

Read the instruction carefully.

1. There will be one controller machine and 5 nodes.
2. You will be provided the root login and root password, and you have to create playbooks via admin user. [Login on controller node with root then switch to admin user]
3. Create all your playbooks in /home/admin/ansible [mkdir /home/admin/ansible]
4. Create config and inventory file in /home/admin/ansible/
5. Create a roles directory in /home/admin/ansible/ [mkdir /home/admin/ansible/roles]

Step1: Read the instructions carefully, there you'll get ip addresses and fqdn of all nodes& root password of controller node. And folder name where you have to put all playbooks and config file. Also username of managed node and some other things.

Remember:-We won't need root password anywhere. -User name of managed node and controller node would be same.

Step2: ssh to controller node on root account. Then switch user(su -username).

Step3: Install and setup vim, install ansible

Step4: Create folder with that name given in instruction

Step5: Start solving questions

Q1. Install and configure Ansible on the control server named workstation.lab.example.com as described below:

1. Install required packages
2. Create a static manifest file named /home/devops/ansible/inventory to meet the following requirements:
3. server1.example.com is a member of the dev host group
4. server2.example.com is a member of the test host group
5. server3.example.com is a member of the prod host group
6. server4.example.com is a member of the prod host group
7. server5 is member of balancer group member
8. The prod group is a member of the webserver host group
9. Create a configuration file named /home/devops/ansible/ansible.cfg to meet the following requirements:
10. The host manifest file is /home/devops/ansible/inventory
11. The locations of the characters used in the playbook include /home/devops/ansible/roles

Q2. Create and run an Ansible adhoc command. As a system administrator, you will need to install software on the managed nodes.

Create a shell script called yum pack.sh that runs an Ansible adhoc command to create a yum repository on each of the managed nodes as follows:

NOTE: you need to create 2 repos (BaseOS and AppStream) in managed node side

i) BaseOS

a. name: baseos

b. baseurl:
http://classroom.example.com/content/rhel8.0/x86_64/dvd/BaseOS/

c. description:Base OS Repo

d. gpgcheck: yes

e. enabled: yes

key:

[http://classroom.example.com/content/rhel8.0/x86_64/dvd/RP
M-GPG-KEY-Redhat-release](http://classroom.example.com/content/rhel8.0/x86_64/dvd/RP
M-GPG-KEY-Redhat-release)

ii) AppStream

a. name: appstream

b. baseurl:
http://classroom.example.com/content/rhel8.0/x86_64/dvd/AppStream/

c. description: Appstream Repo

d. gpgcheck: yes

e. enabled: yes

key:

http://classroom.example.com/content/rhel8.0/x86_64/dvd/RPM-GPG-KEY-redhat-release

Q3. Create a playbook called packages.yml that:

- Installs the php and mariadb packages on hosts in the dev, test, and prod host groups
 - Installs the RPM Development Tools package group on hosts in the dev host group
 - Updates all packages to the latest version on hosts in the dev host group
-

Q4. Install the RHEL system roles package and create a playbook called timesync.yml that:

- Runs on all managed hosts
 - Uses the timesync role
 - Configures the role to use the time server 172.25.254.250
 - Configures the role to set the iburst parameter as enabled
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Q5. Install selinux roles using redhat roles and enable selinux enforcing on all managed nodes

Use RHEL system role to install the RHEL system role package

Enable selinux state “Enforcing” and policy “targeted” mode on all managed nodes

Q6. Create a role called apache in /home/admin/ansible/roles with the following requirements

- The httpd package is installed, enabled on boot, and started
- The firewall is enabled and running with a rule to allow access to the web server
- A template file index.html.j2 exists (you have to create this file) and is used to create the file /var/www/html/index.html with the following output:
- Welcome to HOSTNAME on IPADDRESS

- where HOSTNAME is the fully qualified domain name of the managed node and IPADDRESS is the IP address of the managed node.
- Create a playbook called httpd.yml that uses this role as follows:

The playbook runs on hosts in the webservers host group

Q7. Use Ansible Galaxy with a requirements file called /home/admin/ansible/roles/requirement.yml to download and install roles to /home/admin/ansible/roles from the following URLs:

- <http://classroom.example.com/content/examfun.tar.gz> -
The name of this role should be balancer
 - <http://classroom.example.com/content/examfun.tar.gz> -
The name of this role should be phpinfo
-

Q8. Create a playbook called /home/admin/ansible/roles.yml

Part 01

1. The palybook contains a play that runs on host in the balances host group and uses the balances role.
2. This role configures a service to load balance web server request between hosts in the webserver host group.
3. Browsing to host in the balances host group (for example http://server5.lab.example.com) produces the following output:

a. Welcome to server3.lab.example.com on 172.24.1.8

Reloading the Browser produces output from the alternet

b. web server: Welcome to server4.lab.example.com on 172.24.1.9

Part 02

The Playbook contains a play the runs on hosts in webserver host group and user the phpinfo role.

Q9. Create & use a logical Volume

Create a playbook named /home/devops/ansible/lv.yml

which will run on all managed servers to perform the following tasks:

Create a logical volume that meets the following requirements:

1. The logical volume is created in the research volume group
2. The logical volume name is data
3. The logical volume size is 1500 MiB
4. Use the ext4 file system to format logical volumes
5. If the requested logical volume size cannot be created, the error message Could not create logical volume of that size should be displayed and the size 800 MiB should be used instead.

