

PACSystems™ PROFINET Managed Industrial Ethernet Switches

USER MANUAL

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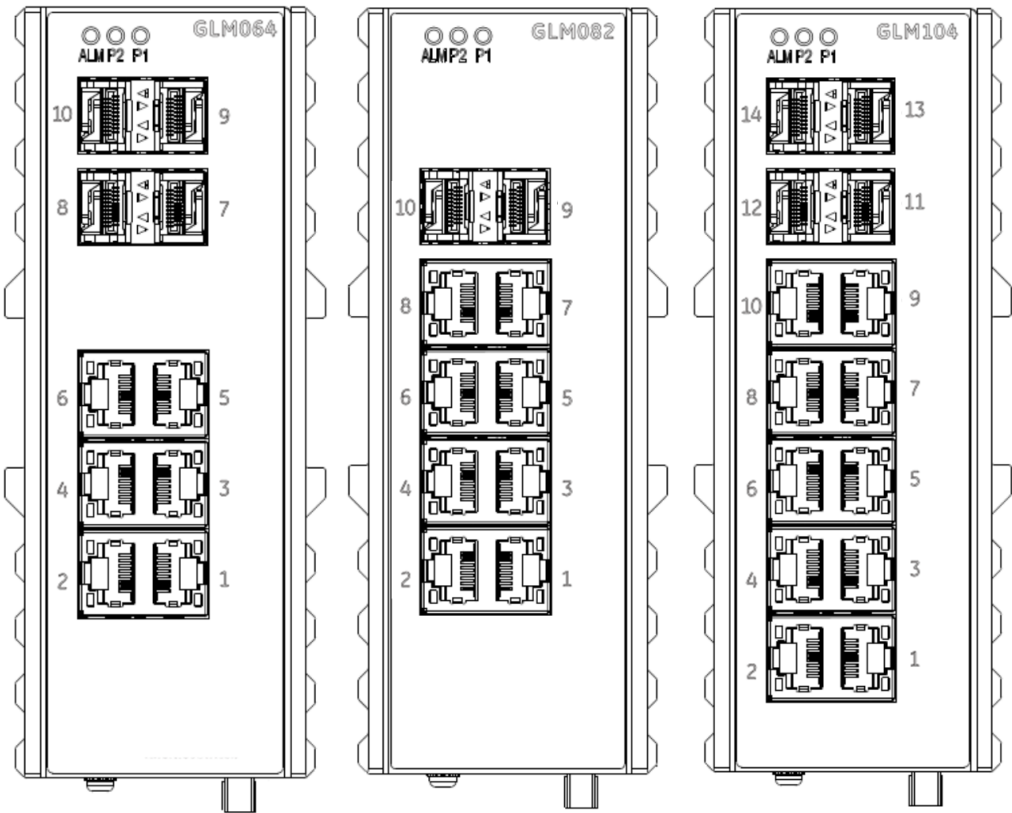
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Section 1 Introduction

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
E	July-2023	Updates to Section 4.3.3, <i>Slot 3: Port Alarm Settings & Status</i> and Section 3.6.2, <i>Small Form-Factor Pluggable (SFP) Connections</i>
D	Mar-2023	Updates to Section 3.6.2, <i>Small Form-Factor Pluggable (SFP) Connections</i> 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.

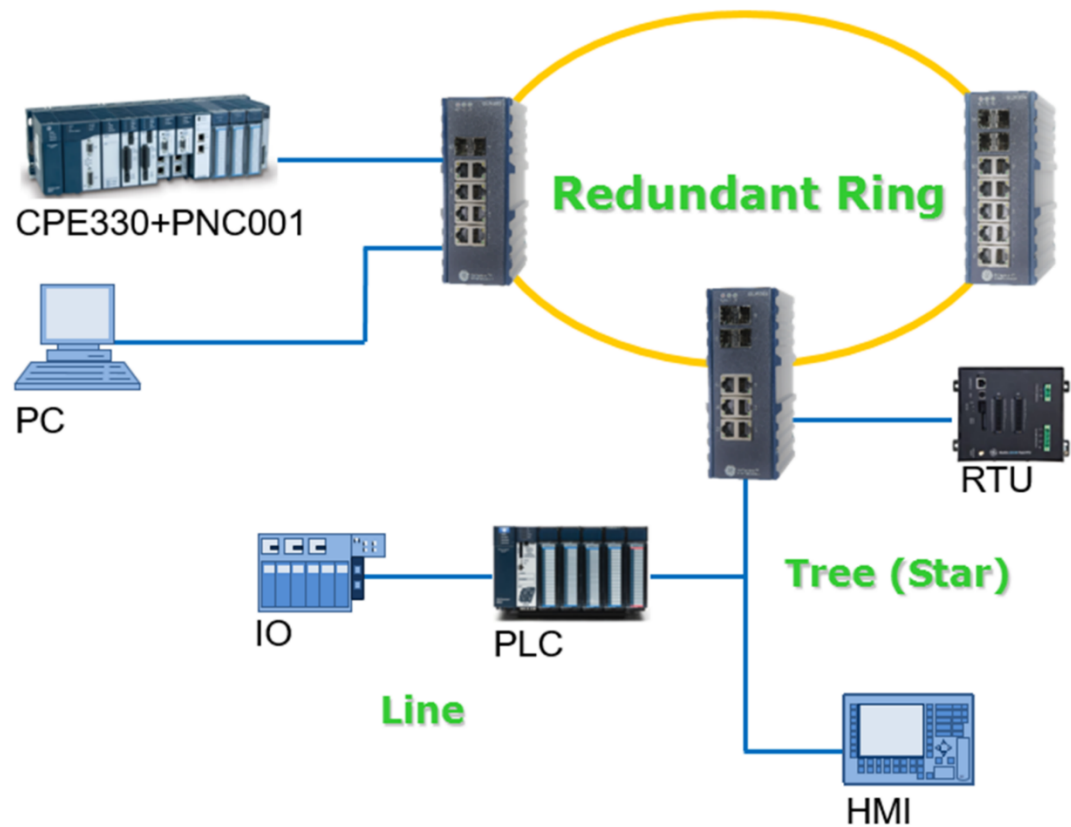
Section 2 Overview

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

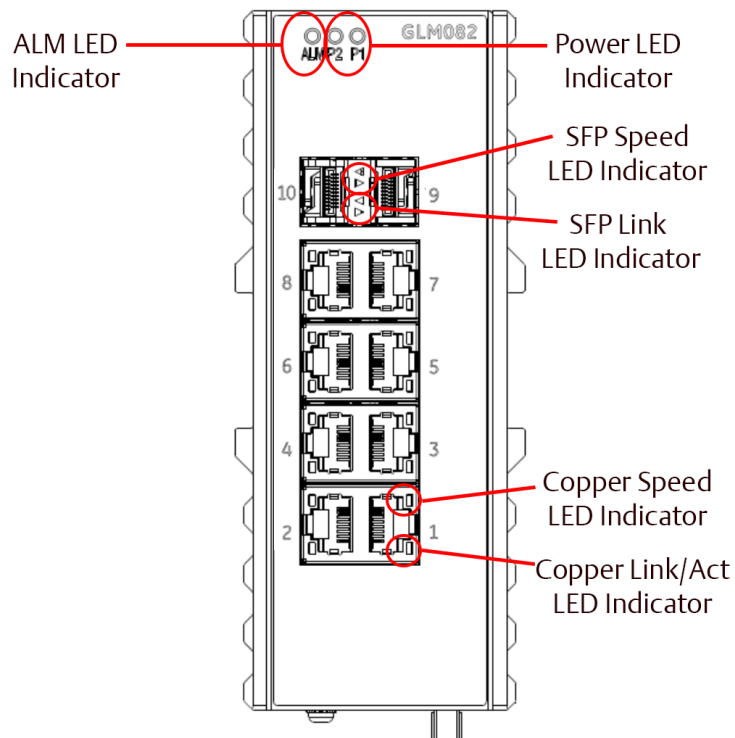
Each GLM Switch product is equipped with a common set of LEDs, as shown in (Figure 4).

