

9400 Series

Layer 3 Gigabit Ethernet Switches

As networks migrate to Gigabit Ethernet, there is a need for easy-to-manage, cost-effective and more intelligent switches at the edge. Allied Telesis designs switches to address these needs, offering performance and value. The Allied Telesis 9400 Series targets the need for low-cost Gigabit Ethernet Layer 3 aggregation in the wiring closet.



Network Security

To address the threat of network attacks in the form of Denial of Service (DoS), the 9400 Series uses Layer 2-4 intelligence, and can be deployed to complement WAN firewalls and PC anti-virus protections to further fortify the network against malicious attacks. The 9400 Series is pre-programmed to detect six well-known DoS attacks and supports security features such as IEEE 802.1x (port-based Network Access Control) and Radius/TACACS+.

Long-term Relevance

The 9400 Series is the ideal choice for organizations seeking a long-term switching solution. In addition to the extensive Layer 2 feature set, this switch series features Layer 3 switching to future proof emerging requirements.

Management Stacking

Stacking provides CLI-based management of up to 24 switches with the same effort as for one switch. This Allied Telesis solution uses open standards interfaces as stacking links so that many switches can be stacked across different sites.

Network QoS and IGMP for Video and Voice-over-IP

A rich offering of voice and video networking features is incorporated to ensure support for demanding multimedia networking applications in the enterprise. Converged networking is enhanced with QoS/CoS including eight priority queues for IEEE

802.1p/ToS/DiffServ traffic. The high performance hardware platform makes latency a non-issue. The IGMP implementation on the 9400 Series is capable of transmitting broadcast-quality video throughout the enterprise network.

Built-in 10GbE Bays

Allied Telesis AT-9448Ts/XP and Allied Telesis AT-9424Ts/XP switches are designed to meet the growing bandwidth needs that advanced applications and connectivity options are requiring of networks. They feature two built-in bays for 10 Gigabit Ethernet connectivity to provide a well balanced uplink subscription ratio (2.4 to 1 using both bays for AT-9448Ts/XP and 1.2 to 1 using both bays for AT-9424Ts/XP). No additional module is required to house the XFP transceivers. This provides an extraordinary amount of bandwidth capacity making it an ideal investment for organizations that seek seven to ten years of service or more from their switches.

Resilient Ring Stacking

Allied Telesis AT-9448Ts/XP, AT-9924Ts and AT-9424Ts/XP switches are designed to meet the growing bandwidth needs that advanced applications and connectivity options are requiring of networks. They feature a stacking expansion bay capable of tapping in 48Gbps of stacking bandwidth. These switches can also be stacked with 10Gbps-capable 9400 Series switches to further improve network performance while keeping costs down.

Key Features

Layer 3 Support

- ▶ RIPv2
- ▶ Static routing
- ▶ ECMP

Performance

- ▶ Stacking bandwidth 48Gbps
- ▶ 4K VLANs (static and dynamic)
- ▶ 256 static Layer 2 multicast groups
- ▶ 255 dynamic Layer 2 multicast groups
- ▶ 9K jumbo frame support

Layer 2-4 Intelligence

- ▶ Packet inspection and classification at MAC, IP, TCP/UDP layers
- ▶ Set QoS, ACL, mirroring and rate-limiting using traffic classes

Security

- ▶ DoS attack protection
- ▶ Radius/TACACS+
- ▶ Port security
- ▶ SSH/SSL
- ▶ IEEE 802.1x
- ▶ Access Control Lists (ACLs)

Advanced Services

- ▶ Rate Limiting (ingress and egress)
- ▶ Eight QoS service levels

Key Features

Advanced Services continued

- ▶ IEEE 802.1p for MAC-based QoS
- ▶ DSCP for IP-based QoS

Resiliency

- ▶ IEEE 802.1s Multiple STP
- ▶ IEEE 802.3ad link aggregation
- ▶ IEEE 802.1D Spanning-Tree
- ▶ IEEE 802.1w Rapid STP
- ▶ Temperature threshold alert

Management

- ▶ Telnet
- ▶ Web GUI
- ▶ CLI
- ▶ Dedicated management port
- ▶ Compact flash slot

Specifications

Physical Characteristics

Dimensions (W x D x H) 4.4 cm x 43.8 cm x 30.4 cm
(1.75 in x 17.3 in x 12 in)

