

# Installing and Attaching OpenFiler to VMware ESXi

## Requirements:

1 Windows Server VM (2 GB RAM, 1 CPU with 2 Cores, 1 SCSI HDD)

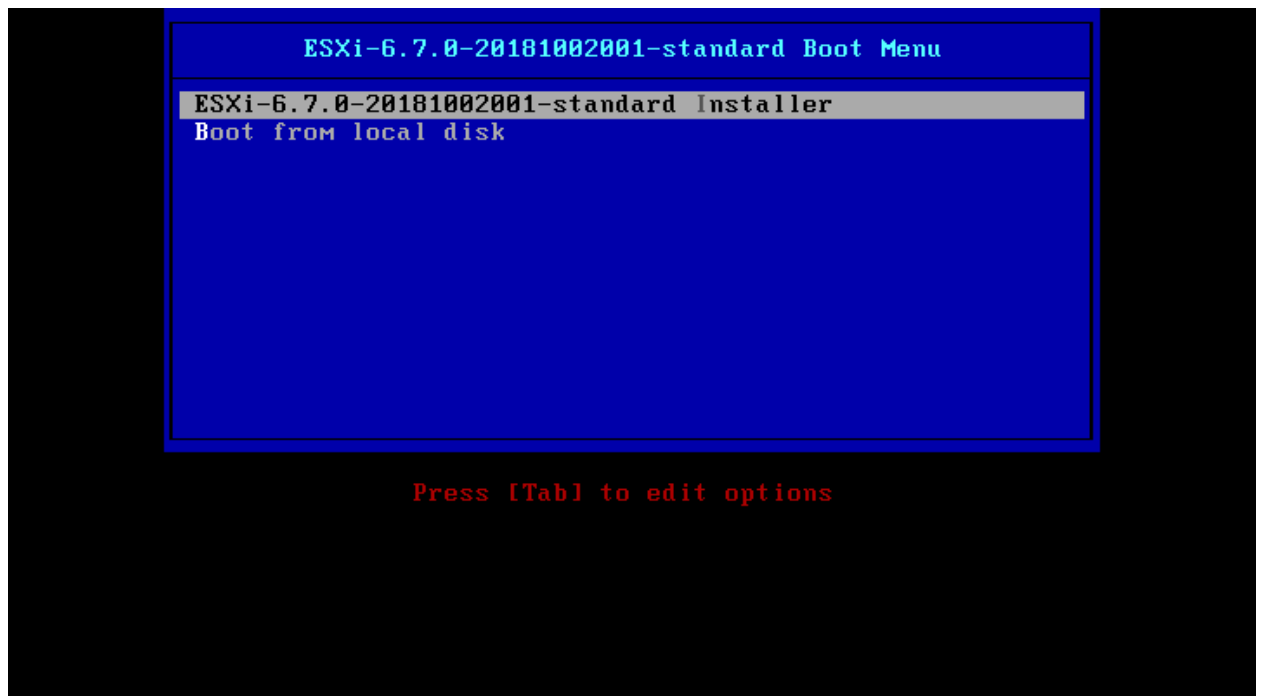
1 OpenFiler VM (4 GB RAM, 1 CPU with 2 Cores, 2 IDE HDDs)

1 ESXi VM (4 GB RAM, 2 CPU with 2 Cores, 1 SCSI HDD)

- Ensure that the processor is virtualized for ESXi VM and VM type is set to VMWare ESX
- Ensure the NICs are set to use the same VMnet and subnet

## ESXi

- 1) Create the virtual machine (VM) according to specification required above
- 2) Attach the VMware VSphere iso to the VM (Click CD/DVD > set connection to "Use ISO image file" > Navigate and select iso file)
- 3) Power on VM
- 4) Push enter



