iStorage Server: High Availability iSCSI SAN for Windows Server 2012

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Overview

KernSafe iStorage Server is an advanced and powerful, full-featured software-only iSCSI Target which is fully compatible with the newest Windows Server 2012. iStorage Server can deliver immediate benefits for the new server environment which is implemented with Window Server 2012 as it is allowed to centralized manage and consolidate storage. iStorage Server provides a lot of features, such as RAID, VHD, CDP, Snapshot and Failover etc. These features are very popular and important in Storage Industry and make iStorage Server suitable for any size of business.

High Availability is the implementation of technology so that if one component fails, another can take over seamlessly right now. By using highly available platform, the downtime of the business can be reduced to a seriously short time which wouldn't be noticed by the users.

In the new version of iStorage Server 3.1, we have highly improved the High Availability feature which allows to create High Availability iSCSI SAN with Multiple Channels.

This document gives you step-by-step instructions on KernSafe iStorage Server configuring for Creating High Availability iSCSI SAN for Window Server 2012. We need two servers and one client, the preparation is as follows:

Details	IP Address	OS
iStorage Server1	SYNC:192.168.1.103 DATA:192.168.0.103	Windows 2000 SP4 +
iStorage Server2	SYNC:192.168.1.104 DATA:192.168.0.104	Windows 2000 SP4 +
Client	192.168.0.105	Windows Server 2012

Configure iStorage Server

Create HA storage

We create HA storage on iStorage Server1

Launch the **iStorage Server management console**, press **create** on the toolbar of iStorage Server management console, the **create device wizard** is shown as below.
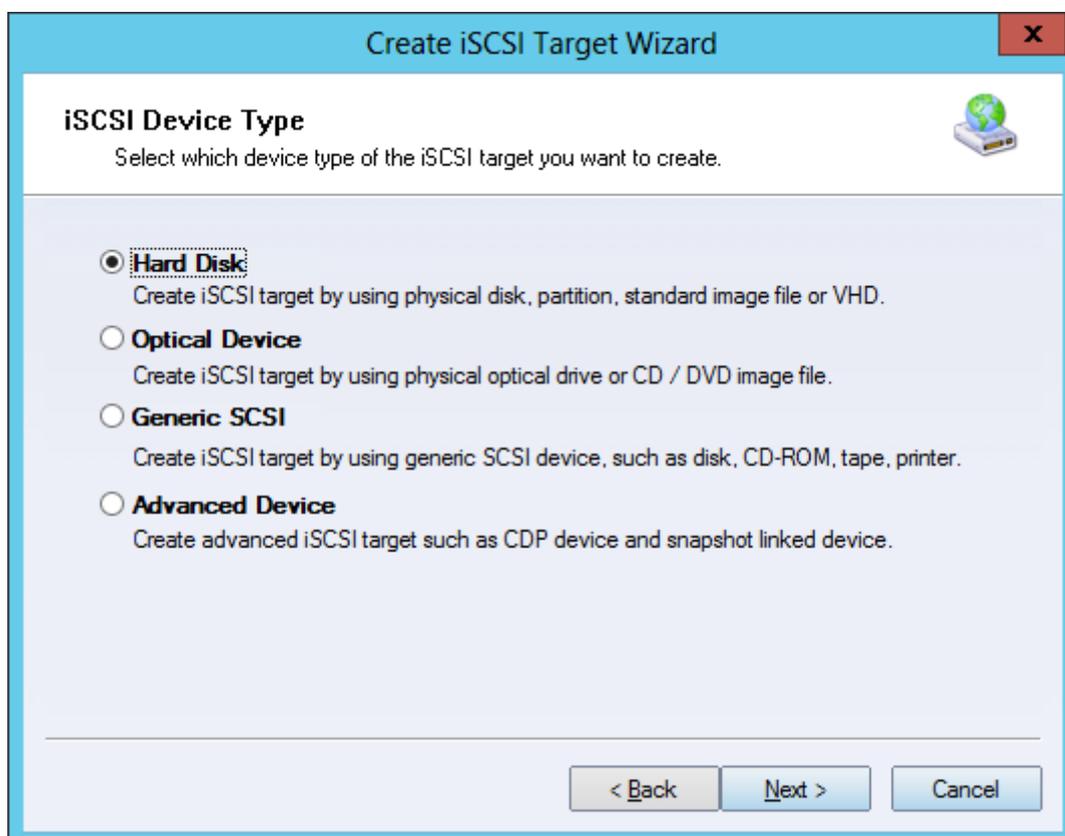
Select **Hard Disk**, press **Next** to continue.
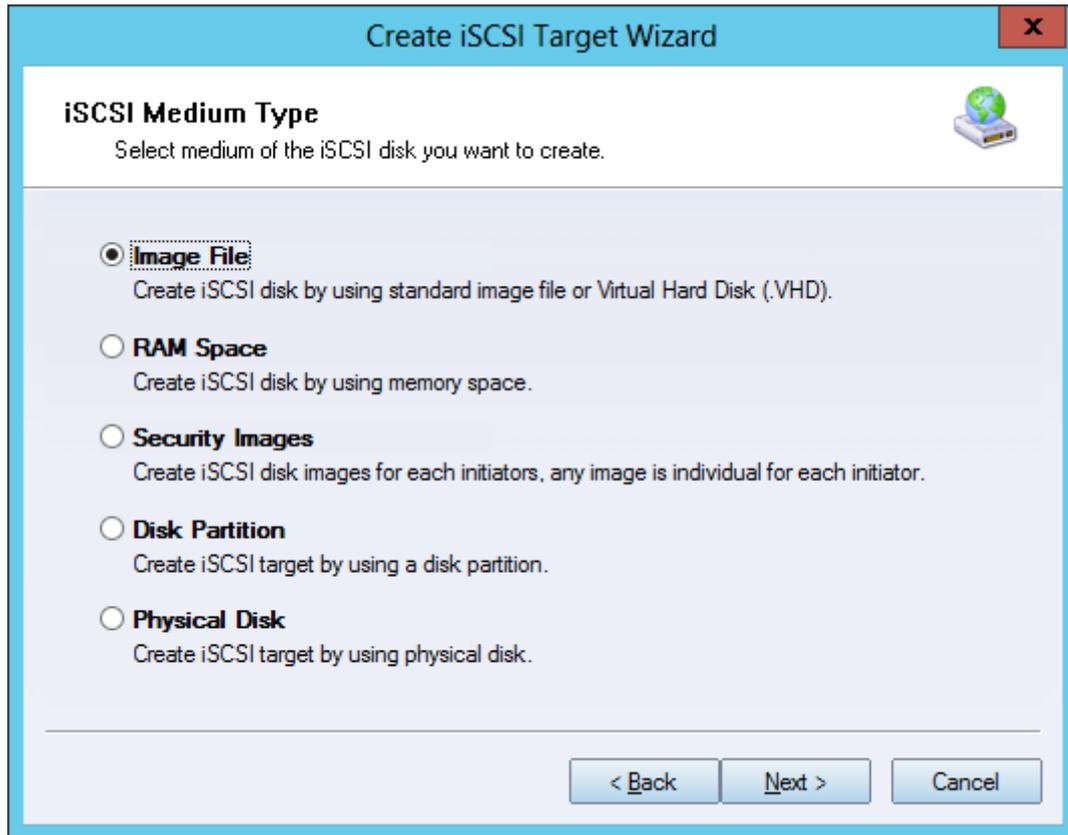
Select **Image File** as the iSCSI Medium Type.

