How to Use Port Binding to Configure Multipathing on VMware for Synology NAS

https://kb.synology.com/en-global/DSM/tutorial/How_to_Use_Port_Binding_to_Configure_Multipathing_on_VMware_for_Synology_NAS

Overview

Network quality of an iSCSI storage is crucial in deploying a VMware environment. To ensure the stability and performance of your Synology iSCSI storage, it is recommended that you use two or more dedicated physical network interfaces for the iSCSI traffic between your VMware host and Synology NAS. With multiple network ports, it is required to configure iSCSI MPIO (Multipath I/O) to achieve load balancing and high availability. One simple method for doing so is to configure port binding.

This article will guide you through the steps of configuring port binding and MPIO in VMware for Synology NAS.

Contents

1. Before you start
2. Allow multiple sessions from one or more iSCSI initiators
3. Assign one active network adapter per port group
4. Configure port binding
5. Locate iSCSI LUN on VMware vSphere Client
6. Learn more

1. Before you start

Before you start to configure port binding, make sure you have completed the following tasks:

- Setting up Synology NAS
- Installing Synology DiskStation Manager (DSM, web-based operating system of Synology NAS)
- Creating iSCSI LUNs and Targets

Refer to **Quick Installation Guide** for more information about hardware and software installation.

Note:

- MPIO is only available on the Synology NAS with two or more network ports.

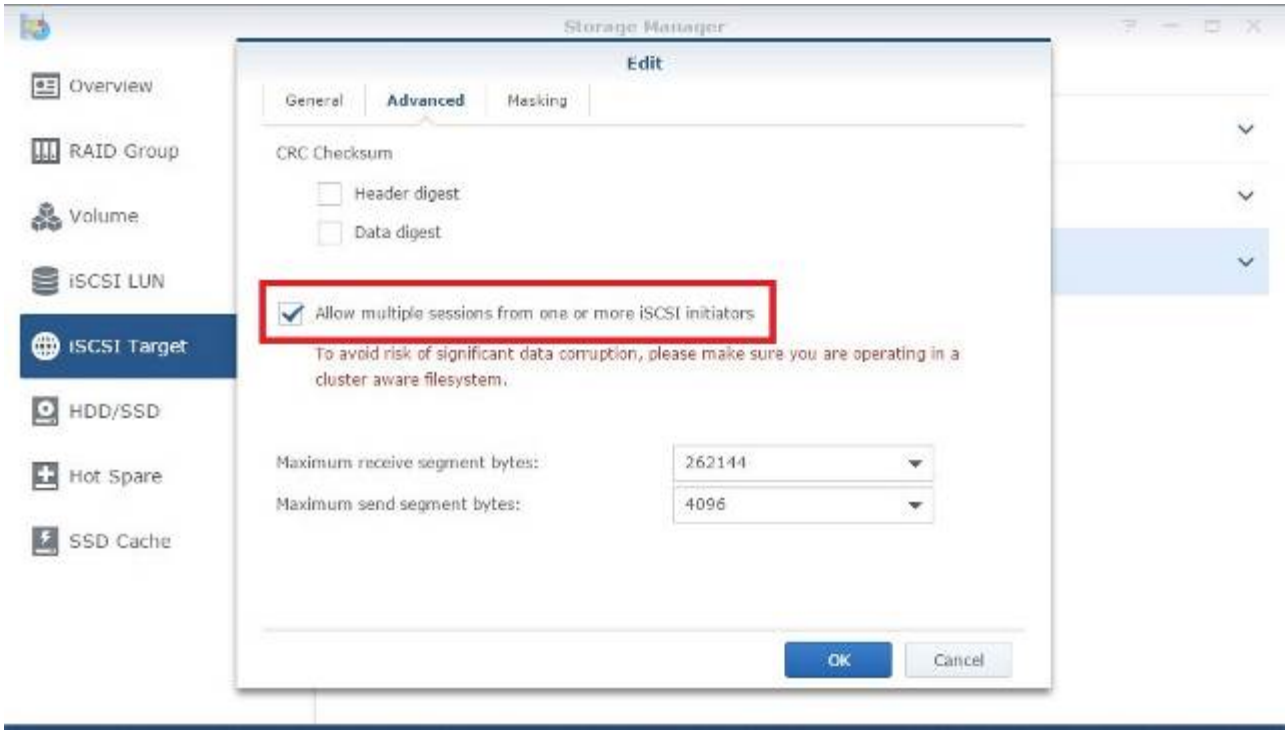
There are several prerequisites for configuring MPIO using port binding:

- An iSCSI Software HBA is used.
- All VMkernel ports used for iSCSI and Synology NAS ports are in the same local network and in the same IP subnet.
- All VMkernel ports are in the same vSwitch.

