PRODUCT BULLETIN NO. 3071

CISCO SFS 3012 MULTIFABRIC SERVER SWITCH

The Cisco SFS 3012 Multifabric Server Switch includes up to 24 10Gbps InfiniBand ports and up to 12 expansion slots for InfiniBand-to-Ethernet or InfiniBand-to-Fibre Channel Gateways, allowing hosts attached to a unified InfiniBand fabric to share a pool of aggregated Ethernet and Fibre Channel ports.

PRODUCT OVERVIEW

Introducing the Cisco Server Switch, a new class of data center infrastructure that provides a platform to interconnect discreet server resources together into a high performance fabric, to connect that server fabric with shared pools of I/O and storage resources, and to map the resources together to deliver virtual "compute services" based on application or business policy and priority. The Cisco Server Switch enables the delivery of utility computing by consolidating server I/O into a shared pool, significantly simplifying the server I/O architecture and enabling the virtualization of compute resources.

The Cisco SFS 3000 Multifabric Server Switch family creates a unified fabric that dramatically simplifies the datacenter architecture by running multiple types of traffic over a single physical connection. With only one interface card in each server, all resources can be managed on one fabric, eliminating the need to install and manage multiple Ethernet, Fibre Channel, and IPC cards. All types of I/O can be aggregated and load-balanced on a single 10Gbps InfiniBand cable, reducing the number of managed host ports and increasing availability. The Server Switch then connects servers to a pool of shared Fibre Channel and Ethernet ports via line-rate gateways, and creates virtual I/O subsystems on each host, including virtual HBAs and virtual IP interfaces. When used in conjunction with VFrame server virtualization software, the Server Switch can dynamically commission or decommission this virtual I/O pool to any physical server on-demand.

Table 1. General Features

Feature	Description
10-Gbps Unified Fabric	The Cisco SFS 3012 Multifabric Server Switch creates a single 10-Gbps fabric for interprocess communications, storage, and networking. With just one 10-Gbps adapter, administrators can create virtual IP and storage interfaces in every server, offering a full 10 Gbps of peak load-balanced bandwidth per port for mission-critical applications. Resources can be managed on one switched fabric, eliminating the need to install and manage multiple Ethernet, Fibre Channel, and interprocess communication (IPC) cards.
24 10-Gbps (4X) InfiniBand Ports	With 24 InfiniBand ports in the Cisco SFS 3012 Multifabric Server Switch, and the ability to easily cascade multiple switches, IT managers can deploy clusters today and protect their initial investments with the flexibility to upgrade over time.
12 Hot-Plug Expansion Slots	The expansion module accepts up to 12 Fibre Channel or Ethernet gateway modules to allow InfiniBand-attached hosts to share a pool of aggregated Ethernet and Fibre Channel ports.
Unique Cisco Transparent Topology Architecture	Using Cisco's transparent topology architecture, no changes are necessary to existing SAN and IP management tools over the unified fabric. Servers appear as direct-attached nodes on the SAN with unique World-Wide Node Names, and switches and hosts are discovered using standard IP tools such as Simple Network Management Protocol (SNMP), ping, and traceroute.
Intelligent Switch with Embedded Subnet Management	Configuration and maintenance are simplified with a full-featured GUI and command-line interface (CLI) using serial console, Telnet, or Secure Shell (SSH) Protocol, enabling remote monitoring, upgrades, and troubleshooting. The Cisco SFS 3012 Multifabric Server Switch can be managed using the Cisco SFS

	management suite or with existing management systems that use standard protocols such as SNMP.

Table 2. Fibre Channel Gateway Features

Feature	Description
Virtual I/O for Fibre Channel	Allows a group of servers to share a pool of centralized Fibre Channel I/O resources. Translates between SCSI over InfiniBand (SRP) and Fibre Channel Protocol (FCP) at the gateway, and allows an SRP initiator to concurrently talk through multiple shared connections.
Topology Transparency	Creates unique World-Wide Node Names for every virtual HBA, enabling InfiniBand-attached hosts to seamless connect with existing Fibre Channel storage and management tools.
Failover/Failback	Enables sessions to fail over and fail back.
Multipathing Support	Full support for existing multipathing tools, including EMC Powerpath, DMP, and more.
Load Distribution	Centralized connection manager dynamically distributes sessions across multiple gateways.
Storage Access Controls	Compatible with existing switch-based zoning and logical unit number (LUN)-based access controls. The Cisco SFS 3012 Multifabric Server Switch also includes support for port and LUN access controls through a storage management GUI.
Storage Traffic Monitoring	Creates graphs and reports on storage performance statistics on individual or aggregated ports.
Boot over SAN/LUN Remapping	Enables InfiniBand-attached servers to boot remotely over the SAN by LUN remapping.

