Combined Upgrade Procedure for VMware ESXi and Cisco Nexus 1000V VEM

First Published: February 18, 2015

Contents

This document includes the following sections:

Introduction

This document describes the combined upgrade procedure for the VMware ESXi image and the Cisco Nexus 1000V VEM image. It also explains the prerequisites for the combined upgrade and how to create a customized ISO file.

You can upgrade the VEM and ESXi versions simultaneously. A combined upgrade is supported for VMware vSphere Release 5.0 update 1 and later, and Cisco Nexus 1000V Release 4.2(1)SV1(5.2) and later. You can upgrade the VEM and ESXi versions manually or by using the VMware Upgrade Manager (VUM). We recommend that you use VUM for the combined upgrade.

For more information on the Cisco Nexus 1000V installation and upgrade, see the *Cisco Nexus 1000V Installation and Upgrade Guide*.

Cisco Systems, Inc.
www.cisco.com

Prerequisites

Ensure that you have installed and configured the following components on the target setup before you begin the combined upgrade:

- Install the VMware PowerCLI on a Windows platform. For more information, see the *vSphere PowerCLI Installation Guide*.
- On the Windows platform where the VMware PowerCLI is installed, download the:
  - ESXi depot (.zip file).
  - VEM offline bundle (.zip file).

Creating a Customized ISO File

To create a customized ISO file using the VMware ESXi image and the Cisco Nexus 1000V VEM image, complete the following steps:

Step 1 Log in to the VMWare PowerCLI application.

Step 2 Run the **set-executionpolicy unrestricted** command. For example:

```
#set-executionpolicy unrestricted
```

Step 3 Connect to the vCenter server by using the **connect-viserver** command. For example:

```
vSphere PowerCLI> connect-viserver 10.105.231.40 -user administrator -password 'XXXXXXXX'

Working with multiple default servers?

    Select [Y] if you want to work with more than one default servers. In this
case, every time when you connect to a different server using Connect-VIServer,
 the new server connection is stored in an array variable together with the
previously connected servers. When you run a cmdlet and the target servers
cannot be determined from the specified parameters, the cmdlet runs against all
 servers stored in the array variable.
    Select [N] if you want to work with a single default server. In this case,
when you run a cmdlet and the target servers cannot be determined from the
specified parameters, the cmdlet runs against the last connected server.

    WARNING: WORKING WITH MULTIPLE DEFAULT SERVERS WILL BE ENABLED BY DEFAULT
IN A FUTURE RELEASE. You can explicitly set your own preference at any time by
using the DefaultServerMode parameter of Set-PowerCLIConfiguration.

[Y] Yes  [N] No  [S] Suspend  [?] Help (default is "Y"): Y

Name                           Port         User
----                           ----         ----
10.105.231.40                  443          administrator
10.105.231.41
```

Step 4 Load the ESXi depot by using the **add-esxsoftwaredepot** command. For example:

```
vSphere PowerCLI> add-esxsoftwaredepot 'C:\Documents and
Settings\Administrator\Desktop\upgrade\229\VMware-ESXi-5.1.0-799733-depot.zip'
depot Url---------
zip:C:\Documents and Settings\Administrator\Desktop\upgrade\229\VMware-ESXi-...
```

Step 5 Display the image profiles by using the **get-esximageprofile** command. For example:

```
vSphere PowerCLI> get-esximageprofile
Name                           Vendor          Last Modified   Acceptance Level
----                           ------          -------------   ----------------
ESXi-5.1.0-20121201001s-no-... VMware, Inc.    12/7/2012 7:... PartnerSupported
ESXi-5.1.0-20121204001-stan... VMware, Inc.    12/7/2012 7:... PartnerSupported
ESXi-5.1.0-20121201001s-sta... VMware, Inc.    12/7/2012 7:... PartnerSupported
ESXi-5.1.0-799733-no-tools     VMware, Inc.    8/2/2012 3:0... PartnerSupported
ESXi-5.1.0-20121204001-no-t... VMware, Inc.    12/7/2012 7:... PartnerSupported
ESXi-5.1.0-799733-standard     VMware, Inc.    8/2/2012 3:0... PartnerSupported
```

