

StarWind iSCSI SAN Software: Multipathing



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Table of Contents

Introduction.....	4
Configuring StarWind Server.....	5
Network Adapters	5
Preparing Storage Volume	7
Configuring Client Server.....	15
Windows 2003 Server	15
Configuring network adapters.....	15
Configuring Microsoft iSCSI Initiator.....	17
Windows 2008 Server	26
Configuring network adapters.....	26
Adding multipath I/O feature.....	28
Configuring Microsoft iSCSI Initiator.....	29
Conclusion.....	38

Guide

Introduction

The diagram below illustrates the network architecture used throughout this document.

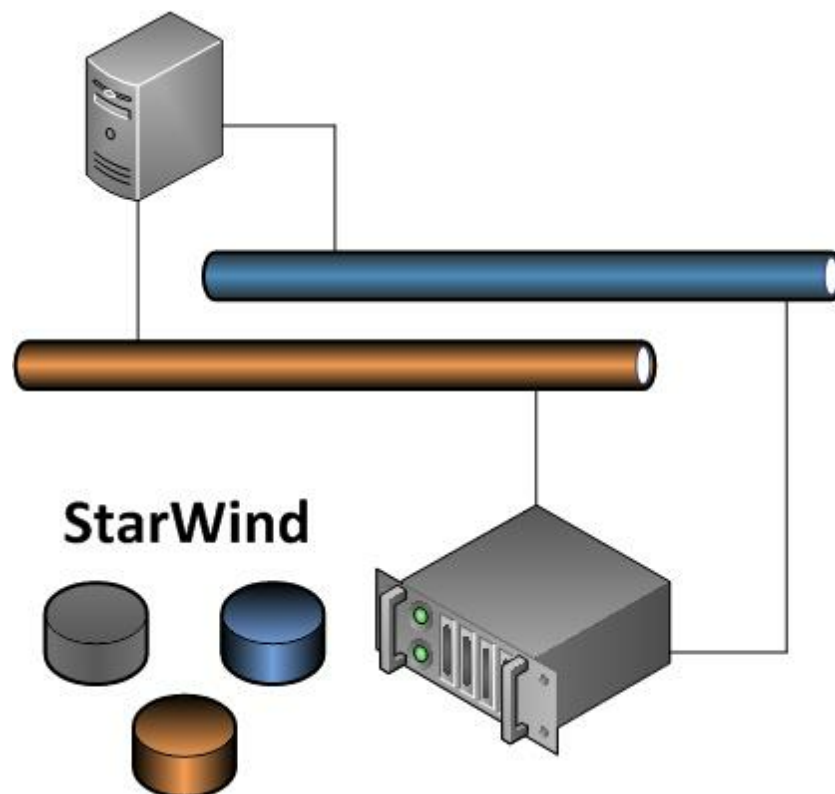
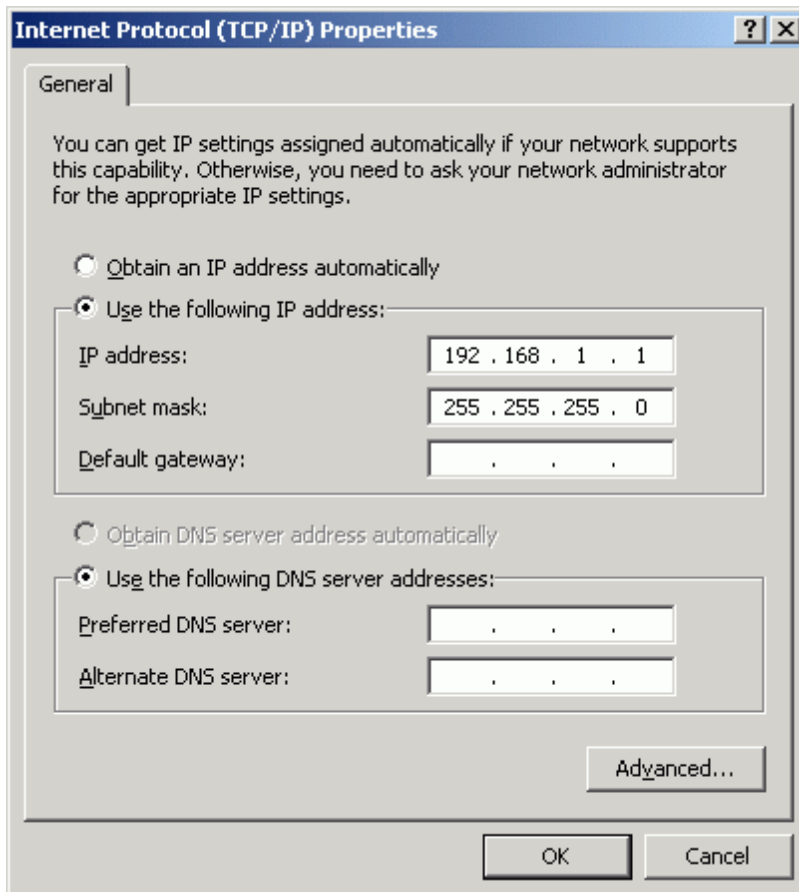


Figure 1. Using StarWind to provide iSCSI storage

Configuring StarWind Server

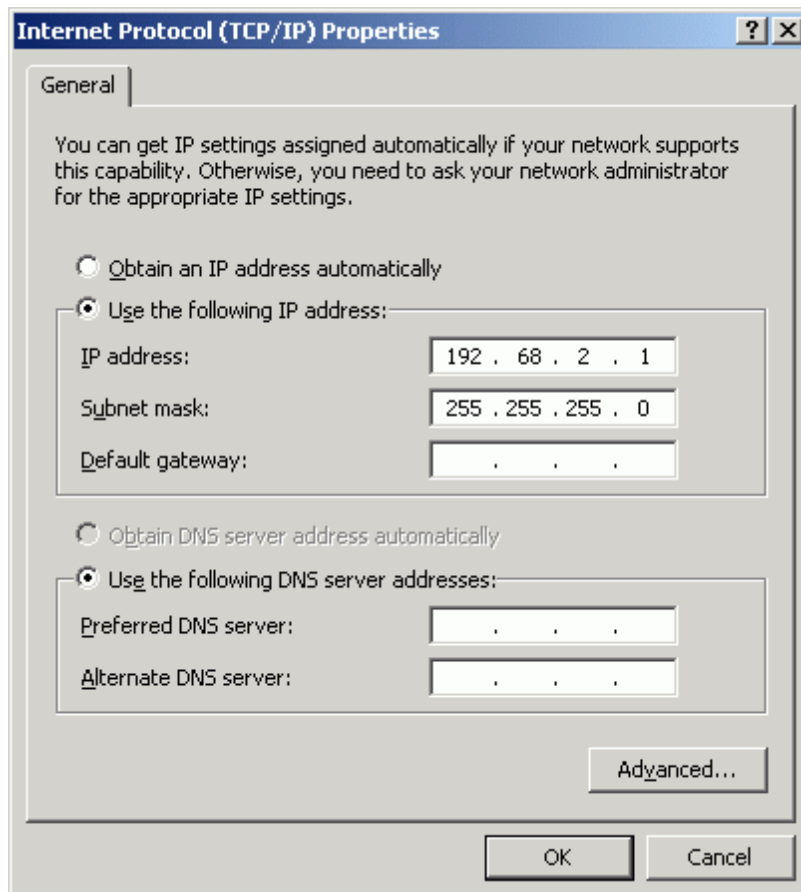
Network Adapters

Both network adapters must have a static IP address assigned. Select **Use the following IP address** option and enter the IP address you wish to use, also provide a subnet mask. The Gateway and DNS are not necessary to provide. Do so for both adapters which participate in MPIO storage configuration.



Press the **OK** button.

Open TCP/IP properties of the second network adapter, enter the IP address with a different subnet, the Subnet mask should remain the same.



Press the **OK** button.

Preparing Storage Volume

Launch the **StarWind** console selecting **Start -> All Programs -> StarWind Software -> StarWind -> StarWind**. After the console is launched its icon appears in the system tray. Double click the icon with the left mouse button or single click it with the right and select **Start Management** pop-up menu item. StarWind management console will appear.

From the **Connections** tree please select the computer you wish to connect to. By default, there is a single item in the tree (localhost) which represents a loopback connection. Double click on the host to connect to it.

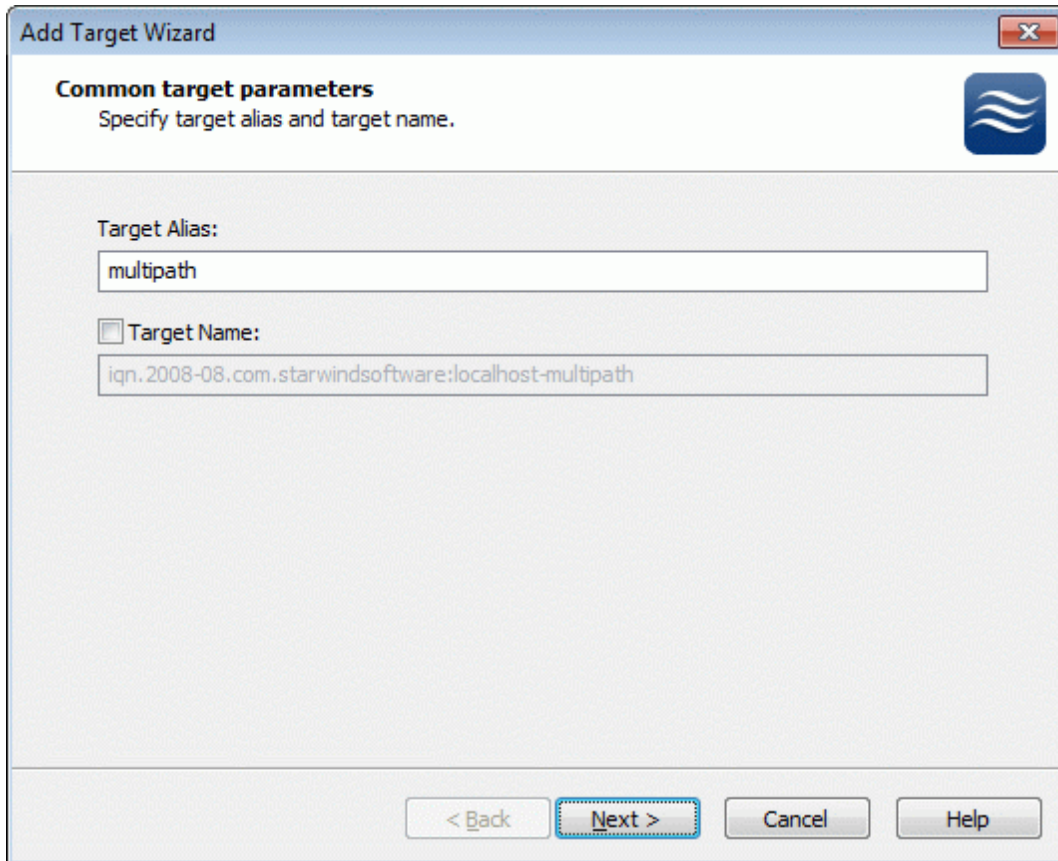
Default login and password are: root, starwind. You can always change them later.

