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ENTERPRISE LEVEL STORAGE OS
for EVERY BUSINESS

Open-E DSS V6 MPIO with Windows 2008

DSS V6
DATA STORAGE SOFTWARE

16 TB



Easy to use, GUI based management provides performance and security.



Reliable disk based backup and recovery, along with Snapshot capability enable fast and reliable backup and restore.



Easy to implement remote Replication, at block or volume level, enables cost-effective disaster recovery.



IP based storage management combines NAS and iSCSI functionality for centralized storage and storage consolidation.

Software Version: DSS ver. 6.00 up14

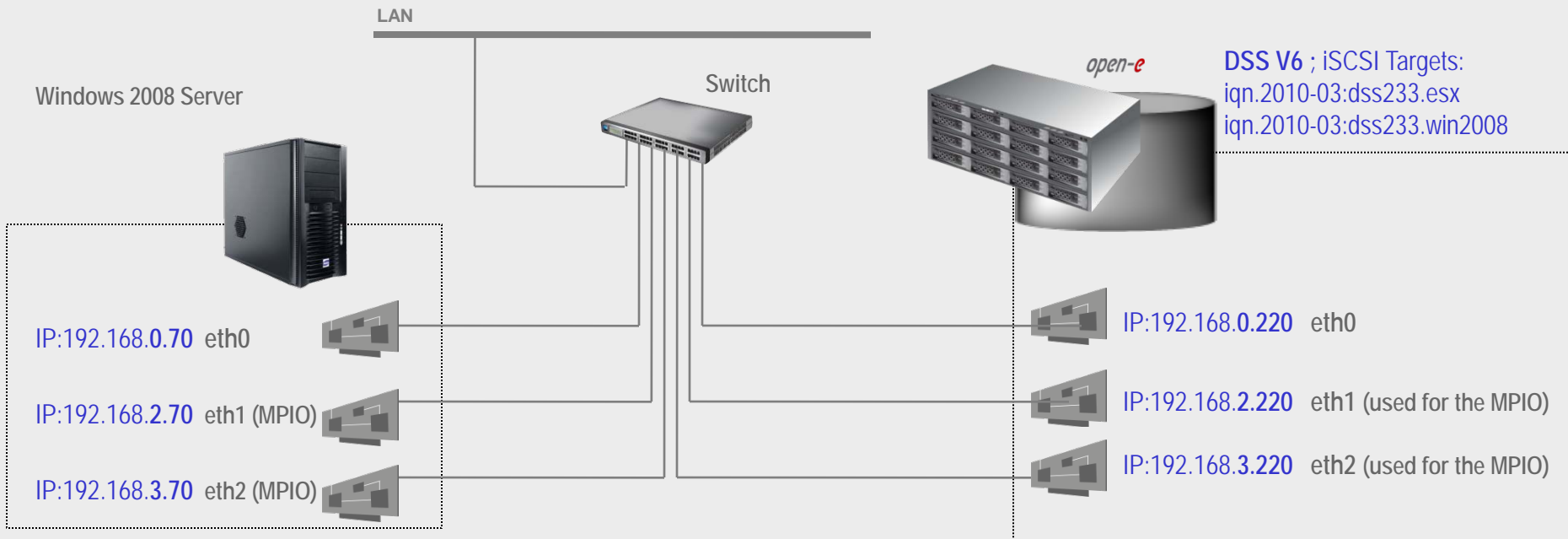
Presentation updated: September 2010

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Example configuration of Multipath I/O on DSS V6 Windows 2008

Hardware Requirements:

To run the Multipath I/O on DSS V6 with Windows 2008 server, a minimum of two network cards in both systems are required. In this example the DSS V6 system and Windows 2008 server use three NICs.



Configure the DSS V6

In order to verify proper NICs settings, go to menu: „STATUS” tab, „network” and Interfaces.

Two NICs must be used for MPIO, we will use the following IP addresses:
192.168.2.220
192.168.3.220

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SETUP | CONFIGURATION | MAINTENANCE | STATUS | HELP

You are here: STATUS > network

Interfaces

Name	IP address	DHCP	Active	Cable	State
eth0	192.168.0.220	off	yes	cable	single
eth1	192.168.2.220	off	yes	cable	single
eth2	192.168.3.220	off	yes	cable	single

DNS info

Info
No DNS servers set.

HTTP proxy info

Use HTTP proxy | HTTP proxy is off

Event Viewer: [icon] | This is TRIAL version, 60 day(s) left for evaluation. | Data Storage Software V6 - All rights reserved

Configure the DSS V6

Next, go to menu: „CONFIGURATION” tab, „volume manager” and Vol. groups.

In Volume manager, create two Block-IO or File-IO iSCSI volumes.

Units assigned

Unit	Serial number	Size (GB)
Unit S000	4063e43039150437	717.11

Volume manager

Logical Volume	Type	Snap.	Rep.	Init.	Blocksize (bytes)	Size (GB)
lv0000	B				N/A	500.00
lv0001	B				N/A	100.00

System volumes

System volumes	Size (GB)
Reserved Pool	4.00
Reserved for snapshots	0.00
Reserved for system	1.00
Reserved for replication	0.00
Free	112.06

Action:

