AX6700S
AX6600S
AX6300S

AX6700S/AX6600S/AX6300S
Software Manual Corrections
(For Version 11.7 and later)

AlaxalA

■ Preface

   This document contains corrections that have been made to the AX6700S/AX6600S/AX6300S software manuals (All Rights Reserved, Copyright(C), 2006, 2012, ALAXALA Networks, Corp.). When you read a manual listed in the following table, please also read this document. The table below lists the software manuals to which the corrections in this document apply.

No.	Manual name	Manual number	Editions history
1	AX6700S/AX6600S/AX6300S Software Manual Configuration Guide Vol. 1 (for Version 11.7)	AX63S-S001X-C0	January 2012
2	AX6700S/AX6600S/AX6300S Software Manual Configuration Guide Vol. 2 (for Version 11.7)	AX63S-S002X-C0	January 2012
3	AX6700S/AX6600S/AX6300S Software Manual Configuration Guide Vol. 3 (for Version 11.7)	AX63S-S003X-C0	January 2012
4	AX6700S/AX6600S/AX6300S Software Manual Configuration Command Reference Vol. 1 (for Version 11.7)	AX63S-S004X-C0	January 2012
5	AX6700S/AX6600S/AX6300S Software Manual Configuration Command Reference Vol. 2 (for Version 11.7)	AX63S-S010X-30	January 2012
6	AX6700S/AX6600S/AX6300S Software Manual Configuration Command Reference Vol.3 (for Version 11.7)	AX63S-S005X-C0	January 2012
7	AX6700S/AX6600S/AX6300S Software Manual Operation Command Reference Vol. 1 (for Version 11.7)	AX63S-S006X-C0	January 2012
8	AX6700S/AX6600S/AX6300S Software Manual Operation Command Reference Vol. 2 (for Version 11.7)	AX63S-S011X-30	January 2012
9	AX6700S/AX6600S/AX6300S Software Manual Operation Command Reference Vol. 3 (for Version 11.7)	AX63S-S007X-C0	January 2012
10	AX6700S/AX6600S/AX6300S Software Manual Message and Log Reference (for Version 11.7)	AX63S-S008X-C0	January 2012
11	AX6700S/AX6600S/AX6300S Software Manual MIB Reference (for Version 11.7)	AX63S-S009X-C0	January 2012

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■ Editions history
April 26, 2013 (Edition 5)

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History of Amendments

Changes in Edition 5

Item	Changes
1. Configuration Guide Vol. 1 (For Version 11.7) (AX63S-S001X-C0)	3.2.9 High Reliability Based on Network Failure Detection [Change]
	3.2.10 Managing information about neighboring devices (LLDP/OADP) [Change]
8. Operation Command Reference Vol. 2 (For Version 11.7) (AX63S-S011X-30)	[11] show gsrp [Change]
9. Operation Command Reference Vol.3 (For Version 11.7) (AX63S-S007X-C0)	[9] traceroute ipv6 [Change]

Changes in Edition 4

Item	Changes
3. Configuration Guide Vol. 3 (For Version 11.7) (AX63S-S003X-C0)	14.4.4 PIM-DM [Change]
7. Operation Command Reference Vol. 1 (For Version 11.7) (AX63S-S006X-C0)	[9] show tech-support [Change]
11. MIB Reference (For Version 11.7) (AX63S-S009X-C0)	2.20.2 dot3adAggPort group [Change]

Changes in Edition 3

Item	Changes
1. Configuration Guide Vol. 1 (For Version 11.7) (AX63S-S001X-C0)	3.2.4 Layer 2 switching [Change]
	3.2.11 Forwarding IPv4 and IPv6 packets [Change]
	3.4.4 Layer 2 switching [Change]
	3.4.11 Forwarding IPv4 and IPv6 packets [Change]
	3.6.4 Layer 2 switching [Change]
	3.6.11 Forwarding IPv4 and IPv6 packets [Change]
	11.2.1 Lists of configuration commands and operation commands [Change]
	11.3.3 Procedure for using a backup/restore command during BCU/CSU/MSU single operation [Change]
	16.3.4 LACP monitoring functionality [Addition]
	16.4.5 Configuring LACP monitoring functionality [Addition]
	19.2.1 List of configuration commands [Change]
	25.1.2 Policy-based switching group [Addition] [Change]
	25.1.6 Tracking functionality for policy-based switching [Addition]
	25.2.1 List of configuration commands [Change]
	25.2.2 Configuring policy-based switching [Addition]
	25.3.1 List of operation commands [Change]
	25.3.2 Checking policy-based switching [Change]
2. Configuration Guide Vol. 2 (For Version 11.7) (AX63S-S002X-C0)	1.1.7 Notes on using the filter [Change]
	4.2.1 List of configuration commands [Change]
	5.1.4 Notes on using flow detection [Addition]
	5.6.3 Checking DSCP updating when non-compliance occurs in minimum monitoring bandwidth [Change]
	5.6.4 Checking the combined use of maximum bandwidth control and minimum bandwidth monitoring [Change]
	5.9.1 Checking user priority updating [Change]
	5.9.2 Checking DSCP updating [Change]

Item	Changes
	6.4.1 Shaper modes [Change]
	6.4.6 Notes on using the hierarchical shaper [Change]
	6.9 Drop control operation [Change]
	17.1.5 Functionality that enables non-stop communication at system switchover [Change]
	21.3.5 GSRP VLAN group-only control functionality [Change]
3. Configuration Guide Vol. 3 (For Version 11.7) (AX63S-S003X-C0)	4.2.1 List of configuration commands [Change]
	4.3.1 List of operation commands for policy-based routing [Change]
	4.3.2 Checking policy-based routing [Change]
	14.3 IPv4 multicast forwarding functionality [Change]
	14.6.1 IPv4 multicast forwarding [Change] [Addition]
4. Configuration Command Reference Vol.1 (For Version 11.7) (AX63S-S004X-C0)	[9] system temperature-warning-level [Change]
	[13] channel-group monitor-lacp [Addition]
	[15] vlan-up-message [Addition]
	[18] policy-channel-group [Change] [Addition]
	[18] policy-interface(policy-switch-list) [Change] [Addition]
	[18] policy-switch-list default-aging-interval [Addition]
	[18] policy-switch-list default-init-interval [Addition]
5. Configuration Command Reference Vol.2 (For Version 11.7) (AX63S-S010X-30)	[7] shaper user-list [Change]
	30.1.20 Port mirroring information [Change]
6. Configuration Command Reference Vol.3 (For Version 11.7) (AX63S-S005X-C0)	[5] policy-interface(policy-list) [Change] [Deletion]
	[15] ip multicast-routing [Addition]
	[15] ip pim nonstop-forwarding [Deletion]
	[15] ip pim sparse-mode [Addition]
7. Operation Command Reference Vol.1 (For Version 11.7) (AX63S-S006X-C0)	[3] telnet [Change]
	[6] killuser [Change]
	[7] set clock [Change]
	[7] show ntp associations [Change]
	[9] show system [Change]
	[9] show environment [Change]
	[14] ppupdate [Change] [Deletion]
	[18] show channel-group [Change]
	[18] show channel-group statistics [Change]
	[23] show cache policy-switch [Change] [Addition]
8. Operation Command Reference Vol.2 (For Version 11.7) (AX63S-S011X-30)	[2] show access-filter [Change]
	[4] show qos-flow [Change]
	[12] swap vrrp (IPv4) [Change]
	[12] swap vrrp (IPv6) [Change]
9. Operation Command Reference Vol.3 (For Version 11.7) (AX63S-S007X-C0)	[2] clear tcp [Change]
	[2] ping [Change]
	[3] show ip cache policy [Change]
	[5] clear ip dhcp binding [Change]
	[5] restart dhcp [Change]
	[9] clear tcp [Change]
	[9] ping ipv6 [Change]
	[12] restart ipv6-dhcp server [Change]
11.MIB Reference (For Version 11.7) (AX63S-S009X-C0)	3.23.9 ax6600sPhysLine group implementation specifications (interface information) [Change]

Changes in Edition 2

Item	Changes
6. Configuration Command Reference Vol.3 (For Version 11.7) (AX63S-S005X-C0)	[15] ip pim max-interface [Change]
	[15] ip pim mcache-limit [Change]
	[15] ip pim mroute-limit [Change]
	[29] ipv6 pim max-interface [Change]
	[29] ipv6 pim mcache-limit [Change]
	[29] ipv6 pim mroute-limit [Change]
11.MIB Reference (For Version 11.7) (AX63S-S009X-C0)	3.1.2 axsQoS group [Addition]
	Appendix A.1 Private MIBs [Addition]

Contents

1. Changes in Configuration Guide Vol. 1 (For Version 11.7) (AX63S-S001X-C0)

3. Capacity Limit

(1) 3.2.1 Number of table entries [Deletion]

Some notes in Table *3-11 Number of entries in an extended routing table* have been deleted.

Deletion:

・One route is added when using RIP version 2.

　One route is added for each VRF when RIP version 2 is used in any VRF.

・Two routes are added when using OSPF.

　Two routes are added for each VRF when using OSPF in any VRF.

(2) 3.2.4 Layer 2 switching [Change]

(7) Policy-based switching has been changed [Version 11.9 and later].

Change:

(7) Policy-based switching

Policy-based switching uses the filtering functionality's flow detection to detect target flows for policy-based switching. When the allocation pattern of flow-related entries is not qos-only and the routing table capacity is extended, policy-based switching is available.

Added ▶ (a) Capacity limits for policy-based switching

The following table describes the number of entries for policy-based switching group per switch.

Table 3-38 Number of entries for policy-based switching group per switch

Item	Number of entries
Number of access list entries	See *Table 3-41 Number of filter entries and QoS entries.*[#1]
Number of policy-based switching lists	1000[#2]
Number of routes that can be set for policy-based switching list information	8
Number of entries that can be linked with the tracking functionality of policy-based switching	8000

(Added to bottom two rows)

#1

　The number of entries is calculated by the same method as described in *3.2.5 Filters and QoS*.

#2

　Each item of policy-based switching list information is registered as one list. Therefore, if the same policy-based switching list information is set for multiple access lists, the number of lists used is counted as 1.

(b) Capacity limits for tracking functionality

The following table describes the capacity limits for the tracking functionality of policy-based switching.

Table 3-38-1 Capacity limits for tracking functionality

Added

Item	Capacity limit
Number of tracks	1024[#2]
Number of polling monitoring tracks[#1]	1024[#2]

#1
  The number of tracks for which the `type icmp` configuration command is set.

#2
  The value indicates the total number of tracks for the tracking functionality of policy-based routing.

(3) 3.2.9 High Reliability Based on Network Failure Detection [Change]

Table *3-70 L2 loop detection frame transmission rate* has been changed.

Change:

Table 3-70 L2 loop detection frame transmission rate

Model	L2 loop detection frame transmission rate (per switch)[#1]	
	Spanning Tree Protocol, GSRP, or Ring Protocol in use	Spanning Tree Protocol, GSRP, or Ring Protocol not in use
All models of the AX6700S series	90 pps (recommended)[#2]	600 pps (maximum)[#3]

- Formula for calculating L2 loop detection frame transmission rate:

$$\textit{number-of-VLAN-ports-subject-to-L2-loop-detection}^{\#4} / \textit{frame-transmission-rate-(pps)} \leq$$

$$\textit{transmission-interval-(sec.)}$$

Corrected

#1
The transmission rate is automatically adjusted to within 600 pps in accordance with the above equation.

#2
When using either Spanning Tree Protocols, GSRP, or Ring Protocol, set the transmission rate to no more than 90 pps. If the rate is greater than 90 pps, normal operation of Spanning Tree Protocols, GSRP or ring protocol is not guaranteed.

#3
Frames that exceed 600 pps will not be sent. Loop failures cannot be detected on target ports or VLANs from which frames have not been sent. Make sure that you set the transmission interval to achieve a transmission rate of no more than 600 pps.

Added

#4
Each channel group is counted as one port.

(4) 3.2.10   Managing   information   about   neighboring   devices (LLDP/OADP) [Change]

Table *3-76 Capacity limits for storing neighboring device information (LLDP/OADP)* has been changed.

Change:

Table 3-76 Capacity limits for storing neighboring device information (LLDP/OADP)

Model	LLDP neighboring device information[#1]	OADP neighboring device information[#1]
All models of the AX6700S series	192	250[#2] ← Corrected

#1
> LLDP/OADP neighboring device information is information that can be collected from a neighboring device connected to the Switch. Basically, there is one entry per neighboring device.

Added {
#2
> Each channel group is counted as one port.

(5) 3.2.11 Forwarding IPv4 and IPv6 packets [Change]

Table *3-86 Number of entries for policy-based routing group per switch* has been changed [Version 11.9 and later].

Change:

Table 3-86 Number of entries for policy-based routing group per switch

Item	IPv4 policy-based routing group	IPv6 policy-based routing group
Number of access list entries	See *Table 3-41 Number of filter entries and QoS entries.*[#1]	--
Number of policy-based routing lists	256[#2]	--
Number of routes that can be set for policy-based routing list information	8	--
Number of routes that can be linked with the tracking functionality of policy-based routing	2048 ← Corrected	--

Legend --: Not applicable

#1
> The number of entries is calculated by the same method as described in *3.2.5 Filters and QoS*.

#2
> Each item of policy-based routing list information is registered as one list. Therefore, if the same policy-based routing list information is set for multiple access lists, the number of lists used is counted as 1.

Deleted {
#3
> Each track ID is registered as one entry. Therefore, if the same track ID is set for multiple routes, the number of entries used is counted as 1.

Table *3-87 Capacity limits for tracking functionality* has been changed [Version 11.9 and later].

Change:

Table 3-87 Capacity limits for tracking functionality

Item	Capacity limit	
Number of tracks	1024[#2]	Corrected
Number of polling monitoring tracks[#1]	1024[#2]	

#1
    The number of tracks for which the `type icmp` configuration command is set.

#2
Added
    The value indicates the total number of tracks for the tracking functionality of policy-based switching.

(6) 3.4.1 Number of table entries [Deletion]

Some notes in Table *3-118 Number of entries in an extended routing table* have been deleted.

Deletion:
    ・One route is added when using RIP version 2.
      One route is added for each VRF when RIP version 2 is used in any VRF.
    ・Two routes are added when using OSPF.
      Two routes are added for each VRF when using OSPF in any VRF.

(7) 3.4.4 Layer 2 switching [Change]

(7) Policy-based switching has been changed [Version 11.9 and later].

Change:

(7) Policy-based switching

Policy-based switching uses the filtering functionality's flow detection to detect target flows for policy-based switching. When the allocation pattern of flow-related entries is not qos-only and the routing table capacity is extended, policy-based switching is available.

Added ▶ (a) Capacity limits for policy-based switching

The following table describes the number of entries for policy-based switching group per switch.

Table 3-145 Number of entries for policy-based switching group per switch

Item	Number of entries
Number of access list entries	See *Table 3-148 Number of filter entries and QoS entries.*[#1]
Number of policy-based switching lists	1000[#2]
Number of routes that can be set for policy-based switching list information	8
Number of routes that can be linked with the tracking functionality of policy-based switching	8000

Added

#1
   The number of entries is calculated by the same method as described in *3.4.5 Filters and QoS*.

#2
   Each item of policy-based switching list information is registered as one list. Therefore, if the same policy-based switching list information is set for multiple access lists, the number of lists used is counted as 1.

(b) Capacity limits for tracking functionality

The following table describes the capacity limits for the tracking functionality of policy-based switching.

Table 3-145-1 Capacity limits for tracking functionality

Item	Capacity limit
Number of tracks	1024[#2]
Number of polling monitoring tracks[#1]	1024[#2]

Added

#1
   The number of tracks for which the `type icmp` configuration command is set.

#2
   The value indicates the total number of tracks for the tracking functionality of policy-based routing.

(8) 3.4.11 Forwarding IPv4 and IPv6 packets [Change]

Table *3-193 Number of entries for policy-based routing group per switch* has been changed [Version 11.9 and later].

Change:

Table 3-193 Number of entries for policy-based routing group per switch

Item	IPv4 policy-based routing group	IPv6 policy-based routing group
Number of access list entries	See *Table 3-148 Number of filter entries and QoS entries.*[#1]	--
Number of policy-based routing lists	256[#2]	--
Number of routes that can be set for policy-based routing list information	8	--
Number of routes that can be linked with the tracking functionality of policy-based routing	2048 ← Corrected	--

Legend --: Not applicable

#1
 The number of entries is calculated by the same method as described in *3.4.5 Filters and QoS*.

#2
 Each item of policy-based routing list information is registered as one list. Therefore, if the same policy-based routing list information is set for multiple access lists, the number of lists used is counted as 1.

Deleted {
#3
 Each track ID is registered as one entry. Therefore, if the same track ID is set for multiple routes, the number of entries used is counted as 1.
}

Table *3-194 Capacity limits for tracking functionality* has been changed [Version 11.9 and later].

Change:

Table 3-194 Capacity limits for tracking functionality

Item	Capacity limit	
Number of tracks	1024[#2]	Corrected
Number of polling monitoring tracks[#1]	1024[#2]	

#1
 The number of tracks for which the `type icmp` configuration command is set.

Added {
#2
 The value indicates the total number of tracks for the tracking functionality of policy-based switching.
}

(9) 3.6.1 Number of table entries [Deletion]

Some notes in Table *3-225 Number of entries in an extended routing table* have been deleted.

Deletion:

・One route is added when using RIP version 2.

One route is added for each VRF when RIP version 2 is used in any VRF.

・Two routes are added when using OSPF.

Two routes are added for each VRF when using OSPF in any VRF.

(10) 3.6.4 Layer 2 switching [Change]

(7) Policy-based switching has been changed [Version 11.9 and later].

Change:

(7) Policy-based switching

Policy-based switching uses the filtering functionality's flow detection to detect target flows for policy-based switching. When the allocation pattern of flow-related entries is not qos-only and the routing table capacity is extended, policy-based switching is available.

Added ► (a) Capacity limits for policy-based switching

The following table describes the number of entries for policy-based switching group per switch

Table 3-252 Number of entries for policy-based switching group per switch

Item	Number of entries
Number of access list entries	See *Table 3-255 Number of filter entries and QoS entries.*[1]
Number of policy-based switching lists	1000[2]
Number of routes that can be set for policy-based switching list information	8
Number of routes that can be linked with the tracking functionality of policy-based switching	8000

Added

#1

The number of entries is calculated by the same method as described in *3.6.5 Filters and QoS*.

#2

Each item of policy-based switching list information is registered as one list. Therefore, if the same policy-based switching list information is set for multiple access lists, the number of lists used is counted as 1.

14

(b) Capacity limits for tracking functionality

The following table describes the capacity limits for the tracking functionality of policy-based switching.

Table 3-252-1 Capacity limits for tracking functionality

Added

Item	Capacity limit
Number of tracks	1024[#2]
Number of polling monitoring tracks[#1]	1024[#2]

#1

    The number of tracks for which the `type icmp` configuration command is set.

#2

    The value indicates the total number of tracks for the tracking functionality of policy-based routing.

(11) 3.6.11 Forwarding IPv4 and IPv6 packets [Change]

Table *3-300 Number of entries for policy-based routing group per switch* has been changed [Version 11.9 and later].

Change:

Table 3-300 Number of entries for policy-based routing group per switch

Item	IPv4 policy-based routing group	IPv6 policy-based routing group
Number of access list entries	See *Table 3-255 Number of filter entries and QoS entries.*[#1]	--
Number of policy-based routing lists	256[#2]	--
Number of routes that can be set for policy-based routing list information	8	--
Number of routes that can be linked with the tracking functionality of policy-based routing	2048 ← Corrected	--

Legend --: Not applicable

#1

    The number of entries is calculated by the same method as described in *3.6.5 Filters and QoS*.

#2

    Each item of policy-based routing list information is registered as one list. Therefore, if the same policy-based routing list information is set for multiple access lists, the number of lists used is counted as 1.

Deleted

#3

    Each track ID is registered as one entry. Therefore, if the same track ID is set for multiple routes, the number of entries used is counted as 1.

Table *3-301 Capacity limits for tracking functionality* has been changed [Version 11.9 and later].

Change:

Table 3-301 Capacity limits for tracking functionality

Item	Capacity limit
Number of tracks	1024[#2]
Number of polling monitoring tracks[#1]	1024[#2]

Corrected

#1
    The number of tracks for which the `type icmp` configuration command is set.

Added

#2
    The value indicates the total number of tracks for the tracking functionality of policy-based switching.

16

11. Device Management

(1) 11.2.1 Lists of configuration commands and operation commands [Change]

Table *11-15 List of configuration commands* has been changed.

Change:

Table 11-15 List of configuration commands

Command name	Description
fldm prefer	Sets the allocation pattern for the number of flow table entries in the Switch.
fwdm prefer	Sets the allocation pattern for the number of routing table entries in the Switch.
system fan mode	Sets the operating mode of the fan.
system hardware-mode	Sets the hardware mode of the Switch.
system recovery	The `no system recovery` command specifies that no recovery processing is to be performed if a problem occurs, and the failed part will remain shut down.
system temperature-warning-level	Outputs an operation message when the intake temperature of the switch rose to the specified temperature or higher.

Corrected

(2) 11.3.3 Procedure for using a backup/restore command during BCU/CSU/MSU single operation [Change]

(2) Restoring information has been changed.

Change:

(2) Restoring information

To restore information from a backup file created by the `backup` command, use the `restore` command.
When you execute the `restore` command, the switch software is updated automatically from the software update files stored in the backup file. At completion, the Switch restarts automatically, and the restoration is continued.
Note the following when executing the `restore` command:
・Make sure that the software version of the switch on which you take the backup is supported by the switch to which you are restoring the information.

Added

・Make sure that the same user account is set for the switch as the user account included in the backup file (with the same user name and the same addition and deletion order of users). If the user accounts are different, file operations will be disabled after restoration.

16. Link Aggregation

(1) 16.3.4 LACP monitoring functionality [Addition]

16.3.4 LACP monitoring functionality has been added. [Version 11.9 and later].

Addition:

16.3.4 LACP monitoring functionality

The LACP monitoring functionality is used to verify link normality between the Switch and connected devices by monitoring reception of link aggregation control frames (LACPDU).
This functionality is available only when static link aggregation is used. Unlike LACP link aggregation, LACPDUs are not sent.

