iSCSI Manager | iSCSI SOP

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How to Use iSCSI Targets on Windows Computers with Multipath I/O

Overview

Failover and load balancing configuration is crucial when deploying virtual storage solution in your IT environment to achieve optimal resource utilization, maximize throughput, minimize response time, and avoid overload. By using Multipath I/O (MPIO) on iSCSI connection, you may deliver a high quality and reliable storage service with failover and load balancing capability and it's also one of the best practices for IT environment.

MPIO has wider support, as it's supported by various technologies, including disk controllers, iSCSI Protocol, Fibre Channel. It also has wider support by various software companies, including Linux, VMware, and Microsoft. Compare with Multiple Connection per Session (MC/S), MPIO can provide a better compatibility in your environment. All of the Synology NAS with 2 or more network interface are equipped with multipath support

on iSCSI Target to help you to deploy failover and load balancing configuration.

This article will guide you the steps of using iSCSI targets on Windows server with multipath support.

Contents

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1. Before you start

This article assumes that you have done the following tasks:

- Set up Synology NAS
- Installed Synology DiskStation Manager (DSM, web-based operating system of Synology NAS)

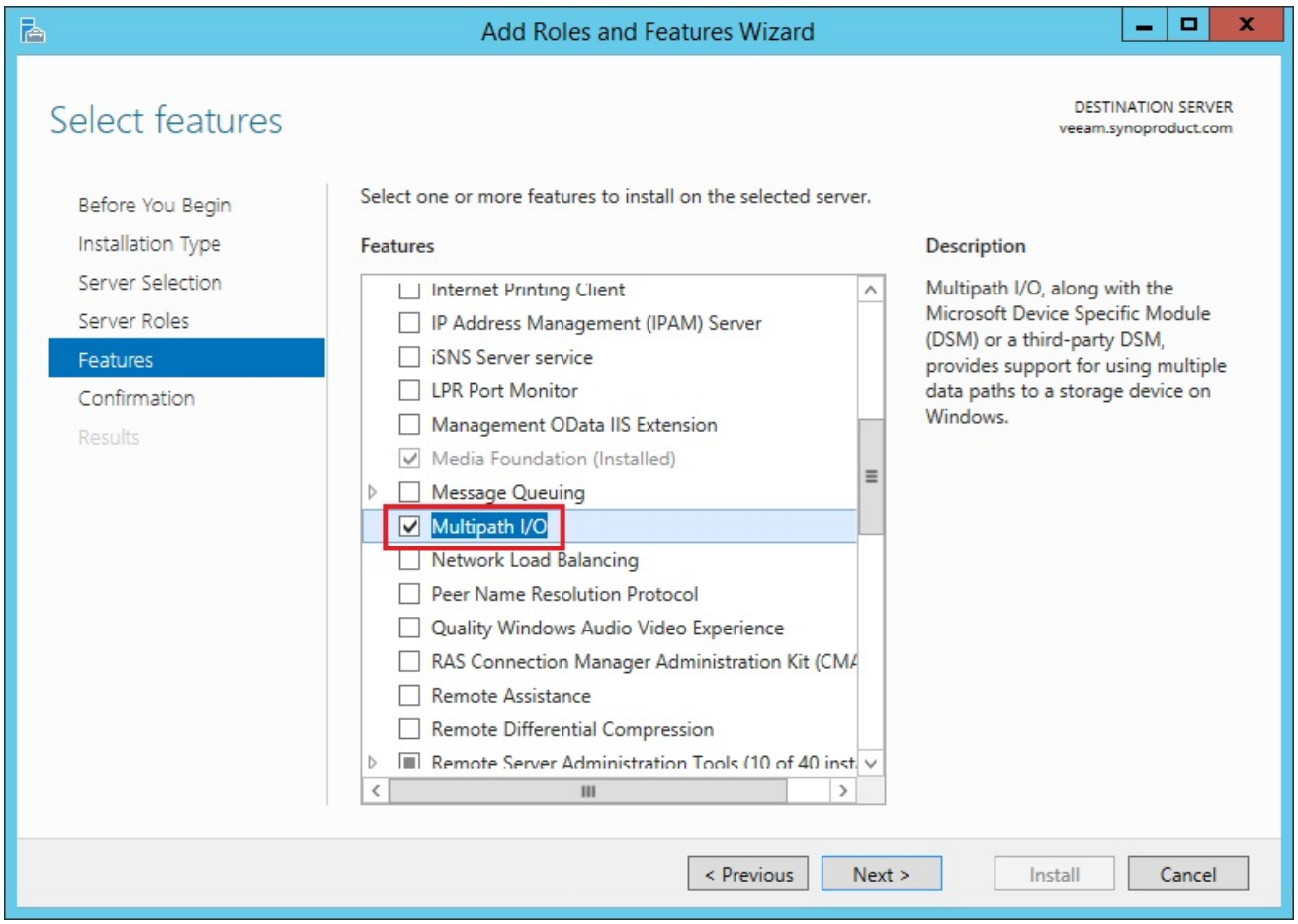
- Enabled multiple sessions support on your iSCSI Targets

Refer to the **Quick Installation Guide** for more information about hardware and software installation. You can also see **Synology NAS User's Guide** (available at Synology's Download Center) for a general idea about topics related to this article.

