

# StarWind iSCSI Target for Microsoft Windows: Configuring StarWind with a host bus adapter for iSCSI boot

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## Guide

#### Introduction

In computer hardware, a host controller, host adapter, or host bus adapter (HBA) connects a host system (the computer) to other network and storage devices.

iSCSI provides with the very popular feature – ability to boot devices from SAN.

This document provides step-by-step instructions to configure StarWind to use it with a host bus adapter to enable the iSCSI boot.



#### Creating a Target to be Used as Boot Device

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** menu item from the pop-up menu.

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. Press the right mouse button over the desired host (computer) and select the **Connect...** menu item. You will be prompted to enter the login and password. Default ones are: **test, test**. You can always change them later.



Select **Connect...** menu item to continue.



The Login dialog asking for the **User name** and the **Password** input looks like the one on the image shown below.

| Login         |       |   | × |
|---------------|-------|---|---|
| $\square$     | Enter | the user name and password for this connection. |   |
| Üser <u>n</u> | ame:  | test  |   |
| Passwo        | ord:  | ••••  |   |
|               |       | OK Cancel                                       |   |



After you have successfully connected to the **StarWind** service on the remote machine, please click the right mouse button over the desired host (computer).

|       |               | 5  | ×                                       | <u> </u>      |            | 2    |       |
|-------|---------------|--|---|---------------|------------|------|-------|
| Exit  | Disconnect    | Refresh  | Preferences                             | Remove connec | Add device | Help | About |
| wishm | aster         |  | raigername                              |               |            |      | 1300  |
| Ĩ     | Iocalhost:326 | 0 Connect<br>Disconn<br>Permiss<br>Access<br>Show Se | t<br>ect<br>Rights<br>erver Log<br>nces | F2            |            |      |       |
|       |               |  | nfiguration                             | F3            |            |      |       |
|       |               | 💓 <u>A</u> dd De                                     | vice                                    | Ins           |            |      |       |
|       |               | Semove <u>R</u> emove                                | e Connection                            | Del           |            |      |       |
|       |               | Show Se  | erver License                           |               |            |      |       |

Select the **Add Device...** menuitem to continue.



In the wizard that appears, please select **Image File device** (the brief description of each option is displayed in the right area of the wizard window). You can display the online help by pressing the **Help** button.

| Add Device Wizard   | ×  |
|---|--|
| Select device type  | $\approx$  |
| Select the type of device<br>Image File device<br>RAM drive device<br>Virtual DVD device<br>Disk Bridge device<br>Snapshot and CDP device<br>Mirror (RAID - 1) device<br>SPTI device<br>Virtual tape device | Description<br>ImageFile plugin allows to create a virtual<br>hard drive within a regular disk file. |
| Help  | < <u>B</u> ack <u>N</u> ext > Cancel   |



Select **Create new virtual disk** to create a new virtual hard disk or **Mount existing virtual disk** to mount an existing virtual disk that you've prepared before.

| Add Device Wizard                                       | ×         |
|---|-----------|
| Select method to add Image File device                  | $\approx$ |
| Select one of the following options.                    |           |
| O Mount existing virtual disk                           |           |
| Create new virtual disk                                 |           |
| C Create new virtual disk based on Snapshot and CDP one |           |
|   |           |
|   |           |
|   |           |
|   |           |
|   |           |
|   |           |
| Help < <u>B</u> ack <u>N</u> ext >                      | Cancel    |



If you have decided to create a new virtual disk, please specify the location and the name of the virtual disk you wish to be created. Also, you have to provide the virtual disk size in megabytes. Check any additional parameters of the virtual disk you wish to create. Please refer to the online help for details regarding those additional parameters (**Compressed** and **Encrypted**).

| Add Device Wizar   | d  | ×         |
|--------------------|--|-----------|
| Specify virtua     | l disk parameters  | $\approx$ |
| New virtual disk l | location and name:   |           |
| My Computer\C      | :\images\boot.img  |           |
| Size in MBs:       | 5120   |           |
| Compressed         | Fill with zeroes<br>WARNING: You choose not to zero out the virtual disk.<br>This can be a security hole if the virtual disk is used directly<br>by untrusted clients! |           |
| Help               | < <u>B</u> ack <u>N</u> ext >  | Cancel    |



Image file device has some extra parameters. Please refer to the online help for details regarding those additional parameters (Asynchronous mode, Allow multiple connections (clustering), Read-Only mode and Specify advanced options).

