

Scalable System with 2 Management Engine Slots & 16 Business Slots

OVERVIEW

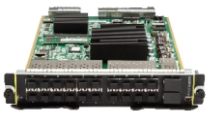
The AirPro AP-CRS-8616 is a high-performance, wire-speed chassis switch designed to meet the demands of modern enterprise and data center networks. It features 18 slots, including 2 dedicated management slots and 16 business slots, providing exceptional scalability and flexibility.

Engineered for high availability, the AP-CRS-8616 is equipped with redundant power supplies, fans, and management modules, ensuring continuous operation and system reliability.

Ideal for campus networks, data centers, and service provider environments, the AP-CRS-8616 delivers robust performance, reliability, and scalability to support a wide range of networking needs.

Appearance	Description
	• Number of Management Engine slots: 2 • Number of Business slots : 16 • Port density per chassis: 384 x GE, 320 x 10GE, 32 x 40GE • Dimensions (W x D x H): 440mm x 450mm x 842mm(19U) • Switching Capacity: 8960Gbps • Forwarding performance: 6667Mpps

BLADES

Appearance	Description
 MRS-8600-SUP	Super management blade, 1+1 redundancy
 MRS-8600-FAB	Fabric blade, 1+1 redundancy
 MRS-8600-20XS2Q	20* 10GbE (SFP+) + 2*40GbE (QSFP) ports Wire-Speed, IPv6, MPLS, VPLS supported
 MRS-8600-24GT-V	24* 10/100/1000Base-T ports Wire-Speed, IPv6, MPLS, VPLS supported
 MRS-8600-24GB-V	24 * 100/1000Base-X(SFP) ports Wire-Speed, IPv6, MPLS, VPLS supported
 MRS-8600-AC	- Power supply module - Rated input voltage range: 100~240V AC 50/60Hz; - Maximum input voltage range: 90~264V AC 47/63Hz; - Maximum input current: 10 A (input voltage: 90V AC) - Maximum output current: 0.5A (output voltage: 10V DC)/12.6A (output voltage: 46.8V DC) - Rated output voltage:12V/48V DC - Rated output power: 600W - N+M redundancy

KEY FEATURES AND HIGHLIGHTS

- **Performance and Scalability:**

AP-CRS-8616 supports up to max 320*10G ports or 384 Gigabit ports, providing flexibility and high port density.

10G blades support max 20 ports for downlink to distribution layer switches or access switches directly, aggregating them to the core layer, and preventing port bottlenecks in Gigabit switches. Furthermore, the optional 10Gigabit Ethernet SFP+ transceivers can be chosen for different distance fiber uplinks.

Backup Master ensures the availability of a master controller for network control at any time. Firmware & configuration are automatically upgraded from master to slave units for management simplicity. Intensive protocol support is included for MPLS, L2/L3 MPLS-VPN supported by a software upgrade to ensuring future investment protection.

- **OpenFlow:**

Supports OpenFlow 1.2 standard protocol. OpenFlow network is increasingly becoming a trend as the core protocol of the SDN network. It makes the network easier programming. OpenFlow brings high performance to datacenter users via a self-defined network. With OpenFlow, this product is ideal to build SDN test-bed for research institutes and SDN Experimental Bureau for large ISP and operator.

Support open controller OpenDaylight, Floodlight, Ryu, Pox, etc.

- **Continuous Availability:**

IEEE 802.1w Rapid Spanning Tree Protocol provides a loop-free network and redundant links to the core network with rapid convergence.

IEEE 802.1s Multiple Spanning Tree Protocol runs STP per VLAN base, providing Layer 2 load sharing on redundant links.

IEEE 802.3ad Link Aggregation Control Protocol (LACP) increases bandwidth by automatically aggregating several physical links together as a logical trunk and providing load balance and fault tolerance for uplink connections.

IGMP snooping prevents flooding of IP multicast traffic and limits bandwidth-intensive video traffic only to the subscribers.

- **L3 Features:**

The AP-CRS-8616 series delivers high-performance hardware-based IP routing.

RIP, OSPF, and BGP provide dynamic routing by exchanging routing information with other Layer 3 switches or routers within the same domain and different domains.

