**User Manual**
GFK-3030D
Mar 2023

# PACSystems™ PROFINET Managed Industrial Ethernet Switches

## USER MANUAL

# Warnings and Caution Notes as Used in this Publication

## ⚠ WARNING

Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in this equipment or may be associated with its use.

In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.

## ⚠ CAUTION

Caution notices are used where equipment might be damaged if care is not taken.

**Note:** Notes merely call attention to information that is especially significant to understanding and operating the equipment.

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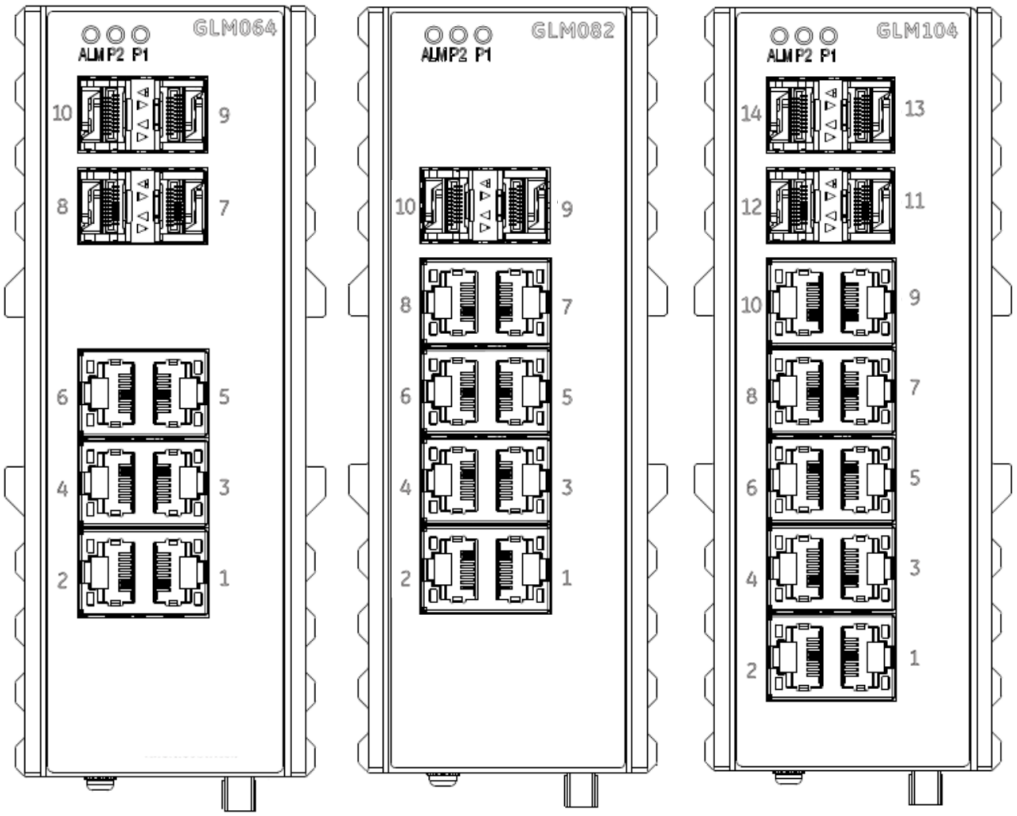
# Contents

# Section 1 Introduction

The PACSystems GLM series Industrial Ethernet Switches deliver high-quality Ethernet operation over a wide temperature range and can tolerate an extended power input range. These switches are ideal for harsh environments and mission-critical applications. They may be DIN rail mounted or panel-mounted.

This document includes a product overview and covers installation, configuration, operation, and diagnostics.

**Figure 1: GLM064, GLM082, GLM104**



# 1.1 Revisions in this Manual

| Rev | Date | Description |
|---|---|---|
| D | Mar-2023 | Updates to Section 3.6.2, *Small Form-Factor Pluggable (SFP) Connections* to provide SFP compatibility details. |
| C | Aug 2022 | Updates to support enhanced browser compatibility. |
| B | May-2022 | Updates to correct the details of the PROFINET database, browser compatibility, SFP details, and device data. |
| A | Jan-2020 | Following Emerson's acquisition of this product, changes have been made to apply appropriate branding and registration of the product with required certification agencies. No changes to the material, process, form, fit, or functionality. |
| - | Dec-2017 | Initial release. |

# 1.2 PACSystems Documentation

## 1.2.1 PACSystems Manuals

| Title | Document Number |
|---|---|
| PACSystems RX3i and RSTi-EP CPU Reference Manual | GFK-2222 |
| PACSystems RX3i and RSTi-EP CPU Programmer's Reference Manual | GFK-2950 |
| PACSystems RX3i and RSTi-EP TCP/IP Ethernet Communications User Manual | GFK-2224 |
| PACSystems TCP/IP Ethernet Communications Station Manager User Manual | GFK-2225 |
| PACSystems Memory Xchange Modules User's Manual | GFK-2300 |
| PACSystems Hot Standby CPU Redundancy User Manual | GFK-2308 |
| Proficy Machine Edition Logic Developer Getting Started | GFK-1918 |
| Proficy Process Systems Getting Started Guide | GFK-2487 |
| PACSystems RXi, RX3i, and RSTi-EP Controller Secure Deployment Guide | GFK-2830 |
| PACSystems RX3i & RSTi-EP PROFINET I/O Controller Manual | GFK-2571 |

### 1.2.2 RX3i Manuals

| Title | Document Number |
|---|---|
| PACSystems RX3i System Manual | GFK-2314 |
| PACSystems RX3i Ethernet Network Interface Unit User's Manual | GFK-2439 |
| PACSystems RX3i PROFINET Scanner Manual | GFK-2737 |

In addition to these manuals, datasheets and product update documents describe individual modules and product revisions. The most recent PACSystems documentation is available on the Emerson support website. Please see the links provided at the end of this document.

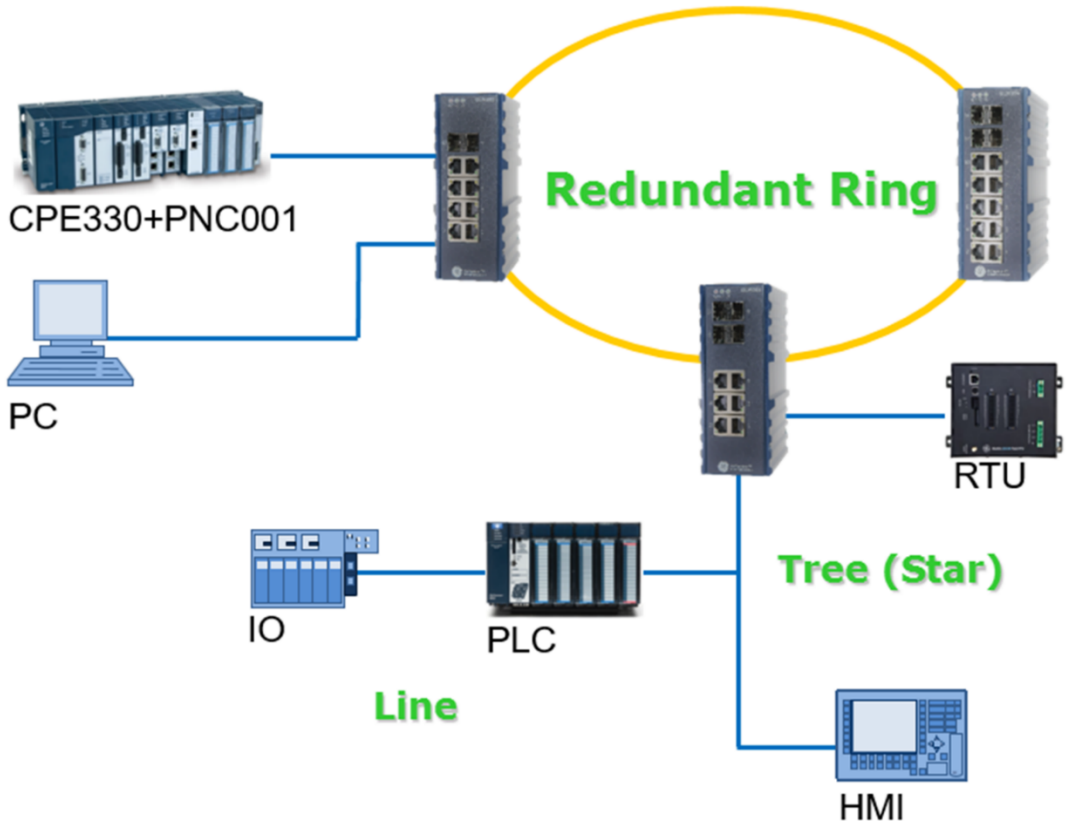
# Section 2 Overview

## 2.1 System Overview

### 2.1.1 I/O devices on a PROFINET Network

GLM Switches are treated as PROFINET-IO devices. The host PLC will therefore use an embedded PROFINET port or a PNC001 PROFINET IO-Controller Module. All physical connections use standard Ethernet connectors (RJ45 or SFP).

**Figure 2: Typical PROFINET System with GLM Switches**



## 2.1.2 Ethernet Devices on an Ethernet Network

The GLM switches contain several features which cannot be accessed over PROFINET but are available over Ethernet. The user may choose to install a separate Ethernet network for this purpose or run both PROFINET and Ethernet on the same physical network.

Care needs to be taken that connection to an Ethernet network does not expose the application to outside interference or monitoring, and does not impose heavy traffic on the PROFINET network, which is intended to service I/O Devices in a timely manner. Refer to the *PACSystems RXi, RX3i,and RSTi-EP Controller Secure Deployment Guide,* GFK-2830.

**⚠ CAUTION**

Within an RX3i system, the user may install an ETM001 module in a rack controlled by the host PLC CPU or may use an embedded Ethernet port within the CPU itself to provide the Ethernet features. If none of the Ethernet-only features will be used, no dedicated Ethernet function is required.

The following features, which are outside the scope of this manual, may be accessed over Ethernet, but may not be accessed over PROFINET:

- Virtual LANs (VLANs)
- Access Control List Security (ACL)
- Quality of Service (QoS) features
- Internet Group Management Protocol (IGMP)

## 2.1.3 GLM System Capabilities

| Function Name | System Max Value |
|---|---|
| VLAN ID | 4096 |
| VLAN Limitation | 1024 |
| Privilege Level of User | 15 |
| RMON Statistic Entry | 65535 |
| RMON Alarm Entry | 65 |
| RMON Event Entry | 65535 |
| IPMC Profile | 64 |
| IPMC Rule / Address Entry | 128 |
| ACE | 256 |
| ICMP Type / Code | 255 |
| MAC-based VLAN Entry | 256 |
| IP subnet-based VLAN Entry | 128 |
| Protocol-based VLAN Group | 125 |
| Voice VLAN OUI | 16 |
| QCE | 256 |
| IP Interface (for management) | 8 |
| IP Route (for management) | 32 |
| Security Access Management | 16 |
| MVR VLAN | 4 |
| MAC Learning table address | 8k |
| IGMP Group | 256 |

## 2.2 GLM Product Differentiation

Product differentiation within the GLM Series of products lies in the number of standard RJ45 Ethernet connections and Small Form-Factor Pluggable (SFP) ports offered, as follows:

| Product | Number of RJ45 Ports | Number of SFP Ports |
|---|---|---|
| IC086GLM064 | 6 | 4 |
| IC086GLM082 | 8 | 2 |
| IC086GLM104 | 10 | 4 |

**Note**: the final three digits of the GLM part numbers convey information about the intrinsic port configuration.

# 2.3 GLM Features

Each GLM switch is a stand-alone Ethernet switch that may be mounted on a DIN-rail, or panel-mounted. For mounting information, please refer to *Section 3.1, Mounting.*

Each GLM switch is designed to operate at the following Operating Temperature Range: -40 °F to +167 °F, (-4 °C to +75 °C).

Each GLM switch is equipped with the same bottom panel (Figure 3), which includes the following: a dual 12 VDC to 58 VDC power input, a ground stud, an alarm contact, a reset pushbutton, and an RJ45 port suitable for attaching a console. Each of these features is discussed in *Section 3, Installation.*

**Figure 3: GLM Switch Bottom Panel**

# 2.4 GLM LEDS

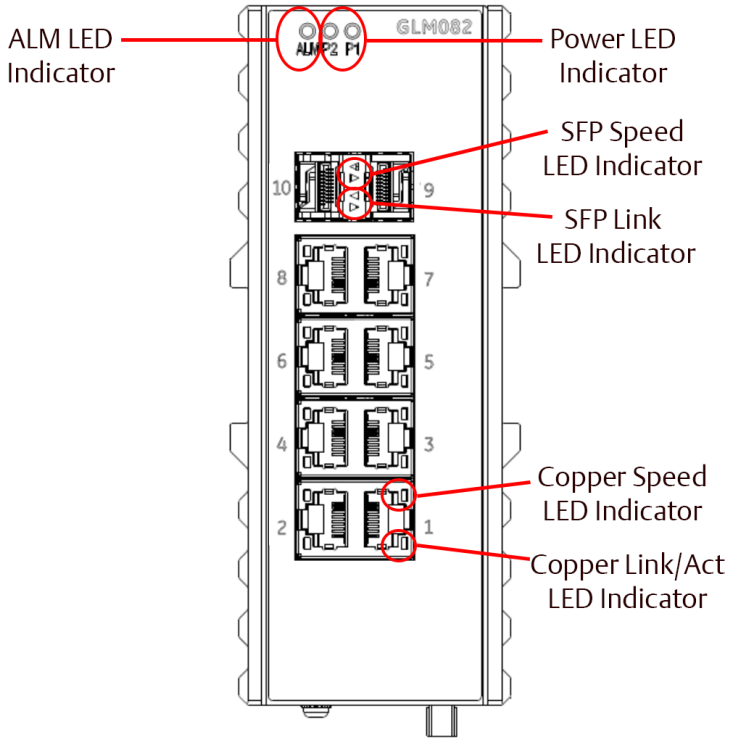
Each GLM Switch product is equipped with a common set of LEDs, as shown in (Figure 4).

One LED for each of the two permitted power supply inputs (P1 and P2).

One LED for the Alarm Contact (ALM).

For each Ethernet port, there is an amber speed LED and a green Link Activity LED. The appearance is different for the RJ45 ports (suitable for copper cables) versus the SFP connectors (Figure 4).LED Operation is detailed in Section 3.7.

**Figure 4: Front-Panel LEDs**



# Section 3 Installation

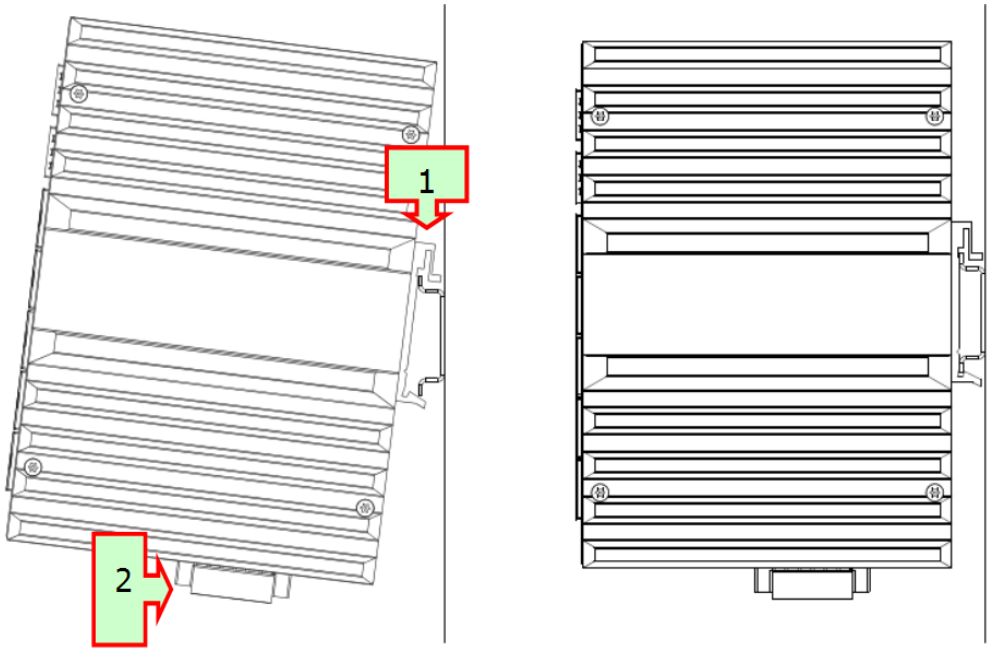
## 3.1 Mounting

The GLM switches may be DIN rail mounted or panel-mounted.

### 3.1.1 DIN Rail Mounting

1. Attach the DIN rail bracket to the mounting surface with the bracket and the M3 screws in the included accessory kit.
2. Hook the top edge of the DIN rail latch attached to the GLM switch over the top edge of the DIN rail (Figure 5, Item 1).
3. Push the bottom of the GLM switch towards the DIN rail until the bottom latch snaps into place (Figure 5, Item 2).

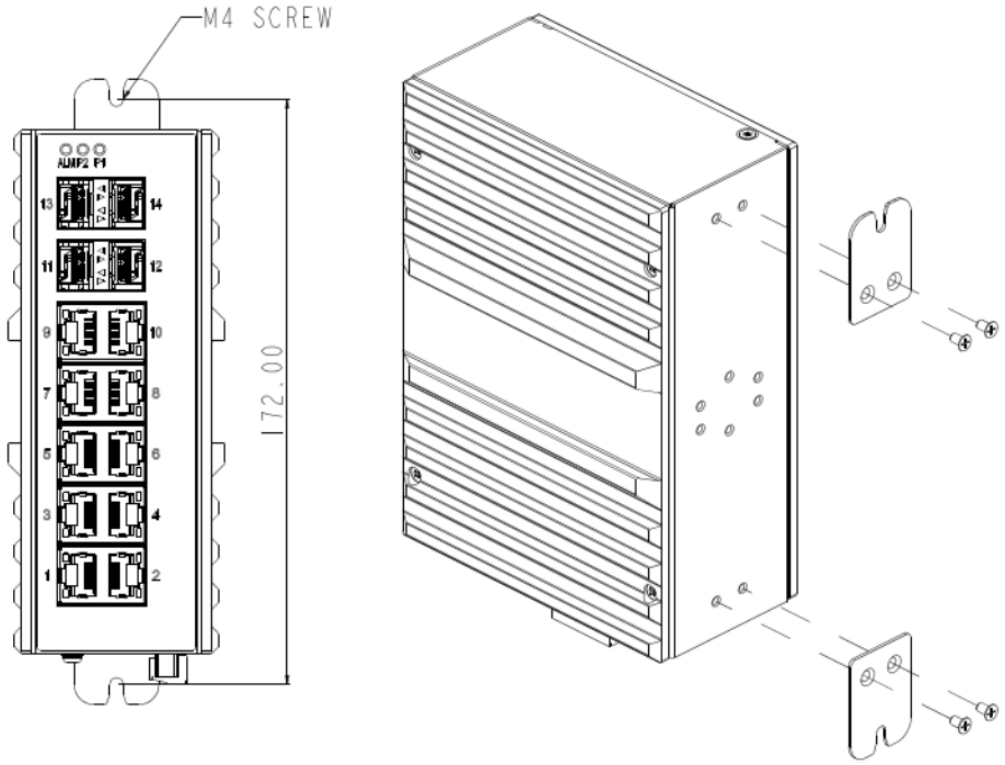
**Figure 5: DIN rail Mounting**



# 3.2 Panel Mounting

1. Prepare two pilot holes in the mounting surface, 172 mm (6 ¾ in) apart (Figure 6). Ensure the pilot holes are large enough to accept the M4 screws provided.
2. Attach the top and bottom panel-mounting plates to the rear of the GLM switch chassis using the screws provided in the accessory kit.
3. Secure the GLM switch to the mounting surface with a pair of M4 machine screws (5.2 lb-in/0.59 N-m).

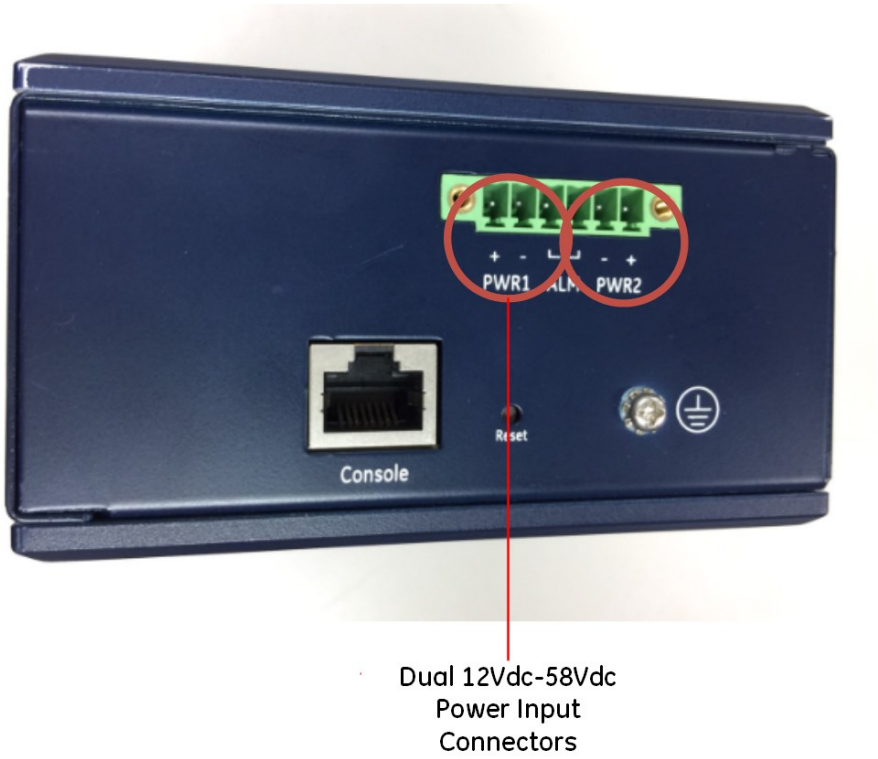
**Figure 6: Panel-Mounting**



# 3.3 Power Connection

The 6-pin terminal block on the bottom panel contains connectors for two DC power inputs. Each is indicated with polarity signs, as shown (Figure 7).

**Figure 7: Dual DC Power Input Connections**




The GLM switch may be powered by one or both power inputs. The specified voltage range is 12 VDC – 58 VDC.

The 6-pin terminal strip will accept 28~14 AWG wire. The wire should be stripped back 6-7 mm. The screw torque limit is 2 Nm.

The P1 and P2 LEDs on the front panel indicate the status of these two power supply inputs, as shown in *Section 3.7, LED Operation*.

### 3.3.1 GLM Switch Current Draw

The maximum current draw at 24 VDC (nominal) for each of the devices is shown below:

| Device | Max Current @ 24 VDC (nominal) |
|---|---|
| GLM064 | 580 mA |
| GLM082 | 521 mA |
| GLM104 | 709 mA |

**Note:** Each DC power input should be connected to a suitably-fused power supply.

## 3.4 Grounding

Each GLM switch must be properly grounded for optimal performance. A ground screw (chassis ground) is provided as part of the bottom panel (Figure 8). Loosen the ground screw, insert the stripped end of the ground strap, then tighten the ground screw to secure the ground strap in place. The other end of the ground strap (which should be as short as possible) should be securely connected to the earth ground.

**Figure 8: Ground Connection**

# 3.5 Alarm Relay Output

The Alarm Relay Output is located on the two terminals in the center of the 6-pin terminal strip on the bottom panel.

**Figure 9: Alarm Relay Output**


The Alarm Relay Output may be connected to an external device. It is a Normally Open (NO) Relay. The state of the Alarm Relay is indicated on the ALM LED, as documented in Section 3.7.

Refer to *Section 3.3, Power Connection* for wire size and stripping information.

Figure 40 diagrams a typical external alarm circuit.

# 3.6 Ethernet Connections

Ethernet connections use either RJ45 (electrical) or mini-GBIC (optical) interfaces. All Ethernet connections are located on the faceplate (Figure 1). The number and type available for each product in the GLM series are discussed in *Section 2.1.3, GLM System Capabilities.*

The activity and speed of each port are indicated separately, as documented in *Section 3.7, LED Operation.*

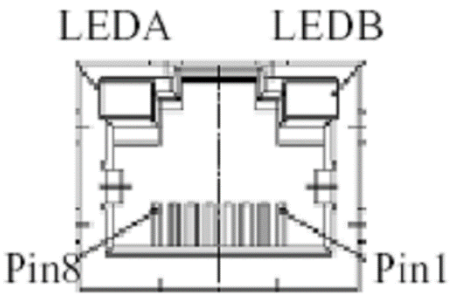
## 3.6.1 RJ45 Connections

GLM switches use standard RJ45 connectors for their electrical interfaces. For example, on GLM082, Ports 1-8 are electrical only.

To connect to a PC, use a straight-through or a cross-over Ethernet cable.

To connect the GLM Switch copper port to an Ethernet device, use UTP (Unshielded Twisted Pair) or STP (Shielded Twisted Pair) Ethernet cables.

**Figure 10: RJ45 Pinout**




| Pin | Assignment |
|---|---|
| 1,2 | T/Rx+, T/Rx- |
| 3,6 | T/Rx+, T/Rx- |
| 4,5 | T/Rx+, T/Rx- |
| 7,8 | T/Rx+, T/Rx- |

**Figure 11: Ports 1 & 2 Copper Connections**

## 3.6.2 Small Form-Factor Pluggable (SFP) Connections

GLM Switches provide SFP connections using an optical (mini-GBIC) interface. For example, on GLM082, Ports 9 and 10 are SFP ports.

An SFP must support the same wavelength, base speed, and fiber type as the device to be connected. For example, when using using IC086SFP1SS the connected devicemust have a matched wavelength of 1300 nm, and operate at 100 Mbps with single-mode fiber wire as indicated in the table below. Users cannot mix SFPs with different speed ratings, mismatched wavelength, or media types.

### SFPs Offered and Tested by Emerson

**Note:** All the below-listed SFPs use LC-type connectors.

| Part Number | SFP Type | Data Rate (Mb) | Wavelength (nm) | Media Type | Core Size (µm) | Model Bandwidth (MHz-km) | Distance (m) |
|---|---|---|---|---|---|---|---|
| IC086SFP1MM | 100BASE-FX | 100 Mbps (Auto) | 1310 | Multi-mode | 62.5 | 500 | 2000 |
| | | | | | 50 | 500 | |
| IC086SFP1SS | 100BASE-LX10 | 100 Mbps (Auto) | 1310 | Single-Mode | 9 | 2000 | 30000 |
| IC086SFP2MM | 1000BASE-SX | 1 Gbps FDX | 850 | Multi-Mode | 62.5 | 200 | 550 |
| | | | | | 50 | 500 | |
| IC086SFP2SS | 1000BASE-LX | 1 Gbps FDX | 1310 | Single-Mode | 9 | 2000 | 10000 |
| IC695SPC100 | 10/100/1000BASE-T | 10/100/1000 Mbps/Auto | - | 10/100/1000BASE-T | - | - | 100 |
| IC695SPF010 | 1000Base-LX | 1 Gbps FDX | 1300 | Single-Mode | 9 | - | 10000 |
| IC695SPF002 | 100Base-FX | 100 Mbps (Auto) | 1300 | Multi-Mode | 62.5 | 500<br>400 | 2000(full duplex)<br>400(half duplex) |
| | | | | | 50 | 400 | |
| | | | | | 50 | 500 | |
| IC695SPF550 | 1000Base-SX | 1 Gbps FDX | 850 | Multi-Mode | 62.5 | 160 | 550 |
| | | | | | | 200 | |
| | | | | | 50 | 400 | |
| | | | | | | 500 | |

# Using 1 Gbps Speed SFPs with GLM Switches

To use 1 Gbps SFPs, users need to change the default speed setting from **Auto** to **1000 Mbps Full Duplex (FDX)** using the web interface. One Gbps SFPs will not communicate when the port speed is set to **Auto**.

# Port Configuration

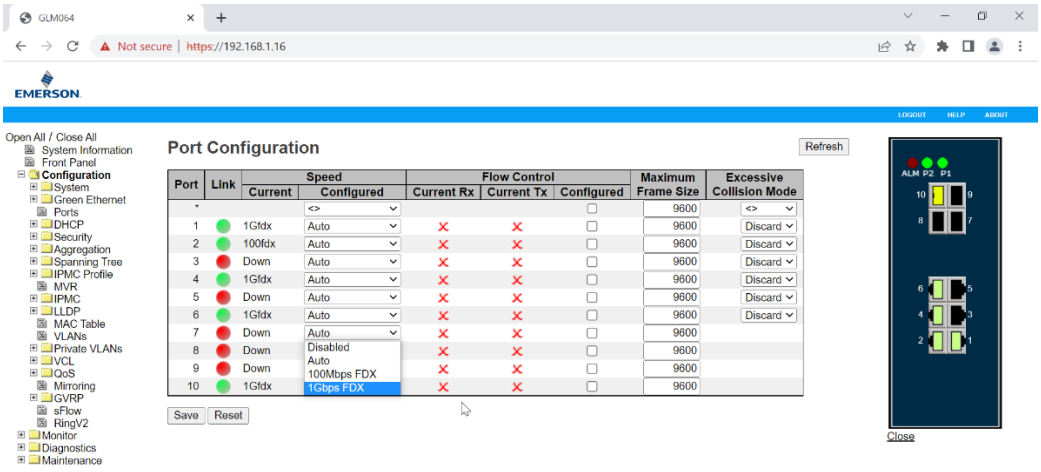
Navigate to the TelNet Interface using either the default IP or the user set IP. Alternatively, the user can also use Profinet DCP Tool in PAC Machine Edition to set the device name and IP address.

