

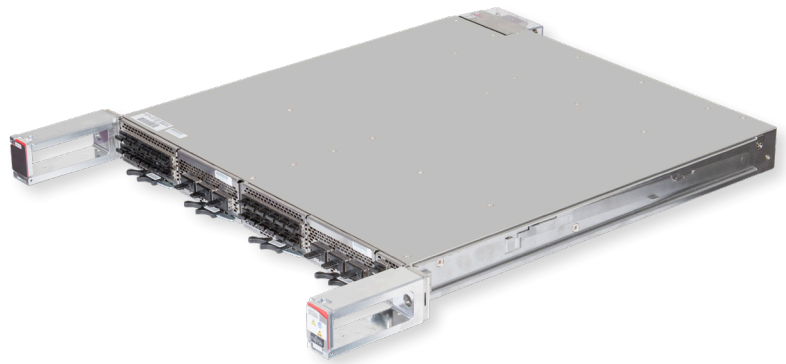
Data Sheet

1FINITY™ S100 Switch

Layer 2 switch delivers dense Ethernet aggregation

S100 Blade at a Glance

- Modular 1RU design
- 1.2 Tbps switching capacity
- Four front-access slots for several combinations:
 - 12 × 10 GbE/OTU2 SFP+
 - 3 × 100 GbE CPF4
 - 12 × 1 GbE/10 GbE SFP+
 - 1 × 100 GbE DWDM CFP2-ACO
- Web-based GUI, CLI scripts, or NETCONF API



Product Overview

The 1FINITY S100 Layer 2 switch is a compact, carrier-grade platform that delivers dense 1 GbE or 10 GbE to 100 GbE aggregation in a 1RU blade. The S100 solves space and power challenges, delivers high-performance scalable services, and reduces operating costs.

Solving the Problems of Convergence

Optical and switching technologies are advancing rapidly, and new platforms often integrate the two. In recent years, vendors have created sophisticated, converged, chassis-based platforms. This approach has been successful, but it has also inflated initial costs; slowed innovation; reduced space efficiency and flexibility; and encouraged vendor lock-in.

Solutions to these problems can be found in a modular, disaggregated product that employs pluggable elements. One of these is the 1FINITY™ S100 Switch, an innovative, modular Layer 2 switch that combines high density and simplicity.

Modular Blade-Based Design

The modular design results in maximum pay-as-you-grow flexibility. This design offers efficient scaling by adding additional 1RU systems as needed. The small, dense form factor allows full utilization of rack space in 1RU increments, and the absence of a large, multislot chassis eliminates the need for rack partitioning.

Operationally, the 1FINITY architecture is as close as possible to zero intercept—with no chassis, there is zero space and zero cost prior to initial service. The modular design enhances availability by minimizing Mean Time To Repair (MTTR), since most sources of failure can be quickly repaired. Additionally, the blade-based design is future-proof and evergreen; modules can be upgraded as new technology becomes available. Finally, with support for open optics, there is no vendor lock-in; optics can be purchased either from Fujitsu or from third parties.

1FINITY: A Revolutionary, Disaggregated Platform

For network operators seeking an open, simple, scalable architecture to meet escalating bandwidth demand, Fujitsu provides 1FINITY, a revolutionary disaggregated platform that delivers unprecedented flexibility, scalability, and efficiency. Unlike the traditional converged systems other vendors provide, the programmable, blade-centric design of 1FINITY offers operators a pay-as-you grow approach with low initial investment. Additional benefits include high rack space utilization, evergreen technology design, operational convergence, open pluggable optics, open APIs, and open protocols.

Efficient 1 GbE or 10 GbE to 100 GbE Aggregation

Layer 2 Switching

The 1FINITY S100 is a modular Ethernet switching platform ideal for networks that require 1 GbE or 10 GbE to 100 GbE aggregation for Carrier Ethernet 2.0-compliant E-Line services. The 1RU blade provides 1.2 Tbps bidirectional switching with four Plug-In Units (PIUs). The S100 blade supports 12 × SFP+ 10 GbE/OTU2, 3 × CFP4 100 GbE, 12 × SFP+ 1 GbE/10 GbE, or 1 × CFP2-ACO 100 GbE DWDM PIUs.

With the 1 × 100 GbE DWDM PIU, a 100 GbE signal can be provisioned directly into a ROADM, eliminating the need for a standalone transponder and thus reducing cost.

Metro to Long-Haul Applications

The 1FINITY S100 is ideal for 10 GbE to 100 GbE aggregation in mobile backhaul and business services applications. Its scalable blade architecture can be used with existing FLASHWAVE® 9500 and FLASHWAVE CDS deployments, and with the 1FINITY Transport blade family. The combination of an S100 and a DWDM optical transport device such as the FLASHWAVE 9500 can efficiently transport 10 GbE and 100 GbE services on 100G optical wavelengths.

Additionally, with the 100 GbE DWDM PIU, the S100 blade can provide economical 100G wavelengths with a direct connection to an L100 ROADM without the need for a standalone transponder.

For long-haul transport up to 200G per lambda, the S100 can be teamed with the FLASHWAVE 9500 and the 1FINITY T200 blade. For dense metro DCI applications requiring up to 200G per lambda transport, the S100 can be deployed with the 1FINITY T100 blade.

