Forced: Force join to Voice VLAN.

Port Security:

Indicates the Voice VLAN port security mode. When the function is enabled, all non-telephonic MAC addresses in the Voice VLAN will be blocked for 10 seconds. Possible port modes are:

Enabled: Enable Voice VLAN security mode operation.

Disabled: Disable Voice VLAN security mode operation.

Port Discovery Protocol:

Indicates the Voice VLAN port discovery protocol. It will only work when auto detect mode is enabled. We should enable LLDP feature before configuring discovery protocol to "LLDP" or "Both". Changing the discovery protocol to "OUI" or "LLDP" will restart auto detect process. Possible discovery protocols are:

OUI: Detect telephony device by OUI address.

LLDP: Detect telephony device by LLDP.

Both: Both OUI and LLDP.

Buttons:

Save – Click to save changes.

Reset – Click to undo any changes made locally and revert to previously saved values.

3.11.2 OUI

This section describes how to configure the Voice VLAN OUI table. The maximum entry number is 16. Modifying the OUI table will restart auto detection of the OUI process.

Web Interface

To configure Voice VLAN OUI Table in the web interface:

1. Select "Add new entry", "Delete „in the Voice VLAN OUI table.

2. Specify Telephony OUI, Description.

3. Click Apply.

Figure 3-11.2: The Voice VLAN OUI Table

Voice VLAN OUI Table

Delete	Telephony OUI	Description
☐	00-01-e3	Siemens AG phones
☐	00-03-6b	Cisco phones
☐	00-0f-e2	H3C phones
☐	00-60-b9	Philips and NEC AG phones
☐	00-d0-1e	Pingtel phones
☐	00-e0-75	Polycom phones
☐	00-e0-bb	3Com phones

Add new entry

Save Reset

Parameter description:

Delete:

Check to delete the entry. It will be deleted during the next save.

Telephony OUI:

A telephony OUI address is a globally unique identifier assigned to a vendor by IEEE. It must be 6 characters long and the input format is "xx-xx-xx" (x is a hexadecimal digit).

Description:

The description of OUI address. Normally, it describes which vendor telephony device it belongs to. The allowed string length is 0 to 32.

Add New entry:

Click to add a new entry in Voice VLAN OUI table. An empty row is added to the table, the Telephony OUI, Description.

Buttons:

Save – Click to save changes.

Reset – Click to undo any changes made locally and revert to previously saved values.

ⓘ   All non-telephonic MAC addresses in the Voice VLAN will be blocked for 10 seconds.

3.12 GARP

The Generic Attribute Registration Protocol (GARP) provides a generic framework whereby devices in a bridged LAN, e.g. end stations and switches, can register and de-register attribute values, such as VLAN Identifiers, with each other. In doing so, the attributes are propagated to devices in the bridged LAN, and these devices form a "reachability"-tree that is a subset of an active topology. GARP defines the architecture, rules of operation, state machines and variables for the registration and de-registration of attribute values.

A GARP participation in a switch or an end station consists of a GARP application component, and a GARP Information Declaration (GID) component associated with each port or the switch. The propagation of information between GARP participants for the same application in a bridge is carried out by the GARP Information Propagation (GIP) component. Protocol exchanges take place between GARP participants by means of LLC Type 1 services, using the group MAC address and PDU format defined for the GARP application concerned.

3.12.1 Configuration

This page allows you to configure the basic GARP Configuration settings for all switch ports. The settings relate to the currently selected unit, as reflected by the page header.

Web Interface

To configure GARP Port in the web interface:

1. Click GARP configure.

2. Specify GARP Configuration Parameters.

3. Click Apply.

Figure 3-12.1: The GARP Port Configuration (GS-2310P)

Parameter description:

Port:

The Port column shows the list of ports for which you can configure GARP settings. There are 2 types configuration settings which can be configured on per port bases.

Timer Values

Application

Attribute Type

GARP Applicant

Timer Values:

Three different timers can be configured on this page:

Join Timer: The default value for Join timer is 200ms.

Leave Timer: The range of values for Leave Time is 600-1000ms. The default value for Leave Timer is 600ms.

