# Vigor2136 Series

Gigabit Broadband Router

User's Guide

Version: 1.1

Firmware Version: V5.3.1

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## Safety Instructions and Approval

Safety Instructions	<ul> <li>Read the installation guide thoroughly before you set up the modem.</li> <li>The modem is a complicated electronic unit that may be repaired only be authorized and qualified personnel. Do not try to open or repair the modem yourself.</li> <li>Do not place the modem in a damp or humid place, e.g. a bathroom.</li> <li>The modem should be used in a sheltered area, within a temperature range of 0 to +40 Celsius.</li> <li>Do not expose the modem to direct sunlight or other heat sources. The housing and electronic components may be damaged by direct sunlight or heat sources.</li> <li>Do not deploy the cable for LAN connection outdoor to prevent electronic shock hazards.</li> <li>Do not power off the device when saving configurations or firmware upgrades. It may damage the data in a flash. Please disconnect the Internet connection on the router before powering it off when a TR-069/ ACS server manages the router.</li> <li>Keep the package out of reach of children.</li> <li>When you want to dispose of the modem, please follow local regulations on conservation of the environment.</li> </ul>
Warranty	We warrant to the original end user (purchaser) that the modem will be free from any defects in workmanship or materials for a period of two (2) years from the date of purchase from the dealer. Please keep your purchase receipt in a safe place as it serves as proof of date of purchase. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, we will, at our discretion, repair or replace the defective products or components, without charge for either parts or labor, to whatever extent we deem necessary tore-store the product to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal value, and will be offered solely at our discretion. This warranty will not apply if the product is modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions. The warranty does not cover the bundled or licensed software of other vendors. Defects which do not significantly affect the usability of the product will not be covered by the warranty. We reserve the right to revise the manual and online documentation and to make changes from time to time in the contents hereof without obligation to notify any person of such revision or changes.
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# Chapter I Installation



## I-1 Introduction

This is a generic International version of the user guide. Specification, compatibility and features vary by region. For specific user guides suitable for your region or product, please contact local distributor.

## I-1-1 LED Indicators and Connectors for Vigor2136

Before you use the Vigor modem, please get acquainted with the LED indicators and connectors first.

#### LED



LED	Status	Explanation
	Blinking	The router is powered on and running normally.
(Activity)	Off	The router is powered off.
	On	Internet connection is ready.
22	Blinking	The data is transmitting.
WAN	Off	Internet connection is not ready.
	On	The LAN port is connected.
1 4	Blinking	The data is transmitting.
~ LAN1/2/3/4	Off	The LAN port is disconnected.
	On	A USB device is connected and active.
USB	Blinking	The data is transmitting.

#### Connectors



Interface	Explanation
Factory Reset	Restore the default settings. Usage: Turn on the router (ACT LED is blinking). Press the hole and keep for more than 5 seconds. When you see the ACT LED begins to blink rapidly than usual, release the button. Then the router will restart with the factory default configuration.
2.5G WAN	Connector for remote networked devices (by Ethernet cable).
P1~P4	Connectors for local networked devices. In which the transmission rate for P1(only) can reach 2.5G.
USB1~USB2	Connector for a USB device (USB Modem or printer).
ON/OFF	Power switch.
PWR	Connector for a power adapter.

## (i) Note

Remove the protective film from the router before use to ensure ventilation.

# I-1-2 LED Indicators and Connectors for Vigor2136ax

LED

	U 22	29 Y I I I I I				
LED	Status	Explanation				
	Blinking	The router is powered on and running normally.				
(Activity)	Blinking (quickly)	When both ACT and WLAN LEDs blink quickly, it means the WPS function is enabled and active. The system is waiting for a wireless station of connection.				
	Off	The router is powered off.				
	On	Internet connection is ready.				
22	Blinking	The data is transmitting.				
WAN	Off	Internet connection is not ready.				
	On	Wireless access point is ready.				
	Blinking	Ethernet packets are transmitting over wireless LAN.				
243) _ 53) WLAN	Blinking (quickly) Blinking the WPS function is enabled a	When both ACT and WLAN LEDs blink quickly, it means the WPS function is enabled and active. The system is waiting for a wireless station of connection.				
	Off	The WLAN function is inactive.				
	On	The LAN port is connected.				
1 4	Blinking	The data is transmitting.				
~ LAN1/2/3/4	Off	The LAN port is disconnected.				
-C13	On	A USB device is connected and active.				
USB	Blinking	The data is transmitting.				

#### Connectors



Interface	Explanation
Wireless LAN ON/OFF/WPS	WLAN On - Press the button and release it within 2 seconds. When the wireless function is ready, the green LED will be on.
	WLAN Off - Press the button and release it within 2 seconds to turn off the WLAN function. When the wireless function is not ready, the LED will be off.
	WPS - When WPS function is enabled by web user interface, press this button for more than 2 seconds to wait for client's device making network connection through WPS.
Factory Reset	Restore the default settings.
	Usage: Turn on the router (ACT LED is blinking). Press the hole and keep for more than 5 seconds. When you see the ACT LED begins to blink rapidly than usual, release the button. Then the router will restart with the factory default configuration.
2.5G WAN	Connector for remote networked devices (by Ethernet cable).
P1~P4	Connectors for local networked devices. In which the transmission rate for P1(only) can reach 2.5G.
USB1~USB2	Connector for a USB device (USB Modem or printer).
ON/OFF	Power switch.
PWR	Connector for a power adapter.



Remove the protective film from the router before use to ensure ventilation.

# I-2 Hardware Installation

This section will guide you to install the Vigor2136 through a hardware connection and configure the device's settings through the web browser.

### I-2-1 Network Connection

- 1. Connect the cable Modem/DSL Modem/Media Converter to any WAN port of router with Ethernet cable (RJ-45).
- 2. Connect one end of an Ethernet cable (RJ-45) to one of the LAN ports of the router and the other end of the cable (RJ-45) into the Ethernet port on your computer.
- 3. Connect one end of the power cord to the power port of this device. Connect the other end to the wall outlet of electricity.
- 4. For ac series, connect detachable antennas to the router.
- 5. Power on the router. Check the ACT and WAN, LAN LEDs to assure network connection.

(For the detailed information of LED status, please refer to section 2. Panel Explanation)



### I-2-2 Wall-Mounted Installation

- 1. Drill the holes on the wall according to the recommended instruction.
- 2. Fit screws into the wall using the appropriate type of wall plug.



## (i) Note

The recommended drill diameter shall be 6.5mm (1/4").

3. When you finished the above procedure, the modem has been mounted on the wall firmly.

# I-3 Accessing to Web User Interface

All functions and settings of this access point must be configured via the web user interface. Please start your web browser (e.g., Firefox).

- 1. Make sure your PC connects to the Vigor router correctly.
- 2. Open a web browser on your PC and type http://192.168.1.1. A pop-up window will open to ask for a username and password. Pease type "admin/admin" on Username/Password and click Login.

Username Password Vigor2136ax Logn		🖶 English 🛛 🗸
		Password
	Vigor2136ax	Login

## (i) Note:

You may either simply set up your computer to get IP dynamically from the router or set up the IP address of the computer to be the same subnet as the default IP address of Vigor router 192.168.1.1.

If you fail to access the web configuration, please go to "Trouble Shooting" for detecting and solving your problem.

3. Next, the page will appear to guide you change the login password.



4. You MUST change the login password before accessing the web user interface. Please set a new password for network security.

nin / Set Password				
ccount	admin			
Current Password	•••••	٢		
lew Password	••••••	٢		
Confirm New Password		۵		
	✓ At least 8	8 characters	3	
	<ul> <li>Uppercas</li> </ul>	se characte	rs	
	Lowerca	se characte	rs	
	V Numbers	s or Special	characters ~!@#\$%^{	&*() =/?[[{}<>'

5. After clicking Apply, the Main Screen will pop up.

Dray Tek view	or2136ax	DrayTek-366100 System Time : 2024-11-01 07:30:36	a admin
Searth Q	Dashboard		C Netrest
Device Menu ( Protocomonio) E Configuration ( Samme) A MA ( DVPN ( )	PORT STATUS	SYSTEM           Device Name         DrayTek-366100           LAN MAC         144950C366100           System Lipititie         04.4% 21m: 54s           Femaure         5.3.0,RC12a           ACS Server         220.132.88.33 •           See More +	
Monikoring     >       B3     Utility     >       ペ     System Maintenance     >       Virtual Controller	WAN STATUS 	WIRELESS OVERVIEW 2.4GHz Itadio Enable MAC 14.42:8C:36:61:00	
}- Wireless ) ፼ Switch )	Name         MAC Address         Connection Type         IP Address         Gateway         Primary DNS         Secondary DNS         Lightme           (WAN) WAN1         14.69/BC36/61/01         State: IP         172.16.332         172.16.31         172.16.3.3         172.16.3.8         0113/578           LAN STATUS         IPvd         IPvd         IPvd         IPvd         IPvd         IPvd	SSB011         DrayTek-366100           SGHz         Rable           Rable         Enable           MAC         1649/8C:56:61:00           SSB011         DrayTek-360:00           SsB0214         DrayTek-360:00	
wascrigh///	Name IPAddress Subnet Mask DHCP Permany DNS Secondary DNS	See More +	

6. The web page can be logged out by clicking Log Out on the top right of the web page. Or, logout the web user interface according to the chosen condition. The default setting is Auto

Logout, which means the web configuration system will log out after 5 minutes without any operation. Change the setting of auto-logout if you want.

ayTek-366100 1-20 14:39:58	a admin V			
	Auto Logout off 🗸		Auto Logout	off 🗸
				off
	🔒 Set Password		🔒 Set Passw	1 min
rayTek-36610(	⇒ Log Out	66100	$[  ightarrow \ Log \ Out$	3 min 5 min
1.40-D0-26-61-0		36:61:0	D	10 min

## (i) Note:

For using the device properly, it is necessary for you to change the password of web configuration for security and adjust primary basic settings.

# I-4 Dashboard

Dashboard shows port status, LAN status, system status, LAN/WAN Usage and DSL information. Click Dashboard from the main menu on the left side of the main page.

							C Refre
ORT STATUS						SYSTEM	
						Device Name	HQ_2-1_V2136_2299.51ff334eb9_Beta
		2.5G				LAN MAC	14:49:BC:3D:12:C0
				1		System Uptime	6d 22h: 1m: 20s
	l	WAN P1 P2	P3 P4	USB		Firmware	2299.51ff334eb9_Beta
						Build Date/Time	Wed Nov 1 03:50:44 UTC 2023
		<b>10/100M</b>	📕 1G 📕 2.5G	i		Web Version	3.4.2_RC1-r3250.5667ef2
						Core Version	r546.36571b6
NICTATUS						ACS Server	acs3.draytek.com 🛛
AN STATUS						ACS Server	acs3.draytek.com 🛛
IPv4 IPv6						ACS Server	
	IP Address	Subnet Mask	DHCP	Primary DNS	Secondary DNS		
IPv4 IPv6		Subnet Mask 255.255.255.0	DHCP	Primary DNS	Secondary DNS	WIRELESS OVE	
IPv4 IPv6 Name	IP Address			Primary DNS	Secondary DNS	WIRELESS OVE	RVIEW
IPv4 IPv6 Name [LAN] LAN1 [LAN] LAN2	IP Address 182.16.2.1 182.16.3.1	255.255.255.0 255.255.255.0	Off Off			WIRELESS OVE 2.4GHz Radio	RVIEW
IPv4 IPv6 Name [LAN] LAN1	IP Address 182.16.2.1	255.255.255.0 255.255.255.0 255.255.255.0	Off	172.16.21.1	172.16.2.8	WIRELESS OVE 2.4GHz Radio MAC	Enable 14:49:BC:3D:12:C0
IPv4 IPv6 Name [LAN] LAN1 [LAN] LAN2	IP Address 182.16.2.1 182.16.3.1	255.255.255.0 255.255.255.0	Off Off			WIRELESS OVE 2.4GHz Radio MAC SSID(1)	Enable 14:49:BC:3D:12:C0
IPv4         IPv6           Name         [LAN] LAN1           [LAN] LAN2         [LAN] LAN2	IP Address 182.16.2.1 182.16.3.1 182.16.21.1	255.255.255.0 255.255.255.0 255.255.255.0	off off off	172.16.21.1	172.16.2.8	WIRELESS OVE 2.4GHz Radio MAC SSID(1) SSID(2)	Enable 14:49:BC:3D:12:C0

## (i) Note:

Switch these two icons by click the mouse cursor on them.



🕖 - means "Disable".

# Chapter II Connectivity



# II-1 Configuration

## II-1-1 Physical Interface

Configure the general settings for available interfaces. Open Configuration >> Physical Interface.

Search	Configuration / Phy	sical Interface			C Refresh
Device Menu	Physical Interface				
(>) Dashboard	1				
				230 250	
WAN					
LAN				WAN P1 P2 P3 P4 US8	
DNS					
Wireless LAN				<b>1</b> 0/100M <b>1</b> 6 <b>2</b> 56	
Routing					
RIP	Ethernet				
BGP	Linemet				
OSPF Bandwidth Management	Interface	Function	Enabled	Speed	
NAT	Ethernet WAN	WAN 😒		Auto negotiation w	
IGMP	Port 1			Auto negotiation ~	
Objects	Port	Care ~	•	write understation ~	
USB Application	Port 2	LAN 😒		Auto negotiation >>	
Wake on LAN Notification Services	Port 3	LAN ~		Auto negotiation V	
RADIUS/TACACS+ Certificates	Port 4	lan $\sim$		Auto negotilation ~	
2) Security					

ltem	Description			
	Ethernet			
Interface	Displays the available interfaces of this device.			
Function	Displays the type (WAN or LAN) of the interface.			
	Except Ethernet WAN is fixed to WAN, Port 1 can be set as WAN or LAN to meet different requirements. Use the drop-down menu to s the specified interface as LAN or WAN.			
Enabled	Switch the toggle to enable or disable the interface.			
Speed	Set the port speed capabilities for each interface.			
	Auto negotiation $\smallsetminus$			
	Auto negotiation			
	2.5G			
	1G			
	100M full duplex			
	100M half duplex			
	For Ethernet WAN / Port 1			

1		
	Auto negotiation $\sim$	
	Auto negotiation	
	10M half duplex	
	10M full duplex	
	100M half duplex	
	100M full duplex	
	For Port 2 to Port 4	
	Port speed capabilities:	
	Auto negotiation - Auto speed with all capabilities.	
	2.5G - Force speed with 2.5G ability.	
	1G - Force speed with 1G ability.	
	10M half duplex - Force speed with 10M ability.	
	10M full duplex - Force speed with 10M ability.	
	100M half duplex - Force speed with 100M ability.	
	100M full duplex - Force speed with 100M ability.	
	Selecting Auto (auto-negotiation) allows one port to negotiate with a peer port automatically to obtain the connection speed and duplex mode that both ends support. When auto-negotiation is turned on, a port on the switch negotiates with the peer automatically to determine the connection speed and duplex mode. If the peer port does not support auto-negotiation or turns off this feature, the switch determines the connection speed by detecting the signal on the cable and using half duplex mode. When the switch's auto-negotiation is turned off, a port uses the pre-configured speed and duplex mode when making a connection, thus requiring you to make sure that the settings of the peer port are the same in order to connect.	h e
		_

## (i) Note:

Switch these two icons by click the mouse cursor on them.



- means "Disable".

### II-1-2 WAN

## II-1-2-1 WAN Connections

This page is to configure the general settings for WAN connection.

Search Q	Configuration	/ WAN									CRetrest
	WAN Connect	ions. WAN AutoHur	nt Virta	al WAN Dynan	nic DNS WAN	Budget DH	CP Options Failover	Link Healt	h Check Perfor	mance SLA	PPPoE Pass-Through
evice Menu	WAN Conne	tions									
b Dashboard											
Physical Interface	Index •	Profile Name	Enabled	Mode	Physical Type	Active WAN Profile	IPv4 Connection Type	IPv4 Address	IPv6 Connection Type	Link Local Address	Option
	WAN1	Wired WAN	Enabled	Primary (Manual)	Sthernet		Static IP	172.15.3.132	Offline		2 Edit
LAN	tion	THE CONTRACT	childred	erning (mandal)	Construction of the second		State	172.10.0.102	Chines		S. con
DNS	WAN2	Wired WAN	Disabled	Failover (Manual)	Ethernet		DHCP		Offline		@ Edit
Wireless LAN	WAN3	Wireless WAN 2.4GHz	Disabled	Failover (Manual)	Wireless 2.4GHz		DHCP		Offline		/ Edit
Routing											
RIP	WAN4	Wireless WAN 5GHz	Disabled	Failover (Manual)	Wireless 5GHz		DHCP		Offline		2 Feit
BGP	WAN5	LTE/USB WAN	Disabled	Fallover (Manual)	USB		DHCP		Offline		// Edit
OSPF											
Bandwidth Management	WAN6	LTE/USB WAN	Disabled	Failover (Manual)	USB		DHCP		offline		22 fain
IGMP											
Objects											
USB Application											
Wake on LAN											
Notification Services											
RADIUS/ TACACS+											
Certificates											

Available settings are explained as follows:

ltem	
leeni	Description
Profile Name	Displays the name of the interface.
Enabled	Displays if the WAN interface is enabled or disabled.
Mode	Displays if the WAN interface is primary or failover interface.
Physical Type	Displays the physical type (e.g., Ethernet, Wireless 2.4GHz, Wireless 5GHz or USB) of the WAN interface.
IPv4 Connection Type	Displays the IPv4 connection type (e.g, Static IP, DHCP and etc.) used by the WAN interface.
IPv4 Address	Displays the IP address assigned by the DHCP server or the static IP address specified manually.
IPv6 Connection Type	Displays the IPv6 connection type used by the WAN interface.
Link Local Address	Displays the IPv6 address for the IPv6 connection type – Static.
Option	Edit - Click to modify the interface name and physical mode.

To configure the detailed settings (varied by physical type) for the selected WAN interface, click the Edit link to the right side of the WAN interface.

For Physical Type with Ethernet

Ethernet WAN and Port 1 can be configured as the WAN interfaces. WAN connections for these two ports can be configured separately.

Click the Edit link for WAN1 or WAN2 (LAN port 1) to open the following page.

		×
		Advanced Mode: ON
Indesc	WAN1	
Profile Name 🛈	Wired WAN	
Enabled		
General Setup		~
Physical Type	Ethernet	
Bind to Physical Interface	Ethernet WAN 🗸	
	Note: to bind more interfaces, alter the interface functionality on <u>Physical Interface</u>	
etup Mode	Marnual AutoHant	
P Version	Both IPvd IPv6	
VLAN Settings		~
Sustamer VLAN	3	
Service VLAN	3	

Available settings are explained as follows:

ltem	Description					
Advanced Mode:ON/OFF	Click to show or hide the advanced settings (IP Alias and WAN MAC Address) for the WAN interface.					
Index	Displays current WAN interface.					
Profile Name	Displays the name of the profile.					
Enabled	Switch the toggle to enable or disable the function.					
	General Setup					
Physical Type	Displays the physical type used by this interface.					
Bind to Physical Interface	Select a physical interface (Ethernet). If LAN port 1 has been set as WAN port, it will be shown as Port 1 (Enabled) available for chosen as the WAN interface.					
	Ethernet WAN					
	Port 1 (NOT Enabled)					
Setup Mode	Determine the WAN connection established on the settings page or automatically based on the AutoHunt profiles, processed one by one					
	Manual – If selected, the WAN connection will be performed					

	according to the settings configured in this page.				
	AutoHunt – The Vigor router will automatically connect to Ethernet WAN connection. Once connected and powered on, the router will run through a list of network connection settings (based on the autohunt profiles) to determine if it can establish a connection. If it is unable to connect, the mechanism will proceed to the next ISP setting until it				
	receives an IP address.				
	If Auto Hunt is selected, configure the following:				
	AutoHunt Profile – Select the AutoHunt profile(s).				
	+Add – Click to specify the autohunt profile(s).				
IP Version	Set the protocol (IPv4 or IPv6 or both) that this WAN interface used.				
	VLAN Settings				
Customer VLAN	Switch the toggle to enable or disable the function of VLAN with tag. In enabled, enter the values for the tag and priority.				
	Tag - Enter the value as the VLAN ID number. The range is from 0 to 4094.				
	Priority - Enter the packet priority number for such VLAN. The range is from 0 to 7.				
Service VLAN	Switch the toggle to enable or disable the function of VLAN with tag. I enabled, enter the values for the tag and priority.				
	Tag - Enter the value as the VLAN ID number. The range is from 0 to 4094.				
	Priority - Enter the packet priority number for such VLAN. The range is from 0 to 7.				
	IPv4				
IPv4 Connection Type	It is available when Both or IPv4 is selected as IP Version.				
	PPPoE – Set the access mode as PPPoE.				
	<ul> <li>Username – Username provided by the ISP for PPPoE authentication.</li> </ul>				
	<ul> <li>Password – Password provided by the ISP for PPPoE authentication.</li> </ul>				
	• WAN DNS – Select Auto or Manual.				
	If Manual is selected, specify the primary and secondary DNS servers.				
	IPv4 Primary DNS –IP address of primary DNS server.				
	IPv4 Secondary DNS - IP address of secondary DNS server.				
	DHCP – The router receives IP configuration information from a DHCI server.				
	• WAN DNS – Select Auto or Manual.				
	If Manual is selected, specify the primary and secondary DNS servers.				
	IPv4 Primary DNS –IP address of primary DNS server.				
	IPv4 Secondary DNS - IP address of secondary DNS server.				
	Static IP – Set the access mode as Static IP.				
	• IP Address – WAN IP address assigned by the ISP.				
	Subnet Mask – WAN subnet mask.				
	<ul> <li>Gateway IP – IP address of the WAN Gateway.</li> <li>IPv4 Primary DNS –IP address of primary DNS server.</li> </ul>				

	<ul> <li>IPv4 Secondary DNS - IP address of secondary DNS server.</li> </ul>
	WAN Connection Detection
Mode	Configures how the WAN connection is monitored.
	Always On - The router assumes the WAN connection is always active
	ARP Detect - The router broadcasts an ARP request every 5 seconds. If no response is received within 30 seconds, the WAN connection is deemed to have failed.
	Ping Detect - The router sends an ICMP (Internet Control Message Protocol) echo request every second to the host, whose address is specified in the Ping IP field, to verify the WAN connection. If the remote host does not respond within 30 seconds, the WAN connection is deemed to have failed.
	If you choose Ping Detect as the detection mode, you have to enter required settings for the following items.
	<ul> <li>Ping Gateway IP - Switch the toggle to enable/ use the current WAN gateway IP address for pinging. With the IP address(es) pinging, Vigor router can check if the WAN connection is on or off.</li> </ul>
	• TTL –Time To Live, the maximum allowed number of hops to the ping destination. Valid values range from 1 to 255.
	• Ping Interval (Sec, 10-3600) – Enter the interval for the system to execute the PING operation.
	<ul> <li>Ping Retry - Enter the number of times that the system is allowed to execute the PING operation before WAN disconnection is judged.</li> </ul>
IP Alias	IPv4 Alias - If you have multiple public IP addresses and would like to utilize them on the WAN interface, please use WAN IP Alias. You can set up to 8 public IP addresses other than the current one you are using.
	+Add – Click to add an IPv4 address as the IPv4 alias.
	IPv6
IPv6 Connection Type	It is available when Both or IPv6 is selected as IP Version.
	Offline – When Offline is selected, the IPv6 connection will be disabled.
	PPP – IPv6 WAN address is assigned along with the IPv4 WAN address during PPPoE negotiation. This IPv6 access mode requires that the IPv4 uses PPPoE.
	Static – Configure an ISP-assigned static IPv6 setup.
	<ul> <li>+Add –Click this button to add the values in the IPv6 Address and Prefix Length fields to the Global Address Table.</li> </ul>
	• IPv6 Global Address – WAN IPv6 address assigned by the ISP.
	• Prefix Length – Length of the IPv6 prefix.
	• Gateway Address - IPv6 address of the ISP gateway.
	DHCPv6 – Use DHCPv6 protocol to obtain IPv6 address from server.
	• DUID – Displays the DHCP unique ID used by this WAN interface
	• IAID – Unique integer that identifies this WAN interface.
	<ul> <li>Authentication Protocol - This protocol will be used for the client to be authenticated by DHCPv6 server before accessing into Internet. There are three types can be specified,</li> </ul>

	Reconfigure Key, Delayed and None. In general, the default setting is None.
	<ul> <li>Reconfigure Key – During the connection process, DHCPv6 server will authenticate the client automatically.</li> </ul>
	<ul> <li>Delayed - During the connection process, DHCPv6 server will authenticate and identify the client based on the key ID, realm and secret information specified in these fields.</li> <li>Key ID – Type a value (range from 1 to 65535) which will be used to generate HMAC-MD5 value.</li> <li>Realm – The name (1 to 31 characters) typed here will identify the key which generates HMAC-MD5 value.</li> <li>Secret – Type a text (1 to 31 characters) as s a unique identifier for each client on each DHCP server.</li> </ul>
	TSPC - Tunnel setup protocol client (TSPC) is an application which could help you to connect to IPv6 network easily.
	Please make sure your IPv4 WAN connection is OK and apply one free account from hexago
	(http://gogonet.gogo6.com/page/freenet6-account ) before you try to use TSPC for network connection. TSPC would connect to tunnel broker and requests a tunnel according to the specifications inside the configuration file. It gets a public IPv6 IP address and an IPv6 prefix from the tunnel broker and then monitors the state of the tunnel in background.
	After getting the IPv6 prefix and starting router advertisement daemon (RADVD), the PC behind this router can directly connect to IPv6 the Internet.
	<ul> <li>Tunnel Broker Address – Enter the address for the tunnel broker IP, FQDN or an optional port number.</li> </ul>
	<ul> <li>Username – It is suggested for you to apply another username and password for http://gogonet.gogo6.com/page/freenet6-account.</li> </ul>
	• Password - Enter the password assigned with the user name.
	6in4 – Setup 6in4 Static Tunnel for WAN interface.
	However, 6in4 offers a prefix outside of 2002::0/16. So, you can use a fixed endpoint rather than any cast endpoint. The mode has more reliability.
	6rd - Setup 6rd for WAN interface.
	IPv6 WAN Connection Detection
Mode	Configures how the WAN connection is monitored.
	Always On - The router assumes the WAN connection is always active. NS Detect - The router verifies connectivity by issuing Neighbor
	Solicitation packets. Ping Detect - The router sends an ICMP (Internet Control Message Protocol) echo request every second to the host, whose address is specified in the Ping IP field, to verify the WAN connection. If the remote host does not respond within 30 seconds, the WAN connection is deemed to have failed.
	If you choose Ping Detect as the detection mode, you have to enter required settings for the following items.
	<ul> <li>Primary Ping IP – Enter an IP address in this field for pinging.</li> <li>Secondary Ping IP - Enter an IP address in this field for pinging.</li> </ul>
	• TTL –Time To Live, the maximum allowed number of hops to the

	ping destination. Valid values range from 1 to 255.
	<ul> <li>Ping Interval (Sec, 10-3600) – Enter the interval for the system to execute the PING operation.</li> </ul>
	<ul> <li>Ping Retry - Enter the number of times that the system is allowed to execute the PING operation before WAN disconnection is judged.</li> </ul>
	MTU
MTU	Maximum Transmission Unit, the size of the largest packet, in bytes, that can be transmitted to the WAN. The maximum value is 1500. For PPPoE connections, there is always an 8-byte overhead, so the maximum valid MTU value for PPPoE is 1492.
	WAN MAC Address
Mode	<ul> <li>Default – Use the default MAC address for the WAN port.</li> <li>Customized - Select this option if your ISP authenticates by MAC addresses.</li> <li>MAC - Specify a MAC address for the WAN Ethernet port.</li> </ul>
MAC	Displays the MAC address of this device.
Cancel	Discard current settings and return to previous page.
Apply	Save the current settings and exit the page.

After finishing this web page configuration, please click Apply to save the settings.

For Physical Type with Wireless 2.4GHz

When Wireless 2.4G is selected as Physical Type, WAN interface uses wireless station mode to access Internet. The Router acts as a 2.4GHz wireless station and connects to the specific Wireless AP.

Click the Edit link for WAN3 or WAN4 to open the following page
---

	×
	Advanced Mode: OFF
Index	WAN3
Profile Name ()	Wireless WAN 2.4GI
Enabled	
General Setup	~
Physical Type	Wireless 2.4GHz
Bind to Physical Interface	Please Select 🗸
	Note: To bind more Interfaces, alter the interface functionality on Physical Interface
IPv4	~
IPv4 Connection Type	DHCP v
WAN DNS	Auto Manual
WAN Connection Detection	
Mode	ARP Detect $\vee$
MTU	~

#### Available settings are explained as follows:

ltem	Description	
Advanced Mode:ON/OFF	Click to show or hide the advance the WAN interface.	ed settings (WAN MAC Address) for
Index	Displays current WAN interface.	
Profile Name	Displays the name of the profile.	
Enabled	Switch the toggle to enable or dis	sable the function.
	General Setup	
Physical Type	Displays the physical type used b	y this interface.
Bind to Physical Interface	At present, only Wireless 2.4GHz is available for WAN3 and Wirele 5GHz for WAN4.	
	Bind to Physical Interface	Please Select \vee
		Wireless 2.4GHz
Peer SSID	Enter the identification of the wireless device.	
Channel	Select the channel of frequency of the device.	
Security Mode	There are several modes provided for you to choose from. Each mod will bring up different parameters (e.g., Pass Phrase) for you to	

	<ul> <li>configure.</li> <li>WPA3 Personal – The Router connects to the wireless AP as a WPA3 client and the encryption key should be entered in PSK.</li> <li>WPA2 Personal – The Router connects to the wireless AP as a WPA2 client and the encryption key should be entered in PSK.</li> <li>OPEN – The encryption mechanism is turned off.</li> </ul>
WPA Algorithms	Select AES as the algorithm for WPA.
Password	Enter 8~64 ASCII characters, such as 012345678(or 64 Hexadecimal digits leading by 0x, such as "0x321253abcde").
	IPv4
IPv4 Connection Type	It is available when Both or IPv4 is selected as IP Version. DHCP – The router receives IP configuration information from a DHCP server.
	<ul> <li>WAN DNS – Select Auto or Manual.</li> <li>If Manual is selected, specify the primary and secondary DNS servers.</li> <li>IPv4 Primary DNS –IP address of primary DNS server.</li> <li>IPv4 Secondary DNS - IP address of secondary DNS server.</li> <li>Static IP – Set the access mode as Static IP.</li> </ul>
	<ul> <li>IP Address – WAN IP address assigned by the ISP.</li> <li>Subnet Mask – WAN subnet mask.</li> <li>Gateway IP – IP address of the WAN Gateway.</li> <li>IPv4 Primary DNS – IP address of primary DNS server.</li> <li>IPv4 Secondary DNS - IP address of secondary DNS server.</li> </ul>
	WAN Connection Detection
Mode	<ul> <li>Configures how the WAN connection is monitored.</li> <li>Always On - The router assumes the WAN connection is always active</li> <li>ARP Detect - The router broadcasts an ARP request every 5 seconds.</li> <li>If no response is received within 30 seconds, the WAN connection is deemed to have failed.</li> <li>Ping Detect - The router sends an ICMP (Internet Control Message Protocol) echo request every second to the host, whose address is specified in the Ping IP field, to verify the WAN connection. If the remote host does not respond within 30 seconds, the WAN connection is deemed to have failed.</li> </ul>
	<ul> <li>If you choose Ping Detect as the detection mode, you have to enter required settings for the following items.</li> <li>Ping Gateway IP - Switch the toggle to enable/ use the current WAN gateway IP address for pinging. With the IP address(es) pinging, Vigor router can check if the WAN connection is on or off.</li> </ul>
	<ul> <li>TTL –Time To Live, the maximum allowed number of hops to the ping destination. Valid values range from 1 to 255.</li> <li>Ping Interval (Sec, 10-3600) – Enter the interval for the system to execute the PING operation.</li> </ul>

MTU	Maximum Transmission Unit, the size of the largest packet, in bytes, that can be transmitted to the WAN. The maximum value is 1500. For PPPoE connections, there is always an 8-byte overhead, so the maximum valid MTU value for PPPoE is 1492.
	WAN MAC Address
Mode	<ul> <li>Default – Use the default MAC address for the wireless WAN.</li> <li>Customized - Select this option to use customized MAC addresses.</li> <li>MAC - Specify a MAC address for the wireless WAN.</li> </ul>
Cancel	Discard current settings and return to previous page.
Apply	Save the current settings and exit the page.

After finishing this web page configuration, please click Apply to save the settings.

#### For Physical Type with Wireless 5GHz

When Wireless 5G is selected as Physical Type, WAN interface uses wireless station mode to access Internet. The Router acts as a 5GHz wireless station and connects to the specific Wireless AP.

	×	
	Advanced Mode: ON	
Index	WAN4	
Profile Name 🕕	Wireless WAN 5GHz	
Enabled		
General Setup	~	
Physical Type	Wireless 5GHz	
Bind to Physical Interface	Wireless 5GHz $\vee$	
	Note: To bind more Interfaces, alter the interface functionality on Physical Interface	
IPv4	~	
IPv4 Connection Type	DHCP v	
WAN DNS	Auto Manual	
WAN Connection Detection		
Mode	Ping Detect $\checkmark$	
Ping Gateway IP		
Cancel Apply		

Available settings are explained as follows:

ltem	Description
Advanced Mode:ON/OFF	Click to show or hide the advanced settings (WAN MAC Address) for the WAN interface.
Index	Displays current WAN interface.
Profile Name	Displays the name of the profile.
Enabled	Switch the toggle to enable or disable the function.
	General Setup
Physical Type	Displays the physical type used by this interface.
Bind to Physical	At present, only Wireless 2.4GHz is available for WAN3 and Wireless

Interface	5GHz for WAN4.
	Please Select 🗡
	Wireless 5GHz (NOT Enabled)
Peer SSID	Enter the identification of the wireless device.
Channel	Select the channel of frequency of the device.
Security Mode	There are several modes provided for you to choose from. Each mode will bring up different parameters (e.g., Pass Phrase) for you to configure. WPA3 Personal – The Router connects to the wireless AP as a WPA3
	client and the encryption key should be entered in PSK. WPA2 Personal – The Router connects to the wireless AP as a WPA2 client and the encryption key should be entered in PSK.
	OPEN – The encryption mechanism is turned off.
WPA Algorithm	Select AES as the algorithm for WPA.
Password	Enter 8~64 ASCII characters, such as 012345678(or 64 Hexadecimal digits leading by 0x, such as "0x321253abcde").
	IPv4
IPv4 Connection Type	It is available when Both or IPv4 is selected as IP Version.
	DHCP – The router receives IP configuration information from a DHCF server.
	• WAN DNS - Select Auto or Manual.
	If Manual is selected, specify the primary and secondary DNS servers.
	IPv4 Primary DNS - IP address of primary DNS server.
	IPv4 Secondary DNS - IP address of secondary DNS server.
	Static IP – Set the access mode as Static IP.
	• IP Address – WAN IP address assigned by the ISP.
	<ul> <li>Subnet Mask – WAN subnet mask.</li> </ul>
	• Gateway IP – IP address of the WAN Gateway.
	<ul> <li>IPv4 Primary DNS – IP address of primary DNS server.</li> </ul>
	IPv4 Secondary DNS - IP address of secondary DNS server.
	WAN Connection Detection
Mode	Configures how the WAN connection is monitored.
	Always On - The router assumes the WAN connection is always active
	ARP Detect - The router broadcasts an ARP request every 5 seconds. If no response is received within 30 seconds, the WAN connection is deemed to have failed.
	Ping Detect - The router sends an ICMP (Internet Control Message Protocol) echo request every second to the host, whose address is specified in the Ping IP field, to verify the WAN connection. If the remote host does not respond within 30 seconds, the WAN connection is deemed to have failed.

If you choose Ping Detect as the detection mode, you have to enter required settings for the following items.
<ul> <li>Ping Gateway IP - Switch the toggle to enable/ use the current WAN gateway IP address for pinging. With the IP address(es) pinging, Vigor router can check if the WAN connection is on or off.</li> </ul>
<ul> <li>TTL –Time To Live, the maximum allowed number of hops to the ping destination. Valid values range from 1 to 255.</li> </ul>
<ul> <li>Ping Interval (Sec, 10-3600) – Enter the interval for the system to execute the PING operation.</li> </ul>
<ul> <li>Ping Retry - Enter the number of times that the system is allowed to execute the PING operation before WAN disconnection is judged.</li> </ul>
MTU
Maximum Transmission Unit, the size of the largest packet, in bytes, that can be transmitted to the WAN. The maximum value is 1500. For PPPoE connections, there is always an 8-byte overhead, so the maximum valid MTU value for PPPoE is 1492.
WAN MAC Address
<ul> <li>Default – Use the default MAC address for the wireless WAN.</li> <li>Customized - Select this option to use customized MAC addresses.</li> <li>MAC - Specify a MAC address for the wireless WAN.</li> </ul>
Discard current settings and return to previous page.
Save the current settings and exit the page.

After finishing this web page configuration, please click Apply to save the settings.

#### For Physical Type with LTE/USB

It is available for USB modem only. USB WAN uses the embedded module to access internet.

Click the Edit link for WAN5 or WAN6 to open the following page.

		×
Index	WAN5	Advanced Mode: ON
Profile Name 🕕	LTE/USB WAN	Advanced Mode. ON
Enabled		
General Setup		~
Physical Type	USB	
Bind to Physical Interface	USB 1 V	
	Note: To bind more Interfaces, alter the interface functionality on Physical Interface	
USB/LTE Settings		~
USB Mode	DHCP 🗸	
USB/SIM1 PIN Code	۵	
Enable Username/Password Authentication		
APN Name		
Network Mode	4G/3G/2G $\vee$	
IPv4		$\sim$
Cancel Apply		

Available settings are explained as follows:

ltem	Description
Advanced Mode:ON/OFF	Click to show or hide the advanced settings (WAN MAC Address) for the WAN interface.
Name	Displays current WAN interface.
Enabled	Switch the toggle to enable or disable the access mode.

	General Setup
Physical Type	Displays the physical type used by this interface.
Bind to Physical Interface	When an external USB modem has been connected to USB port, select USB1 or USB2 as the physical WAN interface according to the location of the modem connected.



	USB/LTE Settings
USB Mode	DHCP – Dynamic Host Configuration Protocol is used to establish a connection. PPP - Point-to-Point Protocol is used to establish a connection.
USB/SIM1 PIN Code	PIN code of the SIM card in the modem. The maximum length of the PIN is 15 characters.
Enable Username/Password Authentication	<ul> <li>Switch the toggle to enable or disable the function.</li> <li>Authentication - Select the protocol used for PPP authentication.</li> <li>PAP only - Only PAP (Password Authentication Protocol) is used.</li> <li>PAP or CHAP - Both PAP and CHAP (Challenge-Handshake Authentication Protocol) can be used for PPP authentication. Router negotiates with the PPTP or L2TP server to determine which protocol to use.</li> <li>Username - Username provided by the ISP for authentication (optional).</li> <li>Password - Password provided by the ISP for authentication (optional).</li> </ul>
APN Name	Access Point Name to be used for the connection. Please contact your ISP or carrier for the appropriate value.
Network Mode	Force Vigor router to connect Internet with the mode specified here. If you choose 4G/3G/2G as network mode, the router will choose a suitable one according to the actual wireless signal automatically.
	IPv4 - WAN Connection Detection
WAN DNS	Select Auto or Manual.

	<ul> <li>If Manual is selected, specify the primary and secondary DNS servers.</li> <li>IPv4 Primary DNS – IP address of primary DNS server.</li> <li>IPv4 Secondary DNS - IP address of secondary DNS server.</li> </ul>	
Mode	<ul> <li>Configures how the WAN connection is monitored.</li> <li>Always On - The router assumes the WAN connection is always active.</li> <li>Ping Detect - The router sends an ICMP (Internet Control Message Protocol) echo request every second to the host, whose address is specified in the Ping IP field, to verify the WAN connection. If the remote host does not respond within 30 seconds, the WAN connection is deemed to have failed.</li> <li>If you choose Ping Detect as the detection mode, you have to enter required settings for the following items.</li> <li>Ping Gateway IP - Switch the toggle to enable/ use the current WAN gateway IP address for pinging. With the IP address(es) pinging, Vigor router can check if the WAN connection is on or off.</li> <li>TTL –Time To Live, the maximum allowed number of hops to the</li> </ul>	
	<ul> <li>ping destination. Valid values range from 1 to 255.</li> <li>Ping Interval (Sec, 10-3600) – Enter the interval for the system to execute the PING operation.</li> <li>Ping Retry - Enter the number of times that the system is allowed to execute the PING operation before WAN disconnection is judged.</li> </ul>	
	MTU	
MTU	Maximum Transmission Unit, the size of the largest packet, in bytes, that can be transmitted to the WAN. The maximum value is 1500. For PPPoE connections, there is always an 8-byte overhead, so the maximum valid MTU value for PPPoE is 1492.	
	WAN MAC Address	
Mode	<ul> <li>It is available when Advanced Mode is ON.</li> <li>Default – Use the default MAC address for the WAN port.</li> <li>Customized - Select this option if your ISP authenticates by MAC addresses.</li> <li>MAC - Specify a MAC address for the WAN Ethernet port.</li> </ul>	
Cancel	Discard current settings and return to previous page.	
	Save the current settings and exit the page.	

After finishing this web page configuration, please click Apply to save the settings.
### II-1-2-2 WAN AutoHunt

The Vigor router will automatically connect to Ethernet WAN connection. Once connected and powered on, the router will run through a list of network connection settings (based on the autohunt profiles) to determine if it can establish a connection. If it is unable to connect, the mechanism will proceed to the next ISP setting until it receives an IP address.

	WAN Connections	WAN AutoHunt Virtual WAN	Dynamic DNS WAN Budget	DHCP Options Failover Link Health Check	Performa	ICA SIA
evice Menu			ejiana ena			
) Dashboard	WAN AutoHunt					
E Configuration	+ Add					Max. 20
Physical Interface	Profile Name	Physical Type	IPv4 Connection Type	IPv6 Connection Type	Option	
MAN .	Auto_Hunt_1	Ethernet	PPPoE	Offline	2 Edit	Delete-
LAN	Auto_Hunt_DH	Ethernet	DHCP	Offline	2 Edit	@ Delete
DNS	Construction of the second sec	and the second sec				
Wireless LAN						
Routing						
RIP						
A STATE OF						
BGP						
BGP OSPF						
OSPF						
OSPF Bandwidth Management						
OSPF Bandwidth Management NAT						
OSPF Bandwidth Management NAT IGMP						
OSPF Bandwidth Management NAT KGMP Objects						
OSPF Bandwidth Management NAT IGMP Objects LTE						
OSPF Bandwidth Management NAT IGMP Objects LTE Wake on LAN						
OSPF Bandwidth Management NAT IGMP Objects LTE Wake on LAN Notification Services						

ltem	Description
Reset	Click to clear all profiles to factory settings.
+Add	Click to bring up the configuration page of the virtual WAN profile (max. 5).

To add a new autohunt profile, click the +Add link to get the following page.

[	>	<
	Advanced Mode: ON	
Profile Name 🕕	Auto_Hunt_3	
Physical Type	Ethernet $\lor$	
IP Version	Both IPv6 IPv6	
VLAN Settings	~	,
Customer VLAN		
Service VLAN		
IPv4	~	
IPv4 Connection Type	PPPoE 🗸	
Username ()		
Password 🕕	٩	
Service Name (Optional)		
PPP Authentication	PAP or CHAP 🗸 🗸	
IP Assignment	DHCP Static IP	
Cancel Apply		

ltem	Description				
Advanced Mode:ON/OFF	Click to show or hide the advanced settings (IP Alias and WAN MAC Address) for the WAN interface.				
Physical Type	Displays the physical type used by this interface.				
IP Version	Set the protocol (IPv4 or IPv6 or both) that this WAN interface used.				
	VLAN Settings				
Customer VLAN	Switch the toggle to enable or disable the function of VLAN with tag. If enabled, enter the values for the tag and priority.				
	Tag - Enter the value as the VLAN ID number. The range is from 0 to 4094.				
	Priority - Enter the packet priority number for such VLAN. The range is from 0 to 7.				
Service VLAN	Switch the toggle to enable or disable the function of VLAN with tag. I enabled, enter the values for the tag and priority.				
	Tag - Enter the value as the VLAN ID number. The range is from 0 to 4094.				
	Priority - Enter the packet priority number for such VLAN. The range is from 0 to 7.				
	IPv4				
IPv4 Connection Type	It is available when Both or IPv4 is selected as IP Version.				
	PPPoE – Set the access mode as PPPoE.				
	<ul> <li>Username – Username provided by the ISP for PPPoE authentication.</li> </ul>				
	<ul> <li>Password – Password provided by the ISP for PPPoE authentication.</li> </ul>				
	<ul> <li>Service Name – PPP service name tag. Required by some ISPs.</li> <li>Leave blank unless instructed otherwise by your ISP.</li> </ul>				
	<ul> <li>PPP Authentication – The protocol used for PPP authentication.</li> </ul>				
	PAP or CHAP - Both PAP and CHAP (Challenge-Handshake Authentication Protocol) can be used for PPP authentication. Router negotiates with the PPTP or L2TP server to determine which protocol to use.				
	<ul> <li>IP Assignment – It is available when PPPoE is selected as IPv4 Connection Type.</li> </ul>				
	DHCP - WAN IP address is dynamically allocated.				
	Static IP - ISP has assigned a fixed WAN IP address. Enter an IP address.				
	• WAN DNS – Select Auto or Manual.				
	If Manual is selected, specify the primary and secondary DNS servers.				
	IPv4 Primary DNS –IP address of primary DNS server.				
	IPv4 Secondary DNS - IP address of secondary DNS server.				
	DHCP – The router receives IP configuration information from a DHCF server.				
	• WAN DNS – Select Auto or Manual.				

	If Manual is selected, specify the primary and secondary DNS servers.
	IPv4 Primary DNS –IP address of primary DNS server.
	IPv4 Secondary DNS - IP address of secondary DNS server.
	Static IP – Set the access mode as Static IP.
	• IP Address – WAN IP address assigned by the ISP.
	• Subnet Mask – WAN subnet mask.
	• Gateway IP – IP address of the WAN Gateway.
	• IPv4 Primary DNS –IP address of primary DNS server.
	• IPv4 Secondary DNS - IP address of secondary DNS server.
	WAN Connection Detection
Mode	Configures how the WAN connection is monitored. Select PPP Detect or Ping Detect.
	Ping Detect - The router sends an ICMP (Internet Control Message Protocol) echo request every second to the host, whose address is specified in the Ping IP field, to verify the WAN connection. If the remote host does not respond within 30 seconds, the WAN connection is deemed to have failed.
	If you choose Ping Detect as the detection mode, you have to enter required settings for the following items.
	<ul> <li>Ping Gateway IP - Switch the toggle to enable/ use the current WAN gateway IP address for pinging. With the IP address(es) pinging, Vigor router can check if the WAN connection is on or off.</li> <li>TTL –Time To Live, the maximum allowed number of hops to the ping destination. Valid values range from 1 to 255.</li> </ul>
	<ul> <li>Ping Interval (Sec, 5-3600) – Enter the interval for the system t execute the PING operation.</li> </ul>
	<ul> <li>Ping Retry - Enter the number of times that the system is allowed to execute the PING operation before WAN disconnection is judged.</li> </ul>
	ΙΡν6
IPv6 Connection Type	It is available when Both or IPv6 is selected as IP Version.
	Offline – When Offline is selected, the IPv6 connection will be disabled.
	PPP – IPv6 WAN address is assigned along with the IPv4 WAN address during PPPoE negotiation. This IPv6 access mode requires that the IPv4 uses PPPoE.
	Static – Configure an ISP-assigned static IPv6 setup.
	<ul> <li>+Add –Click this button to add the values in the IPv6 Address and Prefix Length fields to the Global Address Table.</li> </ul>
	• IPv6 Global Address – WAN IPv6 address assigned by the ISP.
	<ul> <li>Prefix Length – Length of the IPv6 prefix.</li> </ul>
	<ul> <li>Gateway Address - IPv6 address of the ISP gateway.</li> </ul>
	DHCPv6 – Use DHCPv6 protocol to obtain IPv6 address from server.
	<ul> <li>DUID – Displays the DHCP unique ID used by this WAN interfac</li> </ul>
	<ul> <li>IAID – Unique integer that identifies this WAN interface.</li> </ul>
	<ul> <li>Authentication Protocol - This protocol will be used for the</li> </ul>
	client to be authenticated by DHCPv6 server before accessing

	into Internet. There are three types can be specified, Reconfigure Key, Delayed and None. In general, the default setting is None.
	<ul> <li>Reconfigure Key – During the connection process, DHCPv6 server will authenticate the client automatically.</li> </ul>
	<ul> <li>Delayed - During the connection process, DHCPv6 server will authenticate and identify the client based on the key ID, realm and secret information specified in these fields.</li> <li>Key ID – Type a value (range from 1 to 65535) which will be used to generate HMAC-MD5 value.</li> <li>Realm – The name (1 to 31 characters) typed here will identify the key which generates HMAC-MD5 value.</li> <li>Secret – Type a text (1 to 31 characters) as s a unique identifier for each client on each DHCP server.</li> </ul>
	TSPC - Tunnel setup protocol client (TSPC) is an application which could help you to connect to IPv6 network easily.
	Please make sure your IPv4 WAN connection is OK and apply one free account from hexago
	(http://gogonet.gogo6.com/page/freenet6-account ) before you try to use TSPC for network connection. TSPC would connect to tunnel broker and requests a tunnel according to the specifications inside the configuration file. It gets a public IPv6 IP address and an IPv6 prefix from the tunnel broker and then monitors the state of the tunnel in background.
	After getting the IPv6 prefix and starting router advertisement daemon (RADVD), the PC behind this router can directly connect to IPv6 the Internet.
	<ul> <li>Tunnel Broker Address – Enter the address for the tunnel broker IP, FQDN or an optional port number.</li> </ul>
	<ul> <li>Username – It is suggested for you to apply another username and password for http://gogonet.gogo6.com/page/freenet6-account.</li> </ul>
	<ul> <li>Password - Enter the password assigned with the user name.</li> </ul>
	6in4 – Setup 6in4 Static Tunnel for WAN interface.
	However, 6in4 offers a prefix outside of 2002::0/16. So, you can use a fixed endpoint rather than any cast endpoint. The mode has more reliability.
	6rd - Setup 6rd for WAN interface.
	IPv6 WAN Connection Detection
Mode	Configures how the WAN connection is monitored.
	Always On - The router assumes the WAN connection is always active.
	NS Detect - The router verifies connectivity by issuing Neighbor Solicitation packets.
	Ping Detect - The router sends an ICMP (Internet Control Message Protocol) echo request every second to the host, whose address is specified in the Ping IP field, to verify the WAN connection. If the remote host does not respond within 30 seconds, the WAN connection is deemed to have failed.
	If you choose Ping Detect as the detection mode, you have to enter required settings for the following items.
	<ul> <li>Primary Ping IP – Enter an IP address in this field for pinging.</li> <li>Secondary Ping IP - Enter an IP address in this field for pinging.</li> </ul>

	<ul> <li>TTL –Time To Live, the maximum allowed number of hops to the ping destination. Valid values range from 1 to 255.</li> <li>Ping Interval (Sec, 10-3600) – Enter the interval for the system</li> </ul>
	to execute the PING operation.
	<ul> <li>Ping Retry - Enter the number of times that the system is allowed to execute the PING operation before WAN disconnection is judged.</li> </ul>
	MTU
MTU	Maximum Transmission Unit, the size of the largest packet, in bytes, that can be transmitted to the WAN. The maximum value is 1500. For PPPoE connections, there is always an 8-byte overhead, so the maximum valid MTU value for PPPoE is 1492.
	WAN MAC Address
Mode	<ul> <li>Default – Use the default MAC address for the WAN port.</li> <li>Customized - Select this option if your ISP authenticates by MAC addresses.</li> <li>MAC - Specify a MAC address for the WAN Ethernet port.</li> </ul>
МАС	Displays the MAC address of this device.
Cancel	Discard current settings and return to previous page.
Apply	Save the current settings and exit the page.

## II-1-2-3 Virtual WAN

Reset

Up to five virtual WAN profiles can be set for applying to different applications.

Each profile can be specified with VLAN and binding interfaces according to the requirements of the practical network environment.

	Q	Configuratio	on / WAN								@Reset CRefr	resh
		WAN Conne	ections	WAN AutoHunt	VIPLUA WAN	Dynamic DNS	WAN Budget	DHCP Options	Failover	Link Health Check	Performance SLA	>
Davice Manu		Virtual WA			-							
Dashboard		Virtual WA	an a									
		+ Add									6	las: 5
Physical Interface		Name	IP Address	s Uptime	Enabled	WAN Type	WAN Interface	Port Based Brid	ige .	IPv4 Connection Type	Option	
LAN												
DNS												
Wireless LAN												
Routing												
RIP												
BGP												
OSPF												
Bandwidth Manageme	ent											
NAT												
IGMP												
Objects												
Wake on LAN												
Notification Services												
RADIUS/ TACACS+												
Certificates												
ltem			Г	escript	ion							
item				escript	IOII							

Click to clear all profiles to factory settings.

+Add	Click to bring up the configuration page of the virtual WAN profile
	(max. 5).

To add a new virtual WAN, click the +Add link to get the following page.

Configuration / WAN		
		×
		Advanced Mode: ON
Name		
Enabled		
General		$\sim$
WAN Type	Ethernet V	
WAN Interface	WAN1 V	
	Note: The value of the 'Service Tag' is determined by the settings applied to the chosen WAN Interface	
Port-Based Bridge		$\sim$
Port Based Bridge		
VLAN Settings		$\sim$
Customer VLAN		
IPv4		$\sim$
IPv4 Connection Type	PPPoE V	
Username		
Cancel Apply		

ltem	Description
Advanced Mode: ON/OFF	Click to show or hide the advanced settings for virtual WAN.
Name	Enter a name as the profile name.
Enabled	Switch the toggle to enable or disable the function.
	General
WAN Type	Displays the type (e.g., Ethernet) of the physical interface.
WAN Interface	Select one of the available WAN interfaces (enabled on WAN>>WAN Connections).
	Port-Based Bridge
Port Based Bridge	Switch the toggle to enable or disable the function. Binding Interface - Select an interface for binding.
Multicast Stream VLAN Trans	Switch the toggle to enable or disable the function. In some areas, the multicast VLAN tag value might be different from the IGMP VLAN tag. That might cause data transfer issues for IPTV packets flooding to other VLAN ports while watching the IPTV program.
	Configure the IGMP VLAN tag and the multicast VLAN tag with the same value if required.
	Downstream Multicast VLAN Tag – Enter the value for tagging the

	multicast packet. The range is from 0 to 4094. Upstream IGMP VLAN Tag – Enter the value for tagging the IGMP packet. The range is from 0 to 4094.
	VLAN Settings
Customer VLAN	It is available when a WAN Type is selected.
	Switch the toggle to enable or disable the function of VLAN with tag.
	Tag - Enter the value as the VLAN ID number. The range is from 0 to 4094.
	Priority - Enter the packet priority number for such VLAN. The range is from 0 to 7.
	Note if Multicast Stream VLAN Trans is enabled, the VLAN Settings will be ignored and disabled.

Options under the Advanced Mode

IPv4				
IPv4 Connection Type	<ul> <li>There are several types for network connection:</li> <li>PPPoE</li> <li>DHCP</li> <li>Static IP</li> </ul>			
Username/Password	It is available when PPPoE is selected as IPv4 Connection Type.			
PPP Authentication	It means the protocol used for PPP authentication. Both PAP and CHAP (Challenge-Handshake Authentication Protocol) can be used for PPP authentication. Router negotiates with the PPTP or L2TP server to determine which protocol to use.			
IP Assignment	It is available when PPPoE is selected as IPv4 Connection Type. DHCP - WAN IP address is dynamically allocated. Static IP - ISP has assigned a fixed WAN IP address. Enter an IP address.			
IP Address	It means the WAN IP address assigned by the ISP. It is available when Static IP is selected as IPv4 Connection Type.			
Subnet Mask	It means the WAN subnet mask. It is available when Static IP is selected as IPv4 Connection Type.			
Gateway IP	It means the IP address of the WAN Gateway. It is available when Static IP is selected as IPv4 Connection Type.			
Router Name	Set a name for the router. It is available when DHCP is selected as IPv4 Connection Type.			
Domain Name	Enter the domain name used for the router. It is available when DHCP is selected as IPv4 Connection Type.			
Cancel	Discard current settings and return to previous page.			
Apply	Save the current settings and exit the page.			

After finishing this web page configuration, please click Apply to save the settings.

# II-1-2-4 Dynamic DNS

Most ISPs assigns dynamic WAN IP addresses to their customers. Dynamic IP addresses presents challenges to users who would like to accept remote connections to their LANs from the Internet, as service could be disrupted due to the IP address changing without notice. By setting up service with a Dynamic DNS (DDNS) provider, and configuring Dynamic DNS updates on the Vigor router, you can have reliable access to your network by means of an easy-to-remember domain address that resolves to the most current WAN IP address.

The Vigor router supports a wide range of DDNS providers. Please contact the DDNS provider of your choice to set up service before configuring DDNS on the router.

SearchQ						
	WAN Connection	is WAN AutoHunt	Virtual WAN Dynamic DNS W	AN Budget DHCP Options Faile	ver Link Health Check Performa	nce SLA PPPoE Pass-Through
Device Menu	Dynamic DNS					
Dashboard						
E Configuration	+ Add 🗠 For	ce Update				Sharth Mac
Physical Interface	Name	Enabled	Service Provider	Domain Name	Enable ACME Client	Option
WAR						
LAN						
DNS						
Wireless LAN						
Routing						
RIP						
BGP						
OSPF						
Bandwidth Management						
NAT						
IGMP						
Objects						
LTE						
Wake on LAN						
Notification Services						
RADIUS/ TACACS+						
Certificates						

ltem	Description
Reset	Click to clear all profiles to factory settings.
+Add	Click to bring up the configuration page of the DDNS profile (max. 6).
Force Update	Click to connect immediately to DDNS servers to update IP address information.

To add a new DDNS profile, click the +Add link to get the following page.

		×
Name ()		
Fundhied		
Service Provider	DrayDDNS ~	
Service Status		
	Activate	
	Note: To use DrayDDNS, activate license and set up domain name on MyVigon Use Activate button to link to NyVigon page.	
Expire Date		
Domain Name	.drayddns.com	
	Sync Dormain	
Let's Encrypt Certificate		
Enable ACIVIE Client	(3)	
Status		
	Note: Frable ACME Client to pream and allow certificate to be onto renewed before warme stare	
More settings		
Update DDNS with	Internet IP 9/AN 02	
Carroel Apply		

ltem	Description					
Name	Enter a name as the profile name.					
Enabled	Switch the toggle to enable or disable the function.					
Service Provider	Select the DDNS provider. If your DDNS provider is not listed, select User-Defined and manually configure the profile.					
	DrayDDNS					
	NO-IP					
	• Dyn.com					
	• 58DDNS					
	<ul> <li>User-Defined</li> </ul>					
If DrayDDNS is selected as Service	Service Status - Click Activate to activate the service.					
	Expire Date - Display the expired date of the service.					
Provider	Domain Name - Display the domain and sub-domain to be updated.					
	Sync Domain – The domain name for DrayDDNS is set on the MyVigor server. Click this button to load and obtain the domain name if it is available.					
If NO-IP, Dyn.com is	Domain Name - The domain and sub-domain to be updated.					
selected as Service	Account Name - Enter the login name of the DDNS account.					
Provider	Password - Enter the password of the DDNS account.					
If User-Defined is selected as Service	Provider Host URL - Enter the IP address or the domain name of the host which provides related service.					
Provider	Service API - Enter the IP address or the domain name of the host which provides related service.					
	Server Response - Enter any text that you want to receive from the DDNS server.					
	Account Name - Enter the login name of the DDNS account.					
	Password - Enter the password of the DDNS account.					
	Auth Type –Two types can be used for authentication.					

	<ul> <li>Basic – Username and password defined later can be shown from the packets captured.</li> </ul>
	<ul> <li>URL - Username and password defined later can be shown in URL.</li> </ul>
	Enable ACME Client – Switch the toggle to generate a certificate issued by Let's Encrypt for applying to such DDNS account.
Let's Encrypt	It is available when DrayDDNS is selected as the service provider.
Certificate	Enable ACME Client – Switch the toggle to generate a certificate issued by Let's Encrypt for applying to such DDNS account.
	Status – Display the information related to Let's Encrypt certificate.
More settings	
Update DDNS with	If a Vigor router is installed behind any NAT router, you can enable this function to locate the real WAN IP.
	When the WAN IP used by Vigor router is private IP, this function can detect the public IP used by the NAT router and use the detected IP address for DDNS update.
	There are two methods offered for you to choose:
	Internet IP –The real public IP address will be used. Select this option if the IP address assigned to the router's WAN interface is not the actual external IP address.
	WAN IP – The IP address of the router's WAN interface will be used.
	+Add – Click to create a new group of Binding Interface and Interface IP. Up to 6 sets can be created.
	Binding Interface – Select the WAN interface associated with the DDNS profile.
	Interface IP – Select a WAN IP. If not, the default WAN IP will be used instead.
Update WAN IP Mode	It is available when DrayDDNS is set as the Service Provider.
	Update All Selected WAN IPs – Vigor router system will obtain the multiple WAN IPs based on the following table and upload to the service provider.
	Update Single WAN IP by Sequence – Vigor system will use the first selected WAN IP from the following table and upload to the service provider.
Auto Update Interval	The frequency, in minutes, at which the router connects to DDNS servers to update IP address information.
	The default is 14400.
Cancel	Discard current settings and return to previous page.
Apply	Save the current settings and exit the page.

After finishing this web page configuration, please click Apply to save the settings.

#### DrayDDNS Settings

DrayDDNS, a DDNS service developed by DrayTek, can record multiple WAN IP (IPv4/IPv6) on single domain name. It is convenient for users to use and easily to set up with MyVigor. Each Vigor Router is available to register one domain name to MyVigor for one year license.

DDNS updates take place when:

• The router is powered on or rebooted.

- The public IP address of any WAN interface changes.
- The online status of a WAN interface changes (going from online to offline or vice versa).
- The DDNS function is changed from "disabled" to "enabled".
- A DDNS entry is modified and enabled.
- The Auto Update Interval has elapsed.
- Pressing the Force Update.

### II-1-2-5 WAN Budget

This function is used to determine the data *traffic volume* for each WAN interface respectively to prevent overcharges for data transmission by the ISP. Please note that the Quota Limit and Billing cycle day of month settings will need to be configured correctly first in order for some period calculations to be performed correctly.

The WAN Budget feature allows you to conveniently keep track of Internet traffic volume. You can:

- set up calendar cycles to monitor;
- limit your Internet usage according to your ISP's quota;
- set up action(s) to take when the quota is exceeded.

	Configuration / WAN										Reset C Refresh
	WAN Connections	WAN AutoHun	t Virtual V	NAN	Dynamic DNS	WAN Budget	DHCP Option	s Fallover	Link Health Check	Perfo	rmance SLA PP
Device Menu	WAN Budget										
>) Dashboard	man budget										
Physical interface	Interface +	Enabled	Quota		Utilization			Time cycle	Email Alert	Option	
	[WAN] WAN1	Disable		мв			0%	Monthly	Disable	@ Edit	Reset Utilization
LAN	[WAN] WAN2	Disable		MB			05	Monthly	Disable	2 Edit	Reset Utilization
DNS	front more	Ursaule		MID			0.8	Mononly	Disable	er con	where considering
Wireless LAN	[WAN] WAN3	Disable	1	MB			0%	Monthly	Disable	d Edit	Reset Utilization
Routing	[WAN] WAN4	Disable		мв			0%	Monthly	Disable	/ Edit	Reset Ublization
RIP	Contractor of										
BGP	[WAN] WANS	Disable		MB			0%	Monthly	Disable	2 East	Reset Utilization
OSPF											
Bandwidth Management											
NAT											
IGMP											
Objects											
Wake on LAN											
Notification Services RADIUS/ TACACS+											
Certificates											

To edit a profile, click the Edit link to get the following page.

WAN Connections	WAN AutoHu	nt Virtual WAN	Dynamic DNS	WAN Budget			×
WAN Budget					Interface	[WAN]	WAN1
					Enabled		
Interface A	Enabled	Quota	Utilization				
[WAN] WAN1	Disable	MB			Quota 🕧	140	
[WAN] WAN2	Disable	MB				MB	GB
[WAN] WAN3	Disable	MB			When quota exceeded	Shutdown WAN inte	erface
[WAN] WAN4	Disable	MB			Time cycle	Monthly Cus	stom
[WAN] WAN4	Disable	MB			Select the day of a month when your (cellular) data resets.		
[WAN] WAN5	Disable	MB			Data quota resets on day	Select Day	~
						Select Time	~
					SMS Alert		
					SMS Alert		
					Email Alert		
					Note: To use Mail/SMS Alert, set up the Sender by navigating to	Notification Serv	<u>rices</u>
						Cancel Ap	pply

ltem	Description
Enabled	Switch the toggle to enable or disable the profile.
	When enabled, the WAN Budget is enabled for this WAN.
Quota	Enter the data traffic quota allowed for such WAN interface. There are two unit (MB and GB) offered for you to specify.
When quota exceed	Shutdown WAN interface - All the outgoing traffic through such WAN interface will be halted when the traffic has exceeded the budge limit.
Time Cycle	Monthly – Some ISP might apply for the network limitation based on the traffic limit per month. This setting is to offer a mechanism of resetting the traffic record every month.
	Custom - This setting allows the user to define the billing cycle according to his request. The WAN budget will be reset with an interval of billing cycle.
When Monthly is selected as the Time Cycle	Data quota resets on day - You can determine the starting day in one month.
When Custom is selected as the Time Cycle	Monthly is default. If long period or a short period is required, use Custom. The period of cycle duration is between 1 day and 30 days. You can determine the cycle duration by specifying the days and the hours. In addition, you can specify which day of today is in a cycle.
	Cycle duration (Days) – Specify the days (1~31) to reset the traffic record.
	Cycle duration (Hours) – Specify the hours (0~23) to reset the traffic record.
	Start Date – Specify the day in the cycle as the starting point which Vigor router will reset the traffic record.
	Start Time (Hr:Min.) - Specify the time for data quota rest in the cycle as the starting point which Vigor router will reset the traffic record.
SMS Alert	Switch the toggle to enable or disable the function.
	Send Alert SMS to – The system will send out SMS message to the user specified here when the quota is running out (less than 10%).
Email Alert	Switch the toggle to enable or disable the function.
	Send Alert Email to – The system will send out a warning message to the user specified here when the quota is running out (less than 10%)
Cancel	Discard current settings and return to previous page.
Apply	Save the current settings and exit the page.

After finishing this web page configuration, please click Apply to save the settings.

# II-1-2-6 DHCP Options

DHCP packets can be processed by adding option number and data information when this function is enabled and configured.

This page allows to configure additional DHCP client options.

	Configuration / WAN									() Reset
	WAN Connections	Virtual WAN	Dynamic DNS	WAN Budget	<b>OHCP Options</b>	Failover	Link Health Check	Performance SLA	PPPoE Pass-Through	
	DHCP Options									
<ul> <li>Dashboard</li> </ul>										
	+ Add								Swierchur	Max: 5
Physical Interface	Option Number			Data Type			Data	Apply to		Option
LAN										
DNS										
Wireless LAN										
Routing										
BGP										
OSPF										
Bandwidth Management										
NAT										
IGMP										
Objects										
USB Application										
Wake on LAN										
Notification Services										
RADIUS/ TACACS+										
Certificates										

To add/edit a profile, click the +Add/Edit link to get the following page.

N Connections	Virtual WAN	Dynamic DNS	WAN Budget	DHCP Options	Failover				×
ICP Options						Option Number (0-255)		150	
Add						Data Type	ASCII Chara	acter	~
ption Number 👳			Data Type			Data 🕕			
					ords Found!				
						Apply to		All WANs	~
						Note:			- 1
						<ol> <li>DHCP Option does NOT take effect when the config LAN or WAN settings.</li> </ol>	gured option	number conf	flicts with
								Cancel	Apply

ltem	Description
Option Number	Each DHCP option is composed by an option number with data. Enter a number.
Data Type	<ul> <li>Choose the type (ASCII or Hex or Address List) for the data to be stored. Type of data in the Data field:</li> <li>ASCII Character: A text string. Example: /path.</li> </ul>

	<ul> <li>Hexadecimal Digit: A hexadecimal string. Valid characters are from 0 to 9 and from a to f. Example: 2f70617468.</li> <li>Address List: One or more IPv4 addresses, delimited by commas.</li> </ul>
Data	Enter the content of the data to be processed by the function of DHCP option.
Apply to	Select WAN interface(s) to which this entry is applicable.
Cancel	Discard current settings and return to previous page.
Apply	Save the current settings and exit the page.

### II-1-2-7 Failover

This page allows to configure settings for failover WAN.

When the primary WAN of the router goes down the other available WAN interfaces will take over for network connection sequentially.

search Q	Configuration / WAN						3	Reset
and the second se	WAN Connections WAN Autor	Hunt Virtual WAN Dynan	nic DNS WAN Budget	DHCP Option	s Fallover	Link Health Check	Performance SLA	pp >
Device Menu	Failover							1
<ul> <li>Dashboard</li> </ul>	Fallover							
😆 Cantigoration	Primary WAN Members				Max: 1			
Physical Interface	Printery WAN Methoders	Interface			NIMA 7			- 1
WAN		Interiace						- 1
LAN		[WAN] WANS (Cellular WAN) \						- 1
DNS								- 1
Wireless LAN								- 1
Routing	Failover WAN Members				Mac-3			- 1
RIP		Interface		Priority ①	Option			- 1
BGP		[WAN] WAN1 (Wired WAN) ~		3	@ Delete			- 1
OSPF		[WAN] WAN2 (Wired WAN) ~		2	Delete			- 1
Bandwidth Management		(WAN) WANZ (WILED WAN) ~		2	El meiete			- 1
NAT		[WAN] WAN3 (Wireless WAN 2	.4GHz) 😔	3	ff Delete			- 1
IGMP		[WAN] WAN4 (Wireless WAN 5	Cherry	4	@ Delete			_
Objects		they have threasy hards	unity -	-	D strate			
LTE								
Wake on LAN	Advanced Settings. Set							- 1
Neodification Services	Advanced Settings							
RADIUS/ TACACS+								
Certificates								-

ltem	Description
Primary WAN Members	Interface – Select a WAN interface. This WAN will be used for network connection in default. However, if it loses connection, the failover WAN members will take over the network connection based on priority.
Failover WAN Members	Display all the active WAN interfaces which will run as failover WAN. If the interface specified in this field loses connection or is detected unsuccessfully, traffic can be forwarded to an alternate interface.
	Interface – Select a WAN interface. This WAN is intended to serve as a backup when other WAN ports specified have lost connection.
	Priority – Determine the priority of the failover WAN. The less the number is, the more it is used first as a backup WAN.
	Option (Delete) – Remove the entry settings (active WAN).
Advanced Settings	
Failback	Packets will be sent through another Interface or follow another policy when the original interface goes down (Failover to). Once the original interface resumes service (Failback), the packets will be returned to it immediately.
	Switch the toggle to enable / disable the function.
Restore Link Checks	It is available if Failback is enabled.
	Enter a value that will enable the system to determine the number of checks required for the link. Once the link is successfully checked, the connection will be restored.
Link Health Check and SLA	Switch the toggle to enable the function. If disabled, the active WAN interface will be determined based on

	WAN connection detection mode defined in the WAN Connections Profile.
	<ul> <li>If enabled, the WAN connection detection defined in the WAN</li> <li>Connections Profile will be ignored. The router will measure the performance of interface members, and active interfaces will be determined using Link Health Check and Performance SLA.</li> <li>Interface Link Health &amp; SLA – List the available WAN interfaces for setting different health check methods.</li> <li>Interface – Display the WAN interfaces.</li> </ul>
	<ul> <li>Link Health Check Profile – Select one of the available check profiles (defined on Configuration&gt;&gt;WAN&gt;&gt;Link Health Check) for the interface.</li> </ul>
	Off $\checkmark$
	Off
	Google DNS
	CloudFlare DNS
	Quad9 DNS
	<ul> <li>Performance SLA – Select one of the available check profiles (defined on Configuration&gt;&gt;WAN&gt;&gt;Performance SLA) for the interface.</li> </ul>
Failure Retry Checks	Specify how many times for the system to check the connections. If all attempts fail, the system will determine that the connection is unstable.
Cancel	Discard current settings and return to previous page.
Apply	Save the current settings and exit the page.

### II-1-2-8 Link Health Check

Link Health Check is used for specifying the IPs (IPv4 and IPv6) that need to be verified to ensure network connectivity via ping/httping.

This page allows you to create profiles for executing the link health of the WAN interface.

By default, the system offers standard health check options such as Google DNS, CloudFlare DNS, and Quad9 DNS.

Take Google DNS as an example. This profile indicates that primary/secondary IPv4 target (8.8.8.8/8.8.4.4) is used for checking IPv4 network connection, while primary/secondary IPv6 target (2001:4860:4860::8888, 2001:4860:4860::8844) is used for checking IPv6 network connection. Network connection detection is performed per 10 seconds. If one of the IPv4 and IPv6 addresses is detected connection unsuccessfully, it will be judged as checking network connection failure.

Search Q	Configuration / WAN					U) Re	eset C Refresh
	WAN Connections	WAN AutoHunt V	irtual WAN Dynamic DNS	WAN Budget DHCP Options	Fallover Link Health Check	Performa	ance SLA PP
evice Menu	Link Health Check						
h Dashboard	Link Health Check						
	+ Add						Max: 1
Physical Interface	Profile Name	Primary IPv4 Target	Secondary IPv4 Target	Primary IPv6 Target	Secondary IPv6 Target	Interval	Option
	Google DNS	8.8.8.8	8.8.4.4	2001:4860:4860::8888	2001:4860:4860::3844	10	2 Eait
LAN	CloudFlare DNS	1.1.1.1	1.0.0.1	2605:4700:4700:1111	2606:4700:4700::1001	10	2 Edit
DNS							
Wireless LAN	Quad9 DN5	9.9.9.9	149.112.112.112	2620:fe::fe	2620:fe::9	10	R Edit
Routing							
RIP							
BGP							
OSPF							
Bandwidth Management							
NAT							
IGMP							
Objects							
LTE							
Wake on LAN							
Notification Services							
RADIUS/ TACACS+							
Certificates							

To add/edit a profile, click the +Add/Edit link to get the following page.

VAN Connections	WAN AutoHunt Virtual	WAN Dynamic DNS	WAN Budget		×
Link Health Check				Profile Name 🕦	Google DNS
+ Add Profile Name	Primary IPv4 Target	Secondary IPv4 Target	Prima	Detection Method	Ping Detect 🗸 🗸
Google DNS	8.8.8.8	8.8.4.4	2001:4	Primary IPv4 Target ()	8.8.8.8
CloudFlare DNS	1.1.1.1	1.0.0.1	2606:4	Secondary IPv4 Target (i)	8.8.4.4
Quad9 DNS	9.9.9.9	149.112.112.112	2620:f	Primary IPv6 Target ()	2001:4860:4860::8888
				Secondary IPv6 Target 🕦	2001:4860:4860::8844
				Interval (Seconds) 🕕	10
					Cancel Apply

ltem	Description
Profile Name	Enter a name as the Link Health Check profile.
Detection Method	<ul><li>Select the protocol for ping detection.</li><li>HTTP Detect</li><li>Ping Detect</li></ul>
Primary IPv4 Target	Enter the first IPv4 address as the primary target for health check.
Secondary IPv4 Target	Enter the second IPv4 address as the secondary target for health check.
Primary IPv6 Target	Enter the first IPv6 address as the primary target for health check.

Secondary IPv6 Target	Enter the second IPv6 address as the secondary target for health check.
Interval	Set the time interval (unit is second) for network detection or checking.
Cancel	Discard current settings and return to previous page.
Apply	Save the current settings and exit the page.

## II-1-2-9 Performance SLA

This page allows you to set the thresholds for jitter, latency, and loss for Performance SLA (Service Level Agreement), which will be used for detecting the health status of the WAN connection.

Search Q	Configuration / WAN			3	Reset CRefres
	WAN Connections WAN AutoHunt	Virtual WAN Dynamic DNS WAN Budge	t DHCP Options Failover Lir	nk Health Check Perfor	mande SLA PP
wice Menu	Performance SLA				
Dashboard	r en ormanice ser				
	+ Add				Max
Physical Interface	Profile Name	Jitter Threshold	Latency Threshold	Loss Rate	Option
	Wired Default Performance SLA	30	20	2	2 Edn
LAN	Wireless Default Performance SLA	80	80	2	/ East
DNS	Whereas beaut Performance SDA	80	80	2	6 crait
Wireless LAN					
Routing					
RIP					
BGP					
BGP OSPF					
OSPF					
OSPF Bandwidth Management					
OSPF Bandwidth Management NAT					
OSPF Bandwidth Management NAT IGMP					
OSPF Bandwidth Management NAT IGMP Objects					
OSPF Bandwidth Management NAT IGMP Objects LTE					
OSPF Bandwidth Management NAT IGMP Objects LTE Wake on LAN					

To add/edit a profile, click the +Add/Edit link to get the following page.

WAN Connections WAN AutoHunt Virtual WAN	Dynamic DNS WAN Budget		×
Performance SLA		Profile Name 🕦	Wired Default Performance SLA
+ Add			
Profile Name	Jitter Threshold 👳	Jitter	
Wired Default Performance SLA	30	Jitter Threshold (ms) 🛈	30
Wireless Default Performance SLA	80	Latency	
		Latency Threshold (ms) ()	30
		Packet Loss	
		Loss Rate (%) ()	2
			Cancel Apply

ltem	Description
Profile Name	Enter a name as the Link Health Check profile.
Jitter	Switch the toggle to enable or disable the jitter function. Jitter Threshold - It defines the change rate of latency. For stable
	session, small jitter value will be better. When the detected value is greater than the value set here, the
Latency	connection will be regarded as unstable and connection failure. Switch the toggle to enable or disable the latency function.
	Latency Threshold - It defines the time taken by Vigor router when sending the packets to the IP set in Link Condition Detection.
	When the detected value is greater than the value set here, the connection will be regarded as unstable and connection failure.
Packet Loss	Switch the toggle to enable or disable the packet loss function. Loss Rate - It defines the proportion that packets will be discarded before arriving at the IP set in Link Condition Detection.
	When the detected value is greater than the value set here, the connection will be regarded as unstable and connection failure.
Cancel	Discard current settings and return to previous page.
Apply	Save the current settings and exit the page.

## II-1-2-10 PPPoE Pass Through

The router offers PPPoE dial-up connection. Besides, you also can establish the PPPoE connection directly from local clients to your ISP via the Vigor router. According to the WAN Connection Type, this feature will encapsulate the PPPoE package of local clients and send it to the WAN Server.

SearchQ.	Configuration / WAN	③ Reset
	K WAN AutoHunt Virtual WAN Dynamic DNS WAN Budget DHCP Options Failover Link Health Check Performance SLA P	PPOE Pass-Through
Device Menu	PPPoE Pass-Through	
<ul> <li>Dashboard</li> </ul>	i i o i i os mougi	
🚖 Configuration —	Selected WAN Proace select	
Physical Interface		
WAN	PPPoE Pass-through	
LAN		
DNS	To Wired LAN	
Wireless LAN	Pass-through to- All Clients Selected LANs Specific LAN Clients	
Routing		
RIP	Specific Pass-through Clients + Add Max: 6	
BGP	MAC Address	
OSPF		
Bandwidth Management		
IGMP		
Objects		
LTE		
Wake on LAN		
Notification Services		
RADIUS/ TACACS+		
Certificates	Cancel Apply	

Thus, the PC can access Internet through such direction.

Available settings are explained as follows:

ltem	Description			
Selected WAN	Select a WAN interface fo	Select a WAN interface for applying the PPPoE pass-through.		
To Wired LAN	Switch the toggle to enable or disable the function. If enabled, wired LAN clients can initiate PPPoE dial-up connections to the selected WAN.			
Pass-through to	All Clients – All the wired connections to the select		e PPPoE dial-up	
	Selected LANs – One or more LAN clients can initiate PPPoE dial-u connections to the selected WAN. Specific LAN Clients – Up to six specific LAN clients can initiate PP dial-up connections to the selected WAN.			
	<ul> <li>+Add –Click to add</li> </ul>	• +Add –Click to add a new client.		
	Specific Pass-through Clients	+Add	Max: 6	
		MAC Address	Option	
			🔟 Delete	
Cancel	Discard current settings.			
Apply	Save the current settings			

After finishing this web page configuration, please click Apply to save the settings.

# II-1-3 LAN

A LAN(Local Area Network) comprises a collection of LAN clients, which are networked devices on your premises. A LAN client can be a computer, a printer, a Voice-over-IP (VoIP) phone, a mobile phone, a gaming console, an Internet Protocol Television (IPTV), etc, and can have either a wired (using Ethernet cabling) or wireless (using Wi-Fi) network connection.

LAN clients within the same LAN are normally able to communicate with one another directly, as they are peers to one another, unless measures, such as firewalls or VLANs, have been put in place to restrict such access. Nowadays the most common LAN firewalls are implemented on the LAN client itself. For example, Microsoft Windows since Windows XP and Apple OS X have built-in firewalls that can be configured to restrict traffic coming in and going out of the computer. VLANs, on the other hand, are usually set up using network switches or routers.

To communicate with the hosts outside of the LAN, LAN clients have to go through a network gateway, which in most cases is a router that sits between the LAN and the ISP network, which is the WAN. The router acts as a director to ensure traffic between the LAN and the WAN reach their intended destinations.

#### **IP Address**

On most broadband networks, the ISP assigns a single WAN IP address to the subscriber. All LAN clients have to share this WAN IP address when accessing the Internet. To achieve this, a technique called Network Address Translation (NAT) is used. Under NAT, a private block of IP addresses is assigned to the LAN clients, which communicate with WAN hosts through the router, also known as the gateway.

On outgoing traffic to the WAN, the router makes note that a LAN client has attempted to reach a WAN host, and forwards the request to the intended WAN recipient.

On traffic incoming to the LAN from a WAN host, the router checks its records to see if a matching outstanding request from a LAN client to this WAN host exists, and if so, forwards it to the LAN client. Otherwise, the traffic is dropped.

There are 3 distinct blocks of IPv4 address that are reserved for use as private IP addresses on a LAN.

Name IP Address Range	Number of Available Addre	esses Largest Subnet Mask
24-bit Block 10.0.0.0 to 10.2	55.255.255 16,777,216 255	.0.0.0
20-bit Block 172.16.0.0 to 17	72.31.255.255 1,048,576	255.240.0.0
16-bit Block 192.168.0.0 to 1	192.168.255.255 65,536	255.255.0.0

The default beginning IP Address of LAN 1 is 192.168.1.1, and the Subnet Mask is 255.255.255.0, for a total of 254 assignable IP addresses, from 192.168.1.1 to 192.168.1.254. The final IP address of the selected range is reserved for routing and cannot be assigned to a LAN client.

In most cases, the default IP address block should work satisfactorily. However, there are situations where you need to select a different address block, such as when you need to communicate with other LANs that already use the same address block.

Private IP addresses can be assigned automatically to LAN clients using Dynamic Host Configuration Protocol (DHCP), or manually assigned. The DHCP server can either be the router (the most common case), or a separate server, that hands out IP addresses to DHCP clients.

Alternatively, static IP addresses can be manually configured on LAN clients as part of their network settings. No matter how IP addresses are configured, it is important that no two devices get the same IP address. If both DHCP and static assignment are used on a network, it is important to exclude the static IP addresses from the DHCP IP pool. For example, if your LAN uses the 192.168.1.x subnet and you have 20 DHCP clients and 20 static IP clients, you could configure 192.168.1.10 as the Start IP Address, 50 as the IP Pool Counts (enough for the current number of

DHCP clients, plus room for future expansion), and use addresses greater than 192.168.1.100 for static assignment.

### II-1-3-1 LANs

This page provides you the general settings for LAN.

Open Configuration>>LAN and click the LANs tab to open the following page.

Search Q		Bind IP to		otions Inter-LAN Rou	iting VLAN List Inte	erfara VIAN IAN	Part 802 1x		
	_	Dirigin to	and since of	and a second sec	and the last in		1.010.0000110		
ව Dashboard	LANs								
	+ Add								Max
Physical Interface	Name	Usage	IPv4 Address	Subnet Mask	IPv4 DHCP Server	Primary DNS	IPv6 Assignment	Router IPv6 Address Table	Option
WAN	LANT	NAT	192.168.1.1	255.255.255.0/24	On	8.8.8.8	Stateless	[fe80::1649:bcff:fe36:6100/64]	e <sup>b</sup> Edit
DNS									
Wireless LAN									
Routing									
RIP									
BGP									
OSPF									
Bandwidth Management									
NAT									
IGMP									
Objects									
USB Application									
Wake on LAN									
Notification Services									
RADIUS/ TACACS+									
Certificates									

To add/edit a profile, click the +Add/Edit link to get the following page. Here, we take LAN1 as an example.

		×
		Advanced Mode: OFF
Neme @	LANI	
General Setup		
iPud.	Enable	
Lisage	NAT Bruding	
IPv6-		
IPv4		~
IPv4-Address (L)	192,158.1.1	
Subnet Mask	255.255.255.0/24	
DHCP Server Configuration		
	Der Off Reiny	
IPv4 DHCP Server		
IPv4 DHCP Server Stars IP Address (0)	192,168,1,10	
	192.168.1.10	
Start IP Address (D)		
Start (P Address ) () IR Pool Counts (1-252)	100	
Start IP Address (0) IP Pool Counts (1-352) Gateway IP Address (0)	100 192.168.1.1	

ltem	Description
Advanced Mode: ON/OFF	Click to show or hide the advanced settings for LAN.
Name	Display the name for identification. Change the name if required.
	General Setup

IPv4	Display the status (enable/disable) of the profile.
Usage	<ul><li>Specify the IP forwarding method.</li><li>NAT</li></ul>
	Routing
IPv6	Switch the toggle to configure / ignore the IPv6 settings.
	IPv4
IPv4 Address	This is the IP address of the LAN interface (default: 192.168.1.1).
Subnet Mask	Select a subnet mask of the LAN interface.
	DHCP Server Configuration
IPv4 DHCP Server	LAN1 is configured with DHCP in default.
	DHCP stands for Dynamic Host Configuration Protocol. The router by factory default acts a DHCP server for your network so it automatically dispatches related IP settings to any local user configured as a DHCP client. It is highly recommended that you leave the router enabled as a DHCP server if you do not have a DHCP server for your network.
	If you want to use another DHCP server in the network other than the Vigor Router's, you can let Relay Agent help you to redirect the DHCP request to the specified location.
	On - Enables the built-in DHCP server on the router.
	Off - Disables the built-in DHCP server on the router.
	Relay - When selected, all DHCP requests are forwarded to a DHCP server outside of the LAN subnet, and whose address is specified in the DHCP Server IP Address field.
lf On is selected as DHCP Server	Start IP Address - The beginning LAN IP address that is given out to LAN DHCP clients.
	IP Pool Counts - The maximum number of IP addresses to be handed out by DHCP. The default value is 100. Valid range is between 1 and 253.
	Gateway IP Address - The IP address of the gateway, which is the host on the LAN that relays all traffic coming into and going out of the LAN. The gateway is normally the router.
	Lease Time - The maximum duration DHCP-issued IP addresses can be used before they have to be renewed.
	Primary DNS - DNS stands for Domain Name System. Every Internet host must have a unique IP address, also they may have a human-friendly, easy to remember name such as www.yahoo.com. The DNS server converts the user-friendly name into its equivalent IP address.
	Secondary DNS - You can specify secondary DNS server IP address here because your ISP often provides you more than one DNS Server.
lf Relay is selected as DHCP Server	When selected, all DHCP requests are forwarded to a DHCP server outside of the LAN subnet, and whose address is specified in the DHCP Server IP Address field.
	Primary DNS - DNS stands for Domain Name System. Every Internet host must have a unique IP address, also they may have a human-friendly, easy to remember name such as www.yahoo.com. The DNS server converts the user-friendly name into its equivalent IP address.

	You must specify a DNS server IP address here because your ISP should provide you with usually more than one DNS Server.
	Secondary DNS - You can specify secondary DNS server IP address here because your ISP often provides you more than one DNS Server.
	DHCP Relay over WAN (Primary) – Switch the toggle to enable this function. Then, specify a WAN interface for the first DHCP Server.
	<ul> <li>Primary DHCP Server Interface – Use the drop-down list to choose a WAN interface for the first DHCP Server.</li> </ul>
	Primary DHCP Server IP Address - Enter the IP Address of the DHCP server to which DHCP requests from LAN clients are forwarded.
	DHCP Relay over WAN (Secondary) - The secondary DHCP server is an optional setting. If required, specify a WAN interface for the second DHCP Server as a backup server.
	<ul> <li>Secondary DHCP Server Interface – Use the drop-down list to choose a WAN interface for the second DHCP Server.</li> </ul>
	Secondary DHCP Server IP Address - Enter the IP Address of the DHCP server to which DHCP requests from LAN clients are forwarded.
IP Assignment for Teleworkers	The VPN client will receive an IP address from the DHCP pool or IP address range (defined below) for Teleworkers.
	Assignment Start IP – Enter an IP address that serves as the starting point of a range of IP addresses.
	Assignment End IP – Enter an IP address that serves as the end point of a range of IP addresses.
	IPv6
IPv6 Assignment	Configures the Managed Address Configuration flag (M-bit) in Route Advertisements.
	Stateless – M-bit is unset.
	DHCPv6(Stateful) – M-bit is set, which indicates to LAN clients that they should acquire all IPv6 configuration information from a DHCPv6 server. The DHCPv6 server can either be the one built into the Vigor router, or a separate DHCPv6 server.
	Manual – No configuration information is sent.
Router Advertisement	It is available when Stateless is selected as the IPv6 Assignment.
Configuration	The router advertisement daemon sends Router Advertisement messages, specified by RFC 2461, to a local Ethernet LAN periodically and when requested by a node sending a Router Solicitation message These messages are required for IPv6 stateless auto-configuration.
	Generate Prefix From – Select the primary WAN interface which is capable to generate the prefix for IPv6 address. Use the drop down list to specify a WAN interface for IPv6.
	Disabled
	[WAN] WAN1 (Static_IP_1)
	- [WAN] WAN2 (Static_IP_22)
	[WAN] WAN3 ()
	r [WAN] WAN4 ()

DNS Configuration	It is available when Stateless is selected as the IPv6 Assignment. DNS Assign Methods
	<ul> <li>RA(RDNSS) – The DNS server used for hosts (e.g., PC) will be configured via the Router Advertisement Configuration.</li> </ul>
	<ul> <li>Bit(DHCPv6) – The DNS server used for hosts will be configured via DHCPv6 server.</li> </ul>
	<ul> <li>Manual – Vigor router system will not send DNS sever configuration to the hosts.</li> </ul>
	Primary DNS Address - Enter the IPv6 address for Primary DNS server.
	Secondary DNS Address - Enter another IPv6 address for DNS server if required.
DHCPv6 Server Configuration	It is available when DHCPv6 (Stateful) is selected as the IPv6 Assignment.
J. J	On - Enables the built-in DHCPv6 server on the router.
	<ul> <li>Generate Prefix From – Select the primary WAN interface which is capable to generate the prefix for IPv6 address. Use the drop down list to specify a WAN interface for IPv6.</li> </ul>
	<ul> <li>Auto IPv6 Address Range</li> </ul>
	<ul> <li>Random IPv6 Address Allocation</li> </ul>
	Off - Disables the built-in DHCPv6 server on the router.
	Relay - When selected, all DHCP requests are forwarded to a DHCP server outside of the LAN subnet, and whose address is specified in the DHCP Server IP Address field.
	• DHCPv6 Server Interface – Use the drop down list to specify a WAN interface for IPv6.
	<ul> <li>DHCPv6 Server Address - Enter the IPv6 address of the DHCPv6 server.</li> </ul>
DNS Configuration	It is available when DHCPv6 (Stateful) is selected as the IPv6 Assignment.
	Primary DNS Address - Enter the IPv6 address for Primary DNS server.
	Secondary DNS Address - Enter another IPv6 address for DNS server if required.
More Settings - Force DNS Redirection	Enabled – Switch the toggle to enable or disable the function. This function allows all outgoing DNS queries to be intercepted and redirected to the router built-in DNS server, improving the domain lookup performance by caching DNS queries and results.
Options under the Adva	nced Mode
Router IPv6 Address Table	Enter IPv6 Address and Prefix length to be added, or click an existing IPv6 address to be deleted in the Current IPv6 Address Table below and the values will be automatically copied over.
	+Add – Click it to add a new entry. Max is 5.
	Static IP Address – Enter the static IPv6 address for LAN.
Unique Local Address Configuration	Unique Local Addresses (ULAs) are private IPv6 addresses assigned to LAN clients.
	ULA Prefix – LAN clients will be assigned ULAs generated based on the prefix manually entered.
	<ul> <li>Off – ULA is disabled.</li> </ul>

	<ul> <li>Auto – LAN clients will be assigned ULAs using an automatically-determined prefix.</li> </ul>
	• Manual – Enter an IPv6 address.
Router Advertisement Configuration	The Advanced Settings page has additional settings for Router Advertisement and enabling multiple WANs for IPv6 traffic.
	RA Priority – Select the default preference value (Low, Medium, High) of the router sent in route advertisement messages.
	Min / Max Interval Time – Minimum/ Maximum time, in seconds, between unsolicited multicast route advertisement messages sent by the RA server.
	Valid Lifetime – Enter one number (unit is second) to specify the valid lifetime for the DHCPv6 server. The device (connected via the LAN interface) is to be used as the default router.
	This device (connected via the LAN interface) will be treated as the default router within the valid lifetime.
	Preferred Lifetime – Enter one number (unit is second) to specify the preferred lifetime for the DHCPv6 server. It must be lower or equal to the valid lifetime. This device (Vigor router) will be treated as the default router within the preferred lifetime. When there are multiple routers, priority is necessary. In general, the router within the preferred lifetime has higher priority than the router within the valid lifetime.
	Hop Limit - The value is required for the device behind the router when IPv6 is in use. Default value of hop limit field in Route Advertisement messages.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

After finishing this web page configuration, please click Apply to save the settings.

# II-1-3-2 Bind IP to MAC

This function is used to bind the IP and MAC address in LAN to have a strengthening control in network. With the Bind IP to MAC feature you can reserve LAN IP addresses for LAN clients. Each reserved IP address is associated with a Media Access Control (MAC) address.

searchQ	Configuration / LAN					© Resa
	LANS BING IF to MAC DE	CP Options Inter-LAN Routing VLAN I	List Interface VLAN LAN Por	t 802.1X		
	Bind IP to MAC					
n Dashboard	BIND IP LO MAC					
	+ Add				Search,	Max: 30
Physical Interface	Comment	MAC Address		IP Address		Option
WAN						
DNS						
Wireless LAN						
Routing						
RIP						
BGP						
OSPF						
Bandwidth Management						
NAT						
IGMP						
Objects						
USB Application						
Wake on LAN						
Notification Services						
RADIUS/ TACACS+						
Certificates						

P to MAC DHCP Options	Inter-LAN Routing	VLAN List Interf		×
2			Comment 🕡	Bind_1F_to_3F
			MAC Address (Input format is FF:FF:FF:FF:FF:FF;FF)	08:BF:B8:D5:DD:A9
	MAC Address	No Records	IP Address ()	192.168.1.100

To add/edit a profile, click the +Add/Edit link to get the following page.

Available settings are explained as follows:

ltem	Description
Comments	Enter a brief comment to identify this IP Address – MAC Address pair.
MAC Address	Enter the MAC address of the LAN client's network interface.
IP Address	Enter the IP address to be associated with a MAC address.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

# II-1-3-3 DHCP Options

DHCP packets can be processed by adding option number and data information when such function is enabled and configured.

Search	Configuration / LAN				<li>Rese</li>
	LANS BIND IP to MAC DHCP OPO	ons Inter-LAN Routing VLAN List Interfac	e VLAN LAN Port 802.1X		
	DHCP Options				
b Dashboard	DHCP Options				
	+ Add			Searc	May:
Physical Interface	Option Number	Data Type	Data	Apply to	Option
WAN					
DNS					
Wireless LAN					
Routing					
BGP					
OSPF					
Bandwidth Management					
NAT					
IGMP					
Objects					
USB Application					
Wake on LAN					
Notification Services					
RADIUS/ TACACS+					
Certificates					

To add/edit a profile, click the +Add/Edit link to get the following page.

HCP Options Inter-LAN Routing VLAN List	Interface VLAN L		×
		Option Number (0-255)	47
		Data Type	ASCII Character $ \smallsetminus $
Data Type 👳		Data 🕦	
	No Records Found!	Apply to Note: 1. DHCP Option does NOT take effect when the configured optior LAN or WAN settings.	All LANS V All LANS Specified LAN
			Сапсег

ltem	Description
Option Number	Enter a DHCP option number for this function.
Data Type	Choose the type (ASCII or Hex or Address List) for the data to be stored.
Data	<ul> <li>Enter the data in the Data field based on the data type selected.</li> <li>ASCII Character - A text string. Example: /path.</li> <li>Hexadecimal Digital - A hexadecimal string. Valid characters are from 0 to 9 and from a to f. Example: 2f70617468.</li> <li>Address List - One or more IPv4 addresses, delimited by commas.</li> </ul>

Apply to	Select LAN interface(s) to which this entry is applicable.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

## II-1-3-4 Inter-LAN Routing

Up to 25 routing profiles provided by the router allow the users to divide groups into different subnets. In addition, different subnets can link for each other by configuring Inter-LAN Routing.

Search Q,	Configuration / LAN				(1) Reset
Device Menu	LANS Bind IP to MAC DHCP Options	Inter-LAN ROUTIng VLAN List Interfa	ICE VLAN LAN Fort 802.1X		
Statement of the local division of the local	Inter-LAN Routing				
<ul> <li>Dashboard</li> </ul>					
S Companyon	+ Add			Search	Max: 25
Physical Interface	Group Name	Enabled	Selected LANs		Option
WAN					
LAN					
DNS					
Wireless LAN					
Routing					
RIP					
BGP					
OSPF					
Bandwidth Management					
NAT					
IGMP					
Objects					
USB Application					
Wake on LAN					
Notification Services					
RADIUS/ TACACS+					
Certificates					

To add/edit a profile, click the +Add/Edit link to get the following page.

Bind IP to MAC	DHCP Options	Inter-LAN Routing	VLAN List Interf		×
r-LAN Routing				Group Name 🕕	Inter_100
dd				Enabled	
up Name 🖕		Enabled			
			No Records	Selected LANs	select your options
					Select All
					Search
					[LAN] LAN1
					Cancel Apply

ltem	Description
Group Name	Display the name for identification. Change the name if required.
Enabled	Switch the toggle to enable the settings.
Selected LANs	Select the box to link two or more different subnets (LAN and LAN).
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-1-3-5 VLAN List

Virtual Local Area Networks (VLANs) allow you to subdivide your LAN to facilitate management or to improve network security.

This page allows you to create up to 8 VLAN profiles.

SearchQ	Configuration / LAN			3 Revel C Refre
	LANS Bind IP to MAC DHC	P Options Inter-LAN Routing VLAN LILI Inte	rface VLAN LAN Port 802.1X	
b Dashboard	VLAN List			
	+ Add			Max
Physical Interface	VLAN ID	Name	LAN	Option
WAN	1.	Default VLAN	[LAN] LAN1	@ Edit
DNS				
Wireless LAN				
Routing				
RIP				
BGP				
OSPF				
Bandwidth Management				
NAT				
IGMP				
Objects				
USB Application				
Wake on LAN				
Notification Services				
RADIUS/ TACACS+				
Certificates				

To add/edit a profile, click the +Add/Edit link to get the following page.

MAC	DHCP Options	Inter-LAN Routing VLAN List	Interface VLAN L/			×
				VLAN ID 🕕	100	
				Name	Default	VLAN
		Name		LAN	[LAN] LAN1	~
		Default VLAN			[LAN] LAN1	
					Cancel Ap	oply

ltem	Description			
VLAN ID	Enter a number as the VLAN Identifier. Valid values are form 0 to 4095. VIDs must be unique.			
Name	Enter a name of the VLAN profile.			
LAN	Display the physical LAN subnet on the router. Select the LAN subnet(s) to bind them under the selected VLAN.			
Cancel	Discard current settings and return to the previous page.			
Apply	Save the current settings and exit the page.			

## II-1-3-6 Interface VLAN

Port-based VLAN uses physical ports (P1 ~ P4) to separate the clients into different VLAN group.

Virtual LAN function provides you a very convenient way to manage hosts by grouping them based on the physical port. The multi-subnet can let a small businesses have much better isolation for multi-occupancy applications.

SearchQ. Device Menu (?) Dashboard E Cardigmenter Physical Interface	Configuration / LAN LANS Bind IP to MAC DHCP Interface VLAN Settings Ethernet	P Options Inter-LAN	N Routing VLAN List	Interlace YUAN LAN Port 802.1X	Deret Clemen
WAN When DNS Writeless LAN Routing RIP BGP CSIP5 Bandwidth Management NAT IGMP Objects USB Application Wake on LAN Notification Services RADIUX/TACAC5+ Certificates		Interface Port Type Port 1 Access ~ Port 2 Access ~ Port 3 Access ~ Port 4 Trunk ~	Untaggied VLAN 1 (Default VLAN) ~ 1 (Default VLAN) ~ 1 (Default VLAN) ~ 7 (Default VLAN) ~	Tagged VLAN Market VS Market	

ltem	Description
Port Type	Select the VLAN type that the interface (Port 1 to 4) will be applied.
	Trunk – The selected Ethernet port can be used or applied to Multiple VLAN profiles.
	Access – The selected Ethernet port can be used or applied to single VLAN profile.
Untagged VLAN	Select the VLAN profile(s) which will not be tagged.
	Leave one VLAN untagged at least to prevent from not connecting to Vigor router due to unexpected error.
Tagged VLAN	Enable 802.1Q tagging for the selected VLAN.
	The router will add specific VLAN number to all packets on the LAN while sending them out.
	All VLANs – All VLAN profiles will be tagged.
	Selected VLANs – Only the selected VLAN profiles will be tagged.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-1-3-7 LAN Port 802.1x

Wired 802.1X provides authentication for clients wishing to connect to the LAN by Ethernet. Only one client can be authenticated on each LAN port.

	Configuration / LAN				3 Res
	LANS Bind IP to MAC	DHCP Options Inter-LAN	Routing VLAN List. Inter	face VLAN LAN Port 802.1x	
> Dashboard	LAN Port 802.1X				
	Enable LAN Port 802.1X				
Physical Interface	802.1X Ports	Port Name	Function	Enabled	
WAN LIKN		Port 1	LAN	0	
DNS		Port 2	LAN	0	
Wireless LAN		Port 3	LAN		
Routing					
BGP		Port 4	LAN	0	
OSPF	Note: 802.1X requires LAN 1	unction on the port. Manage	in Physical Interface		
Bandwidth Management					
NAT					
Objects					
USB Application					
Wake on LAN					
Notification Services					
RADIUS/ TACACS+					
Certificates	Cancel Apply				

ltem	Description
Enabled LAN 802.1X	Switch the toggle to enable or disable LAN 802.1x function.
Port Name	Display the name of the physical LAN port.
Enabled	Switch the toggle to enable or disable the function. If enabled, the 802.1X authentication will be available for the selected LAN ports.
Cancel	Discard current settings.
Apply	Save the current settings.

# II-1-4 DNS

DNS stands for Domain Name System. Every Internet host must have a unique IP address, also they may have a human-friendly, easy to remember name such as www.yahoo.com. The DNS server converts the user-friendly name into its equivalent IP address.

This section offers settings for DNS security and LAN DNS/Forwarding.

# II-1-4-1 DNS Security

The DNS servers must support DNS security validation for the feature to function properly.

searchQ	Configuration / DNS	NS / Forwarding				Silleset CiRefresh
Device Menu C Dashboard Coffmunetor Physical Interface WAN LAN THE Wireless LAN Routing RIP GGP OSPF Bandwidth Management NAT IGMP Objects USB Application Wake on LAN Notification Services	DNS Security DNS Security # Add WAN Enabled	NS / Forwarding Primary DNS	Primary DNSSEC Status	Secondary DNS	Secondary DNSSEC Status	Datas B
RADIUS/ TACACS+ Certificates						

To add/edit a profile, click the +Add/Edit link to get the following page.

Forwarding				×
			WAN	[WAN] WAN2 (Wired WAN) >
Primary DNS	Primary DNSSEC Status	Second	Primary DNS	
		No Records Foundi	Primary DNSSEC Status Secondary DNS Secondary DNSSEC Status	-
				Cancel Apply
ltem	Description			
---------------------------	--			
WAN	Select the WAN interface for which DNS security is to be configured.			
Enabled	Switch the toggle to enable or disable DNS security for this WAN Interface. Bogus DNS Reply will be dropped when DNS security enabled.			
Primary DNS	Shows the primary DNS server used by this WAN.			
	If "" appears, it means that no WAN is up or no DNS server is configured.			
Primary DNSSE Status	Shows the inspection results if the DNS server supports the DNS security. The result might be:			
	• [Supported] means the DNS server supporting DNS security.			
	<ul> <li>[Unsupported] means the DNS server does not support DNS security,</li> </ul>			
	• "" means the WAN interface is not up or no DNS server detected			
	<ul> <li>[Check Failed - WAN Issue] means failure to inspect due to no Internet connection.</li> </ul>			
	• [DNSSEC Disabled] means the DNS security is disabled.			
	Note: Domain Name System Security Extensions (DNSSEC) protects against DNS-based attacks by authenticating DNS responses from DNS resolvers.			
Secondary DNS	Shows the secondary DNS server used by this WAN.			
	If "" appears, it means that this WAN is not up or no DNS server is configured.			
	it means that this WAN is not up or no DNS server is configured.			
Secondary DNSSE Status	Shows the inspection results if the DNS server supports the DNS security. The result might be:			
	• [Supported] means the DNS server supporting DNS security.			
	<ul> <li>[Unsupported] means the DNS server does not support DNS security,</li> </ul>			
	• "" means the WAN interface is not up or no DNS server detected			
	<ul> <li>[Check Failed - WAN Issue] means failure to inspect due to no Internet connection.</li> </ul>			
	• [DNSSEC Disabled] means the DNS security is disabled.			
	Note: Domain Name System Security Extensions (DNSSEC) protects against DNS-based attacks by authenticating DNS responses from DNS resolvers.			
Cancel	Discard current settings and return to the previous page.			
Apply	Save the current settings and exit the page.			

## II-1-4-2 LAN DNS/Forwarding

LAN DNS is a simple version of DNS server. LAN DNS allows the network administrator to override standard DNS resolutions for selecting domain addresses. The router will respond to queries on matched domain addresses with custom IP addresses. It is not necessary for the user to build another DNS server in LAN. With such feature, the user can configure some services (such as ftp, www or database) with domain name which is easy to be accessed.

DNS Forwarding allows the network administrator to forward DNS queries to different DNS servers based on the domain name.

LAN DNS and DNS Forwarding only affect DNS queries that are sent to the WAN through the router. DNS queries that are directed to a DNS server on the LAN will not be intercepted by the router.

Search Q	Configuration / D						S Reset
Device Menu	DNS Security	LAN DNS / Forywording					
<ul> <li>Dashboard</li> </ul>	LAN DNS / Forw	varding					
🗧 congunation 💦 💡	+ Add					Search	Marc 120
Physical Interface	Name	Enabled	Туре	Domain Name	Mapping	Apply to	Option
WAN							
LAN							
005							
Wireless LAN							
Routing							
RIP							
BGP							
OSPF							
Bandwidth Management							
NAT							
KGMP							
Objects							
USB Application							
Wake on LAN							
Notification Services							
RADIUS/ TACACS+							
Certificates							
Security ,							
<b>Д</b> им ,							

To add/edit a profile (up to 120), click the +Add/Edit link to get the following page.

		>
Name 🕡	DrayTek-366100	
Enabled		
Type	IP CNAME Forwarding	
Domain Name	+Add Mac.12	
	Domain Name	
Mapping IP Address Type Mapping IPv3 Address Mapping IPv5 Address	Note: Support wildcard subdomain, e.g. *.coumple.com Rook IPud IPv6	
Apply to	All LANS ~	
	Note: If Parce DNS Reduction is dealised and AN or the DNS Server is not configured to the router's IP address: JAN 1269, neght not function (maps	ilý.
Cancel Apply		

ltem	Description
Name	Enter a string as the profile name.
Enabled	Switch the toggle to enable/disable this profile.
Туре	Select IP, CNAME or Forwarding.
Domain Name	+Add – Enter the domain name for the router to look for in DNS queries to intercept and reply to. Wildcards in the form of asterisks (* can be used to match a domain level. For example, *.draytek.com will match domain names such as www.draytek.com and ftp.draytek.com Up to 12 domain names can be created.
If IP is selected as Service Provider	The IP address listed here will be used for mapping with the domain name specified above.
	Mapping IP Address Type – Select Both, IPv4, or IPv6. Mapping IPv4 Address – If Both/IPv4 is selected, enter an IPv4 address in this field.
	Mapping IPv6 Address – If Both/IPv6 is selected, enter an IPv6 address in this field.
	Apply to – Select all LANs or specified LAN interfaces for applying this DNS server profile.
If CNAME is selected	CNAME – Enter a domain name alias for the domain name.
as Service Provider	Apply to - Select all LANs or specified LAN interfaces for applying this DNS server profile.
If Forwarding is	DNS Server Type – Both, IPv4, IPv6
selected as Service Provider	Primary IPv4 DNS Server – Enter the primary IPv4 address of the DNS server you want to use for DNS forwarding.
	Secondary IPv4 DNS Server – Enter the secondary IPv4 address of the DNS server you want to use for DNS forwarding.
	Primary IPv6 DNS Server –Enter the primary IPv6 address of the DN server you want to use for DNS forwarding.
	Secondary IPv6 DNS Server – Enter the secondary IPv6 address of the DNS server you want to use for DNS forwarding.
	Apply to - Select all LANs or specified LAN interfaces for applying this DNS server profile.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

## II-1-5 Wireless LAN

Wireless LAN enables high mobility so WLAN users can simultaneously access all LAN facilities just like on a wired LAN as well as Internet access.

In recent years, the market for wireless communications has enjoyed tremendous growth. Wireless technology now reaches virtually every location on earth. Billions of people exchange information daily with wireless communication products. The Vigor2136 series of wireless routers (with "ax" in the model name), designed with maximum flexibility and efficiency in mind, is ideal for use in a small office or home. In a business environment, any authorized personnel can bring a WLAN-equipped tablet, PDA or notebook into a meeting room and connect to the network without drilling holes through walls or tearing up flooring to lay a clot of LAN cabling. Wireless networking enables high mobility so WLAN users can access all LAN resources in the same manner just as they would on a wired LAN, but without the cables.

The actual data throughput will vary according to the network conditions and environmental factors, including volume of network traffic, network overhead and building materials.

In an Infrastructure Mode of wireless network, Vigor wireless router plays a role as an Access Point (AP) connecting to lots of wireless clients or Stations (STA). All the STAs will share the same Internet connection via Vigor wireless router. The wireless network settings, such as SSID, channels, encryption protocol, can be configured in this section.



#### **Multiple SSIDs**

Vigor wireless routers support up to four SSIDs (Service Set Identifiers) per band for wireless connections. A service set is a group of wireless network clients that have the same networking parameters. Each service set can be configured to have a unique name (SSID) and specific VLAN or MAC Filtering List, and can be used by different categories of users.

#### Real-time Hardware Encryption

Vigor wireless routers are equipped with a hardware AES encryption engine to provide the most effective and efficient protection of wireless traffic, without sacrificing user experience.

#### Complete Security Standard Selection

To ensure the security and privacy of your wireless communication, we provide several prevailing standards on market.

WEP (Wired Equivalent Privacy) is a legacy method to encrypt each frame transmitted via radio using either a 64-bit or 128-bit key. Usually access point will preset a set of four keys and it will communicate with each station using only one out of the four keys.

WPA (Wi-Fi Protected Access), the most dominating security mechanism in industry, is separated into two categories: WPA-personal or called WPA Pre-Share Key (WPA/PSK), and WPA-Enterprise or called WPA/802.1x.

In WPA-Personal, a pre-defined key (PSK) is used to encrypt traffic during data transmission. WPA uses the Temporal Key Integrity Protocol (TKIP) for data encryption whereas WPA2/WPA3 applies AES (Advanced Encryption Standard). A major advantage of WPA-Enterprise is that it supports not only encryption but also authentication.

You should select the appropriate security mechanism according to your needs. Because WEP has proven to be vulnerable to attacks, you should consider using WPA instead for the most secure connection. No matter which security suite you select, they all will enhance the over-the-air data protection and /or privacy on your wireless network. The Vigor wireless router is very flexible and can support multiple secure connections with both WEP and WPA at the same time.



The default password (PSK) is listed on a label attached to the bottom of the router. Since anyone who has physical access to the router can discover the default password, you are strongly advised to change it.



Manage Wireless Stations – Monitoring - Clients List

All stations on the wireless network and their connection status will be shown here.

#### WPS

WPS (Wi-Fi Protected Setup) makes connecting wireless clients to wireless access points and routers a simple process.



### II-1-5-1 SSID

On Wi-Fi-equipped models, you can set up SSID for use by internal users, who are allowed to access both the LAN and the WAN (Internet).

This page also allows you to configure a guest SSID (for wireless clients that are restricted to Internet access only, typically used by visitors) with LAN VLAN settings.

Search Q	Configuration / Wireless L/	IN .					() Rese
	SSID Radio Settings	Roaming AP Discovery	WP5 WD5				
Device Menu	SSID						
Dashboard							
	+ Add						Main
Physical Interface	1000			1.0.0			
WAN	SSID ()	Enabled Security	Password ①	VLAN	Scheduled On	2.4GHz	5GHz Option
LAN	DrayTek-86FAB8	WPA3/WPA	2 Personal V ······	⊕ Piease d	Always On V	•	🕑 🤌 Edit
DNS							
Routing							
RIP							
BGP							
OSPF							
Bandwidth Management							
NAT							
IGMP							
Objects							
LTE							
Wake on LAN							
Notification Services							
RADIUS/ TACACS+							
Certificates							

To add a new SSID profile, click +Add to create new entry boxes.

							🕚 Reset
overy WPS	WDS						
							Max
Enabled	Security	Password ()		2.4GHz	5GHz	Option	
	WPA3/WPA2 Personal $\checkmark$		٢			🖉 Edit	🗊 Delete
	WPA3/WPA2 Personal >>		۵			🖉 Edit	🗇 Delete
	Enabled	Enabled Security WPA3/WPA2 Personal >	Enabled Security Password ()	Enabled Security Password ()	Enabled Security Password () 2.4GHz	Enabled Security Password () 2.4GHz 5GHz	Enabled Security Password () 2.4GHz 5GHz Option

To edit a profile, click the Edit link on the right side to get the following page.

		×
SSID (j)	DrayTek-366100	
Enabled		
Security	WPA3/WPA2 Personal $\sim$	
Password 🕕	······ •	
VLAN	Please select 🗸	
Scheduled On	Always On V	
SSID Band		
2.4GHz	٥	
5GHz	۵	
SSID Settings		
MAC Filtering List	Disabled $\checkmark$	
Isolate Client from Wireless		
Hide SSID		
WPA Settings		
Cancel Apply		

ltem	Description
SSID	Service Set Identification (SSID), which shows up as the AP identifier. Maximum length is 32 characters. Modify the name if required.
Enabled	Switch the toggle to enable/disable the SSID profile.
Security	There are several modes provided for you to choose from.
	Below shows the modes with higher security;
WPA3/WPA2 Personal $\sim$	WPA3 Personal, WPA3/WPA2 Personal, WPA2 Personal, WPA2/WPA Personal - Accepts only WPA clients and the
WPA3 Personal	encryption key should be entered in Password. The WPA encrypts each frame transmitted from the radio using the PSK
WPA3/WPA2 Personal	(Pre-Shared Key) entered manually in Password."
WPA2 Personal	<ul> <li>WPA3 Enterprise, WPA2 Enterprise, WPA2/WPA Enterprise</li> <li>Accepts only WPA clients and the Authentication Server</li> </ul>
WPA2/WPA Personal	should be set in Configuration >> RADIUS/ TACACS+ >> External RADIUS and be selected in RADIUS Server. The WPA
WPA3 Enterprise	encrypts each frame transmitted from the radio using the key which automatically negotiated via 802.1x authentication.
	• OWE - WPA3 also introduces a new open and secure connection mode; "Opportunistic Wireless Encryption" (OWE). It allows the clients to connect without a password, ideal for hotspot networks, but the connection between each individual client is uniquely encrypted behind the scenes.
	Below shows the modes with basic security;
	• WPA Personal - Accepts only WPA clients and the encryption key should be entered in Password. The WPA encrypts each frame transmitted from the radio using the PSK (Pre-Shared Key) entered manually in Password.
	<ul> <li>WPA Enterprise - Accepts only WPA clients and the Authentication Server should be set in Configuration &gt;&gt; RADIUS/ TACACS+ &gt;&gt; External RADIUS and be selected in RADIUS Server. The WPA encrypts each frame transmitted</li> </ul>

	from the radio using the key which automatically negotiated via 802.1x authentication.				
	<ul> <li>WEP Personal - Accepts only WEP clients and the encryption key should be entered in WEP Settings.</li> </ul>				
	• None - The encryption mechanism is turned off.				
Password	Enter 8~63 ASCII characters, such as "012345678". This feature is available for WPA Personal, WPA2/WPA Personal, WPA2 Personal, WPA3/WPA2 Personal, and WPA3 Personal mode.				
RADIUS Server	This feature is available for WPA3 Enterprise, WPA2 Enterprise, WPA2/WPA Enterprise, and WPA Enterprise mode. Use the drop-down list to select a RADIUS server setting.				
	Note: Before configuring the RADIUS server, go to Configuration>>RADIUS/TACACS+ to create external RADIUS profiles (at least one) first.				
VLAN	Select a VLAN to which this SSID belongs.				
Scheduled On	This SSID profile will be forced up /down based on the schedule profile used (profiles created via Configuration>>Objects>>Schedule).				
	Scheduled On Always On 🗸				
	Always On				
	Schedule_morning				
	Schedule_noon				
	Schdule_night				
	The default is Always On.				
	SSID Band				
2.4GHz/5GHz	Select the band(s) for the SSID.				
	SSID Settings				
MAC Filtering List	The default is Disabled.				
Ū.	Select one of the MAC filter profiles (created via Security>>MAC Filtering Profile) for this SSID setting.				
	Only the valid MAC address that has been configured allow or deny to access the wireless LAN interface.				
	Disabled				
	MAC_Filter_East				
	MAC_Filter_West				
	MAC_Filter_South				
	Disabled $\checkmark$				
Isolate Client from	Switch the toggle to enable/disable the function.				
Wireless	If enabled, it disallows communication between wireless clients (stations) on the same SSID.				

Hide SSID	Switch the toggle to enable(hide) /disable (show) the SSID.
	Select to keep SSIDs from showing up when scans are performed by wireless clients, which makes it harder for unauthorized clients or STAs to join your wireless LAN. Depending on the wireless client
	and software used, the user may see only an AP listed without the SSID, or the AP might not even show up.
	WPA Settings
WPA Algorithm	This feature is available for WPA3 Enterprise, WPA2 Enterprise, WPA Enterprise, WPA3 Personal, WPA2 Personal, WPA Personal WPA3/WPA2 Personal, or WPA2/WPA Personal mode.
	Select TKIP, AES, or TKIP/AES as the algorithm for WPA.
	Note that not all modes of Vigor router support WPA3 mode. However, if the Vigor router supports WPA3 Personal/Enterprise security mode, the WPA algorithms will be set as AES.
Key Renewal Interval	It is available when WPA # is selected as Security.
	WPA uses a shared key for authentication to the network. However, normal network operations use a different encryption key that is randomly generated. This randomly generated key is periodically replaced. Enter the renewal security time (seconds) in the column. Smaller interval leads to greater security but lower performance. Default is 3600 seconds. Set 0 to disable re-key.
	WEP Settings
Default Key	This feature is available for WEP Personal mode.
	Four keys can be entered here, but only one key can be selected at a time. The format of WEP Key is restricted to 5 ASCII characters or 10 hexadecimal values in 64-bit encryption level, or restricted to 13 ASCII characters or 26 hexadecimal values in 128-bit encryption level. The allowed content is the ASCII characters from 33(!) to 126(~) except '#' and ','.
Кеу # Туре	Hex/ASCII - The format of WEP Key is restricted to 5 ASCII characters or 10 hexadecimal values in 64-bit encryption level, or restricted to 13 ASCII characters or 26 hexadecimal values in 128-bit encryption level. The allowed content is the ASCII characters from 33(!) to 126(~) except '#' and ','.
Key #	Enter 5 ASCII characters or 10 hexadecimal values in 64-bit encryption level, or 13 ASCII characters or 26 hexadecimal values in 128-bit encryption level.
Cancel	Discard current settings and return to the previous page.

# II-1-5-2 Radio Settings

This page lets you configure the most basic settings of your wireless network, including mode, WLAN channels and channel bandwidth.

search. Q	Configuration / Wireless LAN		🕤 Reset
and the second se	SSID Aadio Secongs Roa	aming AP Discovery WPS WDS	
Device Menu	Radio Settings		
<ul> <li>Dashboard</li> </ul>			
a conferman			Advanced Mode: OFF
Physical Interface	2.4GHz Radio		
WAN	Enabled		
LAN	Mode	Mixed((1b+11g+11n+11ax) ~	
DNS	Transmit Power	100% ~	
WreensLAS			
Routing	Channel	Auto Select V	
RIP	Channel Bandwidth	Auto 20/40 MHz $\sim$	
BGP	Current Channel	Channel 13	
OSPF	Current Extension Channel	Channel 9	
Bandwidth Management	Update Channel	Scan and Update	
IGMP		Note: Execute a one-time channel optimization for this AP. This would result in wreless downtime for few minutes	
Objects			
USB Application	Updated Channel Result		
Wake on LAN	5GHz Radio		
Notification Services	JUHZ RADIO		
RADRUS/ TACACS+	Enabled		
Certificates	Mode	Mixed (11a+11n+11ac+11ax) ~	
Security >	Transmit Power	100%	
Даним "	Quannel	Auto Select 🗸 🗸	

Available settings are explained as follows:

ltem	Description				
Advanced Mode:ON/OFF	Click to show or hide the advanced settings for the Radio settings.				
	2.4GHz Radio				
Enabled	Switch the toggle to enable/disable the RADIO settings.				
Mode	<ul> <li>Select the 802.11 mode allowed on the band.</li> <li>On the 2.4GHz band on ax models (2136ax), the following wireless mode options are available: <ul> <li>11b Only</li> <li>11g Only</li> <li>11n Only (2.4 GHz)</li> <li>Mixed (11b+11g)</li> <li>Mixed (11g+11n)</li> <li>Mixed (11b+11g+11n)</li> <li>Mixed (11b+11g+11n+11ax)</li> </ul> </li> </ul>				
Transmit Power	Sets the power percentage of the access point's transmission signal. The greater the TX Power value, the higher intensity of the signal will be.				
Channel	Allows you to specify a particular wireless channel to use, or let the system determine the optimal channel by selecting "Auto Select". The list of available channels varies depending on the locale for which the router is intended.				
Channel Bandwidth	20 MHz –Vigor Router will utilize 20 MHz channels for data transmission and reception between the router and wireless stations. 40 MHz – Vigor Router will utilize 40 MHz for data transmission and				

	reception between the router and wireless stations. Auto 20/40 MHz – Vigor Router will utilize either 20 MHz or 40 MHz for data transmission and reception depending on the number of AP nearby the router. 20MHz will be used when there are more than 10		
	wireless APs; otherwise 40MHz will be used. Selecting this setting ensures the best performance for data transit on networks with both 20 MHz and 40 MHz clients.		
Current Channel	Displays current used channel number.		
Current Extension Channel	Displays current used extension channel number.		
Update Channel	Scan and Update - Click to select the best channel again when Auto Select is selected as the Channel setting.		
Updated Channel Result	Displays the best channel after pressing the Scan and Update button. Update Channel Scan and Update Note: Execute a one-time channel optimization for this AP.		

5GHz Radio

Enabled	Switch the toggle to enable/disable the RADIO settings.
Mode	<ul> <li>Select the 802.11 mode allowed on the band.</li> <li>On the 5GHz band on ax models (2136ax), the following options are available: <ul> <li>11a Only</li> <li>11n Only (5 GHz)</li> <li>Mixed (11a+11n)</li> <li>Mixed (11a+11n+11ac)</li> <li>Mixed (11a+11n+11ac+11ax)</li> </ul> </li> </ul>
Transmit Power	Sets the power percentage of the access point's transmission signal. The greater the TX Power value, the higher intensity of the signal will be.
Channel	Allows you to specify a particular wireless channel to use, or let the system determine the optimal channel by selecting "Auto Select". The list of available channels varies depending on the local for which the router is intended.
Channel Bandwidth	<ul> <li>20 MHz –Vigor Router will utilize 20 MHz for data transmission and reception between the router and wireless stations.</li> <li>40 MHz – Vigor Router will utilize 40 MHz for data transmission and reception between the router and wireless stations.</li> <li>80 MHz –Vigor Router will utilize 80 MHz for data transmission and reception between the router and wireless stations.</li> <li>160 MHz – Vigor Router will utilize 160 MHz for data transmission and reception between the router and wireless stations.</li> </ul>
Current Channel	Displays current used channel number.
Update Channel	Scan and Update - Click to select the best channel again when Auto Select is selected as the Channel setting.
Updated Channel Result	Displays the best channel after pressing the Scan and Update button

	Update Channel	Scan and Update		
		Note: Execute a one-time channel optimization for this AP.		
	Band Ste	ering Settings		
5Ghz Client Minimum RSSI	-	or router will detect if the wireless client is capable t within the time limit.		
	The wireless station has the capability of a 5GHz network connection, yet the signal performance might not be satisfied. Therefore, when the signal strength is below the value set here while the wireless station connecting to Vigor router, Vigor router will allow the client to connect to the 2.4GHz network.			
Options under the Adv	vanced Mode			
Antenna	Vigor router can be attached with two antennas to have good data transmission via wireless connection. However, if you have only one antenna attached, please choose 1T1R.			
Fragment Length	Set the Fragment threshold of wireless radio. Do not modify the default value if you don't know what it is. The default value is 2346.			
RTS Threshold Minimize the collision (un improve wireless perform		ion (unit is bytes) between hidden stations to erformance.		
		old of wireless radio. Do not modify the default now what it is. The default value is 2347.		
Country Code		Available for 2.4GHz Radio only.		
	standard. However points looking for o and utilize channel might get confused broadcasting differ	casts country codes according to the 802.11d r, some wireless stations will detect/scan access country codes to determine which country it is in, is appropriate to the country. The wireless client d if there are multiple access points in the vicinity rent country codes. In such cases, it might be		

	necessary to change the country code of the access point to ensure these clients can successfully establish a wireless connection.		
WMM Capable	WMM stands for Wi-Fi Multimedia. It provides basic Quality of Service (QoS) by prioritizing traffic based on four access categories defined in the IEEE 802.11e standard. The access categories are AC_VO, AC_VI, AC_BE and AC_BK, which corresponds to traffic types of voice, video, best effort and low priority (background) data, respectively. To apply WMM parameters for wireless data transmission, please		
	switch the toggle to enable the function.		
APSD Capable	APSD (Automatic Power-Save Delivery) is an enhancement over the power-saving mechanisms supported by Wi-Fi networks. It allows access points to buffer traffic before transmitting it to wireless devices, thus allowing wireless devices to enter into power saving mode which reduces power consumption. Not all wireless clients support APSD properly, and the only way to find out if APSD is appropriate for your network is to experiment. The default setting is Disable.		
Airtime Fairness	Switch the toggle to enable/disable the function. With airtime fairness, every client at a given quality-of-service level has equal access to the network's airtime.		
	Environments that can benefit by applying airtime fairness:		

	<ul><li>(1) Many wireless stations.</li><li>(2) All stations mainly use download traffic.</li><li>(3) The performance bottleneck is wireless connection.</li></ul>
Cancel	Discard current settings.
Apply	Save the current settings.

## II-1-5-3 Roaming

The network signal for a single wireless access point might be limited by its coverage range. Therefore, if you want to expand the wireless network in a large exhibition with a quick method, you can install multiple access points by enabling the Roaming feature for each AP to reach the purpose of expanding wireless signals seamlessly.

This page allows you to enable the roaming feature.

Searchin Q	Configuration / Wireless LAN	() Reset
and a second sec	SSID Radio Settings Incoming AP Discovery WP5 WD5	
Device Menu	Assisted Client Roaming	
(?) Dashboard	a service encirch menning	
🗧 Configuration 💦 💷	Enabled 802.11r	
Physical Interface	Note: 802.11r is not applicable with WPA3 Security Mode and may not compatible with some wireless clients.	
WAN	802.117 Mode Dwrme to Overme to Overme Ar	
LAN	802.11r Mode Over the DS Over the Ar	
DNS	Assisted Roamling by Signal Strength (RSSI)	
Westernal AH		
Routing	Enabled	
RIP	Assissed Reaming Signal Strength Threshold - Timuming Ognal Langer - Timuth Children (25)	
BGP	Assist reaming when adjacent AP signal is better than   adjacent/d0 signal range 140 - 2040) 5 dB(Default: 5)	
OSPF		
Bandwidth Management NAT		
IGMP		
Objects		
USB Application		
Wake on LAN		
Notification Services		
RADIUS/ TACACS+		
Certificates		
Security 3		
а́ым ⇒	Cancel Apply	

ltem	Description			
Assisted Client Roaming				
Enabled 802.11r	Switch the toggle to enable/disable the function of fast roaming to make Wireless clients switch between the hotspots fast and securely. There are two methods to run fast roaming.			
802.11r Mode	Over the DS - In response to the needs of signal strength change, the client can communicate with the other AP through the original AP with Action Frames (FT Request and FT Response).			
	Over the Air - In response to the needs of signal strength change, the client can communicate directly with the other AP using a fast roaming authentication algorithm (without requiring reauthentication at every AP).			
Assisted Roaming by Signal Strength (RSSI)				
Enabled	Switch the toggle to enable/disable the function. When the link rate of the wireless station is too low or the signal			

	received by the wireless station is too worse, Vigor router will automatically detect (based on the link rate and RSSI requirement) and cut off the network connection for that wireless station to assist it to connect another Wireless AP to get better signal.	
Assisted Roaming Signal Strength Threshold	When the signal strength of the wireless station is below the value (dBm) set here and adjacent AP (must be DrayTek Router/AP and support such feature too) with higher signal strength value (defined in the field of Assist roaming when adjacent AP signal is better than) is detected by Vigor router, Vigor router will terminate the network connection for that wireless station. Later, the wireless station can connect to the adjacent AP (with better RSSI).	
Assist roaming when adjacent AP signal is better than	Specify a value as a threshold.	
Cancel	Discard current settings.	
Apply	Save the current settings.	

### II-1-5-4 AP Discovery

Vigor router can scan all regulatory channels and find working APs in the neighborhood. Based on scanning result, users will know which channel is clean for usage. Also, it can be used to facilitate finding an AP for a WDS link. Notice that during the scanning process (about 5 seconds), no client is allowed to connect to Vigor router.

This page is used to scan the existence of the APs around. Please click Scan to discover all the nearby APs.

SearchQ,	Configuration / Wireless		-					C' Refresh
Device Monu	SSID Radio Settings	Roaming AP Discovery	WPS WDS					-
(?) Dashboard	AP Discovery							
and the second s	Start AP Discovery	Scan						
Physical Interface WAN		Note: Scanning proc	ess would result in wireless downtime	e for few minutes.				
LAN	Radio Information							
DNS		2.4GHz	5GHz					
Winkes UK	Mode	Mixed(110+11g+11n+11ax)	Mixed(11a+11n+11ac+11ax)					
RIP DGP	Current Channel	13	100					
OSPF	Channel Utilization	5%	196					
Bandwidth Management NAT	Channel Width	20/40 MHz	160 MHz					
IGMP Objects	Neighbor AP List							
USB Application Wake on LAN	SSID	BSSID	Signal Strength (RSSI)	Band	Channel	Mode	Security	Encryption
Notification Services RADIUS/ TACACS+	DrayTek-3D1260	14.49.bc 3d 12.60	1%	2.4GHz	10	11b/g/h/ax	WP3/WPA2 Personal	AES
Certificates		16.49 bc 1d 12.60	1%	2.4GHz	13	11b/g/h/ax	WP3/WPA2 Personal	AES
Security								1
S IAM 5								

Available settings are explained as follows:

ltem	Description
Start AP Discovery	Scan - It is used to discover all the nearby AP. The results will be shown on the box below this button.
Radio Information	Displays current information for 2.4GHz and 5GHz used by Vigor router.

Neighbor AP List	Displays all the nearby APs scanned by Vigor router.
------------------	--

### II-1-5-5 WPS

WPS (Wi-Fi Protected Setup) provides an easy way to connect wireless to wireless access points and routers with WPA or WPA2 encryption.



WPS works with wireless stations with WPA or WPA2 support. It does not work with WEP.

It is the simplest way to build connection between wireless network clients and vigor router. Users do not need to select any encryption mode and type any long encryption passphrase to setup a wireless client every time. He/she only needs to press a button on wireless client, and WPS will connect for client and router automatically.

There are two methods to do network connection through WPS between AP and Stations: pressing the Start PBC button or using PIN Code.

#### Using the PBC button

On the Vigor router, press and hold the WPS button on the front panel for 2 seconds, or click the Start PBC button on the Configuration>>Wireless LAN>>WPS page in the Web User Interface. On the wireless station (for example, a laptop computer), press the WPS/Start PBC button on the network card.



Using a PIN code

You may establish a wireless connection by entering a PIN code generated by a wireless client that supports WPS.



Below shows Configuration>>Wireless LAN>>WPS web page:

Starcha Q	Configuration / Wireless LAN		12 Heses C Refresh
	SSID Radio Settings Ri	saming AP Discovery WPS WDS	
Device Menu	WPS		
(2) Dashboard			
🚊 Configuration 👘 👘	Énebled		
Physical Interface		Note: W0X2AW0A Personal security mode support W05.	
WAN			
LAN	Band	24GHz SGHz	
DN5	2.4GHz \$SID	DrayTek-366100	
Windows UNI	and a state of the		
Routing	Method 1 : WPS Button		
RJP	Enable WPS	Start PBC	
RGP		Note:	
OSPF			
Bandwidth Management	Method 2 : Using PIN Code		
NAT			
KGMP	Generate PIN code from	Client	
Objects	Client PIN Code	73156788	
USB Application		Connect	
Wake on LAN		Note:	
Notification Services			
RADIUS/ TACACS+	Connection Status	Idle	
Certificates			
Security >			
S₀ IAM ,	Cancel Apply		

ltem	Description
Reset	Click to reset WPS with the default value.
Refresh	Click to refresh current page.
Enabled	Switch the toggle to enable/disable the function.
Band	Select the band (2.4GHz/5GHz) for this function.
2.4GHz SSID / 5GHz SSID	Displays the SSID used for 2.4GHz/5GHz.
Method 1: WPS Button	Enable WPS – Switch the toggle to enable/disable the function.
	Start PBC –Click it to invoke the Push-Button style WPS setup procedure. The router will wait for about 2 minutes for WPS connection requests from wireless clients. The ACT LED and WLAN LED on the router will blink fast simultaneously when WPS is in progress and will return to normal condition after two minutes.
Method 2: Using PIN	Enter a PIN code, and click the Connect button.
Code	Generate PIN code from – At present, only Client is available. Client PIN Code – Enter a PIN code.
	Connect – Click it to make a connection. The ACT LED and WLAN LED on the router will blink fast simultaneously when WPS is in progress, for up to 2 minutes or until a successful WPS connection from a wireless client has been established.
Connection Status	Displays the connection status after clicking Connect or Start PBC.
Cancel	Discard current settings.
Apply	Save the current settings.

After finishing this web page configuration, please click Apply to save the settings.

### II-1-5-6 WDS

Wireless Distribution System (WDS) is a protocol for linking access points (AP) wirelessly. Vigor2136ax WDS only supports Repeater mode.

• Repeater mode, which extends the coverage range of a WLAN.



Below shows Configuration>>Wireless LAN>>WDS web page:

Search Q	Configuration / Wireless LAN					③Reset ③Refrech
Device Menu		parning AP Discovery WPS WDS				
<ul> <li>Dashboard</li> </ul>	WDS					
÷ Longuilles	Enabled					
Physical Interface WAN	Mode	HE (11ax)				
LAN	2.4GHz WDS List					×
DNS Wrolins Livin	+ Add					Mitc 4
Routing	Peer MAC Address 💿		Enabled	Security	Password (1)	
RIP BGP						
OSPF Bandwidth Management	SGHz WDS List					~
NAT	+ Add					- 1440-1
Objects	Peer MAC Address 💮		Enabled	Security	Password (	
USB Application Wake on LAN						
Notification Services RADIUS/ TACACS+						
Certificates						
Security ,						
- у	Caricel Apply					

ltem	Description		
Reset	Click to reset WPS with the default value.		
Refresh	Click to refresh current page.		
Enabled	Switch the toggle to enable/disable the WDS function.		
Mode	<ul> <li>Select the physical mode for this WDS setting.</li> <li>HE(11ax)</li> <li>VHT(11ac)</li> <li>HTMIX(11n)</li> </ul>		
2.4GHz/5GHz WDS List	+Add – Click to create WDS list (up to 4). Peer MAC Address – Enter the MAC address of the WDS peer.		

	Enabled – Switch the toggle to enable/disable this WDS link.
	Security – Select the encryption method of this WDS link.
	• Open - Security is disabled.
	• TKIP – Enter a string.
	• AES - Enter a string.
	Password – Enter the key of the WDS link when Security is TKIP or AES. It should be a string with 8 ~ 63 ASCII characters.
	Delete – Remove current entry.
Cancel	Discard current settings.
Apply	Save the current settings.

## II-1-6 Routing

Through the IP address and interface configuration, a route policy can be used to configure any routing rules to fit actual requests.

The packets will be directed to the specified interface if they match one of the routing policies.

The router offers IPv4 and IPv6 for you to configure the static route. Both protocols bring different web pages.

## II-1-6-1 Route Policy

Route Policy (also well known as PBR, policy-based routing) is a feature where you may need to get a strategy for routing. The packets will be directed to the specified interface if they match one of the policies. You can setup route policies in various reasons such as load balance, security, routing decision, and etc.

Through protocol, IP address, port number and interface configuration, Route Policy can be used to configure any routing rules to fit actual request.



To add a new IPv4 route policy, click the +Add link to get the following page.

		×
Policy Name 🕠	LAN1_Floor	
Enabled		
Schedule	Always On Scheduled On	
Criteria		
Source	Any ~	
Destination	Any $\checkmark$	
Protocol	Any $\checkmark$	
Interface Selection		$\sim$
Primary Path		
Primary Path	WAN/Virtual WAN $\sim$	
Primary Path WAN	+Add Max 1	
	Interface Interface IP Gateway IP Force NAT/Routing	
	No Records Found!	
Cancel Apply		

Item	Description		
Policy Name	Enter a name as the routing profile name.		
Enabled	Switch the toggle to enable/disable the profile.		
Schedule	Determine the valid time for the routing profile.		
	Always On – The routing profile will be valid all the time if it is enabled.		
	Scheduled On – The routing profile will be valid based on the time schedule specified here.		
	Criteria		
Source / Destination	<ul> <li>Select the type of IP addresses to which this rule is to be applied.</li> <li>Any - This policy applies to all source/destination IP addresses.</li> <li>IPv4 Address - This policy applies to the specified range of source IP addresses.</li> <li>IPv4 Subnet - This policy applies to source IP addresses defined by the specified network IP address and subnet mask.</li> <li>IP Object - This policy applies to a preconfigured IP object.</li> <li>IP Group - This policy applies to a preconfigured IP group.</li> </ul>		
Source / Destination IPv4 Address	It is available when Source / Destination is set as IPv4 Address. +Add – Click to have new entries for setting IPv4 Address Start and End. IPv4 Address Start / End – Enter two IPv4 address(s), one for start and one for end. Delete – Click to remove current entries.		
Source / Destination IPv4 Subnet Address	It is available when Source / Destination is set as IPv4 Subnet. +Add – Click to have new entries for setting IPv4 subnet. IPv4 Address – Enter an IP address. Subnet Mask - Use the drop down list to choose a suitable mask for		

	the network.		
Source / Destination IP Object	It is available when Source / Destination is set as IP Object. +Add – Click it to create a new object (containing different IP addresses). Up to 12 objects can be created. Select Object – Check to select an object or objects.		
Source / Destination IP Group	It is available when Source / Destination is set as IP Group. +Add –Click it to create a new group (containing different IP objects) Up to 12 groups can be specified here. Select Group - Check to select a group or groups.		
Protocol	<ul> <li>Choose a proper protocol for the WAN interface.</li> <li>Any – Any kind of protocol will be used for the WAN interface.</li> <li>Service Object – The protocol used will be determined by the service object.</li> <li>Service Type Object – Click +Add to create a new object (containing different protocols). Up to 12 objects can be created.</li> <li>TCP/UDP – Select TCP/UDP for the WAN interface.</li> <li>Specify Source Port – Switch the toggle to enable the setting of Source Port.</li> <li>Source Port / Destination Port – Set the range (1 to 65535).</li> <li>TCP – Same as TCP/UDP.</li> <li>UDP – Same as TCP/UDP.</li> <li>ICMP – Select ICMP for the WAN interface.</li> </ul>		

#### Interface Selection

Primary Path	Specify the interface that the traffic described by this rule is to be directed.					
	If the packet traffic is matched with the criteria set above, it will be sent to the designated interface and gateway.					
	Primary Path – Packets will be transferred to the interface chosen here. Select an interface from the list (WAN/LAN: A WAN or LAN interface; VPN: A Virtual Private Network).					
	WAN/Virtual WAN $\checkmark$					
	WAN/Virtual WAN					
	VPN					
	LAN					
	Primary Path WAN – It is available when the WAN/Virtual WAN is selected.					
	+Add – Click +Add to create the primary path. Select WAN interface and the corresponding IP address. Packets match with the criteria wil be transferred to the interface chosen here. Select an interface from the list. Specify the gateway (using the default device or customized a gateway IP). Then determine which mechanism (Force NAT/Routing) that the router will use to forward the packet to WAN.					
	Primary Path VPN - It is available when the VPN is selected.					
	+Add – Click +Add to create a new VPN path. Use the drop-down list t select a VPN profile.					

	Primary Path LAN - It is available when the LAN is selected.
	+Add – Click +Add to create a new VPN path. Use the drop-down list to select a VPN profile.
Secondary Path	Disabled – Disable the function settings for the secondary path.
Last Resort Path	The last resort path (setting) will be adopted instead once the Primary Path or the Secondary Path could not be used for directing the traffic. Disabled –Disable the function settings for the Last Resort Path. Disabled Default WAN WAN/Virtual WAN VPN LAN Disabled On Last Resort Path. Default WAN – The default WAN interface will be used for the last resort Path. Default WAN – The default or Customize. Gateway – Select Default or Customize. Gateway IP Address – Enter the IP address of the gateway if Customize is selected. Force NAT/Routing – Determine which mechanism (Force NAT/Routing) that the router will use to forward the packet to WAN. WAN/Virtual WAN – Specify a WAN interface or a virtual WAN interface for the last resort path.
	<ul> <li>Last Resort Path WAN – Click +Add. Then select a WAN interface, the IP address (WAN), the gateway IP address(LAN) and the packet forwarding mechanism.</li> </ul>

VPN –Specify a VPN profile for the last resort path.			
<ul> <li>Last Resort Path VPN – Click +Add. Select one of the VPN profiles.</li> </ul>			
LAN – Specify a LAN interface for the last resort path.			
<ul> <li>Last Resort Path LAN – Click +Add. Then select a LAN interface with an IP address (gateway) and the packet forwarding mechanism.</li> </ul>			
Specifies the priority of the rule about other rules.			
Normal – The routing profile does not affect other routes on the routing table.			
High – The routing profile will override the VPN routes only. However it will not affect LAN/Static route.			
Top – The routing profile will override VPN and LAN/Static route.			
Discard current settings and return to the previous page.			
Save the current settings and exit the page.			

## II-1-6-2 IPv4 Static Route

Static routing is an alternative to dynamic routing. It is a process that the system network administrator can configure network routers with all the required information for packet forwarding.

SearchQ.	Configuration / R	louting						() Reset
	Route Pelicy	Pv4 Static Route	Pv6 Static Route					
evice Menu	IPv4 Static Rout	10						
b Dashboard	in the production							
	+ Add						Search	Max 2
Physical Interface	Name	Enabled	Destination IP Address	Subnet Mask	interface	Gateway	Option	
WAN	LAN1_Floor	Enabled	192.168.1.100	255.255.255.255/32	DWAND WANT	192.168.1.1	P Edia	C Deleze
LAN	1.00							
DNS								
Wireless LAN								
RIP								
BGP								
OSPF								
Bandwidth Management								
NAT								
IGMP								
Objects								
USB Application								
Wake on LAN								
Notification Services								
RADIUS/ TACACS+								
Certificates								
Security								
IAM 3								

To add a new IPv4 static route, click the +Add link to get the following page.



ltem	Description
Name	Enter a name as the profile name.
Enabled	Switch the toggle to enable or disable the function.
Destination IP Address	Enter the IP address as the destination IP address.
Subnet Mask	Select a subnet mask of this static route.
Interface	Use the drop-down list to specify an interface for this static route.
Gateway	Enter an IP address as the gateway.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

After finishing this web page configuration, please click Apply to save the settings.

## II-1-6-3 IPv6 Static Route

Static routing is an alternative to dynamic routing. It is a process that the system network administrator can configure network routers with all the required information for packet forwarding.

search Q	Configuration	/ Routing					(3) Rese
	Route Policy	IPv4 Static Route	vo static Noute				
levice Menu	IPv6 Static Ro	10					
Dashboard	IPV6 Static Ro	oute					
	+ Add					Search_	Mixe
Physical Interface	Name	Enabled	Destination	Prefix Length	Gateway IPv6 Address	Interface	Option
WAN							
DNS							
Wireless LAN							
RIP							
BGP							
OSPF							
Bandwidth Management							
NAT							
IGMP							
Objects							
USB Application							
Wake on LAN							
Notification Services							
RADIUS/ TACACS+							
Certificates							
Security							
IAM ,							

To add a new IPv6 static route, click the +Add link to get the following page.

Route	IPv6 Static Route				×
				Name 🕕	LAN1_Floor_v6
				Enabled	
ed 🔶	Destination	Prefix Length	Gatew	Destination ()	abcd:1234::
			Records Found!	Prefix Length 🕧	64
				Gateway IPv6 Address 🕕	192.168.1.1
				Interface	[WAN] WAN1 (Wired WAN) 🗸
					Cancel Apply

ltem	Description
Name	Enter a name as the profile name.
Enabled	Switch the toggle to enable or disable the function.
Destination	Enter the IPv6 address as the destination IP address.
Prefix Length	Enter the fixed value for prefix length.
Gateway IPv6 Address	Enter an IPv6 address as the gateway.
Interface	Use the drop-down list to specify an interface for this static route.

Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

## II-1-7 RIP

The Routing Information Protocol (RIP) and the RIPng (RIP next generation) are the most popular interior routing protocols. The difference is that the RIPng (RIP next generation) is based on the IPv6 address, but offers the same functions and benefits as IPv4 RIP v2.

If enabling the RIP feature, the router will attempt to exchange routing information with neighboring routers using the Routing Information Protocol.

## II-1-7-1 General Setup

There are two versions of RIP available. This page offers comprehensive settings for each of these versions.

Search	Configuration / RIP		3 Ae
Device Menu	General Setup RIP Network	RIPng Network	
Dashboard	General Setup		
	Enabled		
Physical Interface WAN	BIP Version	VI V2	
LAN DNS	Timers		
Wireless LAN	Update Timer/Secondly @	30	
Routing	Timeous Timer(Timoras) 🕥	160	
	Garbage Tener (Second 10	120	
OSPF			
Bandwidth Management	Redistribute		
NAT IGMP	Connected	3	
Objects	Statio	61)	
USB Application Wake on LAN	BGP	00	
Notification Services	OSPF	C01	
RADIUS/ TACACS+ Certificates	RiPng		
Security 3	Enabled	0	
ann à	Cancel Apply		

ltem	Description	
	General Setup	
Enabled	When Enabled, the router will attempt to exchange routing information with neighbouring routers using the Routing Information Protocol.	
RIP Version	Specify the version number (V1/V2) for RIP protocol.	
Update Timer	Enter a value as the update timer. When the time is up, the Vigor router will send a message containing the complete routing table to all neighboring routers for exchanging the routing information.	
Timeout Timer	The routing information will be valid (but not removed) till the time expiration set in this field. The information will be kept in the routing table temporarily. At the	

	same time, the neighbors will be notified that the route has been dropped.	
Garbage Timer	The route will be removed from the routing table upon the expiration set in Garbage Timer.	
Connected	Switch the toggle to enable/disable the function.	
	All Networks – Apply the RIP profile to all the LAN interfaces.	
	Exclude NAT Networks - Apply the RIP profile to all the LAN interfaces except for NAT network.	
Static	Switch the toggle to enable (apply the static route to the RIP profile) or disable the function.	
BGP	Switch the toggle to enable (allow dynamically route traffic based on information learned from the BGP protocol) or disable the function.	
OSPF	Switch the toggle to enable (allow dynamically route traffic based on information learned from the OSPF protocol) or disable the function.	
	RIPng	
Enabled	Switch the toggle to enable/disable the function of Routing Information Protocol next generation (RIPng).	
Update Timer	Enter a value as the update timer.	
	When the time is up, the Vigor router will send a message containing the complete routing table to all neighboring routers for exchanging the routing information.	
Timeout Timer	The routing information will be valid (but not removed) till the time expiration set in this field.	
	The information will be kept in the routing table temporarily. At the same time, the neighbors will be notified that the route has been dropped.	
Garbage Timer	The route will be removed from the routing table upon the expiration set in Garbage Timer.	
Connected	Switch the toggle to enable (apply the RIPng settings to all the LAN interfaces) or disable the function.	
Static	Switch the toggle to enable (apply the static route to the RIP profile) or disable the function.	
BGP	Switch the toggle to enable (allow dynamically route traffic based on information learned from the BGP protocol) or disable the function.	
OSPF	Switch the toggle to enable (allow dynamically route traffic based on information learned from the OSPF protocol) or disable the function.	
Cancel	Discard current settings.	
	Save the current settings.	

## II-1-7-2 RIP Network

This page allows you to configure up to eight neighboring routers for exchanging the routing information with the local router (Vigor2136).

search	Configuration / RIP			D Resi
	General Setup RIP Network Ris	Ping Network		
evice Menu				
) Dashboard	RIP Network			
	+ Add			Re
Physical Interface	interface	Authentication	Key ID	Option
WAN				
LAN				
DNS				
Wireless LAN				
Routing				
BGP				
OSPE				
Bandwidth Management				
NAT				
IGMP				
Objects				
USB Application				
Wake on LAN				
Notification Services				
RADIUS/ TACACS+				
Certificates				
Security >				
IAM 5				

To add a new RIP network profile, click the +Add link to get the following page.

			×
	Interface	[WAN] WAN1 (Wired	WAN) 🗸
	Authentication	MD5	~
Authentication	Password ()		• •
	Key ID 🕦	16	
		Cancel	Apply

ltem	Description
Interface	Select a LAN / WAN interface to apply the settings configured for this profile.

Authentication	Select the authentication mechanism for this profile.
	Disabled – No authentication mechanism will be used. Plain-Text – Only password will be used for authentication.
	<ul> <li>Password –Enter characters as the password for MD5 authentication.</li> </ul>
	MD5 – Use MD5 authentication.
	<ul> <li>Password – Enter characters as the password for MD5 authentication.</li> </ul>
	<ul> <li>Key ID – Enter a number (0~255). The ID will help Vigor router to be identified in an autonomous system.</li> </ul>
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

## II-1-7-3 RIPng Network

This page allows you to configure up to eight interfaces (WAN or LAN) for exchanging the routing information with the local router (Vigor2136) based on IPv6 address(es).

RPing Network           Refigners.         # Add         Max           Physical Interface         Interface         Option           WMN         Interface         Option           WAN         Interface         Option           WAN         Interface         Option           WAN         Interface         Option           WAN         Interface         Option           Boding         Interface         Option           Boding         Interface         Interface           Boding         Interface         Interface         Interface           Boding         Interface         Interface         Interface           Boding         Interface         Interface         Interface           Boding         Interface         Interface <thin< th=""><th>SearchQ.</th><th>Configuration / RIP</th><th>Sheet</th></thin<>	SearchQ.	Configuration / RIP	Sheet
RPing Network           Refigners.         # Add         Max           Physical Interface         Interface         Option           WMN         Interface         Option           WAN         Interface         Option           WAN         Interface         Option           WAN         Interface         Option           WAN         Interface         Option           Boding         Interface         Option           Boding         Interface         Interface           Boding         Interface         Interface         Interface           Boding         Interface         Interface         Interface           Boding         Interface         Interface         Interface           Boding         Interface         Interface <thin< th=""><th></th><th>General Setup RIP Network, RIPIng Network</th><th></th></thin<>		General Setup RIP Network, RIPIng Network	
Daibbard         * Add         Anx.           Physical Interface         * Add         Anx.           WNN         Coper         Coper           DNS         Coper         Coper           Routing         Coper         Coper           BCA         Co	Device Menu	Differe Machanala	
Image: metal part of the face         Image: metal part of the face         Outpoint           VMN1           Outpoint         Outpoint           VMN1            Outpoint         Outpoint           VMN1 </td <td>(?) Dashboard</td> <td>kirng Network</td> <td></td>	(?) Dashboard	kirng Network	
Physical Interface     Uniferace     Opuion       WNN     LNN     LNN     LNN       Boolding     LNN     LNN       Routing     LNN     LNN       Routing LNN     LNN   <		+ Add	Max 3
WAN LN DNS Routing		Interface	Option
LAN DNS Wreless LAN Routing Bandouth Management Nare Nare Capes USA Application VSA Application VSA Application VSA Application Status Services RADDUST TACACSH			
DNS   Wireless LNN   Routing   Boch   Boch   GSPF   Bindexidth Marugement   Nat   Nat   Coljects   USR Application   Wake on Lation Services   RADIES' TACACS+   Certificates			
Windexs UAN Routing:			
Routing Rou			
BGP GGP GBP Marten Bandwidth Management NAT KGMP Objects USB Application Visit Application Nationation Services RADULS/TACACS+ Certificates			
BCP OSPF Bandwidth Management NAT KAMP Objects USA Application Walke on LAN Netflication Services RADRIS/TACACSH			
Bandwidth Management NAT KMMP Objects USR Application Wake on LMN Notification Services RADRUS/TACACS+ Certificates			
NAT IGMP Objects USB Aplication Wake on LNN Notification Services RADIUS/TACACS+ Certificates	OSPF		
NAT IGMP Objects USB Aplication Wake on LNN Notification Services RADIUS/TACACS+ Certificates	Bandwidth Management		
Objects USR Application Wake on LAN Netification Services RADIUS/ ILACSH Certificates			
USB Application Wake on LAN Notification Services RADIUS/ TACACS+ Certificates	KIMP		
Wake on LAN Notification Services RADIKS/ TACACS+ Certificates	Objects		
Notification Services RADIUS/TACACS+ Certificates	USB Application		
RADNUS/TACACS+ Certificates	Wake on LAN		
Certificates	Notification Services		
	RADIUS/ TACACS+		
	Certificates		
by security	⊘ security ,		
	<b>Д</b> им ,		

To add a new RIPng network profile, click the +Add link to get the following page.



ltem	Description	
Interface	Select a LAN / WAN interface to apply the settings configured for this profile.	
Cancel	Discard current settings and return to the previous page.	
Apply Save the current settings and exit the page.		

After finishing this web page configuration, please click Apply to save the settings.

## II-1-8 BGP

Border Gateway Protocol (BGP) is a standardized protocol designed to exchange routing and reachability information among autonomous systems (AS) on the Internet.

The protocol TCP is used by two routers supporting BGP for data transmission. They can exchange the BGP routing information for each other. A BGP router is the "neighbor" of other BGP routers. Define the IPv4/IPv6 address, AS number for the router is essential for TCP connection of BGP routing information exchange.

AS, the abbreviation of Autonomous System, is a group interconnected with multiple IPv4/IPv6 addresses. Each AS shall be assigned with one AS number (ASN). The ASN is a unique identifier for AS to distinguish each network group in the whole interconnected network. It can be operated by one or several ISPs and follows the routing policies made by ISP.



### II-1-8-1 General Setup

Set general settings for for local router and neighboring routers.

search Q	Configuration / BGP		1) Res
	General Setup IPv4	Neighbors IPv4 Networks IPv6 Neighbors IPv6 Networks	
Device Menu	General Setup		
Dashboard			
	Enabled		
Physical Interface	Local AS (D)		
WAN			
LAN	Router ID (1)		
DNS	the second second		
Wireless LAN	IPv4 Redistribute		
Routing	Connected		
RIP			
		All Hersyon's - Exclude NAT Networks	
OSPF	Statić		
Bandwidth Management	10	-	
NAT	10		
KGMP	OSPE		
Objects			
USB Application	IPv6 Redistribute		
Wake on LAN	Connected		
Notification Services	Connected		
RADIUS/ TACACS+	Static		
Certificates	102	0	
3 Security ,			
Siam (	Cancel Apply		

ltem	Description		
Enabled	Switch the toggle to enable/disable the basic BGP function for local router.		
Local AS	Set the AS number for local router.		
Router ID	Specify the LAN subnet for the router.		
	IPv4 Redistribute		
Connected All Networks – Apply the BGP profile to all the LAN interfaces Exclude NAT Networks - Apply the BGP profile to all the LAN interfaces except for NAT network.			
Static	Switch the toggle to enable or disable the function (apply the static route to the BGP profile).		
RIP	Switch the toggle to enable or disable the function (apply the RIP function to the BGP profile).		
OSPF	Switch the toggle to enable or disable the function (apply the OSPF function to the BGP profile).		
	IPv6 Redistribute		
Connected	Switch the toggle to enable (apply the BGP profile to all the LAN interfaces) or disable the function.		
Static	Switch the toggle to enable or disable the function (apply the static route to the BGP profile).		
RIP	Switch the toggle to enable or disable the function (allow dynamical route traffic based on information learned from the RIP protocol).		
OSPF	Switch the toggle to enable or disable the function (allow dynamicall route traffic based on information learned from the OSPF protocol).		
Cancel	Discard current settings and return to the previous page.		
Apply	Save the current settings and exit the page.		

# II-1-8-2 IPv4 Neighbors

Set general settings for the neighboring routers (based on IPv4 address).

Search Q	Configuration / BGP				③ Revel C Refres
	General Setup IPv4 Neighbors IPv4	Networks IPv6 Neighbors IPv6 Ne	tworks		
evice Menu	IPv4 Neighbors				
b Dashboard	IPv4 Neighbors				
	+ Add				Ma
Physical Interface	Remote AS Number	IPv4 Address	Authentication	Connection Status	Option
WAN					
LAN					
DNS					
Wireless LAN					
Routing					
RIP					
OSPF					
Bandwidth Management					
NAT					
IGMP					
Objects					
USB Application					
Wake on LAN					
Notification Services					
RADIUS/ TACACS+					
Certificates					
Security ,					
им ,					

v6 Neighbors	IPv6 Networks			×
		Remote AS Number 🕕	10021002	
		IPv4 Address	192.168.1.55	
Address	Authentication	Authentication	MD5	~
	No Records Found!	Password ()		٢
			Cancel	Apply

To add a new IPv4 neighbors profile (up to 8), click the +Add link to get the following page.

Available settings are explained as follows:

ltem	Description		
Remote AS Number	Specify the AS Number for neighboring router.		
IPv4 Address	Enter the IP address specified for the neighboring profile.		
Authentication	<ul> <li>Select the authentication mechanism for this profile.</li> <li>Disabled – No authentication mechanism will be used.</li> <li>MD5 – Use MD5 authentication.</li> <li>Password – Enter characters as the password for MD5 authentication.</li> </ul>		
Cancel	Discard current settings and return to the previous page.		
Apply	Save the current settings and exit the page.		

After finishing this web page configuration, please click Apply to save the settings.

## II-1-8-3 IPv4 Networks

This page allows you to configure up to eight neighboring networks for exchanging the routing information with the local router (Vigor2136). The IP address defined on this page will be used to declare which network will participate in the RIP protocol.

searchQ	Configuration / BGP	3 Rese
	General Setup IPv4 Neighbors IINA Nerworks IPv6 Neighbors IPv6 Networks	
Nevice Menu	IPud Networks	
Dashboard	IPv4 Networks	
	bh +	files
Physical Interface	IPv4 Address Subnet Mask	Option
WAN	Contraction of the second seco	
LAN		
DNS		
Wireless LAN		
Routing		
OSPF		
Bandwidth Management		
NAT		
KIMP		
Objects		
USB Application		
Wake on LAN		
Notification Services		
RADIUS/ TACACS+		
Certificates		
Security		
им ,		

To add a new IPv4 networks profile (up to 8), click the +Add link to get the following page.

Networks IPv6 Neighbors IPv6 Networ	rks			×
		IPv4 Address	192.168.1.55	
		Subnet Mask	255.255.255.0/24	~
	Subnet Mask			
	No Records Found!			
			Cancel	Apply

ltem	Description
IPv4 Address	Enter the IPv4 address of a neighboring network (following CIDR format).
	Vigor router (e.g., 2136 series) will exchange routing information (RIP
	info) with the specified network.
-------------	---
Subnet Mask	Select the mask value for the IPv4 address specified above.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-1-8-4 IPv6 Neighbors

Set general settings for local router and neighboring routers (based on IPv6 address).

	Configuration / BGP				Reset C Refrest
Device Menu	General Setup IPv4 Neighbors IP	vi4 Networks IVV6 Neighbors IPv6 Ne	tworks		
(2) Dashboard	IPv6 Neighbors				
	+ Add				Max
	Remote AS Number	IPv6 Address	Authentication	Connection Status	Option
Physical Interface			0.0		oppos.
WAN					
LAN					
DNS					
Wireless LAN					
Routing					
RIP					
OSPE					
Bandwidth Management					
NAT					
IGMP					
Objects					
USB Application					
Wake on LAN					
Notification Services					
RADIUS/ TACACS+					
Certificates					
Security ,					
<u>д</u> им ,					

To add a new IPv6 neighbors profile, click the +Add link to get the following page.

bors IPv4 Netwo	orks IPv6 Neighbors IPv	6 Networks			×
			Remote AS Number (j)	10021002	
			IPv6 Address	2001:0db8:85a3:0000:0000	:8a2e:
	IPv6 Address	Authentication	Authentication	MD5	$\sim$
		No Records Found!	Password ()		٩
				Cancel 4	Apply

ltem	Description
Remote AS Number	Specify the AS Number for neighboring router.
IPv6 Address	Enter the IPv6 address of a neighboring router.
Authentication	<ul> <li>Select the authentication mechanism for this profile.</li> <li>Disabled – No authentication mechanism will be used.</li> <li>MD5 – Use MD5 authentication.</li> <li>Password – Enter characters as the password for MD5 authentication.</li> </ul>
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-1-8-5 IPv6 Networks

This page allows you to configure up to eight neighboring networks for exchanging the routing information with the local router (Vigor2136). The IPv6 address defined on this page will be used to declare which network will participate in the RIPng protocol.

SearchQ	Configuration / BGP	() Resel
Device Menu	General Setup IPv4 Neighbors IPv4 Networks IPv6 Neighbors IPv6 Networks	
	IPv6 Networks	
(?) Dashboard		
	= Add	Marc A
Physical Interface	IPv6 Address Pretix Length	Option
WAN		
LAN		
ONS		
Wireless LAN		
Routing		
OSPE		
Bandwidth Management		
NAT		
IGMP		
Objects		
USB Application		
Wake on LAN		
Notification Services		
RADIUS/ TACACS+		
Certificates		
Security 5		
£, www.s		

To add a new IPv6 networks profile, click the +Add link to get the following page.

Neighbors IPv4 Networks IPv6 Neighbors	IPv6 Networks		×
		IPv6 Address	2001:0db8:85a3:0000:0000:8a2e:
		Prefix Length	125
	Prefix Length		
			Cancel Apply
			Cancel Apply

Available settings are explained as follows:

ltem	Description
IPv6 Address	Enter the IPv6 address of a neighboring network (following CIDR format).
	Vigor router (e.g., 2136 series) will exchange routing information (RIPng info) with the specified network.
Prefix Length	Enter the IPv6 prefix length for the IPv6 address.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

## II-1-9 OSPF

OSPF(Open Shortest Path First), running within the AS, is a routing protocol based on IP protocol. It uses the algorithm of SPF (Shortest Path First) to calculate the route metric. It is suitable for large network and complicated data exchange. Vigor router supports up to OSPF version 2(for IPv4) and OSPF version 3(for IPv6).

The Autonomous System (AS) used in OSPF can be divided into several areas. Usually, Area 0 will be used as OSPF backbone which distributing the routing information among areas.

When you need faster convergence than distance vector, want to support much larger networks or want to have less susceptible to bad routing information, you can enable OSPF feature to fit your request. Note that both routers must support OSPF function at the same time to build the OSPF connection.

### II-1-9-1 General Setup

This page allows you to configure general settings for OSPFv2 (IPv4) and/or OSPFv3 (Ipv6) profile.

earth Q	Configuration / OSPF		to Res
	General Setup OSP	V2 Networks OSPPV3 Networks	
vice Menu	General Setup		
Dashboard	General Secup		
	Enabled		
Physical Interface	Noucer ID - ()		
WAN			
LAN	OSPF Profile		
DNS	1		
Wireless LAN	Redistribute		
Routing	Connected		
ROP		All Metmorita Endude NAT Networks	
BGP			
	Static		
Bandwidth Management	RIP	0	
IGMP	BGP	(3)	
Objects	OSPFv3		
USB Application	1000		
Wake on LAN	Enabled	08	
Notification Services			
RADIUS/ TACACS+			
Certificates			
Security 3			
AM ,	Cancel Apply		

ltem	Description
	General Setup
Enabled	Switch the toggle to enable/disable the OSPFv2 function.
Router ID	Specify the IPv4 address of the Vigor router for routing and neighbor discovery.
	Such ID will help Vigor router to be identified in an autonomous system. However, if no address is specified, then an IP address of the active interface will be used by system automatically.
Connected	All Networks – Apply the OSPF profile to all the LAN interfaces. Exclude NAT Networks - Apply the OSPF profile to all the LAN interfaces except for NAT network.
Static	Switch the toggle to apply the static route to the OSPF profile.
RIP	Switch the toggle to enable (allow dynamically route traffic based on information learned from the RIP protocol) or disable the function.

BGP	Switch the toggle to enable (allow dynamically route traffic based on
	information learned from the BGP protocol) or disable the function.
	OSPFv3
Enabled	Switch the toggle to enable/disable the OSPFv3 function.
Router ID	Specify the IPv6 address of the Vigor router for routing and neighbor discovery.
	Such ID will help Vigor router to be identified in an autonomous system. However, if no address is specified, then an IP address of the active interface will be used by system automatically.
Connected	Switch the toggle to enable (apply the OSPFv3 settings to all the LAN interfaces) or disable the function.
Static	Switch the toggle to enable (apply the static route to the OSPFv3 profile) or disable the function.
RIP	Switch the toggle to enable (allow dynamically route traffic based on information learned from the RIP protocol) or disable the function.
BGP	Switch the toggle to enable (allow dynamically route traffic based on information learned from the BGP protocol) or disable the function.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-1-9-2 OSPFv2 Networks

This page allows you to set neighbors (by Area ID) for OSPFv2 profile.

	Configuration / OSPF					Reset C Refres
	General Setup	FV2 Networks OSPFV3 Net	works			
rvice Menu						
) Dashboard	OSPFv2 Networks					
	+ Add					Ma
Physical Interface	Interface	Area ID	Authentication	Key ID	Neighborhoods	Option
WAN				Contraction of the second		
DNS						
Wireless LAN						
Routing						
8P						
BGP						
Bandwidth Management						
NAT						
GMP						
Objects						
USB Application						
Wake on LAN						
Notification Services						
RADIUS/ TACACS+						
Certificates						
Security .						
IAM ,						

To add a new OSPFv2 networks profile, click the +Add link to get the following page.

OSPFv2 Networks OSPFv3	Networks				×
orks			Interface	[WAN] WAN2 (Wired WAN)	~
			Area ID 👔	30	
Area ID	Authentication	Ke	Authentication	MD5	$\sim$
		No Records Found!	Password ()		۲
			Key ID 🧻	16	
				Cancel	pply

Available settings are explained as follows:

ltem	Description
Interface	Select a LAN / WAN interface to apply the settings configured for this profile.
Area ID	An AS will be divided into several areas. Each area must be assigned with a dedicated number.
	Please enter a number or IPv4 address as the area ID.
Authentication	Select the authentication mechanism for this profile.
	Disabled – No authentication mechanism will be used.
	Plain-Text – Only password will be used for authentication.
	<ul> <li>Password –Enter characters as the password for MD5 authentication.</li> </ul>
	MD5 – Use MD5 authentication.
	<ul> <li>Password – Enter characters as the password for MD5 authentication.</li> </ul>
	<ul> <li>Key ID – Enter a number (0~255). The ID will help Vigor router to be identified in an autonomous system.</li> </ul>
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-1-9-3 OSPFv3 Networks

This page allows you to set neighbors for OSPFv3 profile.

SearchQ	Configuration / OSPF					13 Reset C'Refresh
Device Monu	General Setup OSPP	V2 Networks USPIV3 Netw	venio			
(?) Dashboard	OSPFv3 Networks					
E torigenie	+ Add					Max: 8
Physical Interface	Interface	Area ID	Authentication	Key ID	Neighborhoods	Option
WAN				And Annual Constitution		
LAN						
DNS						
Wireless LAN						
Routing						
RIP						
BGP						
0.00						
Bandwidth Management						
NAT						
IGMP						
Objects						
USB Application						
Wake on LAN						
Notification Services						
RADIUS/ TACACS+						
Certificates						
Security 2						
Se IAM 5						

To add a new OSPFv3 networks profile, click the +Add link to get the following page.

SPFv3 Networks			×
	Interface	[WAN] WAN1 (Wired WAN)	$\sim$
	Area ID 🕕	40	
Authentication Ke	Authentication	HMAC-SHA-256	$\sim$
No Records Found	Password ()	•••••	۵
	Area ID () 40 HMAC-SHA-256	18	
		Cancel Ap	ply.
		Cancer	Py

ltem	Description
Interface	Select a LAN / WAN interface to apply the settings configured for this profile.

Area ID	An AS will be divided into several areas. Each area must be assigned with a dedicated number. Please enter a number or IPv6 address as the area ID.
Authentication	<ul> <li>Select the authentication mechanism for this profile.</li> <li>Disabled - No authentication mechanism will be used.</li> <li>Plain-Text - Only password will be used for authentication.</li> <li>Password -Enter characters as the password for MD5 authentication.</li> <li>MD5 - Use MD5 authentication.</li> <li>Password - Enter characters as the password for MD5 authentication.</li> <li>Key ID - Enter a number (0~255). The ID will help Vigor router to be identified in an autonomous system.</li> </ul>
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

## II-1-10 Bandwidth Management

When LAN clients share a common public IP address by means of Network Address Translation (NAT), the router must track NAT sessions so that traffic to and from the WAN can reach the intended destinations. There is an finite number of sessions that can be tracked by the router, and by setting session limits will ensure that the router does not run out of resources. This is especially important when P2P applications are used. P2P applications, such as BitTorrent, that attempt to simultaneously establish connections to as many WAN hosts as possible.

# II-1-10-1 Traffic Shaping Policy

This page allows you to configure the session limits and QoS settings.

SearchQ.	Configuration /	Bandwidth Manager		p QoS Default Poli	~			3 Reset
Device Menu								
(?) Dashboard	Traffic Shaping	g Policy						
	+ Add						Search	Max: 50
Physical Interface	0	Name	Enabled	Source	Destination	Max Sessions	QoS	Option
WAN								
LAN								
DNS								
Wireless LAN								
Routing								
RIP								
BGP								
OSPF								
Goulworts Masserment								
NAT								
IGMP								
Objects								
USB Application								
Wake on LAN								
Notification Services								
RADIUS/ TACACS+								
Certificates								

To add a new policy, click the +Add link to get the following page.

[		×
Name 🕕	BM_Apart	
Enabled		
Schedule	Aways On Scheduled On	
Criteria		
Source	Any v	
Destination	Any ~	
Protocol	Any v	
Traffic Shaping Policy		
Session Limit Mode	Disabled $\checkmark$	
Qo5	Lowest (Others)	
Cancel Apply		

ltem	Description

Name	Enter a name for identification.
Enabled	Switch the toggle to enable/disable the traffic shaping policy profile.
Schedule	Vigor router can perform the traffic shaping policy profile all the time or on a certain date and time.
	Always On - The function of traffic shaping policy profile is running al the time.
	Scheduled On - The function of traffic shaping policy profile is activated based on the schedule profile.
	Criteria
Source / Destination	Specify the IP type.
	Vigor router will restrict the sessions for the IPs by the default policy.
	• Any – If Any is selected, the limitation will applied to any IP.
	IPv4 Address
	IPv4 Subnet
	IPv6 Address
	<ul> <li>IPv6 Subnet</li> </ul>
	<ul> <li>IP Object</li> </ul>
	IP Group
Source / Destination	It is available when Source / Destination is set as IPv4 Address.
IPv4 Address	+Add – Click to create a new entry.
	IPv4 Address Start / End - Enter an IPv4 address as the starting poin
	And, enter another IPv4 address as the ending point.
Source / Destination	It is available when Source / Destination is set as IPv4 Subnet.
IPv4 Subnet Address	+Add – Click to create a new entry.
	IPv4 Address – Enter an IPv4 address.
	Subnet Mask – Specify the subnet mask for the IPv4 address.
Source / Destination	It is available when Source / Destination is set as IPv6 Address.
IPv6 Address	+Add – Click to create a new entry.
	IPv6 Address Start / End - Enter an IPv6 address as the starting poin And, enter another IPv6 address as the ending point.
Source / Destination	It is available when Source / Destination is set as IPv6 Subnet.
IPv6 Subnet Address	+Add – Click to create a new entry.
	IPv6 Address – Enter an IPv6 address.
	Prefix Length – Set the prefix length for the IPv6 address.
Source / Destination IP	It is available when Source / Destination is set as IP Object.
Object	+Add – Up to 12 objects can be specified here.
	Select Object – Select the object(s) from the available object list on
	the right side.
Source / Destination IP	It is available when Source / Destination is set as IP Group.
Group	+Add – Up to 12 groups can be specified here.
	Select Group - Select the object(s) from the available group list on the right side.
Protocol	Only the traffic passing through the selected protocol will be limited.
	Select one of the protocols from the drop-down menu.

	Any – All traffic will be limited.				
	Service Type Object – Vigor system offers several service types set with different protocols.				
	• Service Type Object – Click +Add to create a new object. Up to 12 objects can be created.				
	TCP/UDP – Select Transmission Control Protocol/User Datagram Protocol.				
	<ul> <li>Specify Source Port – Switch the toggle to enable the setting of Source Port.</li> </ul>				
	• Source Port / Destination Port – Set the port range (1 to 65535).				
	TCP – Transmission Control Protocol. Setting method is the same as TCP/UDP.				
	UDP – User Datagram Protocol. Setting method is the same as TCP/UDP.				
	Traffic Shaping Policy				
Session Limit Mode	Disabled – Select to deactivate session limit function.				
	Per Source IP Limit – Apply the session limit to the traffic.				
	<ul> <li>Max Sessions - The default maximum number of sessions allowed per LAN client, unless overridden by specifying a differen number in the Limitation List.</li> </ul>				
QoS	Select the class level (Class 1, Class 2, Class 3 and others) of bandwidth which will be applied to this profile.				
	High (Class 1)				
	Medium (Class 2)				
	Low (Class 3)				
	Lowest (Others)				
	Lowest (Others) V				

Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-1-10-2 Bandwidth Limit

Bandwidth Limit ensures LAN clients get their fair share of network bandwidth by placing restrictions on upstream and downstream network speeds.

Search Q	Configuration / Bandwin	dth Management						(1) Retter
	Traffic Shaping Policy	Bandwidth Limit	QoS Setup App QoS	Default Pol	cy.			
	Bandwidth Limit							
Dashboard	Danawater Lanit							
	+ Add						Search	Max
Physical Interface	Profile Name	Enabled	Schedule	Source	Upload Limit (Mb/s)	Download Limit (Mb/s)		Option
WAN								
LAN								
DNS								
Wireless LAN								
Routing								
RIP								
BGP								
OSPF								
NAT								
IGMP								
Objects								
USB Application								
Wake on LAN								
Notification Services								
RADIUS/ TACACS+								
Certificates								

To add a new policy, click the +Add link to get the following page.

		×
Profile Name 🕕		
Enabled		
Schedule	Always On Scheduled On	
Source	Any v	
Туре	Shared by All Source IP	
Upload Limit (Mb/s) 🕦		
Download Limit (Mb/s) 🕕		
Note:		
USB WAN upload can not be limited.		
Cancel Apply		

ltem	Description
Profile Name	Enter a string as the profile name.
Enabled	Switch the toggle to enable/disable this profile of bandwidth limit.
Schedule	Vigor router can perform the bandwidth limit all the time or on a certain date and time.
	Always On - The function of bandwidth limit is running all the time.
	Scheduled On - The function of bandwidth limit is activated based on the schedule profile.
Source	<ul> <li>Identify the object to which the bandwidth limit will be applied.</li> <li>Any - All the IPs within the range defined will be restricted by bandwidth limit defined by TX Limit and RX Limit below.</li> </ul>

	IPv4 Address
	IPv4 Subnet
	IP Object
	IP Group
Source IPv4 Address	It is available when IPv4 Address is selected as the Source.
	Click +Add to add a new entry.
	• IPv4 Address Start - The beginning IP address for this limit entry.
	<ul> <li>IPv4 Address End - The ending IP address for limit entry.</li> </ul>
Source IPv4 Subnet	It is available when IPv4 Subnet is selected as the Source.
Address	Click +Add to add a new entry.
	<ul> <li>IPv4 Address - Specify Start IP Address.</li> </ul>
	<ul> <li>Subnet Mask - Select a Subnet Mask.</li> </ul>
Source IP Object	It is available when IP Object is selected as the Source.
	All the IPs specified by the selected IP object will be restricted by bandwidth limit defined by TX Limit and RX Limit below.
	Click on +Add to open the IP object table. Select the IP object(s) and click Close. A new entry will be added immediately.
Source IP Group	It is available when IP Group is selected as the Source.
	All the IPs specified by the selected IP group will be restricted by bandwidth limit defined by TX Limit and RX Limit below.
	Click on +Add to open the IP Group table. Select the IP group(s) and click Close. A new entry will be added immediately.
Туре	Per Source IP Limit – The upload limit and the download limit will be applied to the source IPv4 address, source IPv4 subnet address, source IP object or source group selected as the Source.
Upload Limit	Upstream speed limit for each LAN client. Value must be between 1 and 3999 (Mbps).
Download Limit	Downstream speed limit for each LAN client. Value must be between 1 and 3999 (Mbps).
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-1-10-3 QoS Setup

QoS (Quality of Service) ensures that all LAN clients receive their fair share of bandwidth that is required for applications to function properly and efficiently.

Without QoS, it is possible that certain applications may consume excessive network resources that they degrade performance of more important applications, especially ones that are less tolerant of jitter (delay variation) or lost or delayed packets. Additionally, at times of network congestion, QoS is able to prioritize different types of traffic according to their predefined priority, thus ensuring traffic of higher importance gets processed first.

A typical QoS deployment consists of two components:

• Classification: Identifying low-latency or crucial applications and marking them for high-priority service level enforcement throughout the network.

• Scheduling: Prioritizing packets by assigning them to different queues and service types according to service levels.

	Traffic Shi	aping Poli	cy Ban	dwidth Limit QoS Se	tup App QoS Default	t Policy							
ice Menu	QoS Setu	ID.											
Dashboard		e.											
	1.1												
Physical Interface	Hardwar	e QoS											
WAN													
LAN	Interface	Enabled	Direction	Speed (Mbps)	High (Class 1)		Medium (Class 2)		Low (Class3)		Lowest (Others)		
DNS	WAN1	0.	Upload	2500	25	5	25	5	25	%	25		
Wireless LAN	1000.00	-					Co.		25			-	
Routing	WAN2	100	Upload	2500	25		25		25	~	25	,	
RIP	Port 1	0	Downloa	2500	25		25		25	- 2	25		
BGP		-	d	2.500	20		22		20				
OSPF	1.00	Downloa	-	Downloa									
	Port 2	0	d	1000	25	5	25	5	25	%	25		
NAT			Downloa										
IGMP	Port 3	02	đ	1000	25	- %	25	%	25	%	25	,	
Objects													
USB Application	Port 4	00	Downloa	1000	25	5	25	- 5	25	%	25		
Wake on LAN	100		d										
Notification Services													

Available settings are explained as follows:

ltem	Description
Enabled	Switch the toggle to enable/disable the WAN interface settings.
Direction	At present, only Upload (for outgoing traffic) is available.
Upload Speed(Mbps)	Set the outbound bandwidth (default is 2500) of the WAN/LAN.
High(Class 1)	Set the percentage of bandwidth (upload speed) reserved for class 1.
Medium(Class 2)	Set the percentage of bandwidth (upload speed) reserved for class 2.
Low(Class 3)	Set the percentage of bandwidth (upload speed) reserved for class 3.
Lowest(Others)	Set the percentage of bandwidth (upload speed) reserved for others.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-1-10-4 APP QoS

APP QoS allows QoS to be applied to select protocols and applications.

search_ Q	Configuration / Bandwidth Management			1 Reset
Device Menu (?) Dashboard	Traffic Shaping Policy Bandwidth Limit QoS Setup App QoS	App.Qo5 Default	Policy	
Physical Interface	s Add Apps	QoS	DSCP Relag	Max: 20 Option
WAN LAN DNS	Pipang animetics. At	Lowest (Others) ~	Do not Change DSCP Tag $\sim$	🖹 Deime
Wireless LAN Routing	VolP Prioritize			
RIP BGP OSPF	Enable Pest Priority for VoiP SIP UDP Port 5060			
Terreweild Masseyeneral NAT				
IGMP Objects USB Application				
Wake on LAN Notification Services				
RADIUS/ TACACS+ Certificates	Cancel Apply			

Available settings are explained as follows:

ltem	Description
+Add	Apps – The drop-down menu displays various APPEs. Select the one you want.
	QoS – Select the class level (Class 1, Class 2, Class 3 and others) of bandwidth reserved for the Apps.
	DSCP Retag – Select the level of the data for processing with QoS control.
	Delete – Click to remove the selected entry.
	VoIP Prioritize
Enable First Priority	Switch the toggle to enable/disable the function.
for VoIP	If enabled, it allows VoIP traffic to receive the highest priority.
SIP UDP Port	Enter a port number to be monitored for SIP traffic.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

# II-1-10-5 Default Policy

Default policy defines the bandwidth limit and the session limit for all traffic in default.

SearchQ	Configuration / Bandwidth I Traffic Shaping Policy Bi	Management andwidth Limit QoS Setup App QoS Defa <b>lith Policy</b>	1 Reset
Device Menu (?) Dashboard	Default Policy		
😄 Correganione	Session Limit Mode	Per Source IP Limit. 😒	
Physical Interface WAN LAN DNS Workers LAN Routing RIP BGP OSFF Throchertf, Manupicture, I NAT	Mar Sessors ()	130	
IGMP Objects USB Application Wake on LAN Notification Services RADUS/TACACS+ Certificates	Cancel Apply		

Available settings are explained as follows:

ltem	Description
Session Limit Mode	<ul> <li>Disabled - Select to deactivate session limit function.</li> <li>Per Source IP Limit -Apply the session limit to the traffic.</li> <li>Max Sessions - The default maximum number of sessions allowed per LAN client, unless overridden by specifying a different number in the Limitation List.</li> </ul>
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-1-11 NAT

Most ISPs allocate one WAN IP address to each subscriber. In order to simultaneously connect multiple devices to the Internet, a technique called Network Address Translation is employed.

Usually, the router serves as an NAT (Network Address Translation) router. NAT is a mechanism that one or more private IP addresses can be mapped into a single public one. Public IP address is usually assigned by your ISP, for which you may get charged. Private IP addresses are recognized only among internal hosts.

When the outgoing packets destined to some public server on the Internet reach the NAT router, the router will change its source address into the public IP address of the router, select the available public port, and then forward it. At the same time, the router shall list an entry in a table to memorize this address/port-mapping relationship. When the public server response, the incoming traffic, of course, is destined to the router's public IP address and the router will do the inversion based on its table. Therefore, the internal host can communicate with external host smoothly.

The benefit of the NAT includes:

- Save cost on applying public IP address and apply efficient usage of IP address. NAT allows the internal IP addresses of local hosts to be translated into one public IP address, thus you can have only one IP address on behalf of the entire internal hosts.
- Enhance security of the internal network by obscuring the IP address. There are many attacks aiming victims based on the IP address. Since the attacker cannot be aware of any private IP addresses, the NAT function can protect the internal network.

### II-1-11-1 Port Forwarding

This function allows inbound traffic from specific ports on WAN interfaces to be forwarded to LAN clients.

arch Q	Port	forwarding i	DMZ Host Port	Triggering ALG UPr	p.				
vice Menu	-			mascinia Aco on					
Dashboard	Port	Forwarding							
Lonitgaration	+ A(	bt					1.0.0	ch	Maxia
Physical interface		Name	Enabled	WAN Interface	WAN IP	Source	Private IP	Option	
WAN	0	905	Enabled	[WAN] WAN1	[WAN IP]( WAN1 )172.16.3.132	Any	192.168.10.87	Ø Edit	@ Delete
LAN	0	self	Enabled	[WAN] WAN1	[WAN IP]( WAN1 )172.16.3.132	Any	172.16.3.132	d Edit	E Delete
Wireless LAN	0	g2542x	Enabled	(WAN) WAN1	[WAN IP]( WAN1 )172.16.3.132	Any	192,168.10.18	@ Edit	2 Delete
Routing	0	3912	Enabled	(WAN) WANT	(WAN IP)( WAN1 )172.16.3.132	Any	192.168.10.95	/ Edit	Delete
BGP	0	port_3000	Enabled	[WAN] WAN1	[WAN IP]( WAN1 )172.16.3.132	Any	192.168.10.96	@ Edit	@ Delete
OSPF									
Bandwidth Management									
IGMP									
Objects									
USB Application									
Wake on LAN									
Notification Services									
RADIUS/ TACACS+									
Certificates									

It allows you to open a range of ports for the traffic of special applications.

To add a new forwarding policy, click the +Add link to get the following page.

				×
Name ()	for_Carrie			
Enabled				
Schedule	Always On Scheduled On			
Network				
WAN Interface	Please Select 🗸			
WAN IP	Please Select 🗸			
Source IP	IP Address $\sim$			
IP 🕕	192.168.1.77 - 192.168.1.88			
Private IP	Range $\checkmark$			
IP (j)	192.168.1.155 - 192.168.1.20	1		
Port Forwarding				
				Max: 1
Protocol	Public Port Start ()	Public Port End	Private Port 🕕	Option
TCP UDP TCP/UDP	10008	65535	20002	🗊 Delete
Cancel Apply				

ltem	Description					
Name	Enter a name that identifies the rule.					
Enabled	Switch the toggle to enable or disable the function.					
Schedule	Vigor router can perform the port forwarding all the time or on a certain date and time.					
	Always On - The function of port triggering is running all the time.					
	Scheduled On - The function of port triggering is activated based on the schedule profile.					
	Network					
WAN Interface	The WAN port(s) whose incoming traffic will be forwarded to a LAN client. Select from a specific WAN interface WAN# to apply the rule to the WAN interface.					
Source IP	Any Any IP Address IP Object IP Group Any – Any data traffic coming from the source IP will be forwarded to a LAN. IP Address – Set a range of IP addresses. Any data traffic coming from the IP addresses within the range will be forwarded to a LAN. IP Object –					

	<ul> <li>IP Object – Use the drop down list to specify an IP object profile.</li> <li>IP Group –</li> <li>IP Group - Use the drop down list to specify an IP group profile.</li> </ul>		
Private IP	<ul> <li>Specify a LAN IP address or a range of LAN IP addresses to which the traffic will be forwarded.</li> <li>Single Single</li> <li>Single – Specify a destination LAN IP address that will receive the forwarded traffic.</li> <li>Range – Specify a range of destination LAN IP addresses that will receive the forwarded traffic.</li> </ul>		
	Port Forwarding		
+Add	Click to set port numbers for the specified protocol (TCP, UDP, or TCP/UDP) for a port forwarding profile.		
Protocol	The protocol to which this rule applies, TCP, UDP or TCP/UDP.		
Public Port Start	Specify which port can be redirected to the specified Private IP and Port of the internal host. Enter the required number as the starting port.		
Public Port End	Enter the required number as the ending port.		
Private Port Start	The port on each LAN client to which the traffic will be directed to. Enter the required number as the starting port.		
Private Port End	Enter the required number as the ending port.		
Option	Click Delete to remove the selected entry.		
Cancel	Discard current settings and return to the previous page.		
Apply	Save the current settings and exit the page.		

Config	guration / N	AT							🕚 Rese
ort F	orwarding	DMZ Ho	st Port Trigger	ing ALG UPnP					
Port	Forwarding	g							
+ Ad	ld						Search		Max:
	Name 🝦	Enabled	WAN Interface 👌	WAN IP	Source 👙	Private IP		Option	
0	905	Enabled	[WAN] WAN1	[WAN IP]( WAN1 )172.16.3.132	Any	192.168.1.10		🖉 Edit	î Delete
Ø	2136	Enabled	[WAN] WAN1	[WAN IP]( WAN1 )172.16.3.132	Any	192.168.1.1		🖉 Edit	🗊 Delete
Ø	3912	Enabled	[WAN] WAN1	[WAN IP]( WAN1 )172.16.3.132	Any	192.168.100.252		🧷 Edit	💼 Delete
0	for_Carrie	Disabled	None	None	192.168.1.77 - 192.168.1.88	192.168.1.155 - 19	2.168.1.201	🖉 Edit	î Delete
	Proto	col	Public F	ort Start	Public Port End		Private Po	ort	
TCP/UDP		10008		65535		20002			

### II-1-11-2 DMZ Host

Vigor router provides a facility DMZ Host that maps ALL unsolicited data on any protocol to a single host in the LAN. Regular web surfing and other such Internet activities from other clients will continue to work without inappropriate interruption. DMZ Host allows a defined internal user to be totally exposed to the Internet, which usually helps some special applications such as Netmeeting or Internet Games etc.

vice Menu						
Dashboard	DMZ Host					
	- Add				Search-	Max
Physical interface	Enabled	Interface	WAN IP	Private IP		Option
WAN						
LAN						
DNS						
Wireless LAN						
Routing						
RIP						
BGP						
OSPF						
Bandwidth Management						
Bandwidth Management MAT						
KATI KGMP						
HATT KGMP Objects						
NAT IGMP Objects USB Application						
NART IGMP Objects USB Application Wake on LAN						

To add a new DMZ host profile, click the +Add link to get the following page.

Port Triggering ALG UPnP			×
		Enabled	
		Interface	[WAN] WAN1 (Wired WAN) $\smallsetminus$
Interface 👙	WAN IP 👳	WAN IP	[WAN IP]( WAN1 ) $\smallsetminus$
	No Records Found!	Private IP 🕕	192.168.1.61
			Cancel Apply

ltem	Description
Enabled	Switch the toggle to enable or disable the function.
Interface	Allows WAN traffic to be sent to a specific LAN IP address.

WAN IP	Enable the function of applying WAN alias IP. Then, select a WAN alia IP from the available IPv4 alias settings set on Configuration >> WAN >> WAN Connections.		
Private IP	Enter an IP address to be the DMZ host.		
Cancel	Discard current settings and return to the previous page.		
Apply	Save the current settings and exit the page.		

### II-1-11-3 Port Triggering

If you run programs that function as server applications where they expect to receive unsolicited traffic from the WAN, you can set up rules in Port Triggering to detect LAN-to-WAN traffic initiated by those programs, and automatically open up WAN ports to accept incoming traffic and forward it to the LAN client running the server applications.

The duration that these ports are opened depends on the type of protocol used. The "default" values are shown below and these duration values can be modified via telnet commands.

TCP: 86400 sec.

UDP: 180 sec.

IGMP: 10 sec.

TCP WWW: 60 sec.

TCP SYN: 60 sec.

SearchQ	Configuration / NAT	the local			Offese
evice Menu	Port Forwarding DMZ Host Port	DEBUTE ALS OND			
) Dashboard	Port Triggering				
	+ Add				Searchi Max 2
Physical Interface	Service Name	Enabled	Schedule	Source IP	Option
WAN					
LAN					
DNS					
Wireless LAN					
Routing					
BGP					
OSPF					
Bandwidth Management					
IGMP					
Objects					
USB Application					
Wake on LAN					
Notification Services					
RADIUS/ TACACS+					
Certificates					
Security 3					
им ,					

To add a new port triggering profile, click the +Add link to get the following page.

			>
Add Service	Manually Triese:		
Serviće Name 🕦			
Enabled			
Schedule	Always On Scheduled On		
Triggering Source			
Source IP	IP Address $\sim$		
IP Address 🕐			
Protocol & Port.	+Add	Маур 5	
	Triggering Protocol Triggering Port Start	Triggering Port End	
	TCP UDP TCP/UDP 1	65535	
Incoming Services			
Cancel Apply			

ltem	Description			
Add Service	Select from list of predefined service, or manually configure triggering and incoming protocols and ports.			
	Manually - If selected, self-define the service name.			
	• Service Name – Enter the name of the service.			
	Preset - If selected, various services will be offered for you to choose as the service name.			
	• Service Name – Use the drop-down list to specify one service.			
Enabled	Switch the toggle to enable or disable the function of port triggering.			
Schedule	Vigor router can perform the port triggering all the time or on a certain date and time.			
	Always On - The function of port triggering is running all the time.			
	Scheduled On - The function of port triggering is activated based on the selected schedule profile.			
	Triggering Source			
Source IP	Any - Any source IP will be forwarded to a LAN.			
	IP Address - Set a range of IP addresses forwarded to a LAN.			
	• IP Address – Enter the IP address and the subnet mask.			
	IP Object – Click +Add to specify the IP object profile (up to 12 profiles).			
	IP Group - Click +Add to specify the IP group profile (up to 12 profiles			
Protocol & Port	+Add - Click to set the port numbers (start and end) for the specified protocol (TCP, UDP or TCP/UDP) for the outgoing data (that this rule monitors).			
	Triggering Protocol - The protocol(s) of the outgoing traffic.			
	• TCP - open port(s) to TCP traffic.			
	<ul> <li>UDP - open port(s) to UDP traffic.</li> </ul>			
	• TCP/UDP - open port(s) to both TCP and UDP traffic.			
	Select the protocol (TCP, UDP or TCP/UDP) for the outgoing data of			

such triggering profile.
Triggering Port Start / Triggering Port End - Outgoing traffic from the WAN destined for these port numbers be forwarded to the LAN client that triggered the rule.
Enter the port or port range for the outgoing packets.
Incoming Services
+Add - Click to set port numbers (start and end) for the specified protocol (TCP, UDP or TCP/UDP) for the incoming data.
Incoming Protocol - The protocol(s) of the incoming traffic.
TCP - open port(s) to TCP traffic.
UDP - open port(s) to UDP traffic.
TCP/UDP - open port(s) to both TCP and UDP traffic.
Select the protocol (TCP, UDP or TCP/UDP) for the incoming data of such triggering profile.
Incoming Port Start / Incoming Port End - Incoming traffic from the WAN destined for these port numbers be forwarded to the LAN client that triggered the rule.
Enter the port or port range for the incoming packets.
Discard current settings and return to the previous page.
Save the current settings and exit the page.

### II-1-11-4 ALG

ALG means Application Layer Gateway. There are two methods provided by Vigor router, RTSP (Real Time Streaming Protocol) ALG and SIP (Session Initiation Protocol) ALG, for processing the packets of the voice and the video.

RTSP ALG makes RTSP message, RTCP message, and RTP packets of voice and video be transmitted and received correctly via NAT by Vigor router.

However, SIP ALG makes SIP message and RTP packets of voice be transmitted and received correctly via NAT by Vigor router.

Search Q	Configuration / NAT Port Forwarding DM/2 Host Port Triggering ALG UP-IP				3
Device Menu			ringgenig Nur	2017 DEC	
Dashboard	Application Lay	ver Gateway			
	Protocol	Enabled	Listen Port ()		
Physical Interface	SIP		5050	(1-65535)	
WAN					
LAN	RTSP		554	(1-65535)	
DNS					
Wineless LAN					
Routing					
RIP					
BGP					
OSPF					
Bandwidth Management					
IGMP					
Objects					
USB Application					
Wake on LAN					
Notification Services					
RADIUS/ TACACS+					
	Cancel Apr				

ltem	Description		
Enabled	Switch the toggle to enable or disable the function.		
Listen Port	Enter a port number for SIP or RTSP protocol.		
Apply	Save the current settings and exit the page.		

### II-1-11-5 UPnP

The Vigor supports UPnP (Universal Plug and Play), which is a suite of network protocols that simplifies network configuration. Applications and network devices on the LAN, that support UPnP, may request the router to modify its settings to allow NAT Traversal, so that WAN hosts can connect to them directly.

Examples of applications and devices that support UPnP include file-sharing applications such as uTorrent, Vuze and eMule, gaming consoles such as the Sony PlayStations 3 and 4 Xbox 360 and Xbox One, media streaming applications such as Plex and XBMC, and messaging and calling applications such as Skype. To find out if a certain application or network device supports or requires UPnP, please consult its user manual or check with its vendor.

Search Q	Configuration / NAT					CRefres
	Port Forwarding DMZ	Host Port Triggering AL	G URNP			
Nevice Meriu	UPnP					
Dashboard	OFIF					
	Enabled					
Physical Interface	WAN Interface	None				
WAN						
LAN	Status					
DNS						
Wireless LAN	()The following is the disp	olay historical data, If you want	to receive new information, pleas	e turn on the switch		
Routing	WAN Interface	Source	Public Port	Private IP	Private Port	Protocol
RIP						
BGP						
OSPF						
Bandwidth Management						
IGMP						
Objects						
USB Application						
Wake on LAN						
Notification Services						
RADIUS/ TACACS+						
Certificates	Cancel Apply					

ltem	Description
	UPnP
Enabled	Switch the toggle to enable or disable the function. UPnP is required for some applications such as PPS, Skype, eMuleand etc. If you are not familiar with UPnP, it is suggested to turn off this function for security.
WAN Interface	Select the WAN port on which ports will be opened in response to UPnP commands.
Status	Displays the historical data.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-1-12 IGMP

Internet Group Management Protocol (IGMP) is an IPv4 communication protocol for establishing multicast group memberships.

### II-1-12-1 General Setup

This page offers the general setting for configuring the IGMP function.

Search Q	Configuration / IGMP	(1) Reset
	General Setup IGMP Status	
Device Menu	General Setup	
<li>(?) Dashboard</li>		
🗧 Kanligunaan	IGMP Version	Auto V2 V3
Physical Interface WAN	IGMP Proxy	
LAN	(GMP Proxy	0
DNS		Note: Enable IGMP Proxy to issue multicast membership messages between LAN host and specified interface. Router will forward multicast packets by the group
Wireless LAN		niembership information.
Routing	Interface	None
RIP	Query Interval (Second )	125
BGP	IGMP encapsulation in PPPoE	
OSPF	IGMP encapsulation in PPPoE	0
Bandwidth Management	IGMP Snooping	
KBAP	IGMP Shooping	0
Objects		Note: Enable: Forwards multicast traffic only to ports that are members of that group. Disable: Treats multicast traffic the same as broadcast traffic:
USB Application		
Wake on LAN		
Notification Services		
RADIUS/ TACACS+		
Certificates		

ltem	Description		
IGMP Version	Select v2 or v3 or Auto. At present, two versions (v2 and v3) are supported by Vigor router. Choose the correct version based on th IPTV service you subscribe.		
	IGMP Proxy		
IGMP Proxy	Switch the toggle to enable or disable the function.		
	The application of multicast will be executed through WAN /PVC/VLAN port. In addition, such function is available in NAT mode.		
Interface	Specify an interface for packets passing through.		
Query Interval	Vigor router will periodically check which IP obtaining IPTV service by sending query. It might cause inconvenience for client. Therefore, set a suitable time (unit: second) as the query interval to limit the frequency of query sent by Vigor router.		
IGMP encapsulation in PPPoE	It depends on the specifications regulated by each ISP. If you have no idea to enable or disable, simply contact your ISP providers.		
	IGMP Snooping		
IGMP Snooping	Select to enable IGMP Snooping so that multicast traffic will be forwarded to IGMP clients that have joined a multicast group.		
IGMP Fast Leave	This option is shown only when IGMP Snooping is enabled. Select to enable IGMP Fast Leave.		

	Normally when the router receives a "leave" message from an IGMP host, it will send a last member query message to see if there are still members within the multicast group. When Fast Leave is enabled, multicast for a group is immediately terminated when the last host in that group sends a "leave" message.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

## II-1-12-2 IGMP Status

This page displays a list of active multicast groups.

search Q	Configuration / IGMP				(Citratives)
wice Menu					
) Dashboard	Multicast Group Table				
	-				
Physical Interface	Group Address	P1	P2	P3	P4
WAN	239 255 16.61	10	-	Joined	-
LAN	239.255.16.62		-	Joined	
DNS					
Wireless LAN					
Routing					
RIP					
BGP					
OSPF					
Bandwidth Management					
NAT					
Objects					
USB Application					
Wake on LAN					
Notification Services					
RADIUS/ TACACS+					
Certificates					

Available settings are explained as follows:

ltem	Description
Group Address	Address of the multicast group, which is within the IP range reserved for IGMP, 224.0.0.0 through 239.255.255.254.
P1 to P4	LAN ports that have IGMP hosts joined to this multicast group.

# II-1-13 Objects

Vigor router system provides the object functions.

Users can define various types of objects and groups, and then apply them at various scenarios, like Configuration>>NAT>> Port Forwarding, Security>>Firewall Filters.

The advantage is that the user doesn't have to set data repetitively and it significantly enhances efficiency.

Currently, the objects that can be preset include IP, MAC, Schedule, Service Type, Keyword, and groups that include IP, MAC, etc.

### II-1-13-1 IP Object

For IPs in a range and service ports in a limited range usually will be applied in configuring router's settings, therefore we can define them with objects and bind the objects with groups for using conveniently. Later, we can select that object/group for applying it.

For example, a range of IP address in the same department can be defined with an IP object.

Search Q	Configuration / Objects	MAC Object MAC Group	Schedule Service Type Object	Country Object Keyword O	bject Backup & Restore		DRese
Device Menu	IP Object	www.ooject www.group	Schedule Service Type Object	country object Repairio o	nierr packah a kestare		
⑦ Dashboard							
	+ Add				Search		⇒ Mac 19
Physical Interface	Object Name	IP Version	IPv4 Address	IPv6 Address	Used in	Option	
WAN	car_1	Both	192.168.1.54	abcd:1234::	IP Group	/ Edit	@ Delete
LAN							
DNS							
Wireless LAN							
Routing							
RIP							
BGP							
OSPF							
Bandwidth Management							
NAT							
IGMP							
USB Application							
Wake on LAN							
Notification Services							
RADIUS/ TACACS+							

To add a new IP object profile, click the +Add link to get the following page.

Schedule Service Type Object Countr			×
	Object Name 🕕	IP_Obje	ct_10
	IP Version	Both IPv4	IPv6
IPv4 Address 🖗 192.168.1.54	Address Type	P	Subnet
	IPv4 Settings		
	Start IP Address ()	192.168	.10.96
	End IP Address ()	192.168	8.10.96
	Invert ()		
	IPv6 Settings		
	Match Type 🕧	128 Bits	ouffix 64 Bits
	Start IP Address 🕦	fe80::93	10:657:3464
	End IP Address 🕕	fe80::93	10:657:3464
	Invert 🕡		
		Cancel	Apply

Description
Enter the name that identifies this profile.
Select the IP version (IPv4, IPv6 or Both) for entering correct IP address.
Select the type (IP or Subnet) of address.
IPv4 Settings
Enter the beginning IP address, if the Address Type is IP.
To set a range of IP addresses, enter the different IP addresses as start IP address and end IP address.
Enter the ending IP address, if Address Type is IP.
Enter an IP address if Address Type is Subnet.
Enter subnet mask, if Address Type is Subnet.
If enabled, all addresses except the ones entered above will be used.
IPv6 Settings
Specify the match type (128 Bits or Suffix 64 Bits) for the IPv6 address.
Enter the beginning IPv6 address, if the Address Type is IP. To set a range of IP addresses, enter the different IP addresses as start IP address and end IPv6 address.
Enter the ending IPv6 address, if Address Type is IP.
Enter an IPv6 address if Address Type is Subnet.
Enter IPv6 prefix length, if Address type is Subnet.

Invert	If enabled, all addresses except the ones entered above will be used.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

## II-1-13-2 IP Group

Multiple IPv4 Objects /IPv6 Objects can be placed into an IPv4 Group / IPv6 Group.

	Configuration / Objects						(1) Reset
	IP Object IF Group	MAC Object MAC Group St	chedule Service Type Object	Country Object Keyword	Object Backup & Restore		
Device Menu							
(?) Dashboard	IP Group						
	+ Add				Search-	ĩ	₽ Max: 3
Physical Interface	Group Name	Objects Included		Used in		Option	
WAN							
LAN							
DNS							
Wireless LAN							
Routing							
RIP							
BGP							
OSPF							
Bandwidth Management							
NAT							
IGMP							
USB Application							
Wake on LAN							
Notification Services							
RADIUS/ TACACS+							

To add a new IP group profile, click the +Add link to get the following page.

			Available Ob	Ject		
Group Name 🗇	IP4_group_1		Select Object	ts.	Search	
Selected Objects	+ Add	Max: 1	obje	ect Name IPv4 Address	IPv6 Address	
	Object Name IPv4 Address	IPv6 Address Option	🖬 car."	1 192.168.1.54	abcd:1234::	
	.car_1 192.168.1.54	abcd:1234:: 👔 Delete	IP_O	bject_10 192.168.10.96	fe80::9310:657:3464:d80d	

Available settings are explained as follows:

ltem	Description			
Group Name	Enter a name that identifies this profile.			
Selected Objects	+Add - Click to open the page with available objects.			
Available Object				

Search	Enter the IP object name or the IPv4/IPv6 Address to search related IP object(s).
Selected Objects	Objects available for grouping will be displayed here. Select one or more objects to group under the current IP group.
Object Name	Display current existed IPv4/IPv6 object(s). To add an IP object to the current IP group, simply select the object(s) you want. The selected items will then appear under the Selected Objects section on the left side.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

Configurat	tion / Objects									🕚 Reset
IP Object	IP Group	MAC Object	MAC Group	Schedule	Service Type Object	Country Object	Keyword Object	Backup & Restore		
IP Group										
+ Add								Search		🚔 Max: 32
Gro	up Name	Objec	ts Included				Used In		Option	
IP4_	_group_1	1							🖉 Edit	🗊 Delete

## II-1-13-3 MAC Object

The MAC address of local or remote clients can be specified in the MAC Object page.

Search Q	Configuration / Objects				0	Reset C Refres
evice Menu		MAC Group Schedule Service Type Object	t Keyword Object Backup & Resto	re		
Dashboard	MAC Object					
	+ Add				Gearch	March
Physical Interface	Object Name	MAC Address		Used in		Option
WAN						
DNS						
Wireless LAN						
Routing						
RIP						
BGP						
OSPF						
Bandwidth Management						
IGMP						
USIB Application						
Wake on LAN						
Notification Services						
RADIUS/ TACACS+						
Certificates						
Security )						
IAM						

To add a new MAC object profile, click the +Add link to get the following page.

C Object MAC Group Schedule Service Type Object Keyword Ob		×
	Object Name 🕕	MAC_Obejct_1
	MAC Address ()	14:49:BC:5C:01:15
MAC Address		
No Records Found!		
		Cancel Apply

#### Available settings are explained as follows:

ltem	Description		
Object Name	Enter a name that identifies this object.		
MAC Address Enter the MAC address of the client.			
Cancel	Discard current settings and return to the previous page.		
Apply	Save the current settings and exit the page.		

### II-1-13-4 MAC Group

Multiple MAC Objects can be placed into a MAC Group.

Searchin Q	Configuration / Object								O Reset	Refresin
Device Menu	MAC Group	p MAC Object	MAC Group Sche	dule Service Type Object	Keyword Object	Backup & Restore				
🖓 Dashboard	MAC Group									
÷ confranction -	+ Add							Search		Max; 32
Physical Interface	Group Name		Objects Include	bd	Used in		Selected Objects		Optic	in
WAN										
LAN										
DNS										
Wireless LAN										
Routing										
RIP										
RGP										
OSPI										
Bandwidth Management										
IGMP										
Dissers :										
USB Application										
Wake on LAN										
Notification Services										
RADIUS/ TACACS+										
Certificates										
Security >										
<u>д</u> им 🔸										

To add a new MAC group profile, click the +Add link to get the following page.

		Available	MAC Object		×
Group Name 🛈	MAC_Group_Anna	Select MA	AC Objects	Search	
Selected Objects	+ Add Max: 12		Object Name	MAC Address	
	Object Name MAC Address Option		MAC_Object_1	08:BF:B8:D5:DD:A9	
	No Records Found!				
Cancel Apply					Close

ltem	Description					
Group Name Enter a name that identifies this profile.						
Selected Objects	+Add - Click to open the page with available objects.					
	Available MAC Object					
Select MAC Objects	Search - Enter the MAC object name to display existed MAC objects.					
Object Name	Select the object(s) to be grouped under the current MAC group. The selected one will be shown under the Selected Objects on the left side.					

Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-1-13-5 Schedule

Time schedules can be created and used with router features that support them, so that those features can be turned on and off automatically at preconfigured times.

search	Configurat	tion / Objects							O Report
	P Object	IP Group M	INC Object MAC G	roup Schedule Service Type	Object Keyword Object Backup	& Restore			
Device Menu	Schedule								
(2) Dashboard									
	+ Add							Search-	Max, 20
Physical Interface	Name	Enabled	Start Date	Start Time (Hr. Min.)	End Time (Hr; Min.)	Repeat	Used In	in Use	Option
WAN									
LAN									
DNS									
Wireless LAN									
Routing									
RIP									
BCP									
OSPF									
Bandwidth Management									
NAT									
IGMP									
USB Application									
Wake on LAN									
Notification Services									
RADIUS/ TACACS+									
Certificates									
Security 5									
S IMM S									

To add a new schedule profile, click the +Add link to get the following page.

	MAC Group	Schedule Service Type Object	Keyword Ot				×
				Name 🕕		Schdule_nig	ght
				Enabled			
Enabled 🖕	Start Date	Start Time (HH: mm) 🝵	End Time (HH:	Start Date	2024-10-2	25	÷
Enabled	2024-10-17	14:12	00:00	Start Time (HH: mm)	18	~ : 08	`
Enabled	2024-10-24	12:12	00:00	End Time (HH: mm)	23	√ : 00	`
				Repeat		Once	`

ltem	Description
item	Description

Name	Enter the name of the schedule profile.
Enabled	Switch the toggle to enable or disable this schedule profile.
Start Date	Select the date when the entry comes into effect.
Start Time	Set the time when the schedule is triggered.
End Time	Set the time for the schedule to be ended.
Repeat	Once - The schedule is triggered once based on Date, Start Time and End Time.
	Daily - The schedule is triggered everyday based on Start Time and End Time.
	<ul> <li>End Repeat - If enabled, the schedule will be triggered every day till the date defined in the End Repeat Date.</li> </ul>
	<ul> <li>End Repeat Date - The schedule will be ended on the specified date.</li> </ul>
	Weekly - The schedule will be triggered, starting at the Start Time and ending at the End Time, on the selected days of the week.
	• Every - Select the day for triggering the schedule.
	<ul> <li>End Repeat - If enabled, the schedule will be triggered every week till the date defined in the End Repeat Date</li> </ul>
	<ul> <li>End Repeat Date - The schedule will be ended on the specified date.</li> </ul>
	Monthly - The schedule will be triggered monthly based on the Date setting. For example, choose 2022-04-27 as the date set. Later, this schedule will be triggered on the 27th of every month.
	<ul> <li>End Repeat - If enabled, the schedule will be triggered every month till the date defined in the End Repeat Date.</li> </ul>
	<ul> <li>End Repeat Date - The schedule will be ended on the specified date.</li> </ul>
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

# II-1-13-6 Service Type Object

Up to 255 Service Type Objects can be created.

ice Menu										
Dashboard	Service Type Ol	bject								
Configuration	+ Add							Som	h	Mag 2
Physical Interface	Name	Protocol	Source Port Start	Source Port End	Source Invert	Destination Port Start	Destination Port End	Destination invert	Option	
WAN	AUTH	TCP	4	65535	false	113	113	false	2 Edin	1 Delete
LAN	RGP	TCP		65535	faise	179	179	false	2 Edit	Colete
DNS					10.94	1.1		10.04	a trac	C ovieta
Wireless LAN	BOOTPCLIENT	UDP	1	65535	faise	68	68	faise	@ Edn	D Delete
Routing	BOOTPSERVER	UDP	4	65535	faise	67	67	false	/ Edit	Delete
BGP	CU_SEEME_HI	TCP/UDP		65535	false	24032	24032	false	2 Edin	Deleta
OSPF	COLIEREN	TEP/ODP		03333	18:56	27024	24022	laise	ay burn	C) O'entite
Bandwidth Management	CU_SEEME_LO	TCP/UOP		65535	faise	7648	7648	Ealse	Ø Em	1) Derete
NAT	DNS	TCP/UDP	1	65535	faise	53	58	faise	@ Edn	D Delete
IGMP	FINGER	TCP		65535	faise	79	79	false	/ Edit	
COVER 1	TOTAL N	Jer			10.14			(a)A	Do Frank	III Seriere
USB Application	FTP	TCP	1	65535	false	20	. 21	false	2 Edit	1 Delete
Wake on LAN	H323	тср		65535	false	1720	1720	false	2 Edit	1 Delete
Notification Services										
RADIUS/ TACACS+ Certificates	Showing 1 to 10 of	34 entries							Show 10	Series Series
Certificates										

To add/edit a service type profile, click the +Add / Edit link to get the following page.

ervice Type Ob	piect						
ernee type of	Jeer					Name	AUTH
F Add						Protocol	TCP
lame 💠	Protocol 🔅	Source Port Start	Source Port End	Source Invert 🔅	Destination Port Start 👳	Specify Source Port	(
UTH	тср	1	65535	false	113	Destination Port Start	113
GP	тср	1	65535	false	179	Destination Port End	113
OOTPCLIENT	UDP	1	65535	false	68	Destination Invert	
OOTPSERVER	UDP	1	65535	false	67		
U_SEEME_HI	TCP/UDP	1	65535	false	24032		
U_SEEME_LO	TCP/UDP	1	65535	false	7648		
INS	TCP/UDP	1	65535	false	53		
INGER	ТСР	1	65535	false	79		
ТР	TCP	1	65535	false	20		
1323	ТСР	1	65535	false	1720		
howing 1 to 10 of 3	34 entries						

ltem	Description
Name	Name that identifies this profile. Maximum length is 15 characters.
Protocol	Protocol(s) to which this profile applies. Any – All protocols. ICMP / ICMPv6 – Internet Control Message Protocol IGMP – Internet Group Management Protocol TCP – Transmission Control Protocol

	UDP – User Datagram Protocol
	TCP/UDP – Transmission Control Protocol and User Datagram Protocol
	Other – Other protocols not listed above. Enter protocol number in the textbox.
Specify Source Port	When protocol selected includes TCP or UDP, the source and destination ports can be specified.
	Switch the toggle to enable/disable the source port settings.
	Source Port Start / Source Port End – Enter two values to define the port range of source port.
	Source Invert - If enabled, all port values except the ones entered above (Source Port Start/End) will be used.
Destination Port Start / Destination Port End	When protocol selected includes TCP or UDP, the source and destination ports can be specified.
Destination Invert	If enabled, all port values except the ones entered above (Destination Port Start/End) will be used.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

## II-1-13-7 Country Object

The country object profile can determine which country/countries shall be blocked by the Vigor router's Firewall.

Up to 5 country object profiles can be created for use as blacklists or white lists.

search Q	Configuration	on / Objects									() Resol
	IP Object	IP Group	MAC Object	MAC Group	Schedule	Service Type Object	Country Object	Keyword Object	Backup & Restore		
Device Menu	Country O	biect									
(?) Dashboard											
	+ Add								1.5	earch	Macci
Physical Interface	Object Nam	ne				Selected Countries				Option	
WAN	For_TW					TW				20 Ente	1 Delete
LAN											
DNS											
Wireless LAN											
Routing											
BGP											
OSPF											
Bandwidth Management											
NAT											
IGMP											
USB Application											
Wake on LAN											
Notification Services											
RADIUS/ TACACS+											
Certificates											
Security											

To add a country object profile, click the +Add link to get the following page.
		Available C	puntry	;
		🗌 кz	Kazakhstan	Asia
(i) By clicking Apply, yo	ou agree to the terms and policy of Maxmind License.	KG	Kyrgyzstan	Asia
Dbject Name 🥡	For_TW	TF	"French Southern Territories"	Antarctica
Selected Countries	+ Add Max: 12	🗌 нм	"Heard and McDonald Islands"	Antarctica
	Country Continent Option	🗆 cc	"Cocos (Keeling) Islands"	Asia
	Taiwan Asia 😭 Delete	D PW	Palau	Oceania
	Note: To upgrade database, please check System Maintenance > Syste	VN	Vietnam	Asia
		🗌 ТН	Thailand	Asia
		D	Indonesia	Asia
		🗌 LA	Laos	Asia
		VTW	Taiwan	Asia
		D PH	Philippines	Asia
		MY	Malaysia	Asia
		CN CN	China	Asia
Cancel Apply				Close

Available settings are explained as follows:

ltem	Description
Object Name Name that identifies this profile. Maximum length is 63 cha	
Selected Countries	+Add - Click to create an entry. A list of country codes will appear on the right side. Select up to 12 required codes for the new object.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

After finishing this web page configuration, please click Apply to save the settings.

# II-1-13-8 Keyword Object

50 Keyword Object Profiles can be created for use as blacklists or white lists.

Search Q	Configuration / Objects	Mar Course Schedule	Contraction Contract	China Country Change	Participa Participa		() Reset
Device Menu (7) Dashboard	IP Object IP Group MAC Object Keyword Object	MAC Group Schedule	Service type Object Country	Object Keyword Object	Backup & Restore		
E Contigonition	+ Add				Search		Max: 50
Physical Interface	Object Name		Keywords			Option	
WAN	DrayTek-366100		game, gambling			/ Edit	B Delete
LAN DNS	game123		game, gambling, play			2500	<u>⊖</u> Delete
Wireless I AN Routing RIP							
BGP							
OSPF Bandwidth Management							
NAT							
IGMP							
USB Application							
Wake on LAN							
Notification Services							
RADIUS/ TACACS+							
Certificates							

To add a keyword object profile, click the +Add link to get the following page.

nfiguration / Objects	
	×
opert Name 🔅 Forolden	
hidd	Max. 8
Reywords 🕥 🔪	Option
Gamble	@ Delere
ncel Apply	

Available settings are explained as follows:

ltem	Description			
Object Name Name that identifies this profile. Maximum length is 16 chara				
Keywords	Keywords to be matched. Enter the content for this profile. For example, type <i>gambling</i> as Contents. When you browse the webpage, the page with gambling information will be watched out and be passed/blocked based on the configuration on Firewall settings.			
	In addition, up to 3 key phrases, separated by spaces, for a total length of 63 characters can be entered. For key phrases that contain spaces, replace spaces with the sequence %20. For example, the phrase "keep out" is to be entered as "keep%20out".			
Delete	Click to remove the selected entry.			
Cancel	Discard current settings and return to the previous page.			
Apply	Save the current settings and exit the page.			

# II-1-13-9 Backup & Restore

The object settings can be backed up as a file. The backup file can be imported to the device to restore the configuration in the future if required.

Search Q	Configuration / Objects
Device Menu 🕗 Dashboard	IP Object IP Group MAC Object MAC Group Schedule Service Type Object Country Object Keyword Object Larbup & Restore Backup & Restore
Physical Interface	Backup
WAN LAN DNS Wireless LAN Routing RBP BGCP DSPF Bandwidth Management NAT IGMP JUggenss USB Application	Selected item  Select All  Select All  Select All  Select All  Select All  Select All  Service  Secure Add Copet  Mac Object  Service Type Object  Service Country Object  Keyword Object  Backue  Service Country Object  Ser
USB Application Wake on LAN Notification Services RADIUS/ TACACS+ Certificates	Restore Restore from Backup File Restore

Available settings are explained as follows:

ltem	Description
Backup	Usually, a user can create the objects through the web page under Objects.
	All the objects (or the template) can be saved and exported as a file by clicking Download.
	Back up – Click it to backup current objects to a file. Such file can be restored for future use.
Restore	Restore from Backup File 🗀 – Click it to specify a file backed up previously.
	Restore – Click to execute the restoration.

# II-1-14 USB Application

# II-1-14-1 General Setup

This page allows you to configure the file sharing feature of the Vigor router, where USB mass storage devices such as thumb drives and hard drives can be made accessible to LAN clients.

Contraction of the local division of the loc	Configuration / USB Application
Device Menu	General Setup USB User Management USB Device Status Temperature Sensor Settings Modern Support List SM8 Client Support List
(?) Dashboard	
E fortgaater	General Setup
Physical Interface	
WAN	General Settings
LAN	
DNS	Simultaneous FIP Connections (I) 444, 60 5
Wireless LAN	SMB File Sharing Service (Network Neighborhood)
Routing	SMB Hie sharing Service (Network Neighborhood)
RIP	Enabled
BGP	Access Mode LAN Only LAN And WAN
OSPE	Approximation and additional additiona
Bandwidth Management	NetBios Name Service
NAT	
IGMP	Workgroup Name WORKGROUP
Objects	Hort Name Vigor
Wake on LAN	
Notification Services	Printer Server
RADIUS/ TACACS+	
Certificates	Fnabled
O security .	Cancel Apply-

Available settings are explained as follows:

ltem	Description			
Simultaneous FTP Connections	Enter the maximum number of simultaneous FTP sessions allowed. The router allows up to 6 simultaneous sessions.			
SMB File Sharing Service (Network Neighborhood)	<ul> <li>Click Enabled to invoke SMB file sharing service via the router.</li> <li>Access Mode – Select the access mode for file sharing service.</li> <li>LAN Only – Users coming from internet cannot connect to the SMB server of the router.</li> <li>LAN And WAN - Both LAN and WAN users can access SMB server of the router.</li> </ul>			
NetBios Name Service	For the NetBios service of USB storage disk, you have to specify a workgroup name and a host name. A workgroup name must not be the same as the host name. The workgroup name can have as many as 15 characters and the host name can have as many as 23 characters. Both them cannot contain any of the following ; : " <> * $+ = \setminus  $ ?. Workgroup Name – Type a name for the workgroup. Host Name – Type the host name for the router.			
Printer ServerSwitch the toggle to enable/disable the printer server.If enabled, the Vigor router will act as a print server for printconnected the USB.				
Cancel	Discard current settings.			
Apply	Save the current settings.			

#### II-1-14-2 USB User Management

This page allows you to set up profiles for FTP/SMB users. Any user who wants to access the USB storage disk must authenticate using a username and password that have been configured on this page.

SearchQ	Configuration / I	JSB Application						C Refresh
Acarda and	General Setup	USB User Management	USB Device Status	Temperature Sensor Settings	Modern Support List	SMB Client Support List		
Device Menu	USB User Mana	rement						
<ul> <li>Dashboard</li> </ul>	obb ober maria	Second Second						
😑 Configuration 👘 🚦	+ Add							Mac 15
Physical Interface	Username		Enable	Home Folder		Access Type	Option	
WAN	Worker_George		true	12home		FTP	₫ Edit	@ Delete
LAN								
DNS								
Wireless LAN								
Routing								
RIP								
BGP								
OSPF								
Bandwidth Management								
NAT								
IGMP								
Objects								
Usid Application								
Wake on LAN								
Notification Services								
RADIUS/ TACACS+								

To add a USB user profile, click the +Add link to get the following page.

Device Status	Temperature Sensor Settings			×
		Enable		
able 🔶	Home Folder 🔿	Users		testforest $\checkmark$
le	12home	Home Folder		
		Access Type	🗸 FTP 🗹 Samba	
		Access Rule		
		File Access Rule (FTP)		Read 🗌 Write 🗌 Delete
		Directory Access Rule (FTP)		List 🗌 Create 🗌 Remove
		Access Rule (Samba)		Read Write/Delete
				Cancel Apply

ltem	Description
Enable	Switch the toggle to enable / disable this profile.
Users	Use the drop-down list to select an existed user account.

Home Folder	Enter the folder name which will be the root folder for FTP and SMB sessions established using the credentials of this user profile. Only folders and files inside this selected root folder are accessible to the user.
Access Type	FTP - It allows you to access and control a remote PC through FTP service. Samba - It allows you to access and control a remote PC through Samba service.
Access Rule	It determines the authority for such profile. Any user, who uses such profile for accessing into USB storage disk, must follow the rule specified here. File Access Rule (FTP) – Check the items (Read, Write and Delete) for such profile.
	Directory Access Rule (FTP) – Check the items (List, Create and Remove) for such profile. Access Rule (Samba) – Check the items (Read, Write/Delete) for such
Cancel	profile. Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-1-14-3 USB Device Status

This page allows monitoring of the status of USB devices (disk, modem, printer, and sensor) connected to the Vigor router.

Search Q	Configuration / USB Application		C Refresh
	General Setup USB User Ma	anagement USB Device Status Temperature Sensor Settings Modern Support List SMB Client Support List	
Device Menu	USB Device Status		
⑦ Dashboard	obo bente statos		
E Configuration	Disk Modem Printer	r Sensor	
Physical Interface WAN	USB Mass Storage Device Sta	atus	
LAN	Connection Status	No Disk Connected	
DNS	Disk Capacity	0.0 MB	
Wireless LAN	Free Capacity	0.0 MB	
Routing	tree commenty		
RIP	USB Disk Users Connected	Index Service IP Address(Port) Username	
BGP			
OSPF			
Bandwidth Management			
NAT			
IGMP			
Objects			
USB Application			
Wake on LAN Notification Services			
RADIUS/ TACACS+			

ltem	Description
Connection Status	Shows whether a USB disk is connected or not. If there is no USB device connected to the Vigor router, "No Disk Connected" will be displayed.
Disk Capacity	Shows the total capacity of the USB storage disk.
Free Capacity	Shows the free space on the USB storage disk. Click Refresh at any

	time to get the most up-to-date free capacity.
USB Disk Users Connected	Shows the clients that are connected to the SMB/FTP server. Index – The profile index used by the client to establish the connection.
	Service – Shows whether the connection is using FTP or SMB. IP Address – Shows the client's IP address. Username – Shows the username used to establish the connection.

#### II-1-14-4 Temperature Sensor Settings

A USB Thermometer is now available. It complements your installed DrayTek router installations which will help you monitor the server or data communications room environment and notify you if the server room or data communications room is overheating.

During summer in particular, it is important to ensure that your server or data communications equipment are not overheating due to cooling system failures.

The inclusion of a USB thermometer in compatible Vigor routers will continuously monitor the temperature of its environment. When a pre-determined threshold is reached you will be alerted by either an email or SMS so you can undertake appropriate action.

For a list of supported USB thermometers, visit our website at https://www.draytek.com/en/products/usb-thermometer/ or contact your local DrayTek partner.

Search Q	Configuration / USB Application	CRefresh
	General Setup USB User Management USB Device Status Temperature Sensor Settings Modern Support List SMB Client Support List	
Device Menu	Temperature Sensor Settings	
(?) Dashboard		
🚊 Configuration	Manufacturen	
Physical Interface		
WAN	Product	
LAN	Current Temperature	
DN5	Average Temperature	
Wireless LAN		
Routing	Maximum Temperature	
RIP BGP	Minimum Temperature	
OSPF	Temperature Calibration Unit	
Bandwidth Management		
NAT	Temperature Calibration	
IGMP		
Objects	Alarm Settings	
US& Application	Enable Syslog Alarm	
Wake on LAN	Shris Alert	
Notification Services		
RADIUS/ TACACS+	Cancel Apply	

ltem	Description
Temperature Sensor Settings	Display information related to manufacturer, product, current temperature, average temperature, maximum temperature, and minimum temperature.
	Temperature Calibration Unit - Select the temperature scale to be used.
	Temperature Calibration – Enter the difference between the actual temperature and the temperature as reported by the thermometer.
Alarm Settings	Enable Syslog Alarm – Select to enable recording of the temperature in Syslog.
	SMS Alert – Switch the toggle to enable/disable the SMS alert.
	<ul> <li>Send Alert SMS to – Select the SMS sender profile (created on IAM&gt;&gt;Users &amp; Groups&gt;&gt;Users, System Maintenance&gt;&gt;Account &amp; Permission&gt;&gt;Local Admin Account).</li> </ul>
	Email Alert –Switch the toggle to enable/disable the email alert.
	<ul> <li>Send Alert Email to –Select the email sender profile (created on IAM&gt;&gt;Users &amp; Groups&gt;&gt;Users, System Maintenance&gt;&gt;Account &amp; Permission&gt;&gt;Local Admin Account).</li> </ul>
	Lower temperature limit / Upper temperature limit– Enter the upper and lower temperature limits. If the temperature falls outside

of this range, an alert will be sent.	
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

# II-1-14-5 Modem Support List

This page lists the brands and models of USB modems that are supported by the Vigor router. It is subject to change between different versions of firmware as support for new modems are added.

	Configuration / USB Applie	cation			C Refre
levice Menu	General Setup USB Us	er Management USB Device Status Ten	perature Sensor Settings	Modem Support List SMB Client Sup	iport List
	Modem Support List				
Dashboard					
Physical Interface	Brand	Model	LTE	Access Mode	Status
WAN	Huawe)	E3372h-153	У	DHCP	Y
LAN	Huawel	E3372h-320	· *	DHCP	×
DNS	nuame	E337214320		DHCP	1. A.
Wireless LAN	Huawel	E3372-325	¥.	DHCP	Y
Routing	Huawel	K4201	Ň	DHCP	W.
RIP					
BGP	Alcate!	MW40V	Y	DHCP	Y
OSPF	ZTE	MF627+	N	ppp	v
Bandwidth Management					
NAT	ZTE	MF79N	Y	DHCP	Y
IGMP	ZTE	MF833U1	Y	DHCP	x
Objects					
	BandRich	C170	N	ppp	×
Wake on LAN	BandRich	C502	N	PPP	Y
Notification Services	and the second s				
RADIUS/ TACACS+					

#### II-1-14-6 SMB Client Support List

The SMB Client Support List provides the test status information for applications with file sharing operated under different platforms.

Search Q	Configuration / USB Application		(C Refres)
	General Setup USB User Management USB Device Status Temperature Sensor Setting	s Modem Support List SMB Client Support List	
levice Menu	SMB Client Support List		
<ul> <li>Dashboard</li> </ul>			
Physical Interface	Platform	Application	Status
WAN	Microsoft@ Windows® 7	Build in	×
LAN	Microsoft® Windows® 8.1	Build in	Y.
DNS			
Wireless LAN	Microsoft@ Windows® 10 (22H2)	Build in	Y
Routing	Microsoft® Windows® 11	Build in	¥
RIP			
BGP	Ubuntu 20.04 LTS	Build in	Y
OSPF	Ubuntu 22.04 LTS	Build in	Y
Bandwidth Management	macOS Ventura (13.x)	Build in	м
IGMP			
Objects	IOS8 17.7	Build in	Y
	Android <sup>11</sup> 13	Mi File Manager	M
Wake on LAN	and the second se		
Notification Services	Android™ 13	File Manager Plus	м
RADIUS/ TACACS+	Andreid <sup>m</sup> 13	AndSMB	M

# II-1-15 Wake on LAN

Using the Wake on LAN (WoL) feature, LAN clients that support WoL can be powered on or resume from sleep over the network, without the need for physical access to the device.

In order for LAN clients to be able to wake from sleep or off states, the network interface card must be configured to monitor Wake-on-LAN messages. Consult the documentation of the LAN client for details on setting up its network interface for Wake on LAN.

If you wish to be able to select the IP address of the Wake-on-LAN client, its MAC address must first be bound to a static IP address using the Bind IP to MAC function.

Search Q,	Configuration / Wake on LAN				() Reset C Refresh
Device Menu	Wake on LAN from Router				
<ul> <li>Dashboard</li> </ul>	Wake by	MAC Address Bind IP to MAC List			
E configuration	MAC Address 💮				
WAN		Note: Router will send magic packets to wake de	evice up. Make sore the device s	upports wake on LAN feature	
LAN DNS		Wake UP			
Wireless LAN					
Routing	Wake on LAN/ WAN Device Lis	t			
BGP	+ Add			Max-1.0	
OSPF Bandwidth Management	Name 🗊 Device 🗊	Auto Wake Up by Schedule	Wake on WAN	Public Port	
NAT					
IGMP Objects	Wake on WAN Access Control Mode	Allow List 🔗			
US8 Application	IP Group	(IP Group) IP4_group_1 ×			
Notification Services		Note: Wake on WAN opens router port automat	itally.		
RADIUS/TACACS+ Certificates	Cancel Apply				

ltem	Description			
	Wake on LAN from Router			
Wake by	<ul><li>The type of address of the LAN client to be woken up.</li><li>MAC Address</li><li>Bind IP to MAC List</li></ul>			
MAC Address	The MAC address provided here will be the device that the Vigor router will wake up. If MAC Address is selected in Wake by, the content listed on ARP Table will be shown for you to choose. Configuration / Wake on LAN Wake on LAN from Router			
	Wake by       MAC Address       Bind IP to MAC List         MAC Address       Image: Comparison of the second seco			

	choose one.				
	Configuration / Wake on L	AN			
	Wake on LAN from Rou	ter			
	Wake by	MAC Address Bind IP to MAC List			
	MAC Address 🕕	1			
		SUGGESTICKS C	×e ×		
	Configuration / LAN	77:77:77:77:77 (192.168.1.77)			
	LANS Bind IP to MAC DHCP Options Bind IP to MAC	Inter-LAN Routing VLAN List Interface VLAN LAN Port 802.1X			
	+ Add				
	Comment	MAC Address	IP Address		
	LAN_PC_1	<i>דר:רד:רד:רד:ר</i>	192.168.1.77		
Wake Up	Click to send Wake-o	on-LAN message to the specified LAN	client.		
	Wake on LAN/	WAN Device List			
+Add	Click to specify a new device which will be awakened.				
	Name – Enter the name of the device.				
	Device – Enter the N	/AC address of the device.			
	Auto Wake Up by S the schedule autom	chedule – The device can be awakene atically.	ed based on		
		itch the toggle to enable / disable this wakened by the IPs selected on the Al			
	Public Port –				
	Option (Delete) – R	emove the selected device.			
Wake on WAN Access Control Mode	Set the path for the the remote device.	Set the path for the boot packet (sent by a mobile phone) to deliver to			
		he IP group. The boot packets will be t e via any WAN IP or the IP listed on the			
Cancel	Discard current sett	ings.			
Apply	Save the current set	tings.			

# II-1-16 Notification Services

Generally, the notification service refers to notifying users via email or SMS.

# II-1-16-1 Services & Providers

Before notifying the clients, the router's system administrator needs to configure the server and provider used to send letters or SMS messages.

DNS	Configuration / Not	ification Services			DReset
Wireless LAN	Services & Preseder	SMTP Server SMS Provider Webho	ok Notification Backup & Restore		
Routing		_			
RIP	Services & Provide	ers			
BGP					
OSPF	Categories	Notification Type	SMTP Server	SMS Provider	
Bandwidth Management	System	System Notifications	Default_Email_Profile 🗸	Default_SMS_Profile U	
IGMP	MFA	Email & SMS PIN Code	Default_Email_Profile ~-	Default_SMS_Profile ~	
Objects					
USB Application					
Wake on LAN					
Notification Services					
RADIUS/ TACACS+					
Certificates					
Security )					
Де IAM ⇒					
VPN )					
Monitoring 2					
😫 utility 🤫					
🖏 System Maintenance ;	-				

#### Available settings are explained as follows:

ltem	Description
SMTP Server	Use the drop-down menu to select the SMTP server for sending the e-mail.
SMS Provider	Use the drop-down menu to select the SMS Provider for sending the SMS.
Cancel	Discard current settings.
Apply	Save the current settings.

#### II-1-16-2 SMTP Server

Up to 2 SMTP server profiles can be set up for chosen by Services & Providers.

DNS	Configuration / Notification Services				3 Rese
Wireless LAN	Services & Providers SMTP Server	SMS Provider Webhook Notific	ation Backup & Restore		
Routing		AND FLOTING THE PARTY	BOOT DECKUP & RESULT		
	SMTP Server				
BGP	+ 400				Max
OSPF	Name	Enabled	SMTP Server	Last Sent at	Option
Bandwidth Management	Default_Email_Profile	Enabled		2025-01-08 06:32:09	/2 Edit
NAT	Derault_Email_Prome	Enabled		2025-01-08 06:5209	SC ROA
GMP					
Objects					
JSB Application					
Wake on LAN					
RADIUS/ TACACS+					
Certificates					
iecurity 2					
AM 3					
/PN ÷					
Aonitoring 5					
rtility >					
System Maintenance 5					

To add a new profile, click the +Add link to get the following page.

Name ()	Senders_MKT	
Enabled		
Connecting Sender Through	Default WAN $\sim$	
SMTP Server ()	8.8.8.8	
Specify Port		
Sender Address	carrie_ni@draytek.com	
Connection Security	SSL 🗸	
Authentication Required		
Username	test123	
Password	······ ©	
Sending Intervals (Seconds)	15	
Send Test Email to	NnN20200331@gmail.com	
	Send Test Message	
Send Status		
Cancel Apply		

ltem	Description
Name	Enter the name of the profile.
Enabled	Switch the toggle to enable/disable this profile.
Connecting Sender Through	Specify the WAN interface for connecting the sender.
SMTP Server	Enter the IP address of the SMTP server.
Specify Port	Switch the toggle to enable the port setting. Specify SMTP Port – Enter the port number of the SMTP server.
Sender Address	Enter the E-mail address of the sender.

Connection Security	There are three methods to enhance the connection security of SMTP server.
	None - No SSL. Packets will be transferred without encryption.
	SSL - Packets will be transferred with encrypted connection. Select to use SMTPS (SMTP over SSL) to communicate with the SMTP server. Note that the port number used for SMTPS server is 465.
	StartTLS - It is a protocol used in communication to initiate a transition from an insecure one to a secure channel.
Authentication Required	Select to send username and password to SMTP server for authentication.
	Username – Username for authentication. Maximum length is 31 characters.
	Password – Password for authentication. Maximum length is 31 characters.
Sending Intervals	Minimum amount of time, in seconds, to wait between sending e-mail messages.
Send Test Email to	Specify an email address.
	Send Test Message - Click it to send a test e-mail according to above configuration.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-1-16-3 SMS Provider

Up to 2 SMS profiles can be set up as the SMS Providers.

DNS	Configuration / Notification Services				3 Reset
Wireless LAN	Services & Providers SMTP Server S	MS Provider Webhook Notification	Backup & Restore		
Routing	Services & Providers SMTP Server	Wis Provider Webnook Nocification	Backup & Restore		
RIP	SMS Provider				
BGP	+ Add				Mix
OSPF	Name	Enabled	Service Provider	Last Sent at	Option
Bandwidth Management				Last Sent at	
	Default_SMS_Profile	Enabled	None		A EQM
IGMP					
Objects					
USB Application					
Wake on LAN					
RADIUS/ TACACS+					
Certificates					
Security 2					
MM 3.					
VPN 3					
Monitoring s					
Utility >					
System Maintenance 5					

To add a new profile, click the +Add link to get the following page.

Name 🕡	MKT_1000	
Enabled		
Connecting Sender Through	Default WAN 🔨	
Service Provider	Vigor Router SMS Gateway	
SMS Gateway URL 🕕	www.draytek.com	
Connection Protocol	HTTPS HTTP	
Username	carrie	
Password	•••••• •	
SMS Quota	10	
Sending Intervals (Seconds)	30	
Send Test SMS to	090182054683	
	Send Test Message	
Send Status		
Cancel Apply		

ltem	Description
Name	Enter the name of the profile.
Enabled	Switch the toggle to enable/disable this profile.
Connecting Sender Through	Specify the WAN interface for connecting the sender.
Service Provider	Vigor Router SMS Gateway – Not all Vigor routers support the SMS function. This option allows you to set the IP address of the router which can be treated as a SMS gateway.
	Customized – Set the IP address or URL provided by the SMS provider.

When Vigor Router SMS Gateway is	SMS Gateway URL – Enter an identifier (domain name or IP address) for the service provider.
selected as the Service	Connection Protocol – Specify HTTP or HTTPS.
Provider	Username - Used for being authenticated by the Service Provider. Maximum length is 31 characters.
	Password - Used for being authenticated by the Service Provider. Maximum length is 31 characters.
When Customized is selected as the Service Provider	SMS Provider API URL – Enter the URL for the SMS service. Maximum length is 255 characters. Contact the service provider for the appropriate URL to use.
	SMS API Parameter - For each API (Application Programming Interface) with an independent Text Message and Recipient Number (Send to), please enter the strings represented by each API.
	HTTP Method – Two request methods offered here.
	• GET - Used to request data from a specified resource.
	• POST - Used to send data to a server to create/update a resource
SMS Quota	Remaining number of text messages allowed to be sent. The quota value reduces by 1 every time the router sends an SMS message. When the quota reaches 0, no SMS will be sent until it is reset to greater than 0.
Sending Intervals	Minimum amount of time, in seconds, to wait between sending SMS messages.
Send Test SMS to	Specify an email address.
	Send Test Message - Click it to send a test e-mail according to above configuration.
Cancel	Discard current settings and return to the previous page.
	Save the current settings and exit the page.

#### II-1-16-4 Webhook

Vigor router will send a report (webhook message) including WAN up, down, CPU usage, memory usage and etc. to a monitoring server periodically.

Up to 10 webhook profiles can be set up.

DNS	Configuration / Notification Se	rvices			3 Rese
Wireless LAN					
Routing	Services & Providers SMTP :	ierver SMS Provider We	hook Notification Backup & Restore		
RIP	Webhook				
BGP					
OSPF	+ Add				Max: 10
Bandwidth Management	Webhook Name	Enabled	Server Protocol Type	Monitoring Server URL	Option
	Slack	Disabled	HTTPS		Se Can
IGMP	Telegram	Disabled	HTTPS		
Objects	Telegram	Disabled	HTTPS		2 Keta
USB Application					
Wake on LAN					
RADIUS/ TACACS+					
Certificates					
ecurity					
MM 5					
D VPN					
Monitoring 5					
8 Ublity >					
System Maintenance 5					

To add a new profile, click the +Add link to get the following page.

SMS Provider V	Webhook Notification Backup & Restore		×
		Webhook Name 🕦	Hook_1
Enabled	Server Protocol Type	Enabled	
Disabled	нттрс	Server Protocol Type	HTTPS HTTP
Disabled	HTTPS	Monitoring Server URL 🕕	www.draytek.com
			Cancel Apply

ltem	Description
Webhook Name	Enter the name of the profile.
Enabled	Switch the toggle to enable/disable this profile.
Server Protocol Type	Select the protocol (HTTPS or HTTP) used for the server.
Monitoring Server URL	Enter the URL of a server.

Cancel	Discard current settings and return to the previous page.		
Apply	Save the current settings and exit the page.		

# II-1-16-5 Notification

Up to 20 notification profiles can be created and applied with the provider notification services.

Wireless LAN   Rouring   Ruing   Services & Providers   Sarrige   Bandwalch Management   Padle Name   Events Type   # dEvent   Schedule   Schedule   Schedule   Karrige   Karrige	DNS
RIP BGP DSPF Add Bardwicht Management Profile Name Events Type if of Event Schedule Option NAT rCAP Objects USB Application Wake on LAN Voter States RADUS/TACACS+ Certificates Security ;	Wireless LAN
DGP     Indication       OSPF     4.Add       Bandwidth Management     Profile Name       NAT     rot Events Type       rotage     0       Objects     USB Application       Walk con LAN     Add       AVAIDED Transmission     Add       RADUS/TACACS+     Certificates       Security     2	Routing
OSPF     + Add       Bandwidth Managementer.     Profile Name       NAT       KGMP       ObjectS       USB Application       Wake on LAN       Social filt Rese       Certificates       Social filt Partie	
Pollie Name     Events Type     If of Event     Schedule     Option       NAF     IgAMP     Objects     IgA papiloration       USB Application     Wake on LAN       RADUUST FACAS+     Certificates       © Security     2	
NAT ICMP Clights LISB Application Wale on LAN Wale on LAN Certificates Certificates Security 2	
ISOMP Disjects USB Application Wake on LAN Wake on LAN RADIUSY TACACS+ Certificates © Security 2	
Objects USB Application Wake on LAN Mathematicates Certificates	
USB Application Walke on LAN Additionation Services RADILUE TACACS+ Certificates © Security 2	
Wale on LAN Accentification memory RADIUST TACACS+ Certificates ⊗ Security ,	
Additional too Services RADINUS TACACS+ Certificates Sociality 2	
RADIUS/TACACS+ Certificates ⊘ Security	
Certificates ⊘ security ₂	
⊘ security ₂	
	Certificates
Sa www.	Security
	IAM 3
© vm 3	VPN :
经 Monitoring 5	Monitoring
88 unitey >	utility ,
& system Maintenance s	System Maintenance

To add a new profile, click the +Add link to get the following page.

ile (fame 🙆		
ger Events		
ats Type	Marm Report	
er Evenes		
ification		
il Alert		
i Alert Email to	and the state of the	
lert.		
ert SMS to		
ok -		
book Proble		
date		

ltem	Description
Name	Enter the name of the service profile.
Events Type	Alarm – The Vigor system will send alert messages to recipients if an alert event occurs.
	Report – The Vigor system will periodically send reports to recipients when an alert event occurs.
	• Report Period – Set the period (60-360 minutes) for Vigor system

	to send out the report by email, SMS and etc.		
Trigger Events	Select the events that allow the Vigor system to send reports or al via email, SMS, and more using the drop-down list.		
Email Alert	Switch the toggle to enable / disable the email alert function. Send Alert Email to - Select the email profile(s) for sending out the notification by email.		
SMS Alert	Switch the toggle to enable / disable the SMS alert function. Send Alert SMS to - Select the SMS profile(s) for sending out the notification by SMS.		
Webhook	Switch the toggle to enable / disable the webhook notification. Webhook Profile - Select the webhook profile(s) for sending out t notification.		
Schedule	Select the schedule profile(s) to send the notification (SMS, Email).		
Cancel	Discard current settings and return to the previous page.		
Apply	Save the current settings and exit the page.		

# II-1-16-6 Backup & Restore

Backup and restore the configuration settings for notification services.

DNS	Configuration / Notification Se	vices		() Reset
Wireless LAN				
Routing	Services & Providers SMTP	erver SMS Provider Webhook Notification Backup & F	estore	
RIP	Backup & Restore			
BGP	Children of a contract			
OSPF				
Bandwidth Management	Backup			
	Selected item-	Select All		
IGMP	Therefore Harry	Services & Providers		
Objects		SMTP Server		
USB Application				
Wake on LAN		SMS Provider		
		Webhook		
RADIUS/ TACACS+		Notification		
Certificates	Password Protection	0		
Security :		Back up		
<u>љ</u> им	s	here of		
O VPN	Restore			
G Monitoring	Restore from Backup File	C1 Henry		
BS Libility	File has Password Protection			
🗞 System Maintenance				
And and a second se				

Description		
Select the items for which settings will be backed up or restored.		
Switch the toggle to enable or disable the function. If enabled, set a password. New Password – Enter a string as the password. Confirm New Password – Enter the string again. Back up – Click to perform the backup job.		
Select the backup file you wish to restore.		
Switch the toggle to enable or disable the function.		

Protection	If enabled, set a password.
	Password – Please enter a string to use as the password for restoring the configuration.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

# II-1-17 RADIUS/TACACS+

Remote Authentication Dial-In User Service (RADIUS) is a security authentication client/server protocol that supports authentication, authorization and accounting, which is widely used by Internet service providers. It is the most common method of authenticating and authorizing dial-up and tunneled network users.

The router supports external TACACS+ and internal and external RADIUS servers for user authentication. Services that require user authentication include WLAN and VPN.

# II-1-17-1 External RADIUS

The built-in RADIUS client feature enables the router to assist the remote dial-in user or a wireless station and the RADIUS server in performing mutual authentication. It enables centralized remote access authentication for network management.

Vigor router can be operated as a RADIUS client. This web page is used to configure settings for external RADIUS server. Then LAN users of Vigor router will be authenticated and accounted by such server for network application.

Select External RADIUS to configure the router to use an external RADIUS server for user authentication.



To add a new profile, click the +Add link (up to 4) to get the following page.

Name 🕕	RADIUS	_1				
Authentication						
RADIUS Authentication						
Authentication Server	+Add					Max: 3
	Priority	Server IP	Secret		Authentication Port	Option
	0	172.16.3.62		٢	1812	î Delete
Authorization						
RADIUS Authorization						
Accounting						
RADIUS Accounting						
RADIUS Server Failover Policy						
Retry (Times, 1-10)	5					
Timeout (Sec. 1-90)	3					
Cancel Apply						

ltem	Description			
Name	Enter the name of the profile.			
	Authentication			
RADIUS Authentication	55			
Authentication Server	+Add – Click to add a server (up to 3).			
	Server IP –Enter the IP address of RADIUS server.			
	Secret – The RADIUS server and client share a secret that is used to authenticate the messages sent between them. Both sides must be configured to use the same shared secret. The maximum length of the shared secret you can set is 36 characters.			
	Authentication Port – The UDP port number that the RADIUS server is using. The default value is 1812, based on RFC 2138.			
	Option (Delete) - Remove the selected server.			
	Authorization			
RADIUS Authorization	Switch the toggle to enable/disable this profile.			
	Disconnect Message Port - Set a UDP port number (3799 in default) for receiving the disconnected-request packets from the AAA server. Note that these packets have been accepted by the RADIUS server before being disconnected by the AAA server.			
	Accounting			
RADIUS Accounting	RADIUS Accounting is a network customer billing mechanism for RADIUS server.			
	If enabled, Vigor router will deliver accounting request (e.g., IP address, traffic from the client) to the specified RADIUS server periodically.			
	Switch the toggle to enable/disable this profile.			
Accounting Server	+Add - Click to add a server (up to 3).			
	Server IP - Enter the IP address of RADIUS server.			

<ul> <li>Secret - The RADIUS server and client share a secret that is used to authenticate the messages sent between them. Both sides must be configured to use the same shared secret. The maximum length of the shared secret you can set is 36 characters.</li> <li>Authentication Port - Set the UDP port number (1813 in default) as the accounting port.</li> </ul>				
Option (Delete) - Remove the selected server.				
Set an interval time from 10 minutes to 1440 minutes (1 day) for the router to deliver the accounting request to the RADIUS server.				
RADIUS Server Failover Policy				
Set the number of attempts to perform reconnection with RADIUS server. If the connection (with the Primary Server) still fails, stop the connection attempt and begin to make connection with the secondary server.				
Set a timeout value for the router waiting for a response from the RADIUS server. If no response, Vigor router will send the authentication request again.				
Connection Test				
Test with Status Server – Click to make a test of authentication server and accounting server.				
Display the test result of the connection test.				
Discard current settings and return to the previous page.				
Apply Save the current settings and exit the page.				

Configuration	onfiguration / RADIUS/ TACACS+ 3 Reset				🕓 Reset	
External RAD	DIUS Internal RADIUS External TAC/	ACS+				
External RA	DIUS					
+ Add						Max: 4
Name	Primary Authentication Server	Secondary Authentication Server	Primary Accounting Server	Secondary Accounting Server	Option	
RADIUS_1					🖉 Edit	📋 Delete

#### II-1-17-2 Internal RADIUS

Except for being a built-in RADIUS client, Vigor router also can be operated as a RADIUS server which performs security authentication by itself. This page is used to configure settings for internal RADIUS server. Then LAN user of Vigor router will be authenticated by Vigor router directly.

Select Internal RADIUS to configure the router's built-in RADIUS server.

search Q	Configuration / RADIUS/ TACACS			(Differet)
Device Menu (2) Dashboard	External RADIUS Internal RADIUS	DIUS External TACACS+		
🚍 Çandiganalan	Enabled	•		
Physical Interface WAN	Authentication Port	1812		
LAN DNS	RADIUS Client Access List			
Wireless LAN Routing	IPv4 Client List	+Add		Advoc 101
RIP			Pv4 Address IPv4 Mask 192.168.2.69 255.255.255.0/24 ~	Option
OSPF Bandwidth Management				
NAT	IPv6 Client List	+ Add	M	n: 10
IGMP Objects		Enabled Shared Secret IPv6 Addre	ss IPv6 Option	
USB Application Wake on LAN		( abcd:123	40 12 Delete	
Notification Services				
HADREATACACS+ Certificates	Authentication			

ltem	Description
Enabled	Switch the toggle to enable/disable settings for this RADIUS server.
Authentication Port	The UDP port number that the RADIUS server is using. The default value is 1812, based on RFC 2138.
	RADIUS Client Access List
IPv4 Client List	Only clients that meet the criteria configured in the access list are allowed to access the RADIUS server.
	+Add – Click to add a client (up to 10).
	Enabled –Switch the toggle to enable/disable this entry.
	Shared Secret – A text string that is known to both the router's RADIUS server and the RADIUS client that is used to authenticate messages sent between them. Maximum length is 36 characters.
	IPv4 Address – Enter the IPv4 address of the client.
	IPv4 Mask – Select the IP mask to configure the size of the IP block.
	Option (Delete) - Remove the selected client.
IPv6 Client List	Only clients that meet the criteria configured in the access list are allowed to access the RADIUS server.
	+Add – Click to add a client (up to 10).
	Enabled –Switch the toggle to enable/disable this entry.
	Shared Secret – A text string that is known to both the router's RADIUS server and the RADIUS client that is used to authenticate messages sent between them. Maximum length is 36 characters.
	IPv6 Address –Enter the IPv6 address of the client.
	IPv6 Length – Enter the prefix length of the IPv6 block.
	Option (Delete) - Remove the selected client.
	Authentication
Method	Specify the way to authenticate the wireless client.
	PAP Only – Only the Password Authentication Protocol will be used to validate users.
	PAP/CHAP/MS-CHAP/MS-CHAP2 - PAP, CHAP (Challenge-Handshake

	Authentication Protocol), and Microsoft versions of CHAP can be used			
	to validate users.			
802.1X Method	Support 802.1X Method – The built in RADIUS server offered by Vigor router can act as the AAA server. Select to enable 802.1X support.			
Certificate	Select the certificate (created by Configuration>>Certificates>>Loca Certificates) for applying to Internal RADIUS.			
	User Profile			
User	During the process of security authentication, user account and user password will be required for identity authentication. Before configuring such page, create at least one user profile in IAM>>Users & Groups first.			
	All Users – Click to make all user profiles for security authentication.			
	Select Users – Click to select the user profile(s) for security authentication.			
User Group	All Groups – Click to make all user groups for security authentication. Select Groups – Click to select the user groups for security authentication.			
Cancel	Discard current settings and return to the previous page.			
Apply	Save the current settings and exit the page.			

# II-1-17-3 External TACACS+

It means Terminal Access Controller Access-Control System Plus. It works like RADIUS does. Click the External TACACS+ to open the following page:

Search Q	Configuration / RADIUS/ T	CACS+ al RADIUS External TACACS+	3 Roset
Device Menu (?) Dashboard	External TACACS+		
Configuration Physical Interface	linsbled		
WAN	Primary Server		
DNS Wireless LAN	Server IP Address Destination Port	49	
Routing	Shared Secret 🕠	49	
BGP OSPF	Secondary Server		
Bandwidth Management	Server IP Address		
IGMP Objects	Destination Port	49	
USB Application Wake on LAN	Shured Secret 💿	•	
Notification Services			
Certificates	Cancel Apply		

Item Description					
Enabled Switch the toggle to enable/disable this profile.					
Authentication Port	The UDP port number that the RADIUS server is using. The default value is 1812, based on RFC 2138.				
Primary Server/Secondary Server					

Server IP Address	Enter the IP address of the TACACS+ server.		
	Two external TACACS+ servers are allowed to set in this page.		
	The secondary TACACS+ server will be used as a backup server when the primary TACACS+ server is down.		
Destination Port	Enter the port used by the TACACS+ server. Port 49 is most common.		
Shared Secret	A text string that is known to both the TACACS+ server and client (the router) that is used to authenticate messages sent between them. Maximum length is 36 characters.		
Cancel Discard current settings and return to the previous page.			
Apply Save the current settings and exit the page.			

# II-1-18 Certificates

A digital certificate is an electronic document issued by a certification authority (CA) to an entity to prove ownership of a public key. It contains identifying information including the issued-to party's name, a serial number, expiration dates etc., and the digital signature of the certificate-issuing authority so that a recipient can verify that the certificate is real. Vigor router supports digital certificates that conform to the X.509 standard.

In this section, you can generate and manage local digital certificates, and import trusted CA certificates. Be sure that the system time is correct on the router so that certificates will not be erroneously considered to be invalid because of an incorrect system time falling outside of the certificate's valid time period. The easiest way to accomplish this is by periodically synchronizing the system time to a Network Time Protocol (NTP) server.

### II-1-18-1 Local Certificates

Nevice Menu	i oral Certificates Trusted CA	Local Services Ba	ckup & Restore				
	Local Certificates						
Dashboard	100						
	+ Add					Searth	Mais
Physical interface	Certificate Name	Status	Source	CA Imported	Valid From	Valid Until	Option
WAN	Default_Certificate	Valid	Internal	4	2024/12/26 14:08:01	2026/01/25 14:08:01	C Regenerate
LAN	COURT.						View
DNS	Certificate_25	Requesting	internal	~			园 Sign 合 Delete
Wireless LAN	OpenVPN_Default_client	Valid	External	~	2024/12/04 16:15:17	2025/12/04 16:15:17	C VIEW
Routing	appoint appoint appoint of						Delete
RIP	OpenVPN_Default_server	Valid	External	v	2024/12/04 16:15:10	2025/12/04 16:15:10	@ Delete
BGP							
OSPF							
Bandwidth Management							
NAT							
IGMP							
Objects							
USB Application							
Wake on LAN							
Notification Services RADIUS/ TACACS+							

You can generate, import or view local certificates on this page.

To check detailed information of the selected certificate, click View.

al Services	Backup & Restore	e			×
					Copy PEM Content to clipboard
				Certificate Name ()	Default_Certificate
us ¢	Source 🖕	CA Imported 👙	Valid	Version	V3
	Internal	~	2021	Status	Valid
				Source	Internal
				CA Imported	$\checkmark$
				Subject_Name	~
				$Country\left(\mathbb{C}\right)$	тw
				State (ST)	Hsinchu
				Location (L)	Hsinchu
				Organization (O)	DrayTek
				Organization Unit (UO)	DrayTek
				Common Name (CN)	www.draytek.com
				Email (E)	
				Issuer	$\sim$

To add a new certificate, click the +Add link to get the following page.

		×
Certificate Name 🔘		
Method	Generate DSR Import Diritinate & Klyp	
Key Type	RSA-2048 Bit	
Algorithm	SHA-256	
Subject Alternative Name		V
Туре	IP Address Dismain Narris Email	
IP Address 🕕		
Subject Name		v
Country ; 🖓 🧿		
State (TT) 🕖		
Location (1 / ()		
Organization (C) 🗿		
Deganization Unif (00) 🕜		
Common Name (CP/)		
Email (F)		
Cancel Apply		

ltem	Description			
Certificate Name	nter the name that identifies the certificate.			
Method Generate CSR - Generate a new local certificate.				
	Import Certificate & Keys - Vigor router allows you to generate a certificate request and submit it the CA server, then import it as "Local Certificate". If you have already gotten a certificate from a third party, you may import it directly. The supported types are PKCS12 Certificate			

	and Certificate with a private key.		
	Method - Generate CSR		
Кеу Туре	Displays the key type used by the certificate.		
Algorithm	Displays the algorithm for generating the certificate.		
Туре	<ul> <li>Select the type of Subject Alternative Name and enter its value.</li> <li>IP Address</li> <li>Domain Name</li> <li>Email</li> </ul>		
Country (C)	Enter the country name (code) in which your organization is located.		
State (ST)	Enter the state or province where your organization is located.		
Location (L)	Enter the city where you're your organization is located.		
Organization (O)	Enter the legal name of your organization.		
Organization Unit (OU)	Enter the department within your organization that you wish to be associated with this certificate.		
Common Name (CN)	Enter the fully-qualified domain name / WAN IP that will be used to reach your server.		
Email (E)	Enter the email address of the entry.		
Cancel	Discard current settings and return to the previous page.		
Apply	Save the current settings and exit the page.		
	Method - Import Certificate & Keys		
File Type	Vigor router allows you to generate a certificate request and submit is the CA server, then import it as "Local Certificate". If you have already gotten a certificate from a third party, you may import it directly. The supported types are PKCS12 Certificate and Certificate with a private key.		
	<ul> <li>Certificate Only - Local certificate.</li> <li>Upload Certificate - Click Choose a file to select a local</li> </ul>		
	certificate file.		
	PKCS12 - Users can import the certificate whose extensions are usually .pfx or .p12. And these certificates usually need passwords. PKCS12 is a standard for storing private keys and certificates securely It is used in (among other things) Netscape and Microsoft Internet Explorer with their import and export options.		
	<ul> <li>Upload PKCS12 File - Click Choose a file to select a PKCS12 certificate file.</li> </ul>		
	<ul> <li>Password - Enter the password associated with the certificate and key files.</li> </ul>		
	Certificate & Keys - It is useful when users have separated certificates and private keys. And the password is needed if the private key is encrypted.		
	• Upload File - Click Choose a file to select a local certificate file.		
	• Upload Key - Click Choose a file to select a key file.		
	<ul> <li>Password - Enter the password associated with the certificate and key files.</li> </ul>		
Cancel	Discard current settings and return to the previous page.		

Apply	Save the current settings and exit the page.
-------	--

#### II-1-18-2 Trusted CA

The user can build RootCA certificates (up to three) if required.

Trusted CA certificate lists three sets of trusted CA certificate. In addition, you can build a RootCA certificate if required.

When the local client and remote client are required to make certificate authentication (e.g., IPsec X.509) for data passing through SSL tunnel and avoiding the attack of MITM, a trusted root certificate authority (Root CA) will be used to authenticate the digital certificates offered by both ends.

However, the procedure of applying digital certificate from a trusted root certificate authority is complicated and time-consuming. Therefore, Vigor router offers a mechanism which allows you to generate root CA to save time and provide convenience for general user. Later, such root CA generated by DrayTek server can perform the issuing of local certificate.

	Local Certificates Trusted C	Local Services	Backup & Restore			
Device Menu	Trusted Certificate Authoriti					
Dashboard	Trusted Certificate Authoriti	es				
	= Add				Search	Max: 3
Physical Interface	Certificate Name	Status	Common Name	Valid From	Valid Until	Option
WAN	Root CA	Empty				∠ Create
LAN	and the second s					c: View
DNS	OpenVPN_Default_CA	valia	Vigor Router	2024/12/04 16:15:04	2025/12/04 16:15:04	Delete
Wireless LAN						E Delote
Routing						
RIP						
BGP						
OSPF						
Bandwidth Management						
NAT						
IGMP						
Objects						
USB Application						
Wake on LAN						
Notification Services						

To import a RootCA to the Vigor router, click +Add to upload one certificate.

Upload Certificate	Local_cert_N.txt	Choose a file		
Cancel Apply				

Available settings are explained as follows:

Item Description	
Upload Certificate	Choose a file - Select a local certificate file.
Cancel	Discard current settings and return to the previous page.
Apply	Click to import selected certificate file to the router.

To create a new RootCA, click Create to get the following page.

Local Certificates Trusteel CA	Local Services Backup & Re	store		×
Trusted Certificate Authorities			Кеу Туре	RSA-2048 E
∓ Add			Mgorithm	SHA-25
Certificate Name	Status Empry	Common Name	Subject Alternative Name Type IP Address () Subject Name	PAdhes DominiName Imail
			Country (L) Common Name (CN) Stase (SI) Location (L) Organization (C) Dirganization (C) Dirganization Unit (C) Fmail (F)	TW

ltem	Description
Кеу Туре	Displays the key type (set to RSA).

Algorithm	Displays the algorithm.	
	Subject Alternative Name	
Туре	Vigor router accepts the type and value of the specified subject alternative name as valid authentication. Supported subject alternative types are IP Address, Domain Name and E-Mail.	
	Select the type of Subject Alternative Name and enter its value.	
	Subject Name	
Country (C)	Enter the country name (code) in which your organization is located.	
Common Name (CN)	Enter the fully-qualified domain name / WAN IP that will be used to reach your server.	
State (ST)	Enter the state or province where your organization is located.	
Location (L)	Enter the city where you're your organization is located.	
Organization (O)	Enter the legal name of your organization.	
Organization Unit (OU)	Enter the department within your organization that you wish to be associated with this certificate.	
Email (E)	Enter the email address of the entry.	
Cancel	Discard current settings and return to the previous page.	
Apply	Click to submit generate request to the CA server.	

#### II-1-18-3 Local Services

This page allows you to set different categories and services for the local certificate(s) to prevent security warning messages popped up due to using different browsers.

Search Q	Configuration / Certificates			3 Res
	Local Certificates Trusted CA Loc	al Services Backup & Restore		
Vevice Menu	Local Services			
Dashboard	Lotor Sci inco			
	07-0		1.000	
Physical Interface	Categories	Services	Local Certificate	
WAN	Web Server	HTTPS	Default_Configate	
LAN	Web Server	TR069	Default_Certificate v	
DNS	Contraction of the local distance of the loc			
Wireless LAN	Note: Certificate only and CSR cannot be	anolise to local services		
Routing	Hore compare only and call on most of	ablined to them are there.		
RIP				
BGP				
OSPF				
Bandwidth Management				
NAT				
IGMP				
Objects				
USB Application				
Wake on LAN				
Notification Services				
RADIUS/ TACACS+				

Available settings are explained as follows:

ltem	Description
Local Certificate	Select a local certificate (has been imported to Vigor device) with full key and authentication information.
	Certificate without key phrase or CSR (certificate signing request) file cannot be selected as local certificate.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings.

# II-1-18-4 Backup & Restore

You can back up or restore the Local and Trusted CA certificates on the router to a file.

avice Menu Backup & Restore		
bashboard Backup		
Configuration Selected Item	😨 Select All	
Physical Interface	Local Certificates	
WAN	Trusted Certificate Authorities	
LAN Password Protection		
ONS		
Wireless LAN	0	
Routing Confirm New Password ()	•	
RIP	+ At least 8 characters	
BGP	Uppercase characters	
OSPF	* Lowercase characters	
Bandwidth Management	- Numbers or Special characters -∜@#\$%*&*()_=/?[](<>\	
NAT		
ІСМР	Back up	
Objects		
USB Application Restore		
Wake on LAN		
Restore from Backup File Notification Services	C Restore	
RADIUS/ TACACS+ File has Password Protection	0	
Gertification		

Available settings are explained as follows:

ltem	Description	
	Backup	
Selected Item	Select the certification type (local, trusted or all certificates).	
Password Protection	Enabled - Switch the toggle to enable or disable the function.	
	• New Password - Enter the password with which you wish to encrypt the certificate.	
	• Confirm New Password - Enter the password again.	
	Back up - Click to download the certificate.	
	Restore	
Restore from Backup	Click to select the backup file you wish to restore.	
file	- Click to locate the file for restoring.	
	Restore - Click to retrieve the certificate.	
File has Password	Enabled - Switch the toggle to enable or disable the function.	
Protection	• Password - Enter the password that was used to encrypt the certificates.	
Cancel	Discard current settings and return to the previous page.	
Apply	Save the current settings.	

# II-2 Security

# II-2-1 Firewall Filters

A network firewall monitors traffic travelling between networks, with the ability to selectively allow or block traffic using a predefined set of security rules. This helps to maintain the integrity of networks by stopping unauthorized access and the exchange of sensitive information.

LAN users are provided with secured protection by the following firewall facilities:

- User-configurable IP filter (Data Filter).
- Stateful Packet Inspection (SPI): tracks packets and denies unsolicited incoming data
- Selectable Denial of Service (DoS) /Distributed DoS (DDoS) attacks protection

#### Data Filter

All traffic, both incoming and outgoing, that does not trigger a PPP connection attempt (either because a PPP connection is not necessary, or the required PPP connection has already been established) is checked against the Data Filter, and will be allowed or blocked according to the rules configured within.



#### Stateful Packet Inspection (SPI)

Stateful inspection is a firewall architecture that works at the network layer. Unlike legacy static packet filtering, which examines a packet based on the information in its header, stateful inspection builds up a state machine to track each connection traversing all interfaces of the firewall and makes sure they are valid. The stateful firewall of Vigor router not only examines the header information also monitors the state of the connection.

#### Denial of Service (DoS) Defense

DoS attacks are categorized into two types: flooding-type attacks and vulnerability attacks. Flooding-type attacks attempts to exhaust system resources while vulnerability attacks attempts to paralyze the system by exploiting vulnerabilities of protocols or operation systems.

Vigor's DoS Defense functionality detects DoS attacks and mitigates their damage by inspecting every incoming packet, and malicious packets will be blocked. If Syslog is enabled, alert messages will also be sent. Abnormal traffic flow such as flood and port scan attacks that exceed allowable thresholds are also blocked.

The below shows the attack types that DoS/DDoS defense function can detect:

- SYN flood attack
   UDP flood attack
   ICMP flood attack
   Port Scan attack
   IP options
   Land attack
   Smurf attack
- 8. Trace route

9. SYN fragment
 10. Fraggle attack
 11. TCP flag scan
 12. Tear drop attack
 13. Ping of Death attack
 14. ICMP fragment
 15. Unassigned Numbers

#### II-2-1-1 IP Reputation Filters

An IP Reputation Filter is a security tool that evaluates the trustworthiness of an IP address based on its historical behavior and various factors. This filter helps detect and prevent malicious activities, such as spam, hacking attempts, and other forms of cyberattacks.

The IP Reputation Filter used by the Vigor router is designed to filter and block dangerous IP addresses. To effectively implement this filtering, three directions need to be considered as filtering conditions:

- 1. Inbound (from the Internet to the router's WAN)
- 2. Inbound (from the Internet to the router's LAN)

3. Outbound (from the LAN to the Internet)

This approach ensures comprehensive protection against harmful IP addresses.

	Security / Firewall Filters				C Refre
	IP Reputation Filters IP Filter	rs Content Filter	s Default Filters Backup & Re	store	
Device Menu (?) Dashboard	IP Reputation Filters				
Configuration	Enable IP Reputation (liters				
		Note: To use IP #	Reputation, activate and manage (he	license on Registration & Services	
Defense Setup		High Risk 3	Suspicious Moderate Low Ri	k Trustworthy	
MAC Filtering Profile		0 20	40 60	80 100	
IPv6 Address Security					
Security Defense Status					
URL/IP Lookup	Block Report				
O VPN	5. Enable IP Reputation Log				
Monitoring	> Inbound/Outbound		Block when under ()	Log when under	
88 Utility	Inbound (Internet to Router WAN	0	Disabled U	Disabled ~	
🗞 System Maintenance	inbound (Internet to Router LAN)		Disabled $\backsim$	Disabled 😔	
Virtual Controller	Outbound (LAN to Internet)		Disabled -	Disabled ~	
+ Wireless	2				

ltem	Description			
IP Reputation Filters				
Enable IP Reputation Filters	Switch the toggle to enable/disable this feature.			
Block Report	Click to show the IP Reputation blocked report.			
Enable IP Reputation Log	Switch the toggle to enable or disable the logging function.			
Block when under	Select the risk level. Once the risk for the packets (incoming/outgoing) reaches the threshold (20/40/60/80) defined here, Vigor system will			
	block the IP immediately. The default setting is "Disabled," which means that no filtering will be performed.			
---	---			
Log when under	Select the risk level. Once the risk for the packets (incoming/outgoing reaches the percentage defined here, Vigor system will record corresponding information to the SysLog server. The default is Disabled.			
	Port List			
Inbound (Internet to Router WAN) /	For packet transmission in various directions, select the appropriate service protocol and corresponding port number to be used.			
Inbound (Internet to	The direction of packet transmission includes:			
LAN) / Outbound (LAN to Internet)	<ul> <li>Inbound to Router WAN - Packets coming from the WAN to the localhost and entering the Vigor router will be filtered and checked.</li> </ul>			
	<ul> <li>Inbound to Router LAN - Packets entering the Vigor router from outside via LAN will be filtered and checked.</li> </ul>			
	<ul> <li>Outbound (LAN to Internet) - Packets sent out through the LAN interface of the Vigor router will be filtered and examined.</li> </ul>			
	+Add – Click to select a service from the list of available service options.			
	Allow List			
Inbound (Internet to Router WAN) /	IP address(es) of the clients within the allow list will not be filtered via IP Reputation Filter.			
Inbound (Internet to	The direction of packet transmission includes:			
LAN) /	<ul> <li>Inbound (Internet to Router WAN)</li> </ul>			
Outbound (LAN to Internet)	<ul> <li>Inbound (Internet to LAN)</li> </ul>			
internet)	<ul> <li>Outbound (LAN to Internet)</li> </ul>			
	Click on each tab to create the allow list separately.			
	+Add – Click to add a new IP address as the member within the allow list.			
	IP Address – Enter the IP address.			
	+Add – Click to add a new object / group as the member within the allow list.			
	<ul> <li>Object &amp; Group – Use the drop-down list to specify the object &amp; group profile.</li> </ul>			
<b>a</b> 1	Discard current settings and return to the previous page.			
Cancel	Distant current settings and return to the previous page.			

# II-2-1-2 IP Filters

Users can create access control policies and set black & white lists.

Search Q		Firewall Filters								3A	eset C Refresh
evice Menu 9 Dashboard	IP Reputat	ion Filters	Filters Contes	nt Filters Defaul	t Filters Backi	ip & Restore					
Configuration s	+ Add								5	earch	· Masc H
		Name	Enabled	Direction	Source	Destination	Protocol	Service Type Object	Action	Hits	Option
Defense Setup											
MAC Filtering Profile											
IPv6 Address Security Security Defense Status											
URL/IP Lookup											
IAM §											
VPN											
Monitoring >											
Utility 3											
System Maintenance											
tual Controller											
Wireless >											
Switch											

To add a new IP filter profile, click the +Add link to get the following page.

	;
Always On - Schudules On	
LAN to WAN 🧠	
3	
Any 💉	
Any 🗠	
Any -	
Don't Care 🗠	
Paw Block	
-	
	Arry       Image: Compare the second se

ltem	Description
Name	Enter a name to identify the rule.
Enabled	Switch the toggle to enable/disable this profile.
Schedule	Always On – This rule is enabled and active for always.
	Scheduled On - Select Schedule indexes to allow the rule to be enabled at specific times. You may choose up to 4 out of the 15 schedules in Configurations>>Objects>>Schedule. The rule is always enabled when no indexes have been selected.
	<ul> <li>Clear Session when Schedule is On - Select this option to clear existing sessions when the rule is changes is enabled by a schedule profile. All connections will be reset.</li> </ul>
Direction	<ul> <li>Specify the direction of traffic flow to which this filter rule applies.</li> <li>LAN to WAN</li> <li>WAN to LAN</li> </ul>

	LAN/VPN to LAN/VPN							
Specify Interface	Switch the toggle to enable/disable the function.							
	If enabled, specify the interfaces for the traffic flow.							
	Source Interface – Select the LAN/VPN interface(s). Destination Interface – Select the WAN interface(s).							
	Criteria							
Source	Configure the source IP addresses.							
	To set the IP address manually, please choose Any / IPv4 Address IPv4 Subnet / IPv6 Address / IPv6 Subnet / IP Object / IP Group / MAC Object / MAC Group as the source and enter required information.							
	Any – All IP addresses							
	IPv4 Address–Enter the IP address.							
	<ul> <li>Source IPv4 Address – Click +Add to enter the IP address.</li> </ul>							
	IPv4 Subnet–Enter the IP Address and the Subnet Mask.							
	<ul> <li>Source IPv4 Subnet Address - Click +Add to enter the IPv4 address with a subnet mask.</li> </ul>							
	IPv6 Address–Enter the IPv6 address.							
	<ul> <li>Source IPv6 Address – Click +Add to enter the IPv6 address.</li> </ul>							
	IPv6 Subnet–Enter the IPv6 Address and the prefix length.							
	<ul> <li>Source IPv6 Subnet Address - Click +Add to enter the IPv6 addres with a subnet mask.</li> </ul>							
	IP Object–Allows selection of predefined IP Objects.							
	<ul> <li>Source IP Object – Click +Add to select an IP object.</li> </ul>							
	IP Group –Allows selection of predefined IP Groups.							
	<ul> <li>Source IP Group - Click +Add to select an IP group.</li> </ul>							
	MAC Object-Allows selection of predefined MAC Objects.							
	<ul> <li>Source MAC Object – Click +Add to select an MAC object.</li> </ul>							
	MAC Group –Allows selection of predefined MAC Groups.							
	Source MAC Group - Click +Add to select an MAC group.							
Destination	Configure the destination IP addresses.							
	To set the IP address manually, please choose Any / IPv4 Address IPv4 Subnet / IPv6 Address / IPv6 Subnet / IP Object / IP Group the destination and enter required information.							
	Any – All IP addresses							
	IPv4 Address–Enter one IPv4 address.							
	• Destination IPv4 Address – Click +Add to enter the IP address.							
	IPv4 Subnet–Enter the IPv4 Address and the Subnet Mask.							
	<ul> <li>Destination IPv4 Subnet Address - Click +Add to enter the IPv4 address with a subnet mask.</li> </ul>							
	IPv6 Address–Enter the IPv6 address.							
	• Destination IPv6 Address – Click +Add to enter the IPv6 address.							
	IPv6 Subnet–Enter the IPv6 Address and the prefix length.							
	<ul> <li>Destination IPv6 Subnet Address - Click +Add to enter the IPv6 address with a subnet mask.</li> </ul>							
	IP Object-Allows selection of predefined IP Objects.							
	<ul> <li>Destination IP Object – Click +Add to select an IP object.</li> </ul>							

	<ul> <li>IP Group –Allows selection of predefined IP Groups.</li> <li>Destination IP Group - Click +Add to select an IP group.</li> <li>Country Object –Allows selection of predefined Country Objects.</li> </ul>							
	<ul> <li>Destination Country Object – Select the object.</li> </ul>							
Protocol	<ul> <li>Specify the protocol(s) which this filter rule will apply to.</li> <li>Any</li> <li>Service Object</li> <li>TCP/UDP</li> <li>TCP</li> <li>UDP</li> <li>ICMP</li> <li>ICMPv6</li> <li>IGMP</li> <li>Others</li> </ul>							
Service Type Object	It is available when Service Object is set as the Protocol.							
	Click +Add to select the service type objects (up to 12) you want.							
	Select Object Search							
	Name         Protocol         Destination Port Start         Destination Port End           AUTH         TCP         113         113							
	BGP TCP 179 179							
Specify Source Port	It is available when TCP or UDP or TCP/UDP is set as the Protocol. Switch the toggle to enable / disable the port settings. Source Port – If enabled, please provide the starting and ending port values.							
Destination Port	It is available when TCP or UDP or TCP/UDP is set as the Protocol. To define a port range, please provide the starting and ending port values.							
Protocol Number	It is available when Others is set as the Protocol.							
	Enter a value as the protocol number.							
Fragment	<ul> <li>Action to be taken for fragmented packets.</li> <li>Don't care -No action will be taken towards fragmented packets.</li> <li>Unfragmented -Apply the rule to unfragmented packets.</li> <li>Fragmented - Apply the rule to fragmented packets.</li> <li>Too Short - Apply the rule only to packets that are too short to contain a complete header.</li> </ul>							
	Action							
Action	Action to be taken when packets match the rule. Pass - Packets matching the rule will be passed immediately.							
	Block - Packets matching the rule will be dropped immediately.         Switch the toggle to enable the function.							

	the content filter rules.
Enable Syslog	Switch the toggle to enable the recording the filter log onto SysLog.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings.

	Filters JP Fi	liters Conten	nt Filters Default	Filters Back	kup & Restore						
Filters											
+ Add 16 C	Clone ③ Res	setHits 面 Mu	ltipleDelete						Search.		÷ Max
	Name	Enabled	Direction	Source	Destination	Protocol	Service Type Object	Action	Hits	Option	
	Firewall_T	Enable	LAN to WAN	Any	Any	Any		Pass	0	Ø.Edit	() Delete

Select one of the existed IP filter profile, more options will appear.

ltem	Description
Clone	Duplicate the selected IP filter profile with a new name.
ResetHits	Reset the number of times that each IP rule has been matched when comparing packets to the default value.
MultipleDelete	When more than one item is selected, click it to remove the items at one time.
Edit	Modify the selected IP filter profile.
Delete	Remove the selected IP filter profile.

## II-2-1-3 Content Filters

Content Filter includes APPE, URL Filter, and WCF services. APPE is filtered by defined pattern. URL and WCF filters filter the servers to connect to by examining the server name in DNS request packets or TLS client hello packets.

This page allows you to configure up to 40 content filters profiles (including APPE, URL, and WCF) previously.

Vigor router will perform the payload (content) analysis for the packets in each session (LAN to WAN) based on the filter profiles defined in this page till to find out which content filter meeting the traffic.

Search Q	Security / Fire								3	Reset C Refresh
evice Menu	IP Reputation		Content Filtern	Default Filters	Backup & Restore					
b Dashboard	content into									
Configuration	+ Add								Search_	Max 4
) Security		Profile Name	Enabled	Direction	Source	Destination	Action	Keyword Exceptions	Hits	Option
Frend Horn										
Defense Setup										
MAC Filtering Profile										
IPv6 Address Security										
Security Defense Status										
URL/IP Lookup										
IAM §										
VPN										
Monitoring >										
utility										
System Maintenance										
tual Controller										
Wireless										
Switch										

To add a new content filter profile, click the +Add link to get the following page.

		×
Przifile Name ①	NOgambling	
enablea		
Schedule	Always Dn Scheduled Dn	
Direction	LAN to WAN	
Specify Interface		
Source	Any	
Destination	Please select	
	Note: To use WCF, activate and manage the license on Realistration & Services	
Action		
Atlian	Hows Block	
Enable Keyword Exception		
Enable systop	3	
Cancel Apply		

ltem	Description
Profile Name	Enter a name to identify the filter profile.
Enabled	Switch the toggle to enable/disable this profile.

Schedule	Always On – This rule is enabled and active for always.
	Scheduled On - Select Schedule indexes to allow the rule to be enabled at specific times. You may choose up to 4 out of the 20 schedules in Configurations>>Objects>>Schedule.
	<ul> <li>Clear Session when Schedule is On - Select this option to clear existing sessions when the rule is changes is enabled by a schedule profile. All connections will be reset.</li> </ul>
Direction	Display the direction of traffic flow to which this filter rule applies.
Specify Interface	Switch the toggle to enable/disable the function.
	If enabled, specify the interfaces for the traffic flow. Specified LAN – Select the LAN interface(s).
Source	Configure the source IP addresses.
	To set the IP address manually, please choose Any / IPv4 Address / IPv4 Subnet / IPv6 Address / IPv6 Subnet / IP Object / IP Group / MAC Object / MAC Group as the source and enter required information.
	Any – All IP addresses
	IPv4 Address–Enter the IP address.
	• Source IPv4 Address – Click +Add to enter the IP address.
	IPv4 Subnet–Enter the IP Address and the Subnet Mask.
	<ul> <li>Source IPv4 Subnet Address - Click +Add to enter the IPv4 address with a subnet mask.</li> </ul>
	IPv6 Address–Enter the IPv6 address.
	• Source IPv6 Address – Click +Add to enter the IPv6 address.
	IPv6 Subnet–Enter the IPv6 Address and the prefix length.
	<ul> <li>Source IPv6 Subnet Address - Click +Add to enter the IPv6 address with a prefix length.</li> </ul>
	IP Object–Allows selection of predefined IP Objects.
	• Source IP Object – Click +Add to select an IP object.
	IP Group –Allows selection of predefined IP Groups.
	• Source IP Group - Click +Add to select an IP group.
	MAC Object-Allows selection of predefined MAC Objects.
	• Source MAC Object – Click +Add to select an MAC object.
	<ul> <li>MAC Group –Allows selection of predefined MAC Groups.</li> <li>Source MAC Group - Click +Add to select an MAC group.</li> </ul>
Destination	Select specific WCF and/or APPE and/or UCF (keyword object) profile to be included in the filter.
	Action
Action	Action to be taken when packets match the rule.
	Pass - Packets matching the rule will be passed immediately.
	Block - Packets matching the rule will be dropped immediately.
Enable Keyword	Switch the toggle to enable/disable the function.
Exception	Keyword Exceptions - Displays selected keyword objects. The system will check the sessions additionally with the selected

Enable Syslog	Switch the toggle to enable the recording the filter log onto SysLog.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings.

## II-2-1-4 Default Filters

Traffic is filtered by firewall functions in the following order:

- 1. Data Filter Sets and Rules
- 2. Block connections initiated from WAN
- 3. Default Rule

This page allows you to choose filtering profiles including QoS, Load-Balance policy, WCF, APP Enforcement, URL Content Filter, for data transmission via Vigor router.

The default rule applies to all traffic that is not constrained by other filters or rules.

Search	Security / Firewall Filters	C Refresh
	IP Reputation Filters IP Filters Content Filters Default Filters Backup & Restore	
Device Menu	Default Filters	
<ul> <li>Dashboard</li> </ul>		
😤 Configuration 3	Control Long day	
O: Security	Outbound Traffic (LAN to WAN)	
Oreveal Differs.	IP Filters Default Action Pers Book	
Defense Setup	Enable Content Pitter Default Nule	
MAC Filtering Profile		
IPv6 Address Security	Content Alter Default Rule: Pass Block	
Security Defense Status	Content Destination Practice telect	
URL/IP Lookup	Note: To use WCF, activate and manage the license on Registration & Services	
Данам 2	Level 14 your Level and Level	
	Inbound Traffic (WAN to LAN)	
Monitoring 3		
88 utility 3	Fragmented Large Packets Paw Block	
Statement of the local division of the local	Note: Certain gaming and streaming services required this traffic to be passed.	1
🖏 System Maintenance 🕠		
Virtual Controller	IPv4 Routing Connections Pass Block	
)- Wireless	IPv6 flouting Connections. Page Back	
and the second se		
멾 Switch 문	Cancel Apply	

Available settings are explained as follows:

ltem	Description
	Outbound Traffic (LAN to WAN)
IP Filters Default Action	Define the default action for the outgoing packets that do not match any IP filter rule.
	Pass –The packets that do not match any IP filter rule will be passed and next wait for the content filter.
	Block – The packets that do not match any IP filter rule will be blocked by Vigor system.
Enable Content Filters Default Rule	Switch the toggle to enable or disable the function.
Content Filters Default Rule	Define the default action for the outgoing traffic that match the following Content Destination rule.
	If the outgoing traffic doesn't match any IP/content filter rule and the IP Filters Default Action is PASS, it will be checked with this rule additionally.
	If the outgoing traffic meets the above conditions but still doesn't

	meet the following Content Destination rules, the system will perform the action reversely.
	Pass –The outgoing traffic that matches the following Content Destination rule will be passed. Otherwise, it will be blocked.
	Block – The outgoing traffic that matches the following Content Destination rule will be blocked. Otherwise, it will be allowed to pass through.
Content Destination	Select specific WCF and/or APPE and/or UCF(keyword object) profile to be included in the filter.
	Inbound Traffic (WAN to LAN)
Fragmented Large Packets	Certain games and video streaming service use fragmented UDP packets to transfer data.
	Pass - The router always passes fragmented packets without reassembling them, regardless of the size of the packet.
	Block - The router will attempt to reassemble fragmented packets up to a certain value (e.g., 15xx~2102) kilobytes long. Packets larger than the certain value will be discarded.
IPv4 Routing Connections	<ul> <li>Pass – For LAN hosts receiving WAN IPv4 addresses using the IP routed subnet, select this option to prevent WAN hosts from connecting to LAN hosts. This option has no effect on LAN hosts on private LAN subnets.</li> <li>Block - Block the LAN hosts from connecting to WAN hosts using IPv4.</li> </ul>
IPv6 Routing Connections	Pass – IPv6 does not make use of Network Address Translation (NAT), so all LAN hosts receive public IPv6 IP addresses that are exposed to the WAN.
	Block - Block the WAN hosts from connecting to LAN hosts using IPv6.
Syslog	Enable Syslog – If enabled, the log related to default filter will be recorded to Syslog.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings.

## II-2-1-5 Backup & Restore

This page allows the backup and restoration of router settings.

In addition to restoring Vigor2136's own configuration backup, it is possible to restore backups from certain DrayTek routers on Vigor2136.

Search Q	Security / Finewall Filters IP Reputation Filters UP Filters Content Filters Default Filters Backup & Rectore
Device Menu (?) Dashboard	Backup & Restore
<ul> <li>Configuration ;</li> <li>Mercury;</li> </ul>	Backup
Present Pitter Defense Setup MAC Filtering Profile IPv6 Address Security Security Defense Status URL/IP Lookup	Selected frem Select All  I Pfilers  Default Filters  Back up
A∎ IAM 5	Restore
VPN      P     Monitoring      Notice     Monitoring      Notice     System Maintenance      S	Restore from Backup File
Virtual Controller } Wireless , 蓉 Switch ,	

Available settings are explained as follows:

ltem	Description
Backup	Selected Items – Select the item(s). Backup - Perform the configuration backup of this router based on the item (Selected All, IP Filters, Content Filters and Default Filters)
Restore	selected above. Restore from Backup File – Click the button to specify a file to be restored
	Restore - Click to initiate restoration of configuration. If the backup file is encrypted, you will be asked to enter the password.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings.

# II-2-2 Defense Setup

## II-2-2-1 DoS Defense

As a sub-functionality of IP Filter/Firewall, there are several types of detect / defense function in the DoS Defense setup. In default, the DoS Defense is disabled.

	a	Security / Defense Setup		Reset
		Defense Setup		
Device Menu	_			
Dashboard		DoS Defense BFP Sett	ings Allow/Block List Defense Syslog	
E Configuration	×.	Enable DoS Defense		
Security Firewall Filters	٠	Flood Defense		
		+ Ada		Adex: 0
MAC Filtering Profile		Interface SYN Flood SYN	N Flood Packet Rate 🕥 ICMP Flood ICMP Flood Packet Rate 💍 UDP Flood UDP Flood Packet Rate 🕥 Port Scan Port Scan Packet Rate 💮	Option
IPv6 Address Security				
Security Defense Statu	s			
URL/IP Lookup		Note: Packet Rate: Maximum	n øverage matching rate in second. (Packets/sec)	
Д илм	8			
D VPN	×.	General		
료 Monitoring	8	Block IP Options ()	0	
8 Utility	×	Block Land ()	00	
System Maintenance	×	Block SMURF	0	
		Block Trace Route ()	0	
irtual Controller	_	Block SYN Fragment	0	
H Wireless	×	Riev's Francia (7)		
B Switch	-	Cancel Apply		

Available settings are explained as follows:

ltem	Description
	Defense Setup
Enable DoS Defense	Switch the toggle to enable/disable the DoS Defense.
Flood Defense	+Add – Click it set profiles for flood defense. Up to 6 profiles can be created.
	Interface – Select a WAN interface.
	SYN Flood – Switch the toggle to enable/disable SYN flood defense. When the arrival rate of SYN packets exceeds the Threshold value, the router will start to randomly discard TCP SYN packets for a period of time as defined in Timeout. This is to prevent TCP SYN packets from exhausting router resources.
	<ul> <li>SYN Flood Packet Rate – The default values of threshold and timeout are 2000 packets per second and 10 seconds, respectively.</li> </ul>
	ICMP Flood – Switch the toggle to enable/disable the ICMP flood defense. When the arrival rate of ICMP packets exceeds the Threshold value, the router will start to randomly discard TCP SYN packets for a period of time as defined in Timeout.
	<ul> <li>ICMP Flood Packet Rate – The default values of threshold and timeout are 250 packets per second and 10 seconds, respectively.</li> </ul>
	UDP Flood – Switch the toggle to enable/disable UDP flood defense. When the arrival rate of UDP packets exceeds the Threshold value, the router will start to randomly discard TCP SYN packets for a period of time as defined in Timeout.
	<ul> <li>UDP Flood Packet Rate – The default values of threshold and timeout are 5000 packets per second and 10 seconds,</li> </ul>

	respectively.
	Port Scan – Switch the toggle to enable/disable the Port Scan detection. Port Scans attack your network by sending packets to a range of ports in an attempt to find services that would respond. When Port Scan detection is enabled, the router sends warning messages when it detects port scanning activities that exceed the Threshold rate.
	<ul> <li>Port Scan Packet Rate – The default threshold is 2000 packets per second.</li> </ul>
	Option (Edit/Delete) – Click Edit to open the setting page to modify in detail (packet rate and burst rate). Click Delete to remove the selected entry.
General	Switch the toggle to enable/disable the function listed below.
	Block IP Options – If enabled, the Vigor router will ignore IP packets with IP option field set in the datagram header. IP options are rarely used and could be abused by attackers as they carry information about the private network otherwise not available to the external network, such as security, TCC (closed user group) parameters, a series of Internet addresses, routing messages, etc, which external eavesdroppers can use to discover details about the private network
	Block Land – Enable to block LAND attacks. LAND attacks happen when an attacker sends spoofed SYN packets with both source and destination addresses set to that of the target system, which causes the target to reply to itself continuously.
	Block SMURF – Enable to block Smurf attacks. The router will ignore any broadcasting ICMP echo request.
	Block Trace Route – Enable to block traceroutes. The router will not forward traceroute packets.
	Block SYN Fragment – Enable to block SYN packet fragments. The router will drop any packets having both the SYN and more-fragmen bits set.
	Block Fraggle – Enable to block Fraggle Attacks. Broadcast UDP packets received from the Internet are blocked.
	Activating this feature might block some legitimate packets. Since all broadcast UDP packets coming from the Internet are blocked, RIP packets from the Internet could also be dropped.
	Block Tear Drop – Enable to block Tear Drop attacks. Some clients may crash when they receive ICMP datagrams (packets) that exceed the maximum length. The router discards any fragmented ICMP packets having lengths greater than 1024 octets.
	Block Ping of Death – Enable to block Ping of Death, where fragmented ping packets are sent to target hosts so that those hosts could crash as they reassemble the malformed ping packets.
	Block ICMP Fragment – Enable to block ICMP Fragments. ICMP packets with the more-fragments bit set are dropped.
	Block Unknown Protocol – Enable to block Unassigned Protocol Numbers, and the router will block packets having unassigned protocol numbers. Individual IP packet has a protocol field in the datagram header to indicate the protocol type running over the upper layer. However, the protocol types greater than 100 are reserved and undefined at this time. Therefore, the router should have ability to

ARP Spoofing Defense

Block ARP replies with	This feature can protect a network from ARP (Address Resolution Protocol) spoofing attacks.
	Inconsistent Source MAC addresses – If the sender's MAC address in the ARP packets does not match the source MAC address from ARP packet's ethernet header, the Vigor system will block the packets immediately.
	Inconsistent Destination MAC addresses - If the target MAC address in the ARP packets does not match the destination MAC address from ARP packet's ethernet header, the Vigor system will block the packets immediately.
Virtual MAC Address in	Accept – The virtual MAC address can be recorded in the ARP table.
ARP Table (VRRP)	Decline –The virtual MAC address cannot be recorded in the ARP table.
	IP Spoofing Defense
Block IP Packets with	IP spoofing defense can prevent unauthorized access and then protect the data integrity to make sure the security of network.
	Inconsistent Source IP addresses from WAN – Blocks the fake IP from WAN. For example, if the source IP address from the WAN interface is LAN subnet IP packets, the Vigor system will block the packets immediately.
	Inconsistent Source IP addresses from LAN – Blocks the fake IP from LAN. For example, if the source IP address from the LAN interface is WAN subnet IP packets, the Vigor system will block the packets immediately.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings.

## II-2-2-2 BFP Settings

BFP is the abbreviation of Brute Force Protection.

Any client trying to access into Internet via Vigor router will be asked for passing through user authentication. Such feature can prevent Vigor router from attacks when a hacker tries every possible combination of letters, numbers and symbols until find out the correct combination of password.

StarthQ.	Security / Defense Setup	1 Reset
Device Menu	Defense Setup	
(?) Dashboard	DoS Defense BFP Settings Allow/Block List Defense Syslag	
🛎 Configuration )	Enable Brute Force Protection	
Firewall Filters	Login Protection for Service	
Delmar limito	Service Server	
MAC Filtering Profile	C HITPS/HITP	
IPv6 Address Security	C 55H	
Security Defense Status	Teinet	
URL/IP Lookup	C ELD	
A IAM >	SNMP	
() VPN	Z TR069	
G Monitoring	■ VPN.	
	I I MM	
28 Ublity		
System Maintenance 5	Protection Rules	
Virtual Controller	IAM Users Enable Maximum Login Attempts Penalty Period 💮 Enable User Account Lockout Login Attempts Unlock User Account After Email Notification	
>- Wireless >	0	
E Switch	Cancel Airold	

ltem	Description			
Enable Brute Force Protection	Switch the toggle to enable or disable the detection of brute force login attempts.			
	Login Protection for Service			
Service Server	BFP can protect the Vigor router's login feature from hacker attacks attempting to crack accounts and passwords through protocols such as HTTPS/HTTP, SSH, Telnet, FTP, SNMP, TR-069, VPN, IAM, and more.			
	The default setting is All Server.			
	Protection Rules			
IAM Users	Define the protection rules for IAM users (e.g., using FTP and IAM service.			
	Enable –Switch the toggle to enable or disable the defense setup settings for the IAM users.			
	Maximum Login Attempts – Specify the maximum number of failed login attempts before further login is blocked.			
	The users who fail to log in multiple times by reaching the maximum login attempts will be penalized a period not to login Vigor system (e.g., using FTP and IAM Service).			
	Penalty Period – Set the period for penalty delay.			
	During this period, the user cannot log in. This setting aims to preven outside automated attacks that attempt to guess passwords, authentication codes, or other credentials through repeated trials.			
	Enable User Account Lockout – Switch the toggle to enable or disable the IAM users account lockout function.			
	Login Attempts – Set a maximum number of failed login attempts fo all user accounts. After reaching this limit, the IAM user account will be locked if login fails (e.g., through FTP or IAM Service).			
	Unlock User Account After – Set a time period to unlock specific IAM user accounts.			
	Email Notification – Send a notification to the account via an e-mail when lockout event happened to the user.			
VPN	Define the protection rules for VPN connection.			

	Enable –Switch the toggle to enable or disable the defense setup settings for the VPN connection.
	Maximum Login Attempts – Specify the maximum number of failed login attempts before further login is blocked. The users who fail to log in multiple times by reaching the maximum login attempts will be penalized a period not to login Vigor system.
	Penalty Period – Set the period for penalty delay.
	During this period, the user is unable to log in or access Vigor's system. This setting aims to prevent outside automated attacks that attempt to guess passwords, authentication codes, or other credentials through repeated trials.
	Email Notification - Send a notification to the account via an e-mail when lockout event happened to the user.
System Account	Define the protection rules for the system account (User and Administrator).
	Enable – Switch the toggle to enable or disable the defense setup settings for the system account.
	Maximum Login Attempts – The System Accounts who fail to log in multiple times by reaching the maximum login attempts will be penalized a period not to login Vigor system (e.g., using HTTPS/HTTP, SSH, Telnet, SNMP, and TR069 Service).
	Penalty Period – Set the period for penalty delay.
	During this period, the user is unable to log in or access Vigor's system. This setting aims to prevent outside automated attacks that attempt to guess passwords, authentication codes, or other credentials through repeated trials.
	Enable User Account Lockout –Switch the toggle to enable or disable the System Account lockout function.
	Login Attempts – Specify the maximum number of failed login attempts for all System Accounts. After that, the System Accounts will be locked if login failed (e.g., logging into HTTPS/HTTP, SSH, Telnet, SNMP, and TR-069 Service).
	Unlock User Account After – Specify a time period to unlock specific system account.
	Email Notification - Send a notification to the account via an e-mail when lockout event happened to the user.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings.

# II-2-2-3 Allow/Block List

Define the white list and the black list for the clients.

SearchQ	Security / Defense Setup	() Reset
Device Menu	Defense Setup	
(?) Dashboard	DoS Defense BFP Settings Allow/Block List Defense Syslog	
🚍 Configuration 5	Das Defensa	
@ teority	Priority for Conflicts Allow List first-Pass 🔷	
Firewall Filters Decome Serup	Allow List	
MAC Filtering Profile	+ Add Marc 50	
IPv6 Address Security Security Defense Status	IP Address	
URL/IP Lookup		
O VPN >	+ Add Minc S0	d.
🔂 Monitoring	Object & Group	
88 utility 5		
🐴 System Maintenance 💡		
Virtual Controller	Block List	
> Wireless	+ Add Max 30	
🗑 Switch ,	Cancel Acopy	

Available settings are explained as follows:

ltem	Description
DoS Defense	Switch the toggle to enable or disable the DoS Defense function.
Priority for Conflicts	<ul> <li>Define the processing order/priority for the conflicts.</li> <li>Allow List first-Pass – Let the IP address listed on the Allow List pass through first.</li> <li>Block List first-Block – Block the IP address listed on the Block List pass through first.</li> </ul>
Allow List	Define the IP address(es) of the clients that the packets can be received / delivered via Vigor router.
	+Add – Click to add a new IP address as the member within the allow list.
	<ul> <li>IP Address – Enter the IP address.</li> </ul>
	+Add – Click to add a new object / group as the member within the allow list.
	<ul> <li>Object &amp; Group – Use the drop-down list to specify the object &amp; group profile.</li> </ul>
Block List	Define the IP address(es) of the clients that will be blocked by Vigor router.
	+Add – Click to add a new IP address as the member within the allow list.
	• IP Address – Enter the IP address.
	+Add – Click to add a new object / group as the member within the allow list.
	<ul> <li>Object &amp; Group – Use the drop-down list to specify the object &amp; group profile.</li> </ul>
Apply	Save the current settings.

After finishing this web page configuration, please click Apply to save the settings.

## II-2-2-4 Defense Syslog

Display the type of Syslog provided by Vigor router. Corresponding information related to operation, status, and defense to Vigor router will be recorded to the Syslog server.

SearchQ,	Security / Defense Setup	10 Res
evice Menu	Defense Setup	
	A second strategy and and the second	
Dashboard	DoS Defense BFP Settings Allow/Block List Defense Syslog	
Configuration	Syslog	
3 Secondy		
Firewall Filters	Erable Systing 🗧 All Defense Logs	
Defense Senge	Flood Defense	
MAC Filtering Profile	General Defense	
IPv6 Address Security	IP Reputation Defense	
Security Defense Status	ARP Spoofing Defense	
URL/IP Lookup	IP Spoofing Defense	
IAM Y	All Allow & Block List Logs	
VPN 5	Allow List	
	Block List	
Monitoring ;		
g utility y		
System Maintenance )		
rtual Controller		
• Wireless		
B Switch	Cancel Apply	

Available settings are explained as follows:

ltem	Description
Enable Syslog	Select the feature(s). Operation procedure, result or any information related to the feature will be recorded to the Syslog server.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings.

After finishing this web page configuration, please click Apply to save the settings.

## II-2-3 MAC Filtering Profile

Vigor router may restrict wireless access to specified wireless clients only by referencing a MAC address black/white list.

The router's administrator may block wireless clients by inserting their MAC addresses into a black list, or only allow some wireless clients to connect by inserting their MAC addresses into a white list.

## II-2-3-1 MAC Filtering Profile

This page allows to set the MAC Filtering Profiles (up to 10) that will be applied to SSID (configured on Configuration>>Wireless LAN>>SSID) to meet different needs.

Searth Q	Security / MAC Filtering P	rofile		3 Reset C Refresh
	MAC Filtering Profile	Backup & Restore		
Device Menu	MAC Filtering Profile			
<ul> <li>Dashboard</li> </ul>				
	+ Add			Mase 10
Security	Name	Policy	Included Devices	Option
Firewall Filters				
Defense Setup				
IPv6 Address Security				
Security Defense Status				
URL/IP Lookup				
& IAM				
() VPN				
G Monitoring	×			
88 Utility				
System Maintenance				
Virtual Controller				
≻ Wireless				
뚭 Switch				

To add a new profile, click +Add.

	MAC_Filter_East			
		Block List		
Туре	Manual MAC Object	MAC Group		
Device List +	-Add		Search	Max: 128
Ν	Name	MAC Address ()		
Cancel Apply				

ltem	Description
Name	Enter a string as the profile name.
Policy	Disabled – Disable this policy. Allow List – Only allow wireless clients whose MAC addresses are listed in the Device list. Block List - Only allow wireless clients whose MAC addresses are not listed in the Device list.
Туре	<ul> <li>Determine which wireless clients can be applied to SSID.</li> <li>Manual – Enter the MAC address of certain device one by one.</li> <li>MAC Object – Select the MAC object(s). All the MAC address under the MAC object will be allowed or blocked.</li> <li>MAC Group – Select the MAC group(s). All the MAC objects under the MAC group will be allowed or blocked.</li> </ul>

Device List	+Add – Click to add a new device by entering the device name and the MAC address.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

# II-2-3-2 Backup & Restore

This page allows the backup and restoration of MAC filtering profile settings.

	۹	Security / MAC Filtering Profile				
Device Menu 🕢 Dashboard		MAC Filtering Profile (Backup & Restore	up & Restore			
S Configuration	÷	Download Backup File	Download			
Security Firewall Filters Defense Setup MAC Fittoning Works IPv6 Address Security Security Defense Statu URL/IP Lookup		Restore from Baskup Rie		En Reinve		
LAM D VPN	ہ پ					
🖸 Monitoring 🕱 Utility	y x					
🔓 System Maintenance	*					
irtual Controller + Wireless						
Switch	2.					

ltem	Description
Download Backup File	Click to save current configurations for MAC Filtering Profile.
Restore from Backup File	- Click to locate the file for restoring.
	Restore – Click to execute the restoration.

# II-2-4 IPv6 Address Security

	Security / IPv6 Address Secu	ny.	Chefre
Device Menu	IPv6 Address Security		
🗘 Dashboard	Generate interface (D by	Hundam (D) Kil-Hu	
≟ Configuration ∂ Security	IPv6 Interface IDs		
Firewall Filters	Interface +	IPv6 IIDa	
Defense Setup MAC Filtering Profile	[LAN] LAN1	lcdb:e6em:f255:m61b	
The address Security	[LAN] LAN2	ex33:4x13:e970:3505	
Security Defense Status	[WAN] WAN1	8445:dc2f:1763:8995	
URL/IP Lookup	[WAN] WAN2	21b2:7c3:5df8:bc57	
D VPN	Erraw [rraw]	4600:1826:4735:e3b8	
Monitoring	WAN] WAN4	3b24:322f:44c4:4713	
8 Utility	(WAN) WANS	47ba:bf29:fb93:2134	
System Maintenance	[WAN] WAN5	c719:a863:b323:1e08	
/irtual Controller			
🛏 Wireless	Régénérate Random Intérfacé	D) Regenerate	
Switch			

This page allows you to configure the IPv6 interface ID.

Available settings are explained as follows:

ltem	Description
Generate Interface ID by	<ul> <li>Select to use Random IIDs or EUI-64 IIDs as the interface ID.</li> <li>Random IIDs</li> <li>EUI-64</li> </ul>
IPv6 Interface ID	Display the interface and corresponding IPv6 IIDs.
Regenerate Random Interface IDs	Regenerate - Re-generate the random IIDs for all interfaces.
Cancel	Discard current settings.
Apply	Save the current settings.

After finishing this web page configuration, please click Apply to save the settings.

# II-2-5 Security Defense Status

The router's current security protection mechanisms include Brute Force Protection and IP Reputation. This page provides details on the status of these protection mechanisms.

#### II-2-5-1 BFP Status

This page shows the status of Brute Force Protection.

Search Q	Security / Security	v Defense Status						CRefresh
Device Menu	BFB Status IP	Reputation						
<ul> <li>Dashboard</li> </ul>	Brute Force Pro	tection Status						
E Configuration							Search	Max: 200
3 Security	IP Address	Account Name	Role	Service Type	Blocked Start Time	Blocked End Time	Hit Count	Option
Firewall Filters								
Defense Setup								
MAC Filtering Profile								
IPv6 Address Security								
URL/IP Lookup								
IAM 2								
VPN )								
Monitoring								
Utility 3								
System Maintenance								
rtual Controller								
Wireless >								
Switch >								

ltem	Description
IP Address	Displays the IP addresses that have been blocked due to triggering the Penalty or User Account Lockout function when using a System Account (e.g., logging into HTTPS/HTTP, SSH, Telnet, SNMP, and TR-069 Service
Account Name	Displays the account names that have been blocked due to triggering the Penalty or User Account Lockout function when using a System Account (e.g., logging into HTTPS/HTTP, SSH, Telnet, SNMP, and TR-069 Service.
Role	Displays the role of the account.
Service Type	Displays the service type set for the user account.
Blocked Start Time / Blocked End Time	Displays both the start and end times for blocking the IP address.
Hit Count	Displays the number of times a System Account has triggered the Penalty or User Account Lockout.
Option	Unblock – Click to remove the blocked IPs. Add to Block List - Add IPs to the Defense Setup's Allow/Block List.

## II-2-5-2 IP Reputation

This page displays the IP Reputation status for the Vigor router regarding both inbound and outbound traffic.

search Q	Security / Security	y Defense Status				CRafra
	BFP Status IP	Reputation				
wice Menu	IP Reputation B	Blocked Report				
) Dashboard						
Configuration >	Inbound (inter	met to Router WAN) Inbound (Interr	iet to Router LAN) Outbound			
Socurity						Marc 1
Firewall Filters	Seen at	Source IP (Threat)	Destination IP	Reputation	Attempts	Threat Type
Defense Setup					Constant of Consta	
MAC Filtering Profile						
IPv6 Address Security						
Strumy Oriense Sharra						
URL/IP Lookup						
IAM						
VPN						
Monitoring y						
Manitoring y Utility i						
Manitoring y Utility i						
Monitoring ; Utility ; System Maintenance ;						
and a second second						

Available settings are explained as follows:

ltem	Description
Seen at	Displays the time when the packet matches the specified rule.
Source IP	Displays the IP address of the source of the threat.
Destination IP	Displays the IP address of the destination to which the threat is directed.
Reputation	Displays the score of the IP address.
Attempts	Displays the times of attempts made by the threat towards the target destination.
Threat Type	Displays the type of the threat.

# II-2-6 URL/IP Lookup

This page allows you to view various score of specified IP or URL, click the Look Up button to see the relevant information. After analysis, the Vigor system will provide relevant information about the IP/URL, including risk level, reputation score, category, and more.

Search Q	Security / URL/IP Lookup	CRefresh
	URL/P Lookup History	
Device Menu (?) Dashboard	URL/IP Lookup	
Configuration 2	Mithod Route VIAI IP	
Ø twony	LIRL/IP	
Firewall Filters	Note: Enter a URL or IP address to view threat, content and reputation analysis.	
Defense Setup		
MAC Filtering Profile	Look Up	
IPv6 Address Security		
Security Defense Status		
VECOP Demonstra		
A IAM →		
O VPN 5		
🖽 Monitoring 👌		
28 Utility j		
🔦 System Maintenance 🧃		
Virtual Controller		
>- Wireless		
B Switch		

Available settings are explained as follows:

ltem	Description
Method	Enter URL/IP – Select this method to look up using URL or IP address
	<ul> <li>URL/IP - Enter the URL or the IP address of the subject you want to look up.</li> </ul>
	Router WAN IP – Select this method to look up through WAN interface.
Look Up	Click to display information related to the IP/URL you look up.
	In which, the relevant information associated, see below, with the IP address will be shown on the page.
	Threat Type
	Threat Count
	Reputation Score
	Average Reputation Score
	Organization
	Location
	Latitude
	Longitude
	Or, enter the name of the URL. The relevant information associated with the URL will be shown on the page.
	Reputation Score
	Category
	Category Confidence
	Popularity
	Name Servers
	Registrar Name
	Created Date
	Expired Date
	Organization
	Location

Below shows an example of look up IP/URL:

URL/IP Lookup History						
URL/IP Lookup						
Method	Enter	URL/IP Rou	ter WAN IP			
URL/IP	202.4	3.195.52				
	Note: E	Enter a URL o	r IP address to vie	w threat, c	ontent and re	putation analysis.
	Look	qL				
Threat Type	÷					
Threat Count ()	÷					
	High	n Risk Sus	picious Modera	ite Lov	risk Trust	tworthy
	0	20	40	60	80	100
Reputation Score	89					
Average Reputation Score						
	Change	e at	Reputation Score			
	2022-0	4-08 09:00:56	84			
	2022-0	4-01 09:00:51	80			
	2021.0	7 00 00:00:54	07			

# II-3 IAM

Identity and Access Management (IAM) allows the network administrator to manage Internet access at the user level. After a user has been authenticated using a username and password, the user will be granted Internet access and additionally, optional firewall rules and LAN access policies can be applied.

In addition to being used for identification (via user account/VLAN), IAM can also set access policies to control users accessing network, and can be used as a firewall through group policy (group policy) to perform network management.



## II-3-1 Users & Groups

Before accessing the Internet through the device, any user must be authenticated by the Vigor system to ensure system security.

This section helps the system administrator create different users and groups profiles as the verification basis.

#### II-3-1-1 Users

Up to 100 user profiles can be configured in this section.

Search	۹	IAM / Users & Gro								DE	teset C Refresh
Device Menu	8	Users User Gr	oups Authent	cation Server							
🛎 Configuration	×	+ Add 😪 Op	enVPN Config Gen	erator						Search	Max: 100
G Security	×	Source Use	mame Usag	Role S	tatus Group	p Policy	Allow Login from WAN	Created Time	Last Login at	Last Login IP	Option
LAM Amers & Groups IAM Policies Resources Hotspot Web Portal Account Status Backup & Restore	l						_				
( VPN	2										
E Monitoring	5										
88 utility	5										
🖏 System Maintenance	×										
Virtual Controller											
>- Wireless	*										
Switch	3										

To add a new user account profile, click +Add.

		×
Username 🕕		
Usage	IAM User Router Management	
	Note: IAM User: Permits user authentication for VPN, RADIUS, 802.1X, USB, and IAM, but not for router management. Router Management: Enables router management access while disabling VPN, RADIUS, 802.1X, USB, and IAM authentication.	
Password ()	•	
General Teleworker VPN		
Status	Active $\checkmark$	
Group Policy	None V	
Expiration Time	Never V	
User Information		
Enable Email		
Enable SMS		
MFA		
Enable MFA		
Cancel Apply		

ltem	Description
Username	Enter the Login name (e.g., <i>LAN_User_Group_1, WLAN_User_Group_A, WLAN_User_Group_B</i> , etc.) for this user profile.
Usage	Define the type of this user profile.
	IAM User – This profile can be used for VPN, RADIUS, 802.1X, USB and IAM (Identity and Access Management) authentication.
	Router Management – This profile is only for router management access and cannot be used for VPN, RADIUS, 802.1X, USB, and IAM authentication.
Password/	Password (e.g., <i>lug123, wug123,wug456,</i> etc.) for this user profile.
New Password/ Confirm New	When a user tries to access the Internet, he or she must supply a valid user name and password combination for authentication. The profile

Password	with matching user name and password will be applied to the session
	General
Status	Active – Enable the general settings in this page.
	Inactive – Disable the general settings in this page.
Group Policy	It is available if "IAM User" is selected as the usage.
	Select a group policy profile to be applied by this user profile.
Expiration Time	It is available if "IAM User" is selected as the usage.
	Set the network connection to work at certain time interval only. All user accounts will apply the time configuration automatically by default.
	Never – The network connection is always on.
	Expire in –The network connection will expire and terminate the connection after specified minutes, hours, days, or weeks once built.
	Expire at – The network connection will expire and terminate the connection on the date and time specified below once built.
	• Date
	• Time
	Expiration Time
Role	It is available if "Router Management" is selected as the usage.
	Administrator
	• Guest
	Users
Allow Login from WAN	It is available if "Router Management" is selected as the usage.
	If enabled, the user can login from WAN by using this user account.
User Information	Enable Email – Switch the toggle to enable or disable the email setting.
	<ul> <li>Email – Enter the email address for receiving the MFA PIN code.</li> <li>Send Email Notification to the newly created User – Send a notification email to this user account.</li> </ul>
	Enable SMS – Switch the toggle to enable or disable the SMS setting.
	• SMS - Enter the destination SMS number for receiving the MFA PIN code.
MFA	Multi-factor authentication (MFA) can offer a more secure network connection.
	Enable MFA – Switch the toggle to enable/disable the MFA function.
	<ul> <li>Allowed MFA Method - Select to require mOTP, TOTP or 2-step authentication when logging in from the WAN.</li> </ul>
	TOTP – For the Time-based One-time Password (TOTP) mechanism, please make sure the time zone of your router is correct. Then, install Google Authenticator APP on your cell phone. Open the APP to scan the QR code on this page. A one-time password will be shown on your phone.

	4107
	Secret: JELUMZERXMICUEAJENTEDNESDERMMIKKDARESYNAAWAADERGGODUDEKZAKSZTF OR Code: validation Code: The filed of Validation Code, enter the one-time password and click verify.
	Now, the configuration is finished. You will be asked to enter the 2FA code on the after passing the username and password authentication. SMS/Email – The password will be transferred via the SMS and/or Mail profiles selected from User Information above.
	mOTP - Mobile one-Time Password (mOTP) allows the use of mOTP passwords. Enter the PIN Code and Secret settings for getting one-time passwords.
Account Info	Displays general information (created time, last login at and last login IP) for the user account.
	Teleworker VPN
(a	available if IAM User is selected as the Usage)
General	Enable Teleworker VPN – Switch the toggle to enable/disable Teleworker VPN configuration.
	Idle Timeout – If the user is idle over the limitation of the timer, the network connection will be stopped for this user. By default, the Idle Timeout is set to 300 seconds.
	VPN Schedule – Select Always On (Telework VPN is running all the time). Or choose Scheduled On to make the VPN connection based on the schedule.
	Before configuring VPN Schedule, add the required time intervals in Configuration>>Objects >>Schedule.
	Download SmartVPN Client - Click to download the utility of DrayTeck SmartVPN client for building VPN connection.
Allowed VPN Protocols	Select IPsec, WireGuard or OpenVPN as the protocol for the teleworker VPN connection.
	Enable IPsec – Switch the toggle to enable the IPsec protocol.
	If enabled, select IKEv1/v2, EAP and/or XAuth as the IPsec protocol.
	Enable WireGuard –Switch the toggle to enable WireGuard protocol.
	<ul> <li>Public Key – Enter the string offered by the remote WireGuard VPN client.</li> </ul>
	<ul> <li>Pre-Shared Key – Displays the private key generated by clicking Generate PSK.</li> </ul>
	<ul> <li>Generate PSK – Click the Generate button to generate a pre-shared key.</li> </ul>
	• Persistent Keepalive – Default is 60 seconds. If the peer is behind a NAT or a firewall, use the default setting.

	Enable OpenVPN - Switch the toggle to enable OpenVPN protocol.
Security	Specify VPN Peer – Switch the toggle to enable/disable the security mechanism for the remote client.
	Remote Client IP – Enter the IP address of the remote peer if Specify VPN Peer is enabled.
	Pre-Shared Key – It is available when the IPsec is selected as the Allowed VPN Protocols. "Specify VPN Peer" can restrict the IPsec to be initiated only by the specified peer IP address or domain name, and specify the private key to be used.
	X.509 Digital Signature - It is available when the IPsec is selected as the Allowed VPN Protocols. Accept the certificates authentication. To use an X.509 digital signature, select one of the authentication methods and enter the required information for each method.
	<ul> <li>Disabled – Select to disable the certificate application for VPN connection.</li> </ul>
	<ul> <li>Accept Subject Alternative Name –The following three formats of Peer ID are acceptable, including IP Address, Domain Name, and Email.</li> </ul>
	<ul> <li>Select from Existing Certificates –Select a peer certificate that has been pre-obtained and stored in Configuration&gt;&gt;Certificates Local Certificates.</li> </ul>
	<ul> <li>Accept Subject Name – Enter the complete certificate subject name.</li> </ul>
	<ul> <li>Accept Any – Any certificate signed by a trusted CA in Configuration&gt;&gt;Certificates Trusted CA will be considered valid.</li> </ul>
	Click IPsec Advanced Settings to get the following options. Local ID and Peer ID are provided for certain connections that require specifying an ID, such as IKEv1 using Aggressive mode and IKEv2 (optional).
	<ul> <li>Peer ID – Specify a local ID to be used when establishing a VPN connection using IPsec VPN type. Enter the ID name for the remote client.</li> </ul>
	<ul> <li>Local ID (optional) - If the values are specified, only connections coming from the specified IP address and/or having the specified Peer ID will be accepted.</li> </ul>
Local IP Assignment	Assign IP By – Select LAN DHCP or Static IP.
	Assign IP from – Select a LAN interface for IP assignment.
	Assign DNS By – Choose LAN DHCP (the DNS IP will be assigned by Vigor router automatically) or Static DNS. If Static DNS is selected, configure Primary DNS and Secondary DNS.
	• Primary DNS – Enter the IPv4 address for Primary DNS server.
	<ul> <li>Secondary DNS – Enter another IPv4 address for DNS server if required.</li> </ul>
	If Static IP is selected,
	• Static IP – Specify an IPv4 address.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

To add a new OpenVPN profile, click OpenVPN Config Generator.

On this page, you can create configuration required for a remote OpenVPN client to connect to the router and then download it directly or send it to the user via email.

VPN	OpenVPN Config Generator		×
J.	opennin como conciaco.		
enVPI	Specify Server URL by	WAN IP DDNS Profile Custom URL	
ernam	WAN IP	Please select 🗸	Last Lo
er_Car		Please select 🗸	
er_Tin	Set VPN as Default Gateway		
	Transport Protocol	UDP ~	
	Auto Dial Out		
	Cache password for auto reconnect		
	UDP Ping	5000	
	UDP Ping Exit	300	
	Export Configuration by	Email to Users Download zip file	
	Included Users	select your options 🗸	
		Send Email	
		Close Appl	

ltem	Description			
Specify Server URL by	The OpenVPN client will use the IP address or domain name to connect to the router.			
	WAN IP – The OpenVPN configuration file will use the numeric IP address as the server address.			
	• WAN IP – Select the WAN interface.			
	DDNS Profile – The OpenVPN configuration file will use the domain name from the DDNS Profile.			
	• DDNS Profile – Select a DDNS profile.			
	Custom URL – The OpenVPN configuration file will use the user-defined server IP or domain name.			
	• Custom URL – Specify a user-defined URL.			
Set VPN as Default	Switch the toggle to enable/disable the function.			
Gateway	Enable - The Vigor router will be treated as a "default" gateway for OpenVPN clients. The OpenVPN client will redirect all the traffic to the Vigor router via the OpenVPN tunnel. Disable - Disable the function.			
Turners and Durate cal				
Transport Protocol	TCP/UDP - Select UDP or TCP for the protocol to be used by the OpenVPN client to connect to the router.			
Auto Dial Out	Switch the toggle to enable/disable the function.			
	Enable - The remote client can auto-dial to this Vigor router to build an OpenVPN tunnel.			

	Disable - Disable the function.			
Cache password for auto reconnect	<ul> <li>Switch the toggle to enable/disable the function.</li> <li>Enable - OpenVPN will reconnect per hour. While reconnecting, the password is required. If the function is enabled, the password for OpenVPN connection will be kept and used by the Vigor system for reconnection every time.</li> <li>Disable - Disable the function.</li> </ul>			
UDP Ping	Ping remote device over the UDP control channel, if no packets have been sent for the number of seconds configured here.			
UDP Ping Exit	Let OpenVPN exit after the seconds set here if no reception of a ping or other packet from the remote device.			
Export Configuration by	Email to Users – If selected, the Included Users field below will be displayed. The OpenVPN configuration file will be sent to users listed on Included Users.			
	<ul> <li>Included Users – Select teleworker users that will receive the configuration from Vigor router.</li> </ul>			
	<ul> <li>Send Email – Click to email the settings on this page as a file, which can be imported into a VPN client to establish OpenVPN connections to teleworker users.</li> </ul>			
	Download zip file – The configuration file for OpenVPN will be stored on the database. If selected, the Download Configuration button below will be displayed.			
	<ul> <li>Download Configuration - Click this button to download the settings on this page as a file, which can be imported into a VPN client to establish OpenVPN connections.</li> </ul>			
Close	Discard current settings and return to the previous page.			
Apply	Save the current settings and exit the page.			

# II-3-1-2 User Groups

This page allows you to place multiple user profiles into groups.

Search Q	IAM / Users & Groups		③Reset CRefresh
ivice Manu	Users User Groups Authentication Server	r	
h Dashboard	User Groups		
Configuration	+ Add		Search Max 3
Security	Group Name	# of Users	Option
	Default	٥	0 Edit
IAM Policies			
Resources			
Hotspot Web Portal			
Account Status Backup & Restore			
VPN			
Utility	2		
System Maintenance	e		
tual Controller			
Wireless			

To add a new user group profile, click +Add.

			Available	e Users			×
Group Name 🕕	Default		Select Us	sers		Search	
Selected Users	+ Add	Max: 12		Source	Username		
	Source Username	Option		Internal	Sales_Abb	у	
	Internal Sales_Abby	前 Delete		Internal	Sales_Bill		
				Internal	Sales_Calv	rin	
Cancel Apply							Close

Available settings are explained as follows:

ltem	Description			
Group Name	nter a name for identification.			
Selected Users	+Add – Click to select user profiles to be grouped under the current group profile.			
Available Users	It appears after clicking +Add. Selected Users – Select the member from available user profiles.			
Cancel	Discard current settings and return to the previous page.			
Apply	Save the current settings and exit the page.			

After finishing this web page configuration, please click Apply to save the settings.

	🕚 Reset 🛛 C Refresh
ecurity	
	Search Max: 32
# of Users	Option
0	🖉 Edit
1	🖉 Edit 🛛 🝈 Delete
2	- # of Users

## II-3-1-3 Authentication Server

Vigor router can authenticate users using either a built-in (None) or external service (Radius or TACACS+) server.

SearchQ	IAM / User	rs & Groups				@Reset CRefre
Device Menu		User Groups Authentication 3	lerver			
(?) Dashboard	Authentic	ation Server				
🛎 Configuration	+ Add					Ma
Security		Server Name	Authentication Type	Server Profile	Hit Count	Option
IAM Policies						
Resources						
Hotspot Web Portal Account Status						
Backup & Restore						
D VPN						
요 Monitoring	5.					
8 utility						
System Maintenance						
\$ -/						
irtual Controller						
Wireless						
Switch						

To create a new authentication server profile, click +Add.

Users Us	ser Groups Authentication Se	rver				×
Authenticat	tion Server			Server Name		
+ Add						
	Server Name	Authentication Type		Authentication Type R.	ADIUS	~
			No Records Foun	Server Profile R.	ADIUS_1	$\sim$
					None	
					RADIUS_1	
					RADIUS_2	
				c	Cancel Ap	pply

ltem	Description
Server Name	Enter a name for identification.
Authentication Type	Select the authentication type (RADIUS or TACACS+).
Server Profile	If RADIUS is selected as Authentication Type, the available RADIUS server profiles (created on Configuration>>RADIUS/TACACS+) will be shown in this area. Select the one you need.

Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

AM / Users	s & Groups				🕄 Reset 🔿 Refrest
	Ser Groups Authentication	Server			
uthentica	tion Server				
Add	Server Name	Authentication Type	Server Profile	Hit Count	Max: Option
	Auth_Server_1	RADIUS	RADIUS_1	0	🖉 Edit 🛛 📋 Delete

## II-3-2 IAM Policies

IAM Policy contains access policy, group policy and conditional access policy.

# II-3-2-1 Apply Policies to LAN

This page is used for selecting access policy and group policy which will be applied to the LAN profile.

Search	Q. IAM / IAM Policies	ss Policies Group Policies Conditional Access Policy	GRe
evice Menu		ss Policies Group Policies Conditional Access Policy	
Dashboard	Apply Policies to LAN		
Configuration	3 LAN_Network		
Security	3	Access Policy	Group Policy
	[LAN] LANT	Disabled ~	Disabled ~
Users & Groups	(LAN) LAN2	Default_Access_Policy ~	Disabled ~-
Resources			
Hotspot Web Portal			
Account Status			
Backup & Restore			
D VPN	>		
Monitoring	»-		
8 Utility	2		
System Maintenance			
irtual Controller			
• Wireless	3		

Item Description	
LAN Network	Display the interface that the IAM policy will apply to.
Access Policy	Select an access policy for this interface. Or select Disabled to ignore the setting.
Group Policy	Select a group policy for this interface. Or select Disabled to ignore the setting.

Cancel	Discard current settings.
Apply	Save the current settings.

## II-3-2-2 Access Policies

Access Policies can be applied to LAN interface to determine how the users/clients access the Internet via identification authentication.

This page is used for define different access policies for IAM application.

	IAM / IAM Policies		() Read	C Refresh
	Apply Policies to LAN A	coss Policies Group Policies Conditional Access Policy		
Jevice Menu	Access Policies			
Dashboard				
Configuration	+ Add		Search_	Max; 2
Security	Name	Access Control Mode	Option	
	Default_Access_Policy	Disabled, clients can access the network (MFA may still be requested when accessing resources).	Ø Edit	音 Delete
Users & Groups				
Resources				
Hotspot Web Portal				
Account Status				
Backup & Restore				
VPN	κ			
Monitoring	×			
Utility	>			
System Maintenance	*			
tual Controller				
Wireless	×			
Switch				

To add a new access policy profile, click +Add.

		×
Namm 20	Acc.Polex,1	
Identity Access Control		-
	O Dinabled, clients can access the network (MFA may still be requested when accessing resources)	
Access Control Mode	MAC Allow/Block List Only	
Access Cominal Mode	Login with built-in User function	
	Guest Hotspot	
_		
Cancel Apply		

ltem	Description	
Name	Enter a name for identification.	
Identity Access Control		
Access Control Mode	Disabled – All clients/user accounts can access the network. MAC Allow/Block List Only – Allow or deny the clients/user accounts access to the network by the MAC address filter profile. Login with built-in User function – The clients will be authenticated	
before accessing the network.		
--		
Guest Hotspot - Allow or deny the clients/user accounts access to the network based on the hotspot profile selected.		

If MAC Allow/Block List Only is selected as the Access Control Mode.

	MAC Address Filter
Set up MAC Address Filter by	Selecting from Profile – Use pre-defined MAC Filtering profiles as the filtering basis.
	<ul> <li>MAC Filtering Profile - Select one of the MAC filtering profiles (Security&gt;&gt;MAC Filtering Profile) as the filtering basis.</li> </ul>
	Manually – Define the MAC addresses and separate them as Allow List or Block List.
	<ul> <li>MAC Address Filter Mode – Select Allow List (allow the clients to access) or Block List (deny the clients access). Then, enter the MAC address of the clients separately on the MAC Address Filter Table.</li> </ul>
	<ul> <li>MAC Address Filter Table – Click +Add to enter the MAC address of the client.</li> </ul>
If Login with built-in Us	er function is selected as the Access Control Mode
Authentication Mode	Single-Factor - Only identification authentication is required.
	Multi-Factor - Multi-Factor authentication adds an extra layer of security, ensuring that only those users or devices within the Users of VLAN that apply specified Group Policy can access the specified resource.
	MAC Address Filter
Set up MAC Address Filter by	Selecting from Profile – Use pre-defined MAC Filtering profiles as the filtering basis.
	<ul> <li>MAC Filtering Profile - Select one of the MAC filtering profiles (Security&gt;&gt;MAC Filtering Profile) as the filtering basis.</li> </ul>
	Manually – Define the MAC addresses and separate them as Allow List or Block List.
	<ul> <li>MAC Address Filter Mode – Select Allow List (allow the clients t access) or Block List (deny the clients access). Then, enter the MAC address of the clients separately on the MAC Address Filter Table.</li> </ul>
	<ul> <li>MAC Address Filter Table – Click +Add to enter the MAC addres of the client.</li> </ul>
	Allowed User List
User	Configure the whitelist settings. Users are allowed to send and receiv traffic that satisfies whitelist settings.
	All Users – All user accounts will be considered part of the whitelist.
	Selected Users – The whitelist will only consider the user accounts that have been selected.
	None - There will be no user account applied.
User Groups	Configure the whitelist settings. Groups are allowed to send and receive traffic that satisfies whitelist settings.
	All Groups – All user groups will be considered part of the whitelist.
	Selected Groups – The whitelist will only consider the user groups that have been selected.

	None – There will be no user group applied.
	Login Session Lifetime
Login Session Lifetime	Control the session time for users/clients. After the session's lifetime, the users/clients must log in to access the network, again.
	Specify the number of days, hours, and minutes.
If Guest Hotspot is select	ed as the Access Control Mode
	Login Session Lifetime
Hotspot Profile	Select one of the hotspot profiles.
Login Session Lifetime	Control the session time for users/clients. After the session's lifetime, the users/clients must log in to access the network, again. Specify the number of days, hours, and minutes.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

IAM / IAM Policies		¢	Reset	C Refresh
Apply Policies to LAN	ccess Policies Group Policies Conditional Access Policy			
Access Policies				
+ Add		Search		Max: 20
Name	Access Control Mode	c	Option	
Default_Access_Policy	Disabled, clients can access the network (MFA may still be requested when accessing resources).	d	🖉 Edit	🗊 Delete
Acc_Policy_1	MAC Allow/Block List Only	c	🖉 Edit	🕆 Delete

## II-3-2-3 Group Policies

The traditional firewall generally provides a blocking mechanism with IP-based rules to permit or block traffic on designated ports. To more securely manage access privilege, Group Policies provide a better way to help administrators decide permission for specific users, which define limitations and configuration based on role behavior to authorize corresponding restrictions, such as Time and Date Limit, Resources, Firewall Policies, and Traffic Shaping Policies.

This page is used for configuring group policies for IAM application.

	Q I	AM / IAM Policies					9	Resel C Refrest
	1	Apply Policies to LA	N Access Policies	Policies Conditional Acco	ess Policy			
evice Menu		Group Policies						
Dashboard								
Configuration	×	+ Add					Search	Max: 2
) Security	×	Name	Allowed Resources	IPv4 Filters	Content Filters	Traffic Shaping Policies		Option
Users & Groups								
Resources								
Hotspot Web Portal								
Account Status								
Backup & Restore								
VPN	×:							
Monitoring	×							
Utility	5							
System Maintenance	*							
rtual Controller								
• Wireless	×							
Switch								

## (i) Note:

Once Group Policies are applied to user account/VLAN profile, even if the firewall filter setting has been setup, Group Policies will override rules set at the firewall filter.

#### To add a new group policy profile, click +Add.

		×
Name 🕕		
Schedule	Always On Scheduled On	
	Note: When group policy is off, network firewall/traffic shaping policies will be enforced	
Allowed Resources		~
Allowed Resources	+ Add Max: 50	
	Resource Conditional Access Policy Log	
	No Records Found!	
Firewall Policies		~
Firewall	Use Network Default 🗸	

ltem	Description
Name	Enter a name for identification.

Schedule	Always On - The function of group policy is running all the time. Scheduled On - The function of group policy is activated based on the schedule profile.
	Allowed Resources
Allowed Resources	Select resources profile(s) and apply to this policy profile.
	+Add – Click to add a new resource profile.
	Resource – Use the drop-down menu to select IP or MAC resource profile.
	Conditional Access Policy – Use the drop-down menu to select access condition profile.
	Log – Select Pass or Block or Both. Corresponding records (related to passing or blocking packets) will be stored as a log.
	Option (Delete) – Click to remove the entry.
	Firewall Policies
Firewall	Use Network Default – Select this item to use the default group firewall filter settings.
	Customize Group firewall filters – Select this item to customize the group firewall filter settings. The firewall policy will be applied to allowed resources defined above.
lf Customize Group fir	ewall filters is selected as the Firewall
Outbound IPv4 Filters	+Add – Click to add new IPv4 filter profiles (up to 10) for outgoing traffic.
	Name – Set a name that identifies the IP filter profile. The maximum length of the Profile Name is 15 characters.
	Destination IP Start – Enter an IP address as the starting IP address.
	Destination IP End – Enter an IP address as the ending IP address. If only one static IP address will be filtered by this profile, enter the same IP address as the value in Destination IP Start.
	Protocol – Specify the protocol(s) which this filter rule will apply to.
	Dest Port Start – Specify the target port range (starting point) if the protocol is TCP or UDP.
	Dest Port End – Specify the target port range (ending point) if the protocol is TCP or UDP.
	Action –Select Pass to allow access to the IP address; select Block to disallow access to the IP address.
	Option(Delete) - Click to remove the selected entry.
Content Filters	The system will check the outgoing sessions additionally with the selected content filters profile(s).
	+Add – Click to add a new content filter profile (up to 10).
	Profile Name – Set a name that identifies the content filter profile. The maximum length of the Profile Name is 15 characters.
	Scheduled On - The filter profile will be valid based on the time schedule specified here.
	Destination – Select specific WCF and/or APPE and/or UCF (keyword object) profile to be included in the filter.
	Action – Select Pass to allow access to the Destination; select Block to disallow access to the Destination.
	Enable Keyword Exception – Switch the toggle to enable/disable the

	function.
	Keyword Exceptions - Display selected keyword objects.
	The system will check the sessions additionally with the selected keyword profile(s). If the session meets the keyword filter profile, the system will perform the action reversely.
IP Filters Default Action	Any packet that does not comply with the rules set in Outbound IPv4 Filters and Content Filters will be processed according to the default action.
	• Pass - Allow access to the IP address.
	• Block - Disallow access to the IP address.
Enable Content Filter	If enabled,
Default Rule	Content Filters Default Action - Any session that does not comply with the above firewall filters rules but matches the content destination rule will be processed according to the default action.
	<ul> <li>Pass - Allow the session pass which is matched Content Destination rule. The outgoing traffic that matches the following Content Destination rule will be passed. Otherwise, it will be blocked.</li> </ul>
	<ul> <li>Block - Disallow the session pass which is matched Content Destination rule. The outgoing traffic that matches the following Content Destination rule will be blocked. Otherwise, it will be allowed to pass through.</li> </ul>
	Content Destination – Select the WCF and/or APPE and/or UCF (keyword object) profile to be included in the filter. It is treated as an additional content filter rule to determine whether the packets/sessions will be passed or blocked.
Enable Syslog	The filtering result can be recorded according to the setting selected for Syslog.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

## II-3-2-4 Conditional Access Policy

Different from the Access Policies designed for setting Access Control Mode, this page provides a policy combination of time schedule, source IP, and multi-factor authentication (MFA). It can be used together with the resources.

Search	Q	IAM / IAM Policies				(3) Reset
	88.	Apply Policies to LAN	Access Policies Group Polic	cles Conditional Access Policy		
Device Menu		Conditional Access	Policy			
Dashboard		Conditional Access	roncy			
S Configuration	>	* Add			Geard	h Max 5
3 Security	3	Name	MFA Condition	Source IP Condition	Time Condition	Option
				the laser to be a set of the set		
Users & Groups						
Resources						
Hotspot Web Portal						
Account Status						
Backup & Restore						
D VPN	2					
Monitoring	×.					
g Utility	5					
🖁 System Maintenance	5					
irtual Controller						
- Wireless	. 2					
Switch						

To add a new conditional policy profile, click +Add.

		×
Name		
Multi-Factor Authentication		
MFA Condition		
Required Reauthentication	When Login Session Lifetime expires within         V         Hours         0         V         Minutes	
Source IP		
Source IP Condition		
Source IP	Permit $\checkmark$ access if source IP is $\checkmark$ from any of following VLAN/IP	
LAN	select your options	
IP Group	select your options	
Time Schedule		
Time Condition		
Source IP	Permit $\checkmark$ access if time is $\checkmark$ Within any of following range	
Schedule Object	select your options	
Cancel Apply		

Available settings are explained as follows:

ltem	Description
Name	Enter a name for identification.
	Multi-Factor Authentication
MFA Condition	Switch the toggle to enable/disable the function.
Required Reauthentication	Set the time period for re-authenticating the user when the user wants to access the other IP address (defined in IAM>>Resources).

	Select Everytime or When Login Session Lifetime expires within.			
	Vigor system will perform the reauthentication job for users (clients).			
	Source IP			
Source IP Condition	To Permit or Deny Access if the source IP is from the designated VLAN/IP.			
Source IP	Specify the action (Permit or Deny) for the source IP.			
LAN	Select an interface.			
IP Group	Select an appropriate IP group or multiple IP groups that you would like to include in this policy.			
	Time Schedule			
Time Condition	Switch the toggle to enable/disable the time schedule.			
Source IP	Determine whether you would like to Permit or Deny the source IP.			
Schedule Object	Select an appropriate schedule profile or multiple profiles that you would like to apply to this policy.			
Cancel	Discard current settings and return to the previous page.			
Apply	Save the current settings and exit the page.			

## II-3-3 Resources

This page assists to lock down source objects under IAM control by specifying their IP, corresponding MAC addresses and the port type.

Search	Q	IAM / Resources					() Reset
Device Menu	8	Resources					
<ul> <li>Dashboard</li> </ul>		+ Add				timente.	Max: 50
	5	Name	Resource Type	Resource IP	Resource MAC		Option
Security  MA Users & Groups LAM Policies  Hestames Hostapot Web Portal Account Status Bocup & Restore	3			MORECODI ALA C			
O VPN	×						
E Monitoring	×						
88 Utility	ž.						
🆏 System Maintenance	×						
Virtual Controller							
}- Wireless	- 42						
Switch	×.						

To add a new resources profile (up to 50), click +Add.

Name 🕕	Resources111	
Resource Type	IP MAC	
Resource MAC 🧃	14:49:BC:36:61:00	
esource Port	All TCP / UDP ports $\sim$	
llow ICMP		

16	Description				
ltem	Description				
Name	Enter a name for identification.				
Resource Type	Select IP or MAC as the resource type.				
Resource IP / MAC	Enter the IP address or MAC address according to the resource type selected for this profile.				
Resource Port	Select the resource port type.         • All TCP/UDP ports - Transmission Control Protocol and User Datagram Protocol         • All TCP ports - Transmission Control Protocol         • All UDP ports - User Datagram Protocol         • All UDP ports - Select this port type and set the port number for TCP/UDP, TCP, or UDP respectively.         +Add         Protocol         • Service Type Object - Up to 12 service-type object profiles can be set in this field.         Service Type Object         + Add         Max: 12         Name         Protocol Destination Port Start         Destination Port End Option         No Records Found!         Click +Add to display the available service type list to the right side.         Select the one(s) you want.				
Allow ICMP	It's for diagnostic and control purposes, to send error messages abou IP operations, messages about requested services, or messages abou the reachability of a host or router.				

Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

## II-3-4 Hotspot Web Portal

The Hotspot Web Portal, or the so-called captive portal allows you to control and manage access from LAN users.

## II-3-4-1 Profile Setup

It is also a manner of IAM to identify, authenticate, and authorize any Access from the LAN or redirect to your appointed landing page.

Search Q	IAM / Hotspot Web Portal		() Rese
	Profile Setup Quota Policy Profile Users Information		
tvice Menu	Profile Setup		
h Dashboard			
Configuration	• Add		Mix
) Security	Profile Name	Portal Method	Option
	Default_Hotspot_Profile	Click through	Call a Preview
Users & Groups			
IAM Policies			
Resources			
Account Status			
Backup & Restore			
VPN	5-1		
Monitoring	×1		
Utility	22		
System Maintenance	97		
tual Controller			
Wireless	80 C		
Switch			

To add a new hotspot profile (up to 2), click +Add.

Click Login Method, Login Page Setup, Whitelist Setting, and/or More Options for detailed configuration.

### 1 Login Method

At present, there are three login methods to choose from for authenticating network clients: Click Through, Skip Login, landing page only, External Portal Server and Various Login. Each login mode will present a different web page to users when they connect to the network.

		×
1 Login Method 2 Login P	Page Setup 3 Whitelist Setting 4 More Options	
Profile Name ()		
	O Click through	
Portal Method	Skip Login, landing page only	
	External Portal Server     Various Login	
Captive Portal URL	https:// viscoccigin	
	Note: Hotspot will force using HTTPS when System Maintenance >> Management >> Enforce HTTPS Access is enabled	
Cancel Apply		

ltem	Description		
Profile Name	Enter a name for identification.		
Portal Method	Click through – The user will be redirected to the landing page (defined in Captive Portal URL) and be granted access to the Internet.		
	Skip Login, landing page only – This mode does not perform any authentication. The user will be redirected to the landing page. The user can then leave the landing page to visit other websites.		
	External Portal Server - External RADIUS server will authenticate the users when they attempt to access the Internet for the first time via the router.		
	Various Login - An authentication page will appear when users attempt to access the Internet for the first time via the router. After authenticating themselves using a Facebook account, Google account PIN code, password for RADIUS sever, they will be redirected to the landing page and be granted access to the Internet.		
Captive Portal URL	Enter the captive portal URL.		
Redirection URL	It is available when the External Portal Server is selected as the Portal Method.		
	Enter the URL to which the client will be redirected.		
RADIUS Server	External RADIUS Server Profile - To configure the RADIUS server, click the <u>External RADIUS</u> link and you will be presented with the configuration page.		
	Configuration / RADIUS/ TACACS+		
	External RADIUS Internal RADIUS External TACACS+		
	External RADIUS		
	+ Add		
	Name Primary Authentication Server Secondary Authenti		
	RADIUS MAC Authentication – Switch the toggle to enable/disable the function. If the RADIUS server supports authentication by MAC		

Apply	Save the current settings and exit the page.					
Cancel	Discard current settings and return to the previous page.					
	• Option (Delete) – Click to remove the selected entry.					
	• Content – Enter the placeholder for the Leave Info.					
	• Title – Enter the heading of the Leave Info.					
	entering required information for further connection.					
	<ul> <li>Required – If enabled, items on the login page will ask for</li> </ul>					
	<ul> <li>Info Type – Select the information (e.g., General Info, Phone, Email or Checkbox) that the client needs to offer for connection.</li> </ul>					
	<ul> <li>+Add – Click to add a new entry (up to 10) of leave info.</li> </ul>					
	selected as the login method.					
	Table (for Leave Info) – This setting is available when Leave Info is					
	• Mail Content – Enter a message.					
	<ul> <li>Mail Server - Select the mail server to send PIN notifications.</li> </ul>					
	PIN via Mail - This setting is available when Receive PIN via Mail is selected as the login method.					
	• SMS Content – Enter a message.					
	<ul> <li>SMS Provider - Select the SMS Provider to send PIN notifications</li> </ul>					
	selected as the login method.					
	PIN via SMS - This setting is available when Receive PIN via SMS is					
	<ul> <li>Google App Secret - Enter the secret configured for the APP ID entered above.</li> </ul>					
	Google App ID - Enter a valid Google app ID.					
	as the login method.					
	Google - This setting is available when Login with Google is selected					
	<ul> <li>Facebook APP Secret - Enter the secret configured for the APP entered above.</li> </ul>					
	• Facebook APP ID - Enter a valid Facebook developer app ID.					
	login method.					
	Facebook - This setting is available when Facebook is selected as th					
	<ul> <li>Leave Info</li> </ul>					
	RADIUS					
	<ul> <li>PIN via SMS</li> <li>PIN via Mail</li> </ul>					
	Google					
	Facebook					
	Choose Login Method - Select one or more desired login methods.					
	method.					
Login Method	This setting is available when Various Login is selected as the portal					
	RADIUS NAS-Identifier - Enter an ID.					
	MAC Address Format - Select the MAC address format.					
	address format that is used by the RADIUS server.					

## 2 Login Page Setup

If you have selected a Login Mode that requires authentication, click Login Page Setup to select a background for the login page.

					×
1 Login Method 2 Logi	n Page Setup 3 Whitelis	t Setting 4 More 0	ptions		
Login Page background					
Background Image	None Upload Ima	ige			
Custom Logo	None Upload Ima	ige HTML			
Browser Tab Title	Draytek Hotspot Servi	ce			
Color Scheme					
	Background Color	Text Color	Box Color		
	Link Color	Button Color	Button Text Color		
Box Opacity (0-100%)	100	%			
Cancel Apply					

ltem	Description			
Login Page background				
Background Image	Set the login page background scheme.			
	None – No image will be used.			
	Upload Image – Click to select an image file (.JPG or .PNG format) as the background image. The file size must be less than 5MB.			
	<ul> <li>Current Background Image – Click Upload to upload the selected file to Vigor router system.</li> </ul>			
Custom Logo	Set a logo displayed on the portal.			
	None – DrayTek default logo will be used.			
	Upload Image – Click to use another image as the logo. The file size must be less than 1MB.			
	<ul> <li>Current Logo Image – Click Upload to store the selected file to Vigor router system.</li> </ul>			
Browser Tab Title	Enter the text to be shown as the webpage title in the browser.			
Color Scheme	Set the color used for the background, text, box, link, button and button text. A color box will appear for you to drag your mouse cursor on it to choose the color you want.			



Box Opacity	Set the opacity of the background image.
Box Shadow	Set the transparency (0 – 100%) of login column.
Welcome Message	Enter the text to be displayed as the welcome message.
Terms and Conditions Content	Select Internal Content or External Content.
	Internal Content - Enter the text to be displayed in the Terms and Conditions pop-up window.
	External Content - Enter a URL. After clicking the link of Terms and Conditions on the hotspot login page, the client will be redirected to access the web page of the URL specified here.
Marketing Content	Enter the text to inform the user.
Cancel Discard current settings and return to the previous page.	
Apply Save the current settings and exit the page.	

### 3 Whitelist Setting

In this page you can configure the whitelist settings. Users are allowed to send and receive traffic that satisfies whitelist settings.

1 Login Me	thod 2 Login Page Setup 3 W	itelist Setting 4 More Options	
Destination [	Domain/IP		
+ Add		Max: 30	
Enabled	Destination Domain/IP Whitelist ()		
	No Records Found!		
Destination F	Port		
+ Add		Max: 30	
Enabled	Destination Port Whitelist	Port ()	
	No Records Found!		
Destination 0	Groups		
Destination Ob	jects/ Groups select your option	ns 🗸	
Source IP			

ltem	Description						
	Destination Domain/IP						
+Add	Enabled – Switch the toggle to enable/disable the setting.						
	Destination Domain/IP Whitelist – Please enter IP address or domain name without the 'http://' or 'https://' prefix.						
	Option (Delete) – Remove current entry.						
	Destination Port						
+Add	Enabled – Switch the toggle to enable/disable the setting.						
	Destination Port Whitelist – Select TCP, UDP, or TCP/UDP. The, enter the port number.						
	Option (Delete) – Remove current entry.						
	Destination Groups						
Destination Objects/ Groups	Select one IP object/group or multiple IP objects/groups as the destination.						
	The selected groups are allowed to be accessed.						
	Source IP						
+Add	The selected IPs are allowed through the router.						
	Enabled – Switch the toggle to enable/disable the setting.						
	Source IP Whitelist – Enter the IP address.						
	Option (Delete) – Remove current entry.						
Cancel	Discard current settings and return to the previous page.						
Apply	Save the current settings and exit the page.						

### 4 More Options

In this step you can configure advanced options for the Hotspot Web Portal.

1 Login Method	2 Login Page Setup	3 Whitelist Se	tting 4 Mor	e Options				
uota Management								
Login Methods	Quota Policy Profile	Valid Time	Idle Timeout	Allowed device #	Reconnection Time Restriction	Block Users	Bandwidth Limit (Mbps)	Session Limit
Click Through	${\rm Disable}{\scriptstyle\checkmark}$							
Skip Login	Disable $\checkmark$							
External Portal Server	Disable 🗸							
Facebook Login	Disable $\checkmark$							
Google Login	$Disable \checkmark$							
SMS Login	Disable 🗸							
Email Login	Disable $\checkmark$							
RADIUS Login	Disable 🗸							
Leavelnfo	Disable V							

ltem	Description
	Quota Management
Login Methods	Show different login methods. Set individual quota policy profiles for each method.
Quota Policy Profile	Specify a quota policy profile for each login method. The default is Disable.
	Go to IAM>>Hotspot Web Portal>>Quota Policy Profile to configure several profiles, if required.
	Landing Page After Authentication
Landing Page After Auth	Fixed URL – Specifies the webpage that will be displayed after the user has successfully authenticated.
	The user will be redirected to the specified URL. This could be used for displaying advertisements to users, such as guests requesting wireless Internet access in a hotel.
	User Requested URL - The user will be redirected to the URL they initially requested.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

After finishing this web page configuration, please click Apply to save the settings.

## II-3-4-2 Quota Policy Profile

The system administrator can set restrictions on valid time, idle time, reconnection time, bandwidth, and session quotas that apply only to the web portal clients.

Search	a	IAM / Hotspot V	/eb Portal						1 R	eset CRefresh
		Profile Setup	Quota Policy P	tofile Users	Information					
Device Menu	_	Quota Policy P	rofile							
<ul> <li>Dashboard</li> </ul>		quotaronoyr	ionic.							
Configuration	\$	+ Add								Max 4
Security	÷-	Profile Name	Valid Time	Idle Timeout	Allowed Device #	Reconnection Time Restriction	Block users	Bandwidth Limit (Mbps)	Session Limit	Option
Users & Groups										
IAM Policies										
Resources										
Account Status										
Backup & Restore										
VPN	×.									
Monitoring	÷									
3 Utility	×									
System Maintenance	÷									
irtual Controller										
- Wireless	5 -									
Switch	\$									

To add a new quota policy profile, click +Add.

Only apply on Web Portal	Clients, the policies take	e precedence over Band	width Management.		
Przilde Naron	Quota_Policy_1				
Account Validity					
valid. Time	10	19.0	10		
Frudsler falle: Timesourt	CIR.				
Device Control					
Limited Device / Account					
Reconnection Time Restriction	No by Tim	e by Period			
Block users		6	lock users		

ltem	Description					
Profile Name Enter a name as the profile name.						
	Account Validity					
Valid Time	Configure the validity duration for login by setting days (0-180), hours (0-23), and minutes (0-59).					
	Once the login period expires, the Vigor router will disconnect the client from accessing the network or the Internet. If the client wishes to log in again, they will need to be verified or authenticated by the					

	Vigor router.					
Enable Idle Timeout	When this option is enabled, Vigor router will terminate the network connection if the is no activity from the user after the specified idle time has passed.					
	Idle Timeout – Enter a number (1-480, minutes).					
	Device Control					
Limited Device / Account	Set the maximum number of devices that can be connected for each account, and the time restriction for the client accessing Internet via the web portal.					
	Switch the toggle to enable or disable the function.					
	If enabled, set the number of Allowed device.					
	Allowed device # – Set the maximum number of devices that can be connected for each account, and the time restriction for the client accessing Internet via the web portal. The maximum is 100.					
Reconnection Time Restriction	Blocks the account from being used to connect devices to the netwo in one of three ways:					
	No – No block.					
	by Time – After the login expires, the account cannot be used to connect devices to the network until the set time of day.					
	<ul> <li>Block users before – Choose the deadline (hour and minute) from the drop-down menu. When the time expires, the user's access will be disconnected and blocked.</li> </ul>					
	by Period – After the login expires, the account cannot be used to connect devices to the network for a set period of time.					
	<ul> <li>Block users for – Enter the number of hours and minutes to specify the user block period.</li> </ul>					
	Bandwidth & Session Limit					
Bandwidth Limit	Set the maximum upload and download speeds.					
	Switch the toggle to enable or disable the function.					
	If enabled, configure the following settings:					
	Upload Limit / Download Limit –Enter a number (1 to 9999).					
Session Limit	Configure a maximum session limit for web portal clients.					
	Switch the toggle to enable or disable the function.					
	If enabled, configure the following setting:					
	Sessions – Enter a number (1 to 50000).					
Cancel	Discard current settings and return to the previous page.					
Apply	Save the current settings and exit the page.					

## II-3-4-3 User Information

This page provides details about users (web portal clients) connected to this router.

Search Q	IAM / Hotspot	Web Portal								C	Refres
	Profile Setup	Quota Policy Pro	file User	sinformation							
evice Manu	Users Informa	tion									
Dashboard	and the second second										
Configuration	Orline Users		0								
Security 5	All Users		0								
Users & Groups	🖄 Export as T	KT 🕜 Export as .	ISON EXP	ort as CSV					Filter: All Profile	~ Seatchill	
IAM Policies	Status	Profile	User	Login Methods	IP.	MAC	Expired Time	Email	Phone Number	Custom Info	
Resources											
Account Status											
Backup & Restore											
> VPN >											
Monitoring											
ç utility >											
System Maintenance											
rtual Controller											
• Wireless 3											
Switch 3											

ltem	Description
Online Users	Display the number of online users connected to the Internet via the Vigor router.
All Users	Display the total number of users (both online and offline) connecting to the Internet through the Vigor router.
Export as TXT	Click to export the user information as a TXT file.
Export as JSON	Click to export the user information as a JSON file.
Export as CSV	Click to export the user information as a CSV file.
Filter	Display the hotspot web portal profiles.

## II-3-5 Account Status

This page displays the status of Brute Force Protection for the IAM user account (e.g., using FTP and IAM Service).

Search	a	IAM / Account Sta	atus					CRefre
Device Menu		Brute Force Prot	ection Status					
<ul> <li>Dashboard</li> </ul>							Saach	Max 3
Configuration	5	IP Address	Username/Profile Name	Service Type	Blocked Start Time	Blocked End Time	Hit Count	Option
Security					160 (K000100   00000)			
Users & Groups								
IAM Policies								
Resources								
Hotspot Web Portal								
Account Status Backup & Restore								
5 VPN								
3 Monitoring								
	2 C							
8 ония	2							
System Maintenance	2							
irtual Controller								
⊷ Wireless	ž							
Switch	14							

ltem	Description
Hit Count	Displays the number of times a IAM user has triggered the Penalty or User Account Lockout.
Option	Unblock – Click to remove the blocked IPs. Add to Block List - Add IPs to the Defense Setup's Allow/Block List.

## II-3-5 Backup & Restore

	۹	IAM / Backup & Restore	
		Backup & Restore	
Device Menu	-		
<ul> <li>Dashboard</li> </ul>		Backup	
🚎 Configuration	5	backup	
G Security	8	Selected Item	Select All
JL MM			🛃 Users & Groups
			Z Access Policies
Users & Groups			Z Group Policies
Resources			Conditional Access Policy
Hotspot Web Portal			Resources
Account Status		Password Protection	0
			Beckup
O VPN	2		and the
🖼 Monitoring	2	Restore	
88 Utility	5	Restore from Backup Pile	13 19559w
🖏 System Maintenance	5	File has Password Protection	
Virtual Controller		Passwold	Ø
>- Wireless	3		
Switch	3		

This page can be used to backup/restore the IAM configuration.

ltem	Description	
Backup		
Selected Item	Select the policy or policies for the configuration backup.	
Password Protection	For the sake of security, the configuration file for the access point can be encrypted.	
	Switch the toggle to enable/disable the function.	
	New Password – Enter a string as the new password.	
	Confirm New Password – Enter the string again for confirmation.	
	Back up – Click to save the settings.	
	Restore	
Restore from Backup	- Click to locate the file for restoring.	
File	Restore - Click to execute the restoration.	
File has Password Protection	Switch the toggle to enable/disable the function. If enabled, a password will be required for restoring the configuration.	
	Password – Enter a string used for configuration restoration.	

# II-4 VPN

A Virtual Private Network (VPN) is the extension of a private network that encompasses links across shared or public networks like the Internet. In short, by VPN technology, you can send data between two computers across a shared or public network in a manner that emulates the properties of a point-to-point private link.

Here are some uses of VPNs:

- Communication between home office and customer.
- Secure connection between Teleworker, staff on business trip and main office.
- Exchange data between remote office and main office.
- POS between chain store and headquarters.
- Circumvention of Internet censorship that filters websites or contents.
- Circumvention of geolocation techniques employed by service providers or vendors to block or restrict services to users.
- Secure communications over public access points



### II-4-1 General Setup

This section offers general settings for the VPN server with different types (e.g., IPsec, WireGuard and OpenVPN).

### II-4-1-1 Access Control

Administrators can establish a secure VPN connection by configuring the interfaces allowed for VPN dial-in and pairing them with a whitelist or blacklist of VPN source IP addresses.

search Q	VPN / General Setup	T Rese
	General Setup	
levice Menu		
) Dashboard	Access Control EasyVPN IPsec WireGuard OpenVPN VPN MSS	
Configuration		
Security >	Accept VPN Connections on All Interfaces Specified Interface	
L IAM	VPN Access Control Mode Allow All Connections ~	
5 999		
commed Smop		
Site-to-Site VPN		
Teleworker VPN		
VPN Connection Status		
Backup & Restore		
Monitoring )		
8 utility >		
System Maintenance )		
irtual Controller		
• Wireless		
g switch ,		

ltem	Description
Accept VPN Connections on	It can filter trusted VPN connections by setting up IP object/group allow lists or block lists.
	Select the WAN interfaces to accept VPN connections.
	All Interfaces – Accept the VPN connections on all WAN interfaces.
	Specified Interface – Customize the WAN interface, IP address, and VPN protocols which allow the VPN connections.
	+Add – Click to add up to 8 settings.
	• WAN – Select the WAN interface.
	<ul> <li>IPv4 – Select the WAN IP address (Default WAN IP) or disable this option.</li> </ul>
	<ul> <li>Allowed VPN Protocols – There are four protocols (IPsec, WireGuard, OpenVPN and EasyVPN). Select the one(s) allowed fo VPN connection.</li> </ul>
	• Option – Click Delete to remove the selected interface.
VPN Access Control Mode	It can filter trusted VPN connections by setting up IP object/group allow lists or block lists.
	Allow All Connections – Accept the VPN connections from all clients.
	Allow List – Accept VPN connections from users within the IP object/group settings selected below.
	<ul> <li>+Add - Click to have a new entry setting.</li> </ul>
	Block List – Deny VPN connections from users within the IP object/group settings selected below.
	• +Add - Click to have a new entry setting.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

After finishing this web page configuration, please click Apply to save the settings.

### II-4-1-2 EasyVPN

The Vigor router supports multiple VPN protocols, including IPsec, WireGuard, and OpenVPN. However, general users may find it challenging to choose the right protocol or may face difficulties during the VPN setup. Additionally, environmental factors can sometimes prevent a successful VPN connection. To address these issues, the Vigor router introduces a new protocol called EasyVPN, designed to simplify the process.

With EasyVPN, users no longer need to generate keys for WireGuard, import configuration files for OpenVPN, or upload certificates. To establish a successful VPN connection, users simply need to enter their username and password or obtain an OTP code via email.

Moreover, if a VPN connection cannot be established for any reason, the Vigor system will automatically switch the EasyVPN connection to the next available protocol and attempt to reconnect.

StarchQ	VPN / General Setup		<b>OREMI</b>
Device Menu	General Setup		
<ul> <li>Dashboard</li> </ul>	Access Control EasyVPN	IPsec WireGuard OpenVPN VPN.MSS	
E Configuration			
Security	Enabled		
A 1M	Listen Port Mode	Follow VITTPS WAN Access Port Customere	
		Note If HTTPS IPv4 WAN access is disabled or restricted by an Access Control List, you must customize the port.	
General Setup			
Site-to-Site VPN Teleworker VPN	VPN Type Preference	Preference VPN Protocols	
VPN Connection Status		1 IPsec	
Backup & Restore		2 WreGuard	
Monitoring		3 OpenVPN	
88 Utility			
System Maintenance			
Virtual Controller			
>- Wireless			
E Switch			
and the second value of th	Cancel Apply		

ltem	Description
Enabled	Switch the toggle to enable/disable this service.
Listen Port Mode	Configure the ports that the EasyVPN service listens to. Follow HTTPS WAN Access Port – For the EasyVPN service, use the same port as the HTTPS management port. Ensure that HTTPS management from the WAN is enabled to allow communication between the EasyVPN client and the EasyVPN server.
	<ul> <li>Customize – Select to define the listening port number manually.</li> <li>Listen Port – Enter a port value (1-65535).</li> </ul>
VPN Type Preference	This feature enables users to customize the priority of their Dial-In VPN connections. By default, the order is based on VPN performance, arranged as follows: IPsec VPN > WireGuard VPN > OpenVPN. To change the order, simply drag and rearrange the items in the
	provided interface.
	Preference – Display the order of the VPN protocols.
	VPN Protocols – Display the name of the VPN protocols.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-4-1-3 IPsec

IPsec (Internet Protocol Security) encrypts and authenticates network traffic, ensuring secure data transmission over VPNs. It protects against unauthorized access, data tampering, and eavesdropping, making it ideal for remote work, site-to-site and teleworker connections, while safeguarding sensitive information across untrusted networks.

SearchQ.	VPN / General Setup	3 Reset
Device Menu	General Setup	
<ul> <li>Dashboard</li> </ul>	Access Control EasyVPN IPsec WireGuard OpenVPN VPN MSS	
🚊 Configuration 💦 👌		
⊘ security >	Enabled.	
A IMM →	Authentication Settings for Dynamic Peer	
(0) VPN	Certificate Default_Certificate 🗸	
General Serup	Preferred Local iD Alternative Subject Name 🗠	
Site-to-Site VPN Teleworker VPN	General Site-to-Site PSK	
VPN Connection Status	Pre-Shared Key 🕦 🐵	
Backup & Restore		
🖽 Monitoring >	XAuth User PSK	
👪 utility >	Fre-Shared Key 🔘 💿	
🖏 System Maintenance 🕠		
Virtual Controller		
> Wireless		
🚍 Switch 🔋	1.4.1	
11 m	Cancel Apply	

Available settings are explained as follows:

ltem	Description
Enabled	Switch the toggle to enable/disable the settings.
	Authentication Settings for Dynamic Peer
Certificate	Select a router VPN server certificate. It will be used for X.509 authentication in the IPsec connection. To set up certificates on the router, go to the Configuration>>Certificates section.
Preferred Local ID	Select Alternative Subject Name or Subject Name. Specify the preferred local ID information (Alternative Subject Name or Subject Name) for IPsec authentication.
General Site-to-Site PSK	Pre-Shared key - Define the PSK key for general authentication.
XAuth User PSK	Pre-Shared Key - Define the PSK key for IPsec XAuth authentication.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

After finishing this web page configuration, please click Apply to save the settings.

### II-4-1-4 WireGuard

WireGuard is a secure, fast, and modern open-source VPN Protocol. This VPN connection can build a VPN by exchanging private and public keys between VPN servers (e.g., Vigor router) and VPN clients (e.g., WireGuard VPN Client).

Search	Q VPN / General Setup	() Reset
Device Menu	General Setup	
<ul> <li>Dashboard</li> </ul>	Access Control EasyVPN IPsec WireGuard OpenVPN VPN MSS	
n Configuration	S and	
Security	Enabled  Listen Port ()  51920	
S IAM	S STORY OF STORY	
CS VIN	Default Key Pairs	
General Setup	Ginnerate Private Key Generate	
Site-to-Site VPN Teleworker VPN	Private Key @	
VPN Connection Status	Public Key	
Backup & Restore		
Honitoring		
BS Utility		
🐴 System Maintenance		
Virtual Controller		
> Wireless	3	
🔛 switch	1	
No.	Cancel Apply	

ltem	Description	
Enabled	Switch the toggle to enable/disable the settings.	
Listen Port	Enter a port number for WireGuard VPN server. The default number is 51820.	
	Default Key Pairs	
Private Key	Displays the private key generated.	
Generate Private Key	Generate – Click to generate keys (private and public) for the VPN server.	
Public Key	It is required to be configured in the WireGuard VPN client router. After clicking Generate, the public key will be shown on this page.	
Cancel	Discard current settings and return to the previous page.	
Apply	Save the current settings and exit the page.	

After finishing this web page configuration, please click Apply to save the settings.

### II-4-1-5 OpenVPN

The OpenVPN protocol utilizes public keys, certificates, and usernames and passwords to authenticate the client. Traffic is carried over secure channels built upon industry-standard SSL/TLS encryption protocols.

With integrating of OpenVPN, Vigor router can help users to achieve more robust, reliable and secure private connections for business needs.

OpenVPN offers a convenient way for users to build a VPN between the local end and the remote end. There are two advantages of OpenVPN:

- It can be operated on different systems such as Windows, Linux, and MacOS.
- Based on the standard protocol of SSL encryption, OpenVPN can provide you with a scalable client/server mode, permitting multi-client to connect to a single OpenVPN Server process over a single TCP or UDP port.

In terms of credentials, the administrator can choose to let the router generate the certificates, or import certificates issued by third-party certificate authorities (CAs). When the router generates the certificates, it acts as the root CA to issue the trusted CA certificates. If, however, a certificate issued by a third-party CA is used, both the CA's certificate and the issued certificate need to be imported to the router in the Trusted CA Certificate and Local Certificate sections, respectively.

OpenVPN requires the use of certificates. Before establishing OpenVPN connection, general settings for OpenVPN service shall be configured first.

searchQ	VPN / General Setup		Reset
Device Menu	General Setup		
<ul> <li>Dashboard</li> </ul>	Access Control EasyVPN	IPsec WireGuard OpenVPN VPN MSS	
🚁 Configuration 💡			
Security 5	Enabled		
A INM s	OpenVPN Server Setup		
© viii	UDP Enabled		
General temp.	UDP Part	3194	
Site-to-Site VPN	TCP Enabled		
Teleworker VPN VPN Connection Status	TCP Port	1194	
Backup & Restore	Cipher Algorithm	AES-256-CBC ···································	
🔂 Monitoring 🔊	HMAC Algorithm	SHA256 V	
BS Utility s	Certificate Authentication		
🖏 System Maintenance 🕠	Certificate Source	Select from Existing Certificates Router Generate Comfinates	
	Server CA	Please Select	
Virtual Controller	Server Certificate	Please Select	
> Wireless			
😁 Switch 🔋			
the second se	Cancel Apply		

ltem	Description	
Enabled	Switch the toggle to enable/disable the settings.	
	OpenVPN Server Setup	
UPD Enabled	Switch the toggle to enable/disable the UDP protocol for OpenVPN connections. UDP Port - Enter the UDP port number.	
TCP EnabledSwitch the toggle to enable/disable the TCP protocol for Oper connections.TCP Port - Enter the TCP port number.		

Cipher Algorithm	Select the desired cipher algorithm. Two encryption algorithms are supported: AES128, AES192 and AES256. AES256 is more secure than AES128 but may result in lower performance because it incurs higher computational overhead.
HMAC Algorithm	HMAC stands for Hash-based Message Authentication Code. It is used to validate the data integrity and authenticity of the VPN data. Select the desired HMAC hash algorithm. Two hash algorithms, SHA1 and SHA256, are supported. SHA256 is preferred as it is more robust and reliable than SHA1.
Certificate Authentication	Switch the toggle to enable if you would like to validate that the client certificate was issued by a trusted CA.
Certificate Source	<ul> <li>Select a source for the certificate to be used for OpenVPN.</li> <li>Select from Existing Certificates – Third-party certificates will be used for OpenVPN.</li> <li>Router Generate Certificates – Router-generated certificates that will be used for OpenVPN.</li> </ul>
Server CA	Use the dropdown list to select the trust CA certificate that has already been uploaded to the router. To upload more Trusted CA certificates to the router, go to Certificate Configuration>>Certificates page and click the Trusted CA tab for obtaining more certificates.
Server Certificate	Use the dropdown list to select a server certificate that has already been uploaded to the router. To upload more local certificates to the router, go to Certificate Configuration>>Certificates page and click Local Certificate tab for obtaining more certificates.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-4-1-6 VPN MSS

MSS is the abbreviation of Maximum TCP segment size.

This page is used to automatically adjust the TCP MSS value within a VPN tunnel. It optimizes packet size to prevent fragmentation and ensure the efficient data transmission over the network.

Search	VPN / General Setup	3 Reset
Device Menu  Device Menu  Device Menu  Device Menu  Device Menu  Device Menu  Device VPN  Sine Softe VPN  Teleworker VPN  VPN Connection Status Backup & Restore  Device Menu  Device Menu	General Setup Access Control EasyVP Maximum TCP segment siz Mode Psec(512/12017) WreGuard (\$12-6412) + Open/PN(510/142)	 orics MTU to prevent
88 Utility & System Maintenance Virtual Controller }- Wireless	4. - 5. - 2.	
🗃 Switch	> Cancel Apply	

ltem	Description	
Mode	Auto Adjustment by WAN MTU – Obtain the MSS value by automatically adjusting it according to the WAN MTU.	
	Manually - Please specify the MSS values for each type to avoid packets cut by MTU during the data transmission period via the VPN connection.	
	• IPsec	
	WireGuard	
	OpenVPN	
Cancel	Discard current settings and return to the previous page.	
Apply	Save the current settings and exit the page.	

## II-4-2 Site-to-Site VPN

The VPN means a connection between two router's LAN networks, which

• Allows employees in branch offices and head office to share the same network resources.



• Configures the VPN server for inbound connections from other routers.

This page allows to configure the VPN server for inbound connections from other routers.

	a	VPN / Site-to-Site VPN				@Reset @Refrest
evice Menu		Site-to-Site VPN				
) Dashboard	-	+ Add				Max 3
		Profile Name	Enabled	Remote Network	Status	Option
Configuration	2					
Security	2					
LAM .	5					
General Setup						
Teleworker VPN						
VPN Connection Status						
Backup & Restore						
Monitoring	2					
8 Utility	x					
System Maintenance	- 3.					
rual Controller						
Wireless	>					
Switch						

### II-4-2-1 VPN Type - IPsec

IPsec (Internet Protocol Security) encrypts and authenticates network traffic, ensuring secure data transmission over VPNs. It protects against unauthorized access, data tampering, and eavesdropping, making it ideal for remote work, site-to-site and teleworker connections, while safeguarding sensitive information across untrusted networks.

To add a new resources profile (IPsec VPN type), open VPN>>Site-to-Site VPN and click +Add.

		×
	Advanced Mode: ON	
Profile Name 🕕		
Enabled		
General		~
Direction	Both V	
Dial-Out Interface Mode	Selected Interface First $\checkmark$	
Dial-Out Interface	Auto Select 🗸 🗸	
	Default WAN IP $$	
VPN Type	IPsec v	
IPsec Dial-Out Protocol	IKEv1 V	
IPsec Dial-In Protocol	☑ IKEv1/v2 □ XAuth	
Remote IP/Domain 🕦		
Dial-Out Mode	On Demand Always On Scheduled	
	Note: On Demand VPN will be triggered up when detecting traffic going to remote network.	
Cancel Apply		

ltem	Description	
Advanced Mode:ON/OFF	Click to show or hide the advanced settings for the site-to-site VPN.	
Profile Name	Enter the name of the profile.	
Enabled	Switch the toggle to enable/disable the settings.	
	General	
Direction	Specify the allowed call direction of this VPN profile.	
	Both – Profile is to be used to initiate (dial out) or accept (dial in) connections.	
	Dial-Out – Profile is to be used to initiate outgoing connections.	
	Dial-In – Profile is to be used to accept incoming connections.	
VPN Type	Select a VPN type for building the VPN connection.	
	Direction on Dial-out – Available VPN type includes:	
	• IPsec	
	OpenVPN	
	WireGuard	
	Direction on Dial-In – Available VPN type includes:	
	• IPsec	
	OpenVPN	
	WireGuard	
	Direction on Both – Available VPN type includes:	
	• IPsec	
	OpenVPN	
	Options related to the IPsec VPN type will be changed according to th Direction used.	
	IPsec (with the direction on Both, Dial-In) -	
	IPsec Dial-In Protocol	

	Dial-in Allowed Schedule
	IPsec (with the direction on Both, Dial-Out)-
	IPsec Dial-Out Protocol
	Remote IP/ Domain
	Dial-Out Mode
IPsec Dial-In Protocol	Select a protocol to trigger an IPsec VPN connection through the Internet.
	<ul> <li>IKEv1/v2</li> </ul>
	• XAuth.
Remote IP/ Domain	Enter IPv4 or hostname for the remote VPN server.
Dial-Out Mode	On Demand – The VPN connection will be triggered when detecting traffic going to the remote network.
	Always On – Select this option to maintain an always on dial-out connection.
	Scheduled –Select this option to make the VPN connection based on the schedule.
	<ul> <li>Drop the Active Tunnel when Schedule is Enforced – Switch the toggle to enable/disable the function.</li> </ul>
	<ul> <li>VPN Schedule – Use the drop-down menu to specify one VPN profile. Before configuring the VPN Schedule, add the required time intervals in Configuration&gt;&gt; Objects&gt;&gt; Schedule.</li> </ul>
	Username and Password
Username	It is available when XAuth is selected as IPsec Dial-In/Dial-Out Protocol.
	Used by the remote LAN to establish a VPN connection.
Password	It is available when XAuth is selected as IPsec Dial-In/Dial-Out Protocol.
	Used by the remote LAN to establish a VPN connection.
	IKE Authentication for Dial-Out/Both
Dial-Out Settings	It is available when Dial-Out is selected as the Direction and IPsec is selected as VPN Type.
Negotiation	It is available when IKEv1 is selected as IPsec Dial-Out Protocol.
	Select Main mode or Aggressive mode. The ultimate outcome is to exchange security proposals to create a protected secure channel. The default value in Vigor router is Main mode.
	Main Mode – Main mode is more secure than Aggressive mode since more exchanges are done in a secure channel to set up the IPsec session. However, the Aggressive mode is faster.
	Aggressive Mode – Main mode is more secure than Aggressive mode since more exchanges are done in a secure channel to set up the IPsec session. However, the Aggressive mode is faster.
Authentication	It is available when using IKEv1 (under Main Mode) or IKEv2 is selected.
	Pre-Shared Key – Select as the authentication method.
	<ul> <li>Pre-Shared Key – Input the characters as pre-shared key.</li> </ul>
	Certificate –Select as the authentication method.
	<ul> <li>Local Certificate – Select one of the profiles set in</li> </ul>

	Configuration>>Certificates Local Certificates.
	<ul> <li>Local ID – Select Subject Name or Subject Alternative Name.</li> </ul>
	<ul> <li>Peer ID – Select Accept Subject Alternative Name, Peer Certificate Accept Subject Name, Accept Any.</li> </ul>
	Select Accept Subject Alternative Name - The following three formats of Peer ID are acceptable, including IP Address, Domain Name, and Email.
	Peer Certificate - Select a peer certificate that has been pre-obtained and stored in Configuration>>Certificates Local Certificates.
	Accept Subject Name – Enter the complete certificate subject name.
	Accept Any - Any certificate signed by a trusted CA in Configuration>>Certificates Trusted CA will be considered valid.
IKE Identifier	Set the local ID and Peer ID for identification.
	Local ID and Peer ID are provided for certain connections that require specifying an ID, such as IKEv1 using Aggressive mode and IKEv2 (optional).
Local ID	Specify a local ID to be used when establishing a VPN connection using IPsec VPN type.
Peer ID	Enter the ID name for the remote client.
	If the values are specified, only connections coming from the specified IP address and/or having the specified Peer ID will be accepted.
	IKE Authentication for Dial-In/Both
Dial-In Settings	It is available when Dial-In is selected as the Direction and IPsec is selected as VPN Type.
Negotiation	Select Main mode or Aggressive mode. The ultimate outcome is to exchange security proposals to create a protected secure channel. The default value in Vigor router is Main mode.
	Main Mode – Main mode is more secure than Aggressive mode since more exchanges are done in a secure channel to set up the IPsec session. However, the Aggressive mode is faster.
	Aggressive Mode – Main mode is more secure than Aggressive mode since more exchanges are done in a secure channel to set up the IPsec session. However, the Aggressive mode is faster.
Specify VPN Peer	It is available when IKEv1/v2 is selected as IPsec Dial-In Protocol. This feature can restrict this IPsec to be initiated only by the specified peer IP address or domain name, and specify the private key to be used.
	If enabled,
	Remote IP – Enter the IP address of the remote peer.
	Pre-Shared Key – Input characters as pre-shared key for authentication.
X.509 Digital Signature	It is available when IKEv1/v2 is selected as IPsec Dial-In Protocol.
	To use an X.509 digital signature, select one of the authentication methods and enter the required information for each method.
	Select Accept Subject Alternative Name - The following three formats of Peer ID are acceptable, including IP Address, Domain Name, and Email.

	Poor Cortificato - Solort a poor cortificato that has been pro obtained
	Peer Certificate - Select a peer certificate that has been pre-obtained and stored in Configuration>>Certificates Local Certificates.
	Accept Subject Name – Enter the complete certificate subject name.
	Accept Any - Any certificate signed by a trusted CA in Configuration>>Certificates Trusted CA will be considered valid.
IKE Identifier	Set the local ID and Peer ID for identification.
	Local ID and Peer ID are provided for certain connections that require specifying an ID, such as IKEv1 using Aggressive mode and IKEv2 (optional).
Local ID	Specify a local ID to be used when establishing a VPN connection using IPsec VPN type.
Peer ID	Enter the ID name for the remote client.
	If the values are specified, only connections coming from the specified IP address and/or having the specified Peer ID will be accepted.
More settings for IKE A	uthentication
IKE Phase 1	Encryption – Use Auto/AES/3DES/DES encryption algorithm and apply MD5 or SHA-1 authentication algorithm.
	Group – Specify a key exchange proposal.
	Authentication – Select SHA256 or SHA1 for packet authentication.
	Lifetime - For security reason, the lifetime of key should be defined. The default value is 28800 seconds. You may specify a value in between 900 and 86400 seconds.
Force UDP	Switch the toggle to enable/disable the function.
Encapsulation	All IPsec packets will be encapsulated with UDP header if enabled.
IKE Phase 2	Specify the security protocol, proposal encryption and proposal authentication.
	Security Protocol – AH (Medium) means data will be authenticated, but not be encrypted. By default, this option is active. ESP (High) means payload (data) will be encrypted and authenticated.
	Encryption – Use AES/3DES/DES encryption algorithm.
	Authentication – Select All, SHA256 or SHA1 for packet authentication.
	Lifetime – For security reason, the lifetime of key should be defined. The default value is 3600 seconds. You may specify a value in between 600 and 86400 seconds.
	Perfect Forward Secret – Switch the toggle to enable/disable this function. PFS forces key exchange during Phase-2 periodic Rekey.
Dead Peer Detection	Dead Peer Detection (DPD) is the method to detect an IPsec connection.
	DPD Delay – It is a keep-alive timer. A Hello message will be emitted periodically when a tunnel is idle. Use the value 0 to disable this function. The recommended value is 30 seconds if enabled.
	DPD Timeout - It is the timeout timer. The peer will be declared dead once no acknowledge message is received after timeout value. Use the value 0 to disable this function. The recommended value is 120 seconds if enabled.
	Network
Network	Specify that traffic from the local subnet and remote subnet can pass

	through the VPN connection.
	Local Network – The default value is 0.0.0.0, which means the Vigor router will get a PPP IP address from the remote router during the IPCP negotiation phase. If the PPP IP address is fixed by remote side, specify the fixed IP address here. Do not change the default value if you do not select PPTP or L2TP.
	Subnet Mask – Display the local network IP and mask for TCP / IP configuration. Select the one to meet the local network value.
	Remote Network – The default value is 0.0.0.0, which means the Vigor router will get a remote Gateway PPP IP address from the remote router during the IPCP negotiation phase. If the PPP IP address is fixed by remote side, specify the fixed IP address here. Do not change the default value if you do not select PPTP or L2TP.
	Subnet Mask - Select the one to meet the local network value. It is used to add a static route to direct all traffic destined to this Remote Network IP Address/Remote Network Mask through the VPN connection. For IPsec, this is the destination clients IDs of phase 2 quick mode.
Routing/NAT Mode	Routing Mode – It enables a standard site-to-site VPN, where the traffic is directly routed between two networks without altering the source IP address.
	NAT Mode – It modifies VPN traffic to the remote site by translating the source IP into a virtual IP address before sending it to the destination.
More Remote Subnets	It is used to add more static routes for subnets destined for the remote network.
	Disabled – Disable this function.
	Multiple SAs – Multiple SAs will establish different Phase 2 SAs base on the local network and remote network to provide additional security for data transmission. Select for adding new route.
	<ul> <li>+Add – Click to add new static route. Enter required information for local network, subnet mask, remote network and subnet mask.</li> </ul>

### Options under the Advanced Mode

Dial-Out Interface Mode	It is available when the call direction of this VPN profile is set to Dial-Out the Advanced Mode is ON.
	Select the WAN connection for connections made using this profile. This setting is useful for dial-out only.
	Selected Interface First – While connecting, the router will use the selected WAN interface first for VPN connection. If selected WAN fails, the router will try to use other WAN(s).
	Selected Interface Only – While connecting, the router will use selected WAN as the only interface for VPN connection.
	Manual – Customize VPN settings. Specify which WANs can be used as outgoing interfaces.
Dial-Out Interface	It is available when the call direction of this VPN profile is set to Dial-Out the Advanced Mode is ON.
	Auto Select – Decide which interface to dial out based on the default route.
	Default WAN IP / IP Address – Use the drop-down list to specify one WAN IP address for this VPN profile.

Idle Timeout	The tunnel will be disconnected when no traffic is detected within Idle Timeout. Disable this feature by setting the value to 0.
GRE Over IPsec	Switch the toggle to enable/disable the function. It will verify data and transmit data in encryption with GRE over IPsec packet after configuring IPsec Dial-Out setting. Both ends must match for each other by setting same virtual IP address for communication. GRE Local IP – Enter the virtual IP for router itself for verified by peer. GRE Remote IP - Enter the virtual IP of peer host for verified by router.
Routing/NAT Mode	Routing Mode – It enables a standard site-to-site VPN, where the traffic is directly routed between two networks without altering the source IP address. NAT Mode – It modifies VPN traffic to the remote site by translating the source IP into a virtual IP address before sending it to the destination.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### II-4-2-2 VPN Type - WireGuard

WireGuard is a secure, fast, and modern open-source VPN Protocol. This VPN connection can build a VPN by exchanging private and public keys between VPN servers (e.g., Vigor router) and VPN clients (e.g., WireGuard VPN Client).

To add a new resources profile (WireGuard VPN type), open VPN>>Site-to-Site VPN and click +Add.

[		×
Profile Name 🕕	Advanced Mode: C	N
Enabled		_
General		~
Direction	Dial-In 🗸	
VPN Type	WireGuard 🗸	
Dial-In Allowed Schedule	Always Allow Scheduled	
Drop the Active Tunnel when Schedule is Enforced		
VPN Schedule	select your options V	
Idle Timeout (Seconds) 🕕	0	
	Note: The tunnel will be disconnected when no traffic is detected within Idle Timeout. Disable this feature by setting the value to 0.	
WireGuard		>
Network		~
Cancel Apply		

ltem	Description						
Advanced Mode:ON/OFF	Click to show or hide the advanced settings for the site-to-site VPN.						
Profile Name	Enter the name of the profile.						
------------------	---	--	--	--	--	--	--
Enabled	Switch the toggle to enable/disable the settings.						
	General						
Direction	Specify the allowed call direction of this WireGuard VPN profile.						
	Dial-Out – Profile is to be used to initiate outgoing connections.						
	Dial-In – Profile is to be used to accept incoming connections.						
VPN Туре	Select a VPN type for building the VPN connection. Options related to WireGuard VPN type will be changed according to the Direction used.						
	WireGuard (with the direction on Dial-In) - The WireGuard VPN type is available when Dial-In or Dial-Out is selected as the Direction.						
	Dial-in Allowed Schedule						
	WireGuard (with the direction on Dial-Out) –						
	Remote IP/Domain						
	Server Port						
	Dial-Out Mode						
Dial-In Allowed	Connect and disconnect according to schedule profiles.						
Schedule	Always Allow – Select this option to maintain an always on dial-in connection.						
	Scheduled –Select this option to make the VPN connection based on the schedule.						
	• Drop the Active Tunnel when Schedule is Enforced – Switch the toggle to enable/disable the function.						
	<ul> <li>VPN Schedule – Use the drop-down menu to specify one VPN profile. Before configuring the VPN Schedule, add the required time intervals in Configuration&gt;&gt; Objects&gt;&gt; Schedule.</li> </ul>						
Remote IP/Domain	Enter IPv4 or hostname for the remote VPN server.						
Server Port	Set a port number for the VPN server.						
Dial-Out Mode	On Demand – The VPN connection will be triggered when detecting traffic going to the remote network.						
	Always On – Select this option to maintain an always on dial-out connection.						
	<ul> <li>Always Allow –Select this option to maintain an always on dial-out connection.</li> </ul>						
	<ul> <li>Scheduled - Select this option to make the VPN connection based on the schedule.</li> </ul>						
	Scheduled – Connect and disconnect according to schedule profiles. The default setting of this field is blank and the function will always work.						
	<ul> <li>Always Allow – Select this option to maintain an always on dial-out connection.</li> </ul>						
	<ul> <li>Scheduled - Select this option to make the dial-out VPN connection based on the schedule.</li> </ul>						
Idle Timeout	The tunnel will be disconnected when no traffic is detected within Idle Timeout. Disable this feature by setting the value to 0.						
	WireGuard						
Interface	It is available when Dial-Out is selected as the Direction and Wireguard is selected as VPN Type.						

	Private Key – Displays the private key generated by clicking Generate.							
	Generate Private Key – Click the Generate button to generate a key pair (including private key and public key).							
	Public Key - Displays the public key generated by clicking Generate.							
Peer	It is available when Dial-Out/Dial-In is selected as the Direction and Wireguard is selected as VPN Type.							
	Configure the settings for the client (peer).							
	Public Key - Enter the Public key of the Peer VPN server.							
	Pre-Shared Key - Displays the private key generated by clicking Generate PSK.							
	Generate PSK - Click Generate to generate the pre-shared key.							
	For NAT Client Address (Optional) – It is for Dial-In only. Enter the IP							
	address of the remote peer.							
	Keepalive - Default is 60 seconds.							
	Network							
Network	It is crucial for defining the traffic routing. Traffic from both the local and remote subnets can pass through the WireGuard VPN connection.							
	Local Network – Defines the range of IP addresses that belong to your local network, which will be used when routing traffic through the VPN.							
	Subnet Mask – The subnet mask helps define the size of your local network and tells the VPN how to interpret the network portion of the IP address. A subnet mask of 255.255.255.0 (or /24 in CIDR notation) means that the first 24 bits of the IP address are for the network, and the remaining 8 bits are for hosts (devices) within the local network.							
	Remote Network – Defines the IP address range of the remote network that you are connecting to. For instance, if the remote network is 10.0.0.0/24, you are telling the VPN that the remote network's IP range is 10.0.0.1 through 10.0.0.254.							
	Subnet Mask - Similar to the local network, the subnet mask for the remote network determines how the remote network's IP range is divided. If the remote network has a subnet mask of 255.255.255.0 (o /24), it means that the remote network has 254 possible addresses fo devices.							
Routing/NAT Mode	<ul> <li>If the remote network only allows one IP address for the local network, select NAT; otherwise, select Routing.</li> <li>Routing</li> <li>NAT</li> </ul>							
More Subnets	It is used to add more static routes for subnets destined for the remote network.							
	Disabled – Disable this function.							

Dial-Out Interface	Select the WAN connection for connections made using this profile.
Mode	This setting is useful for dial-out only.
	Selected Interface First – While connecting, the router will use the

	selected WAN interface first for VPN connection. If selected WAN fails, the router will try to use other WAN(s).					
	Selected Interface Only – While connecting, the router will use selected WAN as the only interface for VPN connection.					
	Manual – Customize VPN settings. Specify which WANs can be used as outgoing interfaces.					
Dial-Out Interface	It is available when the call direction of this VPN profile is set to Dial-Out.					
	Auto Select – Decide which interface to dial out based on the default route.					
	Default WAN IP / IP Address – Use the drop-down list to specify one WAN IP address for this VPN profile.					
Cancel	Discard current settings and return to the previous page.					
Apply	Save the current settings and exit the page.					

## II-4-2-3 VPN Type - OpenVPN

The OpenVPN protocol utilizes public keys, certificates, and usernames and passwords to authenticate the client. Traffic is carried over secure channels built upon industry-standard SSL/TLS encryption protocols.

OpenVPN requires the use of certificates. Before establishing OpenVPN connection, general settings for OpenVPN service shall be configured first.

To add a new resources profile (OpenVPN VPN type), open VPN>>Site-to-Site VPN and click +Add.

	×
	Advanced Mode: ON
Profile Name 🕕	
Enabled	
General	~
Direction	Dial-Out ~
Dial-Out Interface Mode	Selected Interface First $\sim$
Dial-Out Interface	Auto Select $\sim$
	Default WAN IP $$
VPN Type	OpenVPN V
Remote IP/Domain ()	OpenVPN
Server Port	1194
Dial-Out Mode	On Demand Always On Scheduled
	Note: On Demand VPN will be triggered up when detecting traffic going to remote network.
Idle Timeout (Seconds) 🕕	0
Cancel Apply	

ltem	Description					
Advanced Mode:ON/OFF	Click to show or hide the advanced settings for the site-to-site VPN.					

Profile Name	Enter the name of the profile.							
Enabled	Switch the toggle to enable/disable the settings.							
	General							
Direction	Specify the allowed call direction of this VPN profile.							
	Dial-Out – Profile is to be used to initiate outgoing connections.							
	Dial-In – Profile is to be used to accept incoming connections.							
VPN Type	Select a VPN type for building the VPN connection. Options related to OpenVPN type will be changed according to the Direction used.							
	OpenVPN (with the direction on Both, Dial-In) –							
	Dial-in Allowed Schedule							
	OpenVPN (with the direction on Both, Dial-Out) –							
	Remote IP/Domain							
	Server Port							
	Dial-Out Mode							
Dial-In Allowed	Connect and disconnect according to schedule profiles.							
Schedule	Always Allow – Select this option to maintain an always on dial-in connection.							
	Scheduled –Select this option to make the VPN connection based or the schedule.							
	<ul> <li>Drop the Active Tunnel when Schedule is Enforced – Swi the toggle to enable/disable the function.</li> </ul>							
	<ul> <li>VPN Schedule – Use the drop-down menu to specify one VPN profile. Before configuring the VPN Schedule, add the required time intervals in Configuration&gt;&gt; Objects&gt;&gt; Schedule.</li> </ul>							
Remote IP/Domain	Enter IPv4 or hostname for the remote VPN server.							
Server Port	Set a port number for the VPN server.							
Dial-Out Mode	On Demand – The VPN connection will be triggered when detecting traffic going to the remote network.							
	Always On – Select this option to maintain an always on dial-out connection.							
	Scheduled – Connect and disconnect according to schedule profiles. The default setting of this field is blank and the function will always work.							
	• Drop the Active Tunnel when Schedule is Enforced – Switch the toggle to enable/disable the function.							
	<ul> <li>VPN Schedule – Use the drop-down menu to specify one VPN profile. Before configuring the VPN Schedule, add the required time intervals in Configuration&gt;&gt; Objects&gt;&gt; Schedule.</li> </ul>							
	Username and Password							
Username and	It is available when Dial-Out/Dial-In is selected as the Direction and							
Password	OpenVPN is selected as VPN Type.							
	Username -Used by the remote LAN to establish a VPN connection.							
	Password - Used by the remote LAN to establish a VPN connection.							
	Network							
Network	It is crucial for defining the traffic routing. Traffic from both the local and remote subnets can pass through the VPN connection.							

	Local Network – Defines the range of IP addresses that belong to your local network, which can be accessed through the VPN tunnel.					
	Subnet Mask – The subnet mask helps define the size of your local network and tells the VPN how to interpret the network portion of the IP address. A subnet mask of 255.255.255.0 (or /24 in CIDR notation) means that the first 24 bits of the IP address are for the network, and the remaining 8 bits are for hosts (devices) within the local network.					
	Remote Network –Defines the IP address range of the remote network that you are connecting to. For instance, if the remote network is 10.0.0.0/24, you are telling the VPN that the remote network's IP range is 10.0.0.1 through 10.0.0.254.					
	Subnet Mask - Similar to the local network, the subnet mask for the remote network determines how the remote network's IP range is divided. If the remote network has a subnet mask of 255.255.255.0 (or /24), it means that the remote network has 254 possible addresses for devices.					
Routing/NAT Mode	If the remote network only allows one IP address for the local network, NAT will be shown in this field. Otherwise, Routing will be shown in this field.					
More Subnets	It is used to add more static routes for subnets destined for the remote network.					
	Switch the toggle to enable/disable this function.					
	<ul> <li>+Add – If the function is enabled, click Add to add new static route. Enter required information for remote network and subnet mask.</li> </ul>					

Options	under	the	Advanced	Mode
---------	-------	-----	----------	------

Dial-Out Interface Mode	Select the WAN connection for connections made using this profile. This setting is useful for dial-out only.							
	Selected Interface First – While connecting, the router will use the selected WAN interface first for VPN connection. If selected WAN fails the router will try to use other WAN(s).							
	Selected Interface Only – While connecting, the router will use selected WAN as the only interface for VPN connection.							
	Manual – Customize VPN settings. Specify which WANs can be used as outgoing interfaces.							
Dial-Out Interface	Auto Select – Decide which interface to dial out based on the default route.							
	Default WAN IP / IP Address – Use the drop-down list to specify one WAN IP address for this VPN profile.							
OpenVPN Settings	It is available when Dial-Out is selected as the Direction and OpenVPN is selected as VPN Type.							
	Dial-Out Protocol – Select TCP or UDP as VPN server protocol.							
	Import OpenVPN Config - An OpenVPN config file from other Vigor router can be imported and apply to this router.							
	Select to import an OpenVPN configuration file from a specified OpenVPN server (e.g., Vigor router, PC, other VPN provider, etc.) onto to Vigor router. Later, as a VPN client, this router can access into VPN server via the username and password. If the configuration file contains certificates, they will be automatically imported.							
Dial Out Advanced	Cipher Algorithm – Select the desired cipher algorithm. Two							

Settings	encryption algorithms are supported: AES128, AES192 and AES256. AES256 is more secure than AES128 but may result in lower performance because it incurs higher computational overhead.
	HMAC Algorithm – HMAC stands for Hash-based Message Authentication Code. It is used to validate the data integrity and authenticity of the VPN data.
	Select the desired HMAC hash algorithm. Two hash algorithms, SHA1 and SHA256, are supported. SHA256 is preferred as it is more robust and reliable than SHA1.
	Client Certificate – Use the dropdown list to select a client certificate that has already been uploaded to the router. Default (Use CERT from OPenVPN Config) will be selected automatically after import OpenVPN Config file.
	Trusted CA – Use the dropdown list to select a trust CA certificate tha has already been uploaded to the router. Default (Use CA from OpenVPN Config) will be selected automatically after import OpenVPN Config file.
	Compress – Select a method to compress the packets to reduce the bandwidth usage while transferring the compressed packets.
	TLS Auth – Switch the toggle to use/close the TLS authentication method. If the OpenVPN configuration file contains TLS Key, they will be automatically imported.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

## II-4-3 Teleworker VPN

The VPN means a connection between the remote host and router's LAN network. The host will use an IP address in the local subnet. It allows employees to access the company's internal resources when they are traveling.



Open VPN>>Teleworker VPN to get the following page.

Search	Q.	VPN / Tele	eworker VPN								9	leses C Refresh
		Telework	er VPN									
		+ Add	S OpenVPN C	unfin Gamara	Tak							Max: 100
<ul> <li>Dashboard</li> </ul>											Searcha,	
Configuration	>	Source	Username	Usage	Role	Status	Group Policy	Allow Login from WAN	Created Time	Last Login at	Last Login IP	Option
Security	\$											
S IAM												
General Setup												
Site to Site VPN												
VPN Connection Status												
Backup & Restore												
표 Monitoring												
88 Utility												
🖏 System Maintenance												
+ Wireless	*											
Switch												

To add a new VPN profile, click +Add.

Note that the settings modification related to the user profile (no matter add or edit) here will rewrite the settings on IAM>>Users & Groups>>Users synchronically, and vice versa.

		×
Username ()		
Usage	IAM User Router Management	
	Note: IAM User: Permits user authentication for VPN, RADIUS, 802.1X, USB, and IAM, but not for router management. Router Management: Enables router management access while disabling VPN, RADIUS, 802.1X, USB, and IAM authentication.	
Password ()	<b></b>	
General Teleworker VPN		
Status	Active $\checkmark$	
Group Policy	None V	
Expiration Time	Never $\checkmark$	
User Information		
Enable Email		
Email		
	Send Email Notification to the newly created User	
Enable SMS		
Cancel Apply		

ltem	Description	
Username	Enter the Login name (e.g., <i>LAN_User_Group_1, WLAN_User_Group_A, WLAN_User_Group_B</i> , etc.) for this user profile.	
Usage	Define the type of this user profile. IAM User – This profile can be used for VPN, RADIUS, 802.1X, USB and IAM (AWS Identity and Access Management) authentication. Router Management – This profile is only for router management access and cannot be used for VPN, RADIUS, 802.1X, USB, and IAM authentication.	
Password/ New Password/ Confirm New Password	Password (e.g., <i>lug123, wug123,wug456</i> , etc.) for this user profile. When a user tries to access the Internet, he or she must supply a valid user name and password combination for authentication. The profile with matching user name and password will be applied to the session	
	General	
Status	Active – Enable the general settings in this page. Inactive – Disable the general settings in this page.	
Group Policy	It is available if "IAM User" is selected as the usage. Select a group policy profile to be applied by this user profile.	
Expiration Time	<ul> <li>It is available if "IAM User" is selected as the usage.</li> <li>It means that the user account will be automatically disconnected after the time is up.</li> <li>Set the network connection to work at certain time interval only.</li> <li>user accounts will apply the time configuration automatically by default.</li> <li>Never - The network connection is always on.</li> <li>Expire in - The network connection will expire and terminate the connection after specified minutes, hours, days, or weeks once b</li> <li>Expire at - The network connection will expire and terminate the connection on the date and time specified below once built.</li> <li>Date</li> <li>Time</li> <li>Expiration Time</li> </ul>	
Role	<ul> <li>It is available if "Router Management" is selected as the usage.</li> <li>Administrator</li> <li>Guest</li> <li>Users</li> </ul>	
Allow Login from WAN	It is available if "Router Management" is selected as the usage. If enabled, the user can login from WAN by using this user account.	
User Information	<ul> <li>Enable Email - Switch the toggle to enable or disable the email setting.</li> <li>Email - Enter the email address for receiving the MFA PIN code.</li> <li>Send Email Notification to the newly created User - Send a notification email to this user account.</li> <li>Enable SMS - Switch the toggle to enable or disable the SMS setting.</li> <li>SMS - Enter the destination SMS number for receiving the MFA</li> </ul>	

	PIN code.
MFA	Multi-factor authentication (MFA) can offer a more secure network connection.
	Enable MFA – Switch the toggle to enable/disable the MFA function.
	<ul> <li>Allowed MFA Method - Select to require TOTP, Email, SMS and/or mOTP authentication when logging in from the WAN.</li> </ul>
	TOTP – For the Time-based One-time Password (TOTP) mechanism, please make sure the time zone of your router is correct. Then, install Google Authenticator APP on your cell phone. Open the APP to scan the QR code on this page. A one-time password will be shown on you phone.
	4107
	Secret: (BLUMZRXMICUEARNIRJEKYTONB2DERKMI/KOARBYKAAWAADP655GDGUDFRZAYS27*
	OR Code:       Unit of the second
	iles Suit evel
	In the filed of Validation Code, enter the one-time password and click Verify.
	Now, the configuration is finished. You will be asked to enter the 2FA code on the after passing the username and password authentication
	SMS/Email – The password will be transferred via the SMS and/or Mail profiles selected from User Information above.
	mOTP - Mobile one-Time Password (mOTP) allows the use of mOTP passwords. Enter the PIN Code and Secret settings for getting one-time passwords.
Account Info	Displays general information (created time, last login at and last login IP) for the VPN user account.
	Teleworker VPN
(a	available if IAM User is selected as the Usage)
General	Enable Teleworker VPN – Switch the toggle to enable/disable Teleworker VPN configuration.
	Idle Timeout – If the user is idle over the limitation of the timer, the network connection will be stopped for such user. By default, the Idle Timeout is set to 300 seconds.
	VPN Schedule – Select Always On. Or choose Scheduled On to make the VPN connection based on the schedule.
	Before configuring VPN Schedule, add the required time intervals in Configuration>>Objects >>Schedule.
	Download SmartVPN Client – Click to download the utility of DrayTeck SmartVPN client for building VPN connection.
Allowed VPN Protocols	Select IPsec, WireGuard or OpenVPN as the protocol for the teleworker VPN connection.
	Enable IPsec – Switch the toggle to enable the IPsec protocol. If enabled, select IKEv1/v2, EAP and/or XAuth as the IPsec

	authentication.
	Enable OpenVPN - Switch the toggle to enable OpenVPN protocol. Enable WireGuard –Switch the toggle to enable WireGuard protocol.
	<ul> <li>General Key Mode – Select Auto or Customized. Select Auto and click Generate Key Pair to generate the key pair of the private key and the public key of the peer. Select Customized to enter the public key of the peer side.</li> <li>Public Key – Enter the string offered by the remote WireGuard VPN client.</li> <li>Pre-Shared Key – Displays the private key generated by clicking Generate PSK.</li> <li>Generate PSK – Click the Generate PSK button to generate a pre-shared key.</li> <li>Persistent Keepalive – Default is 60 seconds. If the peer is behind</li> </ul>
Cocurity	a NAT or a firewall, use the default setting.
Security	Specify VPN Peer – Switch the toggle to enable/disable the security mechanism for the remote client.
	Remote Client IP – Enter the IP address of the remote peer.
	Pre-Shared Key – "Specify VPN Peer" can restrict this IPsec to be initiated only by the specified peer IP address or domain name, and specify the private key to be used.
	X.509 Digital Signature – It is available only for IPsec protocol. Accept the certificates authentication. To use an X.509 digital signature, select one of the authentication methods and enter the required information for each method.
	<ul> <li>Disabled – Select to disable the certificate application for VPN connection.</li> </ul>
	<ul> <li>Accept Subject Alternative Name – The following three formats o Peer ID are acceptable, including IP Address, Domain Name, and Email.</li> </ul>
	<ul> <li>Select from Existing Certificates – Select a peer certificate that ha been pre-obtained and stored in Configuration&gt;&gt;Certificates Local Certificates.</li> </ul>
	<ul> <li>Accept Subject Name – Enter the complete certificate subject name.</li> </ul>
	<ul> <li>Accept Any – Any certificate signed by a trusted CA in Configuration&gt;&gt;Certificates Trusted CA will be considered valid.</li> </ul>
	Click IPsec Advanced Settings to get the following options. Local ID and Peer ID are provided for certain connections that require specifying an ID, such as IKEv1 using Aggressive mode and IKEv2 (optional).
	<ul> <li>Peer ID – Specify a local ID to be used when establishing a VPN connection using IPsec VPN type. Enter the ID name for the remote client.</li> </ul>
	<ul> <li>Local ID (optional) - If the values are specified, only connections coming from the specified IP address and/or having the specified Peer ID will be accepted.</li> </ul>
Local IP Assignment	Assign IP by – It is available if WireGuard protocol is disabled.
	Select LAN DHCP for getting an IP from the router automatically. Or, select Static IP to specify an IPv4 address.
	Assign IP from - Select a LAN interface for IP assignment. And specify

Apply	Save the current settings and exit the page.
Cancel	Discard current settings and return to the previous page.
	<ul> <li>Primary DNS – Enter the IPv4 address for Primary DNS server.</li> <li>Secondary DNS – Enter another IPv4 address for DNS server if required.</li> </ul>
	If Static DNS is selected,
	automatically.
	If LAN DHCP is selected, the DNS IP will be assigned by Vigor router
	Assign DNS By – Select LAN DHCP or Static DNS.
	an IPv4 address as the static IP.

OpenVPN Config Generator

On this page, you can create configuration required for a remote OpenVPN client to connect to the router and then download it directly or send it to the user via email.

specify Server URL by	WAN IP DDNS Profile Custom URL	
WAN IP	Please select 🗸	
	Please select 🗸	
et VPN as Default Gateway		
Fransport Protocol	UDP ~	
Auto Dial Out		
Tache password for auto reconnect		
JDP Ping	5000	
JDP Ping Exit	300	
Export Configuration by	Email to Users Download zip file	
ncluded Users	select your options 🗸 🗸	
	Send Email	

ltem	Description
Specify Server URL by	The OpenVPN client will use the IP address or domain name to connect to the router.
	WAN IP – The OpenVPN configuration file will use the numeric IP address as the server address.
	• WAN IP – Select the WAN interface.
	DDNS Profile – The OpenVPN configuration file will use the domain name from the DDNS Profile.
	<ul> <li>DDNS Profile – Select a DDNS profile.</li> </ul>
	Custom URL – The OpenVPN configuration file will use the

	<ul><li>user-defined server IP or domain name.</li><li>Custom URL – Specify a user-defined URL.</li></ul>
Set VPN as Default Gateway	Switch the toggle to enable/disable the function. Enable - The Vigor router will be treated as a "default" gateway for OpenVPN clients. The OpenVPN client will redirect all the traffic to the Vigor router via the OpenVPN tunnel. Disable -Disable the function.
Transport Protocol	TCP/UDP - Select UDP or TCP for the protocol to be used by the OpenVPN client to connect to the router.
Auto Dial Out	Switch the toggle to enable/disable the function. Enable - The remote client can auto-dial to this Vigor router to build an OpenVPN tunnel. Disable - Disable the function.
Cache password for auto reconnect	Switch the toggle to enable/disable the function. Enable - OpenVPN will reconnect per hour. While reconnecting, the password is required. If the function is enabled, the password for OpenVPN connection will be kept and used by the Vigor system for reconnection every time. Disable - Disable the function.
UDP Ping	Ping remote device over the UDP control channel, if no packets have been sent for the number of seconds configured here.
UDP Ping Exit	Let OpenVPN exit after the seconds set here if no reception of a ping or other packet from the remote device.
Export Configuration by	<ul> <li>Email to Users – If selected, the Included Users field below will be displayed. The OpenVPN configuration file will be sent to users listed on Included Users.</li> <li>Included Users – Select teleworker users that will receive the</li> </ul>
	<ul> <li>configuration from Vigor router.</li> <li>Send Email – Click to email the settings on this page as a file, which can be imported into a VPN client to establish OpenVPN connections to teleworker users.</li> </ul>
	Download zip file – The configuration file for OpenVPN will be stored on the database. If selected, the Download Configuration button below will be displayed.
	<ul> <li>Download Configuration - Click this button to download the settings on this page as a file, which can be imported into a VPN client to establish OpenVPN connections.</li> </ul>
Close	Discard current settings and return to the previous page.

# II-4-4 VPN Connection Status

This section displays various VPN connection status, including

- Site-to-Site VPN
- Teleworker VPN
- Connection History
- Failed VPN Connection Attempts
- Blocked by Brute Force Protection

Search Q	VPN / VPN Connection Stat						C Refres	a.
Device Menu			History Failed VPN Crimes	tuon Attempts Blocked by Brute	Force Protection			
(*) Dashboard	Failed VPN Connection A	ttempts						
Configuration >	Time Period	Last 2) tours Las	a 24 mours					
⊘ security ⇒	Protocol	Failed /	ttempts					
Se iam 💡	IPsec	0						
General Setup	WireGuard	0						
Site-to-Site VPN Teleworker VPN	OpenVPN	D						
Vinit Consumon Manua Backup & Restore	Failed Attempt History							~
• Monitoring ,							Max: 16	00
88 Utility >	External IP	Location	VPN Type	VPN Profile	Interface	Time	Details	
🖏 System Maintenance								
Virtual Controller								
> Wireless								
羀 Switch ,								

# II-4-5 Backup & Restore

This page can be used to backup/restore the VPN configuration.

Search	Q VPN / Backup & Ri	ore
Device Menu	Backup & Restor	
<ul> <li>Dashboard</li> </ul>	22	
n Configuration	Backup	
⊘ security	Selected item	Select All
S IAM		Site-to-Site VPN
		Teleworker VPN
General Setup	Password Protectio	
Site-to-Site VPN	New Password ①	•
Teleworker VPN	Confirm New Passy	d D
VPN Connection Status Datkup & Restore		At least 8 characters
		Upperclase charactèrs     covercase charactèrs
88 utility		Numbers or Special Characters →I@#5%/%#(0,=//∏0-⇔\-
System Maintenance		
		Back up
≻ Wireless	Restore	
E Switch	9 Restore from Back	Filo (D) Ressure
	File has Password I	nection

Available settings are explained as follows:

ltem	Description
	Backup
Selected Item	Select the VPN type for the configuration backup.
Password Protection	For the sake of security, the configuration file for the access point can be encrypted.
	Switch the toggle to enable or disable the function.
New Password/ Confirm New Password	Enter several characters as the password for encrypting the configuration file.
Back up	Click it to backup the configuration file.
	Restore
Restore from Backup File	- Click to locate the file for restoring. Restore - Click to execute the restoration.
File has Password Protection	Switch the toggle to enable or disable the function. If enabled, a password will be required for restoring the configuration.
Password	Enter a password for configuration restoration.

# II-5 Virtual Controller - Wireless

This feature allows users to establish and manage a network of DrayTek devices connected by Wireless or Wired links.

The network consists of one Root and multiple Nodes. Root controls this network and syncs configurations to Nodes. Normally Root and Nodes use the same Wireless SSID/security, and Wireless clients can connect to any of them.

For Mesh networks, Root is also the outlet to the Internet. All devices of a network are in the same Group. The root can add a new Node to its Group or delete members from its Group. Users can choose VigorMesh or EasyMesh to establish the Mesh network. If Mesh is disabled, a network with wired links alone could still be established as long as AP Management is enabled.

Vigor router plays a role of Mesh root in a VigorMesh network.

Please note that, within VigorMesh network,

- the total number allowed for mesh nodes is 8 (including the mesh root)
- the maximum number of hop is 3

Refer to the following figure:



For the mesh group set within VigorMesh network,

- It must be composed by "1" Mesh Root and "0~7" mesh nodes
- (Roaming) Normally members in a mesh group use the same Wireless SSID/security
- (Add) Only the mesh root can add a new mesh node into the mesh group
- (Recover) A disconnected mesh node will automatically try to connect to another connected mesh node of the same group

### Mesh Root

Mesh Root indicates that Vigor router would be other AP's uplink connection. As a Mesh Root, Vigor router must connect to internet through WANs to have an internet connection.

The following figure shows how Vigor router runs as MESH ROOT:



# II-5-1 Role Setup

This page can determine the role of the Vigor router connecting to the computer physically. And set up its Mesh function and AP Management function.

	Wireless / Role Setup		(1) Reset
	Role Setup		
evice Menu	1.1.1		Advanced
Dashboard	Device Role	Root ~	Phyladiaca P
Configuration	Broup Admin Account ()	admin	
Security	Stroup Admin Password ①		
, IAM	>		
D VIDN	Password Status	Use random password	
G Monitoring	3 Mesh Setup		
§ utility	5		
System Maintenance	Mesh Version	Vigor Mesh (R2)	
	Enable Mesh		
irtual Controller	Mesh Protocol	Vigor Mesh	
	Group Name	DrayTekMesh	
	uroup Name	Lagy termiesi	
Device	AP Management Setup		
읍 Switch	2		
	Enable AP Management		
	Cancel Apply		

ltem	Description
Advanced Mode:ON/OFF	Click to show or hide the advanced settings (Wireless Download Band, Auto Wireless Uplinks Optimization and Log Level).
Device Role	Root – The device is a Root. It controls the network and syncs configurations to the Nodes of its Group.
Group Admin Account	Set an account for the system administrator to manage the mesh nodes.
	The account configured here will replace the account name defined for each node to ensure the mesh node's account security.
Group Admin Password	Set a password for the system administrator to manage the mesh nodes.
	The password configured here will replace the password defined for each node to ensure the mesh node's account security.
Password Status	User random password – The default display state. By default, the

	mesh group password will be generated randomly by the Vigor system.
	Ready – If the password is set or changed manually, after finishing the configuration, the word "Ready" will be shown instead.
	Mesh Setup
Enable Mesh	Switch the toggle to enable or disable the mesh function.
Mesh Protocol	Select the mesh protocol to manage the mesh network.
	Vigor Mesh – A protocol developed by DrayTek.
Group Name	Displays the name of the current mesh group. Change the name if required.
Wireless Download	It is available only when Advanced Mode is set to On.
Band	Select a wireless band (Auto, 2.4GHz or 5GHz) for connecting with a downlink mesh root or a downlink mesh node.
	2.4GHz $\checkmark$
	Auto
	2.4GHz
	5GHz
Auto Wireless Uplinks	It is available only when Advanced Mode is set to On.
Optimization	It is enabled in default. To perform the auto reselect, make sure the process for CFG Sync and CFG Check for mesh nodes (members) are successful. If enabled, after changing the environment of mesh network (e.g., offline, disconnection), the root device will perform autoreselect to reconstruct the mesh network.
Log Level	It is available only when Advanced Mode is set to On.
	Choose Basic or Detailed. Related information will be shown on Syslog.
	AP Management Setup
Enable AP Management	Switch the toggle to enable/disable the AP Management.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

# II-5-2 Device

## II-5-2-1 Device List

This page displays general information about the devices grouped under Vigor2136.

search Q		s / Device	AP Adoption							30	eset CiRefresh
Jevice Menu	Device										
Dashboard	Device	List									
E Configuration											Max, 1
) Security ,		Name	MAC	IP Address	\$SID	Status	Role	WLAN Clients (2.4G/5G)	Firmware Version	System Uptime	Option
LIAM s	0	DrayTek-366100	1449BC366100	192,168,1,1	DrayTek-366100	Online	Root	0/0	2814.d608129fa4_Beta	0d 6h 52m 54s	@Edit
VPN s											
Monitoring >											
Utility i											
System Maintenance											
rtual Controller											
Role Setup											
Switch >											

Click Edit to modify the settings of the selected device. The settings for the APs are slightly different based on the role of the Root and Node.

Wireles	ss / Device							
Device	List Mesh Sta	tus AP Adopti	on			I		×
Device	e List						Name	DrayTek-36610
							MAC	1449BC36610
	Name	MAC	IP Address	SSID	Status	Ro	IP Address	192.168.1
Ø	DrayTek-366100	1449BC366100	192.168.1.1	DrayTek-366100	Online	Ro	SSID	DrayTek-3661
						l	Status	Onl
						l	Model	Vigor2136
						l	Role	R
						l	WLAN Clients (2.4G/5G)	
						l	Firmware Version	5.3.0_RC
						l	System Uptime	20d 17h 15m 4
						l	Device Reboot All Nodes	Reboot not
						l	Device Factory Reset All Nodes	Factory Reset nor
						l	Device Configuration	
							Config Sync Status All Nodes	
							Last Sync Time All Nodes	
							Config Sync to All Nodes	Full Config Select Scope

ltem	Description
Device Reboot All Nodes	Reboot Now – Click to reboot all nodes immediately.

Device Factory Reset All Nodes	Factory Reset Now - Click to reset all nodes with factory settings immediately.
Config Sync to All Nodes	Full Config – Sync the full configuration to all nodes. Select Scope - Sync the selected configuration to all nodes.
Sync Config	Sync now –Click to execute the sync configuration.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

## II-5-2-2 Mesh Status

Display general information of the Mesh network.

This page is available only when Mesh is enabled (Virtual Controller>>Role Setup).

	Wireless / Device	Status AP Adaption								(C Refresh
ovice Manu		Sandar Sa Madpinen								
Dashboard	Mesh Status									
2 Configuration									Search.	Max: 225
) security	Name	MAC Address	Role	Нор	Uplink Device	Uplink Interface	Signal Strength	Uplink Rate (TX/RX)	Uplink Uptime	Option
I IAM	DrayTek-366100	14;49;BC:36:61:00	Root	0	N/A	-	-	-	08 07:14:07	© View
> VPN										
Monitoring										
Utility										
System Maintenance										
irtual Controller										
Role Setup										
🛿 Switch										

Item	Description
Name	Displays the name of the device (for identification).
MAC Address	Displays the MAC address of the device.
Role	Displays the role of the device.
Нор	Displays the number of Wireless links from the device to Root. "0" means the device is using a Wired uplink.
Uplink Device	Displays the MAC address of the device that this device connects to.
Uplink Interface	Displays the interface which the device is using to connect to uplink.
Signal Strength	Displays the signal strength of the device to its uplink.
Uplink Rate(Tx/RX)	It is available only when VigorMesh is selected as Mesh Protocol. Displays the link rate of the device to its uplink.
Uplink Uptime	It is available only when VigorMesh is selected as Mesh Protocol. Displays how long the device is online.
Option	Click View to modify the selected mesh device.



## II-5-2-3 AP Adoption

Search and add new Nodes to the device's Group.

This page is available when current device role is Root.

	Q. Wireless / Device	
Device Menu	Device List Mesh Status AP Adoption	
Dashboard	AP Adoption	
🔁 Configuration	Stepsis Ready	
Security	Start AP Discovery Scan	
Д ГАМ	AP Discovery Result Adopt AP MAC Model Signal Strength Device Name	
D VPN	3 ·	
Monitoring		
BS Utility	- A-	
🖏 System Maintenance		
Virtual Controller		
Role Setup		
器 Switch		

ltem	Description
Status	Displays whether the Scan button is available now.
Start AP Discovery	Press the Scan button to search new Nodes.
AP Discovery Result	Displays the scanned result. Adopt AP - Select the checkbox if you want to add the device into a Group.

MAC - Displays the MAC address of the device.
Model - Displays the model of the device.
Signal Strength - Displays the signal strength of the device if it was found through the Wireless.
Device Name - Insert the name of the device for identification.

#### Tips for VigorMesh Network Setup

• VigorMesh supports auto uplink. If a device could not access its gateway, it becomes a Wireless Node automatically.

A Mesh Root or a Wired Mesh Node should be able to ping its gateway through Ethernet.

VigorMesh can add new Mesh Nodes into a Mesh Group through Wireless or Wired connection.
 However, we recommend to connect new Nodes to the Root by Ethernet cables and add them into Mesh Group first.

Wait until the configuration sync finishes. And then move the Nodes to their destinations.

- VigorMesh supports up to 3 hops. However, it is suggested to connect the Mesh network with less than or equal to 2 hops.
- It is suggested to make the Uplink Signal Strengths of all Wireless Mesh Nodes be larger than -65 dBm.
- A Wireless Mesh Node with an Ethernet cable should not loop to another Node.
- If the Mesh Root disappears and there are online Wired Mesh Nodes with Device Role Auto, one of the Wired Mesh Nodes will become a Mesh Root automatically.
- A VigorMesh Group can be reset by the "Reset" button on Virtual Controller >> Wireless >> Device >> Device List.

If resetting a Mesh Root,

- All online Mesh Nodes will be informed to reset.
- For those Mesh Nodes unable to reset, reset them manually.

If resetting a Mesh Node,

- The device will become a New Node again.
- The Wireless SSID settings of the device will be reset, too.

Troubleshooting:

- Check the country code and Wireless channels.
- Check the firmware version. Please make sure all Mesh members are in the newest firmware version.
- Check the Current Device Role and Current Uplink of the device.
- Please make sure that the device is not in DFS CAC detection.
- Check the channel load. Make sure it is not over 70%.

Tips for EasyMesh Network Setup

- Set up multiple mesh devices with uplink RSSI larger than -65dBm.
- Setup is recommended to use wired connection and device list to add devices.
- EasyMesh network supports up to 3 hops of devices. However, it is suggested to connect with less than or equal to 2 hops.

- EasyMesh is not suggested to join existing VigorMesh Environment.
- The maximum of devices number is (ssid\_num \* device\_num <= 56) -> device\_num is the max device number

How to set up a VigorMesh group?

The following steps will guide you how to setup a VigorMesh Group.

Please access the web of the device which you want to use it as the Root.

1. (Optional) Open Virtual Controller>>Wireless>>Role Setup.

Set Group Admin Password. This value will be the Administrator Password of the Nodes after they join the Mesh Group and complete configuration sync.

Role Setup		🕄 Reset 🔿 R
Device Role	Auto ~	Advanced M
Current Device Role	Node	
Group Admin Account	admin	
Group Admin Password	· •	
Password Status	Use random password	
Mesh Setup		
Enable Mesh		
Mesh Protocol	Vigor Mesh EasyMesh	
	Wired	
Current Uplink	Wild	

2. Open Virtual Controller>>Wireless>>Device>>AP Adoption. Click the Scan button.

Wireless / Device	
Device List Mesh Status	AP Adoption
AP Adoption	
Status	Ready
Start AP Discovery	Scan
AP Discovery Result	Adopt AP MAC Model Signal Strength Device Name
	No Records Found!

3. Wait until the searching result appears.

Choose the device(s) you want to add to the Group and set the names for identification.

Click the **Apply** button and wait for it to finish the procedure.

Wireless / Device					
Device List Mesh Status	P Adoption	_			
AP Adoption					
Status	Ready				
Start AP Discovery	Scan				
AP Discovery Result	Adopt AP	MAC	Model	Signal Strength	Device Name
		14:49:BC:51:B7:9F	VigorAP1062C	-92dBm(weak)	
		00:1D:AA:66:44:66	VigorAP1062C	-94dBm(weak)	
		00:1D:AA:64:10:15	VigorAP1062C	-61dBm(good)	N1
Cancel Apply					

4. Refer to Virtual Controller>>Wireless>>Device>>Device List and Virtual Controller>> Wireless >> Device >>Mesh Status for viewing the result.

Wireless / Devic	e											
Device List	Mesh Status	AP Adoptic	on							U	Reset C	Refresh
Device List												
												Max: 50
Name	MAC	IP Address	s :	SSID	Status	Role	WLAN Clients (2.4G/5G)	Firm	ware Version	System Uptime	Option	
VigorAP1062C	001DAA102722	192.168.1	10	DrayTek- 102722	Online	Root	0/0	1.5.1	_RC8	0d 4h 58m	24s 🧷 Edit	
VigorAP1062C	001DAA641015	192.168.1	.11	DrayTek- 102722	Online	Node	0/0	1147	.8df8de432f_Be	eta Od 1h 00m	45s 🧷 Edit	🗊 Delete
Wireless / Devic	ce											
Device List	Mesh Status	AP Adoptic	on								C	Refresh
Mesh Status												
Name	MAC Address	Role	Нор	Uplink D	evice	Uplin	nk Interface		Signal Strength	Uplink Rate (TX/RX)	Uplink Uptime	Option
VigorAP1062C	00:1D:AA:10:27:2	22 Root	0	N/A							0d 02:15:33	© View
N1	00:1D:AA:64:10:1	15 Node	1	00:1D:A	A:10:27:22	2 Wire	less 5GHz (C	:h36)	-56dBm/86%	1755M/1755M	0d 02:11:22	@ View

# II-6 Virtual Controller - Switch

Vigor router can manage lots of VigorSwitch devices connected to it. Through profile and group settings, the administrator can execute firmware/configuration backup, restore for VigorSwitch device, reboot the device or return to factory default settings of VigorSwitch at one time.



This feature allows users to establish and manage a network of DrayTek devices connected by Wireless or Wired links.

## II-6-1 General Setup

In this page, switch the toggle to enable / disable the switch management function.



## II-6-2 Device

This page displays information, including Switch name, MAC address, IP address, Firmware Version, Model, Online Status, System Uptime, Port in Use, Clients, Last Process Status and Option of a VigorSwitch connected to the Vigor router.

	Device List										
evice Menu											
Dashboard		witch Refresh		-				-			Max
Configuration	Switch Name	MAC Address	IP Address	Firmware Version	Model	Online Status	System Uptime	Port in Use	Clients	Last Process Status	Option
) Security											
L IAM											
D VPN											
a Monitoring	8										
{ Uulity											
System Maintenance	× .										
rtual Controller											
Wireless											
General Setup											
Port Profile											
Maintenance											

To add a new switch, click the Add New Switch link to open the following page.

Ad	ld New Swite	ch				×
-	Scanning From N	letwork	Scan			
2	Switches					
	Adopt	Device Name		MAC Address	Model Name	
				No Records Found!		
					Close	Арріу

Scanning F	rom Network	Scan		
Switches				
Adopt	Device Name		MAC Address	Model Name
	Q2200x		14:49:BC:44:A0:B9	Q2200x

Click Scan and wait for a while Vigor router will scan and list the switch connecting to Vigor router.

Check the box below Adopt to select the device and click Apply.

evice List											
& Add New 5	witch Refresh										Max 5
Switch Name	MAC Address	IP Address	Firmware Version	Model	Online Status	System Uptime	Port in Use	Clients	Last Process Status	Option	
22200x	14:49:BC:44:A0:B9	192.168.1.24	2.8.1	VigorSwitch Q2200x	Cinline	7d 22h 50m 6s	1/20	2	Process Successfully		TO Delete

The selected switch, now, has been managed by the Vigor router.

To edit the device information, set port profile or view the port status of the switch, click Edit.

#### General

This page shows a summary related to the VigorSwitch. Also, it offers Reboot Now and Factory Reset Now buttons to assist users in updating the switch.

		$\times$
General Port Profile Po	prt Status	
Switch Name	Q2200x	
MAC Address	14:49:BC:44:A0:B9	
IP Address	192.168.1.24	
Firmware Version	2.8.1	
Model	VigorSwitch Q2200x	
Online Status	Online	
System Uptime	0d 0h 11m 18s	
Port in Use	1/20	
Clients	3	
Last Process Status	Process Successfully Reboot Now Factory Reset Now	

Available settings are explained as follows:

ltem	Description
Switch Name	Display the name of the switch. Change the name if required.
Reboot Now	Click to reboot the switch immediately with current configuration.
Factory Reset Now	Click to reset the switch with factory default setting.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

After finishing this web page configuration, please click Apply to save the settings.

### Port Profile

This page configures the speed, duplex mode, and port profile for each GE port of the VigorSwitch.

General	Port Profile Port Status				
					Search
Port	Description	Port Enabled	Port Speed	Duplex	Port Profile
2.5GE1			Auto $\checkmark$	Auto $\checkmark$	None ~
2.5GE2			Auto $\checkmark$	Auto $\checkmark$	None 🗸
2.5GE3			Auto $\checkmark$	Auto $\checkmark$	None V
2.5GE4			Auto $\checkmark$	Auto $\checkmark$	None 🗸
2.5GE5			Auto $\checkmark$	Auto $\checkmark$	None V
2.5GE6					
2.5GE7			Auto $\checkmark$	Auto $\checkmark$	None 🗸
2.5GE8			Auto $\checkmark$	Auto $\checkmark$	None V
2.5GE9			Auto $\checkmark$	Auto $\checkmark$	None V
2.5GE10			Auto 🗸	Auto 🗸	None V

ltem	Description
Port	Display the number of the GE port.
Description	If required, enter a brief description to explain the device connected to VigorSwitch via the LAN port.
Port Enabled	<ul><li>The port (e.g., GE2 in this case) which is used to connect VigorSwitch and Vigor router will not be shutdown by Vigor router.</li><li>Other LAN ports of VigorSwitch allow to connect to any LAN device.</li><li>When it is checked, after clicking Apply, the network connection between that device and VigorSwitch will be terminated.</li></ul>
Port Speed	Ethernet speed is set automatically by router system or manually set to 10M/100M/1000M/2G bit/s.

### Port Status

This page will display the current status of each GE port of the Vigor switch such as the transmission rate (TX/RX), port type, VLAN ID, applied port profile, etc.

								×
General	Port Profile Port Status	_						
							Search	
Port	Applied Port Profile	Description	Тх	Rx	Port Type	VLAN	Clients	
2.5GE1			0%	0%	Trunk	1	0	
2.5GE2			0%	0%	Trunk	1	0	
2.5GE3			0%	0%	Trunk	1	0	
2.5GE4			0%	0%	Trunk	1	0	
2.5GE5			0%	0%	Trunk	1	0	
2.5GE6			0%	0%	Trunk	1	3	
2.5GE7			0%	0%	Trunk	1	0	
2.5GE8			0%	0%	Trunk	1	0	
2.5GE9			0%	0%	Trunk	1	0	
2.5GE10			0%	0%	Trunk	1	0	

# II-6-3 Port Profile

This page allows you to configure profiles with general settings such as name, group, IP address, MAC address, model, and password required by VigorSwitch when it connects to this Vigor router.

Search	Switch / Port Profile					3 Reso
	Port Profile					
evice Menu	+ 600				Search	Max 3
ት Dashboard	Profile Name	Enable Port by Schedule	Port Type PVID	Untagged VLAN	Tagged VLAN	
Configuration	Prote Name	Enable Port by Schedule		Omagged VLAN	ragged vition	Option
) Security	×					
INM .						
> VPN						
Monitoring						
Utility	5					
System Maintenance	× .					
rtual Controller						
• Wireless	1					
General Setup						
Device						
Maintenance						

To add a new profile, click +Add.

To modify an existing profile, select the one and click the +Edit link to open the setting page.

Below is the settings page after clicking +Add.

### General

Available settings displayed here will vary according to the VigorSwitch managed by Vigor router.

	×
Profile Name 🕕	Advanced Mode: ON
General VLAN GVRP	Multicast STP QoS
PoE Port Enable PoE Priority Enable Port by Schedule	Critical     High     Low       Always On     Scheduled On       select your options
Port Isolation	
LACP Priority (1-65535) ()	1 Short Long
EEE	
Cancel Apply	

ltem	Description
Profile Name	Enter a name for the Switch. The purpose of name is used for identification.
	It is useful when there are many VigorSwitch (same modes) devices connecting to Vigor router.
Advanced Mode:ON/OFF	Click to show or hide the advanced settings.
PoE Port Enable	Switch the toggle to enable/disable the port profile.
Enable Port by Schedule	Set the valid time for the "port profile" when it is applied to specific GE port.
	Always On – The port profile will be valid all the time if it is enabled.
	Scheduled On – The port profile will be valid based on the time schedule specified here.

Options under the Advanced Mode

•	
Port Isolation	It allows the network administrator to configure protected port setting to prevent the selected ports from communication with each other. Port isolation is only allowed to communicate with unprotected port. For example, GE1 and GE3 are selected in Port List and Enable is clicked as port isolation, then users behind GE1 and GE3 are separated and can not communicate with each other. Switch the toggle to enable / disable this function.
LACP Priority	Enter a port priority number (1 to 65535) for the port.
LACP Timeout	<ul> <li>The timeout option decides how local switch of LAG connection determines connection to be lost. Switch would also notify the remote switch about this setting value, so that remote switch can send LACP PDU in correct timing.</li> <li>Short - LACP PDU will be sent per second. If port member is not seen over 3 seconds, it will cause port member timeout.</li> <li>Long - LACP PDU will be sent every 30 seconds. If port member is not seen over 90 seconds, it will cause port member timeout.</li> </ul>
EEE	Switch the toggle to enable or disable port EEE (Energy Efficient Ethernet) function for the selected port.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

After finishing this web page configuration, please click Apply to save the settings.

## VLAN

This page allows a user to configure interface (GE) settings related to VLAN.

Profile Name ①         General       VLAN       GVRP       Multicast       STP       QoS         Port VLAN       Settings         Port Type       Hybrid       Trunk       Access       Tunnel         PVID ①       1       1         Tagged VLAN       Ait VLANs       Select VLANs         Forbidden VLAN       select your options       ✓		
General     VLAN     GVRP     Multicast     STP     QoS       Port VLAN Settings       Port Type     Hybrid     Trunk     Access     Tunnel       PVID ①     1     1       Tagged VLAN     All VLANS     Select VLANs		
Port VLAN Settings       Port Type     Hybrid     Trunk     Access     Tunnel       PVID ①     1     Tagged VLAN     All VLANs     Select VLANs	Profile Name 🥡	
Port Type     Hybrid     Trunk     Access     Tunnel       PVID ①     1	General VLAN GVRP	Multicast STP QoS
Port Type     Hybrid     Trunk     Access     Tunnel       PVID ①     1	Port VLAN Settings	
Tagged VLAN All VLANS Select VLANS		Hybrid Trunk Access Tunnel
	PVID ()	1
Forbidden VLAN select your options	Tagged VLAN	All VLANS Select VLANS
	Forbidden VLAN	select your options 🗸
	Cancel Apply	

Available settings are explained as follows:

ltem	Description
Profile Name	Enter a name for the Switch. The purpose of name is used for identification.
	It is useful when there are many VigorSwitch (same modes) devices connecting to Vigor router.
Port Type	Select the VLAN mode of the interface.
	Hybrid – Support all functions as defined in IEEE 802.1Qspecification.
	Trunk - An untagged member of one VLAN at most, and is a tagged member of zero or more VLANs.
	Access – Accepts only untagged frames and join an untagged VLAN.
	Tunnel - Accepts only untagged frames and join an untagged VLAN.
PVID	A PVID (Port VLAN ID) is a tag that adds to incoming untagged frames received on a port so that the frames are forwarded to the VLAN group that the tag defines.
	For port under Access/Tunnel Mode, VLAN ID provided as PVID would automatically be selected as the untagged VLAN.
Accepted Type	It is available when Hybrid is selected as the port type.
	Specify the acceptable-frame-type of the specified interfaces. It's only available with Hybrid mode.
	All - Accept frames regardless it's tagged with 802.1q or not.
	Tag Only - Accept frames only with 802.1q tagged.
	Untag Only - Accept frames untagged.
Untagged VLAN	It is available when Hybrid is selected as the port type.
	Specify the VLAN profile to be untagged in the VLAN.

Tagged VLANSelect all VLAN profiles or independent VLAN profiles to be tagged in the VLAN.
---

Options under the Advanced Mode

Forbidden VLAN	The GE port set in a VLAN profile allows default VLAN packet to pass through. Select the VLAN profile as forbidden VLAN.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

After finishing this web page configuration, please click Apply to save the settings.

### GVRP

This page allows the network administrator to configure registration mode (e.g., Normal, Fixed or Forbidden) of GVRP (GARP VLAN Registration Protocol) for each GE port.

Such function can eliminate unnecessary network traffic and prevent any attempt to transmit information to unregistered users.

	Advanced Mode
Profile Name 🕠	
General VLAN GVRP Multicast STP QoS	
Enabled	
Dynamic VLAN Creation	
Registration Normal Fixed Forbidden	
Cancel Apply	

ltem	Description
Profile Name	Enter a name for the Switch. The purpose of name is used for identification.
	It is useful when there are many VigorSwitch (same modes) devices connecting to Vigor router.
Enabled	Switch the toggle to enable / disable the GVRP port setting.
Dynamic VLAN Creation	Switch the toggle to enable / disable the VLAN creation.
Registration	There are three modes to be specified. Normal – Default setting. All packets can pass through the selected

	GE port.
	Fixed – The selected GE port only sends static VLAN information to neighboring device and allows static VLAN packet to pass through.
	Forbidden – The selected GE port only allows default VLAN packet to pass through.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### Multicast

IGMP snooping is the process of listening to Internet Group Management Protocol (IGMP) network traffic. The feature allows a network switch to listen in on the IGMP conversation between hosts and routers. By listening to these conversations the switch maintains a map of which links need which IP multicast streams. Multicasts may be filtered from the links which do not need them and thus controls which ports receive specific multicast traffic.

MLD snooping does the same thing as IGMP snooping. The difference is that IGMP snooping acts on IPv4 packets; MLD snooping acts on IPv6 packets. MLD snooping is the process of listening to Multicast Listener Discovery network traffic. It can examine IPv6 packets and forward these packets to designate location via VLAN port members.

		×
	Advanced Mo	de: ON
Profile Name 🕕		
General VLAN GVRP	Multicast STP QoS	
IGMP Snooping		
Throttling Max. Group (0-256) 🚺	256	
Throttling Exceed Action	Deny Replace	
MLD Snooping		
Throttling Max. Group (0-256) 🚺	256	
Throttling Exceed Action	Deny Replace	
Cancel Apply		

ltem	Description
Profile Name	Enter a name for the Switch. The purpose of name is used for identification.
	It is useful when there are many VigorSwitch (same modes) devices connecting to Vigor router.
	IGMP Snooping
Throttling Max. Group	Define the maximum number of IGMP group profile that a user on the switch can join. If "0" is selected, then such interface (port) can join all

	of the IGMP group profiles (defined in Filtering Profile).
Throttling Exceed Action	VigorSwitch will perform the action defined below when the number of IGMP join reports for the specified interface exceeds the value defined in Max Group.
	Deny – It is default setting. The IGMP join report (for multicast service) received by such interface will be discarded.
	Replace – When it is selected, a new group with IGMP report received will replace the existing group.
	MLD Snooping
Throttling Max. Group	Define the maximum number of MLD group profile that a user on the switch can join. If "0" is selected, then such interface (port) can join all of the MLD group profiles (defined in Filtering Profile).
Throttling Exceed Action	VigorSwitch will perform the action defined below when the number of MLD join reports for the specified interface exceeds the value defined in Max Group.
	Deny – It is default setting. The MLD join report (for multicast service) received by such interface will be discarded.
	Replace – When it is selected, a new group with MLD report received will replace the existing group.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

### STP

The Spanning Tree Protocol (STP) is a network protocol that ensures a loop-free topology for any bridged Ethernet local area network.

Bridge Protocol Data Units (BPDUs) are frames that contain information about the Spanning Tree Protocol (STP). Switches send BPDUs using a unique MAC address from its origin port and a multicast address as destination MAC (01:80:C2:00:00:00, or 01:00:0C:CC:CC:CD for Per VLAN Spanning Tree).

Profile Name (	D				
General	VLAN	GVRP	Multicast	STP	QoS
BPDU Filter					
BPDU Guard					
Priority			128	$\sim$	
Edge Port					
P2P Option			Auto	Yes	No
Cancel A	pply				
Available settings are explained as follows:

ltem	Description		
Profile Name	Enter a name for the Switch. The purpose of name is used for identification.		
	It is useful when there are many VigorSwitch (same modes) devices connecting to Vigor router.		
BPDU Filter	Switch the togglee to enable / disable the function of dropping all BPDU packets and no BPDU will be sent.		
BPDU Guard	BPDU Guard further protects your switch by turning this port into error state and shutdown if any BPDU received from this port. Check it to enable such function.		
	Switch the toggle to enable/disable the BPDU Guard function.		
Options under the Adva	nced Mode		
Priority	Specify a priority value for the switch. The smaller the priority value, the higher the priority and greater chance of becoming the root.		
Edge Port	In the Edge mode, the interface would be put into the Forwarding state immediately upon link up. If the edge mode is enabled for the interface and there are BPDUs received on the interface, the loop might be occurred in the short time before the STP state change.		
	Switch the toggle to enable / disable the function.		
P2P Option	Auto – VigorSwitch determines the STP of link type for this port automatically.		
	Yes – It means the STP of link type on this port is full-duplex and directly connect to another switch or host.		
	No - It means the STP of link type on this port is "not" full-duplex and "does not" directly connect to another switch or host.		
Cancel	Discard current settings and return to the previous page.		

After finishing this web page configuration, please click Apply to save the settings.

## QoS

This page is used to configure port settings for QoS. The configuration result for each port will be displayed on the table listed on the lower side of this web page.

Profile Name 🥡			
General VLAN GVRP	Multicast	STP	QoS
Ingress Default CoS	0	$\sim$	
Egress Remark CoS			
Egress Remark DSCP/IP Precedence	Disabled	DSCP	IP Precedence
Enable Ingress Rate Limit			
Enable Egress Rate Limit			
Cancel Apply			

Available settings are explained as follows:

ltem	Description		
Profile Name	Enter a name for the Switch. The purpose of name is used for identification.		
	It is useful when there are many VigorSwitch (same modes) devices connecting to Vigor router.		
Ingress Default CoS	Specify the default CoS priority value for those ingress frames without given trust QoS tag (802.1q/DSCP/IP Precedence, depending on configuration).		
Egress Remark CoS	Switch the toggle to enable/disable the function.		
Egress Remark	Disabled - Select to disable this function.		
DSCP/IP Precedence	DSCP - Egress traffic will be marked with DSCP value according to the Queue to DSCP mapping table.		
	IP Precedence - Egress traffic will be marked with IP Precedence value according to the Queue to IP Precedence mapping table.		
Enable Ingress Rate Limit	This page is used to configure port settings for QoS. The configuration result for each port will be displayed on the table listed on the lower side of this web page.		
	Switch the toggle to enable/disable the function.		
	Ingress Rate Limit - Enter the rate value (16-1000000), unit:16 Kbps.		
Enable Egress Rate Limit	This page is used to configure port settings for QoS. The configuration result for each port will be displayed on the table listed on the lower side of this web page.		
	Switch the toggle to enable/disable the function.		
	Egress Rate Limit - Enter the rate value (16-1000000), unit:16 Kbps.		

Cancel	Discard current settings and return to the previous page.	
Apply	Save the current settings and exit the page.	

After finishing this web page configuration, please click Apply to save the settings.

# II-6-4 Maintenance

Vigor router can backup, restore, reboot, or reset the managed Vigor switch devices.

Search Q	Switch / Maintenance
Device Menu	Maintenance
<ul> <li>Dashboard</li> </ul>	Anna -
Configuration >	Select Action
Security >	Action Type Config Backup 🗸
A, MM →	Select Device
O VPN	Existing Device -+ Add Max: 1
🔂 Monitoring 💡	Switch Name MAC Address IP Address Option
BS utility ;	and Property Sector 1 minute
System Maintenance 5	Back up
Virtual Controller	
>- Wireless	
S Switch	
General Setup Device	
Port Profile	
Maltinuero	

ltem	Description		
	Selection Action		
Action Type	There are four types of action that can be performed on Vigor switch by Vigor router.		
	Config Backup – Backup current configuration of Vigor switch.		
	Config Restore – Restore the configuration of Vigor switch with backup file.		
	Remote Reboot – Reboot the Vigor switch remotely by Vigor router.		
	Factory Reset – Reset the Vigor switch remotely by Vigor router.		
	Select Device		
Existing Device	+Add – Click to add a new device that will be applied with the setting configured above.		
	At present, only one device can be added in this field.		
	For the Action Type set as Config Backup:		
	<ul> <li>Backup – Click to make a backup copy for the current configurations of the selected device(s) (listed on Existing Device list).</li> </ul>		
	For the Action Type set as Config Restore:		
	• Restore - Click to locate the backup file for restoring.		
	<ul> <li>Restore - Click to restore the configuration of the selected device(s) (listed on Existing Device list) with the backup file.</li> </ul>		
	For the Action Type set as Remote Reboot:		

<ul> <li>Reboot – Click to reboot the remote switch (managed by Vigor router) with current configuration.</li> </ul>
For the Action Type set as Factory Rest:
<ul> <li>Reset – Click to reset the selected device(s) (listed on Existing Device list) with the factory default switch settings.</li> </ul>

# Chapter III Management



# III-1 System Maintenance

For the system setup, there are several items that you have to know the way of configuration: Device Settings, Management, Firmware, Backup & Restore, Accounts and Reboot System, and Firmware Upgrade.

# III-1-1 Device Settings

The user can modify the time, device name, and Syslog for the device.

### III-1-1-1 Time

Open System Maintenance>>Device Settings and click the Time tab.

It allows you to specify where the time of Vigor device should be inquired from.

Device Menu	System Maintenance / Device Sett	lings	③Reset C Refresh
<ul> <li>Dashboard</li> </ul>	Time Device Name Syslog	SNMP	
🛎 Configuration >	Time and Date		
Security >	This and pute		
£, им ⇒	Set Time	Automatically with Time Server Manually	
	Time Zone-	Auto Mismutily	
Monitoring )		Note: Auto mode will adjust daylight saving time automatically.	
88 Utility	Time Server ①	time.googie.com	
	Interface	Auto	
Device serings Management	Test Time Server	Test Time Server Connection	
System Upgrade	Server Status		
Backup & Restore Account & Permission			
System Reboot	More settings		
Registration & Services	Auto Update Interval	30min 🔊	
Virtual Controller	Secondary Server 🕥	pool.ntp.org	
> Wireless >	Secondary Interface	Auto No	
🖶 switch 💦 🔗	-		
	Cancel Apply		

Available parameters are explained as follows:

ltem	Description		
	Time Setting		
Set Time	Determine the method (automatically or manually) to set the time. Automatically with Time Server - Set the system time by retrieving time information from the specified network time server using the Network Time Protocol (NTP). Manually - Set the system time using the time reported by the web browser.		
When Automatically with Time Server is selected as Set Time	<ul> <li>Time Zone - Select the time zone (Auto or Manually) where the router is located.</li> <li>Time Server - Enter the web site of the primary time server.</li> <li>Interface - Renew the time through the selected WAN/LAN interface.</li> <li>If Auto is selected, the Vigor system will renew the time through WAN</li> </ul>		

	or LAN.						
	Test Time Server Connection – Test if the time server works well.						
	Server Status - Displays last update time status.						
	More Settings - Click to open advanced settings for the time server.						
	<ul> <li>Auto Update Interval - Select the time interval (e.g., 30min or 60min) at which the router updates the system time periodically.</li> </ul>						
	<ul> <li>Secondary Server - For having a backup time server, please enter the URL/IP address in the field of Secondary Server.</li> </ul>						
	<ul> <li>Secondary Interface - Renew the time through the selected WAN/LAN interface. If Auto is selected, the Vigor system will renew the time through WAN or LAN. This is an optional setting and is used as the interface for the backup time server. If the primary time server fails to renew the time setting, the Vigor system will use the secondary time server instead.</li> <li>Daylight Saving – It is available when Manually is selected as Time Zone. Switch the toggle to enable or disable the function. Enable Daylight Saving Time (DST) if it is applicable to your location if Manually is selected as Time Zone.</li> <li>Daylight Saving Period - It is available when Daylight Saving is enabled. Specify the starting time and the ending time if "by</li> </ul>						
When Manually is	Week" or "by Date" is selected. Date - Use the drop-down calendar to specify correct date.						
selected as Set Time	2021-04-26						
	2021 APR - < >						
	S M T W T F S						
	APR 1 2 3						
	4 5 6 7 8 9 10						
	11 12 13 14 15 16 17						
	18 19 20 21 22 23 24						
	25 26 27 28 29 30						
	Time - Set the time by specifying hours, minutes, and seconds. Synchronize with Browser - Click Sync now to sync the time setting with the browser.						
	with the browser.						
Apply	Save the current settings and renew the system time.						

After finishing this web page configuration, please click Apply to renew the system time.

## III-1-1-2 Device Name

Display the router name. Change the name if you want.

Open System Maintenance>>Device Settings and click the Device Name tab.

search Q	System Maintenance / Device Settings	(1) Runs
	Time Device Name Syslog SNMP	
Device Menu	Device Name	
Dashboard		
Configuration	Device Name HQ_2-1_V2136_2299.51ff334eb9_Beta	
Security >		
M S		
D VPN		
월 Monitoring >		
8 Utility		
Management		
Firmware		
Backup & Restore		
Account & Permission		
System Reboot		
Registration & Services		
irtual Controller		

## III-1-1-3 Syslog

SysLog function is provided for users to monitor the router.

Open System Maintenance>>Device Settings and click the Syslog tab.

	Q	System Maintenance / Dev	ice Settings	3 Reset
		Time Device Name	Syslog SNMP	
Device Menu		Surlag Sattings		
<ul> <li>Dashboard</li> </ul>		Syslog Settings		
n Configuration		The second s	Z External Server	
Security	*	Logging Destinations	USB Disk	
S IAM			Maximum Syslog folder space $_{ m MB}$ $\sim$	
O VPN	· 6.		Note: USB Systog space is available from 256-1024 MB or 1-16 GIL	
	*		When Syslog folder is full: Override Oldest Lags $\sim$	
88 Utility	•	Log Message	User Access Lóg	
			All Interface Log	
			V WAN Log	
Management			🛃 LAN Log	
System Upgrade			Firewall Log	
Backup & Restore			VAM Log	
Account & Permission			VPN Log	
System Reboot			System Log	
Registration & Services			VIFI Basic Log	
Virtual Controller			Mesh Log	
>- Wireless	š		ADM I OF	
		Cancel Apply		

Available parameters are explained as follows:

ltem	Description			
	Syslog Settings			
Logging Destinations External Server - Select to set Log Message item(s) and cor Syslog Servers.				

	USB Disk - Select to configure settings related to USB Disk.
Log Message	Select to send the corresponding message of user access, interface, and system information to Syslog.
Maximum Syslog folder space	Enter the number for the folder space. In which, set the number ranges from 256 – 1024 for MB, and 1 – 16 for GB.
When Syslog folder is full	<ul><li>Select the action performed if the Syslog folder is full.</li><li>Override Oldest Logs</li><li>Stop when Full</li></ul>
	Syslog Servers
+Add	Click to display new entry boxes for creating a new Syslog server profile. The maximum number of Syslog servers to be added is "3".
Server IP	Enter the IP address of the Syslog Server.
Port	Enter the port number (1-65535) of the Syslog Server.
Option	Delete - Click it to remove the selected server profile.
Apply	Save the current settings and exit the page.
Cancel	Discard current settings and return to the previous page.

After finishing this web page configuration, please click Apply to save the settings.

### III-1-1-4 SNMP

This section allows you to configure settings for SNMP services.

The SNMPv3 is more secure than SNMP through the use of encryption (supports AES and DES) and authentication (supports MD5 and SHA) for the management needs.

Open System Maintenance>>Device Settings and click the SNMP tab.

	System Maintenance / Device	Settings	C Rese
	Time Device Name Sy	ralog Stearp	
levice Menu	SNMP		
Dashboard			
🛱 Configuration 🥠	Enabled		
Security 5	0		
A IAM 3	SNMP service also sh	all be enabled for internet access in System Maintenance >> Mahagement	
D VPN			
🔂 Monitoring 🗦	Manager		
88 Utility	Manager Host	Any Specific Hest	
	Query		
	query		
Management	Get Community 🕢	public	
System Upgrade	Set Community ()	private	
Backup & Restore			
Account & Permission	Query Port	161	
System Reboot	1.00		
Registration & Services	Agent		
Virtual Controller	SNMPV3 Agent Enabled	0	
}→ Wireless >	Cancel Apply		

Available parameters are explained as follows:

Item Description

	5	NMP						
Enabled	Switch the toggle to enable/disable the SNMP function.							
	If enabled, Manager, Query, Agent and Trap settings will be val you to configure.							
	Ma	anager						
Manager Host	Any - Any IP can be	set as the	e manager host.					
	Specific Host - Specific Host	cify a host	: (IPv4 or IPv6) or h	osts (both	1Pv4 and			
	• IP Type – Select Both, IPv4 or IPv6.							
	is selected as	the IP Typ	: (IPv4/IPv6) is ava e. Click +Add to ha	ave a new	entry.			
	specified pref	ix length o these fiel	with subnet mask <i>i</i> of hosts that are all ds are left blank, a P commands.	owed to i	ssue SNMP			
	C	)uery						
Get Community	Enter the Get Community string. The default setting is public. Device that send requests to retrieve information using get commands must pass the correct Get Community string.							
Set Community	Enter the Set Community string. The default setting is private. Device that send requests to change settings using set commands must pas the correct Set Community string.							
Query Port	Displays the port nu	umber use	ed by the query ser	ver.				
	A	lgent						
SNMPv3 Agent Enabled	Switch the toggle to If enabled, specify o entry. SNMPv3 Agent Enabled							
	+Add				Max:			
	Username (USM)	Authentication	Authentication Password	Privacy	Privacy Password			
	Username (USM)	Authentication	Authentication Password	Privacy Disabled $\checkmark$	· · · · · · · · · · · · · · · · · · ·			
	SNMPv2c Agent Enabled				· · · · · · · · · · · · · · · · · · ·			
		SHA V Disabled			· · · · · · · · · · · · · · · · · · ·			
	SNMPv2c Agent Enabled	SHA V Disabled MD5 SHA USM mean e to be use elect one algorithm. ssword - encryption	● ns user-based secu ed for authentication of the hashing met Enter a password for n method as the pr	Disabled > urity mode on. thods to b for auther rivacy algo	Password e. e used with ntication.			

SNMPv1 Agent Enabled	Switch the toggle to enable/disable the SNMPv1 function.
	Тгар
Enabled	Switch the toggle to enable/disable the Trap function.
Trap Version	Select the trap version. • V1
	<ul><li>V2c</li><li>V3</li></ul>
Trap Community	Enter the Trap Community string. The default setting is public. Devices that send unsolicited messages to the SNMP console must pass the correct Trap Community string.
	The maximum length of the text is 23 characters.
Trap Port	Enter the port number used for the Trap server.
Notification Host IP Type	<ul><li>Select the type of the notification host.</li><li>Both</li><li>IPv4</li></ul>
	IPv6
Notification Host(IPv4)	+Add - Enter the IPv4 address of hosts that are allowed to be sent SNMP traps.
Notification Host(IPv6)	+Add - Enter the IPv6 address of hosts that are allowed to be sent SNMP traps.
Trap Events	Select the event(s) to apply the settings configured in this page.
Apply	Save the current settings and exit the page.

# III-1-2 Management

# III-1-2-1 Service Control

This page allows you to manage the general settings, management services, and TLS/SSL Encryption setup. After a user has been authenticated by means of a username and password, he or she can be granted Internet access, and optional firewall rules and WAN access policies can be applied.

	System M	Aaintenance / Mana	gement				
vice Menu	Service C	ontrol TR-069	XMPP				
Dashboard	General						
Configuration	Auto Log		1	ff	~		
	ALLO LOG	put	G	in in the second	~		
Security >	Login Val	idation Code	•	D			
, LAM ,							
VPN 5	Manage	ment Services					
Monitoring 3	Enforce +	ITTPS Access	C				
Utility >	LLDP			D			
Device Settings		Port 🕕	(default)	LAN Access	IPv4 WAN Access	IPv6 WAN Access	
	нттр	80	(80)				
System Upgrade	HTTPS	443	(443)				
Backup & Restore	SSH	22	(22)				
Account & Permission System Reboot	aan						
Registration & Services	Teinet	23	(23)				
	SNMP	161	(161)	•			
tual Controller	ETP	-	(211				
Wireless 2	Cancel	Apply					

ltem	Description
	General
Auto Logout	If "off" is selected, the function of auto-logout for the web user interface will be disabled. The web user interface will be open until you click the Logout icon manually.
	off ~
	off
	1 min
	3 min
	efault) W
	<sup>0)</sup> 10 min
	43)

	Management Services
Enforce HTTPS Access	Switch the toggle to enable/disable the feature of allowing system administrators to login Vigor router via HTTPS.
LLDP	Switch the toggle to enable/disable the LLDP service.
Port	Specify user-defined port numbers for the HTTP, HTTPS, SSH, Telnet and SNMP servers.
LAN Access	Select the checkbox to allow the system administrators to login from LAN interface. Later, configure the LAN Access Control below to determine who (the client) is able to access the LAN management services (HTTP, HTTPS, SSH, Telnet and SNMP).
IPv4/IPv6 WAN Access	Select the checkbox to allow the system administrators to login from IPv4/IPv6 WAN interface. Later, configure the WAN Access Control below to determine who (the client) is able to access the IPv4 WAN management services (HTTP, HTTPS, SSH, Telnet and SNMP).
	TLS Encryption

TLS 1.3/TLS 1.2	Switch the toggle to enable or disable the function.
	Access Control List
WAN Access Control	<ul> <li>In general, all the clients via WAN interface can access the IPv4 WAN management services (based on the HTTP, HTTPS, SSH, Telnet and SNMP checkboxes selected).</li> <li>WAN Access Control Mode – Select Disabled or Allow List.</li> <li>Disabled - The default is Disabled.</li> <li>Allow List – Click +Add to have a new entry. The maximum number you can add is up to 6.</li> <li>Only the chosen IP objects within the selected IP group object can access the services listed on this page via the WAN interface.</li> </ul>
LAN Access Control	<ul> <li>In general, all the clients via LAN interface can access the LAN management services (based on the HTTP, HTTPS, SSH, Telnet and SNMP checkboxes selected).</li> <li>LAN Access Control Mode - Select Disabled or Allow List.</li> <li>Disabled - The default is Disabled.</li> <li>Allow List - Click +Add to have a new entry. The maximum number you can add is up to 6.</li> <li>Only the chosen IP objects within the selected IP group object can access the services listed on this page via the LAN interface.</li> </ul>
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

## III-1-2-2 TR-069

Vigor device supports the TR-069 standard for remote management of customer-premises equipment (CPE) through an Auto Configuration Server, such as VigorACS.

Search Q	System Maintenance / Manager	ment	() Reset	CRefresh
	Service Control TR-069	KMPP		
Device Menu	ACS and CPE Settings			
<ul> <li>Dashboard</li> </ul>	Hoo and of E detailings			
🚔 Configuration 5	TR-069			
Security 5	ACS Server			
Д <sub>а</sub> іам ;	ALS Server			
O VPN >	ACS Server On	internet 🗠		
🔂 Monitoring		https://		
88 Utility ,	IP/Domain	Wizard		
💫 "System Malaterance .	Username 🔘			
Device Settings Management System Upgrade Biackup & Restore	Password ()	Note: Usemane support characters: a-zA-Z,0-9@.~%		
Account & Permission System Reboot Registration & Services	Test Connection			
Virtual Controller	Make sure to apply and	save settings first before running the test.		
}→ Wireless >	Cancel Apply			

Item	Description				
TR-069	Switch the toggle to enable or disable the function.				
	ACS Server				
ACS Server On	Choose the interface for connecting the router to the Auto Configuration Server.				
IP/Domain	Enter the IP/domain for connecting to the ACS.				
	Wizard - Click it to enter the IP address of VigorACS server, port number and the handler.				
Username/Password	Enter the credentials required to connect to the ACS server.				
	Test Connection				
Event Code	Use the drop down menu to specify an event to perform the test. Test With Inform - Click it to send a message based on the event code selection to test if such CPE is able to communicate with VigorACS server.				
	More settings				
CPE Client	This section specifies the settings of the CPE Client.				
	Protocol - Select HTTPS if the connection is encrypted; otherwise select HTTP.				
	Port - In the event of port conflicts, change the port number of the CPE.				
	Username / Password - Enter the username and password that the VigorACS will use to connect to the CPE.				
Periodic Inform Settings	Enable / Disable - Switch the toggle to enable or disable the function. The default setting is Enable, which means the CPE Client will periodically connect to the ACS Server to update its connection				

	parameters at intervals specified in the Interval Time field. Time Interval - Set interval time or schedule time for the router to send notification to CPE.
STUN Settings	<ul> <li>Mode - The default is Auto. If select Enabled, please enter the relational settings listed below:</li> <li>Server Address - Enter the IP address of the STUN server.</li> </ul>
	<ul> <li>Server STUN Port - Enter the port number (1-65535) of the STUN server.</li> </ul>
	<ul> <li>Minimum Keep Alive Period - If STUN is enabled, the CPE must send binding request to the server for the purpose of maintaining the binding in the Gateway. Please type a number as the minimum period. The default setting is "60 seconds".</li> </ul>
	<ul> <li>Maximum Keep Alive Period - If STUN is enabled, the CPE must send binding request to the server for the purpose of maintaining the binding in the Gateway. Please type a number as the maximum period. A value of "-1" indicates that no maximum period is specified.</li> </ul>
Apply	Save the current settings and exit the page.
Cancel	Discard current settings and return to the previous page.

After finishing this web page configuration, please click Apply to save the settings.

# III-1-3 System Upgrade

### III-1-3-1 Firmware

Before firmware upgrade, please download the newest firmware from the DrayTeks website or FTP site first. The DrayTek website is www.draytek.com (or local DrayTeks website) and the FTP site is ftp.draytek.com.

Open System Maintenance>> System Upgrade. The following web page will guide you to upgrade firmware by using an example. Note that this example is running over Windows OS (Operating System).

Search Q	System Maintenance / System Upgrade Filmwave Country Object Database					
Device Menu (?) Dashboard	Firmware					
<ul> <li>Pathboard</li> <li>Configuration</li> <li>Security</li> <li>JAM</li> <li>VPN</li> <li>Monitoring</li> <li>Utility</li> <li>System Mandatumes</li> <li>Device Settings</li> <li>Management</li> <li>System Upgrade</li> <li>Backup &amp; Restore</li> <li>Account &amp; Permission</li> </ul>	Current Firmware for splinad     53.1       Primware for splinad     Image: Uplinad       Note: .afw: .stw is askected when you want to update the firmware of Vigor device to a never version while retaining the existing configuration. Lett: rist is used to reset configuration, but retaining service status. [product registration, license keys, and certificates]					
System Rebool Registration & Services Virtual Controller )- Wireless						

Click 🗀 to locate the firmware from your host. Then click Upload and wait for a few seconds.

	File uploading
39% Complete	
File upload	is in progress It must NOT be interrupted!

When the upload is finished, please click the Restart button.

L Upload	×	to a
Congratulations		reg
File Uploaded		I
		l
Please restart to apply changes. Restart		

Wait for a while until the system finishes the rebooting.

2	× to
Rebooting	re
Web UI will be redirected in few seconds.	- 1
152 SECONDS	
Or Access Now →	

# III-1-3-2 Country Object Database

GeolP database provides information for Classless Inter-Domain Routing (CIDR) and location. Vigor router adopts the geographical distribution based on the GeolP database offered by MaxMind.

If required, update the GeoIP database.

Search	q	System Maintenance / System	n Upgrade	CRetresh
Device Menu (?) Dashboard	8	Firmware Country Object I Country Object Database	Database	
<ul><li>➡ Configuration</li><li>⊘ Security</li></ul>	3 3	By clicking Upgrade N	ow or enabling Automatic Upgrades, you agree to the terms and policy of Maxmind License.	
Д <sub>∎</sub> IAM	2	Last Checked Time	2021-10-30 09:01	
O VPN	ź	Current Version	20241119	
Monitoring	5	Latest Version		
88 utility - System Maintenance Device Settings	3	Last Upgrade Time	2021-10-25-02-47-17 Failed  Upgrade Now	
Management Bynten Hogonde Backup & Restore Account & Permission System Reboot Registration & Services		Upgrade Schedule	• Off Upgrade later Repeat Note: To ensure data integrity and prevent potential conflicts, all relevant functions are suspended during database updates.	
Virtual Controller				
≻ Wireless	3			

ltem	Description
Upgrade Now	Click to upgrade the GeoIP database.
Off/Upgrade later/Repeat	Off – There is no need to upgrade the database, even when a ne version is available. Upgrade Later – Allow to specify a time to upgrade the database
	<ul> <li>Start Date – Use the drop-down calendar to specify correct</li> <li>2021-04-26</li> </ul>
	2021 APR - < >
	S M T W T F S
	APR 1 2 3
	4 5 6 7 8 9 10
	11 12 13 14 15 16 17 18 19 20 21 22 23 24
	25 27 28 29 30
	<ul> <li>Start Time - Use the drop-down list to select the time.</li> <li>Repeat – The system will check for any new version updates on first day of every month.</li> <li>1<sup>st</sup> of each month at - Use the drop-down list to select the total select total select the total select total sel</li></ul>

# III-1-4 Backup & Restore

This function can be used to backup/restore the Vigor router settings.

Search	۹	System Maintenance / Backup & R	lestore
Device Menu		Configuration Backup & Restore	
Dashboard		Configuration Backup	
Configuration	1	Password Protection	
Security	5	New Password ③	
a iam	×.	Confirm New Password ①	
D VPN	x.		<ul> <li>At least 8 characters</li> </ul>
Monitoring	. 8.		✓ Uppercase characters
名 Utility	7		
			<ul> <li>Institutes of obscharksheet etc. woment with under an and an an and an an and an and an an and an and an an</li></ul>
Device Settings			Back up
Management			
Firmware		Restore from a Configuration Ba	ckup
		Restore from Backup File	T Prestore
Account & Permission System Reboot	1	Restore except the login password	
Registration & Service	s	File has Password Protection	
Virtual Controller		Restore Password ()	(D)
)- Wireless	-		

ltem	Description
	Configuration Backup
Password Protection	For the sake of security, the configuration file for the access point can be encrypted. Switch the toggle to enable or disable the function.
New Password/ Confirm New Password	Enter several characters as the password for encrypting the configuration file.
Back up	Click it to backup the configuration file.
	Restore from a Configuration Backup
Restore from Backup File	<ul><li>Click to locate the file for restoring.</li><li>Restore - Click to execute the restoration.</li></ul>
Restore except the login password	Switch the toggle to enable or disable the function.
File has Password Protection	Switch the toggle to enable or disable the function. If enabled, a password will be required for restoring the configuration.
Restore Password	Enter a password for configuration restoration.

# III-1-5 Accounts & Permission

This page allows you to modify your current administration account and password. It allows the network administrator to manage Internet access at the user level.



# III-1-5-1 Local Admin Account

This page allows you to create up to five local admin account profiles.

Search	۹		itenance / Account &						TReset C Refresh
Device Menu	8	Local Admin		ermission					
<ul> <li>Dashboard</li> </ul>		Local Admin	n Account						
🛎 Configuration	- 20	+ Add							Max 5
Security		Account	Role	Status	Allow Login from WAN	Last Login at	Last Login IP	Created Time	Option
A IAM	>	admin	Administrator	Active	Enable	2021-10-30 05:47:38	192.168.1.100	2021-10-24 09:08:34	Ø Edit:
D VPN	3								
🖸 Monitoring	3								
82 Utility	5								
Device Settings									
Management									
System Upgrade Backup & Restore									
Account & Permanium									
System Reboot									
Registration & Services									
Virtual Controller									
≻ Wireless	- X.								

ltem	Description
+Add	Create a new account profile.
Edit	Modify the selected account profile.

Delete

Remove the selected account profile.

To modify an existing profile, select the one and click the +Edit link to open the setting page.

To add a new profile, click +Add.

		×
Account ()	Carrie	
New Password ()	······ •	
Confirm New Password 🕕	······ •	
	✓ At least 8 characters	
	✓ Uppercase characters ✓ Lowercase characters	
	✓ Lowercase characters ✓ Numbers or Special characters ~\@#\$%*&*()_=/?[](<>\	
Role	Users V	
Status	Active V	
Allow Login from WAN		
Enable Email		
Email	carrie_ni@draytek.com	
Enable SMS		
MFA		
Enable MFA		
Cancel Apply		

ltem	Description
	Local Admin Account
Account	Display the name of the account.
New Password	Enter a new password in this field.
Confirm New Password	Enter the new password again.
Role	<ul> <li>Specify the role of the account.</li> <li>Administrator</li> <li>Guest</li> <li>Users (created on the Role &amp; Permission page)</li> </ul>
Status	Active - Enable the selected account profile. Inactive - Disable the selected account profile.
Allow Login from WAN	It is available if "Router Management" is selected as the usage. If enabled, the user can login from WAN by using this user account.
Enable Email	Switch the toggle to enable or disable the email setting. Email – Enter the email address for receiving the MFA PIN code.
Enable SMS	Switch the toggle to enable or disable the SMS setting. SMS - Enter the destination SMS number for receiving the MFA PIN code.
	MFA
Enable MFA	Switch the toggle to enable/disable the function of Multi-Factor

#### Authentication (MFA).

Allowed MFA Method - Select to require TOTP, Email, SMS or mOTP authentication when logging in to Vigor router.

Enable MFA	
Allowed MFA Method	select your options
Account Info	Select All
Created Time	Search
	🗌 ТОТР
	Email
	SMS
	motp

TOTP – For the Time-based One-time Password (TOTP) mechanism, please make sure the time zone of your router is correct. Then, install Google Authenticator APP on your cell phone. Open the APP to scan the QR code on this page. A one-time password will be shown on your phone.

TOTP-			
Secret: JELUMZRXMJ	CUE4JRNRJEKYTONB2DERKINIJKDARBYK44W	AADP656DQUDFKZAX527P	
回命			
10 M			
DR Code:			
回版			
validation Code:			
			-
		time 2	ener mandy

In the filed of Validation Code, enter the one-time password and click Verify.

Now, the configuration is finished. You will be asked to enter the 2FA code on the after passing the username and password authentication.

SMS/Email – The password will be transferred via the SMS and/or Mail profiles selected from User Information above.

mOTP - Mobile one-Time Password (mOTP) allows the use of mOTP passwords. Enter the PIN Code and Secret settings for getting one-time passwords.

	Account Info
Created Time	Display the created time of the user account.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

Click Apply to save the settings.

# III-1-5-2 Role & Permission

This page allows the creation of up to five roles which can be applied to the local admin account. The default roles are Administrator, Guest and Users.

SearchQ	System Maintenance / Accourt	t & Permission				
	Local Admin Account Role	& Permission				
Device Menu	Role & Permission					
Dashboard						
Section Section	+ Add				Max: 5	
Security >		Terreta back				
Данам з	Role	Administrator	Guest	Users		
D VPN 3	Left Menu Path					
Monitoring >	► Device Menu	Deny	Deny	Deny	v	
	► Dashboard	Read-write	Read-only	Read-only	•	
	<ul> <li>Configuration</li> </ul>	Read-write	Read-only-	Read-only	*	
R <sub>a</sub> - System Meansances	► Security	Read-write	Read-only	Read-only		
Device Settings Management	<ul> <li>Sectuals</li> </ul>	Keep-write.	(read-only	read-only		
System Upgrade	► IAM	Read-write	Read-only	Read-only	~	
Backup & Restore	▶ VPN	Read-write	Read-only-	Read-only	•	
Account & Permission	Monitoring	Read-write	Read-only	Read-only	~	
System Reboot	+ Utilay	Read-write-	Read-only	Read-only		
Registration & Services						
Virtual Controller	<ul> <li>System Mainlenance</li> </ul>	Read-write-	Read-only	Read-only		
Wireless	<ul> <li>Virtual Controller</li> </ul>	Deny	Deny	Deny	•	
	a. Disalaria	Paid India	Duris inte	David and		

To create a new role profile, click +Add. A new role will be added on to the page.

System Maintenance /	Account & Permissi	on		
Local Admin Account	Role & Permissio	n		
Role & Permission				
+ Add				Max: 5
Role	Administrator	Guest	Users	Role_1
Left Menu Path				间 Delete
Device Menu	Deny	Deny	Deny 🗸	Deny 🗸
Dashboard	Read-write	Read-only	Read-only 🗸	Read-only 🗸

ltem	Description
+Add	Create a new role profile.
Role_1	The field of profile name. New added profile will be named as Role_#. To modify the name, simply click the name and enter a new string (e.g., Role_MKT).

	System Maintenance / Account & Permission							
	Local Admin Account Role & Permission							
	Role & Permission							
	+ Add							
	Role Administrator Guest Users							
	Left Menu Path							
	▶ Device Menu Deny Deny V Deny V							
	▶ Dashboard Read-write Read-only <b>Read-only </b>							
	router. The permissions for user-defined roles are based on read-only or read-write access granted to each menu path (such as dashboard, configuration, device menu, etc.) individually							
Delete	Remove the selected user-defined role profile.							
Read-only V	Specify the permission for each menu item for the user-defined role Deny - The permission for the menu item on the left side is not allowed for the user-defined role profile.							
 Deny	Read-only - The permission for the menu item on the left side allowed for the user-defined role profile to be read-only.							
Read-only Read-write	Read-write - The permission for the menu item on the left side allowed for the user-defined role profile to be both read-only and written.							
Apply	Save the current settings and exit the page.							

After finished the settings, click Apply. The new role can be seen and selected on System Maintenance>>Account & Permission>>Local Admin Account.

		×
Arenaud ())	Carrie	
New Poissond (D)	0	
Confirm New Passweril (0)		
	+ At least 6 characters	
	Uppercase characters	
	i Lowerclase characteria	
	. Number of Special consisters $-([m^2)^{n}h^{n}h^{n}(p))_{-}/2_{0}^{n}([+\infty)$	
10000	Norw	
Status -	None	
allow Lippo fermi wake	Administrator	
Frishio Email	Guest	
Enable SMS	Uters	
MFA	Rele, MAT	
LOUDIN MFA	0	
Account Info		
and the second sec		
Cancel Apply		

# III-1-6 System Reboot

The Web user interface may be used to restart your router. Open System Maintenance >> System Reboot to get the following page.

searchQ	System Maintenance / System Reb	soot
	System Reboot	
Device Menu		
<ul><li>(&gt;) Dashboard</li></ul>	Reboot With	Current Configuration Reset to Factory Default
Configuration		Rebot
Security	s	Note: Reset Configuration: Reset configurations, retaining service status (product registration, license keys, and certificates), is recommended for non-sale/return of Vigor devices.
£ым	».	Reset to Factory Default: Revert all settings to factory default, including service status (product registration, license keys, and certificates), is recommended
O VPN	»	when selling/returning Vigor devices.
🔛 Monitoring	Auto Reboot Time Schedule	
88 Utility	Enable Auto Reboot Schedule	
	Schedule Profile	spect your markets
Device Settings		Note: 1. End Time in the schedule reboot will be ignored.
Management		2. Time setting recommend to use Automatically with Time Server.
Firmware		
Backup & Restore		
Account & Permission		
Registration & Services		
Virtual Controller		
>- Wireless	Cancel Apply	

ltem	Description
Reboot With	Select one of the following options, and press the Reboot button to reboot the router.
	Current Configuration – Select this option to reboot the router using the current configuration.
	Reset Configuration – Select this option to reset the router while retaining service status (product registration, license keys, and certificates).
	Reset to Factory Default – Select this option to reset the router's configuration to the factory defaults before rebooting.
Auto Reboot Time Schedule	Enable Auto Reboot Schedule – Switch the toggle to enable or disable the function. If enabled, Vigor router will reboot automatically based on the schedule profile.
	Schedule Profile – Use the drop-down list to select the profile(s).

This page is left blank.

# Chapter IV Others



Second 1

# **IV-1** Monitoring

# IV-1-1 Clients List

Clients List displays the configuration status of the wireless clients that connect to the Vigor router via Wi-Fi connection.

Besides, this page offers a quick method to add the wireless client to any existing MAC Filtering Profile.

	Monitoring / Clients	List													CR	efrest	
St IAM	Clients List																
(D) VPN >	Add MAC Filterin	ng from Clin	ents											Search_		\$	\$
Approximation     Control Lab     Log Center     Wireless Information     WAN     Asp Table     Acute Table     DicF Table     Invis TSPC Status     Invis Mighbor Table     LLDP Neighbors     information     Dis Cache Table     Remite DSI, Status     PPPOE Pass-Through     Session Table     Session Table     Session Table	Name MAC	Up Time	Link Speed	RSSI	SSID	Usaga Up	Usage Down	P	СН І	land (	BW 1	PSM	Physical Mode	Auth Mode	Encrypt Type		

To add the wireless client(s) onto an existing MAC Filtering Profile, click Add MAC Filtering from Clients to open the following page.

Add MAC Filtering from Clie	ents		×
Add to MAC Filtering Profile Update Client List	Please Select V		
Clients			
Add to MAC Filtering	Name	MAC	IP
	No Records Found!		
			Iose Apply

ltem	Description
Add to MAC Filtering Profile	Select one of the MAC filtering profiles (Security>>MAC Filtering Profile) as the filtering basis.

Update Client List	Update – Click connection.	to renew the	e client list base	d on the act	ual wireless
	Update Client List	Update			
	Clients				
	Add to MAC Filterin	9	Name	MAC	
				72:3C:59:06:2B:78	
				B6:8F:21:92:DD:8A	
					Close Apply
Clients	Displays the SS clients.	SID name, M	AC address, and	IP address	of the wireless
	Add to MAC Fi MAC Filtering F Name – Enter	Profile set ab		wireless clie	ent join the
Close	Discard curren	t settings an	d return to the J	previous pag	ge.
Apply	To check if the	new added	nd exit the page wireless clients IAC Filtering Pro	on the MAC	Filtering profile
	Security / MAC Filtering Profile				
	niamie Poscy Device List	test2 Disabled Advertist d	nck/or	dawn.	Mac (12)
	1.0	Name	MAC Address 🕓		Option
		Andy	72:30:59:06:28:	78	Deid -
		Carrie	B6:8F-21:92:DD:	84	

Click Apply to save the settings.

# IV-1-2 Log Center

# IV-1-2-1 Log Center

Log related to setting configuration and/or actions performed by this device can be stored on web Syslog. Click Refresh to reload this page with the most up-to-date information.

je Coninguration ) ⊙ Security )	Monitoring / Log Center				C Refresh
Liam ,	Log Center DDNS Log				
D VPN	Log Center				
	Enabled Web Syslog				
Clients List	Loop Logging Option	Overvide Üklest Lögs	Scop when Full		
Wireless Information	Z Export as TXT Z Exp	ort as ISON E Clear All		Filter: All Type - Search	Max: 1000
WAN ARP Table	Time	Туре	Content		
Route Table	2021-10-24 09:26:51	User Access	query[A] google.com from 192.168.100.1		
DHCP Table	2021-10-24 09:26:51	User Access	query[A] google.com from 192.168.1.1		
IPv6 TSPC Status	and the state of				
IPv6 Neighbor Table	2021-10-24 09:26:34	Mesh	[dmn] Send a test packet (184)		
LLDP Neighbors information					
DNS Cache Table					
Remote DSL Status					
PPPoE Pass-Through					
Session Table					
utility					
System Maintenance					

Available settings are explained as follows:

ltem	Description
Enabled Web Syslog	Switch the toggle to enable or disable the function. If enabled, Loop Logging Option will be shown as follows.
Loop Logging Option	Override Oldest Logs - Vigor router system will backup all existed information on the flash onto the host and clean up the information from the flash. Later, it will start a new record.
	Stop when Full - Vigor router system will stop to record the user information onto the flash.
Export	Click it to export the log records as a file (.json).
Clear All	Click it to clear all log records on this page.
Filter	Select the type of log to display on this page.
Cancel	Discard current settings and return to the previous page.
Apply	Save the current settings and exit the page.

Click Apply to save the settings.

# IV-1-2-2 DDNS Log

This page displays the log (time, profile name and content) related to Dynamic DNS actions performed by this device.

≝ Configuration ⊘ Security	Monitoring / Log Center			CRefresh
	Log Center DDNS Log			
	DDNS Log			
			Search.	Max: 20
Clients List	Time	Profile Name	Content	
	1 C C C C C C C C C C C C C C C C C C C			
Wireless information				
WAN				
ARP Table				
Route Table				
DHCP Table				
IPv6 TSPC Status				
IPv6 Neighbor Table				
LLDP Neighbors information				
DNS Cache Table				
Remote DSL Status				
PPPoE Pass-Through				
Session Table				
Utility	5			
System Maintenance	5.0			

Click Refresh to reload this page with the most up-to-date information.

# IV-1-3 Wireless Information

For viewing the SSIDs used by 2.4GHz/5GHz or real time throughput for 2.4GHz/5GHz, open Monitoring>>Wireless Information for detailed.

## IV-1-3-1 Wireless Information

This page shows general information (e.g., 2.4GHz/5GHz enabled or not, MAC address, SSID name and etc.) for wireless connection.

Security 5	Monitoring / Wireles	s information	CRefresh
S. IAM	Wireless Information	Recent Activities Real Time Throughput 2.4G Real Time Throughput 5G	
	Wireless Informati	on	
Clients List	2.4GHz		
Log Center Wireless Information	Radio	Enable	
WAN	MAC	14:49:BC:36:61:00	
ARP Table Route Table	SSID(1)	DrayTek-366100	
DHCP Table IPv6 TSPC Status	5GHz		
IPv6 Neighbor Table	Radio	Enable	
LLDP Neighbors Information	MAC	16:49:BC:56:61:00	
DNS Cache Table Remote DSL Status	SSID(1)	DrayTek-366100	
PPPoE Pass-Through Session Table		See More +-	
88 utility			
🐁 System Maintenance			

Click Refresh to reload this page with the most up-to-date information.

Click See More+ to view more information.

## IV-1-3-2 Recent Activities

The activities regarding to wireless network can be shown with line graphs.

	Monitoring / Wireless Information				CRefresh
S IAM	Wireless Information Recent Ac	Inities Real Time Throughput 2.4G Re	al Time Throughput 5G		
O VPN	Recent Activities				
Clients List	Last 24 hours				
Log Center Wireleys information	2.4 Ghz				Trouggest
WAN	10				1.0
ARP Table Route Table	(1200) (1200) COLORIS				0.0 gg
DHCP Table IPv6 TSPC Status	0 PM	12 AM	S AM	12-176	
IPv6 Neighbor Table	5 Ghz				Throughout Genera
information DNS Cache Table	10.				10
Remote DSL Status PPPoE Pass-Through	Troughut (1000) 10 10 10				0.5 0
Session Table	0. 6 PM	12. AM	11 AM	12. 170	· · · · · · 0
System Maintenance	Usage per SSID				~
	220 A. 24				

Click Refresh to reload this page with the most up-to-date information.

# IV-1-3-3 Real Time Throughput 2.4G

The real-time throughput (2.4G) can be shown with line graphs.

⇒ comguration >	Monitoring / Wireless Information	C Refresh
Security >	Wireless Information Recent Activities Innal Time Throughput 2.4G Real Time Throughput 5G	
S IAM →		
O VPN	Real Time Throughput 2.4G	
EE Montonio	10	
Clients List		
Log Center	96	
Wineless information (	0.8	
WAN	07-	
ARP Table		
Route Table	0.5	
DHCP Table	10.05.	
IPv6 TSPC Status	Trou	
IPv6 Neighbor Table	P 04	
LLDP Neighbors information	0.3	
DNS Cache Table	0.2	
Remote DSL Status	0.1	
PPPoE Pass-Through	1	
Session Table	u = 1 Kbps	
88 Utility		
🍓 System Maintenance 🕠		

Click Refresh to reload this page with the most up-to-date information.

# IV-1-3-4 Real Time Throughput 5G

The real-time throughput (5G) can be shown with line graphs.

	Monitoring / Wireless Information	CRefresh
Lam 3	Wireless Information Recent Activities Real Time Throughput 2.4G Real Time Throughput 5G	
D VPN	Real Time Throughput 5G	
Clients List	-10	
Log Center Windows Universities	09	
WAN	ů7	
ARP Table Route Table	0.5	
DHCP Table	in the second se	
IPv6 Neighbor Table		
LLDP Neighbors information DNS Cache Table	03	
Remote DSL Status	.03	
PPPoE Pass-Through Session Table	φ	-
R utility >		
🖏 System Maintenance 💡		

Click Refresh to reload this page with the most up-to-date information.

### IV-1-4 WAN

This page can display the WAN connection status, including the connection interface, MAC address, connection type, connection IP address, connection gateway, primary DNS and secondary DNS server addresses, online Time, and so on.

### IV-1-4-1 WAN Utilization

This page displays the utilization, including upload, download, and percentage of data transmission for each WAN interface.

Security 5	Monitoring / WAN				CRefrest
G IAM .	WAN UNIVASION WAN SE	atus			
D VPN	WAN Utilization				
Clients List	Name	Upload	Download	Utilization	
Log Center	[WAN] WAN1	0.0 8	0.0 B		0%
Wireless Information	[WAN] WAN2	0.0 8	0.0 B		0%
ARP Table	[WAN] WAN3	0.0 0	0.0 0		0%
Route Table	[WAN] WAN4	0.0 8	0.0 B		0%
DHCP Table					
IPv6 TSPC Status	[WAN] WANS	0.0 B	0.0 B		09
IPv6 Neighbor Table	[WAN] WAN6	0.0 B	0.0 B		09
LLDP Neighbors information	and a set of the set o				
DNS Cache Table					
Remote DSL Status					
PPPoE Pass-Through					
Session Table					
3 utility					
System Maintenance					

### IV-1-4-2 WAN Status

### IPv4

Select the IPv4 tab to display the IPv4 WAN connection status.

≓ coniguration )	Monitoring / WAN							CRefre
Security ,	WAN Utilization	WAN Status						
Бµам ş		TIPST JADRIGS						
D VPN	WAN Status							
2 Montoning	IPV4 IPv6							
Clients List								
Log Center	Name	MAC Address	Connection Type	IP Address	Gateway	Primary DNS	Secondary DNS	Uptime
Wireless Information	[WAN] WANS	14:49:BC:36:61:01	Static IP	172.16,3.132		172.16.3.8	172.16.3.1	00:00:00
WAN								
ARP Table								
Route Table								
DHCP Table								
IPv6 TSPC Status								
IPv6 Neighbor Table								
LLDP Neighbors information								
DNS Cache Table								
Remote DSL Status								
PPPoE Pass Through								
Session Table								
Utility )								
System Maintenance								

Click Refresh to reload this page with the most up-to-date information.

IPv6

Select the IPv6 tab to get the WAN connection information (e.g., name, IPv6 address, connection type, gateway and the uptime).

🛫 contiguration 👘 🧯				
Security s	Monitoring / WAN			CRefres
Sµ IAM →	WAN Utilization WAN Status			
D VPN	WAN Status			
😨 Menthening	IPV4 IPV5			
Clients List				
Log Center	Name IPv6 Address	Connection Type	Gateway	Uptime
Wireless Information				
VIAN				
ARP Table				
Route Table				
DHCP Table				
IPv6 TSPC Status				
IPv6 Neighbor Table				
LLDP Neighbors Information				
DNS Cache Table				
Remote DSL Status				
PPPoE Pass-Through				
Session Table				
Utility				
System Maintenance				

Click Refresh to reload this page with the most up-to-date information.

## IV-1-5 ARP Table

The table shows the contents of the ARP (Address Resolution Protocol) cache held in the router and shows the mappings between Ethernet hardware addresses (MAC Addresses) and IP addresses.

### IV-1-5-1 LAN

Click Refresh to reload this page with the most up-to-date information of LAN Ethernet ARP table.

Security	Monitoring / ARP	Table				CRefres
S. IAM	LAN WAN					
D VPN	LAN Ethernet A	RP Table				
	1 Clear All				Sna	ech_
Clients List	Interface	IP Address	MAC Address	Host Name	Port	Option
Log Center Wireless Information WAN ARP Yothe	LANT	192.168.1.100	OB-BF:B8:D5:DD:A9		Port 1	😭 Delete
Route Table DHCP Table						
IPv6 TSPC Status						
IPv6 Neighbor Table						
LLDP Neighbors information						
DNS Cache Table						
Remote DSL Status						
PPPoE Pass-Through						
Session Table						
tutility						
System Maintenance						

### IV-1-5-2 WAN

Click Refresh to reload this page with the most up-to-date information of WAN Ethernet ARP table.

킂 Conreguration	Monitoring / ARP Table				CRefre
Security					
am iam	LAN WAN				
D VPN	WAN Ethernet ARP Ta	ble			
	面 Clear All				Search
Clients List	Interface	IP Address	MAC Address	Comment	Option
Log Center					
Wireless Information					
WAN					
Route Table					
DHCP Table					
IPv6 TSPC Status					
IPv6 Neighbor Table					
LLDP Neighbors Information					
DNS Cache Table					
Remote DSL Status					
PPPoE Pass-Through					
Session Table					
Utility					
System Maintenance					
System manazation					

# IV-1-6 Route Table

# IV-1-6-1 IPv4

Click Refresh to reload this page with the most up-to-date IPv4 routing information.

	Monitoring / Route Ta	ble			Chefresh
Security					
A IAM	IPv4_IPv6				
O VPN	IPv4 Route Table				
					Saarch 2
Clients List	Interface	Destination	Mask	Gateway	Flags
Log Center Wireless Information	(LAN) LAN1	192.168.1.0	255.255.255.0	Directly Connected	Connected
WAN	(LAN) LAN2	192.168.100.0	255.255.255.0	Directly Connected	Connected
ARP Table					
DHCP Table					
IPv6 TSPC Status					
IPv6 TSPC Status IPv6 Neighbor Table					
IPv6 Neighbor Table					
IPv6 Neighbor Table LLDP Neighbors information					
IPv6 Neighbor Table LLDP Neighbors Information DNS Cache Table					
IPv6 Neighbor Table LLDP Neighbors Information DNS Cache Table Remote DSL Status					
IPV6 Neighbor Table LLDP Neighbors information DNS Cache Table Remote DSL Stafus PPPOE Pass-Through					
#### IV-1-6-2 IPv6

Click Refresh to reload this page with the most up-to-date IPv6 routing information.

Security	2				
С ілм	IPv4. IPv6				
D VPN	IPv6 Route Table				
	Hide Detail				Search
Clients List	Interface	Destination	Next Hop	Flag	Metric
Log Center	[LAN] LAN1	fe80::/64	Directly Connected	U	256
Wireless Information WAN	(LAN) LANZ	fe80::/64	Directly Connected	U	256
ARP Table	[LAN] LAN1	fe80::/64	Directly Connected	u	256
Route fulle DHCP Table	[LAN] LAN2	fe80::/64	Directly Connected	U.	250
IPv6 TSPC Status	(LAN) LAN1	fe80::/128	Directly Connected	U. n	0
IPv6 Neighbor Table					
LLDP Neighbors information	[LAN] LAN2	fe80::/128	Directly Connected	U. n	0
DNS Cache Table	(LAN) LANS	fe80::1649:bcff:fe36:6100/128	Directly Connected	U. n	0
Remote DSL Status	[LAN] LAN2	fe80::1649:bcff:fe36:6100/128	Directly Connected	U. n	0
PPPoE Pass-Through Session Table	[LAN] LANI	Hoo::/8	Directly Connected	u	256
8 Utility	ELAN] LANZ	ff00::/8	Directly Connected	u	256
System Maintenance					

## IV-1-7 DHCP Table

This page provides information on IP address assignments. This information is helpful in diagnosing network problems, such as IP address conflicts, etc.

Click Refresh to reload this page with the most up-to-date information.

#### IV-1-7-1 IPv4 DHCP Subnet

This page shows the DHCP server status, IP range, IP pool, Used IP, and percentage of utilization for each LAN interface.

Security	Monitoring / DH						CRetres
IAM		IPv4 DHCP Lease IP	v6 Assignment				
5 VPN	IPv4 DHCP Sub	bnet					
Clients List	Name	DHCP Server Status	IP Range	IP Pool	Used IP	Utilization	
Log Center	[LAN] LAN1	Enabled	192, 168, 1, 10 + 192, 168, 1, 109	100	a		09
Wireless Information WAN	[LAN] LAN2	Enabled	192.168.100.10 - 192.168.100.109	100	0		09
ARP Table							
Route Table							
IPv6 TSPC Status							
IPv6 Neighbor Table							
LLDP Neighbors information							
DNS Cache Table							
DNS Cache Table Remote DSL Status							
Remote DSL Status							
Remote DSL Status PPPoE Pass-Through							

#### IV-1-7-2 IPv4 DHCP Lease

This page shows the remaining time of the IPv4 DHCP lease of the device.

	Monitoring / DHC	P Table					C Refresh
	IPv4 DHCP Subne	t IPWI DHCP Lease IP	6 Assignment				
IAM :							
D VPN	IPv4 DHCP Leas	e					
	意 Clear All						Search
Clients List	Subnet	IP Address	MAC Address	Host Name	Туре	Leased Time	Option
Log Center Wireless information WAN ARP Table Route Table Chice Table IPA6 Table IPA6 Table IPA6 Neighbor Table LLDP Neighbor Table	(LAN) LANS	192.168.1.100	088FB8DS:DD:A9		Static	Fixed IP	및 Delete
information DNS Cache Table Remote DSL Status PPPoE Pass-Through Session Table							
<ul> <li>8 Utility</li> <li>System Maintenance</li> </ul>							

#### IV-1-7-3 IPv6 Assignment

This page shows the remaining time of the IPv6 DHCP lease of the device.

🛫 Connguration :	Monitoring / DHCP T	able					CRefres
Security	Ind Duice Submat	IPv4 DHCP Lease IPv6 As	(Innersen)				
S. IAM	×	IPW4 DRICP Lease IPY6 AS	South Design				
D VPN	IPv6 Assignment						
						Search_	
Clients List	Interface	IPv6 Address	Link-layer address	IAID	DUID	Leased Time	
Log Center							
Wireless Information							
WAN							
ARP Table							
Route Table							
IPv6 TSPC Status							
IPv6 Neighbor Table							
LLDP Neighbors Information							
DNS Cache Table							
Remote DSL Status							
PPPoE Pass-Through							
Session Table							
3 Utility							
System Maintenance	6						

#### IV-1-8 IPv6 TSPC Status

IPv6 TSPC (Tunnel Setup Protocol Client) status page could help you diagnose issues with IPv6 connections that utilize TSP.

If TSPC is configured properly, the router will display the following when the router has connected to the tunnel broker successfully.

	-	Monitorir	ng / IPv6 TSP	PC Status					CRetres
Security	5								
ым	×	IPv6 TSP	C Status						
D VPN	>								
		Name	Status	Tunnel Broker	Local IPv6 Address	Remote IPv6 Address	Router DNS Name	TSPC Prefix	TSPC Prefix Length
Clients List						and the second second			
Log Center									
Wireless Information									
WAN									
ARP Table									
Route Table									
DHCP Table									
IPv6 Neighbor Table									
LLDP Neighbors Information									
DNS Cache Table									
Remote DSL Status									
PPPoE Pass-Through									
Session Table									
Utility									
System Maintenance									

Click Refresh to reload this page with the most up-to-date information.

# IV-1-9 IPv6 Neighbor Table

This page displays the mapping between Ethernet hardware addresses (MAC addresses) and the IPv6 addresses. This information is helpful in diagnosing network problems, such as IP address conflicts.

	IPv6 Neighbor Table			
IAM	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
VPN	×			Search
	IPv6 Address	MAC Address	Interface	Status
Clients List	ff02::1	33:33:00:00:00:01	[LAN] LAN1	NOARP
Log Center Wireless Information	ff02::fb	33:33:00:00:00:fb	[LAN] LAN1	NOARP
WAN	ff02::1:ff57:d30a	33:33:ff:57:d3:0e	(LAN) LANT	NOARP
ARP Table Route Table	fe80::ea9b:6aab:9157:d30a	08:bf:b8:d5:dd:a9	[LAN] LANT	STALE
DHCP Table	fe80::1649:bcff;fe36:6100	14:49:bc:36:61:00	(LAN) LAN1	STALE
IPv6 TSPC Status IPv6 Accimican Table	ff02::1	33:33:00:00:00:01	(LÁN) LANZ	NOARP
LLDP Neighbors Information	#02::16	33:33:00:00:00:16	[LAN] LAN2	NOARP
DNS Cache Table	ff02::fb	33:33:00:00:00:fb	(LAN) LAN2	NOARP
Remote DSL Status PPPoE Pass-Through	fe90::1649:bcff:fe36:6100	14:49:bc:36:61:00	[LAN] LAN2	STALE
Session Table	ff02::1:ff36:6100	33:33:ff:36:61:00	[LAN] LAN2	NOARP
Utility	6			
System Maintenance				

# IV-1-10 LLDP Neighbors Information

This page allows the system administrator to understand the topology of network devices and the relationships between devices. Usually, information includes:

- System name
- System Description
- IPv4/IPv6 address (optional)
- Port ID
- Port Description
- Time
- Time to Live

	Monitori	ing / LLDP Neighb	ors informa	tion							CRetres
Security >											
L IAM >	LLDP N	eighbors inform	ation								
D VPN										Search-	
	Local Port	Chassis ID	System Name	System Description	Management Address(IPv4)	Management Address(IPv6)	System Capabilities	Port ID	Port Description	Time	Time to Live(sec)
Clients List		local MK-								0 day.	
Log Center	P1	CARRIE-A1000						08:bf:b8:d5:dd:a9		01:51:43	3601
Wireless Information											
WAN											
ARP Table											
Route Table											
DHCP Table											
IPv6 TSPC Status											
IPv6 Neighbor Table											
DNS Cache Table											
Remote DSL Status											
PPPoE Pass-Through											
Session Table											
utility											

# IV-1-11 DNS Cache Table

The router can function as a DNS server which allows LAN clients to look up DNS information by sending DNS requests to the router. The DNS information is temporarily cached on the router and can be viewed on this page.

#### IV-1-11-1 IPv4

Click Refresh to reload the most up-to-date information of the IPv4 DNS cache data.

😅 Configuration	Monitoring / DNS Cache Table			CRefres
Security	,			C. Martin
£ IAM	> IPv4 IPv6			
D VPN	IPv4 DNS Cache Table			
	由 Clear All			Search_
Clients List	Domain Name	IP Address	TTL (Seconds)	
Log Center	A			
Wireless information				
WAN				
ARP Table				
Route Table				
DHCP Table				
IPv6 TSPC Status				
IPv6 Neighbor Table				
LLDP Neighbors Information				
Remote DSL Status				
PPPoE Pass-Through				
Session Table				
8 Utility	x			
5ystem Maintenance	5			

#### IV-1-11-2 IPv6

Click Refresh to reload the most up-to-date information of the IPv6 DNS cache data.

Security	Monitoring / DNS Cache Table			CRefn
	IPv4. IPv6.			
	IPv6 DNS Cache Table			
	1 Clear All			Search
Clierits List	Domain Name	IP Address	TTL (Seconds)	
Log Center				
Wireless Information				
WAN				
ARP Table				
Route Table				
DHCP Table				
IPv6 TSPC Status				
IPv6 Neighbor Table				
LLDP Neighbors information				
Remote DSL Status				
PPPoE Pass-Through				
Session Table				
Utility	6 - C			
System Maintenance	-			

# IV-1-12 Remote DSL Status

To receive the remote DSL status from the DrayTek DSL modem on the WAN port and display the status on the Dashboard, switch the toggle to enable the function of showing the remote DSL status.

The default is disabled.



Click Apply to save the settings.

# IV-1-13 PPPoE Pass-Through

The router offers PPPoE dial-up connection. Besides, you also can establish the PPPoE connection directly from local clients to your ISP via the Vigor router. When PPPoA protocol is selected, the PPPoE package transmitted by PC will be transformed into PPPoA package and sent to WAN server. Thus, the PC can access Internet through such direction.

This page displays the results of performing PPPoE Pass-Through.

Click Refresh to reload this page with the most up-to-date information.

Security	Monitoring / PPPoE Pass-Thro	ugh			CRetrest
	PPPoE Pass-Through Client	5			
A INM					
O VPN	y				Marc 2
	Client MAC Address	Client Interface	Uplink/ PPPoE Server MAC Address	Server Interface	Status
Clients List	Cirent INAC ADDress	Cirent Internace	Opanic PPPOE Server MAC Address	Server menuoe	Status
Log Center					
Wireless information					
WAN					
ARP Table					
Route Table					
DHCP Table					
IPv6 TSPC Status					
IPv6 Neighbor Table					
LLDP Neighbors information					
DNS Cache Table					
Remote DSL Status					
Session Table					
8 Utility					

# IV-1-14 Session Table

This screen shows the 200 newest entries in the NAT sessions table. Click Refresh to reload this page with the most up-to-date information.

🗢 Configuration		Monitoring / Se	ession Table							CRefresh
Security	2									Annual
Д или	ş.,	NAT Session								
O VPN	5							Sec	etu	htas: 200
	-	Interface	Source IP	Source Port	Pseudo Port	Destination (P	Destination Port	Protocol	State	TTL
Clients List										
Log Center										
Wireless Information										
WAN										
ARP Table										
Route Table										
DHCP Table										
IPv6 TSPC Status										
IPv6 Neighbor Table										
LLDP Neighbors information										
DNS Cache Table										
Remote DSL Status										
PPPoE Pass Through										
BS Utility	4									
System Maintenance	a									

# IV-2 Utility

This section contains utilities (e.g., ping tool, traceroute, DNS and etc.) that can assist you in analyzing issues and failures during the setup and operation of the router.

## IV-2-1 Network Tools

#### IV-2-1-1 Ping Tool

The user can perform the ping job for specified IP (host) to diagnose if the data transmission via the Vigor system is well or not.

Search	q	Utility / Network Tools			
		Ping Traceroute DNS			
Device Menu		Ping			
Dashboard					
Configuration	5	IP Version	IPv4 IPv6		
Security		Ping from	Auto 🗠		
		Ping to Host/IP Address			
IAM.	>	Packet Size (byte)	64 🗸 🗸		
D VPN	>	Ping Count	4 ~		
표 Manitoring	*	Ping interval (sec.)	1 ~		
			Clear Run		
Web CLI					
🖏 System Maintenance	y .				
/irtual Controller					
}→ Wireless	5				
🔡 Switch	2				

Available settings are explained as follows:

ltem	Description		
IP Version Select the IP version for entering correct IP address.			
Ping from	Select an interface (LAN or WAN) from drop down list to through which you want to perform the ping operation, or choose Auto to be let the router select the WAN interface.		
Ping to Host/IP Address	Enter the IP address of the Host/IP that you want to ping.		
Packet Size (byte)	Determine the packet size for the ping job.		
Ping Count	Determine the quantity of the packet being pinged.		
Ping Interval (sec.)	Set a time interval (unit:second) for the system to ping the IP address specified above.		
Clear	Remove the settings and return to the factory settings.		
Run	Perform the ping job.		

#### IV-2-1-2 Traceroute

The user can perform the traceroute job for specified IP (host) to diagnose if the data transmission via the Vigor system is well or not.

Search	Utility / Network Tools	
and the second s	Ping Traceroute DNS	
Device Menu	Traceroute	
<ul><li>(?) Dashboard</li></ul>		
😤 Configuration	IP Version	1994 - 1096.
⊘ Security	Trace Through	Auto
	Protocol	ICM9 LIDE
A IAM	Host / IP Address	8,8.8.9
O VPN	Trace Count	a
E Monitoring	Мах Нор	30 ~
		Clear
Web CLI		
🖏 System Maintenance	5	
Virtual Controller		
>- Wireless	2	
🔠 Switch	×	

Available settings are explained as follows:

ltem	Description
IP Version	Select the IP version for entering correct IP address.
Trace Through	Trace through specific interface. Only Auto is available for selection.
Protocol	Select ICMP or UDP protocol.
Host/IP Address	Enter the host / IP address that you want to traceroute.
Trace Count	Select the max hops for traceroute, select none for unlimited.
Мах Нор	Set the maximum number of hops to search for the target.
Clear	Remove the settings and return to the factory settings.
Run	Perform the job.

#### IV-2-1-3 DNS

The user can diagnose the router by query Domain Name System (DNS) servers to obtain domain name or IP address information.

Search_	a	Utility / Network Tools	
2.000		Ping Traceroute DNS	
Device Menu	-	DNS	
(2) Dashboard			
	>	Method NSLOOKUP DNS SECURITY	
Security	8	IP Version IPv6 IPv6	
Д им		Clear Plum	
VPN	>		
Monitoring	•		
- Stanley			
Network Tools			
Web CLI			
🖏 System Maintenance	×		
Virtual Controller			
<b>≻</b> Wireless	5		
器 Switch	5		
Sector sector sector			

Available settings are explained as follows:

ltem	Description	
Method	Select a tool to query Domain Name System (DNS) servers to obtain domain name or IP address information.	
	• NSLOOKUP – It is an abbreviation of "Name Server Lookup.	
	<ul> <li>DNS SECURITY – To guarantee the DNS reliability, integrity and the confidentiality, use this method to query the domain name system server.</li> </ul>	
IP Version	Select the IP version for entering correct IP address.	
Host/IP Address	Enter the host / IP (IPv4/IPv6) address that you want to traceroute.	
Clear	Remove the settings and return to the factory settings.	
Run	Perform the job.	

# IV-2-2 Web CLI

It is not necessary to use the telnet command via DOS prompt. The changes made by using web console have the same effects as modified through web user interface. The functions/settings modified under Web Console also can be reviewed on the web user interface.

Click the Web Console icon on the top of the main screen to open the following screen.

Open the page of Utility>>Web CLI.

Search	۹	Utility / Web CLI		
Device Menu		Web CLI		
🖏 Dashboard		and the second se		-
Configuration	,	Username: test Password:		
Security	2			
G IAM	5	vigor> help	Show available commands	
D VPN	×	quit history	Disconnect Show a list of previously run commands	
至 Monitoring	>	enable	Turn on privileged commands	
		exit config	Exit from current mode Configure	
Network Tools		exec	execute	
		ulana I		
🖏 System Maintenance		vigor>		
/irtual Controller	-			
⊷ Wireless	28			
Switch				

This page is left blank.

# Chapter V Troubleshooting



# V-1 Checking the Hardware Status

Follow the steps below to verify the hardware status.

- 1. Check the power line and cable connections. Refer to "I-2 Hardware Installation" for details.
- 2. Power on the modem. Make sure the POWER LED, ACT LED and LAN LED are bright.
- 3. If not, it means that there is something wrong with the hardware status. Simply back to "I-2 Hardware Installation" to execute the hardware installation again. And then, try again.

# V-2 Checking the Network Connection Settings

Sometimes the link failure occurs due to the wrong network connection settings. After trying the above section, if the link is stilled failed, please do the steps listed below to make sure the network connection settings is OK.

## V-2-1 For Windows

# (i) Note:

The example is based on Windows 7 (Professional Edition). As to the examples for other operation systems, please refer to the similar steps or find support notes in www.draytek.com.

1. Open All Programs>>Getting Started>>Control Panel. Click Network and Sharing Center.



2. In the following window, click Change adapter settings.



3. Icons of the network connection will be shown on the window. Right-click on Local Area Connection and click on Properties.



4. Select Internet Protocol Version 4 (TCP/IP) and then click Properties.

Local Area Connecti	on Properties	
Networking Sharing		
Connect using:		
Intel(R) PR0/10	00 MT Network Conne	ection
1		Configure
This connection uses t	he following items:	
Client for Micr		
🗹 📙 Privacyware F		
🛛 🗹 🚚 QoS Packet S		
File and Printe	er Sharing for Microsoft	t Networks
	col Version 0 (TCD/ID	
	col Version 4 (TCP/IP)	
	pology Discovery Map	
	DOIODY DISCOVERY HES	ponaer
📙 📥 Link-Layer To		

5. Select Obtain an IP address automatically and Obtain DNS server address automatically. Finally, click OK.

eneral Alternate Configuration 'ou can get IP settings assigned au his capability. Otherwise, you need or the appropriate IP settings.					
<ul> <li>Obtain an IP address automat</li> <li>Use the following IP address:</li> </ul>					
IP address:					
Subnet mask:					
Default gateway:					
Obtain DNS server address au	utomatic	ally:	1		
Preferred DNS server:			1		
Alternate DNS server:		sy.	,		
🔽 Validate settings upon exit				Adv	vanced

# V-2-2 For Mac Os

- 1. Double click on the current used Mac Os on the desktop.
- 2. Open the Application folder and get into Network.
- 3. On the Network screen, select Using DHCP from the drop-down list of Configure IPv4.

0 0	Network	$\bigcirc$
Show All Displays Sou	Network Startup Disk	
Ŀ	ocation: Automatic 🛟 Show: Built-in Ethernet 🛟	
ТСР	/IP PPPoE AppleTalk Proxies Ethernet	
Configure IPv4:	Using DHCP	
IP Address:	192.168.1.10 (Renew DHCP Lease)	
Subnet Mask: Router:	255.255.255.0 DHCP Client ID: (If required)	
DNS Servers:	(Optional)	
Search Domains:	(Optional)	
IPv6 Address:	fe80:0000:0000:0000:020a:95ff:fe8d:72e4	
	Configure IPv6	
Click the lock to p	revent further changes. Assist me Apply Now	$\supset$

# V-3 Pinging the Device

The default gateway IP address of the modem is 192.168.1.1. For some reason, you might need to use "ping" command to check the link status of the modem. The most important thing is that the computer will receive a reply from 192.168.1.1. If not, please check the IP address of your computer. We suggest you setting the network connection as get IP automatically. (Please refer to the section V-2)

Please follow the steps below to ping the modem correctly.

#### V-3-1 For Windows

- 1. Open the Command Prompt window (from Start menu> Run).
- 2. Type cmd. The DOS command dialog will appear.

🕰 Command Prompt	- 🗆 X
Microsoft Windows XP [Version 5.1.2600] (C) Copyright 1985-2001 Microsoft Corp.	<u> </u>
D:\Documents and Settings\fae>ping 192.168.1.1	
Pinging 192.168.1.1 with 32 bytes of data:	
Reply from 192.168.1.1: bytes=32 time<1ms TTL=255 Reply from 192.168.1.1: bytes=32 time<1ms TTL=255 Reply from 192.168.1.1: bytes=32 time<1ms TTL=255 Reply from 192.168.1.1: bytes=32 time<1ms TTL=255	
Ping statistics for 192.168.1.1: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = Oms, Maximum = Oms, Average = Oms	
D:\Documents and Settings\fae>_	
	-

- 3. Type ping 192.168.1.1 and press [Enter]. If the link is OK, the line of "Reply from 192.168.1.1:bytes=32 time<1ms TTL=255" will appear.
- 4. If the line does not appear, please check the IP address setting of your computer.

#### V-3-2 For Mac Os (Terminal)

- 1. Double click on the current used Mac Os on the desktop.
- 2. Open the Application folder and get into Utilities.
- 3. Double click Terminal. The Terminal window will appear.
- 4. Type ping 192.168.1.1 and press [Enter]. If the link is OK, the line of "64 bytes from 192.168.1.1: icmp\_seq=0 ttl=255 time=xxxx ms" will appear.

000 T	erminal — bash — 80x24
Last login: Sat Jan 3 02:24 Welcome to Darwin! Vigor10:~ draytek\$ ping 192.3 PING 192.168.1.1 (192.168.1.1: id 64 bytes from 192.168.1.1: id ~C 192.168.1.1 ping statist 5 packets transmitted, 5 pack	<pre>18 on ttyp1  68.1.1 ): 56 data bytes mp_seq=0 ttl=255 time=0.755 ms mp_seq=1 ttl=255 time=0.697 ms mp_seq=2 ttl=255 time=0.716 ms mp_seq=3 ttl=255 time=0.731 ms mp_seq=4 ttl=255 time=0.72 ms cs ets received, 0% packet loss</pre>
192.168.1.1 ping statist	ets received, 0% packet loss
Vigor10:~ draytek\$	

# V-4 Backing to Factory Default Setting

Sometimes, a wrong connection can be improved by returning to the default settings. Try to reset the modem by software or hardware.

#### (i) Warning:

After using the factory default settings, you will lose all settings you did before. Make sure you have recorded all useful settings before you pressing.

#### V-4-1 Software Reset

You can reset the modem to factory default via Web page.

Go to System Maintenance and choose System Reboot on the web page. The following screen will appear. Choose Factory Default and click Reboot.

After few seconds, the modem will return all the settings to the factory settings.

System Maintenance / System Reb	oot			
System Reboot				
Reboot With	Current Configuration	Reset Configuration	Reset to Factory Default	
	Reboot			
	Note: Reset Configura	tion: Reset configura	tions, retaining service s	tatus (product registration, license keys, and certif
	Reset to Factory	Default: Revert all s	ettings to factory default	, including service status (product registration, lice

## V-4-2 Hardware Reset

While the modem is running, press the Factory Reset button and hold for more than 5 seconds. When you see the ACT LED blinks rapidly, please release the button. Then, the modem will restart with the default configuration.



After restore the factory default setting, you can configure the settings for the modem again to fit your personal request.

# V-5 Contacting DrayTek

If the modem still cannot work correctly after trying many efforts, please contact your dealer for further help right away. For any questions, please feel free to send an e-mail to support@draytek.com.