



StoneFly SCVM™ Deployment Guide for VMware ESXi

Storage Concentrator™ Virtual Machine
Software-Defined Virtual Storage Appliance

Revision 2017.1

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1. Scope of the document

The purpose of this document is to guide user through the steps required to deploy a Storage Concentrator Virtual Machine (SCVM) on VMWare ESXi 5.x and 6.x systems. The installation described in this document is for a base SCVM.

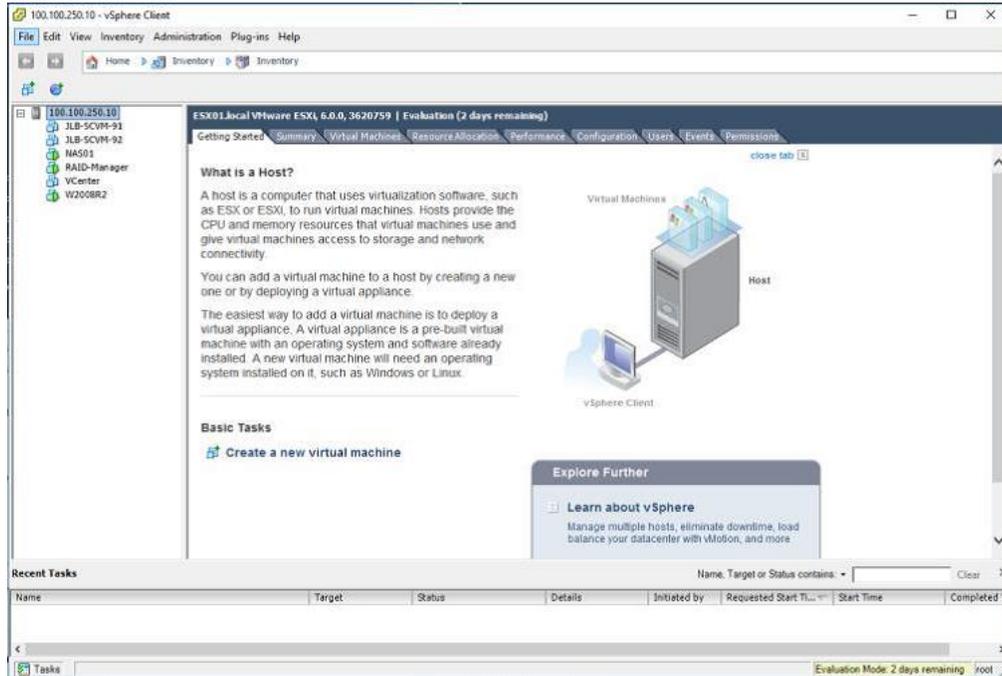
2. Requirement before installation

The following are the prerequisites for installing a new SCVM:

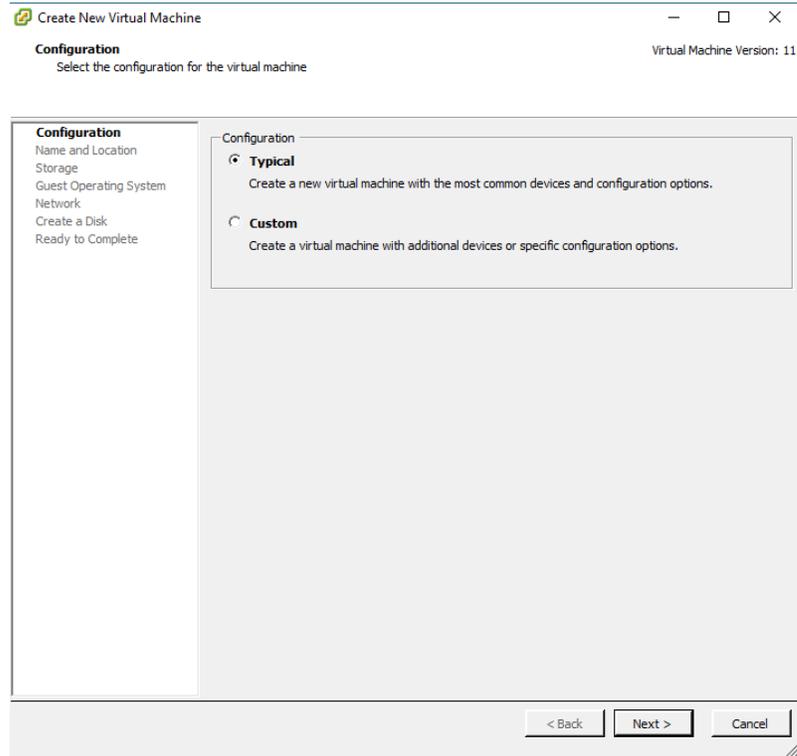
- 1- This document assumes that VMware ESX 5.x/6.x is already installed on the node on which the SCVM is to be deployed. vSphere Client is used to configure the ESXi hypervisor.
- 2- 4 GB or more of free memory for use by the SCVM.
- 3- Powerful CPU(s) (Intel Xeon or equivalent is recommended).
- 4- A minimum of 24 GB of storage for loading the StoneFly StoneFusion is required.
- 5- Two virtual networks defined in VMware ESXi server: One for the LAN, and another for the SAN. There must be at least one physical interface reserved for each network.
- 6- Additional storage space (internal or external) to be managed by the SCVM.
- 7- SCVM package (SCVM software CD, documents, and additional files).

3. Deploying SCVM

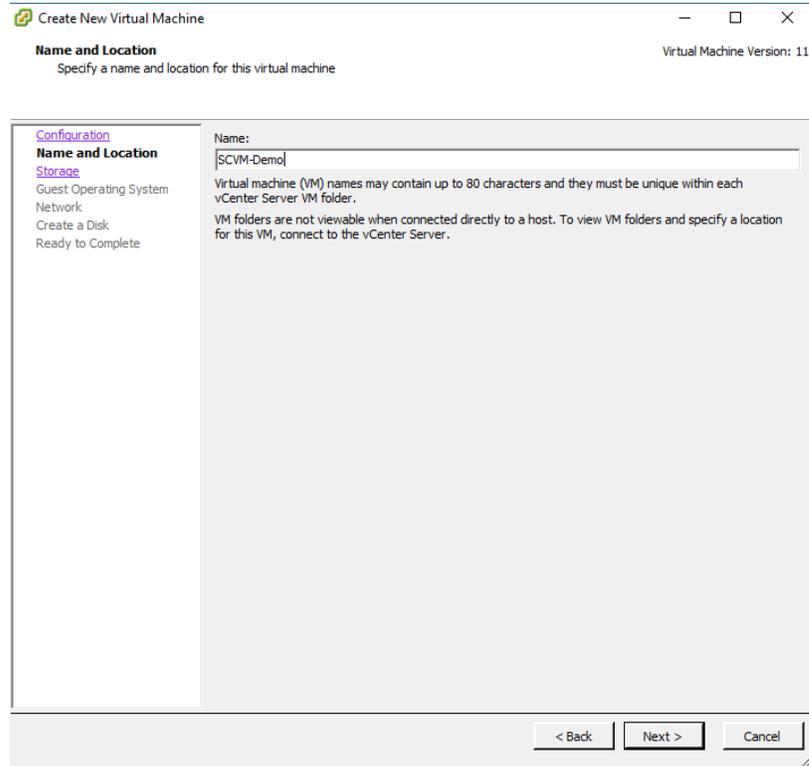
- 1) Login to vSphere or VCenter. Select the host to add new virtual machine to. Right click and select **New Virtual Machine**.



2) Select Typical and click on **Next**.

