User Manual

---Apply to WL-R100/R200/R210/R520 Series 4G/3G

Router

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MLINK Shenzhen Wlink Technology Co., LTD 深圳市徳传物联技术有限公司

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Version History

Updates between document versions are cumulative. The latest document version contains all updates made to previous version.

Data	Document Version	Firmware Version	Description
2022-1-6	V3.3	Rx_4.3.4.5_22-01-	Improved Serial App, reset default, M2M
		06.trx	connection.
			Added MTU Setting.
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		22.trx	
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Hardware Introduction

This chapter is mainly for hardware introduction, there would be some difference between the scheme and real object. But the difference won't have any influence to products performance.

Model	Appearance	SIM Card	LAN	WAN	Wi-Fi	Serial Port	I/O	Dimension(mm)
WL-R100		1	1	N/A	N/A	1	N/A	78.5x59x23.5
WL-R200	Called Des	1	2	Optional	Optional	N/A	N/A	103x73.5x25.5
WL-R210		2	2	1	Default	1	2*DI 1*DO	102x100x42
WL-R520	States and	2	4	1	Default	1	N/A	176x105x25

1.1 WL-Rxx Family List

1.2 LED Indicator

1) WL-R100/R200/R520 LED Status

silk-screen	color	status	Indication
	Red		Pool Signal
Green			Strong Signal
NET		Solid light	4G Online
		Slow Blink (1.5s)	3G Online
		Quick Blink (0.5s)	Offline
LAN(WAN)	Green	Solid light	Plugged

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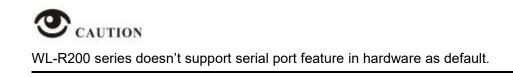
	Green	Blinking	Data Sending
	Green	Dark	Unplugged
PWR	Green	Solid light	Router OS is running.

2) WL-R210 LED Status

silk-screen		status	Indication			
	Signal LED Solid Light		LED1 indicates signal is Pool (CSQ0~10) LED2 indicates signal is good (CSQ11~19) LED3 indicates signal is strong (CSQ20~31)			
Signal		Quick Blink	Offline			
	LED 1	Solid Light	4G Online			
	Slow Blink		3G Online			
PWR	Solid Light		System power operation.			
	Solid light		WLAN enable, but no data communication.			
WLAN	Quick Blinking		Data Send			
	Dark		WLAN disable			
	Dark		System operation and LTE/3G online.			
ERR	Solid Light	(Red)	System fail indicator such as SIM card/ module fail.			
	Green	Solid light	Plugged			
LAN(WAN)	Green	Blinking	Data in transmitting.			
	Green Dark		Unplugged			

1.3 Serial Port Connection

The serial port supports alternative RS232/RS485 port, and RS232 port as default. It might be requested serial port for RS485 when place order. The serial port feature supports TCP/UDP client/server as optional, also supports Modbus protocol. You may check the feature in Serial App of Advanced Network UI.



1.4 Power Supply

Voltage input range: +7.5~32VDC. (Extended models: 7.5~ 48VDC)

1.5 Review

After insert the SIM/UIM card and connect Ethernet cable and antenna, connect power supply adaptor or power cable.



Please connect the antenna before power on, otherwise the signal maybe poor because of impedance mismatching.

Notice:

- Step 1 Check the antenna connection.
- Step 2 Check SIM/UIM card, confirm SIM/UIM card is available.
- Step 3 Power on the industrial Router

----END



WL-Rxx Series routers support GUI and CLI configuration. This chapter introduce GUI configuration via Ethernet port, if need CLI configuration guide, please contact our technical support department by email: support@wlink-tech.com.

2.1 Local Configure

The router supports to be configured by local Ethernet port, you could specify a static IP or set as DHCP. The default IP address is 192.168.1.1, subnet mask is 255.255.255.0, please refer to following.

Step 1 Click "start > control panel", find "Network Connections" icon and double click it to enter, select "Local Area Connection" corresponding to the network card on this page. Refer to the figure below.



Figure 2-1 Network Connection

- Step 2 Obtain a IP address automatically or set up IP address,192.168.1.xxx(XXX can be any number between 2~254)
- Step 3 Run an Internet Explorer and visit "<u>http://192.168.1.1/</u>", to enter identify page.



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User should use the default user name and password when log in for the first time

Connect to 19	2.168.8.1 🔹 🔀
	GA
<u>U</u> ser name: <u>P</u> assword:	 ☑ admin ☑ ☑ ☑ Remember my password
	OK Cancel

Figure 2-2 User Identify Interface

----END

2.2 Status

Check routers information such as status, traffic Stats and device list after login router. Especially, suggest change the password according to the prompts because of security requirement.

You haven't changed the default password for this router. To change router password click here.

The UI will display" already changed login password successfully" after router reboot.

Already changed login password successfully.

2.3 Overview

The overview GUI will be display router system information, Ethernet ports status, VPN connection status, LAN information, 4G connection information and WLAN information,

Status	*	System			~	VPN Status	\$	
Overview Traffic Stats. Device List Ø Basic Network 🖓 WLAN Advanced Network	>	Router Name Hardware Version Firmware Version Router Sn Chipset	Router D20-C12 R50.4.3.4.5 20200419			Router IP Addresses br	x344C:06:50:2D 0 (LAN) - 192:168:1.1/24 0 (LAN) - 192:168:1.2 - 192:168:1.51	
 Advanced Network Firewall 	5	Router Time	Sat, 01 Jan 200 Clock Sync.	0 09:04:14 +08	00	WAN	¢	
VPN Tunnel Administration	(*) [*]	Uptime Memory Usage NVRAM Usage	00:03:27 <u>11.36 мв / 60.0</u> <u>21.47 кв / 64.0</u>			Wireless (2.4 GHz)	0	
) More Info		Ethernet Ports Status WAN/LAN LANI Unplugged 100M Full	LAN2	LAN3	LAN4 Unplugged			

Figure 2-3 Router Status GUI

2.4 Traffic Stats.

Click Status->Traffic Stats. to enter the traffic stats.GUI.to check Cellular/WAN traffic in real-time.

O Status	*		Already changed login password	successfully.
Overview			, , , , ,	
Traffic Stats.		Traffic Stats.		
Device List				
Basic Network	>	Interface	Transmit Data	Receive Data
ক wlan	•	Cellular(usb0)	95.67 <i>KB</i>	111.75 KB
Advanced Networ	k >			
🔕 Firewall	•			
VPN Tunnel	80			
R Administration	>			



2.5 Device List

Click Status->Device List to enter the device list GUI.to check the connected devices information in the list.

WL-Rxx Series Router User Manual Status Already changed login password successfully. Overview Traffic Stats Device List Device List Interface MAC Address IP Address ^ Name RSSI Quality TX/RX Rate Lease Basic Network 54:E1:AD:C3:99:8B 192.168.1.2 br0 WLAN B Firewall PN Tu



2.6 Tool Column

Tools 🛠	Bandwidth 👱	IP Traffic 💻	System 🏚
		Figure 2-6 Too	l Column GUI

2.6.1 **Tools**

2.6.1.1 Ping

Click Tools->Ping to enter ping test GUI. Used to test the reachability of a host on an Internet IP network and to measure the round-trip time for messages sent from the originating host to a destination server.

🔊 Ping 🏿 🧑 Trace 🖽 WC	DL 🖿 Log 🔒 (Capture					
Ping							
IP Address	8.8.8.8		Ping				
Ping Count	5						
Packet Size	56	(bytes)					
Seq Address				RX Bytes	TTL	RTT (ms)	+/- (ms)

2.6.1.2 Trace

Click Tools->Trace to enter trace test GUI. diagnostic tool for displaying the routeand measuring transit delays of packets across an Internet IP network.



Trace Route				
IP Address			Trace	
Maximum Hops	20			
Maximum Wait Time	3	(seconds per hop)		

2.6.1.3 WOL

Click Tools-> WOL to enter WOL(Wake On Lan) GUI. Used to wake up those connected devices via WOL protocol. Clock left mouse button to wake up the device.

/ake On Lan			
/AC Address	IP Address	Status	Name 🔨
4:E1:AD:C3:99:8B	192.168.1.2	Active (In ARP)	
Click to wake up MAC Address List			

2.6.1.4 Log

Click Tools-> Log to enter Log GUI. Use to check logs in GUI, download GUI and send logs to server.

💣 Ping 🛛 🧑 Trac	e 🖽 WOL	🖿 Log	Gapture
Logs			
View			
Download Log File			FindQ
» Logging Configu	ration		

2.6.1.5 Capture

Click Tools-> Capture to enter capture data GUI. Use to capture LAN/WAN data packet to analyse what happen in the router.

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💣 Ping 🗥 Trace 😨	WOL 🖿 Log 🔒 Capture	
Capture		
Time1	15 minutes 🔻 Start	
Network	LAN Y	

2.6.2 Bandwidth

Click Bandwidth to enter bandwidth graphic GUI. Used to check cellular/LAN/Wi-Fi real-time bandwidth.

			Wi-Fi/2.4G (eth1)	Wi-Fi/5G (eth2)	:03 pm / 12942.27 mbit/s (161	7 70 140 /-
^ 12885.00 mbit/s (1610	163 MB/s)			World.	oo pin7 12942.27 moles (101	7.76 WD/
한 8590.00 mbit/s (1073.	75 MB/s)		Π			
12885.00 mbit/s (1610 8590.00 mbit/s (1073. 4295.00 mbit/s (536.8	3 MB/s)					
2						
0 minute window, 2 s	econd interval)		[[]			14 - 542

2.6.3 System

Click system to choose software reboot, hardware reboot and logout GUI.



2.7 Basic Network

2.7.1 WAN Setting

Step 1 Basic Network>WAN to enter below interface.

		■ Shenzhen Wlink Technology Co., LTD ■ 深圳市德传物联技术有限公司	WL-Rxx Series Router User Manual
Status	•		Already changed login password successfully.
Basic Network WAN	~	WAN / Internet	
Cellular LAN VLAN		Туре	Disabled Disabled DHCP PPPoE
Schedule DDNS Routing		Save ✓ Cancel ×	Static Address
 WLAN Advanced Network 	* *		
FirewallVPN Tunnel	> >		
R Administration	•		

Table 2-1 WAN Setting Instruction

Parameter	Instruction
Туре	Support DHCP, PPPoE, Static IP address

Step 2 After setting, please click "save" to finish, the device will reboot.

----End

2.7.2 Cellular Setting

Step 1 Basic Network-> Cellular, you can modify relevant parameter according to the application.

۲	Status	•	Cellular Settings			
ø	Basic Network	~		_		
	WAN		Enable Modem	×		
	Cellular					
	LAN		Basic Settings SIM 1 SIM 2			
	VLAN		Use PPP			
	Schedule					
	DDNS		ICMP Check			
	Routing					
?	WLAN	>	Cellular Traffic Check			
	Advanced Network	•	CIMI Send to	:		
8	Firewall	*	SMS Code			
80	VPN Tunnel	>				
я	Administration	•	Operator Lock	ex:46001		
			DualSim Mode	Fail Over 🔻		
			Save ✓ Cancel ×			
	① More Info					

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۲	Status	>	Basic Settings SIM 1 SIM 2	
Ø	Basic Network	•	SIM 1 Mode	Auto 🔻
	WAN			
	Cellular		SIM 1 PIN Code	
	LAN			
	VLAN		SIM 1 APN	3GNET
	Schedule		SIM 1 User	CARD
	DDNS		Silver	
	Routing		SIM 1 Password	
\$	WLAN	•		
۲	Advanced Network	•	SIM 1 Dial Number	*99#
8	Firewall	•	SIM 1 Auth Type	Auto •
•	VPN Tunnel	•	SIM 1 Local IP Address	
R	Administration	•		
			Save ✓ Cancel ×	
	(i) More Info			

CAUTION

WL-R100/R200 supports single SIM. WL-R520 supports dual-SIM as optional. WL-R210 supports dual-SIM as default.

Table 2-2 Cellular Setting Instruction					
Parameter	Instruction				
Enable Modem	Enable/Disable 4G mode.				
Use PPP	ECM dialup as default. PPP optional.				
ICMP check	If enable ICMP check and setup a reachable IP address as destination IP, the router will reconnect/reboot once ICMP check failed.				
Cellular Traffic Check	The router will reconnect/reboot once there's no Rx/Tx data.				
CIMI Send to	Send CIMI to a defined IP and port by TCP protocol.				
SMS Code	Remote control the router by SMS. Only the configured SMS code will work.				
Operator Lock	Lock a specified operator for the router by MCC/MNC code.				
Dual SIM Mode	【Fail Over】Two SIM cards mutual backup. Once SIM1 failed, it'll switch to SIM2 and work on SIM2, and vice versa.				



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Parameter	Instruction
	[SIM1 Only] Only SIM1 works.
	[SIM2 Only] Only SIM2 works.
	【Backup】SIM1 is the primary SIM. Once SIM1 failed, it'll switch
	to SIM2 and work on SIM2 for a specified period of time, then it
	switches back to SIM1.
Connect Mode	【Auto】The router will automatically connect to 3G/4G networks and give priority to 4G.
	[LTE] Router will connect to 4G only.
	[3G] Router will connect to 3G only.
Pin Code	Some SIM cards are locked with a Personal Identification Number
	(PIN) code in case they are lost or stolen.
APN	APN is provided by local ISP, usually CDMA/EVDO networks do not need this parameter.
User	SIM card user name is provided by ISP
Password	SIM card password is provided by ISP
Auth. Type	Auto/PAP/Chap/MS-Chap/MS-Chapv2 authentication optional.
SIM Local IP Address	Fix SIM IP. The feature is available if carrier can provide this service.

NOTE ICMP Check and Cellular Traffic Check are alternative.

[ICMP Check]

Enable ICMP, Router will automatically check whether the defined IP address is reachable per 60s. If the IP address is unreachable and ICMP check is timeout at the first time, it will check 2 times every 3 seconds. If the third time is still failed, the router will redial.

The ICMP Check IP is a public IP or company server IP address.

JLINK Shenzhen Wlink 深圳市徳传物	Technology Co., LTD 勿联技术有限公司	WL-F	Rxx Series Router User Manual
ICMP Check			
Check IP		8.8.8.8	
Check IP (Optional)		4.4.4.4	
Interval		60	(seconds)
Retries		3	(Times)
Fail Action		Reboot	System 🔻

【Cellular Traffic Check】

[Check Mode] there are Rx(Receive), Tx(Transmission) and Rx/Tx check modes.

[Rx]Router will check the 3G/LTE cellular receiver traffic. If no receiver traffic within the defined check interval, the router will implement the specified action reconnect or reboot.

Cellular Traffic Check	~	
Check Mode	Rx 🔻	
Check Interval	10	(minutes)Range: 1 ~ 1440
Fail Action	Cellular Reco	nnect 🔻

Step 2 After Setting, please click "save" icon.

----End

2.7.3 LAN Setting

Step 1 Basic Network>LAN to enter below interface

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• • • • • • • • • • • • • • • • • • •				Already	changed login passw	vord successfully.		
Basic Network	k 🗡		LAN					
WAN								
Cellular			Bridge ^	IP Address	Subnet Mask	DHCP Server	IP Pool	Lease(minutes)
VLAN			br0	192.168.1.1	255.255.255.0	~	192.168.1.2 - 51	1440
Schedule								
DDNS			1 *					
Routing								
WLAN			Add +					
Advanced Ne	twork							
Firewall			Save ✓ Cancel ×					
VPN Tunnel								
Administratio	n >	5						
③ More LAN Brid			IP Address	Subnet Mask	DHCP St	erver	IP Pool	
LAN Bric	dge ^					erver		Lease(minute
LAN Bric			IP Address 192.168.1.1	Subnet Mask 255.255.255.0	DHCP Se	erver	IP Pool 192.168.1.2 - 51	
LAN Bric	dge ^				~	erver		Lease(minute
LAN Bric	dge ^					erver		Lease(minute

Table 2-3 LAN Setting Instruction

Parameter	Instruction			
Bridge	Supports 4 LAN IP address for br0 to br3 interface. If need to support VLAN, please go to VLAN GUI.			
Router IP Address	Router IP address, default IP is 192.168.1.1			
Subnet Mask	Router subnet mask, default mask is 255.255.255.0			
DHCP	Dynamic allocation IP service, after enable, it will show the IP address range and options of lease			
IP Pool	IP address range within LAN			
Lease	The valid time, unit as minute			
Add	Add LAN IP address, supports 4 LAN IP addresses.			

Step 2 After setting, please click "save" to finish, the device will reboot.

----End

2.7.4 **VLAN**

Step 1 Basic Network->VLAN to enter the VLAN setting page.

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-------	---

1	~	×	~	×	~	×	~	×	~	×	br0
2	×	×	×	×	×	×	×	×	×	×	WAN
• 0											none

Table 2-4 LAN Setting Instruction

Parameter	Instruction				
VID	VLAN ID number. The VID range is from 1 to 15.				
LAN1~LAN4, WAN	LAN				
Tagged	Enable to make router can encapsulate and de-encapsulate the VLAN tag.				
Bridge	Routers interface br0, br1, br2, br3 and WAN				

Step 2 Please Click "Save" to finish.

----End

2.7.5 Schedule

Step 1 Basic Network->VLAN to enter the Schedule setting page.

۲	Status	•	Enabled Links					~
Ø	Basic Network	*	Link Name	Link T	vpe	Description		
4	WAN							
	Cellular		modem	ECM/	QMI			
-	LAN							
-	VLAN		ICMP Check					~
	Schedule			200 M				
-	DDNS		On Link	Destination	Interval	Retries	Description	
i i e	Routing							
	WLAN	•						
R	Advanced Network	•	Add +					
8	Firewall	•						
۰	VPN Tunnel	•	Schedule					~
я	Administration	•	On Link 1	Link 2	Policy	Description		
			modem	• modem	• FAILOVER	¥		
	① More Info		Add +					



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ink Name		Link Type		Description	
nodem		ECM/QMI			
MP Check					
n Link	C	Destination	Interval	Retries	Description
2					
Add +					
nedule					
	ink 1	Link 2	Policy	Description	
n L		Link 2	Policy FAILOVER	Description	

Step 2 Please Click "Save" to finish.

----End

2.7.6 **Dynamic DNS Setting**

Step 1 Basic Network->DDNS to enter the DDNS setting page.

٢	Status		Already changed login password successfully.	
Ø	Basic Network			
÷	WAN	Dynamic DNS		~
-	Cellular	IP Address	Use WAN IP Address 0.0.0.0 (recommended)	
	LAN			
	VLAN	Auto refresh every	28 minutes (0 = Disabled)	
	Schedule DDNS			
	Routing	Dynamic DNS1		ž
~	WLAN	Dynamic Divisi		Ť
		Service	None *	
-	Advanced Network			
8	Firewall			
•	VPN Tunnel	Dynamic DNS2		~
			None	
*	Administration	Service	None *	
	 More Info 	Save 🗸 Cancel 🗙		



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Dynamic DNS		~
IP Address	Use WAN IP Address 0.0.0.0 (recommended)	
Auto refresh every	28 minutes (0 = Disabled)	
Dynamic DNS1		~
Service	None •	
Dynamic DNS2		~
Service	None v	
Save ✓ Cancel ×		

Table 2-5 DDNS Setting Instruction

parameter	Instruction				
IP address	Default is standard DDNS protocol, for customized protocol, please contact Wlink engineer. Usually, use default IP 0.0.0.0				
Auto refresh time	Set the interval of the DDNS client obtains new IP, suggest 240s or above				
Service provider	Select the DDNS service provider that listed.				

Step 2 Please Click "Save" to finish.

----End

2.7.7 Routing Setting

Step 1 Basic Network->Routing to enter the DDNS setting GUI.

Status	>	Current Routing Table						
Basic Network	~	Destination	Gateway / Next Hop		Subnet Mask	Metric	Interface	
WAN		192.168.1.0	*		255.255.255.0	0	LAN	
Cellular		127.0.0.0	*		255.0.0.0	0	lo	
LAN VLAN								
Schedule		Static Routing Table						
Routing		Destination	Gateway	Subnet Mask	Metric	Interface	Description	
🕏 WLAN	>		0.0.0.0		0	LAN *		
Advanced Network	>	Add +						
🔯 Firewall	•	Miscellaneous						
VPN Tunnel	>							
R Administration	>	Mode	Gatewav *					
		RIPv1 & v2	Disabled 🔻					
		DHCP Routes						
		Spanning-Tree Protocol						
① More Info		Save ✓ Cancel ×						

Current Routing Table						
Destination	Gateway / Next Hop		Subnet Mask	Metric	Interface	
192.168.1.0	*		255.255.255.0	0	LAN	
127.0.0.0	*		255.0.0.0	0	lo	
itatic Routing Table						
Destination	Gateway	Subnet Mask	Metric	Interface	Description	
	0.0.0.0		0	LAN		
Add+						
Aiscellaneous						
Mode	Gatewav *					
RIPv1 & v2	Disabled 🔻					
DHCP Routes						
Spanning-Tree Protocol						

Table 2-6 Routing Setting Instruction

Parameter	Instruction	
Destination	Router can reach the destination IP address.	
Gateway	Next hop IP address which the router will reach	
Subnet Mask	Subnet mask for destination IP address	
Metric	Metrics are used to determine whether one particular route should be chosen over another.	
Interface	Interface from router to gateway.	
Description	Describe this routing name.	

Step 2 Please Click " Save " to finish.

----End

2.8 WLAN Setting

It's mainly for router which support Wi-Fi, you can modify and configure WLAN parameter through Web GUI, below is the common setting.

O CAUTION

WL-R100 doesn't support Wi-Fi feature. WL-R200 Wi-Fi feature is optional. WL-R210/WL-R520 supports Wi-Fi feature as default.



2.8.1 Basic Setting

Status	•	Wireless(2.4 GHz)	
Basic Network	- 20	Enable WLAN	
🗟 WLAN	.	MAC Address	00:34:4C:06:50:2F
Basic Settings	_		Access Point 🔻
MultiSSID		Wireless Mode	Access Point.
Wireless Survey	\$	Wireless Network Mode	Auto 🔻
🐹 Firewall	•	SSID	router-wifi_06502F
VPN Tunnel	•	Broadcast SSID	
R Administration	•	Channel	7 - 2.442 GHz 🔻 Scan Q
		Channel Width	40 MHz 🔻
		Control Sideband	Upper 🔻
		Maximum Clients	128 (range: 1 - 255)
		Security option	Disabled v
① More Info			

Step 1 WLAN->Basic Setting to configure relative parameter

Table 2-7 Basic of WLAN Setting Instruction

Parameter	Instruction
Radio Mode	2.4G model, Wi-Fi bandwidth for 1300Mbps
Enable wireless	Enable or Disable the Wireless
Wireless mode	Support AP mode.
Wireless Network protocol	Support Auto/b/g/n optional for 2.4G. Support Auto/A/N optional for 2.5G.
SSID	The default is router, can be modified as per application.
Channel	The channel of wireless network, suggest keep the default
Channel Width	20MHz and 40MHz alternative for 2.4G. 20MHz, 40MHz and 80MHzalternative for 2.4G.
Security	Support various encryption method as requested.

Step 2 Please click "Save" to finish.

----End

2.8.2 MultiSSID

Step 1 WLAN> MultiSSID.

Status	•			Already changed login passw	ord successfully.		
Basic Network	>	the Contraction of Co					
ଙ୍କ WLAN	~	MultiSSID					
Basic Settings		Overview eth1 (v	/10) w10.1 w10.2 w10.3				
MultiSSID		Interface	Enabled	SSID	Mode	Bridge	
Wireless Survey							
Advanced Network	>	eth1 (wi0)	Yes	router-wifi_06502F	Access Point	LAN (br0)	
Firewall	•	wI0.1	Yes	router-wifi_1	Access Point	LAN (br0)	
VPN Tunnel	•	wI0.2	Yes	router-wifi_2	Access Point	LAN (br0)	
R Administration	•	wI0.3	Yes	router-wifi_3	Access Point	LAN (br0)	
		wi0.1	τ		Access Point	▼ LAN (br0)	,

Step 2 Please Click "Save " to finish.



Support 4 SSIDs as Max

----End

2.8.3 Wireless Survey

Step 1 WLAN> Wireless Survey to check survey.

The Router will automatically scan neighbour SSIDs.

Status	>
Basic Network	
😵 WLAN	
Basic Settings	
Wireless Survey	
 Advanced Networ Firewall 	
VPN Tunnel	
R Administration	
① More Info	

Step 2 Please Click "Stop" to change refresh by manual.

----End

2.9 Advanced Network Setting

2.9.1 **Port Forwarding**

Step 1 Advanced Network > Port Forwarding to enter the GUI, you may modify the router name, Host name and Domain name according to the application requirement.

D Status			Alı	eady changed l	ogin password s	successfully.	
Basic Network >	DortE	orwarding					
ŵ WLAN →		5					
Advanced Network	On	Proto	Src Address	Ext Ports	Int Port	Int Address	Description A
Port Forwarding	×	UDP		1000,2000		192.168.1.2	ex: 1000 and 2000
Port Redirecting	×	Both		1000-2000,3000		192.168.1.2	ex: 1000 to 2000, and 3000
DMZ	×	Both	1.1.1.0/24	1000-2000		192.168.1.2	ex: 1000 to 2000, restricted
IP Passthrough		700		1000	2000	192.168.1.2	
Triggered	×	TCP		1000	2000	192.168.1.2	ex: different internal port
Captive Portal		TCP					
Serial App.							
UPnP/NAT-PMP	Ad	d +					
Bandwidth Limiter	• •	irc Address (ontic	onal) - Forward only if from th	nis address. ex: "1.2.3.4".	"1.2.3.4 - 2.3.4.5", "1.2.3.	0/24". "me.example.com".	
VRRP	• E	xt Ports - The po	orts to be forwarded, as seen	from the WAN. ex: "234	", "200,300", "200-300,4	00".	
Static DHCP			 The destination port inside fferent internal port. 	e the LAN. If blank, the d	estination port is the sar	me as Ext Ports. Only one p	ort per entry is supported when
🛿 Firewall 🔹 🔉			destination address inside the	e LAN.			
D VPN Tunnel >							
Administration							
Administration	Save 🗸	Cancel×	i i i i i i i i i i i i i i i i i i i				
 More Info 	Savev	Calicerx					

Table 2-8 Port Forwarding Instruction

Parameter	Instruction
Protocol	Support UDP, TCP, both UDP and TCP
Src. Address	Source IP address. Forward only if from this address.
Ext. Ports	External ports. The ports to be forwarded, as seen from the WAN.
Int. Port	Internal port. The destination port inside the LAN. If blank, the destination port is the same as Ext Ports. Only one port per entry is supported when forwarding to a different internal port.
Int. Address	Internal Address. The destination address inside the LAN.
Description	Remark the rule

Step 2 Please click "save" to finish

----End

2.9.2 Port Redirecting

Step 1 Advanced Network > Port Redirecting to enter the GUI, you may modify the router name, Host name and Domain name according to the application requirement.

		en Wlink Technology C 德传物联技术有		WL-Rxx Serie	es Router User Manual
Status Status Basic Network			Already changed login p	assword successfully.	
ŵ WLAN →	PortRedirecting				
Advanced Network	On Proto	Int Port	Dst Address	Ext Port	Description
Port Forwarding	ТСР	¥			
Port Redirecting	-				
DMZ	Add +				
IP Passthrough					
Triggered					
Captive Portal					
Serial App.	Save ✓ Cancel ×				
UPnP/NAT-PMP					
Bandwidth Limiter					
VRRP					
Static DHCP					
🔯 Firewall 🔹					
VPN Tunnel					
R Administration					
① More Info					

Table 2-9 Port Redirecting Instruction

Parameter	Instruction	
Protocol	Support UDP, TCP, both UDP and TCP	
Int Port	nternal port.	
Dst. Address	The redirecting IP address.	
Ext. Ports	External port for redirection.	
Description	Remark the rule	

Step 2 Please click "save" to finish

----End

2.9.3 DMZ Setting

Step 1 Advanced Network> DMZ to check or modify the relevant parameter.

🛛 Status 🔹 💙		Already changed login password successfully.
Basic Network		
🕅 WLAN	DMZ	
Advanced Network	Enable DMZ	
Port Forwarding	Internel Address	192.168.1.0
Port Redirecting		
DMZ	Source Address	
IP Passthrough	Restriction	
Triggered		(optional; ex: "1.1.1.1", "1.1.1.0/24", "1.1.1.1 - 2.2.2.2" or "me.example.com")
Captive Portal		
Serial App.	Leave CLI Remote Access	 (Redirect remote access ports for CLI to router)
UPnP/NAT-PMP		(Redirect remote access ports for HTTP(s) to router)
Bandwidth Limiter	Leave WEB Remote Access	 (Redirect remote access ports for HTTP(s) to router)
VRRP		
Static DHCP	Save ✓ Cancel ×	
Firewall		
VPN Tunnel		
Administration		
① More Info		



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Table 2-10 DMZ Instruction

parameter	Instruction
Destination Address	The destination address inside the LAN.
Source Address Restriction	If no IP address inside, it will allow all IP address to access. If define IP address, it will just allow the defined IP address to access.
Leave Remote Access	

Step 2 Please click "save" to finish

----End

2.9.4 IP Passthrough Setting

Step 1 Advanced Network> IP Passthrough to check or modify the relevant parameter.

٩	Status		Already changed login password successfully.
Ģ	Basic Network		
\$	₹ WLAN		IP Passthrough
G	Advanced Netwo	ork	Enabled
	Port Forwardin Port Redirectin		MAC Address
	DMZ IP Passthrough		Gateway
	Triggered Captive Portal		Save Cancel X
	Serial App. UPnP/NAT-PM		
	Bandwidth Lim VRRP	iter	
2	Static DHCP Firewall		
e	VPN Tunnel		
Я	Administration		
	More Info		

Table 2-11 IP Passthrough Instruction

parameter	Instruction
Enable	Enable IP Passthrough
MAC Address	Enable DHCP of device. Configure device Mac. Device will be assigned SIM IP.
Gateway	If WL-Rxx router connect to multiple device, input other device gateway. The device might access to router GUI.

Step 2 Please click "save" to finish

----End



2.9.5 Triggered Setting

Step 1 Advanced Network> Triggered to check or modify the relevant parameter.

● Status >	Already changed login password successfully.		
Basic Network >	Triggered Port Forwarding		
🕏 WLAN 🔹 🕨	inggered Fort forwarding		
Advanced Network	On Protocol Trigger Ports	Forwarded Ports Description ^	
Port Forwarding	× TCP 3000-4000	5000-6000 ex: open 5000-6000 if 3000-40	000
Port Redirecting DMZ	ТСР 🔻		
IP Passthrough	Add +		
Triggered			
Captive Portal	- (200.200)		
Serial App.	 (200-300). These ports are automatically closed after a few minut 	s of inactivity.	
UPnP/NAT-PMP			
Bandwidth Limiter	Save ✓ Cancel ×		
VRRP	Save Cancer A		
Static DHCP			
🔯 Firewall 🔹			
🖾 VPN Tunnel 🔹			
R Administration >			
 More Info 	-		

Table 2-12 Triggered Instruction

parameter	Instruction
Protocol	Support UDP, TCP, both UDP and TCP
Triggered Ports	Trigger Ports are the initial LAN to WAN "trigger".
Transferred Ports	Forwarded Ports are the WAN to LAN ports that are opened if the "trigger" is activated.
Note	Port triggering opens an incoming port when your computer is using a specified outgoing port for specific traffic.

Step 2 Please click "save" to finish.

----End

2.9.6 Captive Portal

Step 1 Advanced Network> Triggered to check or modify the relevant parameter.

Status	Captive Portai	
Basic Network >	Enabled	
♦ WLAN	Auth Type	NONE *
会 Advanced Network ✓	WEB Root	Default •
Port Forwarding Port Redirecting	WEB Host	
DMZ	Portal Host	
IP Passthrough Triggered	Login Timeout	0 Minutes
Captive Portal	Idle Timeout	0 Minutes
Serial App. UPnP/NAT-PMP	Ignore LAN	
Bandwidth Limiter VRRP	Redirecting http://	www.google.com
Static DHCP	MAC Address Whitelist	
🐼 Firewall 🔸	Download QOS	
VPN Tunnel	Upload OOS	

Table 2-13 Captive Portal Instruction

Parameter	Instruction
Enable	Enable Captive portal feature.
Auth Type	Reserved.
Web Root	Choose captive portal file storage path. Default: Captive portal file is in the firmware as default. In-storage: Captive portal file is in router's Flash. Ex-storage: Captive portal file is in extended storage such as SD card.
Web Host	Configure domain name for the captive portal access. For example, Configure as wlink.tech.com, we might directly access to captive portal page in the website as wlink.tech.com
Portal Host	Reserved.
Logged Timeout	Maximum time user has connectivity. User need to re-login Captive Portal page after defined time.
Idle Timeout	Maximum time user has connectivity if no network activity from Wi-Fi User.If User need to re-login Captive page to surf internet.
Ignore LAN	If enabled, LAN devices will bypass the Captive Portal page.
Redirecting	Router will redirect to the defined link after accepting the terms and conditions on the Captive Portal page.
MAC Whitelist	No captive portal page for Wi-Fi device.
Download QoS	Enable to apply the Download and Upload per user limits.
Upload Qos	Maximum download speed available to each user.

Step 2 Please click "save" to finish.



CAUTION

WL-R100 doesn't support Captive Portal feature.

----End

2.9.7 Serial App. Setting

Step 1 Advanced Network> Serial App to check or modify the relevant parameter.

ⓓ Status >		Already changed login	password successfully.	
Basic Network >	Serial to TCP/IP			
♥ WLAN >	Serial to TCP/IP			
Advanced	IPoC Mode	Serial 🔻		
Network 🛩	Serial to TCP/IPMode	Disabled *		
Port Forwarding				
Port Redirecting				
DMZ				
IP Passthrough	Save ✓ Cancel ×			
inggereu	cuncerv			
Captive Portal Serial App.				
UPnP/NAT-PMP				
Bandwidth Limiter				
VRRP				
Static DHCP				
Ø Firewall →				
VPN Tunnel >				
6 1 1 - TOD 00				
Serial to TCP/IP				
IPoC Mode	Serial 🔻			
Serial to TCP/IPMode	Client 🔻			
Server IP/Port	8.8.8.8		: 40002	
Socket Type	TCP .			
Source type				
Socket Timeout	500 (millis	econds)		
Serial Timeout	500 (millise	econds)		
Packet Payload	1024 (bytes)			
Heart-Beat Content				
Heart-Beat Interval	2 (secon	ds)		
Port Type	RS485/RS232 *			



Debug Enable		
Baud Rate	57600 *	
Parity Bit	none V	
Data Bit	8 *	
Stop Bit	1 .	

Table 2-14 Serial App Instruction	Table 2-14	Serial App	Instruction
-----------------------------------	------------	------------	-------------

Parameter	Instruction
Serial to TC/IP mode	Support Disable, Server and Client mode. Such as Client.
Server IP/Port	IP address and domain name are acceptable for Server IP
Socket Type	Support TCP/UDP protocol
Socket Timeout	Router will wait the setting time to transmit data to serial port.
Serial Timeout	Serial Timeout is the waiting time for transmitting the data package that is less the Packet payload. If the last package equals to the Packet payload, Serial port will transmit it immediately. The default setting is 500ms.
Packet payload	Packet payload is the maximum transmission length for serial port data packet. The default setting is 1024bytes.
Heart-beat Content	Send heart beat to the defined server to keep router online. Meantime, it's convenient to monitor router from server.
Heart beat Interval	Heart beat interval time
Baud Rate	115200 as default
Parity Bit	None as default
Data Bit	8bit as default
Stop Bit	1bit as default

Step 2 Please click "save" to finish.

----End

2.9.8 UPnp/NAT-PMP Setting

Step 1 Advanced Network> Upnp/NAT-PMP to check or modify the relevant parameter.

Shenzhen Wlink Technology Co., LTD 深圳市徳传物联技术有限公司

Status	>			Already changed logi	n password successfully.	
Basic Network						
ক WLAN		Forwarded Ports				
Advanced Netwo	irk 🛩	Ext Ports	Int Port	Internal Address	Protocol	Description
Port Forwarding	,					Delete All × C Refresh
Port Redirecting						
DMZ		Settings				~
IP Passthrough		Settings				
 Triggered Captive Portal 		Enable UPnP				
- Serial App.		Enable NAT-PMP				
UPnP/NAT-PMF		Enable INAT*PIMP				
Bandwidth Limi	ter	Inactive Rules Cleaning		1		
VRRP			· · · · · · · · · · · · · · · · · · ·			
Static DHCP		Secure Mode		when enabled, UPnP clients are allow	ved to add mappings only to their IP)	
🔯 Firewall						
VPN Tunnel		Show In My Network Plac	es			
R Administration						
		Save ✓ Cancel ×				
① More Info	(

Step 2 Please click "save" to finish.

----End

2.9.9 Bandwidth Control Setting

Step 1 Advanced Network> Bandwidth Control to check or modify the relevant parameter.

۲	Status	*		Already changed login password successfully.								
¢	Basic Network											
ę	∛ WLAN		Bandwidth Control									
6	Advanced Network		Enable Control									
	Port Forwarding											
	Port Redirecting		IP IP Range MAC Address	DLRate	DLCeil	ULRate	ULCeil	Priority				
	DMZ											
	IP Passthrough							Normal 🔻				
	Triggered											
	Captive Portal		Add +									
	Serial App.											
	UPnP/NAT-PMP		Default Class									
	Bandwidth Limiter											
	VRRP		Enable Default Class									
	Static DHCP											
8	Firewall											
6	VPN Tunnel		Save ✓ Cancel ×									
Я	Administration											
	0 11-1-1-1-											

Table 2-15 Bandwidth Control Instruction

Max Available Download	Speed limit for router.
Max Available Upload	Speed limit for router.
IP/ IP Range/	Limit devices speed for specified IP/IP Range/ MAC
MAC Address	Address.
DL Rate	Mix Download rate
DL ceil	Max download rate
UL Rate	Mix Upload rate
UL ceil	Max upload rate
Priority	The priority of a specific user.



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Default Class	If no specified IP/MAC, the download and upload limit for
	total speed for all of device.

Step 2 Please click "save" to finish.

----End

2.9.10 VRRP Setting

Step 1 Advanced Network> VRRP to check or modify the relevant parameter.

Status	•		Already changed login password successfully.
Basic Network	•	VRRP	
	•		
Advanced Network	• •	Enable VRRP	
Port Forwarding		Mode	backup *
Port Redirecting DMZ		Virtual IP	192.168.1.3
IP Passthrough		Virtual Router ID	
Triggered Captive Portal Serial App.		Priority	100
UPnP/NAT-PMP		Authentication	
Bandwidth Limite	F	Script Type	Default *
Static DHCP		Check Interval	3
D VPN Tunnel	>	Weight	10
Administration	•		
① More Info		Save ✓ Cancel ×	

Step 2 Please click "save" to finish.

----End

2.9.11 Static DHCP Setting

Step 1 Advanced Network> Static DHCP to check or modify the relevant parameter.

👁 Status 🔹 🎽		Already changed login passw	vord successfully.	
Basic Network	Charle DUICD			
≷ WLAN →	Static DHCP			
Advanced Network	MAC Address	IP Address	Hostname 🔨	Description
Port Forwarding	00:00:00:00:00:00			
Port Redirecting	00:00:00:00:00:00	192.168.1.2		
DMZ	_			
IP Passthrough	Add +			
Triggered				
Captive Portal				
Serial App.	Save ✓ Cancel ×			
UPnP/NAT-PMP				
Bandwidth Limiter				
VRRP				
Static DHCP				
3 Firewall				
D VPN Tunnel >				
Administration				
 More Info 				

Step 2 Please click "save" to finish.



----End

2.10 Firewall

2.10.1 IP/URL Filtering

Step 1 Firewall> IP/URL Filtering to check or modify the relevant parameter.

State	us)	•	IP/MAC/Port	Filessing							
😟 Basi	c Network		On Src MAC	rittering	Src IP	Dst IP	Protocol Src	D +	Dst Port Polic	Developing	
∲ WLA	in D				Src IP	Dst IP		Port			
😭 Adva	anced Network						NON *		Acc	el 🔺	
🔯 Firev		· .	Add +								
	JRL Filtering nain Filtering		Key Word Filt								
			On	Key Word							
🕱 Adm	ninistration			Key Word				Description			
			Add +								
		URL Filtering									
		On URL Description									
				UKL				Description			
G) More Info		Add +								
IP/N	AC/Port Filte	ring									
On	Src MAC		Src IP		Dst IP	Protocol	Src Port	Dst Port	Policy	Description	
	SICIMAC		SICIP		Dst ir		SICFOR	DSCFOR	Foncy	Description	
~						NON *			Accej 🔻		
Add	1+										
	-										
Key	Word Filterin	g									
On	Key	Word					Description	ı			
_											
Add	i+										
-											
URL	. Filtering										
On	URL						Description	ı			
Add	+										
Acce	ess Filtering										
	Src MAC		Src IP		Dst IP	Protocol	Src Port	Dst Port	Policy	Description	
011 2	DIE MIAC		JIC IF		USL II'		SICFOIL	DSCFOIL		Description	
~						NON .			Accel *		
Add	+										
Save	Cancel	×									



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Table 2-16 IP/URL Filtering Instruction

Parameter	Instruction
IP/MAC/Port Filtering	Support IP address, MAC address and port filter. Accept/Drop options for filter policy.
Key Word Filtering	Support key word filter.
URL Filtering	Support URL filter.
Access Filtering	Support Access Filter.

Please check Firewall rule in Configuration instance.

Step 2 Please click "save" to finish.

---End

2.10.2 **Domain Filtering**

Step 1 Firewall> Domain Filtering to check or modify the relevant parameter.

Status		Already changed login password successfully.						
Basic Network		B 1 50 1						
ଙ୍କ WLAN		Domain Filtering						
Advanced Netv	work>	On						
🕄 Firewall		Default Policy	White List *					
IP/URL Filterin	ıg	On Domain	Description					
Domain Filteri	ing							
D VPN Tunnel								
R Administration		Add +						

Parameter	Instruction
Default Policy	Support black list and white list
Local IP Address	Local IP address for LAN.
Domain	Support Domain filter.

Step 2 Please click "save" to finish.

----End



2.11 VPN Tunnel

2.11.1 **GRE Setting**

Step 1 VPN Tunnel> GRE to check or modify the relevant parameter.

0	Status		Already changed login password successfully.									
Ø	Basic Network		GRE Tun	inel								~
	WLAN		one run				Turnel					
e	Advanced Netwo	rk≯	On Id	x ^	Tunnel Address	Tunnel Source	Tunnel Destination	Keepalive	Interval	Retries	Description	
8	Firewall											
61	VPN Tunnel			-								
	GRE		Add +	÷								
	OpenVPN Client PPTP/L2TP Clien		GRE Rou	ıte								~
-	IPSec Administration	>	On	Tunnel Index	^	Destination Address	5		Description			
~	Administration			1	v							
			Add +									
			Save✓	Cancel ×								

Table 2-18 GRE Instruction

Parameter	Instruction
IDx	GRE tunnel number
Tunnel Address	GRE Tunnel local IP address which is a virtual IP address.
Tunnel Source	Router's 3G/WAN IP address.
Tunnel Destination	GRE Remote IP address. Usually a public IP address
Keep alive	GRE tunnel keep alive to keep GRE tunnel connection.
Interval	Keep alive interval time.
Retries	Keep alive retry times. After retry times, GRE tunnel will be re-established.
Description	

Step 2	Please	click	"save"	to	finish.
--------	--------	-------	--------	----	---------

----End

2.11.2 **OpenVPN Client Setting**

Step 1 VPN Tunnel> OpenVPN Client to check or modify the relevant parameter.

Image: Cleant 2 Basic Advanced Keys Status VPN Client #1 (Stopped) Status Statu Now	
Basic Advanced Keys Status VPN Client #1 (Stopped) Start with WAN Interface Type TUN * Protocol UDP * Server Address Interface Type	
VP Client #1 (Stopped) Sart with WAN Interface Type VUP ' Sart with WAN Interface Type VUP ' Sart with WAN Interface Type VUP ' Sart with WAN Interface Type VUN ' VUN ' Interface Type VUN ' VUN ' Interface Type VUN ' VUN ' VUN ' Interface Type VUN ' Interface Type VUN ' VUN ' VUN ' Interface Type	
Altent Potion Interface Type Protocol Upp • Protocol Upp • Protocol Server Address Interface Type Start with WAN	
Protect Interface Type	
rtion > Protocol UDP • Server Address 1194 Freevall Automatic • Authorization Mode TLS • Usename/Password Authentication HMAC authorization Disabled • Create NAT on tunnel • Start Now enVPN Client to Client 2 C Advanced Keys Status N Client #1 (Stopped) tart with WAN	
server Address 1194 Firewall Automatic * Authorization Mode ILS * Username/Password Authentication HMAC authorization Isabled * Create NAT on tunnel * Start Now enVPN Client c Advanced Keys Status N Client #1 (Stopped) Fart with WAN terface Type	
Authorization Mode Username/Password Authentication HMAC authorization Disabled Create NAT on tunnel Start Now enVPN Client C Advanced Keys Status N Client #1 (Stopped) rart with WAN terface Type	
enVPN Client Client 2 C Advanced Keys Status N Client #1 (Stopped) Cart with WAN terface Type	
HMAC authorization Create NAT on tunnel Start Now enVPN Client nt 1 Client 2 c Advanced Keys Status N Client #1 (Stopped) terface Type TUN	
enVPN Client T Client 2 C Advanced Keys Status N Client #1 (Stopped) art with WAN terface Type	
enVPN Client T Client 2 C Advanced Keys Status N Client #1 (Stopped) art with WAN terface Type TUN	
enVPN Client 2 c Advanced Keys Status N Client #1 (Stopped) art with WAN terface Type TUN T	
nt 1 Client 2 c Advanced Keys Status N Client #1 (Stopped) art with WAN terface Type UDD	
otocol UDP *	
erver Address	1194
rewall Automatic *	
uthorization Mode	
sername/Password Authentication	
MAC authorization Disabled	



Parameter	Instruction			
Start with WAN	Enable the Openvpn feature for 4G/3G/WAN port.			
Interface Type	Tap and Tun type are optional. Tap is for bridge mode and Tunnel is for routing mode.			
Protocol	UDP and TCP optional.			
Server Address	The Openvpn server public IP address and port.			
Firewall	Auto, External only and Custom are optional			
Authorization Mode	TLS, Static key and Custom are optional.			
User name/Password Authentication	As the configuration requested.			
HMAC authorization	As the configuration requested.			
Create NAT on tunnel	Configure NAT in Openvpn tunnel.			

PN Client #1 (Stopped)		
Poll Interval	0 ((in minutes, 0 to disable)
Redirect Internet traffic		
Accept DNS configuration	Disabled *	
ncryption cipher	Use Default	T
Compression	Adaptive *	
LS Renegotiation Time	-1	(in seconds, -1 for default)
onnection retry	30	(in seconds; -1 for infinite)
erify server certificate (tls-remote)		
ustom Configuration		

Table 2-20 Adv	vanced of OpenVF	N Instruction
----------------	------------------	---------------

Parameter	Instruction				
Poll Interval	Openvpn client check router's status as interval time.				
Redirect Internet Traffic	Configure Openvpn as default routing.				
Access DNS	As the configuration requested.				



Parameter	Instruction			
Encryption	As the configuration requested.			
Compression	As the configuration requested.			
TLS Renegotiation Time	TLS negotiation time1 as default for 60s.			
Connection Retry Time	Openvpn retry to connection interval.			
Verify server certificate	As the configuration requested.			
Custom Configuration	As the configuration requested.			

				Þ
ne OpenVPN HOWTO.				
	e OpenVPN HOWTO.	e OpenVPN HOWTO.	e OpenVPN HOWTO.	Ne OpenVPN HOWTO.

Table 2-21 Keys of OpenVPN Instruction

Parameter	Instruction				
Certificate Authority	Keep certificate as the same as server				
Client Certificate	Keep client certificate as the same as server				
Client Key	Keep client key as the same as server				

OpenVPN Client	
Client 1 Client 2	
Basic Advanced Keys Status	
VPN Client #1 (Stopped)	Þ
Client is not running or status could not be read.	
	Refresh Status
Start Now	



Table 2-22 Status of OpenVPN Instruction

Parameter	Instruction
Status	Check Openvpn status and data statistics.

Step 2 Please click "save" to finish.

----End

2.11.3 **PPTP/L2TP Client Setting**

Step 1 VPN Tunnel> VPN Client to check or modify the relevant parameter.

Status	*	L2TP/PPTP Basic							~
Basic Network	•	On	Protocol ^	Name	Server	Username	Password Fire	ewall Default Ro	oute Local IP
🗇 WLAN	•		L2TP *						
Advanced Network	>	Add +	LZTP						
🔯 Firewall	•	and the second s							
VPN Tunnel	~	L2TP Advanced							~
GRE		On	Name ^	Accept DNS	MTU	MRU	Tunnel Auth	Tunnel Password	Custom Options
OpenVPN Clier		~		NO	v				
PPTP/L2TP Clie	ent	-							
R Administration		Add +							
A Administration	<u> </u>								
		PPTP Advanced							~
		On	Name ^	Accept DN	s MTU	MRU	MPPE	MPPE Statefu	I Custom Options
		~		NO	٣				
		Add+							
		Schedule							~
		On		Name 1 ^	Na	me 2	Policy	Descri	ption
							FAILOVER	Ŧ	
		Add+							
③ More Info									

parameter	Instruction
On	VPN enable
Protocol	VPN Mode for PPTP and L2TP
Name	VPN Tunnel name
Server Address	VPN Server IP address.
User name	As the configuration requested.
Password	As the configuration requested.
Firewall	Firewall For VPN Tunnel
Local IP	Defined Local IP address for tunnel



On	L2TP Advanced enable
Name	L2TP Tunnel name
Accept DNS	As the configuration requested.
MTU	MTU is 1450bytes as default
MRU	MRU is 1450bytes as default
Tunnel Auth.	L2TP authentication Optional as the configuration requested.
Tunnel Password	As the configuration requested.
Custom Options	As the configuration requested.

Table 2-25 PPTP Advanced Instruction

On	PPTP Advanced enable
Name	PPTP Tunnel name
Accept DNS	As the configuration requested.
MTU	MTU is 1450bytes as default
MRU	MRU is 1450bytes as default
MPPE	As the configuration requested
MPPE Stateful	As the configuration requested
Customs	As the configuration requested

Table 2-26	SCHEDULE	Instruction
------------	----------	-------------

On	VPN SCHEDULE feature enable
Name1	VPN tunnel name
Name2	VPN tunnel name
Policy	Support VPN tunnel backup and failover modes optional
Description	As the configuration requested

Step 2 Please click "save" to finish.

---End



2.11.4 IPSec Setting

Status	Already changed login password successfully.		
Basic Network >	IPSec		
হু WLAN 🔷 🔸			
Advanced	IPSec 1 IPSec 2 Schedule		
🔀 Firewall 🔹 🔸	Group Setup Basic Setup Advanced Setup	etup	
😫 VPN Tunnel 🛛 👻	Enable IPSec		
GRE OpenVPN Client	IPSec Extensions	Normal	
PPTP/L2TP Client	Local Security Gateway Interface	3G Cellular 📍	
IPSec	Local Security Group Subnet/Netmask	192.168.1.0/24 ex. 192.168.1.0/24	
💂 Administration 🔸	Local Security Firewalling		
	Remote Security Gateway IP/Domain		
	Remote Security Group Subnet/Netmask	10.0.0.0/24 ex. 192.168.88.0/24	
	Remote Security Firewalling		
() More Info	Save ✓ Cancel ×		

2.11.4.1 IPSec Group Setup

Step 1 IPSec> Group Setup to check or modify the relevant parameter.

Group Setup Basic Setup Advanced Setup			
Enable IPSec			
IPSec Extensions	Normal		
Local Security Gateway Interface	3G Cellular 🔻		
Local Security Group Subnet/Netmask	192.168.1.0/24	ex. 192.168.1.0/24	
Local Security Firewalling			
Remote Security Gateway IP/Domain			
Remote Security Group Subnet/Netmask	10.0.0/24	ex. 192.168.88.0/24	
Remote Security Firewalling			

Table 2-27	IPSec Group Se	tup Instruction
------------	----------------	-----------------

parameter	Instruction
IPSec Extensions	Support Standard IPSec, GRE over IPSec, L2TP over IPSec
Local Security Interface	Defined the IPSec security interface
Local Subnet/Mask	IPSec local subnet and mask.
Local Firewall	Forwarding-firewalling for Local subnet



parameter	Instruction
Remote IP/Domain	IPsec peer IP address/domain name.
Remote Subnet/Mask	IPSec remote subnet and mask.
Remote Firewall	Forwarding-firewalling for Remote subnet

Step 2 Please click "save" to finish.

---End

2.11.4.2 IPSec Basic Setup

Step 1 IPSec >Basic Setup to check or modify the relevant parameter.

Group Setup Basic Setup Ad	dvanced Setup
Keying Mode	IKE with Preshared Kev
Phase 1 DH Group	Group 2 - modp1024 🔻
Phase 1 Encryption	3DES (168-bit)
Phase 1 Authentication	MD5 HMAC (96-bit)
Phase 1 SA Life Time	28800 seconds
Phase 2 DH Group	Group 2 - modp1024 🔻
Phase 2 Encryption	3DES (168-bit)
Phase 2 Authentication	MD5 HMAC (96-bit)
Phase 2 SA Life Time	3600 seconds
Preshared Key	

Table 2-28	IPSec Basic Setup	Instruction
14010 2 20	Il eee Baele eelap	

parameter	Instruction	
Keying Mode	IKE preshared key	
Phase 1 DH Group	Select Group1, Group2, Group5 from list. It must be matched to remote IPSec setting.	
Phase 1 Encryption	Support 3DES, AES-128, AES-192, AES-256	



parameter	Instruction
Phase 1 Authentication	Support HASH MD5 and SHA
Phase 1 SA Life Time	IPSec Phase 1 SA lifetime
Phase 2 DH Group	Select Group1, Group2, Group5 from list. It must be matched to remote IPSec setting.
Phase 2 Encryption	Support 3DES, AES-128, AES-192, AES-256
Phase 2 Authentication	Support HASH MD5 and SHA
Phase 2 SA Life Time	IPSec Phase 2 SA lifetime
Preshared Key	Preshared Key

Step 2 Please click "save" to finish.

---End

2.11.4.3 IPSec Advanced Setup

Step 1 IPSec >Advanced Setup to check or modify the relevant parameter.

Group Setup	Basic Setup	Advanced Se	etup
Aggressive Mo	ode		
Compress(IP P	ayload Compre	ssion)	
Dead Peer Det	ection(DPD)		
ICMP Check			
IPSec Custom	Options 1		
IPSec Custom	Options 2		
IPSec Custom	Options 3		
IPSec Custom	Options 4		



 Table 2-29
 IPSec Advanced Setup Instruction

parameter	Instruction
Aggressive Mode	Default for main mode
ID Payload Compress	Enable ID Payload compress
DPD	To enable DPD service
ICMP	ICMP Check for IPSec tunnel
IPSec Custom Options	IPSec advanced setting such as left/right ID.

Step 2 Please click "save" to finish.

----End

2.12 Administration

2.12.1 Identification Setting

Step 1 Please click "Administrator> Identification" to enter the GUI, you may modify the router name, Host name and Domain name according to self-requirement.

Status		Already changed login password successfully.
Basic Network	Router Identification	
🕏 WLAN	and an indication of the second statement in the second second second second second second second second second	Router
Advanced	Router Name	Köuter
Network	Hostname	Router
3 Firewall	Domain Name	
VPN Tunnel		
R Administration	Save ✓ Cancel 🗙	
Identification		

Router Identification

Router Name	Router	
Hostname	Router	
Domain Name		

Save√ Cancel x

Table 2-30 Router Identification Instruction	٦
--	---

Parameter	Instruction	
Router name	Default is router, can be set	maximum 32 character
Host name	Default is router, can be set	maximum 32 character



Parameter	Instruction
Domain name	Default is empty, support maximum up to 32 character, it is the domain of WAN, no need to configure for most application.

Step 2 Please click "save" to finish

----End



2.12.2 Time Setting

Step 1 Please click "Administrator> time" to check or modify the relevant parameter.

۲	Status	•	Time	
0	Basic Network	.	2007/02/2007	
\$	WLAN	•	Router Time	Sat, 01 Jan 2000 09:01:24 +0800 Clock Sync.
۲	Advanced Network	\$	Time Zone	UTC+08:00 China, Hong Kong, Western Australia, Singapore, Taiwan 💌
8	Firewall	•	Time zone	ore rooso china, nong kong, westeri xusuala, singapore, raiwan
۵	VPN Tunnel	•	Auto Daylight Savings Time	
黒	Administration	*		
	Identification		Auto Update Time	Every 4 Hours 🔹
	Time		Trigger Connect On Demand	
	Admin Access			
	Scheduled Reboot		NTP Time Server	Asia 🔻
	SNMP			
	Storage Settings M2M Settings			0.asia.pool.ntp.org, 1.asia.pool.ntp.org 2.asia.pool.ntp.org
	Configuration			
	Logging			
	Upgrade		Save ✓ Cancel ×	

CAUTION

If the device is online but time update is fail, please try other NTP Time Server.

Step 2 Please click "save to finish.

----End



2.12.3 Admin Access Setting

Step 1 Please click "Administrator>Admin" to check and modify relevant parameter.

In this page, you can configure the basic web parameter, make it more convenient for usage. Please note the "password" is the router system account password.

Status		>	WebAccess		
🧔 Basic Ne	twork		Web Style	GUI3.0 ¥	
WLAN	d Notwork	> >	Local Access	нтр	
B Firewall			HTTP Access Port	80	
VPN Tur	nel		Remote Access	Disabled 💌	
R Adminis			Allow Wireless Access		
ldentifi Time	cation		Allow Wireless Access		
Admin	Access		Block WAN Ping		
Schedu	led Reboot		SSH Enable at Startup		
Storage M2M S	Settings ettings		Allow Telnet Remote Access		
Configu					
Logging Upgrad			Password	~	

Step 2 Please click save iron to finish the setting

----End

2.12.4 Schedule Reboot Setting

Step 1 Please click "Administrator>Schedule Reboot" to check and modify relevant parameter.

Status			Already changed login password successfully.
Basic Network	•	Scheduled Reboot	
WLAN		5.11.1	
Advanced		Enabled	
twork	*	Time	1:00 AM
Firewall	>	Days	Sun Mon Tue Wed Thu Fri Sat Vern
VPN Tunnel	>	Days	
Administration	n 🗸	Save ✓ Cancel ×	
Identification		Savev	
Time			
Admin Access	5		
Scheduled Re	boot		

Step 2 Please click save iron to finish the setting

----End

2.12.5 SNMP Setting

Step 1 Please click "Administrator>SNMP" to check and modify relevant parameter.

Status /		SNMP Settings	
Basic Network	6	Siving Settings	
ক WLAN		Enable SNMP	
Advanced Network	8	Port	161
🔯 Firewall 🔷 🔸	<i>51</i>		
💭 VPN Tunnel 🔹 🔸	8	Remote Access	
💂 Administration 🗸		Allowed Remote	
Identification			(optional; ex: "1.1.1.1", "1.1.1.0/24", "1.1.1.1 - 2.2.2.2" or "me.example.com")
Time			
Admin Access		Location	router
Certificate Scheduled Reboot		Contact	admin@router
SNMP			
Storage Settings		RO Community	rocommunity
M2M Settings		Custom OID :	
Configuration			
Logging Upgrade		1.3.6.1.4.1.2021.505	eg:/bin/nvram get snmp_enable
Opgrade O More Info		1.3.6.1.4.1.2021.506	

Step 2 Please click save iron to finish the setting

----End

2.12.6 Storage Setting

Step 1 Please click "Administrator>Storage Setting" to check and modify relevant parameter.

0	Basic Network	*				
	WLAN		Storage settings			v
۲	Advanced Network		Storage	Router 🔻 Total :5,184.00) КВ Free:4,924.00 КВ	
0	Firewall					
٠	VPN Tunnel		Upload new file			~
黒	Administration		No file chosen	Choose File Upload		
	Identification					
	Time					
	Admin Access		Current file list			~
	Scheduled Reboot					
	SNMP		File name	File size	File operation	
	Storage Settings					
	M2M Settings					
	Configuration					
	Logging		Save✓ Cancel×			
	Upgrade					

Step 2 Please click save iron to finish the setting

NOTE WL-R100/R200 series router doesn't support extra storage. The storage path is Router as default.

----End

2.12.7 M2M Access Setting (Apply to M2M Management Platform installation application only)

Step 1 Please click "Administrator>M2M Access" to check and modify relevant parameter.

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Status	m2m	
Basic Network	M2M Enabled	
🗟 WLAN	Fail Action	Restart M2M 🔹
Advanced Network	Device ID	
S Firewall		
VPN Tunnel	M2M Server/Port	: 8000
R Administration		
Identification	Heartbeat Intval	60 (seconds)
Time	Heartbeat Retry	10 (Range10-1000)
Admin Access		
Scheduled Reboot		
SNMP	Named-Pipe Enabled	Remote Connect 🔻
Storage Settings	Named-Pipe Server Port	8002 (Range:1024-65535)
M2M Settings		
Configuration	Named-Pipe Status	Offline
Logging		
Upgrade	Named-Pipe Address	0.0.0

Step 2 Please click save iron to finish the setting

----End

2.12.8 DI/DO Setting(Apply to WL-R210 only)

Step 1 Please click "Administrator>DI/DO Setting" to check and modify relevant parameter.

