

Open-E DSS V6 MPIO with VMware ESX 4.0

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for EVERY BUSINESS

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 up40

Presentation updated: March 2010

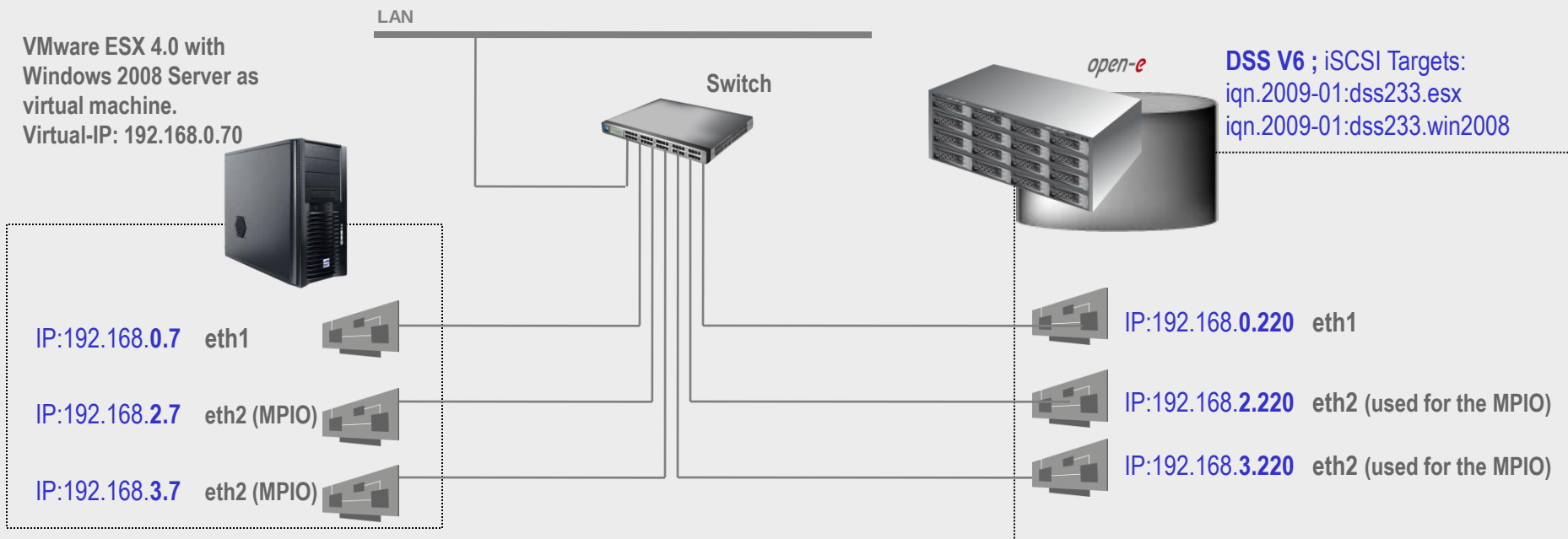
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Multipath I/O on DSS V6 with ESX 4.0

Example configuration of Multipath I/O on DSS V6 with VMware ESX 4.0 and VM-Windows 2008

Hardware Requirements:

To run the Multipath I/O on DSS V6 with VMware ESX 4.0 and Windows 2008 server running as virtual machine, a minimum of two network cards in both systems are required. In this example the DSS V6 system and ESX4 use three NICs.



Configure the DSS V6

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

Two NICs to be used for MPIO has IP address:
192.168.2.220
192.168.3.220

The screenshot shows the open-e web interface for Data Storage Software V6. The top navigation bar includes tabs for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is 'STATUS' > 'network'. On the left, under the 'Interfaces' section, a list shows eth0, eth1, eth2, and eth3. On the right, a table displays the configuration for these interfaces. Below the table are sections for 'DNS info' (showing 'No DNS servers set.') and 'HTTP proxy info' (showing 'HTTP proxy is off').

Name	IP address	DHCP	Active	Cable	State
eth0	192.168.2.220	off	yes	cable	single
eth1	192.168.3.220	off	yes	cable	single
eth2	192.168.0.220	off	yes	cable	single
eth3	192.168.4.220	off	yes	no 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, please go to menu:
„CONFIGURATION” tab, „volume
manager” and Vol. groups.

Select vg00 volume group and in
Volume manager, create two Block-IO
or File-IO iSCSI volumes.

The screenshot displays the open-e Data Storage Software V6 web interface. The top navigation bar includes tabs for SETUP, CONFIGURATION, MAINTENANCE, STATUS, and HELP. The current page is CONFIGURATION, and the breadcrumb trail indicates the path: CONFIGURATION > volume manager > Vol. groups > vg00.

The left sidebar shows the 'Vol. groups' section with 'vg00' selected. The main content area is divided into two panels. The top panel, 'Units assigned', shows a table with one unit:

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

The bottom panel, 'Volume manager', shows a table with logical volumes:

Logical Volume	Type	Snaps.	Rep.	Init.	Blocksize (bytes)	Size (GB)
lv0000	Block-IO				N/A	500.00
lv0001	Block-IO				N/A	100.00

Below the table, the 'System volumes' section shows the following sizes:

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

The 'Action:' dropdown is set to 'new NAS volume'. There are checkboxes for 'Use volume replication' and 'WORM'. A slider bar shows the available free space (112.06 GB) and a text input field shows '0.00' GB. An 'apply' button is at the bottom right.

The footer of the interface includes an 'Event Viewer' icon, a trial notice: 'This is TRIAL version. 60 day(s) left for evaluation.', and the copyright notice: 'Data Storage Software V6 - All rights reserved.'

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

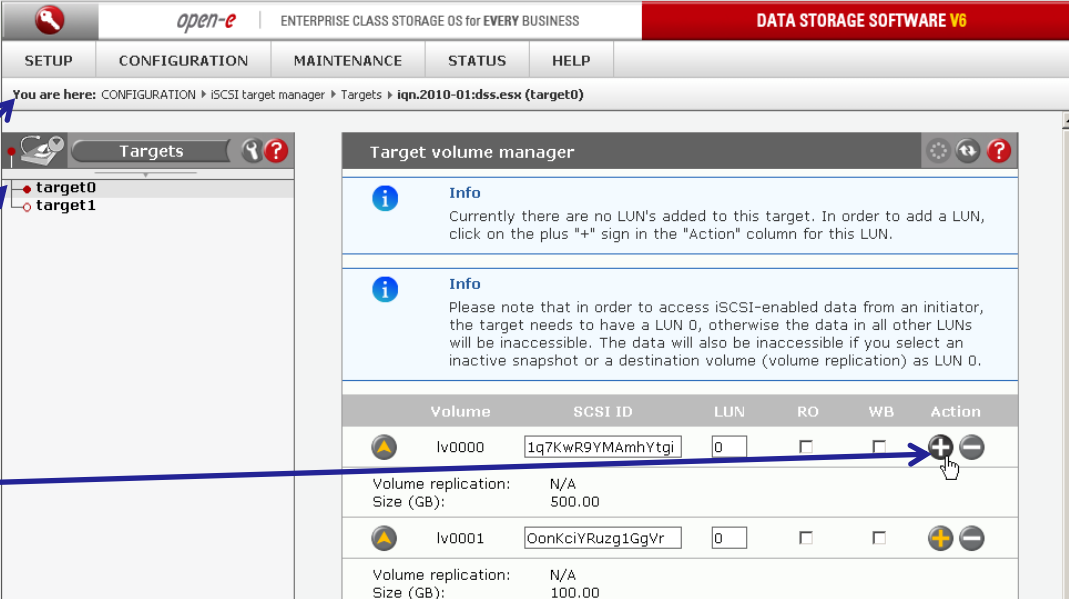
Then the second one:
iqn.2009-01:dss233.win2008

The screenshot shows the open-e web interface with the 'CONFIGURATION' tab selected. The breadcrumb trail indicates 'You are here: CONFIGURATION > iSCSI target manager > Targets'. A 'Targets' sidebar is on the left. The main area displays the 'Create new target' dialog. In this dialog, the 'Target Default Name' checkbox is unchecked. The 'Name' field is populated with 'iqn.2009-01:dss233.esx' and the 'Alias' field with 'target0'. An 'apply' button is at the bottom right. A blue arrow points from the text box to the 'Name' field.

This screenshot shows the same open-e web interface, but the 'Create new target' dialog now shows a second target configuration. The 'Name' field contains 'iqn.2009-01:dss233.win2008' and the 'Alias' field contains 'target1'. The 'apply' button is still present. A blue arrow points from the text box to the 'Name' field.