2. Allow multiple sessions from one or more iSCSI initiators

This section will guide the administrator to configure relevant settings on DSM's Storage Manager.

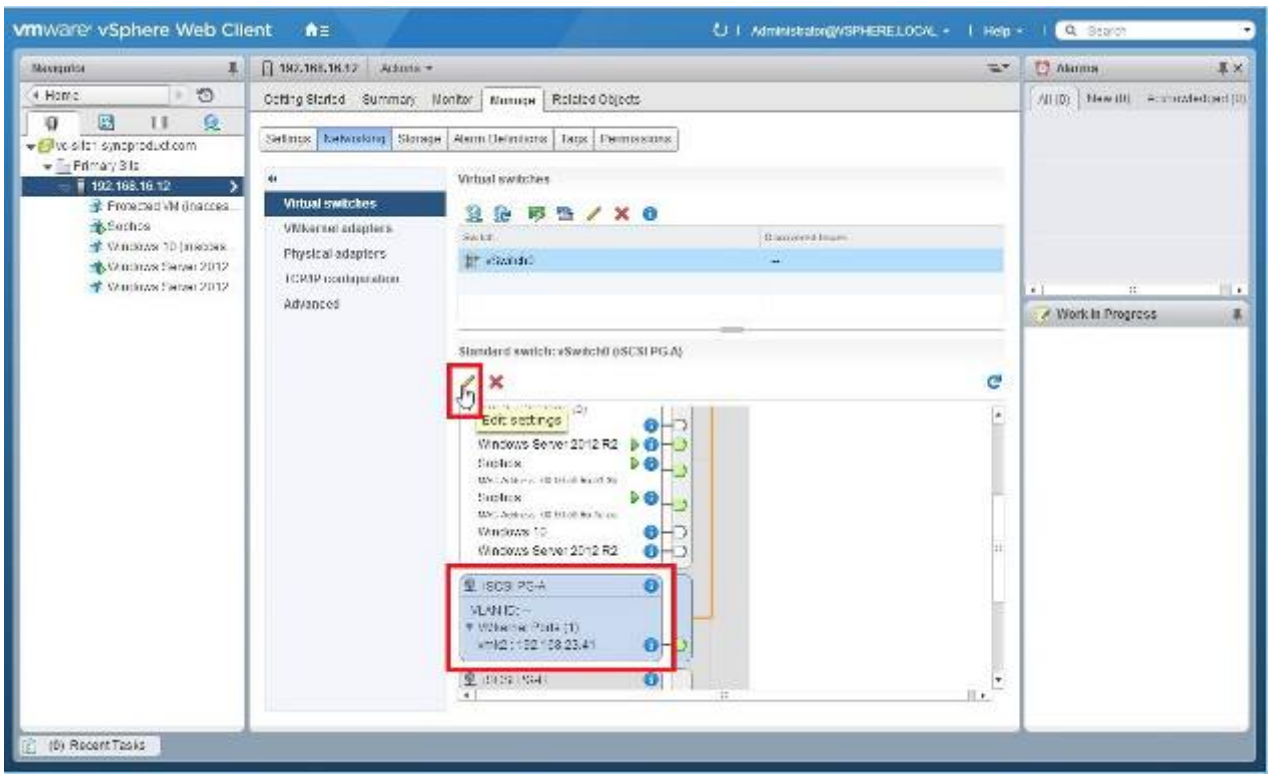
1. On DSM, go to **Storage Manger** > **iSCSI Target** > **Edit** > **Advanced**.
2. Select **Allow multiple sessions from one or more iSCSI initiators**.
3. Click **OK**.



