

# Introducing Reversed Airflow and DC Power Supply on Cisco Nexus 2000 Series Fabric Extenders

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Cisco is introducing a choice of standard or reversed airflow and a choice of AC or DC power on the Cisco Nexus<sup>®</sup> 2000 Series Fabric Extenders. These new options augment the product line by enabling new physical deployment layouts in the data center while providing a unified server access platform across a range of 100 Megabit Ethernet, Gigabit Ethernet, 10 Gigabit Ethernet, copper or fiber, unified fabric, and rack and blade server environments (Figure 1).

**Figure 1.** Cisco Nexus 2000 Series Fabric Extenders



Table 1 summarizes the Cisco Nexus 2000 Series products that support a choice of standard or reversed airflow and AC or DC power supply options.

**Table 1.** Cisco Nexus 2000 Series Specifications

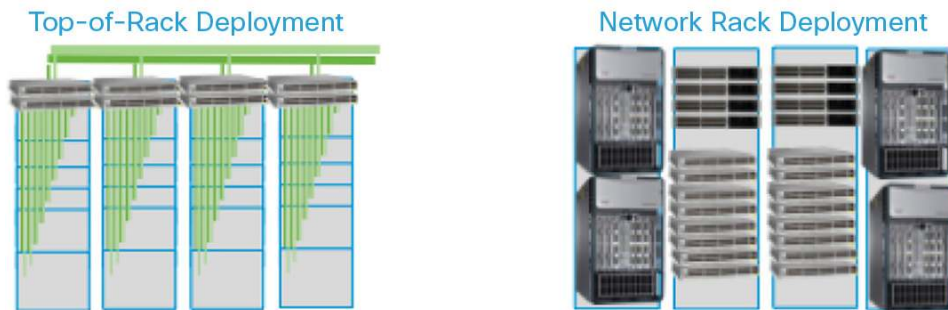
Description	Specification
<b>Cisco Nexus 2224TP Fabric Extender</b>	24 100/1000BASE-T host interfaces and 2 10 Gigabit Ethernet fabric interfaces (Enhanced Small Form-Factor Pluggable [SFP+])
<b>Cisco Nexus 2248TP Fabric Extender</b>	48 100/1000BASE-T host interfaces and 4 10 Gigabit Ethernet fabric interfaces (SFP+)
<b>Cisco Nexus 2232PP Fabric Extender</b>	32 1/10 Gigabit Ethernet and Fibre Channel over Ethernet (FCoE) host interfaces (SFP+) and 8 10 Gigabit Ethernet and FCoE fabric interfaces (SFP+)
<b>Cisco Nexus 2232TM Fabric Extender</b>	32 1/10GBASE-T host interfaces and modular uplinks (8 10 Gigabit Ethernet fabric interfaces (SFP+))

Fabric extenders work in conjunction with a parent Cisco Nexus 5000 or 7000 Series Switch. Cisco Nexus 2000 Series Fabric Extenders can be mixed and matched with a parent switch to provide a variety of connectivity options.

## Airflow Options

The Cisco Nexus 2200 chassis provide a choice of standard airflow and reversed airflow to enable optimization for top-of-rack (ToR) or network rack deployments (Figure 2).

**Figure 2.** ToR and Network Rack Deployments



- Standard-airflow fan: This option provides front-to-back airflow, with ports aligned with the hot aisle (port-side exhaust). This option is ideal for ToR deployments to align the fabric extender ports with the server ports in a given rack
- Reversed-airflow fan: This option provides back-to-front airflow, with ports aligned with the cold aisle (port-side intake). This option is ideal for network rack deployments in which various network equipment ports need to be aligned

## Power Supply Options

The Cisco Nexus 2200 chassis provide a choice of AC or DC power supply. Power supplies embed a fan and thus fan settings need to match the option selected for standard airflow or reversed airflow:

- 400 watt (W) AC power supply, standard airflow
- 400W AC power supply, reversed airflow
- 400W DC power supply, standard airflow

The 400W DC power supply has the following characteristics (Figure 3):

- Cisco® part number N2200-PDC-400W
- Supported on all Cisco Nexus 2200 chassis
- Supported in front-to-back airflow configurations only (port-side exhaust)
- -48 to -60 VDC

**Figure 3.** 400W DC Power Supply



Note that black alignment indicators (Figure 4) on the power supply and fan indicate matching reversed-airflow power supplies and fans. The standard-airflow versions do not have an indicator. If black alignment indicators do not align throughout the fans and power supplies, the power supplies and fans are mismatched.

