



FBR-1418TX

1W, 4L Broadband Router

User Manual

V3.0

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## **FCC Interference Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against radio interference in a commercial environment. This equipment can generate, use and radiate radio frequency energy and, if not installed and used in accordance with the instructions in this manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures are necessary to correct the interference.

## **CE Declaration of Conformity**

This equipment complies with the requirements relating to electromagnetic compatibility, EN 55022/A1 Class B

**The specification is subject to change without notice.**

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# 1. Introduction

Congratulations on your purchase of LevelOne FBR-1418TX Broadband Router. This product is specifically designed for Small Office and Home Office needs. It provides a complete SOHO solution for Internet surfing, and is easy to configure and operate even for non-technical users. Instructions for installing and configuring this product can be found in this manual. Before you install and use this product, please read this manual carefully for fully exploiting the functions of this product.

## 1.1 Functions and Features

### Router Basic functions

- **Broadband modem and NAT Router**  
Connects multiple computers to a broadband (cable or DSL) modem or an Ethernet router to surf the Internet.
- **Auto-sensing Ethernet Switch**  
Equipped with a 4-port auto-sensing Ethernet switch.
- **WAN type supported**  
The router supports some wan types, Static ,Dynamic, PPPOE ,PPTP , Dynamic IP with Road Runner.
- **Firewall**  
All unwanted packets from outside intruders are blocked to protect your Intranet.
- **DHCP server supported**  
All of the networked computers can retrieve TCP/IP settings automatically from this product.
- **Web-based configuring**  
Configurable through any networked computer's web browser using Netscape or Internet Explorer.
- **Multi-language support in Web-based configuring**  
Supports English, Deutsh, Korean, and Chinese Web-based user interface.
- **Virtual Server supported**  
Enables you to expose WWW, FTP and other services on your LAN to be accessible to Internet users.
- **User-Definable Application Sensing Tunnel**  
User can define the attributes to support the special applications requiring multiple connections, like Internet gaming, video conferencing, Internet telephony and so on, then this product can sense the application type and open multi-port tunnel for it.

- **DMZ Host supported**

let a networked computer be fully exposed to the Internet; this function is used when special application sensing tunnel feature is insufficient to allow an application to function correctly.

- **Statistics of WAN Supported**

Enables you to monitor inbound and outbound packets

## Security functions

- **Packet filter supported**

Packet Filter allows you to control access to a network by analyzing the incoming and outgoing packets and letting them pass or halting them based on the IP address of the source and destination.

- **Domain Filter Supported**

Let you prevent users under this device from accessing specific URLs.

- **URL Blocking Supported**

URL Blocking can block hundreds of websites connection by simply a **keyword**.

- **VPN Pass-through**

The router also supports VPN packet pass-through.

- **SPI Mode Supported**

When SPI Mode is enabled, the router will check every incoming packet to detect if this packet is valid.

- **DoS Attack Detection Supported**

When this feature is enabled, the router will detect and log the DoS attack comes from the internet.

## Advanced functions

- **System time Supported**  
Allow you to synchronize system time with network time server.
- **E-mail Alert Supported**  
The router can send its info by mail.
- **Dynamic dns Supported**  
At present,the router has 3 ddns.dyndns,TZO.com and dhs.org.
- **SNMP Supported**  
The router supports basic SNMP function.
- **Routing Table Supported**  
Now, the router supports static routing.
- **Schedule Rule supported**  
Customers can control some functions, like virtual server and packet filters and determine when to access or when to block.
- **UPNP (Universal Plug and Play)Supported**  
The router also supports this function. The applications: X-box, Msn Messenger.

## 1.2 Packing List

- FBR-1418TX
- Power Adapter (DC 5V / 1 ~ 1.2A)
- CAT-5 Cable
- CD Manual
- Quick Installation Guide

If any item is found missing or damaged, please contact your local reseller for replacement.