Use volume replication
 WORM

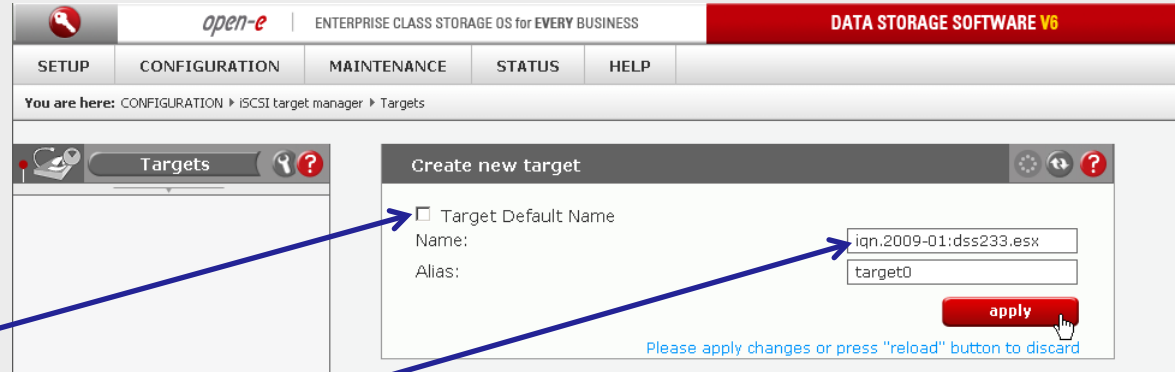
0 112.06

add: GB

apply

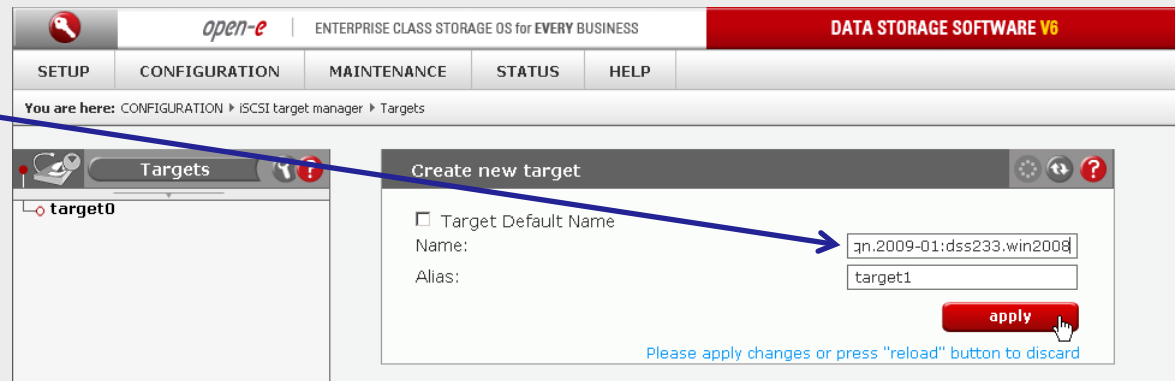
Event Viewer: This is TRIAL version. 60 day(s) left for evaluation.
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Configure the DSS V6



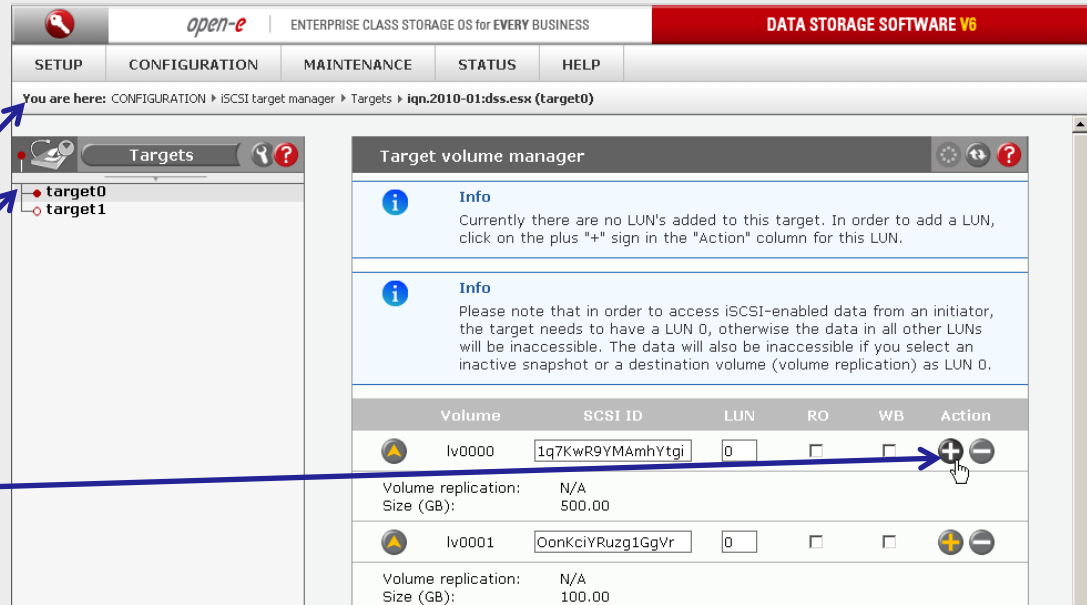
In menu: „CONFIGURATION“ tab,
„iSCSI target manager“, Targets,
please uncheck the Target Default
Name and enter target name:
iqn.2009-01:dss233.esx

Then the second one:
iqn.2009-01:dss233.win2008

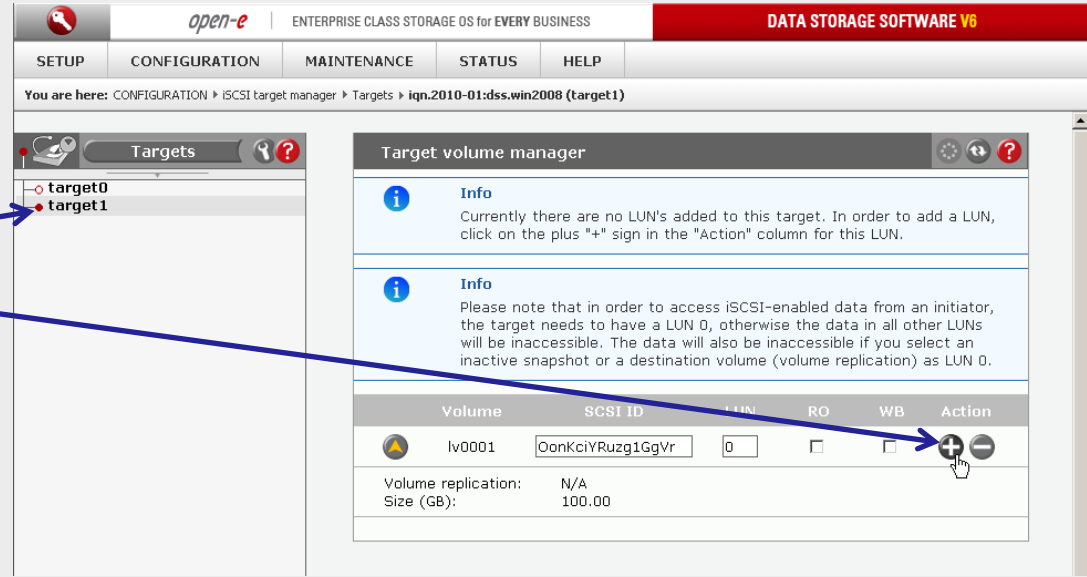


Configure the DSS V6

In menu „CONFIGURATION“ tab, „iSCSI target manager“, Targets, select first alias: target0 and click on the **+** button.