| Add Device Wizard  | ×         |
|--|-----------|
| Specify Image File device parameters                       | $\approx$ |
| Select virtual disk you want to make accessible via iSCSI: |           |
| My Computer\C\images\boot.img                              |           |
| Asynchronous mode  |           |
| Read-Only mode   |           |
| Allow multiple concurrent iSCSI connections (clustering)   |           |
| Specify advanced options                                   |           |
|  |           |
|  |           |
|  |           |
|  |           |
|  |           |
| Help < <u>B</u> ack <u>N</u> ext >                         | Cancel    |



Select an optional target name. Under this target name, the device will be declared to the iSCSI initiators connecting to the **StarWind** over an IP network.

| Add Device Wizard                        |                |                | ×         |
|--|----------------|----------------|-----------|
| Please specify common device paramete    | ers            |                | $\approx$ |
| Choose a target <u>n</u> ame (optional): |                |                |           |
| boot                                     |                |                | •         |
|  |                |                |           |
|  |                |                |           |
|  |                |                |           |
|  |                |                |           |
|  |                |                |           |
|  |                |                |           |
|  |                |                |           |
|  |                |                |           |
|  |                |                |           |
| Help                                     | < <u>B</u> ack | <u>N</u> ext > | Cancel    |



Check if all of the device parameters are correct. Press the **Back** button if any changes are required.

| Add Device Wizard |   | × |
|-------------------|---|---|
|                   | Completing the Add Device Wizard  |   |
| ≋ <b>Ştạr₩ind</b> | The following device will be added:<br>ImageFile0<br>You specified the following settings:  |   |
|                   | Network Name:<br>boot<br>Image file:<br>My Computer\C\images\boot.img<br>Asynchronous: Yes<br>Clustering: No<br>Read-Only: No<br>File system bufferring: No |   |
|                   | To add device, click Next.  |   |
| Help              | < <u>B</u> ack <u>Next</u> > Cancel   |   |



The information about the recently created device is displayed on the last wizard page (see image below).



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



If everything went fine, the **StarWind** console should look like the sample image provided below.

| <u>اک</u> | arWind           |                                     |         |             |               |            |      |            |
|-----------|------------------|-------------------------------------|---------|-------------|---------------|------------|------|------------|
| Eile      | ⊻iew <u>⊂</u> on | nection <u>D</u> evice <u>H</u> elp |         |             |               |            |      |            |
|           |                  |                                     | 5       | ×           | <u> </u>      |            | 2    |            |
|           | Exit             | Disconnect                          | Refresh | Preferences | Remove connec | Add device | Help | About      |
| Devi      | ce tree          |                                     |         | Target name |               |            |      | Туре       |
|           | - 📃 w            | ishmaster                           |         |             |               |            |      |            |
|           |                  | Connections                         |         |             |               |            |      |            |
|           | [                | localhost:326                       | 60      |             |               |            |      |            |
|           |                  | Image                               | FileO   | boot        |               |            |      | Image file |
|           |                  |                                     |         |             |               |            |      |            |
|           |                  |                                     |         |             |               |            |      |            |
|           |                  |                                     |         |             |               |            |      |            |
|           |                  |                                     |         |             |               |            |      |            |
|           |                  |                                     |         |             |               |            |      |            |
|           |                  |                                     |         |             |               |            |      |            |
|           |                  |                                     |         |             |               |            |      |            |
|           |                  |                                     |         |             |               |            |      |            |
|           |                  |                                     |         |             |               |            |      |            |
| •         |                  |                                     |         |             |               |            |      | Þ          |
| Ready     |                  |                                     |         |             |               |            |      |            |



### **Configuring HBA for iSCSI Boot**

Restart the client computer with the Adaptec HBA installed.



During system boot when the Adaptec information appears hit **Ctrl+A** to enter the **Adaptec iSCSISelect(TM) Utility**.



#### Select the Adapter Configuration from the Main Menu.

Main Menu dapter Configuration Target Configuration LUN Configuration Clear Configuration

#### Select the **Controller Configuration** from the **Adapter Configuration Menu**.



Hit Enter to continue.



Optionally specify the iSCSI Initiator Name.

| rirmware version        | : 01.20.41             |
|-------------------------|------------------------|
| BIOS Version            | : v1.20.40             |
| EEPROM Version          | : 2.13                 |
| IP Version Supported    | : IPv4                 |
| Controller Description  | : AdapteciSCSIHostBusA |
| Controller Model Number | : ASA72XX              |
| SCSI Initiator Name     | : ign.1991-05.com.micr |
| BIOS INT13              | : Enabled              |
| lumber Of Ports         | : 1                    |
| Start Session ID        | : 4000031b0001         |
| Max Sessions            | : 40                   |
|                         | (Saua)                 |

Hit Esc to exit out of the Controller Configuration screen.