**Figure 4.** Reversed-Airflow Indicator for the Cisco Nexus 2000 Series



### Availability

All Cisco Nexus 2200 chassis support a choice of airflow and a choice of AC or DC power. New Ordering PIDs have been introduced to provide a configuration choice of airflow and power supplies options (See Ordering Information section). Existing Ordering PIDs continue to be effective, but do not have this choice of airflow and power supplies.

Hardware options are available as of July 2011. New Nexus 2000 Ordering PIDs are available as of September 2011.

The minimum Cisco Nexus 5000 Series software release required to support reversed airflow and DC power supply on the Nexus 2200 platforms is Cisco NX-OS Release 5.0(3)N1(1).

### Ordering Information

Table 2 provides ordering information for new power supplies and airflow options.

**Table 2.** Ordering Information

Part Number	Description
<b>Nexus 2200 Platform</b>	
<b>N2K-C2224TP</b>	Cisco Nexus 2000 Series 1GE Fabric Extender, 2PS, 1 Fan Module, 24x100/1000Base-T + 2x10GE (req SFP+), same as N2K-C2224TP-1GE with added choice of airflow and power supply
<b>N2K-C2248TP</b>	Cisco Nexus 2000 Series 1GE Fabric Extender, 2PS, 1 Fan Module, 48x100/1000Base-T + 4x10GE (req SFP+), same as N2K-C2248TP-1GE with added choice of airflow and power supply
<b>N2K-C2232PP</b>	Cisco Nexus 2000 Series 10GE Fabric Extender, 2PS, 1 Fan Module, 32x1/10GE (req SFP/SFP+) + 8x10GE (req SFP+), same as N2K-C2232PP-10GE with added choice of airflow and power supply
<b>N2K-C2232TM</b>	Cisco Nexus 2000 Series 10GBASE-T Fabric Extender, 2PS, 1 Fan Module, 32x1/10GBase-T + 8x10GE Module (req SFP+), same as N2K-C2232TM-10GE with added choice of airflow and power supply
<b>Nexus 2200 Platform with FET</b>	
<b>N2K-C2224TF</b>	Cisco Nexus 2000 Series 1GE Fabric Extender, 2PS, 1 Fan Module, 24x100/1000Base-T + 2x10GE (includes 4 Fabric Extender Transceivers), same as N2K-C2224TF-1GE with added choice of airflow and power supply
<b>N2K-C2248TF</b>	Cisco Nexus 2000 Series 1GE Fabric Extender, 2PS, 1 Fan Module, 48x100/1000Base-T + 4x10GE (includes 8 Fabric Extender Transceivers), same as N2K-C2248TF-1GE with added choice of airflow and power supply
<b>N2K-C2232PF</b>	Cisco Nexus 2000 Series 10GE Fabric Extender, 2PS, 1 Fan Module, 32x1/10GE (req SFP/SFP+) + 8x10GE (includes 16 Fabric Extender Transceivers), same as N2K-C2232PF-10GE with added choice of airflow and power supply
<b>N2K-C2232TF</b>	Cisco Nexus 2000 Series 10GBASE-T Fabric Extender, 2PS, 1 Fan Module, 32x1/10GBase-T + 8x10GE Module (includes 16 Fabric Extender Transceivers), same as N2K-C2232TF-10GE with added choice of airflow and power supply