After you have successfully connected to the **StarWind Service**, Press the



button to launch Add Target wizard.

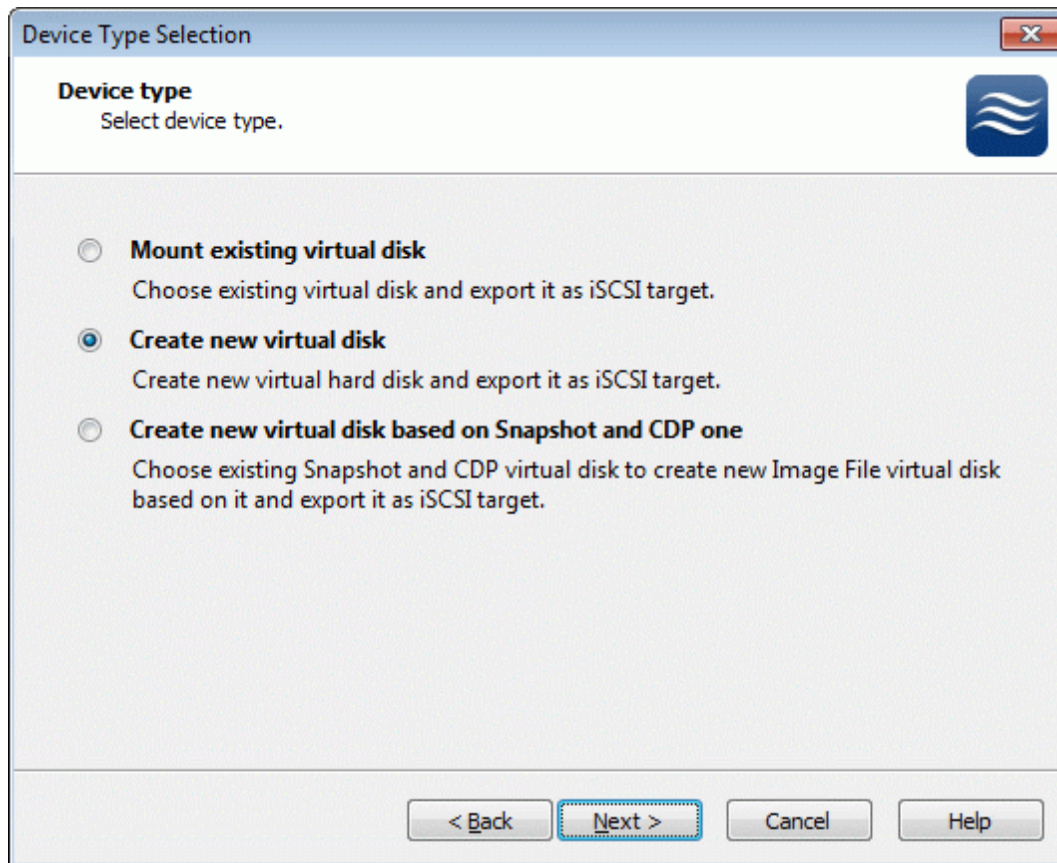
Add Target wizard window will appear. Specify the target name for your virtual disk.



Press the **Next** button to continue.

Select Image File device type by going **Hard Disk->Basic Virtual->Image File device**.

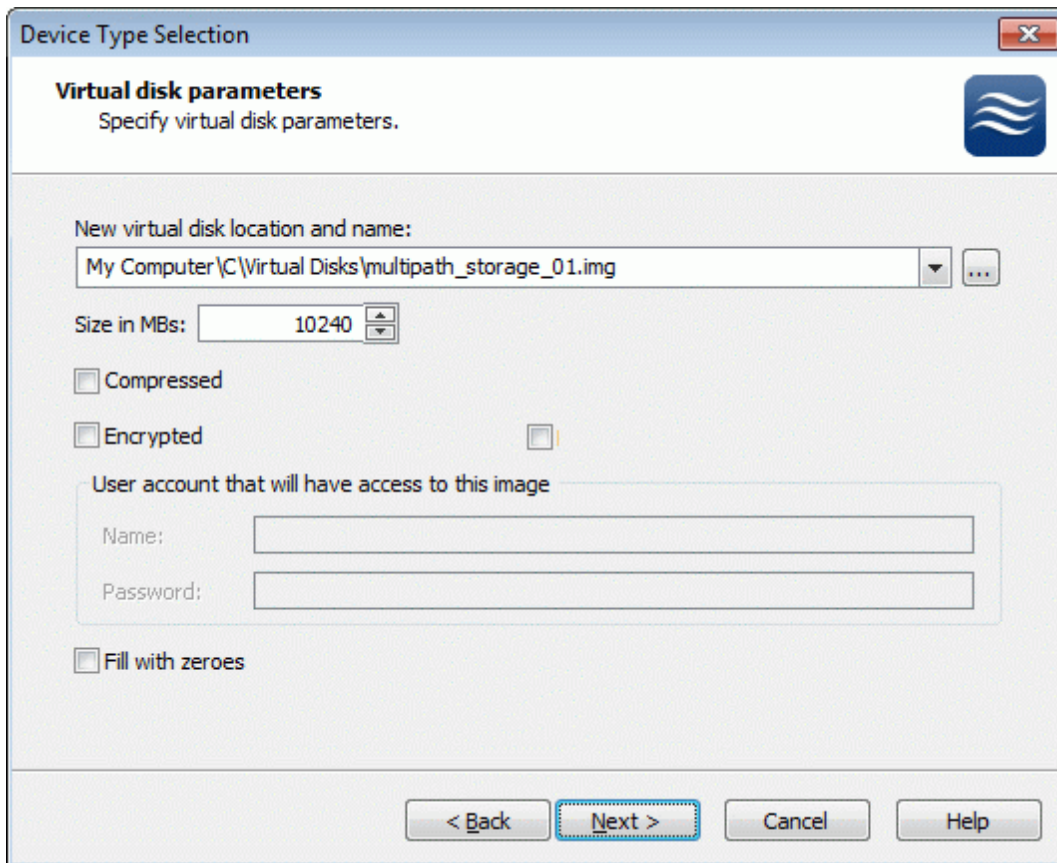
Select **Create new virtual disk** option.



Press the **Next** button to continue.

Specify the path where the disk image file should be created and its size in Megabytes.

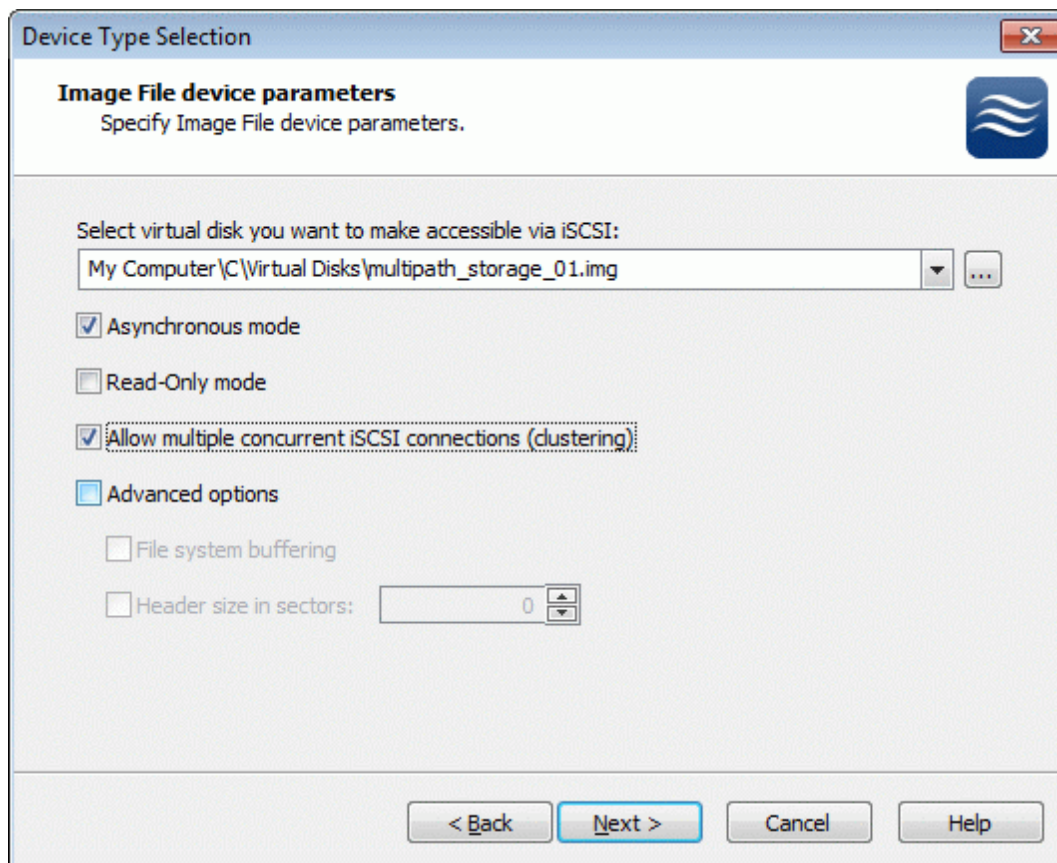
Check any additional parameters of the virtual disk you wish to create. Please refer to the online help to learn about additional parameters (**Compressed**, **Encrypted** and **Fill with zeroes**).



Press the **Next** button to continue.

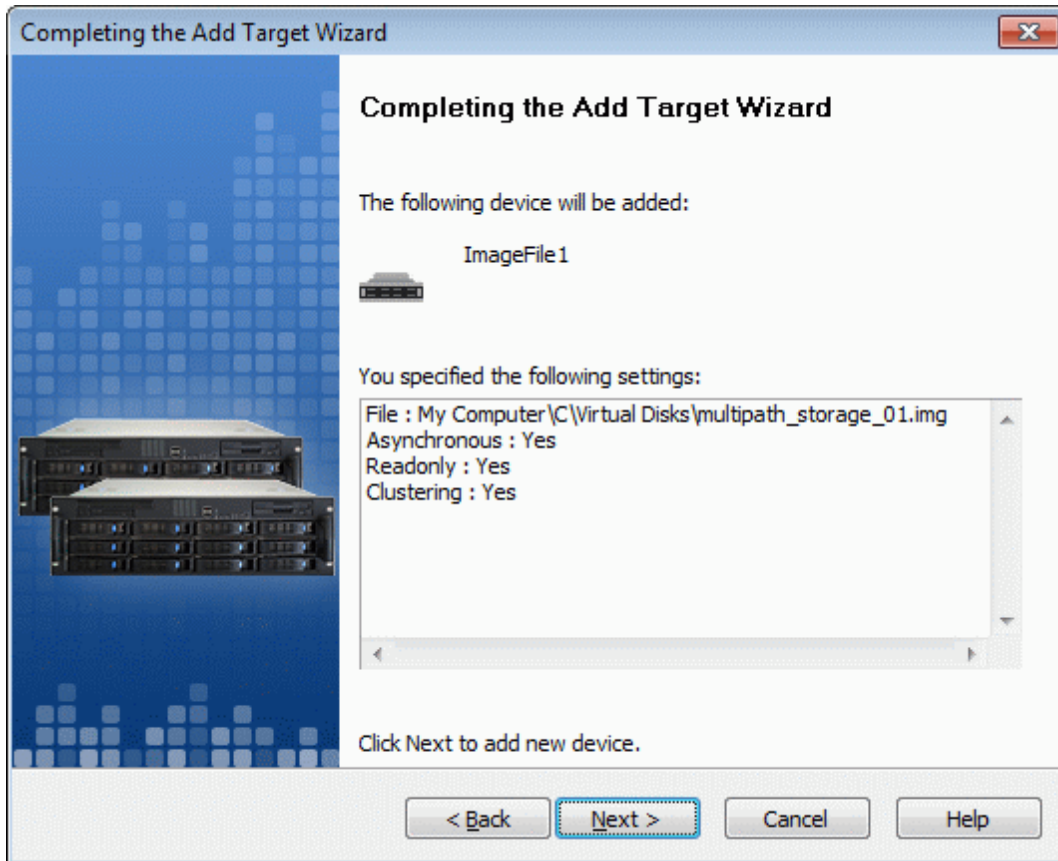
Set Image File device parameters. Check **Allow multiple concurrent iSCSI connections (clustering)** checkbox.

