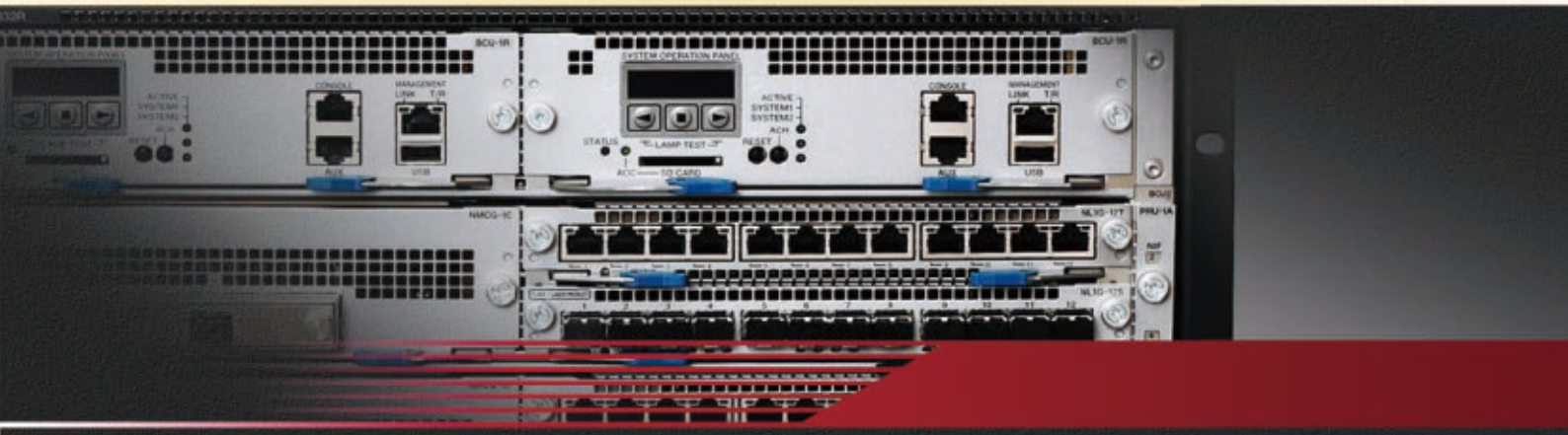
The Guaranteed Network

Closer to you, Further into the future.

AlaxalA

AX Series Product Guide



http://www.alaxala.com

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2014

AX Series Meets Various Customer Needs with its Industry-leading Solutions and Excellent Performance

Pursuing total quality satisfying customers' needs, ALAXALA has been committed to developing products from customers' perspectives. With its high quality and high reliability, the AX series proves best for carriers/ISPs, social infrastructures and business networks.

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AX Series LINEUP

Series	AX8600R NEW	AX6700S	AX6600S	AX6300S	AX4600S NEW	AX3800S	AX3600S	AX2500S	AX2200S	AX1200S
External appearance					IPv6 Ready Logo Phase-2 will be obtained 					
Main interfaces	100G(CFP),10G(SFP+)	10G(XFP), 1G(UTP/SFP)			40G(QSFP+),10G(SFP+)	10G(SFP+)	1G(UTP/SFP)		1G(UTP)	100M(UTP)
Category	High-end router	Layer 3 chassis- type switch				Layer 3 box-type switch		Layer 2 box-type switch		
Main use	Service provider	Core switch			Aggregation switch	Server switch	Distribution switch	Floor switch		

	Functions	Description	AX8600R NEW	AX6700S	AX6600S	AX6300S	AX4600S NEW	AX3800S	AX3600S	AX2500S	AX2200S	AX1200S
Hardware	Max. switching capacity	The amount of data a device can process per second. (the value of the highest-performance model in each series is given)	6.4Tbps	1.15Tbps	384Gbps	192Gbps	1.92Tbps	約1.2Tbps	176Gbps	140Gbps	56Gbps	13.6Gbps
	40G/100G Ethernet	The Ethernet standard for 40G and 100Gbps (IEEE 802.3ba), which are in high demand among carriers/ISPs and data centers	● *1	–	–	–	● (40G)	● (40G)	–	–	–	–
	Full Route	Accommodating full internet routes (the approx. number of available routes as of Oct. 2013: 450,000 for IPv4 and 12,000 for IPv6)	●	–	–	–	–	–	–	–	–	–
	Redundant hot-swappable power supply	Having multiple hot-swappable power supply units (enables power supply replacement without stopping services)	●	●	●	●	●	●	●	–	–	–
	Fanless	Having no cooling fans (reduces workplace noise and prevents malfunction due to dust suction)	–	–	–	–	–	–	–	● *2	● *2	● *2
	PoE	Power feeding using an unshielded twisted pair cable (15.4W for PoE, 30W for PoE+, 60W for 60W PoE)	–	–	–	–	–	–	–	–	●	●
	SD card	Used for data saving. SD card script enables automatic data backup/restoration.	● *3	●	●	●	●	●	●	●	●	●
Fault tolerance (high reliability)	Fault tolerant architecture	High-reliability architecture using micro modules and cross connections	●	●	●	●	–	–	–	–	–	–
	Stack/VRS	Handling multiple switches as a logical single unit to achieve protocol-free redundancy and integrated operation management	–	–	–	–	● (VRS)	●	● *4	● *5	–	–
	Ring protocol	A layer 2 redundancy protocol to configure a ring network (enables fast failover)	–	●	●	●	●	●	●	●	● *6	● *6
Network partition (VRF)		A technique to configure a virtual network by having multiple independent routing tables in a single unit	●	●	●	●	●	●	● *4	–	–	–
Security	Triple authentication	Authentication supporting three methods (IEEE802.1X, web-based authentication, MAC authentication), which makes it possible to authenticate various OS/terminals	–	●	●	●	● *5	●	●	●	●	●
	Multi-step authentication	Authentication with two or more methods combined, which makes it possible to eliminate unauthorized terminals while authenticating users	–	–	–	–	–	–	–	●	●	●
Green IT	Flexible power saving	The advanced version of dynamic power saving (possible to fine-tune the amount of power based on a traffic volume)	● *7	–	–	–	–	–	–	–	–	–
	Dynamic power saving	A technique to supply power as required while reducing/stopping power consumption in idle parts	–	●	●	–	● *5	●	●	●	●	●
Loop detection		Detecting a network loop and automatically fixing it by relevant measures (e.g., loop notification, port blocking)	–	●	●	●	●	●	●	●	●	●
Reference page			P4	P6	P6	P6	P8	P10	P12	P14	P16	P17

*1 40G Ethernet will be supported in future. *2 Fanless models: AX2530S-24T, AX2230S-24T, AX1250S-24T2CH, AX1240S-24T2C *3 SD card script will be supported in future.
*4 Supported by AX3650S only. ※5 To be supported in 2014. *6 Transit only. *7 To be supported in future.

Descriptions for the marks used in this catalogue

- IPv6 Ready Logo Phase-2
- 10/100 — 10Base-T and 100Base-TX are supported.
- 10/100/1000 — 10Base-T, 100Base-TX and 1000Base-T are supported.
- SFP — 1000Base-X (for SFP) is supported.
- XFP — 10GBase-R (for XFP) is supported.
- SFP/SFP+ — 1000Base-X and 10GBase-R (for SFP+) are supported.
- QSFP+ — 40GBase-R optical transceiver is supported.
- PoE/PoE+ — PoE and PoE+ are supported.
- 60W PoE — 60W PoE is supported.
- Fanless — Noise suppressant design without cooling fans
- Redundant PS — Redundant power supplies are supported.
- VRF — VRF is supported.
- FT — Fault tolerant architecture is employed.
- Stack — Stack and VRS are supported.
- Environmentally resistant — Environmentally resistant design allowing use under severe conditions

100 Gigabit Ethernet high-end routers playing leading roles in network strategies

The AX8600R, the flagship of the AX series, addresses network issues facing ISPs / carriers, such as 100G migration due to traffic increase, growing demand for full routing, and power conservation. The AX8600R empowers next-generation networks with its high-speed, large-capacity routing while reducing TCO.

Interop Tokyo 2012 Carrier/SP/Enterprise Networking Category Grand Prix

Interop Tokyo 2013 Carrier/SP Networking Category Special Prize

AX8600R

The AX8600R provides enough performance/routing capacity next-generation routers need (e.g., 100G, a large number of route entries). Further, the AX8600R provides great potential to lead next era with its cutting-edge features such as ***hybrid engine architecture*** allowing future-extensive system upgrade and ***flexible power saving***[*1] using advanced energy saving technology.