Configure the DSS V6

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



You are here: CONFIGURATION > iSCSI target manager > Targets > iqn.2010-01:dss.esx (target0)

Targets

- target0
- target1

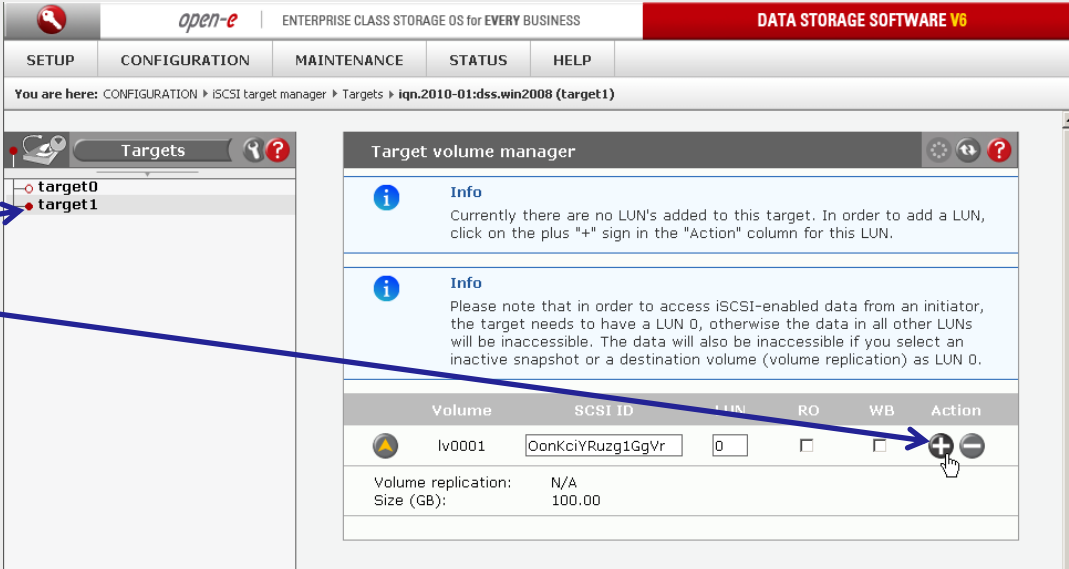
Target volume manager

Info
Currently there are no LUN's added to this target. In order to add a LUN, click on the plus "+" sign in the "Action" column for this LUN.

Info
Please note that in order to access iSCSI-enabled data from an initiator, the target needs to have a LUN 0, otherwise the data in all other LUNs will be inaccessible. The data will also be inaccessible if you select an inactive snapshot or a destination volume (volume replication) as LUN 0.

Volume	SCSI ID	LUN	RO	WB	Action
lv0000	1q7KwR9YMAmHYtgi	0	☐	☐	 
Volume replication: N/A Size (GB): 500.00					
lv0001	OonKciYRuzg1GgVr	0	☐	☐	 
Volume replication: N/A Size (GB): 100.00					

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



You are here: CONFIGURATION > iSCSI target manager > Targets > iqn.2010-01:dss.win2008 (target1)

Targets

- target0
- target1

Target volume manager

Info
Currently there are no LUN's added to this target. In order to add a LUN, click on the plus "+" sign in the "Action" column for this LUN.

Info
Please note that in order to access iSCSI-enabled data from an initiator, the target needs to have a LUN 0, otherwise the data in all other LUNs will be inaccessible. The data will also be inaccessible if you select an inactive snapshot or a destination volume (volume replication) as LUN 0.

Volume	SCSI ID	LUN	RO	WB	Action
lv0001	OonKciYRuzg1GgVr	0	☐	☐	 
Volume replication: N/A Size (GB): 100.00					

Now, configuring DSS V6 is finished.

```
[root@esx ~]# nano /etc/ssh/sshd_config
```

```
PermitRootLogin yes
```

```
<Ctrl-o>
```

```
<Ctrl-x>
```

Enabling Jumbo Frames

```
[root@esx ~]# esxcfg-vswitch -m 9000 vSwitch0
```

Fixing „iSCSI MPIO throughput limited to 1G“

Setting the Round Robin params:

```
esxcli nmp roundrobin setconfig --type "iops" --iops 1 --device <device UID>
```

Listing devices:

```
esxcli nmp device list
```

Example commands for fixing „iSCSI MPIO throughput limited to 1G“ issue:

Setting the Round Robin params for the first device:

```
esxcli nmp roundrobin setconfig --type "iops" --iops 1 --device `esxcli nmp device list | grep ^eui | head -n 1`
```

Setting the Round Robin params for the second device:

```
esxcli nmp roundrobin setconfig --type "iops" --iops 1 --device `esxcli nmp device list | grep ^eui | head -n 2 | tail -n 1`
```

Entering the settings into ESX start script:

```
[root@esx ~]# nano /etc/rc.local
```

```
# Fixing iSCSI MPIO throughput limited to 1G.
```

```
esxcli nmp device list | grep ^eui |
```

```
while read device ; do
```

```
    esxcli nmp roundrobin setconfig --type "iops" --iops 1 --device ${device}
```

```
done
```

```
<Ctrl-o>
```

```
<Ctrl-x>
```


Now, in order to fix:
“iSCSI Round Robin limited to 1G”
problem, please use following CLI
command first:
`esxcli nmp device list`

```
root@esx:~  
[root@esx ~]#  
[root@esx ~]# esxcli nmp device list  
eui.00000000c1742b0a  
Device Display Name: SCST BIO iSCSI Disk (eui.00000000c1742b0a)  
Storage Array Type: VMW_SATP_DEFAULT_AA  
Storage Array Type Device Config:  
Path Selection Policy: VMW_PSP_RR  
Path Selection Policy Device Config: (policy=iops,iops=1514565248,bytes=10485760,useANO=0,lastPathIndex=1: NumIOsPending=0,numBytesPending=0)  
Working Paths: vmhba36:C0:T0:L0, vmhba36:C1:T0:L0  
  
mpx.vmhba32:C0:T0:L0  
Device Display Name: Local USB CD-ROM (mpx.vmhba32:C0:T0:L0)  
Storage Array Type: VMW_SATP_LOCAL  
Storage Array Type Device Config:  
Path Selection Policy: VMW_PSP_FIXED  
Path Selection Policy Device Config: (preferred=vmhba32:C0:T0:L0;current=vmhba32:C0:T0:L0)  
Working Paths: vmhba32:C0:T0:L0  
  
mpx.vmhba3:C0:T1:L0  
Device Display Name: Local Slimtype CD-ROM (mpx.vmhba3:C0:T1:L0)  
Storage Array Type: VMW_SATP_LOCAL  
Storage Array Type Device Config:  
Path Selection Policy: VMW_PSP_FIXED  
Path Selection Policy Device Config: (preferred=vmhba3:C0:T1:L0;current=vmhba3:C0:T1:L0)  
Working Paths: vmhba3:C0:T1:L0  
  
naa.600605b000161ab00f8e8ce6c527141b  
Device Display Name: Local LSI Disk (naa.600605b000161ab00f8e8ce6c527141b)  
Storage Array Type: VMW_SATP_LOCAL  
Storage Array Type Device Config:  
Path Selection Policy: VMW_PSP_FIXED  
Path Selection Policy Device Config: (preferred=vmhba2:C0:T0:L0;current=vmhba2:C0:T0:L0)  
Working Paths: vmhba2:C0:T0:L0  
  
mpx.vmhba33:C0:T0:L0  
Device Display Name: Local USB CD-ROM (mpx.vmhba33:C0:T0:L0)  
Storage Array Type: VMW_SATP_LOCAL  
Storage Array Type Device Config:  
Path Selection Policy: VMW_PSP_FIXED  
Path Selection Policy Device Config: (preferred=vmhba33:C0:T0:L0;current=vmhba33:C0:T0:L0)  
Working Paths: vmhba33:C0:T0:L0  
  
eui.000000007f95b4e8  
Device Display Name: SCST BIO iSCSI Disk (eui.000000007f95b4e8)  
Storage Array Type: VMW_SATP_DEFAULT_AA  
Storage Array Type Device Config:  
Path Selection Policy: VMW_PSP_RR  
Path Selection Policy Device Config: (policy=iops,iops=1514565248,bytes=10485760,useANO=0,lastPathIndex=1: NumIOsPending=0,numBytesPending=0)  
Working Paths: vmhba36:C0:T1:L0, vmhba36:C1:T1:L0  
  
[root@esx ~]#
```

Entering the settings into ESX start script:

Fixing iSCSI MPIO throughput limited to 1G.

```
esxcli nmp device list | grep ^eui |
```

