

vDS Implementation Cheat Sheet

This document was designed to help migrate to a vDS environment from an existing standard virtual switch environment. Since the service console and or management network standard switches vary between hosts, this document will not look at migrating them to the vDS switches. You would normally only migrate them to vDS if you need them to have one of the parameters of the advanced feature set that vDS offers like PVLANs.

This document will use host profiles to migrate to using vDS – this is not the only way, but it is the way I like and think that people should be familiar with. The information below will help you do this. At the end of this document is the author information if you wish to make comments. Suggestions are always welcome, and also much appreciated.

Your environment should be all at vSphere – VC and ESX. There will be some outage (as part of working through this document), but you may / should be able to hide it from users using maintenance mode but it will likely be faster to take an actual outage. Be sure to play with vDS in the lab before doing implementation distributed virtual switches!

It should be stated that standard switches, distributed switches, and Cisco Nexus can all be supported at the same time, however only one Cisco Nexus at a time can be supported.

An important note for Host Profiles is when working with a profile tht will be used in a cluster that supports both ESX and ESXi you should use an ESX host as a reference. It can be safely used to configure ESXi hosts but the reverse is NOT true. However, there are issues with Host Profiles and mixed clusters. I suggest you avoid mixed clusters!

Follow the steps to replace your VM network standard switch to a vDS.

Create the distributed switch infrastructure

Create the vDS

1. From the Home view, select the Networking applet. It should look something like Figure 1 – Network view below.

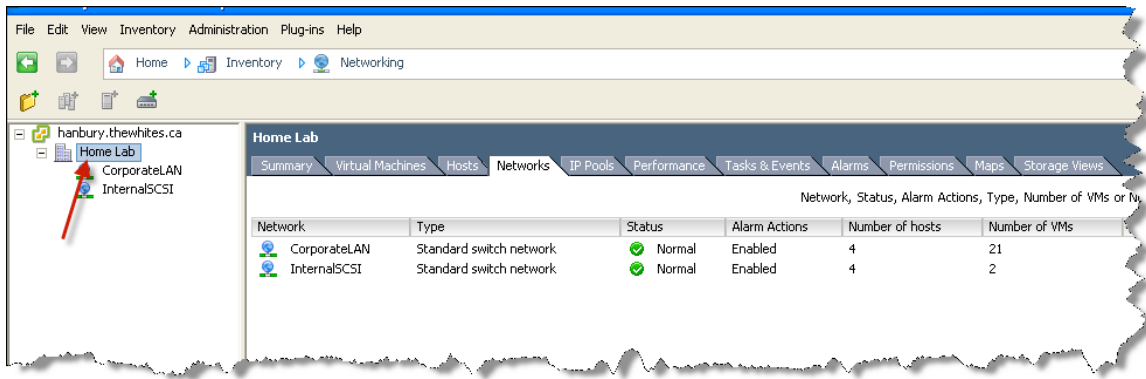


Figure 1 – Network view

2. Notice in Figure 1, the red arrow? It points to where you can <right + click> and select **New vNetwork Distributed Switch**.
3. You should now see **General Properties** screen of building out a vNetwork Distributed Switch. Like Figure 2 – General Properties of building a vDS below.