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

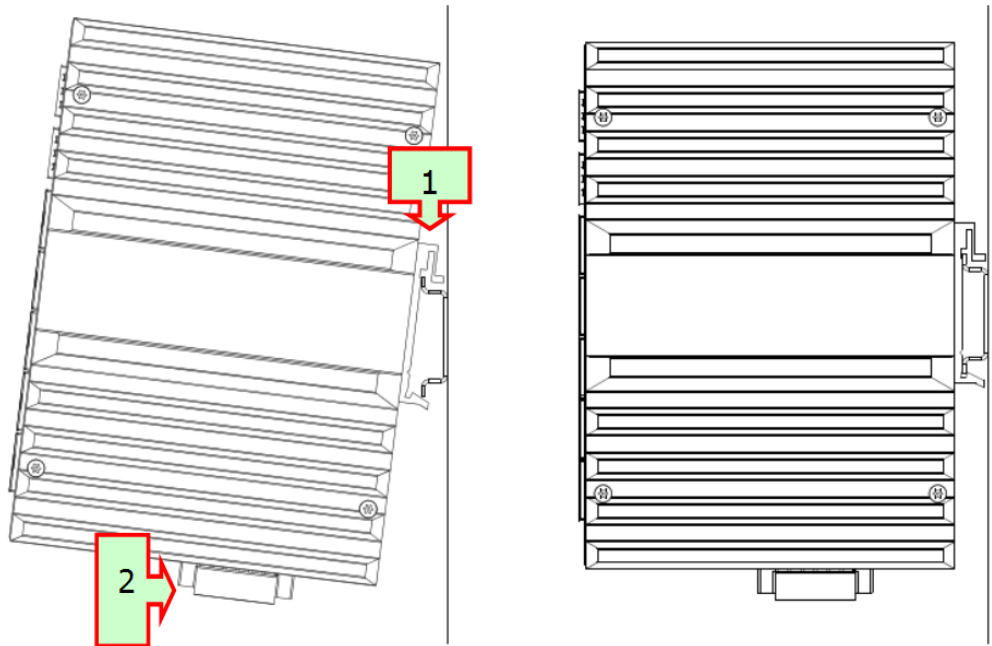
3.1 Mounting

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).

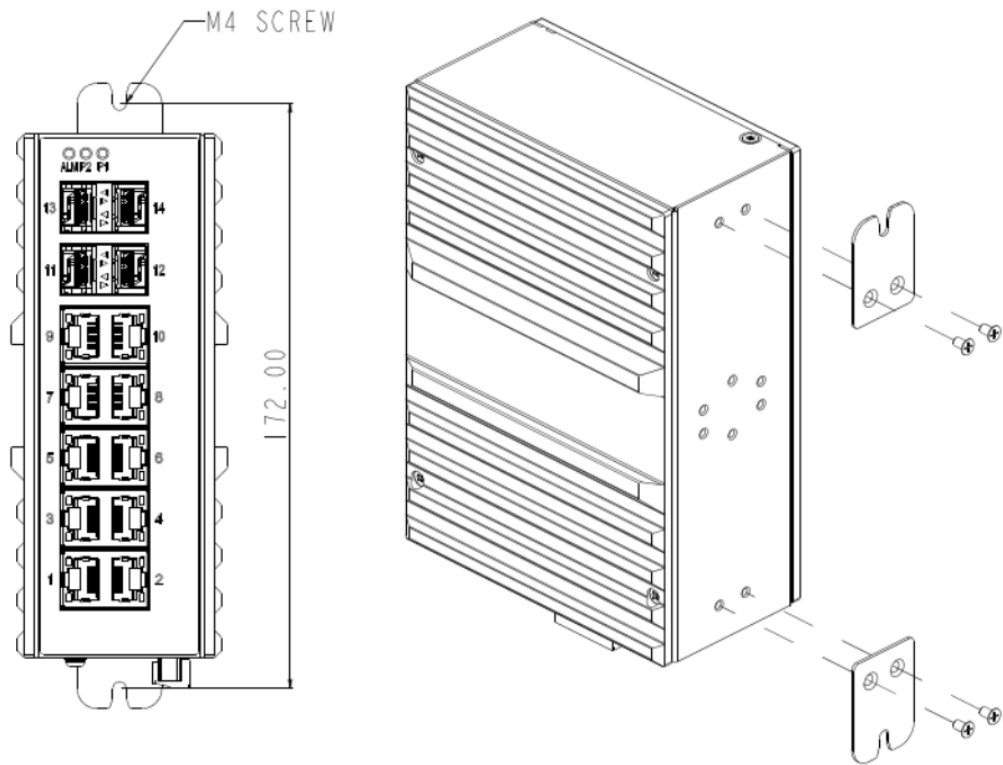
Figure 5: DIN rail Mounting



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).