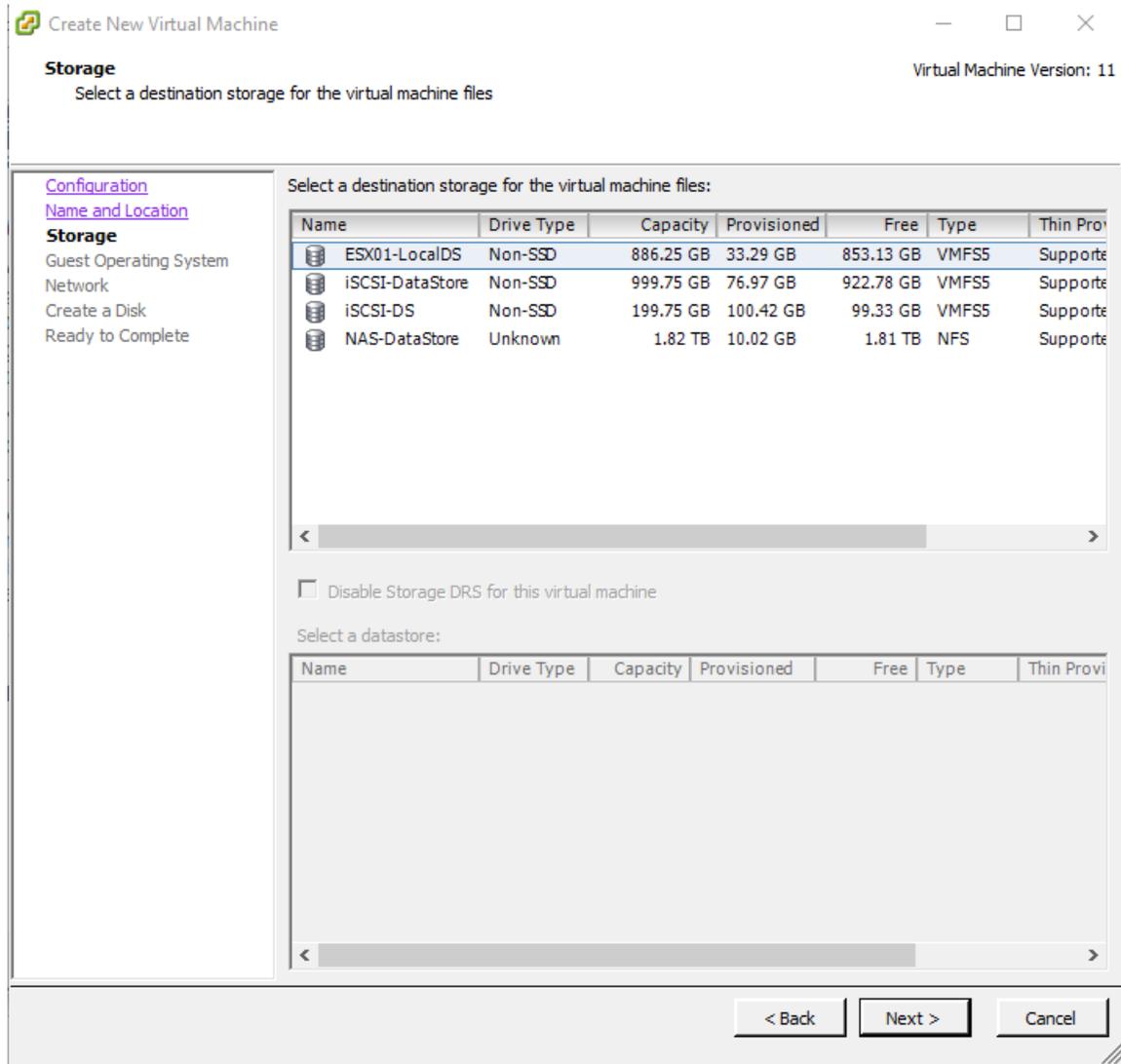


3) Enter a system name in the "Name:" field and click on **Next**.

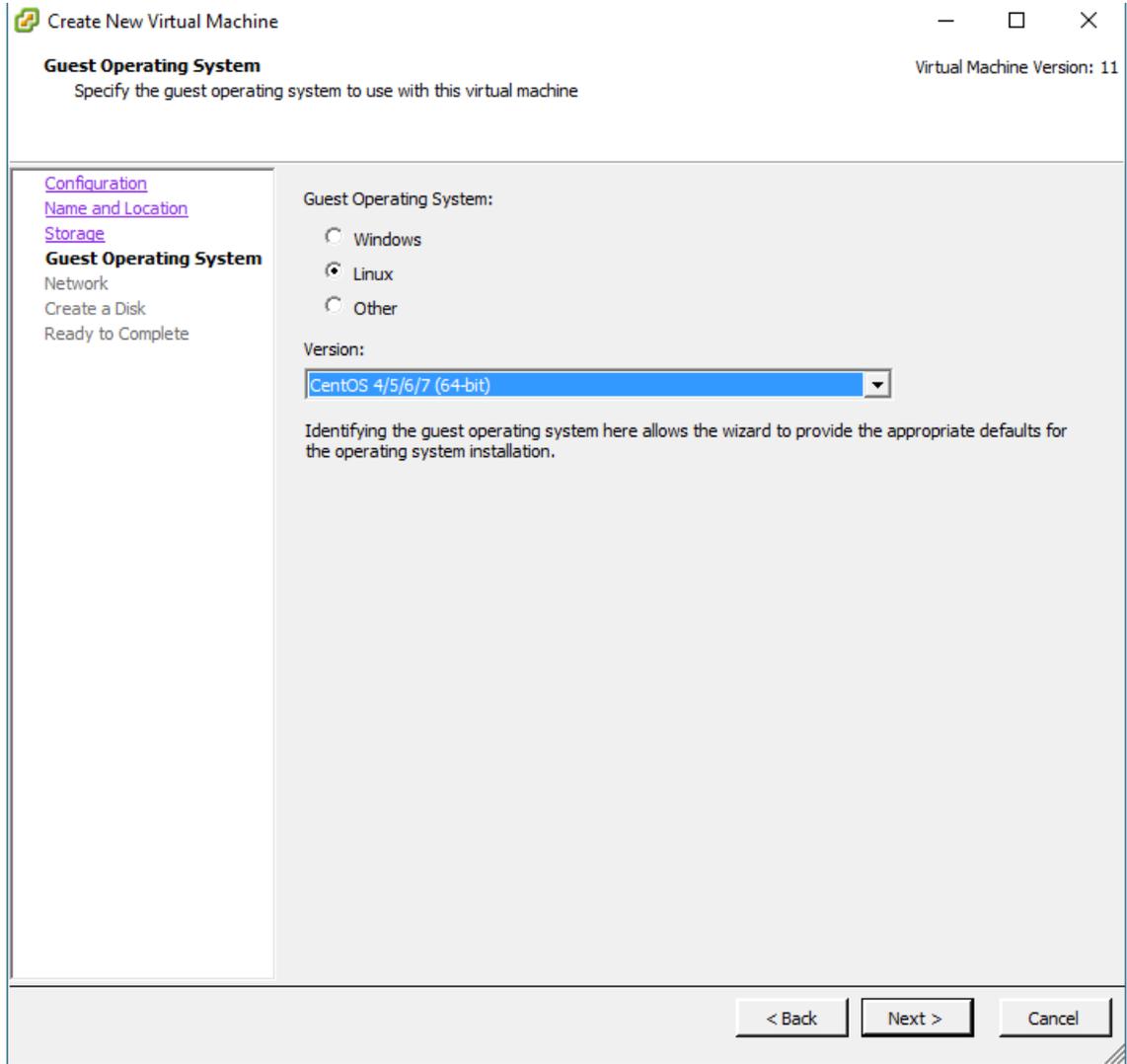


Select a Data Store to use for the System OS disk. This selection will vary depending on the specific configuration. If this is a standalone configuration a local data store can be selected. If this is an ESXi Cluster configuration a shared data store would be used so migration is possible. In this example a standalone configuration is being used.

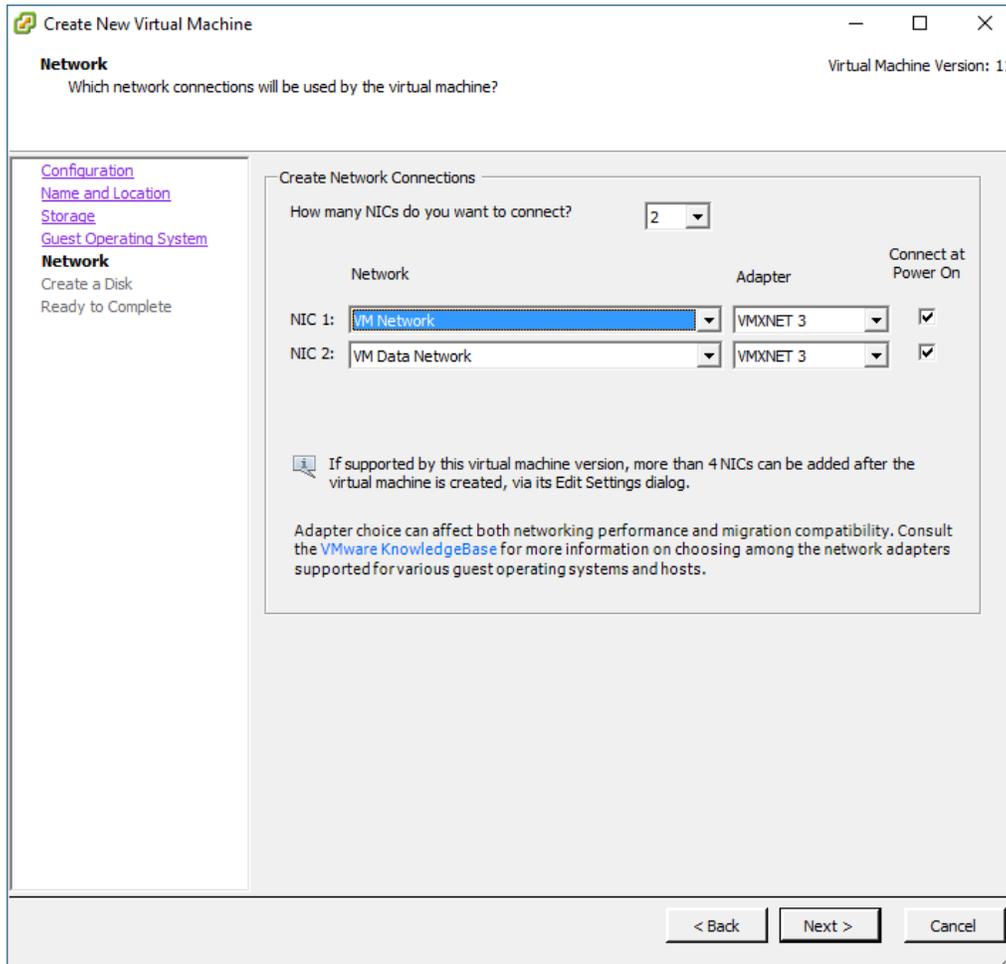
Once selection is made click **Next** to continue.



