



VMware vSphere 6.7/7.0: iSCSI Deployment Guide with Pavilion Hyperparallel Flash Array

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1. About This Guide

The purpose of this document is to guide the user through the installation and configuration of VMware vSphere 6.7/7.0 and **Pavilion** Hyperparallel Flash Array (HFA) to enable storage provided by **Pavilion** HFA to be accessed by VMware initiators over **iSCSI** protocol.

This document is intended for audience familiar with **VMware® vSphere™** client and **ESXi Shell**, so that the user can successfully manage vCenter server systems or standalone ESXi hosts.

Pavilion Data vCenter plugin is a user friendly, browser-based tool. The plugin integrates with the **VMware® vSphere™** client, providing an alternative interface that allows you to monitor and manage **Pavilion HFA**.

It is recommended that you see *Pavilion vCenter Plugin Reference Guide* for more information.

The guide lists the following information that assist the user implement VMware vSphere 6.7/7.0 solution using iSCSI protocol with **Pavilion** Hyperparallel Flash Array:

- Creating an ESXi Cluster through vCenter
- Configuring Distributed Switch
- Creating Distributed Port Groups for **iSCSI** Traffic
- Configuring VMkernel adapters for Distributed Port Groups
- Configuring **Pavilion** HFA controllers to use **iSCSI**
- Creating volumes and assigning volumes to the **iSCSI** controllers dataports (Active/Standy)
- Connecting to iSCSI volumes and creating and mounting datastore
- Configuring multipathing
Note: **Pavilion** supports two-path multipathing, with one path being in the **Active** mode and the other path being in the **Standby** mode.
- Disconnecting datastores



Note: For more detailed implementation assistance, contact your **Pavilion Sales/Support** representative.

2. iSCSI Overview

iSCSI is a protocol that uses TCP to transport SCSI commands, enabling the use of the existing TCP/IP networking infrastructure as a SAN. As with SCSI over Fibre Channel (FC), **iSCSI** presents SCSI targets and devices to iSCSI initiators (requesters).

Unlike NAS, which presents devices at the file level, **iSCSI** makes block devices available via the network. Block devices are presented across an IP network to your local system. These can be consumed in the same way as any other block storage device.

3. Prerequisites

This section lists the perquisites required to configure VMware vSphere 6.7/7.0 using iSCSI protocol using **Pavilion** HFA.

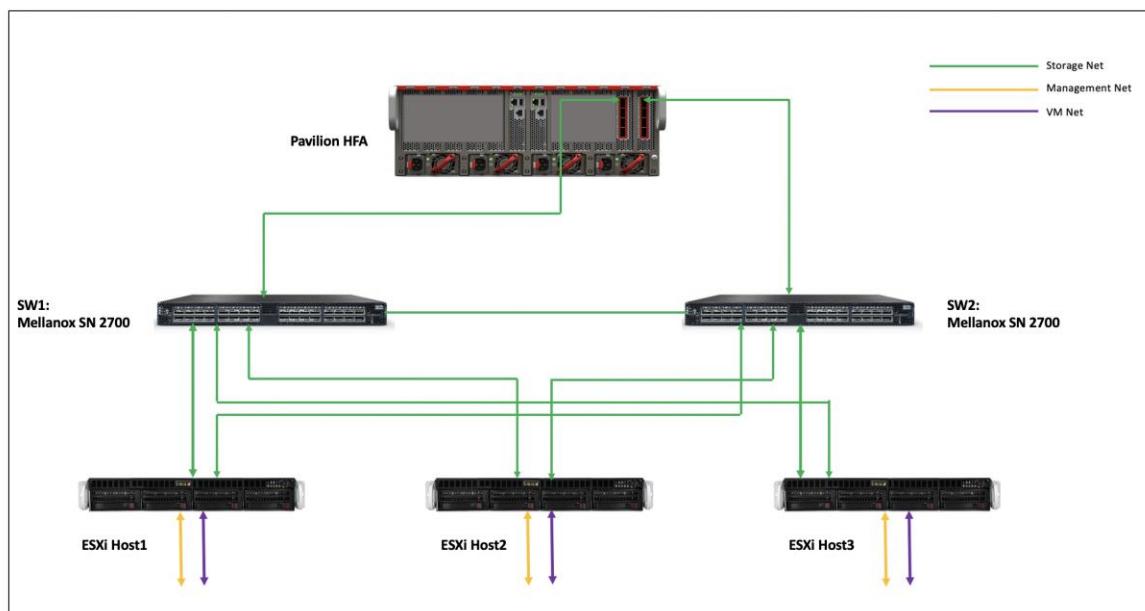
- ✓ The network topology should be redundant, capable of providing **High Availability (HA)** across initiator network ports, switches, and **Pavilion** controller ports.
- ✓ For initiator side link/port failures, 2 VMkernel ports should be created backed by 1 physical uplink respectively.
- ✓ The `iscsivmk_LunQDepth` parameter for the software **iSCSI driver** in ESXi should be set to the **default i.e 128**.
- ✓ The `DelayedAck` parameter for the software iSCSI adapter is “Enabled” by default, this parameter should be used as default.
- ✓ The multipath policy for the **Pavilion iSCSI** volumes should be round robin and needs to be set on all hosts intending to connect to Pavilion.
- ✓ For optimum storage performance, it is recommended that you do not assign more than 3 volumes per active controller. Assigning more than 3 iSCSI volumes to a single Active controller may result in reducing the bandwidth utilization per volume since the total bandwidth for the IO controller gets shared across all Active volumes assigned to the controller.
- ✓ **VAAI setup** is supported with the **Pavilion** storage stack. More details can be obtained from the VAAI specific documentation.

4. Solutions Overview

This section lists and depicts the solutions overview.

- ✓ 3x Supermicro E5-2690 V4 Servers with 1x Mellanox CX-4 Card (dual port)
- ✓ **Pavilion HFA** with PDOS 2.3.1.2 or higher
- ✓ 2x Mellanox 2700 Ethernet Switches
- ✓ VMware ESXi 6.7/7.0 and vCenter 6.7/7.0 for hypervisor and management
See **Image: Solutions Overview** for details.

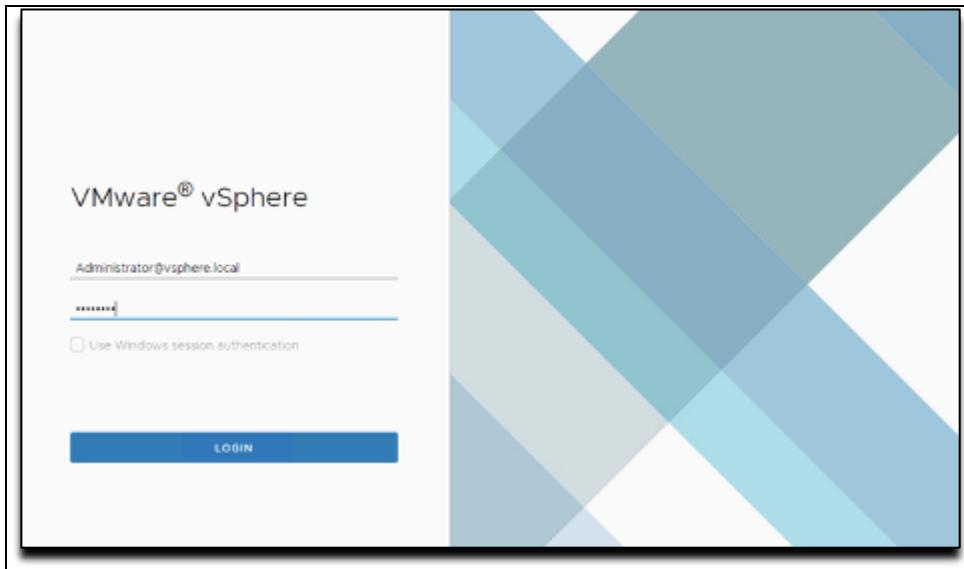
Image: Solutions Overview



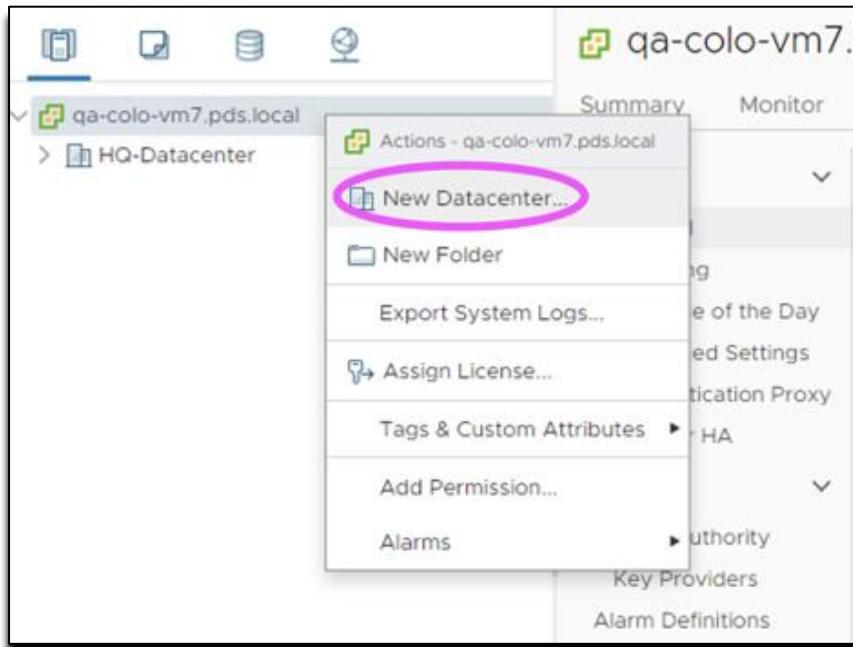
5. Configuring 3 Node ESX Cluster for iSCSI using vCenter

This section lists the details required to set up **3 node ESXi Cluster** for accessing **Pavilion** volumes using **iSCSI** protocol. This section lists how user can create a datacenter, ESXi cluster, and configure network for iSCSI traffic.

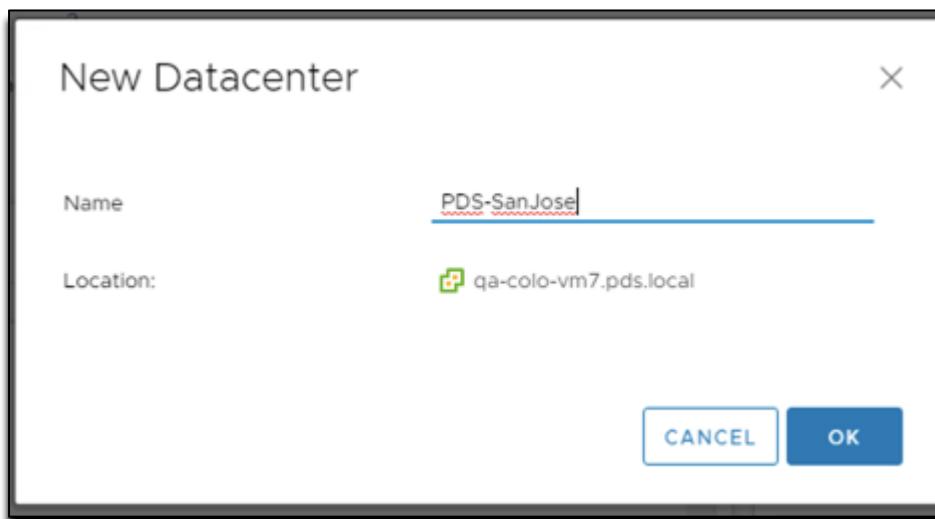
Step 1: Log in to the **VMware® vSphere™** client as seen in the below image:



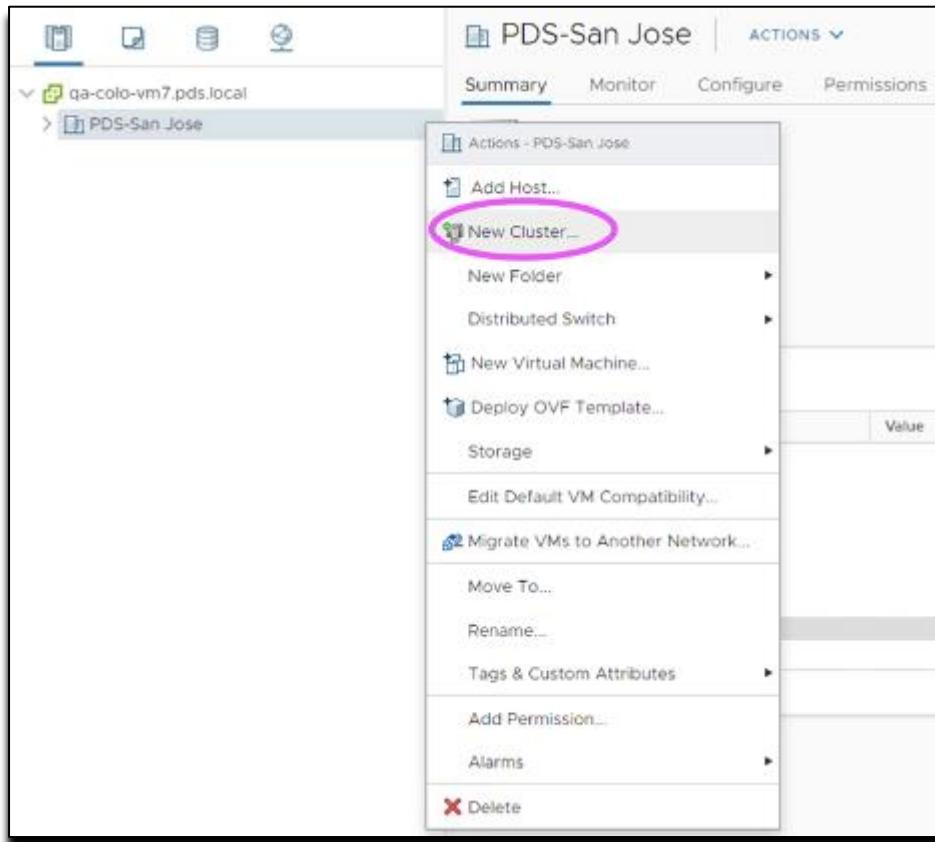
Step 2: Select a location for which you are to create **New Datacenter**, as seen in the below image:



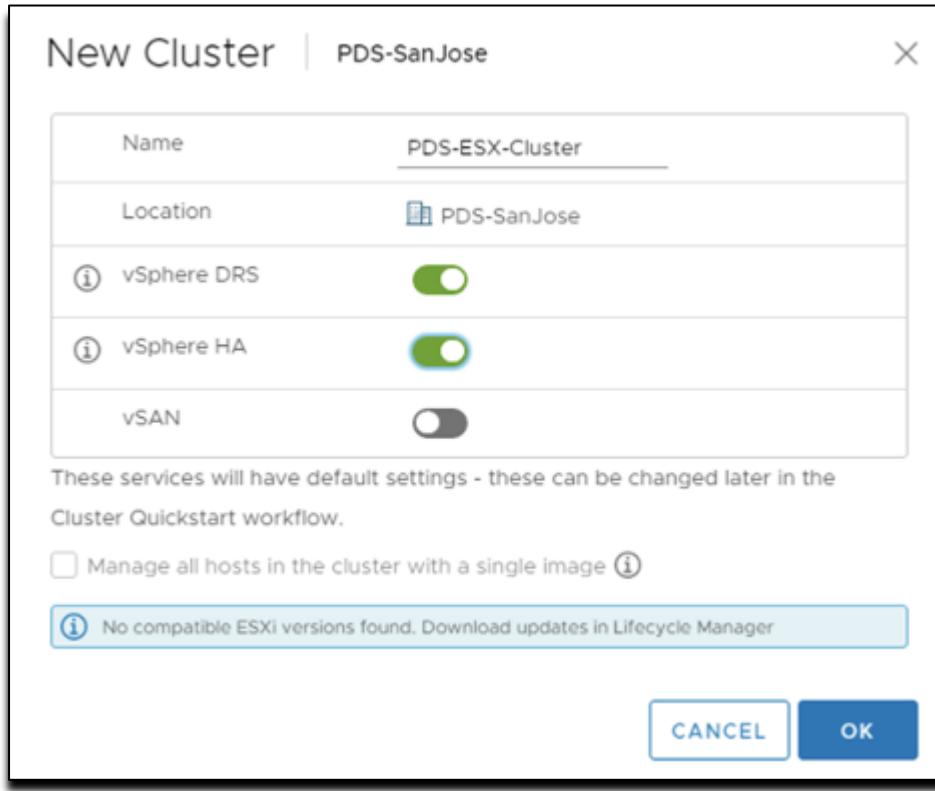
Step 3: In the **New DataCenter** dialog box, enter **Name** of the datacenter, as seen in the below image:



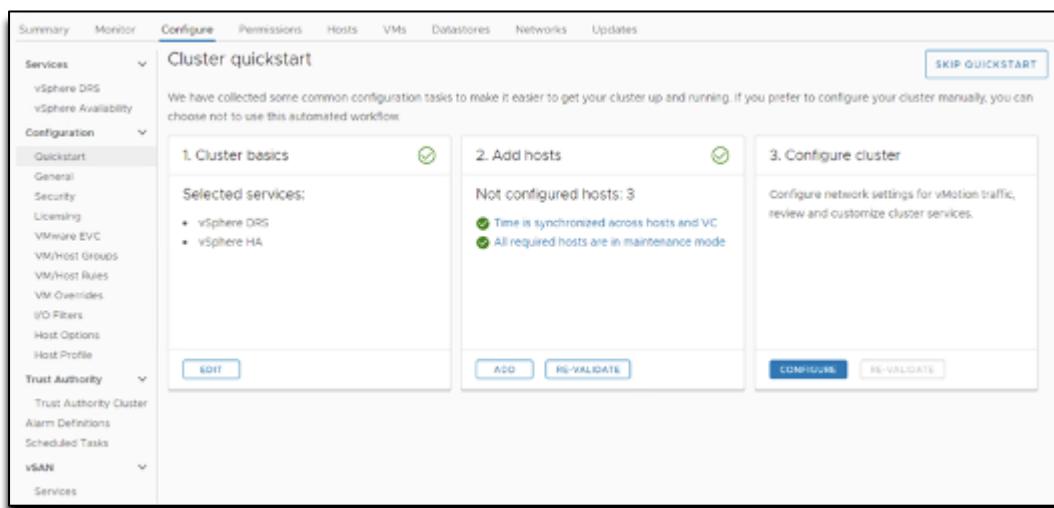
Step 4: Select the Datacentre created, create **New Cluster** for ESX, as seen in the below image:



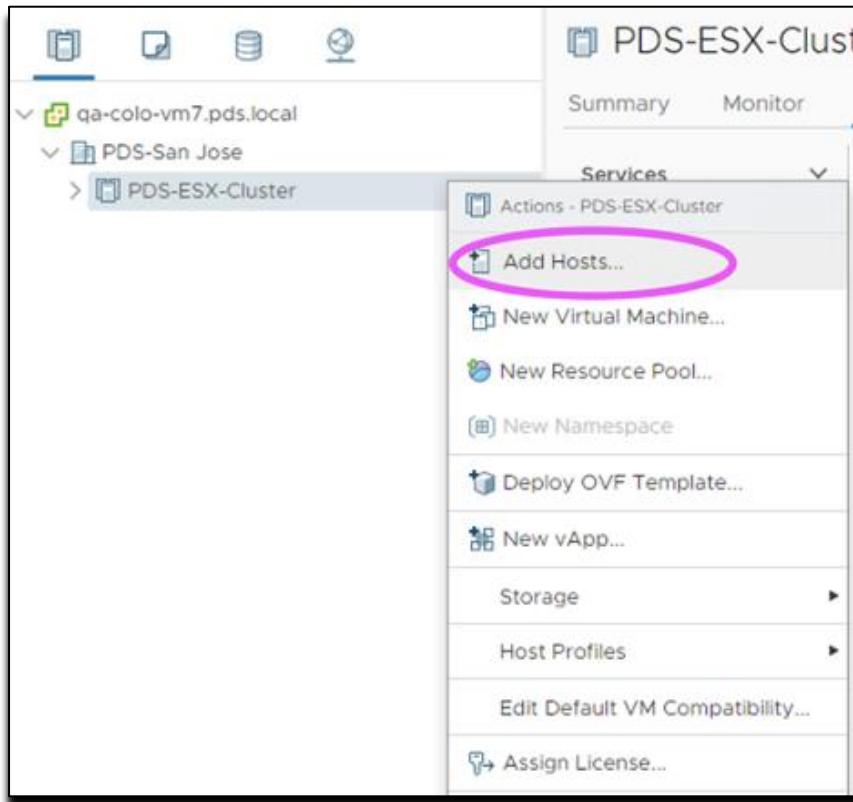
Step 5: In the **New Cluster** dialog box, enter the **Cluster Name** and enable features for **vSphere DRS** and **vSphere HA**. Click **OK**, as seen in the below image:



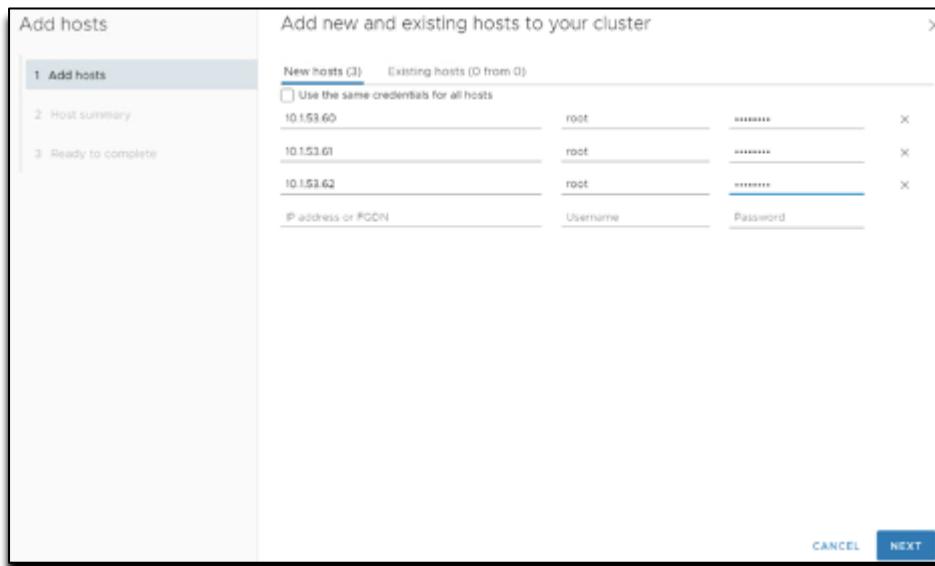
Step 6: The new **ESX cluster** created can be verified as seen in the below image:



Step 7: Subsequently, user can **Add Hosts** to the ESX Cluster as seen in the below image:



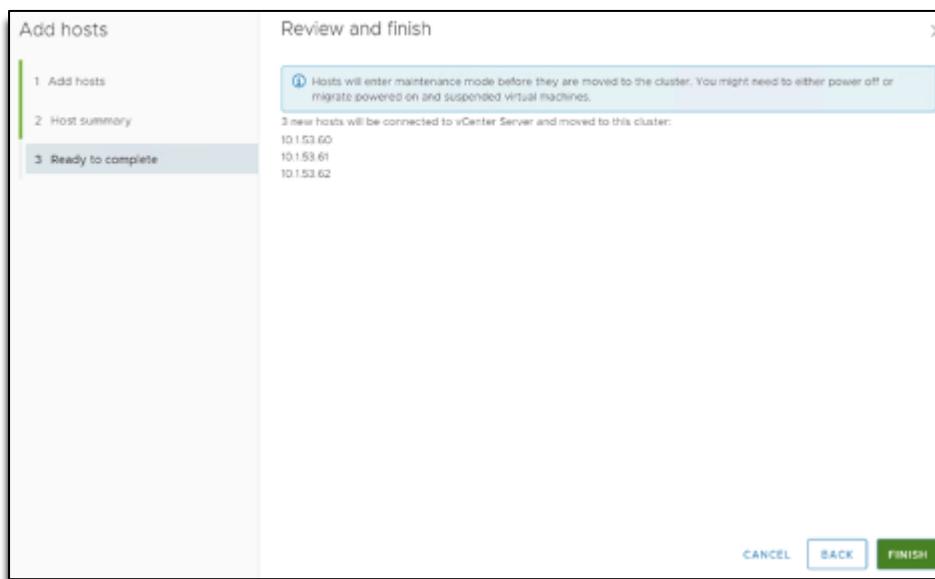
Step 8: Enter host related information, click **Next**, as seen in the below image:



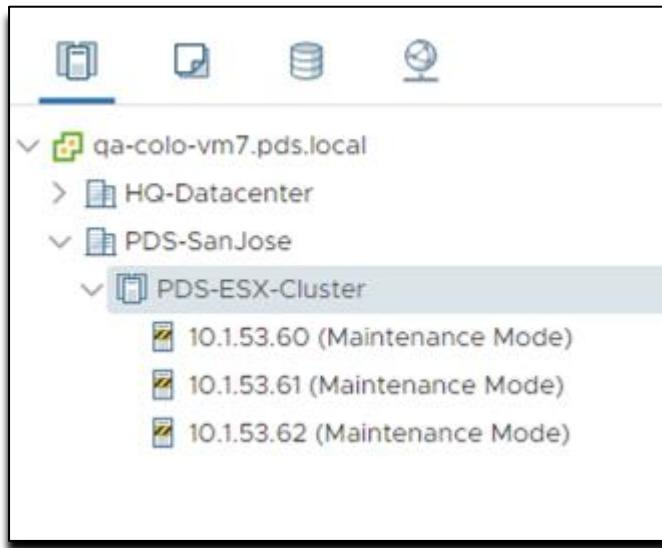
Step 9: Subsequently hosts are created, and hosts are discovered and ready to be added to the cluster as seen in the below image:



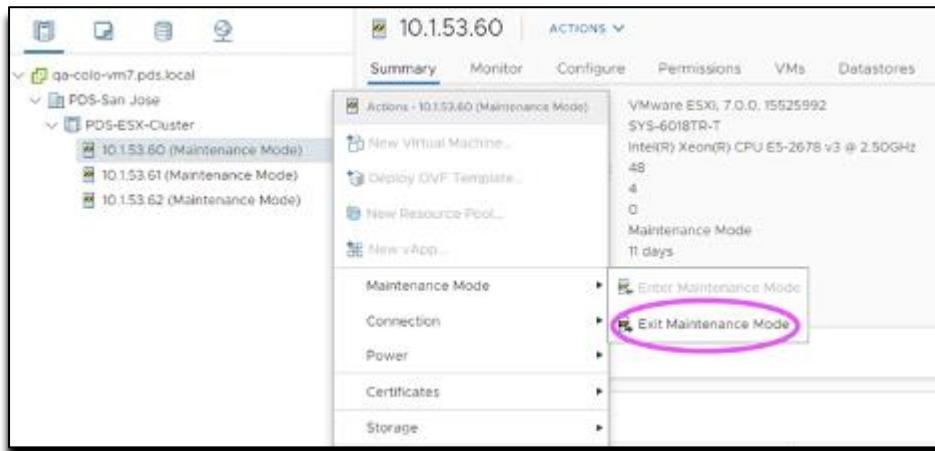
Step 10: Review the host information and click **Finish** as seen in the below image:



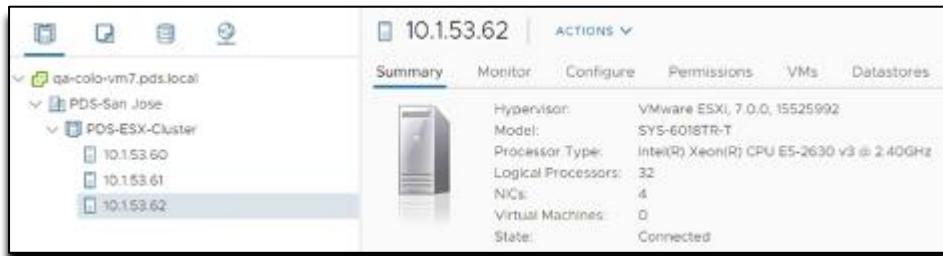
Step 11: The newly added hosts are in **Maintenance Mode** as seen in the image below:



Step 12: Select the hosts that are in maintenance mode, click on **Maintenance Mode>Exit Maintenance Mode** for each host in the cluster, as seen in the below image:



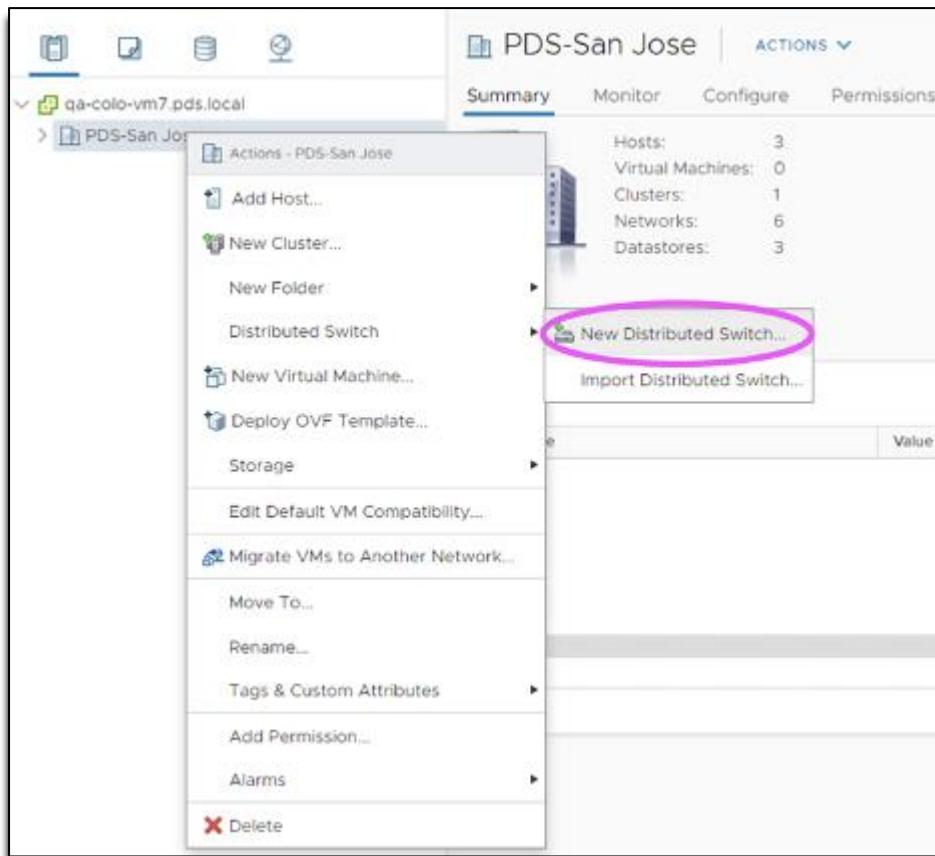
Step 13: Subsequently, the **ESXi Cluster with 3 Hosts** is created as seen in the below image:



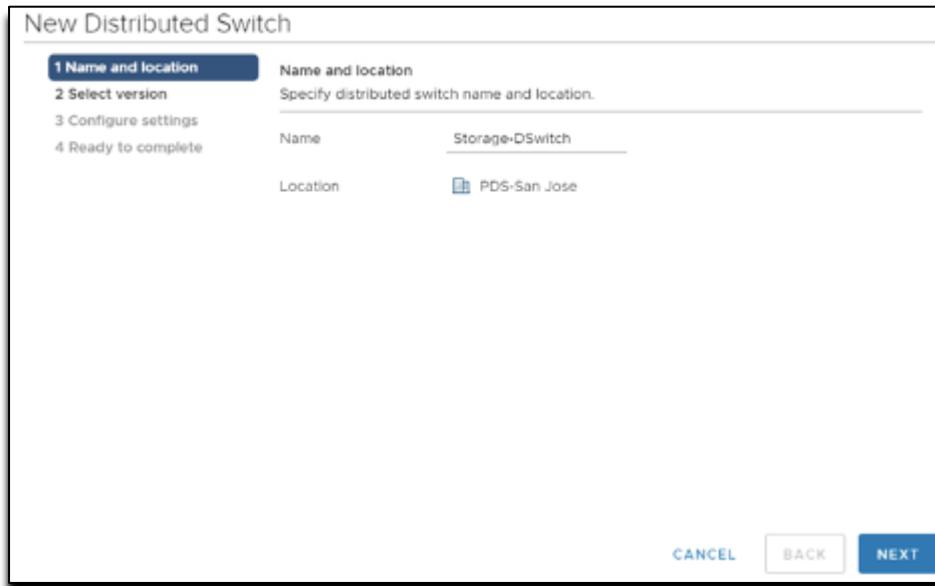
6. Creating Distributed Switch for Storage Traffic

This section lists the steps required to create distributed switch for storage traffic.

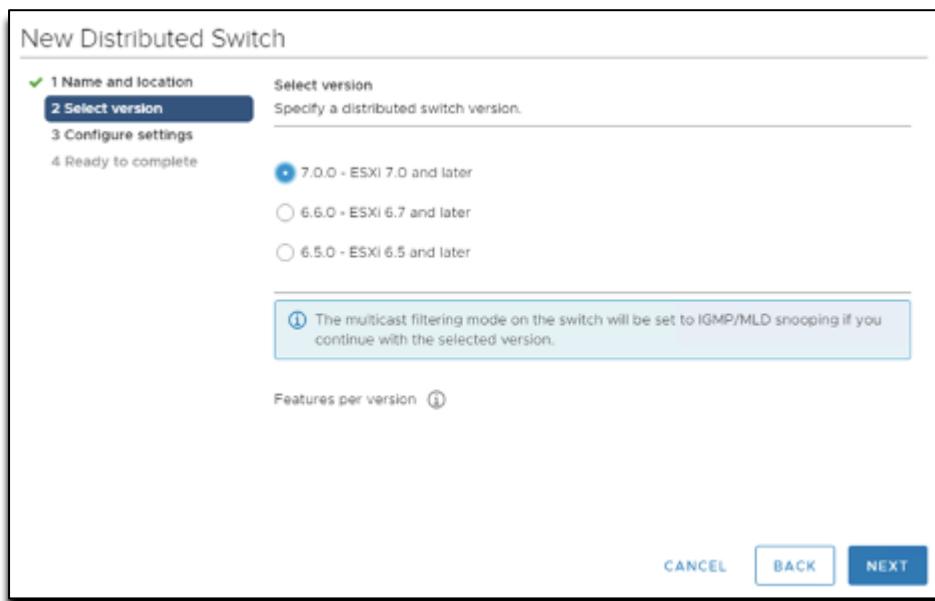
Step 1: Create **New Distributed Switch** for **Storage Traffic**, as seen in the below image:



Step 2: In the **New Distributed Switch** dialog box, enter the **Name** as seen in the below image:

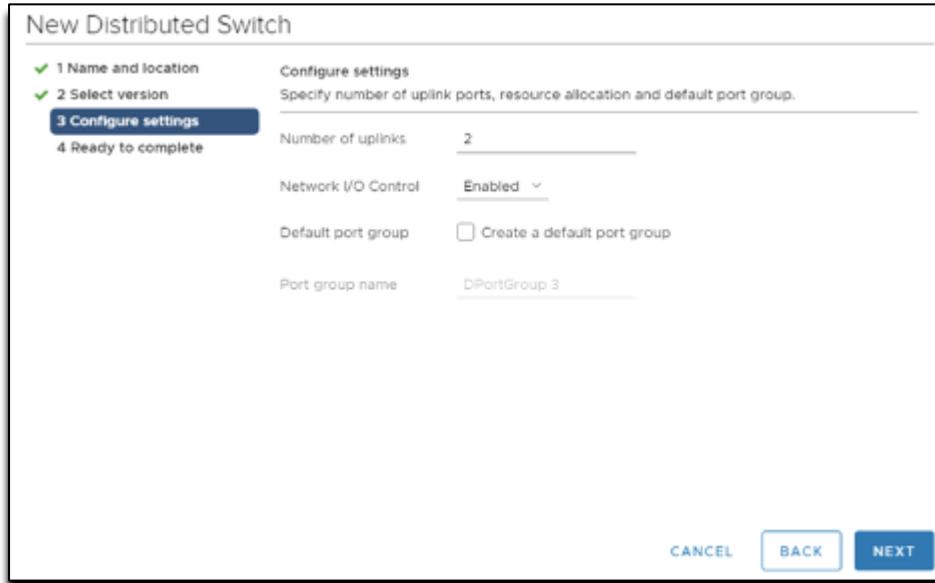


Step 3: Select **ESXi version 7.0.0 and later**. Click **Next**, as seen in the below image:

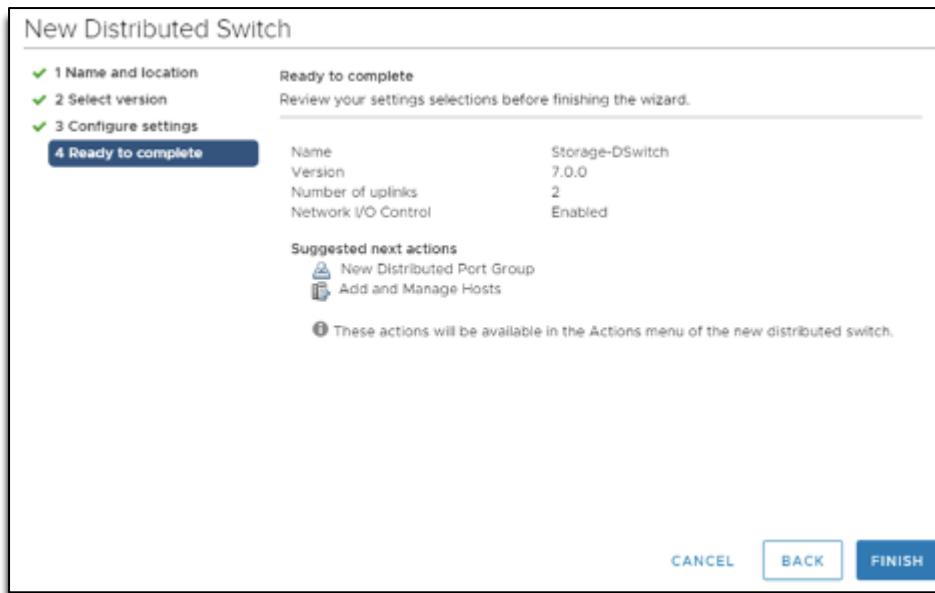


Step 4: Select **Number of Uplinks**. For this instance, **2 uplinks** are used. Click **Next**.

