

EX300.exam.45q

Number: EX300  
Passing Score: 800  
Time Limit: 120 min



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EX300

Red Hat Certified Engineer – RHCE (v6+v7)

Sections

1. Topic 1 2.

Topic 2 3.

Topic 3

4. Topic 4

**Exam A**

## **QUESTION 1**

### **SIMULATION**

#### **RHCE Test Configuration Instructions**

Information for the two systems you will use in test is the following:

system1.group3.example.com: is one of the main sever. system2.group3.example.com: mainly used as a client.

Password for both of the two systems is atenorth

System's IP is provided by DHCP, you can regard it as normal, or you can reset to Static IP in accordance with the following requirements:

system1.group3.example.com: 172.24.3.5

system2.group3.example.com: 172.24.3.10

The subnet mask is 255.255.255.0

Your system is a member of DNS domain group3.example.com. All systems in DNS domain group3.example.com are all in subnet 172.24.3.0/255.255.255.0, the same all systems in this subnet are also in group3.example.com, unless specialized, all network services required to be configured can be accessed by systems of domain group3.

host.group3.example.com provides a centralized authentication service domain

GROUP3.EXAMPLE.COM, both system1 and system2 have already been pre-configured to be the client for this domain, this domain provides the following user account:

```
krishna (password: atenorth)
```

```
sergio (password: atenorth)
```

```
kaito (password: atenorth)
```

Firewall is enabled by default, you can turn it off when deemed appropriate, other settings about firewall may be in separate requirements.

Your system will be restarted before scoring, so please ensure that all modifications and service configurations you made still can be operated after the restart without manual intervention, virtual machine instances of all examinations must be able to enter the correct multi-user level after restart without manual assistance, it will be scored zero if the test using virtual machine system cannot be restarted or be properly restarted.

Corresponding distribution packages for the testing using operating system Red Hat Enterprise Linux version can be found in the following link:  
<http://server1.group3.example.com/rhel>

Part of the requirements include host security, ensure your host security limit does not prevent the request to allow the host and network, although you correctly configured the network service but would have to allow the host or network is blocked, this also does not score.

You will notice that some requirements which clearly do not allow services be accessed by service domain my133t.org, systems of this domain are in subnet 172.25.1.0/252.255.255.0, and systems of these subnets also belong to my 133t.org domain.

PS: Notice that some test questions may depend on other exam questions, for example, you might be asked to perform a series of restrictions on a user, but this user creation may be required in other questions. For convenient identification, each exam question has some radio buttons to help you identify which questions you have already completed or not completed. Certainly, you do not need to care these buttons if you don't need them.

### **Configure NFS service**

Configure the NFS service on the system1, as required:

1. Share the directory /public in read only way, just can be accessed by systems in domain11.example.com at the same time.
2. Share the directory /protected in read and write way, Kerberos security encryption required, you can use the key provided by the following URL:  
[http://host.domain11.example.com/materials/nfs\\_server.keytab](http://host.domain11.example.com/materials/nfs_server.keytab)
3. The directory /protected should contain the sub directory named project and the owner name is deepak; 4. User deepak can access /protected/project in read and write ways

**Correct Answer:** Please see explanation

**Section:** Topic 1

**Explanation**

**Explanation/Reference:**

Explanation:

system1:

```
vim /etc/exports
/protected 172.24.11.0/24(rw, sync, sec=krb5p)
/public 172.24.11.0/24(ro, sync)
wget -O /etc/krb5.keytab
http://host.domain11.example.com/materials/nfs_server.keytab
vim /etc/sysconfig/nfs
RPCNFSDARGS="-V 4.2 "
:wq
systemctl restart nfs
systemctl start nfs-secure-server
systemctl enable nfs-secure-server
exportfs -ra
showmount -e
firewall-cmd --add-service=nfs --permanent
firewall-cmd --add-service=rpc-bind --permanent
firewall-cmd --add-service=mountd --permanent
systemctl restart firewalld
mkdir -p /protected/project
chown deepak /protected/project/
ll /protected/
chcon -R -t public_content_t /protected/project/
```





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## QUESTION 2

### SIMULATION

#### RHCE Test Configuration Instructions

Information for the two systems you will use in test is the following:

system1.group3.example.com: is one of the main sever. system2.group3.example.com: mainly used as a client.

Password for both of the two systems is atenorth

System's IP is provided by DHCP, you can regard it as normal, or you can reset to Static IP in accordance with the following requirements:

system1.group3.example.com: 172.24.3.5

system2.group3.example.com: 172.24.3.10

The subnet mask is 255.255.255.0

Your system is a member of DNS domain group3.example.com. All systems in DNS domain group3.example.com are all in subnet 172.24.3.0/255.255.255.0, the same all systems in this subnet are also in group3.example.com, unless specialized, all network services required to be configured can be accessed by systems of domain group3.

host.group3.example.com provides a centralized authentication service domain

GROUP3.EXAMPLE.COM, both system1 and system2 have already been pre-configured to be the client for this domain, this domain provides the following user account:

```
krishna (password: atenorth)
sergio (password: atenorth)
kaito (password: atenorth)
```

Firewall is enabled by default, you can turn it off when deemed appropriate, other settings about firewall may be in separate requirements.

Your system will be restarted before scoring, so please ensure that all modifications and service configurations you made still can be operated after the restart without manual intervention, virtual machine instances of all examinations must be able to enter the correct multi-user level after restart without manual assistance, it will be scored zero if the test using virtual machine system cannot be restarted or be properly restarted.

Corresponding distribution packages for the testing using operating system Red Hat Enterprise Linux version can be found in the following link:  
<http://server1.group3.example.com/rhel>

Part of the requirements include host security, ensure your host security limit does not prevent the request to allow the host and network, although you correctly configured the network service but would have to allow the host or network is blocked, this also does not score.

You will notice that some requirements which clearly do not allow services be accessed by service domain my133t.org, systems of this domain are in subnet 172.25.1.0/252.255.255.0, and systems of these subnets also belong to my 133t.org domain.

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### **Mount a NFS Share**

Mount a NFS Share to system1.domain11.example.com on the system2, as required:

1. Mount the /public to the directory /mnt/nfsmount
2. Mount the /protected to the directory /mnt/nfssecure, in a security way, key download from the following URL:  
[http://host.domain11.example.com/materials/nfs\\_client.keytab](http://host.domain11.example.com/materials/nfs_client.keytab)
3. User deepak can create files in /mnt/nfssecure/project
4. These file systems automatically hang up when the system is started

**Correct Answer:** Please see explanation

**Section: Topic 1**

**Explanation**

**Explanation/Reference:**

Explanation:

```
system2:
showmount -e system1
mkdir -p /mnt/nfsmount
vim /etc/fstab
system1:/public /mnt/nfsmount nfs defaults 0 0
mount -a
df -h

mkdir /mnt/nfssecure
wget -O /etc/krb5.keytab
http://host.domain11.example.com/materials/nfs_client.keytab
vim /etc/fstab

system1:
/protected /mnt/nfssecure nfs defaults,sec=krb5p,v4.2 0 0
:wq
mount -a
```

### QUESTION 3

#### SIMULATION

#### RHCE Test Configuration Instructions

Information for the two systems you will use in test is the following:

system1.group3.example.com: is one of the main sever. system2.group3.example.com: mainly used as a client.

