanation:

Note: Examiner will provide you the Installation startup CD. And here mentioned size may vary see on the exam paper.

1. Insert the CD on CD-ROM and start the system.
2. In Boot: Prompt type linux askmethod
3. It will display the Language, keyboard selection.
4. It will ask you for the installation method.
5. Select the FTP from the list
6. It will ask the IP Address, Net mask, Gateway and Name Server. Select Use Dynamic IP Configuration: because DHCP Server will be configured in your exam lab.
7. It will ask for the FTP site name and Redhat Enterprise Linux Directory.
Specify the FTP Server: 192.168.0.254
Directory: pub à Because anonymous login on /var/ftp.
8. After Connecting to the FTP Server Installation will start. Go up to the partition screen by selecting the different Options.
9. Create the partition According to the Question because Size and what-what partition should you create at installation time is specified in your question
10. Then select the MBR Options, time zone and go upto package selections.
It is another Most Important Time of installation. Due to the time limit, you should be care about the installation packages. At Exam time you these packages are enough.

X-Window System

GNOME Desktop

(these two packages are generally not required)

Administration Tools.

System Tools

Windows File Server

FTP Servers

Mail Servers

Web Servers

Network Servers

Editors

Text Based Internet

Server Configuration Tools

Printing Supports

When installation will complete, your system will reboot. Jump for another Question.

QUESTION NO: 49 CORRECT TEXT

There is a HTTP server 192.168.0.254 and all required packages are dumped in /var/www/html/rhel5 of that server. Install the Redhat Enterprise Linux 5 by creating following partitions:

/ 1000

/boot 200

/home 1000

/var 1000

/usr 4000

swap 2X256 (RAM SIZE)

Answer and Explanation:

Note: Examiner will provide you the Installation startup CD. And here mentioned size may vary see on the exam paper.

1. Insert the CD on CD-ROM and start the system.
2. In Boot: Prompt type linux askmethod
3. It will display the Language, keyboard selection.
4. It will ask you for the installation method.
5. Select the HTTP from the list
6. It will ask the IP Address, Net mask, Gateway and Name Server. Select Use Dynamic IP Configuration: because DHCP Server will be configured in your exam lab.
7. It will ask for the Web site name and Redhat Enterprise Linux Directory.

Specify the HTTP Server: 192.168.0.254

Directory: rhel5 à Because Default Directory for http is /var/www/html

8. After Connecting to the HTTP Server Installation start. Go upto the partition screen by selecting the different Options.

9. Create the partition According to the Question because Size and what-partition should you create at installation time is specified in your question

10. Then select the MBR Options, time zone and go upto package selections.

It is another Most Important Time of installation. Due to the time limit, you should be care about the installation packages. At Exam time you these packages are enough.

X-Window System

GNOME Desktop

(these two packages are generally not required)

Administration Tools.

System Tools

Windows File Server

FTP Servers

Mail Servers

Web Servers

Network Servers

Editors

Text Based Internet

Server Configuration Tools

Printing Supports

When installation will complete, your system will reboot. Jump for another Question.

QUESTION NO: 50 CORRECT TEXT

Create a RAID Device /dev/md0 by creating equal two disks from available free space on your harddisk and mount it on /data.

Answer and Explanation:

Redhat Enterprise Linux 5 Supports the RAID LEVEL 0, RAID LEVEL 1, RAID LEVEL 5 and RAID LEVEL 6 at installation time. You can create it at installation time later no need to type lots of commands for RAID.

At Installation Time: Create the partitions using diskdruid. Create the Partitions having File system Type Software RAID. Click on RAID button. Type the Mount Point. Select File system type. Select RAID Level. Select Partitions/disks as a member of RAID. Click on ok

After Installation: We can create the RAID Device after Installation on command-line.

1. Create the Two partitions having equal size. (Specify the Size using Cylinder, find the remaining cylinder and divide by 2).