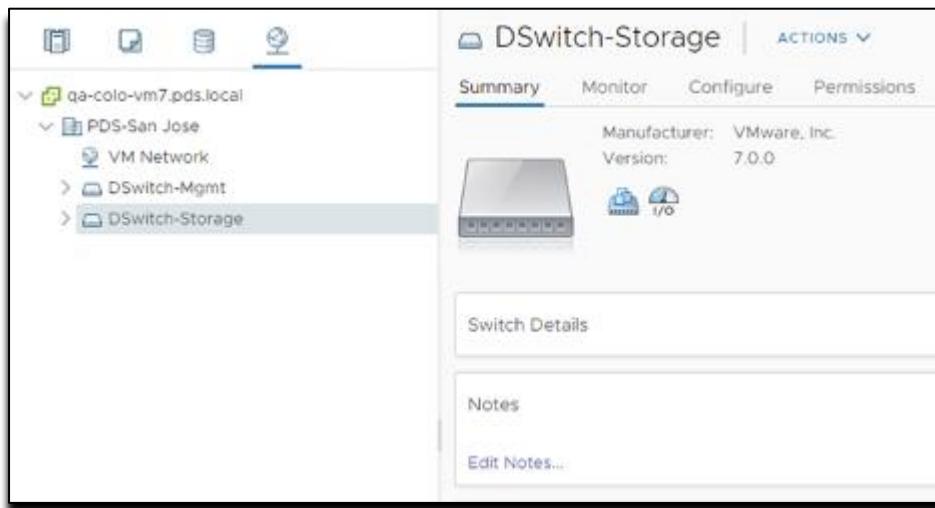
Note: Uncheck **Default Port Group**. User can create port groups later, as seen in the below image:



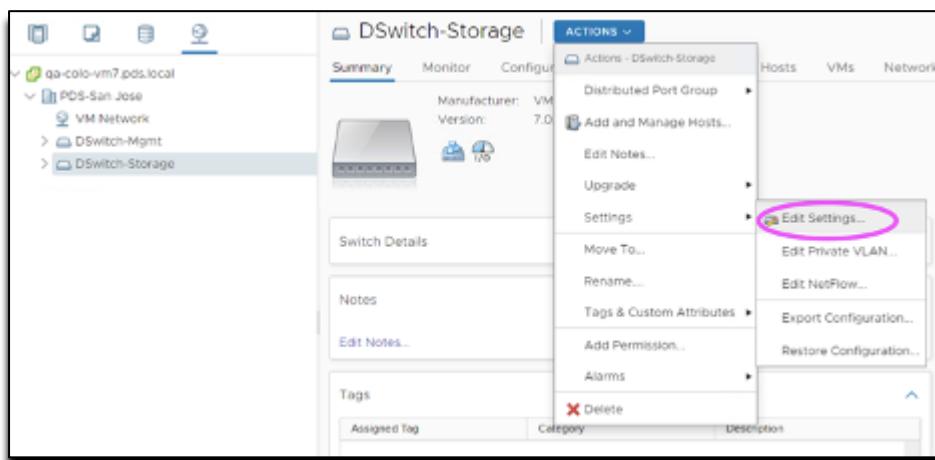
Step 5: On the **Ready to complete** dialog box, click **Finish** as seen in the below image:



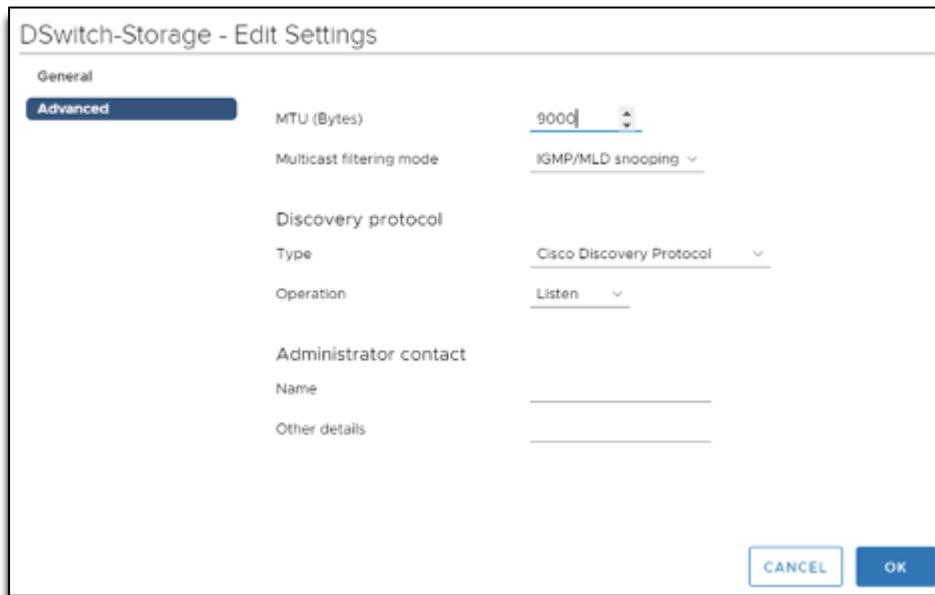
Step 6: Distributed Switch created can be viewed as seen in the below image:



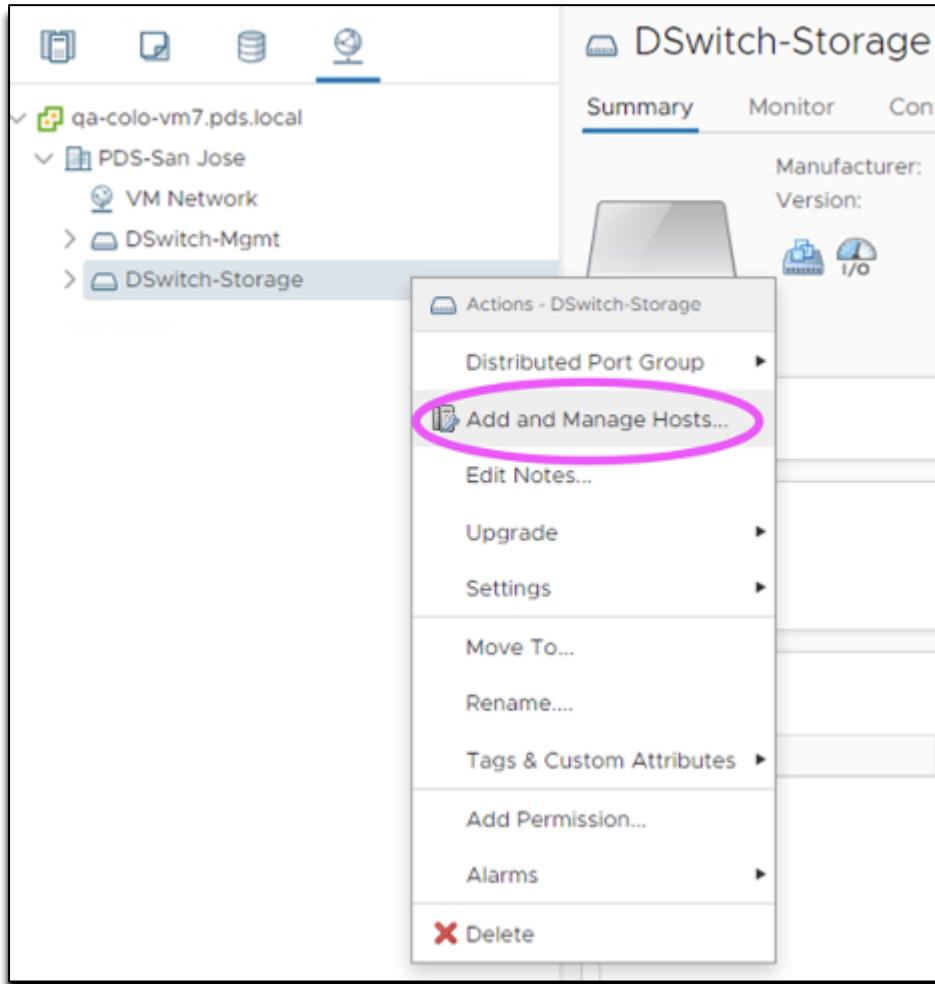
Step 7: Select the switch created, set **MTU** for the newly created distributed switch. Go to **Actions** and click **Edit Settings**, as seen in the below images:



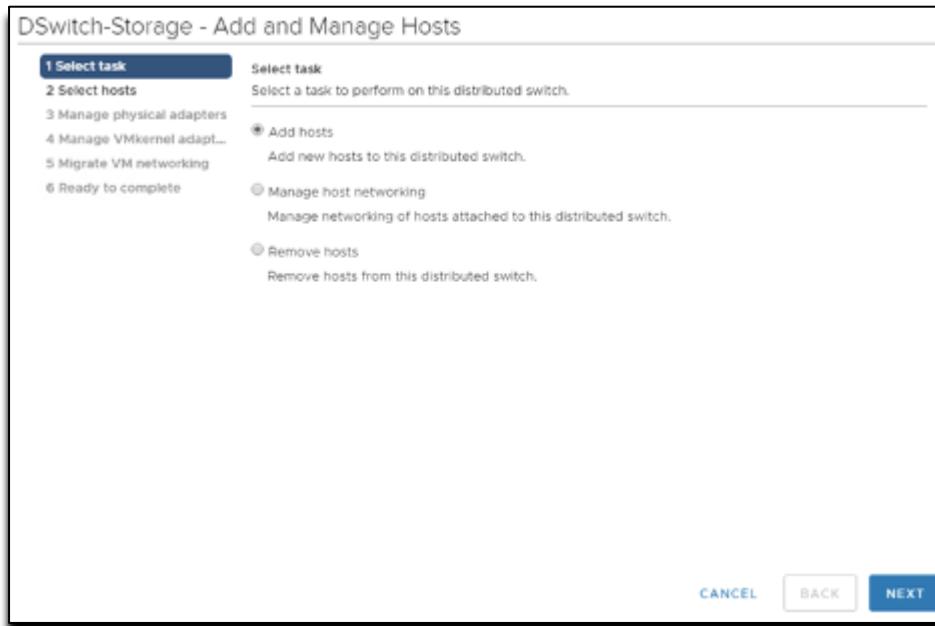
Step 8: In the **Storage-DSwitch-Edit Settings** dialog box set **MTU** to **9000**, as seen in the below image:



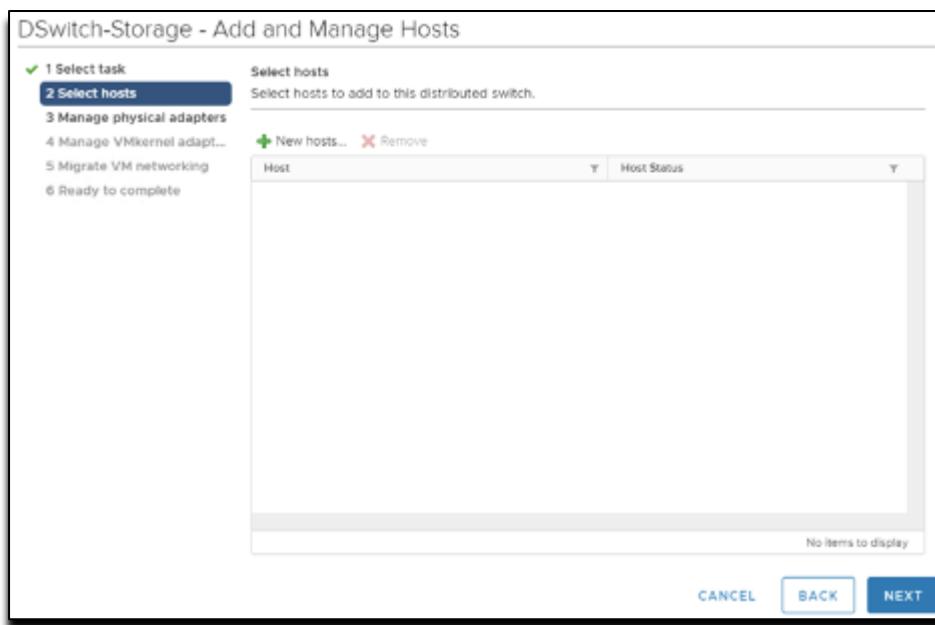
Step 9: Next step is to add **ESXi hosts** that are to use the newly created **Distributed Switch** and the **uplinks** used on those hosts. Right click on **Distributed Switch** and click **Add and Manage Hosts**, as seen in the below image:



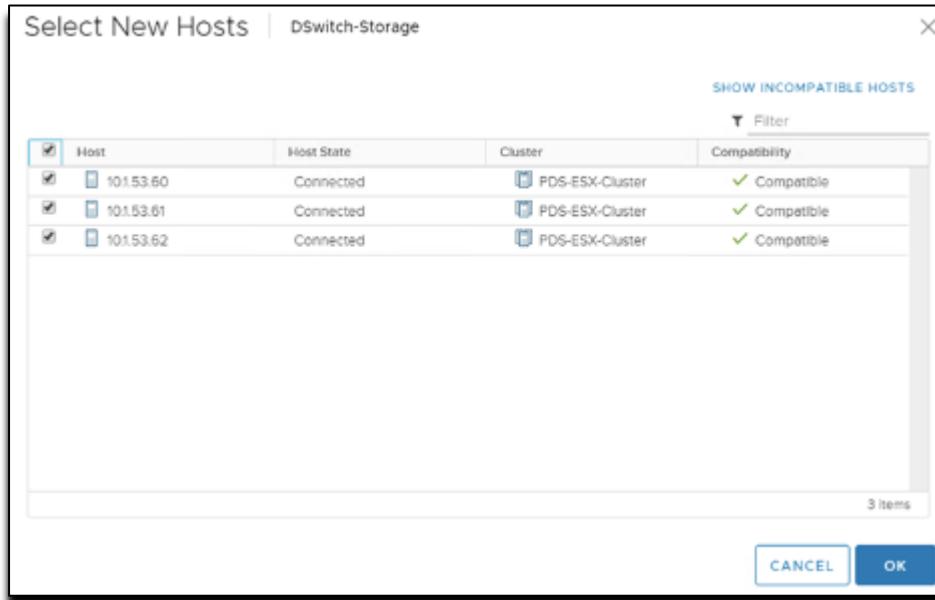
Step 10: On the **Storage-DSwitch-Add and Manage Hosts** dialog box, select **Add Hosts** as seen in the below image:



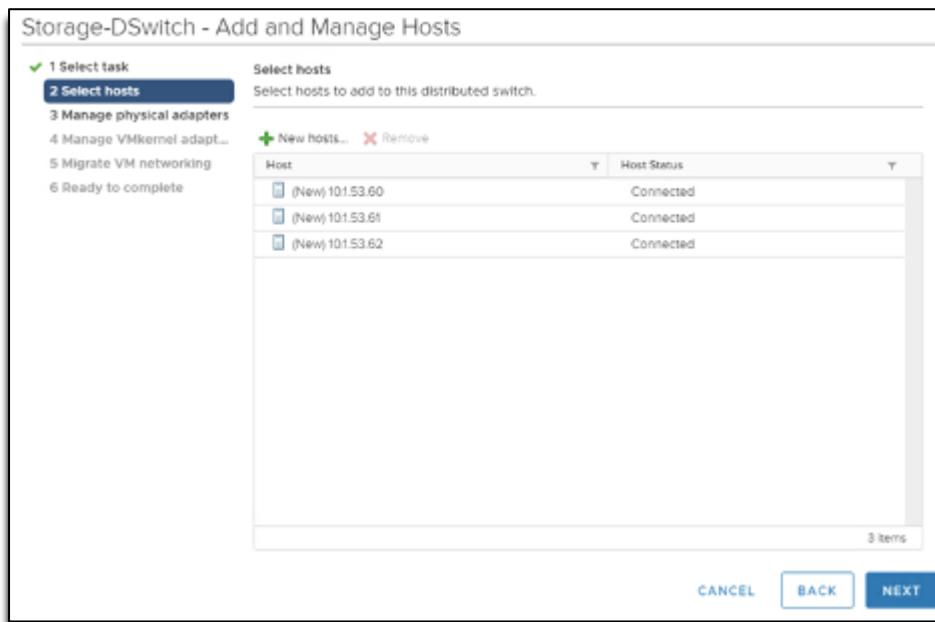
Step 11: Click **Next**. Click on **Select Hosts>New Hosts** as seen in the below image, and **add** the new hosts:



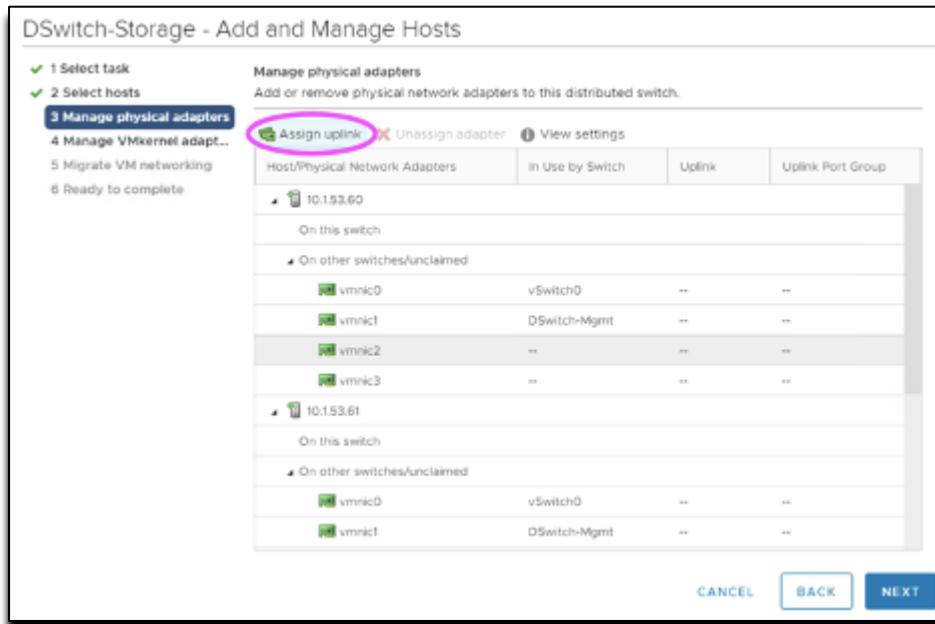
Step 12: Click **Next**. On **Select New Hosts** dialog box select the **hosts** as seen in the below image, click **OK**:



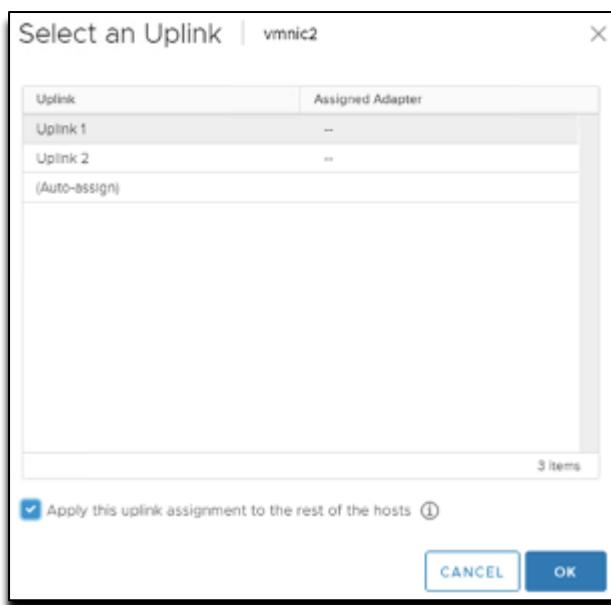
Step 13: Click **Next** as seen in the below image:



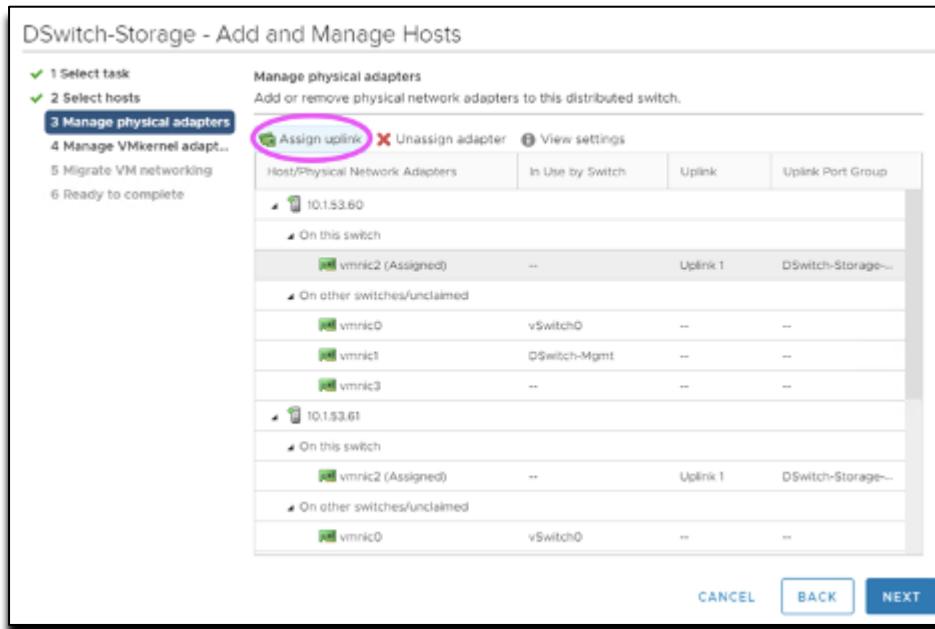
Step 14: Click on **Manage physical adapters**> Select **vmnic2**>**Assign Uplink** as seen in the below image and click **NEXT**:



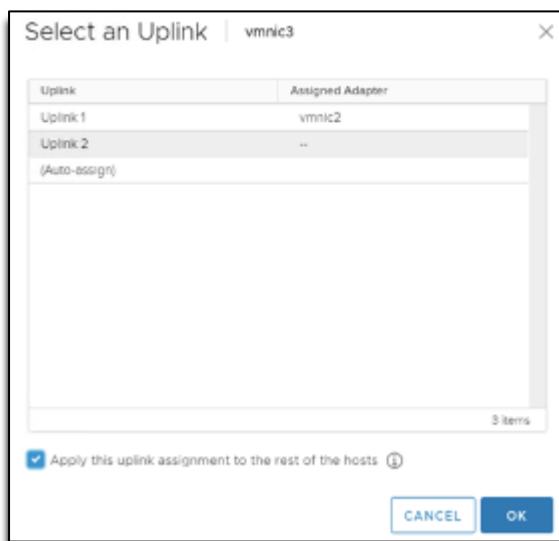
Step 15: On the **Select an Uplink** dialog box, select the **Uplink**. Make sure to check the **Apply this uplink assignment to the rest of the hosts** checkbox, as seen in the below image:



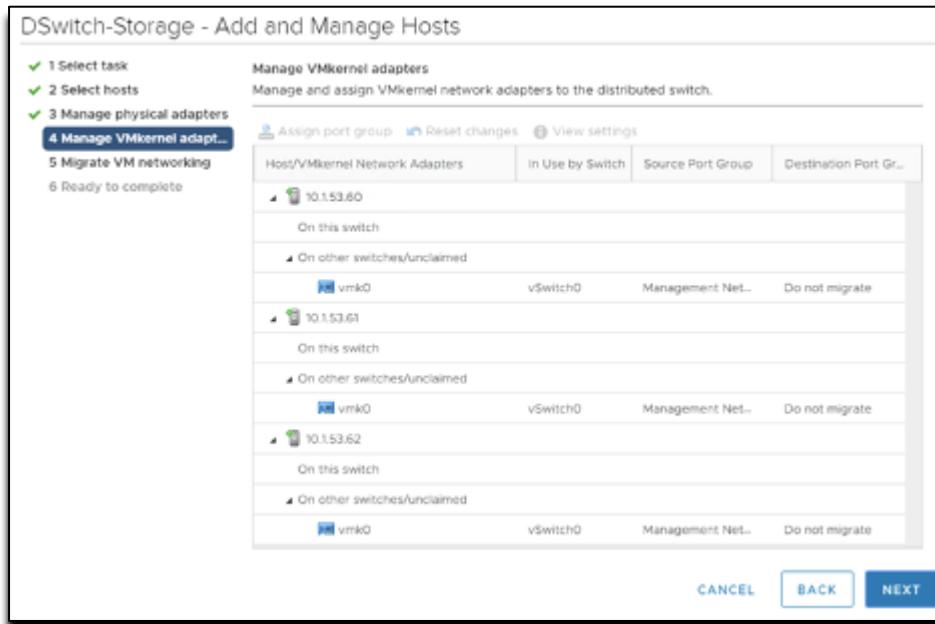
Step 16: Click on **Manage physical adapters**> Select **vmnic3**>**Assign Uplink** as seen in the below image and click **NEXT**:



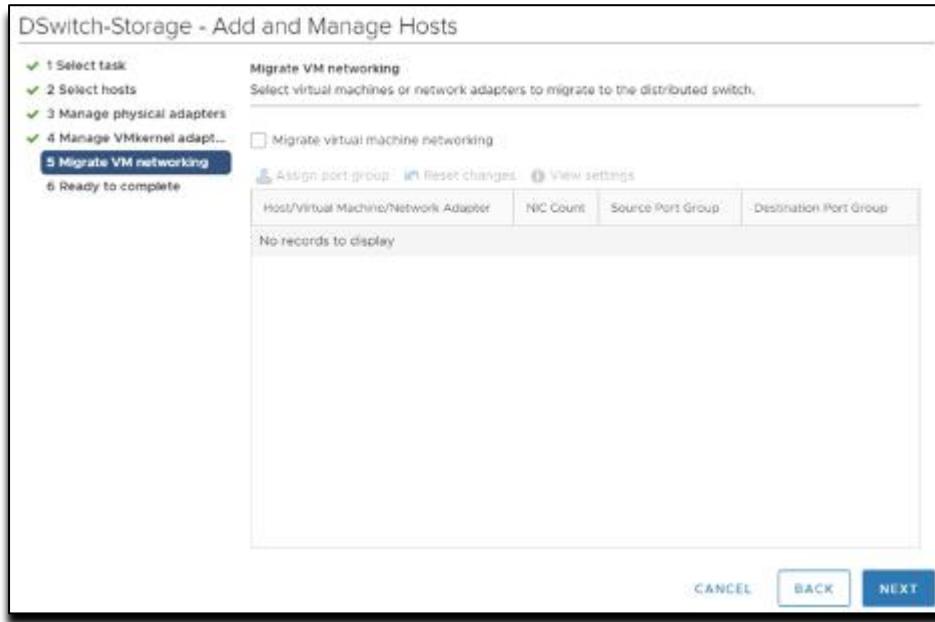
Step 17: Configure **Uplink 2** as seen in below image:



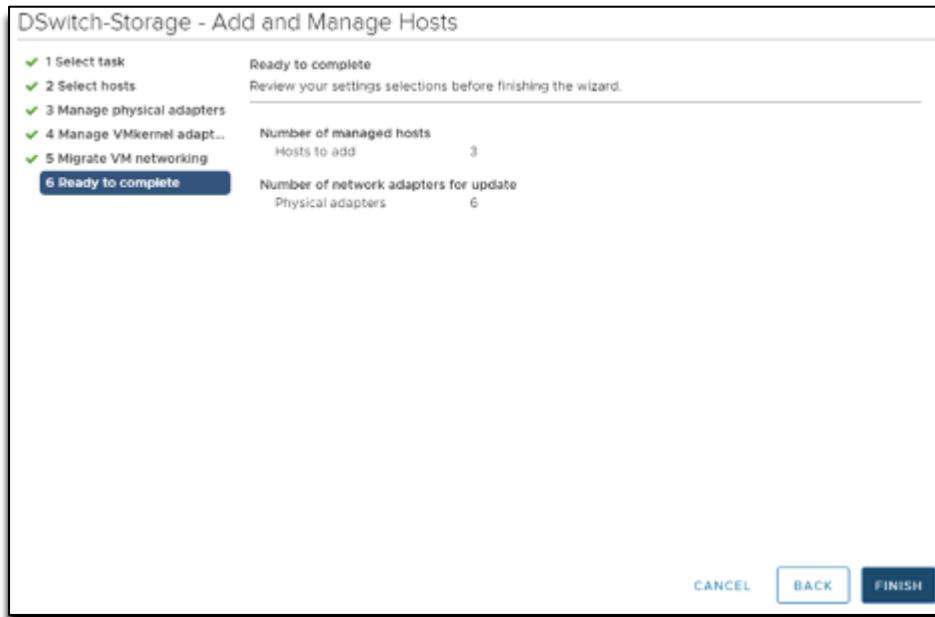
Step 18: Verify **NICs** are assigned to **Uplinks** and Click **NEXT**, on the **Manage VMkernel adapters** dialog box page as seen in below image:



Step 19: Click **NEXT**, on the **Migrate VM Networking** dialog box page, as seen in below image:



Step 20: Click **FINISH** as seen in below image, with this step the user completes configuring ESXi cluster for **iSCSI** via vCenter.



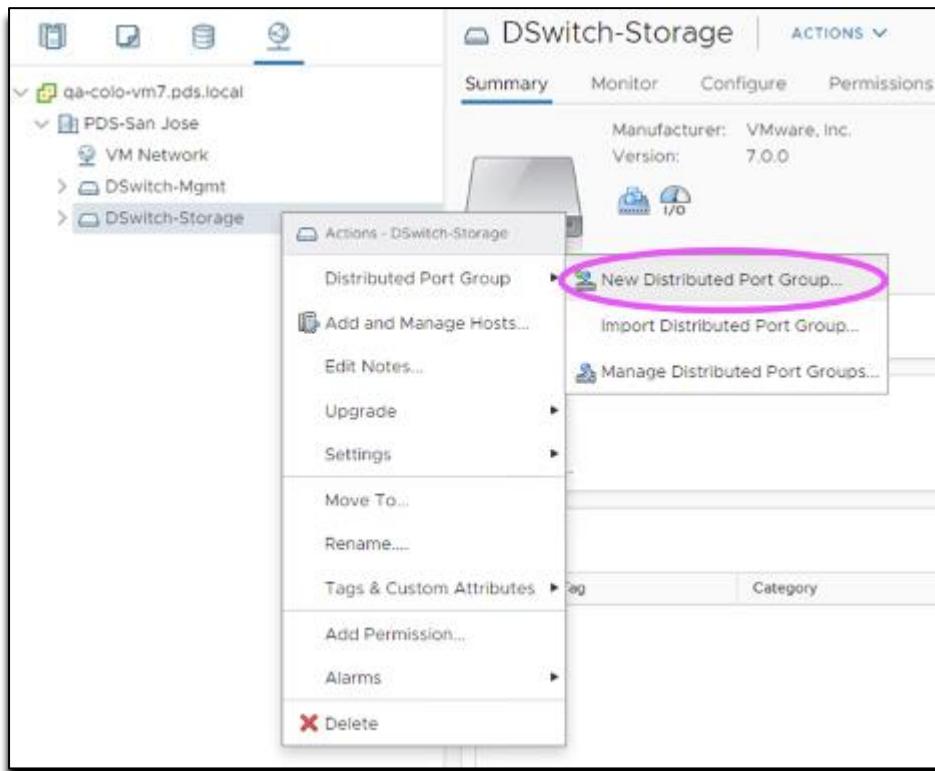
7. Creating Distributed Port Groups for iSCSI Traffic

This section lists the steps required to **create 2 distributed port groups** with one **Active** and **Standby** uplink.

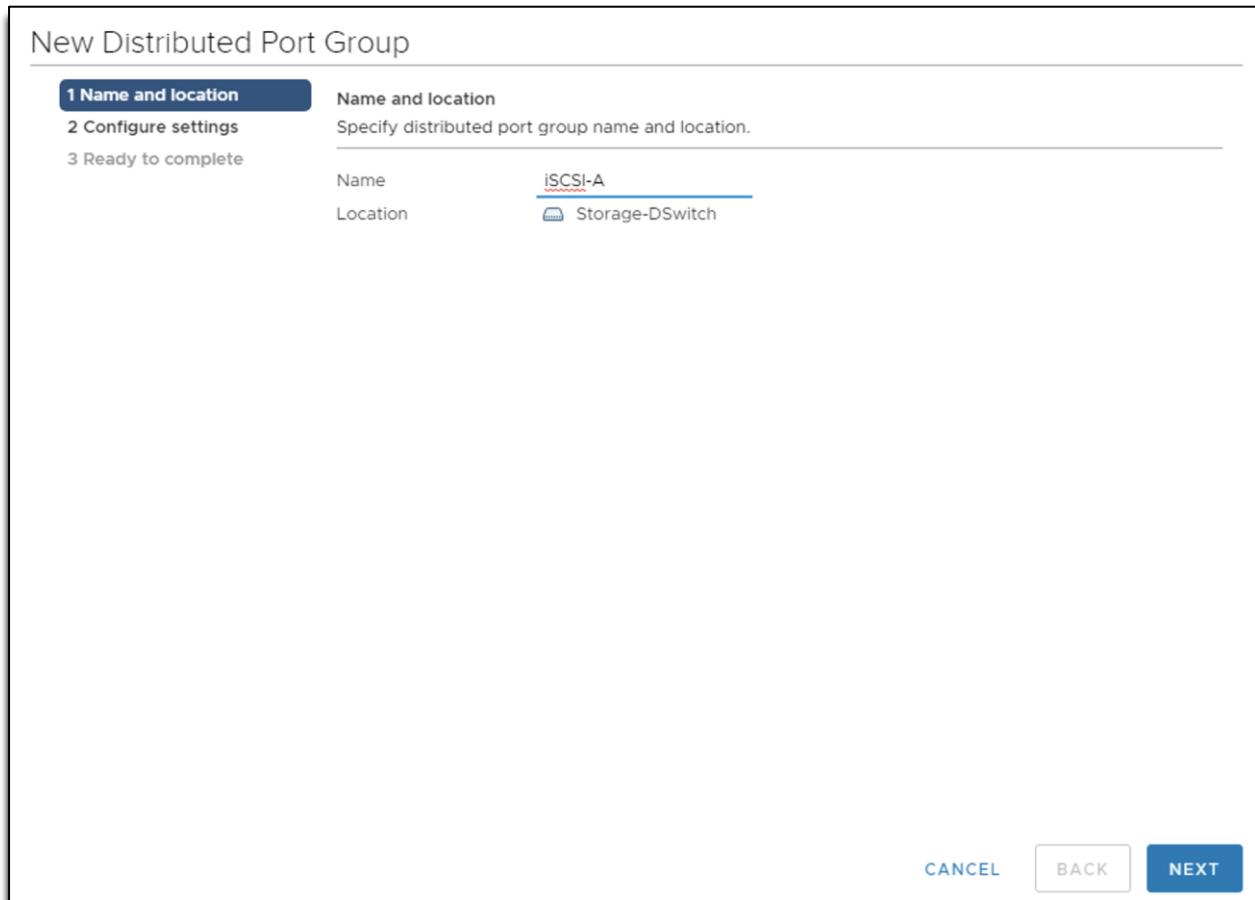
Note: The **2 port groups** should be created in such a way that each uplink is **Active** on one port group and **Passive** on the peer port group.

For representational purpose, user can create 2 distributed port groups namely <iSCSI-A> and <iSCSI-B> with one **Active** uplink each. The steps below describe the creation of the port groups.

Step 1: Right click on **Distributed switch** and select **Distributed Port Group>New Distributed Port Group** as seen in the below image:



Step 2: On the **New Distributed Port Group** dialog box, enter **Name** as *<iSCSI-A>* and click on **Next** as seen in the below image:



Step 3: Check **Customize default policies configuration** checkbox and click **Next** as seen in the below image:

New Distributed Port Group

✓ 1 Name and location Configure settings
Set general properties of the new port group.

