QNAP
QNAP SYSTEMS, INC.

Server Virtualization with QNAP® Turbo NAS and Microsoft® Hyper-V

How to set up the QNAP Turbo NAS as an iSCSI storage for Microsoft Hyper-V and as an ISOs repository

V1.0

Document revision history:

Date	Version	Changes
May 2010	1.0	Initial release

Note:

All the features, functionality, and other product specifications are subject to change without prior notice or obligation. Information contained herein is subject to change without notice.

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Contents

How to set up the QNAP Turbo NAS as an iSCSI storage for Microsoft Hyper-V and as an ISOs repository

Microsoft Hyper-V is a hypervisor-based virtualization system for x64 computers. You can use "Hyper-V" to host virtual machines on your Windows Server 2008 R2 and set up a virtualization environment. In this application note you will see how to set up QNAP NAS as a storage for Hyper-V via iSCSI and a shared ISO repository via Microsoft Networking connection.

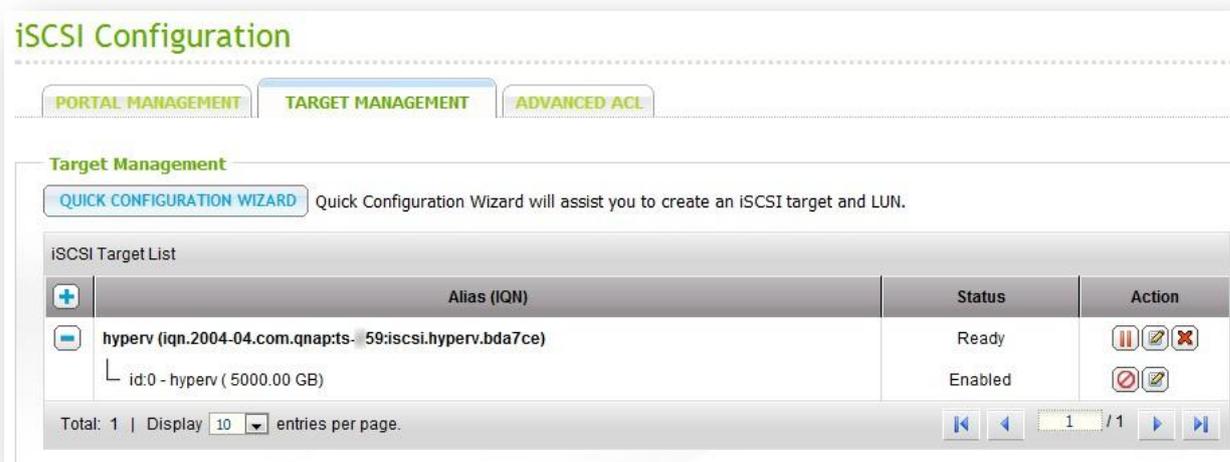## Create an iSCSI LUN on the Turbo NAS

To set up the Turbo NAS as a storage repository for Hyper-V, you have to create an iSCSI logical unit number (LUN) on the Turbo NAS. In this example, we created a 5TB LUN named "hyperv". The complete name of the iSCSI LUN will be:

iqn.2004-04.com.qnap:ts-459:iscsi.hyperv.bda7ce

Make sure the capacity of the LUN is smaller than the maximum capacity of the NAS.

For the details of creating an iSCSI target and LUN, see the application note "Create and use the iSCSI target service on the QNAP NAS" on
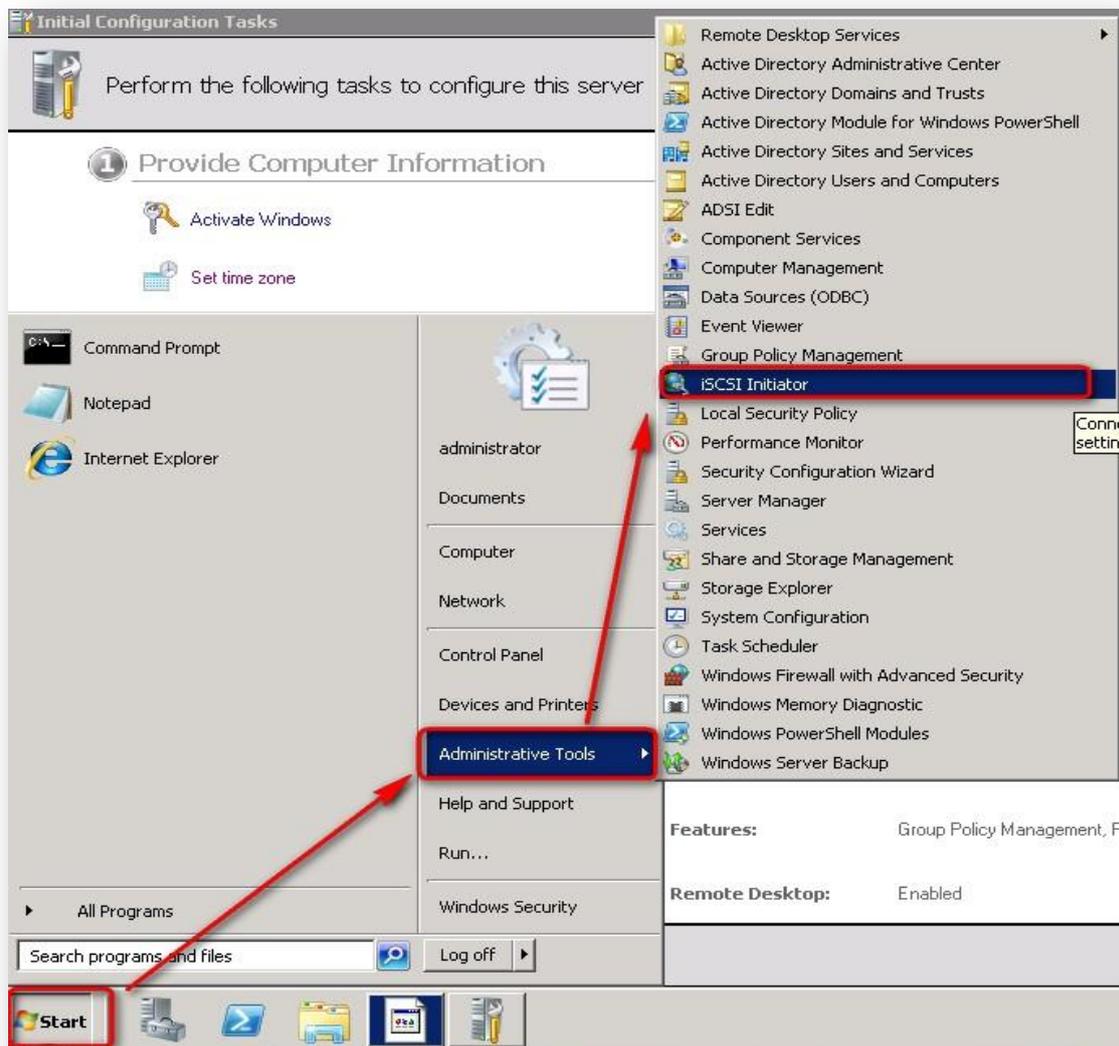http://www.qnap.com/pro_features.asp

