FIBERROAD

Web-based Network Management User Manual

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Product Warranty (5 years)

Fiberroad warrants to you, the original purchaser, that each of its products will be free from defects in materials and workmanship for five years from the date of purchase.

This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Fiberroad, or which have been subject to misuse, abuse, accident or improper installation. Fiberroad assumes no liability under the terms of this warranty as a consequence of such events.

Because of Fiberroad's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If an Fiberroad product is defective, it will be repaired or replaced at no charge during the warranty period. For out of-warranty repairs, you will be billed according to the cost of replacement materials, service time and freight. Please consult your dealer for more details.

If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU speed, Fiberroad products used, other hardware and software used, etc.) Note anything abnormal and list any on screen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain an RMA (return merchandize authorization) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a fully-completed Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

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Declaration of Conformity

CE

This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

FCC Class A

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Technical Support and Assistance

1. Visit the Fiberroad web site at www.Fiberroad.com/support where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Fiberroad's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
   - Product name and serial number
   - Description of your peripheral attachments
   - Description of your software (operating system, version, application software, etc.)
   - A complete description of the problem
   - The exact wording of any error messages

Warnings, Cautions and Notes

Warning! *Warnings indicate conditions, which if not observed, can cause personal injury!*

Caution! *Cautions are included to help you avoid damaging hardware or losing data. e.g.*

There is a danger of a new battery exploding if it is incorrectly installed. Do not attempt to recharge, force open, or heat the battery. Replace the battery only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

Note! *Notes provide optional additional information.*

Document Feedback

To assist us in making improvements to this manual, we would welcome comments and constructive criticism. Please send all such - in writing to: support@advantech.com

Packing List

Before setting up the system, check that the items listed below are included and in good condition. If any item does not accord with the table, please contact your dealer immediately.

- 1 x 8G + 2G SFP Managed TSN Switch w/Wide Temp switch
- 2 x Wall-mounting Bracket
- 1 x DIN-Rail mounting Bracket and Screws

Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
15. The power cord or plug is damaged.
16. Liquid has penetrated into the equipment.
17. The equipment has been exposed to moisture.
18. The equipment does not work well, or you cannot get it to work according to the user's manual.
19. The equipment has been dropped and damaged.
20. The equipment has obvious signs of breakage.
21. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO -40°C (-40°F) ~ 85°C (185°F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.
22. CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.
23. The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Fiberroad disclaims all responsibility for the accuracy of any statements contained herein.

Wichtige Sicherheishinweise

1. Bitte lesen sie Sich diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie Keine Flüssig-oder Aerosolreiniger. Am besten dient ein angefeuchtetes Tuch zur Reinigung.
4. Die NetzanschluBsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Verletzungen hervorrufen.
7. Die Belüftungsöffnungen dienen zur Luftzirkulation die das Gerät vor überhitzung schützt. Sorgen Sie dafür, daB diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim. AnschluB an das Stromnetz die AnschluBwerte.
9. Verlegen Sie die NetzanschluBleitung so, daB niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen die sich am Geräten befinden sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen Sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von authorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
15. Netzkabel oder Netzstecker sind beschädigt.
16. Flüssigkeit ist in das Gerät eingedrungen.
17. Das Gerät war Feuchtigkeit ausgesetzt.
18. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
19. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
20. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
21. VOSICHT: Explisionsgefahr bei unsachgemaben Austausch der Batterie.Ersatz nur durch densellben order einem vom Hersteller empfohlene-mahnlichen Typ. Entsorgung gebrauchter Batterien navh Angaben des Herstellers.
22. ACHTUNG: Es besteht die Explosionsgefahr, falls die Batterie auf nicht fachmännische Weise gewechselt wird. Verfangen Sie die Batterie nur gleicher oder entsprechender Type, wie vom Hersteller empfohlen. Entsorgen Sie Batterien nach Anweisung des Herstellers.
23. Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weiger.

Haftungsausschluss: Die Bedienungsanleitungen wurden entsprechend der IEC-704-1 erstellt. Fiberroad lehnt jegliche Verantwortung für die Richtigkeit der in diesem Zusammenhang getätigten Aussagen ab.

Safety Precaution - Static Electricity

Static electricity can cause bodily harm or damage electronic devices. To avoid damage, keep static-sensitive devices in the static-protective packaging until the installation period. The following guidelines are also recommended:

- Wear a grounded wrist or ankle strap and use gloves to prevent direct contact to the device before servicing the device. Avoid nylon gloves or work clothes, which tend to build up a charge.
- Always disconnect the power from the device before servicing it.
- Before plugging a cable into any port, discharge the voltage stored on the cable by touching the electrical contacts to the ground surface.

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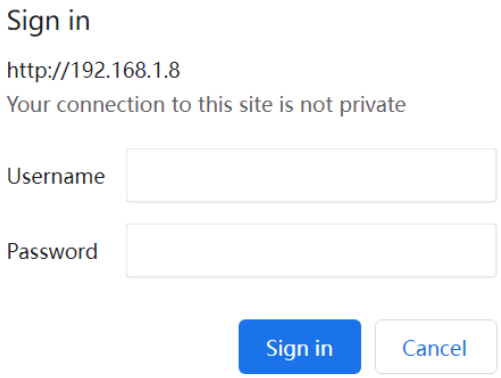
1. Log in

To access the login window, connect the device to the network, see “Connecting the Switch to Ethernet Ports” on page 17. Once the switch is installed and connected, power on the switch see the following procedures to log into your switch.

When the switch is first installed, the default network configuration is set to DHCP enabled. You will need to make sure your network environment supports the switch setup before connecting it to the network.

1. Launch your web browser on a computer.
2. In the browser’s address bar type in the switch’s default IP address (192.168.1.1). The login screen displays.
3. Enter the default user name and password (admin/admin) to log into the management interface. You can change the default password after you have successfully logged in.
4. Click **Sign in** or **Login** (differs by your browser) to enter the management interface.



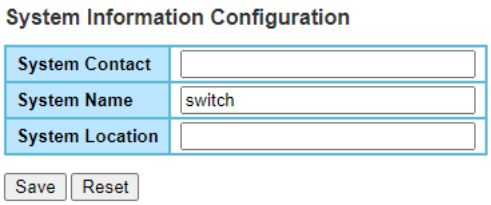
Log in

2. Configuration

2.1 System

2.1.1 Information Configuration

Navigate to **Configuration** > **System** and click **Information**. The System Information Configuration page displays.



Information Configuration

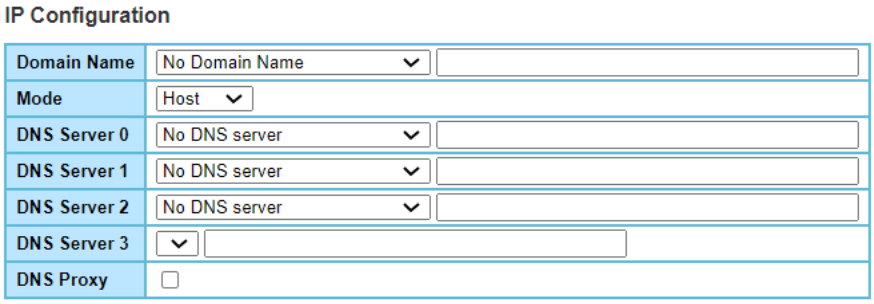
The following table describes the items in the previous figure：

Item	Description
System Contact	Enter identification information to describe the contact option for management events. String length is 0 to 255. Only ASCII characters from 32 to 126 are supported.

System Name	Enter the name to the assigned contact information using alpha numeric characters (A-Za-z), digits (0-9), and minus symbol (-). String length is 0 to 255. No space characters are supported. The first character must be an alphanumeric character. The first or last character must not be a minus sign.
System Location	Enter a description to identify the physical location of this node. The allowed string length is 0 to 255. Only ASCII characters from 32 to 126 are supported.
Save	Click **Save** to store the settings.
Reset	Click **Reset** to clear the settings

2.1.2 IP Configuration

Navigate to **Configuration** > **System** and click **IP**. The IP Configuration page displays :

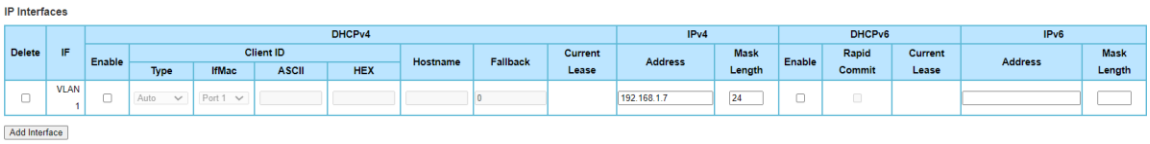


IP Configuration

The following table describes the items in the previous figure：

Item	Description
Domain Name	Enter the string to define the domain name using alpha numeric characters (A-Z, a-z), digits (0-9), and minus symbol (-). String length is 0 to 255. No space characters are supported. The first character must be an alphanumeric character. The first or last character must not be a minus sign.
Mode	Click the drop-down menu to set the mode as a Host or a Router. In Host mode, IP traffic between interfaces is not routed, while in Router mode traffic is routed between all interfaces.
DNS Server (0 ~ 3)	Click the drop-down menu to set the DNS name resolution for the device. The following modes are supported: ■ No DNS server (default): No DNS server is used. ■ Configured IPv4 or IPv6: Enter the specified IPv4/IPv6 address of the DNS Server. ■ From any DHCPv4/DHCPv6 interfaces: First DNS server instance from a DHCP lease to a DHCP-enabled interface is used. ■ From this DHCPv4/DHCPv6 interface: Specify a DHCP-enabled interface to provide DNS server function.
DNS Proxy	Click to enable DNS proxy. The system relay DNS requests to the currently configured DNS server, and replies as a DNS resolver to the network client devices.
Save	Click **Save** to store the settings.
Reset	Click **Reset** to clear the settings

To configure the IP interfaces:



Configuring IP Interfaces

To add an IP interface:

Item	Description
Delete	Click to select the deletion of existing IP interface(s).
VLAN	Enter a value to identify the VLAN associated with the IP interface. Only ports within the identified VLAN can access the IP interface. Only available when creating a new interface.
DHCPv4	
Enabled	Click to enable the interface. If enabled, configure the client ID type (IfMac,ASCII, or HEX) IPv4 address and mask length of the interface for the DHCP protocol.
Type	Click the drop-down menu to specify the client identifier. Options: ■ IfMac ■ ASCII ■ HEX
IfMac	Click the drop-down menu to specify the DHCP client identifier by using the MAC address in the DHCP option 61 field.
ASCII	Enter a string to specify the DHCP client identifier by using the ASCII type string in the DHCP option 61 field.
HEX	Enter a string to specify the DHCP client identifier by using the HEX type string in the DHCP option 61 field.
Hostname	Enter a string to identify the DHCP client hostname.
Fallback	Enter a value to define the time out threshold in seconds (0 to 4294967295 seconds) when trying to obtain a DHCP lease. Once threshold is reached, the configured IPv4 address is used as the IPv4 interface address. A value of zero disables the function.
Current Lease	An active lease is identified by the DHCP interface's current interface address, as provided by the DHCP server.
IPv4 Address	If DHCP is not enabled, enter the IPv4 address to designate the interface.
IPv4 Mask	If DHCP is not enabled, enter the IPv4 network mask in bits (0 & 30 bits for an IPv4 address). If enabled, the fallback address network mask is used.
DHCPv6	
Enable	Click to enable the interface. If enabled, configure the client ID type (IfMac,ASCII, or HEX) IPv6 address and mask length of the interface.
Rapid Commit	Click to enable or disable (default) the rapid-commit option. If this option is enabled, the DHCPv6 client terminates the waiting process as soon as a Reply message with a Rapid Commit option is received.
Current Lease	Displays the current lease of the interface address.
IPv6	
Address	Enter a string to identify IPv6 address of the interface. The field may be left blank if IPv6 operation on the interface is not desired.
Mask Length	Enter a string to identify the length of a network address must match for qualification in the route (values: 0 to 32 bits respectively 128 for IPv6 routes).
Add Interface	Click to add a new IP interface entry.

To add an IP route:

IP Routes

Delete	Network	Mask Length	Gateway	Next Hop VLAN (IPv6)	Distance
Delete			192.168.1.8	0	1

Add Route

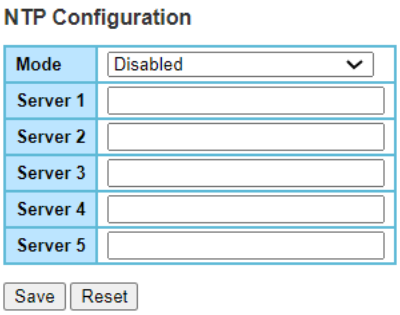
Configuring IP Routes

Item	Desccription
Delete	Click **Delete t**o remove the specified route entry.
Network	Enter the destination IP network or host address of the route. The following values denotes a default route: 0.0.0.0 or IPv6
Mask Length	Enter a value to define the IP network or host mask in number of bits (prefix length). Valid values are between 0 and 32 bits (128 for IPv6 routes). Only a default route has a mask length of 0.
Gateway	Enter the IP address of the IP gateway. The gateway and Network must be of the same type.
Next Hop VLAN (IPv6)	Enter the IPv6 to specify the interface associated with the gateway. Range: 1 to 4094. The range is valid only when the corresponding IPv6 interface is valid. Link-local addresses, must specify the next hop VLAN. If the IPv6 gateway address is not link-local, the system ignores the next hop VLAN for the gateway.
Distance	Enter a value to specify the next hop distance for the route.
Add Route	Click **Add Route** to add a route entry.

2.1.3 NTP Configuration

To configure NTP, access the page as follows:

Navigate to **Configuration** > **System** and click **NTP**. The NTP Configuration page displays.



Configuring IP Settings

The following table describes the items in the previous figure.

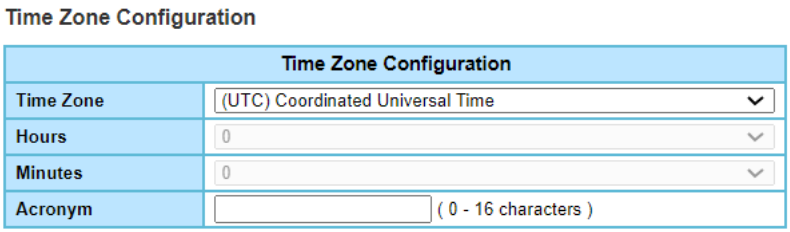
Item	Description
Mode	Click the drop-down menu to select the operation mode: Enabled: Enable NTP client mode operation. Disabled: Disable NTP client mode operation.
Server 1 / 5	Enter the IPv4 or IPv6 address of an NTP server. For IPv6 addresses, enter a 128-bit record represented as eight fields of up to four hexadecimal digits with a colon (:) separating each field.
Save	Click **Save** to store the settings.
Reset	Click **Reset** to clear the settings.

2.1.4 Time Zone Configuration

To configure Time Zone Configuration, access the page as follows:

Navigate to **Configuration** > **System** and click **Time**.

The Time Zone Configuration page displays.

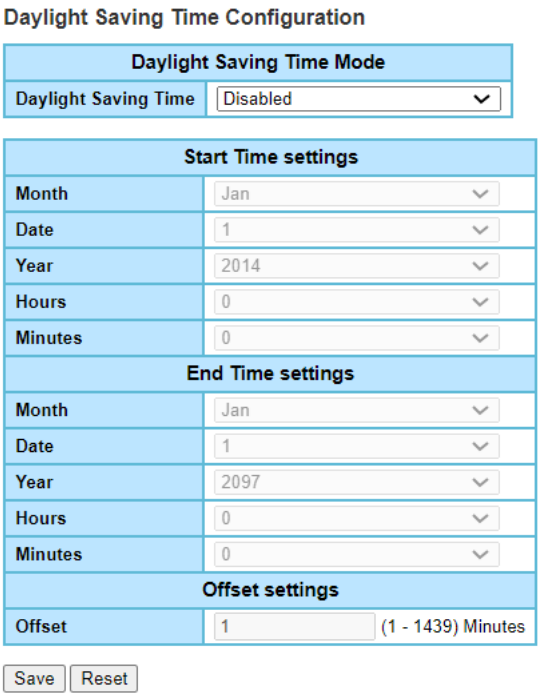


Time Zone Configuration

The following table describes the items in the previous figure.

Item	Description
Time Zone	Click the drop-down menu to select manual to enter a custom time zone setting or an available world wide time zone.
Hours	For manual entries, enter the number of hours offset from UTC.
Minutes	For manual entries, enter the number of minutes offset from UTC.
Acronym	Enter an acronym to easily identify the setting (Range: Up to 16 characters).

