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vSphere4 ESX4: How to configure iSCSI Software initiator on ESX4 against a HP MSA iSCSI Storage system

By Nikolaj Tuxen Gerstrøm on February 25, 2010 5:48 PM | [1 Comment](#) | [0 TrackBacks](#)

This short tutorial describes how to configure iSCSI Software initiator on ESX4 using Jumbo Frames and connect the ESX4 to a HP MSA Storage system. It does not show how to setup CHAP, since the iSCSI network traffic in this tutorial is on an isolated network.

This tutorial shows how to create multiple paths to the storage system. The paths are created using a port binding technique, where a 1 to 1 relationship exists between the physical NIC's and the VMkernel port.

The setup requires you to enable jumbo frames on your switches you use for iSCSI and on your HP MSA Storage system before configuring your ESX4.

Please make sure that all your hardware (especially your NIC's) are supported on ESX4.

You can check that on:

VMware Compatibility Guide

The IP addresses of the host interfaces on the HP MSA are setup as follows:

```
Controller A port 1: 10.10.10.100 / 24 Gateway 0.0.0.0
Controller A port 2: 10.11.10.110 / 24 Gateway 0.0.0.0
Controller B port 1: 10.10.10.120 / 24 Gateway 0.0.0.0
Controller B port 2: 10.11.10.130 / 24 Gateway 0.0.0.0
```

HP MSA Controller A port 1 and B port 1 and ESX4 vmnic0 are connected to physical iSCSI switch 1.

HP MSA Controller A port 2 and B port 2 and ESX4 vmnic1 are connected to physical iSCSI switch 2.

Login to the service console as root on your ESX4 using putty and SSH and run these commands:

```
[root@esx4a ~]# esxcfg-vswitch -a vSwitch1
[root@esx4a ~]# esxcfg-vswitch -m 9000 vSwitch1
[root@esx4a ~]# esxcfg-vswitch -A iSCSI1 vSwitch1
[root@esx4a ~]# esxcfg-vmknic -a -i 10.10.10.10 -n
255.255.255.0 -m 9000 iSCSI1
[root@esx4a ~]# esxcfg-vswitch -a vSwitch2
[root@esx4a ~]# esxcfg-vswitch -m 9000 vSwitch2
[root@esx4a ~]# esxcfg-vswitch -A iSCSI2 vSwitch2
[root@esx4a ~]# esxcfg-vmknic -a -i 10.11.10.10 -n
255.255.255.0 -m 9000 iSCSI2
```

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The above commands will add two vSwitches, configure them for jumbo frames (-m 9000) and add two portgroups named iSCSI1 and iSCSI2 and assign two vmkernel nic's with IP addresses also configured for jumbo frames.

(You could also add only one vSwitch instead of two and add the vmkernel nic's to that vSwitch, if you do that please remember to assign one NIC for each port group in the NIC teaming of the vSwitch by overriding the vSwitch failover order).

Now go into the console and add one physical NIC for each vSwitch. Select vmnico for vSwitch1 and vmnic1 for vSwitch2.

Next you will enable the iSCSI software initiator. You do that in the Storage Adapters Section.

When you have enabled the iSCSI Software initiator look at the Storage Adapters Section and note the vmhbaxx for the iSCSI Software Adapter, in this example it is vmhba34.

Go to putty and run these commands:

```
[root@esx4a ~]# esxcli swiscsi nic add -n vmk0 -d vmhba34
[root@esx4a ~]# esxcli swiscsi nic add -n vmk1 -d vmhba34
```

Next register the host in the HP MSA Storage system using the IQN from the iSCSI Software initiator. You will see the IQN by looking at the ESX4 server Storage Adapters in the vSphere Client.

Configure a disk and volume on the HP MSA.

On the HP MSA you map the disks to host using Explicit Mapping.

If you have several ESX4 servers, it is important that you assign the same lun number for the disk when you map the disk to your ESX4 servers. Use the above procedure to add more ESX4 servers making sure that you use the correct ip addresses.

Go back to the vSphere Client and discover your iSCSI targets by adding the HP MSA target ip's in Dynamic Discovery tab on the iSCSI initiator:

```
10.10.10.100
10.11.10.120
10.10.10.110
10.11.10.130
```

Check that all the targets on the HP MSA Storage system are located in the Static discoveries tab as well.

Rescan the iSCSI software initiator to see your new disk.

When the disk pops up you can now go and configure your datastore.

Do a test reboot and see if all is ok.

And now you are ready to go.

I hope this tutorial is helpful for you.

Best regards,

Reference: [VMware iSCSI SAN Configuration Guide](#)

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1 COMMENT

[Johan de Haan](#) | [May 4, 2010 3:40 PM](#) | [Reply](#)

If you are using VLAN's to make an isolated network, make sure you also tag the VLAN ID to the vSwitch! I've been trying it for hours and just found out that I missed to fill in the VLAN ID at the Port Group..

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