SLK-R602 Series

Industrial Grade 4G/3G Router Manual

Data: 2015-6-6

SERIALLINK CONFIDENTIAL

Contents

Chapter One Product Introduction....3
1.1 Introduction： 3
Order information： 6
Chapter TWO Hardware installation 6
2.1 Packing list 6
2.2 Dimensions： 7
2.3 Antenna installation： 8
2.4 UIM/SIM card installation: 8
2.4 network connection 9
2.5 connect the power adapter 9
2.6 indicator light description 9
2.7 Reset button "Reset", which is used to restore factory Settings. 10
2.8 interface and signal indicator diagram: 10
Chapter 3 Common Configuration of routers 11
3.1 how to connect the computer to the Internet through the network line or login the configuration page of the router? 11
3.2 Log on to the configuration page of the router? 12
3.3. How to connect to the Internet or configure the router through WiFi? 13
3.4 How does the mobile phone connect the router's WiFi to the Internet or login the router's IP for configuration? 14
3.5 How to modify router IP (or LAN port address)? Login the router - network - network Settings - modified - IPV4 addresses, the IP address of the amended as you want. 15
3.6 How to change the WiFi password and ESSID? 16
3.7 if you are a dedicated SIM card, how to modify the APN of 4G/3G Internet access? 17
3.8 How to set up the VPN-L2TP,PPTP client on the router? 20
3.9How to upgrade router firmware? Login router - system - backup and upgrade 24
3.10 How do you configure WhatchCat? Let the router automatically restart the recovery network when it is disconnected from the Internet 25
3.10 How to make broadband dialing through WAN port without using 4G? 26
3.11 How to do know the 4G router is online? 28
3.12Contact: 29

SERIALLINK CONFIDENTIAL

Chapter One Product Introduction

1.1 Introduction：

SLK-R602 is an industrial-grade high-speed wireless router based on GPRS/CDMA/WCDMA/EVDO/LTE cellular mobile network to provide users with high-speed wireless Internet and wireless data transmission functions.

This product adopts industrial-grade dedicated communication 32-bit RISC processors, industrial-strength wireless mold piece, the LINUX embedded real-time operating system, support a SIM card interface, four LAN, a WAN port, and WIFI interface, at the same time provide LAN port equipment or WIFI Internet or data transmission function.

It also adopts wide temperature, wide voltage input and EMC test with electromagnetic compatibility.

Has been widely used in the Internet of things industry chain of M2M industry, such as self-service terminals, smart grid, smart transportation, smart home, financial, mobile POS terminals, supply chain automation, industrial automation, intelligent buildings, fire control, public security, environmental protection, meteorology, digital medical treatment, telemetry, military, space exploration, agriculture, forestry, water, coal, petrochemical and other fields

Features:

- ✓ LTE Band Support
  - EU Model: 2100/1800/2600/900/800 MHz (B1/B3/B7/B8/B20)
  - US Model: 1900/AWS/850/700/700/1900 MHz(B2/B4/B5/B13/B17/B25)
  -AU Model: B1/ B2/ B3/ B4/ B5/ B7/ B8/ B28
- ✓ Built-in high speed 2-port Ethernet switch,1x LAN port
- ✓ 1X WAN port(can setting as a LAN Port)

SERIALLINK CONFIDENTIAL

- ✓ Power input supported DC6-28VDC
- ✓ The power and the antenna with lightning protection
- ✓ Support VPN client(PPTP, L2TP, OPENVPN)
- ✓ Support hardware and software WDT

Details：

Cellular Interface：

Cellular Interface		
Band Supported	4G/3G/2G Version	•Supported TDD-LTE B38/B39/B40/B41 •Supported FDD-LTE B1/B3/B5/B8 •Supported FDD-LTE B12/B4/B5/B12 •Supported FDD-LTE B1/ B3/ B5/ B7/ B8/B12/ B20 •Supported FDD-LTE B1/ B2/ B3/ B4/ B5/ B7/ B8/ B28 •Supported TD-SCDMA B34/B39 •Supported WCDMA/HSDPA/HSPA+ B1/B8 •Supported WCDMA/HSDPA/HSPA+ B1/B5/B8 •Supported CDMA 1X/EVDO BC0 •Supported GSM/GPRS/EDGE 900/1800 MHz
	EVDO 3G Version	Supported EVDO，CDMA2000 1X
	HSDPA 3G Version	Supported HSUPA/HSDPA/UMTS/EDGE/GPRS/GSM
Theory of Bandwidth	• LTE CAT4- DL：50Mbps, UL：150Mbps • TD-HSDPA/HSUPA-DL：2.2 Mbps, UL：2.8 Mbps • HSPA+-DL：5.76 Mbps, UL：42 Mbps • WCDMA – DL/UL：384Kbps • CDMA2000/EVDO DL：1.8 Mbps, UL：3.1 Mbps	

WIFI Performance：

WIFI supported	
Standards	Supported IEEE 802.11 b/g/n
Frequency	2.4GHz (ISM band supported)
WIFI Rate	150Mbps
Security	64/128-bit WEP (Wired Equivalent Privacy)
	WPA & WPA-PSK &WPA2 -PSK(Wi-Fi Protected Access)

Router characteristics	
Firewall	Network Address Translation (NAT)
	State full Packet Inspection (SPI)
Media Access Control	CSMA/CA with ACK
VPN protocol	Supported IPSec，PPTP,L2TP
DHCP	Build-in DHCP (Dynamic Host Configuration Protocol)
Others protocol	Supported PPP,PPOE，DDNS,ICMP,VRRP etc

SERIALLINK CONFIDENTIAL

Hardware ：

Hardware	
CPU	32-bit high performance communication CPU,32bit/400MHZ
Flash/RAM	8M/64M
OS	LINUX latest version

Interface：

Interface	
LAN 口	1 x 10/100M port
WAN 口	1x 10/100M WAN/LAN port
Reset	1x Reset
Serial Port(RS232)	1Xrs232(optional)
Antennas	1x 3G/4G Antenna(50Ω SMA interface)
	1x WiFi or GPS antenna（option）
LED	Power-SYS-LAN-WiFi-3G/4G LED
SIM slot	Supported 1.8/3.3V SIM card we support SIM card converter meet all size sim card

Power interface ：

Power	
Default power	DC 12V/1A power adapter (US,EU etc stander option)
Input VDC	6~28V
Power Dissipation	Min: 260mA@12VDC
	MAX: 500mA@12VDC
	Average:320mA@12VDC

Physical property：

Physical property：	
Operating Temperature	Storage Temperature: (-30°C to 70°C)
	Operating Temperature: (-40°C to 75°C)
Relative Humidity	95%
Size	L*S*H: 98m x60mm x 24mm
Weight	Net weight:400g
	Packing weight: 1kg

Others：

other	
Warranty	5 years
Package contains	Seriallink Router,1.5m long RJ45 Cable,12V/1A Power Adapter,Antennas User manual(Option choose PDF) ,Warranty card, CERTIFICATION

SERIALINK CONFIDENTIAL

Order information：

Model	LAN	LAN/WAN	SIM slot	WIFI /GPS	4G
SLK-R602-_LTE	1	1	1	1	1
SLK-R602-_HSDPA	1	1	1	1	1
SLK-R602-_EVDO	1	1	1	1	1

Chapter TWO Hardware installation

2.1 Packing list

The packing list is as follows：

- ✓ 4G industrial router 1 pcs
- ✓ 4G sucker antenna 1pcs
- ✓ WIFI antennas 1pcs
- ✓ 12V/1A power adapter 1pcs
- ✓ 10/100M network cable 1 pcs
- ✓ instruction manual 1pcs
- ✓ Product qualification certificate 1pcs
- ✓ Product warranty card 1 pcs

SERIALLINK CONFIDENTIAL

2.2 Dimensions：

The dimensions are shown below. Senor group g industrial 4 g router supports standard 35 mm DIN rail installation, as well as wall-mountable installation as shown in the figure below: (unit: mm) fixed screw and routing equipment specifications for: M3 * 5 mm countersunk head screw. Note: no fixed installing 4 g industrial router screw M3, the depth of the screw to lock into the 4 g industrial router is 3 ~ 4 mm.

DIN installation diagram:

Wall mounting diagram:

Dimension:(unit:mm)

2.3 Antenna installation：

Connect one sm-head sucker antenna to the 3G/4G antenna interface and one WIFI connection to the WIFI interface. Forcibly tighten, ensure the quality of reliable connection lest affect reception.

2.4 UIM/SIM card installation:

Insert the SIM card of the corresponding operator according to the router version purchased, and the full-network version supports any operator SIM card. Installation method as shown:

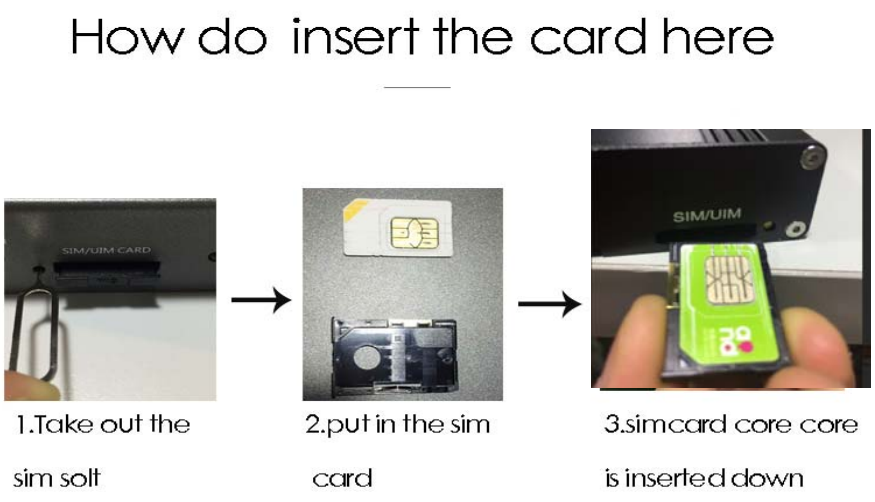
How to take out the SIM card sleeve?

