# InRouter 6x5 Series User's Manual

**Second Edition, May, 2013**

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# InRouter 6x5 Series User's Manual

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# I

# Introduction to InRouter 6x5 Series

- Overview
- Package Checklist
- Product Features & Specifications
- Product Models

# 1.1 Overview

InRouter6x5 series products are M2M wireless routers that integrate 3G network and virtual private network (VPN) technologies. The products meet fundamental needs of field communication in industry, support international commercial UMTS (HSPA+), CDMA2000 1x EV-DO (Rev. A), TD-SCDMA networks, and respectively backward compatible with EDGE, CDMA 1X and GPRS network.

The design of the InRouter6x5 series fully incorporated the requirements of industrial users, adopted multi-level software detection mechanism, and supporting InHand Device Manager Cloud, which facilitates remote management, ensuring stable operation of devices, achieving intelligent management. Multiple VPN protocol ensures security in data transmission, preventing malicious access and tampering of data. The humanized WEB configuration interface is easy for customer to use. It supports Wi-Fi (optional), providing wireless LAN access and wireless user identification authentication services on customer site. It also supports connection to multiple network devices, enabling multi service processing.

The IR6x5 series wireless routers are the ideal choice for industrial usage, having low power consumption, wide working temperature range from -20° C to 70° C, small size and light weight that is easy for application in harsh, narrow industrial environment. The series includes multiple models like InRouter605, and InRouter695, and multiple types of wireless networks to meet various function needs of customers.

# Important Safety Information

## This product is not intended for use in the following circumstances

- Area(s) where radio transmission equipment (such as cell phone) are not permitted.
- Hospitals, health care facilities and area(s) where cell phones are restricted by law.
- Gas stations, fuel storage and places where chemical are stored.
- Chemical plants or places with potential explosion hazard.
- Any metal surface that may weaken the radio signal level.

## RF safety distance

- For GPRS router, the compliance boundary distance is r=0.26m for GSM 900MHz and r=0.13m for DCS 1800 MHz.
- For HSUPA router, the compliance boundary distance is r=0.26m for GSM 900MHz and
- r=0.13m for DCS 1800 MHz, r=.0.094 for WCDMA 900MHz, r=0.063 for WCDMA 2100MHz.

## Warning

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

## WEEE Notice

The Directive on Waste Electrical and Electronic Equipment (WEEE), which entered into force as European law on 13th February 2003, resulted in a major change in the treatment of electrical equipment at end-of-life.
The purpose of this Directive is, as a first priority, the prevention of WEEE, and in addition, to promote the reuse, recycling and other forms of recovery of such wastes so as to reduce disposal.

The WEEE logo (shown at the left) on the product or on its box indicates that this product must not be disposed of or dumped with your other household waste. You are liable to dispose of all your electronic or electrical waste equipment by relocating over to the specified collection point for recycling of such hazardous waste. Isolated collection and proper recovery of your electronic and electrical waste equipment at the time of disposal will allow us to help conserving natural resources. Moreover, proper recycling of the electronic and electrical waste equipment will ensure safety of human health and environment.

For more information about electronic and electrical waste equipment disposal, recovery, and collection points, please contact your local city centre, household waste disposal service, shop from where you purchased the equipment, or manufacturer of the equipment.

## 1.2 Package Checklist

We put each InRouter 6x5 cellular router in a box with standard accessories. Additionally, there're optional accessories can be ordered. When you receive our package, please check carefully, and if there're items missing or appearing to be damaged, please contact with your InHand Networks sales representative.

Items in package include:

Standard Accessories:

| Accessories | Description |
|---|---|
| InRouter6x5 Serials Wireless Router | 1 |
| Cable | 1 Cross line,CAT-5,1.5M |
| Document and Software CD | 1 |
| Antenna | 3m Cellular Antenna |
| **Power Supply** | |
| | Power Adapter, 100-265V AC in, 12V DC out (included in IR6x5) |

Optional Antennas:

| Picture | Type | Description |
|---|---|---|
| | GSM/GPRS Cellular Antennas | GPRS Quad-band (included in IR6x5GS55) |
| | UMTS/HSPA+ Cellular Antennas | UTMS Quad-band (included in IR6x5WH01) |
| | Anti-thief antenna | UTMS Quad-band (Optional for IR6x5WH01) |
| | Stick antenna | UTMS Quad-band (Optional for IR6x5WH01) |
| | Anti-thief antenna | UTMS Quad-band (Optional for IR6x5WH01) |

# 1.3 Product Features

## 1.3.1 Interfaces

**WAN**

**Cellular WAN:**

Band Options:

GSM/GPRS/EDGE:
850/900/1800/1900 MHz
UMTS /HSPA/HSPA+:
850/900/1900/2100 MHz

**Ethernet WAN:**

Ethernet: 10/100 Mbps, RJ45 connector, Auto MDI/MDIX
Magnetic Isolation Protection: 1.5 KV built-in

**Wi-Fi (Optional)**

**Wireless:** 150Mbps 802.11b/g/n Work mode: AP/Client

**LAN**

**Number of Ports:** 3
**Ethernet:** 10/100 Mbps, RJ45 connector, Auto MDI/MDIX
**Magnetic Isolation Protection:** 1.5 KV built-in

**DMZ**

**Number of Ports:** 1
**Ethernet:** 10/100 Mbps, RJ45 connector, Auto MDI/MDIX
**Magnetic Isolation Protection:** 1.5 KV built-in

**Serial**

A. Serial Type: RS232/485
B. Data bit: 5/6/7/8
C. Stop bit: 1/2
D. Check bit: N/O/D
E. Baud rate: 3,200bit/s~ 115,200bit/s

**SIM Interface**

**SIM Control: 3 V**

### 1.3.2 Functions

**PPP**

Support VPDN/APN, fast access to virtual private dial-up network (VPDN) provided by mobile operator, ensure high-security data transmission.

Support CHAP/PAP/MS-CHAP/MS-CHAP V2 authorization

Support Connection Detection, auto-recovery, auto-link, ensure reliable communication.

Support On-demand connection, SMS Activity

**Wi-Fi (Optional)**

**Wireless:** 150Mbps 802.11b/g/n Work mode: AP/Client

**Authentication:** open, WEP, WPA/WPA-2(Personal), PA/WPA-2(Enterprise)

**Dynamic IP**

Support DHCP, applied as Server/Client

**Dynamic DNS**

Support Dynamic DNS-IP Binding

Provide DDNS analyze to help access dynamic data center

**Flux Management**

Support rate limiting,

**Firewall Function**

Package filtering

Port Mapping

Virtual Address Mapping

DMZ zone

MAC addresses binding.

**Route function**

Support Static Routing Table

**VPN (for IR691 only)**

IPSec/SSL VPN

L2TP/PPTP VPN

GRE

**Link Backup**

**VRRP**

Support VRRP protocols, realizing immediate link backup

**DNS Forwarding**

Support DNS Forwarding, support DNS record

**Network tools**

Support Ping, Trace Route and Telnet

### 1.3.3 Environmental Limits

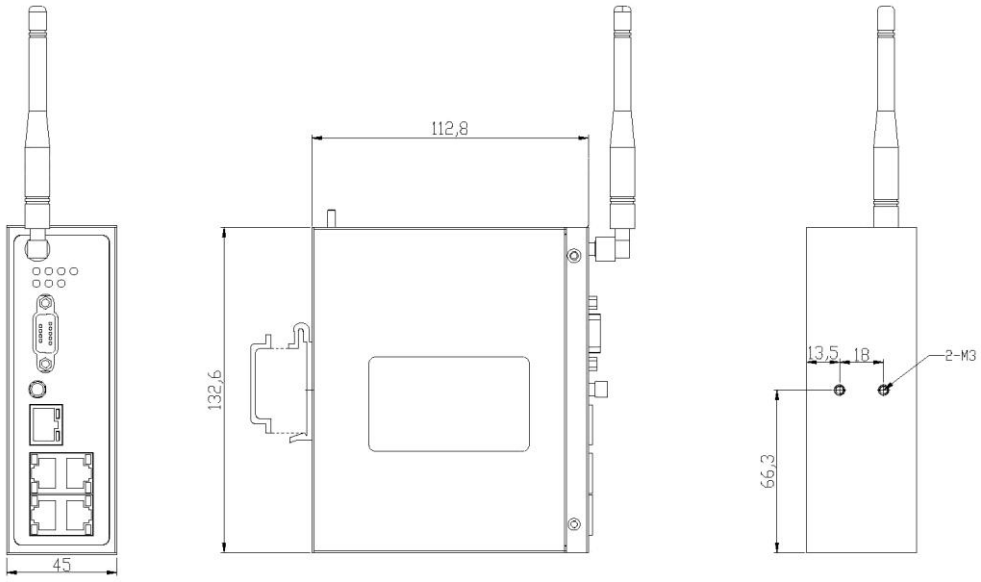
**Operating Temperature:** -20 to 70 ℃ (-4 to 158 ℉)
**Operating Humidity:** 5 to 95% RH
**Storage Temperature:** -40 to 85 ℃ (-40 to 167 ℉)

### 1.3.4 Power Requirements

**Power Inputs:** 1 terminal block, including power jack and serial.
**Input Voltage:** 9~26 VDC

### 1.3.5 Physical Characteristics

**Housing:** Steel, providing IP30 protection
**Dimensions (mm)**



### 1.3.6 Advanced Industrial Characteristics

Physical Characteristics:
Shell: Metal, IP30

### 1.3.7 Device Management Software

**Device Manager:**
Centralized management solution for InHand Networks Devices

### 1.3.8 Warranty

**Warranty Period:** 1 year (Optional service for 3 years)

# 1.4 Product Models

The models are classified according to main differences on Network Type, VPN support and interfaces.

| Model | IR6x5 |
|---|---|
| **Part Number** | **IR6<X>5-<N>-<W>-<P>-<S>** |
| **X**<br>**(Option VPN)** | **0**: ordinary router<br>**9**: advanced VPN(IPSec/SSL/PPTP/L2TP/GRE) + X.509 CA support |
| **N**<br>**（Network）** | **UE00:** No wireless module<br>**WH01:** UMTS/HSDPA (850/900/1900/2100 MHz)<br>**VZ01:** EVDO(800MHz/1900MHz. for China/India only)<br>**PH01:**HSPA+ (850/900/1900/2100 MHz) |
| **W**<br>**（Wi-Fi）** | **<NA>:** No Wi-Fi function<br>**AP:** Wi-Fi AP model<br>**STA:** Wi-Fi client model |
| **S**<br>**(Serial port)** | **<NA> :** RS232<br>**485 :** RS485 |
| **Example** | **IR6 9 5 WH01-AP :**<br>Standard VPN (IPSec/PPTP/L2TP/GRE)<br>WH01: UMTS/HSDPA (850/900/1900/2100 MHz)<br>Wi-Fi : AP model<br>RS232 serial port |

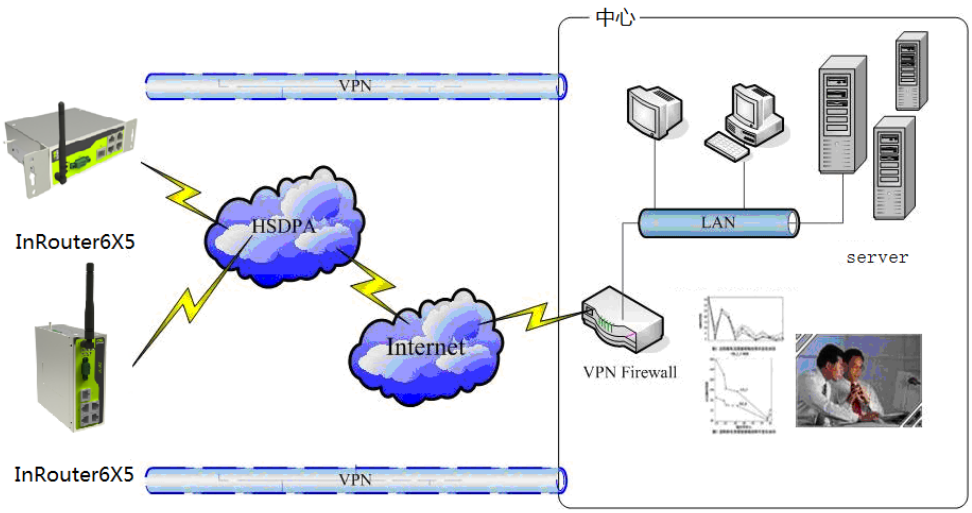
Notice: R695WH01-AP/STA does not support OpenVPN.

# II

# Quick Installation Guide

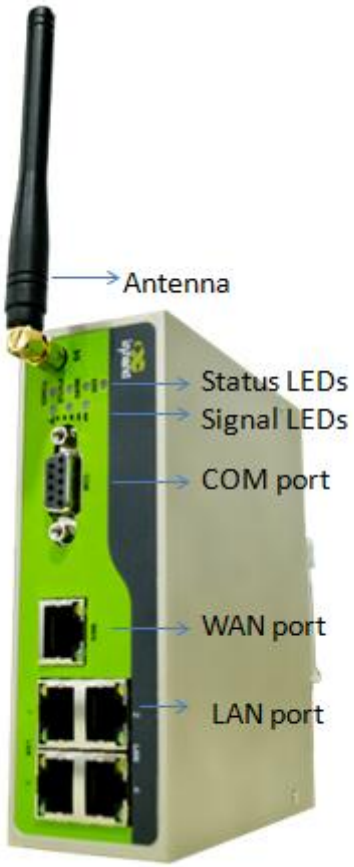
- Typical Application
- Panel Layout
- Quick Connect to Internet
- Quick IPSec VPN Configuration
- Reset to Factory Defaults

# 2.1 Typical Application




InRouter 6x5 series can be used to connect your device (with RS232/485/Ethernet Interface) to Internet via GPRS/ 3G cellular network. Meanwhile, to ensure the security and access, InRouter 6x5 series support VPN, enabling remote access and secure data transmission through Internet.

## 2.2 Panel Layout




The Reset bottom, SIM card slot and power supply are on above panel.

## Description of LED

**Legend: On--** **Off--** **Blink--**

**Power on**

**Start to run firmware**

**Begin dial to Internet**

**Connect to internet**

**Upgrading firmware**

**Restore factory default**

# Signal Status LED Description

----- Signal: 1-9 (poor signal level, router cannot work, please check the antenna and local signal level)

------ Signal: 10-19 (Router can work under this signal level)

------ Signal: 20-31 (Perfect signal level)

# 2.3 Quick Connection to Internet

## 2.3.1 Insert SIM Card

Open InRouter SIM/UIM card case at the bottom, insert the SIM card and close the case.

## 2.3.2 Antenna Installation

After install the IR6x5, connect the interface of enhanced antenna to the interface of skin antenna and screw tightly. Put the amplifier of enhanced antenna to where it can receive the signal well.

Attention: Position and angle of the antenna may influence the quality of signal.

## 2.3.3 Power Supply

Connect InRouter to power supply with the power supply cord in the package, observe whether the Power LED on the panel of InRouter goes on. If not, please contact InHand for technical support.
You can start to configure IR6X1 after the Power LED turns on.

## 2.3.4 Connect

Link IR6x5 with PC:

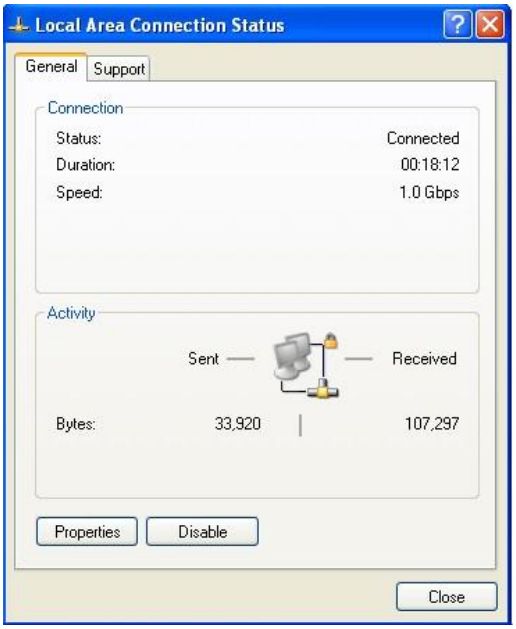
(1) Using a cable to link IR6x5 with a PC;

(2) After the connection, you can see one LED of RJ45 Interface turns green and the other flashes.

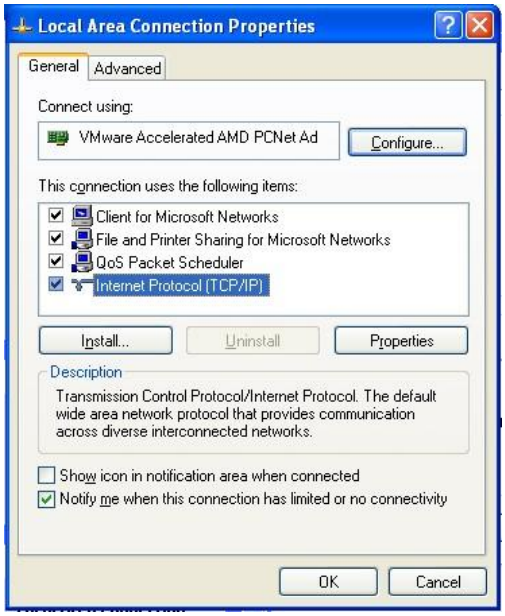
## 2.3.5 Build Connection between InRouter and PC

IR6x5 Router can auto-distribute IP address for PC. Please set the PC to automatically obtain IP address via DHCP. (Based on Windows Operation System):

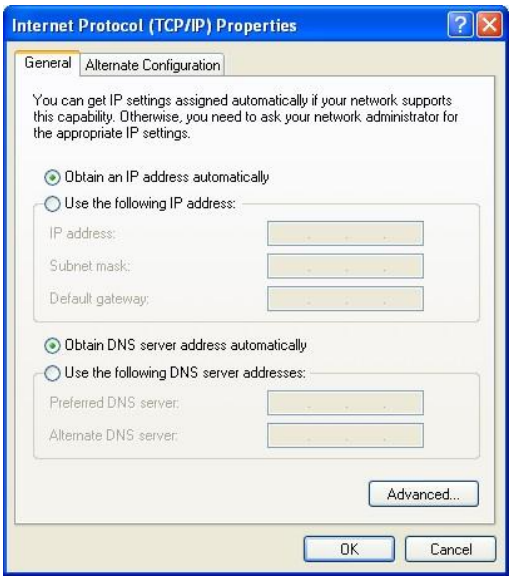
1) Open “Control Panel”, double click “Network Connections” icon, and enter “Network Connections” Screen.
2) Double click “Local Area Connection”, enter “Local Area Connection Status” screen:




3) Click “Properties”, enter “Local Area Connection Properties” screen




Choose “Internet Protocol (TCP/IP)”, click “properties” button, ensure your PC can obtain IP and DNS address automatically. (Or you can set your PC in the subnet: 192.168.2.0/24, for example, set IP: 192.168.2.10, Net Mask: 255.255.255.0, Default Gateway: 192.168.2.1)




Click “OK”, InRouter will allocate an IP address: 192.168.2.x, and a gateway: 192.168.2.1(the default address of IR6x5).

