Data Sheet

Network management products

AX-Network-Manager

1. Overview

1.1 Positioning of AX-Network-Manager

AX-Network-Manager is network operation management software that supports network operation.
In general, there are following network operations:

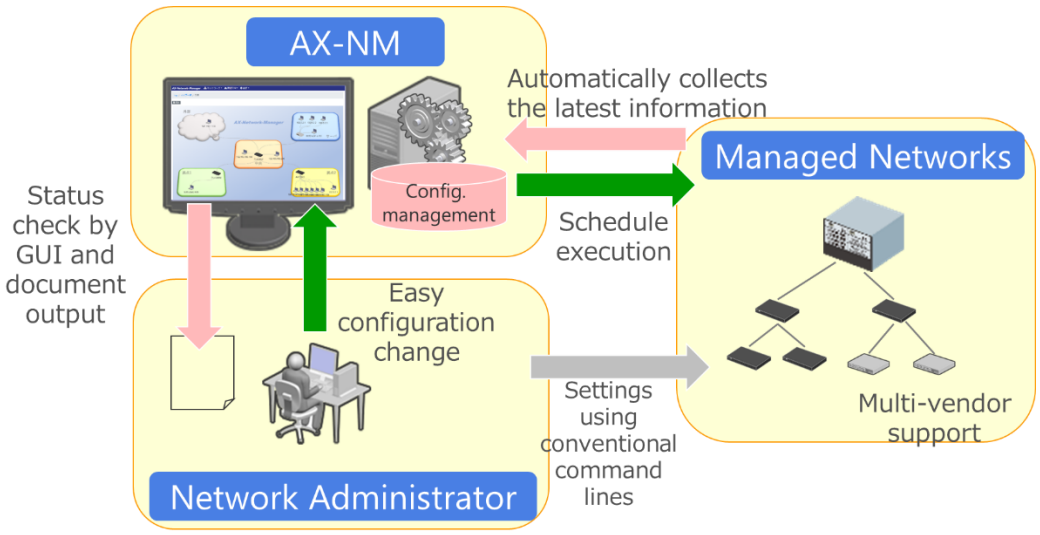
- Understanding operation status during normal operation
- Network configuration changes due to reorganization
- Isolation and response in the event of failure or incident

However, when performing these operations, we often encounter problems as shown below:

- It takes time to grasp the constantly changing network configuration and terminal device position.
- Time is required to identify and respond to failures and incident problems that have occurred.
- There is a lack of operational skills (e.g., understanding different configuration methods for each device).
- Cannot quickly recover from equipment failures.
- Management for each network device is not unified, making management difficult.

To address these problems, AX-Network-Manager provides the following:

- Network configuration management (centralized management of state and settings, visualization of terminal device locations)
  - Visualization of wireless LAN terminal locations encapsulated by CAPWAP
- Reduction of the skill requirement and workload of operators
  - GUI to understand network-status and settings to simplify operation
  - Document output function
- Multi-vendor support
- Incident countermeasures by cooperation with security equipment



Operation outline using the chart 1-1 AX-Network-Manager11

2. Key Features

2.1 Network configuration management (centralized management of status and settings)

AX-Network-Manager is a network operation management software that can automatically collect network status and manage it centrally. You can check the state of the network, such as the interface and connection of the device, and also know the status of the hardware that comprises the device.

In the past, network configuration information has often been managed as a document, which may differ from the actual situation. AX-Network-Manager centrally manages the up-to-date status, allows you to easily understand the operating status and can be used to isolate failures.

2.2 To reduce the skill requirement and workload of operators

AX-Network-Manager is a network operation management software that automatically collects network status and displays centralized information using GUI such as topology maps and front panels, reducing the burden of operators and the skills required for them. It is also possible to output network configuration information as a document from the centrally managed information, thus contributing to the further reduction of the workload.

In addition, you can specify a user privilege for each operator, so that each operator will be able to check operations and manage responses to events that occur. It is possible to create multiple patterns of dashboards that can be managed by multiple users.

In this way, AX-Network-Manager is easy to operate and manage even for users who are not familiar with network-management operations.

2.3 Multi-vendor support

AX-Network-Manager can also be used in multi-vendor networks.
Networks in general consist of devices from multiple vendors. AX-Network-Manager can monitor the state of and manage the devices that support standard MIB, including those from other vendors than ALAXALA. Therefore, it is possible to manage operations while taking advantage of existing system assets.

AX-Network-Manager allows the operation and management of an entire network, which means that in addition to network devices, you can monitor the state of other devices such as servers, surveillance cameras, and IoT devices by Ping or at any MIB. Further, operations on each device can be unified by AX-Network-Manager, reducing the skill requirement for operators.

2.4 Visualization of wireless LAN terminal device locations encapsulated by CAPWAP

AX-Network-Manager is a network operation management software that visualizes the locations of wireless LAN terminal devices in a network environment where communication is performed using CAPWAP protocol between wireless LAN controllers and access points.

2.5 Incident countermeasures by cooperation with security equipment

AX-Network-Manager is a network operation management software that controls the network layer (e.g., blocking communication with an incident location) by cooperating with the security equipment in charge of application layer security control.

3. License

3.1 Configuring licenses

AX-Network-Manager is a subscription-style software.

For use of this software, it is necessary to install the license for the number of management devices according to the function to be used. In addition, select "On-premise version" or "Cloud version" according to your operating environment.

This software consists of the following licenses:

Table 3-1 License breakdown21

Item	Description
Essential Feature License	License to use AX-Network-Manager. Managed devices can use the functions defined as Essential functions. The number of devices you can manage equals the number of licenses purchased.
Standard Feature License	License to use AX-Network-Manager. Managed devices can use the functions defined as Standard functions. It is positioned above the Essential Features License and includes the features provided by the Essential Features License. The number of devices you can manage equals the number of licenses purchased.
Wireless LAN Controller License	License to manage wireless LAN controllers and AXprimoW. The number of devices you can manage equals the number of licenses purchased.
License for cooperation with Trend Micro DDI/PM	License for cooperation with Trend Micro DDI/PM. The Standard Feature License is also required.
License for cooperation with Palo Alto Networks Next-Generation Firewall	License for cooperation with Palo Alto Networks Next Generation Firewall. The Standard Feature License is also required.
License for cooperation with Syslog (CEF)	License for cooperation with Syslog (CEF). The Standard Feature License is also required.
Option license for monitoring target extension	License for using the monitor function on devices other than the managed ones. (This license also applies to a managed device whose license is “invalid” or “none”.) The number of devices you can monitor equals the number of licenses purchased.

For the On-premise version, purchase the number of licenses for the number of devices managed by the Essential Feature License/Standard Feature License.

For the Cloud version, first purchase the Essential Feature Base License/Standard Function Base License, and then purchase the required number of devices managed by these licenses.

The supported functions for each license type are as follows.

Table 3-2: Supported functions for each license type22

Function name	Essential Feature License	Standard Feature License	Wireless LAN Controller License
Network management *2	✓	✓	✓
Network management (Cooperation with Security Device)	N/A	✓	N/A
Monitor management	✓*1	✓	✓*1
Event management	✓	✓	✓
Operation log management	✓	✓	✓
SNMP trap-receiving control	✓*1	✓*1	✓*1
Syslog receiving control	✓*1	✓*1	✓*1
Ingress monitor setting	✓*1	✓*1	✓*1
Notification Setting	✓	✓	✓
Configuration management	✓	✓	✓
Template management	N/A	✓	✓
Setting to the device ・Port configuration ・VLAN Setting ・VXLAN Setting ・Access list setting, Filter enable/disable setting ・QoS flow list setting, QoS control enable/disable setting ・Port mirroring setting	N/A	✓	N/A
Setting to the device ・ Port state change	✓	✓	
Software management	✓	✓	
Backup management	✓	✓	
Serial information management	✓	✓	✓
Distribution of Web control data	✓	✓	
Document output	✓	✓	✓
Task scheduling	✓	✓	✓
Icon/Image setting	✓	✓	✓
Script Setting	✓	✓	✓
Collected-information management	✓	✓	✓
Dashboard	✓	✓	✓
Resource Management	✓	✓	✓
User Setting	✓	✓	✓
RESTAPI	✓	✓	✓

*1 For a monitoring target other than a managed device, a monitoring target extension option license is required.
*2 For filter information statistics collection and QoS statistics collection, a standard license is required.

