

# Setting up Windows Server 2008 R2 Failover Cluster in vSphere.

Many people have been having issues getting this setup in vSphere. This procedure I have used to setup multiple vSphere Windows 2008 R2 Failover clusters. This tutorial will show you how to setup the Quorum device, and setup one file server service. However, once you have the base of the system setup, it is fairly simple to setup your cluster do perform any function you want.

This tutorial makes a few assumptions:

1. You are familiar with how to navigate in vSphere Client
2. You already have a physical NIC on each host setup to be cluster interconnects (NOTE: You can also have a VLAN setup for cluster interconnects, however you need to make sure that you don't use the same IP address that other clusters may be using in that subnet.
3. You have iSCSI targets setup in your infrastructure and you can access the storage.

A couple of notes, with this configuration, you can migrate each node to any host, and it uses iSCSI for all of the cluster devices. The Windows operating system is installed on a VMFS partition that is shared out and visible on all ESX hosts. How your infrastructure is setup for iSCSI is site specific. I will not go into detail on how to setup the iSCSI disks since it varies from each site, however, I will discuss how to use the iSCSI initiator that is included in Server 2008 R2 to attach it and format it and make sure it is available to all your nodes.

1. First thing is to create the Virtual Machine. This is how I built mine:
  - a. I first created a resource pool for my cluster so that it will get the proper processing and memory resources.
  - b. I then right click in Virtual Center on the new resource pool, and create a new Virtual Machine.
  - c. For Configuration, I click Custom and Next >.
  - d. Give the vm a name. Node1 works well, but give it something you'll remember.
  - e. Select where you want to store this VM. Since I want it to be able to migrate to any running host and take full advantage of DRM, I put it on a shared storage all my hosts can see that has at least enough free space for your VM.
  - f. I then say Virtual Machine Version 7 since I don't need to have it backwards compatible with ESX3.
  - g. I then saying Microsoft Windows for the Guest Operating System, and from the Pull Down, select Microsoft Windows Server 2008 R2 (64-bit) (experimental).
  - h. I then gave this VM, 4 processor, but you can give it any amount you want.
  - i. I stuck with the default of 4gb of RAM, but you can adjust this as necessary.

- j. I then gave my VM 3 NIC's, however, only 1 is required, I prefer at least 2. One for your cluster private network and one for your public network. The third one in my case is for a backup network that is for backing up and restoring files. Only change which network they connect to. Make sure that the adapter stays E1000. Remove the check box for Connect at Power On for the Cluster interconnect. This is so that after you install the OS and you assign IP addresses, you know which NIC is which in the OS.)
        - k. For SCSI controller, I kept with the default LSI Logic SAS.
        - l. I created a New Virtual Disk, kept it 40GB in size, and stored it with the VM. You can Thin provision if you want, but I prefer not to so that my storage doesn't run away from me.
        - m. Just keep the defaults for the advanced options of the virtual disk.
        - n. You are then ready to create the VM. Just Click Finish.
2. Now to build the second node. This is really easy. Just clone the one you built.
  - a. Right click your new VM, and click Clone
  - b. Give it a name, Node2 works.
  - c. Put it in your Cluster that hosts your Virtual Infrastructure.
  - d. I then clicked on my newly created Resource Pool to put my clone there.
  - e. Select a storage with at least 45GB of space. The more the better. Make sure it is shared storage though so that you can migrate the VM from host to host.
  - f. Keep the format the same as source. You want these nodes to be the same.
  - g. Click next since you can't customize these servers, and then click Finish to build the VM.
3. Now we can power up these VM's and install the OS.
4. After the OS is installed, login to Windows and check out the Network Devices, one will be powered down, that is your cluster interconnect device. Rename it to Cluster so you know what it is for, and in Virtual Center, right click the VM and click Edit Settings. Click the Cluster NIC and put a Check in Connected and Connect at Power On. You can now modify this NIC with the IP address you want for the Cluster interconnects.
5. Now starts the fun of iSCSI.
  - a. On your iSCSI target, make sure that you have two LUNs built, one for a quorum, and one for your storage. Make sure that you have CHAP enabled and that you have it setup to either use the Initiator ID, or a CHAP username/password combo. However your infrastructure uses to connect to iSCSI devices will work.
  - b. Click Start\Administrative Tools\iSCSI Initiator on the VM.
  - c. Under Target, type the IP address of your iSCSI target and click Quick Connect. You will see your Discovered Targets, select it and click connect.
  - d. Under the Configuration Tab, click the CHAP button and enter all your CHAP information for the iSCSI LUN.
  - e. Click OK at the bottom and your connected.
  - f. Perform the above step again on the other node.
  - g. Start Server Manager and click on Storage. Then select Disk Management. You will see your iSCSI storage, right click them to bring them online. Then again to Initialize, then