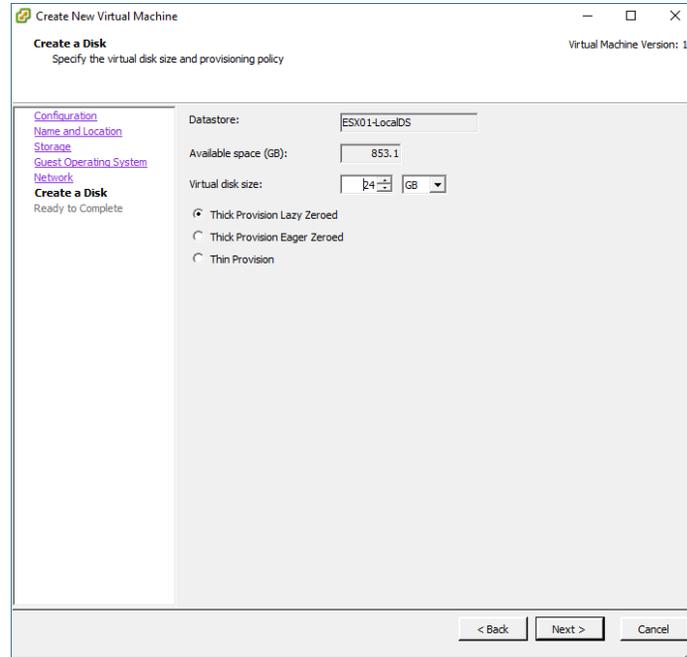
- 4) Check the **Linux** radio button then select **Centos 4/5/6/7 (64-bit)** from the dropdown menu. Once selection is made, click **Next** to continue.



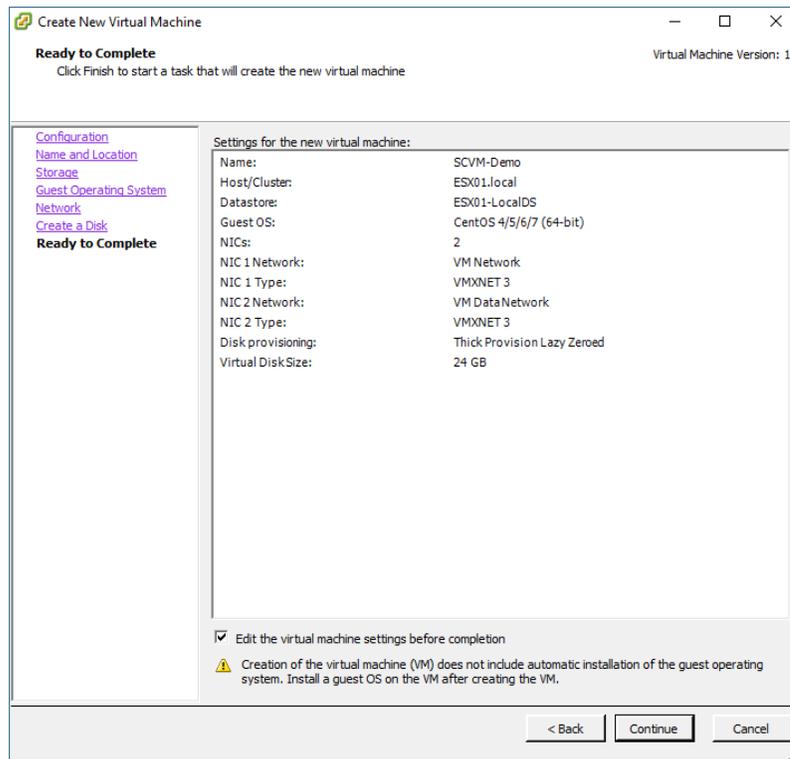
- 5) Enter 2 for “How many NIC’s do you want to connect?”. For “NIC 1:” select **management network**. For “NIC 2:” select **data network**. Select “Adapter” from the dropdown menu. Check both check boxes to “Connect at Power On”. The order of the NIC’s is important. Click on **Next** to continue.



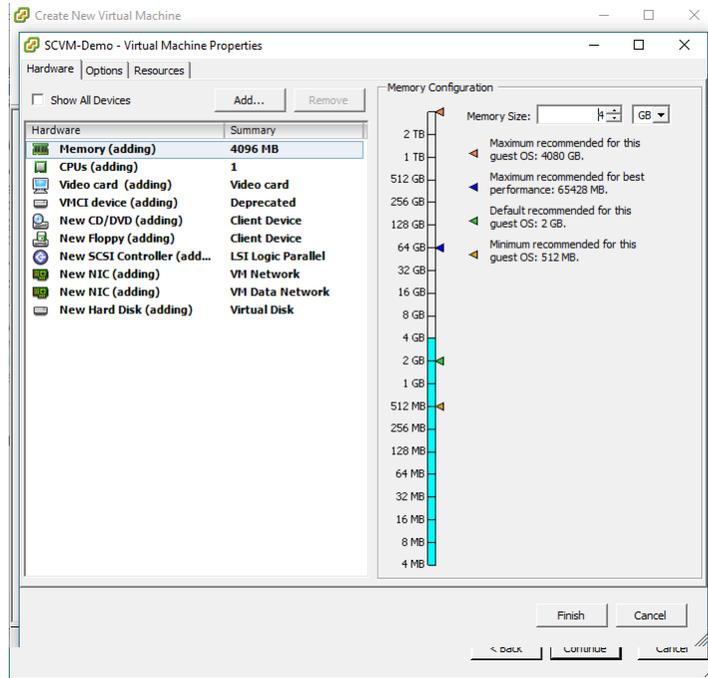
- 6) The minimum OS disk size is 24GB for a base system. Features that require larger OS disk sizes are Deduplication and NAS Volumes. Select the "Virtual disk size". Click on the **Thick Provision Lazy Zeroed** radio button and click **Next** to continue.



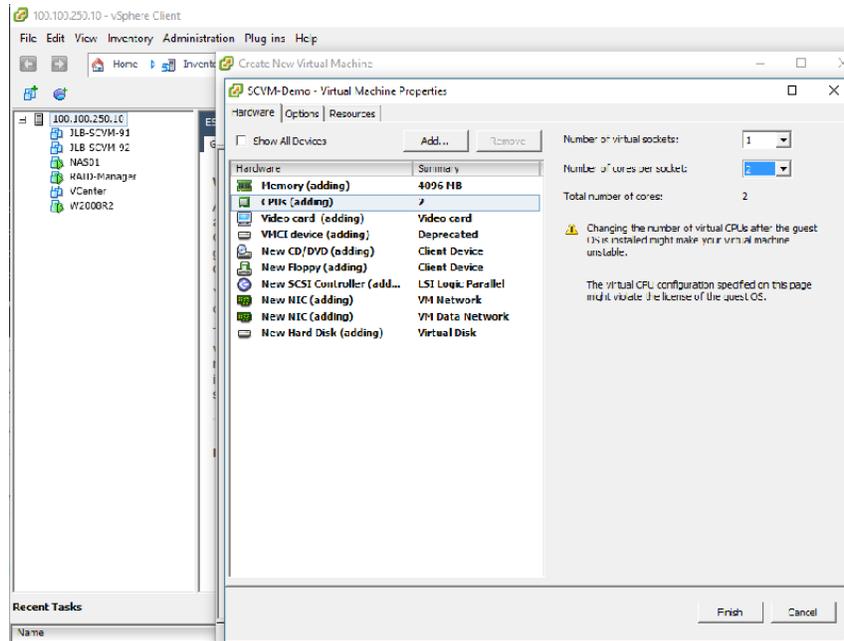
- 7) Check the "Edit the virtual machine settings before completion" box. Click on **Continue** to continue.



