

StarWind iSCSI SAN Software: Using with Citrix XenServer

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Guide

Introduction

Note: this manual assumes that you have already installed and configured XenServer.

Virtualized hardware reduces the TCO for many applications. Using StarWind iSCSI Target for Windows will further enhance these virtualized resources.



Note: this manual assumes that you have already installed and configured XenServer.



Configuring StarWind Server

Enabling iSCSI discovery for XenServer

Go to the StarWind installation folder (Default is C:\Program Files\Starwind Software\Starwind)

Open the starwind.cfg file with notepad and find the lines:

<!-- Allow listing of interfaces in response to SendTargets=All -->

<!--<iScsiDiscoveryListInterfaces value="1"/>-->

Uncomment the iScsiDiscoveryListInterfaces setting by removing <!-- & --> from it.

Save changes.

Restart StarWind service: go Start->Run

Run net stop StarWindService, then run net start StarWindService.



Preparing Storage

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** pop-up menu item. StarWind management console will appear.

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. Double click on the host to connect to it.

Default login and password are: root, starwind. You can always change them later.

After you have successfully connected to the **StarWind Service**, click the **button** to launch Add Target wizard.



Add Target wizard window will appear. Specify the target name for your virtual disk.

arget Alias: kenstorage] Target Name: qn.2008-08.com.starwindsoftware:hk-mp7-xenstorage	Specify target alia	as and target i	name.		
xenstorage] Target Name: qn.2008-08.com.starwindsoftware:hk-mp7-xenstorage	arget Alias:				
] Target Name: qn.2008-08.com.starwindsoftware:hk-mp7-xenstorage	xenstorage				
qn.2008-08.com.starwindsoftware:hk-mp7-xenstorage	Target Name:				
	iqn.2008-08.com	1.starwindsoft	ware:hk-mp7-	xenstorage	



Select Image File device type by going Hard Disk->Basic Virtual->Image File device.

Select Create new virtual disk option.

Add Target Wizard
Device creation method Select device creation method.
 Mount existing virtual disk Choose existing virtual disk and export it as iSCSI target. Create new virtual hard disk and export it as iSCSI target. Create new virtual disk based on Snapshot and CDP one Choose existing Snapshot and CDP virtual disk to create new Image File virtual disk based on it and export it as iSCSI target.
< <u>B</u> ack Next > Cancel Help



Specify the path where the disk image file should be created and it's size in Megabytes.

Check any additional parameters of the virtual disk you wish to create. Please refer to the online help to learn about additional parameters (**Compressed**, **Encrypted** and **Fill with zeroes**).

Add Target Wizard
Virtual disk parameters Specify virtual disk parameters.
New virtual disk location and name:
My Computer\D\xenstorage.img
Size in MBs: 10240
Compressed
Encrypted
User account that will have access to this image
Name:
Password:
Fill with zeroes
< Back Next > Cancel Help



Set Image File device parameters. To learn more about additional parameters (Asynchronous mode, Allow multiple connections (clustering), Read-only mode and Specify advanced options) please refer to the online help.

Add Target Wizard	×
Image File device parameters Specify Image File device parameters.	\approx
Select virtual disk you want to make accessible via iSCSI:	
My Computer \D \xenstorage.img	▼
✓ Asynchronous mode	
Read-Only mode	
Allow multiple concurrent iSCSI connections (clustering)	
Advanced options	
File system buffering	
Header size in sectors: 0	
< <u>B</u> ack <u>Next</u> > Cancel	Help



Set caching options for your image file device. Refer to help section to learn about caching options.

Add Target Wizard	
Image File device cache paramete Specify Image File device cache par	ers rameters.
Cache Normal (no caching)	
Cache size in MBs:	64
Note: cache size is subject to sh memory.	rink w/o notice if specified too large for destination machine
Cache block expiry period in ms:	5000



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





Wizard will inform you that the target has been successfully created.



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



Configure XenCenter

Install XenCenter software from the XenServer installation media. Launch XenCenter.



Click Add New Server button.



