

StarWind iSCSI SAN Software: Configuring High Availability Storage for VMware vSphere and ESX Server

www.starwindsoftware.com

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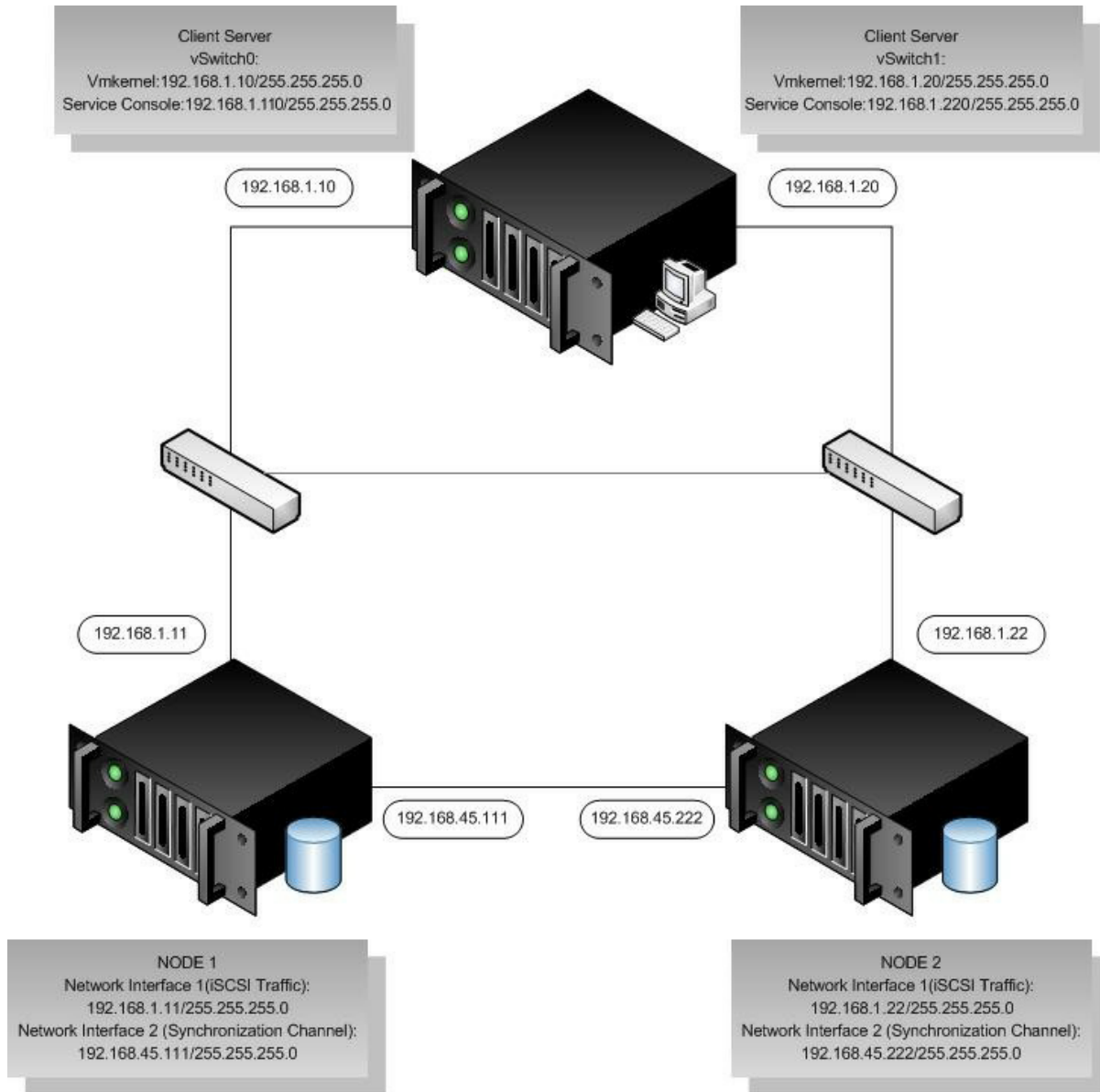
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Guide

Introduction



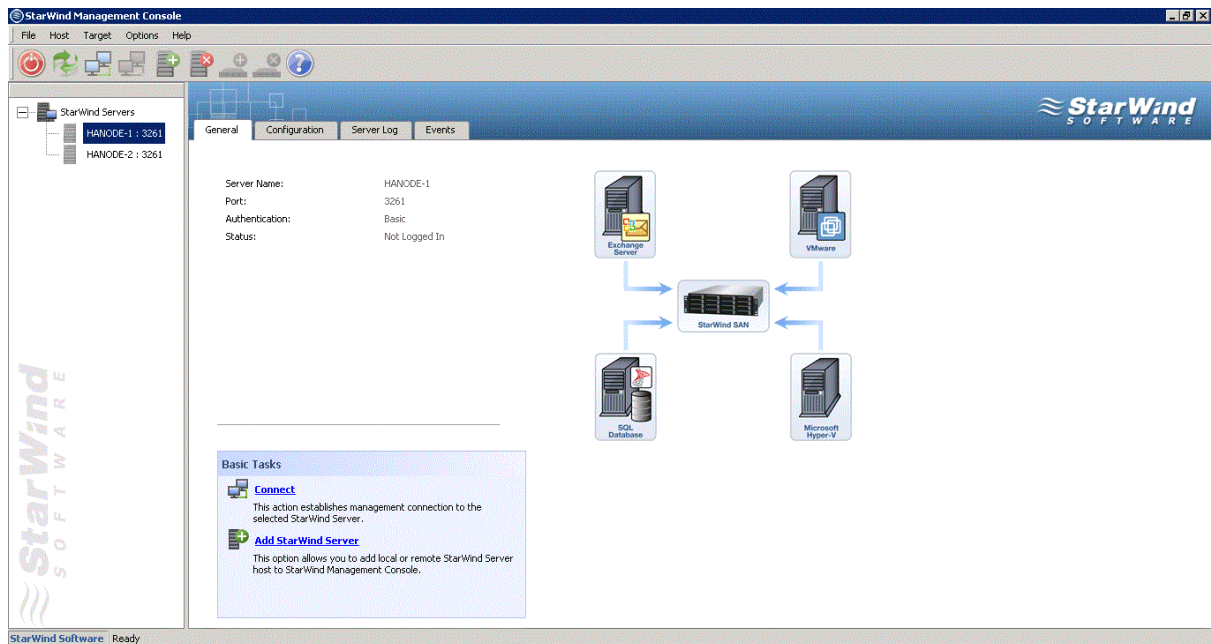
Configuring StarWind Server

Preparing Storage

Launch the StarWind Console: **Start -> All Programs -> StarWind Software -> StarWind**. Whenever the StarWind Console is running, its icon will appear in the system tray.

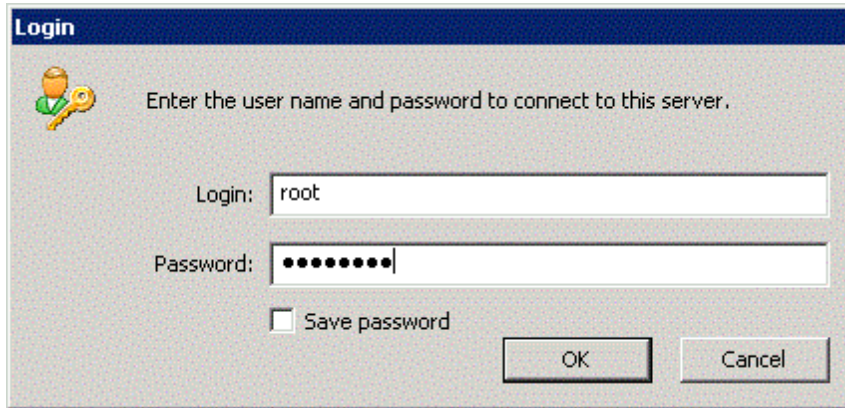
The StarWind Console may be accessed by double-clicking the icon using the left mouse button, or with a single click using the right mouse button and selecting Start Management from the pop-up menu.

From the Connections tree, select the computer you want to provision the iSCSI target device on.



Double-click the host to connect.