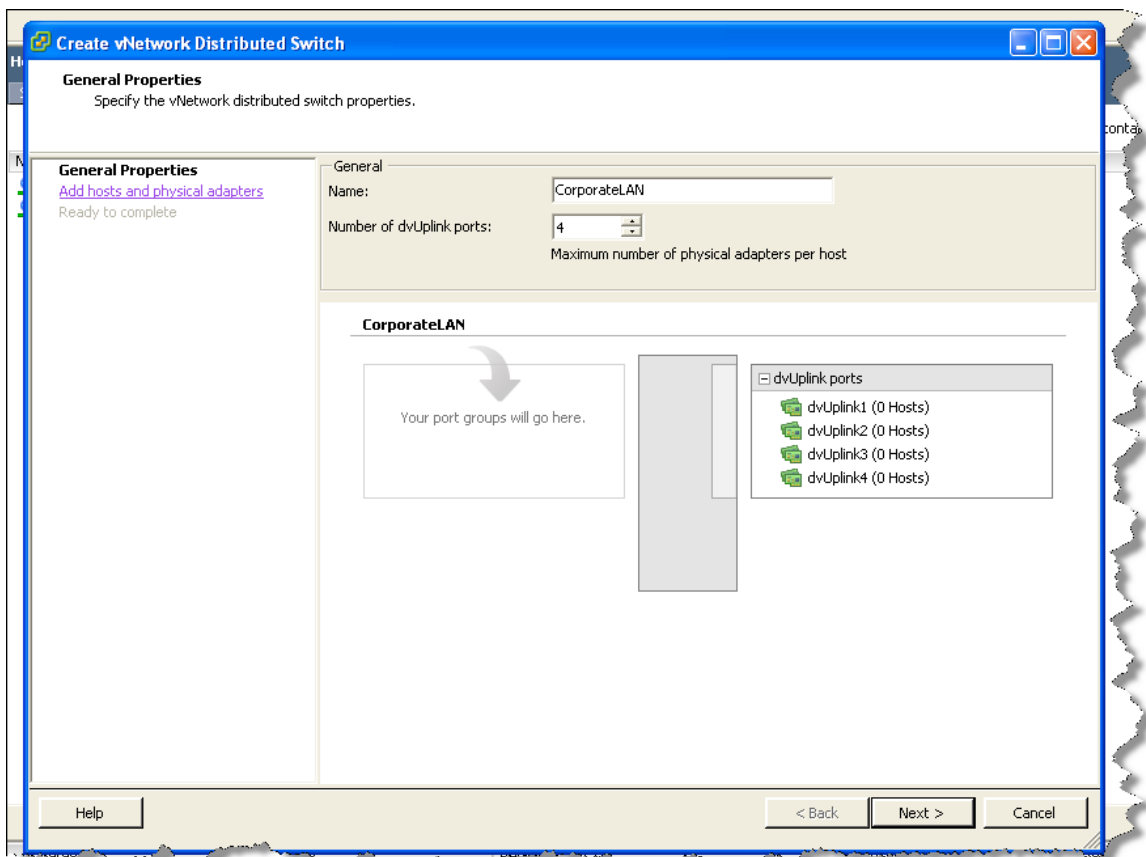


Figure 2 – General Properties of building a vDS

4. Notice how in your screen there will be an odd looking name? I have chosen something different that makes sense to me as you can see above.

5. In the **Add hosts and physical adapters** screen you can add hosts later.
6. In the Ready to complete screen you can automatically create a default port group if necessary or deselect it.
7. You should have a vDS that has no ports assigned to it. See Figure 3 – vDS as an example.