## 2. Hardware Installation

### 2.1 Panel Layout

#### ➤ Front Panel

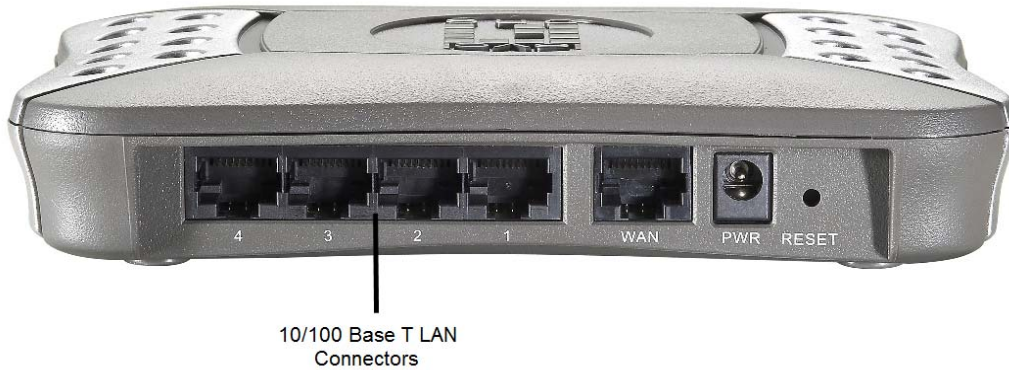


#### LED:

LED	Function	Color	Status	Description
Status	System status indicators	Green	Blinking	Status LED is flashed once per second to indicate system is alive.
WAN	WAN port activity	Green	On	The WAN port is linked.
			Blinking	The WAN port is sending or receiving data.
Link/Act. 1~4	Link status	Green	Blinking	The corresponding LAN port is sending or receiving data.
			On	Data is transmitting in 100Mbps on the corresponding LAN port.



## ➤ Rear Panel



Port	Description
<b>PWR</b>	Power inlet: DC5V / 1 ~ 1.2A
<b>WAN</b>	The port where you will connect your cable (or DSL) modem or Ethernet router.
<b>Port 1-4</b>	The ports where you will connect networked computers and other devices.
<b>RESET</b>	Reset button allows you to reset the FBR-1418TX.

## 2.2 Reset to factory Default

There are 2 methods to reset to default.

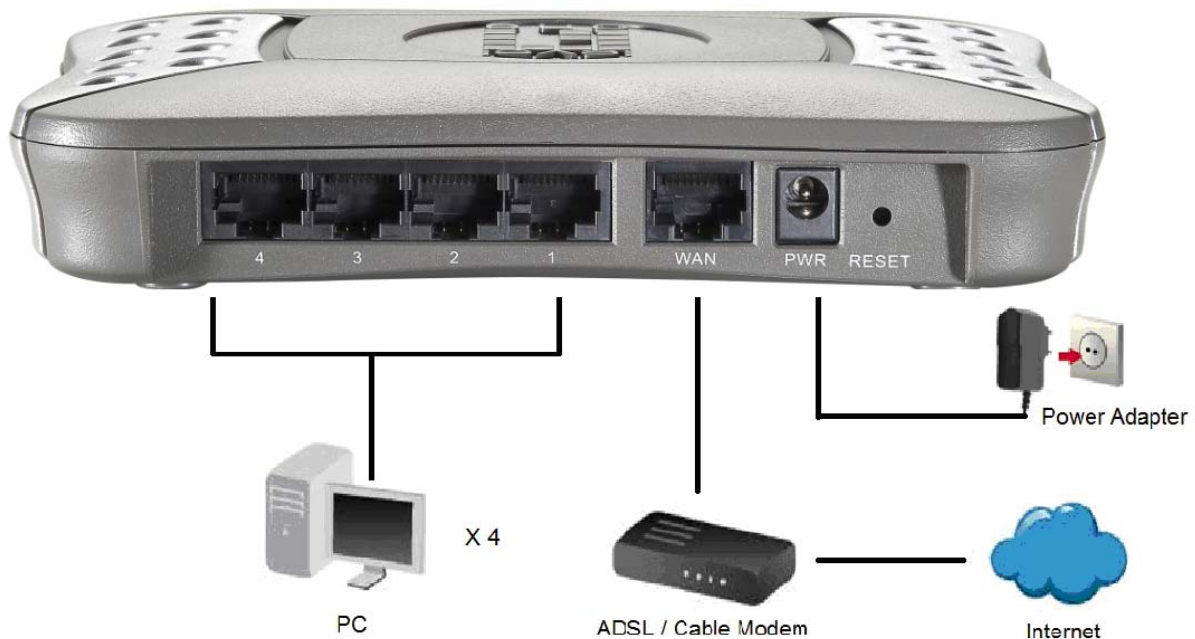
### 1. Restore with RESET button

First, turn off the router and press the RESET button in. And then, power on the router and hold the RESET button down until the Status LED start flashing, then move away the hand. If LED flashes about 8 times, the RESTORE process is completed. However, if LED flashes 2 times, repeat.