Table 3. Ethernet Gateway Features

Feature	Description
Virtual I/O for Ethernet	Allows a group of servers to share a pool of centralized Ethernet I/O resources. Translates between IP over InfiniBand and IP over Ethernet at the gateway, and allows an InfiniBand-attached host to seamlessly join an existing IP subnet.
Full IPv4 Multicast Support	Enables multicast-enabled applications across the InfiniBand network.
Loop Protection	Includes a variety of flexible options to prevent broadcast loops.
Jumbo Frame Support	Supports up to 9k Ethernet frames and wire-speed IP fragmentation.
VLAN and Partition Support	Provides transparent support for VLANs on the InfiniBand network while maintaining existing business and security rules.
Link Aggregation	Combines multiple ports to optimize use of aggregate bandwidth as well as high availability. Supports a variety of metrics, including source/destination IP, source/destination MAC, and round robin.
Load Distribution	Supports redundancy groups across multiple gateways and multiple chassis.
High-Availability Options	Flexible deployment in active-active or active-passive modes helps eliminate single points of failure.
DHCP Relay Support	Allows Dynamic Host Configuration Protocol (DHCP) to work across Ethernet and InfiniBand fabrics.

Table 4. Management Features

Feature	Description
Network Management	Easy configuration, monitoring, and maintenance in band and out of band: • Java-based element manager GUI installs on a variety of platforms • Web-based chassis manager GUI uses browser to manage the switch • CLI uses Telnet, SSH, or RS-232

Feature	Description
Image Management	• Stores multiple system images and configuration files for validation and rollback • Includes recovery image for failsafe upgrades
Network Services	SNMP, NTP, DNS, FTP
MIBs	Supports MIB-II, Bridge MIB, Interface MIB, IP Forwarding MIB, Ethernet-like MIB, IB SM InfiniBand Subnet Manager MIB, IB SM InfiniBand Subnet Manager Agent, and private enterprise switch MIBs
Storage Management	Easy to use, Java-based storage management utility
Security	• Secure management using SSHv2, SSL, and SNMPv3 • Local and RADIUS authentication and authorization • Role-based access controls for Ethernet, Fibre Channel, and InfiniBand
Logging	• Local and streaming logging • Configurable verbosity with log rotation and aging • Ability to upload, aggregate, and filter log files via GUI
Monitoring and Troubleshooting	• Performance monitoring with graphical statistic graphing on a per-port or aggregate port basis • Switch monitoring with SNMP traps and MIBs using integrated or remote trap receiver

AVAILABILITY

The Cisco SFS 3012 Multifabric Server Switch is available and shipping today.

ORDERING INFORMATION

Table 5. Ordering Information for the Cisco SFS 3012 Multifabric Server Switch

Part Number	Description
SFS-3012-4X024-SK9	Cisco SFS 3012 Multifabric Server Switch (standard), including: • 12 port 4X InfiniBand switch card • System controller module • System power supply • Blower module • 12 expansion slots, 2 switch card slots
SFS-3012-4X024-HK9	Cisco SFS 3012 Multifabric Server Switch (HA), including: • 2 12-port 4X InfiniBand switch cards • 2 system controller modules • 2 system power supplies • 2 blower modules • 12 expansion slots, 2 switch card slots
SFS-3012-MFM-K9	Cisco SFS 3012 Management Interface Module
SFS-X3012-04X12K9	Cisco SFS 3012 InfiniBand 4XIB 12-port switch card
SFS-XETH-01C06K9	Cisco SFS 3000 InfiniBand-to-Ethernet Gateway Module
SFS-XFCH-02F02K9	Cisco SFS 3000 InfiniBand-to-Fibre Channel Gateway Module
PWR-SFS3012	Cisco SFS 3012 Power Supply

FAN-SFS3012	Cisco SFS 3012 Blower Module

FOR MORE INFORMATION

For more information about the Cisco SFS 3012 Multifabric Server Switch, visit http://www.cisco.com/en/US/products/ps6422 or contact your local account representative.

Corporate Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 526-4100

European Headquarters
Cisco Systems International BV
Haarlerbergpark
Haarlerbergweg 13-19
1101 CH Amsterdam
The Netherlands
www-europe.cisco.com
Tel: 31 0 20 357 1000
Fax: 31 0 20 357 1100

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
www.cisco.com
Tel: 408 526-7660
Fax: 408 527-0883

Asia Pacific Headquarters
Cisco Systems, Inc.
168 Robinson Road
#28-01 Capital Tower
Singapore 068912
www.cisco.com
Tel: +65 6317 7777
Fax: +65 6317 7799

Cisco Systems has more than 200 offices in the following countries and regions. Addresses, phone numbers, and fax numbers are listed on **the Cisco Website at www.cisco.com/go/offices.**

Argentina • Australia • Austria • Belgium • Brazil • Bulgaria • Canada • Chile • China PRC • Colombia • Costa Rica • Croatia • Cyprus Czech Republic • Denmark • Dubai, UAE • Finland • France • Germany • Greece • Hong Kong SAR • Hungary • India • Indonesia • Ireland • Israel Italy • Japan • Korea • Luxembourg • Malaysia • Mexico • The Netherlands • New Zealand • Norway • Peru • Philippines • Poland • Portugal Puerto Rico • Romania • Russia • Saudi Arabia • Scotland • Singapore • Slovakia • Slovenia • South Africa • Spain • Sweden • Switzerland • Taiwan Thailand • Turkey • Ukraine • United Kingdom • United States • Venezuela • Vietnam • Zimbabwe

205410.BD_ETMG_JL_9.05

Printed in the USA