After configure TCP/IP protocols, you can use ping command to check whether the link between PC and Router is built correctly. Below is an example to execute Ping command under Windows XP:

*Ping 192.168.2.1*

If the screen shows:

```
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\inhand>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Reply from 192.168.2.1: bytes=32 time=1ms TTL=128
Reply from 192.168.2.1: bytes=32 time=1ms TTL=128
Reply from 192.168.2.1: bytes=32 time=1ms TTL=128
Reply from 192.168.2.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\Documents and Settings\inhand>ping 192.168.2.1
```

Then the PC and InRouter are correctly connected. Else if it shows:

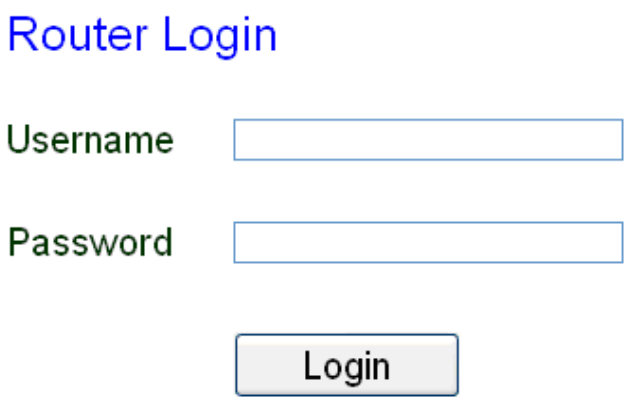
```
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\inhand>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Documents and Settings\inhand>
```

The connection is not built, you need to check step by step starting from Section 2.3.4.

### 2.3.6 Start to configure your InRouter 6x5(Optional)

After you have finished the former steps, you can configure the InRouter:

1) Open IE browser, input the default IP address of the Router: http://192.168.2.1, you can see the login page as below:




Input "username" (default: adm) and the "password" (default: 123456), then click "login" to enter the operation screen.

2) Change the IP configuration:

Attention: After updating the configuration, please click "apply" to activate your configuration.

If you want to set your own IP of InRouter 6x5, please follow the instructions below:

Click "Network"=>"LAN", change the IP address to 192.168.1.254:

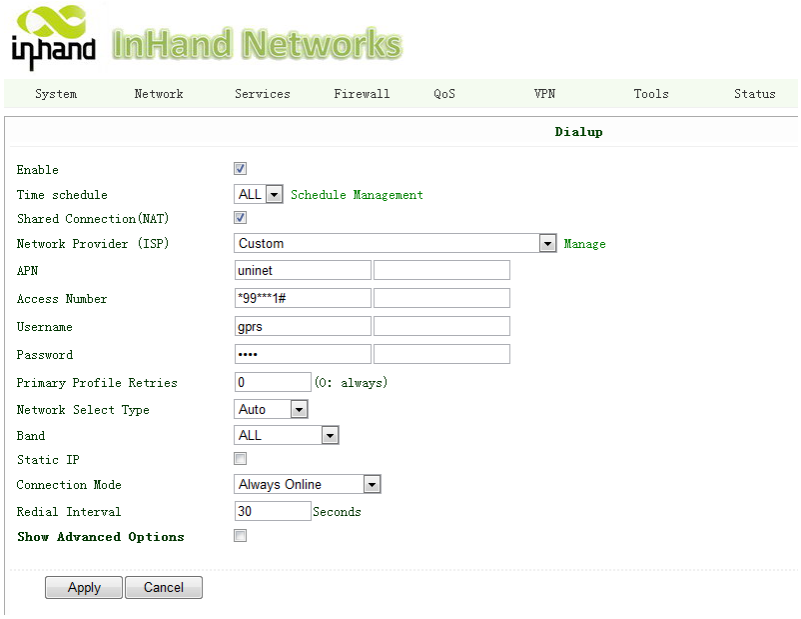
3) Click "Apply", then you will see:

Now the IP address of IR6x5 has been reset, and in order to enter the configuration page, you need to set your PC in the same subnet as InRouter, for example: 192.168.1.10/24 then input the updated IP address (192.168.1.254) in your IE Browser.

### 2.3.7 Connect InRouter with Internet

Follow the configuration steps below to enable IR6x5 to connect to the internet.

Click "Network"=>"Dialup", enter dialup configuration interface:




Please check the APN, Dialup Number, Username and Password:

Dialup Number, Username and Password are provided by local mobile operator. The following examples show parameters provided by China Mobile, Vodafone. Please contact with local operator for details.

1: China Mobile

APN: CMNET

Phone Number: *99#

User Name: web

Password: web

2: Vodafone

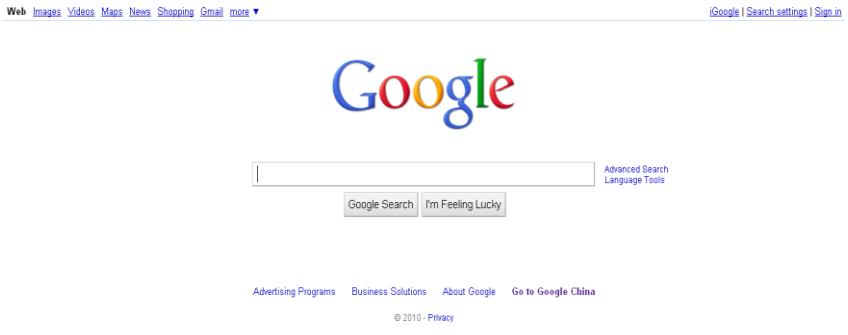
APN: internet

Phone Number: *99#

User Name: web

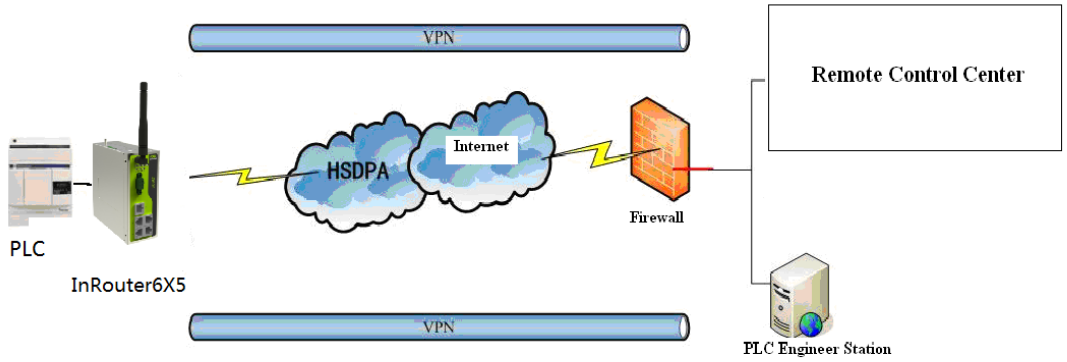
Password: web

After correctly configuring, InRouter 6x5 can now access Internet. Open IE Browser, input www.google.com, you should see the Google home page:

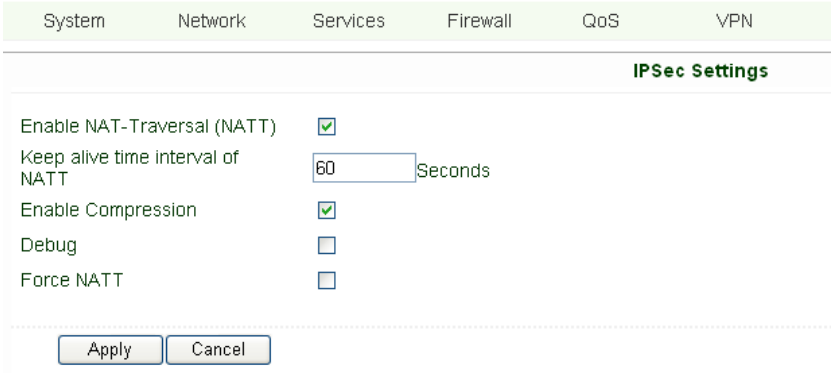


# 2.4 Quick IPSec VPN Configuration

If you need to build a VPN tunnel to access to your remote PLC through Internet or you need to ensure security of the data transmission, here's a quick configuration guide of IPSec for InRouter 6x5 Series.




Connect PC with Router to enter router configuration interface, select "VPN" => "IPSec setting":




Enable NAT-Traversal (NATT): select enable.

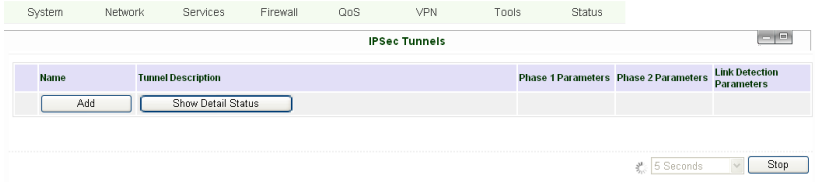
Keep alive time interval of NATT: set the "Keep alive time interval of NATT", default is 60 seconds.

Enable Compression: select enable.

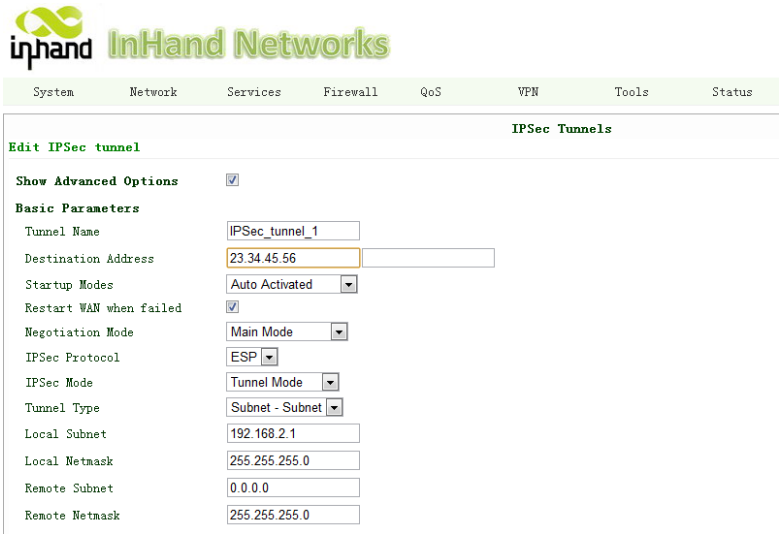
Please change the parameters according to actual situation.

Click "Apply" to complete the configuration.

1） Select "VPN"=> "IPSec Tunnels" to check or modify parameters of IPSec Tunnels.




Click "Add" to add a new IPSec Tunnel:




**Basic Parameters: basic parameters of IPSec tunnel.**

Tunnel Name: name IPSec tunnel, the default is IPSec_tunnel_1.

Destination Address: set to VPN server IP/domain, e.g.: the domain provided by GJJ is gjj-ovdp.3322.org.

Startup Modes: select Auto Activated.

Negotiation Mode: optional between Main Mode and Aggressive Mode. Generally, select Main Mode.

IPSec Protocols: optional among ESP, AH. Generally, select ESP.

IPSec Mode: optional between Tunnel Mode and Transport Mode. Generally, select Tunnel Mode.

Tunnel Type: optional among Host-Host, Host-Subnet, Subnet-Host and Subnet-Subnet.

Local Subnet: IPSec local subnet protected. E.g.: 172.16.16.0.

Local Net Mask: IPSec local Net Mask protected. E.g.: 255.255.255.252.

Remote Subnet: IPSec remote subnet protected. E.g.: 172.16.0.0.

Remote Net Mask: IPSec remote Net Mask protected. E.g.: 255.240.0.0.

**Phase 1 Parameters: configuration parameters during Phase 1 of IPSec negotiation.**

IKE Policy: optional between 3DES-MD5-96 and AES-MD5-96, suggest selecting 3DES-MD5-96.

IKE Lifetime: the default is 86400 seconds.

Local ID Type: optional among FQDN, USERFQDN, IP address, suggest selecting IP address.

Remote ID Type: optional among FQDN, USERFQDN, IP address, suggest selecting IP address.

Authentication Type: optional between Shared Key and Certificate, generally choose Shared Key.

Key: set IPSec VPN negotiating key.

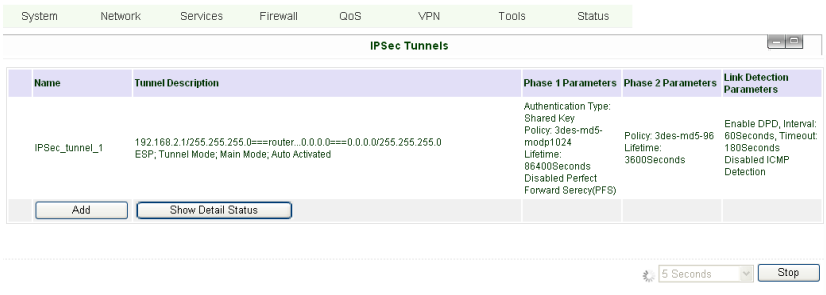
**Phase 2 Parameters: configuration parameters during Phase 2 of IPSec negotiation.**

IPSec Policy: optional between 3DES-MD5-96 and AES-MD5-96, suggest selecting 3DES-MD5-96.

IPSec Lifetime: the default is 3600 seconds.

Perfect Forward Encryption: Optional among None, GROUP1, GROUP2 and GROUP5. This parameter should match with the server, generally, select “None”.

Click “Save” to finish adding IPSec Tunnel:




You can click “Show Detail Status” to observe the specific connection details, or click “Add” to add a new tunnel.

Now you have successfully built a high-security IPSec tunnel.

Here's an example. We set an IPSec Tunnel from subnet: 192.168.220.0/24 to subnet: 192.168.123.0/24, when it succeeds, the screen will show:

And the PC in IPSec client subnet can get access to the server's subnet.

Open command in your PC, then ping a PC in the server's subnet:

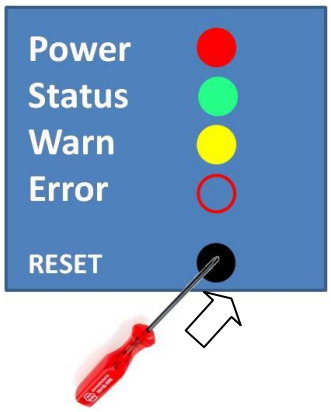
```
C:\Documents and Settings\Jason Hu>ping 192.168.123.250

Pinging 192.168.123.250 with 32 bytes of data:

Reply from 192.168.123.250: bytes=32 time=428ms TTL=63
Reply from 192.168.123.250: bytes=32 time=395ms TTL=63
Reply from 192.168.123.250: bytes=32 time=397ms TTL=63
Reply from 192.168.123.250: bytes=32 time=393ms TTL=63
```

# 2.5 Reset to Factory Defaults

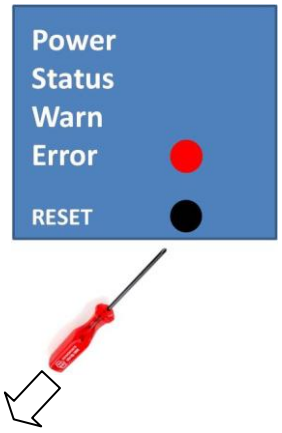
## 2.5.1 Hardware Approach

**Legend: On--** **Off--** **Blink--**

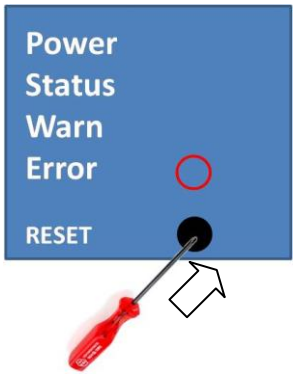
1) Press and hold RESET button while turning on IR6x5:



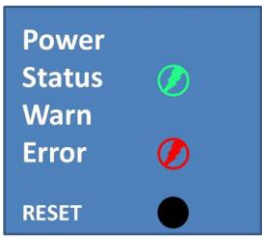

2) When you see ERROR LED turns on (about 10 seconds after power on), release the RESET button:



3) After a few seconds, the ERROR LED will turn off, now press RESET button again:



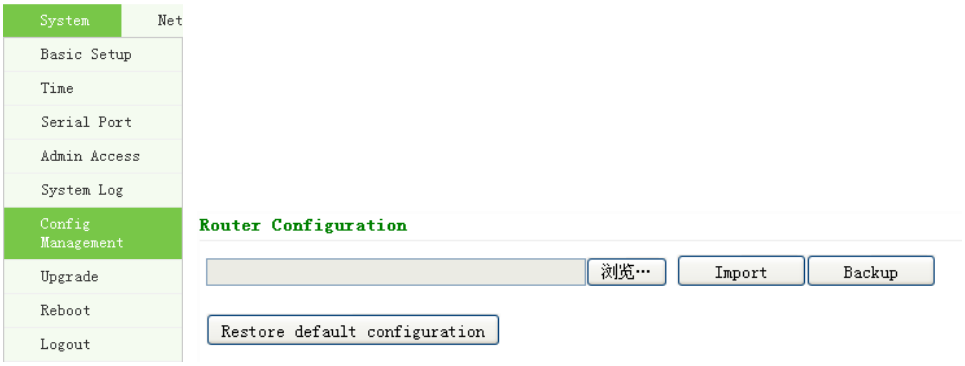

4) Then you will see ERROR and STATUS LED blink, which means reset to factory defaults succeed!




Factory default settings:
IP: 192.168.2.1
Net Mask: 255.255.255.0
Serial parameter: 19200-8-N-1

### 2.5.2 Web Approach

1) Login the web interface of IR6x5, select “System”→”Config Management”:




2) Click “Restore default configuration” to Reset IR6x5.

# III

# Advanced Configuration

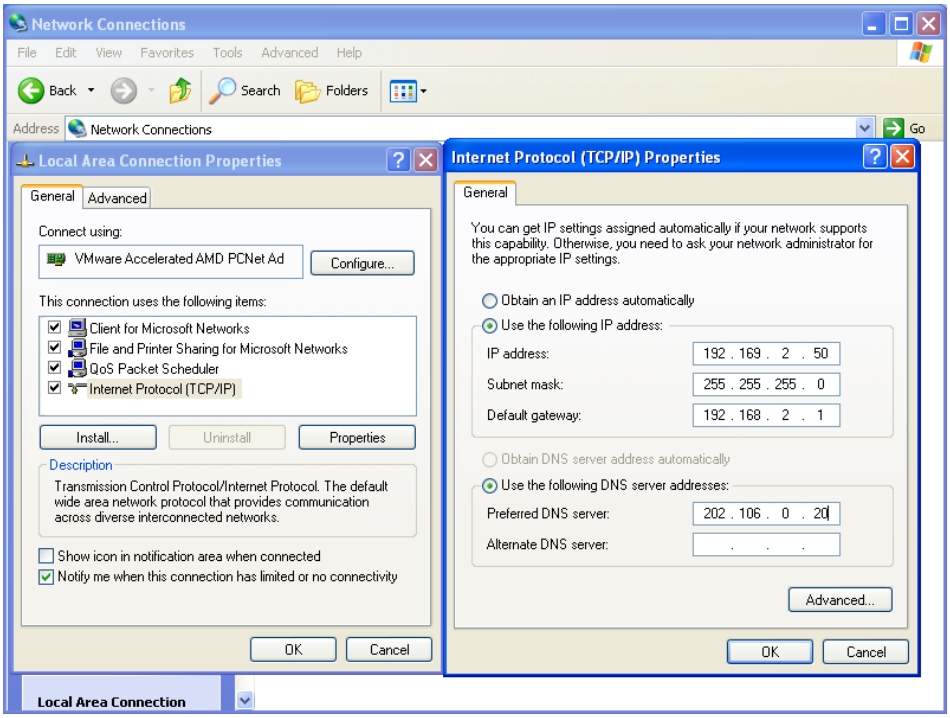
- Configuration on Web
- CLI Configuration

# 3.1 Configuration on Web

InRouter must be correctly configured before use. This chapter will show you how to configure InRouer via Web interface.