3.2 Period of use

The On-premise license is classified into two categories: the first year license (valid from the month following the delivery date to the end of 15 months after the delivery date) and the one-year extension license (valid for 12 months). The Cloud version license is classified into two categories: the first year license (valid until the end of 12th month starting from the 1st day of the month following the delivery date) and the one-year extension license (valid for the 12th month). For the first year, you need to purchase a first-year license, and if you continue to use it through the second year, you need to purchase a one-year extension license of the same type for each managed device (need to purchase the same number of licenses as the number of managed devices).

If the expiration date is exceeded, the device cannot be managed by AX-Network-Manager. Also, if you have a valid license, you cannot view the data gathered by AX-Network-Manager.

An example of the license use period is shown below.

Table 3-3: Example license use period23

First year	Second Year
License for 50 Essential Functional Devices (First year license)	License for 50 Essential Functional Devices (1-Year Extended License)
License for 10 Standard Functional Devices (First year license)	License for 10 Standard Functional Devices (1-Year Extended License)

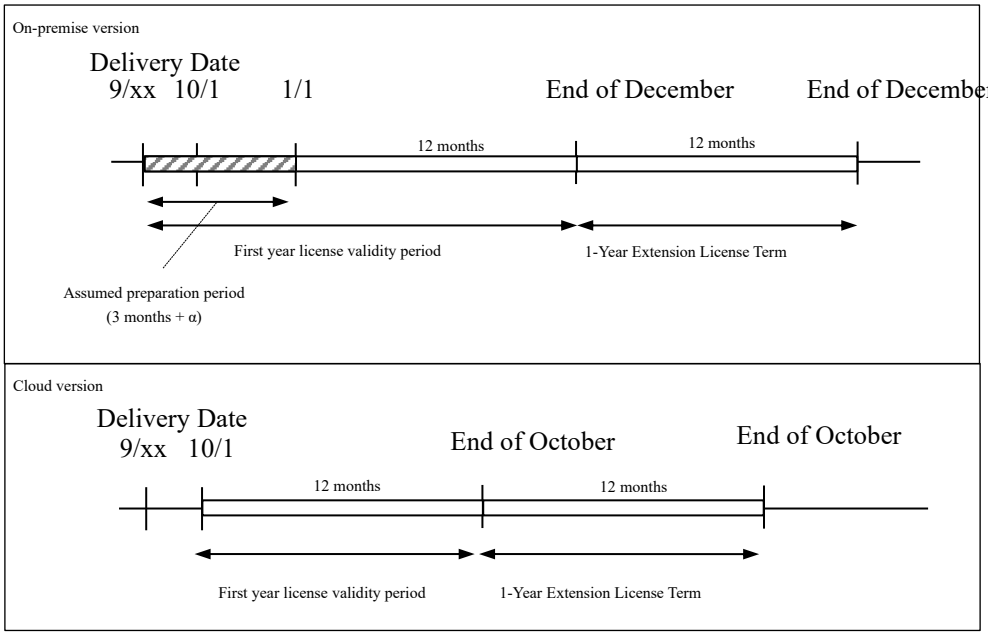


Figure 3-1: Example of use period21

3. Function List

The functions of AX-Network-Manager are listed below.

Table 4-1 Function List31

Classification	Function			Remarks
Network management	Device information display			
		Hardware information display		
		Interface information display		
		Channel group information display		
		Displaying the graph of line bandwidth used		
		Front panel display		
		Front panel display (e.g., displaying the devices supporting standard MIB)		
	Web terminals			
	Hardware status monitoring			
	L2 loop detection			
	Storm detection			
	Congestion detection			
	View of connection information			
	View of terminal device information			
		Displaying the position of the radio LAN terminal		
	Terminal connection history management			
	Route management			
	Map display			
		Display VLAN		
		Display VXLAN		
		Displaying L2 looping position		
		Displaying routing information (IPv4)		
		Display of the monitored object		
		Displaying syslog messaging terminals in CEF		
Monitored management	Ping monitoring			
	MIB monitoring			
Security Filter Management	Communication block / exceptional communication permit			
	Mirroring detail information			
	Terminal mobile device tracking			
	Networking using both IPv4 address and IPv6 address			
	Automatic cancellation	Schedule release		
		Timer release		
	Web communication disable function for a specified terminal device			
	Blocking communication with unregistered alias terminal devices			
	External collaboration	Cooperation with Trend Micro DDI/PM		
Rule match history management	Security Filter is applied.			
Security cooperative device management	Incident acceptance protocol	Syslog	CEF's syslog messaging	
	Incident Extract	syslog message extract		
	Incident Extraction Rule Management			
	External collaboration	Linkage with Palo Alto Networks Next-Generation Firewall		
		Syslog linkage (CEF)		
		Registering optional CEF fields		
Event management	Event display and response status management			
Operation log management	Operation log display			
SNMP trap-receiving control	Displaying received SNMP traps			
	SNMP trap-reception monitoring			
Syslog reception control	Displaying reception syslog			
	Syslog reception filtering			
	Syslog reception monitoring			
Notification management	Syslog notification			
	E-mail notification			
	SNMP notification			
	Script notification			
	Information Collection Notification			

Classification	Function			Remarks
	Notification Information/Suppression Schedule Setting			
Configuration management	Configuration history management			
	Getting configuration from devices			
	Configuration setup on devices			
Template management	Applying and setting the configuration from the template			
Setting to the device	Port configuration			
	VLAN Setting			
	VXLAN Setting			
Software management	Management of software generations			
	Software setup on devices			
Backup management	Collecting Backups			
	Uploading backups into devices	Zero touch provisioning		
Serial information management	Collecting serial information			
Distribution of Web control data	Distributing SSL certificates			
	Distribution of Web authentication windows			
Filter Management	Filter setup on devices			
	Displaying Filter Information Counter Graphs			
QoS management	QoS setup on devices			
	Graphical view of QoS counters			
Port Mirroring Management	Port mirroring setup on devices			
Document output	Web display			
	Excel file format			
Management functions	Administrator function	Dashboard		
			Customization by user	
		Device management		
			Registration with setup support	
		Connection Management		
			Link detection by LLDP	
			Static port setup configuration	
			Access list expansion port	
		Terminal device management		
			Terminal device alias management	
			Management of unmanaged ports	
		Map management		
		Task scheduling management		
		Script management		
			Execution of arbitrary processing	
		Managing collected information		
		Icon management		
		Image management		
		User Management		
		Management of MIB definition files		
		Segment management		
		Security cooperation setting		
		Resource Management Setting		
	RESTAPI			
	Operation and maintenance	Backup and restore		
		Collection of maintenance information		
License	AX-NM essential functionality for 10 devices ・First year license			
	AX-NM essential functionality for 10 devices ・One-year extension license			
	AX-NM essential functionality for 20 devices ・First year license			
	AX-NM Essential functionality for 20 devices ・One-year extension license			
	AX-NM Essential functionality for 50 devices ・First year license			
	AX-NM Essential functionality for 50 devices ・One-year extension license			
	AX-NM standard functionality for 10 devices ・First year license			