> ***Note***:
>
> It is strongly recommended to use MPIO with separate networks (or different subnets) with multiple network interfaces on the iSCSI Initiator and Target.
>
> MPIO is only available on Synology NAS with two or more network ports.

2. Install MPIO Service on Windows server

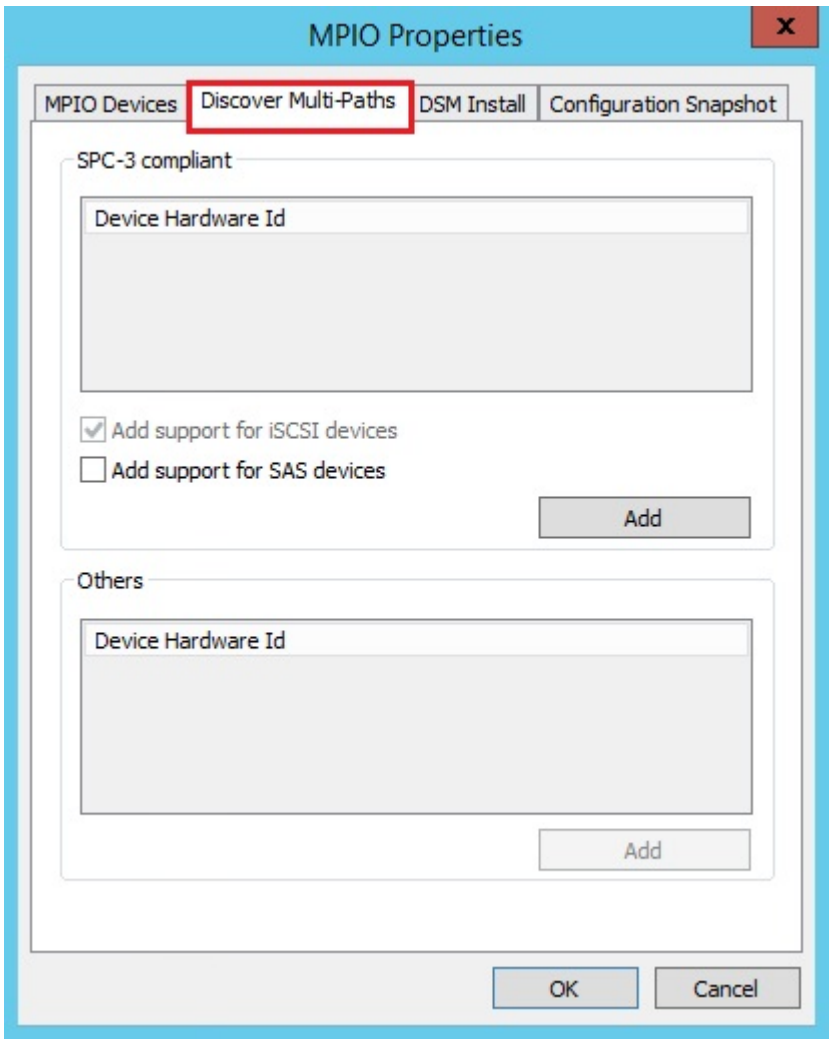
1. Open the **Server Manager Console** and proceed to the **Add Features Wizard**.
2. Select **Multipath I/O** and click on **Install** (This step can be skipped if Multipath I/O is already installed).