Password for both of the two systems is atenorth

System's IP is provided by DHCP, you can regard it as normal, or you can reset to Static IP in accordance with the following requirements:  
system1.group3.example.com: 172.24.3.5

system2.group3.example.com: 172.24.3.10

The subnet mask is 255.255.255.0

Your system is a member of DNS domain group3.example.com. All systems in DNS domain group3.example.com are all in subnet 172.24.3.0/255.255.255.0, the same all systems in this subnet are also in group3.example.com, unless specialized, all network services required to be configured can be accessed by systems of domain group3.

host.group3.example.com provides a centralized authentication service domain

GROUP3.EXAMPLE.COM, both system1 and system2 have already been pre-configured to be the client for this domain, this domain provides the following user account:

```
krishna (password: atenorth)
sergio (password: atenorth)
kaito (password: atenorth)
```

Firewall is enabled by default, you can turn it off when deemed appropriate, other settings about firewall may be in separate requirements.

Your system will be restarted before scoring, so please ensure that all modifications and service configurations you made still can be operated after the restart without manual intervention, virtual machine instances of all examinations must be able to enter the correct multi-user level after restart without manual assistance, it will be scored zero if the test using virtual machine system cannot be restarted or be properly restarted.

Corresponding distribution packages for the testing using operating system Red Hat Enterprise Linux version can be found in the following link:

<http://server1.group3.example.com/rhel>

Part of the requirements include host security, ensure your host security limit does not prevent the request to allow the host and network, although you correctly configured the network service but would have to allow the host or network is blocked, this also does not score.

You will notice that some requirements which clearly do not allow services be accessed by service domain my133t.org, systems of this domain are in subnet 172.25.1.0/252.255.255.0, and systems of these subnets also belong to my 133t.org domain.

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### **Implement/configure a Web Service.**

Configure a site <http://system1.domain11.example.com/> on the system1, then execute the following steps:

- (1) Download file from <http://rhgls.domain11.example.com/materials/station.html> and rename this files index.html, don't modify the file contents;
- (2) Copy the file index.html to your web server's DocumentRoot directory



- (3) Clients from domain group3.example.com can access to this web service
- (4) Clients from domain my133t.org deny access to this web service

**Correct Answer:** Please see explanation

**Section: Topic 1**

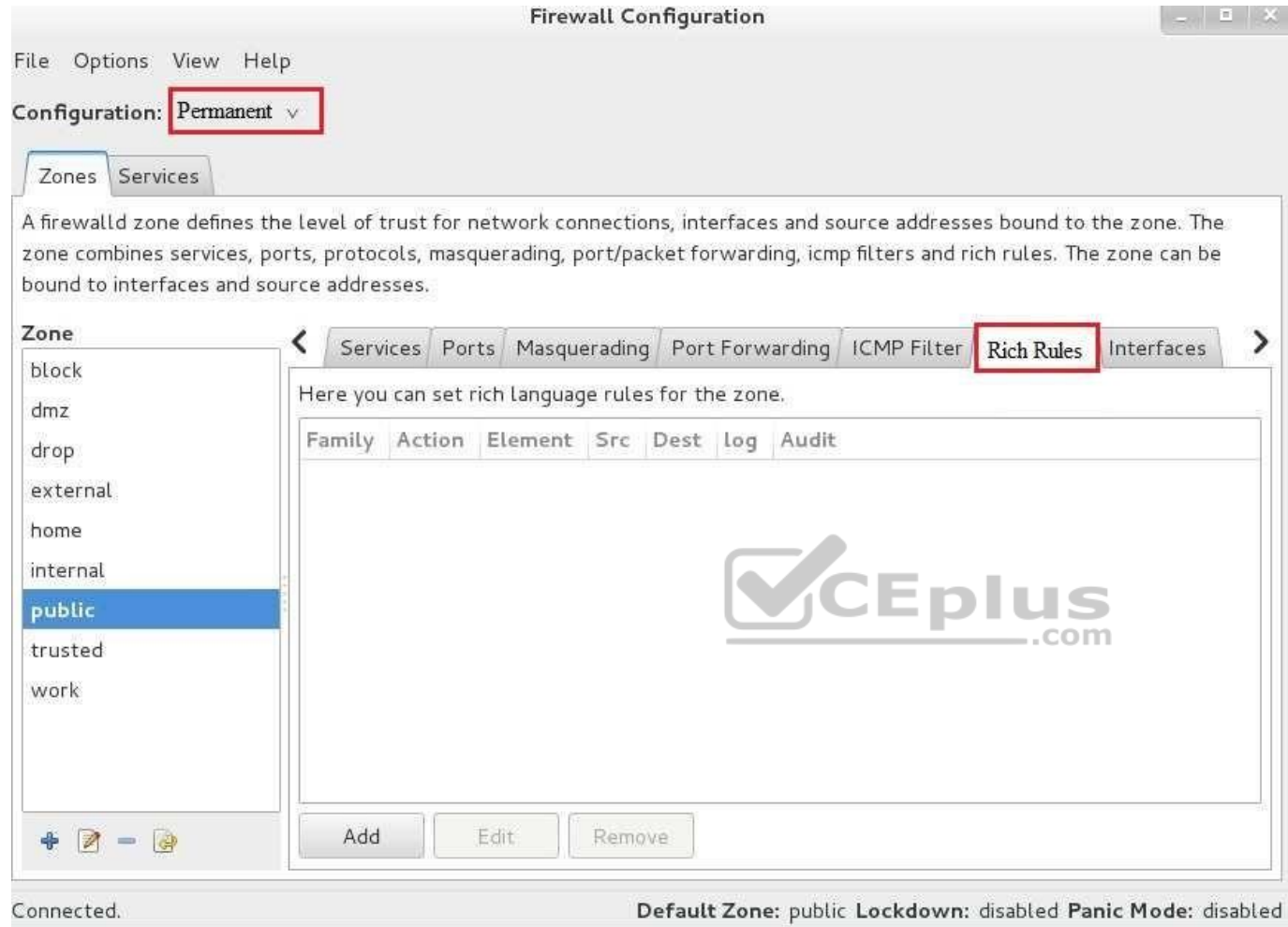
**Explanation**

**Explanation/Reference:**

Explanation:

```
yum groupinstall web\* -y
systemctl start httpd
systemctl enable httpd
vim /etc/httpd/conf/httpd.conf
/ServerName
ServerName server1.domain11.example.com:80
systemctl restart httpd
wget -O index.html
http://rhgls.domain11.example.com/materials/station.html
firewall-config
```






**Rich Rule**

Please enter a rich rule.

For host or network white or blacklisting deactivate the element.

Family: ipv4 ▼


---


✓ Element: service ▼ http 

✓ Action: accept ▼ ☐ with Type: icmp-host-prohibited ▼

☐ With limit:  / second ▼

---

Source: 172.24.11.0/24  ☐ inverted

Destination:   ☐ inverted

---

Prefix:

✓ Log: Level: warning ▼

☐ With limit:  / second ▼

---

☐ Audit: ☐ With limit:  / second ▼

Cancel OK

systemctl restart firewalld **QUESTION 4**  
SIMULATION

## RHCE Test Configuration Instructions

Information for the two systems you will use in test is the following:

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Password for both of the two systems is atenorth

System's IP is provided by DHCP, you can regard it as normal, or you can reset to Static IP in accordance with the following requirements:

system1.group3.example.com: 172.24.3.5

system2.group3.example.com: 172.24.3.10

The subnet mask is 255.255.255.0

Your system is a member of DNS domain group3.example.com. All systems in DNS domain group3.example.com are all in subnet 172.24.3.0/255.255.255.0, the same all systems in this subnet are also in group3.example.com, unless specialized, all network services required to be configured can be accessed by systems of domain group3.

host.group3.example.com provides a centralized authentication service domain

GROUP3.EXAMPLE.COM, both system1 and system2 have already been pre-configured to be the client for this domain, this domain provides the following user account:

```
krishna (password: atenorth)
```

```
sergio (password: atenorth)
```

```
kaito (password: atenorth)
```

Firewall is enabled by default, you can turn it off when deemed appropriate, other settings about firewall may be in separate requirements.

