

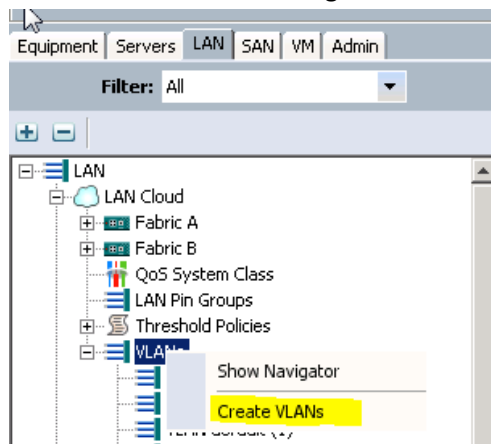
Summary

This article provides a step-by-step guidance to setup a Cisco UCS with a Nimble Storage iSCSI array and VMware vSphere.

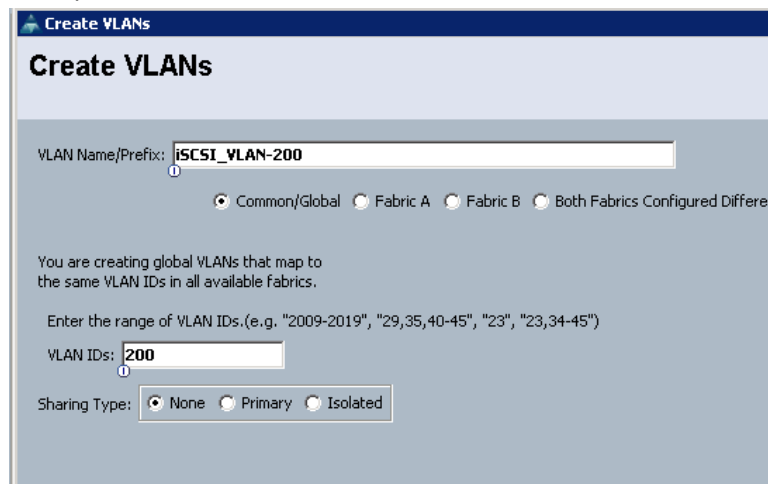
Note: This document does not cover any boot from SAN configuration.

Setup NICs and VLANs in UCS Manager

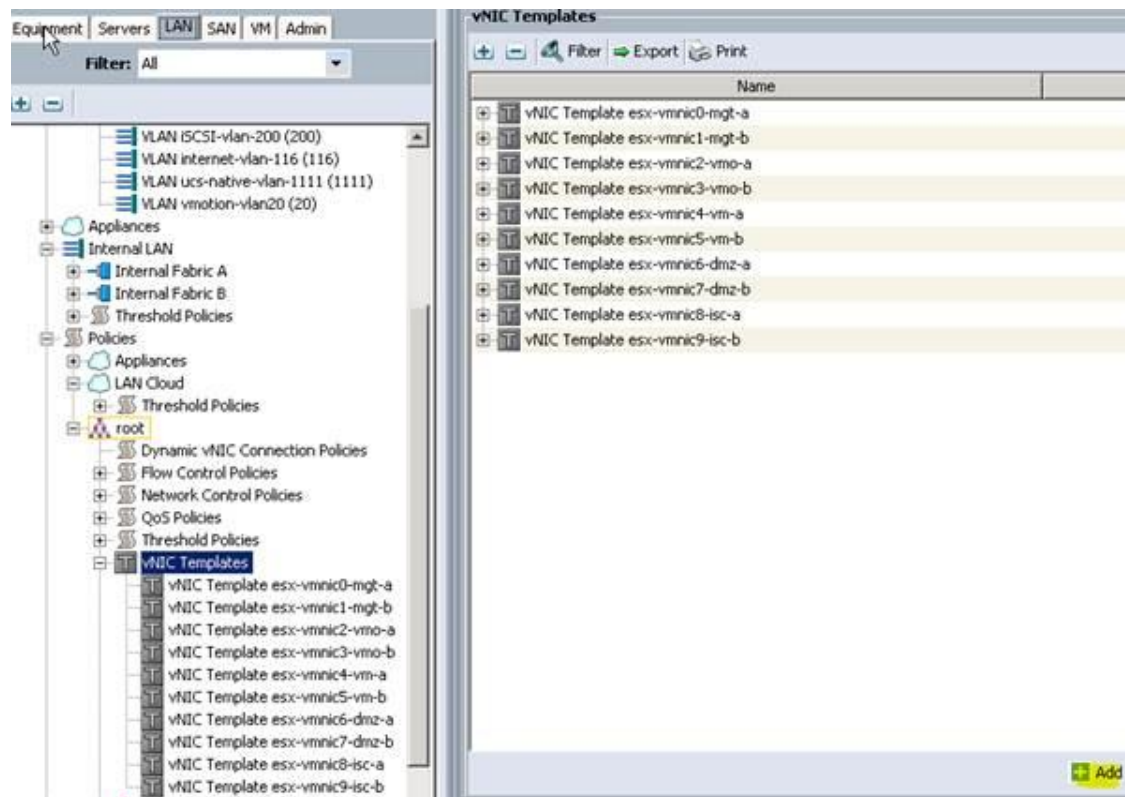
Click on the **LAN** tab and right-click on **VLANS** and select **Create VLANs**.