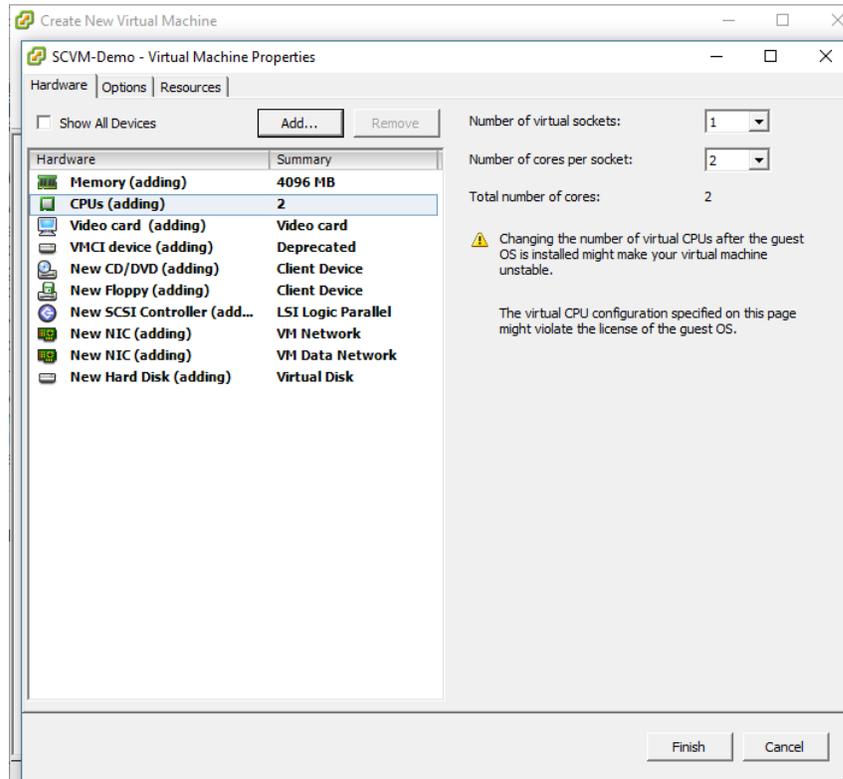
- 8) Click on “Memory” and adjust to 4GB for a base system. Use 6GB for systems using encryption. Systems using deduplication require a larger memory size. This setting can be changed at any time as needed.



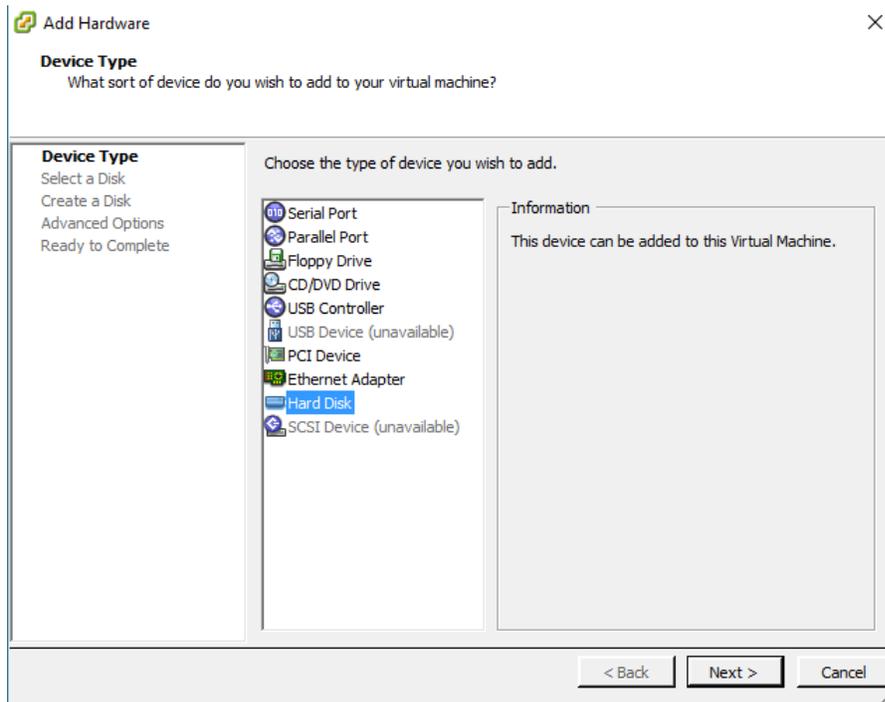
- 9) Click on **CPUs** and select number of CPU’s to use. Number of CPU’s will have an effect on performance. This can be monitored and changed later. 2 CPU’s are recommended for a base system. This can be set using “Number of virtual sockets:” and “Number of cores per socket:” fields.



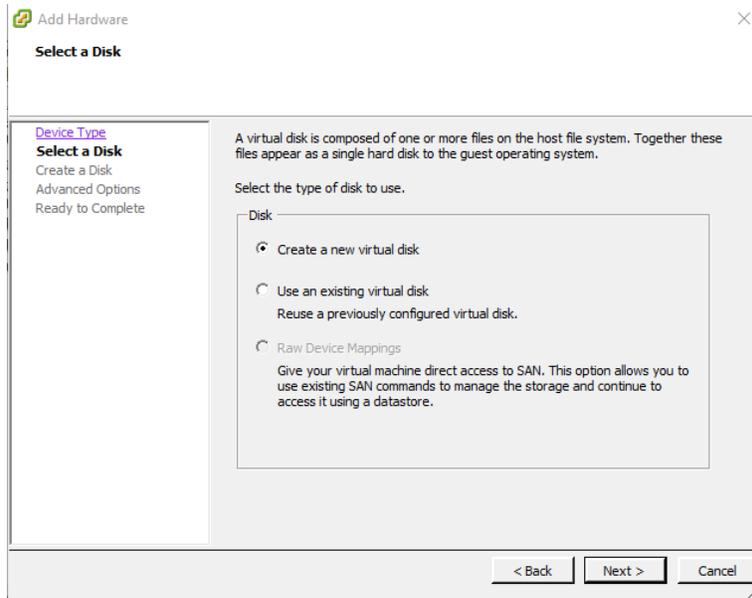
10) Click on "Add..." button.



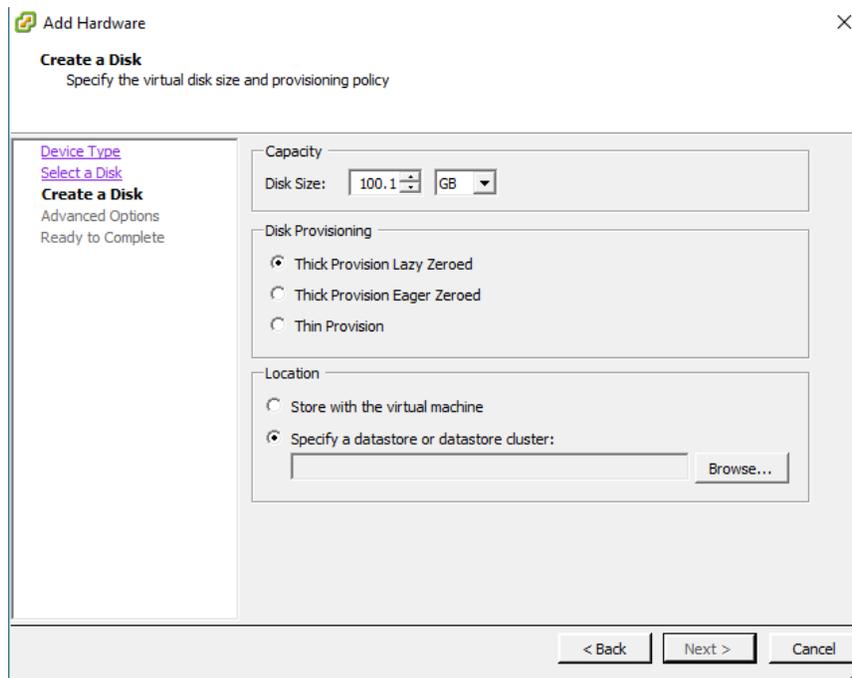
11) Select **Hard Disk** and click on **Next**.

