



Overview

The Cisco Nexus 5600 platform is the third generation of the Data Center Server-Access Nexus 5000 series of switches. Nexus 5600 series switches have a flexible, agile and energy efficient design that supports a broad range of traditional data center and large-scale virtualized cloud deployments.

This chapter provides an overview of the following Cisco Nexus 5600 Series switches:

- [Cisco Nexus 5672UP-16G](#)
- [Cisco Nexus 5648Q](#)
- [Cisco Nexus 5624Q](#)
- [Cisco Nexus 5696Q](#)
- [Cisco Nexus 56128P](#)
- [Cisco Nexus 5672UP](#)

This includes information on the expansion modules, power supplies, and fan modules that you can include with the switch.

Cisco Nexus 5672UP-16G

This section describes the Cisco Nexus 5672UP-16G (N5K-C5672UP-16G) switch and its components. This section includes the following topics:

- [Features](#)
- [Power Supply](#)
- [Fan Modules](#)
- [Transceivers](#)

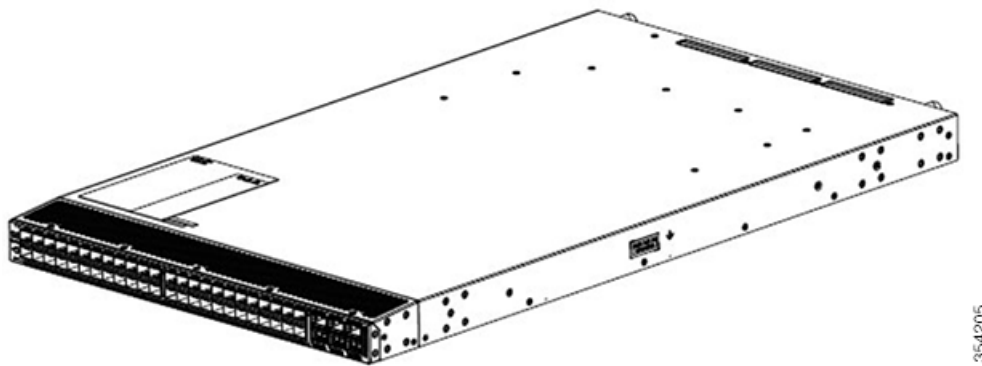
Features

Cisco Nexus 5672UP-16G switch is a compact 1RU (1 Rack Unit), high-performance, low-latency 1/10/40-Gigabit Ethernet, Fibre Channel, and Fibre Channel over Ethernet (FCoE) switch. It runs the industry-leading Cisco NX-OS Software operating system, providing features and capabilities that are widely deployed.

The Cisco Nexus 5672UP-16G switch has the following features:

- 48 fixed ports of which up to 24 ports can be unified ports (UP) and the rest are 1/10 Gbps Ethernet ports
- The 24 unified ports provide 16/8/4 Gbps Fibre Channel as well as 10 Gigabit Ethernet and FCoE connectivity options.
- 6 ports of 40 Gbps using QSFP+ transceivers for Ethernet.
- Two bays on the switch for hot swap-capable power supplies, which provide port side intake or exhaust for cooling.
- Three bays on the switch for hot swap-capable fan modules.
- A management and console interface on the front of the switch.

Figure 1-1 Cisco Nexus 5672UP-16G Switch



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Power Supply

The Cisco Nexus 5672UP-16G switch uses a front-end power supply. The chassis has slots for two redundant power supplies. Power Supply options need to be configured with the base chassis. It needs a minimum of one power supply to operate. Online Insert and Removal (OIR) is supported on the power supplies and the power supplies are hot swappable. The Cisco Nexus 5672UP-16G supports port-side exhaust and port-side intake. [Table 1-15](#) lists the power supplies that you can order with a Cisco Nexus 5672UP-16G switch.

Table 1-1 Power Supplies for the Cisco Nexus 5672UP-16G switch

Part Number	Power Supply
NXA-PAC-1100W	Cisco Nexus 5500/6000 Platinum PSU port side exhaust airflow module, A/C, 100-240V, 1100W
NXA-PAC-1100W(=)	Cisco Nexus 5500/6000 Platinum PSU port side exhaust airflow module spare, A/C, 100-240V, 1100W
NXA-PAC-1100W-B	Cisco Nexus 5500/6000 Platinum PSU port side intake airflow module, A/C, 100-240V, 1100W
NXA-PAC-1100W-B(=)	Cisco Nexus 5500/6000 Platinum PSU port side intake airflow module spare, A/C, 100-240V, 1100W

Table 1-1 Power Supplies for the Cisco Nexus 5672UP-16Gswitch

N55-PDC-1100W	Cisco Nexus 5500/6000 PSU module, DC 1100W
N55-PDC-1100W=	Cisco Nexus 5500/6000 PSU module, DC 1100W, Spare
NXA-PHV-1100W	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Exhaust airflow, 1100W
NXA-PHV-1100W(=)	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Exhaust airflow, 1100W, spare
NXA-PHV-1100W-B	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Intake airflow, 1100W
NXA-PHV-1100W-B(=)	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Intake airflow, 1100W, spare

**Note**

The Cisco Nexus 5672UP-16G AC power supplies support both 110 and 220-volt (V) inputs.

**Caution**

Never leave a power supply slot empty. If you remove a power supply, replace it with another one. If you do not have a replacement power supply, leave the non functioning one in place until you can replace it.

Fan Modules

The Cisco Nexus 5672UP-16G has three fan modules. Fan modules are hot-swappable. Fan modules operate in a 2+1 redundancy mode. Fan options need to be configured with the base chassis. The Cisco Nexus 5672UP-16G switch supports port-side exhaust and port-side intake. Online Insert and Removal (OIR) is supported on the fan tray. [Table 1-16](#) lists the fans that you can order with a Cisco Nexus 5672UP-16G switch.

Table 1-2 Fan Modules for the Cisco Nexus 5672UP-16G switch

Part Number	Details
N6K-C6001-FAN-B	Nexus 5672UP-16G Fan for Port Side Intake (Back to Front) airflow
N6K-C6001-FAN-B=	Nexus 5672UP-16G Fan for Port Side Intake (Back to Front) airflow, spare
N6K-C6001-FAN-F	Nexus 5672UP-16G Fan for Port Side exhaust (Front to Back) airflow
N6K-C6001-FAN-F =	Nexus 5672UP-16G Fan for Port Side exhaust (Front to Back) airflow, spare

**Caution**

You must order all fan modules and power supplies in the same chassis so that they have the same direction of airflow with coolant air entering the chassis from the cold aisle and exhausting to the hot aisle. To change the airflow direction of the chassis, you must power down the switch before swapping out all fan and power supply modules.