**Note:** More inform ation on the web server, default IP and resetting a user set IP can be found in Section TelNet Interface under Section 3.6.2.

Select the **Port Configuration** to view the list of active ports. The link status will be illustrated by the green and red LEDs.

Select the drop-down menu under the **Configured** column and select **1000 Mbps FDX.**

**Figure 12: Port Configuration in Web Server Interface**



# TelNet Interface

For more information on the TelNet Web Server Interface, please review the Firmware Upgrade Kit instructions document located on the support site. Links are provided at the end of this document.

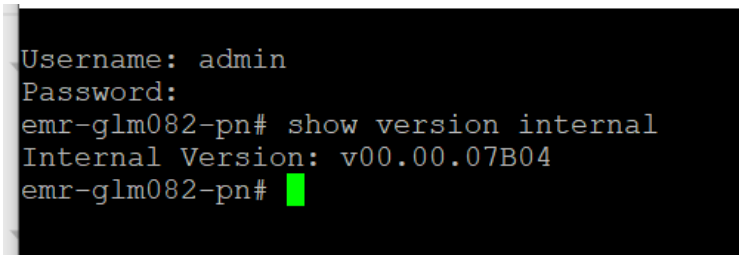
**Note:** The TelNet Interface is only supported by firmware Version 5, Version 6 B02, Version 7 B02, and Version 7.

| Product | IP Address (Default) | User Name | Password |
|---|---|---|---|
| IC086GLM064 | 192.0.2.1 | admin | @admin01 |
| IC086GLM082 | 192.0.2.1 | admin | @admin01 |
| IC086GLM104 | 192.0.2.1 | admin | @admin01 |

If firmware version is unknown, there are two ways to find out:

- Using the command **show version internal** in the CLI will display the current firmware revision.

**Figure 13: CLI Firmware Version**




- Each unit is shipped with a default firmware version and can be seen in the table below.

| Product Number | Default Firmware Version |
|---|---|
| IC086GLM064-AAAA | FW v00.00.05 version release |
| IC086GLM082-AAAA | |
| IC086GLM104-AAAA | |
| IC086GLM064-AAAB | F/W Ver v00.00.06 released |
| IC086GLM082-AAAB | |
| IC086GLM104-AAAB | |
| IC086GLM064-ABAC | F/W Ver v00.00.07 |
| IC086GLM082-ABAC | |
| IC086GLM104-ABAC | |
| IC086GLM064-ABAC | Upgrade kit Ver v00.00.07B04 for GLM switches. |
| IC086GLM082-ABAC | |
| IC086GLM104-ABAC | |

## Resetting IP Address to Default

When using the factory defaults option to clear the configuration via the TelN et Interface, the VLAN 1 IP is left unchanged. The CLI must be used to reset the IP to the factory default setting.

1. Log into the CLI using the following parameters depending on interface type:

| Interface | Parameter |
|---|---|
| Console | Baud rate: 115200bps<br>Data bit: 8<br>Parity: None<br>Stop bit: 1 |
| Telnet | Port 23 |
| SSH | Port 22 (In Windows, you can run a terminal emulator such as PuTTY) |

2. Enter the command **reload defaults**. Connection will lost after reloading to default.
3. Enter the command **copy running-config startup-config** to restore the switch to default settings.

**Note:** Refer to GFK-3061 *PACSystems Industrial Profinet Managed Ethernet Switches CLI Command Reference Guide* for more information on using the CLI.

## Upgrading Firmware

Certain versions of the firmware are only compatible with certain browsers. For instance, Versions 7 B02 and lower, Web configuration will only work with Internet Explorer as they use TLS 1.1 and below. Versions 7 B04 and higher are compatible with the following browsers:

- Firefox: 31.0 (or later)
- Internet Explorer: 8.0.7601.17514 (or later)
- Opera: 23.0.1522.75 (or later)
- Safari: 7.0.5 (or later)
- Google Chrome:103.0.5060.114 (or later)
- Microsoft Edge:102.0.1245.44 (or later)

To Upgrade the unit's firmware follow these steps:

1. Log into the CLI using the parameters from Section Resetting IP Address to Default Step 1.
2. Enter the command **tftp://(tftp server ip & path)/full file name**
   For example: tftp://192.0.2.100//GLM104-ABAC_v00.00.07B01.dat

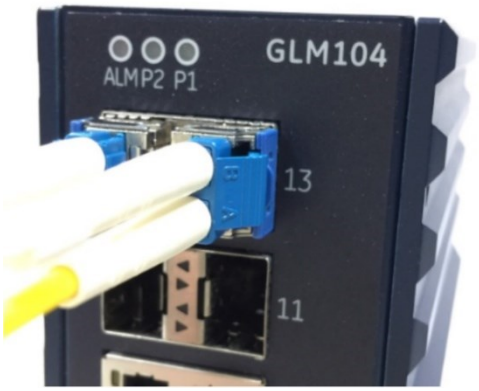
   **Note**: The latest firmware can be found on the found on the IC086GLMxxx Landing Page at https://emerson-mas.force.com/communities/en_US/Article/IC086GLMxxx.

## Connecting SFP Modules to Ethernet Ports

The GLM switches include SFP ports and ethernet ports. The number of SFP ports varies based on the type of GLM switch. The SFP interface provides flexibility in media, connectors, and speed. It is a standard interface and there are many options available on the market. Emerson has fully tested and offers the following SFP interfaces for sale (Figure 14).

**Figure 14: Fiber Optic Cable with LC Duplex Connectors**

**Figure 15: Attach Fiber-Optic Cables to Installed SFP Socket**



Prepare a suitable SFP module and install it into the GLM optical port. Then connect the fiber optic cabling that uses LC connectors (or SC connectors with the use of an optional SC-to-LC adapter) to the fiber optic socket.

**⚠ WARNING**

Never attempt to view optical connectors that might be emitting laser energy.
Do not power up the laser product without first connecting the laser to the optical fiber and properly installing the protective cover.

Laser light, which may cause damage to the eye, will be produced as soon as power is applied to the laser source.

**⚠ WARNING**

When a fiber optic connector is removed during installation, testing, or servicing, or when an energized fiber is broken, there is a risk of injury to the eye. Exposure to optical energy may be hazardous to the eye, depending on the laser output power.

The primary hazards of exposure to laser radiation from an optical-fiber communication system are:

- Damage to the eye by accidental exposure to a beam emitted by a laser source.
- Damage to the eye from viewing a connector attached to a broken fiber or an energized fiber.

# 3.7 LED Operation

| LED | STATE | Description |
|---|---|---|
| P1 | On Green | P1 input power is within the specification |
| | Off | P1 power line is disconnected or supply power is not within the specification |
| P2 | On Green | P2 input power is within the specification |
| | Off | P2 power line is disconnected or supply power is not within the specifications |
| Alarm | On Red | Alarm contact energized |
| | Off | Alarm contact is not energized |
| Copper ports Link/Act | On Green | Ethernet link up but no traffic is detected |
| | Flashing Green | Ethernet link up and there is traffic detected |
| | Off | Ethernet link down |
| Copper ports Speed | On Yellow | A 100 Mbps or a 1000Mbps connection is detected |
| | Off | No link or a 10 Mbps connection is detected |
| SFP port Link/Act | On Green | Ethernet link up |
| | Off | Ethernet link down |
| SFP port Speed | On Yellow | SFP port speed 1000Mbps connection is detected. |
| | Off | No link or an SFP port speed 100Mbps connection is detected |

# 3.8 System Reset

If a GLM switch becomes unresponsive, press the recessed Reset button located on the bottom panel. The reset pushbutton reboots the GLM switch without the need to remove power from that switch. Resetting a switch is normally not required. The Reset button is recessed to avoid accidental use.

**Figure 16: Reset Button Location**

# 3.9 Console Connection

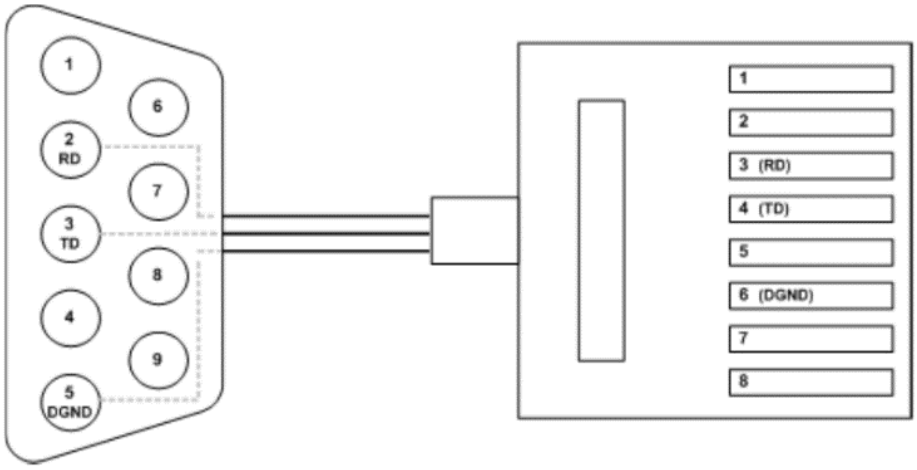
The Console port, located on the bottom panel (Figure 17), is intended for administrative functions, and its use is optional. It uses a terminal emulator or a computer with terminal emulation software, connected as follows:

- DB9 connector connected to computer COM port
- Baud rate: 115,200bps
- 8 data bits, 1 stop bit
- No parity
- No flow control

**Figure 17: Console Port**

To connect the host PC to the Console port, an RJ45 (male) connector-to-RS232 DB9 (female) connector cable is required. The RJ45 connector of the cable is connected to the Console port of the GLM Series; the DB9 connector of the cable is connected to the PC COM port. The wiring for this cable is shown in Figure 18.

**Figure 18: Console Cable Wiring**




**⚠ CAUTION**

Console connections should not be permanent. Once any administrative functions have been performed, disconnect the PC used for that purpose. Leaving a computer connected would expose the application to security risks. Refer to the *PACSystems RXi, RX3ii, and RSTi-EP Controller Secure Deployment Guide,* GFK-2830.

Refer to *Appendix A* Command Language Interface (CLI), for related commands and syntax.

# Section 4 Configuration

Configuration is accomplished using PAC Machine Edition (PME). Each GLM switch has a corresponding GSDML file, which must also be imported.

The GLM switch is always used as a PROFINET I/O device. Using PME, select a suitable PROFINET controller and add a new I/O device to the corresponding PROFINET Network. Alternatively, the PROFINET controller may be an embedded PROFINET controller port in the CPU or a PROFINET Controller module located in the rack controlled by a CPU. Refer to the corresponding CPU manual (GFK-2222) for instructions on how to set up an embedded PROFINET Controller LAN. If setting up a PROFINET controller module or embedded PROFINET controller, consider consulting the *PACSystems RX3i & RSTi-EP PROFINET I/O Controller Manual (*GFK-2571).

If the GLM switch is to be used as an Ethernet Device, using PME, select a suitable Ethernet controller and add a new I/O device to the corresponding Ethernet Network. Alternatively, the controlling Ethernet device may be an embedded Ethernet port in the CPU or an Ethernet module located in a rack controlled by a CPU. For for instructions on how to set up an embedded Ethernet LAN, refer to the corresponding CPU manual (GFK-2222). For instructions on locating an ETM001 in a suitable rack/slot location, then setting up its Ethernet LANs and adding devices to those LANs, refer to the *PACSystems RX3i Ethernet Network Interface Unit User's Manual* (GFK-2349)

## 4.1 Import the GSDML File

Browse to the folder containing the GSDML file, then import it using the Toolchest feature of PME (Figure 19). Alternatively, use the *Have GSDML* button shown in Figure 26, and perform the import as the configuration progresses.

Each GLM switch catalog number has a unique GSDML file associated with it. The witch catalog number is denoted by the four character suffix located at the end of the part number. For example, the catalog number of IC086GLM064-AAAA, would refer to the -AAAA characters.

**Note:** The user will only need to import any given GSDML file once. The file can then be used to define the parameters associated with each GLM switch of the corresponding type added to the networak.

If a newer version of a GSDML file becomes available, it will reside in the Toolchest alongside older versions. The user has the option to change the version of the GSDML file associated with each installed GLM Switch device.

If all GLM switches have been associated with a newer version of the GSDLM file, and the older version of the GSDML file is no longer required, it can be deleted from the Toolchest.

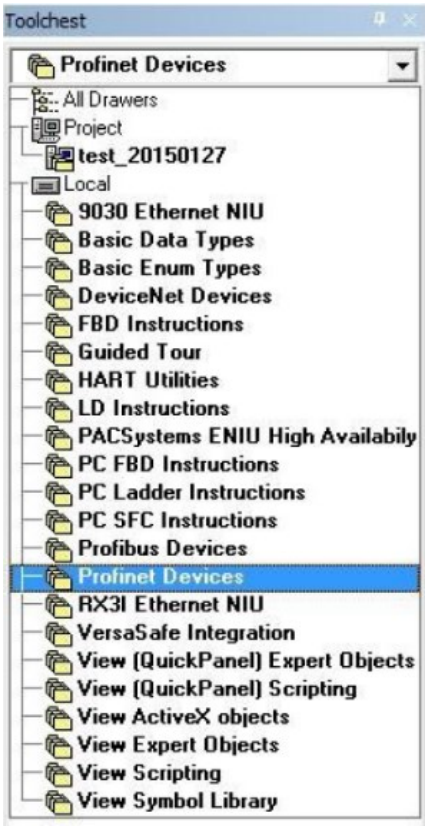
**Figure 19: PME Toolchest Feature**


The Toolchest offers a drop-down list of various data types:

**Figure 20: Toolchest Data Types**

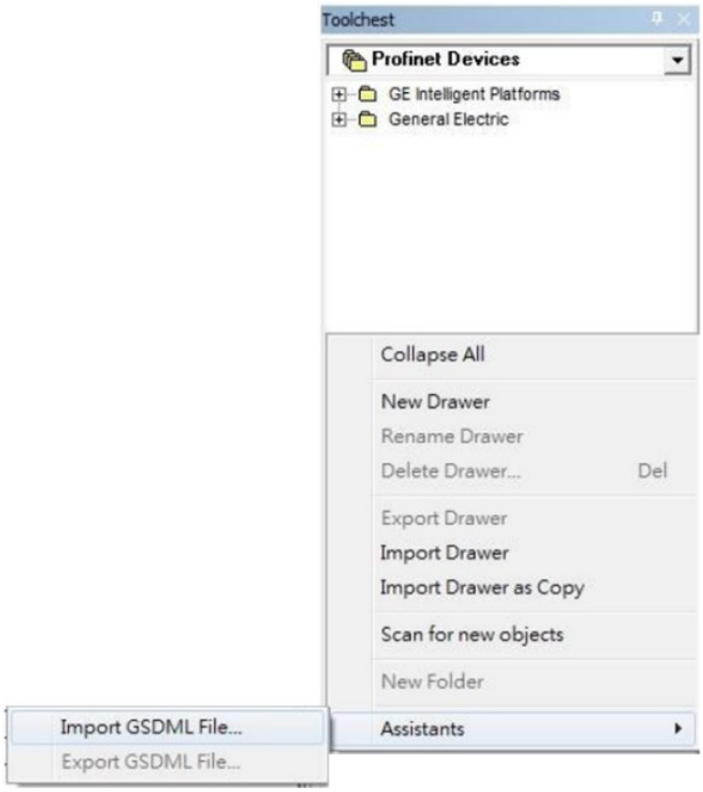
Since the GLM Switch is to be used as a PROFINET Device, select **PROFINET Devices** from the drop-down list (Figure 21).

**Figure 21: Select PROFINET Device**



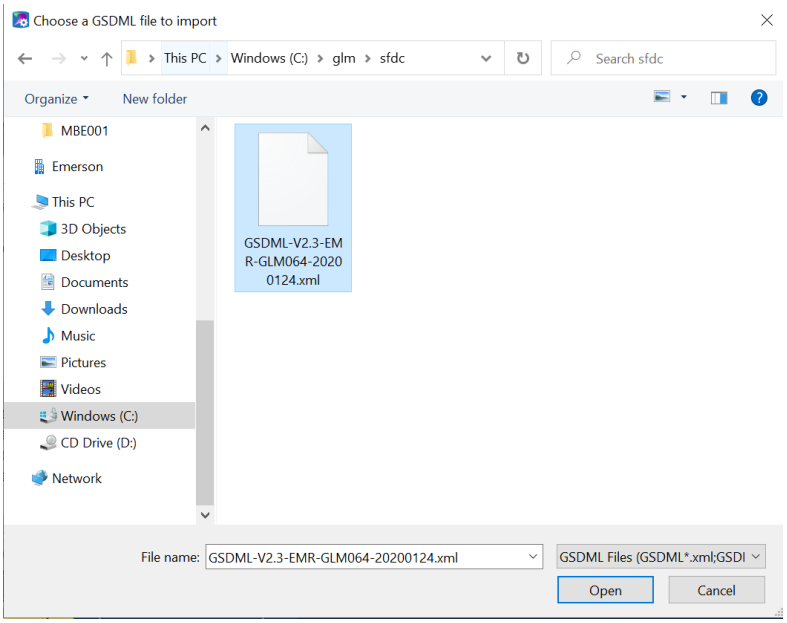
Right-click on the PROFINET Devices line item. At the bottom of the resulting drop-down menu, under **Assistants**, select the **Import GSDML** command.

**Figure 22: Import GSDML Command**



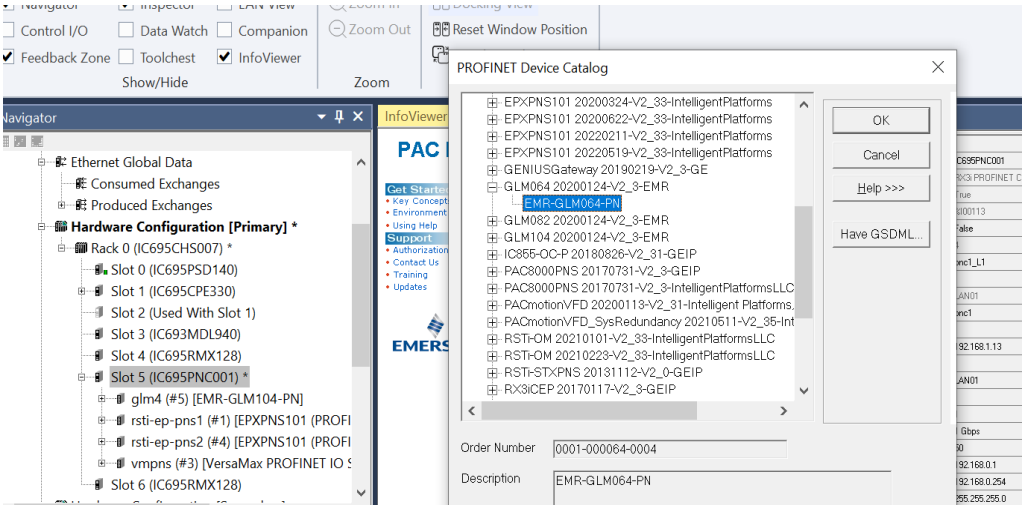
The resulting  dialog box allows you to browse to the desired folder and select the GSDML file.

**Figure 23: Browse to Folder and Select the GSDML file for Import**




The Toolchest now displays the newly-added device:

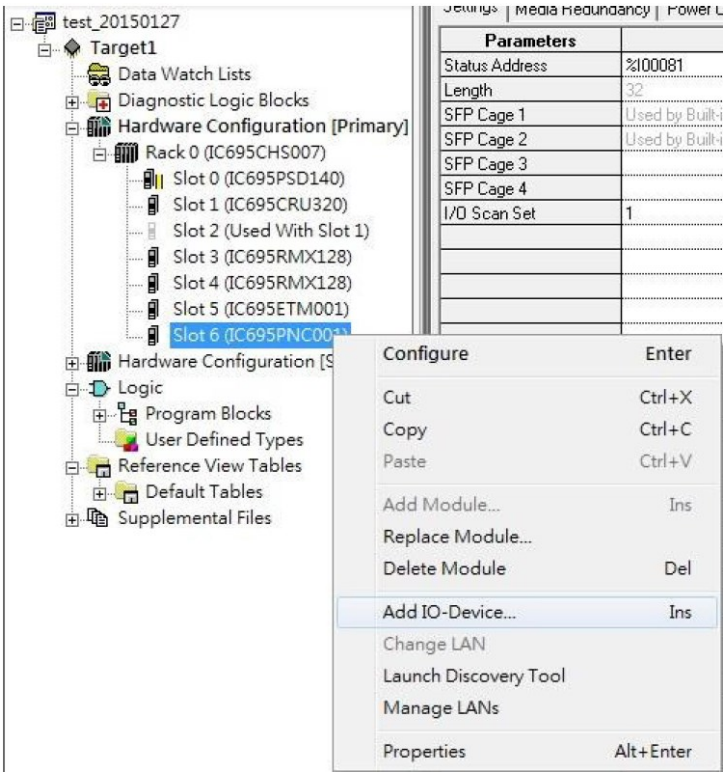
**Figure 24: Toolchest Displays Newly-Added Device**



# 4.2 Associating the I/O device with its Controller

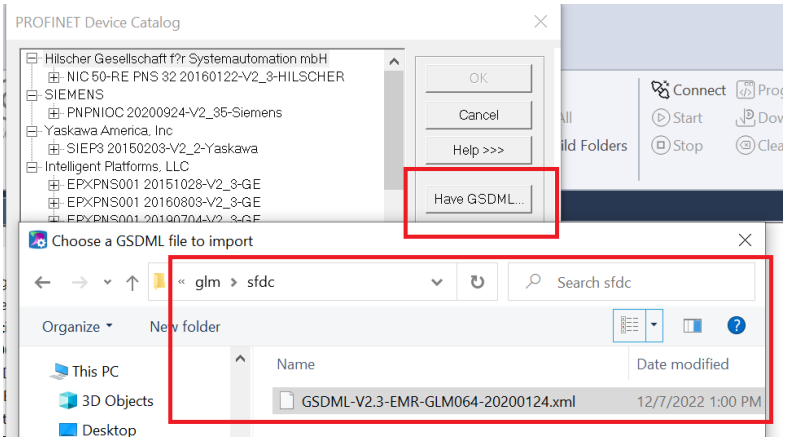
Each GLM Switch device has to be associated with the PROFINET Controller which will be controlling and monitoring it. Figure 25 shows that the PNC001 module located in Slot 6 of Rack 0 (the Main CPU Rack) has been selected. Right-click the PNC001 module on the the menu item and select **Add I/O device**.

**Figure 25: Add I/O device to PROFINET Controller**



Since the device being added is associated with a PROFINET-IO Controller, it will be selected from the catalog of available PROFINET Devices (upper left portion of (Figure 26)

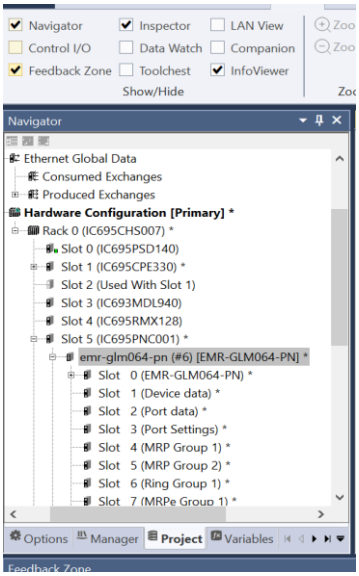
**Figure 26: Select I/O device from PROFINET Device Catalog**




Use the *Have GSDML* button in Figure 26 to select the GSDML file associated with the previously selected GLM catalog number. This interface allows you to browse to the folder in which the GSDML file is located, and select the appropriate file. As in Figure 26, expand the tree using the “+” icons and select the I/O device from the catalog list.

Once selected, the I/O Device will display as having been installed under the previously selected PNC001.

**Figure 27: I/O Device Installed Under PNC001**



Also, note that the constituent parts of the new I/O device are also displayed Figure 27.

The data from the associated slots (shown in Figure 27) is treated as Cyclic I/O Data (RTC) by the PROFINET Controller.

## 4.3 PROFINET Cyclic I/O Data

Cyclic I/O data is the data obtained by the PROFINET controller from each PROFINET I/O device in a cyclic manner. The default transfer frequency of PROFINET cyclic data is 128 ms. The GSDML file supports three possible values: 128 ms, 256 ms, and 512 ms.

PME is used to assign base references to the Cyclic I/O data of each GLM I/O device. Each slot of the GLM I/O device has a **Settings** form, such as that shown in Figure 28. Double-click on the slot to bring up the corresponding form.

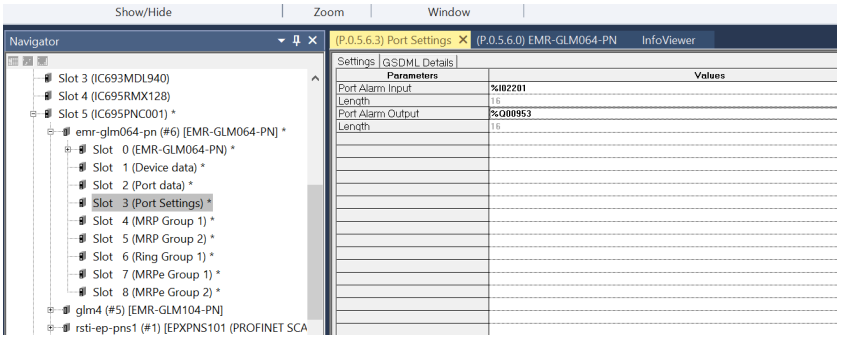
If the Slot has Output values (as defined by the **Direction** column in the following tables), it will require a base reference in %Q. The lowest order bit in the Output table will correspond to the selected %Q reference value, which must be a multiple of 8, plus 1.

If the Slot has Input values (as defined by the Direction column in the following tables), it will require a base reference in %I. The lowest order bit in the Input table will correspond to the selected %I reference value, which must be a multiple of 8, plus 1.

In the case of slot 3, where there are matching input and output settings, Emerson recommends selecting the same %I and %Q references, as this will avoid confusion when debugging and in the project documentation. For instance, if %I00129 is used for the Port Alarm Inputs, then use %Q00129 for the Port Alarm Outputs. Also, note that 16 contiguous %I and %Q references are required to accommodate all the Port Alarm flags (in both %I and %Q). Finally, do not allow any other devices or device slots to overlap the selected %I and %Q settings.

If PME is allowed to automatically assign the next available %I and %Q references, there will likely be no alignment between the %I and %Q bits assigned to any given GLM I/O device. This will work fine but may cause confusion when debugging.

**Figure 28: Assign Starting %I & %Q References for Cyclic I/O Data**




The constituent data content is documented in the following sections:

Slot 1 (of the GLM Switch Device) contains Device Status.

Slot 2 contains Port Status.

Slot 3 contains Port Alarm Settings & Status.

Slot 4 contains MRP Group 1 Status.

Slot 5 contains MRP Group 2 Status.

Slot 6 contains Ring Group 1 Status

Slot 7 contains MRE Group 1 Status

Slot 8 contains MRE Group 2 Status

The Status Flags are discussed in Section 5, Diagnostics.