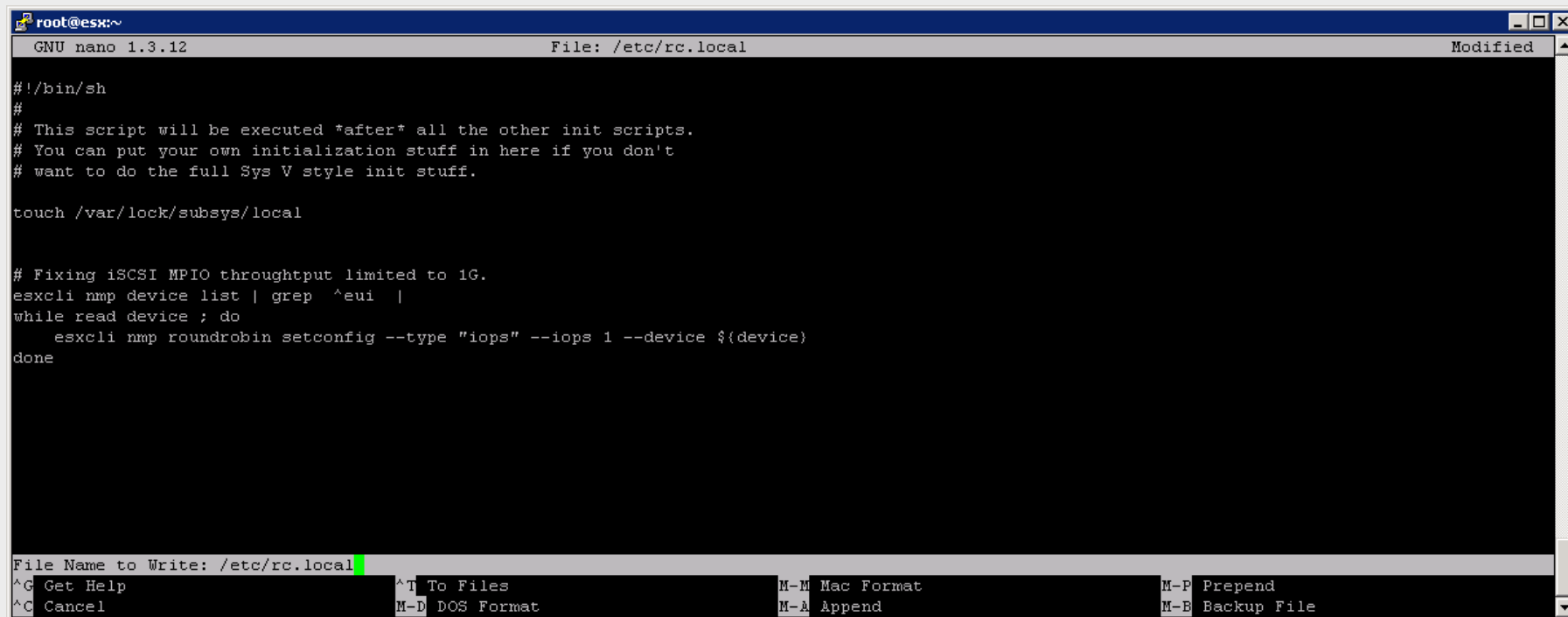
```
while read device ; do
```

```
    esxcli nmp roundrobin setconfig --type "iops" --iops 1 --device ${device}
```

```
done
```

<Ctrl-o>

<Ctrl-x>



The screenshot shows a terminal window with the nano text editor open, editing the file /etc/rc.local. The editor's title bar indicates 'GNU nano 1.3.12' and 'File: /etc/rc.local'. The content of the file includes a shebang line, comments about initialization scripts, a 'touch' command for a lock file, and the iSCSI MPIO configuration script shown in the previous blocks. The bottom of the screen displays the nano editor's command palette with options like '^G Get Help', '^T To Files', 'M-M Mac Format', 'M-P Prepend', '^C Cancel', 'M-D DOS Format', 'M-A Append', and 'M-B Backup File'.

```
root@esx:~  
GNU nano 1.3.12 File: /etc/rc.local Modified  
#!/bin/sh  
#  
# This script will be executed *after* all the other init scripts.  
# You can put your own initialization stuff in here if you don't  
# want to do the full Sys V style init stuff.  
  
touch /var/lock/subsys/local  
  
# Fixing iSCSI MPIO throughput limited to 1G.  
esxcli nmp device list | grep ^eui |  
while read device ; do  
    esxcli nmp roundrobin setconfig --type "iops" --iops 1 --device ${device}  
done  
  
File Name to Write: /etc/rc.local  
^G Get Help      ^T To Files      M-M Mac Format   M-P Prepend  
^C Cancel        M-D DOS Format   M-A Append      M-B Backup File
```

In order to check the settings,
please run the list command:
`esxcli nmp device list`

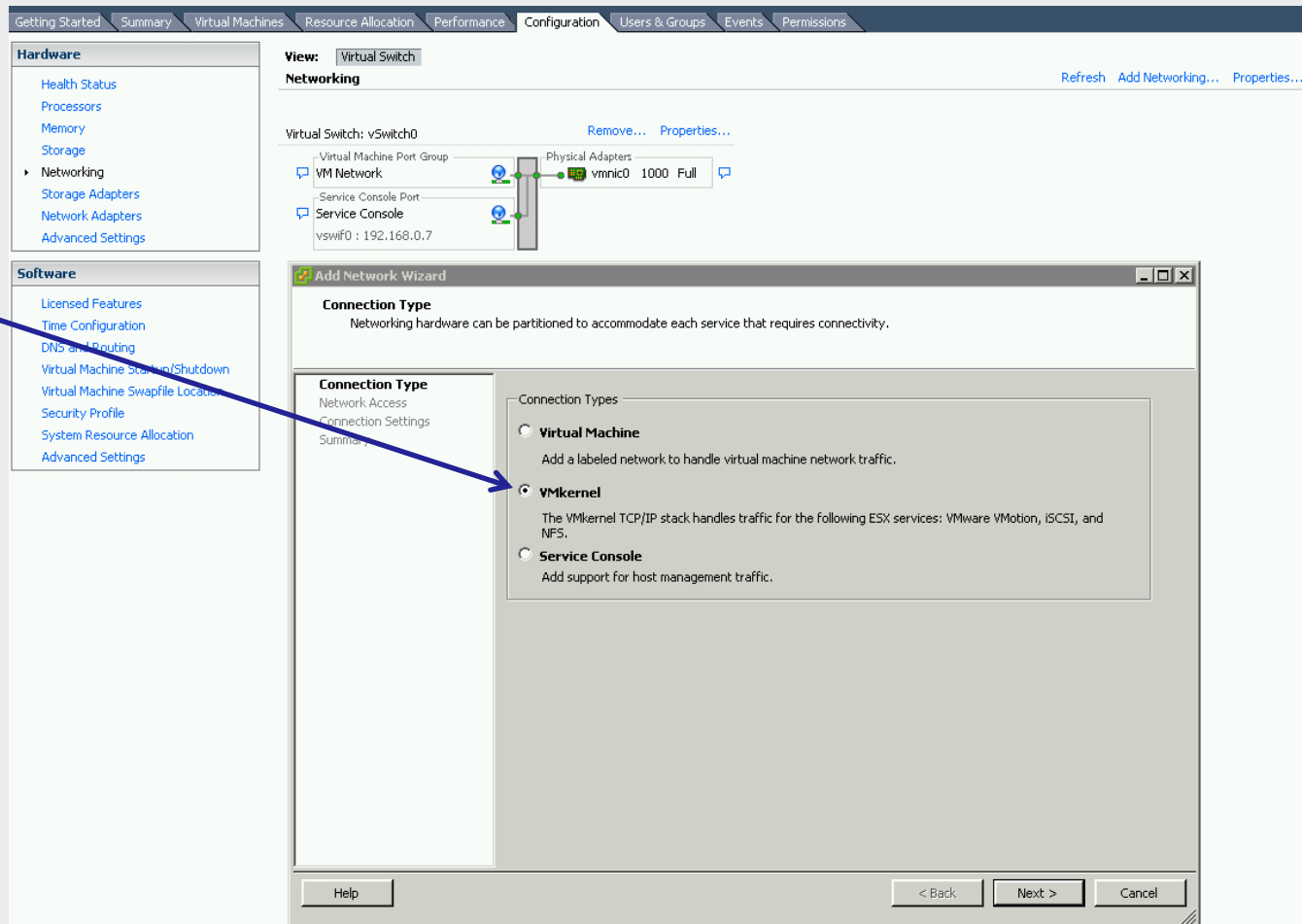
Now, the iops parameter is
changed to 1

```
root@esx:~  
[root@esx ~]#  
[root@esx ~]# esxcli nmp device list  
eui.00000000c1742b0a  
  Device Display Name: SCST_BIO iSCSI Disk (eui.00000000c1742b0a)  
  Storage Array Type: VMW_SATP_DEFAULT_AA  
  Storage Array Type Device Config:  
  Path Selection Policy: VMW_PSP_RR  
  Path Selection Policy Device Config: (policy=iops,iops=1,bytes=10485760,useANO=0,lastPathIndex=1: NumIOsPending=15,numBytesPending=983040)  
  Working Paths: vmhba36:C1:T0:L0, vmhba36:C0:T0:L0  
  
mpx.vmhba32:C0:T0:L0  
  Device Display Name: Local USB CD-ROM (mpx.vmhba32:C0:T0:L0)  
  Storage Array Type: VMW_SATP_LOCAL  
  Storage Array Type Device Config:  
  Path Selection Policy: VMW_PSP_FIXED  
  Path Selection Policy Device Config: (preferred=vmhba32:C0:T0:L0;current=vmhba32:C0:T0:L0)  
  Working Paths: vmhba32:C0:T0:L0  
  
mpx.vmhba3:C0:T1:L0  
  Device Display Name: Local Slimtype CD-ROM (mpx.vmhba3:C0:T1:L0)  
  Storage Array Type: VMW_SATP_LOCAL  
  Storage Array Type Device Config:  
  Path Selection Policy: VMW_PSP_FIXED  
  Path Selection Policy Device Config: (preferred=vmhba3:C0:T1:L0;current=vmhba3:C0:T1:L0)  
  Working Paths: vmhba3:C0:T1:L0  
  
naa.600605b000161ab00f8e8ce6c527141b  
  Device Display Name: Local LSI Disk (naa.600605b000161ab00f8e8ce6c527141b)  
  Storage Array Type: VMW_SATP_LOCAL  
  Storage Array Type Device Config:  
  Path Selection Policy: VMW_PSP_FIXED  
  Path Selection Policy Device Config: (preferred=vmhba2:C0:T0:L0;current=vmhba2:C0:T0:L0)  
  Working Paths: vmhba2:C0:T0:L0  
  
mpx.vmhba33:C0:T0:L0  
  Device Display Name: Local USB CD-ROM (mpx.vmhba33:C0:T0:L0)  
  Storage Array Type: VMW_SATP_LOCAL  
  Storage Array Type Device Config:  
  Path Selection Policy: VMW_PSP_FIXED  
  Path Selection Policy Device Config: (preferred=vmhba33:C0:T0:L0;current=vmhba33:C0:T0:L0)  
  Working Paths: vmhba33:C0:T0:L0  
  
eui.0000000007f95b4e8  
  Device Display Name: SCST_BIO iSCSI Disk (eui.0000000007f95b4e8)  
  Storage Array Type: VMW_SATP_DEFAULT_AA  
  Storage Array Type Device Config:  
  Path Selection Policy: VMW_PSP_RR  
  Path Selection Policy Device Config: (policy=iops,iops=1,bytes=10485760,useANO=0,lastPathIndex=1: NumIOsPending=0,numBytesPending=0)  
  Working Paths: vmhba36:C1:T1:L0, vmhba36:C0:T1:L0  
  
[root@esx ~]#
```

