Cisco Nexus 2300 Platform Fabric Extenders

Product Overview

Simplify your data center access architecture and operations with the Cisco Nexus® 2300 platform fabric extenders, the successors to the industry's widely adopted Cisco Nexus 2000 Series Fabric Extenders. The Cisco Nexus 2300 platform with its Cisco® fabric extender architecture provides a highly scalable unified server-access platform across a range of connectivity options such as 100 Megabit Ethernet; 1, 10, and 40 Gigabit Ethernet; unified fabric; copper and fiber connectivity; and rack and blade server environments.

The platform offers excellent support for migration from traditional 1 Gigabit Ethernet to 10 and 40 Gigabit Ethernet and virtual machine - aware unified fabric technologies.

The Cisco Nexus 2300 platform maintains all the existing Cisco Nexus 2000 Series features, including a single point of management, high availability with virtual PortChannels (vPC), vPC+, Enhanced vPC, and LAN and SAN convergence using Fibre Channel over Ethernet (FCoE). With the addition of true 40 Gigabit Ethernet support, deep buffers to handle bursts of traffic common in today's data center, and unified port capability (on 2348UPQ with 5600 only starting 7.3 release), the Cisco Nexus 2300 platform is suitable for highly virtualized, automated, and cloud environments.

The Cisco Nexus 2300 fabric extenders provide a 1-rack-unit (1RU) energy-efficient platform with a choice of front-to-back (port-side exhaust) and back-to-front (port-side intake) airflow options that offer 100 Megabit Ethernet; 1, 10, and 40 Gigabit Ethernet; Fibre Channel (on 2348UPQ with 5600 only starting 7.3 release); and FCoE for a broad range of traditional data center and large-scale virtualized cloud deployments.

The Cisco Nexus 2300 platform provides:

- **Architecture flexibility with simplified operations:** The fabric extender support unified ports (on 2348UPQ with 5600 only starting 7.3), allowing flexible deployment and LAN and SAN convergence in a heterogeneous architecture. A common, scalable, and adaptive architecture across data center racks and points of delivery (PoDs)[τ] supports a variety of server options, connectivity options, physical topologies, and evolving needs. A single point of management and policy enforcement using upstream Cisco Nexus switches eases the commissioning and decommissioning of server racks through zero-touch installation and automatic configuration of fabric extenders.
- **Highly scalable server access:** Today's data centers require massive scalability to manage the increasing number of servers and higher demand for bandwidth from each server. The Cisco Nexus 2300 platform meets this need with higher-density ports facing servers and the parent switch without any changes to the existing cable plant. The 100 Megabit, 1 and 10 Gigabit Ethernet server access, and the 40 Gigabit network access are scalable, with no reliance on Spanning Tree Protocol. The Cisco Nexus 2300 platform can also provide up to 2:1 oversubscription.

[τ] A PoD is a module or group of network, computing, storage, and application components that work together to deliver a network service. The PoD is repeatable pattern, and its components increase the modularity, scalability, and manageability of data centers

- **Enhanced buffer for applications:** In today's data center, application teams require the network to be flexible and capable of handling the rapid growth of applications. The Cisco Nexus 2300 platform provides deep shared buffers (32 MB) to absorb bursts of traffic from storage devices and a wide variety of applications, such as multicast feeds, voice traffic, video traffic, and healthcare applications. These deep buffers also provide flexibility to expand your network as your needs change. The shared buffers are also very useful in situations in which one or more servers are consuming most of the bandwidth in highly oversubscribed environments.
- **Increased business benefits:** The Cisco Nexus 2300 platform helps data centers keep their space, power, and cooling requirements under control while reducing their carbon footprints. Through consolidation, the fabric extenders reduce cabling, rack space, and power and cooling demands. By inheriting features from the parent switch, they offer investment protection and the capability to add functions without the need for a major upgrade of server-attached infrastructure. This capability helps reduce operating expenses (OpEx) and capital expenditures (CapEx). The 40-Gbps Quad Enhanced Small Form-Factor Pluggable (QSFP+) fabric interfaces offer cost-effective, simplified connectivity to Cisco Nexus parent switches and support for QSFP 40-Gbps bidirectional (BiDi) short-reach transceivers.

The Cisco Nexus 2300 platform has a compact 1RU design that aligns with server designs. It offers front-to-back cooling that is compatible with data center hot-aisle and cold-aisle designs. All switch ports are at the rear of the unit close to server ports, and all user-serviceable components are accessible from the front panel. The platform also offers back-to-front cooling, with switch ports in the front of the chassis aligned with the cold aisle for optimized cabling in network racks. The Cisco Nexus 2300 platform is built for nonstop operation with redundant hot-swappable power supplies and a hot-swappable fan tray with redundant fans. The 1RU form factor takes up little space, making it easy to incorporate into rack designs. The fabric extenders are available in several models with a range of speed, connectivity, and port-density options (Figure 1).

Figure 1. Cisco Nexus 2300 Platform Fabric Extenders: Cisco Nexus 2332TQ (Top Left), Cisco Nexus 2348UPQ (Middle Left), Cisco Nexus 2348TQ (Bottom Left), and Cisco Nexus 2348TQ-E (Right)

The Cisco Nexus 2300 platform provides two types of ports: ports for end-host attachment (host interfaces) and uplink ports (fabric interfaces).

Fabric interfaces (yellow/white) provide connectivity to the upstream parent Cisco Nexus switch.

Models and Configuration

Table 1 provides summarizes the Cisco Nexus 2300 platform.

Table 1. Cisco Nexus 2300 Platform Fabric Extenders

Fabric Extender	Description
Cisco Nexus 2348UPQ 10GE	48 x 1/10 Gigabit Ethernet and unified port host interfaces (SFP+) and up to 6 QSFP+ 10/40 Gigabit Ethernet fabric interfaces
Cisco Nexus 2348TQ 10GE	48 x 100MBASE-T and 1/10GBASE-T port host interfaces (RJ-45) and up to 6 QSFP+ 10/40 Gigabit Ethernet fabric interfaces; FCoE support up to 30m with Category 6a and 7 cables
Cisco Nexus 2332TQ 10GE	32 x 100MBASE-T and 1/10GBASE-T port host interfaces (RJ-45) and up to 4 QSFP+ 10/40 Gigabit Ethernet fabric interfaces; FCoE support up to 30m with Category 6a and 7 cables
Cisco Nexus 2348TQ-E 10GE	48 x 100MBASE-T and 1/10GBASE-T port host interfaces (RJ-45) and up to 6 QSFP+ 10/40 Gigabit Ethernet fabric interfaces; FCoE support up to 30m with Category 6a and 7 cables

Cisco Nexus 2348UPQ Fabric Extender

The Cisco Nexus 2348UPQ fabric extender (Figure 2) is a general-purpose unified port - capable (currently, Fibre Channel functions are supported only in Nexus 5600 since 7.3(0) N1 (1)) 1/10 Gigabit Ethernet fabric extender for workloads such as large-volume databases, distributed storage, and video editing. The Cisco Nexus 2348UPQ supports 48 x 1- and 10-Gbps host unified ports as well as up to six 40-Gbps uplink ports to the parent switch. The 40-Gbps uplinks support BiDi optics for simple connectivity using your existing cable plan. The unified ports provide connectivity to 2-, 4-, 8-, and 16-Gbps Fibre Channel (24 ports for 16 Gbps) as well as 1 and 10 Gigabit Ethernet and FCoE connectivity options (currently, Fibre Channel functions are supported only in hardware). The Cisco Nexus 2348UPQ has a deep 32-MB shared buffer that helps increase performance, and it supports FCoE and Data Center Bridging (DCB) network technologies, which boost the reliability, efficiency, and scalability of Ethernet networks. These features provide support for multiple traffic classes over a lossless Ethernet fabric, enabling consolidation of LAN, SAN, and cluster environments.