## Connect Windows Server 2008 R2 to the iSCSI target

Once you have created an iSCSI target and LUN on the Turbo NAS, you can connect Windows Server to the NAS.

Start the iSCSI initiator to connect to the iSCSI target on the NAS.
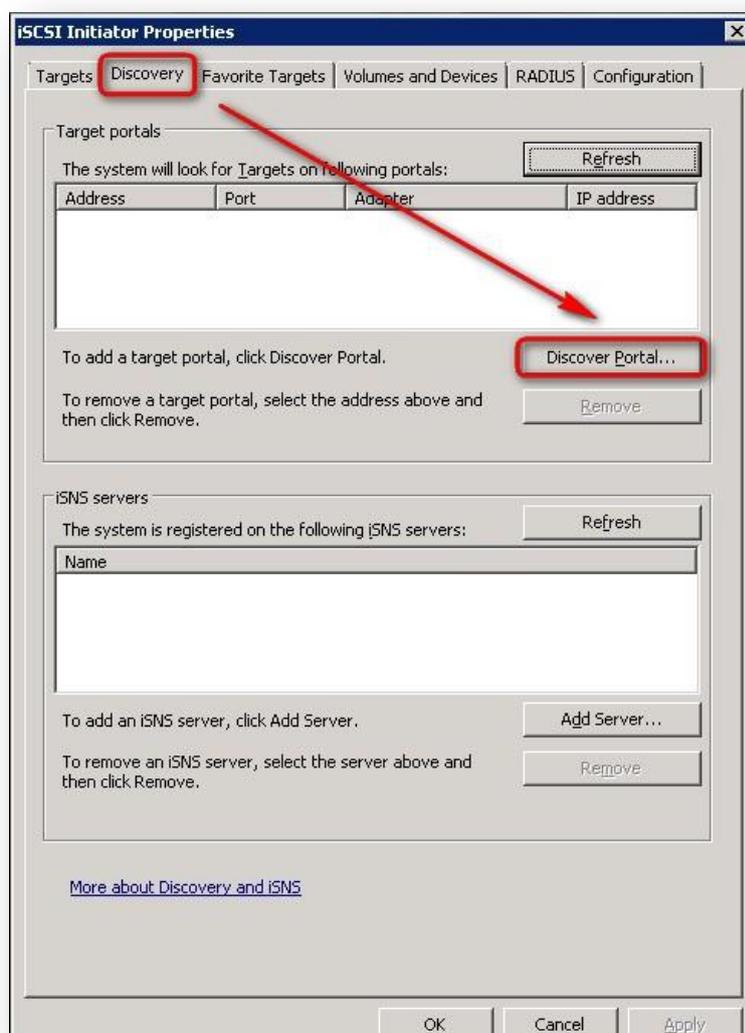
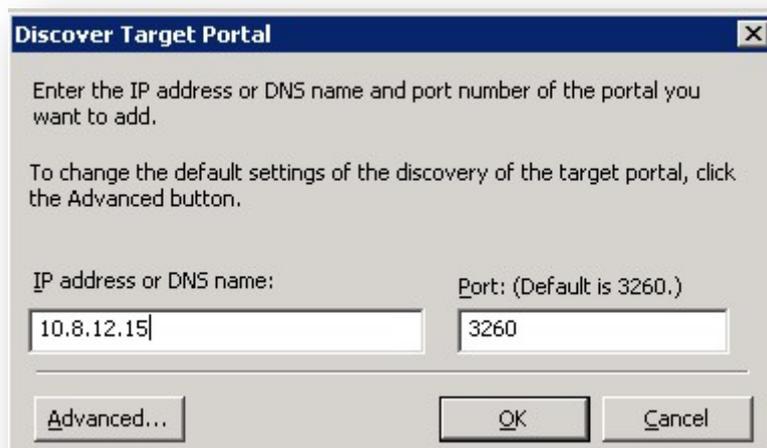From the Start menu, select "Administrative Tools" > "iSCSI Initiator".