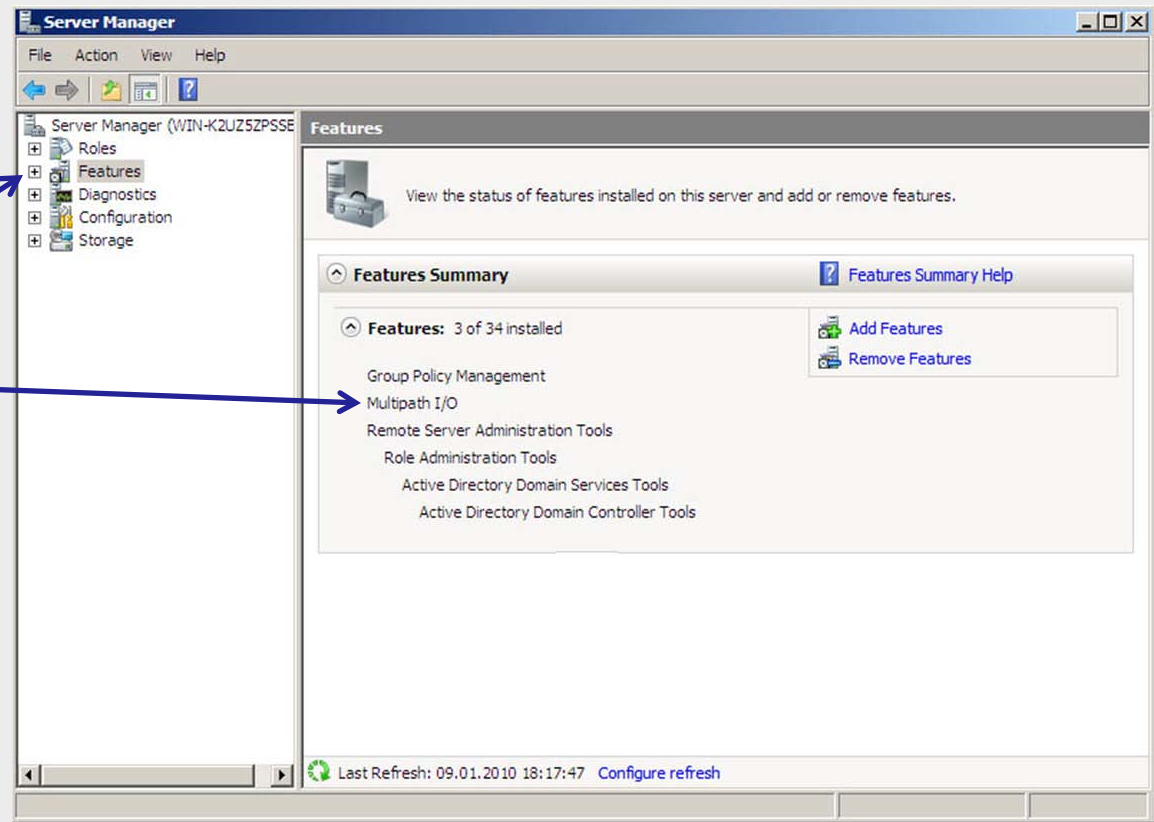
Then select the second alias: target1 and click on the **+** button.



Now the configuration of DSS V6 is finished.

