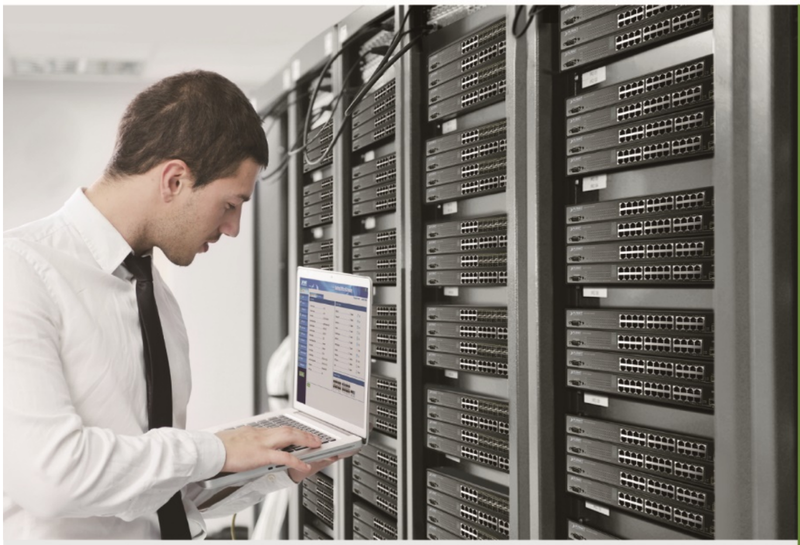
PLANET
Networking & Communication

User's Manual

Industrial Wall-mount Gigabit Router

► WGR-500-4P
WGR-500-4PV



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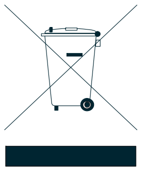

Revision

User's Manual of PLANET WGR-500, WGR-500-4P and WGR-500-4PV

Model: WGR-500 Series

Revision: 1.0 (November, 2018)

Part No: EM-WGR-500-4P_WGR-500-4PV_v1.0

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Chapter 1. Introduction

The descriptions of PLANET industrial wall-mount Gigabit router series, such as WGR-500-4PV and WGR-500-4P, are as follows:

WGR-500-4P	Industrial Wall-mount Gigabit Router with 4-Port 802.3at PoE+
WGR-500-4PV	Industrial Wall-mount Gigabit Router with 4-Port 802.3at PoE+ and LCD Touch Screen

“**Industrial wall-mount Gigabit router**” is used as an alternative name for the above models in this user’s manual.

Model Name	10/100/1000T Copper Ports	802.3at PoE + Ports	2.4’’ LCD
WGR-500-4P	5	4	-
WGR-500-4PV	5	4	■

1.1. Packet Contents

Open the box of the industrial wall-mount Gigabit router and carefully unpack it. The box should contain the following items:

Industrial Router x 1	Quick Installation Guide x 1	Wall-mounted Kit x 1
DIN-rail Kit x 1	Magnet Kit x 1	3-pin Terminal Block Connector x 1
RJ45 Dust Cap x 5		

If any of these are missing or damaged, please contact your dealer immediately; if possible, retain the carton including the original packing material, and use them again to repack the product in case there is a need to return it to us for repair.

1.2. Product Description

All-in-One Industrial Router Enhances IoT Network

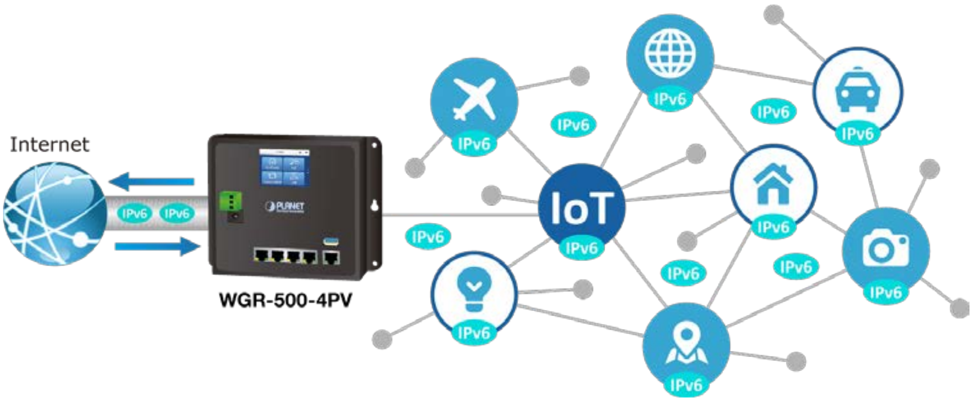
PLANET WGR-500 Series is an industrial router with 8023at PoE+ capability, designed for Internet of Things (IoT) networks. It is capable of having a maximum of up to 120 watts of power output and unique PoE mechanism that facilitates the Ethernet PoE PD management more efficiently in Industrial networks, such as factory, transportation, government buildings, and other public areas. It also features the following special management and operation functions. The WGR-500 Series is the best solution for industry router application.

- Wizard design and IPv6 / IPv4 support
- Router and switch working mode
- Firewall with 802.1Q VLAN security
- PoE usage indicator and management
- 48-56V DC dual power design

IPv6 Support for IoT Networking

With billions of new IoT devices entering the market each year, IPv4 is faced with the issue of not being able to fulfill the requirements of connecting all the IoT products together. IPv6 offers a highly-scalable address scheme that provides a unique 64-bit host ID to every present and future IoT device. It is sufficient to address the needs of any present and future communication device. That means IPv6 allows IoT products to be uniquely addressable without having to work around all of the traditional NAT and firewall issues.

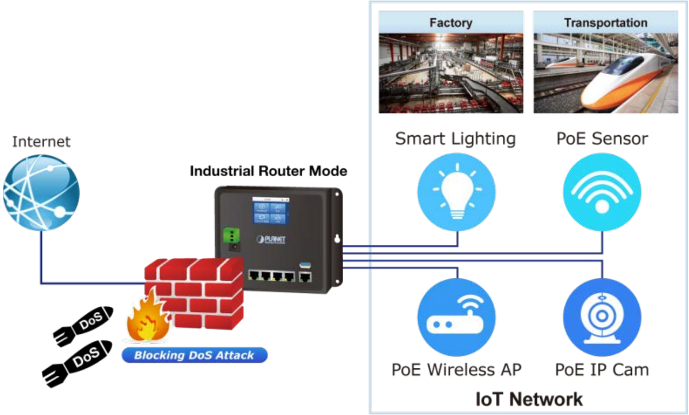
The WGR-500 Series supports both IPv6 and IPv4 to ensure industrial Ethernet with a smooth migration path from the IPv4-based networks to the full IPv6 infrastructure. It assigns IPv6 addresses to clients and passes the IPv6 traffics through the IPv4 environment. The WGR-500-4P supports IPv4 tunneling (6to4 transition tunnel) implementations for IoT connectivity.



Secure Firewall Protection

The denial-of-service attacks (DoS) attempt to consume resources and therefore deny users network and application access. There are two types of DoS attacks – SYN floods and Ping of Death that consume actual server resources, or those of intermediate communication equipment, such as firewalls and load balancers, and the other, volume-based attacks like UDP/ICMP floods and other spoofed-packet floods that would saturate the bandwidth of the attacked site.

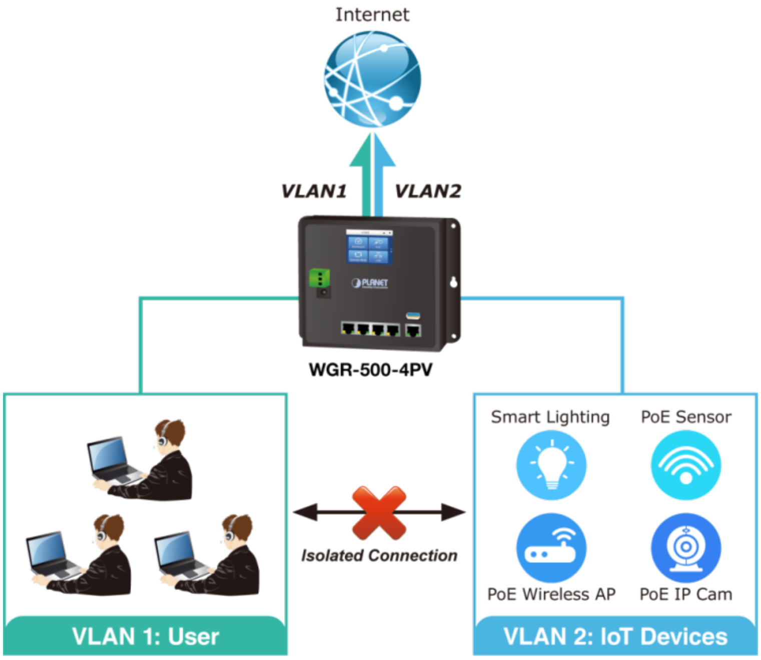
The WGR-500 Series provides firewall to protect IoT devices against networking attack like denial-of-service (DoS), and emerging malicious traffic before attacks can occur. With firewall protection, it prevents IoT network from threats and keeps networking more secure.



VLAN Support for Isolated Traffic and Security

Virtual LANs (VLANs) offer the logical grouping technique to separate the physical ports of Ethernet switch. It can separate private network into several parts for different users. If there are too many computers or networking devices in the same network segment, it will result in heavy traffics locally. Besides, VLANs provide enhanced network security that network administrators can control over each port and whatever resources it is allowed to use.

The WGR-500 Series supports 802.1Q VLAN to separate traffic of users and IoT devices and can work as an intelligent traffic forwarder to control traffic and isolate connections of two groups. It will not only optimize bandwidth but also improve network security.



Built-in Unique PoE Functions for Powered Devices Management

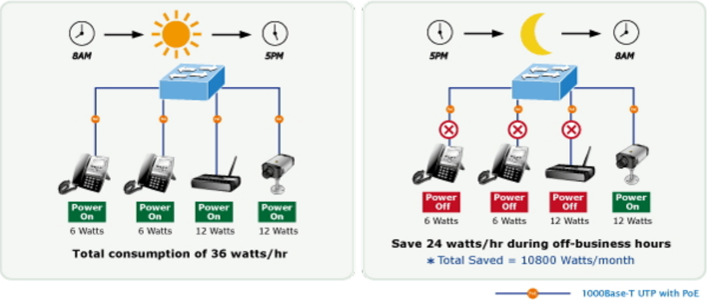
The WGR-500 Series is capable of having a maximum of up to 120 watts of power output and can deliver up to 36W for each port. It also features the following special PoE management functions:

- **PoE usage monitoring**

  With PoE usage monitoring, it can show the PoE loading of each port, total PoE power usage and system status, such as overload, low voltage, over voltage and high temperature. User can obtain detailed information about the real-time PoE working condition of the WGR-500-4P directly.

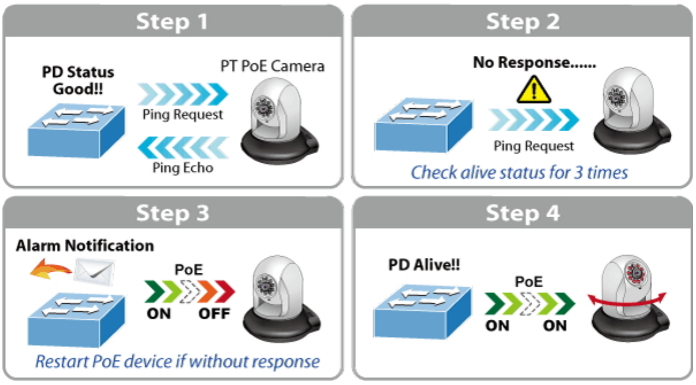
- **PoE schedule**

  Under the trend of energy saving worldwide and contributing to environmental protection, the WGR-500-4P can effectively control the power supply besides its capability of giving high watts power. The "PoE schedule" function helps you to enable or disable PoE power feeding for each PoE port during specified time intervals and it is a powerful function to help SMBs or enterprises save power and budget. It also increases security by powering off PDs that should not be in use during non-business hours.


8AM
5PM
Power On
6 Watts
6 Watts
12 Watts
12 Watts
Total consumption of 36 watts/hr
5PM
8AM
Power Off
Power On
Save 24 watts/hr during off-business hours
∗ Total Saved = 10800 Watts/month
1000Base-T UTP with PoE

- **PD alive check**

  The WGR-500 Series can be configured to monitor connected PD status in real time via ping action. Once the PD stops working and responding, the WGR-500-4P will resume the PoE port power and bring the PD back to work. It will greatly enhance the network reliability through the PoE port resetting the PD’s power source and reducing administrator management burden.



Innovative Wall-mount Installation

The WGR-500 Series is specially designed to be installed in a narrow environment, such as wall enclosure. The compact, flat and wall-mounted design fits easily in any space-limited location. It adopts the user-friendly “Front Access” design, making the installing, cable wiring, LED monitoring and maintenance of the WGR-500 Series placed in an enclosure very convenient for technicians. The WGR-500 Series can be installed by fixed wall mounting, magnetic wall mounting or DIN rail, thereby making its usability more flexible.

1.3. Product Features

- **Physical Port**
  - 4-port 10/100/1000BASE-T RJ45 with IEEE 802.3af / 802.3at PoE injector
  - 1-port 10/100/1000BASE-T RJ45 for WAN port or LAN port interface (router mode or switch mode)
  - 1 x USB 3.0 port for backup and restoration of configuration file

- **Power over Ethernet**
  - Up to 4 ports of IEEE 802.3af/802.3at devices powered
  - Supports PoE power up to 36 watts for each PoE port
  - Auto detects powered device (PD)
  - Remote power feeding up to 100 meters
  - PoE Management
    - PoE Port status monitoring
    - Total PoE power budget control
    - Per port PoE function enable/disable
    - PoE Port power feeding priority
    - Per PoE port power limit
    - PD classification detection
    - PoE alive check

- **Industrial Case and Installation**
  - Compact size with fixed wall mounting, magnetic wall mounting or DIN-rail mounting
  - IP30 metal case
  - Supports **-10 to 60** degrees C operating temperature
  - Supports ESD 6KV DC Ethernet protection
  - Dual power input design
    - 48V~56V DC wide power input with polarity reverse protect function
    - 3-pin terminal block or DC jack connector

- **Layer 2 Features**
  - Supports IEEE 802.1Q tagged VLAN
  - Supports IEEE 802.1D Spanning Tree Protocol (STP)

- **Layer 3 IP Routing Features**
  - IPv6 support
  - WAN Internet types: Dynamic IP(DHCP Client), static IP, PPPoE, L2TP, PPTP
  - Static and dynamic (RIP1 and 2) routing
  - Supports Port Forwarding, DMZ, and UPnP for various networking applications
  - IP/MAC-based bandwidth control
  - Supports Dynamic DNS and PLANET DDNS

- **Security**
  - Port filtering lets you either allow or prevent which application can access the Internet.
  - MAC filtering allows you to include or exclude computers and devices based on their MAC address
  - URL filtering allows you to control access to Internet websites in an URL list
  - DoS attack prevention

- **Management**
  - Management Interfaces
    - 2.4-inch color LCD touch screen (only for WGR-500-4PV)
    - Web GUI management
  - Static and DHCP for IP address assignment
  - System Maintenance
    - Firmware upload/download via HTTP
    - Hardware reset button for system reboot or reset to factory default
  - NTP Network Time Protocol
  - Event message logging to remote syslog server
  - PLANET Smart Discovery Utility for deployment management

1.4. Product Specifications

Product		WGR-500-4P	WGR-500-4PV
Hardware Specifications			
Interface	LAN	4 x 10/100/1000 BASE-T, auto-negotiation, auto MDI/MDI-X RJ45 port	
	WAN	1 x 10/100/1000 BASE-T, auto-negotiation, auto MDI/MDI-X RJ45 port	
LCD Monitor (W x H)		N/A	50mm x 37mm, 2.4-inch TFT color touchscreen
USB Port		1 x USB 3.0 for backup and restoration of configuration file	
Reset Button		< 5 sec: System reboot > 5 sec: Factory default	
ESD Protection		6KV DC	
Enclosure		IP30 metal case	
Installation		DIN-rail, wall mounting, and magnet	
Connector		Removable 3-pin terminal block for power input - Pin 1/2 for Power (Pin 1: V+ / Pin 2: V-) - Pin 3 for earth ground DC power jack with 2.1mm central pole	
LED Indicator		System: Internet (Green) PWR (Green) SYS (Green) Per 10/100/1000T RJ45 Ports: 10/100 LNK/ACT (Green) 1000 LNK/ACT (Amber) PoE Usage: 120W (Amber) 90W (Amber) 60W (Amber) 30W (Amber)	System: Internet (Green) PWR (Green) SYS (Green) Per 10/100/1000T RJ45 Ports : 10/100 LNK/ACT (Green) 1000 LNK/ACT (Amber)
Dimensions (W x D x H)		180 x 140 x 24.4 mm	180 x 140 x 24.4 mm
Weight		714 g	728 g
Power Requirements		Dual 48~56V DC (>51V DC for PoE+ output recommended)	
Power Consumption		Max. 7.3 watts/24.9 BTU (Power on without any connection) Max. 132 watts/450 BTU (Full loading with PoE)	Max. 7.6 watts/25.9 BTU (Power on without any connection) Max. 134 watts/457 BTU (Full loading with PoE)
Router Features			
Internet Connection Type		Shares data and Internet access for users, supporting the following internet accesses: ■ PPPoE ■ Static IP ■ Dynamic IP	
Routing Protocol		Static routing RIPv1/2	
Security		DOS protection MAC/IP/Port/URL filtering	

Protocol / Feature	802.1Q tag-based VLAN 802.1d spanning tree QoS NAT Port Forwarding DMZ UPnP and PLANET DDNS
System Management	Web-based (HTTP) configuration NTP time synchronization System log supports remote log SNMP v1, v2c
Power Over Ethernet	
PoE Standard	IEEE 802.3at Power over Ethernet Plus/PSE
PoE Power Supply Type	End-span
PoE Power Output	IEEE 802.3af Standard - Per port 48V~51V DC (depending on the power supply), max. 15.4 watts IEEE 802.3at Standard - Per port 51V~56V DC (depending on the power supply), max. 36 watts
Power Pin Assignment	1/2(+), 3/6(-)
PoE Power Budget	120W maximum (depending on power input)
Max. Number of Class 4 PDs	4
Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Stability Testing	IEC60068-2-32 (free fall) IEC60068-2-27 (shock) IEC60068-2-6 (vibration)
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX/100BASE-FX IEEE 802.3ab Gigabit 1000T IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.1D Spanning Tree Protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN tagging RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP
Environment	
Operating Temperature	-10 ~ 60 degrees C
Storage Temperature	-20 ~ 70 degrees C
Humidity	5 ~ 95% (non-condensing)

Chapter 2. Hardware Installation

This chapter describes the hardware of the industrial wall-mount Gigabit router and gives a physical overview and different installation methods.

2.1 Product Outlook

This section describes the hardware features of the industrial wall-mount Gigabit router. For easier management and control of the industrial wall-mount Gigabit router, familiarize yourself with its display indicators and ports.

2.1.1 Front and Bottom Panel

The front panel provides a simple interface monitoring the industrial wall-mount Gigabit router. Figures 2-1 and 2-2 show the front panels of the industrial wall-mount Gigabit routers.

WGR-500-4P

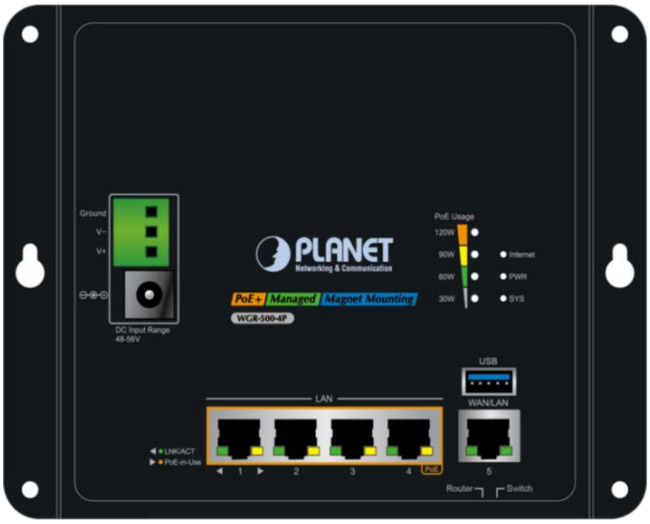


Figure 2-1: Front Panel of WGR-500-4P

WGR-500-4PV

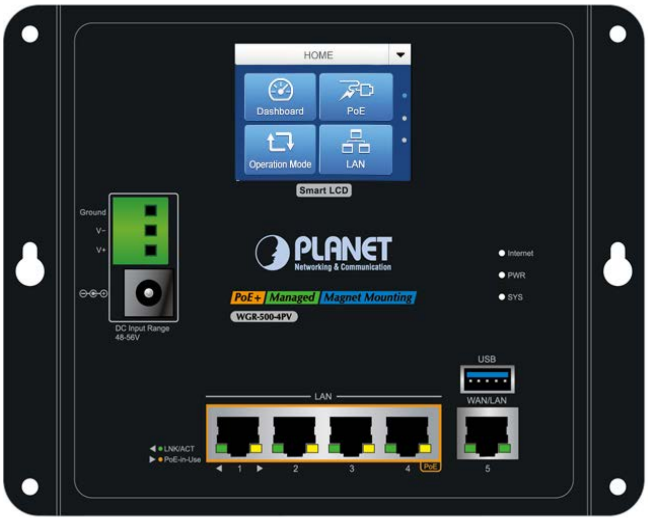


Figure 2-2: Front Panel of WGR-500-4PV

Reset Button

The bottom of the industrial wall-mount Gigabit router comes with a reset button designed for rebooting system or resetting to factory default. The reset buttons are shown in Figures 2-3 and 2-4 and following is the summary table of reset button functions:

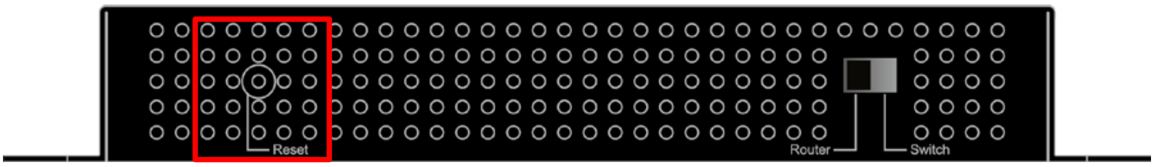


Figure 2-3: Reset Button of WGR-500-4P

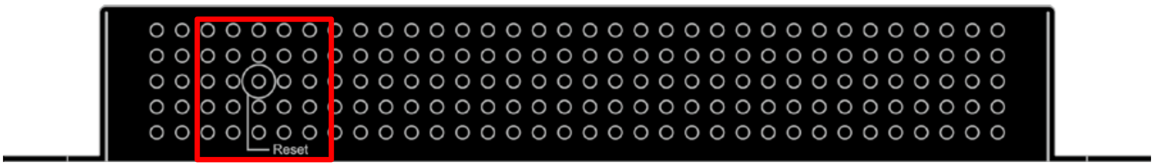


Figure 2-4: Reset Button of WGR-500-4PV

Reset Button Pressed and Released	Function
< 5 sec: System Reboot	Reboot the system.
> 5 sec: Factory Default	Reset the system to factory default. The industrial wall-mount Gigabit router will then reboot and load the default settings as shown below: ◦ Default Username: **admin** ◦ Default Password: **admin** ◦ Default IP Address: **192.168.1.1** ◦ Subnet Mask: **255.255.255.0** ◦ Default Gateway: **192.168.1.254**

DIP Switch

Only the WGR-5004P has the DIP switch, which is for selecting an operation mode. The DIP switch is shown in Figure 2-5.

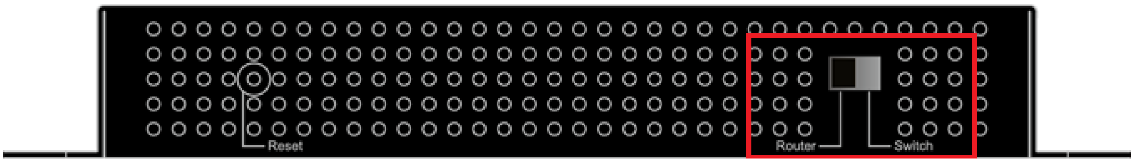


Figure 2-5: DIP Switch of WGR-500-4P

2.1.2 LED Indications

The LED indicators of the WGR-500-4P and WGR-500-4PV are shown in Figures 2-6 and 2-7.

WGR-500-4P

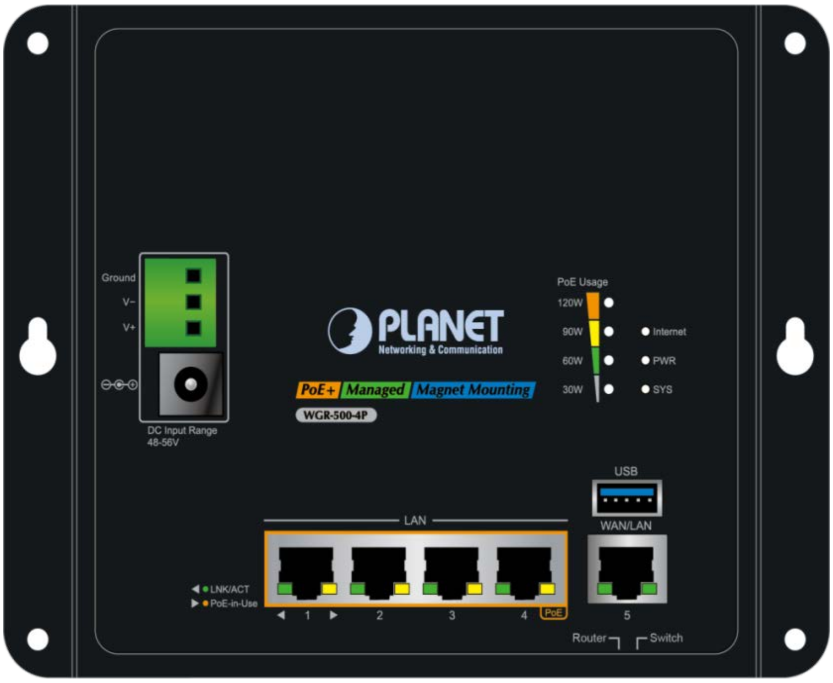


Figure 2-6: LED Indicators of WGR-500-4P

- **System**

LED	Color	Function	
Internet	**Green**	**Lights**:	Internet is synchronized successfully in the route mode.
		Blinks:	Internet data is being transmitted.
PWR	**Green**	Lights to indicate that the Switch has power.	
SYS	**Green**	Lights to indicate the system is working.	

- **PoE Usage LED**

LED	Color	Function	
120W	**Amber**	**Lights**:	To indicate the PoE usage is up to 120W.
		Blinks:	To indicate the PoE usage is more than 90W but less than 120W.
90W	**Amber**	**Lights**:	To indicate the PoE usage is over 90W.
		Blinks:	To indicate the PoE usage is more than 60W but less than 90W.
60W	**Amber**	**Lights**:	To indicate the PoE usage is over 60W.
		Blinks:	To indicate the PoE usage is more than 30W but less than 60W.
30W	**Amber**	**Lights**:	To indicate the PoE usage is over 30W.
		Blinks:	To indicate the PoE usage is less than 30W.

■ **LAN Per 10/100/1000Mbps PoE Port (Port-1 to Port-4) LED**

LED	Color	Function	
LNK/ACT	**Green**	**Lights**:	To indicate the link through that port is successfully established at **10/100Mbps**.
		Blinks:	To indicate that the switch is actively sending or receiving data over that port.
PoE In-Use	**Amber**	**Lights**:	To indicate the port is providing 48V~56VDC in-line power.
		Blinks:	To indicate the connected device is not a PoE powered device (PD).

■ **WAN Per 10/100/1000Mbps RJ45 Port (Port-5)**

LED	Color	Function	
LNK/ACT	**Green**	**Lights**:	To indicate the link through that port is successfully established at **10/100/1000Mbps**.
		Blinks:	To indicate that the switch is actively sending or receiving data over that port.

WGR-500-4PV

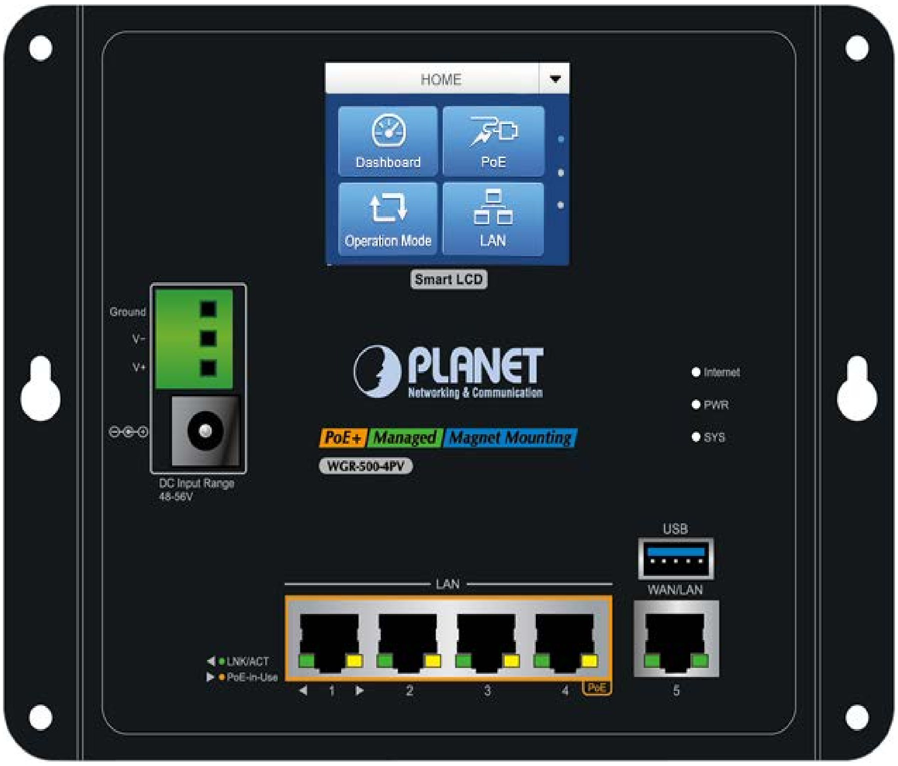


Figure 2-7: LED Indicators of WGR-500-4PV

- **System**

LED	Color	Function	
Internet	**Green**	**Lights**:	Internet is synchronized successfully in the route mode.
		Blinks:	Internet data is being transmitted.
PWR	**Green**	Lights to indicate that the Switch has power.	
SYS	**Green**	Lights to indicate the system is working.	