2. Change the Partition ID to fd (Linux raid Autodetect) by typing t.

3. Type w à To write on partitions table.
4. Use partprobe command to synchronic the partition table.
5. Use: mdadm --create /dev/md0 --level=1 --raid-devices=2 /dev/hda? /dev/hda?
6. Verify the RAID: mdadm --detail /dev/md0
7. mkfs -t ext3 /dev/md0
8. mount /dev/md0 /data
9. vi /etc/fstab
/dev/md0 /data ext3 defaults 0 0
10. Verify mounting devices using mount command.

QUESTION NO: 51 CORRECT TEXT

Create the user named user1, user2, user3

Answer and Explanation:

1. useradd user1
2. useradd user2
3. useradd user3
4. passwd user1
5. passwd user2
6. passwd user3

We create the user using useradd command and we change the password of user using passwd command. If you want to set the blank password use: passwd -d username.

QUESTION NO: 52 CORRECT TEXT

Create the group named training

Answer and Explanation:

1. groupadd training

To create a group we use the groupadd command.

Verify from: cat /etc/group whether group added or not?

QUESTION NO: 53 CORRECT TEXT

Make user1, user2 and user3 belongs to training group.

Answer and Explanation:

1. usermod -G training user1
2. usermod -G training user2
3. usermod -G training user3
4. Verify from : cat /etc/group

There are two types of group, I) primary group II) Secondary or supplementary group.

5. Primary Group: Primary group defines the files/directories and process owner group there can be only one primary group of one user.

6. Secondary Group is used for permission. Where permission are defined for group members, user can access by belonging to that group.

Here user1, user2 and user3 belong as supplementary to training group. So these users get the permission of group member.

QUESTION NO: 54 CORRECT TEXT

Change the Group Owner of /data to training group.

Answer and Explanation:

chown or chgrp command is used to change the ownership.

Syntax of chown: chown [-R] username:groupname file/directory

Syntax of chgrp: chgrp [-R] groupname file/directory

Whenever user creates the file or directory, the owner of that file/directory automatically will be that user and that user's primary group name.

To change group ownership

1. chgrp training /data → Which set the Group Ownership to training
- or

chown root:training /data → Which set the user owner to root and group owner to training group.

Verify /data using: ls -ld /data

You will get: drwxr-xr-x 2 root training

QUESTION NO: 55 CORRECT TEXT

Give Full Permission to owner user and owner group member but no permission to others on /data.

Answer and Explanation:

We can change the permission of file/directory either character symbol method or numeric

method.

Permission:

r-Read

w-Write

x-Execute

Permission Category

u- Owner User

g- Owner Group

o- Others

Operators

+ à Add the Permissions

- à Remove the Permissions

= à Assigns the Permissions

Numeric Method:

4àRead

2à Write

1àExecute

Total: 7, total for owner user, owner group member and for others : 777

1. chmod u+rwx /data

2. chmod g+rwx /data

3. chmod o-rwx /data

or

chmod 770 /data

4. Verify the /data : ls -ld /data

5. You will get drwxrwx---

QUESTION NO: 56 CORRECT TEXT

Whoever creates the file on /data make automatically owner group should be the group owner of /data directory.

Answer and Explanation:

When user creates the file/directory, user owner will be user itself and group owner will be the primary group of the user.

There is one Special Permission SGID , when you set the SGID bit on directory,When users creates the file/directory automatically owner group will be same as a parent.

1. chmod g+s /data

2. Verify using: ls -ld /data

You will get: drwxrws---

QUESTION NO: 57 CORRECT TEXT

Make sure on /data that only the owner user can remove files/directories.

Answer and Explanation:

By default user1 can remove user2's files due to directory permission to group member. We can prevent of deleting files from others users using Sticky Bits.chmod o+t /dataVerify /data: ls -ld /data

You will get: drwxrwx-T

QUESTION NO: 58 CORRECT TEXT

Add a user named user4 and make primarily belongs to training group. As well account should expire on 30 days from today.

Answer and Explanation:

1. useradd username

2. passwd username

3. usermod -e "date"

example: usermod -e "12 Feb 2006" user4

Verify: chage -l user4

QUESTION NO: 59 CORRECT TEXT

One New Kernel is released named kernel-hugemem. Kernel is available on ftp://server1.example.com under pub directory for anonymous. Install the Kernel and make previous new kernel is default to boot System.