In the opened dialog window type in the IP address of the machine running XenServer, login and password.

Add Ne	ew Server		? ×
	Connect to a	a server by entering its IP address or hostname:	
	Hostname:	192.168.1.50	
	User name:	root	
	Password:	•••••	
		Connect Can	cel

Click Connect button.



After connecting your server will appear in the list on the left side of the XenCenter window.

XenCenter						
<u>File ⊻iew P</u> ool <u>S</u> erver	V <u>M</u> St <u>o</u> rag	je <u>T</u> emplates Too <u>l</u> s	s <u>W</u> indow <u>H</u> elp			
GBack - Sroward -	Add New	Server 🎼 New Po	ool 🔐 New Storage 🔐 New VM	🛛 🕘 Shut Down 🛞 R	eboot 🕕 Suspend	🧹 No System Alerts
Search	•	🎚 xenserver-sv	VS New Storage			0
XenCenter		Search General Sto	orage Network NICs Console Pe	erformance Logs		
DVD drives		xenserver-sws	overview			Search Options 💌
		Status	Name	CPU Usage	Used Memory	Disks (avg / max KBs)
		L _	x enserver-sws Default install of XenServer	0% of 4 CPUs	11% of 4.0 GB	-
]					
Saved Searches	e					
VMs by Network	(0 items)					
🔎 VMs by Operating System	(0 items)					
	(0 items)					
VMs by Power State						

Click the **New Storage** button.



A New Storage Repository wizard will appear.

🗴 New Storage Repository	/ - xenserver-sws	
💣 Choose the typ	e of new storage	0
Type Location	Virtual disk storage	Shared Logical Volume Manager (LVM) support is available using either iSCSI or Fibre Channel access to a shared LUN.
	 iSCSI NetApp Hardware HBA Dell EqualLogic 	Using the LVM-based shared SR provides the same performance benefits as unshared LVM for local disk storage, however in the shared context, iSCSI or Fibre Channel-based SRs enable VM agility — VMs may be started on any server in a pool and migrated between them.
RE	ISO library Windows File Sharing (CIFS) NFS	
		< <u>Previous</u> <u>Next ></u> <u>Einish</u> Cancel

Select **iSCSI** from the device list and click **Next** button.



Now enter the IP address of the machine running StarWind.

🗴 New Storage Repository - xense	erver-sws		_ 🗆 🗵
Enter a name and path	n for the new iSCSI	storage	0
Type Location	Name: Target Host:	iSCSI virtual disk storage	
	Use CHAP	Lation	
	CHAP User: CHAP Secret:		
5000	Target IQN:	xenstorage (192.168.1.233:3260) Discover IQNs	
191-	Target LUN:	Discover LUNs	
		< Previous Next > Einish	Canc <u>e</u> l

Click the **Discover IQNs** button.



After the IQN is successfully discovered the wizard window will look similar to the one shown below.

🗴 New Storage Repository - xens	server-sws		
Enter a name and pat	th for the new iSCSI	storage	0
Type Location	Name: Target Host:	ISCSI virtual disk storage	
	CHAP Authentic	ation	
	CHAP User: CHAP Secret:		
110-2	Target IQN: Target LUN:	xenstorage (192.168.1.233:3260) Discover IQNs Discover LUNs	
IC	-		
		< Previous Next > Finish	Cancel

Click **Discover LUNs** button.



Now when the LUN is discovered the window should like the one below.

🗴 New Storage Repository - xense	erver-sws		
Enter a name and path	I for the new iSCSI	storage	0
Type Location	Name:	ISCSI virtual disk storage	
		ation	
	CHAP User:		
1200	CHAP Secret: Target IQN:	xenstorage (192.168.1.233;3260) Discover IQNs	s
197	Target LUN:	LUN 0: E4F733DEC6876B02: 5.0 GB (ROCKET Discover LUNs	
		< Previous Mext >	Canc <u>e</u> l

Click **Finish** button. The setup will ask you to format the disk, click **Yes** button.