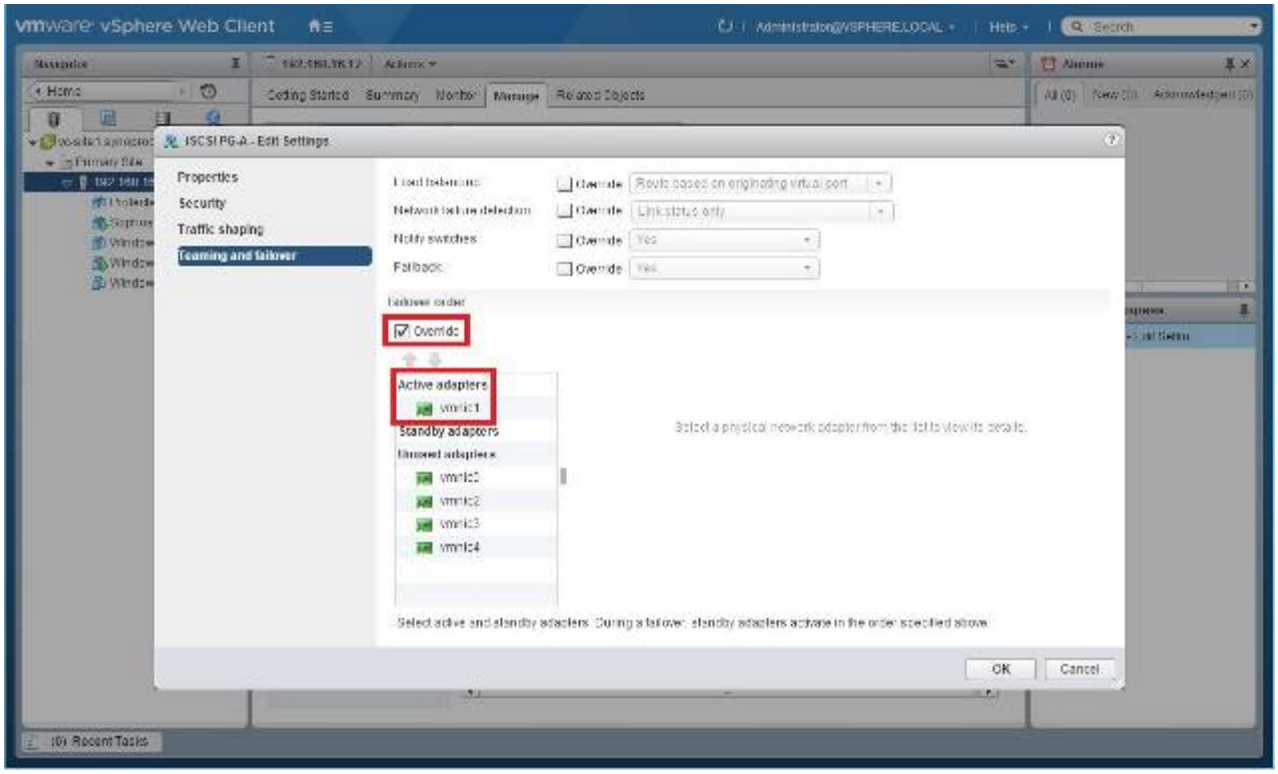
3. Assign one active network adapter per port group

This section will guide the administrator to assign one active network adapter (vmnic) to each port group on VMware vSphere Client 6.0. The administrator has to create multiple port groups for iSCSI (iSCSI-PG-A, iSCSI-PG-B) beforehand.