Leave All Timer: The default value for Leave All Timer is 10000ms

Application:

Currently supported applications:GVRP.

Attribute Type:

Currently supported Attribute Type is VLAN.

GARP Applicant

This configuration is used to configure the Applicant state machine behavior for GARP on a particular port locally.

normal-participant: In this mode the Applicant state machine will operate normally in GARP protocol exchanges.

non-participant: In this mode the Applicant state machine will not participate in the protocol operation.

The default configuration is normal participant.

Buttons:

Save – Click to save changes.

Reset – Click to undo any changes made locally and revert to previously saved values.

3.12.2 Statistics

This section describes the port statistics of GARP for all switch ports. The port statistics relate to the currently selected unit, as reflected by the page header.

Web Interface

To display GARP Port statistics in the web interface:

1. Click GARP statistics.

2. Click Refresh to refresh the GARP statistics information.

Figure 3-12.2: The GARP Port Statistics

Parameter description:

Port:

The Port column shows the list of all ports for which GARP statistics are available.

Peer MAC:

The Peer MAC is the MAC address of the neighbor Switch from which the GARP frame is received.

Failed Count:

The number of times attempted GARP registrations could not be completed

Auto-refresh:

Activate the auto-refresh to refresh the information automatically.

Refresh:

Refresh the GARP Port Statistics information manually.

3.13 GVRP

GVRP is an application based on Generic Attribute Registration Protocol (GARP), mainly used to automatically and dynamically maintain the group membership information of the VLANs. The GVRP offers the function providing the VLAN registration service through a GARP application. It makes use of GARP Information Declaration (GID) to maintain the ports associated with their attribute database and GARP Information Propagation (GIP) to communicate among switches and end stations. With GID information and GIP, GVRP state machine maintain the contents of Dynamic VLAN Registration Entries for each VLAN and propagate these information to other GVRP-aware devices to setup and update their knowledge database, the set of VLANs associated with currently active members, and through which ports these members can be reached.

3.13.1 Configuration

This page allows you to configure the basic GVRP Configuration settings for all switch ports. The settings relate to the currently selected unit, as reflected by the page header.

Web Interface

To configure GVRP Port in the web interface:

1. Click GVRP configure.

2. Specify GVRP Configuration Parameters.

3. Click Apply.

Figure 3-13.1: The GVRP Global Configuration (GS-2310P)

Parameter description:

GVRP Mode:

GVRP Mode is a global setting, to enable the GVRP globally select 'Enable' from menu and to disable GVRP globally select 'Disable'.

Port:

The Port column shows the list of ports for which you can configure per port GVRP settings. There are two configuration settings which can be configured on per port bases.

1. GVRP Mode

This configuration is to enable/disable GVRP Mode on particular port locally.

Disable: Select to Disable GVRP mode on this port.

Enable: Select to Enable GVRP mode on this port.

The default value of configuration is disable.

2. GVRP role

This configuration is used to configure restricted role on an interface.

Disable: Select to Disable GVRP role on this port.

Enable: Select to Enable GVRP role on this port.

The default configuration is disable.

Auto-refresh:

Activate the auto-refresh to refresh the information automatically.

Refresh:

Refresh the GVRP Global configuration information manually.

Save – Click to save changes.

Reset – Click to undo any changes made locally and revert to previously saved values.

3.13.2 Statistics

This section describes the basic GVRP Port statistics for all switch ports. The statistics relate to the currently selected unit, as reflected by the page header.

Web Interface

To display GVRP Port statistics in the web interface:

1. Click GVRP statistics.

2. Click Refresh to modify the GVRP statistics information.

Figure 3-13.2: The GVRP Port Statistics (GS-2310P)

Parameter description:

Port:

The Port column shows the list of ports for which you can see port counters and statistics.

Join Tx Count:

The count of GVRP join PDUs transmitted from the GARP layer (include join in & join empty).

Leave Tx Count:

The count of GVRP leave PDUs transmitted from the GARP layer (include leave in & leave empty).

Auto-refresh:

Activate the auto-refresh to refresh the information automatically.

Refresh:

Refresh the GVRP Port Statistics information manually.