Step 6 Clone the ESXi standard image profile by using the **new-esximageprofile** command. For example:

```
vSphere PowerCLI> new-esximageprofile -clonecrofile ESXi-5.1.0-799733-standard -name
ESXi-N1Kv-bundle

cmdlet new-esximageprofile at command pipeline position 1
Supply values for the following parameters:
(Type !? for Help.)
Vendor: CISCO

Name                           Vendor          Last Modified   Acceptance Level
----                           ------          -------------   ----------------
ESXi-N1Kv-bundle               CISCO           8/2/2012 3:0... PartnerSupported
```

Note The image profiles are usually in read-only format. You must clone the image profile before adding the VEM image to it.

Step 7 Load the Cisco Nexus 1000V VEM offline bundle by using the **add-esxsoftwaredepot** command. For example:

```
vSphere PowerCLI> add-esxsoftwaredepot 'C:\Documents and
Settings\Administrator\Desktop\upgrade\229\VEM510-201408170106-BG-release.zip

Depot Url
---------
zip:C:\Documents and Settings\Administrator\Desktop\upgrade\229\cisco-vem-v1...
```

Step 8 Confirm that the n1kv-vib package is loaded by using the **get-esxsoftwarepackage** command. For example:

```
vSphere PowerCLI> get-esxsoftwarepackage cisco*

Name                     Version                      Vendor     Creation Date
----                     -------                      ------     ------------
cisco-vem-v170-esxi      5.2.1.3.1.1.0-3.1.1          Cisco      1/24/2014...
```

Step 9 Bundle the n1kv-package into the cloned image profile by using the **add-esxsoftwarepackage** command. For example:

```
vSphere PowerCLI> add-esxsoftwarepackage -softwarepackage cisco-vem-v170-esx -imageprofile
ESXi-N1Kv-bundle

Name                           Vendor          Last Modified   Acceptance Level
----                           ------          -------------   ----------------
ESXi-N1Kv-bundle               CISCO           1/24/2014 3:... PartnerSupported
```