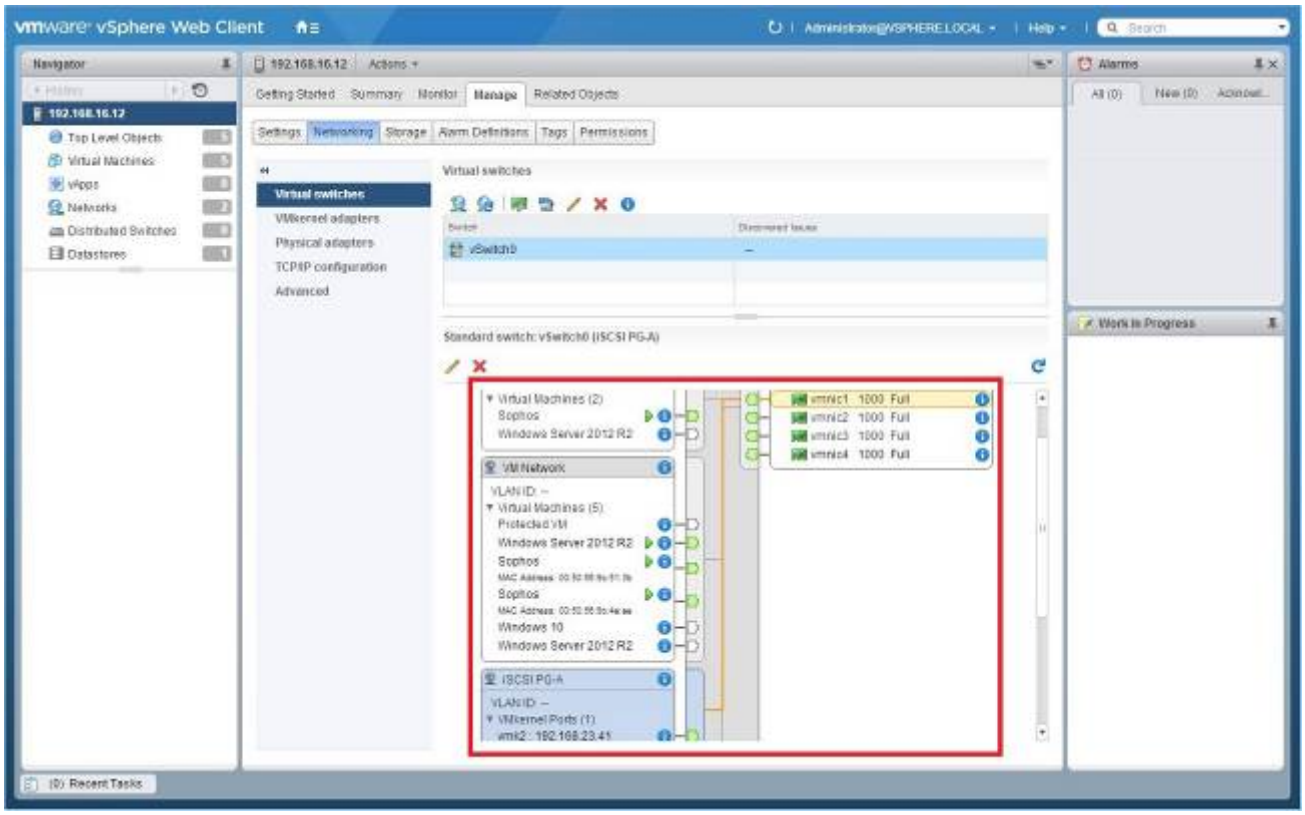
1. In the host **Manage** tab, click **Networking** > **Virtual Switches**, and select the vSwitch that you want to edit from the list.
2. On the vSwitch diagram, click on a port group and then click the "pencil" icon to edit it.



3. On the **Edit Settings** wizard, click **Teaming and failover**.
4. Check **Override** under **Failover order**.
5. Keep only one physical adapter under **Active adapters**. Select all the other adapters and click the move down arrow to move them to **Unused adapters**.



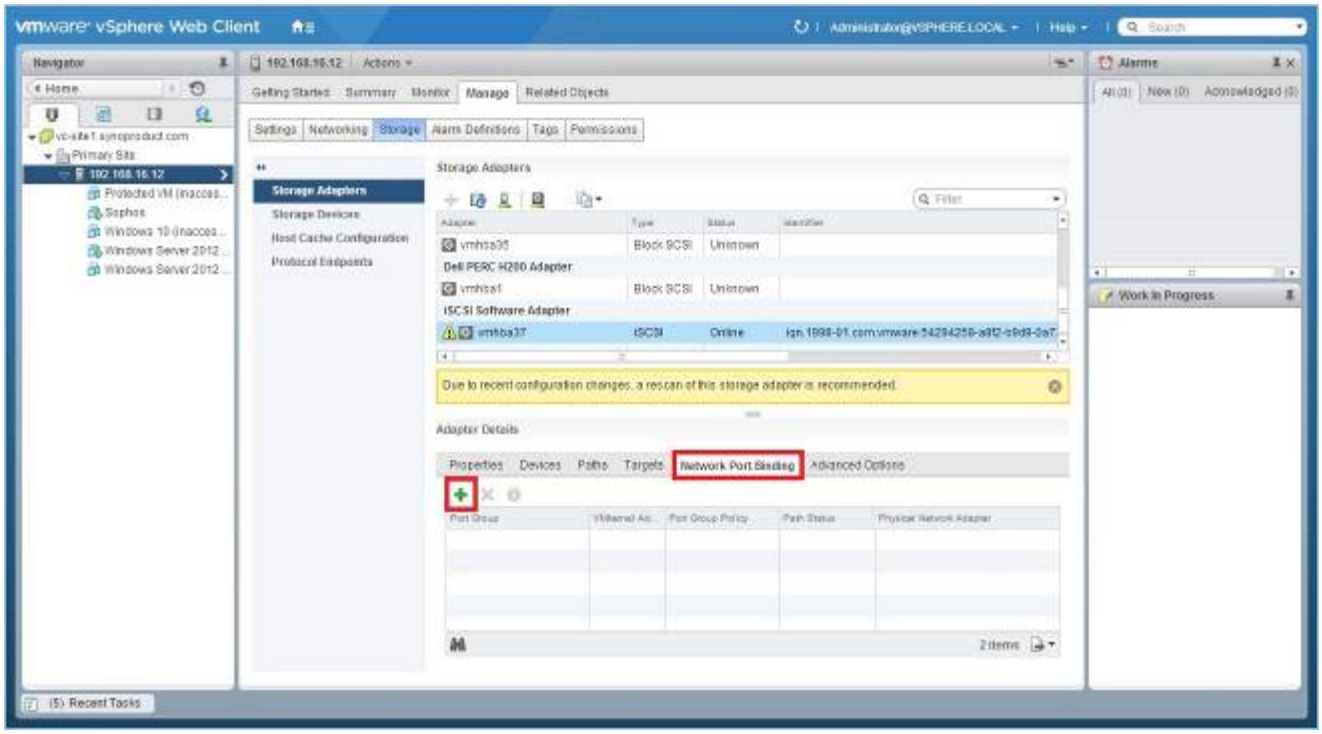
6. Repeat steps 2-5 for the other iSCSI VMkernel ports to ensure that each VMkernel port has its own unique active adapter. The resulted configuration should look similar to the diagram below.