3.14 QoS

The switch supports four QoS queues per port with strict or weighted fair queuescheduling. It supports QoS Control Lists (QCL) for advance programmable QoS classification, based on IEEE 802.1p, Ethertype, VID, IPv4/IPv6 DSCP and UDP/TCP ports and ranges.

High flexibility in the classification of incoming frames to a QoS class. The QoS classification looks for information up to Layer 4, including IPv4 and IPv6 DSCP, IPv4 TCP/UDP port numbers, and user priority of tagged frames. This QoS

classification mechanism is implemented in a QoS control list (QCL). The QoS class assigned to a frame is used throughout the device for providing queuing, scheduling, and congestion control guarantees to the frame according to what was configured for that specific QoS class.

The switch supports advanced memory control mechanisms providing excellent performance of all QoS classes under any traffic scenario, including jumbo frame. A super priority queue with dedicated memory and strict highest priority in the arbitration. The ingress super priority queue allows traffic recognized as CPU traffic to be received and queued for transmission to the CPU even when all the QoS class queues are congested.

3.14.1 Port Classification

The section allows you to configure the basic QoS Ingress Classification settings for all switch ports. and the settings relate to the currently selected unit, as reflected by the page header.

Web Interface

To configure the QoS Port Classification parameters in the web interface:

1. Click Configuration, QoS, Port Classification

2. Select QoS class, DP Level, PCP and DEI parameters

3. Click Apply to save the setting

4. If you want to cancel the setting then you need to click the Reset button. It will revert to previously saved values

Figure 3-14.1: The QoS Configuration (GS-2310P)

Parameter description:

Port:

The port number for which the configuration below applies.

QoS class:

Controls the default QoS class, i.e., the QoS class for frames not classified in any other way. There is a one to one mapping between QoS class, queue and priority. A QoS class of 0 (zero) has the lowest priority.

DP level:

Controls the default DP level, i.e., the DP level for frames not classified in any other way.

PCP:

Controls the default PCP for untagged frames.

DEI:

Controls the default DEI for untagged frames.

Tag Class.:

Shows the classification mode for tagged frames on this port.

Disabled: Use default QoS class and DP level for tagged frames.

Enabled: Use mapped versions of PCP and DEI for tagged frames.

Click on the mode in order to configure the mode and/or mapping.

DSCP Based:

Click to Enable DSCP Based QoS Ingress Port Classification.

Buttons:

Save – Click to save changes.

Reset – Click to undo any changes made locally and revert to previously saved values.

ⓘ　DP level: Every incoming frame is classified to a Drop Precedence Level (DP level), which is used throughout the device for providing congestion control guarantees to the frame according to what was configured for that specific DP level.

PCP: PCP is an acronym for Priority Code Point. It is a 3-bit field storing the priority level for the 802.1Q frame.

DEI: DEI is an acronym for Drop Eligible Indicator. It is a 1-bit field in the VLAN tag.

Actual PCP is Pri column in VLAN tag packet, DEI is cfi column

PCP value from 0~7, it can be used for priority definition.

DEI value is 0 or 1, it is settable; map to DP value is 0 or 1. When ingress QoS class value is the same, the DP level defines the priority, a large DP value will be dropped first.

ex: From Port 1 input 1G Pkts, Egress Port 7 Rate be set with 500M. Port 1 Pkts will include two kinds of packets:

a. PCP & DEI = 0 0, via configured map to QoS class & DP level = 1, 0

b. PCP & DEI = 0 1, via configured map to QoS class & DP level = 1, 1

Result will find: (a) all packets past, and (b) all packets dropped

3.14.2 Port Policing

This section provides an overview of QoS Ingress Port Polices for all switch ports The Port Policing is useful in constraining traffic flows and marking frames above specific rates. Policing is primarily useful for data flows and voice or video flows because voice and video usually maintains a steady rate of traffic

Web Interface

To display the QoS Port Schedulers in the web interface:

1. Click Configuration, QoS, Port Policing

2. Activate which port need to enable the QoS Ingress Port Polices and type the Rate limit condition.

3. Select the Rate limit Unit with kbps, Mbps, fps, or kfps.

4. Click Apply to save the configuration.

Figure 3-14.2: The QoS Ingress Port Policies Configuration (GS-2310P)