		Already changed login password successfully.
Basic Network >	DI Setting	
♥ WLAN >	Enabled	Port1 Port2
会 Advanced Network >		
8 Firewall >		
VPN Tunnel >	DO Setting	
🕱 Administration 👻	Enabled	
Identification Time	Alarm Source	DI Control SMS Control
IIIII		
Admin Access	Alarm Action	ON T
Scheduled Reboot	Alarm Action	
Scheduled Reboot SNMP	Alarm Action Power On Status	ON V OFF V
Scheduled Reboot SNMP Storage Settings		
Scheduled Reboot SNMP Storage Settings M2M Settings	Power On Status	OFF *
Scheduled Reboot SNMP Storage Settings	Power On Status	OFF *
Scheduled Reboot SNMP Storage Settings M2M Settings DI/DO Setting	Power On Status Keep On	OFF *

2.12.8.1 DI Configure

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Enabled	Port1 🔽	Port2
Port1Mode	ON	×
Filter	1	(*100ms)
SMS Alarm		
DO Setting		
Enabled	\checkmark	
Alarm Source	DI Control	SMS Control
Alarm Action	ON T	
Power On Status	OFF *	
	1	(*100ms)

Table 2-31 DI Instruction

Parameter	Instruction
Enable	Enable DI. Port1 is for I/O1 and Port2 is I/O2. Both I/O1 and I/O2 are DI ports
Mode	Selected from OFF, ON and EVENT_COUNTER modes. OFF Mode: DI from high level(3.3v~5V) to low level(0V), it will trigger alarm. ON Mode: DI from low level(0V) to high level(3.3v~5V), it will trigger alarm. EVENT COUNTER Model: Enter EVENT COUNTER mode.
Filter	Software filtering is used to control switch bounces. Input (1~100)*100ms. Under OFF and ON modes, WL-G510 detects pulse signal and compares with first pulse shape and last pulse shape. If both are the same level, WL-G510 will trigger alarm.



Parameter	Instruction
	Under EVENT_COUNTER mode, if first pulse shape and last pulse shape are not the same level, WL-G510 will trigger alarm according to Counter Action setting.
Counter Trigger	Available when DI under Event Counter mode
	Input from 0 to 100. (0=will not trigger alarm)
	It will trigger alarm when counter reaches this value. After triggering alarm, DI will keep counting but no trigger alarm again.
Counter Period	It's a reachable IP address. Once the ICMP check is failed, GRE will be established again.
Counter	it will re-count after counter trigger alarm. The value is 0~30000(*100ms).
Recover	0 means no counter.
	HI_TO_LO and LO_TO_HI is available when DI under Event Counter mode.
Counter Action	In Event Counter mode, the channel accepts limit or proximity switches and counts events according to the ON/OFF status. When LO_TO_HI is selected, the counter value increase when the attached switch is pushed. When HI_TO_LO is selected, the counter value increases when the switch is pushed and released.
Counter Start	Available when DI under EVENT_COUNTER mode. Start counting when enable this feature.
SMS Alarm	The alarm SMS will send to specified phone group.
	Each phone group include up to 2 phone numbers.
SMS Content	70 ASCII Char Max
Number 1	SMS receiver phone number.
Number 2	SMS receiver phone number.

Step 2 Please click "save" to finish.

 \mathbf{N} NOTE

OFF Mode

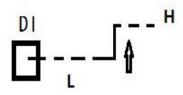
DI from high level 3.3~5V to low level 0V will be triggered.

L

ON Mode

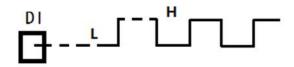
Data input from low level 0V to high level 3.3~5V will be triggered.





EVENT_COUNTER Model

The counted number of pulses will be triggered.



2.12.8.2 DO Configure

DO Configure Enable DI Alarm 🔽 SMS Control 🗹 M2M Control Alarm Source Alarm Action Pulse 🗸 Power On Status ON 🗸 0 (*100ms) Delay Low 10 (*100ms) 10 (*100ms) High 1 Output 70 ASCII Char Max SMS Trigger Content 70 ASCII Char Max SMS Replay Content SMS Manager Num1 backup receiver SMS Manager Num2

Parameter	Instruction
Enable	1 DO as selected
Alarm Source	Digital output initiates according to different alarm source. Select from DI Alarm, SMS Control and M2M Control. Selections can be one or more. DI Alarm: Digital Output triggers the related action when there is alarm from Digital Input.



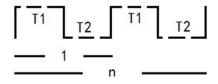
Parameter	Instruction
	SMS Control: Digital Output triggers the related action when receiving SMS from the number in phone book.
	M2M Control: it's not ready.
Alarm Action	Digital Output initiates when there is an alarm.
	Selected from "OFF", "ON", "Pulse".
	OFF: Open from GND when triggered.
	ON: Short contact with GND when triggered.
	Pulse: Generates a square wave as specified in the pulse mode parameters when triggered.
Power on	Specify the digital Output status when power on.
Status	Selected from OFF and ON.
	OFF: how high(0V).
	ON: high lever(4.8-5.0V)
Keep On	Available when digital output Alarm On Action/Alarm Off Action status is ON, input the Digital Output keep on status time.
	Input from 0 to 255 seconds. (0=keep on until the next action)
Delay	Available when enable Pulse in Alarm On Action/Alarm Off Action.
	The first pulse will be generated after a "Delay".
	Input from 0 to 30000ms. (0=generate pulse without delay)
Low	Available when enable Pulse in Alarm On Action/Alarm Off Action.
	In Pulse Output mode, the selected digital output channel will generate a square wave as specified in the pulse mode parameters. The low level widths are specified here.
	Input from 1 to 30000 ms.
	Available when enable Pulse in Alarm On Action/Alarm Off Action.
High	In Pulse Output mode, the selected digital output channel will generate a square wave as specified in the pulse mode parameters. The high level widths are specified here. Input from 1 to 30000 ms.
Output	Available when enable Pulse in Alarm On Action/Alarm Off Action.
	The number of pulses, input from 0 to 30000. (0 for continuous pulse output)
SMS Trigger	Available when enable SMS Control in Alarm Source.
Content	Input the SMS content to enable "Alarm On Action" by SMS (70 ASIC II char max).
SMS Reply Content	Input the SMS content, which will be sent after DO was triggered. (70 ASIC II char max).
Number 1	SMS receiver phone number.
Number 2	SMS receiver phone number.

Step 3 Please click "save" to finish.





DO might be customized pulse width ratio: T1, T2 duration and n value.



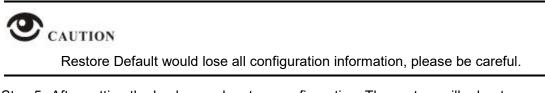
---End

2.12.9 Configuration Setting

Step 4 Please click "Administrator> Configuration " to do the backup setting

Basic Networ	k)	
WLAN	15	Backup Configuration
Advanced Ne	stwork	router_015_m1E202D .cfg Backup 🛆
🔯 Firewall	•	Save As Default Configuration
VPN Tunnel	>	Save
💂 Administratio	on 💙	Restore Configuration
Identificatio	n	Select the configuration file to restore:
Time		No file chosen Choose File Restore
Admin Acce	ss	
Scheduled R	leboot	Restore Default Configuration
SNMP		Select 🔻 OK
Storage Sett	tings	
M2M Settin	gs	Total / Free NVRAM: 64.00 K8 / 39.45 K8 (61.83%)
Configuratio	n	
Logging		
Upgrade		
(i) More	: Info	

Figure 3-1 Backup and Restore Configuration GUI



Step 5 After setting the backup and restore configuration. The system will reboot automatically.

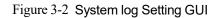
----End



2.12.10 System Log Setting

Step 6 Please click "Administrator> Logging" to start the configuration, you can set the file path to save the log (Local or remote sever).

Basic Network	*			
ବ WLAN		Syslog	Y	
Advanced Network		Log Internally		
🔯 Firewall		Log To Remote System		
VPN Tunnel		Generate Marker	Every 1 Hour 🔹	
R Administration				
Identification		Limit	60 (messages per minute / 0 for unlimited)	
Time				
Admin Access		Save ✓ Cancel ×		
Scheduled Reboot				
SNMP				
Storage Settings				
M2M Settings				
Configuration				
Logging				
Upgrade				
① More Info				



Step 7 After configure, please click "Save" to finish.

----End



2.12.11 Firmware upgrade

Step 8 Please click "Administrator>firmware upgrade" to open upgrade firmware tab.

0	Basic Network	2	
	WLAN	•	Upgrade Firmware Select the file to use:
۲	Advanced Network	•	No file chosen Choose File Upgrade
8	Firewall	*	After flashing, erase all data in NVRAM memory
•	VPN Tunnel	•	
泉	Administration	•	Current Version: G5.0.1.5-200131-120346
	Identification		Free Memory: 86.79 MB (aprox. size that can be buffered completely in RAM)
	Time		
	Admin Access		
	Scheduled Reboot		
	SNMP		
	Storage Settings		
	M2M Settings		
	Configuration		
	Logging		
b	Upgrade		

Figure 3-3 Firmware Upgrade GUI



Please don't cut off the power during upgrading. The upgrade period is about

4mins.

2.12.12 "Reset" Button for Restore Factory Setting

If you couldn't enter web interface for other reasons, you can also use this way. "Reset" button is near to Console port in WL-Rxx panel, This button can be used when the router is in use or when the router is turned on.

Press the "RST" button and keep more than 8 seconds till the NET light stopping blink. The system will be reverted to factory.

Parameter	Default setting
LAN IP	192.168.1.1
LAN Subnet Mask	255.255.255.0
DHCP server	Enable
User Name	admin
Password	admin

Table 2-33 System Default Instruction



After reboot, the previous configuration would be deleted and restore to factory settings.

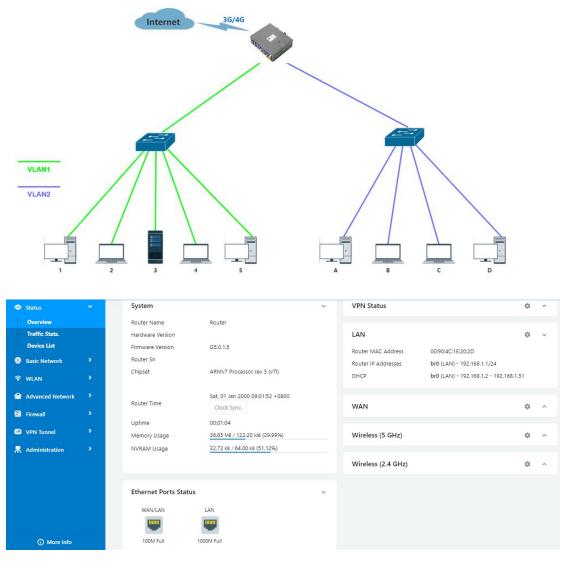


3 Configuration Instance

This chapter is mainly for configured test case, there would be some difference between the scheme and real object. But the difference doesn't have any influence to products performance.

3.1 VLAN

WL-R200/R210/R520 supports VLAN partition based on Ethernet port (LAN1~LAN5)



1) Configure LAN with Basic Network.

Status	•		You have	n't changed the de	efault password for this i	router. To change rou	ter password <u>click here.</u>	
Basic Network	*							
WAN		LAN						`
Cellular		Bridge	^	IP Address	Subnet Mask	DHCP Server	IP Pool	Lease(minutes)
LAN		br0		192.168.1.1	255.255.255.0	~	192.168.1.2 - 51	1440
VLAN								
Schedule DDNS		br1		192.168.10.1	255.255.255.0	~	192.168.10.100 - 120	1440
Routing		br2		192.168.20.1	255.255.255.0	~	192.168.20.100 - 120	1440
F WLAN		3	*					
Advanced Network	•					_		
Firewall	\$]	Add+						
VPN Tunnel	2	Save✓ Can	cel×					
Administration		Save~ Can						

2) If untag for br1 ad br2, it won't be accessed between SW1 and SW2.

•			You	haven't ch	nanged the	e default p	assword fo	or this rout	er. To char	nge router	password	click here.	
~													
	V	'LAN											
		VID ^	LAN 1	Tagged	LAN 2	Tagged	LAN 3	Tagged	LAN 4	Tagged	WAN	Tagged	Bridge
		0	4	×	×	×	×	×	×	×	×	×	br1
		Ľ			-		~						
		1	×	×	~	×	~	×	×	×	~	×	br0
		2	×	×	×	×	×	×	×	×	×	×	WAN
•		3	×	×	×	×	×	×	×.	×	×	×	br2
>		4 🔻											none
>	1	Add +											
•													
>		ive√ C	ancel×										
	2 2 2 2 2 2 2 2 2 2		 VLAN VID ~ 0 1 2 3 4 Xdd+ 	VLAN VID ~ LAN 1 0 ~ 1 × 2 × 3 × 4 * Add+	VLAN VID ^ LAN 1 0 1 2 3 3 4 Add+	VLAN VLAN VID ^ LAN 1 Tagged LAN 2 0 ~ × × 1 × × ~ 2 × × × 3 × × × 4 *	VUAN VID ^ LAN 1 Tagged LAN 2 Tagged Tagged 0 × 1 × 2 × 3 × 4	VUAN VID ^ LAN 1 Tagged LAN 2 Tagged LAN 3 0 ~ × × × × × 1 × × ~ × × × 2 × × × × × × 3 × × × × × × 4 • • Add+	ViD ^ LAN 1 Tagged LAN 2 Tagged LAN 3 Tagged 0 ~ × × × × × 1 × × × × × × 2 × × × × × × 3 × × × × × × 4 • • • • • •	ViD ^ LAN 1 Tagged LAN 2 Tagged LAN 3 Tagged LAN 4 0 ~ × <td>You haven't changed the default password for this router. To change router VLAN VID ^ LAN 1 Tagged LAN 2 Tagged LAN 3 Tagged LAN 4 Tagged 0 ~ ×<td>Vou haven't changed the default password for this router. To change router password VLAN VID ^ LAN 1 Tagged LAN 2 Tagged LAN 3 Tagged LAN 4 Tagged WAN 0 ~ ×</td><td>Vib LAN 1 Tagged LAN 2 Tagged LAN 3 Tagged LAN 4 Tagged WAN Tagged 0 ~ ×</td></td>	You haven't changed the default password for this router. To change router VLAN VID ^ LAN 1 Tagged LAN 2 Tagged LAN 3 Tagged LAN 4 Tagged 0 ~ × <td>Vou haven't changed the default password for this router. To change router password VLAN VID ^ LAN 1 Tagged LAN 2 Tagged LAN 3 Tagged LAN 4 Tagged WAN 0 ~ ×</td> <td>Vib LAN 1 Tagged LAN 2 Tagged LAN 3 Tagged LAN 4 Tagged WAN Tagged 0 ~ ×</td>	Vou haven't changed the default password for this router. To change router password VLAN VID ^ LAN 1 Tagged LAN 2 Tagged LAN 3 Tagged LAN 4 Tagged WAN 0 ~ ×	Vib LAN 1 Tagged LAN 2 Tagged LAN 3 Tagged LAN 4 Tagged WAN Tagged 0 ~ ×

3) If tag for br1 and br2, it will be accessed between sw1 and sw2.

O Statu	us	•			You	haven't ch	nanged the	e default p	assword fo	or this rout	er. To char	ige router	password	click here.		
😟 Basic	c Network															
WA	N		VL	AN.												
Celli	lular			VID ^	LAN 1	Tagged	LAN 2	Tagged	LAN 3	Tagged	LAN 4	Tagged	WAN	Tagged	Bridge	1
LAN				0	~	~	×	×	×	×	×	×	×	×	br1	٦
VLA										556			192		1556235	-
	edule			1	×	×	1	×	~	×	×	×	-	×	br0	
DDN	NS Iting			2	×	×	×	×	×	×	×	×	×	×	WAN	
				3	×	×	×	×	×	×	~	~	×	×	br2	-
🛜 WLA	AN	3						(53)				8		1.00		-
😭 Adva	anced Network	•	-	4 *											none	
🔞 Firev	wall	•		Add +												
🗊 VPN	I Tunnel	•														
	ninistration		Sav		ncel×											





3.2 WAN Backup (WAN as Main, Cellular Backup)

The WAN and Cellular backup feature can quickly switch traffic to Cellular (link2) when WAN (link1) fails, and WL-Rxx brings you a stable network experience.

1) Navigate to Basic **Network > WAN**, you may configure the WAN parameters with your situation

Status	•		You haven't changed the default password for this router. To change router password <u>click here.</u>
Basic Network			
WAN		WAN / Internet	
Cellular		Туре	Static Address 🔻
LAN			Disabled
VLAN Schedule		IP Address	DHCP PPPoE
DDNS		Subnet Mask	Static Address 255,255,255,0
Routing		Subnet Wask	237237237
🗟 WLAN		Gateway	192.168.10.1
Advanced Network		MTU	Default • 1500
🔯 Firewall			
VPN Tunnel		Primary DNS	192.168.10.1
R Administration		Secondary DNS	0.0.0
		Save√ Cancel×	

2) Navigate to Basic Network > VLAN, enable the LAN1 as WAN Ethernet

	: Network	VLAN													
Cellu LAN	ular	VIE) ^	LAN 1	Tagged	LAN 2	Tagged	LAN 3	Tagged	LAN 4	Tagged	WAN	Tagged	Bridge	
VLA			1	~	×	~	×	~	×	~	×	×	×	br0	
Sche	edule		2	×	×	×	×	×	×	×	×	~	×	WAN	
DDN Rout		0	٠											none	
🕈 WLA	N	Add													
😭 Adva	anced Network														
C Firew	vall	Save 🗸	Cance	el ×											
\cdots VPN	Tunnel														

3) Navigate to **Basic network > Cellular**, configure the APN as your SIM

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WL-Rxx Series Rou	iter User Manual
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Status	Basic Settings SIM 1	
Basic Network	Mode	Auto 🔻
WAN		
Cellular	PIN Code	
LAN		
VLAN	APN	3GNET
Schedule		
DDNS	User	CARD
Routing	Password	
WLAN	Password	
Advanced Network	Dial Number	*99#
🔀 Firewall	Auth Type	Auto 🔻
VPN Tunnel	Local IP Address	
R Administration		
	Save√ Cancel×	
(i) More Info		

4) Navigate to **Basic Network > Schedule**, configure WAN (Link1) preferred, Cellular backup (Link2)

Add ICMP Check to WAN Set the working mode (Schedule)

Status	>	Enabled Li	inks							~
Basic Network	~	Link Name		Link Ty	pe			Description		
— WAN		modem		ECM/Q	MI					
Cellular		wan		WAN(S	TATIC)					
- LAN - VLAN										
Schedule		ICMP Che	ck							~
- DDNS		On Li		Destination		Interval		etries	Description	
Routing		On Li	пк							×
🗢 WLAN	*	✓ W	an	8.8.8.8		20	5		WAN Port	<u> </u>
Advanced Network	*									
🔕 Firewall	•	Add +	1							
VPN Tunnel	•	Add +								
R Administration										
		Schedule								~
		On	Link 1	Link 2	Policy		Description			
		~	wan	modem	BACKUP		WAN (Link1) preferre	ed, Cellular (Link2) backup		
			modem •	modem	▼ FAILOVE	R 🔻				
		Add+								
More Info		Save✓	Cancel×							

Parameters	Instruction
modem	The router dial-up to network via modem
wan	The router dial-up to network via WAN (DHCP, PPPOE, Static IP) Ethernet
ICMP Check	When the ICMP Check fails, the switching action between Link1 and Link2
	will be triggered
Link1	The preferred link
Link2	The alternate link
BACKUP	Backup mode, Link1 and Link2 will remain online at the same time
FAILOVER	Failover mode, Link2 will dial-up to network when link1 fails

5) Status: WAN working

		深圳市德住	ink Technology Co., LTD 专物联技术有限公司	WL-Rxx Ser	ies Router Use	r Manua	al
 Status Overview Traffic Stats. Device List Basic Network WLAN Advanced Network Firewall VPN Tunnel Administration 	 A (a) A (b) 	Hardware Version Firmware Version Router Sn Chipset Router Time Uptime Memory Usage NVRAM Usage	G5.0.1.5 ARMv7 Processor rev 5 (v71) Sat, 01 Jan 2000 09:02:47 + 0800 Clock Sync. 00:01:59 36.75 Ms / 122.20 MB (30.07%) 32.55 KB / 64.00 KB (50.86%)	Connection Type Modem IMEI Modem Status Cellular ISP Cellular Network USIM Status CSQ IP Address Subnet Mask Gateway DNS Connection Status Connection Uptime	WAN Searching 0 192.168.10.113 255.255.255.0 192.168.10.1 8.8.8.853 Connected 00.0133		
		WAN/LAN		Wireless (5 GHz)		٥	^
		100M Full	1000M Full	Wireless (2.4 GHz)		\$	^

6) The system quickly switches traffic to Cellular when the WAN fails ---End

3.3 Port Forwarding

1) The router online and got a public IP address 14.31.134.94

Note: It's based on SIM card carrier

2) The PC is connected to router and got IP address 192.168.1.24

Status	~	Router Name	Ethernet 3 Status		Connection Type	Cellular Network		
Overview		Hardware Version		×	Modem IMEI	862808036518002		
Traffic Stats.		Firmware Version	General		Modem Status	Ready		
Device List		Router Sn	Connection		Cellular ISP	"CHINA TELECOM"		
Basic Network	>	Chipset	Network Connection Details	×	Cellular Network	EVDO		
			Network Connection Details:		USIM Selected	USIM Card 1 Running		
কি WLAN	*		Property Value Connection-specific DN		USIM Status	Ready		
Advanced Networ	k 🔸	Router Time	Description Realtek	USB FE Family Controller	CSQ	31		
.	>	Uptime	DHCP Enabled Yes	C-36-1C-C8	IP Address	14.31.134.94		
🔞 Firewall		Memory Usage	IPv4 Address 192.168 IPv4 Subnet Mask 255.255		Subnet Mask	255.255.255.252		
VPN Tunnel	>	NVRAM Usage		2019 9:44:38	Gateway	14.31.134.93		
R Administration			IPv4 Default Gateway 192.168	1.1	DNS	202.96.128.86:53, 202.96.134.133:53		
AT Administration	33		IPv4 DHCP Server 192.168 IPv4 DNS Server 192.168		Connection Status	Connected		
			IPv4 WINS Server NetBIOS over Topip En No		Connection Uptime	00:01:33		
		Ethernet Ports		8f:1e12:474af59b%27	Remaining Lease Time	01:58:27		
		WAN/LAN1	IPv6 DNS Server					
		1			Wireless (5 GHz)		¢ .	~
				Close				
		Unplugged			MAC Address	34:0A:94:01:51:04		
 More Info 					Wireless Mode	Access Point		

3) Configuration

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Status	•		Ye	ou haven't changed t	he default passwoi	d for this router. T	o change router pass	word_click here.
Basic Network	•							
🕅 WLAN	•	Port	orwarding					
Advanced Networl		On	Proto	Src Address	Ext Ports	Int Port	Int Address	Description 个
Port Forwarding		~	UDP		8000	8000	192.168.1.24	
Port Redirecting		~	TCP		433	433	192.168.1.24	
DMZ IP Passthrough			Both		8080	8080	192.168.1.24	
Triggered		De	lete × Can	celØ OK✓				
Captive Portal Serial App.								
UPnP/NAT-PMP			TCP	Ŧ				
Bandwidth Limite /RRP		Ad	d +					
Static DHCP				onal) - Forward only if from				
Firewall	•	•	Int Port (optional	orts to be forwarded, as seer The destination port insid ifferent internal port				rt per entry is supported when
VPN Tunnel	•			destination address inside th	ne LAN.			
R Administration	•							

4) The PC can be accessed via 14.31.134.94:443 over Internet

---End

3.4 IP Passthrough

1) The router online

Status	*		Y	ou haven't change	d the default p	assword for	this router. To change route	r password <u>click here.</u>		
Overview										
Traffic Stats.		System				~	WAN		\$	~
 Device List 		Router Name	Router				Connection Type	Cellular Network		
Basic Network		Hardware Version	C11-D20				Modem IMEI	862808036518002		
		Firmware Version	G5.0.1.5				Modem Status			
🕆 WLAN	*	Router Sn		1904010001			Cellular ISP	Ready "CHINA TELECOM"		
Advanced Network							Cellular ISP Cellular Network	EVDO		
a	100	Chipset	ARMV7 F	Processor rev 5 (v7i)						
S Firewall	•						USIM Selected	USIM Card 1 Running		
VPN Tunnel		Router Time	Thu, 04 /	Apr 2019 09:59:42 +0800	Clock Sync.		USIM Status	Ready		
		Uptime	00:17:18				CSQ	31 🛹		
Administration	*	Memory Usage	37.59 MB	/ 122.22 MB (30.76%)			IP Address	14.31.134.94		
		NVRAM Usage	32,43 KB	/ 64.00 KB (50.67%)			Subnet Mask	255.255.252		
							Gateway	14.31.134.93		
							DNS	202.96.128.86:53, 202.96.134.133:53		
							Connection Status	Connected		
		Ethernet Ports Status				~	Connection Uptime	00:16:09		
		WAN/LAN1	LAN2	LANS	LAN4		Remaining Lease Time	01:43:51		
		WARLANT	(100 C	CANS	CAN4					
		—		—	1		Wireless (5 GHz)		â	~
		Unplugged	100M Full	Unplugged	Unplugged				-	
							MAC Address	34:0A:94:01:51:04		
							Wireless Mode	Access Point		
		VPN Status				\$ ~	Wireless Network Mode	Auto		
		No Active VPN					Interface Status	Up (LAN)		
O More Info							Radio	Enabled 🗸		

2) Configure IP passthrough destination MAC address (PC Ethernet MAC)

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🗟 WLAN	5	IP Passthrough		📮 Ethernet 3 Status	
		Enabled		Network Connection Deta	ils X
Advanced Network	× 1	Lindoled		Network Connection Details	
Port Forwarding Port Redirecting		MAC Address	00:E0:4C:36:1C:C8	Property Connection-specific DN Description	Value Realtek USB FE Family Controller
DMZ		Gateway		Physical Address DHCP Enabled	00-E0-4C-36-1C-C8 Yes
IP Passthrough		onenay		IPv4 Address	192.168.1.24
Triggered				IPv4 Subnet Mask Lease Obtained	255.255.255.0 04 April 2019 9:58:17
Captive Portal				Lease Expires	05 April 2019 9:58:16 192.168.1.1
Serial App.		Save Cancel ×		IPv4 DHCP Server	192.168.1.1
UPnP/NAT-PMP				IPv4 DNS Server IPv4 WINS Server	192.168.1.1
Bandwidth Limiter				NetBIOS over Tcpip En	
VRRP				Link-local IPv6 Address IPv6 Default Gateway	fe80::186f:1e12:474a.f59b%27
Static DHCP				IPv6 DNS Server	
🔯 Firewall	•			· · · · · · · · · · · · · · · · · · ·	Close
VPN Tunnel	>				Ciuse

3) Set the PC to DHCP

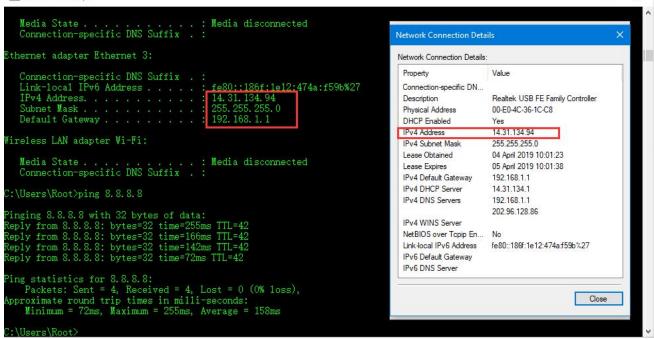
Ethernet Status	📮 Ethernet Properties	Internet Protocol Version 4 (TCP/IPv4) Properties
General	Networking Sharing	General Alternate Configuration
Connection	Connect using:	You can get IP settings assigned automatically if your network supports
IPv4 Connectivity: Internet	Intel(R) Ethemet Connection (3) I218-V	this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
IPv6 Connectivity: No network access Media State: Enabled	Co	Dtain an IP address automatically
Duration: 05:11:32	This connection uses the following items:	O Use the following IP address:
Speed: 100.0 Mbps	 File and Printer Sharing for Microsoft Networks 	IP address:
Details	QoS Packet Scheduler	Sybnet mask:
	Internet Protocol Version 4 (TCP/IPv4) Alpha Microsoft Network Adapter Multiplexor Protocol	Default gateway:
Activity	Microsoft LLDP Protocol Driver Internet Protocol Version 6 (TCP/IPv6)	Obtain DNS server address automatically
Sent — 🛄 — Received	٢	O Use the following DNS server addresses:
	Install Uninstall Pro	Preferred DNS server:
Bytes: 39,134,796 630,257,094	Description	Alternate DNS server:
Properties Diagnose Diagnose	Transmission Control Protocol/Internet Protocol. The wide area network protocol that provides communica across diverse interconnected networks.	
Close	OK	OK Cancel

4) Check the Ethernet status and ping test

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Command Prompt



5) Set the PC Ethernet as DHCP to release the IP and access to router GUI again

Ethernet Properti	es	×	Internet Protocol Version 4 (TCP/I	Pv4) Properties	>	
Networking Sharing			General			
Connect using:	net Connection (3) 1218-\			automatically if your network supports ed to ask your network administrator		
	s the following items:	Configure	O Obtain an IP address automa	atically	_	
Client for Mi File and Prir QoS Packe	icrosoft Networks nter Sharing for Microsoft	/4)	Uge the following IP address: IP address: IP address: I92 . 168 . 1 . 2 Subnet mask: Default gateway:			
	tocol Version 6 (TCP/IP	/6)	 Obtain DNS server address a O Use the following DNS server 			
Install	Uninstall	Properties	Preferred DNS server:			
Description	und Dunte and (Internet Dur	hand The defead	Alternate DNS server:	э к с		
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.			Validate settings upon exit	Ad <u>v</u> anced		
	(0K Cancel		OK Canc	el	

---End

3.5 Captive Portal

Please click "Advanced Network> Captive Portal" to check or modify the relevant parameter.

Status	•	Captive Portal	
Basic Network	•	Enabled	
😵 WLAN	•	Auth Type	NONE Y
Advanced Network	~	WEB Root	Default 🔻
Port Forwarding		WEB ROOT	Jeron ·
 Port Redirecting DMZ 		WEB Host	
IP Passthrough Triggered		Portal Host	
Captive Portal		Login Timeout	0 Minutes
Serial App. UPnP/NAT-PMP Bandwidth Limiter		Idle Timeout	0 Minutes
VRRP Static DHCP		Ignore LAN	
🐼 Firewall	•	Redirecting http://	www.google.com
VPN Tunnel	•	MAC Address Whitelist	
R Administration	•	Download QOS	
		Upload QOS	
() Marcillato		Cannel X	

1) Upload Portal file and Splash.html by local

Upload portal images and splash.html in router for the Slider (0001_portal.png, 0002_portal.png, and 0003_portal.png) to the Router under the "Administration / Storage Settings" menu.

Furthermore, also might upload splash with images together.

Status			You haven't changed the default passwo	ord for this router. To change router password <u>click here.</u>	
Basic Network		Storage settings			
🕸 WLAN		storage settings			Ť
Advanced Net	work >	Storage	Router Total :5,632.00 KB	Free:5,372.00 KB	
🐻 Firewall					
VPN Tunnel		Upload new file			~
R Administration		No file chosen	Choose File Upload		
Identification					
- Time - Admin Access					
Scheduled Re		Current file list			~
— SNMP		File name	File size	File operation	
Storage Setti		sms.list	159	× e	
 M2M Setting: DI/DO Setting 					
Configuration					
- Logging		Save ✓ Cancel ×			
Upgrade					
① More	nfo				

Each Ad file just supports 3 Ad portal images. Picture format is acceptable for png/jpg and image size is less than 100Kbytes and resolution is 800*600. Picture name is 0001_portal.png, 0002_portal.png and 0003_portal.png. Furthermore, please keep image names the same between portal file and splash.html.

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(i) More Info

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Basic Network	> > >	Storage settings Storage	Router	▼ Total :5,632.00 кв Free:5,100.00 кв		1.
Advanced Network	> > >	Upload new file				~
	> ~	No file chosen	Choose File Upload			
Identification Time Admin Access		Current file list		File size	File operation	~
Scheduled Reboot		0001_portal.png		23.8K	× 3	
Storage Settings M2M Settings DI/DO Setting		0002_portal.png 0003_portal.png		45.3K 46.0K	× 8	
Configuration Logging		bootstrap_portal.css jquery_portal.js		124.3К 289.7К	× 8	
Upgrade		splash.html		3.4К	× B	



Finally, we can see the results by connect to router WIFI



ର 🛛 🛋 ଅଟର 🕯 17:08 Sign in to Wi-Fi network MORE

Welcome to Wi-Fi Hotspot



Welcome to our open community WiFi network!

You are solely responsible for any illegal activities once you click the 'OK, I AGREE' button. We are not responsible for faulty operation of your computer or equipment. You may be asked to stop using your equipment. This banner will appear again periodically. Thank You, and Enjoy!



Modify portal file storage path Modify portal file storage for In-storage as below.

Status	•	Captive Portal	
Basic Network	*	Enabled	
🗟 WLAN	>		
Advanced Network	*	Auth Type	NONE 🔻
Port Forwarding Port Redirecting		WEB Root	In-storage 💌
DMZ		WEB Host	
IP Passthrough Triggered		Portal Host	
Captive Portal Serial App.		Login Timeout	0 Minutes
UPnP/NAT-PMP Bandwidth Limiter		Idle Timeout	0 Minutes
VRRP Static DHCP		Ignore LAN	
	•	Redirecting http://	www.google.com
VPN Tunnel	•	MAC Address Whitelist	
R Administration	>		
		Download QOS	
O More Info		Upload QOS	

---End

3.6 GPS Settings

Please click "Advanced Network> GPS" to view or modify the relevant parameter.

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Status	>		'ou haven't changed the default password for	r this router. To change router password <u>click here.</u>	
Basic Network	•	GPS			
🗟 WLAN	>	GFS			
Advanced Network	•	GPS Mode	Client		
Port Forwarding		Data Format	M2M_FMT V		
Port Redirecting DMZ IP Passthrough		Server IP/Port	192.168.1.2	: 40002	
Triggered Captive Portal		Heart-Beat Content			
 Serial App. GPS 		Heart-Beat Interval	5 (seconds)		
UPnP/NAT-PMP Bandwidth Limiter VRRP Static DHCP		Save ✓ Cancel X			
Firewall	>				
VPN Tunnel	>				
R Administration	>]				
① More Info					

Table 4-6 "GPS" Instruction

parameter	Instruction
GPS Mode	Enable/Disable
GPS Format	NMEA and M2M_FMT(WLINK)
Server IP/Port	GPS server IP and port
Heart-Beat	If choose M2M_FMT format, heart-beat ID will be packed into GPS data.
Interval	GPS data transmit as the interval time.

Step 1 Please click "save" to finis

Step 2 Connect the GPS antenna to router GPS interface

Step 3 Check GPS Status

Status		You haven't ch	anged the default password for this router. To change router password <u>click here.</u>
Overview			
Traffic Stats.		GPS Status	
GPS Status		Current	ОК
Device List		System Type	GPS
Basic Network		Satellites Numbers	
			05.
ବି WLAN	*	Satellites Clock	190404 - 022121.00
Advanced Network	>	Positioning	2234.22520N - 11356.63170E
		Google Map	View
🔯 Firewall	*		
VPN Tunnel			
R Administration			
① More Info			





M2M_FMT Format as below.

1. GPS data structure.

Router ID, gps_date, gps_time, gps_use, gps_latitude, gps_NS, gps_longitude, gps_EW, gps_speed, gps_degrees, gps_FS, gps_HDOP, gps_MSL

2. Example

0001_R081850ac,150904,043215.0,06,2234.248130,N,11356.626179,E,0.0,91.5,1,1.2,9 7.5

3. GPS data description

Field	Name	Format	Example	Description
No.				
1	Router ID	String	0001_R081850	0001 customizable product
			ac	ID.
				_R router indicator.
				081850ac Last 8digits of
				routers MAC address.
2	gps_date	yymmdd	150904	Date in year,month,day
3	gps_time	hhmmss.ss	043215.0	UTC Time, Time of position fix.
		s		
4	gps_use	numeric	06	Satellites Used, Range 0 to 12.
5	gps_latitude	ddmm.mm	2234.248130	Latitude, Degrees + minutes.
		mm		
6	gps_NS	character	N	N/S Indicator,N=north or
				S=south.
7	gps_longitude	ddmm.mm	11356.626179	Longitude, Degrees + minutes.
		mm		
8	gps_EW	character	E	E/W indicator, E=east or
				W=west.
9	gps_speed	numeric	0.0	Speed(Knots) over ground,
				units is kn/h.
10	gps_degrees	numeric	91.5	Course over ground, unit is
				degree.
11	gps_FS	digit	1	Position Fix Status Indicator,
12	gps_HDOP	numeric	1.2	HDOP, Horizontal Dilution of
				Precision
13	gps_MSL	numeric	97.5	MSL Altitude, units is meter.

---End



3.7 Firewall

1) IP/MAC/Port Filtering

This part used to intercept packages from router's WAN/Celluar interface to Internet. Test case:

1.1 Only allow three devices (MAC/LAN/WLAN) can access to Internet via WAN: 110.110.10.10

1.2 Only allow three devices (MAC/LAN/WLAN) can access to the router page (192.168.1.1)

Status	*	IP/MAC/Port Filtering						
Basic Network	*	On Src MAC	Src IP	Dst IP	Protocol	Src Port	Dst Port	Policy Description
🗟 WLAN	•	<i>y</i> -	any/0	any/0	2	2	-	Drop
Advanced Network	•		any/0	192.168.1.0/24			-	Accept
🖾 Firewall	~	✓ 50:7B:9D:C3:9A:22	any/0	any/0	<u>1</u>	2	2	Accept
IP/URL Filtering Domain Filtering		✓ 60:F1:89:20:F0:9A	any/0	any/0		÷		Accept
VPN Tunnel	•	✓ 00:1E:64:DF:E8:46	any/0	any/0	2	2	24 	Accept
R Administration	>				NON 🔻			Accer 🔻
		Add +						
		_						
		Key Word Filtering						
		On Key Word				Description		
		Add +						

2) Key Word Filtering

This part used to filter key word packages from router's WAN/Cellular interface to Internet.

Status	2						
Basic Network	>	URL Filtering					
WLAN	>	On	URL		Description		
🚔 Advanced Network	>	×	youtube				
🔕 Firewall		~	facebook				
IP/URL Filtering		~					
Domain Filtering		and the second sec					
VPN Tunnel	>	Add +					
R Administration	•	Access Filteri	ng				
		On Src MAC	Src IP	Dst IP	Protocol Src Port	Dst Port	Policy Description
					¥ 10/		Acce *
		Add +					
		Save ✓ Car	ncel×				

3) URL Filtering

This part used to filter URL from router's WAN/Cellular interface to Internet.



4) Access Filtering

This part used to filter packages from Internet to router's WAN/Celluar interface.

Test case:

4.1) Intercept all TCP packets accessing the router's WAN/Celluar(110.110.10.10).

4.2) Only two devices (MAC/LAN/WLAN) are allowed to be accessed from Internet packets.

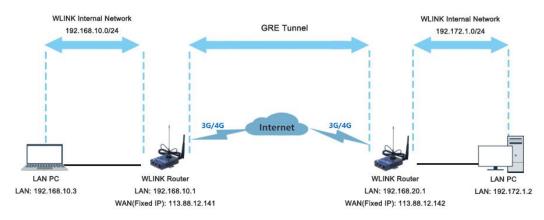
WLIN	K	E					Tools 🛠	Bandwidth 🞽	IP Traffic 📶	System 🏚
Status	•	✓ youtube								
Basic Network	•	✓ facebool	¢							
🗟 WLAN	>									
😭 Advanced Network	•	Add+								
🔞 Firewall	~									
IP/URL Filtering		Access Filtering								
Domain Filtering		On Src MAC	Src IP	Dst IP	Protocol	Src Port	Dst Port	Policy	Description	
VPN Tunnel	*	<i>y</i> -	any/0	any/0	ТСР	-	(-)	Drop		×
R Administration	>	✓ 00:1E:64:DF:E8:46	any/0	any/0	ТСР	.		Accept		
		✓ 60:F1:89:20:F0:9A	any/0	any/0	TCP	.		Accept		
					NOI 🔻			Acce 🔻		
		Add+								
		Save ✓ Cancel ×								
(i) More Info										

---End

3.8 VPN Tunnel

3.8.1 GRE

GRE Tunnel between two WL-Rxx Routers





1) WL-R200(A) Config

Navigate to **Basic Network > LAN**

۲	Status		You h	aven't changed the de	fault password for this r	outer. To change rout	er password <u>click here.</u>	
Ø	Basic Network							
	WAN		LAN					~
	Cellular		Bridge 🔨	IP Address	Subnet Mask	DHCP Server	IP Pool	Lease(minutes)
	LAN		br0	192.168.10.1	255.255.255.0	~	192.168.10.2 - 51	1440
	VLAN			192110011011	2001200120010			
	Schedule		T T					
	DDNS Routing					_		
~		>						
<u>ج</u>	WLAN	ĺ	Add+					
	Advanced Network							
Ø	Firewall		Save ✓ Cancel ×					
٩	VPN Tunnel							
黒	Administration							
	(i) More Info							

Navigate to VPN Tunnel > GRE

۵	Status	•	GRE	Tunnel								~
ø	Basic Network	•	On	Idx ^	Tunnel Address	Tunnel Source	Tunnel Destination	Keepalive	Interval	Retries	Description	
Ŷ	WLAN	•	~	1	192.168.10.10	113.113.11.11	113.111.10.10	~	10	5	A	
۲	Advanced Network	•	~									
8	Firewall	•	Ad	d+								
•	VPN Tunnel	*										
	GRE											
	OpenVPN Client		GRE	Route								~
	PPTP/L2TP Client			_	el Index 🔨	Destination Add						
	IPSec		On	Iunn	el Index o	Destination Add	ress		Description	1		Concerned in
累	Administration	>	~	1		192.172.1.0/24			A			×
			~	1	,							
			Ad	d+								
					_							
			Save✓	Cancel	×							
	(i) More Info		_									

2) WL-R200(B) Config Navigate to **Basic Network > LAN**

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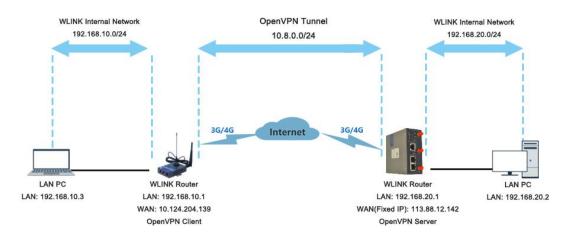
Status	You	haven't changed the de	fault password for this r	outer. To change rout	er password <u>click here.</u>	
Basic Network						
WAN	LAN					~
Cellular	Bridge 🔨	IP Address	Subnet Mask	DHCP Server	IP Pool	Lease(minutes)
LAN	br0	192.172.1.1	255.255.255.0	~	192.172.1.2 - 51	1440
VLAN Schedule						
DDNS	1 *					
Routing						
WLAN	Add+					
Advanced Network						
🔞 Firewall	Save ✓ Cancel ×					
💭 VPN Tunnel						
R Administration						
(i) More Info						

Navigate to VPN Tunnel > GRE

Status	2	GRE Tu	nnel								`
Basic Network		On le	dx ^	Tunnel Address	Tunnel Source	Tunnel Destination	Keepalive	Interval	Retries	Description	
ବି WLAN	•	~ 1		192.172.1.10	113.111.10.101	113.113.11.11	~	10	5	В	
Advanced Network	•										
Firewall	•	Add									
VPN Tunnel	*	Add -									
GRE											
OpenVPN Client		GRE Ro	oute								
				day a	Destination Add			Descriptio			8
OpenVPN Client		GRE Ro On	oute Tunnel In	ndex ^	Destination Addr	ess		Descriptio	'n		
OpenVPN Client PPTP/L2TP Client	>			ndex 🔨	Destination Addr 192.168.10.0/24	ess		Descriptio B	n		
OpenVPN Client PPTP/L2TP Client IPSec	2 2 2	On	Tunnel In			ess			n		
OpenVPN Client PPTP/L2TP Client IPSec	×.	On ✓	Tunnel In 1		192.168.10.0/24	855			m		

3.8.2 OpenVPN





OpenVPN between WL-Rxx client and Server

Please click "VPN Tunnel> OpenVPN Client" to check or modify the relevant parameter.

WLINK	=	Tools 🛠 Bandwidth 🚈 IP Traffic 🗮 Syste
👁 Status 🔹 🔸	OpenVPN Client	
Basic Network	Client 1 Client 2	
🕏 WLAN 🔷 🔸	Basic Advanced Keys Status	
Advanced Network	basic Advanced keys status	
🔯 Firewall 🔹	VPN Client #1 (Stopped)	•
🗊 VPN Tunnel 👻	Start with WAN	
GRE OpenVPN Client	Interface Type	TUN ¥
 PPTP/L2TP Client IPSec 	Protocol	UDP V
R Administration	Server Address	wlink-tech.com 1194
	Firewall	Automatic 🔻
	Authorization Mode	TLS •
	Username/Password Authentication	
	HMAC authorization	Disabled •
	Create NAT on tunnel	
More Info	Start Now	

Parameter	Instruction
Start with WAN	Enable the Openvpn feature for 4G/3G/WAN port.
Interface Type	Tap and Tun type are optional. Tap is for bridge mode and Tunnel is for routing mode.
Protocol	UDP and TCP optional.
Server Address	The Openvpn server public IP address and port.
Firewall	Auto, External only and Custom are optional
Authorization Mode	TLS, Static key and Custom are optional.
User name/Password Authentication	As the configuration requested.



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 HMAC authorization
 As the configuration requested.

 Create NAT on tunnel
 Configure NAT in Openvpn tunnel.

Status	OpenVPN Client	
Basic Network	Client 1 Client 2	
🕏 WLAN	Basic Advanced Keys Status	
Advanced Network		
🖾 Firewall	VPN Client #1 (Stopped)	*
VPN Tunnel	Poll Interval	.0 (in minutes; 0 to disable)
GRE OpenVPN Client	Redirect Internet traffic	
PPTP/L2TP Client	Accept DNS configuration	Disabled Y
R Administration	Encryption cipher	Use Default: V
	Compression	Adaptive *
	TLS Renegotiation Time	1 (in seconds: -1 for default)
	Connection retry	30 (in seconds: -1 for infinite)
	Verify server certificate (tis-remote)	
	Custom Configuration	
		() Z
More Info		

Parameter	Instruction
Poll Interval	Openvpn client check router's status as interval time.
Redirect Internet Traffic	Configure Openvpn as default routing.
Access DNS	As the configuration requested.
Encryption	As the configuration requested.
Compression	As the configuration requested.
TLS Renegotiation Time	TLS negotiation time1 as default for 60s.
Connection Retry Time	Openvpn retry to connection interval.
Verify server certificate	As the configuration requested.
Custom Configuration	As the configuration requested.