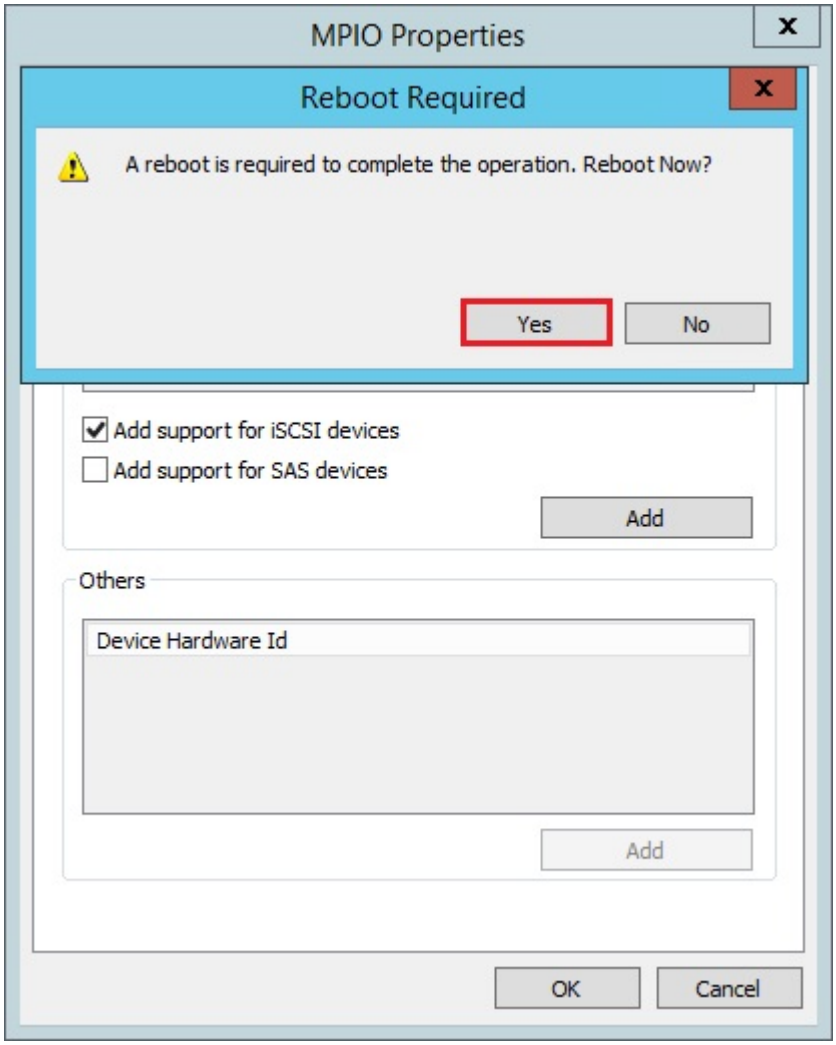
3. After the installation progress is completed, you have to restart your server to apply all the modifications.

3. Enable MPIO on iSCSI Service

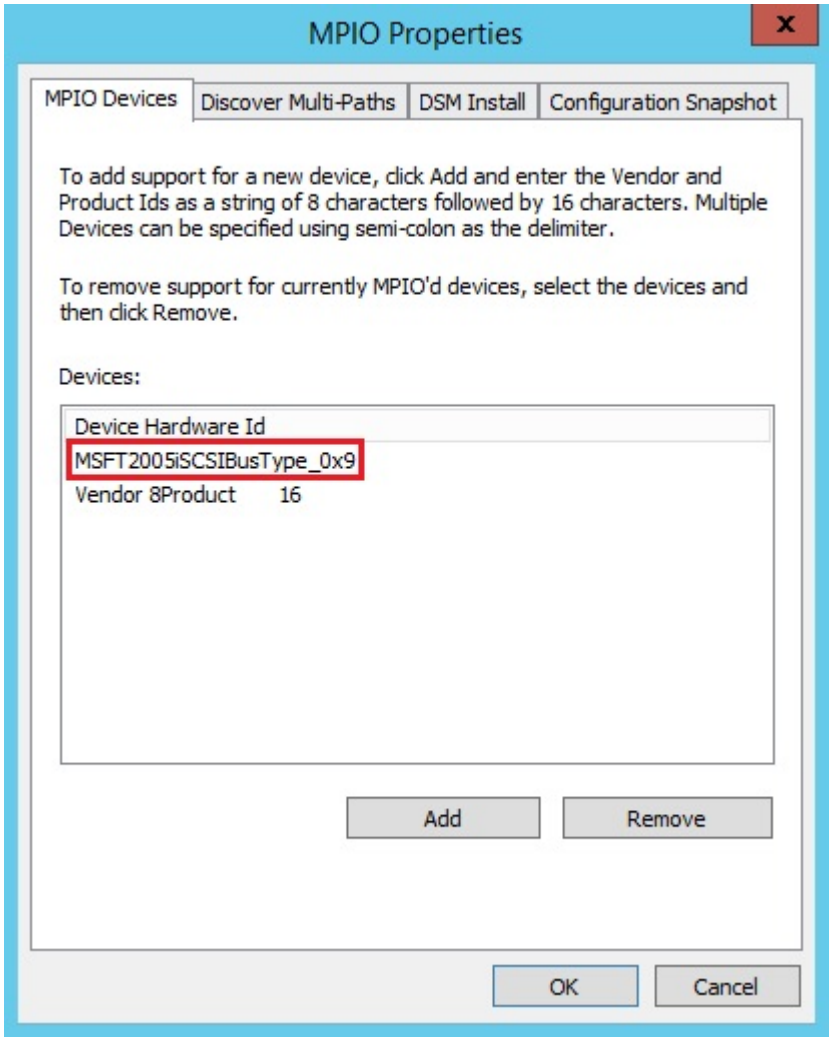
1. Launch **MPIO** configuration from the control panel and go to **Discover Multi-Paths** tab.



2. Apply the following configurations in the **Discover Multi-Paths** tab:
    1. Tick **Add support for iSCSI devices**.
    2. Click **Add**.
    3. Reboot Windows Server.