The first time you start the iSCSI initiator, you will be prompted to start the iSCSI service.   Click "Yes" to start the iSCSI service.
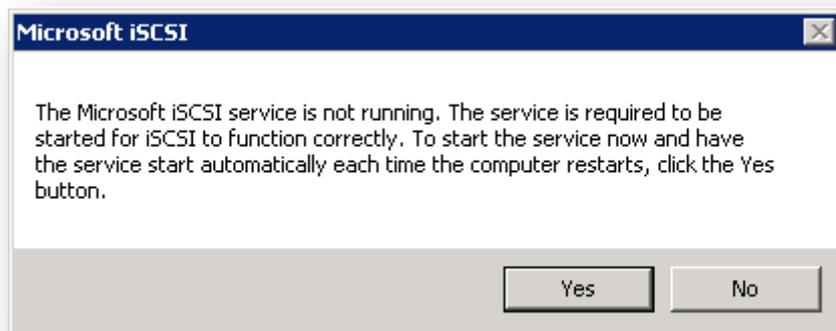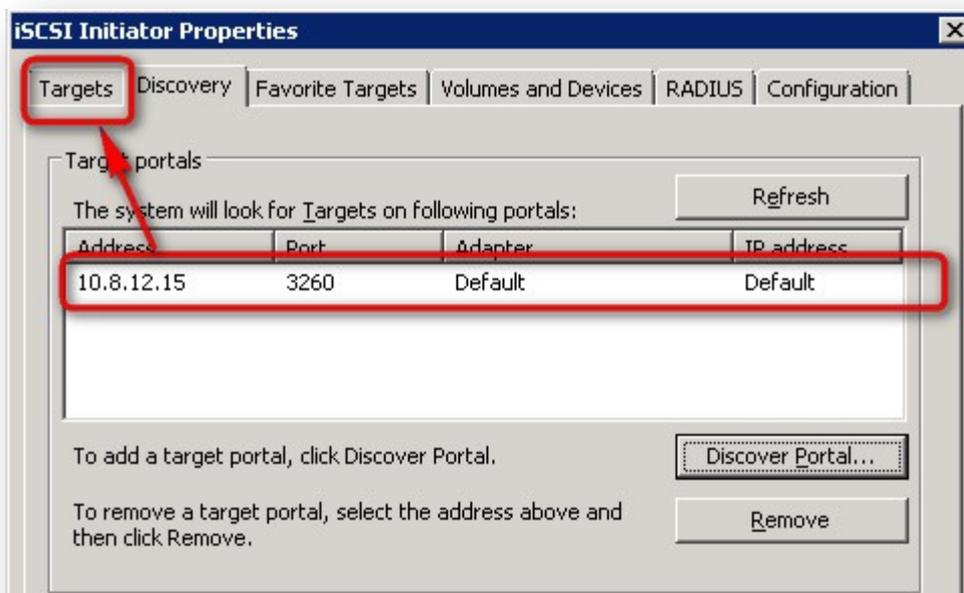

