OpenFiler 2.99.1

X86_64

openfiler

Installation and Configuration Guide V 1.0

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Content

About

Openfiler is an operating system that provides file-based network-attached storage and block-based storage area network.

- Unified Storage
- NAS Features – CIFS, NFS, HTTP
- SAN Features – iSCSI, FC
- High Availability / Failover
- Block Replication (LAN & WAN)
- Web-Based Management
- Cost-free Storage Capacity Expansion

Openfiler addresses all the key data storage concerns:

Reliability - Openfiler supports both software and hardware RAID with monitoring and alert facilities; volume snapshot and recovery
Availability - Openfiler supports active/passive high availability clustering, MPIO, and block level replication
Performance - Linux 2.6 kernel supports the latest CPU, networking and storage hardware
Scalability - filesystem scalability to 60TB+, online filesystem and volume growth support

VM Configuration used in this guide

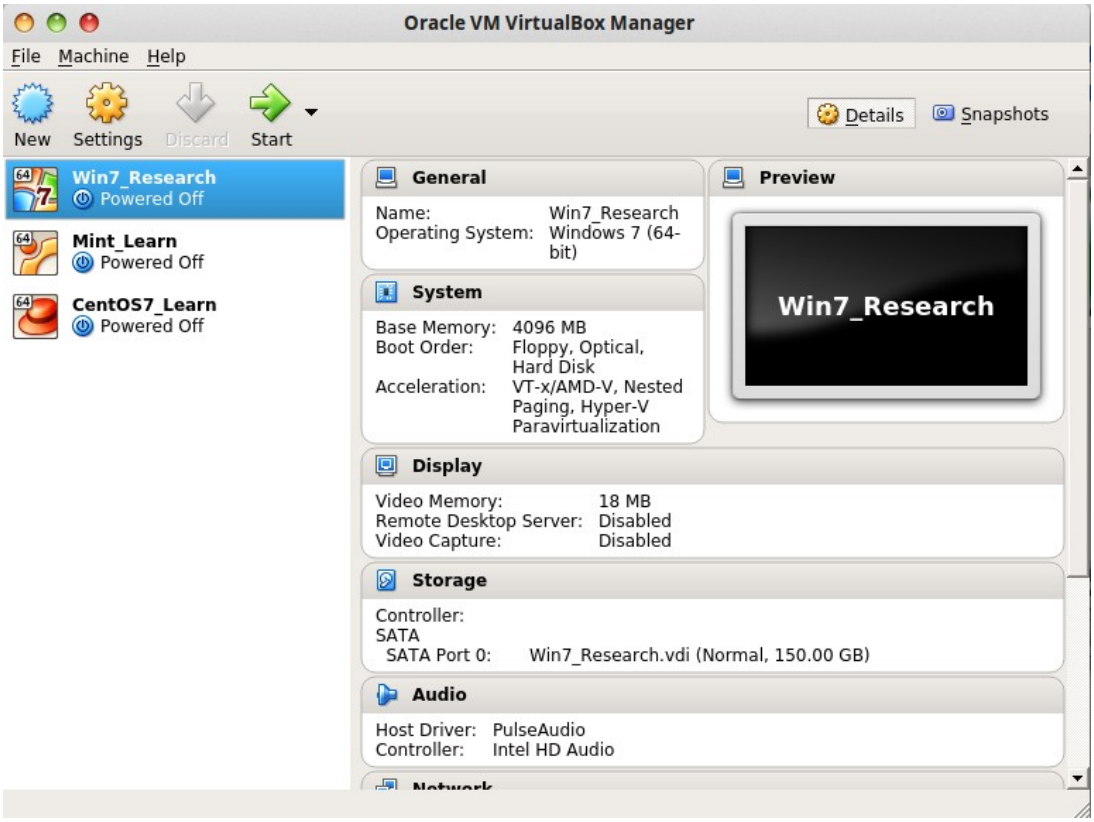
Guest OS :	Linux Mint 17.3 Cinnamon 64bit	username : enigma password : !@root123
VirtualBox :	5.1.30	
RAM :	4GB/6GB	
OpenFiler :	2.99.1	
VDI Space / Storage :	30GB	

Guest OS :	CentOS 7 64bit	hostname : centhost root passwd : !@root123 Fullname : Administrator username : enigma passwd : root123
VirtualBox :	5.1.30	
RAM :	4GB/6GB	
VDI Space / Storage :	30GB	

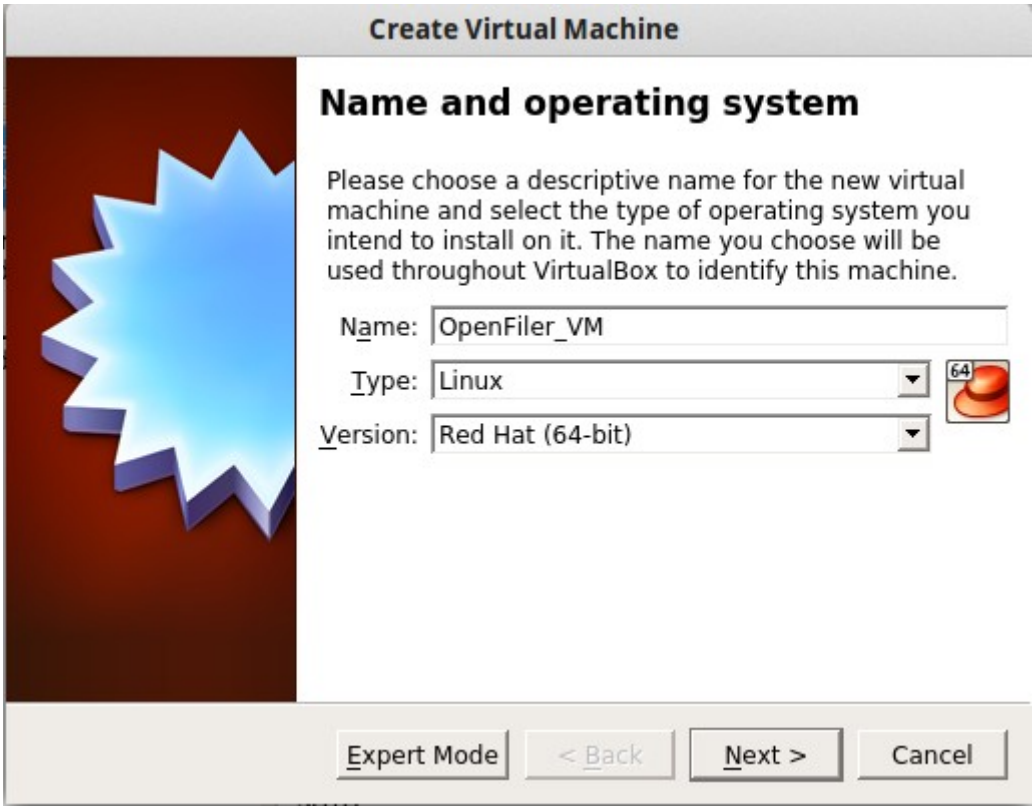
Guest OS :	OpenFiler	username : openfiler passwd : password root username : root root password : !@Ilg007su
VirtualBox :	5.1.30	
RAM :	4GB/6GB	
VDI Space / Storage :	15GB	

Installation

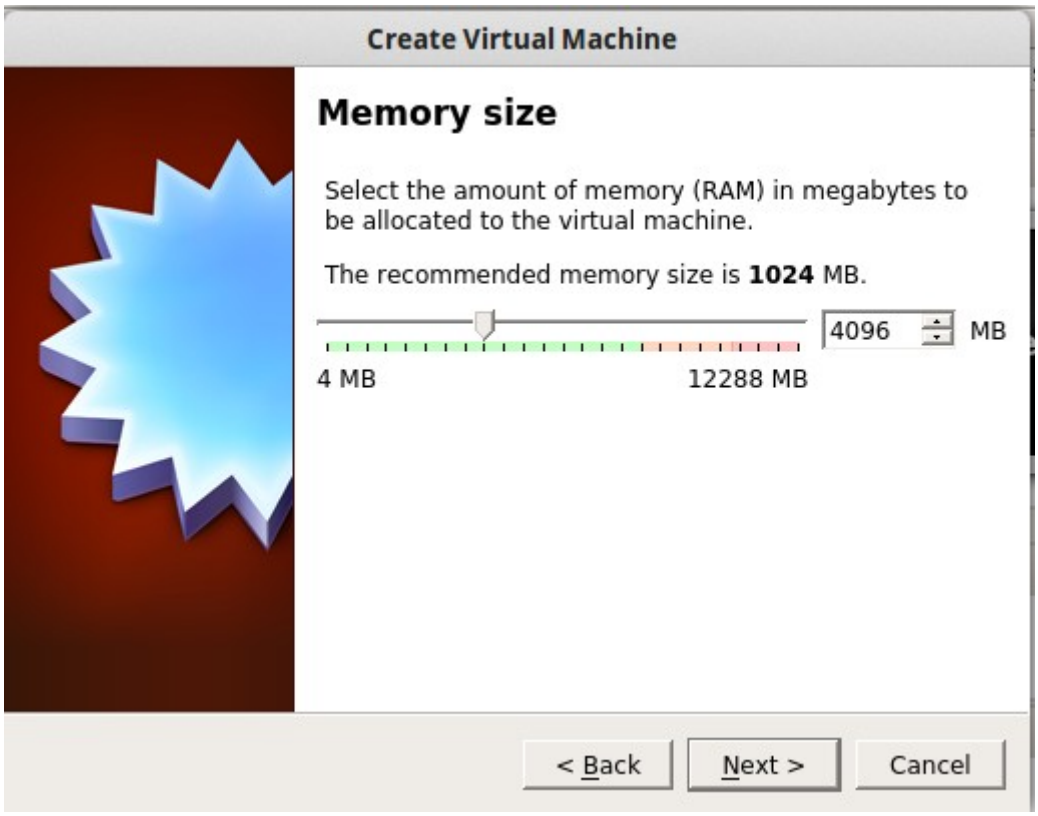
Step 1 : Click on New and follow the steps ahead.



Step 2 :



Step 3 :


Create Virtual Machine
Memory size
Select the amount of memory (RAM) in megabytes to be allocated to the virtual machine.
The recommended memory size is 1024 MB.
4096
MB
4 MB
12288 MB
< Back
Next >
Cancel

Step 4 :


Create Virtual Machine
Hard disk
If you wish you can add a virtual hard disk to the new machine. You can either create a new hard disk file or select one from the list or from another location using the folder icon.
If you need a more complex storage set-up you can skip this step and make the changes to the machine settings once the machine is created.
The recommended size of the hard disk is 8.00 GB.
Do not add a virtual hard disk
Create a virtual hard disk now
Use an existing virtual hard disk file
Win7_Research.vdi (Normal, 150.00 GB)
< Back
Create
Cancel

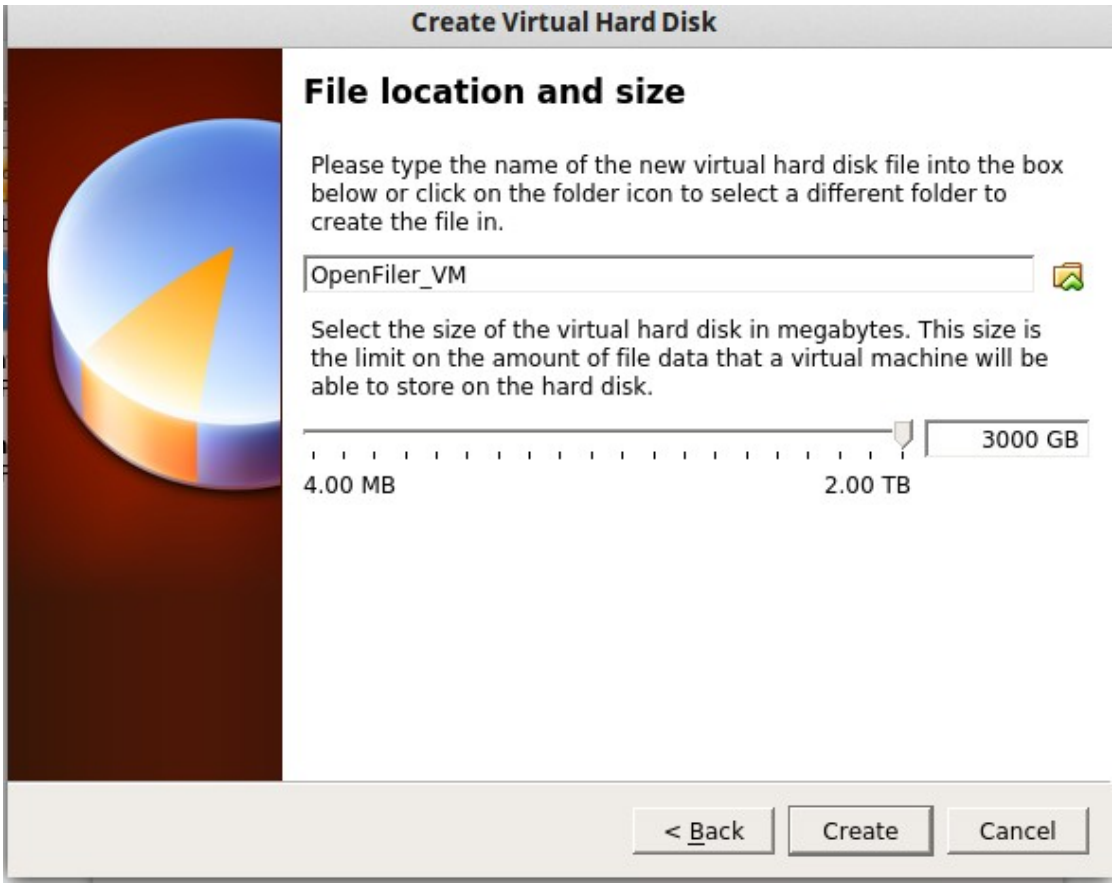
Step 5 :


Create Virtual Hard Disk
Hard disk file type
Please choose the type of file that you would like to use for the new virtual hard disk. If you do not need to use it with other virtualization software you can leave this setting unchanged.
VDI (VirtualBox Disk Image)
VHD (Virtual Hard Disk)
VMDK (Virtual Machine Disk)
Expert Mode
< Back
Next >
Cancel

Step 6 :


Create Virtual Hard Disk
Storage on physical hard disk
Please choose whether the new virtual hard disk file should grow as it is used (dynamically allocated) or if it should be created at its maximum size (fixed size).
A dynamically allocated hard disk file will only use space on your physical hard disk as it fills up (up to a maximum fixed size), although it will not shrink again automatically when space on it is freed.
A fixed size hard disk file may take longer to create on some systems but is often faster to use.
Dynamically allocated
Fixed size
< Back
Next >
Cancel

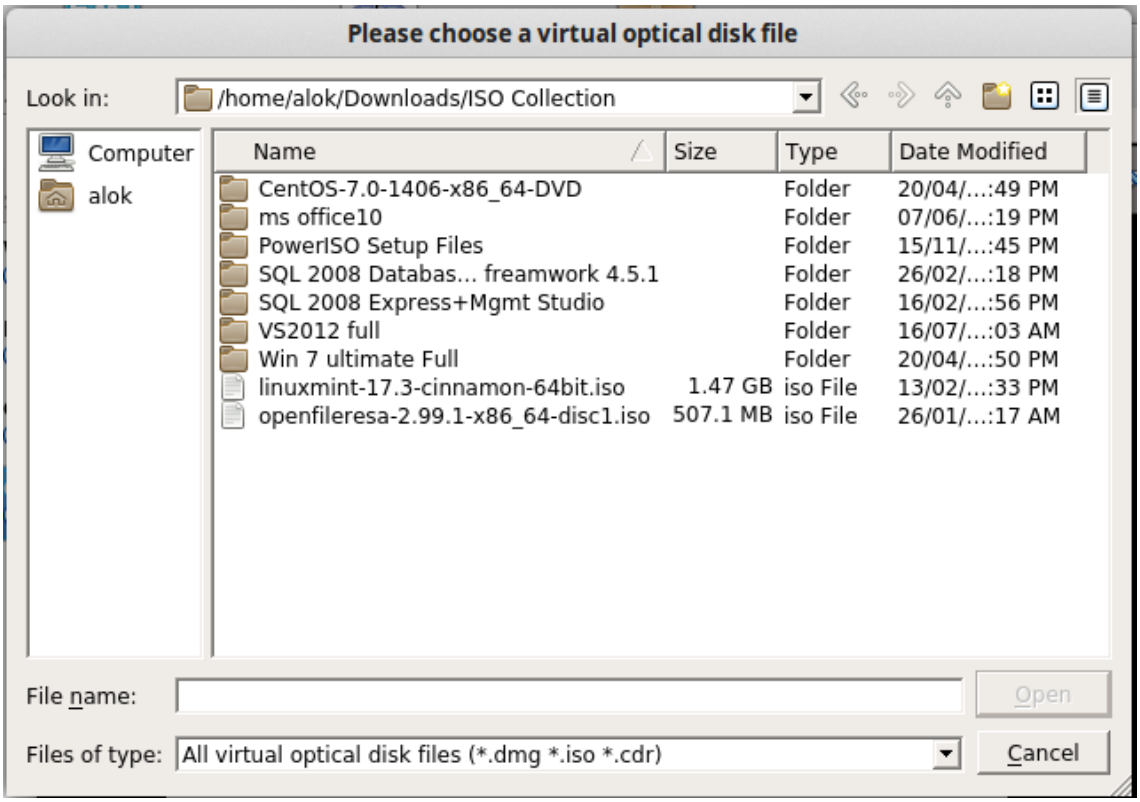
Step 7 :


Create Virtual Hard Disk
File location and size
Please type the name of the new virtual hard disk file into the box below or click on the folder icon to select a different folder to create the file in.
OpenFiler_VM
Select the size of the virtual hard disk in megabytes. This size is the limit on the amount of file data that a virtual machine will be able to store on the hard disk.
3000 GB
4.00 MB
2.00 TB
< Back
Create
Cancel

