White Paper

How to Configure iSCSI Initiator in Microsoft Windows Server 2012 R2

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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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Executive Summary

In this document, we will guide users to understand how to use the software iSCSI initiator in Microsoft® Windows® Server 2012 R2 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: Microsoft Windows Server 2012 R2
- Software: Microsoft iSCSI initiator

Storage

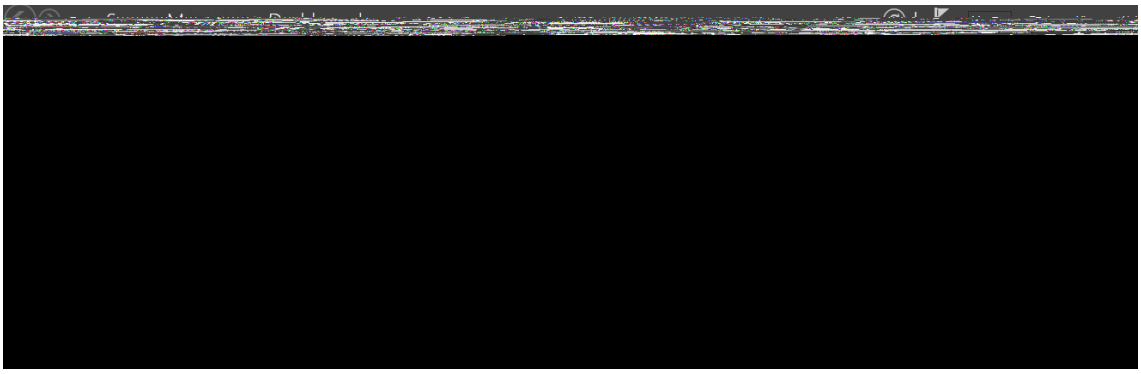
- QSAN XCubeSAN XS5224
  - Firmware Version: 1.0.0

Configuration Guide

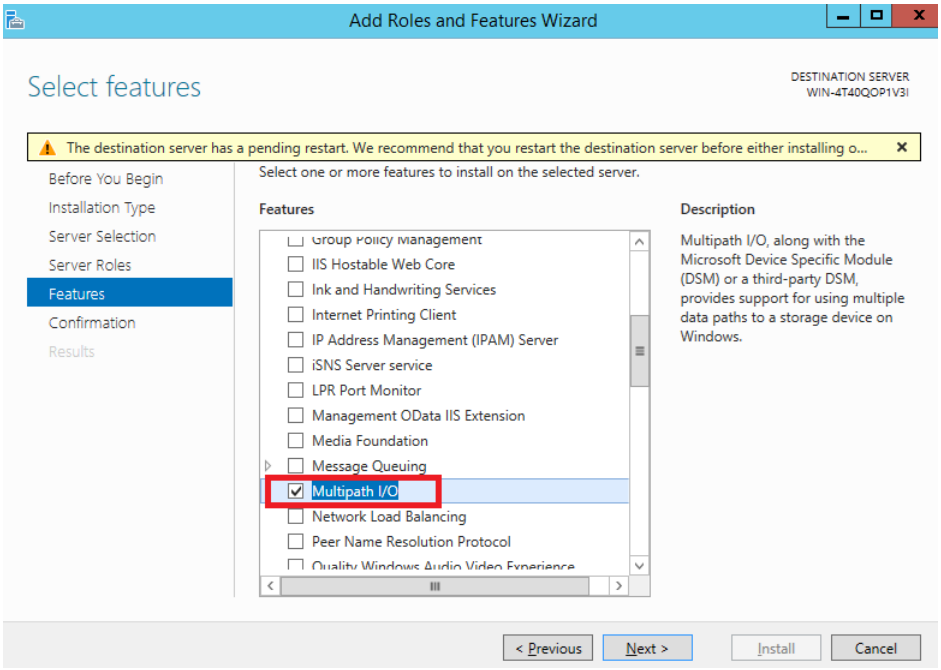
Here is the step by step to setup Microsoft iSCSI Initiator. Please visit Microsoft website for latest iSCSI initiator.