- **LAN Per 10/100/1000Mbps PoE Port (Port-1 to Port-4) LED**

LED	Color	Function	
LNK/ACT	**Green**	**Lights**:	To indicate the link through that port is successfully established at **10/100Mbps**.
		Blinks:	To indicate that the switch is actively sending or receiving data over that port.
PoE In-Use	**Amber**	**Lights**:	To indicate the port is providing 48V~56VDC in-line power.
		Blinks:	To indicate the connected device is not a PoE powered device (PD).

■ **WAN Per 10/100/1000Mbps RJ45 Port (Port-5)**

LED	Color	Function	
LNK/ACT	Green	**Lights**:	To indicate the link through that port is successfully established at **10/100/1000Mbps**.
		Blinks:	To indicate that the switch is actively sending or receiving data over that port.

2.1.3 Wiring the Power Inputs

The industrial wall-mount Gigabit router features a strong dual power input system (Terminal block and DC jack) incorporated into customer’s automation network to enhance system reliability and uptime. The dual power design is shown in Figure 2-8.

Power Input Range / Model	3-pin Terminal Block	DC Jack
WGR-500-4P	48~56V DC	48~56V DC
WGR-500-4PV	48~56V DC	48~56V DC

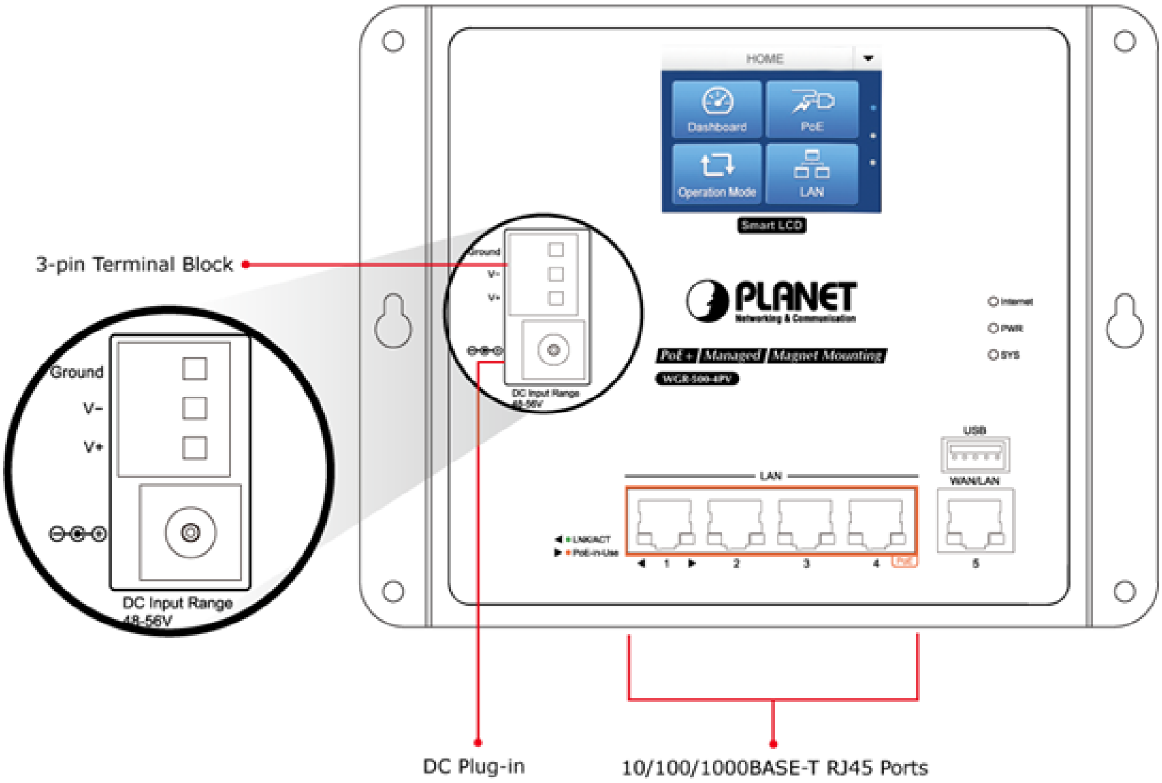


Figure 2-8: Dual Power Design of WGR-500-4PV

■ Terminal Block Connector Pinout

To install the 3-pin Terminal Block Connector on the industrial wall-mount Gigabit router, simply follow the following steps:

Step 1: Insert positive DC power wire into **V+**, negative DC power wire into **V-**, and grounding wire into **Ground** as shown in Figure 2-9.

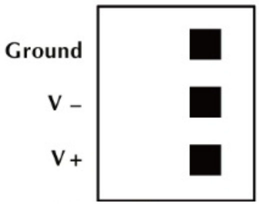


Figure 2-9: Terminal Block Connector

Step 2: Tighten the wire-clamp screws for preventing the wires from loosening and plug them into the industrial wall-mount Gigabit router

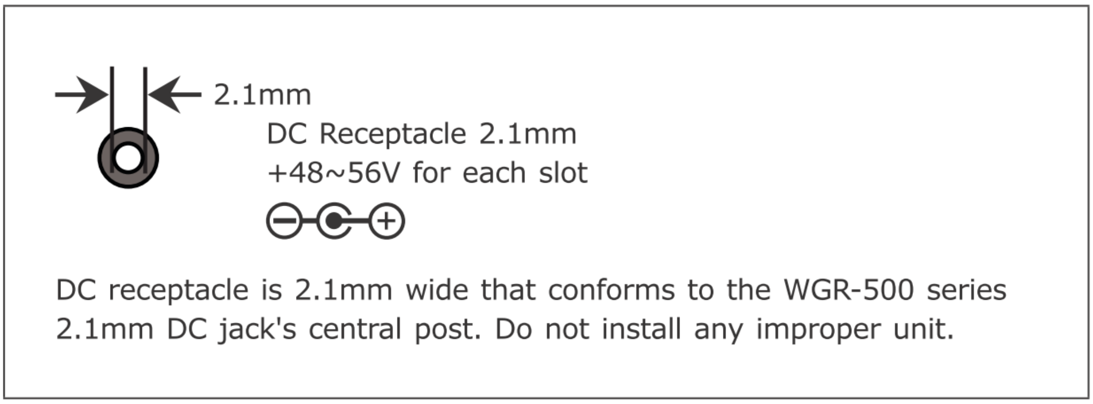
Note

1. The wire gauge for the terminal block should be in the range of 12 ~ 24 AWG.

2. When performing any of the procedures like inserting the wires or tightening the wire-clamp screws, make sure the power is OFF to prevent from getting an electric shock.

■ DC Power Jack

The WGR-500-4P and WGR-500-4P come with DC 48V~56V power input. The DC power jack is shown in Figure 2-10. If you have the issue of power connection, please contact your local sales representative.



DC receptacle is 2.1mm wide that conforms to the WGR-500 series 2.1mm DC jack's central post. Do not install any improper unit.

Figure 2-10: DC Power Jack

2.2 Installing the industrial wall-mount Gigabit router

This section describes how to install your industrial wall-mount Gigabit router and make connections. Please read the following sections and perform the procedures in the order being presented.

2.2.1 Wall-mount Installation

To install the industrial wall-mount Gigabit router on the wall, simply follow the following steps:

Step 1: There are 4 holes with 8mm diameter on the wall mount bracket of the Industrial wall-mount Gigabit router as shown in Figure 2-11. The distance between the 2 holes is 165mm of WGR-500-4PV and WGR-500-4P and the line through them must be horizontal.

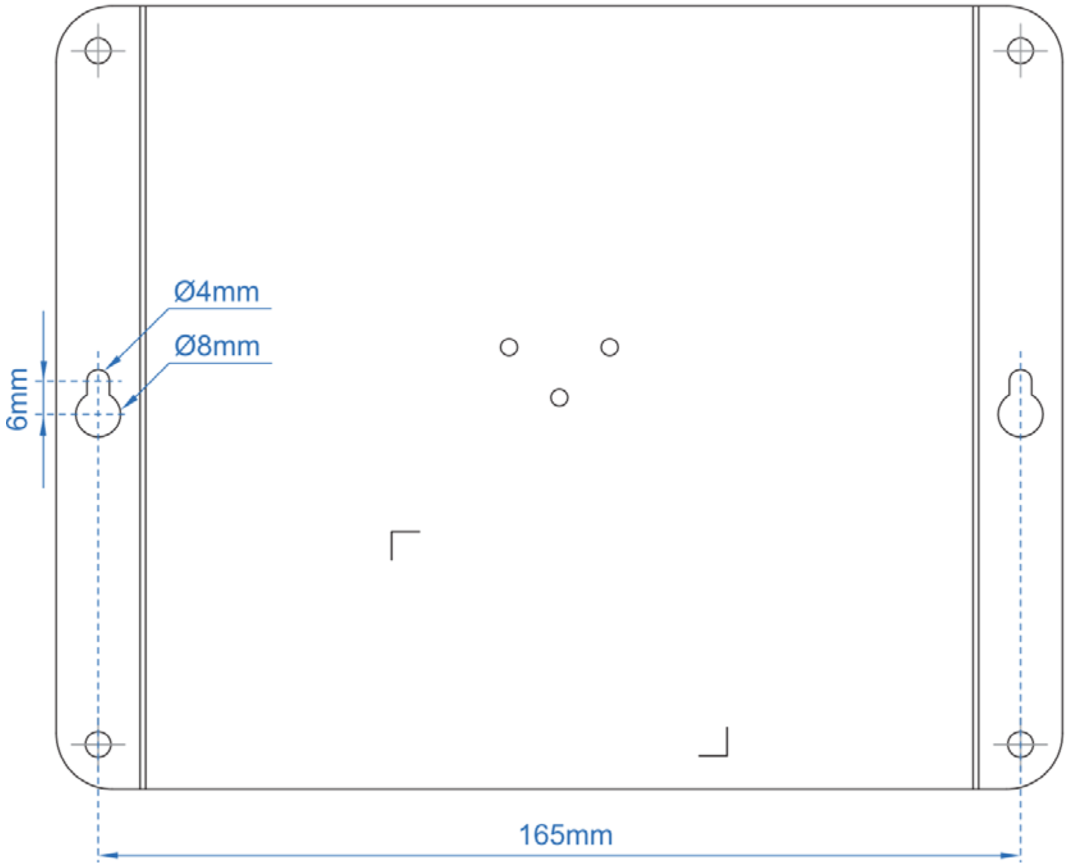


Figure 2-11: Getting Mounting Holes Aligned

Step 2: Install a conductor pipe inside the board hole and flush the edge of the conductor pipe with the wall surface.

Step 3-1: Screw the bolts into the conductor pipe. The industrial wall-mount Gigabit router is between bolts and conductor pipe as shown in Figure 2-12.

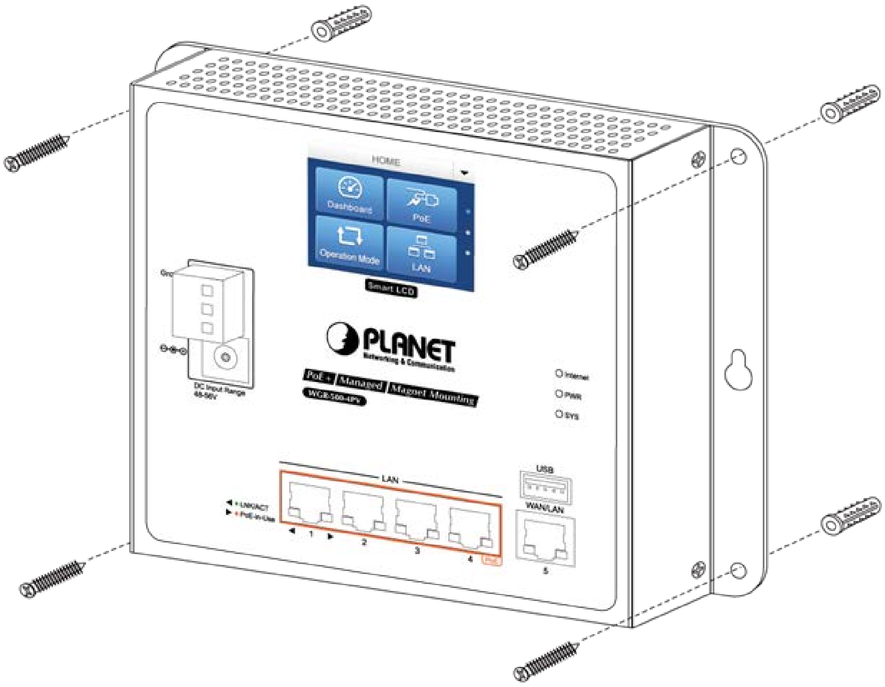


Figure 2-12: Router is screwed to the wall

Step 3-2: Insert screws into the wall anchors, leaving 2mm of each screw exposed. Place the wall-mount slots over the screws and slide the device down until the screws fit snugly into the wall-mount slots. The industry router can be hung on the wall as shown in Figure 2-13.

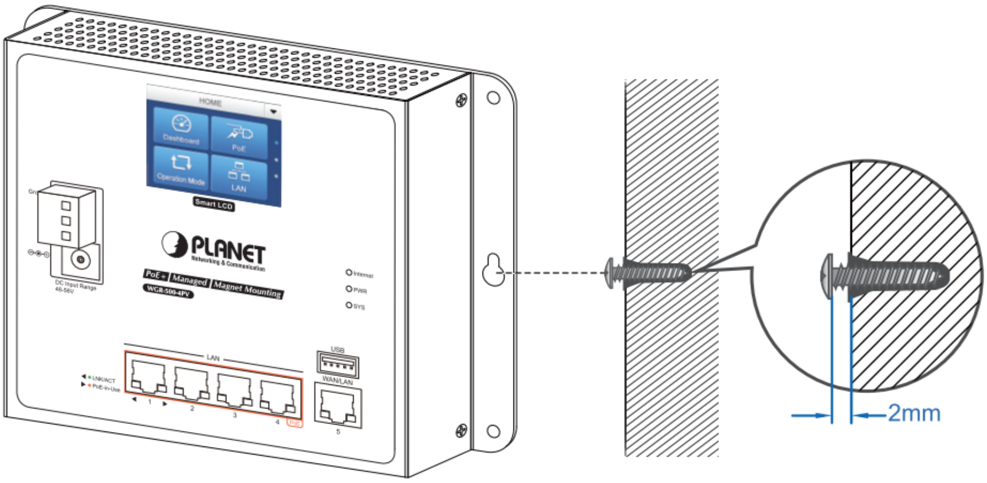


Figure 2-13: Router is hung on the wall

2.2.2 Magnet Installation

To install the industrial wall-mount Gigabit router on a magnetic surface, simply follow Figure 2-14 below:

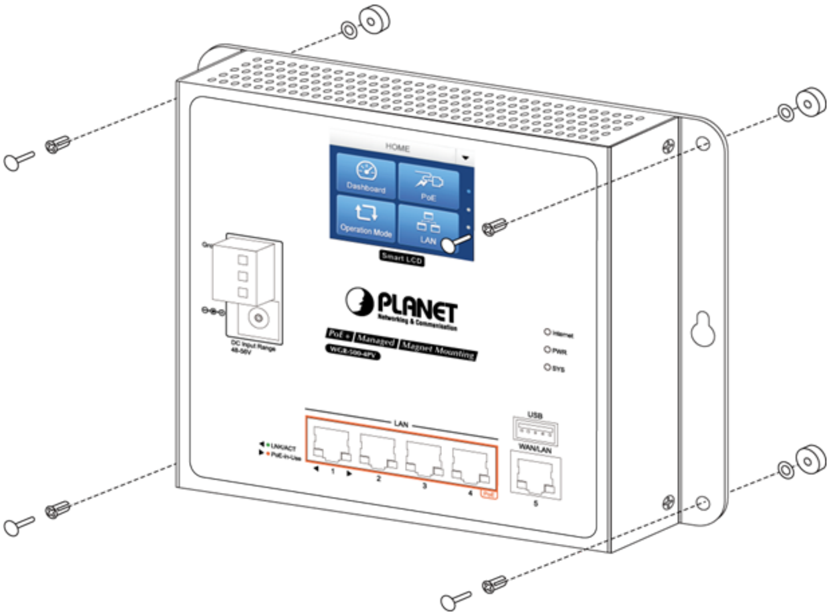


Figure 2-14: Router is magnetically installed

2.2.3 DIN-rail Installation

The DIN-rail kit is included in the package. When the wall-mount application for the industrial wall-mount Gigabit router needs to be replaced with DIN-rail application, please refer to the following figures to screw the DIN-rail on the industrial wall-mount Gigabit router. To hang up the industrial wall-mount Gigabit router, follow the steps below:

Step 1: Screw the DIN-rail bracket on the Industrial Router as shown in Figure 2-15.

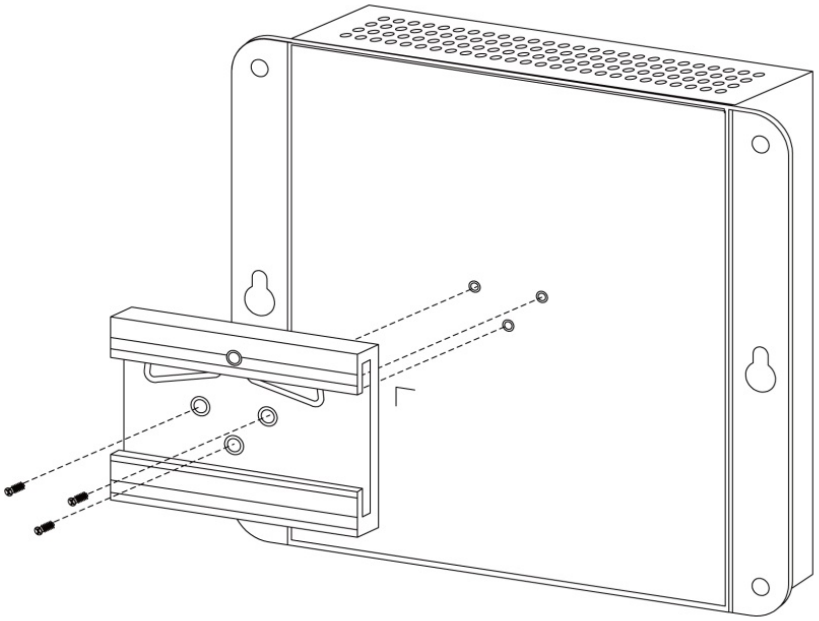


Figure 2-15: DIN-rail bracket is attached to router

Step 2: Lightly insert the DIN-rail bracket into the track as shown in Figure 2-16.

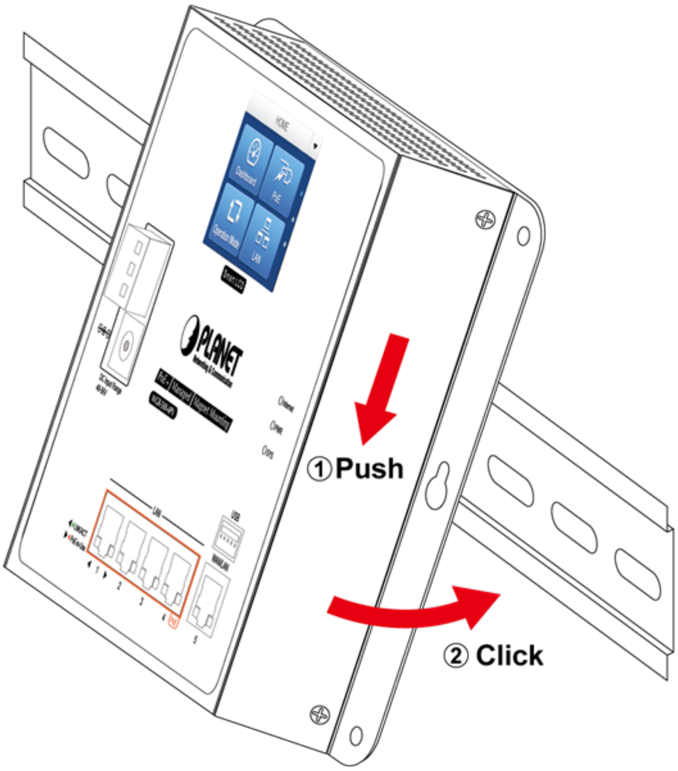


Figure 2-16: Router is placed on the track

Step 3: Router is placed on the track as shown in Figure 2-17

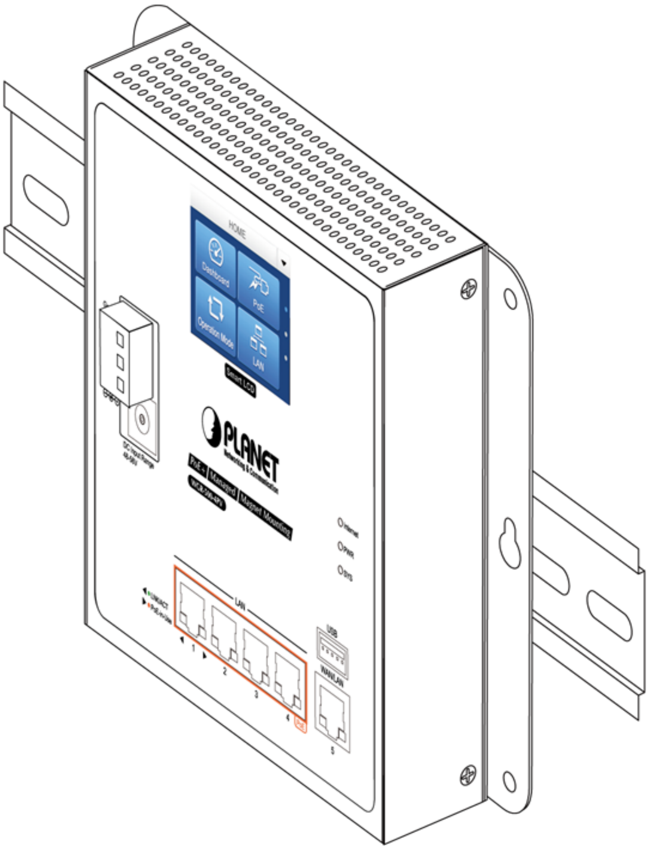


Figure 2-17: Router is tightly fixed on the track

Chapter 3. Router Management

This chapter explains the methods that you can use to configure management access to the **industrial wall-mount Gigabit router**. It describes the types of management applications and the communication and management protocols that deliver data between your management device (workstation or personal computer) and the system. It also contains information about port connection options.

This chapter covers the following topics:

- Requirements
- Web Management Access
- LCD Touch Screen Access

3.1 Requirements

- Workstation running Windows XP/2003, Vista, Windows 7/8/10, MAC OS X, Linux, Fedora, Ubuntu or other platform is compatible with TCP/IP protocols.
- **Workstation** is installed with **Ethernet NIC** (Network Interface Card)
- Ethernet Port
  - Network cables -- Use standard network (UTP) cables with RJ45 connectors.
- The above workstation is installed with **Web browser** and **JAVA runtime environment** Plug-in

Note

It is recommended to use Internet Explorer 8.0 or above to access **industrial wall-mount Gigabit router**.

3.2 Web Management

The industrial wall-mount Gigabit router offers management features that allow users to manage the industrial wall-mount Gigabit router from anywhere on the network through a standard browser such as Microsoft Internet Explorer. After you set up your IP address for the industrial wall-mount Gigabit router, you can access the industrial wall-mount Gigabit router's Web interface applications directly in your Web browser by entering the IP address of the industrial wall-mount Gigabit router.

The following shows how to start up the **Web Management** of the Industrial wall-mount Gigabit router. Note the Industrial Router is configured through an Ethernet connection. Please make sure the manager PC must be set to the same **IP subnet address**. For example, the default IP address of the Industrial Router is **192.168.1.1**, then the manager PC should be set to **192.168.1.x** (where x is a number between 1 and 254) and the default subnet mask is 255.255.255.0 as shown in Figure 3-1.

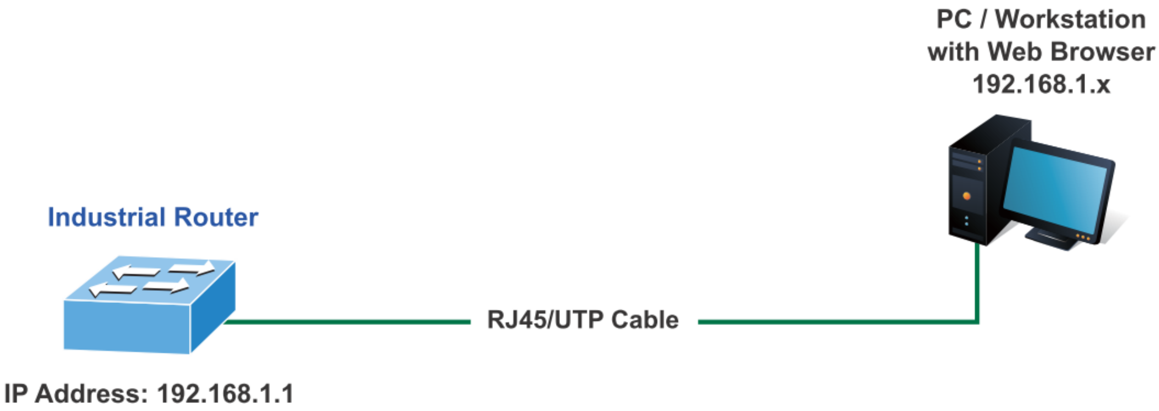


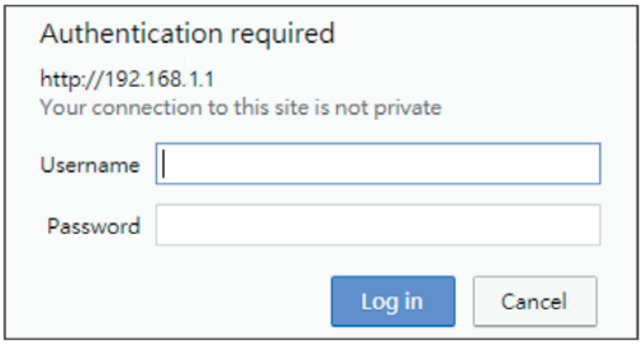
Figure 3-1: Web Management

You can then use your Web browser to list and manage the **industrial wall-mount Gigabit router** configuration parameters from one central location; the Web Management requires **Microsoft Internet Explorer 8.0** or later.

1. Use Internet Explorer 8.0 or above Web browser and enter IP address ***http://192.168.1.1*** to access the Web interface.

2. When the following dialog box appears, please enter **"admin"** in both the default user name and password fields. The login screen shown in Figure 3-2 appears.

Default IP Address: **192.168.1.1**
Default Username: **admin**
Default Password: **admin**



Authentication required

http://192.168.1.1

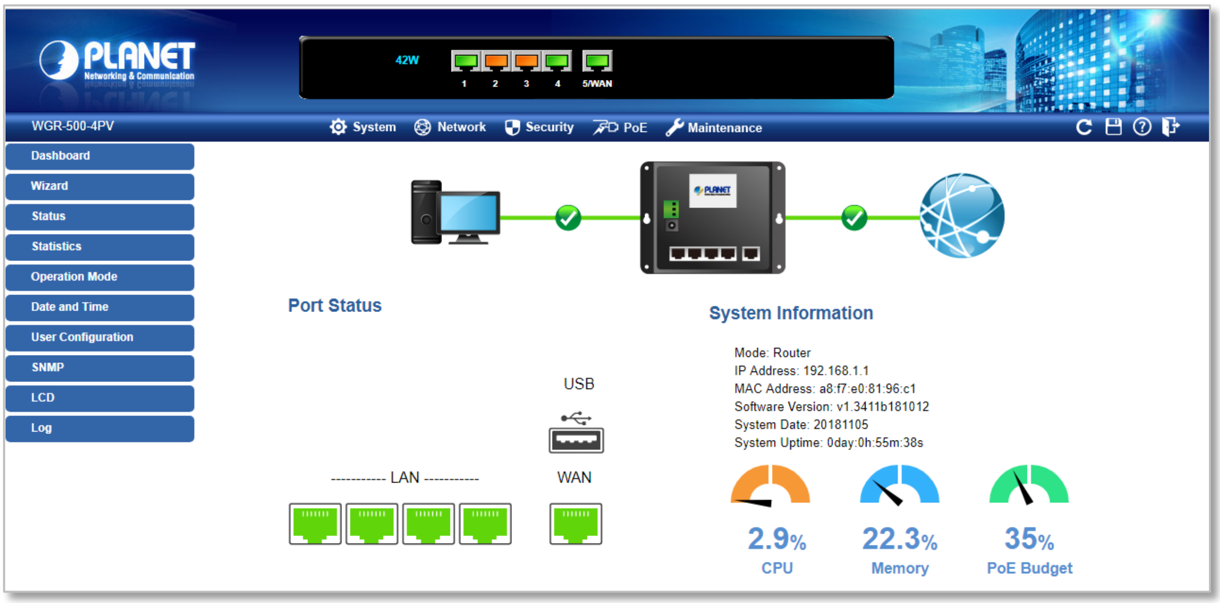
Your connection to this site is not private

Username

Password

Figure 3-2: Web login Screen

After successfully logging into the web UI of the WGR-500 Series, you will see the main menus on the menu bar and sub menus on the left side. The Figure 3-3 is the web main page of the WGR-500-4PV.



System Information

Mode: Router
IP Address: 192.168.1.1
MAC Address: a8:f7:e0:81:96:c1
Software Version: v1.3411b181012
System Date: 20181105
System Uptime: 0day:0h:55m:38s

Figure 3-3: Web Main Page of WGR-500-4PV

3.3 LCD Touch Screen

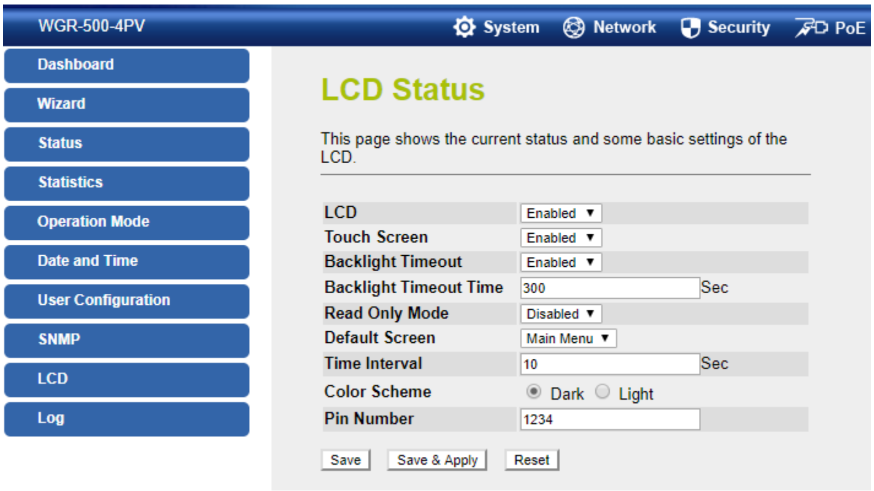
The WGR-500-4PV has a 2.4-inch color LCD touch screen with management functions. Tap the LCD touch screen to wake the LCD touch screen as hown in Figure 3-4.

