**Lab 3**

Perform the following steps before power on the virtual machine.

1. Add 2 5GB hard disks to the virtual machine.
2. Change the “Network Connection” of the network adapter from **NAT** to **Host-only**.
3. Save the settings and create a duplicate copy of the virtual machine to Desktop.

**Part 1: User Management**

Tasks:

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

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

1. Create a new user with the following information.

* Username : stadm
* Default password : st12345

*Self-check:*

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

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

useradd –m $1

echo $1:depw12345 | chpasswd

*Self-check:*

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

1. Create a new user (user name: **stuser**) using the script created in (3).
2. Execute the command that will force **stuser** to change password when first login.
3. Create two new user groups:

* stgroup
* supadmin

*Self-check:*

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

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

*Self-check:*

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

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

**Part 2: Storage Management - LVM**

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

*Self-check:*

* *How to display a list of all physical volume created?*
* *How to check the space in physical volume?*

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

*Self-check:*

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

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

*Self-check:*

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

1. Format the logical volume as **ext4** filesystem.
2. Create a mount point, **/mnt/lvm/st\_lvm**, to mount the logical volume.
3. Mount the logical volume.
4. Add the second additional hard disk to **st\_group**.
5. Extend the logical volume size by 2GB from the first physical volume, 3GB from the second physical volume.

**Part 3: SSH**

1. Power on the second virtual machine.
2. Configure both virtual machines to use static IP in the network 192.168.49.0, change the second machine’s host name to **server2**.

* *Make changes to the appropriate files after the host name has been changed.*
* *Restart the network service after configuration.*
* *Make sure the machines can communicate with each other, e.g. use* ***ping*** *command.*

1. Configure SSH server to listen to port 10022.

*Self-check:*

* *How to display the port that SSH server listen to?*

1. Create a new user (user name = **st\_mgr**) in both machine, assigned that user to st\_group.
2. Perform necessary configuration to allow st\_mgr to login to server1 via SSH with key authentication.
3. Configure SSH server to allow only user **st\_mgr** and user group **st\_adm** to login via SSH.