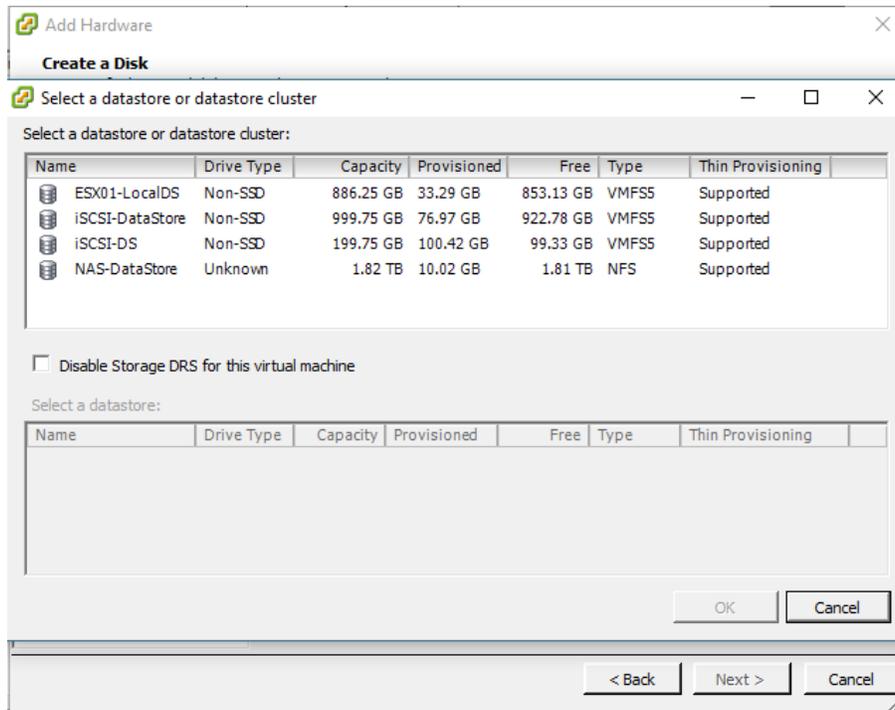


12) Click on **Create a new virtual disk** radio button and click on **Next**.

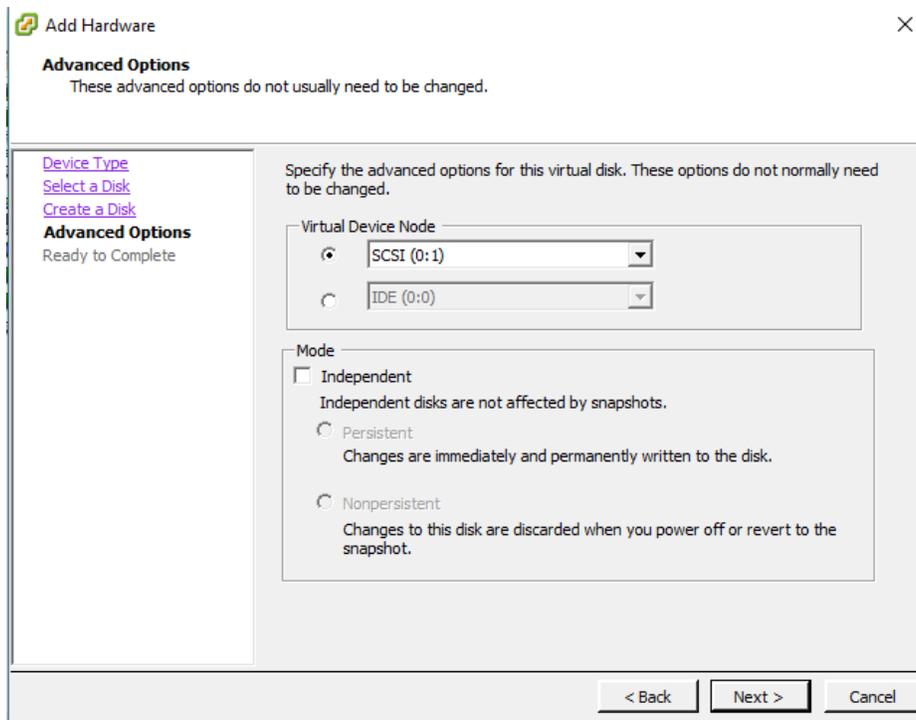


13) SCVM uses the first 64KB of any disk added. Make sure to add this to the required space when creating a new disk. Enter a "disk size". In this example 100.1GB disk will be created. This allows for 100GB of usable disk plus the overhead. Set "Disk Provisioning" to **Thick Provision Lazy Zeroed**. Select "Specify a Datastore or Datastore cluster" and click on **Browse...** to select the Datastore to use. In this example the data store selected is "iSCSI-DataStore". Click on **Next** to continue.

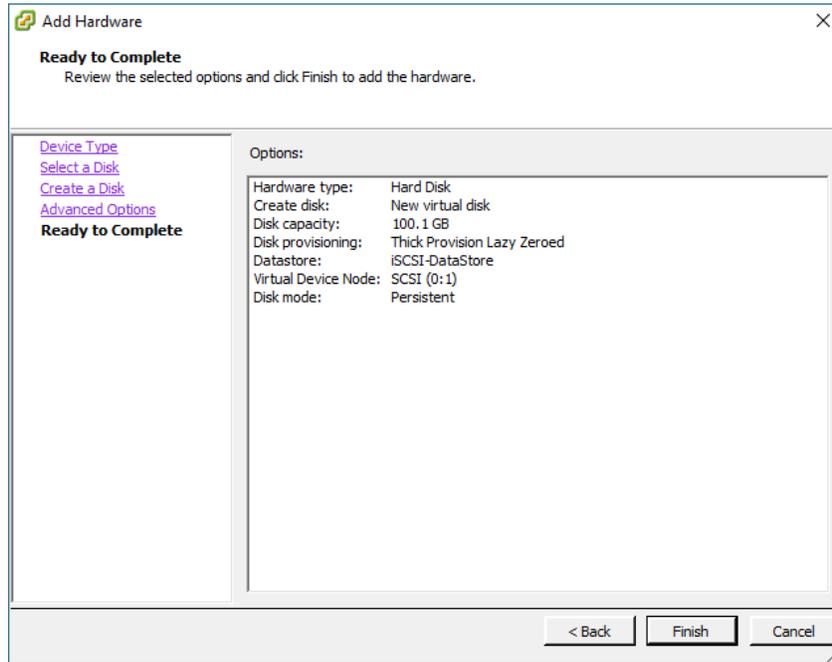




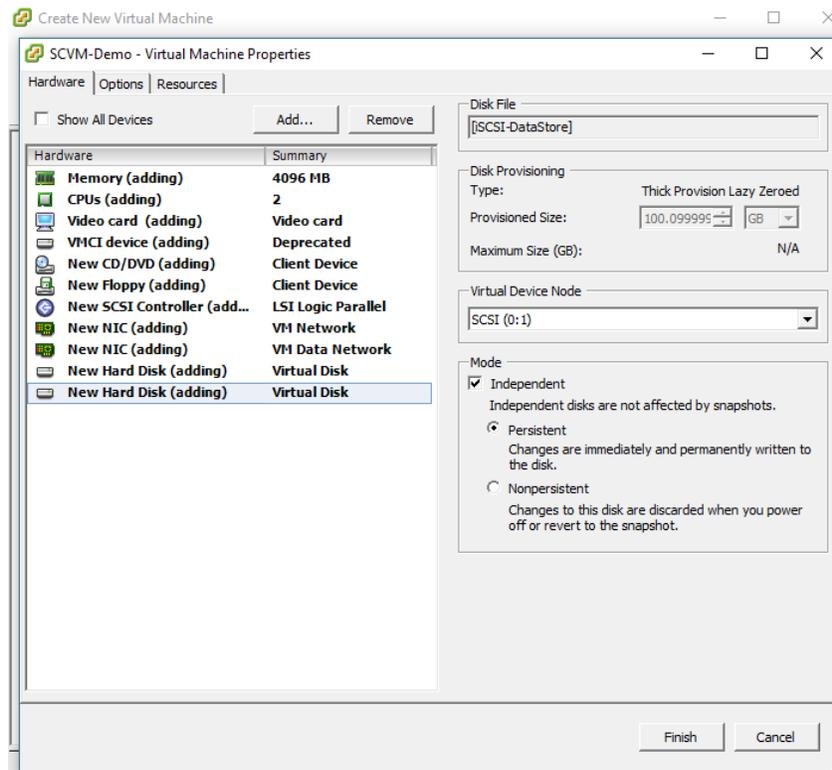
14) Select "Virtual Device Node" SCSI and. This is usually the default setting. Select **Independent** for the "Mode" and click **Next** to continue.