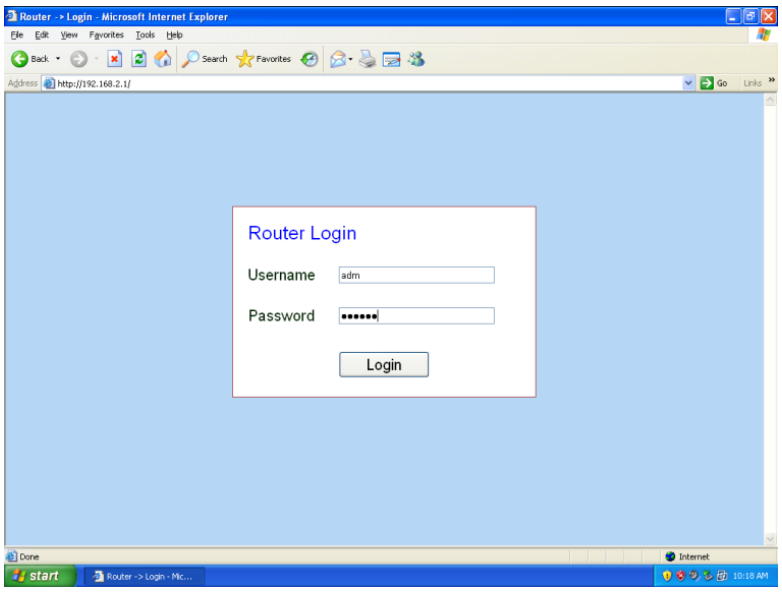
### 3.1.1 Preparation

First, connect your devices to IR6x5 with a cable or a HUB (switch), then set the IP of PC and IR6x5 in the same subnet, for example: Set PC IP to 192.168.2.50, net mask: 255.255.255.0, gateway (default IP of IR6x5: 192.168.2.1 ):




Open IE browser, input the IP address of IR6x5: http://192.168.2.1 (default IP of IR6x5).

Then you'll see the Login Window pop up, you need to login as Administrator. Input the username and password (default: adm/123456).

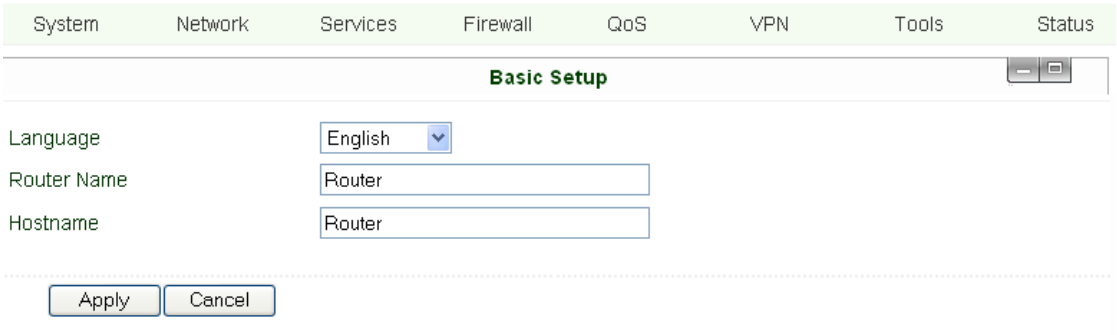



Click "Login" to enter configure interface:

## 3.1.2 System

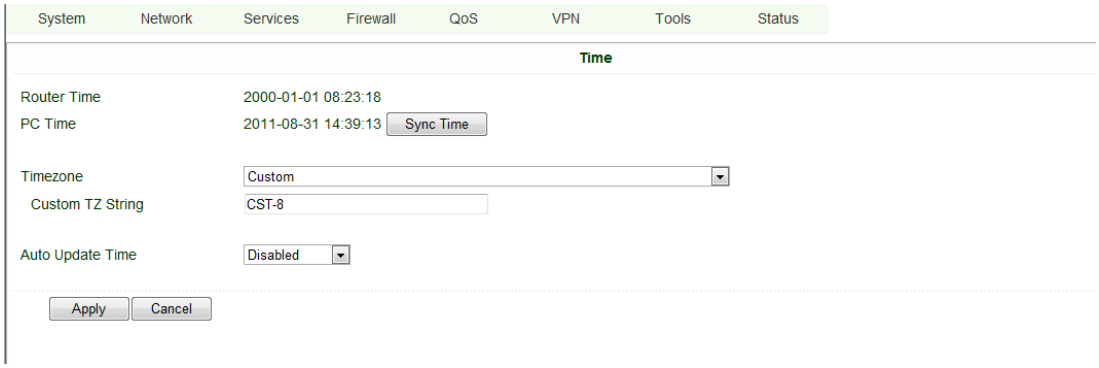
System settings include the 9 parts: Basic Setup, Time, Serial Port, Admin Access, System Log, Config Management, Update, Reboot and Logout.

**(1) Basic Setup**




| Parameters Name | Description | Default | Example |
|---|---|---|---|
| Language | Choose language of configuration web | Chinese | English |
| Router Name | Set name of InRouter | Router | My InRouter |
| Host Name | Name the device/PC linked with IR6x5 | Router | My InRouter |

**(2) Time**

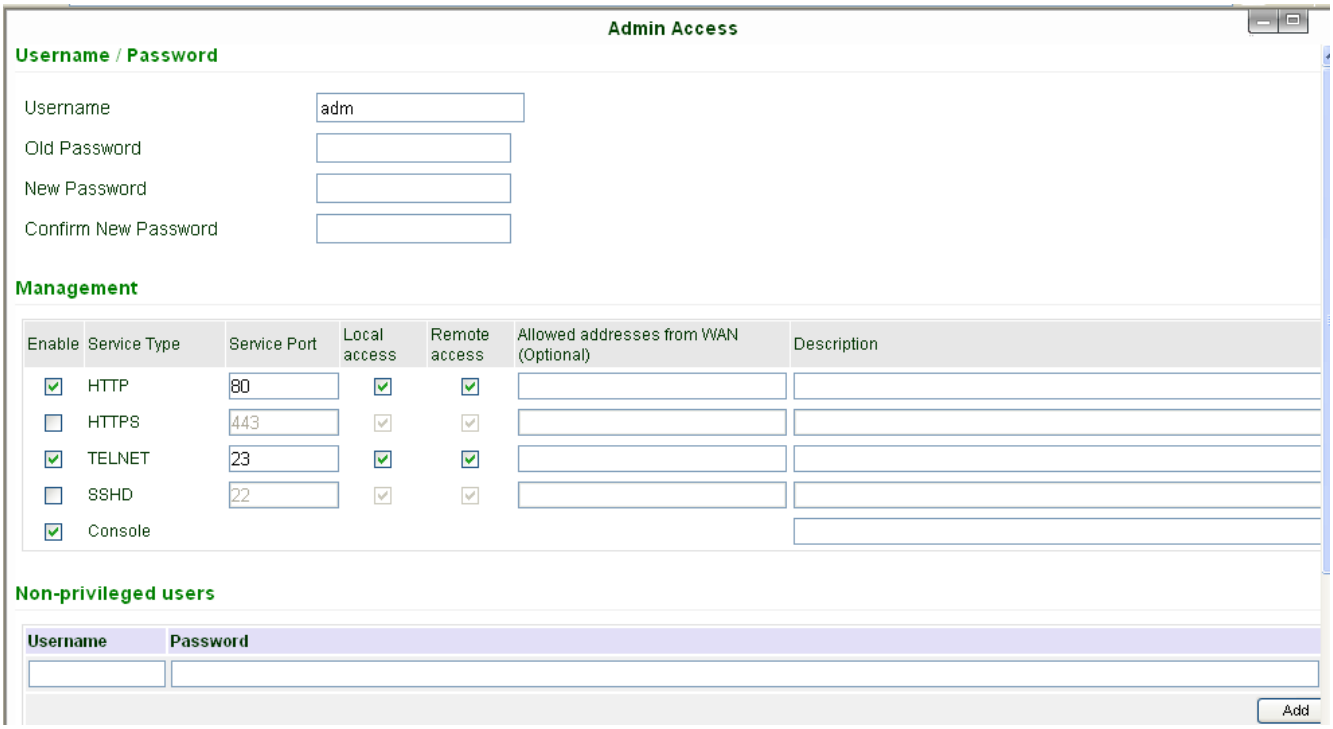


| Name | Description | Default |
|---|---|---|
| Router Time | Display router time | 2000-01-01 8:00:00 |
| PC Time | Display PC time (or the time of device linked with router) | |
| Time Zone | Set time zone | Custom |
| Custom TZ string | Set the string of time zone of Router | CST-8 |
| Auto Update Time | Time Update Interval | Disabled |
| NTP Time Servers (after enable the Auto Update Time) | Setting for NTP Time server. (Three at the most) | pool.ntp.org |

### (3) Serial Port

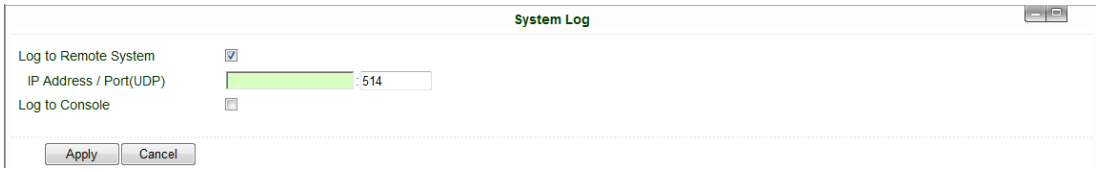
| Name | Description | Default |
|---|---|---|
| Baud Rate | Serial baud rate | 19200 |
| Data Bit | Serial data bits | 8 |
| Parity | Set parity bit of serial data. | None |
| Stop Bit | Set stop bit of serial data. | 1 |
| Hardware Flow Control | Enable Hardware Flow Control | Disable |
| Software Flow Control | Enable Software Flow Control | Disable |

### (4) Admin Access




| Name | Description | Default |
|---|---|---|
| Username/Password | | |
| Username | Username for configuration web login | adm |
| Old Password | To change the password, you need to input the old one | 123456 |
| New Password | Input new password | |
| Confirm New Password | Input the new password again | |
| Management | | |
| HTTP/HTTPS/TELNET/SSHD/Console | | |
| Enable | Select to enable | Enable |
| Service Type | HTTP/HTTPS/TELNET/SSHD/Console | 80/443/23/22/Blank |
| Local Access | Enable—allow manage Router by LAN(e.g.: HTTP)<br>Disable—forbid manage Router by LAN. | Enable |
| Remote Access | Enable—allow to manage IR6x5 by WAN. (e.g.: HTTP)<br>Disable—forbid to manage IR6x5 by WAN. (e.g.: HTTP) | Enable |
| Allowed Access from WAN (Optional) | Set the range of allowed IP address for WAN (HTTP/HTTPS/TELNET/SSHD) | Control services server can be set at this time, for example 192.168.2.1/30 or 192.168.2.1-192.168.2.10 |
| Description | Describe the parameters of management (non-influence to IR6x5) | |
| Other Parameters | | |
| Log Timeout | Set the Log Timeout, configuration web will be disconnected after timeout | 500 seconds |

### (5) System Log

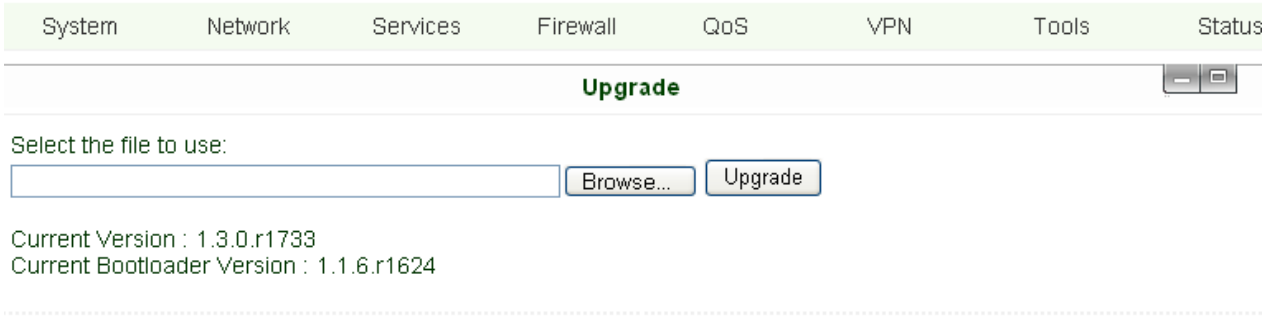


| Name | Description | Default |
|---|---|---|
| Log to Remote System | Enable remote log server | Disable |
| IP address/Port (UDP) | Set the IP and Port of remote log server | Port: 514 |
| Log to Console | Enable remote log server | Disable |

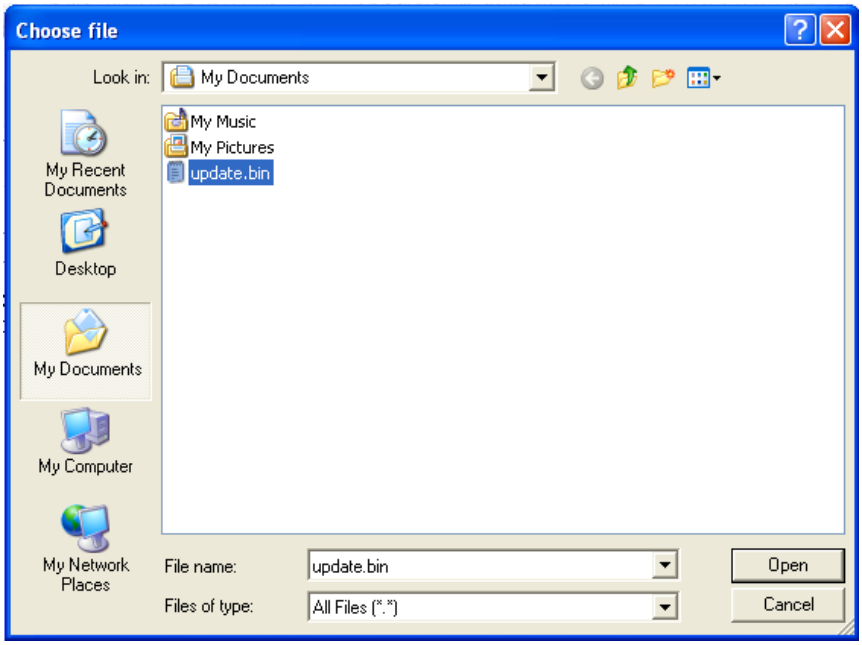
**(6) Config Management**

| Name | Description |
|---|---|
| Router Configuration | Import/Backup configuration file |
| Restore default configuration | Click to reset IR6x5 (to enable RESET, you need to reboot IR6x5) |
| Network Provider (ISP) | Used to configure the APN, username, password and other parameters of major operators |

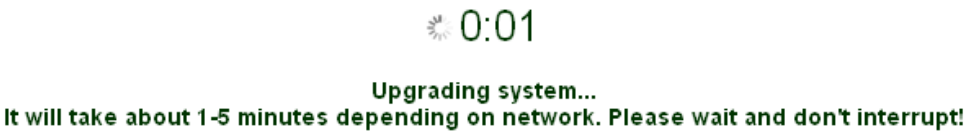
**(7) System Upgrade**




To upgrade the system, click “System”=>”System upgrade” to enter update page, then follow the steps below:
Click “Browse”, choose the upgrade file;



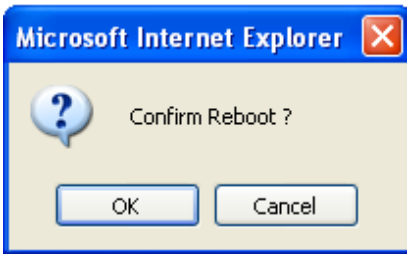

Click “update”, and then click “sure” to begin update, the window will show as below.




Upgrade firmware succeed, and click “reboot” to restart IR6x5.

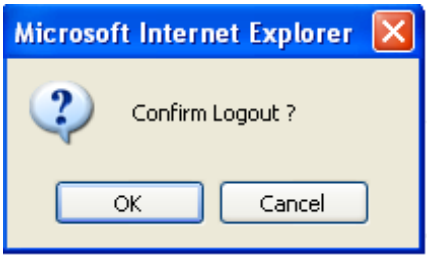
**(8) Reboot**

If you need to reboot system, please click ”System”=>”Reboot”, then click ”OK” to restart system.




**(9) Logout**

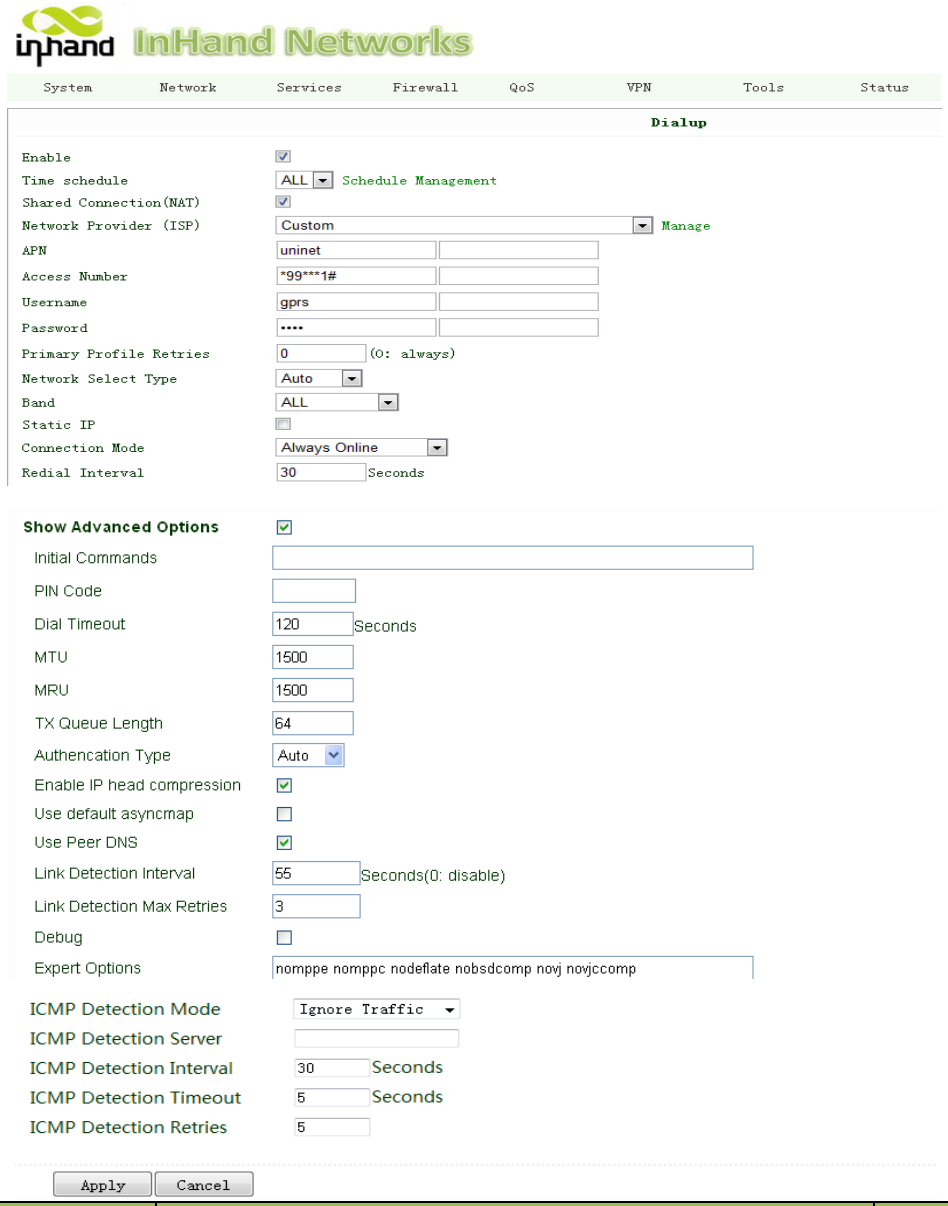
If you need to logout system, click “System”=>”Logout”, and then click “OK”.




### 3.1.3 Network

Network settings include Dialup, LAN, DNS, DDNS, Static Route, and etc.

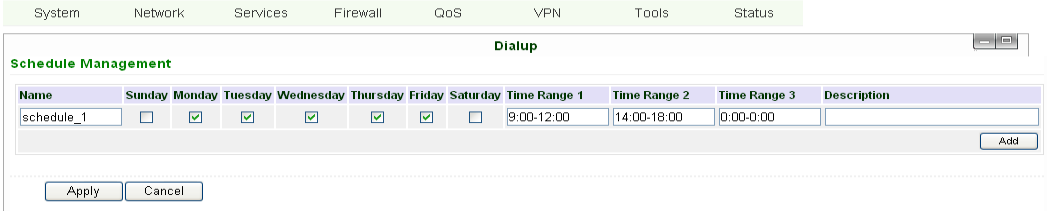
### (1) Dialup




| Name | Description | Default |
|---|---|---|
| Enable | Enable PPP dialup | Enable |
| Time Schedule | Set time for online and offline | ALL |
| SHARED | Enabled—device linked with Router **Can** access to internet.<br>Disable—device **Can NOT** access to internet via Router. | Enable |
| ISP | Select local ISP, if not listed here, please select ”Customer” | Customer |
| Network Select Type | Choose mobile network type | HSDPA (or GPRS) |
| APN | APN parameters provided by **Local ISP, you can set TWO different group of dialup parameters (APN/Username/Password) and set one as backup** | cmnet/uninet |
| Access Number | Dialup parameters provided by **Local ISP** | “*99#”“*99***1#” or #777 |
| Username | Dialup parameters provided by **Local ISP** | “GPRS” or ”CDMA” |
| Password | Dialup parameters provided by **Local ISP** | “GPRS” or ”CDMA” |
| Primary Profile Retries | After retries and dialup still failed, router will try backup dialup parameters (if you have set two IPSec tunnels and one as backup, router will also stop the main one and try another, more details please see at “VPN” → “IPSec” ) | 0 (always use main parameters and never use backup) |

| | | |
|---|---|---|
| Static IP | Enable Static IP if your SIM card can get static IP address | Disable |
| Connection Mode | Optional Always Online, | Always Online |
| Redial Interval | When Dial fails, InRouter will redial after the interval | 30 seconds |
| Show Advanced Options | Enable configure advanced options | Disabled |
| Initial Commands | Used for advanced parameters | Blank |
| Dial Timeout | Set dial timeout (IR700 will reboot after timeout) | 120 seconds |
| MTU | Set max transmit unit | 1500 |
| MRU | Set max receive unit | 1500 |
| TX Queue Length | Set length of transmit queue | 3 |
| Enable IP header compression | Enable IP header compression | Disabled |
| Use default asyncmap | Enable default asyncmap, PPP advanced option | Disabled |
| Using Peer DNS | Click Enable to accept the peer DNS | Enabled |
| Link Detection Interval | Set Link Detection Interval | 30 seconds |
| Link Detection Max Retries | Set the max retries if link detection failed | 3 |
| Debug | Enable debug mode | Enable |
| Expert Option | Provide extra PPP parameters, normally user needn't set this. | Blank |
| ICMP Detection Mode | MONITOR TRAFFIC<br>When InRouter detected there are "business" data (DTU, IPSec) receive or transmit, InRouter will not send ICMP probe packet. When detected without business data, InRouter will send ICPM probe packet | Ignore Traffic |
| | IGNORE TRAFFIC<br>No matter whether InRouter have some data receive or transmit(DUT, IPSec data), InRouter always send the ICMP probe packet. | |
| | HANDOVER ONLY<br>InRouter send the ICMP probe Packet when the field change from a base station to other station. | |
| ICMP Detection Server | Set ICMP Detection Server, blank represents none | Blank |
| ICMP Detection Interval | Set ICMP Detection Interval | 30 seconds |
| ICMP Detection Timeout | Set ICMP Detection Timeout (IR700 will reboot if ICMP time out) | 5 seconds |
| ICMP Detection Max Retries | Set the max number of retries if ICMP failed | 5 |

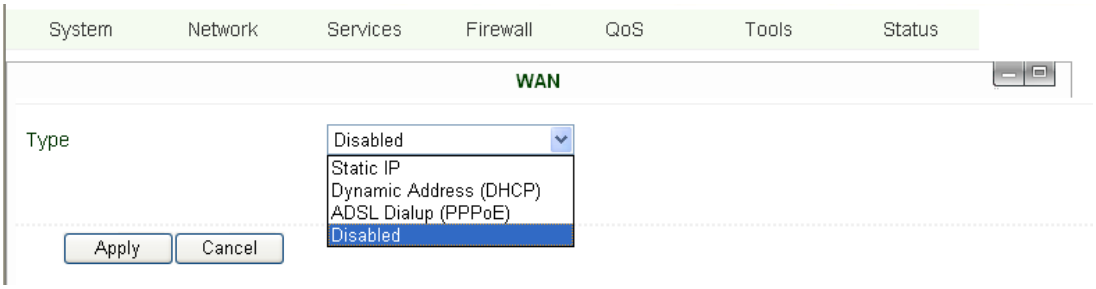
## Dialup----Time Schedule Management:




| Name | Description | Default |
|---|---|---|
| Name | Name the schedule | schedule 1 |
| Sunday | | Blank |
| Monday | | Enable |
| Tuesday | | Enable |
| Wednesday | | Enable |
| Thursday | | Enable |
| Friday | | Enable |
| Saturday | | Blank |

| | | |
|---|---|---|
| Time Range 1 | Set Time Range 1 | 9:00-12:00 |
| Time Range 2 | Set Time Range 2 | 14:00-18:00 |
| Time Range 3 | Set Time Range 3 | 0:00-0:00 |
| Description | Describe configuration | Blank |

**(2) WAN**

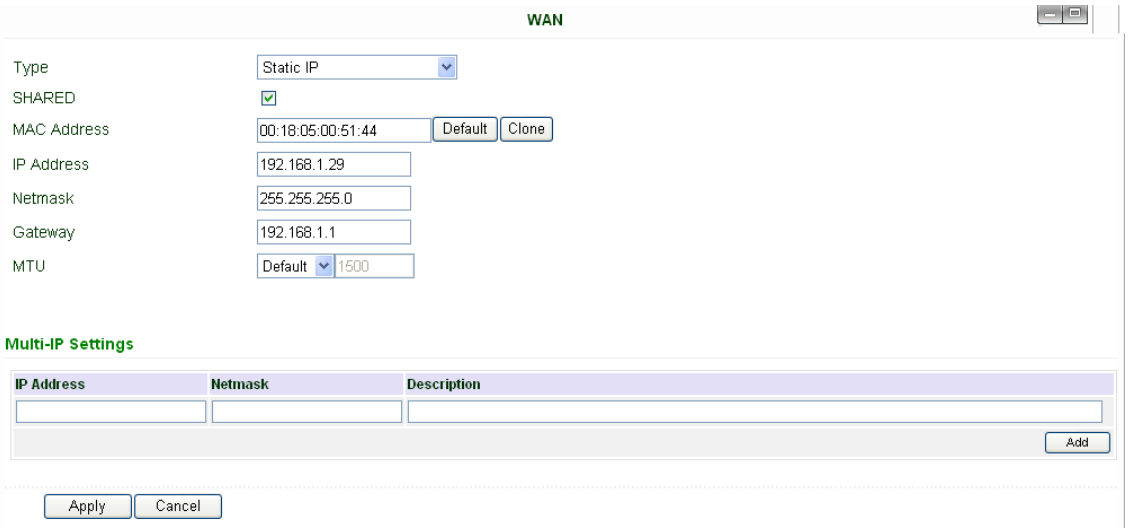



This page is to set the type of WAN port:

| Name | Description | Default |
|---|---|---|
| Type | Static IP;<br>Dynamic Address(DHCP);<br>ADSL Dialup(PPPoE);<br>Disabled | Disabled |

Attention: There can only be one WAN type at one time, enabling one type WAN will disabled another.

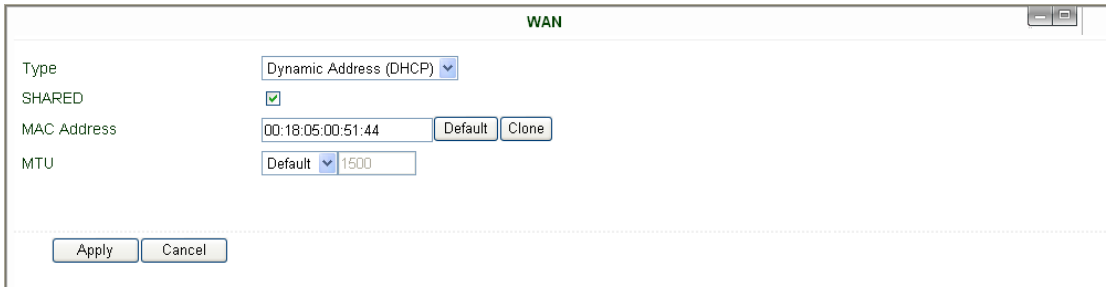
**WAN—Static IP**




| Name | Description | Default |
|---|---|---|
| Type | Static IP | |
| SHARED | Enabled—the local device linked with Router can get access to internet.<br>Disable—the local device can't get access to internet via Router. | Enable |
| MAC Address | Set MAC Address | |
| IP Address | Set WAN port IP | 192.168.1.29 |
| Net Mask | Set WAN port Net Mask | 255.255.255.0 |
| Gateway | Set WAN Gateway | 192.168.1.1 |
| MTU | Set Max Transmission Unit, optional between default and manual | 1500 |
| Multi-IP Settings(can set 8 additional IP address at the most) | | |
| IP address | Set the additional IP address of LAN | Blank |

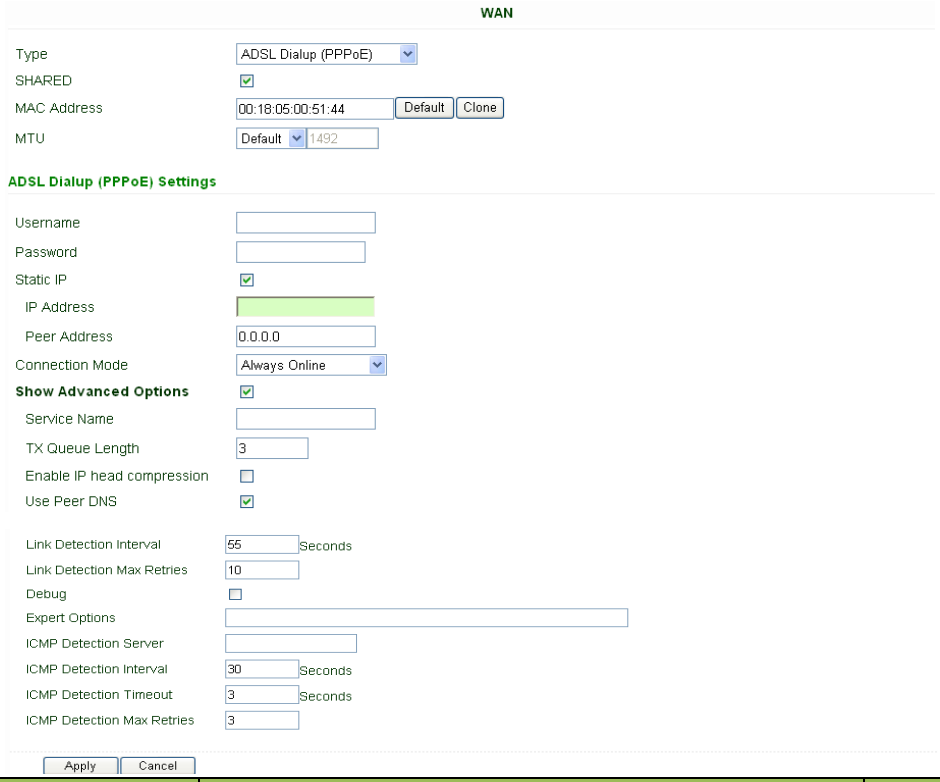
| | | |
|---|---|---|
| Net Mask | Set Net Mask | Blank |
| Description | Describe the settings | Blank |

## WAN—Dynamic Address (DHCP)




| Name | Description | Default |
|---|---|---|
| Type | Dynamic Address (DHCP) | |
| SHARED | Enabled—the local device linked with Router can get access to internet.<br>Disable—the local device can't get access to internet via Router. | Enable |
| MAC Address | Set MAC Address | |
| MTU | Set Max transmission unit, optional between default and manual | 1500 |

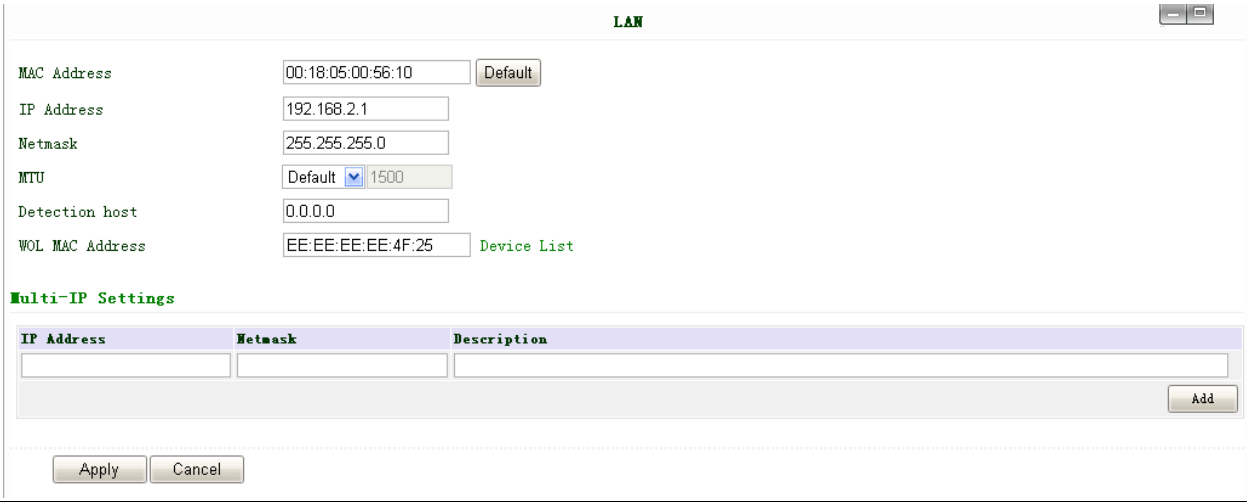
## WAN --ADSL




| Name | Description | Default |
|---|---|---|
| Type | ADSL Dialup (PPPoE) | |
| SHARED | Enabled—the local device linked with Router can get access to internet.<br>Disable—the local device can't get access to internet via Router. | Enable |
| MAC Address | Set MAC Address | |
| MTU | Set Max Transmission Unit, optional between default and manual | 1500 |
| ADSL Dialup (PPPoE) Settings | | |

| | | |
|---|---|---|
| Username | Set username for dialing up | Blank |
| Password | Set password for dialing up | Blank |
| Static IP | Enable Static IP | Disabled |
| IP address | Static IP Address | Blank |
| Peer IP | Set Peer IP | Blank |
| Connection Mode | Set connection mode (Connect on Demand/Always Online/ Manual) | Always Online |
| Advanced Options | | |
| Show advanced options | Enable advanced configuration | Disabled |
| Service Name | Name the service | Blank |
| TX Queue Length | Set TX Queue Length | 3 |
| Enable IP head compression | Click to enable IP head compression | Disabled |
| User Peer DNS | Enable User Peer DNS | Disabled |
| Link Detection Interval | Set link detection interval | 55 seconds |
| Link Detection Max Retries | Set link detection max retries | 10 (times) |
| Debug | Select to enable debug-mode | Disabled |
| Expert Options | Set expert parameters | Blank |
| ICMP Detection Server | Set ICMP Detection Server | Blank |
| ICMP Detection Time | Set ICMP Detection Time | 30 |
| ICMP Detection Timeout | Set ICMP Detection Timeout | 3 |
| ICMP Detection Max Reties | Set ICMP Detection Max Reties | 3 |

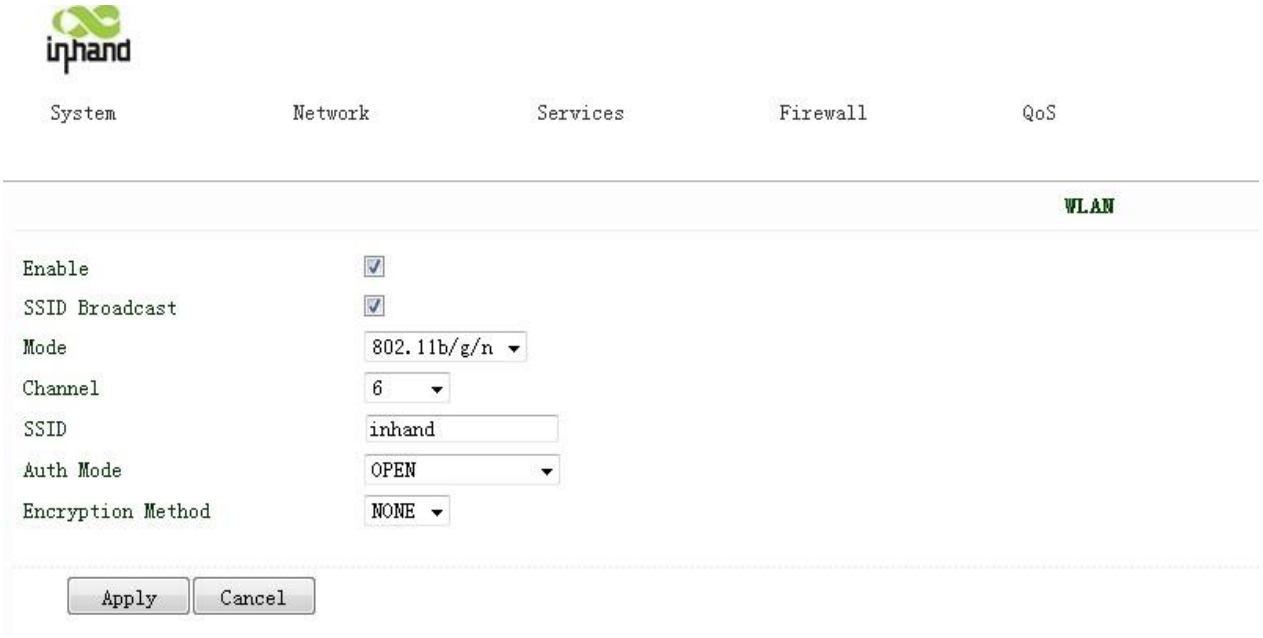
### (3) LAN




| Name | Description | Default |
|---|---|---|
| MAC Address | The MAC address in LAN | 00:10:A1:86:95:02 (Provided by InHand) , for manufactures |
| IP Address | Set IP Address in LAN | 192.168.2.1 (If Changed, you need to input the new address for entering the configuration web) |
| Net Mask | Set Net Mask of LAN | 255.255.255.0 |
| MTU | Set MTU length, optional between Default and Manual | 1500 |
| Detection Host | Set Detection Host Address | 0.0.0.0 |
| WOL MAC Address | Set the MAC of PC in the LAN of router, for Wakeup Over LAN (WOL) function, you should also set "Networks"→ "Dialup" and change dialup mode into "Trigger by SMS". | Blank |