Transceivers

The Cisco Nexus 5672UP-16G supports a wide variety of 1, 10, and 40 Gigabit Ethernet connectivity options. The Cisco Nexus 5672UP-16G supports 16/8/4 Gigabit Fibre Channel connectivity options. For the most current list of supported transceivers, refer to the latest [Cisco Nexus 5600 Series Release Notes](#) at every release.

Cisco Nexus 5648Q

This section describes the Cisco Nexus 5648Q (N5K-C5648Q) and its components. This section includes the following topics:

- [Features](#)
- [Chassis](#)
- [Expansion Modules](#)
- [Power Supply](#)
- [Fan Modules](#)
- [Transceivers](#)

Features

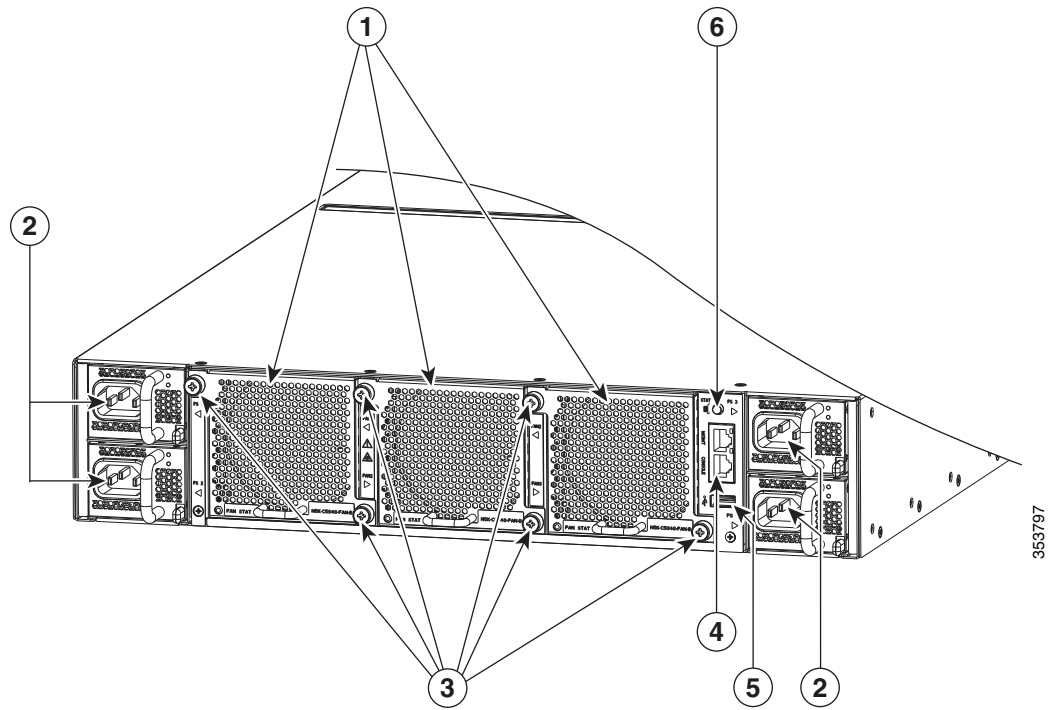
The Cisco Nexus 5648Q is a 2RU top-of-rack (TOR) switch that supports 40Gbps of bandwidth for each of the 24 fixed QSFP+ ports, and provides two GEM slots capable of providing an additional 12 QSFP+ ports each for a total of 48 40Gbps ports in the system. The Cisco Nexus 5648Q runs the industry-leading Cisco NX-OS Software operating system, providing features and capabilities that are widely deployed.

The Cisco Nexus 5648Q switch has the following features:

- 40Gbps bandwidth for each of the 24 fixed QSFP+ ports
- Two GEM slots capable of providing an additional 12 QSFP+ ports each, for a total of 24 additional 40Gbps ports in the system
- Four N+N redundant, hot-swappable power supplies, which provide port side intake or exhaust for cooling
- Three N+1 redundant, hot-swappable fan modules, which provide port side intake or exhaust for cooling
- A management console and USB interface on the fan side of the switch

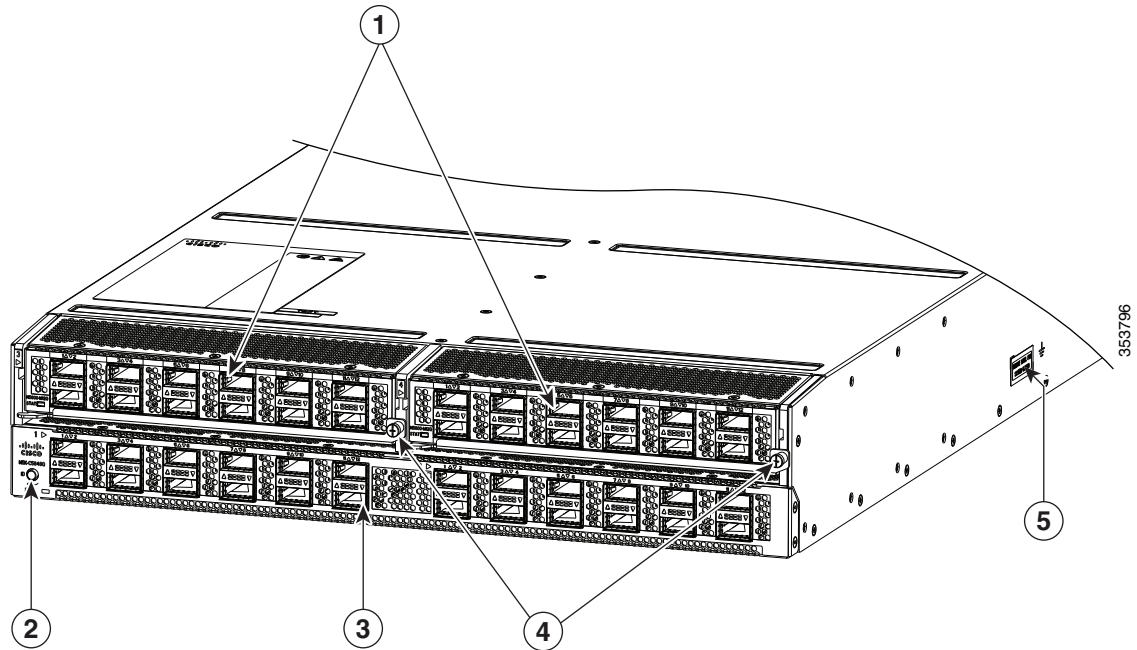
[Figure 1-2](#) shows the fan side view of the Cisco Nexus 5648Q chassis and [Figure 1-3](#) shows the port side view.

