

Box-type L3 Switches Capable of 10G Multiport Accommodation, Suitable for Use as Core Switches in Medium/Small-Scale Networks

The AX3800S is a series of 1U-sized, box-type L3 switches with 44 ports for 10 gigabit Ethernet.

The AX3800S series switches can be used as core switches capable of accommodating 10 gigabit Ethernet and 1 gigabit Ethernet together in medium/small-scale networks. Further, they support **Stack**, which helps configure a redundant system with multiple switches, and thus realizes a fault tolerant network using both 10 gigabit Ethernet and 1 gigabit Ethernet. The AX3830S-44X4QW, which supports 40 gigabit Ethernet, can be used as a backplane switch for stack connection that can provide a large routing capacity.



AX3830S-44XW



AX3830S-44X4QW

Compact Body with High Port Density

- 40G Ethernet
 - ◎ AX3830S-44X4QW supports **40Gbps Ethernet interface** (4 ports), which provides enough performance for stack connection. 40Gbps Ethernet interface has become available prior to the release of the stack function (to be released in the future).
- 10G multiport switch
 - ◎ 1U-sized height with 44 ports for 10Gbps Ethernet interface
 - ◎ Enables mixed use of 10Gbps Ethernet and 1Gbps Ethernet, suitable for use as a core switch in an enterprise network.
 - ◎ Direct attach cables (not require expensive optical transceivers) can be used to reduce the total cost for switch setup.
- Enhanced accommodation capacity of MAC addresses
 - ◎ Compared to AX3650S/AX3640S, the number of MAC addresses that can be accommodated is quadrupled (32,768→131,072), which is a satisfying level for data center networks that are experiencing rapid virtualization of servers/storages

High Reliability and High Availability

- High reliability features
 - ◎ Improves line and route reliability with stacking, link aggregation, STPs, Graceful Restart (helper), VRRP, as well as ALAXALA's proprietary functions, such as GSRP (Gigabit Switch Redundancy Protocol), VRRP Polling, Static Polling, Uplink Redundancy, L2 loop detection, and EtherOAM.
- L2 Ring protocol
 - ◎ Realizes a **ring network without STP**, which enables high-reliability L2 redundancy capable of fast switchover. Supports a flexible network topology configured of multiple rings using a multi-ring feature.
- Hot-swappable power supply unit
 - ◎ Equipped with a built-in redundant power supply that enables hot swapping without communication interruption.
 - ◎ Two types of air flow are available: front-to-rear (FR type) and rear-to-front (RF type). Possible to select an air flow type that fits the cooling system of each data center (power supply and fan modules of FR type have different model numbers from those of RF type).

Stack (to be released in 2013)

- Support of fault tolerant network
 - ◎ Fast failover
 - ◎ Software update without service suspension
- Support of simple redundancy of enterprise network
 - ◎ Stack configuration using switches distanced from each other (possible to select 10G/40G, based on a distance between switches)
 - ◎ Network virtualization with protocol-free redundancy using **Stack** and **Network Partition** together

Network virtualization (Network Partition)

- Simple and low-cost network virtualization
 - ◎ Enables VPN (Virtual Private Network) by logically dividing a network configured of VRF (Virtual Routing and Forwarding) and VLAN (Virtual LAN), helping achieve network integration/separation without sacrificing network security/independence.

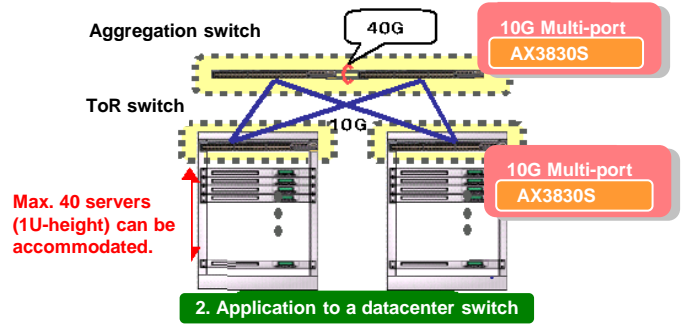
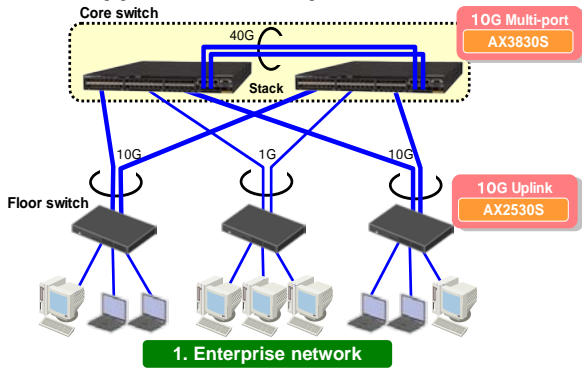
Stable High-Functionality Routing (IPv4/IPv6)

