Exercise 3: Configuring iSCSI in a Storage VM

In this exercise, you use best practice tools to create a simple iSCSI server in a storage VM.

Objectives

This exercise focuses on enabling you to do the following:

- Check the iSCSI Software Initiator name
- Use NetApp ONTAP System Manager to configure a storage VM for iSCSI
- Configure the iSCSI Software Initiator on the Microsoft Windows host
- Access the iSCSI-attached LUN on the Windows host

Case Study

Mr. Zarrot has decided to use some of the additional storage space on the NetApp system to store Zarrot Industries new manufacturing robot application data.

To better control access to this critical data, you create a new storage VM and provision storage space.

You grant the application servers access to the provisioned storage space and configure their access.

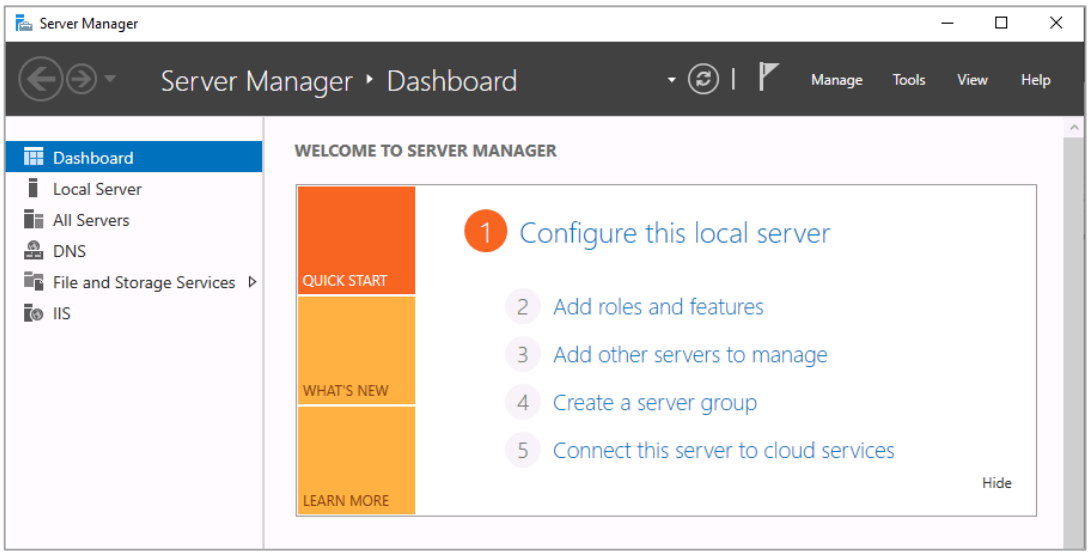
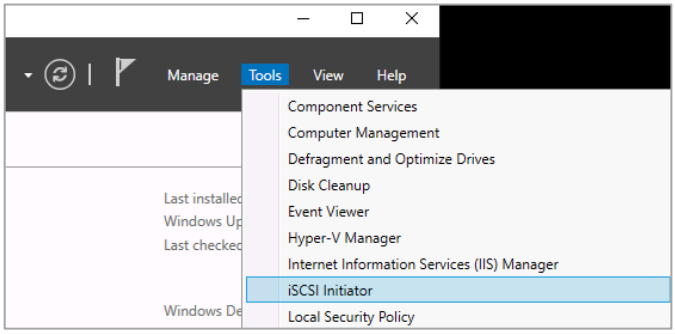
Lab Equipment

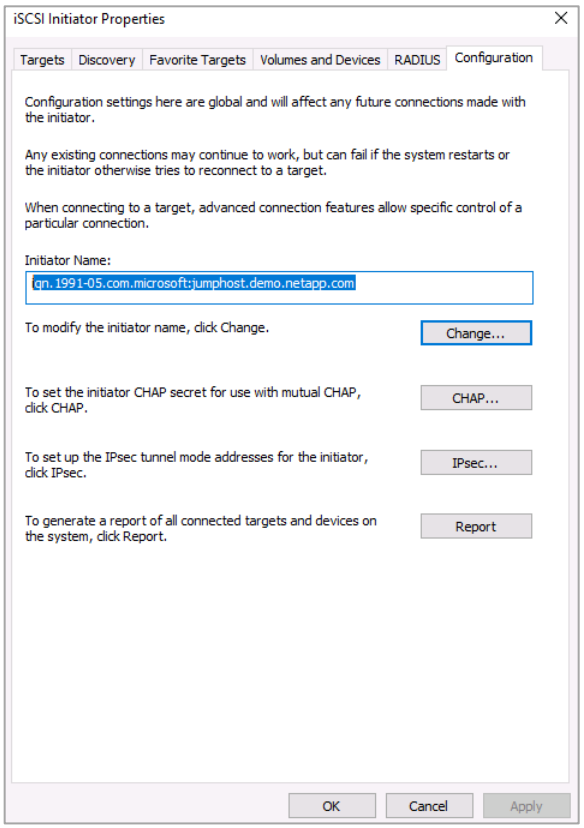
Use the following equipment to complete the exercise:

System	Host Name	IP Addresses	User Name	Password
Windows Server	jumphost	192.168.0.5	DEMO\Administrator	Netapp1!
ONTAP cluster-management LIF (cluster2)	cluster2	192.168.0.102	admin (case-sensitive)	Netapp1!

Task 1: Check the iSCSI Software Initiator Name

Step	Action
1-1	On the Windows desktop, click the Server Manager icon. 

Step	Action
1-2	Wait while Server Manager opens. 
1-3	From the top-right of the Server Manager dashboard, select **Tools > iSCSI Initiator**. 

