# InRouter 6x1 Series User's Manual

**Second Edition, March, 2013**

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## content

# I

# Introduction to InRouter 6x1

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

## 1.1 Overview

InRouter6x1 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 InRouter6x1 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.

The IR6x1 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 InRouter601, and InRouter691, 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.

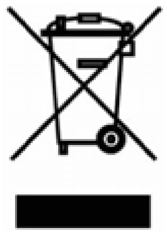
The equipment intended for installation in a RESTRICTED ACCESS LOCATION

## 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 In Router 6x1 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 |
|---|---|
| InRouter6x1 Serials Wireless Router | 1 |
| Cable | 1 Cross line,CAT-5,1.5M |
| Document and Software CD | 1 |
| Antenna | 5m Cellular Antenna |
| **Power Supply** | |
| | Power Adapter, 100-265V AC in, 12V DC out |

Optional Antennas:

| Picture | Type | Description |
|---|---|---|
| | GSM/GPRS Cellular Antennas | GPRS Quad-band<br>(included in IR6x1GS55) |
| | UMTS/HSPA+ Cellular Antennas | UTMS Quad-band<br>(included in IR6x1WH01) |
| | Anti-thief antenna | UTMS Quad-band<br>(Optional for IR6x1WH01) |
| | Stick antenna | UTMS Quad-band<br>(Optional for IR6x1WH01) |
| | Anti-thief antenna | UTMS Quad-band<br>(Optional for IR6x1WH01) |

## 1.3 Product Features

### 1.3.1 Interface

**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:** 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. Serial form: COM, DB-9

C. Data bit: 5/6/7/8

D. Stop bit: 1/2

E. Check bit: N/O/D

F. Baud rate: 1,200bit/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

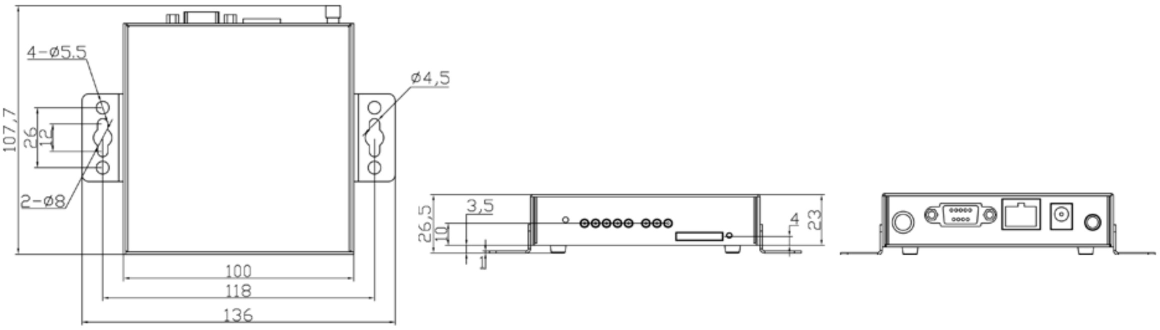
**Operating Temperature:** -20 to 70 ℃
**Operating Humidity:** 5 to 95% RH
**Storage Temperature:** -40 to 85 ℃

### 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
**Weight:** 490g
**Dimensions (mm)**



仰视图　　正视图　　后视图

### 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

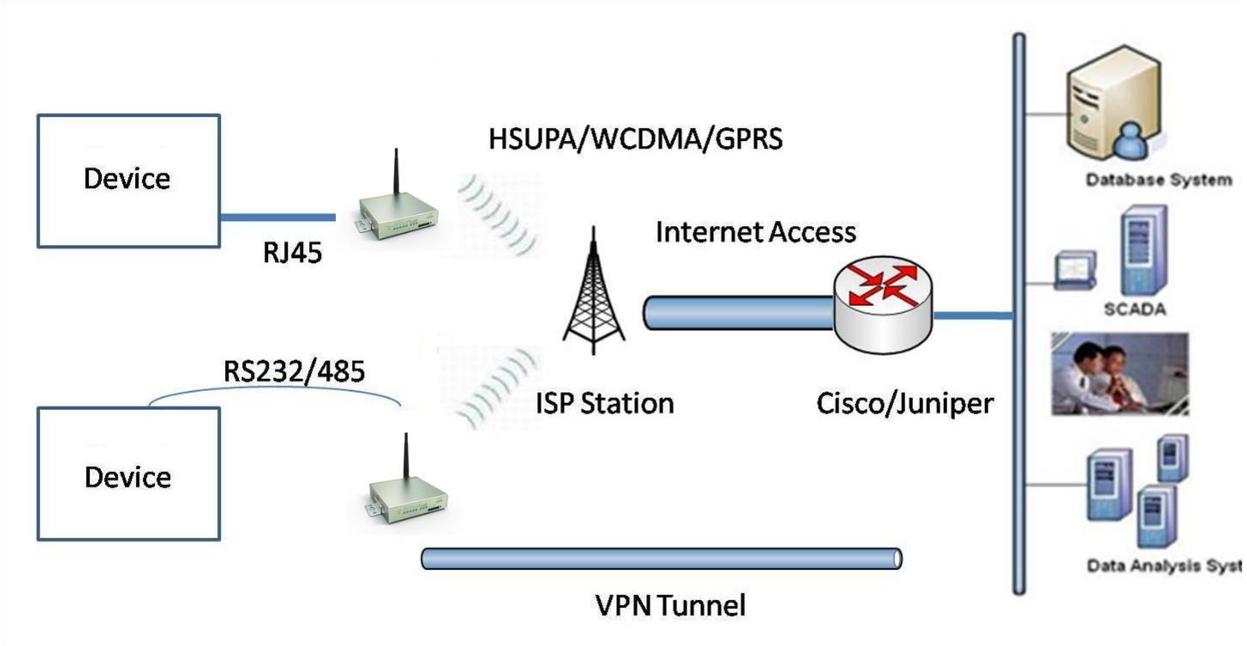
The models are classified according to main differences on cellular network support, VPN support (Once the InRouter supporting WIFI release, we will upgrade this list).

| Model | IR6x1 |
|---|---|
| **Part Number** | **IR6<X>1<N>-<W>-<S>** |
| X<br>(Option VPN) | **0**：ordinary router<br>**9**：VPN, support IPSec/SSL/PPTP/L2TP |
| N<br>(Network) | **PH01**: HSPA+<br>**WH01**: UTMS\EDGE\GPRS<br>**VZ16**:CDMA2000 EVDO\1X<br>**TZ05**:TD-SCDMA\EDGE\GPRS |
| S<br>(Serial Port) | **<NA>**：RS232<br>**485** ：RS485 |
| Example | IR601WH01：one-port wireless route, support UTMS \EDGE\GPRS，RS232 serial port |

# II

# Quick Installation Guide

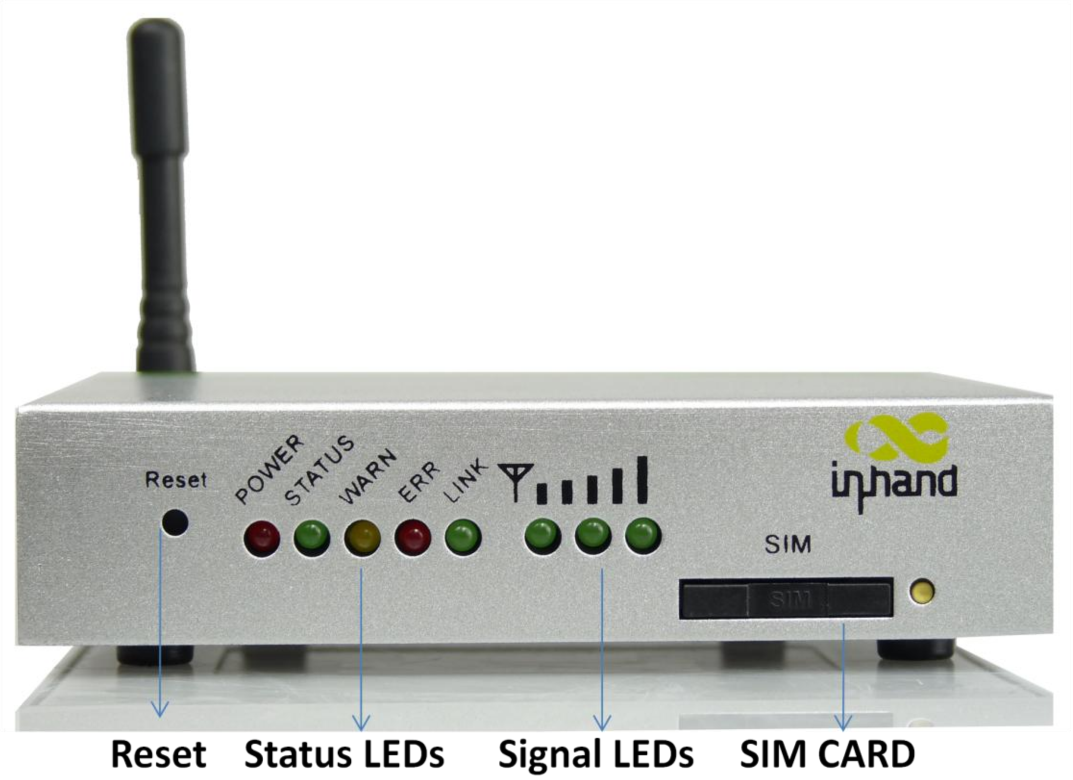
## 2.1 Typical Application



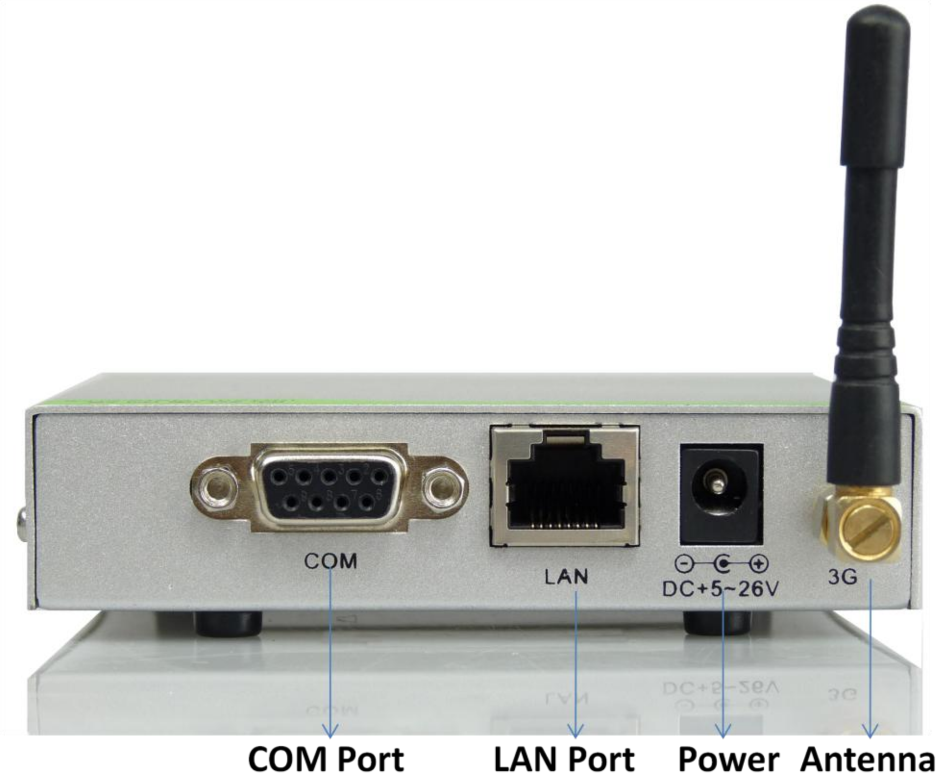
InRouter6x1 series can be used to connect your device (with RS232/485/Ethernet Interface) to internet via GPRS/HSUPA cellular network. Meanwhile, to ensure the security and access, InRouter6x1 series support VPN, enabling remote access and secure data transmission through Internet.

## 2.2 Panel Layout

**Front view:**



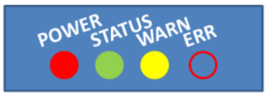
**Back view:**



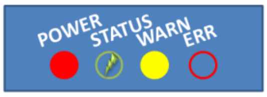
| Interface | Description |
|---|---|
| Power Interface | Access 9-26V DC Power Supply |
| Serial | Access to the serial line, realizing |
| Ethernet Ports | One 10/100Base-TX RJ45 Port (IR601,IR611) |
| ANTENNA | 2.5G/3G antenna |
| SIM Card Connector | Hold SIM card |

### Description of LED

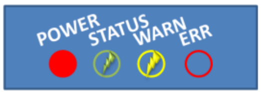
**Legend: On--●     Off--○     Blink--⚡**



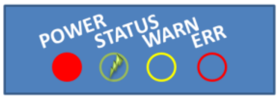
**Power on**



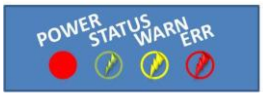
**Start to run firmware**



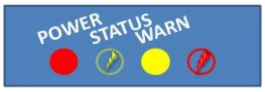
**Begin dial to Internet**



**Connect to internet**

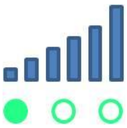


**Upgrading firmware**

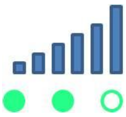


**Restore factory default**

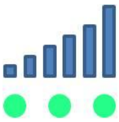
### Signal Status LED Description



----- 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

Push the yellow button next to the SIM card slot, then insert SIM card in the slot.

### 2.3.2 Antenna Installation

After installing IR6x1, 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 IR6x1 with a PC:

(1) Use a cable to link IR6x1 with a PC;

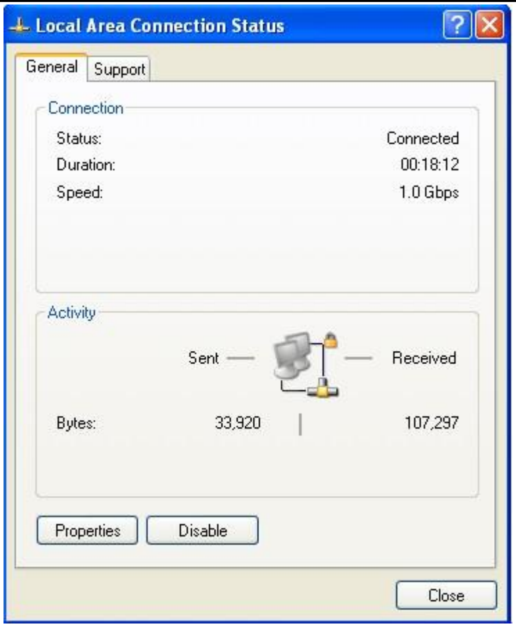
(2) After connected, you can see one LED of RJ45 Interface turns green and the other flashes.

### 2.3.5 Build Connection between InRouter and PC

IR6x1 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:



Local Area Connection Status

Connection

Status: Connected

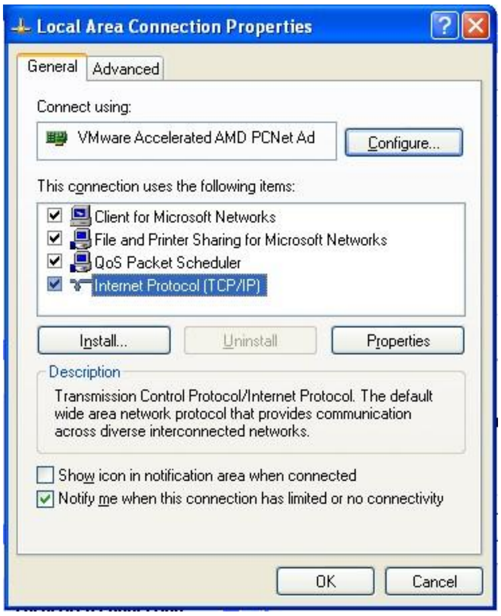
Duration: 00:18:12

Speed: 1.0 Gbps

Activity

Bytes: Sent 33,920 | Received 107,297

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



Local Area Connection Properties

Connect using:

VMware Accelerated AMD PCNet Ad

This connection uses the following items:

- ☑ Client for Microsoft Networks
- ☑ File and Printer Sharing for Microsoft Networks
- ☑ QoS Packet Scheduler
- ☑ Internet Protocol (TCP/IP)

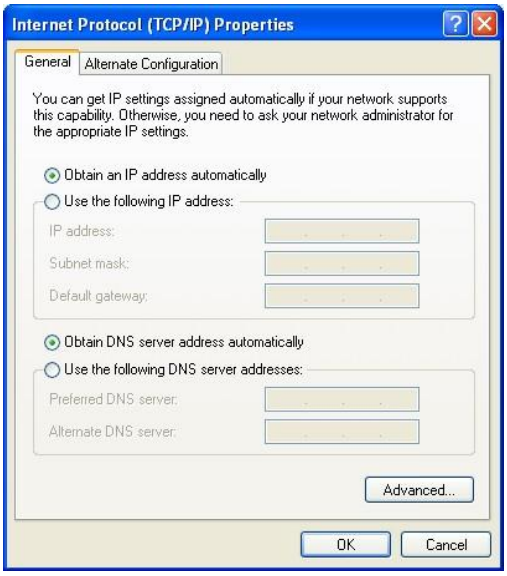
Description

Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

☐ Show icon in notification area when connected

☑ Notify me when this connection has limited or no connectivity

Choose “Internet Protocol (TCP/IP)” and click on “Properties”, 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 as IP: 192.168.2.10, Net Mask: 255.255.255.0, Default Gateway: 192.168.2.1)



You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

● Obtain an IP address automatically
○ Use the following IP address:
IP address:
Subnet mask:
Default gateway:

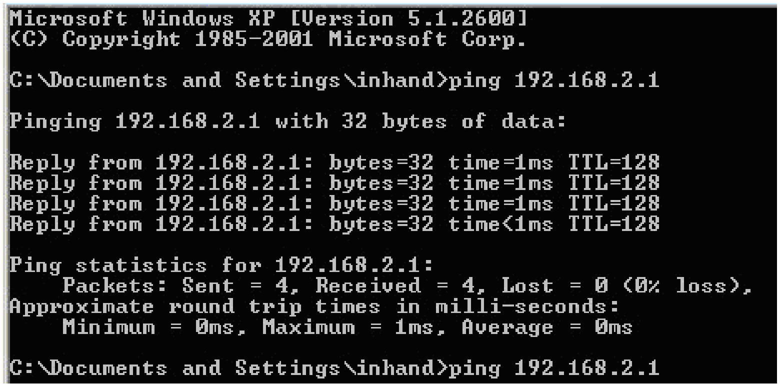
● Obtain DNS server address automatically
○ Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:

Click “OK”, InRouter will allocate an IP address: 192.168.2.x, and a gateway: 192.168.2.1(the default address of IR6x1).

