

# StarWind iSCSI SAN & NAS:

HA Maintenance and Configuration Changes  
April 2013

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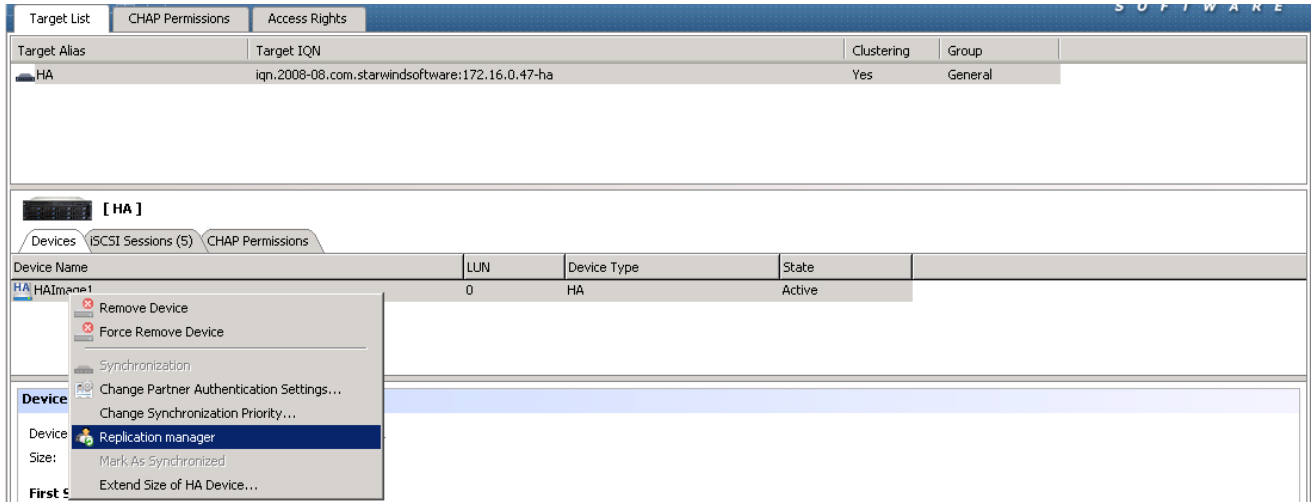
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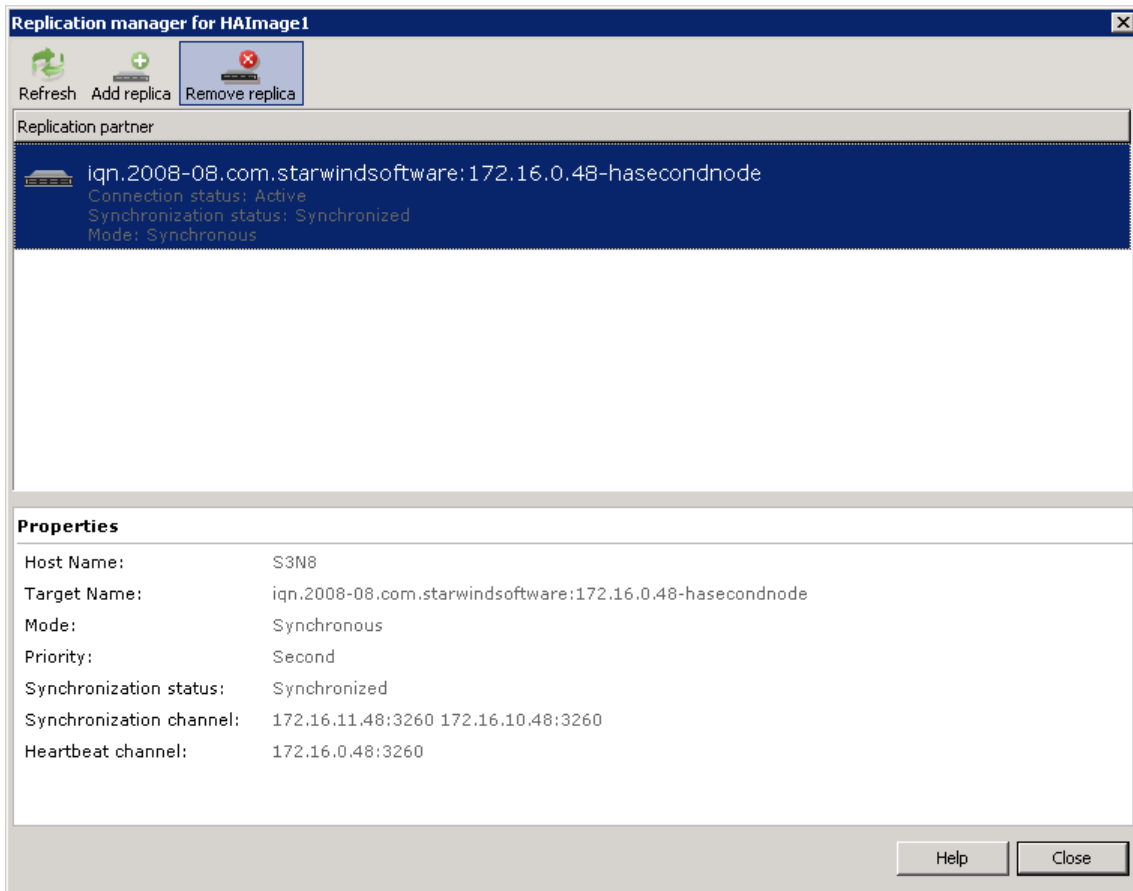
## CHANGING AN HA PARTNER NODE

Take the following actions to change an HA partner node:

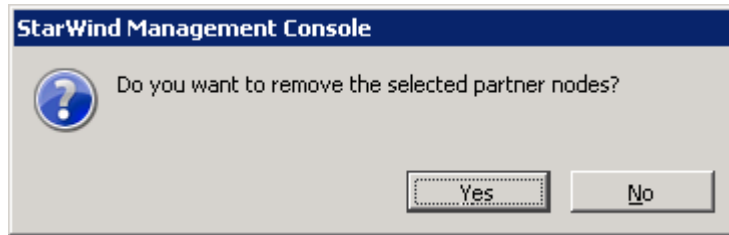
1. Right-click the required HA device and select **Replication manager** from the shortcut menu.



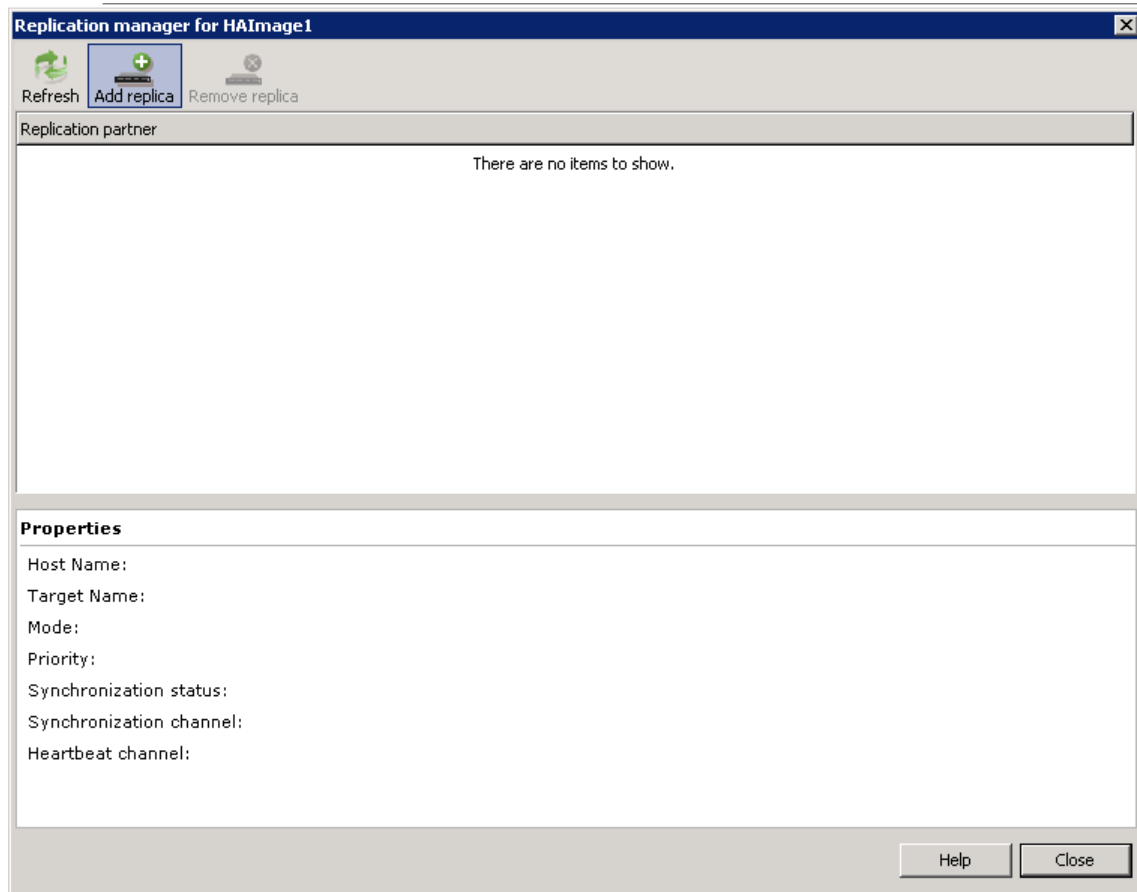
2. HA Device Replication manager appears. Click the **Remove replica** menu button.



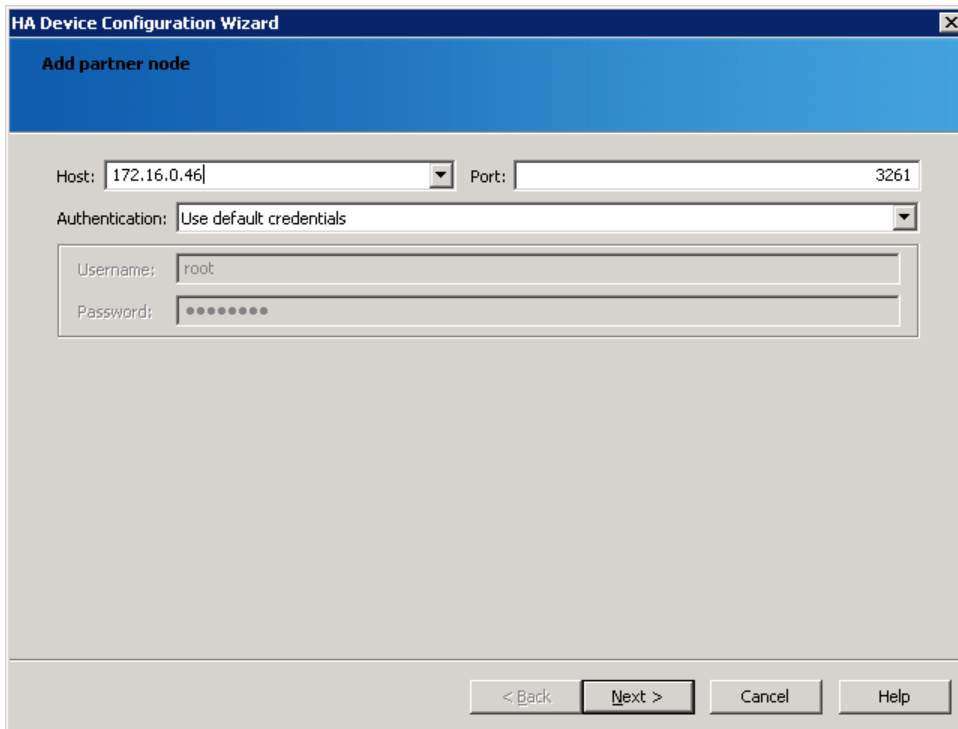
3. Click **Yes** to confirm the deletion.



4. Click the **Add replica** menu button.



3. Specify the partner node parameters.



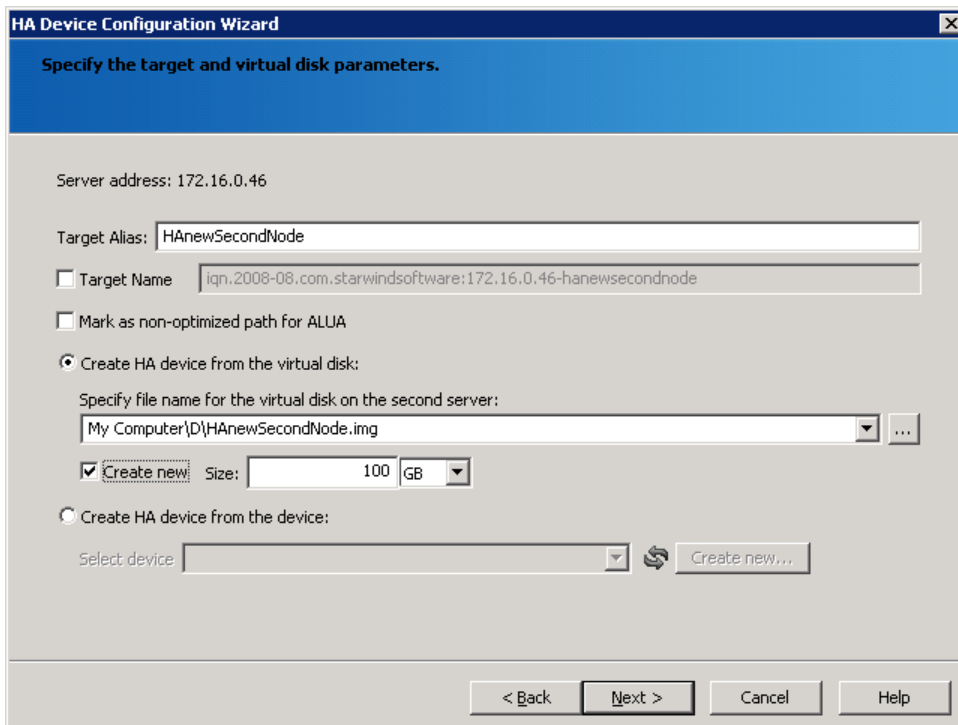
The screenshot shows the 'Add partner node' step of the HA Device Configuration Wizard. The window title is 'HA Device Configuration Wizard'. The main heading is 'Add partner node'. The form contains the following fields:

- Host: 172.16.0.46 (dropdown menu)
- Port: 3261
- Authentication: Use default credentials (dropdown menu)
- Username: root
- Password: [masked]

At the bottom, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

4. Click **Next** to continue.

5. Specify target and virtual disk parameters.



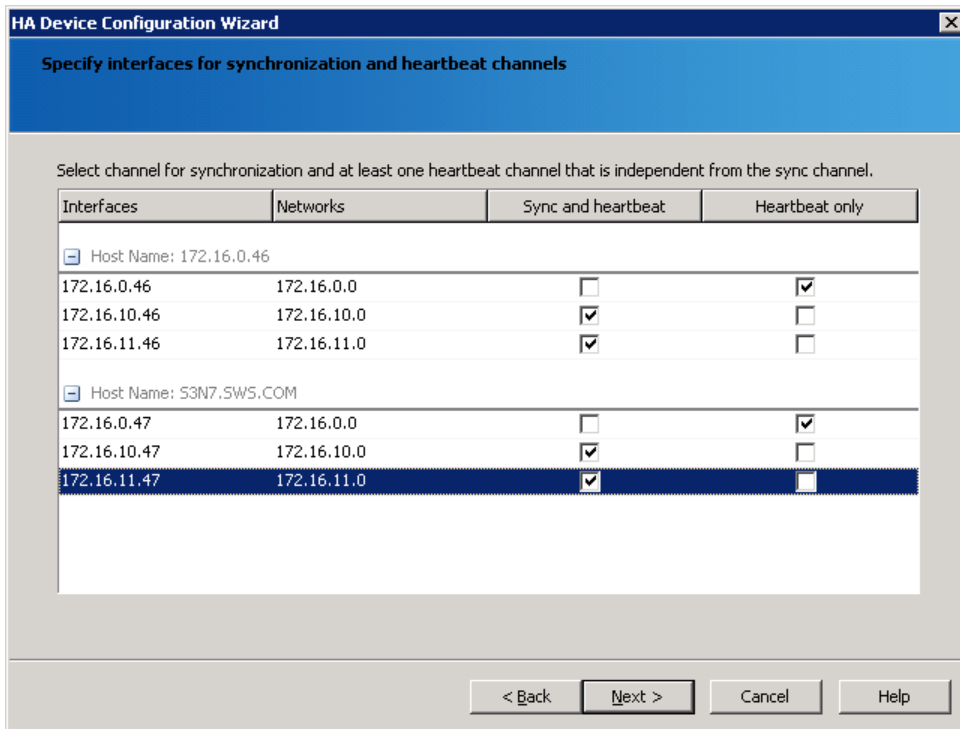
The screenshot shows the 'Specify the target and virtual disk parameters' step of the HA Device Configuration Wizard. The window title is 'HA Device Configuration Wizard'. The main heading is 'Specify the target and virtual disk parameters.'. The form contains the following fields and options:

- Server address: 172.16.0.46
- Target Alias: HANewSecondNode
- Target Name:  iqn.2008-08.com.starwindsoftware:172.16.0.46-hanewsecondnode
- Mark as non-optimized path for ALUA:
- Create HA device from the virtual disk:
- Specify file name for the virtual disk on the second server: My Computer\D\HANewSecondNode.img
- Create new:  Size: 100 GB
- Create HA device from the device:
- Select device: [dropdown menu] Create new...

