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Cisco Nexus 1000V Software Installation Guide, Release 4.0(4)SV1(2)

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This document describes how to create a Cisco Nexus 1000V virtual supervisor module (VSM) by installing the software on an ESX or ESXi 4.0 VMware server.

This document includes the following topics:

- Prerequisites, page 2
- Installing the Software from vSphere Client, page 6

For an overview of the Cisco Nexus 1000V system and procedures for configuring the software, see the *Cisco Nexus 1000V Getting Started Guide, Release 4.0(4)SV1(2)*.

Audience

This guide is for network administrators with the following experience and knowledge:

- An understanding of virtualization
- Using VMware tools to create a virtual machine and configure a vswitch

Note Knowledge of VMware vNetwork Distributed Switch is not required.

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Information About Installing Software

You can install Cisco Nexus 1000V software on a VM using an open virtual appliance (OVA) file or an ISO image from the CD. The software installation consists of copying the Cisco Nexus 1000V image file to the VM. Depending on which installation method you use, some configuration of the VSM is also a part of this process. Table 1 lists these installation methods and describes what they do.

Table 1 Software Installation Methods

Software Installation Method	Description of Tasks to be Performed
CD ISO Image File	• Copies the software to the VM. • Accomplishes the remaining configuration using the CLI setup application.
Open Virtual Appliance (OVA) File	• Creates the VSM • Maps the following port groups to the VSM – Control – Management – Packet • Configures the following: – Management IP address and subnet – Default gateway • Accomplishes the remaining configuration using the GUI setup application.

Prerequisites

This section includes the following prerequisites:

- VSM Prerequisites, page 2
- VMware and Host Prerequisites, page 3

VSM Prerequisites

Before installing the Cisco Nexus 1000V software, you must know or do the following:

- It is highly recommended that you install redundant VSMs. For more information about configuring redundant VSMs, see the *Cisco Nexus 1000V High Availability and Redundancy Configuration Guide, Release 4.0(4)SV1(2)*.
- If you are installing redundant VSMs, make sure you first install and set up the software on the primary VSM before installing and setting up the software on the secondary VSM.
- To improve redundancy, install primary and secondary VSM virtual machines in separate hosts connected to different upstream switches. For other recommendations, see the *Cisco Nexus 1000V Getting Started Guide, Release 4.0(4)SV1(2)*.

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- You have already identified the HA role for this VSM from those listed in Table 2:

Table 2 VSM HA Roles

Role	Single Supervisor System	Dual Supervisor System
Standalone	X	
Primary		X[1]
Secondary		X[2]

1. If this is the first VSM of a dual supervisor pair, install it as primary.
2. If this is the second VSM of a dual supervisor pair, install it as secondary.

- The Cisco Nexus 1000V software includes licenses for 16 CPU sockets for a period of 60 days. These licenses are used only if there are no permanent licenses installed on the VSM. The evaluation period of 60 days starts when you install the software. For more information about licenses, see the *Cisco Nexus 1000V License Configuration Guide, Release 4.0(4)SV1(2)*
- You are familiar with the Cisco Nexus 1000V example installation shown in Figure 1.

VMware and Host Prerequisites

Before installing the Cisco Nexus 1000V software, you must know or do the following:

- You have already installed the vCenter Server.
- Make sure you have already prepared the vCenter Server using the instructions from VMware.
- You have the VMware documentation for installing software on the vSphere Client.
- You have already prepared the required hosts, including the following:
  - The VMware Enterprise Plus license must already be installed on the hosts.
  - All hosts that need to run the VEM must be running the ESX or ESXi 4.0.
  - There is at least one ESX or ESXi 4.0 host. If you plan to use VMotion, you'll need two ESX or ESXi 4.0 hosts.
  - An ESX host is available to run the VSM VM.
  - The VSM virtual machine can be hosted on the VEM in an ESX host that it is managing or it can be hosted on a separate ESX or ESXi host (3.5 or 4.0) running the regular VMware vSwitch.
  - The ESX host requires a minimum of 4 GB of physical RAM to host a VSM VM as the ESX server alone requires a minimum of 2 GB of physical RAM. Additional memory may be required to run the vCenter Server VM on the same host.
  - Each host has a minimum of the following physical NICs (PNICs):

    One PNIC for a Service Console or Management.

    One PNIC for the traffic between VSM and VEM and for VM data traffic.
  - All ESX hosts within a Cisco Nexus 1000V must have Layer 2 connectivity to each other.

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  - If you are using a set of switches, make sure that the inter-switch trunk links carry all relevant VLANs, including control and packet VLANs. The uplink should be a trunk port carrying all VLANs configured on the ESX host.
  - On the host running the VSM VM, the control and packet VLANs are configured through the VMware switch and the VMNIC.
- The optional VMware Update Manager (VUM) manages the Cisco Nexus 1000V software installation for ESX hosts in a datacenter. For instructions on installing VUM on the vCenter Server, see the VMware documentation.
- The VSM VM must be run on the same IP subnet as the ESX 4.0 hosts that it manages.
- The host for the VSM VM runs on 64-bit server hardware and can run ESX 4.0 or ESX 3.5.
- To install the VSM software, you can use either of the following methods:
  - Attach the VSM ISO image to the VM virtual CD-ROM.
  - Use the following open virtual appliance (OVA) file:

    Nexus1000v-4.0.4.SV1.2.ova

Note If you are installing the VSM using an ISO image, then edit the VSM VM configuration settings for reserving memory resource to reserve 2-GB RAM and the CPU frequency to 1500 MHz. If you are installing the VSM using an OVA file, then these parameters are set automatically.