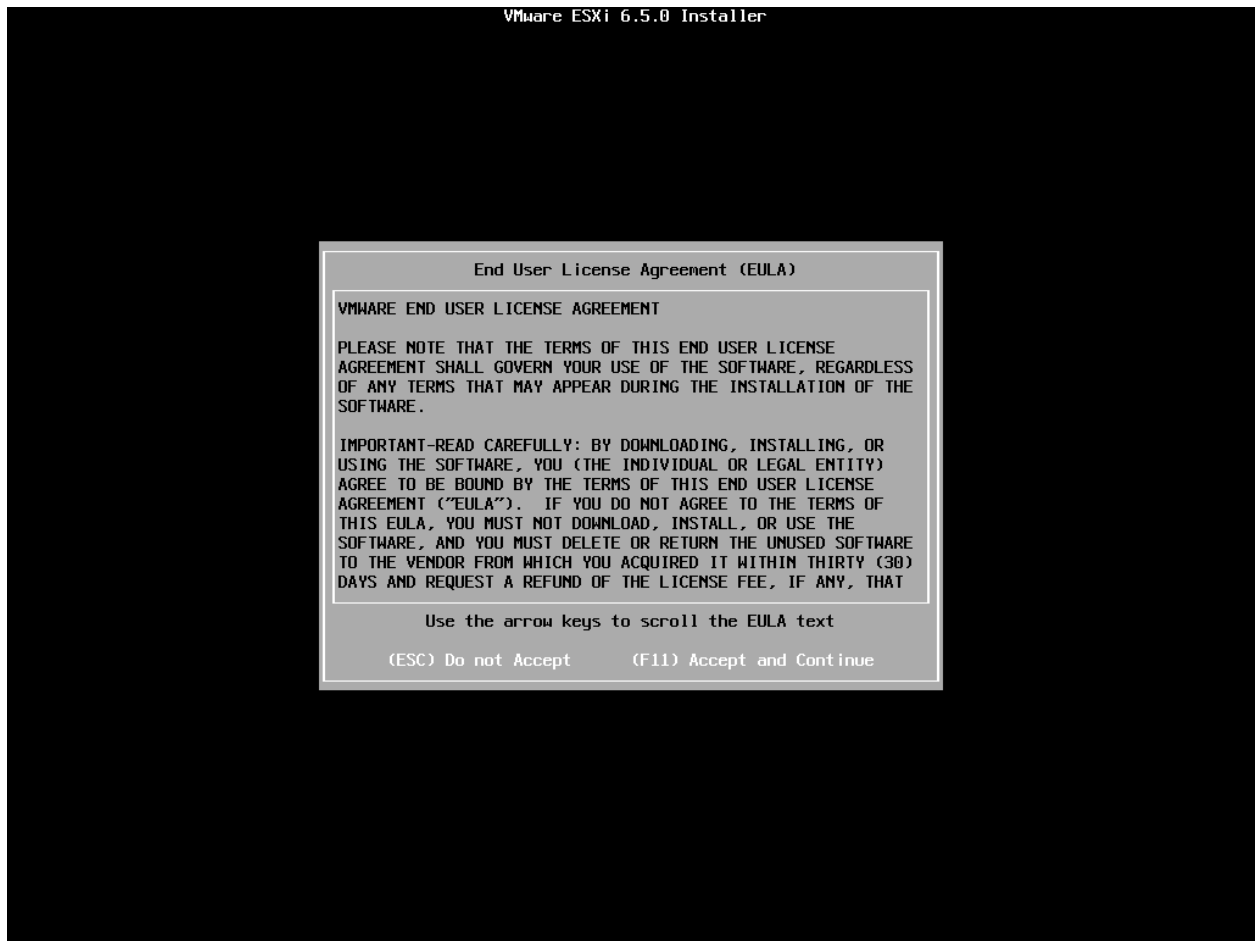
5) Push enter



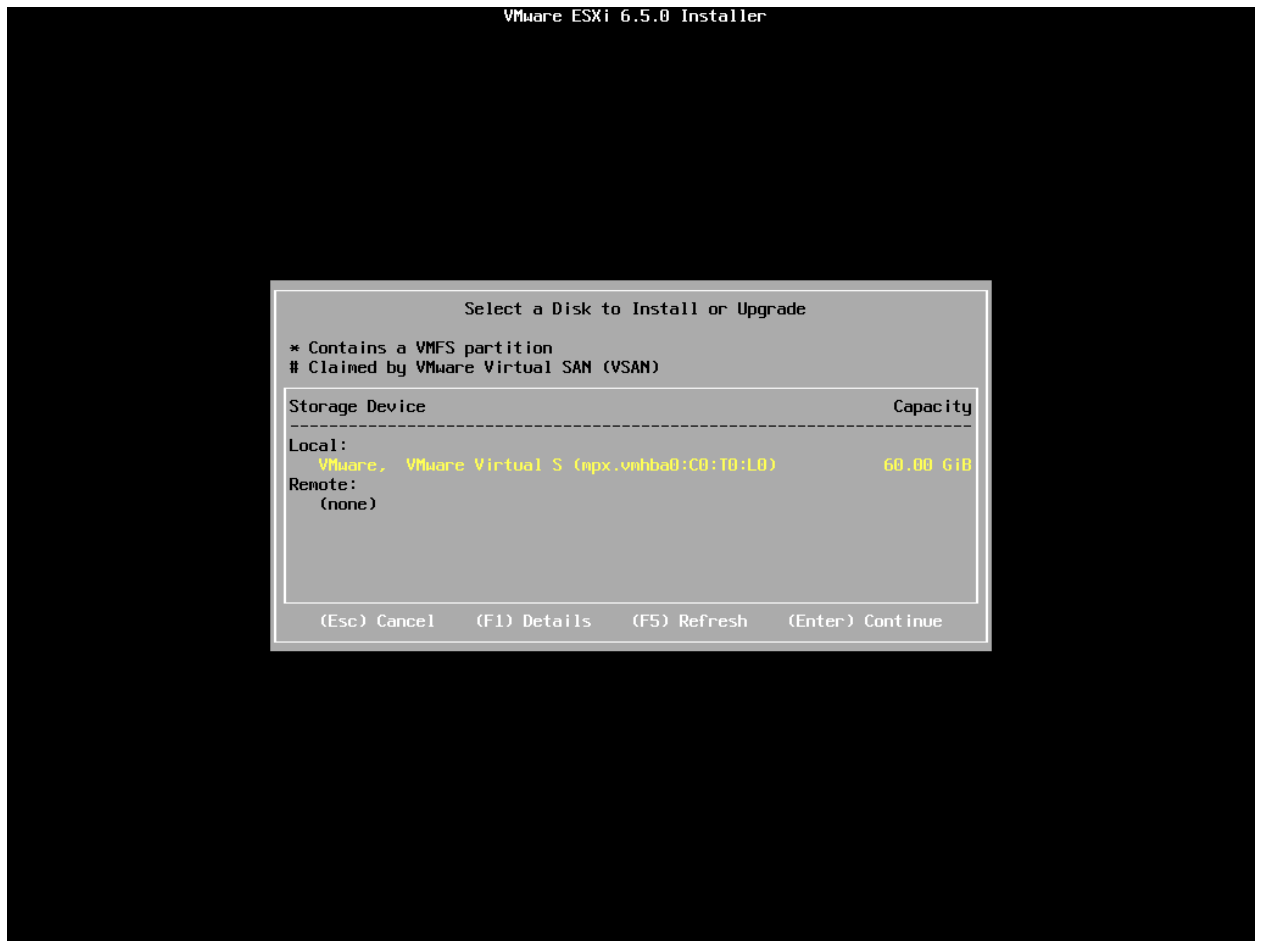
6) Push enter



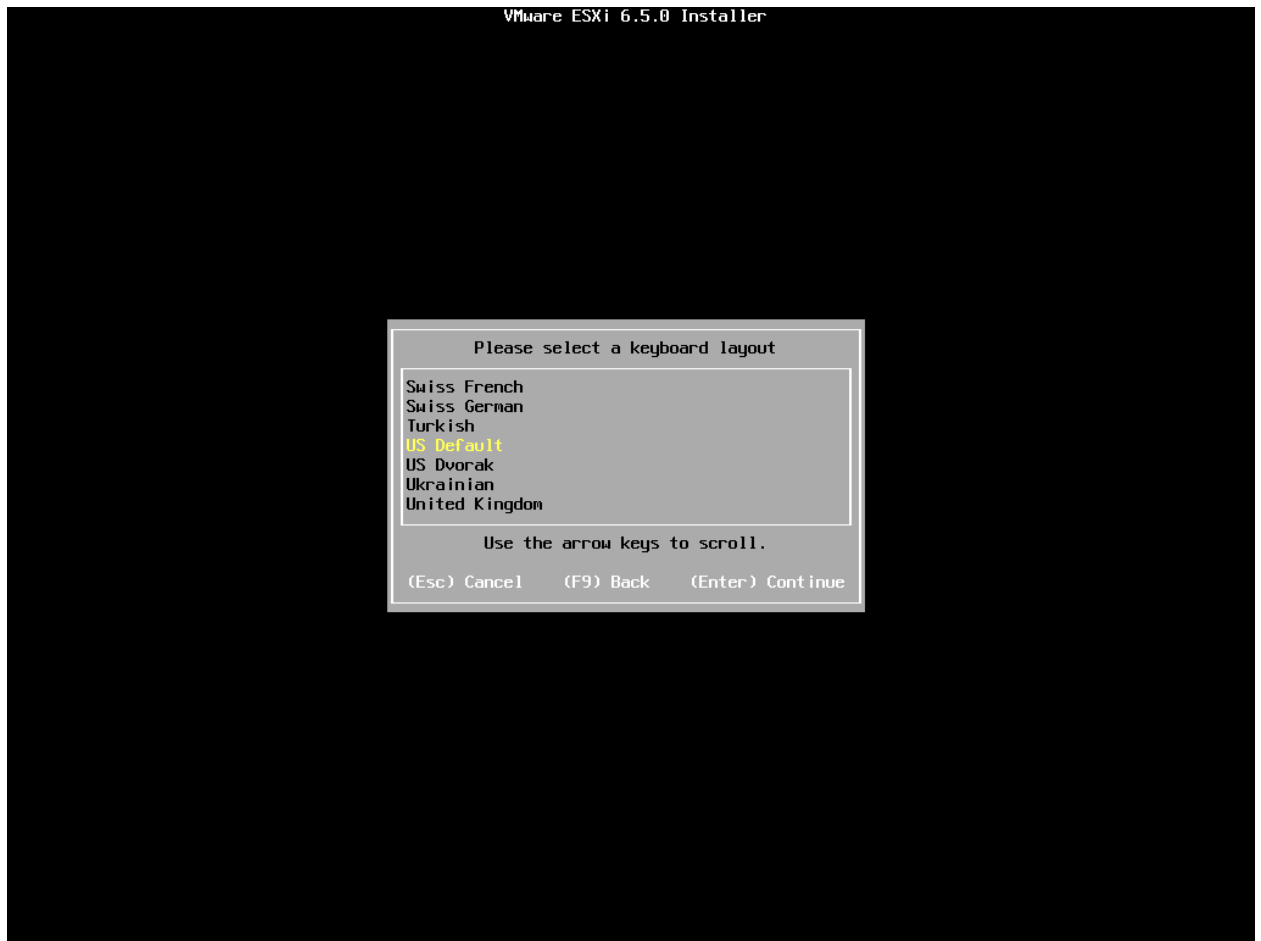
7) Push F11



8) Push enter



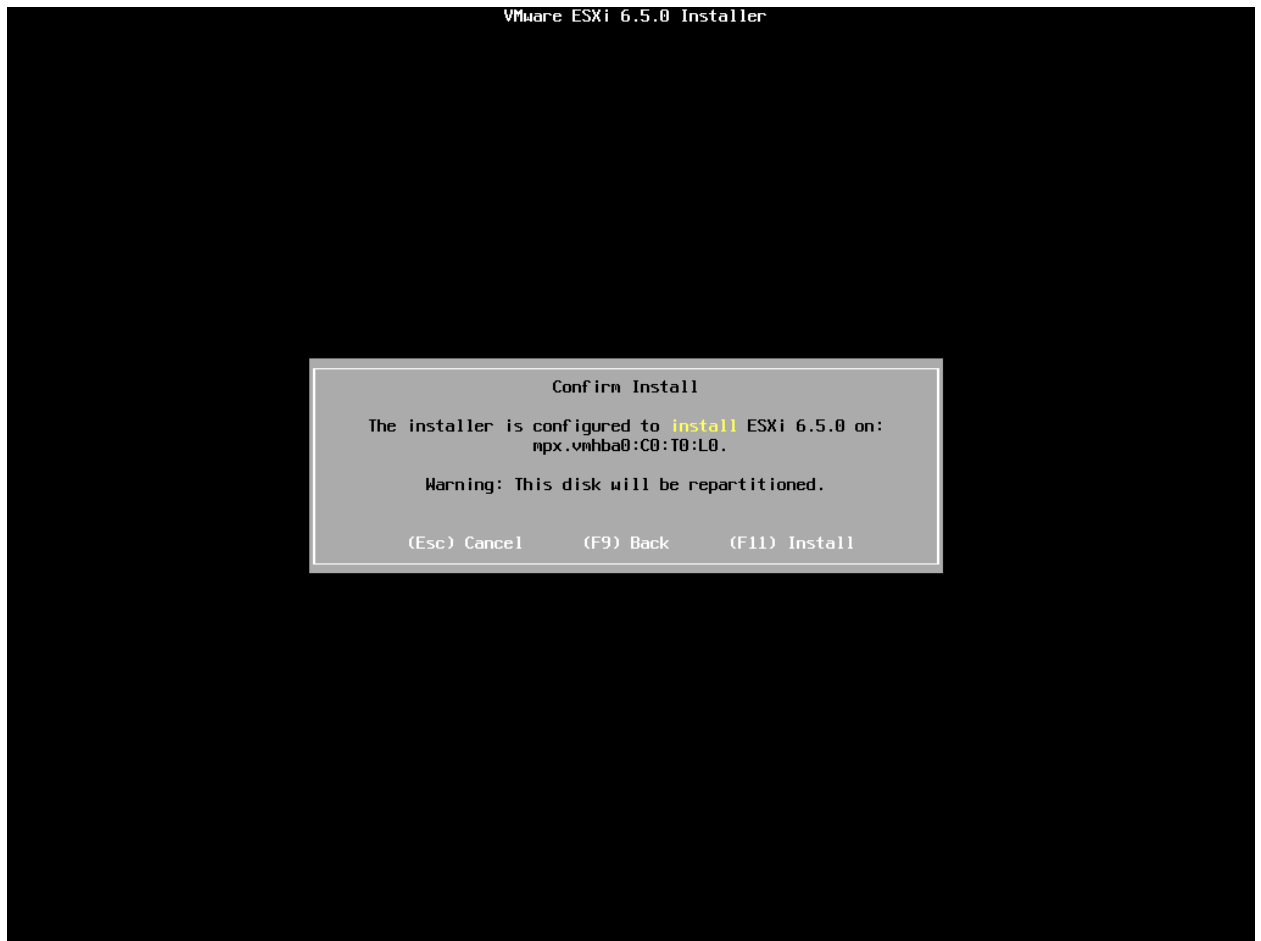
9) Push enter



## 10) Set a password



11) Push F11

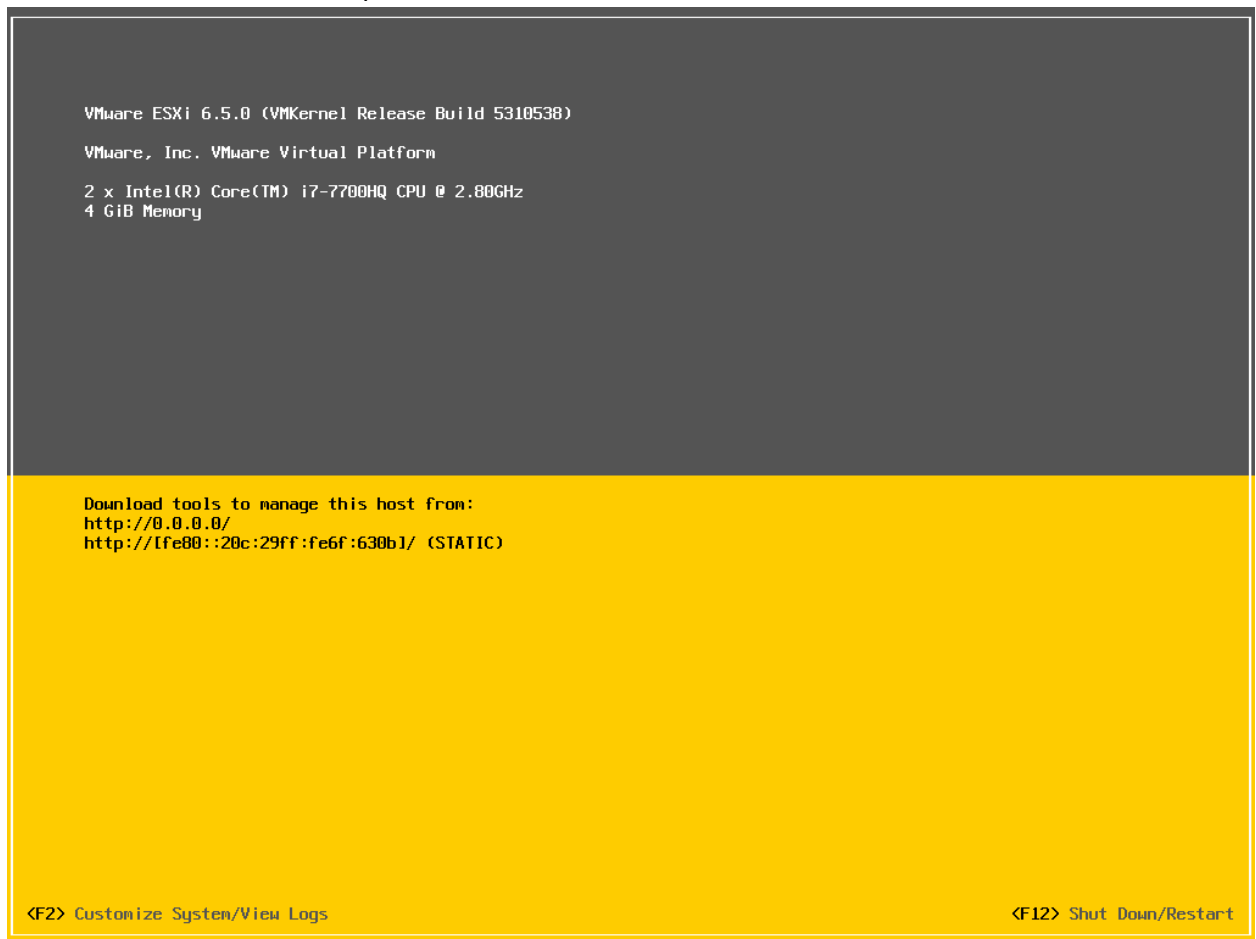




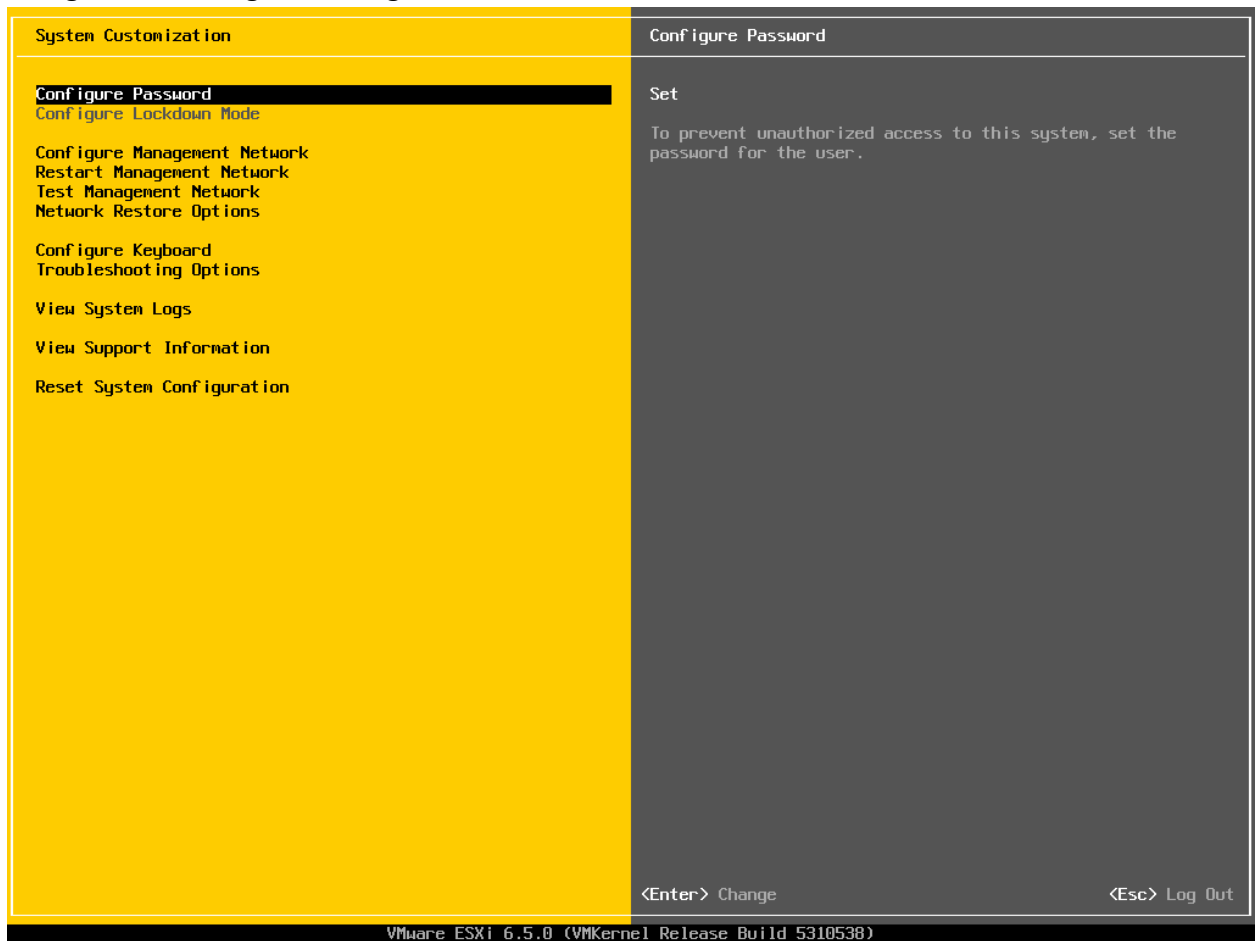
12) Push enter



13) Push F2 and enter the root password



14) Navigate to "Configure Management Network"



## 15) Select IPv4 configuration

Configure Management Network	IPv4 Configuration
Network Adapters VLAN (optional)	Automatic
<b>IPv4 Configuration</b>	IPv4 Address: 169.254.65.23 Subnet Mask: 255.255.0.0 Default Gateway: Not set
IPv6 Configuration	This host can obtain an IPv4 address and other networking parameters automatically if your network includes a DHCP server. If not, ask your network administrator for the appropriate settings.
DNS Configuration	
Custom DNS Suffixes	
<Up/Down> Select	<Enter> Change
	<Esc> Exit

VMware ESXi 6.5.0 (VMKernel Release Build 5310538)

16) Select "Set static IPv4 address and network configuration"