At the bottom, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

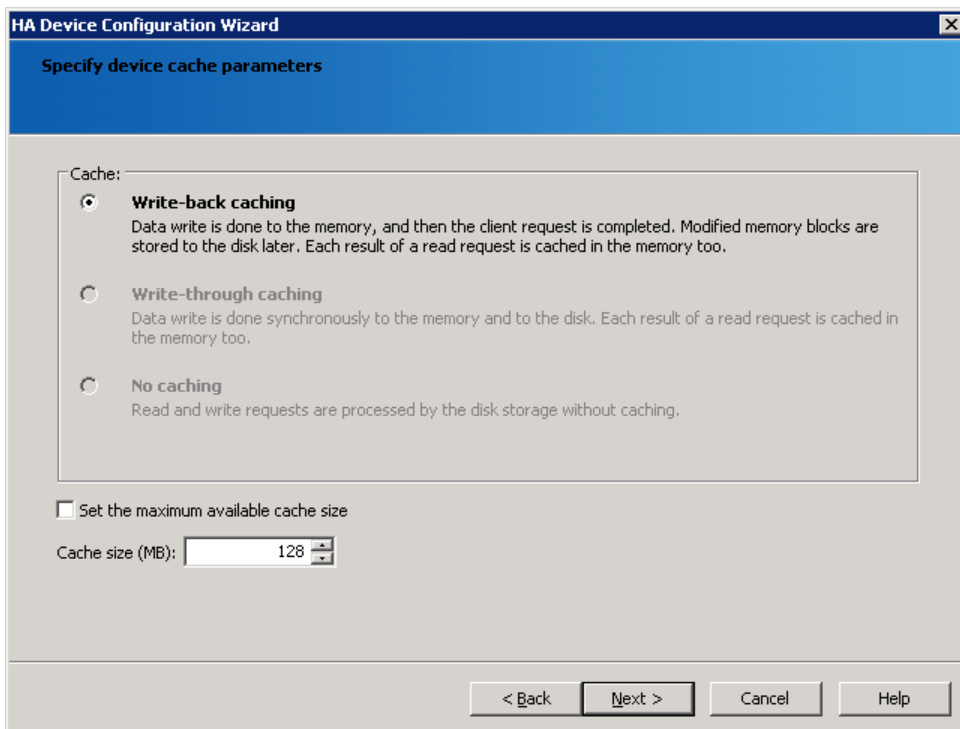
6. Click **Next** to continue.

7. Specify synchronization and heartbeat channels.



8. Click **Next** to continue.

9. Specify cache parameters (the cache type is set automatically in accordance with the partner cache type).



10. Click **Next** to continue.

11. Confirm the settings of a new HA partner target and click **Next** to continue.
12. Click **Finish** to close the wizard.

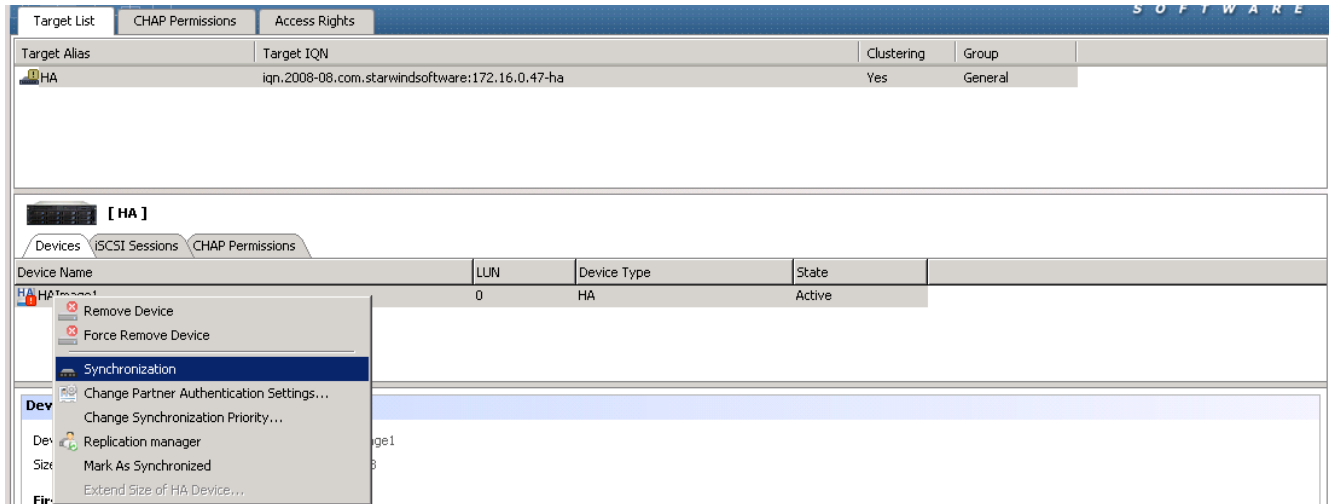


## MANUAL SYNCHRONIZATION

If synchronization of HA device nodes did not start automatically after you brought the nodes online, you can manually start it.

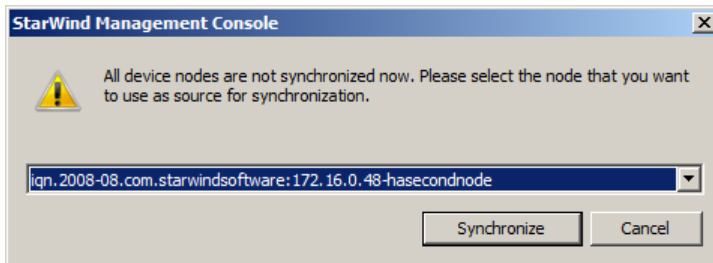
### To start an HA nodes synchronization:

1. Right-click the required HA device and select **Synchronization** from the shortcut menu.



2. Select the node you want to use as a source of synchronization.

**Note:** If you do not know which target has to be used as a source of synchronization, check the **Server Log** or **Event** tabs of each StarWind Server. Select the StarWind Service that went offline last.

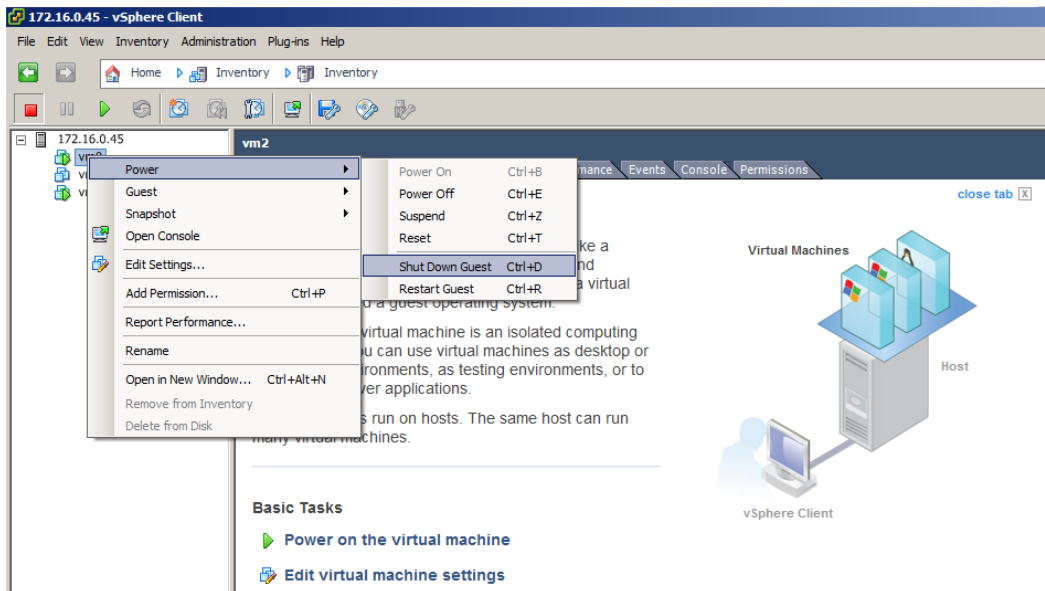


3. Click **Synchronize**.

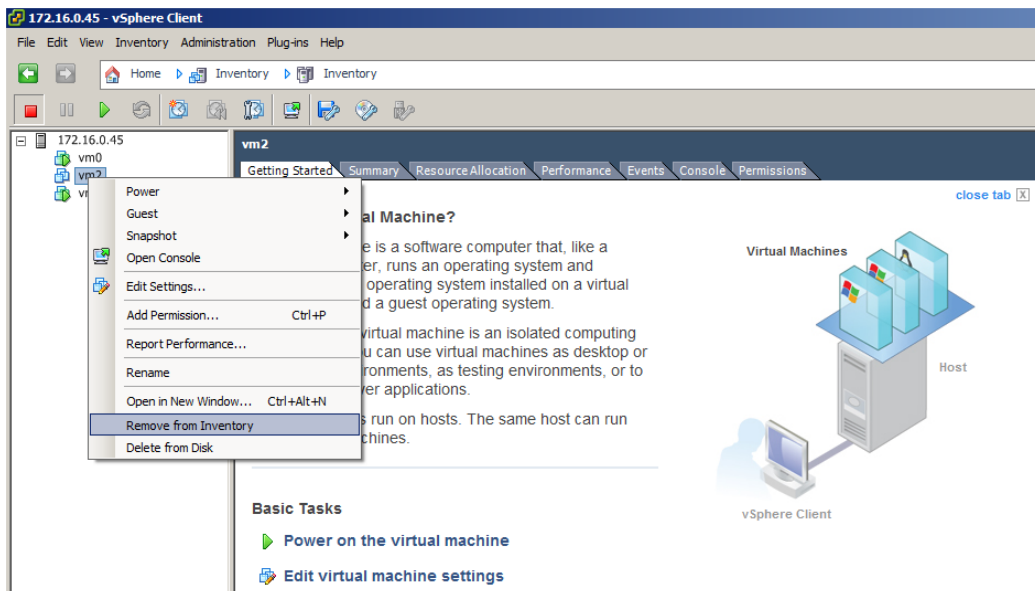
## PREPARING AN HA DEVICE FOR PROLONGED DOWNTIME

To prepare an HA device for prolonged downtime (for ESXi):

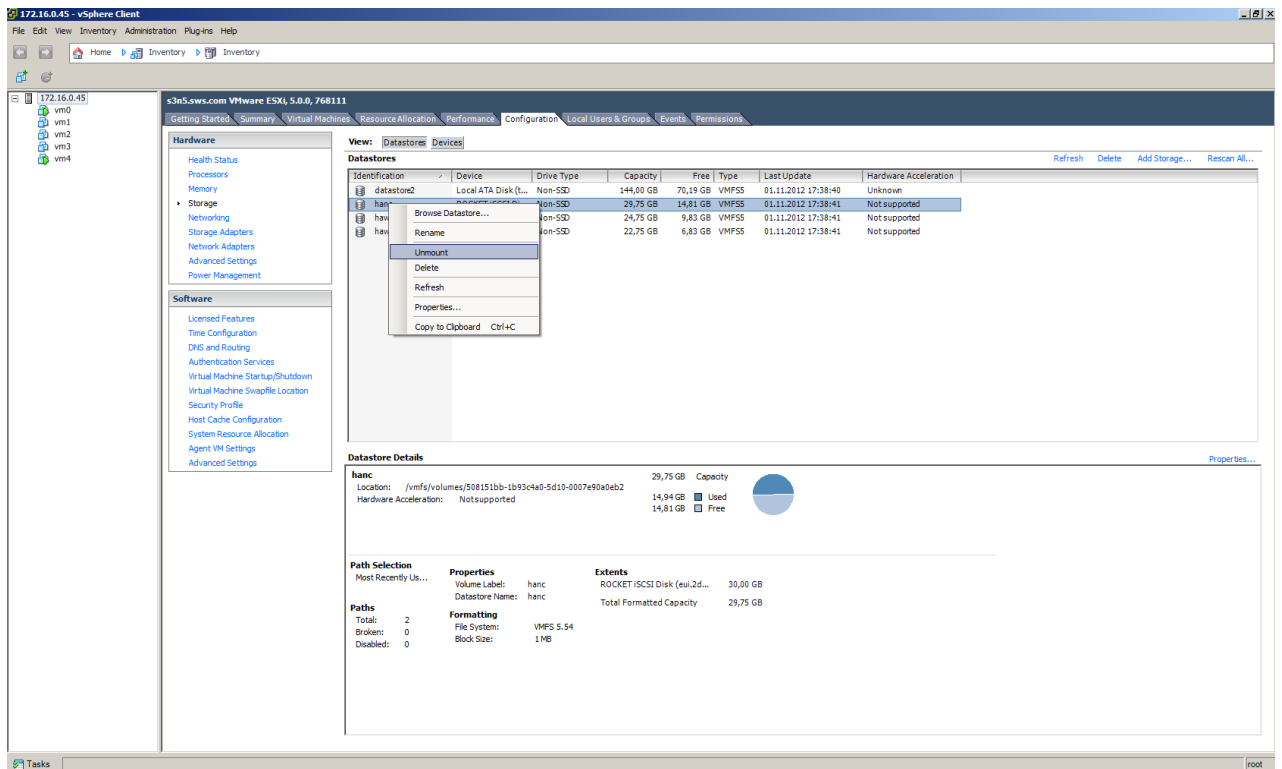
1. Disconnect targets of an HA device from the client nodes properly.
2. Launch **vSphere Client: Start->All Programs->VMware->VMware vSphere Client.**
3. Shut down all VMs that store their data on the StarWind HA device by right-clicking a VM and selecting **Power -> Shut Down Guest.**