The Daylight Saving Time Configuration page is used to set the clock forward or backward according to the configurations set below for a defined Daylight Saving Time duration. To configure the daylight saving time:



Daylight Saving Time Configuration

The following table describes the items in the previous figure.

Item	Description
Daylight Saving Time	Click the drop-down menu to select disable (default), recurring, non-recurring. ■ Disabled ■ Recurring: the configuration repeats every year ■ Non-Recurring: A single time configuration
Start Time Settings	Enter the Month, Date, Year, Hours, and Minutes to setup start time.
End Time Settings	Enter the Month, Date, Year, Hours, and Minutes to setup end time.
Offset Settings	Enter the number of minutes to add during Daylight Saving Time (Range: 1 to 1439).
Save	Click **Save** to store the settings.
Reset	Click **Reset** to clear the settings.

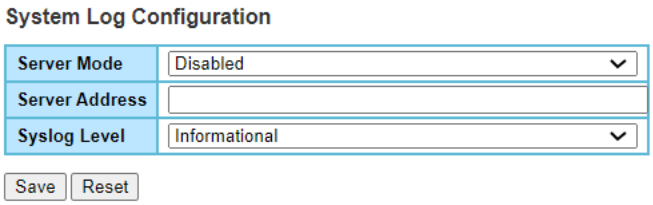
2.1.5 Log Configuration

The System Log provides server mode operations. When the mode is enabled, a syslog message is sent to the syslog server. The syslog protocol is based on UDP communication and received on UDP port 514. The syslog server will not send acknowledgments back sender since UDP is a connectionless protocol and it does not provide acknowledgments. The syslog packet are sent out even if the syslog server does not exist.

To configure System Log, access the page as follows:

Navigate to **Configuration** > **System** and click **Log**.

The System Log Configuration page displays.



System Log Configuration

The following table describes the items in the previous figure.

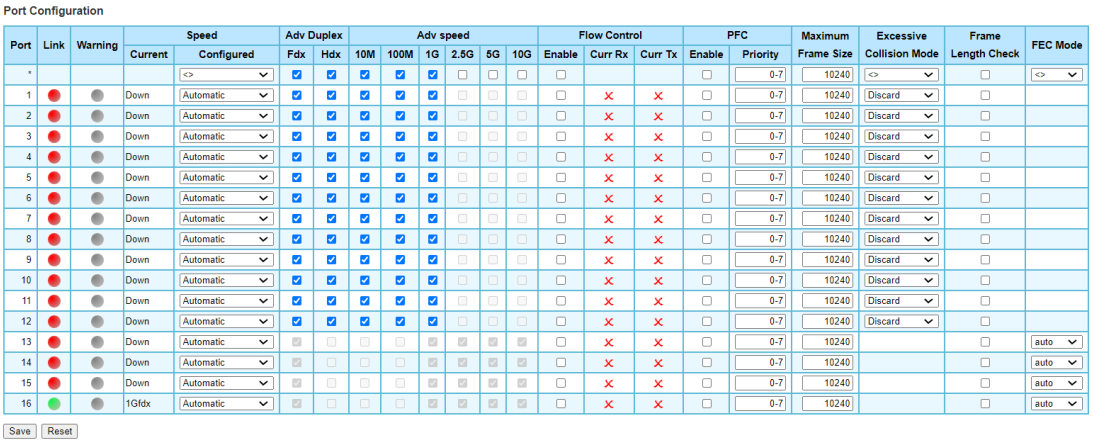
Item	Description
Server Mode	Click the drop-down menu to enable or disable (default) the server mode function.
Server Address	Enter the IPv4 host address of the syslog server. If DNS is featured, a domain name can be indicated.
Syslog Level	Click the drop-down menu to indicate the type of message: Error: Send a specific message(s) if the severity code is less or equal than Error (3). Warning: Send a specific message(s) if the severity code is less or equal than Warning (4). Notice: Send a specific message(s) if the severity code is less or equal than Notice (5). Informational: Send a specific message(s) if the severity code is less or equal than Informational (6).
Save	Click **Save** to store the settings.
Reset	Click **Reset** to clear the settings.

2.2 Ports Configuration

The System Log provides server mode operations. When the mode is enabled, a syslog message is sent to the syslog server. The syslog protocol is based on UDP communication and received on UDP port 514. The syslog server will not send acknowledgments back sender since UDP is a connectionless protocol and it does not provide acknowledgments. The syslog packet are sent out even if the syslog server does not exist.

To configure System Log, access the page as follows:

Navigate to **Configuration** and click **Ports**. The Port Configuration page displays.



Port Configuration

The following table describes the items in the previous figure.

Item	Description
Port Link	Displays the logical port number of the entry. Displays the current link state. Green indicates the link is up and red that it is down.
Current Link Speed	Displays the current link speed of the port.
Configured Link Speed	Click the drop-down menu to select an available link speed for the given switch port. Only speeds supported by the specific port are shown. ■ Disabled - Disables the switch port operation. ■ Auto negotiation - Port auto negotiating speed and duplex with the link partner and selects the highest speed that is compatible with the link partner. ■ 10Mbps HDX - Forces the port in 10Mbps half duplex mode. ■ 10Mbps FDX - Forces the port in 10Mbps full duplex mode. ■ 100Mbps HDX - Forces the port in 100Mbps half duplex mode. ■ 100Mbps FDX - Forces the port in 100Mbps full duplex mode. ■ 1Gbps FDX - Forces the port in 1Gbps full duplex
Advertise Duplex	If duplex is set as auto negotiation, the port only advertises the specified duplex as either Fdx or Hdx to the link partner. By default port will advertise all the supported duplexes if the Duplex is Auto.
Advertise Speed	If speed is set as auto negotiation, the port only advertises the specified speeds (10M 100M 1G 2.5G 5G 10G) to the link partner. By default port will advertise all the supported speeds if speed is set as Auto.

rrr

Item	Description
Flow Control	If auto speed is selected on a port, this section indicates the flow control capability that is advertised to the link partner, otherwise fixed-speed is used if selected. The Current Rx column indicates whether pause frames on the port are obeyed, and the Current Tx column indicates whether pause frames on the port are transmitted. The Rx and Tx settings are determined by the result of the last Auto Negotiation setting. Check a setting to use flow control. This setting is related to the setting for Configured Link Speed. Note: The 100FX standard doesn't support Auto Negotiation. In 100FX mode the flow control capabilities are shown as disabled.
PFC	When PFC (802.1Qbb Priority Flow Control) is enabled on a port flow control on a priority level is enabled. Through the Priority field, range (one or more) of priorities can be configured, e.g. '0-3,7' which equals '0,1,2,3,7'. PFC is not supported through auto negotiation. PFC and Flowcontrol cannot both be enabled on the same port.
Maximum Frame Size	Enter the maximum frame size allowed for the switch port, including FCS. The range is 1518-10240 bytes.
Excessive Collision Mode	Configure the port transmit collision behavior. ■ Discard: Discard frame after 16 collisions (default). ■ Restart: Restart backoff algorithm after 16 collisions.
Frame Length Check	Check an option to configure if frames with incorrect frame length in the EtherType/Length field are to be dropped. An Ethernet frame contains a field EtherType which can be used to indicate the frame payload size (in bytes) for values of 1535 and below. If the EtherType/ Length field is above 1535, it indicates that the field is used as an EtherType (indicating which protocol is encapsulated in the payload of the frame). If frame length check is enabled and EtherType/Length field doesn't match the actually payload length, frames with payload size less than 1536 bytes are dropped. If frame length check is disabled, frames are not dropped due to frame length mismatch. Note: No drop counters count frames dropped due to frame length mismatch
Save	Click **Save** to store the settings.
Reset	Click **Reset** to clear the settings.

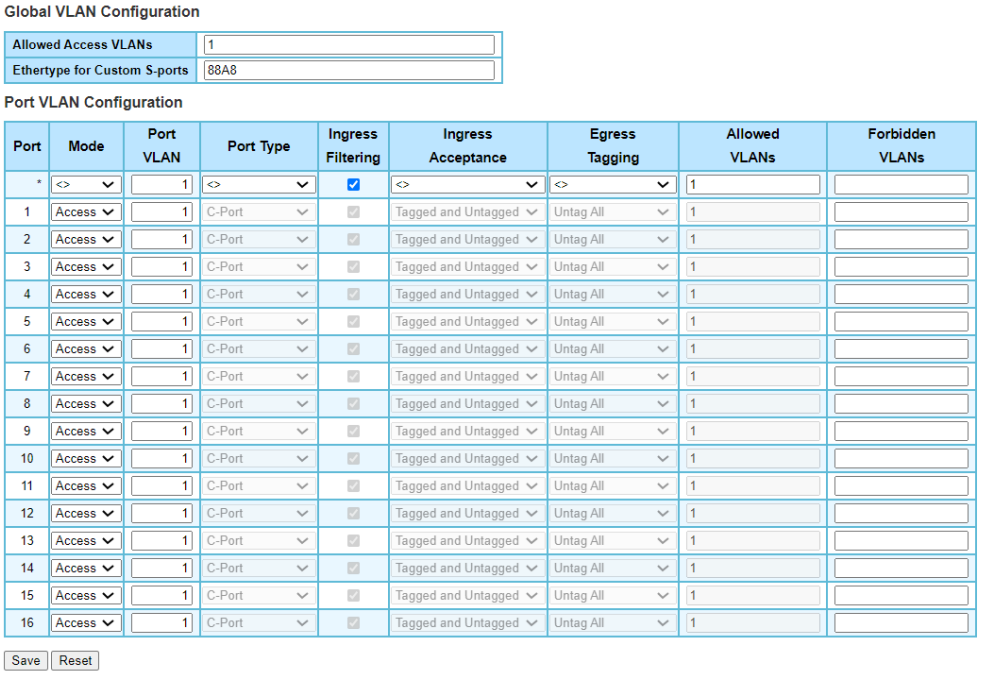
2.3 VLANs

2.3.1 Global VLAN Configuration

The function allows you to configure VLAN control settings.

Navigate to **Configuration** > **VLANs** and click **Configuration**.

The Global VLAN Configuration page displays.



Global VLAN Configuration

The following table describes the items in the previous figure.

Item	Description
Global VLAN Configuration	
Allowed Access VLANs	Enter the string to indicate the allowed access VLANs. VLAN 1 is enabled by default. List range entry is supported.
Ethertype for Custom S-ports	Enter the string to indicate the ethertype/TPID used for custom s-ports. The setting is in force for all ports whose Port Type is set to S-Custom-Port.
Port VLAN Configuration	
Port	Displays the logical port number for the entry.

Item	Description
Mode	Click the drop-down menu to indicate the behavior of the port. Options: **Access**: Access ports are normally used to connect to end stations. Dynamic features like Voice VLAN may add the port to more VLANs behind the scenes. Access ports have the following characteristics: Member of exactly one VLAN, the Port VLAN (a.k.a. Access VLAN), which by default is 1 Accepts untagged and C-tagged frames Discards all frames not classified to the Access VLAN On egress all frames are transmitted untagged **Trunk**: Trunk ports can carry traffic on multiple VLANs simultaneously, and are normally used to connect to other switches. Trunk ports have the following characteristics: By default, a trunk port is member of all VLANs (1 to 4095) The VLANs that a trunk port is member of may be limited by the use of Allowed VLANs Frames classified to a VLAN that the port is not a member of are discarded By default, all frames but frames classified to the Port VLAN (a.k.a. Native VLAN) get tagged on egress. Frames classified to the Port VLAN do not get C-tagged on egress Egress tagging can be changed to tag all frames, in which case only tagged frames are accepted on ingress **Hybrid**: Hybrid ports resemble trunk ports in many ways, but adds additional port configuration features. In addition to the characteristics described for trunk ports, hybrid ports have these abilities: Can be configured to be VLAN tag unaware, C-tag aware, S- tag aware, or S-custom-tag aware Ingress filtering can be controlled Ingress acceptance of frames and configuration of egress tagging can be configured independently
Port VLAN	Enter the string to indicate the port's VLAD ID (range: 1 to 4095, default 1).

Item	Description
Port Type	Click the drop-down menu to indicate the port type. Options: ■ Unaware: On ingress, all frames, whether carrying a VLAN tag or not, get classified to the Port VLAN, and possible tags are not removed on egress. ■ C-Port: On ingress, frames with a VLAN tag with TPID = 0x8100 get classified to the VLAN ID embedded in the tag. If a frame is untagged or priority tagged, the frame gets classified to the Port VLAN. If frames must be tagged on egress, they will be tagged with a C-tag. ■ S-Port: On egress, if frames must be tagged, they will be tagged with an S-tag. On ingress, frames with a VLAN tag with TPID = 0x88A8 get classified to the VLAN ID embedded in the tag. Priority-tagged frames are classified to the Port VLAN. If the port is configured to accept Tagged Only frames (see Ingress Acceptance below), frames without this TPID are dropped. ■ S-Custom-Port: On egress, if frames must be tagged, they will be tagged with the custom S-tag. On ingress, frames with a VLAN tag with a TPID equal to the Ethertype configured for Custom-S ports get classified to the VLAN ID embedded in the tag. Priority-tagged frames are classified to the Port VLAN. If the port is configured to accept Tagged Only frames (see Ingress Acceptance below), frames without this TPID are dropped.
Ingress Filtering	Click to enable (default) or disable ingress filtering. ■ Enabled: frames classified to a VLAN that the port is not a member of get discarded. ■ Disabled: frames classified to a VLAN that the port is not a member of are accepted and forwarded to the switch engine. However, the port will never transmit frames classified to VLANs that it is not a member of.
Ingress Acceptance	Click the drop-down menu to indicate the ingress acceptance type. Options: ■ Tagged and Untagged: Both tagged and untagged frames are accepted. See Port Type for a description of when a frame is considered tagged. ■ Tagged Only: Only frames tagged with the corresponding Port Type tag are accepted on ingress. ■ Untagged Only: Only untagged frames are accepted on ingress. See Port Type for a description of when a frame is considered untagged.
Egress Tagging	Click the drop-down menu to indicate the frame egress tagging control. Options: ■ Untag Port VLAN: Frames classified to the Port VLAN are transmitted untagged. Other frames are transmitted with the relevant tag. ■ Tag All: All frames, whether classified to the Port VLAN or not, are transmitted with a tag. ■ Untag All: All frames, whether classified to the Port VLAN or not, are transmitted without a tag. This option is only available for ports in Hybrid mode.
Allowed VLANs	Enter the string to indicate the bound VLAN membership. By default, a Trunk or Hybrid port becomes member of all VLANs, and is therefore set to 1 to 4095.

Item	Description
Forbidden VLANs	Enter the string to indicate the exclusion of membership to a VLAN membership. Note: Dynamic VLAN protocols like MVRP and GVRP must be prevented from dynamically adding ports to VLANs, which is achieved through this function. By default, the field is left blank indicating that the port can be a member of all possible VLANs.
Save	Click **Save** to create a new user account.
Reset	Click **Reset** to clear the settings.

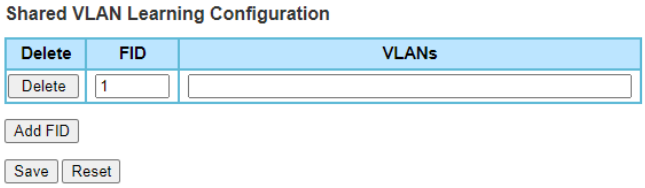
2.3.2 SVL Configuration

The function allows you to configure VLAN control settings.

In SVL, one or more VLANs map to a Filter ID (FID). By default, there is a one-to-one mapping from VLAN to FID, in which case the switch acts as an IVL bridge, but with SVL multiple VLANs may share the same MAC address table entries.

Navigate to **Configuration** > **VLANs** and click **SVL**.

The Shared VLAN Learning Configuration page displays.



Shared VLAN Learning Configuration

The following table describes the items in the previous figure.

Item	Description
Delete	Click Delete to remove an allocated FID.
FID	Enter the string to indicate the ID to bind with the VLAN learning function as shown in the MAC table. SVL must be enabled. Range: 1 to 4095.
VLANs	Enter the string to indicate the VLANs to be mapped into FID. Both individual and range entries are supported.
Add FID	Click **Add FID** to add a new entry in the SVL table.
Save	Click **Save** to create a new user account.
Reset	Click **Reset** to clear the settings.