Figure 3-4: To wake the LCD touch screen

The factory default LCD configurations are shown as follows.

Default LCD: **Enable**
Default Touch Screen: **Enable**
Default Backlight Timeout: **Enable**
Default Backlight Timeout Time: **300**
Default Read Only Mode: **Disable**
Default Screen: **Main Menu**
Default Time Interval: **10**
Default Color Scheme: **Dark**
Default Pin Number: **1234**

You can use the Web management interface and click LCD, and then in the LCD Management, change LCD configuration hown in Figure 3-5.



LCD Status

This page shows the current status and some basic settings of the LCD.

LCD	Enabled ▼
Touch Screen	Enabled ▼
Backlight Timeout	Enabled ▼
Backlight Timeout Time	300 Sec
Read Only Mode	Disabled ▼
Default Screen	Main Menu ▼
Time Interval	10 Sec
Color Scheme	● Dark ○ Light
Pin Number	1234

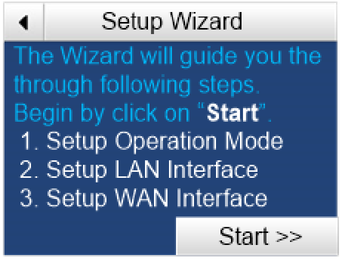
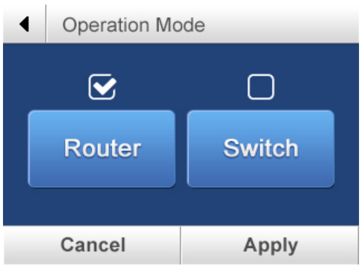
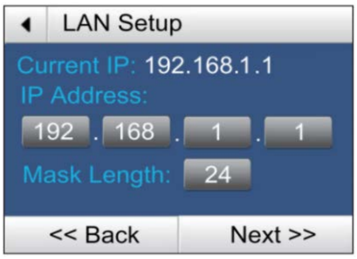
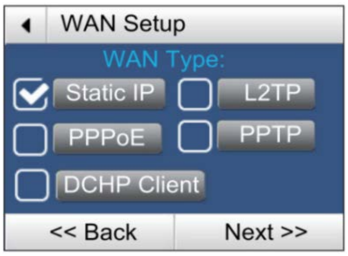
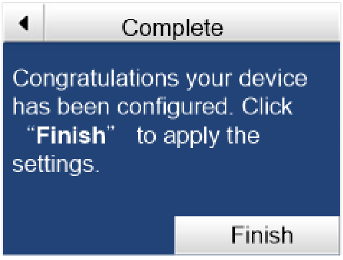
Figure 3-5: LCD Status

Starting Touchscreen Setup Wizard

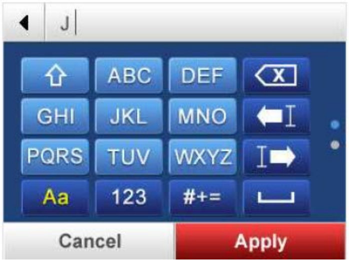
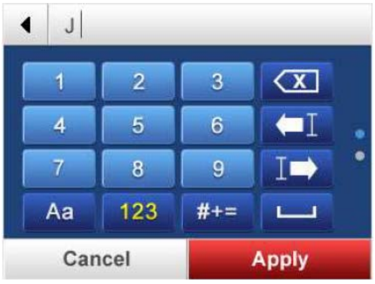
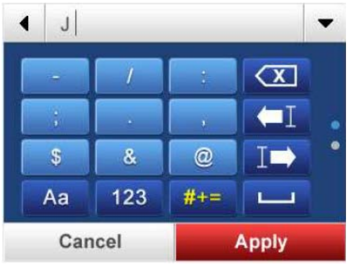
The wizard will guide your through the setup of your industrial wall-mount Gigabit router. For example, when the WGR-500-4PV is in **router** mode, and the touchscreen wizard helps you set up the following configurations in minutes.

- Setting up **Operation Mode**
- Setting up **LAN** Interface
- Setting up **WAN** Interface
- Finish

Begin by clicking on "**Start**"

Step 1	Step 2	Step 3
 Setup Wizard The Wizard will guide you the through following steps. Begin by click on "**Start**". 1. Setup Operation Mode 2. Setup LAN Interface 3. Setup WAN Interface Start >>	 Operation Mode ☑ Router □ Switch Cancel Apply	 LAN Setup Current IP: 192.168.1.1 IP Address: 192 . 168 . 1 . 1 Mask Length: 24 << Back Next >>
Step 4	**Step 5**	
 WAN Setup WAN Type: ☑ Static IP □ L2TP □ PPPoE □ PPTP □ DCHP Client << Back Next >>	 Complete Congratulations your device has been configured. Click "**Finish**" to apply the settings. Finish	

When you configure **WAN setup**, it may require to input user name and password. User can use the following key panels to input letters, numbers and symbols from the LCD screen.

Letters	Numerals	Symbols
 J ⇧ ABC DEF ⌫ GHI JKL MNO PQRS TUV WXYZ Aa 123 #+= Cancel Apply	 J 1 2 3 ⌫ 4 5 6 7 8 9 Aa 123 #+= Cancel Apply	 J - / : ⌫ ; . , $ & @ Aa 123 #+= Cancel Apply

After finishing the procedures, the industrial wall-mount Gigabit router is now successfully configured. You may now attach the xDSL/fiber/cable modem and Ethernet equipment to the wired ports on the front panel of the industrial wall-mount Gigabit router. The Figure 3-6 shows the main menu that allows user to access different router and PoE features. Tap Up/Down to access all settings.

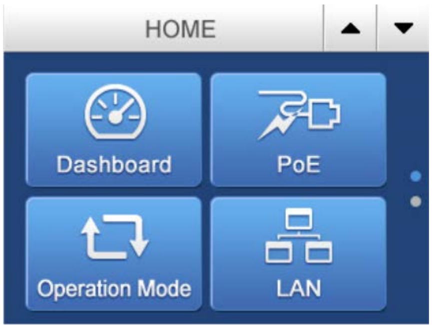


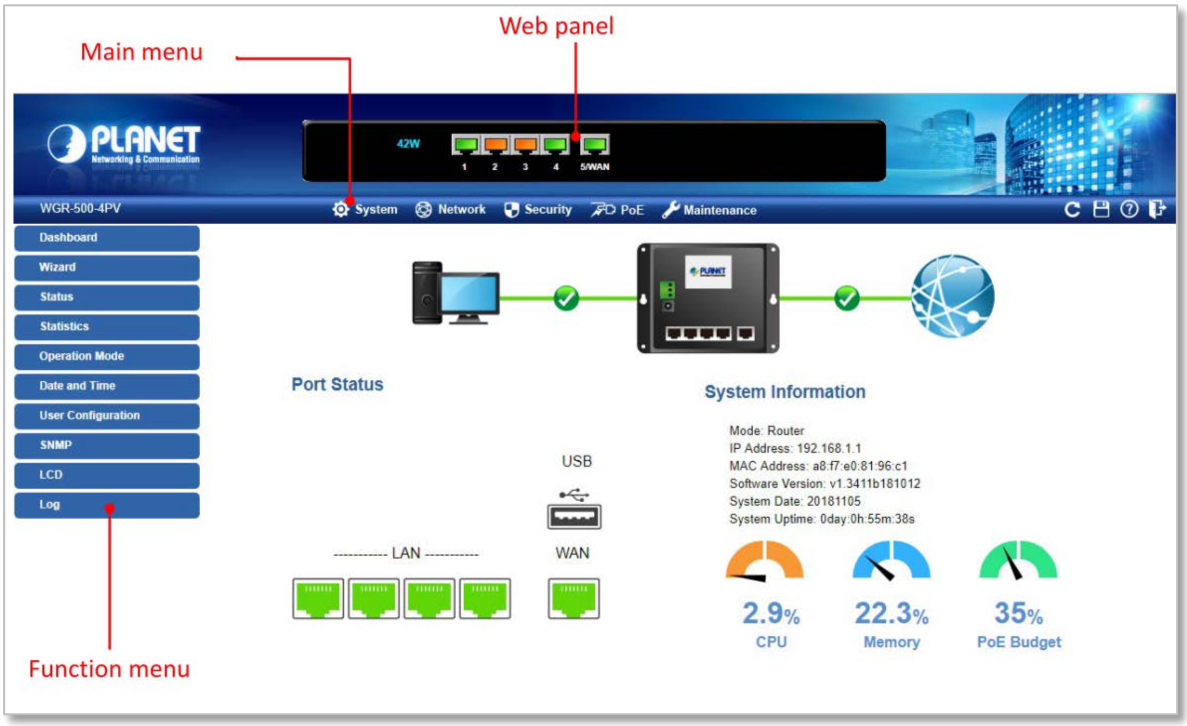
Figure 3-6: Main Menu on LCD Screen

Chapter 4. Configuration in Web UI

This chapter describes how to use Web-based browser interface for configuring and managing industrial wall-mount Gigabit router.

4.1 Main Web Page

After a successful login, the main web page appears. The web main page shown in Figure 4-1 displays the web panel, main menu, function menu, and the main information in the center.



Mode: Router
IP Address: 192.168.1.1
MAC Address: a8:f7:e0:81:96:c1
Software Version: v1.3411b181012
System Date: 20181105
System Uptime: 0day:0h:55m:38s

Figure 4-1: Web Main Page

Web Panel

The web panel displays an image of the **industrial wall-mount Gigabit router**'s ports as shown in Figure 4-2.

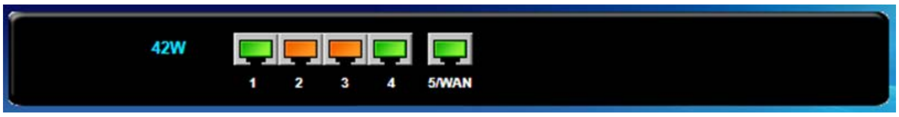


Figure 4-2: Web Panel

Object	Icon	Function
PoE Cosumption	42W	To indicate the PoE consumption.
LAN	⬛	To indicate the LAN with the RJ45 plug-in.
	🟧	To indicate the PoE is in use.
	🟩	To indicates network data is sending or receiving

Main Menu

The main menu displays the product name, function menu, and main information in the center. Via the Web management, the administrator can set up the industrial wall-mount Gigabit router by selecting the functions those listed in the function menu and button as shown in Figures 4-3 and 4-4.

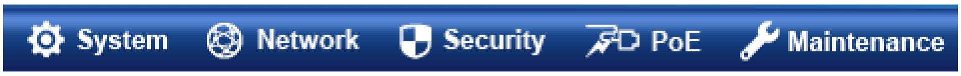


Figure 4-3: Function Menu

Object	Description
System	Provides System information of industrial wall-mount Gigabit router.
Network	Provides WAN, LAN and network configuration of industrial wall-mount Gigabit router.
Security	Provides QoS and security configuration of industrial wall-mount Gigabit router.
PoE	Provides PoE Management configuration of industrial wall-mount Gigabit router.
Maintenance	Provides firmware upgrade and setting file restore/backup configuration of industrial wall-mount Gigabit router

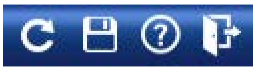


Figure 4-4: Function Button

Object	Description
↻	Click the "**Refresh button**" to refresh the current Web page.
💾	Click the " **Save/Restore configuration button**" to go to Save/Restore configuration page.
?	Click the "**Help button**" to show the function descriptions of the current pages.
🚪	Click the "**Logout button**" to log out the web UI of the industrial wall-mount Gigabit router.

4.2 System

Use the System menu items to display and configure basic administrative details of the industrial wall-mount Gigabit router. The System menu shown in Figure 4-5 provides the following features to configure and monitor system.

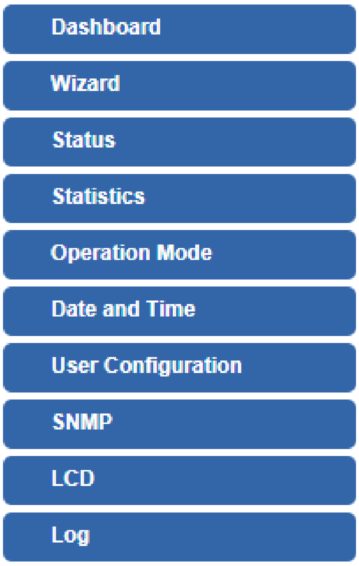
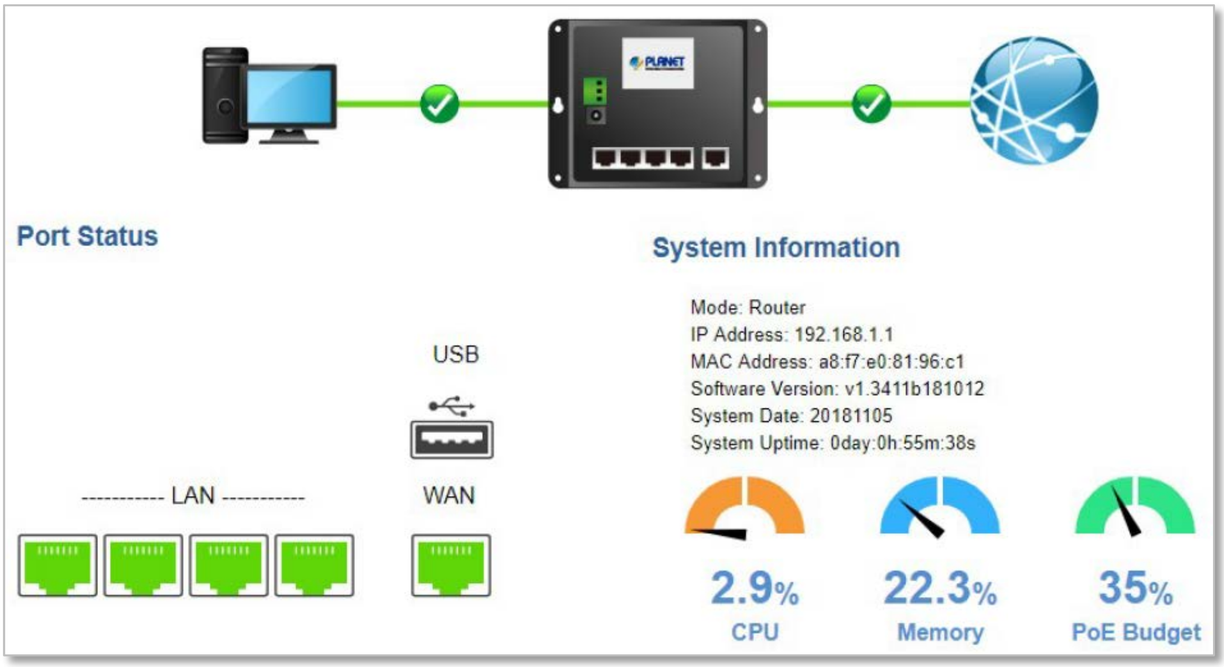


Figure 4-5: System Menu

Object	Description
Dashboard	The overview of system information includes connection, port, and system status
Wizard	The Wizard will guide the user to configuring the router easily and quickly.
Status	Display the status of the system, LAN and WAN.
Statistics	Display statistics information of network traffic of LAN and WAN
Operation Mode	Display the current operation mode, and users can set different modes to LAN interface.
Date and Time	Allow to set system time by manual or synchronize system time from Internet NTP server.
User Configuration	Allow to change the username and password of industrial wall-mount Gigabit router.
SNMP	Display SNMP system information.
LCD	Allow to manage LCD control panel
Log	Provides the system log setting and information display of industrial wall-mount Gigabit router

4.2.1 Dashboard

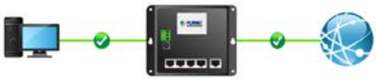
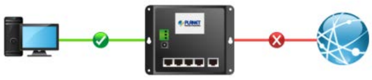
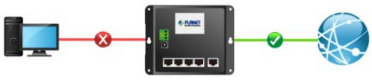
The dashboard provides an overview of system information including connection, port, and system status as shown in Figure 4-6.



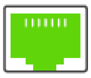
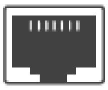
Mode: Router
IP Address: 192.168.1.1
MAC Address: a8:f7:e0:81:96:c1
Software Version: v1.3411b181012
System Date: 20181105
System Uptime: 0day:0h:55m:38s

Figure 4-6: Dashboard

WAN/LAN Connection Status

Object	Description
	The status means WAN is connected to Internet and LAN is connected.
	The status means WAN is disconnected to Internet and LAN is connected.
	The status means WAN is connected to Internet and LAN is disconnected.

Port Status

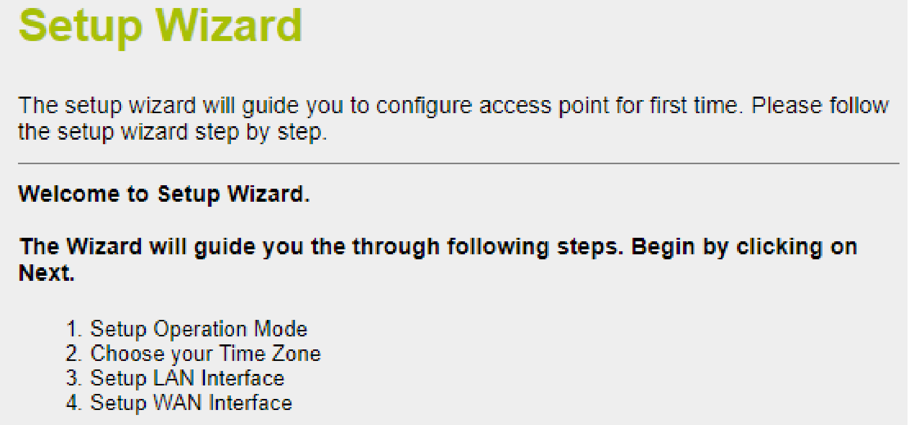
Object	Description
	LAN or WAN port is in use.
	LAN or WAN port is not in use.
	USB port is in use.
	USB port is not in use.

System Information

Object	Description
Mode	Display the current operation mode.
IP Address	Display the current IP address of industrial wall-mount Gigabit router.
MAC Address	Display the LAN MAC address of industrial wall-mount Gigabit router.
Software Version	Display the current firmware version of industrial wall-mount Gigabit router.
System Date	Display the current system date of Industrial wall-mount Gigabit router. The system date will be correct if NTP function is enabled and the Hub is connected to Internet.
System Uptime	Display the period of time the device has been operational.
CPU	Display the CPU loading
Memory	Display the memory usage
PoE Usage	Display the PoE usage

4.2.2 Wizard

The Wizard will guide the user to configuring industrial wall-mount Gigabit router easily and quickly. There are different procedures in different operation modes. According to the operation mode you switch to, please follow the instructions below to configure industrial wall-mount Gigabit router via **Setup Wizard** as shown in Figure 4-7.



Setup Wizard

The setup wizard will guide you to configure access point for first time. Please follow the setup wizard step by step.

Welcome to Setup Wizard.

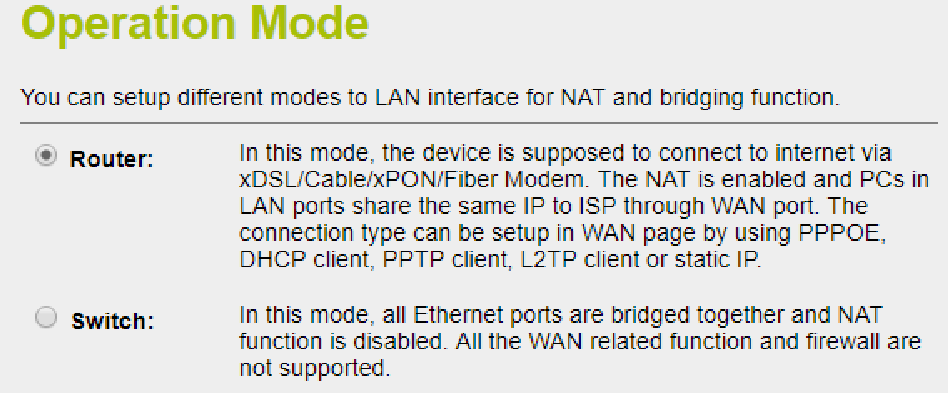
The Wizard will guide you the through following steps. Begin by clicking on Next.

1. Setup Operation Mode
2. Choose your Time Zone
3. Setup LAN Interface
4. Setup WAN Interface

Figure 4-7: Setup Wizard

Step 1: Setting Up Operation Mode

The router supports two operation modes**, Router** and **Switch,** as shown in Figure 4-8.



Operation Mode

You can setup different modes to LAN interface for NAT and bridging function.

● **Router:** In this mode, the device is supposed to connect to internet via xDSL/Cable/xPON/Fiber Modem. The NAT is enabled and PCs in LAN ports share the same IP to ISP through WAN port. The connection type can be setup in WAN page by using PPPOE, DHCP client, PPTP client, L2TP client or static IP.

○ **Switch:** In this mode, all Ethernet ports are bridged together and NAT function is disabled. All the WAN related function and firewall are not supported.

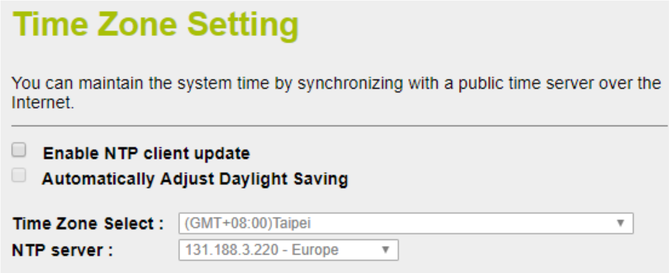
Figure 4-8: Setup Wizard – Operation Mode

Object	Description
Router	In this mode, the device is supposed to connect to internet via xDSL/Cable/xPON/Fiber modem. The NAT is enabled and PCs in LAN ports share the same IP with ISP through WAN port. The connection type can be set up in WAN page by using PPPOE, DHCP client, PPTP client , L2TP client or static IP.
Switch	In this mode, all Ethernet ports are bridged together and NAT function is disabled. All the WAN-related functions and firewall are not supported.

Step 3: Time Zone Setting

The Time Configuration option allows you to configure, update, and maintain the correct time on the internal system clock. Daylight Saving can also be configured to automatically adjust the time when needed.

The setup is shown in Figure 4-9



Time Zone Setting

You can maintain the system time by synchronizing with a public time server over the Internet.

□ Enable NTP client update

□ Automatically Adjust Daylight Saving

Time Zone Select : (GMT+08:00)Taipei

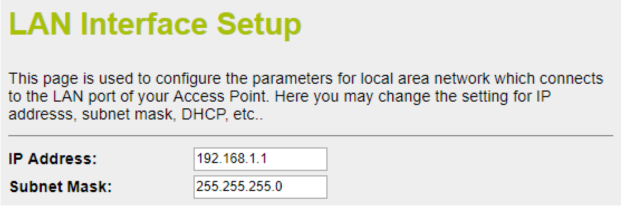
NTP server : 131.188.3.220 - Europe

Figure 4-9: Setup Wizard – Time Zone Configuration

Object	Description
Enable NTP client update	Check this box to connect NTP server and synchronize internet time.
Automatically Adjust Daylight Saving	Check this box to adjust the daylight saving automatically.
Time Zone Select	Select the Time Zone from the drop-down menu.
NTP Server	Select the NTP server from the drop-down menu.

Step 4: LAN Interface Setting

Set up the IP Address and Subnet Mask for the LAN interface as shown in Figure 4-10.



LAN Interface Setup

This page is used to configure the parameters for local area network which connects to the LAN port of your Access Point. Here you may change the setting for IP addresss, subnet mask, DHCP, etc..

IP Address: 192.168.1.1

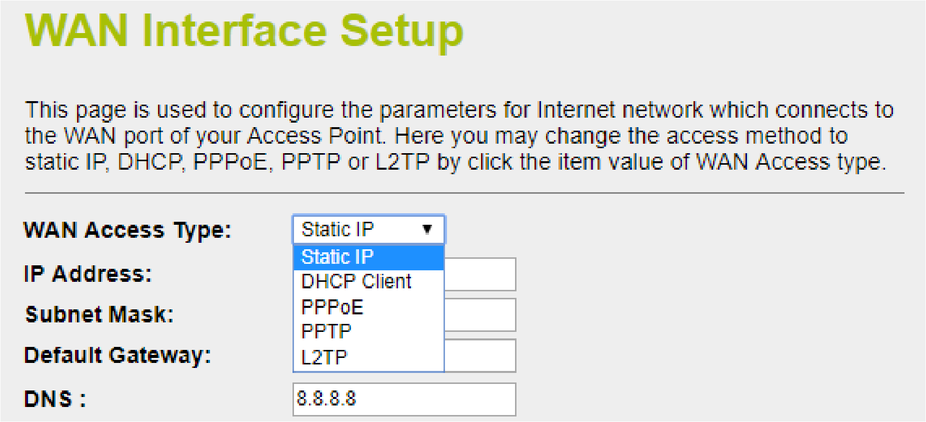
Subnet Mask: 255.255.255.0

Figure 4-10: Setup Wizard – LAN Configuration

Object	Description
IP Address	Enter the IP address of your Router. The default: **192.168.1.1**
Subnet Mask	An address code that determines the size of the network. Normally use **255.255.255.0** as the subnet mask.

Step 5 WAN Interface Setting

The industrial wall-mount Gigabit Router supports five access modes in the WAN side as shown in Figure 4-11. Please choose the correct mode according to your ISP.



WAN Interface Setup

This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE, PPTP or L2TP by click the item value of WAN Access type.

WAN Access Type: Static IP

IP Address:

Subnet Mask:

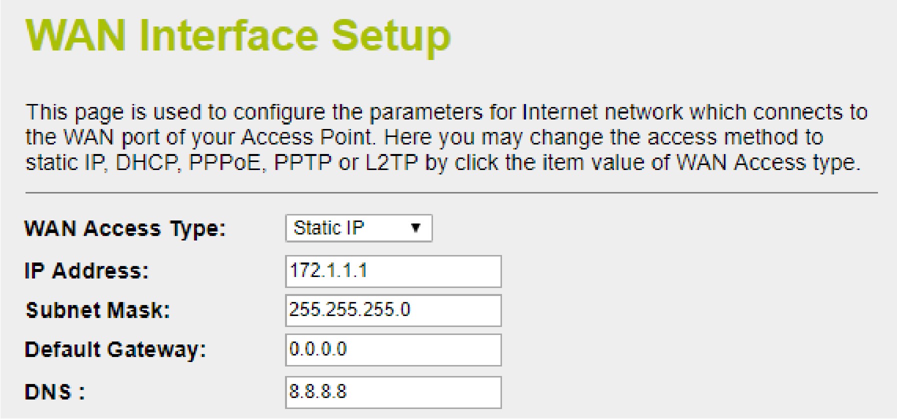
Default Gateway:

DNS : 8.8.8.8

Figure 4-11: Setup Wizard – WAN Configuration

Mode 1 - Static IP

Select **Static IP Address** if all the Internet port's IP information is provided to you by your ISP. You will need to enter the **IP address**, **subnet mask**, **gateway address**, and **DNS address** provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format. The setup is shown in Figure 4-12.



WAN Interface Setup

This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE, PPTP or L2TP by click the item value of WAN Access type.

WAN Access Type: Static IP

IP Address: 172.1.1.1

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

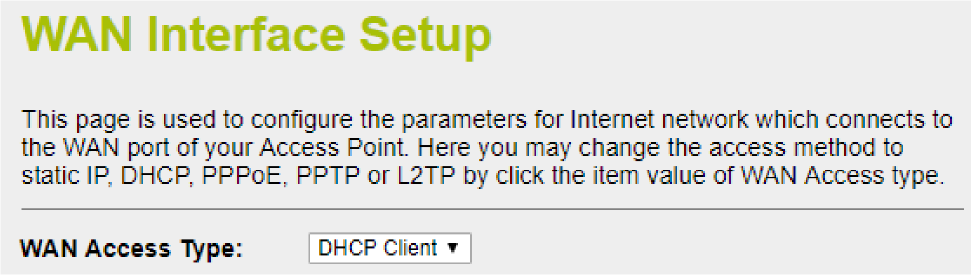
DNS : 8.8.8.8

Figure 4-12: WAN Interface Setup – Static IP Setup

Object	Description
IP Address	Enter the IP address assigned by your ISP.
Subnet Mask	Enter the Subnet Mask assigned by your ISP.
Default Gateway	Enter the Gateway assigned by your ISP.
DNS	The DNS server information will be supplied by your ISP.

Mode 2 DHCP Client

Select DHCP Client to obtain IP Address information automatically from your ISP. The setup is shown in Figure 4-13.



WAN Interface Setup

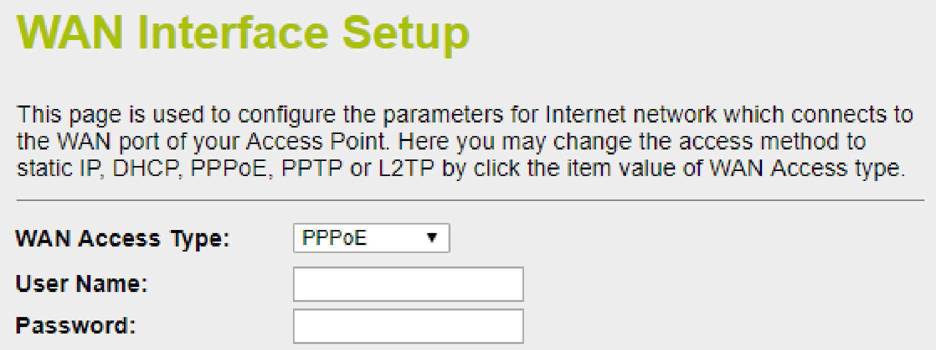
This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE, PPTP or L2TP by click the item value of WAN Access type.

