

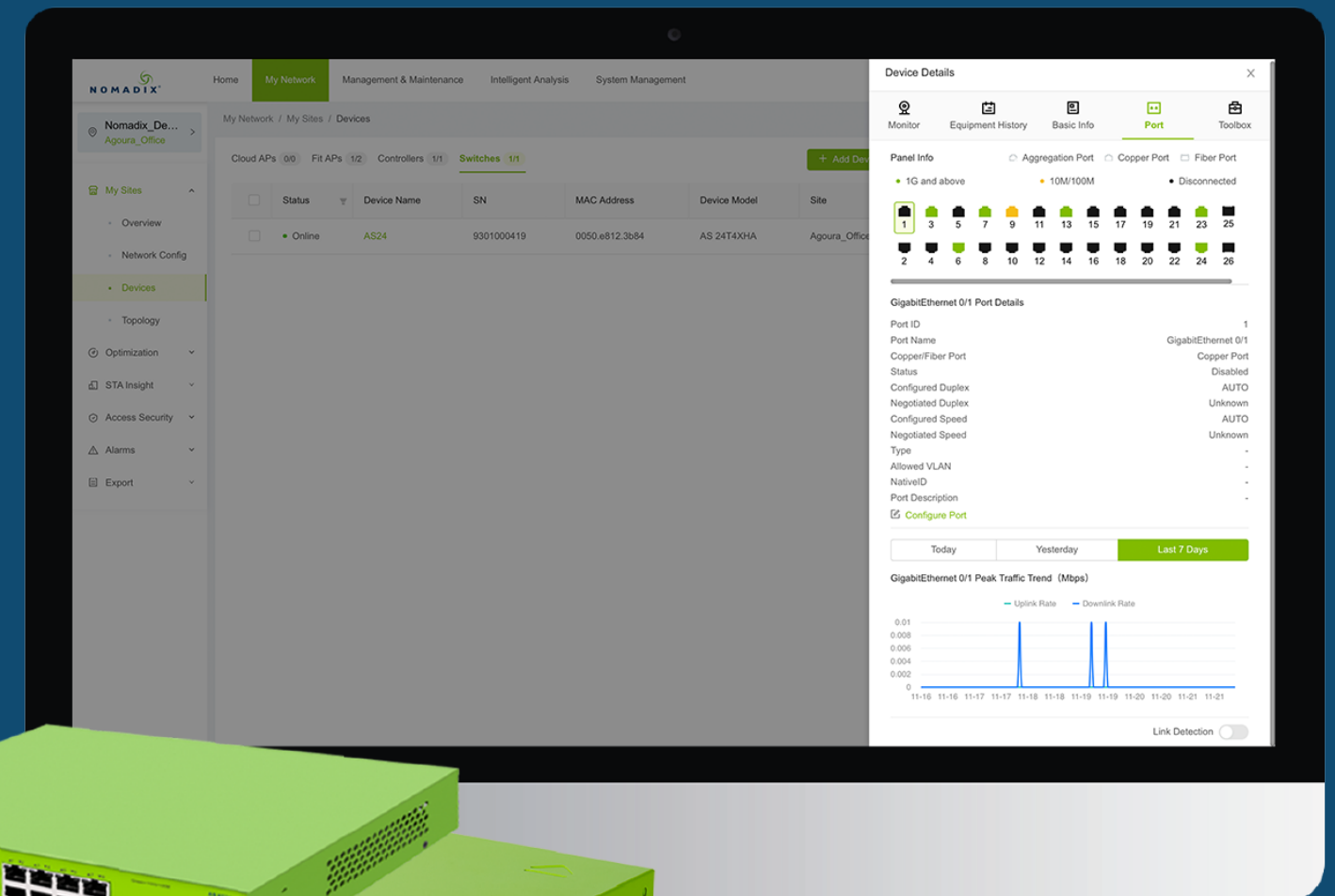
NOMADIX NETWORKS



LAN INFRASTRUCTURE PORTFOLIO

Dependable Access and Aggregation Switches

- Robust design with built-in hardware and software protections
- Copper and fiber connectivity
- PoE capability on all access switches
- Redundant PSU options on larger models
- Virtual Switching Units (VSU)
- Management via CLI and Nomadix Cloud Monitor