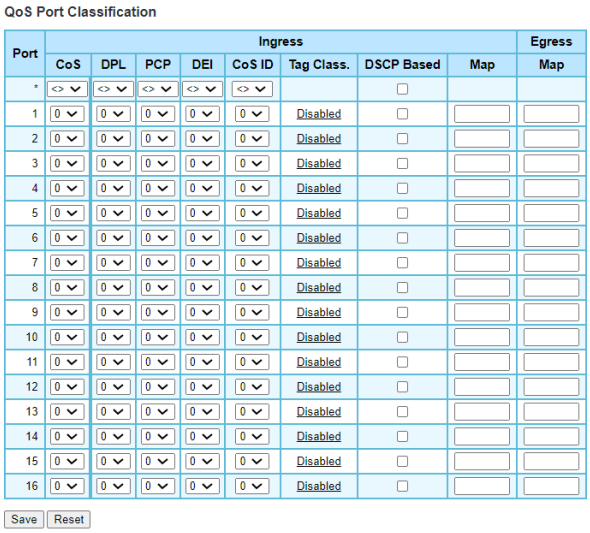
2.4 QoS

2.4.1 Port Classification

This function allows you to configure the basic QoS Classification settings for all switch ports.

Navigate to **Configuration** > **QoS** and click **Port Classification**.

The QoS Port Classification page displays.



QoS Port Classification

The following table describes the items in the previous figure.

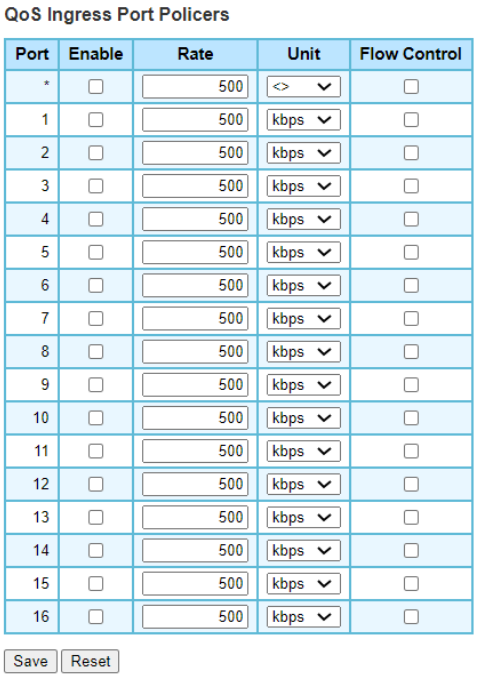
Item	Description
Port	Displays the port number for the configuration entry.
CoS	Click the drop-down menu to select the default CoS value. All frames are classified to a CoS. There is a one to one mapping between CoS, queue and priority. A CoS of 0 (zero) has the lowest priority. Note: If the default CoS has been dynamically changed, then the actual default CoS is shown in parentheses after the configured default CoS.
DPL	Click the drop-down menu to select the default DPL value. All frames are classified to a Drop Precedence Level. If the port is VLAN aware, the frame is tagged and Tag Class. is enabled, then the frame is classified to a DPL that is mapped from the PCP and DEI value in the tag. Otherwise the frame is classified to the default DPL. The classified DPL can be overruled by a QCL entry.
PCP	Click the drop-down menu to select the default PCP value. All frames are classified to a PCP value. If the port is VLAN aware and the frame is tagged, then the frame is classified to the PCP value in the tag. Otherwise the frame is classified to the default PCP value.
DEI	Click the drop-down menu to select the default DEI value. All frames are classified to a DEI value. If the port is VLAN aware and the frame is tagged, then the frame is classified to the DEI value in the tag. Otherwise the frame is classified to the default DEI value.
CoS ID	Click the drop-down menu to select the default CoS ID value. Every incoming frame is classified to a CoS ID, which later can be used as basis for rewriting of different parts of the frame.
Tag Class.	Displays the classification mode for the tagged frames on the port. Disabled: Use default CoS and DPL for tagged frames. Enabled: Use mapped versions of PCP and DEI for tagged frames. Note: This setting has no effect if the port is VLAN unaware. Tagged frames received on VLAN unaware ports are always classified to the default CoS and DPL.
DSCP Based	Click to enable or disable (default) the DSCP Based QoS Ingress Port classification.

Item	Description
Ingress Map	Enter the string to indicate the ID for the Ingress Map (range: 0 to 255). An empty field indicates no map selection.
Egress Map	Enter the string to indicate the ID for the Egress Map (range: 0 to 511). An empty field indicates no map selection.
Save	Click **Save** to create a new user account.
Reset	Click **Reset** to clear the settings.

2.4.2 Port Policing

This function allows you to configure the Policer settings for all switch ports.

Navigate to **Configuration** > **QoS** and click **Port Policing**. The QoS Ingress Port Policer page displays.



QoS Ingress Port Policer

The following table describes the items in the previous figure.

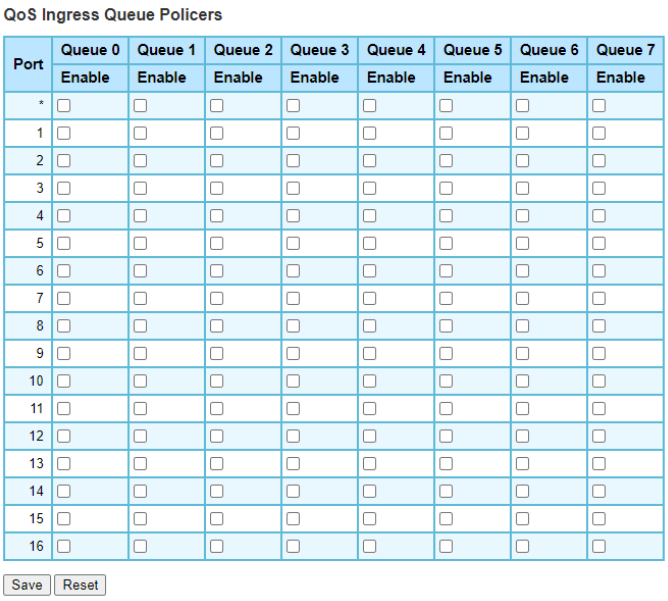
Item	Description
Port	Displays the port number for the entry.
Enable	Click to enable or disable (default) the port policer for the port.
Rate	Enter the string to indicate the control rate of the port policer (values: 10 to 13128147 for kbps, 1 to 13128 Mbps/fps/kfps).
Unit	Click the drop-down menu to select the measurement unit. Options: kbps Mbps fps kfps
Flow Control	Click to enable or disable (default) flow control mode. If flow control is enabled and the port is in flow control mode, then pause frames are sent instead of discarding frames.
Save	Click **Save** to create a new user account.
Reset	Click **Reset** to clear the settings.

2.4.3 Queue Policing

This function allows you to configure the Queue Policer settings for all switch ports.

Navigate to **Configuration** > **QoS** and click **Quene Policing**.

The QoS Ingress Queue Policer Configuration page displays.



QoS Ingress Queue Policers

Port	Queue 0	Queue 1	Queue 2	Queue 3	Queue 4	Queue 5	Queue 6	Queue 7
	Enable	Enable	Enable	Enable	Enable	Enable	Enable	Enable
*	☐	☐	☐	☐	☐	☐	☐	☐
1	☐	☐	☐	☐	☐	☐	☐	☐
2	☐	☐	☐	☐	☐	☐	☐	☐
3	☐	☐	☐	☐	☐	☐	☐	☐
4	☐	☐	☐	☐	☐	☐	☐	☐
5	☐	☐	☐	☐	☐	☐	☐	☐
6	☐	☐	☐	☐	☐	☐	☐	☐
7	☐	☐	☐	☐	☐	☐	☐	☐
8	☐	☐	☐	☐	☐	☐	☐	☐
9	☐	☐	☐	☐	☐	☐	☐	☐
10	☐	☐	☐	☐	☐	☐	☐	☐
11	☐	☐	☐	☐	☐	☐	☐	☐
12	☐	☐	☐	☐	☐	☐	☐	☐
13	☐	☐	☐	☐	☐	☐	☐	☐
14	☐	☐	☐	☐	☐	☐	☐	☐
15	☐	☐	☐	☐	☐	☐	☐	☐
16	☐	☐	☐	☐	☐	☐	☐	☐

Save Reset

QoS Ingress Queue Policer Configuration

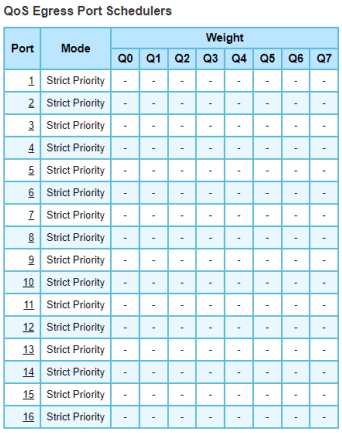
The following table describes the items in the previous figure.

Item	Description
Port	The port number for which the configuration below applies.
Enable (E)	Enable or disable the port policer for this switch port. If enabled, rate and unit options display.
Rate	Enter the string to indicate the rate for the queue policer (values: 10 to 13128147 for kbps, 1 to 13128 Mbps/fps/kfps). The field displays if one of the queue policers is enabled.
Unit	Click the drop-down menu to indicate the rate unit of measurement (options: kbps or Mbps). The field displays if one of the queue policers is enabled.
Save	Click **Save** to create a new user account.
Reset	Click **Reset** to clear the settings.

2.4.4 Port Scheduler

This function provides an overview of QoS Egress Port Schedulers for all switch ports.

Navigate to **Configuration** > **QoS** and click **Port Scheduler**. The QoS Egress Port Schedulers page display.



QoS Egress Port Schedulers

Port	Mode	Weight							
		Q0	Q1	Q2	Q3	Q4	Q5	Q6	Q7
1	Strict Priority	-	-	-	-	-	-	-	-
2	Strict Priority	-	-	-	-	-	-	-	-
3	Strict Priority	-	-	-	-	-	-	-	-
4	Strict Priority	-	-	-	-	-	-	-	-
5	Strict Priority	-	-	-	-	-	-	-	-
6	Strict Priority	-	-	-	-	-	-	-	-
7	Strict Priority	-	-	-	-	-	-	-	-
8	Strict Priority	-	-	-	-	-	-	-	-
9	Strict Priority	-	-	-	-	-	-	-	-
10	Strict Priority	-	-	-	-	-	-	-	-
11	Strict Priority	-	-	-	-	-	-	-	-
12	Strict Priority	-	-	-	-	-	-	-	-
13	Strict Priority	-	-	-	-	-	-	-	-
14	Strict Priority	-	-	-	-	-	-	-	-
15	Strict Priority	-	-	-	-	-	-	-	-
16	Strict Priority	-	-	-	-	-	-	-	-

QoS Egress Port Schedulers

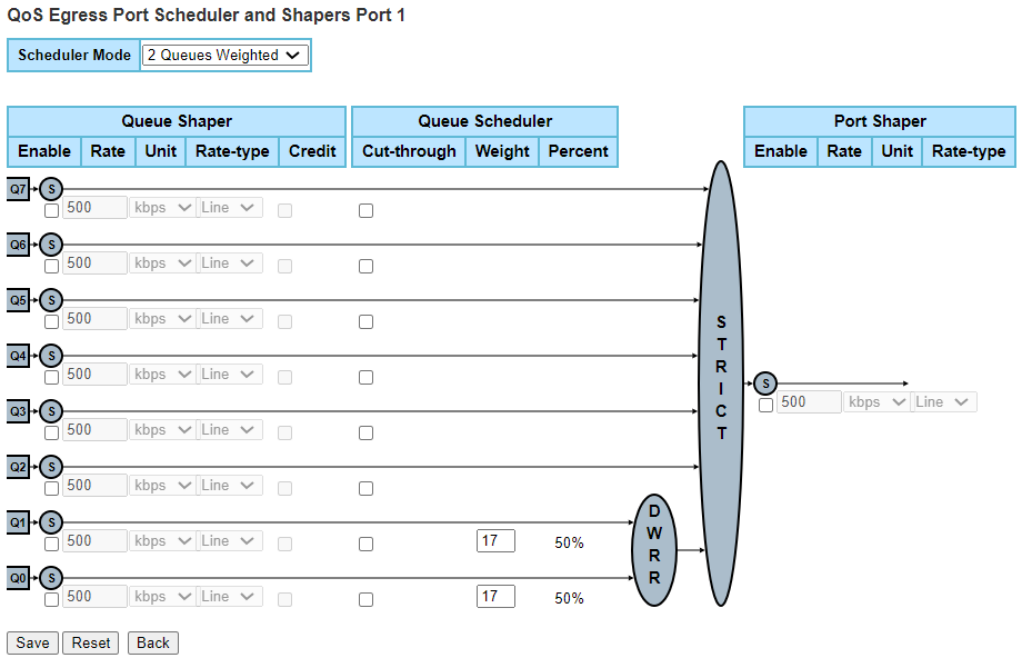
The following table describes the items in the previous figure.

Item	Description
Port	Displays the logical port settings. Click on a port number to view the Port Scheduler and Shapers page.
Mode	Shows the scheduling mode for this port.
Qn	Shows the weight for this queue and port.

2.4.4.1 Port Scheduler and Shapers Configuration

This function provides an overview of QoS Egress Port Schedulers for all switch ports.

1. Navigate to **Configuration** > **QoS** > **Port Scheduler** and click **Port #**..
   The QoS Egress Port Scheduler and Shapers page displays.



QoS Egress Port Scheduler and Shapers

The following table describes the items in the previous figure.

Item	Description
Scheduler Mode	Click the drop-down menu to indicate the number of queues to be ~~scheduled as strict and how many are scheduled as weighted on~~ the switch port.
Queue Shaper Enable	Click to enable or disable (default) the function.
Queue Shaper Rate	Enter the string to indicate the rate for the queue policer (values: 10 to 13128147 for kbps, 1 to 13128 Mbps/fps/kfps). The field displays if one of the queue policers is enabled.
Queue Shaper Unit	Click the drop-down menu to indicate the rate unit of measurement (options: kbps or Mbps). The field displays if one of the queue policers is enabled.
Queue Shaper Rate-type	Click the drop-down menu to indicate the rate type of the queue shaper. Options: ■ Line: Specify that this shaper operates on line rate. ■ Data: Specify that this shaper operates on data rate.

Item	Description
Queue Scheduler Cut-through	Click to enable or disable (default) cut-through.
Queue Scheduler Preemption	Click to enable or disable (default) frame preemption.
Queue Scheduler Weight	Enter the string to indicate the queue weight (values: 1 to 100). This parameter is only available if Scheduler Mode is set to Weighted.
Queue Scheduler Percent	Displays the queue weight as a percentage.
Port Shaper Enable	Click to enable or disable (default) port shaper.
Port Shaper Rate	Enter the string to indicate the rate for the port shaper (values: 100 to 13107100/kbps (1 to 13107 Mbps)).
Port Shaper Unit	Click the drop-down menu to select the unit measurement (values: kbps/Mbps).
Port Shaper Rate-type	Click the drop-down menu to select the rate type. Options: ■ Line: Specify that this shaper operates on line rate. ■ Data: Specify that this shaper operates on data rate.
Save	Click **Save** to create a new user account.
Reset	Click **Reset** to clear the settings.
Back	Click **Back** to return to the previous menu without saving settings.

2.4.5 Port Shaping

This function provides an overview of QoS Egress Port Shapers for all switch ports.

Navigate to **Configuration** > **QoS** and click **Port Shaping**. The QoS Egress Port Shapers page displays.

QoS Egress Port Shapers

Port	Shapers								
	Q0	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Port
1	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-

Egress Port Shapers

The following table describes the items in the previous figure.

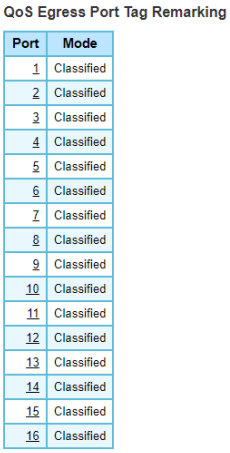
Item	Description
Port	Displays the logical port for the entry. Click on the port number in order to configure the shapers. See “Port Scheduler and Shapers Configuration” on page 47.
Qn	Displays the shaper rate status: disabled or actual queue shaper rate.
Port	Displays the shaper rate status: disabled or actual port shaper rate.

2.4.6 Port Tag Remarking

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

Navigate to **Configuration** > **QoS** and click **Port Tag Remarking**.

The QoS Egress Port Tag Remarking page displays.


QoS Egress Port Tag Remarking

Port	Mode
1	Classified
2	Classified
3	Classified
4	Classified
5	Classified
6	Classified
7	Classified
8	Classified
9	Classified
10	Classified
11	Classified
12	Classified
13	Classified
14	Classified
15	Classified
16	Classified

QoS Egress Port Tag Remarking

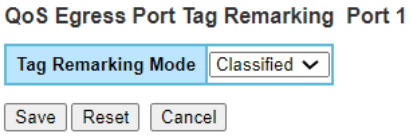
The following table describes the items in the previous figure.