AX8632R NEW

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 443 (W) × 734 (D) × 709 (H) mm (16U) (AC)
443 (W) × 763 (D) × 709 (H) mm (16U) (DC)
Weight (at maximum load) : 220kg or less[*2]
Maximum power consumption : 9290W (AC), 9620W (DC)
Operating temperature/humidity : 0 to 40℃/5 to 85% (no condensation)

Switching capacity 6.4 Tbps
Packet forwarding rate 960 Mpps

VRF FT
10/100/1000 ×384
SFP ×384
SFP/SFP+ ×192/384[*1]
CFP ×16
Redundant PS

AX8616R NEW

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 443 (W) × 734 (D) × 426 (H) mm (10U) (AC)
443 (W) × 763 (D) × 426 (H) mm (10U) (DC)
Weight (at maximum load) : 135kg or less[*2]
Maximum power consumption : 5160W (AC), 5340W (DC)
Operating temperature/humidity : 0 to 40℃/5 to 85% (no condensation)

Switching capacity 3.2 Tbps
Packet forwarding rate 480 Mpps

VRF FT
10/100/1000 ×192
SFP ×192
SFP/SFP+ ×96/192[*1]
CFP ×8
Redundant PS

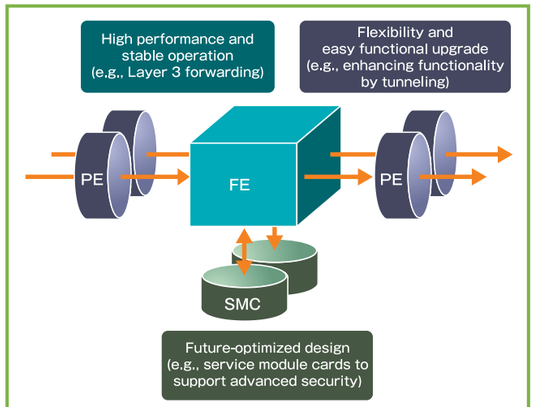
Evolving hybrid engine architecture adaptable to next-generation services and protocols

Challenges

- Adapting to emerging new protocols without degrading performance
- Timely development of new services to improve usability and profitability
- Flexibility allowing on-demand functional upgrade

Solution by AX8600R

- Hybrid engine architecture[*1] allowing operation with a forwarding engine (FE) to achieve high-speed routing, a programmable engine (PE) to add functions flexibly, and a service module card (SMC)
- Functional upgrade for new services / protocols without degrading performance
- Service module card (SMC) to deliver high-end features (e.g., advanced security)



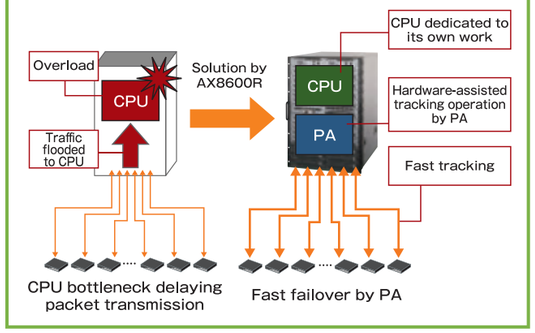
Protocol Accelerator to enhance fault tolerance

Challenges

- Reducing service interruption time during failover / maintenance
- Failover acceleration by reducing time intervals for protocol tracking

Solution by AX8600R

- Fault tolerant architecture (see P7) allowing non-stop operation with a minimum failover time
- PA (Protocol Accelerator) to achieve fast tracking (shorter failover time)[*1]
- Hardware-assisted fast failover using PA



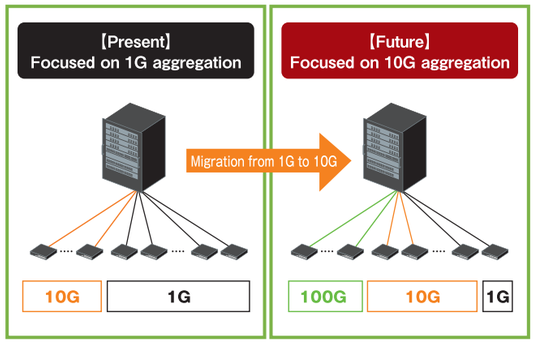
Micro Line Card allowing step-by-step future-extensive system upgrade

Challenges

- Upgrading bandwidth as required with a minimal capital investment
- Migration from 1G to 10G in a cost-effective manner

Solution by AX8600R

- Upgrade per 1/4-sized slot; a maximum of four interface cards per packet routing unit (PRU)
- Features to reduce capital investment costs: mixture of different types of interfaces (1G / 10G, optical fiber / UTP), step-by-step system capacity upgrade, migration without replacing existing facilities, etc.



Flexible Power Saving Wins Green IT Award 2012

Flexible Power Saving[*1], which is intended to reduce power usage of idle ports, fine-tunes power consumption based on traffic volume. The AX8600R received the Green IT Award 2012 from the Green IT Promotion Council for its excellent energy saving solution using Flexible Power Saving.

Green IT AWARD 2012 Green IT Awards Judging Committee Special Awards

80PLUS Platinum AC Power Supply

80PLUS is a certification provided by Ecos Consulting (company organized by the public utility enterprises and energy saving promotion groups of the United States) to products having high energy efficiency. To be certified, products must be energy efficient across a wide load range. The AX8600R AC power supply, which boasts its high energy conversion efficiency of 94% or more, obtained the 80PLUS Platinum mark.

80 PLUS PLATINUM

*1 : To be supported in future. *2 : This value may be changed in future.

10 Gigabit Ethernet enterprise switches offering carrier-grade reliability allowing non-stop networking

The AX6000S Family with fault tolerant architecture that delivers continuous system operation enhances the reliability of a core switch in enterprise networks. Various models to meet customers' needs are available, from high performance models featuring more than 1 terabit switching capacity to cost-effective models.

AX6700S Series

The AX6700S is a full-spec fault-tolerant switch in which control units and packet forwarding units are installed separately, which makes it easier to localize a failure, thereby enhancing the availability of the switch itself. Up to three basic switching units can be installed, which enables step-by-step expansion of switching capacity.

A core switch using fault tolerant architecture

- Two-in-one architecture (having functions of two switches) allowing non-stop operation even if a fault occurs
- Architecture that enhances switch's availability to the highest possible level and enables failover with 50 ms (minimum rate)
- STP-free full link aggregation redundancy, which prevents trouble associated with system complexity and enhances network stability

Simple, low-cost virtual network (Partition)

- Combination of VRF (Virtual Routing and Forwarding) and VLAN (Virtual LAN) logically splits a network.
- Possible to build a secure and highly reliable virtual network (Partition) at low cost.

Dynamic power saving to cut unnecessary power consumption

- Advanced power saving features to promote energy saving for networks (e.g., power saving mode, cold standby)
- Scheduling to cut power during periods of low network usage (e.g., nighttime/holidays)
- Traffic-based autonomous power saving

AX6708S

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 443 (W) × 544 (D) × 395 (H) mm (9U) (AC)
443 (W) × 573 (D) × 395 (H) mm (9U) (DC)
Weight (at maximum load) : 82kg or less
Maximum power consumption : 3750W (AC, DC)
Operating temperature/humidity : 0 to 40℃/10 to 85% (no condensation)

VRF FT
10/100/1000 ×192
SFP ×192
XFP ×64
Redundant PS

Switching capacity 1.15 Tbps*1
Packet forwarding rate 720 Mpps*1

AX6600S Series

The AX6600S offers full-spec fault-tolerant models whose high availability and power saving technologies were inherited from the AX6700S series. Each model employs an integrated control and forwarding system to reduce installation space.

- Possible to use up to two control switching units (CSUs), which enables step-by-step enhancement of switching capacity.
- Compact body having the functionality of the AX6700S: failover with 50 ms (minimum rate), dynamic power saving, etc.

AX6608S

Switching capacity 384 Gbps*2
Packet forwarding rate 240 Mpps*2

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 443 (W) × 544 (D) × 303 (H) mm (7U) (AC)
443 (W) × 573 (D) × 303 (H) mm (7U) (DC)
Weight (at maximum load) : 64kg or less
Maximum power consumption : 2400W (AC, DC)
Operating temperature/humidity : 0 to 40℃/10 to 85% (no condensation)

VRF FT
10/100/1000 ×192
SFP ×192
XFP ×64
Redundant PS

AX6604S

Switching capacity 192 Gbps*2
Packet forwarding rate 120 Mpps*2

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 443 (W) × 544 (D) × 211 (H) mm (5U) (AC)
443 (W) × 573 (D) × 211 (H) mm (5U) (DC)
Weight (at maximum load) : 45kg or less
Maximum power consumption : 1500W (AC, DC)
Operating temperature/humidity : 0 to 40℃/10 to 85% (no condensation)

VRF FT
10/100/1000 ×96
SFP ×96
XFP ×32
Redundant PS

AX6300S Series

The AX6300S offers standard-type fault-tolerant models. Each model employs an integrated control and forwarding system to reduce installation space.

- All-in-one management switching unit (MSU) focused on cost efficiency
- Architecture that enhances switch's availability to the highest possible level and enables failover with 50 ms (minimum rate)

※Dynamic power saving is not supported.

AX6308S

Switching capacity 192 Gbps
Packet forwarding rate 120 Mpps

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 443 (W) × 544 (D) × 303 (H) mm (7U) (AC)
443 (W) × 573 (D) × 303 (H) mm (7U) (DC)
Weight (at maximum load) : 64kg or less
Maximum power consumption : 2400W (AC, DC)
Operating temperature/humidity : 0 to 40℃/10 to 85% (no condensation)

VRF FT
10/100/1000 ×192
SFP ×192
XFP ×64
Redundant PS

AX6304S

Switching capacity 96 Gbps
Packet forwarding rate 60 Mpps

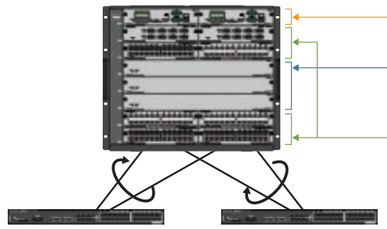
Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 443 (W) × 544 (D) × 211 (H) mm (5U) (AC)
443 (W) × 573 (D) × 211 (H) mm (5U) (DC)
Weight (at maximum load) : 45kg or less
Maximum power consumption : 1500W (AC, DC)
Operating temperature/humidity : 0 to 40℃/10 to 85% (no condensation)

VRF FT
10/100/1000 ×96
SFP ×96
XFP ×32
Redundant PS

Fault tolerant architecture combining two switches into a single unit achieves non-stop networking even with a fault.

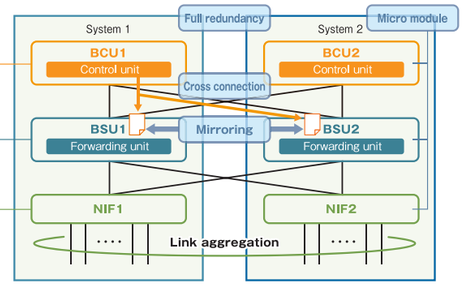
- Power-efficient architecture that enhances switch's availability to the highest possible level
- Simple and dynamic redundancy without STP/VRRP
- Non-stop fast failover (a minimum of 50 ms) via hardware



Connected to neighboring switches by link aggregation via redundant NIFs

BCU (Basic Control Unit) BSU (Basic Switching Unit) NIF (Network Interface Unit)

AX6700S Architecture



Full redundancy	Modules are made redundant allowing dual-switch operation internally (functions doubled).
Micro module	Modularized components minimize the influence of failover.
Cross connection	System 1 and System 2 have their own paths crossed each other (internally redundant).
Mirroring	All modules are instantly synchronized.