Configure MPIO on ESX 4.0

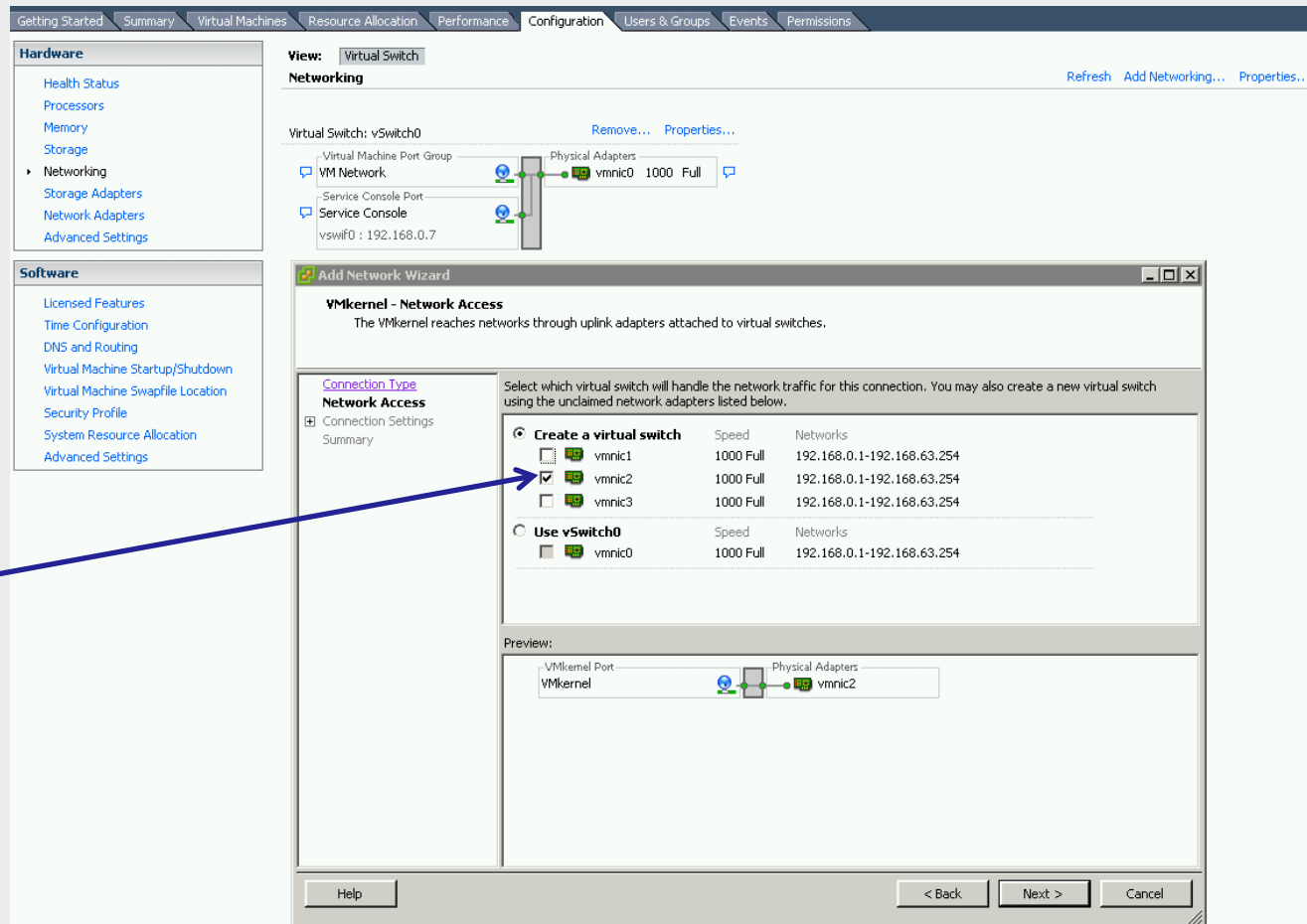
Step 1

Navigate in the ESX 4.0 host Configuration tab and select Networking. Click on „Add Networking...”, select Vmkernel and then on „Next >” button.



Configure MPIO on ESX 4.0

Step 2

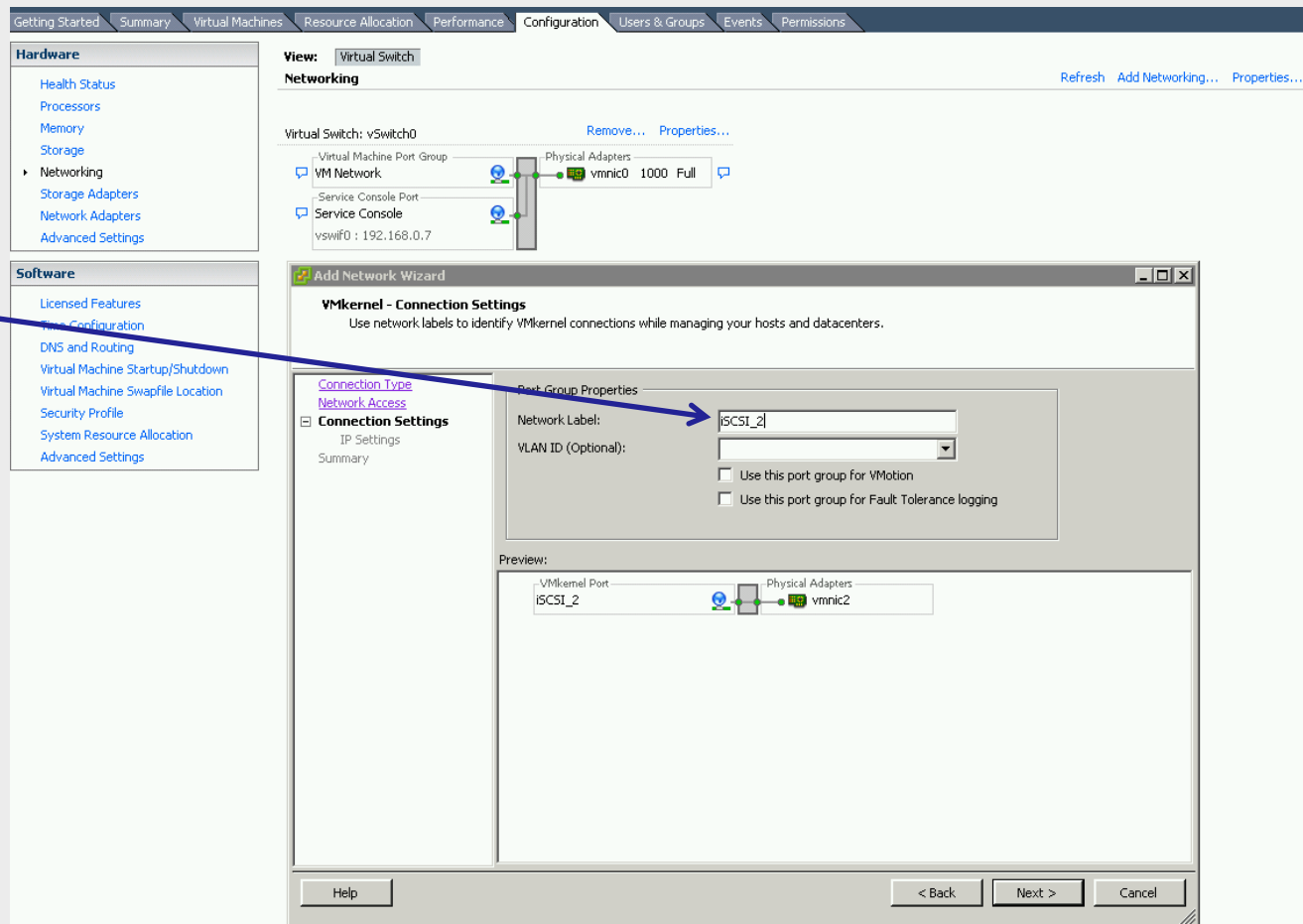


Please select one network adapter dedicated for the first Vmkernel. In this example: vmnic2