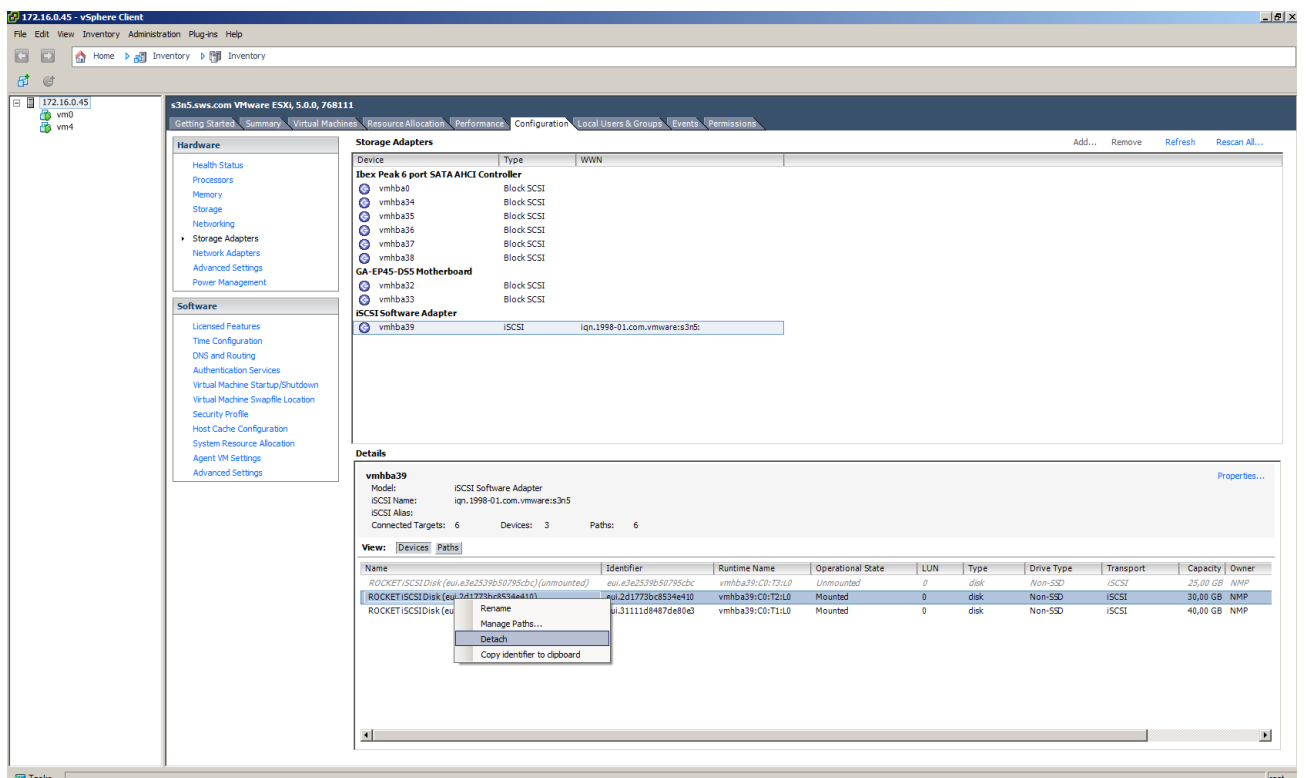
4. Right-click each VM that stores its data on the StarWind HA device and click **Remove from Inventory.**



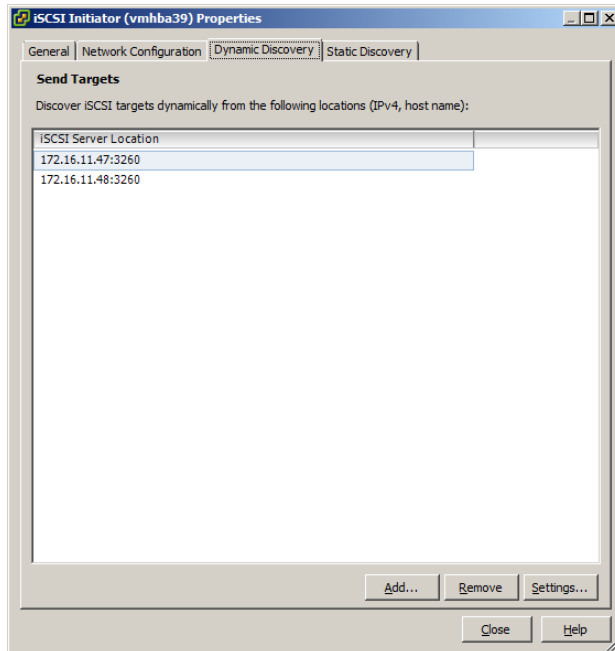
5. Click the **Configuration** tab.
6. Choose **Storage** in the **Hardware** pane. The list of datastores appears.
7. Right-click each datastore that belongs to the HA device and click **Unmount** on the shortcut menu.



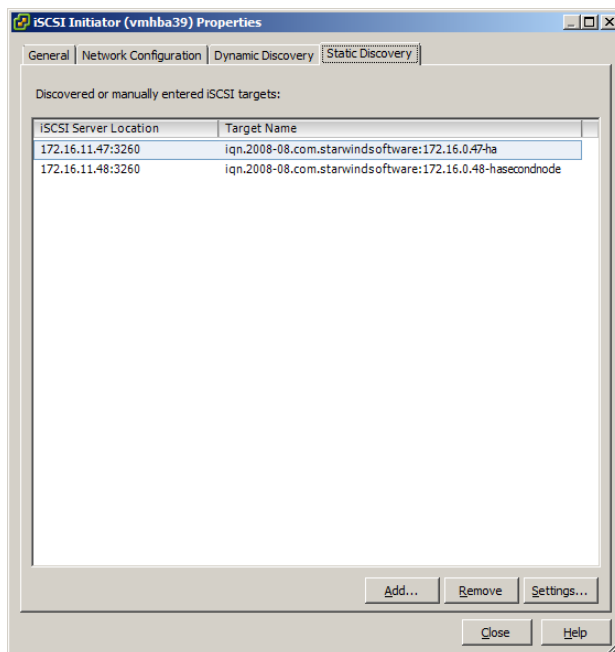
8. Choose **Storage Adapters** in the **Hardware** pane. Select a storage adapter from the **iSCSI Software Adapter** list.
9. In the **Details** section right-click each device and click **Detach** on the shortcut menu.



10. Choose **Storage Adapters** in the **Hardware** pane.
11. Select a storage adapter from the **iSCSI Software Adapter** list.
12. Click the **Properties** link in the **Details** section.
13. In the **iSCSI Initiator** window, switch to the **Dynamic Discovery** tab.
14. Select each StarWind Server and click the **Remove** button.

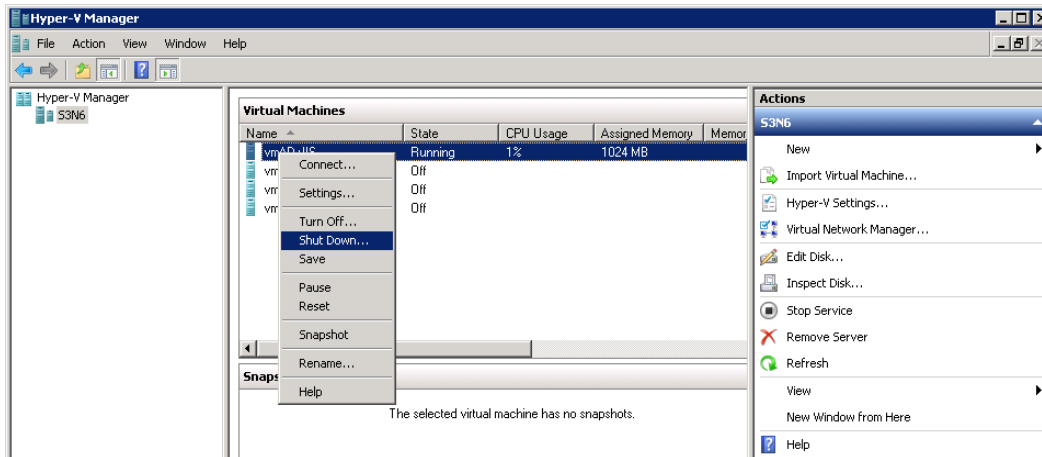


15. Switch to the **Static Discovery** tab of the **iSCSI Initiator** window.
16. Select each StarWind target and click **Remove**.

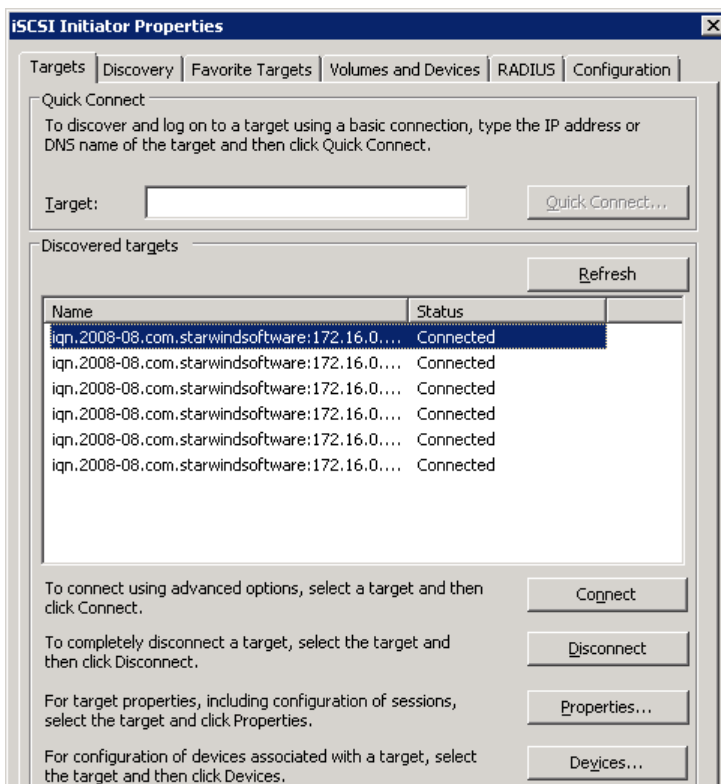


### To prepare an HA device for prolonged downtime (for Hyper-V servers):

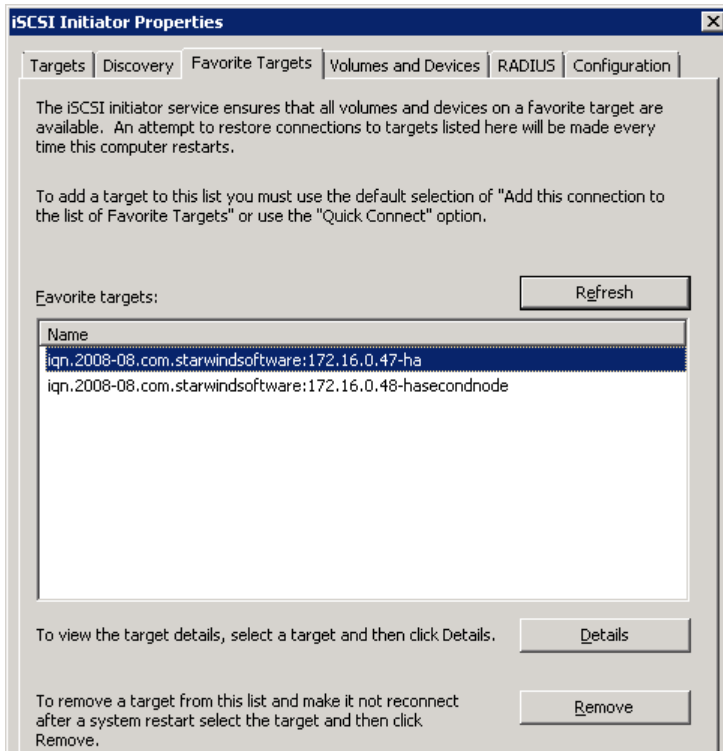
1. Disconnect targets of an HA device from the client nodes properly.
2. Launch **Hyper-V Manager: Start->Administrative Tools->Hyper-V Manager**.
3. Right-click each VM that stores its data on the StarWind HA device and click **Shut Down**.



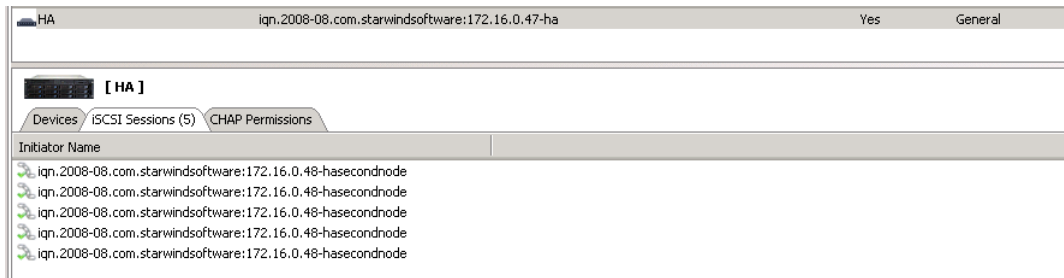
4. Launch **iSCSI Initiator: Start->Administrative Tools->iSCSI Initiator**.
5. Click each StarWind target and click **Disconnect**.



6. Switch to the **Favorite Targets** tab. Select each HA target and click the **Remove** button.

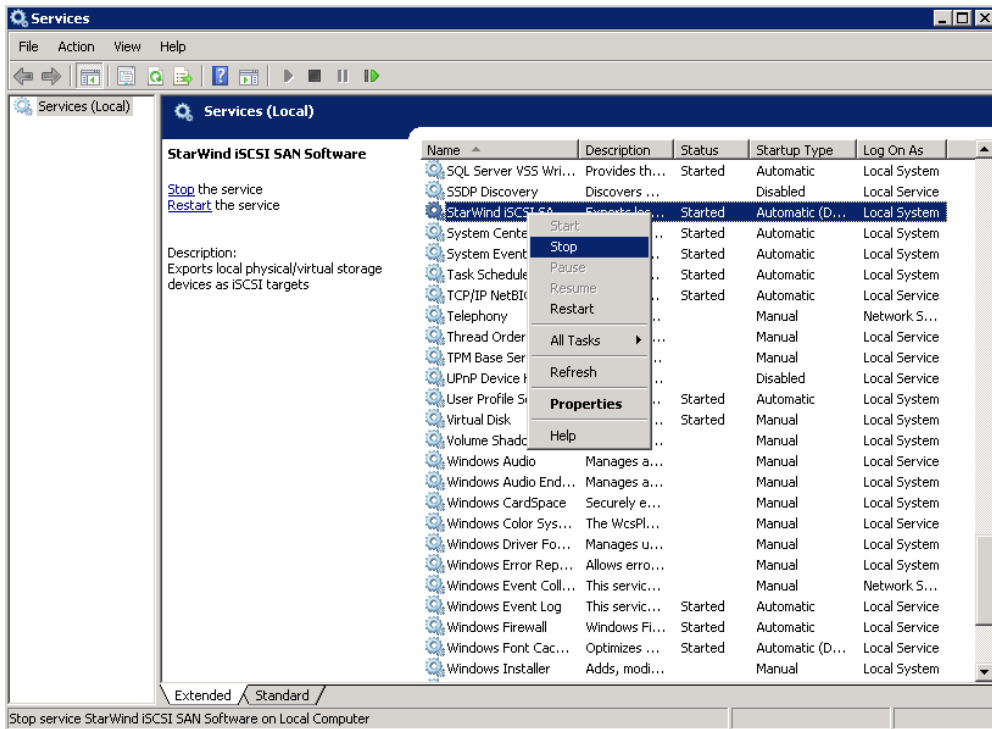


7. Launch **StarWind Management Console** and select the **Targets** item. Go to the **Target List** tab and select the **iSCSI Sessions** tab. Make sure that there are no client connections.