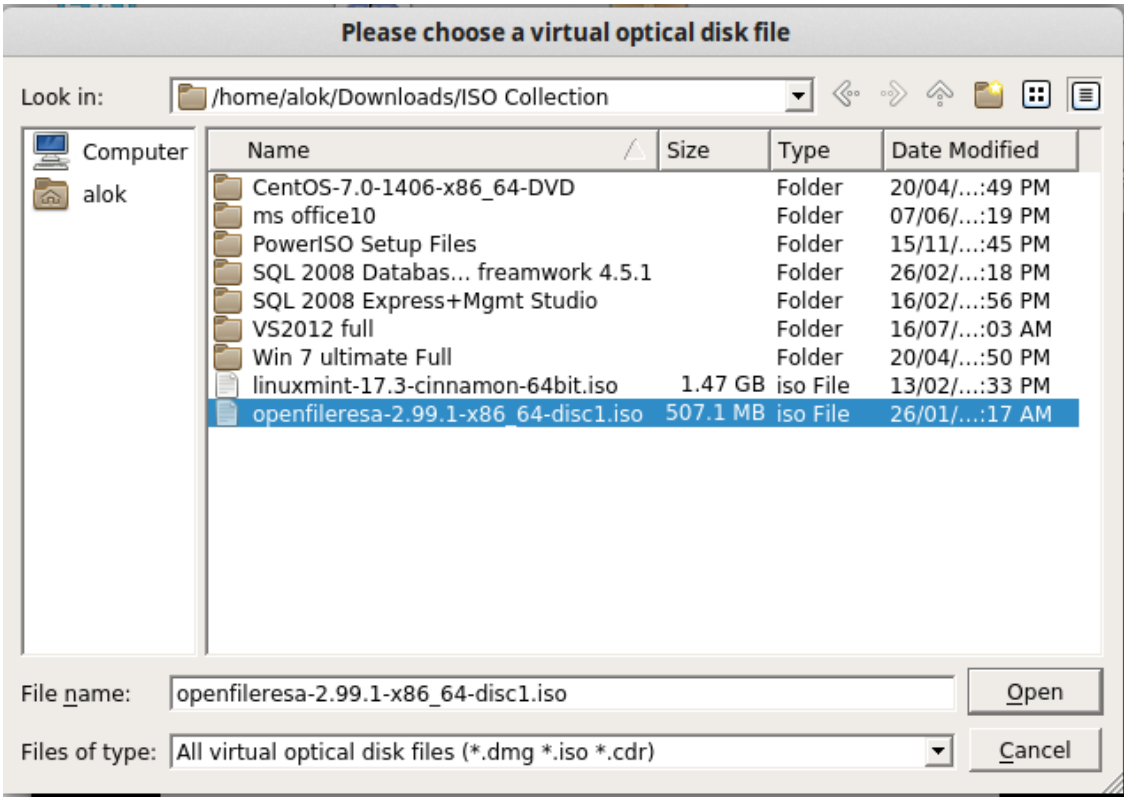
Step 8 :


Select start-up disk
Please select a virtual optical disk file or a physical optical drive containing a disk to start your new virtual machine from.
The disk should be suitable for starting a computer from and should contain the operating system you wish to install on the virtual machine if you want to do that now. The disk will be ejected from the virtual drive automatically next time you switch the virtual machine off, but you can also do this yourself if needed using the Devices menu.
CentOS-7.0-1406-x86_64-DVD.iso (3.86 G
< Back
Start
Cancel

Step 9 :

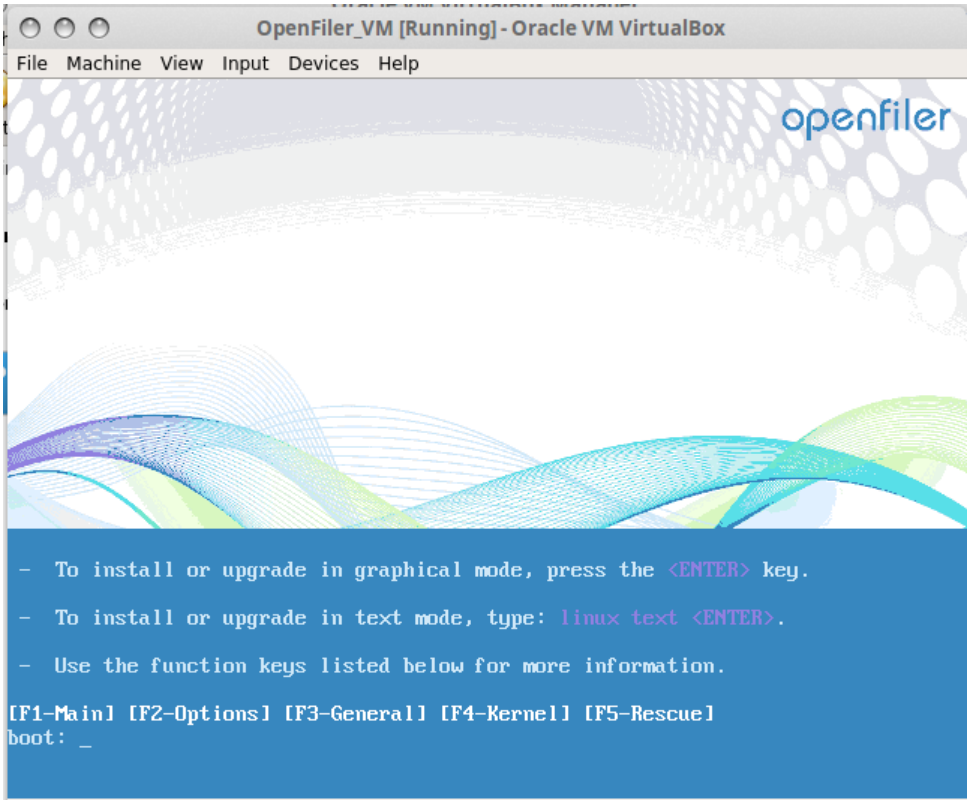


Step 10 :

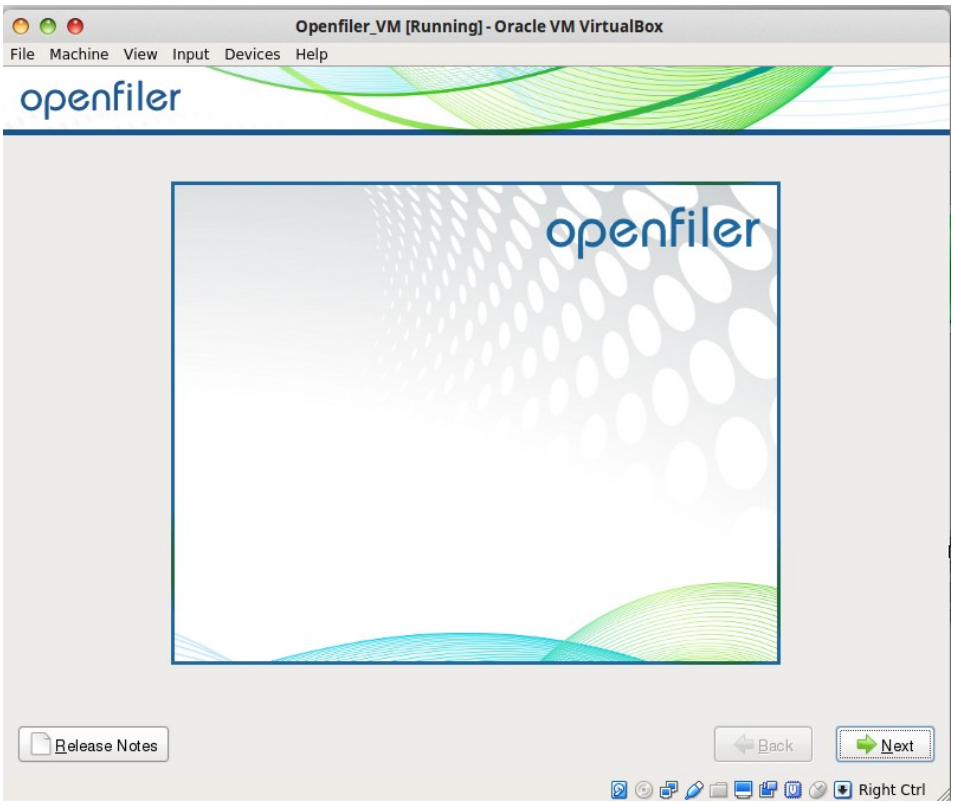


Step 11 :

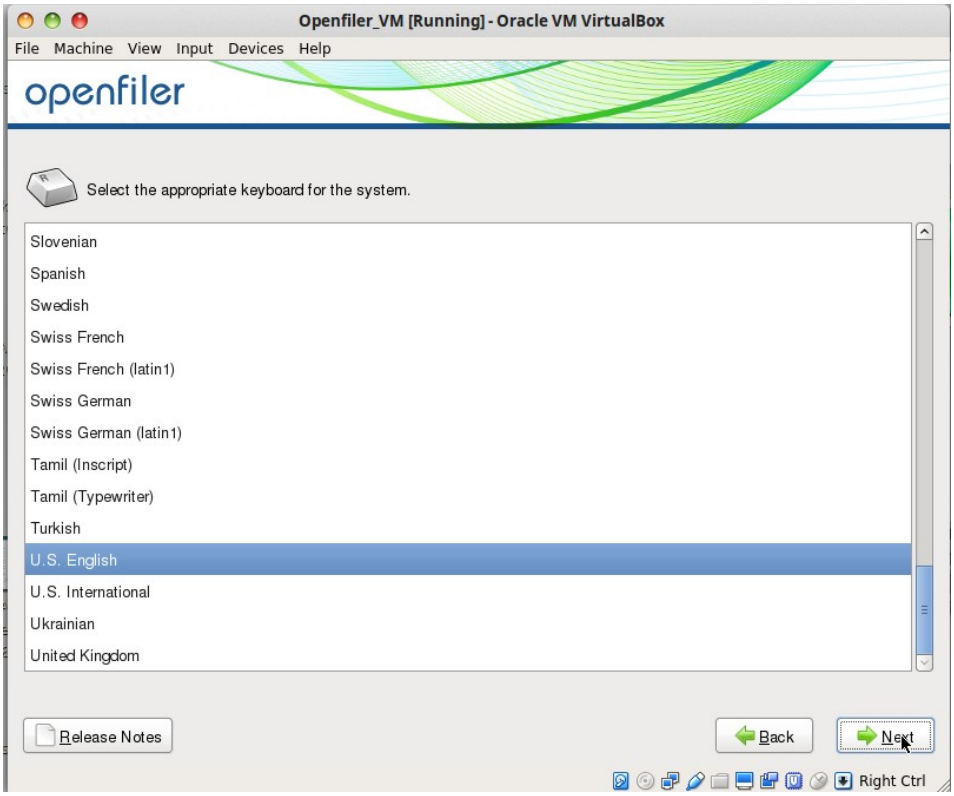
Step 12 :



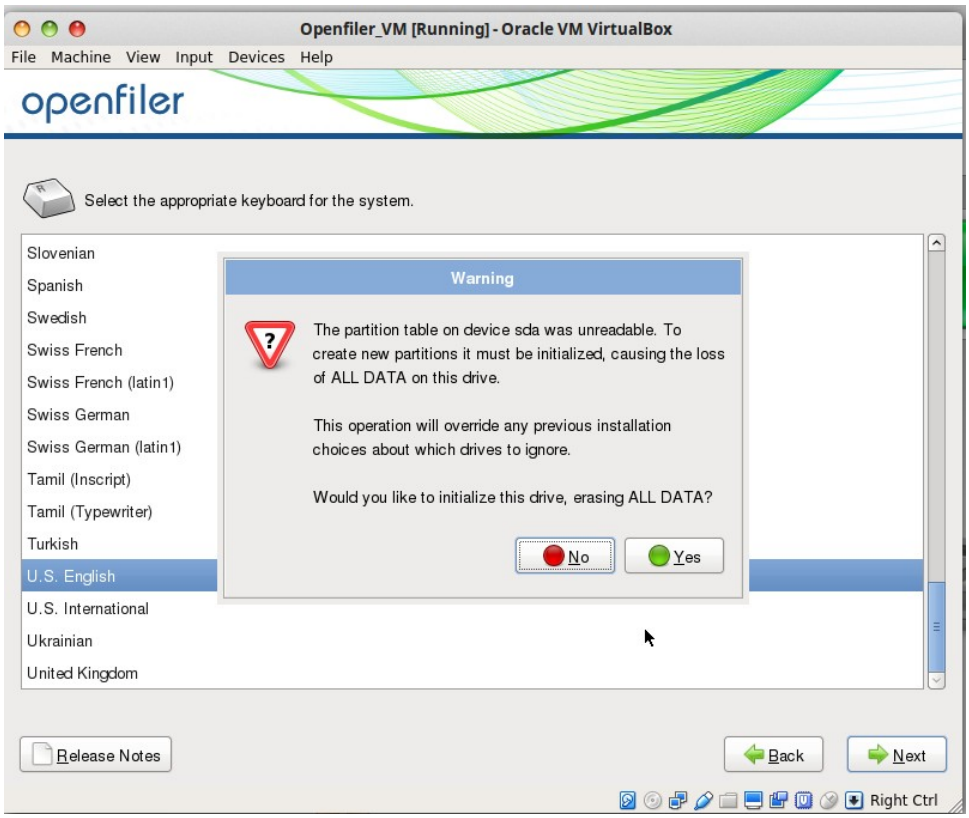
Step 13 :



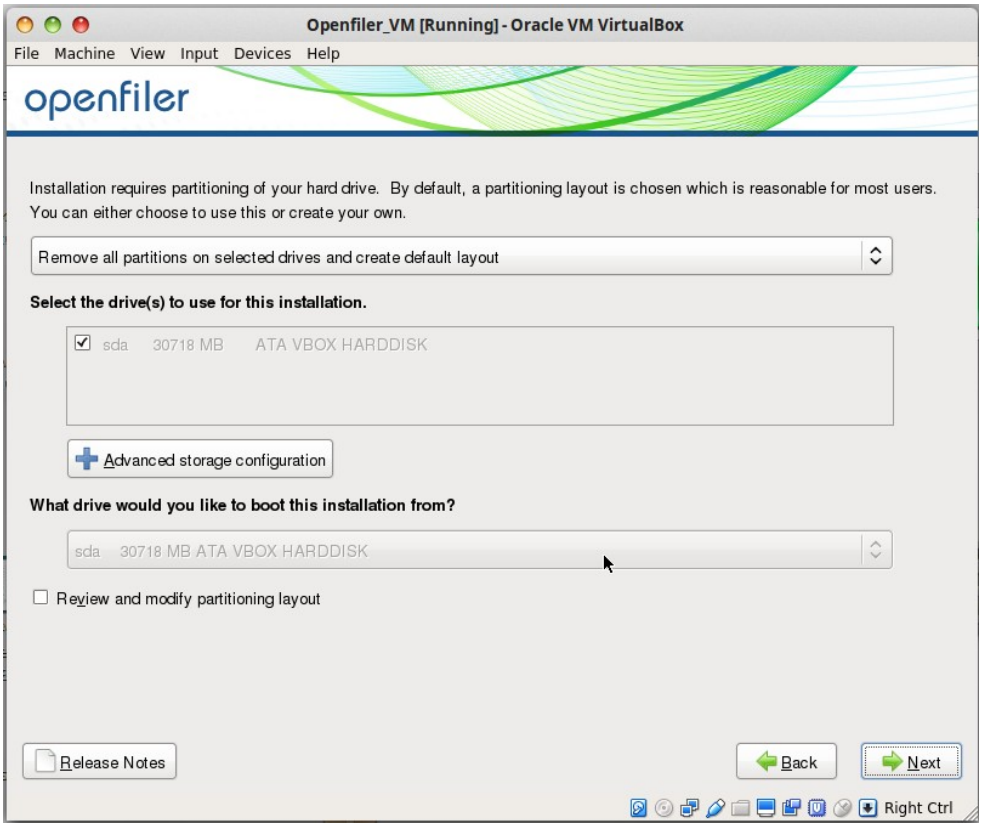
Step 14 :



Step 15 :

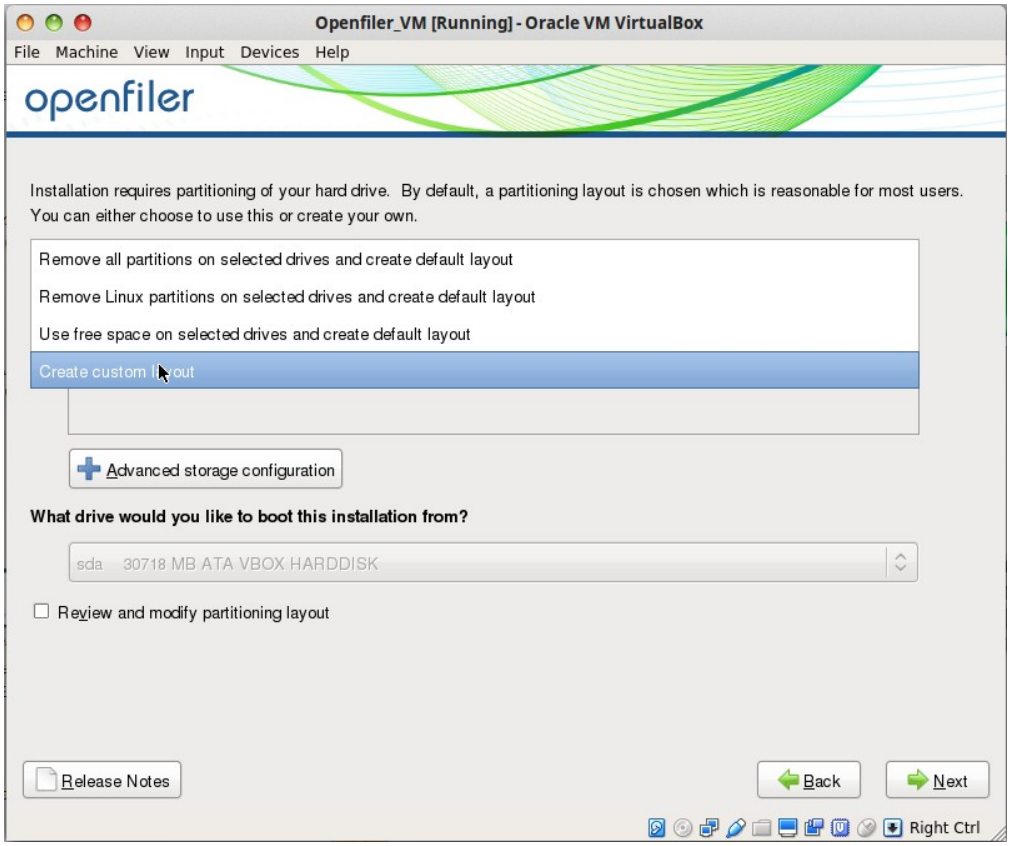


Step 16 :