Figure 1-2 Fan Side View of the Cisco Nexus 5648Q Switch



1	Fan modules	4	Console and management ports
2	Power supplies	5	USB port
3	Fan module screws	6	Status (left) and Chassis locator (right) LEDs

Figure 1-3 Port Side View of the Cisco Nexus 5648Q Switch



1	Expansion modules	4	Expansion module screws
2	Chassis locator (top) and Status (bottom) LEDs	5	Chassis ground
3	24 fixed 40Gbps QSFP+ ports		

Chassis

The Cisco Nexus 5648Q switch chassis is 2RU, 3.5 inches (8.9 cm) tall, 17.5 inches (44.4 cm) wide and 30 inches (76.2 cm) deep. It is designed to be mounted in a standard 19-inch wide rack. This chassis also supports N+N power supply redundancy and N+1 fan module redundancy.

Expansion Modules

Expansion modules allow the Cisco Nexus 5600 switches to be configured as cost-effective switches and as I/O consolidation platforms. The following table lists the expansion modules supported by the Cisco Nexus 5648Q switch.

Table 1-3 Expansion Modules for Cisco Nexus 5648Q

Part Number	Details
N5600-M12Q	Nexus 5648Q Expansion Module, 12 x 40G QSFP+ fixed ports (see Figure 1-4)
N5600-M12Q=	Nexus 5648Q Expansion Module, 12 x 40G QSFP+ fixed ports, spare

N5600-M12Q

The Cisco Nexus 5648Q has two bays for a Generic Expansion Module (GEM). The GEM for the Cisco Nexus 5648Q provides 12 40 Gigabit QSFP+ Ethernet/FCoE ports, as shown in [Figure 1-4](#). The expansion module supports native 40 Gigabit Ethernet on the QSFP+ ports and provides a total of 48 40Gbps ports in the system, if two are installed. The expansion module is supported on the Cisco Nexus 5624Q and 5648Q chassis only.

Figure 1-4 12 Port 40Gbps Generic Expansion Module



Power Supply

The Cisco Nexus 5648Q switch uses a front-end power supply. The chassis has slots for four N+N redundant power supplies. Power Supply options need to be configured with the base chassis. It needs a minimum of two power supplies to operate, which provides no redundancy.

To provide N+1 power supply redundancy, one extra power supply beyond the minimum is required. If any GEMs are installed, you can provide N+N redundancy by installing all four power supplies.

Online Insert and Removal (OIR) is supported on the power supplies and the power supplies are hot swappable. The Cisco Nexus 5648Q supports port-side exhaust and port-side intake. [Table 1-4](#) lists the power supplies that you can order with a Cisco Nexus 5648Q switch.

Table 1-4 Power Supplies for the Cisco Nexus 5648Q switch

Part Number	Power Supply
NXA-PAC-1100W	Cisco Nexus 5500/6000 Platinum PSU port side exhaust airflow module, A/C, 100-240V, 1100W
NXA-PAC-1100W(=)	Cisco Nexus 5500/6000 Platinum PSU port side exhaust airflow module spare, A/C, 100-240V, 1100W
NXA-PAC-1100W-B	Cisco Nexus 5500/6000 Platinum PSU port side intake airflow module, A/C, 100-240V, 1100W
NXA-PAC-1100W-B(=)	Cisco Nexus 5500/6000 Platinum PSU port side intake airflow module spare, A/C, 100-240V, 1100W
N55-PDC-1100W	Cisco Nexus 5500/6000 PSU port side exhaust airflow module, DC 1100W

Table 1-4 Power Supplies for the Cisco Nexus 5648Q switch

N55-PDC-1100W=	Cisco Nexus 5500/6000 PSU port side exhaust airflow module, DC 1100W, Spare
NXA-PHV-1100W	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Exhaust airflow, 1100W
NXA-PHV-1100W(=)	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Exhaust airflow, 1100W, spare
NXA-PHV-1100W-B	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Intake airflow, 1100W
NXA-PHV-1100W-B(=)	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Intake airflow, 1100W, spare

**Note**

The Cisco Nexus 5648Q AC power supplies support both 110 and 220-volt (V) inputs.

**Caution**

Never leave a power supply slot empty. If you remove a power supply, replace it with another one. If you do not have a replacement power supply, leave the non functioning one in place until you can replace it.

Fan Modules

The Cisco Nexus 5648Q has three fan modules. Fan modules are hot-swappable. Fan modules operate in an N+1 redundancy mode. Fan options need to be configured with the base chassis. The Cisco Nexus 5648Q switch supports port-side exhaust and port-side intake. Online Insert and Removal (OIR) is supported on the fan tray. [Table 1-5](#) lists the fans that you can order with a Cisco Nexus 5648Q switch.

Table 1-5 Fan Modules for the Cisco Nexus 5648Q switch

Part Number	Details
N5K-C5648-FAN-B	Nexus 5648Q Fan for Port Side Intake (Back to Front) airflow
N5K-C5648-FAN-B (=)	Nexus 5648Q Fan for Port Side Intake (Back to Front) airflow, spare
N5K-C5648-FAN	Nexus 5648Q Fan for Port Side exhaust (Front to Back) airflow
N5K-C5648-FAN (=)	Nexus 5648Q Fan for Port Side exhaust (Front to Back) airflow, spare

**Caution**

You must order all fan modules and power supplies in the same chassis so that they have the same direction of airflow with coolant air entering the chassis from the cold aisle and exhausting to the hot aisle. To change the airflow direction of the chassis, you must power down the switch before swapping out all fan and power supply modules.

Transceivers

The Cisco Nexus 5648Q supports a wide variety of 1, 10, and 40 Gigabit Ethernet connectivity options. For the most current list of supported transceivers, refer to the latest [Cisco Nexus 5600 Series Release Notes](#) at every release.