- If you are not using the OVA file, but are creating a new VM, make sure that it meets the following minimum basic requirements:
  - A 64 bit VM is required and “Other 64bit Linux” is a recommended VM type.
  - The VM must be equipped as follows:
    1 Processor
    2GB RAM
    3 NICs
    Minimum 3GB SCSI Hard Disk with LSI Logic Parallel adapter (default).
    CPU speed of 1.5 GHz

Note To allocate additional RAM, first power off the VM by right-clicking it and then choosing **Power > Power Off** from the popup menu.
After the VM is powered down, edit the configuration settings on the VM for controlling memory resources.

- Do not enable VMware Fault Tolerance (FT) for the VSM VM because it is not supported. Instead, NX-OS HA provides high availability for the VSM.
- The VSM VM supports VMware High Availability (HA). Cisco strongly recommends that you use redundant VSMs and the NX-OS high availability which can be used with VMware HA. When using VMware HA, you must follow the VMware recommendations. The Isolation Response must not be set to **Leave powered on**.
- Do not enable VM Monitoring for the VSM VM because it is not supported, even if you enable VMware HA on the underlying host. Cisco NX-OS redundancy is the preferred method.

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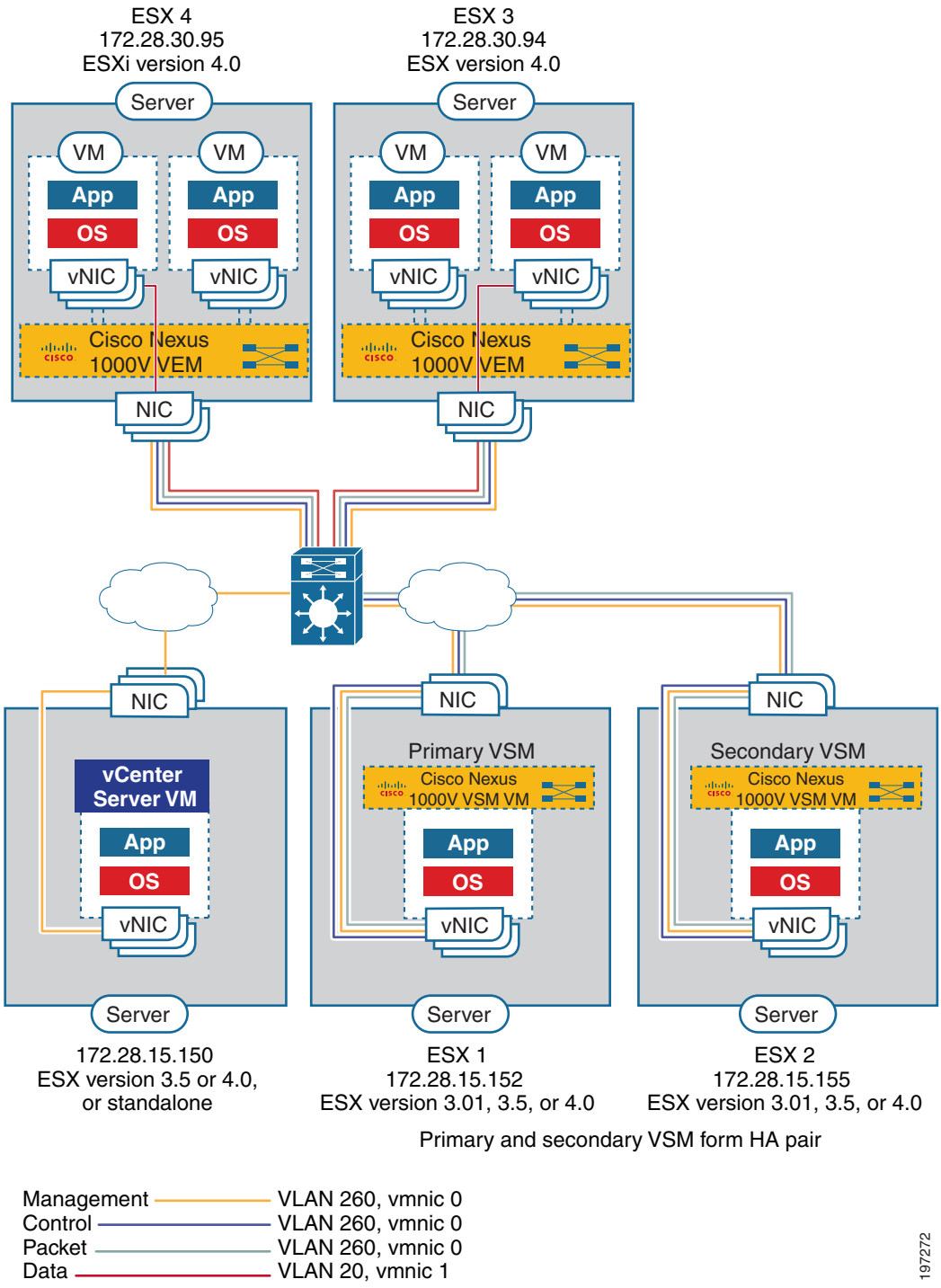
Figure 1 Cisco Nexus 1000V Installation Diagram



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Installing the Software from vSphere Client

Use this procedure and your VMware documentation to install the Cisco Nexus 1000V software and create a VSM VM. This procedure is done from the vSphere Client.

BEFORE YOU BEGIN

Before beginning the installation, you must know or do the following:

- You have the following information available:
  - A name for the new VSM that is unique within the inventory folder and up to 80 characters in length.
  - The name of the host where the VSM will be installed in the inventory folder.
  - The name of the datastore in which the VM files will be stored.
  - The names of the network port groups used for the VM.
  - The Cisco Nexus 1000V VSM IP address.
- You have a copy of the following open virtual appliance (OVA) VSM software file on your local drive:
  - Nexus1000v-4.0.4.SV1.2.ova

DETAILED STEPS

Step 1 From the VSphere Client, choose **File > Deploy OVF Template**.

The Source screen opens.

Step 2 Click **Deploy from file** and choose the location of the installation file on the local disk.

Step 3 Click **Next**.

The OVF Template Details screen opens, displaying product information including the size of the file and the size of the VM disk.

Step 4 Click **Next**.

The End User License Agreement opens.

Step 5 Read the Cisco Nexus 1000V License Agreement.

Step 6 Click **Accept** and then click **Next**.

The Name and Location screen Opens.

Step 7 In the Name field, add a name for the VSM that is unique within the inventory folder and less than 80 characters in length. Then click **Next**.

The Host or Cluster screen opens.

Step 8 Choose the host where this VSM will be installed. Then click **Next**.

The Datastore screen opens.

Step 9 Choose the datastore if one is available. Then click **Next**.

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If network port groups are created in addition to those for the VM Network, the Network Mapping screen opens.

Step 10 Select the port groups for the VM and click **Next**.

The Ready to Complete screen opens.

Step 11 If the configuration is correct, click **Finish.**

The status for the VM installation displays.

A message notifies you when the installation completes.

Step 12 You have completed installing the Cisco Nexus 1000V software and creating a VSM VM.

To configure your new Cisco Nexus 1000V software, see the *Cisco Nexus 1000V Getting Started Guide, Release 4.0(4)SV1(2)*.

Note If you are installing redundant VSMs, make sure you configure the software on the primary VSM before installing the software on the secondary VSM.

Related Documentation

Cisco Nexus 1000V includes the following documents available on Cisco.com:

General Information

Cisco Nexus 1000V Release Notes, Release 4.0(4)SV1(2)

Cisco Nexus 1000V Compatibility Information, Release 4.0(4)SV1(2)

Install and Upgrade

Cisco Nexus 1000V Software Installation Guide, Release 4.0(4)SV1(2)

Cisco Nexus 1000V Virtual Ethernet Module Software Installation Guide, Release 4.0(4)SV1(2)

Cisco Nexus 1000V Software Upgrade Guide, Release 4.0(4)SV1(2)

Configuration Guides

Cisco Nexus 1000V License Configuration Guide, Release 4.0(4)SV1(2)

Cisco Nexus 1000V Getting Started Guide, Release 4.0(4)SV1(2)

Cisco Nexus 1000V Interface Configuration Guide, Release 4.0(4)SV1(2)

Cisco Nexus 1000V Layer 2 Switching Configuration Guide, Release 4.0(4)SV1(2)

Cisco Nexus 1000V Port Profile Configuration Guide, Release 4.0(4)SV1(2)

Cisco Nexus 1000V Quality of Service Configuration Guide, Release 4.0(4)SV1(2)

Cisco Nexus 1000V Security Configuration Guide, Release 4.0(4)SV1(2)

Cisco Nexus 1000V System Management Configuration Guide, Release 4.0(4)SV1(2)

Cisco Nexus 1000V High Availability and Redundancy Configuration Guide, Release 4.0(4)SV1(2)

Cisco Nexus 1000V XML API User Guide, Release 4.0(4)SV1(2)

Programming Guide

Cisco Nexus 1000V XML API User Guide, Release 4.0(4)SV1(2)

Reference Guides

Cisco Nexus 1000V Command Reference, Release 4.0(4)SV1(2)

Cisco Nexus 1000V MIB Quick Reference

Troubleshooting and Alerts

Cisco Nexus 1000V Troubleshooting Guide, Release 4.0(4)SV1(2)

Cisco Nexus 1000V Password Recovery Guide

Cisco NX-OS System Messages Reference

This document is to be used in conjunction with the documents listed in the "Related Documentation" section.

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