Step 10 Verify that the Cisco VIB is added to the cloned image profile by using the following commands:

```
vSphere PowerCLI> $img = get-esximageprofile ESXi-N1Kv-bundle

vSphere PowerCLI> $img.vibList
```

```
Name                      Version                        Vendor     Creation Date
----                      -------                        ------     ------------
scsi-bnx2i                1.9.1d.v50.1-5vmw.510.0.0.7... VMware     8/2/2012 ...
sata-sata-promise         2.12-3vmw.510.0.0.799733       VMware     8/2/2012 ...
net-forcedeth             0.61-2vmw.510.0.0.799733       VMware     8/2/2012 ...
esx-xserver               5.1.0-0.0.799733               VMware     8/2/2012 ...
misc-cnic-register        1.1-1vmw.510.0.0.799733        VMware     8/2/2012 ...
net-tg3                   3.110h.v50.4-4vmw.510.0.0.7... VMware     8/2/2012 ...
scsi-megaraid-sas         5.34-4vmw.510.0.0.799733       VMware     8/2/2012 ...
scsi-megaraid-mbox        2.20.5.1-6vmw.510.0.0.799733   VMware     8/2/2012 ...
scsi-ips                  7.12.05-4vmw.510.0.0.799733    VMware     8/2/2012 ...
net-e1000e                1.1.2-3vmw.510.0.0.799733      VMware     8/2/2012 ...
sata-ahci                 3.0-13vmw.510.0.0.799733       VMware     8/2/2012 ...
sata-sata-svw             2.3-3vmw.510.0.0.799733        VMware     8/2/2012 ...
net-cnic                  1.10.2j.v50.7-3vmw.510.0.0.... VMware     8/2/2012 ...
net-e1000                 8.0.3.1-2vmw.510.0.0.799733    VMware     8/2/2012 ...
ata-pata-serverworks      0.4.3-3vmw.510.0.0.799733      VMware     8/2/2012 ...
scsi-mptspi               4.23.01.00-6vmw.510.0.0.799733 VMware     8/2/2012 ...
ata-pata-hpt3x2n          0.3.4-3vmw.510.0.0.799733      VMware     8/2/2012 ...
net-s2io                  2.1.4.13427-3vmw.510.0.0.79... VMware     8/2/2012 ...
esx-base                  5.1.0-0.0.799733               VMware     8/2/2012 ...
net-vmxnet3               1.1.3.0-3vmw.510.0.0.799733    VMware     8/2/2012 ...
net-bnx2                  2.0.15g.v50.11-7vmw.510.0.0... VMware     8/2/2012 ...
cisco-vem-v164-esx        4.2.1.2.2.2.0-3.1.1            Cisco      1/24/2014...
scsi-megaraid2            2.00.4-9vmw.510.0.0.799733     VMware     8/2/2012 ...
ata-pata-amd              0.3.10-3vmw.510.0.0.799733     VMware     8/2/2012 ...
ipmi-ipmi-si-drv          39.1-4vmw.510.0.0.799733       VMware     8/2/2012 ...
scsi-lpfc820              8.2.3.1-127vmw.510.0.0.799733  VMware     8/2/2012 ...
ata-pata-atiixp           0.4.6-4vmw.510.0.0.799733      VMware     8/2/2012 ...
esx-dvfilter-generic-... 5.1.0-0.0.799733                VMware     8/2/2012 ...
net-sky2                  1.20-2vmw.510.0.0.799733       VMware     8/2/2012 ...
scsi-qla2xxx              902.k1.1-9vmw.510.0.0.799733   VMware     8/2/2012 ...
net-r8169                 6.011.00-2vmw.510.0.0.799733   VMware     8/2/2012 ...