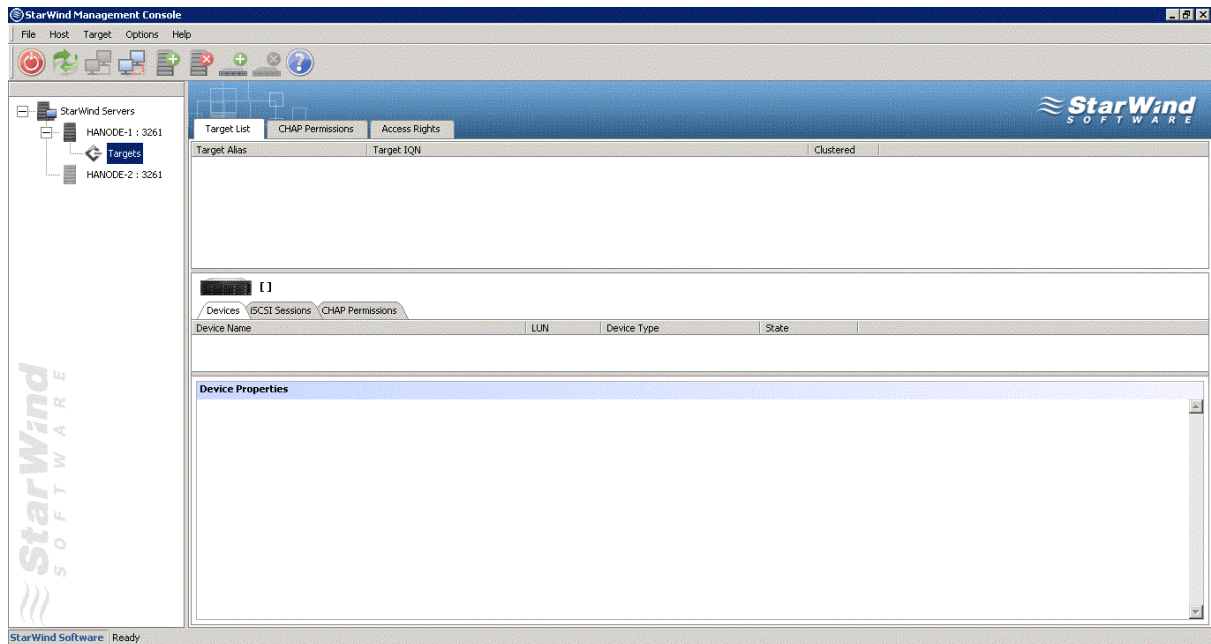
You will be prompted to enter the login and password.
The default login and password are “root” and “starwind”. You can always change them later.



The image shows a 'Login' dialog box with a blue title bar. Inside, there is a key icon and the text 'Enter the user name and password to connect to this server.' Below this, there are two input fields: 'Login:' with the text 'root' and 'Password:' with ten dots. A checkbox labeled 'Save password' is below the password field. At the bottom right are 'OK' and 'Cancel' buttons.

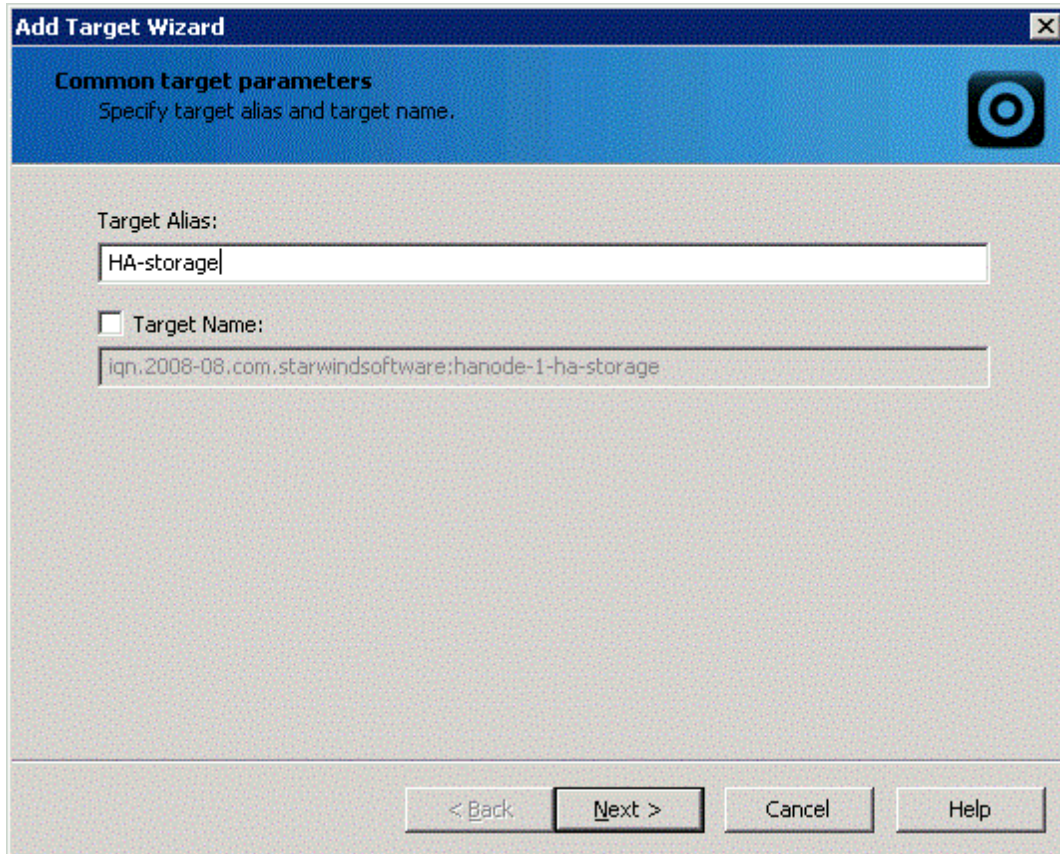
You can store password by checking in the **Save password** checkbox and then pressing the **Yes** button.
Click the **OK** button to continue.

Now, when you are connected to the StarWind Service on the machine you can create targets on it.



Click the **Add Target** button to continue.

In the wizard that appears, specify a target name. The name must be a unique name by which the device will be declared to the iSCSI initiators connecting to StarWind over an IP network.

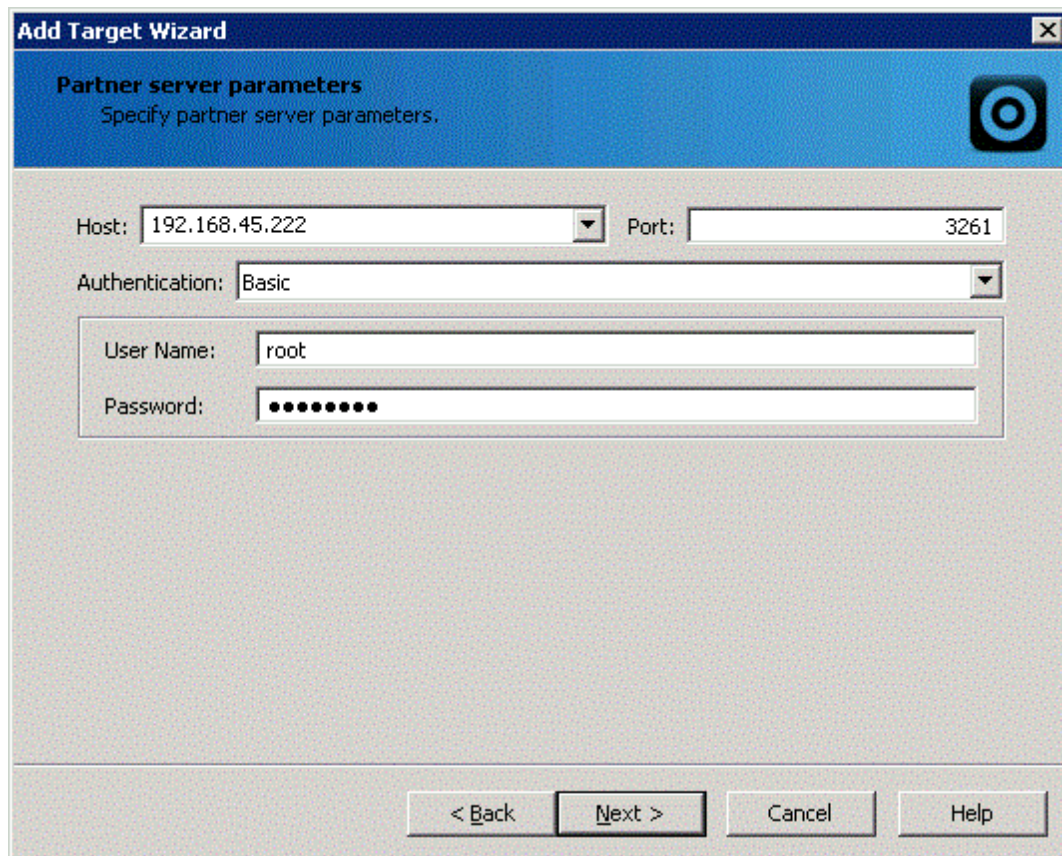


The image shows a Windows-style dialog box titled "Add Target Wizard". The title bar is dark blue with a close button (X) in the top right corner. Below the title bar, there is a blue header area with the text "Common target parameters" and a sub-instruction "Specify target alias and target name." To the right of this text is a circular icon with a target symbol. The main area of the dialog is light gray. It contains two text input fields. The first field is labeled "Target Alias:" and contains the text "HA-storage". Below it is a checkbox labeled "Target Name:" which is currently unchecked. The text input field below the checkbox contains the text "iqn.2008-08.com.starwindsoftware:hanode-1-ha-storage". At the bottom of the dialog, there are four buttons: "< Back", "Next >", "Cancel", and "Help". The "Next >" button is highlighted with a black border.

Click the **Next** button to continue.

Select the HA device type by going **Hard Disk->Advanced Virtual->High Availability device**.