Classification	Function	Remarks
	AX-NM standard functionality (10 devices) ・One-year extension license	
	AX-NM standard functionality (20 devices) ・First year license	
	AX-NM standard functionality (20 devices) ・One-year extension license	
	AX-NM standard functionality (50 devices) ・First year license	
	AX-NM standard functionality (50 devices) ・One-year extension license	
	For up to one wireless LAN controller ・First year (1-year) license	
	For up to one wireless LAN controller ・One-year extension license	
	For cooperation with Trend Micro DDI/PM ・First year (1-year) license	
	Cooperation with Trend Micro DDI/PM ・One-year extension license	
	Cooperation with Palo Alto Networks Next Generation Firewall ・First year (1-year) license	
	Cooperation with Palo Alto Networks Next Generation Firewall ・One-year extension license	
	Cooperation with Syslog (CEF) ・First year (1-year) license	
	Cooperation with Syslog (CEF) ・One-year extension license	
	AX-NM cloud essential functionality basic (20 devices) ・First year license	
	AX-NM cloud essential functionality basic (20 devices) ・One-year extension license	
	AX-NM cloud essential functionality (10 devices) ・First year license	
	AX-NM cloud essential functionality (10 devices) ・One-year extension license	
	AX-NM cloud essential functionality (20 devices) ・First year license	
	AX-NM cloud essential functionality (20 devices) ・One-year extension license	
	AX-NM cloud essential functionality (50 devices) ・First year license	
	AX-NM cloud essential functionality (50 devices) ・One-year extension license	
	AX-NM cloud standard functionality basic (20 devices) ・First year license	
	AX-NM cloud standard functionality basic (20 devices) ・One-year extension license	
	AX-NM cloud standard functionality (10 devices) ・First year license	
	AX-NM cloud standard functionality (10 devices) ・One-year extension license	
	AX-NM cloud standard functionality (20 devices) ・First year license	
	AX-NM cloud standard functionality (20 devices) ・One-year extension license	
	AX-NM cloud standard functionality (50 devices) ・First year license	
	AX-NM cloud standard functionality (50 devices) ・One-year extension license	
	AX-NM cloud wireless LAN controller (one device) ・First year (1-year) license	
	AX-NM cloud wireless LAN controller (one device) ・One-year extension license	
	AX-NM cloud: cooperation with Trend Micro DDI/PM ・First year (1-year) license	
	AX-NM cloud: cooperation with Trend Micro DDI/PM ・One-year extension license	
	AX-NM cloud: Palo Alto Networks Next Generation Firewall ・First year (1-year) license	
	AX-NM cloud: Palo Alto Networks Next Generation Firewall ・One-year extension license	
	AX-NM cloud: cooperation with Syslog (CEF) ・First year (1-year) license	
	AX-NM cloud: cooperation with Syslog (CEF) ・One-year extension license	
	Extended monitoring option (10 devices) ・First year (1-year) license	
	Extended monitoring option (10 devices) ・One-year extension license	
	Extended monitoring option (20 devices) ・First year (1-year) license	
	Extended monitoring option (20 devices) ・One-year extension license	
	Extended monitoring option (50 devices) ・First year (1-year) license	

Classification	Function	Remarks
	Extended monitoring option (50 device) ・One-year extension license	
	AX-NM cloud extended monitoring option (10 devices) ・First year 1-year license	
	AX-NM cloud extended monitoring option (10 devices) ・One-year extension license	
	AX-NM cloud extended monitoring option (20 devices) ・First year (1-year) license	
	AX-NM cloud extended monitoring option (20 devices) ・One-year extension license	
	AX-NM cloud extended monitoring option (50 devices) ・First year (1-year) license	
	AX-NM cloud extended monitoring option (50 devices) ・One-year extension license	

5. Operating Environment

5.1 Hardware Configuration [On-Premise Only]

The hardware requirements under which AX-Network-Manager can operate are shown below.

Table 5-1: Operation specifications51

#	Item	Requirements
1	CPU	Latest multi-core processor (8 cores or more are recommended)
2	Memory	16GB or more *1
3	Free storage space	300GB or more *2, *3
4	Ethernet interface	1 port or more

*1: It is highly recommended to allocate swap space for stable operation. For allocation sizes, refer to https://access.redhat.com/documentation/ja-jp/red_hat_enterprise_linux/7/html/storage_administration_guide/ch-swapspace_for_setting.

*2: The required free space increases or decreases depending on the file size acquired from the device, the number of saved records of line bandwidth occupation, the image file sizes of maps and icons, the number of saved records of terminal device connection, the number of saved monitoring records, the number of saved information collection records, and so on. Make sure that enough free space is available.

*3: Secure the free space for /var.

5.2 Software Configuration [On-Premise Only]

(1) Operational operating system (OS)

The operating system requirements under which AX-Network-Manager can operate are shown below.

Table 5-2: Supported operating systems52

#	Operating System Name *	Remarks
1	CentOS 7	Ver. 7.6 (operation verified)
2	Red Hat Enterprise Linux 7	Ver. 7.8 (operation verified)
3	Red Hat Enterprise Linux 8	Ver. 8.4 (operation verified)
4	MIRACLE LINUX 8	Ver. 8.4 (operation verified)
5	Ubuntu 20.04 LTS	Ver. 20.04 (operation verified)
6	Ubuntu 22.04 LTS	Ver. 22.04 (operation verified)

* Please use 64bit version for the operating system.

(2) Web browser

The web browsers available for AX-Network-Manager are listed below.

Table 5-3: Web browsers available for AX-Network-Manager53

#	Web browser name	Remarks
1	Google Chrome (Latest Version)	
2	Microsoft Edge (Chromium based) (latest version)	

(3) Excel viewers that support document output

Excel viewer that supports document output is listed below.

Table 5-4: Excel viewer available for document output 54

#	Software name	Remarks
1	Microsoft Excel 2016/2019	Desktop app version only Microsoft Excel 2019 (operation verified)

5.3 Prerequisite Network Configuration

The prerequisite networking configuration for AX-Network-Manager is shown below.

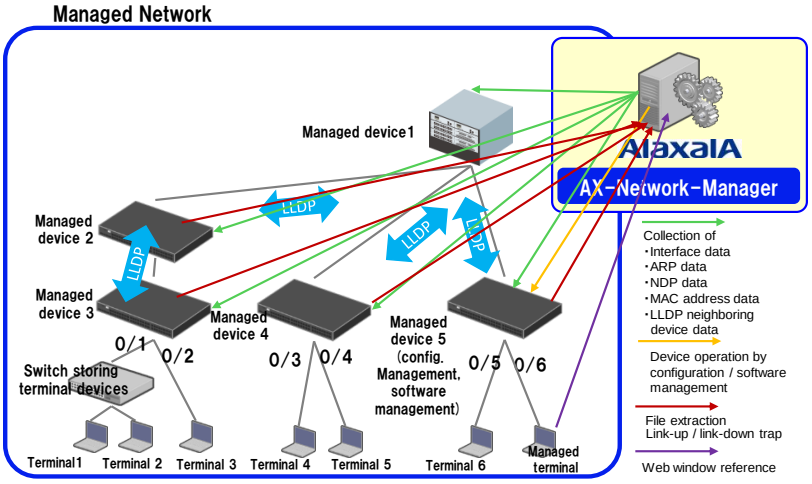


Figure 5-1: Example of prerequisite network configuration51

5.3.1 Managed device

The devices that can be managed by AX-Network-Manager are shown below.
The devices must satisfy the following requirements.