### 2. Restore directly when the router power on

First, hold the RESET button about 5 seconds (STATUS will start flashing about 5 times). Move away the hand. The RESTORE process is completed.

## 2.3 Procedure for Hardware Installation



### **1. Decide where to place your Broadband Router**

You can place your FBR-1418TX Broadband Router on a desk or other flat surface, or you can mount it on a wall. For optimal performance, place your Broadband Router in the center of your office (or your home) in a location that is away from any potential source of interference, such as a metal wall or microwave oven. This location must be close to power and network connection.

### **2. Setup LAN connection**

- a. Wired LAN connection: connects an Ethernet cable from your computer's Ethernet port to one of the LAN ports of this product.

### **3. Setup WAN connection**

Prepare an Ethernet cable for connecting this product to your cable/xDSL modem or Ethernet backbone. Figure 2-3 illustrates the WAN connection.

### **4. Power on**

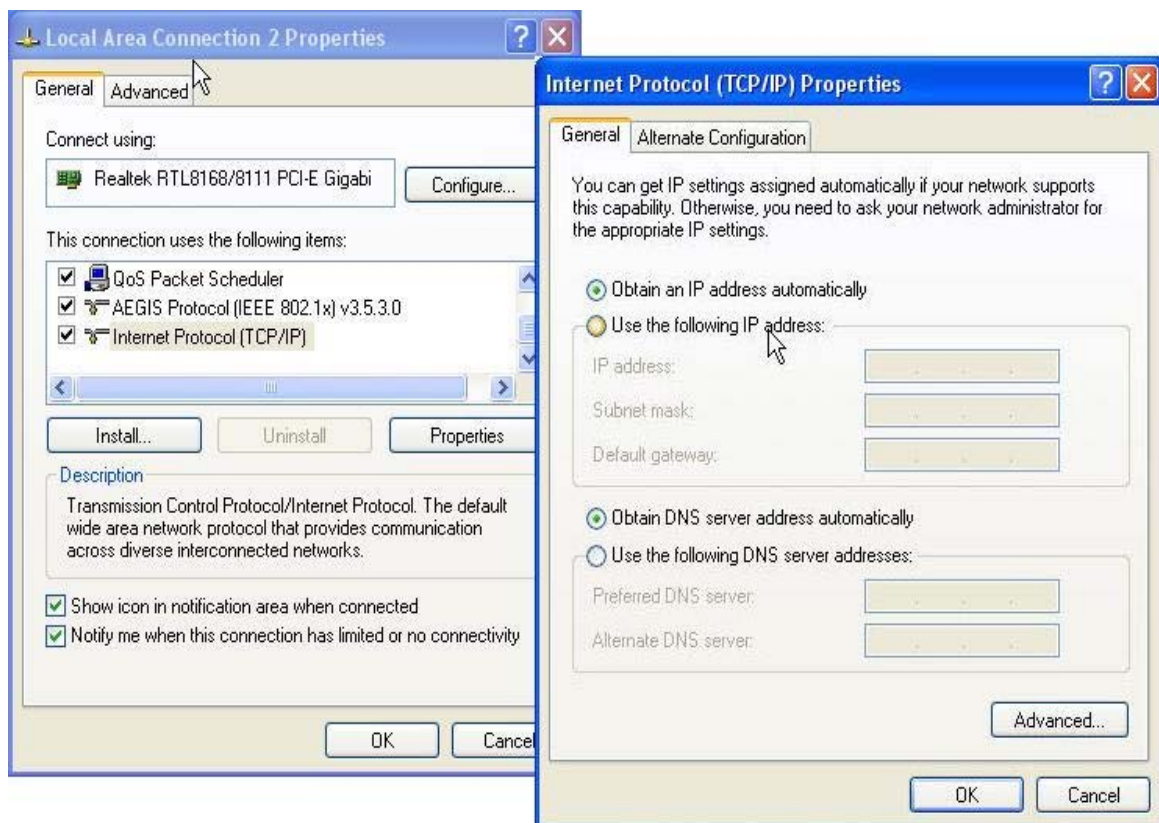
Connecting the power cord to power inlet and turning the power switch on, this product will automatically enter the self-test phase. When it is in the self-test phase, the STATUS indicators will be lighted ON for about 10 seconds, and then will be flashed 3 times to indicate that the self-test operation has finished. Finally, the STATUS Led will be continuously flashed once per second to indicate that this product is in normal operation.