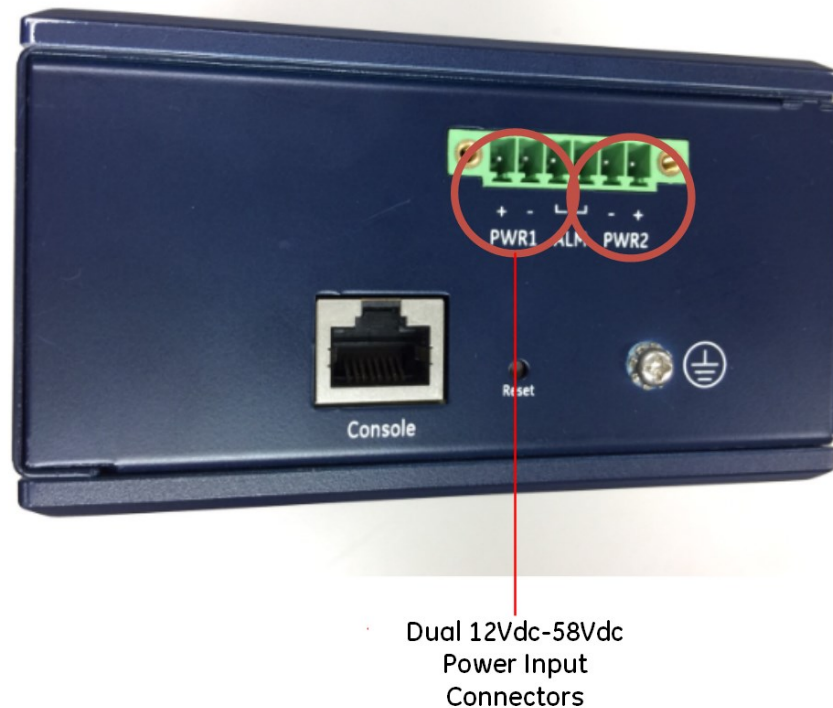
Figure 6: Panel-Mounting



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

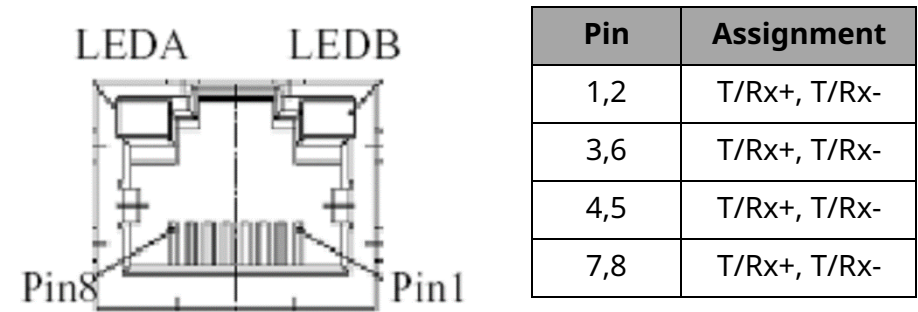


Figure 11: Ports 1 & 2 Copper Connections



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 device must have a matched wavelength of 1310 nm, and operate at 100 Mbps with single-mode fiber 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	1310	Single-Mode	9	-	10000
IC695SPF002	100Base-FX	100 Mbps (Auto)	1310	Multi-Mode	62.5	500 400	2000(full duplex) 400(half duplex)
					50	400	
					50	500	
IC695SPF550	1000Base-SX	1 Gbps FDX	850	Multi-Mode	62.5	160 200	550
						400	
					50	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 information 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

The screenshot shows the 'Port Configuration' page of the GLM064 web interface. The interface includes a sidebar with navigation options like System Information, Front Panel, Configuration, and Ports. The main content area displays a table of port configurations for 10 ports. The table has columns for Port, Link, Speed (Current and Configured), Flow Control (Current Rx, Current Tx, Configured), Maximum Frame Size, and Excessive Collision Mode. Port 9 is highlighted with the 'Configured' speed set to '100Mbps FDX'. To the right of the table is a diagram of the physical port panel with LEDs for each port.

Port	Link	Speed		Flow Control			Maximum Frame Size	Excessive Collision Mode
		Current	Configured	Current Rx	Current Tx	Configured		
1	1Gtdx	Auto	Auto	×	×	□	9600	Discard
2	100fdx	Auto	Auto	×	×	□	9600	Discard
3	Down	Auto	Auto	×	×	□	9600	Discard
4	1Gtdx	Auto	Auto	×	×	□	9600	Discard
5	Down	Auto	Auto	×	×	□	9600	Discard
6	1Gtdx	Auto	Auto	×	×	□	9600	Discard
7	Down	Auto	Auto	×	×	□	9600	Discard
8	Down	Auto	Auto	×	×	□	9600	Discard
9	Down	Auto	100Mbps FDX	×	×	□	9600	Discard
10	1Gtdx	Auto	1Gbps FDX	×	×	□	9600	Discard

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

```
Username: admin
Password:
emr-glm082-pn# show version internal
Internal Version: v00.00.07B04
emr-glm082-pn#
```

- 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 Telnet 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 Data bit: 8 Parity: None 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:

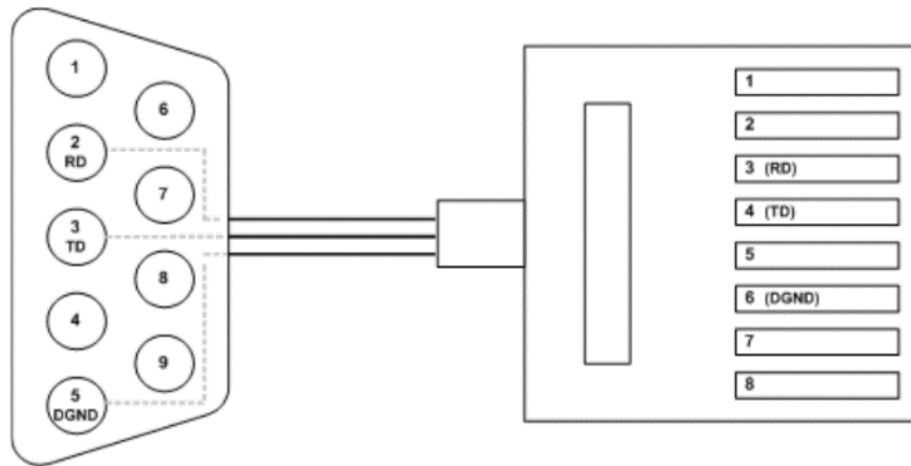
- DB9 connector connected to computer COM port
- Baud rate: 115,200bps
- 8 data bits, 1 stop bit
- No parity
- No flow control

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 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 switch 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 network.

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.

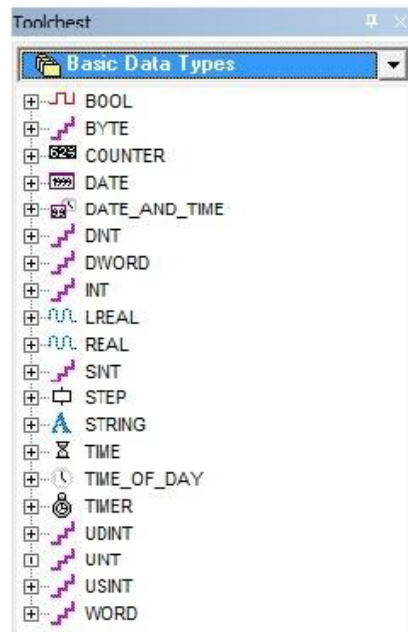
If all GLM switches have been associated with a newer version of the GSDLM file, and the older version of the GSDML file is no longer required, it can be deleted from the Toolchest.

Figure 19: PME Toolchest Feature



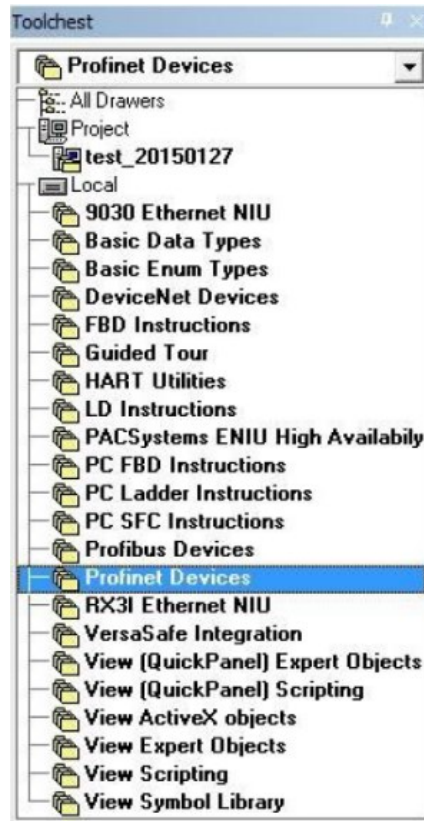
The Toolchest offers a drop-down list of various data types:

Figure 20: Toolchest Data Types



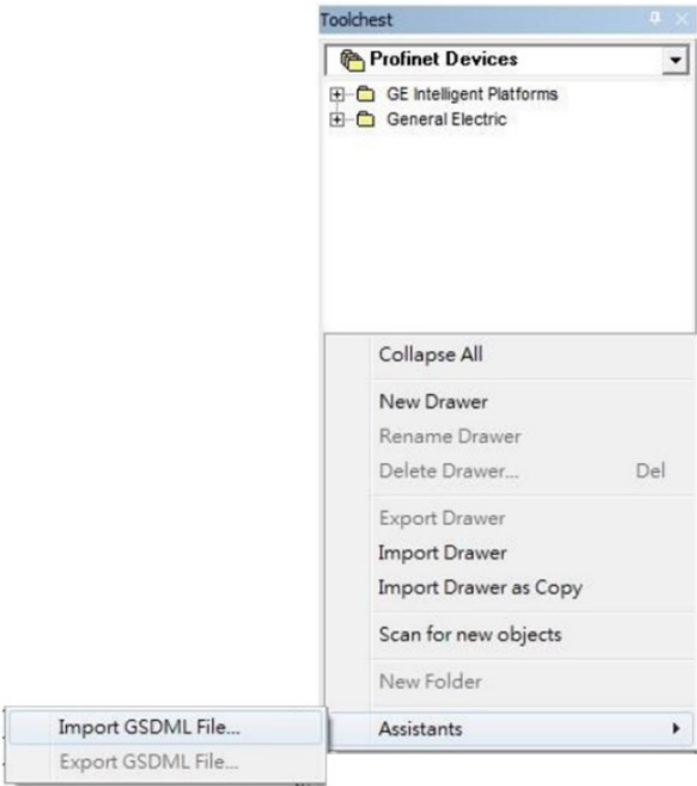
Since the GLM Switch is to be used as a PROFINET Device, select **PROFINET Devices** from the drop-down list (Figure 21).

Figure 21: Select PROFINET Device



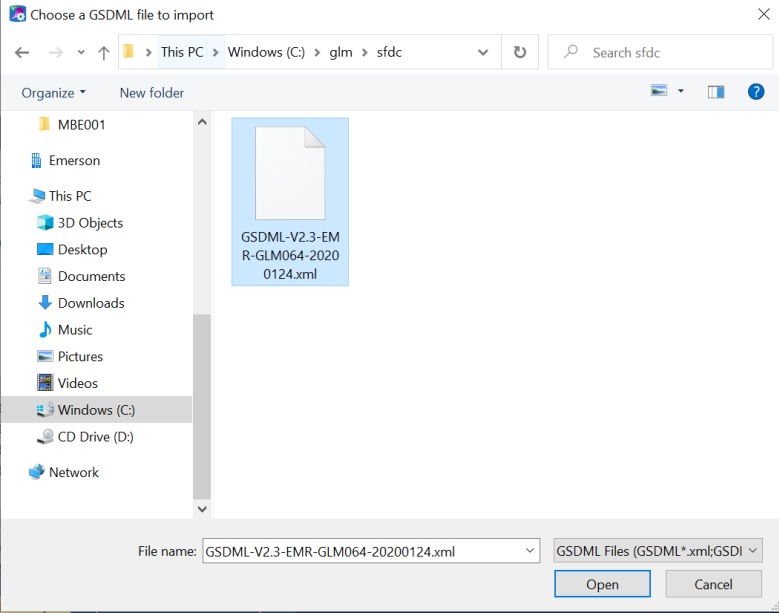
Right-click on the PROFINET Devices line item. At the bottom of the resulting drop-down menu, under **Assistants**, select the **Import GSDML** command.

Figure 22: Import GSDML Command



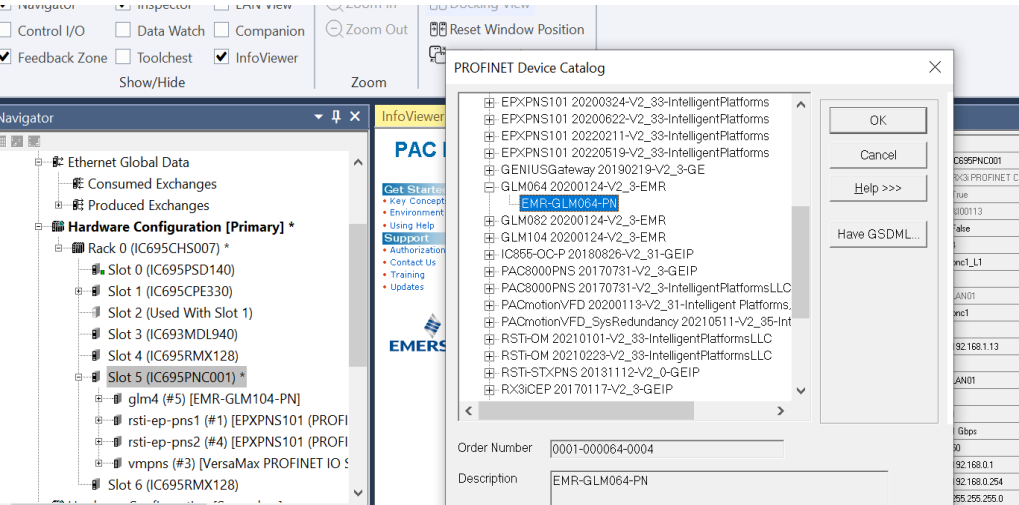
The resulting dialog box allows you to browse to the desired folder and select the GSDML file.

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



The Toolchest now displays the newly-added device:

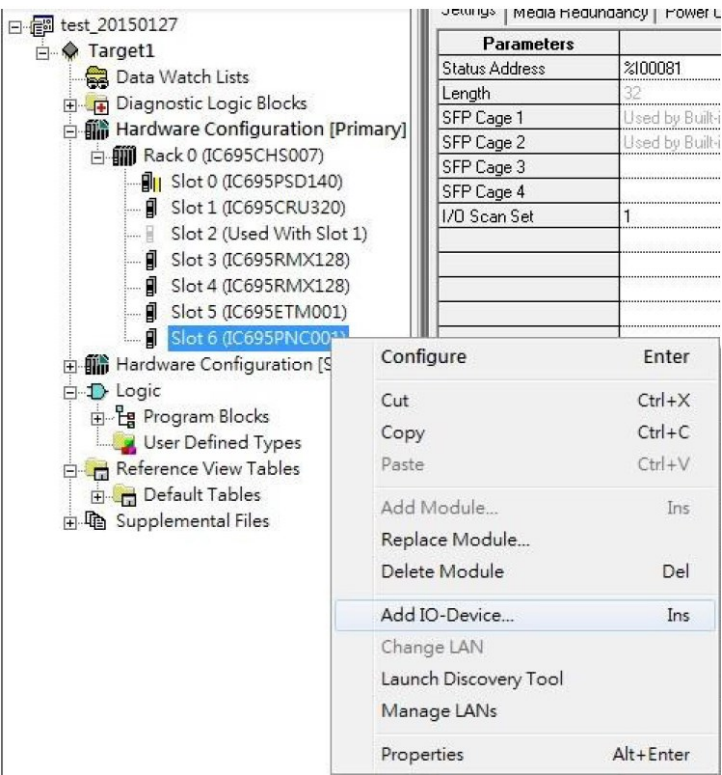
Figure 24: Toolchest Displays Newly-Added Device



4.2 Associating the I/O device with its Controller

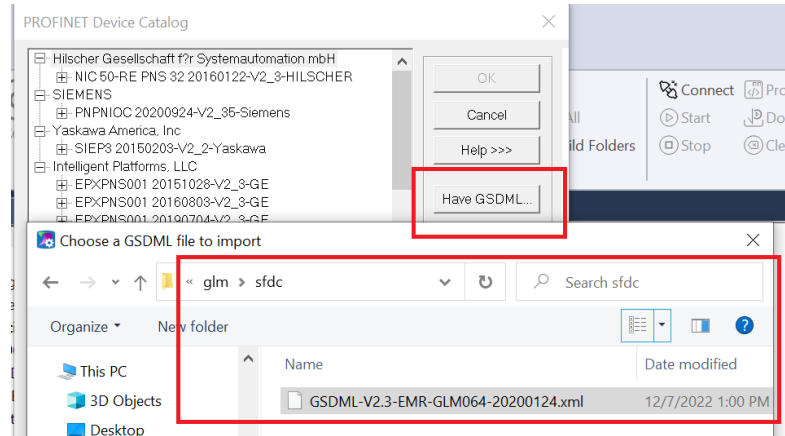
Each GLM Switch device has to be associated with the PROFINET Controller which will be controlling and monitoring it. Figure 25 shows that the PNC001 module located in Slot 6 of Rack 0 (the Main CPU Rack) has been selected. Right-click the PNC001 module on the the menu item and select **Add I/O device**.