6. If the volume group research does not exist, the error message Volume group does not exist should be displayed.

7. Do not mount logical volumes in any way.

Q10. Create Standard Primary Partition

Create a playbook named `/home/devops/ansible/partition.yml` which will run on all group in inventory to perform the following tasks:

Create a standard Primary Partition that meets the following requirements:

1. Partition must be Standard Primary
2. The Partition size is 1500 MiB using `sdb`
3. Use the `ext4` file system to format.
4. Mount it under `/syspart`
5. If the requested Partition size cannot be created, the error message `Could not create Partition of that size` should be displayed and the size 800 MiB should be used instead.
6. If the `vdd` does not exist, the error message “disk does not exist” should be displayed.
7. Must Mount Partition under `/syspart`

Q11. Generate hosts file Download an initial template file from

`http://workstation.lab.example.com/me...` to
`/home/devops/ansible.`

Complete the template so that it can be used to generate the following files:

for each inventory host, there is a line of content in the same format as `/etc/hosts`.

Create a playbook named `/home/devops/ansible/hosts.yml`, which will use this template to generate the file `/etc/myhosts` on the hosts in the dev host group.

After the playbook runs, the file `/etc/myhosts` on the hosts in the dev host group should contain a line for each managed host:

```
127.0.0.1    localhost    localhost.localdomain    localhost4
localhost4.localdomain4
```

```
:::1        localhost    localhost.localdomain    localhost6
localhost6.localdomain6
```

```
172.25.250.10 node1.lab.example.com
```

```
node1 172.25.250.11 node2.lab.example.com
```

```
node2 172.25.250.12 node3.lab.example.com
```

```
node3 172.25.250.13 node4.lab.example.com
```

```
node4 172.25.250.14 node5.lab.example.com node5
```

Note: The display order of the list host names is not important.

Q12. Create a playbook called /home/admin/ansible/issue.yml

1. The playbook runs on all inventory hosts
 2. The playbook replaces the content of /etc/issue with a single line of text as follows:
 3. On host is the dev host group, the line reads: Development
 4. On hosts in the test host group, the line read: Test
 5. On hosts in the prod hosts group, the line read: Production
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Q13. Create a Web content directory.

Create a playbook called /home/admin/ansible/webcontent.yml as follows:

- 1- The playbook runs managed node in the dev host group
- 2- Create the directory /webdev with the following requirement:
 - a. it is owner by the webdev group
 - b. it has regular permissions:
owner=read+write+execute,group=r+w+x,other=r+x
 - c. it has special permission: set group GID
- 3- Symbolically link /var/www/html/webdev to /webdev

4- Create the file /webdev/index.html with a single line of text that reads: Development

5- Browsing this directory on host in the dev host group (for example <http://system1.lab.example.com/webdev/>) produces the following output: Development.

Q14. Generate a hardware report Create a playbook called /home/admin/ansible/hwreport.yml that produces an output file called /root/hwreport.txt on all managed nodes with the following information:

a. Inventory hostname:

b. Total Memory :

c. BIOS version:

d. Size of disk device vda :

e. Size of disk device vdb :

f. Each line of the output file contains a single key=value pair.

your playbook should: - Download the file from <http://workstation.lab.example.com/me...> and save it as /root/hwreport.txt

- Modify /root/hwreport.txt with the correct values

- if a hardware item does not exist, the associated value should be set to NONE

Q15. Create a password vault

Create an ansible vault to store user password as follows:

1. The name of the vault is /home/admin/ansible/locker.yml
 2. The vault contains two variables with names:
 - a. PW_developer with value Imadev
 - b. PW_manager with value Imamgr
 3. The Password to encrypt and decrypt the vault is = redhat
 4. The password is stored in the file /home/admin/ansible/secret.txt
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Q16. Create user accounts * Download a list of user to be created from <http://workstation.lab.example.com/ma...>

* Using the password vault /home/admin/ansible/locker.yml create elsewhere in this exam, create a play book called /home/admin/ansible/users.yml that create user account as following:

* User with job description of developer should be:

- a. create on managed node in the dev and test host group
- b. assigned the password from the pw_developer variable

c. a member of supplementary group devops

* User with a job description of manager should be:

a. create on managed node in the prod host group

b. assigned the password from pw_manager variable

c. a member of supplementary group opsmgr

d. password should use the SHA512 gas format

* Your playbook should work using the vault password file /home/admin/ansible/secret.txt create elsewhere in this exam.

Q17. ReKey an Ansible vault Rekey an existing Ansible vault as follows:

- Download the Ansible vault from <http://workstation.lab.example.com/ma...> to /home/admin/ansible/

- The current vault password is redhat

- The new vault password is redhat123

- The vault remains in an encrypted state with the new password

Q18. Write a playbook name cronjob.yml and Set Cron job for natasha user for dev host group

Time: 15:15

Job: uptime

Q19. Write a playbook name cronjob.yml and Set Cron job for natasha user for all host group

Time: Show “Ex294 Exam in process” every two minute.