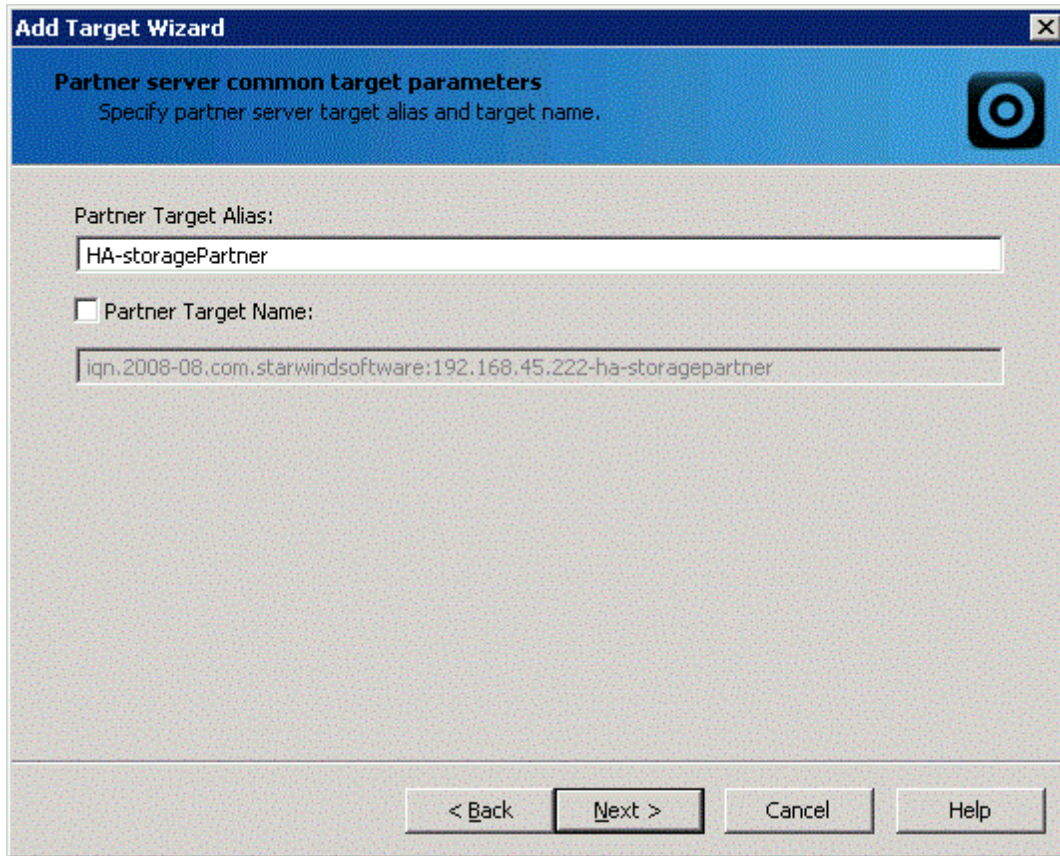
Specify the partner server parameters. Enter the server's IP address or host, and specify the user name and password for the StarWind Service.



The image shows a screenshot of the "Add Target Wizard" dialog box. The title bar reads "Add Target Wizard" with a close button. The main area has a blue header with the text "Partner server parameters" and "Specify partner server parameters." Below this, there are several input fields: "Host:" with the value "192.168.45.222", "Port:" with the value "3261", "Authentication:" with a dropdown menu showing "Basic", "User Name:" with the value "root", and "Password:" with a masked field of dots. At the bottom, there are four buttons: "< Back", "Next >", "Cancel", and "Help".

Click the **Next** button to continue.

Enter the target alias and name to be assigned to the partner target.



The image shows a Windows-style dialog box titled "Add Target Wizard". The main title bar is dark blue with a close button (X) in the top right corner. Below the title bar, there is a blue header area with the text "Partner server common target parameters" and a sub-instruction "Specify partner server target alias and target name." To the right of this text is a circular icon with a target symbol. The main body of the dialog is light gray. It contains two text input fields. The first is labeled "Partner Target Alias:" and contains the text "HA-storagePartner". Below it is a checkbox labeled "Partner Target Name:" which is currently unchecked. The text input field below the checkbox contains the text "iqn.2008-08.com.starwindsoftware:192.168.45.222-ha-storagepartner". At the bottom of the dialog, there are four buttons: "< Back", "Next >", "Cancel", and "Help".

Add Target Wizard

Partner server common target parameters
Specify partner server target alias and target name.

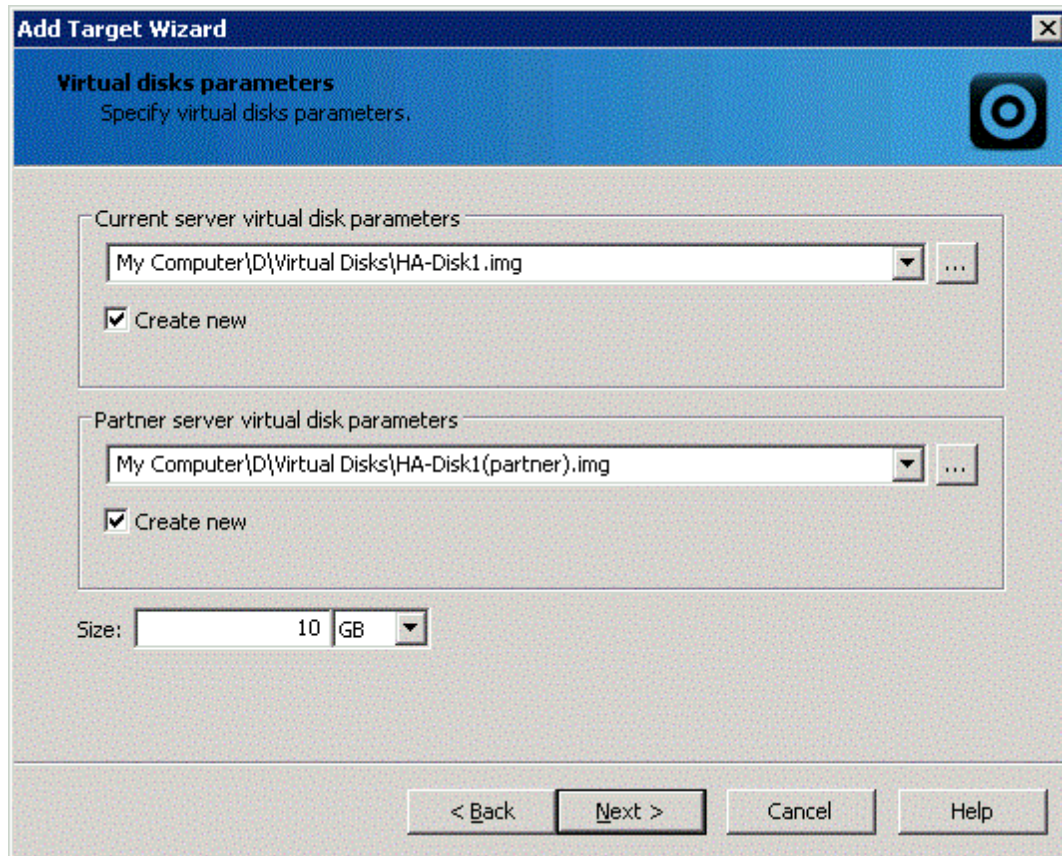
Partner Target Alias:
HA-storagePartner

☐ Partner Target Name:
iqn.2008-08.com.starwindsoftware:192.168.45.222-ha-storagepartner

< Back Next > Cancel Help

Click the **Next** button to continue.

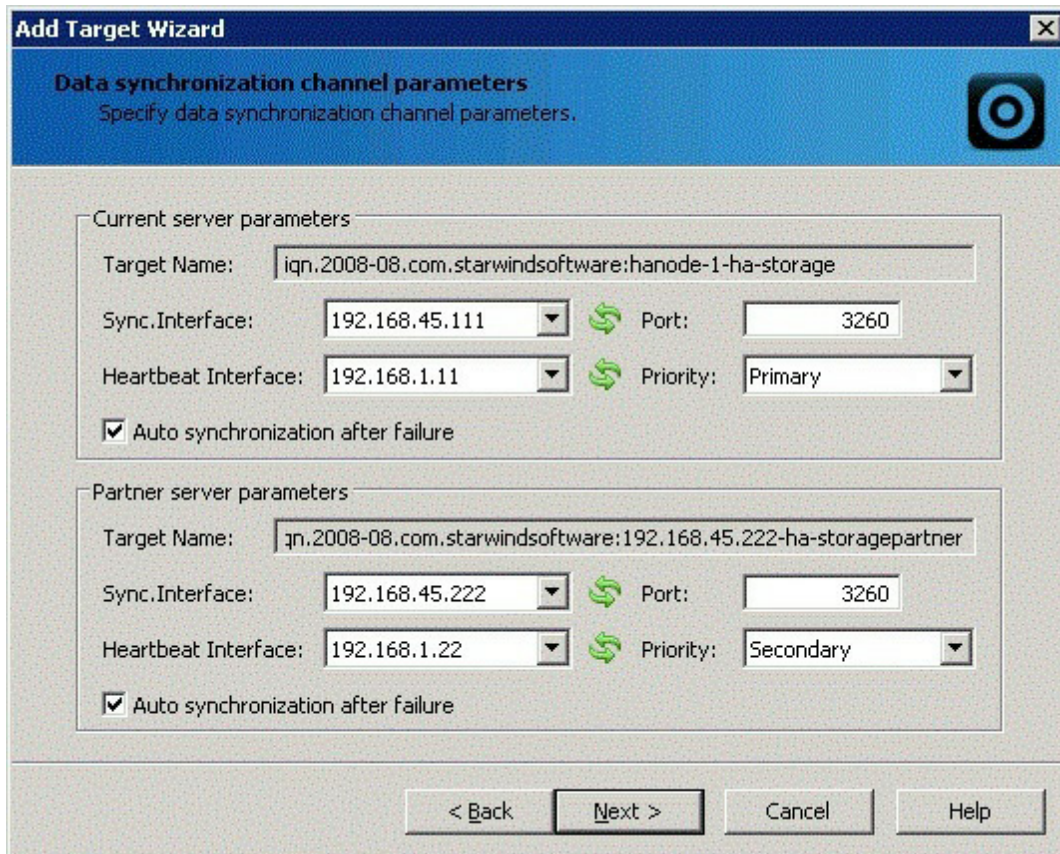
Specify the location and name of your local virtual disks and your partner's virtual disks by clicking the "...". If you want to create new virtual disks, tick the Create New checkbox.