Configure MPIO on ESX 4.0

Step 3

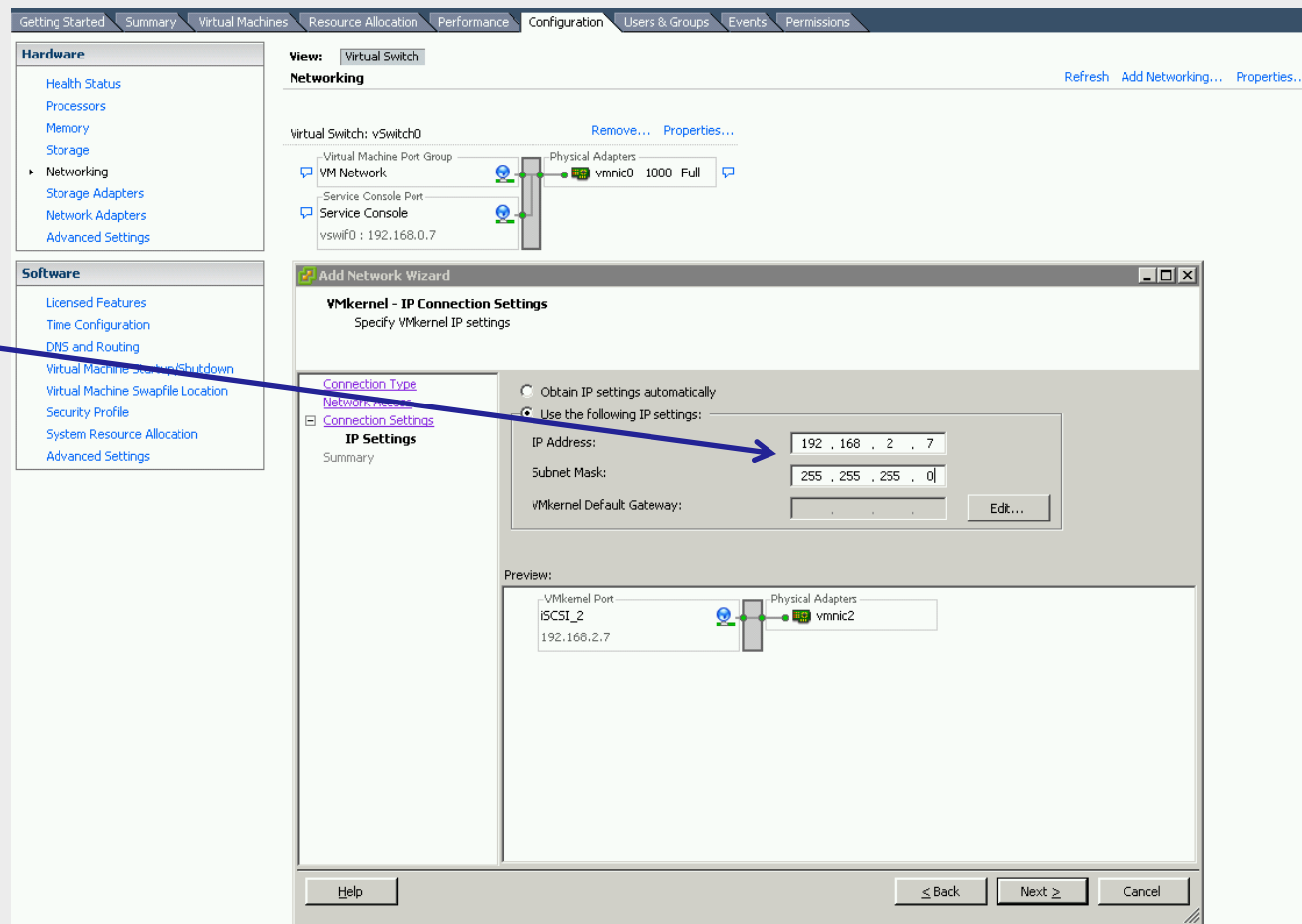
Please enter the Network Label for the first Vmkernel: iSCSI_2
And click on the „Next >” button.



Configure MPIO on ESX 4.0

Step 4

Please enter the IP Address and Subnet Mask
192.168.3.7
255.255.255.0
And click on the „Next ≥” button.

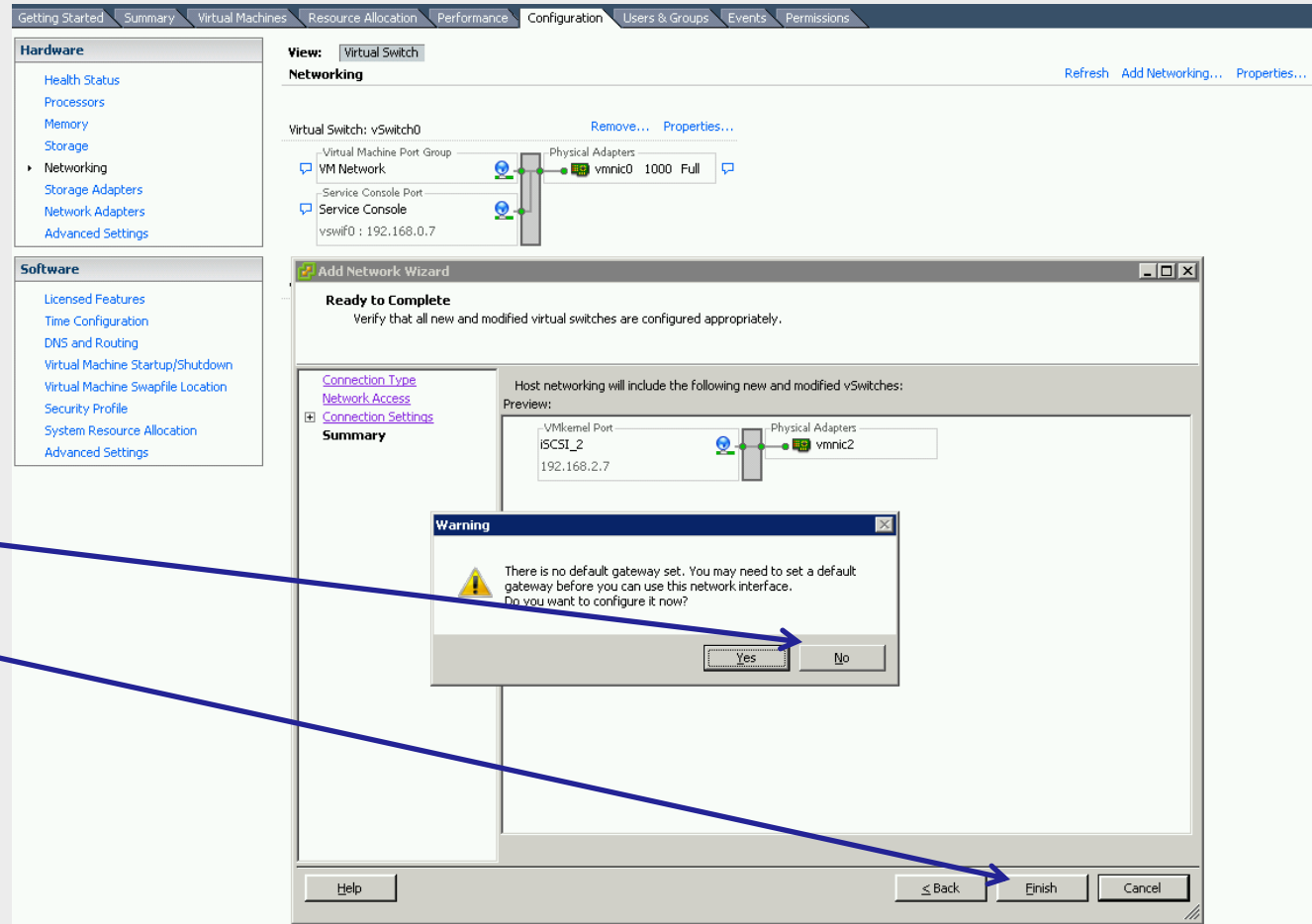


Configure MPIO on ESX 4.0

Step 5

Now, click on the „Finish” button.
Next, in the Warning prompt about
default gateway, click on „No”

Now repeat steps 1 to 5 for the
second Vmkernel. This time use:
vmnic3 for the network adapter,
iSCSI_3 for the Network Label,
192.168.3.7 for IP Address and
255.255.255.0 for the Network
Subnet.