(1) Example of using the LACP monitoring functionality

The figure below shows an example of using the LACP monitoring functionality.
The functionality is configured in the Switch in a configuration where communication between devices A and B connected by LACP link aggregation and LACPDUs are split and sent to the Switch using a device such as a splitter. Reception is monitored for each channel group. When an LACPDU is received by any port in a group, the arrival status is assumed as confirmed. When no LACPDU is received by any port in a group within the monitoring time, the arrival status is assumed as unconfirmed. Changes in the arrival status are notified by MIB traps and operation logs.

Figure 16-4 Example of using the LACP monitoring functionality
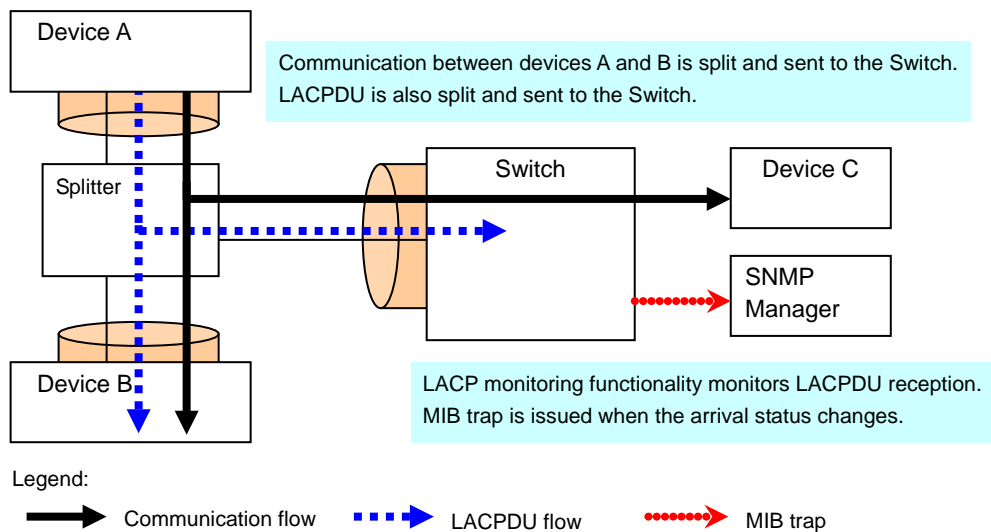
(2) Monitoring time

The LACPDU reception monitoring time is determined based on the LACPDU sending interval set in the configuration. The table below describes the principle for this determination. The times shown in the table indicate the monitoring time. It takes a little time before notifications such as MIB traps are issued.

Table 16-9 Principle for determining the monitoring time

LACPDU sending interval settings	Monitoring time
`long` (default)	90 seconds
`short`	3 seconds

(3) Monitoring method

Reception monitoring is performed as shown in the following table.

Table 16-10 Monitoring method

Item		Description
Monitoring target	Channel group	Channel group configured with static link aggregation and LACP monitoring functionality
	Port	All ports in the channel group to be monitored
Monitoring settings	How to set	Configure static link aggregation and LACP monitoring in the configuration.
	When the change is applied	The change takes effect immediately after it is made.
Arrival status type	Confirmed	Status in which arrival is confirmed
	Unconfirmed	Default status or status in which arrival is not confirmed
When the arrival status changes	From unconfirmed to confirmed	When an LACPDU is received in the group
	From confirmed to unconfirmed	In any of the following conditions. (For 2) - 5) below, the status changes without waiting for the monitoring time.) 1) When no LACPDUs are received in the group within the monitoring time 2) When `shutdown` is specified for the channel group in the configuration (However, LACPDU reception and LACP statistics update are performed.) 3) When link-down occurs on all ports in the channel group 4) When the LACP monitoring configuration is deleted in the configuration 5) When all ports in the channel group become half duplex mode
Arrival status check method	Operation command display	Only in operation with the monitoring settings configured, the following data is displayed: 1) The link aggregation information and detailed information displays the arrival status. 2) The statistics on the sent or received LACPDU for link aggregation displays LACPDU statistics.
	MIB	1) ifOperStatus status of the interfaces group conforms to the arrival status. Confirmed: up Unconfirmed: down 2) LACP statistics for the dot3adAggPort group cannot be collected.

(4) Notification method

Changes in the arrival status are notified as shown in the table below. Normally, the following notifications are issued when the channel group status changes, which is not applicable only while the LACP monitoring functionality is used.

Table 16-11 Notification method

Item	Description
MIB trap	Confirmed: linkUp Unconfirmed: linkDown
Operation log	Confirmed: channel group Up (message ID: 20120002) Unconfirmed: channel group Down (message ID: 20120003)

(5) Notes

- Different from the operations of normal static link aggregation and LACP link aggregation, the LACP monitoring functionality monitors only the LACPDU arrival status. For this reason, the functionality does not guarantee the communication status of channel groups.

- The LACP monitoring functionality does not check the protocol status in the received LACPDU.

- When the LACP monitoring functionality is used continued from normal operation or when use of the LACP functionality is stopped, notification might be redundant. Therefore, we recommend that you tentatively disable the channel group by using the `shutdown` command before changing the settings for this functionality.

- In the channel group with the LACP monitoring functionality configured, do not use the following functionality:

    MAC VLAN, Spanning Tree Protocol, Ring Protocol, IGMP snooping, MLD snooping, IEEE 802.1X, Web authentication, MAC-based authentication, authentication VLAN, DHCP snooping, GSRP, VRRP, IEEE 802.3ah/UDLD, and L2 loop detection

    Because Spanning Tree Protocol and GSRP operate in the entire switch, avoid using such functionality simultaneously with the LACP monitoring functionality by setting the following functionality to the target channel group: configuring PortFast and BPDU filters for Spanning Tree Protocol and configuring ports not under GSRP control for GSRP.

(2) 16.4.5 Configuration of the LACP monitoring functionality [Addition]

16.4.5 Configuration of the LACP monitoring functionality has been added. [Version 11.9 and later].

Addition:

16.4.5 Configuration of the LACP monitoring functionality

Points to note

LACP monitoring can be set for a channel group. This functionality is available only when static link aggregation is used. We recommend that you tentatively disable the channel group by using the `shutdown` command before setting the LACP sending interval and LACP monitoring required for this functionality. For the LACPDU sending interval, set `long` (30 seconds) or `short` (one second). The default is `long` (30 seconds). A value three times the specified LACP sending interval (3 or 90 seconds) is used as the reception monitoring time.

Command examples

1. `(config)# interface port-channel 10`

   Switches channel group 10 to port channel interface configuration mode.

2. `(config-if)# shutdown`

   Disables channel group 10, and stops communication.

3. `(config-if)# channel-group periodic-timer short`

   Sets the interval at which the partner device of channel group 10 sends LACPDUs to a Switch to `short` (one second).

4. `(config-if)# channel-group monitor-lacp`

   Sets LACP monitoring for channel group 10.

5. `(config-if)# no shutdown`

   Releases channel group 10 from the Disable status and starts monitoring using this functionality.

19. VLANs

(1) 19.2.1 List of configuration commands [Change]

Table *19-6 List of configuration commands* has been changed [Version 11.9 and later].

Change:

Table 19-6 List of configuration commands

Command name	Description
name	Sets a VLAN name.
state	Sets the VLAN status (started/stopped).
switchport access	Sets the access port VLAN.
switchport dot1q ethertype	Sets the VLAN tag TPID for port.
switchport mode	Sets the port type (access, protocol, MAC, trunk, or tunneling)
switchport trunk	Sets the VLAN for a trunk port.
vlan	Creates a VLAN. Also, sets items pertaining to a VLAN in VLAN configuration mode.
vlan-dot1q-ethertype	Sets the default value for VLAN tag TPIDs.
vlan dot1q tag native	Handles tagged frames on the native VLAN.
vlan-up-massage	The no vlan-up-message command prevents operation log message and linkUp or linkDown trap from being issued when VLAN is Up or Down.

Added

25. Policy-based Switching

(1) 25.1.2 Policy-based switching group [Addition] [Change]

The following descriptions have been added after Figure *25-2 Policy-based switching group configuration example* [Version 11.9 and later].

Addition:

The policy-based switching group can also be linked with the polling monitoring tracking functionality, to monitor routes to a location subject to polling monitoring. Polling monitoring of the tracking functionality monitors whether communication with devices on the network is possible. Monitoring results are used to determine the route to be selected based on the policy-based switching group. This allows route switching in response to failures that occur between the Switch and neighboring devices and in other routes.

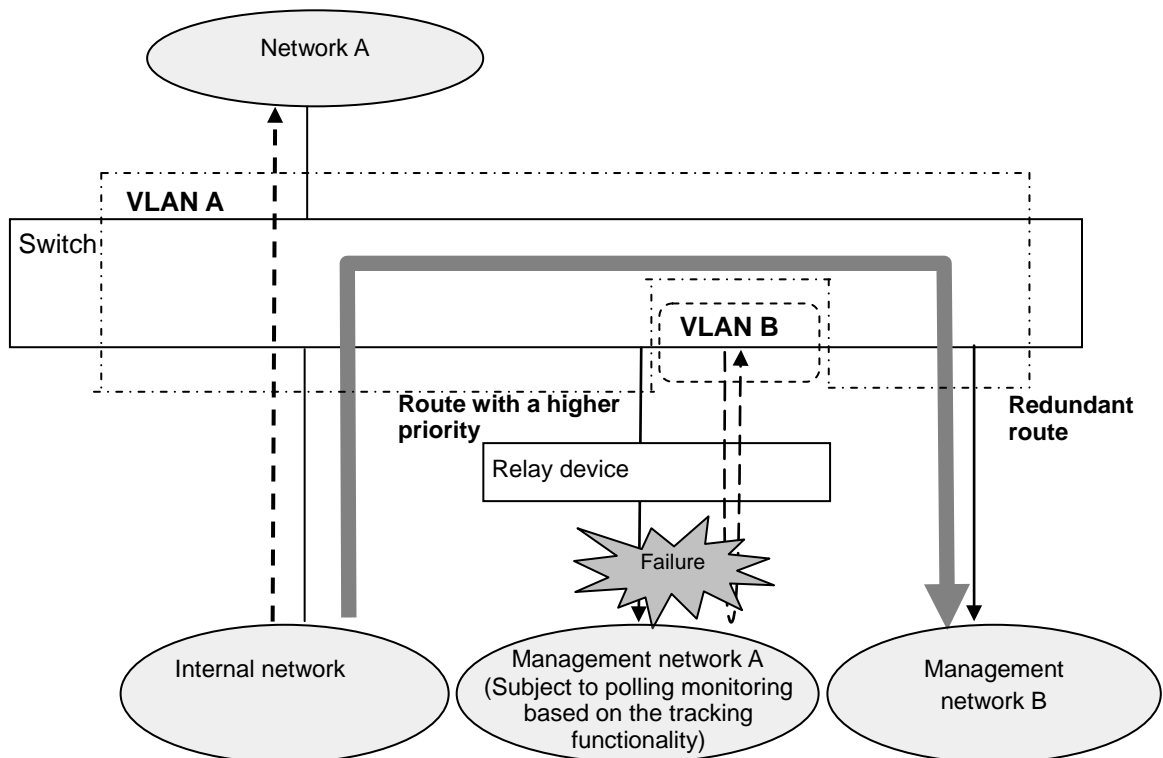The following figure shows a configuration example when a policy-based switching group is linked with the tracking functionality.

Figure 25-3 Configuration example when policy-based switching group is linked with the tracking functionality
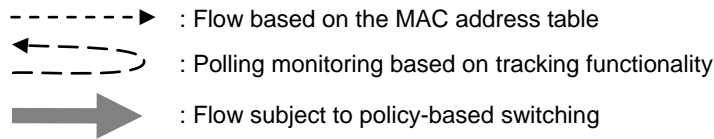
● Normal operation
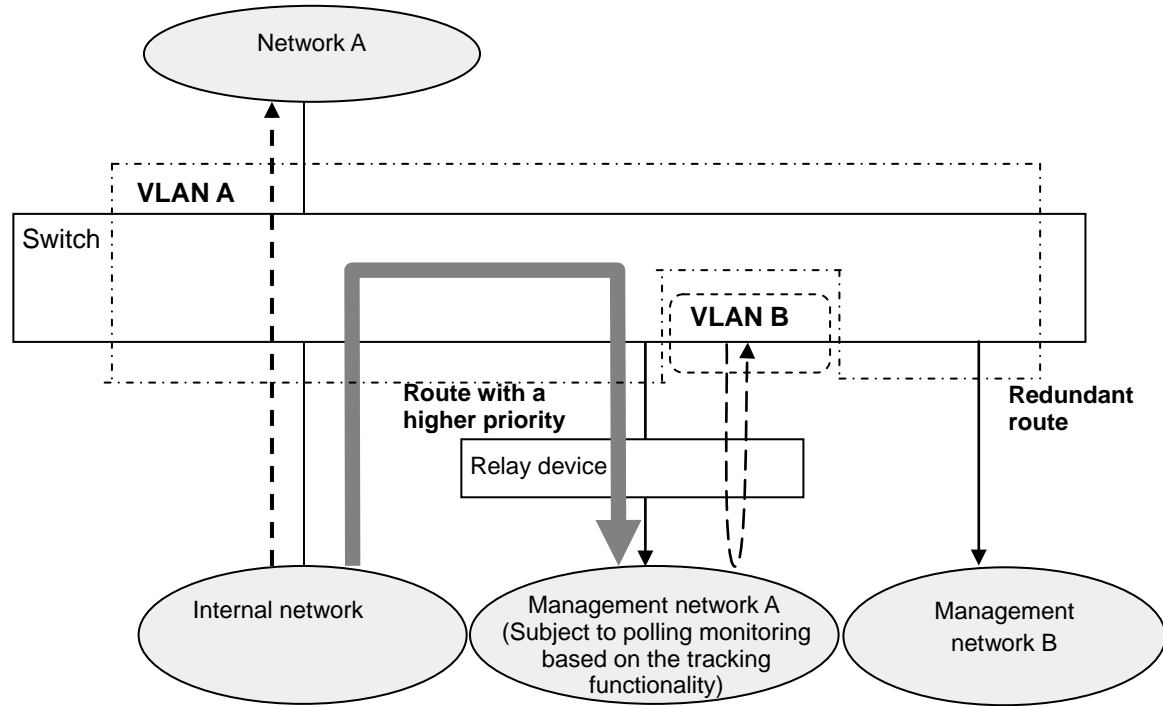
● When reachability of the route with a higher priority is not guaranteed

Legend:

```
- - - - - - ▶    : Flow based on the MAC address table
◀ - - - ⌐
- - - - - ⌐      : Polling monitoring based on tracking functionality

➡ (gray arrow)   : Flow subject to policy-based switching
```

(a) Monitoring results to determine priority and whether forwarding is possible in *(1) Route selection by a policy-based switching group* has been changed [Version 11.9 and later].

Change:

(a) Monitoring results to determine priority and whether forwarding is possible

The results of the following monitored items are used to determine whether the routes registered in the policy-based switching list information can be used for forwarding:

・Monitoring the port status of the destination Ethernet interface

・Monitoring the channel group of the destination link aggregation

Added ➤ ・Polling monitoring based on tracking functionality

The route with the highest priority is selected from the routes that can be used for forwarding.

● Monitoring the port status of the destination Ethernet interface

If the forwarding destination route is specified by using the following configuration command, the possibility of forwarding is determined based on the port status of the destination Ethernet interface:

・policy-vlan command
    VLAN ID of the destination Ethernet interface

・policy-interface command
    NIF number/port number of the destination Ethernet interface

Forwarding is determined to be possible only when the port status of the destination Ethernet interface is Up.

● Monitoring the channel group of the destination link aggregation

If the forwarding destination route is specified by using the following configuration command, the possibility of forwarding is determined based on the channel group status of the destination link aggregation:

・policy-vlan command
    VLAN ID of the destination Ethernet interface

・policy-channel-group command
    Channel group number

Forwarding is determined to be possible only when the channel group status of the destination link aggregation is Up.

● Polling monitoring by the tracking functionality

If the forwarding destination route is specified by using the following configuration command, the possibility of forwarding is determined based on the results of polling monitoring by the tracking functionality in addition to the port status of the destination Ethernet interface:

Added

・policy-vlan command
    VLAN ID of the destination Ethernet interface

・policy-interface command
    NIF number/port number of the destination Ethernet interface, and track ID

Forwarding is determined to be possible only when both the port status of the destination Ethernet interface and the result of polling monitoring by the tracking functionality are Up.

Added

● Polling monitoring and monitoring of the channel group status by the tracking functionality

If the forwarding destination route is specified by using the following configuration command, the possibility of forwarding is determined based on the result of polling monitoring by the tracking functionality in addition to the channel group status of the destination link aggregation:

・policy-vlan command
  VLAN ID of the destination Ethernet interface

・policy-channel-group command
  Channel group number and track ID

Forwarding is determined to be possible only when both the channel group status of the destination link aggregation and the result of polling monitoring by the tracking functionality are Up.

For details about the tracking functionality, see *4.1.5 Tracking functionality for policy-based switching*.

● Determination by priority

Corrected

Route selection is based on the result of monitoring the port status. The route with the highest priority is selected based on the application order specified in the configuration, from the routes that can be used for forwarding in the policy-based switching list information.

(2) Policy-based switching group at startup has been changed [Version 11.9 and later].

Change:

(2) Policy-based switching group at startup

When the Switch starts or restarts, the forwarding availability monitoring and the path switching are stopped for a certain period of time after the policy-based program starts. This is because the results of the forwarding availability monitoring are unstable for the following reasons until the device state after startup has been collected:

・The Ethernet interface port is not in the Up state.

・The channel group for link aggregation is not in the Up state.

Added ➤ ・The result of polling monitoring by the tracking functionality is not in the Up state.

  <omitted>

(2) 25.1.6 Tracking functionality for policy-based switching [Addition]

25.1.6 Tracking functionality for policy-based switching has been added [Version 11.9 and later].

Addition:

25.1.6 Tracking functionality for policy-based switching

For details about the tracking functionality for policy-based switching, see *4.1.5 Tracking functionality for policy-based routing* and *4.1.6 Tracks for tracking functionality* in *Configuration Guide Vol. 3*.

(3) 25.2.1 List of configuration commands [Change]

Table *25-7 List of configuration commands* has been changed.

Change:

Table 25-7 List of configuration commands

Command name	Description
default	Sets the default operation for policy-based switching list information.
policy-channel-group	Sets a channel group number for the policy-based switching destination interface information.
policy-interface	Sets a NIF number/port number for the policy-based switching destination interface information.
policy-switch-list	Sets policy-based switching list information.
policy-switch-list default-aging-interval	Sets the no-forwarding availability monitoring period for policy-based switching at a system switchover.
policy-switch-list default-init-interval	Sets the no-forwarding availability monitoring period for policy-based switching when, for example, the switch starts.
policy-switch-list resequence	Resets the destination interface application sequence for policy-based switching.
policy-vlan	Sets the VLAN ID of the destination interface for policy-based switching.
recover	Sets the path switchback operation for policy-based switching list information.
access-list[#]	Configures an access list used as an IPv4 filter.
advance access-group[#]	Applies an Advance filter to an Ethernet interface and enables Advance filtering.
advance access-list[#]	Configures an access list used as an Advance filter.
ip access-group[#]	Applies an IPv4 filter to an Ethernet interface and enables IPv4 filtering.
ip access-list extended[#]	Configures an access list used as an IPv4 packet filter.
ipv6 access-list[#]	Configures an access list used as an IPv6 packet filter.
ipv6 traffic-filter[#]	Applies an IPv6 filter to an Ethernet interface and enables IPv6 filtering.
mac access-group[#]	Applies a MAC filter to an Ethernet interface and enables MAC filtering.
mac access-list extended[#]	Configures an access list used as a MAC filter.
permit[#]	Specifies conditions by which a filter permits access.

Added / Corrected

(4) 25.2.2 Configuring policy-based switching [Addition]

(3) Setting the tracking functionality has been added [Version 11.9 and later].

Addition:

(3) Setting the tracking functionality

The following example sets an IPv4 ICMP polling monitoring track.

Points to note

To start polling after setting all parameters, we recommend that you use the commands and specify the parameters in the following order:

1. Use the `track-object` command to specify the track ID.

2. Use the `disable` command to stop track operation.

3. Specify all parameters.

4. Use the `no disable` command to cancel the setting that stops the track operation.

Note that if you set a source IPv4 address for IPv4 ICMP polling monitoring, a fixed destination address is set for response packets. This allows you to design the route for response packets more easily.

Command examples

1. `(config)# track-object 1000`

   Specifies the track ID to be configured.

2. `(config-track-object)# disable`

   Stops operation of the track being configured.

3. `(config-track-object)# default-state up`

   Specifies Up as the default track state. After that, the track state is Up after the track operation starts until the track state changes to Down.

4. `(config-track-object)# type icmp 192.168.1.10`

   `(config-track-object)# timeout 5`

   `(config-track-object)# interval 10`

   `(config-track-object)# failure detection 4 trial 5 interval 10`

   `(config-track-object)# recovery detection 4 trial 5 interval 10`

   Specifies the track as an IPv4 ICMP polling monitoring track that monitors 192.168.1.10.

   Then, the command specifies the track's response wait time, normal polling interval, the number of times polling is performed and polling interval during failure verification, the number of times polling is performed and the polling interval during failure recovery verification.

5. `(config-track-object)# no disable`

   Deletes the configuration that stops track operation. When the configuration is deleted, track operation starts.

6. `(config-track-object)# exit`

   Returns to global configuration mode from tracking functionality mode.

7. `(config)# policy-switch-list 10`

   Sets policy-based switching list information with list number 10. When this list is created, the command switches to policy-based routing list information mode.

8. `(config-pol-sw)# policy-vlan 100`

   Sets the VLAN ID of the policy-based switching list information to 100.

9. `(config-pol-sw)# policy-interface gigabitethernet 1/2 track-object`

1000

Sets NIF number 1, port number 2, and track ID 1000 as the route for policy-based switching list information.