### 4.3.1 Slot 1: Device Status

| Category | Direction | Byte# | Bit# | Name | Description |
|---|---|---|---|---|---|
| Device Data (Slot 1) | Input | 0 | 0 | Alarm Status | 0=No Alarm (ALM Relay Open), 1=Alarm Detected (ALM Relay Closed) |
| | | | 1 | Power 1 Status | 0=PWR1 not OK, 1=PWR1 OK |
| | | | 2 | Power 2 Status | 0=PWR2 not OK, 1=PWR2 OK |
| | | | 3 | Ring Enabled/Disabled | 0=Disabled, 1=Enabled |
| | | | 4 | Ring Status | 0=Failure, 1=Normal Condition |
| | | | 5 | Module OK Status | 0 is Not OK, 1 is OK |
| | | | 6 | Reserved | |
| | | | 7 | Reserved | |

### 4.3.2 Slot 2: Port Status

| Category | Direction | Byte# | Bit# | Name | Description |
|---|---|---|---|---|---|
| Port Status (Slot 2) | Input | 0 | 0 | Port 1 Connection | 0=Not Connected, 1=Connected |
| | | | 1 | Port 2 Connection | 0=Not Connected, 1=Connected |
| | | | 2 | Port 3 Connection | 0=Not Connected, 1=Connected |
| | | | 3 | Port 4 Connection | 0=Not Connected, 1=Connected |
| | | | 4 | Port 5 Connection | 0=Not Connected, 1=Connected |
| | | | 5 | Port 6 Connection | 0=Not Connected, 1=Connected |
| | | | 6 | Port 7 Connection | 0=Not Connected, 1=Connected |
| | | | 7 | Port 8 Connection | 0=Not Connected, 1=Connected |
| | Input | 1 | 0 | Port 9 Connection | 0=Not Connected, 1=Connected |
| | | | 1 | Port 10 Connection | 0=Not Connected, 1=Connected |
| | | | 2 | Port 11 Connection[1] | 0=Not Connected, 1=Connected |
| | | | 3 | Port 12 Connection[1] | 0=Not Connected, 1=Connected |
| | | | 4 | Port 13 Connection[1] | 0=Not Connected, 1=Connected |
| | | | 5 | Port 14 Connection[1] | 0=Not Connected, 1=Connected |
| | | | 6 | Reserved | |
| | | | 7 | Reserved | |

[1] GLM104 only

### 4.3.3 Slot 3: Port Alarm & Port Settings & Status

| Category | Direction | Byte# | Bit# | Name | Output Description | Input Description |
|---|---|---|---|---|---|---|
| Port Settings (Slot 3) | Input & Output | 0 | 0 | Port 1 Alarm | 0=Alarm Disabled, 1=Alarm Enabled | 0=No Alarm 1=Alarm Condition Detected |
| | | | 1 | Port 2 Alarm | 0=Alarm Disabled, 1=Alarm Enabled | 0=No Alarm 1=Alarm Condition Detected |
| | | | 2 | Port 3 Alarm | 0=Alarm Disabled, 1=Alarm Enabled | 0=No Alarm 1=Alarm Condition Detected |
| | | | 3 | Port 4 Alarm | 0=Alarm Disabled, 1=Alarm Enabled | 0=No Alarm 1=Alarm Condition Detected |
| | | | 4 | Port 5 Alarm | 0=Alarm Disabled, 1=Alarm Enabled | 0=No Alarm 1=Alarm Condition Detected |
| | | | 5 | Port 6 Alarm | 0=Alarm Disabled, 1=Alarm Enabled | 0=No Alarm 1=Alarm Condition Detected |
| | | | 6 | Port 7 Alarm | 0=Alarm Disabled, 1=Alarm Enabled | 0=No Alarm 1=Alarm Condition Detected |
| | | | 7 | Port 8 Alarm | 0=Alarm Disabled, 1=Alarm Enabled | 0=No Alarm 1=Alarm Condition Detected |
| | | 2 | 0 | Port 9 Alarm | 0=Alarm Disabled, 1=Alarm Enabled | 0=No Alarm 1=Alarm Condition Detected |
| | | | 1 | Port 10 Alarm | 0=Alarm Disabled, 1=Alarm Enabled | 0=No Alarm 1=Alarm Condition Detected |
| | | | 2 | Port 11 Alarm[1] | 0=Alarm Disabled, 1=Alarm Enabled | 0=No Alarm 1=Alarm Condition Detected |
| | | | 3 | Port 12 Alarm[1] | 0=Alarm Disabled, 1=Alarm Enabled | 0=No Alarm 1=Alarm Condition Detected |
| | | | 4 | Port 13 Alarm[1] | 0=Alarm Disabled, 1=Alarm Enabled | 0=No Alarm 1=Alarm Condition Detected |
| | | | 5 | Port 14 Alarm[1] | 0=Alarm Disabled, 1=Alarm Enabled | 0=No Alarm 1=Alarm Condition Detected |
| | | | 6 | Reserved | | |
| | | | 7 | Reserved | | |

***Note:*** Bytes 0 and 2 are not contiguous (see next page).

| Category | Direction | Byte# | Bit# | Name | Output Description | Input Description |
|---|---|---|---|---|---|---|
| Port Settings (Slot 3) (continued) | Input & Output | 1 | 0 | Port 1 Admin | 0=Enable Port, 1=Disable Port | 0=Port Enabled 1=Port Disabled |
| | | | 1 | Port 2 Admin | 0=Enable Port, 1=Disable Port | 0=Port Enabled 1=Port Disabled |
| | | | 2 | Port 3 Admin | 0=Enable Port, 1=Disable Port | 0=Port Enabled 1=Port Disabled |
| | | | 3 | Port 4 Admin | 0=Enable Port, 1=Disable Port | 0=Port Enabled 1=Port Disabled |
| | | | 4 | Port 5 Admin | 0=Enable Port, 1=Disable Port | 0=Port Enabled 1=Port Disabled |
| | | | 5 | Port 6 Admin | 0=Enable Port, 1=Disable Port | 0=Port Enabled 1=Port Disabled |
| | | | 6 | Port 7 Admin | 0=Enable Port, 1=Disable Port | 0=Port Enabled 1=Port Disabled |
| | | | 7 | Port 8 Admin | 0=Enable Port, 1=Disable Port | 0=Port Enabled 1=Port Disabled |
| | | 3 | 0 | Port 9 Admin | 0=Enable Port, 1=Disable Port | 0=Port Enabled 1=Port Disabled |
| | | | 1 | Port 10 Admin | 0=Enable Port, 1=Disable Port | 0=Port Enabled 1=Port Disabled |
| | | | 2 | Port 11 Admin[1] | 0=Enable Port, 1=Disable Port | 0=Port Enabled 1=Port Disabled |
| | | | 3 | Port 12 Admin[1] | 0=Enable Port, 1=Disable Port | 0=Port Enabled 1=Port Disabled |
| | | | 4 | Port 13 Admin[1] | 0=Enable Port, 1=Disable Port | 0=Port Enabled 1=Port Disabled |
| | | | 5 | Port 14 Admin[1] | 0=Enable Port, 1=Disable Port | 0=Port Enabled 1=Port Disabled |
| | | | 6 | Reserved | | |
| | | | 7 | Reserved | | |

***Note:*** Bytes 1 and 3 are not contiguous (see the previous page).

## 4.3.4 Slot 4: MRP Group 1 Status

| Category | Direction | Byte# | Bit# | Name | Description |
|---|---|---|---|---|---|
| MRP Group 1 (Slot 4) | Input | 0 | 0 | MRP Group 1 Mode | 0=MRP Disabled<br>1=MRP Enabled |
| | | | 1 | MRP Group 1 Role | 0=MRP Client<br>1=MRP Master |
| | | | 2 | MRP Group1 Ring Status | 0 is Open, 1 is Close |
| MRP Group 1 Ports (Slot 4) | Input | 1 | 0 | Port 1 MRP-G1 Status | 0=Not MRP-G1 Ring Port<br>1=MRP-G1 Ring Port |
| | | | 1 | Port 2 MRP-G1 Status | 0=Not MRP-G1 Ring Port<br>1=MRP-G1 Ring Port |
| | | | 2 | Port 3 MRP-G1 Status | 0=Not MRP-G1 Ring Port<br>1=MRP-G1 Ring Port |
| | | | 3 | Port 4 MRP-G1 Status | 0=Not MRP-G1 Ring Port<br>1=MRP-G1 Ring Port |
| | | | 4 | Port 5 MRP-G1 Status | 0=Not MRP-G1 Ring Port<br>1=MRP-G1 Ring Port |
| | | | 5 | Port 6 MRP-G1 Status | 0=Not MRP-G1 Ring Port<br>1=MRP-G1 Ring Port |
| | | | 6 | Port 7 MRP-G1 Status | 0=Not MRP-G1 Ring Port<br>1=MRP-G1 Ring Port |
| | | | 7 | Port 8 MRP-G1 Status | 0=Not MRP-G1 Ring Port<br>1=MRP-G1 Ring Port |
| | | 2 | 0 | Port 9 MRP-G1 Status | 0=Not MRP-G1 Ring Port<br>1=MRP-G1 Ring Port |
| | | | 1 | Port 10 MRP-G1 Status | 0=Not MRP-G1 Ring Port<br>1=MRP-G1 Ring Port |
| | | | 2 | Port 11 MRP-G1 Status[1] | 0=Not MRP-G1 Ring Port<br>1=MRP-G1 Ring Port |
| | | | 3 | Port 12 MRP-G1 Status[1] | 0=Not MRP-G1 Ring Port<br>1=MRP-G1 Ring Port |
| | | | 4 | Port 13 MRP-G1 Status[1] | 0=Not MRP-G1 Ring Port<br>1=MRP-G1 Ring Port |
| | | | 5 | Port 14 MRP-G1 Status[1] | 0=Not MRP-G1 Ring Port<br>1=MRP-G1 Ring Port |
| | | | 6 | Reserved | |
| | | | 7 | Reserved | |

### 4.3.5 Slot 5: MRP Group 2 Status

| Category | Direction | Byte# | Bit# | Name | Description |
|---|---|---|---|---|---|
| MRP Group 2 (Slot 5) | Input | 0 | 0 | MRP Group 2 Mode | 0=MRP Disabled<br>1=MRP Enabled |
| | | | 1 | MRP Group 2 Role | 0=MRP Client<br>1=MRP Master |
| | | | 2 | MRP Group 2 Ring Status | 0= Open,<br>1=Closed |
| MRP Group 2 Ports (Slot 5) | Input | 1 | 0 | Port 1 MRP-G2 Status | 0=Not MRP-G2 Ring Port<br>1=MRP-G2 Ring Port |
| | | | 1 | Port 2 MRP-G2 Status | 0=Not MRP-G2 Ring Port<br>1=MRP-G2 Ring Port |
| | | | 2 | Port 3 MRP-G2 Status | 0=Not MRP-G2 Ring Port<br>1=MRP-G2 Ring Port |
| | | | 3 | Port 4 MRP-G2 Status | 0=Not MRP-G2 Ring Port<br>1=MRP-G2 Ring Port |
| | | | 4 | Port 5 MRP-G2 Status | 0=Not MRP-G2 Ring Port<br>1=MRP-G2 Ring Port |
| | | | 5 | Port 6 MRP-G2 Status | 0=Not MRP-G2 Ring Port<br>1=MRP-G2 Ring Port |
| | | | 6 | Port 7 MRP-G2 Status | 0=Not MRP-G2 Ring Port<br>1=MRP-G2 Ring Port |
| | | | 7 | Port 8 MRP-G2 Status | 0=Not MRP-G2 Ring Port<br>1=MRP-G2 Ring Port |
| | | 2 | 0 | Port 9 MRP-G2 Status | 0=Not MRP-G2 Ring Port<br>1=MRP-G2 Ring Port |
| | | | 1 | Port 10 MRP-G2 Status | 0=Not MRP-G2 Ring Port<br>1=MRP-G2 Ring Port |
| | | | 2 | Port 11 MRP-G2 Status[1] | 0=Not MRP-G2 Ring Port<br>1=MRP-G2 Ring Port |
| | | | 3 | Port 12 MRP-G2 Status[1] | 0=Not MRP-G2 Ring Port<br>1=MRP-G2 Ring Port |
| | | | 4 | Port 13 MRP-G2 Status[1] | 0=Not MRP-G2 Ring Port<br>1=MRP-G2 Ring Port |
| | | | 5 | Port 14 MRP-G2 Status[1] | 0=Not MRP-G2 Ring Port<br>1=MRP-G2 Ring Port |
| | | | 6 | Reserved | |
| | | | 7 | Reserved | |

### 4.3.6 Slot 6: Ring Group 1 Status

| Category | Direction | Byte# | Bit# | Name | Description |
|---|---|---|---|---|---|
| Ring Group 1 (Slot 6) | Input | 0 | 0 | Ring Group 1 Mode | 0=Ring Disabled<br>1=Ring Enabled |
| | | | 1 | Ring Group 1 Role | 0=Ring Slave<br>1=Ring Master |
| | | | 2 | Ring Status | 0=Failure<br>1=Normal Condition |
| Ring Group 1 Ports (Slot 6) | Input | 1 | 0...3 | Ring Port 1 Number | Port ID numbers (1 thru 14) |
| | | | 4...6 | Reserved | |
| | | | 7 | Port 1 Status | 0=Forwarded, 1=Blocked |
| | | 2 | 0...3 | Ring Port 2 Number | Port ID numbers (1 thru 14) |
| | | | 4...6 | Reserved | |
| | | | 7 | Port 2 Status | 0=Forwarded<br>1=Blocked |

### 4.3.7 Slot 7: MRE Group 1 Status

| Category | Direction | Byte# | Bit# | Name | Description |
|---|---|---|---|---|---|
| MRE Group 1 (Slot 7) | Input | 0 | 0 | MRE Group 1 Mode | 0=Ring Disabled<br>1=Ring Enabled |
| | | | 1 | MRE Group 1 Role | 0=Ring Slave<br>1=Ring Master |
| | | | 2 | Ring Status | 0=Failure<br>1=Normal Condition |
| | | 1 | 0...3 | Ring Port Number | Port ID numbers (1 thru 14) |
| | | | 4...6 | Reserved | |
| | | | 7 | Port Status | 0=Forwarded<br>1=Blocked |

## 4.3.8 Slot 8: MRE Group 2 Status

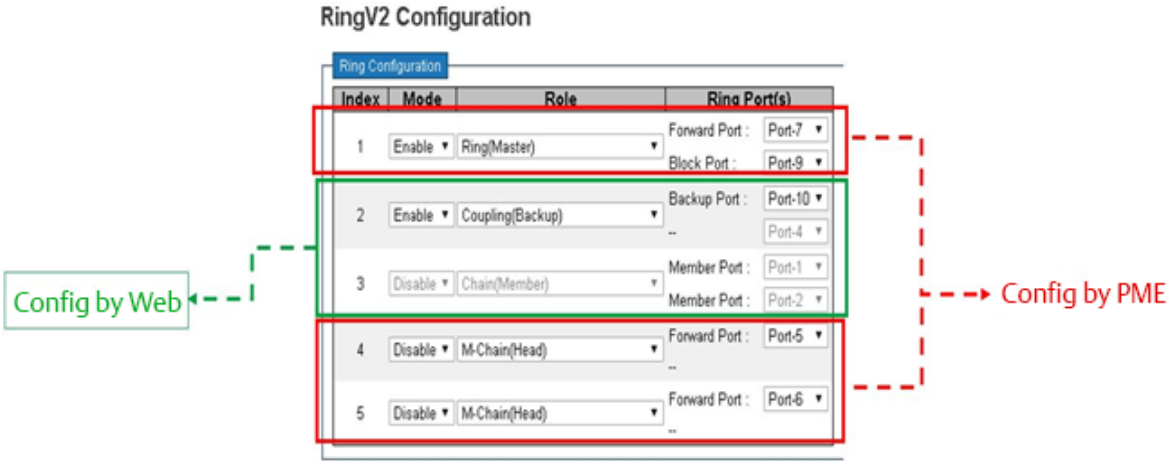
| Category | Direction | Byte# | Bit# | Name | Description |
|---|---|---|---|---|---|
| MRE Group 2 (Slot 8) | Input | 0 | 0 | MRE Group 2 Mode | 0=Ring Disabled<br>1=Ring Enabled |
| | | | 1 | MRE Group 2 Role | 0=Ring Slave<br>1=Ring Master |
| | | | 2 | Ring Status | 0=Failure<br>1=Normal Condition |
| | | 1 | 0...3 | Ring Port Number | Port ID numbers (1 thru 14) |
| | | | 4...6 | Reserved | |
| | | | 7 | Port Status | 0=Forwarded<br>1=Blocked |

**Note**: There are two databases in the switch, one is for a web (runtime) configuration and the other is for a PROFINET configuration. The Ring (index 1), and M-Chain (index 4,5) of the RingV2 configuration are defined by the PME and will be saved to a PROFINET database. The Ring/Coupling (index 2), and Chain (index 3) are configured by a web server interface and will be saved to a web database.

When the ring parameters have to be set through the web configuration only Ring/Coupling (index 2), and Chain (index 3) can be used and when the parameters have to be set via the PME application only Ring (index 1), M-Chain (index 4, 5) can be used.

**Note**: Firmware Version B02 and lower only support the use of the Web Configuartion on Internet Explorer. For instructions on updating the firmware, refer to Section Upgrading Firmware in Section 3.6.2.

**Figure 29: RingV2 Configuration**




# 4.4 PROFINET Acyclic I/O Data

The GLM Switches also support PROFINET acyclic I/O data (RTA). Data of this type has been mapped to the sub-slots as indicated in this section and may be retrieved via the assigned %I references.

## 4.4.1 Acyclic Device Data –Subslot 0

| Byte | Name | Access | Value | Description |
|---|---|---|---|---|
| 0 | Device Status | read-only | 0 | Not supported |
| | | | 1 | Device OK |
| | | | 2 | Device bootup failed |
| 1 | Alarm Status | read-only | 0 | Not supported |
| | | | 1 | No Alarm |
| | | | 2 | Alarm condition detected |
| 2 | Power 1 Status | read-only | 0 | Not supported |
| | | | 1 | PWR1 Input OK |
| | | | 2 | PWR1 Input not OK |
| 3 | Power 2 Status | read-only | 0 | Not supported |
| | | | 1 | PWR2 Input OK |
| | | | 2 | PWR2 Input not OK |
| 4 | Redundant Mode | read-only | 0 | MRP |
| | | | 1 | RSTP/MSTP[2] |
| | | | 2 | Ring/Coupling/Dual Homing/Chain/Balancing Chain[2] |
| | | | 3 | Non-Redundant |
| 5 | | read-only | 0 | Not supported |

[2] This feature is not supported by RX3i CPUs.

| Byte | Name | Access | Value | Description |
|---|---|---|---|---|
| | Ring-1 Mode (config value) | | 1 | Enabled |
| | | | 2 | Disabled |
| 6 | Ring-1 Role | read-only | 0 | Not supported |
| | | | 1 | Ring Master |
| | | | 2 | Ring Slave |
| 7 | Ring-1 State | read-only | 0 | Not supported |
| | | | 1 | Disabled |
| | | | 2 | Normal |
| | | | 3 | Failed |
| 8 | Ring-2 Mode (config value) | read-only | 0 | Not supported |
| | | | 1 | Enabled |
| | | | 2 | Disabled |
| 9 | Ring-2 Role | read-only | 0 | Not supported |
| | | | 1 | Ring Master[2] |
| | | | 2 | Ring Slave[2] |
| | | | 3 | Coupling Primary[2] |
| | | | 4 | Coupling Backup[2] |
| | | | 5 | Dual Homing[2] |
| 10 | Ring-2 State | read-only | 0 | Not supported |
| | | | 1 | Disabled |
| | | | 2 | Normal |
| | | | 3 | Failed |
| 11 | Ring-3 Mode (config value) | read-only | 0 | Not supported |
| | | | 1 | Enabled |
| | | | 2 | Disabled |
| 12 | Ring-3 Role | read-only | 0 | Not supported |
| | | | 1 | Chain Head [2] |
| | | | 2 | Chain Tail [2] |
| | | | 3 | Chain Member [2] |
| | | | 4 | Balancing Chain Terminal 1[2] |
| | | | 5 | Balancing Chain Terminal 2[2] |
| | | | 6 | Balancing Chain Central Block [2] |
| | | | 7 | Balancing Chain Member [2] |
| 13 | Ring-3 State | read-only | 0 | Not supported |
| | | | 1 | Disabled [2] |
| | | | 2 | Normal [2] |
| | | | 3 | Failed [2] |

## 4.4.2 Acyclic Port Data – Subslot 1

| Byte | Name | Access | Value | Output Description | Input Description |
|---|---|---|---|---|---|
| 0 | Port Alarm | read-write | 0 | Do not send an alarm | No Port Alarm |
| | | | 1 | Send alarm when port link down | Port Alarm Detected |
| 1 | Port Setting State | read-write | 0 | Not supported | Not supported |
| | | | 1 | Off | Off |
| | | | 2 | On | On |
| 2 | Port Link State | read-only | 0 | | Not supported |
| | | | 1 | | Link is up |
| | | | 2 | | Link is down |
| 3 | Port Speed | read-only | 0 | | Unavailable (link down) |
| | | | 1 | | 10 Mbps |
| | | | 2 | | 100 Mbps |
| | | | 3 | | 1 Gbps |
| 4 | Port Duplex | read-only | 0 | | Unavailable (link down) |
| | | | 1 | | Half |
| | | | 2 | | Full |
| 5 | Port Auto-negotiation | read-only | 0 | | Unavailable (link down) |
| | | | 1 | | Off |
| | | | 2 | | On |

### 4.4.3 Acyclic MRP Group 1 Data – Subslot 2

| Byte | Name | Access | Value | Output Description | Input Description |
|---|---|---|---|---|---|
| 0 | MRP Mode | read-write | 0 | Disable MRP | MRP Disabled |
| | | | 1 | Enable MRP (Default) | MRP Enabled |
| 1 | MRP Role | read-write | 0 | MRC (Default) | MRC |
| | | | 1 | MRM | MRM |
| 2 | Ring Port1 of MRP | read-write | 0~7 | Assigned Port ID of Ring Port1<br>(0 corresponds to Port 1,<br>7 corresponds to Port 8)<br>0 is the default value. | Port ID |
| 3 | Ring Port2 of MRP | read-write | 0~7 | Assigned Port ID of Ring Port 2<br>(0 corresponds to Port 1,<br>7 corresponds to Port 8)<br>1 is the default value. | Port ID |

### 4.4.4 Acyclic MRP Group 2 Data – Subslot 3

| Byte | Name | Access | Value | Output Description | Input Description |
|---|---|---|---|---|---|
| 0 | MRP Mode | read-write | 0 | Disable MRP (Default) | MRP Disabled |
| | | | 1 | Enable MRP | MRP Enabled |
| 1 | MRP Role | read-write | 0 | MRC (Default) | MRC |
| | | | 1 | MRM | MRM |
| 2 | Ring Port1 of MRP | read-write | 0~7 | Assigned Port ID of Ring Port1<br>(0 corresponds to Port 1,<br>7 corresponds to Port 8)<br>2 is the default value. | Port ID |
| 3 | Ring Port2 of MRP | read-write | 0~7 | Assigned Port ID of Ring Port 2<br>(0 corresponds to Port 1,<br>7 corresponds to Port 8)<br>3 is the default value. | Port ID |

### 4.4.5 Acyclic Ring Group 1 Data – Subslot 4

| Byte | Name | Access | Value | Output Description | Input Description |
|---|---|---|---|---|---|
| 0 | Ring Mode | read-write | 0 | Disable Ring (Default) | Ring Disabled |
| | | | 1 | Enable Ring | Ring Enabled |
| 1 | Ring Role | read-write | 0 | Slave (Default) | Slave |
| | | | 1 | Master | Master |
| 2 | Ring Port1 | read-write | 1~8 | Assigned Port ID of Ring Port1<br>(1 corresponds to Port 1,<br>8 corresponds to Port 8)<br>1 is the default value. | Port ID |
| 3 | Ring Port2 | read-write | 1~8 | Assigned Port ID of Ring Port2<br>(1 corresponds to Port 1,<br>8 corresponds to Port 8)<br>2 is the default value. | Port ID |

### 4.4.6 Acyclic MRPe Group 1 Data – Subslot 5

| Byte | Name | Access | Value | Output Description | Input Description |
|---|---|---|---|---|---|
| 0 | MRPe Mode | read-write | 0 | Disable MRPe (Default) | MRPe Disabled |
| | | | 1 | Enable MRPe | MRPe Enabled |
| 1 | MRPe Role | read-write | 0 | Slave (Default) | Slave |
| | | | 1 | Master | Master |
| 2 | MRPe Port | read-write | 1~8 | Port ID of MRPe port<br>(1 corresponds to Port 1,<br>8 corresponds to Port 8)<br>5 is the default value. | Port ID |

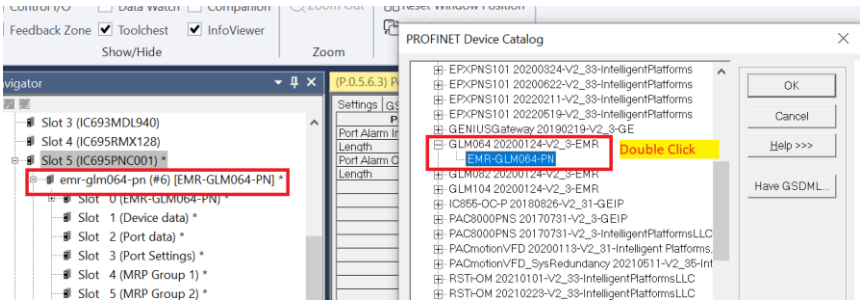
### 4.4.7 Acyclic MRPe Group 2 Data – Subslot 6

| Byte | Name | Access | Value | Output Description | Input Description |
|---|---|---|---|---|---|
| 0 | MRPe Mode | read-write | 0 | Disable MRPe (Default) | MRPe Disabled |
| | | | 1 | Enable MRPe | MRPe Enabled |
| 1 | MRPe Role | read-write | 0 | Slave (Default) | Slave |
| | | | 1 | Master | Master |
| 2 | MRPe Port | read-write | 1~8 | Port ID of MRPe port<br>(1 corresponds to Port 1,<br>8 corresponds to Port 8)<br>6 is the default value. | Port ID |

# 4.5 Assigning Device Name and IP Address

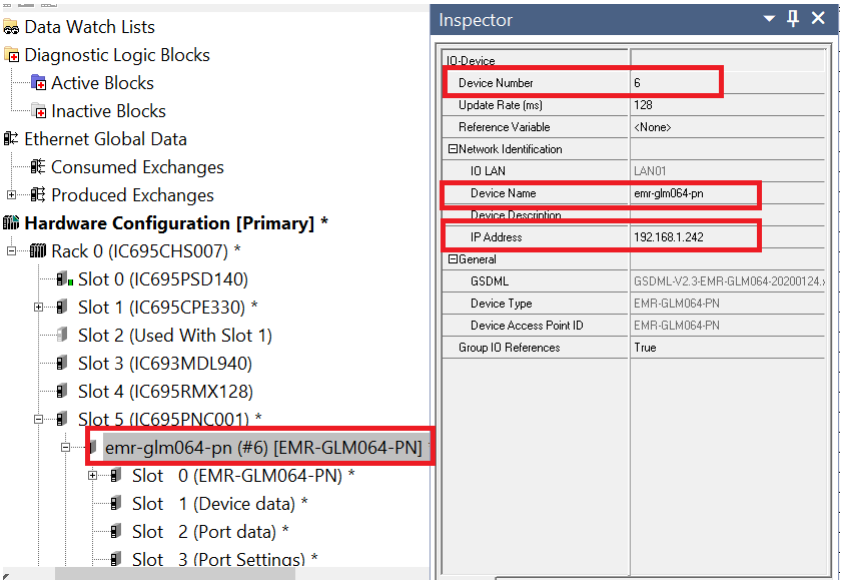
To communicate with the newly-added I/O device, it is necessary to provide it with a unique Device Name and a unique IP Address. This is performed using the Discovery and Configuration Protocol Tool (DCP).

**Figure 30: Properties of I/O Device**




As shown in Figure 30, you will need to drill down to the Properties of the highlighted I/O device. This is done by double-clicking on the I/O device of interest. Doing so produces the **Inspector** form, shown in Figure 31.

**Figure 31: Inspector Form for I/O Device**



Within the Inspector Form:

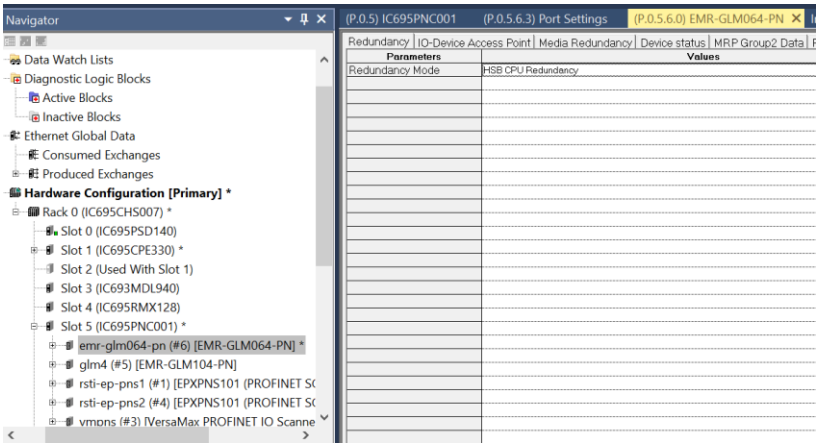
1. Use the **Device Number** field to provide a unique Device Number for this I/O device,
2. Use the **Device Name** field to provide a unique Device Name for this I/O device, and
3. Use the **IP Address** field to provide a unique IP Address.
4. Place the cursor in the corresponding data entry box and key in the desired values.
5. Save the PME project when done.

# 4.6 MRP Settings for I/O devices

Media Redundancy Protocol (MRP) is supported by PACSystems PROFINET Controllers. Refer to the *PACSystems RX3i & RSTi-EP PROFINET I/O Controller Manual,* GFK-2571,

To access the MRP parameters associated with a target I/O device, display the hardware configuration in PME, then double-click on the I/O device of interest (Figure 32).