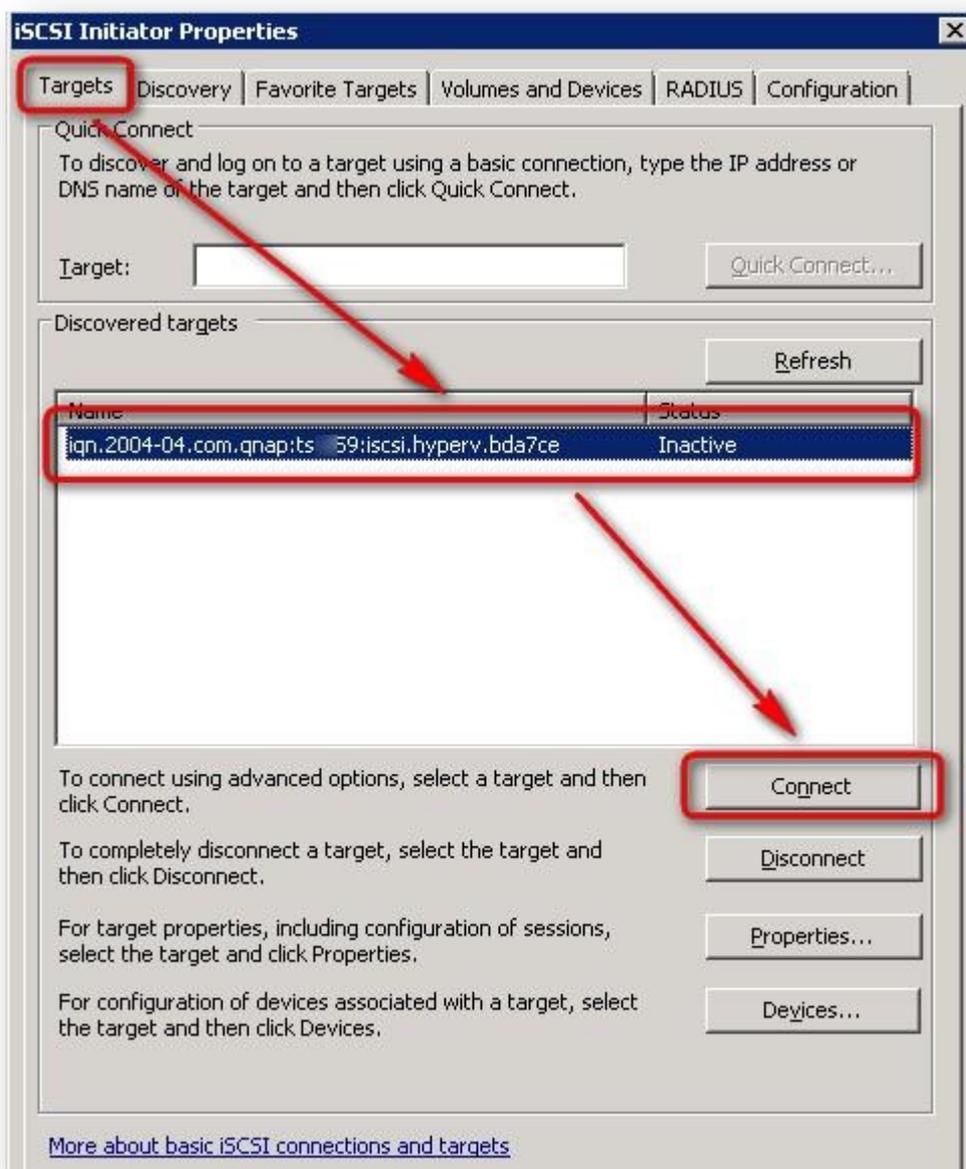Under the "Discovery" tab, click "Discover Portal".

Enter the IP address of the NAS and click "OK".

Next, go to the "Targets" tab.

Select the LUN **iqn.2004-04.com.qnap:ts-259:iscsi.hyperv.bda7ce** and click "Connect".

You can select the option "Add this connection to the list of Favorite Targets" to reconnect the iSCSI targets whenever the server restarts.

QNAP Turbo NAS (Intel-based NAS with firmware 3.2.3 or above) supports MPIO and MC/S. You may refer to the application notes "How to connect to iSCSI targets on QNAP NAS using MPIO on Windows 2008" and "How to connect to iSCSI targets on QNAP NAS using MCS on Windows 2008" on http://www.qnap.com/pro_features.asp for more details.
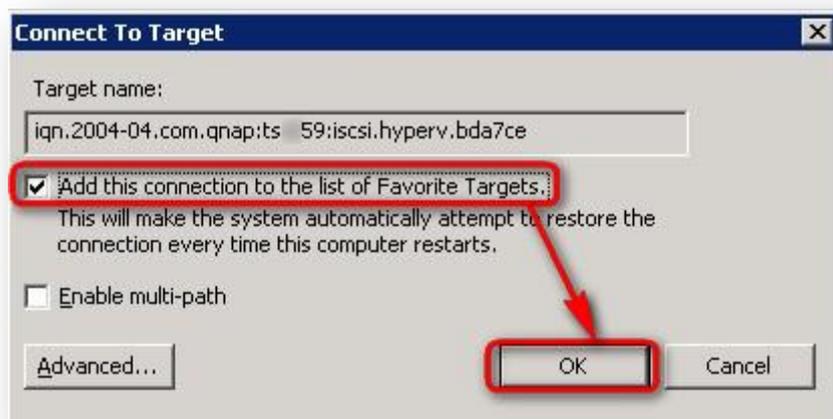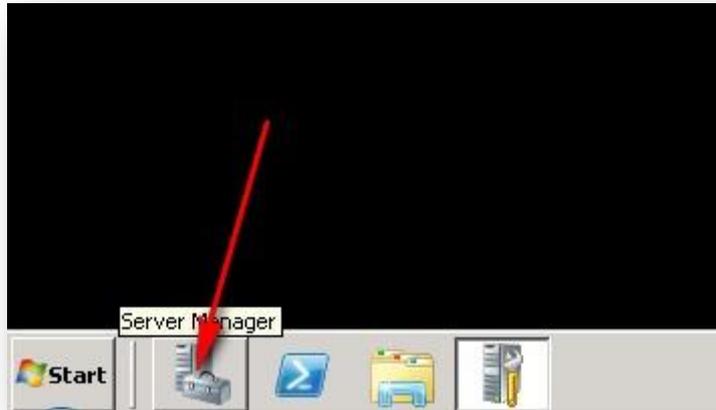

