

Upgrading from Esx4.0.0 to ESX4.1.0 with Nexus1000V

Introduction

The purpose of this document is to outline the procedure to upgrade VMware ESX/ESXi servers from version 4.0 to 4.1, when servers are running Nexus 1000V Virtual Ethernet Module (VEM). The aim of this document is to address the differences in patching ESX/ESXi hosts which are pre-installed with the Cisco Nexus 1000V Virtual Ethernet Module (VEM) as opposed to patching ESX/ESXi hosts NOT running the Cisco Nexus 1000V.

This document SHOULD NOT be referenced for general patch/bulletin upgrade across the same VMware versions (e.g. ESX/ESXi 400-201002001 to ESX/ESXi-U2, ESX/ESXi 400-201002001 to ESX/ESXi VEM400-201005021-BG, etc...).

Upgradeable Components and Versions:

Minimum Versions (Pre-Upgrade):

The minimum pre-update versions required for upgrading to ESX/ESXi version 4.1 are:

All VMware management components: 4.1

Cisco Nexus 1000V: 4.0(4)SV1(3)

Important Note:

If you are running an earlier version of the Nexus 1000V, then upgrade the Nexus 1000V to 4.0(4)SV1(3) before upgrading the VMware management components to 4.1. The Nexus 1000V upgrade procedure can be found here:

http://www.cisco.com/en/US/docs/switches/datacenter/nexus1000/sw/4_0_4_sv1_3/upgrade/software/guide/n1000v_upgrade_software.html

VMware Upgradeable Components Overview

There are 3 main upgrade components in a typical Datacenter environment:

- 1) VMware Management Components – vCenter Server, vSphere Client, VMware Update Manager (VUM), etc.
- 2) ESX/ESXi – host which contain VEM bits
- 3) VM Related Tools/Hardware - VMware Tools & Virtual Hardware for Virtual Machines

NOTE** It is **NOT** necessary to upgrade the Virtual Supervisor Module (VSM) component of the Nexus 1000V during a VMware patch upgrade. When ESX/ESXi hosts are upgraded, new VEM bits will be installed which correspond to the new VMware patch level as well as the same Nexus 1000V Version.

VMware upgrade guidelines should be followed when upgrading VMware Management Components and VMware Related Tools/Hardware. This information as well as best practices for backup procedures and upgrade processes are available on the VMware website. Minimum Cisco supported versions can be on the Cisco Compatibility matrix:

http://www.cisco.com/en/US/products/ps9902/products_device_support_tables_list.html

Download links:

- VMware Upgrade ZIP bundle location:
http://downloads.vmware.com/d/info/datacenter_downloads/vmware_vsphere_hypervisor/4
- Cisco Nexus1000V 4.0(4)SV1(3) VEM bundle for ESX/ESXi 4.1
<http://tools.cisco.com/support/downloads/go/Model.x?mdfid=282646785&mdfLevel=Model&treeName=Switches&modelName=Cisco%20Nexus%201000V%20Switch&treeMdfid=268438038>

- or -

<http://www.cisco.com/en/US/products/ps9902/index.html>

Select: Download software

Download Nexus1000v Switch release 4.0(4)SV1(3).

ESX/ESXi Host Upgrade Options:

ESX/ESXi can be upgraded two ways:

- (1) Offline using the ESX vCLI (vihostupdate command)
- (2) Online using VMware Update Manager (VUM)

Both of these options will be explain in detail in the following sections.

Upgrading the Host Offline:

- (1) Download relevant VMware & Nexus 1000V-VEM upgrade ZIP bundles to the location where vihostupdate is installed. (Links to downloads are available in the "Download Links" section)

In the example scenario, bits are:

ESX: upgrade-from-ESX4.0-to-4.1.0-0.0.260247-release.zip

ESXi: upgrade-from-ESXi4.0-to-4.1.0-0.0.260247-release.zip

VEM: VEM410-201007121.zip

- (2) Put the host in Maintenance Mode
- (3) Perform the installation by running the following command using vSphere CLI:

```
[root@linux root]# ./vihostupdate --install --bundle <Vmware-zipFile-location>, --bundle <VEM-zipFile-Location> --server <Esx/Esxi-HOST-IP>
```

Example:

```
[root@linux root]# ./vihostupdate --install --bundle ESX4.0-to-4.1.0-0.0.260247-release.zip, --bundle VEM410-201007121.zip --server 10.78.27.72
```

NOTE** You can use additional options per VMware recommendations based on vCLI/vihostupdate version.

- (4) Reboot the host. After reboot, the host will be upgraded to ESX/ESXi 4.1.0 with the relevant Nexus 1000V VEM bits installed (still running 4.0(4)SV1(3) version). There will be VEM module re-insertion on the VSM during this step.

Upgrading the Host Online using VUM:

- (1) Download relevant VMware & Nexus 1000V-VEM upgrade ZIP bundles to VCenter. (Links to downloads are available in the "Download Links" section)

In the example scenario, bits are:

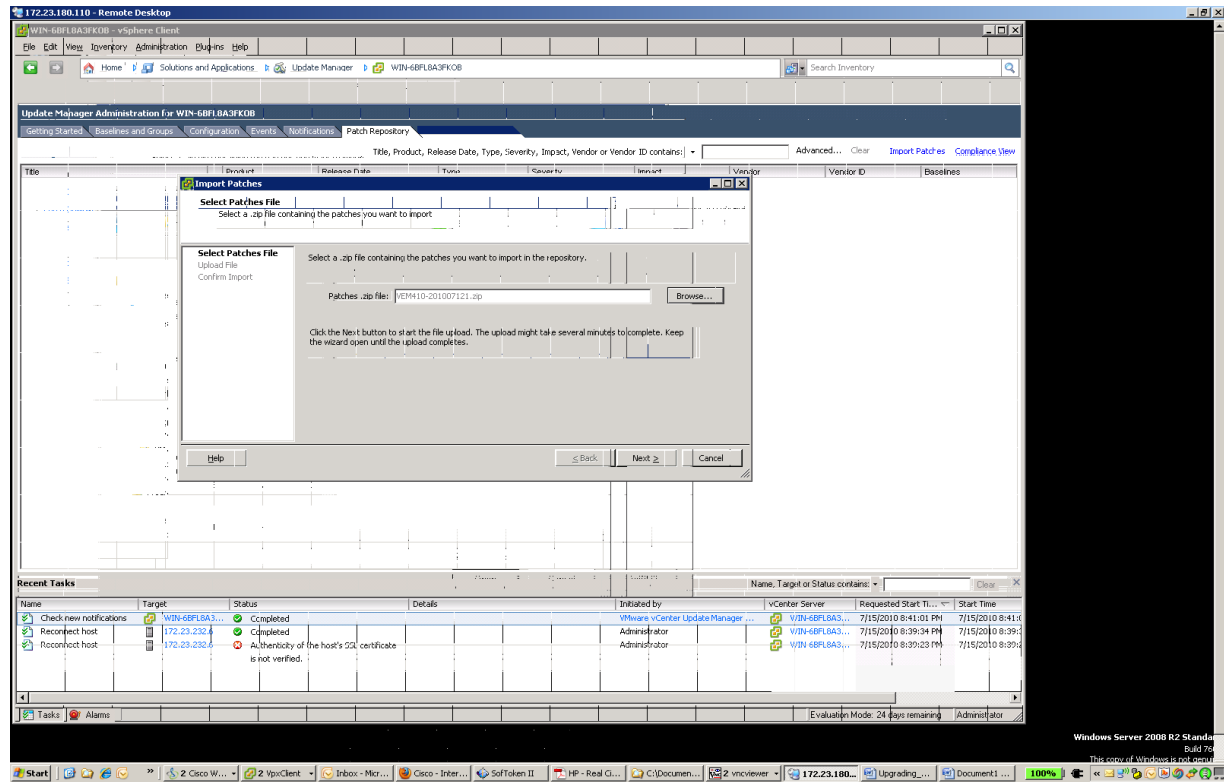
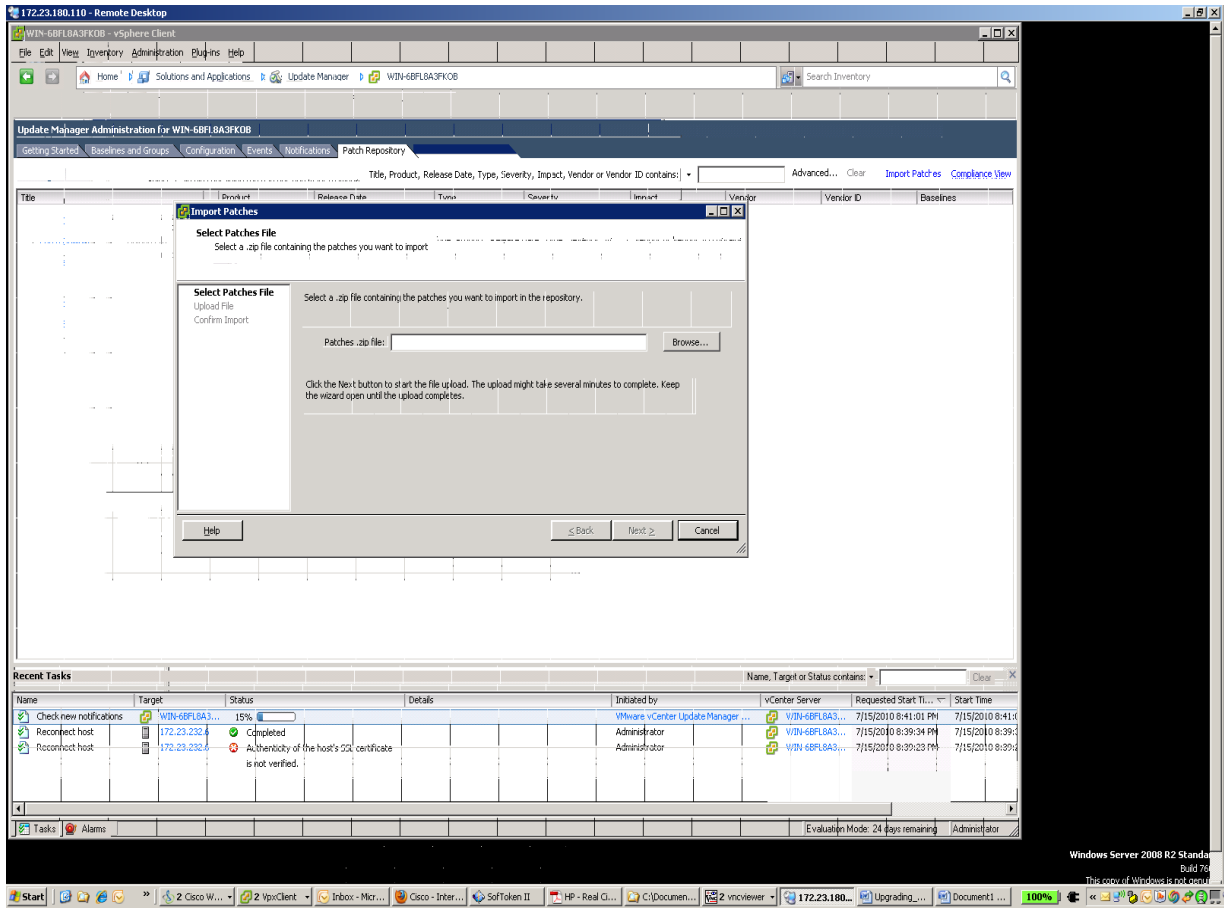
ESX: upgrade-from-ESX4.0-to-4.1.0-0.0.260247-release.zip