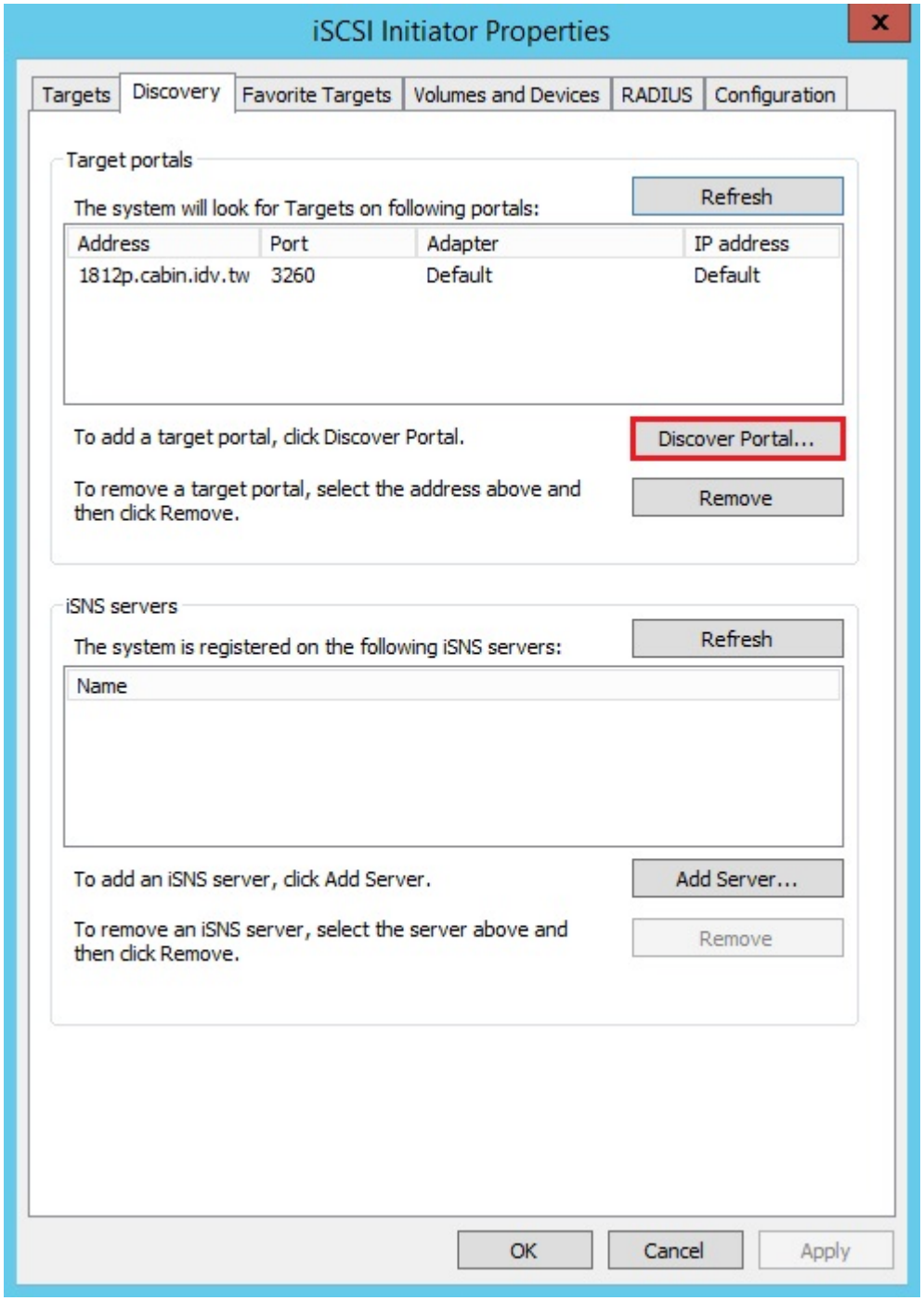


3. After rebooting Windows server, a new device called "MSFT2005iSCSIBusType 0×9" (or similar ID) should be shown in the **MPIO Devices** of **MPIO Properties**.