Now the target has been connected. You may exit this window.
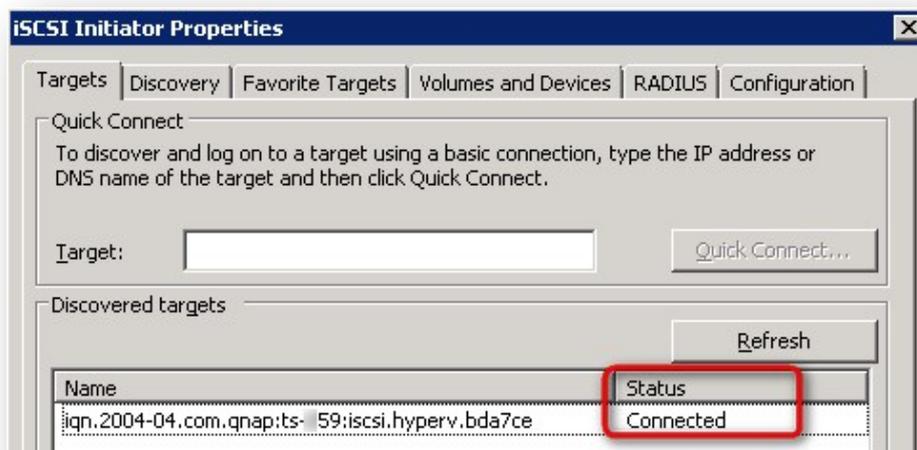
After connecting to the iSCSI LUN, you need to initialize and format the drive.
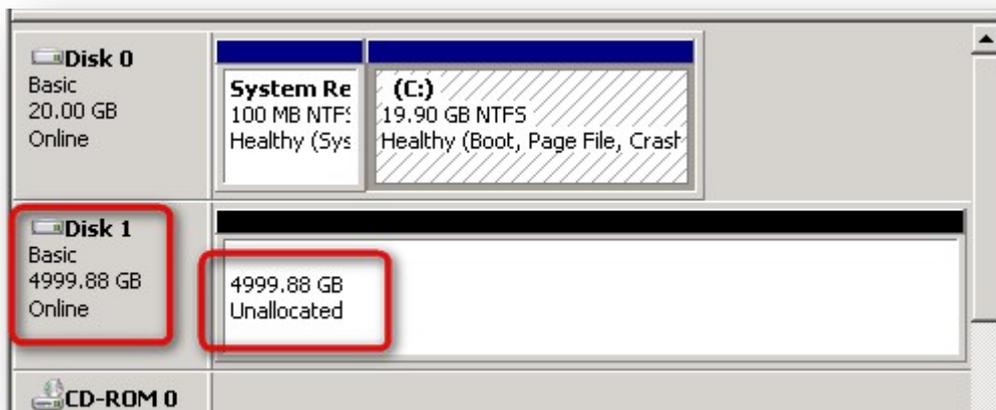
Go to Server Manager.