**Figure 32: Accessing the MRP Parameters of an I/O device**

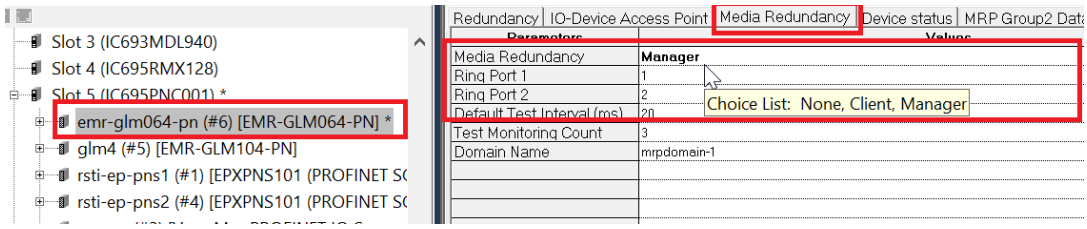



The parameters are displayed in the form at the right (Figure 32).

In the **Media Redundancy** tab (Figure 33), change the **Media Redundancy** field to meet your requirements. The options are **None**, **Client** and **Manager.**

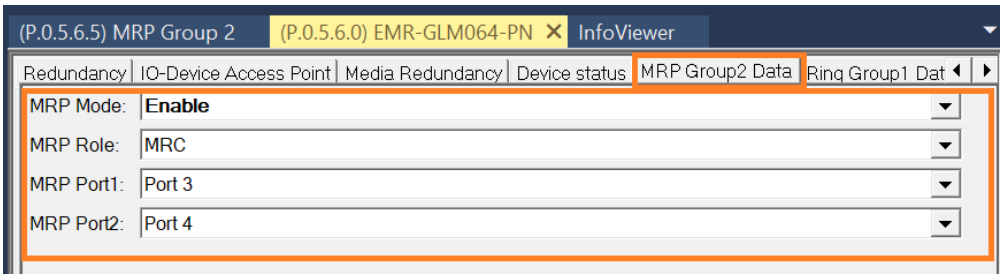
If **Client** or **Manager** is selected, set up or modify the ring ports in the **Media Redundancy** tab (Figure 33).

**Figure 33: Set up MRP Ring Ports**




PME also permits the user to set up dual MRP in a single I/O device. The two MRP implementations are independent and use different ports. To modify the parameters of the second group, select the **MRP Group2 Data** tab.

**Figure 34: MRP Group2 Data Tab**




# 4.7 Download from PME to CPU

Once all the devices have been configured, download the resulting configuration from PME to the host CPU. The CPU will then distribute the configuration elements to its connected devices.

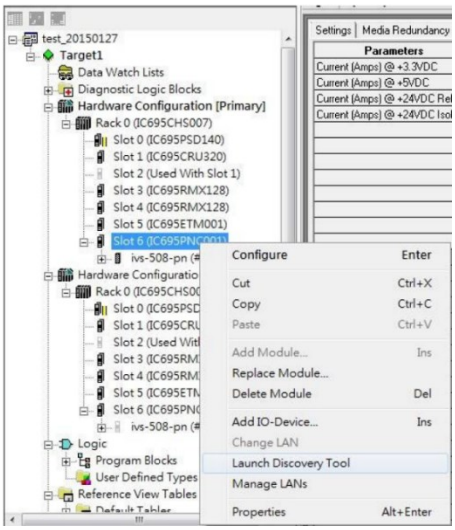
# 4.8 Hot Standby CPU Redundancy Considerations

The Properties of I/O devices need to be synchronized between the Primary and Secondary CPUs in a Hot Standby CPU Redundancy System. To accomplish this, use the Mirror to Secondary Hardware feature. Refer to the PACSystems Hot Standby CPU Redundancy User Manual, GFK-2308.

# 4.9 Discovery Tool

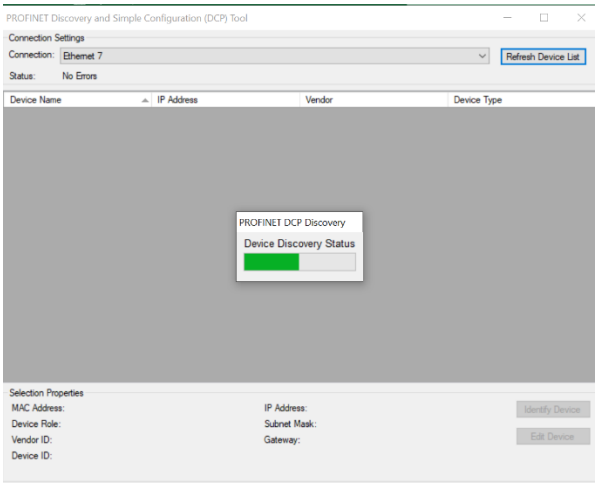
If desired, the operator may use the **Launch Discovery Tool** of PME to automatically detect all connected network devices. This operation may only be performed once all network devices have been interconnected and powered up.

**Figure 35: Launch Discovery Tool**



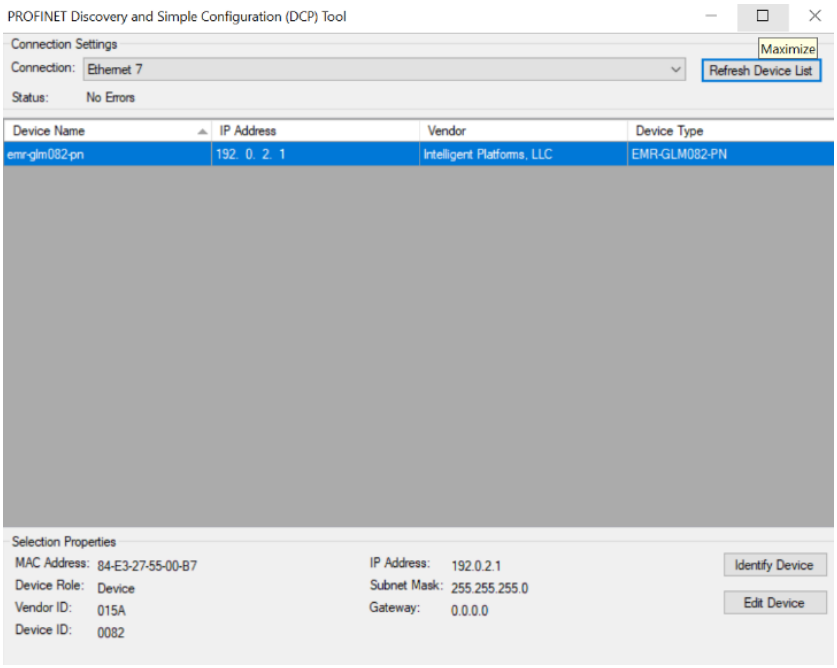

As shown in Figure 35, select the network-controlling device (here the PNC001 in Slot 6 is highlighted). Then right-click and select **Launch Discovery Tool** on the resulting drop-down menu. This initiates a real-time exploration of the connected network.

**Figure 36: Discovery Tool in Progress**



When the Discovery Tool scan completes, a listing of all connected devices is produced, along with status indications.

**Figure 37: Listing of all Detected Devices**




If devices are missing due to incorrect cabling or not having been powered up, correct those situations, then click on the **Refresh Device List** button.

# Section 5 Diagnostics

The GLM Switches support one alarm per port, plus an independent alarm for each power input circuit (PWR1 and PWR2), and an Alarm Status bit that tracks the state of the ALM relay. There are also status bits relating to the MRP setup.

Each of the port alarms (i.e. Slot 3 Settings) may be enabled and disabled, as listed in Section 4.3.3 Slot 3: Port Alarm & Port Settings & Status. These alarms may be enabled/disabled by the PME setup. The PLC logic may also dynamically enable and disable these alarms by manipulating the corresponding %Q reference bit.

For details on bit locations and senses, refer to:

Section 4.3.1 for *Slot 1: Device Status*

Section 4.3.2 for *Slot 2: Port Status*

Section 4.3.3 for Slot 3: Port Alarm & Port Settings & Status

Section 4.3.4 for *Slot 4: MRP Group 1 Status*

Section 4.3.5 for *Slot 5: MRP Group 2 Status*Slot 5: MRP Group 2 Status

Section 4.3.6 for *Slot 6: Ring Group 1 Status*

Section 4.3.7 for *Slot 7: MRE Group 1 Status*

Section 4.3.8 for *Slot 8: MRE Group 2 Status*

All input status bits listed in the above sections may be tested by logic in the PLC CPU.

In addition, there is an Alarm Contact (Normally Open) (Figure 9) which may be wired to an external device. The alarm contacts (marked ALM) are located in the middle of the 6-pin terminal strip on the bottom panel. The Alarm relay closes whenever any of the enabled alarms becomes active. For the corresponding Alarm Status bit, refer to Section 4.3.1 for *Slot 1: Device Status*

The state of the Alarm Relay is indicated on the ALM LED, as documented in Section 3.7, LED Operation.

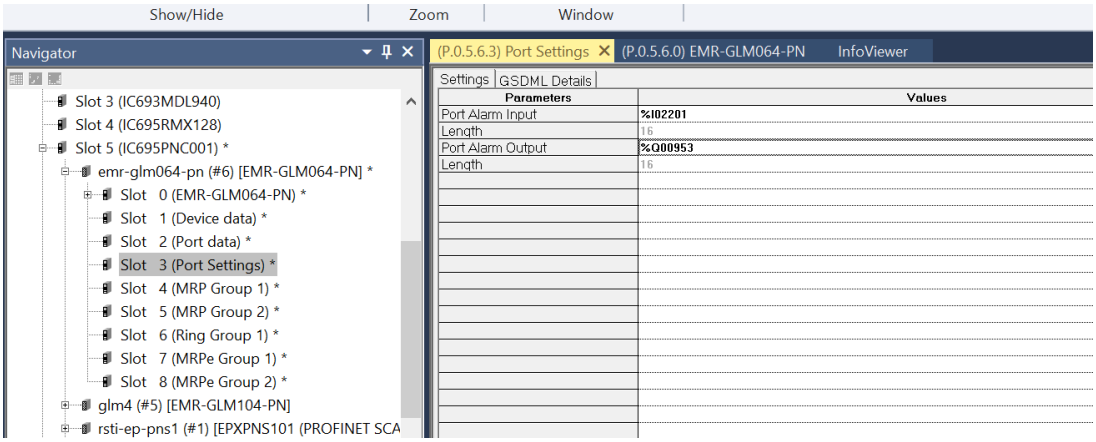
# 5.1 Setting up and Sensing Alarms

Use PME to assign bits in the %Q output table to control whether GLM alarms for a target device will be enabled or disabled. These are shown as the Port Alarm Outputs in Figure 38.

The Alarm Enabled bits are contiguous and must be assigned a starting location in %Q on a byte boundary. Figure 38 uses %Q00001 for simplicity, but this starting location can be any multiple of 8, plus 1. For instance, %Q00401 would be another suitable starting location.

To enable or disable an alarm, refer to Section 4.3.3 for Slot 3: Port Alarm & Port Settings & Status.

**Figure 38: GLM Switch Parameters Set in PME**



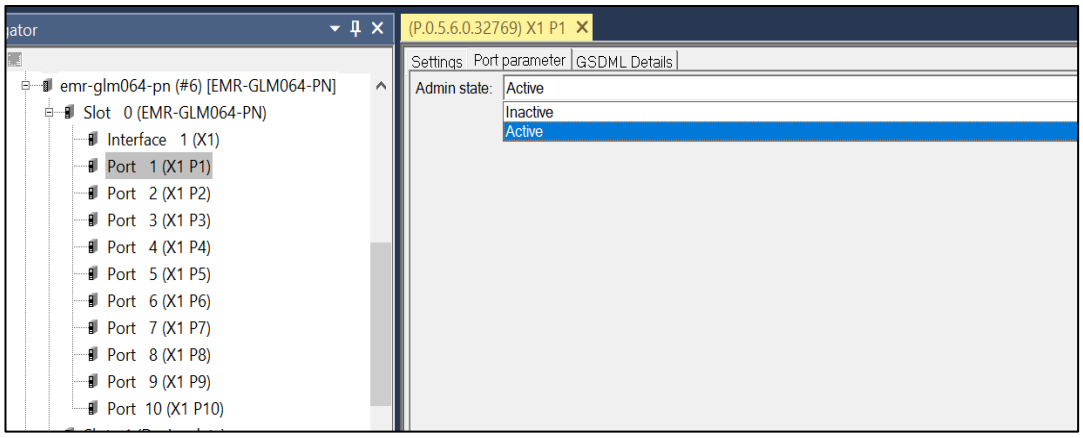

Use PME to assign bits in the %I input table to determine where the PLC may sense the corresponding alarm conditions associated with the target device. These are shown as the Port Alarm Inputs in Figure 38.

The Port Alarm Input bits are contiguous and must be assigned a starting location in %I on a byte boundary. The table above uses %I00129 for simplicity, but this starting location can be any multiple of 8, plus 1. For instance, %I00401 would be another suitable starting location.

When an alarm is present, the corresponding Port Alarm Input bit will register as “1’; when no alarm is present, it will register as **0**. Refer to Section 4.3.3: Slot 3: Port Alarm & Port Settings & Status for details.

The Port Admin Input and Port Admin Output are used by the console function to read the Alarm Input senses and enable/disable the alarms as shown in Figure 39. The starting addresses may be assigned to any available non-conflicting %I and %Q starting references. The corresponding starting location can be any multiple of 8, plus 1.

**Figure 39: Set Port Alarm Active or Inactive Using PME**




## 5.1.1 Power Alarm

As documented in there are two independent power connections, PWR1 and PWR2. In the event one of these is powered up and is capable of energizing the target GLM switch device, it is then possible for that GLM Switch device to sense that the alternate Power Supply Input is within specification, or otherwise. If not, then the corresponding Power Alarm Input is activated.

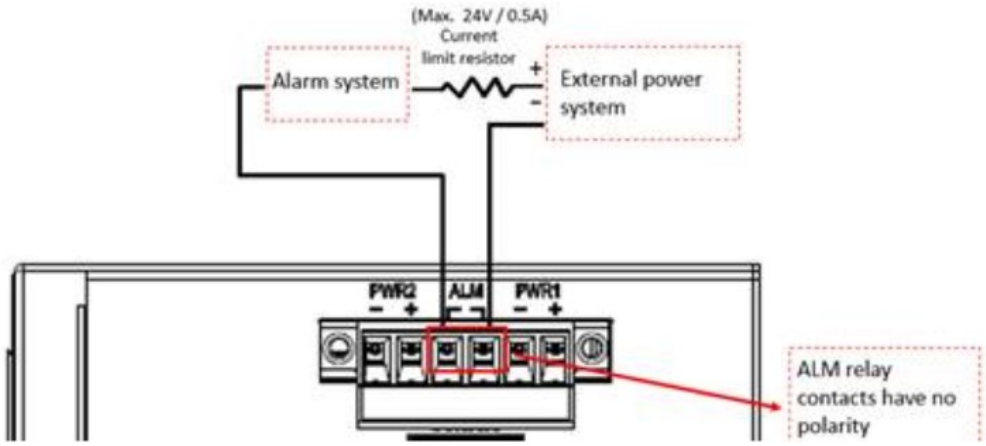
The P1 and P2 LEDs on the front panel indicate the status of the two power supply inputs, PWR1 and PWR2, as shown in Section 3.7, LED Operation. The Power Alarms are always enabled.

The Power Alarm Input bits are located as documented in *Slot 1: Device Status*.

# 5.2 External Alarm Circuit

The two ALM contacts in the 6-pin terminal strip located in the bottom panel may be used to drive an external alarm circuit, as diagrammed in Figure 40. The Alarm Relay is Normally Open and closes in the event of an alarm condition. Within the GLM switch, all alarm conditions that have been enabled are OR'd together. Once any of them becomes active, the Alarm Relay closes.

**Figure 40: External Alarm Circuit**



# Appendix A Command Language Interface (CLI)

Command Language Interface (CLI) is the protocol used by the Console. For security reasons, the use of the Console is discouraged. Information is supplied in this appendix in case the user chooses to use this interface.

## A.1 Operator Interface

Access to the GLM switch is protected by a login security system. You can log on to the switch with the user name and password. After three failed login attempts, the system refuses further attempts.

After you log on, the system monitors the interface for periods of inactivity. If the interface is inactive for too long, you are automatically logged off.

The CLI's initial user name is **admin** without a password. The user should change the password as soon as possible because the initial password is known to anyone who reads this manual. You can also change the user name or add additional user names. Use the “account add” command to enter a new user identification, password, and authorization level.

## A.2 Connection Interface

| Interface | Parameter |
|---|---|
| **Console** | Baud rate: 115200bps,<br>Data bit: 8,<br>Parity: None,<br>Stop bit: 1 |
| **Telnet** | Port 23 |
| **SSH** | Port 22 (In Windows, you can run a terminal emulator such as PuTTY) |

# A.3 Login Screen Description

Connecting to  GLM Switch Ethernet port (RJ45 Ethernet port)

Key in the command under Telnet: telnet 192.0.2.1

Login with the default account and password.

Username: **admin**

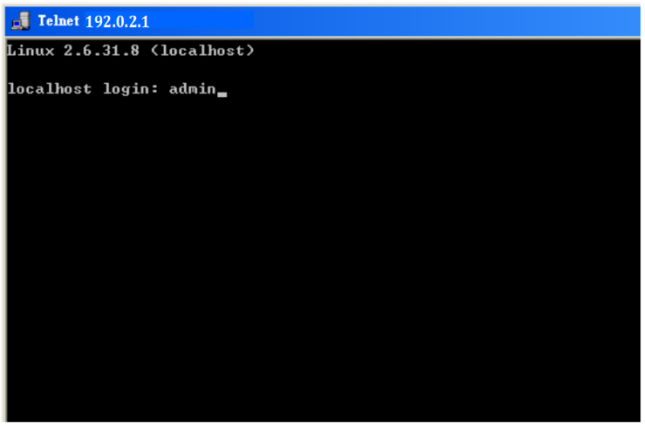
Password: **@admin01**

Set up a unique Username and Password, per the following constraints:

**Figure 41: Login Constraints**

| | |
|---|---|
| Operation | 1. Fill Username and Password<br>2. Click "Sign in" |
| Field | Description |
| Username | Login user name. The maximum length is 32.<br>Default: admin |
| Password | Login user password. The maximum length is 32.<br>Default: @admin01 |

**Figure 42: Telnet Login Screen**



## A.4 Execution Modes

The CLI contains several execution modes. Users will see a different set of commands under different execution modes. The following table lists all the execution modes and their purposes. When users enter a certain execution mode, the corresponding mode prompt will be displayed automatically on the screen. The mode prompts of all the execution modes are also listed below.

| Mode | Access Level | Prompt |
|---|---|---|
| Init Mode | Guest | > |
| Enable Mode | Guest | # |
| Config Mode | Guest | (conf)# |
| Alarm Profile Config Mode | Engineer | (alarm-profile-conf)# |
| Gigabit Interface Config Mode | Engineer | (gigabit-intf-conf)# |
| ACL Profile Config Mode | Engineer | (acl-profile-conf)# |
| scheduler Profile Config Mode | Engineer | (sch-profile-conf)# |
| Vlan Interface Config Mode | Engineer | (vlan-intf-conf)# |
| IGMP MVR Profile Config Mode | Engineer | (igmp-mvr-profile-conf)# |
| IGMP ACL Profile Config Mode | Engineer | (igmp-acl-profile-conf)# |
| RingV2 Group Config Mode | Engineer | (ring)# |
| Trunk Group Config Mode | Engineer | (trunk-group-conf)# |

## A.5 Getting help

The user can get help by entering a question mark '?' at each position in the command. The displayed result depends on the execution mode and previous input.

## A.6 Terminal Key Function

Following is the list of all the terminal keys and their functions.

| Command | Keystroke | Description |
|---|---|---|
| ENTER | CTRL-M | Run a CLI config script |
| TAB | CTRL-I | Tab completion.<br>If the tab is pressed after a non-whitespace character, complete the word before the Tab.<br>If the tab is pressed after a whitespace character, complete the next word. |
| ? | | Display available commands<br>If ? is pressed after a non-whitespace character, show possible choices for this word.<br>If ? is pressed after a whitespace character, show possible choices for the next word. |
| <Up Arrow> | CTRL-P | Up history |
| <Down Arrow> | CTRL-N | Down history |
| Home | CTRL-A | Move the cursor to the beginning of the input line |
| End | CTRL-E | Move the cursor to the end of the input line |
| <Left Arrow> | CTRL-B | Move the cursor backward |
| <Right Arrow> | CTRL-F | Move the cursor forward |
| BACKSPACE | CTRL-H | Erase the character before the cursor |

## A.7 Notation Conventions

The notation conventions for the parameter syntax of each CLI command are as follows:

Parameters enclosed in [ ] are optional.

Parameter values are separated by a vertical bar "|" only when one of the specified values can be used.

Parameter values are enclosed in { } when you must use one of the values specified.

## A.8 Initialize Mode Commands

The commands in this section (except the **enable** command) can be executed under all command modes. These commands are global.

## A.9 Exit

| **Description** | **Exit current mode and quit CLI.** |
|---|---|
| **Syntax** | exit |
| **Parameter** | None |

## A.10 Configure terminal

| **Description** | **Enter configuration mode.** |
|---|---|
| **Syntax** | configure terminal |
| **Parameter** | None |

## A.11 Enable

| **Description** | **Enter enable mode.** |
|---|---|
| **Syntax** | enable |
| **Parameter** | None |

## A.12 Show terminal

| **Description** | **Show CLI environment variables** |
|---|---|
| **Syntax** | show terminal |
| **Parameter** | None |

## A.13 Show history

| Description | Show command history<br>(Note: commands issued in one execution mode only appear in the history of that execution mode) |
|---|---|
| **Syntax** | show history |
| **Parameter** | None |

## A.14 Show clock

| Description | Show current time |
|---|---|
| **Syntax** | show clock [detail] |
| **Parameter** | None |

## A.15 Show clock detail

| Description | Show detailed information |
|---|---|
| **Syntax** | show clock detail |
| **Parameter** | None |

## A.16 Configure terminal

| Description | Enter configuration mode. |
|---|---|
| **Syntax** | configure |
| **Parameter** | None |

## A.17 Disable

| Description | Enter init mode. |
|---|---|
| **Syntax** | disable |
| **Parameter** | None |

## A.18 Show access management

| Description | Access management configuration | |
|---|---|---|
| **Syntax** | show access management [ statistics \| <access_id_list> ] | |
| **Parameter** | **Name** | **Description** |
| | statistics | Statistics data |
| | access_id_list | The ID of access management entry |

# A.19 Show access-list

| Description | Access list | |
|---|---|---|
| Syntax | show access-list [ interface [ ( <port_type> [ <v_port_type_list> ] ) ] ] [ rate-limiter [ <rate_limiter_list> ] ] [ ace statistics [ <ace_list> ] ]<br>show access-list ace-status [ static ] [ link-oam ] [ loop-protect ] [ dhcp ] [ ptp ] [ upnp ] [ arp-inspection ] [ mep ] [ ipmc ] [ ip-source-guard ] [ ip-mgmt ] [ conflicts ] [ switch <switch_list> ] | |
| Parameter | **Name** | **Description** |
| | interface | Select an interface to configure |
| | ace-status | The local ACEs status |
| | port_type | GigabitEthernet,1 Gigabit Ethernet Port |
| | v_port_type_list | PORT_LIST, Port list in 1/1-8 |
| | rate-limiter | Rate limiter |
| | rate_limiter_list | <RateLimiterList : 1~16> Rate limiter ID |
| | ace | Access list entry |
| | statistics | Traffic statistics |
| | ace_list | <AceId : 1~256> ACE ID |
| | static | The ACEs that are configured by users manually |
| | loop-protect | The ACEs that are configured by the Loop Protect module |
| | ipmc | The ACEs that are configured by the IPMC module |
| | IP-source-guard | The ACEs that are configured by the IP Source Guard module |
| | dhcp | The ACEs that are configured by the DHCP module |
| | conflicts | The ACEs that did not get applied to the hardware due to hardware limitations |
| | arp-inspection | The ACEs that are configured by the ARP Inspection module |

# A.20 Show aggregation

| Description | Aggregation | |
|---|---|---|
| Syntax | show aggregation [ mode ] | |
| Parameter | **Name** | **Description** |
| | mode | Traffic distribution mode |

## A.21 Show alarm

| Description | Alarm information | |
|---|---|---|
| Syntax | show alarm { history \| current } | |
| Parameter | Name | Description |
| | current | Show alarm current information |
| | history | Show alarm history information |

## A.22 Show cpu-load

| Description | CPU LOAD |
|---|---|
| Syntax | show cpu-load |
| Parameter | None |

## A.23 Show green-ethernet

| Description | Green Ethernet | |
|---|---|---|
| Syntax | show green-ethernet [ interface ( <port_type> [ <port_list> ] ) ]<br>show green-ethernet eee [ interface ( <port_type> [ <port_list> ] ) ]<br>show green-ethernet energy-detect [ interface ( <port_type> [ <port_list> ] ) ]<br>show green-ethernet short-reach [ interface ( <port_type> [ <port_list> ] ) ] | |
| Parameter | Name | Description |
| | eee | Shows green ethernet EEE status for a specific port or ports |
| | energy-detect | Shows green ethernet energy-detect status for a specific port or ports |
| | short-reach | Shows green ethernet short-reach status for a specific port or ports |
| | interface | Shows green ethernet status for a specific port or ports |
| | port_type | GigabitEthernet, 1 Gigabit Ethernet Port |
| | port_list | <port_type_list> Port list in 1/1-8 |

## A.24 Show IP

| Description | IP information | |
|---|---|---|
| **Syntax** | show IP | |
| **Parameter** | **Name** | **Description** |
| | ARP | Address Resolution Protocol |
| | DHCP | Dynamic Host Configuration Protocol |
| | HTTP | Hypertext Transfer Protocol |
| | IGMP | Internet Group Management Protocol |
| | interface | IP interface status and configuration |
| | name-server | Domain Name System |
| | route | Display the current IP routing table |
| | source | source command |
| | ssh | Secure Shell |
| | statistics | Traffic statistics |
| | verify | verify command |

## A.25 IPMC

| Description | IPMC information | |
|---|---|---|
| **Syntax** | show ipmc profile [ <profile_name> ] [ detail ]<br>show ipmc range [ <entry_name> ] | |
| **Parameter** | **Name** | **Description** |
| | profile | IPMC profile configuration |
| | range | A range of IPv4/IPv6 multicast addresses for the profile |
| | profile_name | <ProfileName: word16> Profile name in 16 chars |
| | detail | Detailed information about a profile |
| | entry_name | <EntryName: word16> Range entry name in 16 chars |

## A.26 Show IPv6

| Description | IPv6 information | |
|---|---|---|
| **Syntax** | show ipv6 | |
| **Parameter** | **Name** | **Description** |
| | interface | Select an interface to configure |
| | mld | Multicast Listener Discovery |
| | neighbor | IPv6 neighbors |
| | route | IPv6 routes |
| | statistics | Traffic statistics |

## A.27 Show LACP

| Description | LACP information | |
|---|---|---|
| Syntax | show lacp { internal \| statistics \| system-id \| neighbour } | |
| Parameter | Name | Description |
| | internal | Internal LACP configuration |
| | neighbour | Neighbour LACP status |
| | statistics | Internal LACP statistics |
| | system-id | LACP system-id |

## A.28 Show line

| Description | Alive line information | |
|---|---|---|
| Syntax | show line [ alive ] | |
| Parameter | Name | Description |
| | alive | Display information about alive lines |

## A.29 Show logging

| Description | Logging information | |
|---|---|---|
| Syntax | show logging <log_id> [ switch <switch_list> ]<br>show logging [ info ] [ warning ] [ error ] [ switch <switch_list> ] | |
| Parameter | Name | Description |
| | log_id | <logging_id: 1-4294967295> Logging ID |
| | error | Error |
| | info | Information |
| | warning | Warning |

## A.30 Show loop-protect

| Description | Loop protect information | |
|---|---|---|
| Syntax | show loop-protect [ interface ( <port_type> [ <plist> ] ) ] | |
| Parameter | Name | Description |
| | interface | Interface status and configuration |
| | port_type | GigabitEthernet, 1 Gigabit Ethernet Port |
| | plist | <port_type_list> Port list in 1/1-8 |

## A.31 Show NTP status

| Description | Show SNTP information. |
|---|---|
| **Syntax** | show sntp |
| **Parameter** | None |

## A.32 Show users

| Description | Show account list. |
|---|---|
| **Syntax** | show account |
| **Parameter** | None |

## A.33 Show running-cfg

| Description | Show running configuration. |
|---|---|
| **Syntax** | show running-cfg |
| **Parameter** | None |

## A.34 Show running-config interface Gigabit

| Description | Show port config | |
|---|---|---|
| **Syntax** | show running-config interface ( <port_type> [ <list> ] ) [ all-defaults ] | |
| **Parameter** | **Name** | **Description** |
| | list | <port_type_list> Port list in 1/1-8 |
| | all-defaults | Include most/all default values |