2 **Configure settings**

3 Security

4 Traffic shaping

5 Teaming and failover

6 Monitoring

7 Miscellaneous

8 Ready to complete

Port binding	Static binding
Port allocation	Elastic
Number of ports	8
Network resource pool	(default)

VLAN

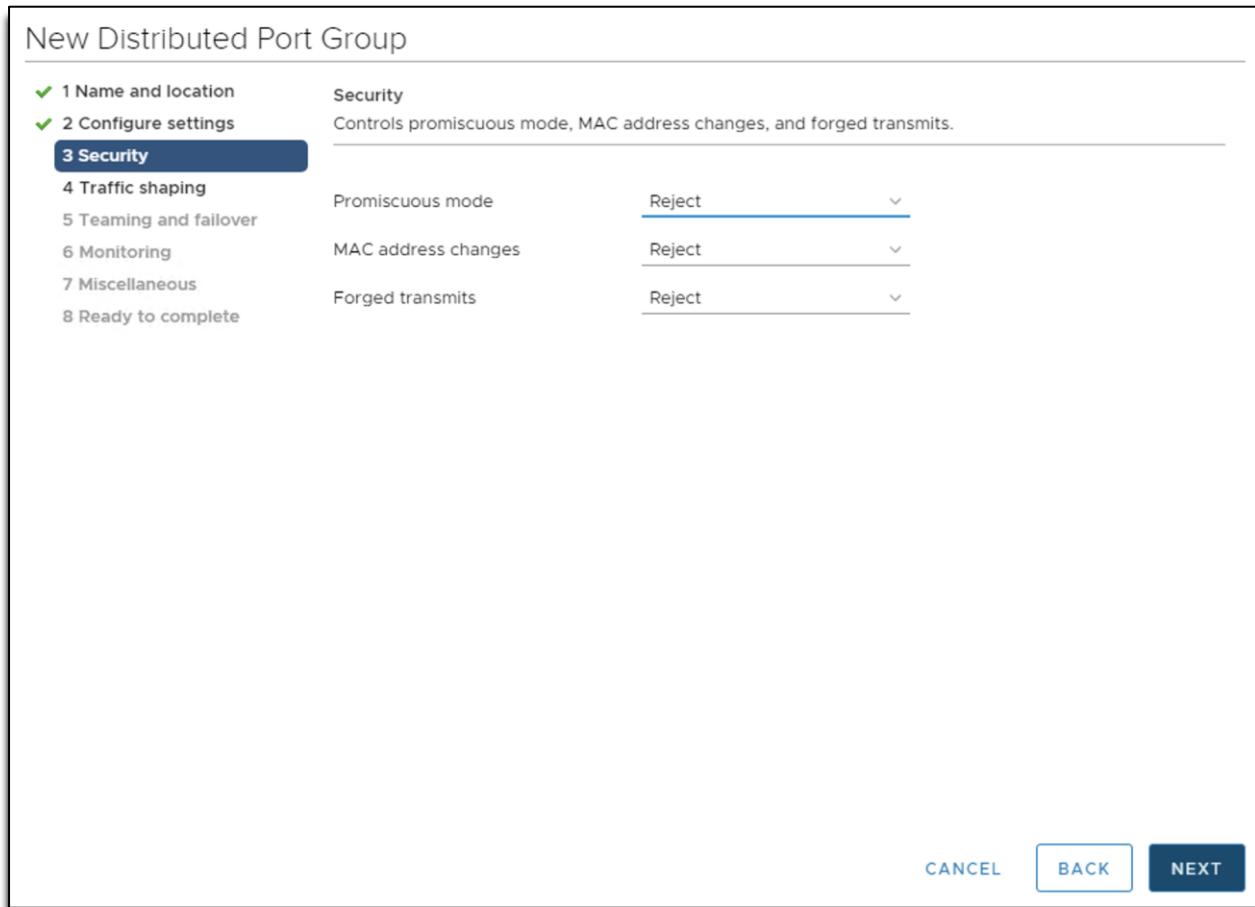
VLAN type	None
-----------	------

Advanced

Customize default policies configuration

[CANCEL](#) [BACK](#) **NEXT**

Step 4: Navigate to **Security**, on the **Security** dialog box, click **NEXT**, as seen in the below image:



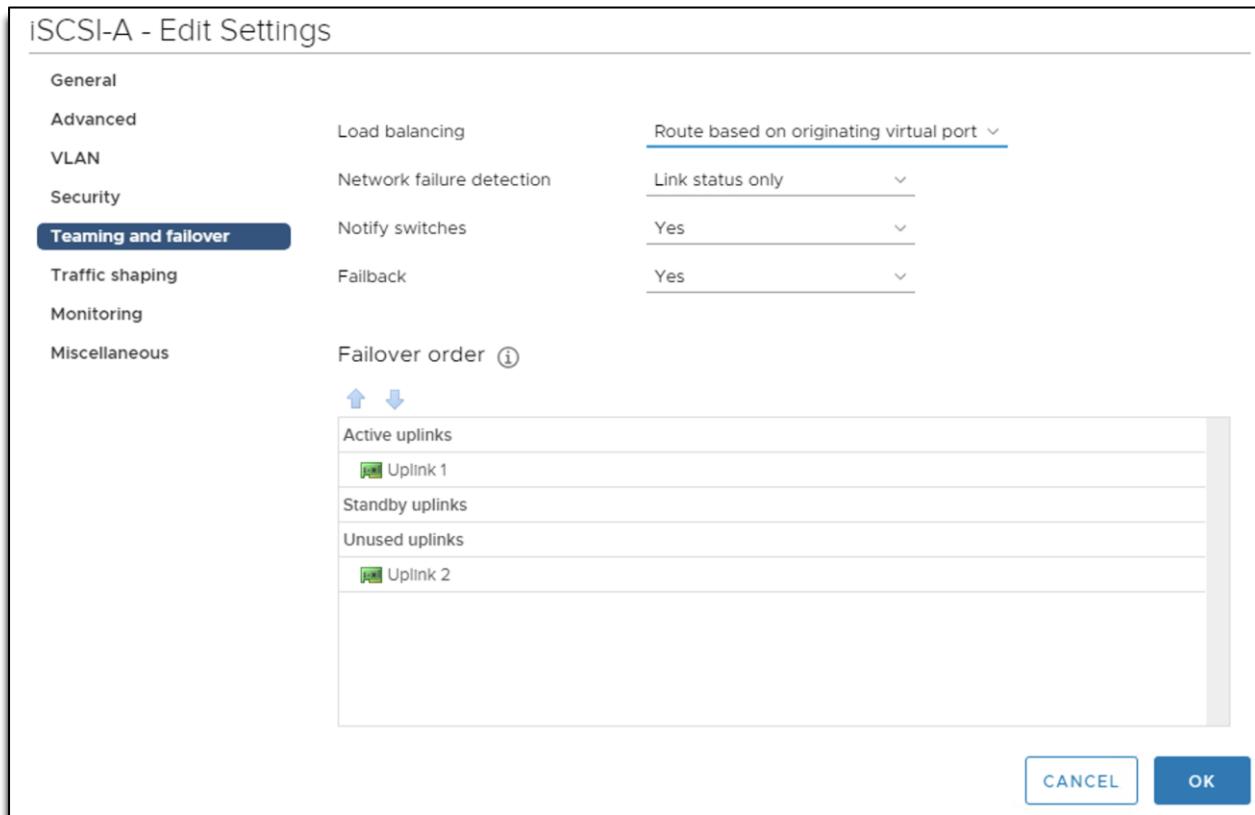
Step 5: Navigate to **Traffic shaping**, on the **Traffic shaping** dialog box, click **NEXT**, as seen in the below image:

New Distributed Port Group

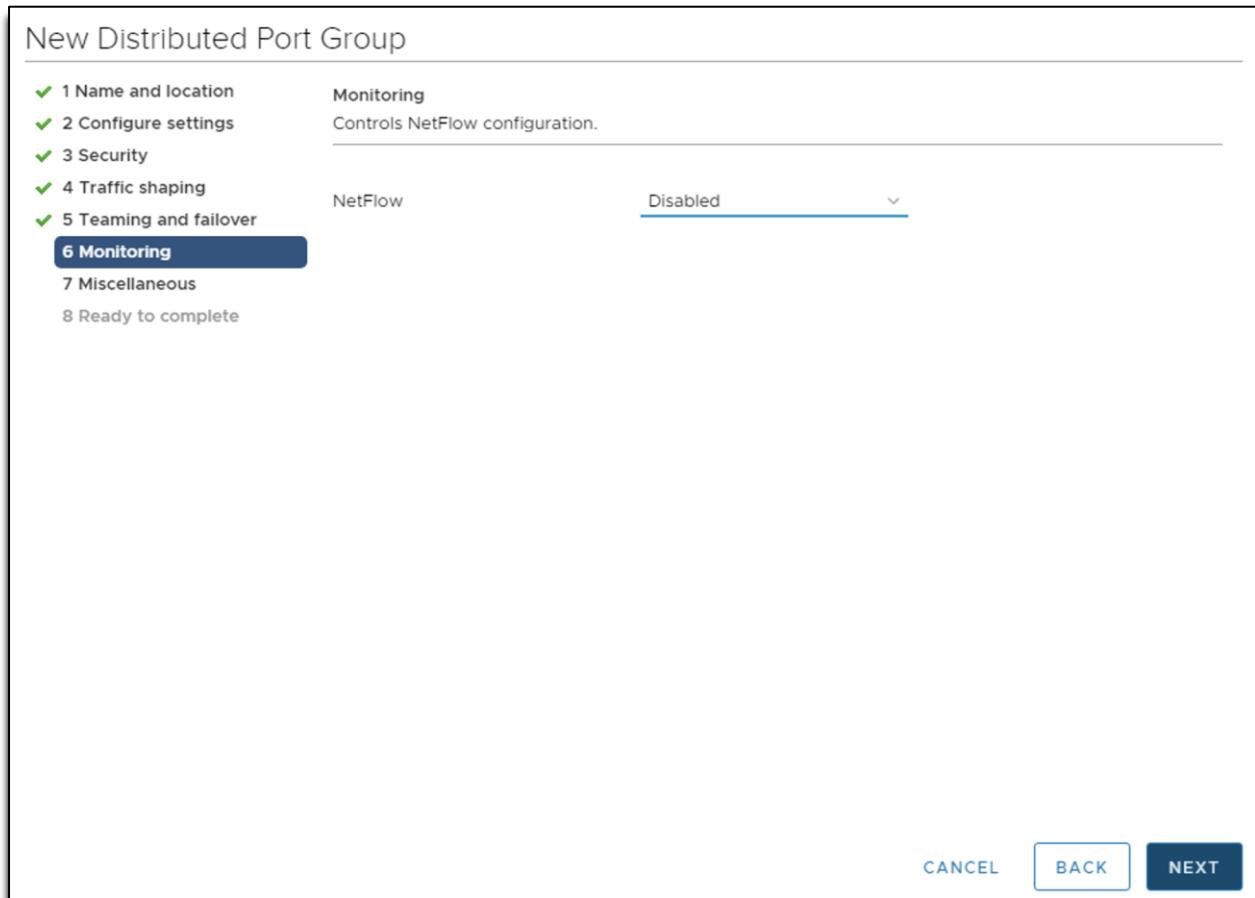
<div style="background-color: #0070C0; color: white; padding: 2px 5px; border-radius: 5px;">4 Traffic shaping</div> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> 1 Name and location <input checked="" type="checkbox"/> 2 Configure settings <input checked="" type="checkbox"/> 3 Security 4 Traffic shaping 5 Teaming and failover 6 Monitoring 7 Miscellaneous 8 Ready to complete 	<p>Traffic shaping Controls average bandwidth, peak bandwidth, and burst size of the ingress and egress traffic on each port.</p> <p>Ingress traffic shaping</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Status</td> <td style="width: 70%;"><input type="text" value="Disabled"/></td> </tr> <tr> <td>Average bandwidth (kbit/s)</td> <td><input type="text" value="100000"/></td> </tr> <tr> <td>Peak bandwidth (kbit/s)</td> <td><input type="text" value="100000"/></td> </tr> <tr> <td>Burst size</td> <td><input type="text" value="102400"/></td> </tr> </table> <p>Egress traffic shaping</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Status</td> <td style="width: 70%;"><input type="text" value="Disabled"/></td> </tr> <tr> <td>Average bandwidth (kbit/s)</td> <td><input type="text" value="100000"/></td> </tr> <tr> <td>Peak bandwidth (kbit/s)</td> <td><input type="text" value="100000"/></td> </tr> <tr> <td>Burst size (KB)</td> <td><input type="text" value="102400"/></td> </tr> </table> <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;"> (i) Traffic shaping policy is applied individually to each port in the port group. </div>	Status	<input type="text" value="Disabled"/>	Average bandwidth (kbit/s)	<input type="text" value="100000"/>	Peak bandwidth (kbit/s)	<input type="text" value="100000"/>	Burst size	<input type="text" value="102400"/>	Status	<input type="text" value="Disabled"/>	Average bandwidth (kbit/s)	<input type="text" value="100000"/>	Peak bandwidth (kbit/s)	<input type="text" value="100000"/>	Burst size (KB)	<input type="text" value="102400"/>
Status	<input type="text" value="Disabled"/>																
Average bandwidth (kbit/s)	<input type="text" value="100000"/>																
Peak bandwidth (kbit/s)	<input type="text" value="100000"/>																
Burst size	<input type="text" value="102400"/>																
Status	<input type="text" value="Disabled"/>																
Average bandwidth (kbit/s)	<input type="text" value="100000"/>																
Peak bandwidth (kbit/s)	<input type="text" value="100000"/>																
Burst size (KB)	<input type="text" value="102400"/>																

CANCEL
BACK
NEXT

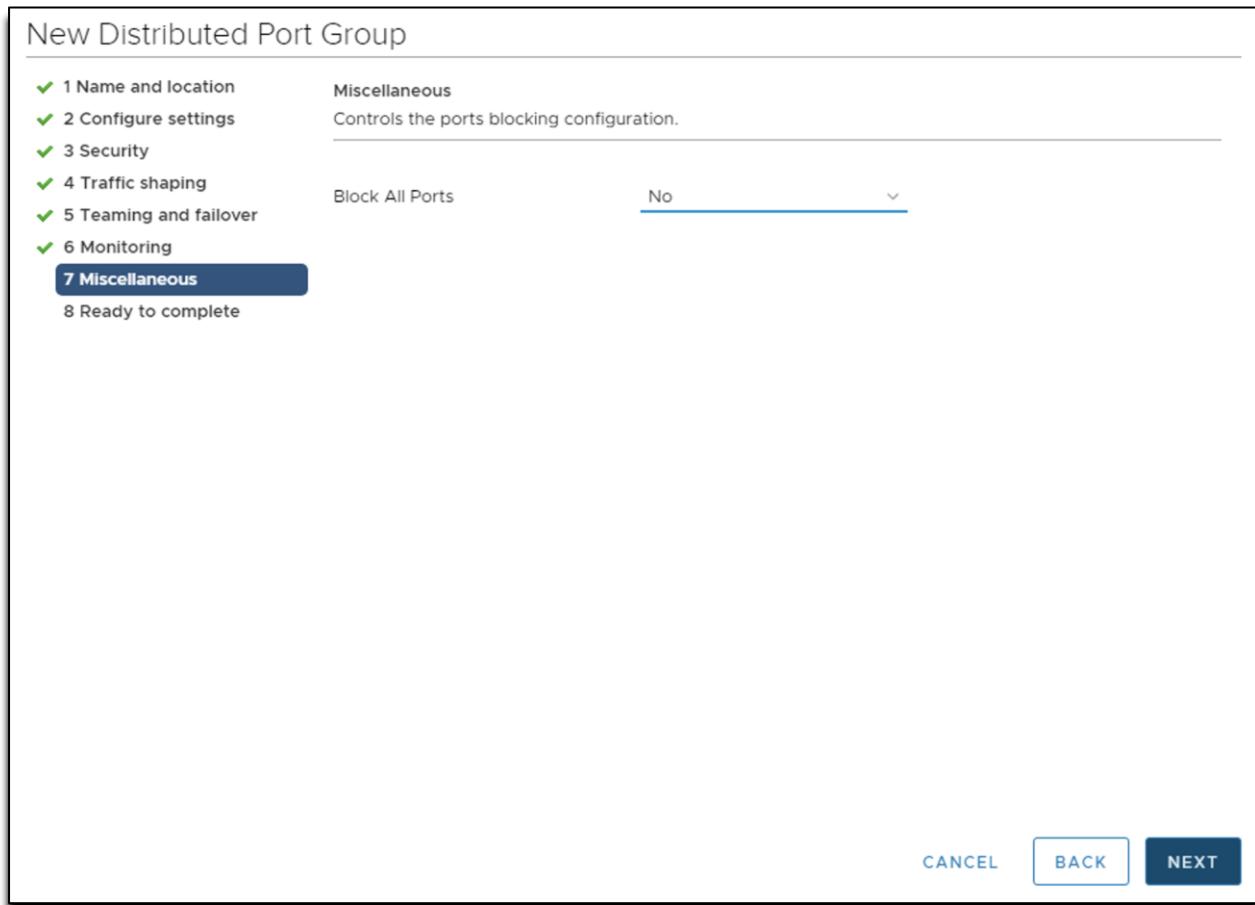
Step 6: Navigate to **Teaming and failover**, on the **Teaming and failover** dialog box select **Uplink 1** as **active** uplink and set **Uplink 2** to **standby** uplink. Click **NEXT**, as seen in the below image:



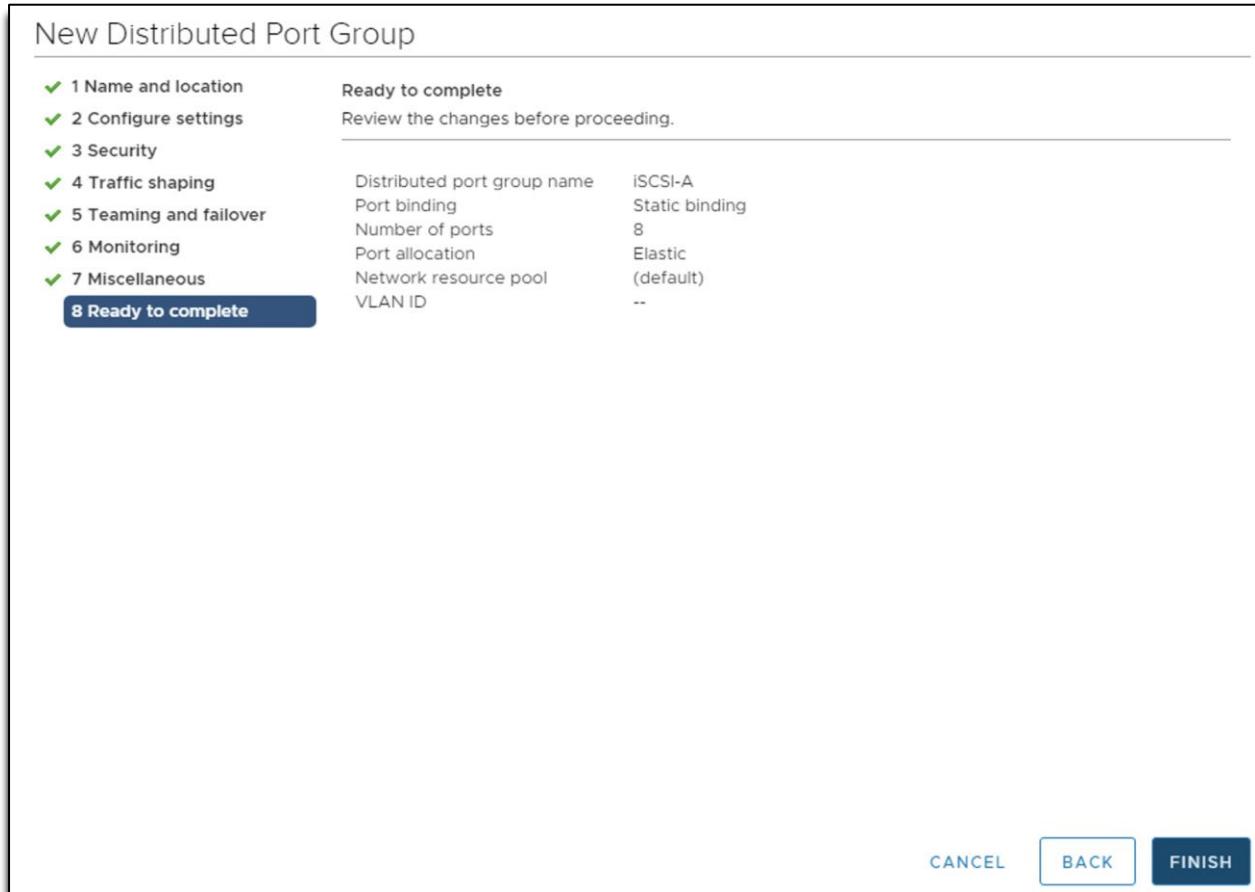
Step 7: Navigate to **Monitoring**, on the **Monitoring** dialog box set **NetFlow** to **Disabled**, click **NEXT**, as seen in the below image:



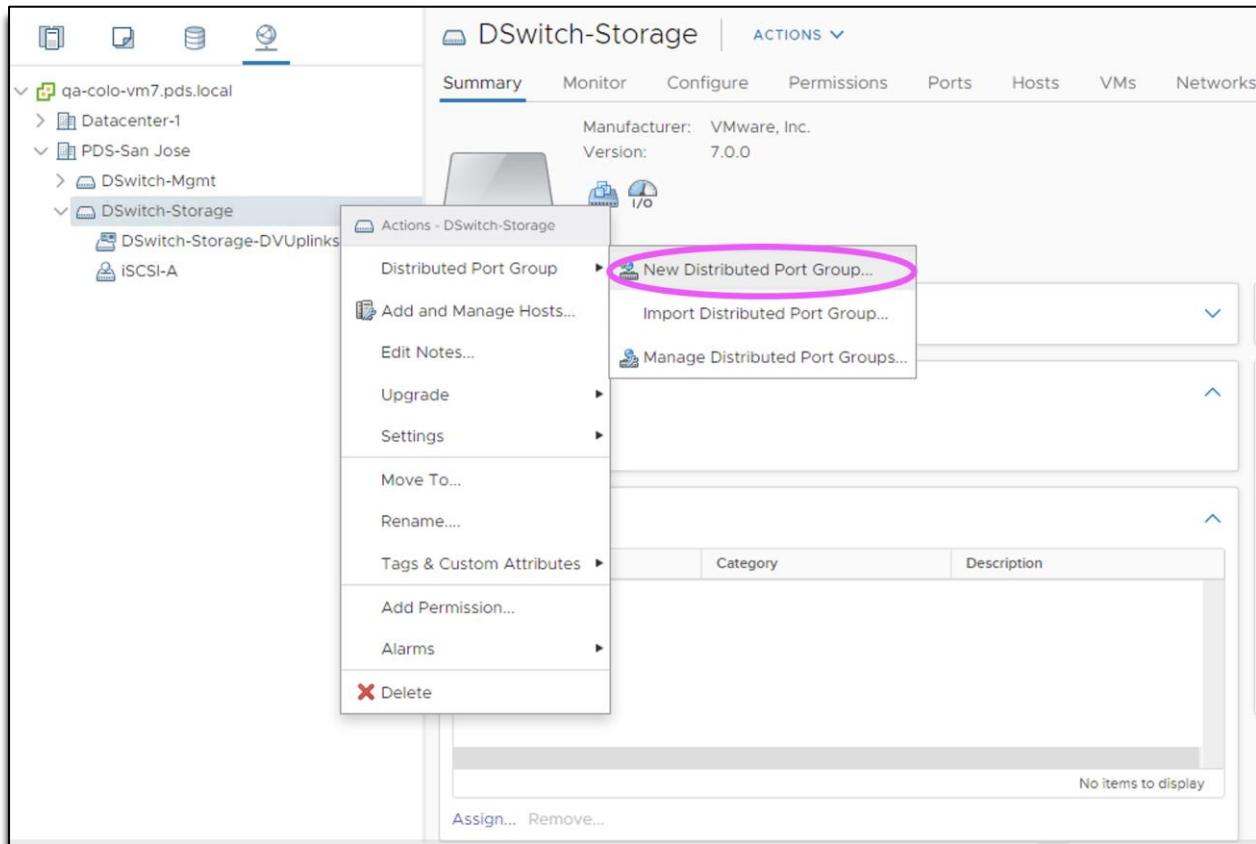
Step 8: Navigate to **Miscellaneous**, on the **Miscellaneous** dialog box set **Block All Ports** to **No**, click **NEXT**, as seen in the below image:



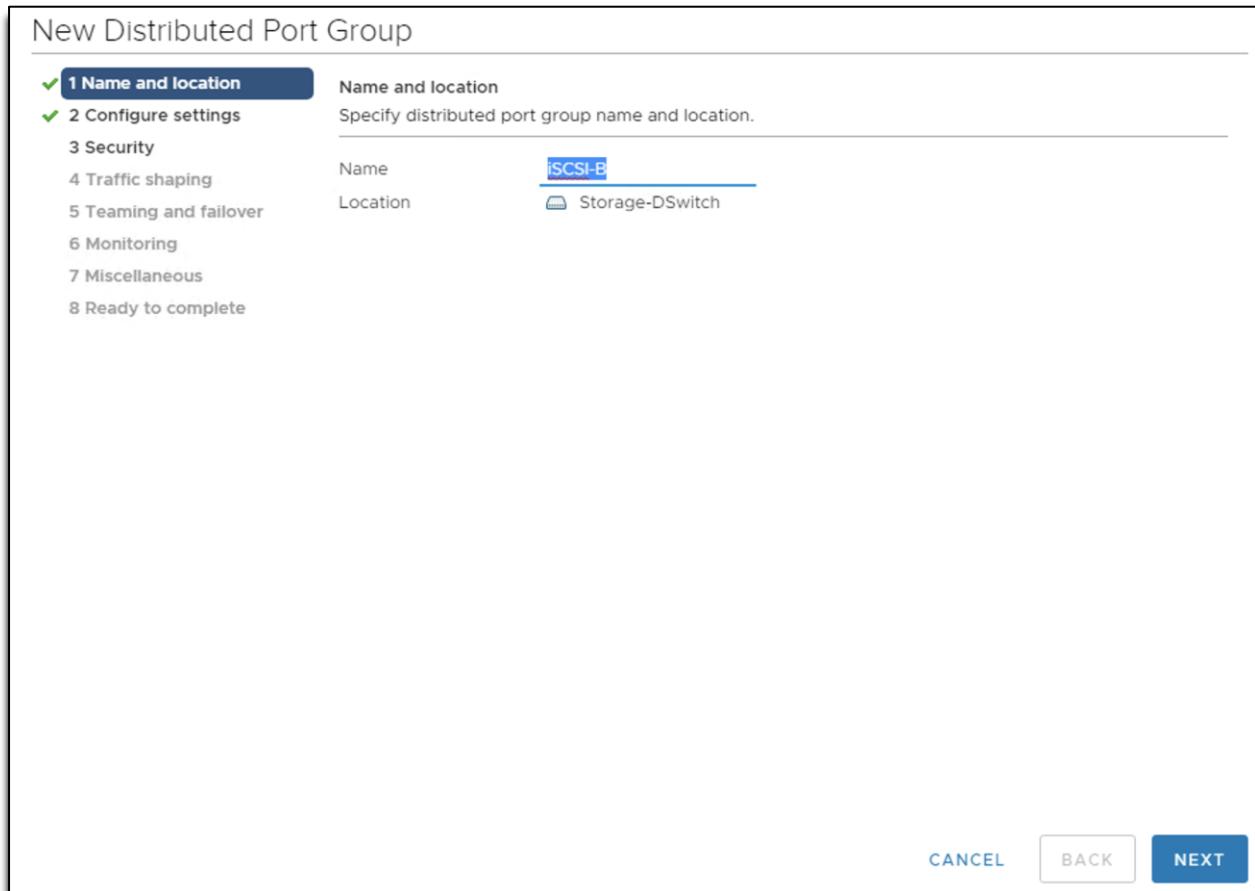
Step 9: Navigate to **Ready to complete**, on the **Ready to complete** dialog box review all the changes before you click **Finish**, as seen in the below image:



Step 10: As a next step, click on **Distributed Port Group> New Distributed Port Group** to create the **second port group**, as seen in the below image:



Step 11: On the **New Distributed Port Group** dialog box, enter **Name** as <iSCSI-B> and click on **Next** as seen in the below image:



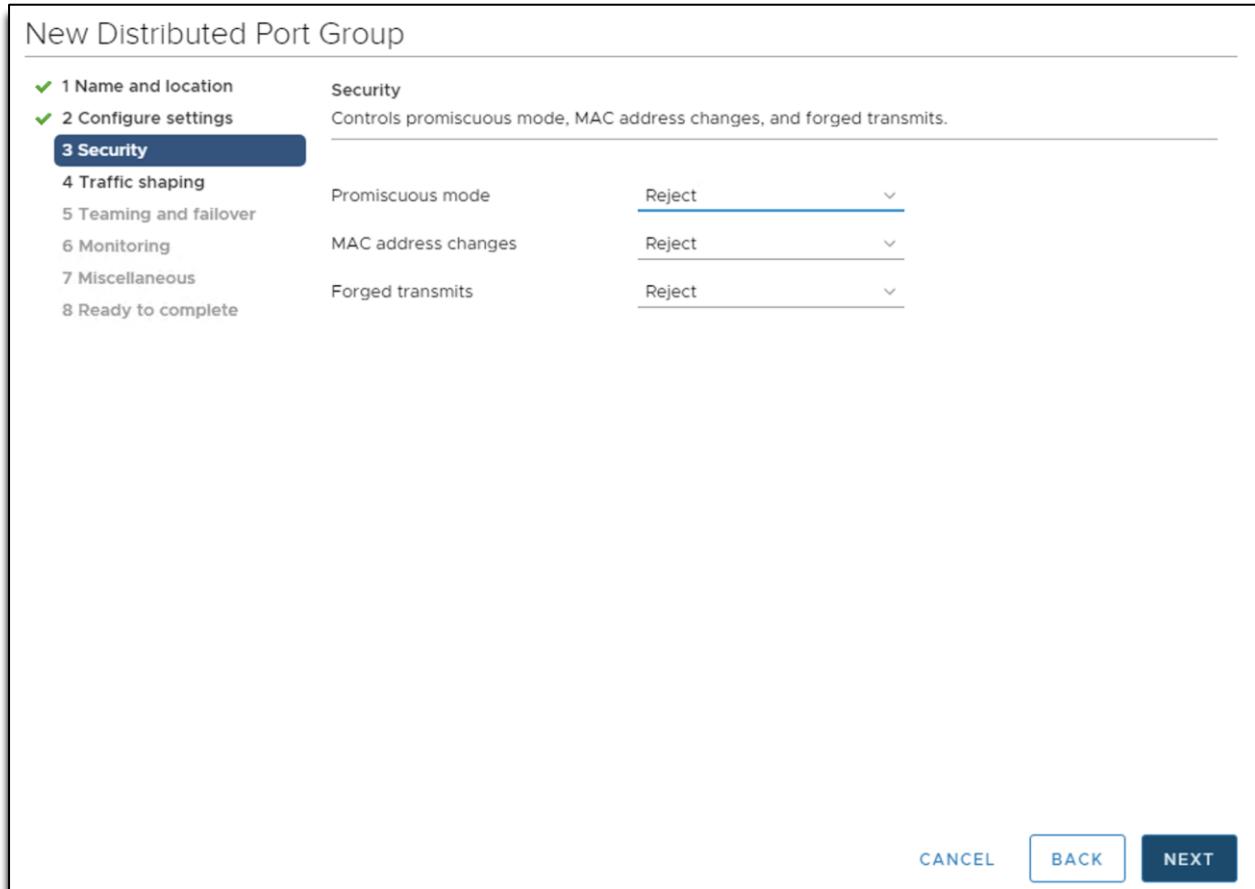
Step 12: Check **Customize default policies configuration** checkbox and click **Next** as seen in the below image:

New Distributed Port Group

✓ 1 Name and location ✓ 2 Configure settings 3 Security 4 Traffic shaping 5 Teaming and failover 6 Monitoring 7 Miscellaneous 8 Ready to complete	Configure settings Set general properties of the new port group.
	Port binding Static binding ▾ Port allocation Elastic ▾ (i) Number of ports 8 Network resource pool (default) ▾
	VLAN VLAN type None ▾
	Advanced <input checked="" type="checkbox"/> Customize default policies configuration

CANCEL BACK NEXT

Step 13: Navigate to **Security**, on the **Security** dialog box, click **NEXT**, as seen in the below image:



Step 14: Navigate to **Traffic shaping**, on the **Traffic shaping** dialog box, click **NEXT**, as seen in the below image:

New Distributed Port Group

✓ 1 Name and location	Traffic shaping
✓ 2 Configure settings	Controls average bandwidth, peak bandwidth, and burst size of the ingress and egress traffic on each port.
✓ 3 Security	
4 Traffic shaping	
5 Teaming and failover	
6 Monitoring	
7 Miscellaneous	
8 Ready to complete	

Ingress traffic shaping

Status	Disabled
Average bandwidth (kbit/s)	100000
Peak bandwidth (kbit/s)	100000
Burst size	102400

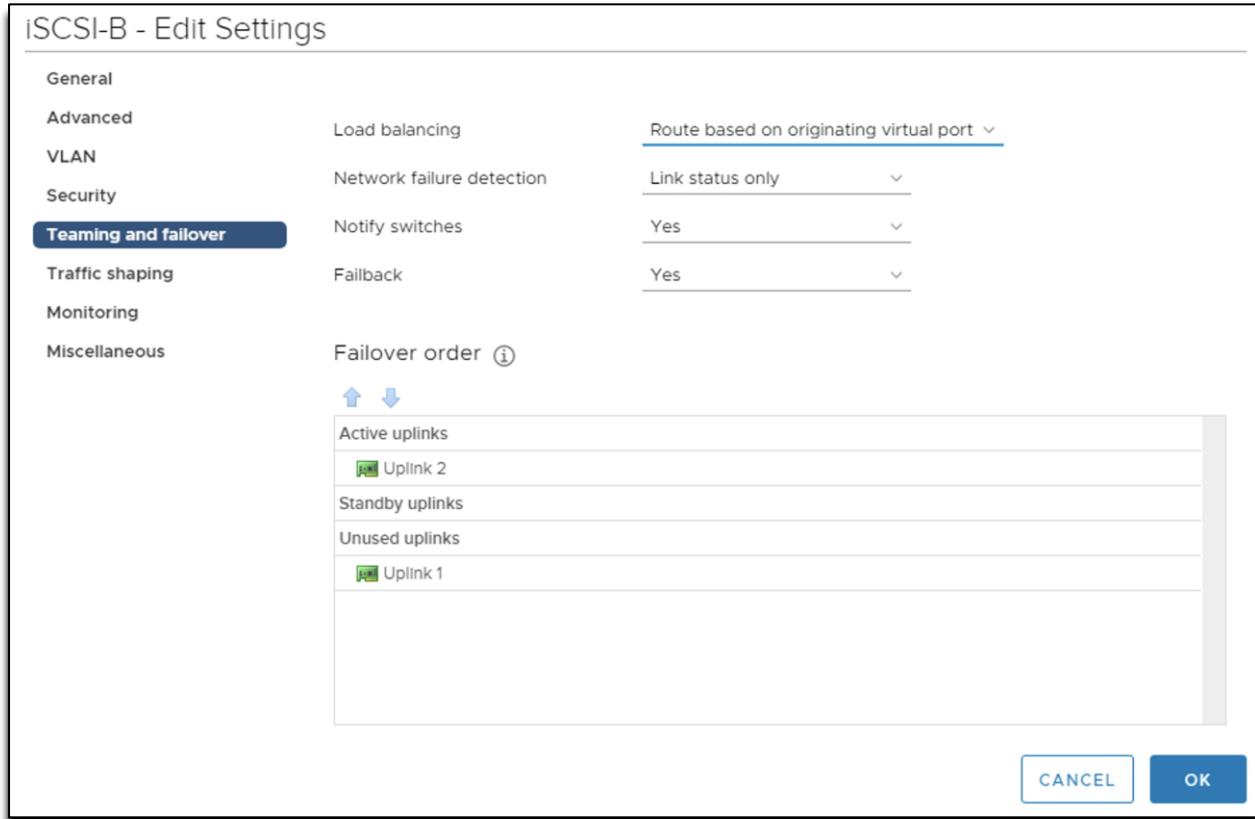
Egress traffic shaping

Status	Disabled
Average bandwidth (kbit/s)	100000
Peak bandwidth (kbit/s)	100000
Burst size (KB)	102400

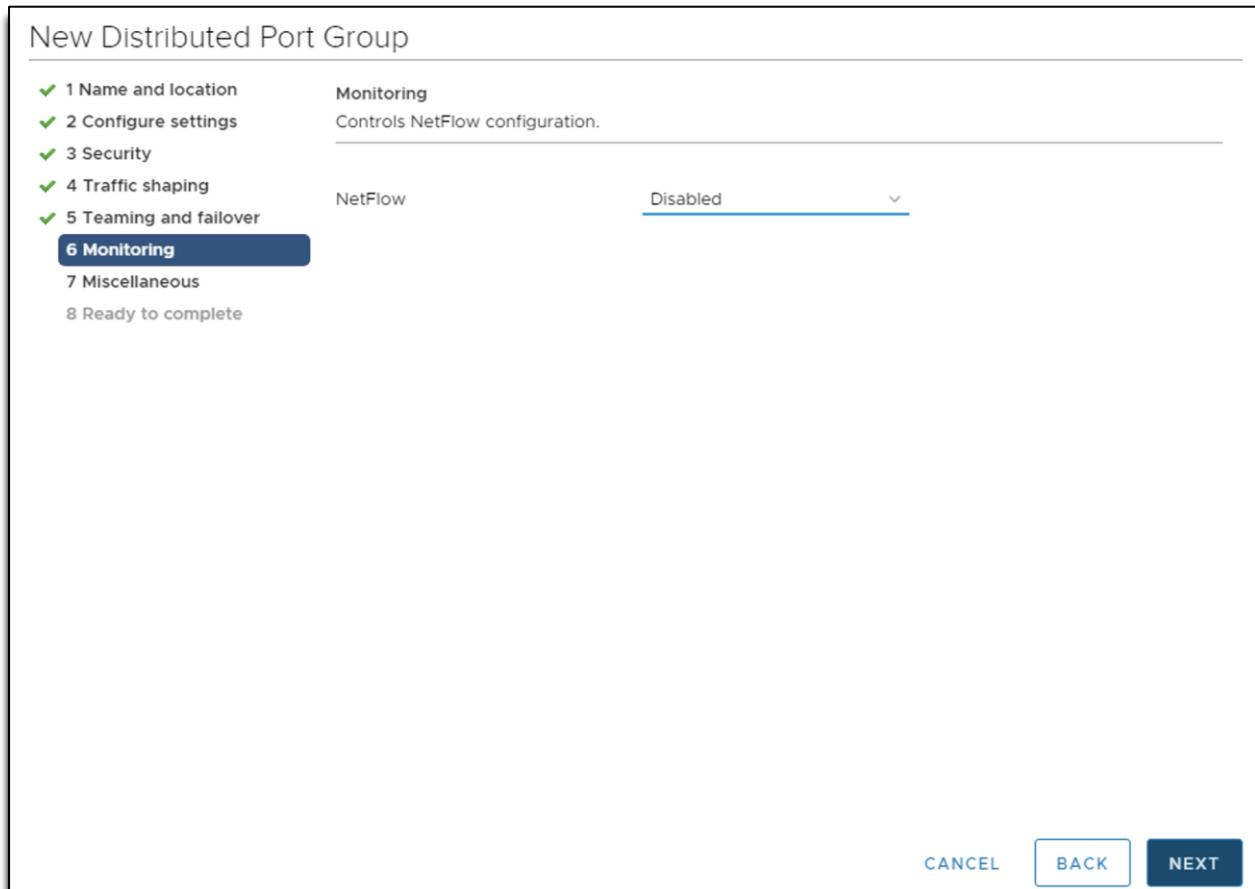
i Traffic shaping policy is applied individually to each port in the port group.