Configure MPIO on ESX 4.0

Step 6

Now, there are 2 vmkernel ports with dedicated network adapter.

„iSCSI_2” -- „vmnic2”
„iSCSI_3” -- „vmnic3”

Next, please select „Storage Adapters”.

The screenshot shows the ESX 4.0 Configuration console. The left sidebar has a 'Hardware' section with 'Storage Adapters' selected. The main area shows the 'Networking' configuration. Under 'Virtual Switch: vSwitch0', there is a 'VM Network' port connected to 'vmnic0'. Under 'Virtual Switch: vSwitch1', there is an 'iSCSI_2' port connected to 'vmnic2'. Under 'Virtual Switch: vSwitch2', there is an 'iSCSI_3' port connected to 'vmnic3'. All ports are shown with a speed of 1000 and a status of Full.

Configure MPIO on ESX 4.0

Step 7

In „Storage Adapters” menu,
please select
„iSCSI Software Adapter”
and click on „Properties” button.

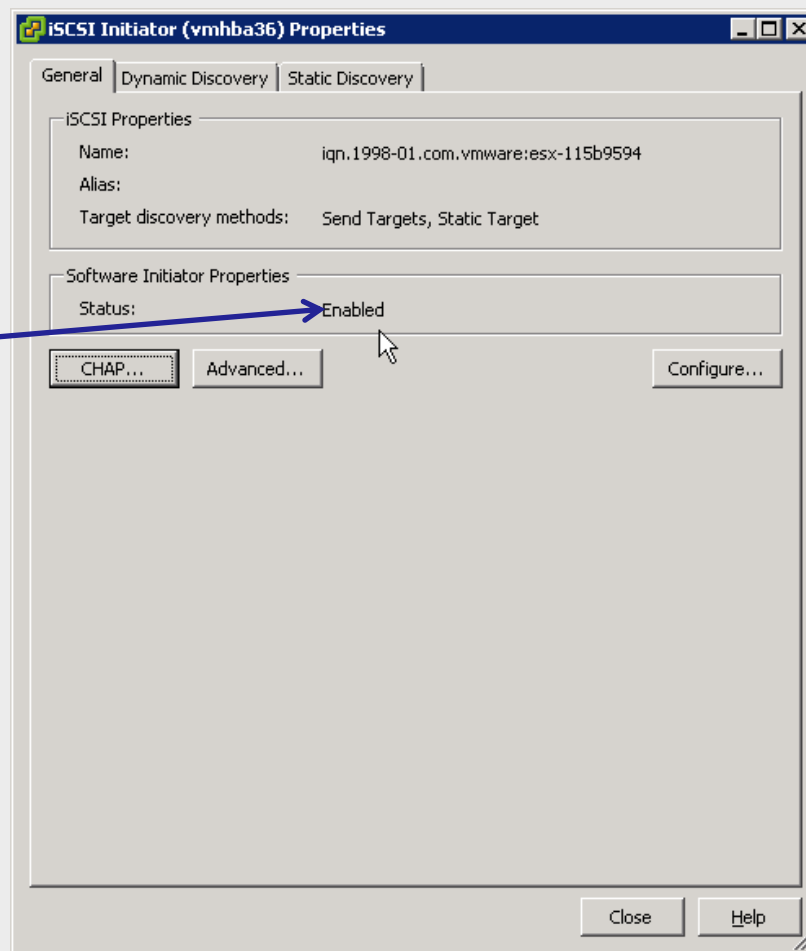
The screenshot shows the ESX 4.0 Configuration console. The left sidebar has a 'Hardware' section with 'Storage Adapters' selected. The main area shows a list of storage adapters. The 'iSCSI Software Adapter' (vmhba36) is selected, and its 'Properties' button is highlighted. Below the list, the 'Details' section for the selected adapter is shown, including its model, name, and connection status. At the bottom, there is a table for the selected adapter's configuration.

Device	Type	WWN
vmhba36	iSCSI	iqn.1998-01.com.vmware:esx-01ccaf35
31xESB/632xESB/3100 Chipset SATA Storage Controller IDE		
vmhba4	Block SCSI	
vmhba35	Block SCSI	
631xESB/632xESB IDE Controller		
vmhba3	Block SCSI	

Details							
vmhba36							
Model:	iSCSI Software Adapter						
iSCSI Name:	iqn.1998-01.com.vmware:esx-01ccaf35						
iSCSI Alias:							
Connected Targets:	0	Devices:	0	Paths:	0		
View: Devices Paths							
Name	Identifier	Runtime Name	LUN	Type	Transport	Capacity	Owner

Step 8

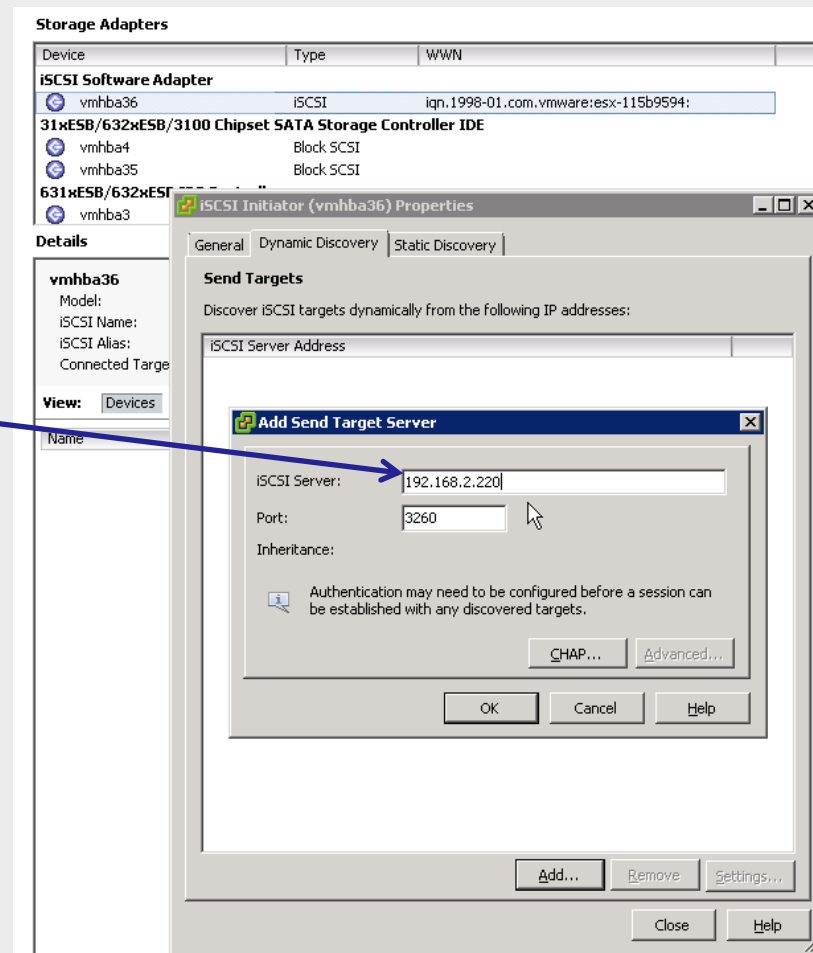
In the iSCSI Initiator Properties, make sure the status is „Enabled”. If not, then click on „Configure...” button and enable it. Next, click on the „Dynamic Discovery” tab.



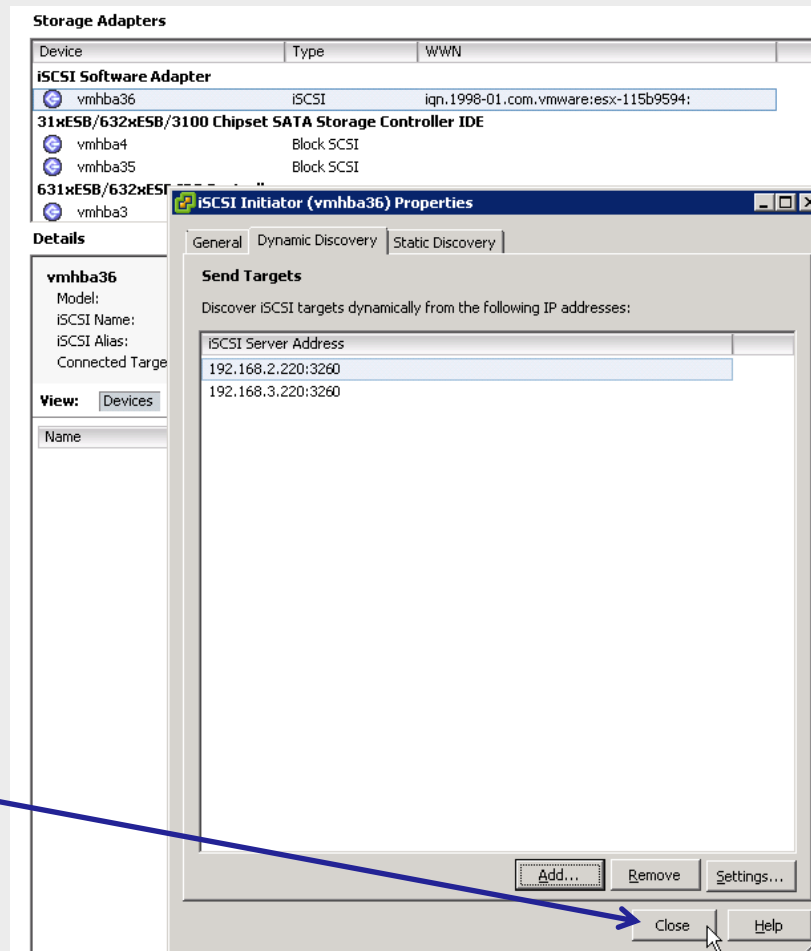
Step 9

In the „Dynamic Discovery” tab click the „Add...” button and enter the IP address of the iSCSI target for the first path. In this example: **192.168.2.220**.

