

S50 High Performance Data Center Switch

High Gigabit Ethernet density for the data center edge

Extends Force10's solution from core aggregation to server edge

Complete, standards-based Layer 2 and Layer 3 features

S-Series S50 — High Performance Data Center Switch

The Force10 S-Series S50 is a compact form factor switch/router that delivers the high Gigabit Ethernet density at the server edge that enables cost effective scalability while eliminating costly bandwidth bottlenecks.

- 48 port GbE fixed configuration 1-RU switch/router
- Dual 10 GbE uplinks
- Scalable stacking technology up to 144 GbE ports – three S50s

Key S50 Applications

Coupled with the E-Series, which delivers unmatched resiliency and performance, the S50 enables IT managers to deploy a reliable end-to-end 10 GbE data center solution, spanning from core aggregation to the server or storage edge.

- Rack access switch, aggregating up to 48 GbE servers, providing redundant 10 GbE uplinks
- Simple and cost effective GbE cluster with up to 144 compute nodes leveraging resilient stacking technology (up to three S50s)"
- Cost effective distribution layer feeding a 10 GbE LAN core or distributed data center deployments

Key S50 Features

- 48 10/100/1000 ports in a 1-RU form factor
 - 44 ports 10/100/1000 Base-T
 - 4 ports 10/100/1000 Base-T shared with SFP pluggable optics
- Optional 2-port 10 GbE LAN PHY (XFP pluggable optics), or CX4 module
- Stack up to three S-Series S50s to deliver a high density data center solution
- Supports Jumbo frames of up to 9,216 bytes; ideal for high-end server connectivity and network attached file servers
- Full complement of standards-based Layer 2 and Layer 3 features



Specifications: S-Series S50



Ordering Information

ORDER NUMBER	DESCRIPTION
SA-01-GE-48T	48 port 10/100/1000 BaseT Module (powercord – localized, front mounting standard bracket)
SA-01-10GE-2P	10 Gigabit Ethernet Module (10 Gigabit Ethernet, 2 port XFP)
SA-01-10GE-2C	10 Gigabit Ethernet Module (10 Gigabit Ethernet, 2 port CX4)
SA-01-RMB-2	Rear (Universal) Mounting Bracket
SA-01-SSC	Short Length stacking cable (60 cms)
SA-01-LSC	Long Length stacking cable (4 M)
SA-01-EPS	Power shelf (external power shelf that hosts eight redundant external units)
SA-01-PSU	External power unit (fits into SA-01-EPS, power supply unit, single redundant power)
SA-01-DPM	Power module (draws DC) (fits into SA-01-GE-48T, DC power module, single redundant power)
SA-01-SW-L3	Layer 3 Software

Physical

48 line-rate ports 10/100/1000Base-T
 4 ports SFP (miniGBIC, shared with 1000Base-T)
 Optional Module, 2 line-rate ports 10 Gigabit Ethernet XFP or CX4
 1 RJ-45 Console/management port with RS-232 signaling
 2 ports 10 Gigabit stacking

Size: 17.32 w x 16.73 d x 1.73" h (440 x 425 x 44 mm)
 Weight: 14.41 lbs (6.54 Kg)
 Power Supply: 100-240V AC, 50-60Hz, Autosensing
 Maximum thermal output: 44.782Btu/hr
 Maximum current draw per system: 100vAC/4A, 240vAC/2A
 Maximum power consumption: 150W
 19" rack mountable

Standard 1U chassis height
 Maximum Operating Specifications:
 Temperature: 32° to 104°F (0° to 40°C)
 Operating humidity: 10 to 90 percent (RH), non-condensing
 Maximum Non-operating Specifications:
 Storage Temperature: -4° to 158°F (-20 to 70°C)
 Storage humidity: 10 to 95 percent (RH), non-condensing
 Reliability:
 MTBF: 116,000 hours

Redundancy

Redundancy in stack connectivity (self healing ring)
 Redundancy with 2 port 10 Gigabit Ethernet uplinks
 Redundancy with 1 Gigabit uplinks – using Link Aggregation
 External Redundant Power redundancy

Performance

Layer 2/MAC Addresses: 16K
 Layer 3 Forwarding Entries: Up to 3k LPM table and 4k host entries
 Switching Fabric Capacity: 192 Gbps (> 130 Mpps)
 User Traffic Capacity: 136 Gbps (> 101 Mpps)
 Jumbo Frame Support: 9216 byte packet support
 Link Aggregation: 8 links per Link Aggregation Group and 48 groups per system
 Stacking port capacity: 10 Gbps per port
 Queues per port: 8 Queues (8th queue reserved for stacking)
 VLANs: 1024 VLANs with 4096 tag value support