8. Go to **Start->Administrative Tools->Services**.

9. In the **Services** window, right-click the **StarWind iSCSI SAN** service and click **Stop** on the shortcut menu.

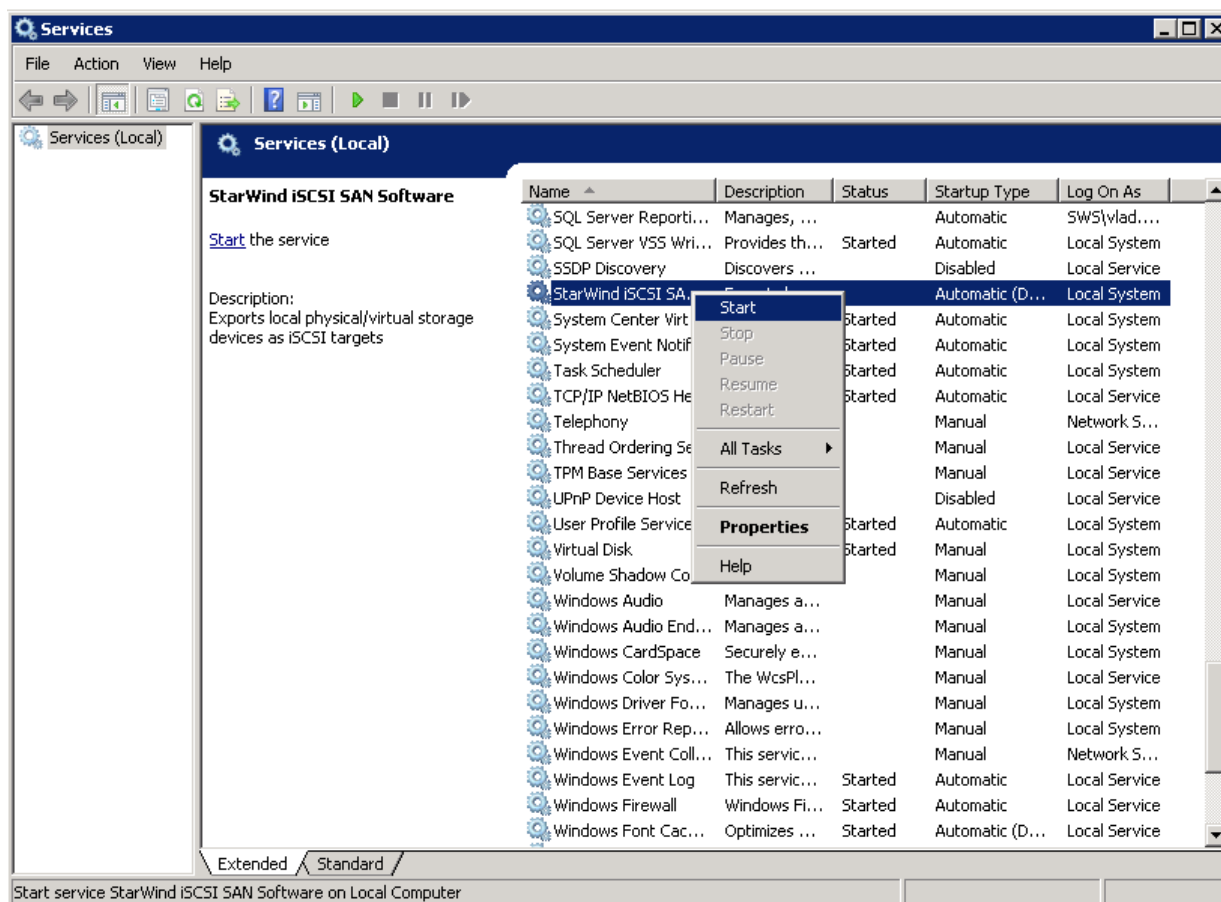


## RESTORING A STARWIND SERVER AFTER DOWNTIME

1. Go to **Start->Administrative Tools->Services**.
2. In the **Services** window, right-click the **StarWind iSCSI SAN** service and click **Start** on the shortcut menu.

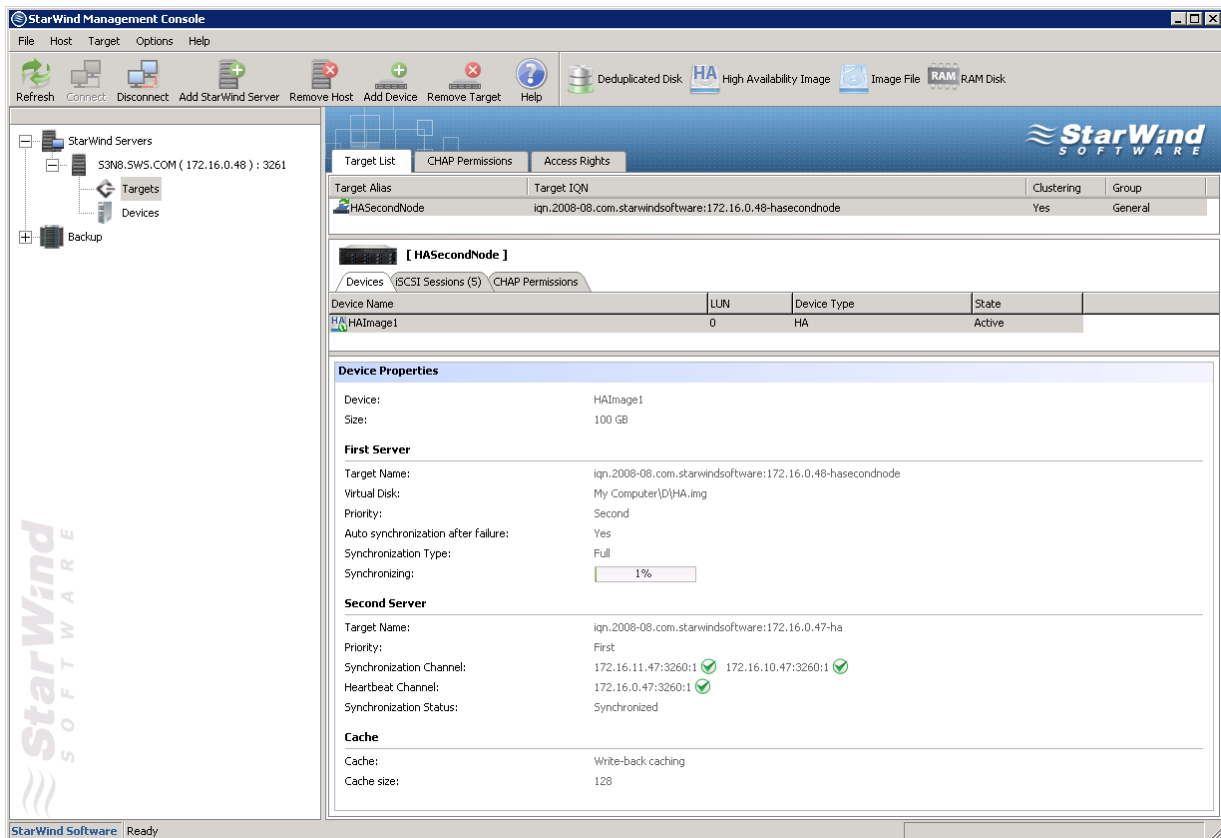
**Note:** You will need to start the service in two cases:

- Host operating system of StarWind was online during planned downtime
- Automatic start for StarWind service was disabled



3. Launch **StarWind Management Console** and connect StarWind Servers (please refer to StarWind Help or [StarWind Quick Start Guide](#) for more detailed information).
4. Select an HA device on the **Target List** tab and check its synchronization status below, in **Device Properties**.
5. If synchronization does not start automatically, perform start it manually (see the **Manual Synchronization** section). Wait until synchronization is complete.

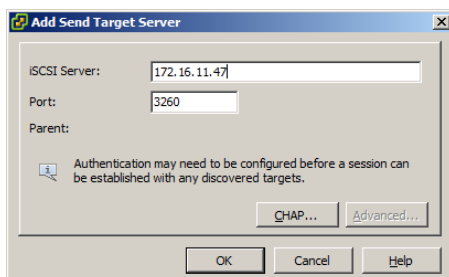




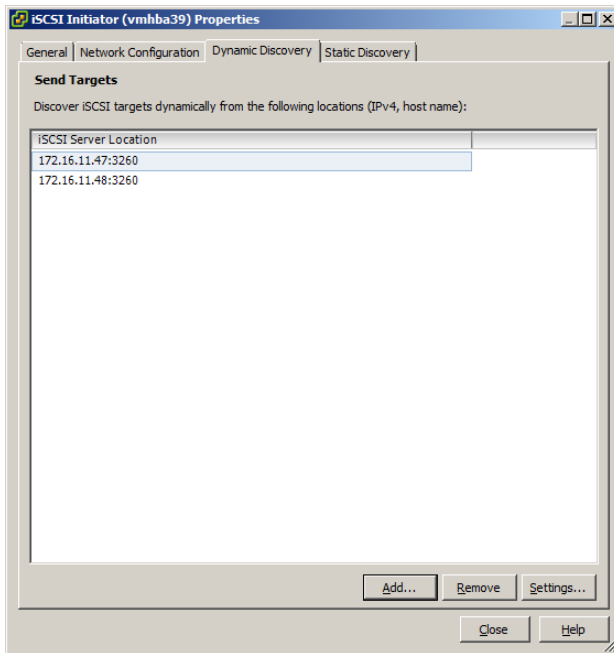
## 6. Connect HA targets to the client node.

### Take the following steps on ESXi servers:

1. Launch **vSphere Client: Start->All Programs->VMware->VMware vSphere Client.**
2. Switch to the **Configuration** tab and click **Storage Adapters** in the **Hardware** pane.
3. Select a storage adapter from the **iSCSI Software Adapter** list and click the **Properties** link in the **Details** section.
4. Switch to the **Dynamic Discovery** tab of the **iSCSI Initiator** window.
5. Click **Add**.
6. Enter an IP address and port of a StarWind Server.
7. Click **OK**.



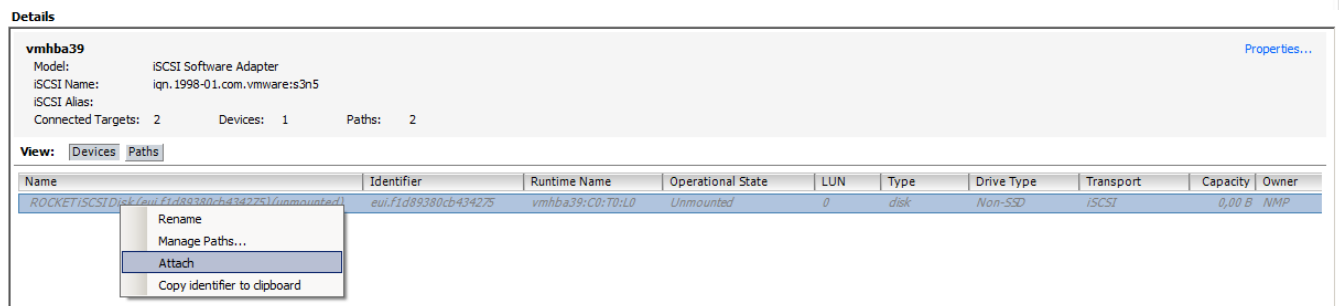
8. Perform the same action for all StarWind Servers.



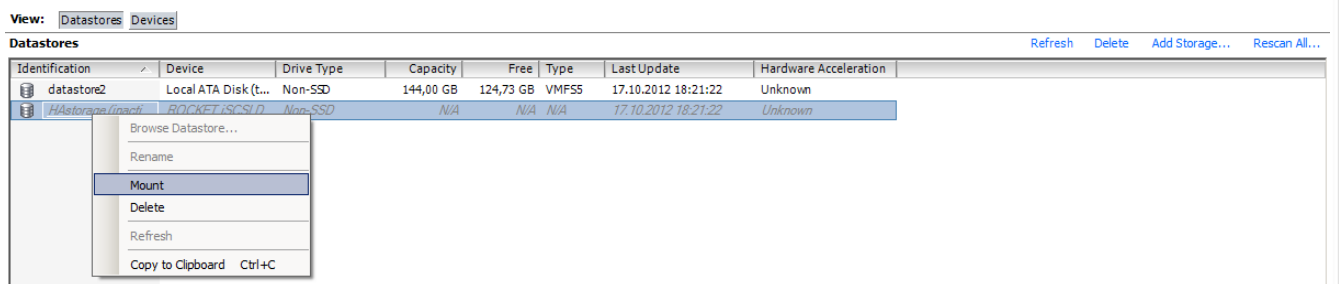
9. Switch to the **Configuration** tab and select **Storage Adapters** in the **Hardware** pane.

10. Select a storage adapter from the **iSCSI Software Adapter** list.

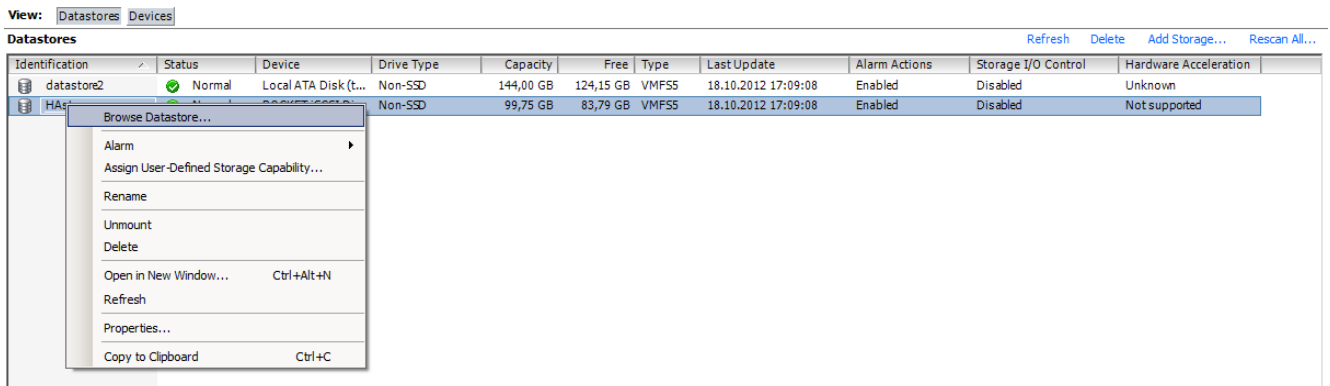
11. Right-click each device and click **Attach**.