Then click the „Add...” button and enter the IP address of the iSCSI Target for the second path: **192.168.3.220**

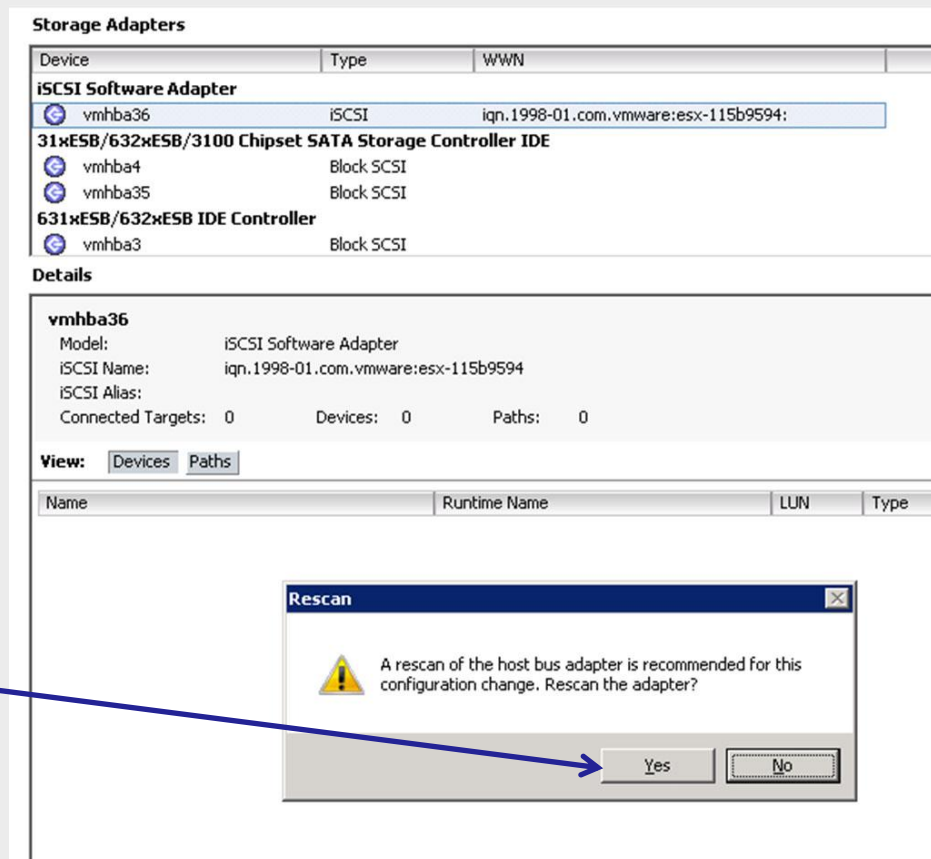


Step 10



Next, click on „Close” button.

Step 11



Now, click on the „Yes” button in order to start adapter rescan.

Configure MPIO on ESX 4.0

Step 12

There is an option to run one more adapter to rescan now click on the „Rescan” button.

The screenshot shows the 'Storage Adapters' configuration page in the ESX interface. A blue box with an arrow points to the 'Rescan...' button in the top right corner. The 'Storage Adapters' section lists several adapters, including 'vmhba36' (iSCSI Software Adapter) and 'vmhba4' (SATA Storage Controller IDE). The 'Details' section for 'vmhba36' shows its model, iSCSI name, and connected targets. The 'View' section shows a list of storage devices. A 'Rescan' dialog box is open in the foreground, with the 'OK' button highlighted by a mouse cursor. The dialog box contains two checked options: 'Scan for New Storage Devices' and 'Scan for New VMFS Volumes'.

Storage Adapters Refresh Rescan...

Device	Type	WWN
iSCSI Software Adapter		
vmhba36	iSCSI	iqn.1998-01.com.vmware:esx-115b9594:
31xESB/632xESB/3100 Chipset SATA Storage Controller IDE		
vmhba4	Block SCSI	
vmhba35	Block SCSI	
631xESB/632xESB IDE Controller		
vmhba3	Block SCSI	

Details Properties...

vmhba36

Model: iSCSI Software Adapter
iSCSI Name: iqn.1998-01.com.vmware:esx-115b9594
iSCSI Alias:
Connected Targets: 2 Devices: 2 Paths: 4

View: Devices Paths

Name
SCST_BIO iSCSI Disk (eui.0000)
SCST_BIO iSCSI Disk (eui.0000)

Rescan

☒ Scan for New Storage Devices
Rescan all host bus adapters for new storage devices. Rescanning all adapters can be slow.

☒ Scan for New VMFS Volumes
Rescan all known storage devices for new VMFS volumes that have been added since the last scan. Rescanning known storage for new file systems is faster than rescanning for new storage.

OK Cancel Help

Type	Transport	Capacity	Owner
disk	iSCSI	500,00 G	NMP
disk	iSCSI	100,00 G	NMP

Step 13

Now, in the Storage Adapters menu, locate the first iSCSI LUN and right-mouse click on it. From pull-down menu select: „Manage Paths”.

The screenshot shows the ESX 4.0 configuration interface. The left sidebar has a 'Hardware' section with links to Health Status, Processors, Memory, Storage, Networking, Storage Adapters, Network Adapters, and Advanced Settings. The 'Storage Adapters' section is selected. The main area displays a table of storage controllers:

Device	Type	WWN
iSCSI Software Adapter		
vmhba36	iSCSI	iqn.1998-01.com.vmware:esx-115b9594
31xESB/632xESB/3100 Chipset SATA Storage Controller IDE		
vmhba4	Block SCSI	
vmhba35	Block SCSI	
631xESB/632xESB IDE Controller		
vmhba3	Block SCSI	

Below the table is the 'Details' section for 'vmhba36' (iSCSI Software Adapter). It shows the Model, iSCSI Name, iSCSI Alias, and Connected Targets (2), Devices (2), and Paths (4). The 'View' section has tabs for 'Devices' and 'Paths'. The 'Paths' tab is selected, showing a table of iSCSI LUNs:

Name	Runtime Name	LUN	Type	Transport	Capacity	Owner
SCST_BIO iSCSI Disk (eui.00000000b5e5c990)	vmhba36:C0:T2:L0	0	disk	iSCSI	500,00 G	NMP
SCST_BIO iSCSI Disk (eui.0000000094d9a)		0	disk	iSCSI	100,00 G	NMP

A right-click context menu is open over the first LUN, with the following options: Rename, Manage Paths..., and Copy identifier to clipboard. The 'Manage Paths...' option is highlighted.

Step 14

Next, in Path selection pull-down menu please select: „Round Robin”.

The screenshot shows the ESX 4.0 Configuration window with the 'Storage Adapters' tab selected. The 'SCST_BIO iSCSI Disk (eui.00000000b5e5c590) Manage Paths' dialog is open, showing the 'Path Selection' dropdown set to 'Round Robin (VMware)'. The 'Paths' table shows two active paths for the iSCSI disk.