WAN Access Type: DHCP Client ▼

Figure 4-13: WAN Interface Setup – DHCP Setup

Mode 3 PPPoE

Choose **PPPoE** (**Point to Point Protocol over Ethernet**) if your ISP uses a PPPoE connection. Your ISP will provide you with a **username** and **password**. This option is typically used for DSL services. The setup is shown in Figure 4-14.



WAN Interface Setup

This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE, PPTP or L2TP by click the item value of WAN Access type.

WAN Access Type: PPPoE ▼

User Name:

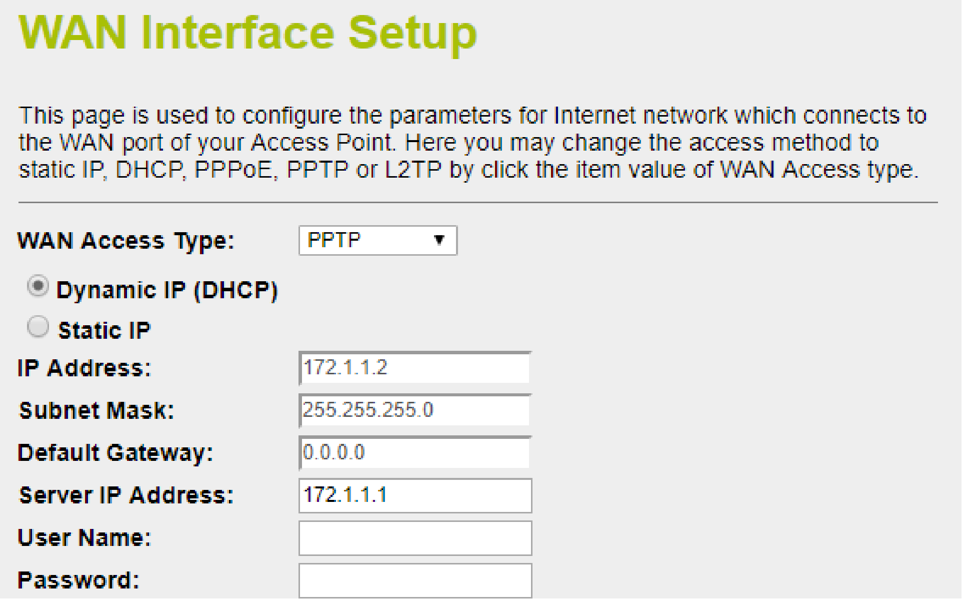
Password:

Figure 4-14: WAN Interface Setup – PPPoE Setup

Object	Description
User Name	Enter your PPPoE user name.
Password	Enter your PPPoE password.

Mode 4 PPTP

Choose **PPTP** (**Point-to-Point-Tunneling Protocol**) if your ISP uses a PPTP connection. Your ISP will provide you with IP information and PPTP Server IP Address; of course, it also includes a **username** and **password**. This mode is typically used for DSL services. The setup is shown in Figure 4-15.



WAN Interface Setup

This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE, PPTP or L2TP by click the item value of WAN Access type.

WAN Access Type: PPTP

● Dynamic IP (DHCP)

○ Static IP

IP Address: 172.1.1.2

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

Server IP Address: 172.1.1.1

User Name:

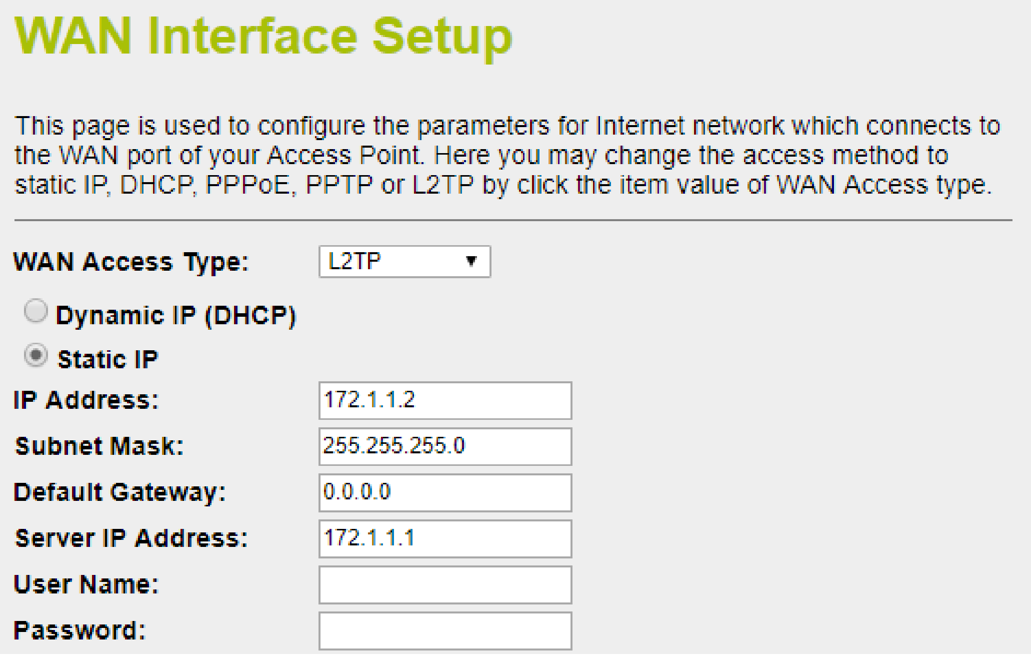
Password:

Figure 4-15: WAN Interface Setup – PPTP Setup

Object	Description
IP Address	Enter the IP address.
Subnet Mask	Enter the subnet Mask.
Server IP Address	Enter the PPTP Server IP address provided by your ISP.
User Name	Enter your PPTP username.
Password	Enter your PPTP password.

Mode 5 L2TP

Choose L2TP (Layer 2 Tunneling Protocol) if your ISP uses an L2TP connection. Your ISP will provide you with a username and password. The setup is shown in Figure 4-16.



WAN Interface Setup

This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE, PPTP or L2TP by click the item value of WAN Access type.

WAN Access Type: L2TP

○ Dynamic IP (DHCP)

● Static IP

IP Address: 172.1.1.2

Subnet Mask: 255.255.255.0

Default Gateway: 0.0.0.0

Server IP Address: 172.1.1.1

User Name:

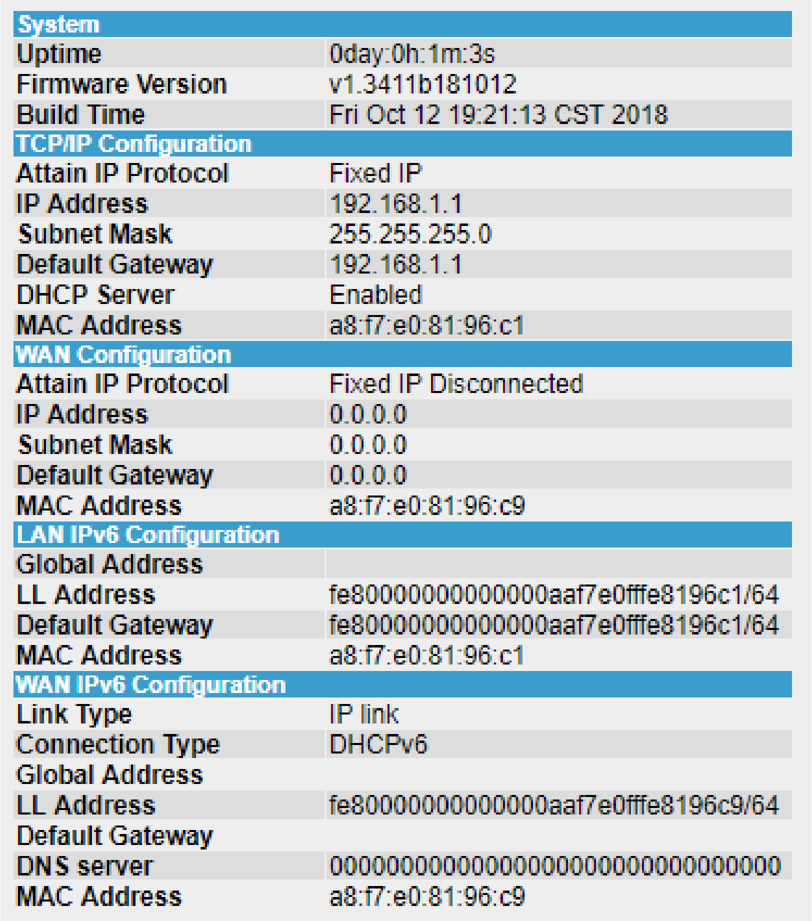
Password:

Figure 4-16: WAN Interface Setup – L2TP Setup

Object	Description
IP Address	Enter the IP address.
Subnet Mask	Enter the subnet Mask.
Server IP Address	Enter the L2TP Server IP address provided by your ISP.
User Name	Enter your L2TP username.
Password	Enter your L2TP password.

4.2.3 Status

This page displays system information of Industrial wall-mount Gigabit router as shown in Figure 4-17.

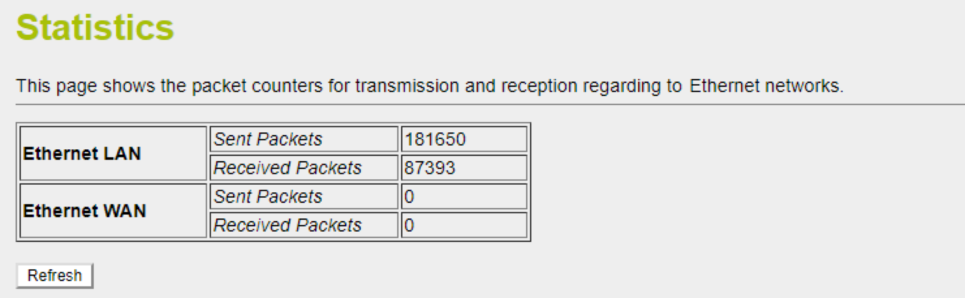


System	
Uptime	0day:0h:1m:3s
Firmware Version	v1.3411b181012
Build Time	Fri Oct 12 19:21:13 CST 2018
TCP/IP Configuration	
Attain IP Protocol	Fixed IP
IP Address	192.168.1.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
DHCP Server	Enabled
MAC Address	a8:f7:e0:81:96:c1
WAN Configuration	
Attain IP Protocol	Fixed IP Disconnected
IP Address	0.0.0.0
Subnet Mask	0.0.0.0
Default Gateway	0.0.0.0
MAC Address	a8:f7:e0:81:96:c9
LAN IPv6 Configuration	
Global Address	
LL Address	fe80000000000000aaf7e0fffe8196c1/64
Default Gateway	fe80000000000000aaf7e0fffe8196c1/64
MAC Address	a8:f7:e0:81:96:c1
WAN IPv6 Configuration	
Link Type	IP link
Connection Type	DHCPv6
Global Address	
LL Address	fe80000000000000aaf7e0fffe8196c9/64
Default Gateway	
DNS server	00000000000000000000000000000000
MAC Address	a8:f7:e0:81:96:c9

Figure 4-17: System Information

4.2.4 Stastics

This page displays the number of packet that pass through the router on the WAN and LAN. The statistics are shown in Figure 4-18.



Statistics

This page shows the packet counters for transmission and reception regarding to Ethernet networks.

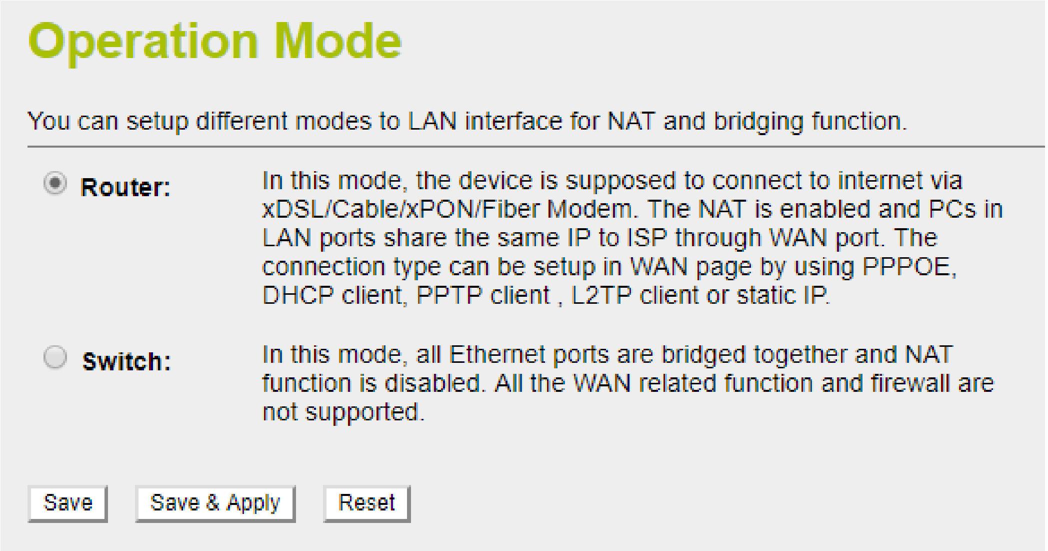
Ethernet LAN	*Sent Packets*	181650
	Received Packets	87393
Ethernet WAN	*Sent Packets*	0
	Received Packets	0

Figure 4-18: Statistics

Object	Description
Refresh	Press this button to refresh the current Web page.

4.2.5 Operation Mode

The industrial wall-mount Gigabit router supports two modes for your application, select the **Router** mode to act as a Gateway which provides the firewall function to protect your private network. To select the **Switch** mode, industrial wall-mount Gigabit router will act as a pure 5-Port Ethernet Switch. The setup is shown in Figure 4-19 and **default mode** is **Router** mode.



Operation Mode

You can setup different modes to LAN interface for NAT and bridging function.

● **Router:** In this mode, the device is supposed to connect to internet via xDSL/Cable/xPON/Fiber Modem. The NAT is enabled and PCs in LAN ports share the same IP to ISP through WAN port. The connection type can be setup in WAN page by using PPPOE, DHCP client, PPTP client , L2TP client or static IP.

○ **Switch:** In this mode, all Ethernet ports are bridged together and NAT function is disabled. All the WAN related function and firewall are not supported.

Figure 4-19: Operation Mode

Object	Description
Router	In this mode, the device is supposed to connect to internet via xDSL/Cable/xPON/Fiber modem. The NAT is enabled and PCs in LAN ports share the same IP with ISP through WAN port. The connection type can be set up in WAN page by using PPPOE, DHCP client, PPTP client , L2TP client or static IP.
Switch	In this mode, all Ethernet ports are bridged together and NAT function is disabled. All the WAN related function and firewall are not supported.
Save	Press this button to save changes.
Save & Apply	Press this button to save and apply changes.
Reset	Press this button to undo any changes made locally and revert to previously saved values.

Note

For the WGR-500-4P model, if you want to set a different mode between router and switch, it can only be configured by **DIP switch,** instead of web GUI, on the bottom case shown in the table below.

The Function Menu of Router Mode

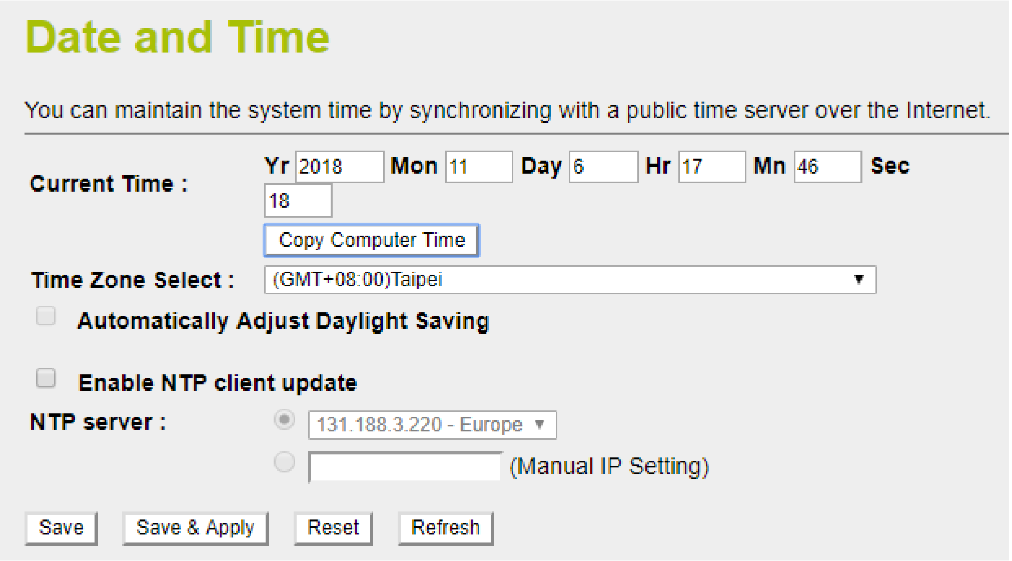
System	Network	Security	PoE	Maintenance
Dashboard	WAN Setup	QoS	PoE Configuration	Connection Test
Wizard	LAN Setup	DoS	PoE Status	Save/Restore Configuration
Status	VLAN	Port Filtering	PoE Schedule	Firmware
Statistics	Route	IP Filtering	PD Alive Check	Reboot
Operation Mode	DDNS	MAC Filtering		
Date and Time	IPv6 WAN Setting	URL Filtering		
User Configuration	IPv6 LAN Setting	DMZ		
SNMP	Radvd	Port Forwarding		
LCD	Tunnel (6 over 4)			
Log				

The Function Menu of Switch Mode

System	Network	PoE	Maintenance
Dashboard	LAN Setup	PoE Configuration	Connection Test
Wizard	VLAN	PoE Status	Save/Restore Configuration
Status	IPv6 LAN Setting	PoE Schedule	Firmware
Statistics		PD Alive Check	Reboot
Operation Mode			
Date and Time			
User Configuration			
SNMP			
LCD			
Log			

4.2.6 Date and Time

This section assists you in setting the system time of industrial wall-mount Gigabit router. You can either select to set the time and date manually or automatically obtain the GMT time from Internet as shown in Figure 4-20.



Date and Time

You can maintain the system time by synchronizing with a public time server over the Internet.

Current Time : Yr 2018 Mon 11 Day 6 Hr 17 Mn 46 Sec 18

Time Zone Select : (GMT+08:00)Taipei

□ Automatically Adjust Daylight Saving

□ Enable NTP client update

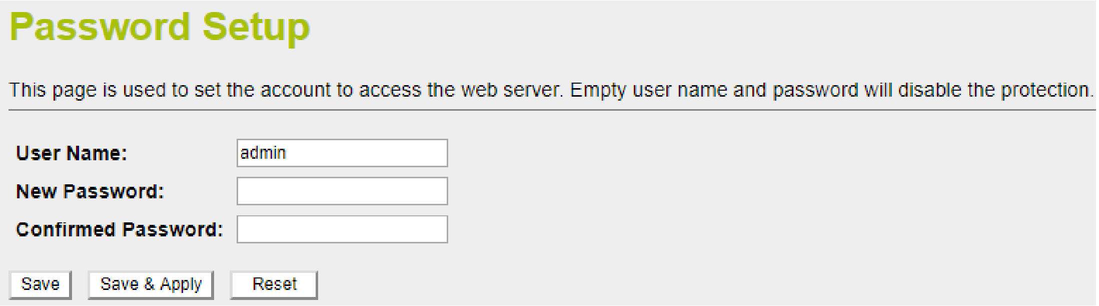
NTP server :
● 131.188.3.220 - Europe
○ (Manual IP Setting)

Figure 4-20: Date and Time

Object	Description
Time Zone Select	Input current time manually.
Time Zone Select	Select the time zone of the country you are currently in. The router will set its time based on your selection.
Enable NTP Client Update	Check to enable NTP update. Once this function is enabled, router will automatically update current time from NTP server.
NTP Server	User may select NTP sever or input address of NTP server manually.
Save	Press this button to save changes.
Save & Apply	Press this button to save and apply changes.
Reset	Press this button to undo any changes made locally and revert to previously saved values.
Refresh	Press this button to refresh the page

4.2.7 User Configuration

To ensure the industrial wall-mount Gigabit router's security is secure, you will be asked for your password when you access the industrial wall-mount Gigabit router's Web-based utility. The default user name and password are "**admin**". This page will allow you to modify the user name and passwords as shown in Figure 4-21.



Password Setup

This page is used to set the account to access the web server. Empty user name and password will disable the protection.

User Name: admin

New Password:

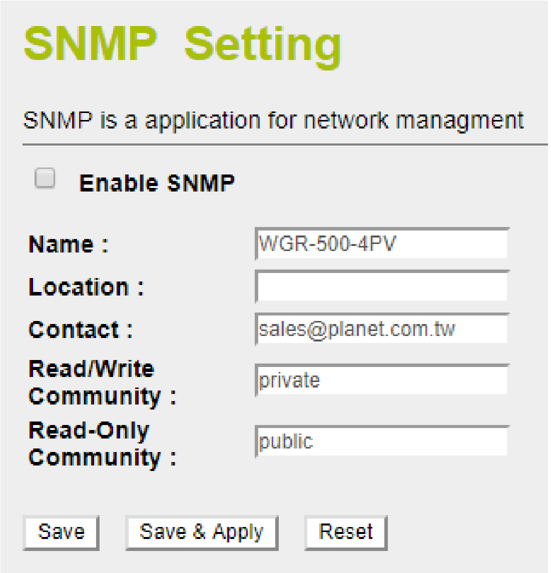
Confirmed Password:

Figure 4-21: User Configuration

Object	Description
User Name	Enter user name.
New Password	Input password for this user.
Confirmed Password	Confirm password again.
Save	Press this button to save changes.
Save & Apply	Press this button to save and apply changes.
Reset	Press this button to undo any changes made locally and revert to previously saved values.

4.2.8 SNMP

This section provides SNMP setting of industrial wall-mount Gigabit router as shown in Figure 4-22.



SNMP Setting

SNMP is a application for network managment

☐ Enable SNMP

Name : WGR-500-4PV

Location :

Contact : sales@planet.com.tw

Read/Write Community : private

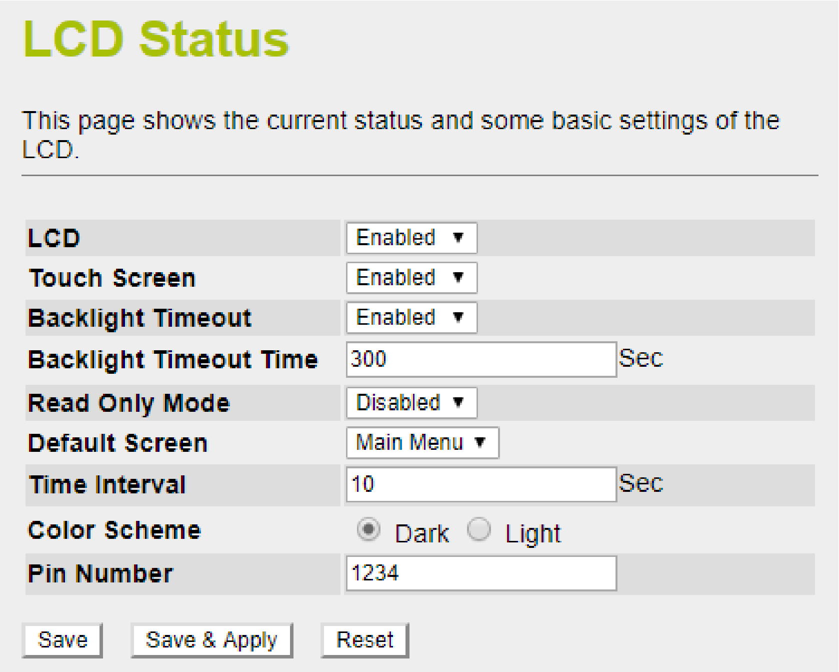
Read-Only Community : public

Figure 4-22: SNMP

Object	Description
Enable SNMP	Disable or enable the SNMP function.
Name	Allows to enter characters for Name of industrial wall-mount Gigabit router.
Location	Allows to enter characters for Location of industrial wall-mount Gigabit router.
Contact	Allows to enter characters for contact of industrial wall-mount Gigabit router.
Read/Write Community	Allows to enter characters for SNMP Read/Write Community of industrial wall-mount Gigabit router.
Read-Only Community	Allow to enter characters for SNMP Read-Only Community of industrial wall-mount Gigabit router.
Save	Press this button to save changes.
Save & Apply	Press this button to save and apply changes.
Reset	Press this button to undo any changes made locally and revert to previously saved values.

4.2.9 LCD

This section offers many options for you to manage LCD control panel as shown in Figure 4-23.



LCD Status

This page shows the current status and some basic settings of the LCD.

LCD	Enabled ▼
Touch Screen	Enabled ▼
Backlight Timeout	Enabled ▼
Backlight Timeout Time	300 Sec
Read Only Mode	Disabled ▼
Default Screen	Main Menu ▼
Time Interval	10 Sec
Color Scheme	● Dark ○ Light
Pin Number	1234

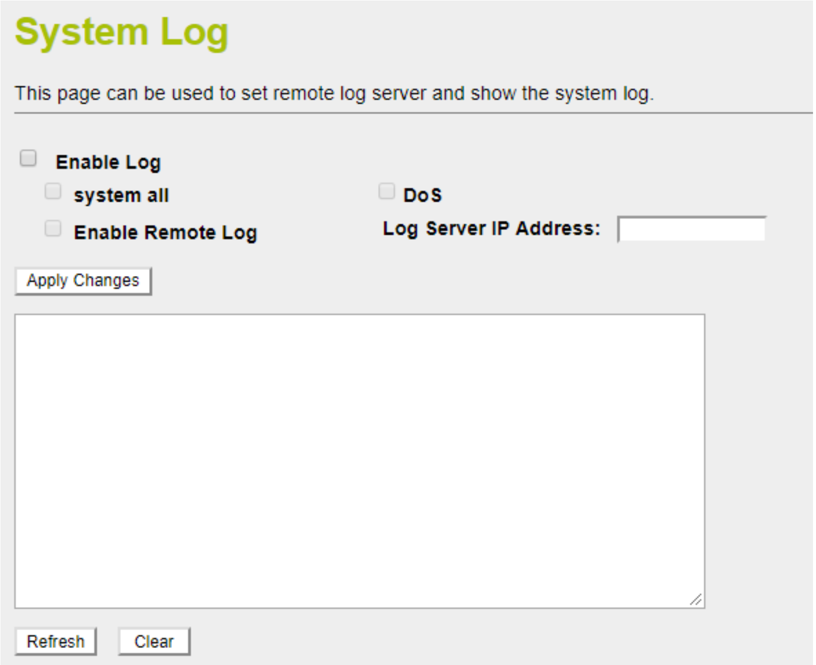
Figure 4-23: LCD

Object	Description
LCD	Allows user to enable or disable LCD panel.
Touch Screen	Allows user to enable or disable touch screen feature.
Backlight Timeout	Allows user to enable or disable panel backlight timeout time feature.
Backlight Timeout Time	All user to setup backlight timeout duration. Default setting is **300 seconds**.
Read Only Mode	Allows user to enable or disable "read only" mode feature to prevent someone from changing or reading information from LCD panel.
Default Screen	Allows user to choose what screen will be displayed on the LCD when system booting is done. Please note that user needs to save configuration and new screen will be displayed next time when system reboots. Default setting can be done from the drop-down main menu.
Time Interval	Allows user to input time interval for page refresh. Please note that shorter time interval will cause high CPU load, so we suggest using default setting which is **10 seconds**.
Color Scheme	Allows user to replace LCD background color. To use this feature, user has to save configuration and reboot system. Default setting is Dark.
Pin Number	It is password. For security reason, when user changes configuration from LCD, user has to input password then configuration will be saved and executed. Default setting is 1234.

Save	Press this button to save changes.
Save & Apply	Press this button to save and apply changes.
Reset	Press this button to undo any changes made locally and revert to previously saved values.

4.2.10 Log

This section will help you to configure the settings of system log as shown in Figure 4-24. You can check the box of the items you want to record it in the log.



System Log

This page can be used to set remote log server and show the system log.

□ Enable Log
□ system all □ DoS
□ Enable Remote Log Log Server IP Address:

Figure 4-24: Log

Object	Description
Enable Log	Check to enable log function.
System all/DoS	Select which log you want to check. Related information will be shown below.
Enable Remote Log	Check to enable remote log functionality.
Log Server IP Address	Enter Log Server IP Address for remote log.
Apply Changes	Press this button to save and apply changes.
Refresh	Press this button to refresh the current Web page.
Clear	Press this button to clear log information.

4.3 Network

The Network function provides WAN, LAN and network configuration of industrial wall-mount Gigabit router as shown in Figure 4-25.