The image shows a screenshot of the "Add Target Wizard" dialog box. The title bar is blue with the text "Add Target Wizard" and a close button. Below the title bar is a blue header area with the text "Virtual disks parameters" and "Specify virtual disks parameters." and a target icon. The main area is light gray and contains two sections. The first section is "Current server virtual disk parameters" and contains a text box with the path "My Computer\D\Virtual Disks\HA-Disk1.img" and a "...". Below the text box is a checkbox labeled "Create new" which is checked. The second section is "Partner server virtual disk parameters" and contains a text box with the path "My Computer\D\Virtual Disks\HA-Disk1(partner).img" and a "...". Below the text box is a checkbox labeled "Create new" which is checked. At the bottom of the main area is a "Size:" label followed by a text box containing "10" and a dropdown menu showing "GB". At the bottom of the dialog box are four buttons: "< Back", "Next >", "Cancel", and "Help".

Click the **Next** button to continue.

Configure the data synchronization and heartbeat channels parameters by specifying the network interface for synchronization and heartbeat respectively. You can also decide node priority by designating it as Primary or Secondary.



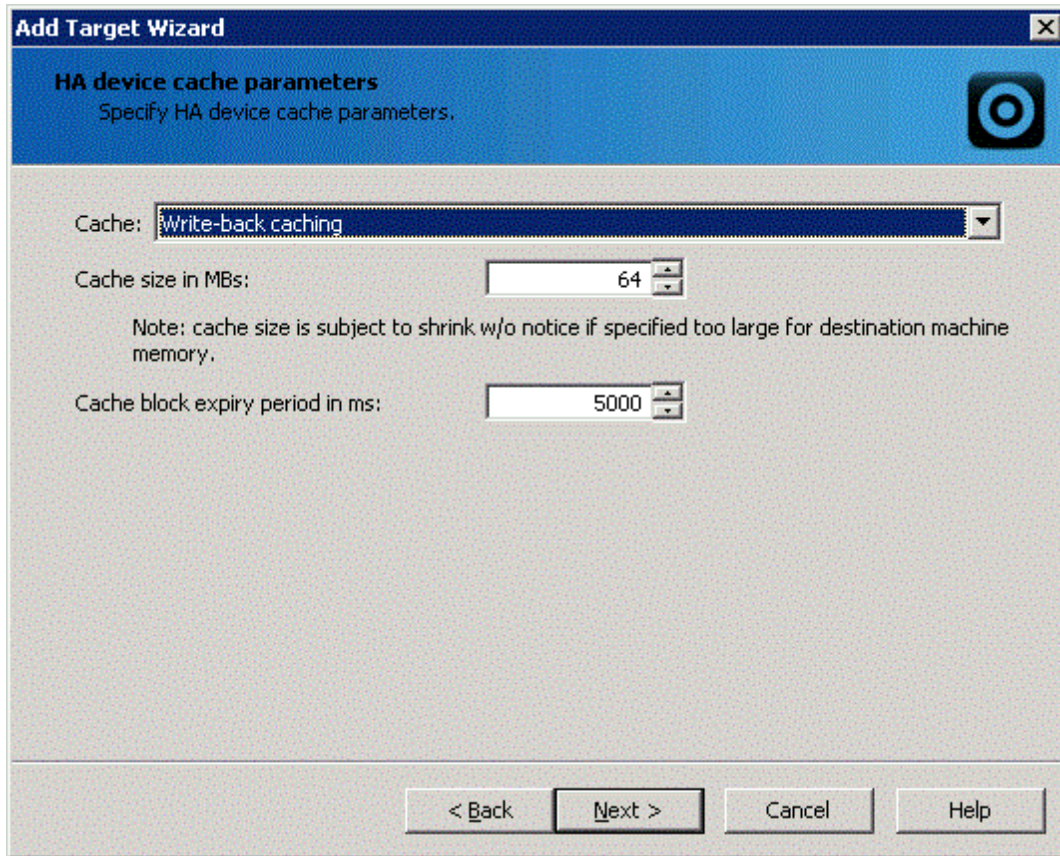
The image shows a screenshot of the "Add Target Wizard" dialog box. The title bar says "Add Target Wizard" with a close button. The main header is "Data synchronization channel parameters" with a sub-header "Specify data synchronization channel parameters." and a StarWind logo. The dialog is divided into two sections: "Current server parameters" and "Partner server parameters". Each section contains fields for "Target Name", "Sync.Interface", "Heartbeat Interface", "Port", and "Priority", along with a checkbox for "Auto synchronization after failure".

Section	Target Name	Sync.Interface	Heartbeat Interface	Port	Priority	Auto synchronization after failure
Current server parameters	iqn.2008-08.com.starwindsoftware:hanode-1-ha-storage	192.168.45.111	192.168.1.11	3260	Primary	<input checked="" type="checkbox"/>
Partner server parameters	iqn.2008-08.com.starwindsoftware:192.168.45.222-ha-storagepartner	192.168.45.222	192.168.1.22	3260	Secondary	<input checked="" type="checkbox"/>

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

Click the **Next** button to continue.

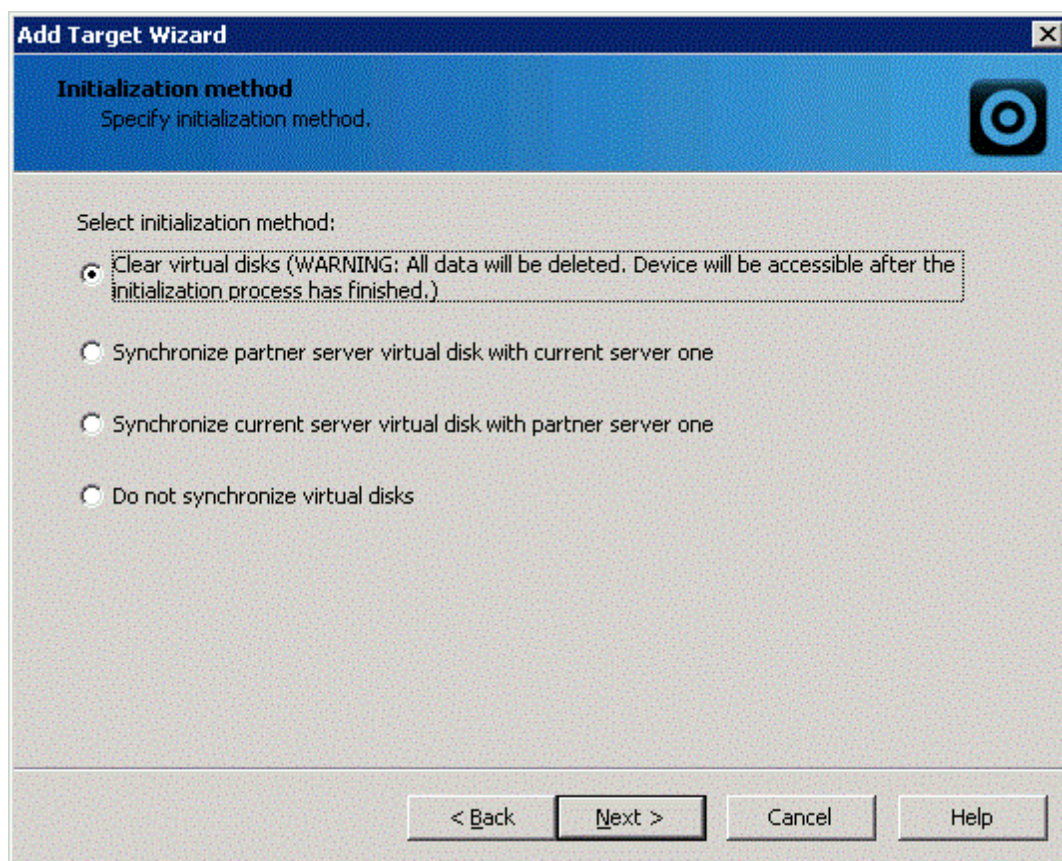
Specify HA device cache type and size.