sata-sata-sil             2.3-4vmw.510.0.0.799733        VMware     8/2/2012 ...
scsi-mpt2sas              10.00.00.00-5vmw.510.0.0.79... VMware     8/2/2012 ...
sata-ata-piix             2.12-6vmw.510.0.0.799733       VMware     8/2/2012 ...
scsi-hpsa                 5.0.0-21vmw.510.0.0.799733     VMware     8/2/2012 ...
ata-pata-via              0.3.3-2vmw.510.0.0.799733      VMware     8/2/2012 ...
scsi-aacraid              1.1.5.1-9vmw.510.0.0.799733    VMware     8/2/2012 ...
scsi-rste                 2.0.2.0088-1vmw.510.0.0.799733 VMware     8/2/2012 ...
ata-pata-cmd64x           0.2.5-3vmw.510.0.0.799733      VMware     8/2/2012 ...
ima-qla4xxx               2.01.31-1vmw.510.0.0.799733    VMware     8/2/2012 ...
net-igb                   2.1.11.1-3vmw.510.0.0.799733   VMware     8/2/2012 ...
scsi-qla4xxx              5.01.03.2-4vmw.510.0.0.799733  VMware     8/2/2012 ...
block-cciss               3.6.14-10vmw.510.0.0.799733    VMware     8/2/2012 ...
scsi-aic79xx              3.1-5vmw.510.0.0.799733        VMware     8/2/2012 ...
tools-light               5.1.0-0.0.799733               VMware     8/2/2012 ...
uhci-usb-uhci             1.0-3vmw.510.0.0.799733        VMware     8/2/2012 ...
sata-sata-nv              3.5-4vmw.510.0.0.799733        VMware     8/2/2012 ...
sata-sata-sil24           1.1-1vmw.510.0.0.799733        VMware     8/2/2012 ...
net-ixgbe                 3.7.13.6iov-10vmw.510.0.0.7... VMware     8/2/2012 ...
ipmi-ipmi-msghandler      39.1-4vmw.510.0.0.799733       VMware     8/2/2012 ...
scsi-adp94xx              1.0.8.12-6vmw.510.0.0.799733   VMware     8/2/2012 ...
scsi-fnic                 1.5.0.3-1vmw.510.0.0.799733    VMware     8/2/2012 ...
ata-pata-pdc2027x         1.0-3vmw.510.0.0.799733        VMware     8/2/2012 ...
misc-drivers              5.1.0-0.0.799733               VMware     8/2/2012 ...
net-enic                  1.4.2.15a-1vmw.510.0.0.799733  VMware     8/2/2012 ...
net-be2net                4.1.255.11-1vmw.510.0.0.799733 VMware     8/2/2012 ...
net-nx-nic                4.0.558-3vmw.510.0.0.799733    VMware     8/2/2012 ...
esx-xlibs                 5.1.0-0.0.799733               VMware     8/2/2012 ...
net-bnx2x                 1.61.15.v50.3-1vmw.510.0.0.... VMware     8/2/2012 ...
ehci-ehci-hcd             1.0-3vmw.510.0.0.799733        VMware     8/2/2012 ...
ohci-usb-ohci             1.0-3vmw.510.0.0.799733        VMware     8/2/2012 ...
net-r8168                 8.013.00-3vmw.510.0.0.799733   VMware     8/2/2012 ...
```

```
esx-tboot                 5.1.0-0.0.799733                VMware     8/2/2012 ...
ata-pata-sil680           0.4.8-3vmw.510.0.0.799733       VMware     8/2/2012 ...
ipmi-ipmi-devintf         39.1-4vmw.510.0.0.799733        VMware     8/2/2012 ...
scsi-mptsas               4.23.01.00-6vmw.510.0.0.799733 VMware     8/2/2012 ...
```