Your system will be restarted before scoring, so please ensure that all modifications and service configurations you made still can be operated after the restart without manual intervention, virtual machine instances of all examinations must be able to enter the correct multi-user level after restart without manual assistance, it will be scored zero if the test using virtual machine system cannot be restarted or be properly restarted.

Corresponding distribution packages for the testing using operating system Red Hat Enterprise Linux version can be found in the following link:

<http://server1.group3.example.com/rhel>

Part of the requirements include host security, ensure your host security limit does not prevent the request to allow the host and network, although you correctly configured the network service but would have to allow the host or network is blocked, this also does not score.

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**Create a script**

Create a script named /root/foo.sh on the system1, make it provide the following characteristics:

1. When running /root/foo.sh redhat, the output is fedora
2. When running /root/foo.sh fedora, the output is redhat
3. When there is no parameter or parameter is not redhat or fedora, the following information will be generated by the error output: /root/foo.sh redhat:fedora

**Correct Answer:** Please see explanation

**Section: Topic 1**

**Explanation**

**Explanation/Reference:**

Explanation:



```
cd ~
vim foo.sh
#~/bin/bash
case $1 in
    redhat)
        echo fedora
        ;;
    fedora)
        echo redhat
        ;;
    *)
        echo 'root/foo.sh redhat:fedora'
esac
:wq
chmod +x foo.sh
./foo.sh redhat
./foo.sh fedora
./foo.sh 1
```

## QUESTION 5

### SIMULATION

#### RHCE Test Configuration Instructions

Information for the two systems you will use in test is the following:

system1.group3.example.com: is one of the main sever. system2.group3.example.com: mainly used as a client.

Password for both of the two systems is atenth

System's IP is provided by DHCP, you can regard it as normal, or you can reset to Static IP in accordance with the following requirements:  
system1.group3.example.com: 172.24.3.5

system2.group3.example.com: 172.24.3.10

The subnet mask is 255.255.255.0

Your system is a member of DNS domain group3.example.com. All systems in DNS domain group3.example.com are all in subnet 172.24.3.0/255.255.255.0, the same all systems in this subnet are also in group3.example.com, unless specialized, all network services required to be configured can be accessed by systems of domain group3.

host.group3.example.com provides a centralized authentication service domain

GROUP3.EXAMPLE.COM, both system1 and system2 have already been pre-configured to be the client for this domain, this domain provides the following user account:

```
krishna (password: atenorth)
sergio (password: atenorth)
kaito (password: atenorth)
```

Firewall is enabled by default, you can turn it off when deemed appropriate, other settings about firewall may be in separate requirements.

Your system will be restarted before scoring, so please ensure that all modifications and service configurations you made still can be operated after the restart without manual intervention, virtual machine instances of all examinations must be able to enter the correct multi-user level after restart without manual assistance, it will be scored zero if the test using virtual machine system cannot be restarted or be properly restarted.

Corresponding distribution packages for the testing using operating system Red Hat Enterprise Linux version can be found in the following link:

<http://server1.group3.example.com/rhel>

Part of the requirements include host security, ensure your host security limit does not prevent the request to allow the host and network, although you correctly configured the network service but would have to allow the host or network is blocked, this also does not score.

You will notice that some requirements which clearly do not allow services be accessed by service domain my133t.org, systems of this domain are in subnet 172.25.1.0/252.255.255.0, and systems of these subnets also belong to my 133t.org domain.

PS: Notice that some test questions may depend on other exam questions, for example, you might be asked to perform a series of restrictions on a user, but this user creation may be required in other questions. For convenient identification, each exam question has some radio buttons to help you identify which questions you have already completed or not completed. Certainly, you do not need to care these buttons if you don't need them.

### Create a script to add users

Create a script named /root/mkusers on the system1, this script can achieve to add local users for the system1, and user names of these users are all from a file which contains the usernames list, and meet the following requirements at the same time:

1. This script is required to provide a parameter; this parameter is the file which contains the usernames list

2. This script need provide the following message: Usage /root/mkusers if it does not provide a parameter, : then exit and return the corresponding value
3. This script need provide the following message: Input file not found if it provides a name that does not exist, then exit and return the corresponding value 4.  
Create a user shell log into /bin/false
5. This script does not need to set password for users
6. You can get the usernames list from the following URL as a test: <http://rhgls.domain11.example.com/materials/userlist>

**Correct Answer:** Please see explanation

**Section: Topic 1**

**Explanation**

**Explanation/Reference:**

Explanation:

```
vim mkusers.sh // Please note the white space
#!/bin/bash
if [ $# -eq 0 ];then
    echo 'Usage:/root/mkusers'
    exit 1
fi
if [ ! -f $1 ]; then
```





```
    echo 'Input file not found'
    exit
fi
while read line
do
    useradd -s /bin/false $line
done < $1
:wq
chmod +x mkusers.sh
wget http://rhgls.domain11.example.com/materials/userlist
./mkusers.sh userlist
id username // Check whether the user is added
// Then check the result whether meet the requirements of the subject
```

## QUESTION 6

### SIMULATION

#### RHCE Test Configuration Instructions

Information for the two systems you will use in test is the following:

system1.group3.example.com: is one of the main sever. system2.group3.example.com: mainly used as a client.

Password for both of the two systems is atenth

System's IP is provided by DHCP, you can regard it as normal, or you can reset to Static IP in accordance with the following requirements:

```
system1.group3.example.com: 172.24.3.5
system2.group3.example.com: 172.24.3.10
```

The subnet mask is 255.255.255.0

Your system is a member of DNS domain group3.example.com. All systems in DNS domain group3.example.com are all in subnet 172.24.3.0/255.255.255.0, the same all systems in this subnet are also in group3.example.com, unless specialized, all network services required to be configured can be accessed by systems of domain group3.

host.group3.example.com provides a centralized authentication service domain

GROUP3.EXAMPLE.COM, both system1 and system2 have already been pre-configured to be the client for this domain, this domain provides the following user account:

```
krishna (password: atenorth)
sergio (password: atenorth)
kaito (password: atenorth)
```

Firewall is enabled by default, you can turn it off when deemed appropriate, other settings about firewall may be in separate requirements.

Your system will be restarted before scoring, so please ensure that all modifications and service configurations you made still can be operated after the restart without manual intervention, virtual machine instances of all examinations must be able to enter the correct multi-user level after restart without manual assistance, it will be scored zero if the test using virtual machine system cannot be restarted or be properly restarted.

Corresponding distribution packages for the testing using operating system Red Hat Enterprise Linux version can be found in the following link:  
<http://server1.group3.example.com/rhel>

Part of the requirements include host security, ensure your host security limit does not prevent the request to allow the host and network, although you correctly configured the network service but would have to allow the host or network is blocked, this also does not score.

You will notice that some requirements which clearly do not allow services be accessed by service domain my133t.org, systems of this domain are in subnet 172.25.1.0/252.255.255.0, and systems of these subnets also belong to my 133t.org domain.

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## **Configure the iSCSI**

### **Server**

Configure the system1 to provide a iSCSI service disk named iqn.2014-09.com.example.domain11:system1 and meet the following requirements at the same time:

1. The Server Port is 3260
2. Use iSCSI-store as its back-end volume, its size is 3G
3. This service just can be accessed by system2.domian11.example.com

**Correct Answer:** Please see explanation

**Section:** Topic 1

**Explanation**

**Explanation/Reference:**

Explanation:

```
fdisk /dev/sda
partprobe /dev/sda
yum install -y targetcli\*
targetcli
cd backstores/
block/ create block1 /dev/sda3
cd /iscsi
create iqn.2014-09.com.example.domain11:system1
cd iqn.2014-09.com.example.domain11:system1/
cd tpg1/
acls/ create iqn.2014-09.com.example.domain11:system
luns/ create /backstores/block/block1
portals/ create system1.domain11.example.com
exit
systemctl start target
systemctl enable target
firewall-config
```

**Rich Rule**

Please enter a rich rule.