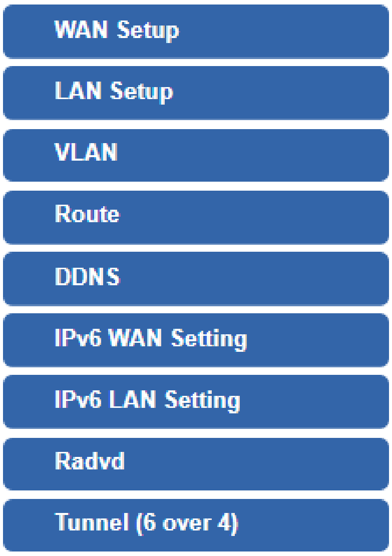
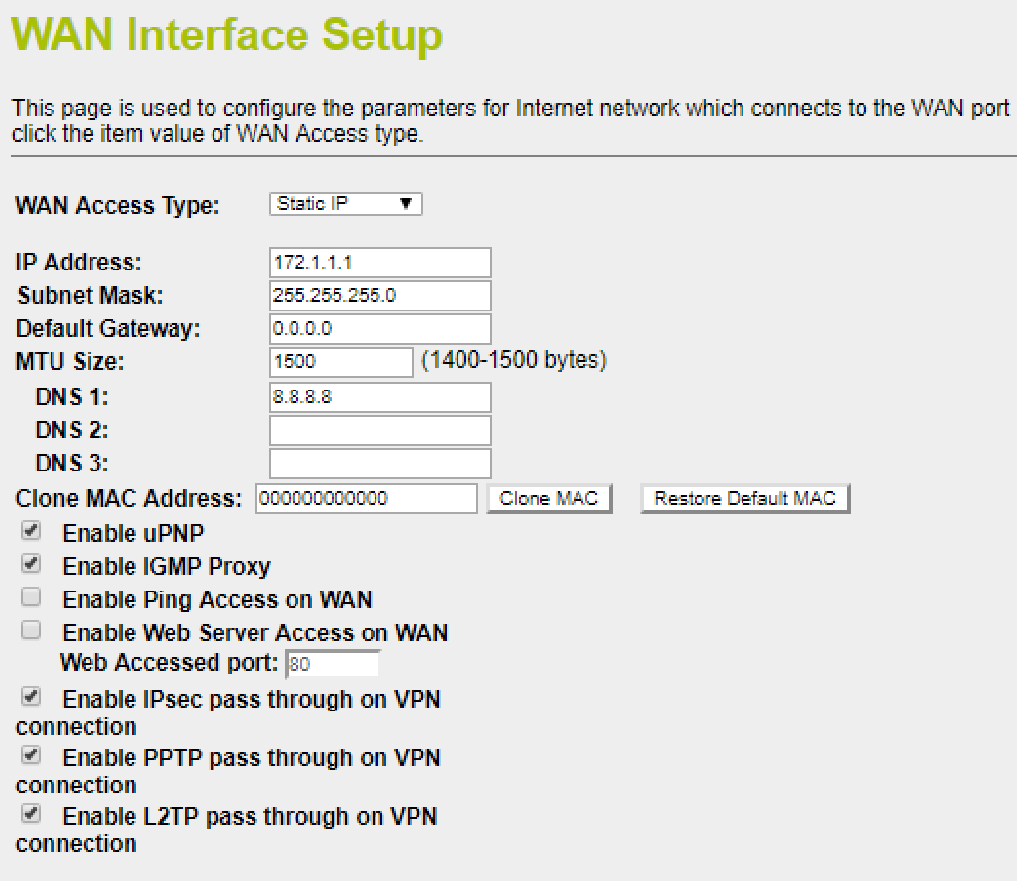


Figure 4-25: Network Menu

Object	Description
WAN Setup	Allows to set WAN interface.
LAN Setup	Allows to set LAN interface.
VLAN	Allows to set VLAN interface.
Route	Allows to set Route interface.
DDNS	Allows to set DDNS and PLANET DDNS
IPv6 WAN Setting	Allows to set IPv6 WAN interface.
IPv6 LAN Setting	Allows to set IPv6 LAN interface.
Radvd	Allows to set RADVD
Tunnel (6 over 4)	Allows to set Tunnel (6 over 4)

4.3.1 WAN Setup

This page is used to configure the parameters for Internet network which connects to the WAN port of industrial wall-mount Gigabit router as shown in Figure 4-26. Here you may change the access method to static IP, DHCP, PPPoE, PPTP or L2TP by clicking the item value of WAN Access type.



WAN Interface Setup

This page is used to configure the parameters for Internet network which connects to the WAN port click the item value of WAN Access type.

WAN Access Type: Static IP ▼

IP Address: 172.1.1.1
Subnet Mask: 255.255.255.0
Default Gateway: 0.0.0.0
MTU Size: 1500 (1400-1500 bytes)
DNS 1: 8.8.8.8
DNS 2:
DNS 3:
Clone MAC Address: 000000000000 Clone MAC Restore Default MAC

☑ Enable uPNP
☑ Enable IGMP Proxy
☐ Enable Ping Access on WAN
☐ Enable Web Server Access on WAN
Web Accessed port: 80
☑ Enable IPsec pass through on VPN connection
☑ Enable PPTP pass through on VPN connection
☑ Enable L2TP pass through on VPN connection

Figure 4-26: WAN Setup

Object	Description	
WAN Access Type	Please select the corresponding WAN Access Type for the Internet, and fill the correct parameters from your local ISP in the fields which appear below.	
	Static IP	Select Static IP Address if all the Internet ports' IP information is provided to you by your ISP (Internet Service Provider). You will need to enter the IP address, subnet mask, gateway address, and DNS address provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format. **IP Address** Enter the IP address assigned by your ISP. **Subnet Mask**

Object		Description
		Enter the Subnet Mask assigned by your ISP. **Default Gateway** Enter the Gateway assigned by your ISP. **DNS** The DNS server information will be supplied by your ISP.
	DHCP Client	Select DHCP Client to obtain IP Address information automatically from your ISP.
	PPPoE	Choose PPPoE (Point to Point Protocol over Ethernet) if your ISP uses a PPPoE connection. Your ISP will provide you with a username and password. This option is typically used for DSL services. **User Name** Enter your PPPoE user name. **Password** Enter your PPPoE password.
	PPTP	Choose PPTP (Point-to-Point-Tunneling Protocol) if your ISP uses a PPTP connection. Your ISP will provide you with IP information and PPTP Server IP Address; of course, it also includes a username and password. This mode is typically used for DSL services. **IP Address** Enter the IP address. **Subnet Mask** Enter the Subnet Mask. **Server IP Address** Enter the PPTP Server IP address provided by your ISP. **User Name** Enter your PPTP user name. **Password** Enter your PPTP password.
	L2TP	Choose L2TP (Layer 2 Tunneling Protocol) if your ISP uses a L2TP connection. Your ISP will provide you with a username and password. **IP Address** Enter the IP address. **Subnet Mask** Enter the Subnet Mask. **Server IP Address** Enter the L2TP Server IP address provided by your ISP. **User Name**

Object	Description
	Enter your L2TP user name. **Password** Enter your L2TP password.
Host Name	This option specifies the Host Name of the industrial wall-mount Gigabit router.
MTU Size	The normal **MTU** (Maximum Transmission Unit) value for most Ethernet networks is 1492 Bytes. It is not recommended that you change the default **MTU Size** unless required by your ISP.
Attain DNS Automatically	Select "**Attain DNS Automatically**", the DNS servers will be assigned dynamically from your ISP.
Set DNS Manually	If your ISP gives you one or two DNS addresses, select **Set DNS Manually** and enter the primary and secondary addresses into the correct fields.
Enable uPnP	Check the box to enable the uPnP function.
Enable IGMP Proxy	Check the box to enable the IGMP Proxy function.
Enable Ping Access on WAN	Check the box to enable Ping access from the Internet Network.
Enable Web Server Access on WAN	Check the box to enable the web server access of the Industrial wall-mount Gigabit router from the Internet network.
Enable IPSec pass through on VPN connection	Check the box to enable IPSec passthrough function on VPN connection.
Enable PPTP passthrough on VPN connection	Check the box to enable PPTP passthrough function on VPN connection.
Enable L2TP passthrough on VPN connection	Check the box to enable L2TP passthrough function on VPN connection.
Enable IPv6 passthrough on VPN connection	Check the box to enable IPv6 passthrough function on VPN connection.

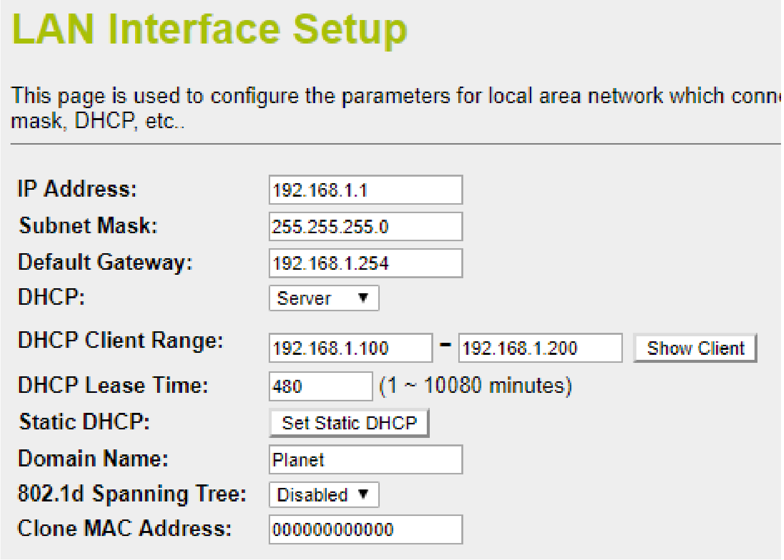
If you get Address not found error when you access a Web site, it is likely that your DNS servers are set up improperly. You should contact your ISP to get DNS server addresses.

Note

WAN IP, whether obtained automatically or specified manually, should NOT be on the same IP net segment as the LAN IP; otherwise, the router will not work properly. In case of emergency, press the hardware-based "Reset" button.

4.3.2 LAN Setup

This page is used to configure the parameters for local area network which connects to the LAN port of your industrial wall-mount Gigabit router as shown in Figure 4-27. Here you may change the setting for IP address, subnet mask, DHCP, etc...



LAN Interface Setup

This page is used to configure the parameters for local area network which conn
mask, DHCP, etc..

IP Address:	192.168.1.1
Subnet Mask:	255.255.255.0
Default Gateway:	192.168.1.254
DHCP:	Server ▼
DHCP Client Range:	192.168.1.100 - 192.168.1.200 Show Client
DHCP Lease Time:	480 (1 ~ 10080 minutes)
Static DHCP:	Set Static DHCP
Domain Name:	Planet
802.1d Spanning Tree:	Disabled ▼
Clone MAC Address:	000000000000

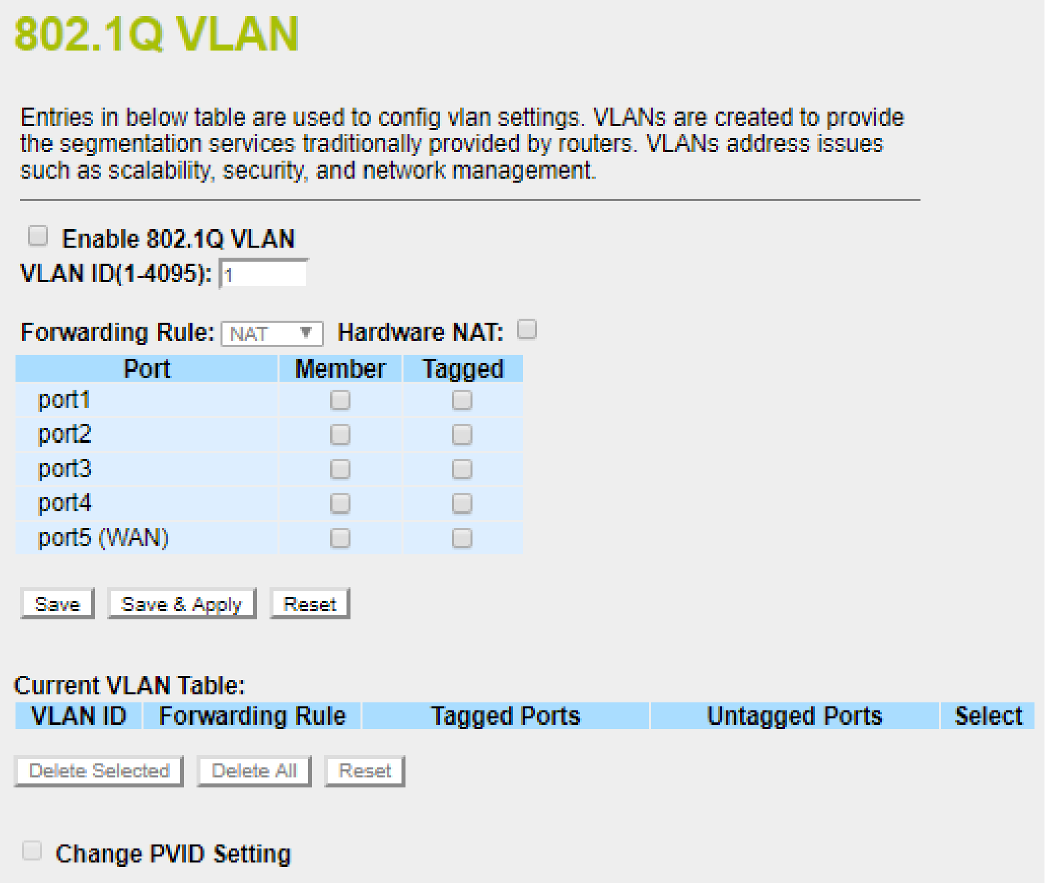
Figure 4-27: LAN Setup

Object	Description
IP Address	The LAN IP address of the Industrial wall-mount Gigabit router and default is **192.168.1.1**. You can change it according to your request.
Subnet Mask	Default is **255.255.255.0**. You can change it according to your request.
Default Gateway	Default is **192.168.1.254**. You can change it according to your request.
DHCP	You can select one of **Disable**, **Client**, **and Server**. Default is **Server,** that the Industrial wall-mount Gigabit router can assign IP addresses to the computers automatically.
DHCP Client Range	For the **Server** mode, you must enter the DHCP client IP address range in the field. And you can click the “**Show Client**” button to show the Active DHCP Client Table.
Domain Name	Default is Planet.
802.1d Spanning Tree	You can enable or disable the spanning tree function.
Clone MAC Address	You can input a MAC address here for using clone function.

Note	If you change the device’s LAN IP address, you must enter the new one in your browser to get back to the web-based configuration utility. And LAN PCs’ gateway must be set to this new IP for successful Internet connection.

4.3.3 VLAN

VLAN (Virtual Local Area Network) allows a physical network to be partitioned into multiple logical networks. Devices on a logical network belong to one group. A device can belong to more than one group. With VLAN, a device cannot directly talk to or hear from devices that are not in the same group. Please refer to the following sections for the details as shown in Figure 4-28.



802.1Q VLAN

Entries in below table are used to config vlan settings. VLANs are created to provide the segmentation services traditionally provided by routers. VLANs address issues such as scalability, security, and network management.

□ Enable 802.1Q VLAN

VLAN ID(1-4095): 1

Forwarding Rule: NAT ▼ Hardware NAT: □

Port	Member	Tagged
port1	□	□
port2	□	□
port3	□	□
port4	□	□
port5 (WAN)	□	□

Current VLAN Table:

VLAN ID	Forwarding Rule	Tagged Ports	Untagged Ports	Select

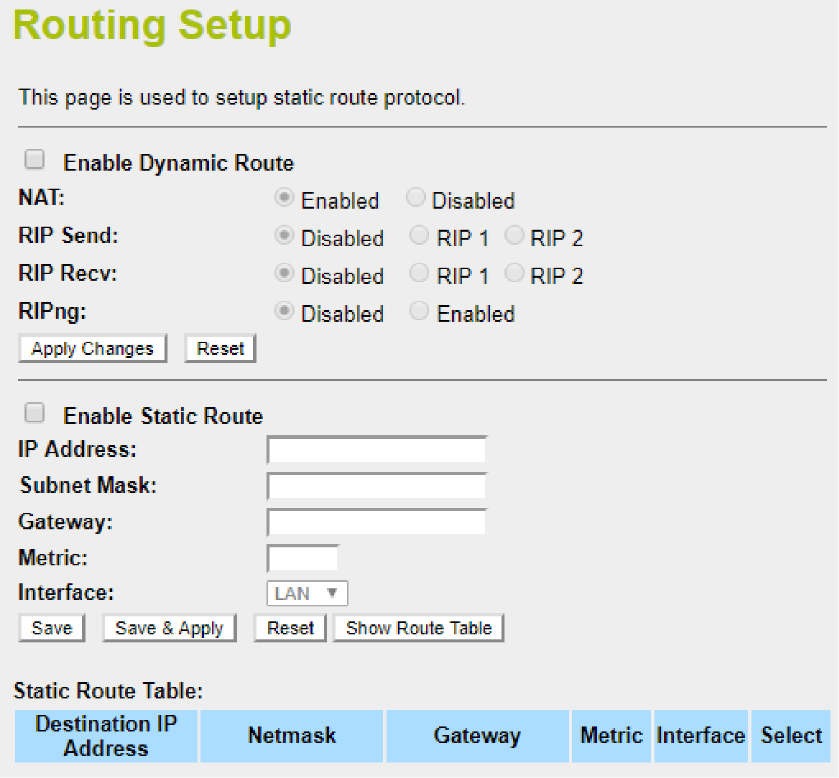
□ Change PVID Setting

Figure 4-28: VLAN Setup

Object	Description
Enable 802.1Q VLAN	Check this box to enable 802.1Q VLAN function.
VLAN ID	Set VLAN ID (1-4095)
Forwarding Rule	Select Bridge or NAT mode
Hardware NAT	Check this box to enable Hardware NAT function.
Member	Add VLAN without tag to packet
Tagged	Add VLAN tag to packet
Change PVID setting	Check this box to enable change PVID (default vlan id)

4.3.4 Route

There are two route types that are **Dynamic Route** and **Static Route**. Please refer to the following sections for the details as shown in Figure 4-29.



Routing Setup

This page is used to setup static route protocol.

☐ Enable Dynamic Route

NAT:	● Enabled ○ Disabled
RIP Send:	● Disabled ○ RIP 1 ○ RIP 2
RIP Recv:	● Disabled ○ RIP 1 ○ RIP 2
RIPng:	● Disabled ○ Enabled

☐ Enable Static Route

IP Address:	
Subnet Mask:	
Gateway:	
Metric:	
Interface:	LAN

Static Route Table:

Destination IP Address	Netmask	Gateway	Metric	Interface	Select

Figure 4-29: Routing setup

- **Dynamic routing**

Dynamic routing is a networking technique that provides optimal data routing. Unlike static routing, dynamic routing enables routers to select paths according to real-time logical network layout changes. **RIPng** exchanges routing information used to compute routes and is intended for IP version 6 (**IPv6**)-based networks while **RIPv1** and **RIPv2** is intended for IP version 4 (**IPv4**)-based networks.

Object	Description
Enable Dynamic Route	Click this box to enable Dynamic Route.
NAT	Enable or Disable NAT function
RIP Send	Disable:do not send any RIP packet out RIP1: Send RIP1 packet out RIP2. Send RIP2 packet out
RIP Recv	Disable：do not receive any RIP packet RIP1: Only receive RIP1 packet RIP2: Only receive RIP2 packet
RIPng	Enable or Disable RIPng function

■ Static routing

Static routing is a special type of routing that can be applied in a network to reduce the problem of routing selection and data flow overload caused by routing selection so as to improve the packets forwarding speed. You can set the destination IP address, subnet mask, and gateway to specify a routing rule. The destination IP address and subnet mask determine a destination network or host to which the router sends packets through the gateway.

Object	Description
Enable Static Route	Click this box to enable Static Route.
IP Address	The network or host IP address desired to access.
Subnet Mask	The subnet mask of destination IP.
Gateway	The gateway is the router or host's IP address to which packet was sent. It must be the same network segment with the WAN or LAN port.
Metric	The route metric is a value from 1 to 16 that indicates the cost of using this route.
Interface	Select the interface that the IP packet must use to transmit out of the router when this route is used.
Show Routing Table	Press the button to show all the routing tables of the system.
Static Routing table	It only shows the static routing table and you can delete one or all.

4.3.5 DDNS

The industrial wall-mount Gigabit router offers the DDNS (Dynamic Domain Name System) feature, which allows the hosting of a website, FTP server, or e-mail server with a fixed domain name (named by yourself) and a dynamic IP address, and then your friends can connect to your server by entering your domain name no matter what your IP address is. Before using this feature, you need to sign up for DDNS service providers such as **PLANET DDNS** or **www.dyndns.org**. The Dynamic DNS client service provider will give you a password or key.

- **Planet DDNS**

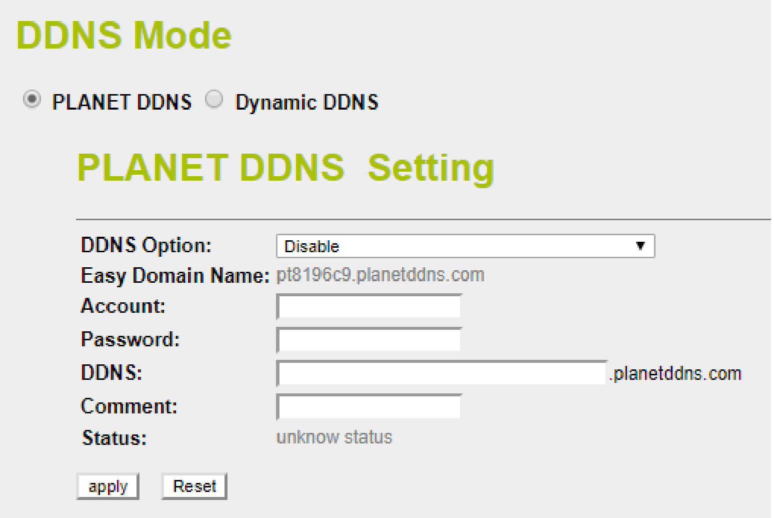
PLANET DDNS website provides a free DDNS (Dynamic Domain Name Server) service for PLANET devices. Whether the IP address used on your PLANET device supporting DDNS service is fixed or dynamic, you can easily connect the devices anywhere on the Internet with a meaningful or easy-remembered name you gave.PLANET DDNS provide two types of DDNS services. One is **Dynamic DDNS** and the other is **Easy DDNS** as shown in Figure 4-30.

PLANET Dynamic DDNS

For example, you've just installed a PLANET IP camera with dynamic IP like 210.66.155.93 in the network. You can name this device as "Mycam1" and get the URL link as Mycam1.planetddns.com. Thus, you don't need to memorize the exact IP address but just the URL link: Mycam1.planetddns.com.

PLANET Easy DDNS

PLANET Easy DDNS is an easy way to help user to get your Domain Name with just one click. You can just login to the Web Management Interface of your devices, say, your IP Camera, check the DDNS menu and just enable it. Once you enabled the Easy DDNS, your PLANET Network Device will use the format PLxxxxxx where xxxxxx is the last 6 characters of your MAC address that can be found on the Web page or bottom label of the device. (For example: A8-F7-E0-81-96-C9, it will be converted into pt8196c9.planetddns.com)



DDNS Mode

● PLANET DDNS ○ Dynamic DDNS

PLANET DDNS Setting

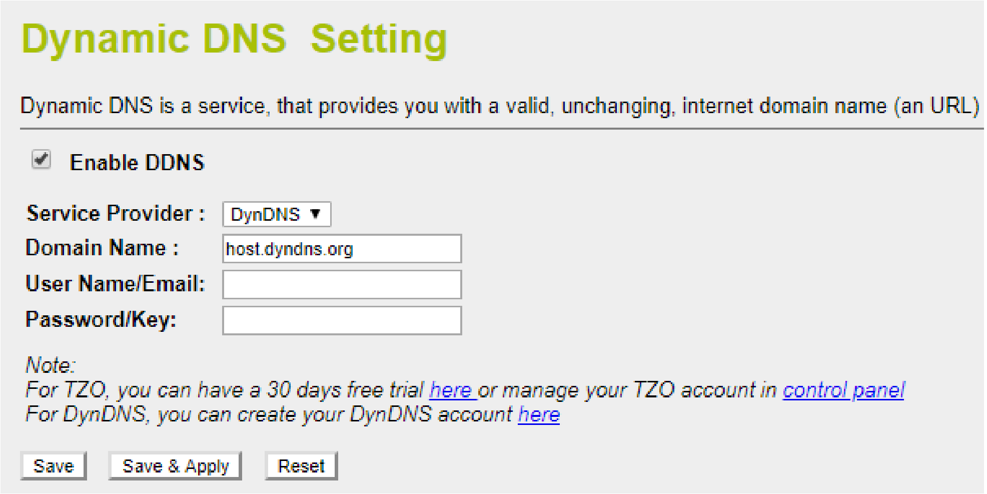
DDNS Option:	Disable ▼
Easy Domain Name:	pt8196c9.planetddns.com
Account:	
Password:	
DDNS:	.planetddns.com
Comment:	
Status:	unknow status

Figure 4-30: PLANET DDNS

Object	Description
DDNS Option	Disable: do not activate PLANET DDNS function Enable Easy DDNS: activate Easy DDNS service Enable Dynamic DDNS: activate Easy Dynamic DDNS service
Account	The User Name for PLANET DDNS account.
Password	The Password for PLANET DDNS account.
DDNS	The DDNS name of PLANET device
Comment	Add some comment for this item.
Status	Connection staus for PLANET DDNS

- **Dynamic DNS**

The industrial wall-mount Gigabit router supports DynDNS and TZO DDNS service providers for Dynamic DNS as shown in Figure 4-31.


Dynamic DNS Setting

Dynamic DNS is a service, that provides you with a valid, unchanging, internet domain name (an URL)

☑ Enable DDNS

Service Provider : DynDNS ▼

Domain Name : host.dyndns.org

User Name/Email:

Password/Key:

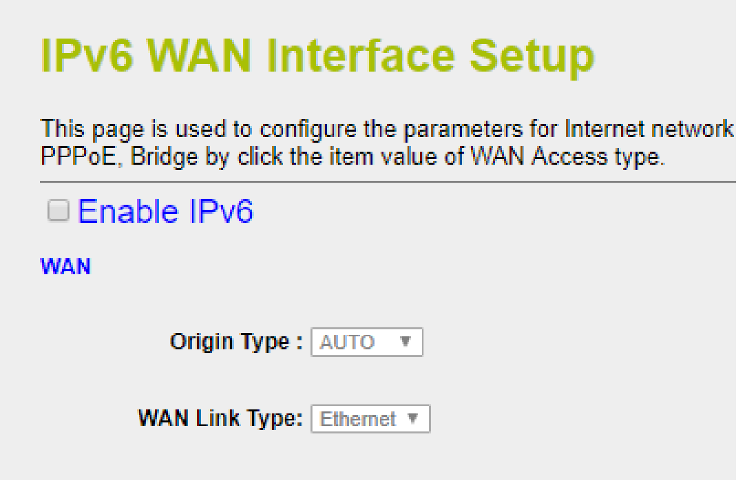
Note:
For TZO, you can have a 30 days free trial here or manage your TZO account in control panel
For DynDNS, you can create your DynDNS account here

Figure 4-31: Dynamic DNS

Object	Description
Enable DDNS	Check the box to enable the Dynamic DNS function.
Service Provider	Select the DDNS service provider from the drop-down menu, such as DynDNS or TZO.
Domain Name	Enter the domain name you have registered from the DDNS service provider.
User Name/Email	Enter the user name or email you have registered from the DDNS service provider.
Password/Key	Enter the password you have registered from the DDNS service provider.

4.3.6 IPv6 WAN Setting

This page is used to configure parameter for IPv6 internet network which connects to WAN port of your industrial wall-mount Gigabit router as shown in Figure 4-32. It allows you to enable IPv6 function and set up the parameters of the router's WAN. In this setting you may change WAN origin type and WAN Link type.



IPv6 WAN Interface Setup

This page is used to configure the parameters for Internet network
PPPoE, Bridge by click the item value of WAN Access type.

□ Enable IPv6

WAN

Origin Type : AUTO ▼

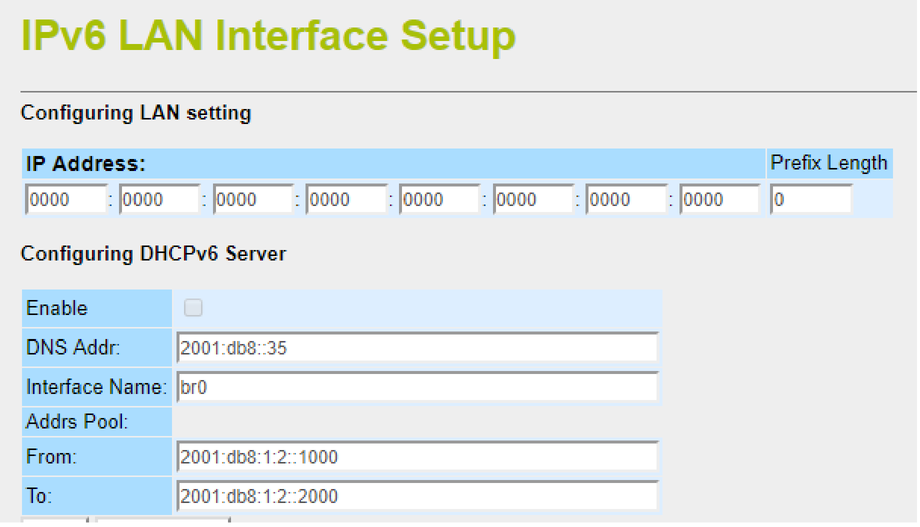
WAN Link Type: Ethernet ▼

Figure 4-32: IPv6 WAN setup

Object	Description
Enable IPv6	Click this box to enable IPv6 configuration.
Origin Type	Select either **Auto** or **Static**. In Auto you could choose the DHCP type for Stateless Address Auto or Stateful Address Auto Configuration. In Static you need to fill in the Static IP address table.
WAN Link Type	Select IPv6 WAN type either by using Ethernet or PPPoE.

4.3.7 IPv6 LAN Setting

IPv6 LAN Setting will be only available if you enable IPv6 WAN. Make sure IPv6 WAN is enabled before you could configure the IPv6 LAN. The setup is shown in Figure 4-33.



IPv6 LAN Interface Setup

Configuring LAN setting

IP Address:								Prefix Length
0000	0000	0000	0000	0000	0000	0000	0000	0

Configuring DHCPv6 Server

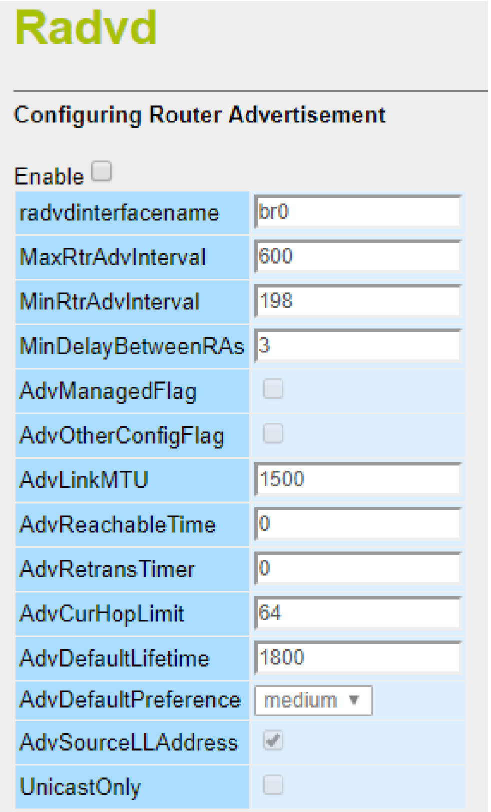
Enable	□
DNS Addr:	2001:db8::35
Interface Name:	br0
Addrs Pool:	
From:	2001:db8:1:2::1000
To:	2001:db8:1:2::2000

Figure 4-33: IPv6 LAN Setup

Object	Description
Enable IPv6 LAN	Click this box to enable IPv6 LAN configuration.
DNS Address	Enter IPv6 DNS Address assigned by your ISP.
Interface Name	Enter assigned Interface name of the IPv6 LAN port.
From	Enter assigned starting Address pool.
To	Enter assigned ending Address pool.