# 3. Network Settings and Software Installation

To use LevelOne FBR-1418TX correctly, you have to properly configure the network settings of your computers and install the attached setup program into your MS Windows platform (Windows 98SE/ME/2000/XP).

## 3.1 Make Correct Network Settings of Your Computer

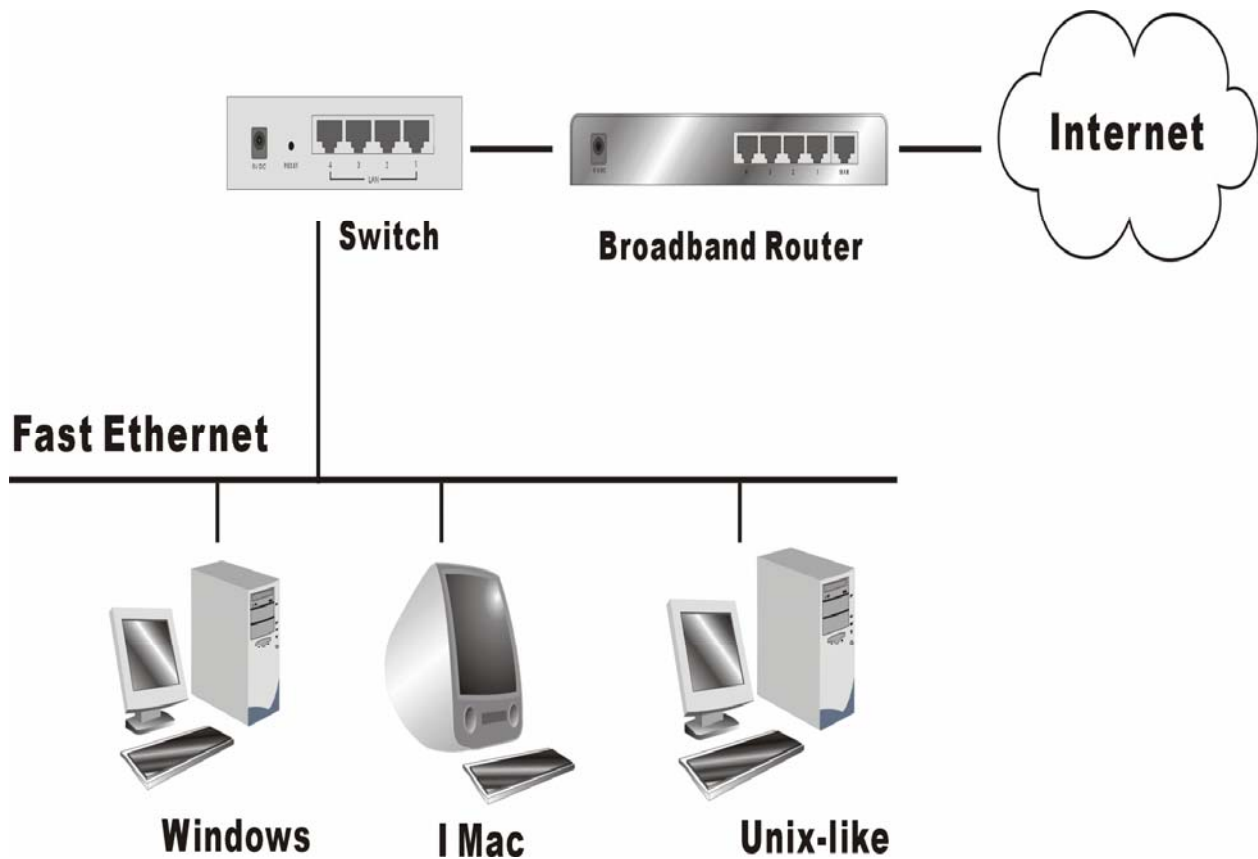
1. Please make sure your PC can get IP address automatically so the FBR-1418TX can communicate with your PC during configuration.
  - Select “Control Panel” > “Network Connections”.
  - Right click the “Local Area Connection” and choose “Properties”.
  - Select the TCP/IP protocol for your network card.
  - Click on the Properties button. You should then see the following screen and make sure you have selected “Obtain IP address automatically”



Reboot computer to make sure you have received the IP address correctly.

## 4. Configuring Broadband Router

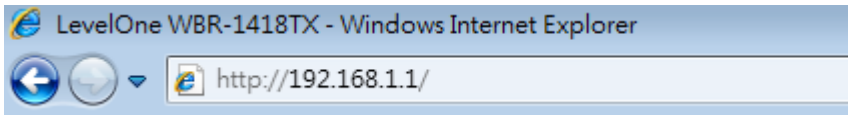
LevelOne FBR-1418TX provides Web based configuration scheme that is, configuring by your Web browser, such as Netscape Communicator or Internet Explorer. This approach can be adopted in any MS Windows, Macintosh or UNIX based platforms.



## 4.1 Start-up and Log in

Start your Web browser. In the Address box, enter FBR-1418TX's Default IP Address:

<http://192.168.1.1>



### Login page

The screenshot shows the LevelOne Broadband Router Configuration web interface. The page has a dark blue background with white and yellow text. At the top, it says "Broadband Router Configuration" and "LEVELONE ONE WORLD ONE BRAND ONE LEVEL". There is a "Status" field with a red box around it and a "Login" button. The main content area is divided into two sections: "System Status" and "Statistics of WAN".

Item	WAN Status	Sidnote
Remaining Lease Time	143:53:30	
IP Address	192.168.50.147	
Subnet Mask	255.255.255.0	
Gateway	192.168.50.1	
Domain Name Server	168.95.1.1, 61.31.233.1	

Statistics of WAN	Inbound	Outbound
Octets	672511	83956
Unicast Packets	124	244
Non-unicast Packets	4513	10

Current Time: 2010年6月21日 下午 05:57:14  
System Time: Mon Jun 21 17:53:59 2010

After the connection is established, you will see the web user interface of this product. There are two appearances of web user interface: for general users and for system administrator.

To log in as an administrator, enter the system password (the factory setting is "admin") in the **System Password** field and click on the **Log in** button. If the password is correct, the web appearance will be changed into administrator configure mode. As listed in its main menu, there are several options for system administration.

## 4.2 Status

The screenshot shows the 'System Status' page of a LevelOne Broadband Router Configuration interface. The page is divided into two main sections: WAN Status and Statistics of WAN.

**WAN Status Table:**

Item	WAN Status	Sidenote
Remaining Lease Time	143:59:41	<input type="button" value="Renew"/>
IP Address	192.168.50.147	<input type="button" value="Release"/>
Subnet Mask	255.255.255.0	
Gateway	192.168.50.1	
Domain Name Server	168.95.1.1, 61.31.233.1	

**Statistics of WAN Table:**

Statistics of WAN	Inbound	Outbound
Octets	1095451	139872
Unicast Packets	185	415
Non-unicast Packets	7302	14

At the bottom of the page, there are buttons for 'View Log', 'Clients List', 'Help', and 'Refresh'. The current time is displayed as '2010年6月21日 下午 06:00:54' and the system time as 'Mon Jun 21 17:59:28 2010'.

This option provides the function for observing this product's working status:

A. WAN Status.

If the WAN port is assigned a dynamic IP, there may appear a “**Renew**” or “**Release**” button on the Sidenote column. You can click this button to renew or release IP manually.

