SYST8111 – Lab 4

Managing Datastores

Overview

This assignment consists of several tasks related to managing VMFS datastores. A part of managing a virtualized environment involves creating, resizing and removing datastores. This assignment requires that you have completed the iSCSI server, and that your ESXi clustered hosts see one 50 GB iSCSI LUN.

Task 1: Initialize LUN with VMFS

Consume the 50GB iSCSI LUN presented from the “-STOR” server for your first VMFS datastore.

1. Open a vSphere client session to your vSphere clustered infrastructure.
2. In vSphere client, select the **Menu** icon, then **Hosts and Clusters**.
3. Right-click on the datacenter object and select **Storage > New Datastore** to start the new datastore wizard.
4. On the next page, verify that **VMFS** is selected and then select **Next**.
5. On the Name and device select page, enter **vg1\_esxi\_lun\_01** in the datastore name text box.
6. From the Sect a host to view its accessible disks/LUNs drop-down menu, select one of your ESXi hosts. A LUN list appears. Note, in the name we are referencing the volume group the LUN came from, the intended use for the ESXi cluster, and the LUN index number. This naming convention should be maintained for future LUNs provisioned.
7. In the LUN list, select LUN 1 (50GB) and select Next.
8. On the VMFS version page, accept VMFS 6 and click Next.
9. On the partition configuration page, keep the LUN size at its maximum, and click **Next**.
10. On the ready to complete page, review the information and click **Finish**.
11. Confirm the new datastore is visible on both ESXi hosts, by selecting the hosts in the navigation menu, then the datastore tab on the top right.

Task 2: Provision two more LUNs to ESXi Cluster

In this task, we are going to add more disk/storage to our “-STOR” server, expand the volume group already defined, and create two more LUNs that will be shared to our ESXi hosts. Since some of these steps were covered in greater detail in previous labs, some of the steps outlined here will be brief.

1. Allocate two more disks, 100GB each, thin provisioned to your “-STOR” server. This will mean that there are four disks added to this VM.
2. Log into your “-STOR”server using PuTTy.
3. Run the “./scan” script to probe for new storage. In the print statements of the script, we should see two new devices, /dev/sdd, and /dev/sde. NOTE: the directory “/dev/” is where Linux maintains references of all hardware devices connected to the system. Connected hard drives are indexed by letters starting with the letters “sd”, and then “a..z”. There are two commands to verify the presence of the new disk, fdisk and lvmdiskscan.
4. Next we need to initialize the disk to be used with volume manager. We do that with the pvcreate command.
   1. sudo pvcreate /dev/sdd
   2. sudo pvcreate /dev/sde
5. Now that the new drives have been initialized, we can extend the existing volume group.
   1. sudo vgextend esxi\_data\_dg /dev/sdd
   2. sudo vgextend esxi\_data\_dg /dev/sde
6. Now that our volume group has been extended to four disks, just shy of 400GB, we are going to add two more logical volumes, or LUNs that can be shared to our ESXi hosts.
   1. sudo lvcreate -L 50g -n esxi\_lun\_02 esxi\_data\_vg
   2. sudo lvcreate -L 125g -n esxi\_lun\_03 esxi\_data\_vg
7. We now need to modify the configuration file located at /etc/tgt/conf.d/iscsi.conf to share the new volumes created.
   1. Cd /etc/tgt/conf.d/
   2. Sudo nano issci.conf
   3. Add the lines to represent the new targets. Your file should look like the following, except that server\_name is the name of your server.

<target server\_name:lun01>

backing-store /dev/esxi\_data\_vg/esxi\_lun\_01

initiator-address 192.168.1.102

initiator-address 192.168.1.103

</target>

<target server\_name:lun02>

backing-store /dev/esxi\_data\_vg/esxi\_lun\_02

initiator-address 192.168.1.102

initiator-address 192.168.1.103

</target>

<target server\_name:lun03>

backing-store /dev/esxi\_data\_vg/esxi\_lun\_03

initiator-address 192.168.1.102

initiator-address 192.168.1.103

</target>

* 1. Now that the configuration file has been updated, we need to force tgtd, the deamon process to re-read the configuration file. We can do this with the command
     1. sudo tgt-admin –update ALL -c /etc/tgt/conf.d/iscsi.conf

1. We can confirm that the new LUNs are being shared with the show command of tgt-admin
   1. sudo tgtadm –-mode target –-ob show

Task 3: Initialize new LUNs to be used by the cluster with VMFS.

With the existing configuration, we should be able to probe for new storage, and at this point, we should see three LUNs, two at 50GB an one LUN at 125GB. Repeat task 1, but now for the two new LUNs provisioned from Task 2.