Figure 2. Cisco Nexus 2348UPQ Fabric Extender (Port View)

Support for both forward (port-side exhaust) and reverse (port-side intake) airflow schemes is available. Forward airflow is useful when the port side of the switch sits on a hot aisle and the power-supply side sits on a cold aisle. Reverse airflow is useful when the power-supply side of the switch sits on a hot aisle and the port side sits on a cold aisle. The Cisco Nexus 2348UPQ has two 1+1 redundant hot-swappable power supplies and three hot-swappable independent fans with support for 2+1 redundancy.

Colored handles on each fan or power supply clearly indicate the airflow direction, as shown in Figure 3.

Figure 3. Cisco Nexus 2348UPQ with Blue Handles Indicating Forward Airflow

Cisco Nexus 2348TQ Fabric Extender

The Nexus 2348TQ (Figure 4) is a low-power platform that is well suited for migration to 10GBASE-T. It supports high-density 100 Megabit Ethernet and 1 and 10 Gigabit Ethernet environments and has 48 x 100MBASE-T and 1/10GBASE-T host interface (HIF) ports as well up to six 40-Gbps uplink ports to the parent switch. The 40-Gbps uplinks support BiDi optics for simple connectivity using your existing cable plan, while lowering power and solution costs. The Cisco Nexus 2348TQ supports FCoE.

Figure 4. Cisco Nexus 2348TQ Fabric Extender (Port View)

Support for both forward (port-side exhaust) and reverse (port-side intake) airflow schemes is available. Forward airflow is useful when the port side of the switch sits on a hot aisle and the power-supply side sits on a cold aisle. Reverse airflow is useful when the power-supply side of the switch sits on a hot aisle and the port side sits on a cold aisle. The Cisco Nexus 2348TQ has two 1+1 redundant hot-swappable power supplies and three hot-swappable independent fans with support for 2+1 redundancy.

Colored handles on each fan or power supply clearly indicate the airflow direction, as shown in Figure 5.

Figure 5. Cisco Nexus 2348TQ with Blue Handles Indicating Forward Airflow

Cisco Nexus 2332TQ Fabric Extender

The Cisco Nexus 2332TQ (Figure 6) is a low-port-count, low-power 10GBASE-T platform with 32 100MBASE-T and 1/10GBASE-T HIF ports as well as four 40-Gbps uplink ports to the parent switch. This platform is well suited for customers with lower power requirements and with lower port density in the rack. The 40-Gbps uplinks support BiDi optics for simple connectivity using your existing cable plan, while lowering power and solution costs. The Cisco Nexus 2332TQ supports FCoE.

Figure 6. Cisco Nexus 2332TQ Fabric Extender (Port View)

Support for both forward (port-side exhaust) and reverse (port-side intake) airflow schemes is available. Forward airflow is useful when the port side of the switch sits on a hot aisle and the power-supply side sits on a cold aisle. Reverse airflow is useful when the power-supply side of the switch sits on a hot aisle and the port side sits on a cold aisle. The Cisco Nexus 2332TQ has two 1+1 redundant hot-swappable power supplies and three hot-swappable independent fans with support for 2+1 redundancy. Colored handles on each fan or power supply clearly indicate the airflow direction, as shown in Figure 7.

Figure 7. Cisco Nexus 2332TQ with Blue Handles Indicating Forward Airflow

Cisco Nexus 2348TQ-E Fabric Extender

The Nexus 2348TQ-E (Figure 4) is a cost optimized platform that is well suited for migration to 10GBASE-T. It supports high-density 100 Megabit Ethernet and 1 and 10 Gigabit Ethernet environments and has 48 x 100MBASE-T and 1/10GBASE-T host interface (HIF) ports as well up to six 40-Gbps uplink ports to the parent switch. The 40-Gbps uplinks support BiDi optics for simple connectivity using your existing cable plan, while lowering power and solution costs. The Cisco Nexus 2348TQ-E supports FCoE.

Figure 8. Cisco Nexus 2348TQ-E Fabric Extender (Port View)

Support for both forward (port-side exhaust) and reverse (port-side intake) airflow schemes is available. Forward airflow is useful when the port side of the switch sits on a hot aisle and the power-supply side sits on a cold aisle. Reverse airflow is useful when the power-supply side of the switch sits on a hot aisle and the port side sits on a cold aisle. The Cisco Nexus 2348TQ has two 1+1 redundant hot-swappable power supplies and three hot-swappable independent fans with support for 2+1 redundancy.

Colored handles on each fan or power supply clearly indicate the airflow direction, as shown in Figure 5.

Figure 9. Cisco Nexus 2348TQ-E with Blue Handles Indicating Forward Airflow

Cisco Nexus 2300 platform fabric extenders connect to a parent Cisco Nexus switch through their fabric links using CX1 copper cable, short-reach or long-reach optics, cost-effective Cisco Fabric Extender Transceivers, and QSFP 40-Gbps bidirectional short-reach transceivers. Fabric Extender Transceivers are optical transceivers that provide a highly cost-effective solution for connecting the fabric extender to its parent switch over OM3 or OM4 multimode fiber.

Cisco Nexus 2300 platform fabric extenders behave like remote line cards for a parent Cisco Nexus 5500, 5600, 7700,6000, 7000 or 9000 Series Switches. Working in conjunction with Cisco Nexus switches, the fabric extenders extend the capabilities and benefits offered by the parent Cisco Nexus switch while providing flexible, scalable, and cost-effective server access. A deployment of Cisco Nexus 2300 platform fabric extenders connected to a Cisco Nexus 5500, 5600, 7700,6000,7000 or 9000 Series Switch supports highly scalable 100 Megabit Ethernet and 1 and 10 Gigabit Ethernet environments.