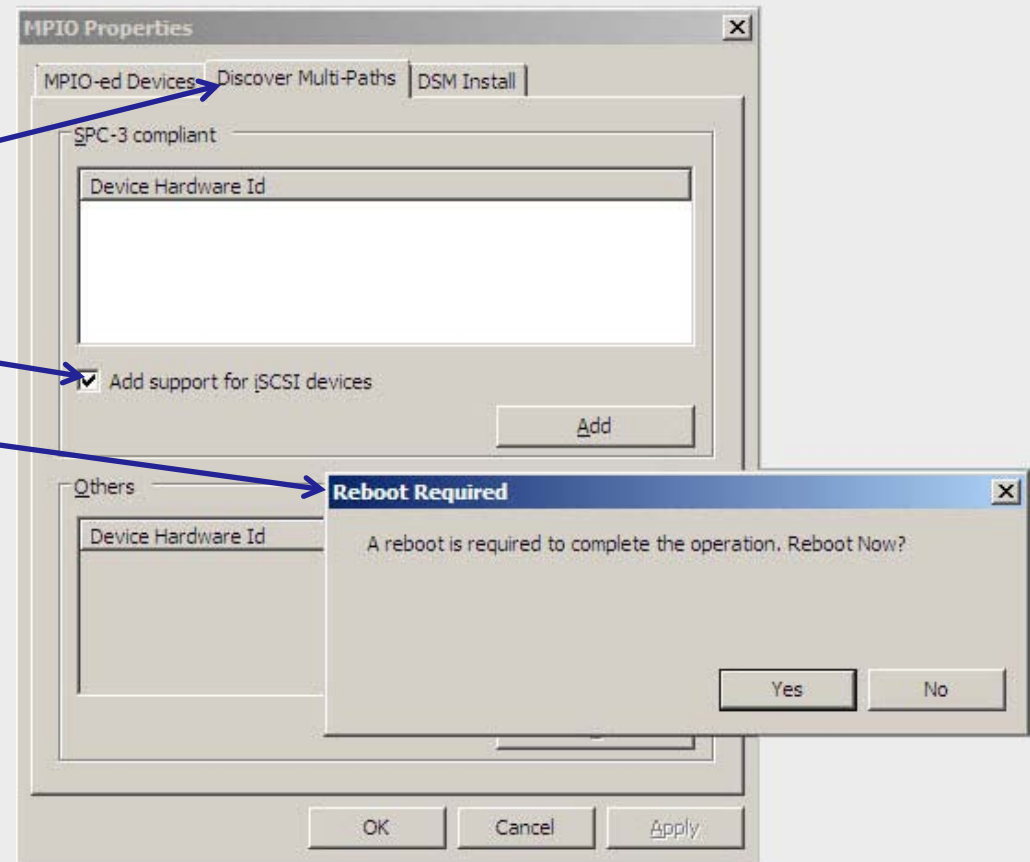
Step 1

Navigate in the Windows 2008 server to the Server Manager, then access the „Features” section and add the „Multipath I/O” feature.



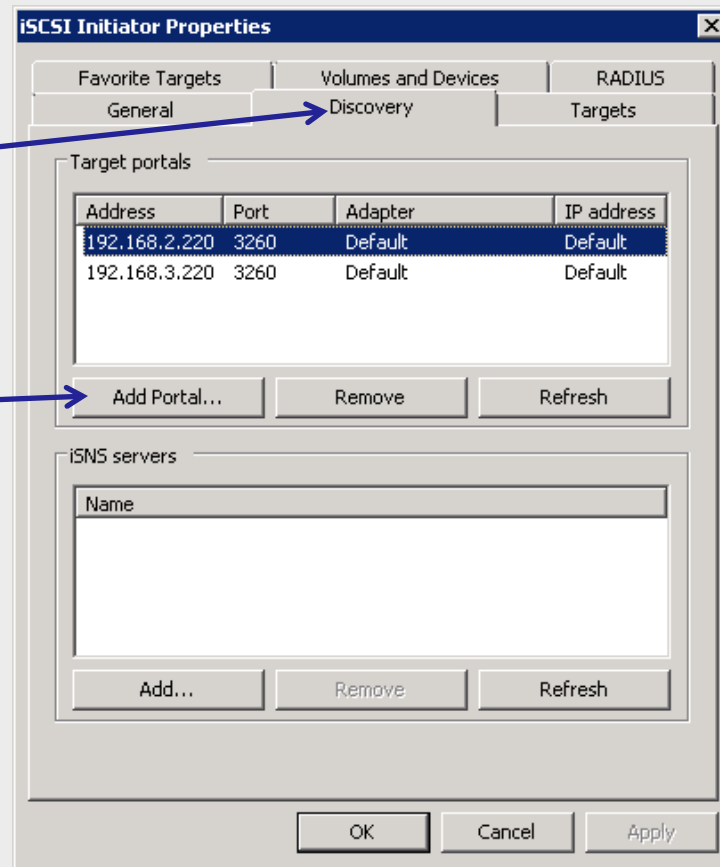
Step 2

Run MPIO from the Administrative Tools. In the MPIO Properties, go to the „Discover Multi-Paths“ tab, check the „Add support for iSCSI devices“ box, and click on the „Add“ button. The system will reboot as this is required. If the checkbox „Add support for iSCSI devices“ cannot be selected, you will have to logon to any iSCSI target using an iSCSI initiator first.



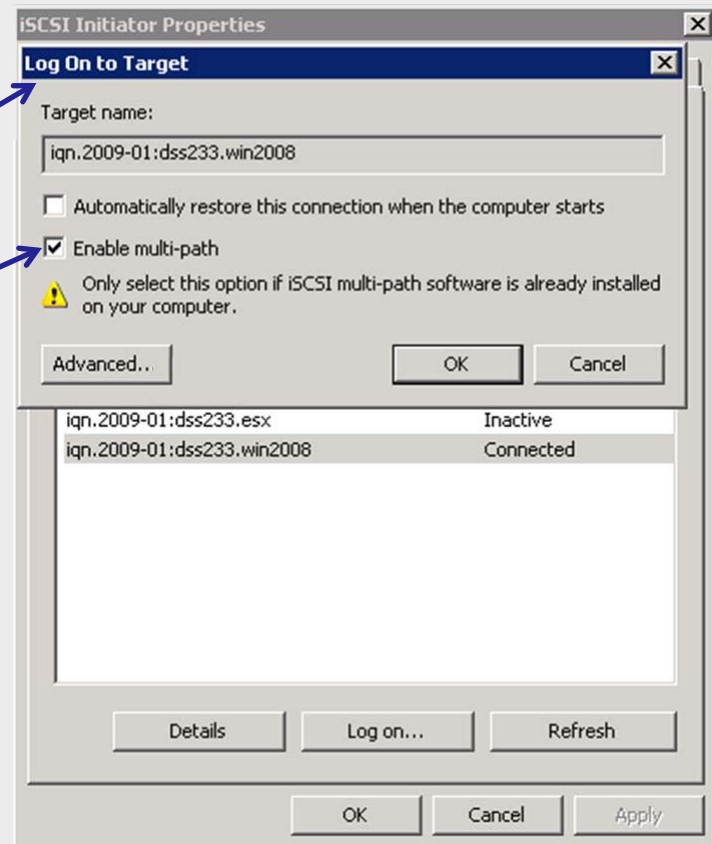
Step 3

Launch the Microsoft iSCSI Initiator and click on the „Discovery“ tab then click „Add Portal...“, and enter the IP addresses of the two network interfaces of the DSS V6 server which has one or more iSCSI targets enabled.