10. `(config-pol-sw)# default permit`

Sets normal forwarding as the default operation in the policy-based switching list information.

11. `(config-pol-sw)# exit`

Returns to global configuration mode from policy-based switching list information mode.

12. `(config)# ip access-list extended POLICY_SW_GROUP`

Creates `ip access-list (POLICY_SW_GROUP)`, and then switches to IPv4 packet filtering mode.

13. `(config-ext-nacl)# permit tcp any any vlan 100 action`

`policy-switch-list 10`

Sets the policy-based switching list information to perform policy-based switching for the IPv4 packet. Sets list number 10.

14. `(config-ext-nacl)# permit ip any any`

Configures an IPv4 packet filter that forwards all frames.

15. `(config-ext-nacl)# exit`

Returns to global configuration mode from IPv4 packet filtering mode.

16. `(config)# interface gigabitethernet 1/1`

Switches to the interface mode for port 1/1.

17. `(config-if)# ip access-group POLICY_SW_GROUP in layer2-forwarding`

On the receiving side, enables the IPv4 filter in which the policy-based switching is set for Layer 2 forwarding.

(5) 25.3.1 List of operation commands [Change]

Table *25-8 List of operation commands* has been changed.

Change:

Table 25-8 List of operation commands

Command name	Description	
show policy-switch	Displays the port numbers of the Ethernet interfaces for which policy-based switching is enabled, and the access list information.	Corrected
show cache policy-switch	Displays the routing information and status for the specified policy-based switching list information.	
reset policy-switch-list	Reselects the routing information.	
dump policy	Outputs to a file event trace information and control table information collected by the policy-based program.	Added
restart policy	Restarts the policy-based program.	
show access-filter[#]	Displays the statistics for the access list (access-list, ip access-list, ipv6 access-list, mac access-list, or advance access-list) configured by using an access group command (ip access-group, ipv6 traffic-filter, mac access-group, or advance access-group).	
clear access-filter[#]	Clears the statistics for the access list (access-list, ip access-list, ipv6 access-list, mac access-list, or advance access-list) configured by using an access group command (ip access-group, ipv6 traffic-filter, mac access-group, or advance access-group).	

(6) 25.3.2 Checking policy-based switching [Change]

Figure *25-3 Result of executing the show policy-switch command* has been changed.

Change:

Figure 25-3 Result of executing the show policy-switch command

```
> show policy-switch
Date 20XX/01/01 12:00:00 UTC    ◄── Corrected
Port   Access List Name/Number            Sequence    Policy Switch List
 1/ 1  POLICY_SW_GROUP                          10                    10
```

Figure *25-4 Result of executing the show access-filter command* has been changed.

Change:

Figure 25-4 Result of executing the show access-filter command

```
> show access-filter 1/1 POLICY_SW_GROUP in
Date 20XX/01/01 12:00:00 UTC    ◄──[ Corrected ]
Using Port:1/1 in
Extended IP access-list:POLICY_SW_GROUP layer2-forwarding
      remark "permit Policy SW Group policy"
      permit tcp(6) any any vlan 100 action policy-switch-list 10
         matched packets      :          74699826
      permit ip any any
         matched packets      :            264176
         implicitly denied packets:            0
```

Figure *25-5 Result of executing the show cache policy-switch command (checking routes)* has been changed.

Change:

Figure 25-5 Result of executing the show cache policy-switch command (checking routes)

```
> show cache policy-switch 10
Date 20XX/01/01 12:00:00 UTC    ◄──[ Corrected ]
Policy Base Switching Default Init Interval :  200
   Start Time : 20XX/01/01 00:00:00  }[ Corrected ]
   End Time   : 20XX/01/01 00:03:20
Policy Base Switching Default Aging Interval :  200
   Start Time : -   }[ Corrected ]
   End Time   : -
Policy Base Switching List :   10
   Default : Permit
   Recover : On
   Priority     Sequence   VLAN ID   Status  Output Interface   Track Object ID  }
 *>      1           10       100   Up      1/2                            1     }[ Corrected ]
         2           20       100   Up      1/3                            -
```

Figure *25-6 Result of executing the show cache policy-switch command (checking path switchback operation)* has been changed.

Change:

Figure 25-6 Result of executing the show cache policy-switch command (checking path switchback operation)

```
> show cache policy-switch 10
Date 20XX/01/01 12:00:00 UTC          ◄─── Corrected
Policy Base Switching Default Init Interval :  200
    Start Time : 20XX/01/01 00:00:00  } Corrected
    End Time   : 20XX/01/01 00:03:20
Policy Base Switching Default Aging Interval :  200
    Start Time : -                    } Corrected
    End Time   : -
Policy Base Switching List :   10
    Default : Permit
    Recover : Off                                                        ...1
    Priority     Sequence    VLAN ID    Status   Output Interface   Track Object ID
 *>      1          10         100      Up       1/2                          1   } Corrected
         2          20         100      Up       1/3                          -
```

2. Changes in Configuration Guide Vol. 2 (For Version 11.7) (AX63S-S002X-C0)

1. Filters

(1) 1.1.7 Notes on using the filter [Change]

(8) Operation when filter entries are applied has been changed.

Before the change:

When filter entries are applied to the interfaces on the Switch[#], an implicit discard entry is applied first. Accordingly, frames that match the implicit discard condition are temporarily discarded until user-specified filter entries are applied. In addition, statistics for the implicit discard entry are collected.

\#

・When an access list containing one or more entries is applied to the interface by using the access group command

・When an access list is applied by using the access group command and the first entry is added.

After the change:

When a filter entry is specified to interfaces on the Switch[#], frames might be detected by other filter entries including the implicit discard filter entry until the specified filter entry is applied. In this case, statistics for the filter entries including the implicit discard entry are collected.

\#

・When an access list containing one or more filter entries is applied to an interface by using access group commands

・When an access list is applied by using access group commands and filter entries are added.

・When a filter entry is applied while the Switch or a BSU starts or while the `copy` or `restart vlan` operation command is executed.

4. Overview of QoS Control

(1) 4.2.1 List of configuration commands [Change]

Table 4-2 List of configuration commands has been changed.

Change:

Command name	Description	
...	...	
predicted-tail-drop	Disables the predicted tail drop functionality for the specified NIFs or all of the NIF mounted on the Switch	Corrected
...	...	
shaper wgq-group rate-limit	Sets WGQ bandwidth control for the total bandwidth used by all users for the target interface of the Ethernet interface.	Corrected
...	...	

5. Flow Control

(1) 5.1.4 Notes on using flow detection [Addition]

(8) Operation when a QoS entry is applied has been added.

Addition:

(8) Operation when a QoS entry is applied

If a QoS entry is applied to the interface on a Switch[#], frames might be detected as if they matched another QoS entry until the configured QoS entry is applied. In this case, statistics for the detected QoS entry are collected.

\#
- When a QoS flow list containing one or more entries is applied to the interface by using the QoS flow group command
- When a QoS flow list is applied by using the QoS flow group command and an entry is added
- When a QoS entry is applied during execution of the `copy` or `restart vlan` operation command at the switch or BSU startup

(2) 5.6.3 Checking DSCP updating when non-compliance occurs in minimum monitoring bandwidth [Change]

Figure *5-7 Checking DSCP updating when a minimum monitoring bandwidth non-compliance occurs* has been changed.

Change:
```
> show qos-flow interface vlan 10 QOS-LIST3 in          ← Corrected
Date 2006/09/01 12:00:00 UTC
Using Interface:vlan 10 in
IP qos-flow-list:QOS-LIST3 layer3-forwarding
    ip any host 192.168.120.10 action min-rate 1M min-rate-burst 3000 penalty-dscp cs1
        matched packets                                        Corrected
            (min-rate over) : 28
            (min-rate under): 7
```

Make sure that the minimum monitoring bandwidth (min-rate 1M), the burst size of the minimum monitoring bandwidth (min-rate-burst 3000), and the DSCP name for non-compliant frames (penalty-dscp cs1) are displayed in the information for QOS-LIST3. You can also view the number of non-compliant frames under matched packets (min-rate over) and the number of compliant frames under matched packets (min-rate under).

Corrected

Corrected

(3) 5.6.4 Checking the combined use of maximum bandwidth control and minimum bandwidth monitoring [Change]

Figure *5-8 Checking the combined use of maximum bandwidth control and minimum bandwidth monitoring* has been changed.

Change:

```
> show qos-flow interface vlan 20 QOS-LIST4 in        ◄── Corrected
Date 2006/09/01 12:00:00 UTC
Using Interface:vlan 20 in
IP qos-flow-list:QOS-LIST4 layer3-forwarding
      ip any host 192.168.130.10 action max-rate 5M max-rate-burst 6000 min-rate 1M
min-rate-burst 3000 penalty-dscp cs1        ◄── Corrected
         matched packets
            (max-rate over) : 28
            (min-rate over) : 58214
            (min-rate under): 74699826
```

Make sure that the monitoring bandwidth for maximum bandwidth control (max-rate 5M), the burst size for maximum bandwidth control (max-rate-burst 6000), the minimum monitoring bandwidth (min-rate 1M), the burst size of the minimum monitoring bandwidth (min-rate-burst 3000), and the DSCP name for non-compliant frames (penalty-dscp cs1) are displayed in the information for QOS-LIST4.   ◄── Corrected
The matched packets (max-rate over) field shows the number of frames deemed non-compliant by maximum bandwidth control. The matched packets (min-rate over) field shows the number of non-compliant frames under   ◄── Corrected
minimum bandwidth monitoring, and the matched packets (min-rate under) shows the number of compliant frames.

(4) 5.9.1 Checking user priority updating [Change]

Figure *5-14 Checking user priority updating* has been changed.

Change:

```
> show qos-flow interface vlan 10 QOS-LIST1 out        ◄── Corrected
Date 2006/03/01 12:00:00 UTC
Using Port: vlan 10 out
IP qos-flow-list:QOS-LIST1 layer3-forwarding
      ip any host 192.168.100.10 action replace-user-priority 6
         matched packets : 74699826
```

(5) 5.9.2 Checking DSCP updating [Change]

Figure *5-15 Checking DSCP updating* has been changed.

Change:

```
> show qos-flow interface vlan 10 QOS-LIST2 in        ◄── Corrected
Date 2006/03/01 12:00:00 UTC
Using Port: vlan 10 in
IP qos-flow-list:QOS-LIST2 layer3-forwarding
      ip any host 192.168.100.10 action replace-dscp 63
         matched packets : 0
```

6. Send Control

(1) 6.4.1 Shaper modes [Change]

Shaper modes has been changed.

Before the change:

      <omitted>

The following table shows an example of calculating bandwidth in RGQ mode, based on a scenario in which the hierarchical shaper uses port bandwidth control to shape the line bandwidth to 900 Mbit/s.

Table 6-6 Example of RGQ bandwidth calculation

User	Input bandwidth (Mbit/s)	Minimum bandwidth (Mbit/s)	Maximum bandwidth (Mbit/s)	Weighting	Surplus bandwidth (Mbit/s)[#1]	Send bandwidth (Mbit/s)[#2]
User 1	500	200	800	3	150	350
User 2	350	200	800	2	100	300
User 3	250	200	800	1	50	250

#1

    Line surplus bandwidth = *line-bandwidth - total-of-minimum-bandwidth-for-all-users*
                  = 900 - (200 + 200 + 200) = 300 (Mbit/s)
    Surplus bandwidth for user 1 = 300 x (3 / (3 + 2 + 1)) = 150 (Mbit/s)
    Surplus bandwidth for user 2 = 300 x (2 / (3 + 2 + 1)) = 100 (Mbit/s)
    Surplus bandwidth for user 3 = 300 x (1 / (3 + 2 + 1)) = 50 (Mbit/s)

#2

    Send bandwidth for each user (less than or equal to the maximum bandwidth)
                = *minimum-bandwidth-of-each-user + surplus-bandwidth-allocated-to-each-user*
    Send bandwidth for user 1 = 200 + 150 = 350 (Mbit/s)
    Send bandwidth for user 2 = 200 + 100 = 300 (Mbit/s)
    Send bandwidth for user 3 = 200 + 50 = 250 (Mbit/s)

After the change:

      <omitted>

The following table shows an example of calculating bandwidth in RGQ mode, based on a scenario in which the hierarchical shaper uses port bandwidth control to shape the line bandwidth to 900 Mbit/s.

Table 6-6 Example of RGQ bandwidth calculation

(Line bandwidth = 900 Mbit/s)

User	Actual input bandwidth (Mbit/s)	Minimum bandwidth (Mbit/s)[#1]	Maximum bandwidth (Mbit/s)[#2]	Weighting[#1]	Surplus bandwidth (Mbit/s)[#3]	Guaranteed bandwidth (Mbit/s)[#4]	Actual send bandwidth (Mbit/s)
User 1	500	200	900	3	150	350	350
User 2	350	200	900	2	100	300	300
User 3	250	200	900	1	50	250	250

#1

    The guaranteed bandwidth for each user is calculated by adding the surplus bandwidth distributed according to the weighting to the minimum bandwidth. Determine the minimum bandwidth and weighting for each user considering the bandwidth that must be guaranteed for each user.

#2

The bandwidth resources are distributed for each user, based on the value calculated by adding the surplus bandwidth distributed according to the weighting to the minimum bandwidth. For this reason, you must not specify a value smaller than the line bandwidth for the maximum bandwidth so that the bandwidth resources are appropriately distributed for each user. If a value smaller than the line bandwidth is specified, the bandwidth-use efficiency might be decreased.

#3

Line surplus bandwidth = *line-bandwidth - total-of-minimum-bandwidth-for-all-users*
    = 900 - (200 + 200 + 200) = 300 (Mbit/s)
Surplus bandwidth for user 1 = 300 x (3 / (3 + 2 + 1)) = 150 (Mbit/s)
Surplus bandwidth for user 2 = 300 x (2 / (3 + 2 + 1)) = 100 (Mbit/s)
Surplus bandwidth for user 3 = 300 x (1 / (3 + 2 + 1)) = 50 (Mbit/s)

#4

Guaranteed bandwidth for each user (less than or equal to the maximum bandwidth)
    = *minimum-bandwidth-of-each-user + surplus-bandwidth-allocated-to-each-user*
Guaranteed bandwidth for user 1 = 200 + 150 = 350 (Mbit/s)
Guaranteed bandwidth for user 2 = 200 + 100 = 300 (Mbit/s)
Guaranteed bandwidth for user 3 = 200 + 50 = 250 (Mbit/s)

(2) 6.4.6 Notes on using the hierarchical shaper [Change]

Notes on using the hierarchical shaper has been changed.

Before the change:

6.4.6 Notes on using the hierarchical shaper

(1) Bandwidth control by LLPQ

The following notes apply when the LLPQ bandwidth is greater than the minimum bandwidth:

・When the input bandwidth of a low latency queue exceeds the minimum bandwidth, the total user bandwidth might exceed the port bandwidth. In this case, the minimum bandwidth cannot be guaranteed for all users.

・When the load on the Switch exceeds the line bandwidth, the difference between users in terms of the output bandwidth allocated by LLPQ bandwidth control will be less than the ratio specified in the LLPQ bandwidth control parameters, increasing the size of users that carry traffic with longer frame lengths.

After the change:

6.4.6 Notes on using the hierarchical shaper

(1) Bandwidth control by RGQ

The following notes apply for bandwidth control by RGQ.

・The guaranteed bandwidth for each user is calculated by adding the surplus bandwidth distributed according to the weighting to the minimum bandwidth. Determine the minimum bandwidth and weighting for each user, considering the bandwidth capacity that must be guaranteed for each user.

・The bandwidth resources are shared among users, based on the value calculated by adding the surplus bandwidth distributed according to the weighting to the minimum bandwidth. For this reason, you must not specify a value smaller than the line bandwidth for the maximum bandwidth so that the bandwidth resources are appropriately distributed for each user. If a value smaller than the line bandwidth is specified, the bandwidth-use efficiency might be decreased.

In the example below, port bandwidth control shapes the line bandwidth to 600 Mbit/s, and bandwidth resources are distributed among users 1, 2, and 3 in the ratio of 3:2:1 when line congestion occurs. In the setting example shown in *Table 6-22a*, the maximum bandwidth capacity given for each user is the same as the line bandwidth capacity. When unused bandwidth exists within the guaranteed bandwidth capacity of user 2, the unused bandwidth can be effectively used by user 1 and user 3. As a result, the total send bandwidth capacity of all users becomes equal to the line bandwidth capacity. In the setting example shown in *Table 6-22b*, the maximum bandwidth capacity of user 3 is smaller than the line bandwidth capacity and the traffic sent by user 3 exceeds the maximum bandwidth capacity. At this time, even if unused bandwidth exists within the guaranteed bandwidth capacity of user 2, the unused bandwidth cannot be effectively used by user 1. As a result, the total send bandwidth capacity of all users might be smaller than the line bandwidth capacity.

Table 6-22a Setting example and send bandwidth for RGQ

(Line bandwidth = 600 Mbit/s)

User	Actual input bandwidth (Mbit/s)	Minimum bandwidth (Mbit/s)	Maximum bandwidth (Mbit/s)	Weighting	Surplus bandwidth (Mbit/s)	Guaranteed bandwidth (Mbit/s)	Actual send bandwidth (Mbit/s)
User 1	500	300	600	3	0	300	380[#1]
User 2	100	200	600	2	0	200	100
User 3	150	100	600	1	0	100	120[#1]

(Total send bandwidth of all users = 600 Mbit/s)

#1: If the send bandwidth capacity exceeds the guaranteed bandwidth capacity, the send bandwidth capacity varies depending on various conditions including input traffic conditions. Therefore, the send capacity in the above table is not guaranteed. The bandwidth within the guaranteed bandwidth is guaranteed for each user.

Table 6-22b Setting example and send bandwidth for RGQ

(Line bandwidth = 600 Mbit/s)

User	Actual input bandwidth (Mbit/s)	Minimum bandwidth (Mbit/s)	Maximum bandwidth (Mbit/s)	Weighting	Surplus bandwidth (Mbit/s)	Guaranteed bandwidth (Mbit/s)	Actual send bandwidth (Mbit/s)
User 1	500	300	600	3	0	300	330[#2]
User 2	100	200	600	2	0	200	100
User 3	150	100	100	0[#1]	0	100	100

(Total send bandwidth of all users = 530 Mbit/s)

#1: The weighting is 0 when the minimum bandwidth is equal to the maximum bandwidth.

#2: If the send bandwidth capacity exceeds the guaranteed bandwidth capacity, the send bandwidth capacity varies depending on various conditions including input traffic conditions. Therefore, the send capacity in the above table is not guaranteed. The bandwidth within the guaranteed bandwidth is guaranteed for each user.

(2) Bandwidth control by LLPQ

The following notes apply when the LLPQ bandwidth is greater than the minimum bandwidth:

・When the input bandwidth of a low latency queue exceeds the minimum bandwidth, the total user bandwidth might exceed the port bandwidth. In this case, the minimum bandwidth cannot be guaranteed for all users.

・When the load on the Switch exceeds the line bandwidth, the difference between users in terms of the output bandwidth allocated by LLPQ bandwidth control will be less than the ratio specified in the LLPQ bandwidth control parameters, increasing the size of users that carry traffic with longer frame lengths.

(3) 6.9 Drop control operation [Change]

6.9 Drop control operation has been changed.

Before the change:

> When traffic that has remaining packets with a Qlen value of 255 for Queue 8 flows into the line, use the `show qos queueing interface` command to check the number of the queue that is holding the queued packets, the queuing priority, and the number of dropped packets. The applicable Ethernet interface is port 1/11, with an output priority of 8 and a queuing priority of 1.

After the change:

> To check the queuing priority, use the `show qos queueing interface` command when traffic that has remaining packets with a Qlen value of 255 for Queue 8 flows into the line and then check the number of the queue that is holding the queued packets, the queuing priority, and the number of dropped packets. The applicable Ethernet interface is port 1/11, with an output priority of 8 and a queuing priority of 1.
>
> To check the buffer management and tail drop status of the hierarchical shaper, use the `show shaper all` command when traffic (traffic whose queuing packets use 70% of the in-use buffer limitation) is delivered to each user, and then check the port buffer information, the queue length information, and the discard mode that are displayed.

17. Redundancy of BCUs, CSUs, and MSUs

(1) 17.1.5 Functionality that enables non-stop communication at system switchover [Change]

A note in Table *17-3 Support of non-stop communication at a system switchover* has been changed [Version 11.9 and later].

Before the change:

Table 17-3 Support of non-stop communication at a system switchover

<The table is omitted>

#4
When the `ip pim nonstop-forwarding` configuration command is executed. If IPv4 multicast is performed on VRF interfaces, this functionality is disabled.

After the change:

Table 17-3 Support of non-stop communication at a system switchover

<The table is omitted>

#4
When the `ip pim nonstop-forwarding` configuration command is executed.

21. Description of GSRP

(1) 21.3.5 Enabling GSRP VLAN group-only control functionality [Change]

GSRP VLAN group-only control functionality has been changed [Version 11.9 and later].

Change:

21.3.5 GSRP VLAN group-only control functionality

Using the `gsrp limit-control` configuration command, you can limit the VLANs under GSRP control only to those that belong to VLAN groups. Because these VLANs are not under GSRP control, you can always use them for communication.

Added
When the GSRP-managed VLAN is not assigned to a VLAN group, the GSRP-managed VLAN is not under GSRP control either, resulting in a loop configuration. When using this functionality, make sure that the GSRP-managed VLAN belongs to a VLAN group. In this case, we recommend that you create a VLAN group that contains only the GSRP-managed VLAN to avoid impact on other VLAN groups.

3. Changes in Configuration Guide Vol. 3 (For Version 11.7) (AX63S-S003X-C0)

4. Policy-based Routing

(1) 4.2.1 List of configuration commands [Change]

Table *4-8 List of configuration commands* has been changed [Version 11.9 and later].