Configure Management Network

IPv4 Configuration

Network Adapters  
VLAN (optional)

IPv4 Configuration  
IPv6 Configuration  
DNS Configuration  
Custom DNS Suffixes

Automatic  
  
IPv4 Address: 169.254.65.23  
Subnet Mask: 255.255.0.0  
Default Gateway: Not set  
  
This host can obtain an IPv4 address and other networking parameters automatically if your network includes a DHCP server. If not, ask your network administrator for the appropriate settings.

IPv4 Configuration

This host can obtain network settings automatically if your network includes a DHCP server. If it does not, the following settings must be specified:

☐ Disable IPv4 configuration for management network  
☐ Use dynamic IPv4 address and network configuration  
☒ Set static IPv4 address and network configuration:

IPv4 Address

[ 192.168.1.1 ]

Subnet Mask

[ 255.255.255.0 ]

Default Gateway

[ 0.0.0.0 ]

<Up/Down> Select   <Space> Mark Selected   <Enter> OK   <Esc> Cancel

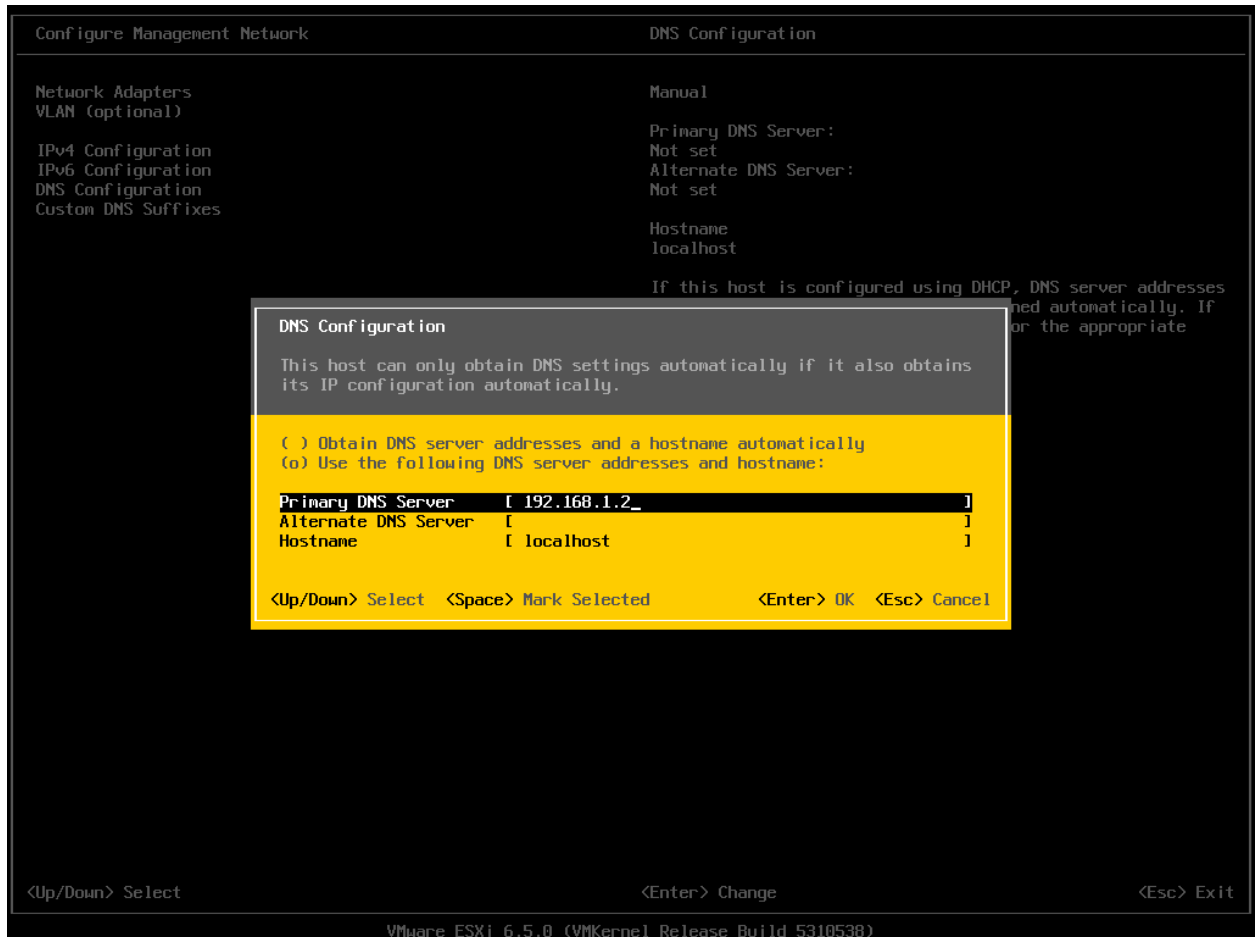
<Up/Down> Select

<Enter> Change

<Esc> Exit

VMware ESXi 6.5.0 (VMKernel Release Build 5310538)