To learn more about additional parameters (**Asynchronous mode**, **Allow multiple connections (clustering)**, **Read-only mode** and **Specify advanced options**) please refer to the online help.



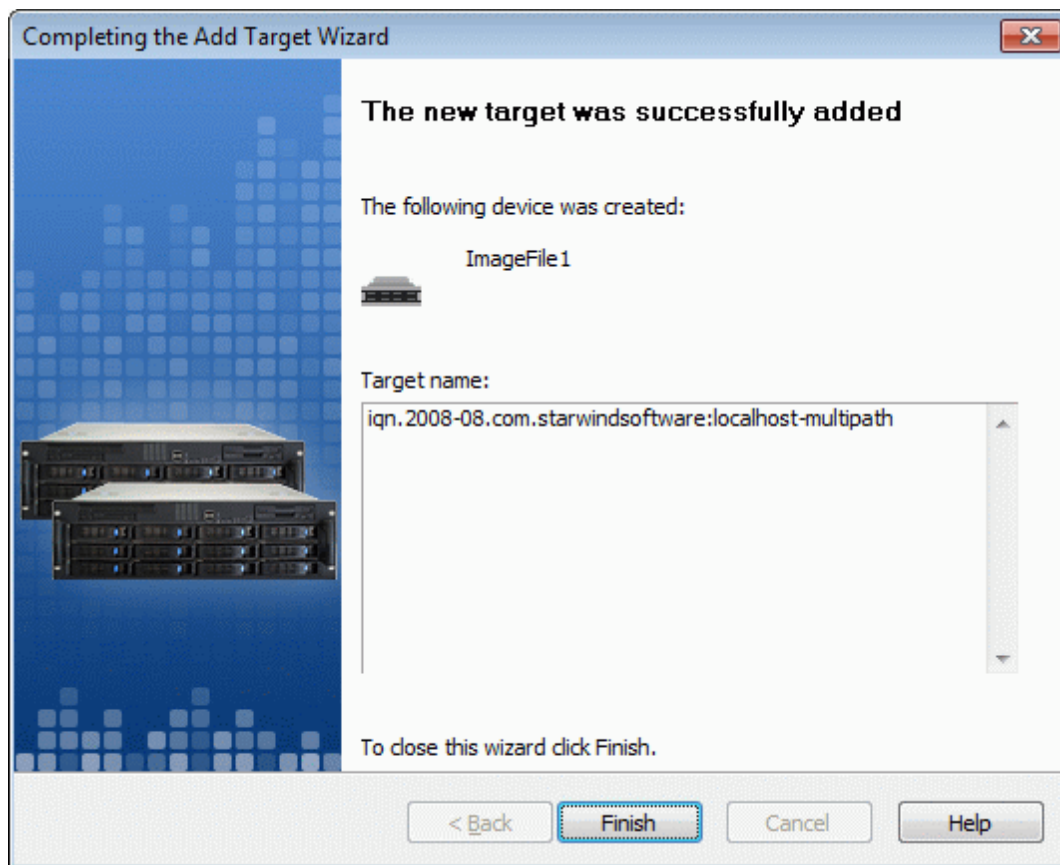
Press the **Next** button to continue.

Check the device parameters you have set are correct.
Press the **Back** button should any changes be required.



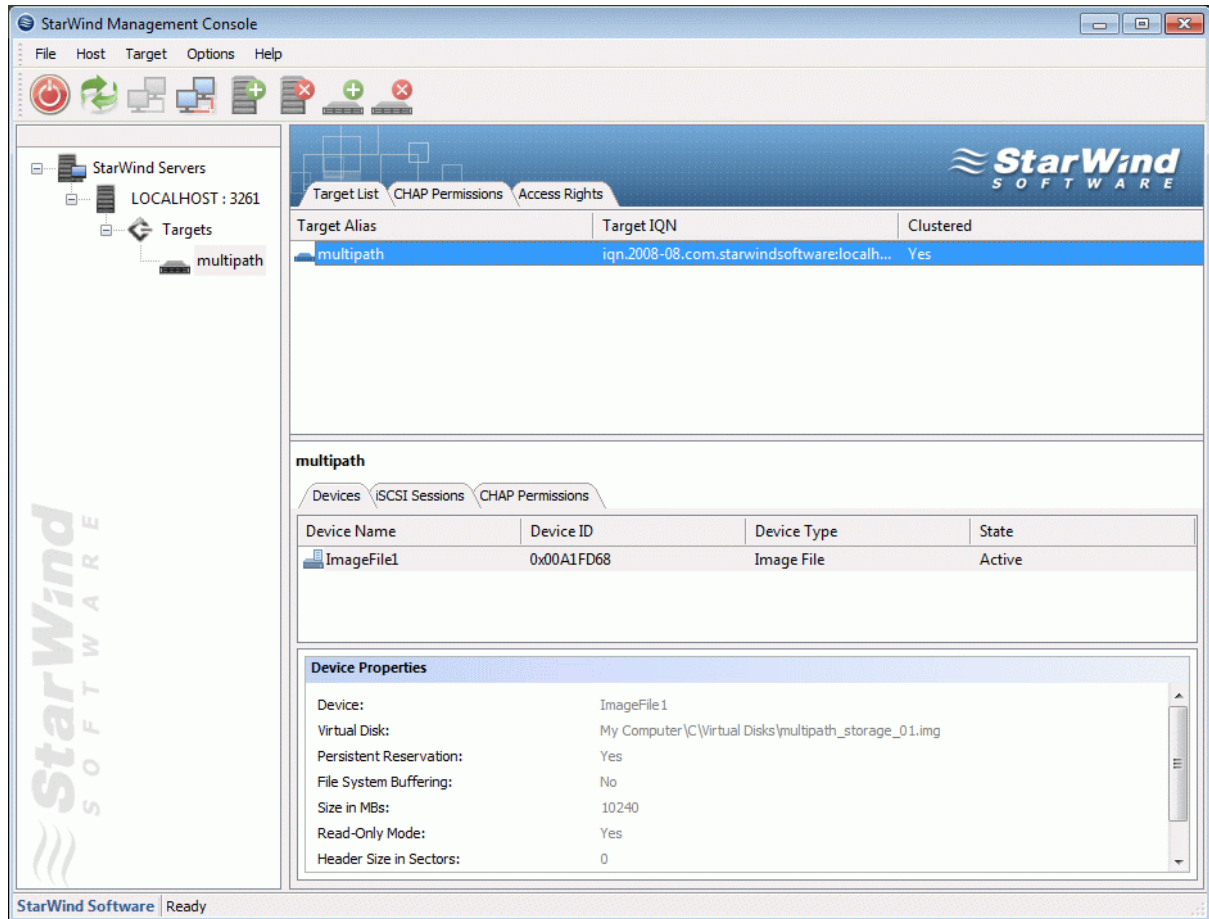
Press the **Next** button to continue.

Wizard will inform you that the target has been successfully created.



Press the **Finish** button to close the wizard.

The **StarWind Console** now displays the device you have created. If needed you can configure access rights and CHAP permissions to the device you have created.



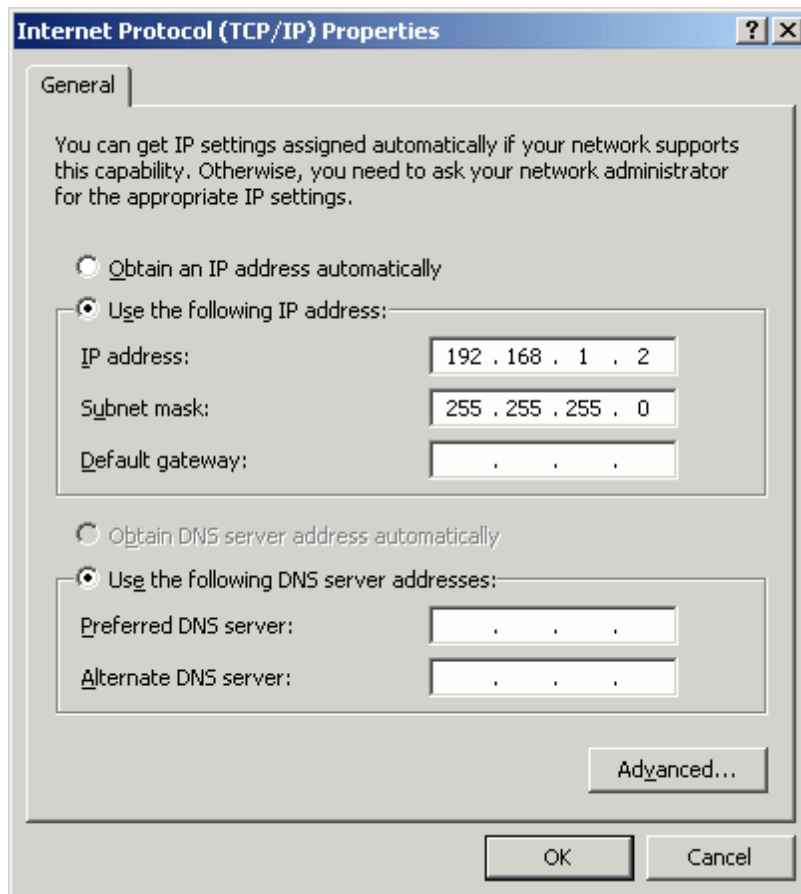
5

Configuring Client Server

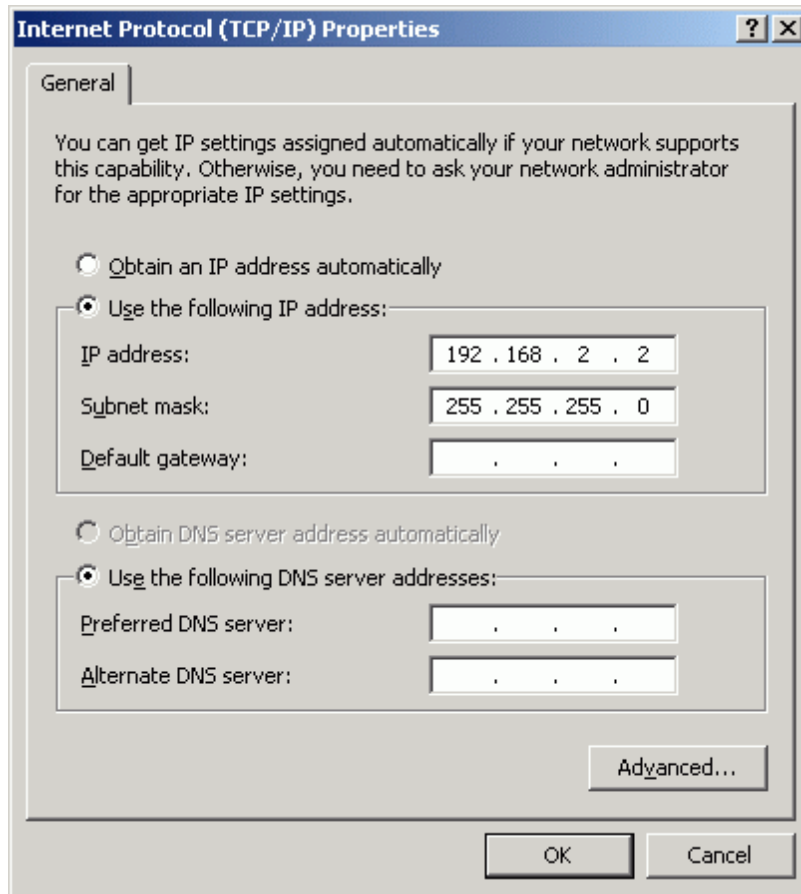
Windows 2003 Server

Configuring network adapters

Both network adapters must have a static IP address assigned. Select **Use the following IP address** option and enter the IP address you wish to use, also provide a subnet mask. The Gateway and DNS are not necessary to provide. Do so for both adapters which participate in MPIO storage configuration.