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:

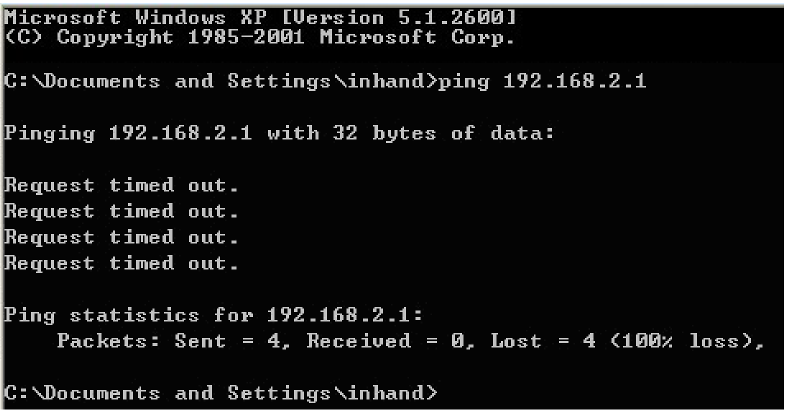
*Ping 192.168.2.1*

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:



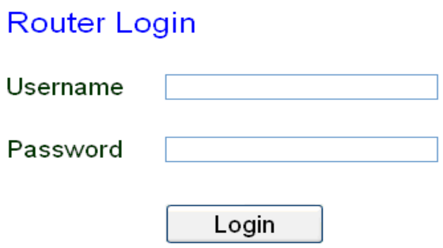
```
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

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 InRouter6x1(Optional)

After you have finished the former steps, you can start to 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:

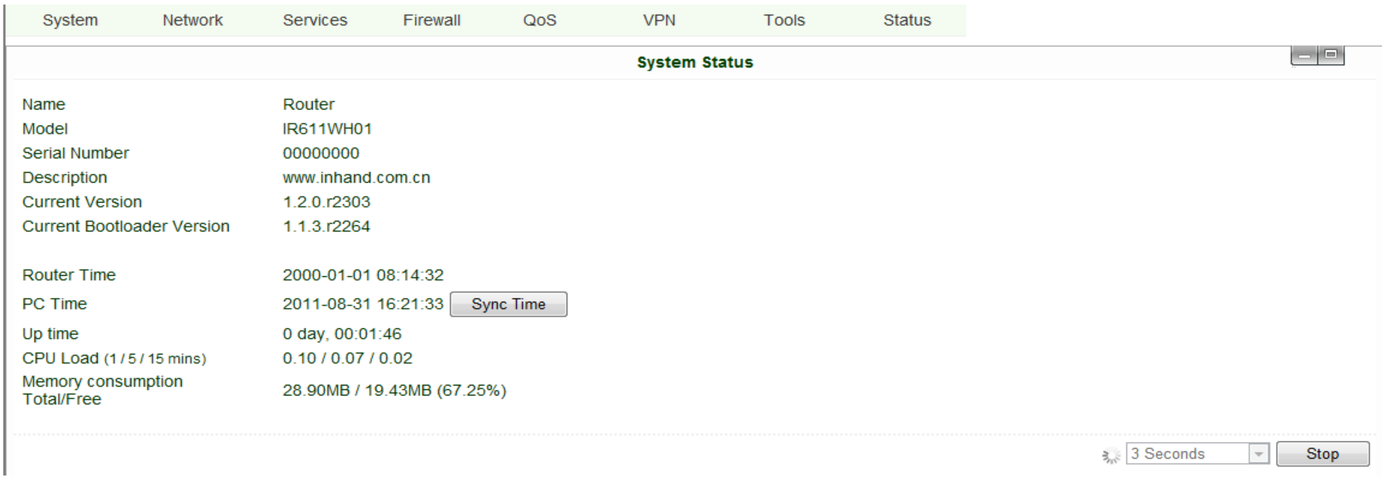


Input "username" (default: adm) and "password" (default: 123456), then click "login" to enter the operation screen.

2) Change IP address:

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

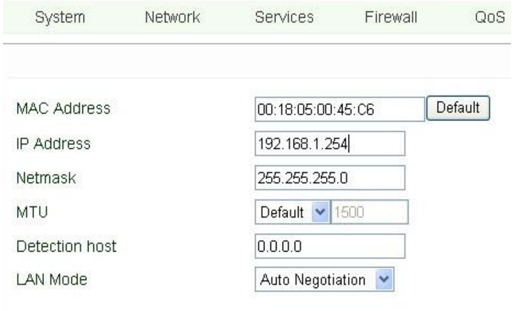
If you want to set your own IP of InRouter 6x1, please follow the instructions below:



System Status

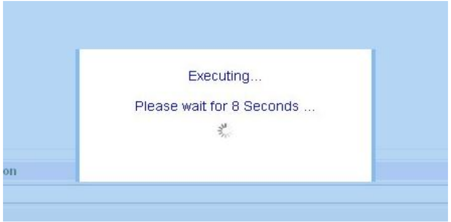
| | |
|---|---|
| Name | Router |
| Model | IR611WH01 |
| Serial Number | 00000000 |
| Description | www.inhand.com.cn |
| Current Version | 1.2.0.r2303 |
| Current Bootloader Version | 1.1.3.r2264 |
| Router Time | 2000-01-01 08:14:32 |
| PC Time | 2011-08-31 16:21:33 |
| Up time | 0 day, 00:01:46 |
| CPU Load (1 / 5 / 15 mins) | 0.10 / 0.07 / 0.02 |
| Memory consumption Total/Free | 28.90MB / 19.43MB (67.25%) |

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



| | |
|---|---|
| MAC Address | 00:18:05:00:45:C6 |
| IP Address | 192.168.1.254 |
| Netmask | 255.255.255.0 |
| MTU | Default 1500 |
| Detection host | 0.0.0.0 |
| LAN Mode | Auto Negotiation |

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



Executing...

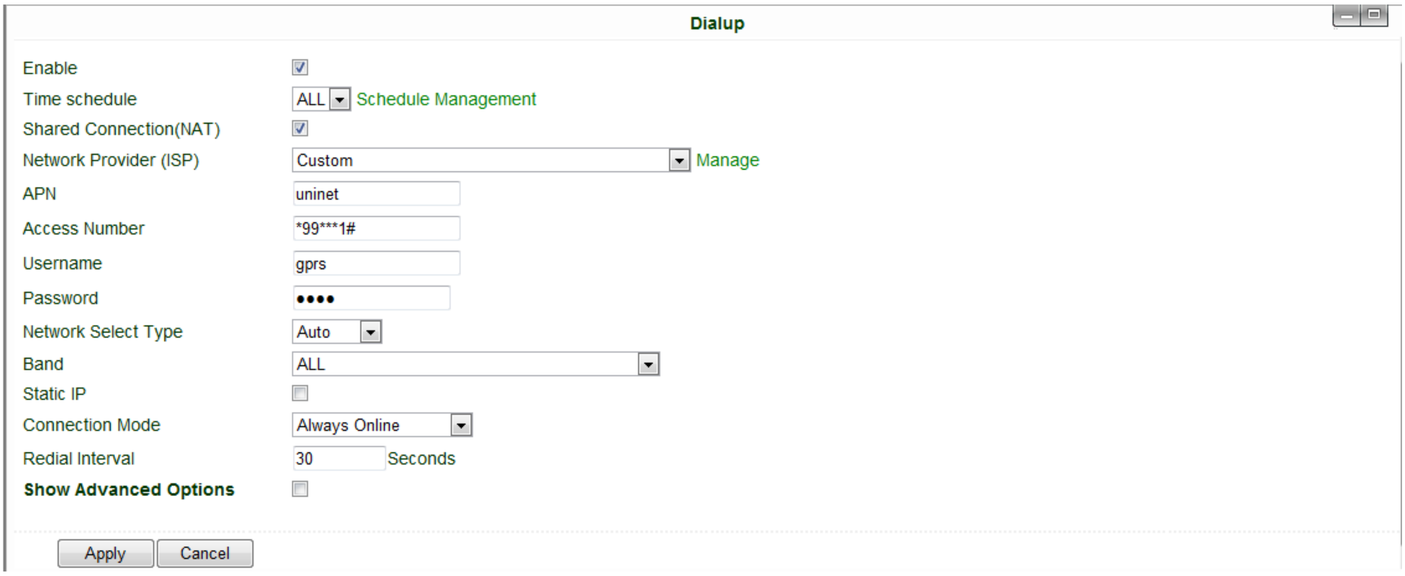
Please wait for 8 Seconds ...

Now the IP address of IR6x1 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 IR6X1 to connect to Internet.

Click “Network”=>“Dialup”, enter dialup configuration interface:



Dialup

| | |
|---|---|
| Enable | ☑ |
| Time schedule | ALL ▼ Schedule Management |
| Shared Connection(NAT) | ☑ |
| Network Provider (ISP) | Custom ▼ Manage |
| APN | uninet |
| Access Number | *99***1# |
| Username | gprs |
| Password | •••• |
| Network Select Type | Auto ▼ |
| Band | ALL ▼ |
| Static IP | □ |
| Connection Mode | Always Online ▼ |
| Redial Interval | 30 Seconds |
| **Show Advanced Options** | □ |

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*

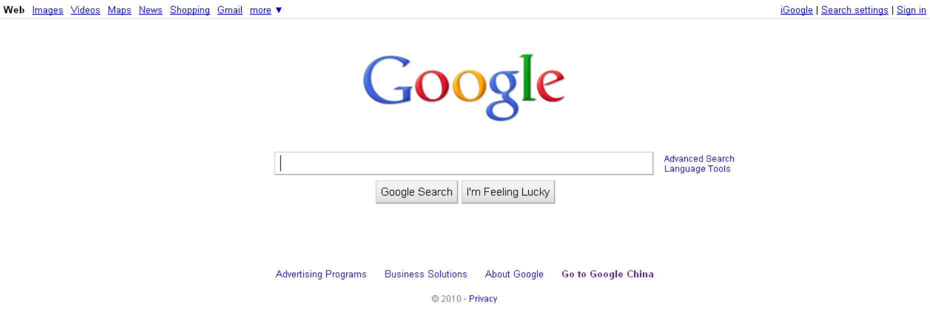
APN: internet

Phone Number: *99#

User Name: web

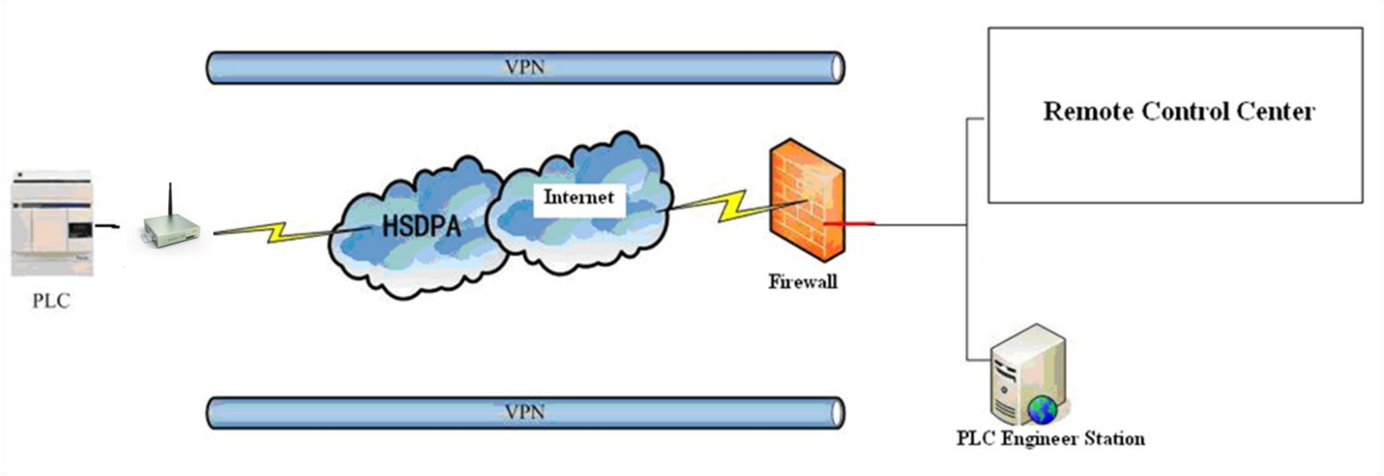
Password: web

After correctly configuring, InRouter6x1 can now access Internet. Open IE Browser, input www.google.com, you sould see the Google home page:

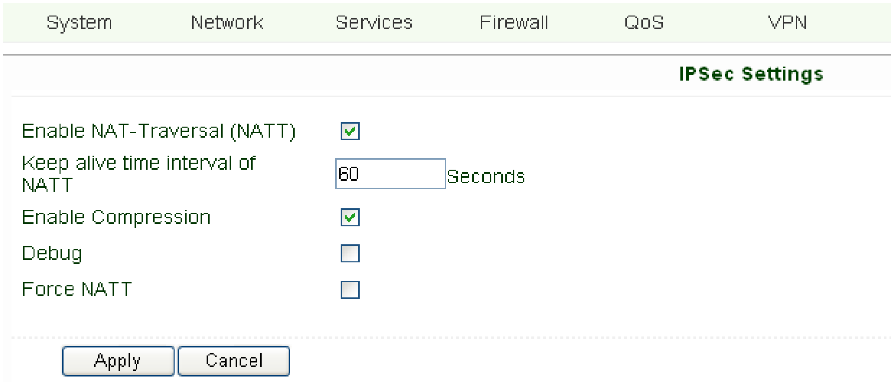


## 2.4 Quick IPSec VPN Configuration

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 InRouter6x1 Series



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



IPSec Settings

Enable NAT-Traversal (NATT) ☑

Keep alive time interval of NATT 60 Seconds

Enable Compression ☑

Debug □

Force NATT □

Enable NAT-Traversal (NATT): select enable.

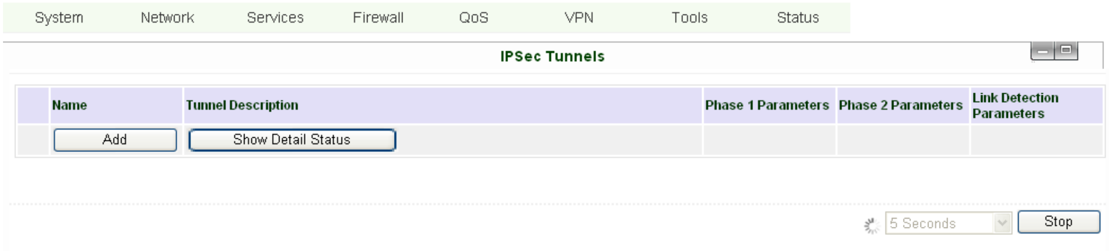
Keep alive time interval of NATT: set the "Keep alive time interval of NATT", default is 60 seconds.

Enable Compression: select enable.

Please change the parameters according to actual situation.

Click "Apply" to complete the configuration.

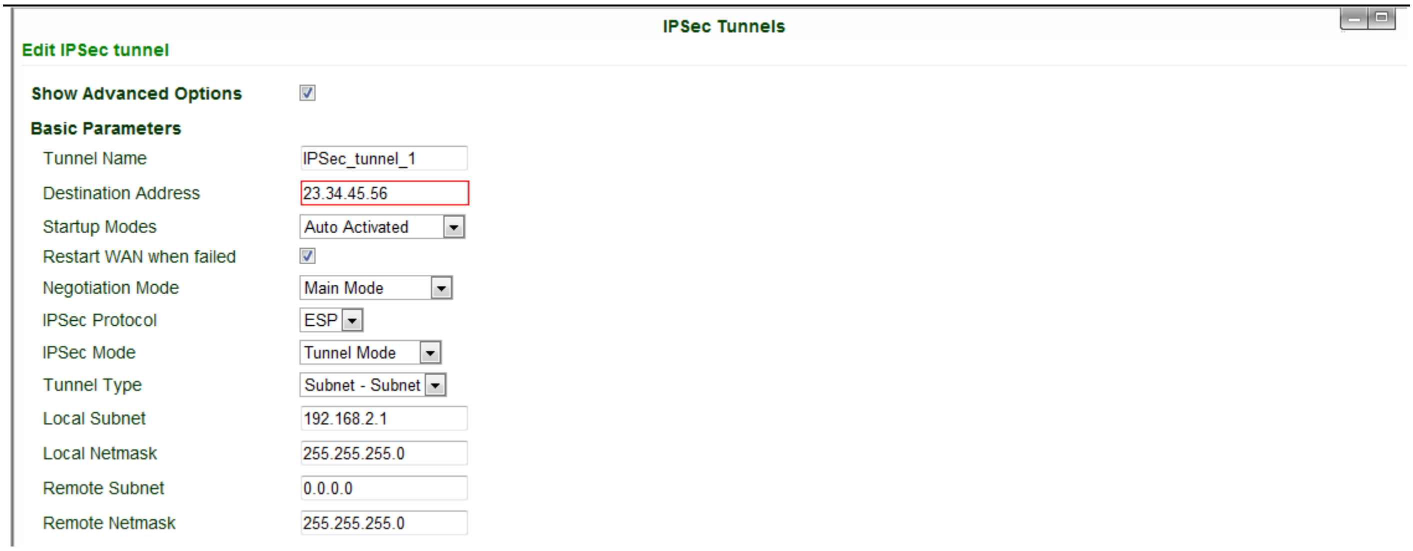
1） Select "VPN"=> "IPSec Tunnels" to check or modify parameters of IPSec Tunnels.



IPSec Tunnels

| Name | Tunnel Description | Phase 1 Parameters | Phase 2 Parameters | Link Detection Parameters |
|---|---|---|---|---|
| Add | Show Detail Status | | | |

Click "Add" to add a new IPSec Tunnel:



IPSec Tunnels

Edit IPSec tunnel

| | |
|---|---|
| Show Advanced Options | ☑ |
| **Basic Parameters** | |
| Tunnel Name | IPSec_tunnel_1 |
| Destination Address | 23.34.45.56 |
| Startup Modes | Auto Activated |
| Restart WAN when failed | ☑ |
| Negotiation Mode | Main Mode |
| IPSec Protocol | ESP |
| IPSec Mode | Tunnel Mode |
| Tunnel Type | Subnet - Subnet |
| Local Subnet | 192.168.2.1 |
| Local Netmask | 255.255.255.0 |
| Remote Subnet | 0.0.0.0 |
| Remote Netmask | 255.255.255.0 |

**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.

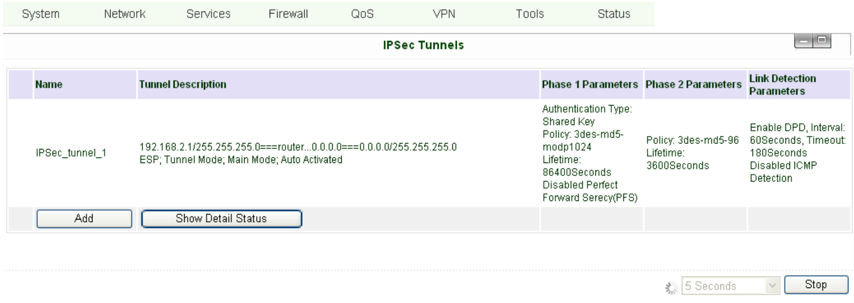
**Phase 2 Parameters: configuration parameters during Phase 2 of IPSec negotiation.**

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:



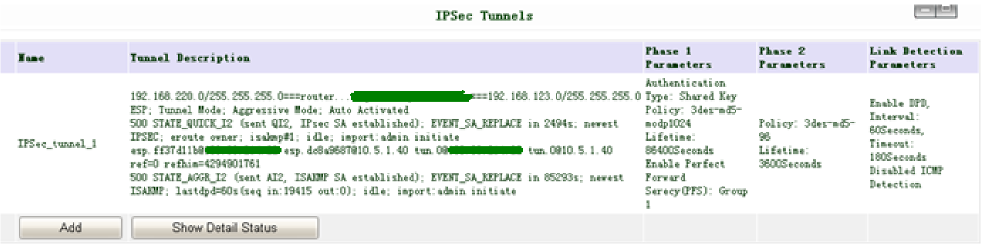
IPSec Tunnels

| Name | Tunnel Description | Phase 1 Parameters | Phase 2 Parameters | Link Detection Parameters |
|---|---|---|---|---|
| IPSec_tunnel_1 | 192.168.2.1/255.255.255.0===router...0.0.0.0===0.0.0.0/255.255.255.0 ESP; Tunnel Mode; Main Mode; Auto Activated | Authentication Type: Shared Key Policy: 3des-md5-modp1024 Lifetime: 86400Seconds Disabled Perfect Forward Serecy(PFS) | Policy: 3des-md5-96 Lifetime: 3600Seconds | Enable DPD, Interval: 60Seconds, Timeout: 180Seconds Disabled ICMP Detection |
| Add | Show Detail Status | | | |

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:

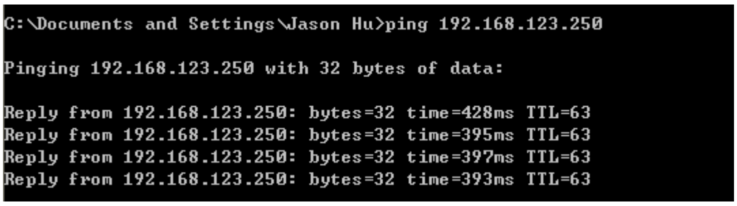


IPSec Tunnels

| Name | Tunnel Description | Phase 1 Parameters | Phase 2 Parameters | Link Detection Parameters |
|---|---|---|---|---|
| IPSec_tunnel_1 | 192.168.220.0/255.255.255.0===router...[redacted]===192.168.123.0/255.255.255.0<br>ESP; Tunnel Mode; Aggressive Mode; Auto Activated<br>500 STATE_QUICK_I2 (sent QI2, IPsec SA established); EVENT_SA_REPLACE in 2494s; newest IPSEC; eroute owner; isakmp#1; idle; import:admin initiate<br>esp.ff37d11b0[redacted] esp.dc8a9687@10.5.1.40 tun.0@[redacted] tun.0@10.5.1.40 ref=0 refhim=4294901761<br>500 STATE_AGGR_I2 (sent AI2, ISAKMP SA established); EVENT_SA_REPLACE in 85293s; newest ISAKMP; lastdpd=60s(seq in:19415 out:0); idle; import:admin initiate | Authentication Type: Shared Key<br>Policy: 3des-md5-modp1024<br>Lifetime: 86400Seconds<br>Enable Perfect Forward Secrecy(PFS): Group 1 | Policy: 3des-md5-96<br>Lifetime: 3600Seconds | Enable DPD, Interval: 60Seconds, Timeout: 180Seconds<br>Disabled ICMP Detection |

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:



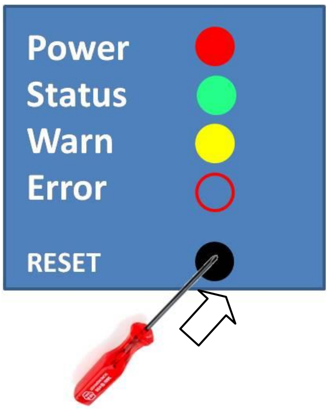
```
C:\Documents and Settings\Jason Hu>ping 192.168.123.250