CANCEL
NEXT

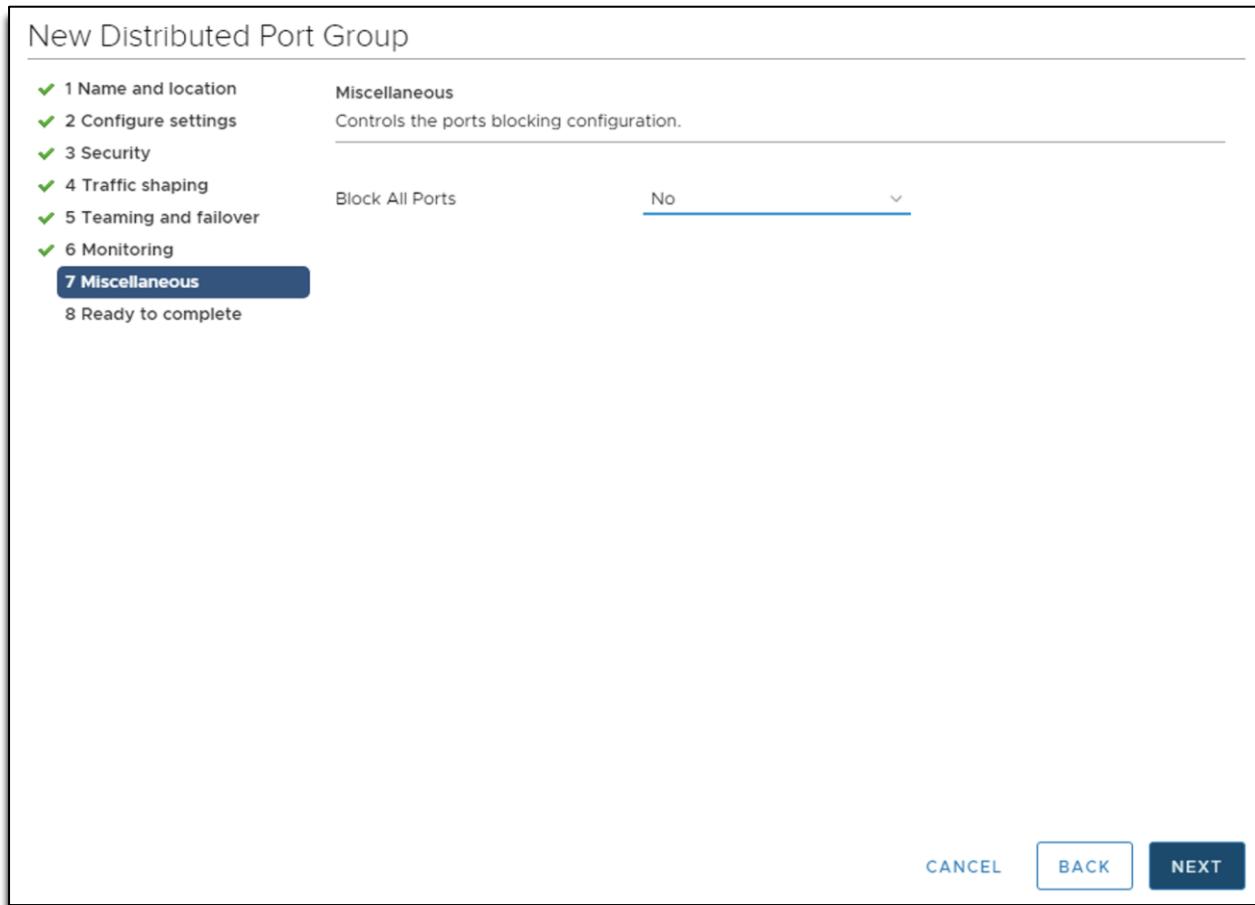
Step 15: Navigate to **Teaming and failover**, on the **Teaming and failover** dialog box select **Uplink 1** as **active** uplink and set **Uplink 2** to **standby** uplink. Click **NEXT**, as seen in the below image:



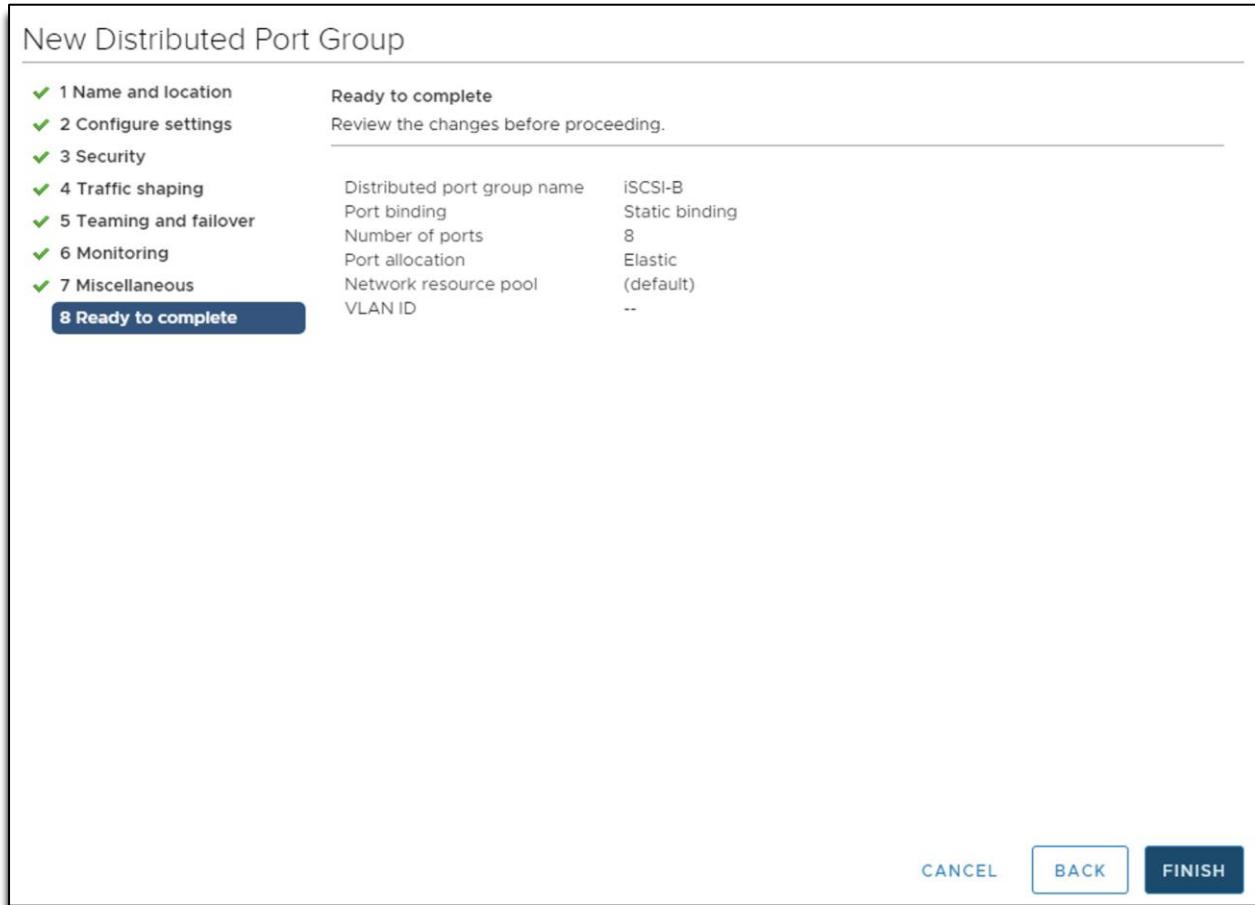
Step 16: Navigate to **Monitoring**, on the **Monitoring** dialog box set **NetFlow** to **Disabled**, click **NEXT**, as seen in the below image:



Step 17: Navigate to **Miscellaneous**, on the **Miscellaneous** dialog box set **Block All Ports** to **No**, click **NEXT**, as seen in the below image:



Step 18: Navigate to **Ready to complete**, on the **Ready to complete** dialog box review all the changes before you click **Finish**, as seen in the below image:

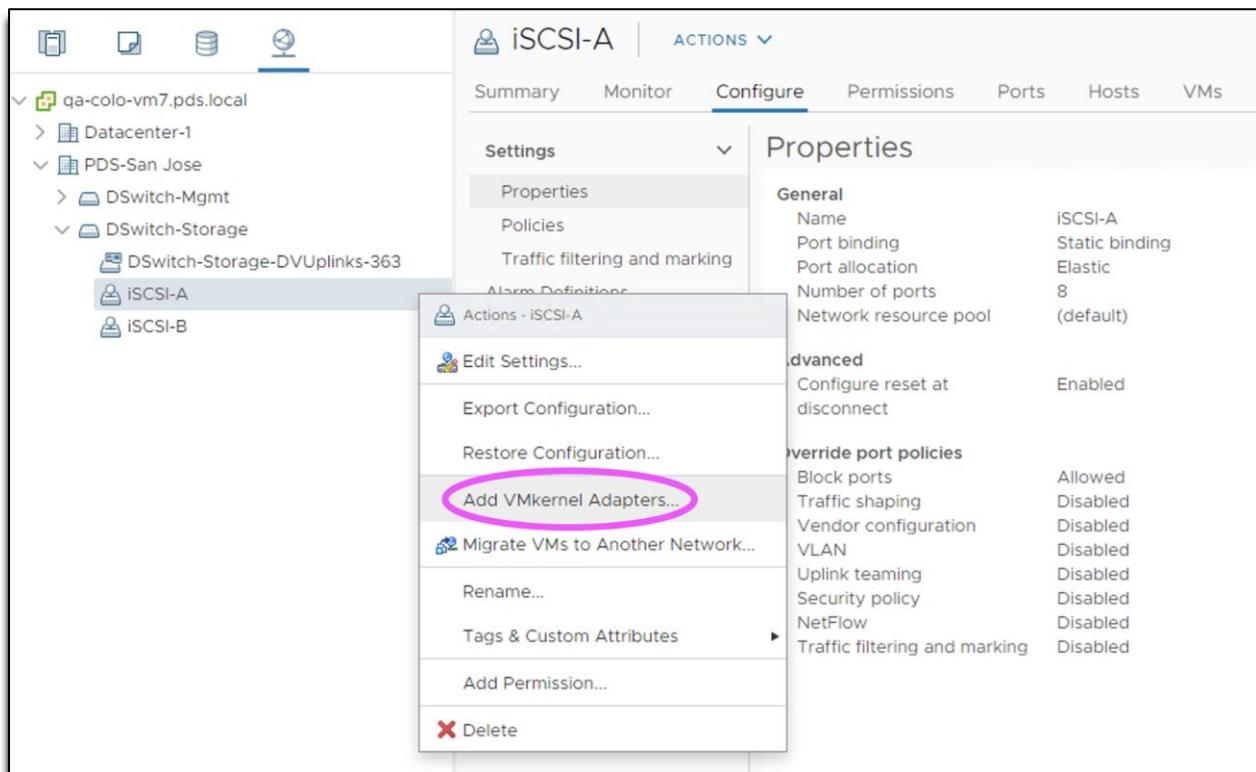


8. Adding VMkernel Adapters for Distributed Port Groups

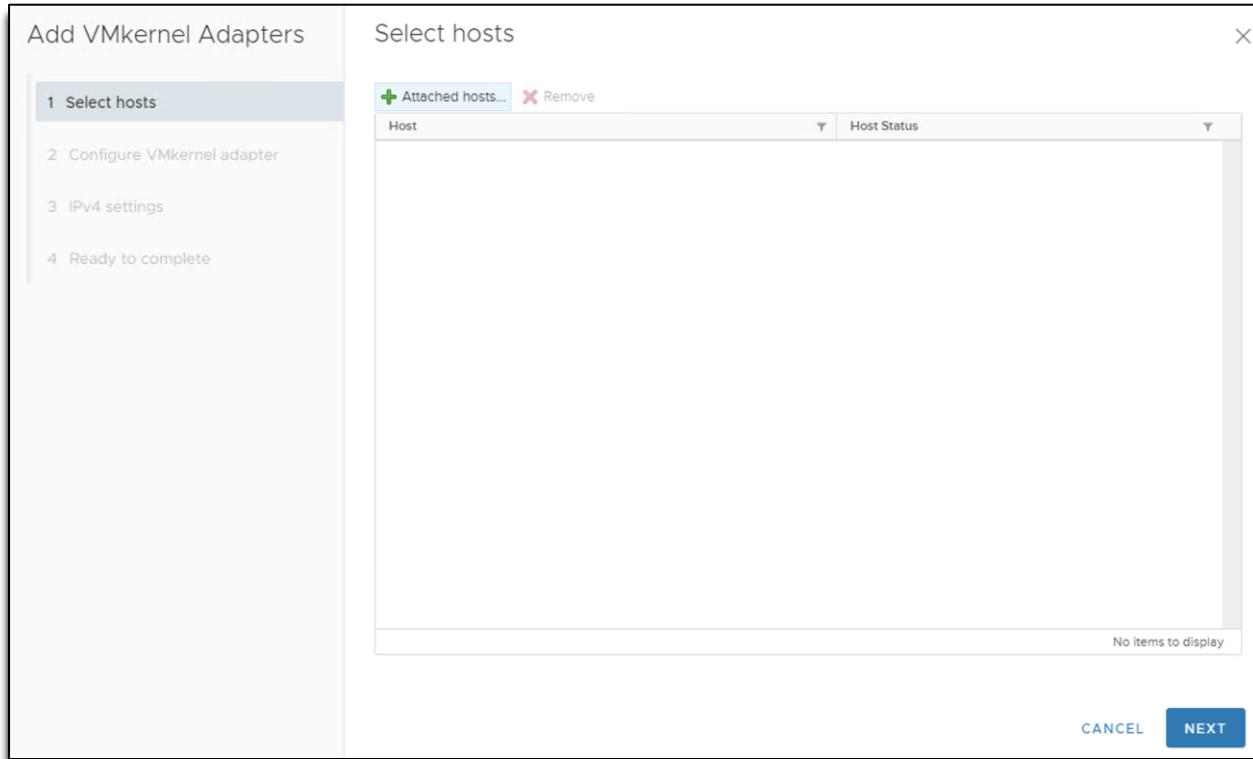
This section lists the steps required to add **VMkernel Adapters** for distributed port groups.

Note: The same steps are applicable for both the port groups <iSCSI-A> and <iSCSI-B> created as seen in the above section *Creating Distributed Port Groups for iSCSI Traffic*.

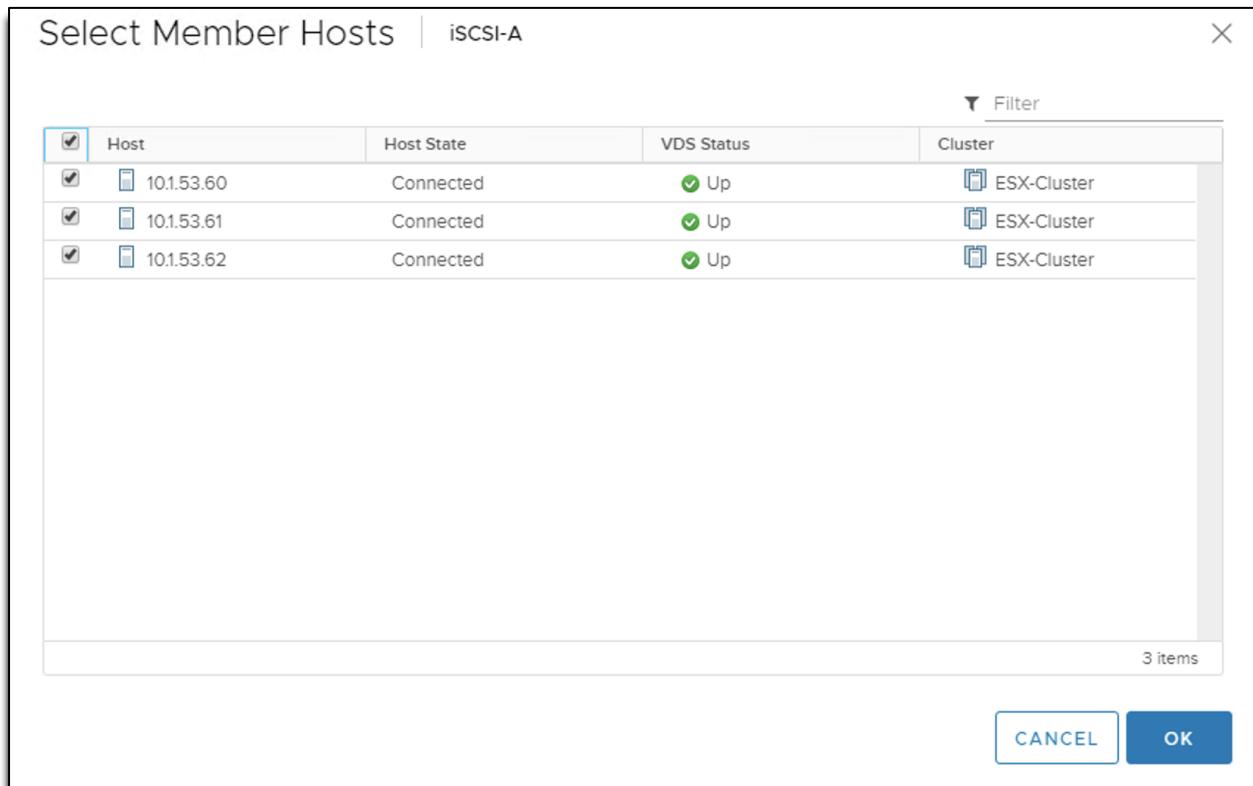
Step 1: As seen in the below image, right click the distributed port group and select **Add VMkernel Adapters**:



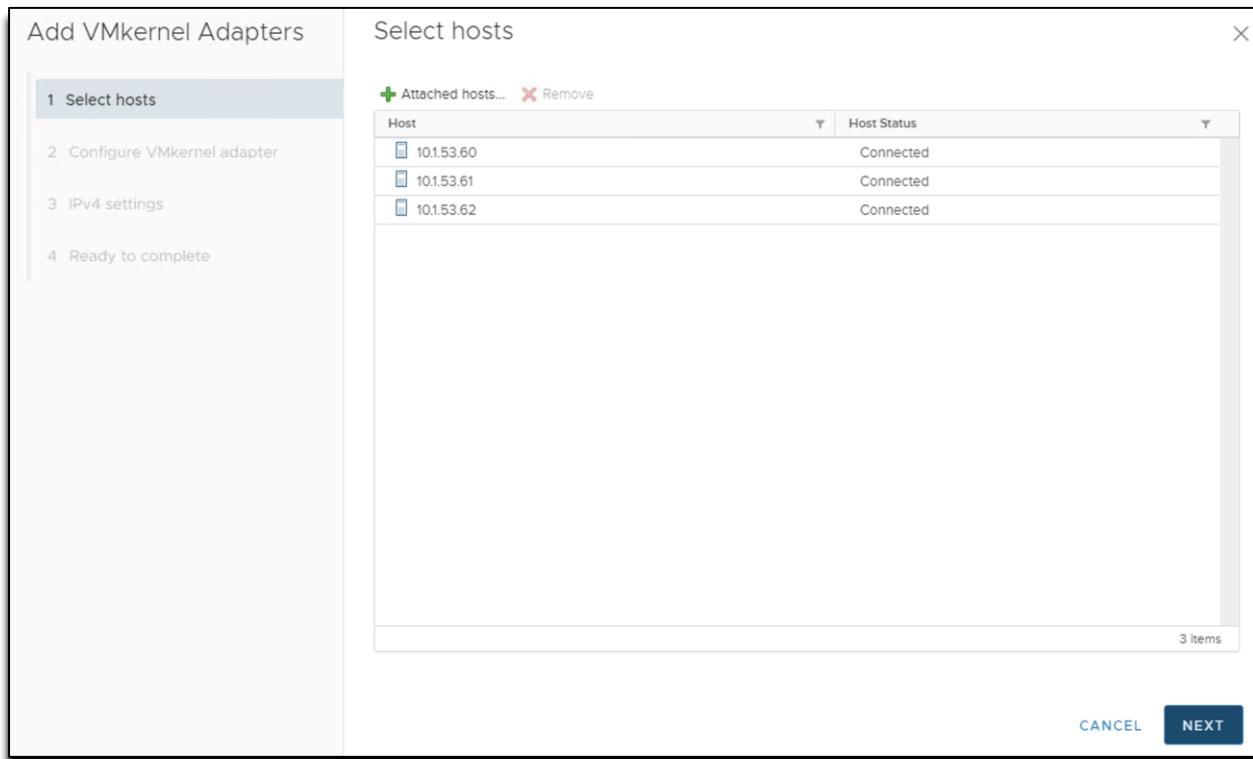
Step 2: Subsequently, navigate to **Select hosts** and click **Add Hosts** as seen in the below image:



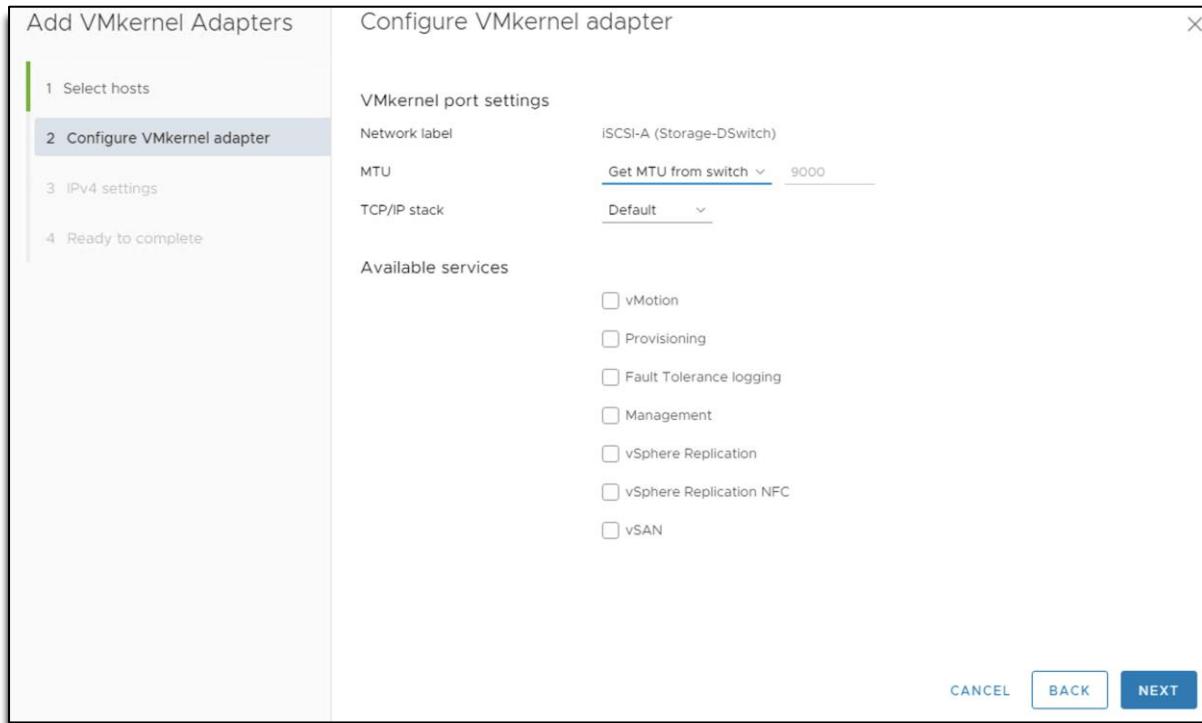
Step 3: As a next step, select the hosts and click **OK**.



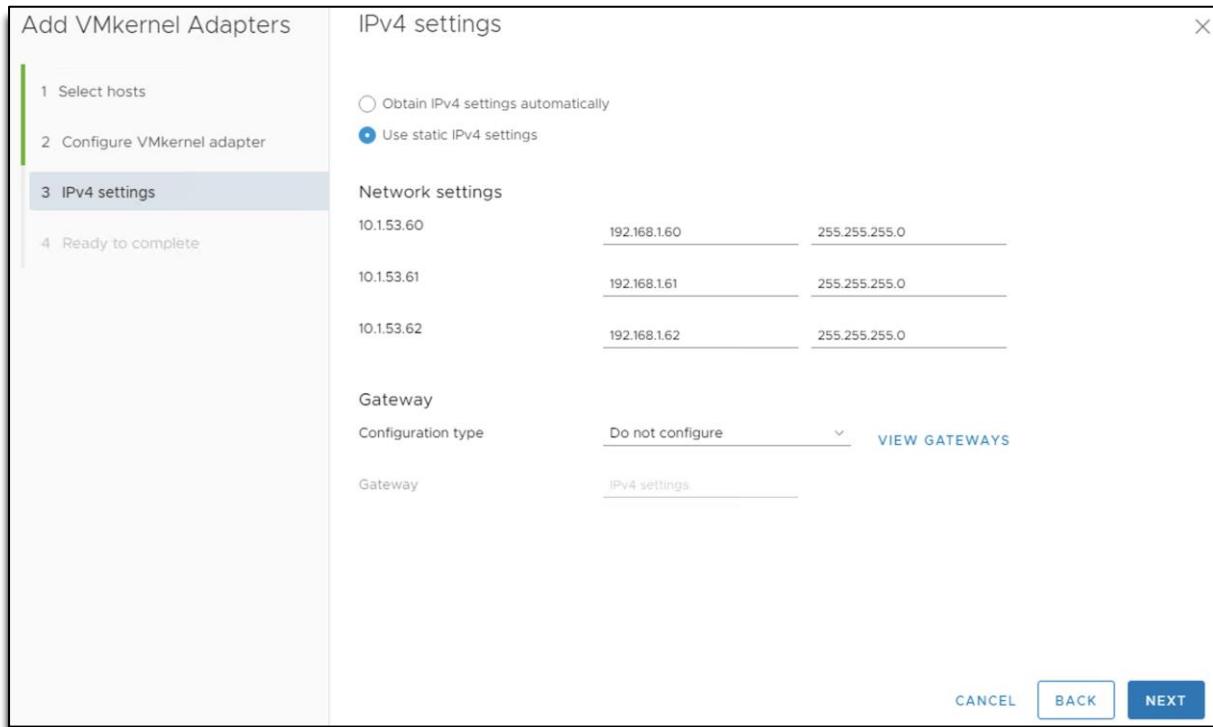
Step 4: Then click **NEXT** on the **Select hosts** dialog box.



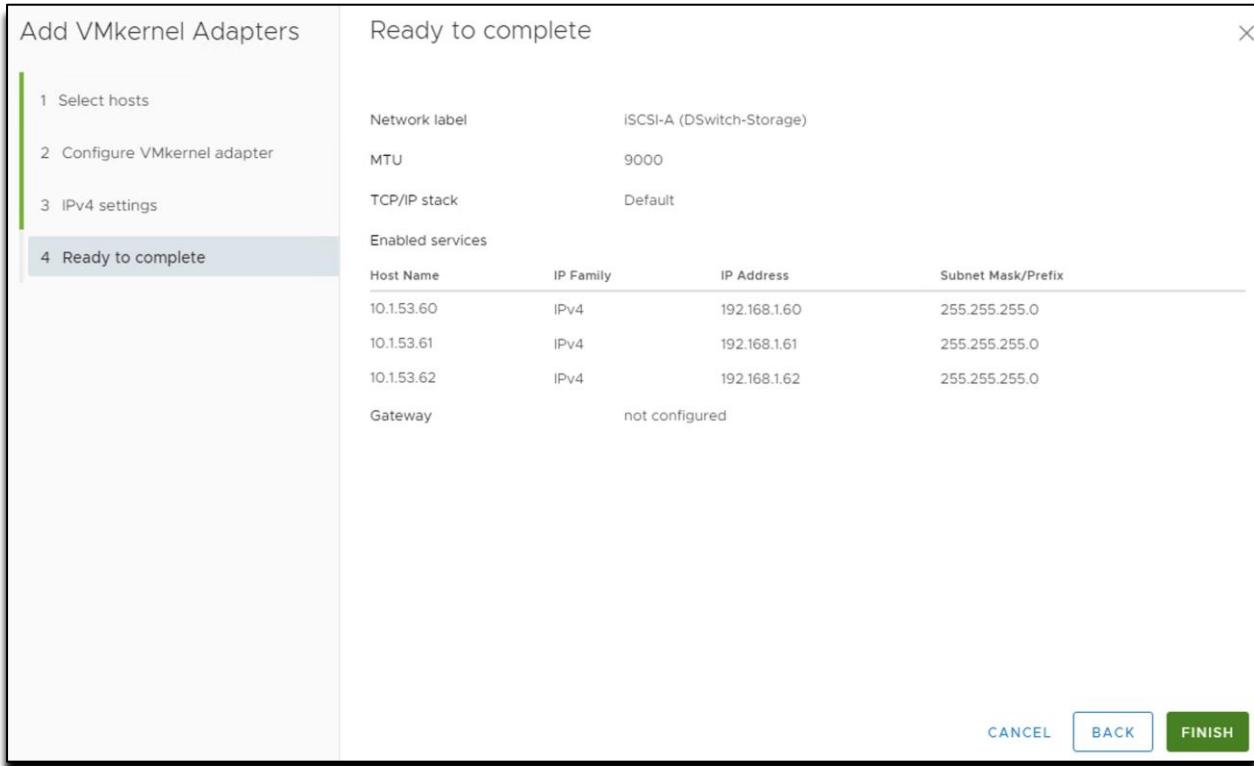
Step 5: Navigate to **Configure VMkernel adapter**, Set **MTU** to **9000** and click **NEXT** as seen in below image:



Step 6: Navigate to **IPv4** settings, enter the **Network Settings** and **Gateway** details, and click **NEXT** as seen in below image:



Step 7: Navigate to **Ready to complete** to verify the settings, and click **FINISH** as seen in the below image:



The screenshot shows a software interface for configuring VMkernel adapters. On the left, a vertical navigation bar lists steps: 1 Select hosts, 2 Configure VMkernel adapter, 3 IPv4 settings, and 4 Ready to complete. Step 4 is highlighted with a light blue background. The main panel is titled "Ready to complete". It displays network configuration details and a table of IP settings.

Network label: iSCSI-A (DSwitch-Storage)

MTU: 9000

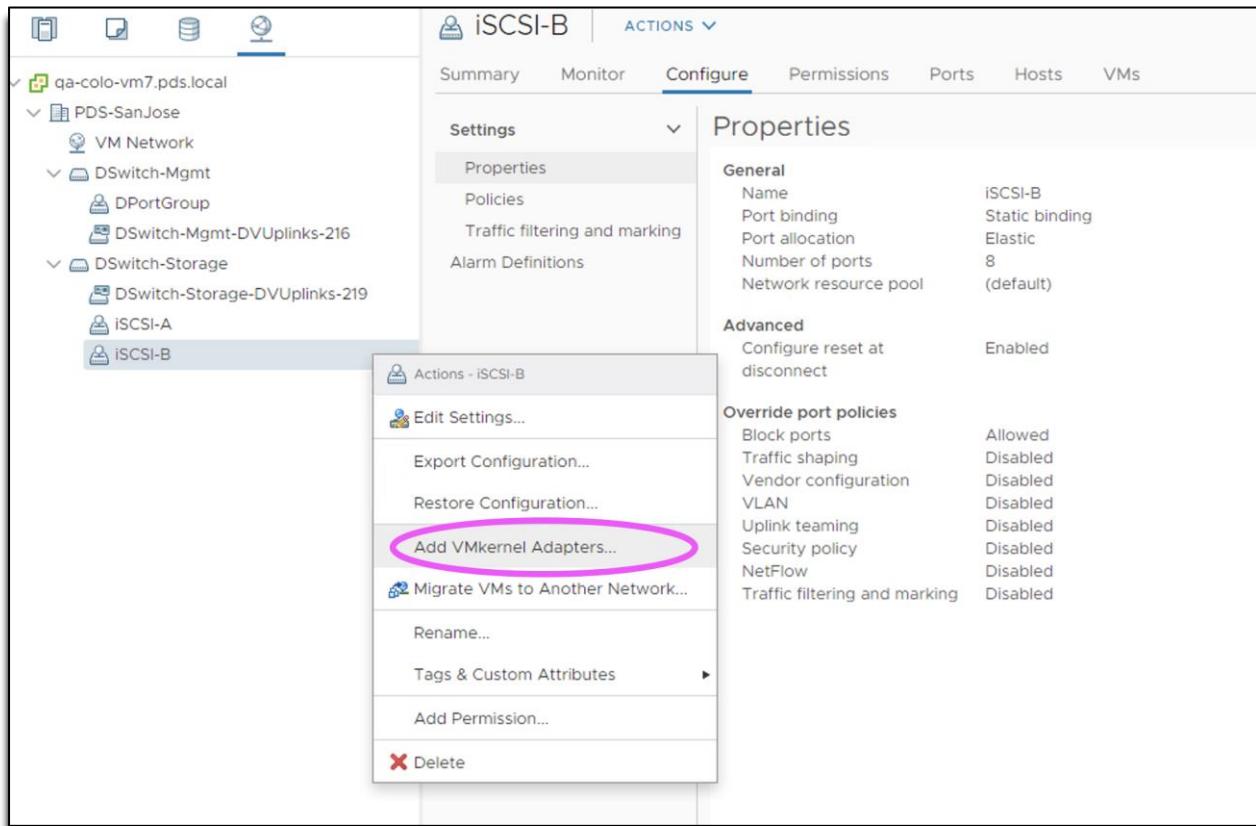
TCP/IP stack: Default

Enabled services:

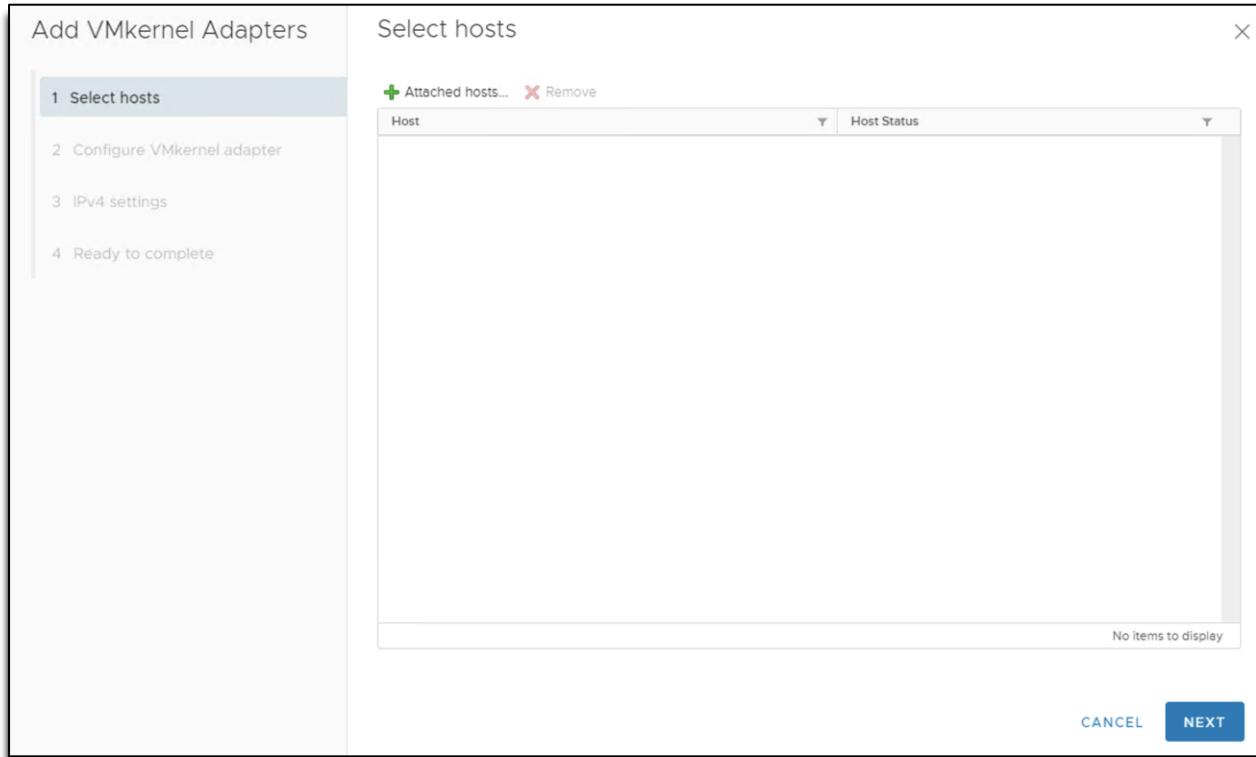
Host Name	IP Family	IP Address	Subnet Mask/Prefix
10.1.53.60	IPv4	192.168.1.60	255.255.255.0
10.1.53.61	IPv4	192.168.1.61	255.255.255.0
10.1.53.62	IPv4	192.168.1.62	255.255.255.0
Gateway		not configured	

At the bottom right are three buttons: CANCEL, BACK (disabled), and FINISH (highlighted).

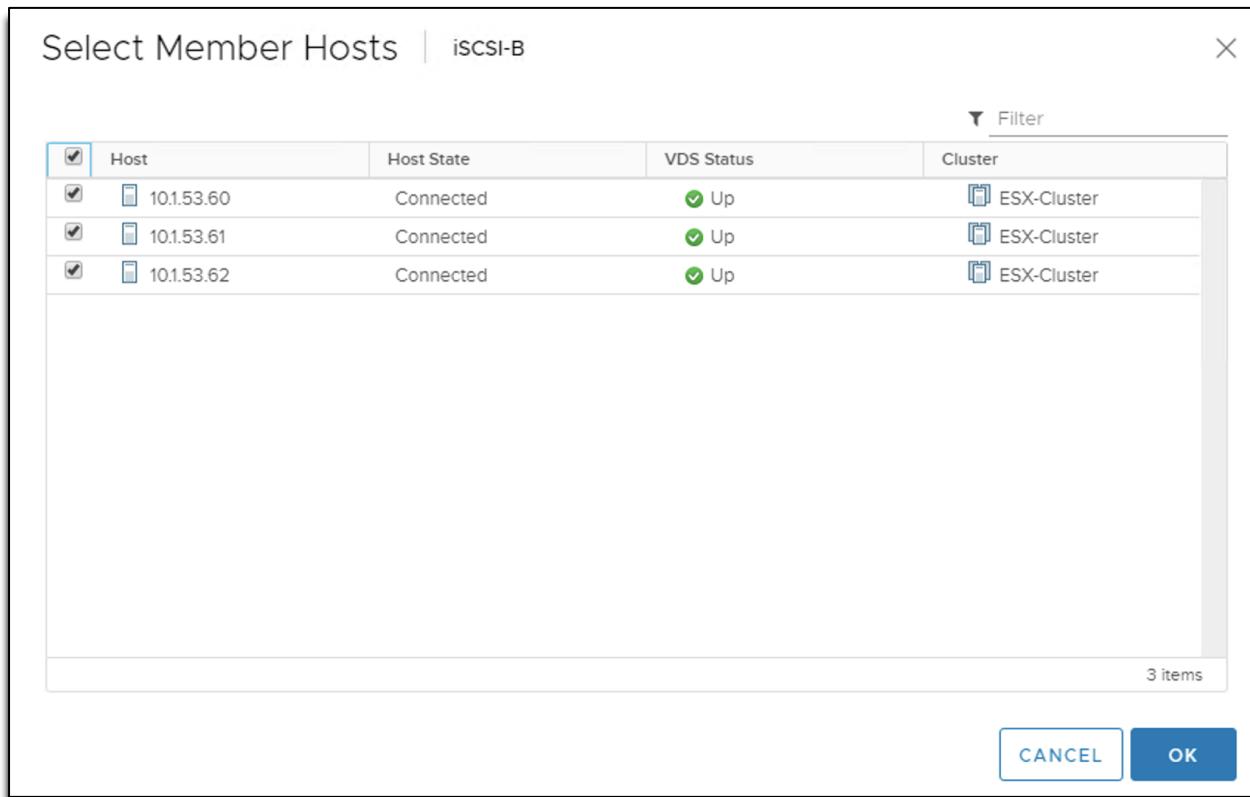
Step 8: As seen in the below image, right click the distributed port group and select **Add VMkernel Adapters**. Configure VMKernel Adapter for Distributed Port Group named <iSCSI-B>.



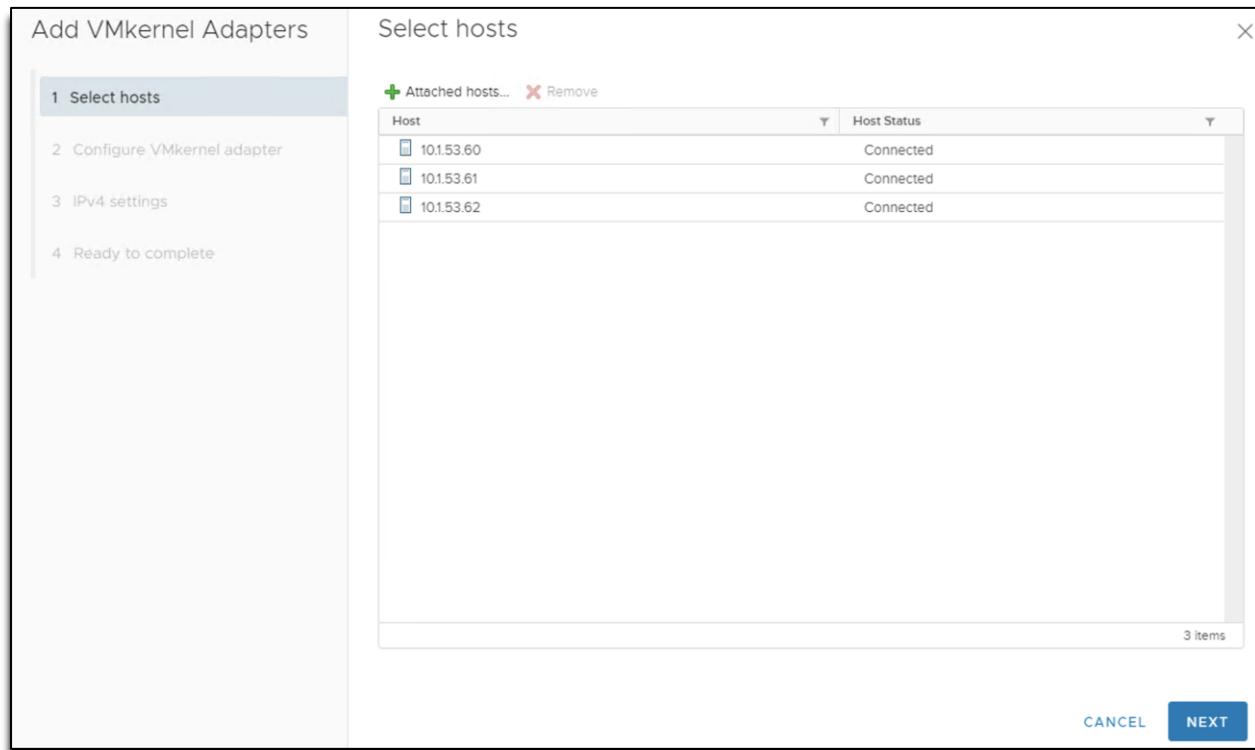
Step 9: Subsequently, navigate to **Select hosts** and click **Add Hosts** as seen in the below image:



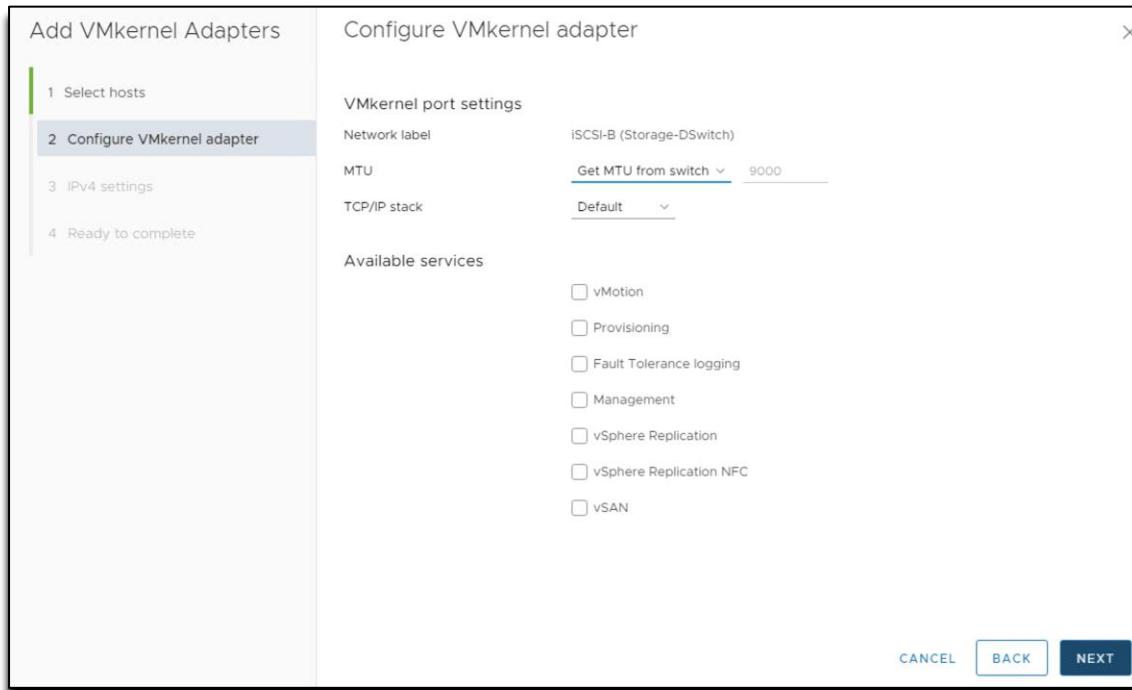
Step 10: As a next step, select the hosts and click **OK**.