Runtime Name	Target	LUN	Status	Preferred
vmhba36:C0:T2:L0	iqn.2009-01:dss233.esx:192.168.2.220:3260	0	Active (I/O)	
vmhba36:C3:T2:L0	iqn.2009-01:dss233.esx:192.168.3.220:3260	0	Active (I/O)	

Refresh

Name: iqn.1998-01.com.vmware.esx-115b9594-00023d000001,iqn.2009-01:dss233.esx,t,1-eui.00000000b5e5c590
Runtime Name: vmhba36:C0:T2:L0

iSCSI

Adapter: iqn.1998-01.com.vmware.esx-115b9594

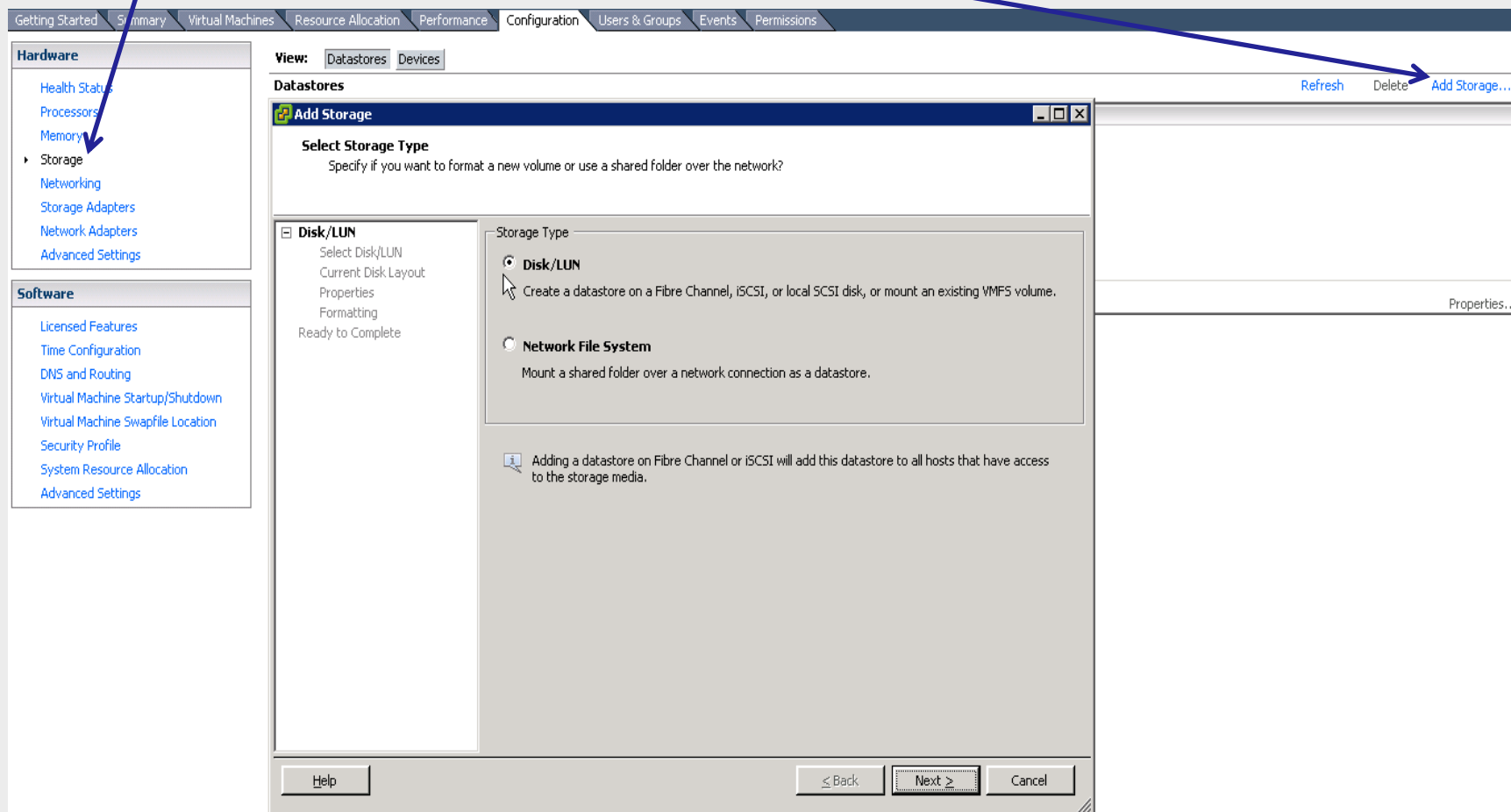
Target: iqn.2009-01:dss233.esx:192.168.2.220:3260

Close Help

Configure MPIO on ESX 4.0

Next, in the „Storage” menu, click on the „Add Storage” button and follow the next steps to add new LUN.

Step 15



Now install the Windows 2008 virtual machine on the new added LUN and run iometer in order to check the performance.

Configure MPIO on ESX 4.0

Step 16

Once the virtual machine is installed and running the network chart will like this screenshot.

The screenshot displays the ESX 4.0 Configuration interface, specifically the 'Virtual Switch' view under the 'Networking' section. The left sidebar shows the 'Hardware' and 'Software' categories, with 'Networking' expanded. The main content area shows three virtual switches: vSwitch0, vSwitch1, and vSwitch2. Each switch is connected to a physical adapter (vmnic0, vmnic2, and vmnic3 respectively) and has a 'Full' status. A blue arrow points from the 'Win 2008 64 DEMO' virtual machine in the vSwitch0 port group to the 'Win 2008 64 DEMO' virtual machine in the vSwitch1 port group.

View: Virtual Switch

Networking

[Refresh](#) [Add Networking...](#) [Properties...](#)

Virtual Switch: vSwitch0 [Remove...](#) [Properties...](#)

Virtual Machine Port Group

VM Network

1 virtual machine(s)

Win 2008 64 DEMO

Service Console Port

Service Console

vswif0 : 192.168.0.7

Virtual Switch: vSwitch1 [Remove...](#) [Properties...](#)

VMkernel Port

iSCSI_2

vmk0 : 192.168.2.7

Virtual Switch: vSwitch2 [Remove...](#) [Properties...](#)

VMkernel Port

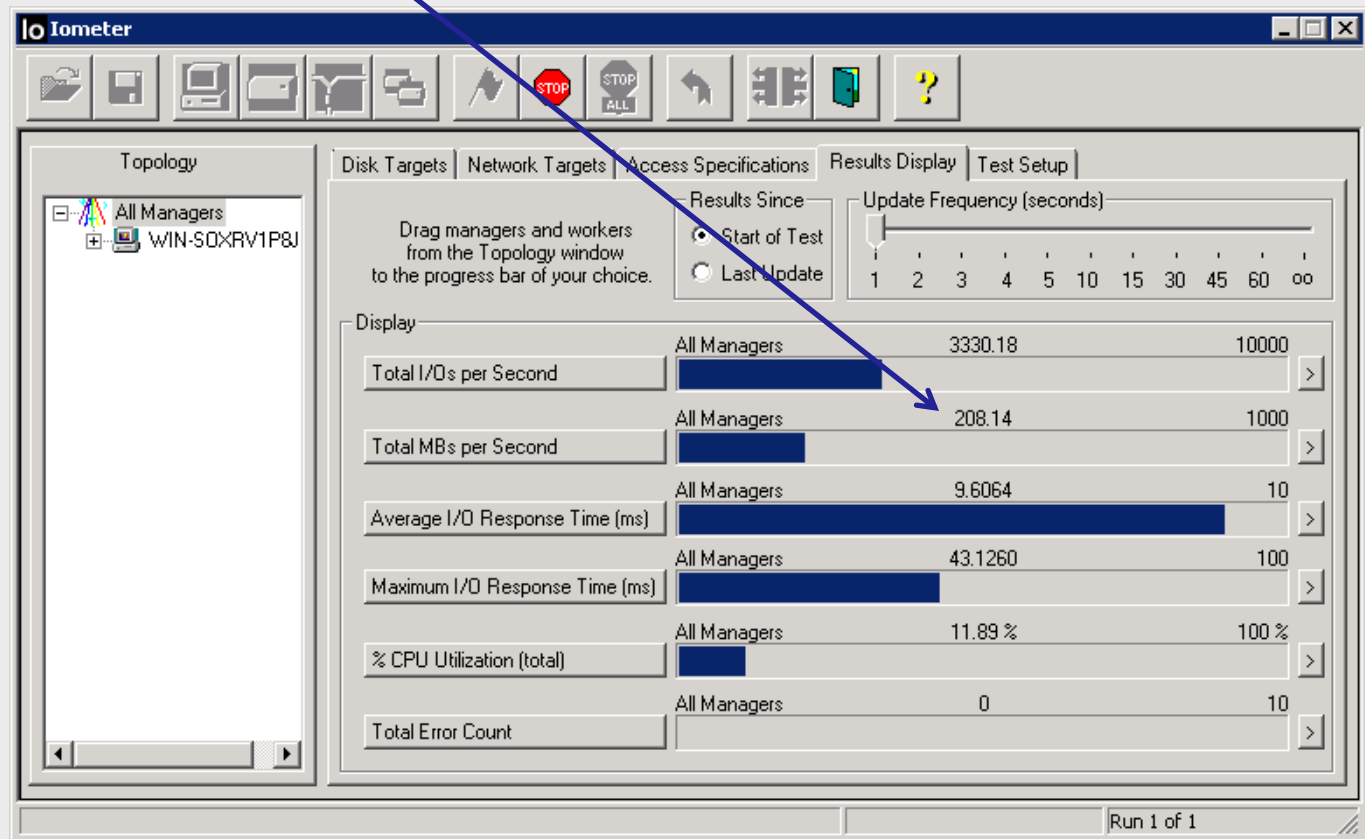
iSCSI_3

vmk1 : 192.168.3.7

Multipath I/O on DSS V6 with ESX4

Step 17

Verify the performance with „Iometer” running on



Now you have completed the configuration of Multipath I/O on DSS V6 with ESX4.

Thank you!