White Paper



# How to Configure iSCSI Initiator in VMware ESXi 6.x

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This edition applies to QSAN XCubeSAN Series. Note that this document was produced based on beta code and some screens may change when it becomes generally available.

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# **CSAN**

# **Configure iSCSI Initiator**

## **Executive Summary**

In this document, we will guide users to understand how to use the software iSCSI initiator in VMware® ESXi 6.x to connect to QSAN XCubeSAN dual controller system. We will also demonstrate the steps pertaining to how multipath I/O be configured with XCubeSAN for achieving the expected throughput.

## Audience

This document is applicable for QSAN customers and partners who are familiar with QSAN products. Any settings which are configured with basic operations will not be detailed in this document. If there is any question, please refer to the user manuals of products, or contact QSAN support for further assistance.

# **Test Environment**

### Host

- OS: VMware ESXi server 6.0
- NICs:
  - VMnic2 (management)
  - VMnic0/VMnic1 (used for connecting to XS5216-D)

### Storage

- QSAN XCubeSAN XS5216
  - Firmware Version: 1.0.0
  - · iSCSI data port: 172.16.135.10/24 & 172.16.136.10/24
  - LUN Mapped: target0, LUN0, 3TB

### Diagram

# **OSAN**



# **Configuration Guide**

## Logging iSCSI Target Using Software iSCSI Initiator

Users can either use VMware vSphere client or VMware Web client to configure the software iSCSI initiator. We are using VMware vSphere client to connect to the ESXi server directly as an example here.

1. Login the ESXi server from VMware vSphere Client.

🚱 VMware vSphere Client	×
vmware VMware vSphere Client	R
All vSphere features available only throug vSphere Client will or feature set as vSphere To directly manage a sing To manage multiple hosts, vCenter Server.	introduced in vSphere 5.5 and beyond are on the vSphere Web Client. The traditional ontinue to operate, supporting the same are 5.0. The host, enter the IP address or host name. enter the IP address or name of a
IP address / Name:	192. 168. 136. 190
User name:	root
Password:	*******
	Use Windows session credentials
	Login Close



2. In **Configuration** tab, modify **Networking** setting to add a **VMkernel** network (It is the TCP/IP stack which handles traffic for ESXi server services, such as vMotion, iSCSI, and NFS).

Hardware	View: vSphere Standard Sw	vitch
Health Status	Networking	Refresh Add Networking Pr
Processors		
Memory	Standard Switch: vSwitch0	Remove Properties
Storage	- Virtual Machine Port Group	Physical Adapters
Networking	🖓 VM Network	👳 🔶 🕳 🐨 vmnic2 1000 Full 🖓
Storage Adapters	1 virtual machine(s)	
Network Adapters	WIN2K8R2	B+
Advanced Settings	-VMkernel Port	

3. Make sure the **VMkernel** connection is selected.

-	
Lonnection Type	- Connection Types
	concean types
	C Virtual Machine
	Add a labeled network to bandle virtual machine network traffic.
	The VMkernel TCP/IP stack handles traffic for the following ESXi services: vSphere vMotion, iSCSI, NF and host management.

4. Create the first virtual switch and make sure to choose the right network interface which is connected to the same network with XCubeSAN XS5216 iSCSI data port.



Carded Constrained Create a vSphere standard switch Speed Networks Intel Corporation 82574L Gigabit Networks Connection V Wincit 1000 Full None Use vSwitch0 Speed Networks Intel Corporation 82572EI Gigabit Ethernet Controller Wernel Vmnic2 1000 Full 192.168.0.1-192.168.255.	
Intel corporation 92.074.04gabit Heckork Connection         Image: Second Seco	
Image: Wind Charles of Comparison and Comparison a	
Use v5witch0     Speed     Networks       Intel Corporation 82572EI Gigabit Ethernet Controller     Image: Controller       Image: Control in the state of the state	
Intel Corporation 82572EI Gigabit Ethernet Controller  Vmmic2 1000 Full 192.168.0.1-192.168.255.  Preview:  VMikemel Port VMikemel Port VMikemel @  Physical Adapters VMikemel @  Physical	
Preview:	
Preview: VMicernel Port VMicernel Q Physical Adapters VMicernel Q Physical Adapters	3.254
VMkernel 👳 🛶 🚥 vmnic0	

5. Specify **Network Label** and setup a proper **VMkernel** network IP which is used to connect to the iSCSI data port of XCubeSAN XS5216.

