

**UEEN3113 / 3413 Server Configuration and Management
Test**

Duration: 1 hour

Total: 50 marks

1. It is important for a newly created user to reset login password during the first login.
 - a. Briefly explained how could this being enforced. (2 marks)
Set the number of days to password expiry to 0.
 - b. What is the command syntax to expire a user's password? (2 marks)
chage -d 0 user_name
2. A new staff has been assigned to manage web server and database server. Briefly explain the advantage and disadvantage of the following strategy to assign privileges to enable the new staff to carry out the tasks.
 - a. Add the new staff into the **sudo** group. (4 marks)
This is the faster and easiest way to assign the privileges to new staff. (2 marks)
Full privileges might be misused or mistake done can cause disastrous consequences. (2 marks)
 - b. Add the new staff into a customised group which is allowed to execute only relevant commands to manage web server and database server. (4 marks)
This can prevent new staff from executing irrelevant commands that cause damages or misusing the privileges. (2 marks)
However, new staff might have to wait for someone with root privilege to perform some actions and have to make that all relevant commands are included in the sudo configuration. (2 marks)
3. New release of applications might not be to run on older distribution because the existing libraries are outdated. Briefly explain how the snap package could solve this problem. (3 marks)
Snap package can include all necessary libraries along with the application so that the package will not rely on and disturb the existing libraries in the target system. (3 marks)
4. Briefly explain TWO (2) reasons or risks we should be caution when install package from a special type of repository called Personal Package Archive. (2 marks)
The package might not compatible with existing system and cause problems. (1 mark)
The package might be compromised if it from untrusted source. (1 mark)
5. State the functionality of each command below.
 - a. apt update (1 mark)
Update the repositories index.
 - b. apt autoremove (1 mark)
Remove unused packages automatically.
 - c. df -h (1 mark)
Check the disk free space.

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6. Write the command to start to configure the commands that can be executed by a specific group through sudo. (2 marks)

sudo visudo

7. Users in a company are grouped by department and each group is assigned with different privileges. The company is using LVM in storage management. New hard disks have been added because growing in data and usage.

- a. John has joined the sales department, write the appropriate command to change the John's primary group to **sales**. Assume that his user name is **john**. (2 marks)

sudo usermod -g sales john

- b. Write the command to list all disks and partitions. (2 marks)

fdisk -l

- c. Given that one of the new hard disk is /dev/sdd, write the appropriate command to configure the hard disk. (2 marks)

fdisk /dev/sdd

- d. Write the command to create physical volume on the new hard disk /dev/sdd. (2 marks)

sudo pvcreate /dev/sdd

- e. Given that the sales department has three categories (namely sales, reports and clients) of documents to be stored. The document amount in some categories will be multiplied from time to time and thus more storage will be required. Each department in the company should have their dedicated storage group. Based on the information, suggest a structure of the volume group and volumes for the sales department. (3 marks)

Create a volume group for sales department.

(1 mark)

For each document category, create a logical volume in the volume group.

(2 marks)

- f. Expand the logical volume lvsales to use all the free space in /dev/sdd. Given that all logical volumes are located at /dev/mapper. (4 marks)

lvextend /dev/mapper/lvsales /dev/sdd

- g. The user found that the volume size has not been increased after the volume is expanded. Briefly explain the reason and the solution. (3 marks)

Although the volume size has changed, the file system has not been resized yet.

(2 marks)

Run the resize2fs command to resize the file system.

(1 mark)

8. Scan for opened ports in user PCs with IP range from 192.168.50.20 to 192.168.50.30. (2 marks)

nmap 192.168.50.20-30

9. Use the tcpdump command to capture packets from port 8080 on interface enp0s3 and store in a file called 8080_dp. (3 marks)

tcpdump -i enp0s3 port 8080 -w 8080_dp

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10. Use netstat to verify that ssh server is listening to the configure port for TCP/UDP. (3 marks)

netstat -tulpn | grep ssh

11. Briefly explain why we should be caution of high usage / activities by nmap. (2 marks)

It might indicate that someone is scanning for open port that can be target of attack.