Change:

Table 4-8 List of configuration commands

	Command name	Description
	default	Sets the default operation for policy-based routing list information.
	policy-interface	Sets a route in policy-based routing list information
	policy-list	Sets policy-based routing list information.
	policy-list default-aging-interval	Sets the time interval over which the forwarding availability monitoring of policy-based routing is stopped during a system switchover.
Added	policy-list default-init-interval	Sets the time interval over which the forwarding availability monitoring of policy-based routing is stopped when, for example, the switch starts.
	policy-list resequence	Resets the value that controls the sequence in which policy-based routing routes are applied.
	recover	Configures the path switchback operation for policy-based routing list information.
	access-list[#]	Configures an access list used as an IPv4 filter.
	advance access-group[#]	Applies an Advance filter to a VLAN interface, and enables Advance filtering.
	advance access-list[#]	Configures an access list used as an Advance filter.
	ip access-group[#]	Applies an IPv4 filter to a VLAN interface, and enables the IPv4 filtering.
	ip access-list extended[#]	Configures an access list used as an IPv4 packet filter.
	permit[#]	Specifies conditions by which a filter permits access.

(2) 4.3.1 List of operation commands for policy-based routing [Change]

Table *4-10 List of operation commands* has been changed.

Change:

Table 4-10 List of operation commands

Command name	Description
show ip policy	Displays the VLAN IDs of VLAN interfaces for which IPv4 policy-based routing is set and the access list information.
show ip cache policy	Displays the routing information and status for the specified policy-based routing list information.
reset policy-list	Reselects the routing information.
dump policy	Outputs to a file event trace information and control table information collected by the policy-based program.
restart policy	Restarts the policy-based program.
show access-filter#	Displays the statistics for the access list (access-list, ip access-list, advance access-list) configured by using the access group command (ip access-group, advance access-group).
clear access-filter#	Displays the statistics for the access list (access-list, ip access-list, advance access-list) configured by using the access group command (ip access-group, advance access-group).

Corrected (show ip policy, show ip cache policy)

Added (reset policy-list, dump policy, restart policy)

(3) 4.3.2 Checking policy-based routing [Change]

Figure *4-9 Execution result of the show ip cache policy command (checking routes)* has been changed.

Change:

Figure 4-9 Execution result of the show ip cache policy command (checking routes)

```
> show ip cache policy 10
Date 2012/01/01 12:00:00 UTC
Policy Base Routing Default Init Interval :  200
    Start Time : 2012/01/01 00:00:00
    End Time   : 2012/01/01 00:03:20
Policy Base Routing Default Aging Interval :  200
    Start Time : -
    End Time   : -
Policy Base Routing List : 10
    Default : Permit
    Recover : On
    Priority    Sequence  VLAN ID  Status   Next Hop         Track Object ID
 *>      1          10      100  Up       192.168.1.1                  -
         2          20      200  Up       192.168.2.1                  -
```

Corrected (Start Time / End Time)

Figure *4-10 Execution result of the show ip cache policy command (checking path switchback operation)* has been changed.

Change:

Figure 4-10 Execution result of the show ip cache policy command (checking path switchback operation)

```
> show ip cache policy 10
Date 2012/01/01 12:00:00 UTC
Policy Base Routing Default Init Interval :  200
    Start Time : 2012/01/01 00:00:00
    End Time   : 2012/01/01 00:03:20
Policy Base Routing Default Aging Interval :  200
    Start Time : -
    End Time   : -       } Corrected
Policy Base Routing List : 10
    Default : Permit
    Recover : Off                                                  ...1
    Priority    Sequence  VLAN ID  Status  Next Hop          Track Object ID
 *>      1          10      100  Up      192.168.1.1                -
         2          20      200  Up      192.168.2.1                -
```

42

14. Description of IPv4 Multicast

(1) 14.3 IPv4 multicast forwarding functionality [Change]

(5) Non-stop communication functionality during a system switchover has been changed [Version 11.9 and later].

Before the change:

<omitted>

For 450 seconds after a system switchover, multicast forwarding is continued based on the hardware entry before the system switchover. These 450 seconds after the system switchover are spent re-learning entries. Entries that are not learned during the re-learning period are deleted. The operation log information is output when re-learning starts and ends.

This functionality is enabled only when the `ip pim nonstop-forwarding` configuration command is set. If IPv4 multicasting is performed on VRF interfaces, this functionality is disabled.

The following operation commands display the re-learning status of IPv4 multicast forwarding entries after a system switchover:

<omitted>

After the change:

<omitted>

For 450 seconds after a system switchover, multicast forwarding is continued based on the hardware entry before the system switchover. These 450 seconds after the system switchover are spent re-learning entries. Entries that are not learned during the re-learning period are deleted. The operation log information is output when re-learning starts and ends.

This functionality is enabled only when the `ip pim nonstop-forwarding` configuration command is set.

The following operation commands display the re-learning status of IPv4 multicast forwarding entries after a system switchover:

<omitted>

(2) 14.4.4 PIM-DM [Change]

(3) Detecting neighbors has been changed [Version 11.9 and later].

Before the change:

Operation is the same as for PIM-SM (see *(3) Detecting neighbors of 14.4.2 IPv4 PIM-SM*).

After the change:

PIM-DM routers regularly send PIM-Hello messages to all interfaces capable of multicast. PIM-Hello messages are sent to the address for the All-PIM-Routers IP multicast group (224.0.0.13). When these messages are received, neighboring PIM routers can be dynamically detected.

SOFT-AM-1793_R1

(3) 14.6.1 IPv4 multicast forwarding [Change] [Addition]

(f) Notes on using the non-stop communication functionality during a system switchover in *(2) Using PIM-SM* has been changed [Version 11.9 and later].

Before the change:

The following notes apply to when the non-stop communication functionality is enabled (when the `ip pim nonstop-forwarding` configuration command is set) during a system switchover.

● Do not change the PIM-SSM operation range in the configuration during a re-learning operation. If the PIM-SSM operation range is changed during a re-learning operation and then the multicast forwarding entry is changed to PIM-SSM routes from PIM-SM or to PIM-SM routes from PIM-SSM routes, multicast forwarding operation is not guaranteed.

After the change:

The following notes apply to when the non-stop communication functionality is enabled (when the `ip pim nonstop-forwarding` configuration command is set) during a system switchover.

● Multicast forwarding entries in which extranet is specified do not support this functionality. For this reason, multicast forwarding through extranet is temporarily stopped when system switching is performed.

(g) Notes on re-learning IPv4 multicast forwarding entries when the non-stop communication functionality is enabled during a system switchover in *(2) Using PIM-SM* has been changed.

Change:

The following notes are applied when IPv4 multicast forwarding entries are re-learned and the non-stop communication functionality is enabled during a system switchover. The following notes are not applied after IPv4 multicast forwarding entries are completely re-learned (450 seconds after a system switchover occurs).

• For the system-switchover-target router and neighboring routers, enable the graceful restart of the unicast routing protocol to be used. If graceful restarts are disabled, PIM messages are not normally sent and received immediately after a system switchover, and multicast forwarding might be temporarily terminated.

• For the neighboring routers of a system-switchover-target router, use the devices that support the Generation ID option (devices that comply with RFC 4601 and draft-ietf-pim-sm-bsr-07). If the neighboring routes do not support the Generation ID option, PIM messages are not normally sent and received immediately after a system switchover, and multicast forwarding might be temporarily terminated. For details about Generation ID option, see *(3) Detecting neighbors* in *14.4.2 IPv4 PIM-SM*.

Added To retain the relationship between the Switch and neighboring routes during system switching, set the Hello message sending interval to 30 seconds or more (the default is 30 seconds).

• Packets might be lost when the following conditions are met during re-learning time:
  - An encapsulated interface is contained in downstream interfaces in multicast forwarding entries.
    Forwarding to the encapsulated interface is stopped until rendezvous point information is learned.
  - When a system switchover is performed while a route is being switched from a rendezvous point route to the shortest path route.
  - A group participation request is received when a system switchover is performed for a rendezvous point.
  - An upstream interface for the multicast forwarding entries is changed.

<The subsequent paragraphs omitted>

44

The following descriptions have been added in *(g) Notes on re-learning IPv4 multicast forwarding entries when the non-stop communication functionality is enabled during a system switchover* of *(2) Using PIM-SM* [Version 11.9 and later].

Addition:

● Changing the configuration used to start and finish IPv4 multicast operations in the global network or VRF finishes relearning of multicast forwarding entries in the global network and all VRFs. When this occurs, unlearned multicast forwarding entries are deleted. The following configurations are the conditions to start and finish IPv4 multicast operations:
  - ip multicast-routing
  - ip pim sparse-mode
  - ip address

● Changing the PIM-SSM operating range in the configuration within the relearning time finishes relearning of multicast forwarding entries in the global network and all VRFs. When this occurs, unlearned multicast forwarding entries are deleted.

4. Changes in Configuration Command Reference Vol. 1 (For Version 11.7) (AX63S-S004X-C0)

9. Device Management

(1) system temperature-warning-level [Change]

Functionality description has been changed.

Before the change:
Outputs an operation message when the intake temperature of the switch exceeds the specified temperature.

After the change:
Outputs an operation message when the intake temperature of the switch rose to the specified temperature or higher.

Default behavior has been changed.

Before the change:
An operation message is not output when the specified temperature is exceeded.

After the change:
None

Notes has been changed.

Before the change:
If the intake temperature of the switch has already exceeded the specified temperature, an operation message is immediately output.

After the change:
If the intake temperature of the switch has already risen to the specified temperature or higher, an operation message is immediately output.

13. Link Aggregation

(1) channel-group monitor-lacp [Addition]

channel-group monitor-lacp has been added [Version 11.9 and later].

Addition:

channel-group monitor-lacp

Enables the LACP monitoring functionality.

Syntax

To set information:
channel-group monitor-lacp

To delete information:
no channel-group monitor-lacp

Input mode

(config-if)

Parameters

None

Default behavior

The LACP monitoring functionality is disabled.

Impact on communication

None

When the change is applied

The change is applied immediately after setting values are changed.

Notes

This command is valid only when static link aggregation is used.

Related commands

interface port-channel
channel-group mode
channel-group periodic-timer

15. VLANs

(1) vlan-up-message [Addition]

vlan-up-message has been added [Version 11.9 and later].

Addition:

vlan-up-message

Suppresses issuing operation log messages or linkUp or linkDown traps during VLAN Up or Down by using the `no vlan-up-message` command.

Syntax

To set information:
   no vlan-up-message

To delete information:
   vlan-up-message

Input mode

(config)

Parameters

None

Default behavior

Operation log messages or linkUp or linkDown traps are issued during VLAN Up or Down.

Impact on communication

None

When the change is applied

The change is applied immediately after setting values are changed.

Notes

1. The value of ifLinkUpDownTrapEnable of the ifMIB group for a VLAN is not affected by the settings for this command.

Related commands

None

18. Policy-based Switching

(1) policy-channel-group [Change] [Addition]

Syntax has been changed [Version 11.9 and later].

Before the change:
> To set or change information:
>> [<*sequence*>] policy-channel-group <*channel group number*>

After the change:
> To set or change information:
>> [<*sequence*>] policy-channel-group <*channel group number*> [track-object <*track object id*>]

In *Parameters*, the following has been added [Version 11.9 and later].

Addition:
> track-object <*track object id*>
>> Specifies the ID of the track for which communication of route information is monitored.
>> 1. Default value when this parameter is omitted:
>>> Communication of route information is not monitored by the track.
>> 2. Range of values:
>>> A decimal number from 1 to 1024 can be specified as the track ID.

In *Related commands*, the following has been added [Version 11.9 and later].

Addition:
> track-object

(2) policy-interface (policy-switch-list) [Change] [Addition]

Syntax has been changed [Version 11.9 and later].

Before the change:
    To set or change information:
        [*<sequence>*] policy-interface {gigabitethernet | tengigabitethernet} *<nif no.>/<port no.>*

After the change:
    To set or change information:
        [*<sequence>*] policy-interface {gigabitethernet | tengigabitethernet} *<nif no.>/<port no.>* [track-object *<track object id>*]

In *Parameters*, the following has been added [Version 11.9 and later].

Addition:
        track-object *<track object id>*
        Specifies the ID of the track for which communication of route information is monitored.
        1. Default value when this parameter is omitted:
            Communication of route information is not monitored by the track.
        2. Range of values:
            A decimal number from 1 to 1024 can be specified as the track ID.

In *Related commands*, the following has been added [Version 11.9 and later].

Addition:

    track-object

(3) policy-switch-list default-aging-interval [Addition]

In *Notes*, the following has been added [Version 11.9 and later].

Addition:
    2. For the interval over which the monitoring of the forward ability is stopped, set a value larger than the value set by the `track-object default-aging-interval` command for the tracking functionality of policy-based switching.

(4) policy-switch-list default-init-interval [Addition]

In *Notes*, the following has been added [Version 11.9 and later].

Addition:
    2. For the interval over which the monitoring of the forward ability is stopped, set a value larger than the value set by the `track-object default-init-interval` command for the tracking functionality of policy-based switching.

5. Changes in Configuration Command Reference Vol. 2 (For Version 11.7) (AX63S-S010X-30)

7. QoS

(1) shaper user-list [Change]

Range of values for *<rate>* in *Parameters* has been changed.

Change:

llq+3wfq *<rate1>*% *<rate2>*% *<rate3>*% *<rate4>*%
In the fourth queue (llq), the specified rate of the packets is given the highest priority for output. For the first to third queues (3wfq), weighted fair queuing is used, where the remaining bandwidth after the bandwidth used by the fourth queue (not the set bandwidth) is subtracted from users' send bandwidth, is shared among the queues based on their weights.
1. Default value when this parameter is omitted:
   This parameter cannot be omitted.
2. Range of values:

Corrected → - *<rate1>* to *<rate3>*: Specify 1 to 98. When you specify the values, make sure that the following condition is satisfied and the total value of *<rate>* is no more than 100: *<rate1>* ≤ *<rate2>* ≤ *<rate3>*.
- *<rate4>*: Specify 5 to 100. Note that you can specify the value in increments of 5. If 100 is specified, the fourth queue operates as priority queueing.

<data omitted>

4wfq *<rate1>*% *<rate2>*% *<rate3>*% *<rate4>*%
Weighted fair queuing is used for the queues, where the bandwidth is shared among the queues based on their weights.
1. Default value when this parameter is omitted:
   This parameter cannot be omitted.
2. Range of values:

Corrected → *<rate1>* to *<rate4>*: Specify 1 to 97. When you specify the values, make sure that the following condition is satisfied and the total value of *<rate>* is no more than 100: *<rate1>* ≤ *<rate2>* ≤ *<rate3>* ≤ *<rate4>*.

<data omitted>

pq+llq+2wfq *<rate1>*% *<rate2>*% *<rate3>*%
The fourth queue (pq) operates with priority queueing, which outputs packets with highest priority. The remaining bandwidth, after the bandwidth used by the fourth queue is subtracted from users' send bandwidth, is allocated as follows: The specified proportion of the remaining bandwidth is used for the third queue (llq) priority traffic. Queues 1 and 2 share the rest according to their weighting (2wfq).
1. Default value when this parameter is omitted:
   This parameter cannot be omitted.
2. Range of values:

Corrected → - *<rate1>* to *<rate2>*: Specify 1 to 99. When you specify the values, make sure that the following condition is satisfied and the total value of *<rate>* is no more than 100: *<rate1>* ≤ *<rate2>*.
- *<rate3>*: Specify 5 to 100. Note that you can specify the value in increments of 5. If 100 is specified, the third queue operates as priority queueing.

<data omitted>

2pq+llq+4wfq+beq *<rate2>*% *<rate3>*% *<rate4>*% *<rate5>*% *<rate6>*%
   The seventh and eighth queues (2pq) operate with priority queuing, which outputs packets with
   highest priority. The remaining bandwidth, after the bandwidth used by the seventh and eighth
   queues is subtracted from users' send bandwidth, is allocated as follows: The specified
   proportion of the remaining bandwidth is used for sixth queue (llq) priority traffic. Queues 2 to
   5 share the rest according to their weighting (4wfq). The remaining bandwidth is used by the
   first queue (beq).
   1. Default value when this parameter is omitted:
      This parameter cannot be omitted.
   2. Range of values:

Corrected ➔ - *<rate2>* to *<rate5>*: Specify 1 to 97. When you specify the values, make sure that the
      following condition is satisfied and the total value of *<rate>* is no more than 100: *<rate2>*
      ≤ *<rate3>* ≤ *<rate4>* ≤ *<rate5>*.
      - *<rate6>*: Specify 5 to 100. Note that you can specify the value in increments of 5. If 100 is
      specified, the sixth queue operates as priority queueing.

   \<data omitted\>

4pq+4wfq *<rate1>*% *<rate2>*% *<rate3>*% *<rate4>*%
   The fifth to eighth queues (4pq) operate with priority queuing, which outputs packets with
   highest priority. For the remaining bandwidth, after the bandwidth used by the fifth to eighth
   queues (not the set bandwidth) is subtracted from users' send bandwidth, weighted fair queuing
   is used. Therefore, queues 1 to 4 are guaranteed to share the remaining bandwidth according to
   their weighting (4wfq).
   1. Default value when this parameter is omitted:
      This parameter cannot be omitted.
   2. Range of values:

Corrected ➔ *<rate1>* to *<rate4>*: Specify 1 to 97. When you specify the values, make sure that the
      following condition is satisfied and the total value of *<rate>* is no more than 100: *<rate1>*
      ≤ *<rate2>* ≤ *<rate3>* ≤ *<rate4>*.

   \<data omitted\>

2pq+4wfq+2beq *<rate3>*% *<rate4>*% *<rate5>*% *<rate6>*%
   The seventh and eighth queues (2pq) operate with priority queuing, which outputs packets with
   highest priority. The remaining bandwidth, after the bandwidth used by the seventh and eighth
   queues (not the set bandwidth) is subtracted from users' send bandwidth, is allocated as follows:
   For queues 3 to 6, weighted fair queuing is used, where queues are guaranteed to share the
   remaining bandwidth according to their weighting (4wfq). The remaining bandwidth is used by
   the first and second queues (2beq).
   1. Default value when this parameter is omitted:
      This parameter cannot be omitted.
   2. Range of values:

Corrected ➔ *<rate3>* to *<rate6>*: Specify 1 to 97. When you specify the values, make sure that the
      following condition is satisfied and the total value of *<rate>* is no more than 100: *<rate3>*
      ≤ *<rate4>* ≤ *<rate5>* ≤ *<rate6>*. Specify the maximum bandwidth for the user list.

   \<data omitted\>

30. Error Messages Displayed When Editing the Configuration

(1) 30.1.20 Port mirroring information [Change]

Table *30-19 Port mirroring error messages* has been changed [Version 11.9 and later].

Before the change:

Table 30-19 Port mirroring error messages

Message	Description
Mirror port and switchport are inconsistent.	Both mirror port and switchport settings cannot be specified simultaneously.

After the change:

Table 30-19 Port mirroring error messages

Message	Description
Mirror port and switchport are inconsistent.	A mirror port cannot be set for ports other than access ports, or ports that belong to the VLAN.

6. Changes in Configuration Command Reference Vol. 3 (For Version 11.7) (AX63S-S005X-C0)

5. Policy-based Routing

(1) policy-interface (policy-list) [Change] [Deletion]

The `track-object` parameter has been changed [Version 11.9 and later].

Before the change:
> track-object *<track object id>*
>> Specifies the ID of the track for which communication of route information is monitored.
>> 1. Default value when this parameter is omitted:
>>> This parameter cannot be omitted.
>> 2. Range of values:
>>> A decimal number from 1 to 1024 can be specified as the track ID.

After the change:
> track-object *<track object id>*
>> Specifies the ID of the track for which communication of route information is monitored.
>> 1. Default value when this parameter is omitted:
>>> Communication of route information is not monitored by the track.
>> 2. Range of values:
>>> A decimal number from 1 to 1024 can be specified as the track ID.

Notes 2 has been deleted [Version 11.9 and later].

Deletion
> 2. Before you specify the `track-object` parameter in this command, enable the tracking functionality for policy-based routing.

15. IPv4 Multicast Routing Protocol Information

(1) ip multicast-routing [Addition]

In *Notes*, the following has been added [Version 11.9 and later].

Addition:

4. When the functionality that enables non-stop communication at system switching is enabled, if you change this setting while IPv4 multicast forwarding entries are re-learned after the system switching, multicast forwarding might temporarily stop. The global network that has been changed by this setting or those other than a VRF will also be affected.

In *Related commands*, the following has been added [Version 11.9 and later].

Addition:

ip pim nonstop-forwarding

ip pim sparse-mode

(2) ip pim max-interface [Change]

Functionality description has been changed.

Before the change:
>   Specifies the maximum number of interfaces that can run IPv4 PIM and IGMP to adjust memory efficiency.

After the change:
>   Specifies the maximum number of interfaces that can run IPv4 PIM or IGMP to adjust memory efficiency.

Parameters has been changed [Version 11.7.A and later].

Before the change:
>   *<number>*
>>   <data omitted>
>   1. Default value when this parameter is omitted:
>   This parameter cannot be omitted
>   2. Range of values:
>   For AX6700S series switches:
>   The valid setting range of the maximum number of interfaces that can run IPv4 PIM and IGMP for each device varies depending on the BSU type.
>   The following table describes the valid setting range of the maximum number of interfaces that can run IPv4 PIM and IGMP for each BSU type.

>   Table 15-2 Valid setting range of the maximum number of interfaces that can run IPv4 PIM and IGMP for each BSU type

BSU type	Range of values
BSU-LA	32, 64, 128
BSU-LB	32, 64, 128, 256

>   For AX6600S series switches:
>   The valid setting range of the maximum number of interfaces that can run IPv4 PIM and IGMP for each device varies depending on the CSU type.
>   The following table describes the valid setting range of the maximum number of interfaces that can run IPv4 PIM and IGMP for each CSU type.
>   <data omitted>

>   For AX6300S series switches:
>   The valid setting range of the maximum number of interfaces that can run IPv4 PIM and IGMP for each device varies depending on the MSU type.
>   The following table describes the valid setting range of the maximum number of interfaces that can run IPv4 PIM and IGMP for each MSU type.
>   <The subsequent paragraphs omitted>

After the change:

> *<number>*
>> <data omitted>
>> 1. Default value when this parameter is omitted:
>>   This parameter cannot be omitted
>> 2. Range of values:
>>
>>> For AX6700S series switches:
>>> The valid setting range of the maximum number of interfaces that can run IPv4 PIM or IGMP for each device is 32, 64, 128, or 256.
>>> Make sure that the number of interfaces that can run IPv4 PIM or IGMP does not exceed the capacity limit of an installed BSU.
>>>
>>> For AX6600S series switches:
>>> The valid setting range of the maximum number of interfaces that can run IPv4 PIM and IGMP for each device varies depending on the CSU type.
>>> The following table describes the valid setting range of the maximum number of interfaces that can run IPv4 PIM and IGMP for each CSU type.
>>> <data omitted>
>>>
>>> For AX6300S series switches:
>>> The valid setting range of the maximum number of interfaces that can run IPv4 PIM and IGMP for each device varies depending on the MSU type.
>>> The following table describes the valid setting range of the maximum number of interfaces that can run IPv4 PIM and IGMP for each MSU type.
>>> <The subsequent paragraphs omitted>

Default behavior has been changed [Version 11.7.A and later].