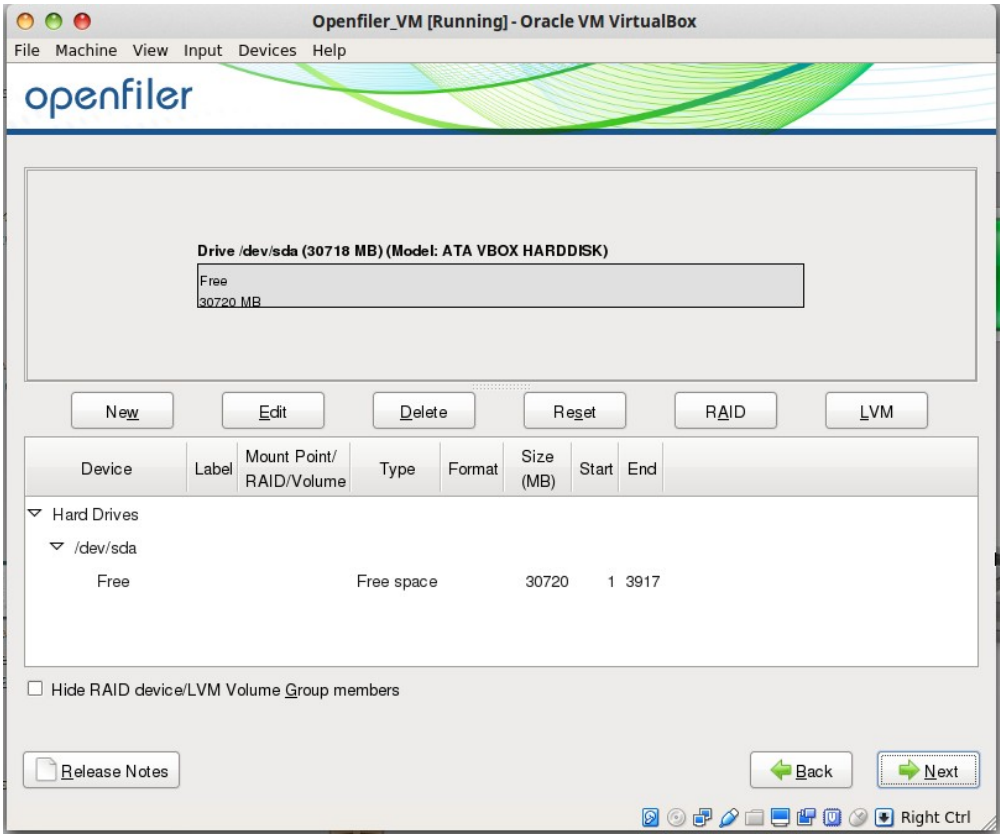


Step 17 :

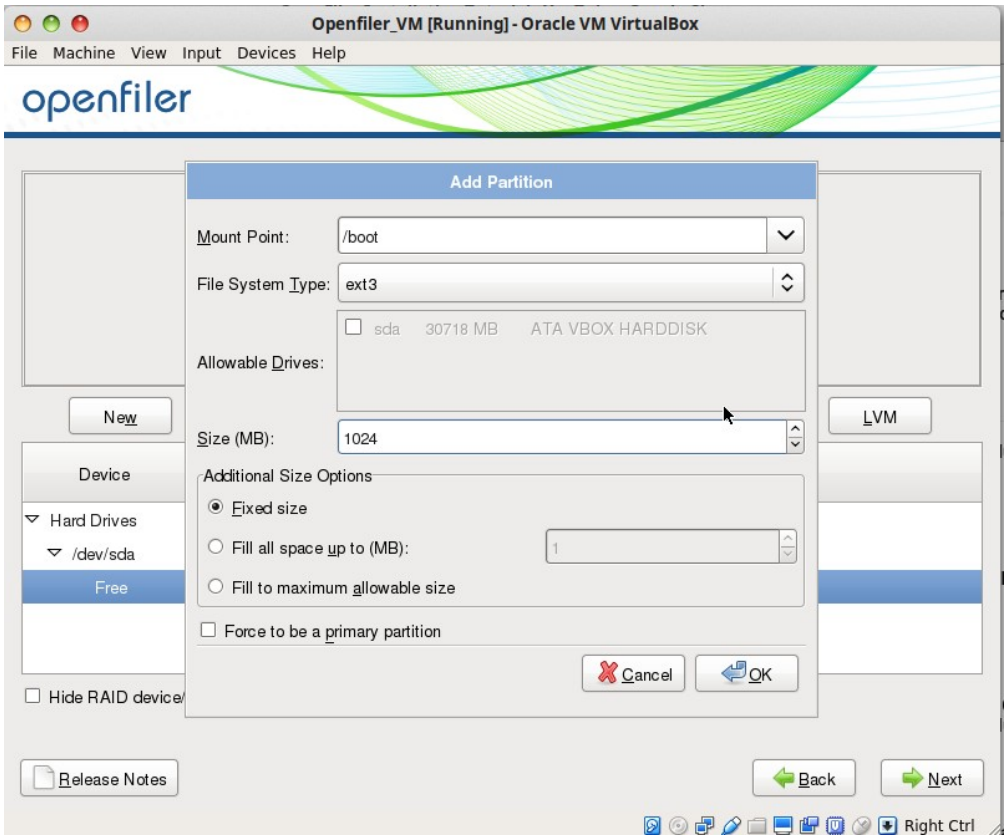
Here you need to select custom layout else you wont be able to create custom sized partitions.



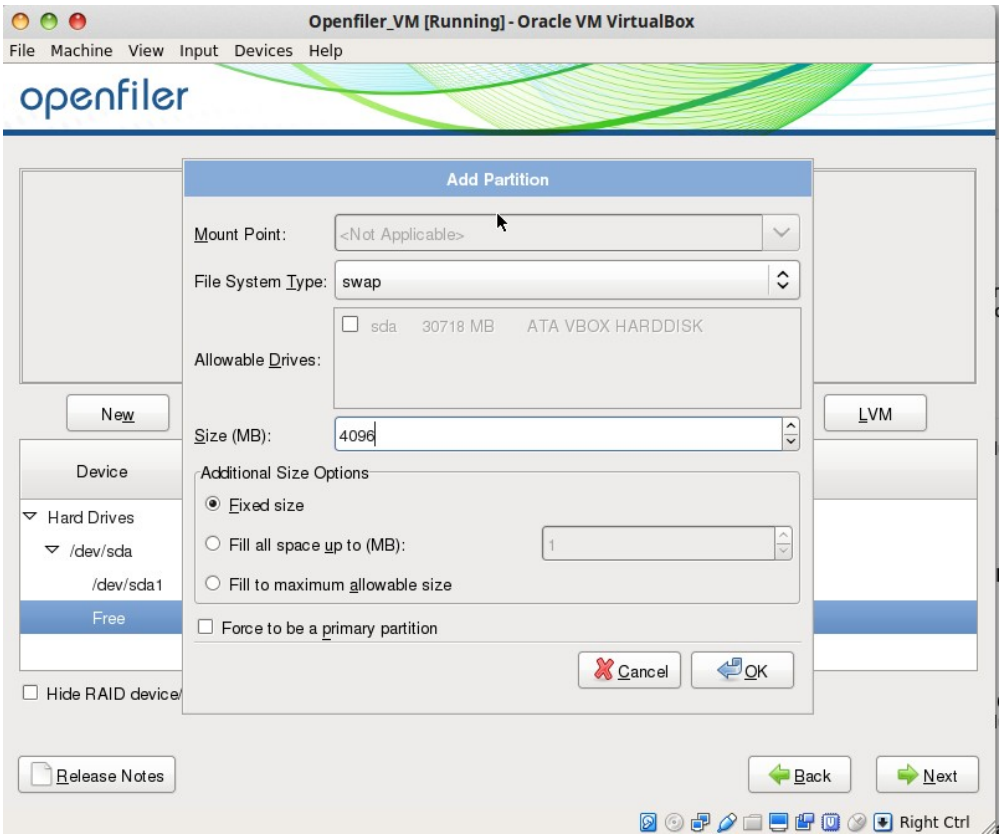
Step 18 :



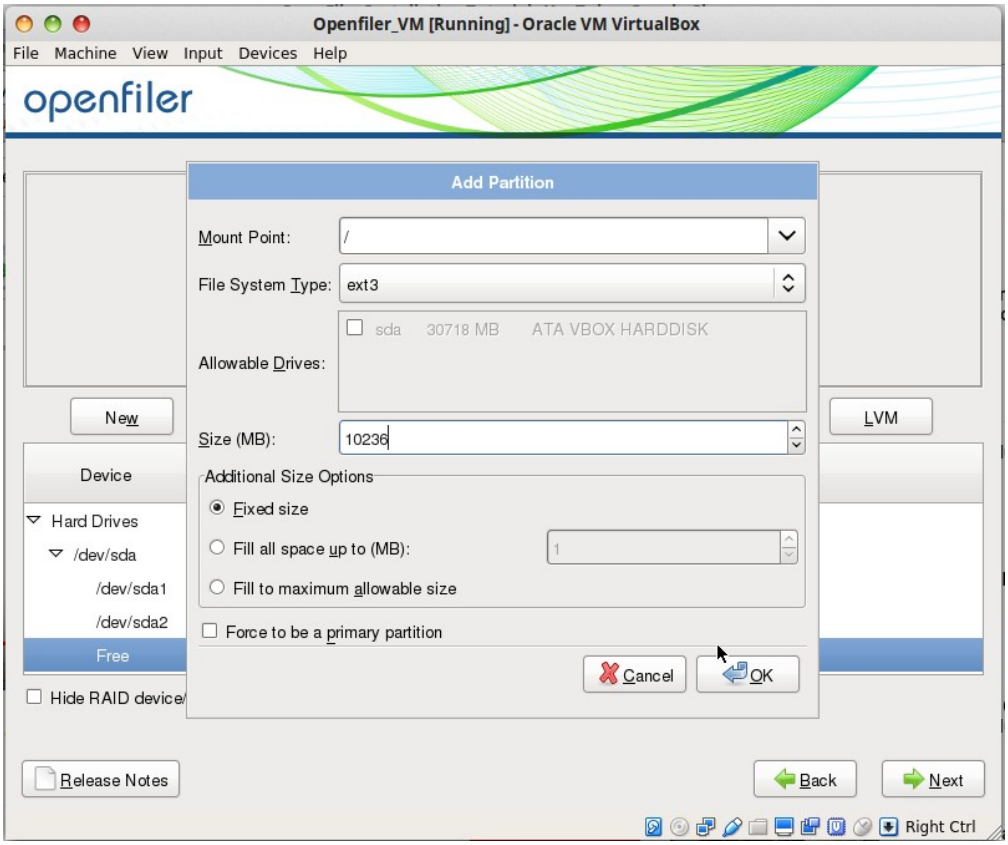
Step 19 :



Step 20 :

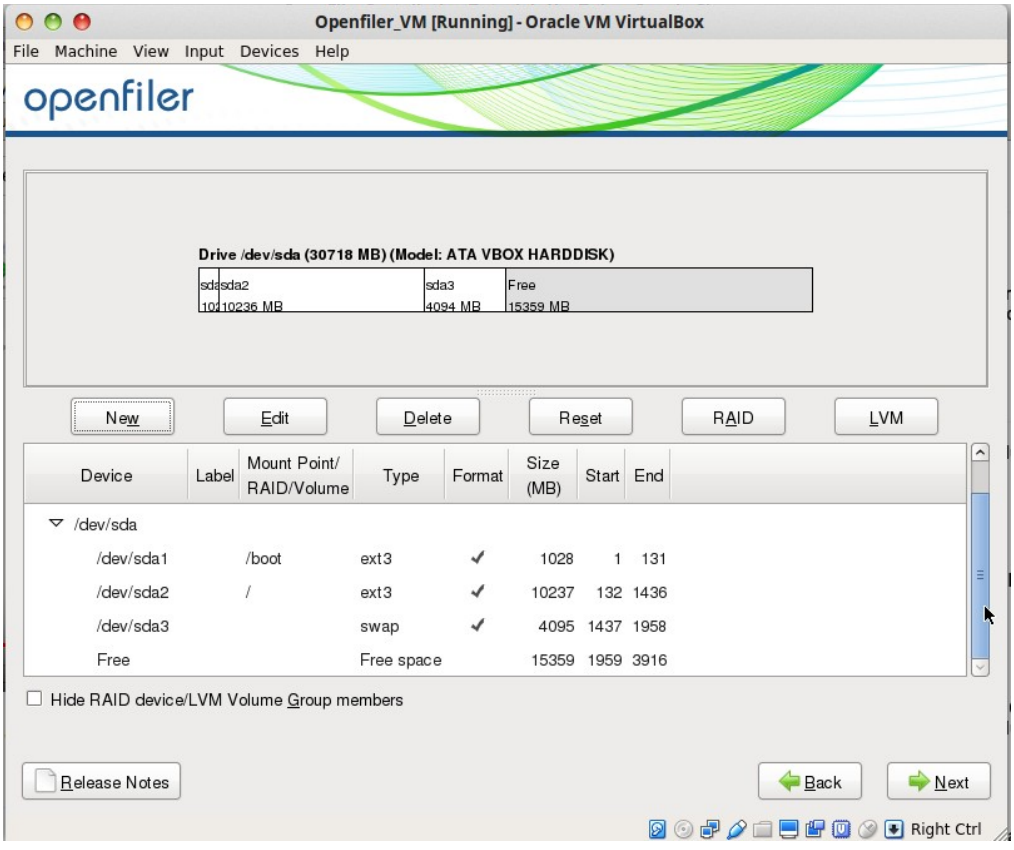


Step 21 :

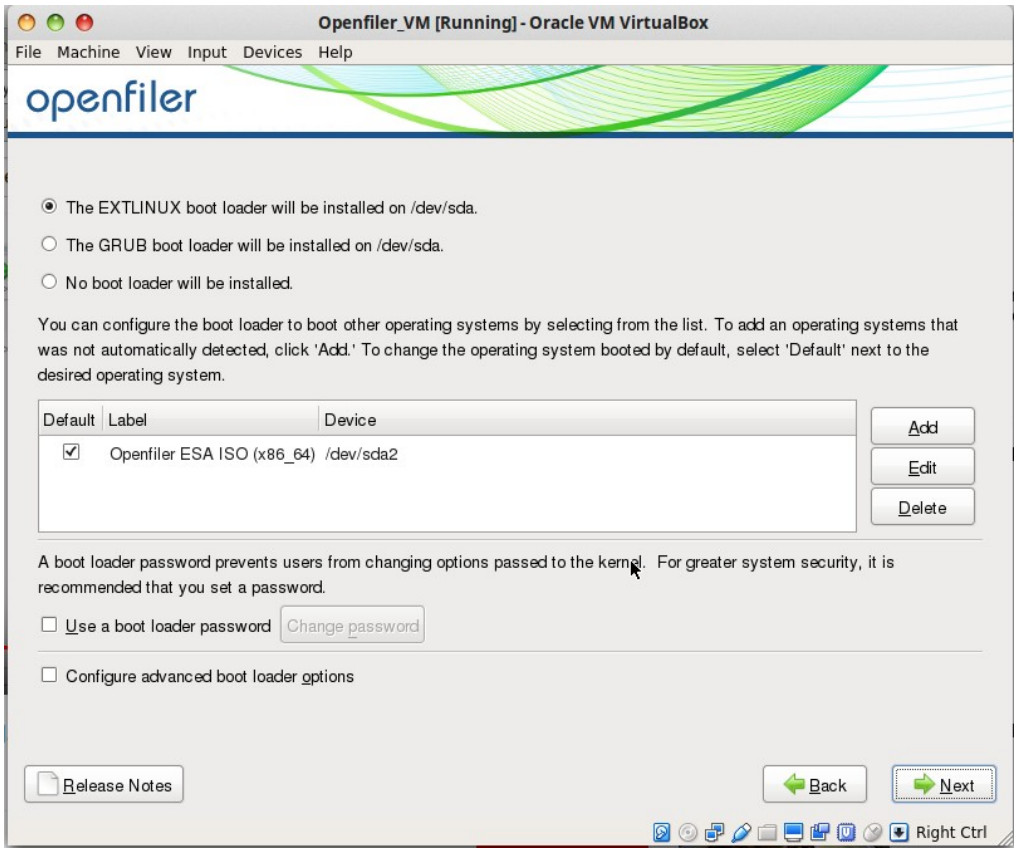


Step 22 :

Keep some space free out of total allocated to VM for later use (i.e. for creating new storage blocks / drives to share further on network)

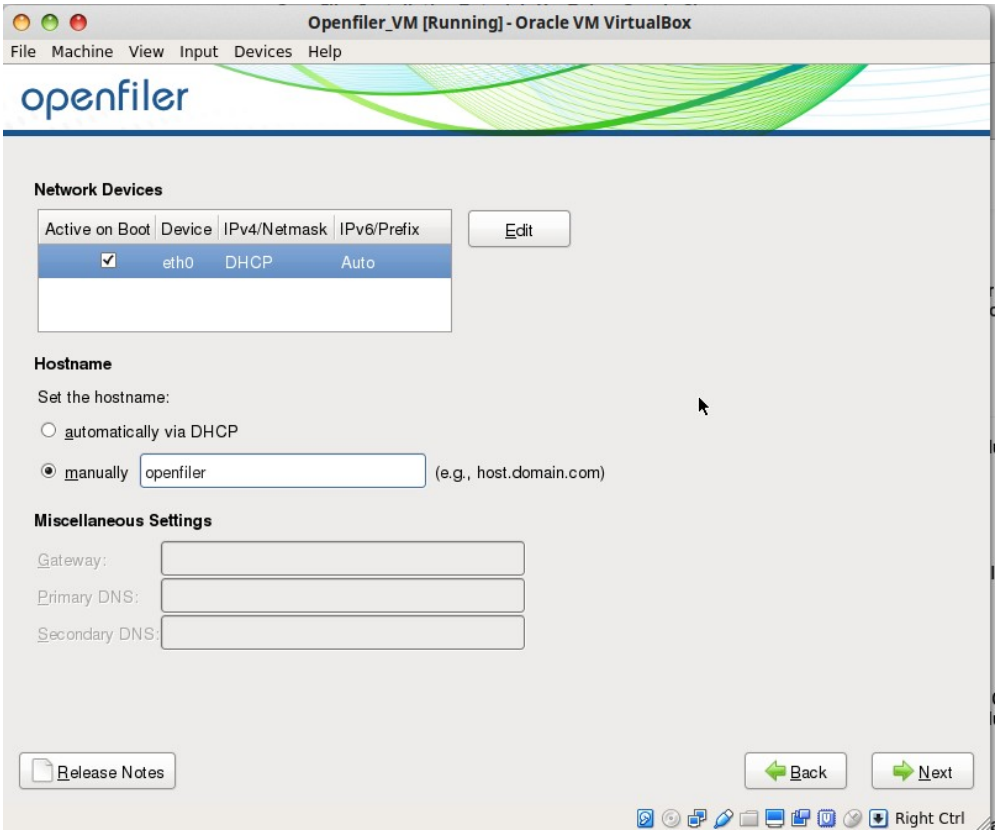


Step 23 :