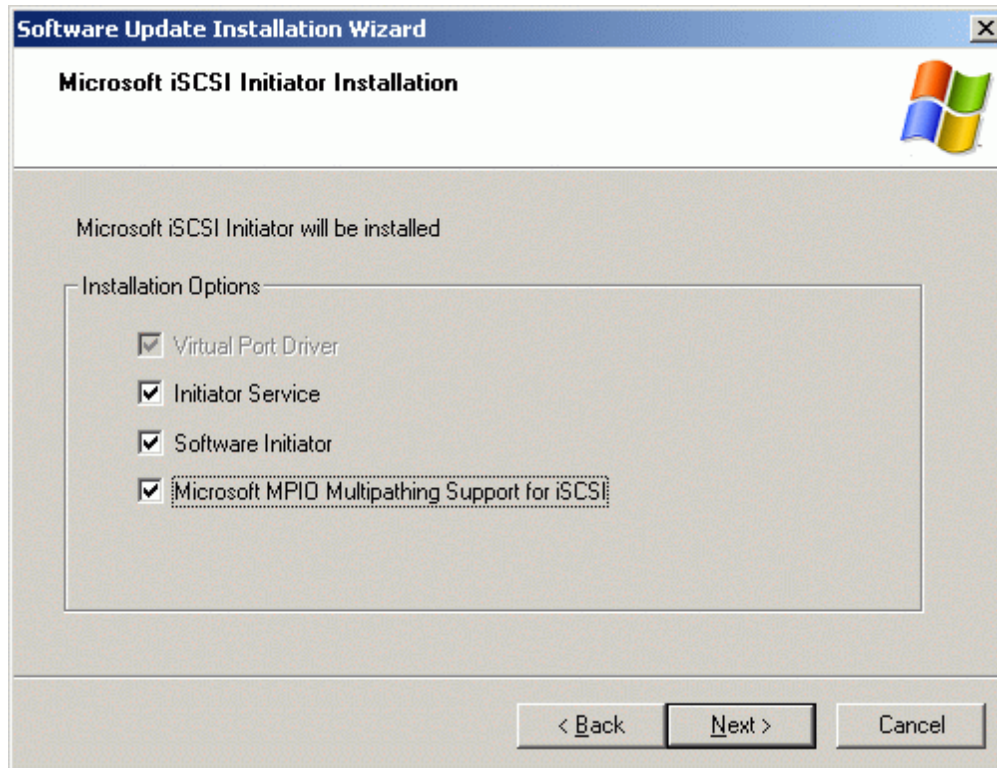
Open TCP/IP properties of the second network adapter, enter the IP address with a different subnet, the Subnet mask should remain the same.



Press the **OK** button.

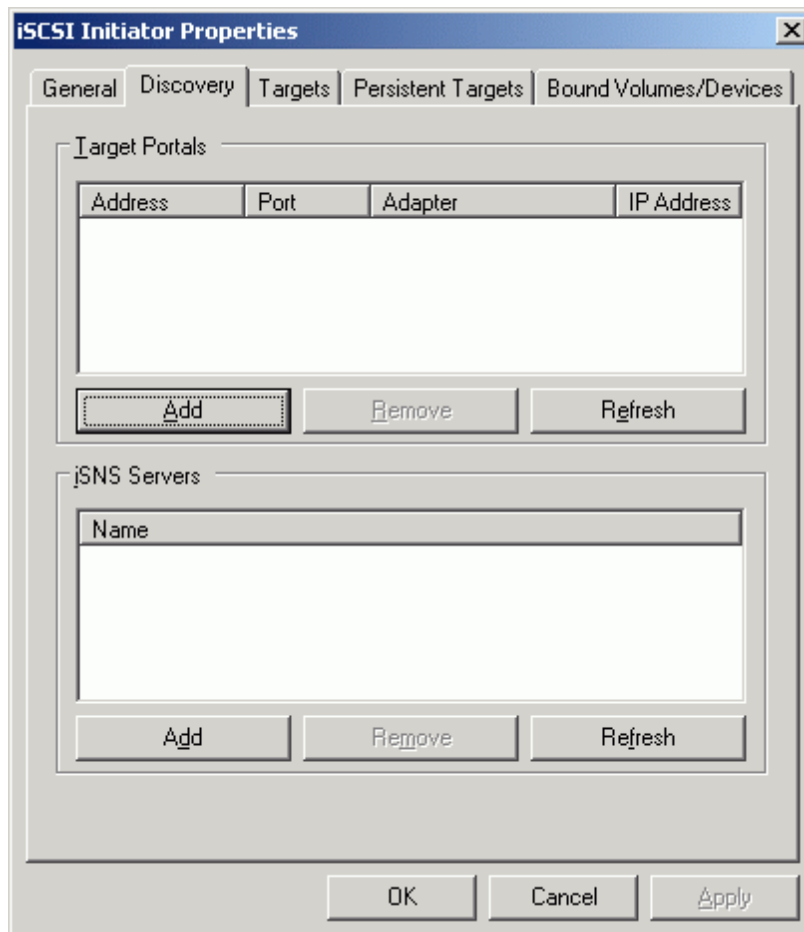
Configuring Microsoft iSCSI Initiator

Download Microsoft iSCSI Initiator from [here](#). Install it with the Microsoft MPIO Multipathing Support for iSCSI option enabled.



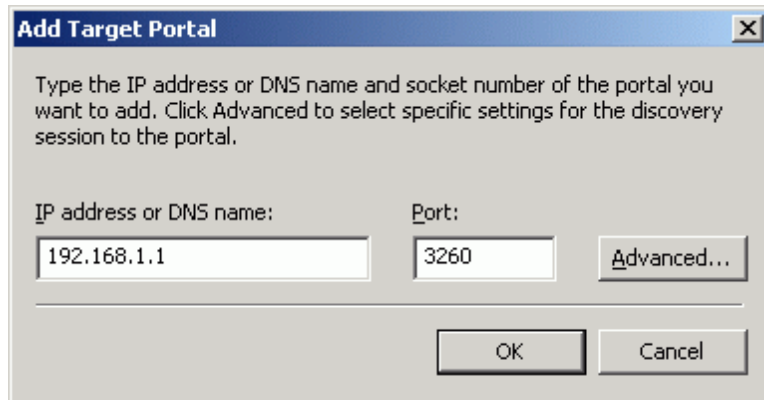
You will need to restart the computer, before continuing.

Launch the MS iSCSI Initiator by selecting Start->All Programs->Microsoft iSCSI Initiator-> Microsoft iSCSI Initiator.
Switch to the Discovery tab. Here you can locate and specify the computer with StarWind installed or iSNS server.



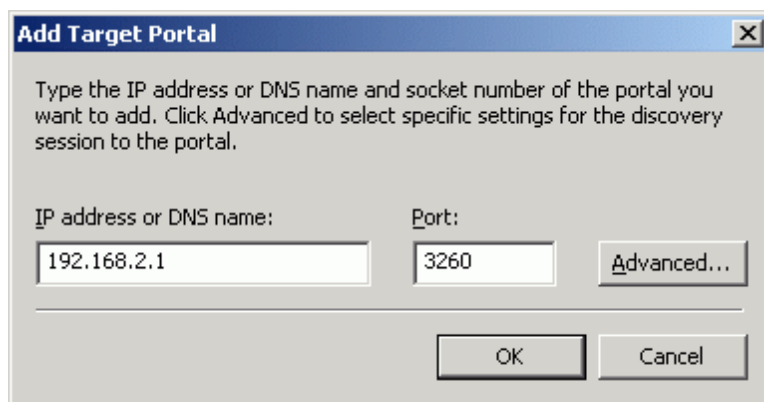
Press the **Add** button.

Type in StarWind servers first IP address.



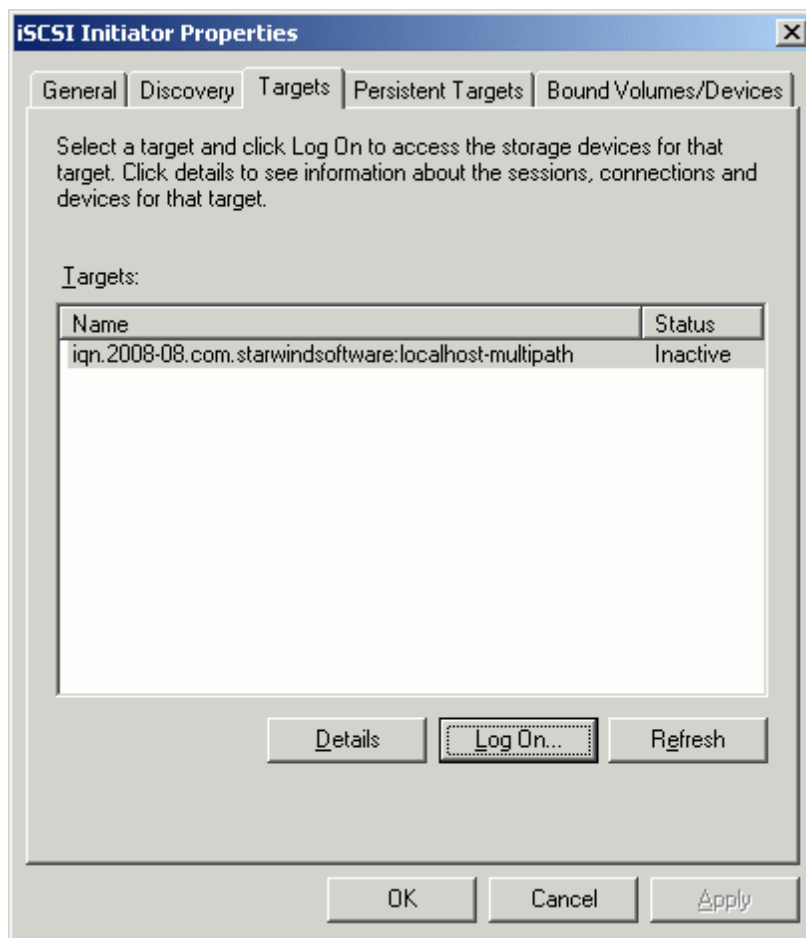
Press the **OK** button.