Item	Description
Port	Displays the logical port for the entry. Click on the port number to 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 CoS and DPL.

Egress Port Tag Remarking Configuration

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

1. Navigate to **Configuration** > **QoS** and click **Port Tag Remarking**.
   The QoS Egress Port Tag Remarking page displays.



QoS Egress Port Tag Remarking PortN

The following table describes the items in the previous figure.

Item	Description
Tag Remarking Mode	Click the drop-down menu select the mode. Options: ■ Classified: Use classified PCP/DEI values ■ Default: Use default PCP/DEI values ■ Mapped: Use mapped versions of CoS and DPL
Port	Click the drop-down menu to select the port to configure.
Save	Click **Save** to create a new user account.
Reset	Click **Reset** to clear the settings.
Cancel	Click **Cancel** to return to the previous menu without saving settings.

2.4.7 Port DSCP

This function allows you to configure the basic QoS Port DSCP Configuration settings for all switch ports.

Navigate to **Configuration** > **QoS** and click **Port DSCP**.

Port DSCP Configuration

The following table describes the items in the previous figure.

Item	Description
Port Ingress Translate	Displays the port number of the entry. Click to enable or disable (default) the Ingress Translation settings.
Ingress Classify	Click the drop-down menu to select the port classification. Options: **Disable:** No Ingress DSCP Classification **DSCP=0:** Classify if incoming (or translated if enabled) DSCP is 0 **Selected:** Classify only selected DSCP for which classification is enabled as specified in DSCP Translation window for the specific DSCP **All:** Classify all DSCP
Egress	■ Click the drop-down menu to set the egress rewriting setting. Options: **Disable:** No Egress rewrite. **Enable:** Rewrite enabled without remapping. **Remap:** DSCP from analyzer is remapped and frame is remarked with remapped DSCP value.
Save	Click **Save** to save changes.
Reset	Click **Reset** to undo any changes made locally and revert to previously saved values.

2.4.8 DSCP-Based QoS

This function allows you to configure the basic QoS DSCP based QoS Ingress Classification settings for all switches.

Navigate to **Configuration** > **QoS** and click **DSCP-Based QoS**.

The DSCP based QoS Ingress Classification page displays.

DSCP based QoS Ingress Classification

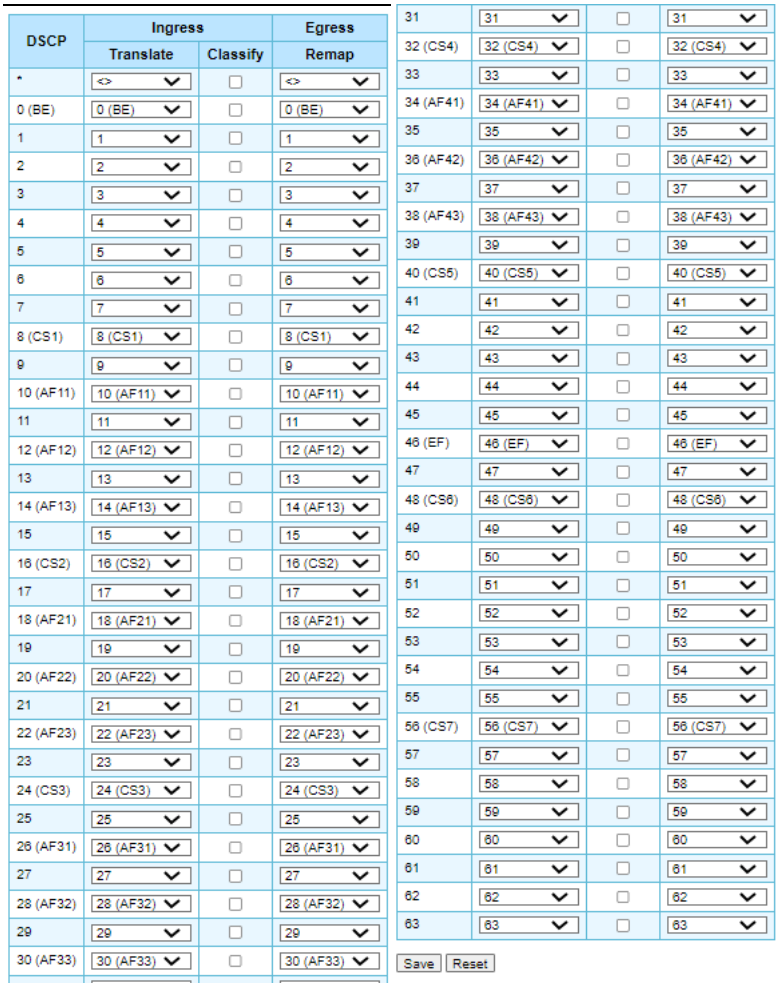
The following table describes the items in the previous figure.

Item	Description
DSCP	Displays the maximum number of supported DSCP (64).
Trust	Click to enable or disable (default) trust classification. Only frames with trusted DSCP values are mapped to a specific CoS and DPL. Frames with untrusted DSCP values are treated as a non-IP frame.
CoS	Click the drop-down menu to set the CoS value (values: 0 to 7).
DPL	Click the drop-down menu to set the Drop Precedence Level (values: 0 to 3).
Save	Click **Save** to save changes.
Reset	Click **Reset** to undo any changes made locally and revert to previously saved values.

2.4.9 DSCP Translation

This function allows you to configure the basic QoS DSCP Translation settings for all switches. DSCP translation can be done in Ingress or Egress.

Navigate to **Configuration** > **QoS** and click **DSCP Translation**.



DSCP Translation

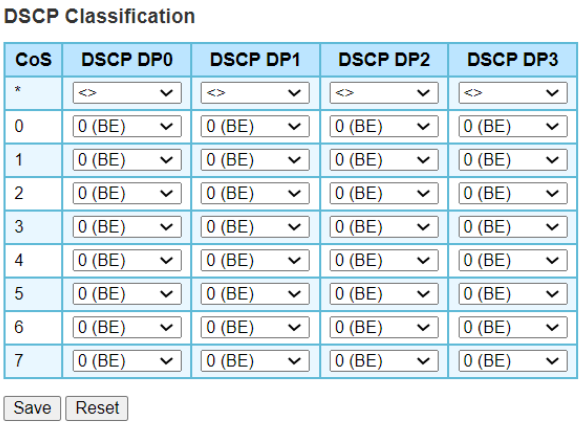
The following table describes the items in the previous figure.

Item	Description
DSCP	Displays the maximum number of supported DSCP values (range: 0 to 63).
Trust	Click to enable or disable (default) trust for the DSCP entry.
CoS	Click the drop-down menu to select the precedence level (values: 0 to 3).
DPL	Click the drop-down menu to select the CoS value (values: 0 to 7).
Save	Click **Save** to save changes.
Reset	Click **Reset** to undo any changes made locally and revert to previously saved values.

2.4.10 DSCP Classification

This function allows you to configure the mapping of CoS and DPL to DSCP value. Navigate to **Configuration** > **QoS** and click **DSCP Classification**.

The DSCP Classification page displays.



DSCP Classification

The following table describes the items in the previous figure.

Item	Description
CoS	Displays the identifier for the class of service entry.
DSCP DP0	Click the drop-down menu to select the classified DSCP value (values: 0 to 63) for Drop Precedence Level 0.
DSCP DP1	Click the drop-down menu to select the classified DSCP value (values: 0 to 63) for Drop Precedence Level 1.
DSCP DP2	Click the drop-down menu to select the classified DSCP value (values: 0 to 63) for Drop Precedence Level 2.
DSCP DP3	Click the drop-down menu to select the classified DSCP value (values: 0 to 63) for Drop Precedence Level 3.
Save	Click **Save** to save changes.
Reset	Click **Reset** to undo any changes made locally and revert to previously saved values.

2.4.11 Ingress Map

This function shows a table of QoS Ingress Maps which is made up of individual map entries. Each entry has a key and an action. The key indicates which fields of the frame will be mapped to the fields specified by and according to the action. Each Map can hold a number of map rules, or mappings between possible keys and actions.
Which of those rules will be applied depends on the selection of (Key-Type, Action- Type). Each row describes a user-defined map.

Maps contain multiple rules. The page allows you to view and configure the key and action filters that will be used when searching through the rules.

Navigate to **Configuration** > **QoS** and click **Ingress Map**. The QoS Ingress Map Configuration page displays.

QoS Ingress Map Configuration

The following table describes the items in the previous figure.

Item	Description
Map ID	Displays the map ID for the entry. Click the ID to edit the Ingress map.

Item	Description
Key-Type	Displays the key type for the entry. Options: **PCP:** Use PCP as key for tagged frames and none for the rest. Table width: 1 **PCP - DEI:** Use PCP/DEI as key for tagged frames and none for the rest. Table width: 2 **DSCP:** Use DSCP as key for IP frames and none for the rest. Table width: 8 **DSCP - PCP - DEI:** Use DSCP as key for IP frames, PCP/DEI for tagged frames and none for the rest. Table width:10
Action-Type	Indicates the Action Type for filtering the map rules when applying the map. Options: **CoS:** Class of Service **DPL:** Drop Precedence Level **PCP:** Priority Code Point **DEI:** Drop Eligible Indicator **DSCP:** Differentiated Services Code Point **CoS ID:** CoS ID
QoS Ingress Map Modification Buttons	Click to modify the selected entry. Options: ■ **Edit**: Edits the map ■ **Delete**: Deletes the map ■ **Add**: Adds a new map in the table
Refresh	Click **Refresh** to refresh the page.
Remove All	Click **Remove All** to remove all Ingress Maps (and their corresponding rules).

2.4.12 Egress Map

This function displays QoS Egress Maps made up of individual map entries. Each entry has a key and an action indicating the field of the frame corresponding to the specified field action. Each Map can hold a number of map rules, or mappings between possible keys and actions. Which of those rules will be applied depends on the selection of (Key-Type, Action-Type).

NOTE: This is just an overview of the configured maps. The user can add new ones or edit existing maps using the Add/Edit buttons. Click on the lowest plus sign (empty map entry) to add a new Ingress Map to the table.

QoS Map Rules Configuration

Maps have multiple rules inside them and this page allows to view and configure the key and action filters that will be used when searching through the rules. To see and configure the set of rules for each map click on the Map ID (link) for each map. (Note: not the edit button).

Navigate to **Configuration** > **QoS** and click **Egress Map**. The QoS Egress Map Configuration page displays.

QoS Egress Map Configuration

The following table describes the items in the previous figure.

Item	Description
Map ID	Indicates the Map (unique) ID. Range is 0 to 511.

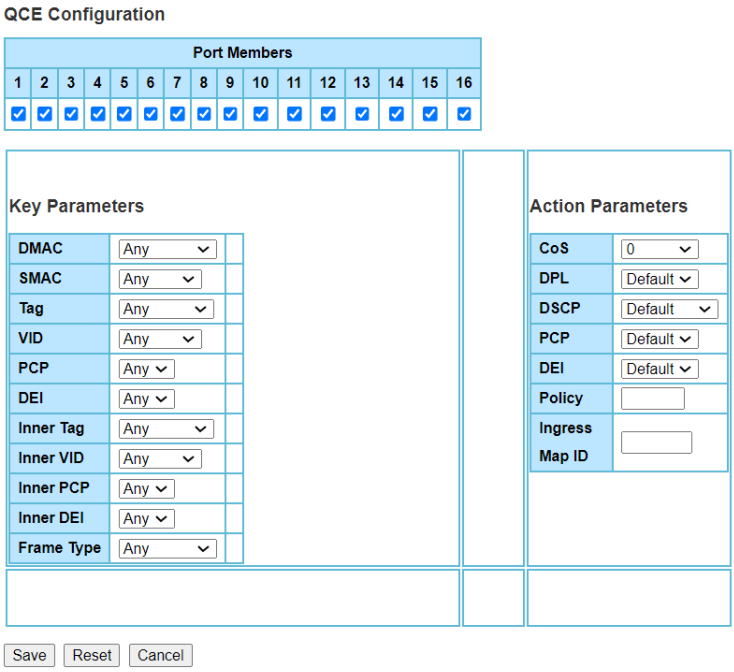
Key-Type	Indicates the Key Type that will be used to filter the map rules when applying the map. As mentioned above, map rules can have various keys and this is to make a select set of them. Possible Key types are: **CoS ID:** Use classified COS ID as key. Table width: 1 **CoS ID - DPL:** Use classified COS ID and DPL as key. Table width: 4 **DSCP:** Use classified DSCP as key. Table width: 8 **DSCP - DPL:** Use classified DSCP and DPL as key. Table width: 32
QoS Egress Map Modification Buttons	It is possible to modify each map (or add new maps) in the table using the following buttons: ■ **Edit**: Edits the map. ■ **Delete**: Deletes the map. ■ **Add**: Adds a new map in the table.
Refresh	Click **Refresh** to refresh the page.
Remove All	Click **Remove All** to remove all Ingress Maps (and their corresponding rules).

2.4.13 QoS Control List

This function shows the QoS Control List (QCL) consisting of the QCEs. Each row describes a defined QCE. The maximum number of QCEs is 256 on each switch.

Click on the lowest plus sign to add a new QCE to the list.

Navigate to **Configuration** > **QoS** and click **QoS Control List**. The QoS Control List Configuration page displays.



QoS Control List Configuration

The following table describes the items in the previous figure.

Item	Description
QCE	Indicates the QCE ID.
Port	Indicates the list of ports configured with the **QCE** or **Any**.
DMAC	Indicates the destination MAC address. Possible values are: **Any (default):** Match any DMAC **Unicast:** Match unicast DMAC **Multicast:** Match multicast DMAC **Broadcast:** Match broadcast DMAC

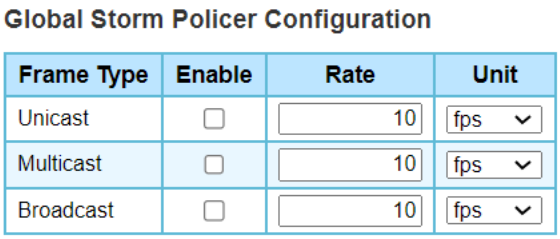
	<MAC>: Match specific DMAC
SMAC	Match specific source MAC address or **Any**.
Tag Type	Indicates tag type. Possible values are: **Any (default):** Match tagged and untagged frames. **Untagged:** Match untagged frames. **Tagged:** Match tagged frames. **C-Tagged:** Match C-tagged frames. **S-Tagged:** Match S-tagged frames.

Item	Description
VID	Indicates (VLAN ID), either a specific VID or range of VIDs (range 1 to 4095 or Any).
PCP	Indicates the Priority Code Point. Single values, a range, or Any are displayed.
DEI	Indicates a Drop Eligible Indicator. Values: 0, 1 or **Any**.
Frame Type	Indicates the type of frame. Possible values are: ■ **Any:** Match any frame type. ■ **Ethernet:** Match EtherType frames. ■ **LLC:** Match (LLC) frames. ■ **SNAP:** Match (SNAP) frames. ■ **IPv4:** Match IPv4 frames. ■ **IPv6:** Match IPv6 frames.
Action	Indicates the classification action taken on ingress frame if parameters configured are matched with the frame's content. Possible actions are: ■ **CoS:** Classify Class of Service. ■ **DPL:** Classify Drop Precedence Level. ■ **DSCP:** Classify DSCP value. ■ **PCP:** Classify PCP value. ■ **DEI:** Classify DEI value. ■ **Policy:** Classify ACL Policy number. ■ **Ingress Map:** Classify Ingress Map ID.
Modification Buttons	Click an option to modify the selected QCE (QoS Control Entry) entry. Options: ■ **Insert**: Inserts a new QCE before the current row. ■ **Edits**: Edits the QCE. ■ **Move Up**: Moves the QCE up the list. ■ **Move Down**: Moves the QCE down the list. ■ **Delete**: Deletes the QCE. ■ **Add to End of List**: The lowest plus sign adds a new entry at the bottom of the QCE listings.

2.4.14 Storm Policing

This storm policers for the switch are configured on this page. There is a unicast storm policer, multicast storm policer, and a broadcast storm policer, only for flooded frames, i.e. frames with a (VLAN ID, DMAC) pair not present in the MAC Address table.

Navigate to **Configuration** > **QoS** and click **Storm Policing**. The Storm Policer Configuration page displays.