Enable Multipath I/O feature

1. Open the Server Manager window, and click Add roles and features.



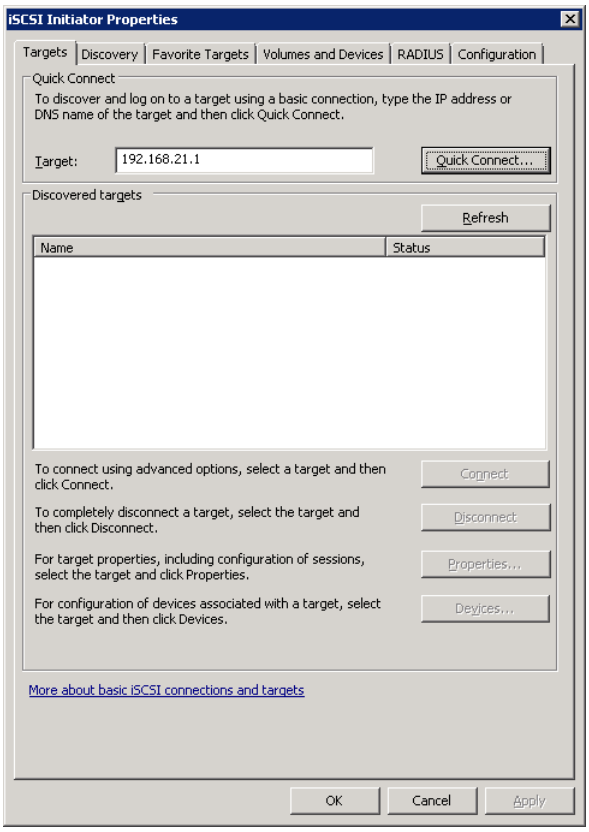
2. Check the item of Multipath I/O , and click Next button to install this new feature.



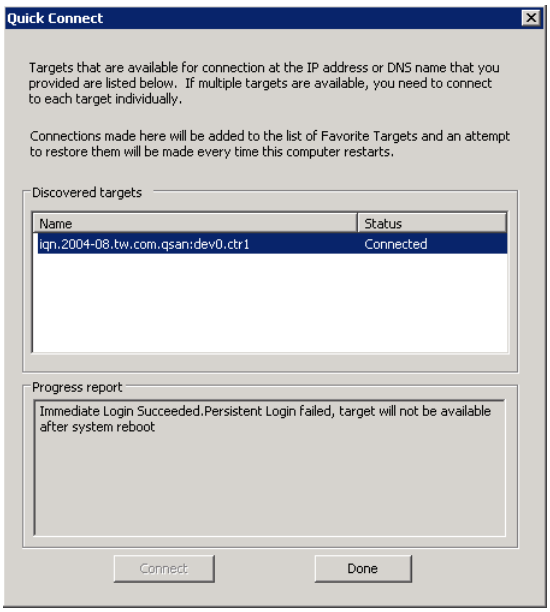
3. This requires a reboot of server to take effect.