Step 4

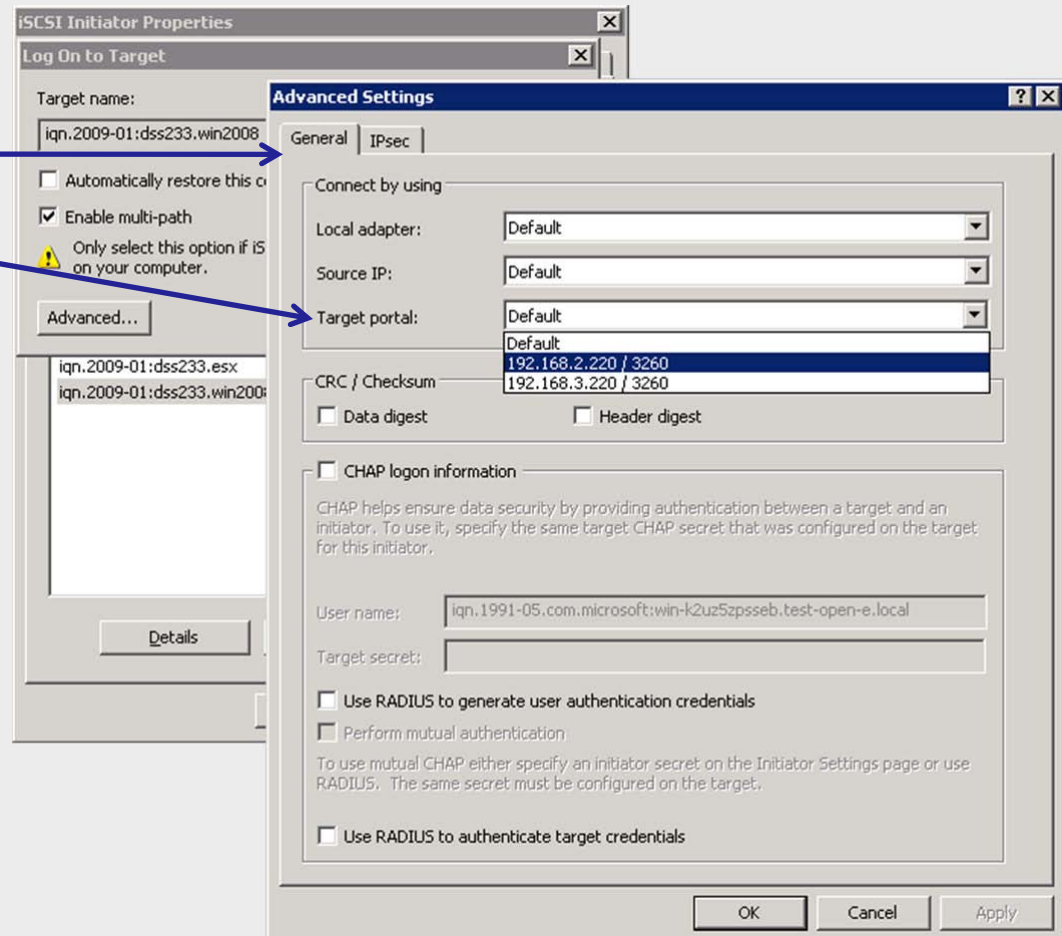
Click „Log on...” on the “Targets” tab, and check the „Enable multi-path” box.



Step 5

Click the „Advanced...” button below on the „General” tab, select the IP address for the first path from the list of the „Target portal” field.

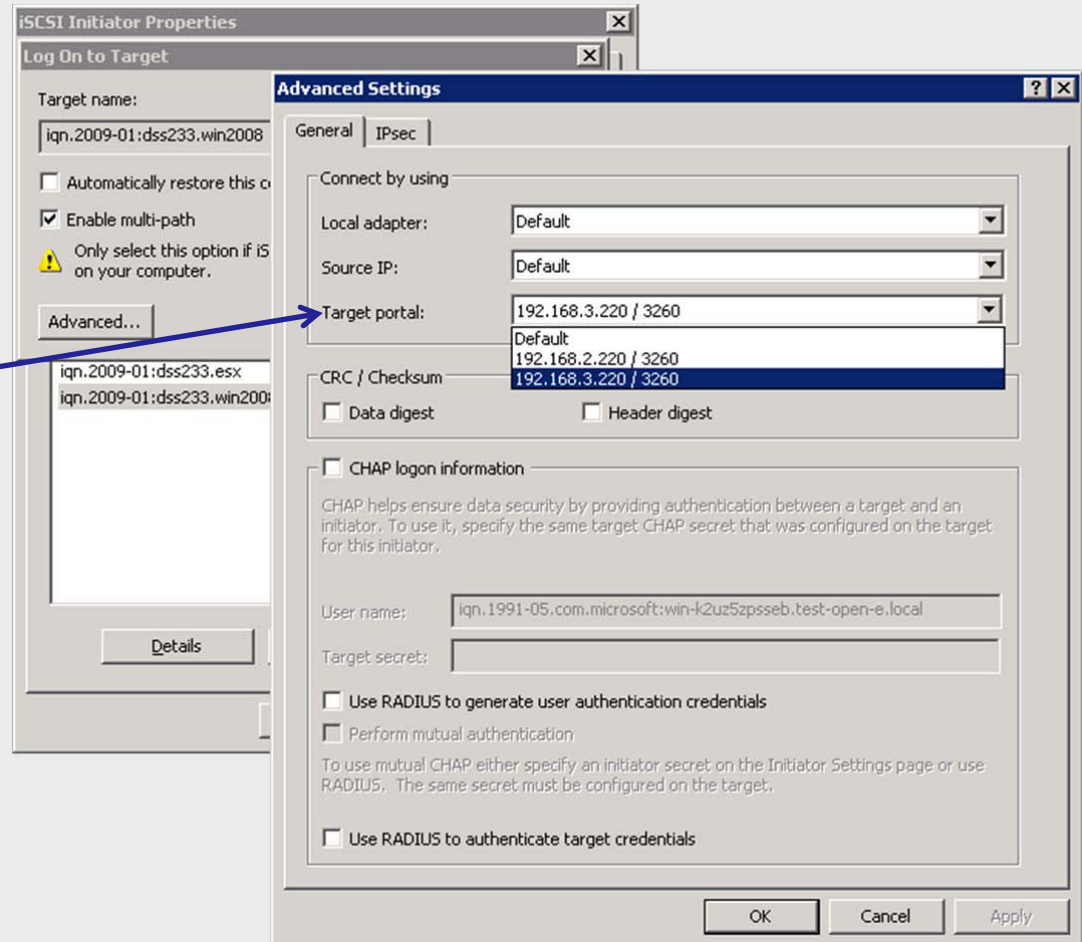
Please note that the values of the „Local adapter” and „Source IP” fields must remain to „Default”.