Specify a **VLAN Name/Prefix** and select **Common/Global** option below.
Also, please enter a **VLAN ID**.

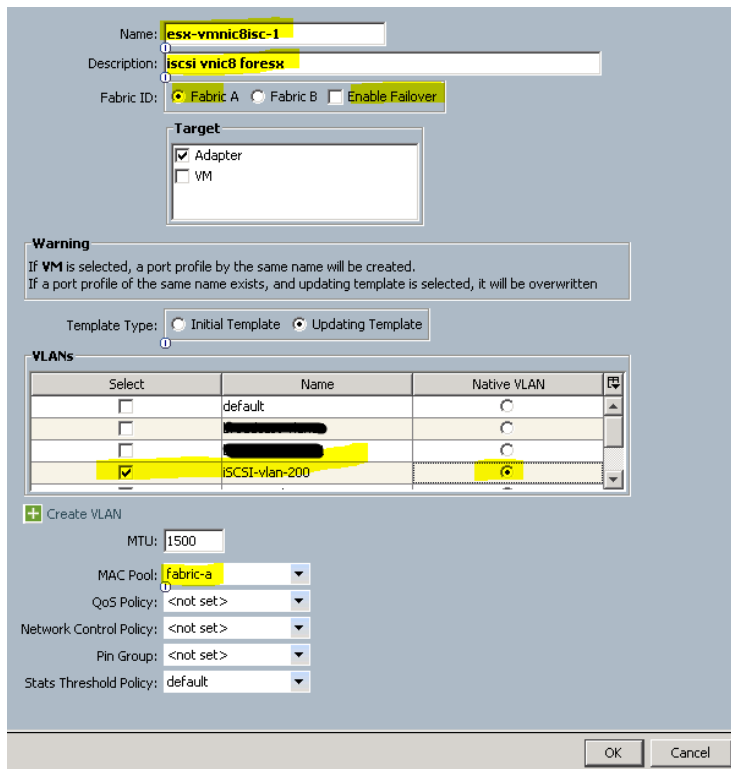
A screenshot of the 'Create VLANs' configuration form in UCS Manager. The form has a title bar 'Create VLANs' and a main heading 'Create VLANs'. It contains several input fields and radio buttons. The 'VLAN Name/Prefix' field is filled with 'iSCSI_VLAN-200'. Below it, there are four radio buttons: 'Common/Global' (selected), 'Fabric A', 'Fabric B', and 'Both Fabrics Configured Differen'. A note below the radio buttons states: 'You are creating global VLANs that map to the same VLAN IDs in all available fabrics.' Below the note, there is a text input field for 'VLAN IDs' with the value '200'. At the bottom, there are three radio buttons for 'Sharing Type': 'None' (selected), 'Primary', and 'Isolated'.

Once the VLAN has been created, we need to create a new vNIC template.
Navigate to the **LAN** tab and select **vNIC templates** and click on **add**.



We need to create a vNIC template for FI-A and FI-B to allow multiple paths to our array to ensure MPIO and higher throughput.

Fabric A and B need to have separate vNIC templates. When creating a vNIC template, please ensure to select a MAC Pool. If you did not **create a new MAC Pool**, you can use the **default MAC Pool**.