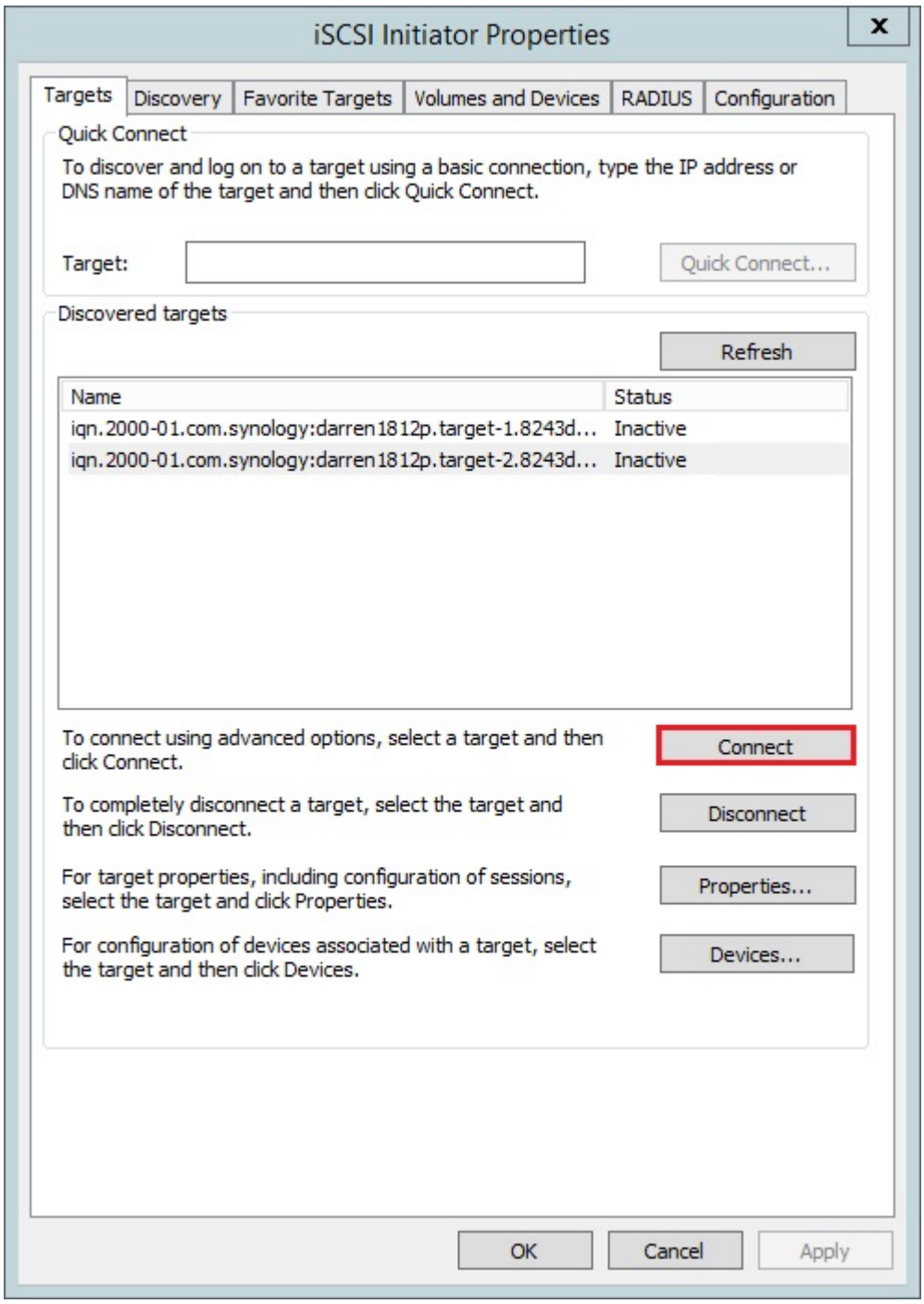


4. Add an iSCSI Target to Your Windows Server

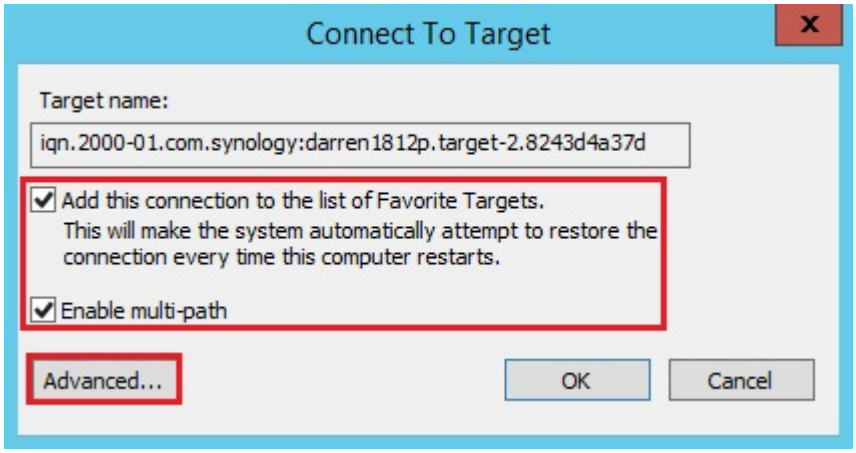
1. Launch Microsoft iSCSI Initiator and proceed to the **Discovery** tab. Add all of the IP addresses of your Synology NAS in the **Target portal** list by clicking **Discover Portal** button.