Press **Next** to continue.
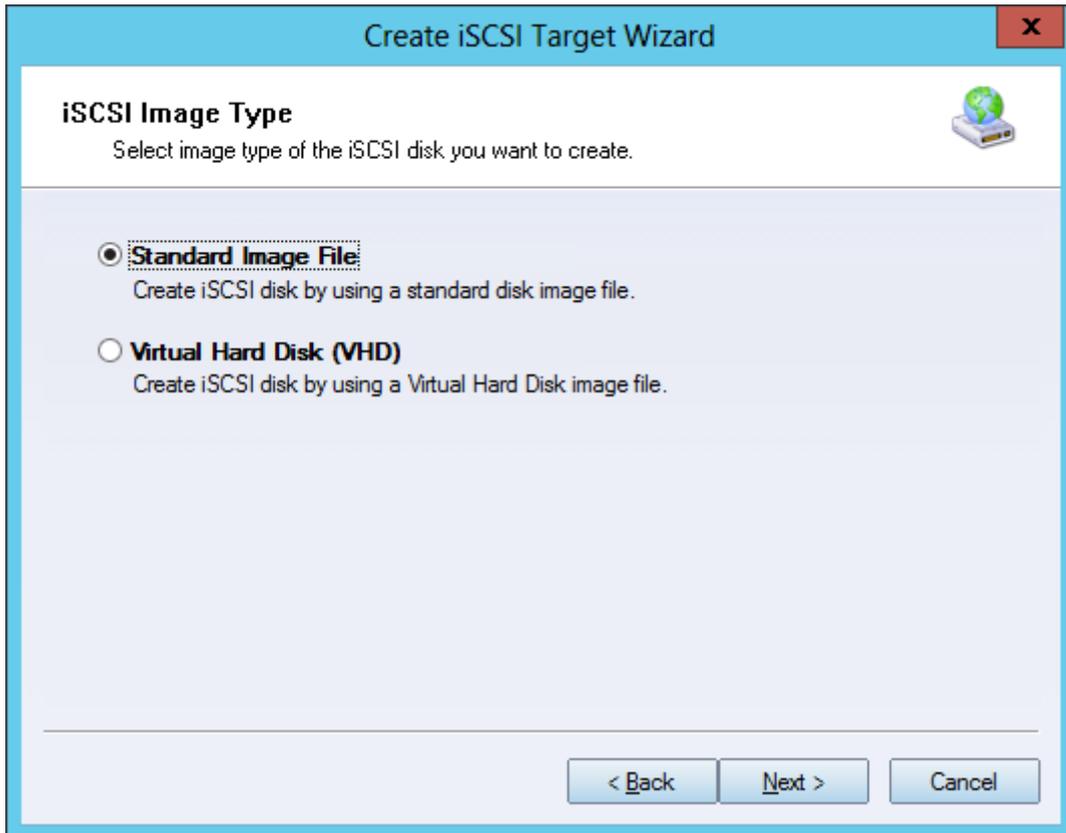
Select **Standard Image File** and then press **Next**.
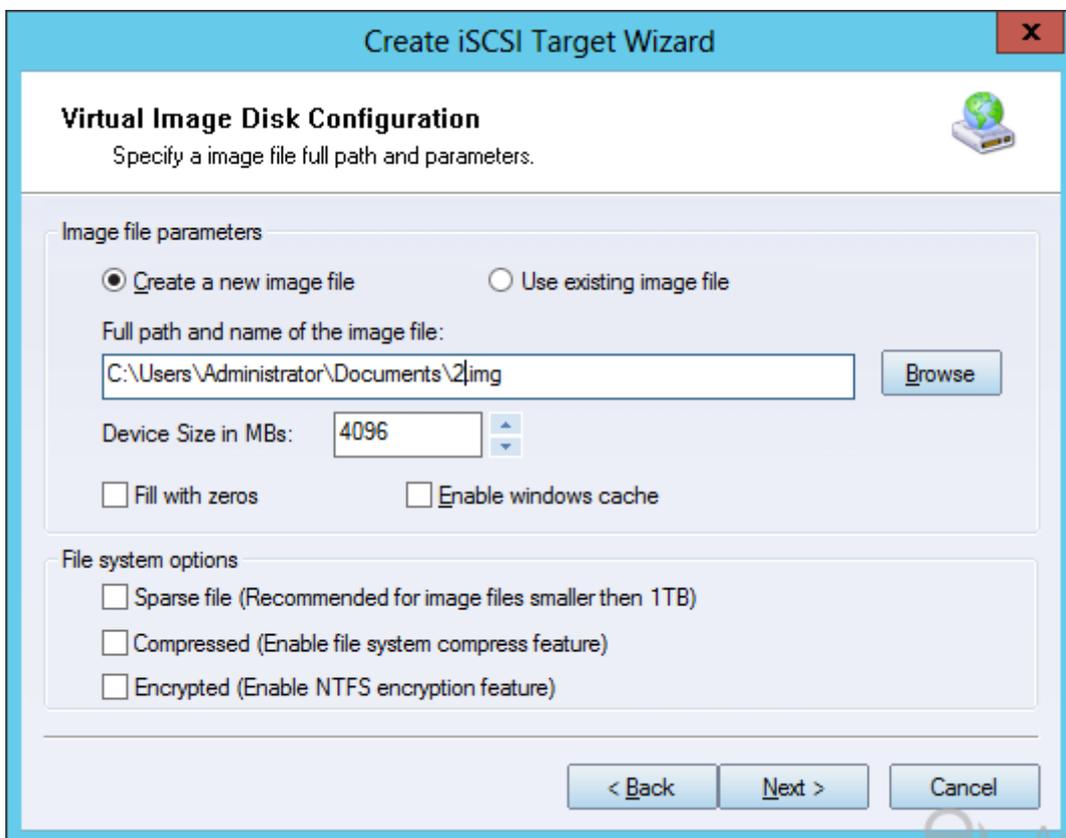
Specify the **File path** and **device capacity**.

Press **Next** to continue.

Select the **Authorization** method.

Press **Next** to continue.
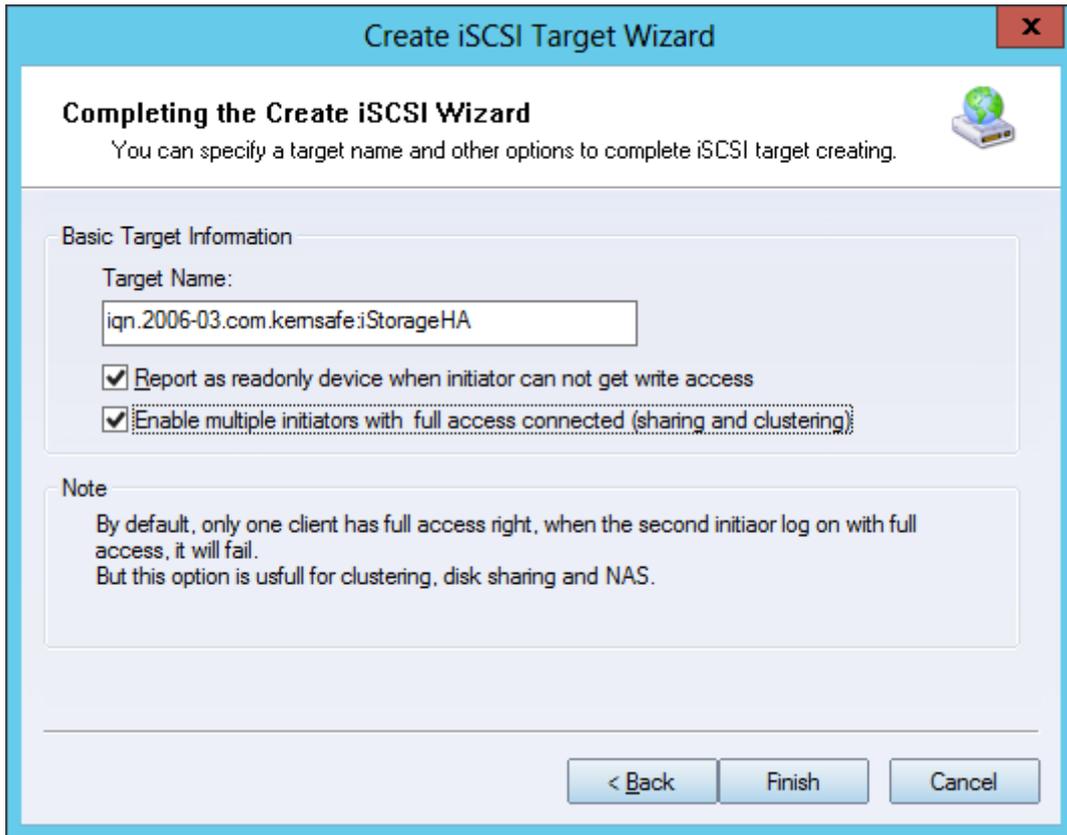
Specify the **Target Name** as you like.

Note: Check "**Enable multiple initiators with full access connected**".

Press **Finish** to complete the creation.
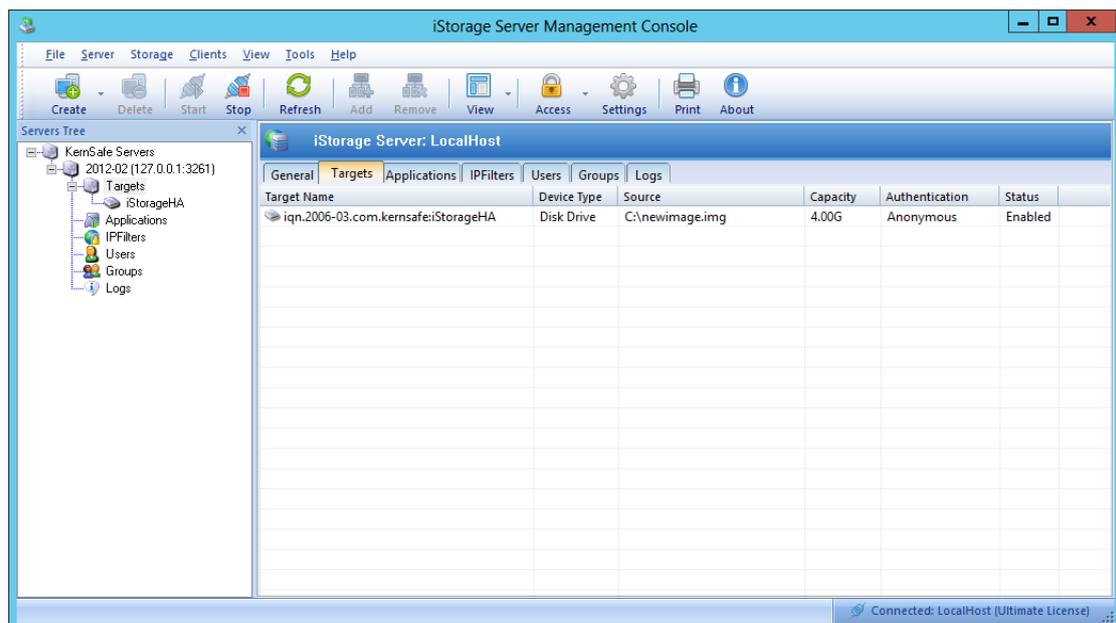
Create HAPartner Storage.

We create HAPartner Storage on iStorage Server2.