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)

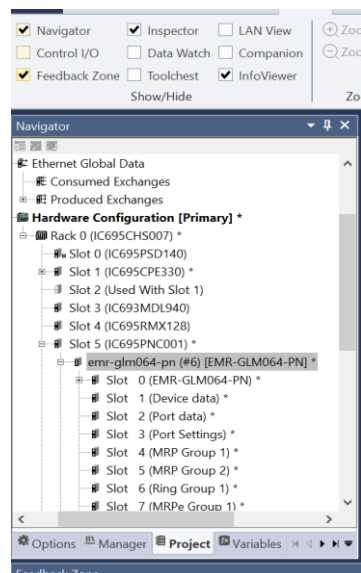
Figure 26: Select I/O device from PROFINET Device Catalog



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.

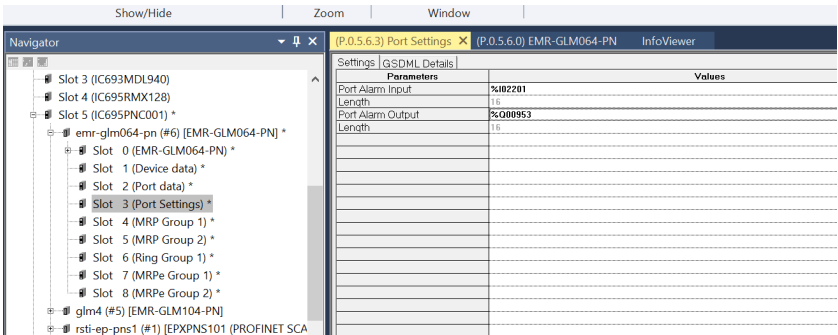
If the Slot has Output values (as defined by the **Direction** column in the following tables), it will require a base reference in %Q. The lowest order bit in the Output table will correspond to the selected %Q reference value, which must be a multiple of 8, plus 1.

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 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
		1	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		

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 1=MRP Enabled
			1	MRP Group 1 Role	0=MRP Client 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 1=MRP-G1 Ring Port
			1	Port 2 MRP-G1 Status	0=Not MRP-G1 Ring Port 1=MRP-G1 Ring Port
			2	Port 3 MRP-G1 Status	0=Not MRP-G1 Ring Port 1=MRP-G1 Ring Port
			3	Port 4 MRP-G1 Status	0=Not MRP-G1 Ring Port 1=MRP-G1 Ring Port
			4	Port 5 MRP-G1 Status	0=Not MRP-G1 Ring Port 1=MRP-G1 Ring Port
			5	Port 6 MRP-G1 Status	0=Not MRP-G1 Ring Port 1=MRP-G1 Ring Port
			6	Port 7 MRP-G1 Status	0=Not MRP-G1 Ring Port 1=MRP-G1 Ring Port
			7	Port 8 MRP-G1 Status	0=Not MRP-G1 Ring Port 1=MRP-G1 Ring Port
		2	0	Port 9 MRP-G1 Status	0=Not MRP-G1 Ring Port 1=MRP-G1 Ring Port
			1	Port 10 MRP-G1 Status	0=Not MRP-G1 Ring Port 1=MRP-G1 Ring Port
			2	Port 11 MRP-G1 Status ¹	0=Not MRP-G1 Ring Port 1=MRP-G1 Ring Port
			3	Port 12 MRP-G1 Status ¹	0=Not MRP-G1 Ring Port 1=MRP-G1 Ring Port
			4	Port 13 MRP-G1 Status ¹	0=Not MRP-G1 Ring Port 1=MRP-G1 Ring Port
			5	Port 14 MRP-G1 Status ¹	0=Not MRP-G1 Ring Port 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 1=MRP Enabled
			1	MRP Group 2 Role	0=MRP Client 1=MRP Master
			2	MRP Group 2 Ring Status	0= Open, 1=Closed
MRP Group 2 Ports (Slot 5)	Input	1	0	Port 1 MRP-G2 Status	0=Not MRP-G2 Ring Port 1=MRP-G2 Ring Port
			1	Port 2 MRP-G2 Status	0=Not MRP-G2 Ring Port 1=MRP-G2 Ring Port
			2	Port 3 MRP-G2 Status	0=Not MRP-G2 Ring Port 1=MRP-G2 Ring Port
			3	Port 4 MRP-G2 Status	0=Not MRP-G2 Ring Port 1=MRP-G2 Ring Port
			4	Port 5 MRP-G2 Status	0=Not MRP-G2 Ring Port 1=MRP-G2 Ring Port
			5	Port 6 MRP-G2 Status	0=Not MRP-G2 Ring Port 1=MRP-G2 Ring Port
			6	Port 7 MRP-G2 Status	0=Not MRP-G2 Ring Port 1=MRP-G2 Ring Port
			7	Port 8 MRP-G2 Status	0=Not MRP-G2 Ring Port 1=MRP-G2 Ring Port
		2	0	Port 9 MRP-G2 Status	0=Not MRP-G2 Ring Port 1=MRP-G2 Ring Port
			1	Port 10 MRP-G2 Status	0=Not MRP-G2 Ring Port 1=MRP-G2 Ring Port
			2	Port 11 MRP-G2 Status ¹	0=Not MRP-G2 Ring Port 1=MRP-G2 Ring Port
			3	Port 12 MRP-G2 Status ¹	0=Not MRP-G2 Ring Port 1=MRP-G2 Ring Port
			4	Port 13 MRP-G2 Status ¹	0=Not MRP-G2 Ring Port 1=MRP-G2 Ring Port
			5	Port 14 MRP-G2 Status ¹	0=Not MRP-G2 Ring Port 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 1=Ring Enabled
			1	Ring Group 1 Role	0=Ring Slave 1=Ring Master
			2	Ring Status	0=Failure 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 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 1=Ring Enabled
			1	MRE Group 1 Role	0=Ring Slave 1=Ring Master
			2	Ring Status	0=Failure 1=Normal Condition
		1	0...3	Ring Port Number	Port ID numbers (1 thru 14)
			4...6	Reserved	
			7	Port Status	0=Forwarded 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 1=Ring Enabled
			1	MRE Group 2 Role	0=Ring Slave 1=Ring Master
			2	Ring Status	0=Failure 1=Normal Condition
		1	0...3	Ring Port Number	Port ID numbers (1 thru 14)
			4...6	Reserved	
			7	Port Status	0=Forwarded 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 Configuration on Internet Explorer. For instructions on updating the firmware, refer to Section Upgrading Firmware in Section 3.6.2.