When installing or removing the SIM card, press the yellow button on the left side of the SIM card holder with a sharp object, and the SIM card sleeve will pop up. Note: if the machine has a SIM card from the yellow button can a bit bigger, SIM card will pop up.

1. How to put the SIM card into the SIM card sleeve?
   If it is Nano SIM card, please use the multi-in-one SIM card holder we give away. Installing a SIM card, SIM card into the card sets first, SIM card sets missing Angle, and make sure that the SIM card metal contact outwards.
2. How to insert SIM card correctly?
   Core insert, the SIM card down and insert it into the finished card sets of will and the shell edge router level.

Note: the card core must be pointed down at the SIM card jack when it is inserted. Release your hand when you touch the SIM card slot to prevent the SIM card from falling into the machine.

SIM card installation diagram:



2.4 network connection

If you are connected to a computer or a device that requires Internet access, insert the yellow cable into any lan1-lan4 interface.

2.5 connect the power adapter

The sinolink 4G router supports 6-28v wide voltage input and USES our standard 12V/1A power adapter by default.If you need the external power adapter can access 6-28VDC dc dc power supply and ensure the power supply is not less than 8W.It is recommended to use 12V/1A national standard power adapter.

2.6 indicator light description

Senor group g 4 g router is provided with the following signal indicator lights, according to "PWRS", "SYS", "3 g / 4 g", "WIFI", "WAN", "LAN1 "

Signal strength display

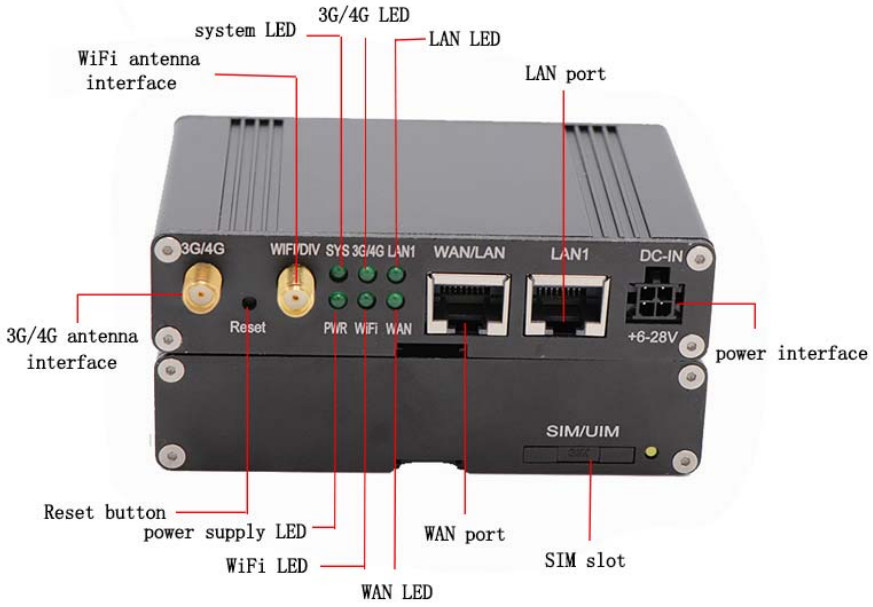
Defines as follows：

LED	Status	Definition
PWR	OFF	No power is plugged in, or the machine is damaged
	Normally on	The power input is correct and the machine is energized
SYS	OFF	The system did not start
	Normally flash	The system is starting up
	Normally on	The system is up and running
3G/4G	Normally on	Not registered to 3G/4G networks
	Quick flash	Registered to 3G/4G networks
	Slow flash	Not registered to 3G/4G networks
WIFI	Normally on	SYS have ok,wifi have working
	Normally flash	The WiFi client connects successfully and has data interaction
WAN	OFF	WAN port cable not inserted (generally used for broadband line access)
	Normally flash	WAN port cable insertion with data interaction
	Normally on	WAN port cable insertion, no data interaction
LAN1	OFF	No cable is inserted at the corresponding LAN port
	Normally flash	The corresponding LAN port has cable insertion and data interaction
	Normally on	The corresponding LAN port has cable insertion and no data interaction

2.7 Reset button "Reset", which is used to restore factory Settings.

Method of use: use a pointed object to resist the release button above 10 s, restart the router and restore factory Settings.

2.8 interface and signal indicator diagram:



SERIALLINK CONFIDENTIAL

Chapter 3 Common Configuration of routers

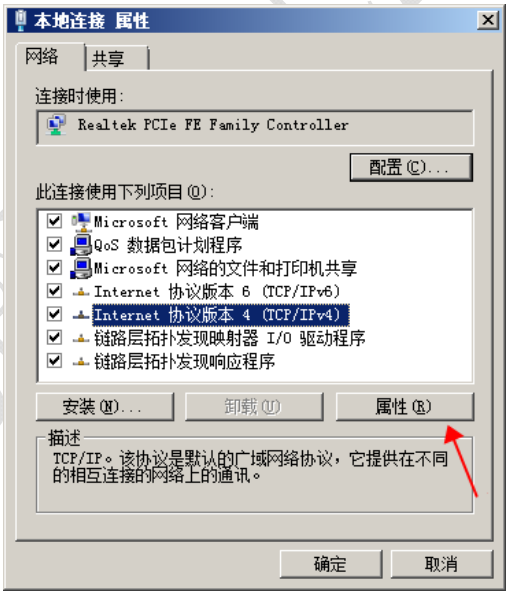
Ordinary SIM CARDS of general operators (except iot or special SIM CARDS) can be connected to the Internet without any setting of connection line or WiFi after the previous hardware is connected. The WiFi password is on the back tag of the router.

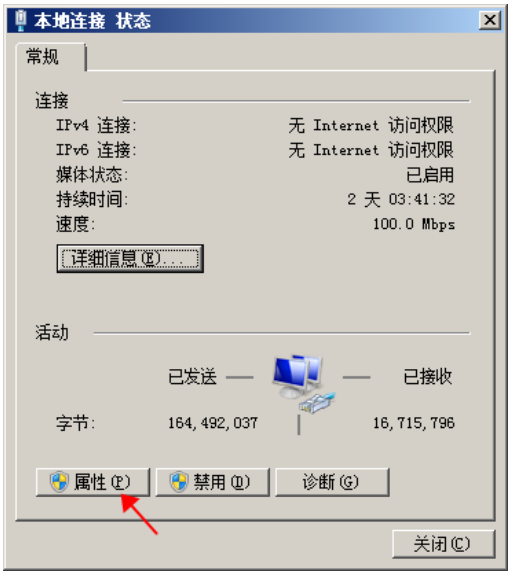
This chapter will introduce the steps of setting up the common functions of routers, and we will introduce them in question-and-answer mode, so that you can find the setting method quickly.

3.1 how to connect the computer to the Internet through the network line or login the configuration page of the router?

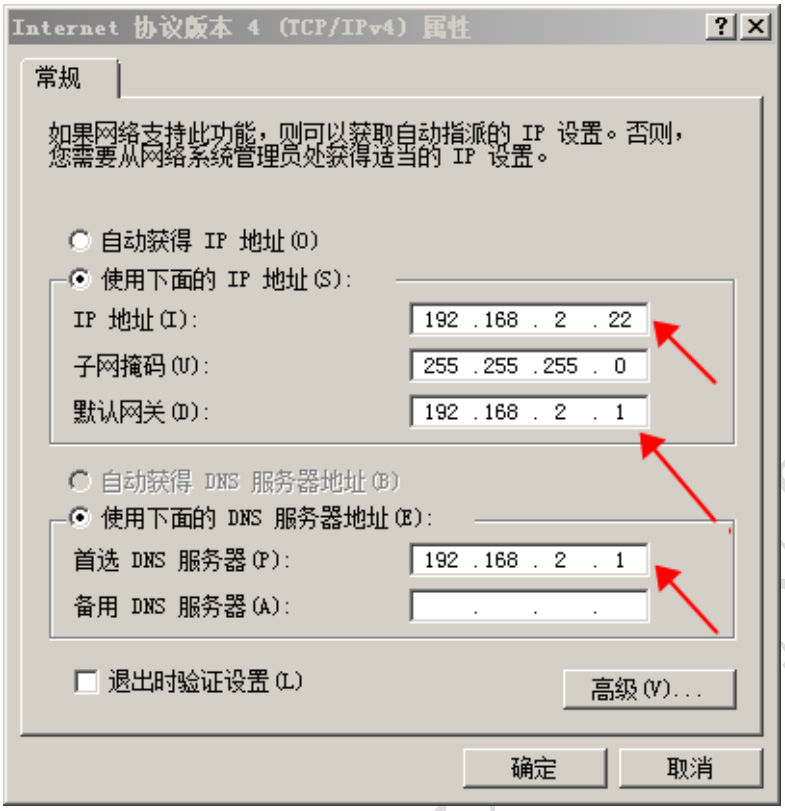
IP router to the default IP: 192.168.2.1, computer need to IP router in the same network segment. The specific setting steps are as follows:

Connect the yellow network cable to the router's LAN and the computer's Ethernet interface, then find the network and sharing center in the computer-control panel, click the local network connection and click properties:



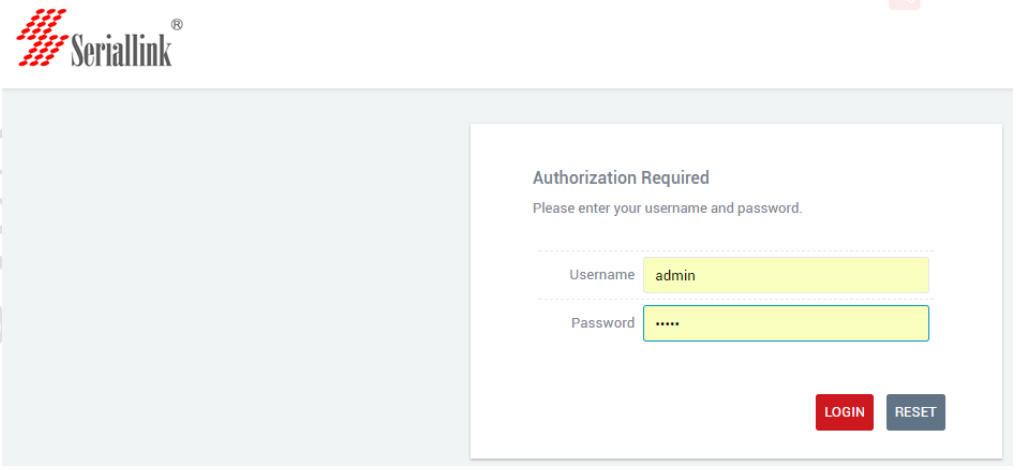


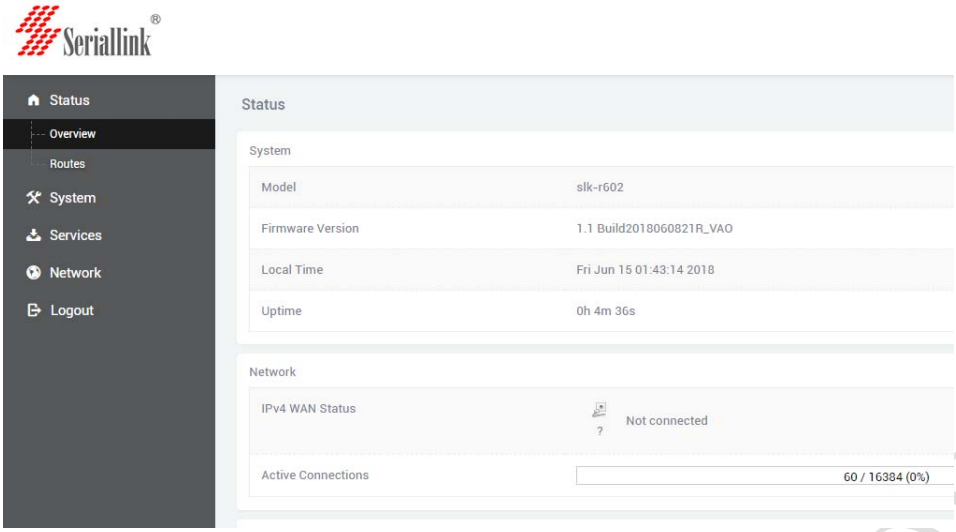
Manually modify the IP address as shown in the figure below, or click to automatically get the IP address automatically allocated by router DHCP.
Note: if it is through our 4 g router to the Internet, the default gateway and DNS need to change the IP address of the router to the Internet.



3.2 Log on to the configuration page of the router?

using Google browser or A browser with A kernel over IE10.Default password: admin, no name required.





3.3. How to connect to the Internet or configure the router through WiFi?

As shown in the figure, open the control panel - network and internet-network connection, select the wireless network connection, and click connect to.

Find the router's SSID and enter the default password to connect to it. The default WiFi password is on the back of the router.The connection is successful

You can then configure this by entering the router's IP address in the browser.For SIM CARDS that do not require configuration, you can access the Internet as long as the WIFI connection is successful.

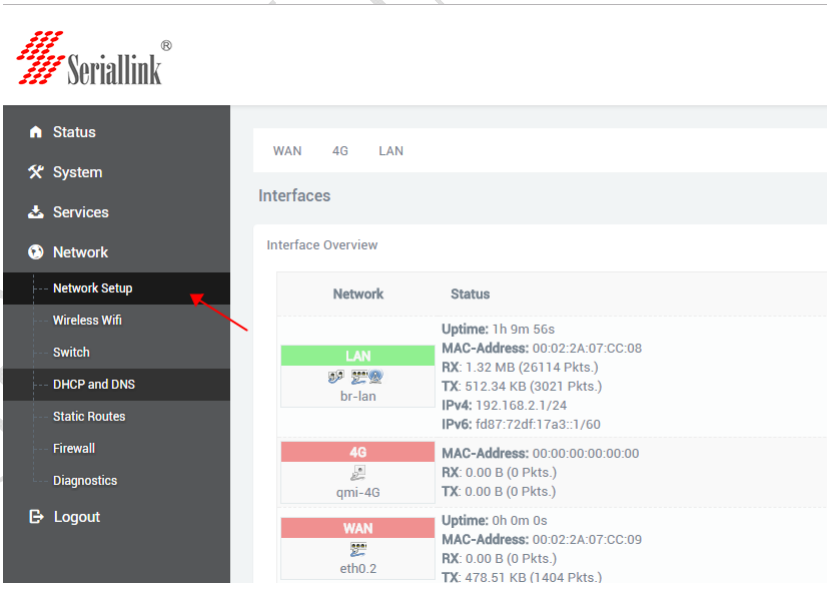
SERIALLINK CONFIDENTIAL

3.4 How does the mobile phone connect the router's WiFi to the Internet or login the router's IP for configuration?

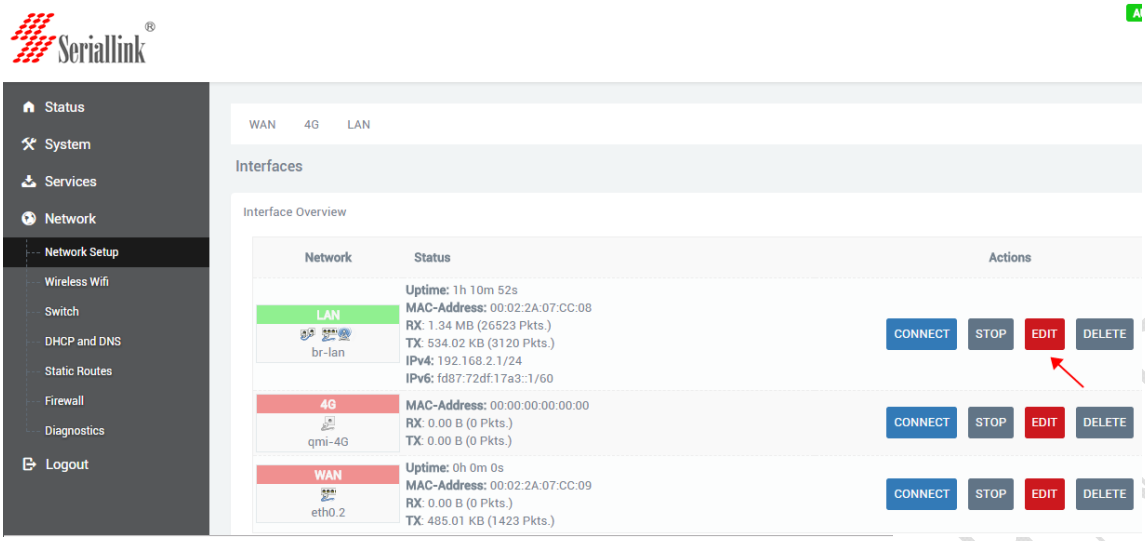
Open the wireless local area network (LAN) search to the router's SSID, begin with SLK - Routers, by default the WIFI password on the back of the router.After entering the password, you can access the Internet or enter the router IP address in the browser for configuration.

Click the position of the logo once and the configuration interface will pop up from the left side:

3.5 How to modify router IP (or LAN port address)? Login the router - network - network Settings - modified - IPV4 addresses, the IP address of the amended as you want.