*1 : When using three BSUs (basic switching units) *2 : When using two CSUs (control switching units)

A high-performance crossover switch, a new concept featuring box's compactness and chassis' scalability

Interop Tokyo 2013
Enterprise Networking Category

The AX4600S is a crossover switch featuring the flexibility and scalability of a chassis-type switch and the compactness and cost-efficiency of a box-type switch. The AX4600S, like a chassis-type switch, supports various types of interface cards that are replaceable but employs a compact engine, the same type of engine used in a box-type switch, thereby achieving high cost-efficiency, high flexibility and high performance.

To be released in 2014. IPv6 Ready Logo Phase2 will be obtained. The number of ports refers to the maximum number of ports that can be used.

AX4600S

The AX4600S is a compact 2U-height switch having four network interface card (NIF) slots, allowing a 1G/10G mixture and a flexible and scalable network configuration commensurate with business growth and budget.

High cost-efficiency and high scalability

- Flexibility and scalability of a chassis-type switch in addition to compactness and cost-efficiency
- Compact body (2U-height) with four network interface card (NIF) slots
- Mixture of 1G/10G
- Max. 1.92Tbps switching capacity, 96 ports for 1Gbps/10Gbps*2

Fault tolerance allowing non-stop operation

- STP-free redundancy with full link aggregation prevents trouble associated with system complexity and enhances network stability.
- VRS (Virtual Redundant System) achieves simple system redundancy and simple operation management.
  - ・Two switches are logically integrated into a single unit (simple redundancy).
  - ・***Dual Active*** doubles the bandwidth of a system.
- Hardware called ***Protocol Accelerator*** (PA) enables hardware-assisted failover.

Enhanced entry capacity

- Larger entry capacity than that of a traditional box-type switch
- Max. number of ARP table entries: 45K

Simple low-cost network virtualization

- Combination of VRF (Virtual Routing and Forwarding) and VLAN (Virtual LAN) logically splits a network.
- Secure, highly reliable virtual networks (partitions) can be configured at low cost.

AX4630S-4M NEW

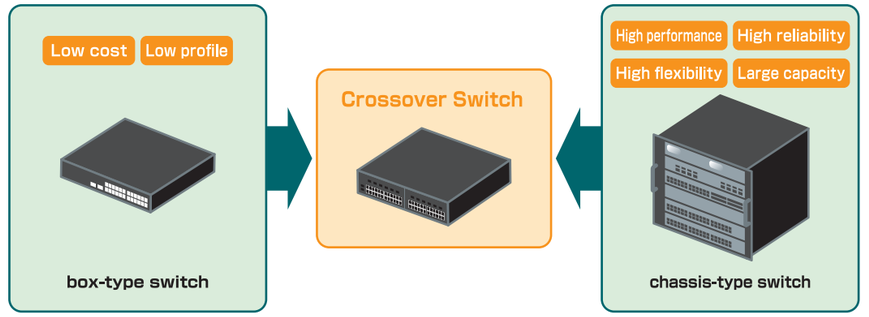
Hot-swappable power supply
AC100V・200V

Dimensions : 445 (W) × 498 (D) × 87 (H) mm (2U)
Weight (at maximum load) : 30.0kg or less
Maximum power consumption : 800W
Operating temperature/humidity :
0℃ to 45℃/10 to 90%以下 (no condensation)

Switching capacity 1.92 Tbps
Packet forwarding rate 1428 Mpps

Stack*1 VRF
10/100/1000 ×96*2
SFP/SFP+ ×96*2
QSFP+ ×4
Redundant PS

A crossover switch achieving the scalability of a chassis-type switch and the compactness of a box-type switch



Challenge for box switches 1 : high flexibility
- Box-type switches with fixed ports narrow interface selection.
- To upgrade bandwidth, switches must be replaced (current asset must be discarded).
- Long-life products that enable system upgrade at low cost are needed.

Solution by AX4600S
- Modular switch allowing flexible use of interfaces (mixture of 1G/10G or optical fiber/UTP)
- Minimum capital investment by interface migration without total hardware replacement

Challenge for box switches 2 : high performance and high reliability
- Cost-focused hardware design sacrifices CPU performance.
- CPU performance sometimes becomes a bottleneck decelerating tracking/failover.

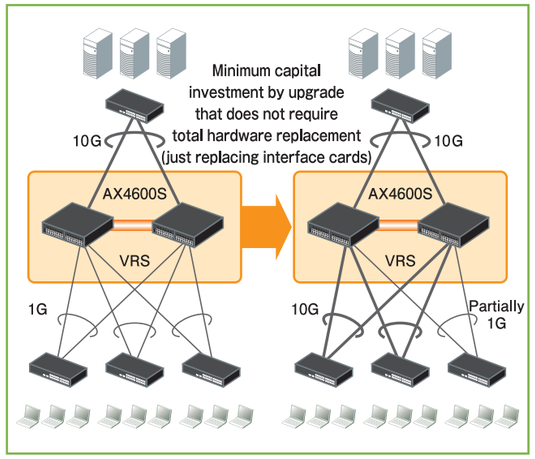
Solution by AX4600S
- High-performance CPU allowing upgrade of software performance
- Protocol accelerator (PA) using the technology of the AX8600R to reduce CPU load and accelerate tracking/failover (to be supported in future)

Challenge for box switches 3 : large capacity
- Box-type switches do not have enough ports.

Solution by AX4600S
- 2U-size compact body with 96 ports for 1G/10G*2

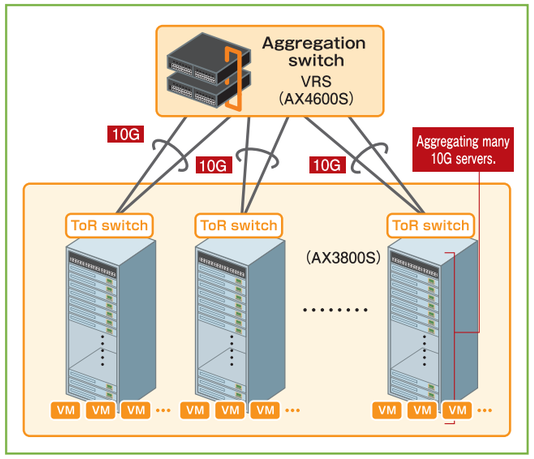
A core switch making it possible to upgrade bandwidth as required

The replaceable interface cards of the AX4600S enable flexible use of bandwidth (1G and 10G) commensurate with a network size. You can configure a core network that achieves both system redundancy and advanced security by using VRS and network partition.



An aggregation switch accommodating ToR switches of data centers

The AX4600S, with its high 10G port density, accelerates data processing and optimizes usage of server resource. Further, VRS makes it possible to realize device redundancy in a simple manner. Note that the AX3800S is best suited as a ToR switch.



*1:VRS (Virtual Redundant System) is used. *2:The number of usable 1G/10G ports on a NIF is reduced by four each time you use one 40G backside port.

Layer 3 box-type switches supporting multiple 10 Gigabit Ethernets, suitable for data centers and for cores of medium/small-size networks

The AX3800S, the successor of the AX3600S featuring the high reliability and the high functionality of a carrier-grade router, enables high-performance, large-capacity layer 3 switching comparable to that of a chassis-type switch. Usable in various ways (e.g., a core switch for medium/small-size networks, an aggregation switch for carriers/ISPs, a ToR switch for data centers).

AX3830S-44XW

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 445 (W) × 580 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 11.0kg or less
Maximum power consumption : 250W (AC, DC)
Operating temperature/humidity :
-10 to 50℃ (front-to-back airflow),
-10 to 45℃ (back-to-front airflow)*1/10 to 90% (no condensation)

Stack VRF
10/100/1000 ×4
SFP/SFP+ ×44
Redundant PS

Switching capacity 888 Gbps
Packet forwarding rate 660.7 Mpps

AX3830S-44X4QW

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 445 (W) × 580 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 11.0kg or less
Maximum power consumption : 300W (AC, DC)
Operating temperature/humidity :
-10 to 50℃ (front-to-back airflow),
-10 to 45℃ (back-to-front airflow)*1/10 to 90% (no condensation)

Stack VRF
10/100/1000 ×4
SFP/SFP+ ×44
QSFP+ ×4
Redundant PS

Switching capacity 1208 Gbps
Packet forwarding rate 896.5 Mpps

AX3830S

The AX3830S offers box-type layer 3 models featuring high port density (4 ports for 40G and 44 ports for 10G).

Compact body with high performance and high port density

- 44 × 10G ports (AX3830S-44XW/AX3830S-44X4QW)
- 4 × 40G ports (AX3830S-44X4QW)
- 10G/1G mixture (suitable as a core switch for enterprise networks)
- Support of direct attach cables (not require expensive optical transceivers)
- MAC address entry capacity four times larger than that of the AX3600S (satisfying level for data centers experiencing rapid virtualization)

Playing leading roles in non-stop middle/small-size networks

- Stack enables multiple switches to operate together as a single unit (protocol-free redundancy and unified management).
- Using Ethernet interfaces for stack enables long-haul communication between remote sites.
- STP-free redundancy with full link aggregation prevents trouble associated with system complexity and enhances network stability.

Simple, low-cost virtual network

- Combination of VRF (Virtual Routing and Forwarding) and VLAN (Virtual LAN) logically splits a network.
- Secure, highly reliable virtual networks (partitions) can be configured at low cost.

Ring protocol allowing STP-free fast failover

- Possible to configure a ring network using the ALAXALA proprietary layer 2 redundancy protocol that enables fast failover within 1s.
- Possible to configure a high-flexibility, multi-ring network.

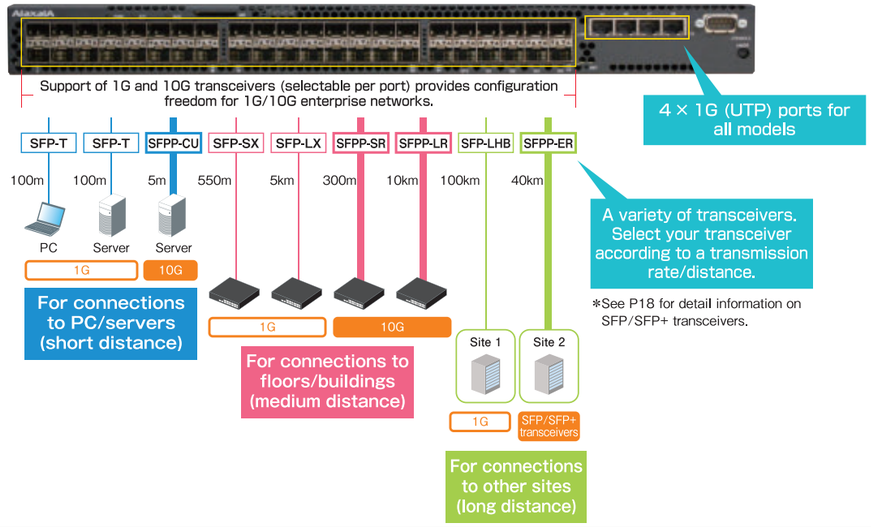
Field-proven and reliable high-functionality routing

- Well-recognized, reliable software equivalent to that of a carrier-grade router
- Policy-based routing (IPv4) allowing use of the best routing path based on each traffic
- Hardware-based fast routing for IPv4/IPv6

Enhanced flexibility in switch/interface selection

The AX3830S consists of box-type models pursuing lower costs and smaller installation spaces as compared to chassis-type switches. The AX3830S allows use of 10G (SFP+) or 1G (SFP) in each port, enabling flexible network configuration using both 1G and 10G.
Further, the AX3800S inherited the field-proven layer 3 functions refined through ALAXALA's long history of development of chassis-type switches. The AX3800S supports your business infrastructure with a full set of layer 3 features essential to enterprise core switches.

- SFP+ interface allowing a low-cost 1G/10G mixture
- Field-proven layer 3 features (e.g., OSPF/BGP, IPv6)
- Secure virtual network ensuring security of LANs
- Stack for protocol-free redundancy and integrated device management



*1 : The permissible temperature range is 0℃ to its upper limit when the device is starting up or when SFP-BX1U/1D or SFP-BX4U/4D is in use. The upper limit is 40℃ when SFPP-ZR (max. 8 ports are available) is in use.

Gigabit Ethernet layer 3 switches for core/distribution, featuring the high reliability and the rich functionality of a carrier-grade router

The AX3600S is suitable for site-to-site connections of enterprises or for use as a core or distribution switch in campus LANs.
Its lineup consists of two models: AX3650S (high-end model supporting Stack and VRF) and AX3640S (classic model supporting standard layer 3 features).

AX3650S

The AX3650S offers high-end models supporting Network Partition (for network integration/split) and Stack (for simple redundancy). Each model has a maximum of six 10G uplink ports, providing enough capacity to configure a large-size network.

High-end models with large entry capacity

- Compared to AX3640S, entry capacity is 1.3 times larger for unicast routes (IPv4/IPv6) and doubled for ARP/NDP.

Core/distribution switches for non-stop medium/small-size networks

- Stack enables multiple switches to operate together as a single unit (protocol-free redundancy and unified management).
- Using Ethernet interfaces for stack enables long-haul communication between remote sites.
- STP-free redundancy with full link aggregation prevents trouble associated with system complexity and enhances network stability.

Simple, low-cost virtual network

- Combination of VRF (Virtual Routing and Forwarding) and VLAN (Virtual LAN) logically splits a network.
- Secure, highly reliable virtual networks (partitions) can be configured at low cost.

Ring protocol allowing STP-free fast failover

- Possible to configure a ring network using the ALAXALA proprietary layer 2 redundancy protocol that enables fast failover within 1s.
- Possible to configure a high-flexibility, multi-ring network.

AX3650S-24T6XW

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 445 (W) × 500 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 9.0kg or less
Maximum power consumption : 105W (AC), 110W*1 (DC)
Operating temperature/humidity : -10 to 50℃*2/10 to 90% (no condensation)

Switching capacity 168 Gbps
Packet forwarding rate 125.0 Mpps

Stack VRF
10/100/1000 ×24
SFP/SFP+ ×6
Redundant PS

AX3650S-48T4XW

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 445 (W) × 500 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 9.0kg or less
Maximum power consumption : 115W (AC), 120W*1 (DC)
Operating temperature/humidity : -10 to 50℃*2/10 to 90% (no condensation)

Switching capacity 176 Gbps
Packet forwarding rate 131.0 Mpps

Stack VRF
10/100/1000 ×48
SFP/SFP+ ×4
Redundant PS

AX3650S-20S6XW

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 445 (W) × 500 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 9.0kg or less
Maximum power consumption : 120W (AC), 125W*1 (DC)
Operating temperature/humidity : -10 to 50℃*2/10 to 90% (no condensation)

Switching capacity 168 Gbps
Packet forwarding rate 125.0 Mpps

Stack VRF
10/100/1000 ×4*3
SFP ×20
SFP/SFP+ ×6
Redundant PS

AX3640S

The AX3640S offers standard layer 3 box-type models balancing cost-efficiency and functionality/performance essential to enterprise networks.

- Well-recognized, reliable software equivalent to that of a carrier-grade router
- Policy-based routing (IPv4) allowing use of the best routing path based on each traffic
- Hardware-based fast routing for IPv4/IPv6

AX3640S-24T

AC100V・200V

Dimensions : 445 (W) × 380 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 5.0kg or less
Maximum power consumption : 75W
Operating temperature/humidity : 0 to 40℃/10 to 85% (no condensation)

Switching capacity 48 Gbps
Packet forwarding rate 35.7 Mpps

10/100/1000 ×24*4
SFP ×4*4

AX3640S-24TW

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 445 (W) × 440 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 9.0kg or less
Maximum power consumption : 85W (AC), 75W (DC)
Operating temperature/humidity : 0 to 40℃/10 to 85% (no condensation)

Switching capacity 48 Gbps
Packet forwarding rate 35.7 Mpps

10/100/1000 ×24*4
SFP ×4*4
Redundant PS

AX3640S-24T2XW

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 445 (W) × 440 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 9.0kg or less
Maximum power consumption : 100W (AC), 90W (DC)
Operating temperature/humidity : 0 to 40℃/10 to 85% (no condensation)

Switching capacity 88 Gbps
Packet forwarding rate 65.5 Mpps

10/100/1000 ×24*4
SFP ×4*4
XFP ×2
Redundant PS

AX3640S-24SW

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 445 (W) × 440 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 9.0kg or less
Maximum power consumption : 85W (AC), 75W (DC)
Operating temperature/humidity : 0 to 40℃/10 to 85% (no condensation)

Switching capacity 48 Gbps
Packet forwarding rate 35.7 Mpps

10/100/1000 ×4*3*4
SFP ×24*4
Redundant PS

AX3640S-24S2XW

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 445 (W) × 440 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 9.0kg or less
Maximum power consumption : 100W (AC), 90W (DC)
Operating temperature/humidity : 0 to 40℃/10 to 85% (no condensation)

Switching capacity 88 Gbps
Packet forwarding rate 65.5 Mpps

10/100/1000 ×4*3*4
SFP ×24*4
XFP ×2
Redundant PS

AX3640S-48TW

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 445 (W) × 440 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 9.0kg or less
Maximum power consumption : 135W (AC), 125W (DC)
Operating temperature/humidity : 0 to 40℃/10 to 85% (no condensation)

Switching capacity 96 Gbps
Packet forwarding rate 71.4 Mpps

10/100/1000 ×48*4
SFP ×4*4
Redundant PS

AX3640S-48T2XW

Hot-swappable power supply
AC100V・200V/DC-48V

Dimensions : 445 (W) × 440 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 9.0kg or less
Maximum power consumption : 145W (AC), 135W (DC)
Operating temperature/humidity : 0 to 40℃/10 to 85% (no condensation)

Switching capacity 136 Gbps
Packet forwarding rate 101.2 Mpps

10/100/1000 ×48
XFP ×2
Redundant PS

*1:When SFPP-ZR is in use. *2:The permissible temperature range is 0℃ to its upper limit when the device is starting up or when SFP-BX1U/1D or SFP-BX4U/4D is in use. The upper limit is 40℃ when SFPP-ZR is in use. *3:With the SFP-T module, up to 24 ports are available. *4:Four ports are for exclusive use of 1000BASE-X or 10/100/1000BASE-T.

Layer 2 Gigabit Ethernet switches offering high reliability and rich functionality to solve various issues facing floor/distribution layers

The AX2500S, which supports Stack*1, helps form STP-free simple redundancy as a distribution switch or helps enhance port density in a flexible manner as a floor switch. Further, the AX2500S supports network authentication, loop detection, ring protocols, etc., as an all-round box-type switch that can be used in various layer 2 networks.

AX2530S

The AX2530S boasts a rich lineup of layer 2 Gigabit models featuring premier-level functionality and performance such as Stack*1 and web-based authentication.

Distribution switches to realize non-stop networks

- Stack*1 enables multiple switches to operate together as a single unit (protocol-free redundancy and unified management).
- Using Ethernet interfaces for stack enables long-haul communication between remote sites.
- STP-free redundancy with full link aggregation prevents trouble associated with system complexity and enhances network stability.

