Group Name: _____   Group Number: _____

Group Members: _____   Section: _____
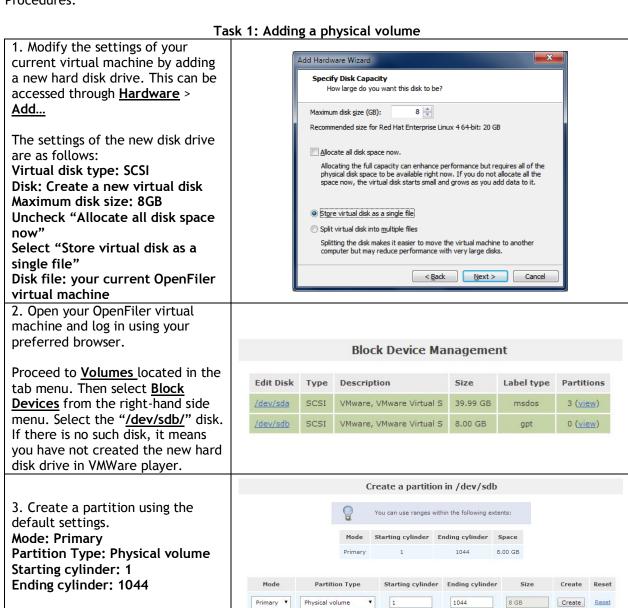
_____   Date: _____

_____

Laboratory Activity 2

Objective:

The activity familiarizes the student on creating volumes in OpenFiler and sharing the volumes on the network. Volume sharing over the network uses the Common Internet File System (CIFS) protocol. The activity uses a virtual machine in deploying OpenFiler on VMware workstation.

Materials/Equipment/Setup needed:
- Desktop PC with 2GB RAM and Windows OS
- VMWare Workstation/Player
- OpenFiler virtual machine from previous laboratory activity
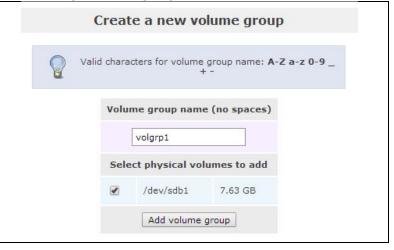- Network connection

Procedures:

Task 1: Adding a physical volume

1. Modify the settings of your current virtual machine by adding a new hard disk drive. This can be accessed through **Hardware** > **Add…** The settings of the new disk drive are as follows: **Virtual disk type: SCSI** **Disk: Create a new virtual disk** **Maximum disk size: 8GB** **Uncheck "Allocate all disk space now"** **Select "Store virtual disk as a single file"** **Disk file: your current OpenFiler virtual machine**	
2. Open your OpenFiler virtual machine and log in using your preferred browser. Proceed to **Volumes** located in the tab menu. Then select **Block Devices** from the right-hand side menu. Select the "**/dev/sdb/**" disk. If there is no such disk, it means you have not created the new hard disk drive in VMWare player.	
3. Create a partition using the default settings. **Mode: Primary** **Partition Type: Physical volume** **Starting cylinder: 1** **Ending cylinder: 1044**	

Task 2: Creating a volume group

1. Select the **Volume Groups** from the right-hand side menu. Create a new volume group using the following settings: **Volume group name: volgrp1** **physical volumes to add: /dev/sdb1**	**Create a new volume group** Valid characters for volume group name: **A-Z a-z 0-9 _ + -** Volume group name (no spaces) volgrp1 Select physical volumes to add ☑ /dev/sdb1 7.63 GB Add volume group

Task 3: Creating a volume

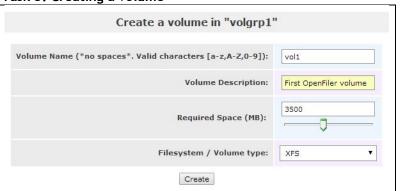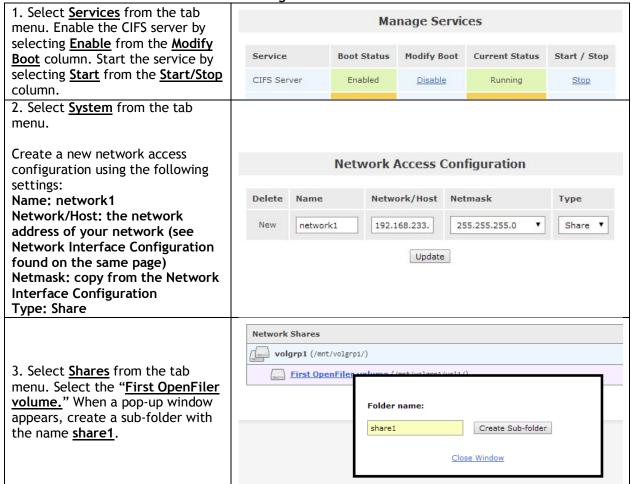|	
1. Select **Add Volume** from the right-hand side menu. Create a new volume using the following settings: **Volume Name: vol1** **Volume Description: First OpenFiler volume** **Required Space (MB): 3500** **Filesystem/Volume type: XFS**	**Create a volume in "volgrp1"** Volume Name (*no spaces*. Valid characters [a-z,A-Z,0-9]): vol1 Volume Description: First OpenFiler volume Required Space (MB): 3500 Filesystem / Volume type: XFS Create

Task 4: Creating the volume share via CIFS

1. Select **Services** from the tab menu. Enable the CIFS server by selecting **Enable** from the **Modify Boot** column. Start the service by selecting **Start** from the **Start/Stop** column.	**Manage Services** | Service	Boot Status	Modify Boot	Current Status	Start / Stop
---	---	---	---	---
CIFS Server	Enabled	Disable	Running	Stop	
2. Select **System** from the tab menu. Create a new network access configuration using the following settings: **Name: network1** **Network/Host: the network address of your network (see Network Interface Configuration found on the same page)** **Netmask: copy from the Network Interface Configuration** **Type: Share**	**Network Access Configuration** | Delete	Name	Network/Host	Netmask	Type
---	---	---	---	---
New	network1	192.168.233.	255.255.255.0	Share	 Update
3. Select **Shares** from the tab menu. Select the "**First OpenFiler volume.**" When a pop-up window appears, create a sub-folder with the name **share1**.	**Network Shares** volgrp1 (/mnt/volgrp1/) First OpenFiler volume (/mnt/volgrp1/vol1/) Folder name: share1 Create Sub-folder Close Window

4. Select the newly created **share1** then select **Make Share** on the pop-up window. Set the **Share Access Control Mode** to **Public Guest Access** then **Update**. Modify the **Host access configuration** using the following settings: **SMB/CIFS: Check restart services, select RW** **NFS: No** **HTTP(S): No** **FTP: No** **Rsync: No**	

Task 5: Accessing the share folder

1. Open any Windows Explorer window or open **Run** by pressing ⊞ **(windows button) + R**. Type \\[your OpenFiler IP address] and the share folder you created should now be accessible.	

Task 6: Create your own share volume

Using the remaining partition in the volume, try to create a volume share on the network. List down the steps you did to create the share.

Guide questions for the laboratory report:
1. What are the steps/stages involved in creating a volume? How are the physical volume, volume group and volume interconnected?
2. Is it possible to create a volume group with several disks? Why?
3. What is the Common Internet File System protocol or CIFS? What is it for?
4. What is the difference of sharing the volume on OpenFiler than sharing on a Windows machine? What are the advantages and disadvantage?
5. When will you recommend using a SAN/NAS than using file sharing using Windows or Linux?