Cisco Introduces Cisco Nexus 2000 Series Fabric Extenders Architecture and Cisco Nexus 2148T Fabric Extender Product
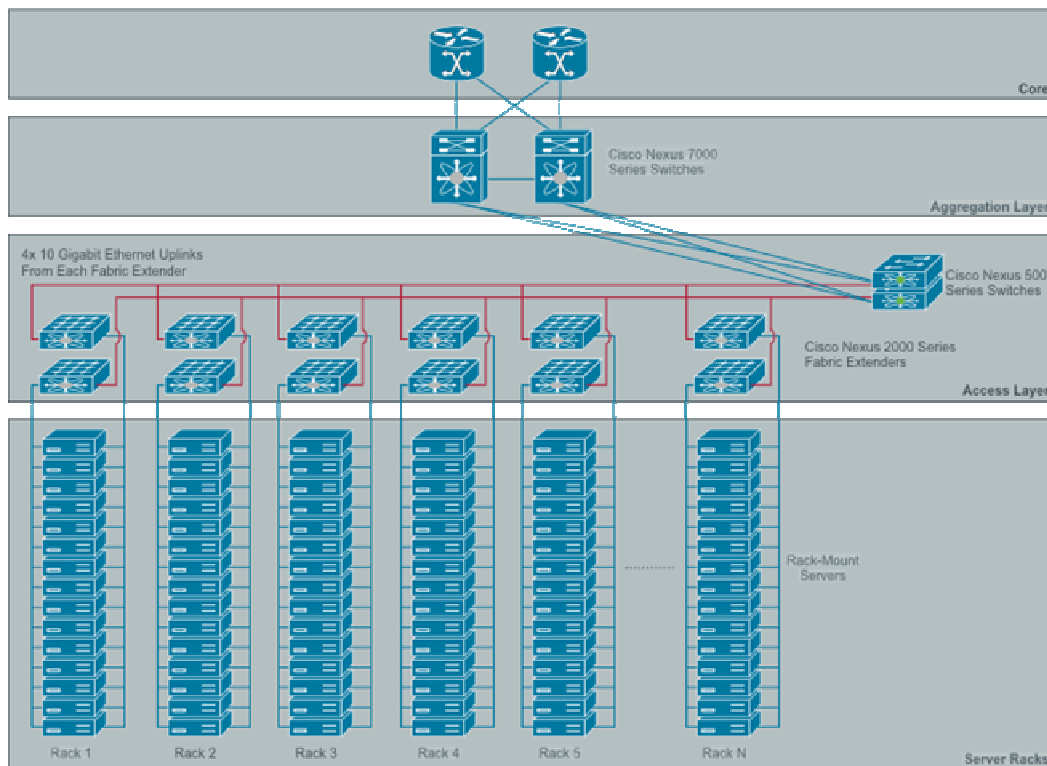
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The Cisco Nexus™ 2000 Series Fabric Extenders (Figure 1) extend the internal switching fabric of Cisco Nexus switches to remote devices positioned along with servers to provide highly scalable, cost-effective, and simplified server-access connectivity.

Cisco Nexus 2000 Series Fabric Extenders Architecture

The Cisco Nexus 2000 Series Fabric Extenders is a new category of data center products that provides a universal server-access platform. Scaling across a multitude of Gigabit Ethernet, 10 Gigabit Ethernet, Unified Fabric, rack, and blade server environments, the Cisco Nexus 2000 Series Fabric Extenders are designed to simplify data center architecture and operations. Working in conjunction with Cisco Nexus switches, the Cisco Nexus 2000 Fabric Extenders architecture delivers a cost-effective and efficient way to support today's Gigabit Ethernet environments while allowing seamless migration to 10 Gigabit Ethernet, virtual machine-aware Unified Fabric technologies.