Robust and reliable authentication / security measures

- Triple authentication (IEEE802.1X, web-based authentication, MAC authentication)
- Multi-step authentication (eliminating unauthorized terminals while performing user authentication)
- Small startup using Stack*1 (e.g., expansion of port density as required)
- Smooth authentication with SSL2048bit
- Simultaneous authentication of a large number of terminals*2

STP-free Ring Protocol allowing fast failover and loop detection

- Possible to configure a ring network using the ALAXALA proprietary layer 2 redundancy protocol that enables fast failover within 1s.
- Possible to configure a high-flexibility, multi-ring network.
- Loop detection (detects miscabling to avoid loop faults)

Eco-friendly fanless design consuming less power

- Suitable for use in places that should be noise-free (e.g., conference rooms)
- No dust accumulation / moving parts (reduces chance of malfunction)
- Auto power off to cut power to idle ports

AX2530S-24S4X

AC100V・200V

Dimensions : 445 (W) × 300 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 3.9kg or less
Maximum power consumption : 75W
Operating temperature/humidity : 0 to 50℃/10 to 90% (no condensation)

Stack*1
SFP ×24*3
SFP/SFP+ ×4*3

Switching capacity 128 Gbps
Packet forwarding rate 95.2 Mpps

AX2530S-24T

AC100V・200V

Dimensions : 445 (W) × 230 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 3.0kg or less
Maximum power consumption : 40W
Operating temperature/humidity : 0 to 45℃/10 to 90% (no condensation)

Stack*1
10/100/1000 ×24
SFP ×4*3
Fanless

Switching capacity 56 Gbps
Packet forwarding rate 41.6 Mpps

AX2530S-24T4X

AC100V・200V

Dimensions : 445 (W) × 300 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 3.9kg or less
Maximum power consumption : 57W
Operating temperature/humidity : 0 to 50℃/10 to 90% (no condensation)

Stack*1
10/100/1000 ×24
SFP/SFP+ ×4*3

Switching capacity 128 Gbps
Packet forwarding rate 95.2 Mpps

AX2530S-48T

AC100V・200V

Dimensions : 445 (W) × 300 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 4.2kg or less
Maximum power consumption : 80W
Operating temperature/humidity : 0 to 50℃/10 to 90% (no condensation)

Stack*1
10/100/1000 ×48
SFP ×4*3

Switching capacity 104 Gbps
Packet forwarding rate 77.3 Mpps

AX2530S-48T2X

AC100V・200V

Dimensions : 445 (W) × 300 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 4.2kg or less
Maximum power consumption : 85W
Operating temperature/humidity : 0 to 50℃/10 to 90% (no condensation)

Stack*1
10/100/1000 ×48
SFP/SFP+ ×2*3
SFP ×2*3

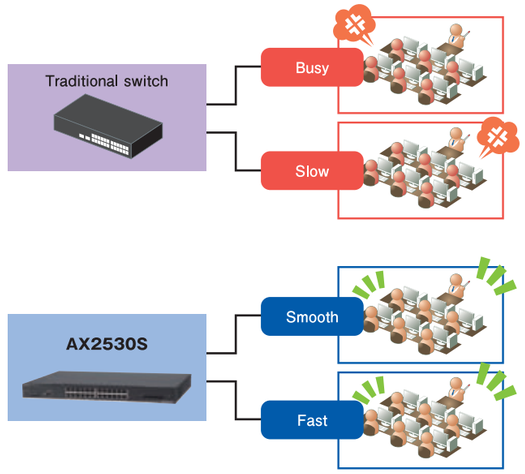
Switching capacity 140 Gbps
Packet forwarding rate 104.1 Mpps

Smooth authentication with a hard-to-crack SSL2048bit key for education and research institutes

As PCs/servers become more powerful, 1024bit keys are more likely to be cracked. Further, the growth of mobile devices has diversified the way we use them, making web-based authentication more popular, thus spurring migration from SSL1024bit to SSL2048bit in the education field that uses many network-connected terminals and in the research field that requires high confidentiality. Given below are the key challenges facing us when migrating to SSL2048bit.

- Eliminating bottlenecks that may be caused by slow authentication using low-end switches
- Keeping the same quality and the same service level
- Smooth connection to a large number of devices

The AX2530S enables smooth migration to SSL2048bit while maintaining a high level of performance without reducing the number of simultaneous authentication terminals*2 and authentication speed (throughput per second).



*1:To be supported in 2014. *2:The number of terminals that can be successfully authenticated at the same time. *3:These ports operate in 1000BASE-T mode when used With the SFP-T module.

High-performance, cost-effective layer 2 Gigabit Ethernet switches suitable for use as a floor switch for mobile networks

Interop Tokyo 2012
SMB Networking Category

AX2230S

The AX2230S offers layer 2 Gigabit models. Each model has 24 ports for PoE/PoE+ high-speed wireless access points, supporting triple authentication and multi-step authentication, which are useful for configuration of a secure wireless network.

- 24 ports for 1 Gigabit Ethernet (UTP)
- PoE model (PoE/PoE+, 60W PoE)
- Triple authentication (IEEE802.1X, Web-based authentication, MAC authentication)
- Multi-step authentication (eliminating unauthorized terminals while performing user authentication)
- Loop detection (detects miscabling to avoid loop faults)

AX2230S-24T

AC100V・200V

Dimensions : 445 (W) × 230 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 3.0kg or less
Maximum power consumption : 30W
Operating temperature/humidity : 0 to 45℃/10 to 90% (no condensation)

Switching capacity 56 Gbps
Packet forwarding rate 41.6 Mpps

10/100/1000 ×24
SFP ×4
Fanless

AX2230S-24P

AC100V・200V

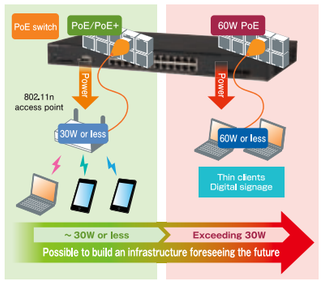
Dimensions : 445 (W) × 350 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 5.0kg or less
Maximum power consumption : 470W
Operating temperature/humidity : 0 to 50℃/10 to 90% (no condensation)

Switching capacity 56 Gbps
Packet forwarding rate 41.6 Mpps

10/100/1000 ×24
SFP ×4
PoE/PoE+*1
60W PoE*2

Next generation PoE/PoE+ switches to realize fast networking

- The AX1200S supports PoE/PoE+ (IEEE802.3af/at) and feeds max. 30W power.
- The AX2200S supports PoE/PoE+ and 60W PoE, feeds power to PoE devices requiring 30W or more (e.g., thin clients, digital signage) and reduces cables.
- When using mobile devices, we need both a floor switch capable of advanced user/terminal authentication and a large capacity Gigabit PoE switch.
  The AX series provides security measures (e.g., user/terminal authentication, quarantine, virtualization) against computer viruses being brought in through mobile devices and against unauthorized access from the outside.



*1 : Up to 12 ports are available for Class 4 (30.0W) powered devices. *2 : Up to 4 ports are available.

Fast Ethernet switches offering robust security for network edges, suitable for use as a floor switch

AX1240S

The AX1240S supports Fast Ethernet to form various LANs (e.g., floor LANs, workgroup LANs).

- Provides functionalities equivalent to those of the AX2200S series, enabling configuration of Fast Ethernet networks offering the functionalities of Gigabit Ethernet.
- Auto power off to cut power to idle ports

AX1240S-24T2C

AC100V・200V

Dimensions : 445 (W) × 200 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 2.8kg or less
Maximum power consumption : 18W/21W*2
Operating temperature/humidity : 0 to 45℃/10 to 90% (no condensation)

Switching capacity 8.8 Gbps
Packet forwarding rate 6.5 Mpps

10/100 ×24
10/100/1000 ×2*1
SFP ×2*1
Fanless

AX1240S-48T2C

AC100V・200V

Dimensions : 445 (W) × 250 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 3.8kg or less
Maximum power consumption : 30W/33W*2
Operating temperature/humidity : 0 to 45℃/10 to 90% (no condensation)

Switching capacity 13.6 Gbps
Packet forwarding rate 10.1 Mpps

10/100 ×48
10/100/1000 ×2*1
SFP ×2*1

AX1240S-24P2C

AC100V・200V

Dimensions : 445 (W) × 350 (D) × 43 (H) mm (1U)
Weight (at maximum load) : 5.8kg or less
Maximum power consumption : 450W/453W*2
Operating temperature/humidity : 0 to 45℃/10 to 90% (no condensation)

Switching capacity 8.8 Gbps
Packet forwarding rate 6.5 Mpps

10/100 ×24
10/100/1000 ×2*1
SFP ×2*1
PoE/PoE+*3

AX1250S

The AX1250S is heat-resistant and dust-proof, making the device operable under severe conditions (e.g., factories, railways, highways), featuring fanless design that prevents dust suction (reduces trouble caused due to dust accumulation). Operable within a wide temperature range (-10 to 50℃).

- High reliability and high availability based on strict design/inspection standards
- Environmentally-resistant architecture ensuring stable operation under severe conditions
- Functionality equivalent to that of the AX1240S

AX1250S-24T2CH

Environmentally resistant

AC100V・200V

Dimensions : 447 (W) × 250 (D) × 65 (H) mm (1U)
Weight (at maximum load) : 3.0kg or less
Maximum power consumption : 18W/21W*2
Operating temperature/humidity :
-10 to 50℃*4/5 to 90% (no condensation)

Switching capacity 8.8 Gbps
Packet forwarding rate 6.5 Mpps

10/100 ×24
10/100/1000 ×2*1
SFP ×2*1
Fanless

*1 : Two ports are for exclusive use of 1000BASE-X or 10/100/1000BASE-T. *2 : When two 1000BASE-LH ports are used. *3 : Up to 12 ports are available for Class 4 (30.0W) powered devices.
*4 : The permissible temperature range is 0℃ to its upper limit when the device is starting up or when SFP-BX1U/1D or SFP-BX4U/4D is in use.

Accessories

The AX series supports various accessories for flexible network configuration.

