

# Network SWITCH



## LAYER 3 2.5G with POE++ Network Switch ASP5 Series ASP5-0800S4 | ASP5-2400S6

### OVERVIEW

Angustos ASP5 Series is Layer 3 multi-gigabit with POE++ network switch series for high-performance computing, data center and campuses. Providing high-performance L2/L3/L4 wire-speed switching services, further integrates various network services such as IPv6 and network security.

1U pizza-box switch with the ultra-high port density of 8-Port 2.5G PoE++, 16-Port 2.5G PoE+ and 6-Port 10G SFP+. Equipped with high-performance ASIC switch chips, suitable for requirements of various complex scenarios.



### Flexibile Networking

- Easy Maintenance with CLI/ Telnet/ SSH/ SSL and SNMP.
- Web GUI module built-in for easy management procedures.
- Support FTP, TFTP, SFTP, ISSU, Zero Touch Provisioning.
- Automatic equipment discovery, network topology, equipment configuration, performance data statistic and analysis.

### VLAN

- 4K Active VLAN.
- QinQ & Selective QinQ.
- GVRP, Private VLAN.
- Voice - VLAN

### Spanning Tree

- 802.1D (STP).
- 802.1W(RSTP) and 802.1S(MSTP)
- BPDU guard, root guard and loopback guard

### Multicast

- PIM-SM, PIM-DM.
- IGMP v1/v2/v3, IGMP Snooping.
- IGMP Fast Leave, MVR, IGMP filter

### IP

- Static route
- RIP v1/v2, ECMP
- OSPF, BGP, PBR, ECMP
- BFD for OSPF, BGP

### Basic Standards

- IEEE 802.3 - 10Mbit/s
- IEEE 802.3ab - G.bit/s Base-T
- IEEE 802.3z - G.bit/s Base-X
- IEEE 802.3u - 10/100 Mbit/s auto
- IEEE 802.3x/ 802.3ad / 802.3ae
- IEEE 802.1d/ 802.1p/ 802.1q/ 802.1w
- IEEE 802.1ab / 802.1ad/ 802.1ax

### QoS

- CAR, HQoS, MAC/IP/TCP/UDP/ VLAN/COS/DSCP/TOS based
- QoS, 802.IP/DSCP priority relabeling, SP, WRR, and "SP+WRR".
- Tail-Drop, WRED, flow monitoring and traffic shaping

### Security

- Port isolation, Port security, and "IP+MAC+port" binding, MAC sticky
- DHCP Snooping and option 82, DAI & IP source guard, PPPoE+.
- IEEE 802.1x, Radius and BDTacacs+
- L2/L3/L4 ACL flow identification and filtration
- Anti-attack from DDoS, TCP's SYN Flood, UDP Flood, etc.
- Broadcast/multicast/unknown unicast storm-control
- MD5, SHA-256, RSA-1024, AES256, etc.

### Environment

- Operating temperature/humidity: -10°C-60°C, 0%-90% non-condensing
- Storage temperature/humidity : -20°C-70°C, 0%-90% non-condensing

### Carrier-level High Reliability

- Redundant Power module (DAC Model)
- Dual master-slave uplink. LACP link aggregation
- Seamless switching. MTTR 50ms.
- STP / RSTP/MSTP, ISSU, BFD, OAM
- VRRP - Ring protection

### Telecom-Level Ethernet Switch

- Layer 2 / 3 Multicast Routing
- Layer 3 Routing Protocol, large routing table.
- Layer 2 MPLS VPN. Perfect Ethernet OAM mechanism

### Advance IPv6

- IPv6 Protocol, IPv6 neighbor discovery
- ICMPv6, Path MTU discovery, DHCPv6
- Ping, Traceroute, Telnet, SSH, ACL based on IPv6
- MLD, MLD Snooping, IPv6 Static routing, RIPng, OSPFv3
- BGP4+, IPv6 tunnel: Manual / Auto / 6to4 tunnel
- ISATAP tunnel

### Stability

- Static/LACP link aggregation.
- Interface backup
- EAPS and ERPS
- ISSU
- BVSS, VRRP, UDLD