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

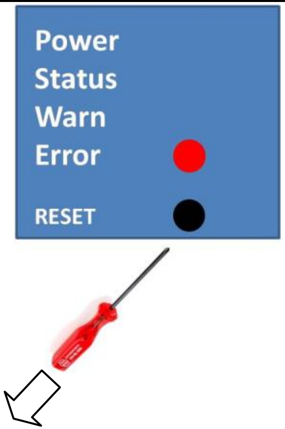
### 2.5.1 Hardware Approach

**Legend: On--**● **Off--**○ **Blink--**⚡

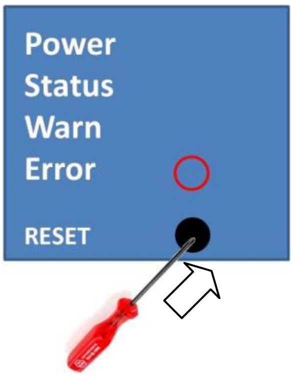
1) Press and hold RESET button while turning on IR6x1:



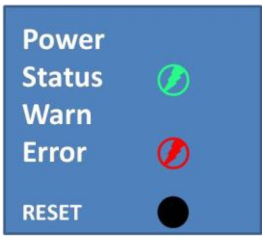
2) When you see ERROR LED turns on (about 10 seconds after power on), release the RESET button:



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:

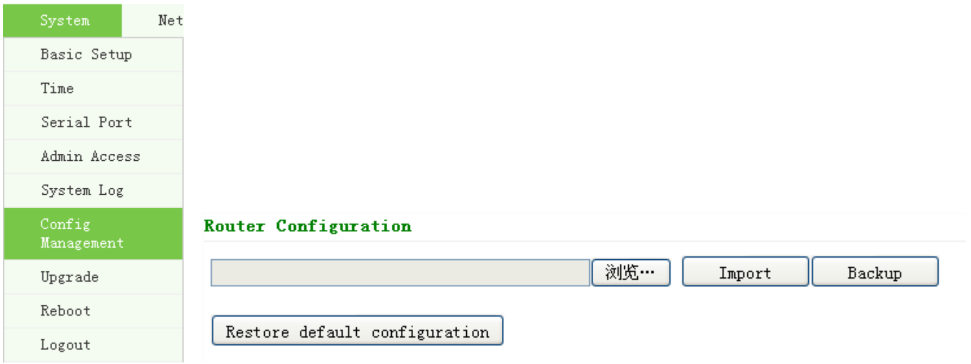
IP: 192.168.2.1

Net Mask: 255.255.255.0

Serial parameter:    19200-8-N-1

### 2.5.2 Web Approach

1) Login the web interface of IR6x1, select “System”→”Config Management”:



2) Click “Restore default configuration” to Reset IR6x1.

# III

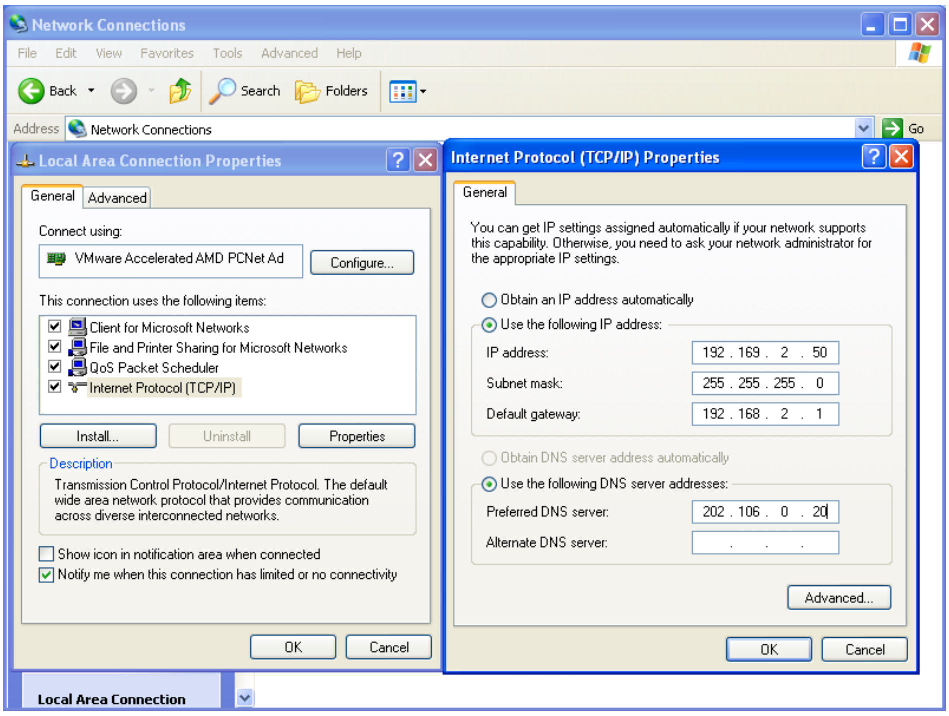
# Advanced Configuration

## 3.1 Configuration on Web

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

### 3.1.1 Preparation

First, connect your device to IR6x1 with a cable or a HUB (switch), then set the IP of PC and IR6x1 in the same subnet, for example: Set PC IP to 192.168.2.50, net mask: 255.255.255.0, gateway (default IP of IR6x1: 192.168.2.1 ):



Connect using: VMware Accelerated AMD PCNet Ad

This connection uses the following items:

- ☑ Client for Microsoft Networks
- ☑ File and Printer Sharing for Microsoft Networks
- ☑ QoS Packet Scheduler
- ☑ Internet Protocol (TCP/IP)

Description: Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.

☐ Show icon in notification area when connected
☑ Notify me when this connection has limited or no connectivity

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

○ Obtain an IP address automatically
● Use the following IP address:

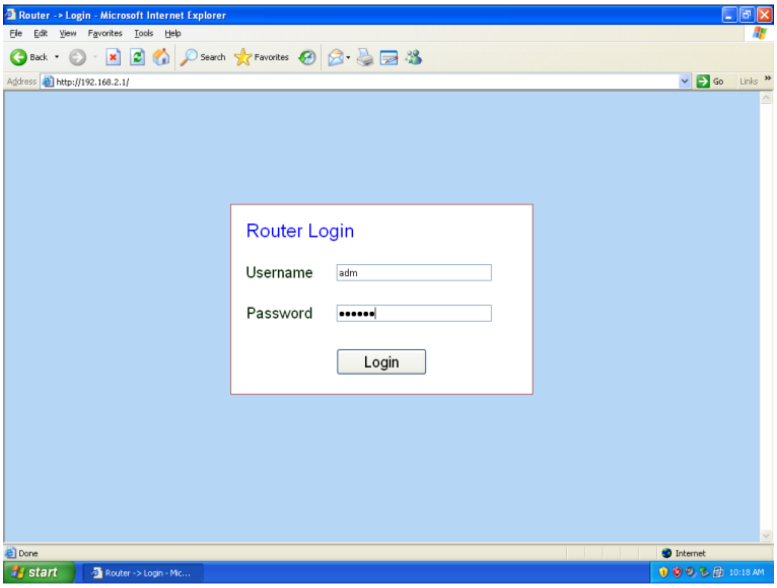
| | |
|---|---|
| IP address: | 192 . 169 . 2 . 50 |
| Subnet mask: | 255 . 255 . 255 . 0 |
| Default gateway: | 192 . 168 . 2 . 1 |

○ Obtain DNS server address automatically
● Use the following DNS server addresses:

| | |
|---|---|
| Preferred DNS server: | 202 . 106 . 0 . 20 |
| Alternate DNS server: | . . . |

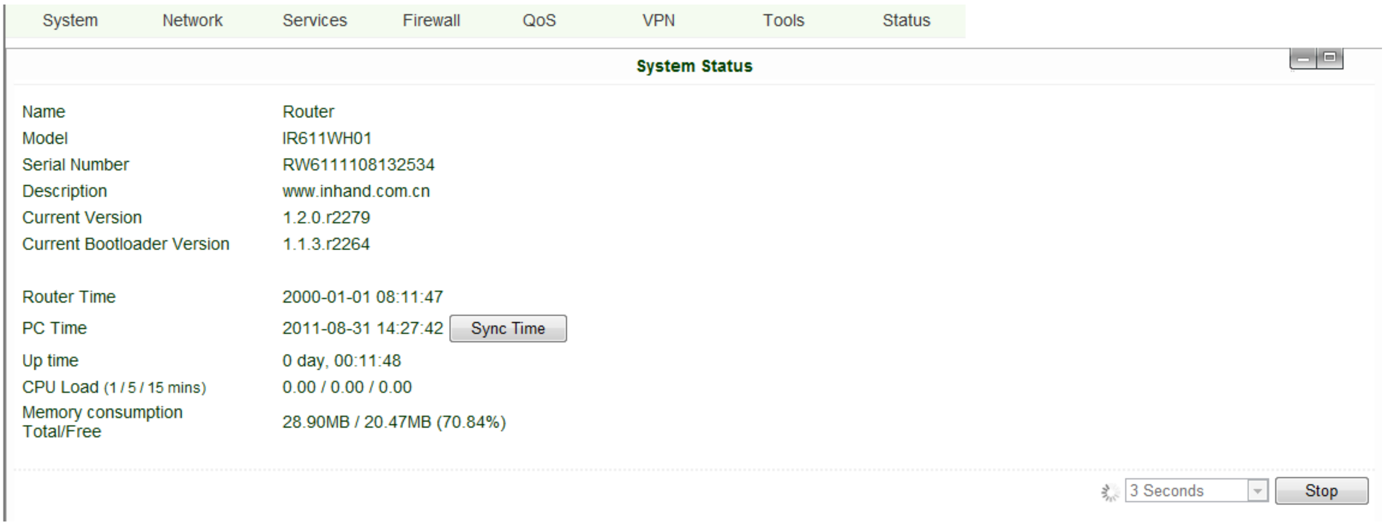
Open IE browser, input the IP address of IR6x1: [http://192.168.2.1](http://192.168.2.1) (default IP of IR6x1).

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



| | |
|---|---|
| Username | adm |
| Password | •••••• |

Click "Login" to enter the configuration interface:



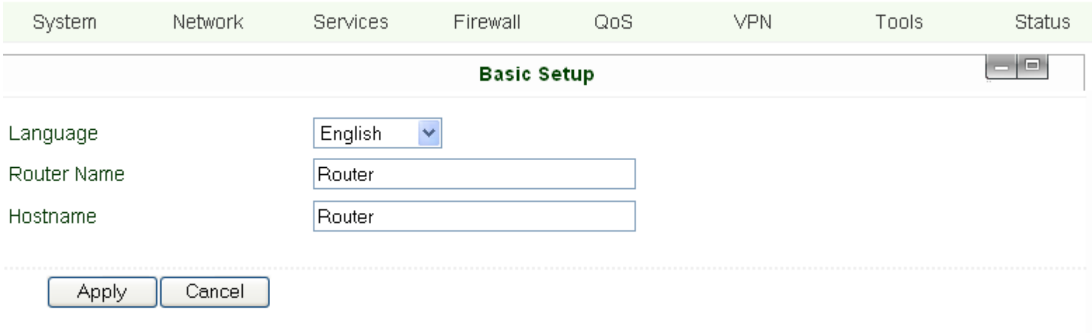
System Status

| | |
|---|---|
| Name | Router |
| Model | IR611WH01 |
| Serial Number | RW6111108132534 |
| Description | www.inhand.com.cn |
| Current Version | 1.2.0.r2279 |
| Current Bootloader Version | 1.1.3.r2264 |
| Router Time | 2000-01-01 08:11:47 |
| PC Time | 2011-08-31 14:27:42 |
| Up time | 0 day, 00:11:48 |
| CPU Load (1 / 5 / 15 mins) | 0.00 / 0.00 / 0.00 |
| Memory consumption Total/Free | 28.90MB / 20.47MB (70.84%) |

## 3.1.2 System

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

### (1) Basic Setup

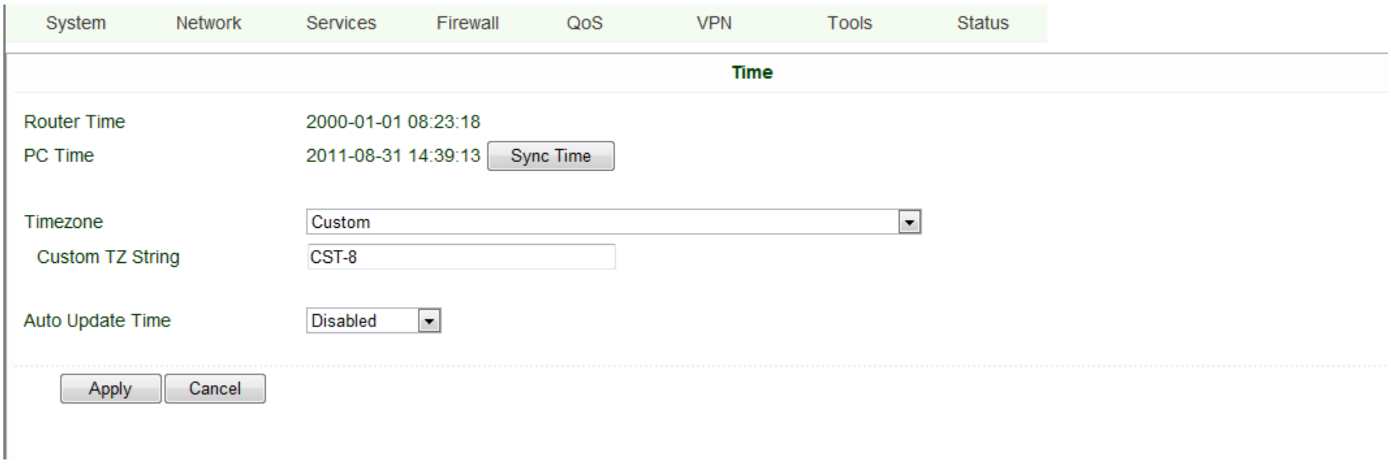


Basic Setup

| | |
|---|---|
| Language | English |
| Router Name | Router |
| Hostname | Router |

| 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 IR6X1 | Router | My InRouter |

### (2) Time

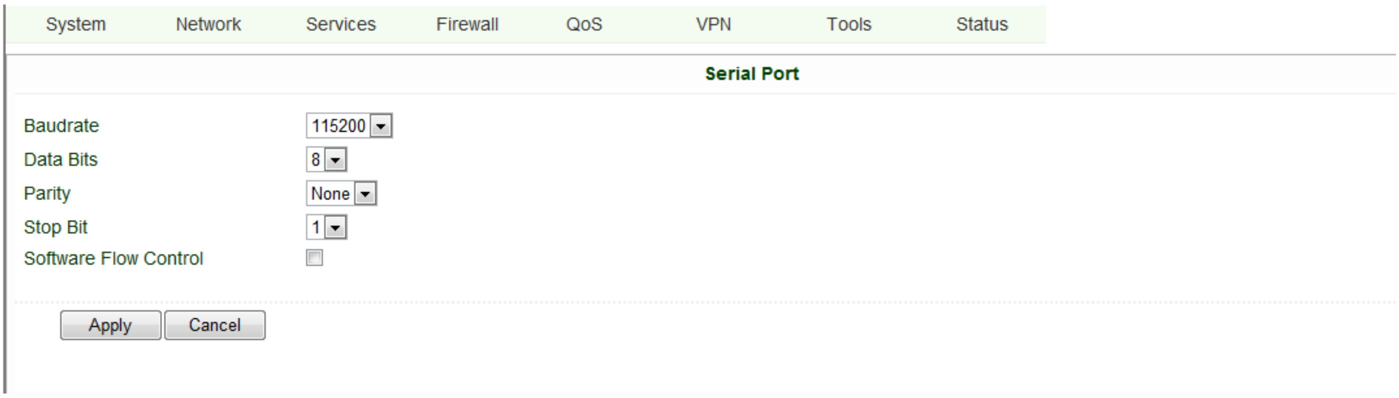


Time

| | |
|---|---|
| Router Time | 2000-01-01 08:23:18 |
| PC Time | 2011-08-31 14:39:13 |
| Timezone | Custom |
| Custom TZ String | CST-8 |
| Auto Update Time | Disabled |

| 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 |

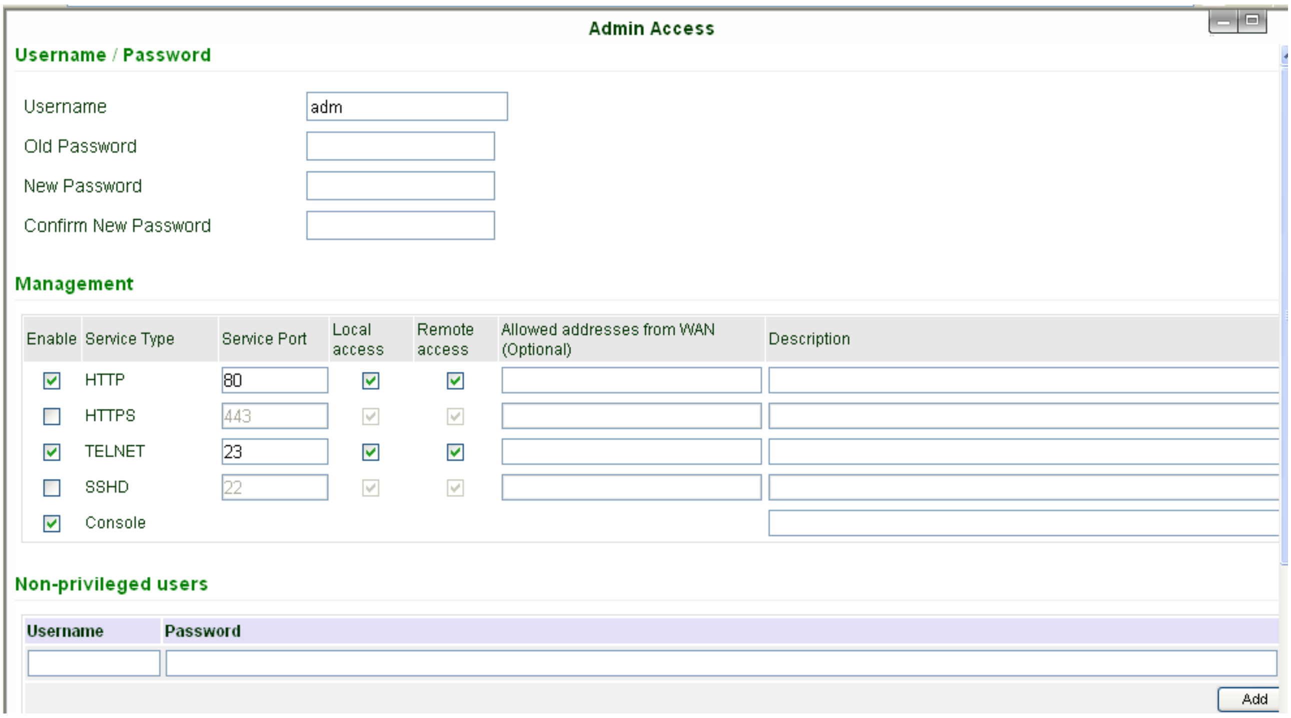
### (3) Serial Port



| | |
|---|---|
| Baudrate | 115200 |
| Data Bits | 8 |
| Parity | None |
| Stop Bit | 1 |
| Software Flow Control | □ |

| Name | Description | Default |
|---|---|---|
| Baud Rate | Serial baud rate | 115200 |
| 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