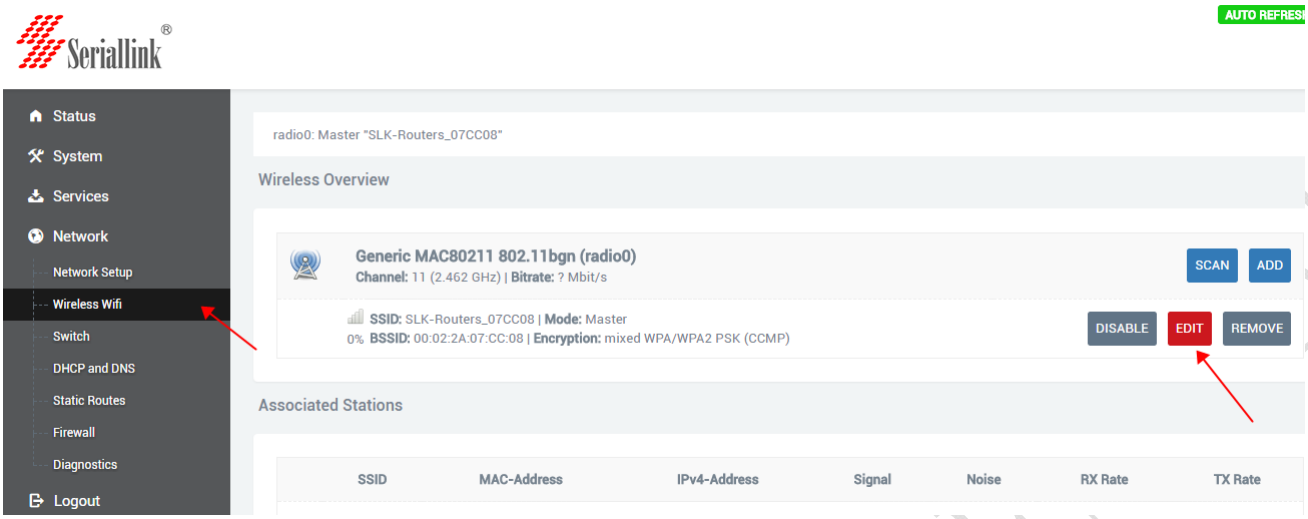
SERIALLINK CONFIDENTIAL

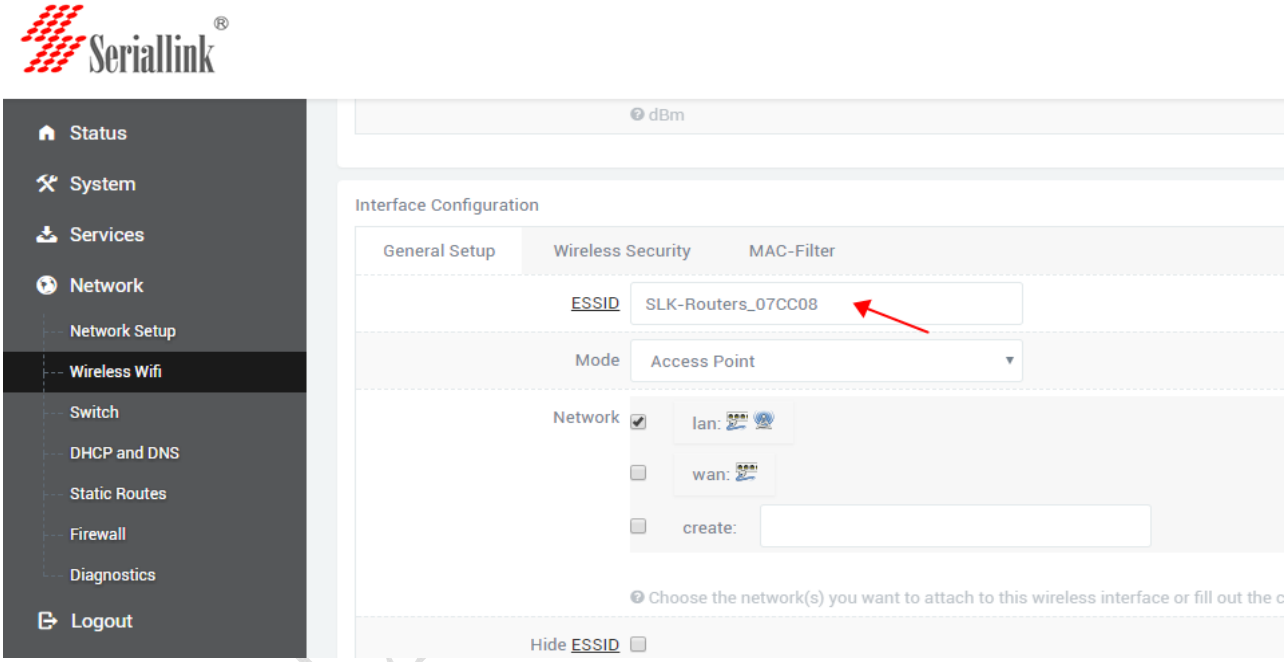


3.6 How to change the WiFi password and ESSID?

Login the router wireless WiFi - modified - wireless security, changes to save. Other parameters do not have to be modified to keep the default. Note: the WiFi password must be more than 8 bits, preferably Numbers and letters. ESSID selects the WiFi ID you want to set as needed.

SERIALLINK CONFIDENTIAL





3.7 if you are a dedicated SIM card, how to modify the APN of 4G/3G Internet access?

Login router - network - network setup -4G - modify - set APN, username and password, dial-up as needed.

Note:

1. The protocol 4G dial-up protocol is extended to 3G "UMTS/GPRS/EVDO", so no modification is required here.
2. Modemodulator nodes, different 4G module-group modemodulator nodes may be different, just keep the default.
3. General SIM card does not need any Settings, so we can access the Internet by keeping our default factory Settings.

4. Special SIM card, fill in as required. We take the setting of telecom iot card as an example:

4G: protocol and modem nodes. The service type is 4G only. The default remains the same as long as you fill in the APN, username, password and dial according to the form, and then click save the application.After the normal Internet access, as shown in the figure below, there will be both sending and receiving metropolis packets, and the operator will assign us an IP address of the 10-point network segment.It means 4G is normal.

Domestic common 4G iot card APN setting method :(iot card must be set)

Operator	APN	user	password	Dial Number
China Telecom IOT card	ctm2m	*.m 2m or m2m)	vnet.mobi vnet.mobi	*99# *99#
China Unicom IOT Card	unim2m.njm2mapn			*99#

General 4G card APN, generally can access the Internet without any Settings:

Sometime need setting as this form.

4G card APN：				
Operator	APN	User	Password	Dial Number
China Mobile	cmnet	card	card	*99#
China Unicom	3gnet	card	card	*99#
China Telecom	ctlte	ctnet@mycdma.cn or card	card	*99#

Note:

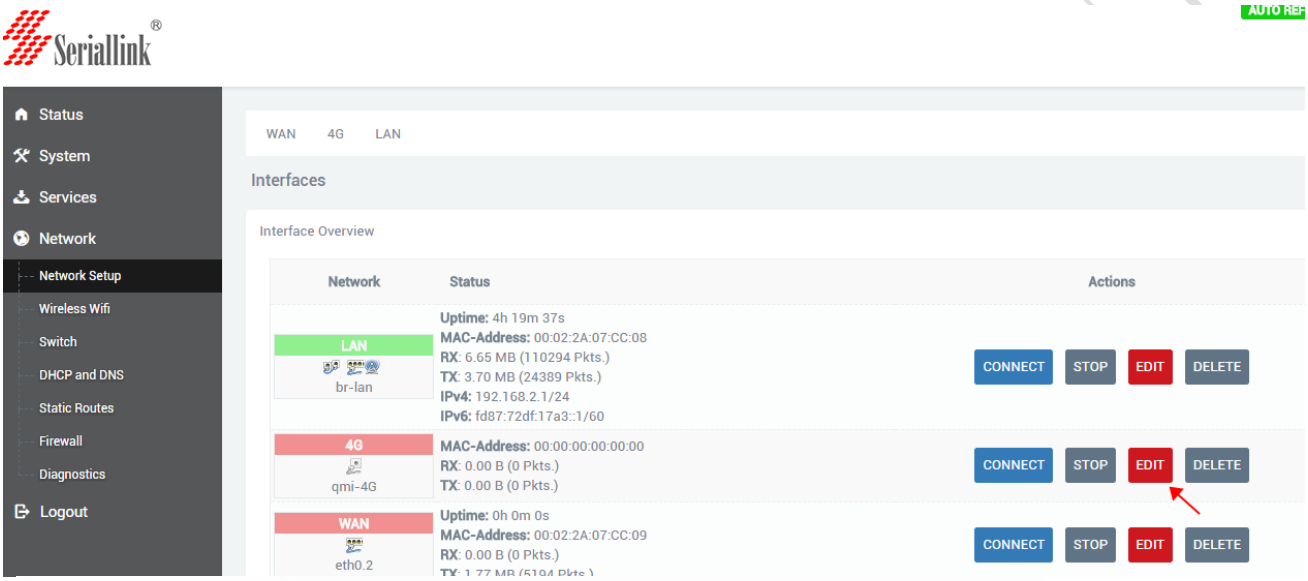
APN is different in every country, and universal SIM CARDS do not require any Settings to access the Internet, setting as your operator supplier.

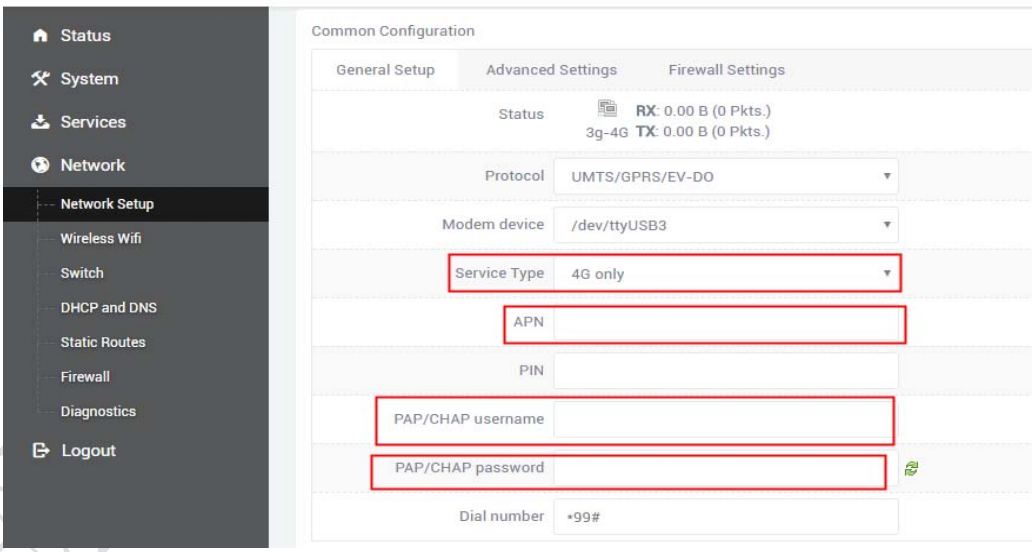
Telecom and China unicom 3 g card for 3 g general card set method: deal with modem node to keep the default, unicom, mobile 3 g service type selection "only" 3 g, 3 g telecommunications service type choose CDMA/EVDO, APN, user name, password, dial according to the following form: if you buy is unicom 3 g or telecom 3 g version of the keep the factory Settings, if it is 3 g network card or other special card according to the SIM card can surf the Internet after suppliers required to fill in.

SERIALLINK CONFIDENTIAL

General 3G network APN reference is as follows :(if you are a 3G card, you must follow the following table)

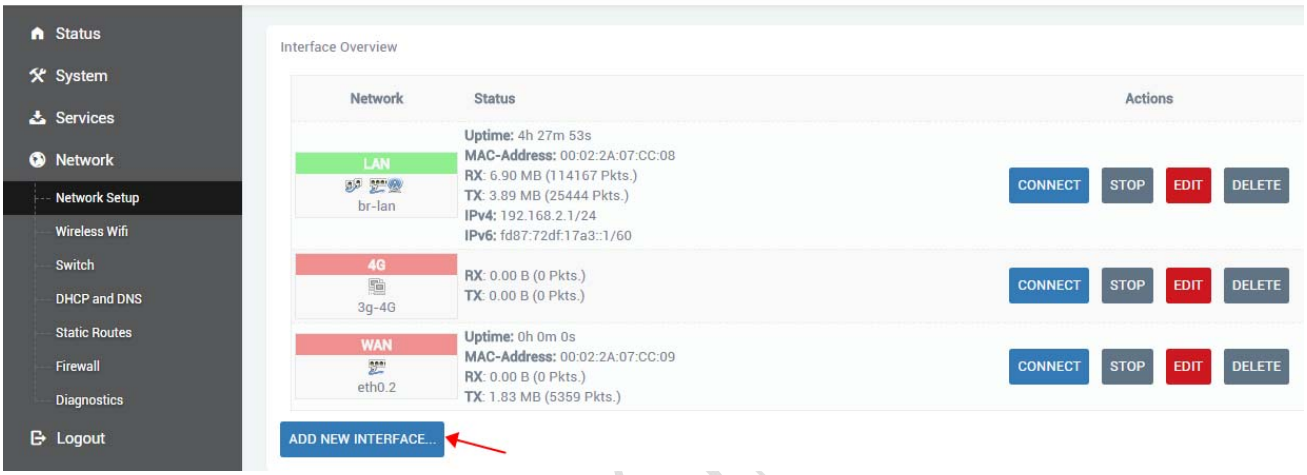
Operator	APN	user	Password	Dial Number
China Mobile	cmnet	card	card	*99#
China Unicom	3gnet			*99#
China Telecom	ctnet	ctnet@mycdma.cn	vnet.mobi	#777



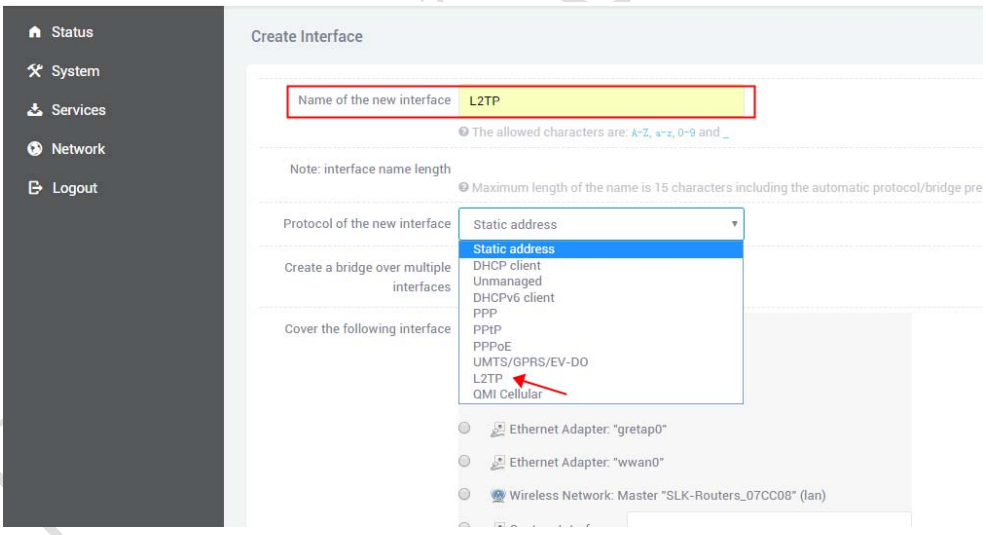


3.8 How to set up the VPN-L2TP,PPTP client on the router?

The following example is to add the L2TP client:
Need set up VPN before in other routers or ali cloud platform set up stable VPN server, also need to have public IP address.
3.8. 1 Log on to the router page and add a new interface to the network - network Settings. Interface names are custom defined as L2TP or others. Select L2TP protocol drop-down box, and dialog box will appear

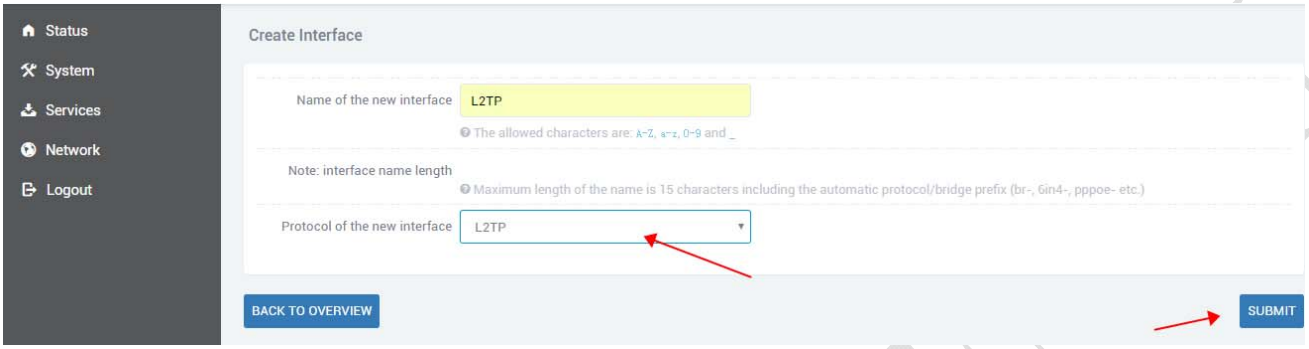


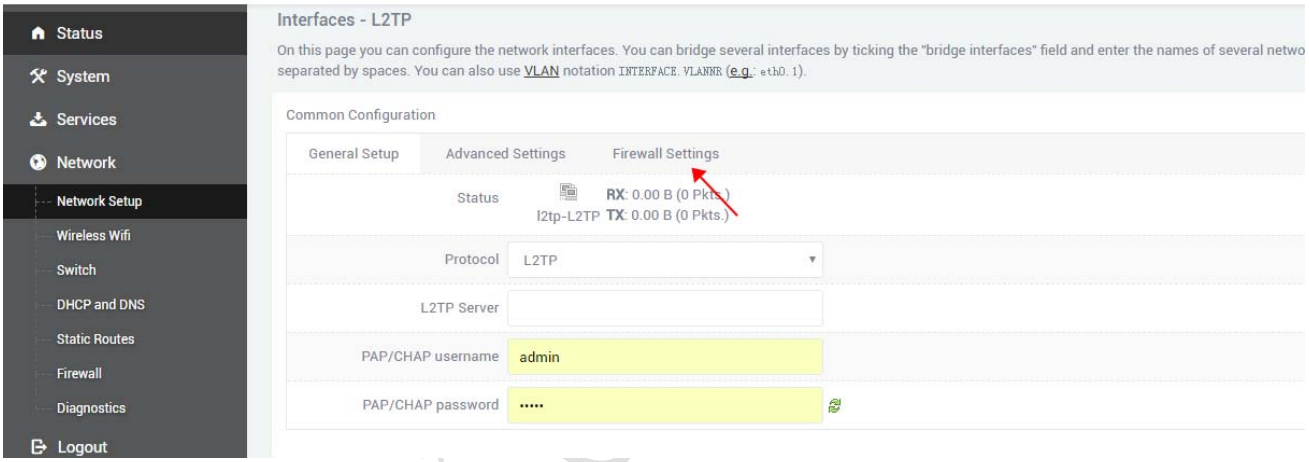
3.8.2 The interface name is L2TP (as easy to manage as the VPN name), and the interface protocol is L2TP.

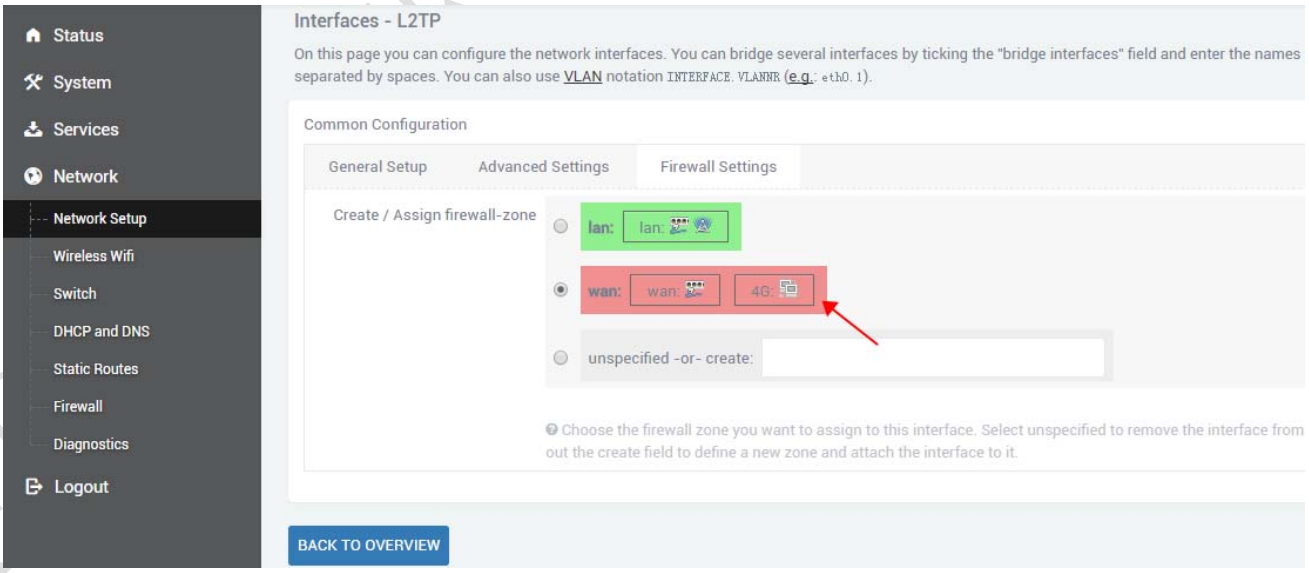


Interface protocol selection: L2TP.

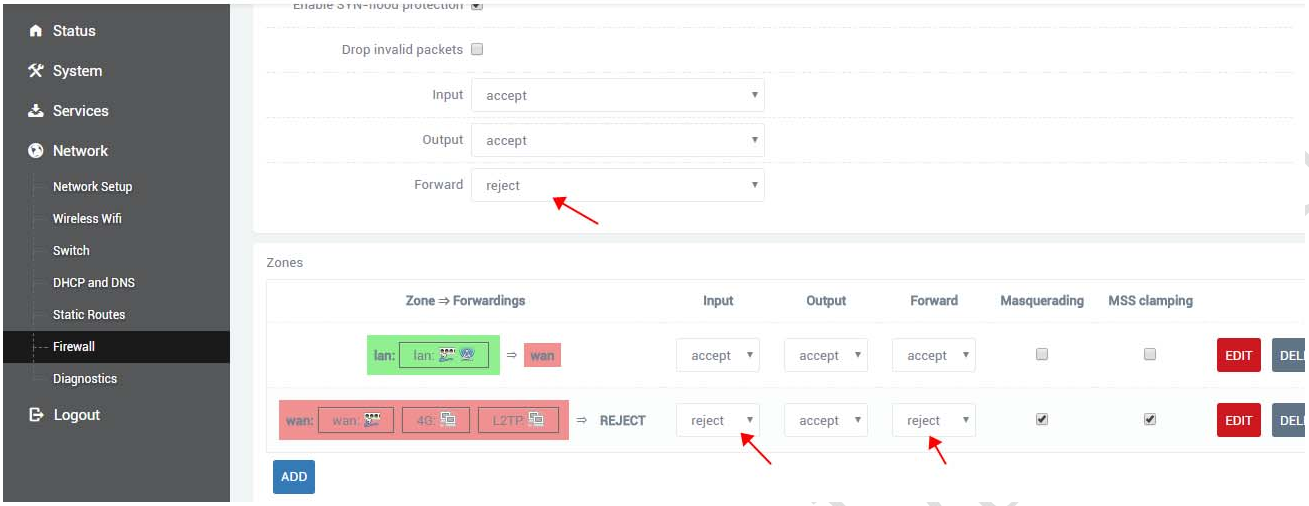
3.8.3. VPN server and username password can be set at the location shown in the figure, and the WAN&4G TAB can be selected at the firewall location.VPN outlet is WAN or 4G network. This completes the VPN setup.





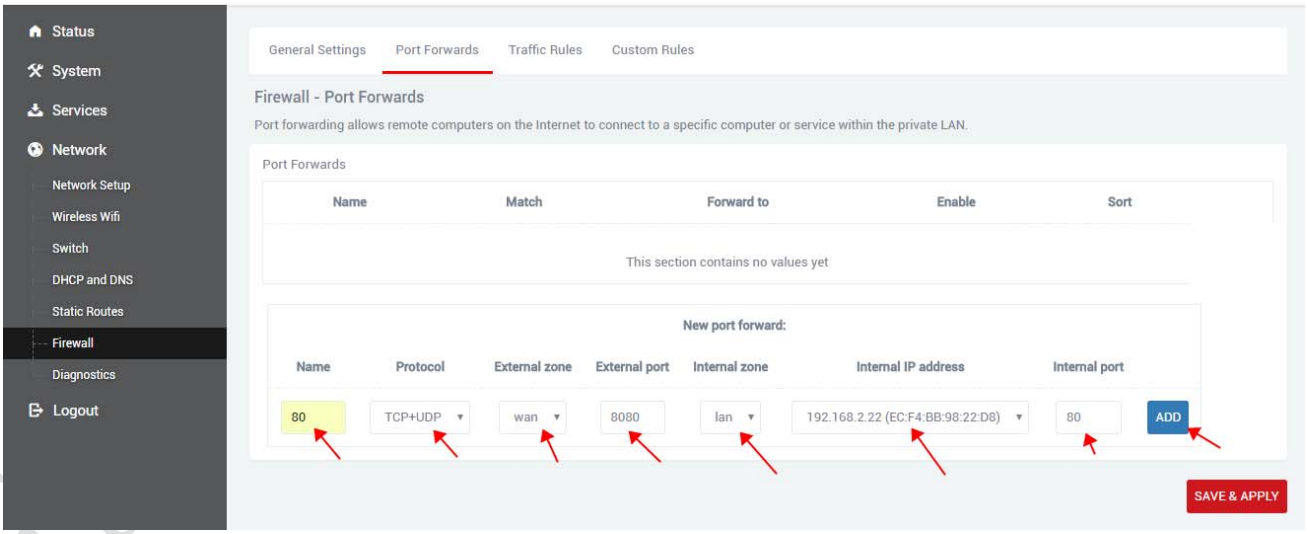


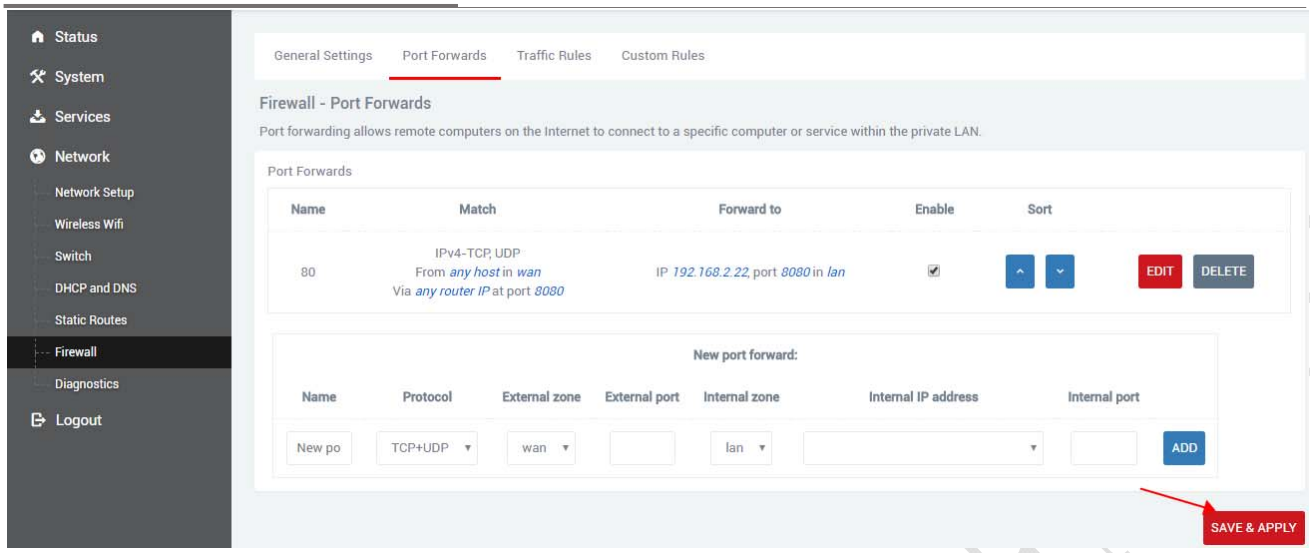
3.8.4. Click the network -- firewall, and change all of them to accept as shown in the picture, and then save the application



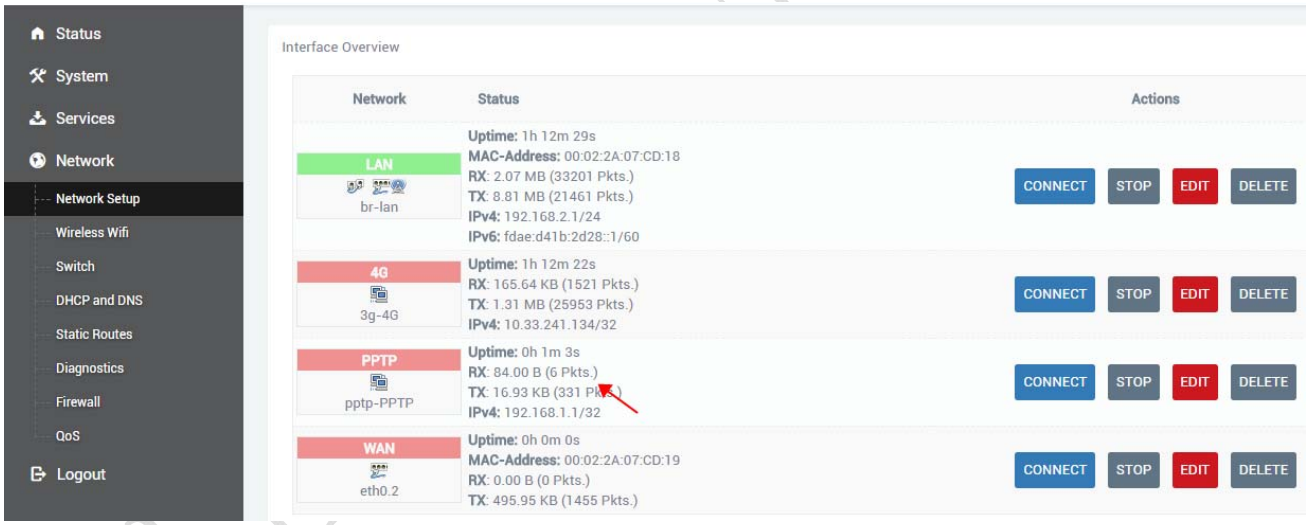
After adding the VPN, you can forward the corresponding port. Take port 80 forwarding as an example:

- Share name - according to your demand custom Settings
- Agreement - can to TCP + UDP
- Outer area - to WAN
- External port - according to the need to set up
- Internal areas - select LAN IP address - according to the need to choose you need to forward the IP Address of the internal port - according to the need to set up and then click - add - button completes the set



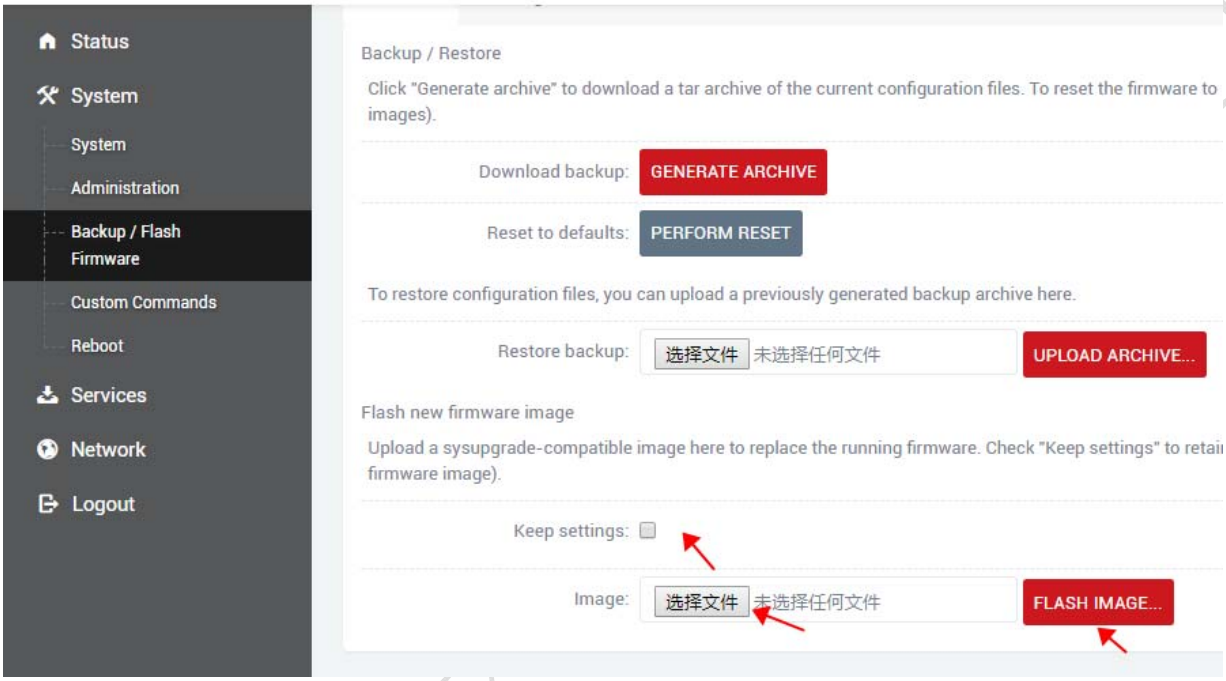


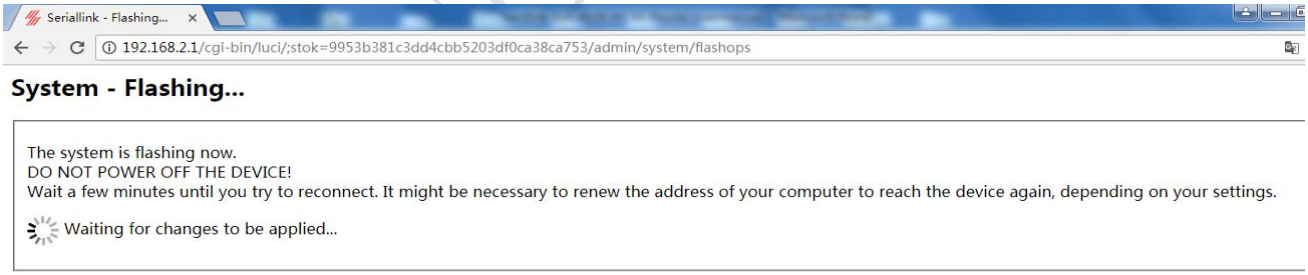
3.8.5 Test the VPN, as shown in the figure, sending and receiving data represents a successful VPN connection.



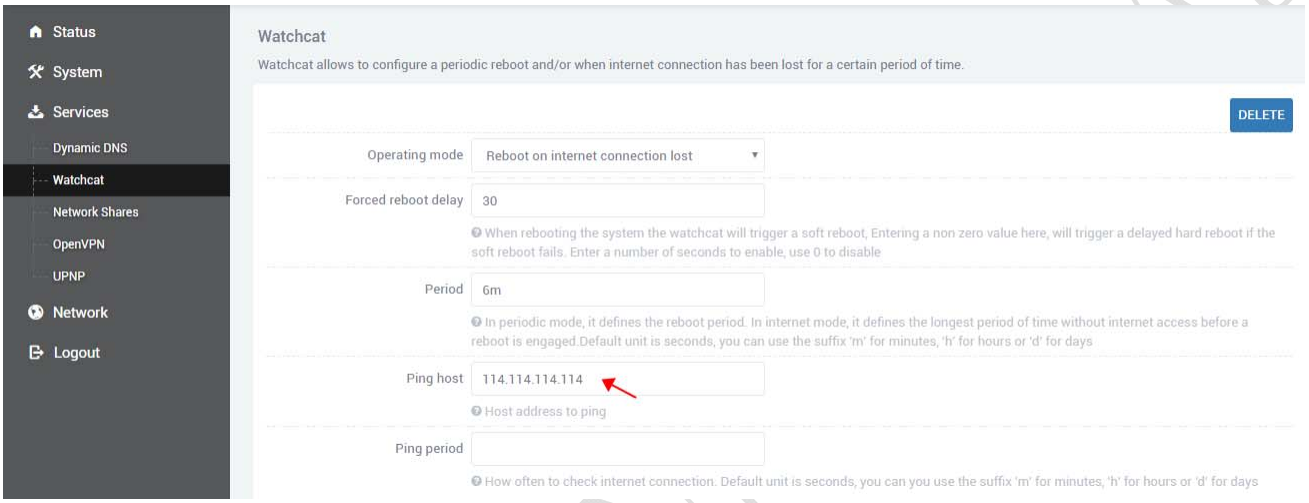
3.9How to upgrade router firmware? Login router - system - backup and upgrade

Do not check the reserved configuration when upgrading, then click the folder where the router firmware is located, and click write firmware. After the upgrade is complete, the router will restart automatically.

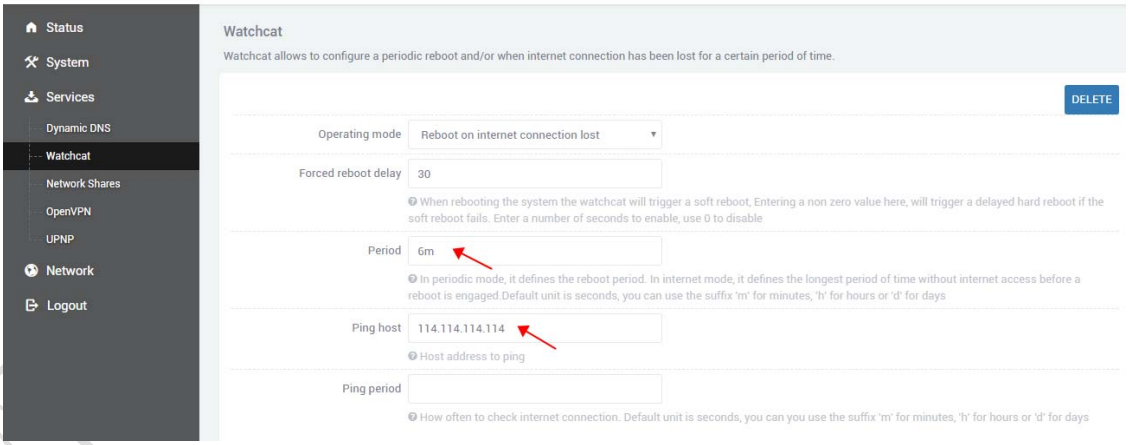




3.10 How do you configure WhatchCat? Let the router automatically restart the recovery network when it is disconnected from the Internet



Ping host -- here we set an IP address that pings can access. By default, we set it to 114.114.114.114 or Google's DNS 8.8.8. If you successfully connect to the VPN, you can configure a pping gateway. Cycle - here we change to 6 M (D on behalf of the day, H represents the hours, M for minutes, S representative seconds), meaning in the case of offline, 6 points within the network services will be restarted. (note: if the router is broken net dial-up will redial within 30 s) set up is completed, click save application.

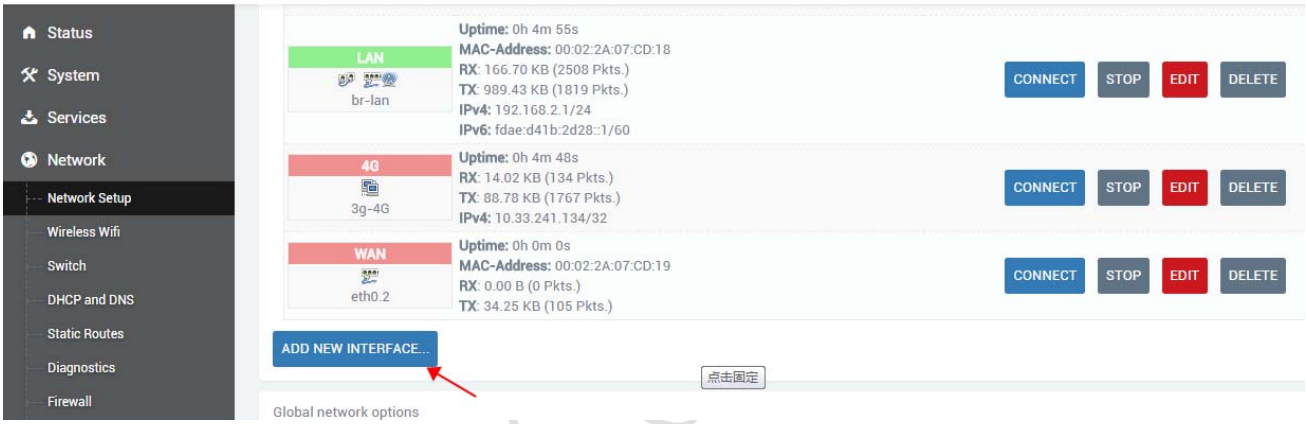


3.10 How to make broadband dialing through WAN port without using 4G?

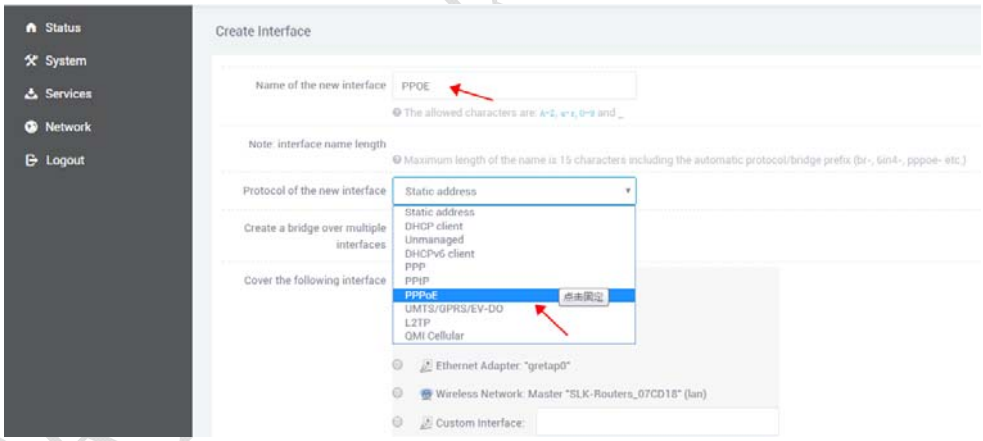
If you use the optical fiber access, light in the cat will have automatic dialing, you only need to use wiring light cat LAN port and 4 g router's WAN port can automatically obtain IP from light cat (LAN). At this time your device or computer connected to the 4 g router LAN can surf the Internet.