Table 5-5: Requirements for managed devices55

Requirements
The managed devices must be accessible using SNMP from AX-Network-Manager.
The devices whose config and software you want to manage must be accessible using SSH/Telnet from AX-Network-Manager.
On an IP network, at least one device must be a Layer 3 switch capable of learning ARP and NDP information of terminal devices (in the above figure, the managed device 1).
The managed devices accommodating terminal devices (or switches accommodating terminal devices) must be switches capable of learning MAC address information of the terminal devices (in the figure above, the managed devices 3, 4, and 5).
LLDP must be enabled on the Ethernet port connected with the neighboring managed device, so that information about the device will be learned (in the above figure, links between the managed devices 1 and 2, 1 and 4, 1 and 5, and 2 and 3). #: If LLDP does not operate on a managed device, you can statically configure a port connection between neighboring managed devices using a Web interface.
The managed devices must be capable of sending the link up/link down traps of their physical ports. #: Substituted by collecting interface information from the managed devices.

5.3.2 Requirements for standard MIB devices

In addition to ALAXALA products supported by AX-Network-Manager, you can use any switch that meets the following conditions as a managed device depending on its usage. Switches that meet these requirements are called standard MIB devices.

Table 5-6: Requirements for devices that support standard MIB56

Usage	Requirements
Equipment data collection (Required)	Retrieve the following objects of RFC1213 (Management Information Base for Network Management of TCP/IP-based internets). ・SysDescr ・SysName
Interface data collection (optional)	Retrieve the following objects of RFC1213 (Management Information Base for Network Management of TCP/IP-based internets). ・IfIndex ・IfDescr ・IfType ・IfMtu ・IfPhysAddress ・IfAdminStatus ・IfOperStatus ・IfInOctets*2 ・IfOutOctets*2 Retrieve the following objects of RFC2233 (The Interfaces Group MIB using SMIv2). ・IfName ・IfHCInOctets*2 ・IfHCOutOctets*2 ・IfHighSpeed ・IfAlias
ARP data collection (optional)	Retrieve the following objects of RFC4293 (Management Information Base for the Internet Protocol (IP)). ・IpNetToMediaPhysAddress
NDP data collection (optional)	Retrieve the following objects of RFC2465 (Management Information Base for IP Version 6:Textual Conventions and General Group). ・Ipv6NetToMediaPhysAddress*1
ARP/NDP data collection (optional)	Retrieve the following objects of RFC4293 (Management Information Base for the Internet Protocol (IP)). ・IpNetToPhysicalPhysAddress*1
MAC addressing data collection (optional)	Retrieve the following objects of RFC1493 or RFC4188 (Definitions of Managed Objects for Bridges). ・Dot1dTpFdbPort
	Retrieve the following objects of RFC2674 or RFC4363 (Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions). ・Dot1qTpFdbPort
LLDP data collection (optional)	Retrieve any of the following objects. IEEE Std 802.1AB-2005 LLDP-MIB ・LldpRemChassisId ・LldpRemChassisIdSubype ・LldpRemPortDesc ・LldpLocPortDesc

Usage	Requirements
	IEEE Std 802.1AB-2009 LLDP-V2-MIB ・LldpV2RemChassisId ・LldpV2RemChassisIdSubype ・LldpV2RemPortDesc
	Axslldp of ALAXALA products ・AxslldpRemRemoteChassis ・AxslldpRemPortDesc
VLAN data collection (optional)	Retrieve the following objects of RFC2674 or RFC4363 (Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions). ・Dot1qVlanStaticEgressPorts ・Dot1qVlanStaticUntaggedPorts
Collecting route data (optional)	Retrieve any of the following objects: RFC1354 (IP Forwarding Table MIB) ・IpForwardMask
	RFC1354 (IP Forwarding Table MIB) ・IpCidrRouteTable
	RFC1213 (Management Information Base for Network Management of TCP/IP-based internets:MIB-II) ・IpRouteMask ・IpRouteNextHop
Sending traps (optional)	Send the link up/link down traps of the physical ports of RFC2233 (The Interfaces Group MIB using SMIv2).

*1: IPv6 link-local addresses are not collected.
*2: Need to support either of the following combinations:
ifInOctets and ifOutOctets, or ifHCInOctets and ifHCOutOctets

5.3.3 Requirements for standard MIB devices (VLAN Communities)

5.3.2

Table 5-7: Requirements for devices that support standard MIB (per-community VLAN)57

Usage	Requirements
Equipment data collection (Required)	Retrieve the following objects of RFC1213 (Management Information Base for Network Management of TCP/IP-based internets). ・SysDescr ・SysName
Interface data collection (optional)	Retrieve the following objects of RFC1213 (Management Information Base for Network Management of TCP/IP-based internets). ・IfIndex ・IfDescr ・IfType ・IfMtu ・IfPhysAddress ・IfAdminStatus ・IfOperStatus ・IfInOctets※2 ・IfOutOctets※2 Retrieve the following objects of RFC2233 (The Interfaces Group MIB using SMIv2). ・IfName ・IfHCInOctets※2 ・IfHCOutOctets※2 ・IfHighSpeed ・IfAlias
ARP data collection (optional)	Retrieve the following objects of RFC4293 (Management Information Base for the Internet Protocol (IP)). ・IpNetToMediaPhysAddress
NDP data collection (optional)	Retrieve the following objects of RFC2465 (Management Information Base for IP Version 6:Textual Conventions and General Group) ・Ipv6NetToMediaPhysAddress*1
ARP/NDP data collection (optional)	Retrieve the following objects of RFC4293 (Management Information Base for the Internet Protocol (IP)). ・IpNetToPhysicalPhysAddress※1
MAC address data collection (optional)	Retrieve the following objects of RFC1493 or RFC4188 (Definitions of Managed Objects for Bridges). ・Dot1dTpFdbPort When obtaining the above-mentioned object for each VLAN, the SNMP community name must be as follows: ・<SNMP community-name>@<VLAN ID>
LLDP data collection (optional)	Retrieve any of the following objects: IEEE Std 802.1AB-2005 LLDP-MIB ・LldpRemChassisId ・LldpRemChassisIdSubtype ・LldpRemPortDesc ・LldpLocPortDesc
	IEEE Std 802.1AB-2009 LLDP-V2-MIB ・LldpV2RemChassisId ・LldpV2RemChassisIdSubtype ・LldpV2RemPortDesc

Usage	Requirements
VLAN data collection (optional)	Retrieve the following objects of CISCO-VTP-MIB. ・VtpVlanState ・VlanTrunkPortVlansEnabled ・VlanTrunkPortVlansEnabled2k ・VlanTrunkPortVlansEnabled3k ・VlanTrunkPortVlansEnabled4k ・VlanTrunkPortNativeVlan Retrieve the following objects of CISCO-VLAN-MEMBERSHIP-MIB. ・VmVlan
Route data collection (optional)	Retrieve any of the following objects: RFC1354(IP Forwarding Table MIB) ・IpForwardMask
	RFC1354(IP Forwarding Table MIB) ・IpCidrRouteTable
	RFC1213 (Management Information Base for Network Management of TCP/IP-based internets:MIB-II) ・IpRouteMask ・IpRouteNextHop
Sending traps (optional)	Send the link up/link down traps of the physical ports of RFC2233 (The Interfaces Group MIB using SMIv2).

*1: IPv6 link-local addresses are not collected.
*2: Need to support either of the following combinations:
ifInOctets and ifOutOctets, or ifHCInOctets and ifHCOutOctets

5.3.4 Requirements for wireless LAN controllers

A switch that meets the following conditions can be used as a managed device. Switches that meet these requirements are called Wireless LAN Controllers (WLC).