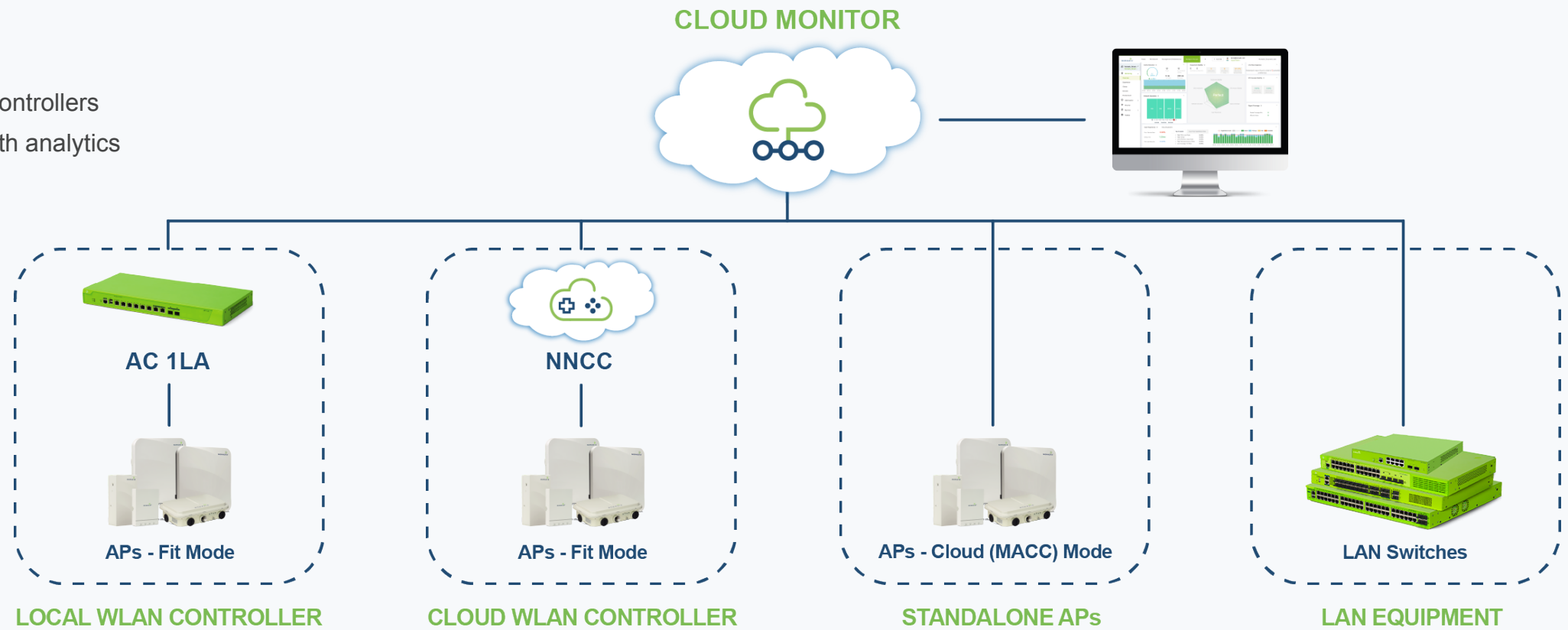
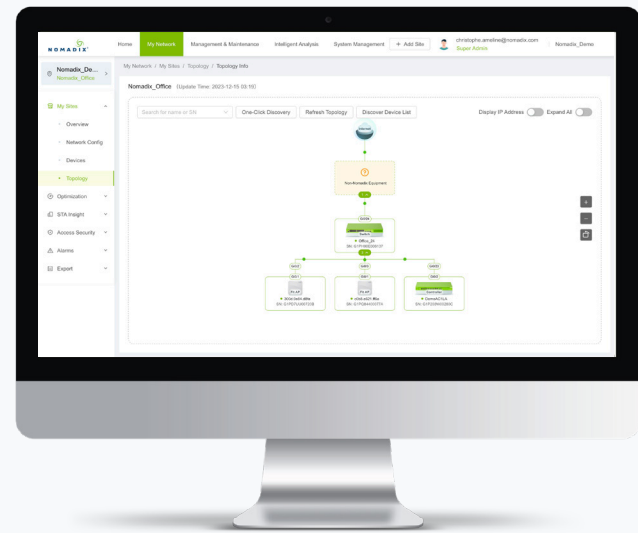