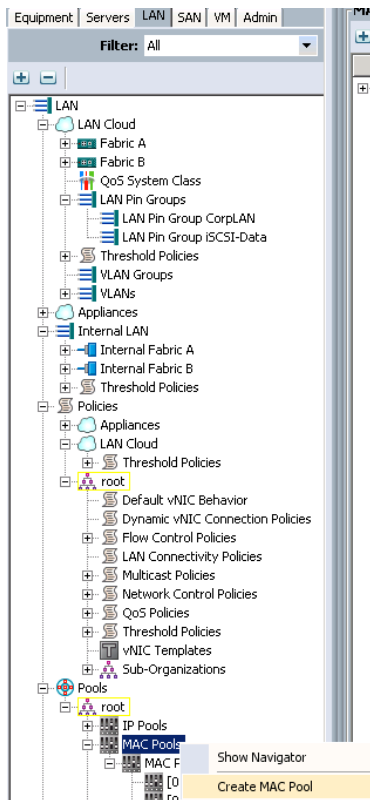
The screenshot shows a configuration window for a vNIC template. The 'Name' field is 'esx-vmnic8isc-1' and the 'Description' is 'iscsi vnic8 foresx'. The 'Fabric ID' is set to 'Fabric A'. The 'Target' section has 'Adapter' checked and 'VM' unchecked. A warning message states: 'Warning: If VM is selected, a port profile by the same name will be created. If a port profile of the same name exists, and updating template is selected, it will be overwritten.' The 'Template Type' is set to 'Updating Template'. The 'VLANs' table is as follows:

Select	Name	Native VLAN
<input type="checkbox"/>	default	<input type="radio"/>
<input type="checkbox"/>	[REDACTED]	<input type="radio"/>
<input checked="" type="checkbox"/>	ISCSI-vlan-200	<input checked="" type="radio"/>

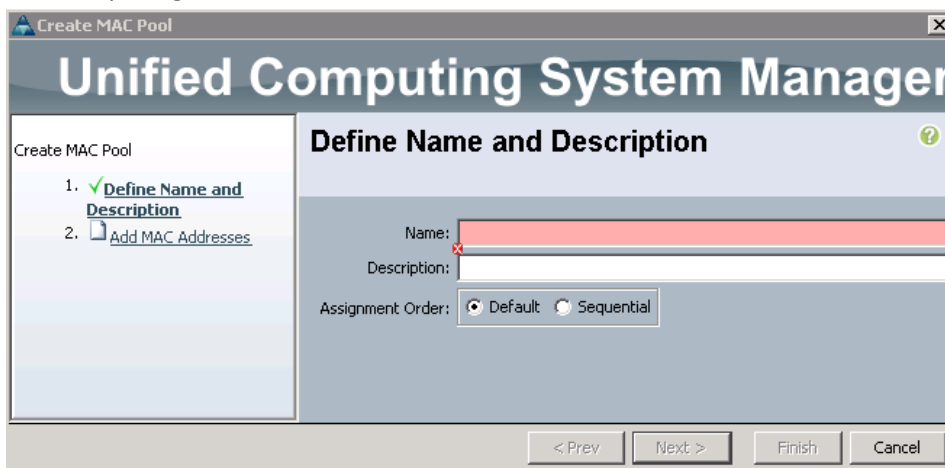
Below the table is a 'Create VLAN' section with the following settings: MTU: 1500, MAC Pool: fabric-a, QoS Policy: <not set>, Network Control Policy: <not set>, Pin Group: <not set>, and Stats Threshold Policy: default. 'OK' and 'Cancel' buttons are at the bottom right.

OPTIONAL STEP – create a new MAC Pool:

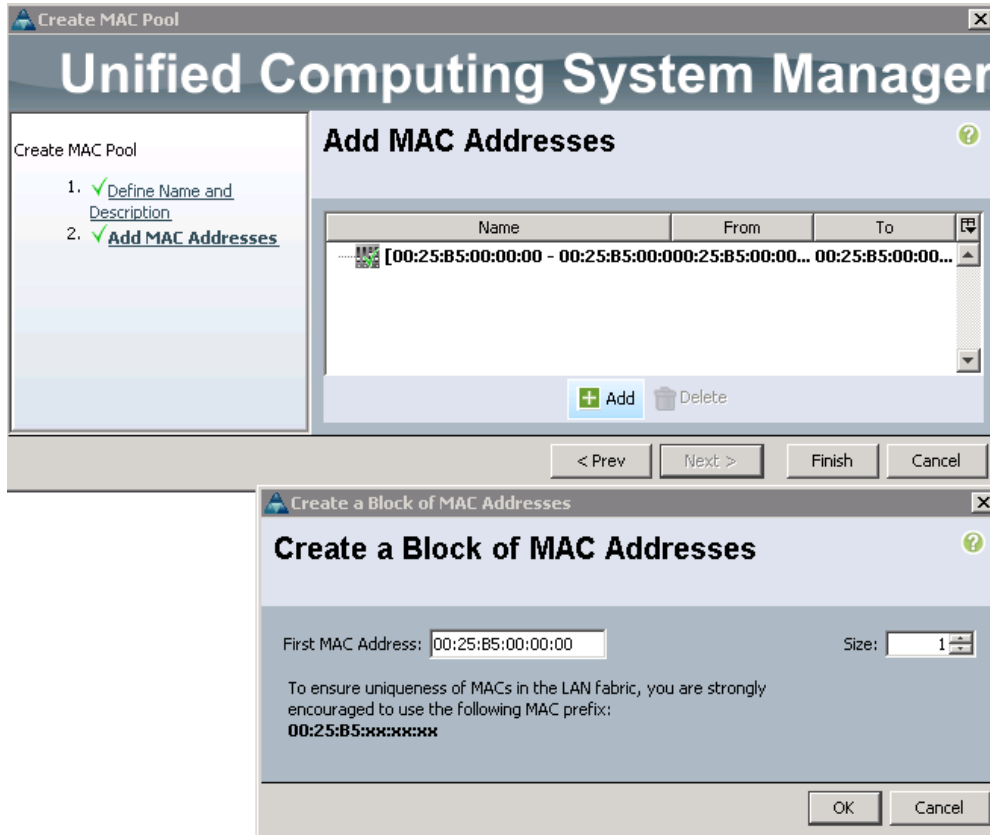
Click on the **LAN** tab and select **Pools**. Right-click on **MAC Pools** and select **Create new MAC Pool**.



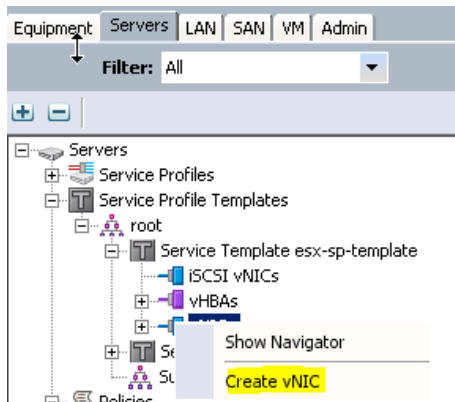
Specify a name for the **MAC Pool** and whether you want the MAC addresses to be sequential or randomly assigned.



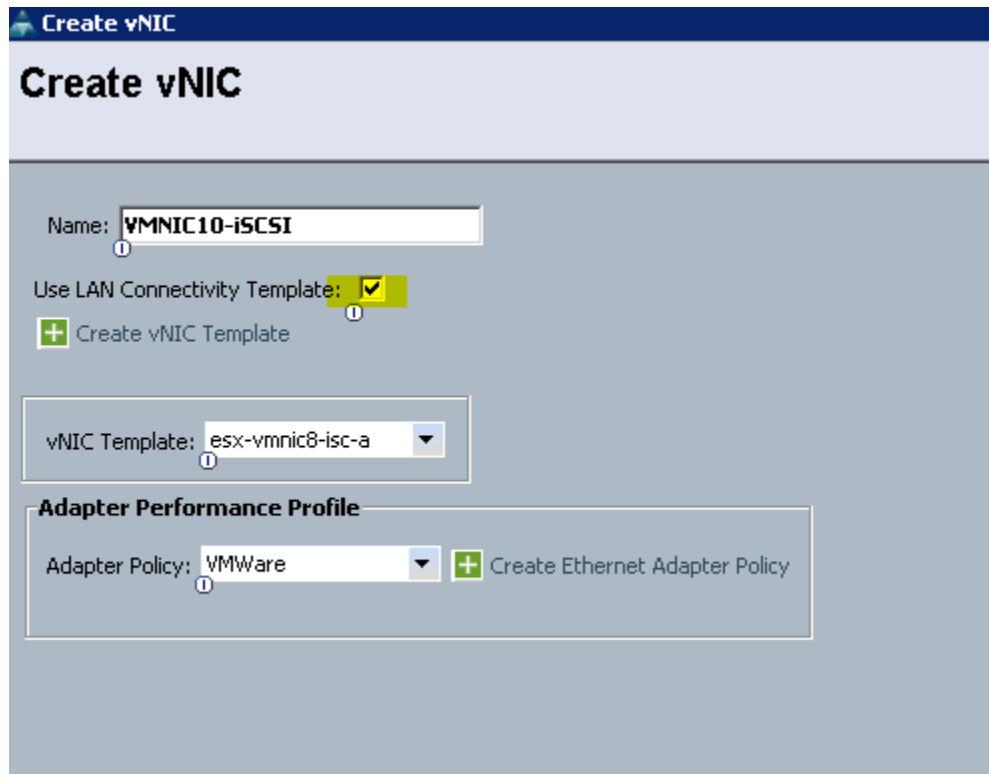
Next, we need to specify the first MAC address and the size of the MAC Pool. Once both have been specified, click on finish and your MAC Pool will be created.