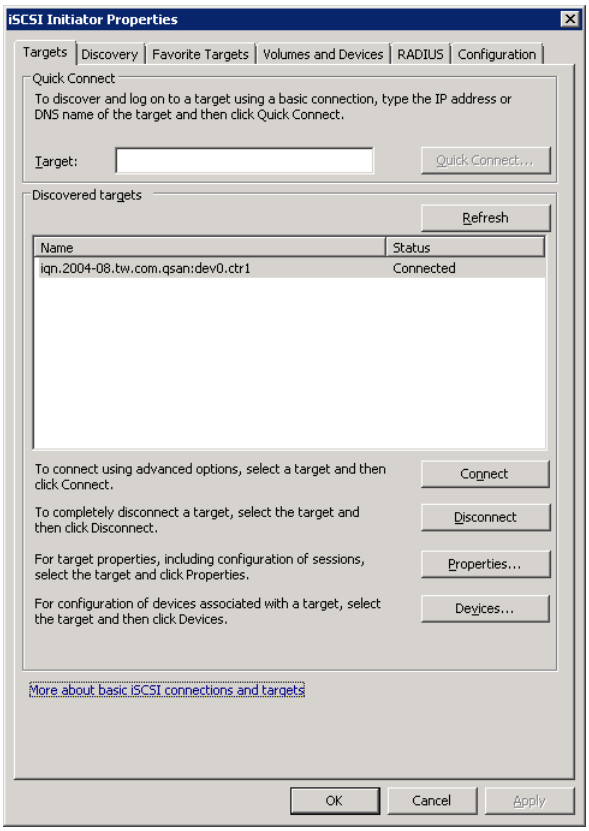
Connect to iSCSI Target

1. Run Microsoft iSCSI Initiator.
2. Input IP address of the iSCSI LAN port on XS5224, and click Quick Connect button.



3. Select the target name, and then click Done button.

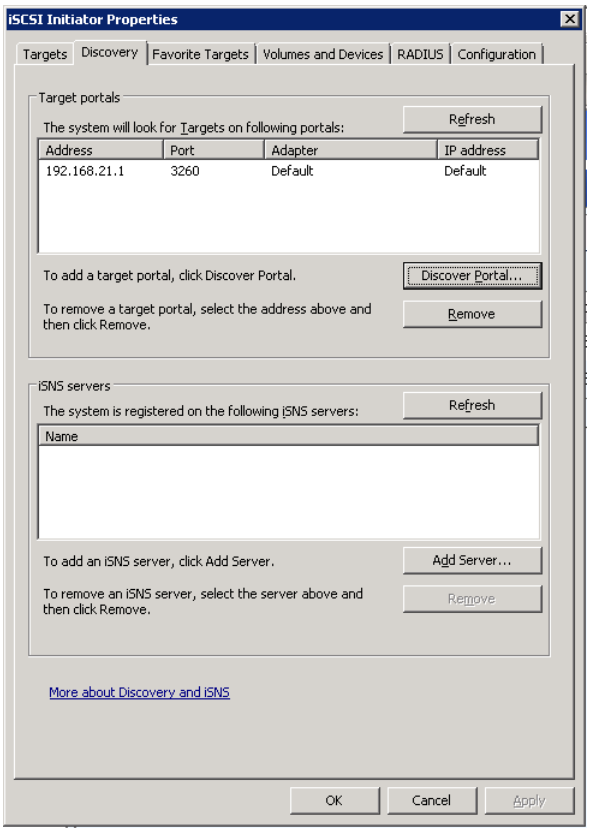


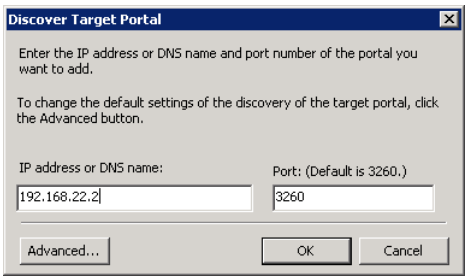


4. It connects to an iSCSI disk now.

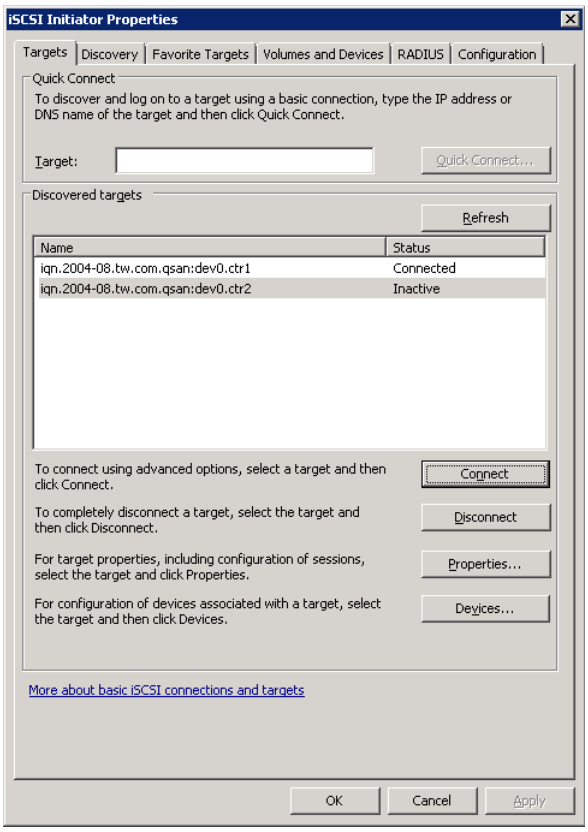
Setup MPIO (Multipath I/O)