Simplified Network Operations

The 1FINITY S100 blade has a Linux-based operating system and can be managed with a Web-GUI, CLI scripts, SNMP, or a NETCONF interface. The GUI or CLI script can provision various service options. The NETCONF management API makes it easy to use the 1FINITY S100 with SDN network controllers, including Fujitsu Virtuora® Network Controller (NC).

The S100 Switch also enables simpler operations with ITU-T Y.1731 for performance monitoring, ITU-T G.8031 and G.8032 for sub-50 millisecond Ethernet linear and ring protection switching, and link aggregation for facility protection.



Up to 3 × CFP4
100 GbE ports

Up to 12 × SFP+
10 GbE/OTU2 ports

Up to 12 × SFP+
1 GbE/10GbE ports

Up to 1 × CFP2-ACO
100 GbE DWDM port

Technical Specifications

Base System Hardware				
System Configuration	1RU blade			
PIU per Blade	4			
Local Management Port (LMP)	None			
Management Port (LCN)	2 × Gigabit Ethernet SFP (T, SX, LX, EX, ZX)			
Front LEDs	System Status, Severity, Port			
Fans	3 hot-swappable fan units, alarm monitored			
Power Supply	Dual-feed fixed DC power supply			
Software OS	Linux			
Service Ports				
	10 GbE/ OTU2	100 GbE	100 GbE DWDM	1 GbE/ 10 GbE
Service Ports per Blade	12 per PIU	3 per PIU	1 per PIU	12 per PIU
Optical/Electrical Interface	SFP+	CFP4	CFP2-ACO	SFP/SFP+
Supported Interfaces	SR, ER, LR, ZR, DWDM	SR4, LR4, ERL, ERL, ER4	DWDM	SX, LX, EX, ZX, SR, ER, LR, ZR, CWDM (Ethernet Only)
Performance Monitoring				
Service PMs	24-hour, 15-minute, and 5-minute bins			
Thresholds and TCA	Support (user assignable)			
Ethernet SLA PMs (Y.1731)	• Frame delay • Delay variation • Loss ratio			
Ethernet Port PMs	• Rx, Tx and error statistics • Input and output rate per port • Input and output utilization per port			
Management				
Virtuora NC	Yes			
Web GUI	Yes			
CLI	Yes			
NETCONF/YANG	Yes			
SNMP	SNMPv2			
NTP, SNTP, Telnet, and FTP	SSH, SFTP, FTP, Telnet, HTTP, HTTPS			
Timing	NTP			
In-Band Management	MVLAN			
OSMINE Support	CLEI			

Physical Characteristics	
Dimensions H × W × D	1.75 × 19 × 17.7" (45 × 483 × 450 mm) W = 19" or 23" with mounting rails D<600 mm with fiber management
Rack Compatibility	19 and 23", 2- and 4-post
Weight	Blade: 16.71 lbs (7.58 kg)
Operating Environment	
Operating Temperature	5 to 40 °C
Operating Humidity	5 to 85%
Power	
Power Supply	Dual-feed, fixed DC power supply
120 V AC	No
–48 V DC	–40 V DC to –57 V DC
Power Consumption	700 W
Regulatory and Compliance	
FCC	FCC Part 15, Class A
NEBS	NEBS Level 3
UL and CB Safety	UL60950-1 & IEC60950-1
CE	CE
ROHS	ROHS
CISPR	CISPR 24 & CISPR 32
ETSI	EN 300-019, EN 300-132, EN 300-753, EN 300-386
WEEE	WEEE
RCM	RCM
CDRH	FDA CDRH

Technical Specifications

Ethernet Switching		Ethernet Services	
Switch Fabric	1.2 Tbps	E-Line/E-LAN	Yes
Packets per Second	1.44 Gbps	E-Line MEF CE 2.0	Yes
MAC Address Table	• 750 K table entries • Enable/disable learning per port	E-LAN MEF CE 2.0*	Yes
Jumbo Frames	9608 bytes	Network Protection	
VLAN Tagging 802.1Q	4094 C-VLANs	Ethernet Protection	• <50 ms protection switching • 3.3 ms CCMs in hardware • Nonrevertive/revertive • ITU-T G.8031 • ITU-T G.8032 • Multiple instances/laddered rings
Provider Bridging 802.1ad	4094 S-VLANs	Link Aggregation	0:N LAG N<=16 1+1 LAG* LAG over G.8032 MC-LAG*
Tagging	• CVLAN translation • Double tagging • Tagging, de-tagging, swapping • Virtual untagged	Security	
Traffic QoS		• L2 loop monitoring • L2 loop protocol • Filtering	
Priority Queues	8 queues per port/4 queues per flow	* Supported in R2.3	
Traffic Classification	• IEEE 802.1Q, Port, VLAN, ToS, DSCP • CIR/CBS and PIR/PBS • 2-rate, 3-color (2R3C)		
Bandwidth Meters	• Bandwidth profiles • Ingress and egress filters • Per service in 1 Mbps increments		
Ethernet OAM			
Fault Management	• IEEE 802.1ag, CFM, ITU-T Y.1731 • Loopback and link trace • Ethernet fault propagation shutdown		
Loopbacks	• Station loopback • Loopback based on L2 and L3 filter • MAC address swap for RFC 2544		
Topology Discovery	LLDP		



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