Connection Type	Port Group Properties	Y
<u>Network Access</u> Connection Settings	Network Label:	VMkernel-ISCSI1
	VLAN ID (Optional):	None (0)
		└── Use this port group for vMotion
		☐ Use this port group for Fault Tolerance logging
		$\square$ Use this port group for management traffic
	Preview:	
	-VMkernel Port VMkernel-iSCSI1	Physical Adapters



VMkernel - IP Connecti Specify VMkernel IP se	ion Settings ettings
Connection Type Network Access Connection Settings IP Settings Sommary	C       Obtain IP settings automatically         IP       Use the following IP settings:         IP Address:       172 . 16 . 136 . 1         Subnet Mask:       255 . 255 . 255 . 0         VMkernel Default Gateway:       172 . 16 . 136 . 254         Edit       Edit
	VMkemel Port VMkernel-iSCSI1 172.16.136.1
	< Back Next > Cancel

6. Check all configurations are correct, and then click **Finish** button.

Network Access	Host networking will include the following new and modified standard switches: Preview:	
Summary	Vinkeme i von VIII Vinkeme i SCSII 172.16.136.1	

 In order to create a multipath I/O session to the iSCSI target, it's necessary to add another VMkernel network, and we suggest to add another vSwitch for separating the network segment and preventing getting user confused

# **OSAN**

Hardware	View: vSphere Standard Switch	
Health Status	Networking	Refresh Add Networking Properties.
Processors		
Memory	Standard Switch: vSwitch0	Remove Properties
Storage • Networking Storage Adapters Network Adapters Advanced Settings Power Management	Virtual Machine Port Group VM Network I virtual machine(s) WIN2K8R2 VMkernel Port Management Network vmk0 : 192.168.136.190	Physical Adapters
Software		-
Licensed Features	Standard Switch: vSwitch1	Remove Properties
DNS and Routing Authentication Services Virtual Machine Startup/Shutdown Virtual Machine Swapfile Location	VMkernel Port VMkernel-iSCSI1 vmk1:172.16.136.1	Physical Adapters

Connection Type Network Access Connection Settings Summary	Connection Types C Virtual Machine Add a labeled network to handle virtual machine network traffic.
	VMkernel     The VMkernel TCP/IP stack handles traffic for the following ESXi services: vSphere vMotion, iSCSI, NFS, and host management.



<u>Connection rype</u>	Port Group Properties	
Network Access Connection Settings	Network Label:	VMkernel-iSCSI2
	VLAN ID (Optional):	None (0)
		☐ Use this port group for vMotion
		Use this port group for Fault Tolerance logging
		Use this port group for management traffic
	Preview:	
	VMkernel-ISCSI2	vmici

Connection Type Network Access Connection Settings IP Settings Summery	C Obtain IP settings automatically C Use the following IP settings: IP Address:	172 . 16 . 135 . 1	
	Subnet Mask: VMkernel Default Gateway:	255.255.255.0       172.16.135.254	
	Preview: -Wikernel Port VMkernel-ISCSI2 172.16.135.1	Physical Adapters	



Ready to Complete Verify that all new and	i modified vSphere standard switches are configured appropriately.
Connection Type Network Access * Connection Settings Summary	Host networking will include the following new and modified standard switches: Preview:  VMkernel-ISCSI2 IZ2.16.135.1  Physical Adapters Vmnic1 IZ2.16.135.1
	< Back Finish Cancel

8. In **Configuration** tab, select **Storage Adapters** to list all available storage adapters. Choose **iSCSI Software HBA** and click **Properties** to modify the settings.