- 17) Select DNS Configuration, set the primary DNS Server to the Windows Server VM controlling the ESXi and OpenFiler VMs



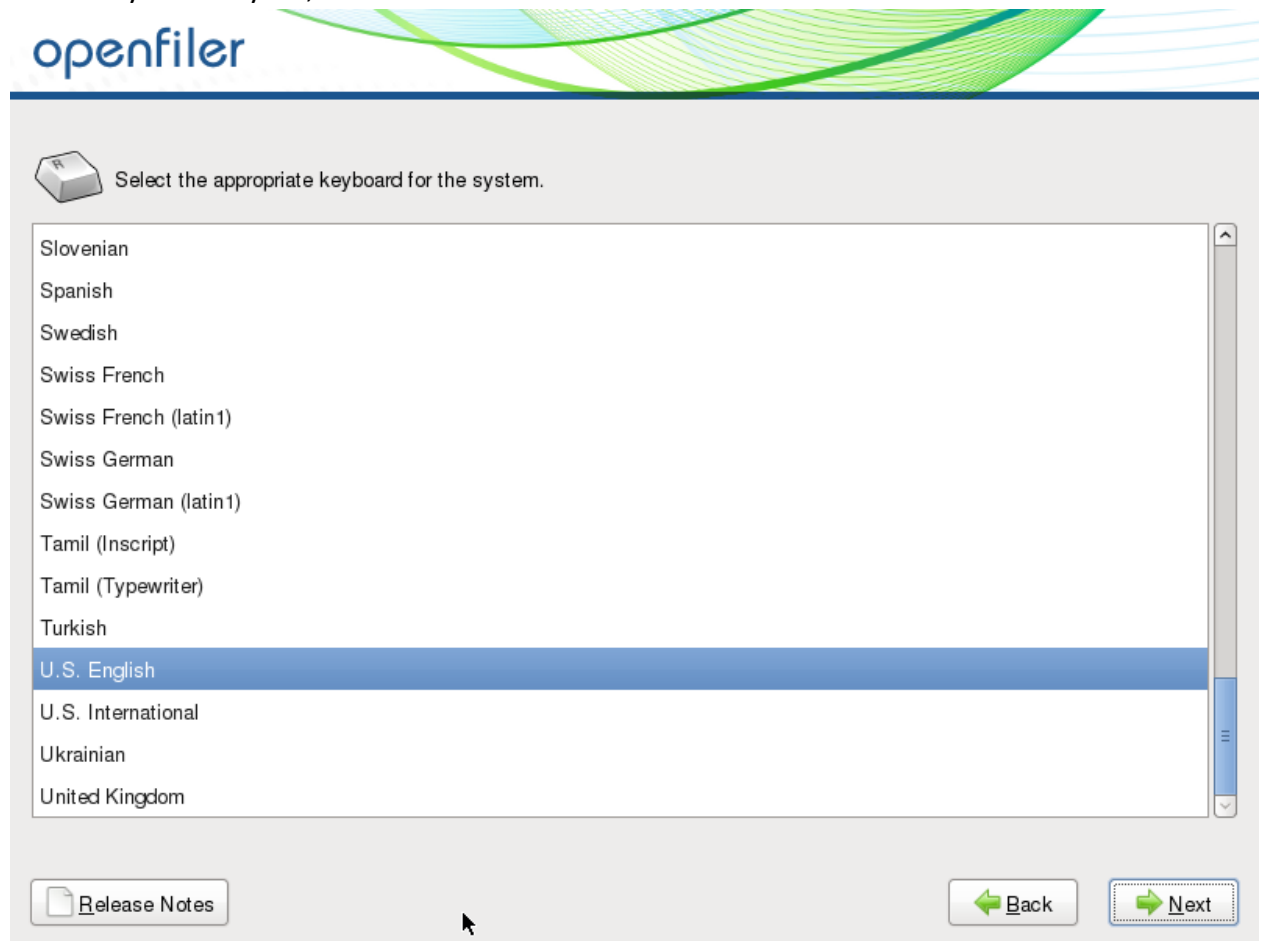
- 18) Push esc and type Y

## OpenFiler

- 1) Create a FreeBSD VM with 4 GB RAM and 1 CPU with 2 cores, 1 IDE HDD
- 2) Start the VM, push enter
- 3) Click next

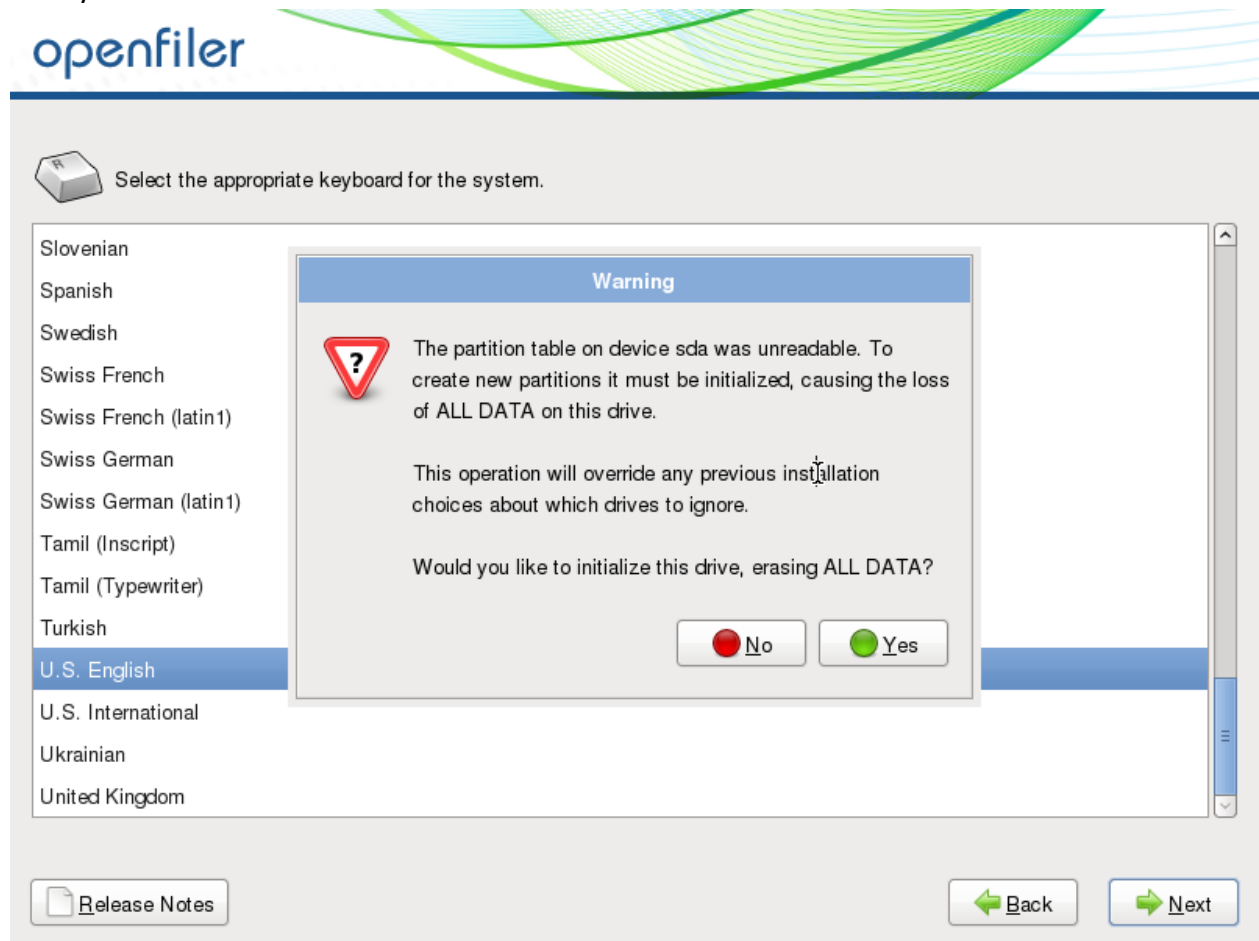


4) Select keyboard layout, click next





5) Click yes



6) Accept defaults, click next

Installation requires partitioning of your hard drive. By default, a partitioning layout is chosen which is reasonable for most users. You can either choose to use this or create your own.