Select "Storage" and then "Disk Management". In this example the new drive is "Disk 1" with 5000GB unallocated. Select the disk and the partition style for the disk.
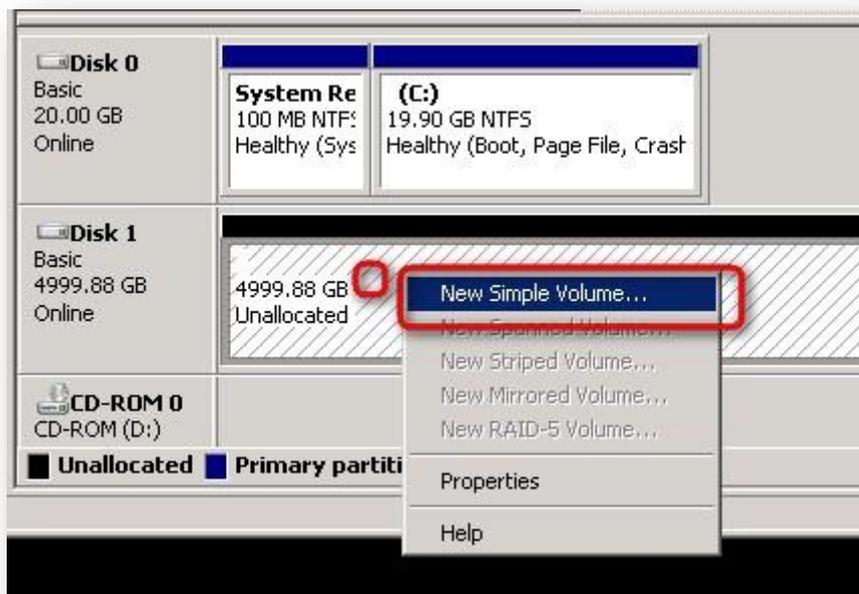
If the LUN is larger than 2TB, you MUST select GPT. If the LUN is smaller than 2TB, you can choose MBR. Click "OK".
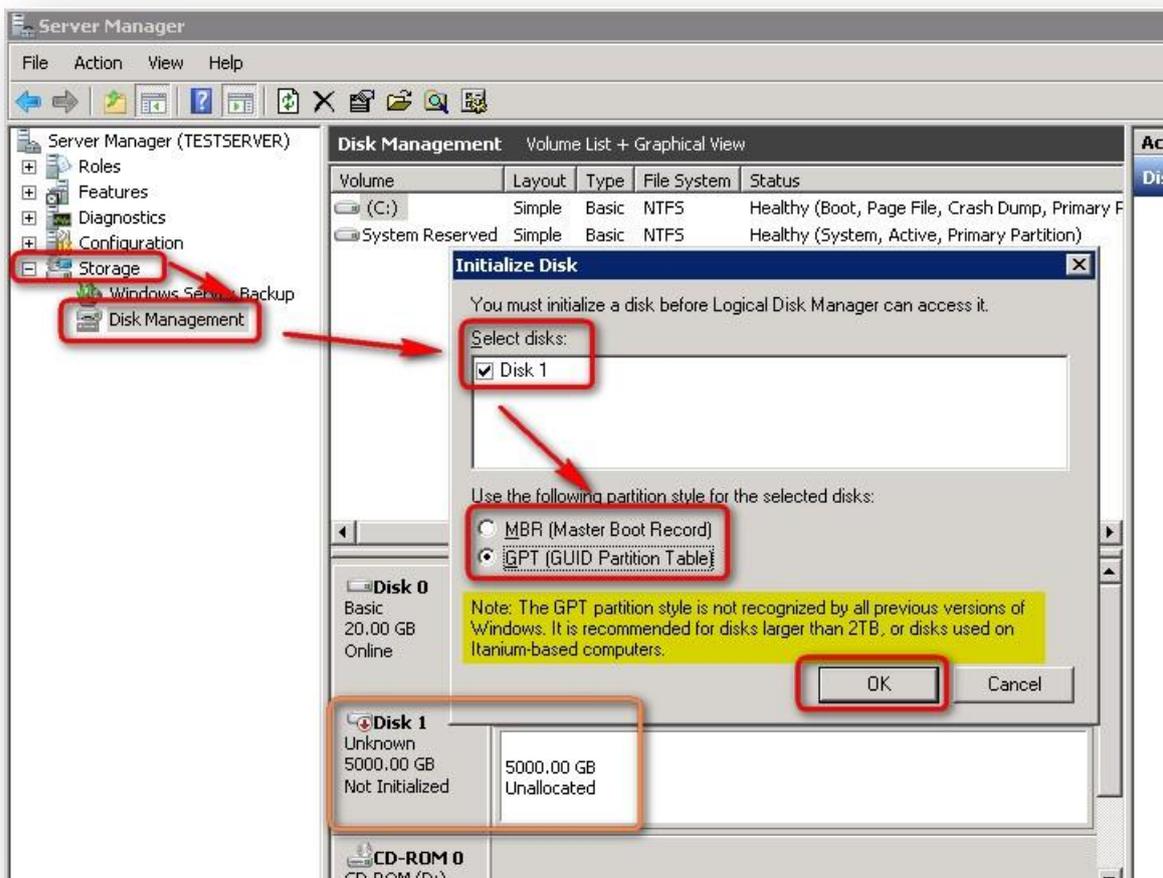
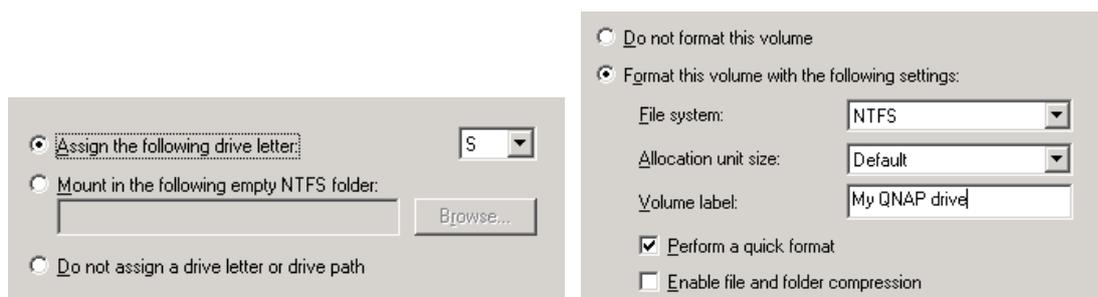After initializing the disk, it is online.

Format the disk.   Right click the volume and select "New Simple Volume".

Follow the wizard to format the drive.

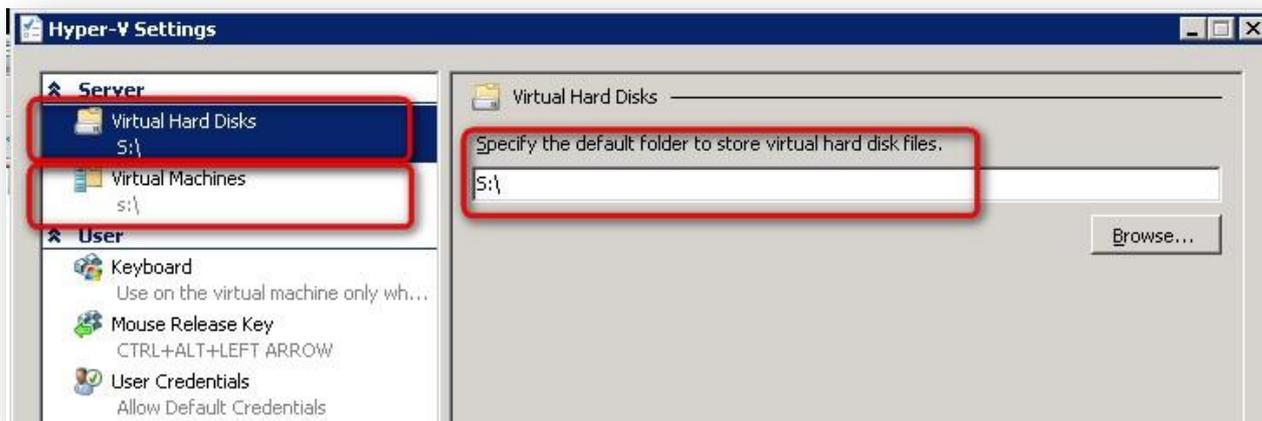For example, choose the drive letter S and name it as "My QNAP drive".

