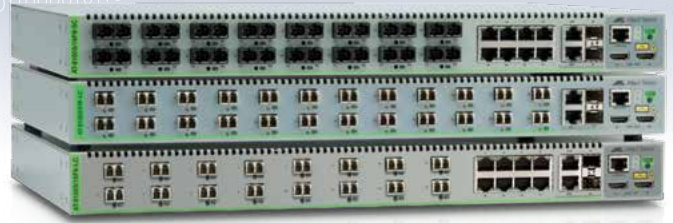# 8100S Series Fiber Switches

LAYER 2–4 FAST ETHERNET STACKABLE SWITCHES

Allied Telesis 8100S Series fiber switches with 100FX multi-mode fiber ports offer high performance Layer 2-4 switching designed for the edge of the network.

eco friendly

The 8100S Series consists of 16 100FX (SC and LC) MMF ports and 24 100FX (LC) MMF ports switch models. The 16-port models come with 16 100FX plus 8 10/100TX ports. All 8100S Series switches offer two Gigabit combo 10/100/1000T-SFP uplink ports plus two dedicated stacking connectors that deliver a total of 10Gbps stack bandwidth. The stackable Ethernet series offers fiber connectivity suitable for a network that requires high security and long distance connectivity.

Redundant Power Options
All variants of the 8100S fiber switch family feature two internal power supplies as standard, allowing the switches to be powered from two separate building feeds making the 8100S Series less susceptible to building power failures and ensuring continuous switch operation.

Stacking
The physical stacking capability integrated into this platform is designed to offer simplified management for higher port density applications. Up to three stackable switches of the 8100S copper and fiber series can be mixed and stacked together to a maximum of 78 ports.

Ease of Management
Designed for rapid deployment with the minimum of configuration time, the 8100S Series offers features such as Voice VLAN, LLDP-MED, Enhanced Stacking and Web management GUI that facilitates simple and effective approach to network management. Voice VLAN segregates VoIP traffic from regular Ethernet traffic and applies to it a higher QoS. It takes the complexity out of VoIP deployments, ensures high voice quality and protects time sensitive voice traffic from being flooded by other data. LLDP-MED lets the user auto-configure end stations to send preconditioned traffic that adheres to Voice VLAN configured network policies.

Enhanced Stacking with 8100S Series enables the user to make software upgrades for multiple switches with a single command, plus update all configurations in a single management session.

The industry standard CLI of AlliedWare Plus™ combined with the simple and intuitive Web management GUI reduces the training needs for those who require granularity of control, by providing a familiar interface for advanced users.

Key Features

Secure
» The 8100S Series fiber switches are designed to offer 100FX multi-mode connectivity for a higher level of security not found in copper based Ethernet systems. This combined with advanced access security features protect the critical edge of the network.

Able to go the distance
» Fiber connectivity is ideal for networks that demand high bandwidth over long distances. The 8100S Series fiber modules support Gigabit and 100Mbps up to a distance of 2 kilometers over multi-mode fiber, and up to 80 kilometers over single-mode fiber. Fiber is able to transport data over long distances without the type of degradation that you see with copper, allowing highly scalable and flexible network design for big business campuses, educational campus and large retails stores.

Stable in harsh environment
» Fibers complete immunity to electrical interference makes it resistant to cross talk between signals among different cables and environmental noise, such as radio waves and electric signals. This makes the 8100S Series ideal for high voltage environments and in places with high EMI (Electromagnetic Interference), such as alongside utility lines, conveyor belts, power lines, and railroad tracks.

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Environmentally Friendly

In keeping with our commitment to environmentally friendly processes and products, the 8100S Series is designed to be green from the ground up, with reduced power consumption and minimal hazardous waste.

The use of highly recyclable metal, combination of green production processes, earth friendly packaging, high efficiency power supplies and effective power management deliver both cost savings and a reduced carbon footprint to the user.

Access Control Lists

Access Control Lists work as filters that can enable inspection and classification of incoming data. Specific actions can then be performed on these defined data frames to more effectively manage the network traffic at Layer 2 through Layer 4. ACLs are typically used as security mechanism, either permitting or denying entry for packets on specific switch ports.