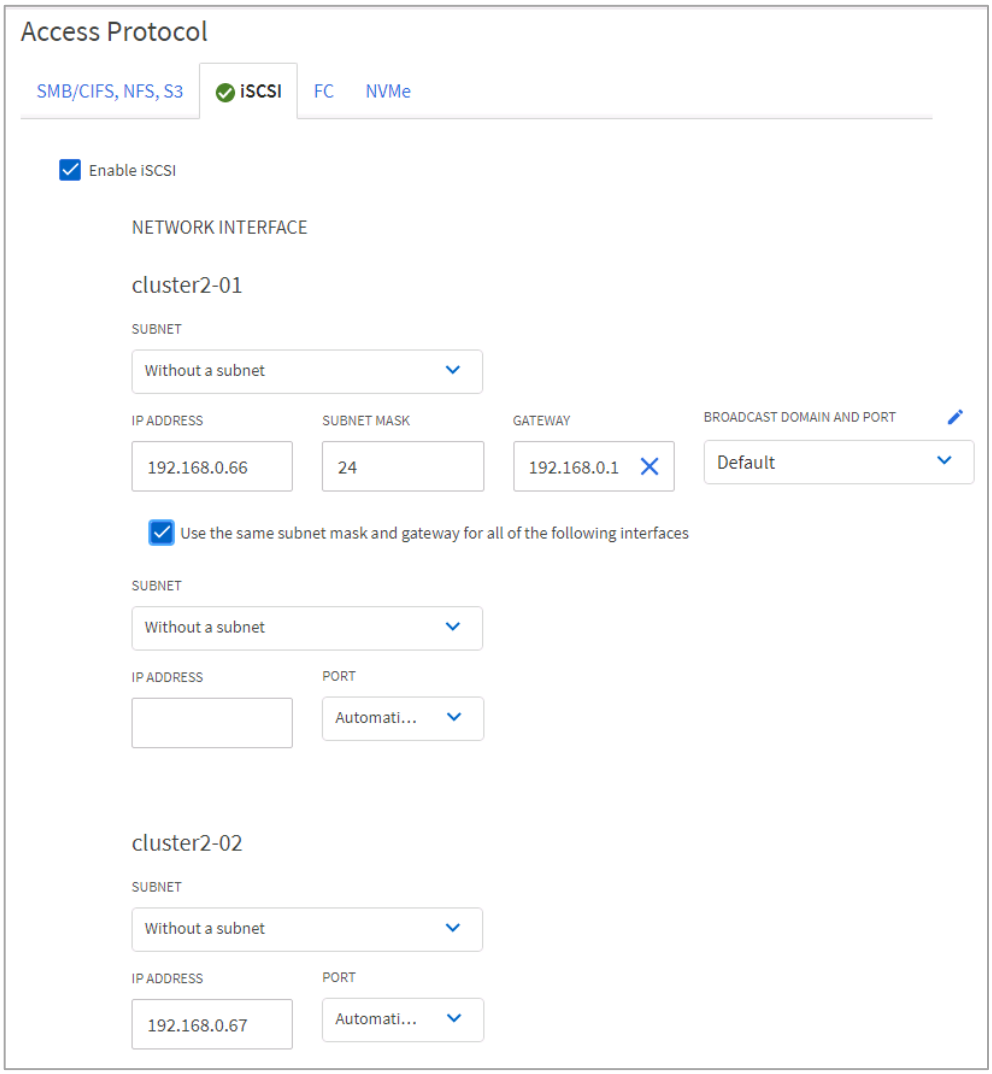
Step	Action
1-4	When the iSCSI Initiator Properties dialog box appears, click the **Configuration** tab. 
1-5	Record and save the Initiator Name here and to a text file on the desktop. The Initiator Name is an iSCSI Qualified Name (IQN). Initiator Name: _____
1-6	Leave the iSCSI Initiator Properties dialog box open.

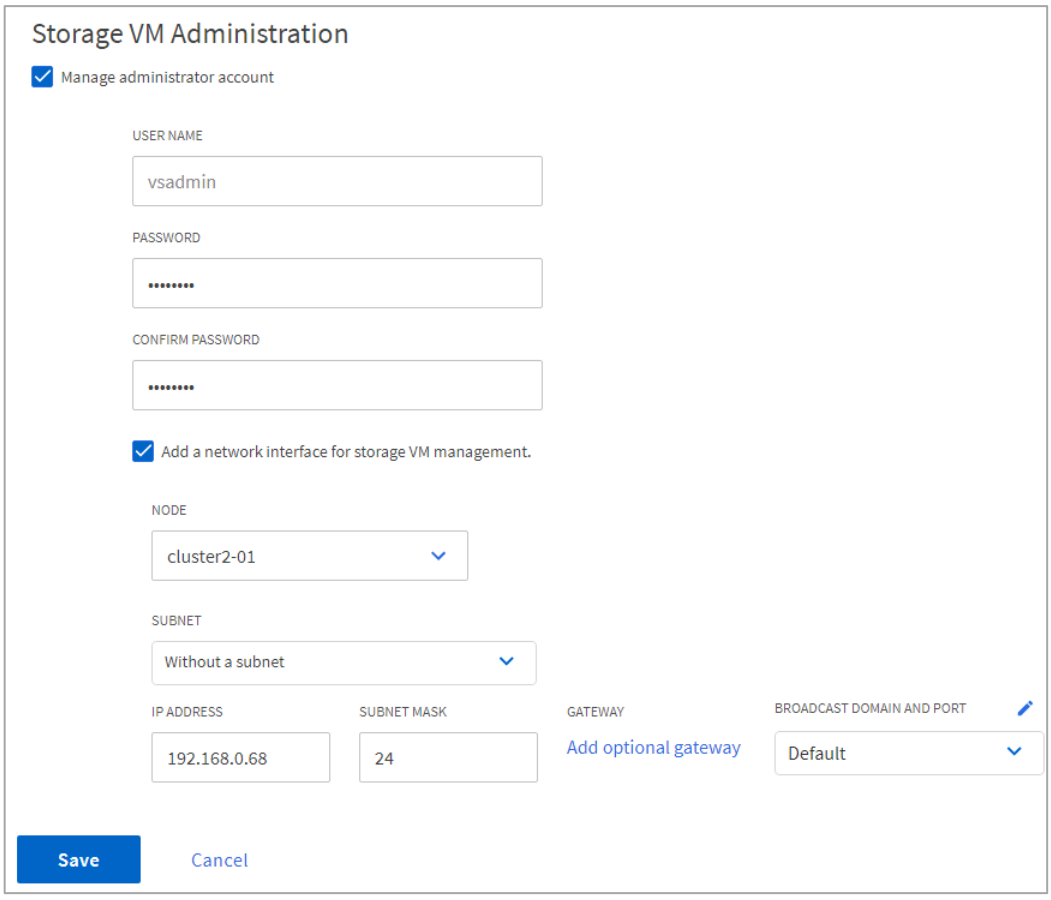
Task 2: Use System Manager to Configure an SVM for iSCSI

