L3 10G Fiber Routing Switch

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OVERVIEW

The AirPro SG6500E Series represents the next generation of enterprise-class, stackable routing switches, equipped with fixed 10GbE uplink ports and shipped with a dual power supply AC/DC. These fully managed switches deliver high availability, scalability, security, energy efficiency, and ease of operation through innovative features like Virtual Switching Framework (VSF).

With exceptional performance, reliability, and flexibility, the SG6500E series is ideal for aggregation or access layer deployments, meeting the demanding needs of modern enterprise networks.

Appearance	Description
AP-SG6500E-16F-4XG-R	• 8 x 100/1000Base-X (SFP) + 4 x GE Combo (RJ45/SFP) + 4 x 10GbE (SFP+) 1 Console, 1 USB, 1 RJ45 management port • AC + 48VDC power supply • Switching capacity 112Gbps • Forwarding rate 83Mpps • VLAN Table 4K • MAC Address 16K • Static & Dynamic Routing
AP-SG6500E-28F-4XG-R	• 16 x 100/1000Base-X (SFP) + 8x GE Combo(RJ45/SFP) + 4 x 10GE(SFP+) 1 Console, 1 USB, 1 RJ45 management port • Rack Mount 1U • Dual AC + 48VDC power supply • Switching Capacity 128Gbps • Packet Forwarding 95Mpps • MAC Address 16K • VLAN Table 4K
AP-SG6500E-52F-4XG-R	• 48Ports 1*G SFP with 4*10G Uplink Ports + 1 Console Port • Rack Mount 1U • Dual Power AC/DC • Switching Capacity 176Gbps • Packet Forwarding 131Mpps • MAC Address 16K • Static Routing, OSPF v3,BGP4+ • VLAN Table 4K

KEY FEATURES AND BENEFITS

Performance and Scalability

The SG6500E Series delivers outstanding switching capacity, supporting wire-speed Layer 2/3 forwarding and high routing performance for both IPv4 and IPv6 protocols.

For 10 Gigabit Ethernet connectivity, the series utilizes hot-pluggable 10 Gigabit SFP+ transceivers, supporting distances of up to 300 meters over multimode fiber and 10 to 40 kilometres over single-mode fiber, depending on the selected optical module.

VSF (Virtual Switch Framework)

The Virtual Switch Framework (VSF) virtualizes multiple AirPro switches into a single logical device, enabling seamless sharing of information and data tables across switches. By leveraging VSF, the performance and port density of the virtualized device are significantly enhanced.

VSF also simplifies network management for administrators, streamlines operations, and improves overall reliability of the network.

Rich L3 Features

The SG6500E Series delivers high-performance, hardware-based IP routing, supporting advanced Layer 3 protocols such as RIP, OSPF, and BGP. These protocols enable dynamic routing by efficiently exchanging routing information with other Layer 3 switches and routers.

Additionally, SG6500E Series supports Policy-Based Routing (PBR), allowing customers to implement multi-exit applications with ease, ensuring greater flexibility and control over traffic flows.

Strong Multicast

The SG6500E Series supports a comprehensive set of multicast features to enhance network performance and user experience.

- At Layer 2, the series includes IGMPv1/v2/v3 Snooping with fast leave capabilities.
- At Layer 3, it supports advanced multicast protocols such as IGMPv1/v2/v3.

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With features like Multicast VLAN Registration (MVR), multicast receiver/sender control, and illegal multicast source detection, the SG6500E Series ensures robust and reliable multicast performance, delivering an exceptional application experience for customers.

Easy High-Reliability Network
MRPP (Multi-layer Ring Protection Protocol) is AirPro's proprietary fast Ethernet ring protocol. Compared to traditional Spanning Tree Protocol (STP), MRPP offers several advantages, including:
- Faster convergence
- Simplified protocol calculation
- Lower system resource consumption

These benefits significantly enhance the reliability and efficiency of Ethernet network operations, ensuring stable and high-performance connectivity.

Comprehensive QoS
The SG6500E Series supports 8 queues per port, enabling differentiated management of up to 8 traffic types. Traffic is prioritized based on IEEE802.1p, DSCP, IP precedence, and TCP/UDP port numbers, ensuring optimal performance for real-time applications such as voice and video.
Additionally, the SG6500E Series offers bi-directional rate limiting configurable per port or per traffic class to preserve network bandwidth and provide full control over network resources.

Abundant IPv6 Support
The SG6500E Series delivers hardware-based IPv6 switching and routing to ensure maximum performance. As the number of network devices continues to grow, the demand for larger address spaces and enhanced security becomes increasingly critical. The SG6500E Series is designed to meet these evolving requirements, making it the ideal solution for modern IPv6 networks.