Launch the i**Storage Server management console**, press **create** on the toolbar of iStorage Server management console, the **create device wizard** is shown as below.
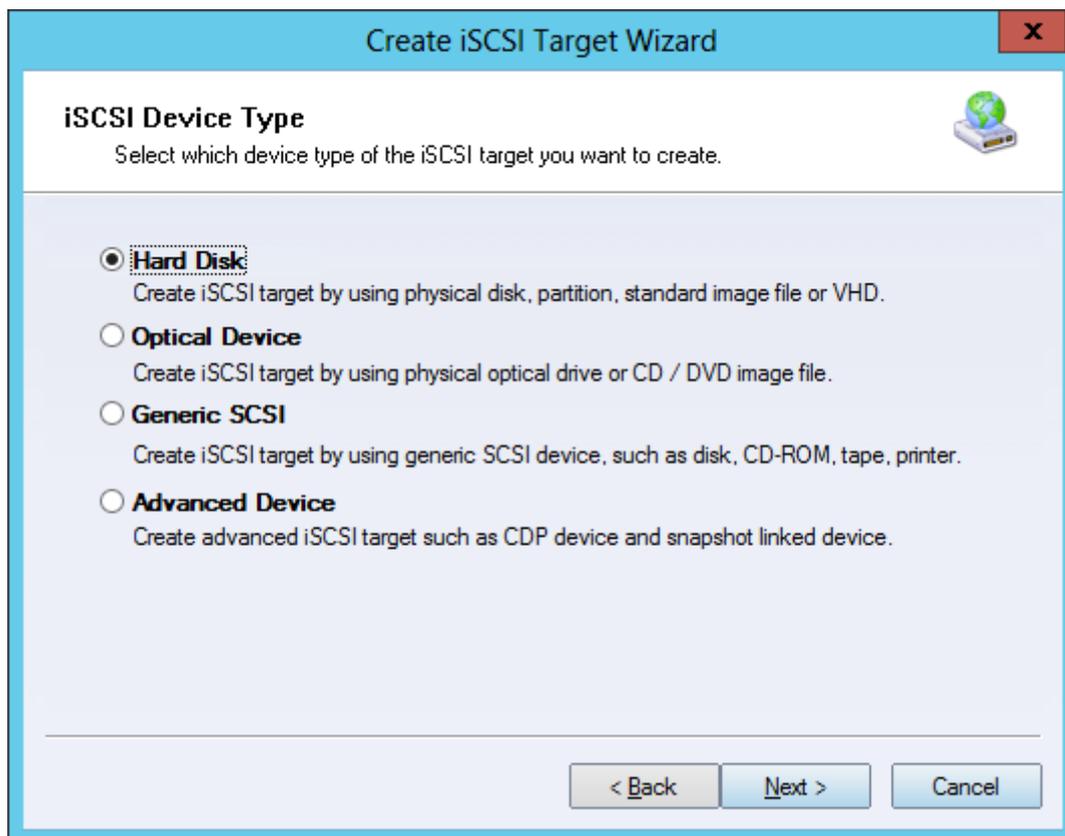
Select **Hard Disk** and press **Next** to continue.
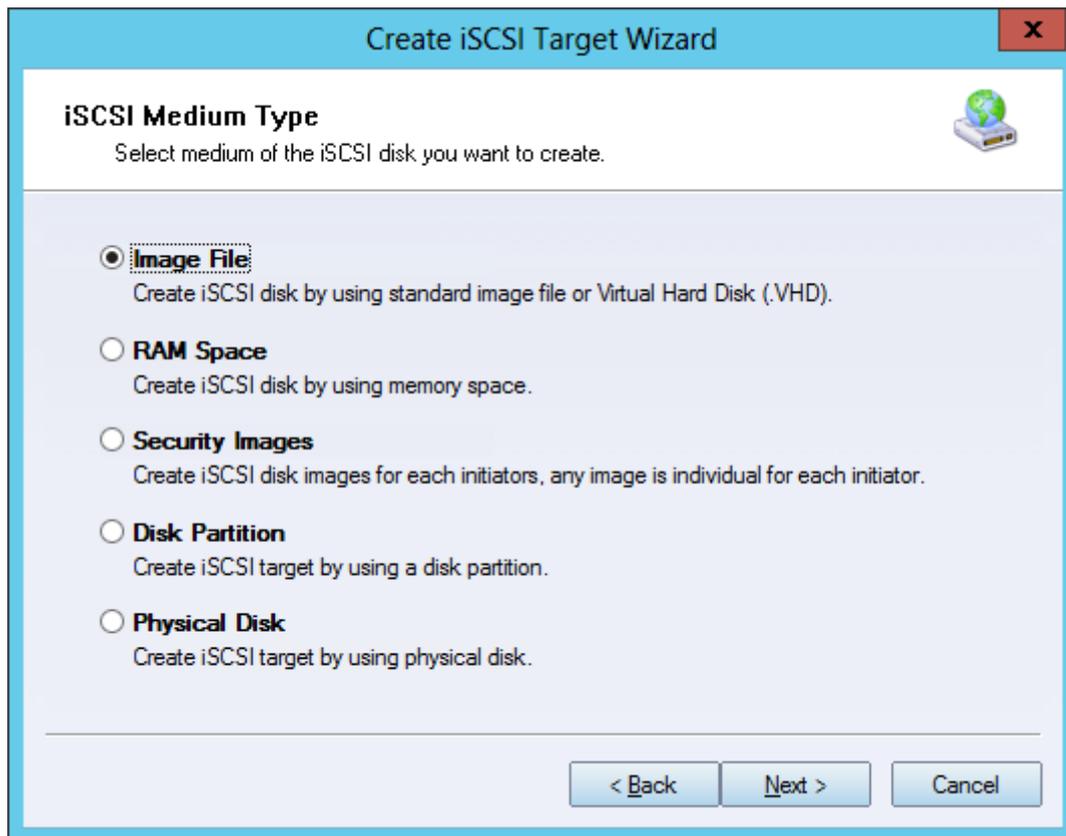
Select **Image File** and then press **Next**.
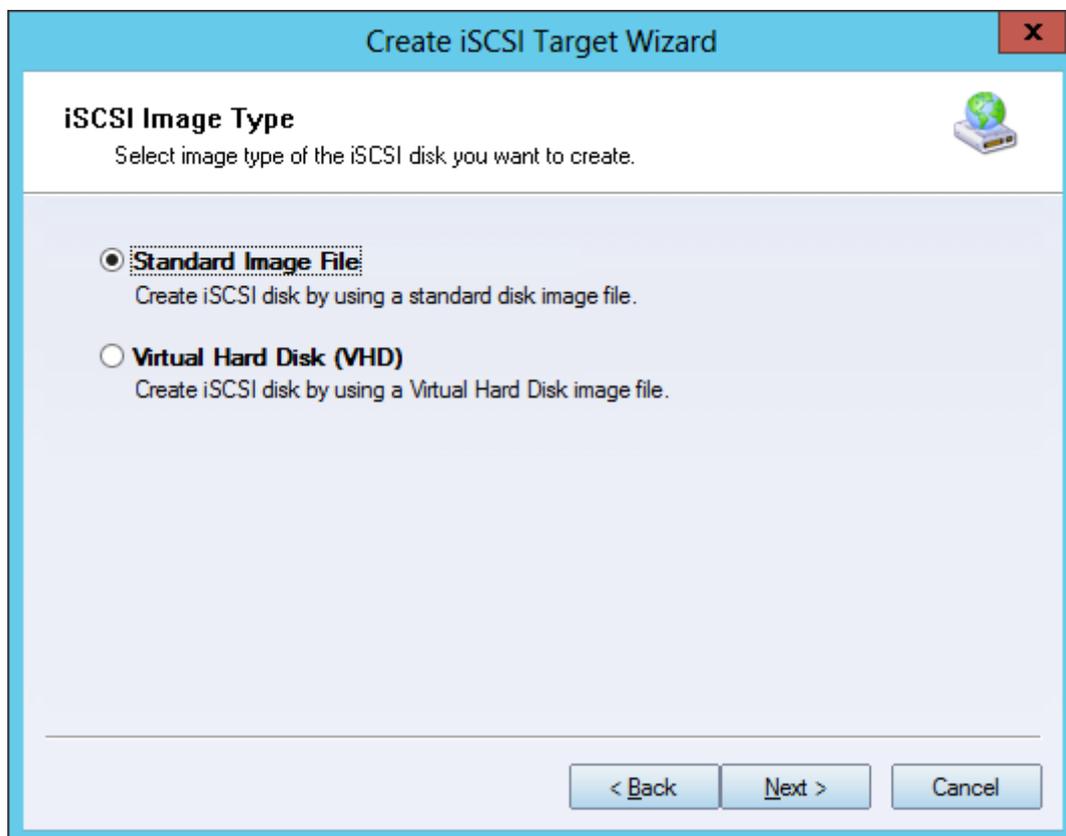
Choose Standard Image File.

Specify the **File path** and **device capacity**.

Press **Next** to continue.

Create iSCSI Target Wizard

Authorization
You can select an authorization mode, Anonymous, CHAP or IP filter.

○ **Anonymous**
   Select this option to disable any authorization.

○ **CHAP**
   Select this option to use CHAP authorization.

○ **IP Filter**
   Select this option to use IP address authorization.

○ **Mixed**
   Select this option to use both CHAP and IP address authorization.

☑ Inherit security roles from global settings.