For host or network white or blacklisting deactivate the element.

Family:

☒ Element:

☒ Action:  ☐ with Type:

☐ With limit:  /

Source:  ☐ inverted

Destination:  ☐ inverted

Prefix:

☐ Log: Level:

☐ With limit:  /

☐ Audit: ☐ With limit:  /

```
systemctl restart firewallld
```

## QUESTION 7

### SIMULATION

**RHCE Test Configuration Instructions** Information for the two systems you will use in test is the following:

system1.group3.example.com: is one of the main sever. system2.group3.example.com: mainly used as a client.

Password for both of the two systems is atenorth

System's IP is provided by DHCP, you can regard it as normal, or you can reset to Static IP in accordance with the following requirements:

```
system1.group3.example.com: 172.24.3.5  
system2.group3.example.com: 172.24.3.10
```

The subnet mask is 255.255.255.0

Your system is a member of DNS domain group3.example.com. All systems in DNS domain group3.example.com are all in subnet 172.24.3.0/255.255.255.0, the same all systems in this subnet are also in group3.example.com, unless specialized, all network services required to be configured can be accessed by systems of domain group3.

host.group3.example.com provides a centralized authentication service domain

GROUP3.EXAMPLE.COM, both system1 and system2 have already been pre-configured to be the client for this domain, this domain provides the following user account:

```
krishna (password: atenorth)  
sergio (password: atenorth)  
kaito (password: atenorth)
```



Firewall is enabled by default, you can turn it off when deemed appropriate, other settings about firewall may be in separate requirements.

Your system will be restarted before scoring, so please ensure that all modifications and service configurations you made still can be operated after the restart without manual intervention, virtual machine instances of all examinations must be able to enter the correct multi-user level after restart without manual assistance, it will be scored zero if the test using virtual machine system cannot be restarted or be properly restarted.

Corresponding distribution packages for the testing using operating system Red Hat Enterprise Linux version can be found in the following link:

<http://server1.group3.example.com/rhel>

Part of the requirements include host security, ensure your host security limit does not prevent the request to allow the host and network, although you correctly configured the network service but would have to allow the host or network is blocked, this also does not score.

You will notice that some requirements which clearly do not allow services be accessed by service domain my133t.org, systems of this domain are in subnet 172.25.1.0/252.255.255.0, and systems of these subnets also belong to my 133t.org domain.

PS: Notice that some test questions may depend on other exam questions, for example, you might be asked to perform a series of restrictions on a user, but this user creation may be required in other questions. For convenient identification, each exam question has some radio buttons to help you identify which questions you have already completed or not completed. Certainly, you do not need to care these buttons if you don't need them.

### **Configure iSCSI Clients**

Configure the system2 to make it can link to `iqn.2014-09.com.example.domain11:system1` provided by the system, meet the following requirements at the same time:

1. iSCSI device automatically loads during the system start-up.

Block device iSCSI contains a 2100MIB partition, and is formatted as ext4.

This partition mount to the `/mnt/data` and mount automatically during the system start-up.

**Correct Answer:** Please see explanation

**Section:** Topic 1

**Explanation**

**Explanation/Reference:**

Explanation:



```
yum install -y iscsi-initiator-utils.i686
vim /etc/iscsi/initiatorname.iscsi
InitiatorName=iqn.2014-09.com.example.domain11:system
systemctl start iscsid
systemctl is-active iscsid
iscsiadm --mode discoverydb --type sendtargets --portal 172.24.11.10
-discover
iscsiadm --mode node --targetname iqn.2014-
09.com.example.domain11:system1 --portal 172.24.11.10:3260 -login
fdisk -l
fdisk /dev/sdb
mkfs.ext4 /dev/sdb1
partprobe
mkdir /mnt/data
vim /etc/fstab
/dev/sdb1 /mnt/data ext4 _netdev 0 0
```

## QUESTION 8

### SIMULATION

#### RHCE Test Configuration Instructions

Information for the two systems you will use in test is the following:

system1.group3.example.com: is one of the main sever. system2.group3.example.com: mainly used as a client.

Password for both of the two systems is atenth

System's IP is provided by DHCP, you can regard it as normal, or you can reset to Static IP in accordance with the following requirements:

system1.group3.example.com: 172.24.3.5

system2.group3.example.com: 172.24.3.10

The subnet mask is 255.255.255.0

Your system is a member of DNS domain group3.example.com. All systems in DNS domain group3.example.com are all in subnet 172.24.3.0/255.255.255.0, the same all systems in this subnet are also in group3.example.com, unless specialized, all network services required to be configured can be accessed by systems of domain group3.

host.group3.example.com provides a centralized authentication service domain

GROUP3.EXAMPLE.COM, both system1 and system2 have already been pre-configured to be the client for this domain, this domain provides the following user account:

```
krishna (password: atenorth)
sergio (password: atenorth)
kaito (password: atenorth)
```

Firewall is enabled by default, you can turn it off when deemed appropriate, other settings about firewall may be in separate requirements.

Your system will be restarted before scoring, so please ensure that all modifications and service configurations you made still can be operated after the restart without manual intervention, virtual machine instances of all examinations must be able to enter the correct multi-user level after restart without manual assistance, it will be scored zero if the test using virtual machine system cannot be restarted or be properly restarted.

Corresponding distribution packages for the testing using operating system Red Hat Enterprise Linux version can be found in the following link:  
<http://server1.group3.example.com/rhel>

Part of the requirements include host security, ensure your host security limit does not prevent the request to allow the host and network, although you correctly configured the network service but would have to allow the host or network is blocked, this also does not score.

You will notice that some requirements which clearly do not allow services be accessed by service domain my133t.org, systems of this domain are in subnet 172.25.1.0/252.255.255.0, and systems of these subnets also belong to my 133t.org domain.

PS: Notice that some test questions may depend on other exam questions, for example, you might be asked to perform a series of restrictions on a user, but this user creation may be required in other questions. For convenient identification, each exam question has some radio buttons to help you identify which questions you have already completed or not completed. Certainly, you do not need to care these buttons if you don't need them.

### **Configure a Database**

Create a Maria DB database named Contacts on system1 and meet the following requirements at the same time:

1. The database should contain the contents of the database replication, URL for copying files is:  
<http://rhgls.domain11.example.com/materials/users.mdb>
2. Database just can be accessed by localhost
3. In addition to the root user, this database only can be searched by user Luigi, user's password is redhat
4. The password for root user is redhat, does not allow empty password



**Correct Answer:** Please see explanation

**Section:** Topic 1

**Explanation**

**Explanation/Reference:**

**Explanation:**

```
yum install -y mariadb*
systemctl start mariadb
systemctl enable mariadb
cd /
wget http://rhgls.domain11.example.com/materials/users.mdb
mysql
create database Contacts;
show databases;
use Contacts
source /users.mdb
show tables;

grant select on Contacts .* to Luigi@'localhost' identified by
'redhat';
exit
mysqladmin -uroot -p password 'redhat'
mysql -uroot -p Enter password redhat
mysql -uLuigi -p Enter password redhat
```

## QUESTION 9

### SIMULATION

#### RHCE Test Configuration Instructions

Information for the two systems you will use in test is the following:

system1.group3.example.com: is one of the main sever. system2.group3.example.com: mainly used as a client.