Figure 29: RingV2 Configuration

RingV2 Configuration

Index	Mode	Role	Ring Port(s)
1	Enable	Ring(Master)	Forward Port : Port-7 Block Port : Port-9
2	Enable	Coupling(Backup)	Backup Port : Port-10 Port-4
3	Disable	Chain(Member)	Member Port : Port-1 Member Port : Port-2
4	Disable	M-Chain(Head)	Forward Port : Port-5 Port-6
5	Disable	M-Chain(Head)	Forward Port : Port-5 Port-6

Config by Web

Config by PME

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 (0 corresponds to Port 1, 7 corresponds to Port 8) 0 is the default value.	Port ID
3	Ring Port2 of MRP	read-write	0~7	Assigned Port ID of Ring Port 2 (0 corresponds to Port 1, 7 corresponds to Port 8) 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 (0 corresponds to Port 1, 7 corresponds to Port 8) 2 is the default value.	Port ID
3	Ring Port2 of MRP	read-write	0~7	Assigned Port ID of Ring Port 2 (0 corresponds to Port 1, 7 corresponds to Port 8) 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 (1 corresponds to Port 1, 8 corresponds to Port 8) 1 is the default value.	Port ID
3	Ring Port2	read-write	1~8	Assigned Port ID of Ring Port2 (1 corresponds to Port 1, 8 corresponds to Port 8) 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 (1 corresponds to Port 1, 8 corresponds to Port 8) 5 is the default value.	Port ID

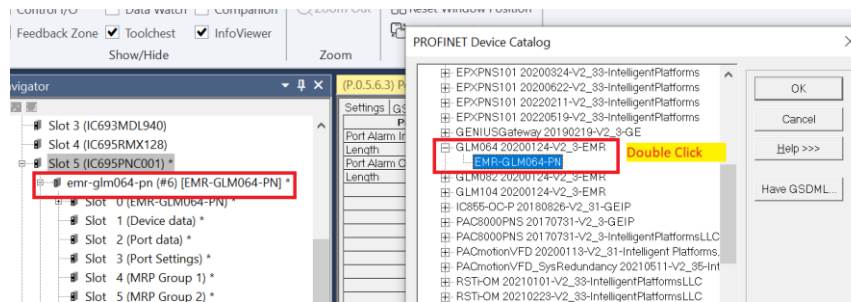
4.4.7 Acyclic MRPe Group 2 Data – Subslot 6

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 (1 corresponds to Port 1, 8 corresponds to Port 8) 6 is the default value.	Port ID

4.5 Assigning Device Name and IP Address

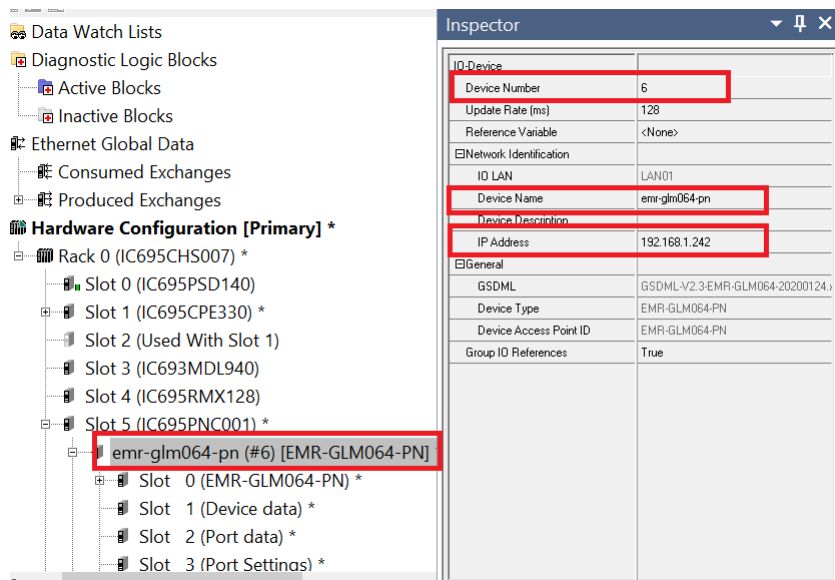
To communicate with the newly-added I/O device, it is necessary to provide it with a unique Device Name and a unique IP Address. This is performed using the Discovery and Configuration Protocol Tool (DCP).

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

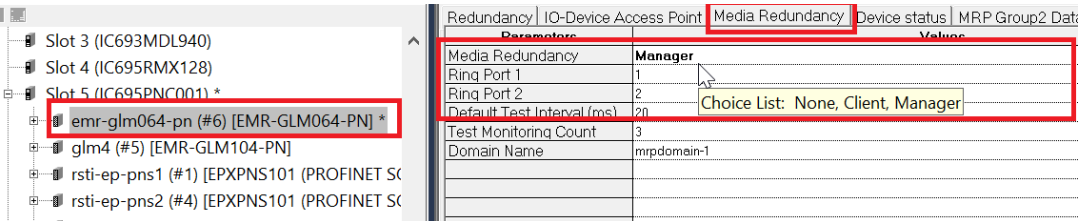
[illegible]

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**.

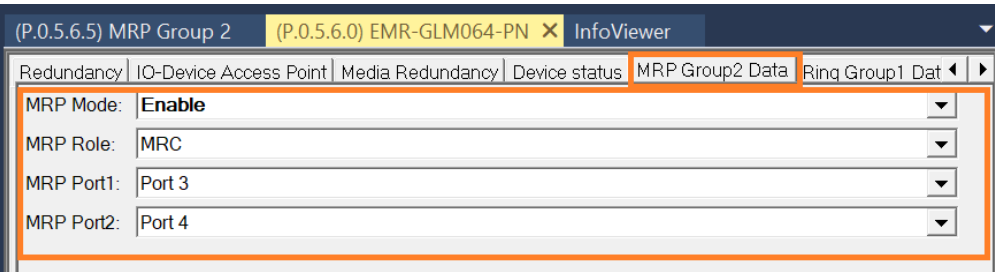
If **Client** or **Manager** is selected, set up or modify the ring ports in the **Media Redundancy** tab (Figure 33).

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.

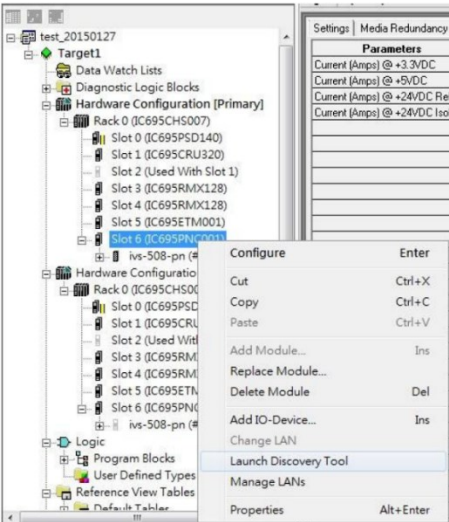
4.8 Hot Standby CPU Redundancy Considerations

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

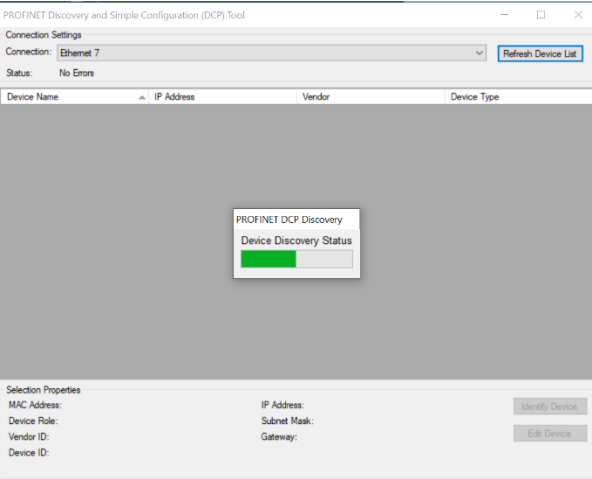
If desired, the operator may use the **Launch Discovery Tool** of PME to automatically detect all connected network devices. This operation may only be performed once all network devices have been interconnected and powered up.