In the MS Initiator window click Add once again, Type in StarWind servers second IP address.



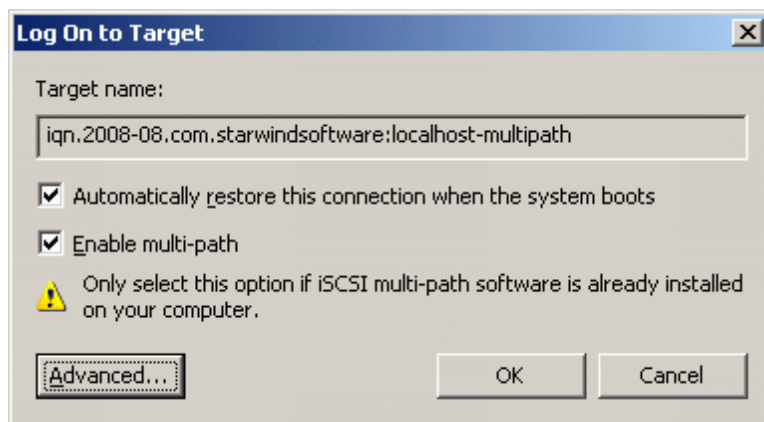
Press the **OK** button.

Switch to the **Targets** tab



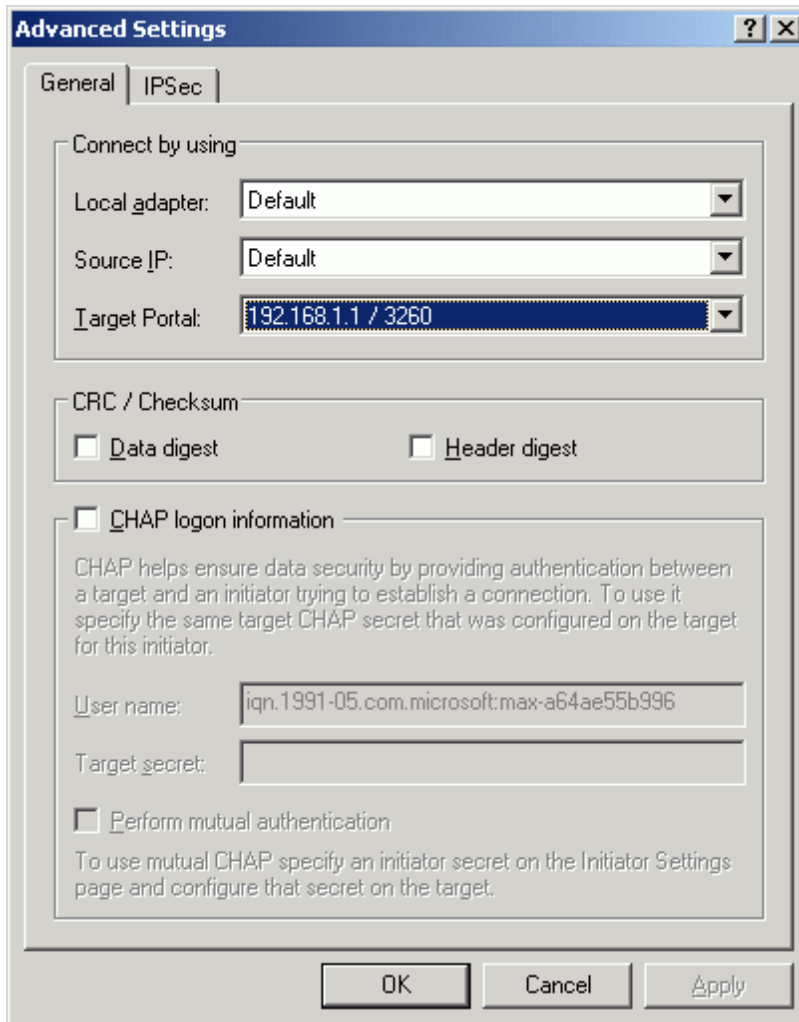
Select a target from the list and press the **Log On...** button.

A 'Log On to Target' dialog will now appear.



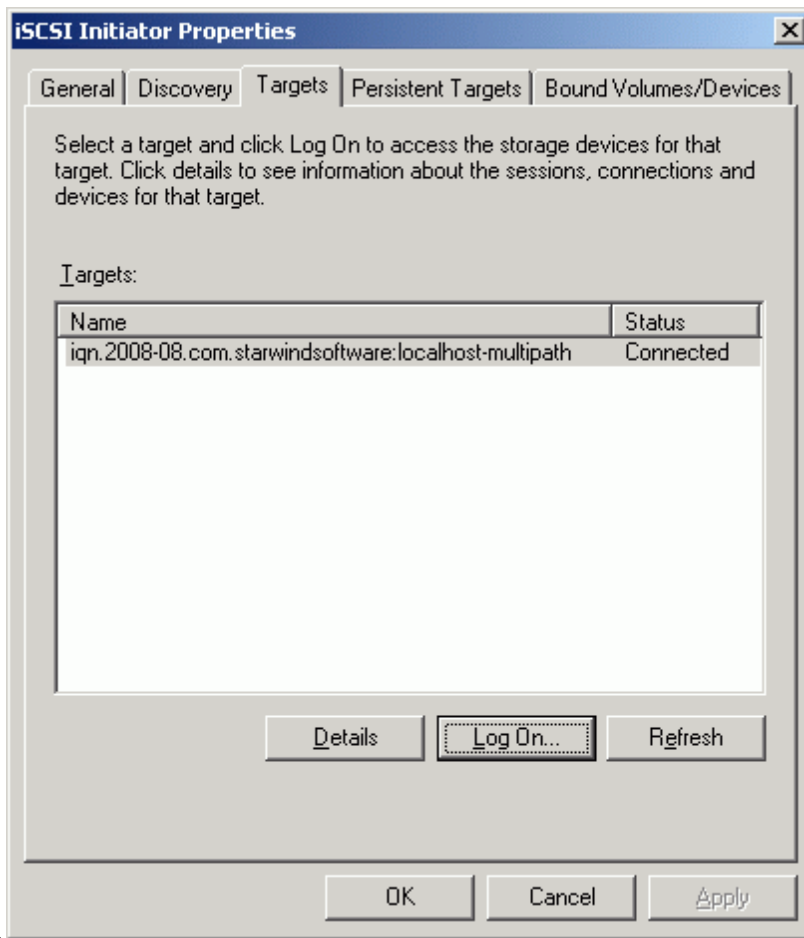
Enable restore and multi-path options and click the **Advanced** button.

The Advanced Settings dialog appears. For the Target Portal select StarWind servers first IP address.



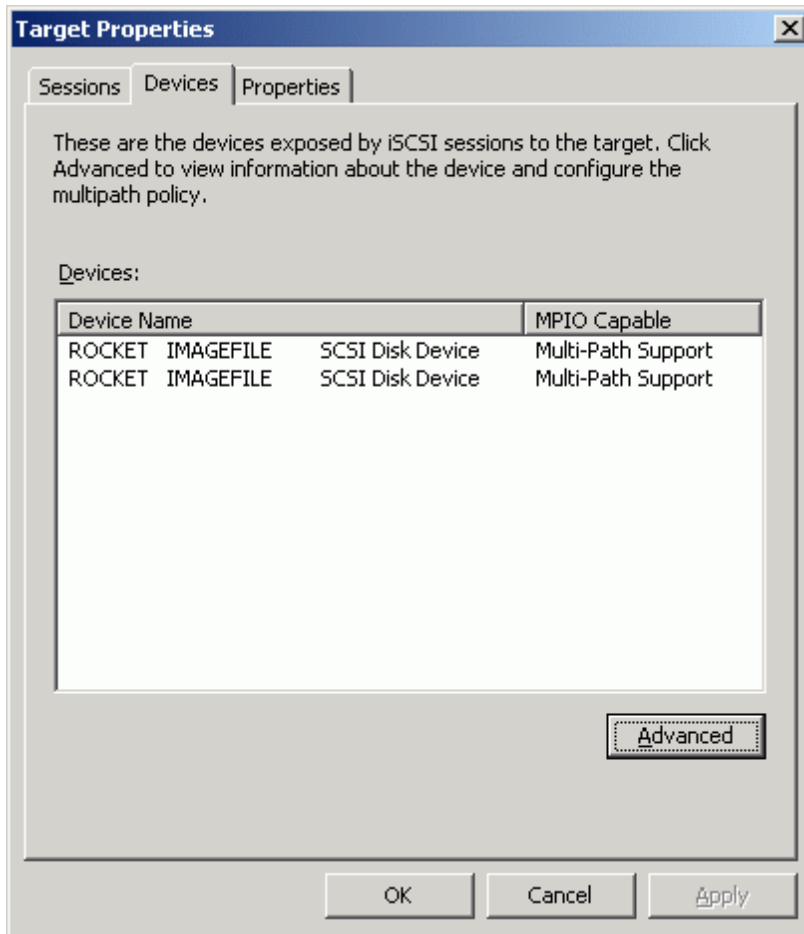
Press the **OK** button to continue.
You will be returned to Previous dialog window.
Press the **OK** button to return to MS Initiator main window

Select the target you have just connected.



Press **Log On...** once again and perform the same steps as described above, but in the target portal selection window select StarWind servers **second** IP address. Return to MS Initiator main window and view the detailed target info by pressing the **Advanced** button.

If you have done everything correct on the Sessions tab you will see two sessions representing both network paths that you have set. Switch to the Devices tab. You can see that the connected device is Multi-Path capable.

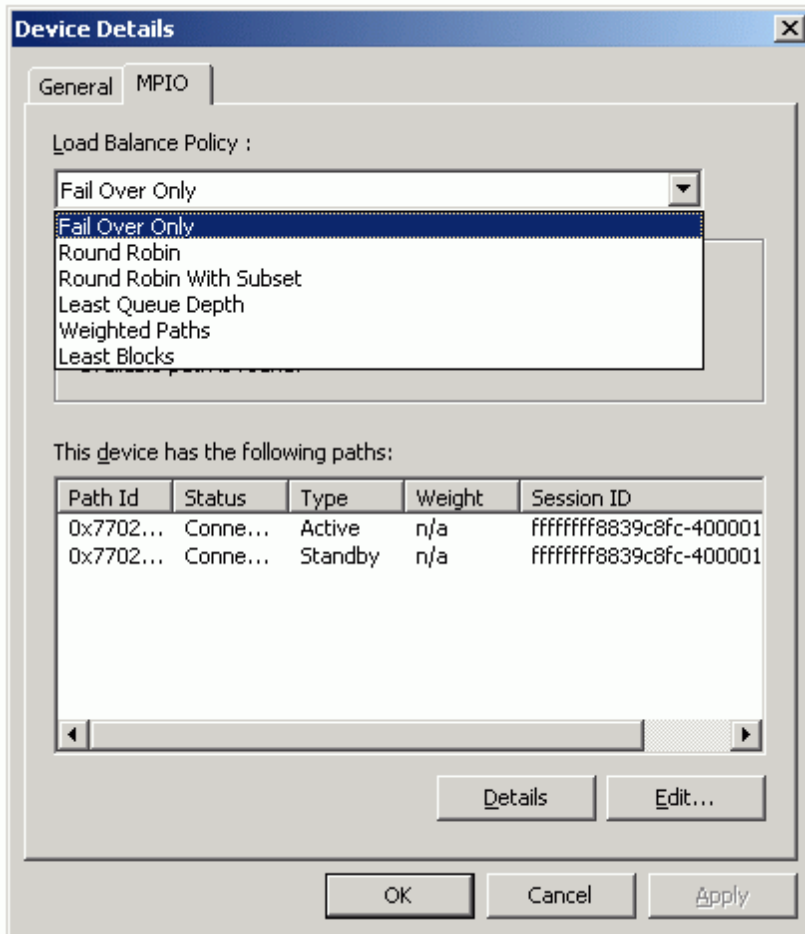


Press the **Advanced** button.