## A.35 Show running-config interface VLAN

| Description | Show default running configuration. |
|---|---|
| **Syntax** | show running-config interface vlan <vlan_list> [ all-defaults] |
| **Parameter** | None |

## A.36 Show running-config all-defaults

| Description | Show all default setting |
|---|---|
| **Syntax** | show running-config [ all-defaults ] |
| **Parameter** | None |

# A.37 Show running-config feature

| Description | Show running config feature | |
|---|---|---|
| Syntax | show running-config feature <feature_name> [ all-defaults ] | |
| Parameter | Name | Description |
| | feature_name | CWORD<br><br>Valid words are 'GVRP' 'access' 'access-list' 'aggregation' 'alm_profile' 'arp-inspection' 'auth' 'clock' 'dhcp' 'dhcp-snooping' 'dhcp_server' 'dns' 'dot1x' 'green-ethernet' 'http' 'icli' 'ip-igmp-snooping' 'ip-igmp-snooping-port' 'ip-igmp-snooping-vlan' 'ipmc-profile' 'ipmc-profile-range' 'ipv4' 'ipv6' 'ipv6-mld-snooping' 'ipv6-mld-snooping-port' 'ipv6-mld-snooping-vlan' 'lacp' 'lldp' 'logging' 'loop-protect' 'mac' 'monitor' 'mstp' 'mvr' 'mvr-port' 'ntp' 'phy' 'port' 'port-security' 'pvlan' 'qos' 'rmon' 'snmp' 'source-guard' 'ssh' 'tring_g1' 'tring_g2' 'tring_g3' 'user' 'vlan' 'voice-vlan' 'web-privilege-group-level' |
| | all-defaults | Include most/all default values |

# A.38 Show running-config line

| Description | Line information | |
|---|---|---|
| Syntax | show running-config line { console \| vty } <list> [ all-defaults ] | |
| Parameter | Name | Description |
| | console | Console |
| | vty | BY |
| | list | <range_list> List of console/VTYs |
| | all-defaults | Include most/all default values |

# A.39 Show running-config VLAN

| Description | VLAN information | |
|---|---|---|
| Syntax | show running-config vlan <list> [ all-defaults ] | |
| Parameter | Name | Description |
| | list | <vlan_list> List of VLAN numbers |
| | all-defaults | Include most/all default values |

## A.40 Show version

| Description | Show firmware hardware and software status update status. |
|---|---|
| **Syntax** | show version |
| **Parameter** | None |

## A.41 Show clock

| Description | Show current time. |
|---|---|
| **Syntax** | Show clock |
| **Parameter** | None |

## A.42 Show version

| Description | Show version information. |
|---|---|
| **Syntax** | show version |
| **Parameter** | None |

## A.43 Show system inventory

| Description | Show system inventory. |
|---|---|
| **Syntax** | show system inventory |
| **Parameter** | None |

## A.44 Show mac address table aging-time

| Description | Show aging time for MAC learning table (system-wide). |
|---|---|
| **Syntax** | show aging time |
| **Parameter** | None |

## A.45 Show mac address table

| Description | Show MAC learning table. |
|---|---|
| **Syntax** | show mac address-table [ conf \| static \| aging-time \| { { learning \| count } [ interface <port_type> [ <port_type_list> ] ] } \| { address <mac_addr> [ vlan <vlan_id> ] } \| vlan <vlan_id> \| interface <port_type> [ <port_type_list> ] ] |
| **Parameter** | None |

## A.46 Show mac address table conf

| Description | The user added static mac addresses |
|---|---|
| **Syntax** | show mac address-table [ conf \| static \| aging-time \| { { learning \| count } [ interface ( <port_type> [ <v_port_type_list> ] ) ] } \| { address <v_mac_addr> [ vlan <v_vlan_id> ] } \| vlan <v_vlan_id_1> \| interface ( <port_type> [ <v_port_type_list_1> ] ) ] |
| **Parameter** | None |

## A.47 Show mac address table count

| Description | Total number of mac addresses | |
|---|---|---|
| **Syntax** | show mac address-table [ conf \| static \| aging-time \| { { learning \| count } [ interface ( <port_type> [ <v_port_type_list> ] ) ] } \| { address <v_mac_addr> [ vlan <v_vlan_id> ] } \| vlan <v_vlan_id_1> \| interface ( <port_type> [ <v_port_type_list_1> ] ) ] | |
| **Parameter** | **Name** | **Description** |
| | None | None |

## A.48 Show mac address table learning

| Description | Learn/disable/secure stat | |
|---|---|---|
| **Syntax** | show mac address-table [ conf \| static \| aging-time \| { { learning \| count } [ interface ( <port_type> [ <v_port_type_list> ] ) ] } \| { address <v_mac_addr> [ vlan <v_vlan_id> ] } \| vlan <v_vlan_id_1> \| interface ( <port_type> [ <v_port_type_list_1> ] ) ] | |
| **Parameter** | **Name** | **Description** |
| | None | None |

## A.49 Show mac address table static

| Description | All static mac addresses |
|---|---|
| **Syntax** | show mac address-table [ conf \| static \| aging-time \| { { learning \| count } [ interface ( <port_type> [ <v_port_type_list> ] ) ] } \| { address <v_mac_addr> [ vlan <v_vlan_id> ] } \| vlan <v_vlan_id_1> \| interface ( <port_type> [ <v_port_type_list_1> ] ) ] |

# A.50 Show mac address table interface

| Description | Show MAC learning table per port. | |
|---|---|---|
| Syntax | show mac address-table [ interface <port_type> [ <port_type_list> ] ] | |
| Parameter | **Name** | **Description** |
| | <portNo> | **Valid values**: 1 ~10(GIE5010) or 1~8(GIE5008)<br>**Type**: Mandatory |

# A.51 Show mac address vlan <vlanid>

| Description | Show MAC learning table per VLAN index. | |
|---|---|---|
| Syntax | show mac address-table { learning \| count } vlan <vlan_id> | |
| Parameter | **Name** | **Description** |
| | <vlanid> | Valid values: 1~4094<br>**Type**: Mandatory |

# A.52 Show mvr

| Description | MVR information | |
|---|---|---|
| Syntax | show mvr [ vlan <v_vlan_list> \| name <mvr_name> ] [ group-database [ interface ( <port_type> [ <v_port_type_list> ] ) ] [ sfm-information ] ] [ detail ] | |
| Parameter | **Name** | **Description** |
| | vlan | Search by VLAN |
| | v_vlan_list | <vlan_list> MVR multicast VLAN list |
| | name | Search by MVR name |
| | mvr_name | <MvrName : word16> MVR multicast VLAN name |
| | group-database | Multicast group database from MVR |
| | interface | Search by port |
| | port_type | GigabitEthernet, 1 Gigabit Ethernet Port |
| | v_port_type_list | PORT_LIST, Port list in 1/1-8 |
| | sfm-information | Including source filter multicast information from MVR |
| | detail | Detail information/statistics of MVR group database |

## A.53 Show fdb static table

| Description | Show static MAC forwarding table. |
|---|---|
| Syntax | show mac address-table static |
| Parameter | None |

## A.54 Show fdbstatic interface gigabit <portNo>

| Description | Show static MAC forwarding table per gigabit port. | |
|---|---|---|
| Syntax | Show mac address-table { learning \| count } [ interface <port_type> [ <port_type_list> ] ] | |
| Parameter | **Name** | **Description** |
| | <port_type> | Port type in Fast, Giga, or Tengiga ethernet |
| | <portNo> | Valid values: 1 ~ 10<br>**Type**: Mandatory |

## A.55 Show fdbstatic vlan <vlanid>

| Description | Show static MAC forwarding table per VLAN index. | |
|---|---|---|
| Syntax | show mac address-table { learning \| count } vlan <vlanid> | |
| Parameter | **Name** | **Description** |
| | <vlanid> | Valid values: 1~4094<br>**Type**: Mandatory |

## A.56 Show interface port < port_type_list >

| Description | Show interface information per \port. | |
|---|---|---|
| Syntax | show interface <port_type> [ <port_type_list> ] status | |
| Parameter | **Name** | **Description** |
| | <port_type> | Port type in Fast, Giga, or Tengiga ethernet |
| | <portNo> | **Valid values**: 1 ~ 10<br>**Type**: Mandatory |

## A.57 show interface port <portNo> statistics

| Description | Show Ethernet counter per gigabit port. | |
|---|---|---|
| **Syntax** | show interface <port_type> [ <port_type_list> ] statistics | |
| **Parameter** | **Name** | **Description** |
| | <port_type> | Port type in Fast, Giga, or Tengiga ethernet |
| | <portNo> | **Valid values**: 1 ~ 10<br>**Type**: Mandatory |
| | counter | Show Gigabit Ethernet counter. |

## A.58 show platform phy

| Description | PHYs' information | |
|---|---|---|
| **Syntax** | show platform phy [ interface ( <port_type> [ <v_port_type_list> ] ) ]<br>show platform phy id [ interface ( <port_type> [ <v_port_type_list> ] ) ]<br>show platform phy instance<br>show platform phy status [ interface ( <port_type> [ <v_port_type_list> ] ) ] | |
| **Parameter** | **Name** | **Description** |
| | id | ID |
| | instance | PHY Instance Information |
| | status | Status |
| | interface | Interface |
| | port_type | GigabitEthernet, 1 Gigabit Ethernet Port |
| | v_port_type_list | PORT_LIST, Port list in 1/1-8 |

## A.59 Show port-security

| Description | Port security | |
|---|---|---|
| **Syntax** | show port-security | |
| **Parameter** | **Name** | **Description** |
| | port | Show MAC Addresses learned by Port Security |
| | switch | Show Port Security status |
| | interface | Interface |
| | port_type | GigabitEthernet, 1 Gigabit Ethernet Port |
| | v_port_type_list | PORT_LIST, Port list in 1/1-8 |

# A.60 Show profile alarm

| Description | Profile alarm |
|---|---|
| **Syntax** | show profile alarm |
| **Parameter** | None |

# A.61 Show sflow

| Description | Sflow information | |
|---|---|---|
| **Syntax** | show sflow<br>show sflow statistics { receiver [ <rcvr_idx_list> ] \| samplers [ interface [ <samplers_list> ] ( <port_type> [ <v_port_type_list> ] ) ] } | |
| **Parameter** | **Name** | **Description** |
| | receiver | Show statistics for receiver |
| | samplers | Show statistics for samplers |
| | interface | Interface |
| | port_type | GigabitEthernet, 1 Gigabit Ethernet Port |
| | v_port_type_list | <port_type_list> Port list in 1/1-8 |

# A.62 Show snmp

| Description | SNMP information | |
|---|---|---|
| Syntax | show snmp<br>show snmp access [ <group_name> { v1 \| v2c \| v3 \| any } { auth \| noauth \| priv } ]<br>show snmp community v3 [ <community> ]<br>show snmp host [ <conf_name> ] [ system ] [ switch ] [ interface ] [ aaa ]<br>show snmp mib context<br>show snmp mib ifmib ifIndex<br>show snmp security-to-group [ { v1 \| v2c \| v3 } <security_name> ]<br>show snmp user [ <username> <engineID> ]<br>show snmp view [ <view_name> <oid_subtree> ] | |
| Parameter | **Name** | **Description** |
| | access | access configuration |
| | group_name | <GroupName : word32> group name |
| | any | any security model |
| | v1 | v1 security model |
| | v2c | v2c security model |
| | v3 | v3 security model |
| | auth | authNoPriv Security Level |
| | noauth | noAuthNoPriv Security Level |
| | priv | authPriv Security Level |
| | community | Community |
| | community | <Community : word127> Specify community name |
| | host | Set SNMP host's configurations |
| | conf_name | <ConfName : word32> Name of the host configuration |
| | aaa | AAA event group |
| | interface | Interface event group |
| | switch | Switch event group |
| | system | System event group |
| | mib | MIB(Management Information Base) |
| | context | MIB context |
| | ifmib | IF-MIB |
| | ifIndex | The IfIndex that is defined in IF-MIB |
| | security-to-group | security-to-group configuration |
| | security_name | <SecurityName : word32> security group name |
| | user | User |
| | username | <Username : word32> Security user name |
| | engineID | <Engiedid : word10-32> Security Engine ID |
| | view | MIB view configuration |
| | view_name | <ViewName : word32> MIB view name |
| | oid_subtree | <OidSubtree : word255> MIB view OID |

## A.63 Show spanning-tree

| Description | System Wide Spanning Tree Setting/Status. | |
|---|---|---|
| Syntax | show spanning-tree [ summary \| active \| { interface ( <port_type> [ <v_port_type_list> ] ) } \| { detailed [ interface ( <port_type> [ <v_port_type_list_1> ] ) ] } \| { mst [ configuration \| { <instance> [ interface ( <port_type> [ <v_port_type_list_2> ] ) ] } ] } ] | |
| Parameter | **Name** | **Description** |
| | active | STP active interfaces |
| | detailed | STP statistics |
| | interface | Choose port |
| | MST | Configuration |
| | summary | STP summary |

## A.64 Show switchport forbidden

| Description | Lookup VLAN Forbidden port entry | |
|---|---|---|
| Syntax | show switchport forbidden [ { vlan <vid> } \| { name <name> } ] | |
| Parameter | **Name** | **Description** |
| | VLAN | Show forbidden access for specific VLAN id |
| | vid | VLAN id |
| | name | Show forbidden access for specific VLAN name |
| | name | VLAN name |

## A.65 Show VLAN

| Description | Show bridge port memberset/status. |
|---|---|
| Syntax | show VLAN |
| Parameter | None |

## A.66 Show vlan ID

| Description | Show bridge port member set/status per VLAN index (1~4094). | |
|---|---|---|
| Syntax | show vlan id <vlanid> | |
| Parameter | **Name** | **Description** |
| | <vlanid> | Valid values: 1~4094<br>**Type**: Mandatory. |

# A.67 Show vlan name

| **Description** | **Show bridge port member set/status per VLAN name ( 32 words ).** | |
|---|---|---|
| **Syntax** | show vlan name <vword32> | |
| **Parameter** | **Name** | **Description** |
| | < vword32> | Valid values: 32 words<br>**Type**: Mandatory. |

# A.68 Show vlan brief

| **Description** | **VLAN summary information** | |
|---|---|---|
| **Syntax** | show vlan [ id <vlan_list> \| name <name> \| brief ] | |
| **Parameter** | **Name** | **Description** |
| | id | VLAN status by VLAN id |
| | vlan_list | <vlan_list> VLAN IDs 1-4095 |
| | name | VLAN status by VLAN name |
| | name | <vword32> A VLAN name |
| | brief | VLAN summary information |

# A.69 Show vlan ip-subnet

| **Description** | **Show VLAN ip-subnet entries** | |
|---|---|---|
| **Syntax** | show vlan ip-subnet [ id <subnet_id> ] | |
| **Parameter** | **Name** | **Description** |
| | id | Show a specific ip-subnet entry |
| | subnet_id | <1-128> The specific ip-subnet to show |

# A.70 Show vlan mac

| **Description** | **Show VLAN MAC entries** | |
|---|---|---|
| **Syntax** | show vlan mac [ address <mac_addr> ] | |
| **Parameter** | **Name** | **Description** |
| | address | Show a specific MAC entry |
| | mac_addr | <mac_ucast> The specific MAC entry to show |

# A.71 Show vlan protocol

| Description | Protocol-based VLAN status | |
|---|---|---|
| **Syntax** | show vlan protocol [ eth2 { <etype> \| arp \| ip \| ipx \| at } ] [ snap { <oui> \| rfc-1042 \| snap-8021h } <pid> ] [ llc <dsap> <ssap> ] | |
| **Parameter** | **Name** | **Description** |
| | eth2 | Ethernet protocol-based VLAN status |
| | etype | 0x600-0xffff> Ether Type(Range: 0x600 - 0xFFFF) |
| | arp | Ether Type is ARP |
| | ip | Ether Type is IP |
| | ipx | Ether Type is IPX |
| | at | Ether Type is AppleTalk |
| | llc | LLC-based VLAN status |
| | dsap | <0x0-0xff> DSAP (Range: 0x00 - 0xFF) |
| | ssap | <0x0-0xff> SSAP (Range: 0x00 - 0xFF) |
| | snap | SNAP-based VLAN status |
| | oui | <0x0-0xffffff> SNAP OUI (Range 0x000000 - 0XFFFFFF) |
| | rfc-1042 | SNAP OUI is rfc-1042 |
| | snap-8021h | SNAP OUI is 8021h |

# A.72 Show vlan status

| Description | Show the VLANs configured for each interface | |
|---|---|---|
| **Syntax** | show vlan status [ interface ( <port_type> [ <plist> ] ) ] [ combined \| admin \| nas \| mvr \| voice-vlan \| mstp \| erps \| vcl \| evc \| gvrp \| all \| conflicts ] | |
| **Parameter** | **Name** | **Description** |
| | admin | Show the VLANs configured by administrator |
| | all | Show all VLANs configured |
| | combined | Show the VLANs configured by a combination |
| | conflicts | Show VLANs configurations that have conflicts |
| | gvrp | Show the VLANs configured by GVRP |
| | interface | Show the VLANs configured for a specific interface(s) |
| | mstp | Show the VLANs configured by MSTP. |
| | mvr | Show the VLANs configured by MVR |
| | nas | Show the VLANs configured by NAS |
| | vcl | Show the VLANs configured by VCL |
| | voice-vlan | Show the VLANs configured by Voice VLAN |

## A.73 Show qos-queue-mapping

| Description | Show CoS queue mapping table. |
|---|---|
| Syntax | show qos maps |
| Parameter | None |

## A.74 Show interface ports <portNo> priority

| Description | Show QoS per gigabit port. | |
|---|---|---|
| Syntax | show interface <port_type> [ <port_type_list> ] statistics { priority [ <0~7> ] } | |
| Parameter | **Name** | **Description** |
| | priority [ <0~7> ] | Valid values:0 ~7<br>**Type**: Mandatory |
| | <port_type> | Port type in Fast, Giga, or Tengiga ethernet |
| | <portNo> | Valid values:0 ~ 10<br>**Type**: Mandatory |

## A.75 Show qos

| Description | Show scheduler profile table. |
|---|---|
| Syntax | show queue-scheduler profile |
| Parameter | None |

## A.76 Show queue-shaper

| Description | Show queue shaper information. |
|---|---|
| Syntax | show queue-shaper |
| Parameter | None |

## A.77 Show port-shaper

| Description | Show port shaper information. |
|---|---|
| Syntax | show port-shaper |
| Parameter | None |

## A.78 Show pvlan [ <pvlan_list> ]

| Description | PVLAN ID | |
|---|---|---|
| Syntax | show pvlan [ <pvlan_list> ] | |
| Parameter | Name | Description |
| | pvlan_list | PVLAN ID to show the configuration for |

## A.79 Show pvlan isolation [ interface <port_type> [ <port_type_list>]]

| Description | Show all port isolation information. | |
|---|---|---|
| Syntax | show pvlan isolation [ interface <port_type> [ <port_type_list> ] ] | |
| Parameter | Name | Description |
| | <port_type> | Port type in Fast, Giga or Tengiga ethernet |
| | <portNo> | Valid values: 1 ~ 10<br>**Type**: Mandatory |

## A.80 Show interface gigabit <portNo> port-isolation

| Description | Show isolation information per gigabit port. | |
|---|---|---|
| Syntax | show pvlan isolation [ interface <port_type> [ <port_type_list> ] ] | |
| Parameter | Name | Description |
| | <portNo> | Valid values: 1 ~ 10<br>**Type**: Mandatory |

## A.81 Show interface gigabit <portNo> storm-control

| Description | Show storm control information per gigabit port. | |
|---|---|---|
| Syntax | show interface gigabit <portNo> storm-control | |
| Parameter | Name | Description |
| | <port_type> | Port type in Fast, Giga or Tengiga ethernet |
| | <portNo> | Valid values: 1~10<br>**Type**: Mandatory |

# A.82 Show qos interface

| Description | QoS interface information | |
|---|---|---|
| Syntax | show qos [ { interface [ ( <port_type> [ <port> ] ) ] } | |
| Parameter | Name | Description |
| | interface | Interface |
| | port_type | GigabitEthernet, 1 Gigabit Ethernet Port |
| | port | PORT_LIST, Port list in 1/1-8 |

# A.83 Show qos maps

| Description | MAPS | |
|---|---|---|
| Syntax | show qos maps { maps [ dscp-cos ] [ dscp-ingress-translation ] [ dscp-classify ] [ cos-dscp ] [ dscp-egress-translation ] } | |
| Parameter | Name | Description |
| | cos-dscp | Map for cos to dscp |
| | dscp-classify | Map for dscp classify enable |
| | dscp-cos | Map for dscp to cos |
| | dscp-egress-translation | Map for dscp egress translation |
| | dscp-ingress-translation | Map for dscp ingress translation |

# A.84 Show qos qce

| Description | QCE | |
|---|---|---|
| Syntax | show qos { qce [ <qce> ] } | |
| Parameter | Name | Description |
| | qce | <Id : 1-256> QCE ID |

## A.85 Show qos storm {unknown-uc|unknown-mc|broadcast}

| Description | Show storm control information by VLAN. | |
|---|---|---|
| Syntax | show vlan unknown-uc<br>show vlan unknown-mc<br>show vlan broadcast | |
| Parameter | **Name** | **Description** |
| | unknown-uc | Show unknown unicast storm control information by VLAN.<br>**Type**: Mandatory |
| | unknown-mc | Show unknown multicast storm-control information by VLAN.<br>**Type**: Mandatory |
| | broadcast | Show broadcast storm control information by VLAN.<br>**Type**: Mandatory |

## A.86 Show port-mirror

| Description | Show port mirror information. |
|---|---|
| Syntax | show port-mirror |
| Parameter | None |

## A.87 Show ringv2

| Description | Show ring protects information |
|---|---|
| Syntax | show ring |
| Parameter | None |

# A.88 Show rmon

| Description | | |
|---|---|---|
| **Syntax** | show rmon alarm [ <id_list> ]<br>show rmon event [ <id_list> ]<br>show rmon history [ <id_list> ]<br>show rmon statistics [ <id_list> ] | |
| **Parameter** | **Name** | **Description** |
| | alarm | Display the RMON alarm table |
| | event | Display the RMON event table |
| | history | Display the RMON history table |
| | statistics | Display the RMON statistics table |
| | id_list | <1~65535>, Statistics entry list |

# A.89 Show interface gigabit <portNo>

| Description | Show interface gigaport information | |
|---|---|---|
| **Syntax** | show interface gigabit <portNo> | |
| **Parameter** | **Name** | **Description** |
| | <portNo> | Gigabit port.<br>Valid values: 1 ~ 10<br>**Type**: Mandatory |

# A.90 Show ext-tpid

| Description | Show TPID for the VLAN Tag |
|---|---|
| **Syntax** | show ext-tpid |
| **Parameter** | None |

# A.91 Show interface vlan

| Description | Show VLAN interface information of all VLANs. |
|---|---|
| **Syntax** | show interface vlan |
| **Parameter** | None |

## A.92 Show interface vlan <vlanid>

| Description | Show VLAN interface information of specified VLAN. | |
|---|---|---|
| Syntax | show interface vlan <vlanid> | |
| Parameter | Name | Description |
| | <vlanid> | VLAN ID.<br>Valid values: 1 ~ 4094<br>**Type**: Mandatory |

## A.93 Show protocol-VLAN

| Description | Show protocol-based VLAN information for all entries. |
|---|---|
| Syntax | show protocol-vlan |
| Parameter | None |

## A.94 Show interface gigabit <portNo> vlan

| Description | Show vlan information per port | |
|---|---|---|
| Syntax | show interface gigabit <portNo> vlan | |
| Parameter | Name | Description |
| | <portNo> | Gigabit port.<br>Valid values: 1 ~ 10<br>**Type**: Mandatory |

## A.95 Show vlan-trans

| Description | Show VLAN translation table for all |
|---|---|
| Syntax | show vlan-trans |
| Parameter | None |

## A.96 Show multicast-fdb

| Description | Show IGMP group membership table |
|---|---|
| Syntax | show multicast-fdb |
| Parameter | None |

## A.97 Show dot1x

| Description | Show dot1x information. |
|---|---|
| Syntax | show dot1x |
| Parameter | None |

# A.98 Show dot1x status

| Description | Show dot1x stats. |
|---|---|
| Syntax | show dot1x status [ interface <port_type> [ <port_type_list> ] ] [ brief ] |
| Parameter | None |

# A.99 Show rfc2544 profile [ <word32> ]

| Description | show rfc2544 profile name | |
|---|---|---|
| Syntax | show rfc2544 profile [ <word32> ] | |
| Parameter | Name | Description |
| | <word32> | rfc2544 profile name |

# A.100 Show voice

| Description | Vlan for voice traffic | |
|---|---|---|
| Syntax | show voice vlan [ oui <oui> \| interface ( <port_type> [ <port_list> ] ) ] | |
| Parameter | Name | Description |
| | vlan | Vlan for voice traffic |
| | oui | OUI configuration |
| | oui | OUI value |
| | interface | Select an interface to configure |
| | port_type | GigabitEthernet, 1 Gigabit Ethernet Port |
| | port_list | <port_type_list> Port list in 1/1-8 |

# A.101 Show web

| Description | Web privilege | |
|---|---|---|
| Syntax | show web privilege group [ <group_name> ] level | |
| Parameter | Name | Description |
| | privilege | Web privilege |
| | group | Web privilege grou |
| | group_name | CWORD<br>Valid words are 'Aggregation' 'DHCP' 'Debug' 'Dhcp_Client' 'Diagnostics' 'EEE' 'Green_Ethernet' 'IP2' 'IPMC_Snooping' 'LACP' 'LLDP' 'Loop_Protect' 'MAC_Table' 'MVR' 'Maintenance' 'Mirroring' 'NTP' 'Ports' 'Private_VLANs' 'QoS' 'RPC' 'Security' 'Spanning_Tree' 'System' 'Timer' 'VCL' 'VLANs' 'Voice_VLAN' 'XXRP' 'sFlow' |
| | level | Web privilege group level |

# A.102 interface gigabit <portNo>

| Description | Gigabit Ethernet interface. (enter gigabit interface mode) | |
|---|---|---|
| **Syntax** | interface gigabit <portNo> | |
| **Parameter** | **Name** | **Description** |
| | <portNo> | Valid values: 1 ~ 10<br>**Type**: Mandatory |

# A.103 Interface vlan <vlanid>

| Description | Vlan Ethernet interface (enter mode of interface vlan) | |
|---|---|---|
| **Syntax** | interface vlan <vlanid> | |
| **Parameter** | **Name** | **Description** |
| | <vlanid> | Valid values: 1 ~ 4094<br>**Type**: Mandatory |

# A.104 aaa

| Description | Authentication | |
|---|---|---|
| **Syntax** | aaa authentication | |
| **Parameter** | **Name** | **Description** |
| | authentication | Authentication |

# A.105 access

| Description | Management configuration | |
|---|---|---|
| **Syntax** | access management | |
| **Parameter** | **Name** | **Description** |
| | management | Access management configuration |

# A.106 access-list

| Description | Enter Acl Profile Config Mode | |
|---|---|---|
| **Syntax** | profile acl | |
| **Parameter** | **Name** | **Description** |
| | <vlanid> | Valid values: 1 ~ 4094<br>**Type**: Mandatory |
| | None | |

# A.107 aggregation mode

| Description | Traffic distribution mode | |
|---|---|---|
| Syntax | aggregation mode { dmac \| ip \| port \| smac } | |
| Parameter | Name | Description |
| | dmac | Destination MAC affects the distribution |
| | ip | IP address affects the distribution |
| | port | IP port affects the distribution |
| | smac | Source MAC affects the distribution |

# A.108 alarm history clear

| Description | Clear alarm history | |
|---|---|---|
| Syntax | alarm history clear | |
| Parameter | Name | Description |
| | | |

# A.109 banner

| Description | Banner control | |
|---|---|---|
| Syntax | banner { LINE \| exec \| login \| motd } | |
| Parameter | Name | Description |
| | LINE | c banner-text c, where 'c' is a delimiting character |
| | exec | Set EXEC process creation banner |
| | login | Set login banner |
| | motd | Set Message of the Day banner |

# A.110 default access-list rate-limiter

| Description | Rate limiter | |
|---|---|---|
| Syntax | default access-list rate-limiter [ <rate_limiter_list> ] | |
| Parameter | Name | Description |
| | RateLimiterId : 1-16 | Rate limiter ID |

# A.111 profile sch

| Description | Enter Scheduling Profile Config Mode |
|---|---|
| Syntax | profile sch |
| Parameter | None |

# A.112 ntp server <1-5> ip-address <ip>

| **Description** | **Set NTP server address.** | |
|---|---|---|
| **Syntax** | ntp server <1-5> ip-address { <ipv4_ucast> \| <ipv6_ucast> \| <hostname> } | |
| **Parameter** | **Name** | **Description** |
| | <1-5> | index number |
| | <ipv4><br><ipv6 > | **Type**: Mandatory |
| | <hostname> | Server name |

# A.113 clock timezone

| **Description** | **Set time zone.** | |
|---|---|---|
| **Syntax** | clock timezone <word16> <-23-23> [ <0-59> ] | |
| **Parameter** | **Name** | **Description** |
| | < word16> | **Valid values**: please see 'list timezone'<br>**Type**: Mandatory |
| | default | Set the time zone to default (GMT/UTC).<br>**Type**: Mandatory |

# A.114 clock summer-time set [start-time] [end-time]

| **Description** | **Set date/time.** | |
|---|---|---|
| **Syntax** | clock summer-time <word16> date [ <1-12> <1-31> <2000-2097> <hhmm> <1-12> <1-31> <2000-2097> <hhmm> [ <1-1440> ] ] | |
| **Parameter** | **Name** | **Description** |
| | < word16> | **Valid values**: please see 'list timezone'<br>**Type**: Mandatory |
| | <day> | **Valid values**: 1 ~ 31<br>**Type**: Mandatory |
| | <month> | **Valid values**: 1 ~ 12<br>**Type**: Mandatory |
| | <year> | **Valid values**: 2000-2097<br>**Type**: Mandatory |
| | <minute> | **Valid values**: 0 ~ 59<br>**Type**: Mandatory |
| | <second> | **Valid values**: 0 ~ 59<br>**Type**: Optional |

# A.115 account add <username>

| Description | Add an account. | |
|---|---|---|
| Syntax | username <word31> privilege <0-15> password encrypted <word4-44> | |
| Parameter | **Name** | **Description** |
| | < word31> | **Valid values**: 1 ~ 31 characters<br>**Type**: Mandatory |
| | <0-15> | **Valid values**: 0 ~ 15<br>**Type**: Mandatory |
| | < word4-44> | **Valid values**: 4-44 characters<br>**Type**: Mandatory |

# A.116 account delete <username>

| Description | Delete an account. | |
|---|---|---|
| Syntax | no username <word31> | |
| Parameter | **Name** | **Description** |
| | < word31> | **Valid values**: 1 ~ 31 characters<br>**Type**: Mandatory |

# A.117 syslog {enable|disable}

| Description | Disable or enable the syslog service. |
|---|---|
| Syntax | logging on<br>no logging on |
| Parameter | None |

# A.118 configuration save and replace

| Description | Save and install configuration | |
|---|---|---|
| Syntax | copy { startup-config \| running-config \| <Filename> } { startup-config \| running-config \| < Filename > } [ syntax-check ] | |
| Parameter | **Name** | **Description** |
| | running-config | Currently running configuration |
| | startup-config | Startup configuration |
| | syntax-check | Perform syntax check on source configuration |
| | Filename | File in FLASH or on TFTP server |

# A.119 clearipigmp snoopingstatistics

| Description | clear ipigmpsnoopingstatisti | |
|---|---|---|
| Syntax | clear ipigmp snooping [ vlan<vlan_list> ] statistics | |
| Parameter | Name | Description |
| | vlan_list | VLAN list. |

# A.120 clear logging

| Description | clear logging | |
|---|---|---|
| Syntax | clear logging [ info ] [ warning ] [ error ] [ switch <switch_list> ] | |
| Parameter | Name | Description |
| | info | Information |
| | warning | Warning |
| | error | Error |
| | Switch list | List of switch ID, ex, 1,3-5,6 |

# A.121 clear mac address-table

| Description | clear mac address-table |
|---|---|
| Syntax | clear mac address-table |
| Parameter | |

# A.122 debug

| Description | Set prompt for testing | |
|---|---|---|
| Syntax | debug prompt | |
| Parameter | Name | Description |
| | <word> | Word for prompt in 32 chars |

# A.123 delete

| Description | Delete one file in flash: file system | |
|---|---|---|
| Syntax | delete <word> | |
| Parameter | Name | Description |
| | <word> | Name of file to delete |

# A.124 dir

| Description | Directory of all files in flash: file system |
|---|---|
| Syntax | dir |
| Parameter | |

# A.125 do

| Description | To run exec commands in config mode | |
|---|---|---|
| Syntax | do <line> | |
| Parameter | Name | Description |
| | <line> | Exec Command |

# A.126 duplex

| Description | Set duplex mode | |
|---|---|---|
| Syntax | duplex { half \| full \| auto [ half \| full ] } | |
| Parameter | Name | Description |
| | half | Forced half-duplex. |
| | full | Forced full-duplex. |
| | auto | Auto-negotiation of duplex mode. |
| | [ half \| full ] | Advertise half /full duplex. |

# A.127 editing

| Description | Enable command line editing |
|---|---|
| Syntax | editing |
| Parameter | |

# A.128 firmware

| Description | Firmware swap and upgrade | |
|---|---|---|
| Syntax | firmware { swap \| upgrade } | |
| Parameter | Name | Description |
| | swap | Swap between Active and Alternate firmware image |
| | upgrade | Firmware upgrade |

# A.129 flowcontrol

| Description | Enable/Disable flow control. | |
|---|---|---|
| Syntax | flowcontrol { on \| off } | |
| Parameter | Name | Description |
| | on | Enable flow control. |
| | off | Disable flow control. |

# A.130 frame-sizes

| Description | Select the frame sizes that the enabled tests will loop through | |
|---|---|---|
| Syntax | frame-sizes { [ 64 ] [ 128 ] [ 256 ] [ 512 ] [ 1024 ] [ 1280 ] [ 1518 ] [ 2000 ] [ 9600 ] } | |
| Parameter | Name | Description |
| | 64 | Enable testing with 64-byte TST PDUs |
| | 128 | Enable testing with 128-byte TST PDUs |
| | 256 | Enable testing with 256-byte TST PDUs |
| | 512 | Enable testing with 512-byte TST PDUs |
| | 1024 | Enable testing with 1024-byte TST PDUs |
| | 1280 | Enable testing with 1280-byte TST PDUs |
| | 1518 | Enable testing with 1518-byte TST PDUs |
| | 2000 | Enable testing with 2000-byte TST PDUs |
| | 9600 | Enable testing with 9600-byte TST PDUs |

# A.131 green-etherneteee

| Description | Powering down of PHYs when there is no traffic. |
|---|---|
| Syntax | green-etherneteee |
| Parameter | |

# A.132 green-etherneteee optimize-for-power

| Description | Set if EEE shall be optimized for the least power consumption (else optimized for the least traffic latency). |
|---|---|
| Syntax | green-etherneteee optimize-for-power |
| Parameter | |

# A.133 green-etherneteee urgent-queues

| | | |
|---|---|---|
| **Description** | **Enables EEE urgent queue. An urgent queue means that latency is kept to a minimum for traffic going to that queue. Note: EEE power savings will be reduced.** | |
| **Syntax** | green-etherneteee urgent-queues [ <range_list> ] | |
| **Parameter** | **Name** | **Description** |
| | range_list | EEE Interface. |

# A.134 help

| | |
|---|---|
| **Description** | **Description of the interactive help system** |
| **Syntax** | help |
| **Parameter** | |

# A.135 iparp inspection

| | |
|---|---|
| **Description** | **iparp inspection** |
| **Syntax** | iparp inspection |
| **Parameter** | |

# A.136 Ip arp inspection translate

| | | |
|---|---|---|
| **Description** | **IP ARP inspection entry interface configuration** | |
| **Syntax** | ip arp inspection translate [ interface <port_type><port_type_id><vlan_id><mac_ucast><ipv4_ucast> ] | |
| **Parameter** | **Name** | **Description** |
| | port_type | Port type in Fast, Giga or Tengigaethernet |
| | port_type_id | Port ID in the format of switch-no/port-no |
| | vlan_id | Select a VLAN id to configure |
| | mac_ucast | Select a MAC address to configure |
| | ipv4_ucast | Select an IP Address to configure |

# A.137 Ip arp inspection entry

| Description | arp inspection entry interface config | |
|---|---|---|
| Syntax | ip arp inspection entry interface <port_type> <in_port_type_id> <vlan_var> <mac_var> <ipv4_var> | |
| Parameter | Name | Description |
| | port_type | Port type in Fast, Giga or Tengigaethernet |
| | in_port_type_id | Port ID in the format of switch-no/port-no |
| | vlan_var | Select a VLAN id to configure |
| | mac_var | Select a MAC address to configure |
| | ipv4_var | Select an IP Address to configure |

# A.138 ip arp inspection vlan

| Description | IP ARP inspection vlan setting | |
|---|---|---|
| Syntax | ip arp inspection vlan<vlan_list> | |
| Parameter | Name | Description |
| | vlan_list | arp inspection vlan list |

# A.139 ip dns proxy

| Description | IP DNS proxy service |
|---|---|
| Syntax | ipdns proxy |
| Parameter | |

# A.140 ip http secure-redirect

| Description | IP http secure-redirect |
|---|---|
| Syntax | ip http secure-redirect |
| Parameter | |

# A.141 ip http secure-server

| Description | IP Secure HTTP web server |
|---|---|
| Syntax | ip http secure-server |
| Parameter | |

# A.142 ip source binding interface

| Description | IP source binding entry interface configuration | |
|---|---|---|
| Syntax | Ip source binding interface <port_type> <port_type_id> <vlan_id> <ipv4_ucast> <mac_ucast> | |
| Parameter | Name | Description |
| | port_type | Port type in Fast, Giga or Tengigaethernet |
| | port_type_id | Port ID in the format of switch-no/port-no |
| | vlan_id | Select a VLAN id to configure |
| | ipv4_ucast | Select an IP Address to configure |
| | mac_ucast | Select a MAC address to configure |

# A.143 ip ssh

| Description | IP Secure Shell |
|---|---|
| Syntax | ipssh |
| Parameter | |

# A.144 ip name-server

| Description | IP name server | |
|---|---|---|
| Syntax | ip name-server { <v_ipv4_ucast> \| dhcp [ interface vlan <v_vlan_id> ] } | |
| Parameter | Name | Description |
| | v_ipv4_ucast | A valid IPv4 unicast address |
| | dhcp | Dynamic Host Configuration Protocol |
| | v_vlan_id | VLAN identifier(s): VID |

# A.145 ip route

| Description | IP Route | |
|---|---|---|
| Syntax | ip route <v_ipv4_addr> <v_ipv4_netmask> <v_ipv4_gw> | |
| Parameter | Name | Description |
| | v_ipv4_addr | Network |
| | v_ipv4_netmask | Netmask |
| | v_ipv4_gw | Gateway |

# A.146 ip routing

| Description | IP routing |
|---|---|
| Syntax | ip routing |
| Parameter | |

# A.147 ip verify

| Description | IP verify | |
|---|---|---|
| Syntax | ip verify [source] [translate] | |
| | Name | Description |
| | source | verify source |
| | translate | ip verify source translate all entries |

# A.148 ipmc profile

| Description | IPMC profile configuration |
|---|---|
| Syntax | ipmc profile |
| Parameter | |

# A.149 ipmc range

| Description | A range of IPv4/IPv6 multicast addresses for the profile | |
|---|---|---|
| Syntax | ipmc range <word16> { <ipv4_mcast> [ <ipv4_mcast> ] \| <ipv6_mcast> [ <ipv6_mcast> ] } | |
| Parameter | Name | Description |
| | word16 | Range entry name in 16 chars |
| | ipv4_mcast | Valid IPv4 multicast address |
| | ipv4_mcast | Valid IPv4 multicast address that is not less than start address |
| | ipv6_mcast | Valid IPv6 multicast address |
| | ipv6_mcast | Valid IPv6 multicast address that is not less than start address |

# A.150 LACP

| Description | LACP system priority | |
|---|---|---|
| Syntax | lacp system-priority <v_1_to_65535> | |
| Parameter | Name | Description |
| | system-priority | System priority |
| | <v_1_to_65535> | Priority value, lower means higher priority |

# A.151 line

| Description | Console terminal control | |
|---|---|---|
| Syntax | line { <0~16> \| console 0 \| vty <0~15> } | |
| Parameter | Name | Description |
| | <0~16> | List of line numbers |
| | console | Console terminal line |
| | vty | Virtual terminal |

# A.152 login host

| Description | Domain name and IP address | |
|---|---|---|
| Syntax | logging host { <v_ipv4_ucast> \| <v_word45> } | |
| Parameter | Name | Description |
| | hostname | Donain name of the log server |
| | ipv4_ucast | IP address of the log server |

# A.153 login level

| Description | Log level | |
|---|---|---|
| Syntax | logging level { info \| warning \| error } | |
| Parameter | Name | Description |
| | error | Error |
| | info | Information |
| | warning | Warning |

# A.154 login on

| Description | Log on |
|---|---|
| Syntax | logging on |
| Parameter | |

# A.155 logout

| Description | System logout |
|---|---|
| Syntax | logout |
| Parameter | |

# A.156 mac address-table aging-time

| Description | MAC table entries/configuration | |
|---|---|---|
| Syntax | mac address-table aging-time <v_0_10_to_1000000> | |
| Parameter | Name | Description |
| | <v_0_10_to_1000000> | Aging time in seconds, 0 disables aging |

# A.157 mac address-table static

| Description | MAC table entries/configuration | |
|---|---|---|
| Syntax | mac address-table static <v_mac_addr> vlan <v_vlan_id> interface ( <port_type> [ <v_port_type_list> ] ) | |
| Parameter | Name | Description |
| | <v_mac_addr | 48-bit MAC address |
| | v_vlan_id | VLAN IDs 1-4095 |
| | port_type | Select an interface to configure |
| | v_port_type_list | Port list |

# A.158 more

| Description | File in FLASH or on TFTP server |
|---|---|
| Syntax | more <Path> |
| Parameter | |

# A.159 no

| Description | Function disable | |
|---|---|---|
| Syntax | no { debug \| port-securit \| terminal } | |
| Parameter | Name | Description |
| | debug | Debugging functions |
| | port-securit | Port security (psec limit) |
| | terminal | Set terminal line parameters |

# A.160 ping

| Description | The ping function | |
|---|---|---|
| Syntax | ping { ip \| ipv6 } | |
| Parameter | Name | Description |
| | ip | IP (ICMP) echo |
| | ipv6 | IPv6 (ICMPv6) echo |

# A.161 port-security

| Description | Port security | |
|---|---|---|
| Syntax | port-security [aging] [time <v_10_to_10000000>] | |
| Parameter | Name | Description |
| | aging | Enable/disable port security aging |
| | time | Time in seconds between checking for activity on learned MAC addresses |
| | v_10_to_10000000 | <10-10000000> seconds |

# A.162 privilege

| Description | | |
|---|---|---|
| **Syntax** | privilege { exec \| configure \| config-vlan \| line \| interface \| if-vlan \| ipmc-profile \| snmps-host \| stp-aggr \| dhcp-pool \| rfc2544-profile } level <privilege> <cmd> | |
| **Parameter** | **Name** | **Description** |
| | config-vlan | VLAN Configuration Mode |
| | configure | Global configuration mod |
| | dhcp-pool | DHCP Pool Configuration Mode |
| | exec | Exec mode |
| | if-vlan | VLAN Interface Mode |
| | interface | Port List Interface Mode |
| | ipmc-profile | IPMC Profile Mode |
| | line | Line configuration mode |
| | rfc2544-profile | RFC2544 Profile Mode |
| | snmps-host | SNMP Server Host Mode |
| | stp-aggr | STP Aggregation Mode |

# A.163 reload

| Description | System or configuration reset | |
|---|---|---|
| **Syntax** | reload { cold \| default } | |
| **Parameter** | **Name** | **Description** |
| | cold | Reload cold |
| | defaults | Reload defaults without rebooting |

# A.164 rmon

| Description | RMON | |
|---|---|---|
| **Syntax** | rmon {alarm \| event} | |
| **Parameter** | **Name** | **Description** |
| | alarm | Configure an RMON alarm |
| | event | Configure an RMON event |

# A.165 rmon alarm

| Description | RMON Alarm | |
|---|---|---|
| **Syntax** | rmon alarm <id> <oid_str> <interval> { absolute \| delta } rising-threshold <rising_threshold> [ <rising_event_id> ] falling-threshold <falling_threshold> [ <falling_event_id> ] { [ rising \| falling \| both ] } | |
| **Parameter** | **Name** | **Description** |
| | id | Alarm entry ID |
| | ifInDiscards | The number of inbound packets that are discarded even if the packets are normal |
| | fInErrors | The number of inbound packets that contained errors preventing them from being deliverable to a higher-layer protocol |
| | ifInNUcastPkts | The number of broadcast and multicast packets delivered to a higher-layer protocol |
| | ifInOctets | The total number of octets received on the interface, including framing characters |
| | ifInUcastPkts | The number of unicast packets delivered to a higher-layer protocol |
| | ifInUnknownProtos | The number of inbound packets that were discarded because of the unknown or un-support protocol |
| | ifOutDiscards | The number of outbound packets that were discarded event the packets are normal |
| | ifOutErrors | The number of outbound packets that could not be transmitted because of errors |
| | ifOutNUcastPkts | The number of broadcast and multicast packets that request to transmit |
| | ifOutOctets | The number of octets transmitted out of the interface, including framing characters |
| | ifOutUcastPkts | The number of unicast packets that request to transmit |
| | interval | Sample interval |
| | absolute | Test each sample directly |
| | delta | Test delta between samples |
| | rising_threshold | <-2147483648-2147483647> rising threshold value |
| | rising_event_id | <0-65535> Event to fire on rising threshold crossing |
| | falling_threshold | <-2147483648-2147483647> falling threshold value |
| | falling_event_id | <0-65535> Event to fire on falling threshold crossing |
| | both | Trigger alarm when the first value is larger than the rising threshold or less than the falling threshold (default) |
| | falling | Trigger alarm when the first value is less than the falling threshold |
| | rising | Trigger alarm when the first value is larger than the rising threshold |

# A.166 rmon alarm

| Description | RMON Event | |
|---|---|---|
| Syntax | rmon event <id> [ log ] [ trap <community> ] { [ description <description> ] } | |
| Parameter | **Name** | **Description** |
| | description | Specify a description of the event |
| | log | Generate RMON log when the event fires |
| | trap | Generate SNMP trap when the event fires |

# A.167 terminal

| Description | Terminal control | |
|---|---|---|
| Syntax | terminal { editing \| exec-timeout \| help \| history \| length \| width } | |
| Parameter | **Name** | **Description** |
| | editing | Enable command line editing |
| | exec-timeout | Set the EXEC timeout |
| | help | Description of the interactive help system |
| | history | Control the command history function |
| | length | Set the number of lines on a screen |
| | width | Set the width of the display terminal |

# A.168 vlan <vlanid>

| Description | Configure VLAN. | |
|---|---|---|
| Syntax | vlan <vlanid> | |
| Parameter | **Name** | **Description** |
| | <vlanid> | Create an empty VLAN index.<br>**Valid values**: 1 ~ 4094<br>**Type**: Mandatory |

# A.169 vlan <vlanid> <name>

| Description | Configure VLAN's name. | |
|---|---|---|
| Syntax | vlan <vlanid> <name> | |
| Parameter | **Name** | **Description** |
| | <vlanid> | Create an empty VLAN index.<br>**Valid values**: 1 ~ 4094<br>**Type**: Mandatory |
| | <name> | VLAN Name (0~31)<br>String Size:0~31<br>**Type**: Mandatory |

# A.170 vlan disable <vlanid>

| Description | Delete VLAN memberset/setting. | |
|---|---|---|
| Syntax | vlan disable <vlanid> | |
| Parameter | **Name** | **Description** |
| | <vlanid> | Valid values: 1 ~ 4094<br>**Type**: Mandatory |

# A.171 aging <time>

| Description | Configure aging time for a bridge port. | |
|---|---|---|
| Syntax | aging <time> | |
| Parameter | **Name** | **Description** |
| | <time> | **Valid values**: 10 ~ 1000000 (seconds)<br>**Type**: Mandatory |

# A.172 jumboframe {enable|disable}

| Description | Set jumbo frame settings. | |
|---|---|---|
| Syntax | jumboframe {enable\|disable} | |
| Parameter | **Name** | **Description** |
| | enable | Enable jumbo frame. |
| | disable | Disable jumbo frame. |

# A.173 jumboframe mtu <value>

| Description | MTU size. | |
|---|---|---|
| Syntax | jumboframe mtu <value> | |
| Parameter | Name | Description |
| | <value> | Range.<br>**Valid values**: 1536~9000 (bytes)<br>**Type**: Mandatory |

# A.174 media-type

| Description | Configure media-type | |
|---|---|---|
| Syntax | media-type { rj45 \| sfp \| dual } | |
| Parameter | Name | Description |
| | rj45 | rj45 interface (copper interface). |
| | sfp | sfp interface (fiber interface). |
| | dual | Dual media interface (cu & fiber interface). |

# A.175 monitor destination interface

| Description | The destination port. That is the port that trafficked should be mirrored to. | |
|---|---|---|
| Syntax | monitor destination interface <port_type> <port_type_id> | |
| Parameter | Name | Description |
| | <port_type | Port type |
| | <port_type_id> | Port Number |

# A.176 monitor source interface

| Description | Mirror Interface traffic | |
|---|---|---|
| Syntax | monitor source { { interface ( <port_type> [ <v_port_type_list> ] ) } | |
| Parameter | Name | Description |
| | port_type | 1 Gigabit Ethernet Port |
| | v_port_type_lis | Port list |

# A.177 monitor source cpu

| Description | Mirror Interface traffic | |
|---|---|---|
| Syntax | monitor source { cpu [ <cpu_switch_range> ] } } { both \| rx \| tx } | |
| Parameter | Name | Description |
| | both | Setting source port to both will mirror both ingress and egress traffic |
| | rx | Setting the source port to rx will mirror ingress traffic |
| | tx | Setting the source port to tx will mirror egress traffic |

# A.178 speed

| Description | Configures interface speed. If you use 10, 100, or 1000 keywords with the auto keyword the port will only advertise the specified speeds. | |
|---|---|---|
| Syntax | speed { 10g \| 2500 \| 1000 \| 100 \| 10 \| auto { [ 10 ] [ 100 ] [ 1000 ] } } | |
| Parameter | Name | Description |
| | 1000 | 1Gbps |
| | 100 | 100Mbps |
| | 10 | 10Mbps |
| | auto | Auto-negotiation |
| | [ 10 ] | 10Mbps |
| | [ 10 0] | 100Mbps |
| | [ 1000 ] | 1Gbps |

# A.179 traps

| Description | trap event configuration | |
|---|---|---|
| Syntax | traps [ aaa authentication ] [ system [ coldstart ] [ warmstart ] ] [ switch [ stp ] [ rmon ] ] | |
| Parameter | Name | Description |
| | aaa authentication | AAA authentication fail event |
| | cold start | Cold start event |
| | warm start | Warm start event |
| | stp | STP event |
| | rmon | RMON event |

# A.180 upnp

| Description | Set UPnP's configurations |
|---|---|
| Syntax | upnp |
| Parameter | |

# A.181 upnp advertising-duration

| Description | Set UPnP's advertising duration | |
|---|---|---|
| Syntax | upnp advertising-duration <100-86400> | |
| Parameter | Name | Description |
| | 100-86400 | advertising duration |

# A.182 upnp ttl

| Description | Set UPnP's TTL value | |
|---|---|---|
| Syntax | upnp ttl <1-255> | |
| Parameter | **Name** | **Description** |
| | 1-255 | TTL value |

# A.183 username

| Description | User account | |
|---|---|---|
| Syntax | username <username> privilege <priv> password encrypted <encry_password><br>username <username> privilege <priv> password none<br>username <username> privilege <priv> password unencrypted <password> | |
| Parameter | **Name** | **Description** |
| | username | <Username: word31> User name allows letters, numbers, and underscores |
| | privilege | Set user privilege level |
| | priv | User privilege level |
| | password | Specify the password for the user |
| | encrypted | Specifies an ENCRYPTED password will follow |
| | none | NULL password |
| | unencrypted | Specifies an UNENCRYPTED password will follow |

# A.184 web

| Description | | |
|---|---|---|
| **Syntax** | web privilege group <group_name> level { [ cro <cro> ] [ crw <crw> ] [ sro <sro> ] [ srw <srw> ] }*1 | |
| **Parameter** | **Name** | **Description** |
| | privilege | Web privilege |
| | group | Web privilege group |
| | group_name | Valid words are 'Aggregation' 'DHCP' 'Debug' 'Dhcp_Client' 'Diagnostics' 'EEE' 'Green_Ethernet' 'IP2' 'IPMC_Snooping' 'LACP' 'LLDP' 'Loop_Protect' 'MAC_Table' 'MVR' 'Maintenance' 'Mirroring' 'NTP' 'Ports' 'Private_VLANs' 'QoS' 'RPC' 'Security' 'Spanning_Tree' 'System' 'Timer' 'VCL' 'VLANs' 'Voice_VLAN' 'XXRP' 'sFlow' |
| | level | Web privilege group level |
| | cro | Configuration Read-only level |
| | crw | Configuration Read-write level |
| | sro | Status/Statistics Read-only level |
| | srw | Status/Statistics Read-write level |
| | cro | <Cro : 0-15> |
| | crw | <Crw : 0-15> |
| | sro | <Sro : 0-15> |
| | srw | <Srw : 0-15> |

# A.185 flow-control {enable|disble}

| Description | Enable/Disable flow-control. | |
|---|---|---|
| **Syntax** | flow-control {enable\|disble} | |
| **Parameter** | **Name** | **Description** |
| | enable | Enable flow-control. |
| | disable | Disable flow-control. |

# A.186 speed

| | | |
|---|---|---|
| **Description** | **Configure gigabit Ethernet speed and Copper/SFP for gigabit port 7~8.<br>(port1~6 Only supports copper, no SFP)<br>(port 9, 10 only support auto)** | |
| **Syntax** | speed {auto\|full-l000mbps\|full-100mbps\|full-10mbps\|half-100mbps\|half-10mbps} | |
| **Parameter** | **Name** | **Description** |
| | auto | Auto-negotiation. |
| | full-l000mbps | Set 1000Mbps full duplexing. |
| | full-100mbps | Set 100Mbps full duplexing. |
| | full-10mbps | Set 10Mbps full duplexing. |
| | half-100mbps | Set 100Mbps half duplexing. |
| | half-10mbps | Set 10Mbps half duplexing. |

# A.187 port {enable/disable}

| | | |
|---|---|---|
| **Description** | **Set interface gigabit port enable or disable.** | |
| **Syntax** | port {enable/disable} | |
| **Parameter** | **Name** | **Description** |
| | disable | Turn off gigabit port. |
| | enable | Turn off gigabit port. |

# A.188 Date/Time

| | | |
|---|---|---|
| **Description** | **Set device date and time** | |
| **Syntax** | clock datetime <2000-2037> <1-12> <1-31> <0-23> <0-59> <0-59> | |
| **Parameter** | **Name** | **Description** |
| | <2000-2037> | year |
| | <1-12> | month |
| | <1-31> | Date |
| | <0-23> | Hour |
| | <0-59> | minute |
| | <0-59> | Second |

# A.189 vlan

| | | |
|---|---|---|
| **Description** | **VLAN commands** | |
| **Syntax** | vlan <vlan_list> | |
| **Parameter** | **Name** | **Description** |
| | vlan_lis | ISL VLAN IDs 1~4095 |

# A.190 vlan ethertype s-custom-port

| Description | Vlan Ether type for custom S-ports configuration | |
|---|---|---|
| Syntax | vlan ethertype s-custom-port <0x0600-0xffff> | |
| Parameter | Name | Description |
| | 0x0600-0xffff | Ethertype (Range: 0x0600-0xffff) |

# A.191 vlan protocol

| Description | | |
|---|---|---|
| Syntax | vlan protocol { { eth2 { <0x600-0xffff> \| arp \| ip \| ipx \| at } } \| { snap { <0x0-0xffffff> \| rfc_1042 \| snap_8021h } <0x0-0xffff> } \| { llc <0x0-0xff> <0x0-0xff> } } group <word16> | |
| Parameter | Name | Description |
| | 0x600-0xffff | Ether Type(Range: 0x600 - 0xFFFF) |
| | arp | Ether Type is ARP |
| | ip | Ether Type is IP |
| | ipx | Ether Type is IPX |
| | at | Ether Type is AppleTalk |
| | 0x0-0xffffff | SNAP OUI (Range 0x000000 - 0XFFFFFF) |
| | rfc_1042 | SNAP OUI is rfc_1042 |
| | snap_8021h | SNAP OUI is 8021h |
| | 0x0-0xffff | PID (Range: 0x0 - 0xFFFF) |
| | 0x0-0xff | DSAP (Range: 0x00 - 0xFF) |
| | 0x0-0xff | SSAP (Range: 0x00 - 0xFF) |
| | word16 | Group Name (Range: 1 - 16 characters) |

# A.192 vlan-trunking

| Description | Change whether trunking of unknown VLANs is enabled |
|---|---|
| Syntax | vlan-trunking |
| Parameter | |

# A.193 switchport access vlan

| Description | Set switch access mode of the interface | |
|---|---|---|
| Syntax | switchport access vlan <vlan_id> | |
| Parameter | Name | Description |
| | vlan_id | VLAN ID of the VLAN when this port is in access mode |

# A.194 switchport forbidden vlan

| Description | Adds or removes forbidden VLANs from the current list of forbidden VLANs | |
|---|---|---|
| Syntax | switchport forbidden vlan { add \| remove } <vlan_list> | |
| Parameter | Name | Description |
| | add | Add to existing list. |
| | remove | Remove from existing list. |
| | vlan_list | VLAN IDs |

# A.195 switchport hybrid acceptable-frame-type

| Description | Set acceptable frame type on a port | |
|---|---|---|
| Syntax | switchport hybrid acceptable-frame-type { all \| tagged \| untagged } | |
| Parameter | Name | Description |
| | all | Allow all frames |
| | tagged | Allow only tagged frames |
| | untagged | Allow only untagged frames |

# A.196 switchport hybrid allowed vlan

| Description | Set allowed VLAN characteristics when interface is in hybrid mode | |
|---|---|---|
| Syntax | switchport hybrid allowed vlan { all \| none \| [ add \| remove \| except ] <vlan_list> } | |
| Parameter | Name | Description |
| | all | All VLANs |
| | none | No VLANs |
| | add | Add VLANs to the current list |
| | remove | Remove VLANs from the current list |
| | except | All VLANs except the following |
| | vlan_list | VLAN IDs of the allowed VLANs when this port is in hybrid mode |

# A.197 switchport hybrid egress-tag

| Description | Egress VLAN tagging configuration | |
|---|---|---|
| Syntax | switchport hybrid egress-tag { none \| all [ except-native ] } | |
| Parameter | Name | Description |
| | none | No egress tagging |
| | all | Tag all frames |
| | except-native | Tag all frames except frames classified to native VLAN of the hybrid port |

# A.198 switchport hybrid ingress-filtering

| Description | VLAN Ingress filter configuration |
|---|---|
| Syntax | switchport hybrid ingress-filtering |
| Parameter | |

# A.199 switchport mode

| Description | Set switching mode | |
|---|---|---|
| Syntax | switchport mode { access \| trunk \| hybrid } | |
| Parameter | Name | Description |
| | access | Set mode to ACCESS unconditionally |
| | trunk | Set mode to TRUNK unconditionally |
| | hybrid | Set mode to HYBRID unconditionally |

# A.200 switchport trunk allowed vlan

| Description | Set allowed VLAN characteristics when interface is in trunk mode | |
|---|---|---|
| Syntax | switchport trunk allowed vlan { all \| none \| [ add \| remove \| except ] <vlan_list> } | |
| Parameter | Name | Description |
| | all | All VLANs |
| | none | No VLANs |
| | add | Add VLANs to the current list |
| | remove | Remove VLANs from the current list |
| | except | All VLANs except the following |
| | vlan_list | VLAN IDs of the allowed VLANs when this port is in trunk mode |

# A.201 switchport vlan protocol group

| Description | Protocol-based VLAN group commands | |
|---|---|---|
| Syntax | switchport vlan protocol group <word16> vlan <vlan_id> | |
| Parameter | Name | Description |
| | word16 | Group Name (Range: 1 - 16 characters) |
| | vlan_id | VLAN ID required for the group to VLAN mapping (Range: 1-4095) |

# A.202 interface

| Description | Interface configuration | |
|---|---|---|
| Syntax | interface <port_type> [ <port_type_list> ] | |
| Parameter | Name | Description |
| | port_type | Port type in Fast, Giga or Tengigaethernet |
| | port_type_list | List of Port ID, ex, 1/1,3-5;2/2-4,6 |

# A.203 interface vlan

| Description | VLAN interface configurations | |
|---|---|---|
| Syntax | interface vlan<vlan_list> | |
| Parameter | Name | Description |
| | vlan_list | List of VLAN interface numbers, 1~4095 |

# A.204 ip address

| Description | IPv4 address configurations | |
|---|---|---|
| Syntax | ip address { { <ipv4_addr><ipv4_netmask> } \| { dhcp [ fallback <ipv4_addr><ipv4_netmask> [ timeout <uint> ] ] } } | |
| Parameter | Name | Description |
| | ipv4_addr | IP address |
| | ipv4_netmask | IP netmask |
| | dhcp | Enable DHCP |
| | fallback | DHCP fallback settings |
| | ipv4_addr | DHCP fallback address |
| | ipv4_netmask | DHCP fallback netmask |
| | timeout | DHCP fallback timeout |
| | uint | DHCP fallback timeout in seconds |

# A.205 ip name-server

| Description | Interface Internet Protocol config commands Domain Name System | |
|---|---|---|
| Syntax | ip name-server { <ipv4_ucast> \| dhcp [ interface vlan<vlan_id> ] } | |
| Parameter | Name | Description |
| | ipv4_ucast | A valid IPv4 unicast address |
| | vlan_id | VLAN identifier(s): VID |

# A.206 ip dhcp excluded-address

| Description | Prevent DHCP from assigning certain addresses | |
|---|---|---|
| Syntax | ip dhcp excluded-address <low_ip> [ <high_ip> ] | |
| Parameter | Name | Description |
| | low_ip | Low IP address |
| | high_ip | High IP address |

# A.207 ip dhcp pool

| Description | Pool name in 32 characters |
|---|---|
| Syntax | ip dhcp pool <pool_name> |
| Parameter | |

# A.208 ip dhcp server

| Description | DHCP Server |
|---|---|
| Syntax | ip dhcp server |
| Parameter | |

# A.209 ip dhcp relay

| Description | DHCP relay agent configuration |
|---|---|
| Syntax | ipdhcp relay |
| Parameter | |

# A.210 ip dhcp relay information option

| Description | IP DHCP relay information option (Option 82) |
|---|---|
| Syntax | ipdhcp relay information option |
| Parameter | |

# A.211 ip dhcp retry interface vlan

| Description | Restart the DHCP query process | |
|---|---|---|
| Syntax | ipdhcp retry interface vlan<vlan_id> | |
| Parameter | Name | Description |
| | vlan_id | Vlan ID |

# A.212 ip dhcp snooping

| Description | IP DHCP snooping |
|---|---|
| Syntax | ipdhcp snooping |
| Parameter | |

# A.213 ip helper-address

| Description | DHCP relay server | |
|---|---|---|
| Syntax | ip helper-address <v_ipv4_ucast> | |
| Parameter | Name | Description |
| | Ip : ipv4_ucast | IP address of the DHCP relay server |

# A.214 ipv6 address

| Description | Configure the IPv6 address of an interface | |
|---|---|---|
| Syntax | ipv6 address <ipv6_subnet> | |
| Parameter | Name | Description |
| | ipv6_subnet | IPv6 prefix x:x::y/z |

# A.215 ipv6mtu

| Description | IPv6 Maximum transmission unit | |
|---|---|---|
| Syntax | ipv6 mtu<1280-1500> | |
| Parameter | Name | Description |
| | 1280-1500 | MTU value in bytes |

# A.216 ringv2 protect

| Description | To configure ring protection. | |
|---|---|---|
| Syntax | ring protect | |
| Parameter | Name | Description |
| | group1 | Configure ring protection v2 group1 |
| | group2 | Configure ring protection v2 group2 |
| | group3 | Configure ring protection v2 group3 |

# A.217 guard-time

| Description | Set guard time | |
|---|---|---|
| Syntax | guard-time { <ringGuardTimerDef> } | |
| Parameter | Name | Description |
| | ringGuardTimerDef | <10-3600>, unit: secound. Default is 10 secounds |

# A.218 mode

| Description | Enable/Disable ring group | |
|---|---|---|
| Syntax | mode { disable \| enable } | |
| Parameter | Name | Description |
| | disable | Set the specified Ring group to Disabled |
| | enable | Set the specified Ring group to Enabled |

# A.219 node1 interface GigabitEthernet <portNo>}

| Description | Set interface of ring protection node | |
|---|---|---|
| Syntax | node1 interface GigabitEthernet <portNo> | |
| Parameter | Name | Description |
| | <portNo> | **Valid values**: 1~max port index. |

# A.220 node2 interface GigabitEthernet <portNo>}

| Description | Set interface of ring protection node | |
|---|---|---|
| Syntax | Node2 interface GigabitEthernet <portNo> | |
| Parameter | Name | Description |
| | <portNo> | **Valid values**: 1~max port index. |

# A.221 role

| Description | Set role for group | |
|---|---|---|
| Syntax | role { ring-master \| ring-slave \| coupling-primary \| coupling-backup \| dual-homing \| chain-head \| chain-tail \| chain-member \| b-chain-terminal-1 \| b-chain-terminal-2 \| b-chain-central-block \| b-chain-member} | |
| Parameter | **Name** | **Description** |
| | ring-master | Set role to ring master |
| | ring-slave | Set role to ring slave |
| | coupling-primary | Set role to coupling primary |
| | coupling-backup | Set role to coupling backup |
| | dual-homing | Set role to dual-homing |
| | chain-head | Set role to chain head |
| | chain-member | Set role to chain member |
| | chain-tail | Set role to chain tail |
| | b-chain-central-block | Set role to balancing chain central block |
| | b-chain-member | Set role to balancing chain member |
| | b-chain-terminal-1 | Set role to balancing chain terminal 1 |
| | b-chain-terminal-2 | Set role to balancing chain terminal 2 |

# A.222 spanning-tree

| Description | Enable/disable STP on this interface | |
|---|---|---|
| Syntax | spanning-tree | |
| Parameter | **Name** | **Description** |
| | | |

# A.223 spanning-tree aggregation

| Description | Spanning Tree protocol | |
|---|---|---|
| Syntax | spanning-tree aggregation | |
| Parameter | **Name** | **Description** |
| | | |

# A.224 spanning-tree auto-edge

| Description | Auto-detect edge status | |
|---|---|---|
| Syntax | spanning-tree auto-edge | |
| Parameter | Name | Description |
| | | |

# A.225 spanning-tree bpdu-guard

| Description | Enable/disable the BPDU guard | |
|---|---|---|
| Syntax | spanning-tree bpdu-guard | |
| Parameter | Name | Description |
| | | |

# A.226 spanning-tree edge

| Description | Edge port<br>spanning-tree<br>STP Bridge | |
|---|---|---|
| Syntax | spanning-tree edge | |
| Parameter | Name | Description |
| | | |

# A.227 spanning-tree edge bpdu-filter

| Description | Enable BPDU filter (stop BPDU tx/rx) | |
|---|---|---|
| Syntax | spanning-tree edge bpdu-filter | |
| Parameter | Name | Description |
| | | |

# A.228 spanning-tree mode

| | | |
|---|---|---|
| **Description** | **Mode**<br>**STP protocol mode**<br>**stp**<br>**802.1D Spanning Tree**<br>**rstp**<br>**Rabid Spanning Tree (802.1w)**<br>**mstp**<br>**Multiple Spanning Tree (802.1s)** | |
| **Syntax** | spanning-tree mode { stp \| rstp \| mstp } | |
| **Parameter** | **Name** | **Description** |
| | stp | 802.1D Spanning Tree |
| | rstp | Rabid Spanning Tree (802.1w) |
| | mstp | Multiple Spanning Tree (802.1s) |

# A.229 spanning-tree mst cost

| | | |
|---|---|---|
| **Description** | **STP bridge instance**<br>**STP Cost of this port** | |
| **Syntax** | spanning-tree mst <0-7> cost { <1-200000000> \| auto } | |
| **Parameter** | **Name** | **Description** |
| | <0-7> | instance 0-7 (CIST=0, MST2=1...) |
| | <1-200000000> | STP Cost of this port |

# A.230 spanning-tree mst port-priority

| | | |
|---|---|---|
| **Description** | **port-priority** | |
| **Syntax** | spanning-tree mst <0-7> port-priority <0-240> | |
| **Parameter** | **Name** | **Description** |
| | <0-7> | instance 0-7 (CIST=0, MST2=1...) |
| | <0-240> | STP priority of this port |

# A.231 spanning-tree mst priority

| | | |
|---|---|---|
| **Description** | **Priority of the instance**<br>**Range in seconds** | |
| **Syntax** | spanning-tree mst <0-7> priority <0-61440> | |
| **Parameter** | **Name** | **Description** |
| | <0-7> | instance 0-7 (CIST=0, MST2=1...) |
| | <0-61440> | Priority of the instance |

# A.232 spanning-tree mst vlan

| Description | VLAN keyword | |
|---|---|---|
| Syntax | spanning-tree mst <0-7> vlan <vlan_list> | |
| Parameter | Name | Description |
| | <0-7> | instance 0-7 (CIST=0, MST2=1...) |
| | <vlan_list> | Range of VLANs |

# A.233 spanning-tree mst forward-time

| Description | forward-time<br>Delays between port states | |
|---|---|---|
| Syntax | spanning-tree mst forward-time <4-30> | |
| Parameter | Name | Description |
| | <4-30> | Delays between port states |

# A.234 spanning-tree mst max-age

| Description | Max bridge age before timeout. | |
|---|---|---|
| Syntax | spanning-tree mst max-age <6-40> [ forward-time <4-30> ] | |
| Parameter | Name | Description |
| | <6-40> | Max bridge age before a timeout |
| | <4-30> | forward-time |

# A.235 spanning-tree mst max-hops

| Description | MSTP bridge max hop count | |
|---|---|---|
| Syntax | spanning-tree mst max-hops <6-40> | |
| Parameter | Name | Description |
| | <6-40> | MSTP bridge max hop count |

# A.236 spanning-tree mst name

| Description | Name of the bridge<br>Revision<br>Revision keyword | |
|---|---|---|
| Syntax | spanning-tree mst name <word32> revision <0-65535> | |
| Parameter | Name | Description |
| | <word32> | Name of the bridge |
| | <0-65535> | Revision keyword |

# A.237 spanning-tree mst <instance>

| Description | instance 0-7 (CIST=0, MST2=1…) | |
|---|---|---|
| Syntax | spanning-tree mst <instance> priority <prio><br>spanning-tree mst <instance> vlan <v_vlan_list> | |
| Parameter | Name | Description |
| | instance | <Instance : 0-7> instance 0-7 (CIST=0, MST2=1…) |
| | priority | Priority of the instance |
| | vlan | VLAN keyword |
| | prio | <Prio : 0-61440> Range in seconds |
| | v_vlan_list | <vlan_list> Range of VLANs |

# A.238 spanning-tree recovery

| Description | Recovery | |
|---|---|---|
| Syntax | spanning-tree recovery interval <interval> | |
| Parameter | Name | Description |
| | interval | The interval |
| | interval | Interval: 30-86400> Range in seconds |

# A.239 spanning-tree transmit

| Description | Transmit | |
|---|---|---|
| Syntax | spanning-tree transmit hold-count <holdcount> | |
| Parameter | Name | Description |
| | hold-count | Max number of transmit BPDUs per sec |
| | holdcount | <Holdcount: 1-10> 1-10 per sec, 6 is the default |

# A.240 sflow

| Description | Enables/disables flow sampling on this port. | |
|---|---|---|
| Syntax | sflow [ <range_list> ] | |
| Parameter | Name | Description |
| | < range_list > | Sampler instance |

# A.241 sflow agent-ip

| Description | The agent IP address is used as the agent address in UDP datagrams. Defaults to IPv4 loopback address. | |
|---|---|---|
| Syntax | sflow agent-ip { ipv4 <ipv4_addr> \| ipv6 <ipv6_addr> } | |
| Parameter | Name | Description |
| | < ipv4_addr > | Ipv4 address |
| | < ipv6_addr> | ipv6 address |

# A.242 sflow collector-address

| Description | Sflow runtime, see sflow_icli_functions | |
|---|---|---|
| Syntax | sflow collector-address [ receiver <range_list> ] [ <word> ] | |
| Parameter | Name | Description |
| | < range_list > | Sampler instance |

# A.243 sflow max-datagram-size

| Description | Statistics flow Maximum datagram size. | |
|---|---|---|
| Syntax | sflow max-datagram-size [ receiver <range_list> ] <200-1468> | |
| Parameter | Name | Description |
| | <range_list> | receiver list |
| | <200-1468> | packet byte |

# A.244 sflow max-sampling-size

| Description | Specifies the maximum number of bytes to transmit per flow sample. | |
|---|---|---|
| Syntax | sflow max-sampling-size [ sampler <range_list> ] [ <14-200> ] | |
| Parameter | Name | Description |
| | < range_list > | Sampler instance |
| | <200-1468> | packet byte |

# A.245 sflow collector-port

| Description | Collector UDP port | |
|---|---|---|
| Syntax | sflow collector-port [ receiver <rcvr_idx_list> ] <collector_port> | |
| Parameter | Name | Description |
| | collector_port | <Collector Port: 1-65535> Port number |

# A.246 sflow sampling-rate

| | | |
|---|---|---|
| **Description** | **Specifies the statistical sampling rate. The sample rate is specified as N to sample 1/Nth of the packets n the monitored flows. There are no restrictions on the value, but the switch will adjust it to the closest possible sampling rate.** | |
| **Syntax** | sflow sampling-rate [ sampler <range_list> ] [ <1-4294967295> ] | |
| **Parameter** | **Name** | **Description** |
| | < range_list > | Sampler instance |
| | <1-4294967295> | Sampling rate |

# A.247 sflow timeout

| | | |
|---|---|---|
| **Description** | **Receiver timeout is measured in seconds. The switch decrements the timeout once per second, and as long as it is non-zero, the receiver receives samples. Once the timeout reaches 0, the receiver and all its configurations are reset to default.** | |
| **Syntax** | sflow timeout [ receiver <range_list> ] <0-2147483647> | |
| **Parameter** | **Name** | **Description** |
| | < range_list > | Sampler instance |
| | <0-2147483647> | The number of seconds. |

# A.248 snmp-server

| | | |
|---|---|---|
| **Description** | **Enable SNMP server** | |
| **Syntax** | snmp-server | |
| **Parameter** | **Name** | **Description** |
| | | |

# A.249 snmp-server access

| | | |
|---|---|---|
| **Description** | **snmp-server access configuration** | |
| **Syntax** | snmp-server access < group name > model { v1 \| v2c \| v3 \| any } level { auth \| noauth \| priv } [ read <word255> ] [ write <word255> ] | |
| **Parameter** | **Name** | **Description** |
| | < group name > | 32 words |
| | < v1 \| v2c \| v3 \| any > | V1~v3 security model |
| | < level > | security level |
| | { auth \| noauth \| priv } | authNoPriv Security Level |
| | | noAuthNoPriv Security Level |
| | | authPriv Security Level |
| | read | specify a read view for the group |
| | <word255> | read view name |

# A.250 snmp-server community v2c

| Description | Set the SNMP v2c community | |
|---|---|---|
| Syntax | snmp-server community v2c <word127> [ ro \| rw ] | |
| Parameter | Name | Description |
| | < word127 > | Community word |
| | < ro > | Read-only |
| | <rw> | Read write |

# A.251 snmp-server community v3

| Description | S Set the SNMP v3 community | |
|---|---|---|
| Syntax | snmp-server community v3 <word127> [ <ipv4_addr> <ipv4_netmask> ] | |
| Parameter | Name | Description |
| | < word127 > | Community word |
| | < ipv4_addr > | IPv4 address |
| | <ipv4_netmask> | IPv4 netmask |

# A.252 snmp-server host

| Description | Set SNMP server's configurations | |
|---|---|---|
| Syntax | snmp-server host <word32> | |
| Parameter | Name | Description |
| | < word32 > | Name of the host configuration |

# A.253 snmp-server host traps

| Description | Set SNMP host's configurations | |
|---|---|---|
| Syntax | snmp-server host < Name of the host configuration > traps [ linkup ] [ linkdown ] [ lldp ] | |
| Parameter | Name | Description |
| | < Name of the host configuration > | Name of the host configuration |
| | <200-1468> | packet byte |
| | [ linkup ] | Link up event |
| | [ linkdown ] | Link down event |
| | [ lldp ] | LLDP event |

# A.254 snmp-server trap

| Description | Set SNMP server's configurations | |
|---|---|---|
| Syntax | snmp-server trap | |
| Parameter | Name | Description |
| | | |

# A.255 snmp-server user

| Description | Set the SNMPv3 user's configurations | |
|---|---|---|
| Syntax | snmp-server user <Username> engine-id <Engine ID octet string> [ { md5 <word8-32> \| sha <word8-40> } [ priv { des \| aes } <word8-32> ] ] | |
| Parameter | Name | Description |
| | <Username > | 32 words |
| | <Engine ID octet string> | word10-32 |
| | MD5 | Set MD5 protocol |
| | sha | Set SHA protocol |
| | <word8-40> | SHA password |
| | priv | Set Privacy |
| | { des \| aes } | Set DES/AES protocol |
| | <word8-32> | Set privacy password |

# A.256 snmp-server version

| Description | Set the SNMP server's version | |
|---|---|---|
| Syntax | snmp-server version { v1 \| v2c \| v3 } | |
| Parameter | Name | Description |
| | { v1 \| v2c \| v3 } | SNMP v1,v2c,v3 |

# A.257 snmp-server view

| Description | Snmp MIB view configuration | |
|---|---|---|
| Syntax | snmp-server view <word32> <word255> { include \| exclude } | |
| Parameter | Name | Description |
| | < word32 > | MIB view name |
| | < word255> | MIB view OID |
| | { include \| exclude } | Included/Excluded type from the view |

# A.258 SNMP trap receive ipv6 host

| Description | host configuration | |
|---|---|---|
| Syntax | host <ipv6_ucast> [ <1-65535> ] [ traps \| informs ] | |
| Parameter | Name | Description |
| | ipv6_ucast | IP address of SNMP trap host |
| | 1-65535 | UDP port of the trap messges |
| | traps | Send Trap messages to this host |
| | informs | Send Inform messages to this host |

# A.259 snmp-server contac

| Description | SNMP server contact | |
|---|---|---|
| Syntax | snmp-server contact <v_line255> | |
| Parameter | Name | Description |
| | v_line255 | <line255> contact string |

# A.260 snmp-server engine-id

| Description | SNMP server engine ID | |
|---|---|---|
| Syntax | snmp-server engine-id local <engineID> | |
| Parameter | Name | Description |
| | local | Set SNMP local engine ID |
| | engineID | <Engineid : word10-32> local engine ID |

# A.261 snmp-server location

| Description | SNMP server location | |
|---|---|---|
| Syntax | snmp-server location <v_line255> | |
| Parameter | Name | Description |
| | v_line255 | <line255> location string |

# A.262 snmp-server security-to-group

| Description | SNMP server security | |
|---|---|---|
| Syntax | snmp-server security-to-group model { v1 \| v2c \| v3 } name <security_name> group <group_name> | |
| Parameter | **Name** | **Description** |
| | model | security model |
| | v1 | v1 security model |
| | v2c | v2c security model |
| | v3 | v3 security model |
| | name | security user |
| | security_name | <SecurityName : word32> security user name |
| | group | security group |
| | group_name | <GroupName : word32> security group name |

# A.263 SNMP trap receive ipv4 host

| Description | host configuration | |
|---|---|---|
| Syntax | host { <ipv4_ucast> \| <hostname> } [ <1-65535> ] [ traps \| informs ] | |
| Parameter | | |
| | **Name** | **Description** |
| | Ipv4_ucast | IP address of SNMP trap host |
| | hostname | hostname of SNMP trap host |
| | 1-65535 | UDP port of the trap messges |
| | traps | Send Trap messages to this host |
| | informs | Send Inform messages to this host |

# A.264 qos qce

| Description | QCE setting | |
|---|---|---|
| Syntax | qos qce { <Id : 1-256> \| refresh \| update } | |
| Parameter | **Name** | **Description** |
| | <Id : 1-256> | QCE ID |
| | refresh | Refresh QCE tables in hardware |
| | update | Update an existing QCE |

# A.265 qos storm

| Description | QoS storm | |
|---|---|---|
| Syntax | qos storm { unicast \| multicast \| broadcast } { { <rate> [ kfps ] } \| { 1024 kfps } } | |
| Parameter | Name | Description |
| | broadcast | Police broadcast frames |
| | multicast | Police multicast frames |
| | unicast | Police unicast frames |
| | <rate> | 1024, Rate is 1024 kfps<br><Rate : 1,2,4,8,16,32,64,128,256,512> Policer rate (default fps) |

# A.266 qos cos

| Description | Class of service configuration | |
|---|---|---|
| Syntax | qos cos <0-7> | |
| Parameter | Name | Description |
| | <0-7> | Specific class of service |

# A.267 qos dscp-classify

| Description | Set qos dscp-classify. | |
|---|---|---|
| Syntax | qos dscp-classify { zero \| selected \| any } | |
| Parameter | Name | Description |
| | | |

# A.268 qos dscp-remark

| Description | Set qos dscp-remark | |
|---|---|---|
| Syntax | qos dscp-remark { rewrite \| remap \| remap-dp } | |
| Parameter | Name | Description |
| | | |

# A.269 qos dscp-translate

| Description | Enable qos dscp-translate mode | |
|---|---|---|
| Syntax | qos dscp-translate | |
| Parameter | Name | Description |
| | | |

# A.270 qos map cos-dscp

| Description | Configure cos mapping to dscptable | |
|---|---|---|
| **Syntax** | qos map cos-dscp <0~7> dpl <0~1> dscp { <0-63> \| { be \| af11 \| af12 \| af13 \| af21 \| af22 \| af23 \| af31 \| af32 \| af33 \| af41 \| af42 \| af43 \| cs1 \| cs2 \| cs3 \| cs4 \| cs5 \| cs6 \| cs7 \| ef \| va } } | |
| **Parameter** | **Name** | **Description** |
| | <0~7> | Cos level |
| | <0~1> | Specific drop precedence level |
| | <0-63> | Dscp level |
| | be | Default PHB(DSCP 0) for best-effort traffic |
| | af11~13 | Assured Forwarding PHB 11~13(DSCP 10,12,14) |
| | af22~23 | Assured Forwarding PHB 22~23(DSCP 20,22) |
| | af31~33 | Assured Forwarding PHB 31~33(DSCP 26,28,30) |
| | Af41~43 | Assured Forwarding PHB 41~43(DSCP 34,36,38) |
| | cs1~7 | Class Selector PHB CS1~7 precedence 1~7(DSCP 8*(cs value)) |
| | ef | Expedited Forwarding PHB(DSCP 46) |
| | va | Voice Admit PHB(DSCP 44) |

# A.271 qos map cos-dscp

| Description | Configure dscp mapping to cos table | |
|---|---|---|
| **Syntax** | qos map dscp-cos { <0~63> \| { be \| af11 \| af12 \| af13 \| af21 \| af22 \| af23 \| af31 \| af32 \| af33 \| af41 \| af42 \| af43 \| cs1 \| cs2 \| cs3 \| cs4 \| cs5 \| cs6 \| cs7 \| ef \| va } } cos <0-7> dpl <dpl> | |
| **Parameter** | **Name** | **Description** |
| | <0~7> | Cos level |
| | <0-63> | Dscp level |
| | be | Default PHB(DSCP 0) for best effort traffic |
| | af11~13 | Assured Forwarding PHB 11~13(DSCP 10,12,14) |
| | af22~23 | Assured Forwarding PHB 22~23(DSCP 20,22) |
| | af31~33 | Assured Forwarding PHB 31~33(DSCP 26,28,30) |
| | Af41~43 | Assured Forwarding PHB 41~43(DSCP 34,36,38) |
| | cs1~7 | Class Selector PHB CS1~7 precedence 1~7(DSCP 8*(cs value)) |
| | ef | Expedited Forwarding PHB(DSCP 46) |
| | va | Voice Admit PHB(DSCP 44) |
| | <0~1> | Specific drop precedence level |

# A.272 qos map dscp-egress-translation

| Description | Configure dscp egress-translation | |
|---|---|---|
| Syntax | qos map dscp-egress-translation { <0~63> \| { be \| af11 \| af12 \| af13 \| af21 \| af22 \| af23 \| af31 \| af32 \| af33 \| af41 \| af42 \| af43 \| cs1 \| cs2 \| cs3 \| cs4 \| cs5 \| cs6 \| cs7 \| ef \| va } } <0~1> to { <0-63> \| { be \| af11 \| af12 \| af13 \| af21 \| af22 \| af23 \| af31 \| af32 \| af33 \| af41 \| af42 \| af43 \| cs1 \| cs2 \| cs3 \| cs4 \| cs5 \| cs6 \| cs7 \| ef \| va } } | |
| Parameter | **Name** | **Description** |
| | <0~7> | Cos level |
| | <0-63> | Dscp level |
| | be | Default PHB(DSCP 0) for best effort traffic |
| | af11~13 | Assured Forwarding PHB 11~13(DSCP 10,12,14) |
| | af22~23 | Assured Forwarding PHB 22~23(DSCP 20,22) |
| | af31~33 | Assured Forwarding PHB 31~33(DSCP 26,28,30) |
| | Af41~43 | Assured Forwarding PHB 41~43(DSCP 34,36,38) |
| | cs1~7 | Class Selector PHB CS1~7 precedence 1~7(DSCP 8*(cs value)) |
| | ef | Expedited Forwarding PHB(DSCP 46) |
| | va | Voice Admit PHB(DSCP 44) |
| | <0~1> | Specific drop precedence level |