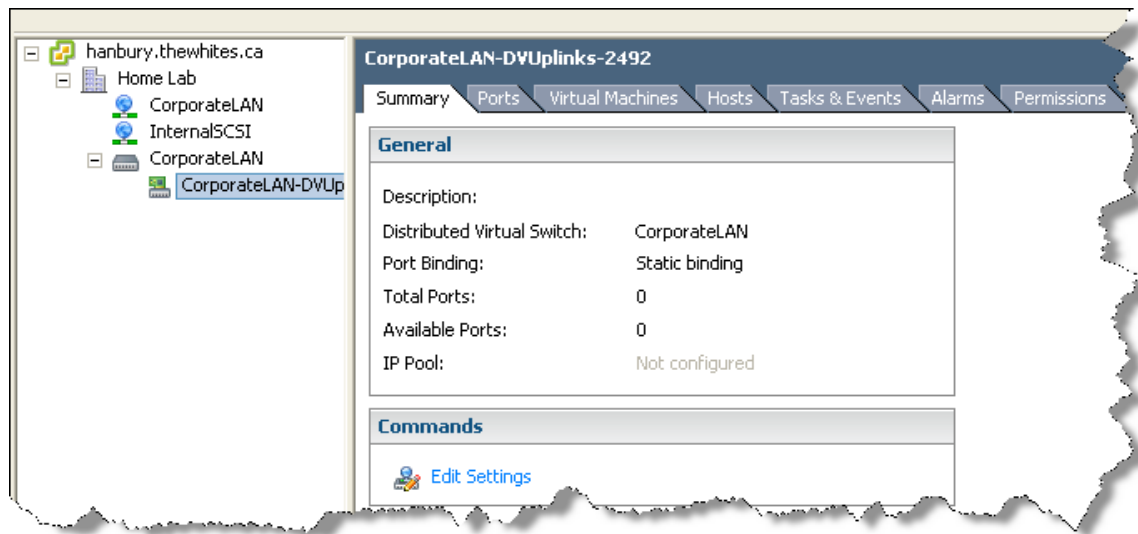


Figure 3 – vDS

8. In Figure 3 you can see the Edit Settings button, which will allow you to make some of the changes, and some new changes too that you have in the past made elsewhere. Note the cursor on the CorporateLAN-DVUP... ? That is the uplinks to the network ports.

DV Port Groups

1. We now need to create some DV Port Groups. Highlight the vDS which is signified by the label in Figure 3 as CorporateLAN and <right + click> followed by select **New Port Group**.
2. This is your chance to name the Distributed Virtual Port Group. I named it as I wanted but with the dv in front of it.
3. Number of ports is the number of VM's that can use this port group.
4. Now you should see something like Figure 4.

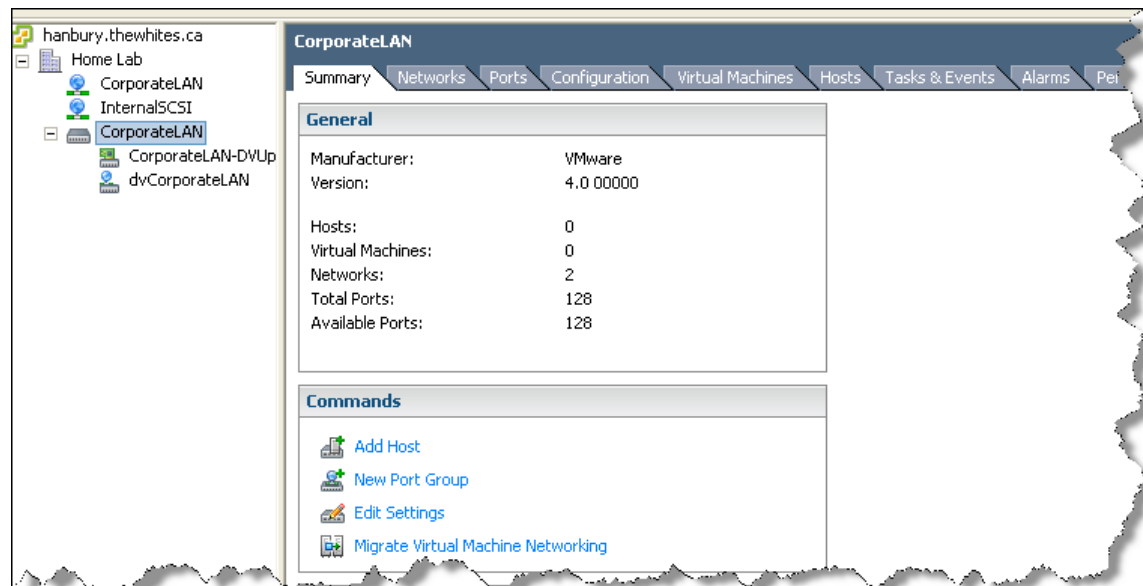


Figure 4 – vDS with uplinks and port groups.

Adding Hosts

1. Add a host to the vDS. You now need to <right + click> on the vDS (CorporateLAN above) and select **Add Host**.
2. You should see something like Figure 5.

