



CHAPTER 1

Overview

This chapter provides an overview of the Cisco Nexus 7000 Series switch and includes the following sections:

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- [Preparing the Site, page 1-12](#)
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- [Installation and Connection Guidelines, page 1-13](#)
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Cisco Nexus 7000 Series

The Cisco Nexus 7000 Series systems are multiprotocol-capable, high-density, and high-performance switches that incorporate Ethernet/IP, virtualization, Layer 4 to Layer 7 services, and low-latency interconnect (LLI) technologies. The Cisco Nexus 7000 Series models are described in the following topics:

- [Cisco Nexus 7010 System, page 1-1](#)
- [Cisco Nexus 7018 System, page 1-6](#)

Cisco Nexus 7010 System

The Cisco Nexus 7010 chassis has 10 slots that allow for two supervisor modules and up to eight I/O modules. The chassis also holds up to five fabric modules, two system fan trays, two fabric fan trays, up to three power supply units, and a cable management system. The chassis also has a mounting bracket and four positioning handles (two on each side) that you use to install the chassis after you position it on a rack. Optionally, you can include an air filter and mid-frame doors.

[Figure 1-1](#) identifies the standard features on the front and sides of the Cisco Nexus 7010 chassis, [Figure 1-2](#) identifies the optional features on the front side of the chassis, and [Figure 1-3](#) identifies the standard features on the rear of the chassis.

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Figure 1-1 Standard Hardware Features on the Front and Sides of the Cisco Nexus 7010 Chassis



1	Door for the cable management area	2	System status LEDs
3	Cable management area (upper routing portion can be removed if necessary)	4	Rack mount bracket (2)—one on each side
5	Handles used to reposition the chassis (do not lift the chassis with these handles—use a mechanical lift)	6	I/O modules (1 to 8) in slots 1 to 4 and 7 to 10—these modules are a combination of the following: <ul style="list-style-type: none"> • 48-port 10/100/1000 modules • 48-port 1-Gigabit Ethernet modules • 32-port 10-Gigabit Ethernet modules
7	Supervisor modules (2) in slots 5 and 6	8	Air intake (shown without the optional air filter)

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Figure 1-2 *Optional Hardware Features on the Front Side of the Cisco Nexus 7010 Chassis*



1	Mid-frame door assembly	2	Air filter
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Figure 1-3 Standard Hardware Features on the Back of the Cisco Nexus 7010 Chassis



1	Fan exhaust for the supervisor and I/O modules	2	System fan trays (2) and exhaust for the supervisor and I/O modules
3	Fabric fan trays (2) and exhaust for the fabric modules	4	Fabric modules (up to 5)
5	Power supply units (up to 3) and exhaust for the power supply units		



Note

Figure 1-1 and Figure 1-3 show the Cisco Nexus 7000 Series chassis as it appears when it is fully configured before including cables for connections to the Internet and the console. The systems that are not fully configured with the maximum number of supervisor modules, I/O modules, fabric modules, or power supply units have blank panels installed in place of the missing components to maintain the designed airflow for system cooling.

You must install the Cisco Nexus 7010 system chassis in a four-post 19-inch EIA rack that meets the following specifications:

- Mounting rails that conform to the English universal hole spacing as specified in ANSI/EIA-310-D-1992.
- The minimum vertical rack space is 36.75 inches (93.3 cm) or 21 rack units (RU) for a single chassis installation and 73.5 inches (186.6 cm) or 42 rack units for a dual-chassis installation. We recommend that you use a 45 RU rack for a dual-chassis installation.

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If you install one chassis, install it at the lowest possible RU on the rack for stability, as shown in [Figure 1-4](#). If you install two chassis in the same rack, install the bottom chassis first and then install the other chassis on top as shown in [Figure 1-5](#).

**Warning**

Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over. Statement 1048

Figure 1-4 ***One Cisco Nexus 7010 Chassis Installed in a Four-Post Rack***



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Figure 1-5 Two Cisco Nexus 7010 Chassis Installed in a Four-Post Rack



Cisco Nexus 7018 System

The Cisco Nexus 7018 chassis has 18 slots that allow for two supervisor modules and up to 16 I/O modules. The chassis also holds up to five fabric modules, two fan trays, up to four power supply units, and a cable management system. The chassis also has a mounting bracket and four positioning handles (two on each side) that you use to install the chassis after you position it on a rack. Optionally, you can include a front door to protect the I/O cable connections.

[Figure 1-6](#) identifies the standard features on the front and sides of the Cisco Nexus 7018 chassis, [Figure 1-7](#) identifies the components of the cable management system, [Figure 1-8](#) identifies the optional feature on the front side of the chassis, and [Figure 1-9](#) identifies the standard features on the rear of the chassis.