Family	AS 8T2XHA 8 Port Managed Access Switch	AS 24T4XHA 24 Port Managed Access Switch	AS 48T2XHEA 48 Port Managed Access Switch	AS 20X6XSEA 20 Port Managed Aggregation Switch
Highlights	<ul style="list-style-type: none"> 8 x 1 Gbps RJ45 PoE/PoE+ ports 2 x 1 Gbps SFP uplink ports 1 x Console RJ45 port Fixed power supply, fan-less LEDs 	<ul style="list-style-type: none"> 24 x 1 Gbps RJ45 ports (1-4 HPoE, 5-24 PoE/PoE+) 4 x 10 Gbps SFP+ uplink ports 1 x Console RJ45 port Fixed power supply and fans LEDs 	<ul style="list-style-type: none"> 48 x 1 Gbps RJ45 PoE/PoE+ ports 2 x 1 Gbps SFP uplink ports (combo with 47-48) 2 x 10 Gbps SFP+ uplink ports 1 x Console RJ45 port 1 x USB 2.0 Type-A port 2 x modular power supply slots LEDs 	<ul style="list-style-type: none"> 20 x 10 Gbps SFP+ ports 4 x 25 Gbps SFP28 ports 2 x 40 Gbps QSFP+ ports 2 x modular power supply slots 1 x Management port (RJ45) 1 x Console RJ45 port 1 x USB 2.0 Type-A port LEDs

Management

Nomadix Cloud Monitor:

- Multi-tenant instance, hosted by Nomadix
- Multi-site network management for switches, access points and controllers
- Centralized monitoring, configuration, security, alarms and in-depth analytics



Hardware	AS 8T2XHA 8 Port Managed Access Switch	AS 24T4XHA 24 Port Managed Access Switch	AS 48T2XHEA 48 Port Managed Access Switch	AS 20X6XSEA 20 Port Managed Aggregation Switch
PoE	<ul style="list-style-type: none"> IEEE 802.3af/at (PoE, PoE+) Total PoE budget: 125 W 	<ul style="list-style-type: none"> IEEE 802.3af/at/bt (PoE, PoE+, HPoE) Total PoE budget: 370 W All ports support PoE (up to 24 ports) and PoE+ (up to 12 ports) Ports 1-4 support HPoE output power of up to 60 W per port 	<ul style="list-style-type: none"> IEEE 802.3af/at (PoE, PoE+) Total PoE budget: 1,480 W (with dual PSUs) All 48 ports support PoE+ (requires dual PSUs) 	–
Power Supply	Built-in AC input: <ul style="list-style-type: none"> Rated voltage range: 100-240 V Maximum voltage range: 90-264 V AC frequency: 50-60 Hz Rated input current: 2.5 A 	Built-in AC input: <ul style="list-style-type: none"> Rated voltage range: 100-240 V Maximum voltage range: 90-264 V AC frequency: 50-60 Hz Rated input current: 6.8 A 	AC Power Supply Module: <ul style="list-style-type: none"> Rated voltage range: 100-240 V AC frequency: 50-60 Hz Rated input current: 10 A HDVC Input: <ul style="list-style-type: none"> Voltage range: 192-290 V Rated input current: 10 A 	AC Power Supply Module: <ul style="list-style-type: none"> Rated voltage range: 100-240 V AC frequency: 50-60 Hz Maximum voltage range: 90-264 V AC frequency: 47-63 Hz Rated input current: 3 A HVDC input: <ul style="list-style-type: none"> Rated voltage range: 240 V Maximum voltage range: 192-288 V Rated input current: 3 A
Power Consumption	≤8-150 W	≤40-460 W	≤57-1,700 W (with dual PSUs)	≤85 W
Dimensions (W x D x H)	281 mm x 185 mm x 44 mm 11.06 in. x 7.28 in. x 1.73 in.	440 mm x 267 mm x 44 mm 17.32 in. x 10.51 in. x 1.73 in.	440mm x 478mm x 44mm, including PSU module 17.32 in. x 18.82 in. x 1.73 in., including PSU module	440 mm x 360 mm x 44 mm, including PSU module 17.32 in. x 14.17 in. x 1.73 in., including PSU module
Weight	1.7 kg 3.7 lbs	4.4 kg 9.6 lbs	6.6 kg / 14.55 lbs, with 1 x PSU module 8.1 kg / 17.86 lbs, with 2 x PSU modules	5.15 kg / 11.35 lbs, with 1 x PSU module 5.7 kg / 12.57 lbs, with 2 x PSU modules
Mounting	19-inch rack format (1U), short depth		19-inch rack format (1U)	
MTBF	>200,000 hours	>388,000 hours	>200,000 hours	>262,000 hours
Temperature	<ul style="list-style-type: none"> Operating: -5°C to 50°C / 23°F to 122°F Storage: -40°C to 70°C / -40°F to 158°F 		<ul style="list-style-type: none"> Operating: 0°C to 50°C / 32°F to 122°F Storage: -40°C to 70°C / -40°F to 158°F 	
Airflow	Fan-less design	Fan management, temperature monitoring and alerts		
Humidity	<ul style="list-style-type: none"> Operating: 10%-90% RH (non-condensing) Storage: 5%-95% RH (non-condensing) 			
Operating Altitude	-50 to 2000 m / -164 to 6560 feet	-500m to 5,000 m / -1640 to 16,400 feet		0 to 5,000 m / 0 to 16,400 feet