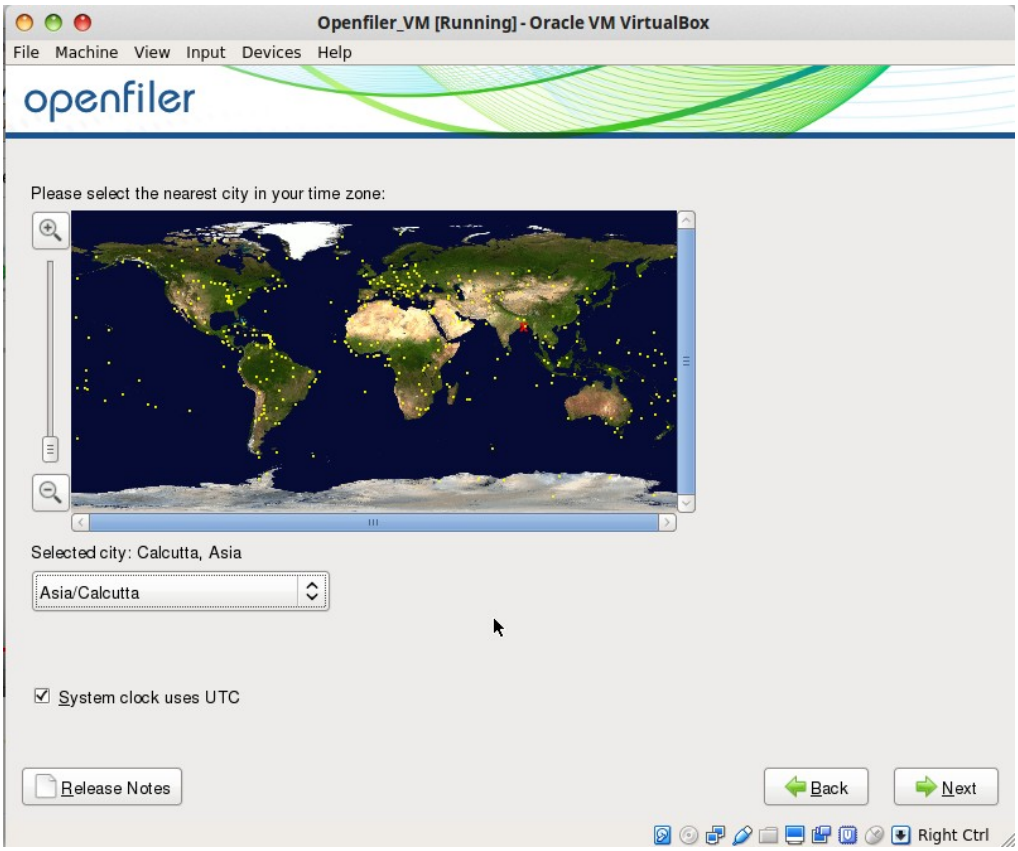


Step 24 :

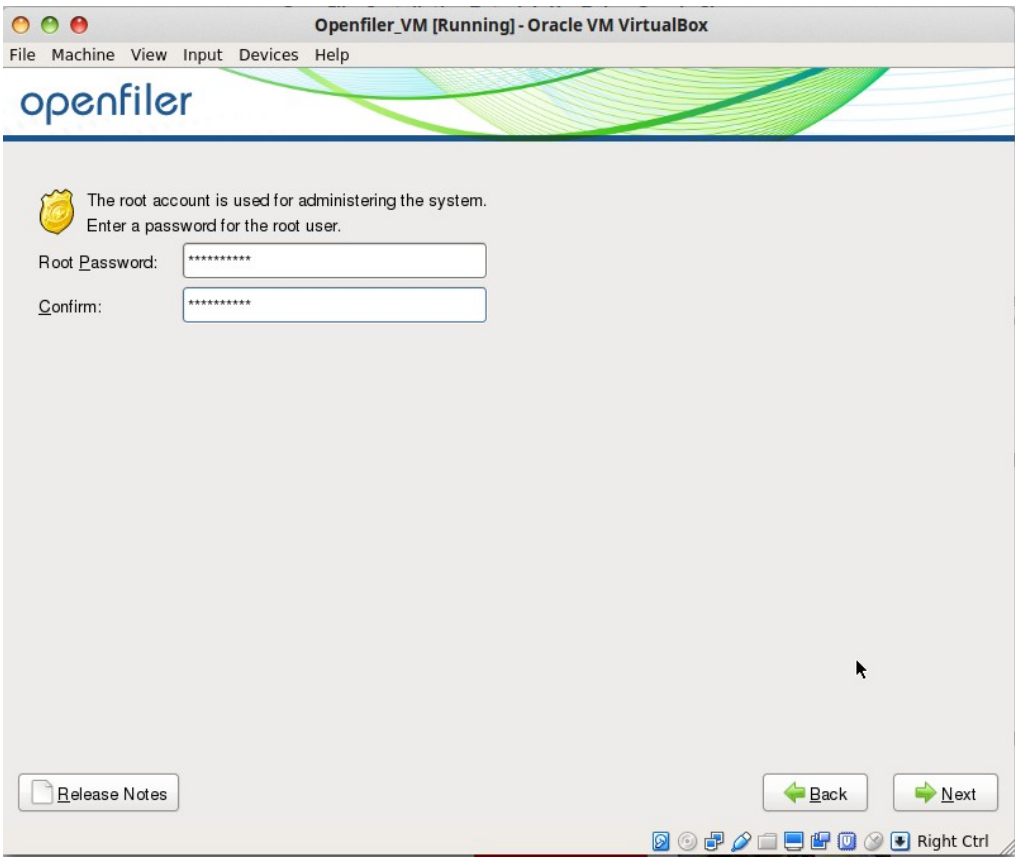
Provide a hostname to your machine and keep the DHCP settings default unless you are not sure of the settings you are planning to do for your network else it may disturb the connectivity of OS on the network.



Step 25 :

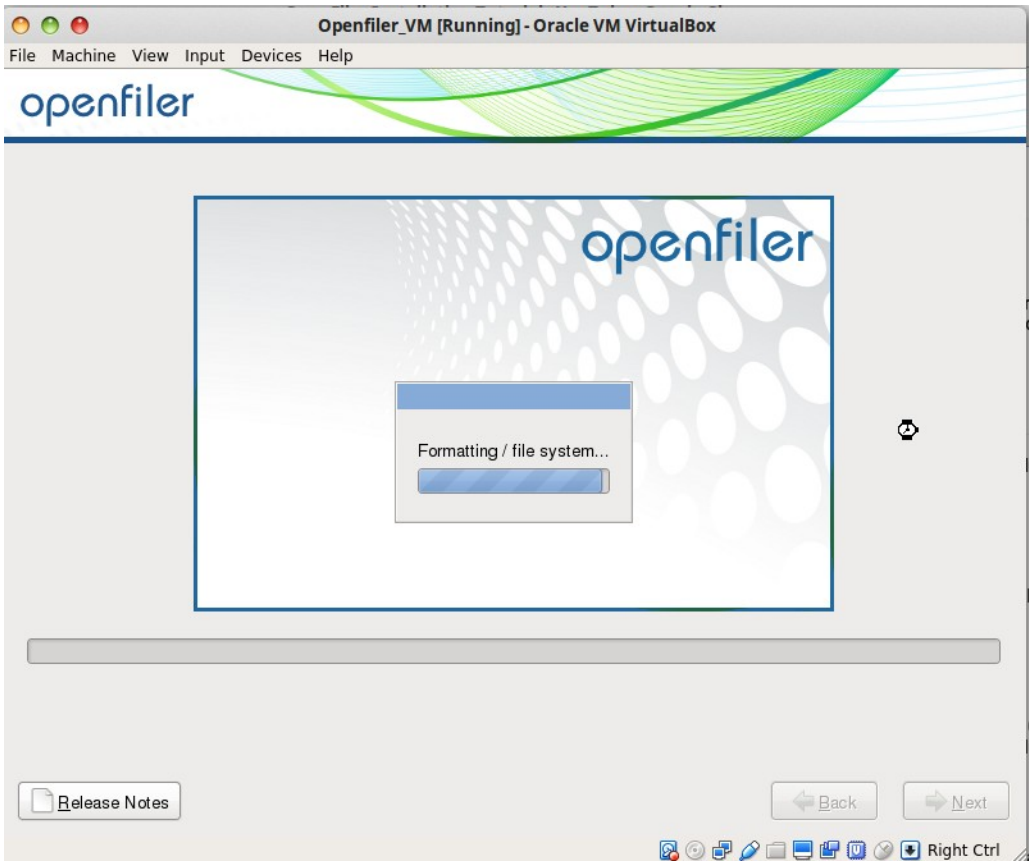


Step 26 :

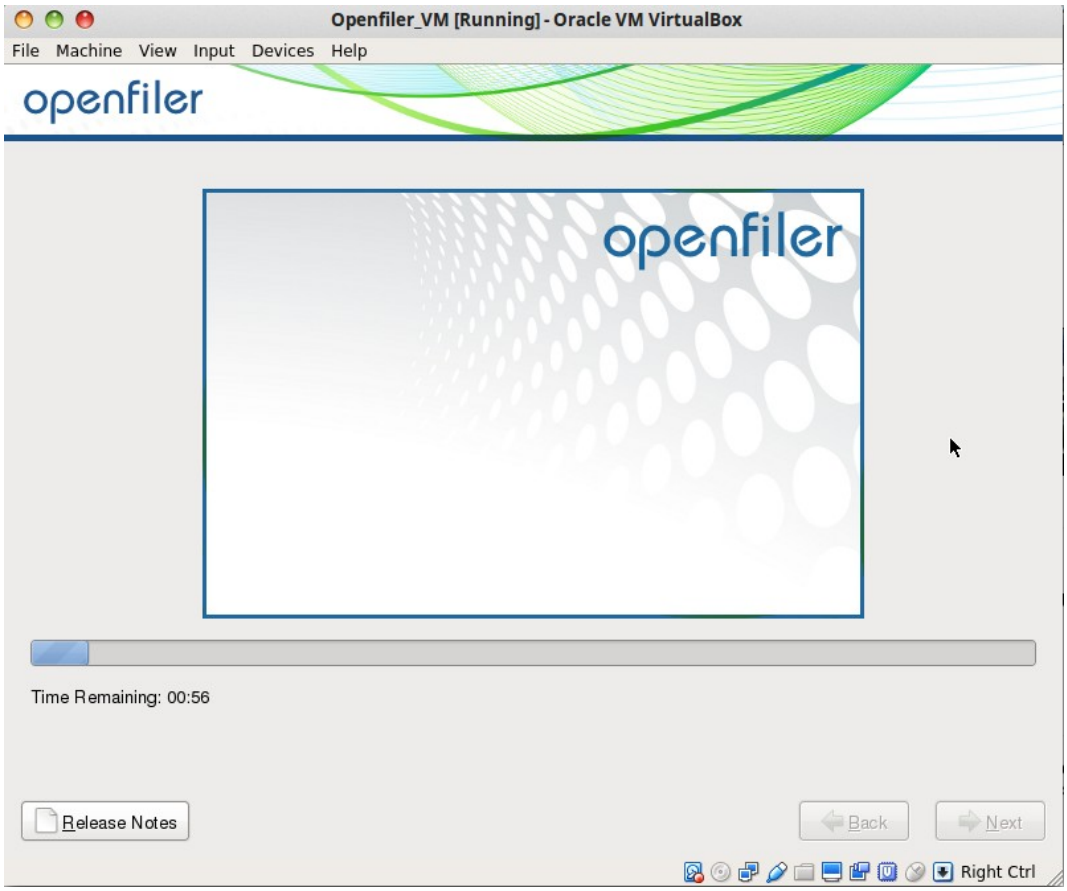


Step 27 :

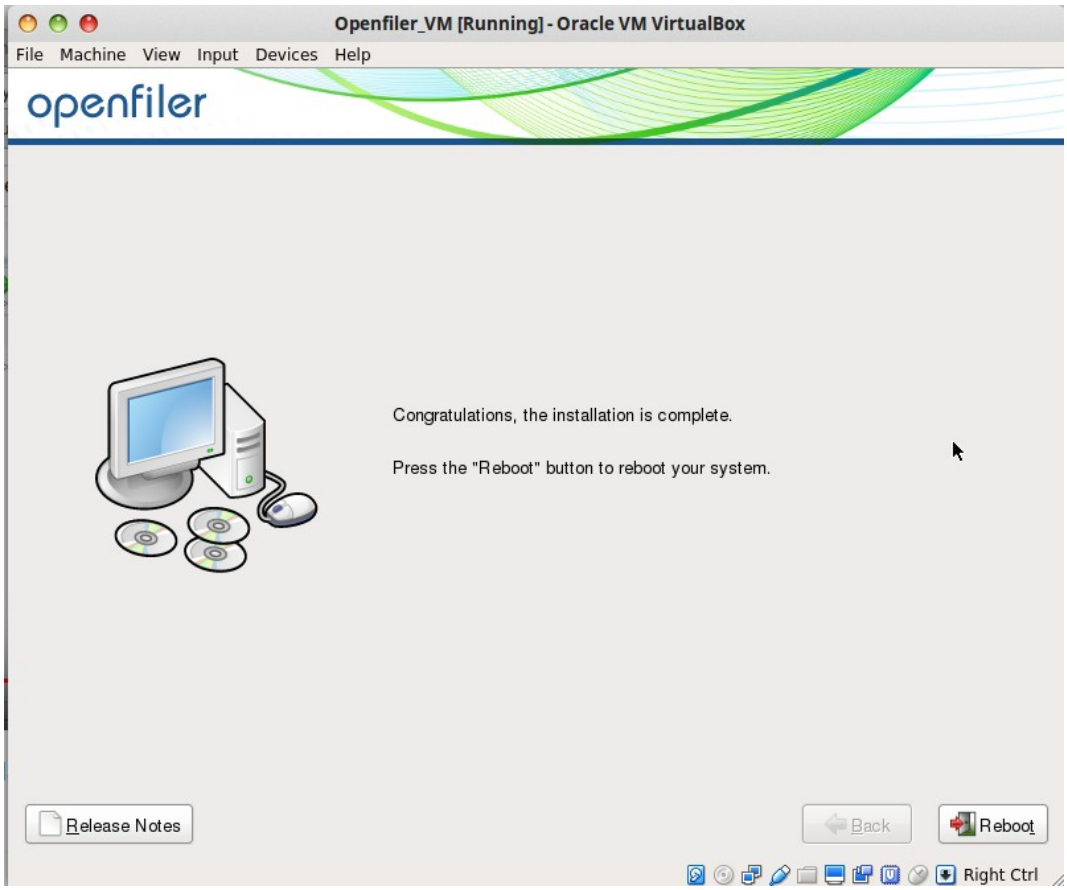
Step 28 :



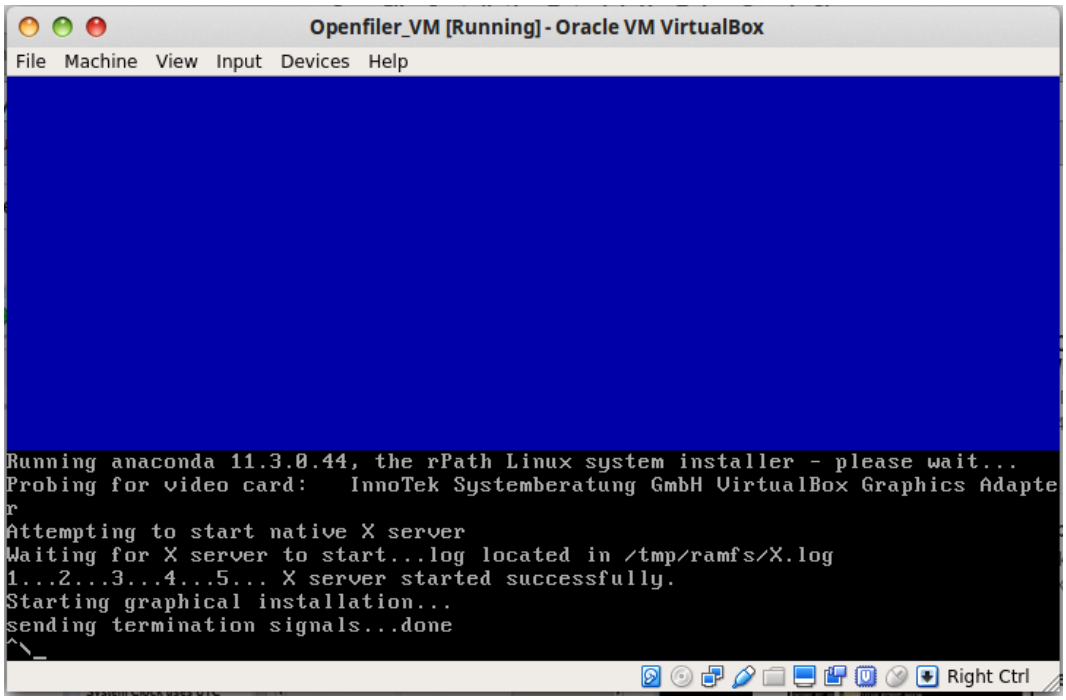
Step 29 :



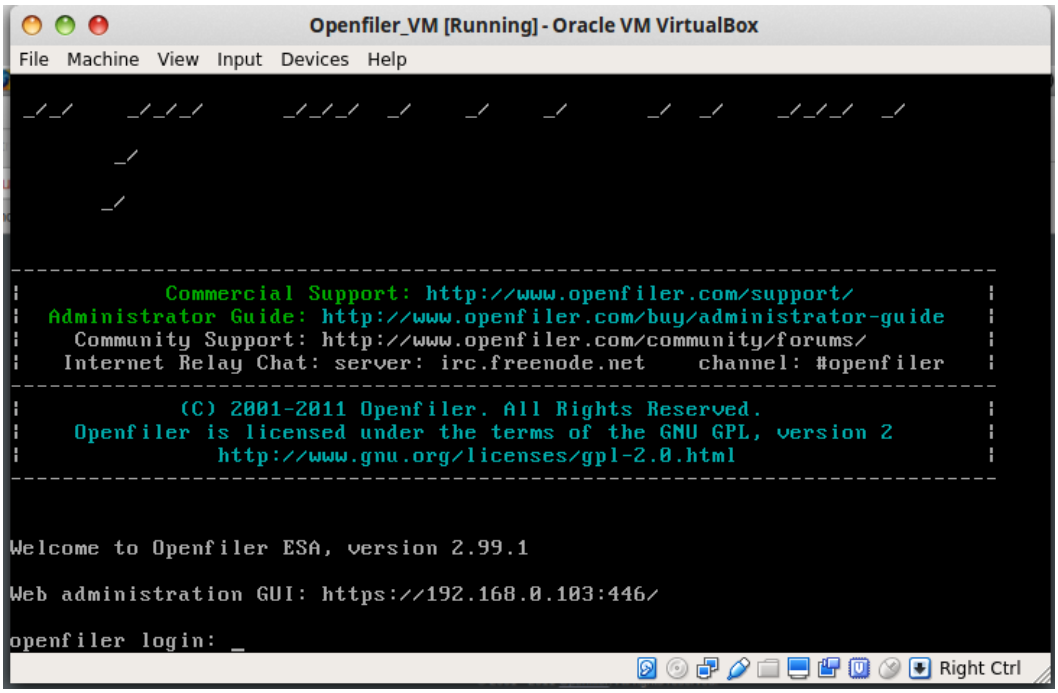
Step 30 :