# A.273 qos map dscp-ingress-translation

| Description | Configure dscp ingress-translation | |
|---|---|---|
| Syntax | qos map dscp-ingress-translation { <0~63> \| { be \| af11 \| af12 \| af13 \| af21 \| af22 \| af23 \| af31 \| af32 \| af33 \| af41 \| af42 \| af43 \| cs1 \| cs2 \| cs3 \| cs4 \| cs5 \| cs6 \| cs7 \| ef \| va } } to { <0-63> \| { be \| af11 \| af12 \| af13 \| af21 \| af22 \| af23 \| af31 \| af32 \| af33 \| af41 \| af42 \| af43 \| cs1 \| cs2 \| cs3 \| cs4 \| cs5 \| cs6 \| cs7 \| ef \| va } } | |
| Parameter | **Name** | **Description** |
| | <0~7> | Cos level |
| | <0-63> | Dscp level |
| | be | Default PHB(DSCP 0) for best effort traffic |
| | af11~13 | Assured Forwarding PHB 11~13(DSCP 10,12,14) |
| | af22~23 | Assured Forwarding PHB 22~23(DSCP 20,22) |
| | af31~33 | Assured Forwarding PHB 31~33(DSCP 26,28,30) |
| | Af41~43 | Assured Forwarding PHB 41~43(DSCP 34,36,38) |
| | cs1~7 | Class Selector PHB CS1~7 precedence 1~7(DSCP 8*(cs value)) |
| | ef | Expedited Forwarding PHB(DSCP 46) |
| | va | Voice Admit PHB(DSCP 44) |
| | <0~1> | Specific drop precedence level |

# A.274 qos policer

| Description | Configure qos policer | |
|---|---|---|
| Syntax | qos policer <unit> [ fps ] [ flowcontrol ] | |
| Parameter | Name | Description |
| | < unit > | Traffic meter |
| | < fps > | Frame rate |
| | [ flowcontrol ] | Enable flowcontrol mode |

# A.275 qos wrr

| Description | Specifies qos wrr mode | |
|---|---|---|
| Syntax | qos wrr <1-100> <1-100> <1-100> <1-100> <1-100> <1-100> | |
| Parameter | Name | Description |
| | <1-100> | every level proportion |

# A.276 qos queue-shaper

| Description | Configure queue-shaper command | |
|---|---|---|
| Syntax | qos queue-shaper queue <0~7> <uint> [ excess ] | |
| Parameter | Name | Description |
| | <1-100> | every level proportion |
| | <unit> | Traffic meter |
| | [ excess ] | Agree the shaper could be excess or not |

# A.277 qos queue-policer

| Description | Configure queue-policer command | |
|---|---|---|
| Syntax | qos queue-policer queue <0~7> <uint> | |
| Parameter | Name | Description |
| | <0~7> | Queue number |
| | <uint> | Traffic meter |

# A.278 qos shaper <unit>

| Description | Configure qos shaper command | |
|---|---|---|
| Syntax | qos shaper <uint> | |
| Parameter | Name | Description |
| | <1-100> | every level proportion |
| | <unit> | Traffic meter |

# A.279 ip igmp host-proxy [ leave-proxy ]

| Description | IGMP proxy for leave configuration | |
|---|---|---|
| Syntax | ipigmp host-proxy [ leave-proxy ] | |
| Parameter | Name | Description |
| | leave-proxy | IGMP proxy for leave |

# A.280 ip igmp snooping

| Description | Snooping igmp |
|---|---|
| Syntax | ipigmp snooping |
| Parameter | N/A |

# A.281 ip igmp snooping immediate-leave

| Description | IP IGMP snooping immediate leave configuration |
|---|---|
| Syntax | ipigmp snooping immediate-leave |
| Parameter | N/A |

# A.282 ip igmp snooping last-member-query-interval

| Description | IP IGMP snooping Last Member Query Interval in tenths of seconds | |
|---|---|---|
| Syntax | ipigmp snooping last-member-query-interval <0-31744> | |
| Parameter | Name | Description |
| | 0-31744 | 0 - 31744 tenths of seconds |

# A.283 ip igmp snooping max-groups

| Description | IGMP group throttling configuration | |
|---|---|---|
| Syntax | ipigmp snooping max-groups <1-10> | |
| Parameter | Name | Description |
| | 1-10 | Maximum number of IGMP group registration |

# A.284 ip igmp snooping mrouter

| Description | IPIGMP snooping Multicast router port configuration |
|---|---|
| Syntax | ipigmp snooping mrouter |
| Parameter | |

# A.285 ip igmp snooping querier

| Description | IP IGMP querier configuration | |
|---|---|---|
| Syntax | ipigmp snooping querier { election \| address <ipv4_ucast> } | |
| Parameter | Name | Description |
| | election | Act as an IGMP Querier to join Querier-Election |
| | address | IGMP Querier address configuration |
| | ipv4_ucast | A valid IPv4 unicast address |

# A.286 ip igmp snooping query-interval

| Description | IP IGMP snooping Query-Interval in seconds | |
|---|---|---|
| Syntax | Ip igmp snooping query-interval <1-31744> | |
| Parameter | Name | Description |
| | 1-317 | 1 - 31744 seconds |

# A.287 ip igmp snooping vlan

| Description | ipigmp snooping vlan IDs | |
|---|---|---|
| Syntax | ipigmp snooping vlan<vlan_list> | |
| Parameter | Name | Description |
| | vlan_list | VLAN identifier(s): VID |

# A.288 ip igmp ssm-range

| Description | SSM range | |
|---|---|---|
| Syntax | ip igmp ssm-range <v_ipv4_mcast> <ipv4_prefix_length> | |
| Parameter | Name | Description |
| | v_ipv4_mcast | Valid IPv4 multicast address |
| | ipv4_prefix_length | Length |

# A.289 ip igmp unknown-flooding

| Description | IP IGMP flooding unregistered IPv4 multicast traffic |
|---|---|
| Syntax | ipigmp unknown-flooding |
| Parameter | |

# A.290 clear ip igmp snooping statistics

| Description | clear ip igmp snooping statistics | |
|---|---|---|
| Syntax | clear ip igmp snooping [ vlan<vlan_list> ] statistics | |
| Parameter | Name | Description |
| | vlan_list | VLAN list. |

# A.291 mvr

| Description | Multicast VLAN Registration configuration | |
|---|---|---|
| Syntax | mvr | |
| Parameter | Name | Description |
| | | |

# A.292 mvr immediate-leave

| Description | mvr immediate leave configuration | |
|---|---|---|
| Syntax | mvr immediate-leave | |
| Parameter | Name | Description |
| | | |

# A.293 mvr name channel

| Description | Multicast VLAN name and channel configuration | |
|---|---|---|
| Syntax | mvr name <word16> channel <word16> | |
| Parameter | Name | Description |
| | name <word16> | MVR multicast VLAN name |
| | channel <word16> | Profile name in 16 char's |

# A.294 mvr frame priority

| Description | Multicast VLAN interface CoS priority | |
|---|---|---|
| Syntax | mvr name <word16> frame priority <0-7> | |
| Parameter | Name | Description |
| | name <word16> | MVR multicast VLAN name |
| | priority <0-7> | CoS priority ranges from 0 to 7 |

# A.295 mvr name <word16> frame tagged

| Description | MVR control frame in TX, Tagged IGMP/MLD frames will be sent | |
|---|---|---|
| Syntax | mvr name <word16> frame tagged | |
| Parameter | Name | Description |
| | name <word16> | MVR multicast VLAN name |

# A.296 mvr name <word16> igmp-address <ipv4_ucast>

| Description | MVR address configuration used in IGMP | |
|---|---|---|
| Syntax | mvr name <word16> igmp-address <ipv4_ucast> | |
| Parameter | Name | Description |
| | name <word16> | MVR multicast VLAN name |
| | <ipv4_ucast> | A valid IPv4 unicast address |

# A.297 mvr name <word16> last-member-query-interval <0-31744>

| Description | Configure last Member Query Interval in tenths of seconds | |
|---|---|---|
| Syntax | mvr name <word16> last-member-query-interval <0-31744> | |
| | Name | Description |
| | name <word16> | MVR multicast VLAN name |
| | <0-31744> | 0 - 31744 tenths of seconds |

# A.298 mvr name <word16> mode

| Description | Dynamic MVR operation mode | |
|---|---|---|
| Syntax | mvr name <word16> mode { dynamic \| compatible } | |
| Parameter | Name | Description |
| | dynamic | Dynamic MVR operation mode |
| | compatible | Compatible MVR operation mode |

# A.299 mvr name <word16> type

| Description | MVR port role configuration | |
|---|---|---|
| Syntax | mvr name <word16> type { source \| receiver } | |
| Parameter | Name | Description |
| | source | MVR source port |
| | receiver | MVR receiver port |

# A.300 mvr vlan

| Description | Multicast VLAN Registration configuration | |
|---|---|---|
| Syntax | mvr vlan <vlan_list> [ name <word16> ] | |
| Parameter | Name | Description |
| | < vlan_list > | MVR multicast VLAN list |
| | name <word16> | MVR multicast VLAN name in 16 char's |

# A.301 mvr vlan <vlan_list> channel

| Description | MVR channel configuration | |
|---|---|---|
| Syntax | mvr vlan <vlan_list> channel <word16> | |
| Parameter | Name | Description |
| | < vlan_list > | MVR multicast VLAN list |
| | channel <word16> | MVR multicast channel name in 16 char's |

# A.302 mvr vlan <vlan_list> frame priority

| Description | Interface CoS priority | |
|---|---|---|
| Syntax | mvr vlan <vlan_list> frame priority <0-7> | |
| Parameter | Name | Description |
| | < vlan_list > | MVR multicast VLAN list |
| | <0-7> | CoS priority ranges from 0 to 7 |

# A.303 mvr vlan <vlan_list> frame tagged

| Description | Set tagged IGMP/MLD frames will be sent | |
|---|---|---|
| Syntax | mvr vlan <vlan_list> frame tagged | |
| Parameter | Name | Description |
| | < vlan_list > | MVR multicast VLAN list |

# A.304 mvr vlan <vlan_list> igmp-address

| Description | Set tagged IGMP/MLD frames will be sent | |
|---|---|---|
| Syntax | mvr vlan <vlan_list> igmp-address <ipv4_ucast> | |
| Parameter | Name | Description |
| | < vlan_list > | MVR multicast VLAN list |
| | <ipv4_ucast> | A valid IPv4 unicast address for IGMP |

# A.305 mvr vlan <vlan_list> mode

| Description | Dynamic MVR vlan operation mode | |
|---|---|---|
| Syntax | mvr vlan <vlan_list> mode { dynamic \| compatible } | |
| Parameter | Name | Description |
| | < vlan_list > | MVR multicast VLAN list |
| | dynamic | Dynamic MVR operation mode |
| | compatible | Compatible MVR operation mode |

# A.306 mvr vlan <vlan_list> type

| Description | MVR vlan role configuration | |
|---|---|---|
| Syntax | mvr vlan <vlan_list> type { source \| receiver } | |
| Parameter | Name | Description |
| | < vlan_list > | MVR multicast VLAN list |
| | source | MVR source port |
| | receiver | MVR receiver port |

# A.307 ipv6 mld host-proxy

| Description | IPv6 MLD proxy configuration | |
|---|---|---|
| Syntax | ipv6 mld host-proxy [ leave-proxy ] | |
| Parameter | Name | Description |
| | leave-proxy | MLD proxy for leave configuration |

# A.308 ipv6 mld snooping

| Description | ipv6 mld snooping |
|---|---|
| Syntax | ipv6 mld snooping |
| Parameter | |

# A.309 ipv6 mld snooping compatibility

| Description | IPv6 MLD snooping compatibility configuration | |
|---|---|---|
| Syntax | ipv6 mld snooping compatibility { auto \| v1 \| v2 } | |
| Parameter | Name | Description |
| | auto | Compatible with MLDv1/MLDv2 |
| | v1 | Forced MLDv1 |
| | v2 | Forced MLDv2 |

# A.310 ipv6 mld snooping immediate-leave

| Description | IPv6 MLD snooping immediate-leave configuration |
|---|---|
| Syntax | ipv6 mld snooping immediate-leave |
| Parameter | |

# A.311 ipv6 mld snooping last-member-query-interval

| Description | ipv6 mld snooping last member query interval in tenths of seconds | |
|---|---|---|
| Syntax | ipv6 mld snooping last-member-query-interval <0-31744> | |
| Parameter | Name | Description |
| | 0-31744 | 0 - 31744 tenths of seconds |

# A.312 ipv6 mld snooping max-groups

| Description | IPv6 MLD group throttling configuration | |
|---|---|---|
| Syntax | ipv6 mld snooping max-groups <1-10> | |
| Parameter | Name | Description |
| | 1-10 | Maximum number of MLD group registration |

# A.313 ipv6 mld snooping mrouter

| Description | ipv6 mld snooping multicast router port configuration |
|---|---|
| Syntax | ipv6 mld snooping mrouter |
| Parameter | |

# A.314 ipv6 mld snooping query-interval

| Description | IPv6 MLD snooping query interval in seconds | |
|---|---|---|
| Syntax | ipv6 mld snooping query-interval <1-31744> | |
| Parameter | Name | Description |
| | 1-31744 | 1 - 31744 seconds |

# A.315 ipv6 mld snooping query-max-response-time

| Description | IPv6 MLD snooping querymaxresponse interval in tenths of seconds | |
|---|---|---|
| Syntax | ipv6 mld snooping query-max-response-time <0-31744> | |
| Parameter | Name | Description |
| | 0-31744 | 0 - 31744 tenths of seconds |

# A.316 ipv6 mld snooping vlan

| Description | ipv6 mld snooping vlan | |
|---|---|---|
| Syntax | ipv6 mld snooping vlan<vlan_list> | |
| Parameter | Name | Description |
| | vlan_list | VLAN identifier(s): VID |

# A.317 ipv6 mld ssm-range

| Description | SSM range | |
|---|---|---|
| Syntax | ipv6 mld ssm-range <v_ipv6_mcast> <ipv6_prefix_length> | |
| Parameter | Name | Description |
| | v_ipv6_mcast | Valid IPv6 multicast address |
| | ipv6_prefix_length | length |

# A.318 ipv6 mld unknown-flooding

| Description | Flooding unregistered IPv6 multicast traffic |
|---|---|
| Syntax | ipv6 mld unknown-flooding |
| Parameter | |

# A.319 ipv6 route

| Description | IPv6 Route | |
|---|---|---|
| Syntax | ipv6 route <v_ipv6_subnet> { <v_ipv6_ucast> \| interface vlan <v_vlan_id> <v_ipv6_addr> } | |
| Parameter | Name | Description |
| | v_ipv6_subnet | IPv6 prefix x:x::y/z |
| | v_ipv6_ucast | The IP address of the DHCP relay server |
| | v_vlan_id | VLAN ID |
| | v_ipv6_addr | IP address |

# A.320 loop-protect

| Description | Loop protection configuration on port |
|---|---|
| Syntax | loop-protect |
| Parameter | |

# A.321 loop-protect action

| Description | Loop protection configuration on port | |
|---|---|---|
| Syntax | loop-protect action { [ shutdown ] [ log ] | |
| Parameter | Name | Description |
| | shutdown | Shutdown port |
| | log | Generate log |

# A.322 loop-protect shutdown-time

| Description | Loop protection shutdown time interval | |
|---|---|---|
| Syntax | loop-protect shutdown-time <0-604800> | |
| Parameter | Name | Description |
| | 0-604800 | Shutdown time in second |

# A.323 loop-protect transmit-time

| Description | Loop protection transmits time interval | |
|---|---|---|
| Syntax | loop-protect transmit-time <1-10> | |
| Parameter | Name | Description |
| | 1-10 | Transmit time in second |

# A.324 loop-protect tx-mode

| Description | Loop protection actively generate PDUs |
|---|---|
| Syntax | loop-protect tx-mode |
| Parameter | |

# A.325 lldp holdtime

| Description | Sets LLDP hold time (The neighbor switch will discarded the LLDP information after \"hold time\" multiplied with \"timer\" seconds ). | |
|---|---|---|
| Syntax | lldp holdtime <2-10> | |
| Parameter | Name | Description |
| | <2-10> | Holdtime 2-10 seconds |

# A.326 lldp med

<table>
<tr><th>Description</th><th colspan="2">LLDP MED</th></tr>
<tr><td>Syntax</td><td colspan="2">See Description</td></tr>
<tr><td rowspan="4">Parameter</td><td>Name</td><td>Description</td></tr>
<tr><td>datum</td><td>Datum (geodetic system) type<br><br><table><tr><td>nad83-mllw</td><td>Mean lower low water datum 1983</td></tr><tr><td>nad83-navd88</td><td>North American vertical datum 1983</td></tr><tr><td>wgs84</td><td>World Geodetic System 1984</td></tr></table></td></tr>
<tr><td>fast</td><td>Number of times to repeat LLDP frame transmission at a fast start<br><v_1_to_10> : <1-10></td></tr>
<tr><td>location-tlv</td><td>LLDP-MED Location Type Length Value parameter<br><br><table><tr><td>altitude</td><td>Altitude parameter</td></tr><tr><td>civic-addr</td><td>Civic address information and postal information</td></tr><tr><td>elin-addr</td><td>Emergency Location Identification Number, (e.g. E911 and others), such as defined by TIA or NENA.</td></tr><tr><td>latitude</td><td>Latitude parameter</td></tr><tr><td>longitude</td><td>Longitude parameter</td></tr></table></td></tr>
<tr><td>media-vlan-policy</td><td>Use the media-vlan-policy to create a policy, which can be assigned to an interface<br><br><Index : 0-31> : Policy id for the policy which is created</td></tr>
</table>

# A.327 lldp receive

| Description | Enable/Disable decoding of received LLDP frames. |
|---|---|
| **Syntax** | lldp receive |

# A.328 lldp reinit <1-10>

| Description | LLDP tx reinitialization delay in seconds. | |
|---|---|---|
| **Syntax** | lldp reinit <1-10> | |
| **Parameter** | **Name** | **Description** |
| | <1-10> | Reinitialization delay time |

# A.329 lldp timer <5-32768>

| Description | Sets LLDP TX interval (The time between each LLDP frame transmitted in seconds). | |
|---|---|---|
| Syntax | lldp timer <5-32768> | |
| Parameter | Name | Description |
| | <5-32768> | 5-32768 seconds. |

# A.330 lldp tlv-select

| Description | Which optional TLVs to transmit? | |
|---|---|---|
| Syntax | lldp tlv-select { management-address \| port-description \| system-capabilities \| system-description \| system-name } | |
| Parameter | Name | Description |
| | management-address | Enable/Disable transmission of management address |
| | port-description | Enable/Disable transmission of port description |
| | system-capabilities | Enable/Disable transmission of system capabilities |
| | system-description | Enable/Disable transmission of system description |
| | system-name | Enable/Disable transmission of system name. |

# A.331 lldp transmission-delay

| Description | Sets LLDP transmission delay. LLDP transmission delay (the amount of time that the transmission of LLDP frames will delayed after LLDP configuration has changed) in seconds.) | |
|---|---|---|
| Syntax | lldp transmission-delay <1-8192> | |
| Parameter | Name | Description |
| | <1-8192> | transmission-delay seconds |

# A.332 lldp transmit

| Description | Enable/Disabled transmision of LLDP frames. |
|---|---|
| Syntax | lldp transmit |
| Parameter | |

# A.333 rfc2544 profile <word32>

| Description | RFC2544 profile configuration | |
|---|---|---|
| Syntax | rfc2544 profile <word32> | |
| Parameter | Name | Description |
| | <word32> | Profile name up to 32 characters long |

# A.334 rfc2544 rename profile

| Description | Rename an existing profile | |
|---|---|---|
| Syntax | rfc2544 rename profile <word32> <word32> | |
| Parameter | Name | Description |
| | profile <word32> | Old profile name |
| | <word32> | New profile name |

# A.335 rfc2544 save <word32> <word>

| Description | Save a report to a file on a TFTP server | |
|---|---|---|
| Syntax | rfc2544 save <word32> <word> | |
| Parameter | Name | Description |
| | <word32> | Name of existing report to save |
| | <word> | TFTP server URL on the form tftp://server[:port]/path-to-file |

# A.336 rfc2544 start <word32> profile <word32> [ desc <line128> ]

| Description | Start execution of a pre-configured profile | |
|---|---|---|
| Syntax | rfc2544 start <word32> profile <word32> [ desc <line128> ] | |
| Parameter | Name | Description |
| | start <word32> | Unique name of the resulting report |
| | profile <word32> | Name of existing profile to execute |
| | desc <line128> | A description that will appear in the report |

# A.337 rfc2544 stop <word32>

| Description | Stop the execution of an ongoing test | |
|---|---|---|
| Syntax | rfc2544 stop <word32> | |
| Parameter | Name | Description |
| | <word32> | Report name to stop the execution of |

# A.338 show rfc2544 profile [ <word32> ]

| Description | show rfc2544 profile name | |
|---|---|---|
| Syntax | show rfc2544 profile [ <word32> ] | |
| Parameter | Name | Description |
| | <word32> | rfc2544 profile name |

# A.339 gvrp

| Description | Enable GVRP on port(s) |
|---|---|
| Syntax | gvrp |
| Parameter | |

# A.340 gvrpjoin request vlan

| Description | Emit a Join-Request for test purpose | |
|---|---|---|
| Syntax | gvrp join-request vlan<vlan_list> | |
| Parameter | Name | Description |
| | vlan_list | List of VLANs |

# A.341 gvrpleave request vlan

| Description | Emit a leave-Request for test purpose | |
|---|---|---|
| Syntax | gvrp leave-request vlan<vlan_list> | |
| Parameter | Name | Description |
| | vlan_list | List of VLANs |

# A.342 gvrp max-vlans

| Description | gvrpmaximum number of VLANs | |
|---|---|---|
| Syntax | gvrp max-vlans<1-4095> | |
| Parameter | Name | Description |
| | <1-4095> | A valid range is from 1-4095. |

# A.343 gvrp time { [ join-time <1-20> ] [ leave-time <60-300> ] [ leave-all-time <1000-50>]

| Description | Set gvrp time | |
|---|---|---|
| Syntax | gvrp time { [ join-time <1-20> ] [ leave-time <60-300> ] [ leave-all-time <1000-5000> ] } | |
| Parameter | Name | Description |
| | 1-20 | join timer, available from 1 to 20 |
| | 60-300 | leave timer, available from 60 to 300 |
| | 1000-5000 | leaveall timer, available from 1000 to 5000 |

# A.344 voice vlan

| Description | Vlan for Voice appliance attributes |
|---|---|
| Syntax | voice vlan |
| Parameter | |

# A.345 voice vlan aging-time

| Description | Set secure learning aging time for voice traffic | |
|---|---|---|
| Syntax | voice vlan aging-time <10-10000000> | |
| Parameter | Name | Description |
| | 10-10000000 | Aging time, 10-10000000 seconds |

# A.346 voice vlan class

| Description | Set voice traffic class | |
|---|---|---|
| Syntax | voice vlan class { <0-7> \| low \| normal \| medium \| high } | |
| Parameter | Name | Description |
| | 0-7 | Traffic class value |
| | low | Traffic class low (0) |
| | normal | Traffic class normal (1) |
| | medium | Traffic class medium (2) |
| | high | Traffic class high (3) |

# A.347 voice vlan oui

| Description | Set voice traffic OUI configuration | |
|---|---|---|
| Syntax | voice vlan oui <oui> [ description <line32> ] | |
| Parameter | Name | Description |
| | oui | OUI value |
| | description | Set description for the OUI |
| | line32 | Description line |

# A.348 voice vlan vid

| Description | Set voice VLAN ID | |
|---|---|---|
| Syntax | voice vlan vid <vlan_id> | |
| Parameter | Name | Description |
| | <vlan_id> | VLAN ID, 1-4095 |

# A.349 profile alarm

| Description | Profile alarm |
|---|---|
| Syntax | profile alarm |
| Parameter | |

# A.350 alarm

| Description | Set alarm content | |
|---|---|---|
| **Syntax** | alarm <alarmId> { mask \| unmask \| major \| minor } | |
| **Parameter** | 101~108: GE-1~8 Port link down | |
| | Name | Description |
| | alarmId | 151: set Power alarm |
| | mask | Set alarm as mask, it means event will not be sent a notification |
| | unmask | Set alarm as un-mask, it means event will be sent a notification |
| | major | Set alarm level as major |
| | minor | Set alarm level as minor |

# Appendix B Supported Ethernet Commands

The following Ethernet Commands may be used:

show running-config

# show interface GigabitEthernet 1/* status

| Interface | Mode | | Speed & Duplex | Flow Control | Max Frame | Excessive | Link |
|---|---|---|---|---|---|---|---|
| GigabitEthernet | 1/1 | enabled | Auto | disabled | 9600 | Discard | Down |
| GigabitEthernet | 1/2 | enabled | Auto | disabled | 9600 | Discard | Down |
| GigabitEthernet | 1/3 | enabled | Auto | disabled | 9600 | Discard | 1Gfdx |
| GigabitEthernet | 1/4 | enabled | Auto | disabled | 9600 | Discard | 100fdx |
| GigabitEthernet | 1/5 | enabled | Auto | disabled | 9600 | Discard | Down |
| GigabitEthernet | 1/6 | enabled | Auto | disabled | 9600 | Discard | Down |
| GigabitEthernet | 1/7 | enabled | Auto | disabled | 9600 | Discard | Down |
| GigabitEthernet | 1/8 | enabled | Auto | disabled | 9600 | Discard | Down |
| GigabitEthernet | 1/9 | enabled | Auto | disabled | 9600 | Discard | Down |
| GigabitEthernet | 1/10 | enabled | Auto | disabled | 9600 | Discard | Down |

# show version

show interface GigabitEthernet 1/* statistics

**GigabitEthernet 1/1 Statistics:**

| Rx Packets: | 0 | Tx Packets: | 0 |
|---|---|---|---|
| Rx Octets: | 0 | Tx Octets: | 0 |
| Rx Unicast: | 0 | Tx Unicast: | 0 |
| Rx Multicast: | 0 | Tx Multicast: | 0 |
| Rx Broadcast: | 0 | Tx Broadcast: | 0 |
| Rx Pause: | 0 | Tx Pause: | 0 |
| | | | |
| Rx 64: | 0 | Tx 64: | 0 |
| Rx 65-127: | 0 | Tx 65-127: | 0 |
| Rx 128-255: | 0 | Tx 128-255: | 0 |
| Rx 256-511: | 0 | Tx 256-511: | 0 |
| Rx 512-1023: | 0 | Tx 512-1023: | 0 |
| Rx 1024-1526: | 0 | Tx 1024-1526: | 0 |
| Rx 1527- : | 0 | Tx 1527- : | 0 |

| Rx Packets: | 0 | Tx Packets: | 0 |
|---|---|---|---|
| | | | |
| Rx Priority 0: | 0 | Tx Priority 0: | 0 |
| Rx Priority 1: | 0 | Tx Priority 1: | 0 |
| Rx Priority 2: | 0 | Tx Priority 2: | 0 |
| Rx Priority 3: | 0 | Tx Priority 3: | 0 |
| Rx Priority 4: | 0 | Tx Priority 4: | 0 |
| Rx Priority 5: | 0 | Tx Priority 5: | 0 |
| Rx Priority 6: | 0 | Tx Priority 6: | 0 |
| Rx Priority 7: | 0 | Tx Priority 7: | 0 |
| | | | |
| Rx Drops: | 0 | Tx Drops: | 0 |
| Rx CRC/Alignment: | 0 | Tx Late/Exc. Coll.: | 0 |
| Rx Undersize: | 0 | | |
| Rx Oversize: | 0 | | |
| Rx Fragments: | 0 | | |
| Rx Jabbers: | 0 | | |
| Rx Filtered: | 0 | | |

**GigabitEthernet 1/2 Statistics:**

| Rx Packets: | 10662497 | Tx Packets: | 1312 |
|---|---|---|---|
| Rx Octets: | 14336340302 | Tx Octets: | 87717 |
| Rx Unicast: | 230 | Tx Unicast: | 212 |
| Rx Multicast: | 10547013 | Tx Multicast: | 1096 |
| Rx Broadcast: | 115254 | Tx Broadcast: | 4 |
| Rx Pause: | 0 | Tx Pause: | 0 |
| | | | |
| Rx 64: | 103730 | Tx 64: | 1244 |
| Rx 65-127: | 25778 | Tx 65-127: | 30 |
| Rx 128-255: | 8672 | Tx 128-255: | 36 |
| Rx 256-511: | 2711 | Tx 256-511: | 2 |
| Rx 512-1023: | 7086 | Tx 512-1023: | 0 |
| Rx 1024-1526: | 10514520 | Tx 1024-1526: | 0 |
| Rx 1527- : | 0 | Tx 1527- : | 0 |
| | | | |
| Rx Priority 0: | 10662497 | Tx Priority 0: | 0 |

show mac address-table

show ringv2

show profinet mrp

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