PRODUCT	WEIGHT
AT-9424T	4.2 kg (9.35 lb)
AT-9424T/POE	6.17 kg (13.60 lb)
AAT-9424Ts	4.2 kg (9.35 lb)
AT-9424Ts/XP	4.23 kg (9.4 lb)
AT-9424T/SP	3.11 kg (6.85 lb)
AT-9448T/SP	4.6 kg (10.15 lb)
AT-9448Ts/XP	5.09 kg (11.2 lb)

System Capacity

32MB SDRAM (AT-94924T, AT-9424T/SP)
128MB RAM (AT-9424Ts, AT-9424Ts/XP)
64MB RAM (AT-9448T/SP)
16MB flash memory
200MHz PowerPC CPU
4096 VLANs
16000 MAC addresses
8 Megabytes file system
Packet buffer memory 1Mbit

Performance

Wirespeed switching on all Ethernet ports
14,880pps for 10Mbps Ethernet
148,800pps for 100Mbps Ethernet
1,488,000pps for 1000Mbps Ethernet

AT-9424T, AT-9424T/POE, AT-9424Ts, AT-9448T/SP

Ethernet throughput 71.424Mpps
Switch fabric 96Gbps
Max Power Consumption 54 Watts

AT-9424Ts/XP

Ethernet throughput 101.184Mpps
Switch fabric 136Gbps (Stacking with AT-STACKXG stacking module up to eight switches. Two 12Gbps full-duplex stacking port per module. Resilient bidirectional ring architecture)
Max Power Consumption 68 Watts

AT-9424T/SP

Ethernet throughput 35.7Mpps
Switch fabric 48Gbps
Max Power Consumption 120 Watts

AT-9448Ts/XP

Ethernet throughput 136.896Mpps
Switch fabric 184Gbps
Max Power Consumption 128 Watts

Power Characteristics

Voltage: 100-240V AC
Current: 4.0/2.0A
Frequency: 50-60Hz

Environmental Specifications

Operating temperature: 0°C to 40°C (32°F to 104°F)
Storage temperature: -25°C to 70°C (-13°F to 158°F)
Operating humidity: 5% to 90% non-condensing
Storage humidity: 5% to 90% non-condensing
Max operating altitude: 3,048m (10,000 ft)
Recommended ventilation on all sides: 10cm (4.0 in.)
MTBF 250,000 hrs.

Electrical/Mechanical Approvals

Safety UL 60950-1, CSA C22.2 No. 60950-1-03, EN60950-1, EN60825-2 (TUV)
EMI FCC Part 15 Class A, EN55022 Class A, EN55024
Immunity, VCCI Class A, C-TICK, EN61000-3-2, EN61000-3-3, AS/NZS 3548 (Australia/New Zealand)
Immunity EN55024

Country of Origin

Singapore / China

Software Specifications

Layer 3 Support

RIPv1
RIPv2
ECMP
Static IPv4 Routing (128 routes)

Interface Standards

IEEE 802.3 10T
IEEE 802.3u 100TX
IEEE 802.3z 1000SX
IEEE 802.3ab1000T

General Standards

IEEE 802.1d Bridging
IEEE 802.3acVLAN tag frame extension
IEEE 802.3x BackPressure/ flow control

Redundancy

Static and dynamic port trunking (with six trunk groups and up to 8 ports per trunk)
IEEE 802.3ad32 LACP link aggregation1

IEEE 802.1D Spanning-Tree Protocol
IEEE 802.1w Rapid Spanning-Tree
IEEE 802.1s Multiple Spanning-Tree
BPDU guard1
Loop guard1
Router Redundancy Protocol (RRP) snooping Dual software images, dual configuration files

Traffic Management Quality of Service (QoS)

Layer 2, 3 and 4 criteria
Flow groups, traffic classes and policies
DSCP replacement
IEEE 802.1Q priority replacement
Type of Service replacement
Type of Service to IEEE 802.1Q priority replacement
IEEE 802.1Q Priority to Type of Service replacement
Maximum bandwidth control
Burst size control
Ingress rate limiting
Head of line blocking prevention
Support for ingress and egress ports
Eight egress queues per port
IEEE 802.1p Class of Service with Strict and Weighted Round Robin Scheduling

Multicast

RFC 1112 IGMP snooping (v1)
RFC 2236 IGMP snooping (v2)
RFC 2710 Multicast Listener Discovery (MLD) snooping (v1)
RFC 3810 Multicast Listener Discovery (MLD) snooping (v2)
IGMP snooping querier1