4.3.8 RADVD

The RADVD configuration is responsible for defining interface setting, prefixes, routers and RDNSS announcements. The setup is shown in Figure 4-34 to 4-35.



Radvd

Configuring Router Advertisement

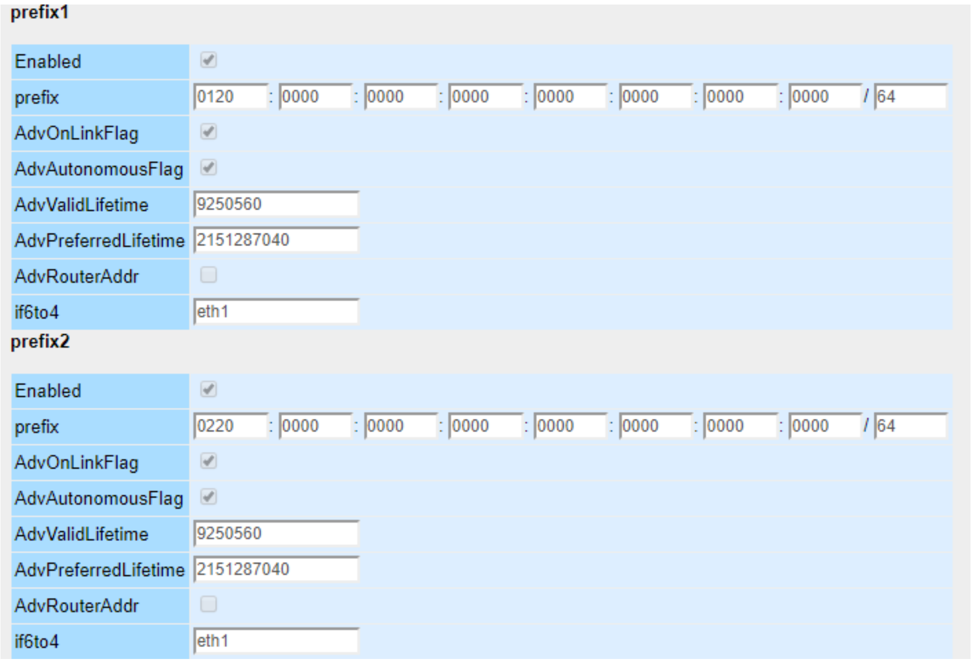
Enable □

radvdinterfacename	br0
MaxRtrAdvInterval	600
MinRtrAdvInterval	198
MinDelayBetweenRAs	3
AdvManagedFlag	□
AdvOtherConfigFlag	□
AdvLinkMTU	1500
AdvReachableTime	0
AdvRetransTimer	0
AdvCurHopLimit	64
AdvDefaultLifetime	1800
AdvDefaultPreference	medium ▾
AdvSourceLLAddress	☑
UnicastOnly	□

Figure 4-34: IPv6 RADVD

Object	Description
Enable	Click this box to enable RADVD configuration.
Radvdinterfacename	Assigned interface name of RADVD.
MaxRtrAdvInterval	Enter the maximum time allowed between sending unsolicited multicast router advertisements from the interface in seconds. By default the value is 600.
MinRtrAdvInterval	Enter the minimum time allowed between sending unsolicited multicast router advertisements from the interface in seconds. By default the value is 198.
MinDelayBetwennRAs	Enter the minimum time allowed between sending multicast router advertisements from the interface in seconds By default the value is 3
AdvManagedFlag	To enables and disable the additional stateful administered auto-configuration protocol.
AdvOtherConfigFlag	To enable and disable the auto-configuration of additional, non address information.

Object	Description
AdvLinkMTU	Enter value of Advertises the given link MTU in the RA if specified. 0 value disables MTU advertisements.
AdvReachable Time	Enter value of Advertises assumed reach-ability time in milliseconds of neighbors in the RA if specified. 0 value disables reach-ability advertisements.
AdvRetransTime	Enter value of Advertises wait time in milliseconds between Neighbor Solicitation messages in the RA if specified. 0 value is disables re-transmit advertisements
AdvCurHopLimit	Enter value of Advertises the default Hop Count value for outgoing unicast packets in the RA. 0 value is disables hopcount advertisements. By default value is set to 64.
AdvDefaultLifetime	Enter value of Advertises the lifetime of the default router in seconds. 0 value is indicates that the node is no default router. By default it is set to 1800.
AdvDefaultPreference	Select the advertises default router preference. By default it is set to medium.
AdvSourceLLAddress	To include the link-layer address of the outgoing interface in the RA.
UnicastOnly	To enable the indication that the underlying link is not broadcast capable, prevents unsolicited advertisements from being sent.



prefix1

Enabled	☑
prefix	0120 : 0000 : 0000 : 0000 : 0000 : 0000 : 0000 : 0000 / 64
AdvOnLinkFlag	☑
AdvAutonomousFlag	☑
AdvValidLifetime	9250560
AdvPreferredLifetime	2151287040
AdvRouterAddr	☐
if6to4	eth1

prefix2

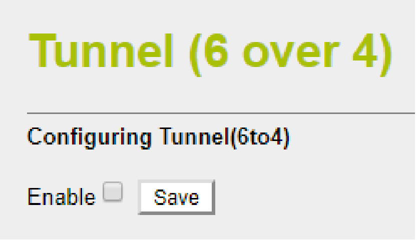
Enabled	☑
prefix	0220 : 0000 : 0000 : 0000 : 0000 : 0000 : 0000 : 0000 / 64
AdvOnLinkFlag	☑
AdvAutonomousFlag	☑
AdvValidLifetime	9250560
AdvPreferredLifetime	2151287040
AdvRouterAddr	☐
if6to4	eth1

Figure 4-35: IPv6 RADVD Prefix

Object	Description
Enable RADVD prefix	Click this box to enable RADVD prefix.
Prefix	Assigned the advertised IPv6 route prefix.
AdvOnLinkFlag	To enable indication that this prefix can be used for on-link determination.
AdvAutonomousFlag	To enable indication that this prefix can be used for autonomous address configuration.
AdvValidLifetime	Enter the advertising length of time in seconds that the prefix is valid for purpose of on-link determination.
AdvPreferredLifeTime	Enter the advertising length of time in seconds that addresses generated from the prefix via stateless address autoconfiguration remain preferred. The special value infinity means forever
AdvRouterAddr	Enable indication of the address of interface that is sent instead of network prefix.
if6to4	Specifies a logical interface name to derive a 6to4 prefix origin.

4.3.9 Tunnel (6 over 4)

6 to 4 is an IPv6 address assignment and automatic tunneling technology that is used to provide unicast IPv6 connectivity between IPv6 sites and hosts across the IPv4 Internet. The setup is shown in Figure 4-36.



Tunnel (6 over 4)

Configuring Tunnel(6to4)

Enable □

Figure 4-36: IPv6 Tunnel (6 over 4)

Object	Description
Enable Tunnel (6 to 4)	Click this box to enable Tunnel (6 to 4).

4.4 Security

The Security menu provides **QoS**, **firewall** and **access filtering** as shown in Figure 4-37. Please refer to the following sections for the details.

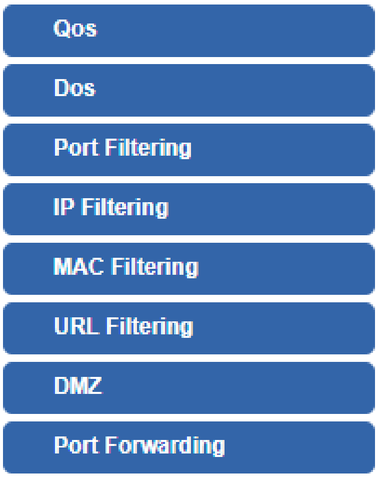
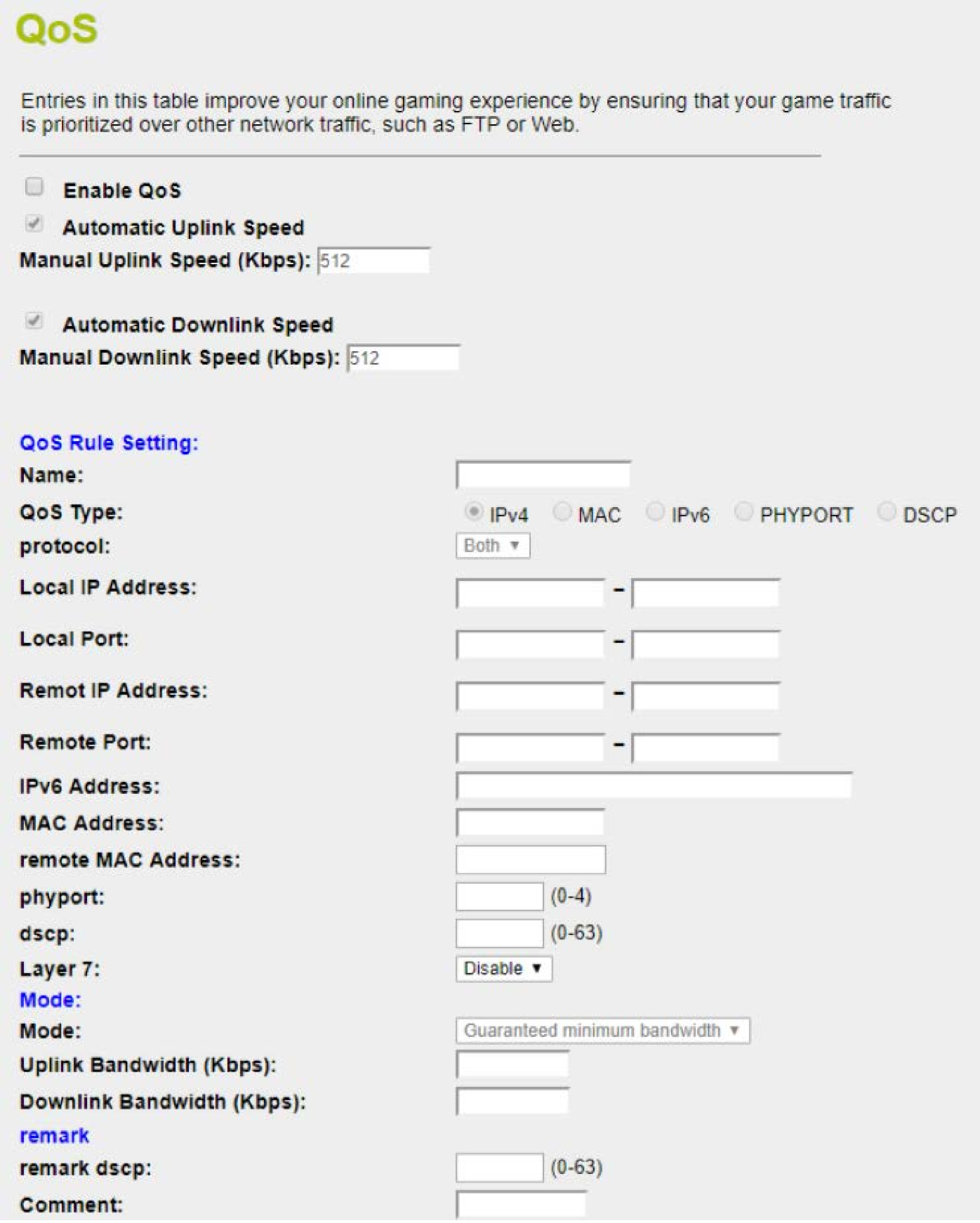


Figure 4-37: Secuirty menu

Object	Description
QoS	Allows to set QoS (Quality of Service).
DoS	Allows to set DoS (Denial of Service).
Port Filtering	Allows to set Port Filtering.
IP Filtering	Allows to set IP Filtering.
MAC Filtering	Allows to set MAC Filtering
URL Filtering	Allow to set MAC Filtering.
DMZ	Allow to set DMZ.
Port Forwarding	Allow to set Port Forwarding

4.4.1 QoS

The QoS (Quality of Service) helps improve your network gaming performance by prioritizing applications as shown in Figure 4-38. By default the bandwidth control is disabled and application priority is not classified automatically. In order to complete this settings, please follow the steps below.



QoS

Entries in this table improve your online gaming experience by ensuring that your game traffic is prioritized over other network traffic, such as FTP or Web.

□ Enable QoS

☑ Automatic Uplink Speed

Manual Uplink Speed (Kbps): 512

☑ Automatic Downlink Speed

Manual Downlink Speed (Kbps): 512

QoS Rule Setting:

Name:	
QoS Type:	● IPv4 ○ MAC ○ IPv6 ○ PHYPORT ○ DSCP
protocol:	Both ▾
Local IP Address:	-
Local Port:	-
Remot IP Address:	-
Remote Port:	-
IPv6 Address:	
MAC Address:	
remote MAC Address:	
phyport:	(0-4)
dscp:	(0-63)
Layer 7:	Disable ▾

Mode:

Mode:	Guaranteed minimum bandwidth ▾
Uplink Bandwidth (Kbps):	
Downlink Bandwidth (Kbps):	

remark

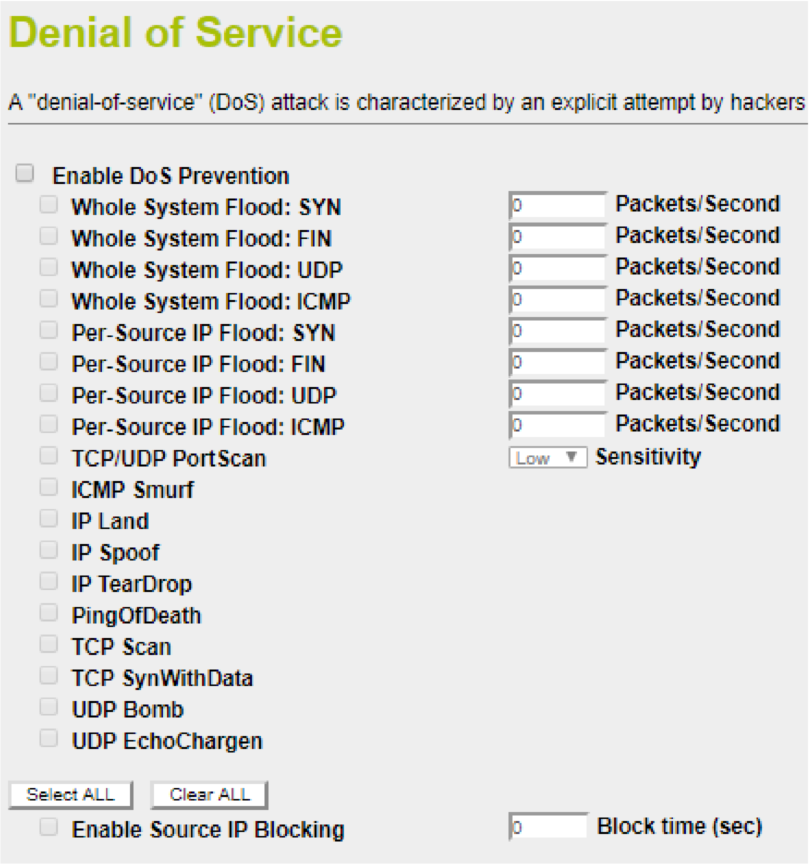
remark dscp:	(0-63)
Comment:	

Figure 4-38: QoS

Object	Description
Enable QoS	Check the box to enable the QoS function.
Automatic Uplink Speed	Check the box to adjust the uplink speed automatically by the Industrial wall-mount Gigabit router. Or enter the uplink data rate manually in the field below.
Automatic Downlink Speed	Check the box to adjust the downlink speed automatically by the Industrial wall-mount Gigabit router. Or enter the downlink data rate manually in the field below.
Name	Add a QoS rule name.
QoS Type	Choose type of QoS either by IPv4, MAC Address, IPv6, PHYPORT or DSCP.
Protocol	Select type of protocol to use for QoS. It can be either TCP, UDP or both.
Select IP	Select connected client IP Address.
Local IP Address	Enter local IP Address range of client or device (if QoS type is IPv4).
Local Port	Enter local port range of client or device (if QoS type is IPv4).
Remote IP Address	Enter remote IP Address range of client or device (if QoS type is IPv4).
Remote Port	Enter remote port range of client or device (if QoS type is IPv4).
IPv6 Address	Enter IPv6 Address of client or device (if QoS type is IPv6).
MAC Address	Enter MAC Address of client or device (if QoS type is MAC).
PHYPORT	Enter Physical Ethernet port of connected client or device (if QoS type is PHYPORT).
DSCP	Enter DSCP number of client or device (if QoS type is DSCP).
Mode	Select QoS mode for “Guaranteed minimum bandwidth” or “Restricted maximum bandwidth”.
Uplink Bandwidth	Enter value of upload limitation value according to the QoS mode.
Downlink Bandwidth	Enter value of download limitation value according to the QoS mode.
remark dscp	Insert a remark on DSCP configuration.
Comment	Insert comment of the DSCP configuration as references.

4.4.2 DoS

A "Denial-of-Service" (DoS) attack is characterized by an explicit attempt by hackers to prevent legitimate users of a service from using that service. The industrial wall-mount Gigabit router can prevent specific DoS attacks as shown in Figure 4-39.



Denial of Service

A "denial-of-service" (DoS) attack is characterized by an explicit attempt by hackers

☐ Enable DoS Prevention
☐ Whole System Flood: SYN 0 Packets/Second
☐ Whole System Flood: FIN 0 Packets/Second
☐ Whole System Flood: UDP 0 Packets/Second
☐ Whole System Flood: ICMP 0 Packets/Second
☐ Per-Source IP Flood: SYN 0 Packets/Second
☐ Per-Source IP Flood: FIN 0 Packets/Second
☐ Per-Source IP Flood: UDP 0 Packets/Second
☐ Per-Source IP Flood: ICMP 0 Packets/Second
☐ TCP/UDP PortScan Low Sensitivity
☐ ICMP Smurf
☐ IP Land
☐ IP Spoof
☐ IP TearDrop
☐ PingOfDeath
☐ TCP Scan
☐ TCP SynWithData
☐ UDP Bomb
☐ UDP EchoChargen

☐ Enable Source IP Blocking 0 Block time (sec)

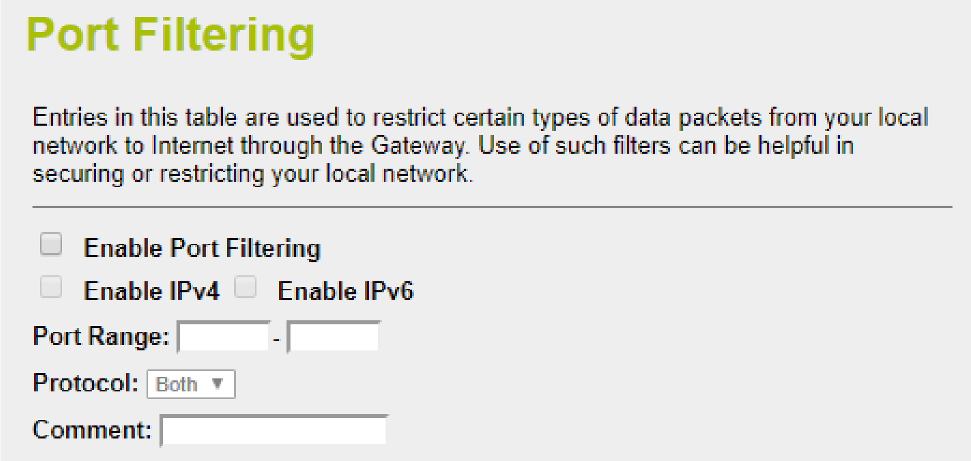
Figure 4-39: DoS

Object	Description
Enable DoS Prevention	Check to enable DoS function. User may set other related configurations about DoS below.
Whole System Flood SYN	Check the box to enable. If enabled, when the number of the current SYN packets is beyond the set value, the router will startup the blocking function immediately.
Whole System Flood FIN	Check the box to enable. If enabled, when the number of the current FIN packets is beyond the set value, the router will startup the blocking function immediately.
Whole System Flood UDP	Check the box to enable. If enabled, when the number of the current UPD-FLOOD packets is beyond the set value, the router will startup the blocking function immediately.
Whole System Flood ICMP	Check the box to enable. If enabled, when the number of the current ICMP-FLOOD packets is beyond the set value, the router will startup the blocking function immediately.

Per-Source IP Flood SYN	Check the box to enable. When the IP Flood SYN Detection is enabled, the router has the ability to block malicious devices that are attempting to flood devices.
Per-Source IP Flood FIN	Check the box to enable. When the IP Flood FIN Detection is enabled, the router has the ability to block malicious devices that are attempting to flood devices.
Per-Source IP Flood UDP	Check the box to enable. When the IP Flood UDP Detection is enabled, the router has the ability to block malicious devices that are attempting to flood devices.
Per-Source IP Flood ICMP	Check the box to enable. When the IP Flood IGMP Detection is enabled, the router has the ability to block malicious devices that are attempting to flood devices.
TCP/UDP PortScan	Check the box wil l block against hackers from probe to router system remotely and determine what TCP/UDP port are open.
ICMP Smurf	Check box to enable protection against ICMP Smurf attack.
IP Land	Check the box to enable the protection against LAND attack.
IP Spoof	Check box to enable protection against IP Spoofing attack on device within network.
IP TearDrop	Check box to enable protection against Teardrop attack that targeting on TCP/IP fragmentation reassembly codes.
PingOfDeath	Check box to enable protection against Ping of Death attack that aims to disrupt a targeted machine by sending a packet larger that maximum allowable size causing the target machine to freeze or crash.
TCP Scan	Check the box to enable protection against TCP Scan. TCP Scan is technique use to identify listening TCP Port.
TCP SynWithData	Check the box to block TCP Syn With Data evasion technique.
UDP Bomb	Check the box to enable protection against UDP Bomb or called as UDP Flood or packet storm.
UDP EchoChargen	Check the box to enable protection against CharGEN attack. CharGEN attack is carried out by sending small packets carrying a spoofed IP of the target to the internet enabled devices running CharGEN.
Select All	Select to enable all the DoS protection method.
Enable Source IP Blocking	Enter value of time duration for IP Blocking.

4.4.3 Port Filtering

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network as shown in Figure 4-40



Port Filtering

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

☐ Enable Port Filtering

☐ Enable IPv4 ☐ Enable IPv6

Port Range: ____ - ____

Protocol: Both ▼

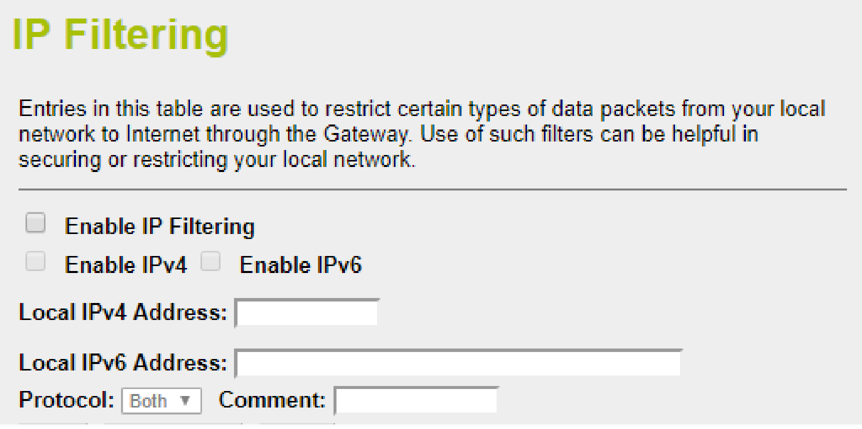
Comment: ____

Figure 4-40: Port Filtering

Object	Description
Enable Port Filtering	Check box to enable Port Filtering function.
Enable IPv4	Check box to enable Port filtering method using IPv4.
Enable IPv6	Check box to enable Port filtering method using IPv6.
Port Range	Add ports you want to control.
Protocol	Select the port number protocol type (TCP, UDP or both). If you are unsure, then leave it to the default both protocols.
Comment	Enter the description for this setting.

4.4.4 IP Filtering

IP Filtering is used to block internet or network access to specific IP addresses on your local network as shown in Figure 4-41. The restricted user may still be able to log in to the network but will not be able to access the internet. To begin blocking access to an IP address, enable IP Filtering and enter the IP address of the user you wish to block.



IP Filtering

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

□ Enable IP Filtering

□ Enable IPv4 □ Enable IPv6

Local IPv4 Address:

Local IPv6 Address:

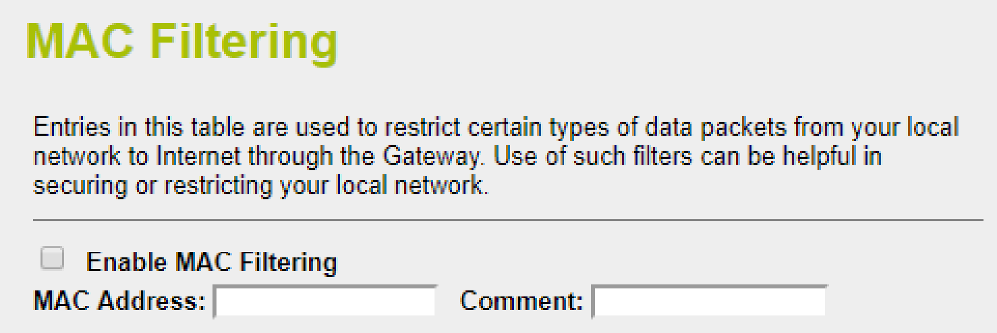
Protocol: Both ▼ Comment:

Figure 4-41: IP Filtering

Object	Description
Enable IP Filtering	Check this box to enable IP Filter function
Enable IPv4	Check this box to enable IP filtering method using IPv4.
Enable IPv6	Check this box to enable IP filtering method using IPv6.
Local IP Address	Add LAN IP address you want to control
Protocol	Select the port number protocol type (**TCP**, **UDP** or **both**). If you are unsure, then leave it to the default **both** protocol
Comment	Enter the description for this setting.

4.4.5 MAC Filtering

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Industrial wall-mount Gigabit router. Use of such filters can be helpful in securing or restricting your local network as shown in Figure 4-42.



MAC Filtering

Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

□ Enable MAC Filtering

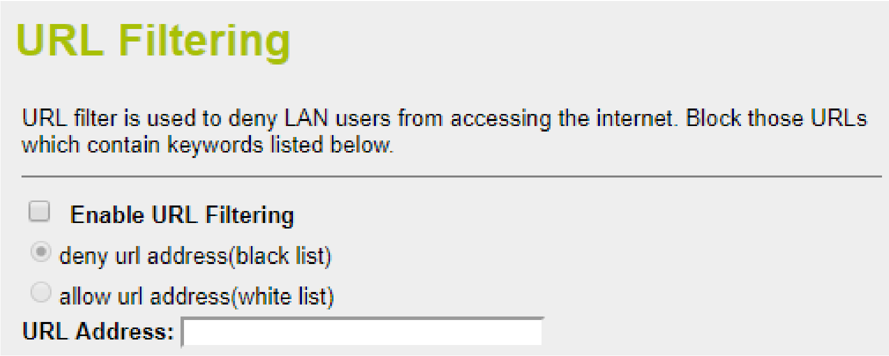
MAC Address: Comment:

Figure 4-42: MAC Filtering

Object	Description
Enable MAC Filtering	Check this box to enable MAC filtering.
MAC Address	Add MAC address you want to control.
Comment	Enter the description for this setting.

4.4.6 URL Filtering

URL filter is used to deny LAN users from accessing the internet as shown in Figure 4-43. Block those URLs which contain keywords listed below.



URL Filtering

URL filter is used to deny LAN users from accessing the internet. Block those URLs which contain keywords listed below.

□ Enable URL Filtering

● deny url address(black list)

○ allow url address(white list)

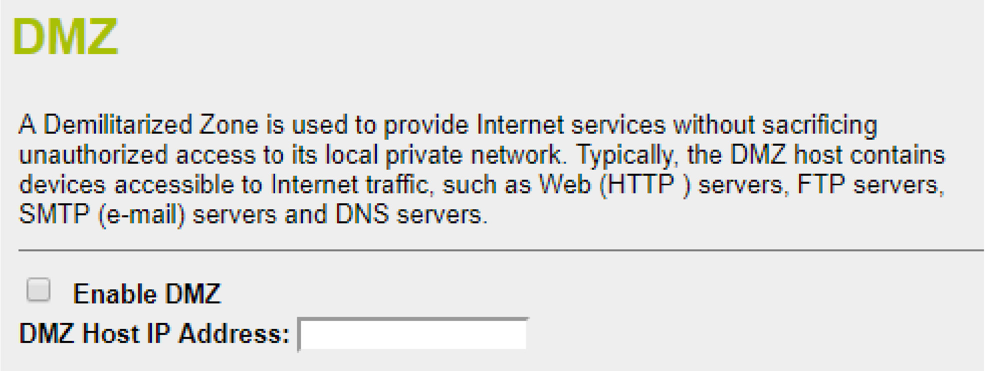
URL Address:

Figure 4-43: URL Filtering

Object	Description
Enable URL Filtering	Check this box to enable URL Filter function.
deny url address (black list)	deny access listed URL in the Current URL Filtering table and allow other URLs which are not in the list.
allow url address (white list)	allow access listed URL in the Current URL Filtering table and deny other URLs which are not in the list.
URL Address	The URL Address that you want to filter.

4.4.7 DMZ

A Demilitarized Zone is used to provide Internet services without sacrificing unauthorized access to its local private network as shown in Figure 4-44.Typically, the DMZ host contains devices accessible to Internet traffic, such as Web (HTTP) servers, FTP servers, SMTP (e-mail) servers and DNS servers.



DMZ

A Demilitarized Zone is used to provide Internet services without sacrificing unauthorized access to its local private network. Typically, the DMZ host contains devices accessible to Internet traffic, such as Web (HTTP) servers, FTP servers, SMTP (e-mail) servers and DNS servers.