Effective Traffic Monitoring

In order to fully understand the performance of the network and ensure the ongoing smooth delivery of critical data, users must be able to measure and analyze the traffic in real time.

The 8100S Series facilitates effective traffic monitoring with sFlow, an industry-standard technology for monitoring high-speed switched networks gives complete visibility into the use of the network enabling performance optimization, accounting, billing for usage, and even defense against security threats.

Securing the Network Edge

In addition to the secure fiber connectivity, the 8100S Series guarantees protection and secure management of administrator's network by providing strong security standards and authentication mechanism for access at the edge of a network.

IEEE 802.1x port authentication methods such as PEAP, EAP-TLS and EAP-TTLS supported by the 8100S Series allows a network controller to restrict external devices from gaining unauthenticated access in to the network.

The Multiple Supplicant Authentication enables the switch to uniquely authenticate and apply the appropriate policies and VLAN for multiple users or devices on a shared port, allowing port expansion while keeping the network secure.
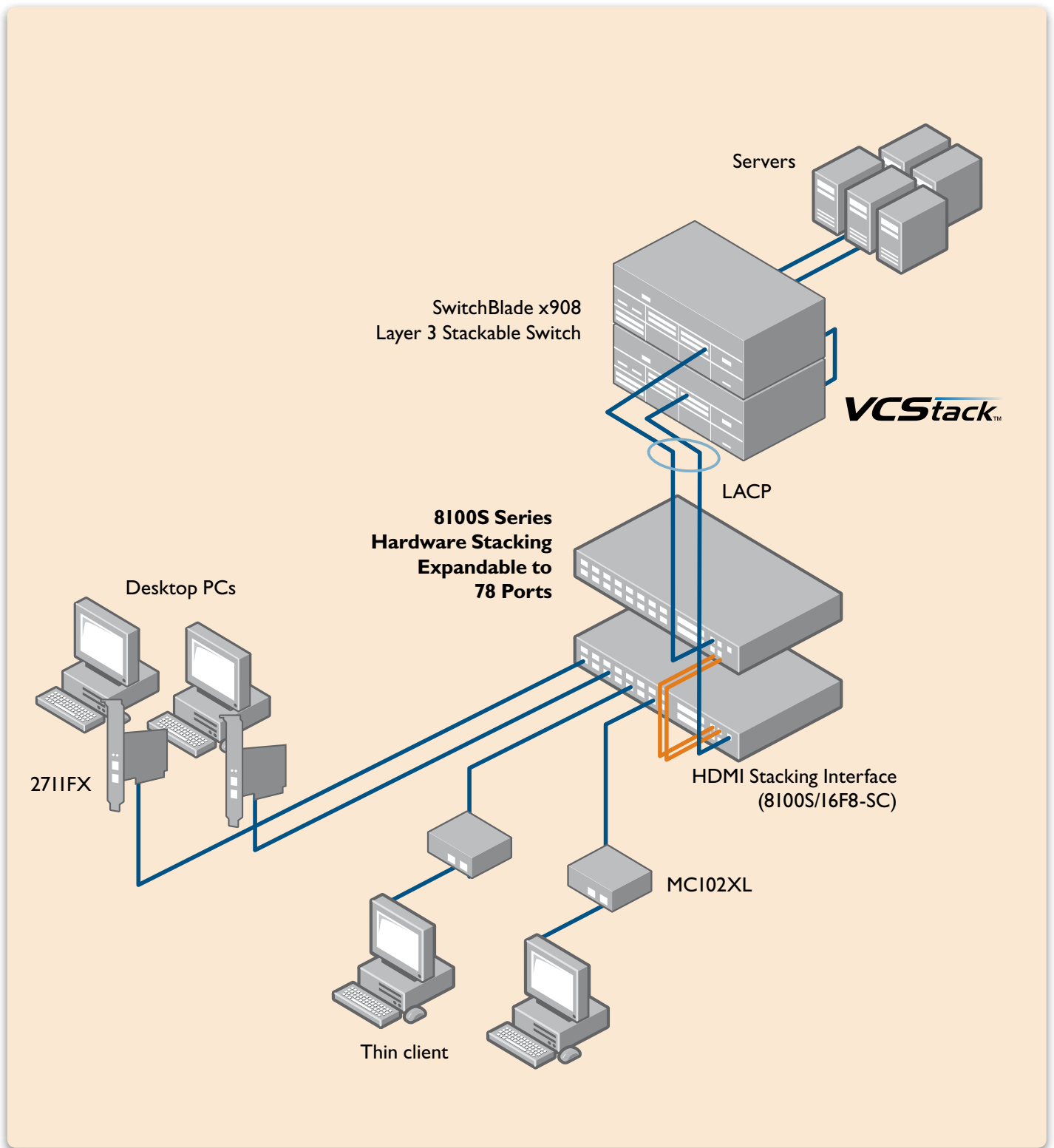
Gigabit and Fast Ethernet SFP Support