Answer and Explanation:

1. rpm -ivh ftp://server1.example.com/pub/kernel-hugemem-*

2. vi /etc/grub.conf

Set the default to new kernel

default=0

Example of /etc/grub.conf

default=0

```
timeout=5
splashimage=(hd0,0)/grub/splash.xpm.gz
hiddenmenu
title Red Hat Enterprise Linux ES (2.6.9-5.ELhugemem)
root (hd0,0)
kernel /vmlinuz-2.6.9-5.ELhugemem ro root=LABEL=/1 rhgb quiet
initrd /initrd-2.6.9-5.ELhugemem.img
title Red Hat Enterprise Linux ES (2.6.9-5.EL)
root (hd0,0)
kernel /vmlinuz-2.6.9-5.EL ro root=LABEL=/1 rhgb quiet
initrd /initrd-2.6.9-5.EL.img
```

rpm command is used to install, update and remove the rpm package. -ivh option is install, verbose, and display the hash mark.

QUESTION NO: 60 CORRECT TEXT

One Package named zsh is dump on ftp://server1.example.com under pub directory. Install the package from ftp server.

Answer and Explanation:

1. rpm -ivh ftp://server1.example.com/pub/zsh-*
2. Package will install

rpm command is used to install, update and remove the package, -i means install, -v means verbose and -h means display the hash mark.

QUESTION NO: 61 CORRECT TEXT

There are Mail servers, Web Servers, DNS Servers and Log Server. Log Server is already configured. You should configure the mail server, web server and dns server to send the logs to log server.

Answer and Explanation:

According to question, log server is already configured. We have to configure the mail, web and dns server for log redirection.

In mail, web and dns server:

1. vi /etc/syslog.conf

mail.* @logserveraddress

2. service syslog restart

mail is the facility and * means the priority. It sends logs of mail services into log server.

QUESTION NO: 62 CORRECT TEXT

Raw (Model) printer named printer1 is installed and shared on 192.168.0.254. You should install the shared printer on your PC to connect shared printer using IPP Protocols.

Answer and Explanation:

IPP(Internet Printing Protocol), allows administrator to manage printer through browser so CUPS is called Internet Printing Protocol based on HTTP. We can Install the printer either through: system-config-printer tool or through Browser.

1. Open the browser and Type on address: `http://localhost:631` à CUPS (Common Unix Printing System) used the IPP protocol. CUPS use the 631 port.
2. Click on Manage Printer.
3. Click on Add Printer.
4. Type Printer name, Location, Description.
5. Select Device for bb. (Select IPP).
6. Device URL: `ipp://192.168.0.254/ipp/` queue name à Same printer name of shared printer.
7. Select Model/Driver RAW printer.
8. service cups restart

QUESTION NO: 63 CORRECT TEXT

You are administrator of Certking network. First time you are going to take the full backup of all user's home directory. Take the full backup of /home on /tmp/back file.

Answer and Explanation:

1. `dump -0u -f /tmp/back /dev/hda4`

dump is the standard backup utility. According to the questions, fullback should take. -0 means fullback, -u means update the /etc/dumpdates which maintains the backup record and -f means filename. If you are directly taking backup into other device, you can specify the device name. i.e `dump -0u -f /dev/st0 /dev/hda4`. Where hda4 is a separate partition mounted on /home.

QUESTION NO: 64 CORRECT TEXT

You are working as a System Administrator at Certking. Your Linux Server crashed and you lost every data. But you had taken the full backup of user's home directory and other System Files on /dev/st0, how will you restore from that device?

Answer and Explanation:

1. Go to on that directory where you want to restore.
2. restore -rf /dev/st0

To restore from backup we use the restore command. Here backup will restore from /dev/st0 on current Directory.

QUESTION NO: 65 CORRECT TEXT

Add a job on Cron schedule to display Hello World on every two Seconds in terminal 8.