Admin Access

**Username / Password**

| | |
|---|---|
| Username | adm |
| Old Password | |
| New Password | |
| Confirm New Password | |

**Management**

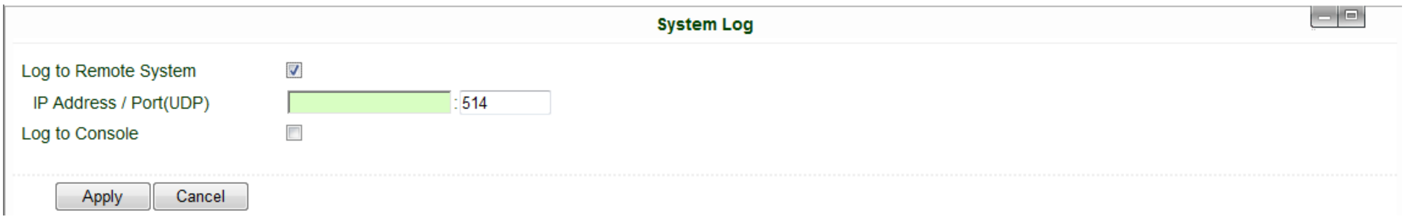
| Enable | Service Type | Service Port | Local access | Remote access | Allowed addresses from WAN (Optional) | Description |
|---|---|---|---|---|---|---|
| ☑ | HTTP | 80 | ☑ | ☑ | | |
| □ | HTTPS | 443 | ☑ | ☑ | | |
| ☑ | TELNET | 23 | ☑ | ☑ | | |
| □ | SSHD | 22 | ☑ | ☑ | | |
| ☑ | Console | | | | | |

**Non-privileged users**

| Username | Password |
|---|---|
| | |

| 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 IR6x1 by WAN. (e.g.: HTTP)<br>Disable—forbid to manage IR6x1 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 IR6x1) | |
| Other Parameters | | |
| Log Timeout | Set the Log Timeout, configuration web will be disconnected after timeout | 500 seconds |

### (5) System Log



System Log

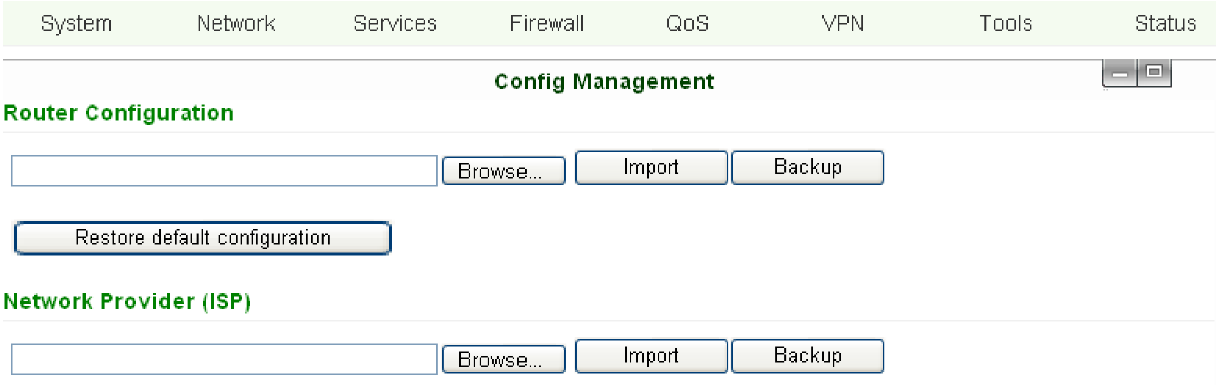
Log to Remote System ☑

IP Address / Port(UDP) : 514

Log to Console □

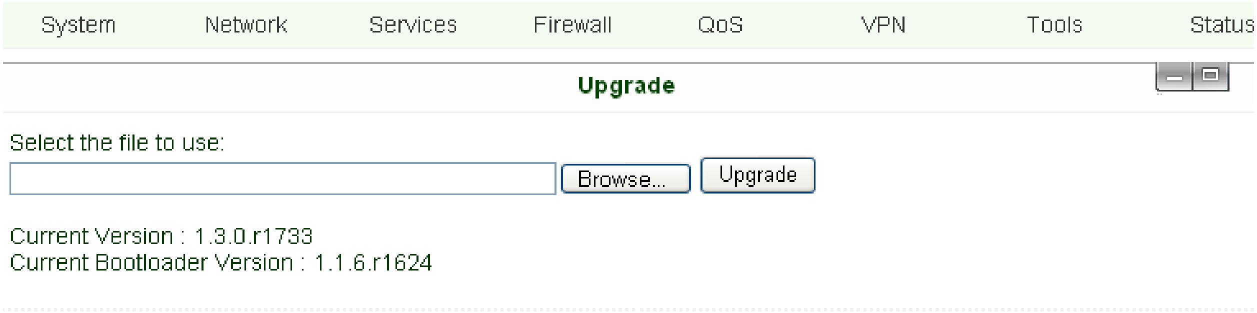
| Name | Description | Default |
|---|---|---|
| Log to Remote System | Enable remote log server | Disable |
| IP address/Port (UDP) | Set the IP and Port of remote log server | Port: 514 |
| Log to Console | Enable remote log server | Disable |

### (6) Config Management



| Name | Description |
|---|---|
| Router Configuration | Import/Backup configuration file |
| Restore default configuration | Click to reset IR6X1 (to enable RESET, you need to reboot IR6X1) |
| Network Provider (ISP) | Used to configure the APN, username, password and other parameters of major operators |

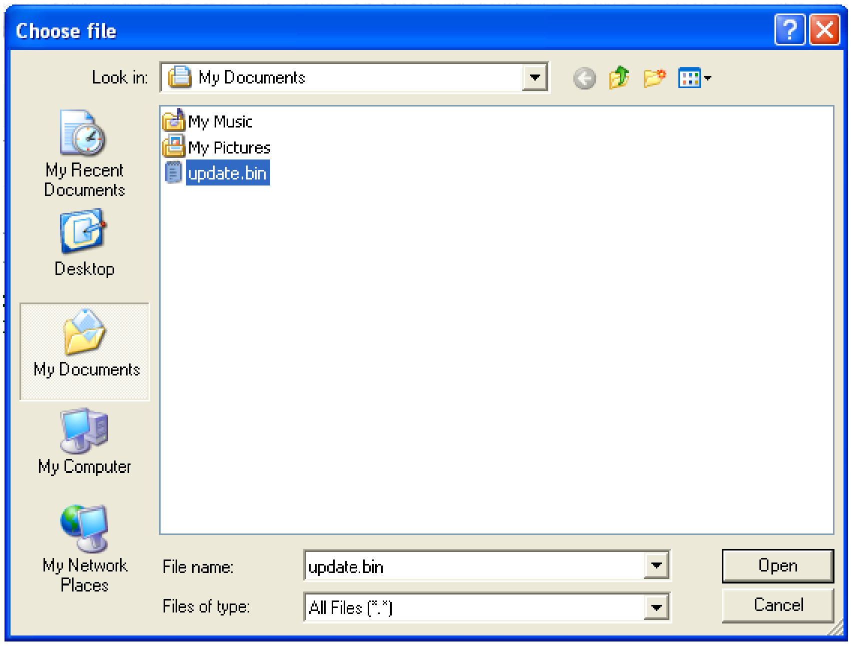
### (7) System Upgrade



Select the file to use:

Current Version : 1.3.0.r1733
Current Bootloader Version : 1.1.6.r1624

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



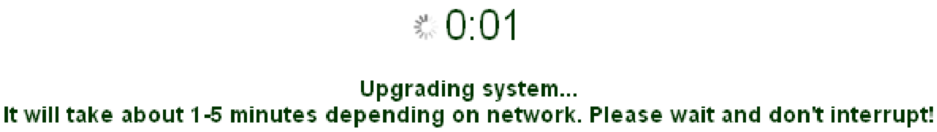
Look in: My Documents

My Music
My Pictures
update.bin

File name: update.bin

Files of type: All Files (*.*)

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



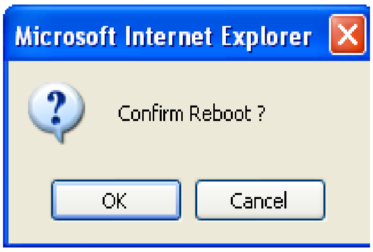
0:01

Upgrading system...
It will take about 1-5 minutes depending on network. Please wait and don't interrupt!

Upgrade firmware succeed, and click “reboot” to restart IR6X1.

**(8) Reboot**

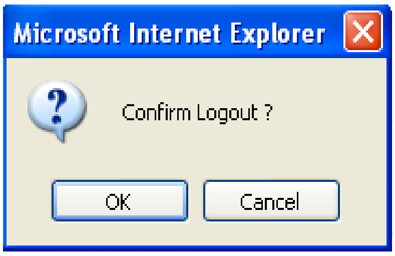
If you need to reboot system, please click ”System”=>”Reboot”, Then click ”OK” to restart system.



Confirm Reboot ?

**(9) Logout**

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

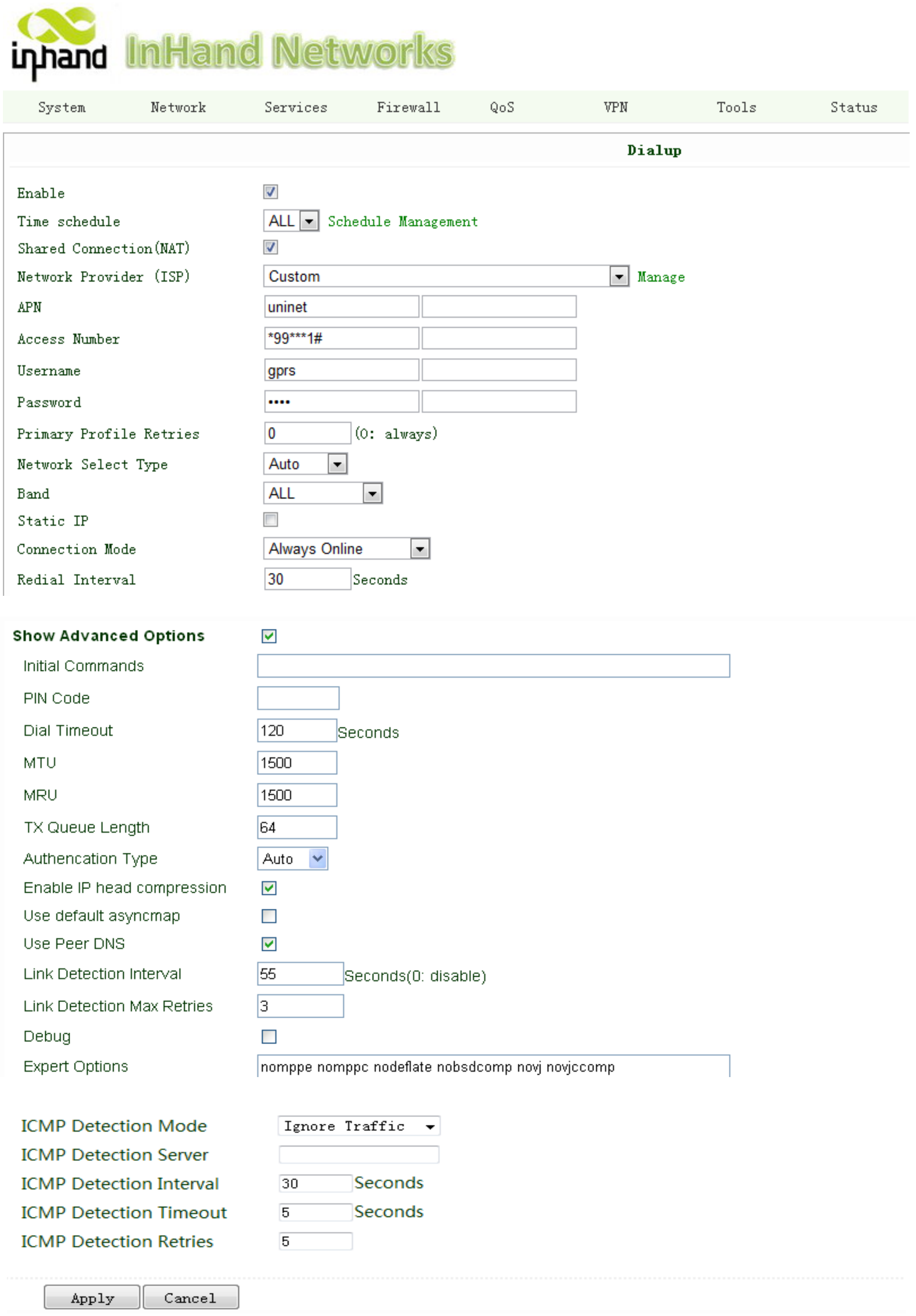


Confirm Logout ?

### 3.1.3 Network

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

**(1) Dialup**



Enable ☑
Time schedule: ALL Schedule Management
Shared Connection(NAT) ☑
Network Provider (ISP): Custom Manage
APN: uninet
Access Number: *99***1#
Username: gprs
Password: ••••
Primary Profile Retries: 0 (0: always)
Network Select Type: Auto
Band: ALL
Static IP □
Connection Mode: Always Online
Redial Interval: 30 Seconds

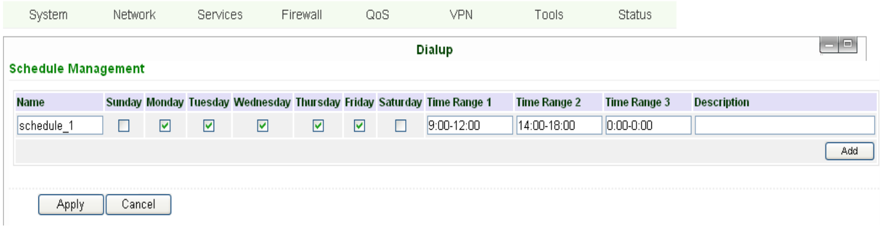
Show Advanced Options ☑
Initial Commands:
PIN Code:
Dial Timeout: 120 Seconds
MTU: 1500
MRU: 1500
TX Queue Length: 64
Authencation Type: Auto
Enable IP head compression ☑
Use default asyncmap □
Use Peer DNS ☑
Link Detection Interval: 55 Seconds(0: disable)
Link Detection Max Retries: 3
Debug □
Expert Options: nomppe nomppc nodeflate nobsdcomp novj novjccomp

ICMP Detection Mode: Ignore Traffic
ICMP Detection Server:
ICMP Detection Interval: 30 Seconds
ICMP Detection Timeout: 5 Seconds
ICMP Detection Retries: 5

| 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 (IR6x1 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 (IR6X1 will reboot if ICMP time out) | 5 seconds |
| ICMP Detection Max Retries | Set the max number of retries if ICMP failed | 5 |

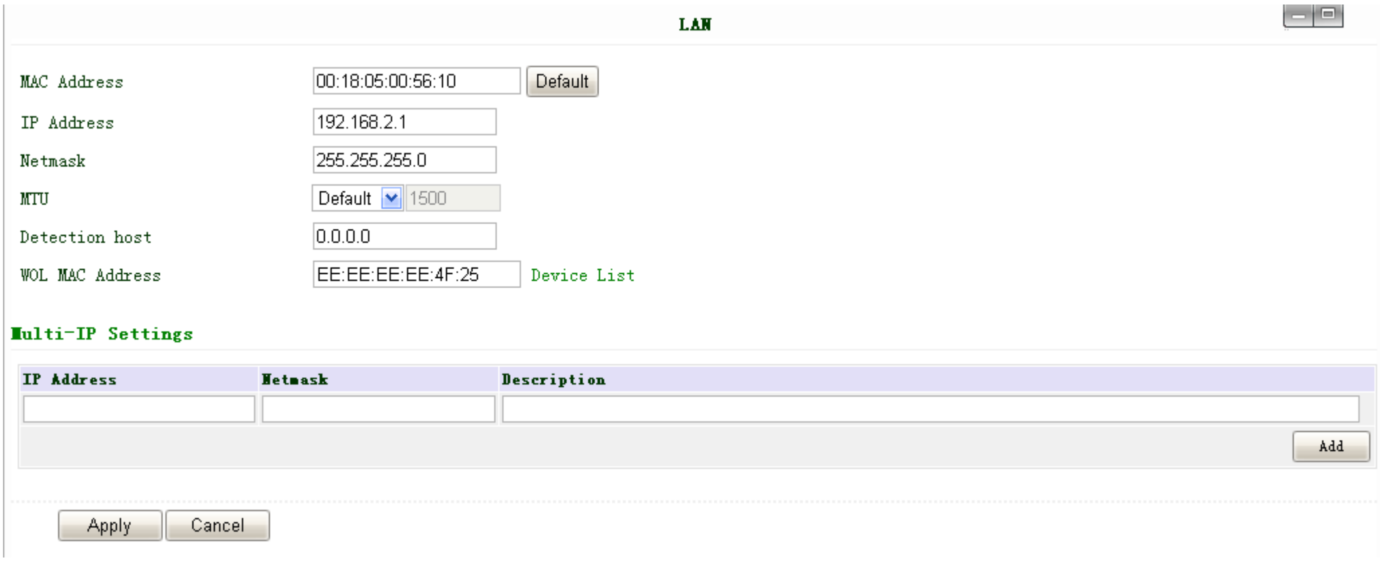
Dialup----Time Schedule Management:



| Name | Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Time Range 1 | Time Range 2 | Time Range 3 | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| schedule_1 | □ | ☑ | ☑ | ☑ | ☑ | ☑ | □ | 9:00-12:00 | 14:00-18:00 | 0:00-0:00 | |

| 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) LAN


LAN

MAC Address: 00:18:05:00:56:10 Default

IP Address: 192.168.2.1

Netmask: 255.255.255.0

MTU: Default 1500

Detection host: 0.0.0.0

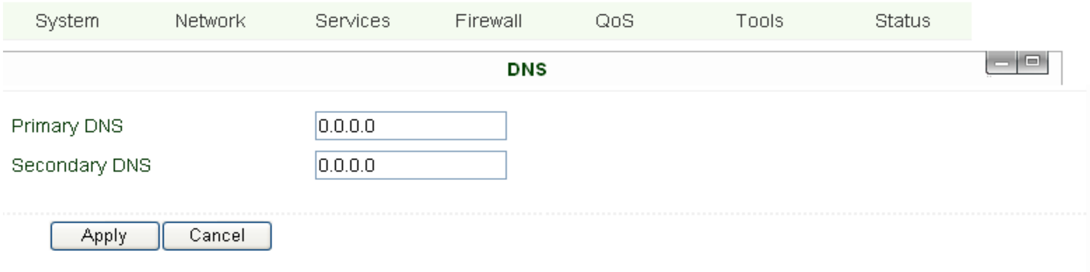
WOL MAC Address: EE:EE:EE:EE:4F:25 Device List