Figure 35: Launch Discovery Tool



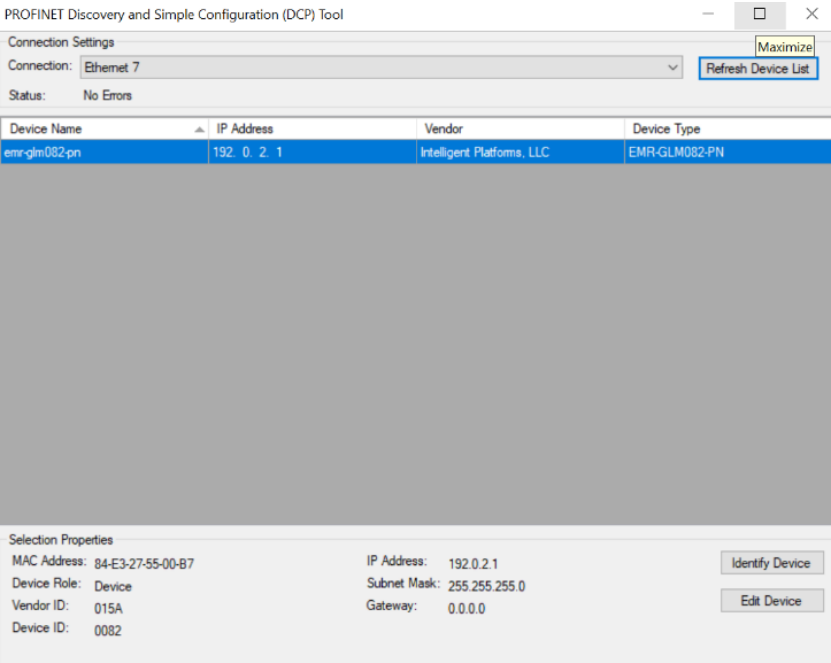
As shown in Figure 35, select the network-controlling device (here the PNC001 in Slot 6 is highlighted). Then right-click and select **Launch Discovery Tool** on the resulting drop-down menu. This initiates a real-time exploration of the connected network.

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 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 Settings & Status*

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

Section 4.3.5 for *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.

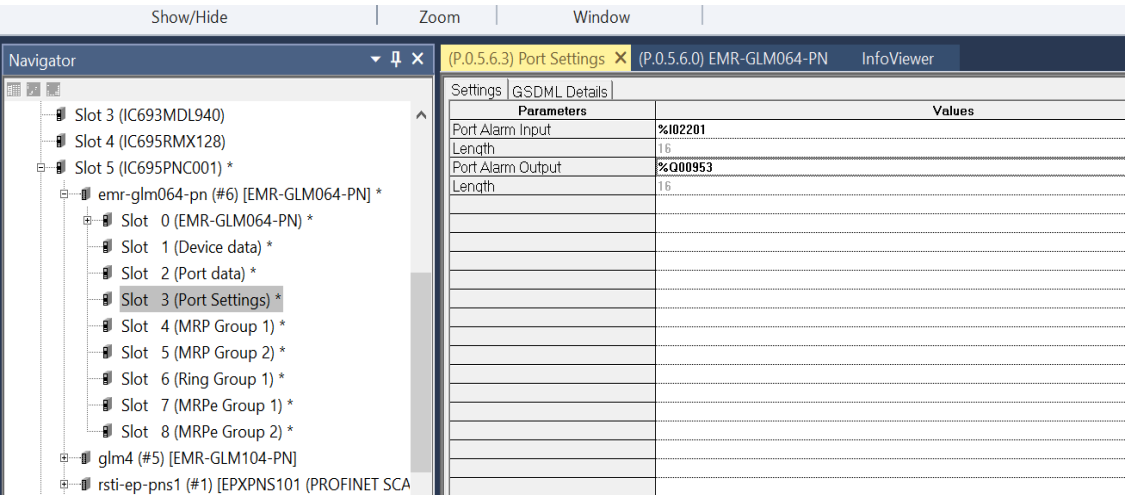
5.1 Setting up and Sensing Alarms

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 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.

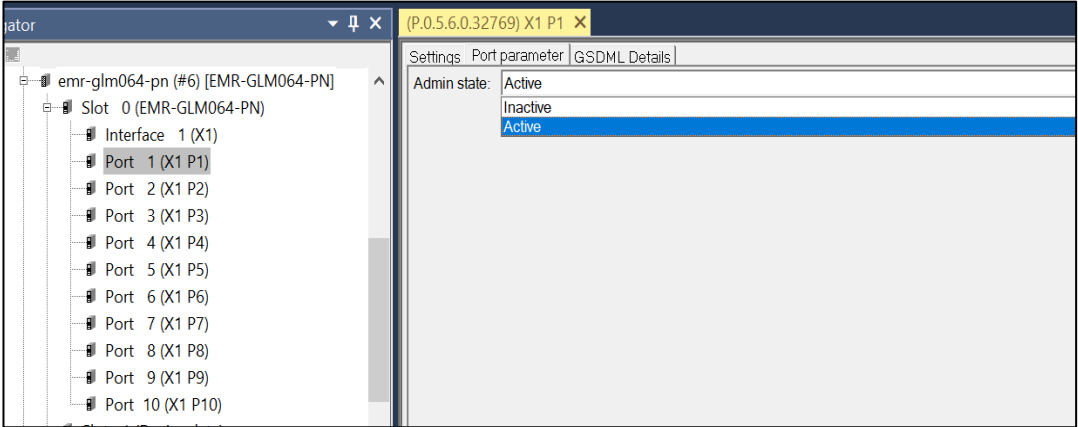
The Port Alarm Input bits are contiguous and must be assigned a starting location in %I on a byte boundary. The table above uses %I00129 for simplicity, but this starting location can be any multiple of 8, plus 1. For instance, %I00401 would be another suitable starting location.

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 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.

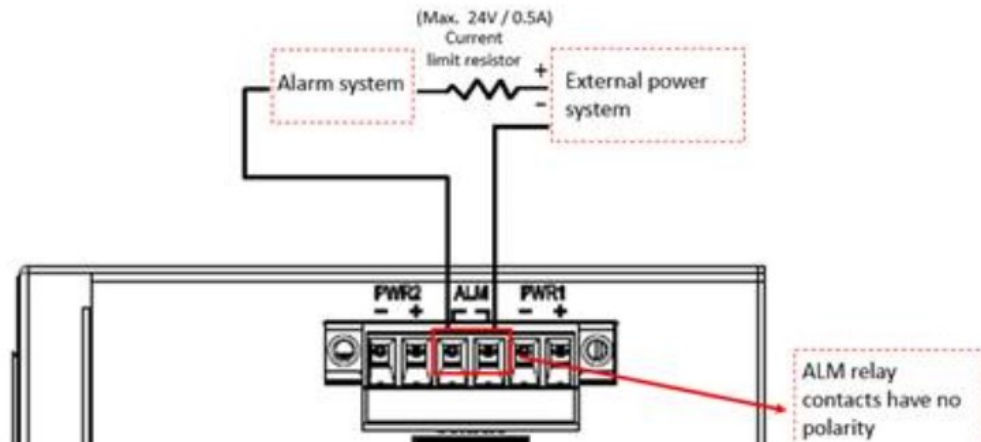
The P1 and P2 LEDs on the front panel indicate the status of the two power supply inputs, PWR1 and PWR2, as shown in Section 3.7, LED Operation. The Power Alarms are always enabled.

