vSphere Virtual Machine Upgrades
VMware Tools and Virtual Hardware

When planning VMWare Tools and Virtual Hardware upgrades for your VMs, there are some things to be aware of that aren't readily apparent or outlined in any VMware documentation I've seen.

There will be a total of (**4**) reboots of a VM during the upgrade process.

1. **Upgrade VMware Tools:** Right click on one or more VMs…choose Guest….Install/Upgrade VMware Tools. Choose Automatic Tools Upgrade unless you have a need for interactive. VM will reboot (**1**) when complete.

NOTE: You can use Update Manager to upgrade VMware Tools however; we had several VMs hang on the reboot after the install. Perhaps it's specific to our environment but, the right click method seemed to work more consistently.

2. **Upgrade Virtual Hardware:** Be sure the VMware Tools were successfully upgraded and the VM is completely back up before beginning this step. You can use Update Manager for this step. You will be using the "VM Hardware Upgrade to Match Host" baseline. The VM will power down completely and power up (**2**) with the v7 hardware.
3. **Post Virtual Hardware reboot:** After verifying the VM is back up on v7 hardware, you need to login to the console. As with many hardware change in Windows, the OS sees the new hardware and requests another reboot. If not prompted to in a minute or 2, reboot manually (**3**). I'd advise you reboot here whether you are prompted to or not.

Virtual Hardware residual cleanup tasks: During the Virtual Hardware upgrade a new vNIC is created and the settings copied to it. The old vNIC, although hidden, still resides in the registry. Although not explicitly documented, a couple system changes should be noted or addressed:

Save an IPCONFIG /ALL before proceeding

4. **Ghost vNIC should be removed:** There is a hidden ghost vNIC still referenced by the OS. You can verify by going into the TCP/IP properties of the vNIC and then just clicking OK to get out. If the vNIC is configured with a static IP, you will see a message that another NIC has the same IP. This won't necessarily cause an issue but, it's probably best to remove it.
    a. To remove the Ghost vNIC you will need to follow one of the methods outlined in this KB http://support.microsoft.com/?kbid=269155. Be careful you are removing the correct device.
5. **WINS settings:** I have noticed that the WINS settings of the vNIC are not copied over. Go into the TCP/IP properties and add the WINS entries back in.
    a. By clicking OK back to the desktop you are also verifying the Ghost vNIC has been successfully removed (if removed correctly in the previous step, you should not get the duplicate IP message).
6. **Final reboot:** Not totally necessary but, I like to reboot one more time (**4**). Login in when it comes back up and verify the changes you made took.

FINAL NOTES: As a result of the virtual hardware upgrade, you'll have a new vNIC name and MAC Address. These things usually don't matter but, you must consider each VM and its applications to determine if special consideration needs to be taken.