Multi-IP Settings

| IP Address | Netmask | Description |
|---|---|---|
| | | |

| 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 |

### (3) DNS



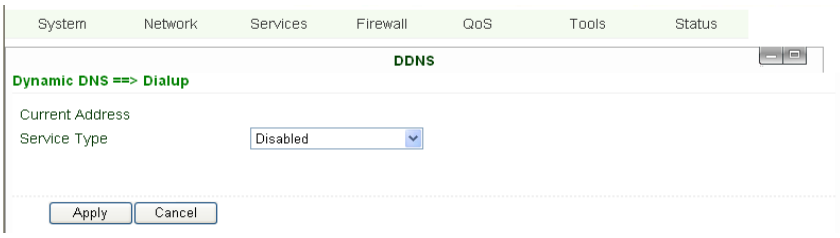
DNS

Primary DNS 0.0.0.0

Secondary DNS 0.0.0.0

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

### (4) DDNS (Dynamic DNS)



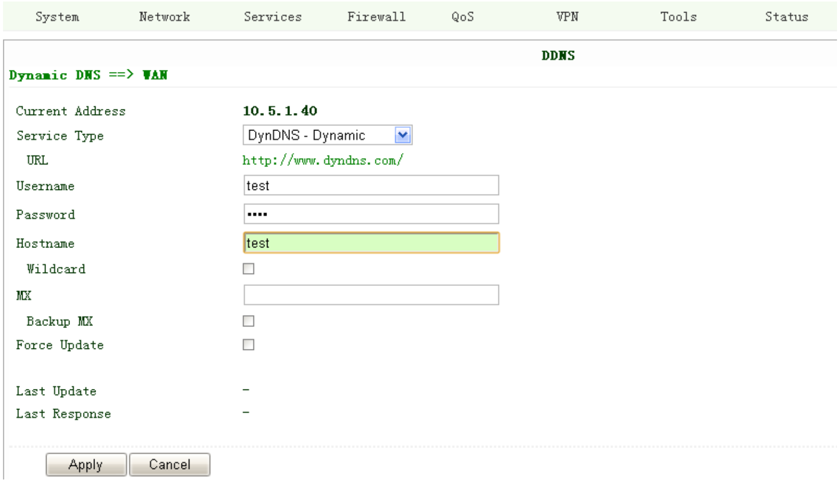
DDNS

Dynamic DNS ==> Dialup

Current Address

Service Type Disabled

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



DDNS

Dynamic DNS ==> WAN

Current Address 10.5.1.40

Service Type DynDNS - Dynamic

URL http://www.dyndns.com/

Username test

Password ••••

Hostname test

Wildcard □

MX

Backup MX □

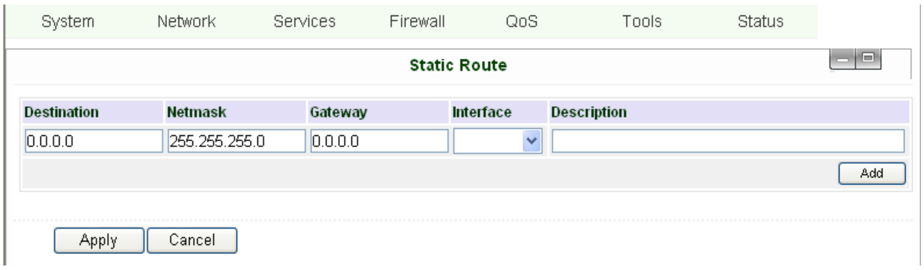
Force Update □

Last Update -

Last Response -

| 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 | |

**(5) Static Route**



Static Route

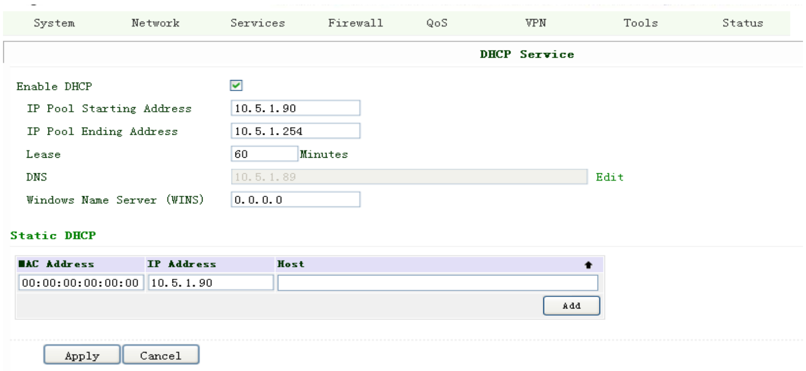
| Destination | Netmask | Gateway | Interface | Description |
|---|---|---|---|---|
| 0.0.0.0 | 255.255.255.0 | 0.0.0.0 | | |

| 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**



DHCP Service

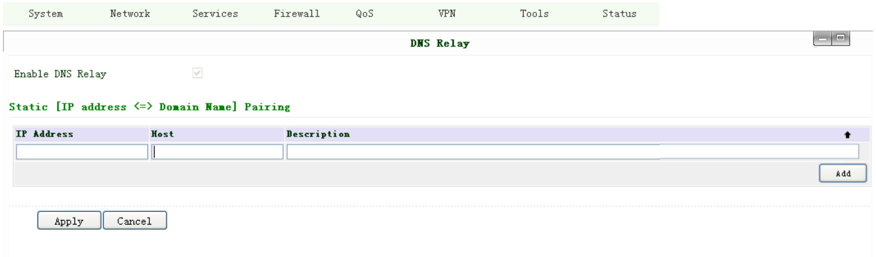
Enable DHCP ☑
IP Pool Starting Address 10.5.1.90
IP Pool Ending Address 10.5.1.254
Lease 60 Minutes
DNS 10.5.1.89
Windows Name Server (WINS) 0.0.0.0

Static DHCP

| MAC Address | IP Address | Host |
|---|---|---|
| 00:00:00:00:00:00 | 10.5.1.90 | |

| 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



DNS Relay

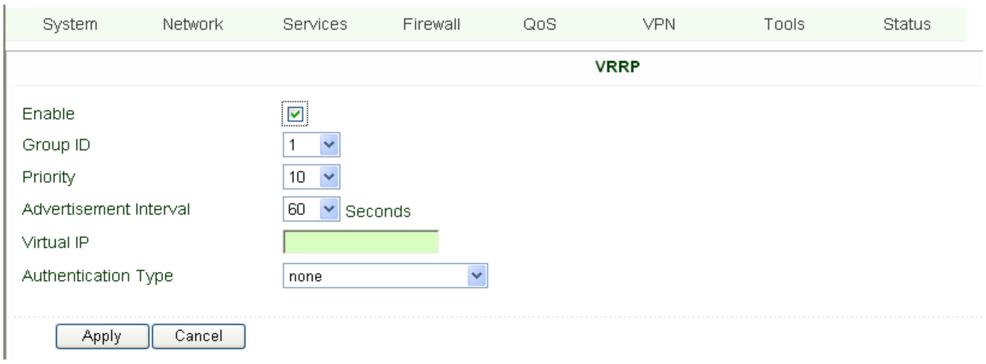
Enable DNS Relay ☑

Static [IP address <=> Domain Name] Pairing

| IP Address | Host | Description |
|---|---|---|
| | | |

| 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

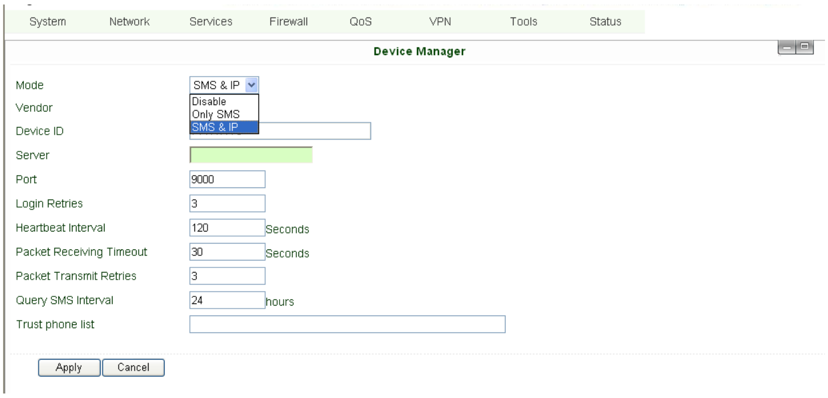


VRRP

Enable ☑
Group ID 1
Priority 10
Advertisement Interval 60 Seconds
Virtual IP
Authentication Type none

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

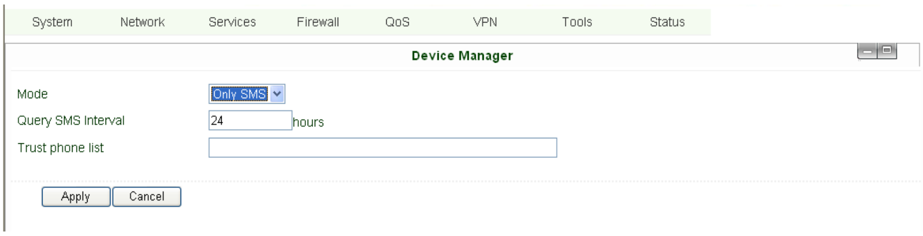
### (4) Device Manager



Device Manager

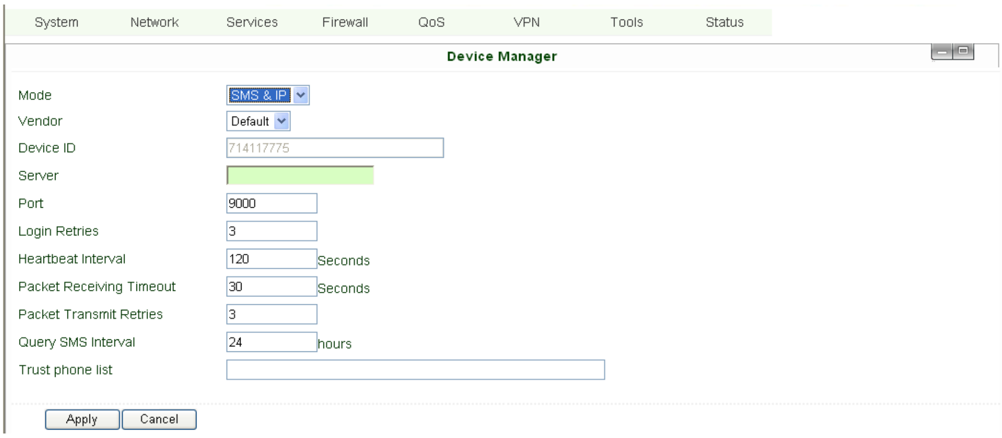
Mode SMS & IP
Vendor
Device ID
Server
Port 9000
Login Retries 3
Heartbeat Interval 120 Seconds
Packet Receiving Timeout 30 Seconds
Packet Transmit Retries 3
Query SMS Interval 24 hours
Trust phone list

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



Mode: Only SMS
Query SMS Interval: 24 hours
Trust phone list:

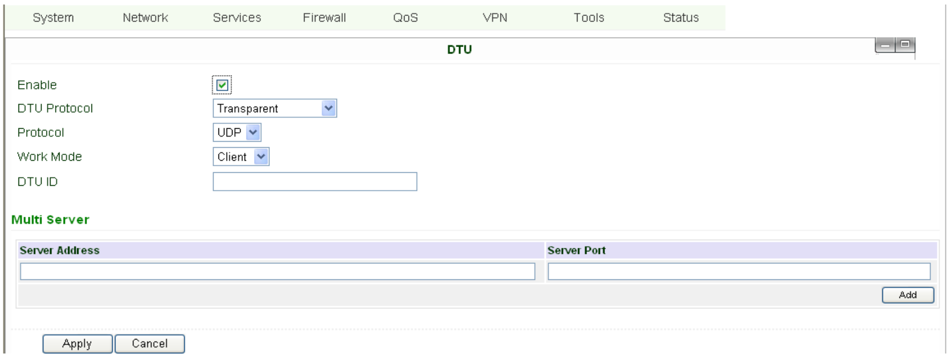
| Name | Description | Default |
|---|---|---|
| Mode | Only SMS | |
| Query SMS Interval | Set how long to check SMS | 24 hours |
| Trust Phone List | Add trust Cell Phone List | |



Mode: SMS & IP
Vendor: Default
Device ID: 714117775
Server:
Port: 9000
Login Retries: 3
Heartbeat Interval: 120 Seconds
Packet Receiving Timeout: 30 Seconds
Packet Transmit Retries: 3
Query SMS Interval: 24 hours
Trust 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



DTU

Enable ☑

DTU Protocol: Transparent

Protocol: UDP

Work Mode: Client

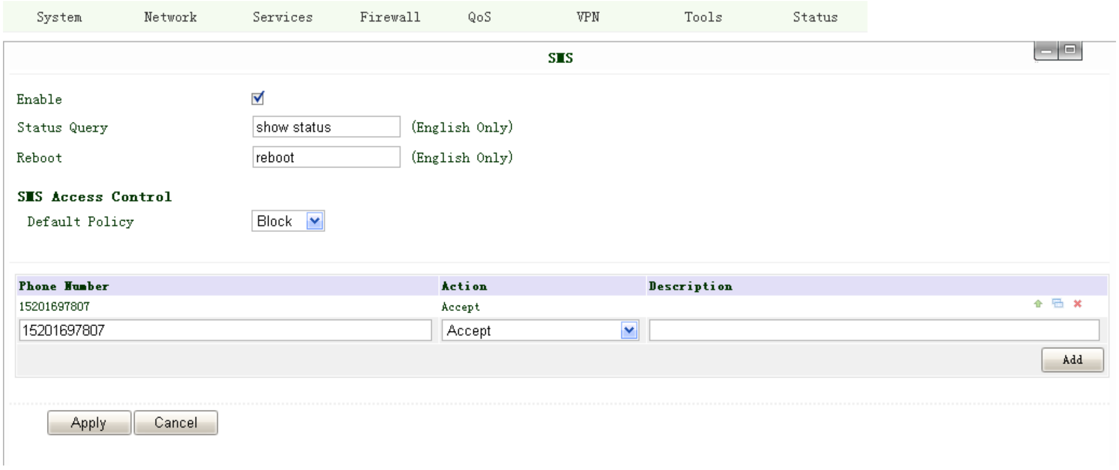
DTU ID:

Multi Server

| Server Address | Server Port |
|---|---|
| | |

| 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



SMS

Enable ☑

Status Query: show status (English Only)

Reboot: reboot (English Only)

SMS Access Control

Default Policy: Block

| Phone Number | Action | Description |
|---|---|---|
| 15201697807 | Accept | |
| 15201697807 | Accept | |

| 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 router 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);

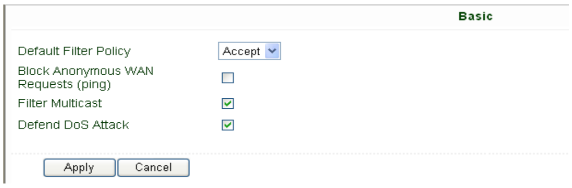
State: (Online/Offline) (Cellular WAN IP)

LAN: (Up) (LAN IP)

### 3.1.5 Firewall

This page is to configure the firewall parameters.

**(1) Basic Configuration**



Basic

Default Filter Policy: Accept

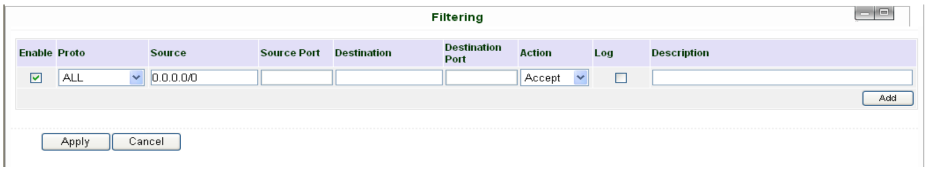
Block Anonymous WAN Requests (ping): □

Filter Multicast: ☑

Defend DoS Attack: ☑

| 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**

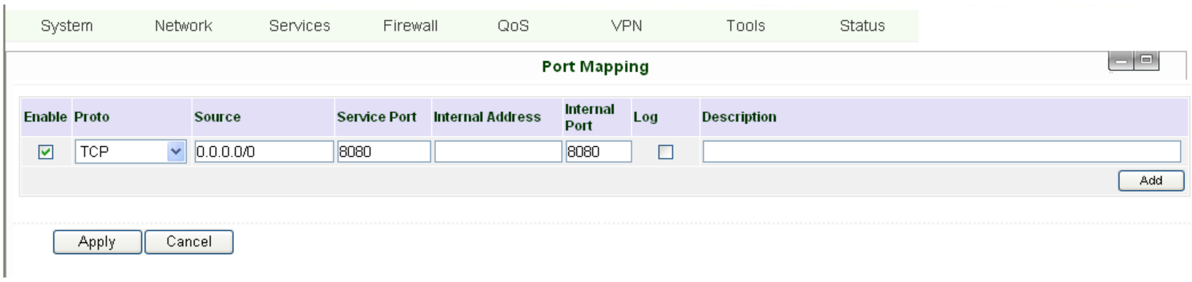


Filtering

| Enable | Proto | Source | Source Port | Destination | Destination Port | Action | Log | Description |
|---|---|---|---|---|---|---|---|---|
| ☑ | ALL | 0.0.0.0/0 | | | | Accept | □ | |

| 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

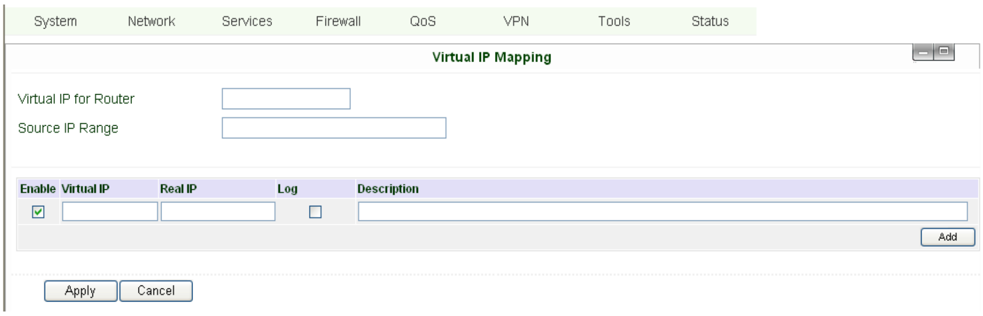


Port Mapping

| Enable | Proto | Source | Service Port | Internal Address | Internal Port | Log | Description |
|---|---|---|---|---|---|---|---|
| ☑ | TCP | 0.0.0.0/0 | 8080 |  | 8080 | □ |  |

| 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



Virtual IP Mapping

Virtual IP for Router

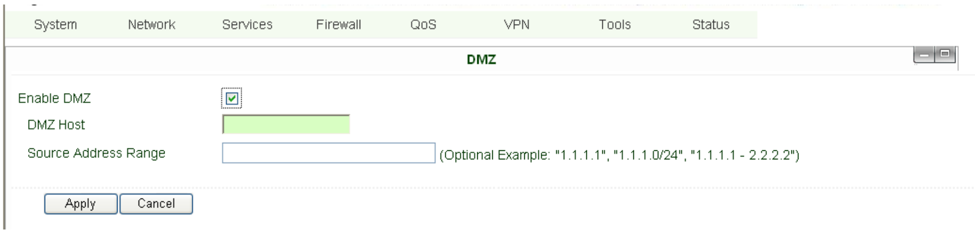
Source IP Range

| Enable | Virtual IP | Real IP | Log | Description |
|---|---|---|---|---|
| ☑ |  |  | □ |  |

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)



DMZ

Enable DMZ ☑

DMZ Host

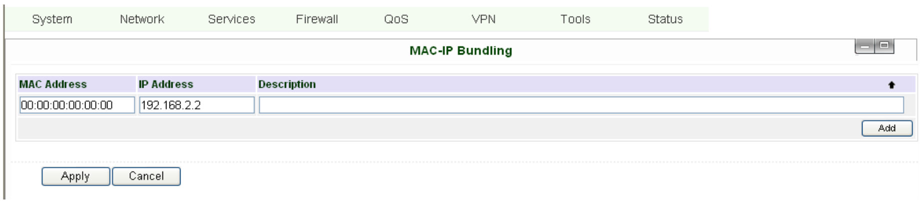
Source Address Range (Optional Example: "1.1.1.1", "1.1.1.0/24", "1.1.1.1 - 2.2.2.2")

Mapping all the ports then external PC can access all the ports of internal devices behind IR6X1.