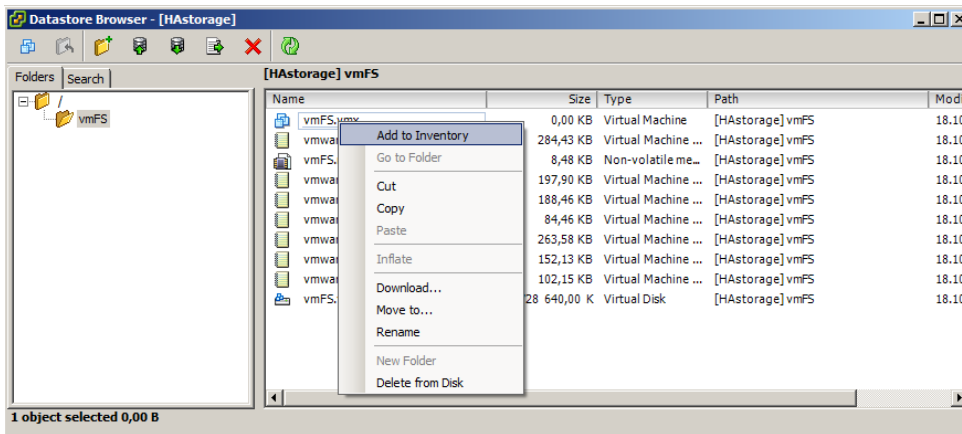
12. Select **Storage** in the **Hardware** pane. Right-click the required datastore and select **Mount**.



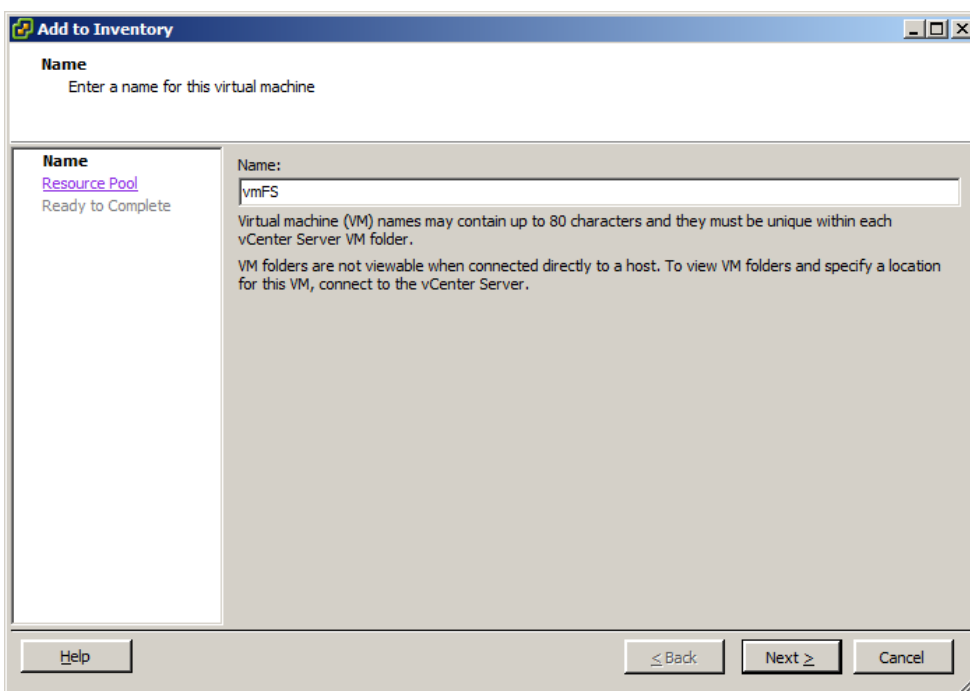
13. Now you can register a virtual machine. Right-click the appropriate datastore and click **Browse Datastore** on the shortcut menu.



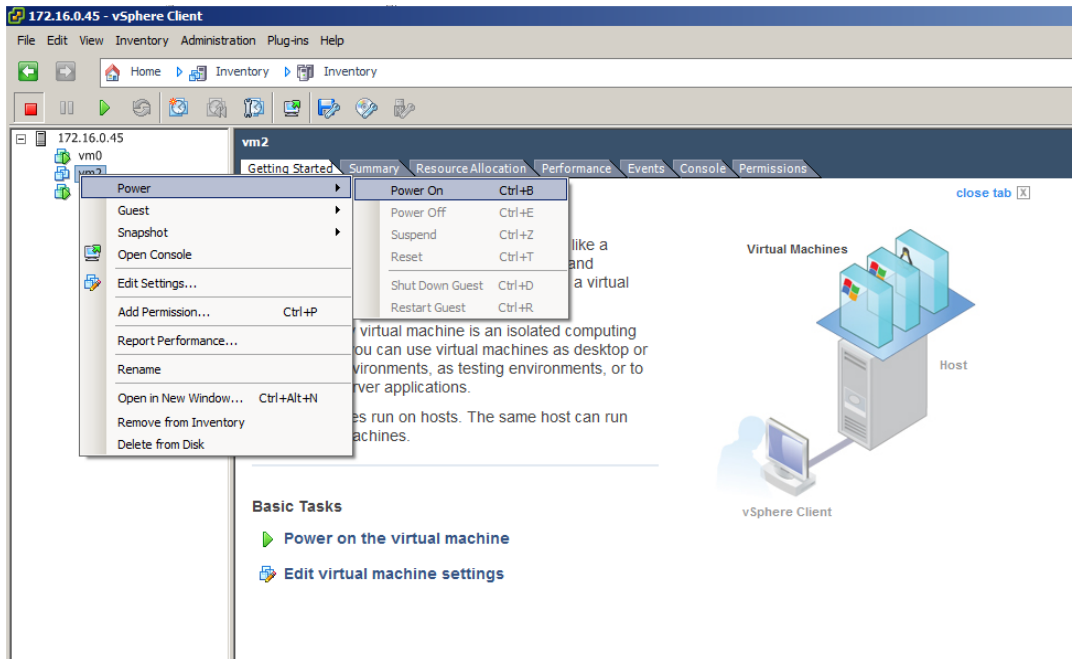
14. Navigate to the folder named after the virtual machine. Right-click the <virtual machine>.vmx file and click **Add to Inventory**.



15. The **Add to Inventory** wizard opens. Follow the wizard’s steps to add a virtual machine.

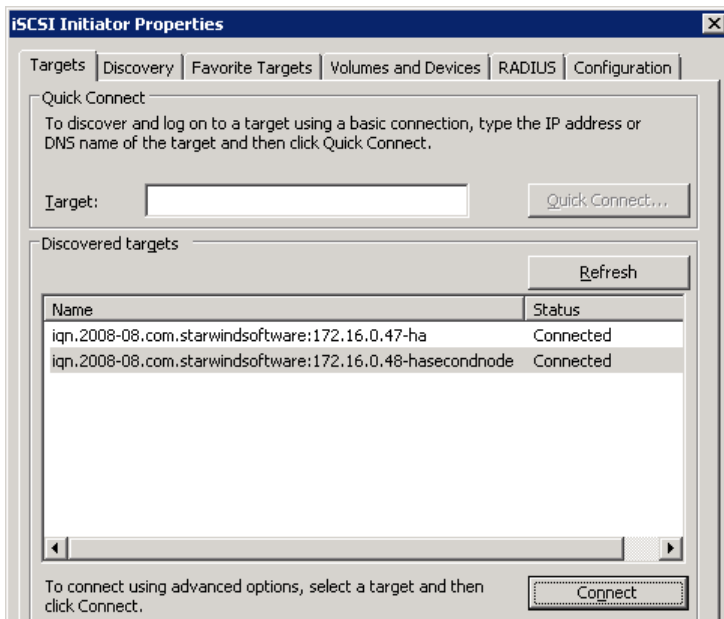


**16. Right-click a VM and click Power -> Power On.**



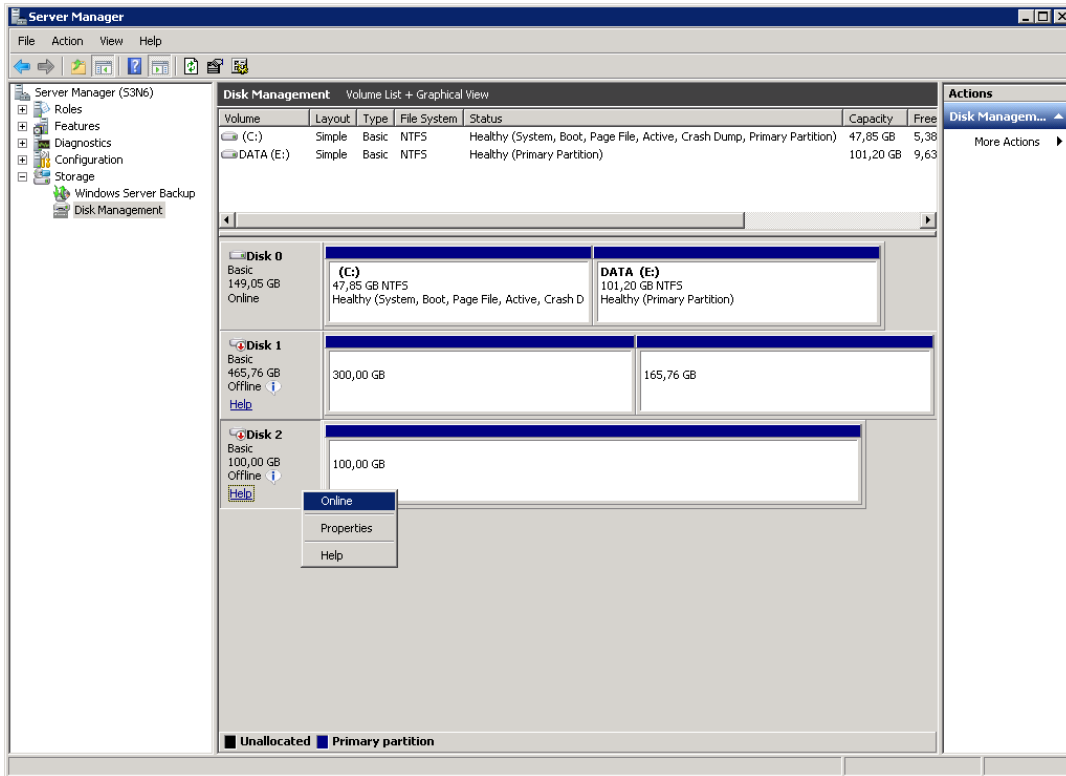
**Take the following steps on Hyper-V servers:**

1. Launch iSCSI Initiator: **Start->Administrative Tools->iSCSI Initiator.**
2. Select each target and click **Connect.**

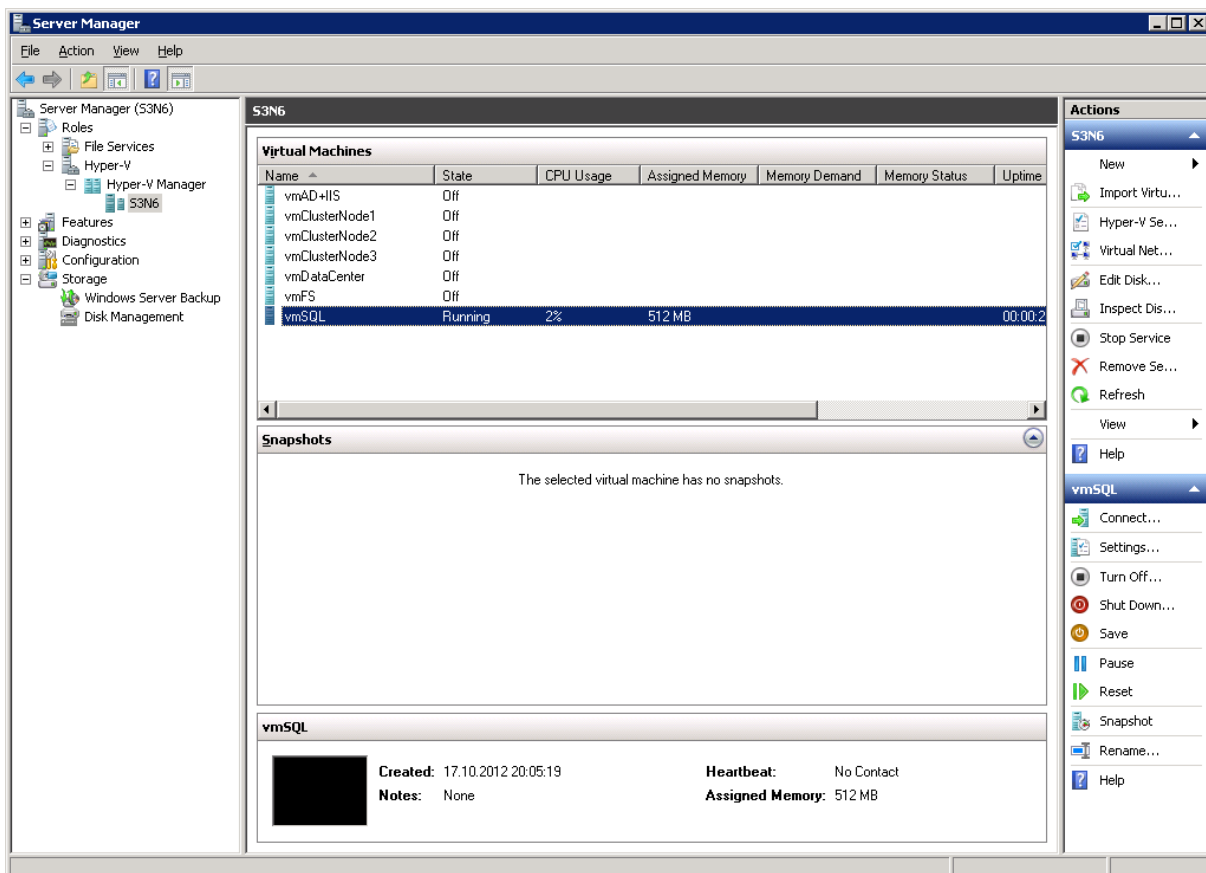


3. Launch **Server Manager: Start->Administrative Tools->Server Manager.**

- Click the **Disk Management** item and check whether the disk is online. If needed right-click the disk and click **Online** on the shortcut menu.



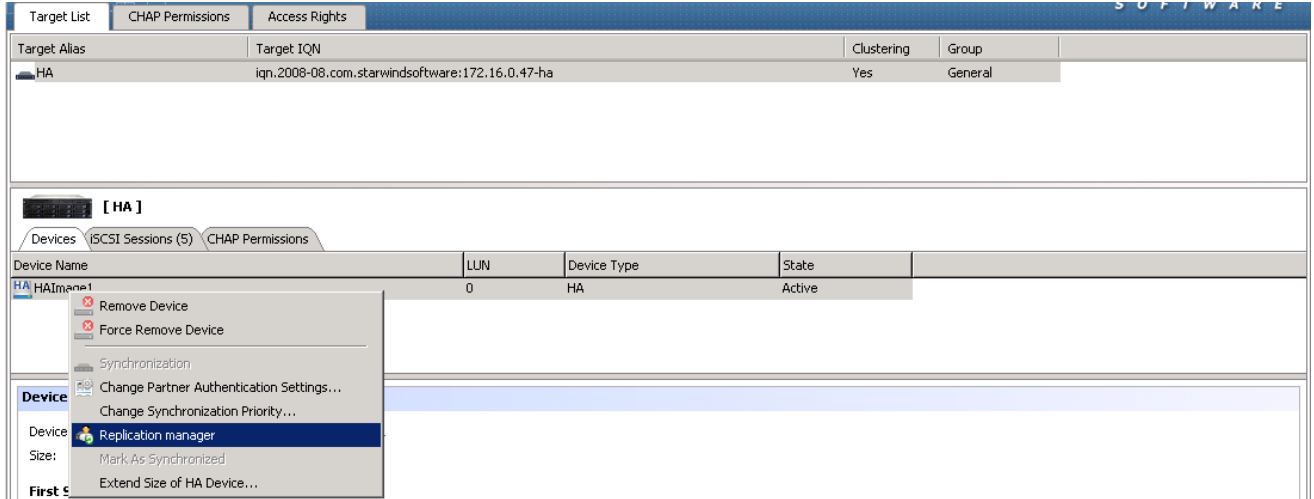
- Virtual disks stored on the HA device will become available for the previously created VMs. Now you can start VMs in **Hyper-V Manager**.