The 8100S Series supports both Gigabit and Fast Ethernet Small Form-Factor Pluggable (SFP) uplinks. The dual-speed ports make this series ideal for environments where Gigabit fiber switches will be phased in over time. The 8100S Series allows for connectivity to the legacy 100FX hardware until the uplink device is upgraded to Gigabit.

Layer 3 Routing

The switch provides static IPv4 routing at the edge of the network as well as support for RIPv1 and RIPv2.

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Servers

SwitchBlade x908
Layer 3 Stackable Switch

VCStack™

LACP

**8100S Series
Hardware Stacking
Expandable to
78 Ports**

Desktop PCs

2711FX

HDMI Stacking Interface
(8100S/16F8-SC)

MC102XL

Thin client

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Specifications

System Capacity
» 128MB RAM
» 16MB flash memory
» 16K MAC addresses
» 266MHz CPU

Maximum Bandwidth
» Non-blocking for all packet sizes

Wirespeed Switching (Layer 2/3) on all Ethernet Ports
» 14,880pps for 10Mbps Ethernet
» 148,800pps for 100Mbps Ethernet
» 1,488,000pps for 1000Mbps Ethernet

Environmental Specifications
» Operating temperature: 0ºC to 40ºC
» Storage temperature: -25ºC to 70ºC
» Operating humidity: 5% to 90% non-condensing
» Storage humidity: 5% to 90% non-condensing
» Max operating altitude: 3,048 m (10,000 ft)

Port Configuration
» Auto-negotiation, duplex, MDI/MDI-X, IEEE 802.3x flow control/back pressure
» Head of Line (HoL) blocking prevention
» Broadcast storm control
» Link flap protection
» Group link control
» Port mirroring

Ethernet Specifications
» RFC 894 Ethernet II encapsulation
» IEEE 802.1D MAC bridges
» IEEE 802.1Q Virtual LANs
» IEEE 802.2 Logical link control
» IEEE 802.3ac VLAN TAG
» IEEE 802.1ax-2008 (LACP) link aggregation
» IEEE 802.3u 100TX
» IEEE 802.3x Full-duplex operation
» IEEE 802.3z Gigabit Ethernet
» Jumbo frames (9198 bytes)

Quality of Service (QoS)
» Eight egress queues per port
» Egress rate limiting
» Voice VLAN
» Automatic QoS
» IEEE 802.1p Class of Service with strict and weighted round robin scheduling
» RFC 2474 DSCP for IP-based QoS
» RFC 2475 Differentiated services architecture
» Layer 2, 3 and 4 criteria

Spanning-Tree Protocol
» IEEE 802.1D Spanning-Tree Protocol
» IEEE 802.1D-2004 Rapid Spanning-Tree Protocol
» IEEE 802.1q-2005 Multiple Spanning-Tree Protocol (15 instances)
» BPDU guard
» Loop guard
» Root guard

MIB Support
» RFC 1213 MIB-II
» RFC 1215 TRAP MIB
» RFC 1493 Bridge MIB
» RFC 2863 Interfaces group MIB
» RFC 1643 Ethernet-like MIB
» RFC 2618 RMON MIB
» RFC 2674 IEEE 802.1Q MIB
» RFC 2096 IP forwarding table MIB
» Allied Telesis managed switch MIB