2. Switch to the **Targets** tab, select a target to enable MPIO and click **Connect**.



3. Tick **Add this connection to the list of Favorite Targets, Enable multi-path** and click **Advanced**.

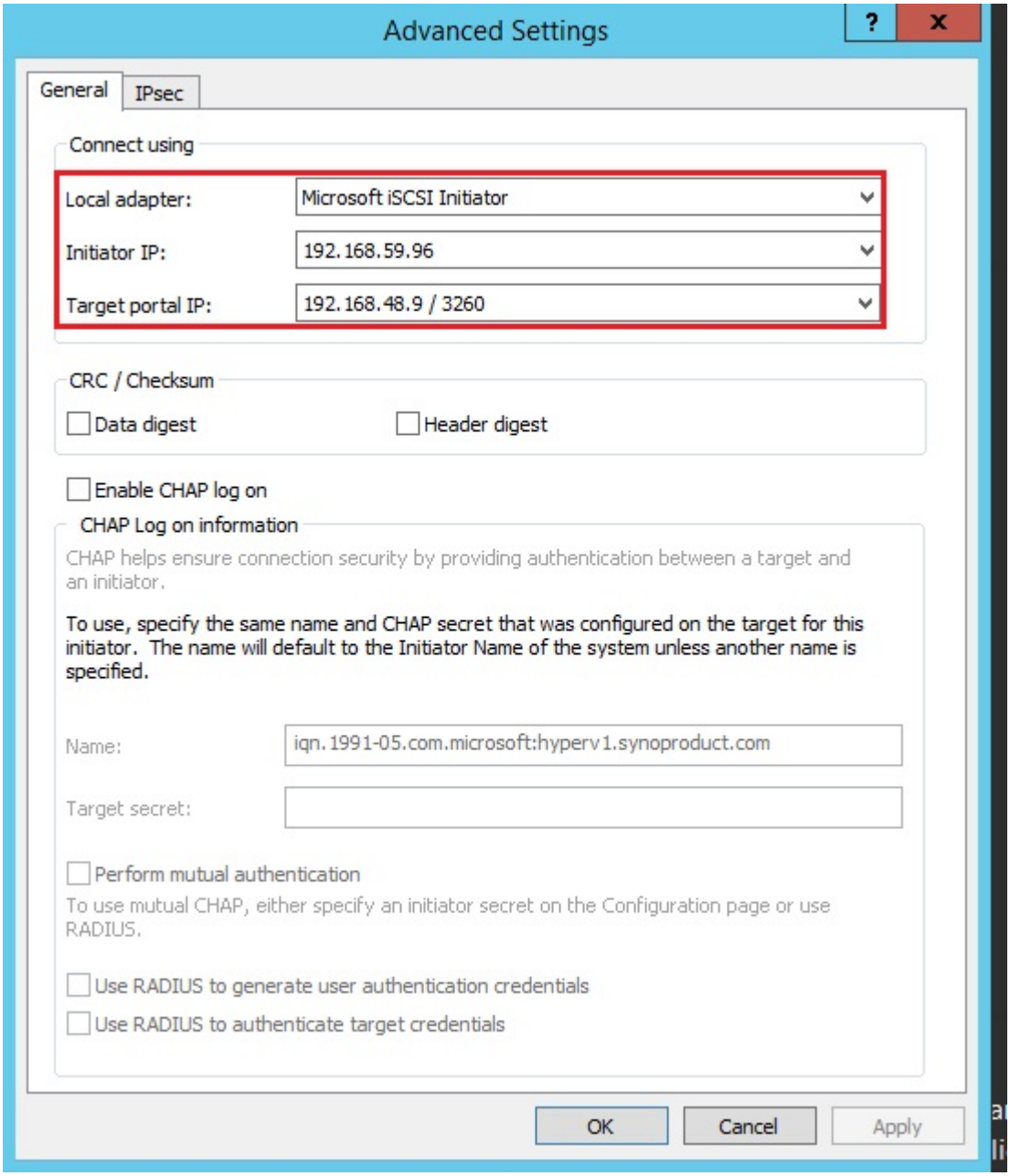


4. Set up connection configuration in the **Advanced Setting** window:

   Select **Microsoft iSCSI Initiator** from **Local Adapter** drop down list.

   Select an IP address from **Initiator IP** drop down list.