Step 11 Export the image profile to an ISO file by using the **export-esximageprofile** command. For example:

```
vSphere PowerCLI> Export-EsxImageProfile -ImageProfile ESXi-N1Kv-bundle -FilePath
'C:\Documents and Settings\Administrator\Desktop\ESXi-N1Kv-bundle.iso' -ExportToIso
```

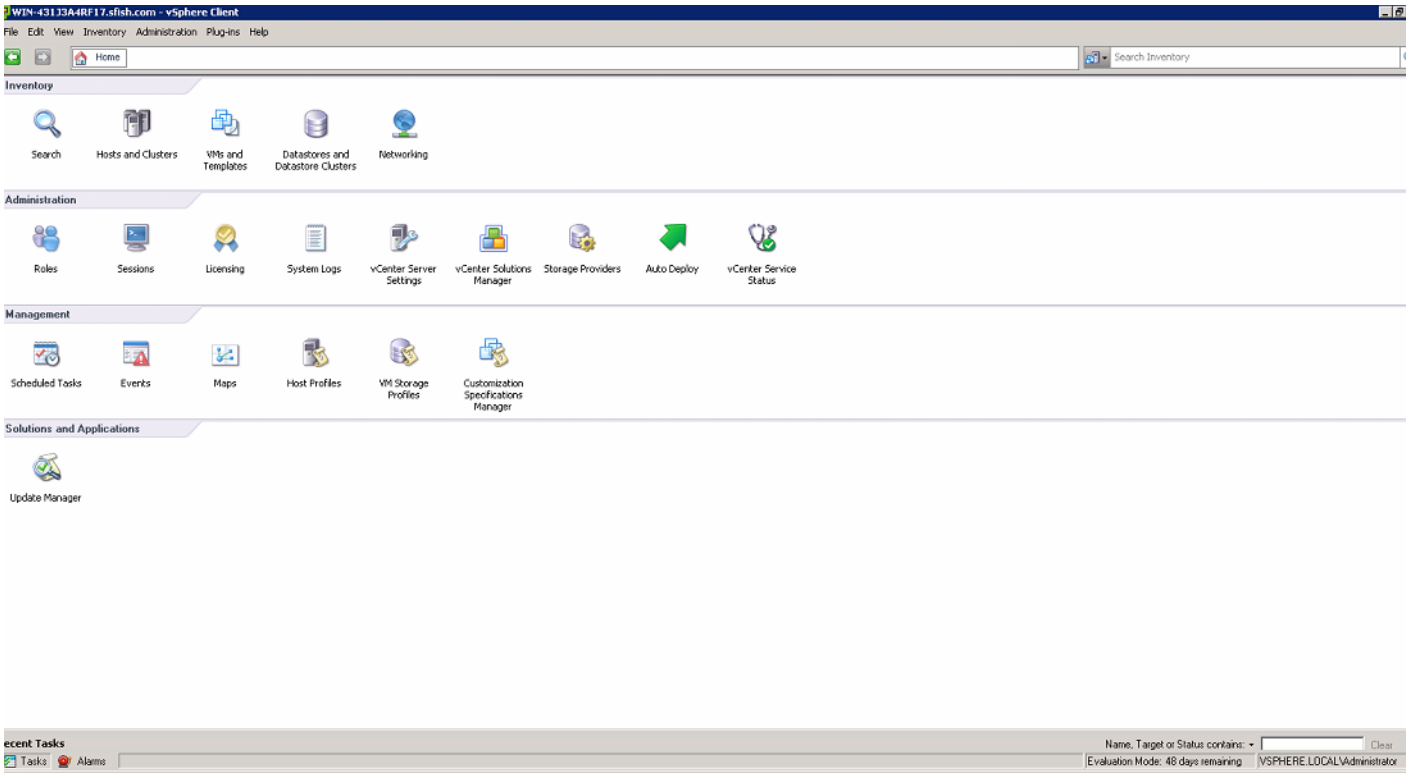
Upgrading VMware ESXi and the Cisco Nexus 1000V VEM

Complete the following steps to upgrade the VMware ESXi and the Cisco Nexus 1000V VEM image simultaneously:

Step 1 Log in to VMware vSphere client.

Step 2 In the vSphere client, click the **Home** icon in the address bar.

Figure 1 VMware vSphere Client



Step 3 Under the **Solutions and Applications** section, click **Update Manager**.

Step 4 Click the **ESXi Images** tab and then click the **Import ESXi Image** link.

Step 5 In the **Import ESXi Image** dialog box, click **Browse** and navigate to the location of the customized upgrade ISO image.

Step 6 Choose the upgrade ISO file (for example, ESXi-N1Kv-bundle) and click **Open**.

Step 7 Click **Next** to import the ISO file. In the **Security Warning** dialog box, click **Ignore**.

Step 8 After the upgrade ISO file is uploaded, click **Next**.

Step 9 In the **Baseline Name and Description** section, enter a name and description for the baseline (ISO).

Step 10 Click **Finish**. The ISO image is uploaded and listed on the **Import ESXi** tab.

Step 11 Click the **Baselines and Groups** tab and verify whether the new ISO is listed under the **Baselines** table.

Step 12 In the vSphere client, choose **Home > Hosts and Clusters**.

Step 13 In the left pane, select the target host to upgrade and click the **Update Manager** tab.

Step 14 On the **Update Manager** tab, click **Attach**.

Step 15 In the **Attached Baseline or Group** dialog box, under the **Individual Baselines by Type** area, expand the **Upgrade Baseline** option.

Step 16 Select the customized ISO image (for example, ESXi-N1Kv-bundle) and click **Attach**.

Step 17 In the **Update Manager** tab, click **Scan**.

Step 18 In the **Confirm Scan** dialog box, check the **Upgrades** check box and click **Scan**.

Note The baseline may display as *Non-Compliant* or *Incompatible* after the scan is complete.

Step 19 Under the **All Groups and Independent baselines** section, select the host and click the **Details** link to open the **Upgrade Details** window. Reboot the host if prompted.

