Your tasks

1. (a) Write 2 different bash command lines we can use in an Oracle Linux command prompt to verify if the 'vsftpd' package has already been installed in the system.

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(6 marks)

(b) List the current IPv4 IP address, Gateway and DNS of your VM.

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(6 marks)

(c) Write a single bash command line that we can use in an Oracle Linux command prompt to list the login id, the user id number and the primary group id number for all user account with their login id start with a 's' and end with a 't' ?

(Hint: Below is a sample output of the command line.)

```
setroubleshoot,991,984
student,1000,1000
[root@MST ~]#
```

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(6 marks)

2.

(a) Create the following users. Set their passwords to "P@ssword".

User	Home Directory
alice	/home/u1
bob	/home/u2
conrad	/home/conrad

(9 marks)

(b) Create the following group. Add the following users as secondary members of the group.

Group	Group members
officer	bob, conrad

(4 marks)

(c) Create a file, /data/myprofile, in your system. The file must contain:

Your Admin No.
Your Test Venue.
Your Class No.

(3 marks)

(d) Configure the file permission of /data/myprofile based on the following:
Owner of the file: student.
Group of the file: officer.
Owner has read, write and execute permissions.
Group has read, write permissions.
Other users have read only access to the file.
Moreover, alice has read, write access to the file too.

(7 marks)

3. Locate the software package file LAS_mst.rpm in your root file system:

(a) Write the full path of the LAS_mst.rpm file.

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(3 marks)

(b) Install the LAS_mst.rpm package to your system.

(3 marks)

4.

(a) Configure the Static hostname of your system to "las.dism"

(3 marks)

(b) Set the system to enable SELinux and configure it to work in enforcing mode immediately and the system will be in this state automatically upon the subsequent boot up.

(3 marks)

5. Configure the SSH service on your system to have the following settings:

- The SSH service is listening on the tcp port 4422 and is started up automatically upon boot up.
- root user is not allowed to connect using SSH to your system. root can still login via the local server GUI).
- Ensure remote client can access to this SSH service.

(10 marks)

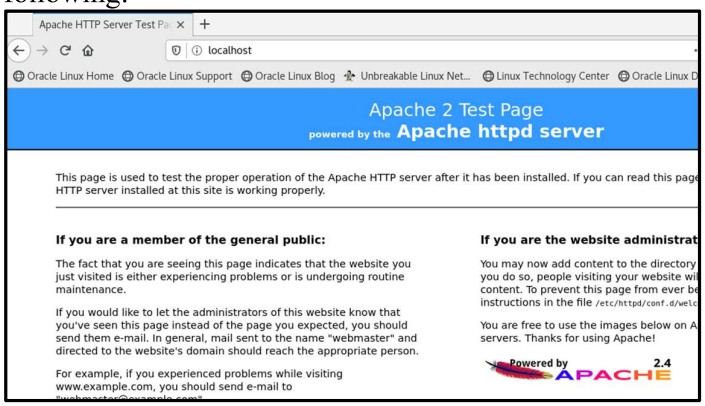
6. Configure your system to be a NFS Server with the following configuration:

   - The NFS service is started up automatically upon boot up.
   - Create the directory `/data/my_nfs` and export it only to clients from the 172.16.108.0/16 or 192.168.129.0/24 subnets.
   - root and other users are not squashed when accessing the exported directory `/data/my_nfs` through NFS.
   - All remote users are able to read, write and list files when accessing the exported directory `/data/my_nfs` through NFS.

   (9 marks)

7. Configure your system to be an Apache Web Server with the following configuration:

   - The Apache Web service is started up automatically upon boot up and listening on the default http port.
   - Set up a Named Virtual Host with the Virtual Host name as www.mst.org and set its default page to `/var/www/las/index.html`.
   - The /var/www/las/index.html file is a copy of /files/myindex.html.
   - When browse to http://localhost from the local server, the browser shall display the following:



   - When browse to http://www.mst.org from the local server, the browser shall display the following:

   (9 marks)

8. Configure the firewall to have the following settings:

   - The firewall is started up automatically upon boot up.
   - Your SSH Service (as defined in question 5) accepts all incoming SSH traffic.
   - Your NFS (as defined in question 6) only accepts connections from the clients within the network segments of 172.16.108.0/16 and 192.168.129.0/24.
   - Incoming HTTP traffic is accepted.
   - Any other incoming TCP traffic is dropped.

   (10 marks)

9. Based on the Squid Log file in `/data/squid.log`, write down three websites that were blocked by the Squid Proxy Server.

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   _____

   (3 marks)

10. Tommy has a text file, file name: 'student_info.txt', which contains a list of student ID/name information. An extract of the file is given below:

```
1845900,David Tan
1846911,Eva Chua
1888771,Flank Low
1890210,Grace Foo
```

He would like to use the last 4 digits (out of the total 7) of the student ID to be the initial login password for the corresponding student account. The first step is to generate a text file that contains the student names (enclosed in a pair of single quotes) and the last 4 digits of their IDs. For example, the above 4 entries will be transformed to:

```
'David Tan',5900
'Eva Chua',6911
'Flank Low',8771
'Grace Foo',0210
```

The generated output will be stored in a new text file.

Write a single command line that we use in an Oracle Linux to carry out this operation. The student information should be getting from the file, `/files/student_info.txt`.

The output should be stored in a new file, `/files/initial_pwd.txt`.

There is a sample file, `/files/student_info.txt`, for you to practice on.

Write your answer below:

_____

_____

(6 marks)

Instructions to Candidates

When you have completed the test, login in as root, run the 'gen_submission' command to generate your final submission file.

Usage: `gen_submission <Venue> <your Admin No>`

Find the generated submission file at /root folder and upload it to the Black Board page.

Submit this paper to the invigilator before you leave the test venue.

– End of the Paper –