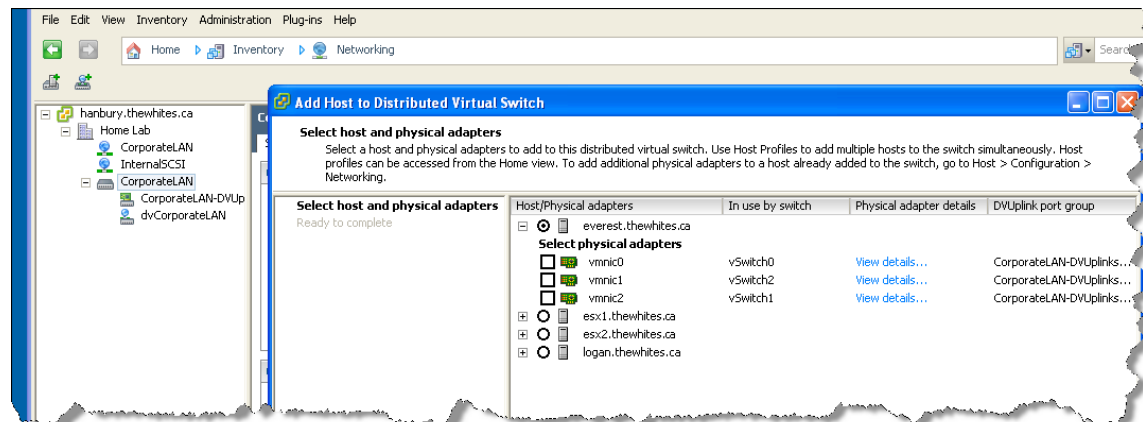


Figure 5 – Adding host to a vDS

3. Select the network adapter that is the one you wish to use. If you replacing your VM network standard switch with a vDS than pick the physical adapter that matches it. Also note which Host holds the adapter.
4. Once you have selected your network adapter, it will be displayed with a nice diagram.
5. Important to note that once finished this step your VM's do not have a physical adapter associated with their configured virtual switch.
6. We now need to migrate the VM's from their old virtual switch to the new.

Migrating VM switch assignments

1. In Figure 4, in the **Commands** windows on the **Summary** tab for the vDS you can see the **Migrate VM Networking** option. Click on it.
2. You will see something like Figure 6.
3. Use the **Source Network** dropdown list to select the source virtual switch – in my case CorporateLAN, and in the **Destination Network** dropdown list select the destination – which in my case is dvCorporateLAN. Use the Show Virtual Machines button to display the VM's that are going to be impacted.

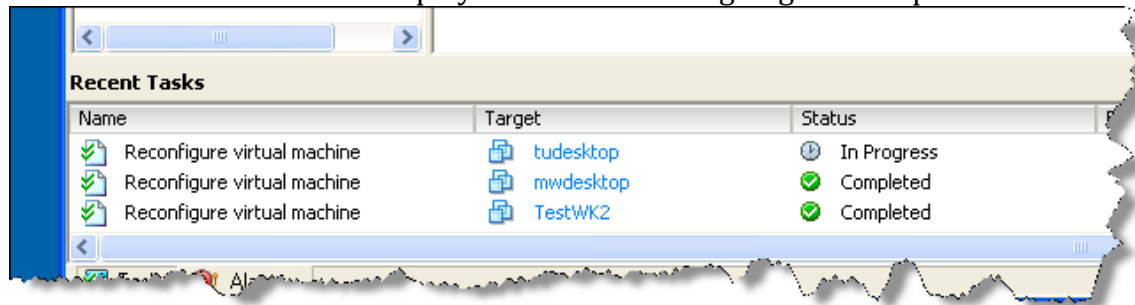


Figure 7 – Changing virtual switch as seen in Recent Tasks

4. Select the VM's to have their virtual switch assignment changed. I would suggest generally it would be all of them.
5. If you have any templates highlight they will generate an error. But that is correct.