Step 31 :



Step 32 :



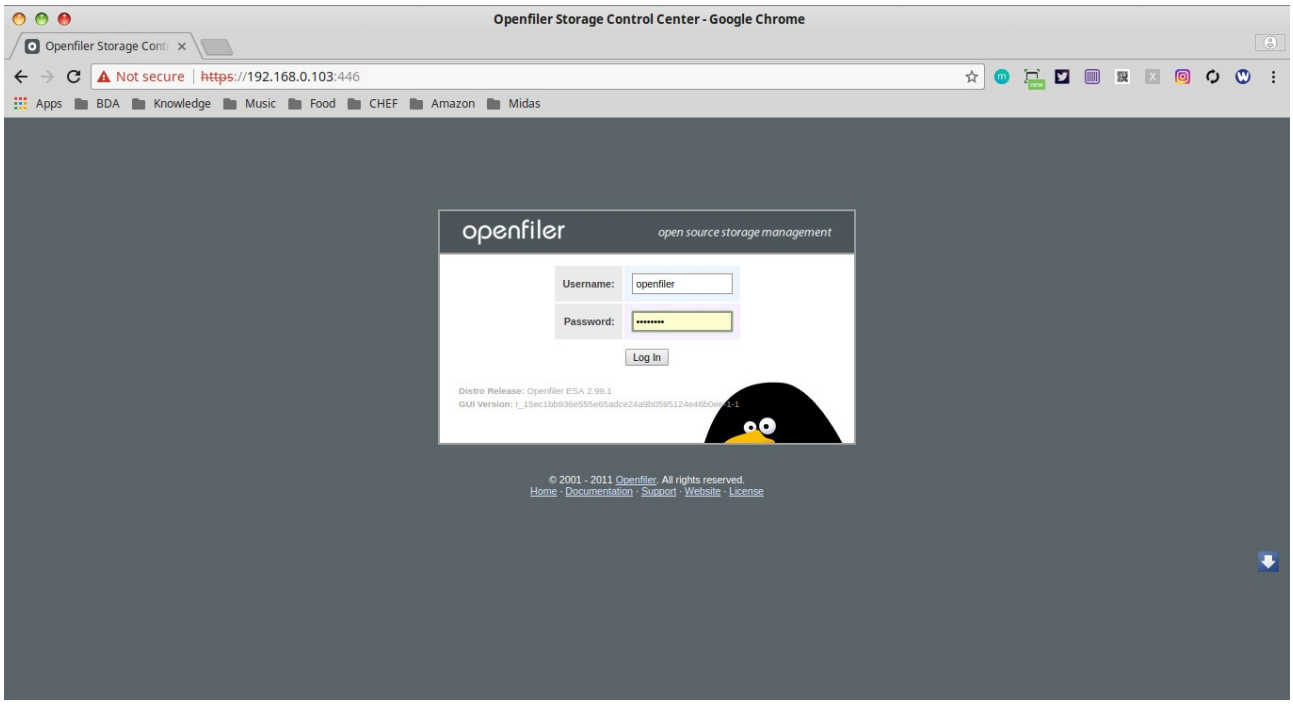
Here you can use command line option to work along with the storage provided if you know the commands well or else you have the GUI version too that makes your work lot more easier. GUI version URL is given on the terminal itself.

Remember : Openfiler runs on port 446 and HTTPS protocol.

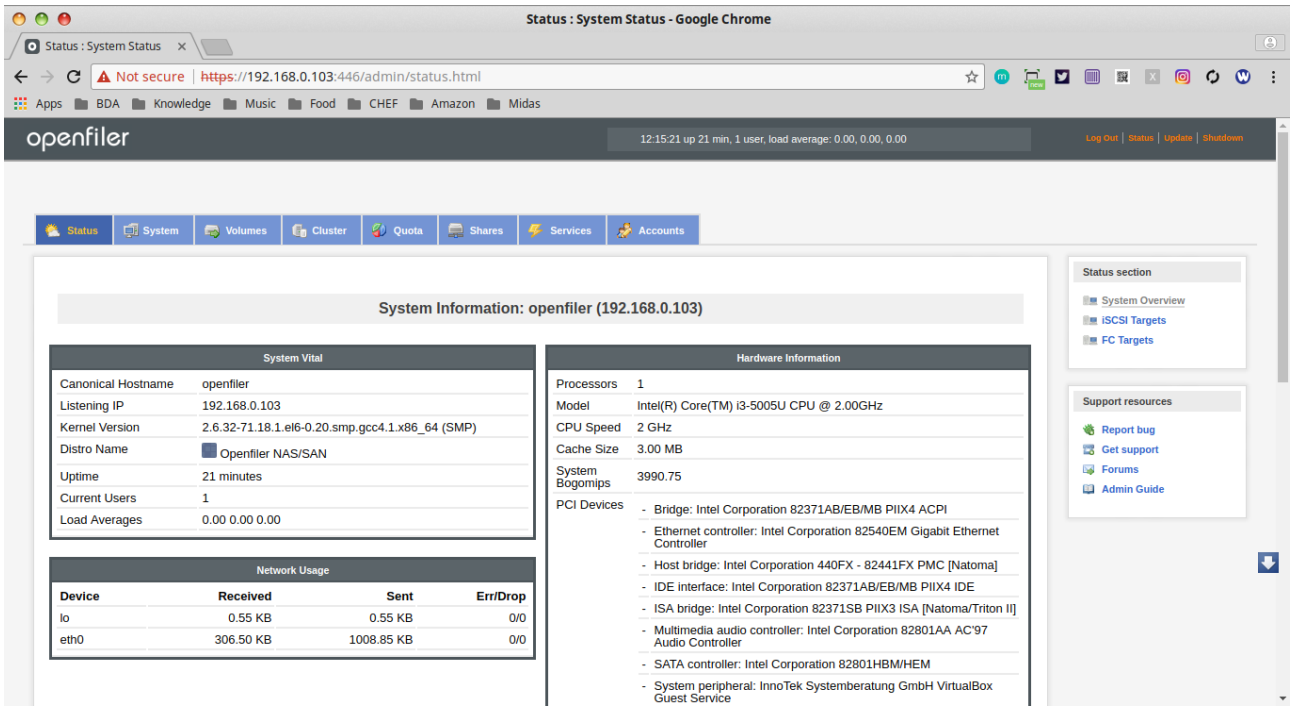
Default Login Credentials for GUI are as follows :

username : openfiler
password : password

Step 33 :



Step 34 :



Kudos!!... Now lets work on some configuration.

Configuration

Step 1 : Go to **Services Tab** and nable the necessary services and start them. (CIFS, LDAP, iSCSI Target, iSCSI initiator)

Manage Services

Service	Boot Status	Modify Boot	Current Status	Start / Stop
CIFS Server	Disabled	Enable	Stopped	Start
NFS Server	Disabled	Enable	Stopped	Start
RSync Server	Disabled	Enable	Stopped	Start
HTTP/Dav Server	Disabled	Enable	Running	Stop
LDAP Container	Disabled	Enable	Stopped	Start
FTP Server	Disabled	Enable	Stopped	Start
iSCSI Target	Disabled	Enable	Stopped	Start
UPS Manager	Disabled	Enable	Stopped	Start
UPS Monitor	Disabled	Enable	Stopped	Start
iSCSI Initiator	Disabled	Enable	Stopped	Start
ACPI Daemon	Enabled	Disable	Running	Stop
SCST Target	Disabled	Enable	Stopped	Start
FC Target	Disabled	Enable	Stopped	Start
Cluster Manager	Disabled	Enable	Stopped	Start

Step 2 :

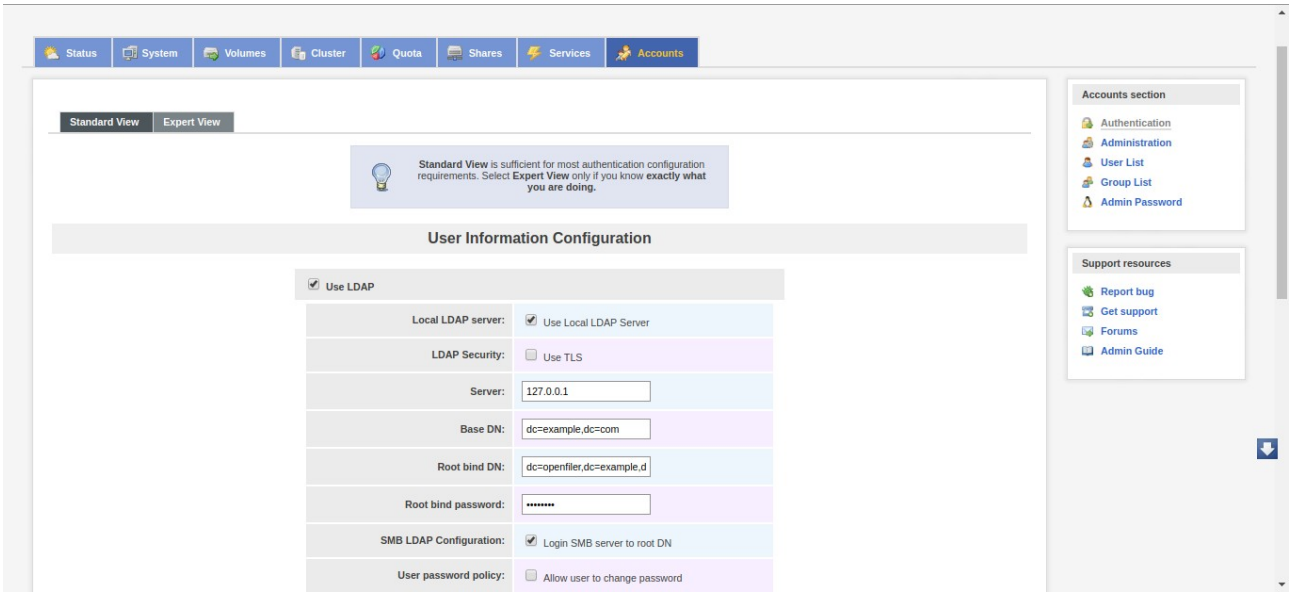
Go to **Accounts Tab.** Now lets configure accounts.

Select the check box : Use LDAP
Select the check box : Local LDAP server
Server : 127.0.0.1
Base DN : dc=example,dc=com
Root bind DN : dc=openfiler,dc=example,dc=com
Root bind password : <your_default_password> i.e. “password”

After making the necessary changes

What is LDAP ??? - (Lightweight Directory Access Protocol) is a software protocol for enabling anyone to locate organizations, individuals, and other resources such as files and devices in a network, whether on the public Internet or on a corporate intranet.

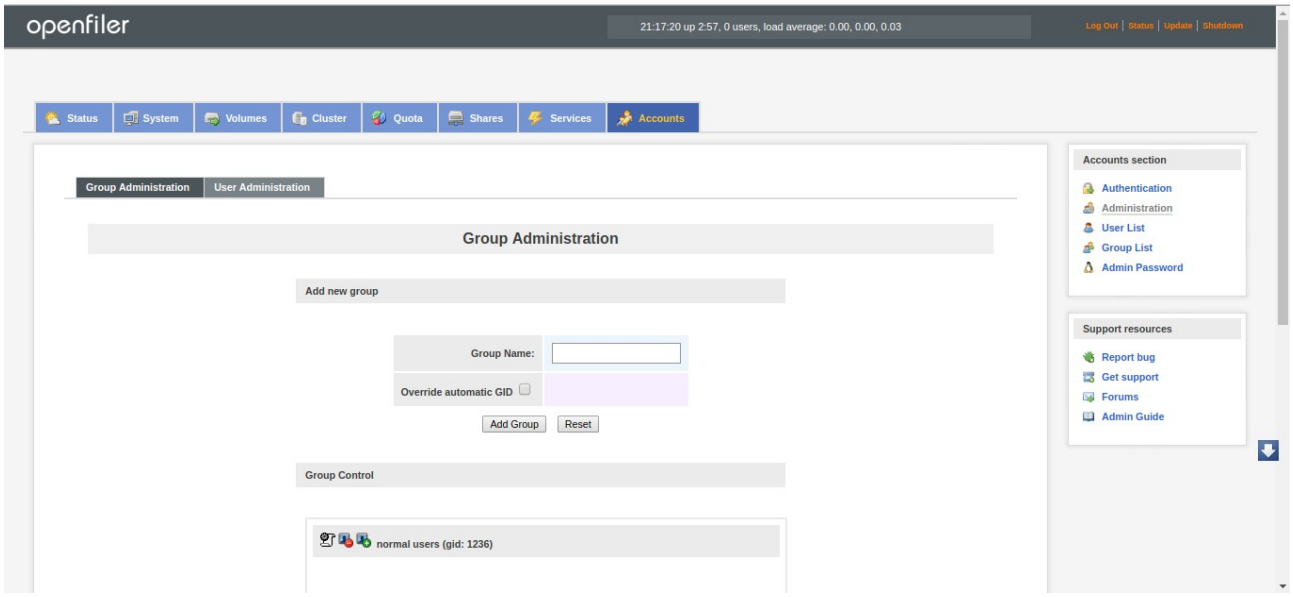
What is DN ??? - The **LDAP** API references an **LDAP** object by its distinguished name (**DN**). A **DN** is a sequence of relative distinguished names (RDN) connected by commas. An RDN is an attribute with an associated value in the form attribute=value; normally expressed in a UTF-8 string format.



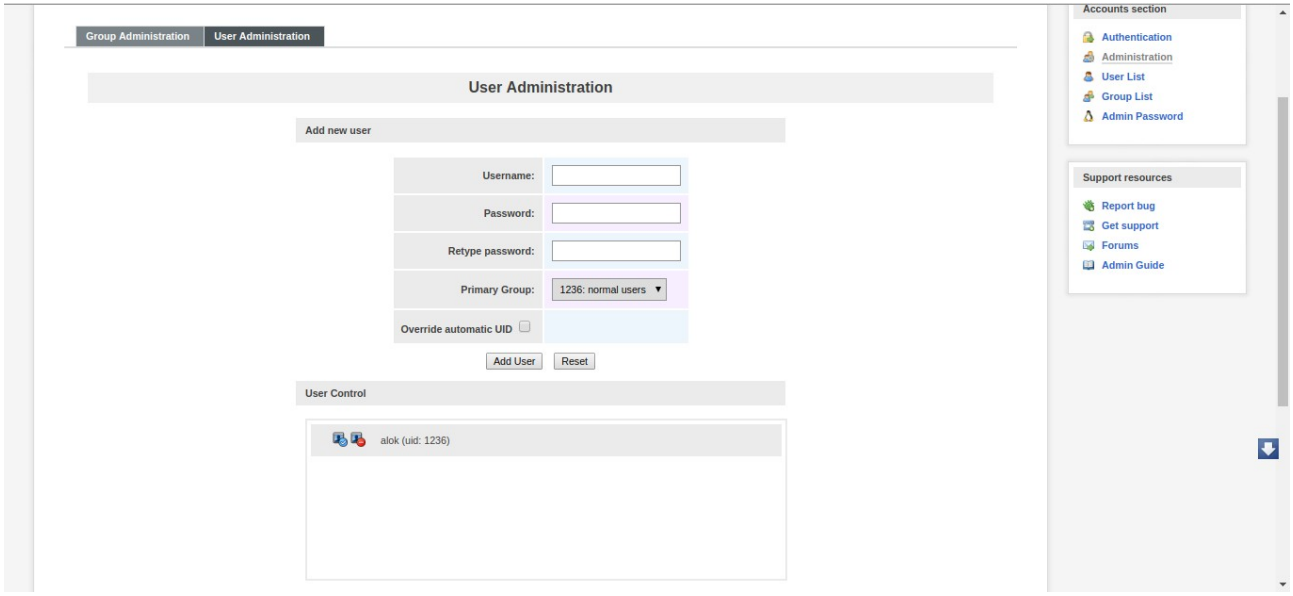
Step 3 : Go to **Accounts Tab.** and Click on Administration and create a user group and atleast one user account.

Here we have created **user group - "normal users"** and **user account with username - "alok"** and **password - "pass123"**. This username and password will be used at the time of accessing the shared folder over network.

Note : Make sure that the gid (group id) is same as that of the uid (user id). For ex. If gid for group - normal user is **1236** in below image then the user id for user – alok should be **1236.** If by default it is not so then delete the user and create it again and while creating the user select the option **Override Automatic UID** and enter the id in the textbox same as that of the group you created.