Cisco Nexus 5624Q

This section describes the Cisco Nexus 5624Q (N5K-C5624Q) and its components. This section includes the following topics:

- [Features](#)
- [Chassis](#)
- [Expansion Modules](#)
- [Power Supply](#)
- [Fan Modules](#)
- [Transceivers](#)

Features

The Cisco Nexus 5624Q is a 1RU top-of-rack (TOR) switch that supports 40Gbps of bandwidth for each of the 12 fixed QSFP+ ports, and provides a GEM slot capable of providing an additional 12 QSFP+ ports for a total of 24 40Gbps ports in a system. The Cisco Nexus 5624Q runs the industry-leading Cisco NX-OS Software operating system, providing features and capabilities that are widely deployed.

The Cisco Nexus 5624Q switch has the following features:

- 40Gbps bandwidth for each of the 12 fixed QSFP+ ports
- GEM slot capable of providing an additional 12 QSFP+ ports for a total of 24 40Gbps ports in a system
- Two 1+1 redundant, hot-swappable power supplies, which provide port side intake or exhaust for cooling
- Three 2+1 redundant, hot-swappable fan modules, which provide port side intake or exhaust for cooling
- A management console and USB interface on the fan side of the switch

Figure 1-5 Cisco Nexus 5624Q Switch



Chassis

The Cisco Nexus 5624Q switch chassis is 1 RU, 1.75 inches (4.4 cm) tall, 17.5 inches (44.4 cm) wide and 30 inches (76.2 cm) deep. It is designed to be mounted in a standard 19-inch wide rack. This chassis also supports 1+1 power supply redundancy and N+1 fan module redundancy.

Expansion Modules

Expansion modules allow the Cisco Nexus 5600 switches to be configured as cost-effective switches and as I/O consolidation platforms. The following table lists the expansion modules supported by the Cisco Nexus 5624Q switch.

Table 1-6 Expansion Modules for Cisco Nexus 5624Q

Part Number	Details
N5600-M12Q	Nexus 5624Q Expansion Module, 12 x 40G QSFP+ fixed ports
N5600-M12Q=	Nexus 5624Q Expansion Module, 12 x 40G QSFP+ fixed ports, spare

N5600-M12Q

The Cisco Nexus 5624Q has one bay for a Generic Expansion Module (GEM). The GEM for the Cisco Nexus 5624Q provides 12 40 Gigabit QSFP+ Ethernet/FCoE ports, as shown in [Figure 1-4](#). The expansion module supports native 40 Gigabit Ethernet on the QSFP+ ports and provides a total of 24 40Gbps ports in a system. The expansion module is supported on the Cisco Nexus 5624Q and 5648Q chassis only.

Power Supply

The Cisco Nexus 5624Q switch uses a front-end power supply. The chassis has slots for two redundant power supplies. Power Supply options need to be configured with the base chassis. It needs a minimum of one power supply to operate. Online Insert and Removal (OIR) is supported on the power supplies and the power supplies are hot swappable. The Cisco Nexus 5624Q supports port-side exhaust and port-side intake. [Table 1-7](#) lists the power supplies that you can order with a Cisco Nexus 5624Q switch.

Table 1-7 Power Supplies for the Cisco Nexus 5624Q switch

Part Number	Power Supply
NXA-PAC-1100W	Cisco Nexus 5500/6000 Platinum PSU port side exhaust airflow module, A/C, 100-240V, 1100W
NXA-PAC-1100W(=)	Cisco Nexus 5500/6000 Platinum PSU port side exhaust airflow module spare, A/C, 100-240V, 1100W
NXA-PAC-1100W-B	Cisco Nexus 5500/6000 Platinum PSU port side intake airflow module, A/C, 100-240V, 1100W
NXA-PAC-1100W-B(=)	Cisco Nexus 5500/6000 Platinum PSU port side intake airflow module spare, A/C, 100-240V, 1100W

Table 1-7 Power Supplies for the Cisco Nexus 5624Q switch

N55-PDC-1100W	Cisco Nexus 5500/6000 PSU module, DC 1100W
N55-PDC-1100W=	Cisco Nexus 5500/6000 PSU module, DC 1100W, Spare
NXA-PHV-1100W	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Exhaust airflow, 1100W
NXA-PHV-1100W(=)	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Exhaust airflow, 1100W, spare
NXA-PHV-1100W-B	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Intake airflow, 1100W
NXA-PHV-1100W-B(=)	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Intake airflow, 1100W, spare

**Note**

The Cisco Nexus 5624Q AC power supplies support both 110 and 220-volt (V) inputs.

**Caution**

Never leave a power supply slot empty. If you remove a power supply, replace it with another one. If you do not have a replacement power supply, leave the non functioning one in place until you can replace it.

Fan Modules

The Cisco Nexus 5624Q has three fan modules. Fan modules are hot-swappable. Fan modules operate in a 2+1 redundancy mode. Fan options need to be configured with the base chassis. The Cisco Nexus 5624Q switch supports port-side exhaust and port-side intake. Online Insert and Removal (OIR) is supported on the fan tray. [Table 1-8](#) lists the fans that you can order with a Cisco Nexus 5624Q switch.

Table 1-8 Fan Modules for the Cisco Nexus 5624Q switch

Part Number	Details
N6K-C6001-FAN-B	Nexus 5624Q Fan for Port Side Intake (Back to Front) airflow
N6K-C6001-FAN-B=	Nexus 5624Q Fan for Port Side Intake (Back to Front) airflow, spare
N6K-C6001-FAN-F	Nexus 5624Q Fan for Port Side exhaust (Front to Back) airflow
N6K-C6001-FAN-F =	Nexus 5624Q Fan for Port Side exhaust (Front to Back) airflow, spare

**Caution**

You must order all fan modules and power supplies in the same chassis so that they have the same direction of airflow with coolant air entering the chassis from the cold aisle and exhausting to the hot aisle. To change the airflow direction of the chassis, you must power down the switch before swapping out all fan and power supply modules.

Transceivers

The Cisco Nexus 5624Q supports a wide variety of 1, 10, and 40 Gigabit Ethernet connectivity options. For the most current list of supported transceivers, refer to the latest [Cisco Nexus 5600 Series Release Notes](#) at every release.

Cisco Nexus 5696Q

This section describes the Cisco Nexus 5696Q (N5K-C5696Q) and its components. This section includes the following topics:

- [Features](#)
- [Chassis](#)
- [Expansion Modules](#)
- [Ports](#)
- [Power Supply](#)
- [Fan Module](#)
- [Transceivers](#)

Features

The Cisco Nexus 5696Q switch is a four-rack-unit (4RU) 10 and 40 Gigabit Ethernet switch. It offers-

- Eight line-card expansion module (LEM) slots to support up to 96 ports of 40-Gbps throughput.
 - Each LEM supports 12 ports of 40 Gigabit Ethernet in a quad small form-factor pluggable (QSFP) footprint.
 - Each 40 Gigabit Ethernet port can also be split into four line-rate 10 Gigabit Ethernet ports using QSFP breakout cables.