Before the change:

> For AX6700S series switches:
> If the BSU type is BSU-LA, the maximum number of interfaces that can run IP multicast is 128, and if BSU-LB, it is 256.

> For AX6600S series switches:
> If the CSU type is CSU-1A, the maximum number of interfaces that can run IP multicast is 128, and if CSU-1B, it is 256.

> For AX6300S series switches:
> If the MSU type is MSU-1A or MSU-1A1, the maximum number of interfaces that can run IP multicast is 128, and if MSU-1B or MSU-1B1, it is 256.

After the change:

> For AX6700S series switches:
> The maximum number of interfaces that can run IPv4 PIM or IGMP is 256.
> Make sure that the number of interfaces that can run IPv4 PIM or IGMP does not exceed the capacity limit of an installed BSU.

> For AX6600S series switches:
> If the CSU type is CSU-1A, the maximum number of interfaces that can run IPv4 PIM or IGMP is 128, and if CSU-1B, it is 256.

> For AX6300S series switches:
> If the MSU type is MSU-1A or MSU-1A1, the maximum number of interfaces that can run IPv4 PIM or IGMP is 128, and if MSU-1B or MSU-1B1, it is 256.

(3) ip pim mcache-limit [Change]

Parameters has been changed [Version 11.7.A and later].

Before the change:
  <number>
     <data omitted>
   1. Default value when this parameter is omitted:
      This parameter cannot be omitted.
   2. Range of values:

      For AX6700S series switches:
        The valid setting range of the maximum number of the total of IPv4 PIM-SM/SSM multicast forwarding entries and negative cache entries for each device varies depending on the BSU type.
        The following table describes the valid setting range of the maximum number of the total of IPv4 PIM-SM/SSM multicast forwarding entries and negative cache entries for each BSU type.

Table 15-5 Valid setting range of the maximum number of IPv4 PIM-SM/SSM multicast routing entries for each BSU type

BSU type	Range of values
BSU-LA	0 to 4000
BSU-LB	0 to 8000

After the change:
  <number>
     <data omitted>
   1. Default value when this parameter is omitted:
      This parameter cannot be omitted.
   2. Range of values:

      For AX6700S series switches:
        The valid setting range of the maximum total number of IPv4 PIM-SM/SSM multicast forwarding entries and negative cache entries for each device is 0 to 8000.
        Make sure that the setting does not exceed the capacity limit of an installed BSU.

(4) ip pim mroute-limit [Change]

Parameters has been changed [Version 11.7.A and later].

Before the change:
> *<number>*
>> <data omitted>
>> 1. Default value when this parameter is omitted:
>>> This parameter cannot be omitted.
>> 2. Range of values:
>>
>>> For AX6700S series switches:
>>> The valid setting range of the maximum number of PIM-SM/SSM multicast routing entries for each device varies depending on the BSU type.
>>> The following table describes the valid setting range of the maximum number of PIM-SM/SSM multicast routing entries for each BSU type.

Table 15-8 Valid setting range of the maximum number of PIM-SM/SSM multicast routing entries for each BSU type

BSU type	Range of values
BSU-LA	0 to 4000
BSU-LB	0 to 8000

After the change:
> *<number>*
>> <data omitted>
>> 1. Default value when this parameter is omitted:
>>> This parameter cannot be omitted.
>> 2. Range of values:
>>
>>> For AX6700S series switches:
>>> The valid setting range of the maximum number of PIM-SM/SSM multicast routing entries for each device is 0 to 8000.
>>> Make sure that the setting does not exceed the capacity limit of an installed BSU.

(5) ip pim nonstop-forwarding [Deletion]

Note 1 has been deleted [Version 11.9 and later].

Deletion
> 1. If IPv4 multicast is run on the interface of the VRF, this command is not valid.

(6) ip pim sparse-mode [Addition]

In *Notes*, the following has been added [Version11.9 and later].

Addition:
> 2. When the functionality that enables non-stop communication at system switching is enabled, if you change this setting while IPv4 multicast forwarding entries are re-learned after the system switching, multicast forwarding might temporarily stop. The global network that has been changed by this setting or those other than a VRF will also be affected.

29. IPv6 Multicast Routing Protocol Information

(1) ipv6 pim max-interface [Change]

Parameters has been changed [Version 11.7.A and later].

Before the change:
> *<number>*
>> <data omitted>
>> 1. Default value when this parameter is omitted:
>>> This parameter cannot be omitted.
>> 2. Range of values:
>>
>>> For AX6700S series switches:
>>> The valid setting range of the maximum number of interfaces that can run IPv6 PIM or MLD for each device varies depending on the BSU type.
>>> The following table describes the valid setting range of the maximum number of interfaces that can run IPv6 PIM or MLD for each BSU type.

Table 29-5 Valid setting range of the maximum number of interfaces that can run IPv6 PIM/MLD for each BSU type

BSU type	Range of values
BSU-LA	32, 64, 128
BSU-LB	32, 64, 128, 256

After the change:
> *<number>*
>> <data omitted>
>> 1. Default value when this parameter is omitted:
>>> This parameter cannot be omitted.
>> 2. Range of values:
>>
>>> For AX6700S series switches:
>>> The valid setting range of the maximum number of interfaces that can run IPv6 PIM or MLD for each device is 32, 64, 128, or 256.
>>> Make sure that the number of interfaces that can run IPv6 PIM or MLD does not exceed the capacity limit of an installed BSU.

Default behavior has been changed.

Before the change:

> For AX6700S series switches:
> If the BSU type is BSU-LA, the maximum number of interfaces that can run IPv6 PIM or MLD is 128, and if BSU-LB, it is 256.

After the change:

> For AX6700S series switches:
> The maximum number of interfaces that can run IPv6 PIM or MLD is 256.
> Make sure that the number of interfaces that can run IPv6 PIM or MLD does not exceed the capacity limit of an installed BSU.

(2) ipv6 pim mcache-limit [Change]

Parameters has been changed [Version 11.7.A and later].

Before the change:
> *<number>*
>> <data omitted>
>
> 1. Default value when this parameter is omitted:
>   This parameter cannot be omitted.
> 2. Range of values:
>
>   For AX6700S series switches:
>   The valid setting range of the maximum total number of IPv6 PIM-SM/SSM multicast forwarding entries and negative cache entries for each device varies depending on the BSU type.
>   The following table describes the valid setting range of the maximum total number of IPv6 PIM-SM/SSM multicast forwarding entries and negative cache entries for each BSU type.

Table 29-8 Valid setting range of the maximum number of IPv6 PIM-SM/SSM multicast routing entries for each BSU type

BSU type	Range of values
BSU-LA	0 to 1000
BSU-LB	0 to 8000

After the change:
> *<number>*
>> <data omitted>
>
> 1. Default value when this parameter is omitted:
>   This parameter cannot be omitted.
> 2. Range of values:
>
>   For AX6700S series switches:
>   The valid setting range of the maximum total number of IPv6 PIM-SM/SSM multicast forwarding entries and negative cache entries for each device is 0 to 8000.
>   Make sure that the setting does not exceed the capacity limit of an installed BSU.

(3) ipv6 pim mroute-limit [Change]

Parameters has been changed [Version 11.7.A and later].

Before the change:
    <number>
        <data omitted>
     1. Default value when this parameter is omitted:
       This parameter cannot be omitted.
     2. Range of values:

      For AX6700S series switches:
      The valid setting range of the maximum number of IPv6 PIM-SM/SSM multicast routing entries for each device varies depending on the BSU type.
      The following table describes the valid setting range of the maximum number of IPv6 PIM-SM/SSM multicast routing entries for each BSU type.

Table 29-11 Valid setting range of the maximum number of IPv6 PIM-SM/SSM multicast routing entries for each BSU type

BSU type	Range of values
BSU-LA	0 to 1000
BSU-LB	0 to 8000

After the change:
    <number>
        <data omitted>
     1. Default value when this parameter is omitted:
       This parameter cannot be omitted.
     2. Range of values:

      For AX6700S series switches:
      The valid setting range of the maximum number of IPv6 PIM-SM/SSM multicast routing entries for each device is 0 to 8000.
      Make sure that the setting does not exceed the capacity limit of an installed BSU.

7. Changes in Operation Command Reference Vol. 1 (For Version 11.7) (AX63S-S006X-C0)

3. Terminals and Remote Operations

(1) telnet [Change]

Parameters has been changed.

Change:

{/ipv4 | /ipv6}

/ipv4
Establishes a connection via IPv4 only.
/ipv6
Establishes a connection via IPv6 only.

Added { Operation when this parameter is omitted:
Establishes a connection via IPv4 or IPv6.

6. Login Security and RADIUS or TACACS+

(1) killuser [Change]

Impact on communication has been changed.

Before the change:

Impact on communication

When a logged-in user is forcibly logged out from the remote operation terminal, the remote access communication is disconnected.

After the change:

Impact on communication

None

7. Time Settings and NTP

(1) set clock [Change]

Table *7-1 List of response messages for the set clock command* has been changed.

Change:

Table 7-1 List of response messages for the set clock command

Message	Description
illegal time format.	The input format of the time is incorrect.
illegal time.	The specified date and time are outside the valid range. Set values within the range.
invalid day of month supplied.	The specified day is outside the valid range. Set a value within the range.
invalid hour supplied.	The specified hour is outside the valid range. Set a value within the range.
invalid minute supplied.	The specified minute is outside the valid range. Set a value within the range.
invalid month supplied.	The specified month is outside the valid range. Set a value within the range.
invalid second supplied.	The specified second is outside the valid range. Set a value within the range.

Added

Note 2 has been changed.

Before the change:
2. Do not specify an invalid date or time that does not actually exist. If an invalid date or time is specified, it is automatically changed to a valid date. For example, if 0431 (April 31) is specified for *mmdd*, the value is changed to 0501 (May 1).

After the change:
2. The valid range is `1969/01/01 00:00:00` to `2038/01/19 03:14:07`.

(2) show ntp associations [Change]

Display items has been changed.

Change:

Table 7-2 Information displayed by the show ntp associations command

Item	Meaning
...	...
when	If a host is connected, this item indicates the time elapsed since the last packet was received from the host. If a host is disconnected, this item indicates the time since the last time the host was synchronized. – is displayed when the elapsed time is 0 seconds or less. ⎤ Corrected [Meaning of the symbol at the end of a displayed number] m: In minutes (for 2049 seconds or more) h: In hours (for 301 minutes or more) d: In days (for 97 hours or more) If only a number is displayed with no symbol, the displayed value is in seconds.
...	...

9. Checking Software Versions and Device Statuses

(1) show system [Change]

Table *9-6 Information displayed by the show system command (2/8) [AX6700S]* has been changed.

Before the change:

Table 9-6 Information displayed by the show system command (2/8) [AX6700S]

Item	Displayed information	Displayed detailed information
...		
Temperature	Intake temperature information	normal: Normal caution: Caution (High or low temperature) critical: Warning fault: Abnormal #: If the sensor detects temperatures over 65 degrees Celsius, the software stops.

After the change:

Table 9-6 Information displayed by the show system command (2/8) [AX6700S]

Item	Displayed information	Displayed detailed information
...		
Temperature	Intake temperature information	normal: Normal caution: Caution (High or low temperature) critical: Warning fault: Abnormal #: If the sensor detects a temperature of 65 degrees Celsius or higher, the software stops.

Table *9-7 Information displayed by the show system command (3/8) [AX6600S]* has been changed.

Before the change:

Table 9-7 Information displayed by the show system command (3/8) [AX6600S]

Item	Displayed information	Displayed detailed information
...		
Temperature	Intake temperature information	normal: Normal caution: Caution (High or low temperature) critical: Warning fault: Abnormal #: If the sensor detects temperatures over 65 degrees Celsius, the software stops.

After the change:

Table 9-7 Information displayed by the show system command (3/8) [AX6600S]

Item	Displayed information	Displayed detailed information
...		
Temperature	Intake temperature information	normal: Normal caution: Caution (High or low temperature) critical: Warning fault: Abnormal #: If the sensor detects a temperature of 65 degrees Celsius or higher, the software stops.

Table *9-8 Information displayed by the show system command (4/8) [AX6300S]* has been changed.

Before the change:

Table 9-8 Information displayed by the show system command (4/8) [AX6300S]

Item	Displayed information	Displayed detailed information
...		
Temperature	Intake temperature information	normal: Normal caution: Caution (High or low temperature) critical: Warning fault: Abnormal #: If the sensor detects temperatures over 65 degrees Celsius, the software stops.

After the change:

Table 9-8 Information displayed by the show system command (4/8) [AX6300S]

Item	Displayed information	Displayed detailed information
...		
Temperature	Intake temperature information	normal: Normal caution: Caution (High or low temperature) critical: Warning fault: Abnormal #: If the sensor detects a temperature of 65 degrees Celsius or higher, the software stops.

(2) show environment [Change]

An annotation in Table *9-15 Information displayed by the show environment command* has been changed.

Before the change:

Table 9-15 Information displayed by the show environment command

<Table omitted>

#1
`Warning level` is displayed as a result of evaluating the changes in intake temperature. If the sensor detects temperatures over 65 degrees Celsius, the software is stopped.

After the change:

Table 9-15 Information displayed by the show environment command

<Table omitted>

#1
`Warning level` is displayed as a result of evaluating the changes in intake temperature. If the sensor detects a temperature of 65 degrees Celsius or higher, the software is stopped.

Notes have been changed.

Before the change:

Notes
- The temperature history display is refreshed at the fixed times (0:00, 6:00, 12:00, and 18:00). The times might slightly change depending on the environment of the switch.
- For the display of temperature history, if the date of the switch is changed, the change is applied at 0:00 on the next day. Because the information items are displayed in the order they are collected, they are not displayed chronologically.
- Temperature history is retained for each BCU, MSU, and CSU board. Therefore, if a board is replaced, the information about the previous board is not used by the replacement board.

After the change:

Notes
- The temperature history display is refreshed at the fixed times (0:00, 6:00, 12:00, and 18:00). The times might slightly change depending on the environment of the switch. If the temperature history is refreshed and the BCU, MSU, or CSU is restarted at the same time, part of the temperature history might be lost.
- For the display of temperature history, if the date of the switch is changed, the change is applied at 0:00 on the next day. Because the information items are displayed in the order they are collected, they are not displayed chronologically.
- Temperature history is retained for each BCU, MSU, and CSU board. Therefore, if a board is replaced, the information about the previous board is not used by the replacement board.
- If the cumulative operating time information is refreshed and the BCU, MSU, or CSU is restarted at the same time, the cumulative operating time might be reset to 0 hour.

(3) show tech-support [Change]

The `ftp` parameter has been changed.

Before the change:

ftp

Saves a text file of collected information, and the dump file and core file from the internal memory card to a remote FTP server. The dump file and core file are combined into one binary file. When this parameter is specified, collected information is not displayed. Additionally, when this parameter is specified, enter connection setting information for the FTP server as per the prompts.

After the change:

ftp

Saves a text file of collected information, and the dump file and core file from the internal flash memory to a remote FTP server. The dump file and core file are combined into one binary file. When this parameter is specified, collected information is not displayed. Additionally, when this parameter is specified, enter connection setting information for the FTP server as per the prompts.

Example has been changed.

Before the change:

● Example of executing the `show tech-support ftp` command:

Collect basic information that shows the hardware and software status, and save it with a dump file and core file from the internal memory card to an FTP server. Specify the file name as `support`.

After the change:

● Example of executing the `show tech-support ftp` command:

Collect basic information that shows the hardware and software status, and save it with a dump file and core file from the internal flash memory to an FTP server. Specify the file name as `support`.

14. Software Management

(1) ppupdate [Change] [Deletion]

Impact on communication has been changed.

Before the change:

Impact on communication
Yes

After the change:

Impact on communication

If neither the `test` nor `no-reload` parameter is specified, the device is automatically restarted when the update finishes. During the restart, communication is temporarily suspended.

Note 1 has been deleted.

Deletion:
1. If the `no-reload` parameter is not specified, the device is automatically restarted after the update finishes. During the restart, communication is temporarily suspended. If the `no-reload` parameter is specified, the device is not automatically restarted after the update finishes. In this case, the device starts up with the new software the next time the device is restarted.

18. Link Aggregation

(1) show channel-group [Change]

Table *18-1 Display items for link aggregation information* has been changed. [Version 11.9 and later]

Change:

Item	Meaning	Displayed information
...	...	...
Multi Speed	Mixed-speed mode	`Off`: Does not permit a channel group to consist of ports with different transmission speeds. `On`: Permits a channel group to consist of ports with different transmission speeds.
Description	Supplementary explanation regarding the channel group	This item is not displayed if a supplementary explanation has not been set in the configuration.
LACP Monitor	LACP monitor	This item is displayed only when LACP monitoring is configured in static link aggregation mode. `Reachable`: Arrival confirmed `Unreachable`: Arrival unconfirmed
MAC Address	Channel group's MAC address	The MAC address of the group
VLAN ID	VLAN ID to which the channel group belongs	VLAN ID
...	...	...

Added (for LACP Monitor row)

Table *18-3 Display items for the detailed link aggregation information* has been changed. [Version 11.9 and later]

Change:

	Item	Meaning	Displayed information
	...	...	...
	Multi Speed	Mixed-speed mode	Off: Does not permit a channel group to consist of ports with different transmission speeds. On: Permits a channel group to consist of ports with different transmission speeds.
	Description	Supplementary explanation regarding the channel group	This item is not displayed if a supplementary explanation has not been set in the configuration.
Added	LACP Monitor	LACP monitor	This item is displayed only when LACP monitoring is configured in static link aggregation mode. Reachable: Arrival confirmed Unreachable: Arrival unconfirmed
	MAC Address	Channel group's MAC address	The MAC address of the group
	VLAN ID	VLAN ID to which the channel group belongs	VLAN ID
	...	...	...

(2) show channel-group statistics [Change]

The lacp parameter has been changed [Version 11.9 and later]

Before the change:
lacp
   Displays for each port the statistics for sent and received LACPDUs in link aggregation. Information is not displayed if static link aggregation mode is enabled or link aggregation mode has not been set.

After the change:
lacp
   Displays for each port the statistics for sent and received LACPDUs in link aggregation. Information is not displayed if static link aggregation mode is enabled or link aggregation mode has not been set.
   However, information is displayed if the LACP monitoring functionality is enabled even in static link aggregation mode.

23. Policy-based Switching

(1) show cache policy-switch [Change] [Addition]

Syntax has been changed. [Version 11.9 and later]

Before the change:
```
show cache policy-switch [<policy switch list no.>]
```

After the change:
```
show cache policy-switch [<policy switch list no.> [track-object [<track object
id>]]]
```

Parameters has been changed. [Version 11.9 and later]

Before the change:
  <policy switch list no.>
    Specify the list whose destination interface information and state information you want to display.
    For *<policy switch list no.>*, specify the list number of policy-based switching list information. The specifiable
    values are from 1 to 1000.
    Operation when this parameter is omitted:
        The destination interface information and state information for all policy-based switching list information
        items is displayed.

After the change:
  <policy switch list no.>
    Specify the list whose destination interface information and state information you want to display.
    For *<policy switch list no.>*, specify the list number of policy-based switching list information. The specifiable
    values are from 1 to 1000.

  track-object [*<track object id>*]
    Specifies the track whose route and state information you want to display.
    For *<track object id>*, specify the ID of a monitoring-target track set for the route information in the
    policy-based switching list information. The specifiable values are from 1 to 1024.
    If you omit *<track object id>*, all objects linked to the tracking functionality of policy-based switching are
    displayed.

  Operation when a parameter is omitted
    This command can display only the information relevant to the condition applied by a parameter that has been
    set. If the parameter has not been set, information is displayed with no condition applied. If multiple parameters
    are specified, information conforming to the conditions will be displayed.

  Operation when all parameters are omitted:
    The destination interface information and state information for all policy-based switching list
    information items is displayed.

