S50N Data Center Switch

48-port GbE fixed configuration 1-RU switch

Up to four 10 GbE uplinks

Scalable stacking technology supports 144 GbE ports in up to three S50Ns

S-Series S50N High Performance GbE/10 GbE Access Switch

The Force10 S50N brings core-like resiliency in a compact form factor to the network edge, enabling cost-effective scalability. This high-density gigabit ethernet switch, with low switching latency, delivers the critical functionalities that advanced enterprise network edges demand.

Key Applications

Coupled with the E-Series, which delivers unmatched resiliency and performance, the S50N enables IT managers to deploy a reliable end-to-end 10 GbE solution that spans from core to network edge.

- Line-rate GbE and 10 GbE rack switches for the most demanding data center, storage or compute facility

- Cost effective distribution layer into a 10 GbE LAN core or distributed data center deployments

Key Features

The S50N is a fixed configuration switch that delivers the reliability and scalability that data centers demand.

- 48 10/100/1000 ports in a 1-RU form factor
  - 44 ports 10/100/1000Base-T
  - 4 ports 10/100/1000Base-T shared with SFP pluggable optics

- Optional Modules
  - 2-port 10 GbE LAN PHY (pluggable XFP modules)
  - 2-port 10 GbE (CX4)
  - 2-port 12 Gbps stacking
  - 1-port 24 Gbps stacking

- Switching fabric capacity of 288 Gbps and forwarding capacity of more than 131 Mpps

- Stack up to three S50Ns to deliver a scalable high capacity 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

- Built-in power redundancy

FORCE10
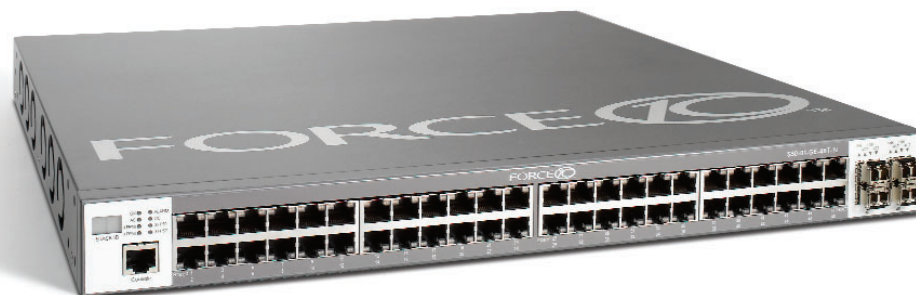
Specifications: S-Series S50N Data Center Switch

Ordering Information

Order Number	Description
S50-01-GE-48T-AC-1	48-port 10/100/1000BaseT chassis with 4 SFP ports, 2 modular slots 1 AC + 1 DC power supply, SFTOS
S50-01-GE-48T-DC-1	48-port 10/100/1000BaseT chassis with 4 SFP ports, 2 modular slots 2 DC power supplies, SFTOS
S50-01-10GE-2P	2-port 10 GbE XFP module*
S50-01-10GE-2C	2-port 10 GbE CX4 module*
S50-01-12G-2S	2-port 12 Gbps stacking module*
S50-01-24G-1S	1-port 24 Gbps stacking module*
S50-01-SSC-12G	60cm stacking cable - S50-01-12G-2S
S50-01-LSC-12G	4m stacking cable - S50-01-12G-2S
S50-01-SSC-24G	60cm stacking cable - S50-01-24G-1S
S50-01-LSC-24G	4m stacking cable - S50-01-24G-1S
SA-01-EPS	S50N power supply shelf, holds eight redundant power supply units*
SA-01-PU	S50N redundant power supply unit*
S50-01-SW-L3	Layer 3 SFTOS software upgrade*

* Optional component for the S50N

Physical
48 line-rate ports 10/100/1000Base-T
4 SFP ports (shared)
1 RJ-45 Console/management port with RS-232 signaling

Optional Modules:
  2 line-rate ports 10 Gigabit Ethernet XFP
  2 line-rate ports 10 Gigabit Ethernet CX4
  2 line-rate ports 12 Gigabit Stacking
  1 line-rate port 24 Gigabit Stacking