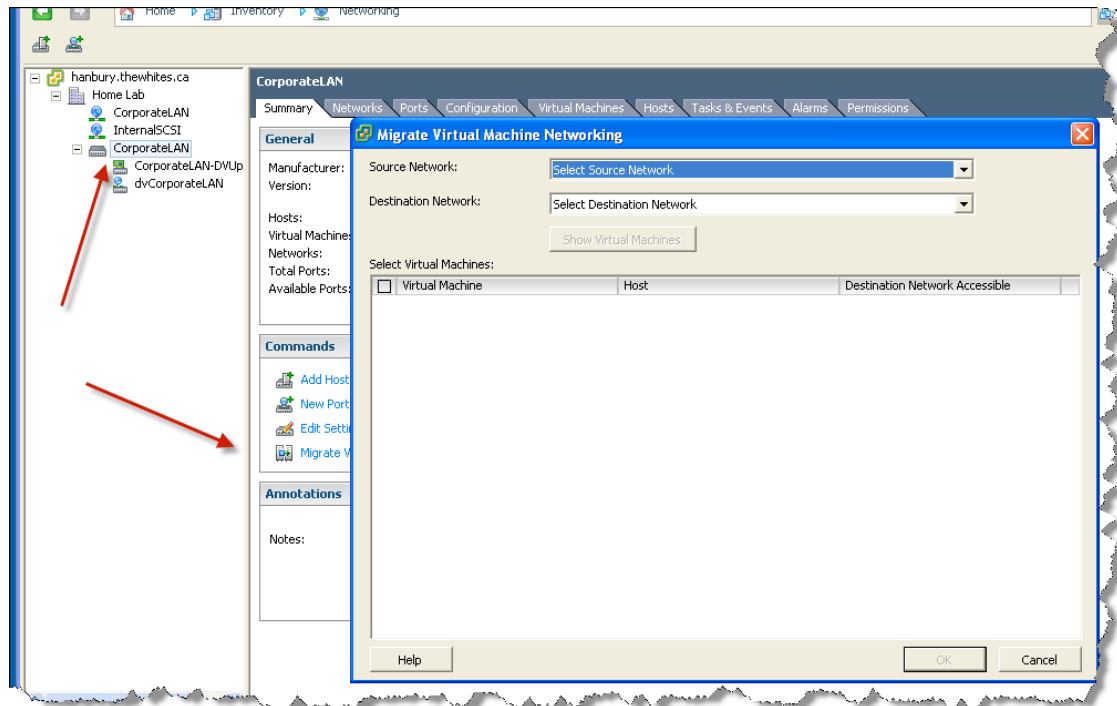


Figure 6 – Migrate VM networking

6. If you do a ping test, all of your VM's will now be reachable.

You will also have now a reference host we can use with Host Profiles to push this vDS out to everyone.

Distributing our vDS

Now we can use our reference host that has a distributed virtual switch to create a profile, and share it out.

It is a good idea to delete your standard switch before continuing but I had problems doing that on the host that was my reference host had my templates and they couldn't be easily changed to the new vDS as they were still allied with the old one and so it couldn't be deleted. I was in a hurry, and so turned them on and changed the network to the new distributed switch instead of troubleshooting.

Create a host profile

1. We create a host profile by starting at Home, and selecting **Host Profiles**.
2. You should now see something like Figure 8.