ardware	Storage Adapters		A	dd Remove	Refresh	Rescan All
Health Status	Device	Туре	WWN			
Processors	iSCSI Software Adapter					
Processors	O vmhba34	ISCSI	iqn.1998-01.c	om.vmware:anton	y-esxi6-4a27394	b:
Memory	ICH10 2 port SATA IDE Co	ntroller				
Storage	🕝 vmhba1	Block SCSI				
Networking	ymhba33	Block SCSI				
Storage Adapters	ICH10 4 port SATA IDE Co	ntroller				
Network Adapters	C vmbba0	Block SCSI				
Advanced Settings	ymhba32	Block SCSI				
Power Management						
DNS and Routing	Details					
DNS and Routing						800 NG
	vmhba34					Properties
Authentication Services	Madalı	CT Cothuses Adapter				
Authentication Services Virtual Machine Startup/Shutdown	Model: iSC iSCSI Name: ign	SI Software Adapter	tony-esvi6-4a2739	4h		
Authentication Services Virtual Machine Startup/Shutdown Virtual Machine Swapfile Location	Model: iSC iSCSI Name: iqn iSCSI Alias:	SI Software Adapter .1998-01.com.vmware:an	tony-esxi6-4a2739	4b		
Authentication Services Virtual Machine Startup/Shutdown Virtual Machine Swapfile Location Security Profile	Model: iSC iSCSI Name: iqn iSCSI Alias: Connected Targets: 0	SI Software Adapter .1998-01.com.vmware:an Devices: 0	tony-esxi6-4a2739 Paths:	4b 0		
Authentication Services Virtual Machine Startup/Shutdown Virtual Machine Swapfile Location Security Profile Host Cache Configuration	Model: iSC iSCSI Name: iqn iSCSI Alias: Connected Targets: 0	SI Software Adapter .1998-01.com.vmware:an Devices: 0	tony-esxi6-4a2739 Paths:	4b 0		
Authentication Services Virtual Machine Startup/Shutdown Virtual Machine Swapfile Location Security Profile Host Cache Configuration System Resource Reservation	Model: iSC iSCSI Name: iqn iSCSI Alias: Connected Targets: 0 View: Devices Paths	SI Software Adapter . 1998-01.com.vmware:an Devices: 0	tony-esxi6-4a2739 Paths:	4b 0	47em	
Authentication Services Virtual Machine Startup/Shutdown Virtual Machine Swapfile Location Security Profile Host Cache Configuration System Resource Reservation Agent VM Settings	Model: iSC iSCSI Name: iqn iSCSI Alias: Connected Targets: 0 View: Devices Paths Name	SI Software Adapter .1998-01.com.vmware:an Devices: 0	tony-esxi6-4a2739 Paths:	4b 0 Identifier		
Authentication Services Virtual Machine Startup/Shutdown Virtual Machine Swapfile Location Security Profile Host Cache Configuration System Resource Reservation Agent VM Settings Advanced Settings	Model: iSC iSCSI Name: iqn iSCSI Alias: Connected Targets: 0 View: Devices Paths Name	SI Software Adapter .1998-01.com.vmware:an Devices: 0	tony-esxi6-4a2739 Paths:	4b 0 Identifier		
Authentication Services Virtual Machine Startup/Shutdown Virtual Machine Swapfile Location Security Profile Host Cache Configuration System Resource Reservation Agent VM Settings Advanced Settings	Model: iSC iSCSI Name: iqn iSCSI Alas: Connected Targets: 0 View: Devices Paths Name	SI Software Adapter .1998-01.com.vmware:an Devices: 0	tony-esxi6-4a2739 Paths:	4b 0 Identifier		P
Authentication Services Virtual Machine Startup/Shutdown Virtual Machine Swapfile Location Security Profile Host Cache Configuration System Resource Reservation Agent VM Settings Advanced Settings	Model: iSC iSCSI Name: iqn iSCSI Alias: Connected Targets: 0 View: Devices Paths Name	SI Software Adapter .1998-01.com.vmware:an Devices: 0	tony-esxi6-4a2739 Paths:	4b 0 Identifier		P

9. In **iSCSI initiator Properties**, select **General** tab and click **Configure** to enable iSCSI initiator.



💋 iSCSI Initiator (vmhba34) Properties	
General Network Configuration Dynamic Discovery	Static Discovery
iSCSI Properties	
Name: iqn. 1998-01.com.vm	iware:antony-esxi6-4a27394b
Target discovery methods: Send Targets, Static	Target
Software Initiator Properties	
Status: Enabled	
CHAP Advanced	Configure
	Glose

- 10. Next, please add another VMkernel port (default is one only) into the iSCSI initiator, so that the multipath session can be created smoothly.
- 11. Go to **Static Discovery** tab, click **Add** button to set iSCSI target IP, here is iSCSI data port of XCubeSAN XS5216.

SCSI Serv	er Location	Target Name	
ſ	🕢 Add Static Tar	get Server	
	ISCSI Server: Port: ISCSI Target Nar Parent: IN Authent be estat	IT2. 16. 136. 10       3         3260       3         b04-08.com.qsan:xs5224-0001246a0:dev0.ctr1         cation may need to be configured before a session can blashed with the specified target.         QHAP         Advanced         OK       4 Cancel	



SCSI Serve 172.16.136	r Location Target N 10:3260 iqn.2004	lame -08.com.qsan:xs5224-0001246a0:dev0
	Add Static Target Server	
	ISCSI Server: 172.11 Port: 3260 ISCSI Target Name: 004-08 Parent: Authentication may n be established with th	s. 135. 10 . com.qsan:xs5224-0001246a0:dev0.ctr4 eed to be configured before a session can be specified target. CHAP Advanced
L		OK Cancel

### NOTE:

The iSCSI target iqn can be found on web UI. Remember that the iqn is different if you are connecting to the iSCSI data port of controller1 and controller2 from ESXi server.