DVMRP, PIM-SM/DM Multicast Routing Protocols send IP multicast traffic from one subnet to another.

VRRP prevents your system from failing by dynamically backing up multiple L3 switches for routing.

Support OSPF and BGP graceful restart to protect network stability.

- **Strong Multicast:**

The AP-CRS-8616 supports abundant multicast features. The product supports rich L2 multicast features such as IGMPv1/v2/v3 and snooping and L3 multicast protocols such as DVMRP, PIM-DM, PIM-SM, and PIM-SSM. As a rich application experience, the product supports Multicast VLAN Register and Multicast Receive Control and Illegal Multicast Source Detection function.

- **Easy High-Reliability Network:**

MRPP (Multi-layer Ring Protection Protocol), is a link-layer protocol applied on Ethernet loop protection which reduces network convergence time to 50ms.

PRODUCT SPECIFICATIONS

Hardware Specifications

Item	AP-CRS-8616
Slot	2 management slots 16 business slots
Business Ports	10/100/1000BASE-T: MAX 384 1000Base-SX: MAX 384 1000Base-LX: MAX 384 10G: MAX 320
Performance	
Switching Capacity	8960Gbps
Forwarding Rate	6667Mpps
Routing Table	MAX 16K
VLAN Table	4K
Features	
Forwarding	Storage and forwarding IEEE802.3(10Base-T) IEEE802.3u(100Base-TX) IEEE802.3z(1000BASE-X) IEEE802.3ab(1000Base-T) IEEE802.3ae(10GBase) Loopback Interface 9k Jumbo Frame Port Loopback Detection LLDP and LLDP-MED UDLD
L2 Features	LACP 802.3ad, max 128 group trunk with max 8 ports for each trunk Link Aggregation by manual
	IEEE802.1d(STP) IEEE802.1w(RSTP) IEEE802.1s(MSTP) Max 48 instance Root Guard BPDU Guard BPDU Forwarding
	One to one or any to one mirror Mirror cross-business cards RSPAN
	IGMP v1/v2/v3, IGMP v1/v2/v3 Snooping, IGMP Proxy ICMPv6, ND, ND Snooping, MLDv1/v2, MLDv1/v2 Snooping
	GVRP Port/ MAC/ IP Segment/ Portocol/ Voice/ Private/ VLAN support Multicast VLAN Register/MVR for IPv4 and IPv6
	Port-based 802.1Q, 4K VLAN QinQ and Selective QinQ
	DFI/Broadcast/Multicast Storm control
	Binding (IPv4/IPv6), IP Source Guard MAC Filter, MAC Limit
	IP Source Guard
	Port Binding (IPv4 /Ipv6)
	Support Smart Link (or named Flexible Link)
	IP Protocol (IP support both IPv4 and Ipv6)
	Default Routing, Static Routing, Blackhole Route, VLSM and CIDR, RIPv1/V2, OSPFv2, BGP4, support MD5 Authentication LPM Routing
	OSPFv3, BGP4+ support
L3 Features	Policy-based routing (PBR) for IPv4 and Ipv6 Support 4-byte BGP AS number Support GR for OSPF and BGP VRRP, VRRP v3
	DVMRP, PIM-DM, PIM-SM, PIM-SSM MSDP (Multicast Source Discovery Protocol) Static Multicast Route Multicast Edge Configure Anycast RP for IPv4 and Ipv6 PIM-SM/DM/SSM for IPv6, 6 to 4 Tunnels, configured Tunnels, ISATAP Multicast Receive Control Illegal Multicast Source Detection
	URPF for IPv4 and Ipv6
	BFD
	ECMP (Equal Cost Multi-Path) with maxim 8 groups
	ARP Guard, Local ARP Proxy, Proxy ARP, ARP Binding, Gratuitous ARP, ARP Limit