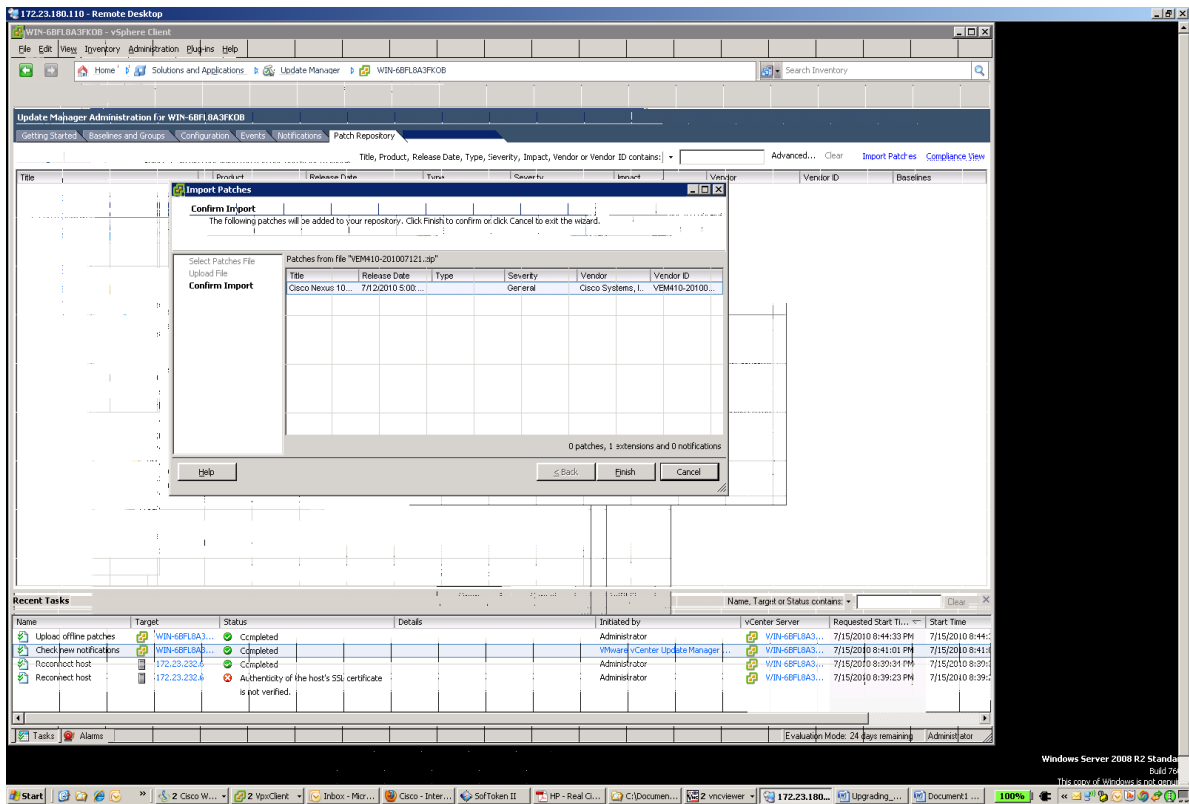
ESXi: upgrade-from-ESXi4.0-to-4.1.0-0.0.260247-release.zip