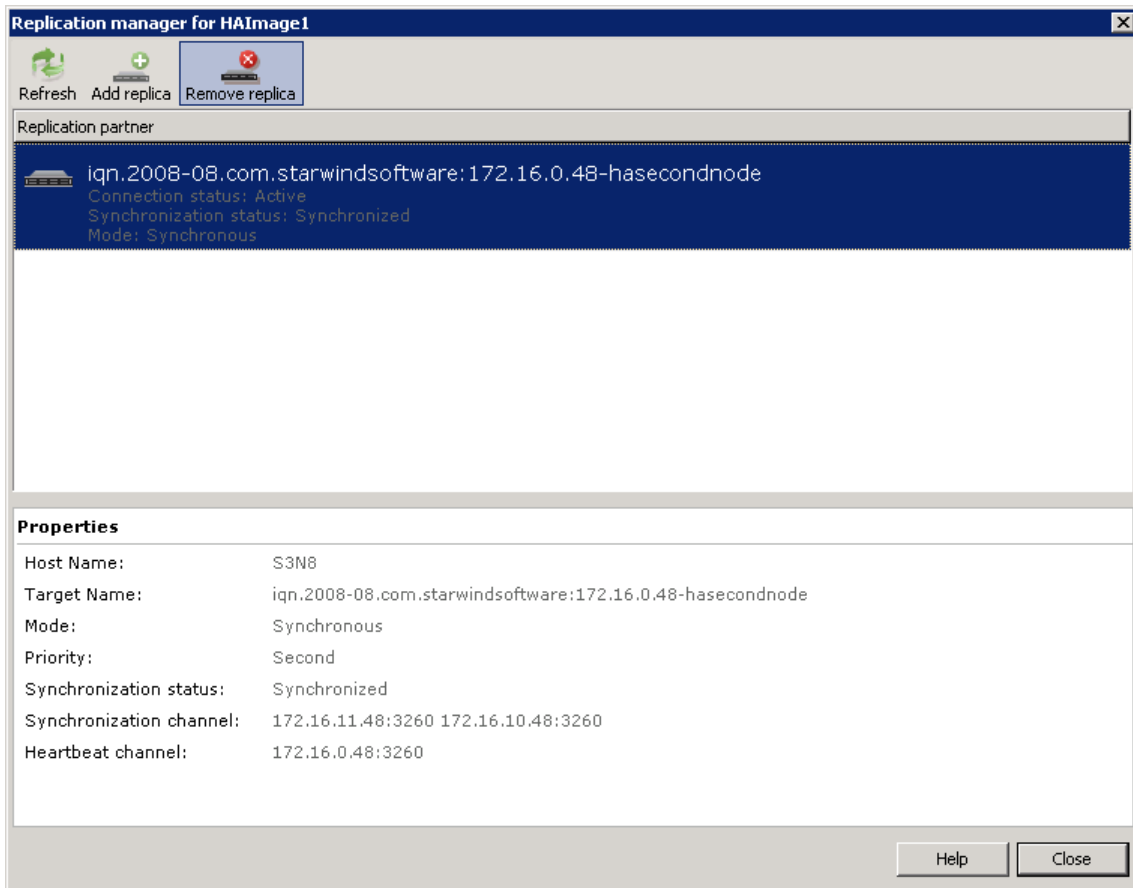
## CHANGING SYNCHRONIZATION AND HEARTBEAT CHANNELS

To change synchronization or heartbeat channels or replace a NIC:

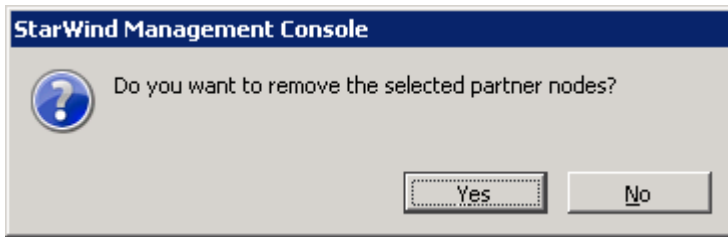
1. Launch **StarWind Management Console** and connect to the first StarWind HA partner.
2. Right-click the required HA device and click **Replication manager** on the shortcut menu.



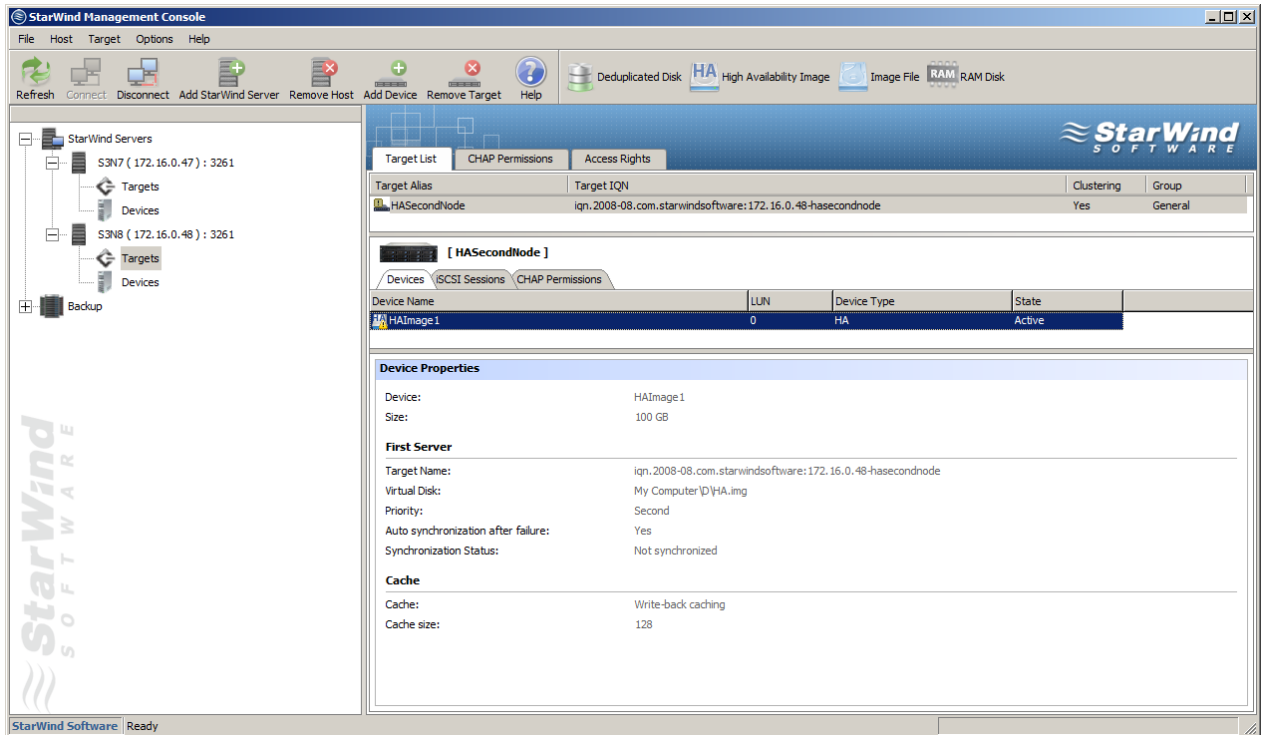
3. **HA Device Replication manager** appears. Click the **Remove replica** button on the toolbar.



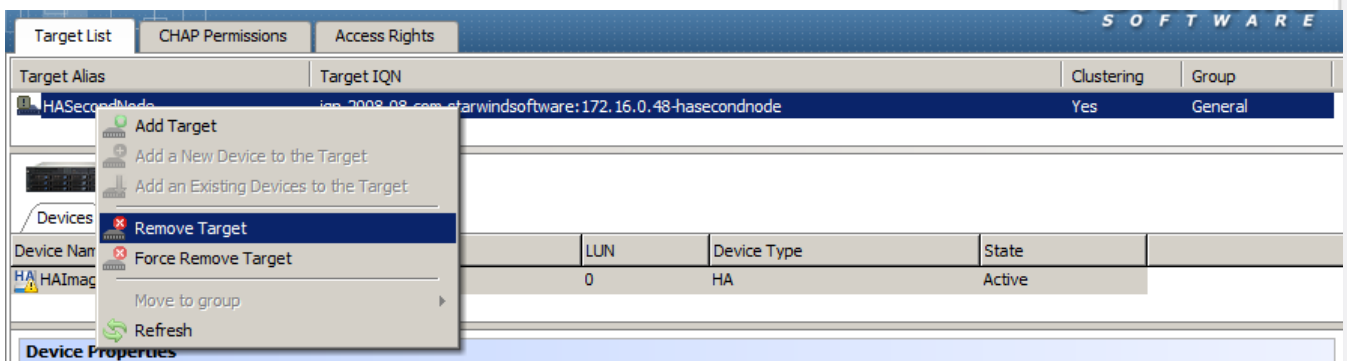
4. Click **Yes** to confirm the deletion.



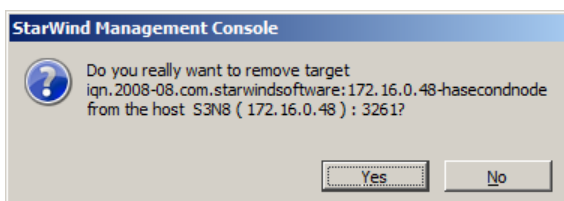
5. Connect to the second HA partner node.



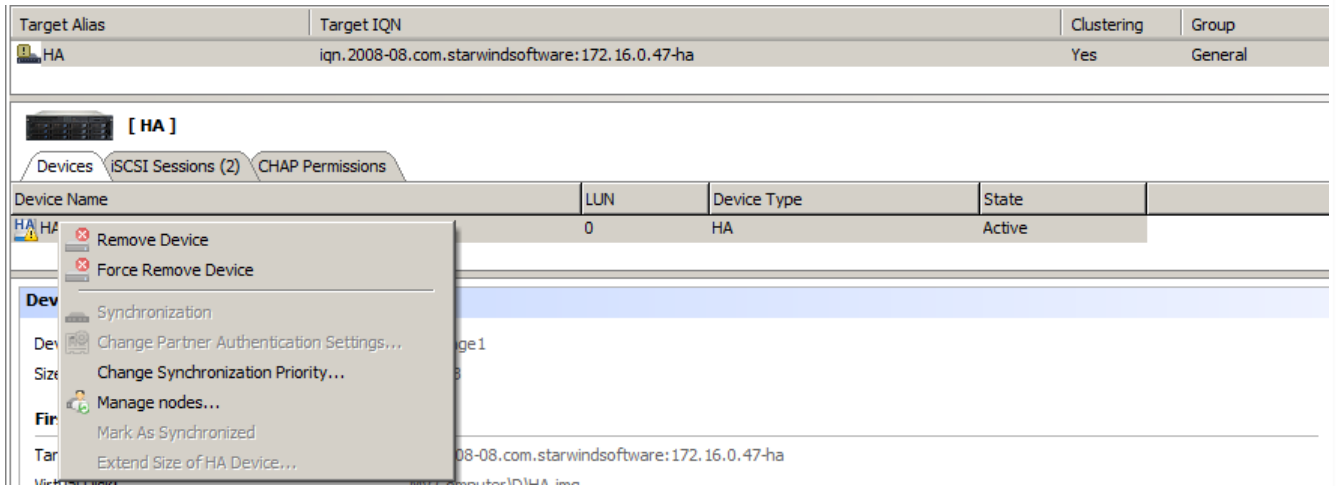
6. Right-click the target and click **Remove Target**.



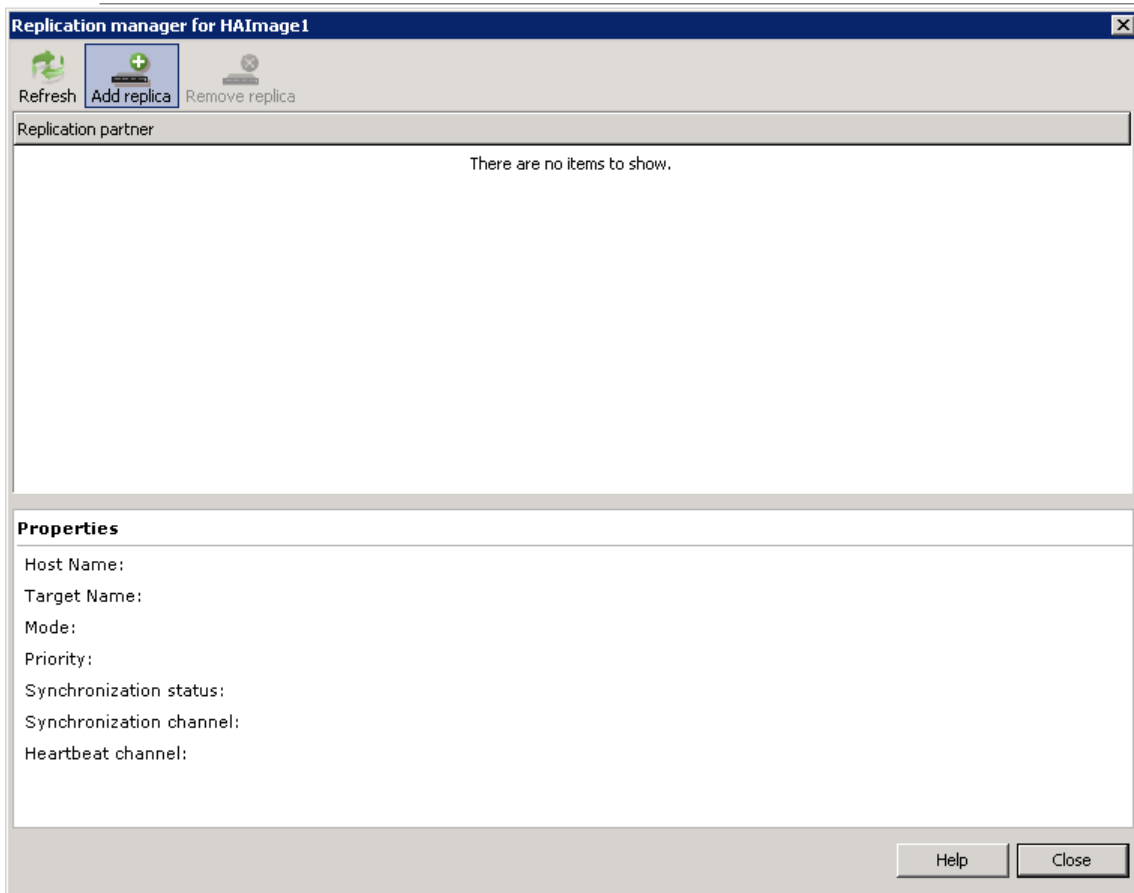
7. Click **Yes** to confirm the deletion.