Remove all partitions on selected drives and create default layout

**Select the drive(s) to use for this installation.**

☒ sda 61436 MB ATA VMware Virtual I

[+ Advanced storage configuration](#)

**What drive would you like to boot this installation from?**

sda 61436 MB ATA VMware Virtual I


☐ Review and modify partitioning layout

[Release Notes](#)

[Back](#)

[Next](#)

7) Click edit



**Network Devices**

Active on Boot	Device	IPv4/Netmask	IPv6/Prefix
<input checked="" type="checkbox"/>	eth0	DHCP	Auto
<div></div>			

[Edit](#)

**Hostname**

Set the hostname:

☒ automatically via DHCP

☐ manually  (e.g., host.domain.com)

**Miscellaneous Settings**

Gateway:

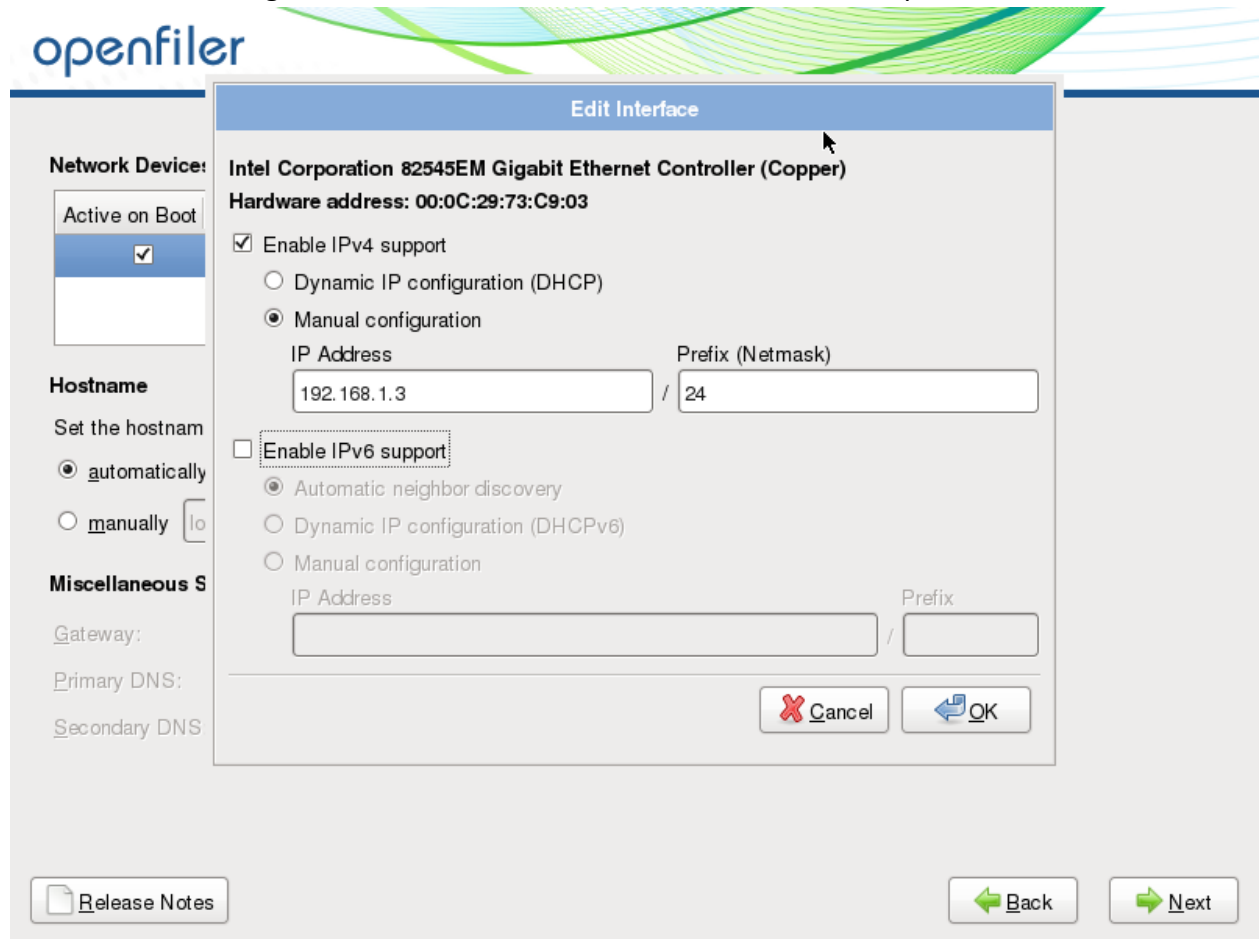
Primary DNS:

Secondary DNS:

[Release Notes](#)

[Back](#) [Next](#)

8) Select manual configuration and set the IP address and subnet mask prefix



The image shows the Openfiler 'Edit Interface' dialog box. On the left, there are sections for 'Network Device' (with 'Active on Boot' checked), 'Hostname' (set to 'automatically'), and 'Miscellaneous S' (with fields for Gateway, Primary DNS, and Secondary DNS). The main area is titled 'Edit Interface' and shows the selected network device as 'Intel Corporation 82545EM Gigabit Ethernet Controller (Copper)' with hardware address '00:0C:29:73:C9:03'. Under 'Enable IPv4 support' (checked), 'Manual configuration' is selected, with IP Address '192.168.1.3' and Prefix (Netmask) '24'. There is also an 'Enable IPv6 support' section which is currently unchecked. At the bottom right of the dialog are 'Cancel' and 'OK' buttons. At the very bottom of the Openfiler window are 'Release Notes', 'Back', and 'Next' buttons.

**openfiler**

**Edit Interface**

**Network Device:** Intel Corporation 82545EM Gigabit Ethernet Controller (Copper)  
Hardware address: 00:0C:29:73:C9:03

☒ Enable IPv4 support

☐ Dynamic IP configuration (DHCP)

☒ Manual configuration

IP Address: 192.168.1.3 / Prefix (Netmask): 24

☐ Enable IPv6 support


☒ Automatic neighbor discovery

☐ Dynamic IP configuration (DHCPv6)

☐ Manual configuration

IP Address: / Prefix:

- 9) Set the primary DNS to the IP address of the Windows Server VM



**Network Devices**

Active on Boot	Device	IPv4/Netmask	IPv6/Prefix
<input checked="" type="checkbox"/>	eth0	192.168.1.3/24	Disabled

[Edit](#)

**Hostname**

Set the hostname:

☐ automatically via DHCP

☒ manually  (e.g., host.domain.com)

**Miscellaneous Settings**

Gateway:

Primary DNS:

Secondary DNS:

[Release Notes](#)

[< Back](#) [Next >](#)

10) Click next

openfiler

Please select the nearest city in your time zone:



Selected city: New York, America (Eastern Time)

America/New York

☐ System clock uses UTC

[Release Notes](#)

[Back](#) [Next](#)


11) Set a root password





The root account is used for administering the system.  
Enter a password for the root user.

Root Password:

Confirm:

 Release Notes

 Back

 Next

12) Click next

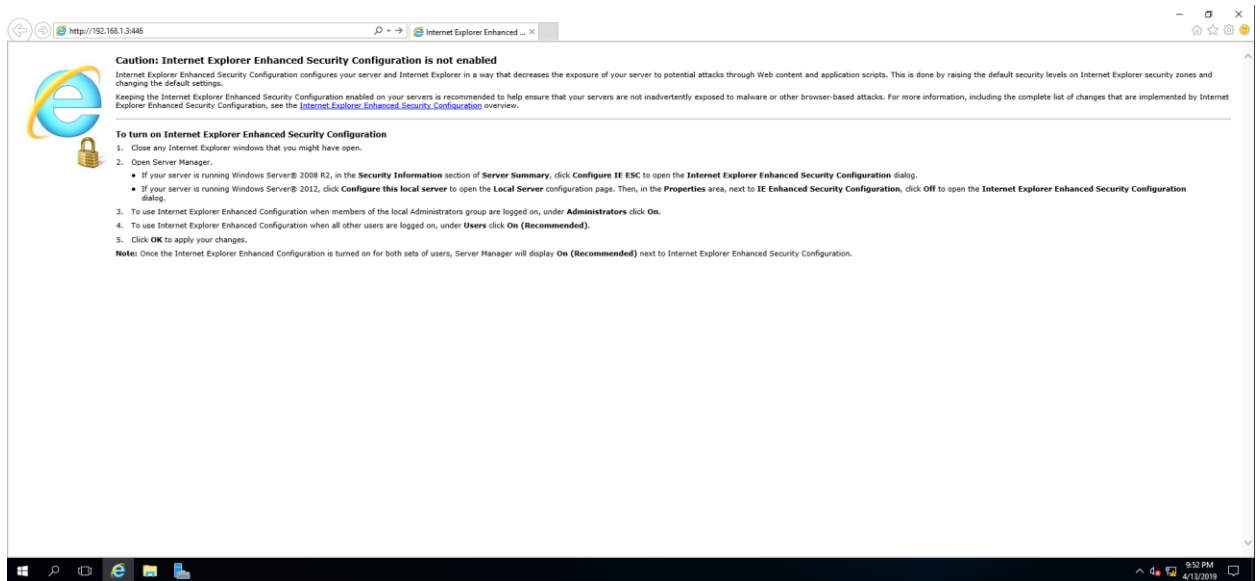


13) Click reboot

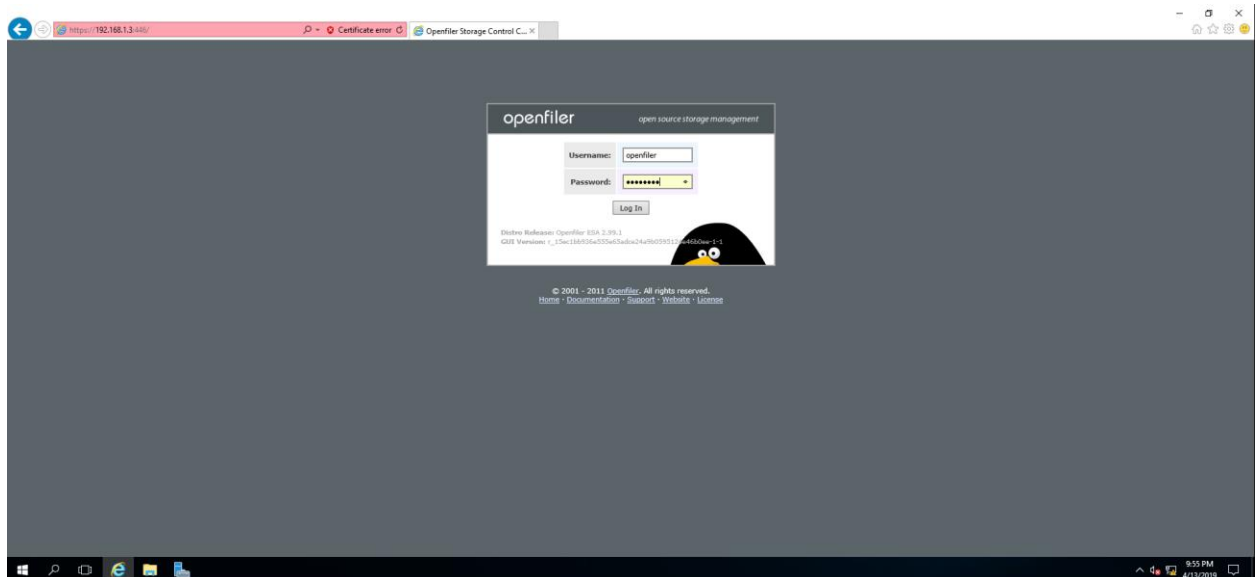


## Windows Server VM

- 1) Open internet explorer and in the browser bar type in https://IP address of OpenFiler server followed by:446



- 2) Enter in the username and password



- 3) Click systems > scroll down to Network configuration > point the ip address to the ESXi server and set the type to share. Click update.