The image shows a Windows-style dialog box titled "Add Target Wizard". The main heading is "HA device cache parameters" with a sub-instruction "Specify HA device cache parameters." and a target icon. The "Cache:" dropdown menu is set to "Write-back caching". The "Cache size in MBs:" spinner box is set to "64", with a note below it stating: "Note: cache size is subject to shrink w/o notice if specified too large for destination machine memory." The "Cache block expiry period in ms:" spinner box is set to "5000". At the bottom, there are four buttons: "< Back", "Next >", "Cancel", and "Help".

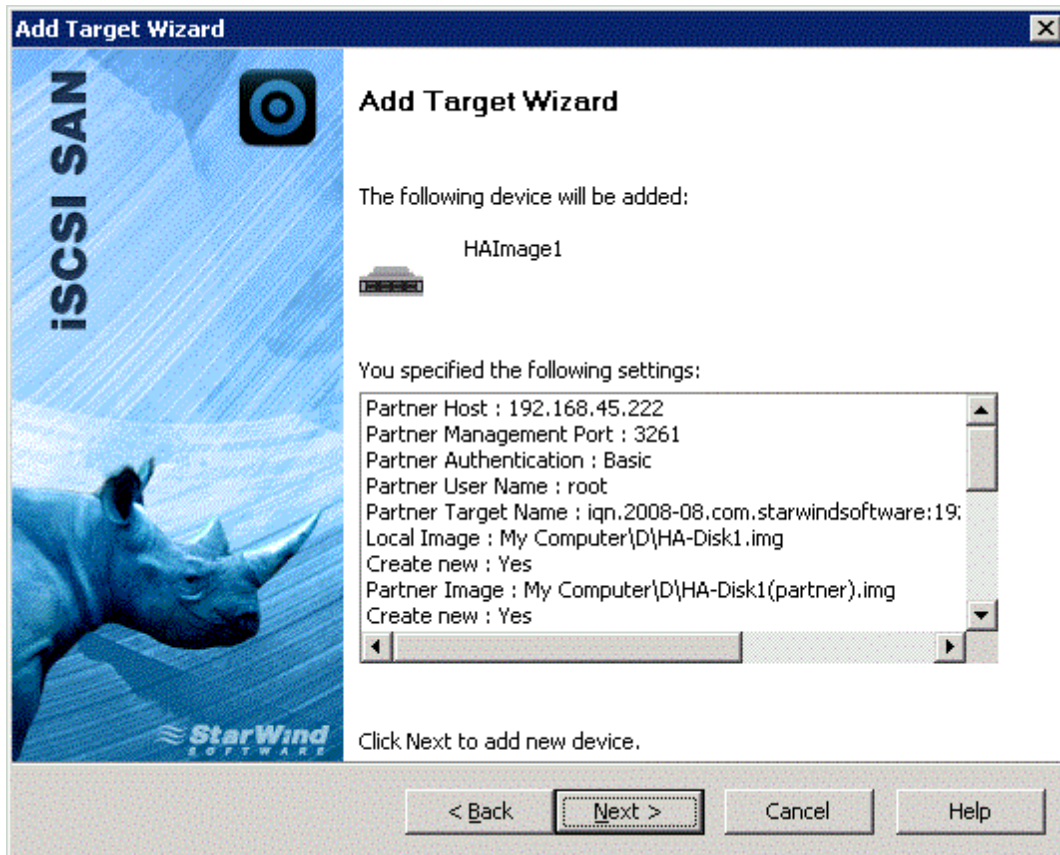
Click the **Next** button to continue.

Specify the method to initialize your HA device.



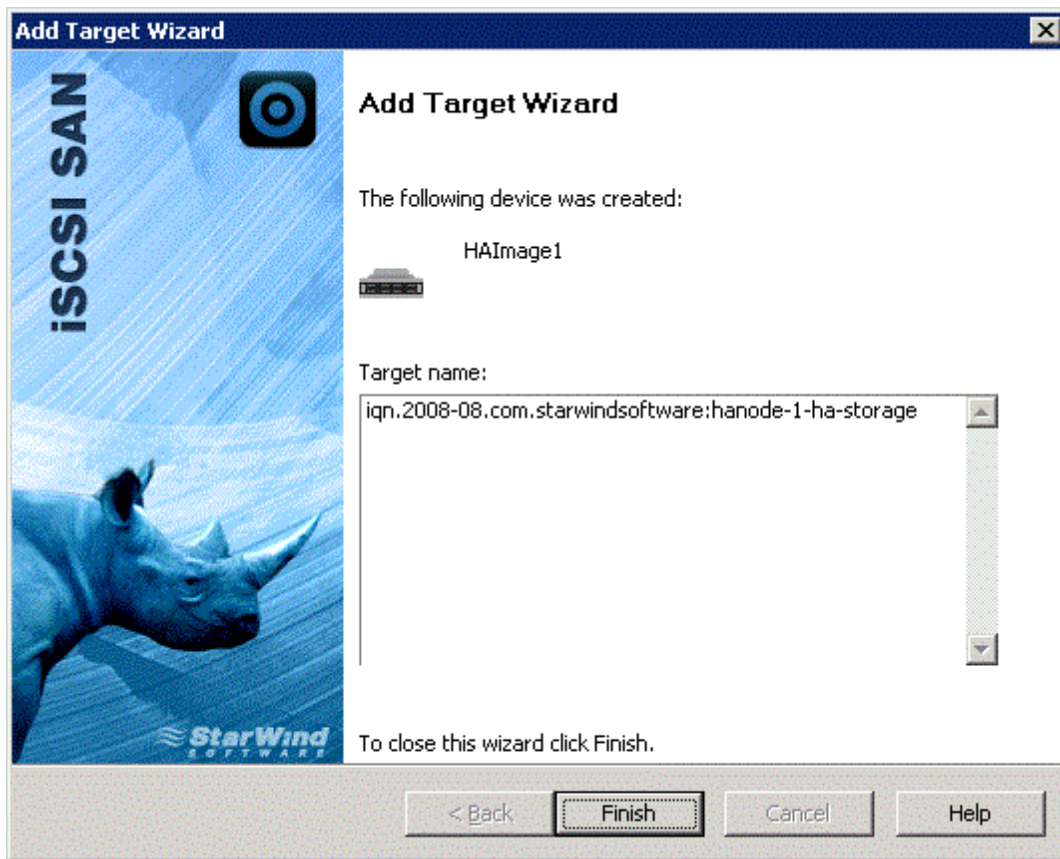
Click the **Next** button to continue.

Check that the device parameters are correct. Click the **Back** button should any changes be required.



Click the **Next** button to continue.

A summary is displayed on the last wizard page.



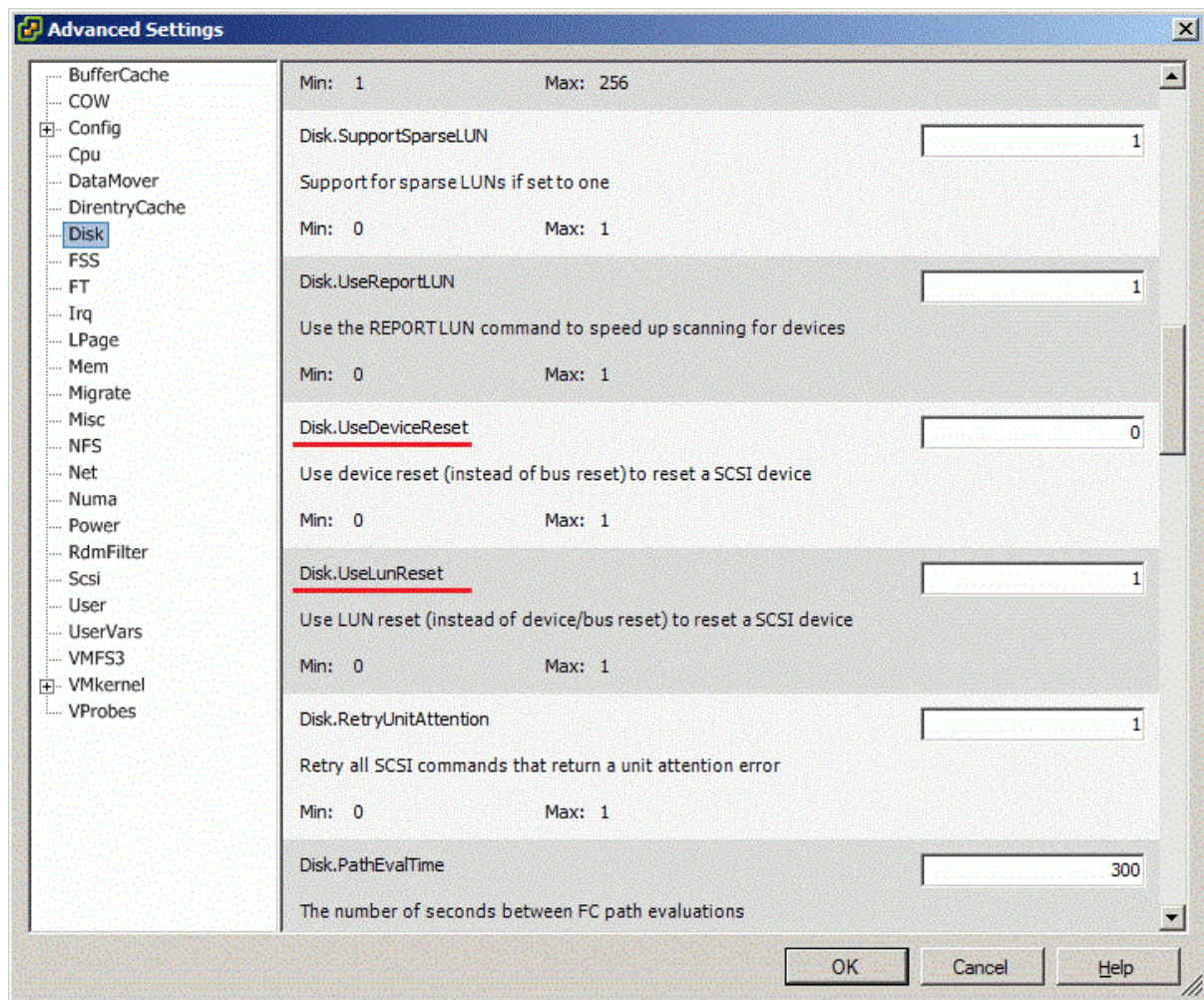
Click the **Finish** button to close the wizard.