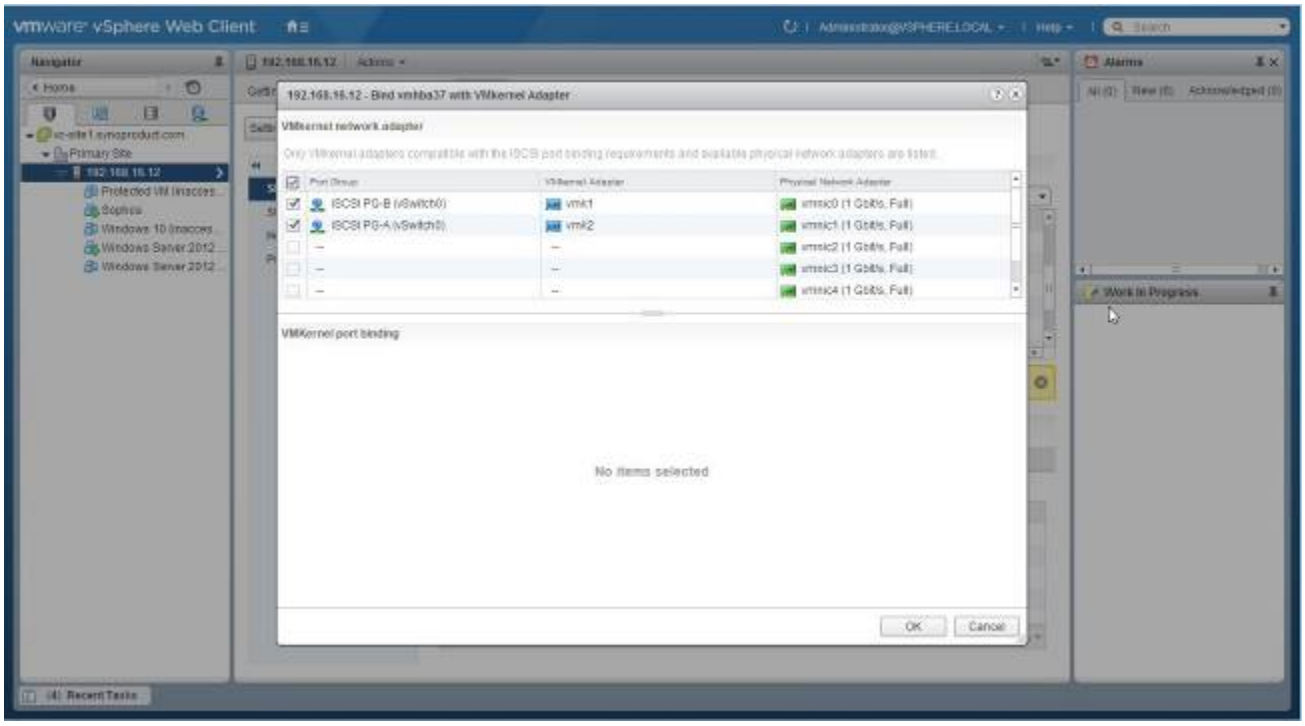
4. Configure port binding

This section will guide the administrator to configure port binding on VMware vSphere Client 6.0.