The screenshot displays the ESXi Network Configuration web interface. The browser address bar shows <https://192.168.1.3/ehk/admin/system.html>. The interface is divided into three main sections:

- Network Configuration:** Contains fields for Hostname (localhost.localdomain), Primary DNS (192.168.1.2), Secondary DNS, and Gateway. There are 'Update' and 'Cancel' buttons.
- Network Interface Configuration:** Contains a table with network interface details.
- Network Access Configuration:** Contains a table for network access settings.

**Network Interface Configuration Table:**

Interface	Boot Protocol	IP Address	Network Mask	Speed	MTU	Link	Edit
eth0	Static	192.168.1.3	255.255.255.0	1000Mb/s	1500	Yes	<a href="#">Configure</a>

[Create bonded interface](#)

**Network Access Configuration Table:**

Delete	Name	Network/Host	Netmask	Type
New	GSCE	192.168.1.1	255.255.255.0	Share

At the bottom of the interface, there is a message: "Would you like to store your password for 192.168.1.3? [More info](#)". The Windows taskbar at the bottom shows the time as 9:56 PM on 4/13/2019.

4) Navigate to volumes > block devices click edit disk

The screenshot shows the Openfiler web interface in a browser window. The address bar displays <https://10.0.0.1:44>. The page title is "Volumes : Block Devices". The Openfiler logo is in the top left, and the system status bar shows "09:58:29 up 7 min, 0 users, load average: 0.29, 0.12, 0.04" along with links for "Log Out", "Status", "Update", and "Shutdown".

The main navigation bar includes tabs for "Status", "System", "Volumes", "Cluster", "Quota", "Shares", "Services", and "Accounts". The "Volumes" tab is active.

The "Block Device Management" section contains a table with the following data:

Edit Disk	Type	Description	Size	Label type	Partitions
<a href="#">/dev/sdb</a>	SCSI	ATA VMware Virtual I	60.00 GB	msdos	1 ( <a href="#">view</a> )
<a href="#">/dev/sda</a>	SCSI	ATA VMware Virtual I	60.00 GB	msdos	3 ( <a href="#">view</a> )

On the right side, the "Volumes section" sidebar lists the following options: "Manage Volumes", "Volume Groups", "Block Devices", "Add Volume", "iSCSI Targets", and "Software RAID". The "Support resources" sidebar lists: "Report bug", "Get support", "Forums", and "Admin Guide".

At the bottom of the page, the copyright notice reads: "© 2001 - 2011 Openfiler. All rights reserved." followed by links for "Home", "Documentation", "Support", "Website", "License", and "Log Out".

The Windows taskbar at the bottom shows the time as 11:05 AM on 4/14/2019.

5) Scroll to the bottom, set the partition type to physical volume. Click create

Browser window showing the Openfiler web interface for creating a partition on /dev/sdb.

**Support resources**

- [Report bug](#)
- [Get support](#)
- [Forums](#)
- [Admin Guide](#)

**Create a partition in /dev/sdb**

You can use ranges within the following extents:

Mode	Starting cylinder	Ending cylinder	Space
Primary	7470	7832	2.78 GB

Mode	Partition Type	Starting cylinder	Ending cylinder	Size	Create	Reset
Primary	Extended partition	7470	7832	2.78 GB	Create	In Use

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Windows taskbar: 11:06 AM 4/14/2019


- 6) Click volume groups, enter a name for the volume group and select a volume to add.  
Click add volume group

The screenshot shows the Openfiler web interface. At the top, there's a navigation bar with tabs: Status, System, Volumes (selected), Cluster, Quota, Shares, Services, and Accounts. Below the navigation bar, the main content area is titled "Volume Group Management". It contains a table with columns: Volume Group Name, Size, Allocated, Free, Members, Add physical storage, and Delete VG. Below the table, there's a section titled "Create a new volume group". This section includes a lightbulb icon and a text box with the instruction: "Valid characters for volume group name: A-Z a-z 0-9 \_ + -". Below this, there's a form with a label "Volume group name (no spaces)" and a text input field containing "iSCSI". Underneath, there's a section titled "Select physical volumes to add" with a table showing a checkbox, the path "/dev/sdb1", and the size "57.22 GB". The checkbox is checked. At the bottom of this section is a button labeled "Add volume group". On the right side of the interface, there's a sidebar with two sections: "Volumes section" containing links for "Manage Volumes", "Volume Groups", "Block Devices", "Add Volume", "iSCSI Targets", and "Software RAID"; and "Support resources" containing links for "Report bug", "Get support", "Forums", and "Admin Guide". At the bottom of the page, there's a footer with copyright information: "© 2001 - 2011 Openfiler. All rights reserved." and links for "Home", "Documentation", "Support", "Website", "License", and "Log Out". The Windows taskbar at the bottom shows the time as 10:26 PM on 4/13/2019.

- 7) Click add volume(right hand side menu), scroll to the bottom. Set volume name and required space as needed click create. Leave file system as default.

←↻https://192.168....Certifi...Volumes : Add Volume

Total Space	Used Space	Free Space
59965440 bytes (58560 MB)	0 bytes (0 MB)	59965440 bytes (58560 MB)



Free  
(100%)

Create a volume in "iscsi"

Volume Name (\*no spaces\*. Valid characters [a-z,A-Z,0-9]):

Volume Description:

Required Space (MB):

Filesystem / Volume type:

Create

Do you want AutoComplete to remember web form entries? [Learn about AutoComplete](#)

YesNo

Report bugGet supportForumsAdmin Guide

10:28 PM  
4/13/2019

←↻https://10.0.0.1:44Certifi...Volumes : Volume Groups

openfiler09:59:38 up 8 min, 0 users, load average: 0.09, 0.09, 0.04Log Out | Status | Update | Shutdown

StatusSystemVolumesClusterQuotaSharesServicesAccounts

Volume Group Management

Volume Group Name	Size	Allocated	Free	Members	Add physical storage	Delete VG
test	57.19 GB	57.19 GB	0 bytes	<a href="#">View member PVs</a>	All PVs are used	<a href="#">VG contains volumes</a>

Create a new volume group

!

No existing physical volumes were found, or all existing physical volumes are used. You can [create new physical volumes](#).

Volumes section

[Manage Volumes](#)  
[Volume Groups](#)  
[Block Devices](#)  
[Add Volume](#)  
[iSCSI Targets](#)  
[Software RAID](#)

Support resources

[Report bug](#)  
[Get support](#)  
[Forums](#)  
[Admin Guide](#)

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WindowsTaskbarIconsSystem Tray11:07 AM4/14/2019

8) Click services, navigate to iSCSI target. Enable and start the service

The screenshot shows the Openfiler web interface. The top navigation bar includes links for Status, System, Volumes, Cluster, Quota, Shares, Services (selected), and Accounts. The main content area is titled 'Manage Services' and contains a table of services. The 'iSCSI Target' service is highlighted in green, indicating it is enabled and running. The table lists various services with their boot status, modify boot link, current status, and start/stop link. A sidebar on the right contains links for 'Manage Services', 'SMB/CIFS Setup', 'LDAP Setup', 'UPS Setup', 'Rsync Setup', 'iSCSI Target Setup', and 'FTP Setup'. A 'Support resources' section at the bottom right includes links for 'Report bug', 'Get support', 'Forums', and 'Admin Guide'. A bottom notification bar asks if the user wants AutoComplete to remember web form entries.

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

Do you want AutoComplete to remember web form entries? [Learn about AutoComplete](#)



9) Click Volumes > iSCSI Targets > click Add > Network ACL

The screenshot shows the Openfiler web interface at the URL [https://192.168.1.3:443/admin/volumes\\_iscsi\\_targets.html/targets](https://192.168.1.3:443/admin/volumes_iscsi_targets.html/targets). The top navigation bar includes links for Status, System, Volumes, Cluster, Quota, Shares, Services, and Accounts. The main content area is titled 'Add new iSCSI Target' and contains two sections: 'Add new iSCSI Target' and 'Select iSCSI Target'. The 'Add new iSCSI Target' section has a 'Target IQN' field with the value 'iqn.2006-01.com.openfiler:tsn.4ef5dc1812' and an 'Add' button. The 'Select iSCSI Target' section has a dropdown menu with the value 'iqn.2006-01.com.openfiler:tsn.1ff8415774b1' and a 'Change' button. Below this, the 'Settings for target: iqn.2006-01.com.openfiler:tsn.1ff8415774b1' section shows a table of target attributes:

Target Attribute	Attribute Value
HeaderDigest	None
DataDigest	None
MaxConnections	1

The right sidebar contains a 'Volumes section' with links for Manage Volumes, Volume Groups, Block Devices, Add Volume, iSCSI Targets, and Software RAID. Below this is a 'Support resources' section with links for Report bug, Get support, Forums, and Admin Guide.