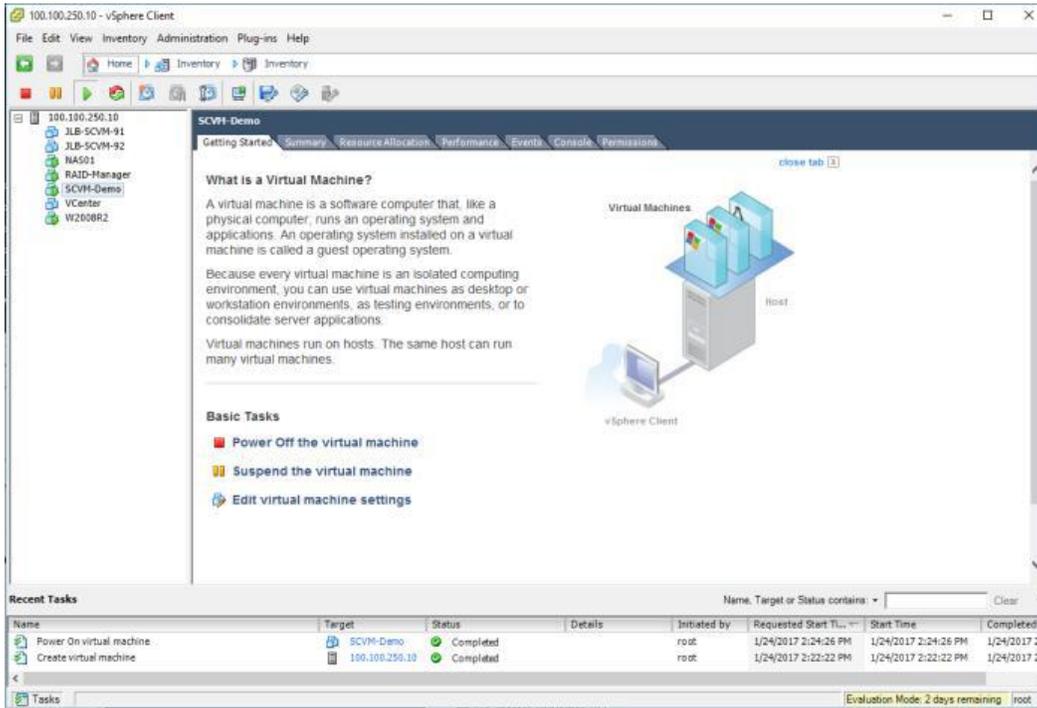
15) Review the settings and click **Finish** to continue.



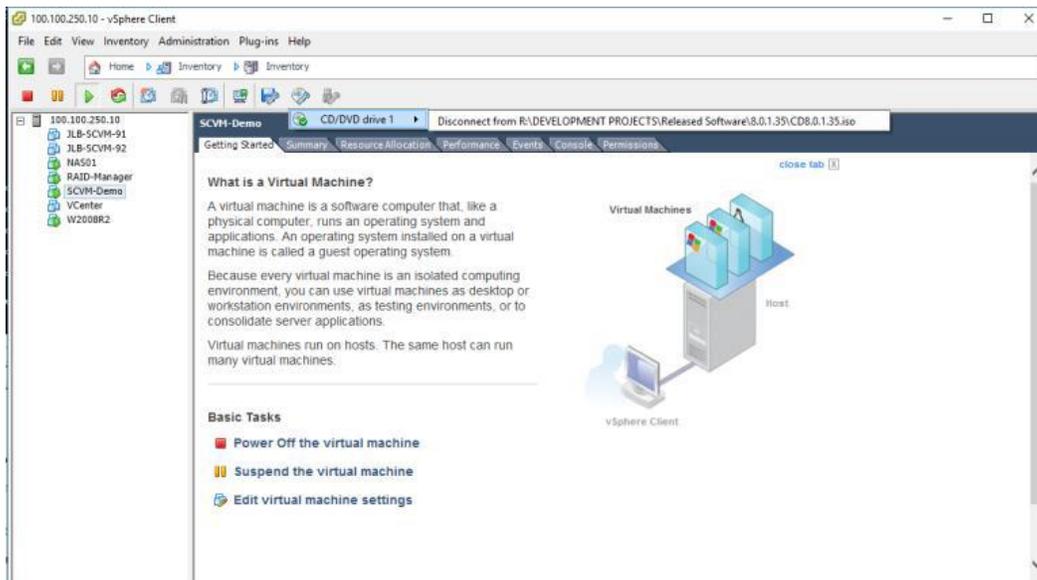
16) Review the settings and click on **Finish**.



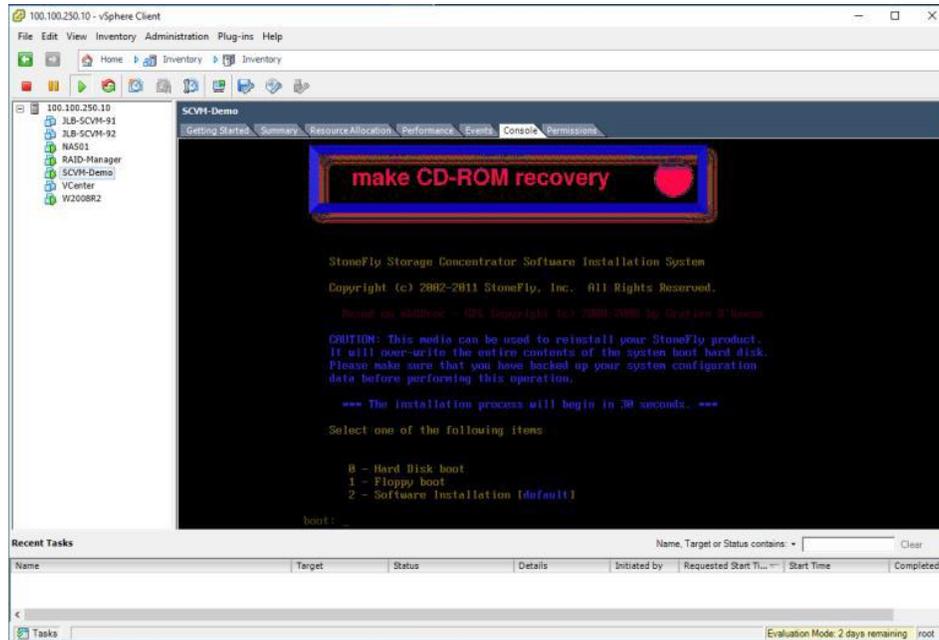
17) Select the new virtual machine and power it on.



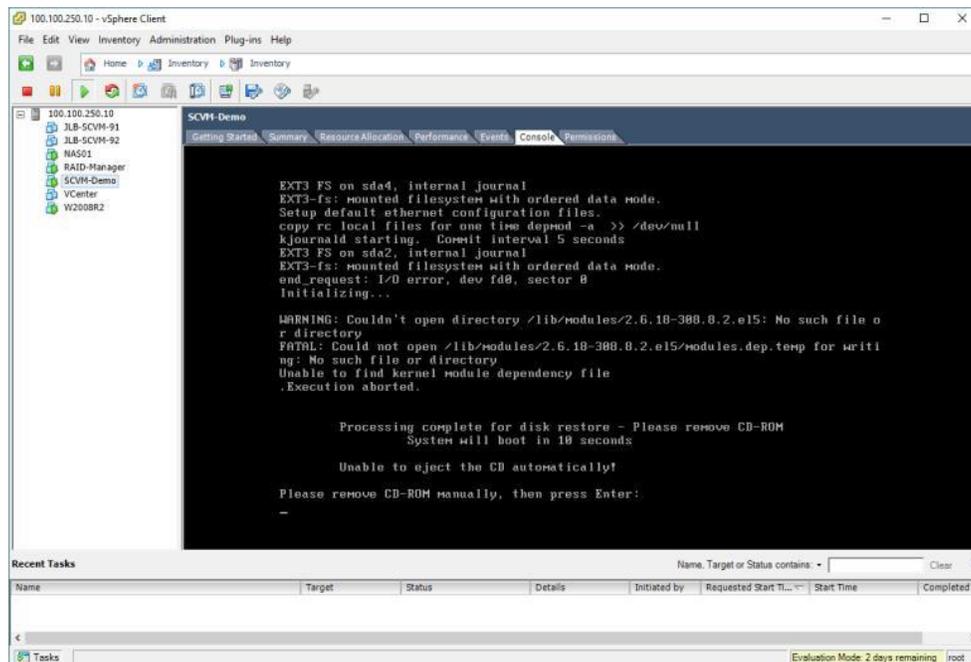
18) Click on the CD ICON in the VSphere Client and select the source for either CD or IOS. In this example the ISO image is selected for the install.