Management
» RFC 854 Telnet server
» Console management port
» AlliedWare Plus CLI
» Web GUI
» Enhanced Stacking
» RFC 1866 HTML
» RFC 2068 HTTP
» RFC 2616 HTTPS
» RFC 1350 TFTP
» zModem
» RFC 1305 SNTP
» RFC 1155 MIB
» RFC 1157 SNMPv1
» RFC 1901 SNMPv2c
» RFC 3411 SNMPv3
» RFC 1757 RMON 4 groups: Stats, History, Alarms and Events
» RFC 3164 Syslog protocol (client)
» Event log
» RFC 3176 sFlow
» Auto config

VLAN
» 4096 VLANs (IEEE 802.1Q)
» Port-based VLANs
» MAC-based VLANs – 256
» IP subnet-based VLANs – 256
» Port-based Private VLANs
» GARP VLAN Registration Protocol (GVRP)

Link Aggregation
» IEEE 802.3ad LACP - eight groups
» Static link aggregation - 24 groups

Link Discovery
» IEEE 802.1ab Link Layer Discovery Protocol (LLDP)
» Link Layer Discovery Protocol-Media Endpoint (LLDP-MED)

General Protocols
» RFC 768 UDP
» RFC 791 IP
» RFC 792 ICMP
» RFC 793 TCP
» RFC 826 ARP
» RFC 950 Subnetting, ICMP
» RFC 1027 Proxy ARP
» RFC 1035 DNS
» RFC 1122 Internet host requirements
» DHCP client
» DHCP snooping
» DHCP option 82
» RFC 3046 DHCP relay
» RFC 951 BootP

IP Multicast
» RFC 1112 IGMPv1 snooping
» RFC 2236 IGMPv2 snooping
» IGMPv2 snooping querier
» Multicast groups – 255

IPv6
» IPv6 host
» IPv6 ACL
» ICMPv6
» Dual-stack IPv4/IPv6 management
» IPv6 applications: WEB/SSL, Telnet server/SSH,

IP Routing
» Static IPv4 routing – 4K
» RIPv1, v2
» Proxy ARP

Security / IEEE 802.1x
» TACACS+
» RFC 2865 RADIUS client
» RFC 2866 RADIUS accounting
» IEEE 802.1x port-based Network Access Control (NAC)
» Supplicant
» Authenticator
» IEEE 802.1x multiple supplicant mode
» Piggy-back mode
» Per port MAC address limiting
» Per port MAC address filtering
» MAC address security/lockdown
» RFC 1321 MD-5
» EAP, EAP-TLS, LEAP, PEAP, TTLS
» Dynamic VLANs
» Guest VLANs
» Secure VLANs
» Layer 2/3/4/ Access Control Lists (ACLs)
» SSLv3 for Web management
» SSL
» SSH
» SSH session time out
» Microsoft NAP compliant
» Symantec NAC support

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Stacking Features

» 10Gbps stacking bandwidth via dedicated HDMI stacking ports
» Hardware stack up to three units (78 ports) using HDMI stacking ports or stack up to 24 units using Enhanced Stacking
» Single system appearance
» Single IP management
» Backup master
» Link aggregation / trunking across hardwire stack
» Port mirroring across stack
» VLAN across stack
» Maximum HDMI stacking cable length 1m

Compliance Standards

» IEEE 802.3 – 10T
» IEEE 802.3u – 100TX with auto-negotiation
» IEEE 802.3ab – 1000T Gigabit Ethernet
» 100FX SFP support
» 1000X SFP support

Safety and Electromagnetic Emissions Certifications

» EMI: FCC class A, CISPR class A, EN55022 class A, C-TICK, VCCI Class A, CE, EN601000-3-2, EN601000-3-3
» Immunity: EN55024
» Safety: UL 60950-1 (cUlus), EN60950-1 (TUV), EN60825

RoHS Standards

» Compliant with European and China RoHS standards

Package Description

» AT-8100S/xx switch
» AC power cords
» Management cable (RJ-45 to DB-9)
» Rubber feet for desktop installation and 19" rack-mountable hardware kit accessories
» Install guide and CLI users guide available at alliedtelesis.com
» HDMI stacking cable (1 meter)

PRODUCT	SWITCHING CAPACITY	FORWARDING RATE	LATENCY	
			10Mb	100MB
AT-8100S/16F8-SC	18.8Gbps	27.9Mpps	81µs	11µs
AT-8100S/16F8-LC	18.8Gbps	27.9Mpps	81µs	11µs
AT-8100S/24F-LC	18.8Gbps	27.9Mpps	81µs	11µs