PRODUCT SPECIFICATIONS

Hardware Specifications

Tunnel Technical	Manual Configure IPv4/IPv6 tunnel 6to4 Tunnel ISATAP Tunnel GRE Tunnel
MPLS	255 VRF/VFI LDP L3 MPLS VPN VPLS MPLS QoS
QoS	8 Hardware Queues per port Traffic Classification based on IEEE 802.1p, ToS, port, and DiffServ SP, WRR, SWRR Traffic Shaping Rate Limit for Import and Export PRI Mark/Remark WRED 2 buckets with dual-rate and triply color mark Standard and Expanded ACL
ACL	IP ACL and MAC ACL, ACL based on source/destination IP, MAC, L3 protocol, TCP/UDP port number, IP PRI (DSCP, ToS, Precedence), Time Ingress and Egress ACL
ACL-X	Time-Based Security Auto-negotiation ACL rules can be configured to port, VLAN Can be used for QoS Classification
Anti-attack and Security	S-ARP: ARP Inspection, defense ARP-DOS Attack, and Address Clone Anti-Sweep: prevent Ping Sweep S-ICMP: resist PING-DOS attack, ICMP unreachable attack S-Buffer: prevent DDOS attack Switch engine CPU protection Key message priority: secure processing of key legal messages Port Credit: inspect illegal DHCP Server, Radius Server. Connection via credit port only Support URPF, avoid IP address clone All the above technologies efficiently prevent various DOS attack (e.g. ARP, Synflood, Smurf, ICMP attack), support ARP monitoring, defense Worm, Bluster, check sweep and raise an alarm
DHCP	Support DHCP Client, Relay, Snooping, Option 82 DHCP Server for IPv4 and Ipv6 DHCP v6 and DHCP Snooping v6
DNS	DNS Client DNS Proxy
Ring Protocol	MRPP (Multi-Ring Protect Protocol)
Access security	802.1X - Port, MAC, username based - Account-based on time length and traffic - Guest VLAN and Auto VLAN - Work with a private client can manage P2P traffic MAC Based AAA (Client free access) PPPOE/PPPOE+ forwarding
AAA	RADIUS AAA for IPV4 and Ipv6 TACACS+ AAA
Configuration and Management	CLI, Telnet, WEB, SSH and SSL SNMPv1/v2c/v3 MIB RMON 1, 2, 3, 9
Power Saving Technology	Reduce power consumption, improve cooling and reliability Flexible fan and port management to save power consumption
Syslog	Save Syslog and Trap to local device or server Max. 8 servers for Syslog or Trap receive
NMS	Strict Access Control by ACL and QoS Access the switch through AAA or Local Authentication SNTP and NTP Setup Time Zone and Summer Time
Supervision and Trouble Shooting	Supervise abnormality of task, memory, CPU, stack, switch chip, temperature and raise an alarm Sflow Ping and Traceroute command
Configuration Management	Configuration file storage Command operation log Dual Images and files startup FTP/TFTP server or client upgrade X-modem protocol transfer the file

PRODUCT SPECIFICATIONS

Hardware Specifications

OAM	802.3ah 802.1ag
Physical	
Dimension (W x D x H)	440mm×450mm ×842mm (19U)
Relative Humidity	10%~90%, non-condensing
Storage Temperature	-40℃~70℃
Operating Temperature	0℃~40℃
Power	AC: Input 90~260V, 50~60 Hz:
Power Consumption	≤1600W
MTBF	>250,000 hours

ORDER INFORMATION

Product	Description
AP-CRS-8616	CRS-8616 routing switch chassis (2 slots for management cards and 16 slots for business blades. AC power supply 3+1 redundancy), standard with 1 MRS-8600-AC power supply, no management cards.
MRS-8600-AC	220V AC Power Supply (600W) for CRS-8600
MRS-8600-SUP	CRS-8600 Series super management blade
MRS-8600-FAB	CRS-8600 Series fabric blade
MRS-8600-20XS2Q	CRS-8600 Series Interface Module (20* 10GbE (SFP+) + 2*40GbE (QSFP) ports), Wire-Speed, IPv6, MPLS, VPLS supported
MRS-8600-24GB-V	CRS-8600 Series Interface Module (24 * 100/1000Base-X(SFP) ports), Wire-Speed, IPv6, MPLS, VPLS supported
MRS-8600-24GT-V	CRS-8600 Series Interface Module (24* 10/100/1000Base-T ports), Wire-Speed, IPv6, MPLS, VPLS supported