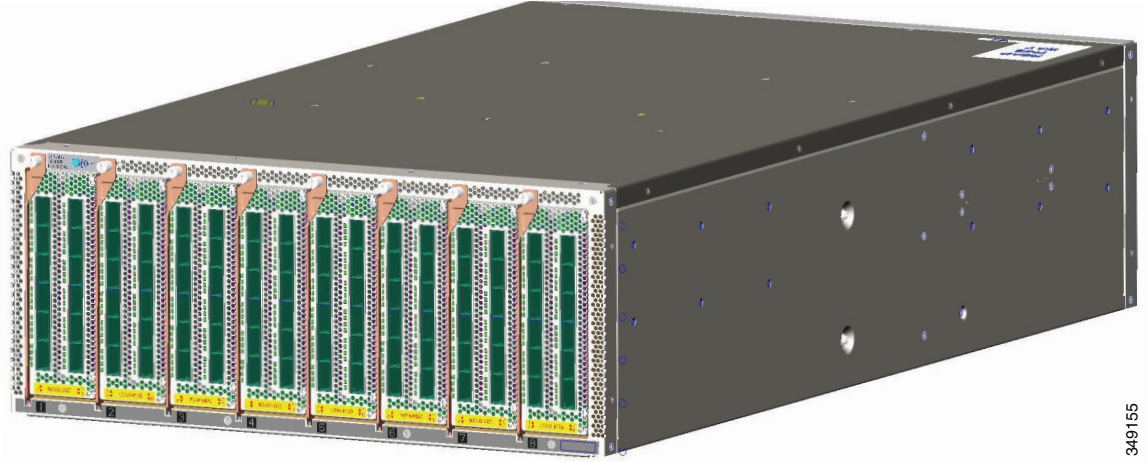
This flexibility makes the Cisco Nexus 5696Q the only fully extensible fixed 10 and 40 Gigabit Ethernet platform in the industry.

- A unified expansion module for 1/10 Gigabit Ethernet and FC/FCoE support.
- The unified port module provides
 - Up to twenty 1/10 Gigabit Ethernet and FCoE ports using the SFP+ interface
 - Or
 - Up to twenty ports of 8/4-Gbps native Fibre Channel connectivity using the SFP+ and SFP interfaces;

The use of 1/10 Gigabit Ethernet or 8/4-Gbps Fibre Channel on a port is mutually exclusive but can be selected for any of the twenty physical ports per module.

- A 4-port 100 Gigabit Ethernet line card expansion module for 100 Gigabit Ethernet support.

Figure 1-6 Cisco Nexus 5696Q Switch



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Figure 1-7 Fan side view of Cisco Nexus 5696Q Switch



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Chassis

The Cisco Nexus 5696Q switch chassis is 4 RU, 6.97 inches (17.7 cm) tall, 17.3 inches (43.9 cm) wide and 30 inches (76.2 cm) deep. It is designed to be mounted in a standard 19-inch wide rack. The fan side of the switch, has a console port, management port and USB port, six power supplies, and four fan modules. This chassis also supports N+N power supply redundancy and N+1 fan module redundancy.

Expansion Modules

Expansion modules allow the Cisco Nexus 5696Q switch to be configured as cost-effective 10/40-Gigabit Ethernet switches and as I/O consolidation platforms with native Fibre Channel connectivity. The supported expansion modules are:

Table 1-9 Supported Expansion Modules for Cisco Nexus 5696Q

Part Number	Details
N5696-M4C	Cisco Nexus 5696Q Chassis Module 4C 100GE Ethernet
N5696-M4C=	Cisco Nexus 5696Q Chassis Module 4C 100GE Ethernet, Spare
N5696-M12Q	Cisco Nexus 5696Q Chassis Module 12Q 40GE Ethernet/FCoE
N5696-M12Q=	Cisco Nexus 5696Q Chassis Module 12Q 40GE Ethernet/FCoE, Spare
N5696-M20UP	Cisco Nexus 5696Q Chassis Module 20P 10GE Eth/FCoE and 8/4G FC
N5696-M20UP=	Cisco Nexus 5696Q Chassis Module 20P 10GE Eth/FCoE and 8/4G FC, spare
N6004X-M20UP	Cisco Nexus 6004X Chassis Module 20P 10GE Eth/FCoE and 8/4/2G FC
N6004X-M20UP=	Cisco Nexus 6004X Chassis Module 20P 10GE Eth/FCoE and 8/4/2G FC, Spare

**Caution**

The software does not support hot swap of the expansion modules during their operation. You must power off the module before removing it, though the switch can stay powered on.

**Note**

For the most current list of supported transceivers, refer to the Cisco Nexus 5600 Release Notes document at every release.

N5696-M12Q

The Cisco Nexus 5696-M12Q Generic Expansion Module (GEM) provides 12 40 Gigabit QSFP+ Ethernet/FCoE ports, as shown in [Figure 1-8](#). The expansion module supports native 40 Gigabit Ethernet on the QSFP+ ports. You can configure a total of eight 5696-M12Q modules in a Cisco Nexus 5696Q switch to provide a total of 96 40 Gigabit Ethernet connections.

Figure 1-8 12 Port 40 Gbps Line Card Expansion Module



N5696-M20UP

The Cisco Nexus 5696Q offers a Unified Port, Linecard Expansion Module (UP LEM) for Ethernet/FCoE and native Fibre Channel support. The UP LEM (N5696-M20UP) provides up to twenty 1/10 Gigabit Ethernet and FCoE ports using the SFP+ interface or up to twenty ports of native Fibre Channel connectivity using 8 and 4G SFP+ and SFP interfaces. The use of 1/10 Gigabit Ethernet or 8/4-Gbps Fibre Channel on a port is mutually exclusive but can be selected for any of the twenty physical ports per module.

N5696-M4C

The Cisco Nexus 5696-M4C LEM is a 4-port 100G LEM that provides 100 Gigabit Ethernet ports for the Cisco Nexus 5696Q switch. Each 5696-M4C offers 4 CXP optical module connections, which provide a total bandwidth of 400Gbps. The port interface supports CXP optical PMD modules such as CXP-100G-SR10 and CXP-100G-SR12. You can configure a total of 8 100G LEM modules in a Cisco Nexus 5696Q switch to provide a total of 32 CXP 100 Gigabit Ethernet connections.