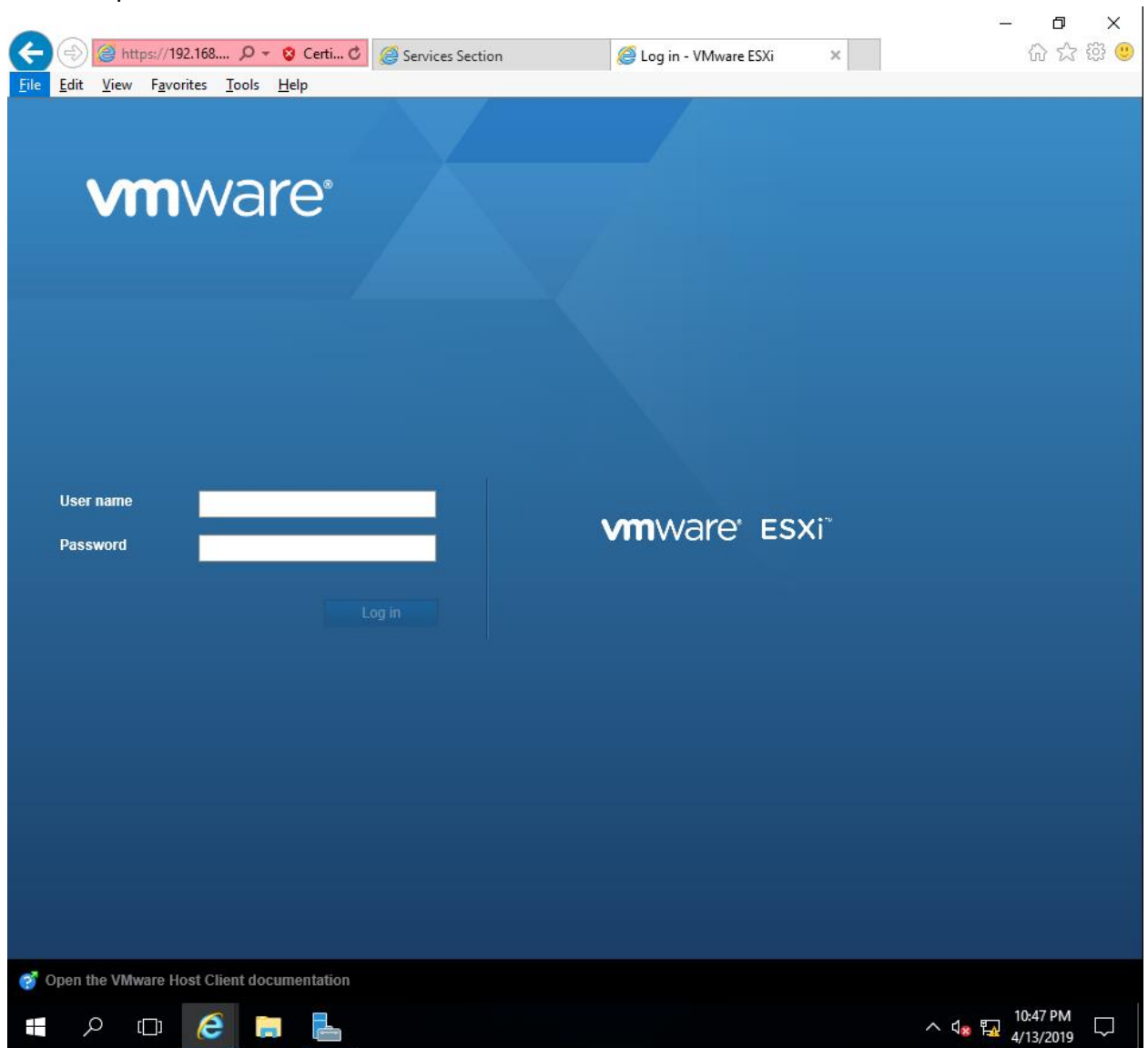
10) Set access to allow, click update


The screenshot shows the Openfiler web interface at the URL [https://192.168.1.3:443/admin/volumes\\_iscsi\\_targets.html/targets](https://192.168.1.3:443/admin/volumes_iscsi_targets.html/targets). The top navigation bar is the same as in the previous screenshot. The main content area is titled 'iSCSI host access configuration for target "iqn.2006-01.com.openfiler:tsn.1ff8415774b1"'. It contains a table with the following data:

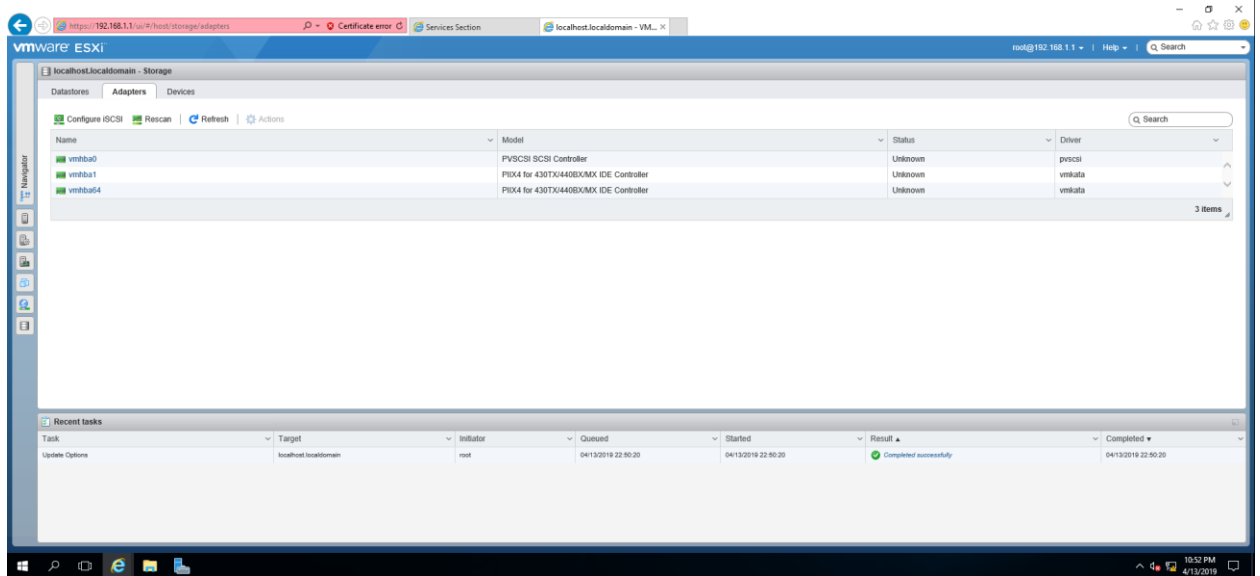
Name	Network/Host	Netmask	Access
ESXi	192.168.1.1	255.255.255.0	Allow

Below the table is an 'Update' button. The right sidebar is the same as in the previous screenshot. At the bottom of the page, there is a copyright notice: '© 2001 - 2011 Openfiler. All rights reserved. Home · Documentation · Support · Website · License · Log Out'.

11) Open another tab and in the address bar type http://ip address of esxi server, login with root and password



12) Click  the configure iSCSI



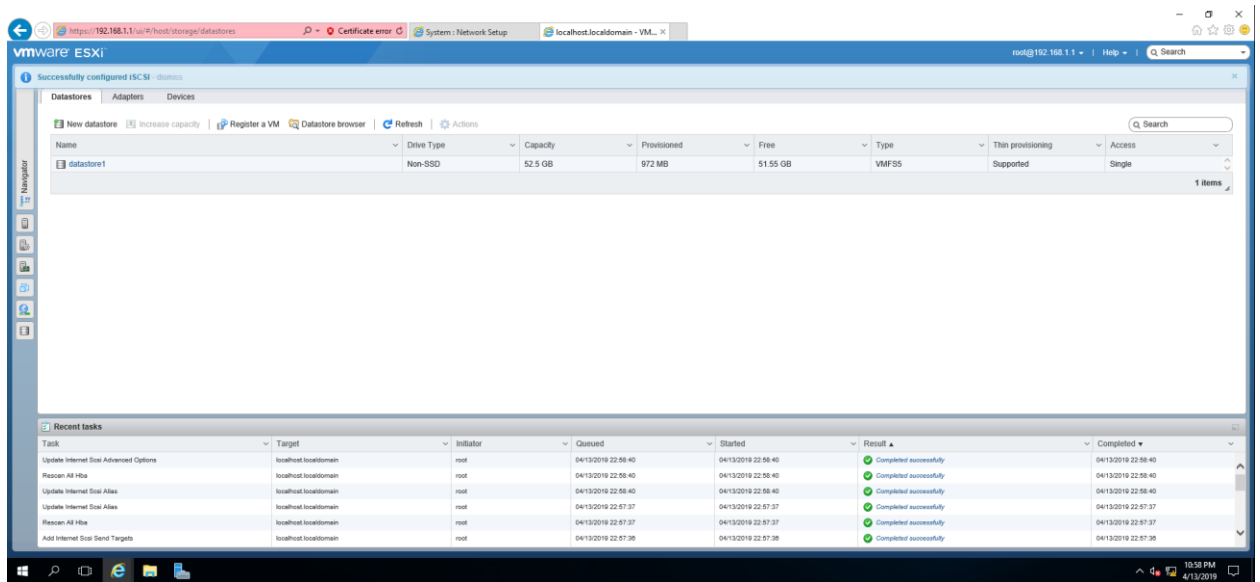
- 13) Click enabled, click add dynamic target and enter the IP address for the Openfiler server.  
Click add static target and enter the OpenFile target IQN and IP address

The screenshot displays the VMware ESXi web interface for configuring iSCSI. The browser address bar shows 'https://10.0.0.3/ui'. The page title is 'localhost.localdomain - Storage'. The navigation tabs include 'Datastores', 'Adapters', and 'Devices'. The 'Configure iSCSI' section is active, showing the following configuration:

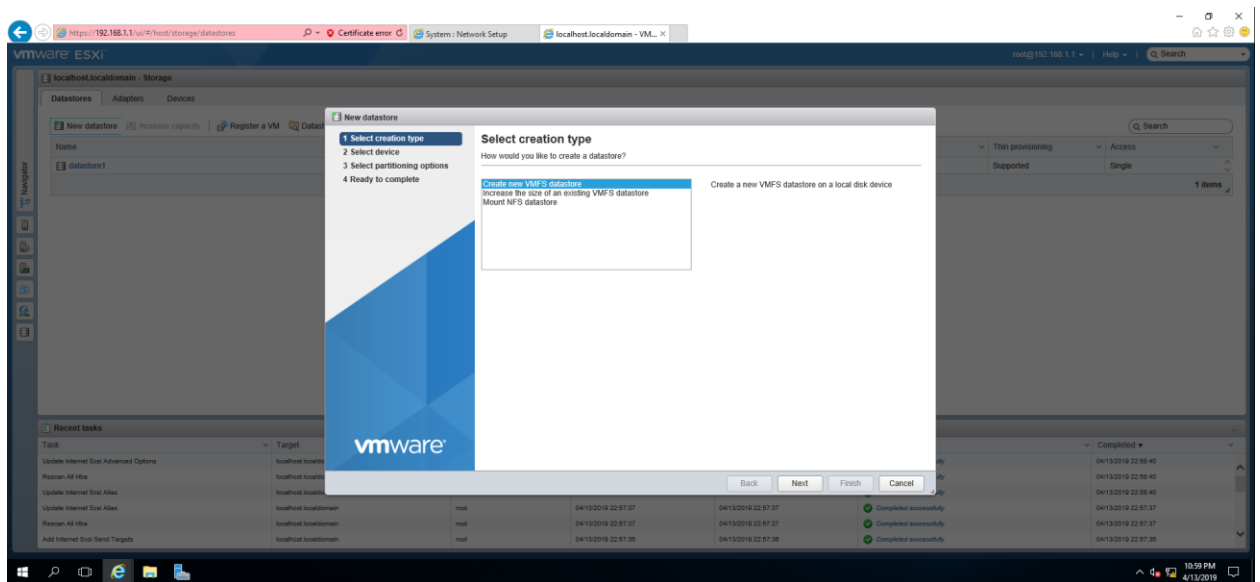
- iSCSI enabled:** ☐ Disabled ☒ Enabled
- Name & alias:** iqn.1998-01.com.vmware:5cb1798d-0f9d-365d-fe40-000c296f630b-4e1e0a99
- CHAP authentication:** Do not use CHAP
- Mutual CHAP authentication:** Do not use CHAP
- Advanced settings:** Click to expand
- Network port bindings:** Add port binding Remove port binding  
VMkernel NIC Port group IPv4 address  
No port bindings
- Static targets:** Add static target Remove static target Edit settings Search  
Target Address Port  
iqn.2006-01.com.openfiler:tsn.5c4fb573f402 10.0.0.1 3260
- Dynamic targets:** Add dynamic target Remove dynamic target Edit settings Search  
Address Port  
10.0.0.1 3260