Table 5-8 Requirements for wireless LAN controllers (Aruba-1) 58

Usage	Requirements
Equipment data collection (Required)	Retrieve the following objects of RFC1213 (Management Information Base for Network Management of TCP/IP-based internets). ・SysDescr ・SysName
WLC data collection (Required)	Retrieve the following objects. ・WlsxUserAllInfoGroup ・WlsxWlanAccessPointInfoGroup
Interface data collection (optional)	Retrieve the following objects of RFC1213 (Management Information Base for Network Management of TCP/IP-based internets). ・IfIndex ・IfDescr ・IfType ・IfMtu ・IfPhysAddress ・IfAdminStatus ・IfOperStatus ・IfInOctets※2 ・IfOutOctets※2 Retrieve the following objects of RFC2233 (The Interfaces Group MIB using SMIv2). ・IfName ・IfHCInOctets※2 ・IfHCOutOctets※2 ・IfHighSpeed ・IfAlias
ARP data collection (optional)	Retrieve the following objects of RFC4293 (Management Information Base for the Internet Protocol (IP)). ・IpNetToMediaPhysAddress
NDP data collection (optional)	Retrieve the following objects of RFC2465 (Management Information Base for IP Version 6:Textual Conventions and General Group) ・Ipv6NetToMediaPhysAddress*1
ARP/NDP data collection (optional)	Retrieve the following objects of RFC4293 (Management Information Base for the Internet Protocol (IP)). ・IpNetToPhysicalPhysAddress※1
MAC address data collection (optional)	Retrieve the following objects of RFC1493 or RFC4188 (Definitions of Managed Objects for Bridges). ・Dot1dTpFdbPort
	Retrieve the following objects of RFC2674 or RFC4363 (Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions). ・Dot1qTpFdbPort
LLDP data collection (optional)	Retrieve any of the following objects: IEEE Std 802.1AB-2005 LLDP-MIB ・LldpRemChassisId ・LldpRemChassisIdSubtype ・LldpRemPortDesc ・LldpLocPortDesc

Usage	Requirements
	IEEE Std 802.1AB-2009 LLDP-V2-MIB ・LldpV2RemChassisId ・LldpV2RemChassisIdSubtype ・LldpV2RemPortDesc
	Axslldp of ALAXALA products ・AxslldpRemRemoteChassis ・AxslldpRemPortDesc
VLAN data collection (optional)	Retrieve the following objects of RFC2674 or RFC4363 (Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions). ・Dot1qVlanStaticEgressPorts ・Dot1qVlanStaticUntaggedPorts
Sending traps (optional)	Send the link up/link down traps of the physical ports of RFC2233 (The Interfaces Group MIB using SMIv2).

*1: IPv6 link-local addresses are not collected.
*2: Need to support either of the following combinations:
ifInOctets and ifOutOctets, or ifHCInOctets and ifHCOutOctets

Table 5-9 Requirements for wireless LAN controllers (Cisco-1) 59

Usage	Requirements
Equipment data collection (Required)	Retrieve the following objects of RFC1213 (Management Information Base for Network Management of TCP/IP-based internets) ・SysDescr ・SysName
WLC data collection (Required)	Support the following objects. ・BsnEss ・BsnAP
Interface data collection (optional)	Retrieve the following objects of RFC1213 (Management Information Base for Network Management of TCP/IP-based internets). ・IfIndex ・IfDescr ・IfType ・IfMtu ・IfPhysAddress ・IfAdminStatus ・IfOperStatus ・IfInOctets※2 ・IfOutOctets※2 Retrieve the following objects of RFC2233 (The Interfaces Group MIB using SMIv2). ・IfName ・IfHCInOctets※2 ・IfHCOutOctets※2 ・IfHighSpeed ・IfAlias
ARP data collection (optional)	Retrieve the following objects of RFC4293 (Management Information Base for the Internet Protocol (IP)). ・IpNetToMediaPhysAddress
NDP data collection (optional)	Retrieve the following objects of RFC2465 (Management Information Base for IP Version 6:Textual Conventions and General Group). ・Ipv6NetToMediaPhysAddress※1

Usage	Requirements
ARP/NDP data collection (optional)	Retrieve the following objects of RFC4293 (Management Information Base for the Internet Protocol (IP)). ・IpNetToPhysicalPhysAddress*1
MAC address data collection (optional)	Retrieve the following objects of RFC1493 or RFC4188 (Definitions of Managed Objects for Bridges). ・Dot1dTpFdbPort
	Retrieve the following objects of RFC2674 or RFC4363 (Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions). ・Dot1qTpFdbPort
LLDP data collection (optional)	Retrieve the following objects: IEEE Std 802.1AB-2005 LLDP-MIB ・LldpRemChassisId ・LldpRemChassisIdSubtype ・LldpRemPortDesc ・LldpLocPortDesc
	IEEE Std 802.1AB-2009 LLDP-V2-MIB ・LldpV2RemChassisId ・LldpV2RemChassisIdSubtype ・LldpV2RemPortDesc
	Axslldp of ALAXALA products ・AxslldpRemRemoteChassis ・AxslldpRemPortDesc
VLAN data collection (optional)	Retrieve the following objects of RFC2674 or RFC4363 (Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions). ・Dot1qVlanStaticEgressPorts ・Dot1qVlanStaticUntaggedPorts
Sending traps (optional)	Send the link up/link down traps of the physical ports of RFC2233 (The Interfaces Group MIB using SMIv2).

*1: IPv6 link-local addresses are not collected.
*2: Need to support either of the following combinations: ifInOctets and ifOutOctets, or ifHCInOctets and ifHCOutOctets.

Table 5-10 Requirements for Wireless LAN controllers (Fortinet-1)510

Usage	Requirements
Equipment data collection (Required)	Retrieve the following objects of RFC1213 (Management Information Base for Network Management of TCP/IP-based internets). ・SysDescr ・SysName
WLC data collection (Required)	Support the following objects. ・MwConfigAp ・MwConfigStation

Usage	Requirements
Interface data collection (optional)	Retrieve the following objects of RFC1213 (Management Information Base for Network Management of TCP/IP-based internets). ・IfIndex ・IfDescr ・IfType ・IfMtu ・IfPhysAddress ・IfAdminStatus ・IfOperStatus ・IfInOctets※2 ・IfOutOctets※2 Retrieve the following objects of RFC2233 (The Interfaces Group MIB using SMIv2). ・IfName ・IfHCInOctets※2 ・IfHCOutOctets※2 ・IfHighSpeed ・IfAlias
ARP data collection (optional)	Retrieve the following objects of RFC4293 (Management Information Base for the Internet Protocol (IP)). ・IpNetToMediaPhysAddress
NDP data collection (optional)	Retrieve the following objects of RFC2465 (Management Information Base for IP Version 6:Textual Conventions and General Group). ・Ipv6NetToMediaPhysAddress*1
ARP/NDP data collection (optional)	Retrieve the following objects of RFC4293 (Management Information Base for the Internet Protocol (IP)). ・IpNetToPhysicalPhysAddress*1
MAC address data collection (optional)	Retrieve the following objects of RFC1493 or RFC4188 (Definitions of Managed Objects for Bridges). ・Dot1dTpFdbPort
	Retrieve the following objects of RFC2674 or RFC4363 (Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions). ・Dot1qTpFdbPort
LLDP data collection (optional)	Retrieve the following objects: IEEE Std 802.1AB-2005 LLDP-MIB ・LldpRemChassisId ・LldpRemChassisIdSubtype ・LldpRemPortDesc ・LldpLocPortDesc
	IEEE Std 802.1AB-2009 LLDP-V2-MIB ・LldpV2RemChassisId ・LldpV2RemChassisIdSubtype ・LldpV2RemPortDesc
	Axslldp of ALAXALA products ・AxslldpRemRemoteChassis ・AxslldpRemPortDesc
VLAN data collection (optional)	Retrieve the following objects of RFC2674 or RFC4363 (Definitions of Managed Objects for Bridges with Traffic Classes, Multicast Filtering and Virtual LAN Extensions). ・Dot1qVlanStaticEgressPorts ・Dot1qVlanStaticUntaggedPorts

Usage	Requirements
Sending traps (optional)	Send the link up/link down traps of the physical ports of RFC2233 (The Interfaces Group MIB using SMIv2).