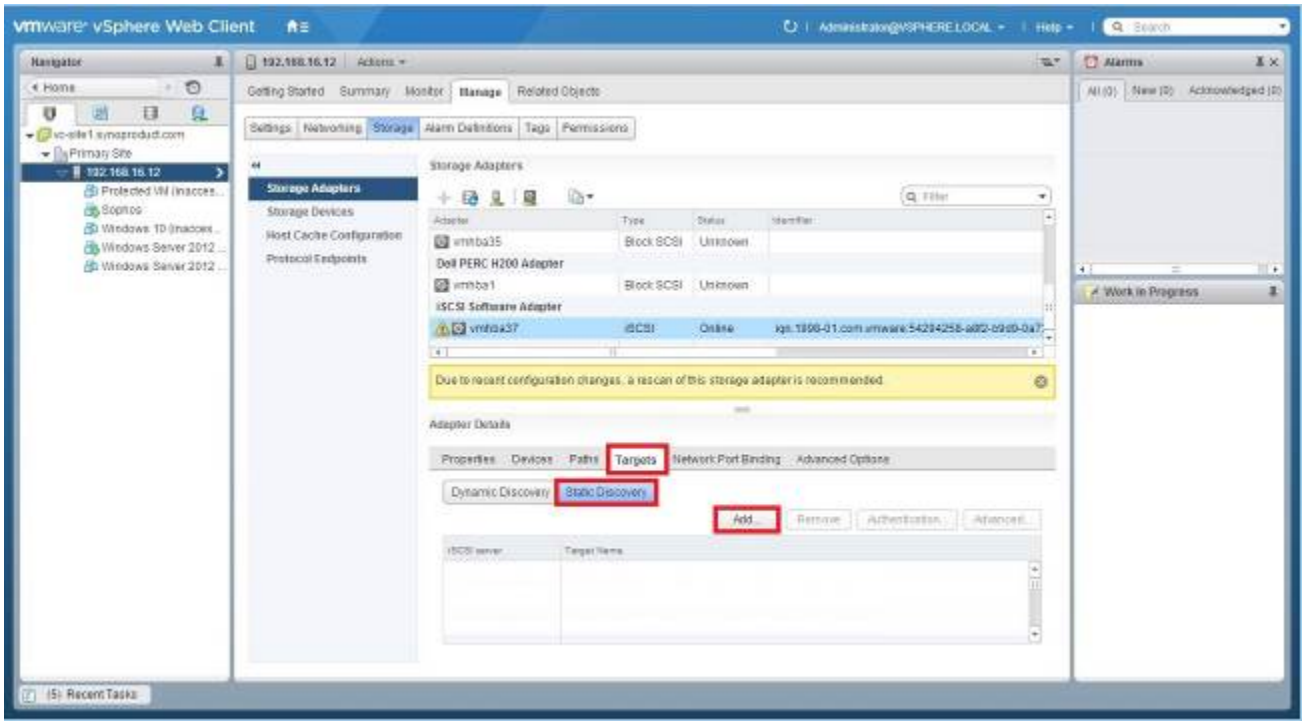
1. In the host **Manage** tab, click **Storage** > **Storage Adapters**.
2. Under **Adapter Details**, click **Network Port Binding** and then click the green add button.