Cisco Nexus 2300 Platform Deployment Scenarios

The fabric extenders can be used in the following deployment scenarios:

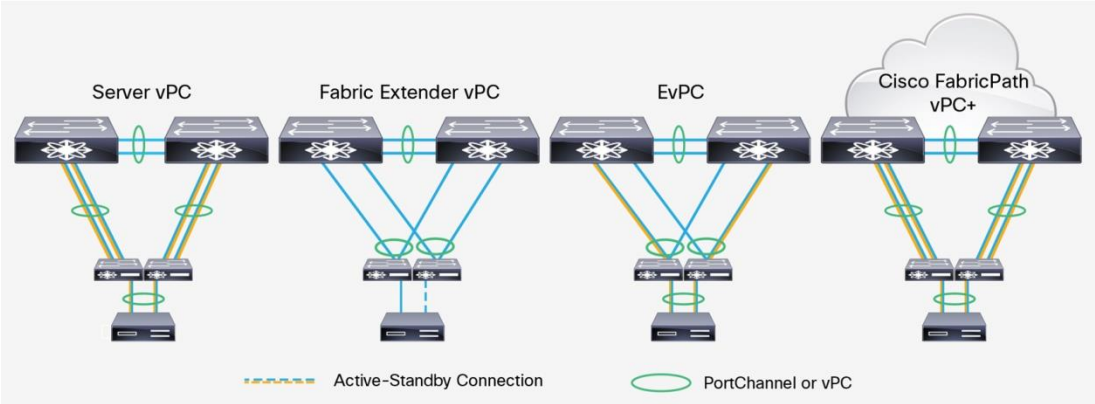
- Rack servers with 100 Megabit Ethernet, 1 Gigabit Ethernet, or 10 Gigabit Ethernet network interface cards (NICs); the fabric extender can be physically located at the top of the rack, and the Cisco Nexus parent switch can reside in the middle or at the end of the row, or the fabric extender and the Cisco Nexus parent switch can both reside at the end or middle of the row
- 10 Gigabit Ethernet and FCoE deployments, using servers with converged network adapters (CNAs) for unified fabric environments
- 100MBASE-T and 1/10GBASE-T server connectivity with ease of migration from 100MBASE-T to 1GBASE-T to 10GBASE-T and reuse of structured cabling
- 1 and 10 Gigabit Ethernet blade servers with pass-through blades
- SAN connectivity (2348UPQ with 5600 only)
- Low-latency, high-performance computing environments
- Virtualized access

For more information, visit the Cisco Nexus 2000 Series case studies page: http://www.cisco.com/en/US/products/ps10110/prod_case_studies_list.html

The Cisco Nexus 2300 platform can be used in conjunction with a Cisco Nexus parent switch in four main design scenarios (Figure 10):

- Cisco Nexus 2300 platform single-connected to one upstream Cisco Nexus 5500, 5600, 7700, 6000,7000 or 9000 Series Switch: In this deployment model, access-layer redundancy is achieved through redundant server connections to two upstream distributed modular systems using vPC (Cisco Nexus 5500, 5600, or 7700 platform or 6000 or 7000 Series) or server NIC teaming to two Cisco Nexus 2300 platform fabric extenders.
- Cisco Nexus 2300 platform dual-connected to two upstream Cisco Nexus 5500, 5600, 7700, 6000, or 7000 Series Switches (vPC): In this deployment model, access-layer redundancy is achieved with a combination of Cisco Nexus 2300 platform fabric extenders dual-connected to an upstream parent switch and server NIC teaming.
- Enhanced vPC (EvPC): In this deployment model, access-layer redundancy is achieved in two ways: through redundant connections between the Cisco Nexus 2300 platform and the Cisco Nexus parent switches using vPC; and through redundant server connections to two fabric extenders using vPC and active-active server NIC teaming. This scenario is supported only with the Cisco Nexus 5500 or 5600 or 6000 Series used as upstream switches. The Cisco Nexus 7000 Series and 7700 platform currently are not supported as upstream switches in this scenario.
- vPC+: In this deployment model, access-layer redundancy is achieved through server vPC, fabric extender vPC, and EvPC. In addition, a vPC+ domain allows the Cisco Nexus parent switch and the fabric extenders to be viewed as a single virtual switch in a Cisco FabricPath network.

Figure 10. Cisco Nexus 2300 Platform Fabric Extenders Design Models, from Left to Right: Server vPC, Fabric Extender vPC, EvPC, and vPC+



All topologies are supported with the Cisco Nexus 5000 and 6000. Server vPC and Fabric Extender vPC are supported on the Nexus 7000 series. Server vPC is supported on Nexus 9000 series.

Product Specifications

Tables 2 through 6 provide product specifications, and Table 7 lists standards support for the Cisco Nexus 2300 platform fabric extenders.

Table 2. Cisco Nexus 2300 Platform 10 Gigabit Ethernet Fabric Extender Product Specifications

Description	Cisco Nexus 2348UPQ	Cisco Nexus 2348TQ	Cisco Nexus 2332TQ	Cisco Nexus 2348TQ-E
Fabric extender host interfaces	48	48	32	48
Fabric extender host interface type	For 48 x 1/10 Gigabit Ethernet host interface ports • 1/10 Gigabit Ethernet ports SFP/SFP+ (supported transceiver and cables include Twinax SFP-H10GB-CU1M, SFP-H10GB-CU1-5M, SFP-H10GB-CU2M, SFP-H10GB-CU2-5M SFP-H10GB-CU3M, SFP-H10GB-CU5M, SFP-H10GBACU7M, and SFP-H10GB-ACU10M; SFP+ SFP-10G-SR, SFP-10G-SR-S, SFP-10G-LR, and SFP-10G-LR-S; and SFP GLC-T, GLC-SX-MM, GLC-LH-SM, SFP-GE-T, SFP-GE-S, and SFP-GE-L) • AOC cables: SFP-10G-AOC1M, SFP-10G-AOC2M, SFP-10G-AOC3M, SFP-10G-AOC5M, SFP-10G-AOC7M, and SFP-10G-AOC10M • DS-SFP-FC16G-SW (16, 8 and 4G modes),DS-SFP-FC16G-LW (16, 8 and 4G modes),DS-SFP-FC8G-SW,DS-SFP-FC8G-LW,DS-SFP-FC4G-SW, DS-SFP-FC4G-LW	48 100M/1/10GBASE-T ports: RJ-45 connectors	32 100M/1/10GBASE-T ports: RJ-45 connectors	48 100M/1/10GBASE-T ports: RJ-45 connectors