Figure *23-3 Result of displaying the destination interface information for the specified list number* has been changed. [Version 11.9 and later]

Before the change:

Figure 23-3 Result of displaying the destination interface information for the specified list number

```
> show cache policy-switch 1
Date 2012/01/11 16:20:40 UTC
Policy Base Switching Default Init Interval :  240
    Start Time : 2012/01/11 15:00:00
    End Time   : 2012/01/11 15:04:00
Policy Base Switching Default Aging Interval : 240
    Start Time : 2012/01/11 16:00:00
    End Time   : 2012/01/11 16:04:00
Policy Base Switching List :    1
    Default : Permit
    Recover : On
    Priority    Sequence    VLAN ID    Status    Output Interface
 *>       1          10        100    Up        2/1
         2          20        100    Down      2/4
         3          30        100    Up        3/10
         4          40        100    Up        20(ChGr)
>
```

After the change:

Figure 23-3 Result of displaying the destination interface information for the specified list number

```
> show cache policy-switch 1
Date 2012/08/11 17:20:40 UTC
Policy Base Switching Default Init Interval :  240
    Start Time : 2012/08/11 15:00:00
    End Time   : 2012/08/11 15:04:00
Policy Base Switching Default Aging Interval : 3600
    Start Time : -
    End Time   : -
Policy Base Switching List :    1
    Default : Permit
    Recover : On
    Priority    Sequence    VLAN ID    Status    Output Interface    Track Object ID
 *>       1          10        100    Up        2/1                              1
         2          20        100    Down      2/4                              -
         3          30        100    Up        3/10                            11
         4          40        100    Up        20(ChGr)                         2
>
```

Figure *23-4 Result of displaying the destination interface information for all list numbers* has been changed. [Version 11.9 and later]

Before the change:

Figure 23-4 Result of displaying the destination interface information for all list numbers

```
> show cache policy-switch
Date 2012/01/11 16:20:40 UTC
Policy Base Switching Default Init Interval :  240
   Start Time : 2011/01/11 15:00:00
   End Time   : 2011/01/11 15:04:00
Policy Base Switching Default Aging Interval : 240
   Start Time : 2012/01/11 16:00:00
   End Time   : 2012/01/11 15:04:00
Policy Base Switching List :  100
   Default : Permit
   Recover : On
   Priority     Sequence   VLAN ID   Status   Output Interface
 *>        1          10        100   Up       2/1
          2          20        100   Down     2/4
          3          30        100   Up       3/10
          4          40        100   Up       20(ChGr)
Policy Base Switching List :  200
   Default : Permit
   Recover : On
   Priority     Sequence   VLAN ID   Status   Output Interface
          1          10        200   Down     2/3
          2          20        200   Down     2/5
 *>        3          30        200   Up       3/3
          4          40        200   Up       3/4
>
```

After the change:

Figure 23-4 Result of displaying the destination interface information for all list numbers

```
> show cache policy-switch
Date 2012/08/11 17:20:40 UTC
Policy Base Switching Default Init Interval :  240
   Start Time : 2012/08/11 15:00:00
   End Time   : 2012/08/11 15:04:00
Policy Base Switching Default Aging Interval : 3600
   Start Time : -
   End Time   : -
Policy Base Switching List :  100
   Default : Permit
   Recover : On
   Priority     Sequence   VLAN ID   Status   Output Interface   Track Object ID
 *>        1          10        100   Up       2/1                              1
          2          20        100   Down     2/4                              -
          3          30        100   Up       3/10                            11
          4          40        100   Up       20(ChGr)                         2
Policy Base Switching List :  200
   Default : Permit
   Recover : On
   Priority     Sequence   VLAN ID   Status   Output Interface   Track Object ID
          1          10        200   Down     2/3                              2
          2          20        200   Down     2/5                              2
 *>        3          30        200   Up       3/3                             16
          4          40        200   Up       3/4                              1
>
```

Figure *23-5 Result of displaying the route information for the specified list number and track ID* has been added. [Version 11.9 and later]

Addition:

Figure 23-5 Result of displaying the route information for the specified list number and track ID

```
> show cache policy-switch 11 track-object 1
Date 2012/08/11 17:20:40 UTC
Policy Base Switching Default Init Interval :  240
   Start Time : 2012/08/11 15:00:00
   End Time   : 2012/08/11 15:04:00
Policy Base Switching Default Aging Interval : 3600
   Start Time : -
   End Time   : -
Policy Base Switching List :    11
   Default : Permit
   Recover : On
   Priority    Sequence    VLAN ID    Status    Output Interface    Track Object ID
 *>      1          10        100    Up        2/1                               1
         4          40        100    Up        20(ChGr)                          1
```

In Table *23-3 Items displayed by the show cache policy-switch command*, the following item has been added. [Version 11.9 and later]

Addition:

Table 23-3 Items displayed by the show cache policy-switch command

Item	Meaning	Displayed information
Track Object ID	Object ID of a route failure monitoring track	A hyphen (–) is displayed when this ID is not set.

In Table *23-4 List of response messages for the show cache policy-switch command*, the following items have been added. [Version 11.9 and later]

Addition:

Table 23-4 List of response messages for the show cache policy-switch command

Message	Description
No such track object id.	The specified track object ID is not set. Make sure the specified parameter is correct, and then try again.
No such track object.	The tracking functionality is not set in the specified policy-based switching list number. Make sure the specified parameter is correct, and then try again.

8. Changes in Operation Command Reference Vol. 2 (For Version 11.7) (AX63S-S011X-30)

2. Filters

(1) show access-filter [Change]

Functionality description has been changed.

Before the change:
> Displays the filter conditions applied on the Ethernet interface or VLAN interface by the access group commands (`ip access-group`, `ipv6 traffic-filter`, and `mac access-group`), the number of packets that met the filter conditions, and the number of packets discarded because they did not match any filter conditions in the access list.

After the change:
> Displays the filter conditions applied on the Ethernet interface or VLAN interface by the access group commands (`ip access-group`, `ipv6 traffic-filter`, `mac access-group`, and `advance access-group`), the number of packets that met the filter conditions, and the number of packets discarded because they did not match any filter conditions in the access list.

4. QoS

(1) show qos-flow [Change]

Functionality description has been changed.

Before the change:
> Displays the number of packets that meet the flow detection conditions corresponding to the flow detection conditions and specified actions in the QoS flow list applied to the Ethernet interface or VLAN interface by QoS flow group commands (`ip qos-flow-group`, `ipv6 qos-flow-group`, and `mac qos-flow-group`).

After the change:
> Displays the number of packets that meet the flow detection conditions corresponding to the flow detection conditions and specified actions in the QoS flow list applied to the Ethernet interface or VLAN interface by QoS flow group commands (`ip qos-flow-group`, `ipv6 qos-flow-group`, `mac qos-flow-group`, and `advance access-group`).

11. GSRP

(1) show gsrp [Change]

Table *11-2 Items displayed for GSRP information when a VLAN group ID is specified* has been changed.

Before the change:

Table 11-2 Items displayed for GSRP information when a VLAN group ID is specified

Item	Meaning	Displayed information
...	...	...
Member Port	Ports belonging to a VLAN which is configured for a VLAN group	- is displayed if no active ports belong to a VLAN group, or if the VLAN group is disabled.
Active Port	Active port	- is displayed if no active ports belong to a VLAN group, or if the VLAN group is disabled. Note, however, that a ring port is not counted as an active port.
...	...	...

After the change:

Table 11-2 Items displayed for GSRP information when a VLAN group ID is specified

Item	Meaning	Displayed information
...	...	...
Member Port	Ports belonging to a VLAN which is configured for a VLAN group	- is displayed if no active ports belong to a VLAN group, or if the VLAN group is disabled. A channel group is expanded to a list of aggregated ports and then displayed.
Active Port	Active port	- is displayed if no active ports belong to a VLAN group, or if the VLAN group is disabled. A channel group is expanded to a list of aggregated ports and then displayed. Note, however, that a ring port is not counted as an active port.
...	...	...

Table *11-4 Items displayed for GSRP information when a port is specified* has been changed.

Before the change:

Table 11-4 Items displayed for GSRP information when a port is specified

Item	Meaning	Displayed information
...	...	...
TxFrame	Number of sent GSRP Advertise frames (statistics)	0 to 4294967295
RxFrame	Number of received GSRP Advertise frames (statistics)	0 to 4294967295
Discard Frame	Number of GSRP Advertise frames discarded when they are received (statistics)	0 to 262140 (The maximum value is 65535 (the maximum number by reason why the frame is discarded) times 4 (the number of components).)

After the change:

Table 11-4 Items displayed for GSRP information when a port is specified

Item	Meaning	Displayed information
...	...	...
TxFrame	Number of sent GSRP Advertise frames (statistics)	0 to 4294967295 The same value is displayed for all ports in the same channel group.
RxFrame	Number of received GSRP Advertise frames (statistics)	0 to 4294967295 The same value is displayed for all ports in the same channel group.
Discard Frame	Number of GSRP Advertise frames discarded when they are received (statistics)	0 to 262140 (The maximum value is 65535 (the maximum number by reason why the frame is discarded) times 4 (the number of components).) The same value is displayed for all ports in the same channel group.

Table *11-5 Items displayed for GSRP information when a port is specified* has been changed.

Before the change:

Table 11-5 Items displayed for GSRP information when a port is specified

Item	Meaning	Displayed information
...	...	...
TxFrame	Number of sent GSRP Advertise frames (statistics)	0 to 4294967295
RxFrame	Number of received GSRP Advertise frames (statistics)	0 to 4294967295
Discard Frame	Number of GSRP Advertise frames discarded when they are received (statistics)	0 to 262140 (The maximum value is 65535 (the maximum number by reason why the frame is discarded) times 4 (the number of components).)
...	...	...

After the change:

Table 11-5 Items displayed for GSRP information when a port is specified

Item	Meaning	Displayed information
...	...	...
TxFrame	Number of sent GSRP Advertise frames (statistics)	0 to 4294967295 The same value is displayed for all ports in the same channel group.
RxFrame	Number of received GSRP Advertise frames (statistics)	0 to 4294967295 The same value is displayed for all ports in the same channel group.
Discard Frame	Number of GSRP Advertise frames discarded when they are received (statistics)	0 to 262140 (The maximum value is 65535 (the maximum number by reason why the frame is discarded) times 4 (the number of components).) The same value is displayed for all ports in the same channel group.
...	...	...

12. VRRP

(2) swap vrrp (IPv4) [Change]

Impact on communication has been changed.

Before the change:

Impact on communication
None

After the change:

Impact on communication
Communication might stop temporarily depending on VRRP state transition.

(3) swap vrrp (IPv6) [Change]

Impact on communication has been changed.

Before the change:

Impact on communication
None

After the change:

Impact on communication
Communication might stop temporarily depending on VRRP state transition.

9. Changes in Operation Command Reference Vol. 3 (For Version 11.7) (AX63S-S007X-C0)

2. IPv4, ARP, and ICMP

(1) clear tcp [Change]

Impact on communication has been changed.

Before the change:

Impact on communication
None

After the change:

Impact on communication
Communication of the disconnected TCP connection stops.

(2) ping [Change]

Parameters has been changed.

Before the change:

Parameters
verbose
Enables verbose output. Received ICMP packets other than ECHO_RESPONSE are also displayed.
<omitted>
preload *<preload>*
Sends the number of packets specified in *<preload>* as fast as possible, and then returns to normal operation. The specifiable values are from 1 to 2147483647.

After the change:

Parameters
verbose
Enables verbose output. Received ICMP packets other than ECHO_RESPONSE are also displayed. Received ICMP packets other than the ping command are also displayed.
<omitted>
preload *<preload>*
Sends the number of packets specified in *<preload>* as fast as possible, and then returns to normal operation. The specifiable values are from 1 to 2147483647. Do not use this parameter during normal operation. Using this parameter significantly consumes the CPU usage and the send bandwidth, which can affect other processes, services, or communication.

Impact on communication has been changed.

Before the change:

Impact on communication
  None

After the change:

Impact on communication
  Using the `preload` parameter significantly consumes the CPU usage and the send bandwidth, which can affect communication.

3. Policy-based Routing

(1) show ip cache policy [Change]

Figure *3-3 Result of displaying the route information for the specified list number* has been changed.

Change:

Figure 3-3 Result of displaying the route information for the specified list number

```
> show ip cache policy 1
Date 2012/01/11 16:20:40 UTC
Policy Base Routing Default Init Interval :  240
   Start Time : 2012/01/11 15:00:00
   End Time   : 2012/01/11 15:04:00
Policy Base Routing Default Aging Interval :  240
   Start Time : -
   End Time   : -                         Corrected
Policy Base Routing List :   1
   Default : Permit
   Recover : On
   Priority    Sequence  VLAN ID  Status  Next Hop         Track Object ID
 *>      1         10       10  Up      200.1.1.10                     1
         2         20      100  Down    200.1.2.20                     -
         3         30      110  Up      200.1.3.30                    11
         4         40      120  Up      200.1.4.40                     2
>
```

Figure *3-4 Result of displaying the route information for the specified list number and track ID* has been changed.

Change:

Figure 3-4 Result of displaying the route information for the specified list number and track ID

```
> show ip cache policy 11 track-object 1
Date 2012/01/11 16:20:40 UTC
Policy Base Routing Default Init Interval :  240
   Start Time : 2012/01/11 15:00:00
   End Time   : 2012/01/11 15:04:00
Policy Base Routing Default Aging Interval :  240
   Start Time : -
   End Time   : -            Corrected
Policy Base Routing List :  11
   Default : Permit
   Recover : On
   Priority    Sequence  VLAN ID  Status  Next Hop       Track Object ID
 *>      1          10       10  Up      200.1.1.10                   1
         4          40      120  Up      200.1.4.40                   1
>
```

Figure *3-5 Result of displaying all route information* has been changed.

Change:

Figure 3-5 Result of displaying all route information

```
> show ip cache policy
Date 2012/01/11 16:20:40 UTC
Policy Base Routing Default Init Interval :  240
   Start Time : 2012/01/11 15:00:00
   End Time   : 2012/01/11 15:04:00
Policy Base Routing Default Aging Interval :  240
   Start Time : -
   End Time   : -            Corrected
Policy Base Routing List : 1
   Default : Permit
   Recover : On
   Priority    Sequence  VLAN ID  Status  Next Hop       Track Object ID
 *>      1          10       10  Up      200.1.1.10                   1
         2          20      100  Down    200.1.2.20                   -
         3          30      110  Up      200.1.3.30                  11
         4          40      120  Up      200.1.4.40                   2
Policy Base Routing List : 200
   Default : Permit
   Recover : On
   Priority    Sequence  VLAN ID  Status  Next Hop       Track Object ID
         1          10      100  Down    201.1.1.10                   2
         2          20      110  Down    201.1.2.20                   2
 *>      3          30      200  Up      201.1.3.30                  18
         4          40      210  Up      201.1.4.40                   1
>
```

5. DHCP Server Functionality

(1) clear ip dhcp binding [Change]

Impact on communication has been changed.

Before the change:

Impact on communication
None

After the change:

Impact on communication
When Dynamic DNS link is enabled, the corresponding entry records are deleted from the dynamic DNS server (DNS updates) at the same time, which disables DNS resolution.

(2) restart dhcp [Change]

Impact on communication has been changed.

Before the change:

Impact on communication
None

After the change:

Impact on communication
The sending and receiving of DHCP packets temporarily stops, which disables IP address distribution, update, and release.

9. IPv6, NDP, and ICMPv6

(1) clear tcp [Change]

Impact on communication has been changed.

Before the change:

Impact on communication
None

After the change:

Impact on communication
Communication of the disconnected TCP connection stops.

(2) ping ipv6 [Change]

Parameters has been changed

Before the change:

Parameters
verbose
Enables verbose output. Received ICMPv6 packets other than `ECHO_RESPONSE` are also displayed.

<omitted>

preload <*preload*>
Sends the number of packets specified in <*preload*> as fast as possible, and then returns to normal operation. The specifiable values are from 1 to 2147483647.

After the change:

Parameters
verbose
Enables verbose output. Received ICMPv6 packets other than `ECHO_RESPONSE` are also displayed. Received ICMPv6 packets other than the `ping ipv6` command are also displayed.

<omitted>

preload <*preload*>
Sends the number of packets specified in <*preload*> as fast as possible, and then returns to normal operation. The specifiable values are from 1 to 2147483647. Do not use this parameter during normal operation. Using this parameter significantly consumes the CPU usage and the send bandwidth, which can affect other processes, services, or communication.

Impact on communication has been changed.

Before the change:

Impact on communication
None

After the change:

Impact on communication
Using the `preload` parameter significantly consumes the CPU usage and the send bandwidth, which can affect communication.

(3) traceroute ipv6 [Change]

The `numeric` parameter has been changed.

Before the change:
numeric
Displays the gateway address by the IPv6 address alone, not by the host name and IPv6 address.

Operation when this parameter is omitted:
Displays the name converted from the host IPv6 address.

After the change:
numeric
Displays the gateway address by the IPv6 address alone, not by the host name.

Operation when this parameter is omitted:
Displays the name converted from the host IPv6 address.

12. IPv6 DHCP Server Functionality

(1) restart ipv6-dhcp server [Change]

Impact on communication has been changed.

Before the change:

Impact on communication
None

After the change:

Impact on communication
Sending and receiving DHCPv6 packets temporarily stop, which disables prefix assignment, update, and release.

10. Changes in Message and Log Reference (For Version 11.7) (AX63S-S008X-C0)

No corrections.

11. Changes in MIB Reference (For Version 11.7) (AX63S-S009X-C0)

2. Standard MIBs (RFC-compliant and IETF Draft MIBs)

(1) 2.20.2 dot3adAggPort group [Change]

Table *2-69 Implementation specifications for the dot3adAggPort group* has been changed.

Change:

Table 2-69 Implementation specifications for the dot3adAggPort group

#	Object identifier	Access	Implementation specifications	Support?
...	...	...	...	...
11	dot3adAggPortPartnerOperSystemID {dot3adAggPortEntry 9}	R/O	[Standard] The system ID operational value for the protocol partner. ← Corrected [Implementation] Same as the standard.	Y
...	...	...	...	...
40	dot3adAggPortDebugLastRxTime {dot3adAggPortDebugEntry 2}	R/O	[Standard] The aTimeSinceSystemReset value for when the AggregationPort received the last LACPDUs. ← Corrected [Implementation] Same as the standard.	Y
41	dot3adAggPortDebugMuxState {dot3adAggPortDebugEntry 3}	R/O	[Standard] The state of the Mux state machine for the AggregationPort: - detached (1) - waiting (2) - attached (3) - collecting (4) - distributing (5) - collecting_distributing (6) ← Corrected [Implementation] Same as the standard.	Y
...	...	...	...	...

3. Private MIBs

(1) 3.1.2 axsQoS group [Addition]

(3) axsEtherRxQoS group has been added. [Version 11.7.A and later]

Addition:

(3) axsEtherRxQoS group

(a) ID

```
axsStats OBJECT IDENTIFIER ::= {axsMib 1}

axsQoS OBJECT IDENTIFIER ::= {axsStats 6}

axsEtherRxQoS OBJECT IDENTIFIER ::= {axsQoS 1}
Object ID value  1.3.6.1.4.1.21839.2.2.1.1.6.7
```

(b) Implementation specifications

The following table shows the implementation specifications for the axsEtherRxQoS group.

Table 3-4 axsEtherRxQoS group implementation specifications (QoS statistics of Ethernet interface)

#	Object identifier	SYNTAX	Access	Implementation specifications	Support?
1	axsEtherRxQoSStatsTable {axsEtherRxQoS 1}	NOT-ACCESSIBLE	NA	Table information on the QoS statistics about the port input queue.	Y
2	axsEtherRxQoSStatsEntry {axsEtherRxQoSStatsTable 1}	NOT-ACCESSIBLE	NA	Entry for the QoS statistics of each Ethernet interface. [index] { axsEtherRxQoSStatsIndex }	Y
3	axsEtherRxQoSStatsIndex {axsEtherRxQoSStatsEntry 1}	NOT-ACCESSIBLE	NA	Shows the index value to identify an entry in this table (ifIndex of the Ethernet interface), in the range from 1 to ifNumber.	Y
4	axsEtherRxQoSStatsMaxQnum {axsEtherRxQoSStatsEntry 2}	INTEGER	R/O	Shows the maximum number of queues of the port input queue for the relevant interface.	Y
5	axsEtherRxQoSStatsLimitQlen {axsEtherRxQoSStatsEntry 3}	INTEGER	R/O	Shows the limit length of the output priority queue of the port input queue for the relevant interface.	Y
6	axsEtherRxQoSStatsTotalOutFrames {axsEtherRxQoSStatsEntry 4}	Counter	R/O	Shows the total number of frames of the port input queue for the relevant interface.	Y
7	axsEtherRxQoSStatsTotalOutBytesHigh {axsEtherRxQoSStatsEntry 5}	Counter	R/O	Shows the total number of bytes of the port input queue for the relevant interface (most significant 4 bytes). FCS is not included in the number of bytes.	Y
8	axsEtherRxQoSStatsTotalOutBytesLow {axsEtherRxQoSStatsEntry 6}	Counter	R/O	Shows the total number of bytes of the port input queue for the relevant interface (least significant 4 bytes). FCS is not included in the number of bytes.	Y
9	axsEtherRxQoSStatsTotalDiscardFrames {axsEtherRxQoSStatsEntry 7}	Counter	R/O	Shows the total number of discarded frames of the port input queue for the relevant interface.	Y
10	axsEtherRxQoSStatsQueueTable {axsEtherRxQoS 2}	NOT-ACCESSIBLE	NA	Table information of the QoS statistics for each output priority queue of the port input queue for the relevant interface.	Y

#	Object identifier	SYNTAX	Access	Implementation specifications	Support?
11	axsEtherRxQoSStatsQueueEntry {axsEtherRxQoSStatsQueueTable 1}	NOT-ACCESSIBLE	NA	Entry of the QoS statistics for each output priority queue of the port input queue for the relevant interface. [index] { axsEtherRxQoSStatsQueueIndex, axsEtherRxQoSStatsQueueQueIndex}	Y
12	axsEtherRxQoSStatsQueueIndex {axsEtherRxQoSStatsQueueEntry 1}	NOT-ACCESSIBLE	NA	Shows the index value to identify an entry in this table (ifIndex of the Ethernet interface), in the range from 1 to ifNumber.	Y
13	axsEtherRxQoSStatsQueueQueIndex {axsEtherRxQoSStatsQueueEntry 2}	NOT-ACCESSIBLE	NA	Shows the index value for identifying any entry in the table. The value ranges from 1 to axsEtherRxQoSStatsMaxQnum.	Y
14	axsEtherRxQoSStatsQueueQlen {axsEtherRxQoSStatsQueueEntry 3}	INTEGER	R/O	Shows the length of the output priority queue of the port input queue at the time of information collection. #1	Y
15	axsEtherRxQoSStatsQueueMaxQlen {axsEtherRxQoSStatsQueueEntry 4}	INTEGER	R/O	Shows the maximum length of the output priority queue of the port input queue for the relevant interface after the statistics are deleted or initialized. #1	Y
16	axsEtherRxQoSStatsQueueDiscardFramesClass1 {axsEtherRxQoSStatsQueueEntry 5}	Counter64	R/O	Shows the number of discarded frames in the relevant output priority queue at discard class 1 of the port input queue. #1	Y
17	axsEtherRxQoSStatsQueueDiscardFramesClass2 {axsEtherRxQoSStatsQueueEntry 6}	Counter64	R/O	Shows the number of discarded frames in the relevant output priority queue at discard class 2 of the port input queue. #1	Y

#1: The value is 0 if the NIF type is as follows:
  For AX6300S series switches: NH10G-1RX

(4) axsEtherDistributionTxQoS group has been added. [Version 11.7.A and later]

Addition:

(4) axsEtherDistributionTxQoS group

(a) ID

```
axsStats OBJECT IDENTIFIER ::= {axsMib 1}

axsQoS OBJECT IDENTIFIER ::= {axsStats 6}

axsEtherDistributionTxQoS OBJECT IDENTIFIER ::= {axsQoS 1}
Object ID value  1.3.6.1.4.1.21839.2.2.1.1.6.8
```

(b) Implementation specifications

The following table shows the implementation specifications for the axsEtherDistributionTxQoS group.