Now your iSCSI storage device has appeared in the list of available storage.



Now right click on the **iSCSI virtual disk storage** menu item in the left part of the XenCenter window.

🔀 XenCenter					
File View Pool Server VM Stora	ge Templates Tools	Window Help			
GBack 🔹 💮 Forward 🔹 📑 Add New	v Server 🕴 🎼 New Pool	🔐 New Storage 📑 New VM 🕴 🌘	🕖 Shut Down 🛞 Reboot 🌘	D Suspend	🧹 No System Alerts
Search 🔹	🍘 iSCSI virtual disk	storage			1
E 😣 XenCenter	General Storage Logs				
Xeriserver-sws CIFS ISO library DVD drives ISCSI virtual disk storage	Virtual Disks	•	Add Disk	Properties	Remove
🖉 Local storage 👩 Set as Def	ault Storage Repository	Description		Size	VM
Removable sto Share Stor	rage Repository				
Detach Sto	orage Repository				
Forget Sto	rage Repository				
Destroy St	orage Repository				
Properties					
Saved Searches VMs by Network (0 items) VMs by Operating System (0 items) VMs by Power State (0 items) VMs without XenServer Tools (0 items)					

Select **Set as Default Storage Repository.** Now the virtual machine you create will use iSCSI virtual disk storage as default storage.



You can optionally add a remote OS installation image. To do so click Add Storage button.

A New Storage Repository wizard will appear.

🗴 New Storage Repository - xen	server-sws	
Choose the type of n	ew storage	0
Туре	Virtual disk storage	Select this option if you have a library of VM installation
Location	O NFS	ISO images available as a Windows File Sharing share that you wish to attach to your host or pool.
	O ISCSI	
	C NetApp	
	O Hardware HBA	
	O Dell EqualLogic	
and a faith a	ISO library	
3-1-2-5	Windows File Sharing (CIFS)	
3133	O NFS	
10		
		< Previous Next > Einish Cancel

Select Windows File Sharing (CIFS) and click Next button.



Now specify the source folder where the OS install Image is stored.

🗴 New Storage Repository - xer	iserver-sws		_ 🗆 🗵
Enter a name and pa	th for the ne	w CIFS storage	0
Туре	Name:	CIFS ISO library]
Location	Share Name:	\\192.168.1.149\Install\OS\2003\	
		Example: \\server\sharename	
	Server Option	15	
	🗖 Use difi	ferent user name	
	Login -		
	User n	iame:	
	Passw	ord:	
2000			
1.11	Advanced	Options:	
14-14			
AN ANTA			
and the second second			
		< Previous Next > Finish	Canc <u>e</u> l

Click the **Finish** button.



Now we can create a new virtual machine, in the XenCenter window select your server.



Click the **New VM** button.



A **New VM** wizard will appear. Select the OS type you wish to Install on your virtual machine.

Note: to make the additional Linux templates available install Linux support pack from the second XenServer CD on the machine running XenServer.

New VM - xenserver-sws		_ 🗆 🗵
Select an operatin	g system for the new virtual machine	0
Template Name Location CPU & Memory Virtual Disks Virtual Interfaces Finish	Image: Emplates: SUSE Linux Enterprise Server 10 SP2 x64 Windows 2000 SP4 Windows Server 2003 Windows Server 2003 Windows Server 2008 Windows Server 2008 x64 Windows Server 2008 x64 Windows SP SP2 Windows XP SP3 Other install media Debian Etch 4.0 Debian Sarge 3.1	
	Windows Server 2003 Installs Windows Server® 2003 32-bit Service Pack 0, 1, or 2. The Server, Enterprise, Data Centre, and SB5 editions are supported. < Previous	Cancel

Click the **Next** button.



Enter a name and description for your VM

🗴 New VM - xenserver-sws				_ 🗆 X
💣 Enter a name and des	cription for th	e new virtual machine		?
Template	Name:	Windows Server 2003		
Location CPU & Memory Vietual Dicks	<u>D</u> escription:			
Virtual Disks Virtual Interfaces Finish				
110				
16-2				
		< <u>P</u> revio	us Next > Enish	Canc <u>e</u> l

Click the **Next** button.