XS5224-1246	A0					
DASHBOARD	iSCSI Port	is isc	SI Settings	iSCSI Targets	CHAP Accounts	Sessi
SYSTEM SETTINGS General Management Port Power	Controlle	r 1 prev 1	2345	5 <u>6</u> 7 <u>8</u> 9	<u>10 next&gt; last&gt;&gt;</u>	ł
Notification		ID A	uth Targe	t Name 🕴		
Maintenance		0 N	one iqn.20	004-08.com.qsan	xs5224-0001246a0:d	ev0.ctr1
S HOST CONFIGURATION		1 N	one iqn.20	004-08.com.qsan:	xs5224-0001246a0:d	ev1.ctr1
Overview iSCSI Ports		2 N	one iqn.20	004-08.com.qsan:	xs5224-0001246a0:d	ev2.c <mark>tr1</mark>
Fibre Channel Ports		3 N	one iqn.20	004-08.com.qsan:	xs5224-0001246a0:d	ev3.ctr1
		4 N	one ian 20	104-08 com asan.	vs5224_0001246a0.d	ev4 ctr1

12. A **Rescan** window will pop up after the configuration is finished, click **Yes** button to rescan all devices.

# **CSAN**



13. After rescanning, the available LUNs will be listed in the **Details** column when selecting the **iSCSI software adapter**. Although only one LUN is created on XCUBESAN XS5216-D, there are two different physical paths to the same LUN, therefore the system displays two different records to the same LUN here.

irdware	Storage Adapters			Add	Remove	Refresh	
Health Status	Device	Туре	WWN				
Processors	iSCSI Software Adapter		and the second second				
Memory	🕝 vmhba34	iSCSI	ign.1998-0	1.com.vr	mware:anto	ny-esxi6-4a273	94b
Changes	ICH10 2 port SATA IDE C	ontroller					
Storage	🕝 vmhba1	Block SCSI					
Networking	🕝 vmhba33	Block SCSI					
Storage Adapters	ICH10 4 port SATA IDE C	ontroller					
Network Adapters	S vmhba0	Block SCSI					
Advanced Settings	ymhba32	Block SCSI					
Power Management							
ftware							
Electrocol Color co							
Time Configuration	Details						
Time Configuration DNS and Routing Authentication Services Virtual Machine Startup/Shutdown Virtual Machine Swapfile Location Security Profile Host Cache Configuration	Details vmhba34 Model: iS iSCSI Name: iq iSCSI Alias: Connected Targets: 2 View: Devices Paths	CSI Software Adapter n. 1998-01.com. vmware:an Devices: 1	tony-esxi6-4a2 Paths:	7394b 2			
Time Configuration Time Configuration DNS and Routing Authentication Services Virtual Machine Startup/Shutdown Virtual Machine Swapfile Location Security Profile Host Cache Configuration System Resource Reservation Acaet VM Settings	Details vmhba34 Model: iS iSCSI Name: iq iSCSI Alias: Connected Targets: 2 View: Devices Paths Runtime Name Tarr	CSI Software Adapter n. 1998-01.com.vmware:an Devices: 1 net	tony-esxi6-4a2 Paths:	7394b 2	LUN	Status	
Time Configuration DNS and Routing Authentication Services Virtual Machine Startup/Shutdown Virtual Machine Swapfile Location Security Profile Host Cache Configuration System Resource Reservation Agent VM Settings	Details vmhba34 Model: iS iSCSI Name: iq iSCSI Alias: Connected Targets: 2 View: Devices Paths Runtime Name Targ vmhba34:(1:T2:10 ion.	CSI Software Adapter n. 1998-01.com.vmware:an Devices: 1 get 2004-08.com.gsai	tony-esxi6-4a2 Paths:	7394b 2	LUN	Status Active	

## Add a New Storage Using the iSCSI LUN

1. The LUN will be used as a virtual disk of the created guest OS. In **Configuration** tab, select **Storage** and click **Add Storage**.