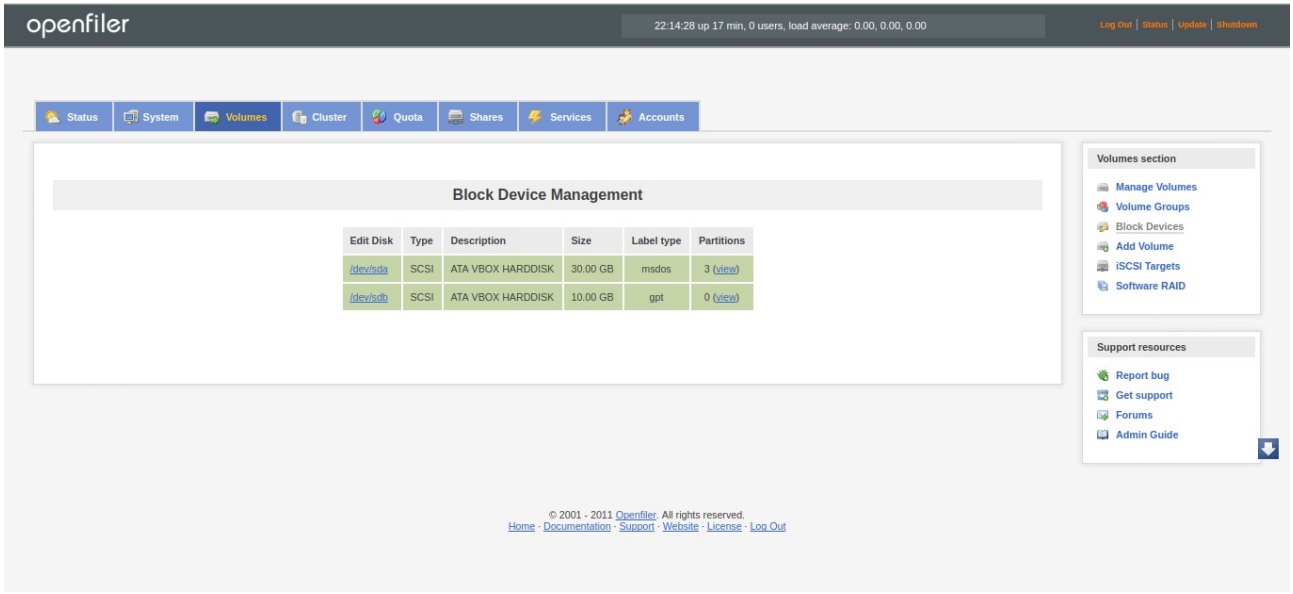


Step 4 : Create user account here.

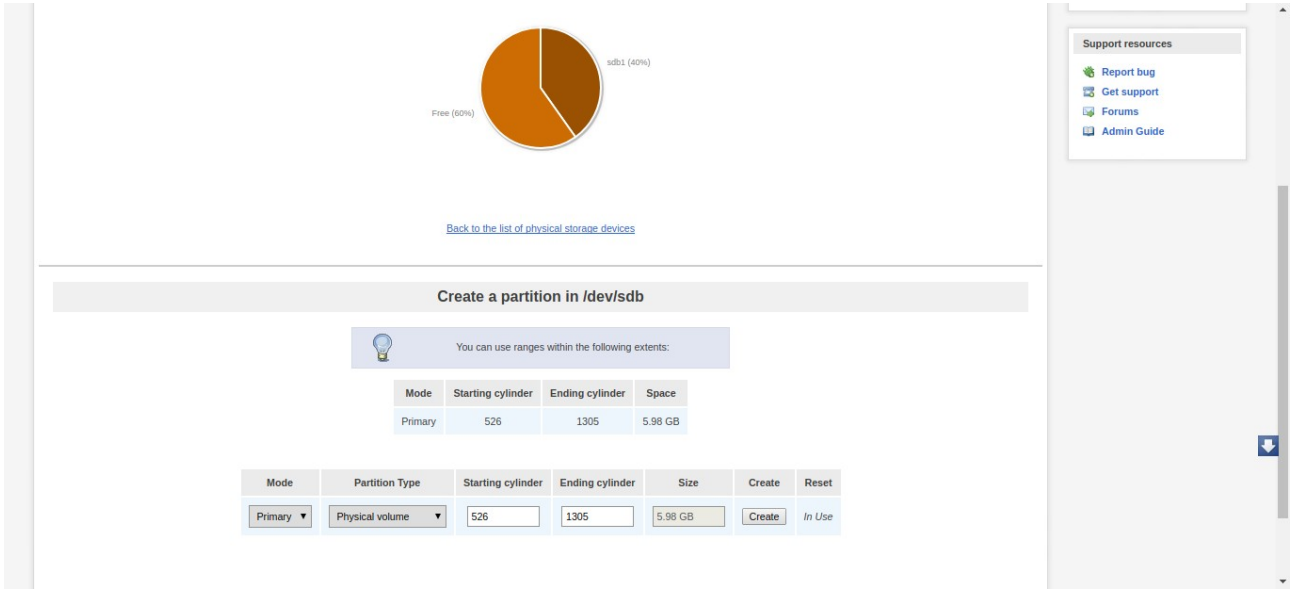


Step 5 :

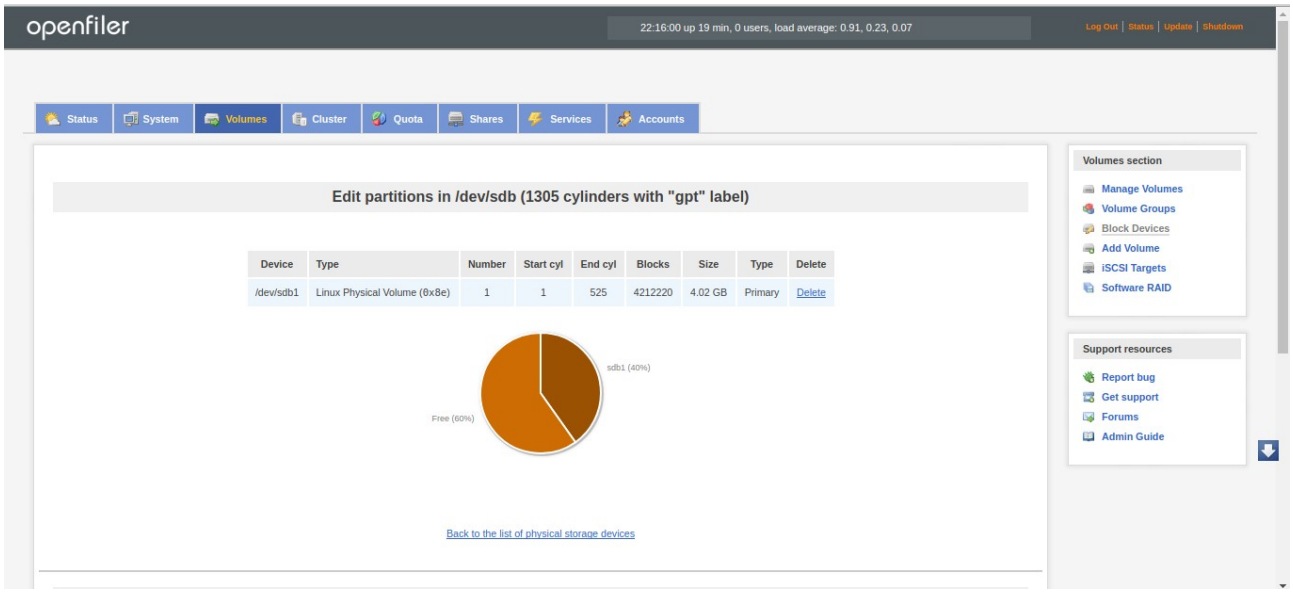
Here the disks attached to openfiler are listed.



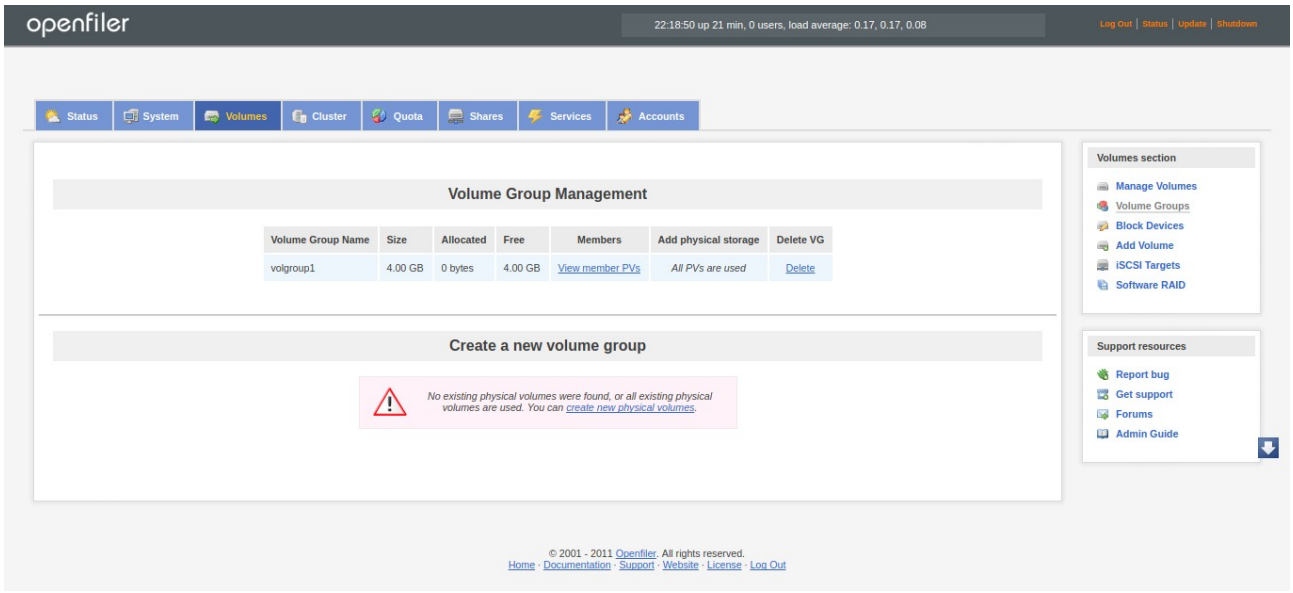
Step 6 : Select /dev/sdb and click and you can see the disk space capacity details.
Here you can create partitions according to your needs.



Step 7 :

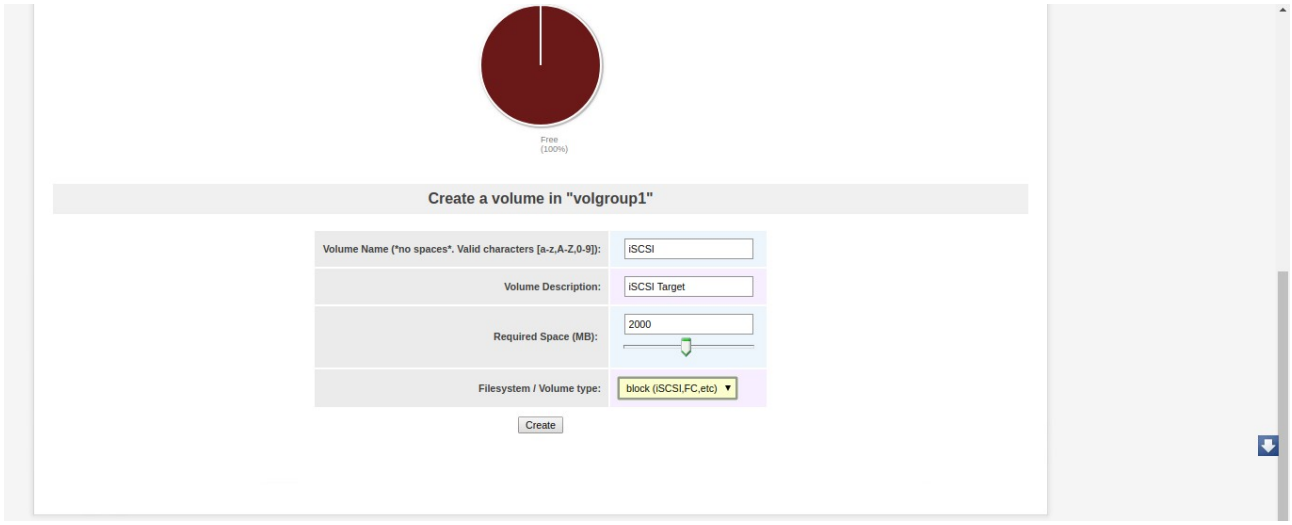


Step 8 : Go to **Volumes Tab** and click on Volume Groups and create a volume group and select the disk you want to add to the group. Here we have created **"volgroup1".**

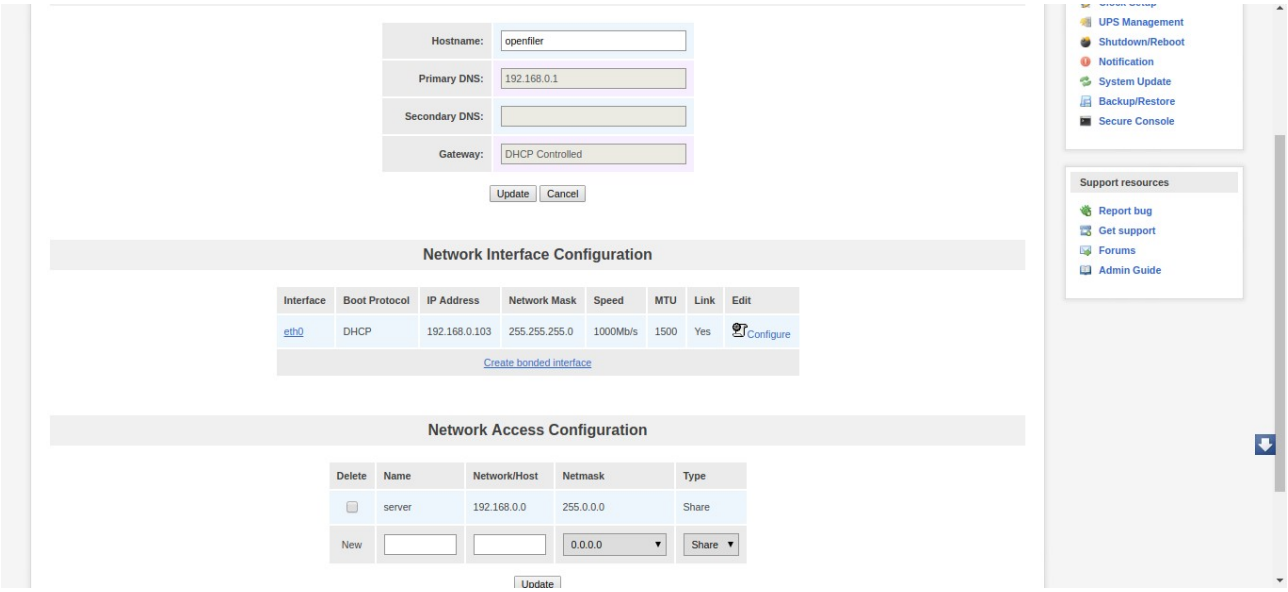


Step 9 : Now create volumes from Add Volume option on right side of the page.

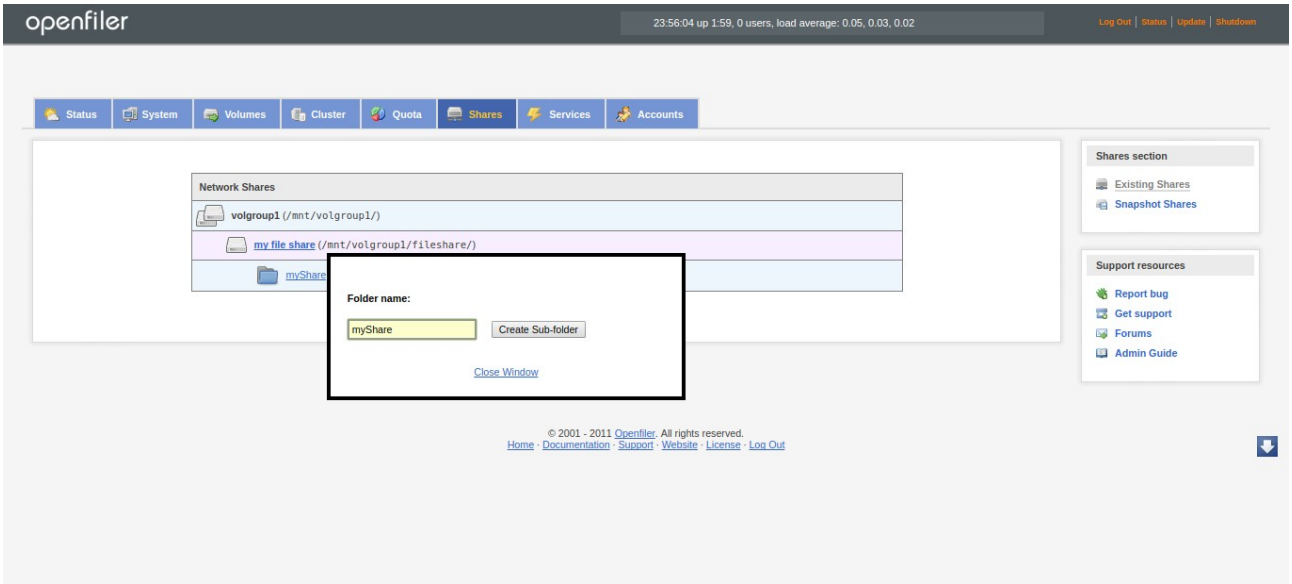
We have created one share volume (partition type : ext3 / ext4).



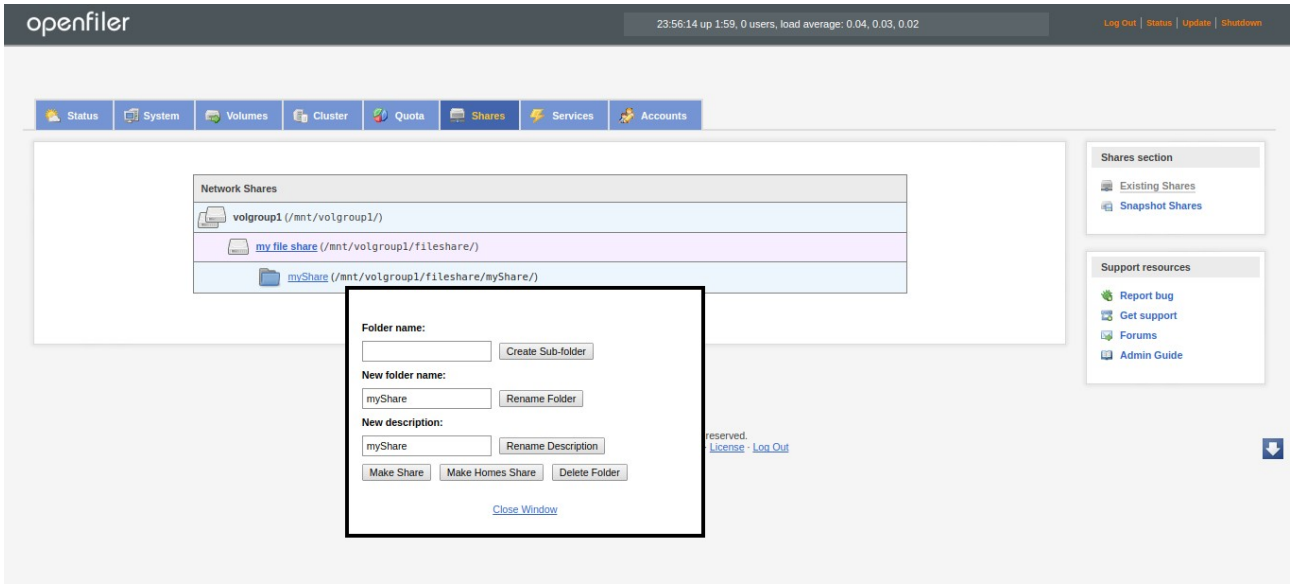
Step 10 : Go to **System Tab** and you will see the hostname and interface configuration details. Here you have to add entry for incoming connections under **Network Access Configuration** area. i.e when we will access the volume from outside network we need to add the host and netmask entry in openfiler. For ex. If our ip address range is **192.168.x.x** and netmask range is **255.255.255.x** then we will add the entry as **192.168.0.0** and **255.0.0.0** so it will accept all ip address within that range.



