IGR-20 series

User's Manual

Version 1.0

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www.oring-networking.com

ORing Industrial Networking Corp.

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Tables of Content

Getting to Know your Router

1.1 Overview

The ORing IGR-20 is designed to operate in industrial environment. The router provides a fast and effective ways of communicating to the internet over wired LAN. In addition, multiple types of WAN connection are provided for easily access to the internet.

The ORing IGR-20 router's VPN capability creates encrypted "Virtual Tunnels" through the internet, allowing remote or traveling users for secured connection with the network in your office.

1.2 Software Features

- Intuitive Web-based management user interface for simply and easily operation.
- Functions of firewall provides many security features such as blocking attacks from hacker, especially IP Spoofing, Ping flood, Ping of Death, DOS, DRDOS, Stealth Scan, ICMP flooding etc.
- Advanced firewall configuration to extend the capability and security, such as Virtual Server, Port Trigger, DMZ host, UPnP auto Forwarding, IP Filter and MAC filter.

1.3 Hardware Features

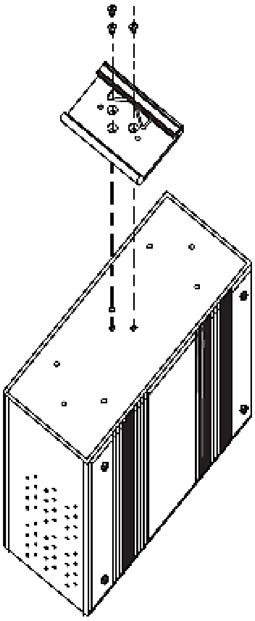
- Two 10/100/1000 Base-T(X) Ethernet ports for WAN / LAN connection individually.
- Fully Compliant with IEEE802.3af (Power Device at ETH2, WAN port) only for IGR-20+
- Redundant Power Inputs: 12~48 VDC on terminal block
- Casing: IP-30
- Dimensions(W x D x H) : 74.3(W) x 109.2(D) x 153.6(H) mm
- Storage Temperature: -40 to 85^{o}C
- Operating Humidity: 5% to 95%, non-condensing

Hardware Installation

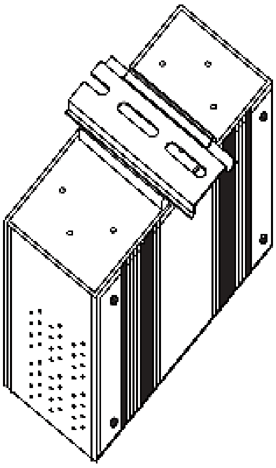
2.1 Installation Router on DIN-Rail

Each router has a DIN-Rail kit on rear panel. The DIN-Rail kit helps router to fix on the DIN-Rail.

Step 1: Slant the router and mount the metal spring to DIN-Rail.



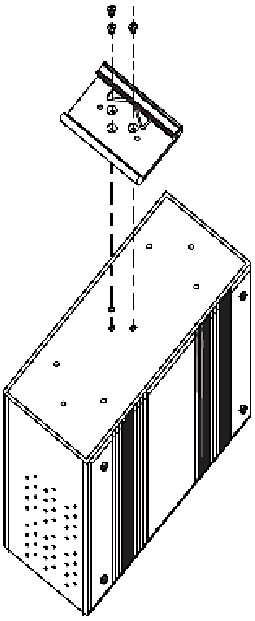
Step 2: Push the router toward the DIN-Rail until you heard a "click" sound.



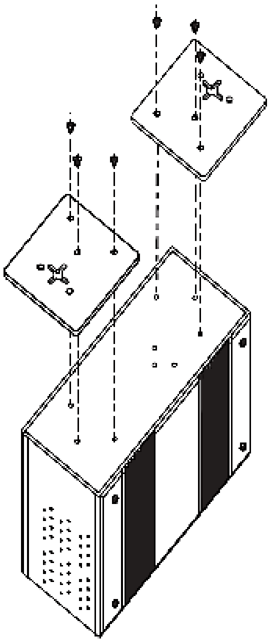
2.2 Wall Mounting Installation

Each router has another installation method to fix the router. A wall mount panel can be found in the package. The following steps show how to mount the router on the wall:

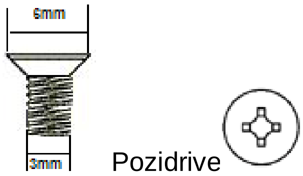
Step 1: Remove DIN-Rail kit.



Step 2: Use 6 screws that can be found in the package to combine the wall mount panel. Just like the picture shows below:



The screws specification shows in the following two pictures. In order to prevent the routers from any damage, the screws should not larger than the size that used in IGR-20 series.



Step 3: Mount the combined on the wall.

Hardware Overview

3.1 Front Panel

The following table describes the labels that stick on the IGR-20.

Port	Description
10/100/1000 Base-T(X) fast Ethernet ports	10/100/1000Base-T(X) RJ-45 fast Ethernet ports support auto-negotiation. Default Setting : Speed: auto Duplex: auto
PoE PD Port	ETH2 (WAN port) of IGR-20+ compliant with IEEE802.3af PoE specifications and can be connected to PoE switches.*

***Note:** Please refer to the products of **ORing IPS series** for P.O.E. Ethernet switch.

3.2 Front Panel LEDs

LED	Color	Status	Description
PWR1	Green	Green On	DC power 1 activated.
PWR2	Green	Green On	DC power 2 activated.
ETH1	Green/Amber	On	Port link up at 10Mbps /1000Mbps.
	Green	On	Port link up at 100Mbps.
		Blinking	Data transmitted.
ETH2	Green/Amber	On	Port link up at 10Mbps/1000Mbps.
	Green	On	Port link up at 100Mbps.
		Blinking	Data transmitted.
		Blinking	WLAN Data transmitted.
WAN	Green	On	Modem Ready
Fault	Red	On	Fault relay. Power failure or Port down/fail.

Cables

4.1 Ethernet Cables

The IGR-20 WLAN AP has two 10/100/1000 Base-T(X) Ethernet ports. According to the link type, the AP use CAT 3, 4, 5, 5e, 6 UTP cables to connect to any other network device (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

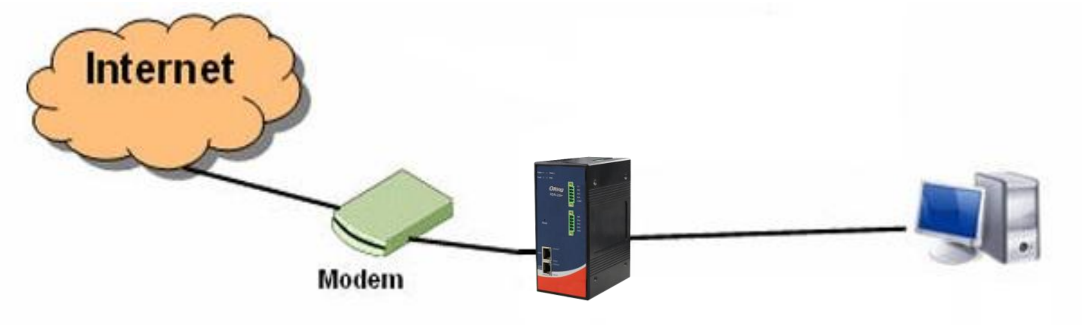
Cable Types and Specifications

Cable	**Type**	**Max. Length**	**Connector**
10Base-T	Cat. 3, 4, 5 100-ohm	UTP 100 m (328 ft)	RJ45
100Base-T(X)	Cat. 5 100-ohm UTP	UTP 100 m (328 ft)	RJ45
1000Base-T(X)	Cat 5e,6	UTP 100 m (328 ft)	RJ45

Management Interface

5.1 First-time Installation

Before installing IGR-20, you need to access router by a computer equipped with an Ethernet card.



Basic connection for IGR-20

Step 1: Select the Power Source

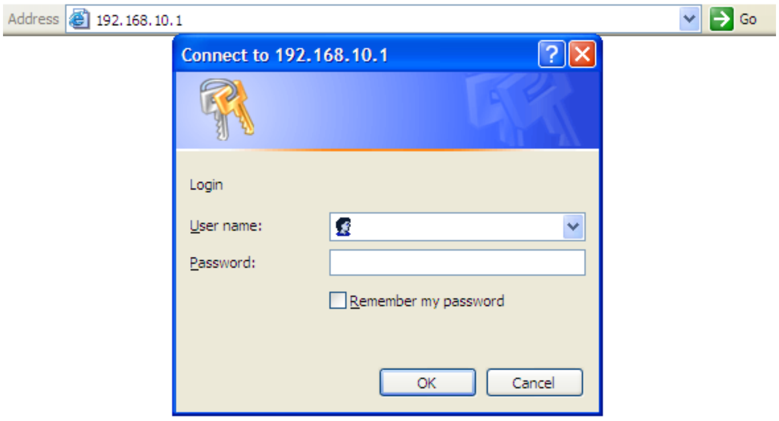
IGR-20 router can be powered by +12~48V DC power input, or by P.O.E. (Power over Ethernet) PSE Ethernet switch.

Step 2: Connect a computer to IGR-20

Use either a straight-through Ethernet cable or cross-over cable to connect to ETH1 of IGR-20 AP router to a computer. If the LED of the LAN port lights up, it indicates the connection is established. After that, the computer will initiate a DHCP request to get an IP address from the router.

Step 3: Use the web-based manager to configure IGR-20

The default gateway IP of IGR-20 router is 192.168.10.1. Start the web browser of your computer and type http://192.168.10.1 in the address box to access the webpage. A login window will popup, and then enter the default login name **admin** and password **admin.**



Address 192.168.10.1

Connect to 192.168.10.1

Login

User name:

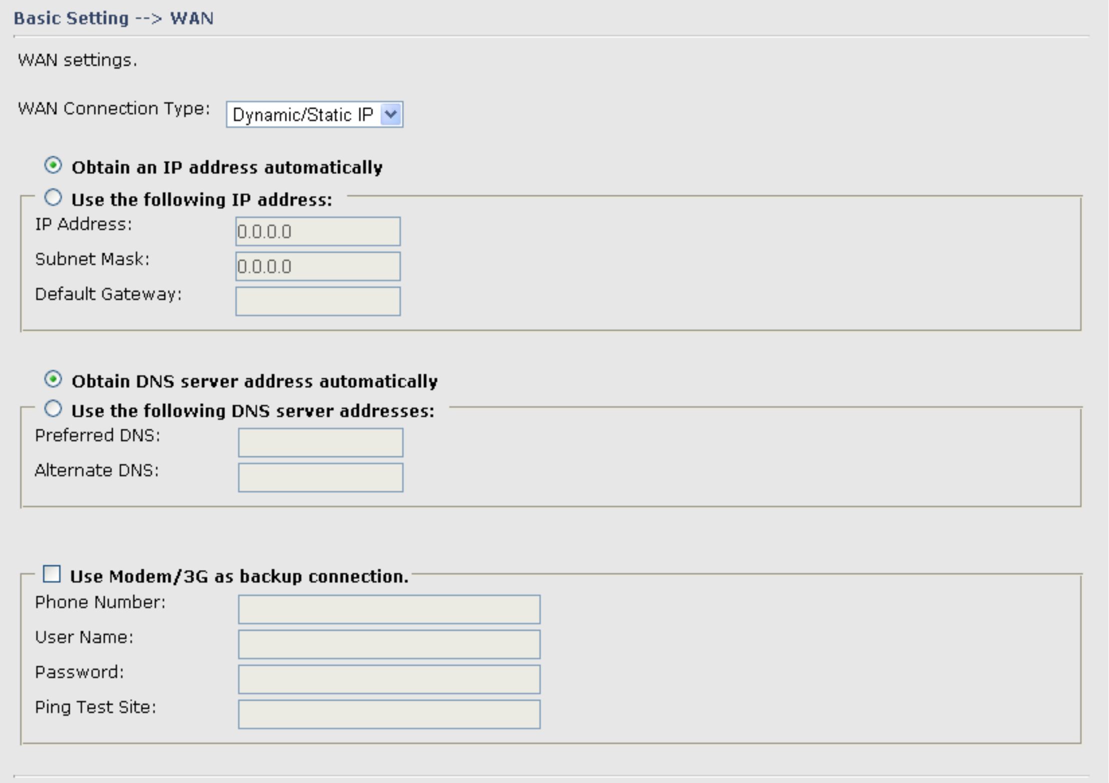
Password:

□ Remember my password

Login screen

Step 4: Select WAN connection type

Click the **Basic Setting** in the top menu to enter the **WAN** configuration page, select the proper connection type according to the information of your ISP. If you use **modem/3G** as WAN connection



Basic Setting --> WAN

WAN settings.

WAN Connection Type: Dynamic/Static IP

● Obtain an IP address automatically

○ Use the following IP address:

IP Address: 0.0.0.0

Subnet Mask: 0.0.0.0

Default Gateway:

● Obtain DNS server address automatically

○ Use the following DNS server addresses:

Preferred DNS:

Alternate DNS:

□ Use Modem/3G as backup connection.

Phone Number:

User Name:

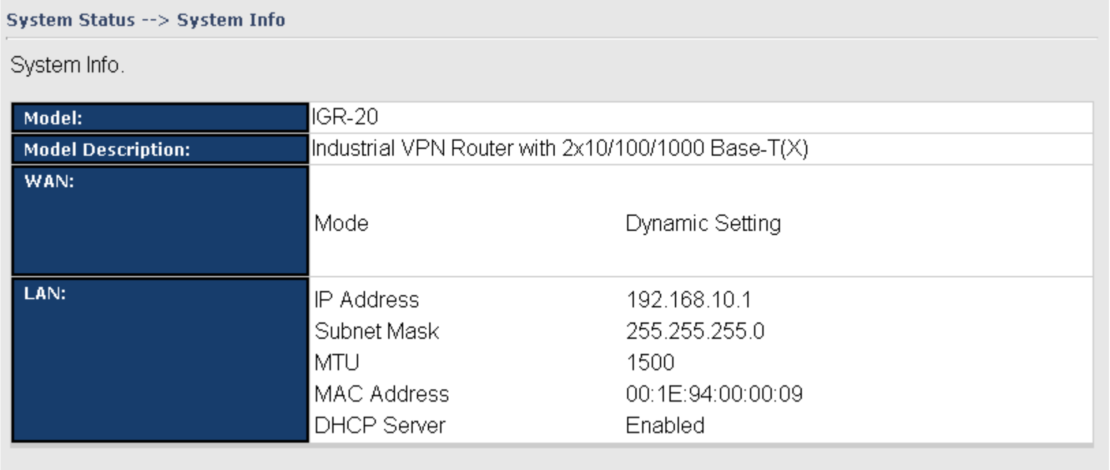
Password:

Ping Test Site:

WAN connection type

Step 6: Review the router settings and check router status

Click the **System Status** in the top of the menu, the system info page will be shown. You can check all the configuration and status of the router.



System Status --> System Info

System Info.

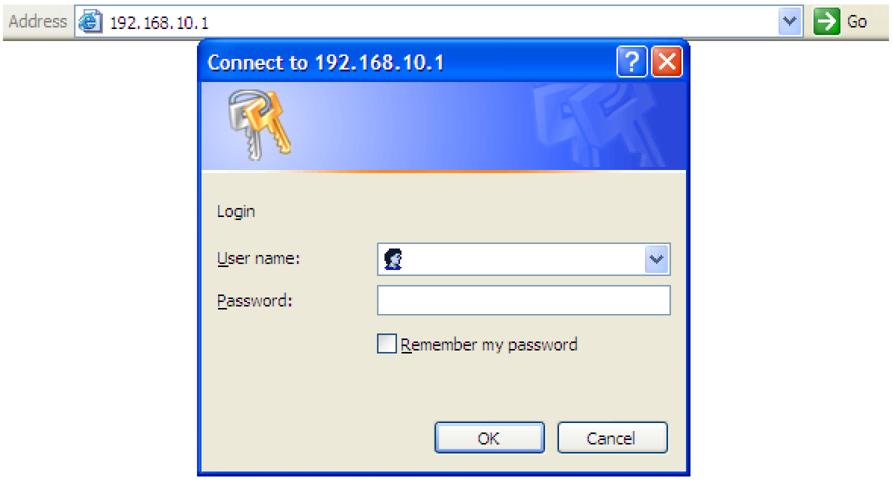
Model:	IGR-20	
Model Description:	Industrial VPN Router with 2x10/100/1000 Base-T(X)	
WAN:	Mode	Dynamic Setting
LAN:	IP Address Subnet Mask MTU MAC Address DHCP Server	192.168.10.1 255.255.255.0 1500 00:1E:94:00:00:09 Enabled

System status Screen

5.2 Configure the Router

In this section, the web management page will be explained in detail.

By default setting, you can type http://192.168.10.1 in the address box of web browser to login the web management interface. A login window will be prompted, enter username **admin** & password **admin** to login.

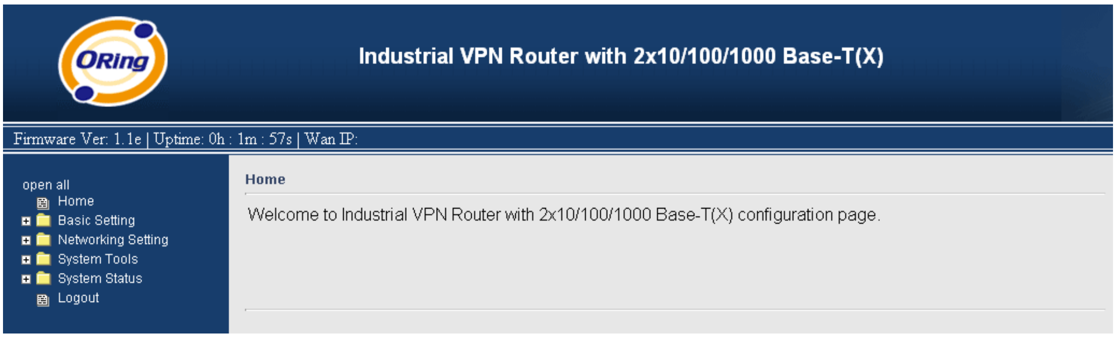


Login screen

For security reasons, we strongly recommend you to change the password. Click on **System Tools > Login Setting** and change the password.

5.3 Main Interface

The **Home** screen will be shown when login successfully.



Industrial VPN Router with 2x10/100/1000 Base-T(X)

Firmware Ver: 1.1e | Uptime: 0h : 1m : 57s | Wan IP:

Home

Welcome to Industrial VPN Router with 2x10/100/1000 Base-T(X) configuration page.

Main Interface

In the page, you can check the Firmware version, the router running time and the WAN IP setting.

The following table describes the labels in this screen.

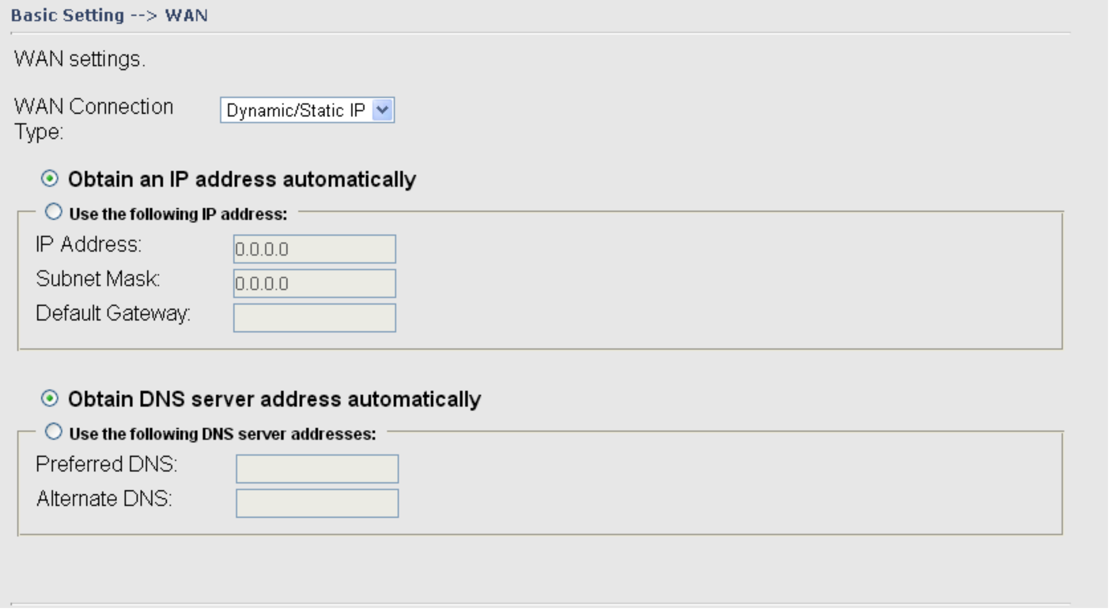
Label	Description
Firmware	Show the current firmware version.
Uptime	Show the elapsed time since the AP router is started.
Wan IP	Show the WAN IP address.

5.3.1 Basic Setting

WAN

The IGR-20 provides 2 types of WAN connection.

1. **WAN Connection Type: Dynamic/Static IP**



Basic Setting --> WAN

WAN settings.

WAN Connection Type: Dynamic/Static IP

● Obtain an IP address automatically

○ Use the following IP address:

IP Address: 0.0.0.0

Subnet Mask: 0.0.0.0

Default Gateway:

● Obtain DNS server address automatically

○ Use the following DNS server addresses:

Preferred DNS:

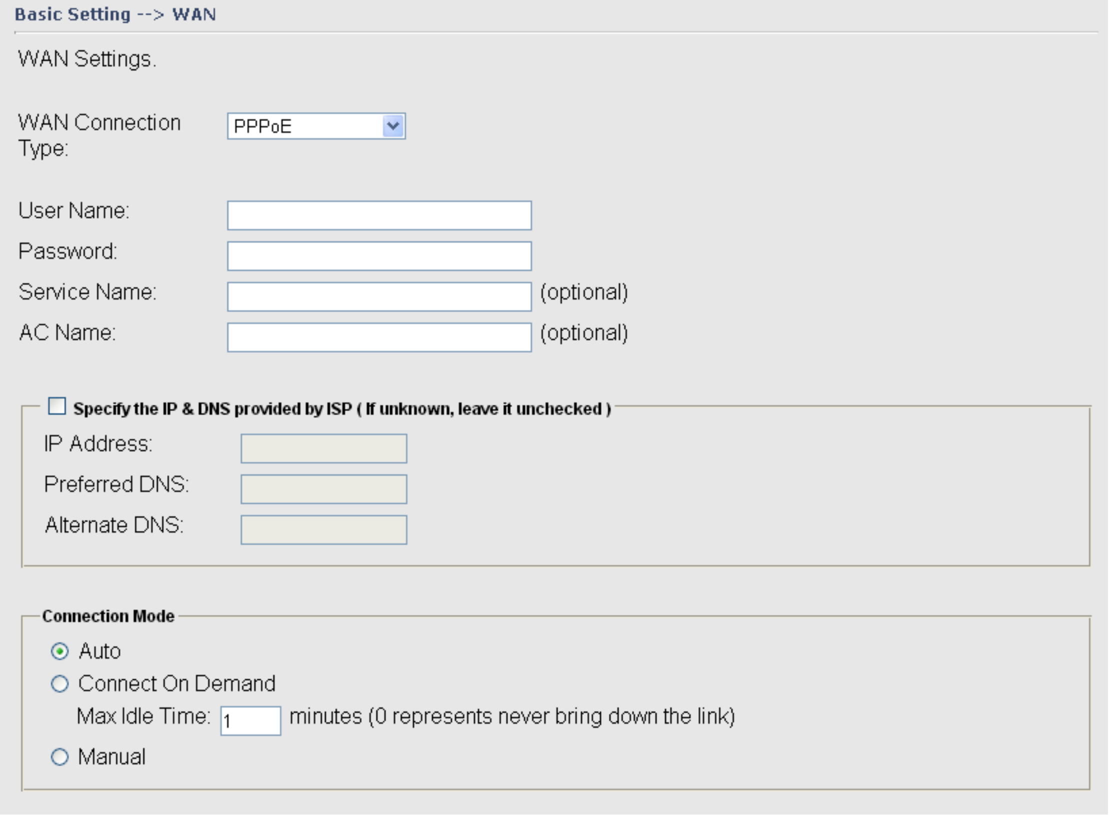
Alternate DNS:

Dynamic/Static IP

The following table describes the labels in this screen.

Label	**Description**
Obtain an IP address automatically	Select this option if you would like to have an IP address assigned automatically from the WAN port by DHCP server in your network.
Use the following IP address	Select this option if you would like to assign an IP address to the WAN port manually. You should set the IP Address, Subnet Mask and Default gateway appropriately so that they comply with IP rules.
Obtain DNS server address automatically	Obtain DNS server from DHCP server. If the above **Obtain an IP address automatically** is selected, this option will be chosen accordingly.
Use the following DNS server addresses	Specify DNS server address manually.

2. WAN Connection Type: PPPoE


Basic Setting --> WAN

WAN Settings.

WAN Connection Type: PPPoE

User Name:

Password:

Service Name: (optional)

AC Name: (optional)

□ Specify the IP & DNS provided by ISP (If unknown, leave it unchecked)

IP Address:

Preferred DNS:

Alternate DNS:

Connection Mode

● Auto

○ Connect On Demand

Max Idle Time: 1 minutes (0 represents never bring down the link)

○ Manual

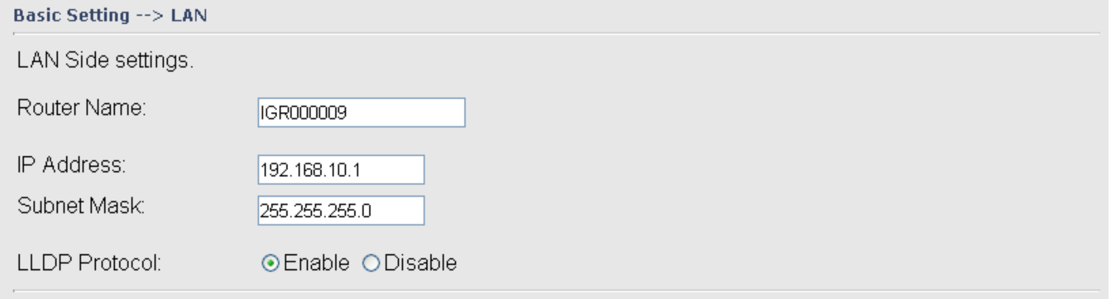
PPPoE Screen.

The following table describes the labels in this screen.

Label	Description
User Name / Password	Enter the username & password provided by your Internet Service Provider (ISP).
Service Name	Enter the service name provided by your ISP.
AC Name	Enter the name of the access concentrator as provided by your ISP.
Specify the IP & DNS provided by ISP	Enter static IP and DNS address which may required by some ISP
Connection Mode	**Auto:** Connect automatically when the router boots up. **Connect on Demand:** Select to disconnect the PPP session if the router has had no traffic for the specified amount of time. Enter the Max Idle Time in minutes. **Manual:** Select this option to use only the Connect/Disconnect buttons to call up or close the connection.

LAN

These are the IP settings of the LAN interface for the IGR-20. The LAN IP address is privately for your internal network and can not be exposed on the Internet.



Basic Setting --> LAN

LAN Side settings.

Router Name: IGR000009

IP Address: 192.168.10.1

Subnet Mask: 255.255.255.0

LLDP Protocol: ● Enable ○ Disable

LAN Screen

The following table describes the labels in this screen.

Label	Description
IP Address	The IP address of the LAN interface, the default IP address is 192.168.10.1
Subnet Mask	The Subnet Mask of the LAN interface, the default Subnet mask is 255.255.255.0

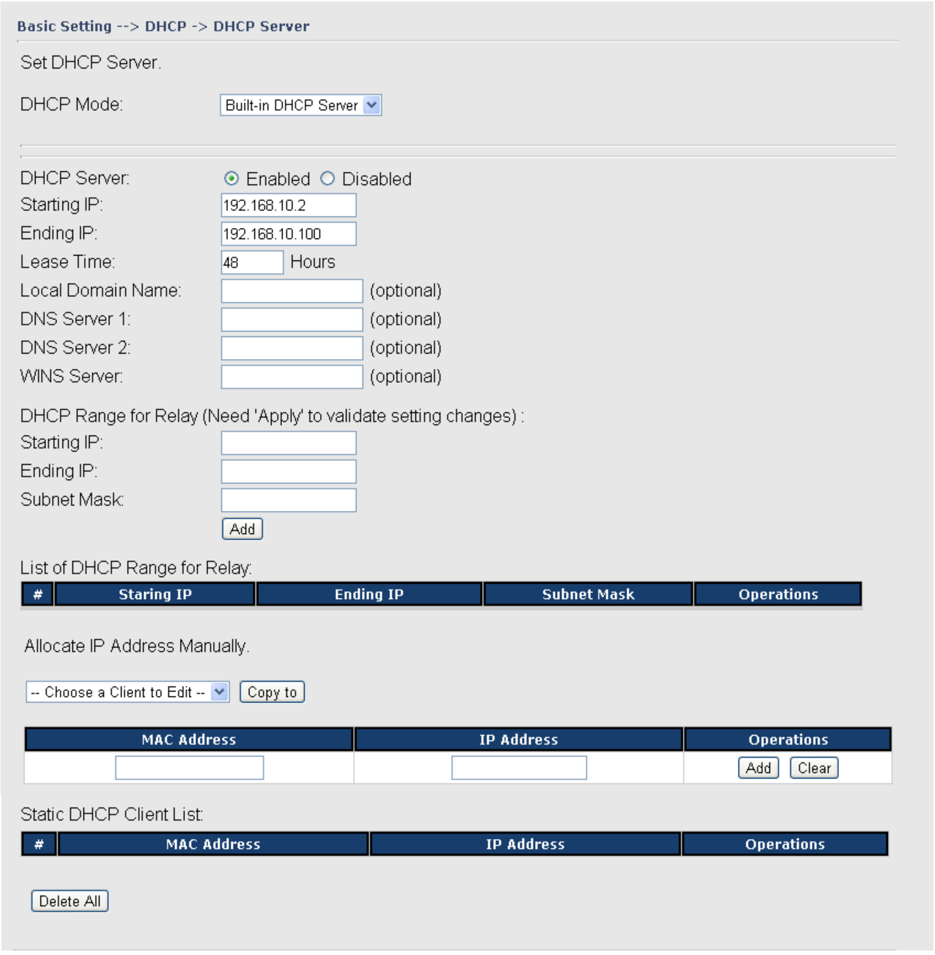
DHCP

DHCP stands for Dynamic Host Control Protocol. The IGR-20 with a built-in DHCP server. The internal DHCP server will assign an IP address to the computers (DHCP client) on the LAN automatically.

Set your computers to be DHCP clients by setting their TCP/IP settings to Obtain an IP Address Automatically. The DHCP server will allocate an unused IP address from the IP address pool to the requesting computer automatically.

The IP Allocation provides one-to-one mapping of MAC address to IP address. When a computer with the MAC address requesting an IP from the IGR-20 , it will be assigned with the IP address according to the mapping. You can choose one from the client lists and add it to the mapping relationship.

1. DHCP Sever



Basic Setting --> DHCP -> DHCP Server

Set DHCP Server.

DHCP Mode: Built-in DHCP Server

DHCP Server: ● Enabled ○ Disabled

Starting IP: 192.168.10.2

Ending IP: 192.168.10.100

Lease Time: 48 Hours

Local Domain Name: (optional)

DNS Server 1: (optional)

DNS Server 2: (optional)

WINS Server: (optional)

DHCP Range for Relay (Need 'Apply' to validate setting changes) :

Starting IP:

Ending IP:

Subnet Mask:

List of DHCP Range for Relay:

#	Staring IP	Ending IP	Subnet Mask	Operations

Allocate IP Address Manually.

MAC Address	IP Address	Operations
		Add Clear

Static DHCP Client List:

#	MAC Address	IP Address	Operations

DHCP Server Screen

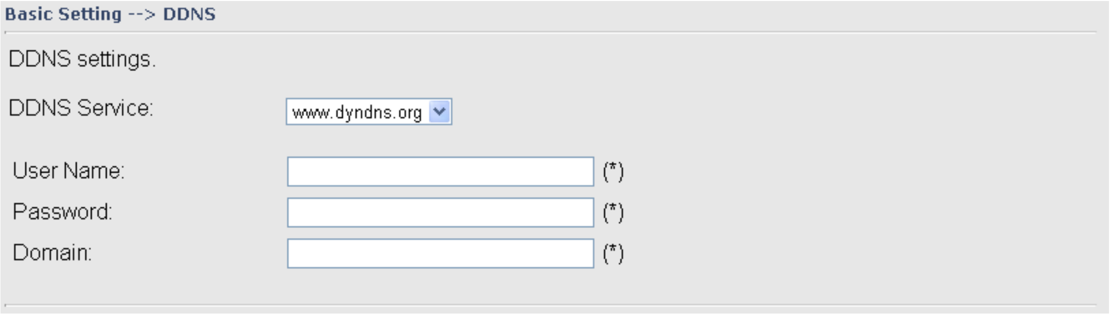
The following table describes the labels in this screen.

Label	Description
DHCP Mode	Select built-in DHCP server or DHCP Forwarder
DHCP Server	Enable or Disable the DHCP Server. The default setting is Enable
Starting IP	The starting IP address of the IP range for the DHCP server
Ending IP	The ending IP address of the IP range for the DHCP server
Lease Time	The period of time for the IP to be leased. Enter the Lease time. The default setting is 48 hours.
Local Domain Name	Enter the local domain name of private network. It is optional.
DNS Server 1&2	Enter the DNS Server. It is optional.
WINS Server	Enter the WINS Server. It is optional.
DHCP Relay start IP	Enter DHCP Relay starting IP
DHCP Relay end IP	Enter DHCP Relay Ending IP
Subnet Mask	Enter DHCP Relay IP Subnet mask

List of DHCP Range for relay	List DHCP Relay IP range
Choose a Client to Edit	The list shows the MAC addresses and IP addresses that are already assigned by IGR-20. Choose one from the list and click **Copy to** button for editing.
MAC Address	The MAC addresses of the computer.
IP Address	The IP address to be related to the MAC address.
Static DHCP Client List	The list shows the MAC address and IP address one-to-one relationship.

DDNS

Dynamic Domain Name System is a method of keeping a domain name linked to a changing IP address.



Basic Setting --> DDNS

DDNS settings.

DDNS Service: www.dyndns.org

User Name: (*)

Password: (*)

Domain: (*)

DDNS Screen

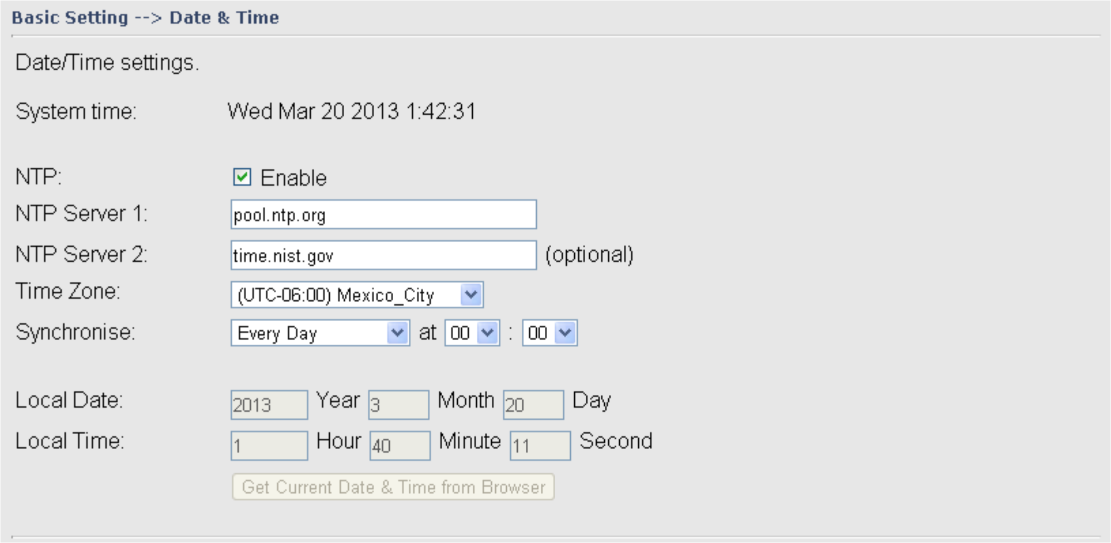
For example, Choose DDNS Service: www.dyndns.org and configure the following instructions:

The following table describes the labels in this screen.

Label	Description
User Name	Enter the user name for your DDNS account.
Password	Enter the password for your DDNS account.
Domain	Enter the domain names provided by your dynamic DNS service provider.

Date&Time

In this page, you can set the date & time of the device. The correct date & time will be helpful for logging of system events. A NTP (Network Time Protocol) client can be used to synchronize date & time with NTP server through internet.



Basic Setting --> Date & Time

Date/Time settings.

System time: Wed Mar 20 2013 1:42:31

NTP: ☑ Enable

NTP Server 1: pool.ntp.org

NTP Server 2: time.nist.gov (optional)

Time Zone: (UTC-06:00) Mexico_City

Synchronise: Every Day at 00 : 00

Local Date: 2013 Year 3 Month 20 Day

Local Time: 1 Hour 40 Minute 11 Second

Date & Time Screen

The following table describes the labels in this screen.

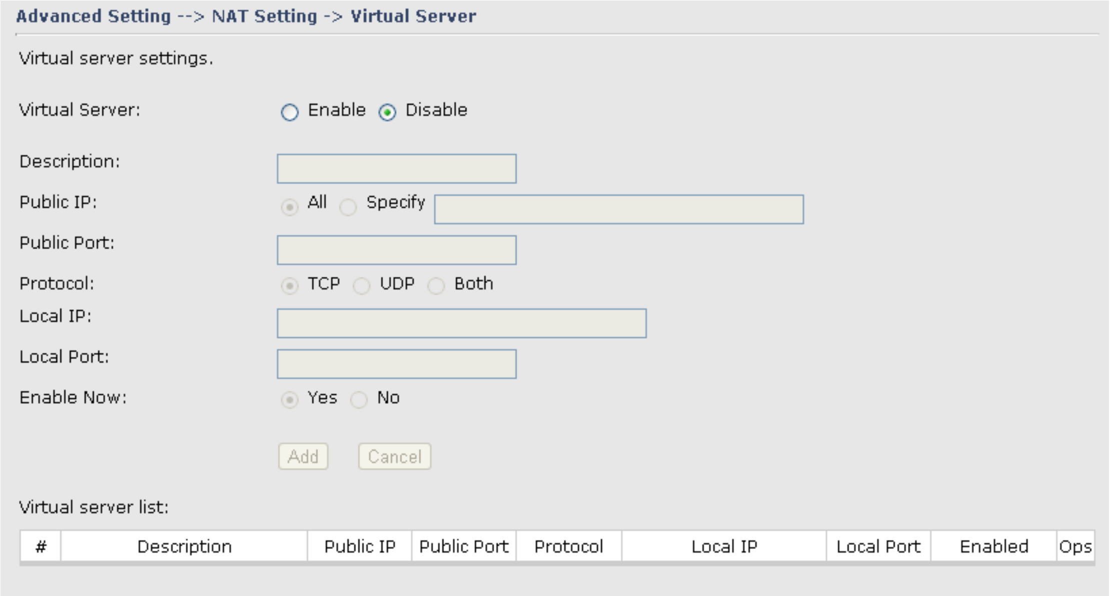
Label	Description
Local Date	Set local date manually.
Local Time	Set local time manually.
Time Zone	Select the time zone manually
Get Current Date & Time from Browser	Click this button; you can set the time from your browser.
NTP	Enable or disable NTP function to synchronize time from the NTP server.
NTP Server 1	The primary NTP Server.
NTP Server 2	The secondary NTP Server.
Synchronize	This is the scheduled time when the NTP synchronization performed.

5.3.2 Networking Setting

NAT Setting

1. Virtual Server

Virtual Server is used for setting up public services on the LAN, such as DNS, FTP and Email. Virtual Server is defined as a Local Port to the LAN servers, and all requests from Internet to this Local port will be redirected to the computer specified by the Local IP. Any PC that was used for a virtual server must have static or reserved IP Address because its IP address may change when requesting IP by DHCP.



Advanced Setting --> NAT Setting -> Virtual Server

Virtual server settings.

Virtual Server: ○ Enable ● Disable

Description:

Public IP: ● All ○ Specify

Public Port:

Protocol: ● TCP ○ UDP ○ Both

Local IP:

Local Port:

Enable Now: ● Yes ○ No

Add Cancel

Virtual server list:

#	Description	Public IP	Public Port	Protocol	Local IP	Local Port	Enabled	Ops

Virtual Server

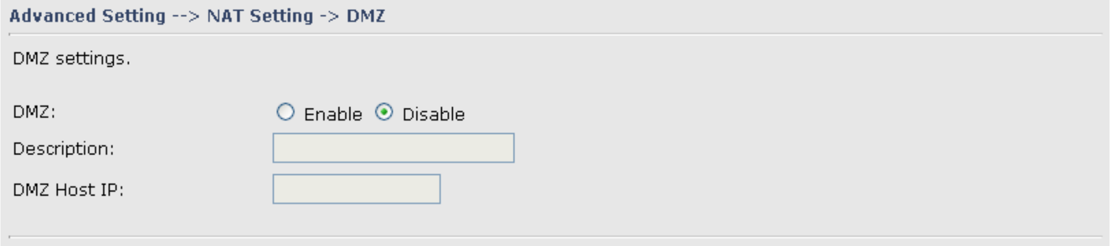
The following table describes the labels in this screen.

Label	Description
Virtual Server	Enable or disable Virtual Server.
Description	Enter the description of the entry. Acceptable characters consist of '**0-9**', '**a-z**', '**A-Z**'. This field accepts null value.
Public IP	Enter the public IP that is allowed to access the virtual service, if not specified, choose All.
Public Port	The port number on the WAN (Wide Area Network) side that will be used to access the virtual service.
Protocol	The protocol used for the virtual service.
Local IP	The IP of the computer that will be providing the virtual service.
Local Port	The port number of the service used by the Private IP computer.
Enable Now	Enable the virtual server entry after adding it.
Virtual server list	Click **Edit** to edit the virtual service entry, **Del** to delete the entry.

2. DMZ

It allows a computer to be exposed to the Internet. This feature is useful for gaming purposes.

Enter the IP address of the internal computer that will be the DMZ host. Adding a client to the DMZ may expose your local network with variety of security risks, so only use this option carefully.



Advanced Setting --> NAT Setting -> DMZ

DMZ settings.

DMZ: ○ Enable ● Disable

Description:

DMZ Host IP:

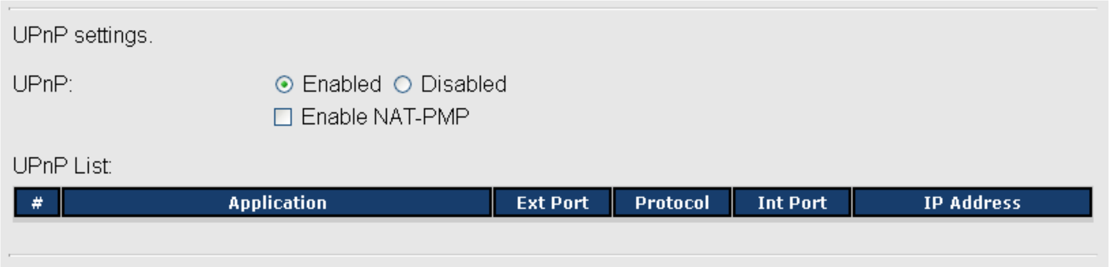
DMZ Screen

The following table describes the labels in this screen.

Label	Description
DMZ	Enable or disable the DMZ.
Description	Description for the DMZ host entry.
DMZ Host IP	Enter the IP address of the computer to be in the DMZ.

3. UPnP

The UPnP (Universal Plug and Play) feature allows the devices, such as Internet computers, to access the local host resources or devices as needed. UPnP devices can be automatically discovered by the UPnP service application on the LAN.



UPnP settings.

UPnP: ● Enabled ○ Disabled

□ Enable NAT-PMP

UPnP List:

#	Application	Ext Port	Protocol	Int Port	IP Address

UPnP Screen

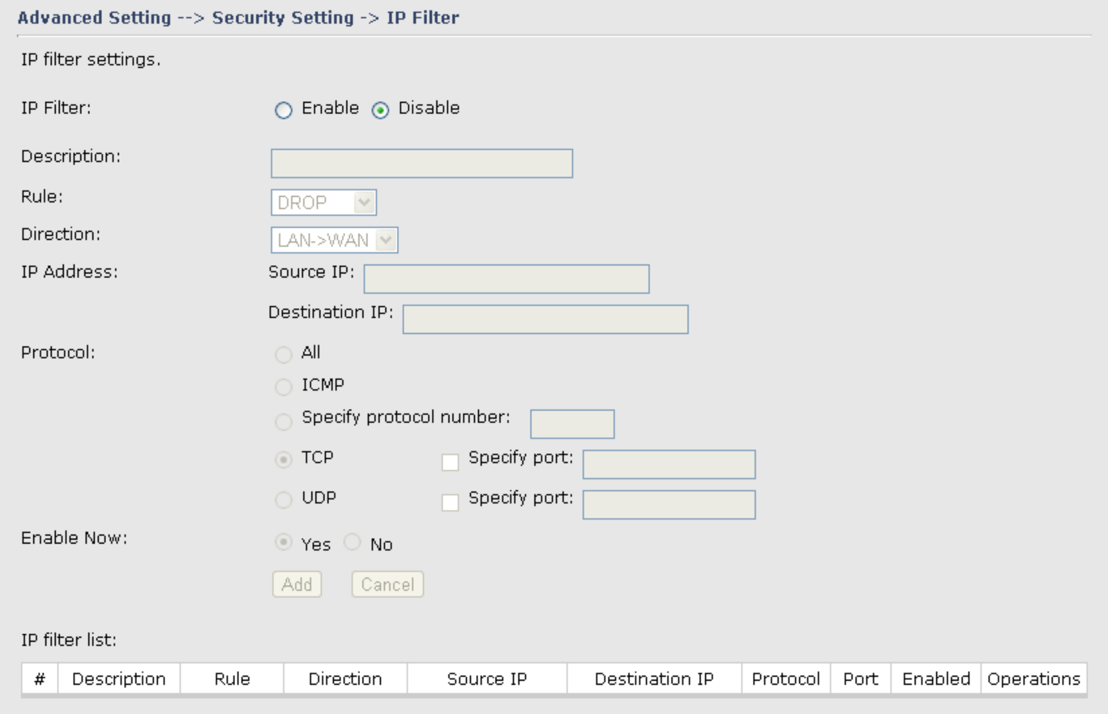
The following table describes the labels in this screen.

Label	Description
UPnP	Enable or disable UPnP.
Enable NAT-PMP	NAT-PMP allows a computer in a private network (behind a NAT router) to automatically configure the router to allow parties outside the private network to contact with each other. NAT-PMP operates with UDP. It essentially automates the process of port forwarding. Check the box to enable NAT-PMP.
UPnP List	This table lists the current auto port forwarding information. **Application:** The application that generates this port forwarding. **Ext Port:** The port opened on WAN side. **Protocol:** The protocol type. **Int Port:** The port redirected to the local computer. **IP Address:** The IP address of local computer to be redirected to. **Status:** This status shows if the entry is valid or not.

Firewall Setting

1. IP Filter

Filters are used to deny or allow LAN computers from accessing the internet. It also allow or deny WAN hosts to access LAN computers.



Advanced Setting --> Security Setting -> IP Filter

IP filter settings.

IP Filter: ○ Enable ● Disable

Description:

Rule: DROP

Direction: LAN->WAN

IP Address: Source IP:

Destination IP:

Protocol:
○ All
○ ICMP
○ Specify protocol number:
● TCP □ Specify port:
○ UDP □ Specify port:

Enable Now: ● Yes ○ No

IP filter list:

#	Description	Rule	Direction	Source IP	Destination IP	Protocol	Port	Enabled	Operations

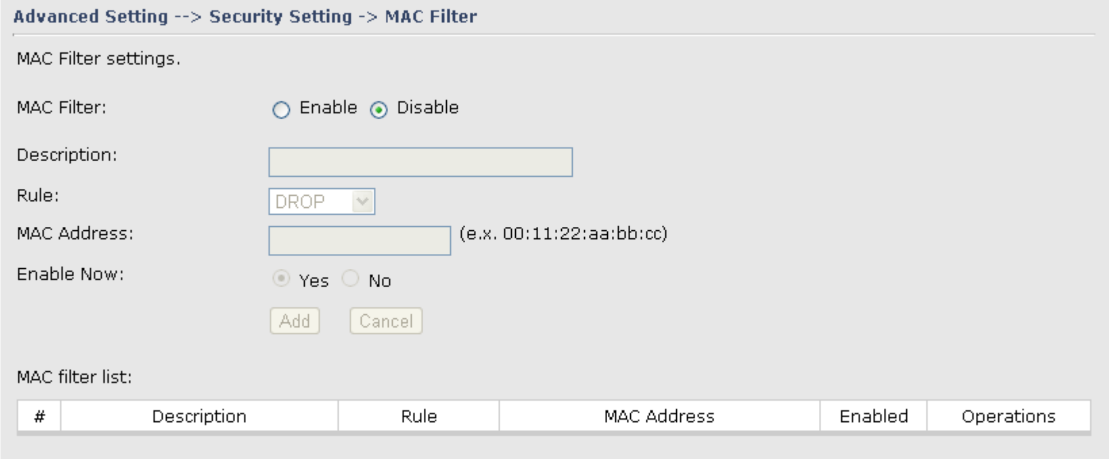
IP Filter Screen

The following table describes the labels in this screen.