#### Select Network Configuration from the Adapter Configuration Menu.



Hit Enter to continue.



Configure the adapter to use static **IP addresses**.



Save the settings and return to the Main Menu.



#### Select Target Configuration from the Main Menu.

Main Menu Adapter Configuration Target Configuration LUN Configuration Clear Configuration

Then select Add Targets from the Target Configuration Menu.



Hit Enter to continue.



On the **New Target screen**, enter the **IP address** of the **StarWind** computer. Specify the **Target Name** to connect. If a different iSCSI port is used, update the **Port Number** to reflect the new port number. Ensure that **Available After Reboot** option is set to **Yes**.

| Target Name         | : boot           |
|---------------------|------------------|
| Target IP Address   | : 192.168.1 .234 |
| Port Number         | : 3260           |
| Available After Reb | oot: Yes         |
| [5                  | ave]             |

Save the settings and return to the Target Configuration Menu.



#### Select Rescan Targets.



Hit Enter to continue.



Select **PING Targets**. Specify IP address of the **StarWind** target server.



Watch the ping statistics. All ping results should be **PASS**.

| S.No | IP Add   | ress  | Resp.Time | Result |
|------|----------|-------|-----------|--------|
| 0    | 192.168. | 1.234 | 10 ms     | PASS   |
| 1    | 192.168. | 1.234 | 10 ms     | PASS   |
| 2    | 192.168. | 1.234 | 10 ms     | PASS   |
| 3    | 192.168. | 1.234 | 10 ms     | PASS   |

Hit **Esc** to exit out of the **PING Target** screen.



#### From the Target Menu select Boot Targets.





On the **List of Targets** page select the target and enable it for booting by hitting the **F4** key. Modify the boot order of the LUN as needed and save the settings.



|      |      |     | L1      | ST 01 | large | ets        |          |            |
|------|------|-----|---------|-------|-------|------------|----------|------------|
| S.No | Name | IP  | Address |       | PortN | o Type     | Bootable | Connection |
| 01.  | boot | 192 | 168.1   | .234  | 3260  | Configured | Yes      | Yes        |



Exit out of the Adaptec iSCSISelect(TM) Utility and restart the computer.



Install the operating system using the adapter. For information on installing the operating system, please see the documentation that comes with the adapter (you need to create floppy disk with Adaptec drivers and during Windows operating system install press F6 and specify that floppy disk).

| Windows Setup   |
|---|
| Setup could not determine the type of one or more mass storage devices<br>installed in your system, or you have chosen to manually specify an adapter.<br>Currently, Setup will load support for the following mass storage devices(s): |
| <none></none>   |
| * To specify additional SCSI adapters, CD-ROM drives, or special<br>disk controllers for use with Windows, including those for<br>which you have a device support disk from a mass storage device<br>manufacturer, press S.             |
| * If you do not have any device support disks from a mass storage<br>device manufacturer, or do not want to specify additional<br>mass storage devices for use with Windows, press ENTER.   |
|   |
|   |
| S=Specify Additional Device ENTER=Continue F3=Exit  |





Hit Enter to continue.



Select the device driver and continue operating system installation in the usual way.

| Windows Setup   |
|---|
|   |
| You have chosen to configure a SCSI Adapter for use with Windows,<br>using a device support disk provided by an adapter manufacturer. |
| Salast the SPSI Odantan way want from the fallowing list, on where FSC  |
| to return to the previous screen.   |
|   |
|   |
|   |
|   |
|   |
| Adaptec Windows Server 2003 1Gb iSCSI Miniport Driver   |
|   |
|   |
|   |
|   |
|   |
| ENTER=Select F3=Exit  |
|   |
| Windows Server 2003, Enterprise Edition Setup   |
|   |
| The following list shows the existing partitions and unpartitioned space on this computer.  |
| Use the UP and DOWN ARROW keys to select an item in the list.   |
| <ul> <li>To set up Windows on the selected item, press ENTER.</li> </ul>  |
| • To create a partition in the uppartitioned chace press C  |

• To delete the selected partition, press D.

5120 MB Disk 0 at Id 0 on bus 0 on symmpi [MBR] Unpartitioned space 5120 MB

ENTER=Install C=Create Partition F3=Quit

# 

## Conclusion



#### Contacts

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