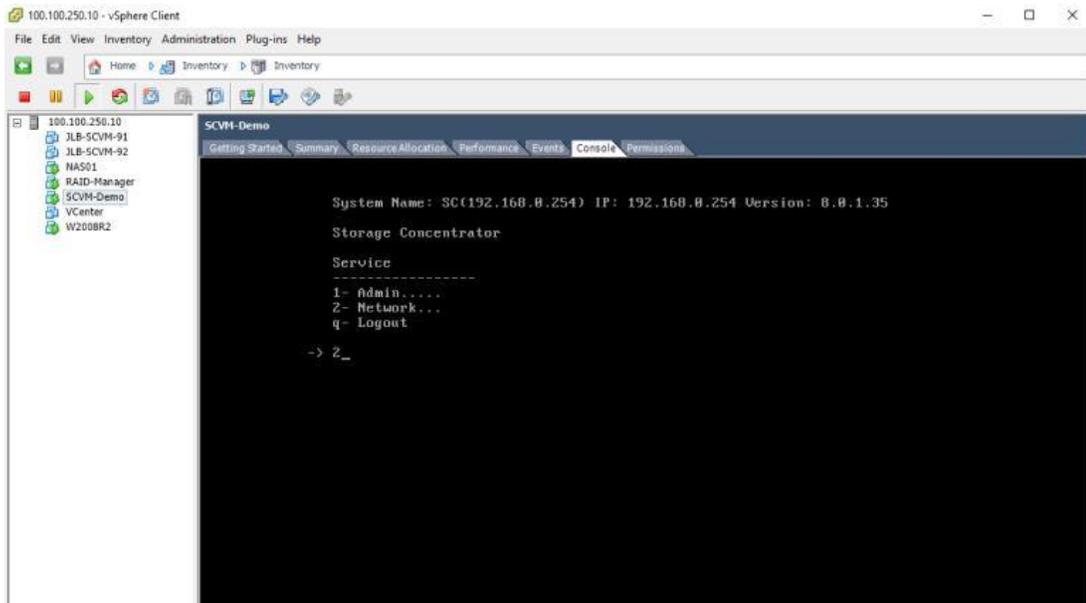
- 19) Click on the **Console** tab for console access. Use Ctrl + Alt _Insert keys to start boot. The screen below shows when the installation starts.



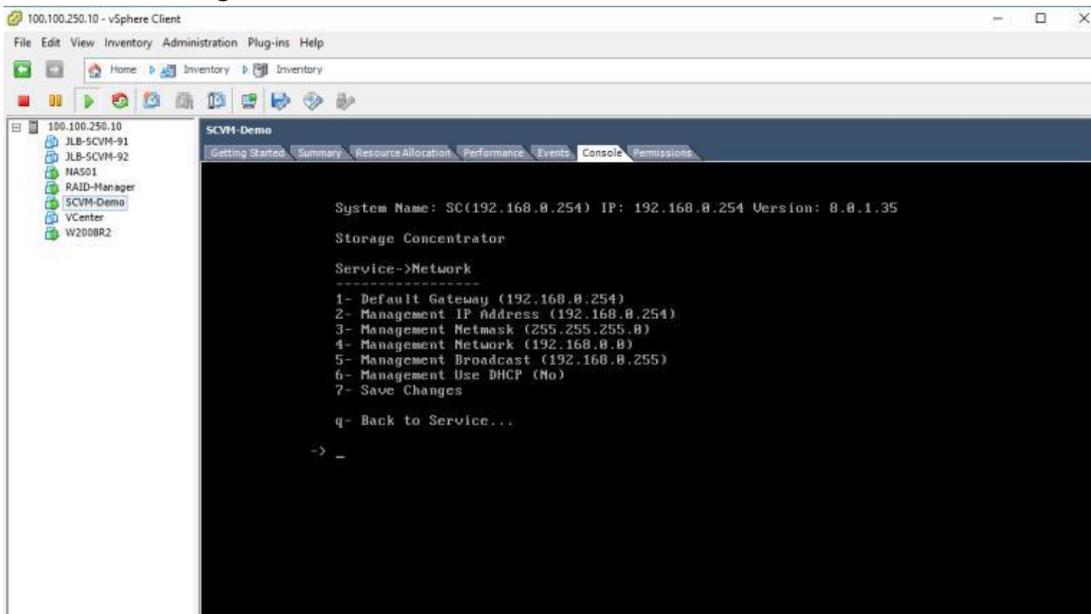
- 20) After the installation has completed, the message "Please remove CD-ROM manually, then press enter" will be shown at the bottom of the console. Click on the CD Icon and disconnect from the drive or ISO. Accept the VMWare disconnect messages and click on console pane and press the **enter** key. The system will boot, wait for the boot to complete.



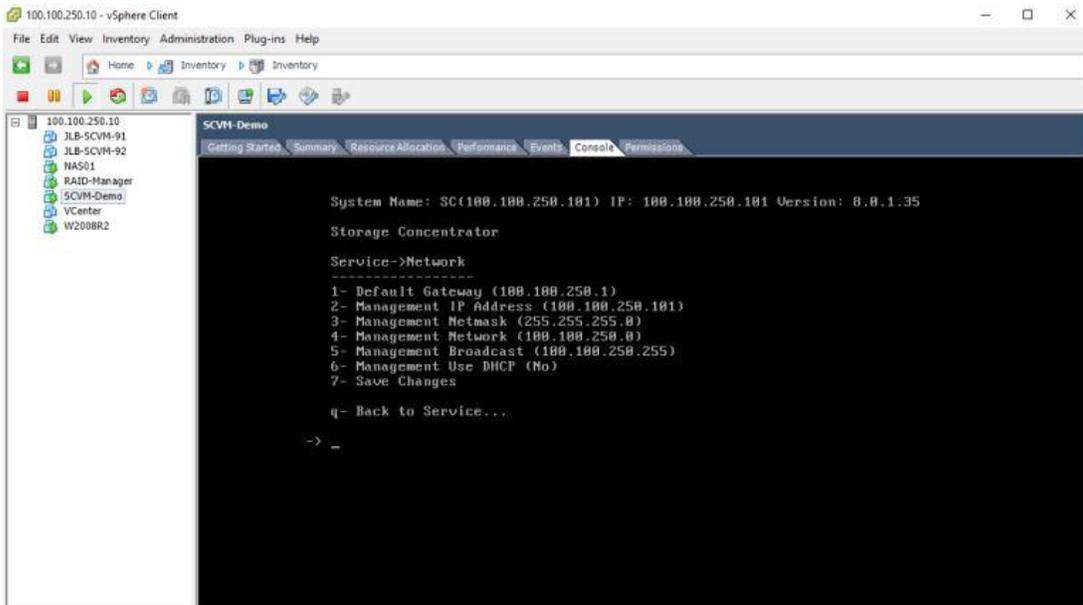
- 21) Wait for the system to complete booting. Login to the user console menu using **UserID:** console and **Password:** con100o. This starts the user service menu. Enter 2 at the -> prompt to configure the Network. Adjust settings as needed then Save the changes. Enter "q" at the command prompt to exit back to the service menu. Enter "q" again to exit out of the user console service.



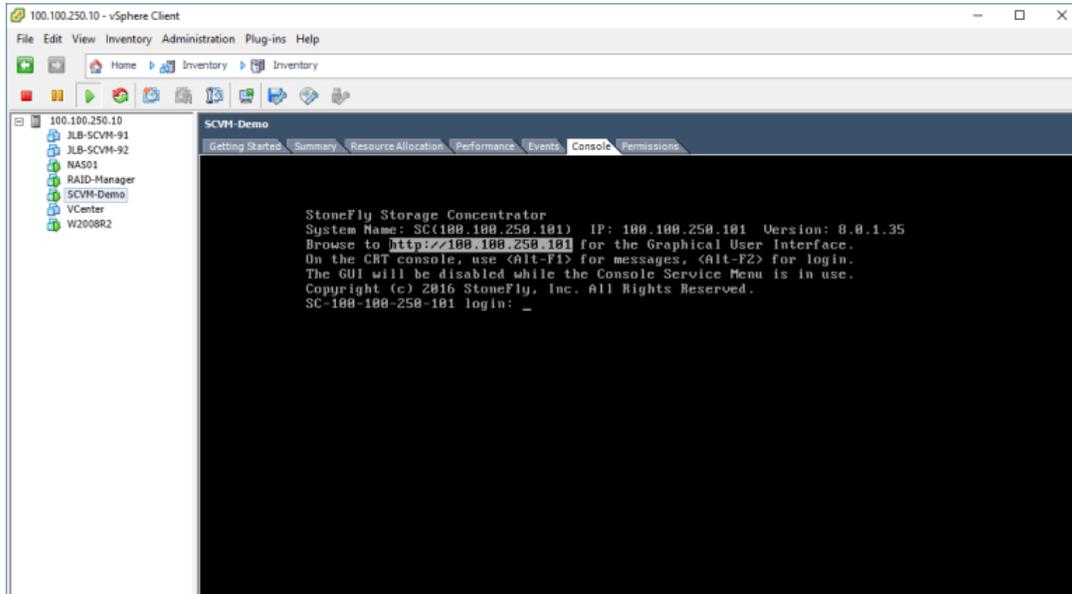
The default settings are shown below.