Configuring ESX Server

ESX Configuration

Go to **Configuration -> Software -> Advanced settings -> Disk** and set the following settings for each ESX/ESXi host:

- Set Disk.UseDeviceReset to **0**
- Set Disk.UseLunReset to **1**



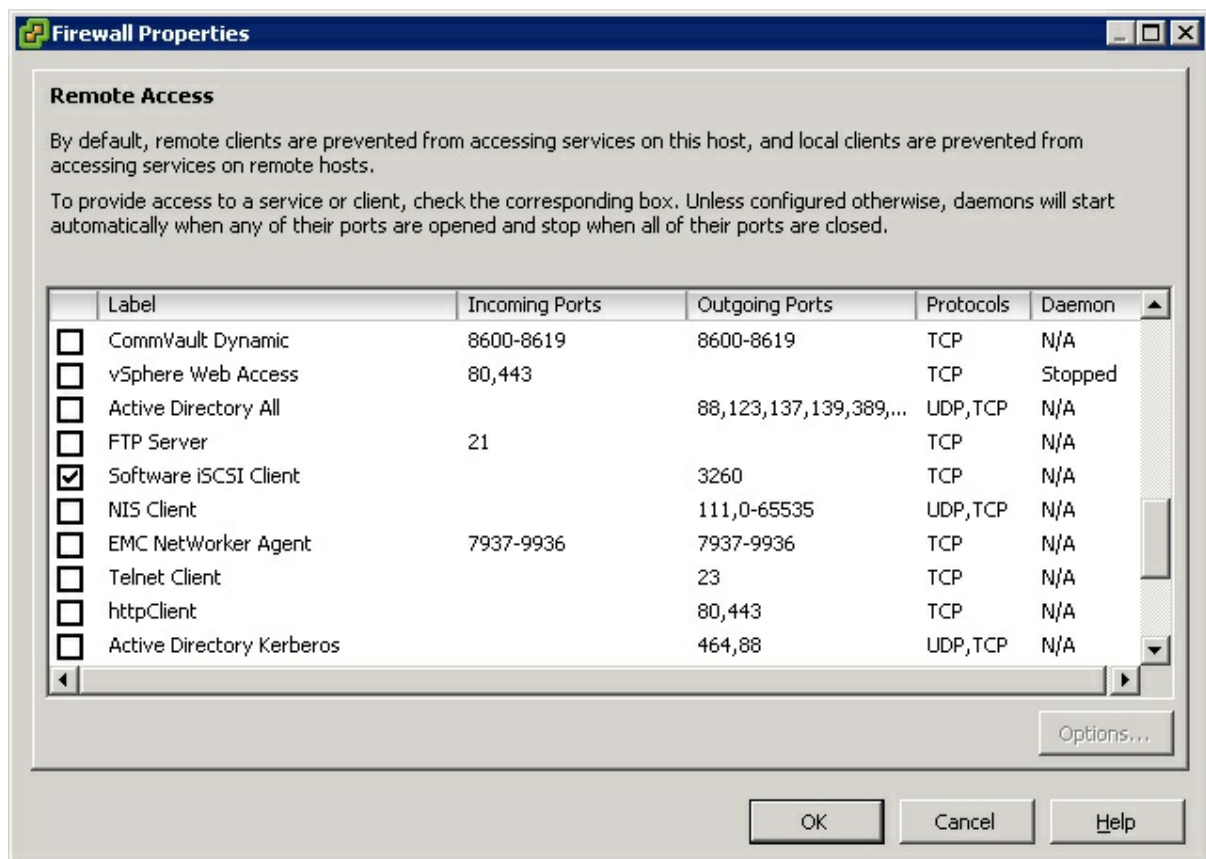
More information you could find at: http://www.vmware.com/pdf/vsphere4/r41/vsp_41_iscsi_san_cfg.pdf

Configuring the Firewall

For working with iSCSI connections you need to permit them in the firewall settings.

Click the **Configuration** tab. Then click **Security Profile**.

The **vSphere Client** displays a list of currently active incoming and outgoing connections with the corresponding firewall ports. Click the **Properties** link. The **Firewall Properties** dialog box will appear. Find the **Software iSCSI Client** in the list. Tick the option (set checkbox) to allow outgoing connection on the port shown (3260).



Press the **OK** button to continue.

Configuring the Networking

Configuring First NIC

VMkernel1

Click the **Configuration** tab. Then click **Networking**. Click the **Properties** link of the first Virtual Switch. Click the **Add...** button. Select the **VMkernel** option. Click the **Next** button to continue. Under IP Settings, set the IP address to 192.168.1.10 and the Subnet Mask to 255.255.255.0. Click the **Next** button to continue. Click the **Finish** button to close the wizard. Click **Yes** at the default gateway warning dialog box.

In the **DNS** and routing configuration box, type the same default gateway as Service Console default gateway and press the **OK** button.

Press the **Close** button to exit the vSwitch properties editor.

Configuring Second NIC

VMkernel2

Click the **Configuration** tab. Then click **Networking**. Click **Add Networking...** Select the **VMkernel** option. Press the **Next** button to continue.

Choose **Create a virtual switch**, select the second network card and click the **Next** button to continue.

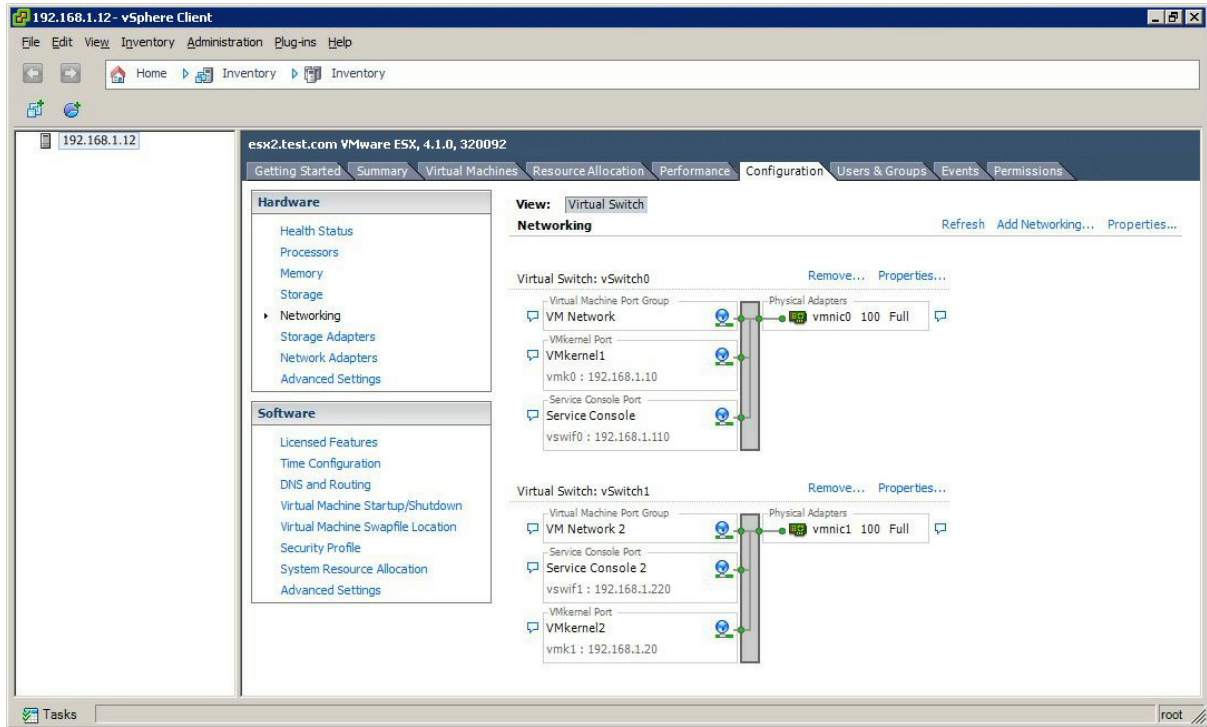
In IP Settings set the IP address to 192.168.1.20 and Subnet Mask to 255.255.255.0, click the **Next** button. Click the **Finish** button to close the wizard.