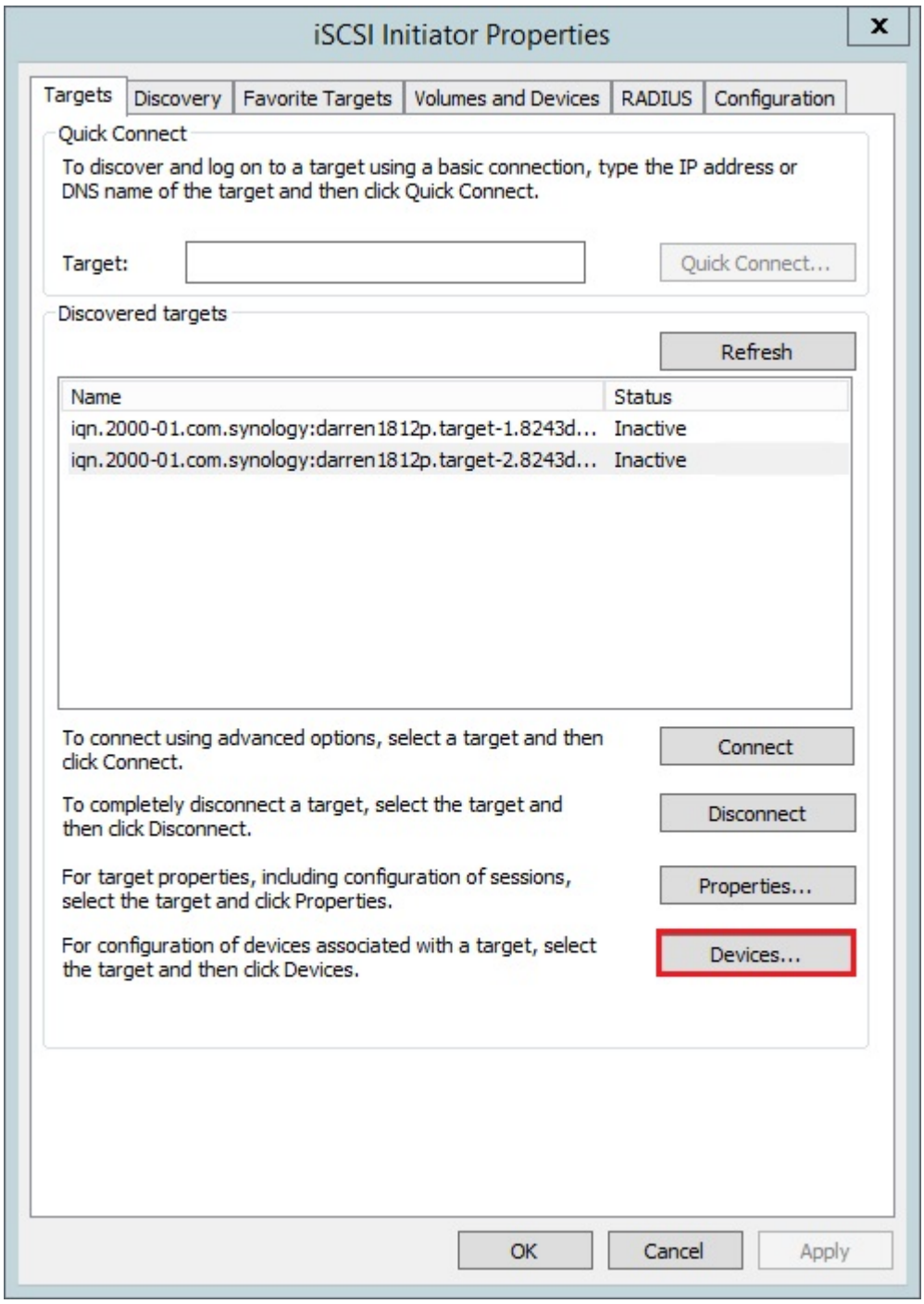
   Select an IP address from **Target portal IP** drop down list, please ensure the Initiator IP and Target portal IP are within the same subnet.



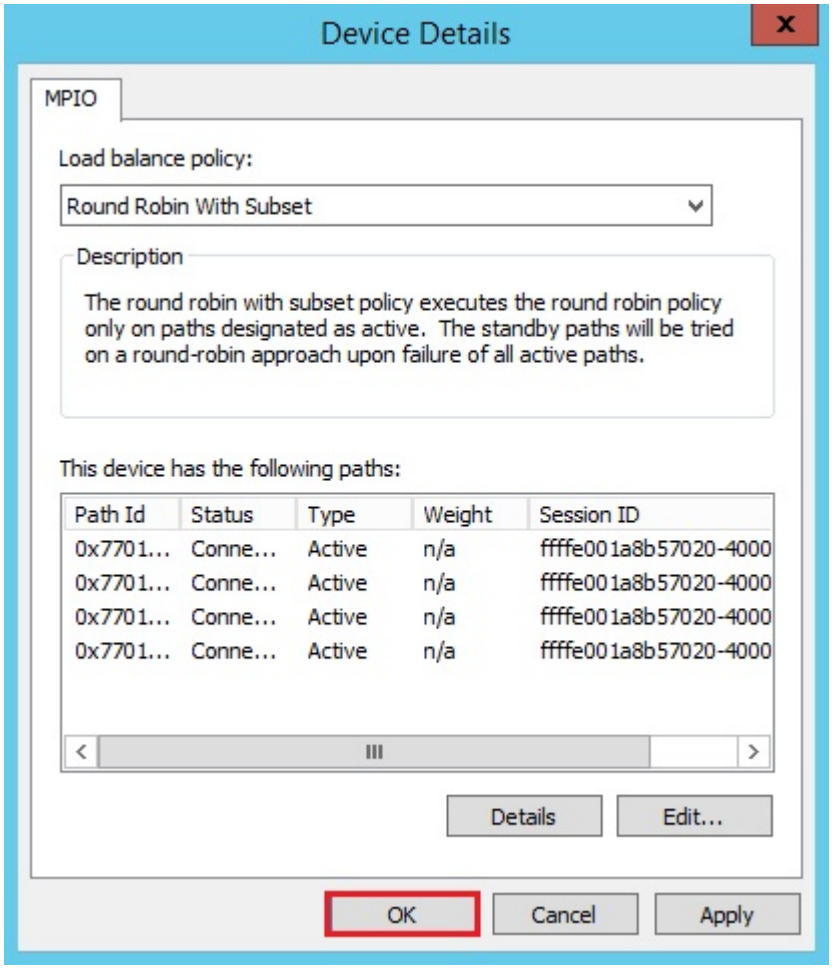
5. Click **OK** to complete the setting.