Hardware Health Status	View: Datastores	Devices		Refresh De	ete Add	Storage
Processors	Identification	A Device	Drive Type	Capacity	Free	Туре
Memory     Storage     Networking     Storage Adapters     Network Adapters     Advanced Settings     Power Management	datastorel	Local ATA Disk (t	Non-550	1.81 18	1.70 18	VMES

2. Select **Disk/LUN**, and click **Next** button.

have access

3. Select **Qsan iSCSI Disk**, and click **Next** button.



Name	Path ID	LUN /	Drive Type	Capacity
Qsan iSCSI Disk (naa.209a001378	9 iqn.2004-08.com	0	Non-SSD	2.93 TE
•	III	-		1

<u>k/LUN</u>	Review the current disk layout:				
Current Disk Layout Properties Formating Ready to Complete	Device Qsan iSCSI Disk (naa.209a001 Location /vmfs/devices/disks/naa.209a00 Partition Format Unknown	Drive Type Non-SSD 137890be00	Capacity 2.93 TB	Available 2.93 TB	LUN O
		The hard disk is	blank.		
	I There is only one layout configuration pages.	available. Use th	e Next button to	proceed with the ot	her wizard

- 4. Enter a name for the new datstore, and click **Next** button.
- 5. Click **Next** button.

# **C**SAN

Disk/LUN - Formatting Specify the maximum file	size and capacity of the datastore
DiskAUN     Select DiskAUN     Current Disk Layout     Properties     Formatting     Ready to Complete	Capacity G Maximum available space C Custom space setting GOODOD G GB available space
	< Back Next > Cancel

- 6. Check all settings, then click **Finish** button.
- 7. A new storage is added under **Datastores** of the ESXi server. The ESXi server provides settings to the multipath I/O. We can select the iSCSI storage and click **Properties** to modify the settings.
- 8. Select Manage Paths button.
- 9. In Manage Paths window, it will display how many paths connect to this LUN and what path is active now. The policy is in Fixed mode by default, it can be modified by the drop-down menu. There are three types available, Fixed, Most Recently Used, and Round Robin. The difference between Fixed and Most Recently Used is that Fixed will make the active path to failback once the preferred path is restored from a failure status, but Most Recently Used policies will use only one path to transfer the iSCSI network traffic at the same time, whereas Round Robin policy will use all available paths to transfer the data. Remember to click Change button for applying the setting.

#### NOTE:

For more details, please refer to the Best Practice document - BP-Best Configuration to maximize performance in ESXi environment.

## Add a New HDD to the Created Guest OS Using the Added Datastore

1. Now the datastore can be added as a virtual disk of guest OS. Right click on the guest OS and select **Edit Settings**.





2. In the **Hardware** tab, click **Add** button.



3. Select Hard Disk, and click Next button.



What sort of device do	you wish to add to your virtual machine	e?
Device Type Select a Disk Create a Disk Advanced Options Ready to Complete	Choose the type of device you w Choose the type of device you w Choose Device (unavailable) CD/DVD Drive CD/DVD Drive USB Controller USB Controller USB Controller CD Device (unavailable) CD Device (unavailable)	vish to add. Information This device can be added to this Virtual Machine.

- 4. Choose **Create a new virtual disk**, and click **Next** button.
- 5. Select **Specify a datastore or datastore cluster**, and click **Browse** button.

Device Type Jelect a Disk Greate a Disk divanced Options teady to Complete	Capacity Disk Size: 40 GB - Disk Provisioning (* Thick Provision Lazy Zeroed (* Thick Provision Eager Zeroed (* Thin Provision
	C Store with the virtual machine C Specify a datastore or datastore cluster: Browse

6. Select iSCSI storage on XS5216, and click **OK** button.



anne		Drive Type	Capacity	Provisioned	Free	Туре	Thin Provisioning
data	istore1	Non-SSD	1.81 TB	150.90 GB	1.66 TB	VMFS5	Supported
iscs 👔	il storage	Non-SSD	2.93 TB	987.00 MB	2.93 TB	VMFS5	Supported
Disable	: Storage DRS	S for this virtual m	achine				
Disable	: Storage DRS Itastore:	S for this virtual m	achine				
Disable lect a da	: Storage DR: Itastore:	S for this virtual m	achine Capacity   Pr	rovisioned	Free	Туре	Thin Provisioning
Disable lect a da	: Storage DRS	S for this virtual m	achine Capacity   Pr	rovisioned	Free	Туре	Thin Provisioning
Disable lect a da	: Storage DRS stastore:	S for this virtual m	achine Capacity Pr	novisioned	Free	Туре	Thin Provisioning

- 7. Leave all settings by default, click **Next** button.
- 8. Check all settings, then click **Finish** button.
- 9. Done

## Logging iSCSI Target Directly from the Guest OS

Users may also log in the iSCSI target on XCUBESAN XS5216-D directly from the created guest OS, however, before you try to do so, please make sure the LUN will only be used by this guest OS, otherwise you have to confirm that there is LUN masking well-configured on the XCUBESAN XS5216-D, to prevent any possibility of data inconsistency caused by multiple host log in the same LUN in the same time.