Click the properties of the recently created virtual switch. Click the **Add...** button. Select the **Service Console** option. Press the **Next** button to continue.

In IP Settings set the IP Address to 192.168.1.220 and Subnet Mask to 255.255.255.0, click the **Next** button.

Press the **Finish** button to close the wizard. Press the **Close** button to exit the vSwitch properties editor.

If successful, the **vSphere Client** window should look like the sample image provided below.



Configuring the iSCSI Initiator

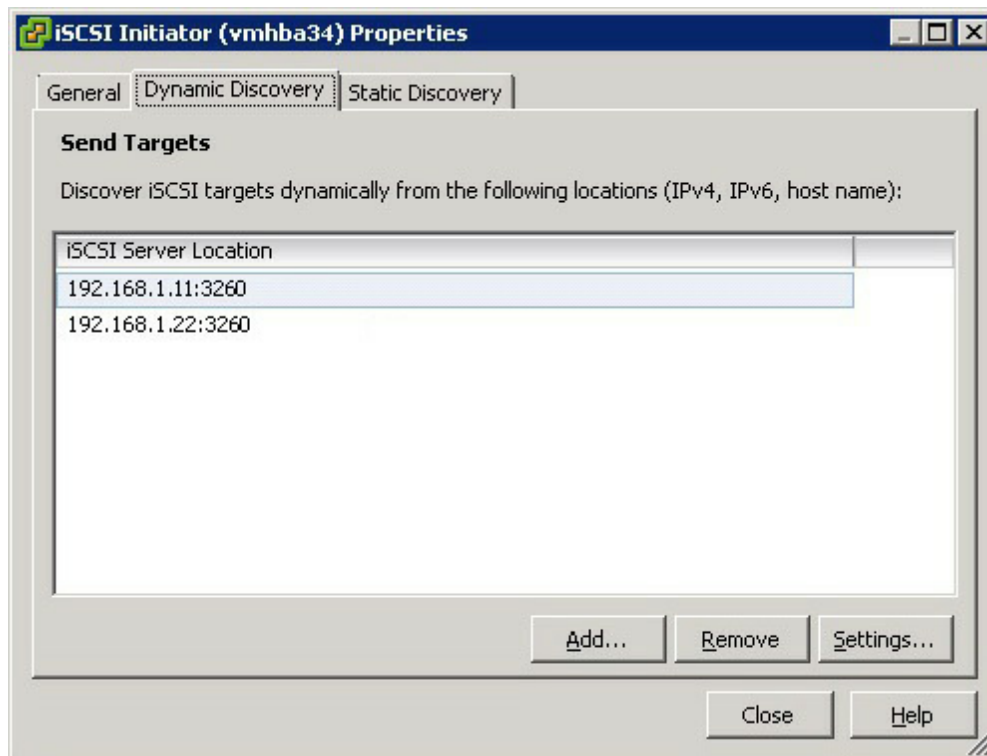
Click the **Configuration** tab. Then click **Storage Adapters**.

The list of available storage adapters appears. Select iSCSI Software Adapter.

Click **Properties**, click the **Configure** button in the iSCSI Initiator Properties dialog which appears. To enable the initiator feature tick the **Enabled** check box. Click the **OK** button to close the **General Properties** dialog and return to the **iSCSI Initiator Properties** dialog.

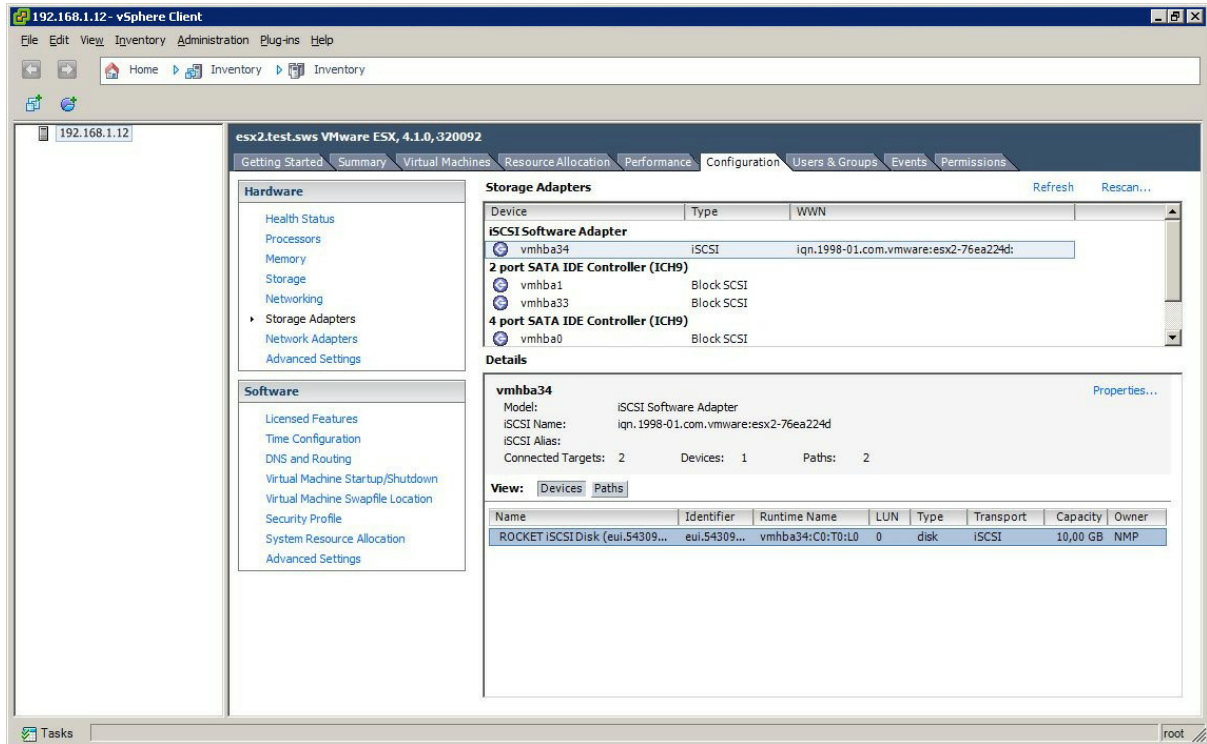
Switch to the **Dynamic Discovery** tab.

Add each of the StarWind servers by clicking the **Add...** button and specifying servers IP address.



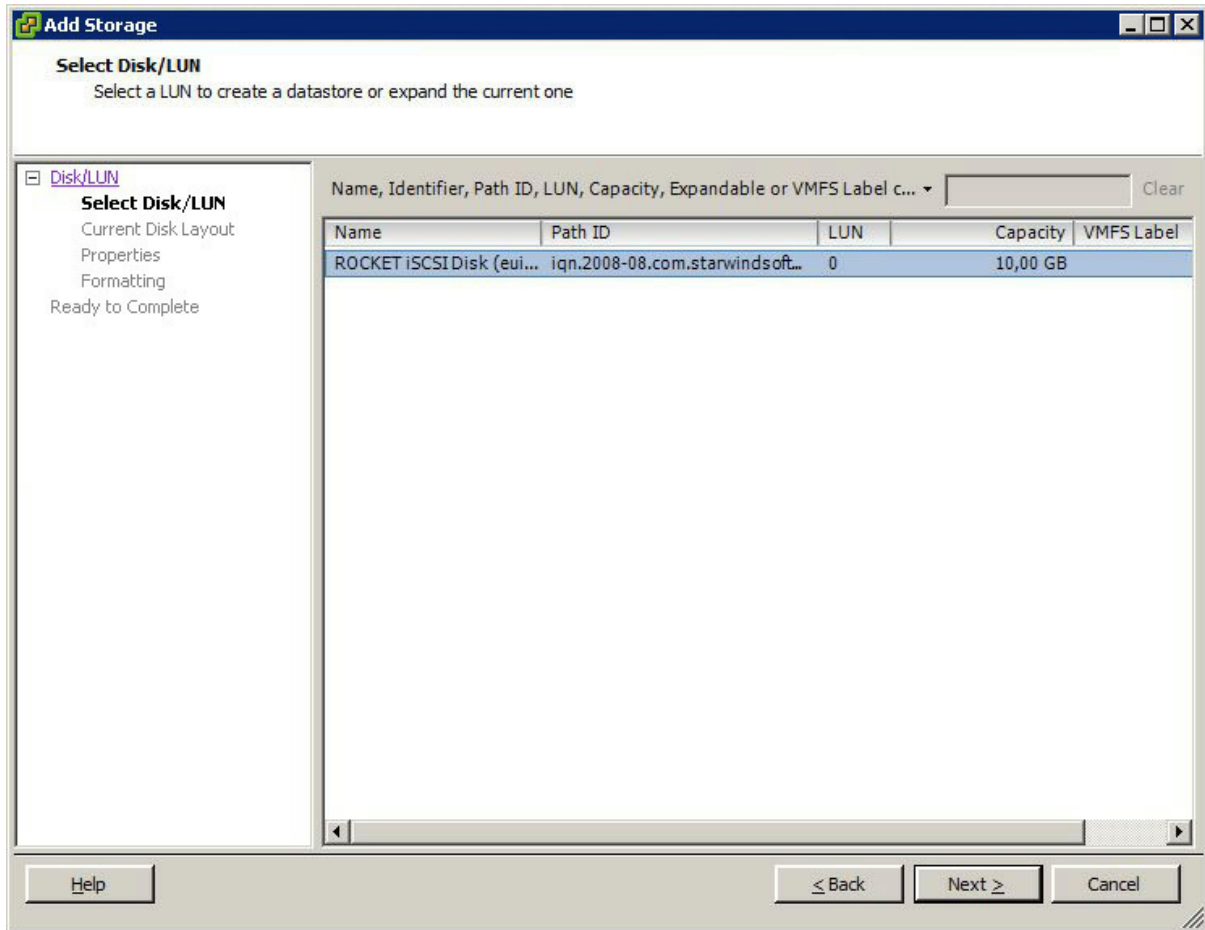
Click the **Close** button. Infrastructure client will prompt you to rescan for new iSCSI LUNs. Leave the default values and click the **Yes** button.