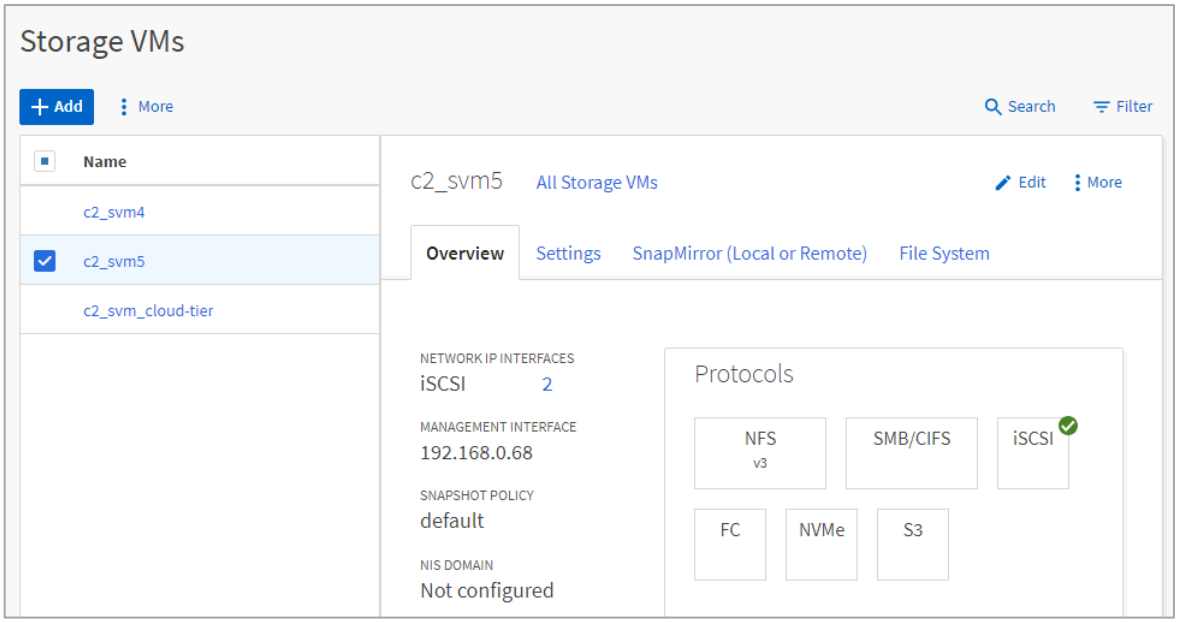
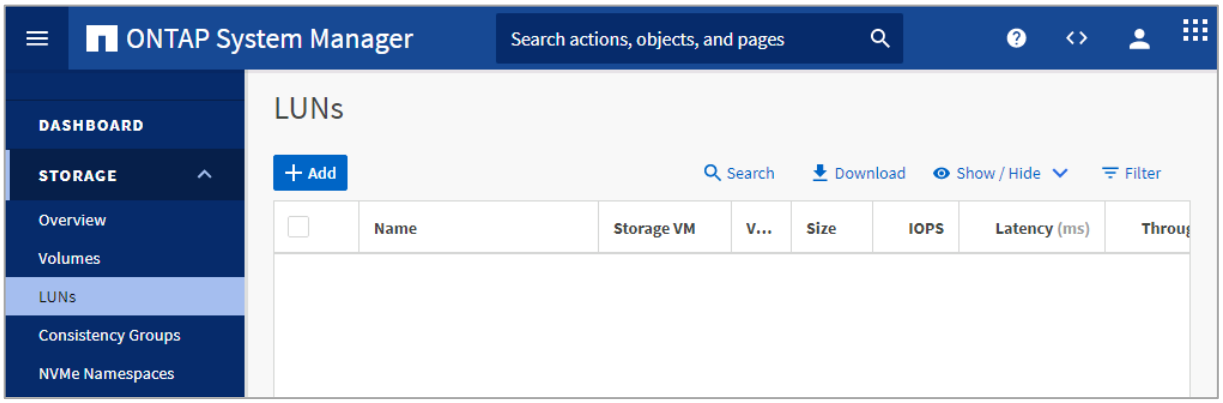
Step	Action
2-1	Return to the System Manager session for cluster2.
2-2	From the System Manager menu, select **Storage > Storage VMs**.
2-3	Click **Add** to create a new storage VM.

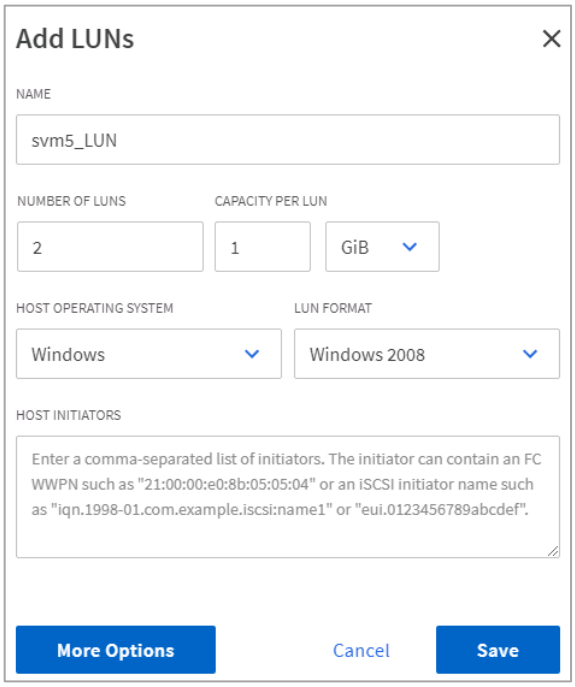
Step	Action
2-4	On the Add Storage VM page, specify the following settings: • SVM Name: **c2_svm5** • IPspace: **Default** (default) 