### Management

- Console, Telnet, SSH v1/v2, HTTP, HTTPS, SNMP v1/v2/v3, RMON
- TFTP, FTP, SFTP
- NTP, Syslog, LLDP
- ZTP(Zero Touch Provisioning)
- SPAN, RSPAN

### DHCP

- DHCP server / relay / client
- DHCP snooping / option 82
- DHCP pool

### Certification

- CE / FCC/ RoHS

### POE ++

- IEEE 802.3af/at/bt
- Up to 90W POE port
- Max 740W POE budget
- Manual and Dynamic Mode
- Non-Stop POE supply, POE power is not disconnected when switch unit reload

## LAYER 3 2.5G with POE++ Network Switch

### ASP5 Series

ASP5-O8OOS4 | ASP5-24OOS6

#### SPECIFICATION

		ASP5-08OOS4	ASP5-24OOS6
Interface		8 x 2.5G / POE ++	8 x 2.5G/ POE++
			16 x 2.5G / POE +
		4 x 10G/GE SFP+	6 x 10G/GE SFP+
Backplane		120 Gbps	240 Gbps
Forwarding Rate (Mpps)		90 Mpps	180 Mpps
Power consumption	No load	30 W	30 W
	Full load	400 W	780 W
	POE Budget	370 W	740 W
Power supply	100-220V (50-60Hz)	1 module AC	1 module AC
Total Output BTU	(1000BTU/H=293W)	1433	2901
Fan		2	2
MTBF(H)		200,000	200,000
Dimension	WxDxH (mm)	300x240x44	440x280x44
Weight	Empty (kg)	~5Kg	~5Kg
Console		1 x RJ-45	1 x RJ-45
Forwarding Mode		Store-Forwarding	Store-Forwarding
Flash (MB)		16	16
DRAM (MB)		256	512
MAC		16K	32K
Jumbo Frame   Buffer Size		9K   1.5 MB	9K   2 MB
Routing Table	IPv4	512	8K
	IPv6	128	4K
ARP Table	IPv4	2K	12K
	IPv6	2K	2K
Total SVI		63	1K
Certification	CE, FCC, RoHS		
Temperature	Operational : -10°C-60°C   Storage : -20°C-70°C		
Humidity	Operational : 0 - 90%   Storage : 0 - 90% Non-Condensing		

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### SPECIFICATION (cont)

Multicast	PIM-SM/SSM, PIM-DM, IGMP v1/v2/v3, IGMP Snooping, IGMP Fast Leave, MVR, IGMP filter Multicast group policy and multicast number limit, Multicast filtering, Transparent passing without IGMP
Spanning Tree	802.1D (STP)/ 802.1W (RSTP) / 802.1S (MSTP), BPDU guard, root guard loopback guard
IPv4	Static routing, RIP v1/v2, OSPF, BGP, PBR, ECMP, BFD for OSPF, BGP
IPv6	ICMPv6, DHCPv6, ACLv6 and IPv6 Telnet, IPv6 neighbor discovery, Path MTU discovery MLD V1/V2, MLD snooping, IPv6 Static Routing, RIPng, OSPFv3, BGP4+ Manual tunnel, ISATAP tunnel, 6 to 4 tunnel
MPLS	LDP protocol, Multi-VRF, MPLS L2 VPN
QoS	CAR, HQoS, MAC/IP/TCP/UDP/VLAN/COS/DSCP/TOS based QoS, 802.1P/DSCP priority SP, WRR, and "SP+WRR", Tail-Drop, WRED, flow monitoring and traffic shaping
Security	Port isolation, Port security, and "IP+MAC+port" binding, MAC sticky, DHCP Snooping and option 82 DAI & IP source guard, PPPoE+, IEEE 802.1x, Radius and BDTacacs+ L2/L3/L4 ACL flow identification & filtration, Anti-attack from DDoS, TCP's SYN Flood, UDP Flood, Broadcast/multicast/unknown unicast storm-control MD5, SHA-256, RSA-1024, AES256, etc.
Reliability	Static/LACP link aggregation, Interface backup BVSS virtual-stacking. EAPS and ERPS, URPF, LLDPISU, VRRP 1+1 power backup (DAC Model)
Standard	<ul style="list-style-type: none"> <li>. IEEE 802.3</li> <li>. IEEE 802.3ab   IEEE 802.3ah   IEEE 802.3ag</li> <li>. IEEE 802.3z</li> <li>. IEEE 802.3u</li> <li>. IEEE 802.3x</li> <li>. IEEE 802.3ad</li> <li>. IEEE 802.3ae   IEEE 802.3az</li> <li>. IEEE 802.1d</li> <li>. IEEE 802.1p</li> <li>. IEEE 802.1q   IEEE 802.1s</li> <li>. IEEE 802.1w   IEEE 802.1x</li> <li>. IEEE 802.1ab</li> <li>. IEEE 802.1ad</li> <li>. IEEE 802.1ax</li> <li>. IEEE 802.af / IEEE 802.3at / IEEE 802.3bt</li> </ul>