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Figure 1-6 **Standard Hardware Features on the Front and Sides of the Cisco Nexus 7018 Chassis**



1	System status LEDs	2	Rack-mount brackets (2)
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3	I/O modules (1 to 16) in slots 1 to 8 and 11 to 18—these modules are a combination of the following: <ul style="list-style-type: none"> • 48-port 10/100/1000 modules • 48-port 1-Gigabit Ethernet modules • 32-port 10-Gigabit Ethernet modules 	4	Supervisor modules (2) in slots 9 and 10
5	Air intake for power supply units	6	Air intake for the supervisor modules and I/O modules
7	Air intake for fabric modules	8	Handles used to reposition the chassis (do not lift the chassis with these handles—use a mechanical lift)

Figure 1-7 Cable Management System for the Cisco Nexus 7018 Chassis



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1	System status LEDs (these LEDs show the system status displayed by the chassis LEDs)	2	Top hood
3	Upper cable management assemblies	4	Lower cable management assemblies

Figure 1-8 **Optional Front Door for the Cisco Nexus 7018 Chassis**



1	Front doors	2	Air intake frame for power supply units
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Figure 1-9 Standard Hardware Features on the Back of the Cisco Nexus 7018 Chassis



1	Fabric modules (up to 5)	2	Power supply units (up to 4)
3	Fan trays for cooling the supervisor, I/O, and fabric modules	4	Fan exhaust for fabric modules
5	Fan exhaust for supervisor and I/O modules	6	Handles used to reposition the chassis (do not lift the chassis with these handles—use a mechanical lift)

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**Note**

Figure 1-6 and Figure 1-9 show the Cisco Nexus 7018 chassis as it appears when it is fully configured before including cables for connections to the Internet and the console. The systems that are not fully configured with the maximum number of supervisor modules, I/O modules, fabric modules, or power supply units have blank panels installed in place of the missing components to maintain the designed airflow for system cooling.

You must install the Cisco Nexus 7018 chassis in a four-post 19-inch EIA rack that meets the following specifications:

- Mounting rails that conform to the English universal hole spacing as specified in ANSI/EIA-310-D-1992.
- The minimum vertical rack space is 43.75 inches (111.1 cm) or 25 rack units (RU) for a single chassis installation and 87.5 inches (222.2 cm).

Install the Cisco Nexus 7018 chassis at the lowest possible RU on the rack for stability, as shown in Figure 1-10. If there is another device in the rack, install the heaviest one at the bottom.

**Warning**

Stability hazard. The rack stabilizing mechanism must be in place, or the rack must be bolted to the floor before you slide the unit out for servicing. Failure to stabilize the rack can cause the rack to tip over. Statement 1048

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Figure 1-10 Cisco Nexus 7018 Chassis Installed in a Four-Post Rack



Preparing the Site



Warning

Installation of the equipment must comply with local and national electrical codes. Statement 1074

Before you can install a Cisco Nexus 7000 Series system, you must prepare the site for the installation. You must make sure that the altitude, temperature, humidity, air quality, airflow, electromagnetic and radio frequency interference, floor structure, power, and earth grounding of the installation site all meet the requirements of the Cisco Nexus 7000 Series system that you are installing. In addition, you must

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set up a rack or cabinet that can hold one or two chassis. To see the general requirements for this system, see [Appendix A, “Technical Specifications.”](#) To see detailed information about preparing the data center for the installation, see the *Cisco Nexus 7000 Series Site Preparation Guide*.

Safety Guidelines



Warning

Only trained and qualified personnel should be allowed to install, replace, or service this equipment.
Statement 1030

The prerequisites listed for any procedure are required conditions that you must verify before you start that procedure. If the prerequisites have not been met, you must satisfy those requirements before carrying out the procedure.

Safety warnings appear in this publication wherever procedures present conditions that could endanger you or others installing this system. Adhering to these warnings and following their recommended actions are required actions for these procedures. For regulatory compliance and safety information on these warnings, see the *Cisco Nexus 7000 Series Regulatory Compliance and Safety Information* document.

Installation and Connection Guidelines

After you fully prepare the site as specified in the *Cisco Nexus 7000 Series Site Preparation Guide*, install a four-post 19-inch EIA rack, and attach two bottom-support rails, you can begin installing the Cisco Nexus 7000 Series system. To install the system, you must load the chassis onto a mechanical lift, use the mechanical lift to position and elevate the chassis at its bottom-support rails on a rack or cabinet, push the chassis onto the rack or cabinet, and then secure the chassis to the rack or cabinet. With the chassis in place, you can install the power supply units and accessories and then connect the switch to the console and network. For detailed instructions on installing a Cisco Nexus 7010 switch, see the following chapters:

- [Chapter 2, “Installing a Cisco Nexus 7010 Chassis”](#)
- [Chapter 3, “Installing a Cisco Nexus 7018 Chassis”](#)
- [Chapter 4, “Installing Power Supply Units”](#)

For detailed instructions on connecting the switch to the console and network, see [Chapter 5, “Connecting the Cisco Nexus 7000 Switch to the Network.”](#)



Caution

Do not use the handles on the side of the chassis to lift the chassis. Use these handles only for adjusting the position of the chassis while the chassis rests on a platform or bottom-support rails.

Managing the System Hardware

After the Cisco Nexus 7000 Series system is installed and operating, you can use the Cisco NX-OS operating system to manage the system hardware. These management functions include displaying system and module information, setting the power supply modes, and managing module functions. For more information about these functions, see [Chapter 6, “Managing the Switch Hardware.”](#)

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Replacing Components

While the Cisco Nexus 7000 Series system is operational, you can replace any I/O module or any one of the following components if they are redundant:

- Power supply
- Supervisor module
- Fabric module
- System fan tray
- Fabric fan tray

For detailed information on replacing these components, see [Chapter 8, “Replacement Procedures.”](#)