- **Field-proven routing functionality** same as that of core routers
 - ◎ Routing software equivalent to that of the AX7800R, which has always been well received by many ISPs/carriers
 - ◎ Load balancing based on high-reliability routing (e.g., multipath) with OSPF/BGP for site-to-site connection using wide-area Ethernet and IP-VPN
 - ◎ Policy-based routing (IPv4) to choose the best route based on each traffic amount (supports tracking function to detect communication faults and achieve automatic route switchover)
- IPv6/Multicast
 - ◎ Hardware-based IPv6 routing similar to IPv4 routing
 - ◎ Supports various protocols (Static, RIPng, OSPFv3, BGP4+, Multicast, and so on) responding to the diversity of IPv6 networks.

Green IT/Power Saving

- **Dynamic power saving** to cut unnecessary power use
 - ◎ Unused-port power saving for cutting power to unused ports
- Low power consumption
 - ◎ 1208Gbps switching capacity (AX3830S-44X4QW), low power consumption (max. 300(W)), TCO reduction

AX3830S Application Examples



Application examples		Points
2. Data center	- Aggregation switch	- Switch accommodating multiple ToR switches - TCO reduction in power consumption/operation management - 1U-height compact design
	- ToR (Top of Rack) switch	- Switch accommodating many 10G servers - TCO reduction in power consumption/operation management - 1U-height compact design

Application examples		Points
1. Enterprise network	- Core switch	- High performance 10G core switch (for enterprises) - Stable operation of routing protocols (OSPF, BGP, etc.) - Integration of different networks (Network Partition) - Security protection (flow monitoring, authentication, quarantine) - TCO reduction in power consumption/operation management - 1U-height compact design