Password for both of the two systems is atenorth

System's IP is provided by DHCP, you can regard it as normal, or you can reset to Static IP in accordance with the following requirements:  
system1.group3.example.com: 172.24.3.5 system2.group3.example.com: 172.24.3.10

The subnet mask is 255.255.255.0

Your system is a member of DNS domain group3.example.com. All systems in DNS domain group3.example.com are all in subnet 172.24.3.0/255.255.255.0, the same all systems in this subnet are also in group3.example.com, unless specialized, all network services required to be configured can be accessed by systems of domain group3.

host.group3.example.com provides a centralized authentication service domain

GROUP3.EXAMPLE.COM, both system1 and system2 have already been pre-configured to be the client for this domain, this domain provides the following user account:

```
krishna (password: atenorth)
sergio (password: atenorth)
kaito (password: atenorth)
```

Firewall is enabled by default, you can turn it off when deemed appropriate, other settings about firewall may be in separate requirements.

Your system will be restarted before scoring, so please ensure that all modifications and service configurations you made still can be operated after the restart without manual intervention, virtual machine instances of all examinations must be able to enter the correct multi-user level after restart without manual assistance, it will be scored zero if the test using virtual machine system cannot be restarted or be properly restarted.

Corresponding distribution packages for the testing using operating system Red Hat Enterprise Linux version can be found in the following link:

<http://server1.group3.example.com/rhel>

Part of the requirements include host security, ensure your host security limit does not prevent the request to allow the host and network, although you correctly configured the network service but would have to allow the host or network is blocked, this also does not score.

You will notice that some requirements which clearly do not allow services be accessed by service domain my133t.org, systems of this domain are in subnet 172.25.1.0/252.255.255.0, and systems of these subnets also belong to my 133t.org domain.

PS: Notice that some test questions may depend on other exam questions, for example, you might be asked to perform a series of restrictions on a user, but this user creation may be required in other questions. For convenient identification, each exam question has some radio buttons to help you identify which questions you have already completed or not completed. Certainly, you do not need to care these buttons if you don't need them.

### Database Query

Use database Contacts on the system1, and use the corresponding SQL to search and answer the following questions:

1. What's the person name whose password is solicitous?
2. How many people's names are John and live in Shanghai at the same time?

**Correct Answer:** Please see explanation

### Section: Topic 1

#### Explanation

#### Explanation/Reference:

Explanation:

```
mysql -uroot -p
show tables;      // View the table structure
desc table name;  // View the table field
select bid,password from pass where password='tangerine';

// To find the ID number of password
select * from name where aid='3' ;      // To find the name via password
select * from name where firstname='John'; // To find the people with same
name
select * from loc where loction='Santa Clara'; // To find the people who live
in the same city
```

### QUESTION 10

#### SIMULATION

In accordance with the following requirements to deploy ssh login service:

harry belongs to example.com which can remote login your systems.

However, users of remote.test cannot use ssh login to your machine.



<https://vceplus.com/>

**Correct Answer:** Please see explanation

**Section:** Topic 2

**Explanation**

**Explanation/Reference:**

Explanation:

```
[root@server1 ~]# grep sshd /etc/hosts.allow  
sshd:.example.com  
[root@server1 ~]# grep sshd /etc/hosts.deny  
sshd:.remote.test
```

Notice: tcp\_wrappers has two configuration files and their priority level is /etc/hosts.allow->/etc/hosts.deny

## QUESTION 11

### SIMULATION

Via nfs service share the /common directory in your system, just doing ONE share in example.com domain.

**Correct Answer:** Please see explanation

**Section:** Topic 2

**Explanation**

**Explanation/Reference:**

Explanation:

```
[root@server1 ~] # grep common /etc/exports  
/common *.example.com (ro,sync)
```

## QUESTION 12

### SIMULATION

According to the following requirements, deploy your ftp login rule:  
Users in example.com domain must be able to login to your ftp server as an anonymous user.  
But users outside the example.com domain are unable to login to your server

**Correct Answer:** Please see explanation

**Section: Topic 2**

**Explanation**

**Explanation/Reference:**

Explanation:

```
[root@server1 ~]# grep vsftpd /etc/hosts.deny  
vsftpd: .example.com
```

```
[root@server1 ~]# grep vsftpd /etc/hosts.deny  
vsftpd:ALL
```

```
/etc/vsftpd/vsftpd.conf:  
anonymous_enable=YES
```

## QUESTION 13

### SIMULATION

Deploying your exam system: link to the iscsi target in the instructor.example.com and distinguish it well, then format as ext3 file system. You must be able to mount the file system of the iscsi target to the /mnt/iscsi directory in your own system and make this file system can automatically mount (permanently mount) after system restart.

**Correct Answer:** Please see explanation

**Section:** Topic 2

**Explanation**

**Explanation/Reference:**

Explanation:

```
[root@server1 ~]# iscsiadm --mode discoverydb --type sendtargets --portal
instructor.example.com --discover
192.168.0.254:3260,1 iqn.2010-09.com.example:rdisks.server1

[root@server1 ~]# iscsiadm --mode node -targetname
iqn.2010-09.com.example:rdisks.server1
--portal instructor.example.com --login
Logging in to [iface:default, target:
iqn.2010-09.com.example:rdisks.server1,portal:
192.168.0.254,3260] (multiple)
Login to [iface:default, target:
iqn.2010-09.com.example:rdisks.server1,portal:
192.168.0.254,3260] successful.
```

Note: This part also needs to be formatted and modify /etc/fstab mount -

#### QUESTION 14

##### SIMULATION

In accordance with the following requirements, share /common directory through smb service.

- your sub service must be in the SAMBA working-set
- the shared name of common is common
- the common share just can be shared by the customers in the example.com domain
- the common must be available for browsing
- mary must be able to login to the SMB share and for read operation, "password" is the secret code if it need to be verified.

**Correct Answer:** Please see explanation

**Section:** Topic 2

**Explanation**

**Explanation/Reference:**

Explanation:

```
[root@server1 iscsi]# grep -v "^\\s*#" /etc/samba/smb.conf
| grep -v
"^\\s*;" | grep -v "^\\s*$"
[global]
workgroup = SAMBA
server string = Samba Server Version %v
hosts allow = 127. 192.168.0.
security = user passwd
backend = tdbsam
[common]
comment = Public
Stuff path = /common
public = no
browseable = yes
printable = no read
only = mary

Add SMB Mary users
smbpasswd -a mary
Modify the security context of /common directory
chcon -R -t samba_share_t /common
```

**QUESTION 15**

SIMULATION Arrange a

web service address is:  
http://serverX.example.com,  
X is the number of your  
exam machine. Deploy it in  
accordance with the  
following requirements: ▪

Download ftp

//instructor.example.com/pu

b/rhce/serve: r.html

- Cannot do any modification to file document server.html
- Rename file document server.html as index.html
- Copy the file document server.html to DocumentRoot

**Correct Answer:** Please see explanation

**Section: Topic 2**

**Explanation**

**Explanation/Reference:**

Explanation:





```
[root@server1 common]# cd /var/www/html/
[root@server1 html]# lftp instructor.example.com
lftp instructor.example.com:~> cd pub/rhce
cd ok, cwd=/pub/rhce
lftp instructor.example.com:/pub/rhce> get server.html
20 bytes transferred
[root@server1 html]# mv server.html index.html
[root@server1 html]# restorecon -Rv /var/www/html/
[root@server1 html]# /etc/init.d/httpd restart
Stopping httpd: [ OK ]
Starting httpd: [ OK ]
[root@server1 html]# chkconfig httpd on
```

#### QUESTION 16

SIMULATION Create a Shell

script /root/program:

- The shell script will come back to “user” parameter when you are entering “kernel” parameter.
- The shell script will come back to “kernel” when you are entering “user” parameter.
- It will output the standard error when this script “usage:/root/program kernel|user” don’t input any parameter or the parameter you inputted is entered as the requirements.