Optical transceiver (SFP)

SFP-T

10/100/1000BASE-T
UTP:100m
AX-F6244-3S1T

SFP-SX

1000BASE-SX
MMF:2m to 550m
AX-F6244-3S1S

SFP-SX2

1000BASE-SX2
MMF:2m to 2km
AX-F6244-3S1S2

SFP-LX

1000BASE-LX
MMF:2m to 550m,
SMF:2m to 5km
AX-F6244-3S1L

SFP-LH

1000BASE-LH
SMF:2m to 70km
AX-F6244-3S1LH

SFP-BX1U[*6]

1000BASE-BX10
SMF:0.5m to 10km
AX-F6244-3SB1U

SFP-BX1D[*6]

1000BASE-BX10
SMF:0.5m to 10km
AX-F6244-3SB1D

Optical transceiver (XFP)

SFP-BX4U[*6]

1000BASE-BX40
SMF:0.5m to 40km
AX-F6244-3SB4U

SFP-BX4D[*6]

1000BASE-BX40
SMF:0.5m to 40km
AX-F6244-3SB4D

XFP-SR

10GBASE-SR
MMF:2m to 300m
AX-F6244-3X1S

XFP-LR

10GBASE-LR
SMF:2m to 10km
AX-F6244-3X1L

XFP-ER

10GBASE-ER
SMF:2m to 40km
AX-F6244-3X1E

XFP-ZR

10GBASE-ZR
SMF:2m to 80km
AX-F6244-3X1Z

Optical transceiver (SFP+)

SFPP-SR

10GBASE-SR
MMF:2m to 300m
AX-F0110-3P1S

SFPP-LR

10GBASE-LR
SMF:2m to 10km
AX-F0110-3P1L

SFPP-ER

10GBASE-ER
SMF:2m to 40km
AX-F0110-3P1E

SFPP-ZR[*7]

10GBASE-ZR
SMF:2m to 80km
AX-F0110-3P1Z

Optical transceiver (QSFP+ and CFP)

QSFP-SR4

40GBASE-SR4
MMF:0.5m to 150m
AX-F0110-3Q1S

QSFP-LR4

40GBASE-LR4
SMF:2m to 10km
AX-F0110-3Q1L

CFP-LR4

100GBASE-LR4
SMF:2m to 10km
AX-F0110-3C1L

SD card

SD1G[*8]

SD memory card 1GB
AX-F0110-SD1G

10G SFP+ direct attach cables

SFPP-CU
10G SFP+
direct attach cables


AX-F0110-3D1CU30C (Cable length:30cm)
AX-F0110-3D1CU1M (Cable length:1m)
AX-F0110-3D1CU3M (Cable length:3m)
AX-F0110-3D1CU5M (Cable length:5m)

40G QSFP+ direct attach cables

QSFP-CU
40G QSFP+
direct attach cables


AX-F0110-3Q1CU35C (Cable length:35cm)
AX-F0110-3Q1CU1M (Cable length:1m)
AX-F0110-3Q1CU3M (Cable length:3m)
AX-F0110-3Q1CU5M (Cable length:5m)

Optical transceivers supported on each model

Model number	Abbrev.	Network switches										Routers
		AX6700S	AX6600S	AX6300S	AX4600S	AX3800S	AX3650S	AX3640S	AX2500S	AX2200S	AX1200S	AX8600R
AX-F6244-3S1T	SFP-T	●[*1]	●[*1]	●[*1]	●[*2]	●[*2]	●[*3]	●[*4]	●[*5]	–	–	●
AX-F6244-3S1S	SFP-SX	●	●	●	●	●	●	●	●	●	●	●
AX-F6244-3S1S2	SFP-SX2	●	●	●	–	–	●[*3]	●	●[*3]	●	●	●
AX-F6244-3S1L	SFP-LX	●	●	●	●	●	●	●	●	●	●	●
AX-F6244-3S1LH	SFP-LH	●	●	●	●	●	●	●	●	●	●	●
AX-F6244-3SB1U	SFP-BX1U	●	●	●	●	●	●	●	●	●	●	●
AX-F6244-3SB1D	SFP-BX1D	●	●	●	●	●	●	●	●	●	●	●
AX-F6244-3SB4U	SFP-BX4U	●	●	●	●	●	●	●	●	●	●	●
AX-F6244-3SB4D	SFP-BX4D	●	●	●	●	●	●	●	●	●	●	●
AX-F6244-3X1S	XFP-SR	●	●	●	–	–	–	●	–	–	–	–
AX-F6244-3X1L	XFP-LR	●	●	●	–	–	–	●	–	–	–	–
AX-F6244-3X1E	XFP-ER	●	●	●	–	–	–	●	–	–	–	–
AX-F6244-3X1Z	XFP-ZR	●	●	●	–	–	–	●	–	–	–	–
AX-F0110-3P1S	SFPP-SR	–	–	–	●	●	●	–	●	–	–	●
AX-F0110-3P1L	SFPP-LR	–	–	–	●	●	●	–	●	–	–	●
AX-F0110-3P1E	SFPP-ER	–	–	–	●	●	●	–	●	–	–	●
AX-F0110-3P1Z[*7]	SFPP-ZR	–	–	–	–	●	●	–	–	–	–	–
AX-F0110-3Q1S	QSFP-SR4	–	–	–	●	●	–	–	–	–	–	–
AX-F0110-3Q1L	QSFP-LR4	–	–	–	●	●	–	–	–	–	–	–
AX-F0110-3C1L	CFP-LR4	–	–	–	–	–	–	–	–	–	–	●
AX-F0110-3D1CU30C	SFPP-CU30C	–	–	–	●	●	●	–	●	–	–	–
AX-F0110-3D1CU1M	SFPP-CU1M	–	–	–	●	●	●	–	●	–	–	–
AX-F0110-3D1CU3M	SFPP-CU3M	–	–	–	●	●	●	–	●	–	–	–
AX-F0110-3D1CU5M	SFPP-CU5M	–	–	–	●	●	●	–	●	–	–	–
AX-F0110-3Q1CU35C	QSFP-CU35C	–	–	–	●	●	–	–	–	–	–	–
AX-F0110-3Q1CU1M	QSFP-CU1M	–	–	–	●	●	–	–	–	–	–	–
AX-F0110-3Q1CU3M	QSFP-CU3M	–	–	–	●	●	–	–	–	–	–	–
AX-F0110-3Q1CU5M	QSFP-CU5M	–	–	–	●	●	–	–	–	–	–	–

The above table shows the optical transceivers supported on each model listed in this catalogue. *1:NIFs supporting SFP-T: NK1G-24S(AX6700S/AX6600S), NH1G-24S(AX6300S)
*2:SFP/SFP+ shared ports support only 1000BASE-T. *3:Supported only on SFP ports (not supported on SFP/SFP+ shared ports). *4:Supported on AX3640S-24SW/AX3640S-24S2XW.
*5:In AX2530S-24S4X, SFP ports operate in 10/100/1000BASE-T mode when used with the SFP-T module while SFP/SFP+ shared ports operate in 1000BASE-T mode when used with the SFP-T module. In the other AX2500S models, the ports, whether SFP or SFP/SFP+ shared, operate in 1000BASE-T mode when used with the SFP-T module. *6:SFP-BX1U and SFP-BX1D must be used as a pair in the upstream position and the downstream position, respectively. Likely, SFP-BX4U and SFP-BX4D must be used as a pair in the upstream position and the downstream position, respectively. (U: upstream,D: downstream) *7:To be supported in 2014. *8:Not supported on AX8600R. Use 8GB SD memory card [AX-F0110-SD8G] instead.

Router specifications

AX8600R Series

Category	Functions			AX8600R
LAN	Ethernet		10BASE-T/100BASE-TX/1000BASE-T	●
			1000BASE-X (for SFP)	●
			10GBASE-R(for SFP+)	●
			100GBASE-R(for CFP)	●
Routing protocol	IPv4	Unicast	Static	●
			RIP/RIP2	●
			OSPF(v1/v2)	●
			BGP4	●
			IS-IS	※
			Policy-based routing	●
			Maximum routes*1	1952K
		Multicast	PIM-SM/SSM	●
			DVMRPv3	–
			IGMPv2/v3	●
	IPv6		Maximum routes*1	8,000
		Unicast	Static	●
			RIPng	●
			OSPFv3	●
			BPG4+	●
			IS-IS	※
			Policy-based routing	●
			Maximum routes*1	960K
		Multicast	PIM-SM/SSM	●
			MLDv1/v2	●
			Maximum routes*1	8,000
MPLS	Protocol		LDP/Static	※
	VPN		IPv4 VPN/EoMPLS	※
Network functionality	QoS	Flow detection	L2/IPv4/IPv6/L4	●
		Bandwidth monitoring	UPC (Policer)	●
		Marking	DSCP/user priority	●
		Priority control	Flow-based	●
			DSCP mapping	●
		Discard control	Tail Drop	●
		Shaping	Port bandwidth control	●
			Strict priority queuing (PQ)	●
			Round Robin (RR)	●
			Other scheduling features	4PQ+4WFQ/ 2PQ+4WFQ+2BEQ/ 4WFQ+4BEQ
		Hierarchical shaping	Port bandwidth control	※
			User bandwidth control	※
			Scheduling	※
		Other	Diff-serv	●

Category	Functions			AX8600R
Network functionality	High reliability		VRRP(IPv4/IPv6)	●
			Static polling (IPv4/IPv6)	●
			Link aggregation (IEEE802.3ad)	●
			EtherOAM	●
		Graceful Restart	OSPF/OSPFv3/BGP4/BGP4+/IS-IS	●*2
			Helper (OSPF/OSPFv3/IS-IS)	●*2
			Receiving Router (BGP4/BGP4+)	●
			Fast reroute	●
			Load balancing (IPv4/IPv6)	●
	Network Partition (VRF)		Extranet VRF	●
		IP routing	IPv4 unicast	●
			IPv4 multicast	●
			IPv6 unicast	●
			IPv6 multicast	●
	Security		Filtering (L2/IPv4/IPv6/L4)	●
			Subinterface (Tag-VLAN)	●
	Other		IPv4 DHCP relay agent	●
			IPv6 DHCP relay agent	●
			Jumbo Frame	●
Network management			SNMPv1/v2/v3	●
			MIB-II/IP Forwarding MIB/Interface MIB/IPv6 MIB/RMON	●
			sFlow	●(v4)
			NetFlow	※
			LLDP	●
			Port mirroring	●
Operation / maintenance			Command Line Interface	●
			RADIUS/TACACS+	●
			SSH	●
			Configuration (commit /rollback)	●
			Configuration (template)	●
			uRPF	●
			Non-stop software update	●
			E-mail notification of logs	●
			syslog/ping/traceroute/telnet/ftp/tftp/NTP	●
			Airflow (front-to-back)	●
Redundancy			Power supply	●
			Shared parts	●

*1: The maximum number of routes varies with each route distribution pattern. The values given here are the maximum allowable values in each product. For details, see product manuals (not possible to set a maximum value for all entries at a time). k=1024 *2: IS-IS will be supported in future.