Adjusted settings are shown below.



Back to console login screen.



4. SCVM Configuration

- 1) Open a browser page and navigate to the IP address configured in the user console menu. The login screen will display.

Login using **User ID:** stonefly and **Password:** stonefly.

'SC(100.100.250.101)' at IP 100.100.250.101

Enter the System Support

User Login

User ID

Password

Your StoneFusion Base OS 45 day evaluation period has only 45 days remaining. Please contact customer support for a license for this product.

Licensing		
System Name	System UUID	Vendor Serial Number
SC(100.100.250.101)	564D79DA-D500-0DA0-426B-4010186C9FB5	00:0C:29:6C:9F:B5
Licensed Feature Name	License Key	
StoneFusion Base OS	SC(100.100.250.101) SC(100.100.250.101) SC(100.100.250.101)	Eval - 45 days left <input style="width: 100%;" type="text"/>

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'SC(100.100.250.101)' at IP 100.100.250.101 Status: Good

Welcome, stonefly! Evaluation 45 days left [Home](#) [Support](#) [Log Out](#)

Volumes
Hosts
Sessions
Resource
NAS
System
Users
Reports

Concentrators

iSCSI IP	NAS SAN IP	NAS LAN IP
		100.100.250.101

Primary

Name: SC(100.100.250.101)
Mgmt IP: 100.100.250.101
iSCSI IP:

Discovered SC's

- NAS01
- SC(100.100.250.101)

Resources

VMware-Virtual disk	Usage		
Path: >01	Used 0 GB	Avail 0 GB	Total 100 GB

Used
 Available
 Not managed

- 2) The default User ID's are stonefly for **administrative users** and demo for **observer**. The default passwords should be changed on first login to secure the system. To change the passwords navigate to Users->detail page, **Select User** and enter the new password and click on **Submit**. This should be performed for both default User IDs.

The screenshot shows the StoneFly SCVM web interface. At the top, there is a navigation bar with 'Welcome, stonefly!', 'Evaluation - 45 days left', and links for 'Home', 'Support', and 'Log Out'. Below this is a header section with the StoneFly logo, the text ''SC(100.100.250.101)' at IP 100.100.250.101', and a 'Status: Good' indicator. A main menu bar contains 'Volumes', 'Hosts', 'Sessions', 'Resources', 'NAS', 'System', 'Users', and 'Reports'. Underneath, a 'User Management' section has tabs for 'Summary', 'Detail', and 'Add User'. The 'Users' section is active, showing a 'Select User' dropdown menu with 'stonefly' selected. Below this is the 'Edit User stonefly' form, which includes fields for 'Log In' (containing 'stonefly'), 'Administration Level' (with radio buttons for 'Administrative (All)' and 'Observer'), 'Password', and 'Confirm Password'. A green 'Submit' button is located at the bottom of the form. The footer of the page contains the copyright notice: 'Copyright© 2002-2016 StoneFly, Inc. All Rights Reserved.'

- 3) Navigate to System->Network->Local iSCSI Data Port page. **Enter** the “Local Host GbE IP Address” and click on **Submit**. Review the popups and click on **accept**. The Data network must not be the same network as the one used on the management network.

Welcome, stonefly! Evaluation: 45 days left! Home Support Log Out

'SC(100.100.250.101)' at IP 100.100.250.101 Status: Good

Volumes	Hosts	Sessions	Resources	NAS	System	Users	Reports
System Management							Help
Information	Admin	Network	Target Portals	Diagnostics	Notifications	UPS	Fibre Channel

Local iSCSI Data Port | Management Port | Routing

Local iSCSI Data Port Settings

Use Jumbo Frames

Local Host iSCSI Listening Port:

Local Host GbE IP Address:

Net Mask:

[Advanced: Network:Erracctst](#)

Undo Submit

Select Concentrator

Network Interfaces

Id	Port	IP Address / Network	MAC Address	Lnk	Cur Speed	Dupl	Type	Max Speed	Stats
1d	1		00:0c:29:6c:9f:b1	Up	10Gb/s	Full	vmxnet3	10Gb/s	Stats

Ping Address

Ping Address: Count: Ping

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100.100.250.101 says:

Automatically calculated values:
 Network = 192.168.101.0
 Broadcast = 192.168.101.255
 If other values are required, please use the advanced feature.

OK

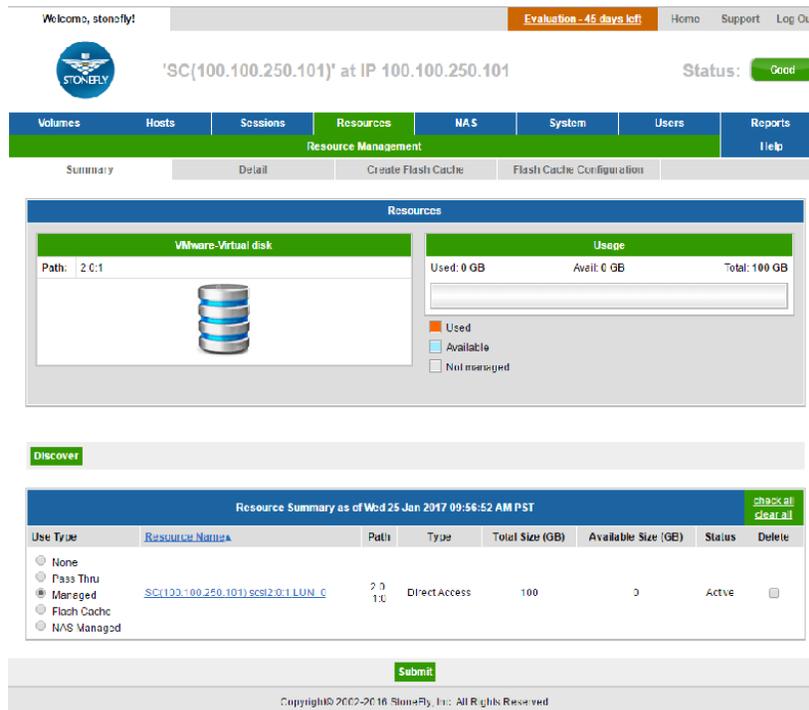
100.100.250.101 says:

Changing the iSCSI Data Port settings could affect hosts that are currently logged onto volumes.
 Continue with setting change?
 If so, update affected hosts of the new settings at 192.168.101.101:3260.

Prevent this page from creating additional dialogs.

OK Cancel

- 4) Navigate to Resources->Summary page. A list of available resources will be displayed. The "Use Type" must be set before a resource can be used. Use Type of **Managed** is the most common, this allows for iSCSI and NAS volume creation plus Advanced Features based upon licensing. **Pass Thru** is only used when migrating existing data into a StoneFly volume and should only be used temporarily. **Flash Cache** is only used when higher speed storage is available to cache write operation for a slower speed resource. **NAS_Managed** can only be used to create NAS volumes and cannot be split into multiple volumes. In most cases the "Use Type" of **Managed** should be selected. Select the "Use Type" and click on the **Submit** button.



The configuration is complete at this point. iSCSI or NAS volumes can be created as needed.

5. Available Features

The Storage Concentrator User Guide is available to discover more features available. Some of the available features are listed below.

High availability Cluster

This feature allows for the creation of an Active-Active Cluster of 2 SCVM's. This allows for maintenance on 1 system while the other remains active for host utilization.

Scale Out

This feature allows for expanding NAS volumes while distributing workloads between multiple Storage Concentrators. Scale Out node can be created across SCVM and physical hardware.

iSCSI

iSCSI volumes can have snapshots, sync mirroring, Async replication, thin volumes, encryption and deduplicated volumes.

NAS

NAS volumes can be configured with snapshots.



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