- 1. Remove the new added Hard disk on the guest OS.
- 2. Remove the new added datastore on ESXi server.
- 3. Log out both of the iSCSI targets.
- 4. Add a new VM port group to each created vSwitch (VMkernel-iSCSI1, iSCSI2).



onfiguration	Summary	vopriere standard Switch Propertie	15	
vSwitch	120 Ports vMotion and IP	Number of Ports:	120	
- The second second		Advanced Properties		
		MTU:	1500	
		Default Policies		
		Security		
		Promiscuous Mode:	Reject	
		MAC Address Changes:	Accept	
		Forged Transmits:	Accept	
		Traffic Shaping		
		Average Bandwidth:		
		Peak Bandwidth:	-	
		Burst Size:		
		Failover and Load Balancing		
		Load Balancing:	Port ID	
		Network Failure Detection:	Link status only	
		Notify Switches:	Yes	
	- Electronic Contraction	Failback:	Yes	
Add	Edit Remove	Active Adapters:	vmnic0	

onnection Type	
Connection Settings	Connection Types
	Virtual Machine
	Add a labeled petwork to bandle victual machine petwork traffic
	Add a labeled network to handle vir tual machine network tranic.
	C VMkernel
	The VMkernel TCP/IP stack handles traffic for the following ESXi services: vSphere vMotion, iSCSI, NFS,
	and host management.



onnection Type	Port Group Properties			P
onnection Settings unmary	Network Label:	VM Network 2 - iSCSI1		
	VLAN ID (Optional):	None (0)	•	
	Preview:			
	- Virtual Machine Port Group VM Network 2 - ISCSI1	Physical Adapters		
	VMkernel Port VMkernel-iSCSI1	0		
	vmk1 : 172.16.136.1			

- 5. And so on for the other vSwitch, there will be another 2 VM port group available for VM guest OS.
- 6. Add 2 more Ethernet NIC to the created guest OS, using the VM port group that is created.

Device Type What sort of device do	o you wish to add to your virtual machine	2
Device Type Vetwork connection teady to Complete	Choose the type of device you will Choose the type of device you will Choose the type of device you will Choose the type of device you Choose the type of device you will Choose the type of device you will be Choose the type of device you will be Choo	sh to add. Information This device can be added to this Virtual Machine.
		< Back Next > Ca



Hardware Options Resources		Virtual Machine Version: 11
Show All Devices	Add Remove	
Hardware	Summary	
Memory	4096 MB	
CPUs	1	
🛄 Video card	Video card	
VMCI device	Deprecated	
SCSI controller 0	LSI Logic SAS	
CD/DVD drive 1	[datastore1] ISO/7600	
Hard disk 1	Virtual Disk	
🗐 Floppy drive 1	Client Device	
Network adapter 1	VM Network	
New NIC (adding)	VM Network 2 - iSCS	
New NIC (adding)	VM Network 3 - iSCS	
		OK Cancel

- 7. Configure the new added 2 NICs on the guest OS, so that the guest OS can ping to iSCSI data port on the XS5216, and log in the iSCSI target.
- 8. Done.

## Conclusion

QSAN XCubeSAN series products provide Active-Active dual controller and support ALUA, user don't have to pre-configure any option on XCubeSAN system to achieve the redundancy between ESXi server and XCubeSAN, just make sure the multipath I/O session is well-configured and the failover/back mechanism will automatically be executed once one of controllers gets failed.

# Apply To

- XCubeSAN Series
- AegisSAN Q500 Series
- AegisSAN LX Series
- AegisSAN V100 Series

# Reference

**VMware Documentations** 

<u>https://www.vmware.com/support/pubs/</u>



### Obsolete QSAN White Paper

- QWP200802-P150C-Connect\_P150C\_with\_iSCSI\_initiator\_in\_ESX3.5.pdf
- QWP200917-P300H-Connect\_P300H\_with\_iSCSI\_initiator\_in\_ESX4.0.pdf