Description	Cisco Nexus 2348UPQ	Cisco Nexus 2348TQ	Cisco Nexus 2332TQ	Cisco Nexus 2348TQ-E
Fabric extender fabric interfaces	6 x 40 Gigabit Ethernet QSFP (24 x 10 Gigabit Ethernet)	6 x 40 Gigabit Ethernet QSFP (24 x 10 Gigabit Ethernet)	4 x 40 Gigabit Ethernet QSFP (16 x 10 Gigabit Ethernet)	6 x 40 Gigabit Ethernet QSFP (24 x 10 Gigabit Ethernet)
Fabric extender fabric interface type	• Fiber: QSFP-40G-SR-BD, QSFP-40G-SR4,QSFP-40G-SR4-S, QSFP-40G-LR4, QSFP-40G-LR4-S, and QSFP-40G-CSR4-S • Copper: 40 Gigabit Ethernet QSFP+ active Twinax cables (QSFP-H40G-ACU7M and QSFP-H40G-ACU10M (no passive cables) • AOC cables: QSFP-H40G-AOC1M, QSFP-H40G-AOC2M, QSFP-H40G-AOC3M, QSFP-H40G-AOC5M, QSFP-H40G-AOC7M, QSFP-H40G-AOC10M, and QSFP-H40G-AOC15M • AOC breakout cables: QSFP-4X10G-AOC1M, QSFP-4X10G-AOC2M, QSFP-4X10G-AOC3M, QSFP-4X10G-AOC5M, QSFP-4X10G-AOC7M, and QSFP-4X10G-AOC10M • Copper breakout cables: QSFP-4x10G-AC7M and QSFP-4x10G-AC10M (no passive cables) • Distance between Cisco Nexus 2300 fabric extender and Cisco Nexus 5500 switch is up to 10 km (up to 3 km for FCoE traffic), and for the Cisco Nexus 5600 switch or 6000 Series Switch the distance is up to 3 km (300m for FCoE traffic) • All equivalent S-class optics are supported • Cisco 40GBASE QSFP to SFP+/SFP adapter (CVR-QSFP-SFP10G)	• Fiber: QSFP-40G-SR-BD, QSFP-40G-SR4,QSFP-40G-SR4-S, QSFP-40G-LR4, QSFP-40G-LR4-S, and QSFP-40G-CSR4-S • Copper: 40 Gigabit Ethernet QSFP+ active Twinax cables (QSFP-H40G-ACU7M and QSFP-H40G-ACU10M (no passive cables) • AOC cables: QSFP-H40G-AOC1M, QSFP-H40G-AOC2M, QSFP-H40G-AOC3M, QSFP-H40G-AOC5M, QSFP-H40G-AOC7M, QSFP-H40G-AOC10M, and QSFP-H40G-AOC15M • AOC breakout cables: QSFP-4X10G-AOC1M, QSFP-4X10G-AOC2M, QSFP-4X10G-AOC3M, QSFP-4X10G-AOC5M, QSFP-4X10G-AOC7M, and QSFP-4X10G-AOC10M • Copper breakout cables: QSFP-4x10G-AC7M and QSFP-4x10G-AC10M (no passive cables) • Distance between Cisco Nexus 2300 fabric extender and Cisco Nexus 5500 switch is up to 10 km (up to 3 km for FCoE traffic), and for the Cisco Nexus 5600 switch or 6000 Series Switch the distance is up to 3 km (300m for FCoE traffic) • All equivalent S-class optics are supported • Cisco 40GBASE QSFP to SFP+/SFP adapter (CVR-QSFP-SFP10G)	• Fiber: QSFP-40G-SR-BD, QSFP-40G-SR4,QSFP-40G-SR4-S, QSFP-40G-LR4, QSFP-40G-LR4-S, and QSFP-40G-CSR4-S • Copper: 40 Gigabit Ethernet QSFP+ active Twinax cables (QSFP-H40G-ACU7M and QSFP-H40G-ACU10M (no passive cables) • AOC cables: QSFP-H40G-AOC1M, QSFP-H40G-AOC2M, QSFP-H40G-AOC3M, QSFP-H40G-AOC5M, QSFP-H40G-AOC7M, QSFP-H40G-AOC10M, QSFP-H40G-AOC15M • AOC breakout cables: QSFP-4X10G-AOC1M, QSFP-4X10G-AOC2M, QSFP-4X10G-AOC3M, QSFP-4X10G-AOC5M, QSFP-4X10G-AOC7M, and QSFP-4X10G-AOC10M • Copper breakout cables: QSFP-4x10G-AC7M and QSFP-4x10G-AC10M (no passive cables) • Distance between Cisco Nexus 2300 fabric extender and Cisco Nexus 5500 switch is up to 10 km (up to 3 km for FCoE traffic), and for the Cisco Nexus 5600 switch or 6000 Series Switch the distance is up to 3 km (300m for FCoE traffic) • All equivalent S-class optics are supported	• Fiber: QSFP-40G-SR-BD, QSFP-40G-SR4,QSFP-40G-SR4-S, QSFP-40G-LR4, QSFP-40G-LR4-S, and QSFP-40G-CSR4-S • Copper: 40 Gigabit Ethernet QSFP+ active Twinax cables (QSFP-H40G-ACU7M and QSFP-H40G-ACU10M (no passive cables) • AOC cables: QSFP-H40G-AOC1M, QSFP-H40G-AOC2M, QSFP-H40G-AOC3M, QSFP-H40G-AOC5M, QSFP-H40G-AOC7M, QSFP-H40G-AOC10M, and QSFP-H40G-AOC15M • AOC breakout cables: QSFP-4X10G-AOC1M, QSFP-4X10G-AOC2M, QSFP-4X10G-AOC3M, QSFP-4X10G-AOC5M, QSFP-4X10G-AOC7M, and QSFP-4X10G-AOC10M • Copper breakout cables: QSFP-4x10G-AC7M and QSFP-4x10G-AC10M (no passive cables) • Distance between Cisco Nexus 2300 fabric extender and Cisco Nexus 5500 switch is up to 10 km (up to 3 km for FCoE traffic), and for the Cisco Nexus 5600 switch or 6000 Series Switch the distance is up to 3 km (300m for FCoE traffic) • All equivalent S-class optics are supported • Cisco 40GBASE QSFP to SFP+/SFP adapter (CVR-QSFP-SFP10G)
Fabric speed	Up to 240 Gbps in each direction (480-Gbps full duplex)	Up to 240 Gbps in each direction (480-Gbps full duplex)	Up to 160 Gbps in each direction (320-Gbps full duplex)	Up to 240 Gbps in each direction (480-Gbps full duplex)
Oversubscription	Up to 2:1	Up to 2:1	Up to 2:1	Up to 2:1
Performance	Hardware forwarding at 1440 Gbps or 2160 million packets per second (mpps)	Hardware forwarding at 1440 Gbps or 2160 mpps	Hardware forwarding at 960 Gbps or 1440 mpps	Hardware forwarding at 1440 Gbps or 2160 mpps
FCoE	FCoE supported (Cisco Nexus 5500 and 5600 platforms and 6000 Series) (select N7k platforms since 7.3 release)	FCoE support up to 30m with Category 6a and 7 cables (Cisco Nexus 5500 and 5600 platforms and 6000 Series)	FCoE support up to 30m with Category 6a and 7 cables (Cisco Nexus 5500 and 5600 platforms and 6000 Series)	FCoE support up to 30m with Category 6a and 7 cables (Cisco Nexus 5500 and 5600 platforms and 6000 Series)