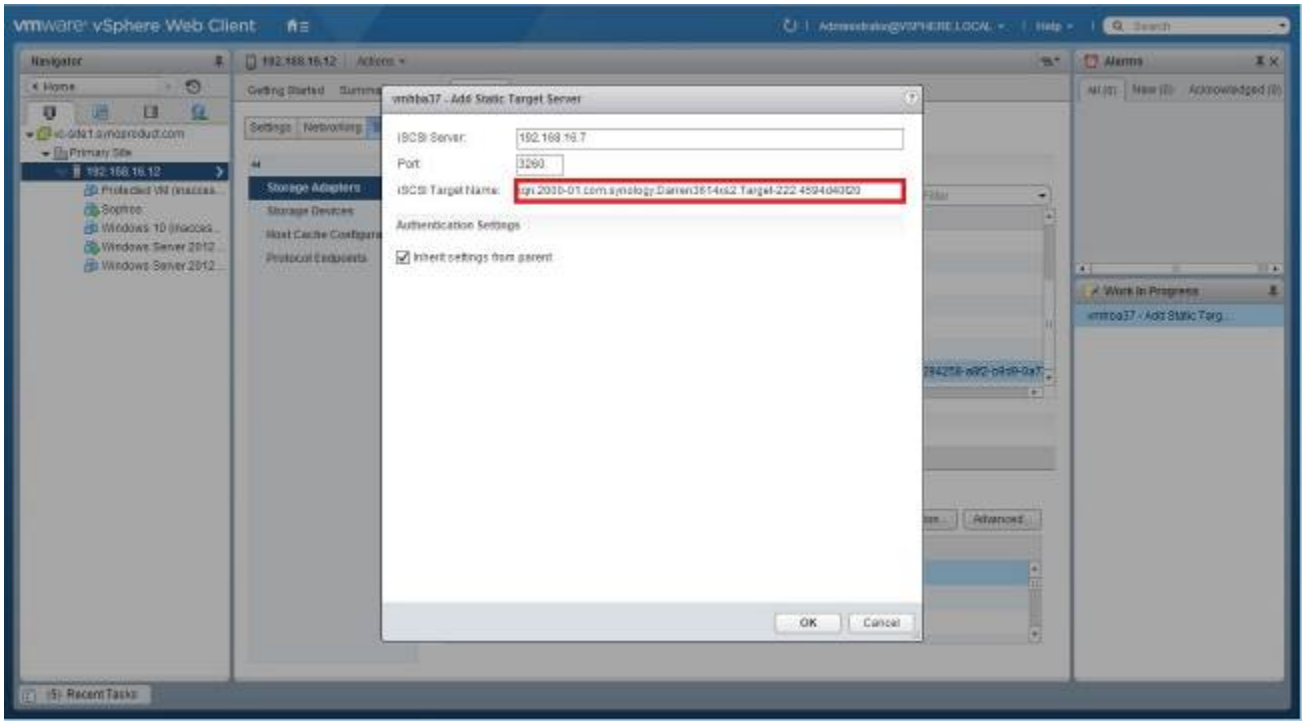
3. Select the port groups that you want to bind. Click **OK**.



4. Return to the **Storage Adapters** tab. Under **Adapter Details**, click **Targets** > **Static Discovery** > **Add**.



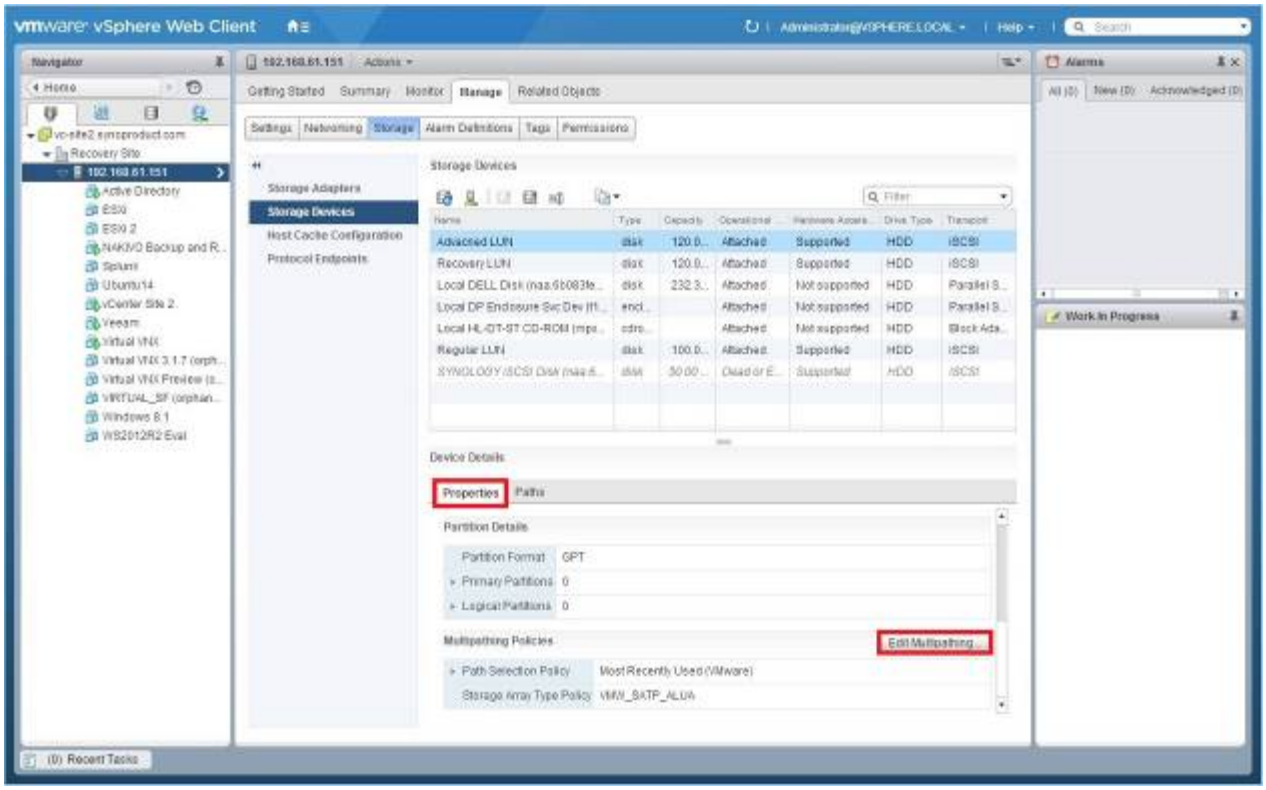
5. Enter the iSCSI target's information to add the target.