8. Select the first HA partner node again. Right-click the target and click **Manage nodes**.

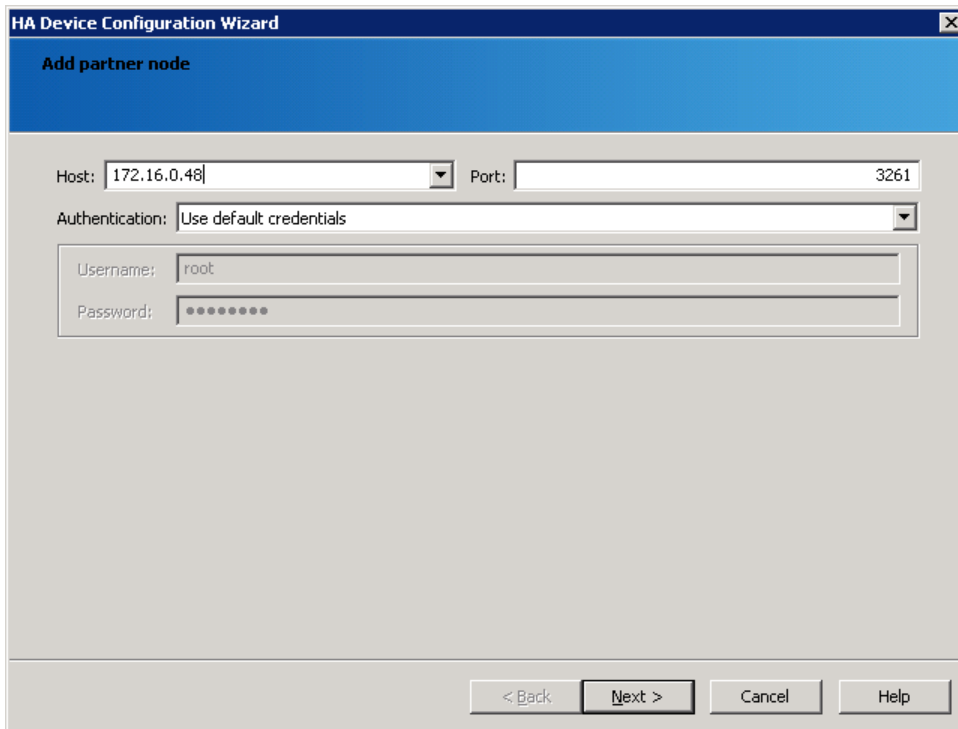


9. HA Device Replication manager appears. Click **Add replica** on the toolbar.





10. Specify an IP address of the second StarWind HA partner node.



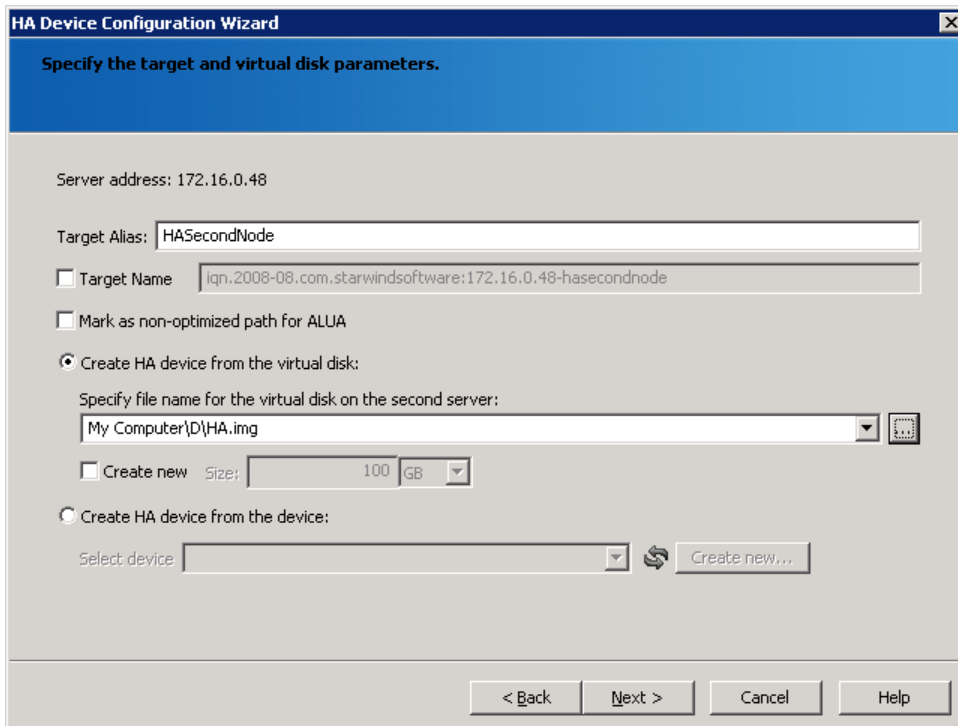
The screenshot shows the 'Add partner node' step of the HA Device Configuration Wizard. The 'Host' field is set to '172.16.0.48' and the 'Port' field is set to '3261'. The 'Authentication' dropdown is set to 'Use default credentials'. Below this, the 'Username' field contains 'root' and the 'Password' field is masked with dots. At the bottom, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

11. Click **Next** to continue.

12. Specify target and virtual disk parameters.

13. Select **Create HA from virtual disk** radio button.

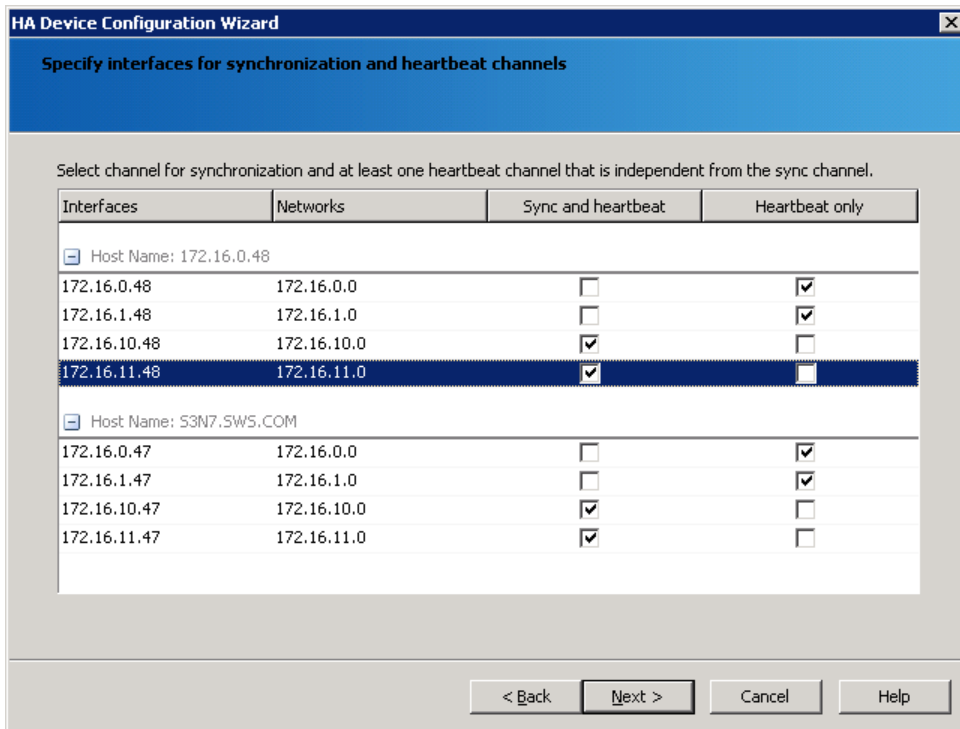
14. Specify the previously used image file as a virtual disk on the second server.



The screenshot shows the 'Specify the target and virtual disk parameters' step of the HA Device Configuration Wizard. The 'Server address' is '172.16.0.48'. The 'Target Alias' is 'HASecondNode'. The 'Target Name' field contains 'iqn.2008-08.com.starwindsoftware:172.16.0.48-hasecondnode'. There are three radio buttons: 'Mark as non-optimized path for ALUA' (unchecked), 'Create HA device from the virtual disk' (checked), and 'Create HA device from the device' (unchecked). Under the checked option, the 'Specify file name for the virtual disk on the second server:' field contains 'My Computer\{D}\HA.img'. There is also a 'Create new' checkbox with a 'Size' field set to '100 GB'. At the bottom, there are four buttons: '< Back', 'Next >', 'Cancel', and 'Help'.

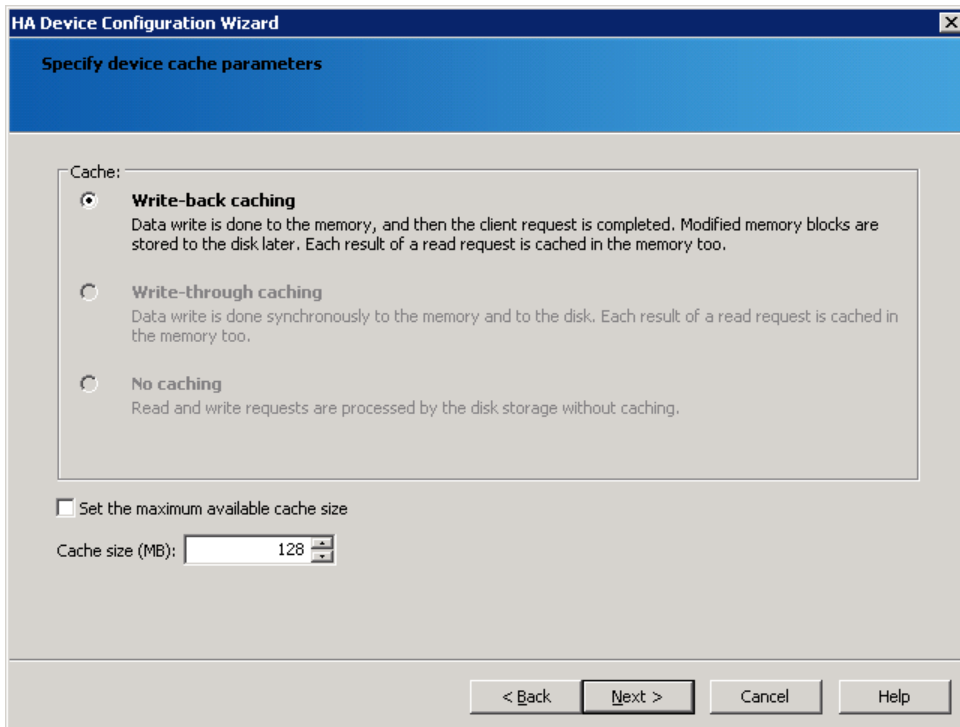
15. Click **Next** to continue.

16. Specify synchronization and heartbeat channels.



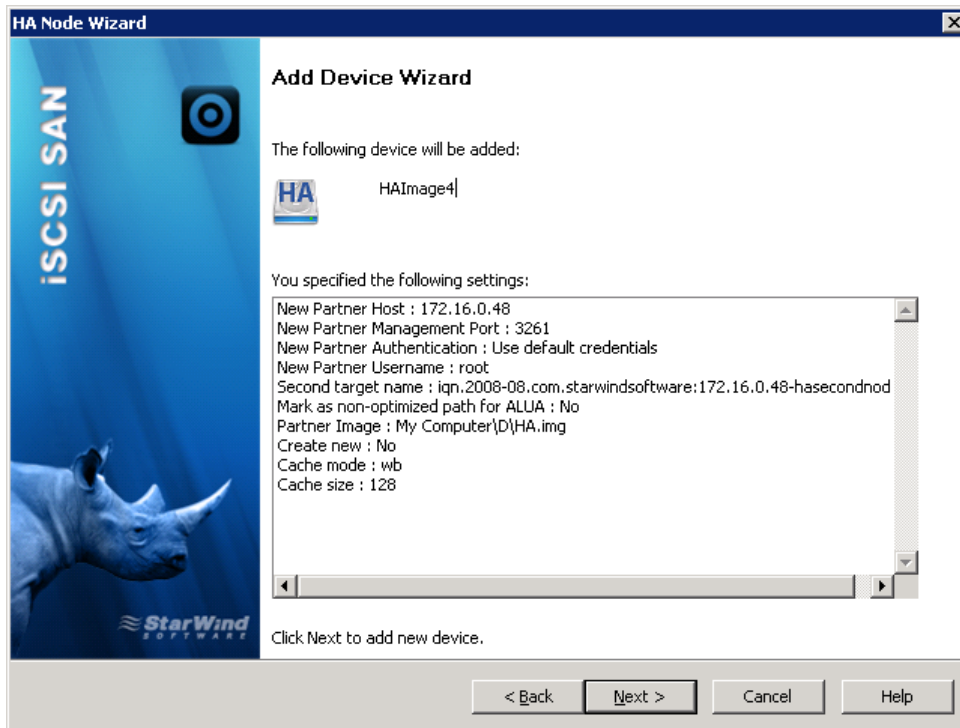
17. Click **Next** to continue.

18. Specify cache parameters (the cache type is set automatically in accordance with the partner cache type).

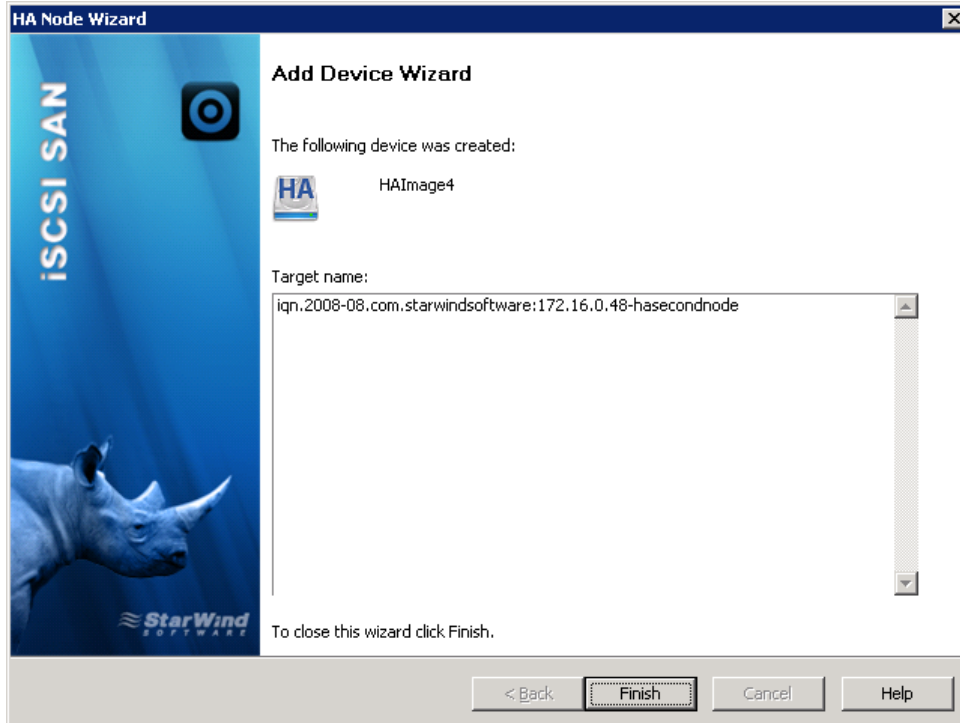


19. Click **Next** to continue.

20. Confirm the settings of a new HA partner target.



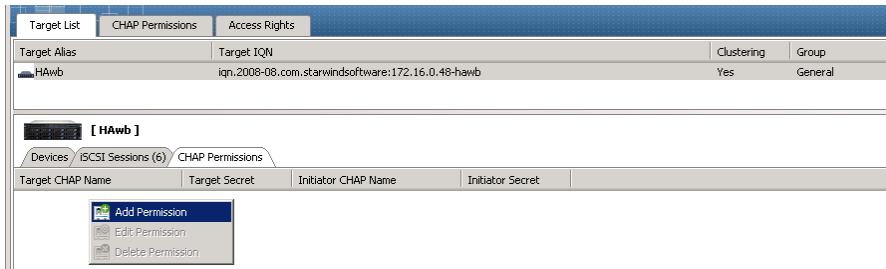
21. Click **Next** to continue.