So far we have created a new VLAN and two new vNIC templates. In the next step, we will create actual vNICs within the assigned Service Template and use our vNIC templates.



Click on the tick box **Use LAN Connectivity Template** which will use our pre-configured vNIC templates. Add a name, select the vNIC template and use the **VMware Adapter Policy**.



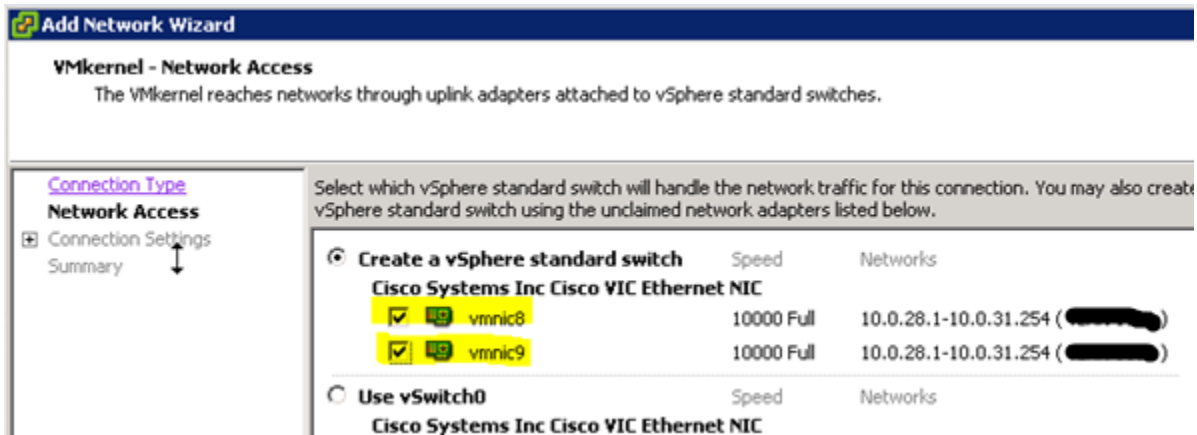
After we have created our vNICs, the blades need to be rebooted in order to get the vNICs added.

Setup VMware vSphere to connect to the array

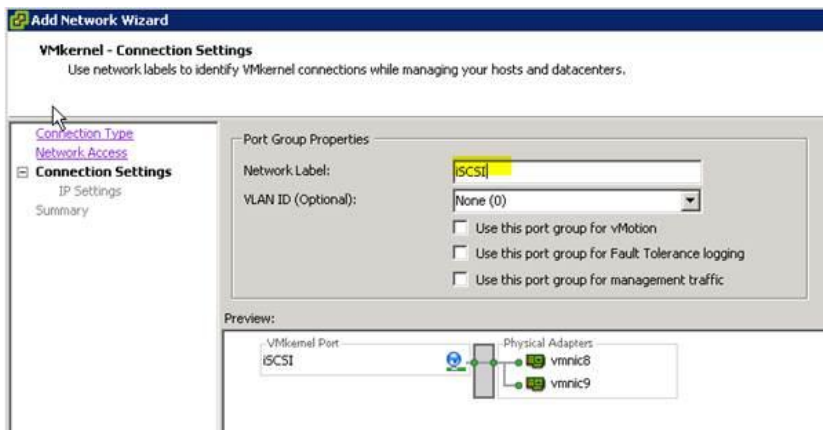
We need to create a new vSwitch which will use our iSCSI vNICs which we have created earlier. Select your VMware ESXi host in the Inventory within vCenter and go to **Configuration** and then **Networking**.