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, Data bit: 8, Parity: None, 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**

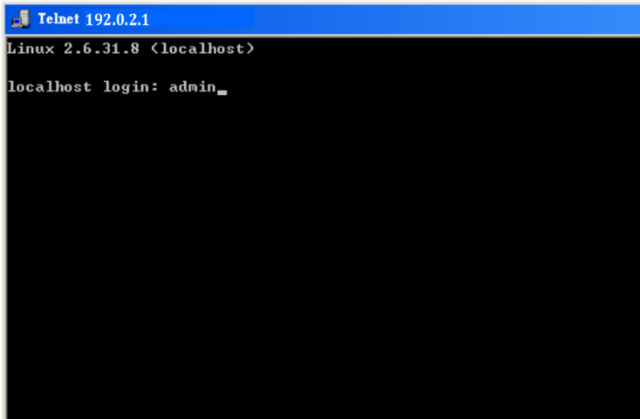
Password: **@admin01**

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

Figure 41: Login Constraints

Operation	1. Fill Username and Password 2. Click "Sign in"
Field	Description
Username	Login user name. The maximum length is 32. Default: admin
Password	Login user password. The maximum length is 32. 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. If the tab is pressed after a non-whitespace character, complete the word before the Tab. If the tab is pressed after a whitespace character, complete the next word.
?		Display available commands If ? is pressed after a non-whitespace character, show possible choices for this word. 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 (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>]] 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>])] show green-ethernet eee [interface (<port_type> [<port_list>])] show green-ethernet energy-detect [interface (<port_type> [<port_list>])] 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] 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>] 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	<p>CWORD</p> <p>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' 'lcp' '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'</p>
	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) 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 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 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 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 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 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>])] show platform phy id [interface (<port_type> [<v_port_type_list>])] show platform phy instance 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 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	
	show snmp access [<group_name> { v1 v2c v3 any } { auth noauth priv }]	
	show snmp community v3 [<community>]	
	show snmp host [<conf_name>] [system] [switch] [interface] [aaa]	
	show snmp mib context	
	show snmp mib ifmib ifIndex	
	show snmp security-to-group [{ v1 v2c v3 } <security_name>]	
	show snmp user [<username> <engineID>]	
	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 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 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	<0x0-0xffffffff> SNAP OUI (Range 0x000000 - 0xFFFFFFFF)
	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 Type: Mandatory
	<port_type>	Port type in Fast, Giga, or Tengiga ethernet
	<portNo>	Valid values:0 ~ 10 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 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 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 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 show vlan unknown-mc show vlan broadcast	
Parameter	Name	Description
	unknown-uc	Show unknown unicast storm control information by VLAN. Type: Mandatory
	unknown-mc	Show unknown multicast storm-control information by VLAN. Type: Mandatory
	broadcast	Show broadcast storm control information by VLAN. 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>] show rmon event [<id_list>] show rmon history [<id_list>] 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. Valid values: 1 ~ 10 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. Valid values: 1 ~ 4094 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. Valid values: 1 ~ 10 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 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 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 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 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> <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' Type: Mandatory
	default	Set the time zone to default (GMT/UTC). 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' Type: Mandatory
	<day>	Valid values: 1 ~ 31 Type: Mandatory
	<month>	Valid values: 1 ~ 12 Type: Mandatory
	<year>	Valid values: 2000-2097 Type: Mandatory
	<minute>	Valid values: 0 ~ 59 Type: Mandatory
	<second>	Valid values: 0 ~ 59 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 Type: Mandatory
	<0-15>	Valid values: 0 ~ 15 Type: Mandatory
	< word4-44>	Valid values: 4-44 characters Type: Mandatory

A.116 account delete <username>

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

A.117 syslog {enable | disable}

Description	Disable or enable the syslog service.
Syntax	logging on 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 clearigmp snoopingstatistics

Description	clear igmpsnoopingstatisti	
Syntax	clear igmp 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
	vtty	Virtual terminal

A.152 login host

Description	Domain name and IP address	
Syntax	logging host { <v_ipv4_ucast> <v_word45> }	
Parameter	Name	Description
	hostname	Domain 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
	flnErrors	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. Valid values: 1 ~ 4094 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. Valid values: 1 ~ 4094 Type: Mandatory
	<name>	VLAN Name (0~31) String Size:0~31 Type: Mandatory

A.170 vlan disable <vlanid>

Description	Delete VLAN memberset/setting.	
Syntax	vlan disable <vlanid>	
Parameter	Name	Description
	<vlanid>	Valid values: 1 ~ 4094 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) 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. Valid values: 1536~9000 (bytes) 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>	
	username <username> privilege <priv> password none	
Parameter	username <username> privilege <priv> password unencrypted <password>	
	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. (port1~6 Only supports copper, no SFP) (port 9, 10 only support auto)	
Syntax	speed {auto full-1000mbps full-100mbps full-10mbps half-100mbps half-10mbps}	
Parameter	Name	Description
	auto	Auto-negotiation.
	full-1000mbps	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 { <0x0-0xfffff> 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
	0x0-0xfffff	SNAP OUI (Range 0x000000 - 0FFFFFFF)
	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: second. Default is 10 seconds

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 spanning-tree 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 STP protocol mode stp 802.1D Spanning Tree rstp Rapid Spanning Tree (802.1w) mstp Multiple Spanning Tree (802.1s)	
Syntax	spanning-tree mode { stp rstp mstp }	
Parameter	Name	Description
	stp	802.1D Spanning Tree
	rstp	Rapid Spanning Tree (802.1w)
	mstp	Multiple Spanning Tree (802.1s)

A.229 spanning-tree mst cost

Description	STP bridge instance 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 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 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 Revision 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> 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_ici_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 in 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 messages
	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 messages
	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 <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

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

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 transmission 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

General Contact Information

Home link: <http://www.emerson.com/industrial-automation-controls>

Knowledge Base: <https://www.emerson.com/industrial-automation-controls/support>

Technical Support

Americas

Phone: 1-888-565-4155
1-434-214-8532 (If toll-free option is unavailable)

Customer Care (Quotes/Orders>Returns): customercare.mas@emerson.com
Technical Support: support.mas@emerson.com

Europe

Phone: +800-4444-8001
+420-225-379-328 (If toll-free option is unavailable)
+39-0362-228-5555 (from Italy - if the toll-free 800 option is unavailable or dialing from a mobile telephone)

Customer Care (Quotes/Orders>Returns): customercare.emea.mas@emerson.com
Technical Support: support.mas.emea@emerson.com

Asia

Phone: +86-400-842-8599
+65-6955-9413 (All other Countries)

Customer Care (Quotes/Orders>Returns): customercare.cn.mas@emerson.com
Technical Support: support.mas.apac@emerson.com

Any escalation request should be sent to: mas.sfdcescalation@emerson.com

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