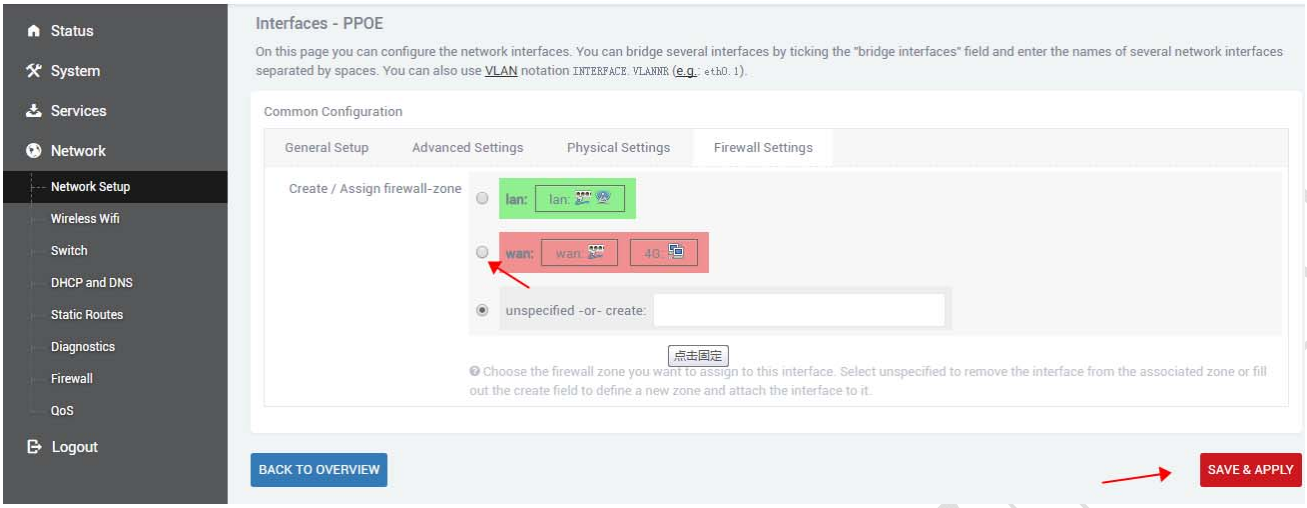
If you are using ordinary MODEM need dial-up Internet access through the router Settings as follows:

Add the PPOE dial port. Login router - network - network setup - add new interface

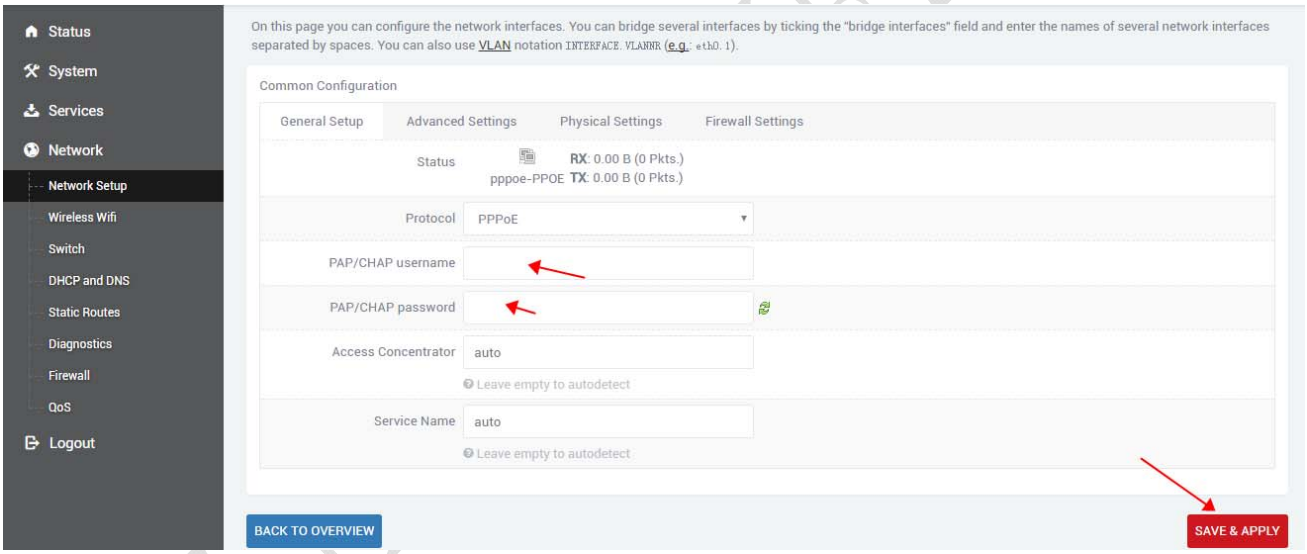


According to the shown to fill, the interface name: PPOE, interface protocol selection PPOE, select the WAN port, and then click submit.





Finally, enter the user name and password given by the operator to complete the broadband Internet Settings, and then connect your computer or device to the LAN port to access the Internet.

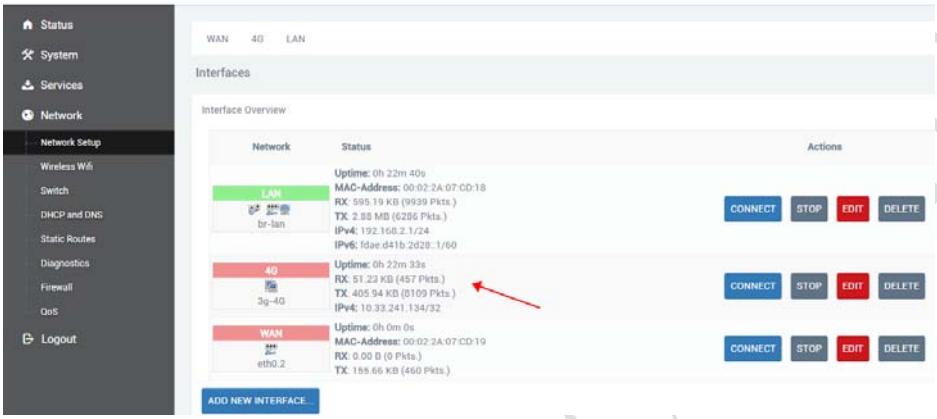


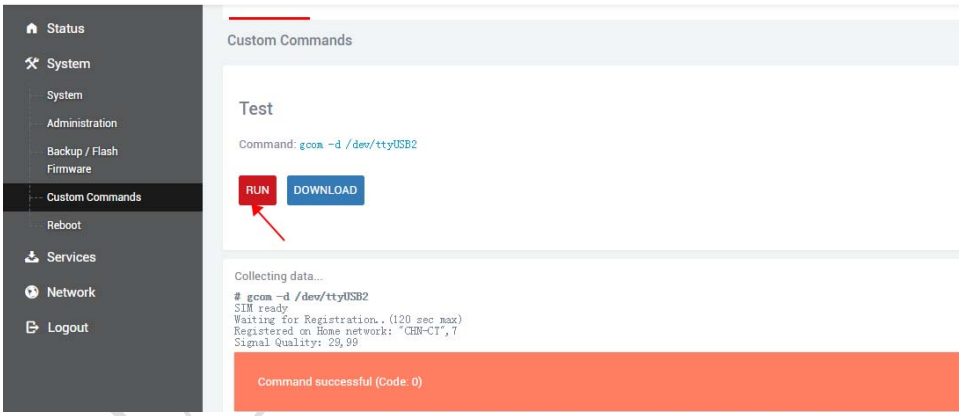
Note:If you want to access the device under the router LAN port, you need to change the LAN port device gateway and DNS to the IP address of our 4G router.

3.11 How to do know the 4G router is online?

A. By looking at the 3G/4G indicator, if it's a flash, it means that 4G is already registered.
B. Check the WiFi password on the back of the router, connect to the WiFi, and click the common website through the browser to see if the Internet can be accessed.
C. Login router, see section 3.1 & 3.2 login method, network, the network Settings - to see if 3 g / 4 g have to send and receive data, if you have to send and receive data representatives have normal access to the Internet.
D. Login router, network - network diagnostics - ping to see if there is a return value, if there is a return value can be normal access to the Internet.
E. Log on to the router, the system - custom - click run to see 4G or 3G network status.

If there is no try to click the run results.





The meaning is explained as follows:

- SIM ready to represent the router has read the SIM card, if it is SIM ERRO rep didn't read the SIM card, or a SIM card is not good.
- Chn-ct represents the registered operator of China telecom. Different operator CARDS have different names.
- "Signal Quality:29,99" Represents the signal value of 29, generally more than 20 signal is normal.
- Returns the following information to indicate that 4G is able to access the Internet normally, if there is any error message on behalf of the registered network exception。

3.12Contact:

Web：www.seriallink.net
e-Mail：info@seriallink.net
Mobile Phone：+86-18682315199
Address：A602, Bldg A ,ShenMa Industrial district , Nanwan Street, Longgang District Shenzhen Guangdong China (Mainland)

SERIALLINK CONFIDENTIAL