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### ASP5 Series

ASP5-O8OOS4 | ASP5-24OOS6

<b>Optical Module</b>	<i>*Other module available upon request</i>
AS-SFP-CO	GE SFP single to RJ45 module
AS-SFP-SX-D	GE SFP MM (500m,850nm,LC,DDM)
AS-SFP-LX-10-D	GE SFP SM (10Km,1310nm,LC,DDM)
AS-SFP-LX-20-D	GE SFP SM (20Km,1310nm,LC,DDM)
AS-SFP-LX-40-D	GE SFP SM (40Km,1310nm,LC,DDM)
AS-SFP-ZX-80-D	GE SFP SM (80Km, 1550nm, LC, DDM)
AS-SFP-LX-310-10-BIDI	GE SFP SM, single-chip BIDI (10Km, TX1310/RX1550, LC, DDM)
AS-SFP-LX-310-20-BIDI	GE SFP SM, single-chip BIDI (20Km, TX1310/RX1550, LC, DDM)
AS-SFP-LX-550-10-BIDI	GE SFP SM, single-chip BIDI (10Km, TX1550/RX1310, LC, DDM)
AS-SFP-LX-550-20-BIDI	GE SFP SM, single-chip BIDI (20Km, TX1550/RX1310, LC, DDM)
AS-SFP+-SX	TE 10G SFP+ multi-mode (300m, 850nm, LC)
AS-SFP+-LX-10	TE 10G SFP+ single-mode (10Km, 1310nm, LC, DDM)
AS-SFP+-LX-20	TE 10G SFP+ single-mode (20Km, 1310nm, LC, DDM)
AS-SFP+-LX-40	TE 10G SFP+ single-mode (40Km, 1310nm, LC, DDM)
AS-SFP+-LX-SM-270-10	10GE SFP+SM, single-chip and BIDI (10Km, TX1270/RX1330, LC, DDM)
AS-SFP+-LX-SM-330-10	10GE SFP+SM, single-chip and BIDI (10Km, TX1330/RX1270, LC, DDM)
AS-SFP+-LX-SM-270-20	10GE SFP+SM, single-chip and BIDI (20Km, TX1270/RX1330, LC, DDM)
AS-SFP+-LX-SM-330-20	10GE SFP+SM, single-chip and BIDI (20Km, TX1330/RX1270, LC, DDM)
AS-SFP+-LX-SM-270-40	10GE SFP+SM, single-chip and BIDI (40Km, TX1270/RX1330, LC, DDM)
AS-SFP+-LX-SM-330-40	10GE SFP+SM, single-chip and BIDI (40Km, TX1330/RX1270, LC, DDM)
<b>Optional Power Module</b>	
AS-P75-DC	Hot-swap DC Power (Max Power 75W, DC-36V~72V input, isolated cooling fan)
AS-P75-AC	Hot-swap AC Power (Max Power 75W, AC 100-240V input, isolated cooling fan)
AS-P150-DC	Hot-swap DC Power (Max Power 150W, DC-36V~72V input, isolated cooling fan)
AS-P150-AC	Hot-swap AC Power (Max Power 150W, AC 100-240V input, isolated cooling fan)