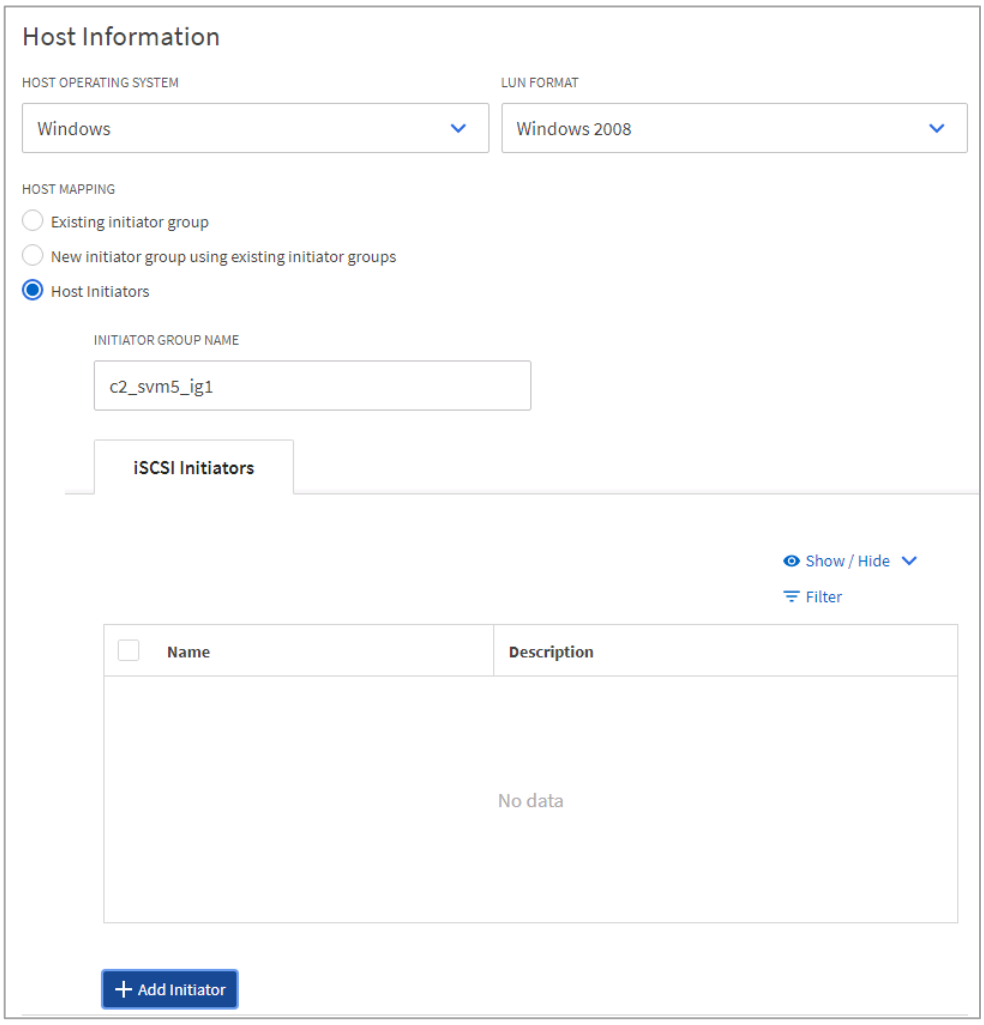
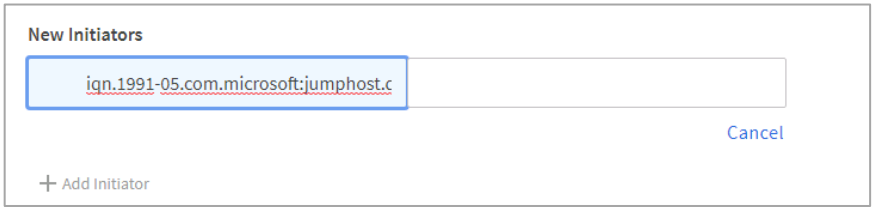
Step	Action

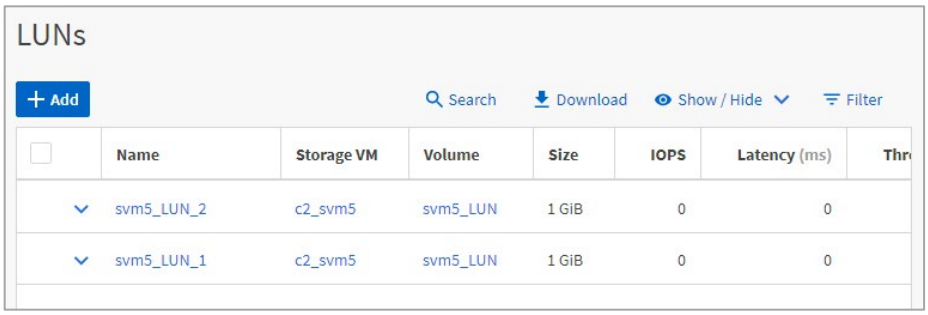
2-5	In the Access Protocol section, click the **iSCSI** tab, and then specify the following settings:
	• Enable iSCSI: **<selected>**
	• Cluster2-01:
	  • Subnet: **Without a subnet** (default)
	  • IP Address: **192.168.0.66**
	  • Subnet Mask: **24**
	  • Gateway: **192.168.0.1** (default)
	  • Broadcast Domain and Port: **Default**
	  • Use the same subnet mask and gateway for all of the following interfaces **<selected>**
	• Cluster2-02:
	  • Subnet: **Without a subnet** (default)
	  • IP Address: **192.168.0.67**
	  • Port: **Automatically select a home port (recommended)** (default)
	 

Step	Action
2-6	In the Storage VM Administration section, specify the following settings: • Manage administrator account: **<selected>** • User Name: **vsadmin** (default) • Password and Confirm Password: **Netapp1!** • Add a network interface for storage VM management: **<selected>** • Node: **cluster2-01** (default) • Subnet: **Without a subnet** (default) • IP Address: **192.168.0.68** • Subnet Mask: **24** • Gateway: **192.168.0.1** (default) • Broadcast Domain and Port: **Default** 
2-7	You cannot manage storage VMs through SAN data LIFs. You must create a management LIF if you intend to delegate management of a storage VM.
2-8	Click **Save**.

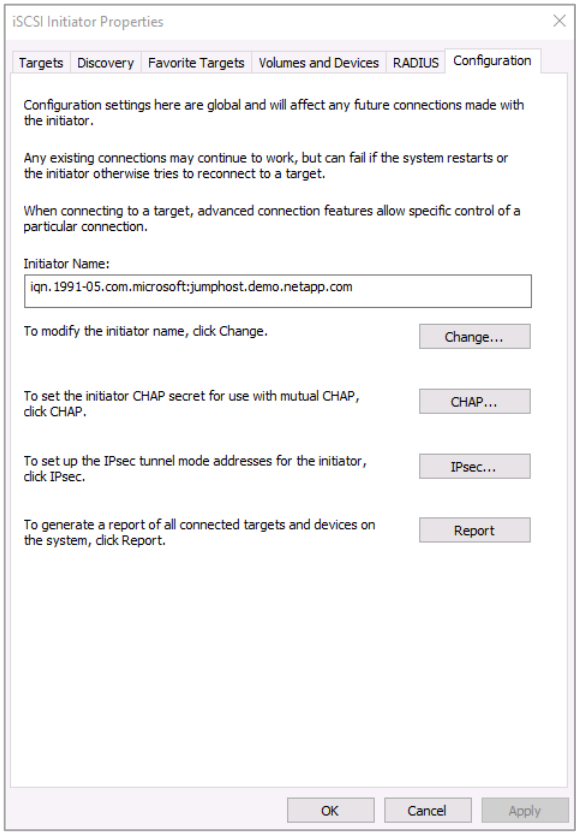
Step	Action
2-9	On the list of storage VMs, select **c2_svm5**, and then verify that the iSCSI protocol is enabled for the storage VM. 
2-10	From the System Manager menu, select **Storage > LUNs**, and then click **Add**. 