Table 3-5   axsEtherDistributionTxQoS group implementation specifications (QoS statistics of Ethernet interface)

#	Object identifier	SYNTAX	Access	Implementation specifications	Support?
1	axsEtherDistributionTxQoSStatsTable {axsEtherDistributionTxQoS 1}	NOT-ACCESSIBLE	NA	Table information on the QoS statistics about the distribution output queue. #1	Y
2	axsEtherDistributionTxQoSStatsEntry {axsEtherDistributionTxQoSStatsTable 1}	NOT-ACCESSIBLE	NA	Entry for the QoS statistics of the distribution output queue. [index] { axsEtherDistributionTxQoSStatsIndex, axsEtherDistributionTxQoSStatsIfIndex }	Y
3	axsEtherDistributionTxQoSStatsIndex {axsEtherDistributionTxQoSStatsEntry 1}	NOT-ACCESSIBLE	NA	Shows the number in the location where the distribution output queue to be acquired exists. - For AX6700S series: BSU number (1 to 3) - For AX6600S series: CSU number (1 to 2) - For AX6300S series: Fixed value of 1	Y
4	axsEtherDistributionTxQoSStatsIfIndex {axsEtherDistributionTxQoSStatsEntry 2}	NOT-ACCESSIBLE	NA	Shows the index value to identify an entry in this table (ifIndex of the Ethernet interface), in the range from 1 to ifNumber.	Y
5	axsEtherDistributionTxQoS1StatsMaxQnum {axsEtherDistributionTxQoSStatsEntry 3}	INTEGER	R/O	Shows the maximum number of queues of distribution output queue 1 for the relevant interface.	Y
6	axsEtherDistributionTxQoS1StatsLimitQlen {axsEtherDistributionTxQoSStatsEntry 4}	INTEGER	R/O	Shows the limit length of the output priority queue of distribution output queue 1 for the relevant interface.	Y
7	axsEtherDistributionTxQoS1StatsTotalOutFrames {axsEtherDistributionTxQoSStatsEntry 5}	Counter	R/O	Shows the total number of frames of distribution output queue 1 for the relevant interface.	Y
8	axsEtherDistributionTxQoS1StatsTotalOutBytesHigh {axsEtherDistributionTxQoSStatsEntry 6}	Counter	R/O	Shows the total number of bytes of distribution output queue 1 for the relevant interface (most significant 4 bytes). FCS is not included in the number of bytes.	Y

#	Object identifier	SYNTAX	Access	Implementation specifications	Support?
9	axsEtherDistributionTxQoS1StatsTotalOutBytesLow {axsEtherDistributionTxQoSStatsEntry 7}	Counter	R/O	Shows the total number of bytes of distribution output queue 1 for the relevant interface (least significant 4 bytes). FCS is not included in the number of bytes.	Y
10	axsEtherDistributionTxQoS1StatsTotalDiscardFrames {axsEtherDistributionTxQoSStatsEntry 8}	Counter	R/O	Shows the total number of discarded frames of distribution output queue 1 for the relevant interface.	Y
11	axsEtherDistributionTxQoS2StatsMaxQnum {axsEtherDistributionTxQoSStatsEntry 9}	INTEGER	R/O	Shows the maximum number of queues of distribution output queue 2 for the relevant interface. #2	Y
12	axsEtherDistributionTxQoS2StatsLimitQlen {axsEtherDistributionTxQoSStatsEntry 10}	INTEGER	R/O	Shows the limit length of the output priority queue of distribution output queue 2 for the relevant interface. #2	Y
13	axsEtherDistributionTxQoS2StatsTotalOutFrames {axsEtherDistributionTxQoSStatsEntry 11}	Counter	R/O	Shows the total number of frames of distribution output queue 2 for the relevant interface. #2	Y
14	axsEtherDistributionTxQoS2StatsTotalOutBytesHigh {axsEtherDistributionTxQoSStatsEntry 12}	Counter	R/O	Shows the total number of bytes of distribution output queue 2 for the relevant interface (most significant 4 bytes). FCS is not included in the number of bytes. #2	Y
15	axsEtherDistributionTxQoS2StatsTotalOutBytesLow {axsEtherDistributionTxQoSStatsEntry 13}	Counter	R/O	Shows the total number of bytes of distribution output queue 2 for the relevant interface (least significant 4 bytes). FCS is not included in the number of bytes. #2	Y
16	axsEtherDistributionTxQoS2StatsTotalDiscardFrames {axsEtherDistributionTxQoSStatsEntry 14}	Counter	R/O	Shows the total number of discarded frames of distribution output queue 2 for the relevant interface. #2	Y
17	axsEtherDistributionTxQoS1StatsQueueTable { axsEtherDistributionTxQoS 2}	NOT-ACCESSIBLE	NA	Table information of the QoS statistics for each output priority queue of distribution output queue 1 for the relevant interface.	Y
18	axsEtherDistributionTxQoS1StatsQueueEntry {axsEtherDistributionTxQoS1StatsQueueTable 1}	NOT-ACCESSIBLE	NA	Entry of the QoS statistics for each output priority queue of distribution output queue 1 for the relevant interface. [index] { axsEtherDistributionTxQoS1StatsQueueIndex, axsEtherDistributionTxQoS1StatsQueueIfIndex, axsEtherDistributionTxQoS1StatsQueueQueIndex}	Y
19	axsEtherDistributionTxQoS1StatsQueueIndex {axsEtherDistributionTxQoS1StatsQueueEntry 1}	NOT-ACCESSIBLE	NA	Shows the number in the location where the distribution output queue 1 to be acquired exists. - For AX6700S series: BSU number (1 to 3) - For AX6600S series: CSU number (1 to 2) - For AX6300S series: Fixed value of 1	Y
20	axsEtherDistributionTxQoS1StatsQueueIfIndex {axsEtherDistributionTxQoS1StatsQueueEntry 2}	NOT-ACCESSIBLE	NA	Shows the index value to identify an entry in this table (ifIndex of the Ethernet interface), in the range from 1 to ifNumber.	Y

#	Object identifier	SYNTAX	Access	Implementation specifications	Support?
21	axsEtherDistributionTxQoS1StatsQueueQueIndex {axsEtherDistributionTxQoS1StatsQueueEntry 3}	NOT-ACCESSIBLE	NA	Shows the index value for identifying any entry in the table. The value ranges from 1 to axsEtherDistributionTxQoS1StatsMaxQnum.	Y
22	axsEtherDistributionTxQoS1StatsQueueQlen {axsEtherDistributionTxQoS1StatsQueueEntry 4}	INTEGER	R/O	Shows the length of the output priority queue of distribution output queue 1 at the time of information collection.	Y
23	axsEtherDistributionTxQoS1StatsQueueMaxQlen {axsEtherDistributionTxQoS1StatsQueueEntry 5}	INTEGER	R/O	Shows the maximum length of the output priority queue of distribution output queue 1 for the relevant interface after the statistics are deleted or initialized.	Y
24	axsEtherDistributionTxQoS1StatsQueueDiscardFramesClass1 {axsEtherDistributionTxQoS1StatsQueueEntry 6}	Counter64	R/O	Shows the number of discarded frames in the relevant output priority queue at discard class 1 of distribution output queue 1.	Y
25	axsEtherDistributionTxQoS1StatsQueueDiscardFramesClass2 {axsEtherDistributionTxQoS1StatsQueueEntry 7}	Counter64	R/O	Shows the number of discarded frames in the relevant output priority queue at discard class 2 of distribution output queue 1.	Y
26	axsEtherDistributionTxQoS1StatsQueueDiscardFramesClass3 {axsEtherDistributionTxQoS1StatsQueueEntry 8}	Counter64	R/O	Shows the number of discarded frames in the relevant output priority queue at discard class 3 of distribution output queue 1.	Y
27	axsEtherDistributionTxQoS1StatsQueueDiscardFramesClass4 {axsEtherDistributionTxQoS1StatsQueueEntry 9}	Counter64	R/O	Shows the number of discarded frames in the relevant output priority queue at discard class 4 of distribution output queue 1.	Y
28	axsEtherDistributionTxQoS2StatsQueueTable { axsEtherDistributionTxQoS 3}	NOT-ACCESSIBLE	NA	Table information of the QoS statistics for each output priority queue of distribution output queue 2 for the relevant interface.	Y
29	axsEtherDistributionTxQoS2StatsQueueEntry {axsEtherDistributionTxQoS2StatsQueueTable 1}	NOT-ACCESSIBLE	NA	Entry of the QoS statistics for each output priority queue of distribution output queue 2 for the relevant interface. [index] { axsEtherDistributionTxQoS2StatsQueueIndex, axsEtherDistributionTxQoS2StatsQueueIfIndex, axsEtherDistributionTxQoS2StatsQueueQueIndex}	Y
30	axsEtherDistributionTxQoS2StatsQueueIndex {axsEtherDistributionTxQoS2StatsQueueEntry 1}	NOT-ACCESSIBLE	NA	Shows the number in the location where distribution output queue 2 to be acquired exists. - For AX6700S series: BSU number (1 to 3) - For AX6600S series: CSU number (1 to 2) - For AX6300S series: Fixed value of 1	Y
31	axsEtherDistributionTxQoS2StatsQueueIfIndex {axsEtherDistributionTxQoS2StatsQueueEntry 2}	NOT-ACCESSIBLE	NA	Shows the index value to identify an entry in this table (ifIndex of the Ethernet interface), in the range from 1 to ifNumber.	Y
32	axsEtherDistributionTxQoS2StatsQueueQueIndex {axsEtherDistributionTxQoS2StatsQueueEntry 3}	NOT-ACCESSIBLE	NA	Shows the index value for identifying any entry in the table. The value ranges from 1 to axsEtherDistributionTxQoS2StatsMaxQnum.	Y

#	Object identifier	SYNTAX	Access	Implementation specifications	Support?
33	axsEtherDistributionTxQoS2StatsQueueQlen {axsEtherDistributionTxQoS2StatsQueueEntry 4}	INTEGER	R/O	Shows the length of the output priority queue of distribution output queue 2 at the time of information collection. #2	Y
34	axsEtherDistributionTxQoS2StatsQueueMaxQlen {axsEtherDistributionTxQoS2StatsQueueEntry 5}	INTEGER	R/O	Shows the maximum length of the output priority queue of distribution output queue 2 for the relevant interface after the statistics are deleted or initialized. #2	Y
35	axsEtherDistributionTxQoS2StatsQueueDiscardFramesClass1 {axsEtherDistributionTxQoS2StatsQueueEntry 6}	Counter64	R/O	Shows the number of discarded frames in the relevant output priority queue at discard class 1 of distribution output queue 2. #2	Y
36	axsEtherDistributionTxQoS2StatsQueueDiscardFramesClass2 {axsEtherDistributionTxQoS2StatsQueueEntry 7}	Counter64	R/O	Shows the number of discarded frames in the relevant output priority queue at discard class 2 of distribution output queue 2. #2	Y
37	axsEtherDistributionTxQoS2StatsQueueDiscardFramesClass3 {axsEtherDistributionTxQoS2StatsQueueEntry 8}	Counter64	R/O	Shows the number of discarded frames in the relevant output priority queue at discard class 3 of distribution output queue 2. #2	Y
38	axsEtherDistributionTxQoS2StatsQueueDiscardFramesClass4 {axsEtherDistributionTxQoS2StatsQueueEntry 9}	Counter64	R/O	Shows the number of discarded frames in the relevant output priority queue at discard class 4 of distribution output queue 2. #2	Y

#1: The following NIF types are to be collected:
    For AX6300S series switches: Other than NH1GS-6M and NH10G-1RX
    For AX6600S and AX6700S series switches: All NIFs
#2: For AX6300S and AX6600S series switches: Fixed value of 0

(5) axsEtherDistributionRxQoS group has been added. [Version 11.7.A and later]

Addition:

(5) axsEtherDistributionRxQoS group

(a) ID

```
axsStats OBJECT IDENTIFIER ::= {axsMib 1}

axsQoS OBJECT IDENTIFIER ::= {axsStats 6}

axsEtherDistributionRxQoS OBJECT IDENTIFIER ::= {axsQoS 1}
Object ID value  1.3.6.1.4.1.21839.2.2.1.1.6.9
```

(b) Implementation specifications

The following table shows the implementation specifications for the axsEtherDistributionRxQoS group.

Table 3-6   axsEtherDistributionRxQoS group implementation specifications (QoS statistics of Ethernet interface)

#	Object identifier	SYNTAX	Access	Implementation specifications	Support?
1	axsEtherDistributionRxQoSStatsTable {axsEtherDistributionRxQoS 1}	NOT-ACCESSIBLE	NA	Table information on the QoS statistics about the distribution input queue. #1	Y

#	Object identifier	SYNTAX	Access	Implementation specifications	Support?
2	axsEtherDistributionRxQoSStatsEntry {axsEtherDistributionRxQoSStatsTable 1}	NOT-ACCESSIBLE	NA	Entry for the QoS statistics of the distribution input queue. [index] { axsEtherDistributionRxQoSStatsIndex, axsEtherDistributionRxQoSStatsIfIndex }	Y
3	axsEtherDistributionRxQoSStatsIndex {axsEtherDistributionRxQoSStatsEntry 1}	NOT-ACCESSIBLE	NA	Shows the number in the location where the distribution input queue to be acquired exists. - For AX6700S series: BSU number (1 to 3) - For AX6600S series: CSU number (1 to 2) - For AX6300S series: Fixed value of 1	Y
4	axsEtherDistributionRxQoSStatsIfIndex {axsEtherDistributionRxQoSStatsEntry 2}	NOT-ACCESSIBLE	NA	Shows the index value to identify an entry in this table (ifIndex of the Ethernet interface), in the range from 1 to ifNumber.	Y
5	axsEtherDistributionRxQoS1StatsMaxQnum {axsEtherDistributionRxQoSStatsEntry 3}	INTEGER	R/O	Shows the maximum number of queues of the distribution input queue 1 for the relevant interface.	Y
6	axsEtherDistributionRxQoS1StatsLimitQlen {axsEtherDistributionRxQoSStatsEntry 4}	INTEGER	R/O	Shows the limit length of the output priority queue of the distribution input queue 1 for the relevant interface.	Y
7	axsEtherDistributionRxQoS1StatsTotalOutFrames {axsEtherDistributionRxQoSStatsEntry 5}	Counter	R/O	Shows the total number of frames of the distribution input queue 1 for the relevant interface.	Y
8	axsEtherDistributionRxQoS1StatsTotalOutBytesHigh {axsEtherDistributionRxQoSStatsEntry 6}	Counter	R/O	Shows the total number of bytes of the distribution input queue 1 for the relevant interface (most significant 4 bytes). FCS is not included in the number of bytes.	Y
9	axsEtherDistributionRxQoS1StatsTotalOutBytesLow {axsEtherDistributionRxQoSStatsEntry 7}	Counter	R/O	Shows the total number of bytes of the distribution input queue 1 for the relevant interface (least significant 4 bytes). FCS is not included in the number of bytes.	Y
10	axsEtherDistributionRxQoS1StatsTotalDiscardFrames {axsEtherDistributionRxQoSStatsEntry 8}	Counter	R/O	Shows the total number of discarded frames of distribution input queue 1 for the relevant interface.	Y
11	axsEtherDistributionRxQoS2StatsMaxQnum {axsEtherDistributionRxQoSStatsEntry 9}	INTEGER	R/O	Shows the maximum number of queues of distribution input queue 2 for the relevant interface. #2	Y
12	axsEtherDistributionRxQoS2StatsLimitQlen {axsEtherDistributionRxQoSStatsEntry 10}	INTEGER	R/O	Shows the limit length of the output priority queue of distribution input queue 2 for the relevant interface. #2	Y
13	axsEtherDistributionRxQoS2StatsTotalOutFrames {axsEtherDistributionRxQoSStatsEntry 11}	Counter	R/O	Shows the total number of frames of distribution input queue 2 for the relevant interface. #2	Y
14	axsEtherDistributionRxQoS2StatsTotalOutBytesHigh {axsEtherDistributionRxQoSStatsEntry 12}	Counter	R/O	Shows the total number of bytes of distribution input queue 2 for the relevant interface (most significant 4 bytes). FCS is not included in the number of bytes. #2	Y

#	Object identifier	SYNTAX	Access	Implementation specifications	Support?
15	axsEtherDistributionRxQoS2StatsTotalOutBytesLow {axsEtherDistributionRxQoSStatsEntry 13}	Counter	R/O	Shows the total number of bytes of distribution input queue 2 for the relevant interface (least significant 4 bytes). FCS is not included in the number of bytes. #2	Y
16	axsEtherDistributionRxQoS2StatsTotalDiscardFrames {axsEtherDistributionRxQoSStatsEntry 14}	Counter	R/O	Shows the total number of discarded frames of distribution input queue 2 for the relevant interface. #2	Y
17	axsEtherDistributionRxQoS1StatsQueueTable { axsEtherDistributionRxQoS 2}	NOT-ACCESSIBLE	NA	Table information of the QoS statistics for each output priority queue of distribution input queue 1 for the relevant interface.	Y
18	axsEtherDistributionRxQoS1StatsQueueEntry {axsEtherDistributionRxQoS1StatsQueueTable 1}	NOT-ACCESSIBLE	NA	Entry of the QoS statistics for each output priority queue of distribution input queue 1 for the relevant interface. [index] { axsEtherDistributionRxQoS1StatsQueueIndex, axsEtherDistributionRxQoS1StatsQueueIfIndex, axsEtherDistributionRxQoS1StatsQueueQueIndex}	Y
19	axsEtherDistributionRxQoS1StatsQueueIndex {axsEtherDistributionRxQoS1StatsQueueEntry 1}	NOT-ACCESSIBLE	NA	Shows the number in the location where distribution input queue 1 to be acquired exists. - For AX6700S series: BSU number (1 to 3) - For AX6600S series: CSU number (1 to 2) - For AX6300S series: Fixed value of 1	Y
20	axsEtherDistributionRxQoS1StatsQueueIfIndex {axsEtherDistributionRxQoS1StatsQueueEntry 2}	NOT-ACCESSIBLE	NA	Shows the index value to identify an entry in this table (ifIndex of the Ethernet interface), in the range from 1 to ifNumber.	Y
21	axsEtherDistributionRxQoS1StatsQueueQueIndex {axsEtherDistributionRxQoS1StatsQueueEntry 3}	NOT-ACCESSIBLE	NA	Shows the index value for identifying any entry in the table. The value ranges from 1 to axsEtherDistributionRxQoS1StatsMaxQnum.	Y
22	axsEtherDistributionRxQoS1StatsQueueQlen {axsEtherDistributionRxQoS1StatsQueueEntry 4}	INTEGER	R/O	Shows the length of the output priority queue of the distribution input queue 1 at the time of information collection.	Y
23	axsEtherDistributionRxQoS1StatsQueueMaxQlen {axsEtherDistributionRxQoS1StatsQueueEntry 5}	INTEGER	R/O	Shows the maximum length of the output priority queue of distribution input queue 1 for the relevant interface after the statistics are deleted or initialized.	Y
24	axsEtherDistributionRxQoS2StatsQueueTable { axsEtherDistributionRxQoS 3}	NOT-ACCESSIBLE	NA	Table information of the QoS statistics for each output priority queue of distribution input queue 2 for the relevant interface.	Y

#	Object identifier	SYNTAX	Access	Implementation specifications	Support?
25	axsEtherDistributionRxQoS2StatsQueueEntry {axsEtherDistributionRxQoS2StatsQueueTable 1}	NOT-ACCESSIBLE	NA	Entry of the QoS statistics for each output priority queue of distribution input queue 2 for the relevant interface. [index] { axsEtherDistributionRxQoS2StatsQueueIndex, axsEtherDistributionRxQoS2StatsQueueIfIndex, axsEtherDistributionRxQoS2StatsQueueQueIndex}	Y
26	axsEtherDistributionRxQoS2StatsQueueIndex {axsEtherDistributionRxQoS2StatsQueueEntry 1}	NOT-ACCESSIBLE	NA	Shows the number in the location where distribution input queue 2 to be acquired exists. - For AX6700S series: BSU number (1 to 3) - For AX6600S series: CSU number (1 to 2) - For AX6300S series: Fixed value of 1	Y
27	axsEtherDistributionRxQoS2StatsQueueIfIndex {axsEtherDistributionRxQoS2StatsQueueEntry 2}	NOT-ACCESSIBLE	NA	Shows the index value to identify an entry in this table (ifIndex of the Ethernet interface), in the range from 1 to ifNumber.	Y
28	axsEtherDistributionRxQoS2StatsQueueQueIndex {axsEtherDistributionRxQoS2StatsQueueEntry 3}	NOT-ACCESSIBLE	NA	Shows the index value for identifying any entry in the table. The value ranges from 1 to axsEtherDistributionRxQoS2StatsMaxQnum.	Y
29	axsEtherDistributionRxQoS2StatsQueueQlen {axsEtherDistributionRxQoS2StatsQueueEntry 4}	INTEGER	R/O	Shows the length of the output priority queue of distribution input queue 2 at the time of information collection. #2	Y
30	axsEtherDistributionRxQoS2StatsQueueMaxQlen {axsEtherDistributionRxQoS2StatsQueueEntry 5}	INTEGER	R/O	Shows the maximum length of the output priority queue of distribution input queue 2 for the relevant interface after the statistics are deleted or initialized. #2	Y

#1: The following NIF types are to be collected:
   For AX6300S series switches: Other than NH1GS-6M and NH10G-1RX
   For AX6600S and AX6700S series switches: All NIFs

#2: The value is fixed to 0 under any of the following conditions:
   - AX6700S with port-based allocation used as the load balancing method for BSU
   - AX6600S and AX6300S

(6) axsToCpuQoS group has been added. [Version 11.7.A and later]

Addition:

(6) axsToCpuQoS group

(a) ID

```
axsStats OBJECT IDENTIFIER ::= {axsMib 1}

axsQoS OBJECT IDENTIFIER ::= {axsStats 6}

axsToCpuQoS OBJECT IDENTIFIER ::= {axsQoS 11}
Object ID value  1.3.6.1.4.1.21839.2.2.1.1.6.11
```

(b) Implementation specifications

The following table shows the implementation specifications for the axsToCpuQoS group.