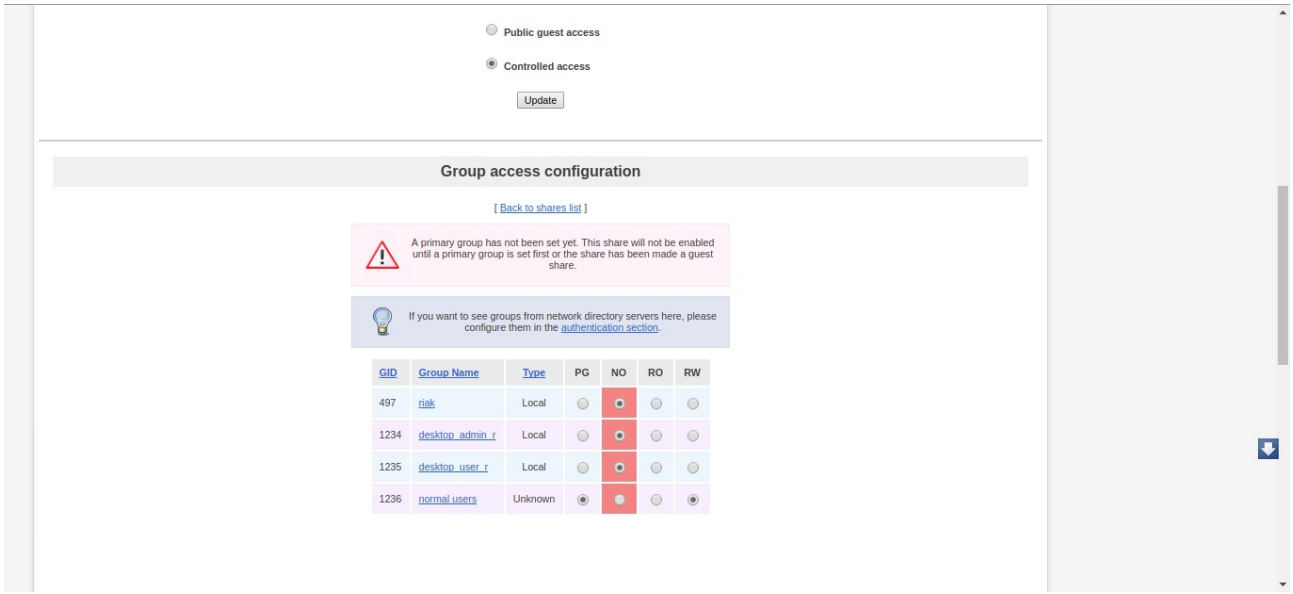
Step 11 : Go to **Shares Tab** and you will see the share volume you created listed under the volume group. Right click on the shared volume and create a folder to share.



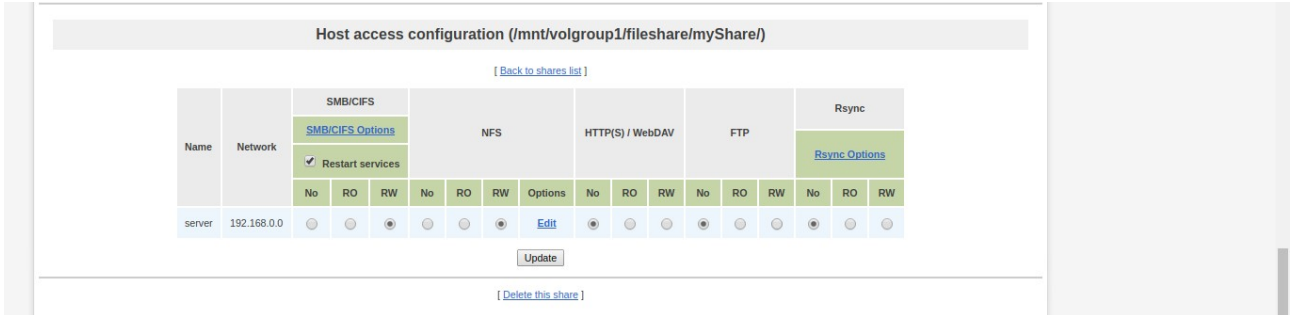
Step 12 : Right click on the folder you created and click on **Make Share** button. It wil redirect you to access controls page where you will set the read / write permissions as shown in the image below.



Step 13 :



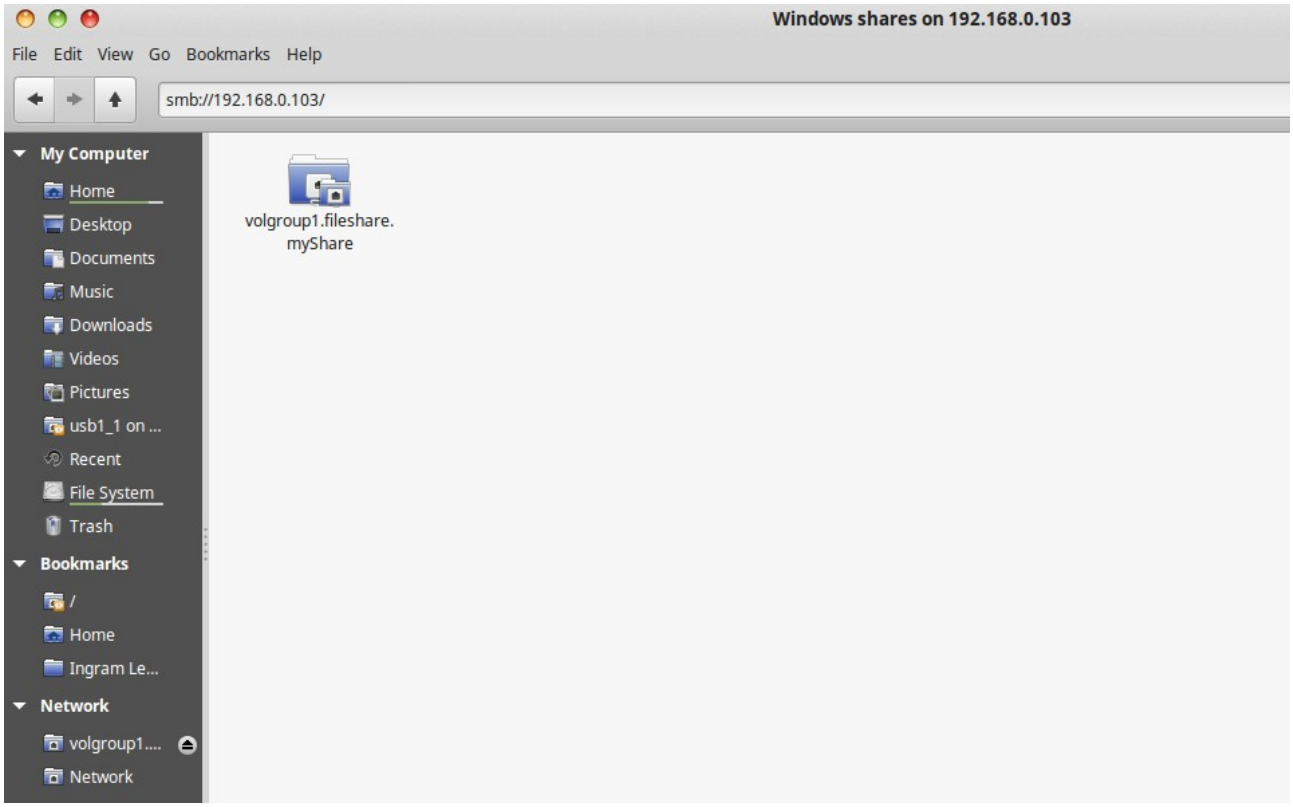
Step 14 :



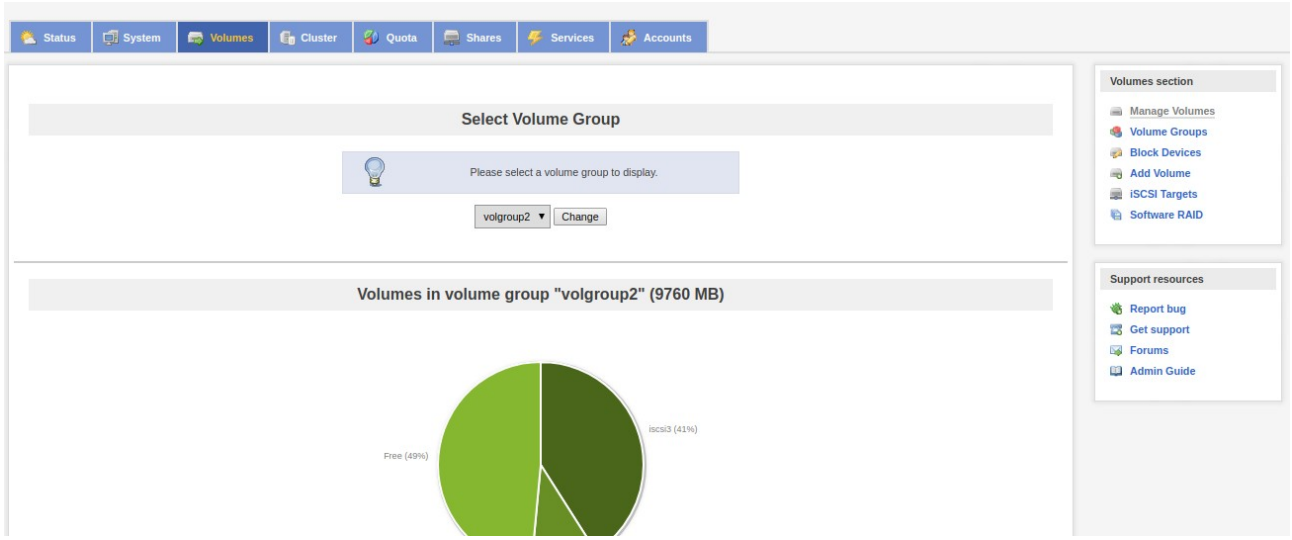
Step 15 : To access your volume type in the URL bar of the explorer

smb://<ip_address>/

here the ip address is of your openfiler OS

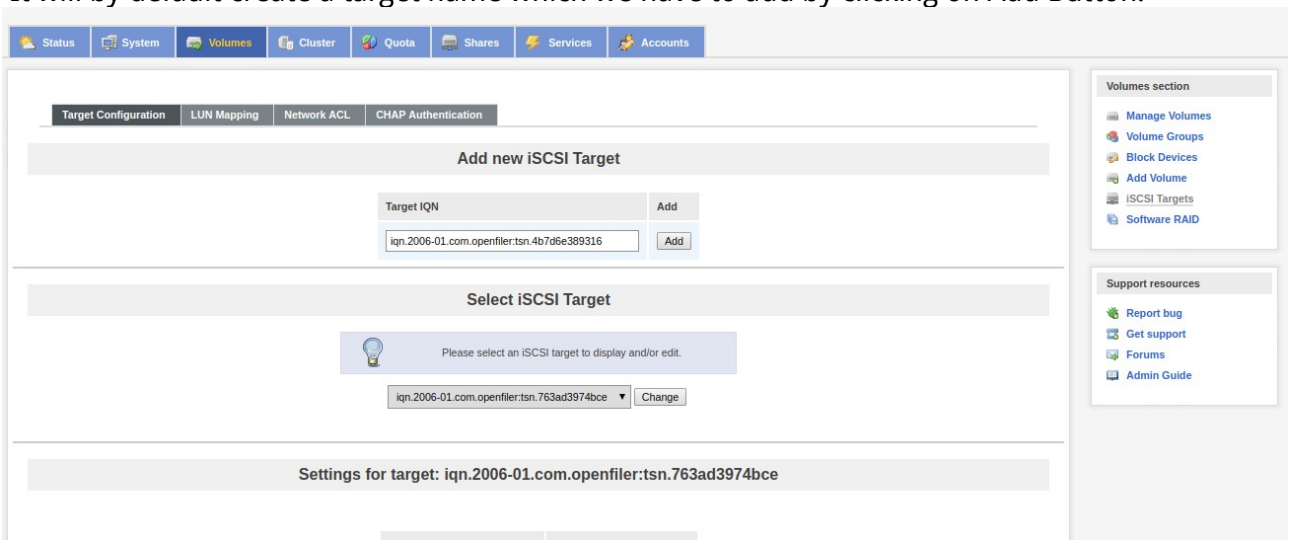


Step 16 : Go to **Volumes Tab** and click on iSCSI Targets on right side of the page.



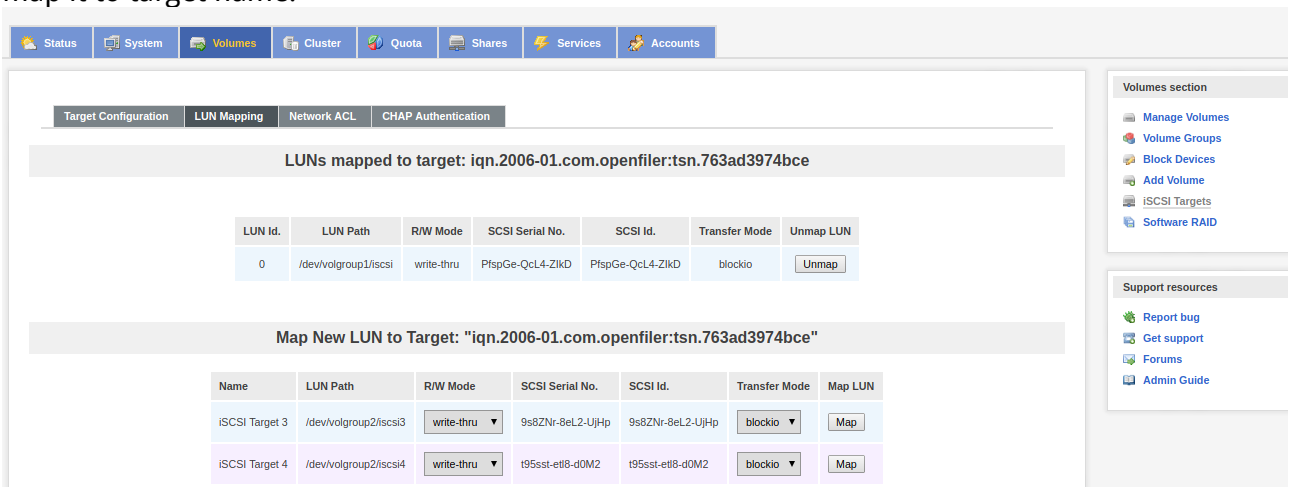
Step 17 :

It will by default create a target name which we have to add by clicking on Add Button.



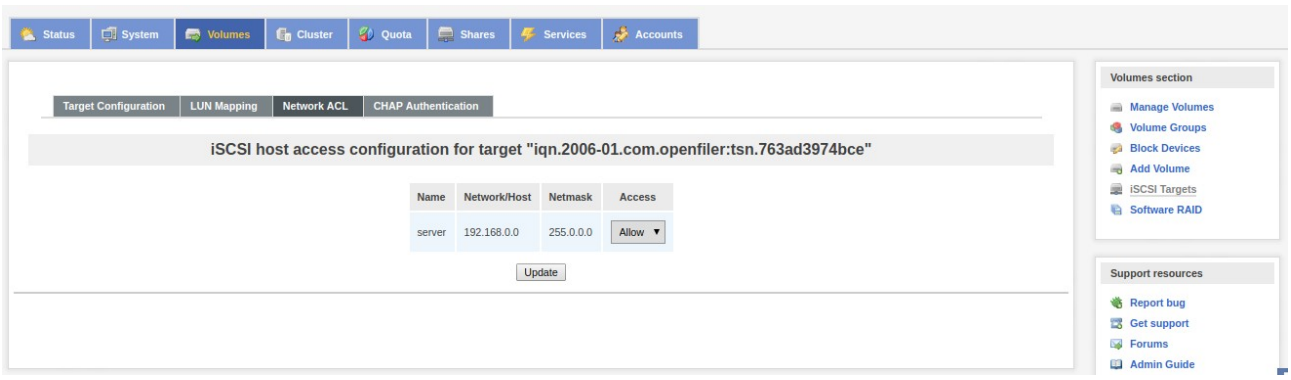
Step 18 :

The added target name will appear under LUN mapping tab where we have to actually map the iSCSI volume we created earlier to the target name. Select the appropriate volume name and map it to target name.