PRODUCT SPECIFICATIONS

Hardware Specifications

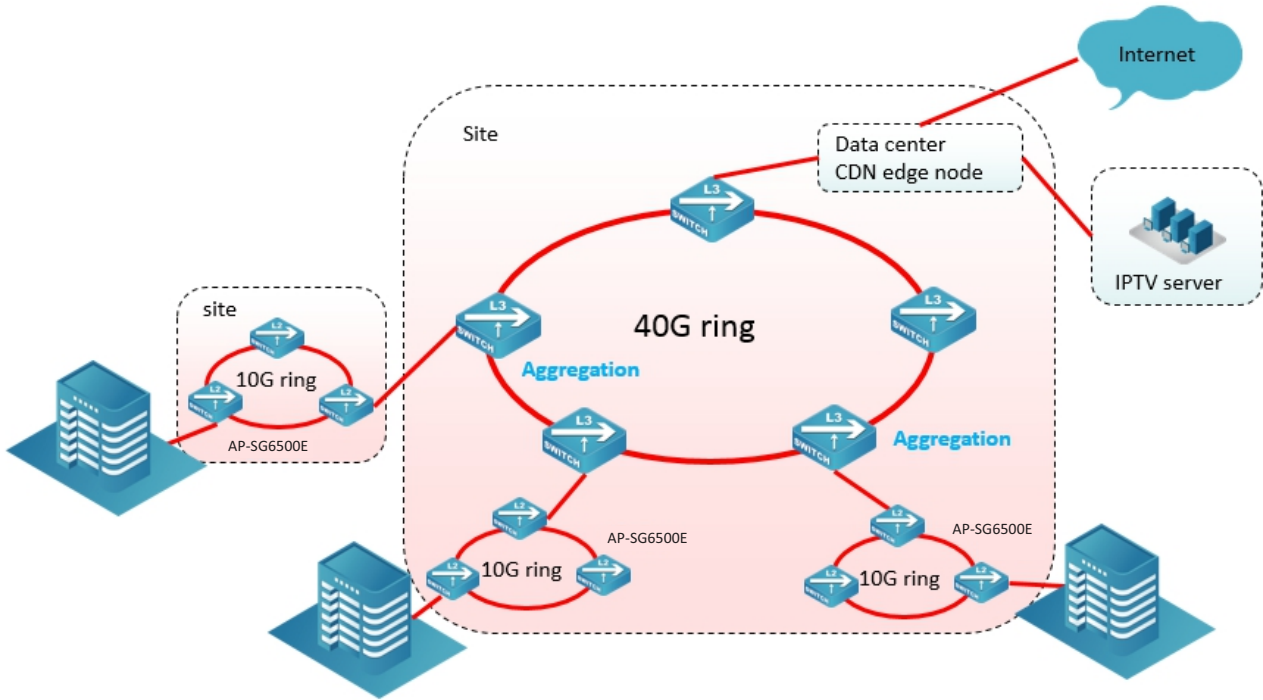| Item	AP-SG6500E-16F-4XG-R	AP-SG6500-28F-4XG-R	AP-SG6500E-52F-4XG-R
Physical port	8 x 100/1000Base-X (SFP) + 4 x GE Combo(RJ45/SFP) + 4 x 10GbE (SFP+) Auto-MIDX	16 x 100/1000Base-X (SFP) + 8x GE Combo(GT/SFP) + 4 x 10GE (SFP+) Auto-MIDX	48 x 100/1000Base-X (SFP) + 4 x 10GbE (SFP+) Auto-MIDX
Management port	1x RJ45 Ethernet Management port		
	1x Console port		
	1x USB2.0 interface		
Performance			
Switching Capacity	112Gbps	128Gbps	176Gbps
Forwarding rate	83Mpps	95Mpps	131Mpps
Jumbo Frame	10K	10K	10K
MAC Address	16K	16K	16K
ARP Table	4K	4K	4K
Routing Table	1K	1K	1K
ACL Table	1K	1K	1K
Physical			
Dimension (W*H*D)	330mm x 44mm x 230mm	440mm x 44mm x 240mm	440mm*44mm*320mm
Relative Humidity	10%~90% non-condensing, storage 95%		
Temperature	Working 0°C~50°C, storage-40°C~70°C		
Power Supply	AC:100~240VAC, 50~60Hz + 12VDC RPS	AC:100~240VAC, 50~60Hz + 48V DC	AC:100~240VAC, 50~60Hz + 12VDC RPS
Power Consumption	<22W	<34W	<60W
Main Features			
L1, L2 Features	IEEE802.3(10Base-T), IEEE802.3u(100Base-TX), IEEE802.3z(1000BASE-X), IEEE802.3ab(1000Base-T), IEEE802.3ae(10GBase), IEEE802.3x, IEEE802.3ak(10GBASE-CX4) Port loopback detection LLDP and LLDP-MED UDLD 802.3ad LACP, max 128 group trunks with max 8 ports for each trunk LACP load balance ERPS(G.8032) N:1 Port Mirroring RSPAN IEEEE802.1d(STP) IEEEE802.1w(RSTP) IEEEE802.1s(MSTP) Root Guard BPDU Guard BPDU Tunnel 802.1Q, 4K VLAN MAC VLAN, Voice VLAN, PVLAN, Protocol VLAN, Multicast VLAN QinQ, Flexible QinQ GVRP N:1 VLAN Translation Broadcast / Multicast / Unicast Storm Control IGMP v1/v2/v3 Snooping and L2 Query ND Snooping MLDv1/v2 Snooping Port Security Flow Control: HOL, IEEE802.3x Bandwidth Control		