[< Back] [Next >] [Cancel]
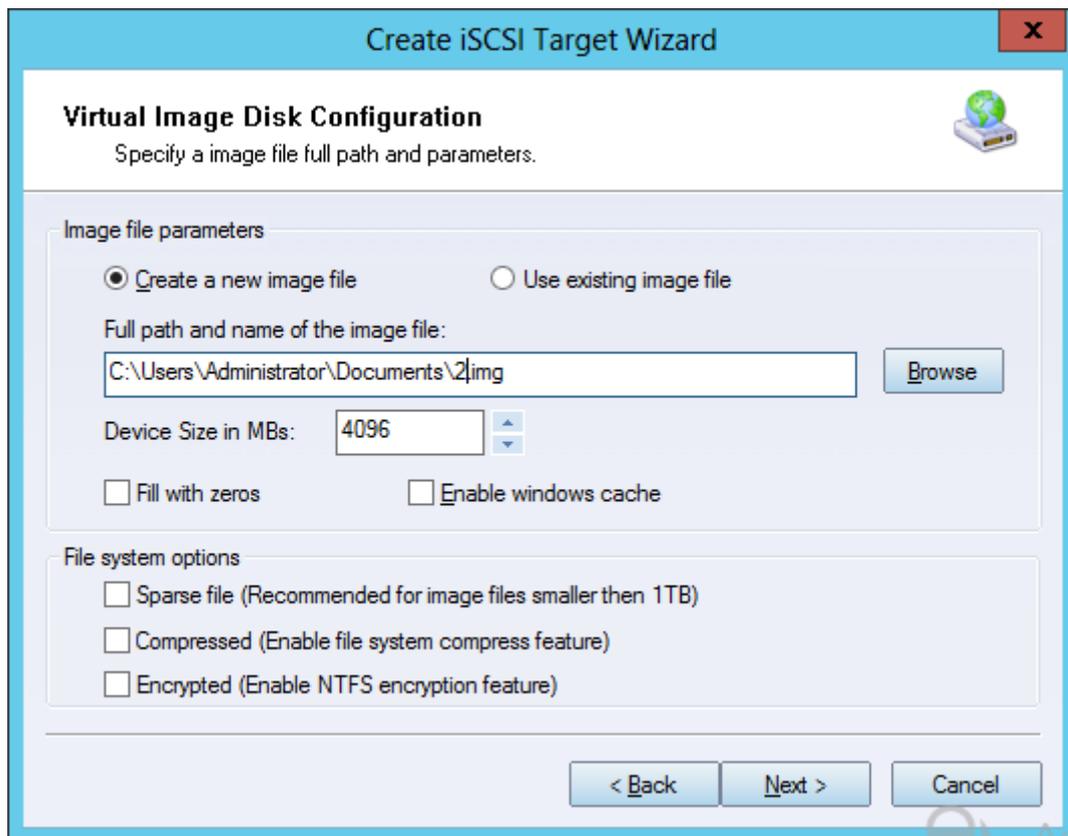
Select **Anonymous** authorization.

Create iSCSI Target Wizard

Completing the Create iSCSI Wizard
You can specify a target name and other options to complete iSCSI target creating.

Basic Target Information

Target Name:

iqn.2006-03.com.kernsafe:iStorageHAPartner

☑ Report as readonly device when initiator can not get write access
☑ Enable multiple initiators with full access connected (sharing and clustering)

Note

By default, only one client has full access right, when the second initiaor log on with full access, it will fail.
But this option is usfull for clustering, disk sharing and NAS.

[< Back] [Finish] [Cancel]

Type the Target Name.

Note: Check "**Enable multiple initiators with full access connected**".

Press **Finish** to complete the creation.
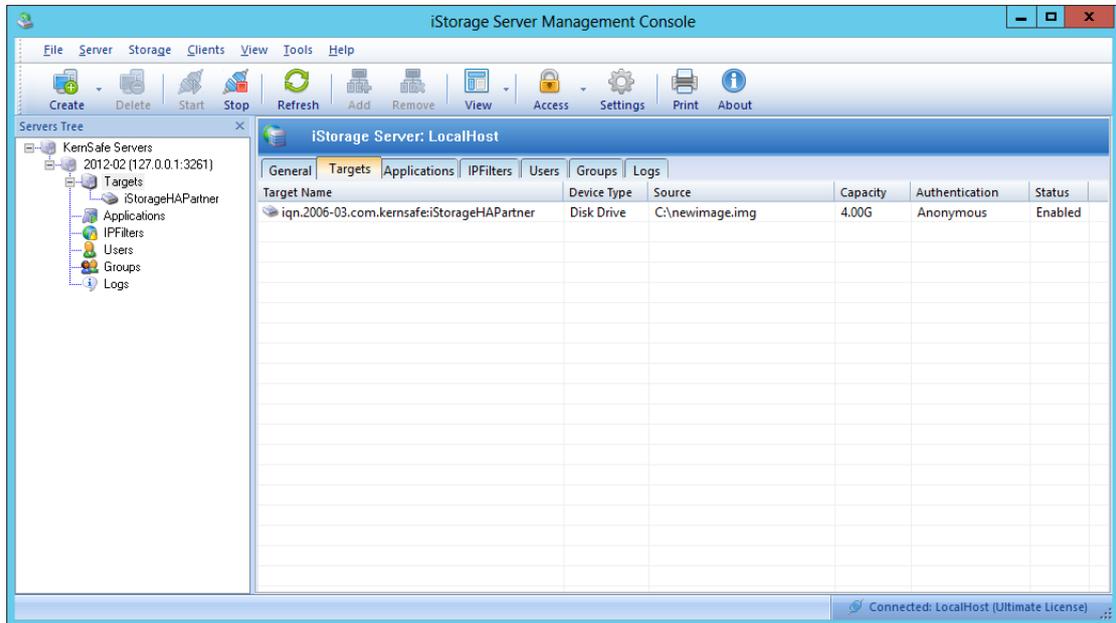
Create Application

On iStorage Server1, open the iStorage Server management console, click **Create** and then select **Application**.

The **Create Application Wizard** will be shown as below.
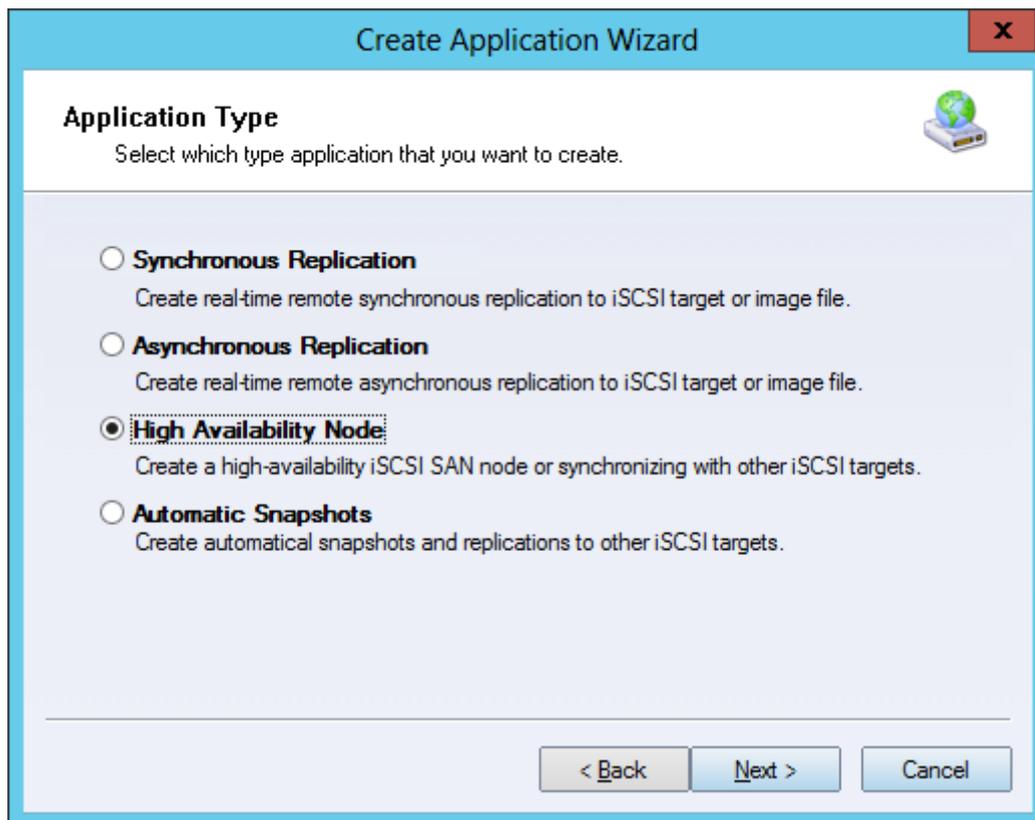
Select **High Availability Node** as the **Application Type**.