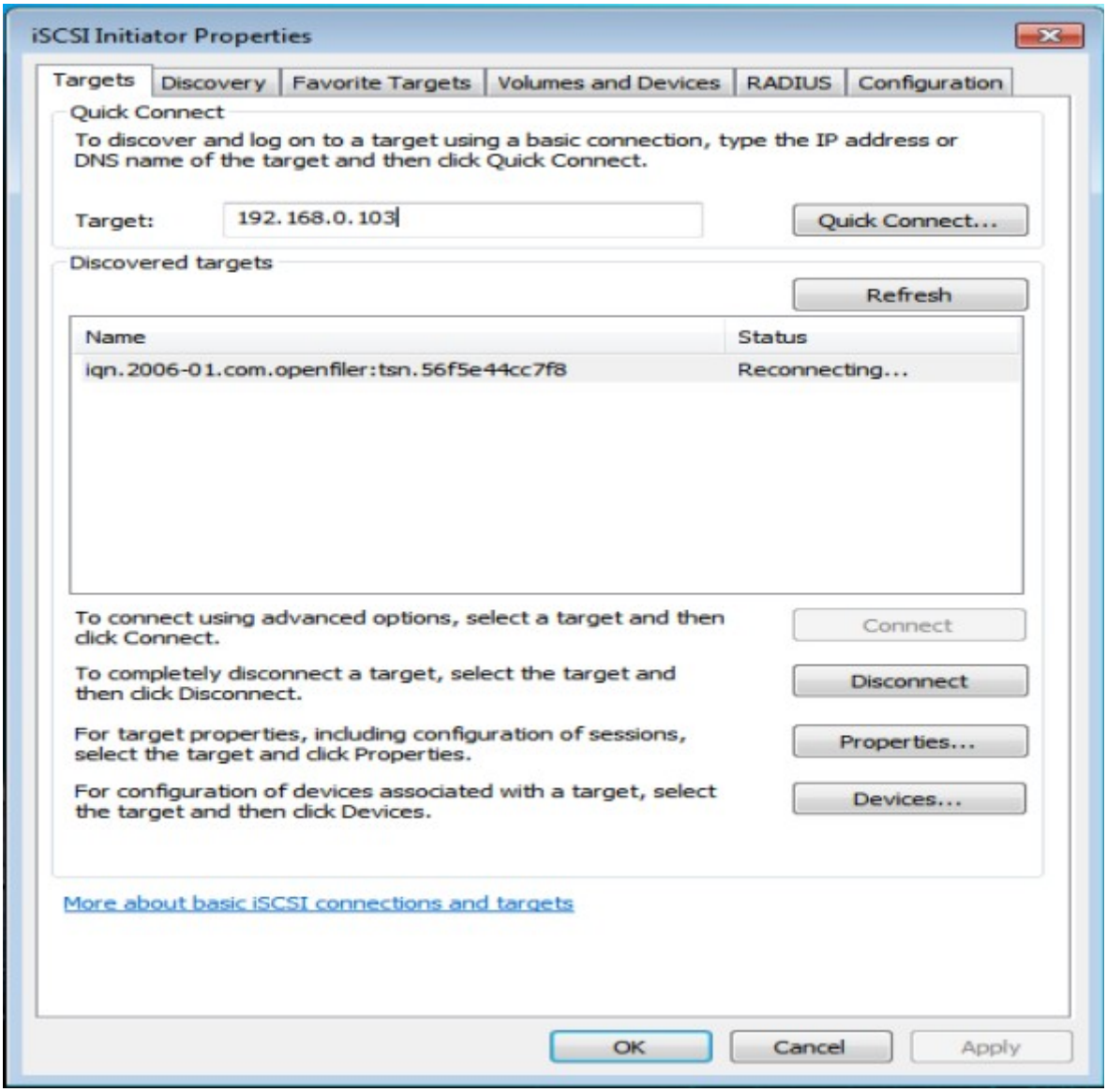
Step 19 :

After mapping the volume then enable the access for the requests coming via incoming connections. Select **Allow** from the dropdown under **Access** column show below and click on **Update button**. Thats it your iSCSI volume is ready to export now and accessed from another location.

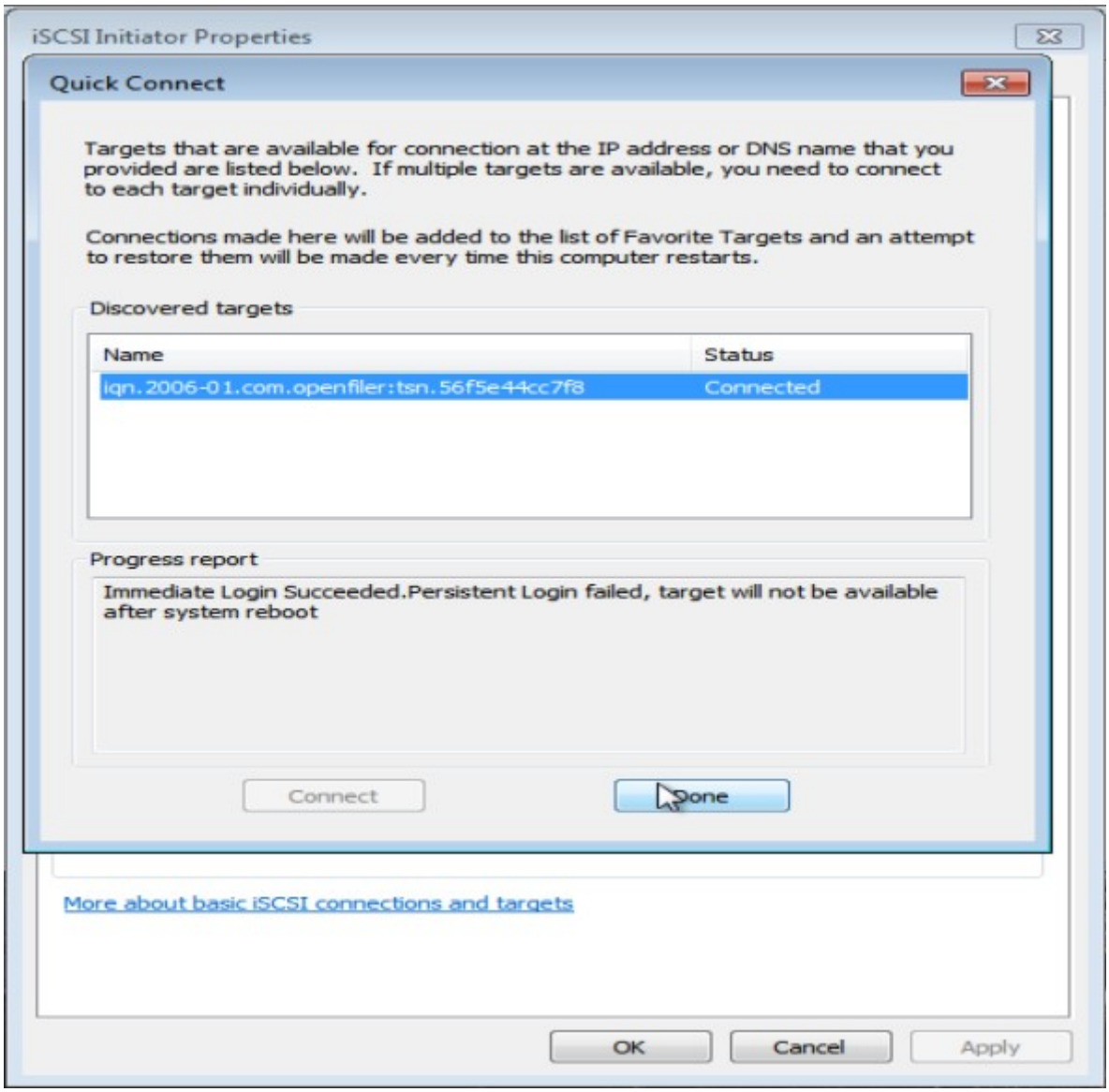


Step 20 : Go to control panel and open iSCSI initiator.

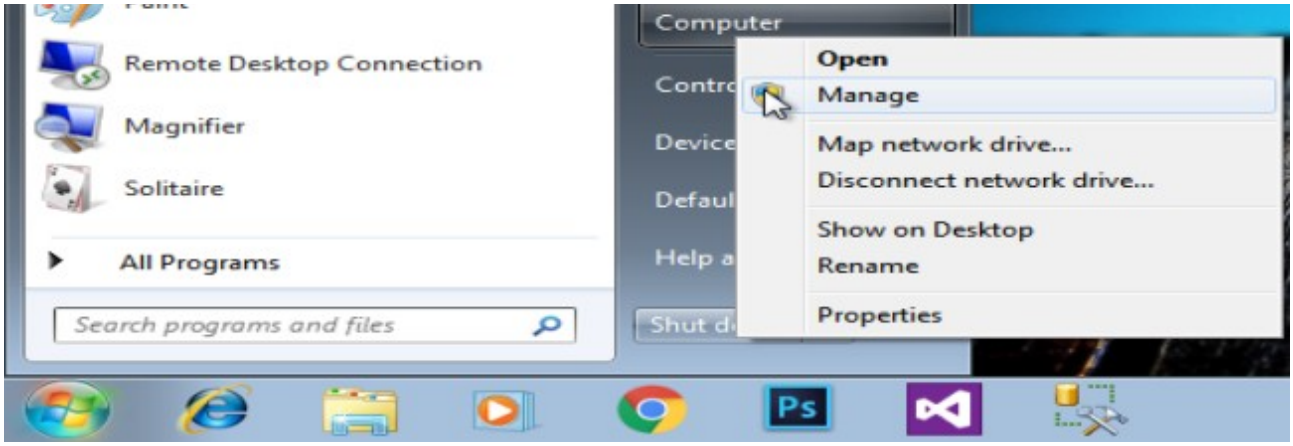
Step 21 : Enter the target ip address and click on **Quick connect.**



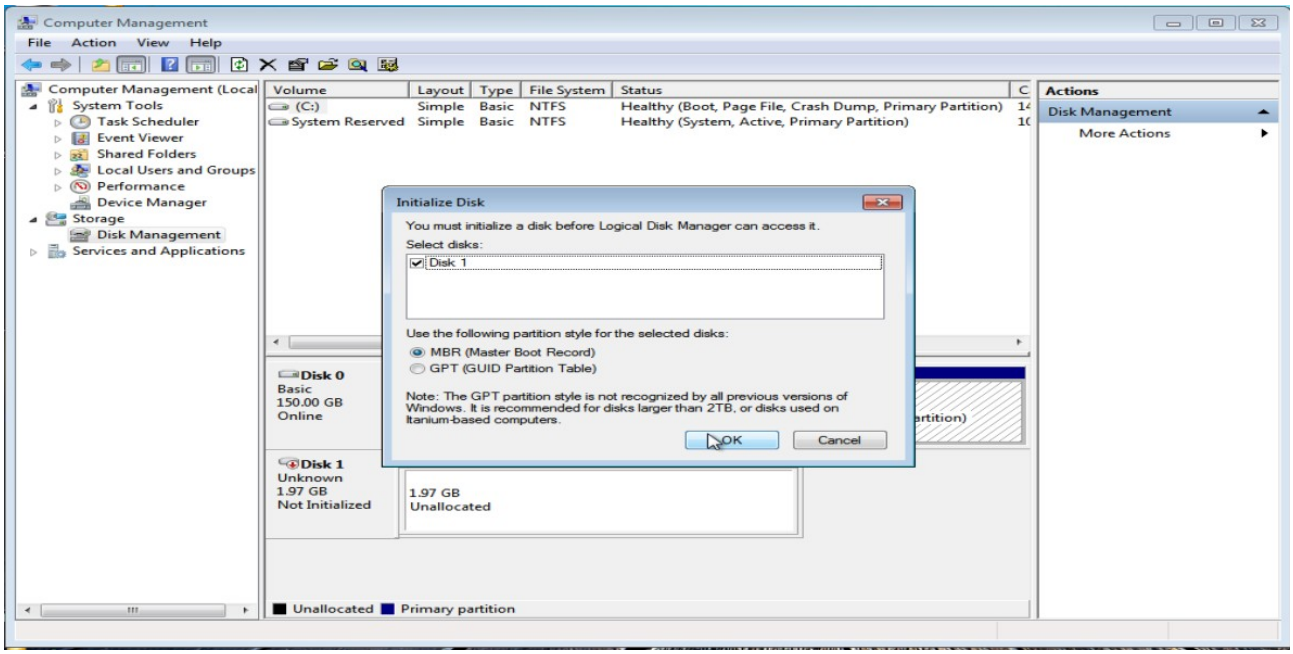
Step 22 : Your mapped iSCSI target names should appear here. Select the name and click Done.



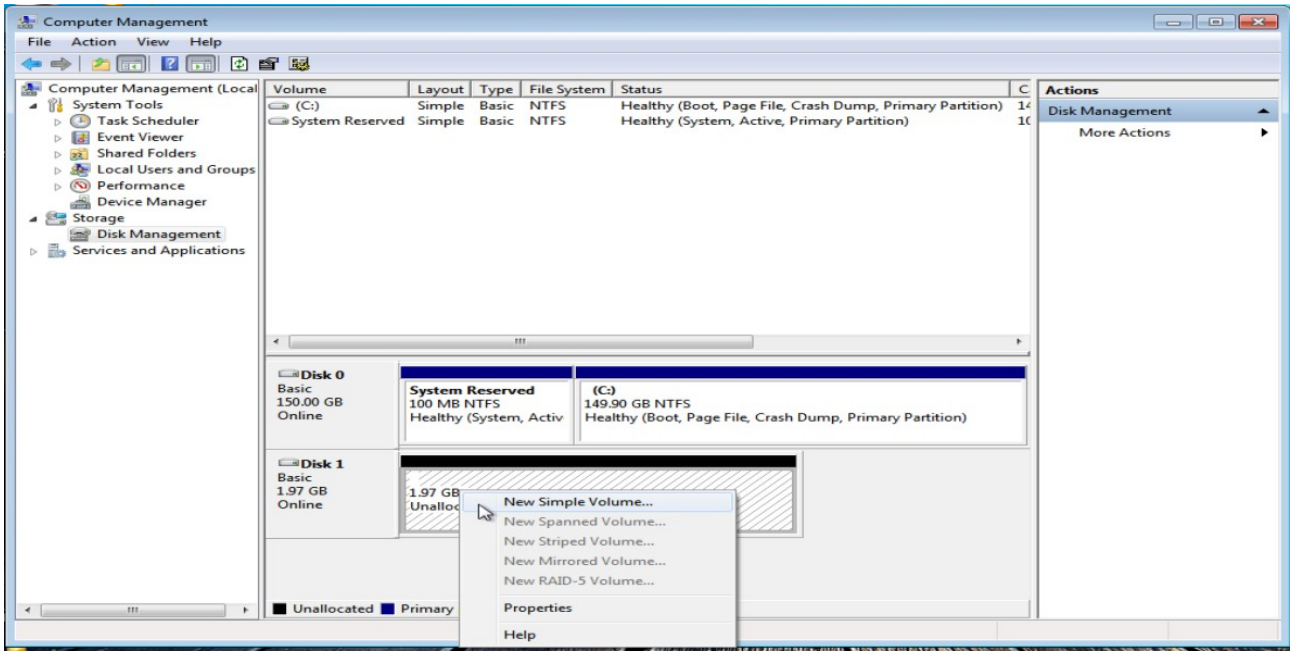
Step 23: Now open Computer Management window and check for the new disk added under Disk Management section. The new disk will be appear as unallocated space.



Step 24 :

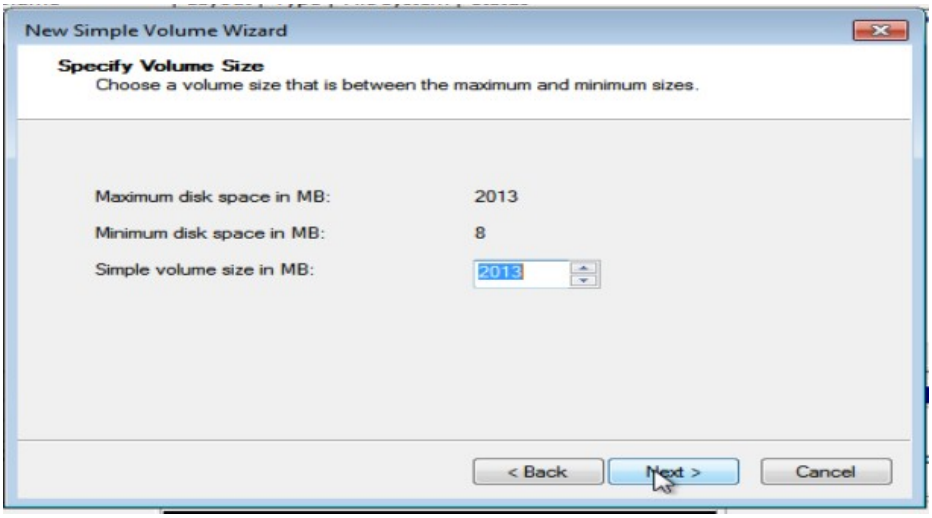


Step 25 : Perform the steps below to create a new volume to use from the unallocated space.

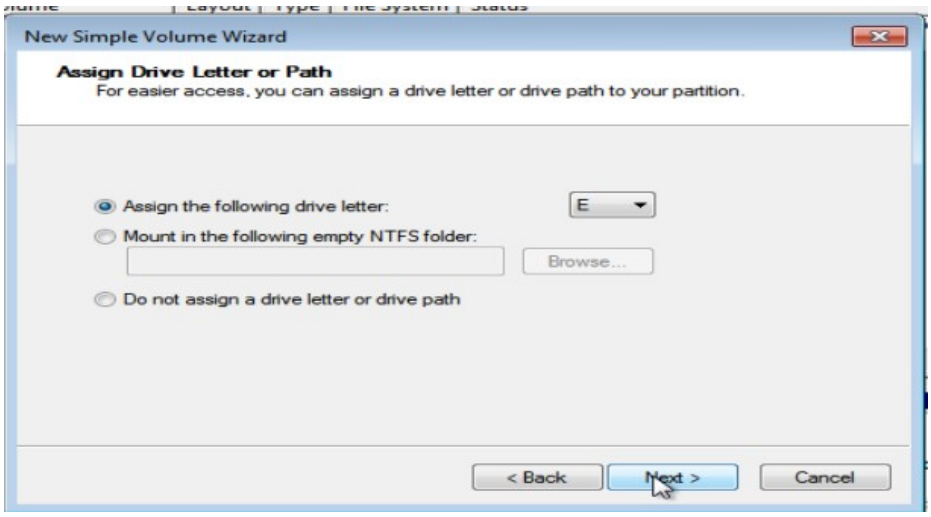


Step 26 :

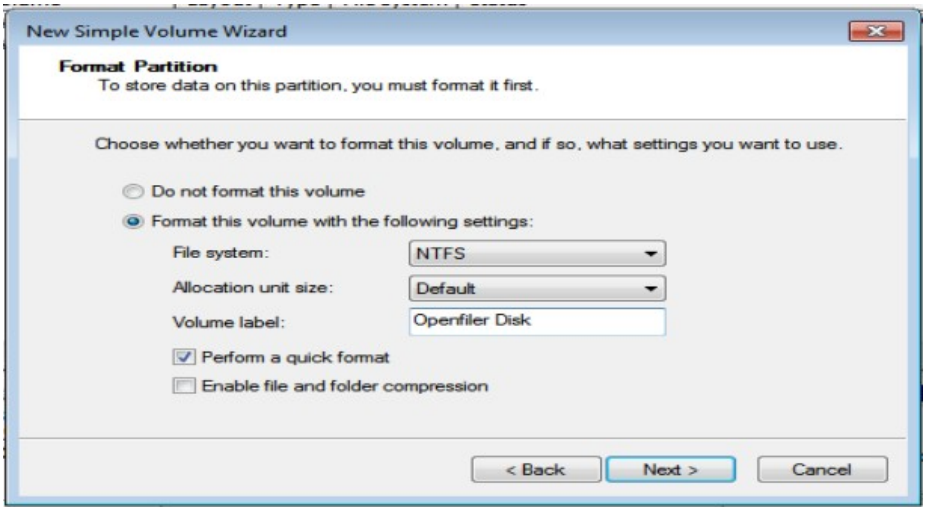
Step 27:



Step 28 :



Step 29:



Step 30 :

Step 31: