Overview

This chapter describes the Cisco Nexus Cloud Services Platform (CSP) and includes the following topics:

Information About Cisco Nexus Cloud Services Platform

The Cisco Nexus Cloud Services Platform product family includes the Cisco Nexus 1010, Cisco Nexus 1010-X, Cisco Nexus 1110-S, and the Cisco Nexus 1110-X.

The Cisco Nexus Cloud Services Platform product family product family comprises networking appliances that can host from 6 up to 14 Cisco Nexus 1000V virtual service blades (VSBS) on a Cisco Nexus Cloud Services Platform.

The Cisco Nexus Cloud Services Platform product family supports VSBs like Cisco Nexus 1000V Virtual Supervisor Module (VSM), Cisco NetScalar 1000v, Network Analysis Module (NAM), Virtual Security Gateway (VSG), and Data Center Network Management Module (DCNM).

The Cisco Nexus Cloud Services Platform provides dedicated hardware for the VSM. From a network management perspective, the hosted VSMs appear as a cluster. Each VSM and its associated VEMs make up one virtual switch. VSMs that were hosted on VMware virtual machines can be hosted on a Cisco Nexus 1010, Cisco Nexus 1010-X, Cisco Nexus 1110-S, or Cisco Nexus 1110-X appliance. This allows you to install and manage the VSM like a standard Cisco switch. The services (VSM, VSG, DCNM, or NAM) managed by the Cisco Nexus Cloud Services Platform product family are called virtual service blades.

This section includes the following topics:

Hardware Features

Table 1-1 describes the Cisco Nexus Cloud Services Platform product family hardware features.

For a complete description and specifications, see the "Technical Specifications" section on page A-1.

.

Table 1-1   Hardware Features of the Cisco Nexus Cloud Services Platform product family

Feature or Component	Cisco Nexus 1010	Cisco Nexus 1010-X	Cisco Nexus 1110-S	Cisco Nexus 1110-X
Memory	16G 4x4G	48G 6x8G	32 G 4x8G	64G 8x8G
Capacity	Up to 6xVSBs	Up to 10xVSBs	6 to 10xVSBs	10 to 14xVSBs
Total Cores	12	12	16	16
CPU Type	Westmere (2)	Westmere (2)	Sandy Bridge(2)	Sandy Bridge(2
CPU Model	X5650	X5650	E5-2650 (8Core)	E5-2650 (8Core)
HDD	1TB 2x 500G 3.5" SATA	4TB 2x 2TB 3.5" SAS	2TB 2x 1TB 2.5" SATA	4 TB 4x 1TB 2.5" SATA
I/O	6x 1G	6x 1G	6x 1G	6x 1G 2x 10G (dormant)
RAID	1	1	1	10

Note   The VSB density is 6 to 10 on the 1110-S and 10 to 14 on the 1110-X.

Front Panel Description

This section includes the following topics:

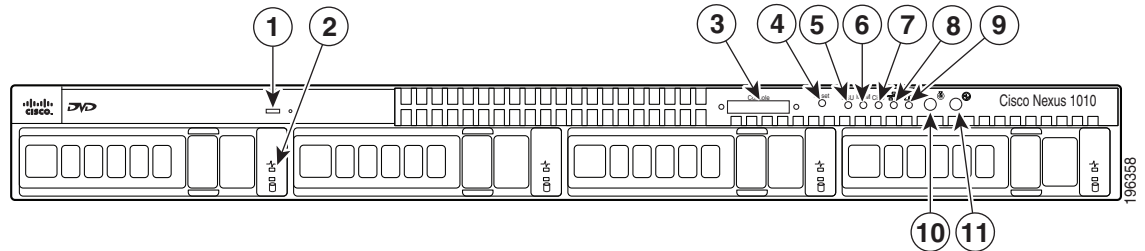- Cisco Nexus 1010, page 1-3
- Cisco Nexus 1110, page 1-3

Cisco Nexus 1010

This section describes the front panel of a Cisco Nexus 1010 and Cisco Nexus 1010-X.

For a complete description of LED indicators, see the "Status LEDs" section on page 6-1.

Figure 1-1   Front panel of a Cisco Nexus 1010

1	DVD-RW drive
2	Hard drive (two)
3	Console connector Used to connect the supplied KVM cable to a monitor and keyboard for CIMC installation.
4	Reset button ⚠ **Caution** Do not depress the Reset button. This button is for development debugging only. This button resets memory and CPU values to their default settings.
5	Power supply fault LED
6	Memory fault LED
7	CPU fault LED
8	Network activity LED
9	System fault LED
10	Locator button/LED
11	Power button/Power status LED

Cisco Nexus 1110

This section describes the front panel of a Cisco Nexus 1110-S and Cisco Nexus 1110-X.

Figure 1-2   Font Panel Features
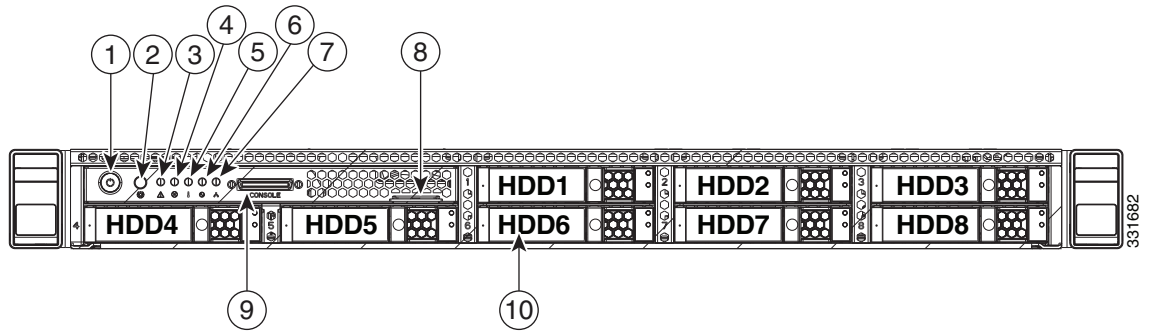
1	Power button/Power status LED	6	Power supply status LED
2	Identification button/LED	7	Network link activity LED
3	System status LED	8	Pull-out asset tag
4	Fan status LED	9	KVM connector (used with KVM cable that provides two USB, one VGA, and one serial connector)
5	Temperature status LED	10	Drives, hot-swappable (up to eight 2.5-inch drives)

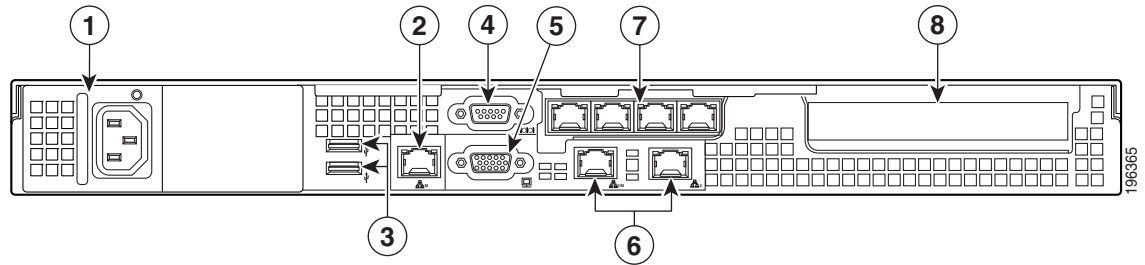# Rear Panel Description

This section includes the following topics:

-
-

Cisco Nexus 1010

This section describes the rear panel of a Cisco Nexus 1010.

For a complete description of LED indicators, see the "Status LEDs" section on page 6-1.
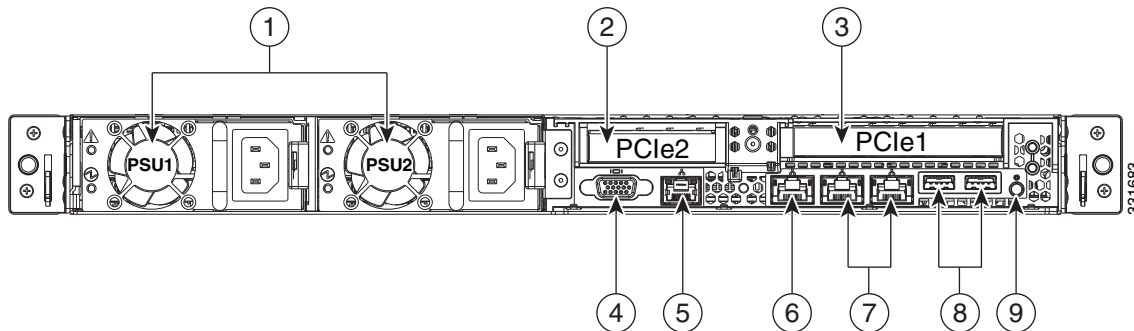
Figure 1-3   Rear panel of a Cisco Nexus 1010

1	Power supply
2	10/100 Ethernet CIMC management port (RJ-45)[1]
	Used for configuration of the Cisco Integrated Management Controller (CIMC) software only. Cisco Nexus Cloud Services Platform software is configured using the serial connector port (number 4). The Cisco Nexus Cloud Services Platform only supports Gigabit ports.
3	USB 2.0 connectors (two)
	Used with the supplied thumb drive for transferring a script file.
4	Serial connector (DB9)
	Used for out-of-band terminal access or serial over LAN access for Cisco Nexus 1010 and Cisco Nexus 1010-X software configuration.
5	Video connector (15-pin VGA)
6	10/100/1000 Ethernet ports (two on the motherboard)
	Used to connect to an upstream switch.
7	Quad-port NIC with four 10/100/1000 Ethernet ports
	Used to connect to an upstream switch.
8	Standard-profile PCIe card slot (not used)

1. Although the Cisco Nexus 1010 interfaces allow 10/100/1000 Ethernet connections, the NX-OS operating system requires that the Cisco Nexus 1010 be connected to 1-Gigabit ports on the uplink switches. You cannot modify this speed setting but might need to set the speed and duplex settings on the upstream switches.

Cisco Nexus 1110

This section describes the rear panel of a Cisco Nexus 1110-S and Cisco Nexus 1110-X. Figure 1-4 shows the rear panel features. See labels 2 and 3 of Figure 1-4 to distinguish between the Cisco Nexus 1110-S and Cisco Nexus 1110-X.

Figure 1-4 **Rear Panel of a Cisco Nexus 1110-S and Cisco Nexus 1110-X**

1	Power supplies (two)	6	1-Gb Ethernet dedicated management port
2	PCIe slot 2 on riser (half-height, half-length, x8 lane). **Note** For the Cisco Nexus 1110-S and Cisco Nexus 1110-X, this slot has a Quad port Intel NIC.	7	Dual 1-Gb Ethernet ports (LAN1 and LAN2)
3	PCIe slot 1 on riser (full-height, half-length, x16 lane) **Note** For the Cisco Nexus 1110-S, it is blank. For the Cisco Nexus1110-X, it is the Dual port VIC card.	8	USB ports
4	VGA video connector	9	Rear Identification button/LED
5	Serial port (RJ-45 connector)		–

⚠ **Caution**   The system will not boot, if either of the PCIe slots do not detect the right card.

Note   For details about configuring the ports on the Cisco Nexus Cloud Services Platform, refer to *Cisco Nexus Cloud Services Platform Software Installation and Upgrade Guide*

Cisco Integrated Management Controller

The Cisco Integrated Management Controller (CIMC) is a software interface included with the Cisco Nexus Cloud Services Platform. CIMC allows you to configure serial over LAN (SoL) access and set up remote management in the event the device becomes unreachable. When installing the Cisco Nexus Cloud Services Platform, you have the option of configuring the CIMC interface. To configure the CIMC software while installing the Cisco Nexus Cloud Services Platform, see the "Installing a Cisco Nexus Cloud Services Platform with CIMC" section on page 3-1.

Secure Socket Layer Card

Virtual Service Blades on the Cisco Nexus Cloud Services Platform can offload their security processing capacity to a dedicated external processor to improve their performance. Depending on their deployment models, different VSBs may require more or less processing capacity than the others on the Cisco Nexus Cloud Services Platform.

In order to meet the security processing requirements of the VSBs, starting this release, the Cisco Nexus 1110-X, supports the Cavium Nitrox Crypto Compression card also known as the Secure Socket Layer (SSL) card, as a Field Replacement Unit (FRU) to enable the secure socket layer and crypto acceleration.

Note The UCS firmware should be upgraded for an SSL card to be supported. For details, see the Cisco Nexus Cloud Services Platform Software Configuration Guide, Release 5.2(1)SP1(7.1).

The SSL card provides a total of 30 GBps of SSL offload capacity that is shared by all the VSBs on the Cisco Nexus Cloud Services Platform. The Cisco Nexus Cloud Services Platform slices the security processor card and allocates the corresponding capacities to the VSBs, based on their bandwidth requirement. However, you have to configure the VSBs to utilize the allocated slice of the security processor card. For detailed information about Configuring SSL and Crypto Offload Capability in a Virtual Service Blade, see the Cisco Nexus Cloud Services Platform Software Configuration Guide, Release 5.2(1)SP1(7.1).

The Cisco Nexus 1110-X is shipped with two Peripheral Component Interconnect (PCIe) slots with Cisco UCS VIC 1225 (UCSC-PCIE-CSC-02) or the10G Dual Port VIC (dual port 10G card) and the Intel 1G Quad Port NIC (Quad port 1G card) inserted by default. Starting this release, the Dual port 10G card and the Quad port 1G card can be replaced by the SSL card. You can add an SSL card without service interruption.

Installing the SSL Card on Your Cisco Nexus Cloud Services Platform

This section describes the steps to install the SSL card on your Cisco Nexus Cloud Services Platform.

Step 1 Power down the Cisco Nexus Cloud Services Platform and then disconnect the power cords to each power supply. The system is powered down when the LEDs on each power supply are off.

Caution When you are handling the Cisco Nexus Cloud Services Platform, you must follow the ESD protocol at all times to prevent ESD damage. This protocol includes, but is not limited to wearing an ESD wrist strap that you connect to the earth ground in the data center building.

Step 2 Disconnect the up-links from the network.

Step 3 Slide the Cisco Nexus 1110-X out from the rack, and remove its top panel.

Step 4 Once you remove the top panel, you can see the Cisco Nexus 1110-X with its default configuration. The PCIe2 slot has the Quad port 1G card and the PCIe1 slot has the Dual port 10G card.

Caution The system will not boot, if either of the PCIe slots do not detect the right card.

Step 5 You have two options. You can either replace the Quad port Intel NIC by the SSL card in the PCIe slot 2, or you can replace the Dual port VIC card with the SSL card in the PCIe1 slot.

Step 6 Once the SSL card is installed in the desired PCIe slot, slide the lid of the Cisco Nexus 1110-X back, restore all the configurations and power on the device. To view a video of the installation, see the Hardware Installation Video.

Step 7 Once the SSL card is installed, you can configure it using the Cisco Nexus Cloud Services Platform Software CLI. For detailed information about enabling a 10G Card on the Cisco Nexus Cloud Services Platform, see the Cisco Nexus Cloud Services Platform Software Configuration Guide, Release 5.2(1)SP1(7.1).

Guidelines for Using the SSL Card

The following are the guidelines for using the SSL card on the Cisco Nexus Cloud Services Platform.

1. The SSL card is supported as a Field Replacement Unit (FRU) only on the Cisco Nexus 1110-X.

2. Multiple VSBs on a single Cisco Nexus Cloud Services Platform can offload their security processing to a single security processor.

3. The SSL card is supported only on a new deployment and you cannot upgrade your existing Cisco Nexus 1110-X pair to a crypto enabled Cisco Nexus 1110-X pair. However, you can convert the existing Cisco Nexus 1110-X to a crypto enabled appliance by replacing the Quad Port Card or 10G card with an SSL card and reinstalling the Cisco Nexus Cloud Services Platform software. For information about installing the Cisco Nexus Cloud Services Platform software, see the Cisco Nexus Cloud Services Platform Software Installation and Upgrade Guide, Release 5.2(1)SP1(7.1).

> **Note** All the existing configuration and the VSBs on your Cisco Nexus 1110-X will be lost when you reinstall the Cisco Nexus Cloud Services Platform software.

4. If the security processor card used by a VSB gets disabled, the VSB moves to the shutdown state in the following cases:

   – When the presence of an SSL card is not detected after a system reboot.

> **Note** When a Cisco Nexus Cloud Services Platform is paired with a new HA appliance, and the HA Cisco Nexus Cloud Services Platform does not have an SSL card, the VSB will be moved to the shutdown state on the newly paired HA appliance

Getting Started with the Cisco Nexus Cloud Services Platform

To get started with the Cisco Nexus Cloud Services Platform, you first install the hardware appliance and connect it to the network. This document includes procedures for doing this. This document also includes crucial safety information and prerequisite information for each step of the hardware install.

> **Note** There are some changes to the hardware installation process in this release. Starting this release, the Dual port 10G card and the Quad port 1G card can be replaced by the SSL card.

You can use either of the following processes to install the Cisco Nexus Cloud Services Platform hardware. The difference is whether you include CIMC configuration.

Installation process	Description
Installing a Cisco Nexus Cloud Services Platform Without CIMC	1. Unpacking the Cisco Nexus Cloud Services Platform 2. Installing the Cisco Nexus Cloud Services Platform Into a Rack 3. Connecting the Power Cable 4. Connecting to Upstream Switches 5. Configuring Terminal Server Access for the Cisco Nexus Cloud Services Platform 6. Powering On a Cisco Nexus Cloud Services Platform Appliance 7. Connecting to the Cloud Services Platform CLI, page 2-16
Installing a Cisco Nexus Cloud Services Platform with CIMC	1. Unpacking the Cisco Nexus Cloud Services Platform 2. Installing the Cisco Nexus Cloud Services Platform Into a Rack 3. Connecting the Power Cable 4. Connecting to Upstream Switches 5. Connecting a Monitor and Keyboard 6. Configuring CIMC 7. Configuring Serial Over LAN Access on the Cisco Nexus Cloud Services Platform 8. Connecting to the Cloud Services Platform Host CLI, page 3-7

Once you install the hardware and connect it to the network, you can configure the Cisco Nexus Cloud Services Platform product family management software which includes migrating existing VSMs from a VM to the Cisco Nexus Cloud Services Platform appliance as virtual service blades (VSBs), or creating and configuring new VSBs. Detailed information about configuring the software is found in the *Cisco Nexus Cloud Services Platform Configuration Guide*.

For an overview of the complete installation process, see the "Flow Chart: Installing and Configuring the Cisco Nexus Cloud Services Platform" section on page 1-10.
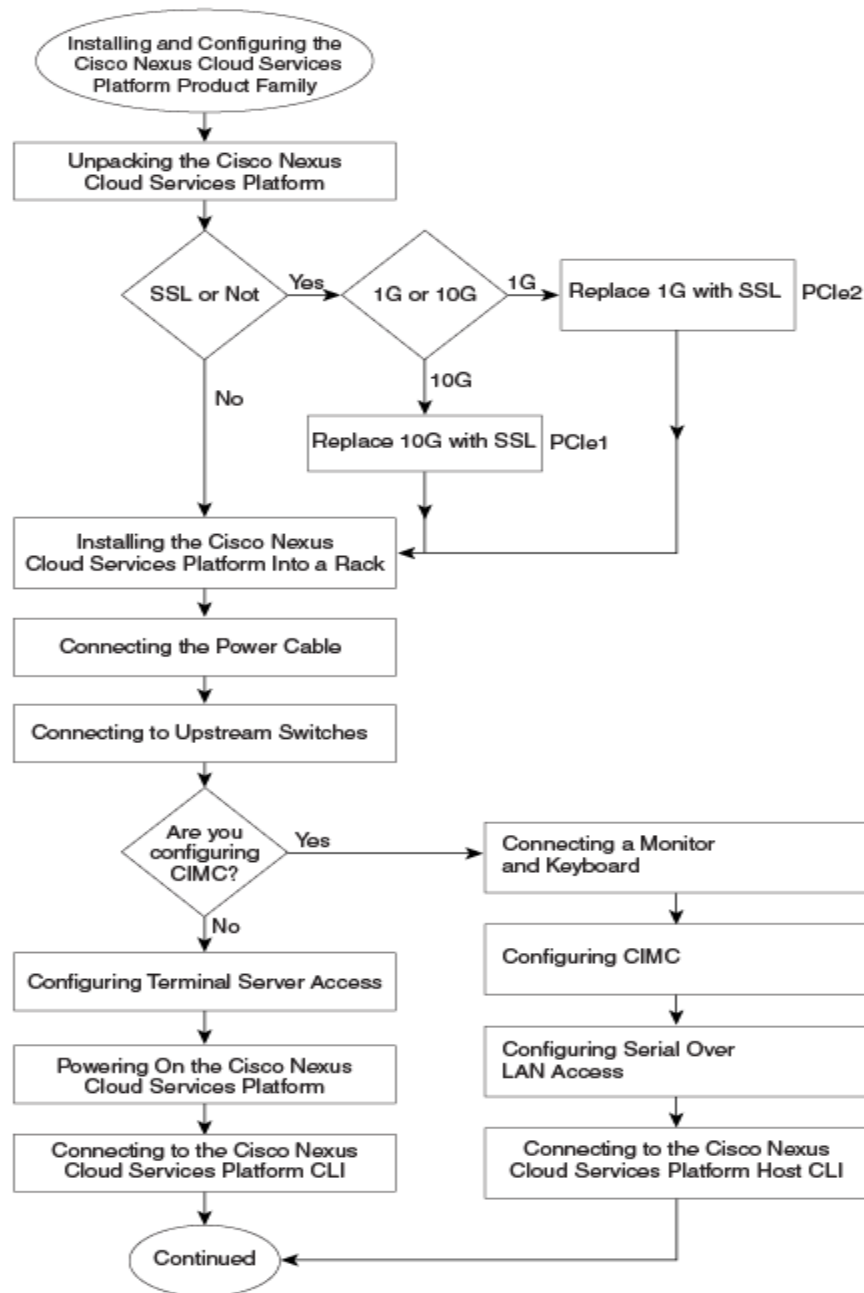
Flow Chart: Installing and Configuring the Cisco Nexus Cloud Services Platform

For detailed steps of an installation workflow, see
http://www.cisco.com/c/dam/en/us/td/docs/switches/datacenter/nexus1000/cloud_services_platform/52
1_SP1_71/workflow/cisco_nexus_1110_csp_installation_workflow.html.

Figure 1-5 and Figure 1-6 show the basic steps for installing and configuring the Cisco Nexus Cloud
Services Platform product family.