Answer and Explanation:cat >schedule

```
*/2 * * * * /bin/echo "Hello World" >/dev/tty8
```

crontab scheduleVerify using: crontab -l
service crond restart

Cron helps to schedule on recurring events. Pattern of Cron is:

Minute Hour Day of Month Month Day of Week Commands

0-59 0-23 1-31 1-12 0-7 where 0 and 7 means Sunday.

Note * means every. To execute the command on every two minutes */2.

To add the scheduled file on cron job: crontab filename

To List the Cron Shedule: crontab -l

To Edit the Schedule: crontab -e

To Remove the Schedule: crontab -r

QUESTION NO: 66 CORRECT TEXT

Deny to all users except root to run cron schedule.

Answer and Explanation:

1. vi /etc/cron.allow

root

or

vi /etc/cron.deny

Write all user name to deny.

/etc/cron.allow, /etc/cron.deny file is used to control users to allow or deny. If /etc/cron.allow file is created only that users are allowed to run cron schedule. Another way to deny to users is /etc/cron.deny write all user name on single line.

QUESTION NO: 67 CORRECT TEXT

Add a cron schedule to take full backup of /home on every day at 5:30 pm to /dev/st0 device.

Answer and Explanation:

1. vi /var/schedule

```
30 17 * * * /sbin/dump -0u /dev/st0 /dev/hda7
```

2. crontab /var/schedule

3. service crond restart

We can add the cron schedule either by specifying the scripts path on /etc/crontab file or by creating on text file on crontab pattern.

cron helps to schedule on recurring events. Pattern of cron is:

Minute Hour Day of Month Month Day of Week Commands

0-59 0-23 1-31 1-12 0-7 where 0 and 7 means Sunday.

Note * means every. To execute the command on every two minutes */2.

QUESTION NO: 68 CORRECT TEXT

One NIS Domain named rhce.com is configured in your lab, server is

192.168.0.254. rhce100, rhce200, rhce300 user are created on domain server.

Make your system as a member of rhce.com domain. Make sure that when nis user login in your system home directory should get by them. Home directory is separately shared on server eg /home/stationx/ where x is you station number.

Answer and Explanation:

1. use the authconfig --nisserver=192.168.0.254 --nisdomain=rhce.com --update or system-config-authentication

2. Click on Enable NIS

3. Type the NIS Domain: rhce.com

4. Type Server 192.168.0.254 then click on next and ok

5. You will get a ok message.

6. vi /etc/auto.master and write at the end of file

/home/stationx /etc/auto.home --timeout=60

7. vi /etc/auto.home and write

* -rw,soft,intr 192.168.0.254:/home/stationx/&

Note: please specify your station number in the place of x.

8. Service autofs restart

9. Login as the rhce1 or rhce2 or rhce3 on another terminal will be

Success.

According to question, rhce.com domain is already configured. We have to make a client of rhce.com domain and automatically mount the home directory on every client. To make a member of domain, we use the authconfig or system-config-authentication command. There are lots of authentication server i.e NIS, LDAP, SMB etc. NIS is a RPC related Services, no need to configure the DNS, we should specify the NIS server address.

Here Automount feature is available. When user tried to login, home directory will automatically mount. The automount service reads the configuration from /etc/auto.master file.

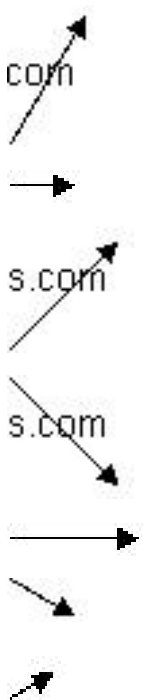
On /etc/auto.master file we specified the mount point the configuration file for mount point.

QUESTION NO: 69 CORRECT TEXT

There are three Disk Partitions /dev/hda8, /dev/hda9, /dev/hda10 having size 100MB of each partition. Create a Logical Volume named testvolume1 and testvolume2 having a size 250MB. Mount each Logical Volume on lvmtest1, lvmtest2 directory.

Answer and Explanation:

Steps of Creating LVM:



1. pvcreate /dev/hda8 /dev/hda9 /dev/hda10

àpvdisplay command is used to display the information of physical volume.