Description	Cisco Nexus 2348UPQ	Cisco Nexus 2348TQ	Cisco Nexus 2332TQ	Cisco Nexus 2348TQ-E
Cisco parent switch	• Cisco Nexus 5500 and 5600 platforms • Cisco Nexus 6000 Series • Cisco Nexus 7000 Series and 7700 platform • Cisco Nexus 9300 and 9500 Series	• Cisco Nexus 5500 and 5600 platforms • Cisco Nexus 6000 Series • Cisco Nexus 7000 Series and 7700 platform • Cisco Nexus 9300 and 9500 Series	• Cisco Nexus 5500 and 5600 platforms • Cisco Nexus 6000 Series	• Cisco Nexus 5500 and 5600 platforms • Cisco Nexus 6000 Series
Minimum software	• Cisco NX-OS Release 7.0(3)N1(1) (Cisco Nexus 5500 and 5600 platforms and 6000 Series) • Cisco NX-OS Release 7.2.0D1(1) • (Cisco Nexus 7000 Series and 7700 platform) • Cisco NX-OS Release 7.0(3)I2(1) • (Cisco Nexus 9300 Series and 9500 platform) • Native FC support: Cisco NX-OS Release 7.3(0)N1(1) (Cisco Nexus 5600 platforms Only)	• Cisco NX-OS Release 7.1(0)N1(1) (Cisco Nexus 5500 and 5600 platforms and 6000 Series) • Cisco NX-OS Release 7.2.0D1(1) • (Cisco Nexus 7000 Series and 7700 platform) • Cisco NX-OS Release 7.0(3)I2(1) • (Cisco Nexus 9300 Series and 9500 platform)	• Cisco NX-OS Release 7.1(0)N1(2) (Cisco Nexus 5500 and 5600 platforms and 6000 Series)	• Cisco NX-OS Release 7.3(0)N1(1) (Cisco Nexus 5500 and 5600 platforms and 6000 Series)
Dimensions (H x W x D)	• 1.72 x 17.3 x 14.05 in. (4.37 x 43.94 x 35.69 cm)	• 1.72 x 17.3 x 17.07 in. (4.37 x 43.94 x 43.36 cm)	• 1.72 x 17.3 x 14.07 in. (4.37 x 43.94 x 35.69 cm)	• 1.72 x 17.3 x 17.07 in. (4.37 x 43.94 x 43.36 cm)
Weight	• 15.50 lbs. (7.0 kg)	• 17.7 lbs. (8.0 kg2)	• 15.00 lbs. (6.8 kg)	• 17.7 lbs. (8.0 kg2)
Environment	• Operating temperature: 32 to 131°F (0 to 55°C) • Non-operating temperature: -40 to 158°F (-40 to 70°C) • Humidity: 5 to 95 percent (noncondensing) • Altitude: 0 to 10,000 ft. (0 to 3000m)	• Operating temperature: 32 to 131°F (0 to 55°C) • Non-operating temperature: -40 to 158°F (-40 to 70°C) • Humidity: 5 to 95 percent (noncondensing) • Altitude: 0 to 10,000 ft. (0 to 3000m)	• Operating temperature: 32 to 131°F (0 to 55°C) • Non-operating temperature: -40 to 158°F (-40 to 70°C) • Humidity: 5 to 95 percent (noncondensing) • Altitude: 0 to 10,000 ft. (0 to 3000m)	• Operating temperature: 32 to 131°F (0 to 55°C) • Non-operating temperature: -40 to 158°F (-40 to 70°C) • Humidity: 5 to 95 percent (noncondensing) • Altitude: 0 to 10,000 ft. (0 to 3000m)
Power supply	• N2200-PAC-400W, N2200-PAC-400W-B, N2200-PDC-400W, N2200-PDC-350W-B, NXA-PHV-500W, and NXA-PHV-500W-B	• N2200-PAC-400W, N2200-PAC-400W-B, N2200-PDC-400W, N2200-PDC-350W-B, NXA-PHV-500W, and NXA-PHV-500W-B	• N2200-PAC-400W, N2200-PAC-400W-B, N2200-PDC-400W, N2200-PDC-350W-B, NXA-PHV-500W, and NXA-PHV-500W-B	• N2200-PAC-400W, N2200-PAC-400W-B, N2200-PDC-400W, and N2200-PDC-350W-B
Fan modules	• NXA-FAN-30CFM-F and NXA-FAN-30CFM-B (N+1 redundancy = 3 fans)	• NXA-FAN-30CFM-F and NXA-FAN-30CFM-B (N+1 redundancy = 3 fans)	• NXA-FAN-30CFM-F and NXA-FAN-30CFM-B (N+1 redundancy = 3 fans)	• NXA-FAN-30CFM-F and NXA-FAN-30CFM-B (N+1 redundancy = 3 fans)
Typical input operating power	• 125W at 30m (maximum 200W)	• 280W at 30m (maximum 350W)	• 190W at 30m (maximum 250W)	• 280W at 30m (maximum 350W)
Heat dissipation	• 425 BTU/hour (typical); 680 BTU/hour (maximum)	• 952 BTU/hour (typical); 1190 BTU/hour (maximum)	• 510 BTU/hour (typical); 850 BTU/hour (maximum)	• 952 BTU/hour (typical); 1190 BTU/hour (maximum)

Table 3. Cisco Nexus Fabric Extender Transceiver Specifications

Cisco Fabric Extender Transceiver	Specification				
	Support Matrix	**Form Factor**	**Cable**	**Distance**	**Power**
Cisco Fabric Extender Transceiver (FET-10G)	• Supported for fabric links only (Cisco Nexus 2300 platform to Cisco parent switch) • Cisco Fabric Extender Transceiver must be connected to another Fabric Extender Transceiver • Supported on Cisco Nexus 2300 platform uplinks • Supported on Cisco Nexus 5500 and 5600 platforms and 6000 and 7000 Series	SFP	Multimode fiber (MMF)	• 25m (OM2) • 100m (OM3)	Approximately 1W per transceiver
Cisco Fabric Extender Transceiver (FET-40G)	• Supported for fabric links only (Cisco Nexus 2300 platform to Cisco parent switch) • Cisco Fabric Extender must be connected to another Fabric Extender Transceiver • Supported on Cisco 2300 platform uplinks • Supported on Cisco Nexus 5500 and 5600 platforms and 6000 and 7000 Series.	SFP	MMF	• 30m (OM2) • 100m (OM3)	Approximately 1.5W per transceiver

Table 4. Cisco Nexus 2300 Platform Spare Weight Specifications

Cisco Nexus 2300 Platform	Weight	
	Pounds	**Kilograms**
N2200-PAC-400W=	2.2 lb	1 kg
N2200-PAC-400W-B=	2.2 lb	1 kg
N2200-PDC-400W=	2.2 lb	1 kg
N2200-PDC-350W-B=	2.2 lb	1 kg
NXA-PHV-500W	2.2 lb	1 kg
NXA-PHV-500W-B	2.2 lb	1 kg
NXA-FAN-30CFM-F	0.25 lb	0.11 kg
NXA-FAN-30CFM-B	0.25 lb	0.11 kg