QoS Ingress Port Policers

Port	Mode	Rate	Unit	Flow Control
*	☐		<> ▼	☐
1	☐	500	kbps ▼	☐
2	☐	500	kbps ▼	☐
3	☐	500	kbps ▼	☐
4	☐	500	kbps ▼	☐
5	☐	500	kbps ▼	☐
6	☐	500	kbps ▼	☐
7	☐	500	kbps ▼	☐
8	☐	500	kbps ▼	☐
9A	☐	500	kbps ▼	☐
10A	☐	500	kbps ▼	☐
9B	☐	500	kbps ▼	☐
10B	☐	500	kbps ▼	☐

Apply   Reset

Parameter description:

Port:

The logical port for the settings contained in the same row. Click on the port number in order to configure the schedulers.

Enabled:

To activate which Port you need to enable the QoS Ingress Port Policies function.

Rate:

To set the Rate limit value for this port, the default is 500.

Unit:

To scroll to select what unit of rate includes kbps, Mbps, fps and kfps. The default is kbps.

Flow Control:

Activate to enable or disable flow control on port.

Buttons:

Save – Click to save changes.

Reset – Click to undo any changes made locally and revert to previously saved values.

3.14.3 Port Scheduler

This section provides an overview of QoS Egress Port Schedulers for all switch ports. The ports belong to the currently selected unit, as reflected by the page header.

Web Interface

To display the QoS Port Schedulers in the web interface:

1. Click Configuration, QoS, Port Schedulers

2. Display the QoS Egress Port Schedulers

Figure 3-14.3: The QoS Egress Port Schedules (GS-2310P)

QoS Egress Port Schedulers

Port	Mode	Weight					
		Q0	Q1	Q2	Q3	Q4	Q5
1	Strict Priority	-	-	-	-	-	-
2	Strict Priority	-	-	-	-	-	-
3	Strict Priority	-	-	-	-	-	-
4	Strict Priority	-	-	-	-	-	-
5	Strict Priority	-	-	-	-	-	-
6	Strict Priority	-	-	-	-	-	-
7	Strict Priority	-	-	-	-	-	-
8	Strict Priority	-	-	-	-	-	-
9A	Strict Priority	-	-	-	-	-	-
10A	Strict Priority	-	-	-	-	-	-
9B	Strict Priority	-	-	-	-	-	-
10B	Strict Priority	-	-	-	-	-	-

QoS Egress Port Scheduler and Shapers Port 1

Scheduler Mode Strict Priority ▼

Queue Shaper

Enable	Rate	Unit	Excess

Port Shaper

Enable	Rate	Unit

Q0 S □ 500 kbps ▼ □
Q1 S □ 500 kbps ▼ □
Q2 S □ 500 kbps ▼ □
Q3 S □ 500 kbps ▼ □
Q4 S □ 500 kbps ▼ □
Q5 S □ 500 kbps ▼ □
Q6 S □ 500 kbps ▼ □
Q7 S □ 500 kbps ▼ □

STRICT

S □ 500 kbps ▼

Save Reset Cancel

Parameter description:

Port:

The logical port for the settings contained in the same row. Click on the port number in order to configure the schedulers.

Mode:

Shows the scheduling mode for this port.

Weight (Qn):

Shows the weight for this queue and port.

Scheduler Mode:

Controls whether the scheduler mode is "Strict Priority" or "Weighted" on this switch port.

Queue Shaper Enable:

Controls whether the queue shaper is enabled for this queue on this switch port.

Queue Shaper Rate:

Controls the rate for the queue shaper. The default value is ?. This value is restricted to ?-1000000 when the "Unit" is "kbps", and it is restricted to 1-? when the "Unit" is "Mbps.

Queue Shaper Unit:

Controls the unit of measure for the queue shaper rate as "kbps" or "Mbps". The default value is "kbps".

Queue Shaper Excess:

Controls whether the queue is allowed to use excess bandwidth.

Queue Scheduler Weight:

Controls the weight for this queue. The default value is "17". This value is restricted to 1-100. This parameter is only shown if "Scheduler Mode" is set to "Weighted".