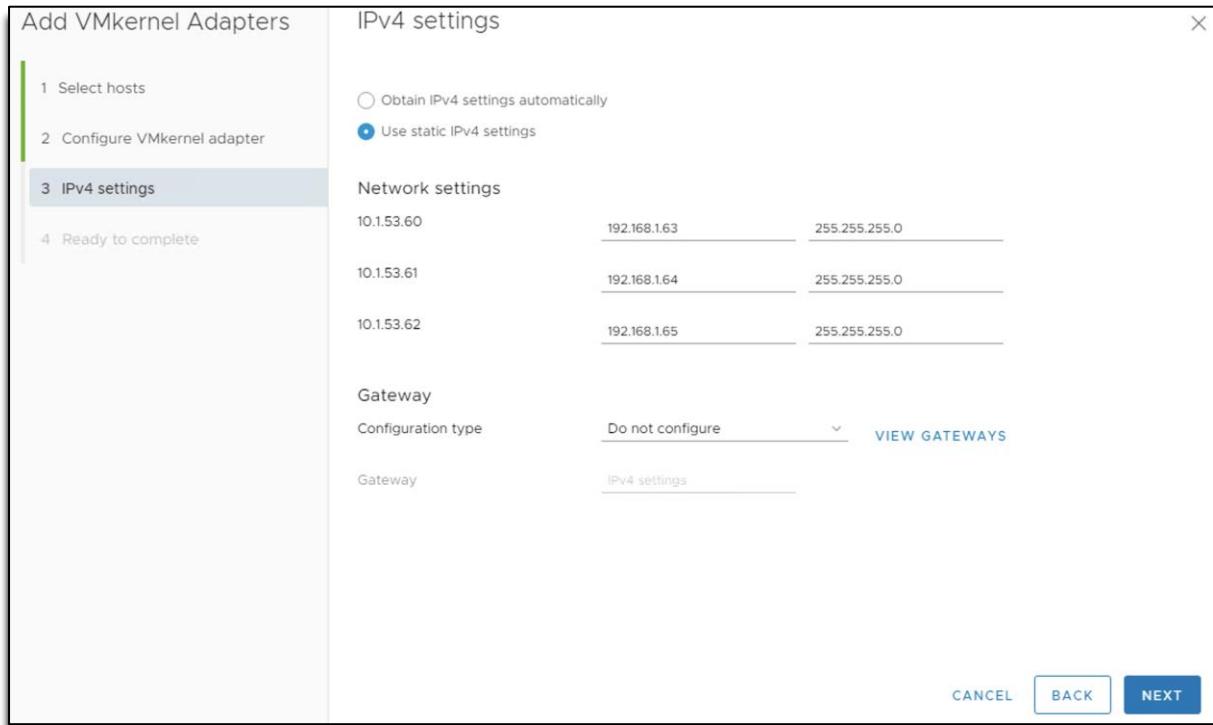
Step 11: Then click **NEXT** on the **Select hosts** dialog box.



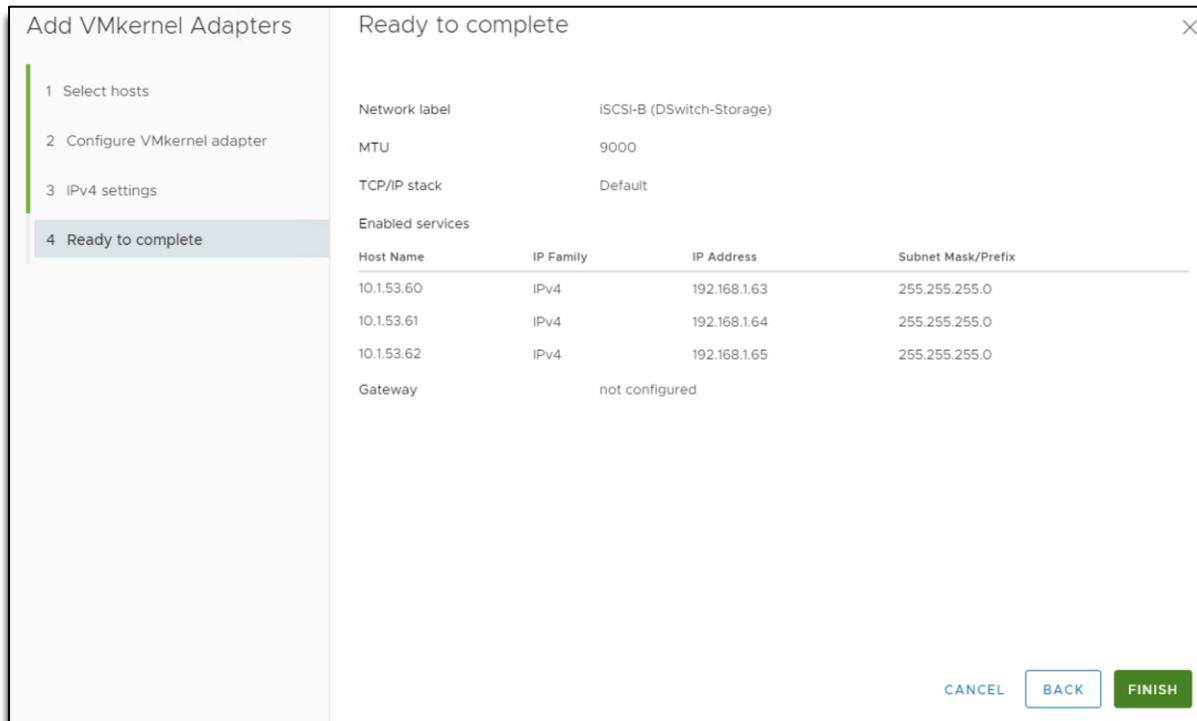
Step 12: Navigate to **Configure VMkernel adapter**, Set **MTU** to **9000** and click **NEXT** as seen in below image:



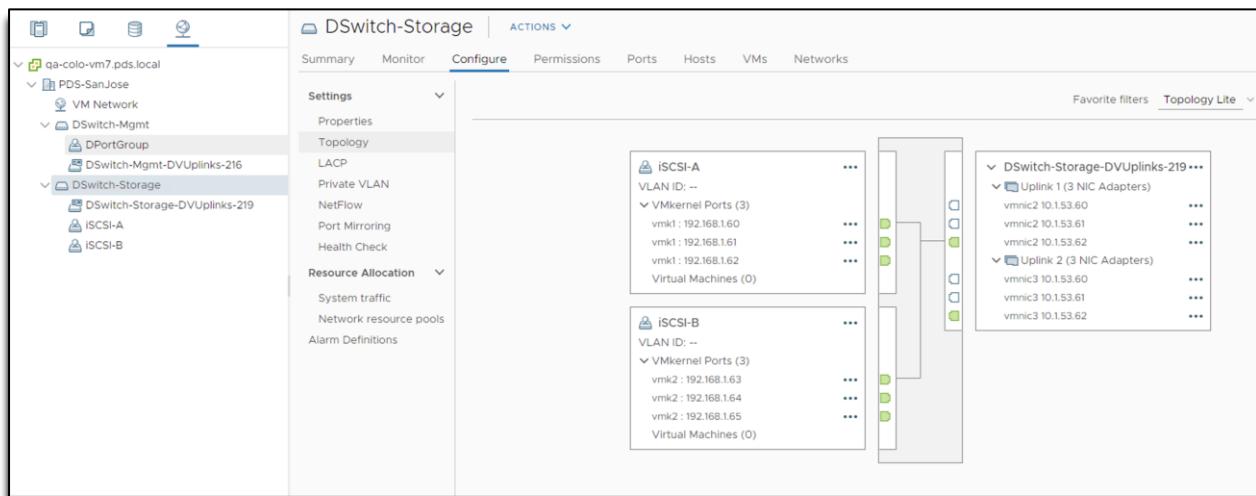
Step 13: Navigate to **IPv4** settings, enter the **Network Settings** and **Gateway** details, and click **NEXT** as seen in below image:



Step 14: Navigate to **Ready to complete** to verify the settings, and click **FINISH** as seen in the below image:



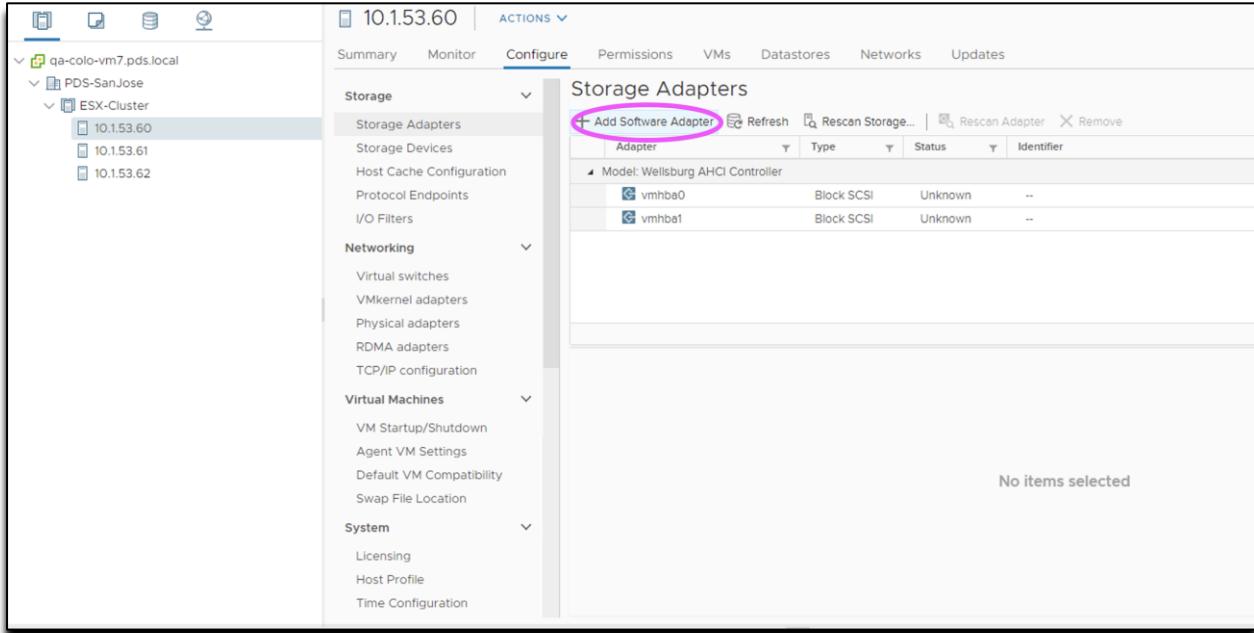
Step 15: After all the ESXi Cluster Networking configuration is complete, the configuration can be verified under the **Distributed Switch>Configure>Topology** tab, the topology is seen in the below image:



9. Configuring iSCSI Software Adapter

Note: For accessing **Pavilion** volumes, user need to create the **Software iSCSI Adapter**.

Step 1: Navigate to Hosts and Clusters>Configure>Storage Adapters>**Add Software Adapters** as seen in the below image:



The screenshot shows the VMware vSphere Web Client interface. The top navigation bar includes icons for Home, Summary, Monitor, Configure (selected), Permissions, VMs, Datastores, Networks, and Updates. The IP address 10.1.53.60 is displayed. The left sidebar shows a tree structure with nodes like qa-colo-vm7.pds.local, PDS-SanJose, ESX-Cluster, and several IP addresses (10.1.53.60, 10.1.53.61, 10.1.53.62). The main content area is titled 'Storage Adapters'. At the top right of this section are buttons for Add Software Adapter (circled in pink), Refresh, Rescan Storage..., Rescan Adapter, and Remove. A table lists storage adapters under the heading 'Model: Wellsburg AHCI Controller'. The table has columns for Adapter, Type, Status, and Identifier. It shows two entries: vmhba0 (Block SCSI, Unknown) and vmhba1 (Block SCSI, Unknown).

Adapter	Type	Status	Identifier
vmhba0	Block SCSI	Unknown	--
vmhba1	Block SCSI	Unknown	--

No items selected

Step 2: Select **Add software iSCSI adapter** and click **OK**.

Add Software Adapter | 10.1.53.60 X

Add software iSCSI adapter
A new software iSCSI adapter will be added to the list. After it has been added, select the adapter and use the Adapter Details section to complete the configuration.

Add software NVMe over RDMA adapter
Discover software NVMe adapters associated with the following RMDA devices.

RDMA device:

Add Software FCoE Adapter
Discover software FCoE adapters associated with the following physical network adapter.

Physical Network Adapter:

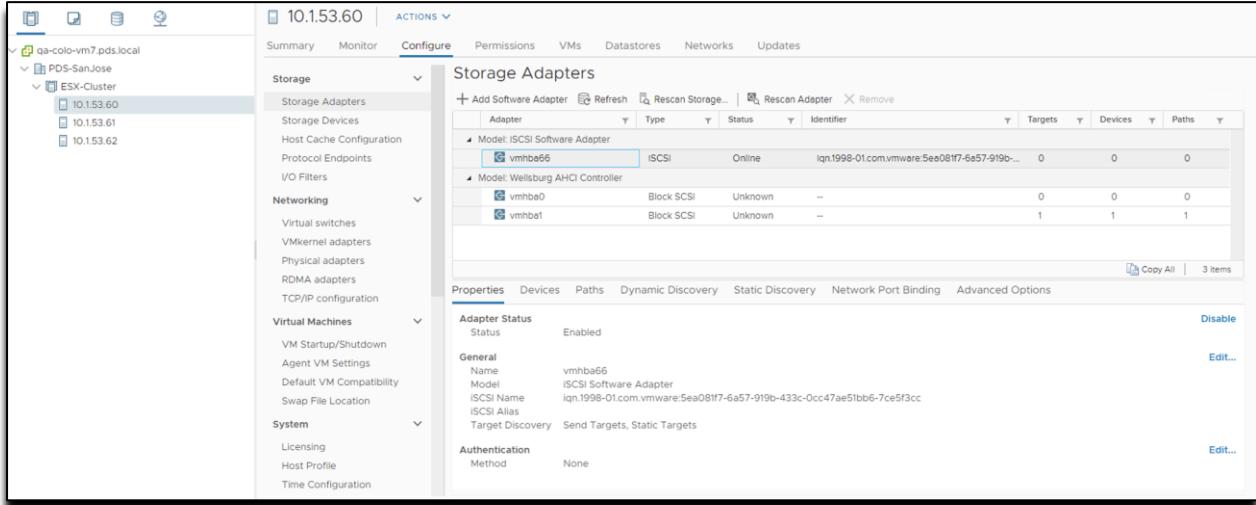
VLAN ID: Range: 0 - 4094

Priority Class: Range: 0 - 7

Controller MAC Address:

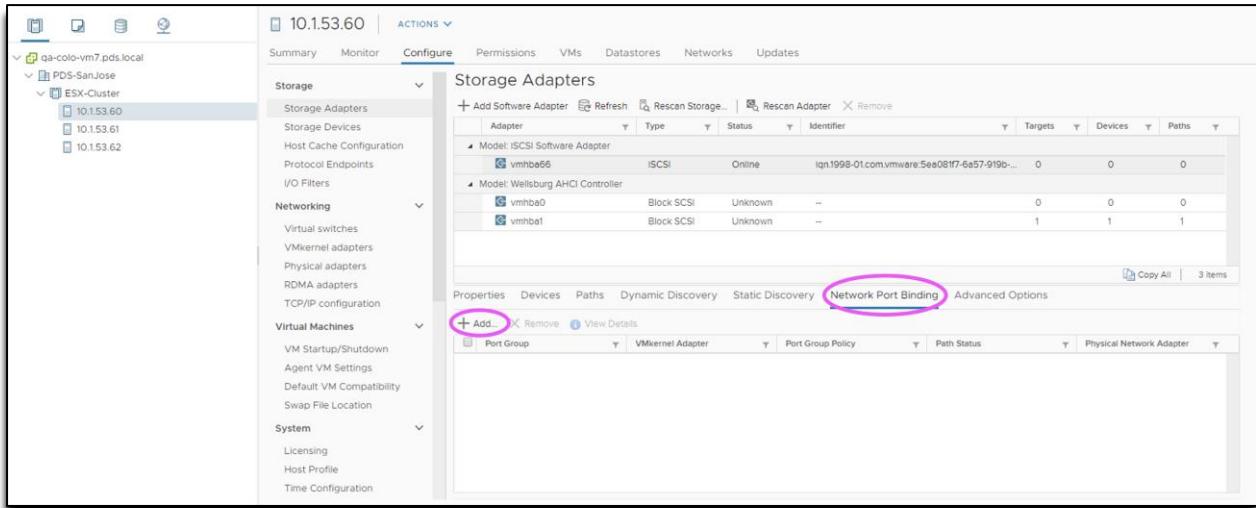
CANCEL OK

Step 3: Click OK. As a next step, verify in the **Storage Adapters>Configure>Storage Adapters** tab, that iSCSI software adapter <vmhba66> has been added, as seen in the below image:

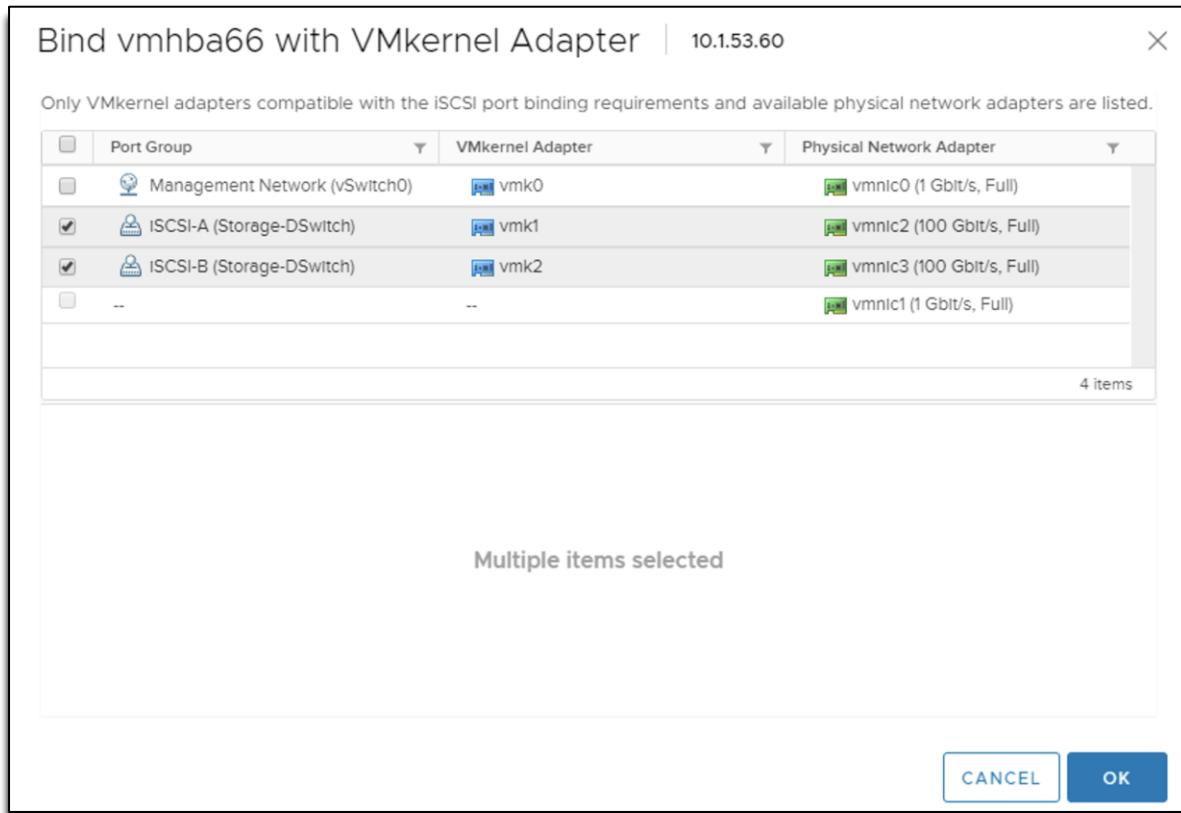


Adapter	Type	Status	Identifier	Targets	Devices	Paths
vmhba66	iSCSI	Online	iqn.1998-01.com.vmware:5ea08ff7-6a57-919b-...	0	0	0
vmhba0	Block SCSI	Unknown	--	0	0	0
vmhba1	Block SCSI	Unknown	--	1	1	1

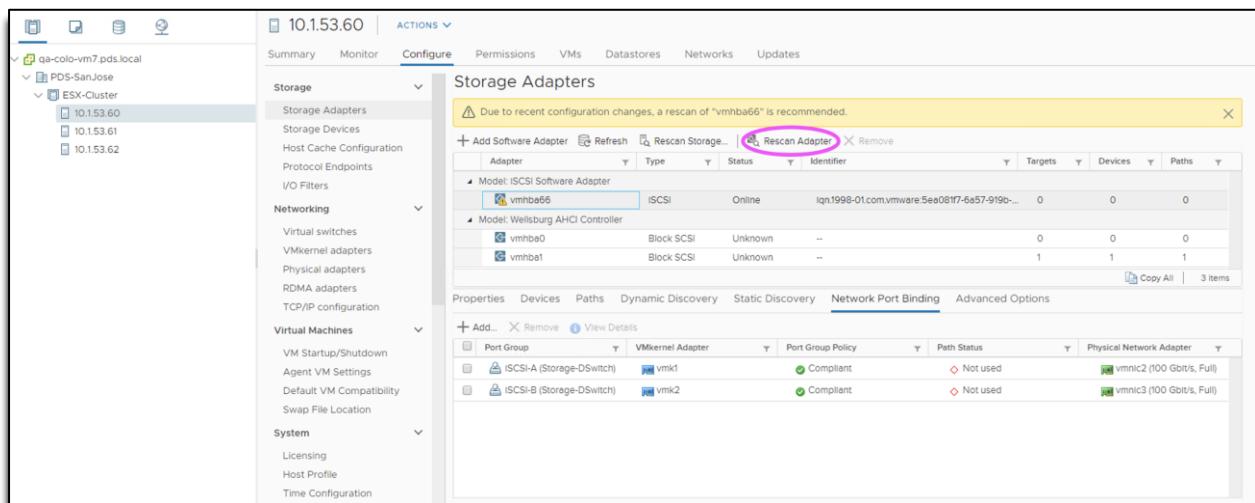
Step 4: Select **iSCSI Software Adapter** and select **Network Port Binding** and click **Add** as seen in the below image:



Step 5: Select <iSCSI-A> and <iSCSI-B> created earlier and click OK as seen in below image:



Step 6: Navigate to Storage Adapters>Configure>Rescan Adapter as seen in below image:



Step 7: As a next step navigate to **Network Port Binding** as seem in below image:

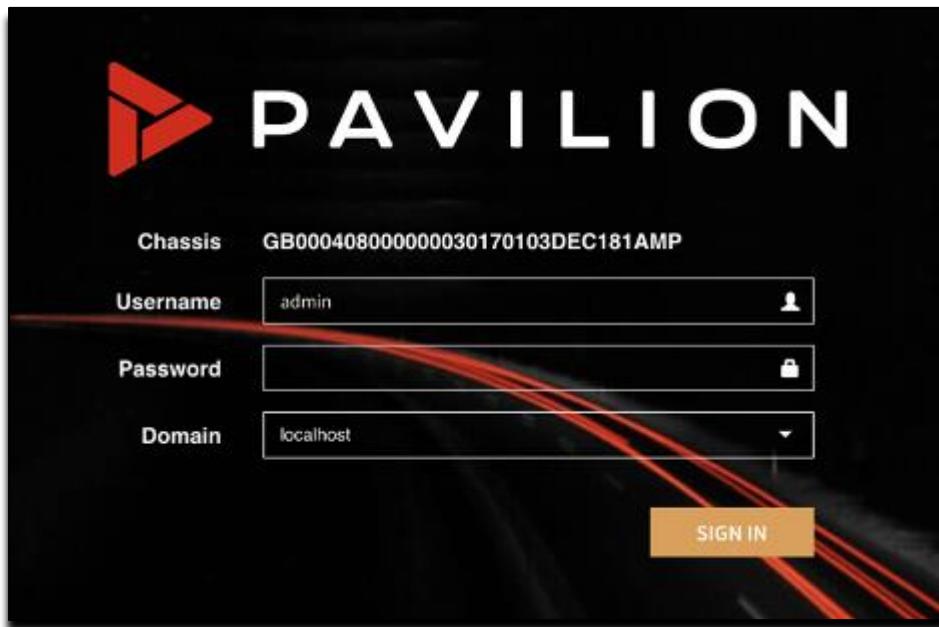
Port Group	VMkernel Adapter	Port Group Policy	Path Status	Physical Network Adapter
ISCSI-A (Storage-Dswitch)	vmk1	Compliant	Not used	vmnic2 (100 Gbit/s, Full)
ISCSI-B (Storage-Dswitch)	vmk2	Compliant	Not used	vmnic3 (100 Gbit/s, Full)

Step 8: Repeat above steps for all hosts in the ESX cluster.

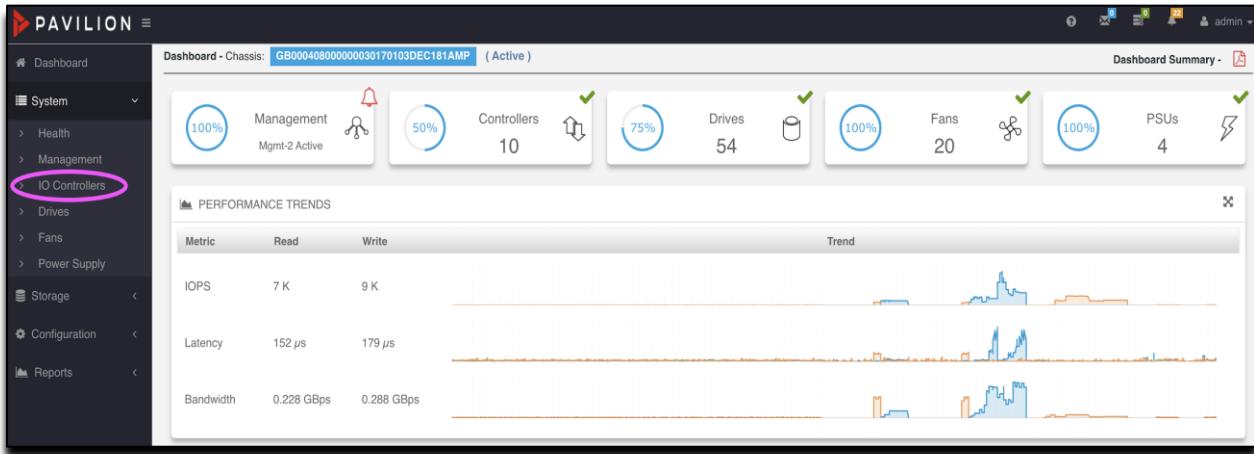
10. Configuring Pavilion Controllers for iSCSI

This section lists the steps required to configure two controllers to serve **iSCSI** connections. Once controllers are configured for iSCSI protocol, user can set dataports and configure **Active/Standby** paths.

Step 1: Login to the **Pavilion** GUI with the administrator login and password as seen in below image:



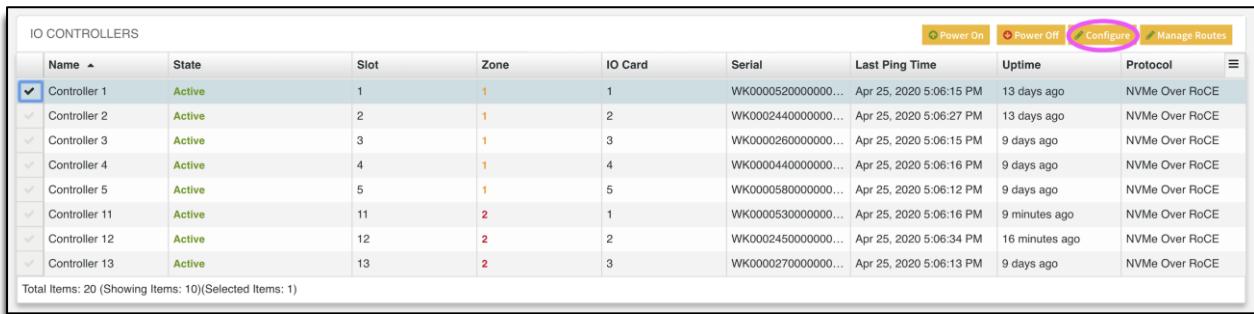
Step 2: Navigate to **System>IO Controller** as seen in below image:



The screenshot shows the Pavilion Dashboard interface. On the left, there's a navigation sidebar with sections like Dashboard, System (with IO Controllers highlighted), Storage, Configuration, and Reports. The main area displays a dashboard summary with various status indicators: Management (100% Mgmt-2 Active), Controllers (50%, 10), Drives (75%, 54), Fans (100%, 20), and PSUs (100%, 4). Below this is a performance trends section showing IOPS, Latency, and Bandwidth over time.

Step 3: Configure controllers 1 and 2 for iSCSI.

Note: All controllers by default are configured for **NVMe Over RoCE**. To change protocol type for a controller, select the controller and click on **Configure** button displayed at the top-right corner of the page as seen in the image below:

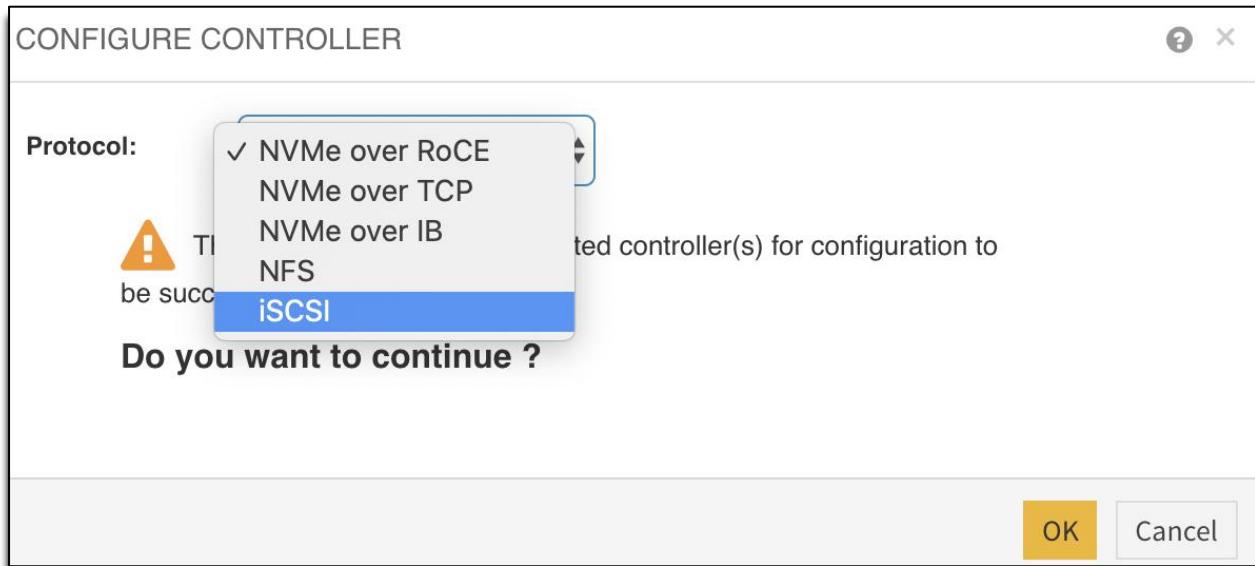


This screenshot shows a table titled "IO CONTROLLERS" listing 13 controllers. The columns include Name, State, Slot, Zone, IO Card, Serial, Last Ping Time, Uptime, Protocol, and actions (Power On, Power Off, Configure, Manage Routes). Controller 1 is selected, and the "Configure" button for it is highlighted with a red circle. The table shows details for each controller, such as their serial numbers and last ping times.

Name	State	Slot	Zone	IO Card	Serial	Last Ping Time	Uptime	Protocol	
Controller 1	Active	1	1	1	WK0000520000000...	Apr 25, 2020 5:06:15 PM	13 days ago	NVMe Over RoCE	
Controller 2	Active	2	1	2	WK0002440000000...	Apr 25, 2020 5:06:27 PM	13 days ago	NVMe Over RoCE	
Controller 3	Active	3	1	3	WK0002600000000...	Apr 25, 2020 5:06:15 PM	9 days ago	NVMe Over RoCE	
Controller 4	Active	4	1	4	WK0000440000000...	Apr 25, 2020 5:06:16 PM	9 days ago	NVMe Over RoCE	
Controller 5	Active	5	1	5	WK0000580000000...	Apr 25, 2020 5:06:12 PM	9 days ago	NVMe Over RoCE	
Controller 11	Active	11	2	1	WK0000530000000...	Apr 25, 2020 5:06:16 PM	9 minutes ago	NVMe Over RoCE	
Controller 12	Active	12	2	2	WK0002450000000...	Apr 25, 2020 5:06:34 PM	16 minutes ago	NVMe Over RoCE	
Controller 13	Active	13	2	3	WK0000270000000...	Apr 25, 2020 5:06:13 PM	9 days ago	NVMe Over RoCE	

Total Items: 20 (Showing Items: 10)(Selected Items: 1)

Step 4: Select the Protocol as **iSCSI** and click **OK**, as seen in the below image:



Step 5: Repeat the above steps to configure protocol and assign IP address for all the controllers.

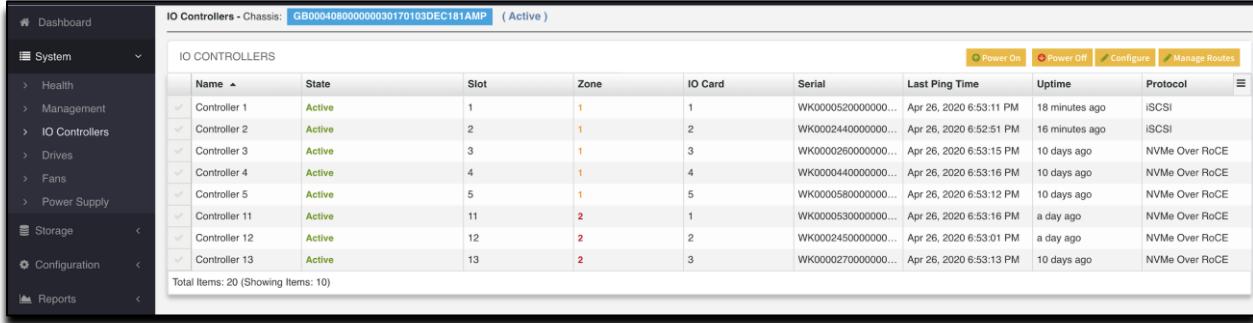
IO Controllers - Chassis: GB00040800000030170103DEC181AMP (Active)									
<input type="button" value="Power On"/> <input type="button" value="Power Off"/> <input style="outline: 2px solid red; border-radius: 10px; border: none; background-color: #f0f0f0; color: black; font-weight: bold; padding: 2px 10px; margin-right: 5px;" type="button" value="Configure"/> <input type="button" value="Manage Routes"/>									
IO CONTROLLERS									
Name	State	Slot	Zone	IO Card	Serial	Last Ping Time	Uptime	Protocol	
Controller 1	Configuring	1	1	1	WK0000520000000...	Apr 26, 2020 6:32:38 PM	-	iSCSI	
Controller 2	Active	2	1	2	WK0002440000000...	Apr 26, 2020 6:32:41 PM	36 minutes ago	NVMe Over RoCE	
Controller 3	Active	3	1	3	WK0000260000000...	Apr 26, 2020 6:32:45 PM	10 days ago	NVMe Over RoCE	
Controller 4	Active	4	1	4	WK0000440000000...	Apr 26, 2020 6:32:46 PM	10 days ago	NVMe Over RoCE	
Controller 5	Active	5	1	5	WK0000580000000...	Apr 26, 2020 6:32:42 PM	10 days ago	NVMe Over RoCE	
Controller 11	Active	11	2	1	WK0000530000000...	Apr 26, 2020 6:32:46 PM	a day ago	NVMe Over RoCE	
Controller 12	Active	12	2	2	WK0002450000000...	Apr 26, 2020 6:33:01 PM	a day ago	NVMe Over RoCE	
Controller 13	Active	13	2	3	WK0000270000000...	Apr 26, 2020 6:32:43 PM	10 days ago	NVMe Over RoCE	

Note: It is recommended that you refer to *Pavilion NVMe-oF Storage Platform GUI Reference Guide* for more information.

11. Configuring Data Network (IP) interfaces for the controller's

This section lists the steps required to configure data network (IP) interfaces for the controllers.

Step 1: Re-select the controller you changed to **iSCSI** in the prior section to begin configuring its IP configuration.