Table 5. Cisco Nexus 2300 Platform Power Specifications

Cisco Nexus 2300 Platform	Specification					
	N2200-PAC-400W	**N2200-PAC-400W-B**	**N2200-PDC-400W**	**N2200-PDC-350W-B**	**NXA-PHV-500W**	**NXA-PHV-500W-B**
Platform	Cisco Nexus 2348UPQ, 2348TQ,2332TQ and 2348TQ-E	Cisco Nexus 2348UPQ, 2348TQ, 2332TQ and 2348TQ-E	Cisco Nexus 2348UPQ, 2348TQ, 2332TQ and 2348TQ-E	Cisco Nexus 2348UPQ, 2348TQ, 2332TQ and 2348TQ-E	Cisco Nexus 2348UPQ, 2348TQ and 2332TQ	Cisco Nexus 2348UPQ, 2348TQ and 2332TQ
Compatible fan tray	NXA-FAN-30CFM-F	NXA-FAN-30CFM-B	NXA-FAN-30CFM-F	NXA-FAN-30CFM-B	NXA-FAN-30CFM-F	NXA-FAN-30CFM-B
Compatible power supply	N2200-PAC-400W	N2200-PAC-400W-B	N2200-PDC-400W	N2200-PDC-350W-B	NXA-PHV-500W	NXA-PHV-500W-B
Airflow	Port-side exhaust	Port-side intake	Port-side exhaust	Port-side intake	Port-side exhaust	Port-side intake
Input voltage	90 to 264V AC	90 to 264V AC	-40 to -72V DC	-40 to -72V DC	192 to 400 VDC 100 to 277 VAC	192 to 400 VDC 100 to 277 VAC
Frequency	50 to 60 Hz	50 to 60 Hz	DC	DC	50 to 60 Hz	50 to 60 Hz

Cisco Nexus 2300 Platform	Specification					
Efficiency	• 90 to 92% (110 to 240V input) at typical power draw • 88 to 91% (110 to 240V input) at maximum power draw	• 90 to 92% (110 to 240V input) at typical power draw • 88 to 91% (110 to 240V input) at maximum power draw	• 88% (-48V input) at typical power draw • 85% (-48V input) at maximum power draw	• 88% (-48V input) at typical power draw • 85% (-48V input) at maximum power draw	• 92 to 94% (110 to 240V input) at typical power draw • 91 to 93% (110 to 240V input) at maximum power draw	• 92 to 94% (110 to 240V input) at typical power draw • 91 to 93% (110 to 240V input) at maximum power draw
RoHS compliance	RoHS-6 compliant	RoHS-6 compliant	RoHS-6 compliant	RoHS-6 compliant	RoHS-6 compliant	RoHS-6 compliant
Hot swappable	Yes	Yes	Yes	Yes	Yes	Yes
Maximum rated output power	400W	400W	400W	350W	500W	500W
Power-cord rating	6A at 100V input; 3A at 240V input maximum	6A at 100V input; 3A at 240V input maximum	• 15A at -48V input; 8A at -60V input maximum • Maximum 14AWG wire	• 15A at -48V input; 8A at -60V input maximum • Maximum 14AWG wire	• 4A at 240 Vin and 277 Vin • 3A at 380Vin	• 4A at 240 Vin and 277 Vin • 3A at 380Vin

Table 6. Cisco Nexus 2300 Airflow Optimization Accessories

Accessories	Airflow Extension Sleeve
Part number	NXA-AIRFLOW-SLV-E=
Description	Cisco Nexus airflow extension sleeve: Optimizes airflow in port-side exhaust (front to back) airflow deployments for alignment of port in back of rack and extension of power-supply side of chassis to front of rack with airflow sleeve
Compatibility	Cisco Nexus 2300 platform chassis
Dimensions (H x W x D)	• 1.72 (1RU) x 17.3 x 8.5 in. (fully retracted) or 12.9 in. (fully extended) • Adjustable depth for the fabric extender: 26 to 30 in.
Weight	• 5.7 lb (2.6 kg)

Table 7. Cisco Nexus 2300 Platform Compliance Information

Specification	Description
Regulatory Compliance	Products should comply with CE Markings according to directives 2004/108/EC and 2006/95/EC
Safety	• UL 60950-1 • CAN/CSA-C22.2 No. 60950-1EN 60950-1 • IEC 60950-1AS/NZS 60950-1GB4943
EMC: Emissions	• 47CFR Part 15 (CFR 47) Class A • AS/NZS CISPR22 Class A • CISPR22 Class A • EN55022 Class A • ICES003 Class A • VCCI Class A • EN61000-3-2 • EN61000-3-3 • KN22 Class A • CNS13438 Class A

Specification	Description
EMC: Immunity	• EN50082-1 • EN61000-6-1 • EN55024 • CISPR24 • EN300386 • KN 61000-4 series
RoHS	The Cisco Nexus 2348UPQ, 2348TQ, and 2332TQ are RoHS-6 compliant
Network Equipment Building Standards (NEBS)	The Cisco Nexus 2348UPQ, 2348TQ, and 2332TQ meet NEBS level-3 standards (hardware revision 3) (not currently supported)

Feature support for the Cisco Nexus 2300 platform is mainly derived from the parent switch feature set. Please consult the Cisco Nexus parent switch data sheets for a comprehensive list of features supported. Table 8 lists the hardware capabilities of the Cisco Nexus 2300 platform.

Table 8. Feature Support for Cisco Nexus 2300 Platform

Description	Specification
Layer 2 features	• Layer 2 VLAN trunks • IEEE 802.1Q VLAN encapsulation • Cisco EtherChannel technology on uplinks • PortChannel on server ports on Cisco Nexus 2300 platforms • Advanced PortChannel hashing • Jumbo frames on all ports (up to 9216 bytes) • Pause frames (Priority Flow Control [PFC] and IEEE 802.3x) • Private VLANs (promiscuous only on uplinks) • Local multicast replication on Cisco Nexus 2300 platform (8000 entries) • Autonegotiation to 1000BASE-T; full duplex on host interfaces
Enhanced Ethernet	• DCB
Quality of service (QoS)	• Layer 2 IEEE 802.1p (class of service [CoS]) • Eight hardware queues per port (Cisco Nexus 2300 platforms) • Per-port QoS configuration • Local policing on Cisco Nexus 2300 platform (64 policers) • CoS trust • Configurable tail-drop threshold on Cisco Nexus 2300 platform • Egress strict-priority queuing • Egress port-based scheduling: Weighted Round Robin (WRR)
High availability	• Hot-swappable field-replaceable power supplies and fan modules • 1:1 power redundancy • Uplink traffic management through Cisco EtherChannel hashing or static port pinning • vPCs for dual-homed active-active connectivity across two Cisco Nexus parent switches • vPCs for dual-homed straight-through NIC connectivity across two Cisco Nexus 2300 platform fabric extenders • In-Service Software Upgrade (ISSU)
Security	• Local classification (256 access control list [ACL] entries)
Management	• Fabric extender management using in-band management • Locator and beacon LEDs on front and back of chassis (locator beacons on the front and rear of the chassis help reduce errors when the equipment is serviced) • Per-port locator and beacon LEDs • Syslog • Simple Network Management Protocol Versions 1, 2, and 3 (SNMP v1, v2, and v3) • Enhanced SNMP MIB support • XML (NETCONF) support • Remote Monitoring (RMON) • Cisco Discovery Protocol Versions 1 and 2