Label	Description
IP Filter	Enable or disable the IP Filter.
Description	Enter description for the entry.
Rule	Select **DROP**, **ACCEPT** and **REJECT** rule for the entry.
Direction	Specify the direction of the data flow that is to be filtered.
IP Address	Enter the IP address of the source and destination computer.
Protocol	Choose which protocol to be filtered.
Enable Now	Enable the entry after adding it.
IP filter list	Click **edit** for editing the entry, click **Del** to delete the entry.

2. MAC Filter

Filters are used to deny or allow LAN computers from accessing the internet, according to their MAC address.



Advanced Setting --> Security Setting -> MAC Filter

MAC Filter settings.

MAC Filter: ○ Enable ● Disable

Description:

Rule: DROP

MAC Address: (e.x. 00:11:22:aa:bb:cc)

Enable Now: ● Yes ○ No

MAC filter list:

#	Description	Rule	MAC Address	Enabled	Operations

MAC Filter Screen

The following table describes the labels in this screen.

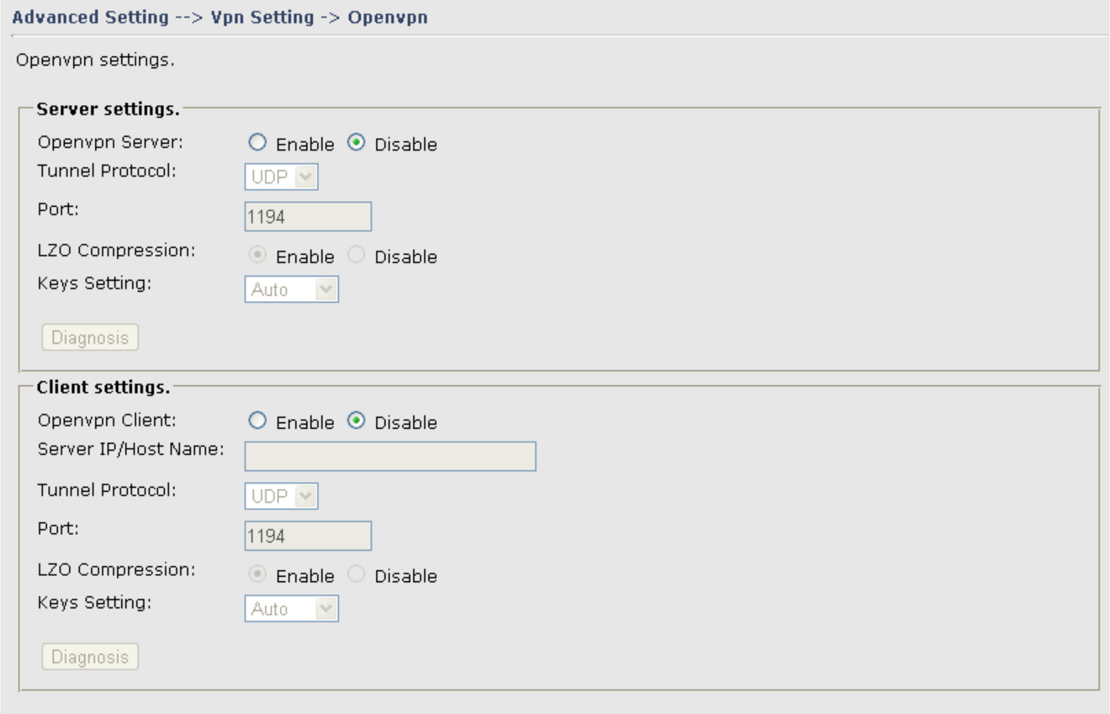
Label	Description
MAC Filter	Enable or disable the MAC Filter.
Description	Enter the description for the entry.
Rule	Select **DROP**, **ACCEPT** and **REJECT** rule for the entry.
MAC Address	Enter the MAC address to be filtered.
Enable Now	Enable the entry after adding it.
IP filter list	Click **Edit** for editing the entry, click **Del** to delete the entry.

VPN Setting

VPN Setting is settings that are used to create virtual private tunnels to remote VPN gateways. The tunnel technology supports data confidentiality, data origin, authentication and data integrity of network information by utilizing encapsulation protocols, encryption algorithms, and hashing algorithms.

1. Open VPN

Open VPN is a full-functioned SSL VPN solution which can accommodates a wide range of configurations including remote access, site-to-site VPNs, WiFi security, and enterprise-scale remote access solutions with load balancing, failover, and fine-grained access-controls.



Advanced Setting --> Vpn Setting -> Openvpn

Openvpn settings.

Server settings.

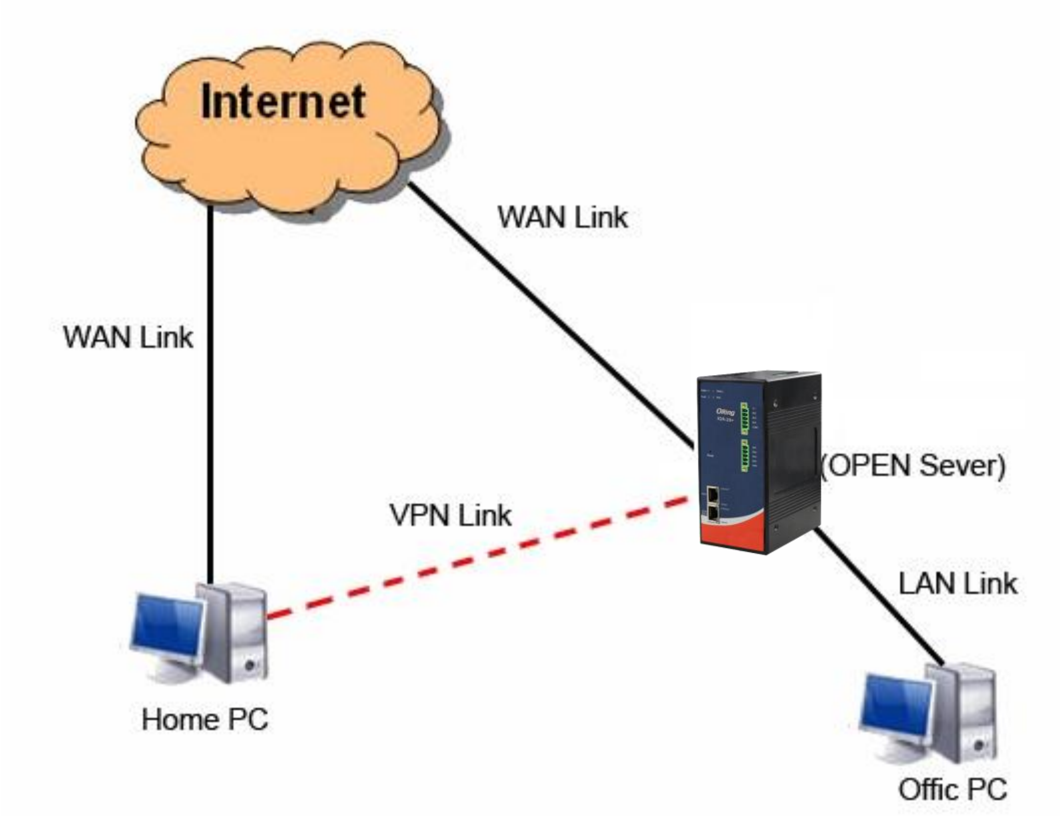
Openvpn Server: ○ Enable ● Disable
Tunnel Protocol: UDP
Port: 1194
LZO Compression: ● Enable ○ Disable
Keys Setting: Auto

Client settings.

Openvpn Client: ○ Enable ● Disable
Server IP/Host Name:
Tunnel Protocol: UDP
Port: 1194
LZO Compression: ● Enable ○ Disable
Keys Setting: Auto

Open VPN Screen

The following topology shows the common use of VPN connection from WAN side.



1: Open VPN Server

Connection to Open VPN Server

Before connecting to the Openvpn server of IGR-20 , please install openvpn client software for your windows PC. It can be download from http://openvpn.net/download.html#stablel. The current version of Openvpn used in IGR-20 is version 2.0.9. The corresponding software for client should be installed.

The following table describes the labels in this screen.

Label	Description
Open VPN Server	Enable or disable the function of Open VPN Server.
Tunnel Protocol	Select UDP or TCP protocol.
Port	Input the number about the port, and the default is 1194.
LZO Compression	Enable or disable the function of LZO Compression.
Keys Setting	Select Auto to use the preset certificates, select Manual to paste your certificates. Please install openvpn client software to generate your certificates and paste them here. For more information, please visit openvpn website.

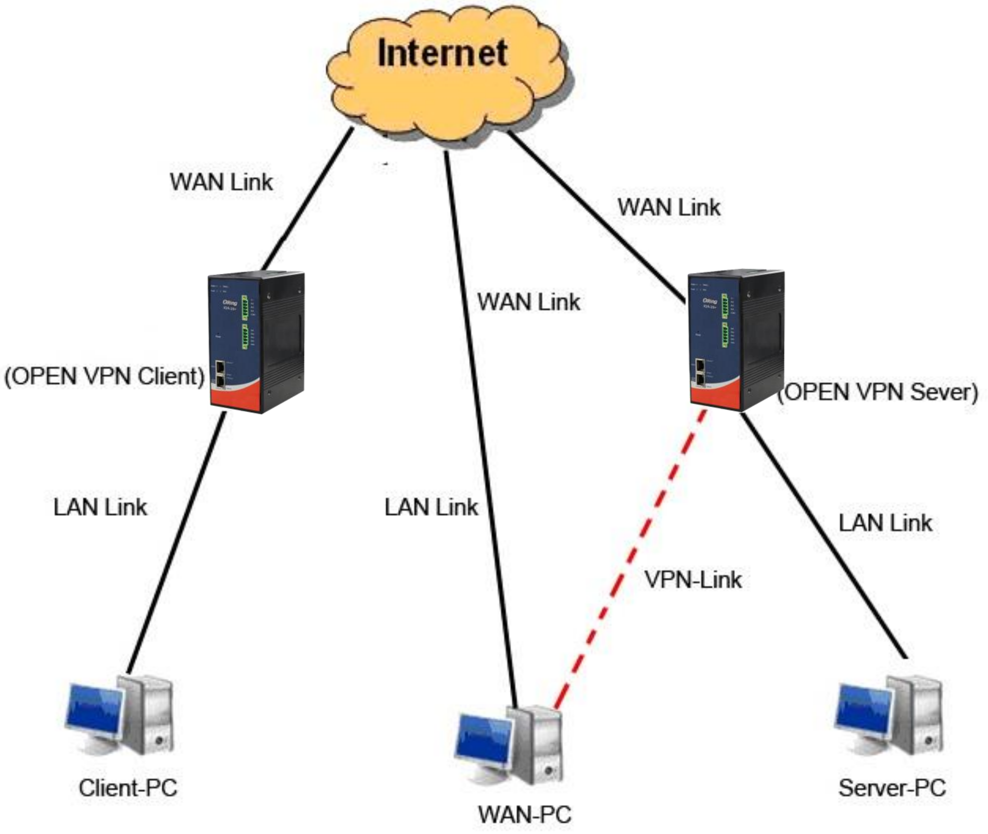
2: Open VPN Client

Two routers are needed for creating site-to-site VPN connection using this mode.

The following table describes the labels in this screen.

Label	Description
Open VPN Client	Enable or disable the function of Open VPN Client. You can allow or deny the Open VPN Client with this option.
Server IP	Enter the Open VPN Server IP address.
Tunnel Protocol	Select UDP or TCP protocol.
Port	Enter the port number, default is 1194.
LZO Compression	Enable or disable the LZO Compression.
Keys Setting	Select **Auto** to use the preset certificates, select **Manual** to paste your certificates. Please install software for openvpn client to generate your certificates and paste them here. For more information, please visit openvpn website.

3: Open VPN Server VS Client



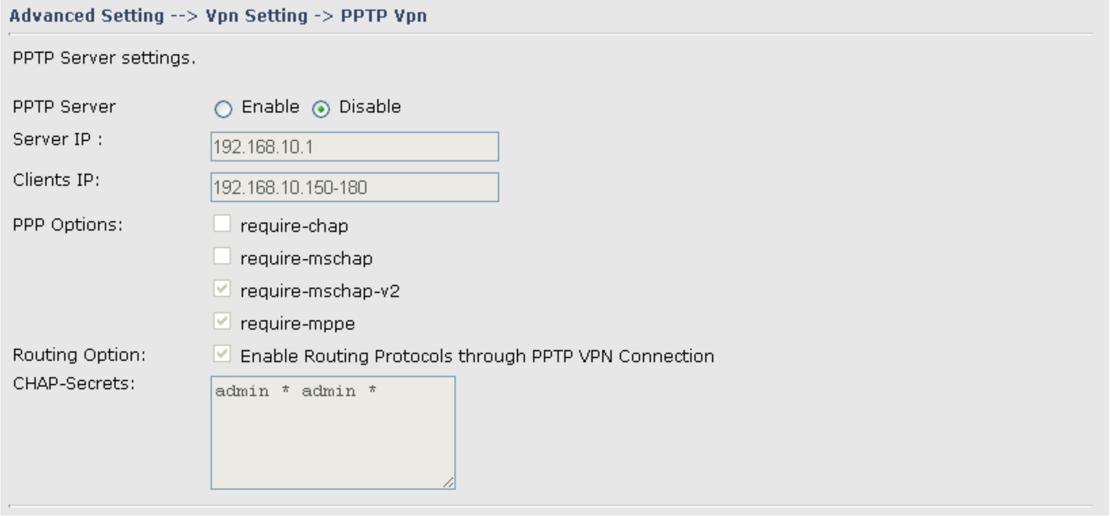
Client-PC and connect to Server-PC,WAN-PC

The chart above displays the connection of Open VPN Server and Client. The Server IP and Client IP address should configure with the same network domain.

2. PPTP VPN

The PPTP (Point to Point Tunneling Protocol) VPN feature allows PC connected to the router from WAN port, just like connecting in the LAN.

To create a PPTP connection to the router, you should create a PPTP network connection if you are using a window PC. The steps are: **Right click Network > property > create a new connection > connect to my work space (VPN) > use VPN to internet > enter the user name and password** which are set in the page.



Advanced Setting --> Vpn Setting -> PPTP Vpn

PPTP Server settings.

PPTP Server ○ Enable ● Disable

Server IP : 192.168.10.1

Clients IP: 192.168.10.150-180

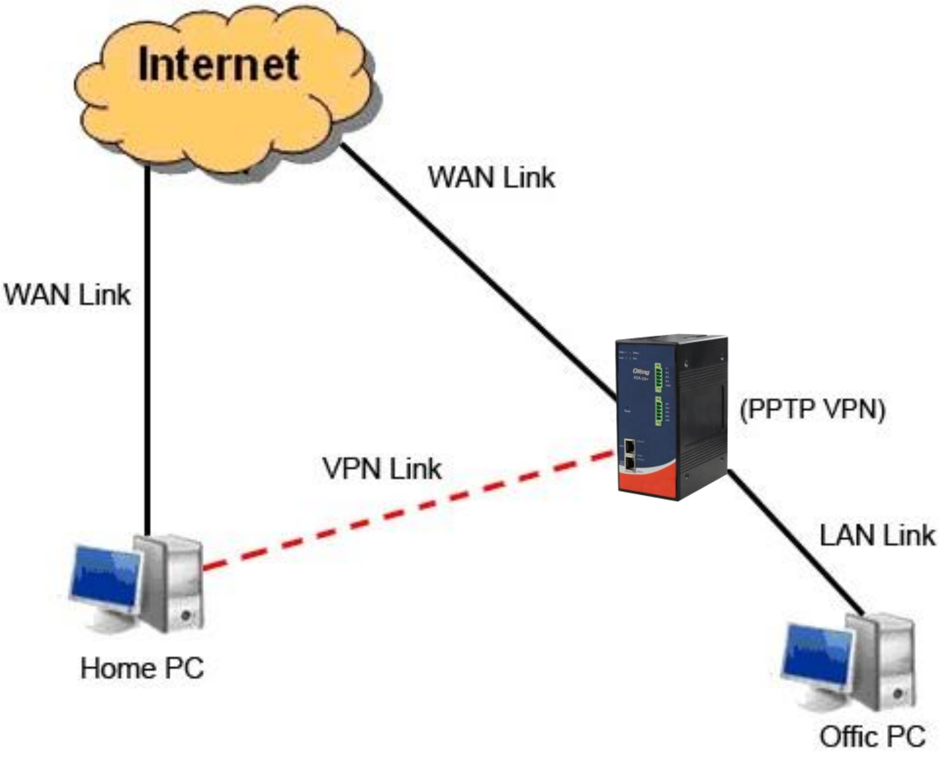
PPP Options:
□ require-chap
□ require-mschap
☑ require-mschap-v2
☑ require-mppe

Routing Option: ☑ Enable Routing Protocols through PPTP VPN Connection

CHAP-Secrets: admin * admin *

PPTP VPN Screen

The following topology shows the common use of PPTP connection from the internet.



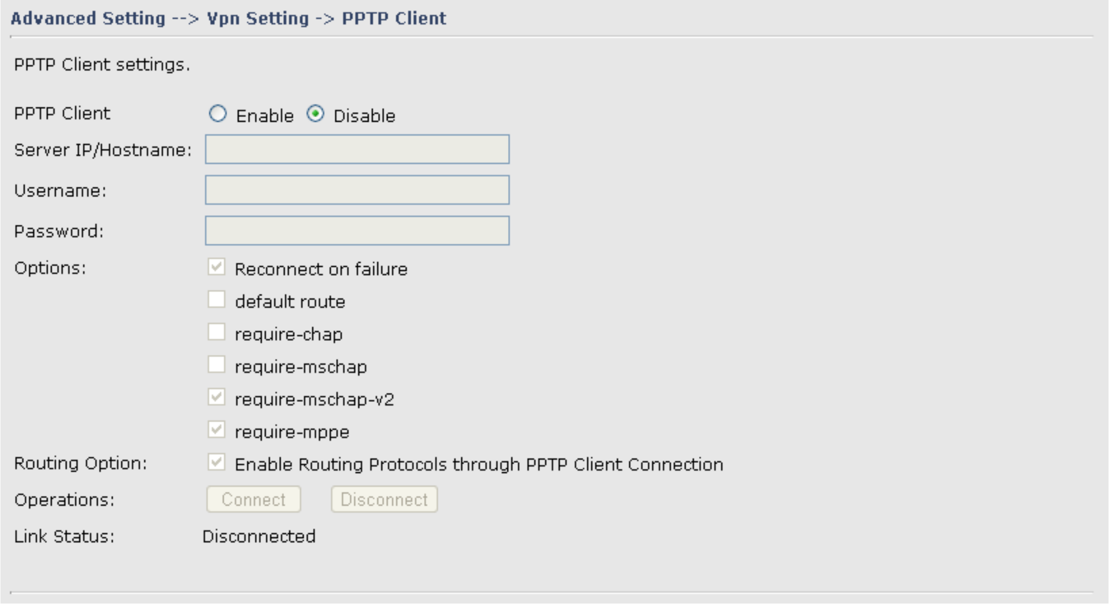
Connection to PPTP VPN Server

The following table describes the labels in this screen.

Label	Description
PPTP Server	Enable or disable PPTP VPN Server.
Server IP	Enter the server side IP address, default is the LAN port IP.
Client IP	Enter the IP address range, format is as **192.168.10.xx-xx**, connected client will be assigned the IP address.
CHAP-Secrets	Enter the username and password pairs, format is as **user * pass ***, multiple username password pairs are allowed.

3. PPTP Client

If the router A want to link with the others which is not in the same network with the router A, the function of PPTP client should support in the router page.



Advanced Setting --> Vpn Setting -> PPTP Client

PPTP Client settings.

PPTP Client ○ Enable ● Disable

Server IP/Hostname:

Username:

Password:

Options: ☑ Reconnect on failure

□ default route

□ require-chap

□ require-mschap

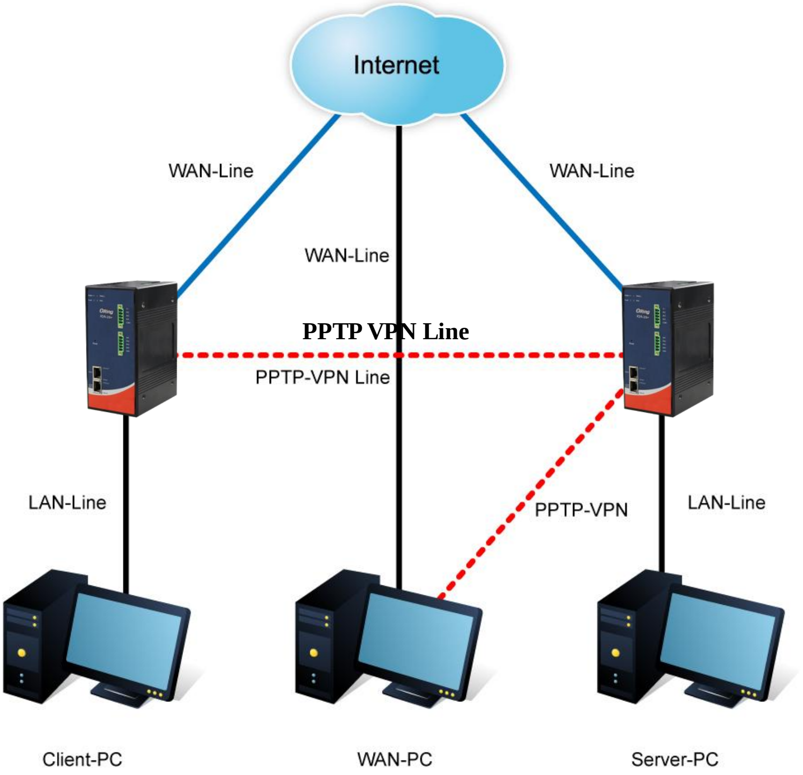
☑ require-mschap-v2

☑ require-mppe

Routing Option: ☑ Enable Routing Protocols through PPTP Client Connection

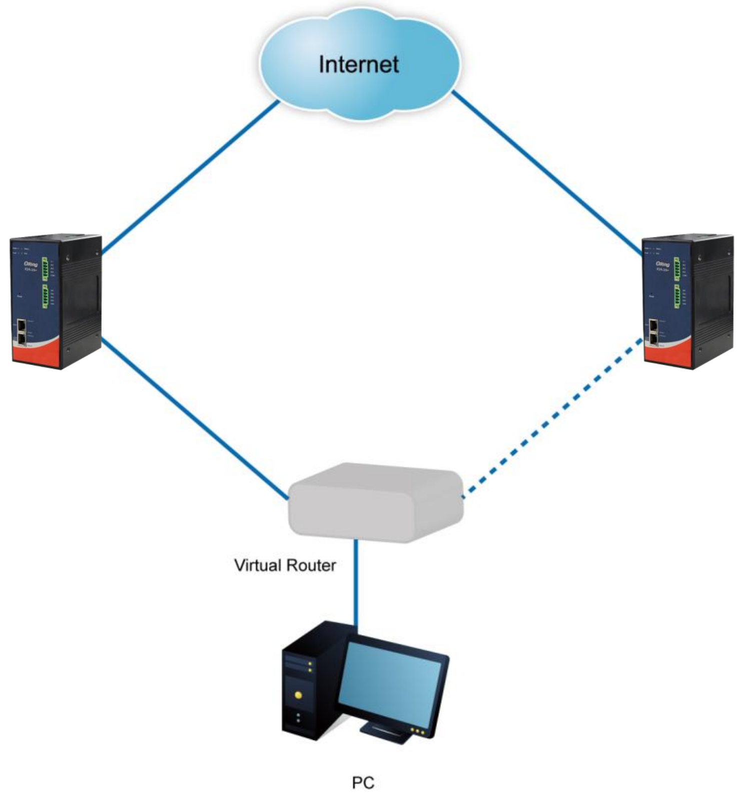
Operations:

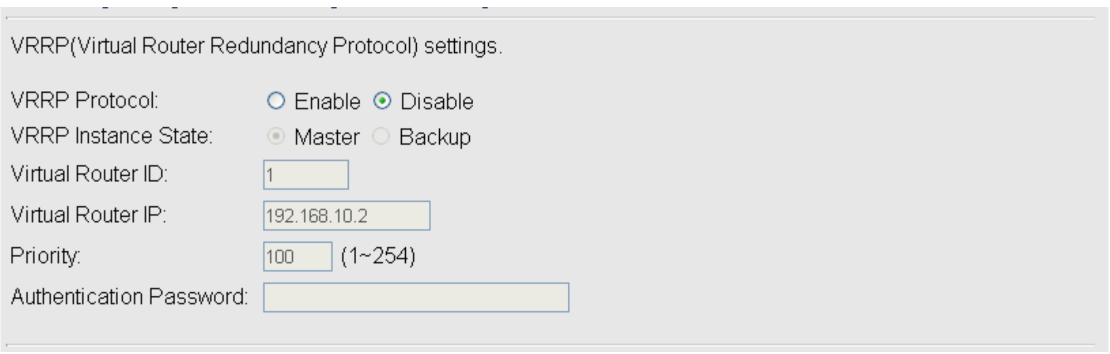
Link Status: Disconnected



Label	Description
PPTP Client	Enable or disable PPTP Client.
Server IP/Hostname	Enter the server IP address or hostname.
Username/Password	Enter the username and password which is signed by PPTP server.
Option	**Reconnect on failure:** Pitch on this option, it will be reconnect when the link is on failure. **Require MPPE:** Choose Enable Require MPPE (Microsoft Point-to-Point Encryption) to encrypt data across Point-to-Point Protocol (PPP) and Virtual Private Network links.
Operations	Click "Connect" to link the server, if or not, you can click ""Disconnect" to break off from the server.
Link Status	Show the status about the link.

VRRP

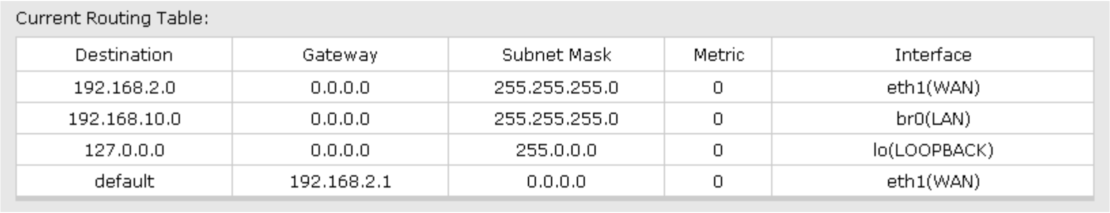



VRRP(Virtual Router Redundancy Protocol) settings.

VRRP Protocol:	○ Enable ● Disable
VRRP Instance State:	● Master ○ Backup
Virtual Router ID:	1
Virtual Router IP:	192.168.10.2
Priority:	100 (1~254)
Authentication Password:	

Routing Protocol (Routing Setting)

This page shows the information of routing table. The initial state of the router connect to the WAN, it will be based on the outside networks to access the routing table automatically. You can refer the shows about the bellow page.


Current Routing Table:

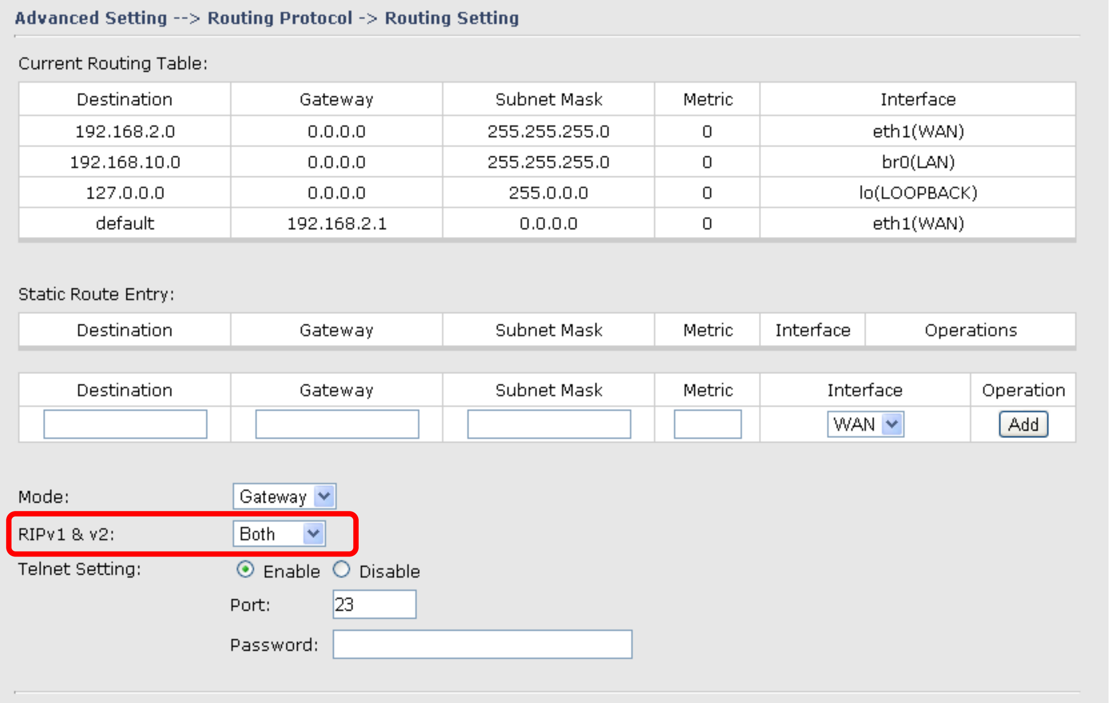
Destination	Gateway	Subnet Mask	Metric	Interface
192.168.2.0	0.0.0.0	255.255.255.0	0	eth1(WAN)
192.168.10.0	0.0.0.0	255.255.255.0	0	br0(LAN)
127.0.0.0	0.0.0.0	255.0.0.0	0	lo(LOOPBACK)
default	192.168.2.1	0.0.0.0	0	eth1(WAN)

The table shows the normal routing table

1. Use Dynamic Routing

Use the dynamic routing, you should not choose "Disable" about the **RIPv1 & v2** in the routers.

Click "Apply", and you can see the more information in the **Current Routing Table**, which shows the network segment of the other router.



Advanced Setting --> Routing Protocol -> Routing Setting

Current Routing Table:

Destination	Gateway	Subnet Mask	Metric	Interface
192.168.2.0	0.0.0.0	255.255.255.0	0	eth1(WAN)
192.168.10.0	0.0.0.0	255.255.255.0	0	br0(LAN)
127.0.0.0	0.0.0.0	255.0.0.0	0	lo(LOOPBACK)
default	192.168.2.1	0.0.0.0	0	eth1(WAN)

Static Route Entry:

Destination	Gateway	Subnet Mask	Metric	Interface	Operations

Destination	Gateway	Subnet Mask	Metric	Interface	Operation
				WAN	Add

Mode: Gateway

RIPv1 & v2: Both

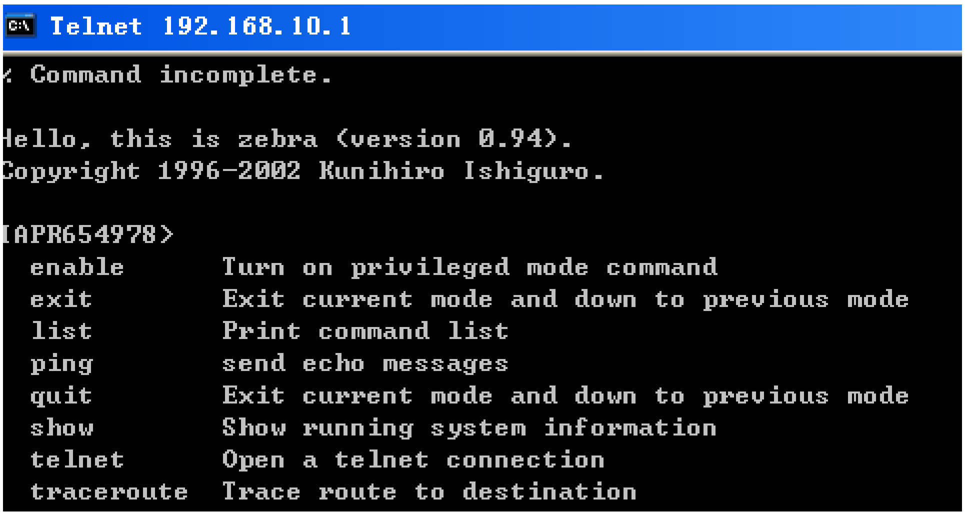
Telnet Setting: ● Enable ○ Disable

Port: 23

Password:

Label	Description
Current Routing Table	Show the current the routing information.
Static Router Entry	Not RIP and enter the right value in the textbox will be showing.
Mode	If you want to the PC in the router can visit the outside network, only choose the **Gateway Mode**; if or not, you choose the **Router Mode.**
RIPv1 &v2	Choose "Disable" in the Static routing.
Telnet Setting	Only use in the Dynamic routing.

Simultaneously, only use the Telnet function in the dynamic routing. You can telnet the LAN IP and there are many orders.



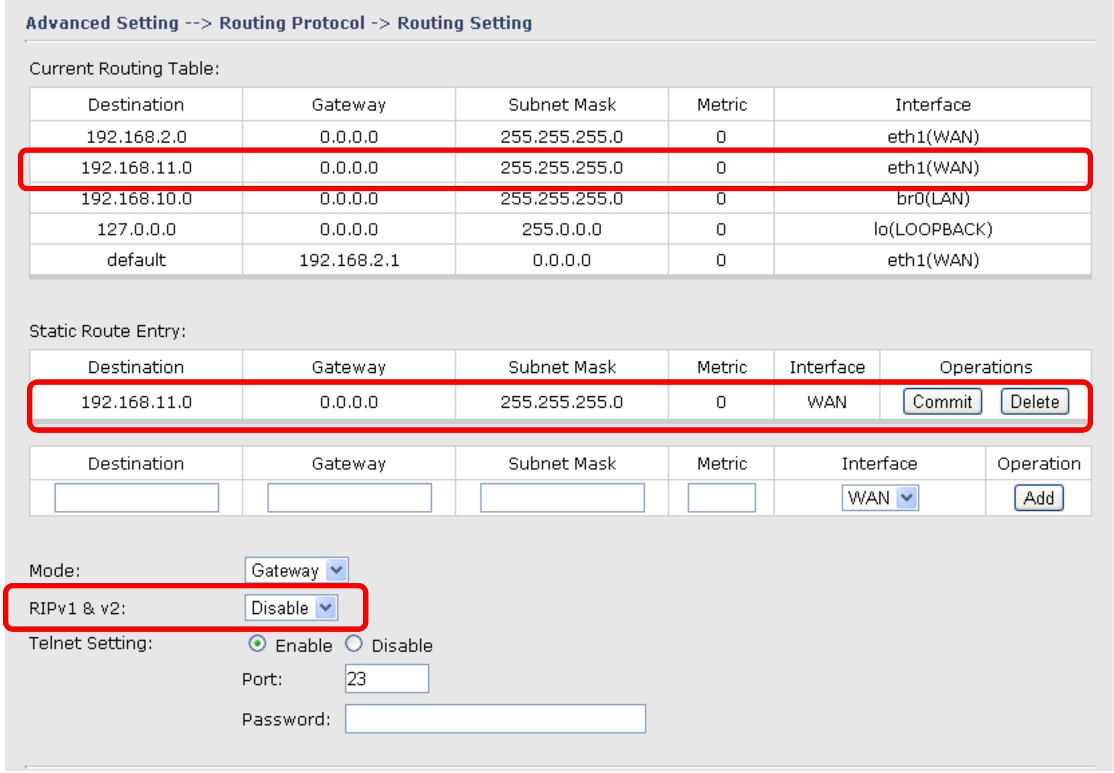
```
Telnet 192.168.10.1
% Command incomplete.

Hello, this is zebra (version 0.94).
Copyright 1996-2002 Kunihiro Ishiguro.

IAPR654978>
  enable       Turn on privileged mode command
  exit         Exit current mode and down to previous mode
  list         Print command list
  ping         send echo messages
  quit         Exit current mode and down to previous mode
  show         Show running system information
  telnet       Open a telnet connection
  traceroute   Trace route to destination
```

2. Use Static Routing

Use the Static routing, you should choose "Disable" about the **RIPv1 & v2** in the routers. Click "Apply", and you can see the more information in the **Current Routing Table** and **Static Route Entry**, which shows the network segment of the other router.



Advanced Setting --> Routing Protocol -> Routing Setting

Current Routing Table:

Destination	Gateway	Subnet Mask	Metric	Interface
192.168.2.0	0.0.0.0	255.255.255.0	0	eth1(WAN)
192.168.11.0	0.0.0.0	255.255.255.0	0	eth1(WAN)
192.168.10.0	0.0.0.0	255.255.255.0	0	br0(LAN)
127.0.0.0	0.0.0.0	255.0.0.0	0	lo(LOOPBACK)
default	192.168.2.1	0.0.0.0	0	eth1(WAN)

Static Route Entry:

Destination	Gateway	Subnet Mask	Metric	Interface	Operations
192.168.11.0	0.0.0.0	255.255.255.0	0	WAN	Commit Delete

Destination	Gateway	Subnet Mask	Metric	Interface	Operation
				WAN	Add

Mode: Gateway

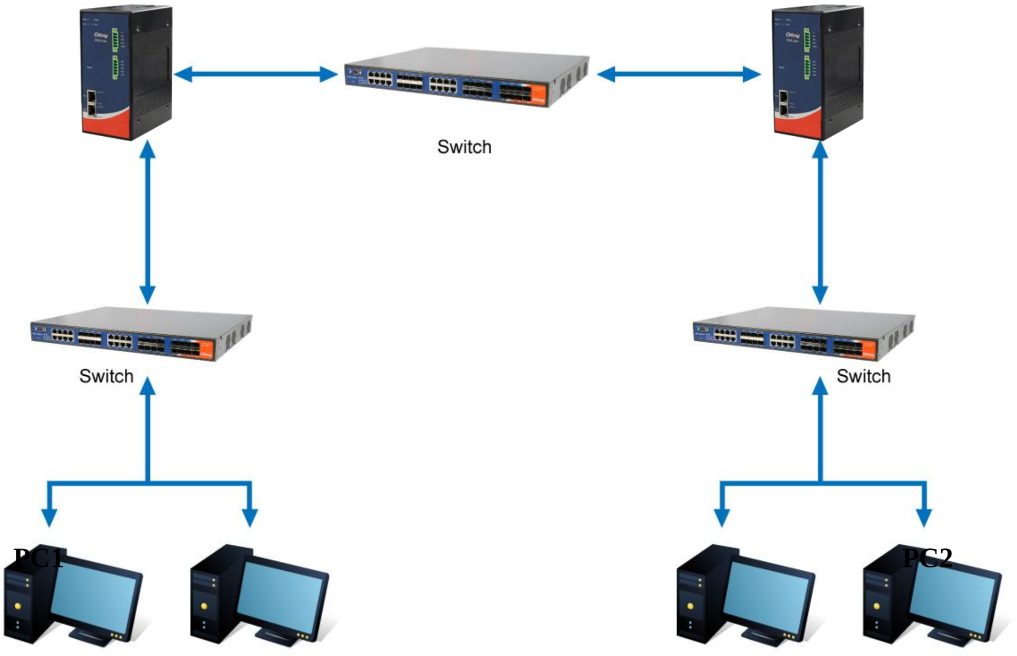
RIPv1 & v2: Disable

Telnet Setting: ● Enable ○ Disable

Port: 23

Password:

Use the dynamic routing; it will have many ways such as RIP, OSPF.BGP. In this router, we use the RIP Protocol to finish the dynamic routing table.



The Routing Topography

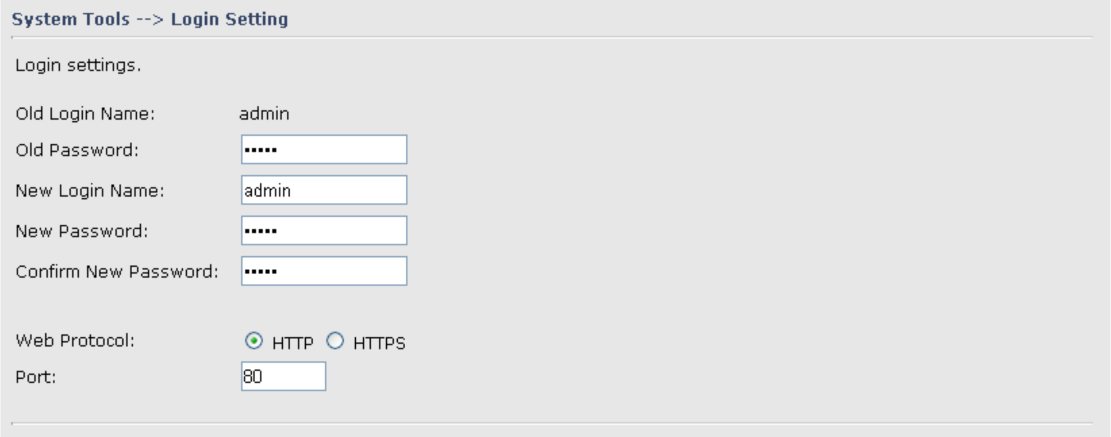
RIP, Routing Information Protocol, is a dynamic routing protocol used in local and wide area networks. As such it is classified as an interior gateway protocol (IGP) using the distance-vector routing algorithm.

After all settings, PC1 can visit PC2 which is different network segment of the PC1.

5.3.3 System Tools

Login Setting

At this page, the administrator can change the login name and password. The default name and password is **admin** and **admin**.



System Tools --> Login Setting

Login settings.

Old Login Name:	admin
Old Password:	•••••
New Login Name:	admin
New Password:	•••••
Confirm New Password:	•••••
Web Protocol:	● HTTP ○ HTTPS
Port:	80

Login Setting Screen

The following table describes the labels in this screen.

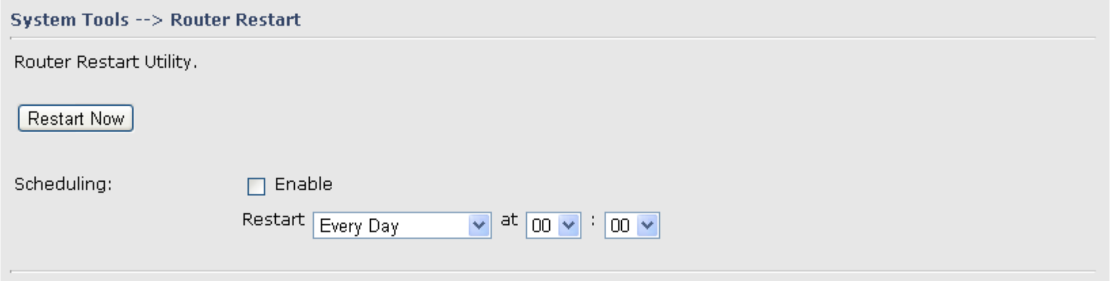
Label	Description
Old Name	This field shows the old login name.
Old Password	Before making a new setting, you should provide the old password for verification. Acceptable characters of this field contains '**0-9**', '**a-z**', '**A-Z**' and must be between 0 to 15 characters in length. An empty password is also acceptable.
New Name	Enter a new login name. Acceptable characters of this field contains '**0-9**', '**a-z**', '**A-Z**' and must be between 1 to 15 characters in length. An empty name is not acceptable.
New Password	Enter a new login password. Acceptable characters of this field contains '**0-9**', '**a-z**', '**A-Z**' and must be between 0 to 15 characters in length.
Confirm New Password	Retype the password to confirm it. Acceptable inputs of this field contains '**0-9**', '**a-z**', '**A-Z**' and must be between 0 to 15 characters in length.
Web Protocol	Choose the web management page protocol. HTTP and HTTPS are both supported.

Port	Choose the web management page port number. For HTTP, default port is 80; For HTTPS, default port is 443.

HTTPS (HTTP over SSL) is a Web protocol which encrypts and decrypts user page requests as well as the pages that are returned by the Web server.

Router Restart

If you want restart the router through the **Warm Reset**, click **Restart Now** to restart the Wireless Router. Also, you can set a **Scheduling** time to make the router restart.



System Tools --> Router Restart

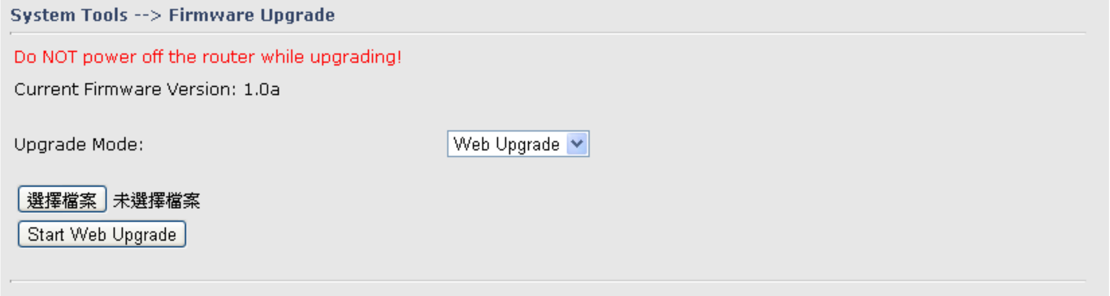
Router Restart Utility.

Scheduling: □ Enable

Restart Every Day at 00 : 00

Router Restart Screen

Firmware Upgrade



System Tools --> Firmware Upgrade

Do NOT power off the router while upgrading!

Current Firmware Version: 1.0a

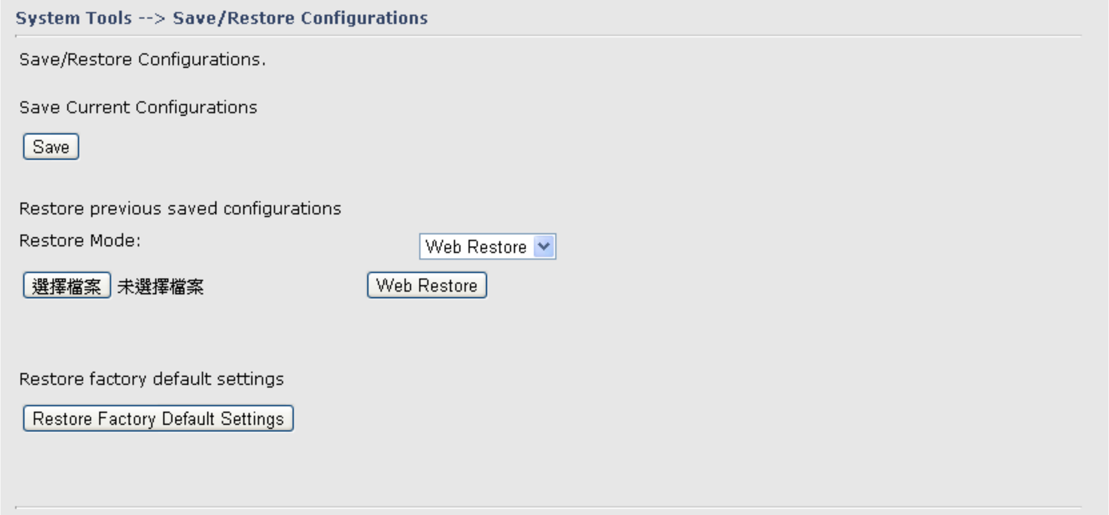
Upgrade Mode: Web Upgrade

Firmware Upgrade Screen

Newer firmware may provide better performance or function extensions. To upgrade the new firmware, you need a firmware file which matches the model of this AP router. It will take several minutes to upload and update the firmware. After the upgrade is done successfully, reboot the router to utilized new firmware.

Important Notice: DO NOT POWER OFF THE ROUTER OR PRESS THE RESET BUTTON WHILE THE FIRMWARE IS BEING UPGRADED.

Save/Restore Configurations



System Tools --> Save/Restore Configurations

Save/Restore Configurations.

Save Current Configurations

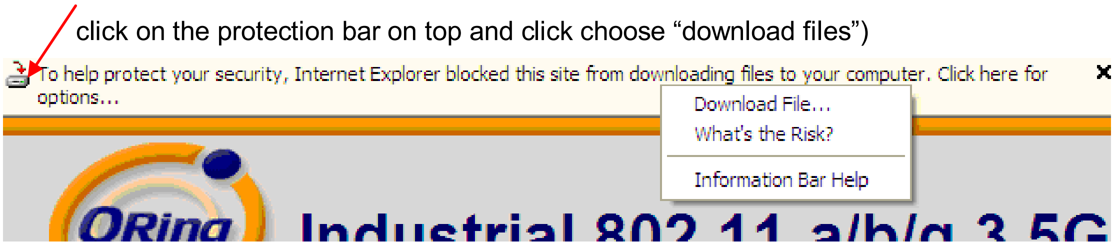
Restore previous saved configurations

Restore Mode: Web Restore

Restore factory default settings

Save/Restore Configurations Screen

Save: The configuration file can be downloaded. (Internet Explorer user will need to click on the protection bar on top and click choose "download files")

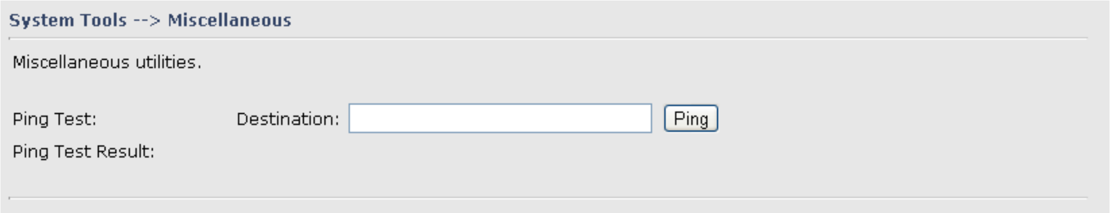


To help protect your security, Internet Explorer blocked this site from downloading files to your computer. Click here for options...

The following table describes the labels in this screen.

Label	Description
Download configuration	The current system settings can be saved as a file into your PC.
Upload configuration	The configuration can be restored to the router. To reload a system settings file, click on **Browse** to browse your local hard drive and locate the system settings file previously saved. Click **Upload** when you have selected the file.
Restore Default Settings	You may also reset the router to the factory settings by clicking on **Restore Default Settings**. The router will reboot to validate the default settings.

Miscellaneous (Ping)


System Tools --> Miscellaneous

Miscellaneous utilities.

Ping Test: Destination:

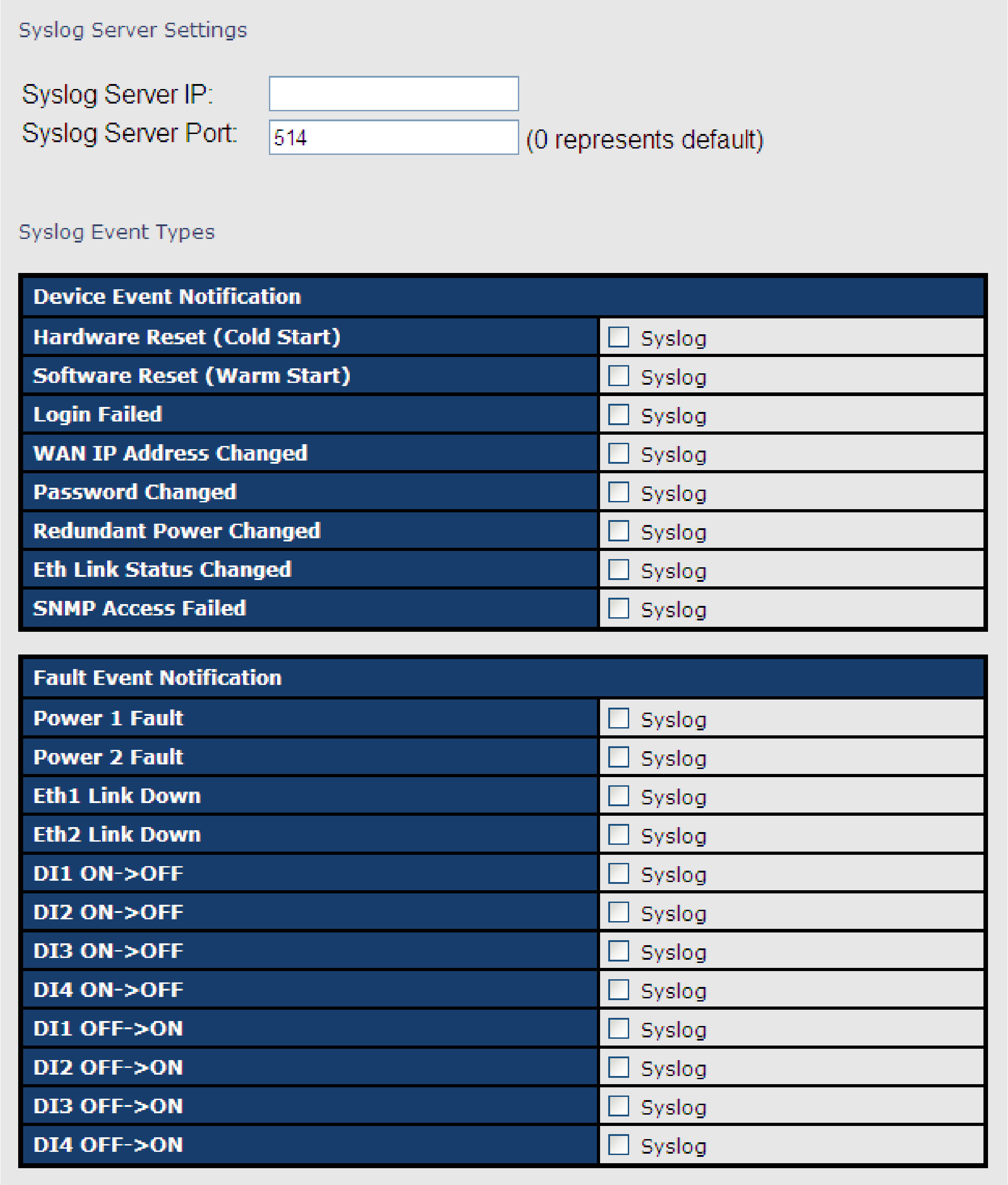
Ping Test Result:

Miscellaneous Screen

The Ping Test is used to send Ping packets to test if a computer whether it is on the Internet or test if the WAN connection is OK. Enter a domain or IP in the destination box and click Ping to test.

Even warning setting

1. System Log



Syslog Server Settings

Syslog Server IP:

Syslog Server Port: 514 (0 represents default)

Syslog Event Types

Device Event Notification	
Hardware Reset (Cold Start)	□ Syslog
Software Reset (Warm Start)	□ Syslog
Login Failed	□ Syslog
WAN IP Address Changed	□ Syslog
Password Changed	□ Syslog
Redundant Power Changed	□ Syslog
Eth Link Status Changed	□ Syslog
SNMP Access Failed	□ Syslog

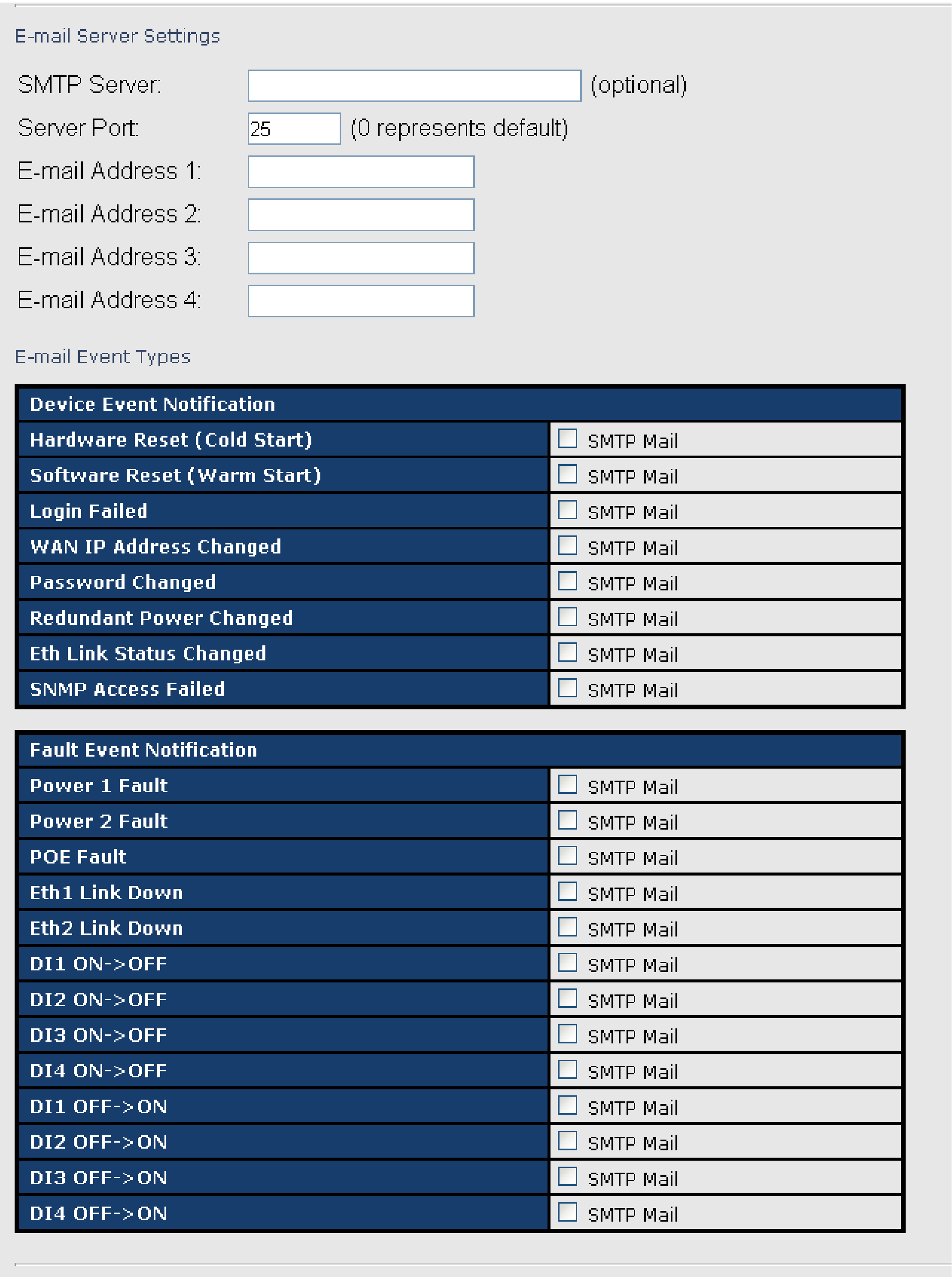
Fault Event Notification	
Power 1 Fault	□ Syslog
Power 2 Fault	□ Syslog
Eth1 Link Down	□ Syslog
Eth2 Link Down	□ Syslog
DI1 ON->OFF	□ Syslog
DI2 ON->OFF	□ Syslog
DI3 ON->OFF	□ Syslog
DI4 ON->OFF	□ Syslog
DI1 OFF->ON	□ Syslog
DI2 OFF->ON	□ Syslog
DI3 OFF->ON	□ Syslog
DI4 OFF->ON	□ Syslog

System Log setting interface

The following table describes the labels in this screen.

Label	Description
Syslog Server IP	Not only the syslog keeps the logs locally, it can also log to remote server. Specify the IP of remote server. Leave it blank to disable logging remotely.
Syslog Server Port	Specify the port of remote logging. Default port is 514.

2. E-Mail



E-mail Server Settings

SMTP Server:	(optional)
Server Port:	25 (0 represents default)
E-mail Address 1:	
E-mail Address 2:	
E-mail Address 3:	
E-mail Address 4:	

E-mail Event Types

Device Event Notification	
Hardware Reset (Cold Start)	□ SMTP Mail
Software Reset (Warm Start)	□ SMTP Mail
Login Failed	□ SMTP Mail
WAN IP Address Changed	□ SMTP Mail
Password Changed	□ SMTP Mail
Redundant Power Changed	□ SMTP Mail
Eth Link Status Changed	□ SMTP Mail
SNMP Access Failed	□ SMTP Mail

Fault Event Notification	
Power 1 Fault	□ SMTP Mail
Power 2 Fault	□ SMTP Mail
POE Fault	□ SMTP Mail
Eth1 Link Down	□ SMTP Mail
Eth2 Link Down	□ SMTP Mail
DI1 ON->OFF	□ SMTP Mail
DI2 ON->OFF	□ SMTP Mail
DI3 ON->OFF	□ SMTP Mail
DI4 ON->OFF	□ SMTP Mail
DI1 OFF->ON	□ SMTP Mail
DI2 OFF->ON	□ SMTP Mail
DI3 OFF->ON	□ SMTP Mail
DI4 OFF->ON	□ SMTP Mail

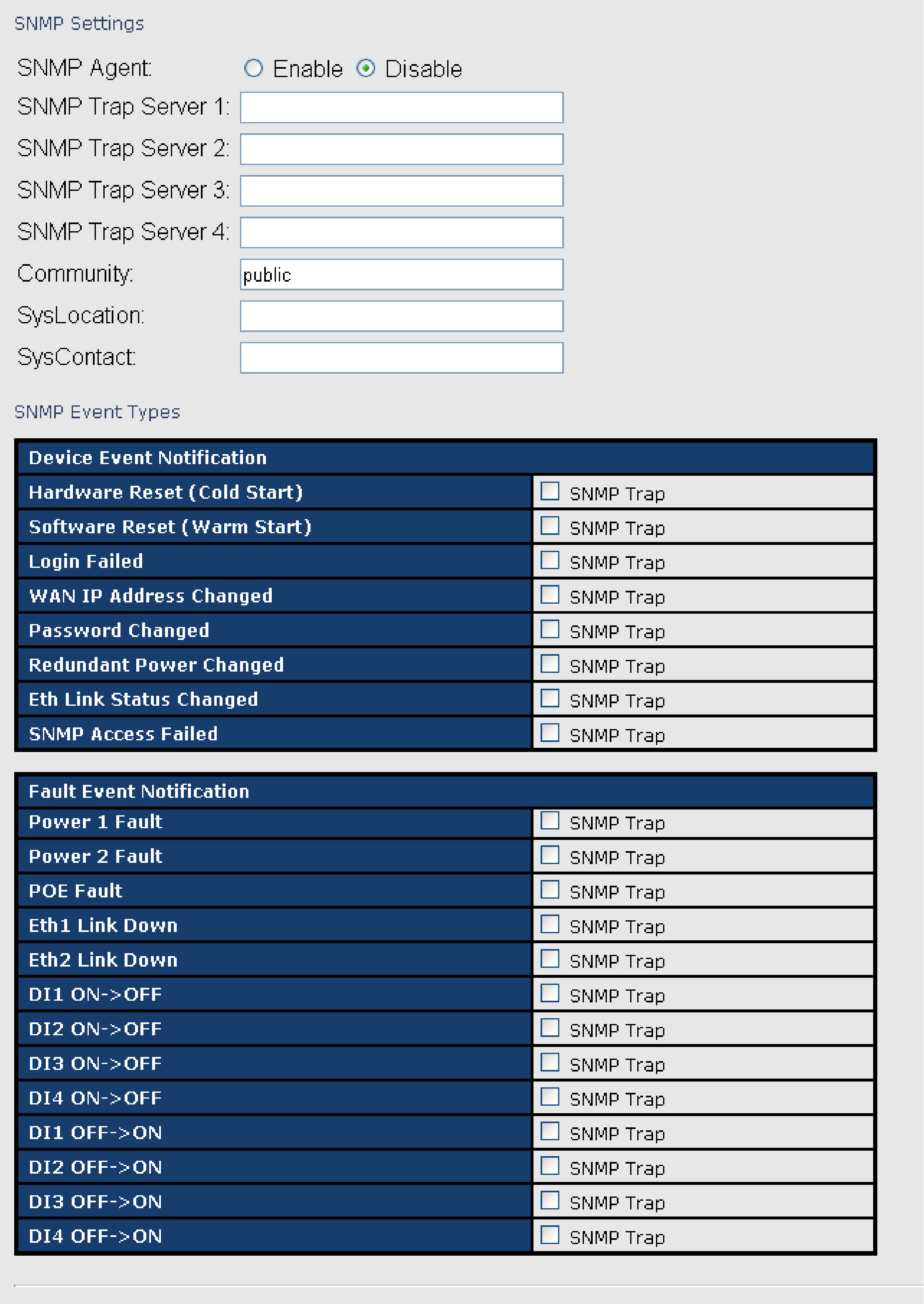
E-Mail setting interface

The following table describes the labels in this screen.