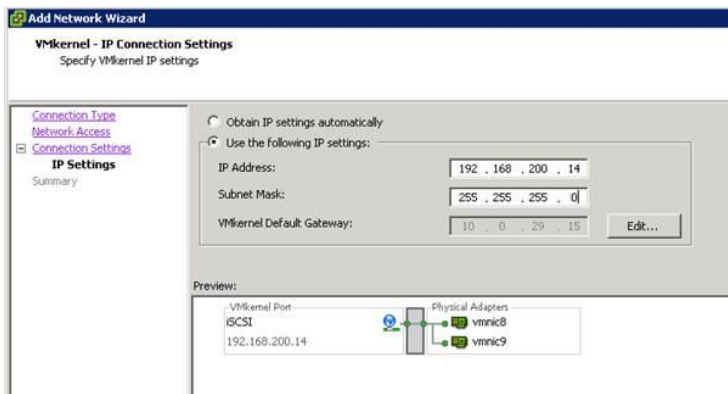
Add a new VMkernel port and add both NICs which were create within UCS.



Create a name for the first iSCSI VMkernel port. (We recommend using **iSCSI-0X** for the name)



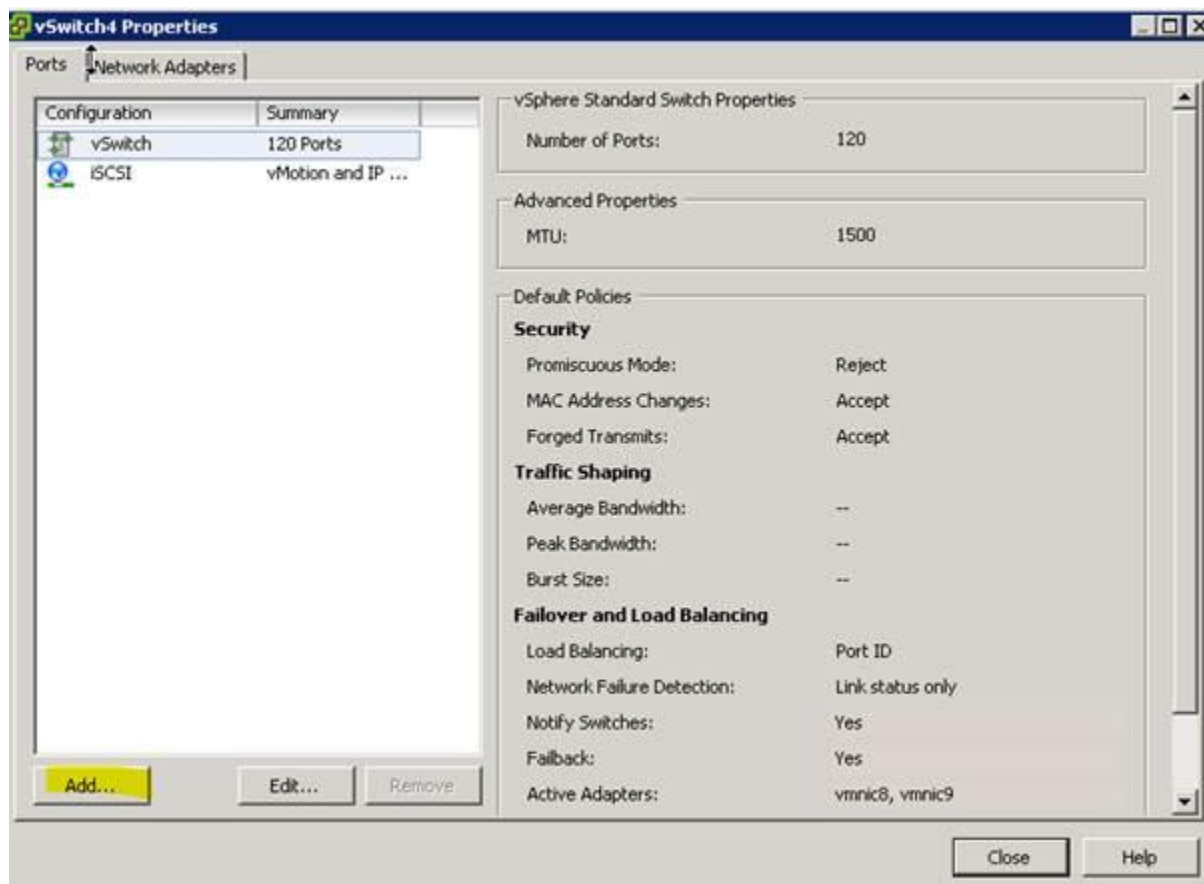
Add the IP address and subnet mask of the first iSCSI VMkernel adapter, click next and then Finish.