Attention: This function cannot map the admin port of IRx1 (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**

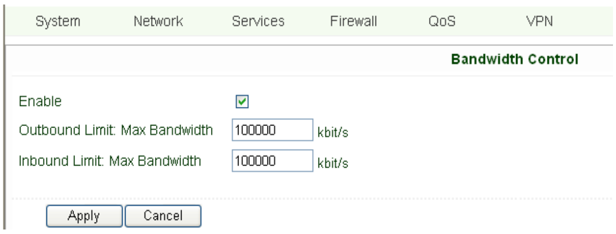


| MAC Address | IP Address | Description |
|---|---|---|
| 00:00:00:00:00:00 | 192.168.2.2 | |

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



Enable ☑

Outbound Limit: Max Bandwidth 100000 kbit/s

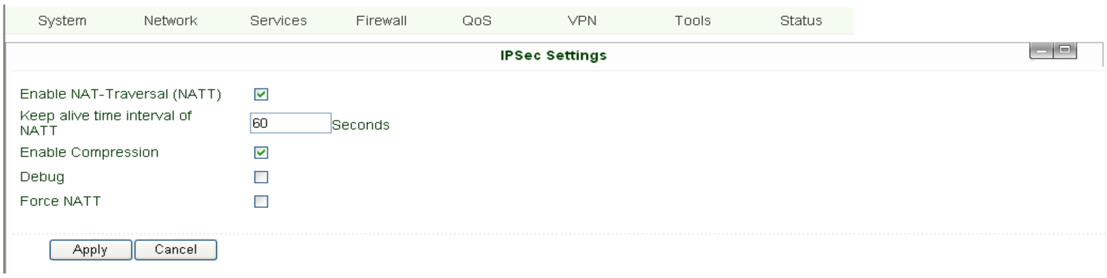
Inbound Limit: Max Bandwidth 100000 kbit/s

| 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 |

## 3.1.7 VPN

**(1) IPSec Settings**

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



Enable NAT-Traversal (NATT) ☑

Keep alive time interval of NATT 60 Seconds

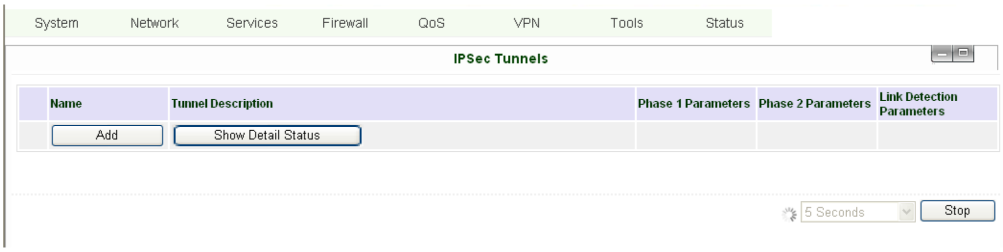
Enable Compression ☑

Debug □

Force NATT □

| 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 |

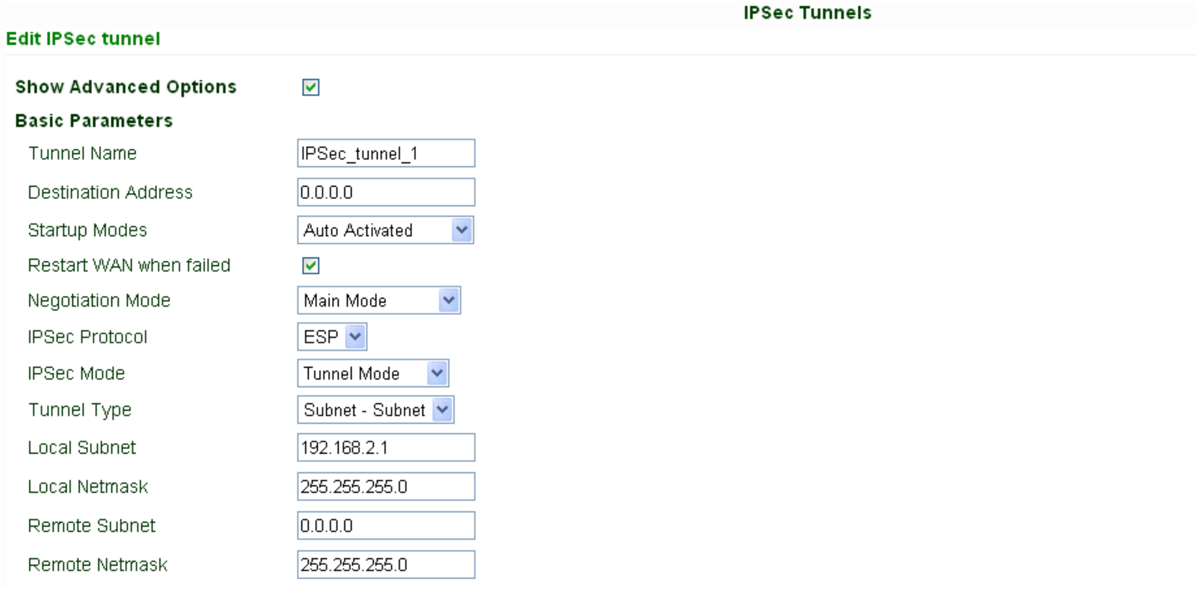
**(2) IPSec Tunnels**



IPSec Tunnels

| Name | Tunnel Description | Phase 1 Parameters | Phase 2 Parameters | Link Detection Parameters |
|---|---|---|---|---|
| Add | Show Detail Status | | | |

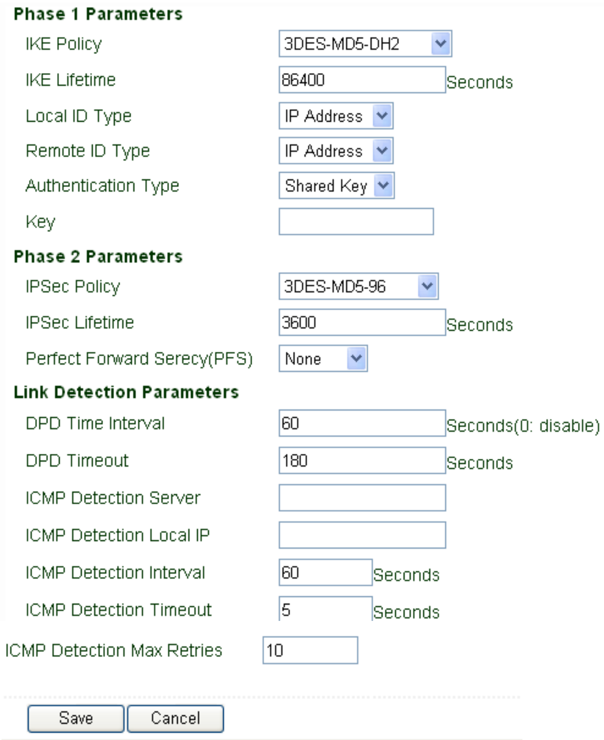
Click "Add" to enter the configuration page:



IPSec Tunnels

Edit IPSec tunnel

| | |
|---|---|
| **Show Advanced Options** | ☑ |
| **Basic Parameters** | |
| Tunnel Name | IPSec_tunnel_1 |
| Destination Address | 0.0.0.0 |
| Startup Modes | Auto Activated |
| Restart WAN when failed | ☑ |
| Negotiation Mode | Main Mode |
| IPSec Protocol | ESP |
| IPSec Mode | Tunnel Mode |
| Tunnel Type | Subnet - Subnet |
| Local Subnet | 192.168.2.1 |
| Local Netmask | 255.255.255.0 |
| Remote Subnet | 0.0.0.0 |
| Remote Netmask | 255.255.255.0 |



**Phase 1 Parameters**

IKE Policy: 3DES-MD5-DH2

IKE Lifetime: 86400 Seconds

Local ID Type: IP Address

Remote ID Type: IP Address

Authentication Type: Shared Key

Key:

**Phase 2 Parameters**

IPSec Policy: 3DES-MD5-96

IPSec Lifetime: 3600 Seconds

Perfect Forward Serecy(PFS): None

**Link Detection Parameters**

DPD Time Interval: 60 Seconds(0: disable)

DPD Timeout: 180 Seconds

ICMP Detection Server:

ICMP Detection Local IP:

ICMP Detection Interval: 60 Seconds

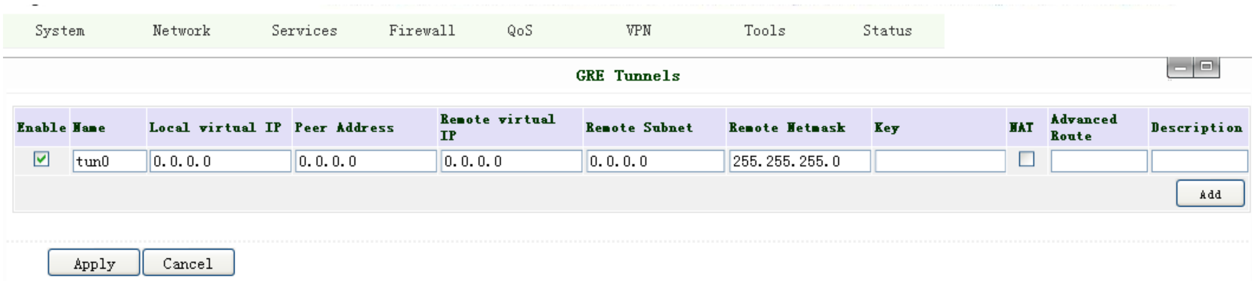
ICMP Detection Timeout: 5 Seconds

ICMP Detection Max Retries: 10

| 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,<br>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

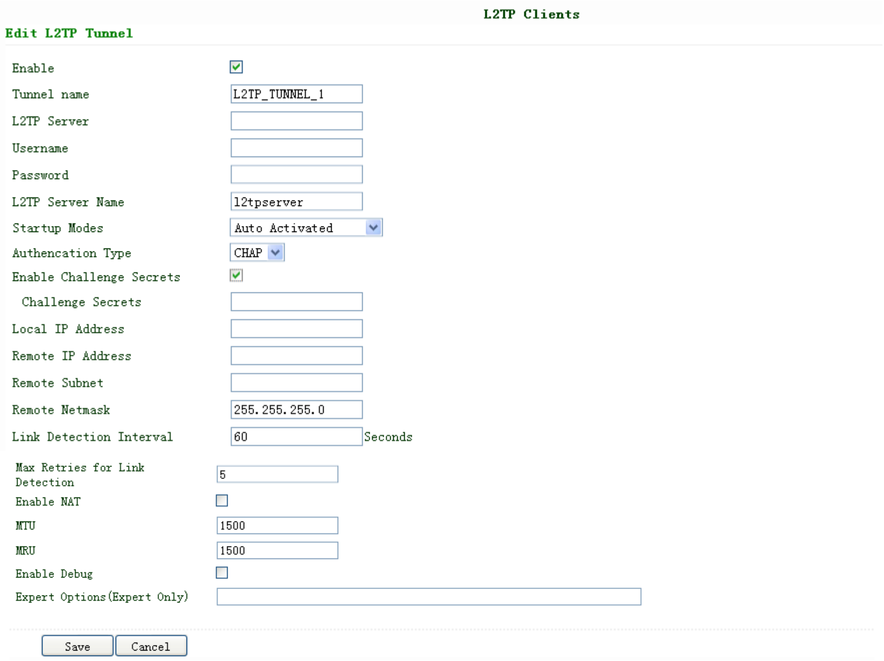


GRE Tunnels

| Enable | Name | Local virtual IP | Peer Address | Remote virtual IP | Remote Subnet | Remote Netmask | Key | NAT | Advanced Route | Description |
|---|---|---|---|---|---|---|---|---|---|---|
| ☑ | tun0 | 0.0.0.0 | 0.0.0.0 | 0.0.0.0 | 0.0.0.0 | 255.255.255.0 | | □ | | |

| 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



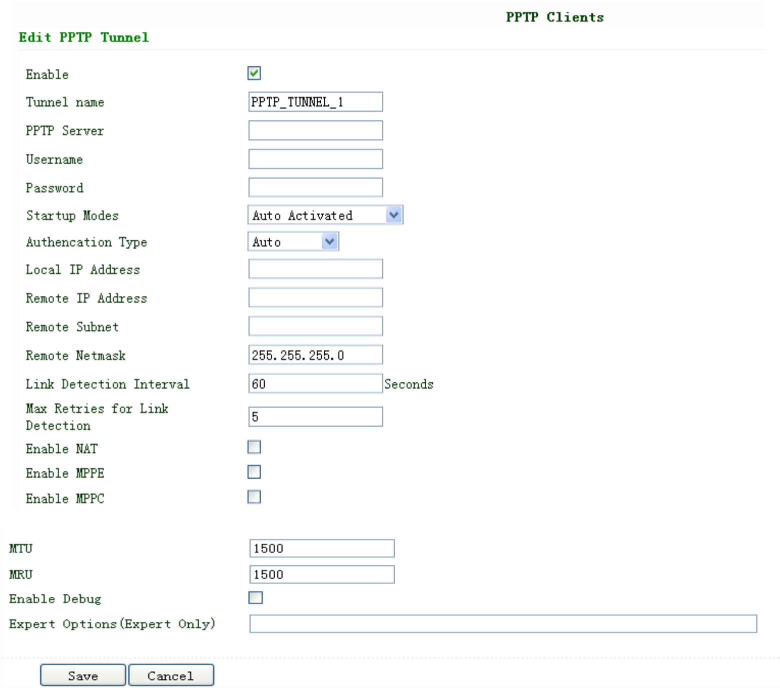
L2TP Clients

Edit L2TP Tunnel

| | |
|---|---|
| Enable | ☑ |
| Tunnel name | L2TP_TUNNEL_1 |
| L2TP Server | |
| Username | |
| Password | |
| L2TP Server Name | l2tpserver |
| Startup Modes | Auto Activated |
| Authencation Type | CHAP |
| Enable Challenge Secrets | ☑ |
| Challenge Secrets | |
| Local IP Address | |
| Remote IP Address | |
| Remote Subnet | |
| Remote Netmask | 255.255.255.0 |
| Link Detection Interval | 60 Seconds |
| Max Retries for Link Detection | 5 |
| Enable NAT | □ |
| MTU | 1500 |
| MRU | 1500 |
| Enable Debug | □ |
| Expert Options(Expert Only) | |

| 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



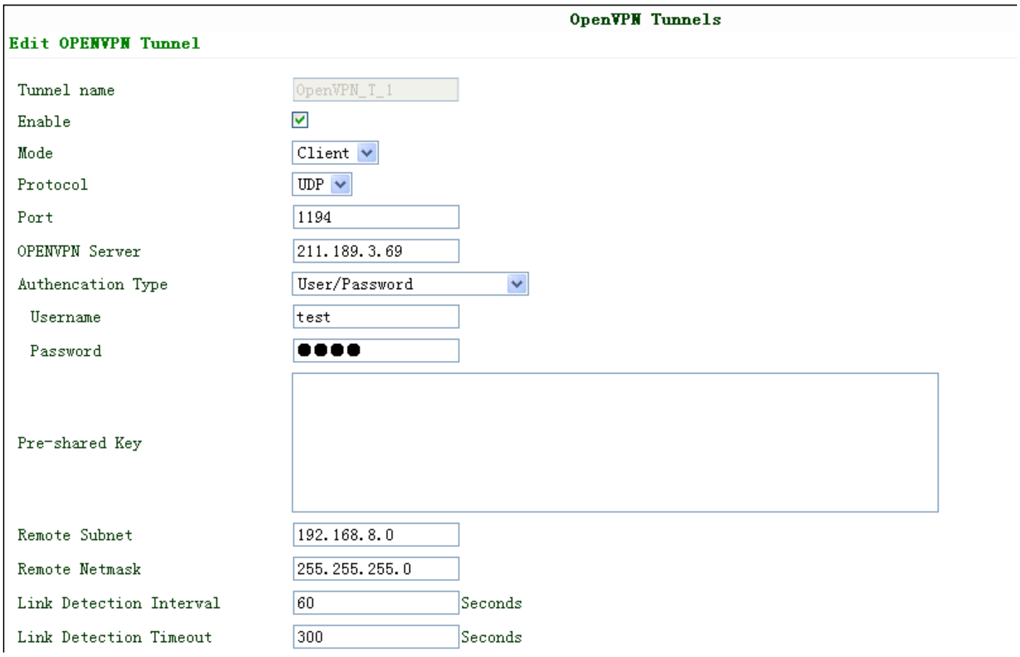
PPTP Clients

Edit PPTP Tunnel

| | |
|---|---|
| Enable | ☑ |
| Tunnel name | PPTP_TUNNEL_1 |
| PPTP Server | |
| Username | |
| Password | |
| Startup Modes | Auto Activated |
| Authencation Type | Auto |
| Local IP Address | |
| Remote IP Address | |
| Remote Subnet | |
| Remote Netmask | 255.255.255.0 |
| Link Detection Interval | 60 Seconds |
| Max Retries for Link Detection | 5 |
| Enable NAT | □ |
| Enable MPPE | □ |
| Enable MPPC | □ |
| MTU | 1500 |
| MRU | 1500 |
| Enable Debug | □ |
| Expert Options(Expert Only) | |

| 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 |

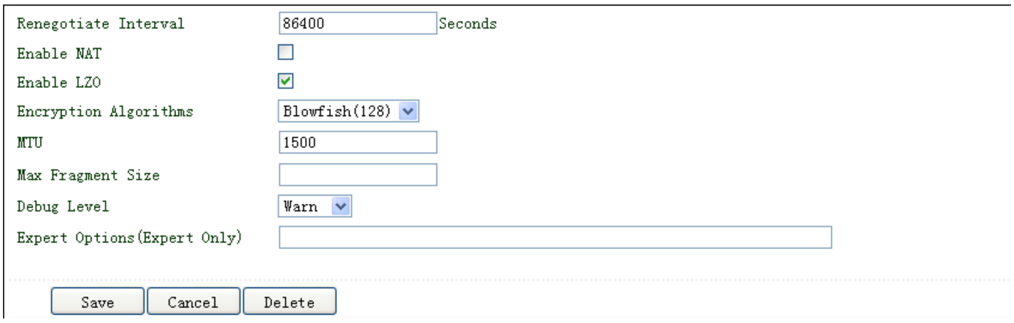
**(6) OpenVPN Settings**



OpenVPN Tunnels

Edit OPENVPN Tunnel

Tunnel name: OpenVPN_T_1
Enable: ☑
Mode: Client
Protocol: UDP
Port: 1194
OPENVPN Server: 211.189.3.69
Authencation Type: User/Password
Username: test
Password: ●●●●
Pre-shared Key:
Remote Subnet: 192.168.8.0
Remote Netmask: 255.255.255.0
Link Detection Interval: 60 Seconds
Link Detection Timeout: 300 Seconds



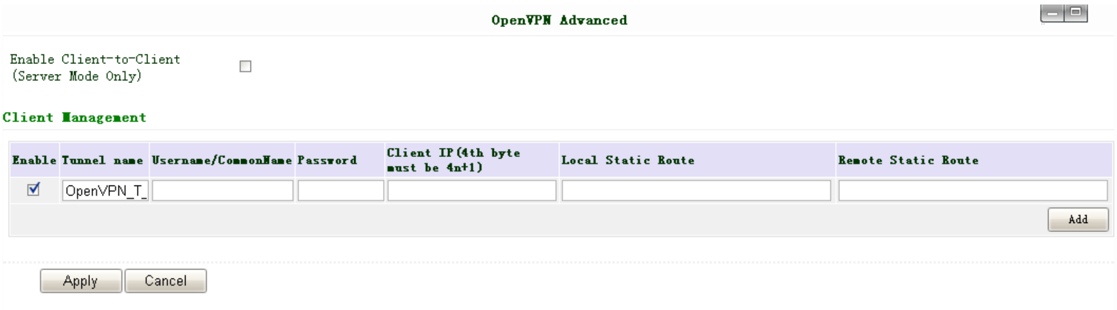
Renegotiate Interval: 86400 Seconds
Enable NAT: □
Enable LZO: ☑
Encryption Algorithms: Blowfish(128)
MTU: 1500
Max Fragment Size:
Debug Level: Warn
Expert Options(Expert Only):

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<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>(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) |

| | |
|---|---|
| | 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



OpenVPN Advanced

Enable Client-to-Client (Server Mode Only) ☐

Client Management

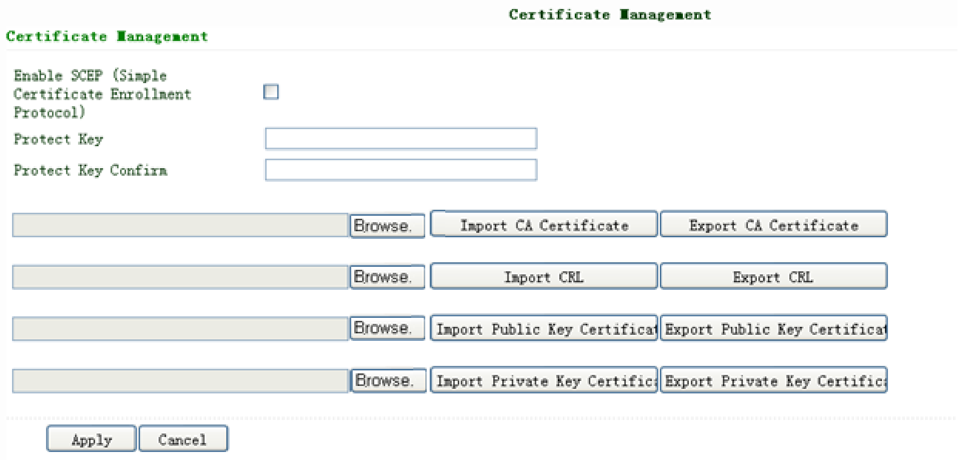
| Enable | Tunnel name | Username/CommonName | Password | Client IP(4th byte must be 4n+1) | Local Static Route | Remote Static Route |
|---|---|---|---|---|---|---|
| ☑ | OpenVPN_T_ | | | | | |

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

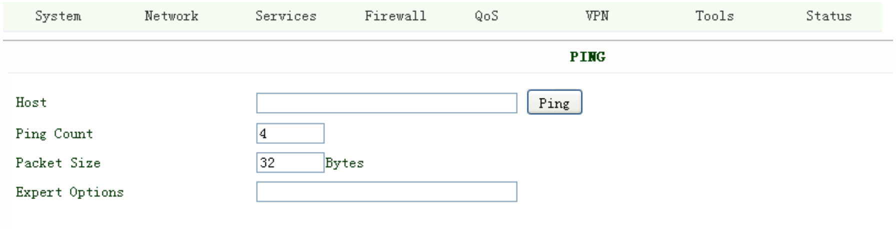


| Name | Description | Default |
|---|---|---|
| Enable SCEP<br>(Simple Certificate Enrollment Protocol) | Click Enable | |
| Certificate Protected Key | Set Certificate Protected Key | Blank |
| Certificate Protected Key Confirm | Confirm Certificate Protected Key | Blank |
| Import/Export CA Certificate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

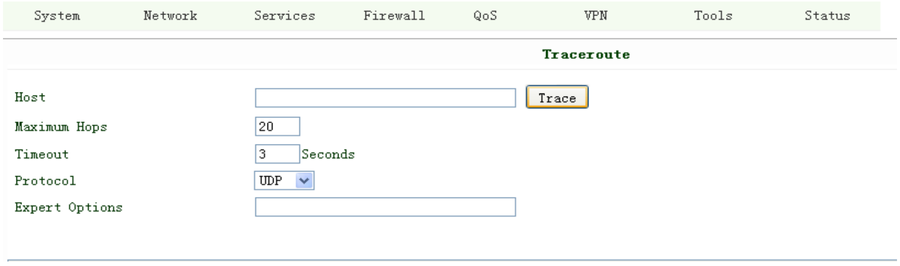


PING

Host
Ping Count 4
Packet Size 32 Bytes
Expert Options

| 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**

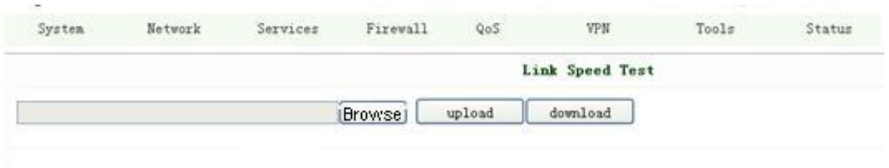


Traceroute

Host
Maximum Hops 20
Timeout 3 Seconds
Protocol UDP
Expert Options

| 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**



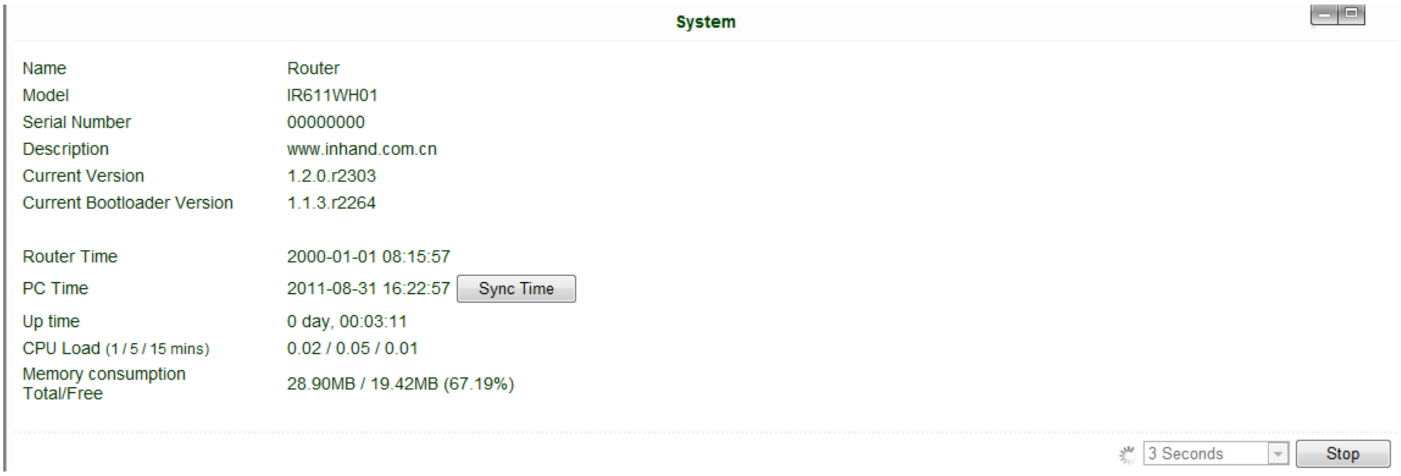
Link Speed Test

Test link speed via upload or download.

### 3.1.9 Status

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

**(1) System Status**

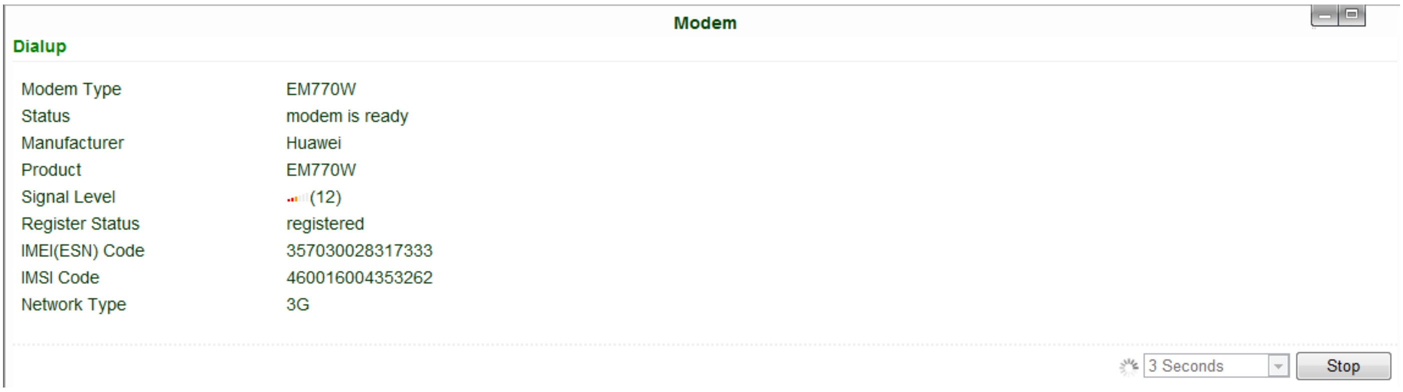


System

| | |
|---|---|
| Name | Router |
| Model | IR611WH01 |
| Serial Number | 00000000 |
| Description | www.inhand.com.cn |
| Current Version | 1.2.0.r2303 |
| Current Bootloader Version | 1.1.3.r2264 |
| Router Time | 2000-01-01 08:15:57 |
| PC Time | 2011-08-31 16:22:57 |
| Up time | 0 day, 00:03:11 |
| CPU Load (1 / 5 / 15 mins) | 0.02 / 0.05 / 0.01 |
| Memory consumption Total/Free | 28.90MB / 19.42MB (67.19%) |

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

**(2) Modem Status**



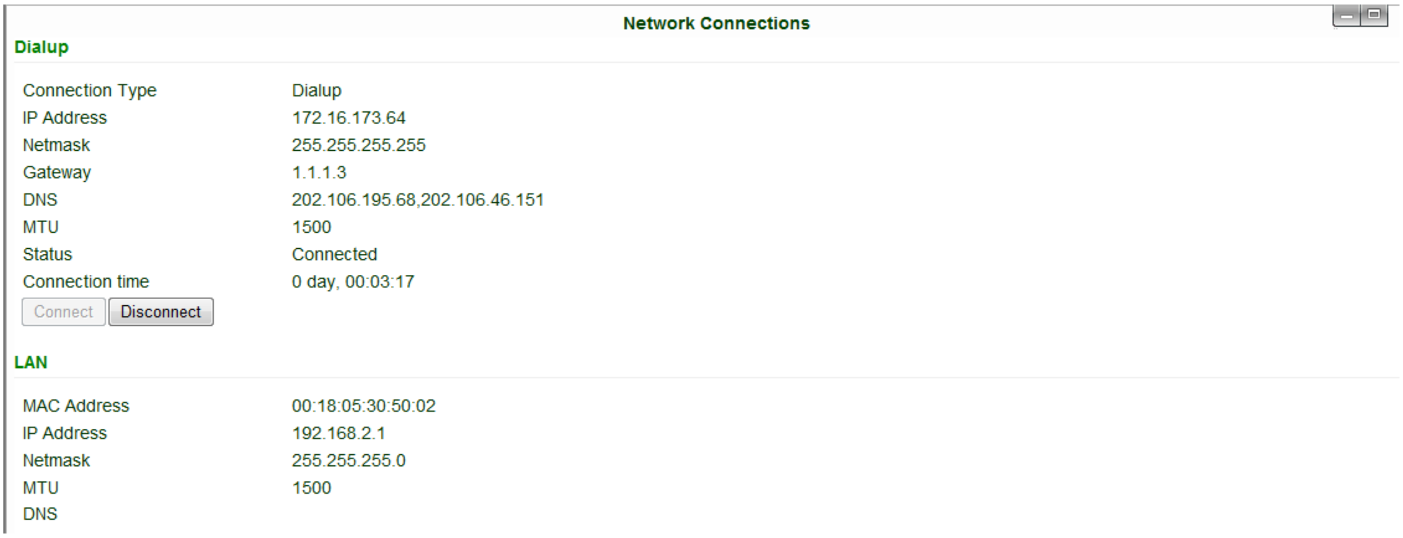
Modem

Dialup

| | |
|---|---|
| Modem Type | EM770W |
| Status | modem is ready |
| Manufacturer | Huawei |
| Product | EM770W |
| Signal Level | (12) |
| Register Status | registered |
| IMEI(ESN) Code | 357030028317333 |
| IMSI Code | 460016004353262 |
| Network Type | 3G |

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

### (3) Network Connections



Network Connections

Dialup

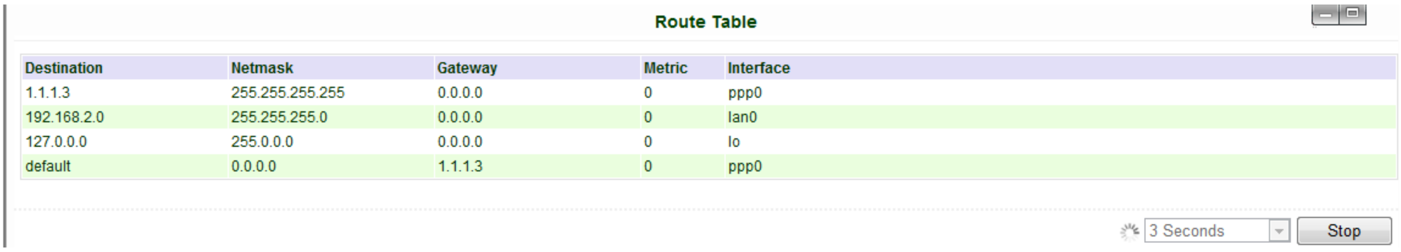
| | |
|---|---|
| Connection Type | Dialup |
| IP Address | 172.16.173.64 |
| Netmask | 255.255.255.255 |
| Gateway | 1.1.1.3 |
| DNS | 202.106.195.68,202.106.46.151 |
| MTU | 1500 |
| Status | Connected |
| Connection time | 0 day, 00:03:17 |

LAN

| | |
|---|---|
| MAC Address | 00:18:05:30:50:02 |
| IP Address | 192.168.2.1 |
| Netmask | 255.255.255.0 |
| MTU | 1500 |
| DNS | |

This page shows the network connection via WAN or LAN

### (4) Route Table

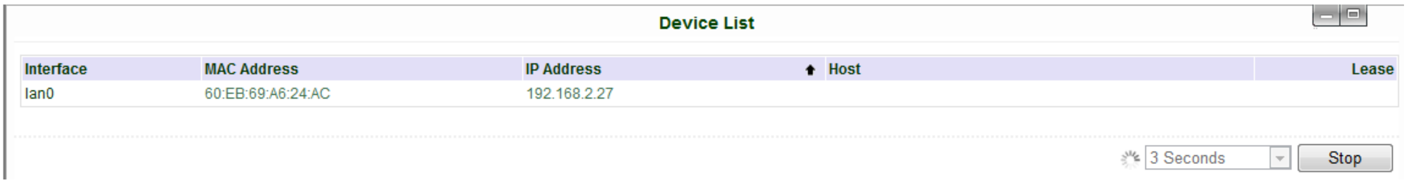


Route Table

| Destination | Netmask | Gateway | Metric | Interface |
|---|---|---|---|---|
| 1.1.1.3 | 255.255.255.255 | 0.0.0.0 | 0 | ppp0 |
| 192.168.2.0 | 255.255.255.0 | 0.0.0.0 | 0 | lan0 |
| 127.0.0.0 | 255.0.0.0 | 0.0.0.0 | 0 | lo |
| default | 0.0.0.0 | 1.1.1.3 | 0 | ppp0 |

This page shows the route table of IR6x1.

### (5) Device List

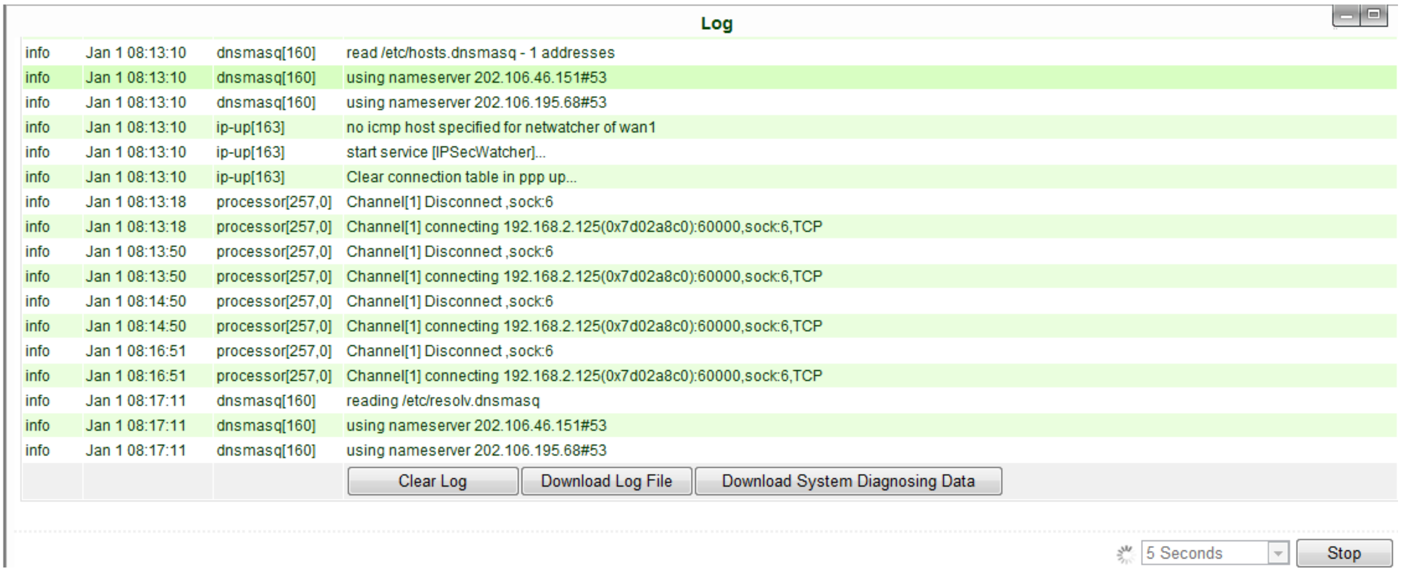


Device List

| Interface | MAC Address | IP Address | Host | Lease |
|---|---|---|---|---|
| lan0 | 60:EB:69:A6:24:AC | 192.168.2.27 | | |

This page shows the devices linked with IR6x1.