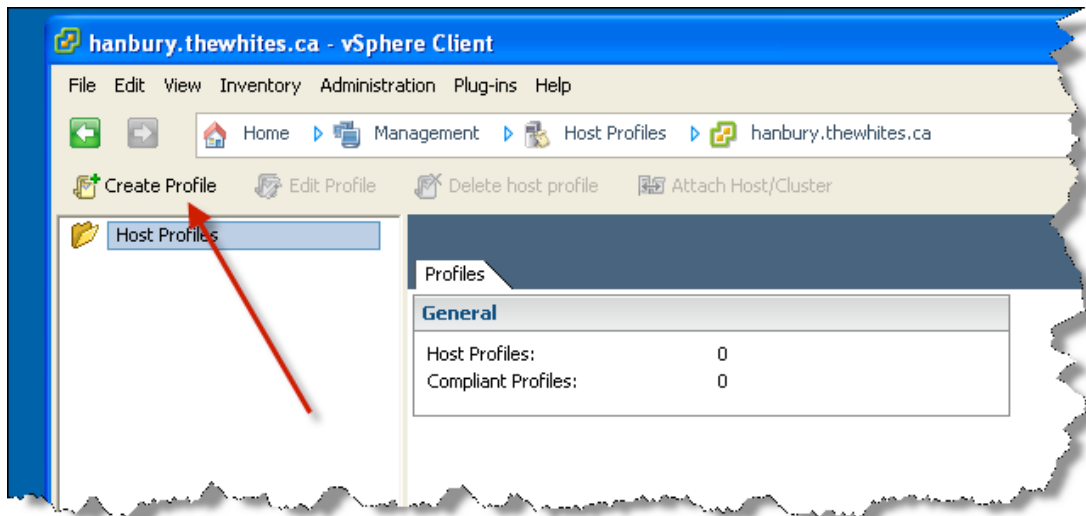


Figure 8 – Creating a host profile

3. After selecting **Create** you can select your reference host. Which is the one you just create the vDS switch on.
4. Use a meaningful name (ie. Accounting Cluster profile).
5. You should now have a profile and be at a screen that is similar to below in Figure 9.

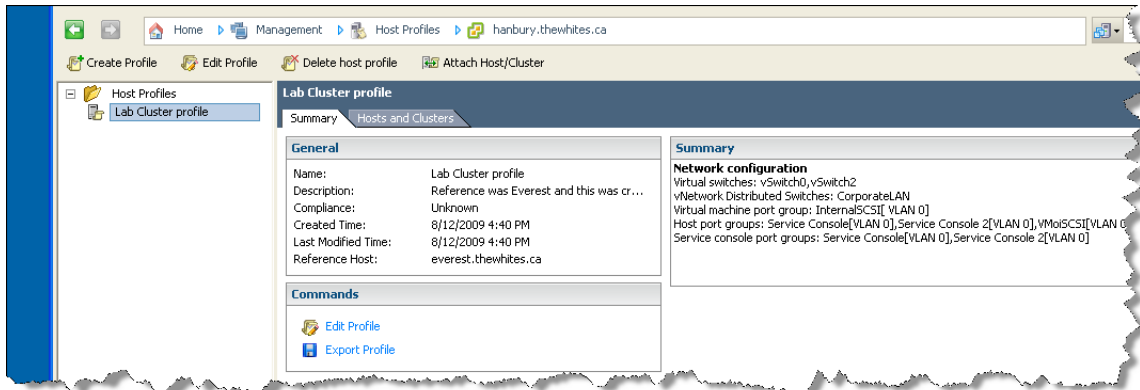


Figure 9 – profile summary screen

Figure 9 shows the host profile we just created. You can edit or export it from here as well as delete it. The **Edit Profile** button will allow editing the contents or parameters inside the profile.

FYI - Currently I am aware of two things that cannot be added to a host profile. You cannot turn on the NTP service, nor configure an iSCSI software initiator. As well, there are issues with the ability to control both service console AND management networks from the same profile.

Attaching a profile to a cluster

The last step is to make sure our cluster is using this profile. That will publish the vDS and make it live everywhere. To apply a profile to a host it must be in maintenance mode.

1. You can use the button visible in Figure 9 to start the **Attach Host/Cluster** operation.
2. Once the profile is attached to the cluster you will see **Unknown** for Host Profile Compliance (see in Figure 9 where this Hosts and Clusters view is that shows compliance) as it has not been applied.
3. See what it looks like below in Figure 10.