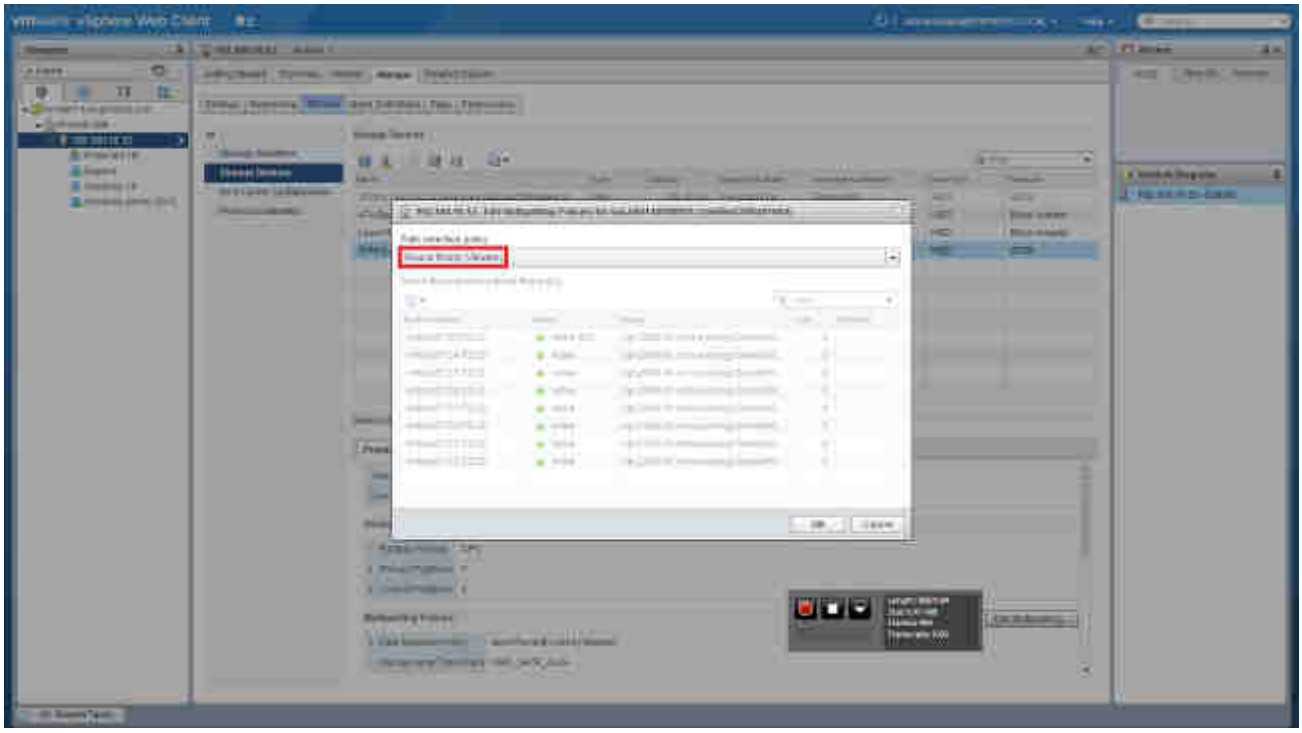
5. Locate iSCSI LUN on VMware vSphere Client

This section will guide the administrator to locate the Synology iSCSI LUN on VMware vSphere Client 6.0.

1. In the host **Manage** tab, click **Storage** > **Storage Devices**, and select the iSCSI LUN from the list.
2. Click the **Properties** tab, and then click > **Edit Multipathing Policies** under **Multipathing Policies**.



3. Change the path selection policy from **Most Recently Used** to **Round Robin**.



6. Learn more

For more detailed information on port binding, please consult the following recourses:

- Considerations for using software iSCSI port binding in ESX/ESXi
- Configuring iSCSI port binding with multiple NICs in one vSwitch for VMware ESXi 5.x and 6.0.x
- Multipathing Configuration for Software iSCSI Using Port Binding