2. vgcreate test0 /dev/hda8 /dev/hda9 /dev/hda10

àvgdisplay command is used to display the information of Volume Group.

3. lvcreate -L 250M -n testvolume1 test0

àlvdisplay command is used to display the information of Logical Volume.

4. lvcreate -L 250M -n testvolume2 test0

5. mkfs -t ext3 /dev/test0/testvolume1

6. mkfs -t ext3 /dev/test0/testvolume2

7. mkdir /lvtest1

8. mkdir /lvtest2

9. mount /dev/test0/testvolume1 /lvtest1

10. mount /dev/test0/testvolume2 /lvtest2

11. vi /etc/fstab

/dev/test0/testvolume2 /lvtest2 ext3 defaults 0 0

/dev/test0/testvolume1 /lvtest1 ext3 defaults 0 0

To create the LVM(Logical Volume Manager) we required the disks having '8e' Linux LVM type. First we should create the physical Volume, then we can create the Volume group from disks belongs to physical Volume. lvcreate command is used to create the logical volume on volume group. We can specify the size of logical volume with -L option and name with -n option.

QUESTION NO: 70 CORRECT TEXT

One Logical Volume named /dev/test0/testvolume1 is created. The initial Size of that disk is 100MB now you required more 200MB. Increase the size of Logical Volume, size should be increase on online.

Answer and Explanation:

1. lvextend -L+200M /dev/test0/testvolume1

Use lvdisplay /dev/test0/testvolume1)

2. ext2online -d /dev/test0/testvolume1

lvextend command is used the increase the size of Logical Volume. Other command lvresize command also here to resize. And to bring increased size on online we use the ext2online command.

QUESTION NO: 71 CORRECT TEXT

We are working on /data initially the size is 2GB. The /dev/test0/lvtestvolume is mount on /data. Now you required more space on /data but you already added all disks belong to physical volume. You saw that you have unallocated space around 5 GB on your harddisk. Increase the size of lvtestvolume by 5GB.

Answer and Explanation:.

1. Create a partition having size 5 GB and change the systid '8e'.
2. use partprobe command
3. pvcreate /dev/hda9 à Suppose your partition number is hda9.
4. vgextend test0 /dev/hda9 à vgextend command add the physical disk on volume group.
5. lvextend -L+5120M /dev/test0/lvtestvolume
6. verify using lvdisplay /dev/test0/lvtestvolume.

QUESTION NO: 72 CORRECT TEXT

Install the Redhat Linux RHEL 5 through NFS. Where your Server is server1.example.com having IP 192.168.0.254 and shared /var/ftp/pub. The size of the partitions are listed below:

/ à 1048

/home à 1028

/boot à 512

/var à 1028

/usr à 2048

Swap -> 1.5 of RAM Size

/data à configure the RAID Level 0 of remaining all free space.

After completing the installation through NFS solve the following questions. There are two networks 192.168.0.0/24 and 192.168.1.0/24. As well as there are two domains example.com on 192.168.0.0/24 network and cracker.org on 192.168.1.0/24 network. Your system is based on example.com domain.

Answer and Explanation:

1. Insert the CD on CD-ROM and start the system.
2. In Boot: Prompt type linux askmethod
3. It will display the language, keyboard selection.
4. It will ask you for the installation method.
5. Select the NFS Image from the list

6. It will ask the IP Address, Net mask, Gateway and Name Server. Select Use Dynamic IP Configuration: because DHCP Server will be configured in your exam lab.
7. It will ask for the NFS Server Name and Redhat Enterprise Linux Directory.
Specify the NFS Server: 192.168.0.254
Directory: /var/ftp/pub
8. After Connecting to the NFS Server Installation start in GUI. Go up to the partition screen by selecting the different Options.
9. Create the partition According to the Question because Size and what-partition should you create at installation time is specified in your question
10. Create the two RAID partitions having equal size of remaining all free space.
11. Click on RAID button
12. Type mount point /data
13. Select RAID Level 0
14. Click on ok

15. Then select the MBR Options, time zone and go upto package selections.

It is another Most Important Time of installation. Due to the time limit, you should care about the installation packages. At Exam time you these packages are enough.