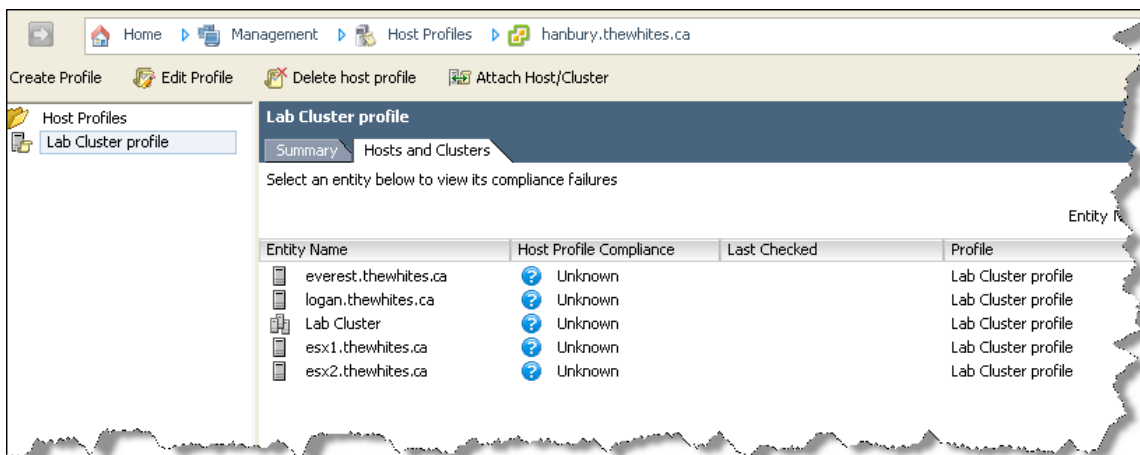


Figure 10 – host and cluster compliance status

Making your profile active

1. The quickest way, and most unrealistic normally, is to put all of your hosts in maintenance mode. But more realistic is likely one host at a time. Host Profiles is another reason to have well designed clusters that have spare resources for this sort of thing.
2. In our case we will do one at a time.
3. Put your host into maintenance mode. This can be done in the view shown in Figure 10 by <right + click> and select **Enter Maintenance mode**.
4. Once your host is in maintenance mode, you can <right + click> again and select **Apply**.
5. You will see the very useful configuration change screen. This is alerting you to what is going to happen. Look closely just in case there is something you don't expect. Like the service console memory reservation in Figure 11 for me.

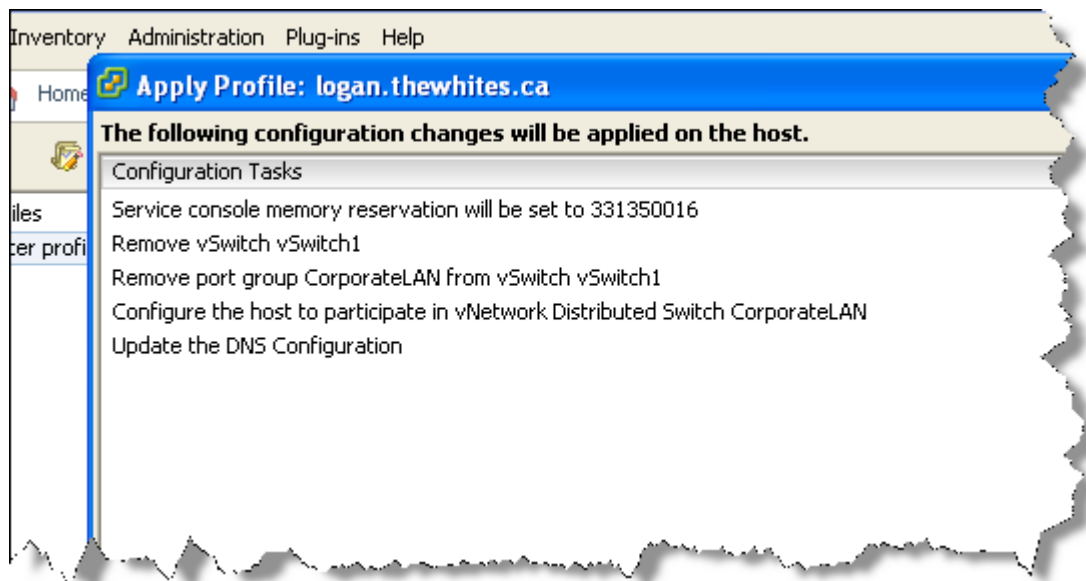


Figure 11 – what will change when the profile is applied?