5. Add the Second iSCSI Connection Path

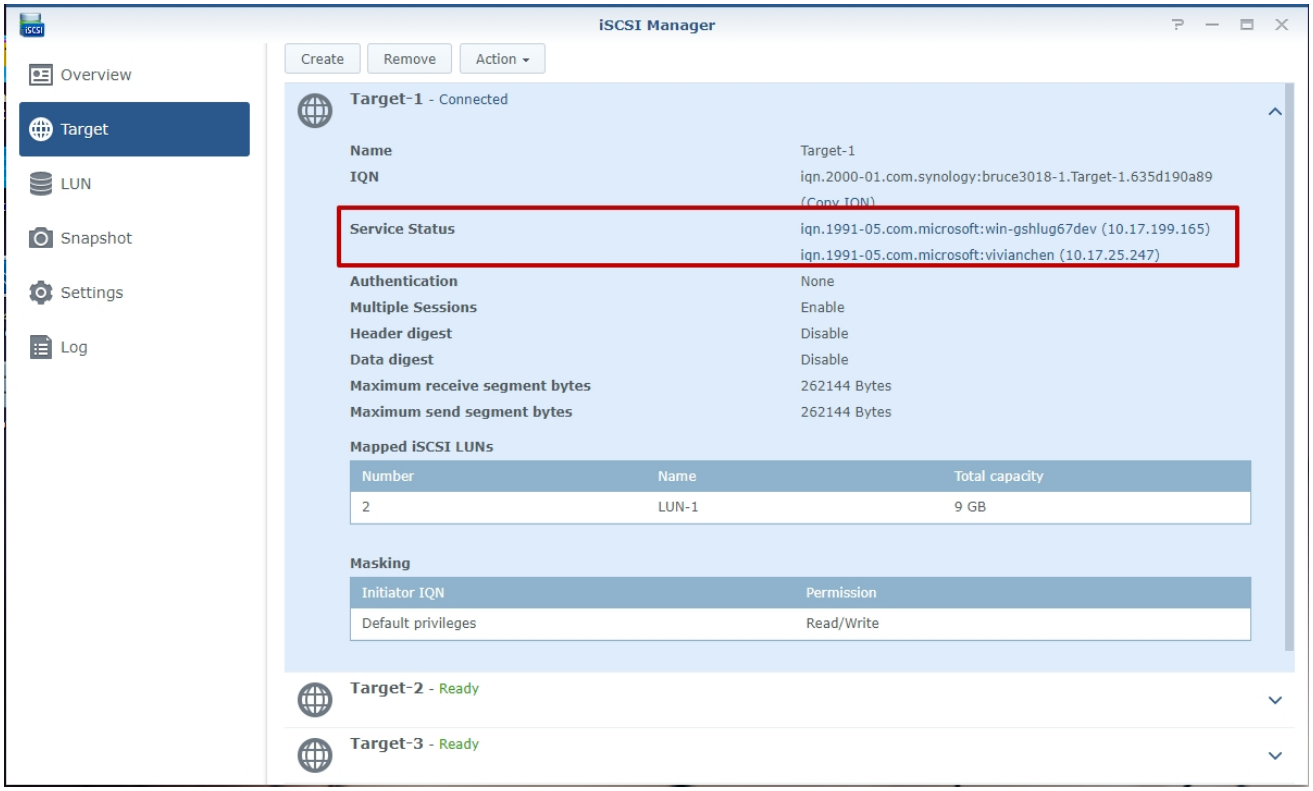
1. Add another iSCSI Target path by following step 3 to 6 from section **Add an iSCSI Target to Your Windows Server**.
2. Switch to **Target** tab and click **Devices**.



3. Click **MPIO** in the popup window.
4. Choose one of the **Load-balance Policy** such as **Round Robin with Subset** or **Failover ONLY** and click **OK** to complete the setup.



5. You may confirm the multi path connection is working within **iSCSI Manager** in DSM, you will see two IP addresses shown as connected.



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