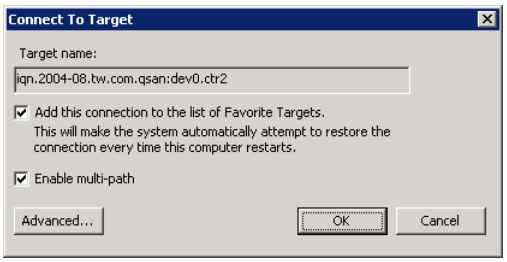
1. If running MPIO, please continue.
2. Click Discovery tab to connect the second path.
3. Click Discover Portal button. Enter the IP address or DNS name of the target.





4. Click OK button.



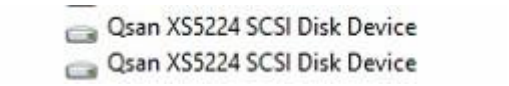


5. Click Targets tab, select the second path, and then click Connect button.
6. Enable Enable multi-path checkbox. Then click OK button.
7. Done, it connects to an iSCSI disk with multi-path.

Enable MPIO Support

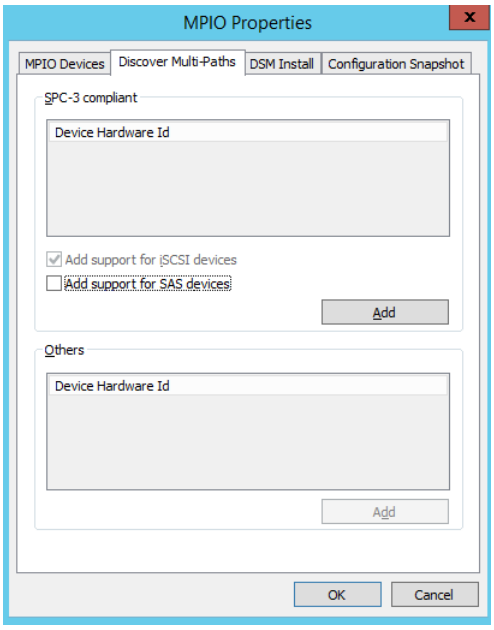
1. For the iSCSI storage, use the iSCSI Initiator to connect to the XS5224 with volume attached to LUN on it first.

2. In Device Manager, under Disk drives, it will display one or more disks, depends on how many paths available to a single volume on the storage. There are two identical SCSI devices to one volume on XS5224 as two paths are available from the host to the storage.