In the dialog window appeared you can view general information about the device.

Go to MPIO tab. Here you can configure load balance policy for your connections.

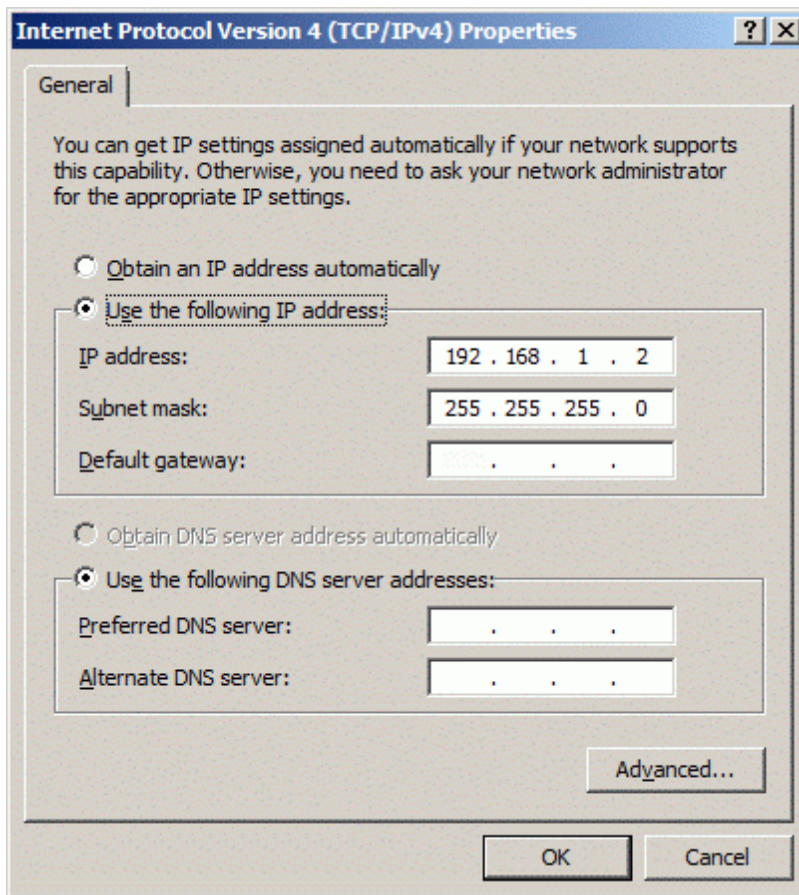
A brief description of the selected policy type can be found beneath Load Balance Policy selection box.



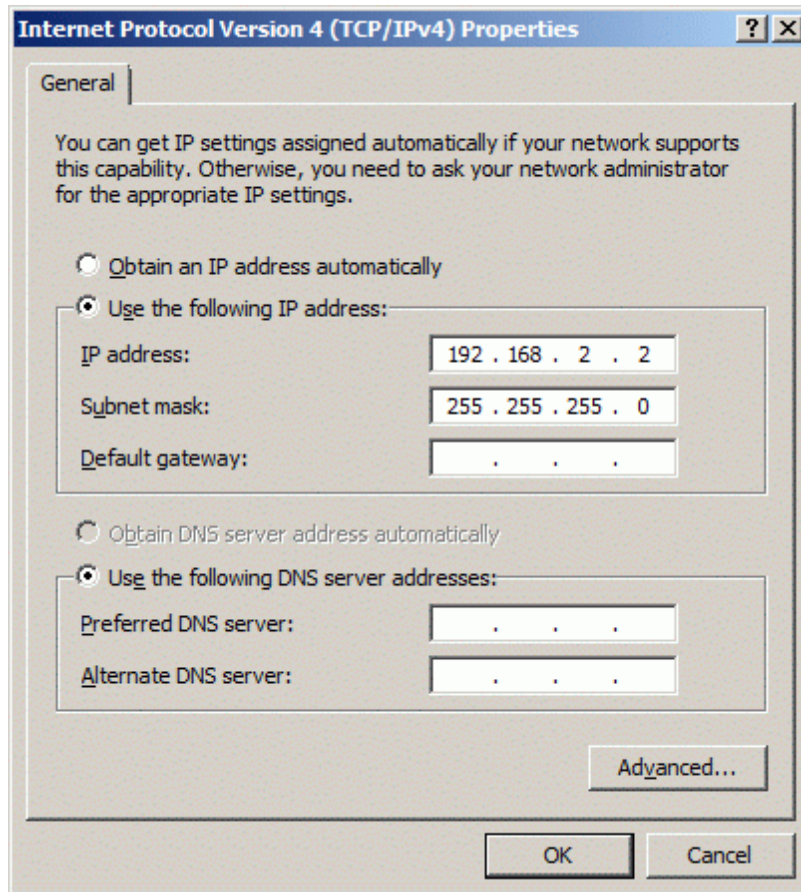
Windows 2008 Server

Configuring network adapters

Both network adapters must have a static **IPv4** address assigned. It is recommended to switch off the IPv6 option. Select Use the following IP address option and enter the IP address you wish to use, also provide a subnet mask. Gateway and DNS are not necessary to provide. Do so for both adapters which participate in MPIO storage configuration.



Open **TCP/IPv4** properties of the second network adapter, enter the IP address with a different subnet, leave the Subnet mask the same as in the first connection.

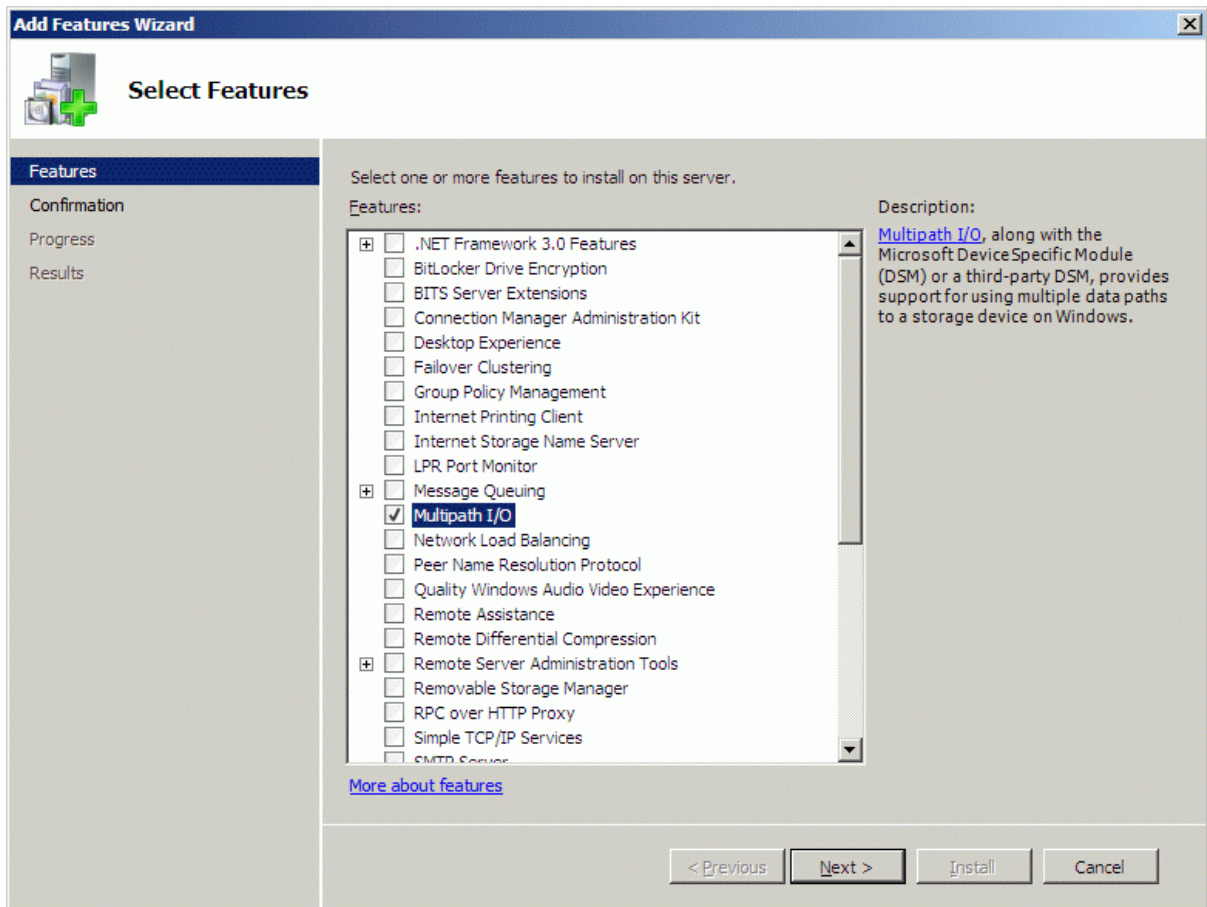


Press the **OK** button.

Adding multipath I/O feature

Open **Server Manager** (Start->Administrative Tools->Server Manager). Go to **Features** item. Click **Add Features**.

An **Add Features Wizard** will appear. In the features list select **Multipath I/O** feature and install it.



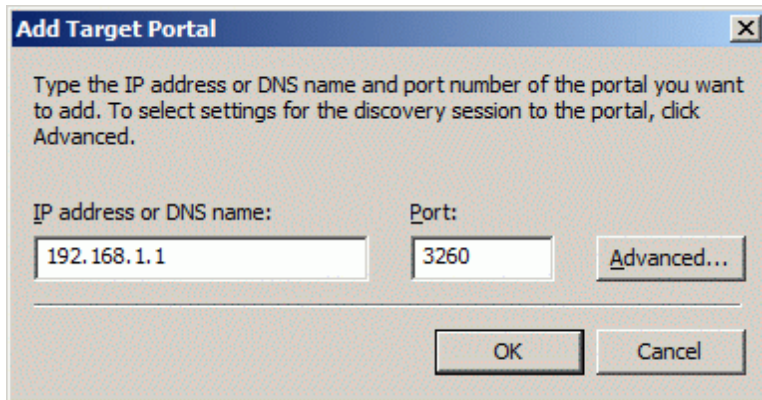
After the installation completes restart your server.

