**User and Storage Management**

Perform the following steps before power on the virtual machine.

1. Add 2 5GB hard disks to the virtual machine.
2. Take a snapshot of the virtual machine.

**Part 1: User Management**

Tasks:

1. Create a file named ***User\_guide*** in **/etc/skel** directory.

Command(s) to create file: useradd -d /etc/skel -m User\_guide

Command to copy: cp User\_guide /etc/skel

*Self-check: What is the purpose of the /etc/skel directory?*

* + *All the files in this directory will copied into user’s home directory when it is created during the process of adding new user.*
  + *Any text file or configuration can be placed into this directory.*

1. Create 2 users with the following information.

* User 1 : stadmin
* User 2 : stuser
* Default password : st12345

Command:

Useradd -d /home/stadmin -m stadmin

Useradd -d /home/stuser -m stuser

Sudo passwd stadmin

Password: st12345

Sudo passwd stuser

Password: st12345

*Self-check:*

* *How to check the existence of an user?*

1. Execute the command that will force **stadmin** to change password when first login.

Command: chage -d 0 stadmin

// by setting days of expiry to 0

1. Create two new user groups:

* stgroup
* upadmin

Command:

Groupadd stgroup

Groupadd upadmin

*Self-check:*

* *How to confirm that the groups have been created in the system?*

1. Assign *stadm* to *upadmin* group and *stuser* to *stgroup*.

Command:

Usermod -g upadmin stadm

Usermod -g stgroup stuser

*Self-check:*

* *How to know the groups that an user assigned to?*
* *How to remove an user from a group?*

*// gpasswd -d user\_name group\_name*

* *How to remove a group from system?*

*//groupdel group\_name*

1. Remove user **stuser** from system but keep the home directory.

Command:

Userdel stuser

*Self-check:*

* *How to remove the home directory with all its contents?*

*//userdel -f user\_name*

* *How to remove an user and the home directory at the same time?*

*//userdel -r user\_name*

1. Create a shell script that contains the following commands.

useradd –m $1

echo $1:depw12345 | chpasswd

Command to make the script executable:

Cgmod +x script

*Self-check:*

* *What is $1? //username*
* *Explain the operation of the second line. To change password*
* *How to display the permission of a file?*
* *What is the command to make the script executable?*

1. Create a new user (user name: **stbob**) using the script created above.

Useradd -m stbob

**Part 2: Storage Management - Quota**

1. Configure quota management support for root filesystem (/).

File to edit: sudo apt install quota quotatool

Parameter to be used: *What is the parameter for group quota?*

*// for user quota: usrquota, for group quota grpquota*

1. Remount the root filesystem (/).

Command: sudo mount -o remount /

1. Enable the quota support.

Command: quotacheck -avgum

*Self-check:*

* *What files will be created by the command and where they are located?*

*//2 quota files created in the root file system, aquota.group & aquota.user*

1. Configure quota for **stuser** as follow:

* Soft limit : 100 MB
* Hard limit : 120 MB

Command:

edquota stuser

// change soft = 100000, hard = 120000

*Self-check:*

* *What are soft and hard limits? //*User will get warning when the usage exceeds the soft limit, and there will be a grace period (7 days by default) for user to reduce the usage
* *Can usage exceed soft limit?// cant exceed*

1. Change the grace period to 3 days.

Command: edquota -t

*Self-check:*

* *Try to configure quota for a group.*

*// edquota -g group\_name*

**Part 3: Storage Management - LVM**

1. Configure the 2 additional hard disks as physical volumes.

Command:

pvcreate /dev/sdb

pvcreate /dev/sdc

* *How to display a list of all physical volume created?*

*// pvdisplay*

* *How to check the space in physical volume?*

1. Create a volume group named **st\_group**.

Command: vgcreate st\_groupname physical\_volume

*Self-check:*

* *How to display a list of all volume group created?*

*// vgdisplay*

1. In the first additional hard disk, create a logical volume of size 2GB, named as **st\_data** for st\_group.

Command: lvcreate -n st\_data -L 2g st\_group

*Self-check:*

* *How to display a list of logical volume created?*

*//lvdisplay*

1. Format the logical volume as **ext4** filesystem.

Command: mkgs.ext4 /dev/mapper/logical\_volume\_name

1. Create a mount point, **/mnt/lvm/st\_lvm**, to mount the logical volume.

Command: mount /dev/mapper/mnt/lbm/st\_lvm/data

1. Mount the logical volume.

Command: mount /dev/mapper/mnt/lbm/st\_lvm/data

1. Add the second additional hard disk to **st\_group**.

Command: vgextend st\_group /dev/sdc

1. Extend the logical volume size by 2GB from the first physical volume, 3GB from the second physical volume.

Command: lvextend -n /dev/mapper/v\_name -l +2g /dev/first\_disk

lvextend -n /dev/mapper/v\_name -l +3g /dev/sec-disk