□ Enable DMZ

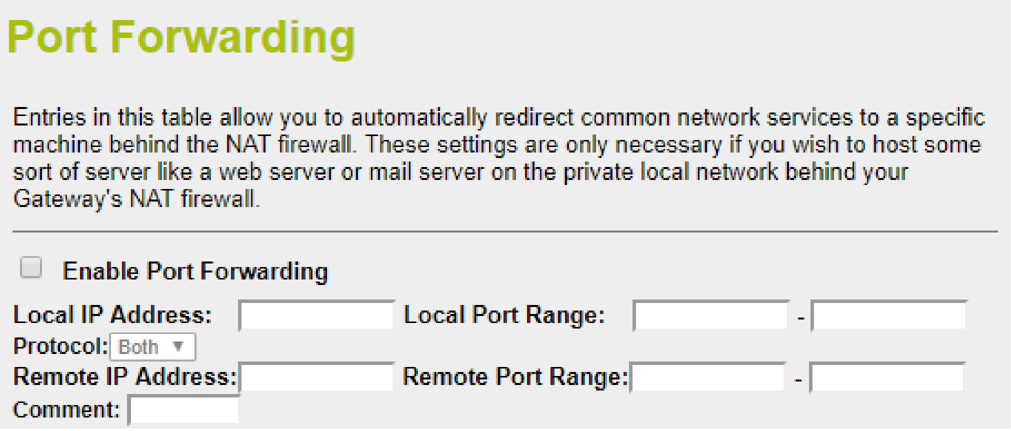
DMZ Host IP Address:

Figure 4-44: DMZ

Object	Description
Enable DMZ	Check the box to enable DMZ function. If the DMZ Host Function is enabled, it means that you set up DMZ host at a particular computer to be exposed to the Internet so that some applications/software, especially Internet / online game can have two way connections.
DMZ Host IP Address	Enter the IP address of a particular host in your LAN which will receive all the packets originally going to the WAN port / Public IP address above.

4.4.8 Port Forwarding

Entries in this table allow you to automatically redirect common network services to a specific machine behind the NAT firewall as shown in Figure 4-45. These settings are only necessary if you wish to host some sort of server like a web server or mail server on the private local network behind your Router's NAT firewall.



Port Forwarding

Entries in this table allow you to automatically redirect common network services to a specific machine behind the NAT firewall. These settings are only necessary if you wish to host some sort of server like a web server or mail server on the private local network behind your Gateway's NAT firewall.

☐ Enable Port Forwarding

Local IP Address: ____ Local Port Range: ____ - ____

Protocol: Both ▼

Remote IP Address: ____ Remote Port Range: ____ - ____

Comment: ____

Figure 4-45: Port Forwarding

Object	Description
Enable Port Forwarding	Check the box to enable Port Forwarding function
Local IP Address	Enter Local IP address of specified host or server on the private local network.
Protocol	Select the port number protocol type (TCP, UDP or both). If you are unsure, then leave it to the default both protocols.
Local Port Range	Enter local ports you want to control. For TCP and UDP Services, enter the beginning of the range of port numbers used by the service. If the service uses a single port number, enter it in both the start and finish fields.
Remote IP Address	Enter remote IP address of external IP Address. You could set to 0.0.0.0 for any IP address.
Remote Port Range	Enter remote ports you want to control. For TCP and UDP Services, enter the beginning of the range of port numbers used by the service. If the service uses a single port number, enter it in both the start and finish fields.
Comment	Enter the description for this setting.

4.5 PoE

The PSU input power consumption is monitored by measuring voltage and current. The input power consumption is equal to the system’s aggregated power consumption. The power management concept allows all ports to be configured, monitored and scheduled. The PoE menu provides PoE Configuration and other functions as shown in Figure 4-46.

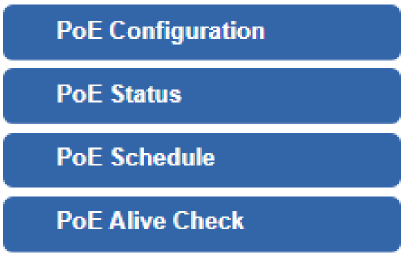


Figure 4-46: PoE Menu

Object	Description
PoE Configuration	Allows to centralize management PoE power for PDs.
PoE Status	Displays the current PoE usage.
PoE Schedule	Allows to centralize management PoE power for providing schedule.
PD Alive Check	Allows to centralize management PoE power for checking PDs alive.

4.5.1 Power over Ethernet Powered Device

 3~5 Watts	**Voice over IP phones** Enterprises can install PoE VoIP phone, ATA and other Ethernet/non-Ethernet end-devices in the central where UPS is installed for uninterruptible power system and power control system.
 6~12 Watts	**Wireless LAN Access Points** Suitable for museums, sightseeing places, airports, hotels, campuses, factories, warehouses, etc.
 10~12 Watts	**IP Surveillance** Great for enterprises, museums, campuses, hospitals, banks, etc. Power out lets are not required.
 3~12 Watts	**PoE Splitter** PoE Splitter splits the PoE 52V DC over the Ethernet cable into 5/12V DC power output. It frees the device deployment from restrictions due to power outlet locations, which eliminate the costs for additional AC wiring and reduces the installation time.
 3~25 Watts	**High Power PoE Splitter** High PoE Splitter splits the PoE 526V DC over the Ethernet cable into 24/12V DC power output. It frees the device deployment from restrictions due to power outlet locations, which eliminate the costs for additional AC wiring and reduces the installation time.
 30 Watts	**High Power Speed Dome** This state-of-the-art design is considerable to fit in various network environments like traffic centers, shopping malls, railway stations, warehouses, airports, and production facilities for the most demanding outdoor surveillance applications. An extra power outlet is not required.

Note

Since the WGR-500 Series per PoE port supports 48~56V DC PoE power output, please check whether the powered device’s (PD) acceptable DC power range is 48~56V DC; otherwise, it will damage the PD.

4.5.2 System Configuration

In a power over Ethernet system, operating power is applied from a power source (PSU) over the LAN infrastructure to **powered devices (PDs)**, which are connected to ports. Under some conditions, the total output power required by PDs can exceed the maximum available power provided by the PSU. In order to maintain the majority of ports active, power management is implemented.

The PSU input power consumption is monitored by measuring voltage and current.The input power consumption is equal to the system's aggregated power consumption .The power management concept allows all ports to be active and activates additional ports, as long as the aggregated power of the system is lower than the power level at which additional PDs cannot be connected .When this value is exceeded, ports will be deactivated, according to user-defined priorities. The power budget is managed according to the following user-definable parameters: maximum available power, ports priority, maximum allowable power per port.

Reserved Power Management

There are five modes for configuring how the ports/PDs may reserve power and when to shut down ports.

■ **Classification mode**

In this mode, each port automatically determines how much power to reserve according to the class the connected PD belongs to, and reserves the power accordingly. Four different port classes exist and one for 4, 7, 15.4 and 30.8 watts.

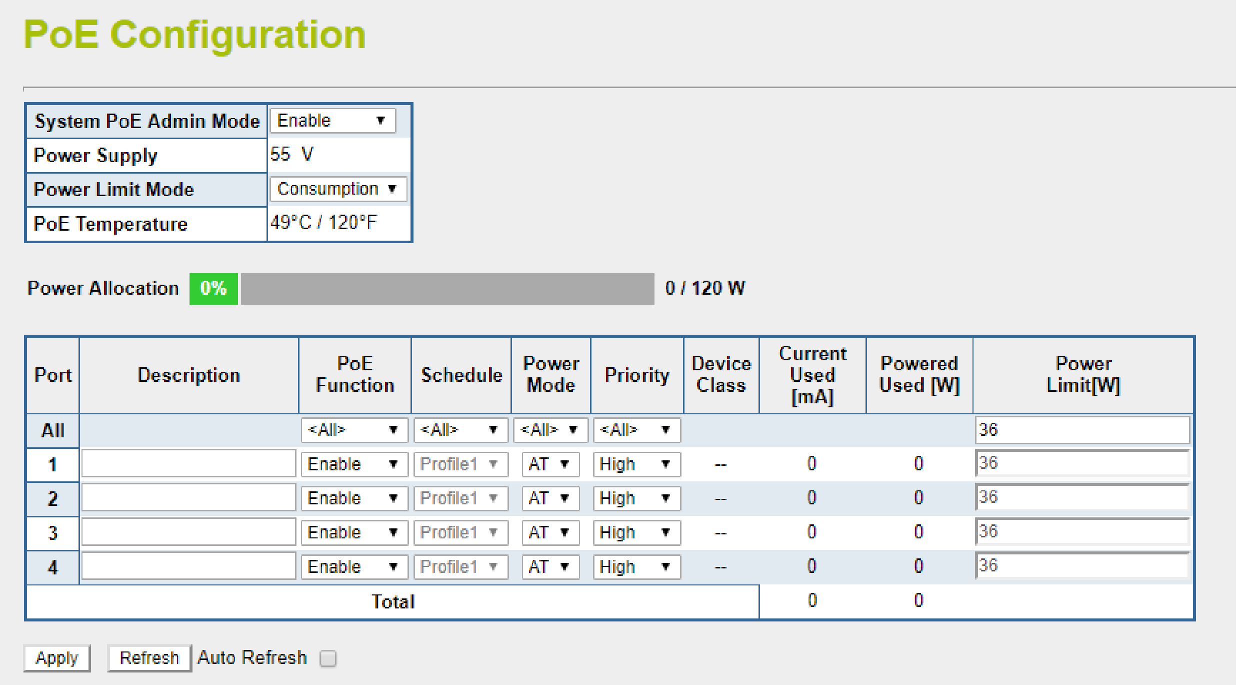
Class	Usage	Range of maximum power used by the PD	Class Description
0	Default	0.44 to 12.95 watts	Classification unimplement
1	Optional	0.44 to 3.84 watts	Very low power
2	Optional	3.84 to 6.49 watts	Low power
3	Optional	6.49 to 12.95 watts (or to 15.4 watts)	Mid power
4	Optional	12.95 to 25.50 watts (or to 30.8 watts)	High power

Note

1. In this mode the **Maximum Power fields** have no effect.
2. The PoE chip of PD69012 designed to that Class level 0 will be assigned to 15.4 watts in AF mode and 30.8 watts in AT mode under classification power limit mode. It is hardware limited.

4.5.3 PoE Configuration

This section provides PoE (Power over Ethernet) Configuration and PoE output status of industrial wall-mount Gigabit router as shown in Figure 4-47.



PoE Configuration

System PoE Admin Mode	Enable ▼
Power Supply	55 V
Power Limit Mode	Consumption ▼
PoE Temperature	49°C / 120°F

Power Allocation 0% 0 / 120 W

Port	Description	PoE Function	Schedule	Power Mode	Priority	Device Class	Current Used [mA]	Powered Used [W]	Power Limit[W]
All		<All> ▼	<All> ▼	<All> ▼	<All> ▼				36
1		Enable ▼	Profile1 ▼	AT ▼	High ▼	--	0	0	36
2		Enable ▼	Profile1 ▼	AT ▼	High ▼	--	0	0	36
3		Enable ▼	Profile1 ▼	AT ▼	High ▼	--	0	0	36
4		Enable ▼	Profile1 ▼	AT ▼	High ▼	--	0	0	36
Total							0	0	

Figure 4-47: PoE Configuration

Object	Description
System PoE Admin Mode	Allows user to disable / enable PoE function.
Power Supply	Displays PoE power supply status.
Power Limit Mode	Allows user to configure power limit mode, which can be chosen. **Consumption:** Based on the real device power consumption where PoE power is delivered as system default setting is in this mode. **Allocation:** Users allow to assign how much PoE power to each port and the system will reserve PoE power to PD.
PoE Temperature	Displays the current PoE temperature of industrial wall-mount Gigabit router.
Power Allocation	Display the current total power consumption status.
Description	This function provides input per port description and the available letters is 30. NOTE: The total maximum letters are only 800. Some of special words will count as 5 per word, like ‘, “, \, < and >.
PoE Function	Allows user to disable or enable per port PoE function, and also allows to choose schedule for enabling PoE Schedule function of each port.
Schedule	Indicates the scheduled profile mode. Possible profiles are: **Profile1**

	Profile2 **Profile3** **Profile4** This function is available when choosing schedule on each port.
Power Mode	Allows user to select AT/AF compatibility mode. The default value is AT mode. Indicates the power inline mode.
Priority	The Priority represents PoE ports priority. There are three levels of power priority named **Low**, **High** and **Critical**. The priority is used in case the total power consumption is over the total power budget. In this case the port with the lowest priority will be turned off, and offer power for the port of higher priority.
Device Class	Display PoE class level. The IEEE 802.3af standard offers PoE class level from **1 to 3** and IEEE 802.3at standard offers the class from **1 to 4**.
Current Used [mA]	The **Power Used** shows how much current the PD currently is using.
Power Used [W]	The **Power Used** shows how much power the PD currently is using.
Power Limit [W]	It can limit the port PoE supply watts. Per port maximum value must be less than **36 watts**. Total port values must be less than the Power Reservation value. Once power overload is detected, the port will automatically shut down and keep in detection mode until PD’s power consumption is lower than the power limit value.
Apply	Press this button to take effect.
Refresh	Press this button to refresh the current Web page.
Auto-Refresh	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.

Note

The PoE budget is 120W. If the usage of power is over the PoE budget, the system will show warning message to notify user. To avoid damaging system, don’t overuse the power budget.

4.5.4 PoE Status

This page allows user to see the usage of individual PoE Port as shown in Figure 4-48.

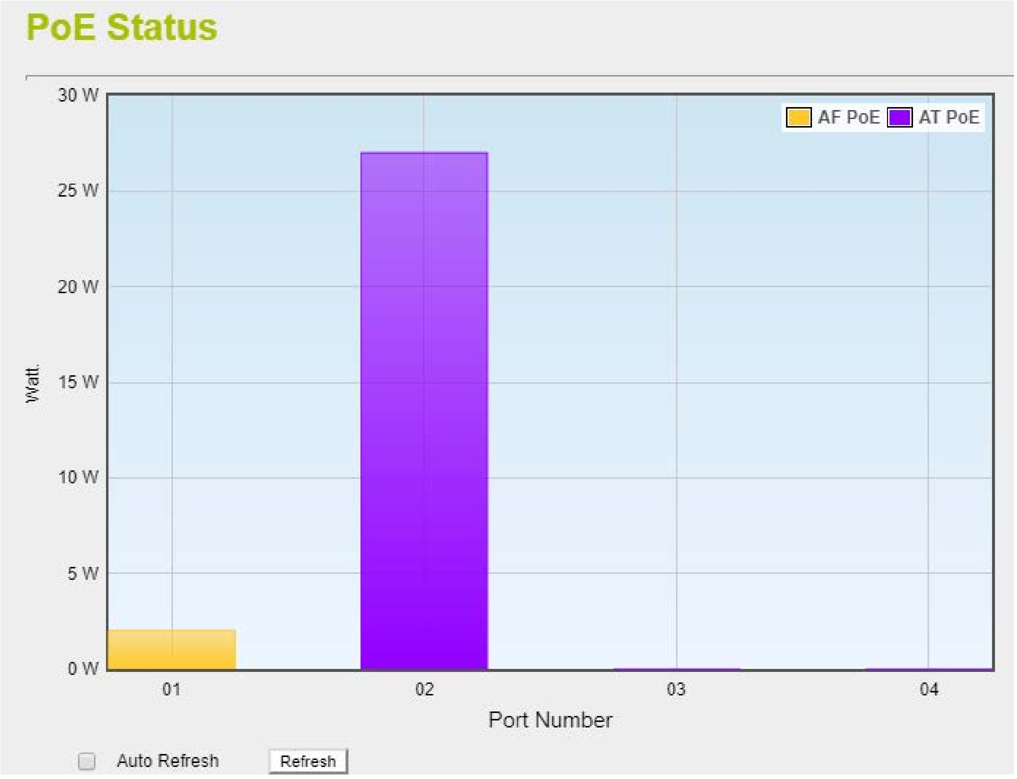
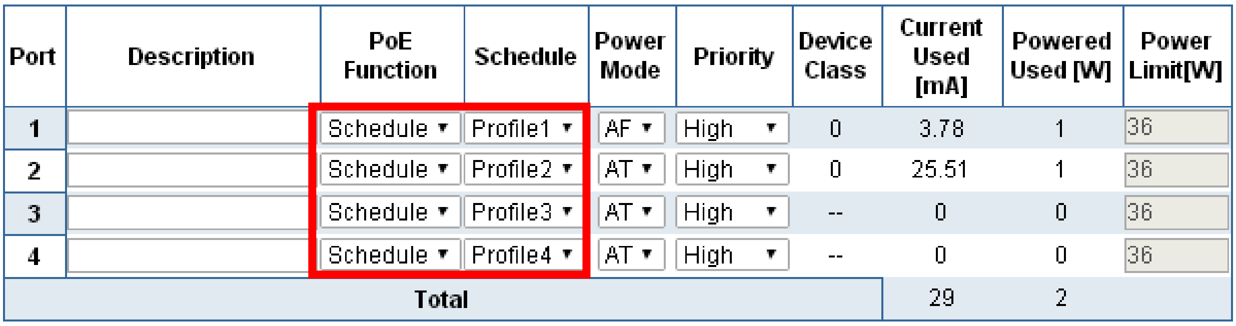


Figure 4-48: PoE Status

Object	Description
Port Number	Displays per port status.
Watt	Displays per port PoE usage.
🟨 AF PoE	Indicates the AF PoE operation mode of that port.
🟪 AT PoE	Indicates the AT PoE operation mode of that port.
Refresh	Press this button to refresh the current Web page.
Auto Refresh	Check this box to refresh the page automatically. Automatic refresh occurs every 3 seconds.

4.5.5 PoE Schedule

This page provides user to configure PoE schedule and scheduled power recycling. The “PoE schedule” helps you to enable or disable PoE power feeding for PoE ports during specified time intervals and it is a powerful function to help SMBs or enterprises save power and money.The PoE Schedule Profile Web Screens are shown in Figure 4-49.

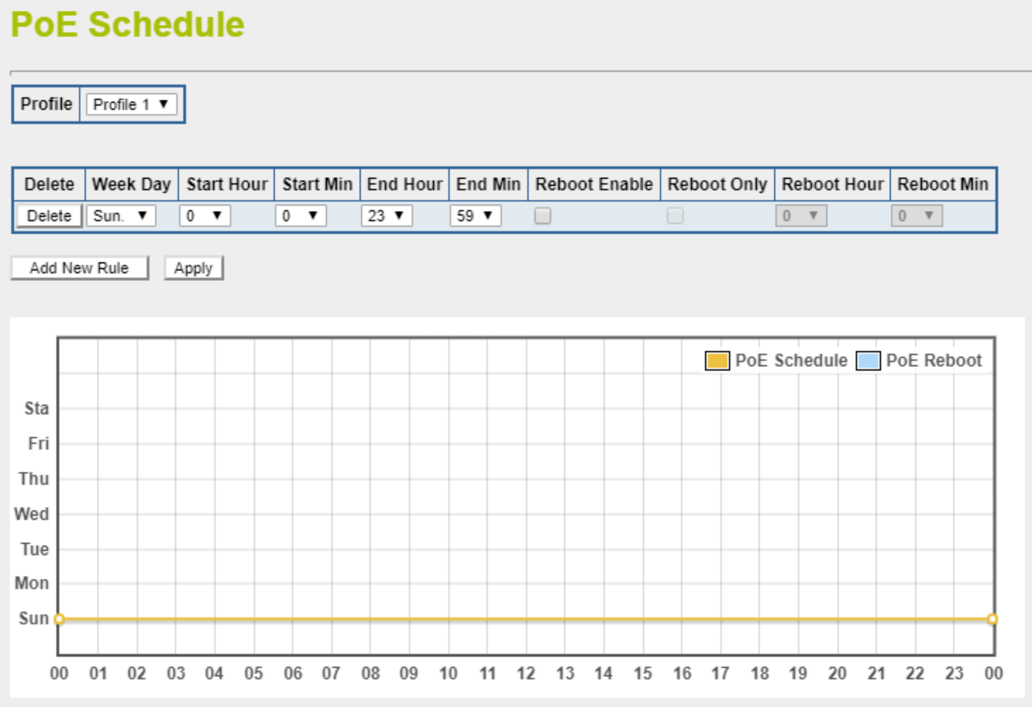


Port	Description	PoE Function	Schedule	Power Mode	Priority	Device Class	Current Used [mA]	Powered Used [W]	Power Limit[W]
1		Schedule	Profile1	AF	High	0	3.78	1	36
2		Schedule	Profile2	AT	High	0	25.51	1	36
3		Schedule	Profile3	AT	High	--	0	0	36
4		Schedule	Profile4	AT	High	--	0	0	36
Total							29	2	

Figure 4-49: PoE Function

Object	Description
PoE Function	Allows user to disable or enable per port PoE function, and also allows to choose schedule for enabling PoE Schedule function of each port.
Schedule	Indicates the scheduled profile mode. Possible profiles are: **Profile1/Profile2/Profile3/Profile4** This function is available when choosing schedule on each port.

PoE Schedule user can configure a duration time for PoE port as default value does not provide power as shown in Figure 4-50.



PoE Schedule

Profile: Profile 1

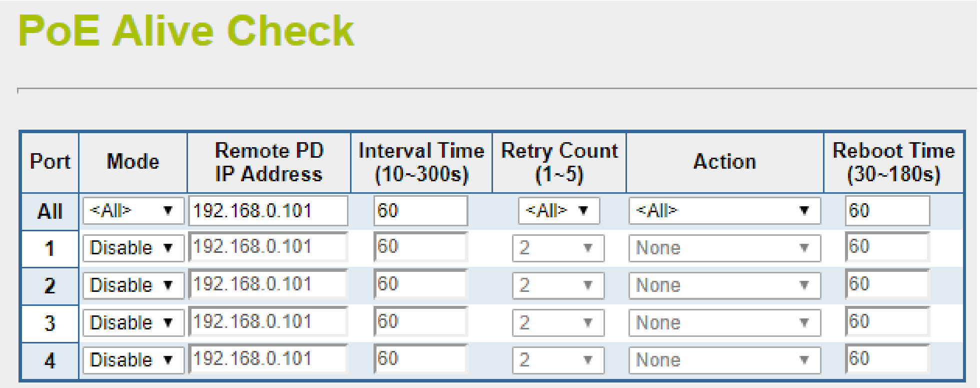
Delete	Week Day	Start Hour	Start Min	End Hour	End Min	Reboot Enable	Reboot Only	Reboot Hour	Reboot Min
Delete	Sun.	0	0	23	59	□	□	0	0

Figure 4-50: PoE Schedule

Object	Description
Profile	Set the schedule profile mode. Possible profiles are: **Profile1** **Profile2** **Profile3** **Profile4**
Delete	Check to delete the entry.
Week Day	Allows user to set week day for defining PoE function by enabling it on the day. **Sun.**: Sunday **Mon.**: Monday **Tue.**: Tuesday **Wed.**: Wednesday **Thu.**: Thursday **Fri.**: Friday **Sat.**: Saturday
Start Hour	Allows user to set what hour PoE function does by enabling it.
Start Min	Allows user to set what minute PoE function does by enabling it.
End Hour	Allows user to set what hour PoE function does by disabling it.
End Min	Allows user to set what minute PoE function does by disabling it.
Reboot Enable	Allows user to enable or disable the whole PoE port reboot by PoE reboot schedule. Please note that if you want PoE schedule and PoE reboot schedule to work at the same time, please use this function, and don’t use **Reboot Only** function. This function offers administrator to reboot PoE device at an indicated time if administrator has this kind of requirement.
Reboot Only	Allows user to reboot PoE function by PoE reboot schedule. Please note that if administrator enables this function, PoE schedule will not set time to profile. This function is just for PoE port to reset at an indicated time.
Reboot Hour	Allows user to set what hour PoE reboots. This function is only for PoE reboot schedule.

4.5.6 PoE Alive Check Configuration

The WGR-500 Series can be configured to monitor connected PD’s status in real-time via ping action. Once the PD stops working and without response, the WGR-500 Series is going to restart PoE port port power, and bring the PD back to work. It will greatly enhance the reliability and reduces administrator management burden. The PoE Alive Check setup is shown in Figure 4-51



PoE Alive Check

Port	Mode	Remote PD IP Address	Interval Time (10~300s)	Retry Count (1~5)	Action	Reboot Time (30~180s)
All	<All>	192.168.0.101	60	<All>	<All>	60
1	Disable	192.168.0.101	60	2	None	60
2	Disable	192.168.0.101	60	2	None	60
3	Disable	192.168.0.101	60	2	None	60
4	Disable	192.168.0.101	60	2	None	60

Figure 4-51: PD alive check

Object	Description
Mode	Allows user to enable or disable PD Alive Check function. The default is disabled.
Remote PD IP Address	Allows user to set PoE device IP address for system making ping to the PoE device. Please note that the PD’s IP address must be set to the same network segment as the industrial wall-mount Gigabit router. The default is 60s.
Interval Time (10~300s)	Allows user to set how long system should issue a ping request to PD for detecting whether PD is alive or dead. Interval time range is from 10 seconds to 300 seconds.
Retry Count (1~5)	Allow user to set how many times system wants to retry ping to PD. For example, if we set count 2, the meaning is that if system retries ping to the PD and the PD doesn’t response continuously, the PoE port will be reset. The default is 2.
Action	Allow users to set which action will be applied if the PD is without any response. The industrial wall-mount Gigabit router offers 4 actions as follows: **None:** no action. The default is None. **PD Reboot:** system will reset the PoE port that is connected to the PD. **PD Reboot & Alarm:** system will reset the PoE port and issue an alarm message via syslog. **Alarm:** system will issue an alarm message via syslog.
Reboot Time (30~180s)	Allows user to set the PoE device rebooting time. The PD alive check is not a defining standard, so the PoE device on the market doesn’t report reboots done information to the system. User has to make sure how long the PD will be finished to boot, and set the time value to this column. If you cannot make sure the precise booting time, we suggest you set it longer. The default is 60s.

4.6 Maintenance

The Maintenance menu provides the following features for managing the system as Figure 4-52 is shown below:

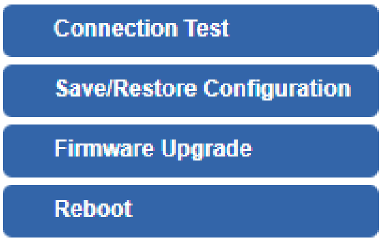
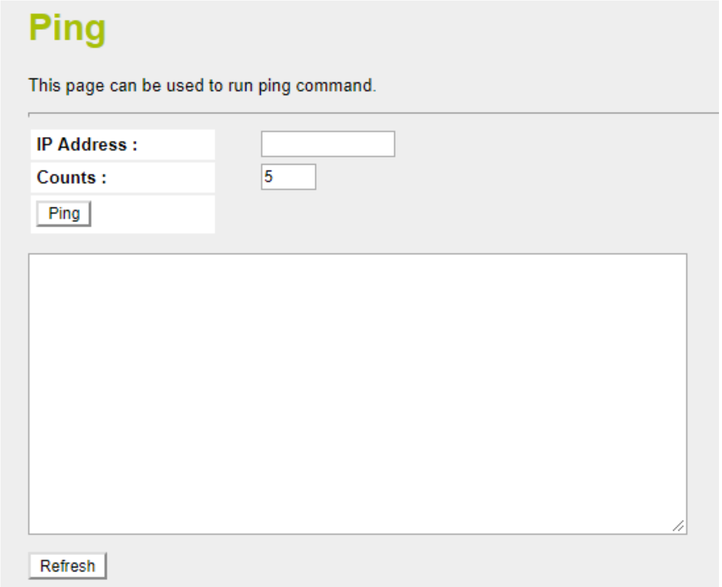


Figure 4-52: Maintenance Menu

Object	Description
Connection Test	Allows you to issue ICMP PING packets to troubleshoot IP.
Save/Restore Configuration	Backup and restore setting file via USB HDD or PC.
Firmware	Firmware upgrade.
Reboot	Reboot the system

4.6.1 Connection Test

The page is allows you to issue ICMP PING packets to troubleshoot IP connectivity issues. After you press “Ping”, 5 ICMP packets are transmitted, and the sequence number and roundtrip time are displayed upon reception of a reply. The Page refreshes automatically until responses to all packets are received, or until a timeout occurs. The ICMP Ping is shown in Figure 4-53.



Ping

This page can be used to run ping command.

IP Address :

Counts : 5

Figure 4-53: Ping

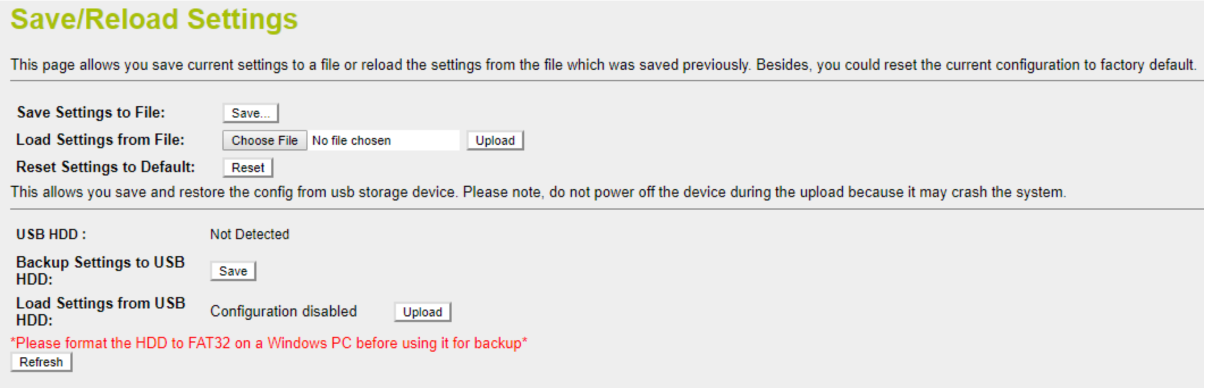
Object	Description
IP Address	The destination IP Address.
Counts	The time of ping.

Note

Be sure the target IP address is within the same network subnet of the industrial wall-mount Gigabit router, or you have to set up the correct gateway IP address.

4.6.2 Save/Restore Configuration

This page shows the status of the configuration. You may save the setting file to either USB HDD or PC and load the setting file from USB HDD or PC as Figure 4-54 is shown below:



Save/Reload Settings

This page allows you save current settings to a file or reload the settings from the file which was saved previously. Besides, you could reset the current configuration to factory default.

Save Settings to File:	Save...
Load Settings from File:	Choose File No file chosen Upload
Reset Settings to Default:	Reset

This allows you save and restore the config from usb storage device. Please note, do not power off the device during the upload because it may crash the system.