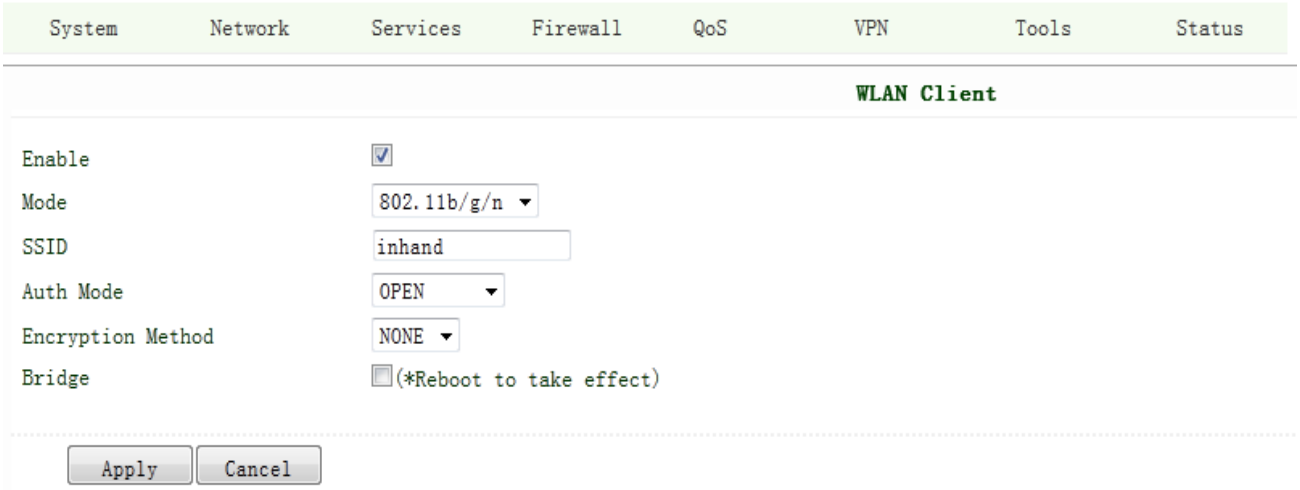
| Multi-IP Settings (Support additional 8 IP addresses at the most) | | |
|---|---|---|
| IP Address | Set additional IP Address of LAN | Blank |
| Description | Description about this IP address | Blank |

### (4) WLAN (Only AP Series)



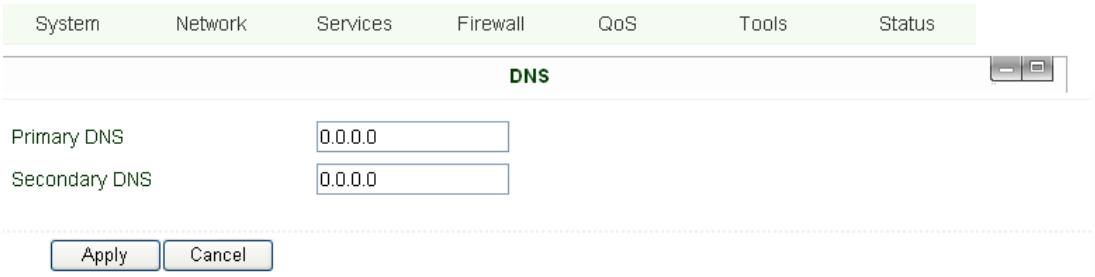

| WLAN | | |
|---|---|---|
| Description: Support WIFI, provide wireless LAN access and wireless user identification authentication services on customer field. | | |
| **Name** | **Description** | **Default** |
| Enable | Enable "WLAN" port | Enable |
| SSID Broadcast | Enable "SSID Broadcast", user can search wireless network by SSID name. | Enable |
| Mode Selection | Support 802.11b/g/n modes, etc. | 802.11b/g/n |
| Channel Selection | Select channel | 6 |
| SSID | Self-define SSID name | Inhand |
| Authentication Method | Support Open, Shared Key, and Auto Select WEP, WPA-PSK, WPA, WPA2-PSK, WPA2, WPA/WPA2, WPAPSK/WPA2PSK. | Open |
| Encryption Scheme | Based on authentication method, support NONE, WEP, TKIP, AES, and TKIP/AES. Different authentication method uses different encryption scheme and may need network key and corresponding authentication parameters, which will not be listed here. | NONE |

### (5) WLAN Client (Only STA Series)



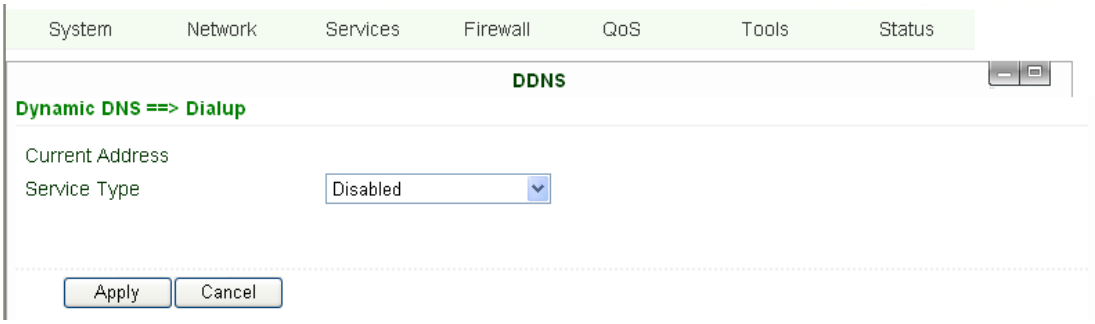

| WLAN Client | | |
|---|---|---|
| Description: Provide WIFI access for your Ethernet device | | |
| **Name** | **Description** | **Default** |
| Enable | Enable "WLAN Client" port | Enable |
| Mode | Support 802.11b/g/n modes, etc. | Enable |
| SSID | Fill in the accessed SSID name. | inhand |
| Auth Mode | Support Open, Shared, WPA-PSK , WPA2-PSK, | Open |
| Encryption Method | Support NONE, WEP, TKIP, AES | NONE |
| Bridge | Enable bridge, the Access Point will assign a local IP address for your device. | NONE |

### (6) DNS

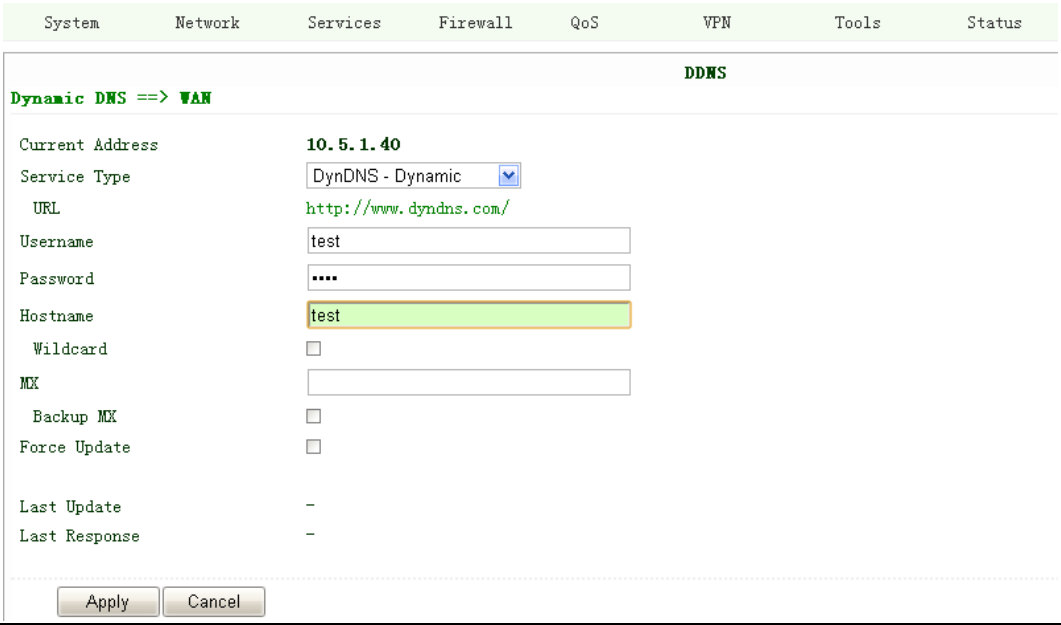



| Name | Description | Default |
|---|---|---|
| Primary DNS | Set Primary DNS | Blank |
| Secondary DNS | Set Secondary DNS | Blank |

### (7) DDNS (Dynamic DNS)

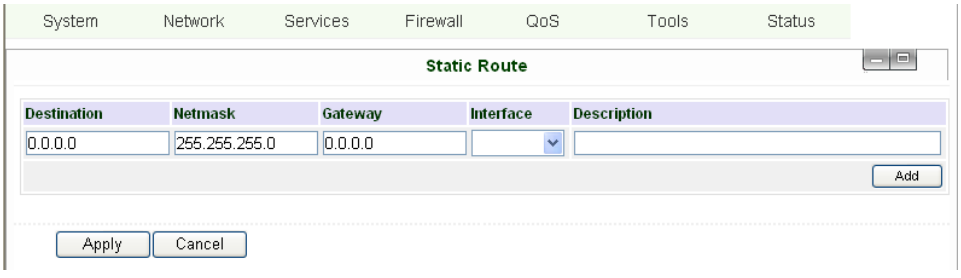



| Name | Description | Default |
|---|---|---|
| Current Address | Show the current IP address | Blank |
| Service Type | Select DDNS Provider | Disabled |




| Name | Description | Default |
|---|---|---|
| Service Type | DynDNS - Dynamic | |
| URL | http://www.dyndns.com/ | |
| Username | Registered username for DDNS | |
| Password | Registered password for DDNS | |
| Hostname | Registered hostname for DDNS | |

### (8) Static Route



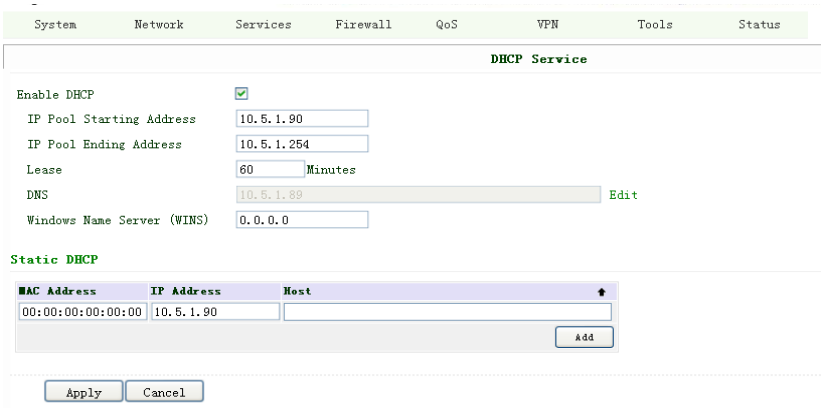

| Name | Description | Default |
|---|---|---|
| Destination | Set IP address of destination | Blank |

| | | |
|---|---|---|
| Net Mask | Set subnet Mask of destination | 255.255.255.0 |
| Gateway | Set the gateway of destination | Blank |
| Interface | Optional LAN/WAN port access to destination | Blank |
| Description | Describe static route | Blank |

### 3.1.4 Service

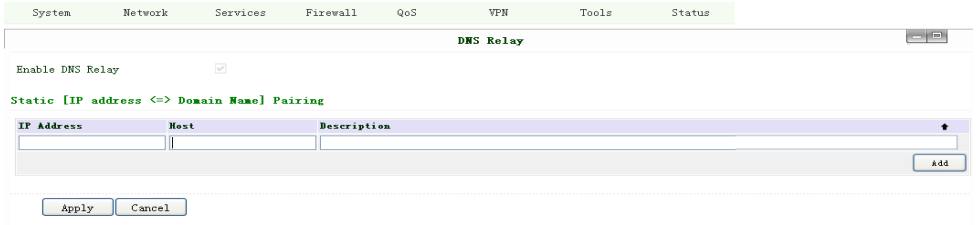
Service settings include DHCP Service, DNS Forwarding, VRRP and other related parameters.

**(1) DHCP Service**




| Name | Description | Default |
|---|---|---|
| Enable DHCP | Click to enable DHCP | Enable |
| IP Pool Starting Address | Set the starting IP address of DHCP pool | 192.168.2.2 |
| IP Pool Ending Address | Set the ending IP address of DHCP pool | 192.168.2.100 |
| Lease | Set the valid time lease of IP address obtained by DHCP | 60 minutes |
| DNS | Set DNS Server | 192.168.2.1 |
| Windows Name Server (WINS) | Set WINS | Blank |
| Static DHCP (can set 20 designated IP address at the most) | | |
| MAC Address | Set the MAC address of a designated IP address | Blank |
| IP address | Set the static IP address | 192.168.2.2 |
| Host | Set the hostname | Blank |

**(2) DNS Relay**



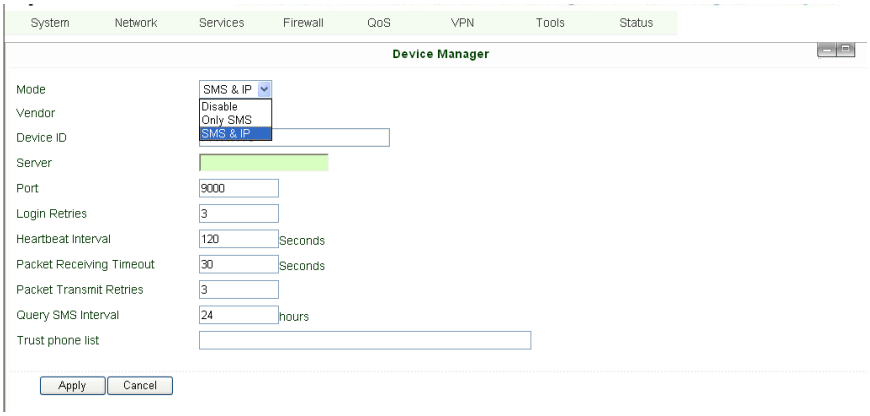

| Name | Description | Default |
|---|---|---|
| Enable DNS Relay | Click to enable DNS Relay | Disabled |
| Designate IP address<=>DNS couples (20 at the most) | | |
| IP Address | Set IP address <=> DNS couples | Blank |

| | | |
|---|---|---|
| Host | Set the name of IP address <=> DNS couples | Blank |
| Description | Describe IP address <=> DNS couples | Blank |

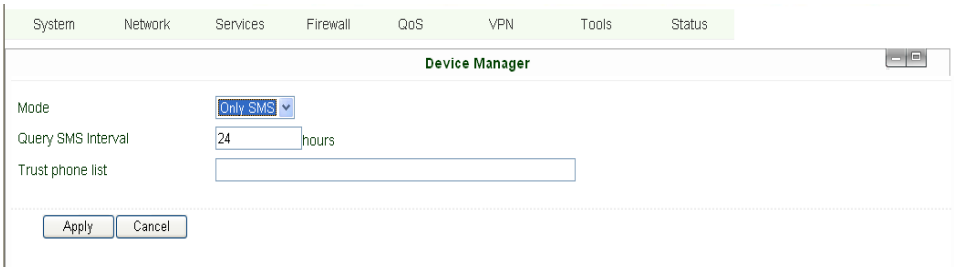
### (3) VRRP

| Name | Description | Default |
|---|---|---|
| VRRP-1 | Select to enable VRRP | Disable |
| Group ID | Select group id of routers (range 1-255) | 1 |
| Priority | Select priority for router (range 1—254) | 10 (bigger number stands for higher priority) |
| Advertisement Interval | Set ad interval | 60 sec |
| Virtual IP | Set Virtual IP | Blank |
| Authentication Type | Optional: None/Password type | None |
| Virtual MAC | Set Virtual MAC | Blank |
| Monitor | Set Monitor | None |
| VRRP-II | | |

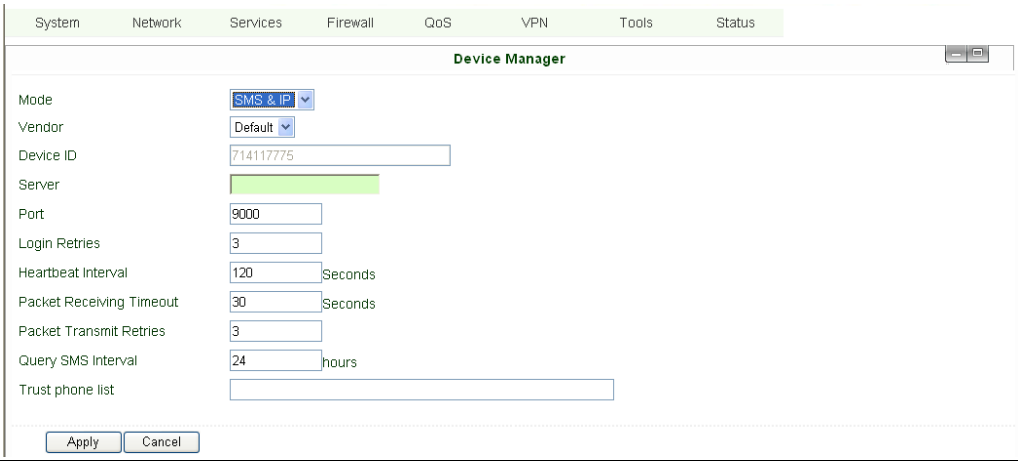
### (4) Device Manager




| Name | Description | Default |
|---|---|---|
| Mode | Disabled/Only SMS/SMS+IP | Disable |

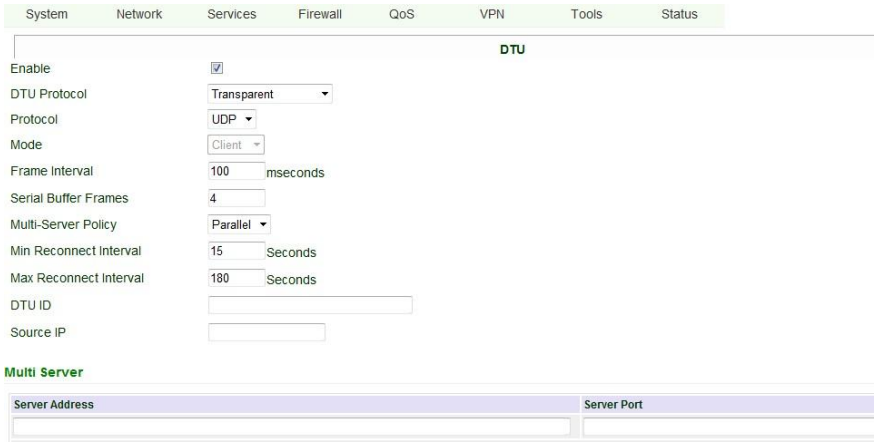



| Name | Description | Default |
|---|---|---|
| Mode | Only SMS | |
| Query SMS Interval | Set how long to check SMS | 24 hours |
| Trust Phone List | Add trust Cell Phone List | |



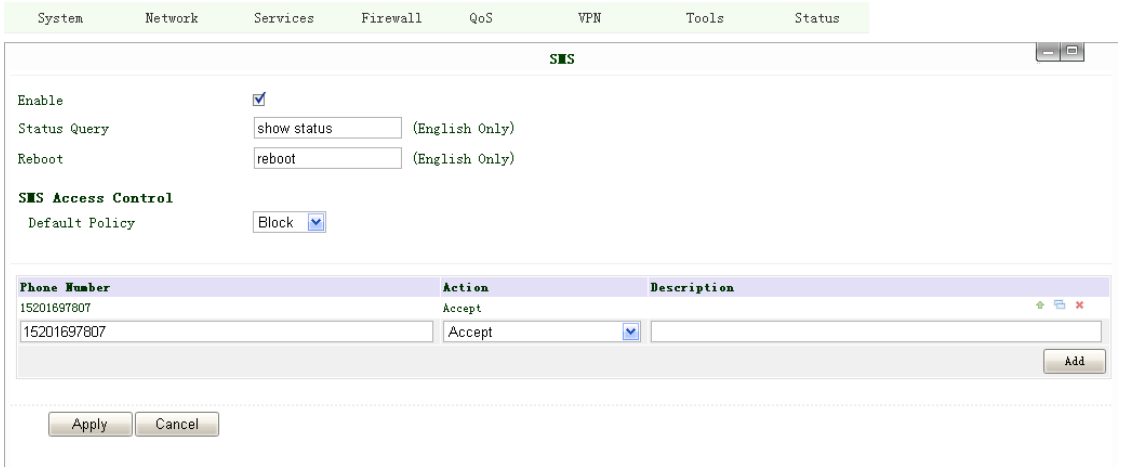

| Name | Description | Default |
|---|---|---|
| Mode | SMS+IP Mode | |
| Vendor | Set Vendor Name | Default |
| Device ID | Set Device ID | |
| Server | Set Device Manager Server IP | |
| Port | Set Port For DM | 9000 |
| Login Retries | Set login retries | 3 |
| Heartbeat Interval | Set interval of heartbeat | 120 |
| Packet Receiving Timeout | Set packet receiving timeout | 30 |
| Packet Transmit Retries | Set packet transmit reties | 3 |
| Query SMS Interval | Set how long to check SMS | 24 |
| Trust phone list | Set trust cell phone list | |