Size: 1 RU, 1.7 h x 17.32 w x 16.73" d
  (4.3 h x 44 w x 42.5 cm d)
Weight: 14.39 lbs (6.54 kg)
Power Supply: 100 - 240 VAC 50/60 Hz
  -48V Terminal Type DC
Max. Thermal Output: 407 BTU/hr
Max. Current Draw per System:
  4 A at 100/120 VAC, 2 A at 200/240 VAC
Max. Power Consumption: 150 W
19" rack mountable
Standard 1U chassis height
Max. Operating Specifications:
  Temperature: 32° to 122°F (0° to 50°C)
  Operating humidity: 10 to 90% (RH), non-condensing
Max. Non-operating Specifications:
  Storage Temperature: –40° to 158°F (–40° to 70°C)
  Storage humidity: 10 to 90% (RH), non-condensing
Fan Acoustic Noise at Low, Medium, and High speed
  S50N-AC: 39.3 dB, 49.2 dB, 59.6 dB
  S50N-DC: 39.7 dB, 48.1 dB, 58.3 dB
Reliability: MTBF 169,315 hours

Redundancy
Redundancy in stack connectivity (self healing ring)
Redundancy with up to 4 ports of 10 GbE uplinks
Redundancy with dual modular slots
Redundancy with link aggregation across stack members
Power redundancy

Performance
Layer 2 MAC Addresses:	16K
Layer 3 Forwarding Entries:	Up to 3K LPM table and 4K host entries
Switching Fabric Capacity:	288 Gbps
User Traffic Capacity:	176 Gbps (131 Mpps)
Jumbo Frame Support:	9216 bytes
Link Aggregation:	8 links per Link Aggregation Group & 48 groups per system
Stacking Capacity:	Up to 96 Gbps
Queues per port:	8 Queues (8th queue reserved for stacking)
VLANs:	1024 VLANs with 4096 tag value support
Line-rate Layer 2 switching:	all protocols, including IPv4 and IPv6
Line-rate Layer 3 routing:	IPv4

LAG load balancing based on Layer 2, IPv4 or IPv6 headers

IEEE Compliance
802.1AB	Link Layer Discovery Protocol
802.1D	Bridging, STP
802.1p	L2 Prioritization
802.1Q	VLAN Tagging
802.1s	Multiple Spanning Tree Protocol
802.1w	Rapid Spanning Tree Protocol
802.1X	Network Access Control
802.3ab	Gigabit Ethernet (1000BASE-T)
802.3ad	Link Aggregation with LACP
802.3ae	10 Gigabit Ethernet
802.3ak	10 Gigabit Ethernet (10GBASE-CX4)
802.3i	Ethernet (10BASE-T)
802.3u	Fast Ethernet (100BASE-TX)
802.3x	Flow Control
802.3z	Gigabit Ethernet (1000BASE-X)

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:
1112	IGMP	Ietf-draft	IGMP-snooping v1 and v2
2236	IGMPv1 and v2		
3376	IGMPv3		

General Routing and Switching Protocols:
768	UDP	1027	Proxy ARP
783	TFTP	1256	ICMP
791	IP	1519	CIDR
792	ICMP	1542	BootP (relay)
793	TCP	1812	IP v4 routers
826	ARP	2030	SNTP
854	Telnet	2131	BootP/DHCP helper
894	IP over Ethernet		
903	Reverse ARP	2236	IGMP v1 & v2
951	BootP	2338	VRRP

Security:
1492	TACACS+
2865	RADIUS
3128	Protection Against a Variant of the Tiny Fragment Attack

Port Security:
Ietf-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:
RADIUS/TACACS+ Authentication
Industry familiar CLI: 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

Compliances

Safety
UL 60950-1:2003, 1st edition
CSA C22.2 No. 60950-1-03, 1st edition April 1, 2003
CE Mark (EN 60950-1:2001)
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)

RoHS Compliance
All S50N components are EU RoHS compliant with the exception of lead, which is exempt from the directive for network equipment.