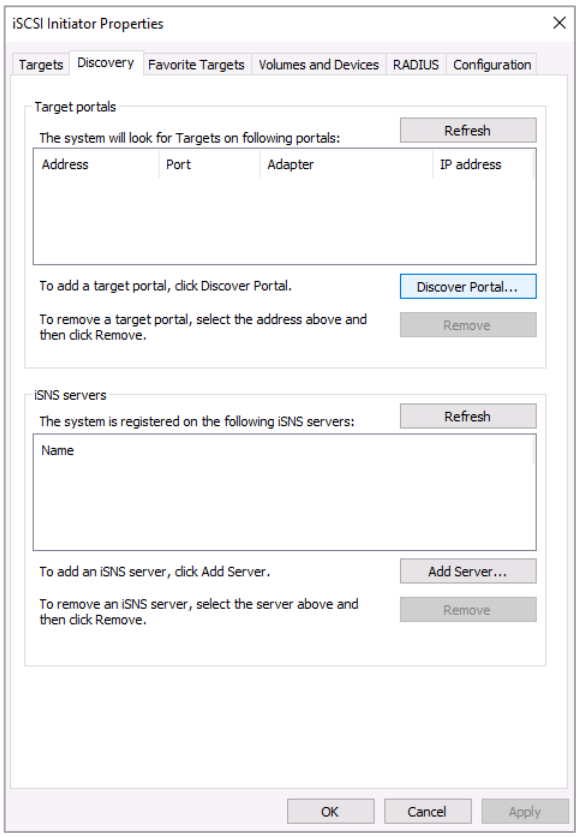
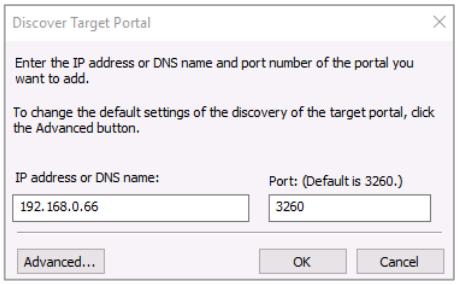
Step	Action
2-11	In the Add LUNs dialog box, specify the following settings: • Name: **svm5_LUN** • Number of LUNs: **2** • Capacity: **1 GiB** • Host Operating System: **Windows** (default) • LUN Format: **Windows 2008** (default) 
2-12	Click **More Options**.

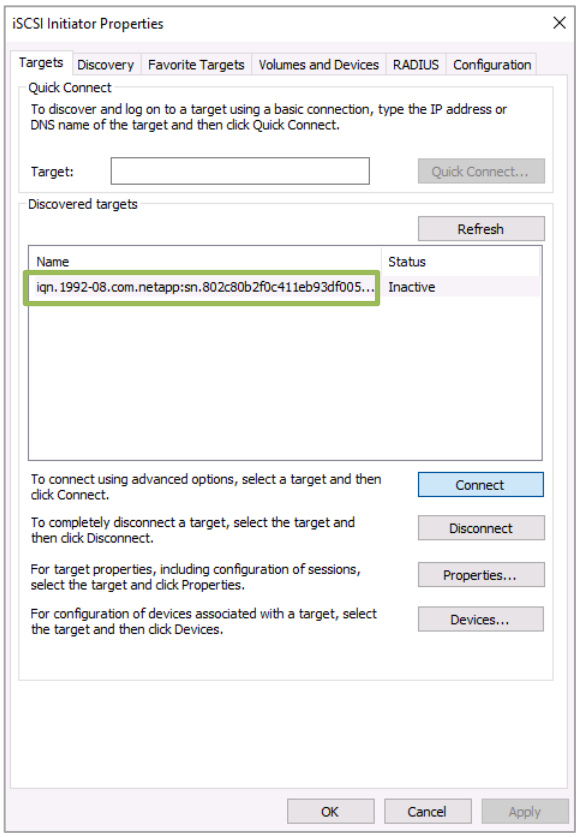
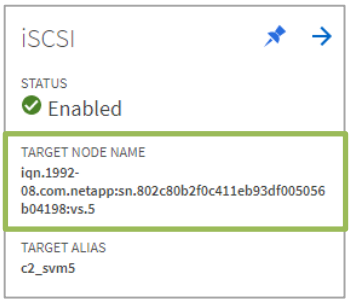
Step	Action
2-13	On the Add LUNs page, scroll to the Host Information section, and then specify the following settings: • Host initiators: **<selected>** (default) • Initiator Group Name: **c2_svm5_ig1** 
2-14	Click **Add Initiator**.
2-15	Copy the Windows host iSCSI Initiator Name value, that you saved in step 2-3, to your clipboard.
2-16	In the New Initiators field, paste the IQN of the client host to include the host in the new initiator group. 
2-17	Click **Save**.

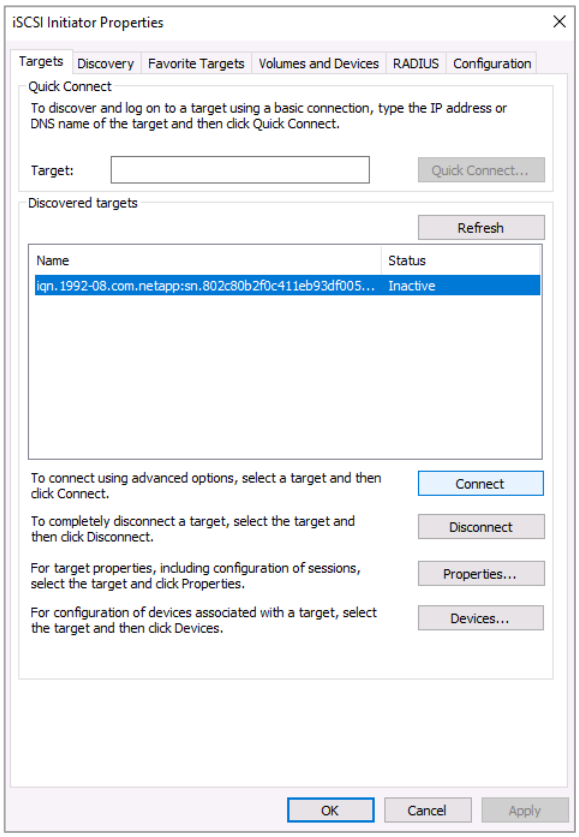
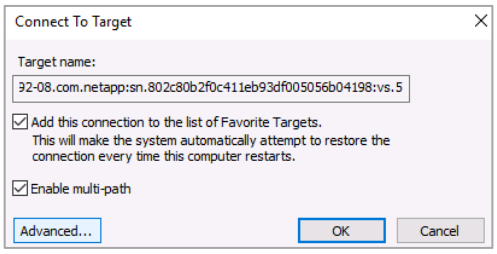
Step	Action
2-18	Verify the creation of the LUNs. 