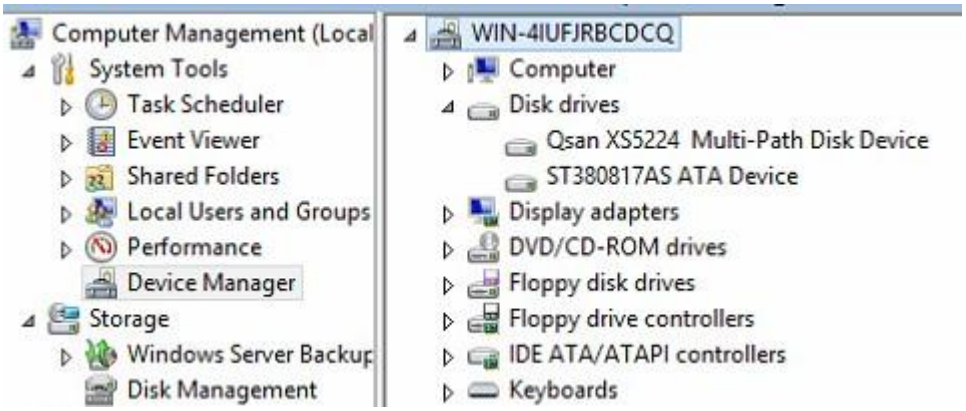


3. After adding the Multipath I/O feature, MPIO support for iSCSI devices can be added or removed via MPIO tool.

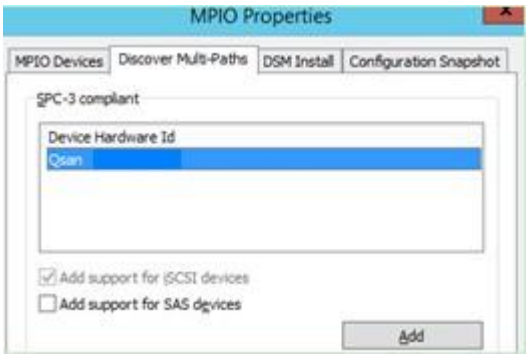
4. In MPIO Properties window, switch to the label of Discover Multi-Paths, check the option of Add support for iSCSI devices and click Add button. A reboot for the host is required for this setting to take effect.



5. After reboot, logon the iSCSI target again. The iSCSI disk drive in Device Manager becomes a multi-path disk device now.



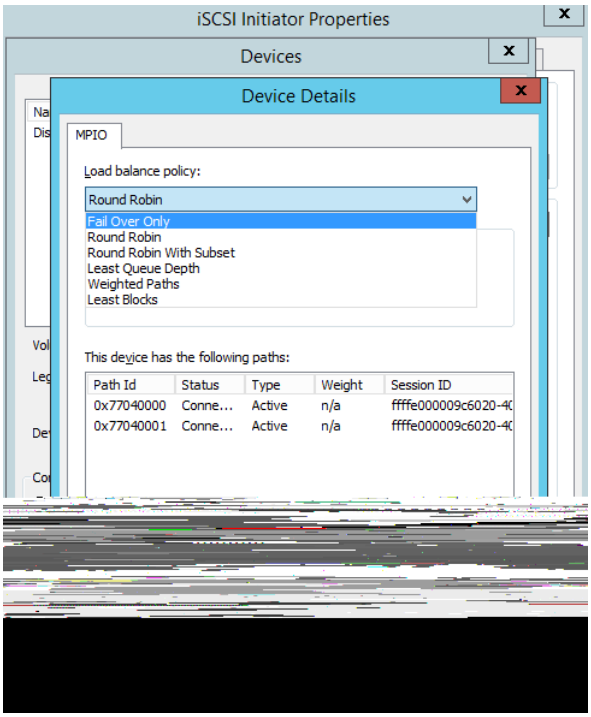
6. For FC (Fibre Channel) volume, the steps to enable the MPIO support are similar as the iSCSI storage. Here is an example, connecting the host with HBA to the storage, and there is a volume attached with a LUN.
7. In MPIO Properties window, switch to the label of Discover Multi -Paths. The FC device will be listed in the SPC-3 compliant column. Select the Qsan and click Add button. It will take about half minutes to accomplish the setting, and then a reboot on the server is necessary to let it take effect.



8. After reboot, the volume on XS5224 in Device Manager becomes a multi-path disk device.

Configure Multipath Policy

1. For the iSCSI disk, the multipath policy can be specified inside the Microsoft iSCSI initiator.



2. For the FC disk, the multipath policy can be specified by right clicking on the multi-path disk device in the Device manager, and then select Properties.
3. In MPIO label, the policy can be modified.

2. Done, the iSCSI device disconnect successfully.

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 Windows 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

Obsolete QSAN White Paper

- QWP201201-How_To_Enable_MPIO_in_WS2008.pdf