Configuring Microsoft iSCSI Initiator

Open the Microsoft iSCSI Initiator (Start -> Administrative Tools -> iSCSI Initiator).

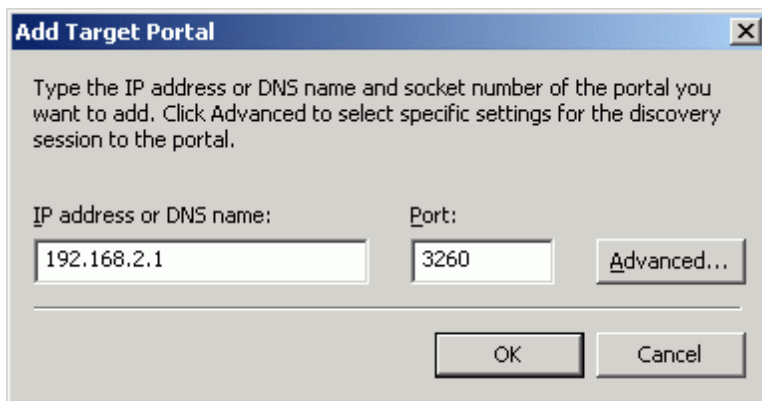
Now the Microsoft iSCSI Initiator window will open. Go to Discovery tab. Press the **Add Portal ...** button.

In the window appeared enter StarWind servers first IP address.



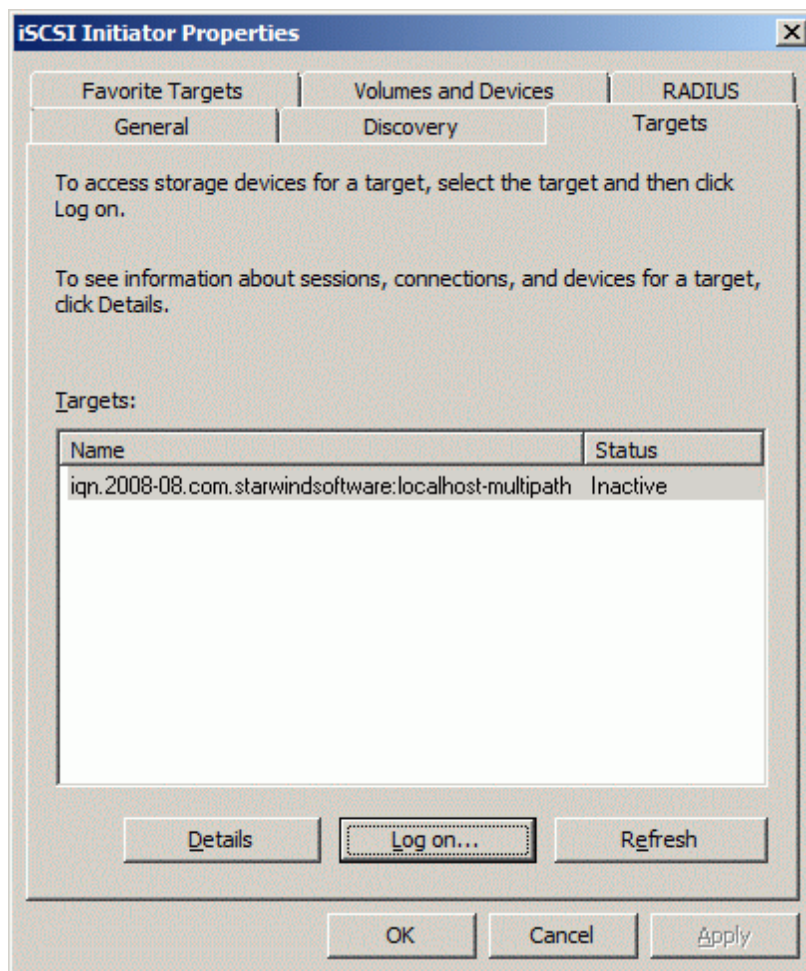
Press **OK** button to continue.

In the initiator window press Add Portal... button once again to add the second StarWind server IP address.

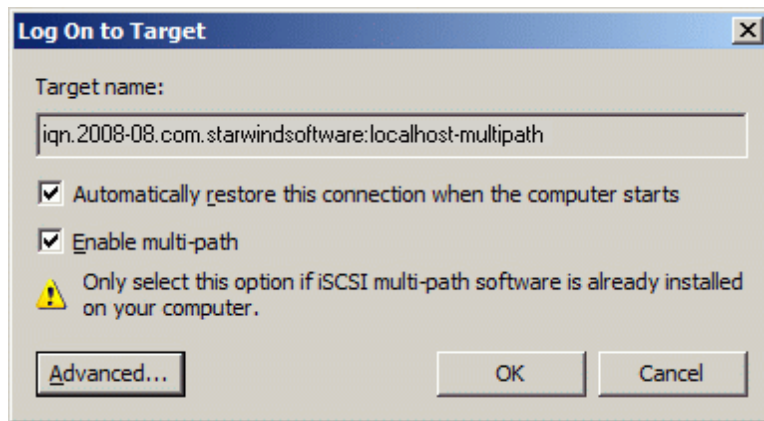


Press **OK** button to continue and switch to Targets tab.

Select the desired target.

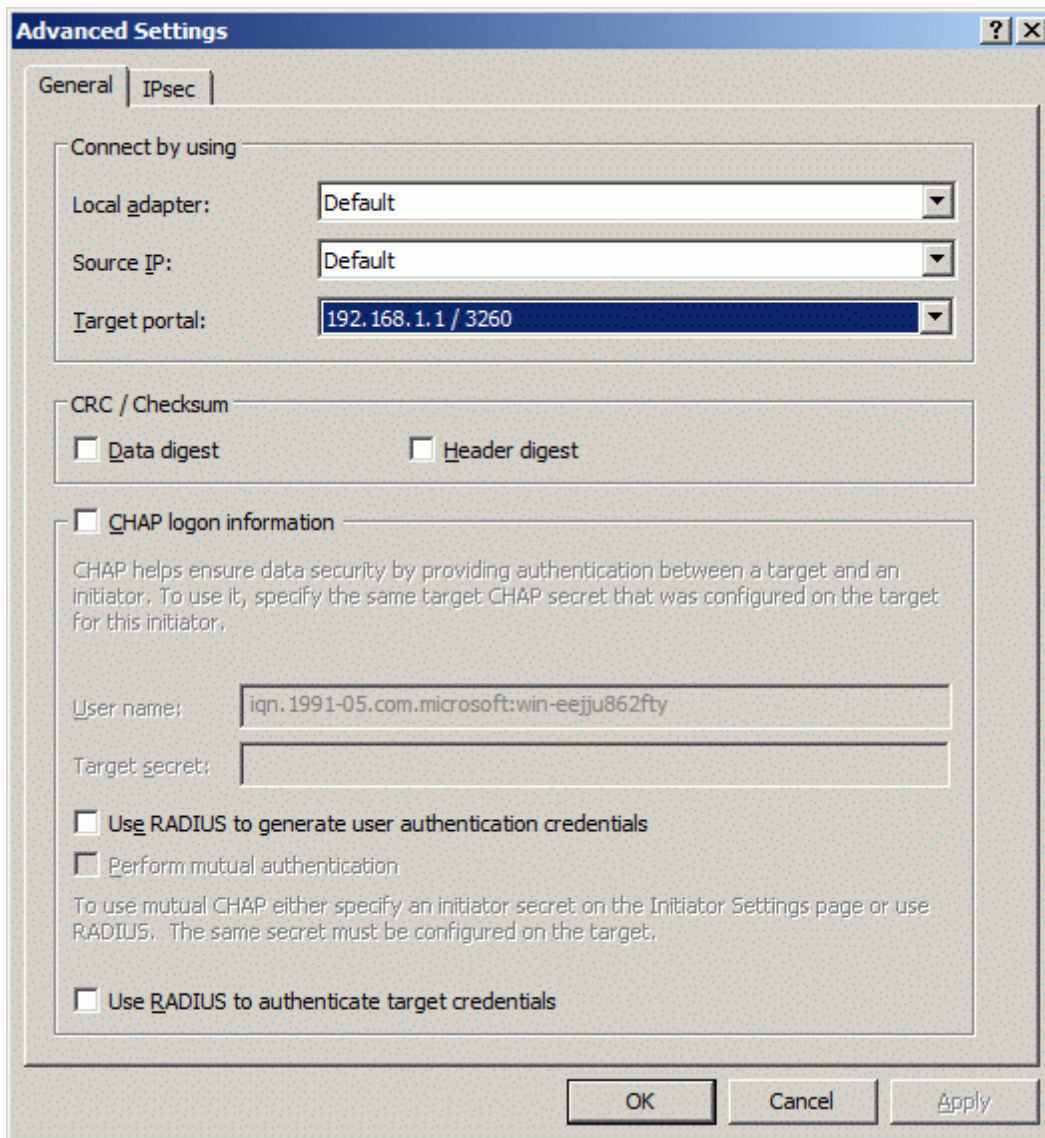


press the **Log On...** button.



Enable restore and multi-path options and press the **Advanced...** button.

In the Target Portal field select StarWind servers first IP address.

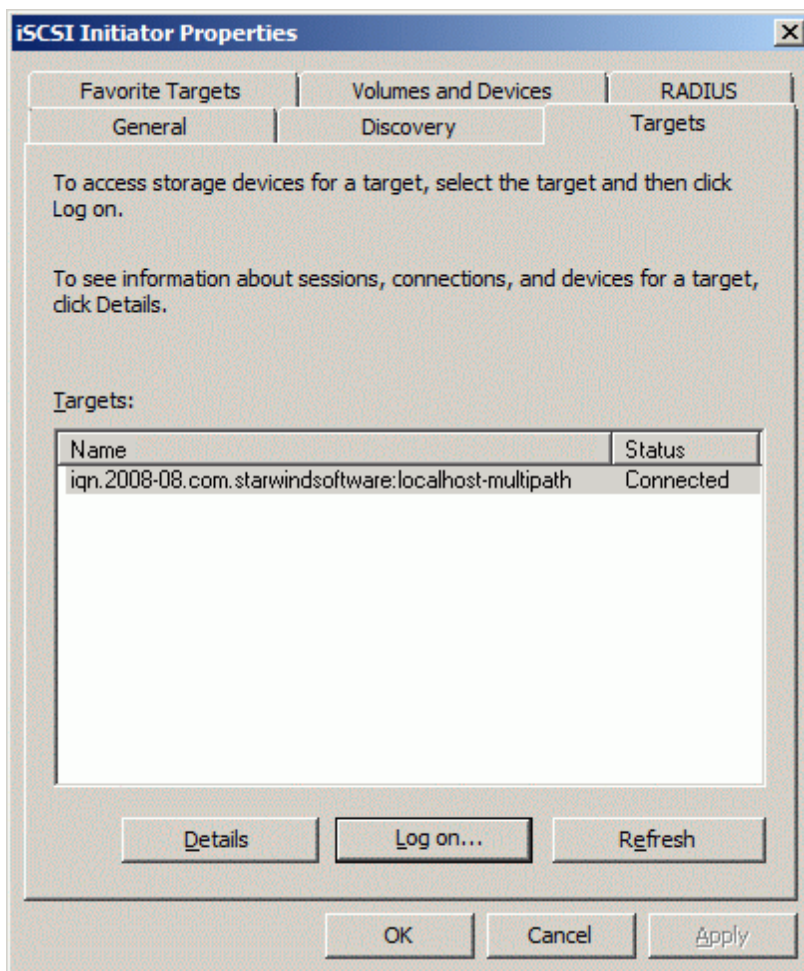


Press the **OK** button to continue.