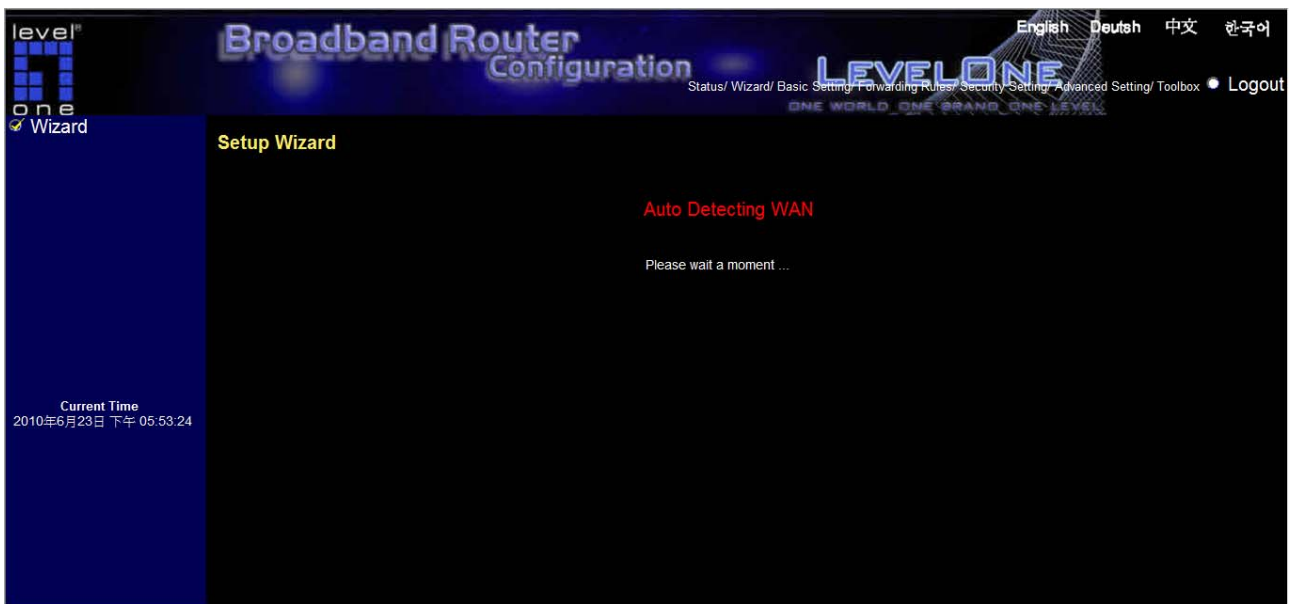
B. Statistics of WAN: enables you to monitor inbound and outbound packets

**NOTE: After successful login, you can switch the language in the Web-based user interface. There are four languages available, which are English, German, Chinese, and Korean. Please select the language by clicking the option on the top-right corner.**

## 4.3 Wizard



Setup Wizard will guide you through a basic configuration procedure step by step. Press **“Next>”**



**Auto Detecting WAN**



level  
one  
Wizard

Broadband Router  
Configuration

LEVELONE  
ONE WORLD ONE BRAND ONE SYSTEM

English Deutsch 中文 한국어

Setup Wizard Base Setting/ WAN Setting/ Security Setting/ Advanced Setting/ Toolbox • Logout

### Setup Wizard - Select WAN TYPE

- ISP assigns you a static IP address. (Static IP Address)
- Obtain an IP address from ISP automatically. (Dynamic IP Address)
- Dynamic IP Address with Road Runner Session Management. (e.g. Telstra BigPond)
- Some ISPs require the use of PPPoE to connect to their services. (PPP over Ethernet)
- Some ISPs require the use of PPTP to connect to their services. (PPTP)
- Some ISPs require the use of L2TP to connect to their services. (L2TP)