Specifications	AS 8T2XHA 8 Port Managed Access Switch	AS 24T4XHA 24 Port Managed Access Switch	AS 48T2XHEA 48 Port Managed Access Switch	AS 20X6XSEA 20 Port Managed Aggregation Switch
Switching Capacity	20 Gbps	256 Gbps	264 Gbps	2.56 Tbps/23.04 Tbps
Packet Forwarding Rate	15 Mpps	96 Mpps	132 Mpps	570 Mpps/1,260 Mpps
Port Buffer	4 MB	1.5 MB		4 MB
ARP Table	256	1K		16K
MAC Address	8K	16K		32K
Routing Table Size	–	500 (IPv4/IPv6)		4K (IPv4/IPv6)
ACL Entries	In: 255, Out: N/A	In: 1,500, Out: 500		In: 2,500, Out: 1,000
VLAN	802.1Q, private, MAC, voice, protocol and VLAN mapping. MAC not available on aggregation ports and Class of Service cannot change. Voice not available on aggregation ports and Class of Service and DSCP cannot change. VLAN mapping only on output direction on 802.1Q tagged packets	4K 802.1q VLANs, port-based VLAN, MAC-based VLAN, protocol-based VLAN, private VLAN, voice VLAN, IP subnet-based VLAN, GVRP	4K 802.1q VLAN, port-based VLAN, MAC-based VLAN, protocol-based VLAN, private VLAN, voice VLAN, QinQ, IP subnet-based VLAN, GVRP, guest VLAN	4K 802.1Q VLAN, port-based VLAN, private VLAN, GVRP, super VLAN
QinQ	Basic QinQ	Basic QinQ, flexible QinQ		Basic QinQ
Link Aggregation	AP, LACP (maximum 8 ports)	AP, LACP (maximum 8 ports), cross devices AP, flow balance		LACP (802.3ad)
Port Mirroring	Many-to-one mirroring, AP as mirror source port	Aggregation port as source and destination port of mirroring, flow-based mirroring, VLAN-based mirroring, many-to-one mirroring, one-to-many mirroring, cross-device traffic mirroring, RSPAN, ERSPAN	Many-to-one mirroring, one-to-many mirroring, flow-based mirroring, over devices mirroring, VLAN-based mirroring, VLAN-filtering mirroring, AP-port mirroring, RSPAN, ERSPAN, flow-based mirroring	Flow-based mirroring, many-to-one mirroring, one-to-many mirroring RSPAN, link aggregation mirroring
Spanning Tree Protocols	IEEE802.1d STP, IEEE802.1w RSTP, standard 802.1s MSTP, port fast, BPDU filter, BPDU guard, TC guard, TC filter, edge port auto-detection, TC protection, loop guard, root guard, auto errdisable recovery	IEEE802.1d STP, IEEE802.1w RSTP, standard 802.1s MSTP, port fast, BPDU filter, BPDU guard, TC guard, TC protection, root guard	IEEE802.1d STP, IEEE802.1w RSTP, standard 802.1s MSTP, port fast, BPDU filter, BPDU guard, TC guard, TC protection, root guard, spanning tree root guard (STRG)	IEEE802.1d STP, IEEE802.1w RSTP, standard 802.1s MSTP
DHCP	DHCP client, DHCP snooping	DHCP server, DHCP client, DHCP snooping, DHCP relay, IPv6 DHCP snooping, IPv6 DHCP client, IPv6 DHCP relay	DHCP server, DHCP client, DHCP snooping, DHCP relay, IPv6 DHCP snooping, IPv6 DHCP client, IPv6 DHCP relay, DHCP snooping option 82	DHCP server, DHCP client, DHCP snooping, DHCP relay, IPv6 DHCP snooping, IPv6 DHCP client IPv6 DHCP relay
MSTP Instances	64			
Maximum Aggregation Ports (AP)	8	128		
Virtual Switching Unit (VSU)	–	Up to 4 stack members, stacking via regular uplink ports, local and distant stacking, cross chassis link aggregation		Up to 2 stack members, stacking via regular ports, local and distant stacking

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Zero Configuration	CWMP (TR069)			
L2 Features	STP, RSTP, MSTP, IGMP snooping v1/v2, jumbo frame, port grouping LACP 8 ports, VLAN 802.1Q, private, MAC, voice, protocol and VLAN mapping	MAC, VLAN, basic QinQ, Felix QinQ, mirroring, STP, RSTP, MSTP, broadcast storm control, IGMP v1/v2/v3 snooping, IGMP filter, IGMP fast leave, jumbo frame, RLDLP, LLDP, REUP, G.8032	MAC, EEE, ARP, VLAN, basic QinQ, Felix QinQ, link aggregation, mirroring, STP, RSTP, MSTP, broadcast/multicast/unknown unicast storm control, IGMP v1/v2/v3 snooping, IPv6 MLD snooping v1/v2, IGMP SGVL/ IVGL, IGMP querier, IGMP filter, IGMP fast leave, DHCP, jumbo frame, RLDLP, LLDP, REUP, G.8032 ERPS, layer 2 protocol tunnel	IGMP v1/v2/v3, IGMP proxy, IGMP v1/v2/v3 snooping, IGMP filtering, IGMP fast leave, PIM-DM, PIM-SM, PIM-SSM, MLD snooping, MLD, MSDP
Layer 2 Protocols	IEEE 802.1d, IEEE802.1w, IEEE802.1s, IGMP snooping v1/v2	IEEE802.1d, IEEE802.1w, IEEE802.1s, IGMP snooping v1/v2/v3	IEEE802.3, IEEE802.3u, IEEE802.3z, IEEE802.3x, IEEE802.3ad, IEEE802.1p, IEEE802.1x, IEEE802.3ab, IEEE802.1Q (GVRP), IEEE802.1d, IEEE802.1w, IEEE802.1s	
IPv4 Features	Ping, traceroute			
IPv4 Routing Protocols	SVI based static and direct routing	Static routing, RIP, OSPFv1/v2		Static routing, RIP, RIPng, OSPFv2, OSPFv3, IS-ISv4, IS-ISv6 BGP4, BGP4+, ECMP
IPv6 Features	–	0-64 any length mask, ICMPv6, neighbor discovery, manually configure local address, automatically create local address, IPv6 ping, IPv6 tracert, IPv6 extender option head	ICMPv6, IPv6 ping, IPv6 tracert, manually configure local address, automatically create local address	
Basic IPv6 Protocols	–	IPv6 addressing, neighbor discovery, IPv6 ACL, ICMPv6, IPv6 ping, IPv6 tracert	IPv6 addressing, neighbor discovery, ICMPv6, IPv6 ping, IPv6 tracert	IPv6 addressing, ICMPv6, path MTU discovery
IPv6 Routing Protocols	–	Static Routing, RIPng, OSPFv3		
ACL	Standard IP ACL, extended IP ACL, extended MAC ACL, L2 port-based (physical port/AP) connection with ACL, ACL remark	Standard IP ACL, extended IP ACL, extended MAC ACL, expert ACL, ACL80, IPv6 ACL, ACL logging, ACL counter, ACL remark, global ACL, ACL redirect	Standard/extended/expert ACL, extended MAC ACL, ACL 80, IPv6 ACL, ACL logging, ACL counter, ACL remark, global ACL, ACL redirect, time-based ACL, router ACL, VLAN ACL, port-based ACL	Standard IP ACL, extended IP ACL, extended MAC ACL, time-based ACL, expert ACL, ACL80, IPv6 ACL
QoS	IEEE 802.1p/DSCP traffic classifications, input/output port based speed limit, tail drop congestion avoidance, 8 queue congestion management	802.1p/DSCP traffic classification, multiple queue scheduling mechanisms (such as SP, WRR, DRR, SP+WRR, SP+DRR), input/output port-based speed limit, each port supports 8 queue priorities, dynamic QoS	802.1p/DSCP/TOS traffic classification, multiple queue scheduling mechanisms (such as SP, WRR, DRR, SP+WFQ, SP+WRR, SP+DRR), input/output port-based speed limit, port-based traffic recognition, each port supports 8 queue priorities, flow-based rate limiting with the minimum granularity of 8Kbps, dynamic QoS	Port-based traffic recognition, port-based speed limit, 802.1p/DSCP/TOS traffic classification, 8 priority queues per port, queue scheduling algorithms (SP, WRR, DRR, SP+WRR, SP+DRR, RED/WRED)
Resilience	–	VSU, RIP GR		VSU, RIP GR/OSPF/BGP, BFD, G.8032 (ERPS), REUP, RLDLP, 1+1 power redundancy, hot-swappable power module
EEE Format	Support IEEE 802.3az standard			–