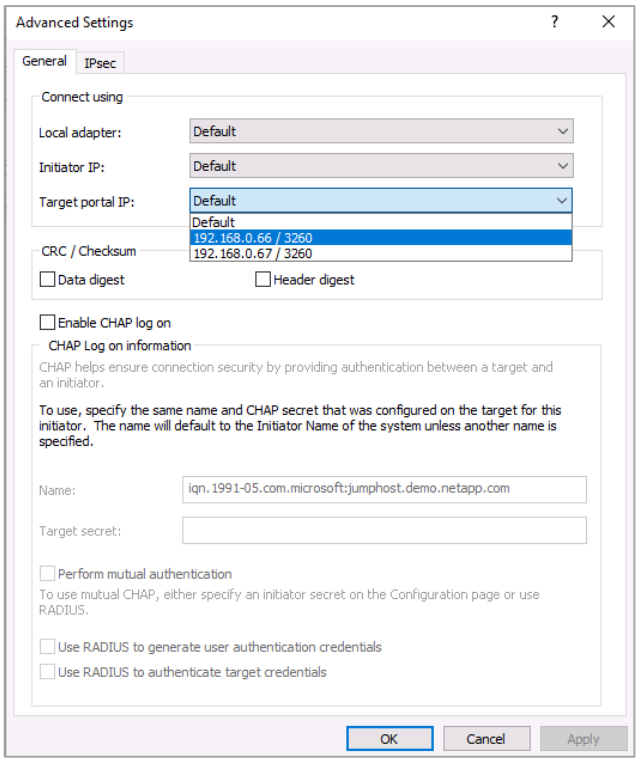
Task 3: Configure the iSCSI Software Initiator on the Windows Host

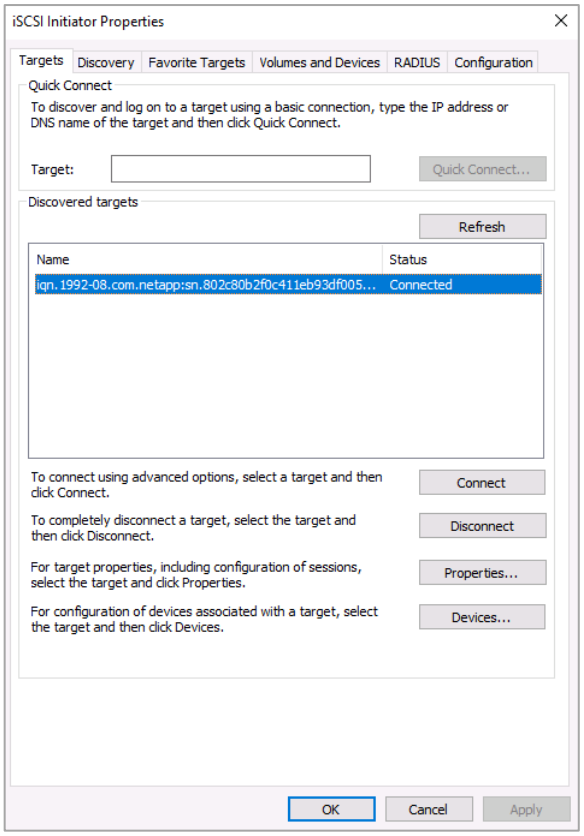
Step	Action
3-1	Return to the iSCSI Initiator Properties dialog box on the Windows jump host. 

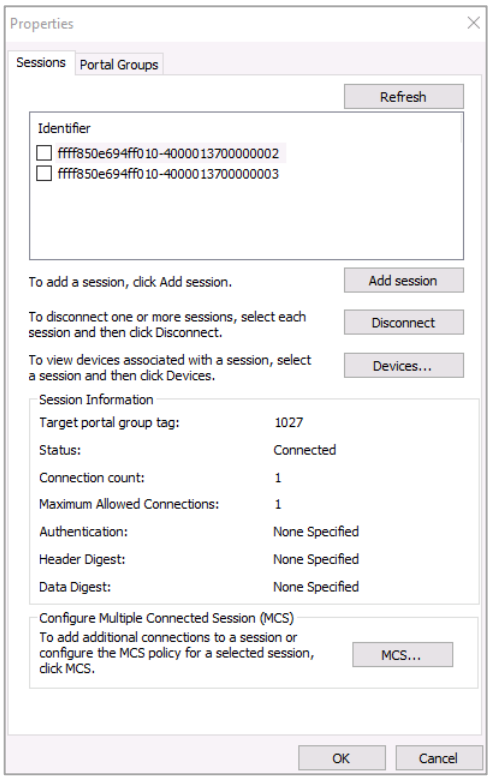
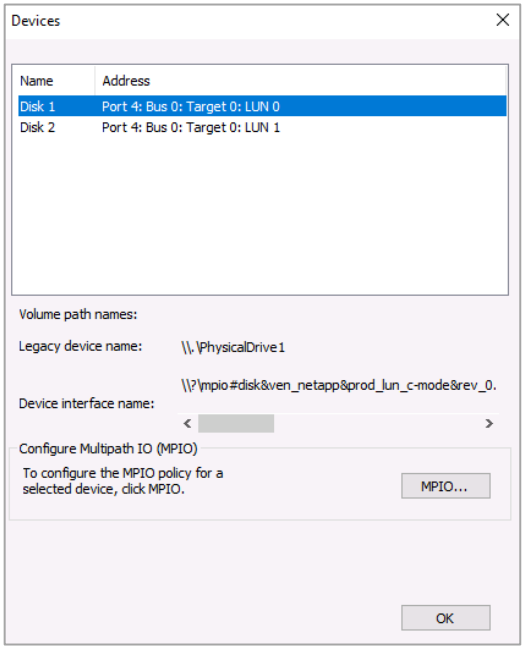
Step	Action
3-2	Click the **Discovery** tab. 
3-3	Click **Discover Portal**.
3-4	In the Discover Target Portal dialog box, specify the following settings: • IP address or DNS name: **192.168.0.66** • Port: **3260** 
3-5	Click **OK**.