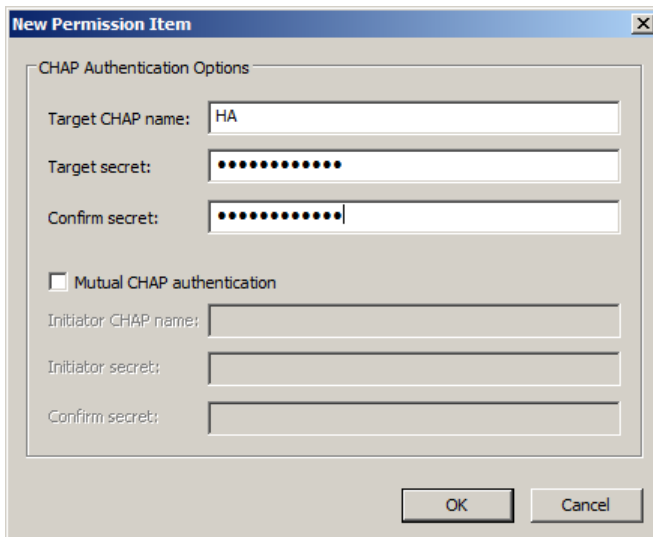
22. Click **Finish** to close the wizard.

## CONFIGURING CHAP FOR AN HA DEVICE

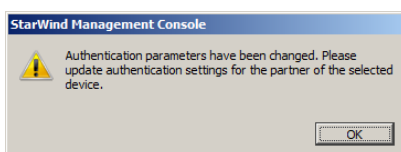
1. Launch **StarWind Management Console** and connect the first StarWind HA partner node.
2. Right-click the HA device on the **CHAP Permissions** tab and click **Add permission**.



3. Specify the values in the **Target CHAP name**, **Target secret** and **Confirm secret** fields.
4. Select **Mutual CHAP authentication** checkbox to ensure a higher level of iSCSI security.



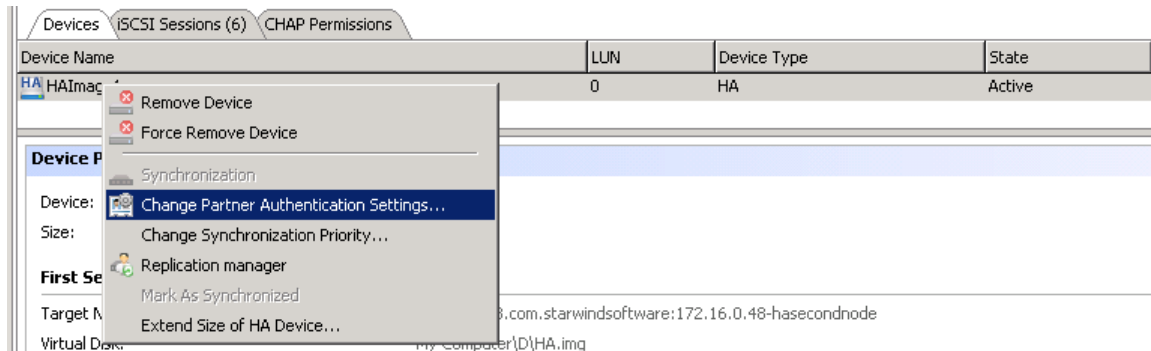
5. Click **OK**.
6. Read the notification and click **OK**.



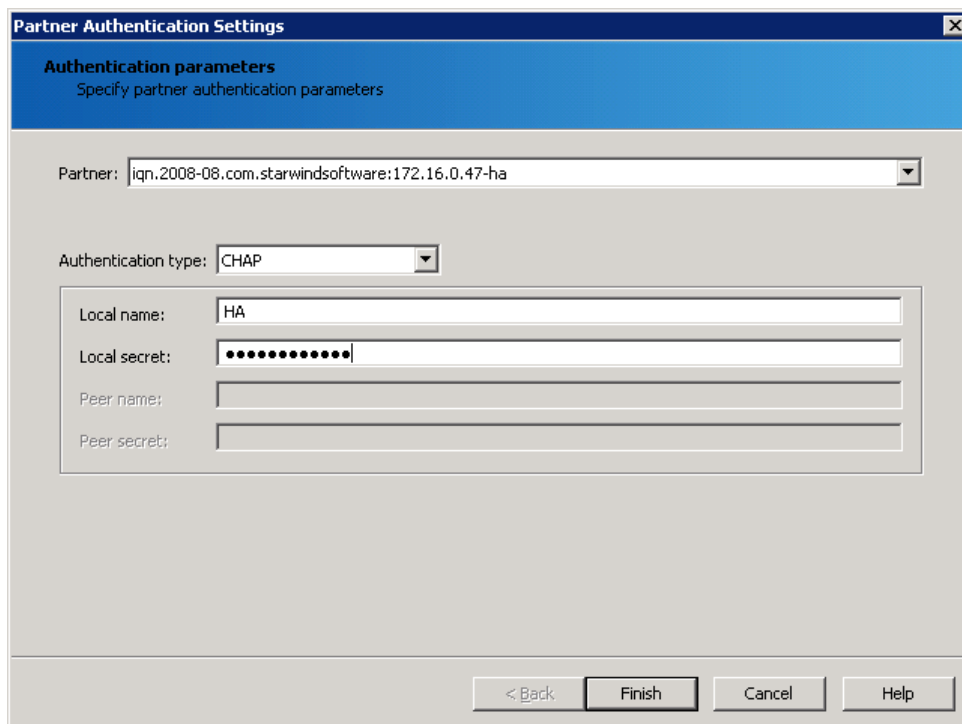
7. Connect to the second HA partner node.

- Right-click HA device and click **Change Partner Authentication Settings**.

**Note:** If you don't change partner authentication settings, the HA device will not be able to synchronize after the service restart.



- Select the partner target with installed CHAP.
- Specify CHAP as an authentication type and enter local name and secret specified for the first server (refer to the item 2-4 of this section).

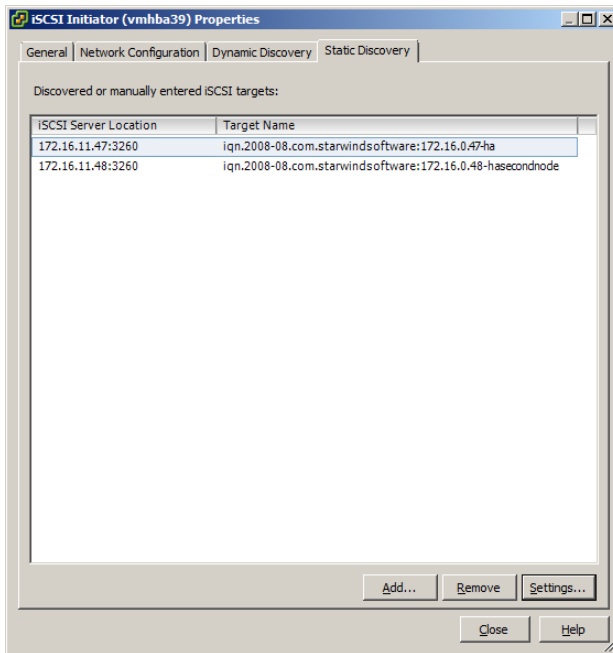


- Click **Finish**.
- Perform the actions described in the item 1-11 for another HA partner node.
- Specify a local name and secret to connect to the client node.

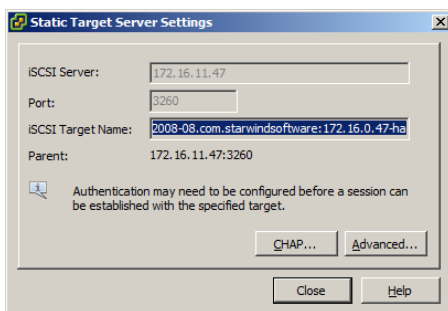
#### Take the following steps on ESXi servers:

- Launch **vSphere Client: Start->All Programs->VMware->VMware vSphere Client**.
- Switch to the **Configuration** tab and select **Storage Adapters** in the **Hardware** pane.
- Select a storage adapter from the **iSCSI Software Adapter** list and click the **Properties** link in the **Details** section.
- Switch to the **Static Discovery** tab of the **iSCSI Initiator** window.

5. Select the target and click **Settings**.

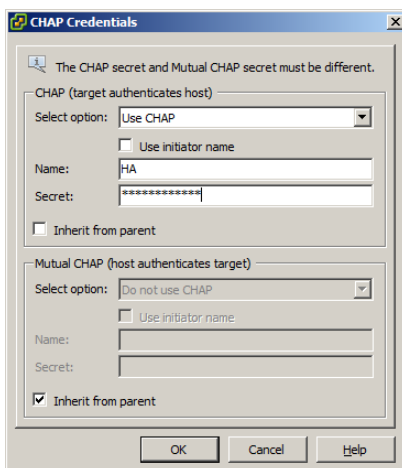


6. Click **CHAP**.



7. Clear the **Inherit from parent** checkbox and specify a CHAP name and secret.

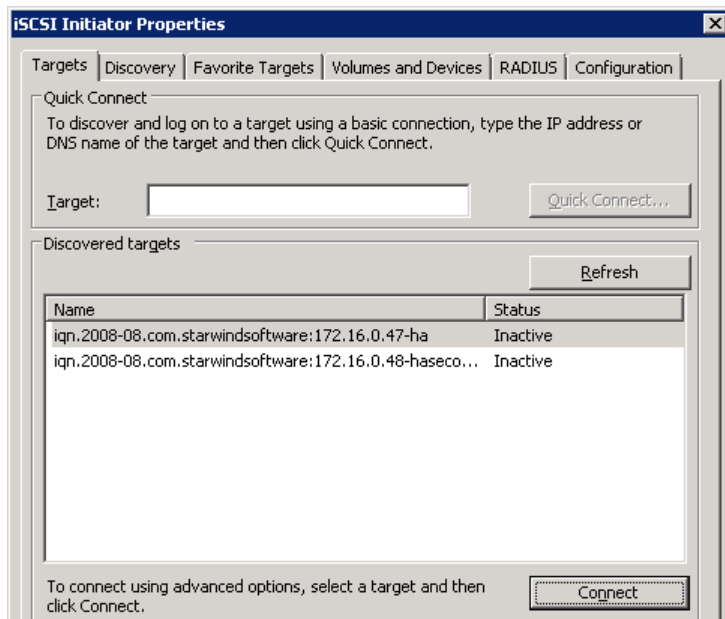
**Note:** If you have specified mutual CHAP earlier, clear the **Inherit from parent** checkbox and specify a mutual CHAP name and secret.



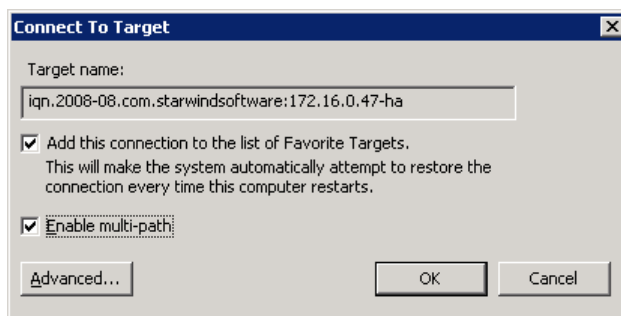
f. Click **OK**.

Take the following steps on Hyper-V servers:

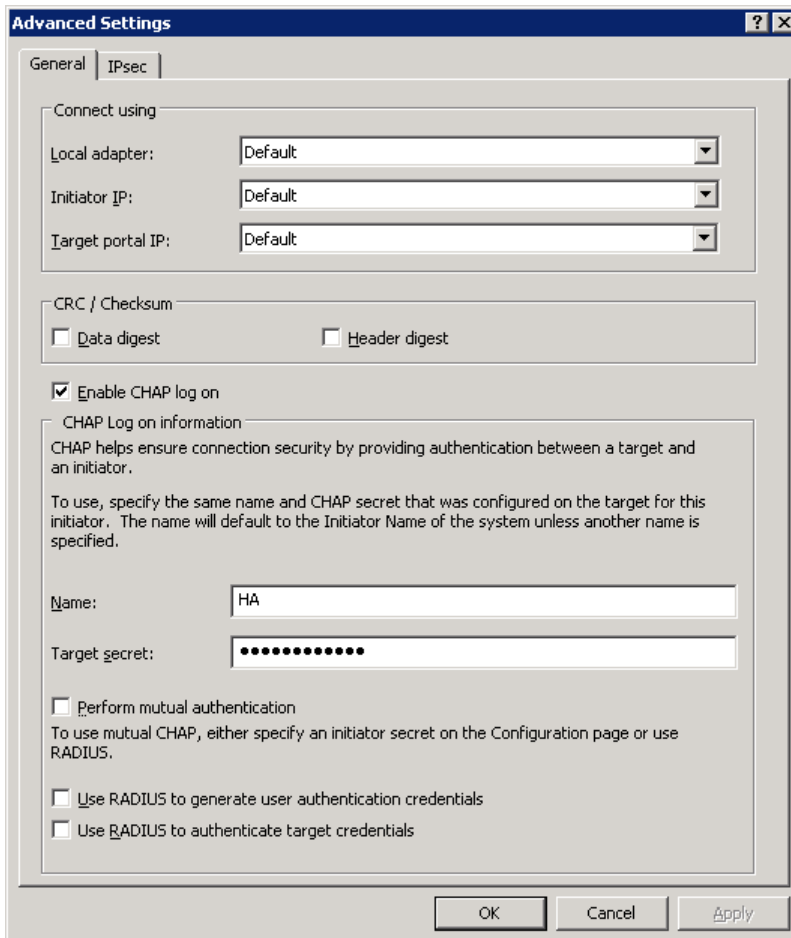
1. Launch **iSCSI Initiator**: **Start->Administrative Tools->iSCSI Initiator**.
2. Select the required target and click **Connect**.



3. Click **Advanced**.



4. Select the **Enable CHAP log on** checkbox and specify a name and target secret.



**Advanced Settings** [?] [X]

General | IPsec

Connect using

Local adapter: Default

Initiator IP: Default

Target portal IP: Default

CRC / Checksum

Data digest  Header digest

Enable CHAP log on

CHAP Log on information

CHAP helps ensure connection security by providing authentication between a target and an initiator.

To use, specify the same name and CHAP secret that was configured on the target for this initiator. The name will default to the Initiator Name of the system unless another name is specified.

Name: HA

Target secret: .....

Perform mutual authentication

To use mutual CHAP, either specify an initiator secret on the Configuration page or use RADIUS.

Use RADIUS to generate user authentication credentials

Use RADIUS to authenticate target credentials

OK Cancel Apply

5. Click **OK**.



## CONTACTS

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