VEM: VEM410-201007121.zip

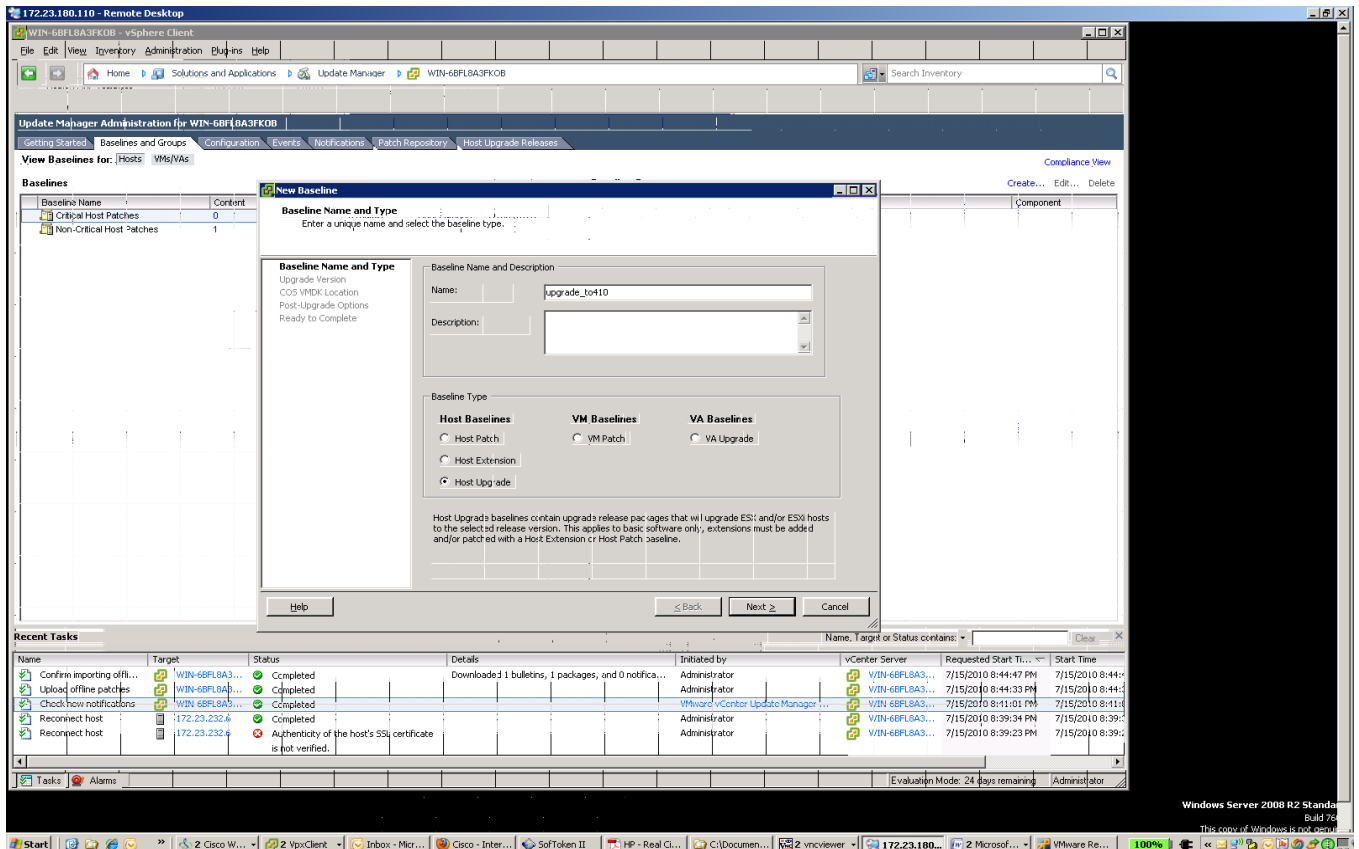
- (2) Refer to VMware documentation for creating a baseline for Virtual Machine (VM) upgrade zip file
- (3) Import the Nexus 1000V VEM bundle to the VUM repository through the following process using the VMware 4.1 vSphere Client:

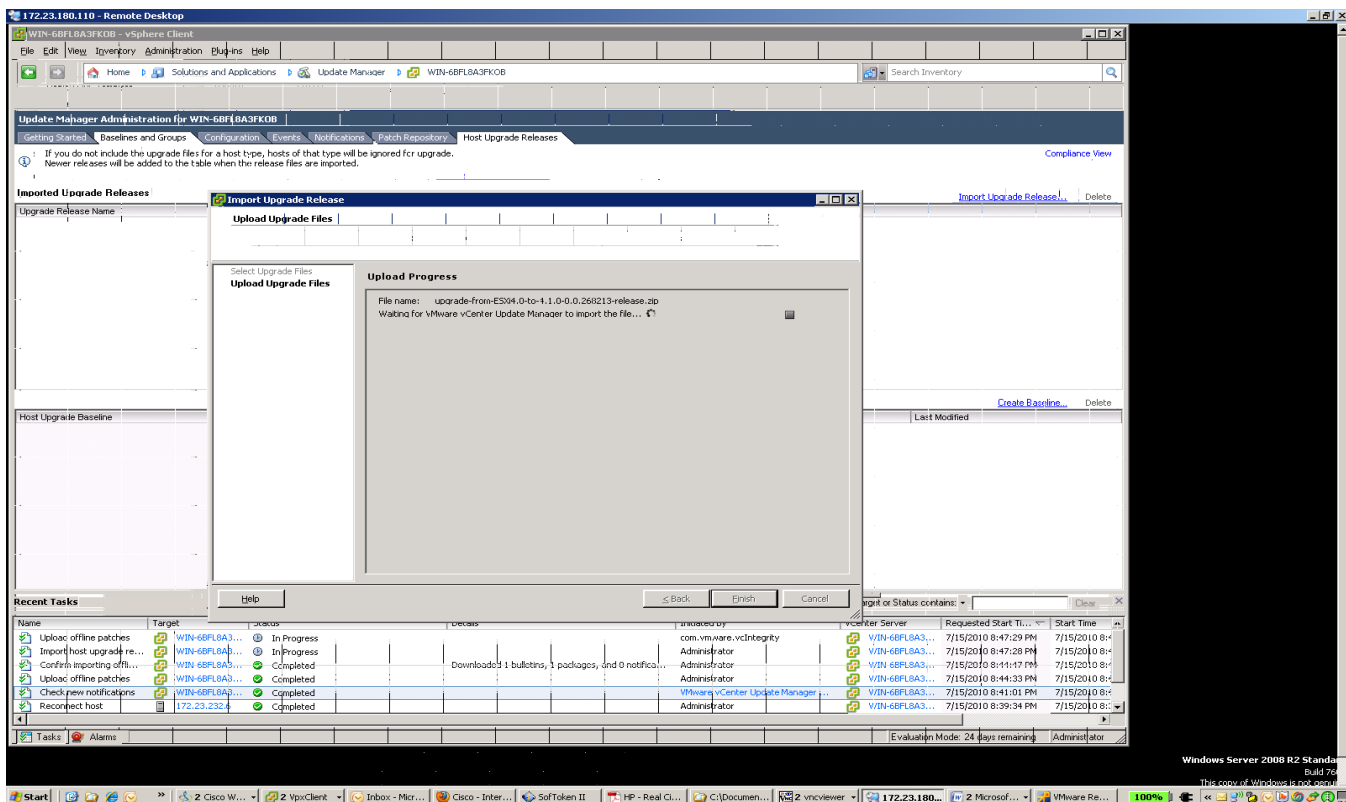
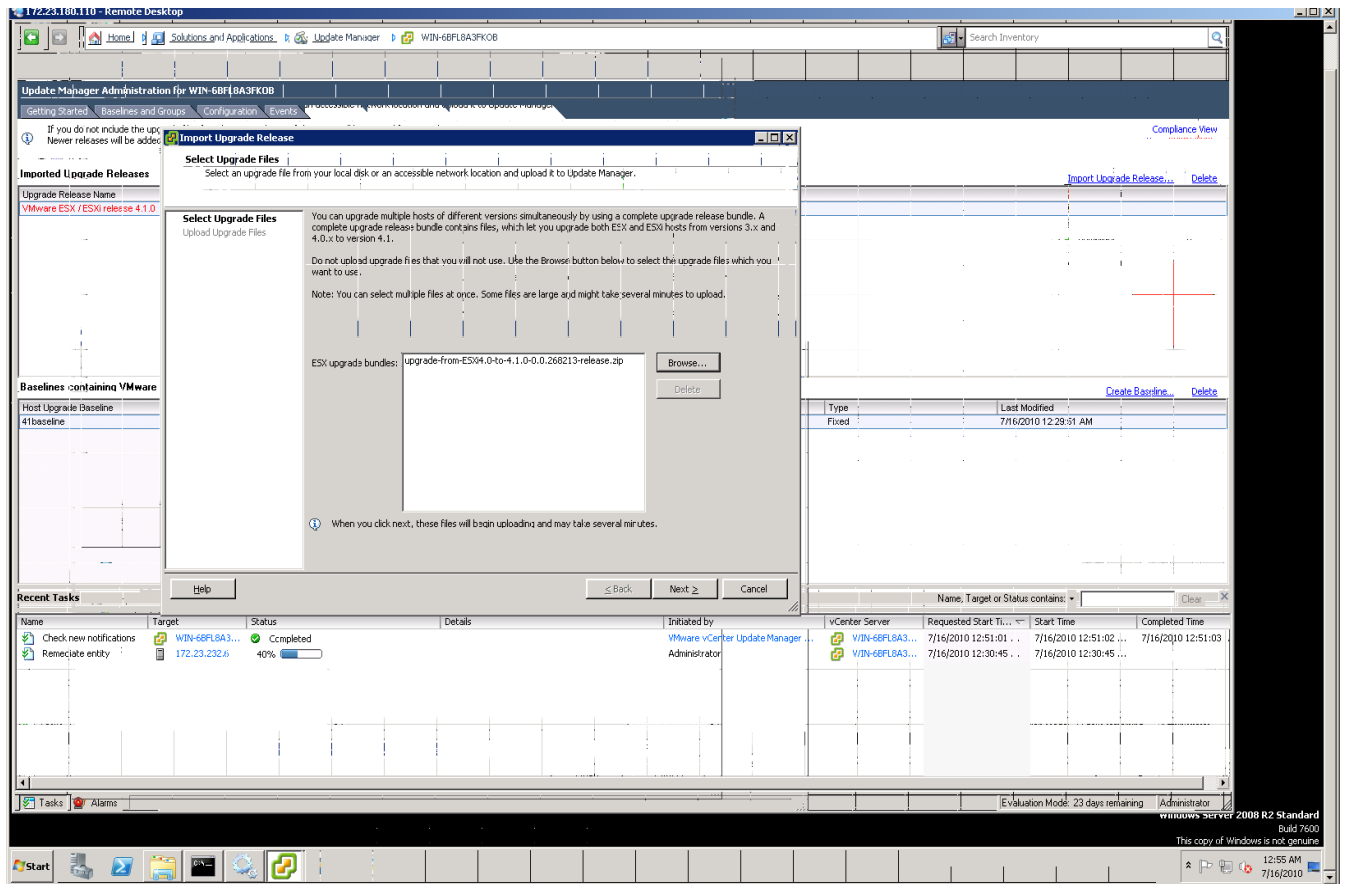
From **VUM Manager** → Click on **Patch Repository** → Click the **Import patches** link in the top right corner