Step	Action
3-6	Click the **Targets** tab, and then note the IQN names. 
3-7	In System Manager, from the Menu, select **Storage > Storage VMs**.
3-8	Click **c2_svm5**, and then click the **Settings** tab.
3-9	Verify that the iSCSI Target Node Name matches a node name from the list of discovered targets in the iSCSI Initiator Properties dialog box. 
3-10	Return to the iSCSI Initiator Properties dialog box on the Windows jump host.

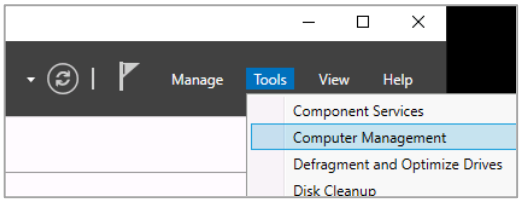
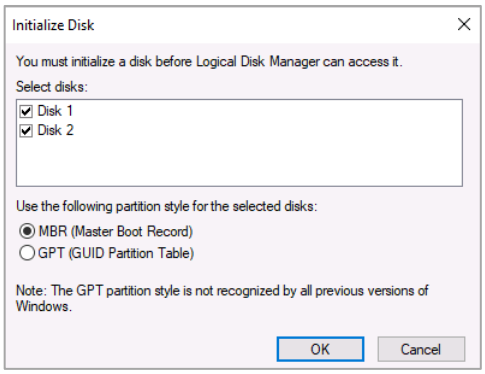
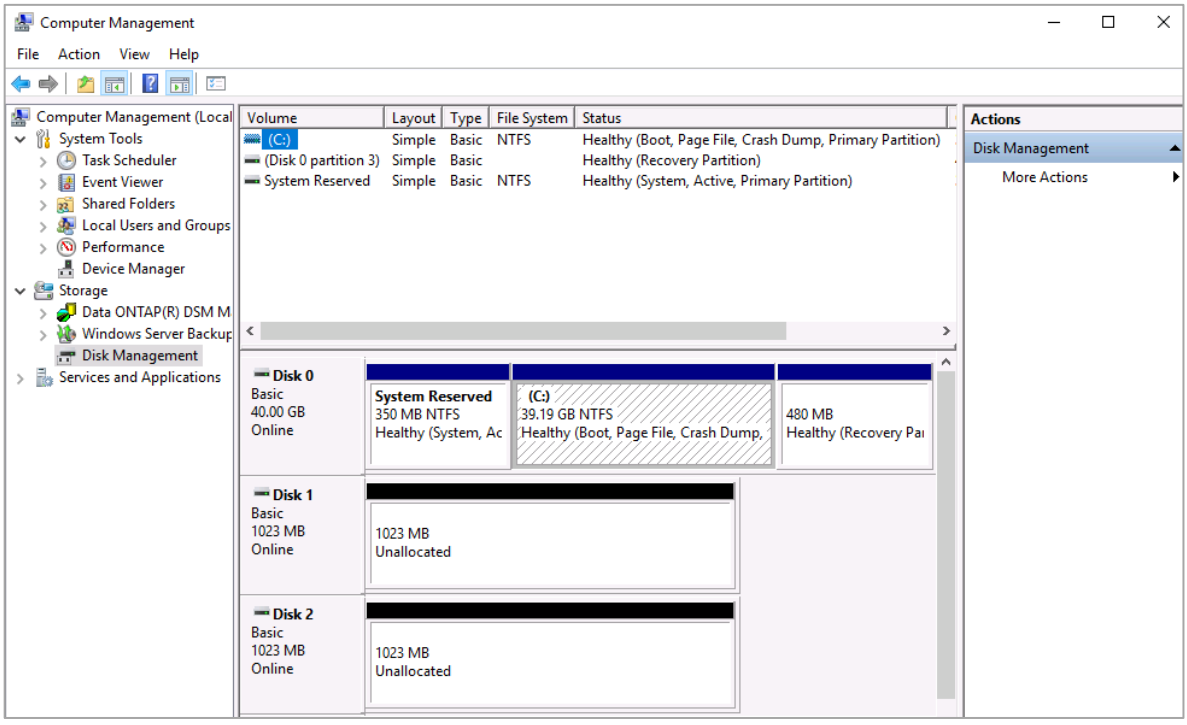
Step	Action
3-11	From the Discovered targets list, select the correct target, and then click **Connect.** 
3-12	In the Connect To Target dialog box, select the **Enable multi-path** checkbox, and then click **Advanced**. 

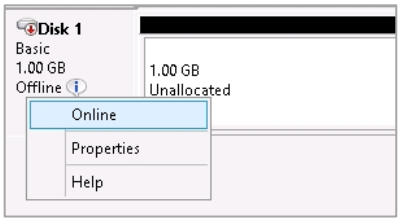
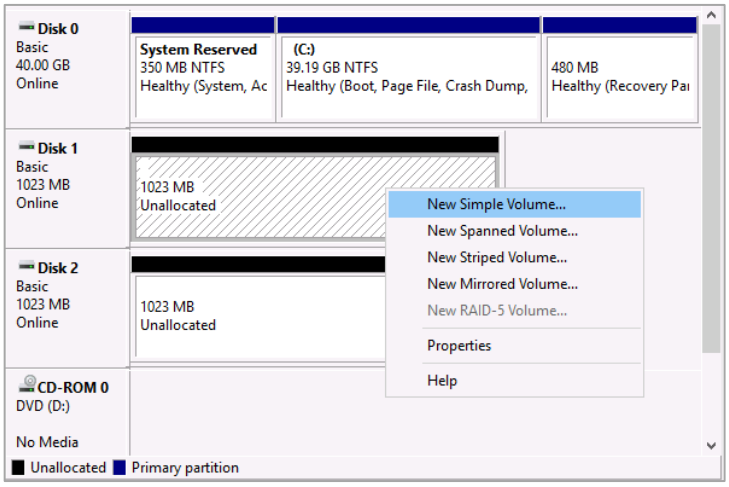
Step	Action
3-13	In the Advanced Settings dialog box, from the Target portal IP list, select **192.168.0.66 / 3260**, and then click **OK**. 
3-14	Click **OK**.