○:Supported, –:Not supported, ※:Under planning

Chassis-type switch specifications

AX6700S/AX6600S/AX6300S/AX4600S Series

Category	Functions			AX6700S	AX6600S	AX6300S	AX4600S
LAN	Ethernet		10BASE-T/100BASE-TX/1000BASE-T	●	●	●	●
			1000BASE-X (SX/LX/LH)(for SFP)	●	●	●	●
			1000BASE-X (SX2/BX)(for SFP)	●	●	●	●*4
			10BASE-T/100BASE-TX/1000BASE-T (for SFP)	●*2	●*2	●*2	●*5
			10GBASE-R (for XFP/SFP+)	●(XFP)	●(XFP)	●(XFP)	●(SFP+)
			40GBASE-R (for QSFP+)	–	–	–	●
Layer 2			Maximum MAC addresses*1	120K	120K	120K	96K
	VLAN		Tag-VLAN (IEEE802.1Q)	●	●	●	●
			Port-based VLAN	●	●	●	●
			Protocol VLAN	●	●	●	●*7
			MAC VLAN	●	●	●	●
			Uplink VLAN	–	–	–	–*6
			Uplink block	–	–	–	–*6
			Private VLAN	–	–	–	–*6
			Tag translation	●	●	●	●*7
	Spanning Tree Protocol (STP)		STP (IEEE802.1D)	●	●	●	●
			RSTP (IEEE802.1w)	●	●	●	●
			PVST+	●	●	●	●
			MSTP (IEEE802.1s)	●	●	●	●
			BPDU filter	●	●	●	●
			Root guard	●	●	●	●
			Loop guard	●	●	●	●
	IGMP / MLD snooping		IGMP snooping	●(v1,v2,v3)	●(v1,v2,v3)	●(v1,v2,v3)	●(v1,v2,v3)*7
			MLD snooping	●(v1,v2)	●(v1,v2)	●(v1,v2)	●(v1,v2)*7
	Other		Policy-based switching	●	●	●	–
			L2 loop detection	●	●	●	●
			Storm control	●	●	●	●
			IEEE802.3ah/UDLD	●	●	●	●
			Ring protocol	●	●	●	●
			EtherOAM	●	●	●	●*7
Routing protocol	IPv4	Unicast	Static	●	●	●	●
			RIP/RIP2	●	●	●	●
			OSPF	●	●	●	●
			BGP4	●	●	●	●
			IS-IS	※	※	※	※
			Policy-based routing	●	●	●	●
			Maximum routes*1	208K	208K	208K	13K
		Multicast	PIM-SM/SSM	●	●	●	●
			PIM-DM	●	●	●	–
			IGMPv2/v3	●	●	●	●
			Maximum routes*1	8,000	8,000	8,000	2048
	IPv6	Unicast	Static	●	●	●	●
			RIPng	●	●	●	●
			OSPFv3	●	●	●	●
			BGP4+	●	●	●	●
			IS-IS	※	※	※	※
			Policy-based routing	●	●	●	–
			Maximum routes*1	104K	104K	104K	5632
		Multicast	PIM-SM/SSM	●	●	●	●*7
			MLDv1/v2	●	●	●	●*7
			Maximum routes*1	8,000	8,000	8,000	768*7
Network functionality	QoS	Flow detection	L2/IPv4/IPv6/L4	●	●	●	●
		Bandwidth monitoring	UPC (Policer)	●	●	●	●
		Marking	DSCP/user priority	●	●	●	●
		Priority control	Flow-based	●	●	●	●
			DSCP mapping	●	●	●	–
			User priority mapping	–	–	–	●
		Discard control	Tail Drop	●	●	●	●

Category			Functions	AX6700S	AX6600S	AX6300S	AX4600S
Network functionality	QoS	Shaping	Port bandwidth control	●	●	●	●
			Strict priority queuing (PQ)	●	●	●	●
			Round Robin (RR)	●	●	●	–
			Other scheduling features	PQ+WFQ/PQ+WFQ+BEQ/WFQ+BEQ			★
		Hierarchical shaping	Port bandwidth control	●	●	●	–
			User bandwidth control	●	●	●	–
			Scheduling	●	●	●	–
		Other	Diff-serv	●	●	●	●
	Security		Filtering (L2/IPv4/IPv6/L4)	●	●	●	●
			Access list logging	●	●	●	–
			IEEE802.1X	●	●	●	●*7
			Web-based authentication	●	●	●	●*7
			MAC authentication	●	●	●	●
			Multi-step authentication	–	–	–	–
			DHCP snooping	●	●	●	●*7
			Inter-port relay blocking	–	–	–	●
	High reliability		Load balancing (IPv4/IPv6)	●	●	●	●
			VRRP (IPv4/IPv6)	●	●	●	●
			Static / VRRP polling (IPv4/IPv6)	●	●	●	●
			Link aggregation (IEEE802.3ad)	●	●	●	●
			GSRP (L2/IPv4/IPv6)	●	●	●	●
			Fast reroute	●	●	●	–
			Uplink Redundancy	●*9	●*9	●*9	●*7
			Stack	–	–	–	●(VRS)
			SML (Split Multi Link)	–	–	–	–
		Graceful Restart	OSPF/OSPFv3/BGP4/BGP4+/IS-IS	●*3	●*3	●*3	–
			Helper (OSPF/OSPFv3/IS-IS)	●*3	●*3	●*3	●*3*7
			Receiving Router (BGP4/BGP4+)	●	●	●	●*7
		Network Partition (VRF)	Use with layer 2 functionality	●	●	●	●
			Extranet VRF	●	●	●	●
		IP routing	IPv4 unicast	●	●	●	●
			IPv4 multicast	●	●	●	●
			IPv6 unicast	●	●	●	●
			IPv6 multicast	●	●	●	●*7
		Other	IPv4 DHCP server / relay agent	●	●	●	●*8
			IPv6 DHCP server (Prefix delegation)	●	●	●	●*7
			IPv6 DHCP relay agent	●	●	●	●*7
			L2-VPN (VLAN tunneling)	●	●	●	●*7
			Secure Wake On LAN	–	–	–	–
	Network management		SNMPv1/v2c/v3	●	●	●	●
			MIB-II/IP Forwarding MIB/Interface MIB/IPv6 MIB/RMON	●	●	●	●*8
			sFlow	●(v2,v4)	●(v2,v4)	●(v2,v4)	●(v2,v4)
			LLDP/OADP	●	●	●	●*8
			Port mirroring	●	●	●	●
	Operation / maintenance		Command-free maintenance	●	●	●	●
			RADIUS/TACACS+	●	●	●	●*8
			SSH	●	●	●	●
			uRPF	●	●	●	–
			syslog/ping/traceroute/telnet/ftp/tftp/NTP	●	●	●	●
			Airflow (front-to-back)	–	–	–	●
	Power saving	Static power saving	Power control of the shared parts /NIF (restart required)	●	●	●	–
			Powering off NIF /ports	●	●	●	–
		Dynamic power saving	Power control of the shared parts (restart not required)	●	●	–	–
			Powering off the shared parts	●	●	–	–
			Scheduling	●	●	–	●*7
	Redundancy		Power supply	●	●	●	●
			Shared parts	●	●	●	–

★AX4600S:PQ+RR/PQ+WFQ/PQ+WRR/PQ+ERR

*1: The maximum numbers of MAC addresses and routes vary with each route distribution pattern. The values given here are the maximum allowable values in each product. For details, see product manuals (not possible to set a maximum value for all entries at a time). k=1024 *2: NIFs supporting these interfaces: NK1G-24S (AX6700S/AX6600S), NH1G-24S (AX6300S) *3: IS-IS will be supported in future. *4: SFP-SX2 is not supported. *5: SFP/SFP+ shared ports support only 1000BASE-T. *6: The inter-port relay blocking feature can be used as a substitute. *7: To be supported in 2014. *8: IPv4 DHCP server, RMON, OADP and TACACS+ will be supported in 2014. *9: Only possible to remove routes from a routing table in an upstream switch.