### (5) DTU




| Name | Description | Default |
|---|---|---|
| Enable | Click to enable DTU | Disable |
| DTU Protocol | Set DTU protocol, Please see more in related Quick Guide | Transparent |
| Protocol | Optional between TCP/UDP | UDP |
| Mode | Set DTU as client or server | Client |
| Frame Interval | Set Frame Interval | 100 |
| Serial Buffer Frames | Set Serial Buffer Frames | 4 |
| Multi-Server Policy | Optional between Parallel/Poll | Parallel |
| Min Reconnect interval | Set Min Reconnect interval | 15 |
| Max Reconnect interval | Set Max Reconnect interval | 180 |
| DTU ID | Set ID of DTU | Blank |
| Source IP | Set Source IP | Blank |
| Multi Server | Set the IP address and Port of server to receive data. | Blank |

### (6) SMS




| Name | Description | Default |
|---|---|---|
| Enable | Click to enable SMS control | Disable |

| | | |
|---|---|---|
| Status Query | Set Status Query SMS, and you can see status of router by send SMS (e.g.: show status). | |
| Reboot | Let the router reboot | |
| SMS Access Control | | |
| Default Policy | Block or Accept control SMS from certain Phone | Block |
| Phone List | Include phone numbers accepted or blocked to send SMS to router | |

**Notice: Before using this function, please make sure you have a SIM card in the InRouter that has SMS function. Otherwise, please contact local mobile operator to get one.**

SMS you will get in your mobile phone:

Host: (SN);

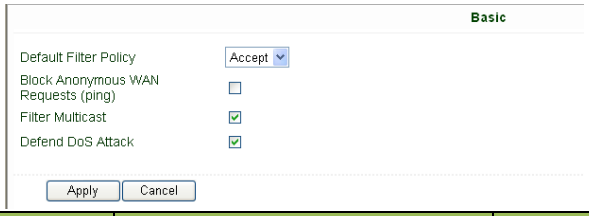
Uptime: (the uptime of router for this time of reboot);

State: (Online/Offline) (Cellular WAN IP)

### 3.1.5 Firewall

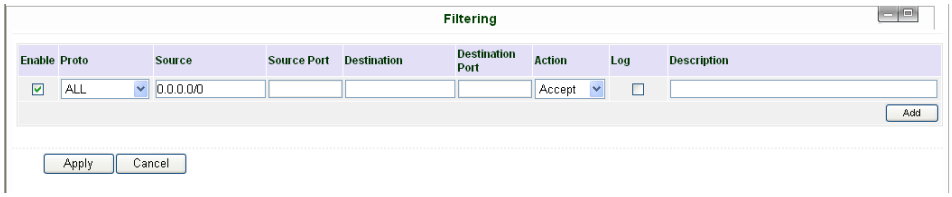
This page is to configure the firewall parameters.

**(1) Basic Configuration**



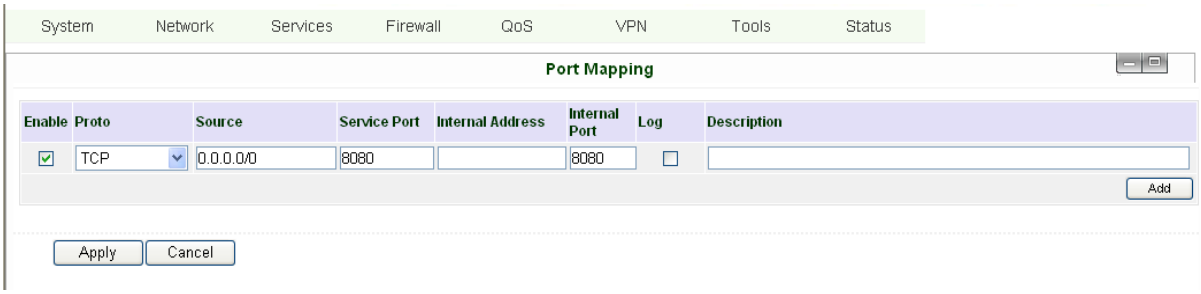

| Name | Description | Default |
|---|---|---|
| Default Filter Policy | Optional between Accept /Refused | Accept |
| Block Anonymous WAN Request (ping) | Click to enable filer ping request | Disable |
| Filter Multicast | Click to enable filter multicast | Enable |
| Defend DoS Attack | Click to enable Defend DoS Attack | Enable |

**(2) Filtering**



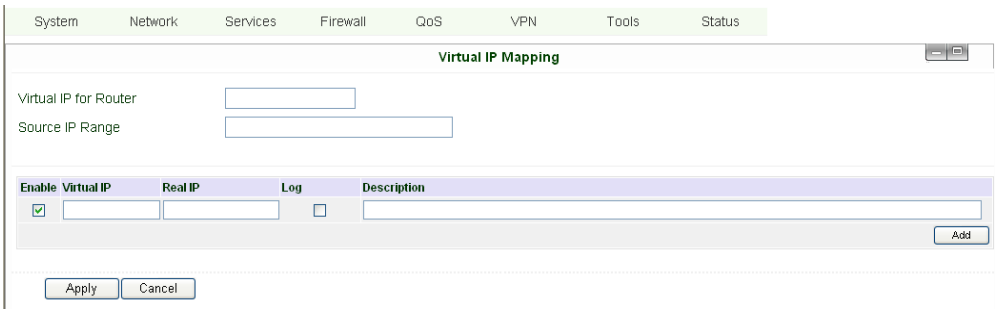

| Name | Description | Default |
|---|---|---|
| Enable | Click to enable filtering | Blank |
| Protocol | Optional among TCP/UDP/ICMP | All |
| Source IP address | Set Source IP address | Blank |
| Source Port | Set Source Port | Blank |
| Destination IP | Set destination IP | Blank |
| Destination Port | Set destination port | Blank |
| Action | Accept/Deny | Accept |
| Log | Click to enable login | Disable |
| Description | Describe your configuration | Blank |

### (3) Port Mapping




| Name | Description | Default |
|---|---|---|
| Enable | Click Enable Port Mapping | Disable |
| Source | To fill with source IP | 0.0.0.0/0 |
| Service Port | Fill the port of service | 8080 |
| Internal Address | Set the internal IP for mapping | Blank |
| Internal Port | Set the Port mapping to internal | 8080 |
| Log | Click to enable log about port mapping. | Disable |
| Description | Describe meanings of each mapping | Blank |

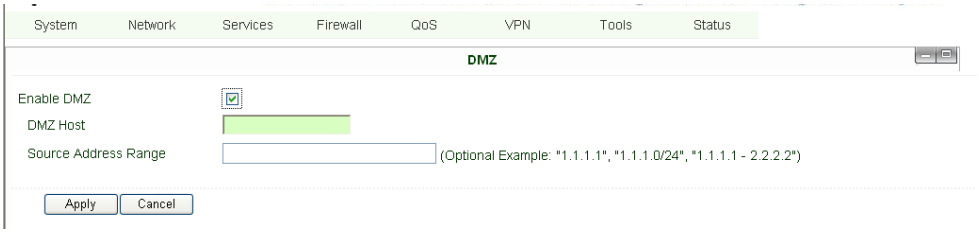
### (4) Virtual IP Mapping




An internal PC's IP can match to a virtual IP, and external network can access the internal PC via this virtual IP address.

| Name | Description | Default |
|---|---|---|
| Virtual IP for Router | Set Virtual IP for Router | Blank |
| Source IP Range | Set range of source IP address | Blank |
| Virtual IP | Set virtual IP | Blank |
| Real IP | Set real IP | Blank |
| Log | Enable logging concerned with virtual IP | Disable |
| Description | Describe this configuration | Blank |

### (5) DMZ (All Port Mapping)

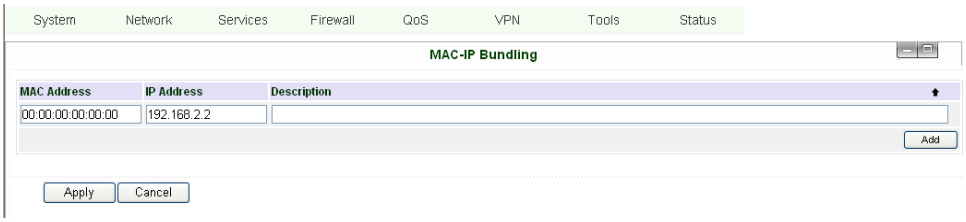



Mapping all the ports and then external PC can get access to all the ports of internal device behind IR6x5.

Attention: this function cannot map the admin port of IR6x5 (e.g.: 80 TCP) to the device's port.

| Name | Description | Default |
|---|---|---|
| Enable DMZ | Click to Enable DMZ | Disable |
| DMZ Host | Set host IP of DMZ | Blank |
| Source Address Range | Set IP address with restrict IP access | Blank |

**(6) MAC-IP Bundling**

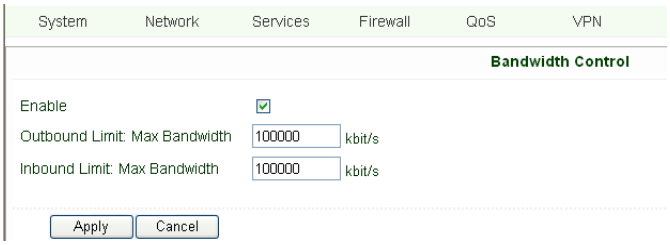



When firewall denies all access to the external network, only PC with MAC-IP Bundling can access external network

| Name | Description | Default |
|---|---|---|
| MAC Address | Set Bundling Mac address | Blank |
| IP Address | Set Bundling IP address | 192.168.2.2 |
| Description | Describe this configuration | Blank |

## 3.1.6 QoS

**（1）Banwidth Control**




| Name | Description | Default |
|---|---|---|
| Enable | Click to enable | Disable |
| Outbound Limit Max Bandwidth | Set the limit speed of out- bound bandwidth | 100000kbit/s |
| Inbound Limit Max Bandwidth | Set the limit speed of inbound bandwidth | 100000kbit/s |

**（2）IP BM Limit**

| Name | Description | Default |
|---|---|---|

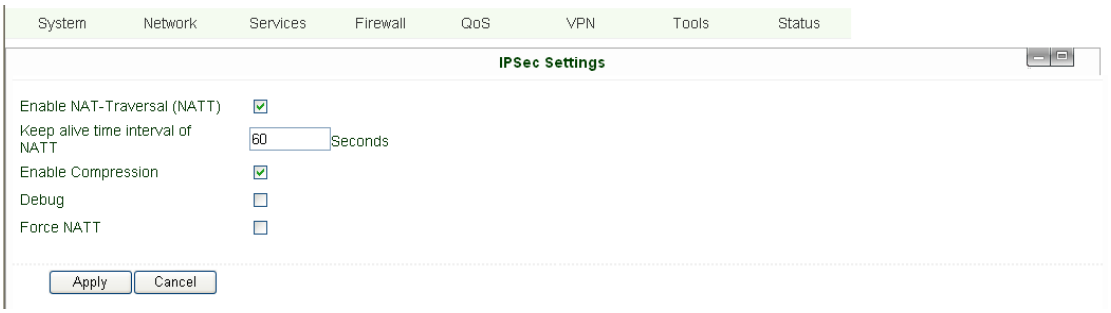
| | | |
|---|---|---|
| Enable | Click to enable | Disable |
| IP Address | Set IP Address | Blank |
| Rate | Set Rate | 100 kbit/s |
| Priority | Set the Priority | Medum |
| Description | Describe this configuration | Blank |

## 3.1.7 VPN

This page introduces the parameters in InRouter615's Web. (For IR615 only)

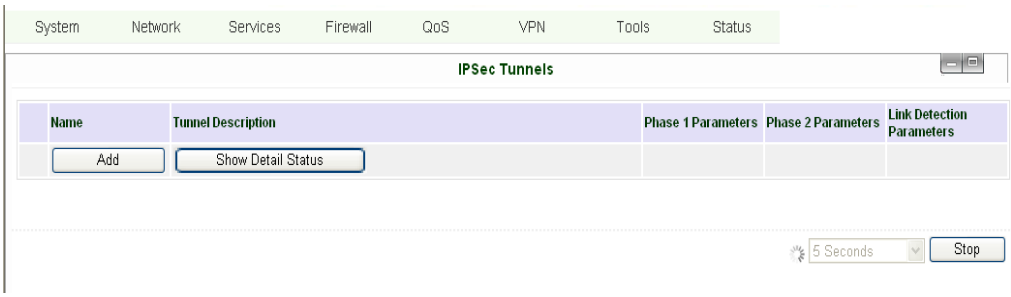
### (1) IPSec Settings

To build an IPSec VPN Tunnel, you need to first set IPSec properties on this page, then go to IPSec Tunnels to add your VPN:

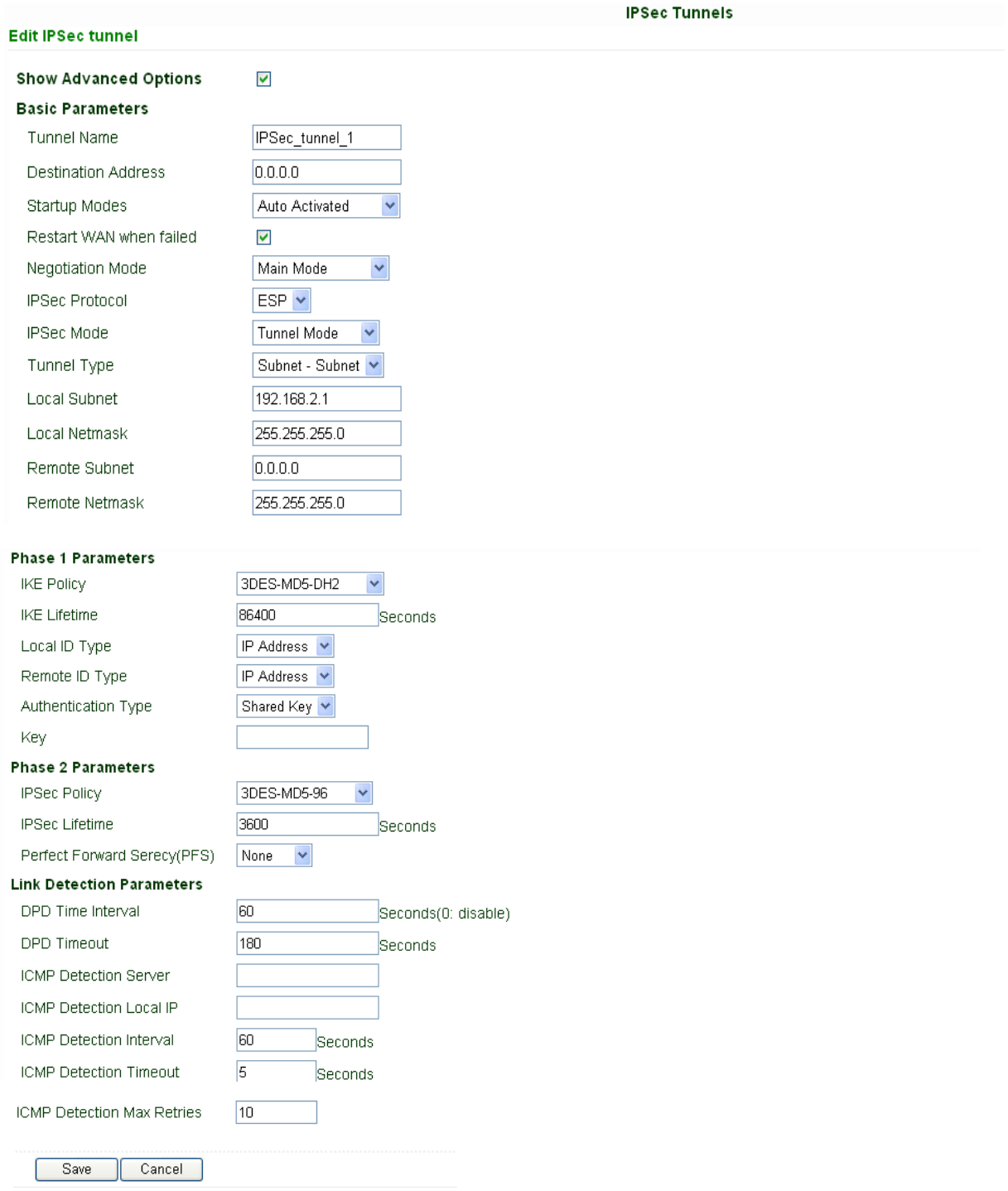



| IPSec Settings | | |
|---|---|---|
| Description: 1. Select to Enable or Disable NATT, normally we need to enable, unless you ensure there is no NAT routers in the network.<br>2. Select to enable Compression Mode or Debug | | |
| **Name** | **Description** | **Default** |
| Enable NAT Transversal (NATT) | Click to enable NATT | Enable |
| Keep alive time interval of NATT | Set live time for NATT | 60 sec |
| Enable Compression | Click to enable | Enable |
| Enable Debug | Click to enable | Disable |
| Force NATT | Click to enable | Disable |

### (2) IPSec Tunnels



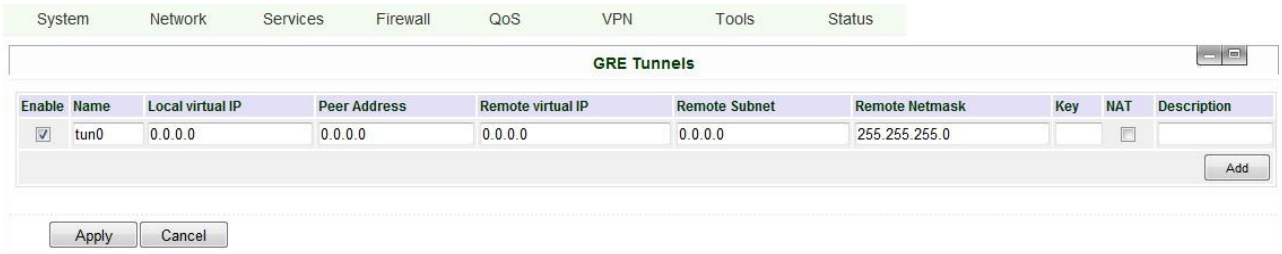

Click "Add" and enter the configuration page:




| Name | Description | Default |
|---|---|---|
| Show Advanced Options | Click to enable advanced options | Disable |
| Basic Parameters | | |
| Tunnel Name | To name the tunnel | IPSec_tunnel_1 |
| Destination Address | Set the destination address of IPSec VPN Server | Blank |
| Startup Mode | Auto Activate/Trigged by Data/Passive/Manually Activated | Enable |
| Negotiation Mode | Optional: Main Mode or<br>Aggressive Mode | Main Mode |
| IPSec Mode<br>(Enable Advanced options) | Optional: ESP or AH | ESP |

| | | |
|---|---|---|
| IPSec Mode<br>(Enable Advanced options) | Optional: Tunnel Mode or Transport Mode | Tunnel Mode |
| Tunnel Type | Optional:<br>Host——Host, Host——Subnet, Subnet——Host, Subnet——Subnet | Subnet——Subnet Mode |
| Local Subnet | Set IPSec Local Protected Subnet | 192.168.2.1 |
| Local Subnet Net Mask | Set IPSec Local Protected Subnet Net Mask | 255.255.255.0 |
| Remote Subnet Address | Set IPSec Remote Protected Subnet | Blank |
| Remote Subnet Net Mask | Set IPSec Remote Protected Subnet Net Mask | 255.255.255.0 |
| **Phase 1 Parameters** | | |
| IKE Policy | Optional: 3DES-MD5-96 or AES-MD5-96 | 3DES-MD5-96 |
| IKE Lifetime | Set IKE 的 Lifetime | 86400 sec |
| Local ID Type | Optional: FQDN, USERFQDN, or IP Address | IP Address |
| Local ID (Only for FQDN 和 USERFQDN) | Set the ID according to ID type | Blank |
| Remote ID Type | Optional: FQDN,<br>USERFQDN, or IP Address | IP Address |
| Remote ID (Only for FQDN and USERFQDN) | Set the ID according to ID type | Blank |
| Authentication Type | Optional: Shared Key or Certificate | Shared Key |
| Key (While choosing Shared Key Authentication Type) | Set IPSec VPN Negotiation Key | Blank |
| **Phase 2 Parameters** | | |
| IPSec Policy | Optional: 3DES-MD5-96 or AES-MD5-96 | 3DES-MD5-96 |
| IPSec Lifetime | Set IPSec Lifetime | 3600sec |
| Perfect Forward Secrecy (PFS) | Optional: Disable, GROUP1, GROUP2, GROUP5 | Disable ((Enable Advanced options) |
| **Link Detection Parameters** (Enable Advanced options) | | |
| DPD Time Interval | Set DPD Time Interval | 60sec |
| DPD Timeout | Set DPD Timeout | 180sec |
| ICMP Detection Server | Set ICMP Detection Server | Blank |
| ICMP Detection Local IP | Set ICMP Detection Local IP | |
| ICMP Detection Interval | Set ICMP Detection Interval | 30sec |
| ICMP Detection Timeout | Set ICMP Detection Interval | 5sec |
| ICMP Detection Max Retries | Set ICMP Detection Max Retries | 3 |