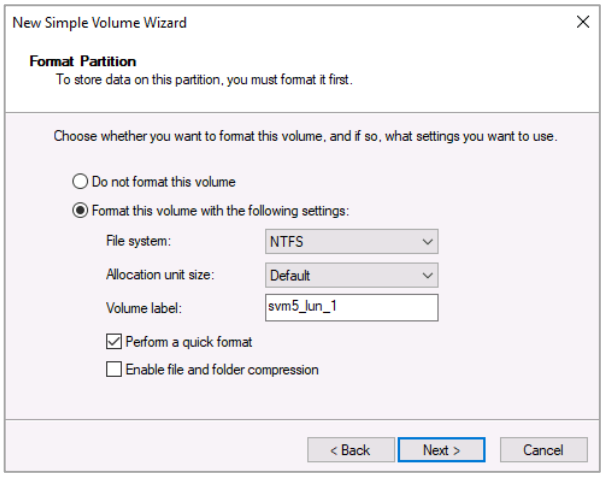
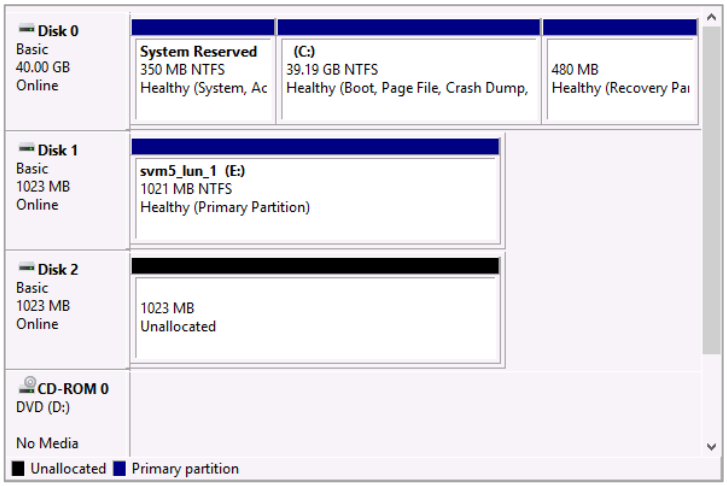
Step	Action
3-15	In the iSCSI Initiator Properties dialog box, verify that the correct target has a status of Connected. 
3-16	Click **Properties**.

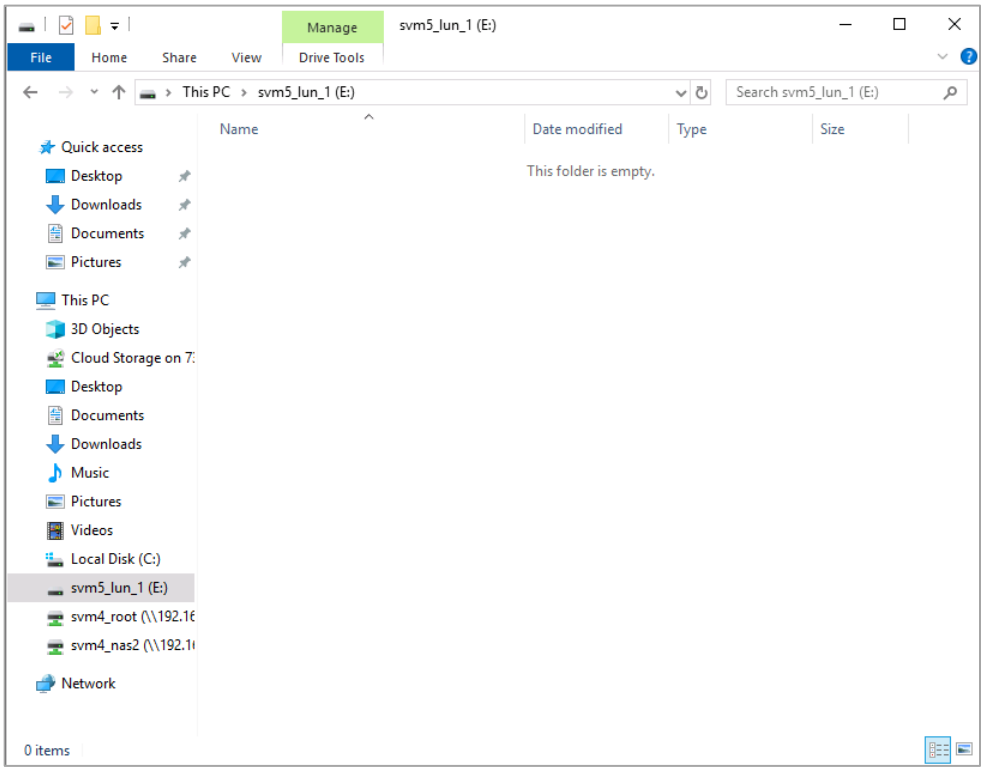
Step	Action
3-17	In the Properties dialog box, on the Sessions tab, verify that a new session was created. 
3-18	In the Properties dialog box, click Devices and observe the iSCSI attached devices. 
3-19	Click **OK** to close the Devices dialog box.
3-20	Click **OK** to close the Properties dialog box.
3-21	Click **OK** to close the iSCSI Initiator Properties dialog box.

Task 4: Access the iSCSI-Attached LUN from the Windows Host

Step	Action
4-1	From the top-right of the Server Manager dashboard, select **Tools > Computer Management**. 
4-2	In the left navigation pane, expand the **Storage** group, and then select **Disk Management**.
4-3	In the Initialize Disk dialog box, click **OK**. 
4-4	Note that each LUN appears as a single disk object. 
4-5	If you do not see the LUN disk in the bottom section of the center pane, right-click the **Disk Management** node in the left pane, and then select **Rescan Disks**.

Step	Action
4-6	If the disk is Offline, right-click the disk header, and then select **Online**. 
4-7	In the Disk Management pane, right-click the **Unallocated** partition, and then select **New Simple Volume**. 
4-8	On the introduction page of the New Simple Volume wizard, click **Next**.
4-9	On the Specify Volume Size page, click **Next**.
4-10	On the Assign Drive Letter or Path page, click **Next**.

Step	Action
4-11	On the Format Partition page, specify the following settings: • Do not format this volume: **<not selected>** (default) • Format this volume with the following settings: **<selected>** (default) • File system: **NTFS** (default) • Allocation unit size: **Default** (default) • Volume label: **svm5_lun_1** • Perform a quick format: **<selected>** (default) • Enable file and folder compression: **<not selected>** (default) 
4-12	Click **Next**.
4-13	Review the Completing page, and then click **Finish**.
4-14	Verify that the new LUN is provisioned, and then close the Computer Management window. 
4-15	Close Server Manager.
4-16	Note the dialog box that indicates that drive E needs to be formatted before it can be used.

Step	Action
4-17	Format the drive, using the defaults.
4-18	In File Explorer, navigate to the mount location of the LUN, and then verify that you can create a file in the LUN. 

End of exercise