Step 6

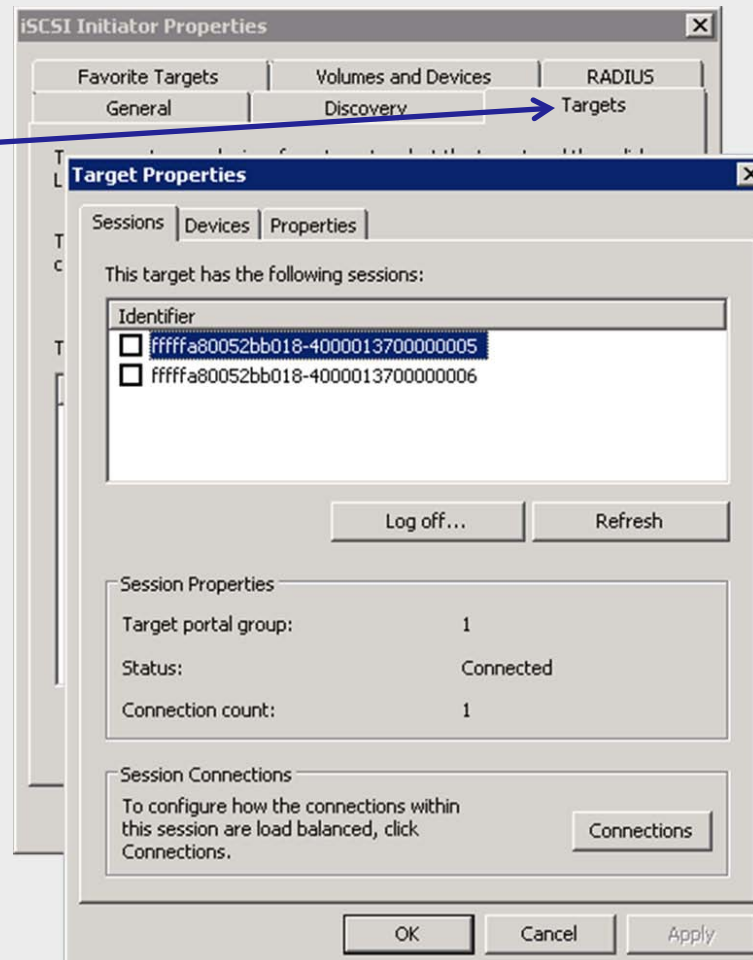
It is needed to log on as many times as there are paths to be used in MPIO (in this example we will log on twice), repeat steps 4. and 5., this time selecting the IP address for the second path in „Target portal“.

Again, make sure the values of the „Local adapter“ and „Source IP“ fields remain at „Default“.



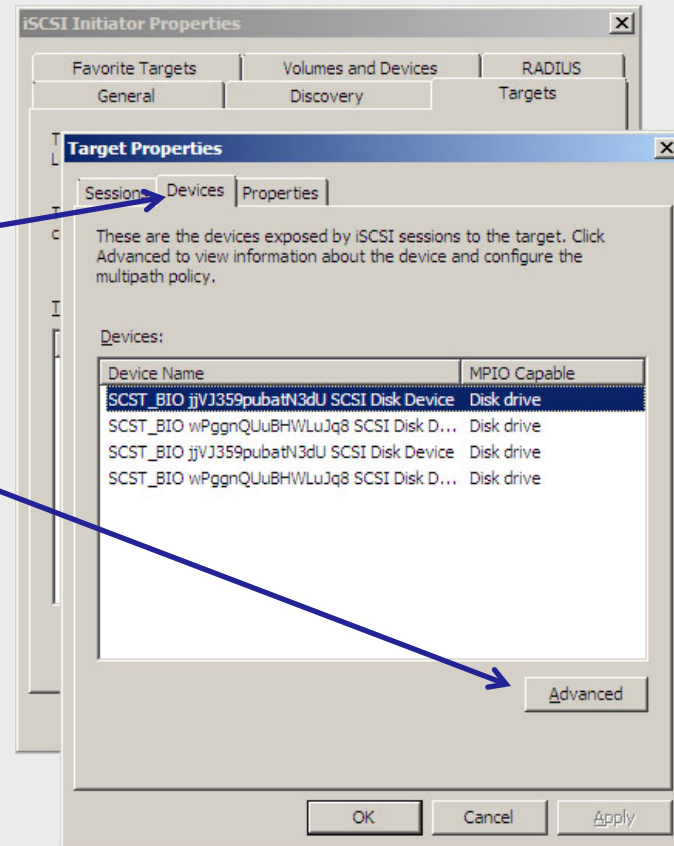
Step 7

Now go back in the iSCSI Initiator's main window and go to the „Targets“ tab, select the target, and click the „Details“ button.