*1: IPv6 link-local addresses are not collected.

*2: Need to support either of the following combinations: ifInOctets and ifOutOctets, or ifHCInOctets and ifHCOutOctets.

5.3.5 Devices and supported features

The list below shows the devices that can be managed by AX-Network-Manager and supported features.

(1) Devices supporting front panel display

The following devices support front panel display.

Table 5-11: Devices supporting front panel display511

Supported Devices		Models and Packages	
AX8600S・AX8300S series	AX8600S	AX8608S	NL1G-12T
		AX8616S	NL1G-12S
		AX8632S	NL1GA-12S
		BCU-1S	NLXG-6RS
		BCU-2S	NLXGA-12RS
		PSU-11	NLXLG-4Q
		PSU-12	NLCG-1Q
		PSU-21	NMCG-1C
		PSU-22	PS-A21
		PSU-23	PS-D21
	AX8300S	AX8304S	NL1G-12T
		AX8308S	NL1G-12S
		BCU-ES	NL1GA-12S
		BCU-FS	NL1G-24T
		PSU-C1	NL1G-24S
		PSU-C2	NLXG-6RS
		PSU-E1A	NLXGA-12RS
		PSU-E2A	NLXLG-4Q
		PSU-E1	NLCG-1Q
		PSU-E2	PS-A42
			PS-D42
AX4600S Series	AX4630S	AX4630S-4M NA1G-24T NA1G-24S NAXG-24RS NAXLG-6Q	
AX3800S Series	AX3830S	AX3830S-32X4QW AX3830S-44XW AX3830S-44X4QW AX3830S-44X4QS	
AX3600S Series	AX3660S	AX3660S-24T4X AX3660S-24T4XW AX3660S-16S4XW AX3660S-24S8XW AX3660S-48T4XW AX3660S-48XT4QW AX3660S-24X4QW AX3660S-48X4QW	
	AX3650S *1	AX3650S-24T6XW AX3650S-20S6XW AX3650S-48T4XW	
AX2600S Series-	AX2630S	AX2630S-24T4XW AX2630S-24P4XW AX2630S-48T4XW AX2630S-48P4XW	
AX2500S Series-	AX2530SE	AX2530SE-24T AX2530SE-24T4X AX2530SE-24S4X AX2530SE-48T AX2530SE-48T2X	

Supported Devices		Models and Packages
	AX2530S	AX2530S-24T AX2530S-24TD AX2530S-24T4X AX2530S-24S4X AX2530S-24S4XD AX2530S-48T AX2530S-48TD AX2530S-48T2X AX2530S-48P2X AX2530S-08P AX2530S-08PD1 AX2530S-08PD2 AX2530S-08TC1 AX2530S-16P4X
AX2300S Series	AX2340S	AX2340S-24T4X AX2340S-24P4X AX2340S-48T4X AX2340S-48P4X AX2340S-16P8MP2X AX2340S-24TH4X AX2340S-24PH4X
AX2200S Series	AX2230S	AX2230S-24T AX2230S-24P
AX2100S Series	AX2130S	AX2130S-16T AX2130S-16P AX2130S-24T AX2130S-24TH AX2130S-24P AX2130S-24PH
AXprimoM210 Series-	AXprimoM210	AXprimoM210-08T AXprimoM210-08P
AX260A Series-	AX260A	AX260A-08T AX260A-08TF
AX-Traffic Optimizer series-	AX-Traffic Optimizer	AX-Traffic Optimizer
AX-Sensor Series-	AX-Sensor	AX-Sensor-08T AX-Sensor-08T2X AX-Sensor-08TL
AX620R Series	AX620R	AX620R-2105 AX620R-2106 AX620R-2025 AX620R-2215 AX620R-3110 AX620R-3315

*1: AX3650S is supported on Ver.11.10 and later.

(2) Devices capable of L2 loop detection

The following devices support L2 loop detection.

Tabular 5-12 Devices capable of L2 loop detection512

Supported Devices	
AX8600S・AX8300S Series	AX8600S
	AX8300S
AX4600S Series	AX4630S
AX3800S Series	AX3830S
AX3600S Series	AX3660S
	AX3650S
	AX3640S
AX2600S Series-	AX2630S
AX2500S Series-	AX2530SE
	AX2530S
AX2300S Series	AX2340S
AX2200S Series	AX2230S
AX2100S Series	AX2130S
AX1200S Series	AX1250S
	AX1240S
AX260A Series-	AX260A

(3) Devices capable of storm detection

The following devices support storm detection.

Table 5-13 Devices capable of storm detection513

Supported Devices	
AX8600S・AX8300S Series	AX8600S
	AX8300S
AX4600S Series	AX4630S
AX3800S Series	AX3830S
AX3600S Series	AX3660S
	AX3650S
	AX3640S
AX2600S series-	AX2630S
AX2500S series-	AX2530SE
	AX2530S
AX2300S Series	AX2340S
AX2200S Series	AX2230S
AX2100S Series	AX2130S
AX1200S Series	AX1250S
	AX1240S
AX260A series-	AX260A

(4) Devices capable of congestion management

The following devices support congestion management.

Table 5-14 Devices capable of congestion managements514

Supported Devices	
AX4600S Series	AX4630S
AX3800S Series	AX3830S
AX3600S Series	AX3660S
	AX3650S
	AX3640S
AX2600S series-	AX2630S
AX2500S series-	AX2530SE
	AX2530S
AX2300S Series	AX2340S
AX260A series-	AX260A

(5) Devices capable of stack switching monitoring

The following devices support stack switching monitoring.

Table 5-15 Devices capable of stack switching monitoring515

Supported Devices	
AX2600S Series-	AX2630S *1
AX2500S Series-	AX2530SE
	AX2530S
AX260A Series-	AX260A

*1: Supported by software version Ver.2.2 (after October 2022)

(6) Web terminal

When SSH is used as a protocol, the following devices automatically change the command-entry mode to the administrator mode.

Tabular 5-16 Web terminal (change to administrator mode) compatible devices516

Supported Devices	
AX8600S・AX8300S Series	AX8600S
	AX8300S
AX4600S Series	AX4630S
AX3800S Series	AX3830S
AX3600S Series	AX3660S
	AX3650S
	AX3640S
AX2600S series-	AX2630S
AX2500S series-	AX2530SE
	AX2530S
AX2300S Series	AX2340S
AX2200S Series	AX2230S
AX2100S Series	AX2130S
AX1200S Series	AX1250S
	AX1240S
AX260A Series-	AX260A
AX-Traffic Optimizer Series-	AX-Traffic Optimizer

(7) Devices capable of route management

The following devices support route management:

Table 5-17 Devices capable of route management517

Supported Devices	
AX8600S・AX 8300S Series	AX8600S
	AX8300S
AX4600S Series	AX4630S
AX3800S Series	AX3830S
AX3600S Series	AX3660S
	AX3650S
	AX3640S
AX-Sensor Series-	AX-Sensor
AX620R Series	AX620R-3315 AX620R-3110 AX620R-2215 AX620R-2106 AX620R-2105 AX620R-2025
*1 Standard MIB devices	AX6700S, AX6600S, AX6300S In addition to ALAXALA products, third-party products are also available.
Standard MIB devices (VLAN community) *1	Cisco SW

*1: Refer to the switches satisfying the route data collection requirements described in 5.3.2 Requirements for standard MIB devices and 5.3.3 Requirements for standard MIB devices (community VLAN).5.3.2Requirements for standard MIB5.3.3Requirements for standard MIB devices (VLAN Communities)

(8) Devices capable of VXLAN management

The following devices are capable of VXLAN management.