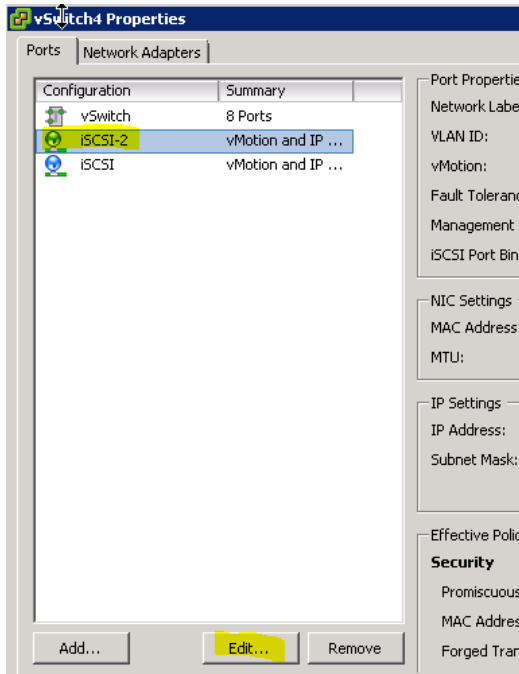
Now, we need to configure a second iSCSI VMkernel adapter. On our newly created vSwitch, click on **Properties**.



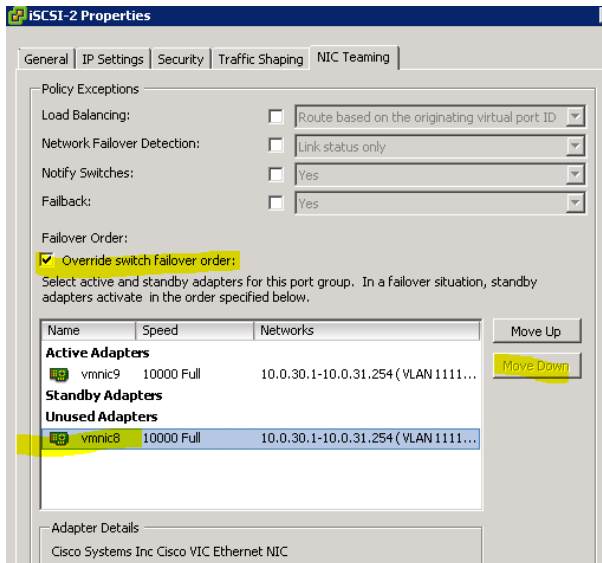
Click on Add and run through the previous steps on how to add a VMkernel port again.



After both VMkernel ports have been created, select the first VMkernel port (iSCSI-0X) and click on Edit.



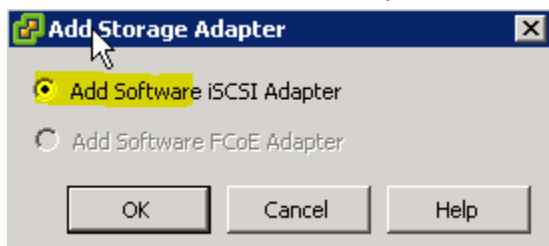
On the **NIC Teaming** tab, select **Override switch failover order** for our VMkernel port and make sure that only one NIC is active and the other one is set to unused. The same needs to be done for the second VMkernel port.



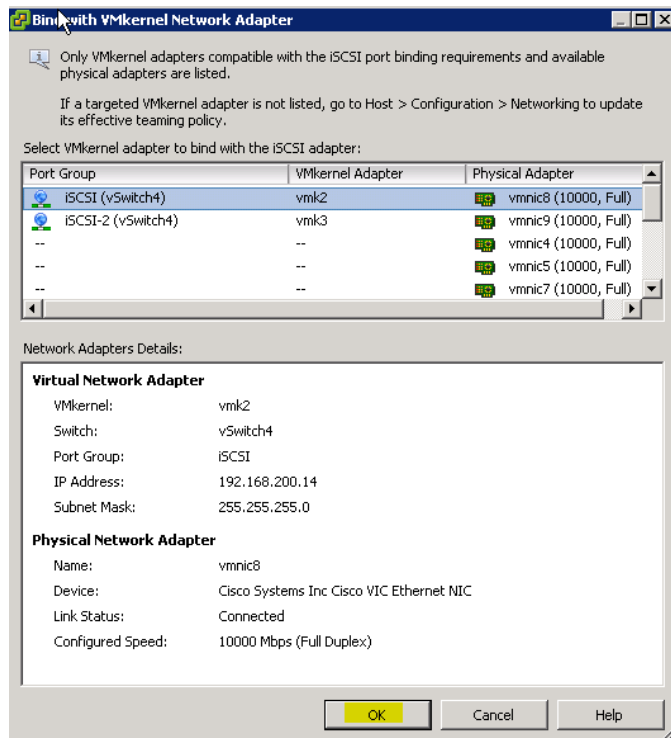
Once the vSwitch is configured correctly we can add the Software iSCSI Adapter, on the Storage Adapter section in the Configuration tab by clicking Add.