Storm Policer Configuration

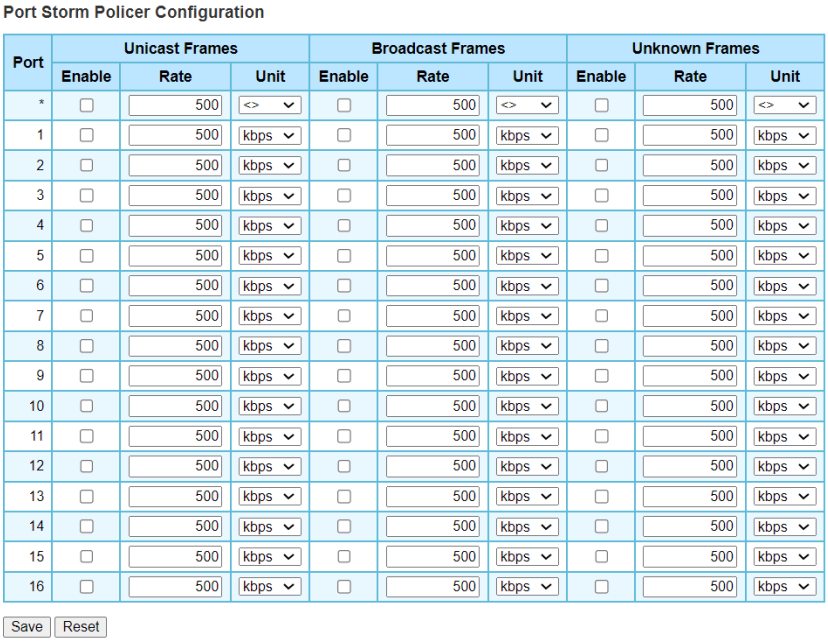
The following table describes the items in the Global Storm Policer Configuration figure.

Item	Description
Frame Type	Display the frame type for which the configuration below applies.

Item	Description
Enable	Click to enable or disable (default) the global storm policer for the given frame type.
Rate	Enter the string to indicate the rate for the global storm policer (value: 10 to 13128147 fps or kbps, and 1 to 13128 kfps or Mbps). Supported rates are divisible by 10 fps or 25 kbps.
Unit	Click the drop-down menu to select the unit of measure for the global storm policer rate (value: fps, kfps, kbps or Mbps).
Save	Click **Save** to save changes.
Reset	Click **Reset** to undo any changes made locally and revert to previously saved values.

The following table describes the items in the Port Storm Policer Configuration figure.

Port storm policers for all switch ports are configured on this page.



Port Storm Policer Configuration

Item	Description
Port	Displays the port number for the configuration below applies.
Enable	Click enable or disable (default) the storm policer for this switch port.
Rate	Enter the string to indicate the rate for the port storm policer (value: 10 to 13128147 fps or kbps, and 1 to 13128 kfps or Mbps). Supported rates are divisible by 10 fps or 25 kbps.
Unit	Click the drop-down menu to select the unit of measurement for the port storm policer rate (value: fps, kfps, kbps or Mbps).
Save	Click **Save** to save changes.
Reset	Click **Reset** to undo any changes made locally and revert to previously saved values.

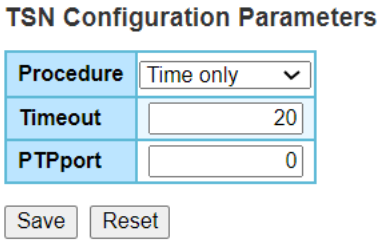
2.5 TSN

2.5.1 PTP Check

When using TAS and PSFP between network elements, it is required to have a common global time reference provided by PTP. When booting the device, it will take some time for a configured PTP application to get locked to the common time reference. It may cause malfunctioning of TAS and PSFP if config-change is issued

before PTP time is in a Locked or Locking state. A function which can delay the issue of config-change until PTP is Locked/Locking or a configurable time has passed, can be configured here.

Navigate to **Configuration** > **TSN** and click **PTP check**. The TSN Configuration page displays.



TSN Configuration

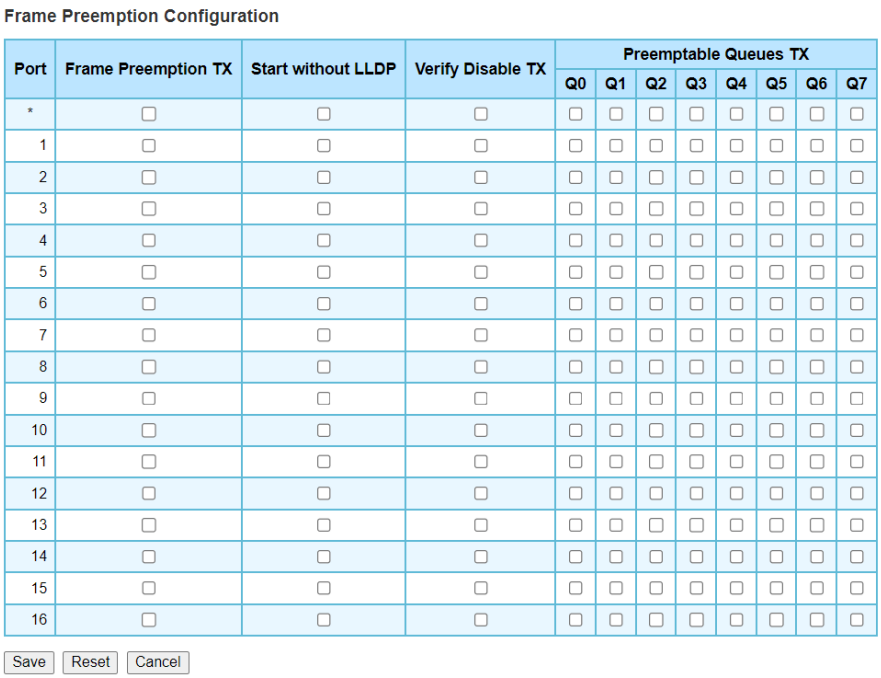
The following table describes the items in the TSN Configuration page.

Item	Description
Procedure	Click the drop-down menu to select how to ensure PTP state. Options: None Time only Time and Ptp
Timeout	Enter a string to indicate the maximal number of seconds to wait before config_change is issued.
PTPport	Enter a string to indicate the PTP port to use for sensing PTP status
Save	Click **Save** to save changes.
Reset	Click **Reset** to undo any changes made locally and revert to previously saved values.

2.5.2 Frame Preemption

This function provides an overview of TSN Egress Port Frame Preemption Configuration.

Navigate to **Configuration** > **TSN** and click **Frame Preemption**. The Frame Preemption Configuration page displays.



Frame Preemption Configuration

The following table describes the items in the Frame Preemption Configuration page.

Item	Description
Port	Displays the logical port for the settings contained in the same row. Please note that Frame Preemption is not supported on ports with maximum speed 25 Gigabit/sec and is also not supported on 10G Gigabit/sec Aquantia Copper port.
Frame Preemption TX	Click to enable or disable (default) the value of the 802.3br aMACMergeEnableTx parameter for the port. This value determines whether frame preemption is enabled (TRUE) or disabled (FALSE) in the MAC Merge sublayer in the transmit direction.
Start without LLDP	Click to enable or disable (default) when this field is checked, Frame Preemption will be active when Frame Preemption TX is checked.
Verify Disable TX	Click to enable or disable (default) the value of the 802.3br aMACMergeVerifyDisableTx parameter for the port. This value determines whether the verify function is disabled (TRUE) or enabled (FALSE) in the MAC Merge sublayer in the transmit direction.
Preemptable Queues	Click to select the parameter to a preemptive status for the priority. If checked, it takes value preemptable if frames queued for the priority are to be transmitted using the preemptable service for the Port. If not checked, it takes value express if frames queued for the priority are to be transmitted using the express service for the Port and preemption is enabled for the Port.
Save	Click **Save** to save changes.
Reset	Click **Reset** to undo any changes made locally and revert to previously saved values.
Cancel	Click **Cancel** to return to the previous menu without saving any updates.

2.5.3 TAS

2.5.3.1 Ports

This function allows the user to inspect the current TAS configurations, and possibly change them as well.

1. Navigate to **Configuration** > **TSN** > **TAS** and click **Ports**.
   The TAS Configuration Parameters page displays.

TAS Configuration Parameters

Always Guard Band option: Enabled

TAS Port Configuration Parameters

Port	Enabled	Gate States Q0	Q1	Q2	Q3	Q4	Q5	Q6	Q7	GCL Length	GCL	Cycle Time Value	Unit	Extension, ns	Base Time	Config Change
*	☐	☑	☑	☑	☑	☑	☑	☑	☑	0		100	<>	256	0	☐
1	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐
2	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐
3	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐
4	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐
5	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐
6	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐
7	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐
8	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐
9	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐
10	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐
11	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐
12	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐
13	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐
14	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐
15	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐
16	☐	☑	☑	☑	☑	☑	☑	☑	☑	0	Configure	100	MilliSeconds	256	0	☐

Save Reset

TAS Configuration Parameters

The following table describes the items in the TAS Configuration Parameters page.

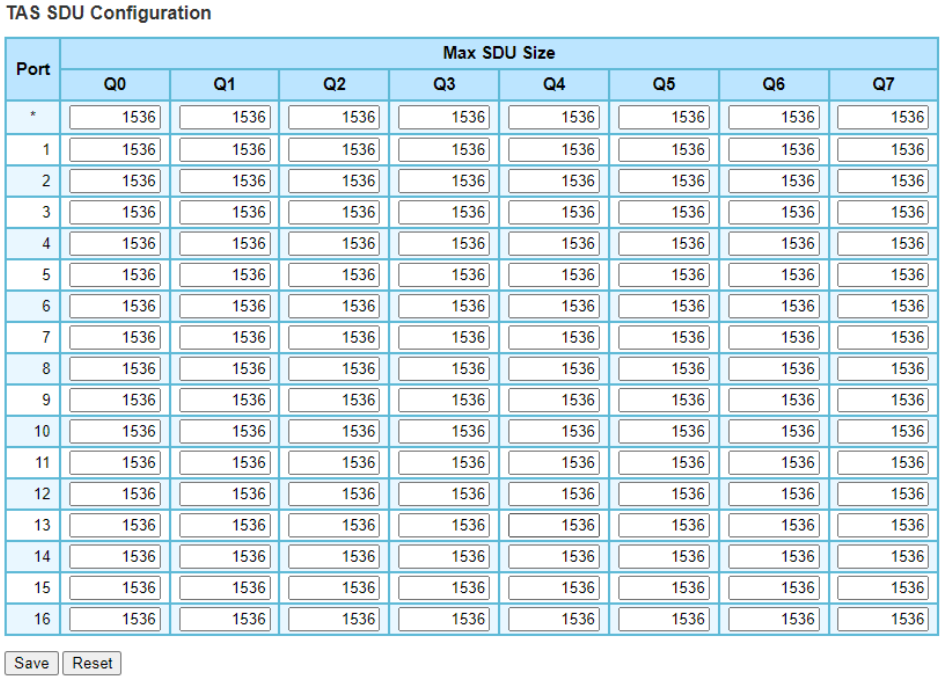
Item	Description
Always Guard Band	Click the drop-down menu to enable (default) or disable the Always Guard Band option--defines how the values are calculated. If a Gate Control List does not contain SetAndHold and/or SetAndRelease operations the Always Guard Band option has no effect. If a Gate Control List does contain SetAndHold and SetAndRelease operations then: ■ When Always Guard Band is Enabled, a guard band is implemented on all queues, both Express and Preemptible queues. ■ When Always Guard Band is Disabled, a guard band is only implemented on Preemptible queues.
Port	Displays the port number of the device.
Gate Enabled	Click to enabled or disable (default) the parameter which determines whether traffic scheduling is active (true) or inactive (false).
Gate States	Click to enable (default) or disable the initial value of the port open states that is used when no Gate Control List is active on the Port.
GCL Length	Enter an string to indicate the Admin Gate Control List length parameter for the Port (range: 0 to 256). The integer value indicates the number of entries Gate Control Elements in the Gate Control List.
GCL	Displays the link to the Gate Control List parameter configuration.
Cycle Time	
Cycle Time Value	Enter the string to indicate the Admin Cycle Time (range: admin cycle Time 1 to 999999999, cycle time 256 to 999999999 nanoseconds) as defined by the number of units defined in the Unit field. The default value is 100 milliseconds.
Cycle Time Unit	Click the drop-down menu to select unit for the Admin Cycle Time (values: milliseconds, microseconds or nanoseconds).
Cycle Time Extension	Enter a string to indicate the integer in nanoseconds (range: 256 to 999999999) defining the maximum amount of time by which the gating cycle for the Port is permitted to be extended when a new cycle configuration is installed. The default value is 256 nanoseconds.
Base Time	Enter a string to indicate the Admin value of base time, expressed as an IEEE 1588 precision time protocol (PTP) timescale.
Config Change	Click to enable or disable (default) the Configuration Change parameter signals the start of a configuration change. After a successful configuration change, the configured Admin values will become the Oper values, which are displayed in the Monitor/TSN/TAS web page. If the value of parameter Base Time is in the future, the configuration change will be executed at Base Time.
Save	Click **Save** to save changes.
Reset	Click **Reset** to undo any changes made locally and revert to previously saved values.

2.5.3.2 Max SDU

This function allows you to inspect the current TAS configurations, and possibly change them as well.

Navigate to **Configuration** > **TSN** > **TAS** and click **Max SDU**.

The TAS SDU Configuration page displays.



TAS SDU Configuration

The following table describes the items in the TAS SDU Configuration page.

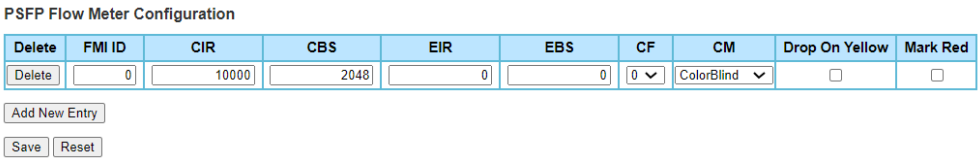
Item	Description
Port	Displays the port number of the device.
Maximum SDU	Enter the value of the Maximum SDU size parameter for the traffic class supported by the port (values: unsigned integer in the range 0 to 10240). A value of 0 is interpreted as the Maximum SDU size supported by the underlying MAC: 10240. The default value of the Maximum SDU parameter is 1536. The Maximum SDU size parameter is used to calculate the guard band time = Maximum SDU * 8 / LINK_SPEED (sec) If frame preemption is enabled and a gate operaton is SetAndHold, the guard band time in preemptable queues is automatically selected as the frame preemption minimum fragment size plus 64 bytes. A queue is said to be preemptible, if frame preemption is enabled, and if this queue is not opened in a SetAndHold gate operation.
Save	Click **Save** to save changes.
Reset	Click **Reset** to undo any changes made locally and revert to previously saved values.

2.5.3.2 PSFP

Flow Meter

This function allows you to inspect the current PSFP configurations.

1. Navigate to **Configuration** > **TSN** > **PSFP** and click **Flow Meter**.
   The PSFP Flow Meter Configuration page displays.



PSFP Flow Meter Configuration

The following table describes the items in the PSFP Flow Meter Configuration page.

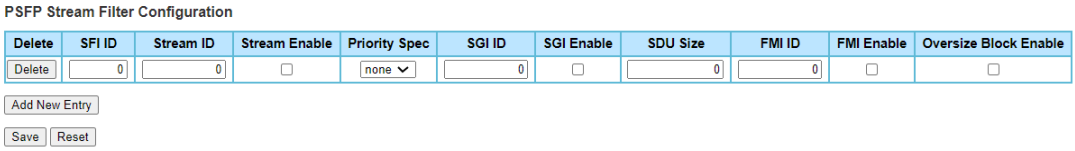
Item	Description
Delete	Click **Delete** to remove the entry. It will be deleted during the next save.
FMI ID	Enter a string to indicate the FlowMeterInstance parameter is an index into the FlowMeterTable.
CIR	Enter a string to indicate the FlowMeterCIR parameter contains an integer value that represents the CIR value for the flow meter, in bit/s.
CBS	Enter a string to indicate the FlowMeterCBS parameter contains an integer value that represents the CBS value for the flow meter, in octets.
EIR	Additional information required.
EBB	Additional information required.
CF	Additional information required.
CM	Additional information required.
Drop on Yellow	Additional information required.
Mark RED	Click to enable or disable (default) the FlowMeterMarkAllFramesRed parameter contains a Boolean value that indicates whether, if the MarkAllFramesRed function is enabled, all frames are to be discarded (TRUE) or not (FALSE).
Add New Entry	Click **Add New Entry** to add Flow Meter entry.
Save	Click **Save** to save changes.
Reset	Click **Reset** to undo any changes made locally and revert to previously saved values.