Tabular 5-18 Devices capable of VXLAN management518

Supported Devices	
AX4600S Series	AX4630S
AX3600S Series	AX3660S

(9) Devices capable of configuration management and template management

The following devices are capable of configuration management and template management.

Table 5-19 Devices capable of managing configurations and templates519

Supported Devices	
AX8600S・AX8300S Series	AX8600S
	AX8300S
AX4600S Series	AX4630S
AX3800S Series	AX3830S
AX3600S Series	AX3660S
	AX3650S
	AX3640S
AX2600S Series-	AX2630S
AX2500S Series-	AX2530SE
	AX2530S
AX2300S Series	AX2340S
AX2200S Series	AX2230S
AX2100S Series	AX2130S
AXprimoM210 Series-	AXprimoM210
AX1200S Series	AX1250S
	AX1240S
AX260A Series-	AX260A
AX-Traffic Optimizer Series-	AX-Traffic Optimizer
AX-Sensor Series-	AX-Sensor
AX620R Series	AX620R-3315
	AX620R-3110
	AX620R-2215
	AX620R-2106
	AX620R-2105
	AX620R-2025
*1 Standard MIB devices	AX6700S, AX6600S, AX6300S In addition to ALAXALA products, third-party products are also available.
Standard MIB devices (VLAN community) *1	Cisco SW
Wireless LAN Controllers *1	Switches satisfying the requirements described in 5.3.4Requirements for wireless LAN controllers

*1: Support script setting to manage configuration and templates.

(10) Devices capable of software management

The following devices support software management.

Table 5-20 Devices capable of software management520

Supported Devices		Supported Software version
AX8600S・AX8300S Series	AX8600S	Ver.12.7.B or later
	AX8300S	Ver.12.7.B or later
AX4600S Series	AX4630S	Not specified
AX3800S Series	AX3830S	Ver.11.14.L or later
AX3600S Series	AX3660S	Not specified
	AX3650S	Ver.11.14.L or later
	AX3640S	Not specified
AX2600S Series-	AX2630S	Not specified
AX2500S Series-	AX2530SE	Not specified
	AX2530S	Not specified
AX2300S Series	AX2340S	Not specified
AX2200S Series	AX2230S	Not specified
AX2100S Series	AX2130S	Not specified
AXprimoM210 Series-	AXprimoM210	Not specified
AX1200S Series	AX1250S	Not specified
	AX1240S	Not specified
AX260A Series-	AX260A	Not specified
AX-Traffic Optimizer Series-	AX-Traffic Optimizer	Ver.1.1 or later
AX-Sensor Series-	AX-Sensor	Ver.1.7 or later
AX620R Series	AX620R-3315	Not specified
	AX620R-3110	Ver.9.5.13 or later
	AX620R-2215	Ver.9.5.13 or later
	AX620R-2106	Not specified
	AX620R-2105	Ver.9.5.13A or later
	AX620R-2025	Ver.9.5.13 or later

(11) Devices capable of backup management

The following table lists the devices that support backup management, and the software versions that support device replacement by zero-touch provisioning.

Table 5-21 Devices capable of backup management521

Supported Devices		Software Version for Zero-Touch Provisioning
AX2600S Series-	AX2630S	Not specified
AX2500S Series-	AX2530SE	Ver.4.15 or later
	AX2530S	
AX2300S Series	AX2340S	Not specified
AX2100S Series	AX2130S	Ver.2.11 or later
AXprimoM210 Series-	AXprimoM210	Ver.1.2.3.3 or later
AX260A Series-	AX260A	Ver.4.15 or later

(12) Serial information management compatible devices

The following devices support serial information management.

Table 5-22 Devices capable of serial management522

Supported Devices	
AX8600S・AX8300S series	AX8600S
	AX8300S
AX4600S Series	AX4630S
AX3800S Series	AX3830S
AX3600S Series	AX3660S
	AX3650S
	AX3640S
AX2600S Series-	AX2630S
AX2500S Series-	AX2530SE
	AX2530S
AX2300S Series	AX2340S
AX2200S Series	AX2230S
AX2100S Series	AX2130S
AXprimoM210 Series-	AXprimoM210
AX1200S Series	AX1250S
	AX1240S
AX260A Series-	AX260A
AX-Traffic Optimizer Series-	AX-Traffic Optimizer
AX-Sensor Series-	AX-Sensor
AX620R Series	AX620R-3315
	AX620R-3110
	AX620R-2215
	AX620R-2106
	AX620R-2105
	AX620R-2025
*1 Standard MIB devices	AX6700S AX6600S AX6300S In addition to ALAXALA products, third-party products are also available.
Standard MIB devices (VLAN community) *1	Cisco SW
Wireless LAN Controllers *1	Switches satisfying the requirements described in 5.3.4Requirements for wireless LAN controllers

*1: Support script setting to manage configuration and templates.

(13) Devices capable of web management data distribution

The following devices are capable of web management data distribution.

Tabular 5-23 Devices capable of web management data distribution523

Supported Devices	
AX4600S Series	AX4630S
AX3800S Series	AX3830S
AX3600S Series	AX3660S
	AX3650S
	AX3640S
AX2600S Series-	AX2630S
AX2500S Series-	AX2530SE
	AX2530S
AX2300S Series	AX2340S
AX2200S Series	AX2230S
AX2100S Series	AX2130S
AX1200S Series	AX1250S
	AX1240S
AX260A Series-	AX260A

(14) Devices capable of filter management

The following devices are capable of filter management.

Table 5-24 Devices capable of filter management524

Supported Devices		Collection of filter data counters
AX 8600 S・AX 8300 S series	AX8600S	✓
	AX8300S	✓
AX4600S Series	AX4630S	✓*1
AX3800S Series	AX3830S	✓*1
AX3600S Series	AX3660S	✓*2
	AX3650S	✓*1
	AX3640S	✓
AX2600S series-	AX2630S	✓*1
AX2500S series-	AX2530SE	NA
	AX2530S	NA
AX2300S Series	AX2340S	✓
AX2200S Series	AX2230S	NA
AX2100S Series	AX2130S	NA
AX1200S Series	AX1250S	NA
	AX1240S	NA
AX260A series-	AX260A	NA

*1: Filter data counters are not collected in a stack configuration.

*2: In a stack configuration, filter data counters are collected when the device software version is Ver.12.1.T or later.

(15) Devices capable of QoS control

The following devices are capable of QoS control.

Table 5-25 Devices capable of QoS control525

Supported Devices		Collection of filter data counters
AX8600S・AX8300S Series	AX8600S	✓
	AX8300S	✓
AX4600S Series	AX4630S	✓*1
AX3800S Series	AX3830S	✓*1
AX3600S Series	AX3660S	✓*2
	AX3650S	✓*1
	AX3640S	✓
AX2600S Series-	AX2630S	✓*1
AX2500S Series-	AX2530SE	NA
	AX2530S	NA
AX2300S Series	AX2340S	✓
AX2200S Series	AX2230S	NA
AX2100S Series	AX2130S	NA
AX1200S Series	AX1250S	NA
	AX1240S	NA
AX260A series-	AX260A	NA

*1: QoS data counters are not collected in a stack configuration.

*2: In a stack configuration, QoS data counters are collected when the device software version is Ver.12.1.T or later.

(16) Devices capable of port mirroring management

The following devices are capable of port mirroring management.