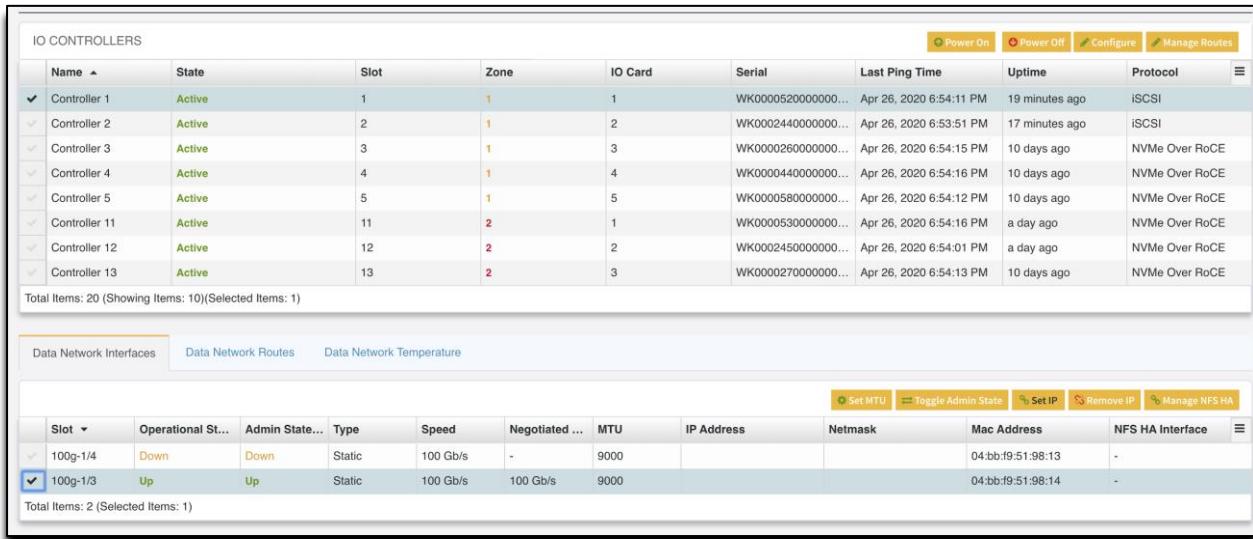


The screenshot shows the 'IO Controllers - Chassis' interface. The left sidebar has sections for System (Health, Management, IO Controllers, Drives, Fans, Power Supply), Storage, Configuration, and Reports. The main area is titled 'IO CONTROLLERS' with a sub-header 'GB00040B000000030170103DEC1B1AMP (Active)'. A table lists 13 controllers:

Name	State	Slot	Zone	IO Card	Serial	Last Ping Time	Uptime	Protocol
Controller 1	Active	1	1	1	WK000052000000...	Apr 26, 2020 6:53:11 PM	18 minutes ago	iSCSI
Controller 2	Active	2	1	2	WK000244000000...	Apr 26, 2020 6:52:51 PM	16 minutes ago	iSCSI
Controller 3	Active	3	1	3	WK000026000000...	Apr 26, 2020 6:53:15 PM	10 days ago	NVMe Over RoCE
Controller 4	Active	4	1	4	WK000044000000...	Apr 26, 2020 6:53:16 PM	10 days ago	NVMe Over RoCE
Controller 5	Active	5	1	5	WK000058000000...	Apr 26, 2020 6:53:12 PM	10 days ago	NVMe Over RoCE
Controller 11	Active	11	2	1	WK000053000000...	Apr 26, 2020 6:53:16 PM	a day ago	NVMe Over RoCE
Controller 12	Active	12	2	2	WK000245000000...	Apr 26, 2020 6:53:01 PM	a day ago	NVMe Over RoCE
Controller 13	Active	13	2	3	WK000027000000...	Apr 26, 2020 6:53:13 PM	10 days ago	NVMe Over RoCE

Total Items: 20 (Showing Items: 10)

Step 2: Once the iSCSI controller is selected, the Data Network Interfaces tab appears at the bottom of the screen. Select the interface, each controller has two interfaces, and use the **Set IP** button to bring up the **Set Dataport IP** window and enter the IP and netmask desired. See image for reference:



The screenshot shows the 'IO CONTROLLERS' interface with the 'Data Network Interfaces' tab selected. Controller 13 is selected. Below the table, there is a sub-table for Data Network Interfaces:

Slot	Operational St...	Admin State...	Type	Speed	Negotiated ...	MTU	IP Address	Netmask	Mac Address	NFS HA Interface
100g-1/4	Down	Down	Static	100 Gb/s	-	9000			04:bb:f9:51:98:13	-
100g-1/3	Up	Up	Static	100 Gb/s	100 Gb/s	9000			04:bb:f9:51:98:14	-

Total Items: 2 (Selected Items: 1)

Step 3: Assign IP address and Netmask

SET DATAPORT IP

IP Address:	192.168.1.100
Netmask:	255.255.255.0

Step 4: Assign IP address and Netmask. Controller 1 is configured for iSCSI as seen in below image:

IO CONTROLLERS

Name	State	Slot	Zone	IO Card	Serial	Last Ping Time	Uptime	Protocol
Controller 1	Active	1	1	1	WK0000520000000...	Apr 26, 2020 6:55:11 PM	20 minutes ago	iSCSI
Controller 2	Active	2	1	2	WK0002440000000...	Apr 26, 2020 6:54:51 PM	19 minutes ago	iSCSI
Controller 3	Active	3	1	3	WK0002600000000...	Apr 26, 2020 6:55:15 PM	10 days ago	NVMe Over RoCE
Controller 4	Active	4	1	4	WK0000440000000...	Apr 26, 2020 6:55:16 PM	10 days ago	NVMe Over RoCE
Controller 5	Active	5	1	5	WK0000580000000...	Apr 26, 2020 6:55:12 PM	10 days ago	NVMe Over RoCE
Controller 11	Active	11	2	1	WK0000530000000...	Apr 26, 2020 6:55:16 PM	a day ago	NVMe Over RoCE
Controller 12	Active	12	2	2	WK0002450000000...	Apr 26, 2020 6:55:01 PM	a day ago	NVMe Over RoCE
Controller 13	Active	13	2	3	WK0000270000000...	Apr 26, 2020 6:55:13 PM	10 days ago	NVMe Over RoCE

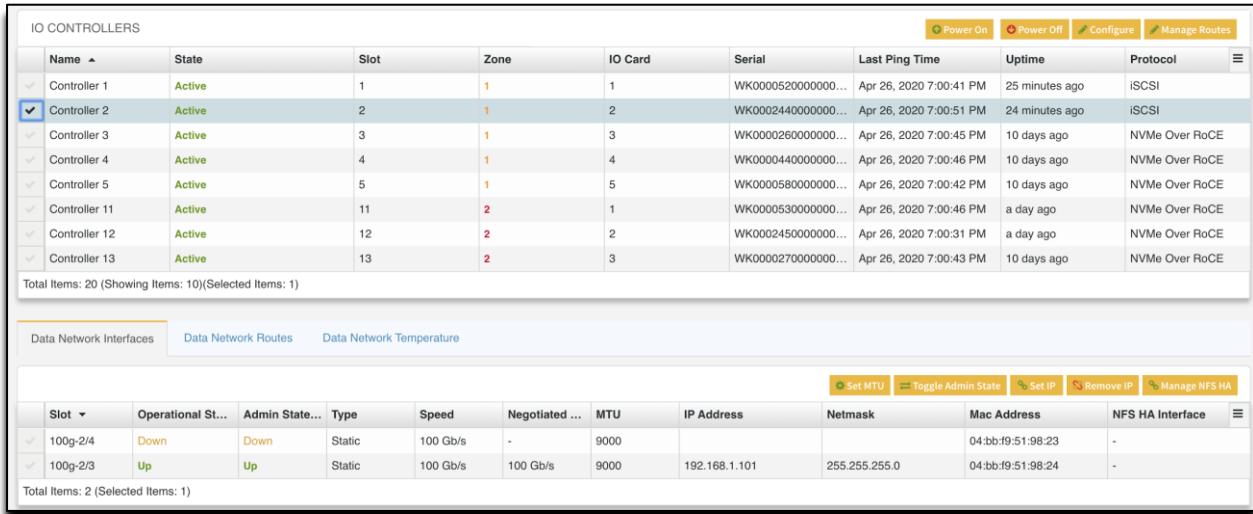
Total Items: 20 (Showing Items: 10)(Selected Items: 1)

Data Network Interfaces Data Network Routes Data Network Temperature

Slot	Operational St...	Admin State...	Type	Speed	Negotiated ...	MTU	IP Address	Netmask	Mac Address	NFS HA Interface
100g-1/4	Down	Down	Static	100 Gb/s	-	9000	192.168.1.100	255.255.255.0	04:bb:19:51:98:13	-
100g-1/3	Up	Up	Static	100 Gb/s	100 Gb/s	9000			04:bb:19:51:98:14	-

Total Items: 2 (Selected Items: 1)

Step 5: Similarly configure protocol and IP Address for Controller 2 as seen in below image:



The screenshot shows two main sections of the GUI:

- IO CONTROLLERS** section:

Name	State	Slot	Zone	IO Card	Serial	Last Ping Time	Uptime	Protocol
Controller 1	Active	1	1	1	WK0000520000000...	Apr 26, 2020 7:00:41 PM	25 minutes ago	iSCSI
<input checked="" type="checkbox"/> Controller 2	Active	2	1	2	WK0002440000000...	Apr 26, 2020 7:00:51 PM	24 minutes ago	iSCSI
Controller 3	Active	3	1	3	WK0002600000000...	Apr 26, 2020 7:00:45 PM	10 days ago	NVMe Over RoCE
Controller 4	Active	4	1	4	WK0004400000000...	Apr 26, 2020 7:00:46 PM	10 days ago	NVMe Over RoCE
Controller 5	Active	5	1	5	WK0005800000000...	Apr 26, 2020 7:00:42 PM	10 days ago	NVMe Over RoCE
Controller 11	Active	11	2	1	WK0005300000000...	Apr 26, 2020 7:00:46 PM	a day ago	NVMe Over RoCE
Controller 12	Active	12	2	2	WK0002450000000...	Apr 26, 2020 7:00:31 PM	a day ago	NVMe Over RoCE
Controller 13	Active	13	2	3	WK0002700000000...	Apr 26, 2020 7:00:43 PM	10 days ago	NVMe Over RoCE

Total Items: 20 (Showing Items: 10)(Selected Items: 1)
- Data Network Interfaces** section:

Slot	Operational St...	Admin State...	Type	Speed	Negotiated ...	MTU	IP Address	Netmask	Mac Address	NFS HA Interface
100g-2/4	Down	Down	Static	100 Gb/s	-	9000			04:bb:f9:51:98:23	-
100g-2/3	Up	Up	Static	100 Gb/s	100 Gb/s	9000	192.168.1.101	255.255.255.0	04:bb:f9:51:98:24	-

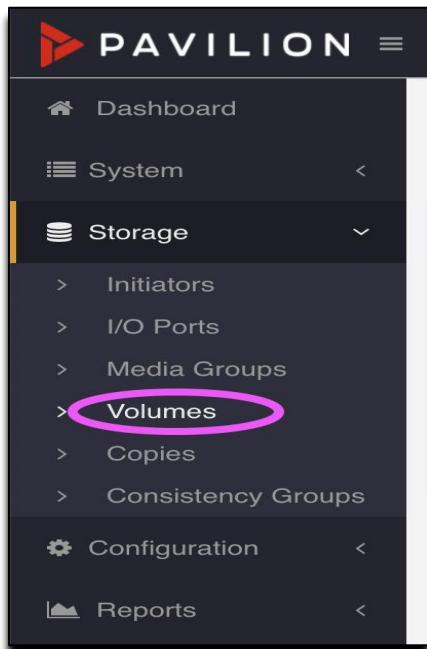
Total Items: 2 (Selected Items: 1)

It is recommended that you refer to *Pavilion NVMe-oF Storage Platform GUI Reference Guide* for more information.

12. Creating a Volume

This section lists the steps required to create a volume.

Step 1: Log in to the **Pavilion GUI**, as usual. Navigate to **Storage>Volumes** as seen in the below image:

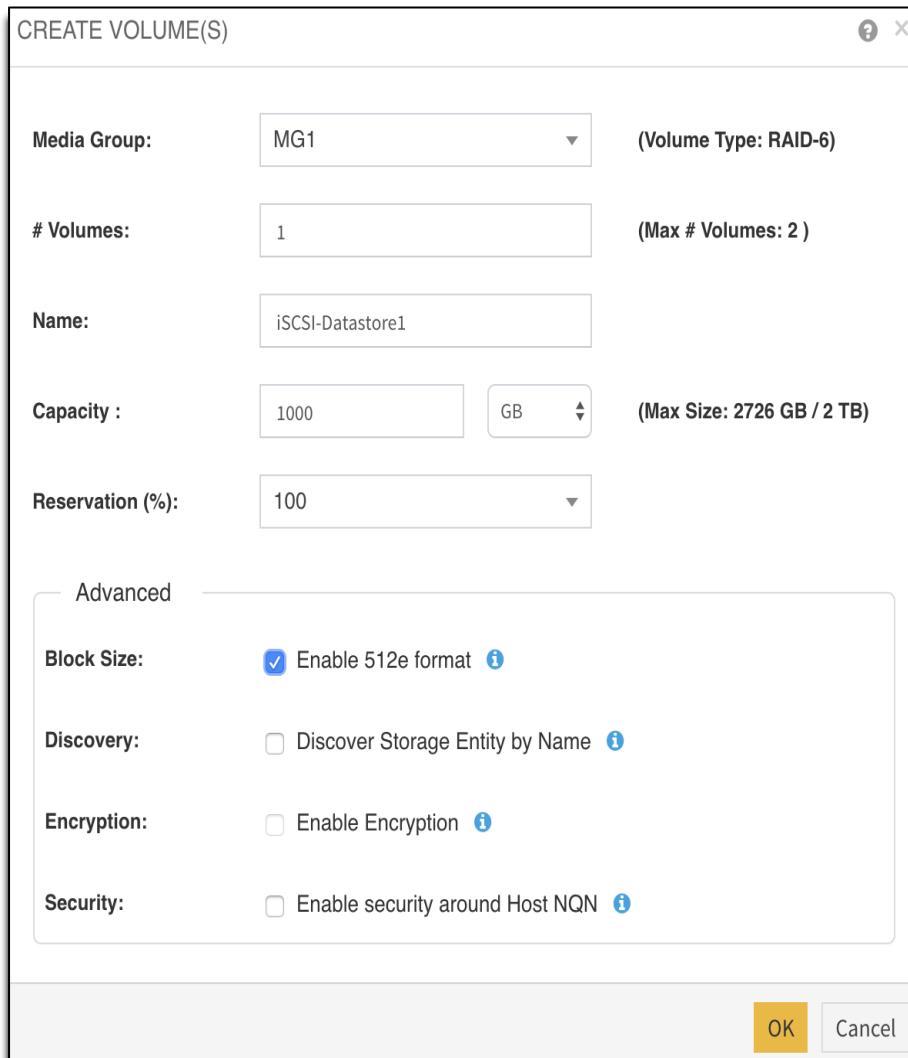


Step 2: Click **Create** button to begin Volume creation as seen in below image:

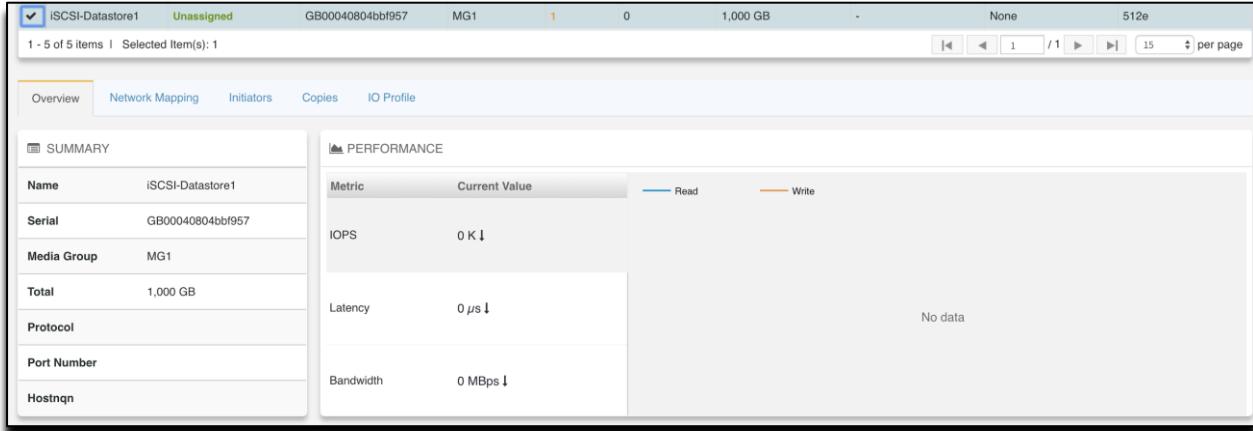
VOLUMES								
	Name	Type	State	Serial	Media Group ...	# Copies	Total Capacity	Protocol
✓	MG1_vol1	RAID-6	Online	GB00051104bbf91	MG1	0	11,500 GB	NFS
✓	MG2_vol1	RAID-6	Online	GB00051104bbf92	MG2	0	23,500 GB	NFS

1 - 2 of 2 items

Step 3: Use the options (media group, name, total capacity, etc.) and configure the volume as desired as seen in dialog box **Create Volumes**:



Step 4: Volume gets created and is ready to be assigned to the iSCSI controller pair configured.



The screenshot shows the 'Overview' tab of the iSCSI-Datastore1 volume in the Pavilion NVMe-oF Storage Platform GUI. The top navigation bar includes tabs for 'Overview', 'Network Mapping', 'Initiators', 'Copies', and 'IO Profile'. The 'Overview' tab is selected. The main interface is divided into two sections: 'SUMMARY' on the left and 'PERFORMANCE' on the right.

Summary Section:

Name	iSCSI-Datastore1
Serial	GB00040804bbf957
Media Group	MG1
Total	1,000 GB
Protocol	
Port Number	
Hostnqn	

Performance Section:

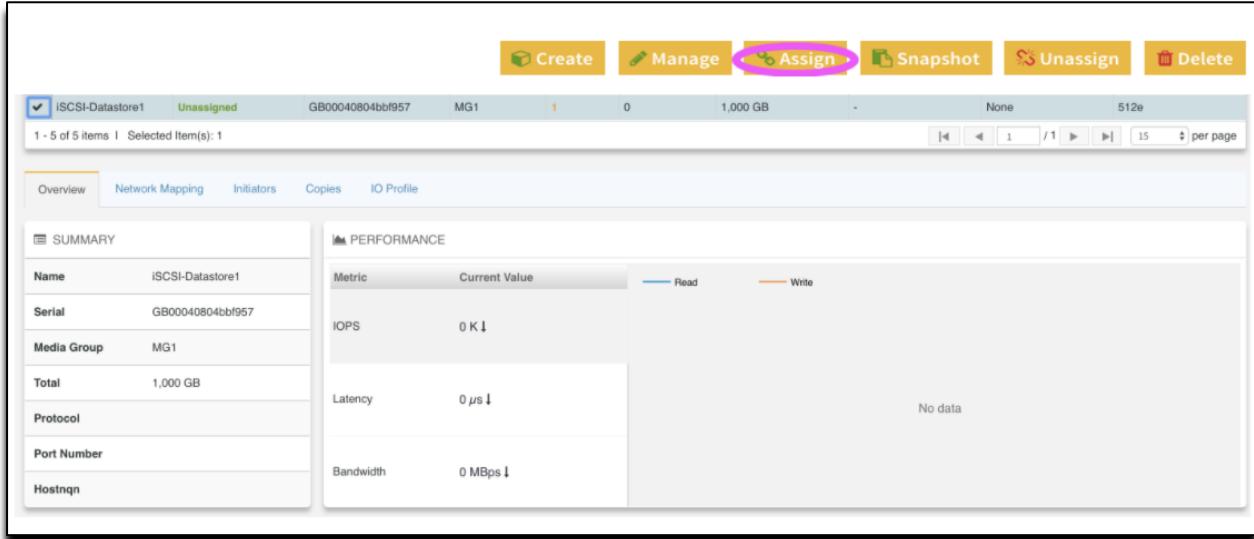
Metric	Current Value	Read	Write
IOPS	0 K↓		
Latency	0 µs↓		No data
Bandwidth	0 MBps↓		

It is recommended that you refer to *Pavilion NVMe-oF Storage Platform GUI Reference Guide* for more information.

13. Assigning the volume

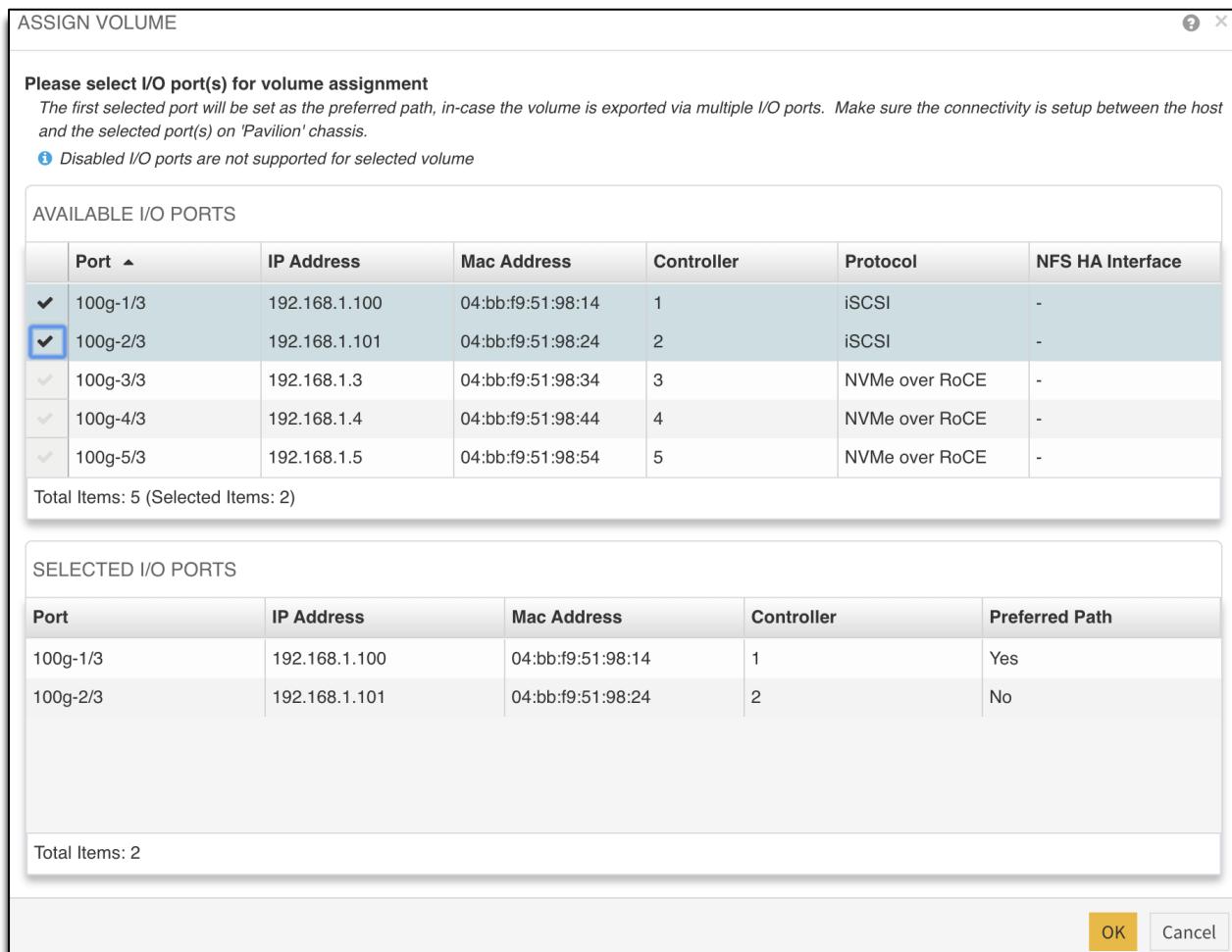
This section lists the steps required to assign a volume.

Step 1: Select the newly created volume in the list and click on the **Assign** button, as seen in the below image:



The screenshot shows a software interface for managing storage volumes. At the top, there is a toolbar with several buttons: Create, Manage, Assign (which is highlighted with a pink oval), Snapshot, Unassign, and Delete. Below the toolbar, a header bar displays the volume name "iSCSI-Datastore1", its status "Unassigned", its serial number "GB00040804bbf957", its media group "MG1", and its total capacity "1,000 GB". The interface includes a navigation bar with icons for Overview, Network Mapping, Initiators, Copies, and IO Profile. The main area is divided into two sections: "SUMMARY" on the left and "PERFORMANCE" on the right. The "SUMMARY" section contains details such as Name, Serial, Media Group, Total, Protocol, Port Number, and Hostnqn. The "PERFORMANCE" section displays metrics for IOPS, Latency, and Bandwidth, each with a current value and a trend indicator (downward arrow). A message "No data" is visible in the bottom right corner of the performance section.

Step 2: At this point, select the active and standby data ports and click OK as seen in the below image:



Step 3: Above step assigns volume to the iSCSI controller pair. Next step is to mount volume and create a datastore in the ESXi Cluster.

It is recommended that you refer to *Pavilion NVMe-oF Storage Platform GUI Reference Guide* for more information.

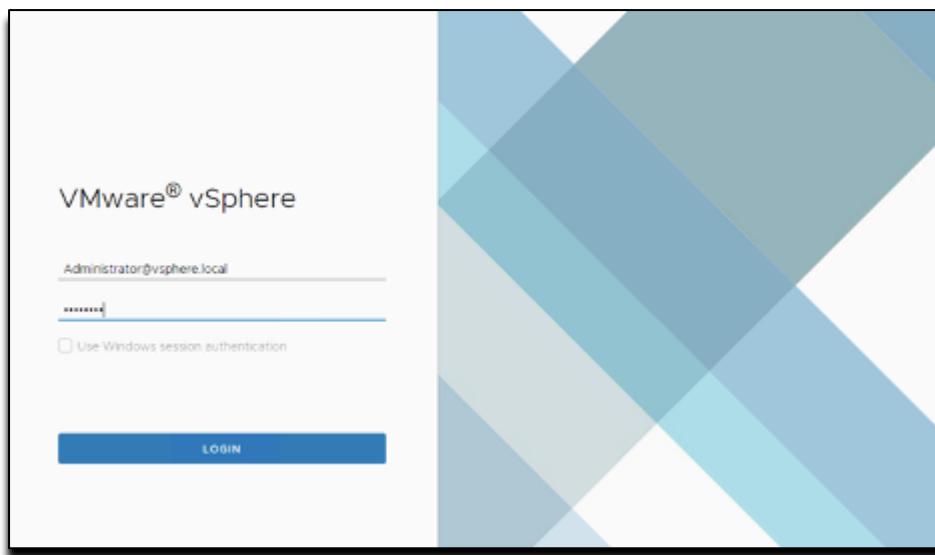
14. VMWare iSCSI Datastore Mounting and Options

To connect the **iSCSI volumes** created on the **Pavilion HFA** using multiple paths, the **multipath policy** needs to be set on all the **ESXi hosts**. This can be done via CLI for each ESXi host by running the below command:

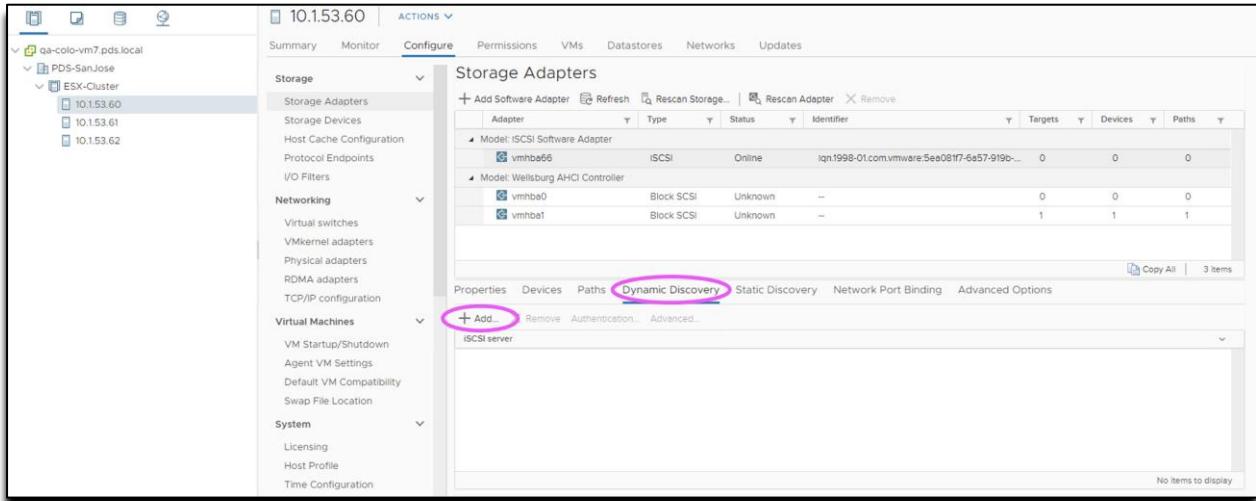
```
# esxcli storage npn satp rule add -V Pavilion -M "HPFA 2" -P  
VMW_PSP_RR -s VMW_SATP_DEFAULT_AP
```

After the **Path Policy** is added the connections to the **iSCSI volumes** can be done as listed in the upcoming steps.

Step 1: Login Back to VCenter Server.



Step 2: Select any host in the ESX cluster. Navigate to **Storage Adapters**, select **Dynamic Discovery**, and click **Add** as seen in the below image:



The screenshot shows the VMware vSphere Web Client interface. The left sidebar lists the host configuration sections: Summary, Monitor, Configure (selected), Permissions, VMs, Datastores, Networks, and Updates. Under the Configure section, the Storage Adapters option is selected. The main pane displays the Storage Adapters list for host 10.1.53.60. The table includes columns for Adapter, Type, Status, Identifier, Targets, Devices, and Paths. It shows two entries: 'Model: iSCSI Software Adapter' with adapter 'vmhba66' (Type: iSCSI, Status: Online) and 'Identifier: iqn.1998-01.com.vmware:5e08f7-6a57-919b...' and 'Model: Wellsburg AHCI Controller' with adapters 'vmhba0' and 'vmhba1' (Type: Block SCSI, Status: Unknown). Below the table are tabs for Properties, Devices, Paths, Dynamic Discovery (circled in red), Static Discovery, Network Port Binding, and Advanced Options. A sub-section for 'iSCSI server' is visible. At the bottom of the main pane, there is a note 'No items to display'. The bottom navigation bar includes buttons for + Add..., Remove, Authentication..., and Advanced...

Step 3: On the **Add Send Target Server** dialog box, add **iSCSI server IP** address and **Port** number. This is the Controller IP address configured for **iSCSI** and **port number is 3260**.

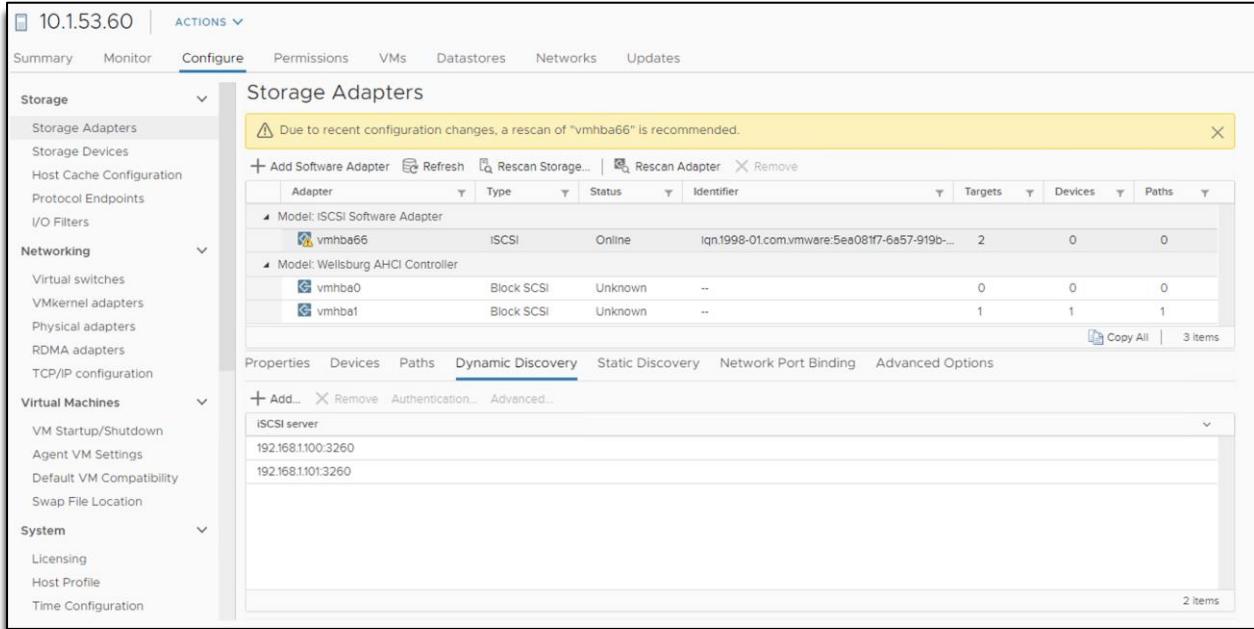
For example, as seen in the below image, Active Controller IP address <192.168.1.100> is used for reference:



Step 4: As a next step add the Add second controller 's IP address. For example, as seen in the below image, **Standby** Controller IP address <192.168.1.101> is used for reference:

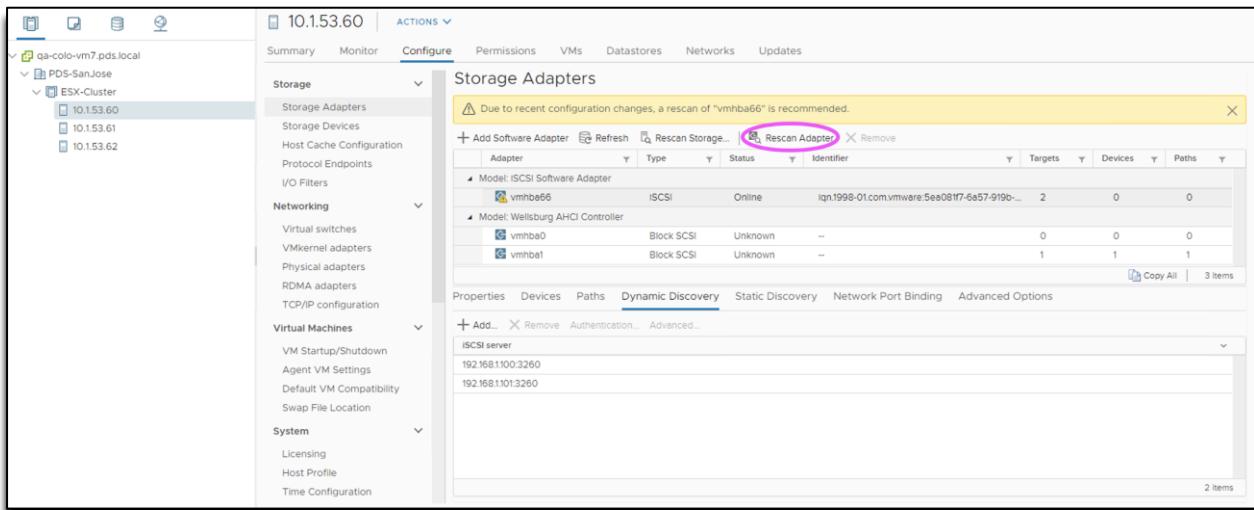


Step 5: Verify both IP addresses show up under Storage>Configure>**Dynamic Discovery** as seen in the below image:



Adapter	Type	Status	Identifier	Targets	Devices	Paths
vmhba66	iSCSI	Online	lqn1998-01.com.vmware:5ea081f7-6a57-919b...	2	0	0
vmhba0	Block SCSI	Unknown	--	0	0	0
vmhba1	Block SCSI	Unknown	--	1	1	1

Step 6: On the **Storage Adapters** page click **Rescan Adapter** as seen in the below image:



Step 7: As a next step is to verify the **Paths** as seen in below image:

Runtime Name	Target	LUN	Status
vmhba66:C0:TlL77	iqn.2014-01.org.pvl-iscsi.x8664-sn.gb00040804bbf977n5:192.168.1...	77	Standby
vmhba66:C1:TlL77	iqn.2014-01.org.pvl-iscsi.x8664-sn.gb00040804bbf977n5:192.168.1...	77	Standby
vmhba66:C0:T0:L77	iqn.2014-01.org.pvl-iscsi.x8664-sn.gb00040804bbf977n3:192.168.1...	77	Active (I/O)
vmhba66:C1:T0:L77	iqn.2014-01.org.pvl-iscsi.x8664-sn.gb00040804bbf977n3:192.168.1...	77	Active (I/O)

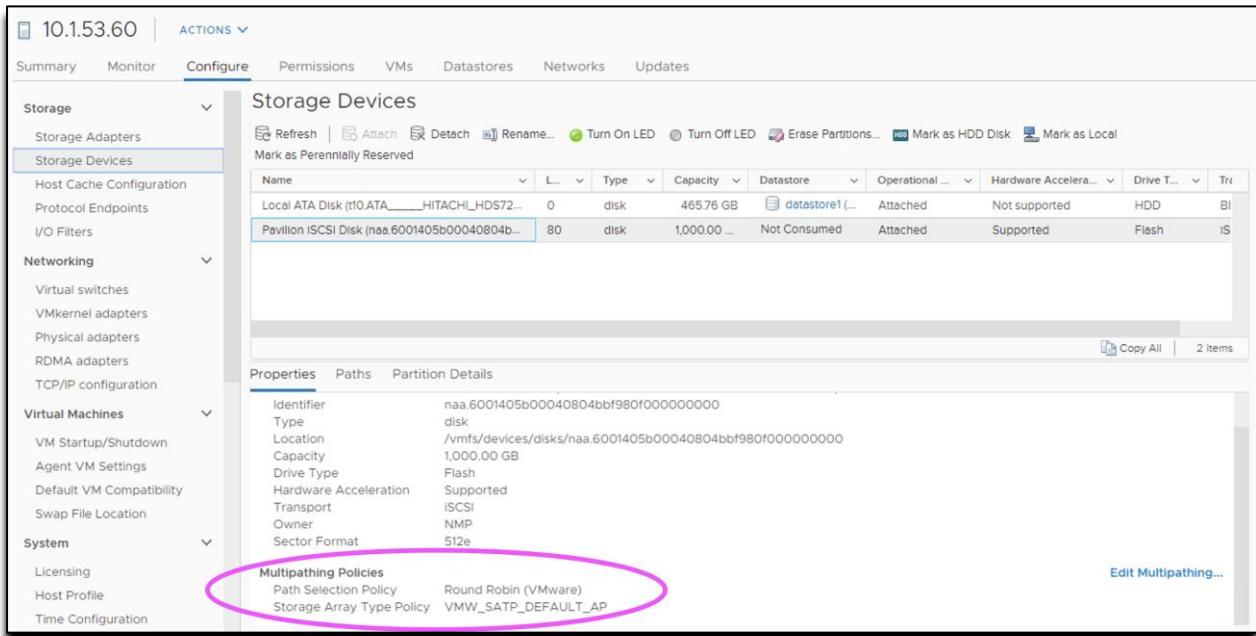
Step 8: After successful discovery **Pavilion** volume is displayed under **Devices** tab as seen in below image:

Name	LUN	Type	Capacity	Datasto...	Operatio...	Hardware Accel...	Drive T...	Transport
Pavilion iSCSI Disk (haa.6001405b00040804b...	80	disk	1,000.00...	Not Cons...	Attached	Supported	Flesh	iSCSI

15. Multipathing Configuration

This section lists the steps required to setup multipathing configuration.

Step 1: Navigate to Storage>Storage Devices>Configure>Properties, verify that **Multipathing Policies** is set to **Round Robin (VMware)** as seen in the below image:



Identifier	naa.6001405b00040804bbf980f00000000
Type	disk
Location	/vmfs/devices/disks/naa.6001405b00040804bbf980f00000000
Capacity	1,000.00 GB
Drive Type	Flash
Hardware Acceleration	Supported
Transport	iSCSI
Owner	NMP
Sector Format	512e

Multipathing Policies

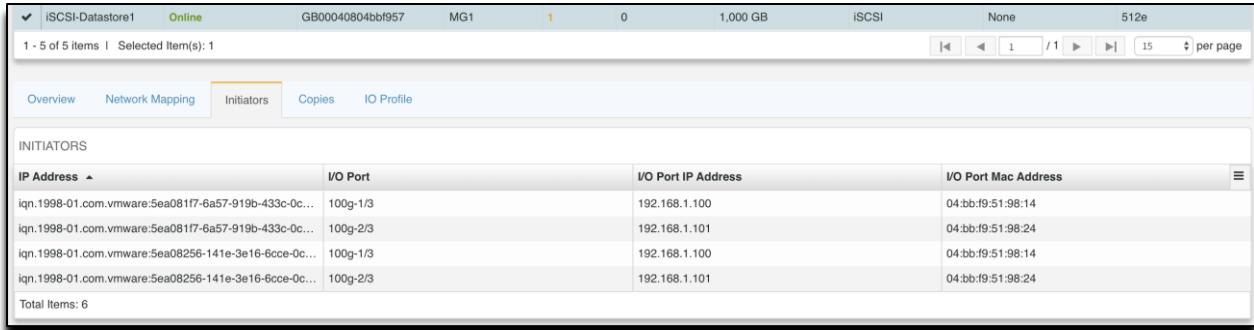
Path Selection Policy	Round Robin (VMware)
Storage Array Type Policy	VMW_SATP_DEFAULT_AP

Step 2: Perform discovery process for all the hosts in ESX cluster.

16. Verifying Initiators in pavilion

This section lists the steps required to verify **Pavilion** initiators.