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Status	•	You have	en't changed the default password for this router. To change router password_ <u>click here</u> .
Basic Network	,	OpenVPN Client	
ক WLAN		Client 1 Client 2	
Advanced Network	•		
🔕 Firewall	•	Basic Advanced Keys Status	
VPN Tunnel	•	VPN Client #1 (Stopped)	Þ
GRE OpenVPN Client		For help generating keys, refer to the OpenVPN HOWTO.	
PPTP/L2TP Client		Certificate Authority	
R Administration	•	4	
		Client Certificate	
		4	
		Client Key	
		4	► <i>1</i>
		Start Now	
		Save ✓ Cancel ×	
O More Info			

Parameter	Instruction
Certificate Authority	Keep certificate same as the server
Client Certificate	Keep client certificate same as the server
Client Key	Keep client key same as the server

Status	You haven't changed the default password for this router. To change router password <u>click here</u> .
Basic Network	
∲ WLAN →	OpenVPN Client
Advanced Network	Client 2 Client 2
🔞 Firewall 🔹 🔸	Basic Advanced Keys Status
💭 VPN Tunnel 🛛 👻	
GRE	VPN Client #1 (Stopped)
···· OpenVPN Client	Client is not running or status could not be read.
PPTP/L2TP Client	Refresh Status
R Administration	
	Slart Now
O More Info	Save - Cancel X
O More Into	
Parameter	Instruction

Parameter	Instruction
Status	Check OpenVPN status and data statistics.

Click "save" and "start now" to enable OpenVPN when you have done all the client config.

OpenVPN Keys Guide



The fllowing steps are for server running on Windows 7/8/10

Access to (http://openvpn.net/release/) and download the file "openvpn-2.3.0-install.exe" (or higher)



Index of /release

Name	Last modified	Size Description
Parent Directory		-
1zo-1.08-3.0.el2.dag.i386.rpm	21-Feb-2012 00:50	55K
1zo-1.08-3.0.rh7.dag.i386.rpm	21-Feb-2012 00:50	54K
1zo-1.08-3.0.rh8.dag.i386.rpm	21-Feb-2012 00:50	58K
1zo-1.08-4.0.rh9.rf.i386.rpm	21-Feb-2012 00:50	59K
1zo-1.08-4.1.el3.rf.i386.rpm	21-Feb-2012 00:50	58K
1zo-1.08-4.1.el3.rf.x86_64.rpm	21-Feb-2012 00:50	55K
2 1zo-1.08-4.1.fc1.rf.i386.rpm	21-Feb-2012 00:50	58K

After installing OpenVPN, please find the OpenVPN folder to generate the certificate of server and client. (Access to <u>http://openvpn.net</u> for more information)

	noose Components	
	hoose which features of OpenVPN 2.3.0-I001 you want t Istall.	0
Select the components to insta service if it is running. All DLLs	ll/upgrade. Stop any OpenVPN processes or the OpenVPI are installed locally.	N
Select components to install:	OpenVPN File Associations	•
	OpenSSL Utilities OpenVPN RSA Certificate Management Scripts	
	Add OpenVPN to PATH	
	Add Shortcuts to Start Menu	III
	Dependencies (Advanced)	*
Constructional distance	Description	
Space required: 4.4MB	Position your mouse over a component to see its description.	
lsoft Install System v2.46-101		

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lame	Date modified	Туре	Size
bin	2019-01-10 11:42	File folder	
config	2019-01-10 14:10	File folder	
doc	2019-01-10 11:42	File folder	
easy-rsa	2019-01-10 11:54	File folder	
log	2019-01-10 14:10	File folder	
sample-config	2019-01-10 11:41	File folder	
icon.ico	2015-02-18 17:56	lcon	22 KB
Uninstall.exe	2019-01-10 11:42	Application	117 KB

Configure "vas.bat.sample" to complete the initialization step and keys

ame	Date modified	Туре	Size
keys	2019-01-10 12:04	File folder	
] .rnd	2019-01-10 12:04	RND File	1 KB
build-ca.bat	2016-01-04 20:41	Windows Batch File	1 KB
build-dh.bat	2016-01-04 20:41	Windows Batch File	1 KB
build-key.bat	2016-01-04 20:41	Windows Batch File	1 KB
build-key-pass.bat	2016-01-04 20:41	Windows Batch File	1 KB
build-key-pkcs12.bat	2016-01-04 20:41	Windows Batch File	1 KB
build-key-server.bat	2016-01-04 20:41	Windows Batch File	1 KB
clean-all.bat	2016-01-04 20:41	Windows Batch File	1 KB
] index.txt.start	2016-01-04 20:41	START File	0 KB
init-config.bat	2016-01-04 20:41	Windows Batch File	1 KB
] openssl-1.0.0.cnf	2016-01-04 20:41	CNF File	9 KB
README.txt	2016-01-04 20:41	Text Document	2 KB
revoke-full.bat	2016-01-04 20:41	Windows Batch File	1 KB
] serial.start	2016-01-04 20:41	START File	1 KB
vars.bat	2019-01-10 11:43	Windows Batch File	1 KB
vars.bat.sample	2019-01-10 11:43	SAMPLE File	1 KB

Configure the client keys to WLINK OpenVPN client GUI when you create the server and client certificate in the path OpenVPN/easy-rsa/keys Client certificate (Generated on the server)

Name	Date modified	Туре	Size
🙀 ca.crt	2019-01-10 11:57	Security Certificate	2 KB
📮 client.crt	2019-01-10 12:04	Security Certificate	4 KB
client.key	2019-01-10 12:04	KEY File	1 KB
🕥 client.ovpn	2019-01-10 14:08	OpenVPN Config	4 KB
📄 ta.key	2019-01-10 12:04	KEY File	1 KB



OpenVPN>easy-rsa>keys

Name	Date modified	Туре	WLINK	= * * * *
Tiny (0 - 10 KB) (15)				
01.pem	2019-01-10 12:01	PEM File	Status	OpenVPN Client
02.pem	2019-01-10 12:04	PEM File	Basic Network >	
a ca.crt	2019-01-10 11:57	Security Certificate	W DESIC RECITOR A	Client 1 Client 2
ca.key	2019-01-10 11:57	KEY File	🕆 WLAN	
client.crt	2019-01-10 12:04	Security Certificate	Advanced Network	Basic Advanced Keys Status
client.csr	2019-01-10 12:04	CSR File	Advanced Network	
client.key	2019-01-10 12:04	KEY File	🐼 Firewall 🔹 🔸	
dh1024.pem	2019-01-10 12:02	PEM File		VPN Client #1 (Stopped)
index.txt	2019-01-10 12:04	Text Document	💭 Ven onel 👻	For help generating keys, refer to the OpenVPN HOWTO.
] index.bd.attr	2019-01-10 12:04	ATTR File	GRE	
serial	2019-01-10 12:04	File	OpenVPN Client	Certificate Authority FSIPXdHAWUfW/eOmtXQdeXI4xFdJ/AXHFYWbFysJ+ul/aaDi aXX9
server.crt	2019-01-10 12:01	Security Certificate	PPINE 2TP Client	quDDun6eL9ngQKMfCVjoxG0bjQhcs5SNWwcPmXn/em+is/
server.csr	2019-01-10 12:01	CSR File	IPSec	END CERTIFICATE
] server.key	2019-01-10 12:01	KEY File	Administration	
] ta.key	2019-01-10 12:04	KEY File	Administration	Client Certificate a7
				QbTzIHIz2pRB6iO3VEV7sw==
				END CERTIFICATE
				+j5ZXNBejs0zicfhQQNhhqdplhl1UGUksaql0Fp0OkvgAKYuZ
				Client Key WH
				tYOrsqNxQhfj6RALBgIJU2mbWCjnUi6ZX/GicBrPyaB/qy0=
				END CERTIFICATE
				Start Now
		>		Save ✓ Cancel ×

Ping test to your server when the tunnel is established

Basic Network	•	Basic Advanced Keys	Status		
🗟 WLAN	•				
Advanced Network	•	VPN Client #1 (Running)			
Firewall	•	Data current as of Thu Apr 4 11:3	34:22 2019.		
D VPN Tunnel	~	General Statistics			
GRE		Name		Value	
OpenVPN Client		TUN/TAP read bytes	Command Prompt – 🗆 X	0	
PPTP/L2TP Client		TUN/TAP write bytes	(c) 2017 Microsoft Corporation. All rights reserved.	0	
IPSec		TCP/UDP read bytes	C:\Users\Root>ping 10.8.0.1	7168	
Administration	•	TCP/UDP write bytes	Pinging 10.8.0.1 with 32 bytes of data:	5531	
		Auth read bytes Reply from 10.8.0.1: bytes=32 time=10m TTL=63 Auth read bytes Reply from 10.8.0.1: bytes=32 time=10ms TTL=63 pre-compress bytes Reply from 10.8.0.1: bytes=32 time=10ms TTL=63	Reply from 10.8.0.1: bytes=32 time=13ms TTL=63	48	
			Reply from 10.8.0.1: bytes=32 time=10ms TTL=63	0	
		post-compress bytes	Ping statistics for 10.8.0.1:	0	
		pre-decompress bytes	Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds:	0	
		post-decompress bytes	Minimum = 10ms, Maximum = 21ms, Average = 15ms	0	
			C:\Users\Root>		Refresh Stati
					nenesi succ

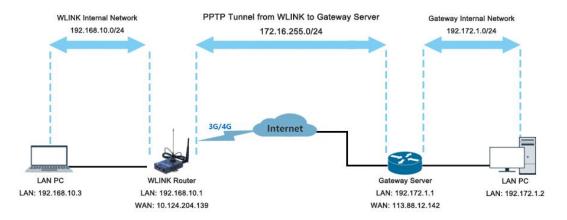
---End

3.8.3 L2TP/PPTP

Please click "VPN Tunnel>PPTP/L2TP Client" to view or modify the relevant parameter.

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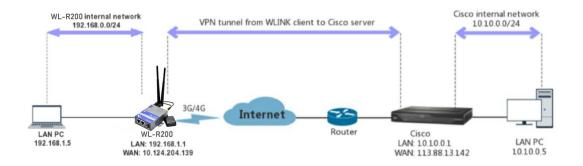
Configured as PPTP

Basic Network	>								
Basic Network	· ·	On	Protocol ^	Name	Server	Username	Password	Firewall Default R	oute Local IP
WLAN	•	1	PPTP	3	wlinktech.com.cn	test123	test123	× ×	E
Advanced Network	2	 Image: A set of the set of the	L2TP T						
Firewall	1.2	Add+							
VPN Tunnel									
GRE		L2TP Advanced							
OpenVPN Client		L2 IP Advanced							
PPTP/L2TP Client		On	Name 🔿	Accept DNS	MTU	MRU	Tunnel A	uth Tunnel Password	Custom Options
Administration				NO	Ŧ				
		Add+							
		PPTP Advanced							
		On	Name 🔿	Accept DNS	MTU	MRU	MPPE	MPPE Stateful	Custom Options
		-	3	NO	1440	1440	~	×	debug;noipdefault;requir mppe-128
		 Image: A second s		NO	Ŧ				

Note: The Custom Options are based on your server ---End

3.8.4 IPSec

IPSec between WL-R200 and Cisco Router



Cisco Config (main mode)
 crypto isakmp policy 10



encr 3des hash md5 authentication pre-share group 2 crypto isakmp key test1234 address 0.0.0.0 0.0.0.0 !

crypto ipsec transform-set Tran-set esp-3des esp-sha-hmac

crypto ipsec nat-transparency spi-matching

!

2) WLINK Config

Navigate to VPN Tunnel > IPSec > Group Setup

 Status 	•	You haven't changed the default password for this router. To change router password <u>click here</u> .					
Basic Network	•						
🕏 WLAN	•	IPSec					
Advanced Network	•	IPSec 1 IPSec 2 Schedule					
🔀 Firewall	•	Group Setup Basic Setup Advanced Setup					
VPN Tunnel	•		v				
— GRE		Enable IPSec					
OpenVPN Client PPTP/L2TP Client		IPSec Extensions	Normal 🔻				
IPSec		Local Security Gateway Interface	3G Cellular 🔻				
R Administration	•	Local Security Group Subnet/Netmask	192.168.1.0/24	ex 192.168.1.0/24			
		Local Security Firewalling	~				
		Remote Security Gateway IP/Domain	113.88.13.142				
		Remote Security Group Subnet/Netmask	10.10.0.0/24	ex 192.168.88.0/24			
		Remote Security Firewalling	~				
		Save ✓ Cancel ×					

Navigate to VPN Tunnel > IPSec > Basic Setup

Status			
Status	- ⁶	IPSec 1 IPSec 2 Schedule	
Basic Network	•		
🕏 WLAN	•	Group Setup Basic Setup Advanced Setup	
Advanced Network	•	Keying Mode	IKE with Preshared Key 🔹 🔻
Firewall	•	Phase 1 DH Group	Group 2 - modp1024 V
VPN Tunnel			
GRE		Phase 1 Encryption	3DES (168-bit) Y
 OpenVPN Client PPTP/L2TP Client 		Phase 1 Authentication	MDS HIMAC (96-bit)
		Phase 1 SA Life Time	26800 seconds
R Administration	•	Phase 2 DH Group	Group 2 - modp1024
		Phase 2 Encryption	3DES (168-bit) *
		Phase 2 Authentication	SHA1 HMAC (96-bit)
		Phase 2 SA Life Time	3600 seconds
		Preshared Key	
0		Save ✓ Cancel ×	

Navigate to VPN Tunnel > IPSec > Advanced Setup

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Status	()	IPSec					
Basic Network	•	IPSec 1 IPSec 2 Schedule					
WLAN	(9)						
Advanced Network		Group Setup Basic Setup Advance	d Setup				
Firewall	•	Aggressive Mode					
VPN Tunnel		Compress(IP Payload Compression)					
GRE OpenVPN Client PPTP/L2TP Client		Dead Peer Detection(DPD)					
		ICMP Check					
R Administration	2	Check Period Time Interval	10 seconds				
		Check Timeout Count	3 Times				
		Check IP	10.10.0.1				
		IPSec Custom Options 1	rightid=%any				
		IPSec Custom Options 2					
		IPSec Custom Options 3					
		IPSec Custom Options 4					
① More Info		Save 🗸 Cancel 🗙					
Status	•				Wireless Mode	Access Point	
- Overview		VPN Status		¢ ~	Wireless Network Mode	Auto	
Traffic Stats.		Name	2		Interface Status Radio	Up (LAN) Enabled 🗸	
- GPS Status - Device List		Protocol	L2TP		SSID	router-wifi_015103_5G	
		Connection Status	Disconnected		Broadcast	Enabled 🗸	
Basic Network	•	IP Address	0.0.0.0		Security	disabled	
😤 WLAN	•	Gateway	0.0.0.0		Channel	149 - 5.745 GHz	
Advanced Network	•	IPSec 1	Connected		Channel Width	80 MHz	
		Phase 1 Status	21 seconds		Interference Level	Acceptable	
🐼 Firewall	•	Phase 1 IKE	3DES_CBC/HMAC_MD5_96/PRF_HMAC_MD5/	/MODP_1024	Rate	433 Mbps	
VPN Tunnel	>	Phase 2 Status Phase 2 ESP	TUNNEL 3DES_CBC/HMAC_SHA1_96				
R Administration	,	IPSec Recv.	84 Bytes		Wireless (2.4 GHz)		¢ ~
AL AND ALL AND A		IPSec Send.	84 Bytes		MAC Address	34:0A:94:01:51:03	
		3.			Wireless Mode	Access Point	
		LAN		¢ v	Wireless Network Mode	Auto	
		LAN		¢ ~	Interface Status	Up (LAN)	
		Router MAC Address	34:0A:94:01:51:01		Radio	Enabled 🗸	
		Router IP Addresses	br0 (LAN) - 192.168.1.1/24		SSID	router-wifi_015103	
		DHCP	br0 (LAN) - 192.168.1.2 - 192.168.1.51		Broadcast	Enabled 🗸	
					Security	disabled	
					Channel	7 - 2.442 GHz	
					Channel Width	40 MHz	
					Interference Level	Acceptable	
① More Info					Rate	200 Mbps	

---End