If successful, the **vSphere Client** window should look like the sample picture provided below.



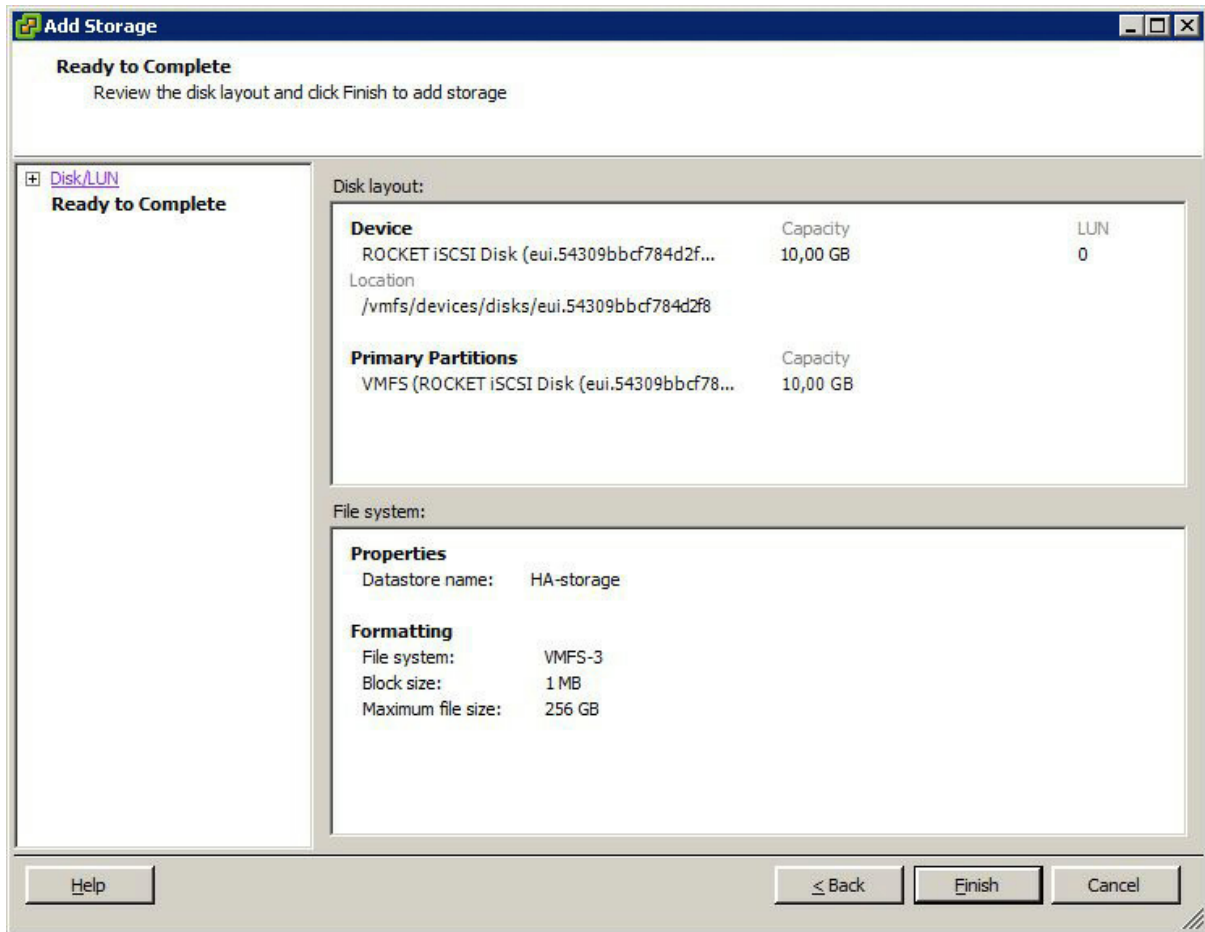
Setting Up the Datastore

Click the **Configuration** tab. Then click Storage. Click the **Add Storage...** link. The Add Storage dialog appears. Select **Disk/LUN** storage type. Click the **Next** button to continue. Select the device.



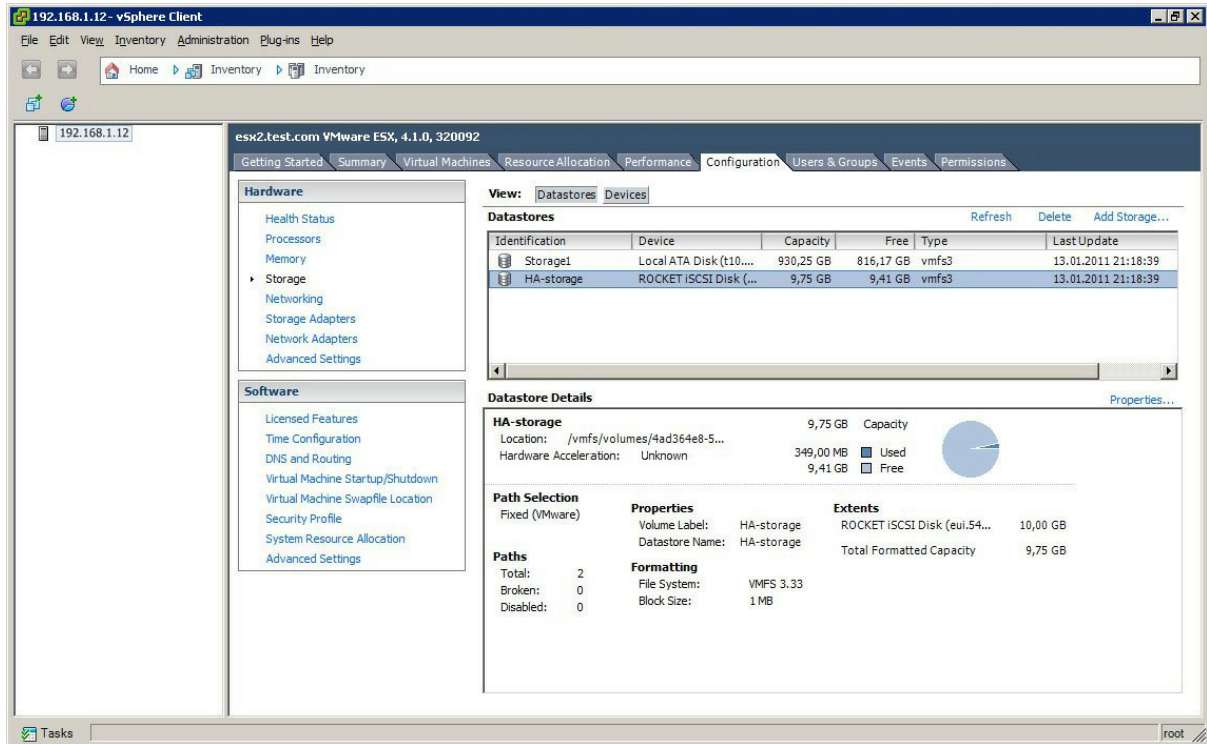
Click the **Next** button to continue.

Review the disk layout. Type in the Datastore Name, set the Disk/LUN formatting options. Confirm that the device parameters are correct and click the **Back** button should any changes be required.



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

If everything has been entered correctly, the **vSphere Client** window should look like the sample picture provided below.



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