Physical Specifications and MTBF Figures

PRODUCT	WIDTH	DEPTH	HEIGHT	WEIGHT	MTBF (HOURS)
AT-8100S/16F8-SC	44.1 cm (17.3 in)	32.2 cm (12.7 in)	4.4 cm (1.7 in)	4.1 kg (9.1 lb)	190,000
AT-8100S/16F8-LC	44.1 cm (17.3 in)	32.2 cm (12.7 in)	4.4 cm (1.7 in)	4.4 kg (9.75 lb)	170,000
AT-8100S/24F-LC	44.1 cm (17.3 in)	29.1 cm (11.5 in)	4.4 cm (1.7 in)	4.4 kg (9.75 lb)	140,000

Power and Noise Characteristics

PRODUCT	MAX POWER CONSUMPTION	MAX HEAT DISSIPATION	NOISE	VOLTAGE	FREQUENCY
AT-8100S/16F8-SC	22W*	75 BTU/hr	55.4 dB	100-240V AC (10% auto-ranging)	47-63Hz
AT-8100S/16F8-LC	22W*	75 BTU/hr	55.4 dB	100-240V AC (10% auto-ranging)	47-63Hz
AT-8100S/24F-LC	22W*	75 BTU/hr	55.4 dB	100-240V AC (10% auto-ranging)	47-63Hz

* Standard product with dual AC power supply

Optical Ports Specifications

PRODUCT	OPTICAL PORTS
AT-8100S/16F8-SC	100FX (MMF)
AT-8100S/16F8-LC	100FX (MMF)
AT-8100S/24F-LC	100FX (MMF)

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Ordering Information

8100S Series Fiber Switches

AT-8100S/16F8-SC-xx
16 100M fiber SC ports, 8-port 10/100TX
  2 combo ports (10/100/1000T-100/1000 SFP)
  2 HDMI stacking ports
  Standard two AC power supplies

AT-8100S/16F8-LC-xx
16 100M fiber LC ports, 8-port 10/100TX
  2 combo ports (10/100/1000T-100/1000 SFP)
  2 HDMI stacking ports
  Standard two AC power supplies

AT-8100S/24F-LC-xx
24 100M fiber LC ports
  2 combo ports (10/100/1000T-100/1000 SFP)
  2 HDMI stacking ports
  Standard two AC power supplies

Where xx =
  10 for US power cord
  20 for no power cord
  30 for UK power cord
  40 for Australian power cord
  50 for European power cord

Small Form Pluggable Optics Modules

AT-SPSX
SFP, MMF, 1000Mbps, 220 / 500 m, 850 nm, LC

AT-SPSX/I
SFP, MMF, 1000Mbps, 220 / 550m, 850 nm, LC
  Extended temperature: -40°C to 85°C

AT-SPEX
SFP, MMF, 1000Mbps, 2 km, 1310 nm, LC

AT-SPLX10
SFP, SMF, 1000Mbps, 10 km, 1310 nm, LC

AT-SPLX10/I
SFP, SMF, 1000Mbps, 10 km, 1310 nm, LC
  Extended temperature: -40°C to 85°C

AT-SPLX40
SFP, SMF, 1000Mbps, 40 km, 1310 nm, LC

AT-SPZX80
SFP, SMF, 1000Mbps, 80 km, 1550 nm, LC

AT-SPBD10-13
SFP, SMF, 1000Mbps, 10 km, 1310/1490 nm,
  LC-BiDi

AT-SPBD10-14
SFP, SMF, 1000Mbps, 10 km, 1490/1310 nm,
  LC-BiDi

AT-SPFX/2
SFP, MMF, 100Mbps, 2 km, 1310 nm, LC

AT-SPFXBD-LC-13
SFP, SMF, 100Mbps, 10 km, 1310/1510 nm, LC-BiDi

AT-SPFXBD-LC-15
SFP, SMF, 100Mbps, 10 km, 1510/1310 nm, LC-BiDi

AT-SPFX/15
SFP, SMF, 100Mbps, 15 km, 1310 nm, LC

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