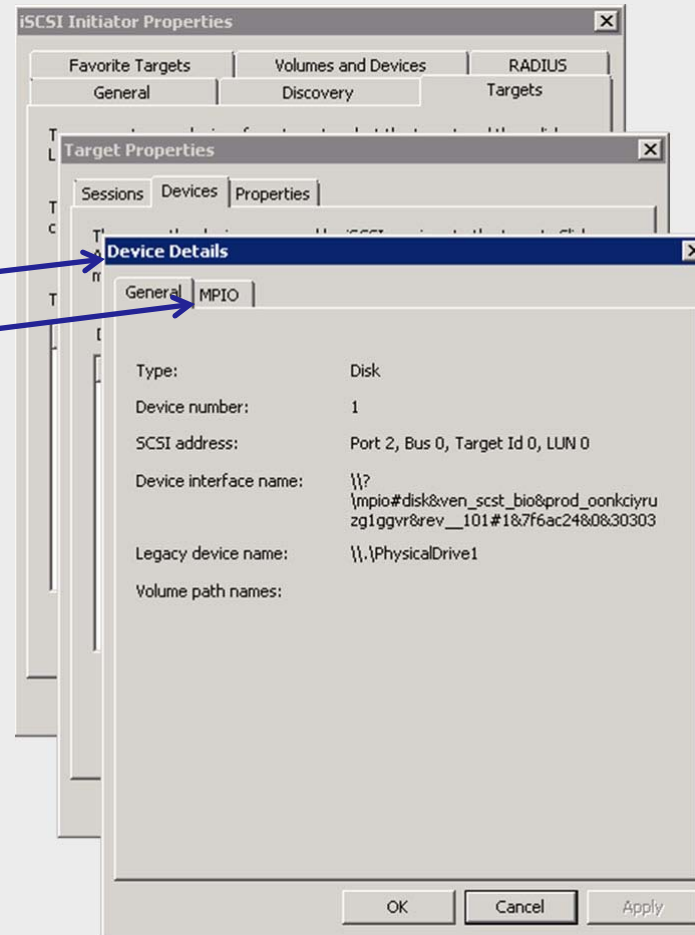
Step 8

On the „Devices“ tab, click the „Advanced“ button.



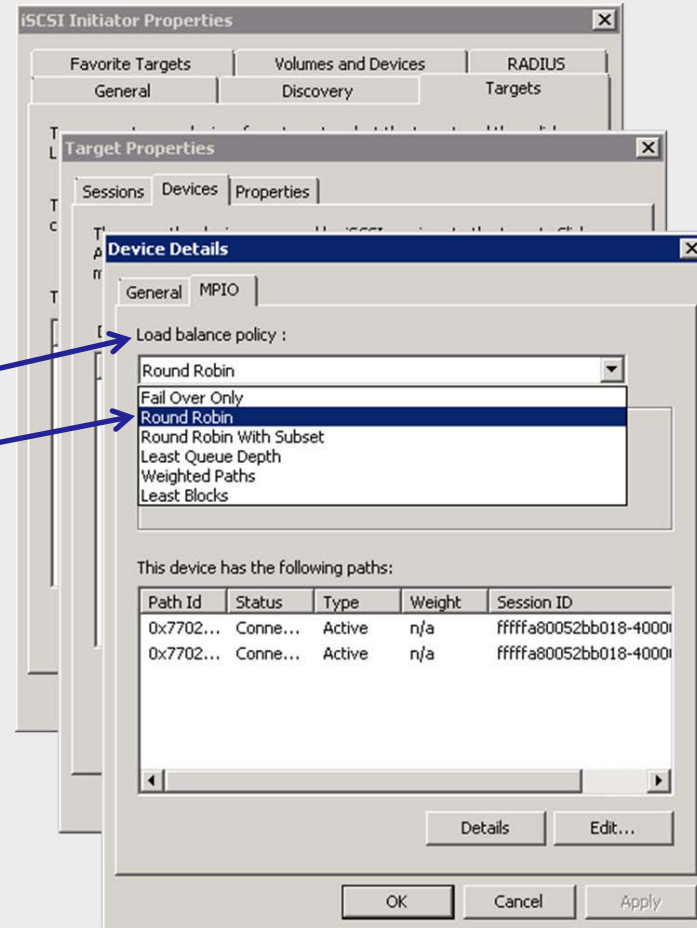
Step 9

In the „Device Details“ window, go to the „MPIO“ tab.



Step 10

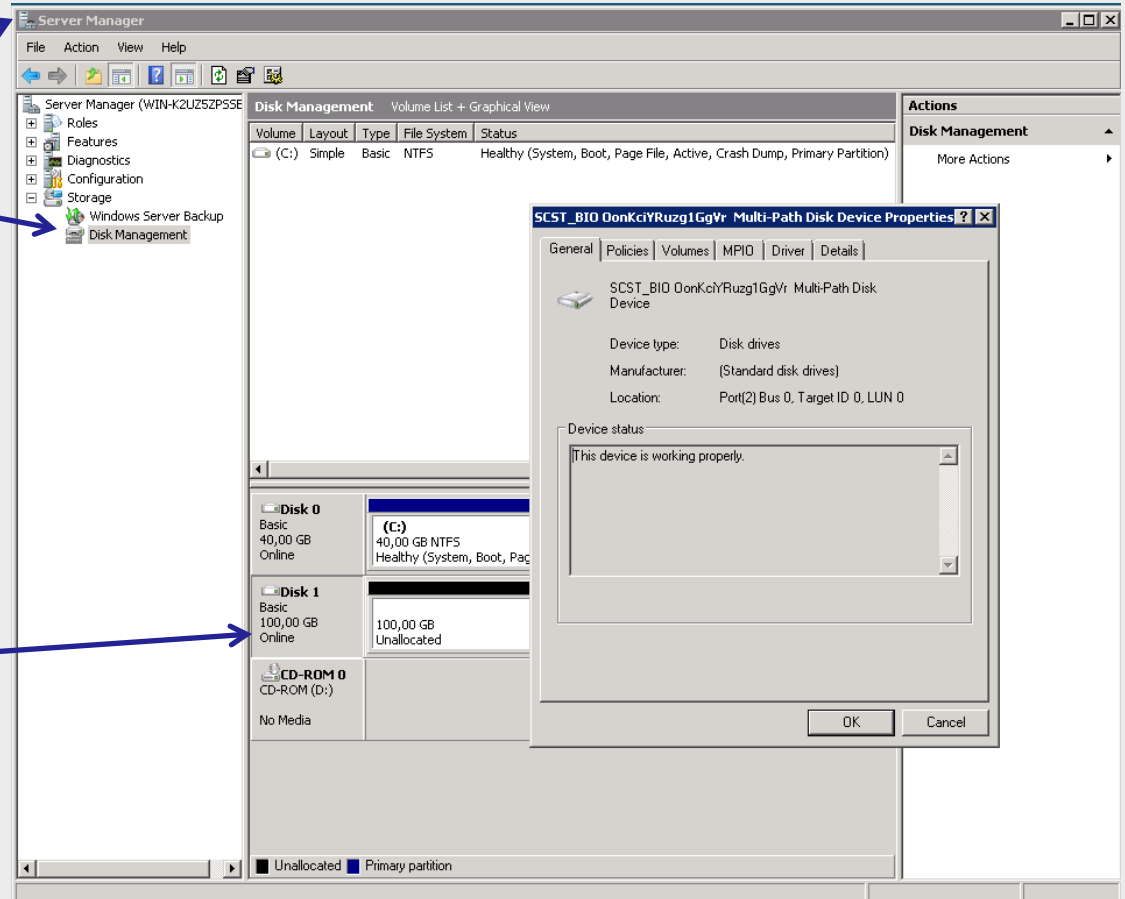
Select „Round Robin” in the „Load balance policy” from the pull down menu, confirm by clicking the „OK” button and exit the iSCSI Initiator.