○:Supported, –:Not supported, ※:Under planning

Box-type switch specifications

AX3800S/AX3600S/AX2500S/AX2200S/AX1200S Series

Category	Functions		AX3800S	AX3600S		AX2500S	AX2200S	AX1200S
				AX3650S	AX3640S			
LAN	Ethernet	10BASE-T/100BASE-TX/1000BASE-T	●	●	●	●	●	●
		1000BASE-X (SX/LX/LH)(for SFP)	●	●	●	●	●	●
		1000BASE-X (SX2/BX)(for SFP)	●*2	●*3	●	●*3	●	●
		10BASE-T/100BASE-TX/1000BASE-T (for SFP)	●*4	●*5	●*6	●*7	–	–
		10GBASE-R (for XFP/SFP+)	●(SFP+)	●(SFP+)	●(XFP)	●(SFP+)	–	–
		40GBASE-R (for QSFP+)	●(QSFP+)*8	–	–	–	–	–
Layer 2		Maximum MAC addresses*1	128K	32K	32K	32K	16K	16K
	VLAN	Tag-VLAN (IEEE802.1Q)	●	●	●	●	●	●
		Port-based VLAN	●	●	●	●	●	●
		Protocol VLAN	●	●	●	●	●	●
		MAC VLAN	●	●	●	●	●	●
		Uplink VLAN	–*9	–*9	–*9	–*9	–*9	–*9
		Uplink block	–*9	–*9	–*9	–*9	–*9	–*9
		Private VLAN	–*9	–*9	–*9	–*9	–*9	–*9
		Tag translation	●	●	●	●	–	–
	Spanning Tree Protocol (STP)	STP (IEEE802.1D)	●	●	●	●	●	●
		RSTP (IEEE802.1w)	●	●	●	●	●	●
		PVST+	●	●	●	●	●	●
		MSTP (IEEE802.1s)	●	●	●	●	●	●
		BPDU filter	●	●	●	●	●	●
		Root guard	●	●	●	●	●	●
		Loop guard	●	●	●	●	●	●
	IGMP / MLD snooping	IGMP snooping	●(v1,v2,v3)	●(v1,v2,v3)	●(v1,v2,v3)	●(v1,v2,v3)	●(v1,v2)	●(v1,v2)
		MLD snooping	●(v1,v2)	●(v1,v2)	●(v1,v2)	●(v1,v2)	●(v1,v2)	●(v1,v2)
	Other	Policy-based switching	–	–	–	–	–	–
		L2 loop detection	●	●	●	●	●	●
		Storm control	●	●	●	●	●	●
		IEEE802.3ah/UDLD	●	●	●	●	●	●
		Ring protocol	●	●	●	●	●*10	●*10
		EtherOAM	●	●	●	●	●	●
Routing protocol	IPv4	Unicast: Static	●	●	●	–	–	–
		Unicast: RIP/RIP2	●	●	●	–	–	–
		Unicast: OSPF	●	●	●	–	–	–
		Unicast: BGP4	●	●	●	–	–	–
		Unicast: IS-IS	※	※	※	–	–	–
		Unicast: Policy-based routing	●	●	●	–	–	–
		Unicast: Maximum routes*1	13K	16K	12K	–	–	–
		Multicast: PIM-SM/SSM	●	●	●	–	–	–
		Multicast: PIM-DM	–	–	–	–	–	–
		Multicast: IGMPv2/v3	●	●	●	–	–	–
		Multicast: Maximum routes*1	1,024	1,024	1,024	–	–	–
	IPv6	Unicast: Static	●	●	●	–	–	–
		Unicast: RIPng	●	●	●	–	–	–
		Unicast: OSPFv3	●	●	●	–	–	–
		Unicast: BGP4+	●	●	●	–	–	–
		Unicast: IS-IS	※	※	※	–	–	–
		Unicast: Policy-based routing	–	–	–	–	–	–
		Unicast: Maximum routes*1	7,560	7,680	5,632	–	–	–
		Multicast: PIM-SM/SSM	●	●	●	–	–	–
		Multicast: MLDv1/v2	●	●	●	–	–	–
		Multicast: Maximum routes*1	128	768	128	–	–	–
Network functionality	QoS	Flow detection: L2/IPv4/IPv6/L4	●	●	●	●	●(IPv6 not supported)	●(IPv6 not supported)
		Bandwidth monitoring: UPC (Policer)	●	●	●	–	–	–
		Marking: DSCP/user priority	●	●	●	●	●	●
		Priority control: Flow-based	●	●	●	●	●	●
		Priority control: DSCP mapping	–	–	–	–	–	–
		Priority control: User priority mapping	●	●	●	●	●	●
		Discard control: Tail Drop	●	●	●	●	●	●

Category	Functions			AX3800S	AX3600S		AX2500S	AX2200S	AX1200S
					AX3650S	AX3640S			
Network functionality	QoS	Shaping	Port bandwidth control	●	●	●	●	●	●
			Strict priority queuing (PQ)	●	●	●	●	●	●
			Round Robin (RR)	–	●	●	–	–	–
			Other scheduling features	★	PQ+DRR/PQ+WRR/WRR/WFQ		PQ+WRR/WRR/WFQ	PQ+WRR/WRR/WFQ	PQ+WRR/WRR/WFQ
		Hierarchical shaping	Port bandwidth control	–	–	–	–	–	–
			User bandwidth control	–	–	–	–	–	–
			Scheduling	–	–	–	–	–	–
		Other	Diff-serv	●	●	●	●	●	●
	Security		Filtering (L2/IPv4/IPv6/L4)	●	●	●	●	●(IPv6 not supported)*11	●(IPv6 not supported)*11
			Access list logging	–	–	–	–	–	–
			IEEE802.1X	●	●	●	●	●	●
			Web-based authentication	●	●	●	●	●	●
			MAC authentication	●	●	●	●	●	●
			Multi-step authentication	–	–	–	●	●	●
			DHCP snooping	●	●	●	●	●	●
			Inter-port relay blocking	●	●	●	●	●	●
	High reliability		Load balancing (IPv4/IPv6)	●	●	●	–	–	–
			VRRP (IPv4/IPv6)	●	●	●	–	–	–
			Static / VRRP polling (IPv4/IPv6)	●	●	●	–	–	–
			Link aggregation (IEEE802.3ad)	●	●	●	●	●	●
			GSRP (L2/IPv4/IPv6)	●	●	●	●(GSRP aware only)	●(GSRP aware only)	●(GSRP aware only)
			Fast reroute	–	–	–	–	–	–
			Uplink Redundancy	●	●	●	●	●	●
			Stack	●	●	–	●*18	–	–
			SML (Split Multi Link)	–	–	–	●	–	–
		Graceful Restart	OSPF/OSPFv3/BGP4/BGP4+/IS-IS	–	–	–	–	–	–
			Helper (OSPF/OSPFv3/IS-IS)	●*12	●*12	●*12	–	–	–
			Receiving Router (BGP4/BGP4+)	●	●	●	–	–	–
		Network Partition (VRF)	Use with layer 2 functionality	●	●	–	–	–	–
			Extranet VRF	●	●	–	–	–	–
		IP routing	IPv4 unicast	●	●	–	–	–	–
			IPv4 multicast	●	●	–	–	–	–
			IPv6 unicast	●	●	–	–	–	–
			IPv6 multicast	●	●	–	–	–	–
		Other	IPv4 DHCP server / relay agent	●	●	●	●*13	●*13	●*13
			IPv6 DHCP server (Prefix delegation)	●	●	●	–	–	–
			IPv6 DHCP relay agent	●	●	●	–	–	–
			L2-VPN (VLAN tunneling)	●	●	●	●	–	–
			Secure Wake On LAN	–	–	–	●	●	●
	Network management		SNMPv1/v2c/v3	●	●	●	●	●(v1 and v2c only)	●(v1 and v2c only)
			MIB-II/IP Forwarding MIB/Interface MIB/IPv6 MIB/RMON	●	●	●	●	●*14	●*14
			sFlow	●(v2,v4)	●(v2,v4)	●(v2,v4)	●(v2,v4)	–	–
			LLDP/OADP	●	●	●	●(LLDP only)	●(LLDP only)	●(LLDP only)
			Port mirroring	●	●	●	●	●	●
	Operation / maintenance		Command-free maintenance	●	●	●	●	●	●
			RADIUS/TACACS+	●	●	●	●(RADIUS only)	●(RADIUS only)	●(RADIUS only)
			SSH	●	●	●	●	●	●
			uRPF	–	–	–	–	–	–
			syslog/ping/traceroute/telnet/ftp/tftp/NTP	●	●	●	●	●(IPv6 not supported)*15	●(IPv6 not supported)*15
			Airflow (front-to-back)	●	–	–	–	–	–
	Power saving	Static power saving	Power control of the device (restart required)	–	–	–	–	–	–
			Powering off ports	●	●	●	●	●	●
		Dynamic power saving	Power control of the device (scheduling)	●	●	–	●	–	●
			Powering off ports (scheduling)	●	●	●	●	●	●
			Reducing power usage of idle ports	●*16	●*16	–	●*16	●*16	●*16
	Redundancy		Power supply	●	●	●*17	–	–	–
			Shared parts	–	–	–	–	–	–

★AX3800S:PQ+RR/PQ+WFQ/PQ+WRR/PQ+ERR　*1:The maximum numbers of MAC addresses and routes vary with each route distribution pattern. The values given here are the maximum allowable values in each product. For details, see product manuals (not possible to set a maximum value for all entries at a time). k=1024　*2:SFP-SX2 is not supported.　*3:SFP-SX2 is supported only on SFP ports (not supported on SFP/SFP+ shared ports).　*4:SFP/SFP+ shared ports support only 1000BASE-T.　*5:Supported only on SFP ports (not supported on SFP/SFP+ shared ports).　*6:Supported on AX3640S-24SW/AX3640S-24S2XW.　*7:In AX2530S-24S4X, SFP ports operate in 10/100/1000BASE-T mode when used with the SFP-T module while SFP/SFP+ shared ports operate in 1000BASE-T mode when used with the SFP-T module. In the other AX2500S models, the ports, whether SFP or SFP/SFP+ shared, operate in 1000BASE-T mode when used with the SFP-T module.　*8:Supported on AX3830S-44X4QW.　*9:The inter-port relay blocking feature can be used as a substitute.　*10:Supports Transit only.　*11:Outbound filtering is not supported.　*12:IS-IS will be supported in future.　*13:Only the IPv4 DHCP server function is supported.　*14:IPv6 MIB is not supported.　*15:tftp is not supported.　*16:Supported only on the 10/100/1000BASE-T (UTP) ports.　*17:AX3640S-24T does not support power redundancy.　*18: To be supported in 2014.

○:Supported, –:Not supported, ※:Under planning

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

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