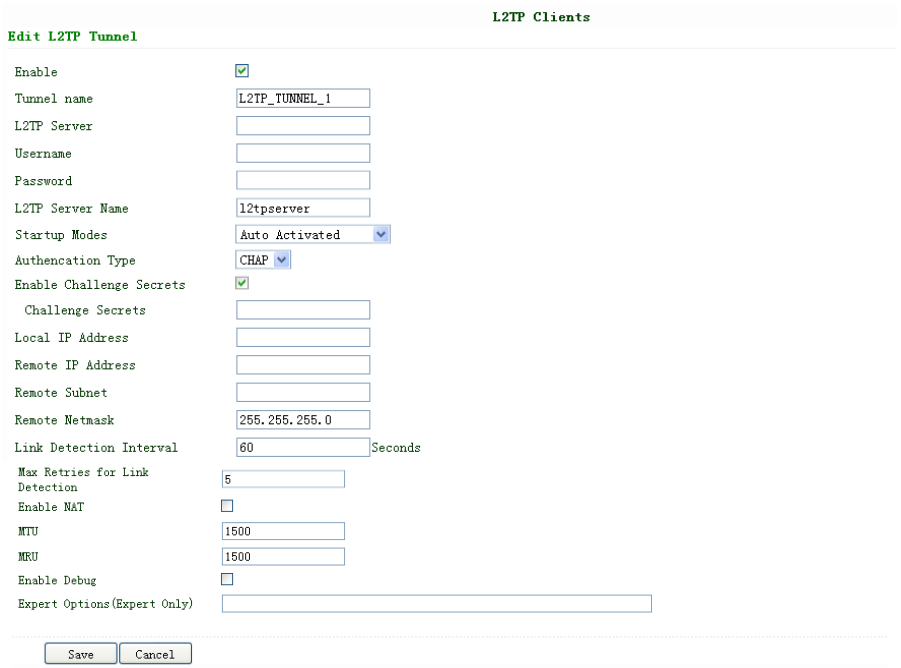
### (3) GRE Tunnels




| GRE Tunnels | | |
|---|---|---|
| Name | Description | Default |
| Enable | Click Enable | Enable |

| | | |
|---|---|---|
| Tunnel Name | Set GRE Tunnel Name | tun0 |
| Local Virtual IP | Set Local Virtual IP | 0.0.0.0 |
| Remote Address | Set Remote Address | 0.0.0.0 |
| Remote Virtual IP | Set Remote Virtual IP | 0.0.0.0 |
| Remote Subnet Address | Set Remote Subnet Address | 0.0.0.0 |
| Remote Subnet Net Mask | Set Remote Subnet Net Mask | 255.255.255.0 |
| Key | Set Tunnel Key | Blank |
| NAT | Click Enable NAT Function | Disable |
| Description | Add Description | Blank |

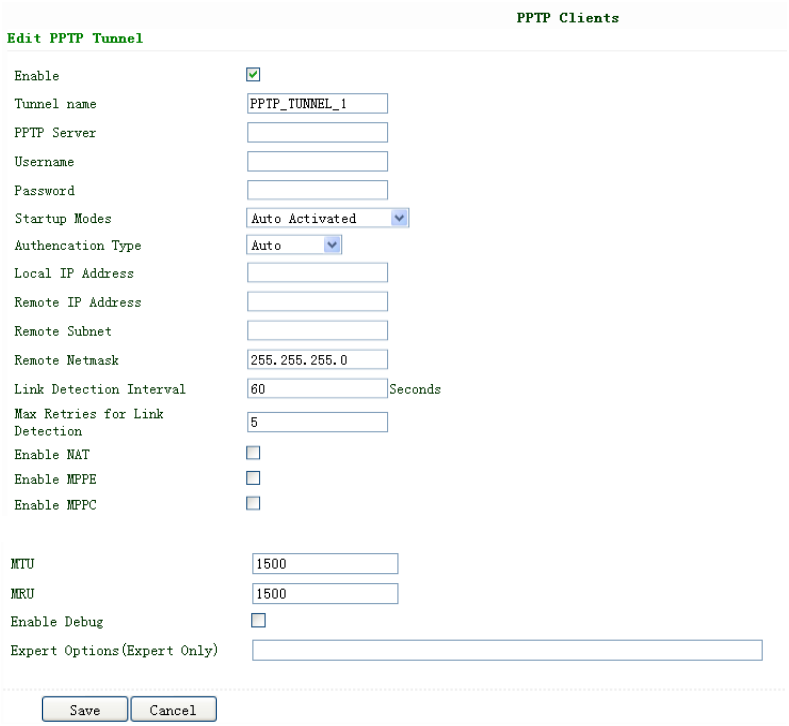
### (4) L2TP Clients




| Name | Description | Default |
|---|---|---|
| Enable | Click Enable | Enable |
| Tunnel Name | Set Tunnel Name | L2TP_TUNNEL_1 |
| L2TP Server | SetL2TP Server Address | Blank |
| Username | Set Server Username | Blank |
| Password | Set Server Password | Blank |
| Server Name | Set Server Name | l2tpserver |
| Startup Modes | Set Startup Modes: Auto Activated, Trigged by Data, Manually Activated | Auto Activated |
| Authencation Type | Set Authencation Type: CHAP, PAP | CHAP |
| Enable Challenge secrets | Set to enable Challenge secrets | Disable |
| Local IP Address | Set Local IP Address | Blank |
| Remote IP Address | Set Remote IP Address | Blank |
| Remote Subnet | Set Remote Subnet | Blank |
| Remote Subnet Net Mask | Set Remote Subnet Net Mask | 255.255.255.0 |
| Link Detection Interval | Set Link Detection Interval | 60 |
| Max Retries for Link Detection | Set Max Retries for Link Detection | 5 |
| Enable NAT | Click Enable NAT | Disable |

| | | |
|---|---|---|
| MTU | Set MTU parameters | 1500 |
| MRU | Set MRU parameters | 1500 |
| Enable Debug Mode | Click Enable Debug Mode | Disable |
| Expert Options | Set Expert Options | Blank |

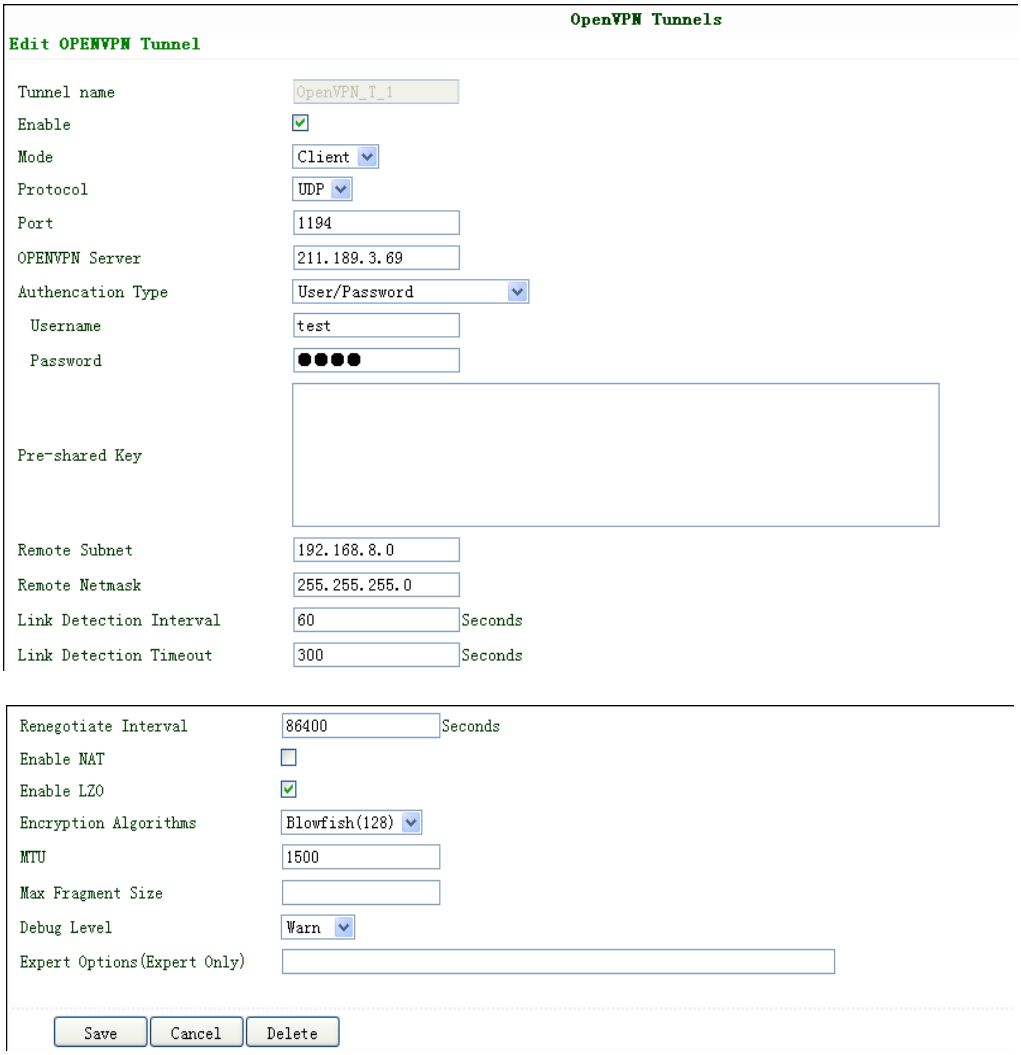
### (5) PPTP Clients




| Name | Description | Default |
|---|---|---|
| Enable | Click Enable | Enable |
| Tunnel Name | Set Tunnel Name | PPTP_TUNNEL_1 |
| PPTP Server | Set PPTP Server Address | Blank |
| Username | Set Server Username | Blank |
| Password | Set Server's Password | Blank |
| Startup Mode: | Set Startup Modes: Auto Activated, Trigged by Data, Manually Activated | Auto Activated |
| Authencation Type | Set Authencation Type: CHAP, PAP, MS-CHAPv1, MS-CHAPv2 | Auto |
| Local IP Address | Set Local IP Address | Blank |
| Remote IP Address | Set Remote IP Address | Blank |
| Remote Subnet | Set Remote Subnet | Blank |
| Remote Subnet Net Mask | Set Remote Subnet Net Mask | 255.255.255.0 |
| Link Detection Interval | Set Link Detection Interval | 60 |
| Max Retries for Link Detection | Set Max Retries for Link Detection | 5 |
| Enable NAT | Click Enable NAT | Blank |
| Enable MPPE | Click Enable MPPE | Blank |
| Enable MPPC | Click Enable MPPC | Blank |
| MTU | Set MTU parameters | 1500 |
| MRU | Set MRU parameters | 1500 |

| | | |
|---|---|---|
| Enable Debug Mode | Click Enable Debug Mode | Blank |
| Expert Options | For InHand R&D only | Blank |

**(6) OpenVPN Settings**

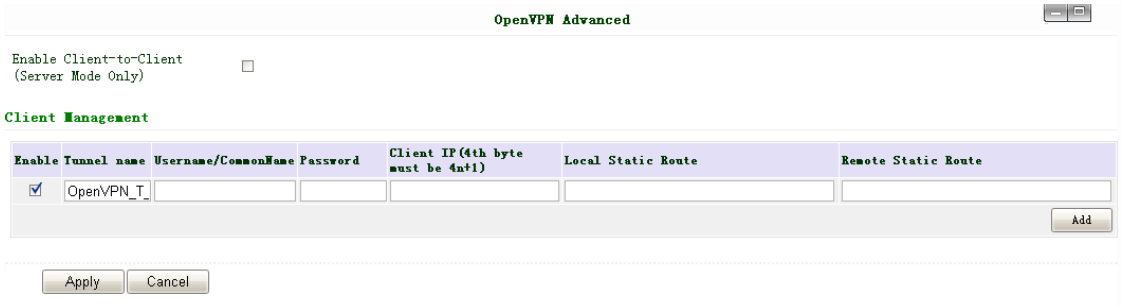



This page is to configure the OpenVPN settings, including Tunnel Name, Work Mode, Protocol, Port No. and other items.

| Name | Description |
|---|---|
| Tunnel name | default |
| Enable | Enable this configuration |
| Mode | Client or Server |
| Protocol | UDP or TCP |
| Port | Import or Export Certificate (CRL) |
| OPEN VPN Server | OPEN VPN Server's IP or DNS |
| Authencation Type | (1) None ----- for host to host connection (not available when 700 as server)<br>(2) Pre-shared Key ----- for host to host connection (not available when 700 as server)<br>(3) User/Password ----- For multi users to access<br>CA needed: Client: root CA (ca.crt)<br>Server: root CA (ca.crt), public key (pub.crt), private key (pri.key)<br>(4) X.509 Cert (multi-client) ----- CA mode for multi users to access |

| | |
|---|---|
| | CA needed: Client: root CA (ca.crt), public key (pub.crt), private key (pri.key)<br>Server: root CA (ca.crt), public key (pub.crt), private key (pri.key)<br>(5) X.509 Cert -----CA mode for host to host tunnel<br>CA needed: Client: root CA (ca.crt), public key (pub.crt), private key (pri.key)<br>Server: root CA (ca.crt), public key (pub.crt), private key (pri.key)<br>(6) User+X.509 mode------username + password + CA certificate<br>CA needed: Client: root CA (ca.crt), public key (pub.crt), private key (pri.key)<br>Server: root CA (ca.crt), public key (pub.crt), private key (pri.key) |
| Pre-shared Key | Set shared key or TLS-AUTH static password |
| Remote Subnet, Remote Net mask | Set the static route of the router, always towards the subnet of its peer |
| Link Detection Interval, Link Detection Timeout | Always use default |
| Renegotiate Interval | Always use default |
| Enable NAT | Set NAT mode, meanwhile it will disable route mode |
| Enable MPPE | Enable MPPE, always set in server |
| Enable LZO | Enable LZO compression |
| Encryption Algorithms | Set encryption algorithms, must match with the server |
| MTU, Max Fragment Size | Always use default |

### (7) OpenVPN Advanced Settings

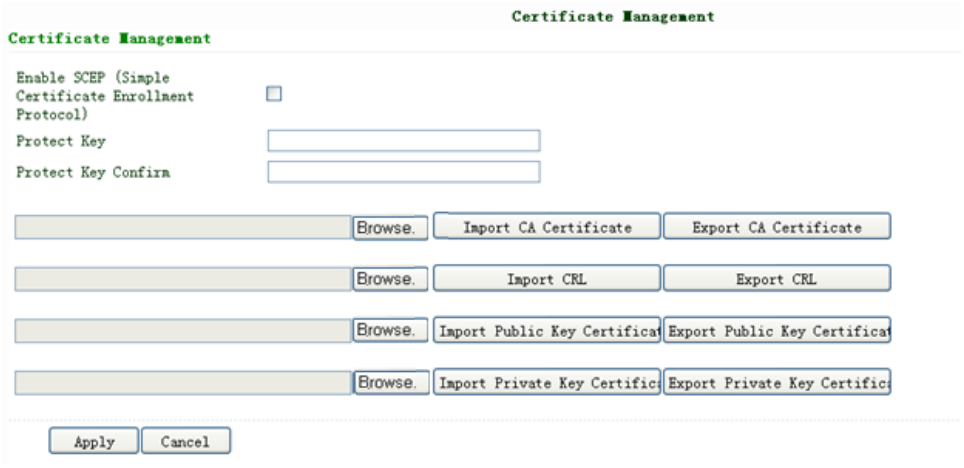



This page is to configure the OpenVPN advanced settings.

| Name | Description |
|---|---|
| Enable Client-to-Client | Enable client access to other clients |
| Client Management | |
| Tunnel Name | Tunnel Name of the Client |
| Username/Common Name | Username (using Username/password mode) or Common Name in CA (CA mode) |
| Local Static Route | The client subnet |
| Remote Static Route | The server subnet |

Attention: CA can only be produced by customer's PC; InRouter cannot produce CA.

**(8) Certificate Management of OpenVPN Settings**

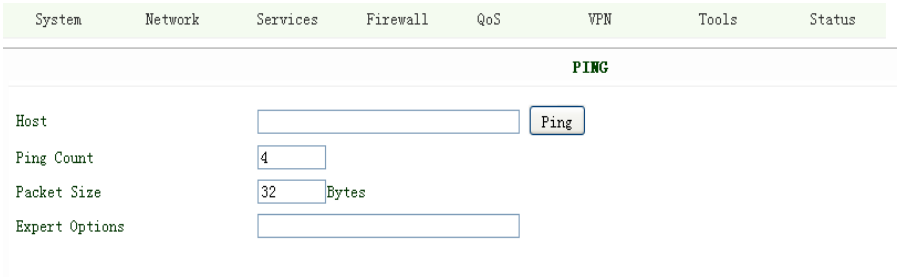



| Name | Description | Default |
|---|---|---|
| Enable SCEP<br>(Simple Certificate Enrollment Protocol) | Click Enable | |
| Certificate Protected Key | Set Certificate Protected Key | Blank |
| Certificate Protected Key Confirm | Confirm Certificate Protected Key | Blank |
| Import/Export CA Certificate | Import or Export (CA) Certificate | Blank |
| Import/Export Certificate (CRL) | Import or Export Certificate (CRL) | Blank |
| Import/Export Public Key Certificate | Import or Export Public Key Certificate | Blank |
| Import/Export Private Key Certificate | Import or Export Private Certificate | Blank |

# 3.1.8 Tools

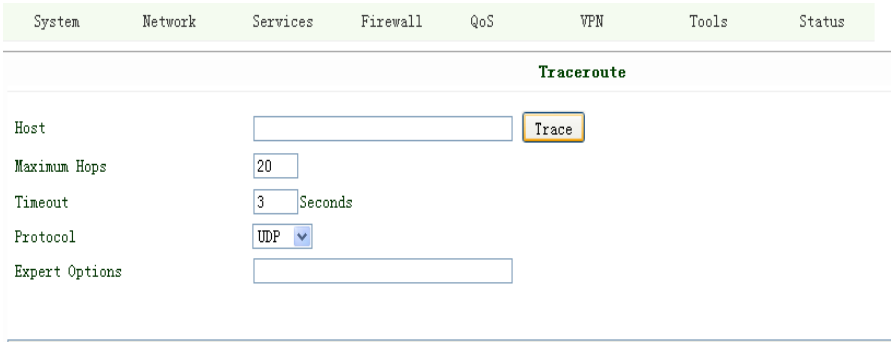
Tools contain PING Detection, Route Trace, Link Speed Test and etc.