Stream Filter

This function allows you to inspect the current PSFP configurations.

Navigate to **Configuration** > **TSN** > **PSFP** and click **Steam Filter**.

The PSFP Stream Filter Configuration page displays.



Stream Filter Configuration

The following table describes the items in the PSFP Stream Filter Configuration page.

Item	Description
Delete	Click **Delete** to remove the entry. It will be deleted during the next save.
SFI ID	Enter a string to indicate the Stream Filter Instance parameter is an index into the StreamFilterTable.
Stream ID	The Stream Handle Spec parameter contains a stream identifier specification value. A value of -1 denotes the wild card value; all positive values denote stream identifier values.
Stream Enable	Click to enable or disable (default) the stream function.
Priority Spec	Click the drop-down menu to specify a priority value (value: -1 denotes the wild card value; zero or positive values denote priority).

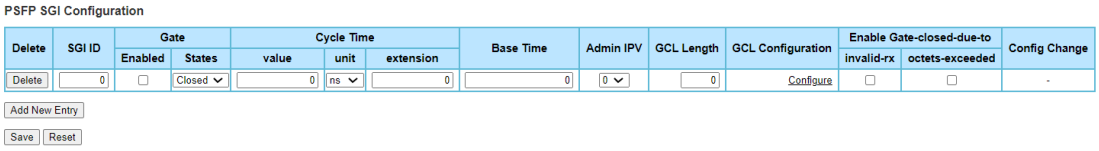
SGI ID	Enter a string to indicate the Stream Gate Instance parameter contains the index of an entry in the Stream Gate Table.
SDU Size	Enter a string to indicate the MaximumSDUSize parameter specifies the maximum allowed frame size for the stream. Any frame exceeding this value will be dropped. A value of 0 denote that the MaximumSDUSize filter is disabled for this stream.
FMI ID	Enter a string to indicate the FlowMeterInstanceID parameter of an entry in the Flow Meter Table. A value of -1 denotes that no flow meter is assigned; zero or positive values denote flow meter IDs.
FMI Enable	Click to enable or disable (default) the FMI function.
Oversize Block Enable	Click to enable or disable (default) the object to indicate whether the StreamBlockedDueToOversizeFrame function is enabled (TRUE) or disabled (FALSE).
Add New Entry	Click **Add New Entry** to add Stream Filter entry.
Save	Click **Save** to save changes.
Reset	Click **Reset** to undo any changes made locally and revert to previously saved values.

Stream Gate

This function allows you to inspect the current PSFP configurations, and possibly change them as well.

Navigate to **Configuration** > **TSN** > **PSFP** and click **Steam Gate**.

The PSFP Stream Gate parameters Configuration page displays.



PSFP Stream Gate parameters Configuration

The following table describes the items in the PSFP Stream Gate parameters Configuration page.

Item	Description
Delete	Click **Delete** to remove the entry. It will be deleted during the next save.
SGI ID	Enter an string to indicate a parameter for the Stream Gate ID.
Gate Enabled	Click to enable or disable (default) the Gate Enabled parameter determines.
Gate States	Click the drop-down menu to select the administrative value of the GateStates parameter (options: open, closed).
Cycle Time Value	Enter an string to indicate the administrative value of the cycle time for the gate. The time may be specified in either milli seconds, micro seconds or nano seconds as defined by the field Cycle Time unit.
Cycle Time unit	Enter an string to indicate the unit used for specifying the administrative cycle time (values: ns, us or ms).
Cycle Time Extension	Enter an string to indicate the administrative value of the CycleTimeExtension parameter for the gate (value: unsigned integer number of nanoseconds).

Item	Description
Base Time	Enter an string to indicate the administrative value of the BaseTime parameter for the gate (value: a representation of a PTPtime value, consisting of decimal number of seconds since epoch). The time can be given with a resolution of nine decimals.
Admin IPV	Click the drop-down menu to select the administrative value of the IPV parameter for the gate. A value of -1 denotes the null value.
GCL Length	Enter an string to indicate the number of entries in the Gate Control List.
GCL Configuration	Displays the configuration of the Gate Control List.
Enable Gate-closed-due-to invalid-rx	Click to enable or disable (default) whether to close the gate if invalid data is received.
Enable Gate-closed-due-to octets-exceeded	Click to enable or disable (default) whether to close the gate if too many octets are received.
Config Change	The ConfigChange parameter signals the start of a configuration change for the gate when it is set to TRUE. This should only be done when the various administrative parameters are all set to appropriate values.
Add New Entry	Click **Add New Entry** to add Stream Gate entry.
Save	Click **Save** to save changes.
Reset	Click **Reset** to undo any changes made locally and revert to previously saved values.

2.5.3.3 FRER

This function allows you to inspect the current FRER configurations

Navigate to **Configuration** > **TSN** and click **FRER**

The FRER Configuration Parameters page displays.

FRER Configuration Parameters

The following table describes the items in the FRER Configuration Parameters page.

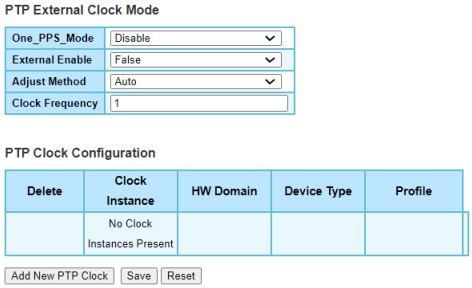
Item	Description
Instance	Displays the instance of the identifier.
Mode	Displays the mode of operation: Generation or Recovery.
Enable	Displays the FRER instance status.
Ingress Streams	Enter a string to indicate the list of ingress stream IDs.
FRER VLAN	Displays the VLAN ID that ingress flows get classified to.
Egress Ports	Displays the port numbers that this FRER instance will hit.
Algorithm	Displays the algorithm used by Recovery function. Vector or match.
History Length	Displays the history length of vector algorithm.
Reset Timeout	Displays the reset timeout of Recovery function.
Take-no-sequence	If true, accept all frames whether they are R-tagged or not.
Individual	Displays the individual recovery status.
Terminate	Strip R-Tag from a frame before presenting it on egress.
Enable	Enable/disable Latent error detection.
Error Diff	Displays the latent error detection error difference.
Period	Displays the latent error detection period.

Paths	Displays the latent error detection paths.
Reset Period	Displays the latent error detection reset period.
Oper	Displays the operational state of FRER instance.
Warnings	Displays the operational warnings of FRER instance.
Latent Error	Displays any detected latent errors.
Configuration Buttons	Click to modify an entry. Options: ■ Edit: Edits the FRER instance. ■ Delete: Deletes the FRER instance. ■ Add: Adds new FRER instance.
Refresh	Click **Refresh** to refresh the page immediately.

2.5.4 PTP

This function allows you to configure and inspect the current PTP clock settings.

1. Navigate to **Configuration** and click **PTP**.
   The PTP Clock Configuration page displays.



PTP Clock Configuration

The following table describes the items in the PTP Clock Configuration page.

Item	Description
One_PPS_Mode	Click the drop-down menu to select the One_pps_mode configuration. The following values are possible: ■ Output: Enable the 1 pps clock output ■ Input: Enable the 1 pps clock input ■ Disable: Disable the 1 pps clock in/out-put
External Enable	Click the drop-down menu to configure the External Clock output. The following values are possible: ■ True: Enable the external clock output ■ False: Disable the external clock output
Adjust Method	Click the drop-down menu to configure the Frequency adjustment configuration. ■ LTC: Select Local Time Counter (LTC) frequency control ■ Single: Select SyncE DPLL frequency control, if allowed by SyncE ■ Independent: Select an oscillator independent of SyncE for frequency control, if supported by the HW ■ Common: Select second DPLL for PTP, Both DPLL have the same (SyncE recovered) clock. ■ Auto: AUTO Select clock control, based on PTP profile and available HW resources.

Item	Description
Clock Frequency	Enter a string to indicate the Clock Frequency. The possible range of values are 1 - 25000000 (1 - 25MHz).

The following table describes the items in the PTP External Clock Configuration page.

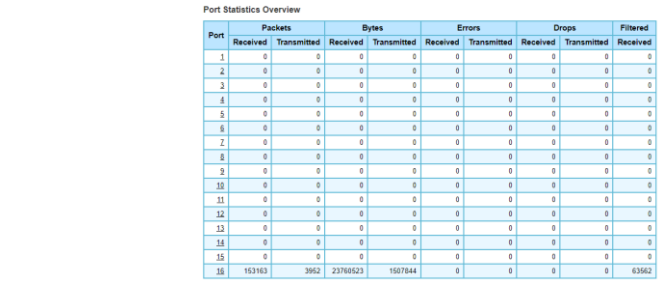
Item	Description
Delete	Check this box and click on **Save** to delete the clock instance.
Clock Instance	Indicates the instance number of a particular Clock Instance [0..3]. Click on the **Clock Instance** number to edit the Clock details.
HW Domain	Indicates the HW clock domain used by the clock.
Device Type	Indicates the Type of the Clock Instance. There are five Device Types. 1. Ord-Bound - clock's Device Type is Ordinary-Boundary Clock. 2. P2p Transp - clock's Device Type is Peer to Peer Transparent Clock. 3. E2e Transp - clock's Device Type is End to End Transparent Clock. 4. Master Only - clock's Device Type is Master Only. 5. Slave Only - clock's Device Type is Slave Only.
Profile	Indicates the profile used by the clock.
Add New PTP Clock	Click **Add New PTP Clock** to create a new clock instance.
Save	Click **Save** to save changes.
Reset	Click **Reset** to reset the the page immediately.

3. Monitor

3.1 Ports

3.1.1 Traffic Overview

This page provides an overview of general traffic statistics for all switch ports. Navigate to **Monitor** > **Ports** and click **Traffic Overview**. The Port Statistics Overview page displays.



(on the top right of page)

Port Statistics Overview

The following table describes the items in the Port Statistics Overview page.

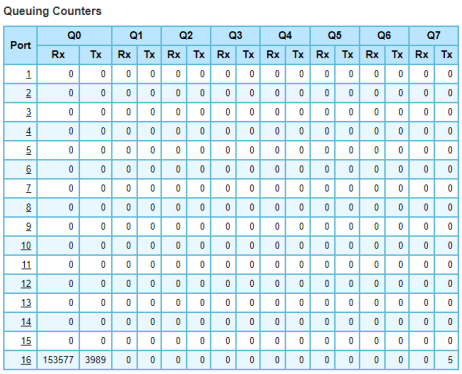
Item	Description
Port	Displays the logical port for the entry.
Packets	Displays the number of received and transmitted packets per port.
Bytes	Displays the number of received and transmitted bytes per port.
Errors	Displays the number of frames received in error and the number of incomplete transmissions per port.

Item	Description
Drops	Displays the number of frames discarded due to ingress or egress congestion.
Filtered	Displays the number of received frames filtered by the forwarding process.
Auto-refresh	Click to enable or disable the automatic refresh function for the page. Automatic refresh occurs every 3 seconds.
Refresh	Click **Refresh** to refresh the page immediately.
Clear	Click **Clear** to clear the counters for all ports.

3.1.2 QoS Statistics

This page provides statistics for the different queues for all switch ports.

Navigate to **Monitor** > **Ports** and click **QoS Statistics**. The QoS Statistics page displays.



Queuing Counters

Port	Q0		Q1		Q2		Q3		Q4		Q5		Q6		Q7	
	Rx	Tx	Rx	Tx	Rx	Tx	Rx	Tx	Rx	Tx	Rx	Tx	Rx	Tx	Rx	Tx
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	153577	3989	0	0	0	0	0	0	0	0	0	0	0	0	0	5

QoS Statistics

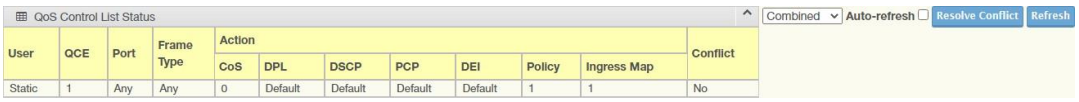
The following table describes the items in the QoS Statistics page.

Item	Description
Port Qn	Displays the logical port for the settings contained in the same row. Displays the QoS queues per port for listing. Q0 is the lowest priority queue.
Rx/Tx	Displays the number of received and transmitted packets per queue.
Auto-refresh	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	Click **Refresh** to refresh the page immediately.
Clear	Click **Clear** to clear the counters for all ports.

3.1.3 QCL Status

This page shows the QCL status by different QCL users. Each row describes the QCE that is defined. It is a conflict if a specific QCE is not applied to the hardware due to hardware limitations.

Navigate to **Monitor** > **Ports** and click **QCL Status**. The QCL Status page displays.



QoS Control List Status

Combined Auto-refresh Resolve Conflict Refresh

User	QCE	Port	Frame Type	Action							Conflict
				CoS	DPL	DSCP	PCP	DEI	Policy	Ingress Map	
Static	1	Any	Any	0	Default	Default	Default	Default	1	1	No

QCL Status

The following table describes the items in the QCL Status page.

Item	Description
User	Displays the QCL user entry.

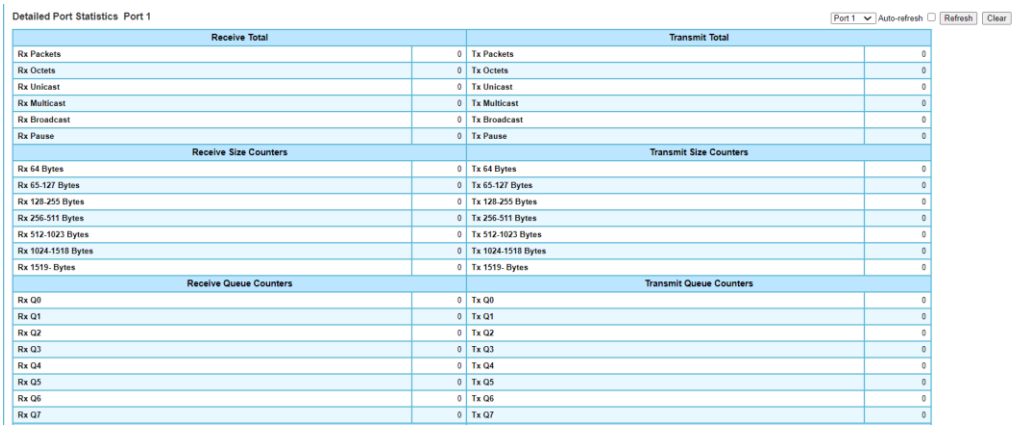
Item	Description
QCE	Displays the QCE identifier for the entry.
Port	Displays the port configured for the QCE entry.
Frame Type	Displays the type of frame. Values: **Any:** Match any frame type. **Ethernet:** Match EtherType frames. **LLC:** Match (LLC) frames. **SNAP:** Match (SNAP) frames. **IPv4:** Match IPv4 frames. **IPv6:** Match IPv6 frames.
Action	Displays the classification action taken on ingress frame if parameters configured are matched with the frame's content. Values: **CoS:** Classify Class of Service. **DPL:** Classify Drop Precedence Level. **DSCP:** Classify DSCP value. **PCP:** Classify PCP value. **DEI:** Classify DEI value. **Policy:** Classify ACL Policy number. **Ingress Map:** Classify Ingress Map ID.
Conflict	Displays the conflict status of the QCL entry. Yes: if resources required to add a QCE may not be available. No: there are no conflicts.
Combined	Click the drop-down menu to select the QCL status. Options: Combined Static Voice VLAN Conflict
Auto-refresh	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Resolve Conflict	Click **Resolve Conflict** to release the resources required to add QCL entry, in case the conflict status for any QCL entry is **yes**.
Refresh	Click **Refresh** to refresh the page.

3.1.4 Detailed Statistics

This page provides detailed traffic statistics for a specific switch port. Use the port select box to select which switch port details to display.

The displayed counters are the totals for receive and transmit, the size counters for receive and transmit, and the error counters for receive and transmit.

Navigate to **Monitor** > **Ports** and click **Detailed Statistics**.

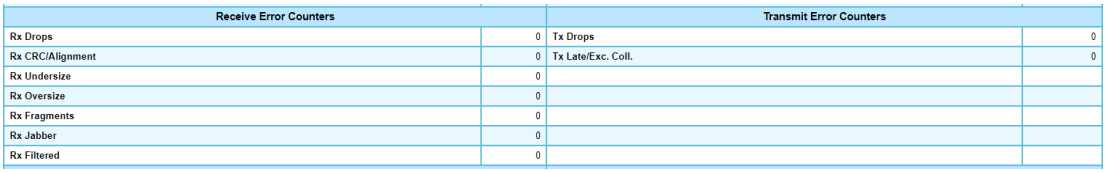


Detailed Port Statistics

The following table describes the items in the Detailed Port Statistics page.