At the bottom right, there are 'Save configuration' and 'Cancel' buttons. The Windows taskbar at the bottom shows the time as 11:09 AM on 4/14/2019.

14) Click datastores > new datastore



15) Select create a new VMFS datastore



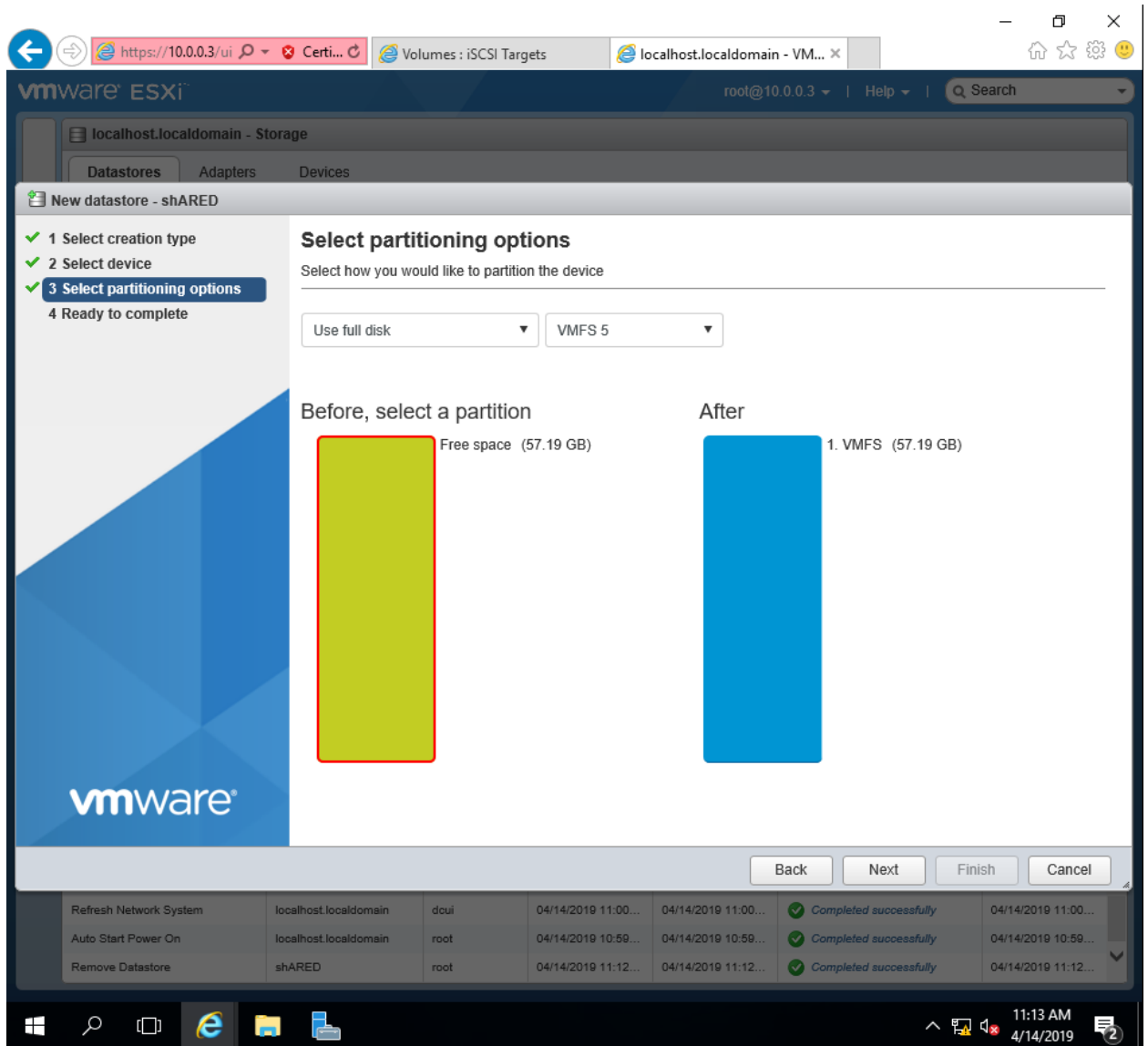
## 16) Select OpenFile device

The screenshot shows the VMware ESXi web interface with the 'New datastore' wizard open. The wizard is at step 2, 'Select device'. The left sidebar shows the progress: 1. Select creation type (checked), 2. Select device (active), 3. Select partitioning options, and 4. Ready to complete. The main area is titled 'Select device' and asks the user to 'Select a device on which to create a new VMFS partition'. Below this, a message states: 'The following devices are unclaimed and can be used to create a new VMFS datastore'. A table lists the available devices:

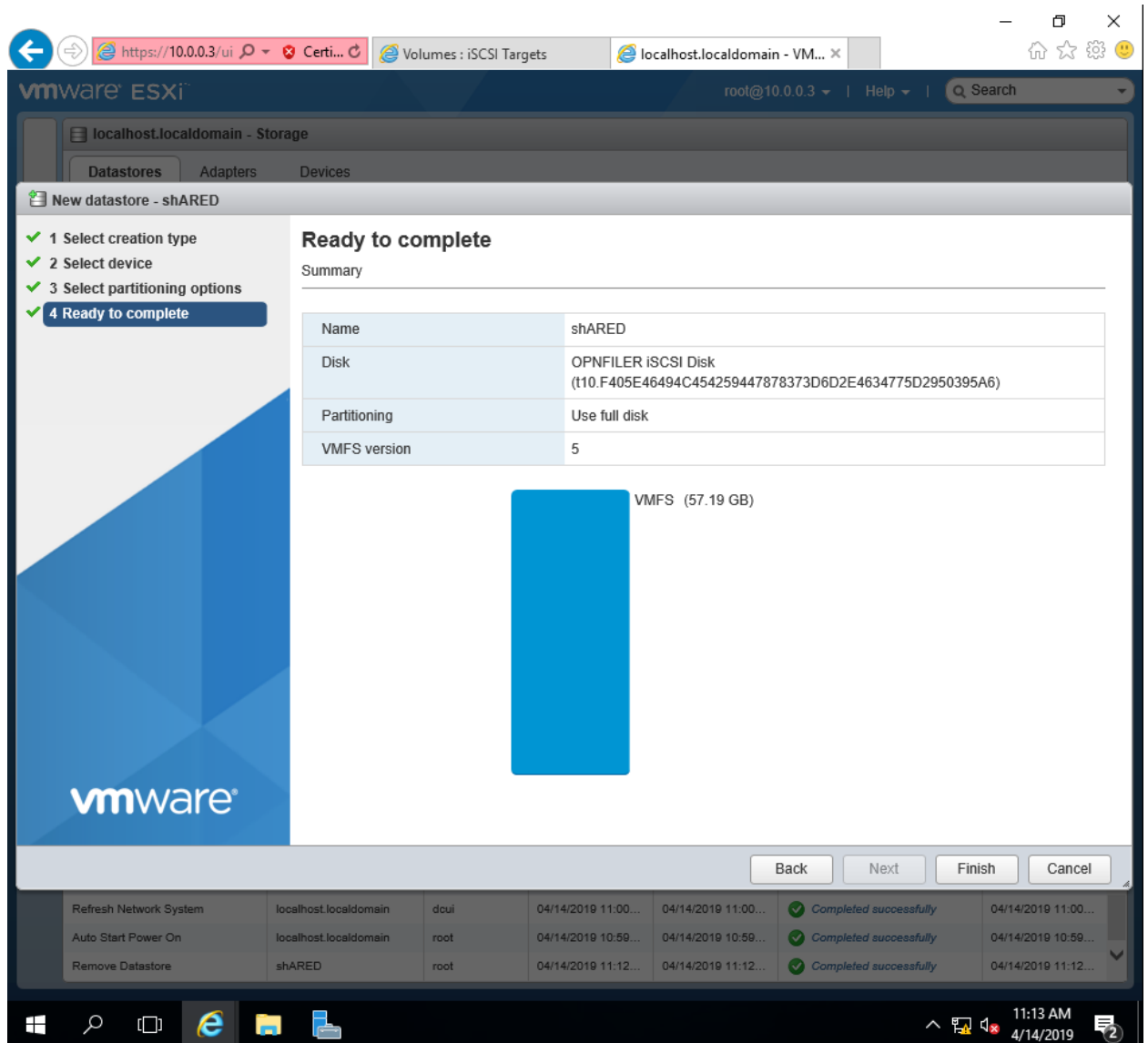
Name	Type	Capacity	Free space
OPNFILER iSCSI Disk (t10.F405E46494C45425944...)	Disk	57.19 GB	57.19 GB

At the bottom right of the table, it says '1 items'. Below the table are buttons for 'Back', 'Next', 'Finish', and 'Cancel'. At the bottom of the interface, there is a task log showing three completed tasks: 'Refresh Network System', 'Auto Start Power On', and 'Remove Datastore', all with a status of 'Completed successfully'.

## 17) Accept defaults



18) Click finish



19) Click finish