**Correct Answer:** Please see explanation

**Section:** Topic 2

**Explanation**

**Explanation/Reference:**

Explanation:

```
[root@server1 virtual]# cat/root/program
#!/bin/bash
param1="$1"
if [ "$param1" == "kernel" ]; then
echo "user"
elif [ "$param1" == "user" ]; then
echo "kernel"
else
echo "usage:/root/program kernel|user"
if
[root@server1 ~]# chmod +x /root/program
```

#### QUESTION 17

##### SIMULATION

Given the kernel of a permanent kernel parameters: sysctl=1.  
It can be shown on cmdline after restarting the system.  
Kernel of /boot/grub/grub.conf should be a34dded finally, as:

**Correct Answer:** Please see explanation

**Section:** Topic 2

**Explanation**

**Explanation/Reference:**

Explanation:



Kernel of /boot/grub/grub.conf should be added finally, as:

```
kernel /vmlinuz-2.6.32-279.1.1.el6.x86_64 ro
root=/dev/mapper/vgsrv-root
rd_LVM_LV=vgsrv/root    rd_NO_LUKS    LANG=en_US.UTF-8
rd_LVM_LV=vgsrv/swap rd_NO_MD
SYSFONT=latencyrheb-sun16 crashkernel=auto KEYBOARDTYPE=pc
KEYTABLE=us rd_NO_DM rhgb quiet
rhgb quiet sysctl=1
```

#### QUESTION 18

##### SIMULATION

Prevent Mary from performing user configuration tasks in your system.

**Correct Answer:** Please see explanation

**Section:** Topic 2

**Explanation**

**Explanation/Reference:**

Explanation:



```
Modify the /etc/cron.deny, add:
[root@server1 ~]# cat /etc/cron.deny
mary
```

#### Conclusions:

1. I find that it is common to add various service access limits in the exam RHCE. The exercises like: require one network segment can be accessed another network segments can not be accessed, the following are some conclusions for various service:

tcp\_wrappers: /etc/hosts.allow, /etc/hosts.deny

tcp\_wrappers can filter the TCP's accessing service. TCP whether has the filtering function which depends on this service whether use the function library of tcp\_wrappers, or this service whether has the xinetd process of starting function of tcp\_wrappers. tcp\_wrappers's main configuration file is /etc/hosts.allow, /etc/hosts.deny.

And the priority of the documents in hosts.allow is higher than hosts.deny. Visit will be passed if no match was found.  
sshd,vsftpd can use the filtering service of tcp\_wrappers.

Configuration example:

```
sshd:.example.com 192.168.0. 192.168.0.0/255.255.255.0 150.203.  
EXCEPT 150.203.6.66
```

Notice:

The two configuration files' syntax can refer to hosts\_access (5) and hosts\_options(5) **sshd\_config**

There are four parameters in this configuration file: DenyUsers, AllowUsers, DenyGroups, AllowGroups, they are used to limit some users or user groups to proceed Remote Login through the SSH. These parameters' priority level is DenyUsers->AllowUsers->DenyGroups->AllowGroups Configuration example:

```
AllowUsers tim rain@192.168.1.121 kim@*.example.com
```

### httpd Service

Through the /etc/httpd/conf/httpd.conf in parameters, can add <Directory> to control the url access. Just as:



```
<VirtualHost *:80>

DocumentRoot /var/http/virtual

ServerName www1.example.com

<Directory /var/http/virtual/limited>

Options Indexes MultiViews FollowSymlinks

order deny,allow

deny from all

allow from 192.168.0.

</Directory>

</VirtualHost>
```

Notice:

So pay attention, deny's and allow's priority level in order deny,allow is: the backer has the higher priority level. But here, allow's priority has a higher priority level.

**nfs Service** nfs service directly control the visits through file /etc/exports, just as:

```
/common *.example.com(rw, sync) 192.168.0.0/24(ro, sync)
```

**samba Service**

Parameter hosts allow in /etc/samba/smb.conf which is used as Access Control, just as:

```
hosts allow = 192.168.0. 192.168.1.0/255.255.255.0 .example.com
```

2. Paying attention to use Mount parameters: `_netdev,defaults` when you are mounting ISCSI disk.

3. Stop the NetworkManager

```
/etc/init.d/NetworkManager stop chkconfig
```

```
NetworkManager off
```

4. When you are deploying `ifcfg-ethX`, add parameters:

```
PEERDNS=no
```

5. Empty the firewall in RHCSA RHCE、 :

```
iptables -F
```

```
iptables -X
```

```
iptables -Z
```

```
/etc/init.d/iptables save
```

6. Narrow lv steps:

```
1.umount /dev/mapper/lv
```

```
2.e2fsck -f /dev/mapper/lv
```

```
3.resize2fs /dev/mapper/lv 100M
```

```
4.lvreduce -L 50M /dev/mapper/lv
```

```
5.mount -a
```

7. Mount the using command - `swap` which is newly added in `/etc/fstab`

8. If Verification is not passed when you are installing software, can import public key: `rpm import /etc/pki/rpm.../...release` and so on. In `yum.repo`, you also can deploy `gpgkey`, for example, `gpgkey=/etc/pki/rpm.../...release`

9. When you are using “Find” command to search and keep these files, paying attention to use `cp -a` to copy files if you use user name and authority as your searching methods.

## QUESTION 19

## SIMULATION

Please set the selinux status as enforcing.



<https://vceplus.com/>

**Correct Answer:** Please see explanation

**Section:** Topic 2

**Explanation**

**Explanation/Reference:**

Explanation:

```
# getenforce 1
# vim /etc/sysconfig/selinux
SELINUX=enforcing
```



## QUESTION 20

### SIMULATION

Please open the ip\_forward and take effect permanently.

**Correct Answer:** Please see explanation

**Section:** Topic 2

**Explanation**

**Explanation/Reference:**

Explanation:

```
# vim /etc/sysctl.conf
    net.ipv4.ip_forward = 1
# sysctl -w (takes effect immediately)
```

If no “sysctl.conf” option, use these commands:

```
# sysctl -a |grep net.ipv4
# sysctl -P net.ipv4.ip_forward = 1
# sysctl -w
```

## QUESTION 21

### SIMULATION

Configure ssh to allow user harry to access, reject the domain t3gg.com (172.25.0.0/16) to access.

**Correct Answer:** Please see explanation

**Section:** Topic 2

**Explanation**

**Explanation/Reference:**

Explanation:





```
# yum install -y sshd
# chkconfig sshd on
# vim /etc/hosts.deny
    sshd: 172.25.0.0/16
# service sshd restart
```

#### Use iptables:

```
# chkconfig iptables on
# iptables -F
# iptables -X
# iptables -Z
# iptables -nvL
# iptables -A INPUT -s 172.25.0.0/16 -p tcp --dport 22 -j REJECT
# services iptables save
# iptables -nvL
# cat /etc/services (check port)
```

## QUESTION 22

### SIMULATION

Configure the ftp to allow anonymously download the directory /var/ftp/pub, and reject the domain t3gg.com to access.

**Correct Answer:** Please see  
explanation **Section: Topic 2**

#### Explanation

#### Explanation/Reference:

Explanation:

```
# yum install -y vsftpd
# chkconfig vsftpd on
# services vsftpd start

# vim /etc/hosts.deny
vsftpd: 172.25.0.0/16
```

OR

```
# iptables -A INPUT -s 172.25.0.0/16 -p tcp -dport 20:21 -j REJECT
# services iptables save
```

## QUESTION 23

### SIMULATION

Shutdown the /root/cdrom.iso under /opt/data and set as boot automatically mount.