You will be returned to Previous dialog window.

Press the **OK** button to return to MS Initiator main window

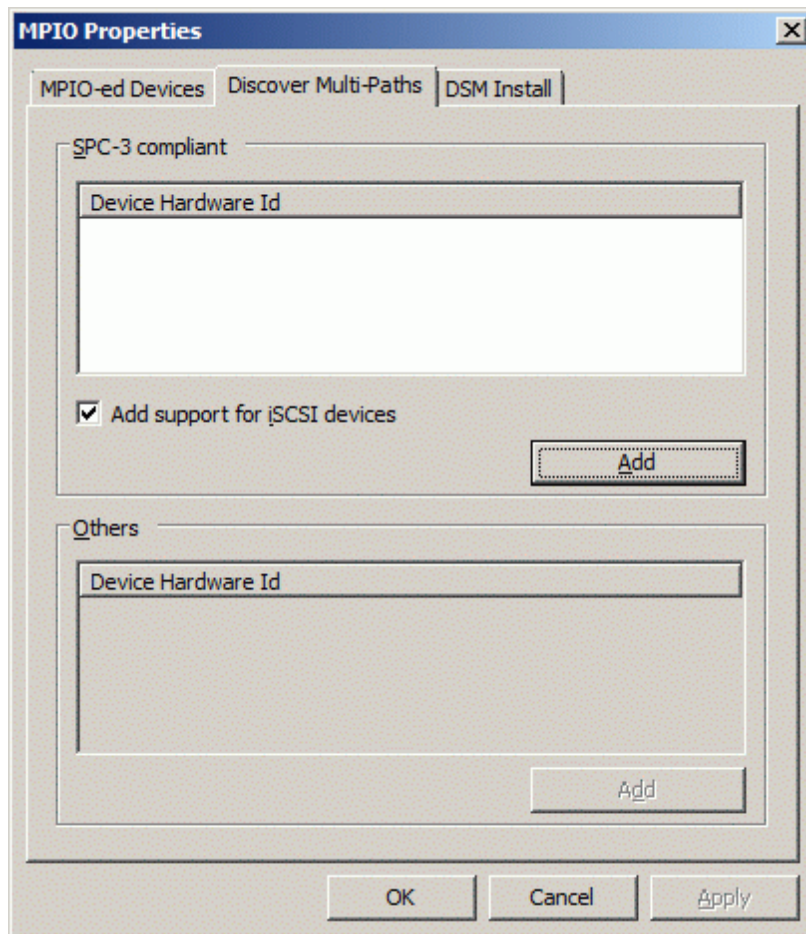
Select the target again.



Press **Log On...** once again and perform the same steps as described above, but in the target portal selection window select StarWind servers **second** IP address. Connect the target's second path and close the MS Initiator.

Now open the MPIO manager(Start->Administrative Tools->MPIO) and go to **Discover Multi-Paths** tab.

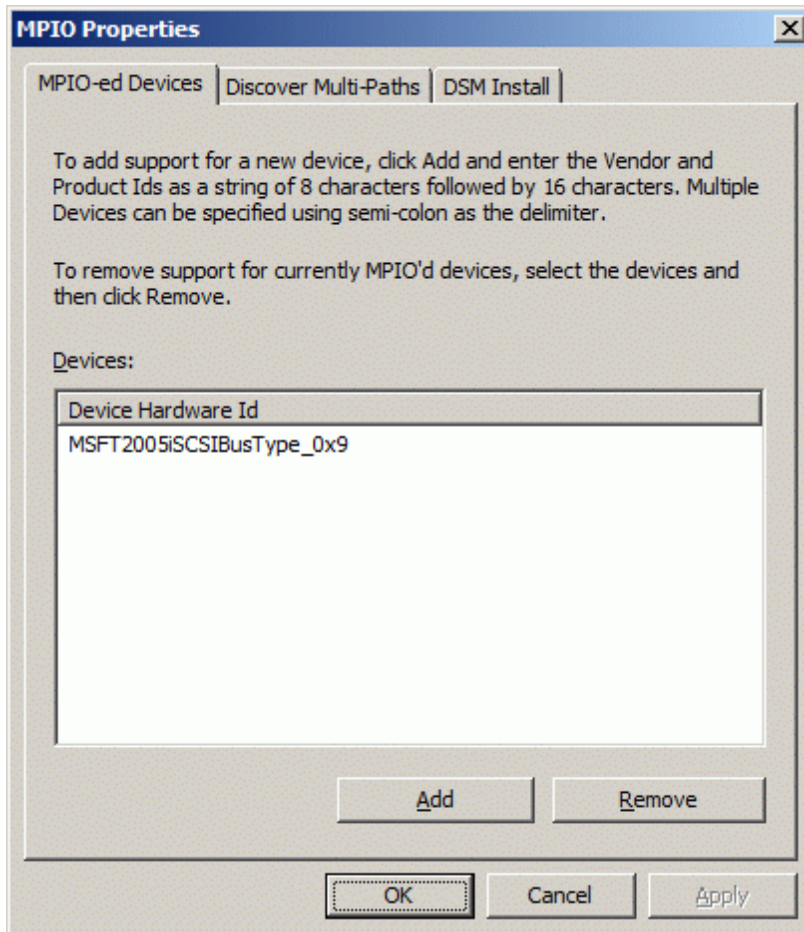
Enable the Add support for iSCSI devices checkbox.



Press **Add** button.

You will be prompted to reboot, press the **Yes** button.

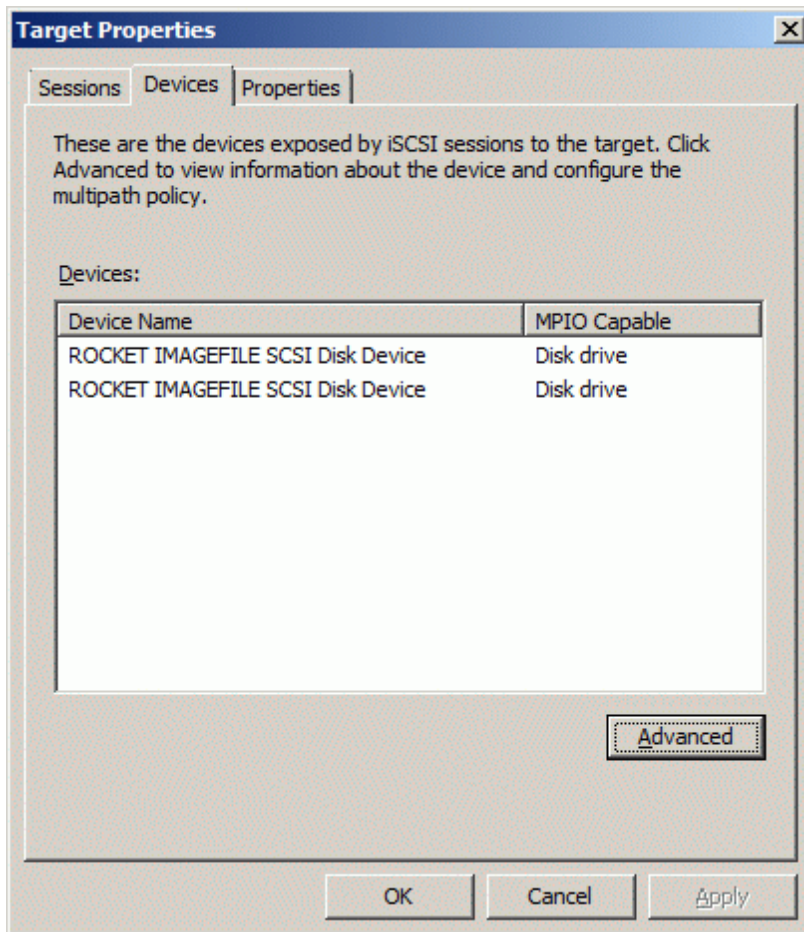
After the reboot open the MPIO manager once again to ensure that the multipathed device has been successfully recognized and added. In case of success you will see a new device in the Devices list on the MPIO-ed devices tab.



Open the iSCSI initiator and view your target properties by selecting the target and pressing Details button.

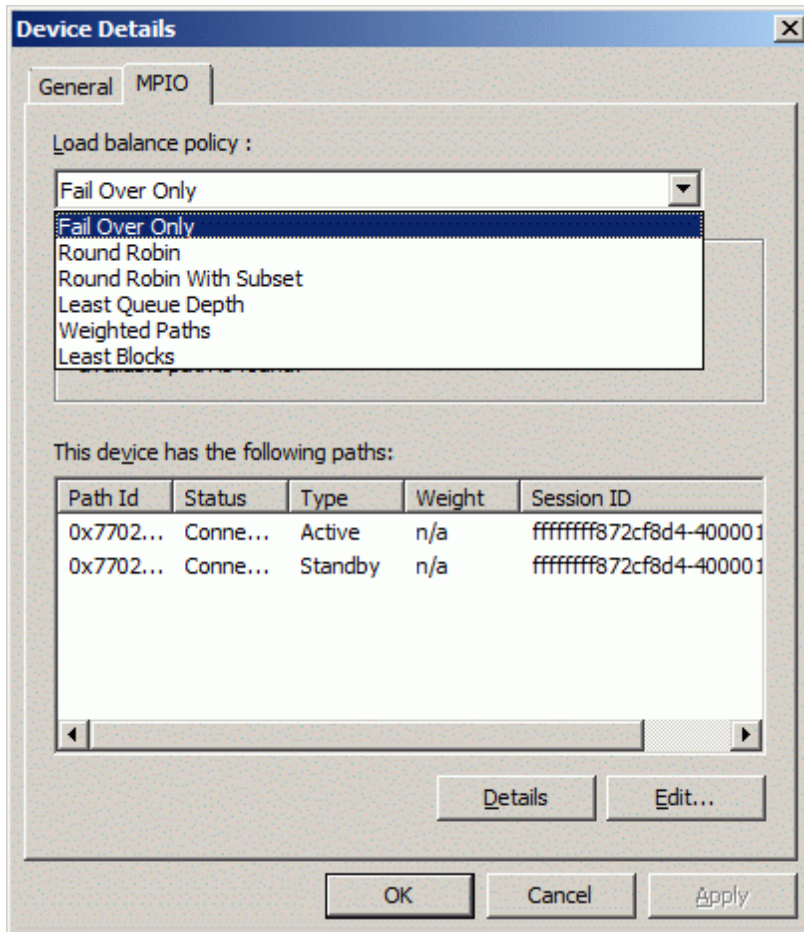
On the Sessions tab you will see two sessions representing both network paths that you have set.

Switch to the Devices tab. You can see that the connected device is Multi-Path capable.



Press the **Advanced** button.

Here you can view general information about the device. Go to MPIO tab.
Here you can specify the load balance policy for your connections. A brief description of the selected policy type can be found beneath Load Balance Policy selection box.



Conclusion

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