X-Window System

GNOME Desktop

(these two packages are generally not required)

Administration Tools.

System Tools

Windows File Server

FTP Servers

Mail Servers

Web Servers

Network Servers

Editors

Text Based Internet

Server Configuration Tools

Printing Supports

When installation will complete, your system will reboot. Jump for another Question.

QUESTION NO: 73 CORRECT TEXT

Fill up the Form through <http://server1.example.com/form.php>

Answer and Explanation:

1. Open the Browser and type the above URL.

2. Fill the form as required all information.

QUESTION NO: 74 CORRECT TEXT

One Domain RHCE is configured in your lab, your domain server is server1.example.com. nisuser2001, nisuser2002, nisuser2003 user are created on your server 192.168.0.254:/rhome/stationx/nisuser2001. Make sure that when NISuser login in your system automatically mount the home directory. Home directory is separately shared on server /rhome/stationx/ where x is your Station number.

Answer and Explanation:

1. use the authconfig --nisserver=<NIS SERVER> --nisdomain=<NIS DOMAIN> --update

Example: # authconfig --nisserver=192.168.0.254 --nisdomain=RHCE --update
or system-config-authentication

2. Click on Enable NIS

3. Type the NIS Domain: RHCE

4. Type Server 192.168.0.254 then click on next and ok

5. You will get a ok message.

6. Create a Directory /rhome/stationx where x is your station number.

6. vi /etc/auto.master and write at the end of file
/rhome/stationx /etc/auto.home --timeout=60

7. vi /etc/auto.home and write

* -rw,soft,intr 192.168.0.254:/rhome/stationx/&

Note: please specify your station number in the place of x.

8. Service autofs restart

9. Login as the nisuser2001 or nisuser2002 on another terminal will be
Success.

According to question, RHCE domain is already configured. We have to make a client of RHCE domain and automatically mount the home directory on your system. To make a member of domain, we use the authconfig with option or system-config-authentication command. There are lots of authentication server i.e NIS, LDAP, SMB etc. NIS is a RPC related Services, no need to configure the DNS, we should specify the NIS server address.

Here Automount feature is available. When user tried to login, home directory will automatically mount. The automount service used the /etc/auto.master file. On /etc/auto.master file we specified the mount point the configuration file for mount point.

QUESTION NO: 75 CORRECT TEXT

Create the group named sysadmin.

Answer and Explanation:

1. groupadd sysadmin

groupadd command is used to create the group and all group information is stored in /etc/group file.

QUESTION NO: 76 CORRECT TEXT

Create the user named jane and john.

Answer and Explanation:

1. useradd jane

2. useradd john

useradd command is used to create the user. All user's information stores in /etc/passwd and user's shadow password stores in /etc/shadow.

QUESTION NO: 77 CORRECT TEXT

Raw printer named printerx where x is your station number is installed and shared on server1.example.com. Install the shared printer on your PC to connect shared printer using IPP Protocols. Your server is 192.168.0.254.

Answer and Explanation:

1. Open the Browser either firefox or links
2. Type : http://localhost:631
3. Click on Manage Printer
4. Click on Add Printer
5. Type Queue name like stationx and click on continue
6. Type Device type or printing Protocol: i.e Internet printing Protocol
7. Click on Continue
8. Type Device URL: ipp://server1.example.com/printers/printerx
9. Click on Continue
10. Select RAW Model printer
11. Click on Continue
12. Test by sending the printing job

QUESTION NO: 78 CORRECT TEXT

Make Secondary belongs the both users on sysadmin group.

Answer and Explanation:

1. `usermod -G sysadmin john`
2. `usermod -G sysadmin jane`
3. Verify by reading `/etc/group` file

Using `usermod` command we can make user belongs to different group. There are two types of group one primary and another is secondary. Primary group can be only one but user can belongs to more than one group as secondary.