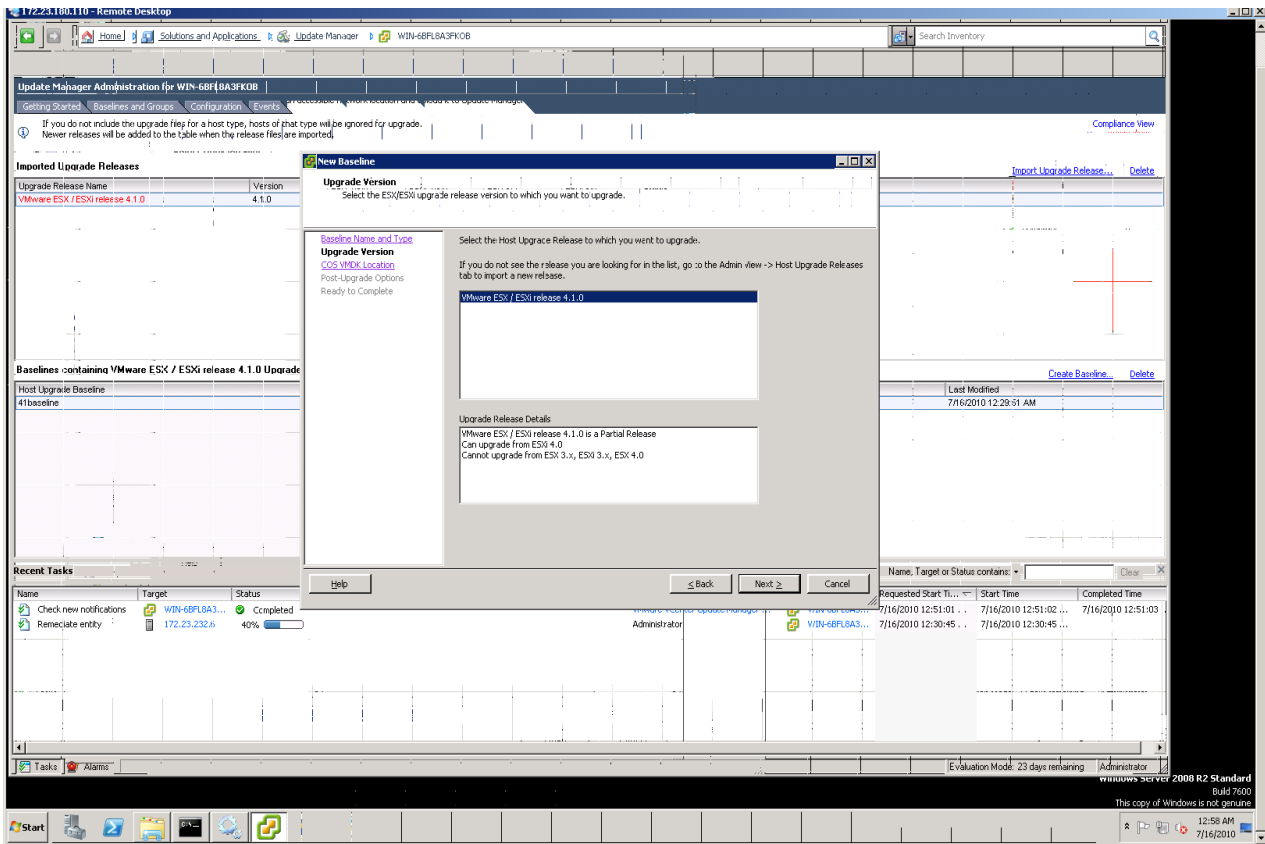


(4) Create a host upgrade baseline by going to the VUM Manager view and clicking on the tab **Host Upgrade Releases** and selecting **Import Upgrade Releases**



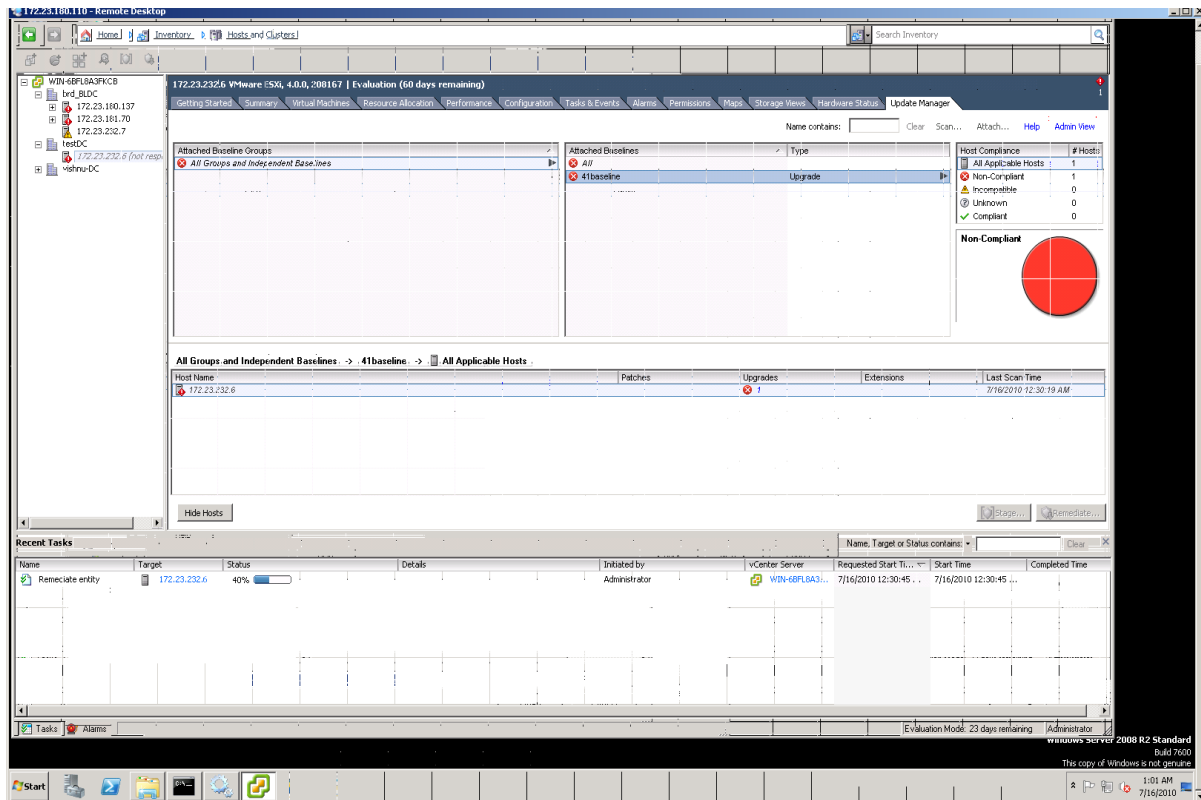


Now create a host upgrade baseline by clicking the link **Create Baseline**. Make sure to select the Baseline type has **Host Upgrade**.