Step 11

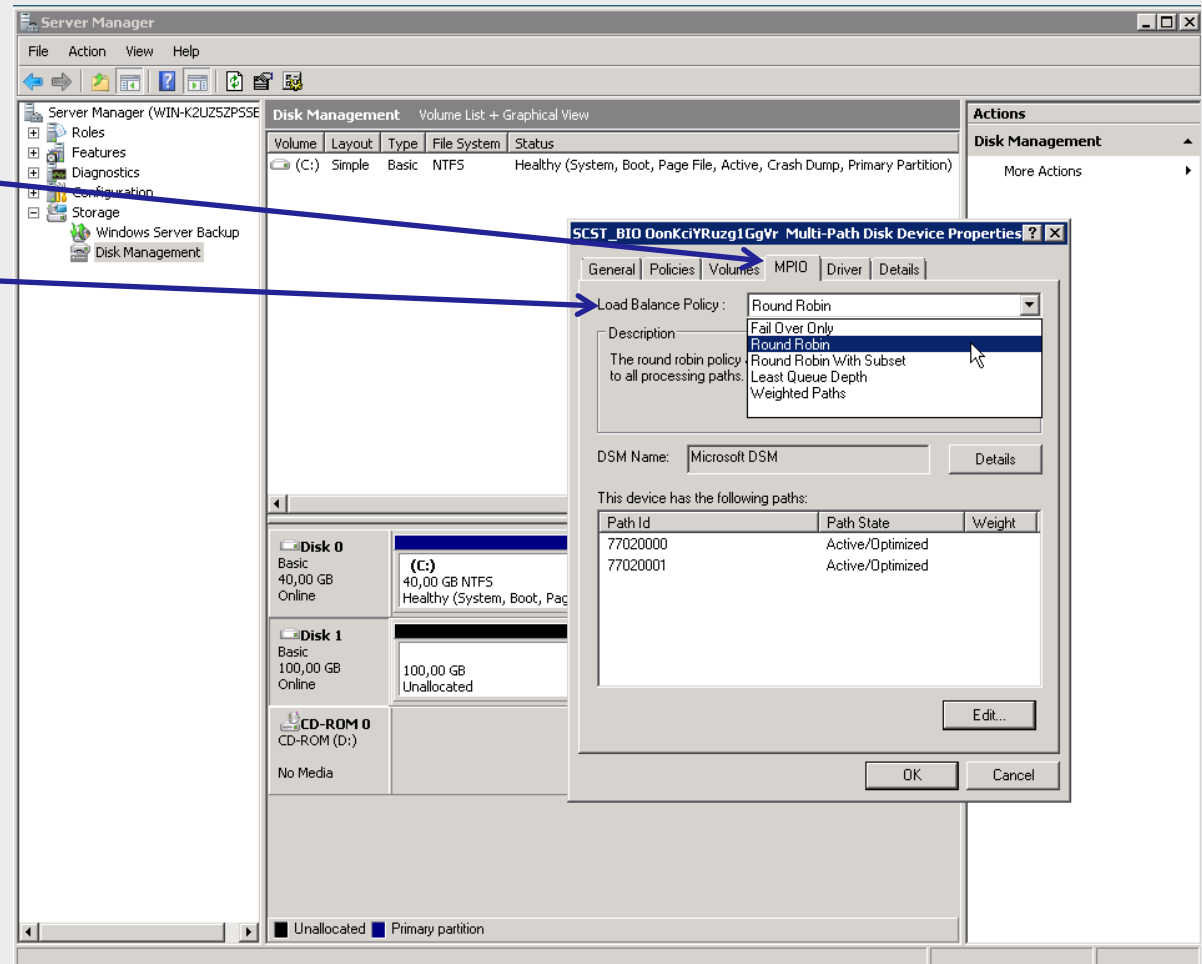
Now go back to the „Server Manager“ and navigate to the „Storage -> Disk Management“.

Next, right-click on the disk provided by the iSCSI Initiator and select „Properties“.



Step 12

On the „MPIO“ tab, select „Round Robin“ from the „Load Balance Policy“ pull down menu and click the „OK“ button to confirm.



Multipath I/O on DSS V6 with Windows 2008

Verify the performance with „Iometer” and „Windows Task Manager”.

Step 13

The screenshot displays two windows side-by-side. The Iometer window on the left shows performance results for 'All Managers' on 'WIN-ZZPVOL62E'. The Windows Task Manager window on the right shows network utilization for three local area connections.

Display	All Managers	Target
Total I/Os per Second	3388.53	10000
Total MBs per Second	211.78	1000
Average I/O Response Time (ms)	5.8994	10
Maximum I/O Response Time (ms)	82.7647	100
% CPU Utilization (total)	47.74 %	100 %
Total Error Count	0	10

Adapter ...	Network Utiliza...	Link Sp...	State
Local Area Conn...	0 %	1 Gbps	Connected
Local Area Conn...	93,16 %	1 Gbps	Connected
Local Area Conn...	92,68 %	1 Gbps	Connected

Windows Task Manager status: Processes: 44, CPU Usage: 41%, Physical Memory: 20%

Now you have completed the configuration of Multipath I/O on DSS V6 with Windows 2008 server.

Thank you!