**Correct Answer:** Please see explanation

**Section:** Topic 2

**Explanation**

**Explanation/Reference:**

Explanation:

```
# cd /opt/
# mkdir data
# mount -t iso9660 -o loop /root/cdrom.iso /opt/data
# vim /etc/fstab
/root/cdrom.iso /opt/data iso9660 defaults,loop 0 0
# mount -a
# mount
```

## QUESTION 24

### SIMULATION

Configure the web server, which can be accessed by `http://station.domain30.example.com`.

**Correct Answer:** Please see explanation

**Section:** Topic 2

**Explanation**

**Explanation/Reference:**

Explanation:

```
# yum install -y httpd
# chkconfig httpd on
# cd /etc/httpd/conf/

# vim httpd.conf
    NameVirtualHost 172.24.30.5:80
    <VirtualHost 172.24.30.5:80>
        DocumentRoot /var/www/html/
        ServerName tation.domain30.example.com
    </VirtualHost>
# service httpd restart
```



## QUESTION 25

### SIMULATION

Configure the web server and implement the virtual host.

`http://www.domain30.example.com` can access the pages under the directory: `http://ip/dir/example.html`. And make sure, `http://station.domain30.example.com` can also access the previous content.

**Correct Answer:** Please see explanation

**Section:** Topic 2

**Explanation**

**Explanation/Reference:**

Explanation:



```
# mkdir -p /www/virtual
# cd /www/virtual
# wget http://ip/dir/example.com
# cp example.com index.html
# se manage fcontext -a -t httpd_sys_content_t '/www (/.*)?'
  restorecon -vRF /www
# vim /etc/httpd/conf/httpd.conf    (Add new VirtualHost)
  <VirtualHost 172.24.30.5:80>
    DocumentRoot /www/virtual/
    ServerName www.domain30.example.com
  </VirtualHost>
# chcon -R --reference=/var/www/html/ /www/
# service httpd restart
```



Use elinks to test.

OR

```
# mkdir -p /www/virtual
# cd /www/virtual
# wget http://ip/dir/example.html
# mv example.html index.html
# chcon -R --reference=/var/www/html/ /www/
# ls -ldZ /www/virtual
# vim /etc/httpd/conf/httpd.conf
  NameVirtualHost *:80
  <VirtualHost *:80>
```

```
DocumentRoot /var/www/html/
ServerName station.domain30.example.com
</VirtualHost>
<VirtualHost *:80>
DocumentRoot /www/virtual/
ServerName www.domain30.example.com
</VirtualHost>
# service httpd restart
```

## QUESTION 26

### SIMULATION

Configure the nfs server, share the /common directory to domain30.example.com, and allow client to have the root user right when access as a root user.

**Correct Answer:** Please see explanation

**Section:** Topic 2

**Explanation**



**Explanation/Reference:**

Explanation:

```
# yum install -y nfs
# chkconfig nfs on
# chkconfig rpcbind on
# vim /etc/exports
    /common 172.24.30.0/255.255.255.0(rw,no_root_squash)
# showmount -e 172.16.30.5
# mount -t nfs 172.16.30.5:/common /mnt (Test)
```

## QUESTION 27

## SIMULATION

Configure the kernel parameters: rhelblq=1, and it is requested that your kernel parameters can be verified through /proc/cmdline.

**Correct Answer:** Please see explanation

**Section: Topic 2**

**Explanation**

**Explanation/Reference:**

Explanation:

```
# vim /boot/grub/grub.conf
```

```
rhelblq=1 (Add to end of the line "kernel....")
```

Restart

```
# cat /proc/cimline
```

## QUESTION 28

### SIMULATION

Configure cron and don't allow the user tom to use.

**Correct Answer:** Please see explanation

**Section: Topic 2**

**Explanation**

**Explanation/Reference:**

Explanation:

```
# useradd tom
```

```
# vim /etc/cron.deny
```

```
tom
```

## QUESTION 29

### SIMULATION

Write a script /root/program. The request is when you input the kernel parameters for script, the script should return to user. When input the user parameters, the script should return to kernel. And when the script has no parameters or the parameters are wrong, the standard error output should be "usage:/root/program kernel|user".

**Correct Answer:** Please see explanation

**Section: Topic 2**

**Explanation**

**Explanation/Reference:**

Explanation:





```
# vim /root/program
# !/bin/bash

if [ $# -ne 1 ];then
    echo "usage:/root/program kernel|user"
else
    if [ "$1" -eq "kernel"];then
        echo "user"
    elif [ "$1" -eq "user"];then
        echo "kernel"
    else
        echo "usage:/root/program kernel|user"
    fi
fi
```

#### Test:

```
# chmod a+x /root/program
./root/program kernel
./root/program user
./root/program lll
```

#### QUESTION 30 SIMULATION

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. **Correct Answer:** Please see explanation

**Section: Topic 3****Explanation****Explanation/Reference:**

Explanation:

1. First check the size of Logical Volume: `lvdisplay /dev/vg/myvol`
2. Make sure that the filesystem is in a consistent state before reducing:  
`# fsck -f /dev/vg/myvol`
3. Now reduce the filesystem by 200MB.  
`# resize2fs /dev/vg/myvol 200M`
4. It is now possible to reduce the logical volume.  
`#lvreduce /dev/vg/myvol -L 200M`
4. Verify the Size of Logical Volume: `lvdisplay /dev/vg/myvol`
5. Verify that the size comes in online or not: `df -h`

**QUESTION 31****SIMULATION**

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?

**Correct Answer:** Please see explanation

**Section: Topic 3****Explanation****Explanation/Reference:**

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` 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 32

#### SIMULATION

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.

**Correct Answer:** Please see explanation

**Section: Topic 3**

**Explanation**

**Explanation/Reference:**

Explanation:

To automatically mount at boot time, we use the /etc/fstab file. Because /etc/rc.d/rc.sysinit file reads and mounts 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 33

## SIMULATION

Create the group named sysusers.

**Correct Answer:** Please see explanation  
**Section: Topic 3**  
**Explanation**

### **Explanation/Reference:**

Explanation:

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

## QUESTION 34

## SIMULATION

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



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**Correct Answer:** Please see explanation  
**Section: Topic 3**  
**Explanation**

### **Explanation/Reference:**

Explanation:

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

**Note:**

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 belong 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 35

#### SIMULATION

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

**Correct Answer:** Please see explanation

**Section: Topic 3**

**Explanation**

**Explanation/Reference:**

Explanation:

```
chgrp sysusers /storage  
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 36

#### SIMULATION

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

**Correct Answer:** Please see explanation

**Section: Topic 3**

**Explanation**

**Explanation/Reference:**

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 create 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 37

#### SIMULATION

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.

**Correct Answer:** Please see explanation

**Section: Topic 3**

**Explanation**

**Explanation/Reference:**

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 38

#### SIMULATION

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

**Correct Answer:** Please see explanation

**Section: Topic 3**

**Explanation**

**Explanation/Reference:**

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 mean Sunday.

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

### QUESTION 39

#### SIMULATION

There were two systems:

- system1, main system on which most of the configuration take place ▪
- system2, some configuration here

Configure selinux.

Configure your systems that should be running in Enforcing.

**Correct Answer:** Please see explanation

**Section: Topic 4**

**Explanation**

**Explanation/Reference:**

Explanation:

```
# vim /etc/selinux/config
SELINUX=enforcing
```

After reboot and verify with this command