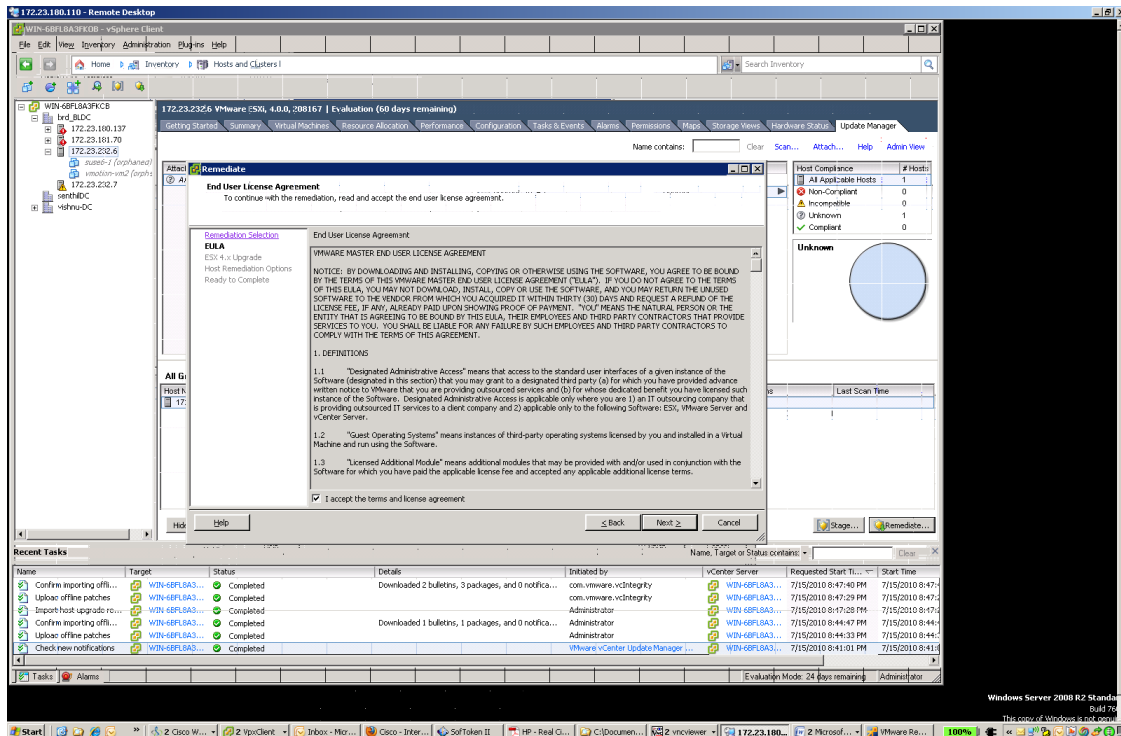
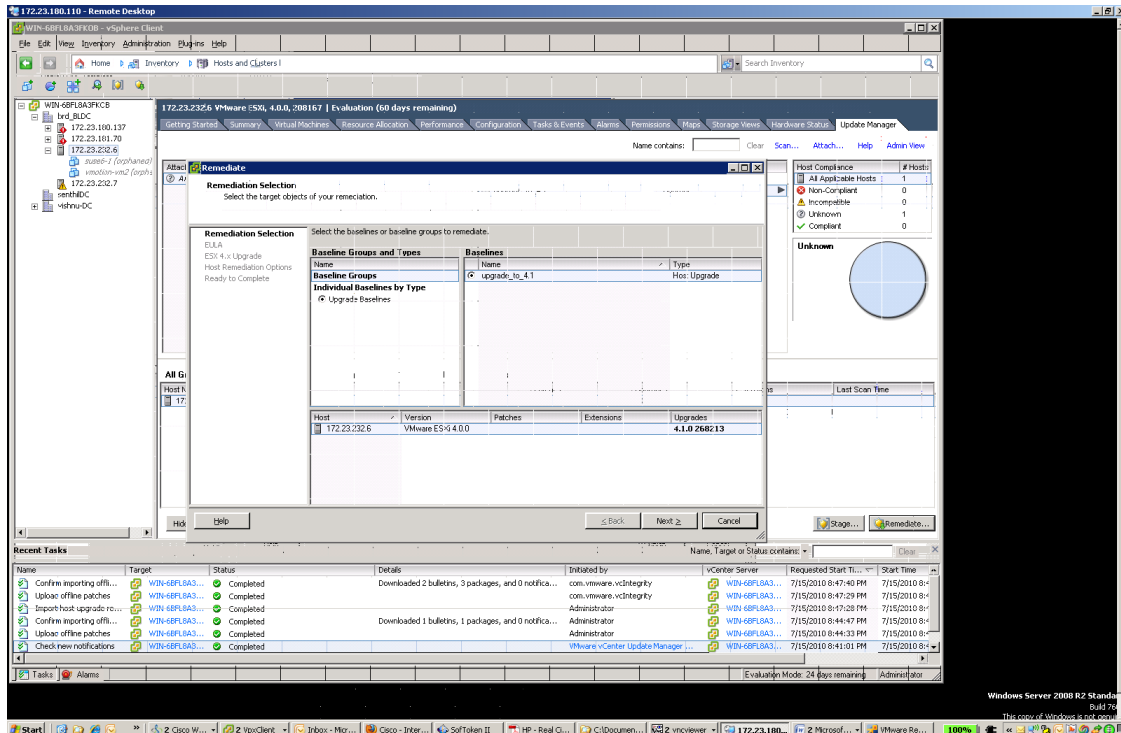