Queue Scheduler Percent:

Shows the weight in percent for this queue. This parameter is only shown if "Scheduler Mode" is set to "Weighted"

Port Shaper Enable:

Controls whether the port shaper is enabled for this switch port.

Port Shaper Rate:

Controls the rate for the port shaper. The default value is ?. This value is restricted to ?-1000000 when the "Unit" is "kbps", and it is restricted to 1-? when the "Unit" is "Mbps".

Port Shaper Unit:

Controls the unit of measure for the port shaper rate as "kbps" or "Mbps". The default value is "kbps".

Buttons:

Save – Click to save changes.

Reset – Click to undo any changes made locally and revert to previously saved values.

3.14.4 Port Shaping

This section provides an overview of QoS Egress Port Shaping for all switch ports. It offers all detail information of the ports belonging to the currently selected unit, as reflected by the page header.

Web Interface

To display the QoS Port Shapers in the web interface:

1. Click Configuration, QoS, Port Shapers

Figure 3-14.4: The QoS Egress Port Shapers

QoS Egress Port Shapers

Port	Shapers								
	Q0	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Port
1	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
2	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
3	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
4	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
5	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
6	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
7	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
8	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
9	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
10	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
11	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
12	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
13	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
14	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
15	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
16	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
17	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
18	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
19	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
20	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
21	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
22	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
23	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
24	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
25	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled
26	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled	disabled

Parameter description:

Port:

The logical port for the settings contained in the same row. Click on the port number in order to configure the shapers.

Shapers (Qn):

Shows "disabled" or actual queue shaper rate - e.g. "800 Mbps".

Shapers (Port):

Shows "disabled" or actual port shaper rate - e.g. "800 Mbps".

Scheduler Mode:

Controls whether the scheduler mode is "Strict Priority" or "Weighted" on this switch port.

Queue Shaper Enable:

Controls whether the queue shaper is enabled for this queue on this switch port.

Queue Shaper Rate:

Controls the rate for the queue shaper. The default value is ?. This value is restricted to ?-1000000 when the "Unit" is "kbps", and it is restricted to 1-? when the "Unit" is "Mbps.

Queue Shaper Unit:

Controls the unit of measure for the queue shaper rate as "kbps" or "Mbps". The default value is "kbps".

Queue Shaper Excess:

Controls whether the queue is allowed to use excess bandwidth.

Queue Scheduler Weight:

Controls the weight for this queue. The default value is "17". This value is restricted to 1-100. This parameter is only shown if "Scheduler Mode" is set to "Weighted".

Queue Scheduler Percent:

Shows the weight in percent for this queue. This parameter is only shown if "Scheduler Mode" is set to "Weighted"

Port Shaper Enable:

Controls whether the port shaper is enabled for this switch port.

Port Shaper Rate:

Controls the rate for the port shaper. The default value is ?. This value is restricted to ?-1000000 when the "Unit" is "kbps", and it is restricted to 1-? when the "Unit" is "Mbps".

Port Shaper Unit:

Controls the unit of measure for the port shaper rate as "kbps" or "Mbps". The default value is "kbps".

Buttons:

Save – Click to save changes.

Reset – Click to undo any changes made locally and revert to previously saved values.

3.14.5 Port Tag Remarking

This Section provides an overview of QoS Egress Port Tag Remarking for all switch ports.

Web Interface

To display the QoS Port Tag Remarking in the web interface:

Click Configuration, QoS, Port Tag Remarking

Figure 3-14.5: The Port Tag Remarking

Parameter description:

Port:

The logical port for the settings contained in the same row. Click on the port number in order to configure tag remarking.

Mode:

Shows the tag remarking mode for this port.

Classified: Use classified PCP/DEI values.

Default: Use default PCP/DEI values.

Mapped: Use mapped versions of QoS class and DP level.

Tag Remarking Mode:

To scroll to select the tag remarking mode for this port.

Classified: Use classified PCP/DEI values.

Default: Use default PCP/DEI values.

Mapped: Use mapped versions of QoS class and DP level.

Buttons:

Save – Click to save changes.

Reset – Click to undo any changes made locally and revert to previously saved values.

Cancel – Click to cancel the changes.