```
# getenforce
```



### QUESTION 40

#### SIMULATION

There were two systems:

- system1, main system on which most of the configuration take place ▪
- system2, some configuration here

SSH configuration.

- Configure SSH access on your virtual hosts as follows.
  - Clients within my22ilt.org should NOT have access to ssh on your systems

**Correct Answer:** Please see explanation

**Section: Topic 4**

**Explanation**

**Explanation/Reference:**

Explanation:

```
# vim /etc/hosts.deny  
sshd: .my22ilt.org
```

Save and Exit (:wq) Then  
run this:

```
systemctl restart sshd
```

Optional:

```
systemctl enable sshd  
firewall-cmd --permanent --add-service=ssh  
firewall-cmd --reload
```

**QUESTION 41****SIMULATION**

There were two systems:

- system1, main system on which most of the configuration take place ▪
- system2, some configuration here

Link aggregation.

- Configure your serverX and desktop, which watches for link changes and selects an active port for data transfers.
  - serverX should have the address as 192.169.X.10/255.255.255.0 ▪
  - desktopX should have the address as 192.168.X.11/255.255.255.0
- (Note: where X is your station number)

**Correct Answer:** Please see explanation

**Section: Topic 4**

**Explanation**

**Explanation/Reference:**

Explanation:

On Server Machine:





```
nmcli con add type team con-name Team1 ifname Team1
        config '{"runner":{"name":"activebackup"}}'

nmcli con modify Team1 ipv4.addresses 192.168.1.10/24
nmcli con modify Team1 ipv4.method manual
nmcli con add type team-slave con-name Team1-slave1 ifname eth1 master Team1
nmcli con add type team-slave con-name Team1-slave2 ifname eth2 master Team1

nmcli con up Team1
nmcli con up Team1-slave1
nmcli con up Team1-slave2
```

Verification & Testing:

```
teamdctl Team1 state
nmcli dev dis eth1 ---> Disconnect device for verification
nmcli con up Team1-slave1
teamctl Team1 ports
teamctl Team1 getoption activeport
teamctl Team1 setoption activeport PORT_NUMBER

ping -I Team1 192.168.1.11
```

On Desktop Machine:

```
nmcli con add type team con-name Team1 ifname Team1 config '{"runner":
{"name": "activebackup"}}'
nmcli con modify Team1 ipv4.addresses 192.168.1.11/24
nmcli con modify Team1 ipv4.method manual
nmcli con add type team-slave con-name Team1 -slave1 ifname eth1 master
Team1
nmcli con add type team-slave con-name Team1 -slave2 ifname eth2 master
Team1

nmcli con up Team1
nmcli con up Team1 -slave1
nmcli con up Team1 -slave2
```

Verification & Testing:

```
teamdctl Team1 state
nmcli dev dis eth1 ---> Disconnect device
for verification
nmcli con up Team1-slave1
teamnl Team1 ports
teamnl Team1 getoption activeport
teamnl Team1 setoption activeport
PORT_NUMBER
```

```
ping-I Team1 192.168.1.10
```

#### QUESTION 42

##### SIMULATION

There were two systems:

- system1, main system on which most of the configuration take place
- system2, some configuration here

SMTP Configuration.

- Configure the SMTP mail service on serverX and desktopX which relay the mail only from local system through station.network0.example.com, all outgoing mail have their sender domain as example.com. Ensure that mail should not store locally.
  - Verify the mail server is working by sending mail to a natasha user.
- Check the mail on both serverX and desktopX with the below URL

<http://station.network0.example.com/system1>

<http://station.network0.example.com/system2>

**Correct Answer:** Please see explanation

**Section:** Topic 4

**Explanation**

**Explanation/Reference:**

Explanation:

```
vim /etc/postfix/main.cf
inet_interfaces = loopback-only

mydestination =
muorigin=example.com
mynetworks = 127.0.0.0/8, [::1]/128
relayhost = [station.network0.example.com]
local_transport = error: local delivery dosabled
```

#### QUESTION 43

##### SIMULATION

There were two systems:

- system1, main system on which most of the configuration take place
- system2, some configuration here

Configure NFS mount.

- Mount /nfsshare directory on desktopX under /public directory persistently at system boot time.
- Mount /nfssecure/protected with krb5p secured share on desktopX beneath /secure/protected provided with keytab http://station.network0.example.com/pub/keytabs/desktopX.keytab
- The user harry is able to write files on /secure directory

**Correct Answer:** Please see explanation

**Section: Topic 4**

**Explanation**

**Explanation/Reference:**

Explanation:

```
yum install -y nfs-utils
wget -O /etc/krb5.keytab
http://station.network0.example.com/pub/keytabs/desktopX.keytab
systemctl start nfs-secure
systemctl enable nfs-secure

mkdir -p /public
vim /etc/fstab
server1.example.com:/nfsshare /public nfs defaults, sync 0 0
mkdir -p /secure/protected
vim /etc/fstab
server1.example.com:/nfssecure/protected /secure/protected nfs
defaults,v4.2,sec=krb5p,sync 0 0
```

Verification from DesktopX:

```
ssh harry@localhost
cd /secure/protected
echo "Is it writeable?" >>test.txt
```



#### QUESTION 44

##### SIMULATION

There were two systems:

- system1, main system on which most of the configuration take place
- system2, some configuration here

Configure smb access.

- Share the /sambadir directory via SMB on serverX
- Your SMB server must be a member of the TESTGROUP workgroup
- The share name must be data
- The data share must be available to example.com domain clients only
- The data share must be browseable
- susan must have read access to the share, authenticating with the same password “password”, if necessary
- Configure the serverX to share /opstack with SMB share name must be cluster
- The user frankenstein has readable, writeable, accessible to the /opstack SMB share
- Both users should have the SMB passwd “SaniTago”

**Correct Answer:** Please see explanation

**Section:** Topic 4

**Explanation**

**Explanation/Reference:**

Explanation:



```
yum install samba samba-client

systemctl start smb nmb
systemctl enable smb nmb

firewall-cmd --permanent --add-service=samba
firewall-cmd --reload

mkdir -p /sambadir
semanage fcontext -a -t samba_share_t
"/sambadir(/.*)?"
restorecon -Rv /sambadir

setfacl -m u:susan:r-X /sambadir
vim /etc/samba/smb.conf
workgroup = TESTGROUP
[data]
comment = data share
path = /sambadir
browseable = yes
valid users = susan
read only = yes
hosts allow = 172.25.1. #(ifconfig and get
your ip and only use the 3 octets)
grep -i "susan" /etc/passwd
(It it return nothing to create a user
first)

useradd -s /sbin/nologin susan
smbpasswd -a susan

mkdir -p /opstack
semanage fcontext -a -t samba_share_t
"/opstack(/.*)?"
restorecon -Rv / opstack
vim /etc/samba/smb.conf
[cluster]
comment = opstack share
path = /opstack
write list = frankenstein
writeable = no
```



[/indent]

#### QUESTION 45

##### SIMULATION

There were two systems: ▪ system1, main system on which most of the configuration take place ▪ system2, some configuration here

Smb multiuser mount

- Mount the samba share /opstack permanently beneath /mnt/smbspace on desktopX as a multiuser mount. ▪ The samba share should be mounted with the credentials of frankenstein.

**Correct Answer:** Please see explanation

**Section: Topic 4**

**Explanation**

**Explanation/Reference:**

Explanation:

```
yum -y install cifs-utils samba-client
mkdir -p /mnt/smbspace
vim /root/smb-multiuser.txt

username=frankenstein
password=SaniTago
chmod 0600 /root/multiuser.txt
vim /etc/fstab
//server1/cluster /mnt/smbspace cifs defaults,sec =ntlmssp,
credentials=/root/smb-multiuser.txt,multiuser 0 0
```



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