IEEE Compliance

802.3ae 10 Gigabit Ethernet
 802.3ab 1000Base-T
 802.3ak 10 Gigabit Ethernet CX4
 802.3z Gigabit Ethernet
 802.1p L2 Prioritization
 802.1Q VLAN Tagging, Double VLAN Tagging (Q in Q)
 802.1s Multiple Spanning Tree Protocol
 802.1w Rapid Spanning Tree Protocol
 802.1AB Link Layer Discovery Protocol
 802.3ad Link Aggregation with LACP
 802.1D Bridging
 802.3x Flow Control

RFC Compliance

OSPF:
 1765 OSPF Database overflow
 2154 OSPF MD5
 2328 OSPF v2
 1850 OSPF MIB

RIP:
 1058 RIP v1
 2082 RIP MD5
 1724 RIP MIB
 2453 RIP v2

IP Multicast:
 1122 DVMRPv3-10
 3376 IGMPv3
 2236 IGMPv1 and v2 left-draft
 IGMP-snooping v1 and v2
 2362 PIM-SM

General Routing and Switching Protocols:

768 UDP
 1256 ICMP
 783 TFTP
 1519 CIDR
 791 IP
 1542 BootP (relay)
 792 ICMP
 1812 IP v4 Routers
 793 TCP
 1866 HTML
 826 ARP
 2068 HTTP
 854 Telnet
 2030 SNMP
 894 IP over Ethernet
 2131 BootP/DHCP helper
 903 Reverse ARP
 951 BootP
 2236 IGMP v1 and v2
 1027 Proxy ARP
 2338 VRRP

Security:

1492 TACACS+
 2865 RADIUS
 3128 Protection Against a Variant of the Tiny Fragment Attack
 left-draft SSH v2
 SSL
 Layer 2/3/4 ACLs
 IP Broadcast Control

Quality of Service:

7 user queues per port
 IEEE 802.1p
 IP DiffServ support
 Per port rate limiting
 Per queue rate limiting
 Strict Priority and Weighted Round Robin Scheduling

Management and SNMP:

Industry familiar CLI with
 - Scripting
 - Command completion
 - Context sensitive help
 1157 SNMP v1
 1212 Concise MIB Definition
 1213 SNMP v2 (MIB-II)
 1493 Bridge MIB
 1643 Ethernet-like MIB
 1901 Community based SNMPv2
 1905 Protocol Operations for SNMPv2
 1906 Transport Mappings for SNMPv2
 1907 Management Information Base for SNMPv2
 1908 Coexistence between SNMPv1 and SNMPv2
 1724 RIP v2 MIB extension
 1850 OSPF v2 MIB
 2096 IP forwarding table MIB
 2233 The Interfaces Group MIB using SMI v2
 2570 SNMP v3
 2665 Ethernet-like interfaces
 2674 VLAN MIB
 2787 VRRP MIB
 2819 RMON (Groups 1,2,3,9)
 2933 IGMP MIB
 2934 PIM MIB for IPv4

Compliances

Safety
 CUS 60950, 3rd edition (US NRTL through CSA)
 CSA 60950, 3rd edition
 CE Mark (EN 60950)
 CB Report, all country deviations
 EN 60825-1 Safety of Laser Products-Part 1: Equipment Classification Requirements and User's Guide
 EN 60825-2 Safety of Laser Products-Part 2: Safety of Optical Fibre Communications Systems
 21 CFR 1040.10 and 1040.11 FDA laser device requirements

EMC

USA: FCC CFR47 Part 15, Subpart J, Class A
 Canada: ICES-003, Issue-2, Class A
 Europe: EN55022 1998 (CISPR 22: 1997), Class A
 Japan: VCCI V3/01.4 Class A
 EN 61000-4-2 ESD
 EN 61000-4-3 Radiated Immunity
 EN 61000-4-4 EFT
 EN 61000-4-5 Surge
 EN 61000-4-6 Low Frequency Conducted Immunity
 EN 300 386 V1.3.1 (2001-09) EMC for Network Equipment
 EN 55024 1998

Telecoms

JATE (for Japan)



Force10 Networks, Inc.
 350 Holger Way
 San Jose, CA 95134 USA
www.force10networks.com

408-571-3500 PHONE
 408-571-3550 FACSIMILE

© 2007 Force10 Networks, Inc. All rights reserved. Force10 and the Force10 logo are registered trademarks, and EtherScale, FTOS, SFTOS, and TeraScale are trademarks of Force10 Networks, Inc. All other brand and product names are trademarks or registered trademarks of their respective holders. Information in this document is subject to change without notice. Certain features may not yet be generally available. Force10 Networks, Inc. assumes no responsibility for any errors that may appear in this document.