Item	Description
Rx and Tx Packets	Displays the number of received and transmitted packets.
Rx and Tx Octets	Displays the number of received and transmitted bytes. Includes FCS, but excludes framing bits.
Rx and Tx Unicast	Displays the number of received and transmitted unicast packets.
Rx and Tx Multicast	Displays the number of received and transmitted multicast packets.
Rx and Tx Broadcast	Displays the number of received and transmitted broadcast packets.
Rx and Tx Pause	Displays the count of the MAC Control frames received or transmitted on this port that have an opcode indicating a PAUSE operation.
Receive and Transmit Size Counters	Displays the number of received and transmitted (good and bad) packets split into categories based on their respective frame sizes.
Receive and Transmit Queue Counters	Displays the number of received and transmitted packets per input and output queue.
Refresh	Click **Refresh** to refresh the page immediately.
Clear	Click **Clear** to clear the counters for the selected port.
Auto-refresh	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.

The following table describes the items in the Receive and Transmist Error Counters table.

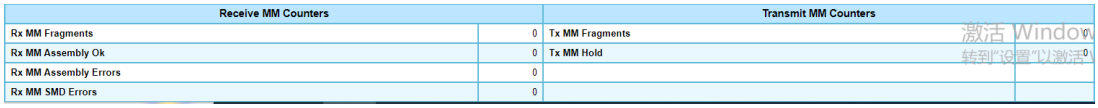


Receive and Transmit Error Counters Table

Item	Description
Rx Drops	Displays the number of frames dropped due to lack of receive buffers or egress congestion.
Rx CRC/Alignment	Displays the number of frames received with CRC or alignment errors.

Item	Description
Rx Undersize	Displays the number of short frames (longer than the configured maximum frame length for this port) received with valid CRC.
Rx Oversize	Displays the number of long frames (longer than the configured maximum frame length for this port) received with valid CRC.
Rx Fragments	Displays the number of short frames (smaller than 64 bytes) received with invalid CRC.
Rx Jabber	Displays the number of long frames received with invalid CRC.
Rx Filtered	Displays the number of received frames filtered by the forwarding process.
Tx Drops	Displays the number of frames dropped due to output buffer congestion.
Tx Late/Exc. Coll.	Displays the number of frames dropped due to excessive or late collisions.

The following table describes the items in the Receive and Transmist MM Counters table.



Receive MM Counters		Transmit MM Counters	
Rx MM Fragments	0	Tx MM Fragments	0
Rx MM Assembly Ok	0	Tx MM Hold	0
Rx MM Assembly Errors	0		
Rx MM SMD Errors	0		

激活 Windows
转到"设置"以激活。

Receive and Transmit MM Counters Table

Item	Description
Rx MM Fragments	Displays the count of received MAC frame fragments.
Rx MM Assembly Ok	Displays the count of MAC frames that were successfully reassembled and delivered to MAC.
Rx MM Assembly Errors	Displays the count of MAC frames with reassembly errors. The counter is incremented when the ASSEMBLY_ERROR state of the Receive Processing State Diagram is entered.
Rx MM SMD Errors	Displays the count of received MAC frames / MAC frame fragments rejected due to unknown SMD value or arriving with an SMD-C when no frame is in progress. The counter is incremented each time the BAD_FRAG state of the Receive Processing State Diagram is entered.
Tx MM Fragments	Displays the count of transmitted MAC frame fragments.
Tx MM Hold	Displays the count of times MM_CTL.request(HOLD) primitive assertion caused preemption of a preemptable MAC frame.

3.1.5 Name Map

Many Web pages use a port number to express an interface, whereas CLI uses interface names. The table on this page provides a means to convert from one to the other.

Navigate to **Monitor** > **Ports** and click **Name Map**.

Interface Name to Port Number Map

Interface Name	Port Number
Gi 1/1	1
Gi 1/2	2
Gi 1/3	3
Gi 1/4	4
Gi 1/5	5
Gi 1/6	6
Gi 1/7	7
Gi 1/8	8
Gi 1/9	9
Gi 1/10	10
Gi 1/11	11
Gi 1/12	12
10G 1/1	13
10G 1/2	14
10G 1/3	15
10G 1/4	16

Interface Name to Port Number Map

The following table describes the items in the Interface Name to Port Number Map page.

Item	Description
Interface Name	Displays the name of the interface entry.
Port Number	Displays the number identifying the port corresponding to the interface.

3.2 PTP

3.2.2 PTP

Many Web pages use a port number to express an interface, whereas CLI uses interface names. The table on this page provides a means to convert from one to the other.

Navigate to **Monitor** > **PTP** and click **PTP**. The PTP External Clock Mode page displays.

PTP External Clock Mode

One_PPS_Mode	Disable
External Enable	False
Adjust Method	Auto
Clock Frequency	1

PTP Clock Configuration

			Port List													
Inst	ClkDom	Device Type	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	No Clock Instances Present																	

PTP External Clock Mode

The following table describes the items in the PTP External Clock Mode page.

Item	Description
One_PPS_Mode	Displays the name of the interface entry.
External Enable	Displays the number identifying the port corresponding to the

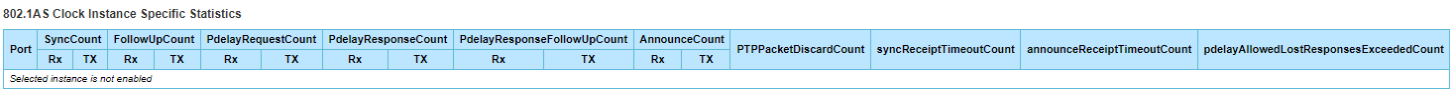
interface.

Item	Description
Adjust Method	Displays the current frequency adjustment configuration. Options: Shows the current Frequency adjustment configuration. LTC: Use Local Time Counter (LTC) frequency control Single: Use SyncE DPLL frequency control, if allowed by SyncE Independent: Use an oscillator independent of SyncE for frequency control, if supported by the HW Common: Use second DPLL for PTP, Both DPLL have the same (SyncE recovered) clock. Auto: AUTO Select clock control, based on PTP profile and available HW resources.
Clock Frequency	Displays the current clock frequency (values: 1 to 25000000 [1 - 25MHz]).
PTP Clock Description	
Inst	Displays the instance of a clock instance for the entry.
ClkDom	Displays the clock domain for the instance entry.
Device Type	Displays the clock instance type: Ord-Bound - Clock's Device Type is Ordinary-Boundary Clock. P2p Transp - Clock's Device Type is Peer to Peer Transparent Clock. E2e Transp - Clock's Device Type is End to End Transparent Clock. Master Only - Clock's Device Type is Master Only. Slave Only - Clock's Device Type is Slave Only.
Port List	Displays the port(s) configured for the instance.
Auto-refresh	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	Click **Refresh** to refresh the page immediately.

3.2.3 802.1AS Statistics

The function provides the means to inspect the current PTP configuration.

Navigate to **Monitor** > **PTP** and click **802.1AS Statistics**. The 802.1AS Clock Instance Specific Statistics page displays.


802.1AS Clock Instance Specific Statistics

Port	SyncCount		FollowUpCount		PdelayRequestCount		PdelayResponseCount		PdelayResponseFollowUpCount		AnnounceCount		PTPPacketDiscardCount	syncReceiptTimeoutCount	announceReceiptTimeoutCount	pdelayAllowedLostResponsesExceededCount
	Rx	TX	Rx	TX	Rx	TX	Rx	TX	Rx	TX	Rx	TX				

Selected instance is not enabled

802.1AS Clock Instance Specific Statistics

Attention! *The previous figure was distorted to accommodate the current layout.*

The following table describes the items in the 802.1AS Clock Instance Specific Statistics page.

Item	Description
Clock	Click to display the configured values.

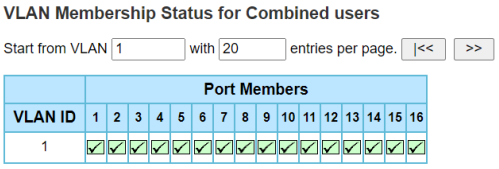
Item	Description
Refresh	Click **Refresh** to refresh the page immediately.
Clear	Click to clear the statistics.
SyncCount	Displays the counter that increments every time synchronization information is transmitted.
FollowUpCount	Displays the counter that increments every time a Follow_Up message is transmitted.
PdelayRequestCount	Displays the counter that increments every time a Pdelay_Req message is transmitted.
PdelayResponse Count	Displays the counter that increments every time a Pdelay_Resp message is transmitted.
PdelayResponse FollowUpCount	Displays the counter that increments every time a Pdelay_Resp_Follow_Up message is transmitted.
AnnounceCount	Displays the counter that increments every time an Announce message is transmitted.

3.3 VLANs

3.3.2 Membership

The function provides an overview of membership status of VLAN users.

Navigate to **Monitor** > **VLANs** and click **Membership**. The VLAN Membership Status page displays.



VLAN Membership Status

The following table describes the items in the VLAN Membership Status page.

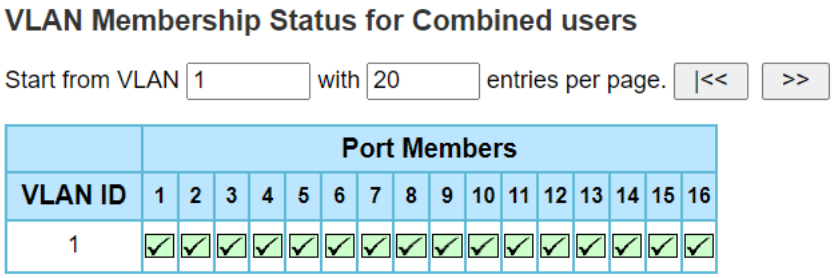
Item	Description
Start from VLAN	
First Page	Click the icon to display the first page.
Next Page	Click the icon to display the next page in the list.
VLAN ID	Displays the VLAN ID for the port entry.
Port Members	Displays the status of the port: ■ Included in a VLAN ■ Forbidden ■ Forbidden and attempted included in VLAN A row of check boxes for each port is displayed for each VLAN ID.
Select Users	Click the drop-down menu to select the VLAN users. Options: ■ Admin ■ NAS ■ GVRP ■ MVR ■ RMirror
Auto-refresh	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	Click **Refresh** to refresh the page immediately.

3.3.3 Ports

The function provides an overview of the VLAN port status.

Navigate to **Monitor** > **VLANs** and click **Ports**.

The VLAN Port Status for Combined users page displays.



VLAN Membership Status

The following table describes the items in the VLAN Port Status for Combined users page.

Item	Description
Port	Displays the port settings of the entry.
Port Type	Displays the port type as configured by a user. Values: ■ Unaware ■ C-Port ■ S-Port ■ S-Custom-Port
Ingress Filtering	Displays if ingress filtering is enabled or disabled for the entry.
Frame Type	Displays the acceptable frame type as configured by a user. Values: ■ All ■ Taged ■ Untagged
Port VLAN ID	Displays the port VLAN ID as configured for the entry.
Tx Tag	Displays the TX Tag requirements as configured for the entry. Values: ■ Tag All ■ Tag PVID ■ Tag UVID ■ Untag All ■ Untag PVID ■ Untag UVID
Untagged VLAN ID	Displays whether Tx Tag is overridden and set to Tag or Untag UVID. The field is empty if not overridden by the selected user.
Conflicts	Displays whether a port conflict exists (Yes).

Item	Description
Select Users	Click the drop-down menu to select the VLAN users. Options: ■ Admin ■ NAS ■ GVRP ■ MVR ■ MSTP ■ ERPS ■ VCL ■ RMirror
Auto-refresh	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	Click **Refresh** to refresh the page immediately.

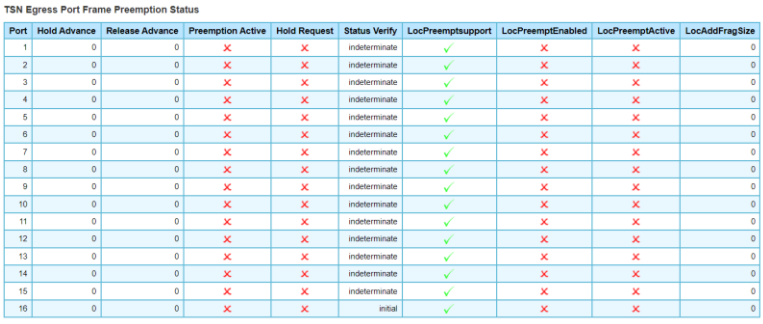
3.4 TSN

3.4.2 Frame Preemption

The function provides an overview of TSN egress port frame preemption status.

Navigate to **Monitor** > **TSN** and click **Frame Preemption**.

The TSN Egress Port Frame Preemption Status page displays.



TSN Egress Port Frame Preemption Status

Port	Hold Advance	Release Advance	Preemption Active	Hold Request	Status Verify	LocPreemptsupport	LocPreemptEnabled	LocPreemptActive	LocAddFragSize
1	0	0	×	×	indeterminate	✓	×	×	0
2	0	0	×	×	indeterminate	✓	×	×	0
3	0	0	×	×	indeterminate	✓	×	×	0
4	0	0	×	×	indeterminate	✓	×	×	0
5	0	0	×	×	indeterminate	✓	×	×	0
6	0	0	×	×	indeterminate	✓	×	×	0
7	0	0	×	×	indeterminate	✓	×	×	0
8	0	0	×	×	indeterminate	✓	×	×	0
9	0	0	×	×	indeterminate	✓	×	×	0
10	0	0	×	×	indeterminate	✓	×	×	0
11	0	0	×	×	indeterminate	✓	×	×	0
12	0	0	×	×	indeterminate	✓	×	×	0
13	0	0	×	×	indeterminate	✓	×	×	0
14	0	0	×	×	indeterminate	✓	×	×	0
15	0	0	×	×	indeterminate	✓	×	×	0
16	0	0	×	×	initial	✓	×	×	0

TSN Egress Port Frame Preemption Status

The following table describes the items in the TSN Egress Port Frame Preemption Status page.

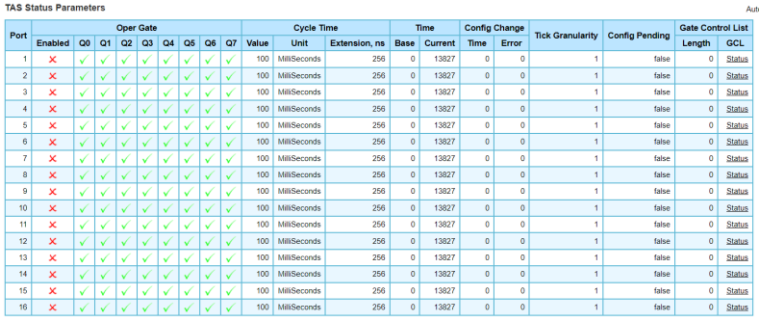
Item	Description
Port	Displays the logical port of the entry.
Hold Advance	Displays the value of the holdAdvance parameter for the Port in nanoseconds.
Release Advance	Displays the value of the releaseAdvance parameter for the Port in nanoseconds.
Preemption Active	Displays the value is active (TRUE) when preemption is operationally active for the Port, and idle (FALSE) otherwise.
Hold Request	Displays the value is hold (TRUE) when the sequence of gate operations for the Port has executed a Set-And-Hold-MAC operation, and release (FALSE) when the sequence of gate operations has executed a Set-And-Release-MAC operation.
Status Verify	Displays the status of the MAC Merge sublayer verification for the given device.
LocPreemptsupport	Displays the value is TRUE when preemption is supported on the port, and FALSE otherwise.

Item	Description
LocPreemptEnabled	Displays the value is TRUE when preemption is enabled on the port, and FALSE otherwise.
LocPreemptActive	Displays the value is TRUE when preemption is operationally active on the port, and FALSE otherwise.
LocAddFragSize	Displays the value of the 802.3br LocAddFragSize parameter for the port.
Auto-refresh	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	Click **Refresh** to refresh the page immediately.

3.4.3 TAS

The function provides an overview of TSN egress port frame preemption status.

Navigate to **Monitor** > **TSN** and click **TAS**.
The TAS Status Parameters page displays.