AX3830S Product Specifications

Model		AX3830S-44XW	AX3830S-44XQW
Performance	Max. switching capacity	888Gbps	1208Gbps
	Max. packet forwarding performance	660.7Mpps	896.5Mpps
Port count	40GBASE-SR4 (QSFP+)	-	4
	40GBASE-CR4 (QSFP+)	-	4
	10GBASE-SR/LR/ER (SFP+)	-	44 #1
	10GBASE-CU (SFP+)	-	44 #2
	1000BASE-SX/LX/LH/BX/LHB (SFP)/1000BASE-T (SFP)	-	4
Routing protocol	IPv4	Unicast	Static, RIP, RIP2, OSPF #3, BGP4 #3, IS-IS #4, Stub Router (OSPF) #3, Policy-based routing #3
		Multicast	PIM-SM, PIM-SSM, IGMPv2/v3
	IPv6	Unicast	Static, RIPng, OSPFv3 #3, BGP4+ #3, IS-IS #4, Stub Router (OSPFv3) #3
		Multicast	PIM-SM, PIM-SSM, MLDv1/v2
Layer 2 functions	Max. MAC entry count	131,072	
	VLAN	Port VLAN, Tag-VLAN (IEEE802.1Q), Protocol VLAN, MAC VLAN, Tag Conversion	
	Spanning tree protocol	STP (IEEE802.1D), RSTP (IEEE802.1w), PVST+, MSTP (IEEE802.1s), BPDU filter, Root Guard, Loop Guard	
	Layer 3 cooperation	IGMPv1/v2/v3 snooping, MLDv1/v2 snooping	
Network functions	Ring protocol	Autonomous Extensible Ring Protocol	
	Security	IEEE802.1X (per-port authentication/per-VLAN authentication (static/dynamic)), Authentication VLAN #5, Web authentication, Filtering (L2/IPv4/IP6/L4), interception of relay between ports, URL redirection (dynamic VLAN mode, fixed VLAN mode), MAC authentication (dynamic VLAN mode, fixed VLAN mode)	
	QoS	Flow detection (L2/IPv4/IP6/L4), Bandwidth monitoring (rate limitation), Marking (DSCP/user prioritization), Priority control (flow-based, user priority mapping), Discard control (tail drop), Shaping (8 classes, port bandwidth control, scheduling (PQ, PQ+RR, PQ+WRR, PQ+WERR)), Diff-serve, IEEE802.1p	
	L2-VPN	VLAN Tunneling	
	High reliability/high operability	Stack #6, Load balance (IPv4/IP6), VRRP (IPv4/IP6), Static Polling (IPv4/IP6), VRRP Polling (IPv4/IP6), Link Aggregation (IEEE802.3ad), GSRP, Uplink Redundancy, Graceful Restart #3, #7, Storm Control, IEEE802.3ah/UDLD, Local Proxy ARP, GSRP aware extension, L2 loop detection, EtherOAM	
Operation management	Virtualization	Network Partition (VRF (Virtual Routing and Forwarding)) #3	
	Network management	SNMPv1/v2c/v3, MIBII, IPv6 MIB, IPv6 VRRP MIB, RMON, Port Mirroring, IPv4 DHCP server/relay, IPv6 DHCP server (Prefix delegation), IPv6 DHCP relay #5, LLDP, OADP, sFlow	
	Operation/maintenance	syslog, ping, traceroute, telnet, SSHv2, ftp, tftp, NTP, RADIUS, TACACS+, temperature log, fan control	
Power saving	Air flow	front-to-rear (FR type), rear-to-front (RF type)	
Redundancy	Dynamic power saving (unused-port power saving, device sleep, link-down port power saving #8, LED brightness control)		
	Built-in power supply (AC, DC)		
Equipment conditions	Input voltage	AC100 to 120V/200 to 240V DC-48V	
	Max. input current (A)	2.5@AC100V / 1.3@AC200V 5.3@DC-48V	3.0@AC100V / 1.5@AC200V 6.3@DC-48V
	Max. power consumption (W)	250	300
	Max. heat output (kJ/h)	900	1080
	Outer dimensions W x D x H (mm)	445 x 580 x 43 (1U)	
	Weight (kg) (with full installation)	11.0 or less	
Environment conditions	Permissible operation temperature range	-10°C to 50°C (with front-to-rear air flow) -10°C to 45°C (with rear-to-front air flow) #9	
	Temperature when not operating (when not applying current)	-10°C to 50°C	
	Temperature at storage and transport	-25°C to 65°C	
	Permissible operation humidity range	10% to 90% (no condensation)	
	Humidity when not operating (when not applying current)	8% to 90% (no condensation)	
	Humidity at storage and transport	5% to 90% (no condensation)	
	Floating dust	Floating dust of about 10 microns or smaller : 0.15mg/m3	

#1: When SFP/SFP+ ports (ports shared by SFP and SFP+) are used for 1000BASE-X (SFP), this value must be reduced by the number of such ports.

#2: When SFP/SFP+ ports are used for 10GBASE-R/CU (SFP+), this value must be reduced by the number of such ports.

#3: Supported by L3S advanced software. #4: Planned to be supported. #5: Requires dedicated optional software. #6: To be released in 2013.

#7: Supports Helper function (OSPF/OSPFv3) and Receive Router function (BGP4/BGP4+).

#8: Supported only on 10/100/1000BASE-T(UTP) ports. #9: The temperature range is 0°C to its upper limit when the device has started up or when SFP-BX1U1D or SFP-BX4U4D is used.



Caution For your safety, please be sure to read the *Hardware Instruction Manual* and the *Safety Guide* beforehand.

- Company/product names in this catalog are trademarks or registered trademarks of their respective companies.
- Product appearance or specifications may be changed without notice.
- In the event that any or all ALAXALA products (including technologies, programs and services) described or contained herein are controlled under any of applicable export control laws and regulations (including the Foreign Exchange and Foreign Trade Law of Japan and United States export control laws and regulations), such products shall not be exported without obtaining the required export licenses from the authorities concerned in accordance with the above laws.
- The company name and logo of ALAXALA are the trademark and registered trademark of ALAXALA Networks Corporation.

Alaxala ALAXALA Networks Corp.

Shinkawasaki Mitsui Bldg., West Tower, 1-1-2 Kashimada, Saiwai-ku, Kawasaki-shi, Kanagawa, 212-0058

<http://www.alaxala.com/>