Table 5-26 Devices capable of port mirroring management526

Supported Devices	
AX8600S・AX8300 S Series	AX8600S
	AX8300S
AX4600S Series	AX4630S
AX3800S Series	AX3830S
AX3600S Series	AX3660S
	AX3650S
	AX3640S
AX2600S Series-	AX2630S
AX2500S Series-	AX2530SE
	AX2530S
AX2300S Series	AX2340S
AX2200S Series	AX2230S
AX2100S Series	AX2130S
AX1200S Series	AX1250S
	AX1240S
AX260A Series-	AX260A

5.3.6 Network requirements for switch replacement using Zero-Touch Provisioning features

There are two types of requirements: (1) using a new device in its initial state of purchase, and (2) presetting configurations on a spare device.(1)(2)

In either case, the functions such as stacking and SML cannot be used with the zero-touch provisioning features. Refer to the manual of the device for details.

(1) Using a new device in its initial state of purchase

If the network is designed to meet the following requirements, you can immediately replace with a new device in its original state of purchase.

1. Use the AX-Network-Manager of a device to be replaced

Keep alive the communication with the AX-Network-Manager of a device to be replaced in the default configuration

Do not use the features disabled in the default configuration (e.g., link aggregation). It is required that the device can communicate with AX-Network-Manager in the untagged default VLAN (interface vlan 1).

When terminal devices use DHCP, the network must be separated

When terminal devices use DHCP under the device to be replaced with, network separation by VLAN is required to prevent the terminal devices from forwarding its DHCP packets to the AX-Network-Manager. AX-Network-Manager cannot handle DHCP packets sent from the terminal devices.

2. Enable DHCP relay on the L3 switches/routers for the AX-Network-Manager

If a device to be replaced is not on the same network as AX-Network-Manager, configure DHCP relay on the L3 switch/router for the AX-Network-Manager of the device. Then, forward DHCP packets to the AX-Network-Manager.

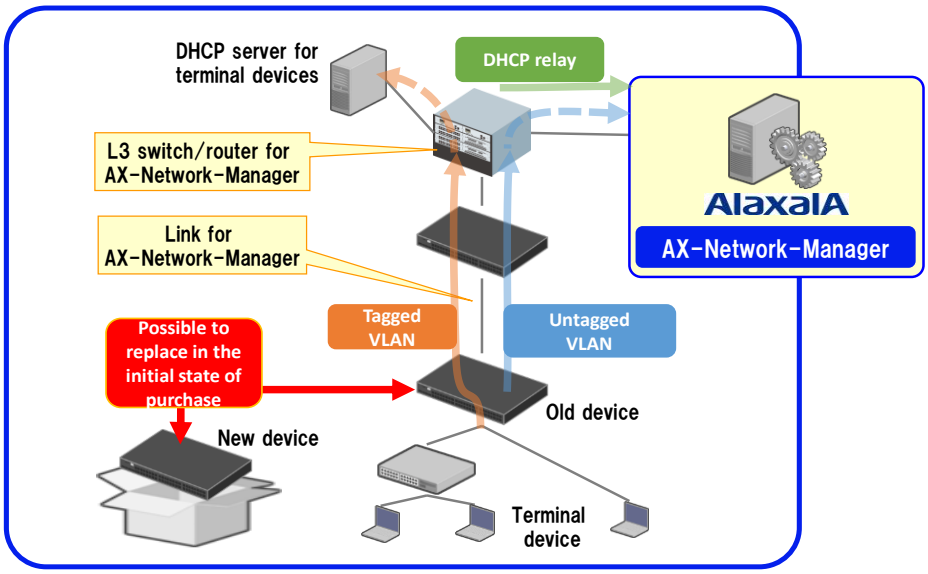


Figure 5-2 Example of a network that allows a replacement with a new device in its initial state of purchase52

(2) Presetting configurations on a spare device

Even if the above requirements cannot be satisfied, you can replace a current device by using the zero touch provisioning function from a spare device (make sure to preset a minimal configuration on the spare device).

If there are two or more devices to be replaced, you can reduce the configuration patterns and spare devices by establishing sharable links for AX-Network-Manager.
The network requirements are shown below.

1. Use the AX-Network-Manager of a device to be replaced

Set configurations that allow communication with AX-Network-Manager on a spare device

Even when using a VLAN with link aggregation or tagging, preset the following configurations on a device to be used as a spare:

- configuration that allows communication with AX-Network-Manager (e.g., set **`ip address dhcp`*** `for` **`interface vlan`** on AXprimoM210, and **`interface vlan`*** for other AX devices)
- configuration that allows zero-touch provisioning (e.g., set **`ip dhcp dynamic-provision`*** for AXprimoM210, and **`system zero-touch-provisioning`**/**`system zero-touch-provisioning vlan`*** for other AX devices).

*: For the setting information, refer to the manual of the device.

When terminal devices use DHCP, the network must be separated

When terminal devices use DHCP under the device to be replaced with, network separation by VLAN is required to prevent the terminal devices from forwarding its DHCP packets to the AX-Network-Manager. AX-Network-Manager cannot handle DHCP packets sent from the terminal devices.

2. Enable DHCP relay on the L3 switches/routers for the AX-Network-Manager

If a device to be replaced is not on the same network as AX-Network-Manager, configure DHCP relay on the L3 switch/router for the AX-Network-Manager of the device. Then, forward DHCP packets to the AX-Network-Manager.

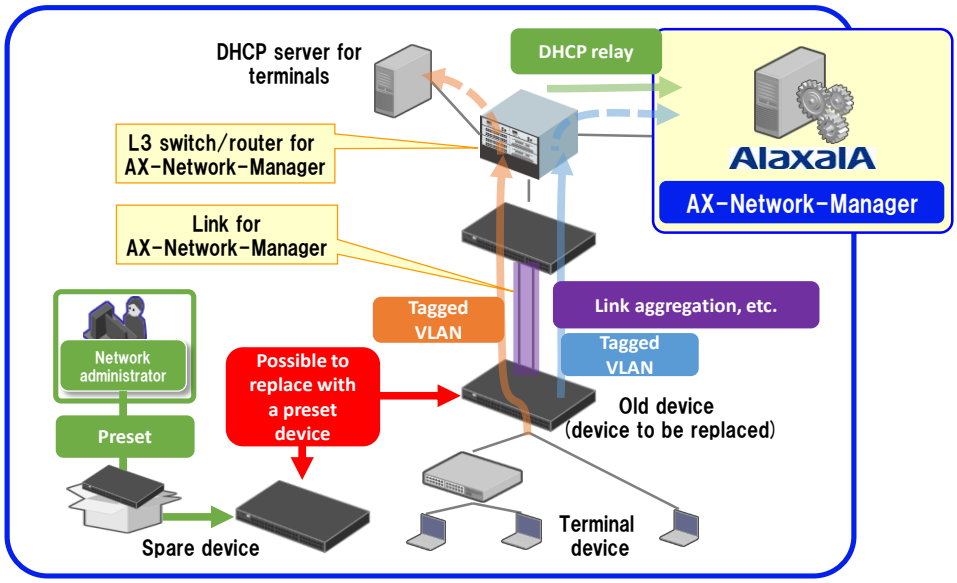


Figure 5-3 Example of a network in which configurations are preset on a spare device before replacement 53

[Issue]
October 2019 (Ver.1.0 rev. 1)
February 2020 (Ver.1.1 rev. 2)
June 2020 (Ver.1.2 rev. 3)
September 2020 (Ver.1.3 rev. 4)
October 2020 (Ver.1.3 rev. 5)
January 2021 (Ver.1.4 rev. 6)
April 2021 (Ver.1.5 rev. 7)
May 2021 (Ver.1.5.A rev. 8)
October 2021 (Ver.1.6 rev. 9)
April 2022 (Ver.1.7 rev. 10)
October 2022 (Ver.1.8 rev. 11)

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