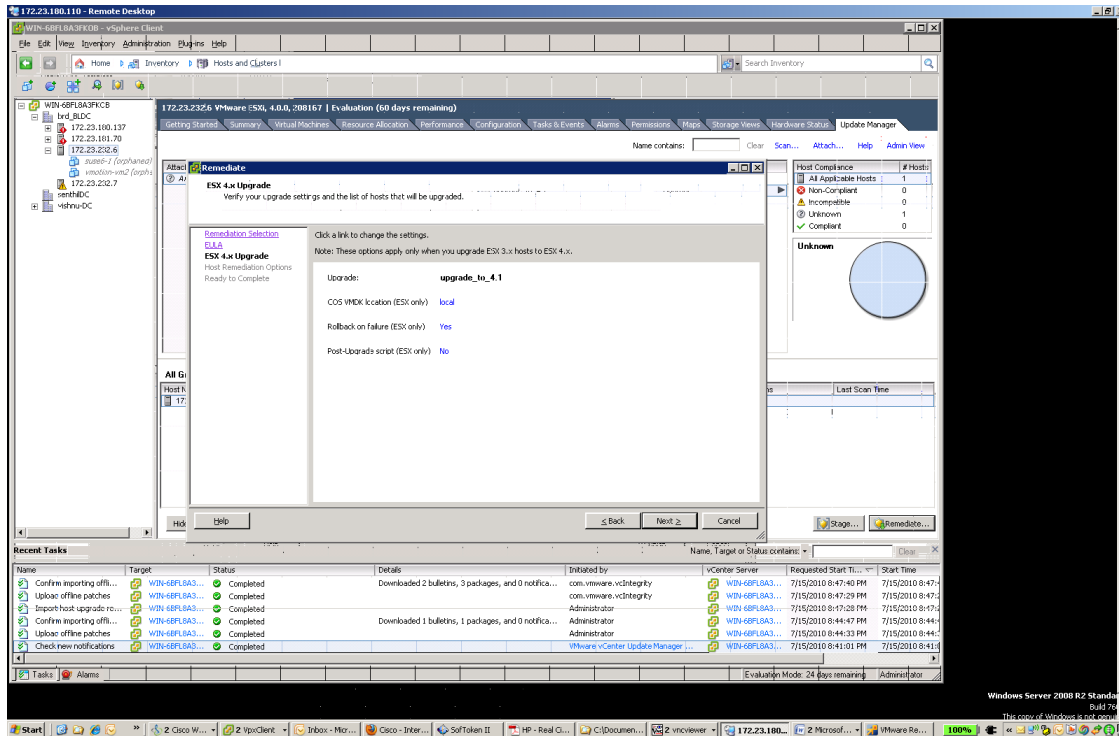
(5) Attach the baseline to ESX/ESXi host and choose **Remediate**

Once you have created an upgrade baseline you can attach it to the host by going into the **Compliance View** and attaching it to the host



Once the baseline is attached to the host, remediate the ESX 4.0 host with Nexus 1000V VEM bits to ESX/ESXi 4.1.0 with the Nexus 1000V VEM bits





Post Upgrade Checks:

1. Check for VEM bits version & Ensure vemdpa is running on with **vemstatus -v** on Esx/Esxi console.

```
# vem status -v
Package vssnet-esx5.0.0-00000-release
Version 4.0.4.1.3.0.0-1.20.21
Build 21
Date Sat May 22 16:25:36 PDT 2010
Number of PassThru NICs are 0
VEM modules are loaded
Switch Name      Num Ports  Used Ports  Configured Ports  MTU  Uplinks
vSwitch0         32         4           32                1500 vmnic0
DVS Name         Num Ports  Used Ports  Configured Ports  Uplinks
nexus            256       50          256                vmnic3
Number of PassThru NICs are 0
VEM Agent (vemdpa) is running
```

Few relevant console commands

```
~ # esxupdate query
----Bulletin ID----- Installed----- Summary-----
ESXi410-GA-esxupdate 2010-04-21T20:29:41 ESXi pre-upgrade Bulletin
ESXi410-GA           2010-04-21T20:33:58 ESXi upgrade Bulletin
VEM410-201007121-BG 2010-04-21T20:33:58 Cisco Nexus 1000V VEM
```

```
~ # vemcmd show version
VEM Version: 4.0.4.1.3.0.0-2.0.21
```

VSM Version:

System Version: VMware ESXi 4.1.0 Releasebuild-268213

Refer VMware documentation to check upgrade checks for VMware hosts.

- There will not be any change in software version in VSM. You can view the same using **show module** command:

```
N1KV-VSM# sh mod
```

Mod	Ports	Module-Type	Model	Status
1	0	Virtual Supervisor Module	Nexus1000V	active *
3	248	Virtual Ethernet Module	NA	ok
4	248	Virtual Ethernet Module	NA	ok

Mod	Sw	Hw
1	4.0(4)SV1(3)	0.0
3	4.0(4)SV1(3)	2.0
4	4.0(4)SV1(3)	2.0

Mod	MAC-Address(es)	Serial-Num
1	00-19-07-6c-5a-a8 to 00-19-07-6c-62-a8	NA
3	02-00-0c-00-03-00 to 02-00-0c-00-03-80	NA
4	02-00-0c-00-04-00 to 02-00-0c-00-04-80	NA

Mod	Server-IP	Server-UUID	Server-Name
1	10.78.27.73	NA	NA
3	10.78.27.72	44454c4c-5100-104c-8036-b3c04f593153	10.78.27.72
4	10.78.27.71	44454c4c-4800-104e-804d-b1c04f563153	10.78.27.71

- You can view upgrade logs at:

ESX: /var/log/vmware/

ESXi: /locker/db/esxupdate.log