`usermod -g groupname username` → To change the primary group of the user

`usermod -G groupname username` → To make user belongs to secondary group.

QUESTION NO: 79 CORRECT TEXT

Create the user named eric but eric should not belong to the sysadmin group.

Answer and Explanation:

1. `useradd eric`

Very tricky question given to you that this user should not belongs to sysadmin group.

QUESTION NO: 80 CORRECT TEXT

Create the directory `/data` and group owner should be the sysadmin group.

Answer and Explanation:

1. `chgrp sysadmin /data`
2. Verify using `ls -ld /data` command. You should get like

```
drwxr-x--- 2 root sysadmin 4096 Mar 16 17:59 /data
```

`chgrp` command is used to change the group ownership of particular files or directory.

Another way you can use the `chown` command.

```
chown root:sysadmin /data
```

QUESTION NO: 81 CORRECT TEXT

Make on /data that only the user owner and group owner member can fully access.

Answer and Explanation:

1. `chmod 770 /data`
2. Verify using : `ls -ld /data`

Preview should be like:

```
drwxrwx--- 2 root sysadmin 4096 Mar 16 18:08 /data
```

To change the permission on directory we use the `chmod` command. According to the question that only the owner user (root) and group member (sysadmin) can fully access the directory so:
`chmod 770 /data`

QUESTION NO: 82 CORRECT TEXT

Who ever creates the files/directories on /data group owner should be automatically should be the same group owner of /data.

Answer and Explanation:

1. `chmod g+s /data`
2. Verify using: `ls -ld /data`

Permission should be like:

```
drwxrws--- 2 root sysadmin 4096 Mar 16 18:08 /data
```

If SGID bit is set on directory then who every users creates the files on directory group owner automatically the owner of parent directory.

To set the SGID bit: `chmod g+s directory`

To Remove the SGID bit: `chmod g-s directory`

QUESTION NO: 83 CORRECT TEXT

Your System is going to use as a Router for two networks. One Network is 192.168.0.0/24 and Another Network is 192.168.1.0/24. Both network's IP address has assigned. How will you forward the packets from one network to another network?

Answer and Explanation:

```
1. echo "1" >/proc/sys/net/ipv4/ip_forward
```

```
2. vi /etc/sysctl.conf
```

```
net.ipv4.ip_forward = 1
```

If you want to use the Linux System as a Router to make communication between different networks, you need enable the IP forwarding. To enable on running session just set value 1 to /proc/sys/net/ipv4/ip_forward. As well as automatically turn on the IP forwarding features on next boot set on /etc/sysctl.conf file.

QUESTION NO: 84 CORRECT TEXT

One New Kernel is released named kernel-2.6.19-11. Kernel is available on ftp://server1.example.com/pub/updates directory for anonymous. Install the Kernel and make the kernel-2.6.18-8 default.

Answer and Explanation:

```
1. rpm -ivh ftp://server1.example.com/pub/updates/kernel-2.6.19-11.i686.rpm
```

```
2. vi /etc/grub.conf
```

```
default=1 à Change this value to 1
```

```
timeout=5
```

```
 splashimage=(hd0,0)/grub/splash.xpm.gz
```

```
 hiddenmenu
```

```
title Red Hat Enterprise Linux ES (2.6.19-11)
```

```
root (hd0,0)
```

```
kernel /vmlinuz-2.6.19-11.EL ro root=LABEL=/ rhgb quiet
```

```
initrd /initrd-2.6.19-11.EL.img
```

```
title Red Hat Enterprise Linux ES (2.6.9-5.EL)
```

```
root (hd0,0)
```

```
kernel /vmlinuz-2.6.9-5.EL ro root=LABEL=/ rhgb quiet
```

```
initrd /initrd-2.6.9-5.EL.img
```

According question that kernel is available to anonymous user. You can directly install from the ftp server using rpm command.

When you install the kernel, it will write on /etc/grub.conf file. You can set the default kernel by changing the default value. See on the output of /etc/grub.conf file that new kernel is on first title so it's index is 0 and previous kernel's index is 1.

QUESTION NO: 85 CORRECT TEXT