Label	Description
SMTP Server	Simple Message Transfer Protocol, enter the backup host to use if primary host is unavailable while sending mail by SMTP server.

Server Port	Specify the port where MTA can be contacted via SMTP server.
E-mail Address 1-4	Inputs specify the destination mail address.

3.SNMP



SNMP Settings

SNMP Agent: ○ Enable ● Disable

SNMP Trap Server 1:

SNMP Trap Server 2:

SNMP Trap Server 3:

SNMP Trap Server 4:

Community: public

SysLocation:

SysContact:

SNMP Event Types

Device Event Notification	
Hardware Reset (Cold Start)	□ SNMP Trap
Software Reset (Warm Start)	□ SNMP Trap
Login Failed	□ SNMP Trap
WAN IP Address Changed	□ SNMP Trap
Password Changed	□ SNMP Trap
Redundant Power Changed	□ SNMP Trap
Eth Link Status Changed	□ SNMP Trap
SNMP Access Failed	□ SNMP Trap

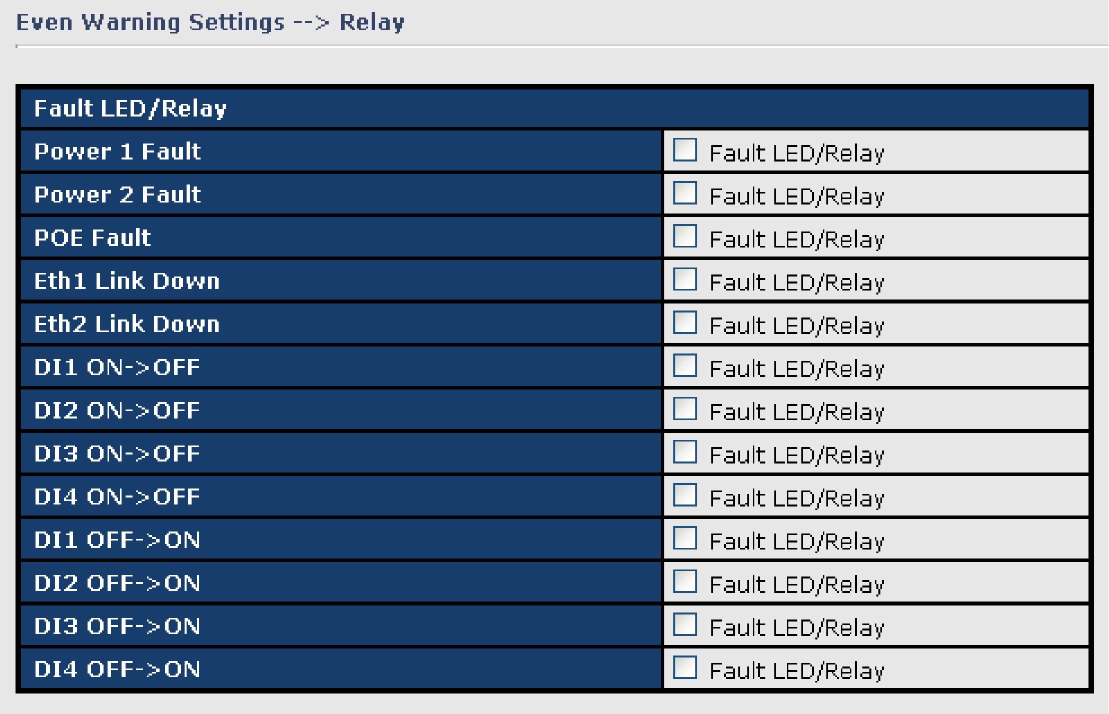
Fault Event Notification	
Power 1 Fault	□ SNMP Trap
Power 2 Fault	□ SNMP Trap
POE Fault	□ SNMP Trap
Eth1 Link Down	□ SNMP Trap
Eth2 Link Down	□ SNMP Trap
DI1 ON->OFF	□ SNMP Trap
DI2 ON->OFF	□ SNMP Trap
DI3 ON->OFF	□ SNMP Trap
DI4 ON->OFF	□ SNMP Trap
DI1 OFF->ON	□ SNMP Trap
DI2 OFF->ON	□ SNMP Trap
DI3 OFF->ON	□ SNMP Trap
DI4 OFF->ON	□ SNMP Trap

SNMP setting interface

The following table describes the labels in this screen.

Label	Description
SNMP Agent	SNMP (Simple Network Management Protocol) Agent is a service program that runs on the access point. The agent provides management information to the NMS by keeping track of various operational aspects of the AP system. Turn on to open this service and off to shutdown it.
SNMP Trap Server 1-4	Specify the IP of trap server, which is the address to which it will send traps AP generates.
Community	Community is essentially password to establish trust between managers and agents. Normally "public" is used for read-write community.
SysLocation	Specify sysLocation string.
SysContact	Specify sysContact string.

4.Relay

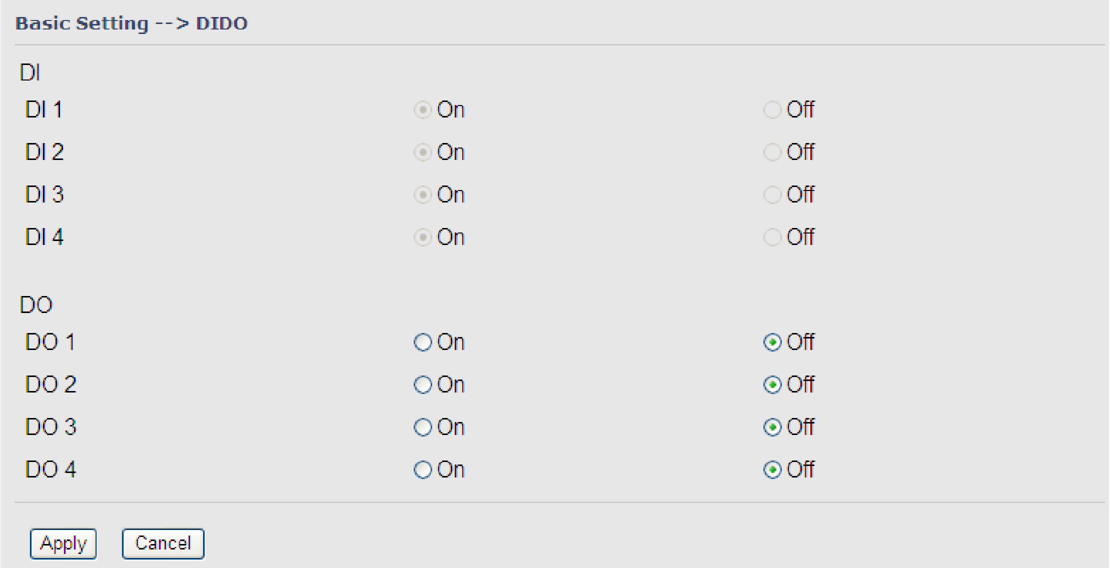


Even Warning Settings --> Relay

Fault LED/Relay	
Power 1 Fault	☐ Fault LED/Relay
Power 2 Fault	☐ Fault LED/Relay
POE Fault	☐ Fault LED/Relay
Eth1 Link Down	☐ Fault LED/Relay
Eth2 Link Down	☐ Fault LED/Relay
DI1 ON->OFF	☐ Fault LED/Relay
DI2 ON->OFF	☐ Fault LED/Relay
DI3 ON->OFF	☐ Fault LED/Relay
DI4 ON->OFF	☐ Fault LED/Relay
DI1 OFF->ON	☐ Fault LED/Relay
DI2 OFF->ON	☐ Fault LED/Relay
DI3 OFF->ON	☐ Fault LED/Relay
DI4 OFF->ON	☐ Fault LED/Relay

Relay setting interface

DIDO



Basic Setting --> DIDO

DI

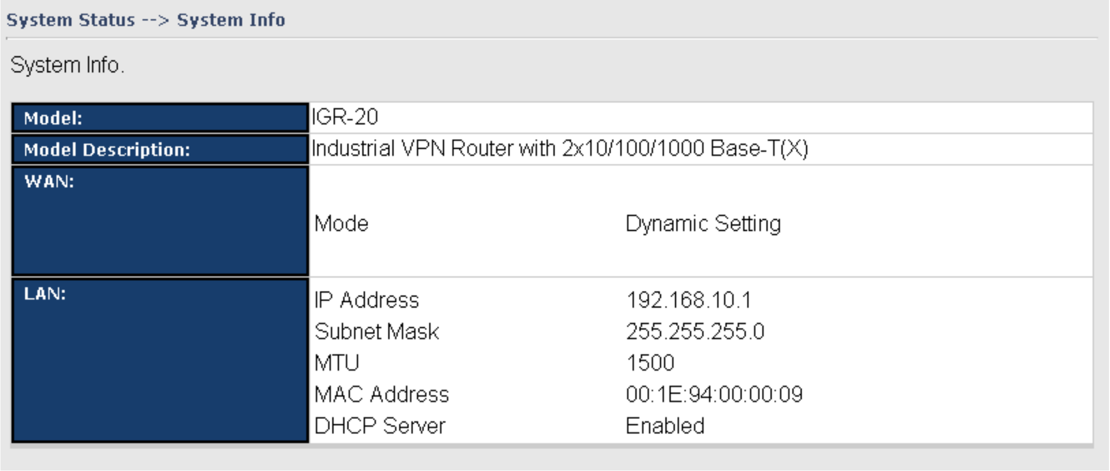
DI 1	● On	○ Off
DI 2	● On	○ Off
DI 3	● On	○ Off
DI 4	● On	○ Off

DO

DO 1	○ On	● Off
DO 2	○ On	● Off
DO 3	○ On	● Off
DO 4	○ On	● Off

5.3.4 System Status

System Info



System Status --> System Info

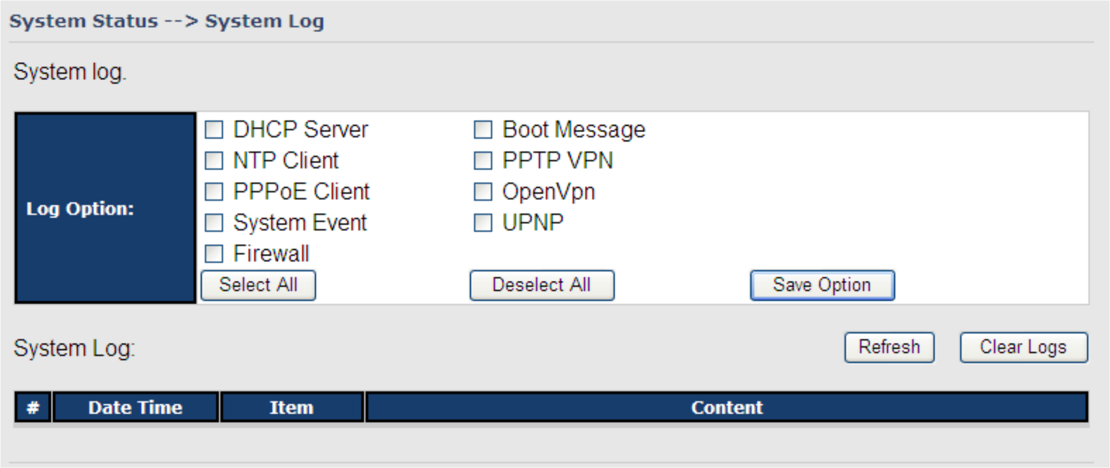
System Info.

Model:	IGR-20
Model Description:	Industrial VPN Router with 2x10/100/1000 Base-T(X)
WAN:	Mode Dynamic Setting
LAN:	IP Address 192.168.10.1 Subnet Mask 255.255.255.0 MTU 1500 MAC Address 00:1E:94:00:00:09 DHCP Server Enabled

System Info Screen

This page displays the details information for the router including model name, model description, firmware version, WAN, LAN settings.

System Log



System Status --> System Log

System log.

Log Option:

- ☐ DHCP Server
- ☐ NTP Client
- ☐ PPPoE Client
- ☐ System Event
- ☐ Firewall
- ☐ Boot Message
- ☐ PPTP VPN
- ☐ OpenVpn
- ☐ UPNP

System Log:

#	Date Time	Item	Content

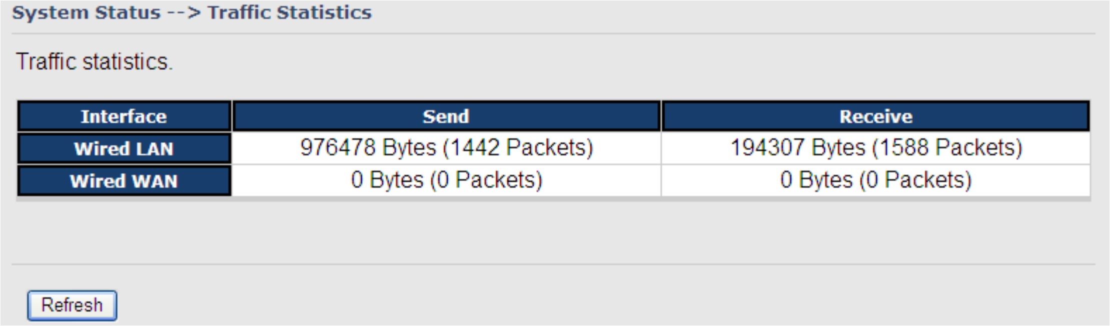
System Log Screen

The router keeps a running log of events and activities occurring on the router, several filters are provided for displaying related log entries.

Click the button '**Refresh**' to refresh the page.

Click the button '**Clear Logs**' to clear the log entries.

Traffic Statistics



System Status --> Traffic Statistics

Traffic statistics.

Interface	Send	Receive
Wired LAN	976478 Bytes (1442 Packets)	194307 Bytes (1588 Packets)
Wired WAN	0 Bytes (0 Packets)	0 Bytes (0 Packets)

Traffic Statistics Screen

This page displays the network traffic statistics for both received and transmitted packets through the Ethernet port and wireless connections.

Technical Specifications

LAN Interface	
Ethernet Ports	2 x 10/100/1000Base-T(X), Auto MDI/MDI-X
Protocols	IP, TCP, UDP, DHCP, BOOTP, ARP/RARP, DNS, SNMP MIB II, HTTPS, SNMPV1/V2, Trap, Private MIB
LED Indicators	3 x LEDs, PWR1(2)(PoE) / Ready: 1) Red On: Power is on and booting up. 2) Green On: Power is on and functioning normally. ETH1(2) Link / ACT: Green for port Link/ Act at 1000Mbps Amber for port Link/ Act at 100Mbps. Off for port Link at 10Mbps Fault indicator: Red On: Ethernet link down or power down
Power Requirements	
Power Input Voltage	Dual DC inputs. 12~48VDC on 6-pin terminal block
Reverse Polarity Protection	Present
Power Consumption	4 Watts
Environmental	
Operating Temperature	-40 to 75°C
Storage Temperature	-40 to 85°C
Operating Humidity	5% to 95%, non-condensing
Mechanical	
Dimensions(W x D x H)	74.3(W) x 109.2(D) x 153.6(H) mm
Casing	IP-30 protection
Regulatory Approvals	
EMI	FCC Part 15, CISPR (EN55022) class A
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
Shock	IEC60068-2-27
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6

Rail Traffic	EN60950-1

Compliance

FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

RF exposure warning: The equipment complies with RF exposure limits set forth for an uncontrolled environment. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment. This device should be operated with minimum distance 20cm between the device and all persons.

Industry Canada Statement

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Industry Canada - Class B This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of Industry Canada.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matérial brouilleur: "Appareils Numériques," NMB-003 édictée par l'Industrie.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

L'opération est soumise aux deux conditions suivantes: (1) cet appareil ne peut causer d'interférences,et (2) cet appareil doit accepter toute interférence, y compris celles susceptibles de provoquer fonctionnement du dispositif.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

Afin de réduire les interférences radio potentielles pour les autres utilisateurs, le type d'antenne et son gain doivent être choisie que la puissance isotrope rayonnée équivalente (PIRE) est pas plus que celle premise pour une communication réussie

RF exposure warning: The equipment complies with RF exposure limits set forth for an uncontrolled environment. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Avertissement d'exposition RF: L'équipement est conforme aux limites d'exposition aux RF établies pour un incontrôlés environnement. L'antenne (s) utilisée pour ce transmetteur ne doit pas être co-localisés ou fonctionner en conjonction avec toute autre antenne ou transmetteur.