Management and Monitoring

RFC 1157 SNMPv1
RFC 1901 SNMPv2
RFC 3411 SNMPv3
RFC 1213 MIB-II
RFC 1215 TRAP MIB
RFC 1493 Bridge MIB
RFC 2863 Interfaces group MIB
RFC 1643 Ethernet-like MIB
RFC 1757 RMON 4 groups: Stats, History, Alarms and Events
RFC 2674 IEEE 802.1Q MIB
RFC 1866 HTML
RFC 2068 HTTP
RFC 2616 HTTPS
RFC 854 Telnet server
RFC 1350 TFTP client
Allied Telesis Private MIB

IP address allocation:
RFC 951/RFC1542 BOOTP client
RFC 2131 DHCP client manual
RFC 2030 SNTP, Simple Network Time Protocol
BootP/DHCP relay
Group link control1
Link flap protection1

Syslog client
Two event logs:
4,000 event capacity in temporary memory
2,000 event capacity in permanent memory

Management Access Methods
Single IP address for management
Out of Band management (serial port)
In-band management (over the network) using Telnet, Web browser or SNMP
Enhanced Stacking

¹ New features supported in AT-S63 v4.1.0

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Management Interfaces

Menus
AlliedWare Plus™ CLI
Multiple management sessions (up to three administrators)
Command line
Web browser
SNMP v1/ v2/ v3

Security

RFC 1492 TACACS+
RFC 2865 RADIUS client
RFC 2866 RADIUS accounting
IEEE 802.1x Port-based network access control with multiple supplicants per port
Ingress and egress control of broadcast, multicast and unknown unicast traffic

MAC Address Security/Lockdown

Layer 2/3/4/ Access Control Lists (ACLs)
64 ACL profiles
256 rules per ACL profile
ACLs based on:

- ▶ Ethernet frame type
- ▶ MAC address/VLAN ID/IEEE 802.1p
- ▶ Layer 2/3 protocol
- ▶ IP subnet/address/TOS/DSCP
- ▶ UDP/TCP port/flag

SSHv2 for Telnet mgmt
SSLv3 for Web mgmt
DoS attack protection
Smurf
SYN flood
Teardrop
Land
IP option
Ping of Death
SNMP attack
Microsoft NAP compliant
Symantec NAC support

Bad cable detection
Broadcast storm control

Ordering Information

AT-9424T-xx

Layer 3 managed switch with 20 ports
10/100/1000T, 4 x 10/100/1000T / SFP combo ports

AT-9424T/POE-xx

Layer 3 Power over Ethernet managed switch with 20 ports 10/100/1000T, 4 x 10/100/1000T / SFP combo ports

AT-9424Ts-xx

Layer 3 stackable switch with 20 ports
10/100/1000T, 4 x 10/100/1000T / SFP combo ports, plus AT-StackXG module bay

AT-9424Ts/XP-xx

Layer 3 stackable switch with 24-port
10/100/1000T, 4 x 10/100/1000T / SFP combo ports, plus 2 XFPs bays (unpopulated) and AT-StackXG module bay

AT-9424T/SP-xx

Layer 2+ switch with 24 ports of 10/100/1000T plus two combo SFP slots (unpopulated)

AT-9448T/SP-xx

Layer 3 switch with 48 ports 10/100/1000T plus four combo SFP bays

AT-9448Ts/XP-xx

Layer 3 stackable switch with 48 port
10/100/1000T plus 2 XFPs bays (unpopulated) and memory flash card slot

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

Accessories

Redundant Power Supply

AT-RPS3204

Chassis for up to four redundant power supplies (chassis includes one power supply and one cable)

AT-PWR3202

Additional 200w redundant power supply with cable

Stacking Accessories

AT-STACKXG-00

Stacking module for the AT-9448Ts/XP switch
One AT-StackXG/0.5-00 cable include

AT-STACKXG/0.5-00

0.5 meter cable for stacking

AT-STACKXG/1-00

1 meter cable for stacking

Small Form Pluggables (SFPs)

AT-SPSX

Multi-mode fiber, GbE SFP, 850 nm

AT-SPLX10

Single-mode fiber, 10km, GbE SFP, 1310 nm

AT-SPLX40

Single-mode fiber, 40km, GbE SFP, 1310 nm

AT-SPLX40/1550

Single-mode fiber, 40km, GbE SFP, 1550 nm

AT-SPZX80

Single-mode fiber, 80km, GbE SFP, 1550 nm



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617-000601 RevP