Step 1: Login to **Pavilion GUI**, navigate to **Storage>Volumes** and verify **Initiators** tab displayed at the bottom of the page, when you select a volume, as seen in the below image:

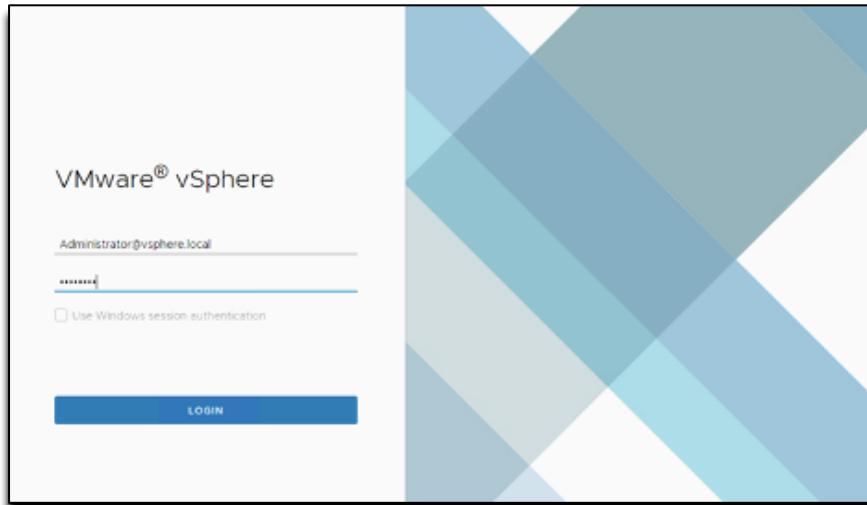


IP Address	I/O Port	I/O Port IP Address	I/O Port Mac Address
iqn.1998-01.com.vmware:5ea081f7-6a57-919b-433c-0c...	100g-1/3	192.168.1.100	04:bb:f9:51:98:14
iqn.1998-01.com.vmware:5ea081f7-6a57-919b-433c-0c...	100g-2/3	192.168.1.101	04:bb:f9:51:98:24
iqn.1998-01.com.vmware:5ea08256-141e-3e16-6cce-0c...	100g-1/3	192.168.1.100	04:bb:f9:51:98:14
iqn.1998-01.com.vmware:5ea08256-141e-3e16-6cce-0c...	100g-2/3	192.168.1.101	04:bb:f9:51:98:24

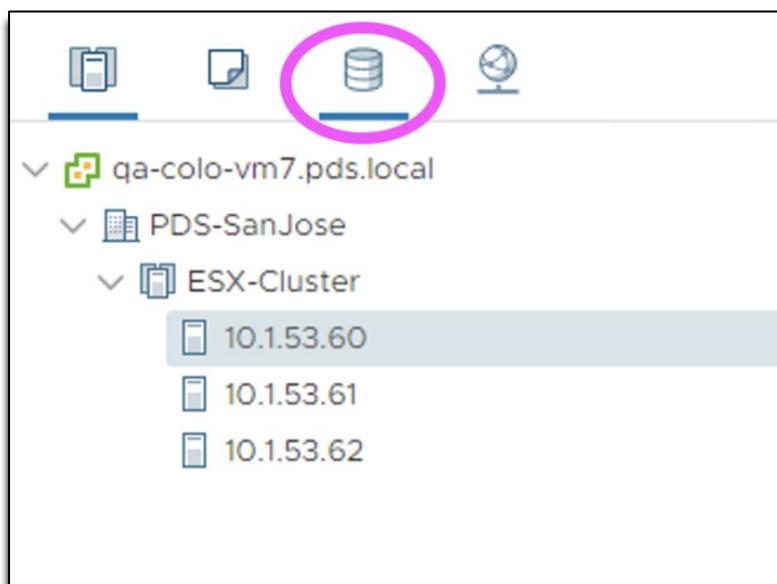
17. Creating Datastore, VMFS Filesystem and Virtual Machine

This section lists the steps required to create datastore, VMFS filesystem and Virtual Machine.

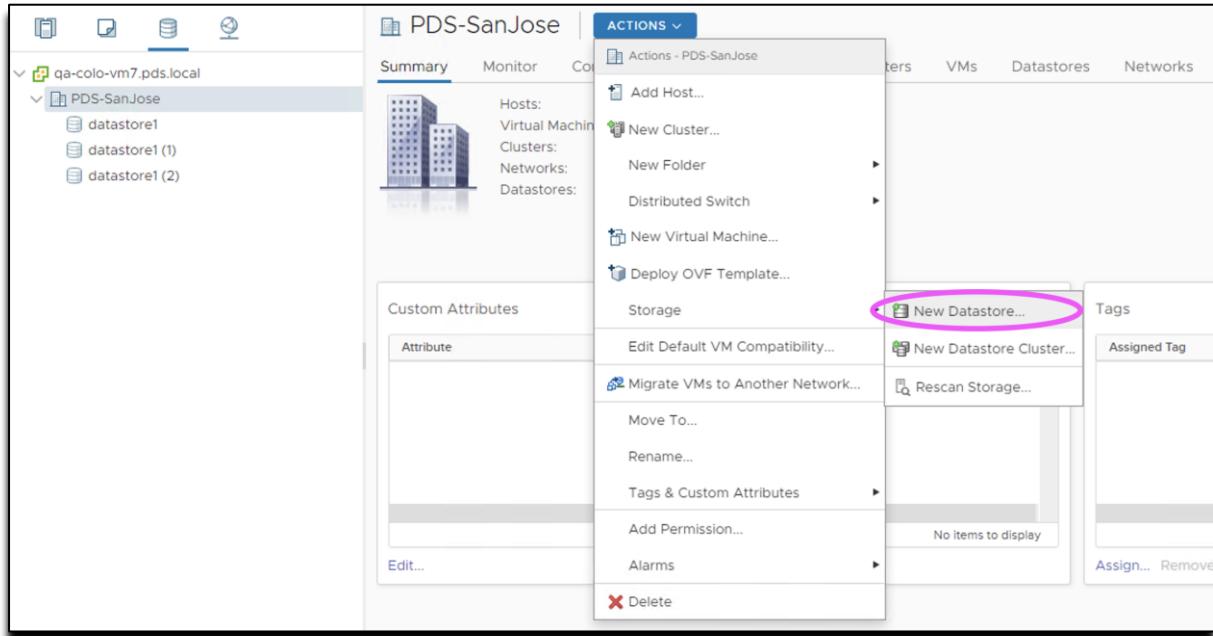
Step 1: Log in to the **VMware® vSphere™** Client, as seen in the below image:



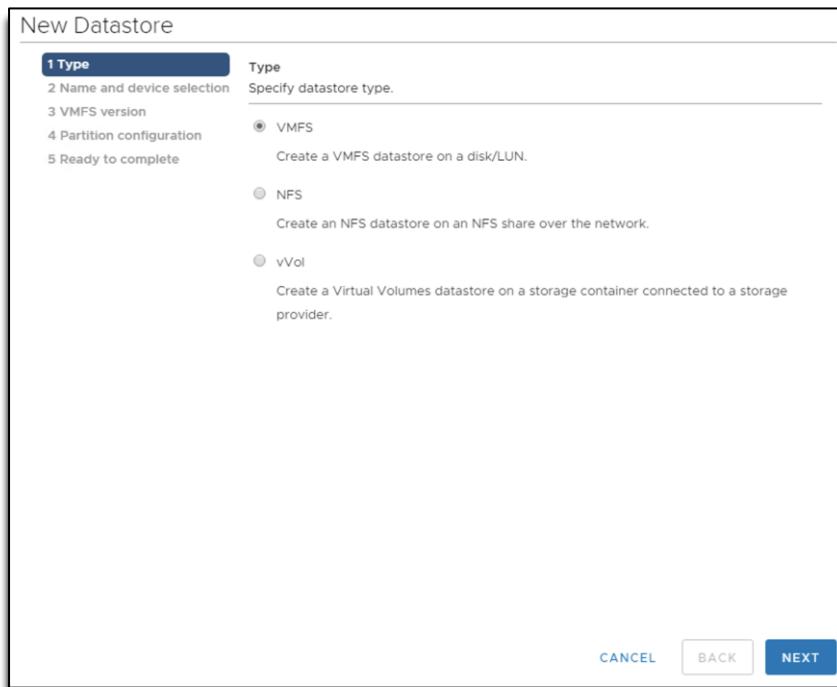
Step 2: Click **Storage** icon as seen in the below image:



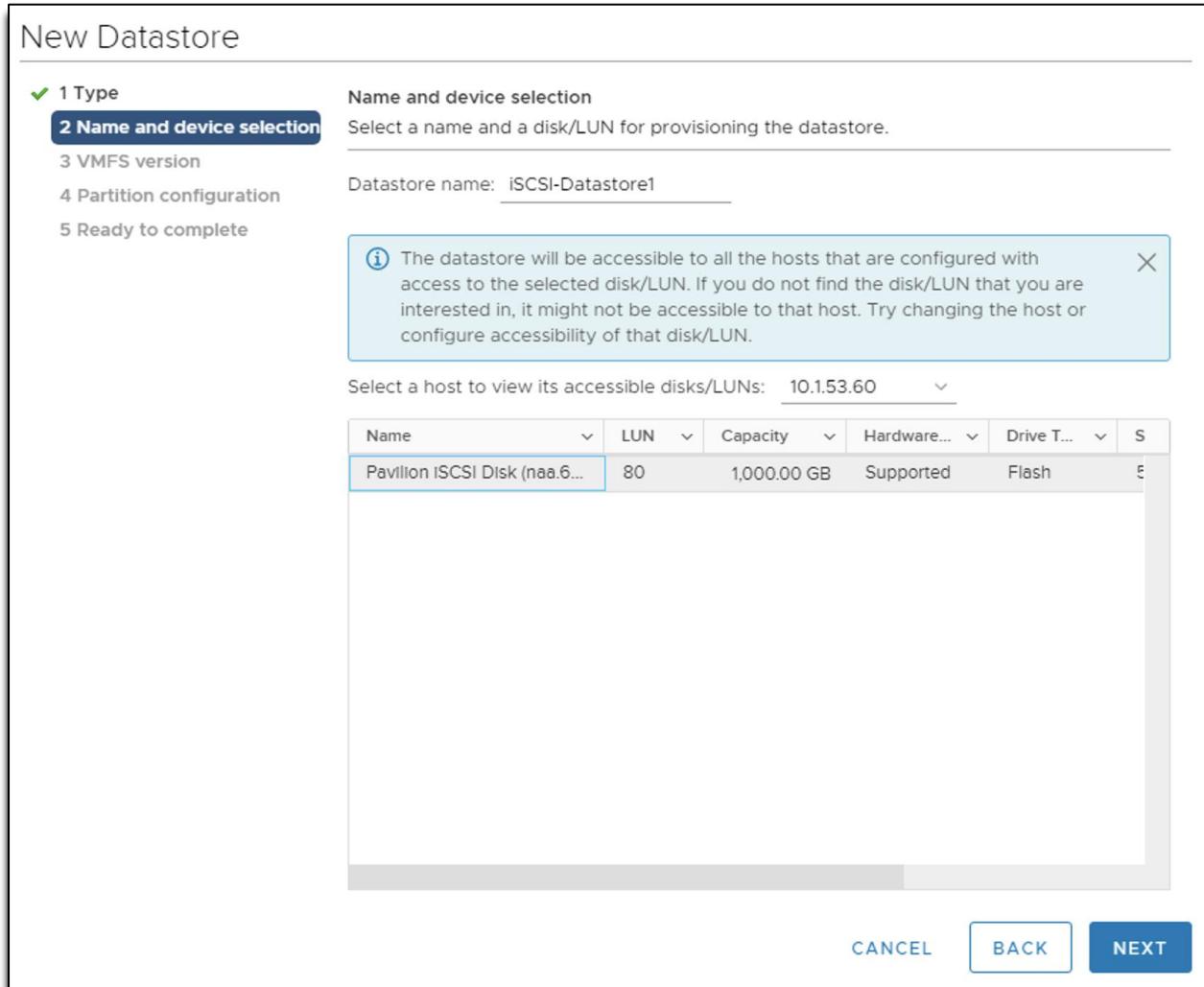
Step 3: Navigate to Actions > Storage > New Datastore as seen in the below image:



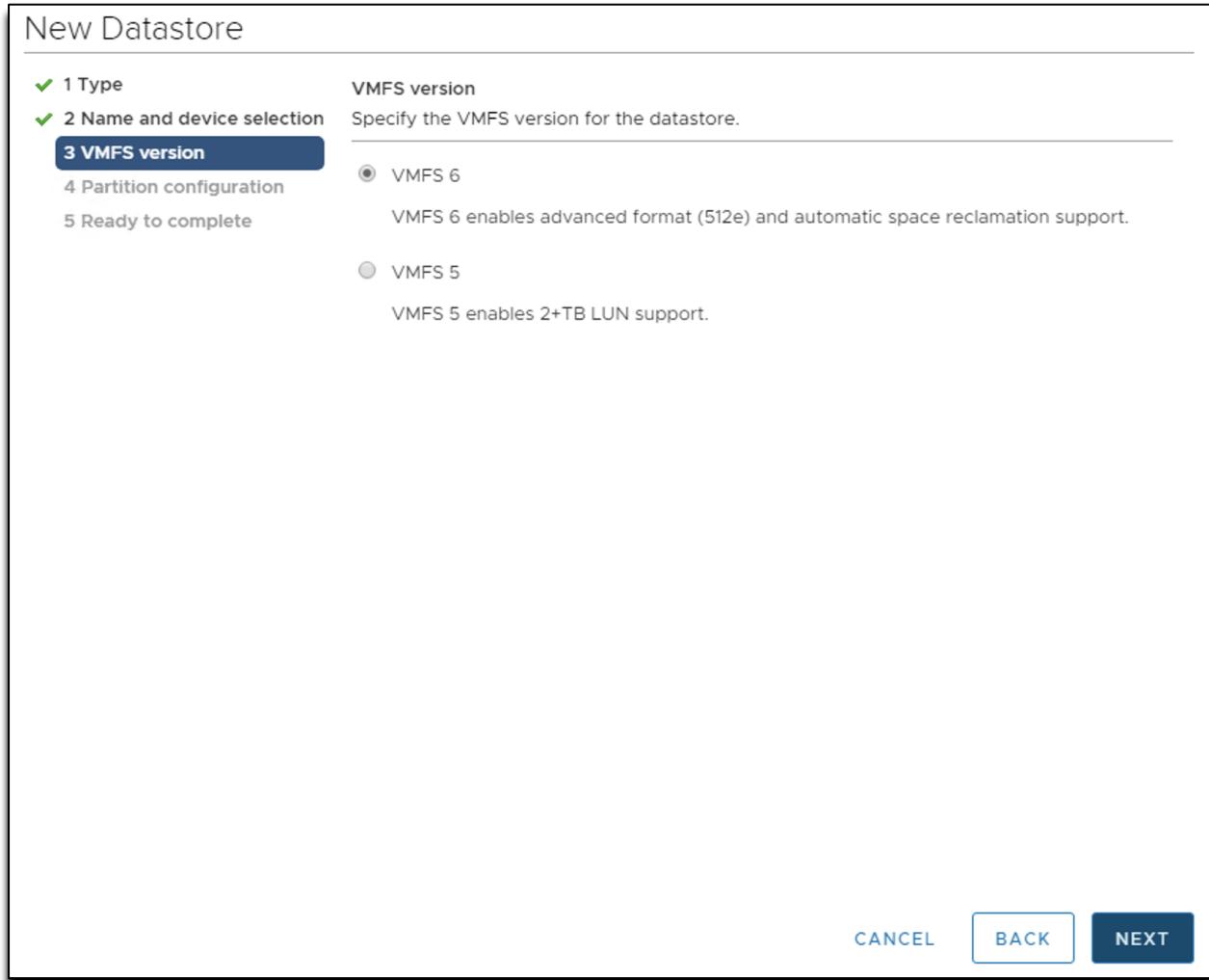
Step 4: On the **New Datastore** dialog box select **Type** and click **NEXT** as seen in the below image:



Step 5: Navigate to **Name and device selection**, enter the Datastore name, and click **NEXT** as seen in below image:



Step 6: Navigate to VMFS version, Select **VMFS Version** and click NEXT as seen in below image:



Step 7: Navigate **Partition configuration**, specify Partition configuration and click **NEXT** as seen in below image:

New Datastore

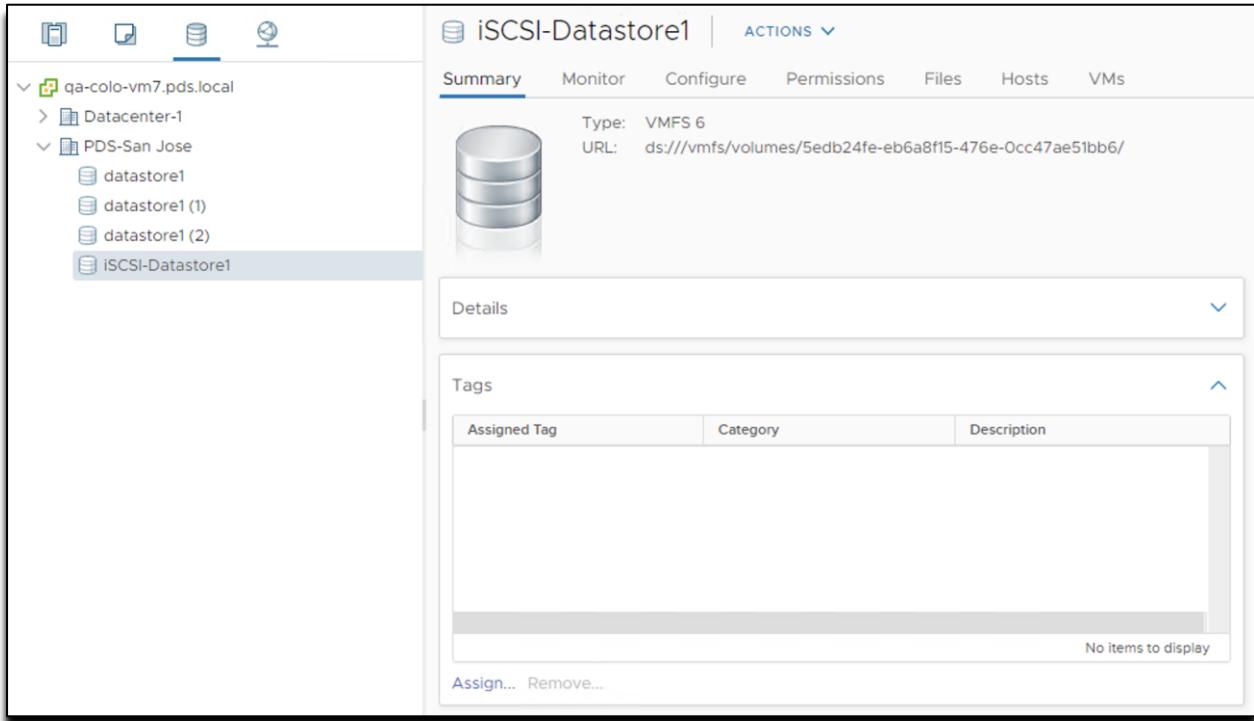
✓ 1 Type ✓ 2 Name and device selection ✓ 3 VMFS version 4 Partition configuration 5 Ready to complete	Partition configuration Review the disk layout and specify partition configuration details.
	Partition Configuration <input style="width: 150px; height: 20px; border: 1px solid #ccc; border-radius: 5px; padding: 2px 10px;" type="button" value="Use all available partitions"/>
	Datastore Size <input style="width: 50px;" type="text" value="1000"/> GB
	Block size <input type="text" value="1 MB"/>
	Space Reclamation Granularity <input type="text" value="1 MB"/>
	Space Reclamation Priority <input style="width: 150px; height: 20px; border: 1px solid #ccc; border-radius: 5px; padding: 2px 10px;" type="text"/> <small>Low: Deleted or unmapped blocks are reclaimed on the LUN at Low priority</small>
Empty: 1,000.0 GB	
CANCEL BACK NEXT	

Step 8: Navigate to Ready to complete page, verify datastore information and click **Finish** as seen in below image:

New Datastore

✓ 1 Type	Ready to complete
✓ 2 Name and device selection	Review your settings selections before finishing the wizard.
✓ 3 VMFS version	
✓ 4 Partition configuration	
5 Ready to complete	
General Name: iSCSI-Datastore1 Type: VMFS Datastore size: 1,000.00 GB	
Device and Formatting Disk/LUN: Pavilion iSCSI Disk (naa.6001405b00040804bbf957f000000000) Partition Format: GPT VMFS Version: VMFS 6 Block Size: 1 MB Space Reclamation: 1 MB Granularity: Space Reclamation Priority Space Reclamation Priority: Low: Deleted or unmapped blocks are reclaimed on the LUN at low priority	
CANCEL BACK FINISH	

Step 9: As a next step you can verify that new datastore if < iSCSI-Datastore1 > is created and is ready for use as seen in below image:



The screenshot shows the VMware vSphere interface. On the left, the navigation bar includes icons for hosts, datastores, clusters, and VMs. Below it, a tree view shows a folder named 'qa-colo-vm7.pds.local' containing a 'Datacenter-1' folder, which in turn contains a 'PDS-San Jose' folder. Inside 'PDS-San Jose', there are three datastores: 'datastore1', 'datastore1 (1)', 'datastore1 (2)', and the newly created 'iSCSI-Datastore1'. The 'iSCSI-Datastore1' icon is highlighted with a blue selection bar.

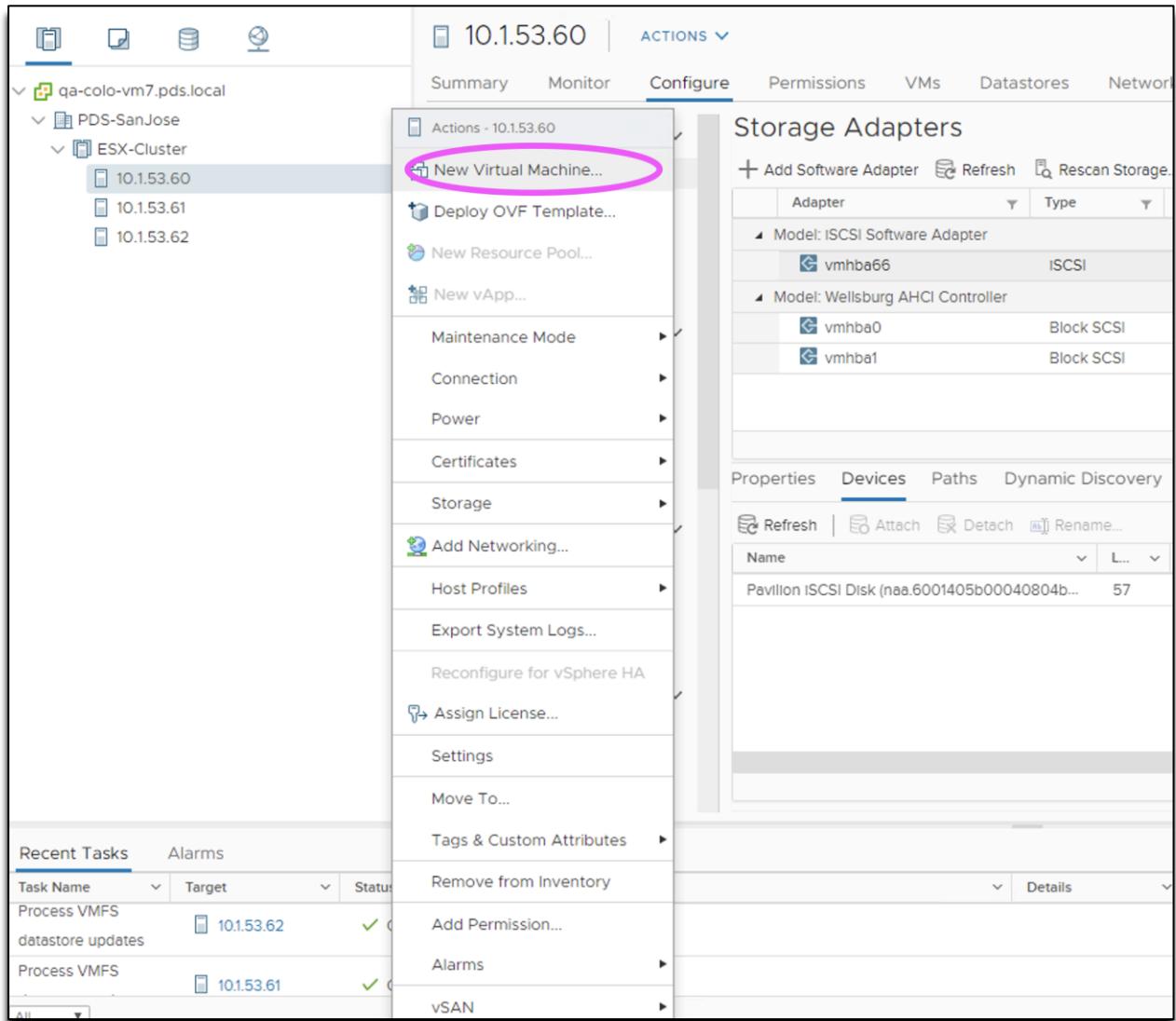
The main pane displays the 'iSCSI-Datastore1' summary screen. At the top, there are tabs for 'Summary' (which is selected), 'Monitor', 'Configure', 'Permissions', 'Files', 'Hosts', and 'VMs'. Below the tabs, there is a summary box with the following details:

- Type: VMFS 6
- URL: ds://vmfs/volumes/5edb24fe-eb6a8f15-476e-0cc47ae51bb6/

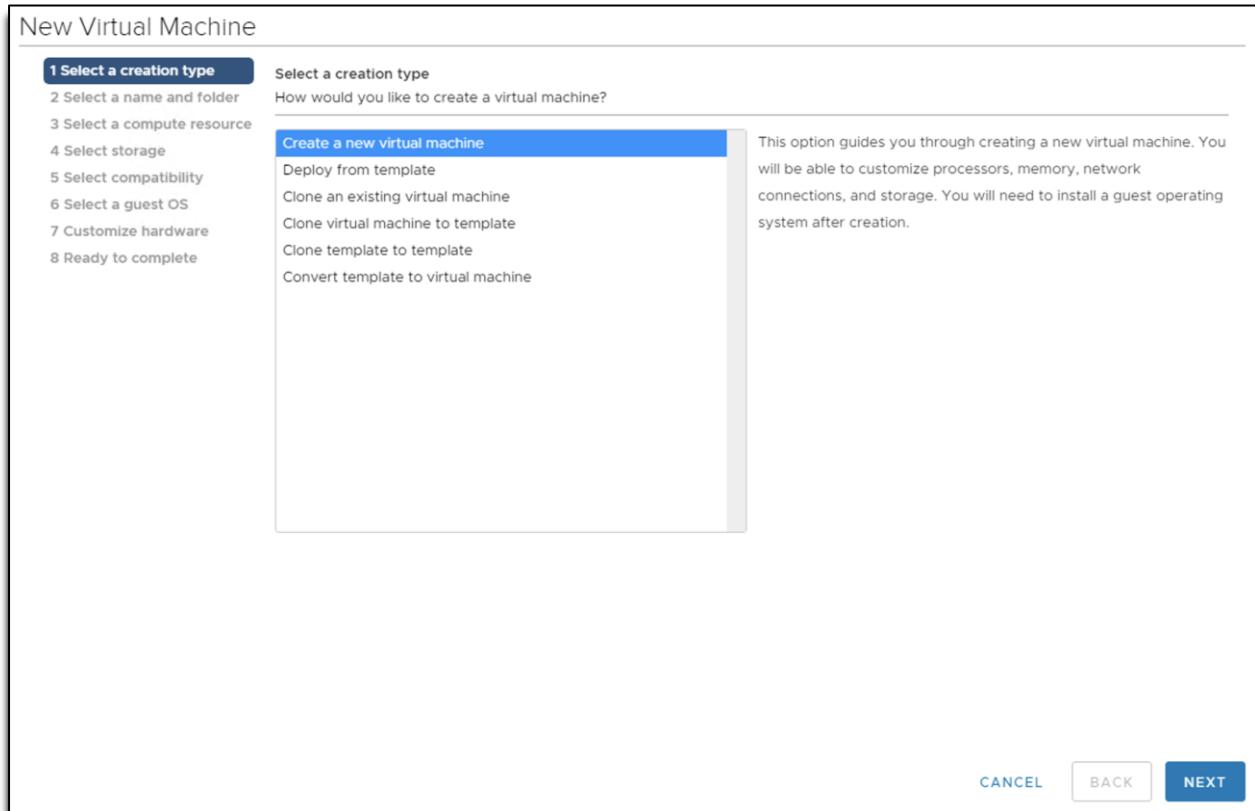
Below the summary box is a 'Details' section, which is currently collapsed. Further down is a 'Tags' section, also collapsed. This section contains a table with columns for 'Assigned Tag', 'Category', and 'Description'. A message at the bottom of this section states 'No items to display'. At the very bottom of the 'Tags' section are two buttons: 'Assign...' and 'Remove...'.

Assigned Tag	Category	Description
No items to display		

Step 10: Navigate back to **Host and Clusters** in **VMware® vSphere™**. Right click on any hosts in your ESX cluster and select **New Virtual Machine** as seen in the below image:



Step 11: Navigate to **Select Creation type>Create a new virtual machine**, and click **NEXT** as seen in below image:



Step 12: Specify Virtual Machine Name and click **NEXT** as seen in below image:

New Virtual Machine

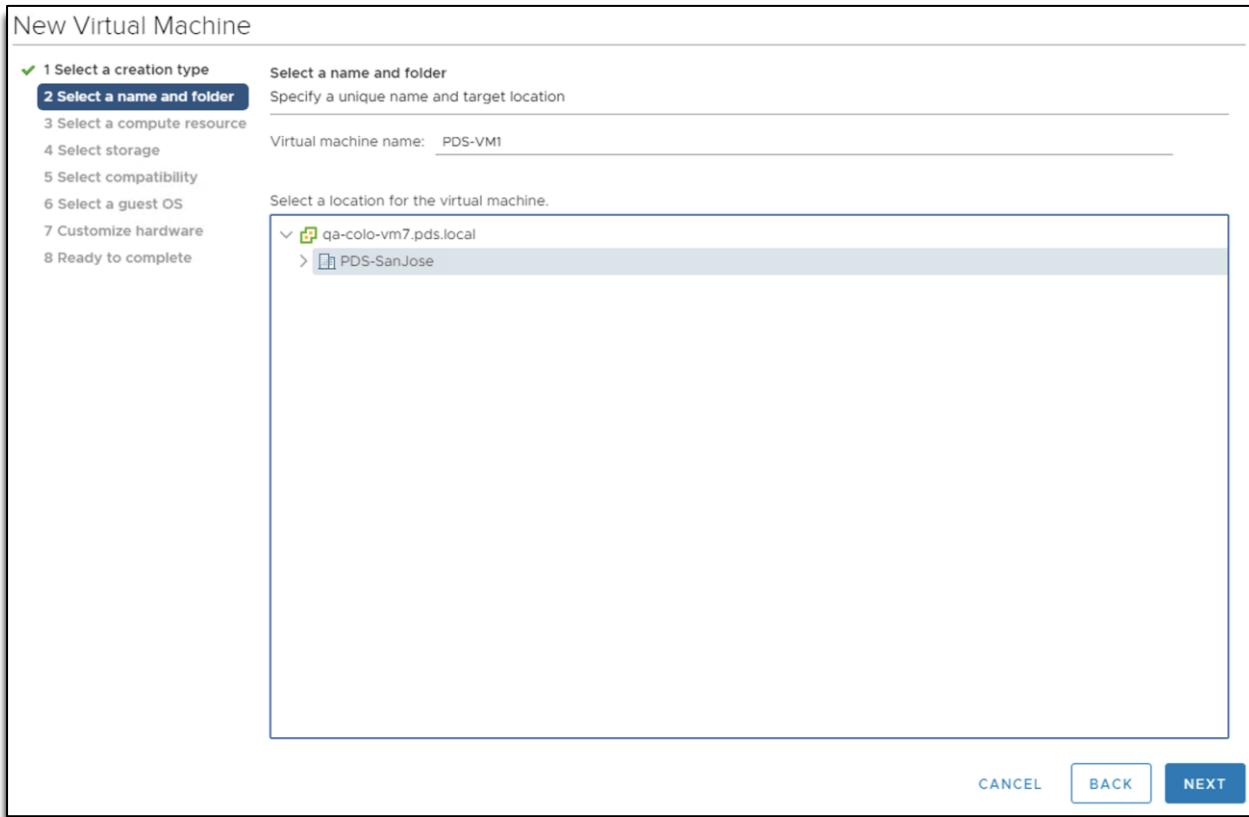
✓ 1 Select a creation type
2 Select a name and folder
3 Select a compute resource
4 Select storage
5 Select compatibility
6 Select a guest OS
7 Customize hardware
8 Ready to complete

Select a name and folder
Specify a unique name and target location
Virtual machine name: PDS-VM1

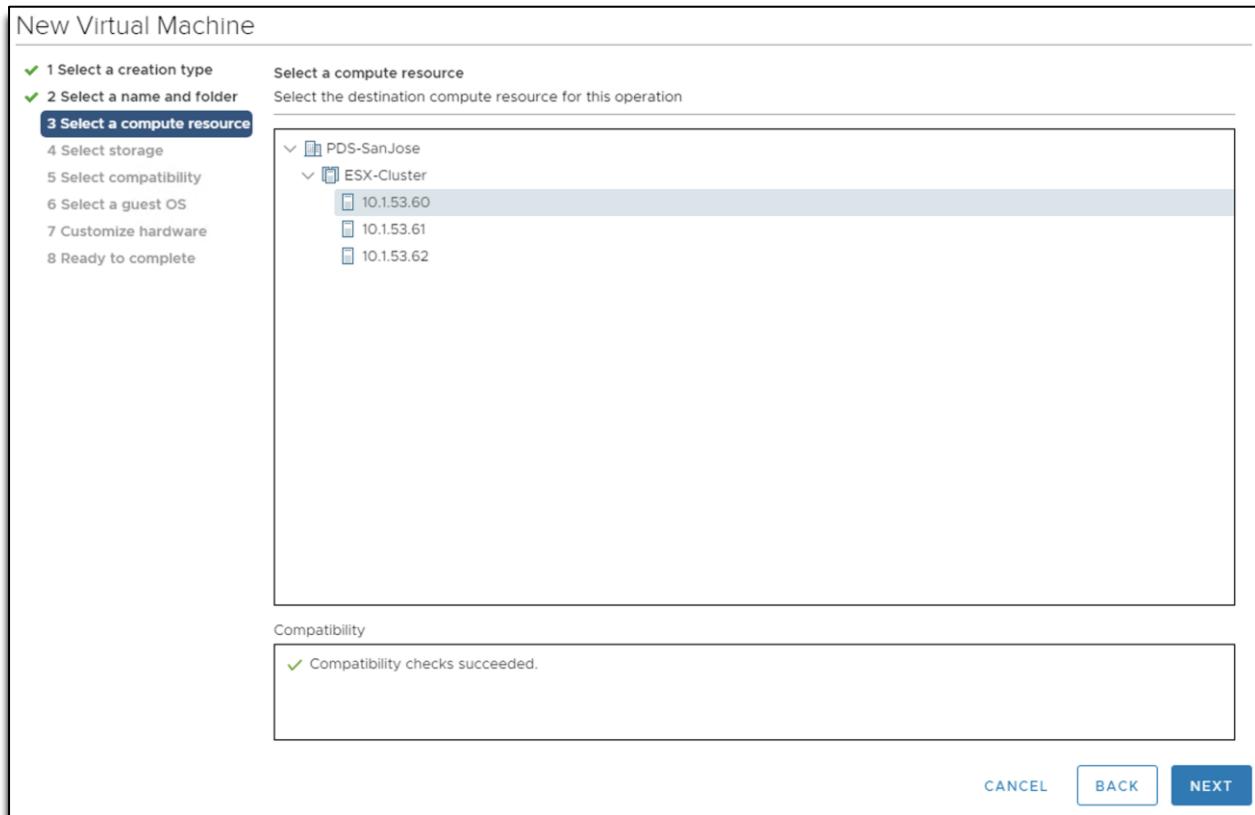
Select a location for the virtual machine.

qa-coloc-vm7.pds.local
PDS-SanJose

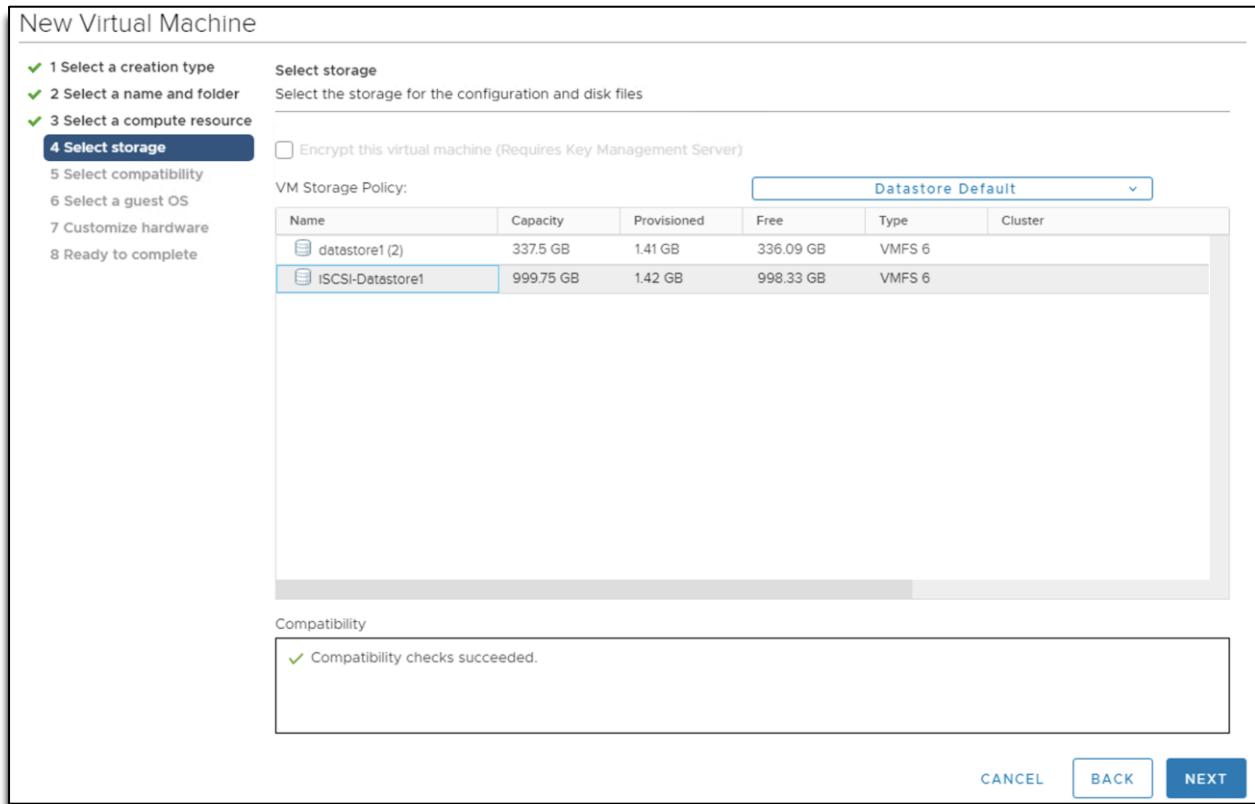
CANCEL BACK NEXT



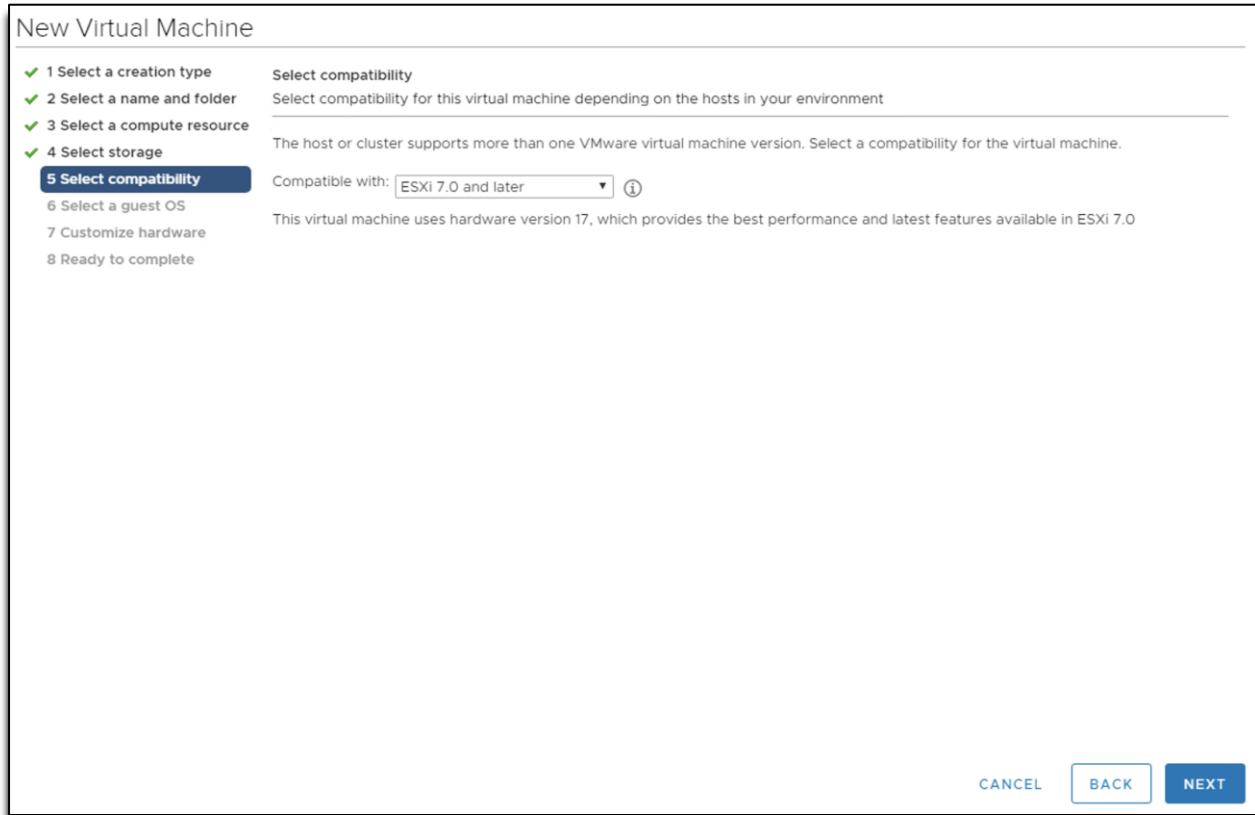
Step 13: Navigate to **Select a computer resource**, select primary host for the virtual machine and click **NEXT** as seen in below image:



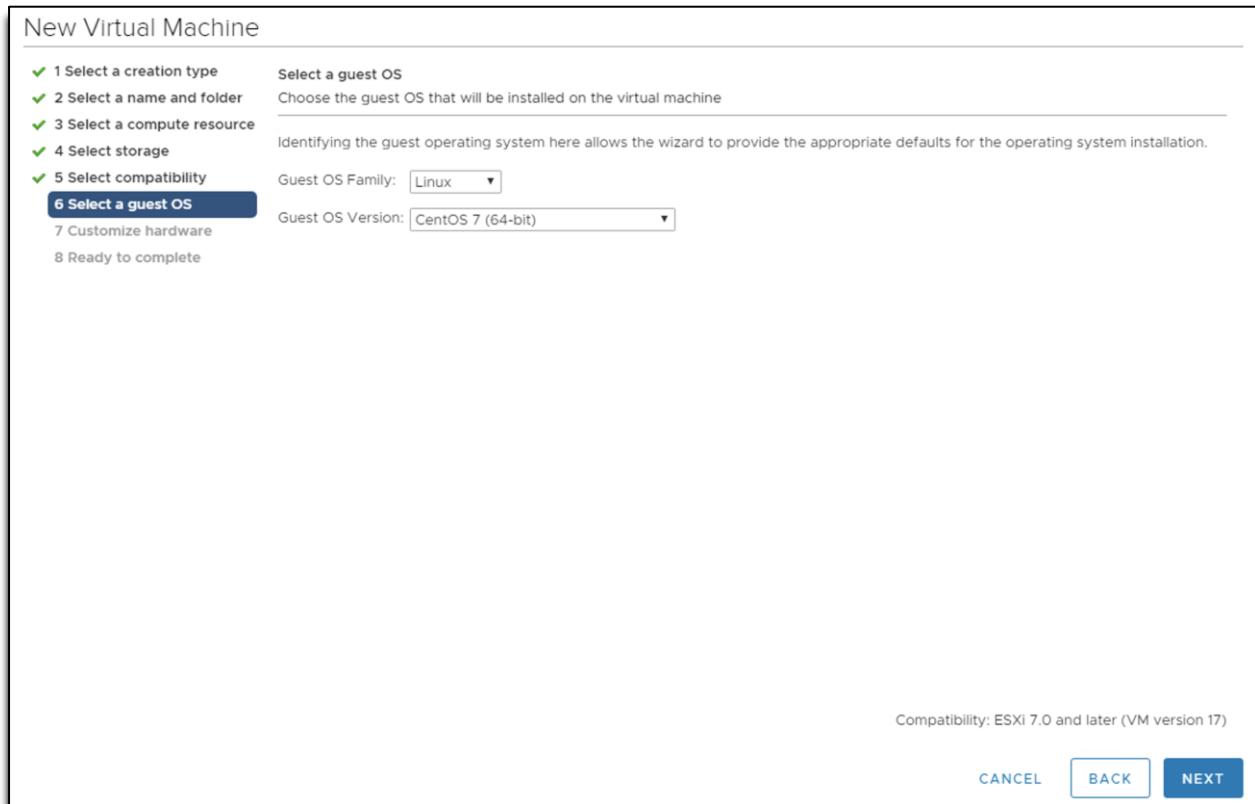
Step 14: Navigate to **Select Storage**, select datastore for the virtual machine and click **NEXT** as seen in below image:



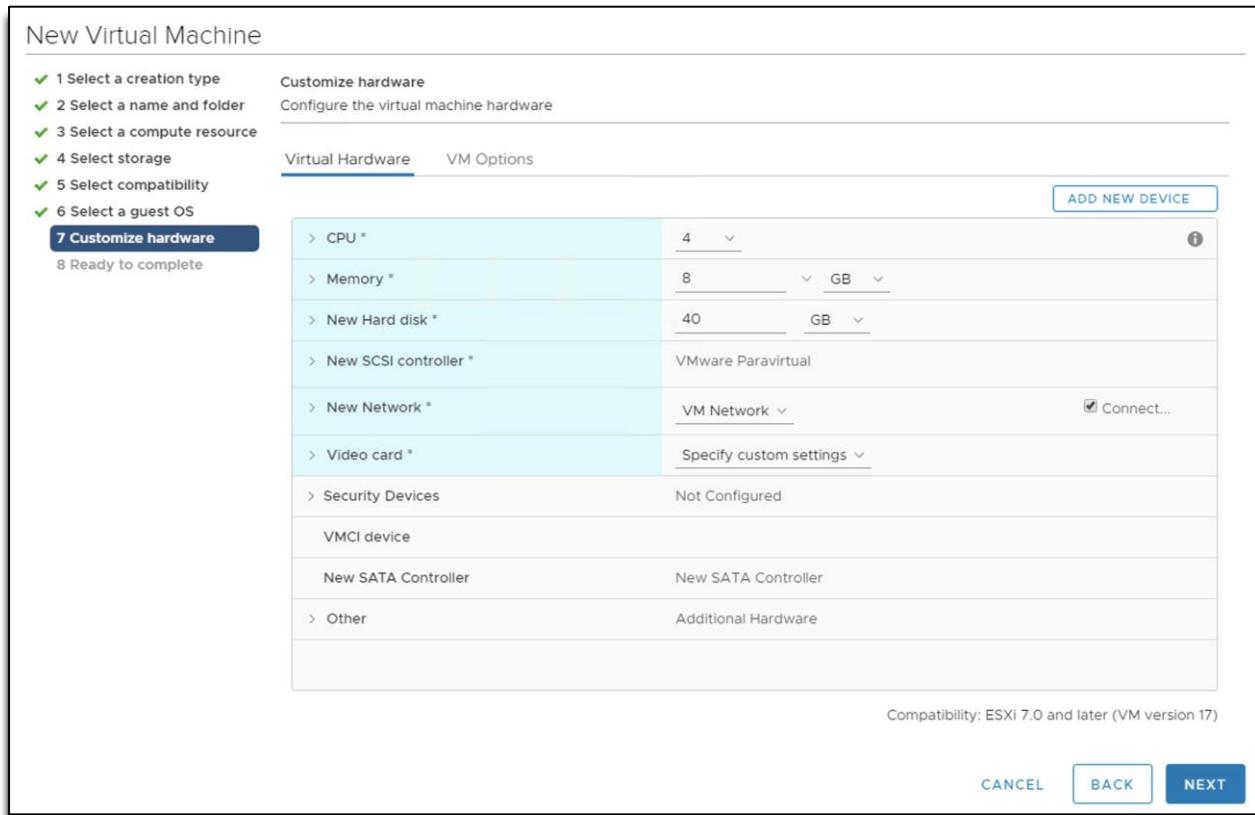
Step 15: Navigate to **Select Compatibility**, select **Compatibility with** and click **NEXT** as seen in below image:



Step 16: Navigate to **Select a guest OS**, select **Guest OS Family** and **Guest OS Version** and click **NEXT** as seen in below image:



Step 17: Navigate to **Customize hardware>Virtual Hardware**, and add new network adapter and click **NEXT** as seen in below image:



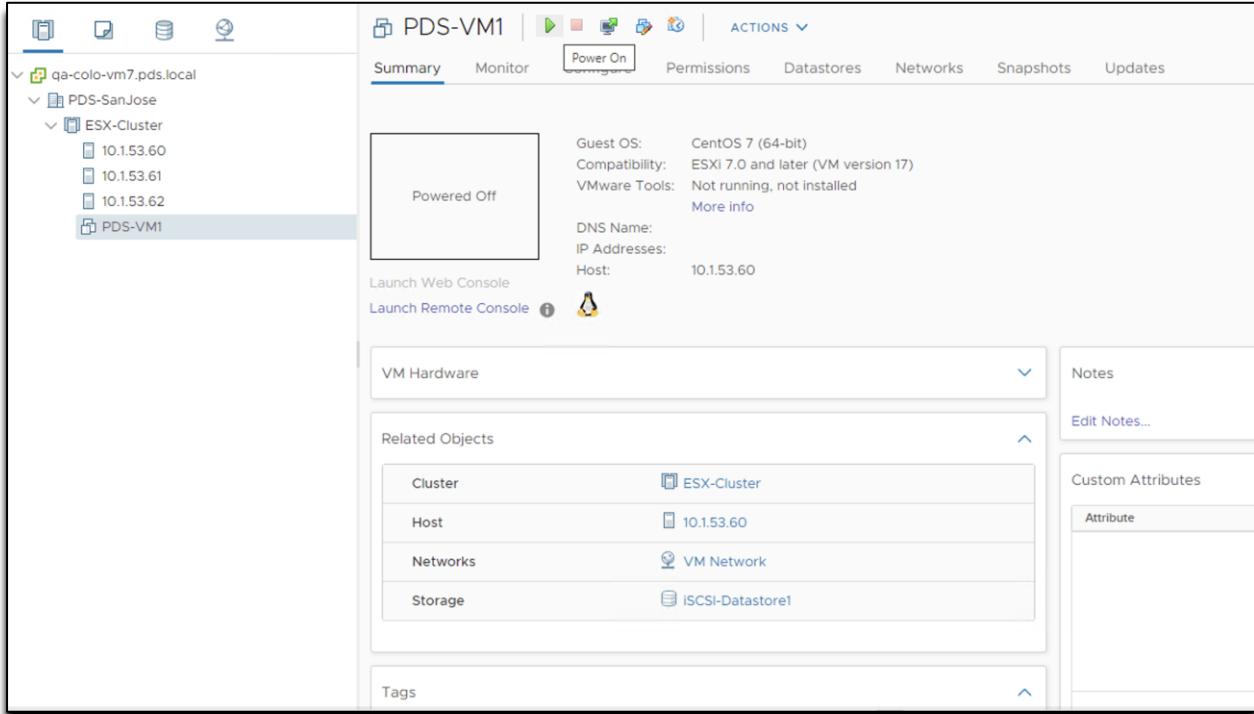
Step 18: Navigate to Ready to complete, verify VM hardware information and click **FINISH** as seen in the below image:

New Virtual Machine

Ready to complete	
Click Finish to start creation.	
Virtual machine name	PDS-VM1
Folder	PDS-SanJose
Host	10.1.53.60
Datastore	iSCSI-Datastore1
Guest OS name	CentOS 7 (64-bit)
Virtualization Based Security	Disabled
CPUs	4
Memory	8 GB
NICs	1
NIC 1 network	VM Network
NIC 1 type	VMXNET 3
SCSI controller 1	VMware Paravirtual
Create hard disk 1	New virtual disk
Capacity	40 GB
Datastore	iSCSI-Datastore1

[CANCEL](#) [BACK](#) [FINISH](#)

Step 19: Lastly, Power On the new created VM and install OS as seen in the below image:



PDS-VM1

Summary

Powered Off

Guest OS: CentOS 7 (64-bit)
Compatibility: ESXi 7.0 and later (VM version 17)
VMware Tools: Not running, not installed
More info

DNS Name:
IP Addresses:
Host: 10.1.53.60

Launch Web Console | Launch Remote Console

VM Hardware

Related Objects

Cluster	ESX-Cluster
Host	10.1.53.60
Networks	VM Network
Storage	iSCSI-Datastore1

Tags

Notes
Edit Notes...

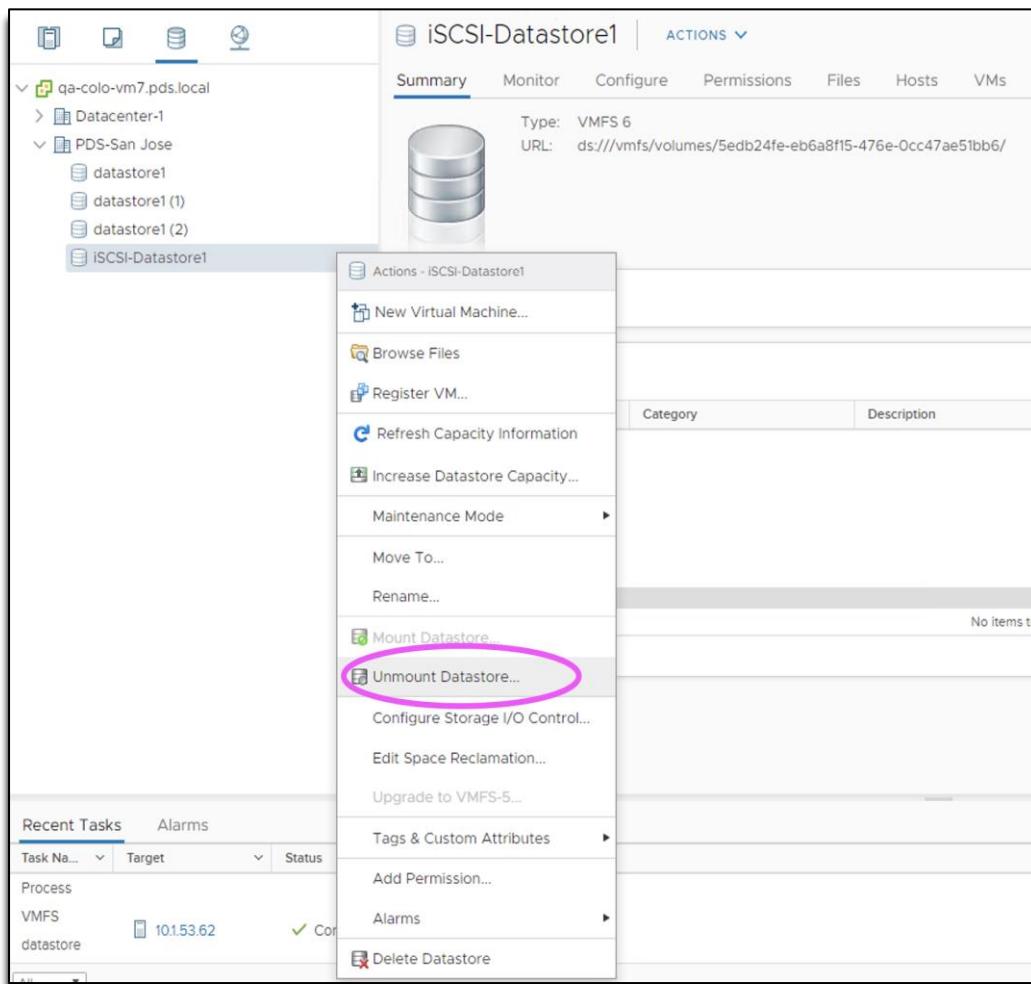
Custom Attributes
Attribute

18. Disconnecting Datastore

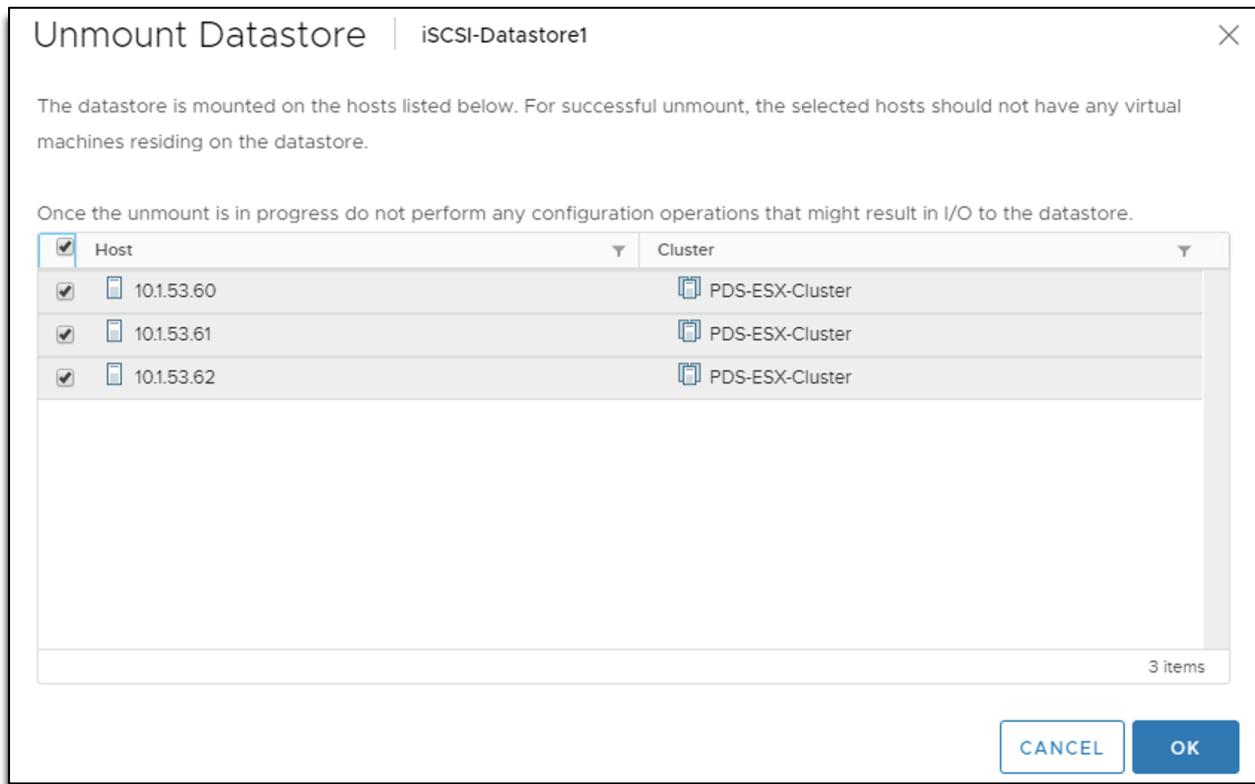
To disconnect the **Pavilion** volumes from the VMware initiator, the Target IPs should be removed from the Storage adapter configuration. **Power Off** all the VMs. Delete the VMs or migrate storage to different datastore.

This section lists the steps required to disconnect from an iSCSI datastore:

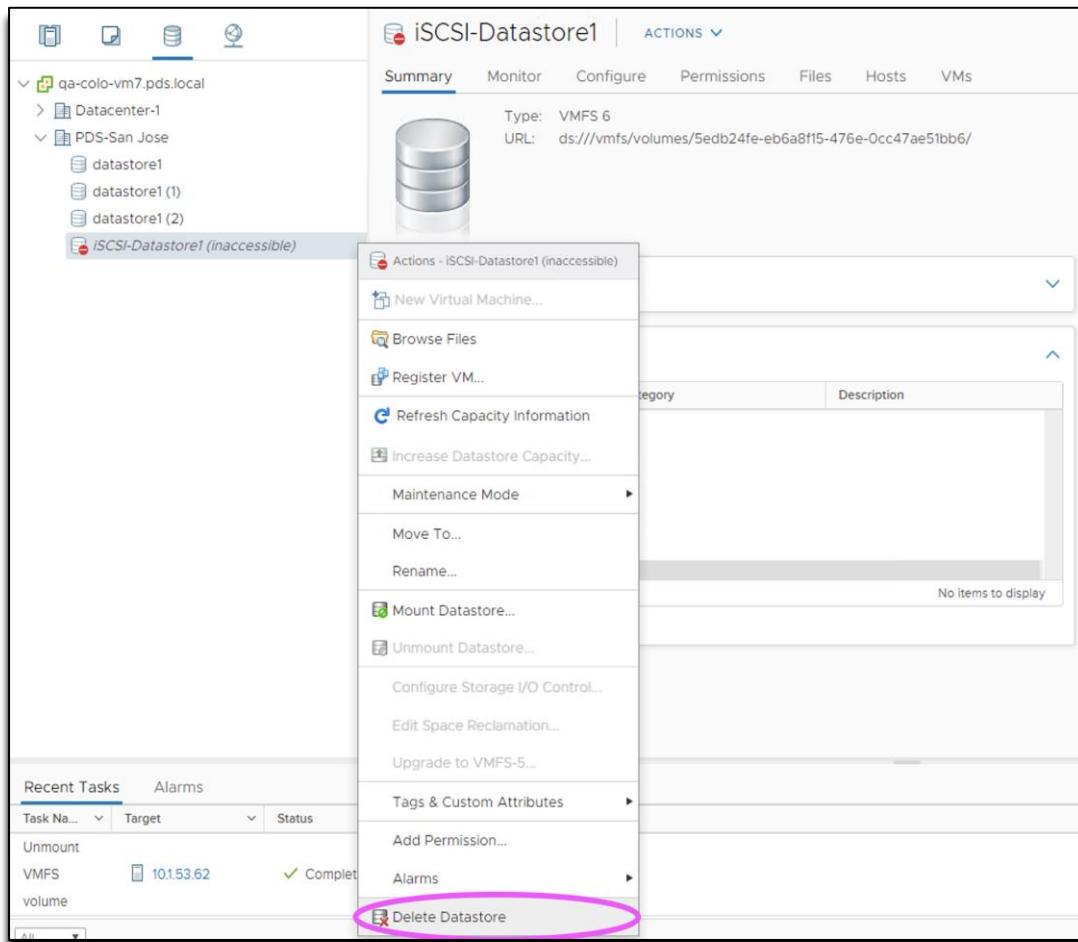
Step 1: Right click the datastore to be removed and click **Unmount Datastore** as seen in the below image:



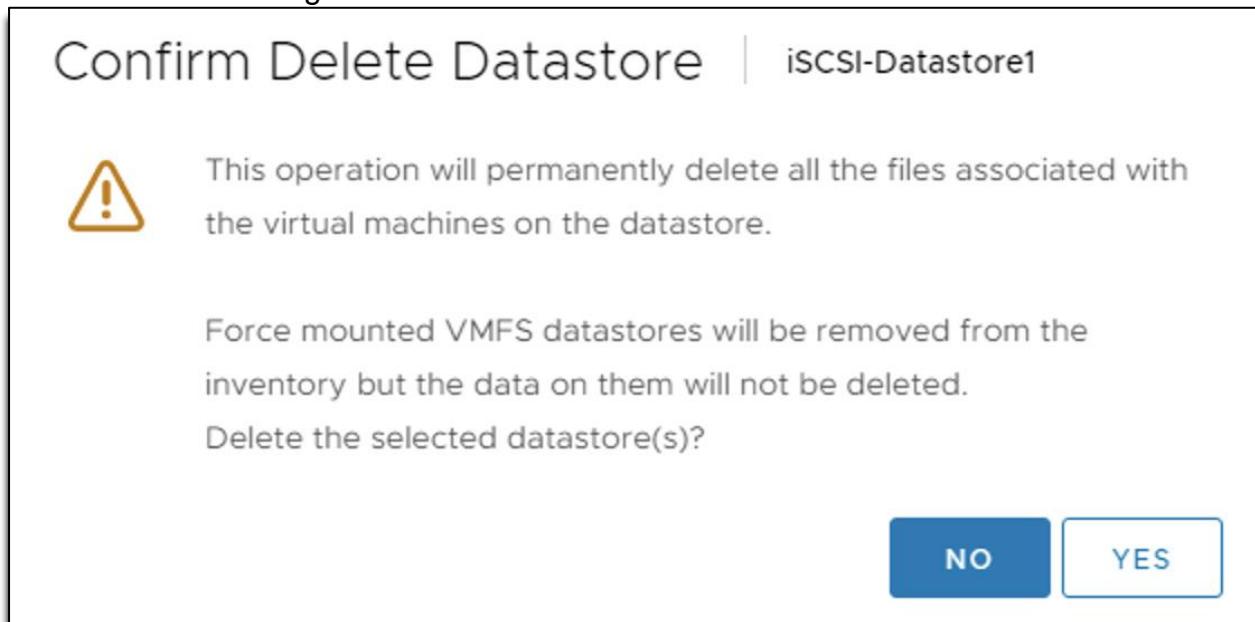
Step 2: On the **Unmount DataStore| iSCSI DataStore1** dialog box, select all the hosts with access to the datastore and click OK as seen in the below image:



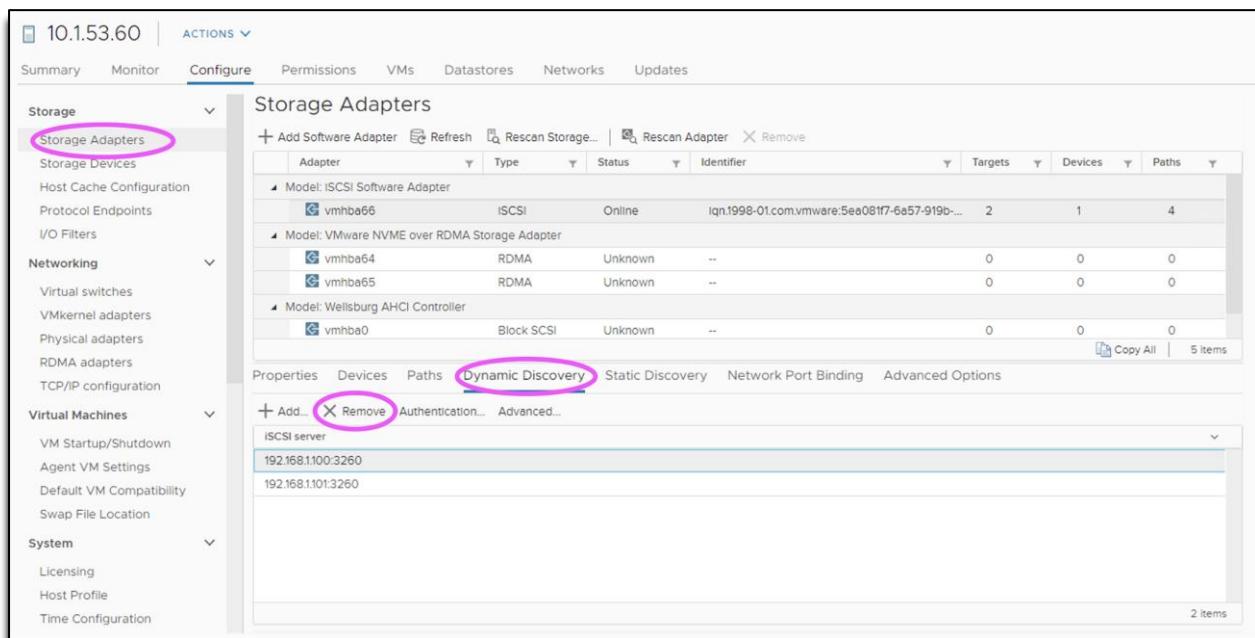
Step 3: Next step is to delete, right click the datastore to be removed and click **Delete Datastore** as seen in the below image:



Step 4:  Make sure VMs are migrated to another datastore before you click **YES** as seen in the below image:



Step 5: Navigate to **Host and Clusters**, select any host in the ESX cluster and **remove** the iSCSI server from the iSCSI storage adapter as seen in the below image:



Adapter	Type	Status	Identifier	Targets	Devices	Paths
vmhba66	iSCSI	Online	iqn.1998-01.com.vmware:5ea08f7-6a57-919b...	2	1	4
vmhba64	RDMA	Unknown	--	0	0	0
vmhba65	RDMA	Unknown	--	0	0	0
vmhba0	Block SCSI	Unknown	--	0	0	0

Properties Devices Paths **Dynamic Discovery** Static Discovery Network Port Binding Advanced Options

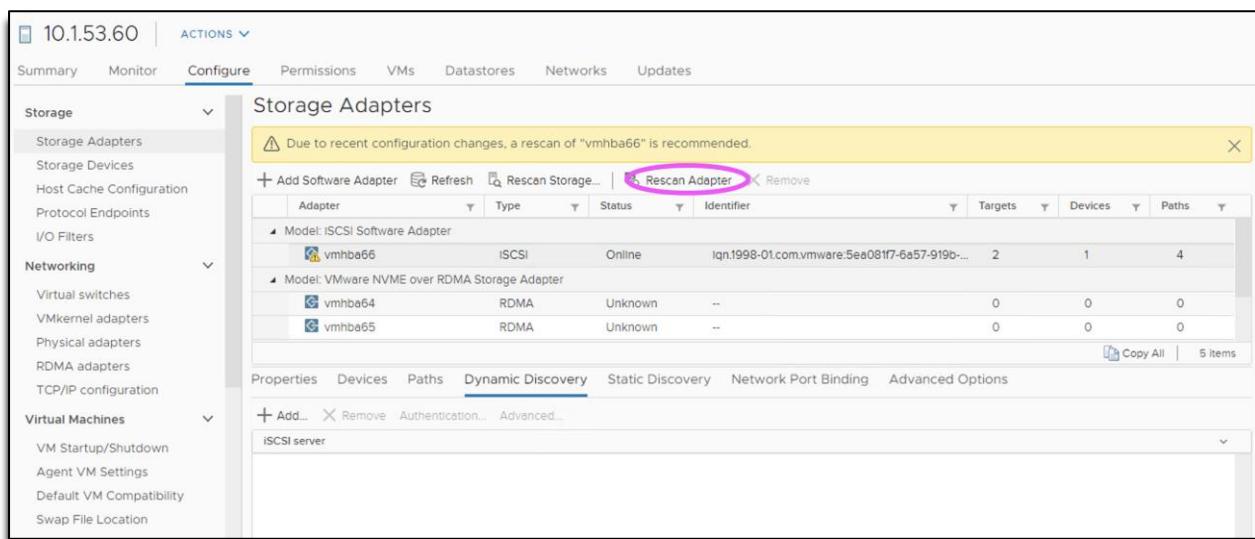
+ Add... Remove Authentication... Advanced...

iSCSI server
192.168.1.100:3260
192.168.1.101:3260

Step 6:  Be cautious before you proceed with the step.
Click **OK** as seen in below image:

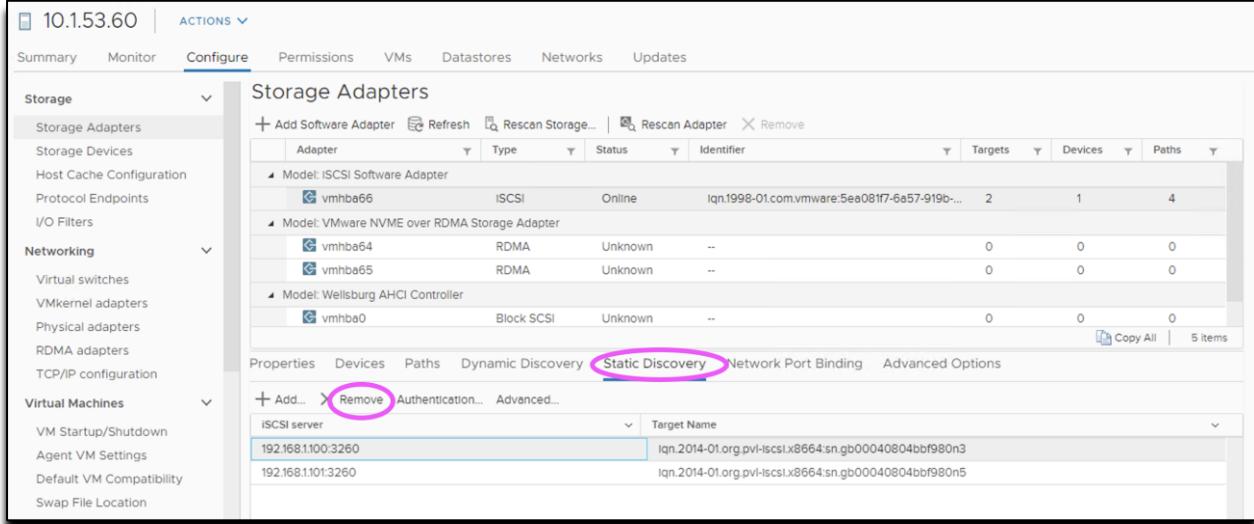


Step 7: After removing all iSCSI servers IP, click **Rescan Adapter** as seen in the below image:



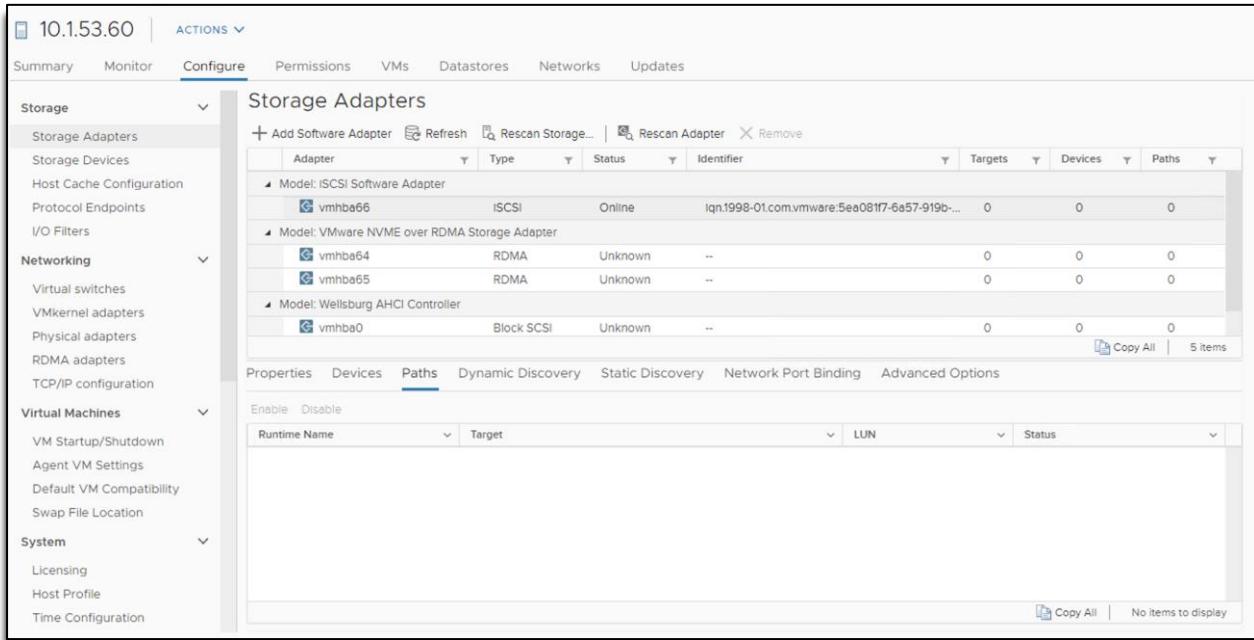
Adapter	Type	Status	Identifier	Targets	Devices	Paths
vmhba66	iSCSI	Online	lqn.1998-01.com.vmware.5ea081f7-6a57-919b-...	2	1	4
vmhba64	RDMA	Unknown	--	0	0	0
vmhba65	RDMA	Unknown	--	0	0	0

Step 8: Remove all iSCSI server IP addresses under **Static Discovery** and click **Rescan Adapter** as seen in below image:



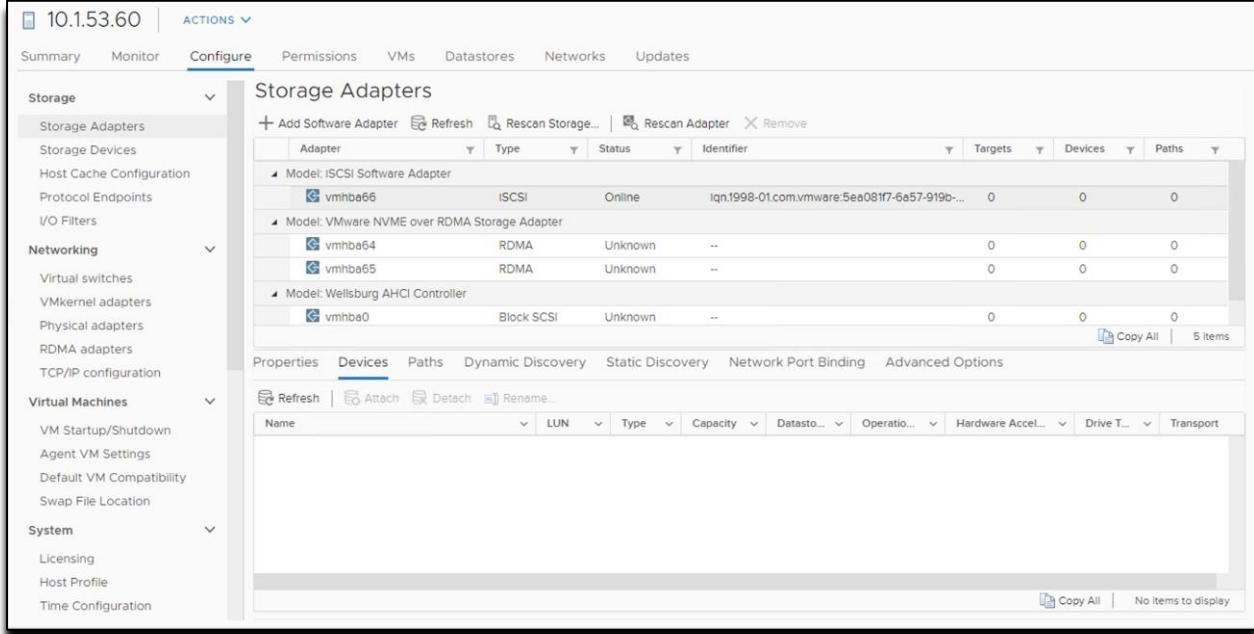
ISCSI server	Target Name
192.168.1.100:3260	Iqn.2014-01.org.pvl-iscsi.x8664:sn.gb00040804bbf980n3
192.168.1.101:3260	Iqn.2014-01.org.pvl-iscsi.x8664:sn.gb00040804bbf980n5

Step 9: Verify on the **Paths** tab if all paths have been removed as seen in below image:



Runtime Name	Target	LUN	Status

Step 10: As a next step, verify that the **Pavilion** device is no longer visible to the host as seen in below image:



Adapter	Type	Status	Identifier	Targets	Devices	Paths
vmhba66	iSCSI	Online	lqn.1998-01.com.vmware.5ea081f7-6a57-919b-...	0	0	0
vmhba64	RDMA	Unknown	--	0	0	0
vmhba65	RDMA	Unknown	--	0	0	0
vmhba0	Block SCSI	Unknown	--	0	0	0

Name	LUN	Type	Capacity	Datasto...	Operatio...	Hardware Accel...	Drive T...	Transport
No items to display								

Step 11: Repeat above steps for all hosts in the ESX cluster.