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Security	CPP, SSH, SSL, port security	Binding of the IPv6 and MAC address, port-based and MAC-based 802.1x, MAB, portal and portal 2.0 authentication, ARP-check, DAI, gateway anti-ARP spoofing, hierarchical management by administrators and password protection, RADIUS and TACACS+, SSH V1.5 and SSH V2.0, IP source guard, CPP, NFPP, port protection	Binding of the IP address, MAC address, and port address, binding of the IPv6, MAC address, and port address, filter illegal MAC addresses, port-based and MAC-based 802.1x, MAB, portal and portal 2.0 authentication, ARP-check, DAI, restriction on the rate of ARP packets, gateway anti-ARP spoofing, broadcast suppression, hierarchical management by administrators and password protection, RADIUS and TACACS+, change of authorization, AAA security authentication (IPv4/IPv6) in device login management, SSH and SSH V2.0, BPDU guard, IP source guard, CPP, NFPP, port protection, CoA (RADIUS change of authorization), SCP (Secure Copy), dynamic ARP Inspection (DAI)	Filter unauthorized MAC addresses, broadcast storm suppression, hierarchical management by administrators and password protection RADIUS and TACACS+, SSH, BPDU guard, CPP, NFPP
Network and User Access Management	SNMPv1/v2c/v3, CLI (Telnet/Console), RMON (1, 2, 3, 9), SSH, Syslog/Debug, NTP/SNTP, FTP, TFTP		SNMPv1/v2c/v3, CLI (Telnet/Console), RMON (1, 2, 3, 9), SSH, Syslog/Debug, NTP/SNTP, FTP, TFTP, sFlow	SNMP, CLI (Telnet/Console), RMON (1,2,4,9), Syslog, NTP, SNMP over IPv6, IPv6 MIB support for SNMP, Telnet v6, FTP/TFTP v6, DNS v6, NTP for v6, traceroute v6, sFlow

Certifications				
Safety Standard	<ul style="list-style-type: none"> GB4943-2011 EN62368 	<ul style="list-style-type: none"> GB4943-2011 EN 62368-1:2014+A11:2017 	<ul style="list-style-type: none"> GB4943-2011 	<ul style="list-style-type: none"> IEC 60950-1 EN 60950-1
Emissions Standard	<ul style="list-style-type: none"> GB9254/EN55032 Class A EN55035 VCCI Class A 	<ul style="list-style-type: none"> GB9254 Class A 	<ul style="list-style-type: none"> EN 300 386 EN 61000-4-3 EN 55022/55032 EN 61000-4-4 EN 61000-3-2 EN 61000-4-5 EN 61000-3-3 EN 61000-4-6 EN 55024 EN 61000-4-8 EN 61000-4-2 EN 61000-4-11 	<ul style="list-style-type: none"> GB9254 Class A EN 55032:2015+AC:2016 EN 61000-3-2:2014 EN 61000-3-3:2013+A1:2019 EN 55035:2017- ETSI EN 300 386 V2.1.1 (2016-07)