Figure 1-9 4 Port 100Gbps Line Card Expansion Module



**Note**

The Cisco Nexus 5696-M4C LEM requires a minimum of 4 operating power supplies when installed.

**Note**

The Cisco Nexus 5696-M4C LEM requires NX-OS Release 7.1(0)N1(1b) or later, and BIOS version 2.8.0 or later (included in the NX-OS release).

Ports

All the individual ports on the Cisco Nexus 5696Q switch are numbered and groups of ports are numbered based on their function. The ports are numbered from top to bottom and left to right. For the M20UP LEM, the port numbering is from left to right and then top to bottom. For the M4C LEM, port 1 and 2 are on the left and port 3 and 4 are on the right.

Power Supply

The Cisco Nexus 5696Q switch uses a front-end power supply. The chassis ships with all six power supply slots filled. The power supplies operate in N+N redundancy mode. The chassis needs a minimum of three power supplies to operate, which provides no redundancy.

The following table lists the power supplies that you can order with the Cisco Nexus 5696Q switch.

Table 1-10 Supported Power Supplies for Cisco Nexus 5696Q

Part Number	Power Supply
NXA-PAC-1100W	Cisco Nexus 5500/6000 Platinum PSU port side exhaust airflow module, A/C, 100-240V, 1100W
NXA-PAC-1100W(=)	Cisco Nexus 5500/6000 Platinum PSU port side exhaust airflow module spare, A/C, 100-240V, 1100W
NXA-PAC-1100W-B	Cisco Nexus 5500/6000 Platinum PSU port side intake airflow module, A/C, 100-240V, 1100W
NXA-PAC-1100W-B(=)	Cisco Nexus 5500/6000 Platinum PSU port side intake airflow module spare, A/C, 100-240V, 1100W
N55-PDC-1100W	Cisco Nexus 5500/6000 PSU module, DC 1100W
N55-PDC-1100W=	Cisco Nexus 5500/6000 PSU module, DC 1100W, Spare
NXA-PHV-1100W	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Exhaust airflow, 1100W
NXA-PHV-1100W(=)	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Exhaust airflow, 1100W, spare
NXA-PHV-1100W-B	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Intake airflow, 1100W
NXA-PHV-1100W-B(=)	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Intake airflow, 1100W, spare

**Note**

Never leave a power supply slot empty. If you remove a power supply, replace it with another one. If you do not have a replacement power supply, leave the non-functioning one in place until you can replace it.

Fan Module

The Cisco Nexus 5696Q switch has four fan modules that are hot-swappable. Although the switch can function when a fan stops functioning within a fan module, if a whole fan module stops functioning, you must replace the fan module. The fan modules operate in N+1 redundancy mode. The Cisco Nexus 5696Q switch supports both the port side intake and port side exhaust airflow.

The bicolor status LED indicates fan tray health. Green indicates normal operation, while amber indicates a fan failure.

Table 1-11 Fan Modules for Cisco Nexus 5696Q

Part Number	Details
N5K-C5696-FAN	Cisco Nexus N5696 Fan Module, Port Side exhaust
N5K-C5696-FAN =	Cisco Nexus N5696 Fan Module, Port Side exhaust, spare
N5K-C5696-FAN -B	Cisco Nexus N5696 Fan Module, Port Side intake
N5K-C5696-FAN -B=	Cisco Nexus N5696 Fan Module, Port Side intake, spare

**Caution**

You must order all fan modules and power supplies in the same chassis so that they have the same direction of airflow with coolant air entering the chassis from the cold aisle and exhausting to the hot aisle. To change the airflow direction of the chassis, you must power down the switch before swapping out all fan and power supply modules.

Transceivers

The Cisco Nexus 5696Q supports a wide variety of 1, 10, and 40 Gigabit Ethernet connectivity options. The Cisco Nexus 5696Q supports 4G and 8G FC connectivity options. For the most current list of supported transceivers, refer to the latest [Cisco Nexus 5600 Series Release Notes](#) at every release

Cisco Nexus 56128P

This section describes the Cisco Nexus 56128P (N5K-C56128P) and its components. This section includes the following topics:

- [Features](#)
- [Expansion Modules](#)
- [Power Supply](#)
- [Fan Modules](#)
- [Transceivers](#)

Features

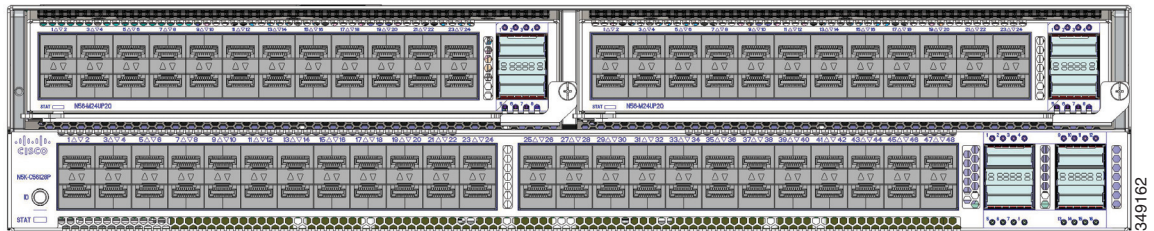
The Cisco Nexus 56128P is a 2RU (2 rack unit) switch that supports 2.56 Tbps of bandwidth across 48 fixed 1 Gigabit and 10 Gigabit Ethernet SFP+ ports, and four 40-Gbps QSFP+ ports. The 48 fixed SFP+ ports and 4 40Gbps QSFP+ ports support FCoE also, in addition to Ethernet. The Cisco Nexus 56128P runs the industry-leading Cisco NX-OS Software operating system, providing features and capabilities that are widely deployed.

The Cisco Nexus 56128P switch has the following features:

- 48 fixed 1 Gigabit and 10 Gigabit Ethernet SFP+ ports
- Four 40-Gbps QSFP+ ports
- Two expansion bays to support 24 ports of 10 Gigabit Ethernet and FCoE or 8/4-Gbps Fibre Channel and two ports of 40 Gigabit Ethernet using QSFP optics.
- Four N+N redundant, hot-swappable power supplies, which provide port side intake or exhaust for cooling.
- Four N+1 redundant, hot-swappable independent fans.
- A management console and USB interface on the fan side of the switch.