Press **Next** to continue.
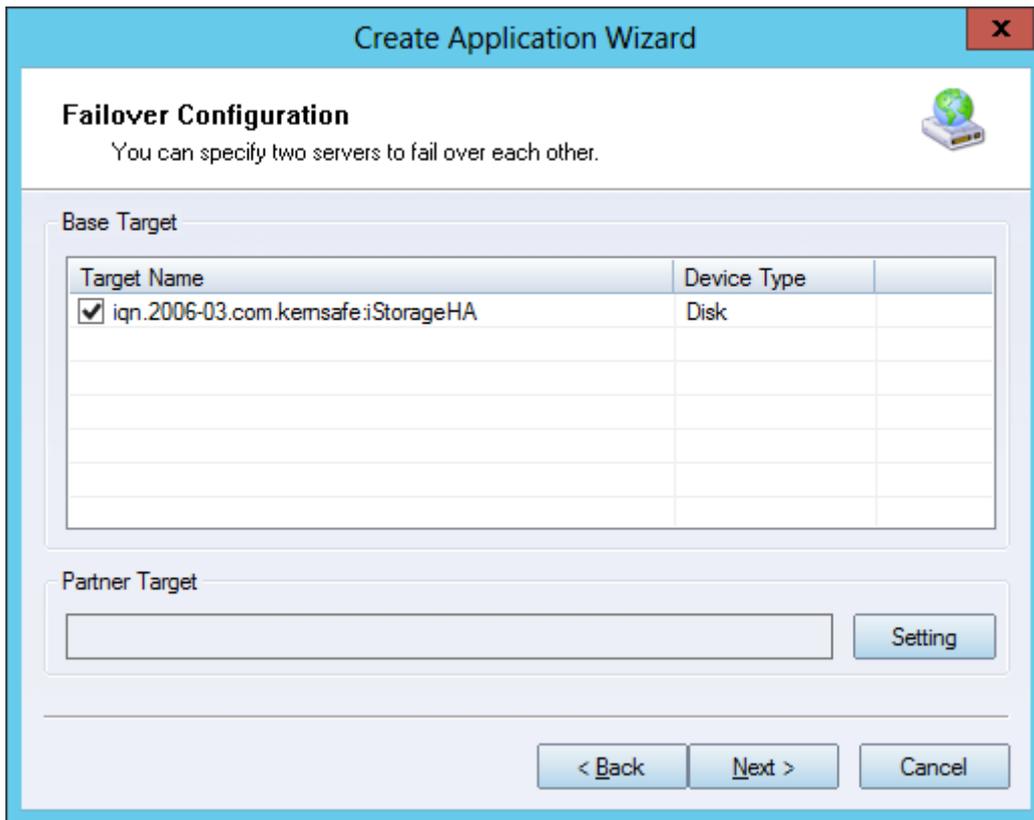
Check the **Base Target** then press **Settings** to configure the partner.
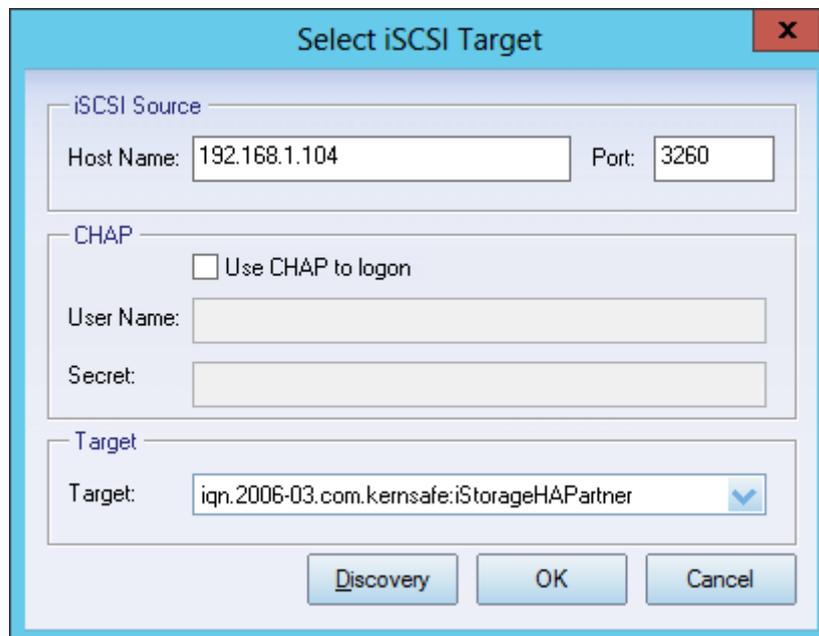
Input the IP Address of iStorage Server2 and the press **Discovery** to find

the mirror target, Choose **HAPartner** in the drop-down-list.

Press **OK** button to continue.

Note: If the target needs CHAP authorization, you should provide User
Name and Secret to logon.

Press **Next** to continue.

Configure the **Synchronization** Settings.

In iStorage Server 3.0, we have improved the HA feature which can use multiple channels for SYNC to prevent Split-brain. We choose the 192.168.1.103 as the primary.

Now, the mirror target should be synchronized from the base target, if the two targets are both the new and not initialized, we can choose

Create mirror device without synchronization (Manual Initialization),
otherwise, we must choose **Create mirror device with full
synchronization from base target**.

Press **OK** to continue.
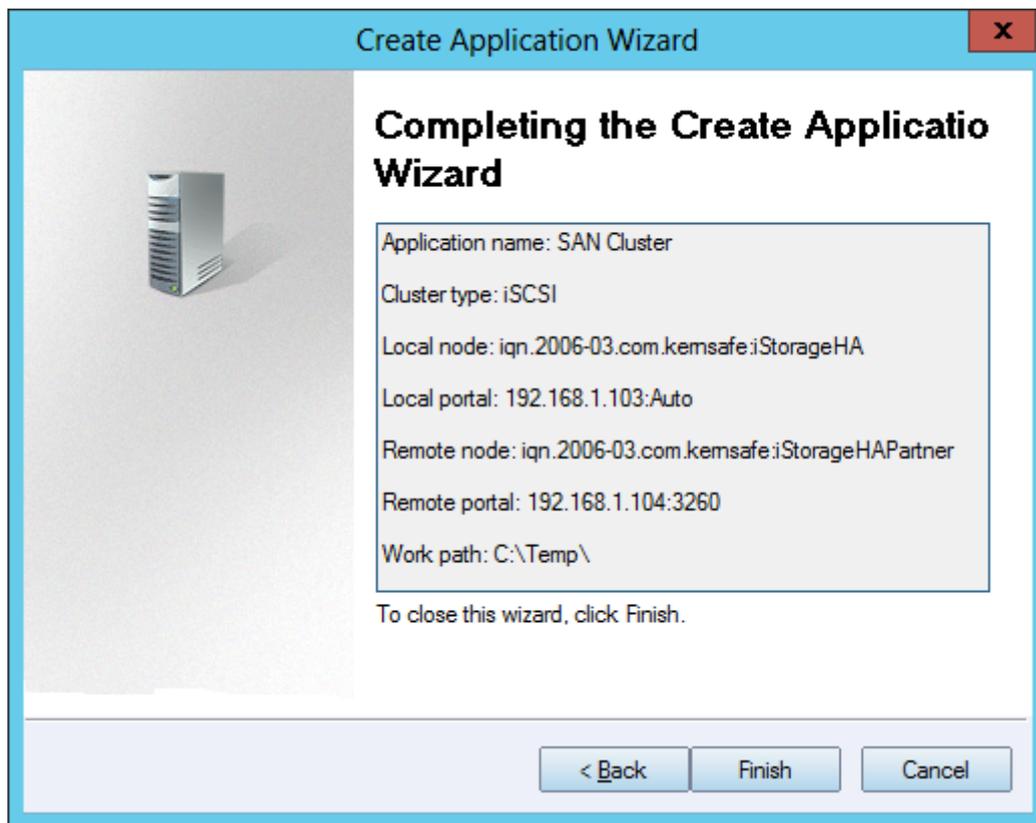
Press **Finish** to complete the application.
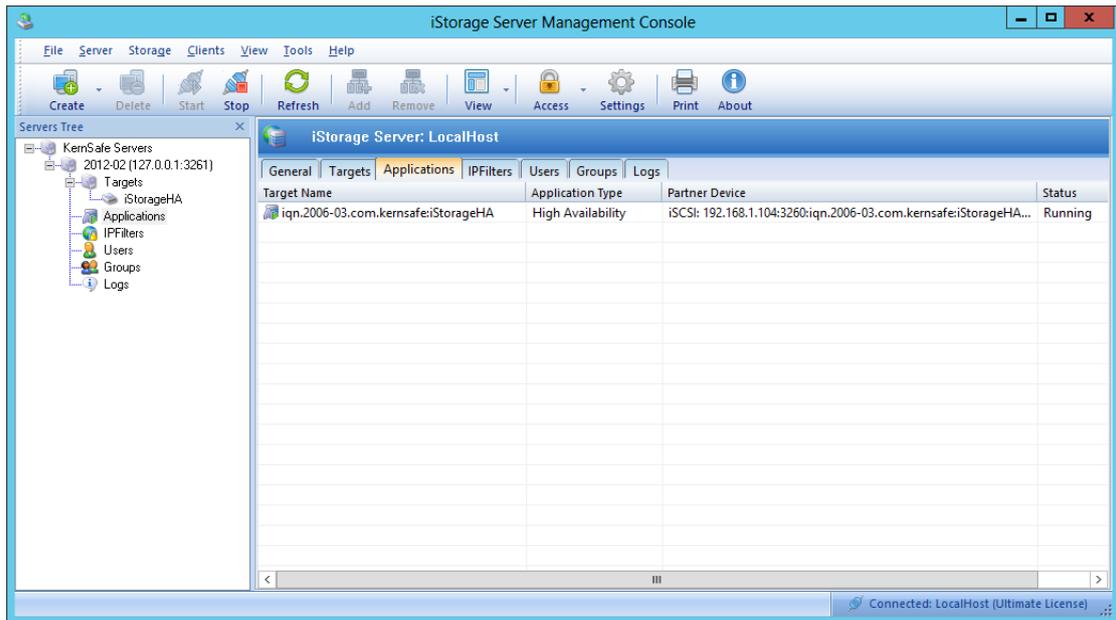
When the application is successfully created, it will be shown as above.

Now we should do the same operations on iStorage Server2 to create an application. Choose **HA** as the mirror target.
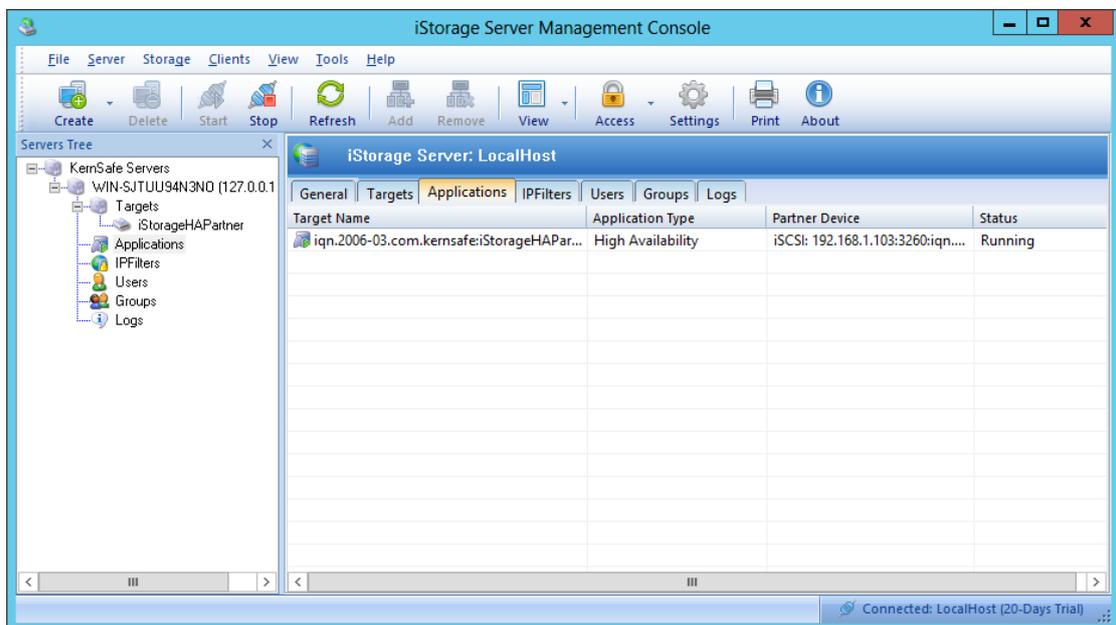
Configure Client