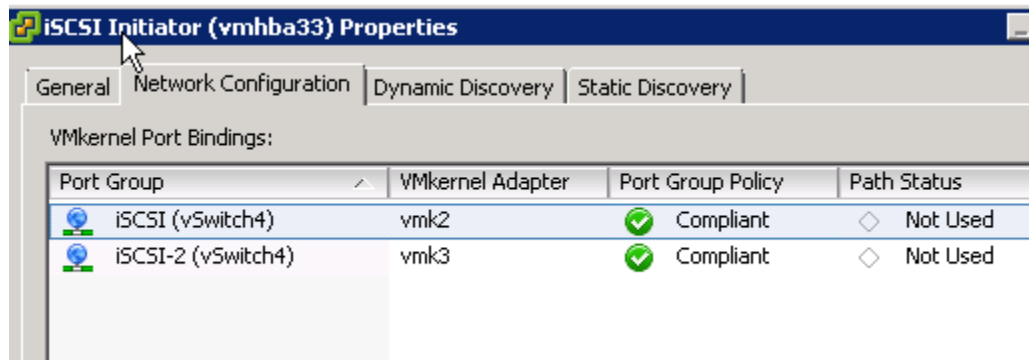
Click on Add Software iSCSI Adapter.



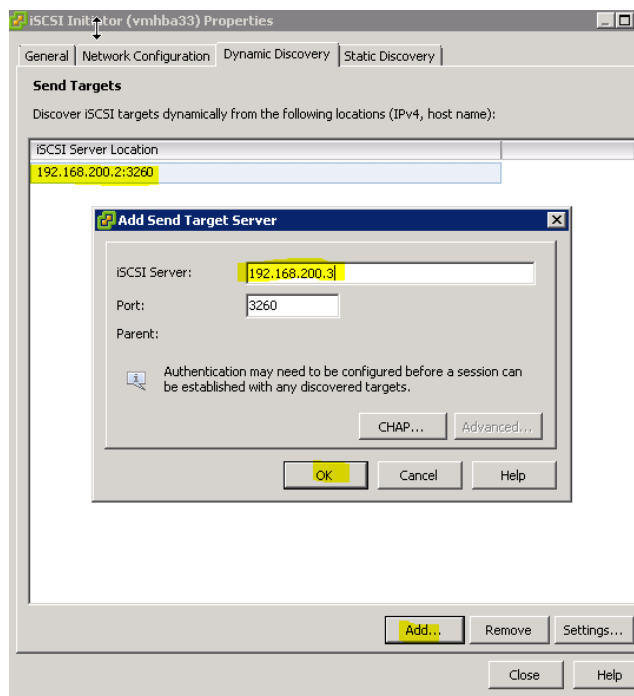
After the Software iSCSI Adapter has successfully been added, select the adapter under Storage Adapters and click on Properties. Go to the **Network Configuration Tab** and add both VMkernel adapters.



Once both adapters are added the Network Configuration Tab should show both adapters.



Now we need to add our iSCSI Discovery IP of the array within the **Dynamic Discovery Tab**.



Click on ok and close. The host will prompt you to do a rescan on the Software iSCSI Initiator. After the rescan completed, select the vmhba33 (iSCSI Software Adapter). You should see all volumes, which are presented from the array to the host, and two paths per volume.

Storage Adapters

Device	Type	WWN
iSCSI Software Adapter		
vmhba33	iSCSI	iqn.1998-01.com.vmware:
Cisco VIC FCoE HBA Driver		
vmhba1	Fibre Channel	20:11:00:25:b5:00:00:7f2
vmhba2	Fibre Channel	20:11:00:25:b5:00:00:7f2
LSI1064E		
vmhba0	Block SCSI	

Details

vmhba33	
Model:	iSCSI Software Adapter
iSCSI Name:	iqn.1998-01.com.vmware:peakucs4-6134607f
iSCSI Alias:	
Connected Targets:	2
Devices:	1
Paths:	2

(end of document)