TAS Status Parameters

Port	Oper Gate								Cycle Time			Time		Config Change		Tick Granularity	Config Pending	Gate Control List	
	Enabled	Q0	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Value	Unit	Extension, ns	Base	Current	Time	Error			Length	GCL
1	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status
2	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status
3	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status
4	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status
5	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status
6	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status
7	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status
8	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status
9	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status
10	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status
11	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status
12	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status
13	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status
14	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status
15	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status
16	✗	✓	✓	✓	✓	✓	✓	✓	✓	100	MilliSeconds	256	0	13827	0	0	1	false	0	Status

TAS Status Parameters

The following table describes the items in the TAS Status Parameters page.

Item	Description
Port Oper Gate Enabled	Displays the logical port of the entry. Displays the whether traffic scheduling is active (true) or inactive (false).
Oper Gate States	Displays the current state of the gate associated with each queue for the Port.
Cycle Time Value	Displays the operational value of the gating cycle for the Port.
Cycle Time Unit	Displays the operational Cycle Time unit.
Cycle Time Extension	Displays the integer number of nanoseconds, defining the maximum amount of time by which the gating cycle for the Port is permitted to be extended when a new cycle configuration is installed.
Base Time	Displays the operational value of base time, expressed as an IEEE 1588 precision time protocol (PTP) timescale.
Current Time	Displays the current time (seconds), in PTPtime, as maintained by the local system. The value is a representation of a PTPtime value, consisting of a 48-bit integer number of seconds and a 32-bit integer number of nanoseconds.
Config Change Time	Displays the PTPtime at which the next config change is scheduled to occur.
Config Change Error	Displays the counter of the number of times that a re-configuration of the traffic schedule has been requested with the old schedule still running and the requested base time was in the past.
Tick Granularity	Displays the granularity of the cycle time clock, represented as an unsigned number of tenths of nanoseconds.

Item	Description
Config Pending	Displays the value of the ConfigPending state machine variable.
GCL Length	Displays the operational value of the gate control list length parameter for the Port.
GCL	Displays the link to the GCL parameter status.
Auto-refresh	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	Click **Refresh** to refresh the page immediately.

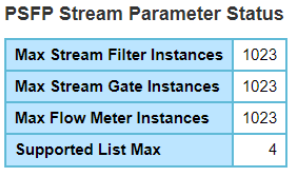
3.4.4 PSFP

3.4.4.1 Global Parameters

The function provides an overview of the current PSFP configurations.

Navigate to **Monitor** > **TSN** > **PSFP** and click **Global Parameters**.

The PSFP Stream Parameter Status page displays.



PSFP Stream Parameter Status

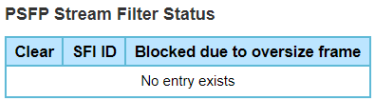
The following table describes the items in the PSFP Stream Parameter Status page.

Item	Description
Max Stream Filter Instances	Displays the maximum number of stream filter instances that are supported by this Bridge component.
Max Stream Gate Instances	Displays the maximum number of stream gate instances that are supported by this Bridge component.
Max Flow Meter Instances	Displays the maximum number of flow meter instances that are supported by this Bridge component.
Supported List Max	Displays the maximum value supported by this Bridge component of the AdminControlListLength and OperControlListLength parameters.
Auto-refresh	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	Click **Refresh** to refresh the page immediately.

3.4.4.2 Stream Filter Status

The function provides an overview of the current PSFP configurations.

Navigate to **Monitor** > **TSN** > **PSFP** and click **Stream Filter Status**. The TPSFP Stream Filter Status page displays.



PSFP Stream Filter Status

The following table describes the items in the PSFP Stream Filter Status page.

Item	Description
Clear	Click to clear the entry for the next Clear operation.
SFI ID	Displays the stream filter instance ID.

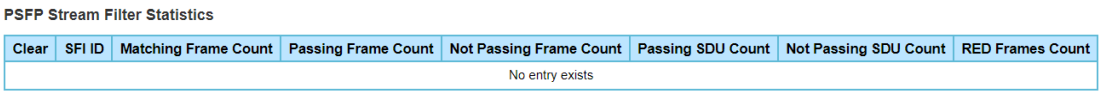
Item	Description
Blocked Due to Oversize Frame	Displays if the filter is blocked due to oversize frame.
Auto-refresh	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	Click **Refresh** to refresh the page immediately.
Clear	Click **Clear** to clear the counters for the selected port.
Clear All	Click **Clear All** to clear the blocked flags for all entries.

3.4.4.3 Stream Filter Statistics

The function provides an overview of the current PSFP configurations.

Navigate to **Monitor** > **TSN** > **PSFP** and click **Stream Filter Statistics**.

The PSFP Stream Filter Statistics page displays.


PSFP Stream Filter Statistics

Clear	SFI ID	Matching Frame Count	Passing Frame Count	Not Passing Frame Count	Passing SDU Count	Not Passing SDU Count	RED Frames Count
No entry exists							

Stream Filter Statistics

The following table describes the items in the PSFP Stream Filter Statistics page.

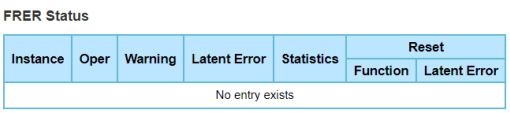
Item	Description
Clear	Click to clear the entry for the next Clear operation.
SFI ID	Displays the maximum number of stream filter instances that are supported by this Bridge component.
Matching Frame Count	Displays the counts received frames that match this stream filter.
Passing Frame Count	Displays the counts received frames that pass the gate associated with this stream filter
Not Passing Frame Count	Displays the counts received frames that do not pass the gate associated with this stream filter.
Passing SDU Count	Displays the counts received frames that pass the SDU size filter specification associated with this stream filter.
Not Passing SDU Count	Displays the counts received frames that do not pass the SDU size filter specification associated with this stream filter.
RED Frames Count	Displays the counts received random early detection (RED) frames associated with this stream filter.
Auto-refresh	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	Click **Refresh** to refresh the page immediately.
Clear	Click **Clear** to clear the counters for the selected port.
Clear All	Click **Clear All** to clear the blocked flags for all entries.

3.4.5 FRER

3.4.5.1 FRER Status

The function provides an overview of the current FRER status.

1. Navigate to **Monitor** > **TSN** > **FRER** and click **FRER Status**.
   The FRER Status page displays.


FRER Status

Instance	Oper	Warning	Latent Error	Statistics	Reset	
					Function	Latent Error
No entry exists						

FRER Status

The following table describes the items in the FRER Status page.

Item	Description
Instance	Displays the FRER instance.
Oper	Displays the operational state. ■ Green: active ■ Red: disabled or internal error detected.

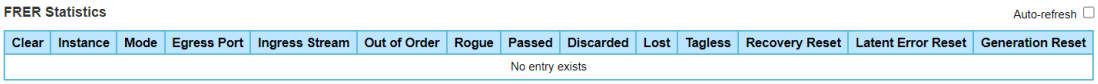
Item	Description
Warning	Displays any operation warnings. ■ Off: no warning detected ■ Yellow: warnings detected, use tooltip for further details.
Latent Error	Displays any latent errors ■ Green: no error detected ■ Red: latent errors detected
Statistics	Click to reset the statistics counter.
Reset Function	Click to reset the function. If this FRER instance is in generation mode, this is used to reset the sequence number of the sequence generator. If this FRER instance is in recovery mode, this is used to reset the recovery function. It resets both possible individual recovery functions and the compound recovery functions.
Reset Latent Error	Click to clear a sticky latent error.
Auto-refresh	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	Click **Refresh** to refresh the page immediately.
Clear All	Click **Clear All** to clear the blocked flags for all entries.

3.4.5.2 FRER Statistics

The function provides an overview of the current FRER statistics counters.

Navigate to **Monitor** > **TSN** > **FRER** and click **FRER Statistics**.

The FRER Statistics page displays.



FRER Statistics

The following table describes the items in the FRER Statistics page.

Item	Description
Clear	Click to mark an entry for clearance during the following Clear operation.
Instance	Displays the FRER instance ID.
Mode	Displays the operation mode (Generation or Recovery).
Egress Port	Displays the list of egress port numbers.
Ingress Stream	Displays the list of ingress stream IDs.
Out of Order	Displays the out of order counters.
Roque	Displays the receiving roque counters.
Passed	Displays the receiving passed counters.
Discarded	Displays the Receiving discarded counters.
Lost	Displays the receiving lost counters.
Tagless	Displays the receiving tagless counters.
Recovery Reset	Displays the receiving reset counters.
Latent Error Reset	Displays the receiving latent error counters.
Generation Reset	Displays the generation reset counters.
Auto-refresh	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.
Refresh	Click **Refresh** to refresh the page immediately.
Clear	Click **Clear** to clear the counters for the selected port.

Item	Description
Clear All	Click **Clear All** to clear the blocked flags for all entries.

4 Maintenance

4.1 Restart Device

The function allows for the restart of the device. After a restart, the switch boots normally.

Navigate to **Maintenance** and click **Restart Device**. The

Restart Device page displays.

Click **Yes** to reboot the switch. Any configuration changes you have made since the last time you issued a save will be lost.

Click **No** to cancel the reboot.

Restart Device

4.2 Factory Defaults

The function allows for the rest of the device to its factory default configuration.

Navigate to **Maintenance** and click **Factory Defaults**.

The Factory Defaults page displays.

Click **Yes** to reset the device to it's original factory defaults. All changes that have been made will be lost, even if you have issued a save.

Reset settings take effect after a system reboot.

Click **No** to cancel the reboot.

Factory Defaults

4.3 Software

4.3.2 Upload

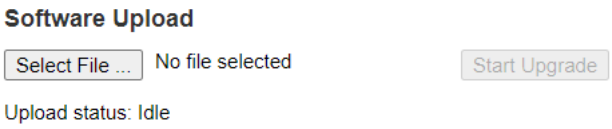
The function allows for the updating of the firmware controlling the switch.

Navigate to **Maintenance** > **Software** and click **Upload**. The

Software Upload page displays.

Click **Select File...** to browse for a software image and select it.

Once selected, click Start Upgrade to begin the process.



Software Upload

After the software image is uploaded, a page announces that the firmware update is initiated. After about a minute, the firmware is updated and the switch restarts.

Warning! *While the firmware is being updated, Web access appears to be defunct. The front LED flashes Green/Off with a frequency of 10 Hz while the firmware update is in progress. Do not restart or power off the device at this time or the switch may fail to function afterwards.*

4.3.3 Image Select

The page provides information about the active and alternate (backup) firmware images in the device, and allows you to revert to the alternate image.

Navigate to **Maintenance** > **Software** and click **Image Select**.

The Software Image Selection page displays.

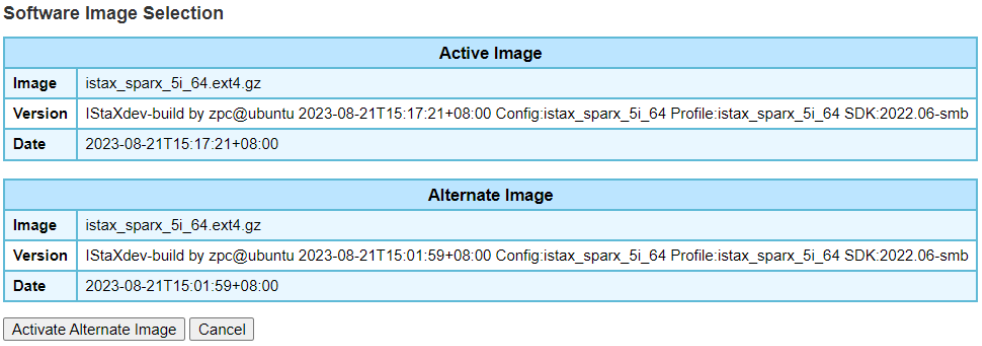


Image Select

The following table describes the items in the Software Image Selection page.

Item	Description
Image	Displays the name of the firmware image since its last update.
Version	Displays the version of the firmware image.
Date	Displays the production date of the firmware.
Active Alternative Image	Click **Activate Alternative Image** to use the alternate image. This button may be disabled depending on system state.
Cancel	Click **Cancel** to discontinue activating the backup image. Returns to the previous page.

4.4 Configuration

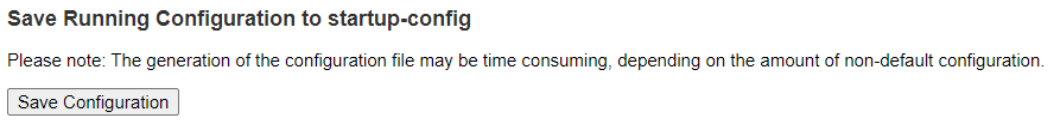
4.4.1 Save startup-config

Note! The generation of the configuration file may be time consuming, depending on the amount of non-default configuration.

The page provides information about the active and alternate (backup) firmware images in the device, and allows you to revert to the alternate image.

Navigate to **Maintenance** > **Configuration** and click **Save startup-config**. The Save Running Configuration to startup-config page displays.

Click **Save Configuration** to FLASH the configuration changes to be saved across a system reboot. All changes submitted since the previous save or sys- tem reboot will be retained by the switch.



Save startup-config

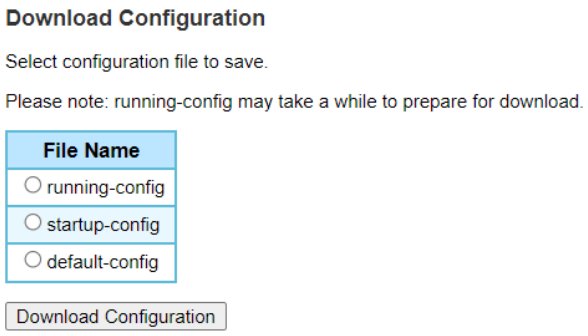
4.4.2 Download

The function allows you to download any of the files on the device to a browser.

Navigate to **Maintenance** > **Configuration** and click **Download**. The Download Configuration page displays.

Click a listed file name to select it.

Click **Download Configuration** to start the download.



Download

Download of running-config may require time to complete, as the file must be prepared for download.

4.4.3 Upload

The function allows you to upload a file to the device with the exception of the default-config file as it is read-only.

Navigate to **Maintenance** > **Configuration** and click **Upload**.

The Upload Configuration page displays.

Click **Choose File** to select a source file.

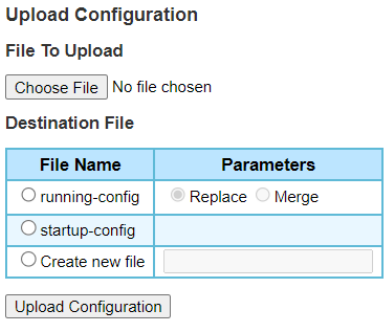
Select the destination file on the File Name (target) column.

If the destination is the running-config, the upload applies to the configuration in one of two methods:

Replace mode: The current configuration is fully replaced with the configura- tion in the uploaded file.

Merge mode: The uploaded file is merged into running-config.

Click **Upload Configuration** to start the upload.



Upload

If the flash file system is full (i.e. contains default-config and 32 other files, usually including startup-config), it is not possible to create new files. Instead an existing file must be overwritten or another file must be deleted.

4.4.4 Activate

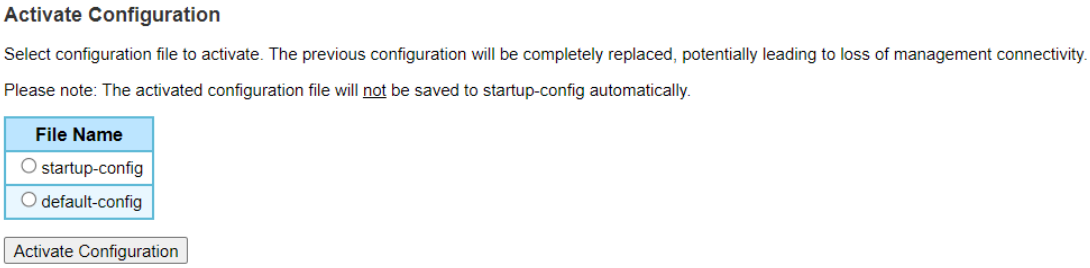
The function allows you select a configuration file to activate.

Navigate to **Maintenance** > **Configuration** and click **Activate**.

The Activate Configuration page displays.

Click a file from the File Name table to select and activate.

Click **Activate Configuration** to start the process.

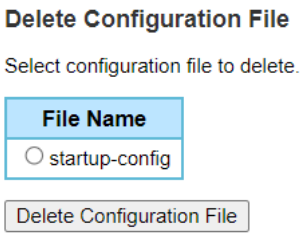


Activate

4.4.5 Delete

The function allows you select a configuration file to delete.

Navigate to **Maintenance** > **Configuration** and click **Delete**. The Delete Configuration File page displays.

Click a file from the File Name table to select and delete.

Click **Delete Configuration file** to start the process.