Install MPIO

Launch the **Server Manager** in Windows Server 2012 and then click

Manage on the top right corner, select **Add Roles and Features**.
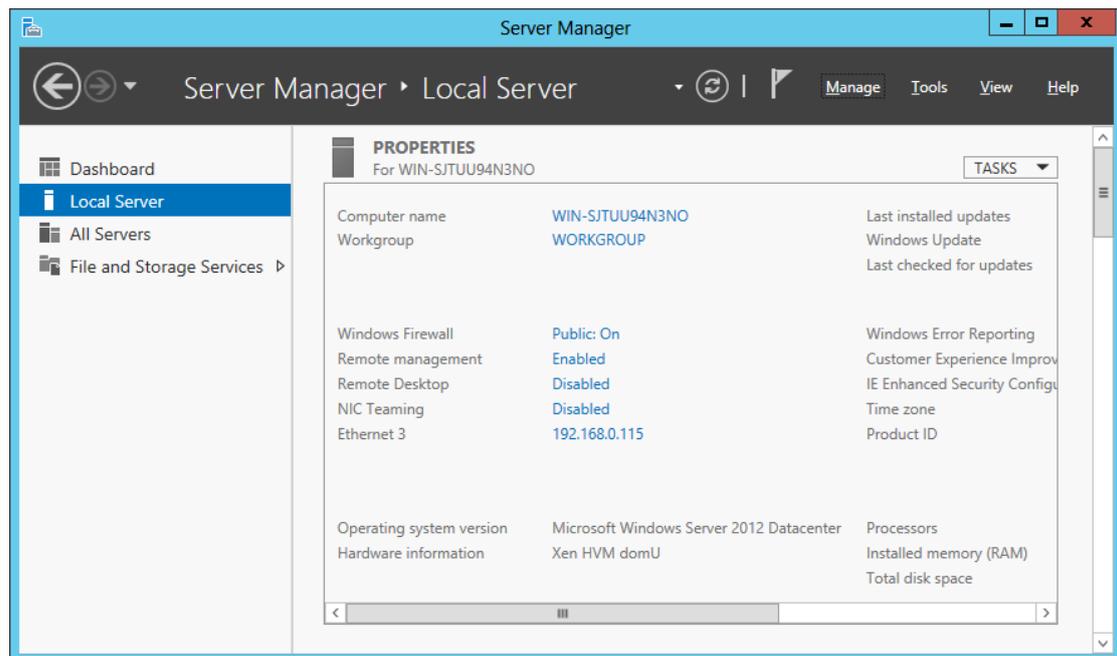
The Wizard will be shown as below.
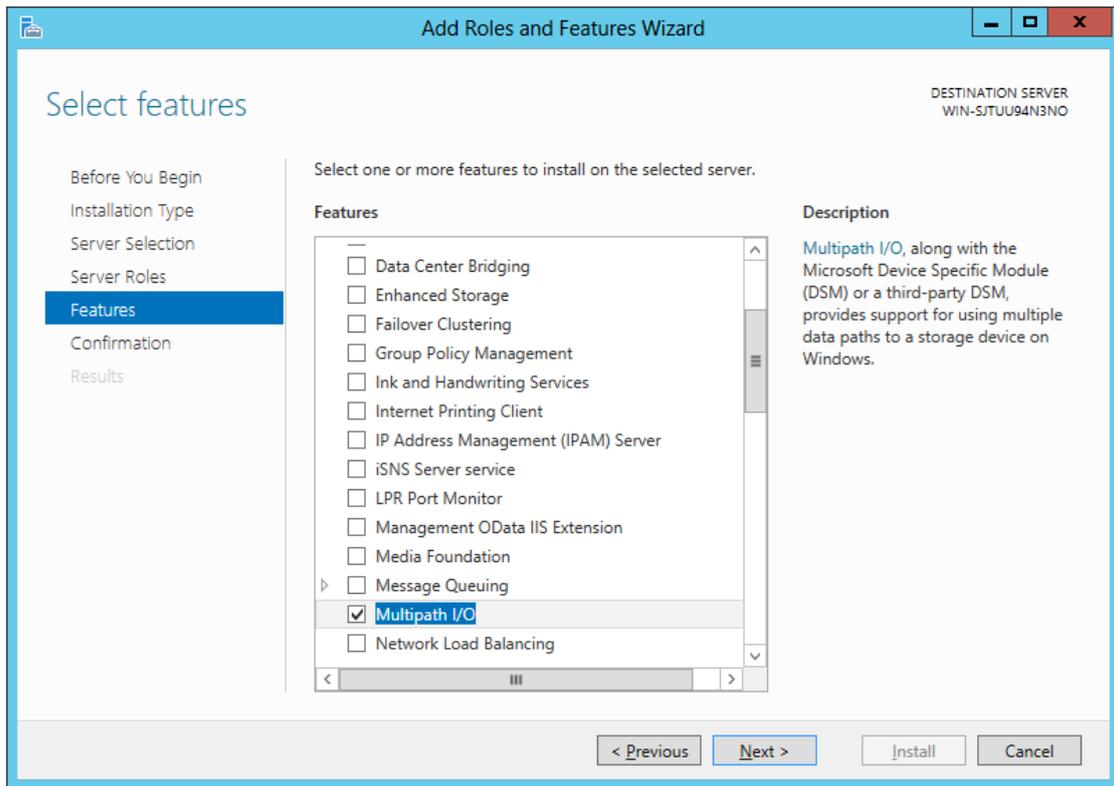
Select **Multipath I/O** and then press **Next** to continue.

Connect Targets

Launch the Administrator Tools-> Microsoft iSCSI initiator.