The drive is ready to use.

Use the new iSCSI drive in Hyper-V

Now start your Hyper-V Manager in Administrative Tools.　Right click your Hyper-V server and select "Hyper-V Settings".

Set the default server location to the newly created drive S:.　The new virtual machines will be stored on the S: drive on QNAP NAS.

Use Turbo NAS as a shared ISO repository by Microsoft Networking

You can use an ISO file to install a virtual machine with Hyper-V. You can store all your ISO files in a shared folder on the QNAP NAS, which is accessible by the Hyper-V servers.
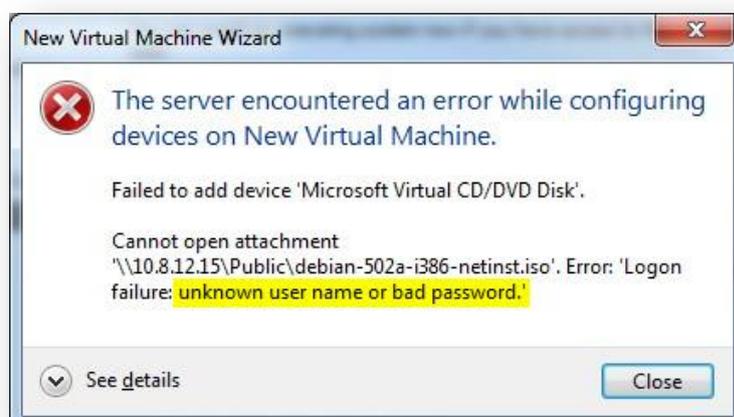
ISO file: An ISO image is an archive file (also known as a disc image) of an optical disc in a format defined by the International Organization for Standardization (ISO). You can create ISO files with free software.

Standalone mode

If the Hyper-V server is in workgroup mode (not joined to an Active Directory), you must allow "guest" to access the share folder which contains the ISO files.
If the guests are denied to access the share folder, you may encounter the following error.

![QNAP logo]

Login the NAS as an administrator. Go to "Access Right Management" > "Share Folders". Click ![icon] to edit the folder access right.

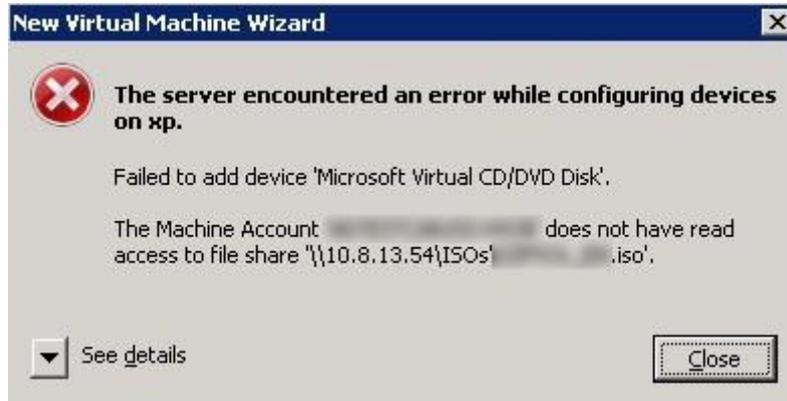Select "Read only" or "Full access" for the guest access right. Then click "Apply".

If the Hyper-V is a member of an Active Directory, you have to assign permission to your server to connect to the share folder on the NAS.

Hyper-V allows you to connect to a share folder to use an ISO files stored on it. Without the correct permission you will encounter the following error.

To use a shared folder, follow the instructions:

- Create a security group in Active Directory, for example "ComputerAccounts".
- Add all the computer accounts of all the Hyper-V servers in the group.
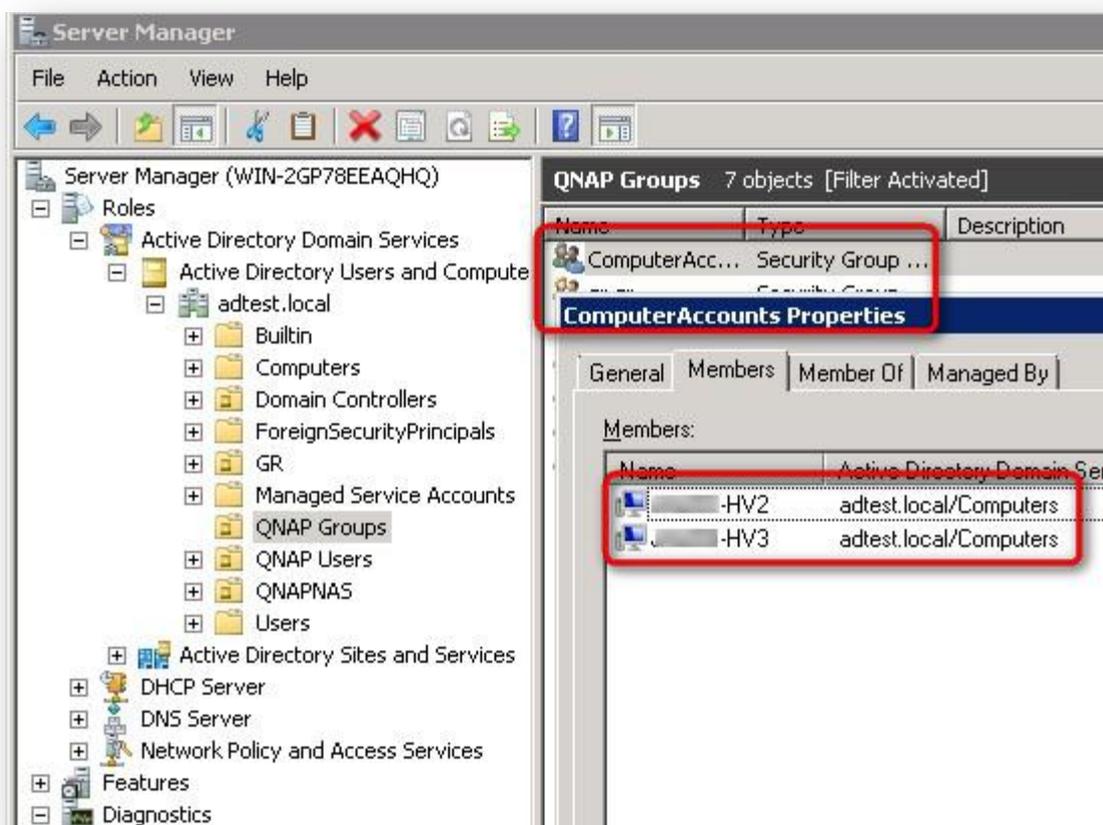
- Login the NAS as an administrator. Go to "Access Right Management" > "Share Folders". Click to edit the folder access right.