Description	Specification
	• Cisco Switched Port Analyzer (SPAN) source on server ports • Power-on self-test (POST) • Cisco Generic Online Diagnostics (GOLD): Ethernet • Comprehensive bootup diagnostic tests • CiscoWorks • Cisco Data Center Network Manager (DCNM); the Cisco Nexus 2300 platform is managed through the parent Cisco Nexus switch using DCNM and standard SNMP, XML interface, and command-line interface (CLI)
Configuration MIBs	• ENTITY-MIB • IF-MIB • FABRIC-EXTENDER MIB • CISCO-ENTITY-EXT-MIB • CISCO-ENTITY-FRU-CONTROL-MIB • CISCO-ENTITY-SENSOR-MIB • CISCO-ETHERNET-FABRIC-EXTENDER-MIB
Monitoring MIBs	• RMON-MIB
Industry standards	• IEEE 802.1p: CoS prioritization • IEEE 802.1Q: VLAN tagging • IEEE 802.3: Ethernet • IEEE 802.3ae: 10 Gigabit Ethernet • SFF 8431 SFP+ support • IEEE 802.3u 100BASE-TX specification • IEEE 802.3ab 1000BASE-T specification • IEEE 802.3an 10GBASE-T • 10GBASE-SR • 10GBASE-LR • RMON • SFF-8461

Cisco Nexus 2300 Platform Ordering Information

Table 9 provides ordering information for the Cisco Nexus 2300 platform fabric extenders.

Table 9. Ordering Information

Part Number	Description
Cisco Nexus 2300 Platform Chassis	
N2K-C2348UPQ	Cisco Nexus 2348UPQ 10GE Fabric Extender, 2PS, 3 Fan Module, 48x1/10GE (req SFP/SFP+) + 6x40G QSFP+(req QSFP+), choice of airflow and power supply
N2K-C2348TQ	Cisco Nexus 2348TQ 10G BASE T Fabric Extender, 2PS, 3 Fan Module, 48x100M/1/10GT (RJ45) + 6x40G QSFP+(req QSFP+), choice of airflow and power supply
N2K-C2332TQ	Cisco Nexus 2332TQ 10G BASE T Fabric Extender, 2PS, 3 Fan Module, 32x100M/1/10GT (RJ45) + 4x40G QSFP+(req QSFP+), choice of airflow and power supply.
N2K-C2348TQ-E	Cisco Nexus 2348TQ-E 10G BASE T Fabric Extender, 2PS, 3 Fan Module, 48x100M/1/10GT (RJ45) + 6x40G QSFP+(req QSFP+), choice of airflow and power supply
Cisco Nexus 2300 Platform Chassis with Fabric Extender and BiDI Optics	
N2K-C2348UPQ4F	Cisco Nexus 2348UPQ 10GE Fabric Extender, 2PS, 3 Fan Module, 48x1/10GE (req SFP/SFP+) + 6x40G QSFP+(req QSFP+), choice of airflow and power supply includes 4/8/12 x Fabric extender transceivers (FET 10G-FET 40G) or QSFP-Bidi
N2K-C2348UPQ8F	
N2K-C2348UPQ12F	
N2K-C2348UPQF-QSA	Cisco Nexus 2348UPQ 10GE Fabric Extender, 2PS, 3 Fan Module, 48x1/10GE (req SFP/SFP+) + 6x40G QSFP+(req QSFP+), choice of airflow and power supply includes 12 x Fabric extender transceivers (FET 10G) and 6 x QSA
N2K-C2348TQ4F	Cisco Nexus 2348TQ 10G BASE T Fabric Extender, 2PS, 3 Fan Module, 48x100M/1/10GT (RJ45) + 6x40G QSFP+(req QSFP+), choice of airflow and power supply includes 4/8/12 x Fabric extender transceivers (FET 10G/FET 40G) or QSFP-Bidi
N2K-C2348TQ8F	
N2K-C2348TQ12F	

Part Number	Description
N2K-C2332TQ4F	Cisco Nexus 2332TQ 10G BASE T Fabric Extender, 2PS, 3 Fan Module, 32x100M/1/10GT (RJ45) + 4x40G QSFP+(req QSFP+), choice of airflow and power supply includes 4/8 x Fabric extender transceivers (FET 10G/FET 40G) or QSFP-Bidi
N2K-C2332TQ8F	
N2K-C2348TQ4F-E	Cisco Nexus 2348TQ-E 10G BASE T Fabric Extender, 2PS, 3 Fan Module, 48x100M/1/10GT (RJ45) + 6x40G QSFP+(req QSFP+), choice of airflow and power supply includes 4/8/12 x Fabric extender transceivers (FET 10G/FET 40G) or QSFP-Bidi
N2K-C2348TQ8F-E	
N2K-C2348TQ12F-E	
Fan Modules	
NXA-FAN-30CFM-F=	Cisco Nexus FEX Fan Module (Std airflow, port side exhaust; Color coding: Blue), spare
NXA-FAN-30CFM-B=	Cisco Nexus FEX Fan module (Reversed airflow, port side intake; Color coding: Red), spare
Power Supplies	
N2200-PAC-400W=	Cisco Nexus 2200 AC Power supply (Std airflow, port side exhaust), spare
N2200-PAC-400W-B=	Cisco Nexus 2200 AC Power supply, Back-to-front airflow (Reversed airflow, port side intake), spare
N2200-PDC-400W=	Cisco Nexus 2200 DC Power supply (Std airflow, port side exhaust), spare
N2200-PDC-350W-B=	Cisco Nexus 2200 DC Power supply, Back-to-front airflow (Reversed airflow, port side intake), spare
N2200-P-BLNK=	Cisco Nexus 2200 Power supply Blank, spare
NXA-PHV-500W=	Nexus Access 500W 277VAC HVDC PSU, Port side exhaust, spare
NXA-PHV-500W-B=	Nexus Access 500W 277VAC HVDC PSU, Port side intake, spare
1 Gigabit Ethernet Transceivers and Cables	
GLC-T(=)	1000BASE-T SFP
GLC-SX-MM(=)	GE SFP, LC connector SX transceiver
GLC-LH-SM(=)	GE SFP, LC connector LX/LH transceiver
SFP-GE-T(=)	1000BASE-T SFP, Extended Temperature Range
SFP-GE-S(=)	GE SFP, LC connector SX transceiver, with Digital Optical Monitoring (DOM) and Extended Temperature Range
SFP-GE-L(=)	GE SFP, LC connector LX/LH transceiver, with Digital Optical Monitoring (DOM) and Extended Temperature Range
10 Gigabit Ethernet Transceivers and Cables	
SFP-10G-SR(=)	10GBASE-SR SFP+ Module
SFP-10G-LR(=)	10GBASE-LR SFP+ Module
SFP-10G-SR-S(=)	10GBASE-SR SFP Module, Enterprise-Class
SFP-10G-LR-S(=)	10GBASE-LR SFP Module, Enterprise-Class
SFP-H10GB-CU1M(=)	10GBASE-CU SFP+ Passive Cable 1 Meter
SFP-H10GB-CU3M(=)	10GBASE-CU SFP+ Passive Cable 3 Meter
SFP-H10GB-CU5M(=)	10GBASE-CU SFP+ Passive Cable 5 Meter
SFP-H10GB-ACU7M(=)	10GBASE-CU SFP+ Active Cable 7 Meter
SFP-H10GB-ACU10M(=)	10GBASE-CU SFP+ Active Cable 10 Meter
40 Gigabit Ethernet Transceivers and Cables	
QSFP-40G-SR4(=)	40GBASE-SR4 QSFP module, (multi-mode fiber, MMF at 100m)
QSFP-40G-CSR4(=)	40GBASE Extended CSR4 QSFP module, (multi-mode fiber, MMF at 300m)
QSFP-40G-LR4(=)	Cisco 40GBASE-LR4 QSFP Module for SMF
QSFP-40G-SR-BD(=)	Cisco QSFP40G BiDi Short-reach Transceiver
QSFP-H40G-ACU7M(=)	Cisco 40GBASE-CR4 QSFP+ direct-attach copper cable, 7-meter, active
QSFP-H40G-ACU10M(=)	Cisco 40GBASE-CR4 QSFP+ direct-attach copper cable, 10-meter, active
QSFP-4x10G-AC7M(=)	Cisco 40GBASE-CR4 QSFP+ to 4 10GBASE-CU SFP+ direct-attach breakout cable, 7-meter, active
QSFP-4x10G-AC10M(=)	Cisco 40GBASE-CR4 QSFP+ to 4 10GBASE-CU SFP+ direct-attach breakout cable, 10-meter, active