Spare Part Number	Description
<b>Spare Fan Modules</b>	
<b>N2K-C2248-FAN=</b>	Cisco Nexus 2224TP/2248TP FEX FAN Module (Std airflow, port side exhaust), spare
<b>N2K-C2248-FAN-B=</b>	Cisco Nexus 2224TP/2248TP FEX FAN Module (Reversed airflow, port side intake), spare
<b>N2K-C2232-FAN=</b>	Cisco Nexus 2232PP and 2232TM FEX Fan Module (Std airflow, port side exhaust), spare
<b>N2K-C2232-FAN-B=</b>	Cisco Nexus 2232PP and 2232TM FEX Fan Module, (Reversed airflow, port side intake), spare
<b>Spare Power Supplies</b>	
<b>N2200-PAC-400W=</b>	Cisco Nexus 2200 AC Power supply (Std airflow, port side exhaust), spare
<b>N2200-PAC-400W-B=</b>	Cisco Nexus 2200 AC Power supply, (Reversed airflow, port side intake), spare
<b>N2200-PDC-400W=</b>	Cisco Nexus 2200 DC Power supply (Std airflow, port side exhaust), spare

## Airflow Fan and Power Supply Packaged Options

An existing Cisco Nexus 2200 chassis can be upgraded to support DC power or a change in airflow through the purchase of spare parts:

- Cisco Nexus 2248TP or 2224TP with AC power and reversed airflow: Use N2K-C2248-FAN-B+N2200-PAC-400W-B Spares
- Cisco Nexus 2232PP or 2232TM with AC power and reversed airflow: Use N2K-C2232-FAN-B+N2200-PAC-400W-B Spares
- Cisco Nexus 2248TP or 2224TP with DC power and standard airflow: Use existing N2K-C2248-FAN-B in conjunction with N2200-PDC-400W Spares
- Cisco Nexus 2232PP or 2232TM with AC power and reversed airflow: Use existing N2K-C2232-FAN-B in conjunction with N2200-PDC-400W Spares

New Cisco Nexus 2200 chassis can be purchased with a choice of airflow fan and power supply packaged options:

- N22xx-FA-BUN is the default option for standard airflow with an AC power supply (Cisco Nexus 2200 chassis, one fan with standard airflow (front to back, aligned with port-side exhaust), and two AC power supplies)
- N22xx-BA-BUN is the reversed-airflow option with an AC power supply (Cisco Nexus 2200 chassis, one fan with reversed airflow (back to front, aligned with port-side intake), and two AC power supplies)
- N22xx-FD-BUN is the standard-airflow option with a DC power supply (Cisco Nexus 2200 chassis, one fan with standard airflow (front to back, aligned with port-side exhaust), and two DC power supplies)

To place an order, visit the [Cisco Ordering homepage](#). To download software, visit the [Cisco Software Center](#).

## Warranty

The Cisco Nexus 2000 Series Fabric Extenders have a 1-year limited hardware warranty. The warranty includes hardware replacement with a 10-day turnaround from receipt of a return materials authorization (RMA).

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## Cisco Services

Cisco offers a wide range of services to help accelerate your success in deploying and optimizing the Cisco Nexus 5000 Series Switches and Cisco Nexus 2000 Series Fabric Extenders in your data center. The innovative Cisco Services offerings are delivered through a unique combination of people, processes, tools, and partners and are focused on helping you increase operation efficiency and improve your data center network. Cisco Advanced Services uses an architecture-led approach to help you align your data center infrastructure with your business goals and achieve long-term value. Cisco SMARTnet<sup>®</sup> Service helps you resolve mission-critical problems with direct access at any time to Cisco network experts and award-winning resources. With this service, you can take advantage of the Cisco Smart Call Home service capability, which offers proactive diagnostics and real-time alerts on your Cisco Nexus 5000 Series Switches. Spanning the entire network lifecycle, Cisco Services offerings help increase investment protection, optimize network operations, support migration operations, and strengthen your IT expertise. For more information about Cisco Nexus Services, visit <http://www.cisco.com/go/nexuservices>.

## For More Information

- Cisco Nexus 2000 Series Fabric Extenders: <http://www.cisco.com/go/nexus2000>
- Cisco Nexus 5000 Series Switches: <http://www.cisco.com/go/nexus5000>
- Cisco NX-OS Software: <http://www.cisco.com/go/nxos>



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