USB HDD :	Not Detected
Backup Settings to USB HDD:	Save
Load Settings from USB HDD:	Configuration disabled Upload

Please format the HDD to FAT32 on a Windows PC before using it for backup

Refresh

Figure 4-54: Save/Restore Configuration

■ **Save Setting to PC**

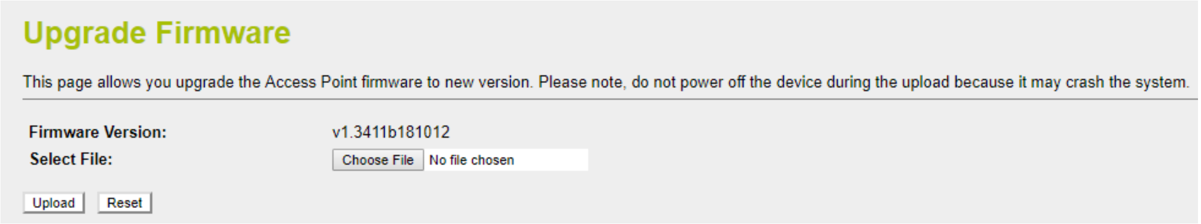
Object	Description
Save Settings to File	Press the Save button to save setting file to PC.
Load Settings from File	Press the Choose File button to select the setting file, and then press the Upload button to upload setting file from PC.
Reset Setting to Default	Press the Reset button to reset to factory default.

■ **Save Setting of USB HDD**

Object	Description
USB HDD	The status of USB HDD.
Save Settings to USB HDD	Press the Save button to save setting file to USB HDD.
Load Settings from USB HDD	Press the Upload button to upload setting file from USB HDD.

4.6.3 Upgrading Firmware

This page provides the firmware upgrade of industrial wall-mount Gigabit router as shown in Figure 4-55.



Upgrade Firmware

This page allows you upgrade the Access Point firmware to new version. Please note, do not power off the device during the upload because it may crash the system.

Firmware Version: v1.3411b181012

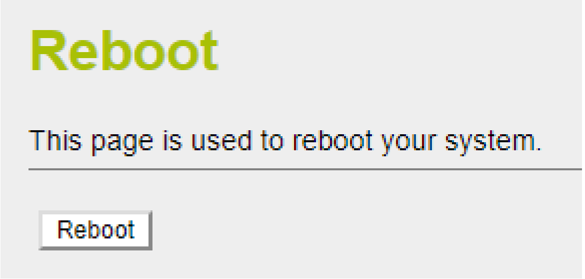
Select File: Choose File No file chosen

Figure 4-55: Firmware upgrade

Object	Description
Choose File	Press the button to select the firmware.
Upload	Press the button upgrades firmware to system.
Reset	Press this button to cancel the file.

4.6.4 Reboot

This page enables the device to be rebooted from a remote location. Once the Reboot button is pressed, users have to re-log in the Web interface for about 60 seconds later as Figure 4-56 is shown below:



Reboot

This page is used to reboot your system.

Figure 4-56: Reboot

Object	Description
Reboot	Press the button to reboot system.

Note

You can also check the **SYS LED** on the front panel to identify whether the System is loaded completely or not. If the SYS LED is blinking, then it is in the firmware load stage; if the SYS LED light is on, you can use the Web browser to log in the industrial wall-mount Gigabit router.

Appendix A: Troubleshooting

This chapter contains information to help you solve issues. If the industrial wall-mount Gigabit router is not functioning properly, make sure the industrial wall-mount Gigabit router was set up according to instructions in this manual.

- **The Link LED is not lit**

Solution:
Check the cable connection and remove duplex mode of the industrial wall-mount Gigabit router

- **Some stations cannot talk to other stations located on the other port**

Solution:
Please check the VLAN settings.

- **Performance is bad**

Solution:
Check the full duplex status of the industrial wall-mount Gigabit router. If the industrial wall-mount Gigabit router is set to full duplex and the partner is set to half duplex, then the performance will be poor. Please also check the in/out rate of the port.

- **Why the Router doesn't connect to the network**

Solution:

1. Check the LNK/ACT LED on the router
2. Try another port on the router
3. Make sure the cable is installed properly
4. Make sure the cable is the right type
5. Turn off the power. After a while, turn on power again

- **1000BASE-T port link LED is lit, but the traffic is irregular**

Solution:
Check that the attached device is not set to dedicate full duplex. Some devices use a physical or software switch to change duplex modes. Auto-negotiation may not recognize this type of full-duplex setting.

- **Router does not power up**

Solution:

1. Terminal block or DC jack is not inserted or faulty
2. Check that the terminal block or DC jack is inserted correctly
3. If the terminal block or DC jack is inserted correctly; check that the power source is working by connecting a different device in place of the router.
4. If that device works, refer to the next step.
5. If that device does not work, check the power source

Appendix B: Planet Smart Discovery Utility

For easily listing the industrial wall-mount Gigabit router in your Ethernet environment, Planet Smart Discovery Utility from PLANET download center is an ideal solution.

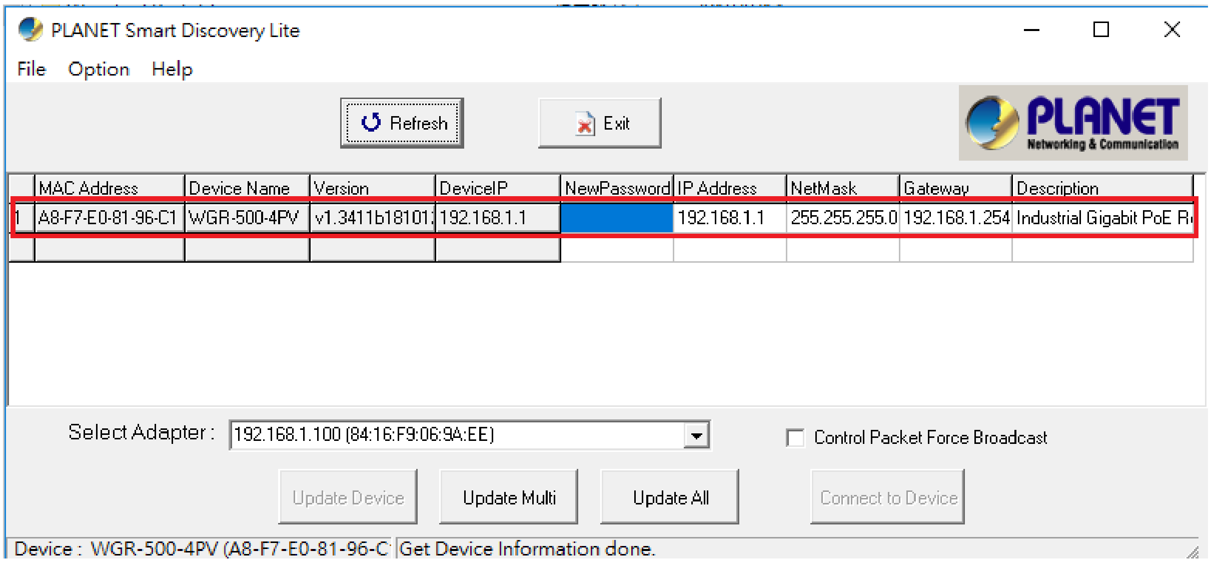
The following installation instructions guide you to running the Planet Smart Discovery Utility.

Step 1: Download the **Planet Smart Discovery Utility** to the administrator PC.

Step 2: Run this utility and the following screen appears.

Planet_Utility.exe
PLANET Corp.

Step 3: Press the **“Refresh”** button for the currently connected devices in the discovery list as shown in the following screen:



	MAC Address	Device Name	Version	DeviceIP	NewPassword	IP Address	NetMask	Gateway	Description
1	A8-F7-E0-81-96-C1	WGR-500-4PV	v1.3411b18101	192.168.1.1		192.168.1.1	255.255.255.0	192.168.1.254	Industrial Gigabit PoE R

Select Adapter : 192.168.1.100 (84:16:F9:06:9A:EE)

□ Control Packet Force Broadcast

Device : WGR-500-4PV (A8-F7-E0-81-96-C Get Device Information done.

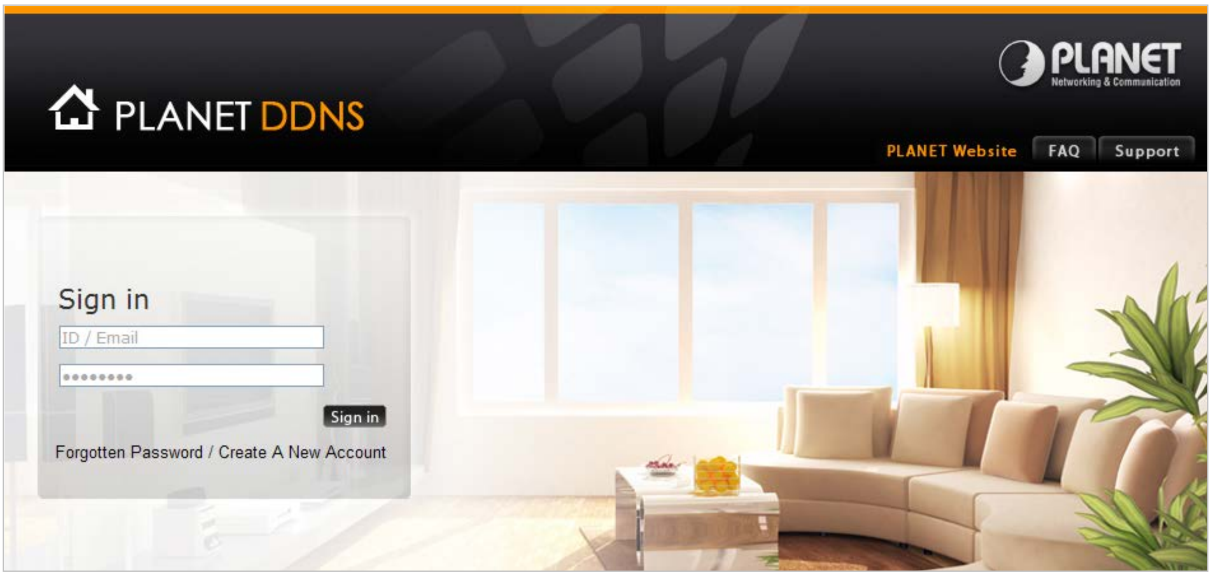
Step 3: Press the **“Connect to Device”** button and then the Web login screen appears.

Note

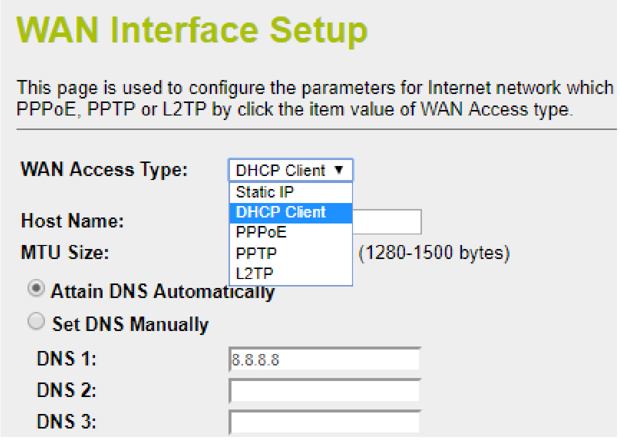
The fields in the white background can be modified directly, and then you can apply the new setting by clicking the “**Update Device**” button.

Appendix C: Planet DDNS

First of all, please go to http://www.planetddns.com to register a Planet DDNS account, and refer to the FAQs (http://www.planetddns.com/index.php/faq) for how to register a free account.


PLANET DDNS
PLANET Networking & Communication
PLANET Website
FAQ
Support
Sign in
ID / Email
••••••••
Sign in
Forgotten Password / Create A New Account

When you finish your DDNS account, please return to WAN Setup -> WAN Setup to set up your WAN type which can be connected to external network.



WAN Interface Setup

This page is used to configure the parameters for Internet network which PPPoE, PPTP or L2TP by click the item value of WAN Access type.

WAN Access Type: DHCP Client ▼

Host Name:

MTU Size: (1280-1500 bytes)

● Attain DNS Automatically

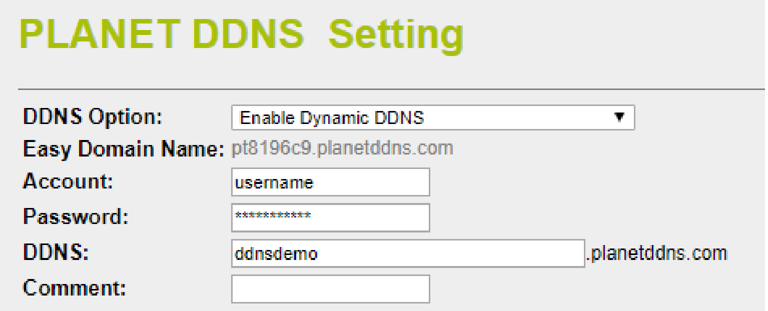
○ Set DNS Manually

DNS 1: 8.8.8.8

DNS 2:

DNS 3:

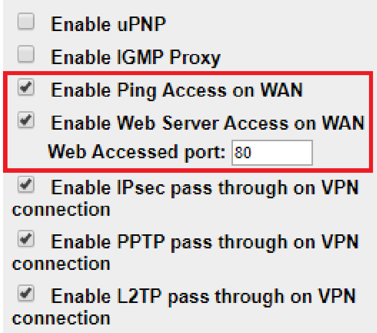
Step 1. Enable PLANET Dynamic DDNS, and enter acoount, password, and DDNS.



PLANET DDNS Setting

DDNS Option:	Enable Dynamic DDNS ▼
Easy Domain Name:	pt8196c9.planetddns.com
Account:	username
Password:	***********
DDNS:	ddnsdemo .planetddns.com
Comment:	

Step 2. Go to **Network-> WAN setup** page to allow remote access from WAN port.



☐ Enable uPNP

☐ Enable IGMP Proxy

☑ Enable Ping Access on WAN

☑ Enable Web Server Access on WAN

Web Accessed port: 80

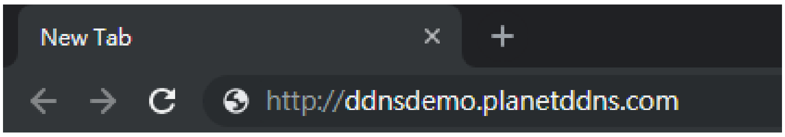
☑ Enable IPsec pass through on VPN connection

☑ Enable PPTP pass through on VPN connection

☑ Enable L2TP pass through on VPN connection

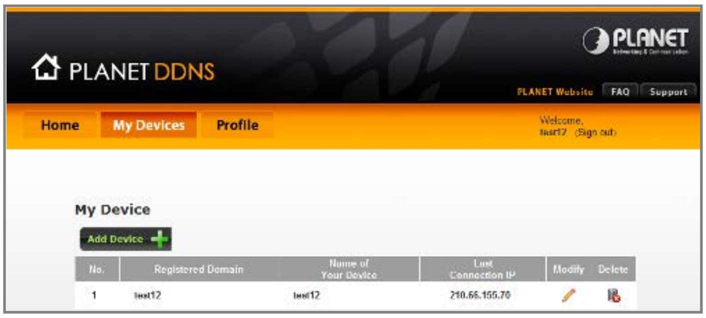
Step 3. Apply the settings, and ensure you have connected the WAN port to the internet by Ethernet cable.

Step 4. In a remote computer, enter the Domain Name to the internet browser's address bar.



http://ddnsdemo.planetddns.com

Lastly you can go to My Devices page of Planet DDNS website to check if the "Last Connection IP" is displayed. This indicates your DDNS service is working properly.



My Device

No.	Registered Domain	Name of Your Device	Last Connection IP	Modify	Delete
1	test12	test12	210.66.155.70		

Appendix D: Glossary

A

ARP

ARP is an acronym for **A**ddress **R**esolution **P**rotocol. It is a protocol that used to convert an IP address into a physical address, such as an Ethernet address. ARP allows a host to communicate with other hosts when only the Internet address of its neighbors is known. Before using IP, the host sends a broadcast ARP request containing the Internet address of the desired destination system.

ARP Inspection

ARP Inspection is a secure feature. Several types of attacks can be launched against a host or devices connected to Layer 2 networks by "poisoning" the ARP caches. This feature is used to block such attacks. Only valid ARP requests and responses can go through the switch device.

Auto-Negotiation

Auto-negotiation is the process where two different devices establish the mode of operation and the speed settings that can be shared by those devices for a link.

D

Default Gateway (Router)

Every non-router IP device needs to configure a default gateway's IP address. When the device sends out an IP packet, if the destination is not on the same network, the device has to send the packet to its default gateway, which will then send it out towards the destination.

DHCP

DHCP is an acronym for **D**ynamic **H**ost **C**onfiguration **P**rotocol. It is a protocol used for assigning dynamic IP addresses to devices on a network.

DHCP used by networked computers (clients) to obtain IP addresses and other parameters such as the default gateway, subnet mask, and IP addresses of DNS servers from a DHCP server.

The DHCP server ensures that all IP addresses are unique, for example, no IP address is assigned to a second client while the first client's assignment is valid (its lease has not expired). Therefore, IP address pool management is done by the server and not by a human network administrator.

Dynamic addressing simplifies network administration because the software keeps track of IP addresses rather than requiring an administrator to manage the task. This means that a new computer can be added to a network without the hassle of manually assigning it a unique IP address.

DHCP Relay

DHCP Relay is used to forward and to transfer DHCP messages between the clients and the server when they are not on the same subnet domain.

The DHCP option 82 enables a DHCP relay agent to insert specific information into a DHCP request packets when forwarding client DHCP packets to a DHCP server and remove the specific information from a DHCP reply packets when forwarding server DHCP packets to a DHCP client. The DHCP server can use this information to implement IP address or other assignment policies. Specifically the option works by setting two sub-options: Circuit ID (option 1) and Remote ID (option2). The Circuit ID sub-option is supposed to include information specific to which circuit the request came in on. The Remote ID sub-option was designed to carry information relating to the remote host end of the circuit.

The definition of Circuit ID in the switch is 4 bytes in length and the format is "vlan_id" "module_id" "port_no". The parameter of "vlan_id" is the first two bytes represent the VLAN ID. The parameter of "module_id" is the third byte for the module ID (in standalone switch it always equal 0, in stackable switch it means switch ID). The parameter of "port_no" is the fourth byte and it means the port number.

The Remote ID is 6 bytes in length, and the value is equal the DHCP relay agents MAC address.

DNS

DNS is an acronym for **D**omain **N**ame **S**ystem. It stores and associates many types of information with domain names. Most importantly, DNS translates human-friendly domain names and computer hostnames into computer-friendly IP addresses. For example, the domain name www.example.com might translate to 192.168.0.1.

DoS

DoS is an acronym for **D**enial of **S**ervice. In a denial-of-service (DoS) attack, an attacker attempts to prevent legitimate users from accessing information or services. By targeting at network sites or network connection, an attacker may be able to prevent network users from accessing email, web sites, online accounts (banking, etc.), or other services that rely on the affected computer.

E

Ethernet Type

Ethernet Type, or EtherType, is a field in the Ethernet MAC header, defined by the Ethernet networking standard. It is used to indicate which protocol is being transported in an Ethernet frame.

F

FTP

FTP is an acronym for **F**ile **T**ransfer **P**rotocol. It is a transfer protocol that uses the Transmission Control Protocol (TCP) and provides file writing and reading. It also provides directory service and security features.

H

HTTP

HTTP is an acronym for **H**ypertext **T**ransfer **P**rotocol. It is a protocol that used to transfer or convey information on the World Wide Web (WWW).

HTTP defines how messages are formatted and transmitted, and what actions Web servers and browsers should take in response to various commands. For example, when you enter a URL in your browser, this actually sends an HTTP command to the Web server directing it to fetch and transmit the requested Web Page. The other main standard that controls how the World Wide Web works is HTML, which covers how Web Pages are formatted and displayed.

Any Web server machine contains, in addition to the Web Page files it can serve, an HTTP daemon, a program that is designed to wait for HTTP requests and handle them when they arrive. The Web browser is an HTTP client, sending requests to server machines. An HTTP client initiates a request by establishing a Transmission Control Protocol (TCP) connection to a particular port on a remote host (port 80 by default). An HTTP server listening on that port waits for the client to send a request message.

HTTPS

HTTPS is an acronym for **H**ypertext **T**ransfer **P**rotocol over **S**ecure Socket Layer. It is used to indicate a secure HTTP connection.

HTTPS provide authentication and encrypted communication and is widely used on the World Wide Web for security-sensitive communication such as payment transactions and corporate logons.

HTTPS is really just the use of Netscape's Secure Socket Layer (SSL) as a sublayer under its regular HTTP application layering. (HTTPS uses port 443 instead of HTTP port 80 in its interactions with the lower layer, TCP/IP.) SSL uses a 40-bit key size for the RC4 stream encryption algorithm, which is considered an adequate degree of encryption for commercial exchange.

I

ICMP

ICMP is an acronym for **I**nternet **C**ontrol **M**essage **P**rotocol. It is a protocol that generated the error response, diagnostic or routing purposes. ICMP messages generally contain information about routing difficulties or simple exchanges such as time-stamp or echo transactions. For example, the PING command uses ICMP to test an Internet connection.

IGMP

IGMP is an acronym for **I**nternet **G**roup **M**anagement **P**rotocol. It is a communications protocol used to manage the membership of Internet Protocol multicast groups. IGMP is used by IP hosts and adjacent multicast routers to establish multicast group memberships. It is an integral part of the IP multicast specification, like ICMP for unicast connections. IGMP can be used for online video and gaming, and allows more efficient use of resources when supporting these uses.

IP

IP is an acronym for **I**nternet **P**rotocol. It is a protocol used for communicating data across a internet network.

IP is a "best effort" system, which means that no packet of information sent over it is assured to reach its destination in the same condition it was sent. Each device connected to a Local Area Network (LAN) or Wide Area Network (WAN) is given an Internet Protocol address, and this IP address is used to identify the device uniquely among all other devices connected to the extended network.

The current version of the Internet protocol is IPv4, which has 32-bits Internet Protocol addresses allowing for in excess of four billion unique addresses. This number is reduced drastically by the practice of webmasters taking addresses in large blocks, the bulk of which remain unused. There is a rather substantial movement to adopt a new version of the Internet Protocol, IPv6, which would have 128-bits Internet Protocol addresses. This number can be represented roughly by a three with thirty-nine zeroes after it. However, IPv4 is still the protocol of choice for most of the Internet.

IP Source Guard

IP Source Guard is a secure feature used to restrict IP traffic on DHCP snooping untrusted ports by filtering traffic based on the DHCP Snooping Table or manually configured IP Source Bindings. It helps prevent IP spoofing attacks when a host tries to spoof and use the IP address of another host.

L

LAN

Local Area Network. A LAN is a group of computers and devices connected together in a relatively small area (such as a house or an office). Your network is considered a LAN.

N

NAT

Network Address Translation. NAT technology translates IP addresses of a local area network to a different IP address for the Internet Using the NAT capability of WGR-500 Series , you can access the Internet from any computer on your network without having to purchase more IP addresses from your ISP.

NetBIOS

NetBIOS is an acronym for **Net**work **B**asic **I**nput/**O**utput **S**ystem. It is a program that allows applications on separate computers to communicate within a Local Area Network (LAN), and it is not supported on a Wide Area Network (WAN).

The NetBIOS giving each computer in the network both a NetBIOS name and an IP address corresponding to a different host name, provides the session and transport services described in the Open Systems Interconnection (OSI) model.

NTP

NTP is an acronym for **N**etwork **T**ime **P**rotocol, a network protocol for synchronizing the clocks of computer systems. NTP uses UDP (datagrams) as transport layer.

PD

PD is an acronym for **P**owered **D**evice. In a PoE> system the power is delivered from a PSE (power sourcing equipment) to a remote device. The remote device is called a PD.

PHY

PHY is an abbreviation for Physical Interface Transceiver and is the device that implement the Ethernet physical layer (IEEE-802.3).

PING

ping is a program that sends a series of packets over a network or the Internet to a specific computer in order to generate a response from that computer. The other computer responds with an acknowledgment that it received the packets. Ping was created to verify whether a specific computer on a network or the Internet exists and is connected.

ping uses Internet Control Message Protocol (ICMP) packets. The PING Request is the packet from the origin computer, and the PING Reply is the packet response from the target.

POP3

POP3 is an acronym for **P**ost **O**ffice **P**rotocol version 3. It is a protocol for email clients to retrieve email messages from a mail server.

POP3 is designed to delete mail on the server as soon as the user has downloaded it. However, some implementations allow users or an administrator to specify that mail be saved for some period of time. POP can be thought of as a "store-and-forward" service.

An alternative protocol is Internet Message Access Protocol (IMAP). IMAP provides the user with more capabilities for retaining e-mail on the server and for organizing it in folders on the server. IMAP can be thought of as a remote file server.

POP and IMAP deal with the receiving of e-mail and are not to be confused with the Simple Mail Transfer Protocol (SMTP). You send e-mail with SMTP, and a mail handler receives it on your recipient's behalf. Then the mail is read using POP or IMAP. IMAP4 and POP3 are the two most prevalent Internet standard protocols for e-mail retrieval. Virtually all modern e-mail clients and servers support both.

PPPoE

PPPoE is an acronym for Point-to-Point Protocol over Ethernet.

It is a network protocol for encapsulating Point-to-Point Protocol (PPP) frames inside Ethernet frames. It is used mainly with ADSL services where individual users connect to the ADSL transceiver (modem) over Ethernet and in plain Metro Ethernet networks (Wikipedia).

Q

QoS

QoS is an acronym for **Q**uality **o**f **S**ervice. It is a method to guarantee a bandwidth relationship between individual applications or protocols.

A communications network transports a multitude of applications and data, including high-quality video and delay-sensitive data such as real-time voice. Networks must provide secure, predictable, measurable, and sometimes guaranteed services.

Achieving the required QoS becomes the secret to a successful end-to-end business solution. Therefore, QoS is the set of techniques to manage network resources.

QoS class

Every incoming frame is classified to a QoS class, which is used throughout the device for providing queuing, scheduling and congestion control guarantees to the frame according to what was configured for that specific QoS class. There is a one to one mapping between QoS class, queue and priority. A QoS class of 0 (zero) has the lowest priority.

R

RADIUS

RADIUS is an acronym for **Re**mote **A**uthentication **D**ial In **U**ser **S**ervice. It is a networking protocol that provides centralized access, authorization and accounting management for people or computers to connect and use a network service.

S

SHA

SHA is an acronym for **S**ecure **H**ash **A**lgorithm. It designed by the National Security Agency (NSA) and published by the NIST as a U.S. Federal Information Processing Standard. Hash algorithms compute a fixed-length digital representation (known as a message digest) of an input data sequence (the message) of any length.

SMTP

SMTP is an acronym for **S**imple **M**ail **T**ransfer **P**rotocol. It is a text-based protocol that uses the Transmission Control Protocol (TCP) and provides a mail service modeled on the FTP file transfer service. SMTP transfers mail messages between systems and notifications regarding incoming mail.

SNMP

SNMP is an acronym for **S**imple **N**etwork **M**anagement **P**rotocol. It is part of the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol for network management. SNMP allow diverse network objects to participate in a network management architecture. It enables network management systems to learn network problems by receiving traps or change notices from network devices implementing SNMP.

T

Tag Priority

Tag Priority is a 3-bit field storing the priority level for the 802.1Q frame.

TCP

TCP is an acronym for **T**ransmission **C**ontrol **P**rotocol. It is a communications protocol that uses the Internet Protocol (IP) to exchange the messages between computers.

The TCP protocol guarantees reliable and in-order delivery of data from sender to receiver and distinguishes data for multiple connections by concurrent applications (for example, Web server and e-mail server) running on the same host.

The applications on networked hosts can use TCP to create connections to one another. It is known as a connection-oriented protocol, which means that a connection is established and maintained until such time as the message or messages to be exchanged by the application programs at each end have been exchanged. TCP is responsible for ensuring that a message is divided into the packets that IP manages and for reassembling the packets back into the complete message at the other end.

Common network applications that use TCP include the World Wide Web (WWW), e-mail, and File Transfer Protocol (FTP).

TELNET

TELNET is an acronym for **TEL**etype **NET**work. It is a terminal emulation protocol that uses the Transmission Control Protocol (TCP) and provides a virtual connection between TELNET server and TELNET client.

TELNET enables the client to control the server and communicate with other servers on the network. To start a Telnet session, the client user must log in to a server by entering a valid username and password. Then, the client user can enter commands through the Telnet program just as if they were entering commands directly on the server console.

U

UDP

UDP is an acronym for **U**ser **D**atagram **P**rotocol. It is a communications protocol that uses the Internet Protocol (IP) to exchange the messages between computers.

UDP is an alternative to the Transmission Control Protocol (TCP) that uses the Internet Protocol (IP). Unlike TCP, UDP does not provide the service of dividing a message into packet datagrams, and UDP doesn't provide reassembling and sequencing of the packets. This means that the application program that uses UDP must be able to make sure that the entire message has arrived and is in the right order. Network applications that want to save processing time because they have very small data units to exchange may prefer UDP to TCP.

UDP provides two services not provided by the IP layer. It provides port numbers to help distinguish different user requests and, optionally, a checksum capability to verify that the data arrived intact.

Common network applications that use UDP include the Domain Name System (DNS), streaming media applications such as IPTV, Voice over IP (VoIP), and Trivial File Transfer Protocol (TFTP).

UPnP

UPnP is an acronym for **U**niversal **P**lug and **P**lay. The goals of UPnP are to allow devices to connect seamlessly and to simplify the implementation of networks in the home (data sharing, communications, and entertainment) and in corporate environments for simplified installation of computer components

User Priority

User Priority is a 3-bit field storing the priority level for the 802.1Q frame.

V

VLAN

Virtual LAN. A method to restrict communication between switch ports. VLANs can be used for the following applications:

VLAN unaware switching: This is the default configuration. All ports are VLAN unaware with Port VLAN ID 1 and members of VLAN 1. This means that MAC addresses are learned in VLAN 1, and the switch does not remove or insert VLAN tags.

VLAN aware switching: This is based on the IEEE 802.1Q standard. All ports are VLAN aware. Ports connected to VLAN aware switches are members of multiple VLANs and transmit tagged frames. Other ports are members of one VLAN, set up with this Port VLAN ID, and transmit untagged frames.

Provider switching: This is also known as Q-in-Q switching. Ports connected to subscribers are VLAN unaware, members of one VLAN, and set up with this unique Port VLAN ID. Ports connected to the service provider are VLAN aware, members of multiple VLANs, and set up to tag all frames. Untagged frames received on a subscriber port are forwarded to the provider port with a single VLAN tag. Tagged frames received on a subscriber port are forwarded to the provider port with a double VLAN tag.

VLAN ID

VLAN ID is a 12-bit field specifying the VLAN to which the frame belongs.

W

WAN

Wide Area Network. A network that connects computers located in geographically separate areas (e.g. different buildings, cities, countries). The Internet is a wide area network.