Table 3-7 axsToCpuQoS group implementation specifications (QoS statistics for the queues output to the CPU)

#	Object identifier	SYNTAX	Access	Implementation specifications	Support?
1	axsToCpuQoSStatsTable {axsToCpuQoS 1}	NOT-ACCESSIBLE	NA	Table information on the QoS statistics for the queues output to the CPU.	Y
2	axsToCpuQoSStatsEntry {axsToCpuQoSStatsTable 1}	NOT-ACCESSIBLE	NA	Entry for the QoS statistics of the queues output to the CPU. [index] { axsToCpuQoSStatsIndex }	Y
3	axsToCpuQoSStatsIndex {axsToCpuQoSStatsEntry 1}	NOT-ACCESSIBLE	NA	Shows the number in the location where the queue output to the CPU to be acquired exists. - For AX6700S series: BSU number (1 to 3) - For AX6600S series: CSU number (1 to 2) - For AX6300S series: Fixed value of 1	Y
4	axsToCpuQoSStatsMaxQnum {axsToCpuQoSStatsEntry 2}	INTEGER	R/O	Shows the maximum number of queues output to the CPU.	Y
5	axsToCpuQoSStatsLimitQlen { axsToCpuQoSStatsEntry 3}	INTEGER	R/O	Shows the limit length of the output priority queue of the relevant queue in the queues output to the CPU. #1	Y
6	axsToCpuQoSStatsTotalOutFrames {axsToCpuQoSStatsEntry 4}	Counter	R/O	Shows the total number of frames of the queues output to the CPU.	Y
7	axsToCpuQoSStatsTotalOutBytesHigh {axsToCpuQoSStatsEntry 5}	Counter	R/O	Shows the total number of bytes of the queues output to the CPU (most significant 4 bytes). FCS is not included in the number of bytes. - Fixed value of 0	Y
8	axsToCpuQoSStatsTotalOutBytesLow {axsToCpuQoSStatsEntry 6}	Counter	R/O	Shows the total number of bytes of the queues output to the CPU (least significant 4 bytes). FCS is not included in the number of bytes. - Fixed value of 0	Y
9	axsToCpuQoSStatsTotalDiscardFrames {axsToCpuQoSStatsEntry 7}	Counter	R/O	Shows the total number of discarded frames of the queues output to the CPU.	Y
10	axsToCpuQoSStatsQueueTable { axsToCpuQoS 2}	NOT-ACCESSIBLE	NA	Table information of the QoS statistics for each output priority queue of the queues output to the CPU.	Y
11	axsToCpuQoSStatsQueueEntry {axsToCpuQoSStatsQueueTable 1}	NOT-ACCESSIBLE	NA	Entry of the QoS statistics for each output priority queue of the queues output to the CPU. [index] { axsToCpuQoSStatsQueueIndex, axsToCpuQoSStatsQueueQueIndex}	Y
12	axsToCpuQoSStatsQueueIndex {axsToCpuQoSStatsQueueEntry 1}	NOT-ACCESSIBLE	NA	Shows the number in the location where the queue output to the CPU to be acquired exists. - For AX6700S series: BSU number (1 to 3) - For AX6600S series: CSU number (1 to 2) - For AX6300S series: Fixed value of 1	Y
13	axsToCpuQoSStatsQueueQueIndex {axsToCpuQoSStatsQueueEntry 2}	NOT-ACCESSIBLE	NA	Shows the index value for identifying any entry in the table. The value ranges from 1 to axsToCpuQoSStatsMaxQnum.	Y

#	Object identifier	SYNTAX	Access	Implementation specifications	Supp ort?
14	axsToCpuQoSStatsQueueQlen {axsToCpuQoSStatsQueueEntr y 3}	INTEGER	R/O	Shows the length of the output priority queue of the queues output to the CPU at the time of information collection.	Y
15	axsToCpuQoSStatsQueueMaxQ len {axsToCpuQoSStatsQueueEntr y 4}	INTEGER	R/O	Shows the maximum length of the output priority queue of the relevant queue in the queues output to the CPU after the statistics are deleted or initialized.	Y
16	axsToCpuQoSStatsQueueDisca rdFramesClass1 {axsToCpuQoSStatsQueueEntr y 5}	Counter64	R/O	Shows the number of discarded frames in the relevant output priority queue at discard class 1 of the relevant queue in the queues output to the CPU.	Y
17	axsToCpuQoSStatsQueueDisca rdFramesClass2 {axsToCpuQoSStatsQueueEntr y 6}	Counter64	R/O	Shows the number of discarded frames in the relevant output priority queue at discard class 2 of the relevant queue in the queues output to the CPU.	Y
18	axsToCpuQoSStatsQueueDisca rdFramesClass3 {axsToCpuQoSStatsQueueEntr y 7}	Counter64	R/O	Shows the number of discarded frames in the relevant output priority queue at discard class 3 of the relevant queue in the queues output to the CPU.	Y
19	axsToCpuQoSStatsQueueDisca rdFramesClass4 {axsToCpuQoSStatsQueueEntr y 8}	Counter64	R/O	Shows the number of discarded frames in the relevant output priority queue at discard class 4 of the relevant queue in the queues output to the CPU.	Y

#1: The maximum queue length largest of all the queues output to the relevant CPU is returned.

(2) 3.23.9 ax6600sPhysLine group implementation specifications (interface information) [Change]

Table *3-98 ax6600sPhysLine group implementation specifications (interface information)* has been changed. [Version 11.9 and later]

Before the change:

Table 3-98 ax6600sPhysLine group implementation specifications (interface information)

#	Object identifier	SYNTAX	Acc ess	Implementation specifications	Supp ort?
3	ax6600sPhysLineIndex {ax6600sPhysLineEntry 1}	NOT-ACC ESSIBLE	NA	Port number information. Value from 1 to ax6600sNifLineNumber (Line number +1).	Y

After the change:

Table 3-98 ax6600sPhysLine group implementation specifications (interface information)

#	Object identifier	SYNTAX	Acc ess	Implementation specifications	Supp ort?
3	ax6600sPhysLineIndex {ax6600sPhysLineEntry 1}	NOT-ACC ESSIBLE	NA	Port number information. Value from 1 to ax6600sNifLineNumber.	Y

Appendix

(1) Appendix A.1 Private MIBs [Addition]

The axsEtherRxQoS group, axsEtherDistributionTxQoS group, axsEtherDistributionRxQoS group, and axsToCpuQoS group have been added to Table *A-1 MIB names in the axsStats group and their corresponding object ID values*. [Version 11.7.A and later]

Addition:

Table A-1 MIB names in the axsStats group and their corresponding object ID values

MIB name	Object ID
axsEtherRxQoS	1.3.6.1.4.1.21839.2.2.1.1.6.7
axsEtherRxQoSStatsTable	1.3.6.1.4.1.21839.2.2.1.1.6.7.1
axsEtherRxQoSStatsEntry	1.3.6.1.4.1.21839.2.2.1.1.6.7.1.1
axsEtherRxQoSStatsIndex	1.3.6.1.4.1.21839.2.2.1.1.6.7.1.1.1
axsEtherRxQoSStatsMaxQnum	1.3.6.1.4.1.21839.2.2.1.1.6.7.1.1.2
axsEtherRxQoSStatsLimitQlen	1.3.6.1.4.1.21839.2.2.1.1.6.7.1.1.3
axsEtherRxQoSStatsTotalOutFrames	1.3.6.1.4.1.21839.2.2.1.1.6.7.1.1.4
axsEtherRxQoSStatsTotalOutBytesHigh	1.3.6.1.4.1.21839.2.2.1.1.6.7.1.1.5
axsEtherRxQoSStatsTotalOutBytesLow	1.3.6.1.4.1.21839.2.2.1.1.6.7.1.1.6
axsEtherRxQoSStatsTotalDiscardFrames	1.3.6.1.4.1.21839.2.2.1.1.6.7.1.1.7
axsEtherRxQoSStatsQueueTable	1.3.6.1.4.1.21839.2.2.1.1.6.7.2
axsEtherRxQoSStatsQueueEntry	1.3.6.1.4.1.21839.2.2.1.1.6.7.2.1
axsEtherRxQoSStatsQueueIndex	1.3.6.1.4.1.21839.2.2.1.1.6.7.2.1.1
axsEtherRxQoSStatsQueueQueIndex	1.3.6.1.4.1.21839.2.2.1.1.6.7.2.1.2
axsEtherRxQoSStatsQueueQlen	1.3.6.1.4.1.21839.2.2.1.1.6.7.2.1.3
axsEtherRxQoSStatsQueueMaxQlen	1.3.6.1.4.1.21839.2.2.1.1.6.7.2.1.4
axsEtherRxQoSStatsQueueDiscardFramesClass1	1.3.6.1.4.1.21839.2.2.1.1.6.7.2.1.5
axsEtherRxQoSStatsQueueDiscardFramesClass2	1.3.6.1.4.1.21839.2.2.1.1.6.7.2.1.6
axsEtherDistributionTxQoS	1.3.6.1.4.1.21839.2.2.1.1.6.8
axsEtherDistributionTxQoSStatsTable	1.3.6.1.4.1.21839.2.2.1.1.6.8.1
axsEtherDistributionTxQoSStatsEntry	1.3.6.1.4.1.21839.2.2.1.1.6.8.1.1
axsEtherDistributionTxQoSStatsIndex	1.3.6.1.4.1.21839.2.2.1.1.6.8.1.1.1
axsEtherDistributionTxQoSStatsIfIndex	1.3.6.1.4.1.21839.2.2.1.1.6.8.1.1.2
axsEtherDistributionTxQoS1StatsMaxQnum	1.3.6.1.4.1.21839.2.2.1.1.6.8.1.1.3
axsEtherDistributionTxQoS1StatsLimitQlen	1.3.6.1.4.1.21839.2.2.1.1.6.8.1.1.4
axsEtherDistributionTxQoS1StatsTotalOutFrames	1.3.6.1.4.1.21839.2.2.1.1.6.8.1.1.5
axsEtherDistributionTxQoS1StatsTotalOutBytesHigh	1.3.6.1.4.1.21839.2.2.1.1.6.8.1.1.6
axsEtherDistributionTxQoS1StatsTotalOutBytesLow	1.3.6.1.4.1.21839.2.2.1.1.6.8.1.1.7
axsEtherDistributionTxQoS1StatsTotalDiscardFrames	1.3.6.1.4.1.21839.2.2.1.1.6.8.1.1.8
axsEtherDistributionTxQoS2StatsMaxQnum	1.3.6.1.4.1.21839.2.2.1.1.6.8.1.1.9
axsEtherDistributionTxQoS2StatsLimitQlen	1.3.6.1.4.1.21839.2.2.1.1.6.8.1.1.10
axsEtherDistributionTxQoS2StatsTotalOutFrames	1.3.6.1.4.1.21839.2.2.1.1.6.8.1.1.11
axsEtherDistributionTxQoS2StatsTotalOutBytesHigh	1.3.6.1.4.1.21839.2.2.1.1.6.8.1.1.12
axsEtherDistributionTxQoS2StatsTotalOutBytesLow	1.3.6.1.4.1.21839.2.2.1.1.6.8.1.1.13
axsEtherDistributionTxQoS2StatsTotalDiscardFrames	1.3.6.1.4.1.21839.2.2.1.1.6.8.1.1.14
axsEtherDistributionTxQoS1StatsQueueTable	1.3.6.1.4.1.21839.2.2.1.1.6.8.2
axsEtherDistributionTxQoS1StatsQueueEntry	1.3.6.1.4.1.21839.2.2.1.1.6.8.2.1
axsEtherDistributionTxQoS1StatsQueueIndex	1.3.6.1.4.1.21839.2.2.1.1.6.8.2.1.1
axsEtherDistributionTxQoS1StatsQueueIfIndex	1.3.6.1.4.1.21839.2.2.1.1.6.8.2.1.2
axsEtherDistributionTxQoS1StatsQueueQueIndex	1.3.6.1.4.1.21839.2.2.1.1.6.8.2.1.3
axsEtherDistributionTxQoS1StatsQueueQlen	1.3.6.1.4.1.21839.2.2.1.1.6.8.2.1.4
axsEtherDistributionTxQoS1StatsQueueMaxQlen	1.3.6.1.4.1.21839.2.2.1.1.6.8.2.1.5

MIB name	Object ID
axsEtherDistributionTxQoS1StatsQueueDiscardFramesClass1	1.3.6.1.4.1.21839.2.2.1.1.6.8.2.1.6
axsEtherDistributionTxQoS1StatsQueueDiscardFramesClass2	1.3.6.1.4.1.21839.2.2.1.1.6.8.2.1.7
axsEtherDistributionTxQoS1StatsQueueDiscardFramesClass3	1.3.6.1.4.1.21839.2.2.1.1.6.8.2.1.8
axsEtherDistributionTxQoS1StatsQueueDiscardFramesClass4	1.3.6.1.4.1.21839.2.2.1.1.6.8.2.1.9
axsEtherDistributionTxQoS2StatsQueueTable	1.3.6.1.4.1.21839.2.2.1.1.6.8.3
axsEtherDistributionTxQoS2StatsQueueEntry	1.3.6.1.4.1.21839.2.2.1.1.6.8.3.1
axsEtherDistributionTxQoS2StatsQueueIndex	1.3.6.1.4.1.21839.2.2.1.1.6.8.3.1.1
axsEtherDistributionTxQoS2StatsQueueIfIndex	1.3.6.1.4.1.21839.2.2.1.1.6.8.3.1.2
axsEtherDistributionTxQoS2StatsQueueQueIndex	1.3.6.1.4.1.21839.2.2.1.1.6.8.3.1.3
axsEtherDistributionTxQoS2StatsQueueQlen	1.3.6.1.4.1.21839.2.2.1.1.6.8.3.1.4
axsEtherDistributionTxQoS2StatsQueueMaxQlen	1.3.6.1.4.1.21839.2.2.1.1.6.8.3.1.5
axsEtherDistributionTxQoS2StatsQueueDiscardFramesClass1	1.3.6.1.4.1.21839.2.2.1.1.6.8.3.1.6
axsEtherDistributionTxQoS2StatsQueueDiscardFramesClass2	1.3.6.1.4.1.21839.2.2.1.1.6.8.3.1.7
axsEtherDistributionTxQoS2StatsQueueDiscardFramesClass3	1.3.6.1.4.1.21839.2.2.1.1.6.8.3.1.8
axsEtherDistributionTxQoS2StatsQueueDiscardFramesClass4	1.3.6.1.4.1.21839.2.2.1.1.6.8.3.1.9
axsEtherDistributionRxQoS	1.3.6.1.4.1.21839.2.2.1.1.6.9
axsEtherDistributionRxQoSStatsTable	1.3.6.1.4.1.21839.2.2.1.1.6.9.1
axsEtherDistributionRxQoSStatsEntry	1.3.6.1.4.1.21839.2.2.1.1.6.9.1.1
axsEtherDistributionRxQoSStatsIndex	1.3.6.1.4.1.21839.2.2.1.1.6.9.1.1.1
axsEtherDistributionRxQoSStatsIfIndex	1.3.6.1.4.1.21839.2.2.1.1.6.9.1.1.2
axsEtherDistributionRxQoS1StatsMaxQnum	1.3.6.1.4.1.21839.2.2.1.1.6.9.1.1.3
axsEtherDistributionRxQoS1StatsLimitQlen	1.3.6.1.4.1.21839.2.2.1.1.6.9.1.1.4
axsEtherDistributionRxQoS1StatsTotalOutFrames	1.3.6.1.4.1.21839.2.2.1.1.6.9.1.1.5
axsEtherDistributionRxQoS1StatsTotalOutBytesHigh	1.3.6.1.4.1.21839.2.2.1.1.6.9.1.1.6
axsEtherDistributionRxQoS1StatsTotalOutBytesLow	1.3.6.1.4.1.21839.2.2.1.1.6.9.1.1.7
axsEtherDistributionRxQoS1StatsTotalDiscardFrames	1.3.6.1.4.1.21839.2.2.1.1.6.9.1.1.8
axsEtherDistributionRxQoS2StatsMaxQnum	1.3.6.1.4.1.21839.2.2.1.1.6.9.1.1.9
axsEtherDistributionRxQoS2StatsLimitQlen	1.3.6.1.4.1.21839.2.2.1.1.6.9.1.1.10
axsEtherDistributionRxQoS2StatsTotalOutFrames	1.3.6.1.4.1.21839.2.2.1.1.6.9.1.1.11
axsEtherDistributionRxQoS2StatsTotalOutBytesHigh	1.3.6.1.4.1.21839.2.2.1.1.6.9.1.1.12
axsEtherDistributionRxQoS2StatsTotalOutBytesLow	1.3.6.1.4.1.21839.2.2.1.1.6.9.1.1.13
axsEtherDistributionRxQoS2StatsTotalDiscardFrames	1.3.6.1.4.1.21839.2.2.1.1.6.9.1.1.14
axsEtherDistributionRxQoS1StatsQueueTable	1.3.6.1.4.1.21839.2.2.1.1.6.9.2
axsEtherDistributionRxQoS1StatsQueueEntry	1.3.6.1.4.1.21839.2.2.1.1.6.9.2.1
axsEtherDistributionRxQoS1StatsQueueIndex	1.3.6.1.4.1.21839.2.2.1.1.6.9.2.1.1
axsEtherDistributionRxQoS1StatsQueueIfIndex	1.3.6.1.4.1.21839.2.2.1.1.6.9.2.1.2
axsEtherDistributionRxQoS1StatsQueueQueIndex	1.3.6.1.4.1.21839.2.2.1.1.6.9.2.1.3
axsEtherDistributionRxQoS1StatsQueueQlen	1.3.6.1.4.1.21839.2.2.1.1.6.9.2.1.4
axsEtherDistributionRxQoS1StatsQueueMaxQlen	1.3.6.1.4.1.21839.2.2.1.1.6.9.2.1.5
axsEtherDistributionRxQoS2StatsQueueTable	1.3.6.1.4.1.21839.2.2.1.1.6.9.3
axsEtherDistributionRxQoS2StatsQueueEntry	1.3.6.1.4.1.21839.2.2.1.1.6.9.3.1
axsEtherDistributionRxQoS2StatsQueueIndex	1.3.6.1.4.1.21839.2.2.1.1.6.9.3.1.1
axsEtherDistributionRxQoS2StatsQueueIfIndex	1.3.6.1.4.1.21839.2.2.1.1.6.9.3.1.2
axsEtherDistributionRxQoS2StatsQueueQueIndex	1.3.6.1.4.1.21839.2.2.1.1.6.9.3.1.3
axsEtherDistributionRxQoS2StatsQueueQlen	1.3.6.1.4.1.21839.2.2.1.1.6.9.3.1.4
axsEtherDistributionRxQoS2StatsQueueMaxQlen	1.3.6.1.4.1.21839.2.2.1.1.6.9.3.1.5
axsToCpuQoS	1.3.6.1.4.1.21839.2.2.1.1.6.11
axsToCpuQoSStatsTable	1.3.6.1.4.1.21839.2.2.1.1.6.11.1
axsToCpuQoSStatsEntry	1.3.6.1.4.1.21839.2.2.1.1.6.11.1.1
axsToCpuQoSStatsIndex	1.3.6.1.4.1.21839.2.2.1.1.6.11.1.1.1
axsToCpuQoSStatsMaxQnum	1.3.6.1.4.1.21839.2.2.1.1.6.11.1.1.2
axsToCpuQoSStatsLimitQlen	1.3.6.1.4.1.21839.2.2.1.1.6.11.1.1.3
axsToCpuQoSStatsTotalOutFrames	1.3.6.1.4.1.21839.2.2.1.1.6.11.1.1.4
axsToCpuQoSStatsTotalOutBytesHigh	1.3.6.1.4.1.21839.2.2.1.1.6.11.1.1.5
axsToCpuQoSStatsTotalOutBytesLow	1.3.6.1.4.1.21839.2.2.1.1.6.11.1.1.6
axsToCpuQoSStatsTotalDiscardFrames	1.3.6.1.4.1.21839.2.2.1.1.6.11.1.1.7

MIB name	Object ID
axsToCpuQoSStatsQueueTable	1.3.6.1.4.1.21839.2.2.1.1.6.11.2
axsToCpuQoSStatsQueueEntry	1.3.6.1.4.1.21839.2.2.1.1.6.11.2.1
axsToCpuQoSStatsQueueIndex	1.3.6.1.4.1.21839.2.2.1.1.6.11.2.1.1
axsToCpuQoSStatsQueueQueIndex	1.3.6.1.4.1.21839.2.2.1.1.6.11.2.1.2
axsToCpuQoSStatsQueueQlen	1.3.6.1.4.1.21839.2.2.1.1.6.11.2.1.3
axsToCpuQoSStatsQueueMaxQlen	1.3.6.1.4.1.21839.2.2.1.1.6.11.2.1.4
axsToCpuQoSStatsQueueDiscardFramesClass1	1.3.6.1.4.1.21839.2.2.1.1.6.11.2.1.5
axsToCpuQoSStatsQueueDiscardFramesClass2	1.3.6.1.4.1.21839.2.2.1.1.6.11.2.1.6
axsToCpuQoSStatsQueueDiscardFramesClass3	1.3.6.1.4.1.21839.2.2.1.1.6.11.2.1.7
axsToCpuQoSStatsQueueDiscardFramesClass4	1.3.6.1.4.1.21839.2.2.1.1.6.11.2.1.8