**(1) PING**




| Name | Description | Default |
|---|---|---|
| Host | Destination for PING | Blank |
| Ping Count | Set PING Counts | 4 times |
| Packet Size | Set PING Packet Size | 32 Bytes |
| Expert Options | Advanced parameters | Blank |

**(2) Trace Route**




| Name | Description | Default |
|---|---|---|
| Host | Destination for Trace Route | Blank |
| Max Hops | Set Max Hops | 20 |
| Time Out | Set Time Out | 3 sec |
| Protocol | Optional: ICMP/UDP | UDP |
| Expert Options | Advanced parameters | Blank |

**(3) Link Speed Test**

Test link speed via unload or download

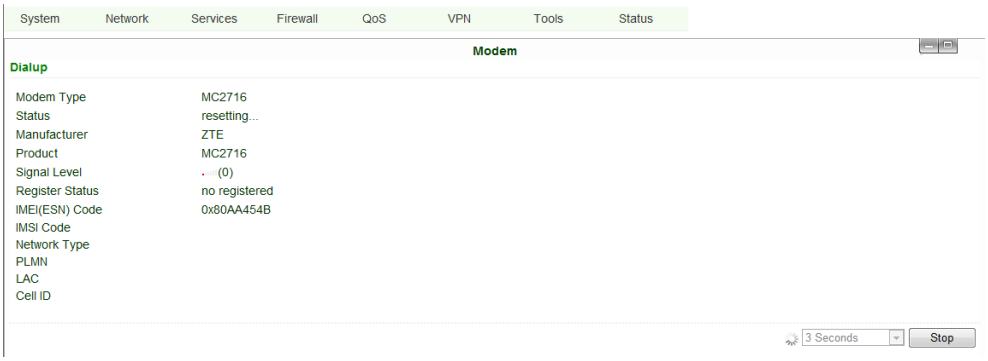
## 3.1.9 Status

Status contains System, Modem, WLAN, Network Connections, Route Table, Device List and Log.

**(1) System Status**

This page shows the status of system, including Name, Model Type, Current Version and etc.

### (2) Modem Status

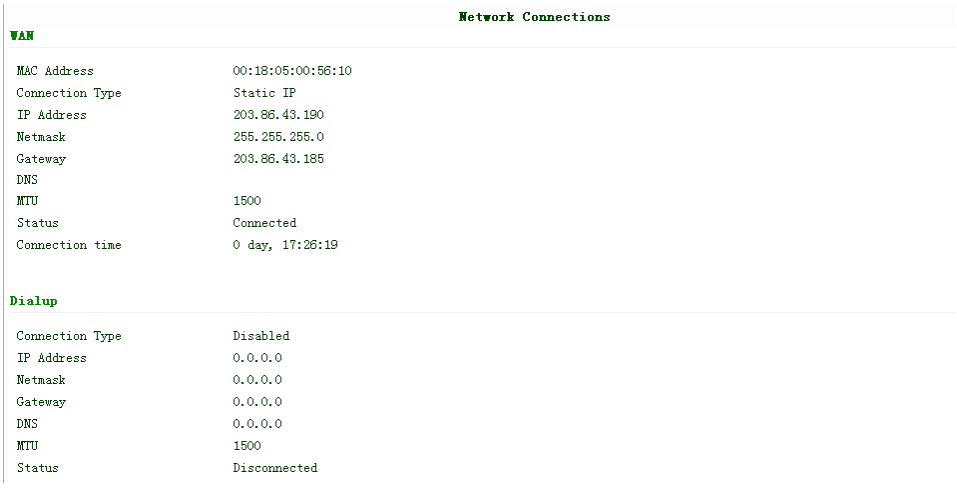



This page shows the status of Modem, including signal level.

### (3) WLAN (Only STA Series)

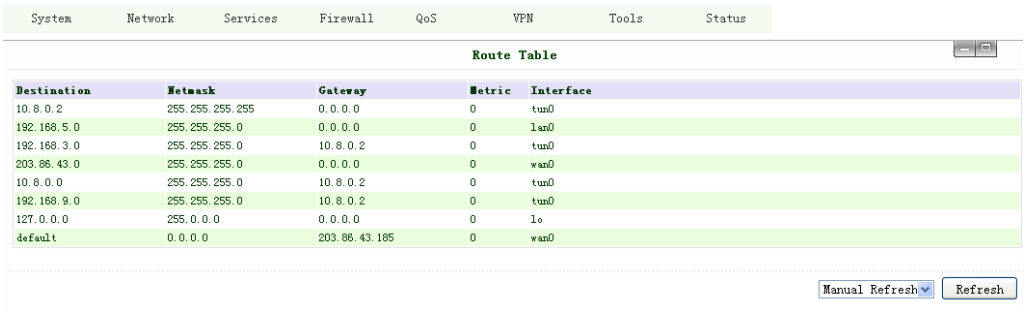
This page show joinable access point.

### (4) Network Connections



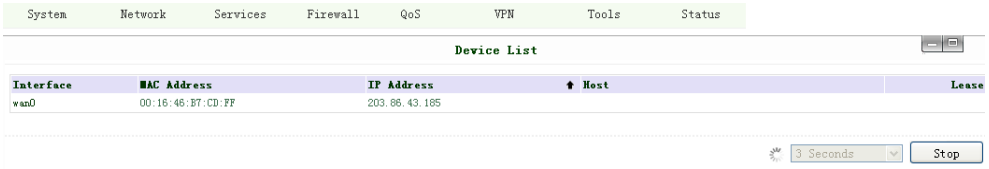

This page shows the network connections via WAN or LAN

**(5) Route Table**




This page shows the route table of IR6x5.

**(6) Device List**




This page shows the devices linked with IR6x5.

**(7) Log**

This page shows the log of system, including download log file.

Under certain situation when there’re problems that can’t be diagnosed at the moment, you’ll be asked to provide the diagnose log to InHand engineers, you may click “Download System Diagnosing Data” and then send the diagnose log to us.

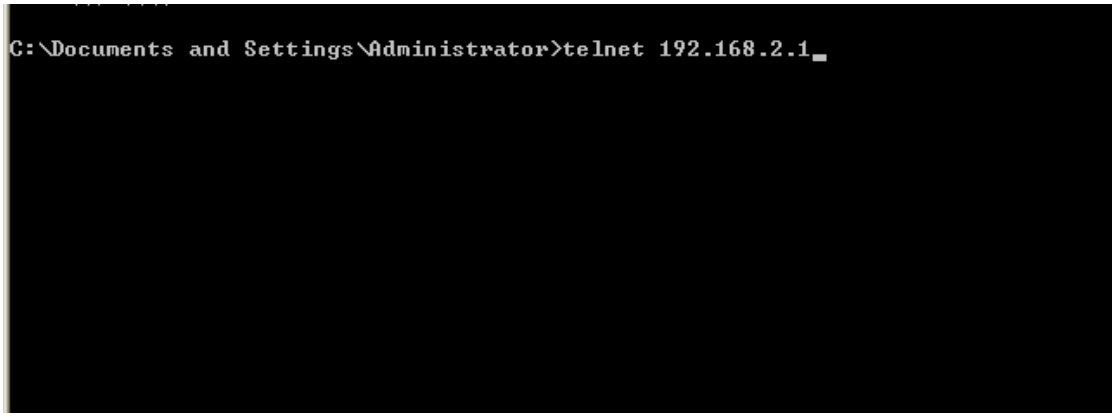
.

# 3.2 CLI Configuration

This chapter will show you how to configure via CLI.

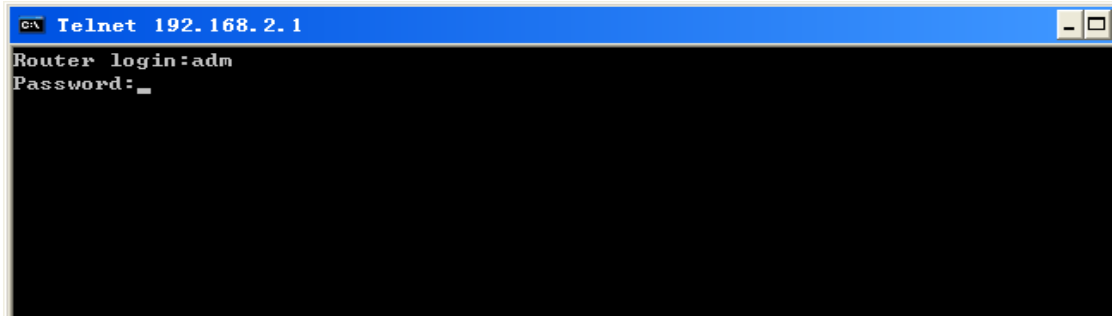
## 3.2.1 CLI Operation

**Step 1: Input telnet LAN IP to login CLI configuration. For example:**

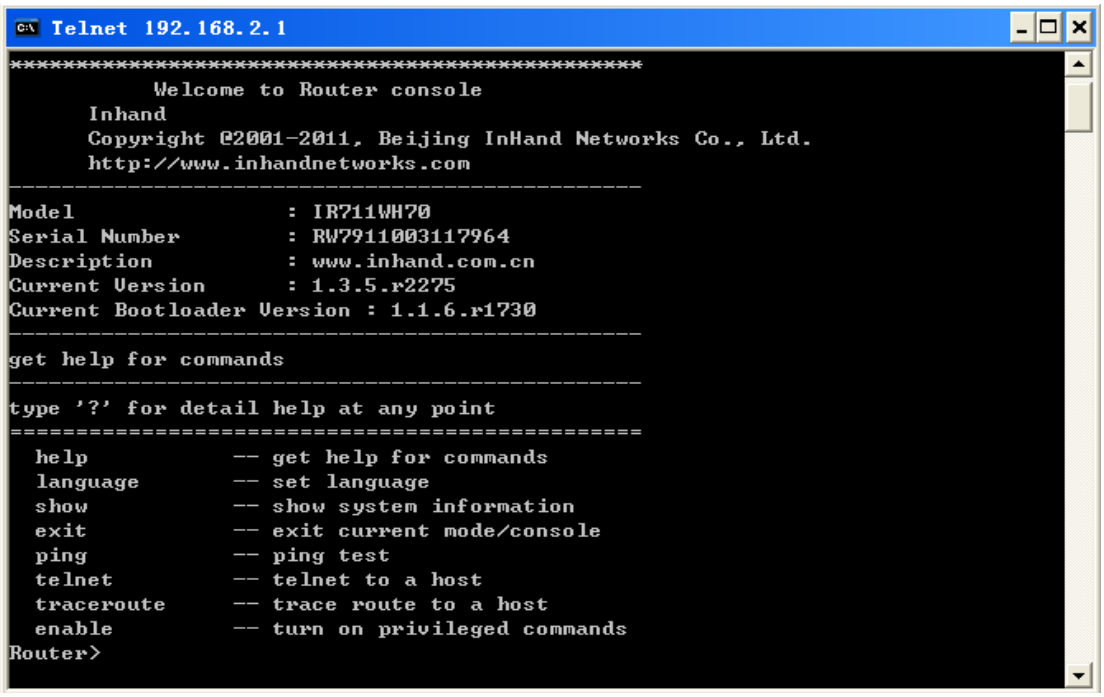



**Step 2: After connection is succeed, input username and password of IR6x5. The default username/password is adm/123456**

Attention: password will not be showed.

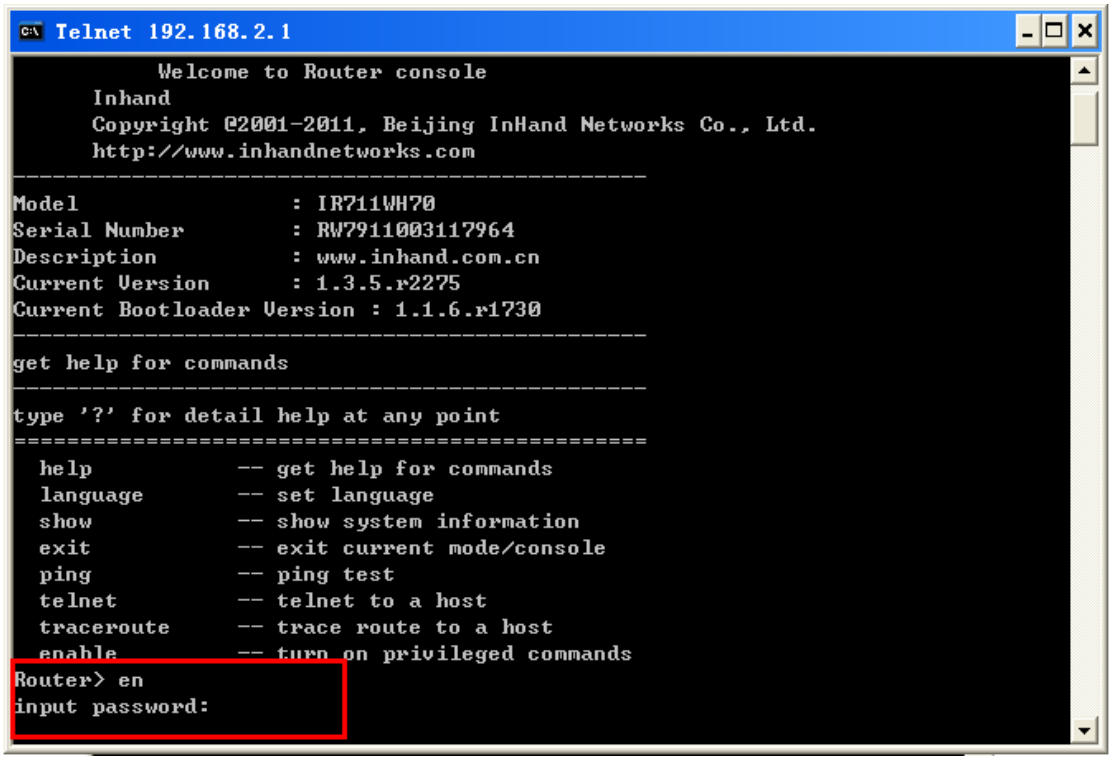



**Step 3: Login to User Mode**




This screenshot is the config-view of IR700.

**Step 4: enter privileged mode, password is 123456**




**Step 5: Login to privileged mode successfully**

**Step 6: Enter configured mode, then you could configure parameters you want to set up.**

```
Router# conf terminal
Router(config)#
```

## 3.2.2 CLI command

**Configure username and password**

```
Router(config)# nvram set adm_user adm
set adm_user=adm
Router(config)# nvram set adm_passwd 123456
set adm_passwd=123456
Router(config)#
```

**Enable serial function**

```
Router(config)# nvram set console_enable 1
set console_enable=1
```

**Configure serial port parameters, like baudrate, parity, stop bit and so on.**

```
Router(config)# nvram set com4_config 192008n1
set com4_config=192008n1
```

**Enable advanced options of dialup**

```
Router(config)# nvram set advanced 1
set advanced=1
```

**Configure ICMP server**

```
Router(config)# nvram set wan1_icmp_host www.sina.com
set wan1_icmp_host=www.sina.com
```

**Configure LAN IP**

```
Router(config)# nvram set lan0_ip 192.168.2.1
set lan0_ip=192.168.2.1
```

**Enable DHCP function**

```
Router(config)# nvram set dhcpd_enable 1
set dhcpd_enable=1
```

**Configure DHCP IP pool: 192.168.2.10-192.168.2.20**

```
Router(config)# nvram set dhcpd_start 192.168.2.10
set dhcpd_start=192.168.2.10
Router(config)# nvram set dhcpd_end 192.168.2.20
set dhcpd_end=192.168.2.20
```

**Enable HTTP function**

```
Router(config)# nvram set http_enable 1
set http_enable=1
```

**Configure HTTP service port**

```
Router(config)# nvram set http_port 80
set http_port=80
```

**Enable HTTP local access**

```
Router(config)# nvram set http_local 1
set http_local=1
```

**Enable HTTP remote access**

```
Router(config)# nvram set http_remote 1
set http_remote=1
```

**Check device ID**

```
Router(config)# nvram get ovdp_device_id
ovdp_device_id=711122732
```

**After configuration, please don't forget to commit and reboot router!**

```
Router(config)# nvram commit
% command ok!
Router(config)# reboot
are you sure to reboot system?[Y!N] y
```

# FQA

**1. InRouter is powered on, but can not access Internet through it?**

Please check:

- ✧ Whether the InRouter is inserted with a SIM card.
- ✧ Whether the SIM card is enabled with data service, whether the service of the SIM card is suspended because of an overdue charge.
- ✧ Whether the dialup parameters, e.g. APN, dialup number, account, and password are correctly configured.
- ✧ Whether the IP Address of your computer is the same subnet with InRouter and the gateway address is InRouter LAN address.

**2. InRouter is powered on, have a ping to detect InRouter from your PC and find packet loss?**

Please check if the network crossover cable is in good condition.

**3. Forget the setting after revising IP address and can`t configure InRouter?**

Method 1: connect InRouter with serial cable, configure it through console port.

Method 2: within 5 seconds after InRouter is powered on, press and hold the Restore button until the ERROR LED flashes, then release the button and the ERROR LED should goes off, press and hold the button again until the ERROR LED blinks 6 times, the InRouter is now restored to factory default settings. You may configure it now.

**4. After InRouter is powered on, it frequently auto restarts. Why does this happen?**

Please check:

- ✧ Whether the module works normally.
- ✧ Whether the InRouter is inserted with a SIM card.
- ✧ Whether the SIM card is enabled with data service, whether the service of the SIM card is suspended because of an overdue charge.
- ✧ Whether the dialup parameters, e.g. APN, dialup number, account, and password are correctly configured.
- ✧ Whether the signal is normal.
- ✧ Whether the power supply voltage is normal.

**5. Why does upgrading the firmware of my InRouter always fail?**

Please check:

- ✧ When upgrading locally, check if the local PC and InRouter are in the same network segment.
- ✧ When upgrading remotely, please first make sure the InRouter can access Internet.

**6. After InRouter establishes VPN with the VPN server, your PC under InRouter can connect to the server, but the center can`t connect to your PC under InRouter?**

Please make sure the firewall of your computer is disabled.

**7. After InRouter establishes VPN with the VPN server, Your PC can`t connect to the server?**

Please make sure “Shared Connection” on “Network=>WAN” or “Network=>Dialup” is enabled in the configuration of InRouter.

**8. InRouter is powered on, but the Power LED is not on?**

- ✧ Check if the protective tube is burn out.
- ✧ Check the power supply voltage range and if the positive and negative electrodes are correctly connected.

**9. InRouter is powered on, but the Network LED is not on when connected to PC?**

- ✧ When the PC and InRouter are connected with a network cable, please check whether a network crossover cable is used.
- ✧ Check if the network cable is in good condition.
- ✧ Please set the network card of the PC to 10/100M and full duplex.

**10. InRouter is powered on, when connected with PC, the Network LED is normal but can`t have a ping detection to the InRouter?**

- ✧ Check if the IP Address of the PC and InRouter are in the same subnet and the gateway address is InRouter LAN address.

**11. InRouter is powered on, but can`t configure through the web interface?**

- ✧ Whether the IP Address of your computer is the same subnet with InRouter and the gateway address is InRouter LAN address.
- ✧ Check the firewall settings of the PC used to configure InRouter, whether this function is shielded by the firewall.

**12. The InRouter dialup always fails, I can`t find out why?**

Please restore InRouter to factory default settings and configure the parameters again.

**13. How to restore InRouter to factory default settings?**

- IR6X5 routers:

1. Press and hold the Restore button, power on InRouter;
2. Release the button until after the STATUS LED flashes and the ERROR LED is on;
3. After the button is released, the ERROR LED will go off, within 30s press and hold the Restore button again until the ERROR LED flashes;
4. Release the button, the system is now successfully restored to factory default settings.

# Support

In case you have problems with the installation and use, please address them to us by e-mail: support@inhandnetworks.com.

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