Note After the reboot, the Compliance State displays as *Non-Compliant* or *Incompatible*.

Step 20 When you are finished viewing the upgrade details, click **Close**.

Step 21 In the **Update Manager** tab, click **Remediate**.

Step 22 In the **Remediate** dialog box, click **Next**.

Step 23 In the **End User License Agreement** screen, check the **I accept the terms and license agreement** check box and click **Next**.

Step 24 In the **ESXi 5.x Upgrade** screen, follow the instructions and click **Next**.

Step 25 In the **Schedule** screen, click **Next**.

Step 26 In the **Host Remediation Options** screen, under the **Maintenance Mode Options** area, check the **Disable any removable media devices connected to the virtual machines on the host** check box, and click **Next**.

Step 27 In the **Cluster Remediation Options** screen, click **Next**.

Step 28 In the **Ready to Complete** screen, click **Finish**. The host will go into maintenance mode and reboot.

Step 29 To check the host versions, click each host in the left pane and confirm that 5.x appears in the top-left corner of the right pane and that the version information matches the *Cisco Nexus 1000V and VMware Compatibility Information*.

Verifying the Upgrade

Complete the following steps to verify whether the combined upgrade procedure succeeded:

Step 1 Verify the build number on the ESXi host by using the **vmware** command. For example:

```
# vmware -v -l
VMware ESXi 5.5.0 build- 2068190
VMware ESXi 5.5.0 Update 2
```

Step 2 Verify the VEM status by using the **vem status** command. For example:

```
# vem status -v
Package vssnet-esxmn-ga-release
Version 5.2.1.3.1.1.0-2.1.1
Build 1
Date Mon Aug 4 04:56:14 PDT 2014

VEM modules are loaded
Switch Name      Num Ports   Used Ports  Configured Ports  MTU     Uplinks
vSwitch0         128         4           128               1500    vmnic0
DVS Name         Num Ports   Used Ports  Configured Ports  MTU     Uplinks
p-1              1024        13          1024              1500
vmnic7,vmnic6,vmnic3,vmnic2,vmnic1,vmnic0
VEM Agent (vemdpa) is running
```

Step 3 Verify the VEM version by using the **vemcmd show version** command. For example:

```
# vemcmd show version
VEM Version: 5.2.1.3.1.1.0-2.1.1
VSM Version: 5.2(1)SV3(1.1)
System Version: VMware ESXi 5.5.0 Releasebuild-2068190 ESXi Version Update Level: 2
```

Step 4 Verify the VEM module status by using the **show module** command. For example:

```
# show module
Mod  Ports  Module-Type                        Model               Status
---  -----  --------------------------------  ------------------  ------------
1    0      Virtual Supervisor Module         Nexus1000V          active *
2    0      Virtual Supervisor Module         Nexus1000V          ha-standby
3    1022   Virtual Ethernet Module           NA                  ok
6    1022   Virtual Ethernet Module           NA                  ok

Mod  Sw                  Hw
---  ------------------  ------------------------------------------------
1     5.2(1)SV3(1.1)  0.0
2     5.2(1)SV3(1.1)  0.0
3     5.2(1)SV3(1.1)      VMware ESXi 5.5.0 update 2068190 (3.0)
```

Step 5 Verify that the VEM is installed by using the **esxcli software vib list |grep cisco** command. For example:

```
# esxcli software vib list |grep cisco
cisco-vem-v170-esx    5.2.1.3.1.1.0-3.2.1   Cisco   PartnerSupported  2015-01-21
```

Cisco and the Cisco logo are trademarks or registered trademarks of Cisco and/or its affiliates in the U.S. and other countries. To view a list of Cisco trademarks, go to this URL: www.cisco.com/go/trademarks. Third-party trademarks mentioned are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (1110R)

Internet Protocol (IP) addresses used in this document are for illustration only. Examples, command display output, and figures are for illustration only. If an actual IP address appears in this document, it is coincidental.

© 2015 Cisco Systems, Inc. All rights reserved.