Cisco Nexus 56128P switch chassis is 2 RU, and 3.5 x 17.3 x 30 in (8.8 x 43.9 x 76.2 cm).

Figure 1-10 View of Cisco Nexus 52128P ports



Expansion Modules

Expansion modules allow the Cisco Nexus 5600 switches to be configured as cost-effective switches and as I/O consolidation platforms with native Fibre Channel connectivity. The following table lists the expansion modules supported by the Cisco Nexus 56128P switch.

The maximum number of supported 8GFC LW optical modules in both GEMs is 16



Caution

The software does not support hot swap of the expansion modules during their operation. You must power off the module before removing it, though the switch can stay powered on.

Table 1-12 Expansion Modules for Cisco Nexus 52128P

Part Number	Power Supply
N56-M24UP2Q	Nexus 56128P Expansion Module, 24x 10G SFP+ UP, 2 x QSFP+ fixed ports
N56-M24UP2Q=	Nexus 56128P Expansion Module, 24x 10G SFP+ UP, 2 x QSFP+ fixed ports, spare

N56-M24UP2Q

The Cisco Nexus 56128P has two bays for a Generic Expansion Module (GEM). The GEM for the Cisco Nexus 56128P provides 24 ports 10G Ethernet/FCoE or 8/4G Fibre Channel and 2 ports 40 Gigabit QSFP+ Ethernet/FCoE ports. The expansion module supports native 40 Gigabit Ethernet on the QSFP+ ports. The expansion module is supported on the Cisco Nexus 56128P chassis only and can be inserted into either of the two expansion bays.

Power Supply

The Cisco Nexus 56128P chassis has bays for four redundant power supplies. Power Supply options need to be configured with the base chassis when ordering. It needs a minimum of one power supply when no GEMs are installed, and a minimum of two power supplies when GEMs are installed. Online Insert and Removal (OIR) is supported on the power supplies and the power supplies are hot swappable. The Cisco Nexus 56128P supports port-side exhaust and port-side intake. The following table lists the power supplies that you can order with a Cisco Nexus 56128P switch.

The Cisco Nexus 56128P AC power supplies support both 110 and 220-volt (V) inputs.

Table 1-13 Supported Power Supply for Cisco Nexus 56128P

Part Number	Power Supply
NXA-PAC-1100W	Cisco Nexus 5500/6000 Platinum PSU port side exhaust airflow module, A/C, 100-240V, 1100W
NXA-PAC-1100W(=)	Cisco Nexus 5500/6000 Platinum PSU port side exhaust airflow module spare, A/C, 100-240V, 1100W
NXA-PAC-1100W-B	Cisco Nexus 5500/6000 Platinum PSU port side intake airflow module, A/C, 100-240V, 1100W
NXA-PAC-1100W-B(=)	Cisco Nexus 5500/6000 Platinum PSU port side intake airflow module spare, A/C, 100-240V, 1100W
N55-PDC-1100W	Cisco Nexus 5500/6000 PSU module, DC 1100W
N55-PDC-1100W=	Cisco Nexus 5500/6000 PSU module, DC 1100W, Spare
NXA-PHV-1100W	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Exhaust airflow, 1100W
NXA-PHV-1100W(=)	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Exhaust airflow, 1100W, spare

Table 1-13 Supported Power Supply for Cisco Nexus 56128P

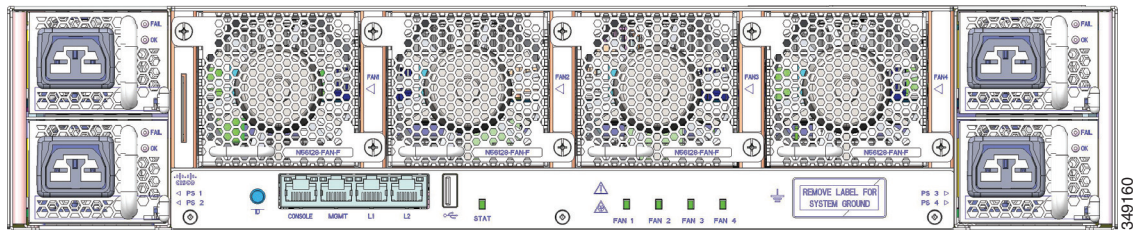
Part Number	Power Supply
NXA-PHV-1100W-B	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Intake airflow, 1100W
NXA-PHV-1100W-B(=)	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Intake airflow, 1100W, spare

**Caution**

Never leave a power supply bay empty. If you remove a power supply, replace it with another one. If you do not have a replacement power supply, leave the non functioning one in place until you can replace it.

Fan Modules

The Cisco Nexus 56128P has four fan modules. Fan modules are hot-swappable. Fan modules operate in a N+1 redundancy mode. Fan options need to be configured with the base chassis when ordering. The Cisco Nexus 56128P switch supports port-side exhaust and port side intake. Online Insertion and Removal (OIR) is supported on the fan tray. The following table lists the fans that you can order with a Cisco Nexus 56128P switch.

Figure 1-11 View of Cisco Nexus 52128P Fans**Note**

You must order all fan modules and power supplies in the same chassis so that they have the same direction of airflow with cooler air entering the chassis from the cold aisle and exhausting to the hot aisle. To change the airflow direction of the chassis, you must power down the switch before swapping out all fan and power supply modules.

Table 1-14 Fan Modules for Cisco Nexus 52128P

Part Number	Details
N56128-FAN-F	Cisco Nexus 56128P Fan Module, Port Side Exhaust
N56128-FAN-F=	Cisco Nexus 56128P Fan Module, Port Side Exhaust, spare
N56128-FAN-B	Cisco Nexus 56128P Fan Module, Port Side intake
N56128-FAN-B=	Cisco Nexus 56128P Fan Module, Port Side intake, spare

Transceivers

The Cisco Nexus 52128P supports a wide variety of 1, 10, and 40 Gigabit Ethernet connectivity options. The Cisco Nexus 52128P supports 4G and 8G FC connectivity options. For the most current list of supported transceivers, refer to the latest [Cisco Nexus 5600 Series Release Notes](#) at every release

Cisco Nexus 5672UP

This section describes the Cisco Nexus 5672UP (N5K-C5672UP) and its components. This section includes the following topics:

- [Features](#)
- [Power Supply](#)
- [Fan Modules](#)
- [Transceivers](#)