- Select "Domain Groups" from the drop down menu. Select the access right of "ComputerAccounts" as read only. Click "Apply".

You can use the share folder of the NAS as an ISO repository for the installation of virtual machines.
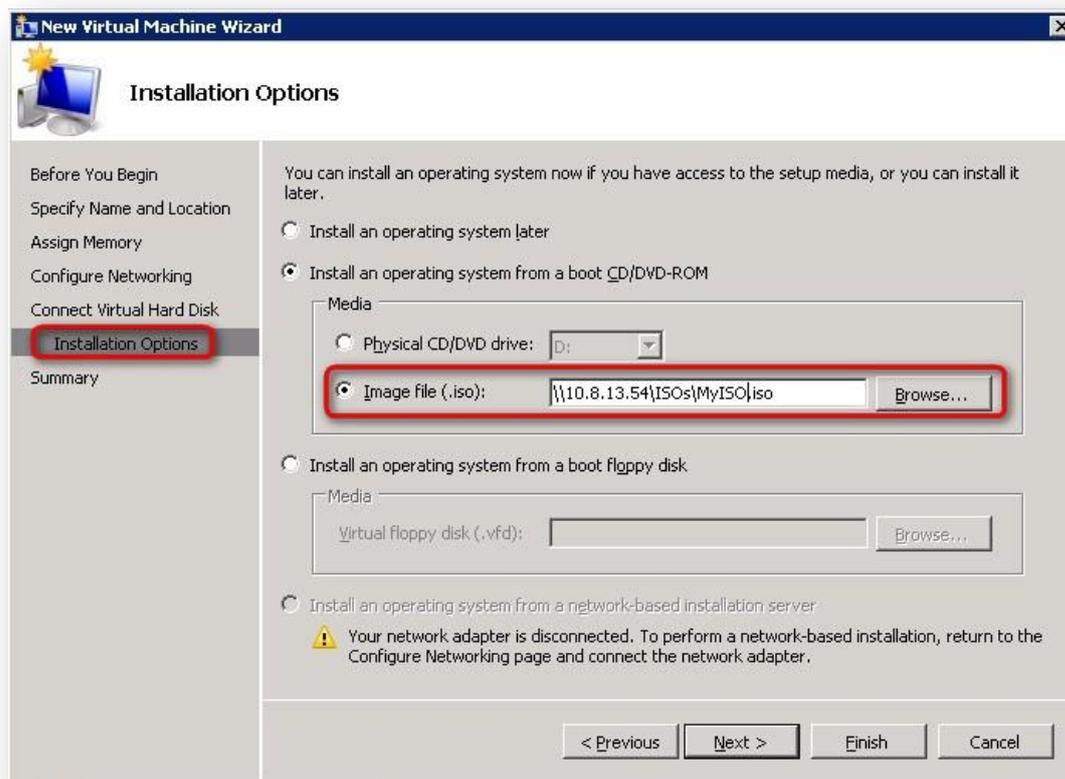
Additional information

"How to connect to iSCSI targets on QNAP NAS with MPIO on Windows 2008"
http://files.qnap.com/news/pressresource/product/How_to_connect_to_iSCSI_targets_on_QNAP_NAS_using_MPIO_on_Windows_2008.pdf

"How to connect to iSCSI targets on QNAP NAS with MCS on Windows 2008"
http://files.qnap.com/news/pressresource/product/How_to_connect_to_iSCSI_targets_on_QNAP_NAS_using_MCS_on_Windows_2008.pdf

"Microsoft iSCSI Software Initiator Version 2.X Users Guide"
 http://download.microsoft.com/download/A/E/9/AE91DEA1-66D9-417C-ADE4-92D824B871AF/uGuide.doc

Microsoft virtualization: http://www.microsoft.com/virtualization

Microsoft Hyper-V Server 2008 R2: http://www.microsoft.com/hyper-v-server