Figure 1-5   *Flow Chart: Installing and Configuring the Cisco Nexus Cloud Services Platform*

Figure 1-6   *Flow Chart: Installing and Configuring the Cisco Nexus Cloud Services Platform*
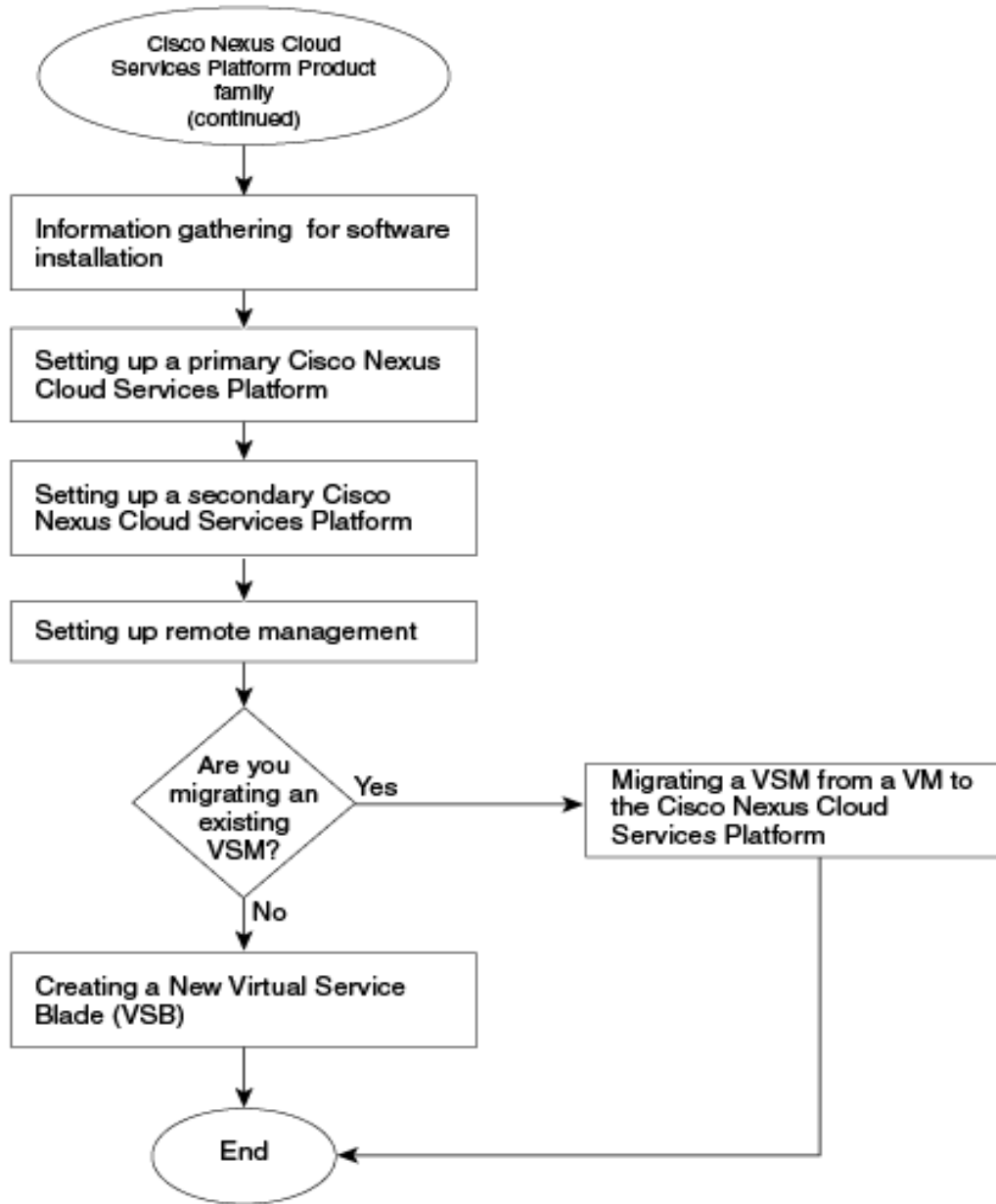
The procedures for installing the Cisco Nexus Cloud Services Platform hardware are included in this document. For details about configuring the Cisco Nexus Cloud Services Platform, refer to *Cisco Nexus Cloud Services Platform Software Installation and Upgrade Guide.*