Switch to the Discovery tab. Add each IP Address of iStorage Server by clicking **Discover Portal...**
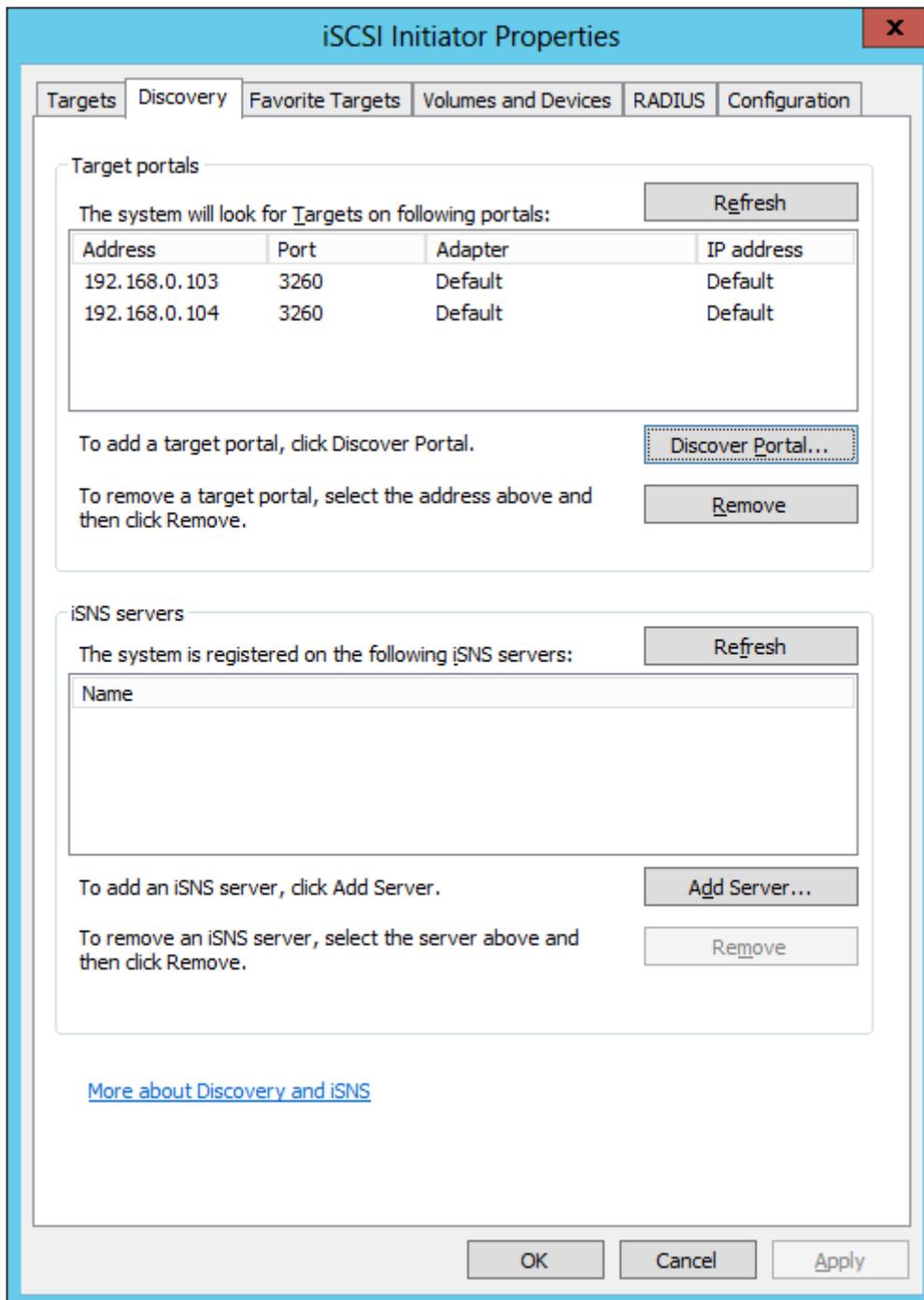
Switch to the **Targets** tab.
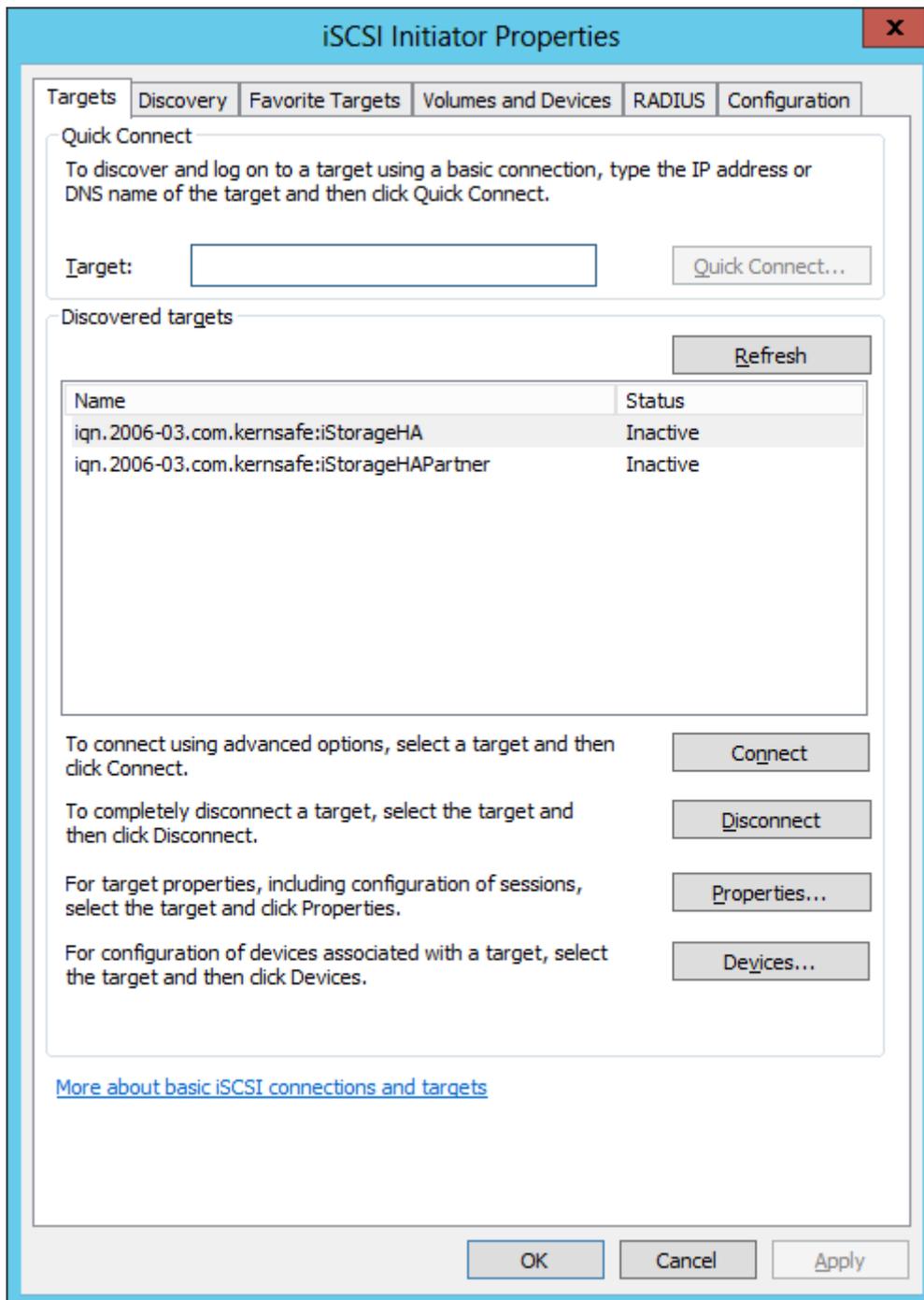
Connect the target by click **Connect** button.

A **Connect to Target** dialogue is shown.

Check **Add this connection to the list of Favorite Targets**.

Target 1
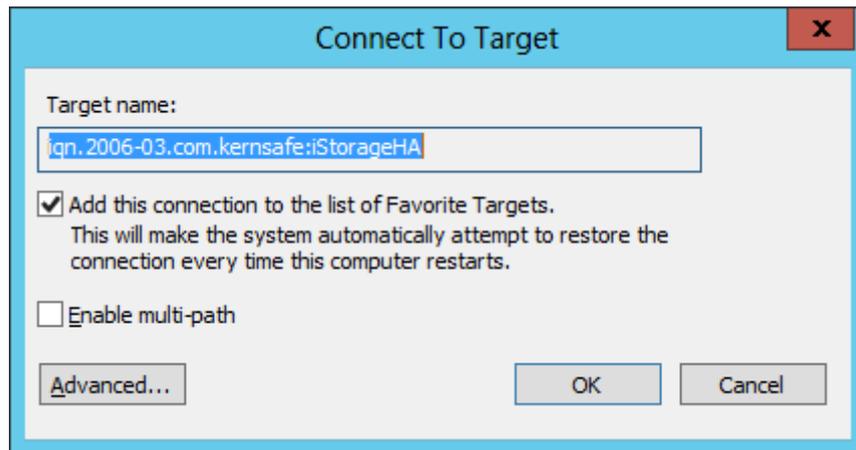
Target 2
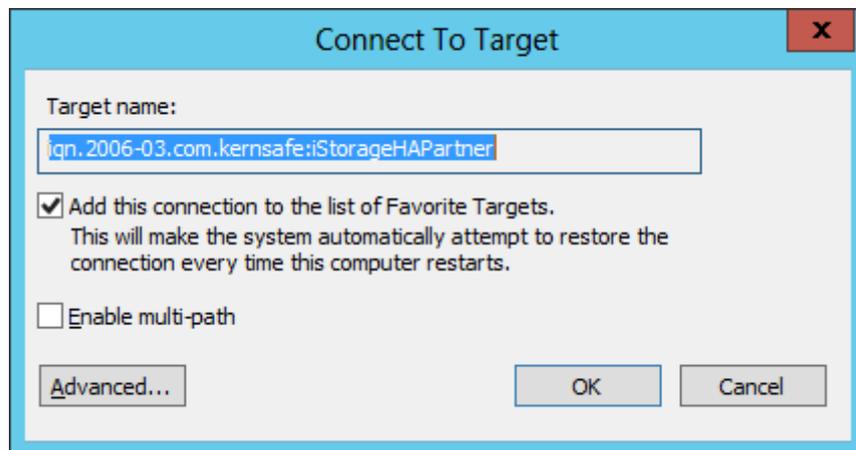
Click **OK** button to connect the target.
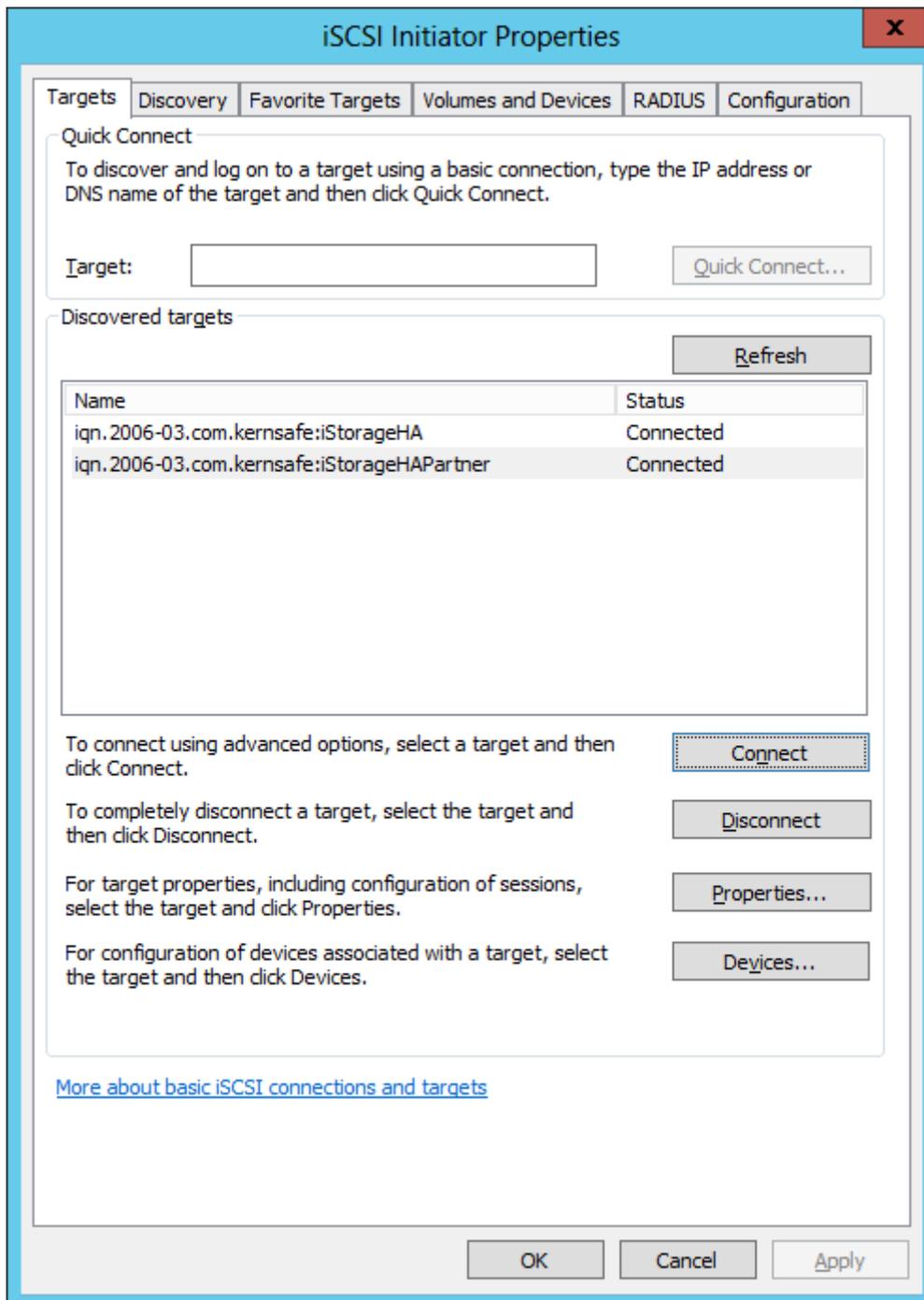
Now, the client is connected to the two targets.