6. You can select the **Finish** button if that is what you want to do!! Which I did.
7. Once it is finished it updates the view you see Figure 10. But it is not always what you expect or what. See Figure 12.
8. What you will see in Figure 12 is that it is noncompliant even after it is complete. But notice in the **Compliance Failures** box that you see it only needs a restart. So while we are in maintenance mode we can do that easy enough.
9. Continue putting your hosts in maintenance mode and applying the profile until they are compliant!

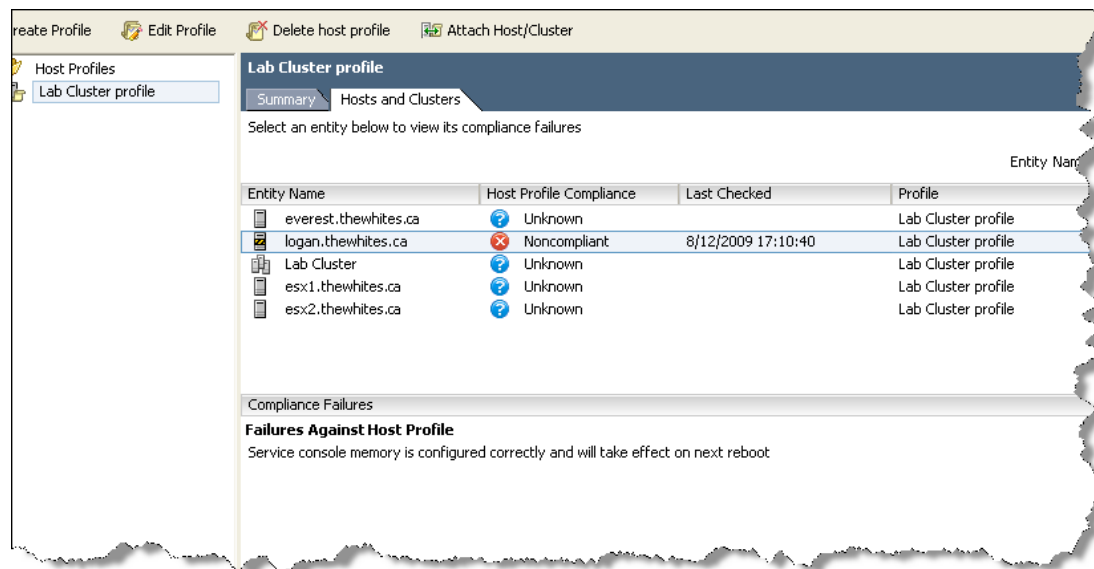


Figure 12 – Status

I must admit this did not work well for me with ESXi servers. I am astonished how poorly it worked. It all worked perfect for the ESX servers but for some reason it tried to push out service console and VMotion network info to the ESXi servers, and removing management network, and have some expectation to have VMotion enabled on both the service console network, and the actual VMotion / iSCSI network. Which is very odd. In point of fact, I removed the host profile from the cluster, and only used it for the two ESX servers, and manually add the vDS to the two ESXi servers.

Migrate VM Networking

Now that we have removed the virtual switch that everyone is using, even though we have provided the vDS, no one is using it! So we need to do that now. Way above is the instructions (Migrate VM switch assignments) to manage the change in network for the VM's. Get it done.

Background and author contact info

Much of the information to help me get things going in the lab came from the detailed and very useful document at <http://www.vmware.com/resources/techresources/10050>.

Once you have used the info in this document to get things working, the document URL above will help you further exploit vDS technology. There is a lot of things it can do for you!

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