Part Number	Description
AOC Cables	
SFP-10G-AOC1M(=)	Cisco 10GBASE-AOC SFP+ Cable 1 Meter
SFP-10G-AOC2M(=)	Cisco 10GBASE-AOC SFP+ Cable 2 Meter
SFP-10G-AOC3M(=)	Cisco 10GBASE-AOC SFP+ Cable 3 Meter
SFP-10G-AOC5M(=)	Cisco 10GBASE-AOC SFP+ Cable 5 Meter
SFP-10G-AOC7M(=)	Cisco 10GBASE-AOC SFP+ Cable 7 Meter
SFP-10G-AOC10M(=)	Cisco 10GBASE-AOC SFP+ Cable 10 Meter
QSFP-4X10G-AOC1M(=)	Cisco 40GBase-AOC QSFP to 4 SFP+ Active Optical breakout Cable, 1-meter
QSFP-4X10G-AOC2M(=)	Cisco 40GBase-AOC QSFP to 4 SFP+ Active Optical breakout Cable, 2-meter
QSFP-4X10G-AOC3M(=)	Cisco 40GBase-AOC QSFP to 4 SFP+ Active Optical breakout Cable, 3-meter
QSFP-4X10G-AOC5M(=)	Cisco 40GBase-AOC QSFP to 4 SFP+ Active Optical breakout Cable, 5-meter
QSFP-4X10G-AOC7M(=)	Cisco 40GBase-AOC QSFP to 4 SFP+ Active Optical breakout Cable, 7-meter
QSFP-4X10G-AOC10M(=)	Cisco 40GBase-AOC QSFP to 4 SFP+ Active Optical breakout Cable, 10-meter
QSFP-H40G-AOC1M(=)	Cisco 40GBase-AOC QSFP direct-attach Active Optical Cable, 1-meter
QSFP-H40G-AOC2M(=)	Cisco 40GBase-AOC QSFP direct-attach Active Optical Cable, 2-meter
QSFP-H40G-AOC3M(=)	Cisco 40GBase-AOC QSFP direct-attach Active Optical Cable, 3-meter
QSFP-H40G-AOC5M(=)	Cisco 40GBase-AOC QSFP direct-attach Active Optical Cable, 5-meter
QSFP-H40G-AOC7M(=)	Cisco 40GBase-AOC QSFP direct-attach Active Optical Cable, 7-meter
QSFP-H40G-AOC10M(=)	Cisco 40GBase-AOC QSFP direct-attach Active Optical
SFP-10G-AOC1M(=)	Cisco 10GBASE-AOC SFP+ Cable 1 Meter
Accessory Kit	
N2300-ACC-KIT=	Cisco Nexus 2300 FEX Accessory Kit, spare (includes rack mount kit, ground lug kit, and ESD strap)
NXA-AIRFLOW-SLV-E=	Nexus 2K/3K airflow extension sleeve
NXA-ACC-KIT-BAV	Airflow Vent 2348TQ, 2348TQ-E and 2332TQ only.
Power Cords	
CAB-N5K6A-NA(=)	Power Cord, 210/220V 30A North America
CAB-AC-250V/13A(=)	Power Cord for North America, 125VAC/13A
CAB-C13-C14-JMPR(=)	Recessed receptacle AC power cord 27
CAB-C13-C14-2M(=)	Power Cord Jumper, C13-C14 Connectors, 2 Meter Length
CAB-C13-C14-AC(=)	Power Cord Jumper, C13-C14 Connectors, 3 Meter Length
CAB-C13-CBN(=)	Cabinet Jumper Power Cord, 250 VAC 16A, C14-C13 Connectors
CAB-9K12A-NA(=)	Power Cord, 125VAC 15A NEMA 5-15 Plug, North America
SFS-250V-10A-AR(=)	SFS Power Cord - 250V, 10A - Argentina
CAB-9K10A-AU(=)	Power Cord, 250VAC 10A 3112 Plug, Australia
SFS-250V-10A-CN(=)	SFS Power Cord - 250V, 10A - PRC
CAB-9K10A-EU(=)	Power Cord, 250VAC 10A CEE 7/7 Plug, EU
SFS-250V-10A-ID(=)	SFS Power Cord - 250V, 10A - South Africa, UAE, India
CAB-IND-10A(=)	10A Power cable for India
SFS-250V-10A-IS(=)	SFS Power Cord - 250V, 10A - Israel
CAB-9K10A-IT(=)	Power Cord, 250VAC 10A CEI 23-16/VII Plug, Italy
CAB-9K10A-SW(=)	Power Cord, 250VAC 10A MP232 Plug, Switzerland
CAB-9K10A-UK(=)	Power Cord, 250VAC 13A BS1363 Plug (13 A fuse), UK

Warranty

The Cisco Nexus 2300 platform 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).

Service and Support

Cisco offers a wide range of services to support the deployment and optimization of Cisco Nexus 2300 platform fabric extenders in your data center. These 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 use an architecture-led approach to help you align your data center infrastructure with your business goals and achieve long-term value. Cisco Smart Net Total Care™ 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 capability, which offers proactive diagnostics and real-time alerts on your Cisco Nexus 5500 and 5600 platform switches, Cisco Nexus 6000 and 7000 Series Switches, and Cisco Nexus 2000 Series Fabric Extenders. 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/nexusservices.

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- Cisco Nexus 2000 Series Fabric Extenders: http://www.cisco.com/go/nexus2000
- Cisco Nexus 5000 Series Switches: http://www.cisco.com/go/nexus5000
- Cisco Nexus 6000 Series Switches: http://www.cisco.com/go/nexus6000
- Cisco Nexus 7000 Series Switches: http://www.cisco.com/go/nexus7000b
- Cisco Nexus 9000 Series Switches: http://www.cisco.com/go/nexus9000
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