### (6) Log



```
info  Jan 1 08:13:10  dnsmasq[160]        read /etc/hosts.dnsmasq - 1 addresses
info  Jan 1 08:13:10  dnsmasq[160]        using nameserver 202.106.46.151#53
info  Jan 1 08:13:10  dnsmasq[160]        using nameserver 202.106.195.68#53
info  Jan 1 08:13:10  ip-up[163]          no icmp host specified for netwatcher of wan1
info  Jan 1 08:13:10  ip-up[163]          start service [IPSecWatcher]...
info  Jan 1 08:13:10  ip-up[163]          Clear connection table in ppp up...
info  Jan 1 08:13:18  processor[257,0]    Channel[1] Disconnect ,sock:6
info  Jan 1 08:13:18  processor[257,0]    Channel[1] connecting 192.168.2.125(0x7d02a8c0):60000,sock:6,TCP
info  Jan 1 08:13:50  processor[257,0]    Channel[1] Disconnect ,sock:6
info  Jan 1 08:13:50  processor[257,0]    Channel[1] connecting 192.168.2.125(0x7d02a8c0):60000,sock:6,TCP
info  Jan 1 08:14:50  processor[257,0]    Channel[1] Disconnect ,sock:6
info  Jan 1 08:14:50  processor[257,0]    Channel[1] connecting 192.168.2.125(0x7d02a8c0):60000,sock:6,TCP
info  Jan 1 08:16:51  processor[257,0]    Channel[1] Disconnect ,sock:6
info  Jan 1 08:16:51  processor[257,0]    Channel[1] connecting 192.168.2.125(0x7d02a8c0):60000,sock:6,TCP
info  Jan 1 08:17:11  dnsmasq[160]        reading /etc/resolv.dnsmasq
info  Jan 1 08:17:11  dnsmasq[160]        using nameserver 202.106.46.151#53
info  Jan 1 08:17:11  dnsmasq[160]        using nameserver 202.106.195.68#53
```

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

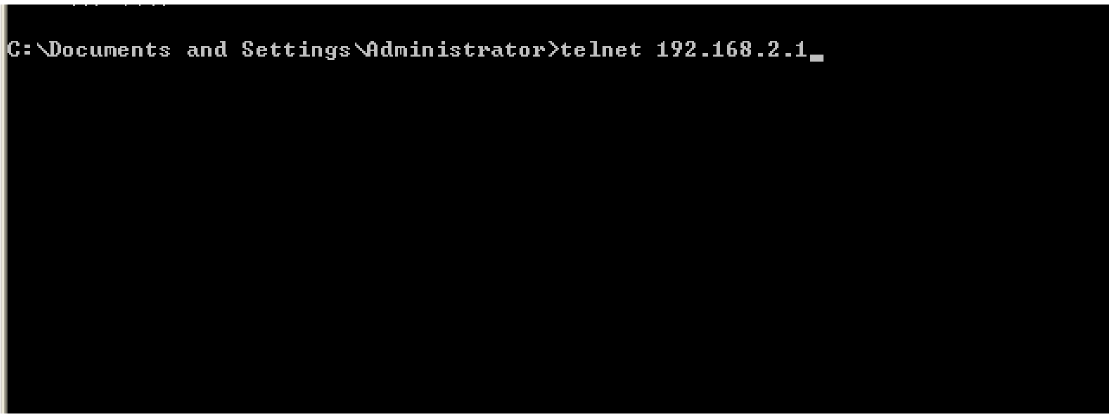
Under certain situation when there’re problems that can’t be diagnosed at the moment, you’ll be asked to provide the diagnose log to InHand engineers, you may click “Download System Diagnosing Data” and then send the diagnose log to us.

## 3.2 CLI Configuration

This chapter will show you how to configure via CLI.

### 3.2.1 CLI Operation

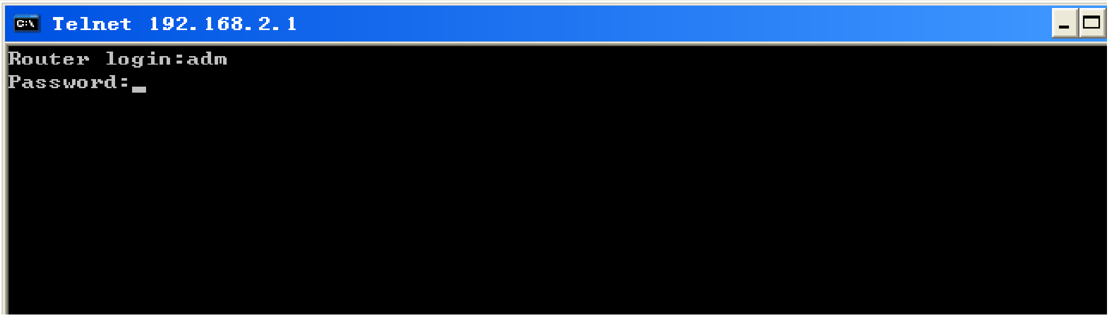
**Step 1: Input telnet LAN IP to login CLI configuration. For example:**



```
C:\Documents and Settings\Administrator>telnet 192.168.2.1_
```

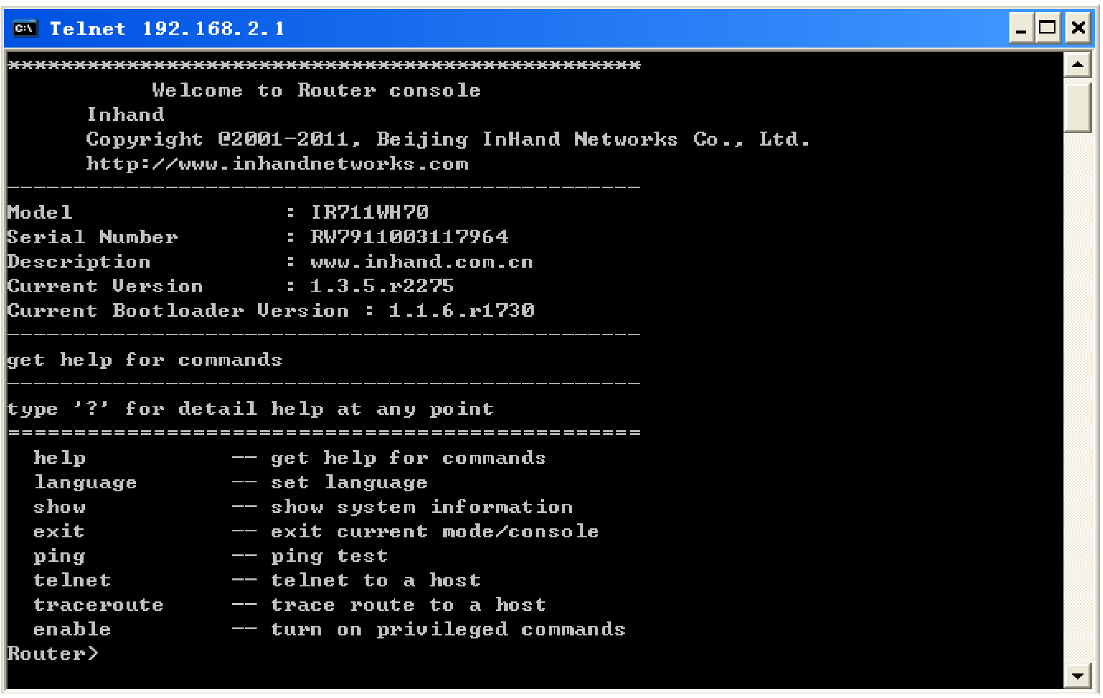
**Step 2: After connection is succeed, input username and password of IR6x1. The default username/password is adm/123456**

Attention: password will not be showed.



```
Router login:adm
Password:_
```

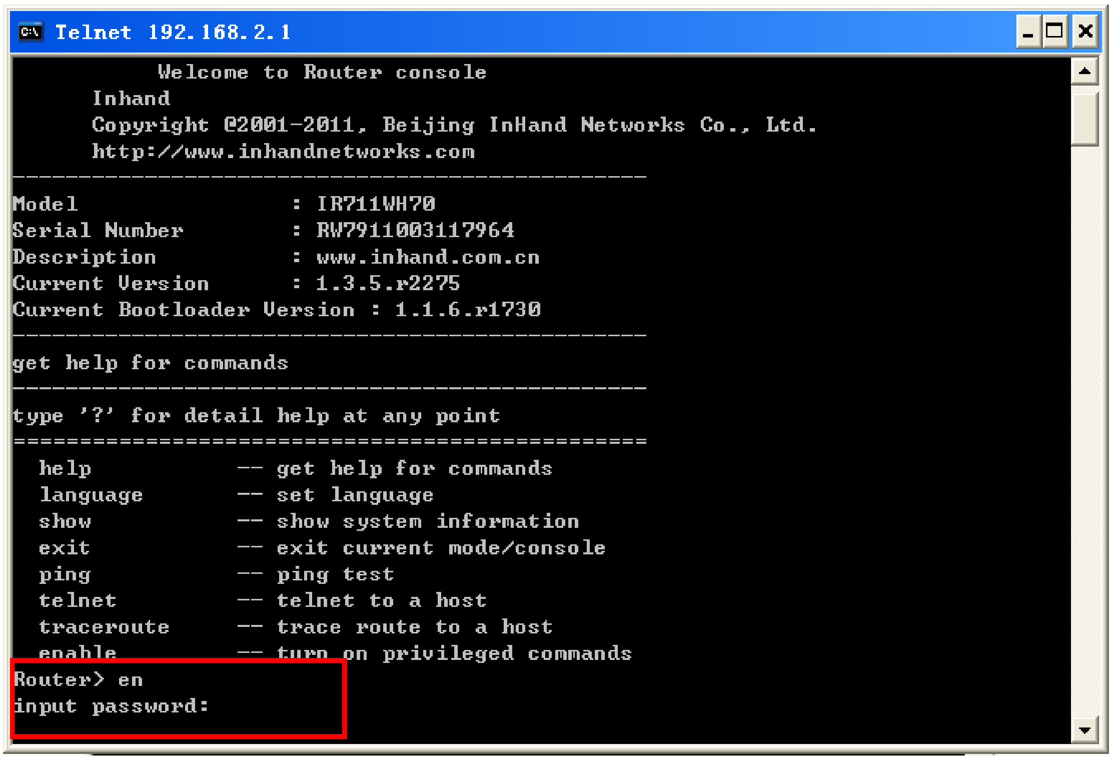
**Step 3: Login to User Mode**



```
************************************************
           Welcome to Router console
      Inhand
      Copyright @2001-2011, Beijing InHand Networks Co., Ltd.
      http://www.inhandnetworks.com
------------------------------------------------
Model                    : IR711WH70
Serial Number            : RW7911003117964
Description              : www.inhand.com.cn
Current Version          : 1.3.5.r2275
Current Bootloader Version : 1.1.6.r1730
------------------------------------------------
get help for commands
------------------------------------------------
type '?' for detail help at any point
================================================
  help              -- get help for commands
  language          -- set language
  show              -- show system information
  exit              -- exit current mode/console
  ping              -- ping test
  telnet            -- telnet to a host
  traceroute        -- trace route to a host
  enable            -- turn on privileged commands
Router>
```

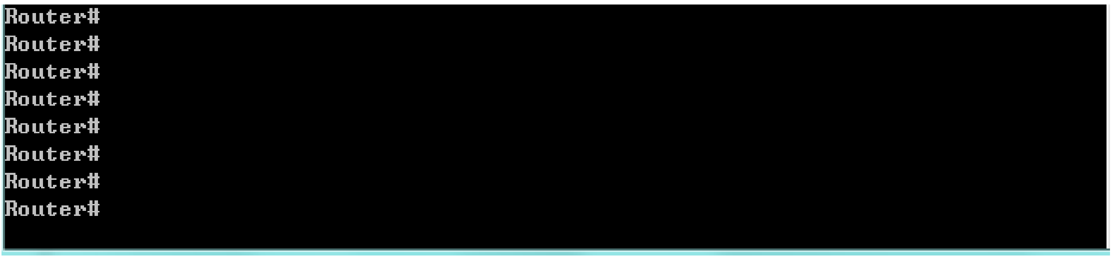
This screenshot is the config-view of IR700.

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



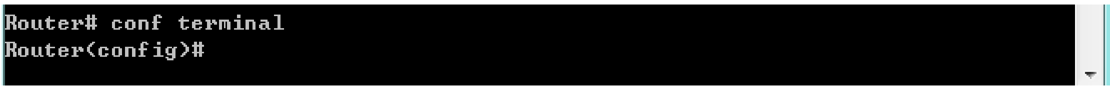
```
           Welcome to Router console
      Inhand
      Copyright @2001-2011, Beijing InHand Networks Co., Ltd.
      http://www.inhandnetworks.com
------------------------------------------------
Model                    : IR711WH70
Serial Number            : RW7911003117964
Description              : www.inhand.com.cn
Current Version          : 1.3.5.r2275
Current Bootloader Version : 1.1.6.r1730
------------------------------------------------
get help for commands
------------------------------------------------
type '?' for detail help at any point
================================================
  help              -- get help for commands
  language          -- set language
  show              -- show system information
  exit              -- exit current mode/console
  ping              -- ping test
  telnet            -- telnet to a host
  traceroute        -- trace route to a host
  enable            -- turn on privileged commands
Router> en
input password:
```

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



```
Router#
Router#
Router#
Router#
Router#
Router#
Router#
Router#
```

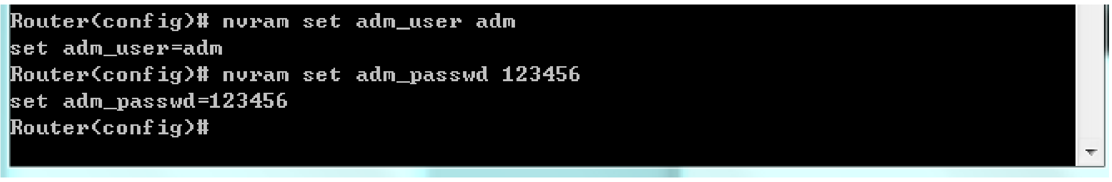
**Step 6: Enter configured mode, then you could configure parameters you want to set up.**



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

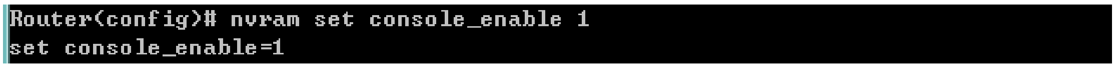
## 3.2.2 CLI command

**Configure username and password**



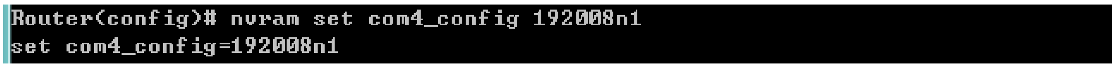
```
Router(config)# nvram set adm_user adm
set adm_user=adm
Router(config)# nvram set adm_passwd 123456
set adm_passwd=123456
Router(config)#
```

**Enable serial function**



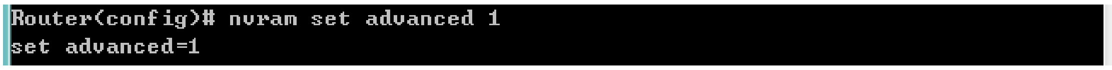
```
Router(config)# nvram set console_enable 1
set console_enable=1
```

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



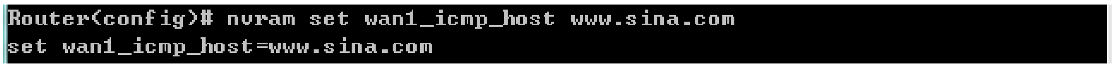
```
Router(config)# nvram set com4_config 192008n1
set com4_config=192008n1
```

**Enable advanced options of dialup**



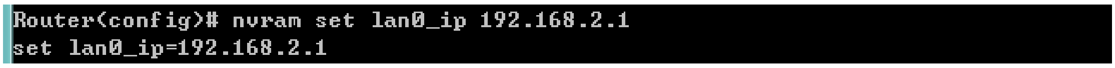
```
Router(config)# nvram set advanced 1
set advanced=1
```

**Configure ICMP server**



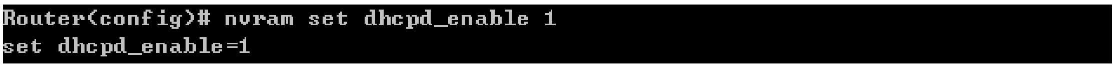
```
Router(config)# nvram set wan1_icmp_host www.sina.com
set wan1_icmp_host=www.sina.com
```

**Configure LAN IP**



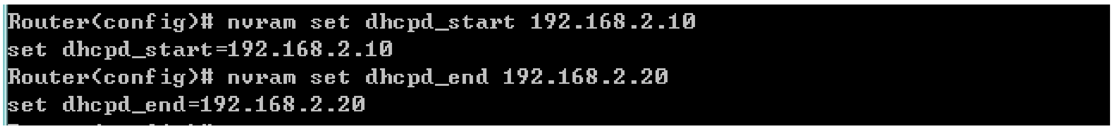
```
Router(config)# nvram set lan0_ip 192.168.2.1
set lan0_ip=192.168.2.1
```

**Enable DHCP function**



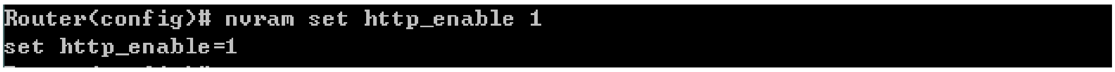
```
Router(config)# nvram set dhcpd_enable 1
set dhcpd_enable=1
```

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



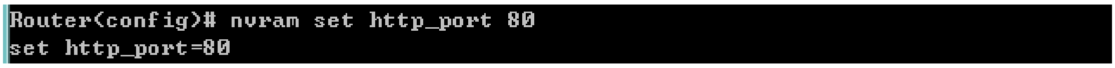
```
Router(config)# nvram set dhcpd_start 192.168.2.10
set dhcpd_start=192.168.2.10
Router(config)# nvram set dhcpd_end 192.168.2.20
set dhcpd_end=192.168.2.20
```

### Enable HTTP function



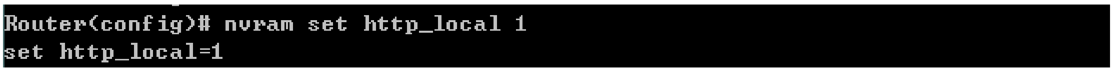
```
Router(config)# nvram set http_enable 1
set http_enable=1
```

### Configure HTTP service port



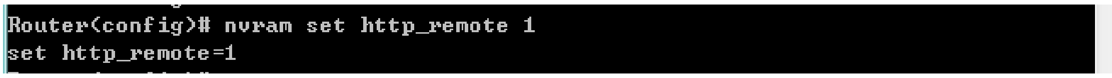
```
Router(config)# nvram set http_port 80
set http_port=80
```

### Enable HTTP local access



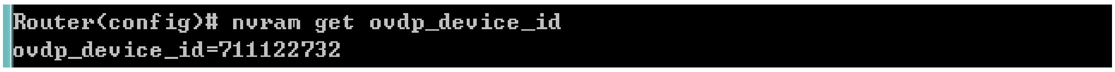
```
Router(config)# nvram set http_local 1
set http_local=1
```

### Enable HTTP remote access



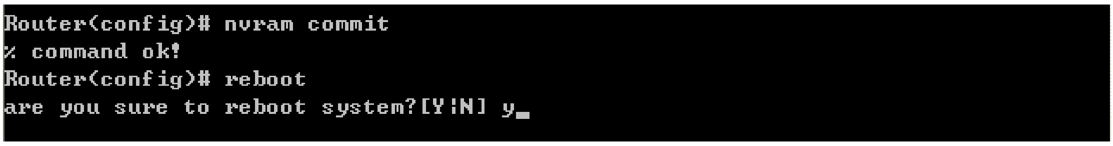
```
Router(config)# nvram set http_remote 1
set http_remote=1
```

### 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`t 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?**

- IR6x1 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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**Subject to alterations without notice.**