Enable Multipath Support

Launch MPIO manager by clicking **Start-> MPIO**.

Check **Add support for iSCSI device**.
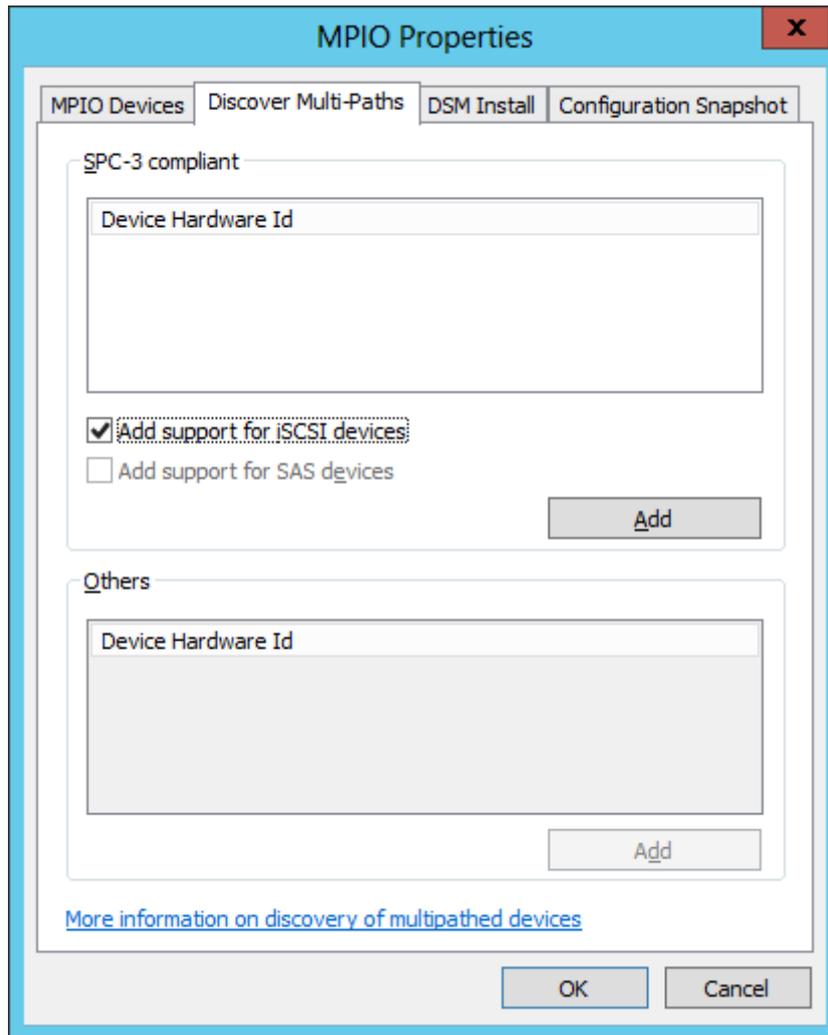
Click **Add** button.

Windows will prompt you to reboot the server.
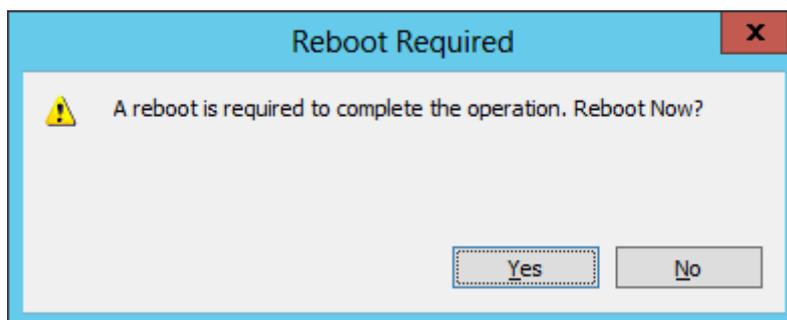
After the server is restarted, we should initialize the disk.

Click **Administrator Tools-> Computer Manager.**
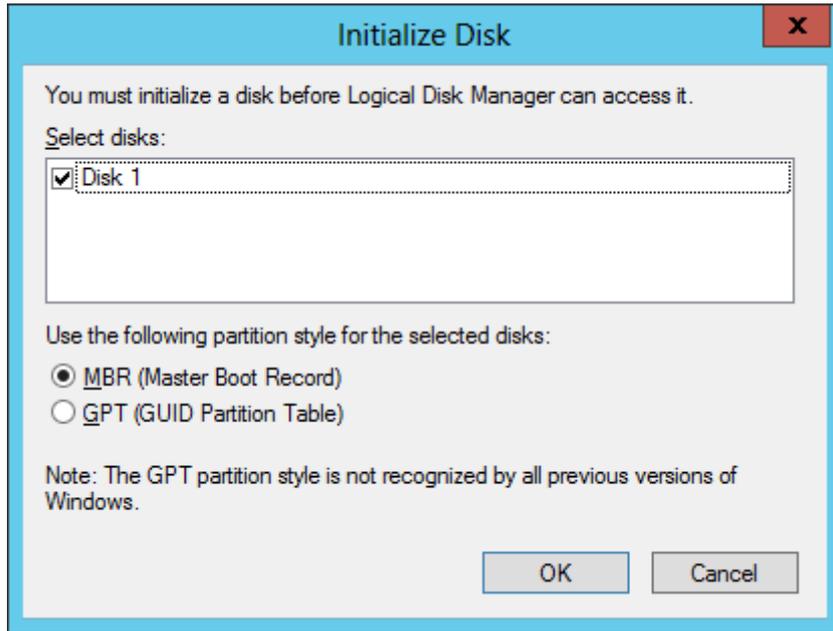
Select **Disk 1** and press **OK** to finish the initialization.

Right click the disk and then select New Simple Volume, format and partition as wizard.

If successful, it will be shown as below.
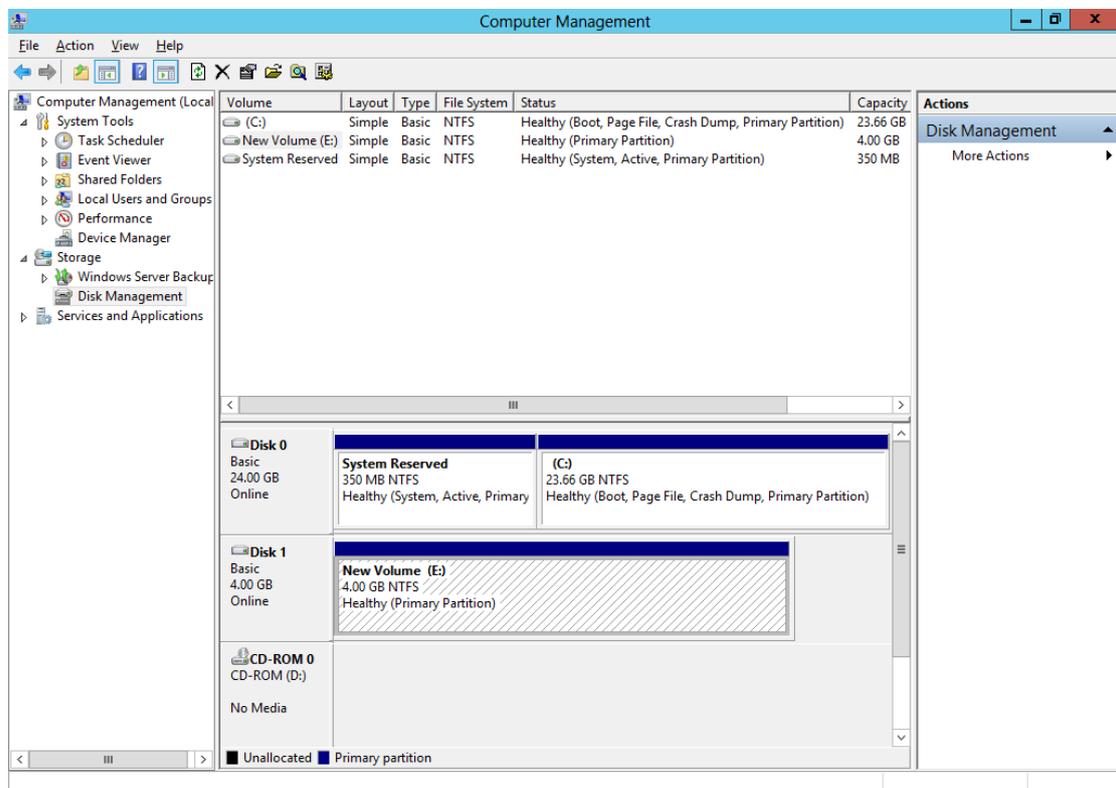
Note: Though we have connected to two targets, there will be only one disk with two active connections for Failover.

Contact

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