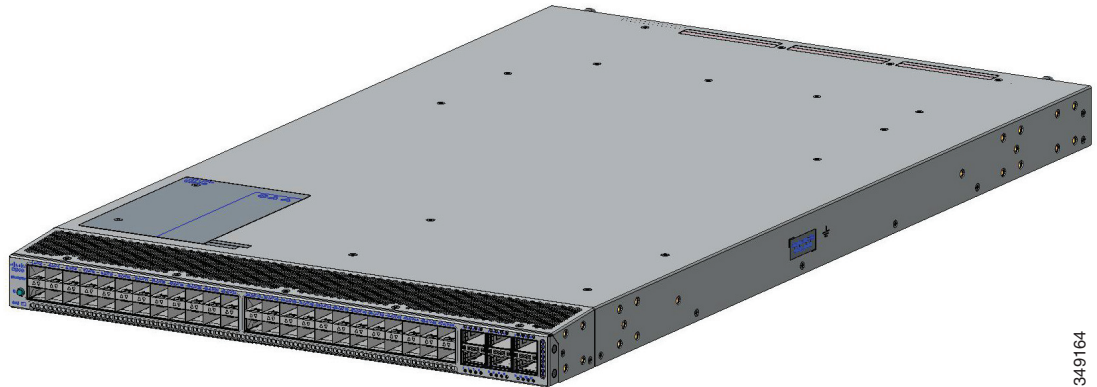
Features

Cisco Nexus 5672UP switch is a compact 1RU (1 Rack Unit), high-performance, low-latency 1/10/40-Gigabit Ethernet, Fibre Channel, and Fibre Channel over Ethernet (FCoE) switch. It runs the industry-leading Cisco NX-OS Software operating system, providing features and capabilities that are widely deployed.

The Cisco Nexus 5672UP switch has the following features:

- 48 fixed 1 Gigabit and 10 Gigabit Ethernet ports of which 16 ports can be unified ports (UP)
- The 16 unified ports provide 8/4 Gbps Fibre Channel as well as 10 Gigabit Ethernet and FCoE connectivity options.
- 6 ports of 40 Gbps using QSFP+ transceivers for Ethernet.
- Two bays on the switch for hot swap-capable power supplies, which provide port side intake or exhaust for cooling.
- Three bays on the switch for hot swap-capable fan modules.
- A management and console interface on the front of the switch.

Figure 1-12 Cisco Nexus 5672 UP Switch



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Power Supply

The Cisco Nexus 5672UP switch uses a front-end power supply. The chassis has slots for two redundant power supplies. Power Supply options need to be configured with the base chassis. It needs a minimum of one power supply to operate. Online Insert and Removal (OIR) is supported on the power supplies and the power supplies are hot swappable. The Cisco Nexus 5672UP supports port-side exhaust and port-side intake. [Table 1-15](#) lists the power supplies that you can order with a Cisco Nexus 5672UP switch.

Table 1-15 Power Supplies for the Cisco Nexus 5672UPswitch

Part Number	Power Supply
NXA-PAC-1100W	Cisco Nexus 5500/6000 Platinum PSU port side exhaust airflow module, A/C, 100-240V, 1100W
NXA-PAC-1100W(=)	Cisco Nexus 5500/6000 Platinum PSU port side exhaust airflow module spare, A/C, 100-240V, 1100W
NXA-PAC-1100W-B	Cisco Nexus 5500/6000 Platinum PSU port side intake airflow module, A/C, 100-240V, 1100W
NXA-PAC-1100W-B(=)	Cisco Nexus 5500/6000 Platinum PSU port side intake airflow module spare, A/C, 100-240V, 1100W
N55-PDC-1100W	Cisco Nexus 5500/6000 PSU module, DC 1100W
N55-PDC-1100W=	Cisco Nexus 5500/6000 PSU module, DC 1100W, Spare
NXA-PHV-1100W	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Exhaust airflow, 1100W
NXA-PHV-1100W(=)	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Exhaust airflow, 1100W, spare
NXA-PHV-1100W-B	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Intake airflow, 1100W
NXA-PHV-1100W-B(=)	Cisco Nexus 5500/6000 Platinum HV-AC-DC PS, Port side Intake airflow, 1100W, spare

**Note**

The Cisco Nexus 5672UP AC power supplies support both 110 and 220-volt (V) inputs.

**Caution**

Never leave a power supply slot empty. If you remove a power supply, replace it with another one. If you do not have a replacement power supply, leave the non functioning one in place until you can replace it.

Fan Modules

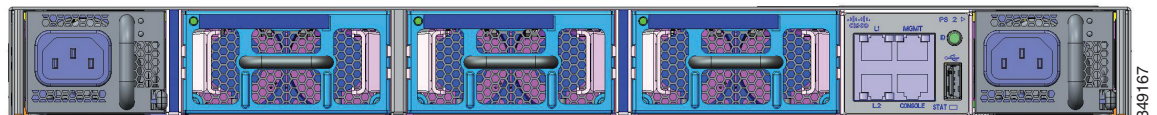
The Cisco Nexus 5672UP has three fan modules. Fan modules are hot-swappable. Fan modules operate in a 2+1 redundancy mode. Fan options need to be configured with the base chassis. The Cisco Nexus 5672UP switch supports port-side exhaust and port-side intake. Online Insert and Removal (OIR) is supported on the fan tray. [Table 1-16](#) lists the fans that you can order with a Cisco Nexus 5672UP switch.

Table 1-16 Fan Modules for the Cisco Nexus 5672UP switch

Part Number	Details
N6K-C6001-FAN-B	Nexus 5672UP Fan for Port Side Intake (Back to Front) airflow
N6K-C6001-FAN-B=	Nexus 5672UP Fan for Port Side Intake (Back to Front) airflow, spare
N6K-C6001-FAN-F	Nexus 5672UP Fan for Port Side exhaust (Front to Back) airflow
N6K-C6001-FAN-F =	Nexus 5672UP Fan for Port Side exhaust (Front to Back) airflow, spare

**Caution**

You must order all fan modules and power supplies in the same chassis so that they have the same direction of airflow with coolant air entering the chassis from the cold aisle and exhausting to the hot aisle. To change the airflow direction of the chassis, you must power down the switch before swapping out all fan and power supply modules.



Transceivers

The Cisco Nexus 5672UP supports a wide variety of 1, 10, and 40 Gigabit Ethernet connectivity options. The Cisco Nexus 5672UP supports 4G and 8G FC connectivity options. For the most current list of supported transceivers, refer to the latest [Cisco Nexus 5600 Series Release Notes](#) at every release.