Figure 1. The Physical Architecture Places Cisco Nexus 2000 Series Fabric Extenders at the Top of Each Rack, with Cisco Nexus 5000 Series Switches Providing Access-Layer Switching

Cisco Nexus 2148T Fabric Extender

The first product in the Cisco Nexus 2000 Series is the Cisco Nexus 2148T Fabric Extender (Figure 2). A Cisco Nexus 2148T connected to a Nexus 5000 Series system acts as a single managed entity, with the Cisco Nexus 5000 Series system providing the supervisory functions of the control plane and the Cisco Nexus 2148T inheriting the characteristics of connected Cisco Nexus 5000 Series ports. The Cisco Nexus 2148T supports the following features:

- Operates as a "Remote I/O Module" extending the internal fabric of the Cisco Nexus 5010 and 5020 Switches for low-cost port-count expansion
- Zero-touch provisioning, including configuration and upgrade
- 48 Gigabit Ethernet server access ports with RJ-45 connectors
- 4 10 Gigabit Ethernet uplink ports using Small Form-Factor Pluggable Plus (SFP+) short-reach (SR) and long-reach (LR) optical or CX1 direct-attach copper interconnects
- Compact one rack-unit (1RU) form factor
- Front-to-back cooling compatible with data center hot-aisle and cold-aisle designs, with all switch ports at the rear of the unit in close proximity to server ports
- Optional dual-redundant power supplies
- Hot-swappable fan trays
- All user-serviceable components accessible from the front panel

Figure 2.   Cisco Nexus 2148T Fabric Extender Provides 48 Gigabit Ethernet Server Ports in a Compact 1RU Chassis

The Cisco Nexus 2148T forwards all traffic to parent Cisco Nexus 5000 Series Switches over 10 Gigabit Ethernet uplinks. Depending on the number of server ports and uplinks used, the Cisco Nexus 2148T FEX can support oversubscription ratios ranging from 1:1 to 4.8:1. Passing all traffic to the parent switch allows all traffic to be shaped according to policies established on the Cisco Nexus 5000 Series switch with a single point of management.

The Cisco Nexus 2000 Series Fabric Extenders integrate with the parent switch, allowing zero-touch provisioning as well as automatic configuration and software upgrade when the fabric extender is connected to the parent switch. This integration allows large numbers of servers to be supported with the same feature set as the parent Cisco Nexus 5000 Series switch and with specific configuration parameters including security and quality of service (QoS). The FEX does not run Spanning Tree Protocol even when multiple links are connected to the parent switch, thus giving customers loop-free, active-active connectivity between the two.

No software is included with the Cisco Nexus 2148T. Software is downloaded from the parent Nexus 5000 Series switch.

Availability

The Cisco Nexus 2148T will be available for ordering and first customer shipment (FCS) in the first quarter of 2009.

Ordering Information

Table 1 provides ordering information for the Cisco Nexus 2000 Series Fabric Extenders.

Table 1. Ordering Information

Part Number	Description
Chassis	
N2K-C2148T-1GE	Cisco Nexus 2000 Series 1GE Fabric Extender, 1PS, 1 Fan Module, 48x1G-BaseT + 4x10GE (req SFP+)
Fan Modules	
N2K-C2148T-FAN=	Cisco Nexus 2000 FEX 1GE Fan Module, spare
Power Supplies	
N2K-PAC-200W(=)	Cisco Nexus 2000 FEX 1GE 200W Power supply
N2K-P1-BLNK=	Cisco Nexus 2000 FEX 1GE Power supply Blank, spare
Transceivers and Cables	
SFP-10G-SR(=)	10GBASE-SR SFP+ Module
SFP-10G-LR(=)	10GBASE-LR SFP+ Module
SFP-H10GB-CU1M(=)	10GBASE-CU SFP+ Cable 1 Meter
SFP-H10GB-CU3M(=)	10GBASE-CU SFP+ Cable 3 Meter
SFP-H10GB-CU5M(=)	10GBASE-CU SFP+ Cable 5 Meter
Accessory Kit	
N2K-C2148T-ACC=	Cisco Nexus 2000 FEX 1GE Accessory Kit, spare
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 receptical AC power cord 27
CAB-9K12A-NA(=)	Power Cord, 125VAC 15A NEMA 5-15 Plug, North America
CAB-C13-CBN(=)	Cabinet Jumper Power Cord, 250 VAC 16A, C14-C13 Connectors
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 - S. 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, SWITZ
CAB-9K10A-UK(=)	Power Cord, 250VAC 13A BS1363 Plug (13 A fuse), UK

Warranty

The Cisco Nexus 2148T Fabric Extender has 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 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 are delivered through a unique combination of people, processes, tools, and partners and are focused on helping you increase operational 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 SMARTnet® 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 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 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.

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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