Select the storage where you want to store your virtual machine.

💣 Enter the information a	bout the virtu	al disks for the new virtual mach	ine	0
Template Name Location CPU & Memory	The default vir You can add, n continue to the Virtual disks ins	tual disks for the template you have selecte nodify or delete virtual disks, if required. Wh e next page. stalled on the new machine:	d are listed below. en you have finished, click "Next" to	
Virtual Disks	Size (GB)	Location	Shared	
Virtual Interfaces	4	iSCSI virtual disk storage	No	
		<u>Ad</u>	Meyt > Finish	Capcel

Click **Add...** if you want to add local or other storage to your VM.



In the Disk Settings window you can select storage available for your virtual machine and the VM's disk access priority if using local storage.

🙁 New VM - xei	nserver-sws					
💣 Enter	Disk Settings Enter the settings for the	new virtual disk		Disk Access I	? iority	× 0
Template Name	Size: 4.0 📻 Gi	8 🗖 Read Only	Lowest	. т. т.	Highest	
Location	Name	Description		Size (GB)	Free Space (GB)	
CPU & Memo	iSCSI virtual disk storage	iSCSI SR [192.168.1.233 (xenst	orage)]	4	4	
Virtual Disk	Local storage on xens	Local storage on xenserver-sws	_	923	923	
Finich						
T IIIISII						
L BH WHURST						
1000						
2000						
1 31.13						
all the						
and the second second						
				0	K Cancel	
		A. La. A. J. K. D. K.	< <u>P</u>	revious <u>N</u> ext	> Enish	Canc <u>e</u> l

I.e. we have allocated 4 Gigabytes of disk space for our VM. Pressing **OK** returns us to the previous screen.



🗴 New VM - xenserver-sws					_ 🗆 🗙
💼 Enter the information al	bout the virtu	al disks for the new virtual m	achine		?
Template Name Location CPU & Memory	The default vir You can add, n continue to the Virtual disks ins	tual disks for the template you have sel nodify or delete virtual disks, if required e next page. stalled on the new machine:	ected are listed below. . When you have finish	ed, click "Next" to	
Virtual Disks	Size (GB)	Location		Shared	
Virtual Interfaces	4	iSCSI virtual disk storage		No	
			Add Edįt.	Delețe	2
		< <u>P</u> revious	<u>N</u> ext >	Enish	Canc <u>e</u> l

Click the **Next** button.



On this step we can manage network interfaces to use with our VM.

🗴 New VM - xenserver-sws				
💣 Add or remove virtua	l network interface	es for the virtual machine		(7)
Template Name Location CPU & Memory	The default virtual add, modify or dele When you have fin	network interfaces for the template y ete virtual network interfaces, if requi ished, click "Next" to continue to the r	rou have selected are listed belo red. next page.	w. You can
Virtual Disks	Name		Network	
Finish	interface 0	auto-generate	Network 0	-
			Add	Delete
		< <u>P</u> revious	Next > Einish	Canc <u>e</u> l

Select the desired network interface or/and add one with different settings. Click **Next** button to continue.



Select whether to power on VM after creation or to launch it later.

🗴 New VM - xenserver-sws		_ 🗆 🗡
💣 Your new virtual mac	hine configuration is complete	0
Template Name Location CPU & Memory	You have successfully completed the new virtual machine wizard. To create the new virtual machine and close the wizard, click Finish. This process may take several minutes.	
Virtual Disks Virtual Interfaces Finish	I Start VM automatically	
	< Previous Mext >	Canc <u>e</u> l

Click the **Finish** button.



Now go to the **Console** tab.

As soon as the VM is online select your OS install repository from the DVD drive menu.



Click on the VM screen to dock your mouse and keyboard to it.



Here we can see that our iSCSI disk has been successfully mounted and is discovered by OS install like a regular local storage.



Install the OS in the usual way.



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