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Main Features	AP-SG6500E Series
L3 Features	Static Routing,RIPv1/v2,OSPFv2,BGP4 OSPFv3, BGP4+ OSPF multiple process LPM Routing Policy-based Routing(PBR) for IPv4 and IPv6 VRRP URPF, ECMP BFD IGMP v1/v2/v3, IGMP Proxy, Static Multicast Route Multicast Receive Control Illegal Multicast Source Detect ARP Guard, Local ARP proxy, Proxy ARP, ARP Binding, Gratuitous ARP, ARP Limit Anti ARP Cheat, Anti ARP Scan DNS Client, DNS Relay GRE Tunnel
Ipv6	6to4 Tunnel, Configured Tunnel, ISATAP Tunnel, GRE Tunnel ICMPv6,ND,DNSv6 IPv6 LPM Routing,IPv6 Policy-based Routing(PBR) IPv6 VRRPv3,IPv6 URPF,IPv6 RA RIPng,OSPFv3,BGP4+ MLD Snooping,IPv6 Multicast VLAN MLDv1/v2,IPv6 Any Cast RP, IPv6 ACL, IPv6 QoS
QoS	8 Queues SWRR, SP, WRR, WDRR, SWDRR Traffic Classification Based on 802.1p COS, ToS, DiffServ DSCP, ACL, port number Traffic Policing PRI Mark/Remark
ACL	IP ACL ,MAC ACL,IP-MAC ACL Standard and Expanded ACL Based on source/destination IP or MAC, IP Protocol, TCP/UDP port, DSCP, ToS, IP Precedence), VLAN, Tag/Untag, CoS Redirect and statistics Rules can be configured to port, VLAN, VLAN routing interfaces Time Ranged ACL
Security	802.1x AAA Port, MAC based authentication Accounting based on time length and traffic Guest VLAN and auto VLAN RADIUS for IPv4 and Ipv6 TACACS+ for IPv4 and Ipv6 MAB
DHCPv4/v6	DHCP Server/Client for IPv4/IPv6 DHCP Relay/Option 82 DHCP Snooping/Option 82
Traffic Monitor	sFlow Traffic Analysis
Security Network Management	CLI, WEB, Telnet, SNMPv1/v2c/v3 through IPv4 and IPv6 Syslog and external Syslog Server HTTP SSL SNMP MIB, SNMP TRAP FTP/TFTP SNTP/NTP RMOM 1,2,3,9 Authentication by Radius/TACACS SSH v1/v2 Dual firmware images/ Configuration files 802.3ah OAM, 802.1ag OAM
Data CenterFeatures	VSF(Virtual Switch Framework)

The contents marked with "" need future upgrade or are under development*

APPLICATIONS

Access switch with 10G uplink in FTTH network

ORDER INFORMATION

Product	Description
AP-SG6500E-16F-4XG-R	10GEthernet Routing Switch, 8 x 100/1000Base-X (SFP) + 4 x GE Combo(RJ45/SFP) + 4 x 10GbE (SFP+), AC + 12VDC RPS power supply
AP-SG6500E-28F-4XG-R	10GEthernet Routing Switch, 16 x 100/1000Base-X (SFP) + 8 x GE Combo(RJ45/SFP) + 4 x 10GbE (SFP+), AC + 48VDC power supply
AP-SG6500E-52F-4XG-R	10GEthernet Routing Switch, 48 x 100/1000Base-X (SFP) + 4 x 10GbE (SFP+), AC + 12VDC RPS power supply

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