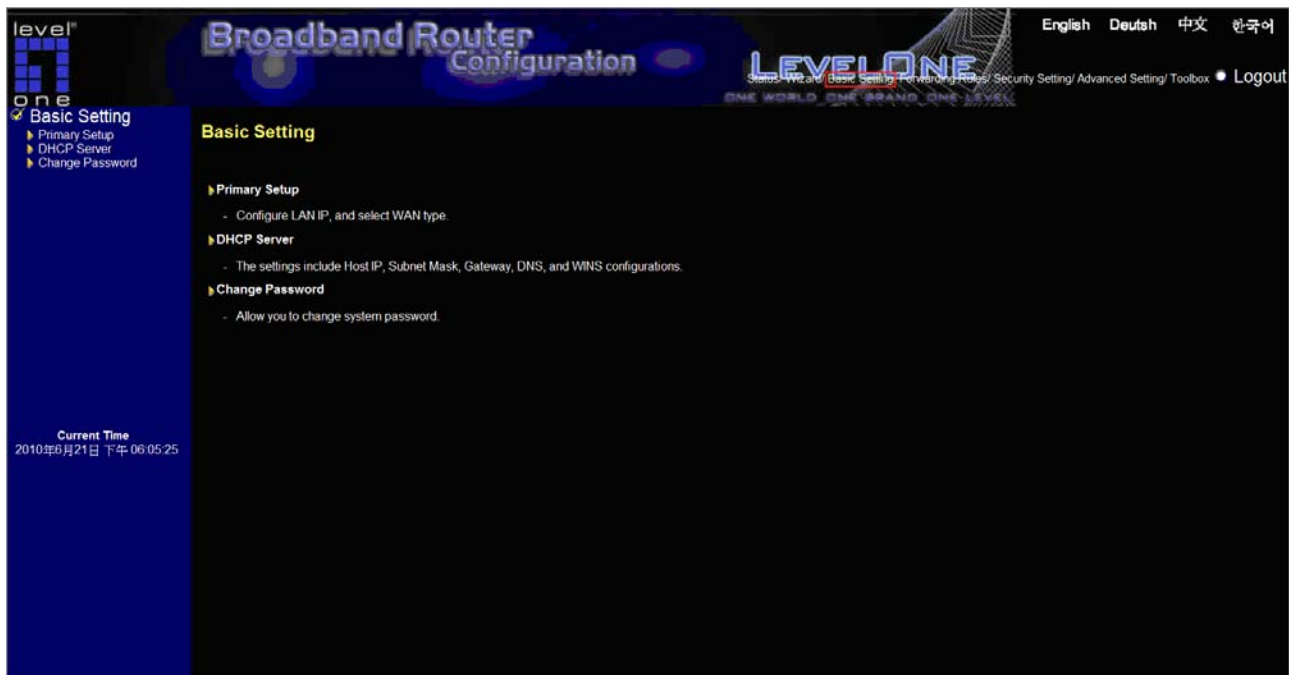
Current Time  
2010年06月21日 下午 06:03:12

<Back Undo Next>

**Setup Wizard - Select WAN Type:** For detail settings, please refer to [4.4.1 primary setup](#).

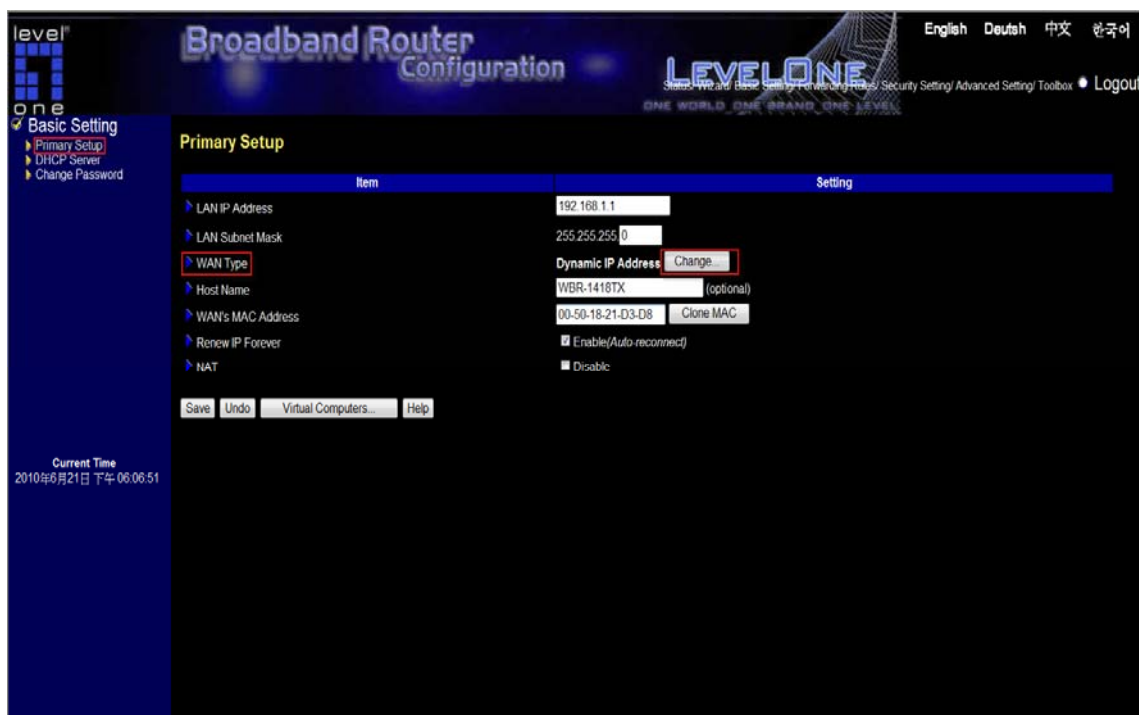


## 4.4 Basic Setting



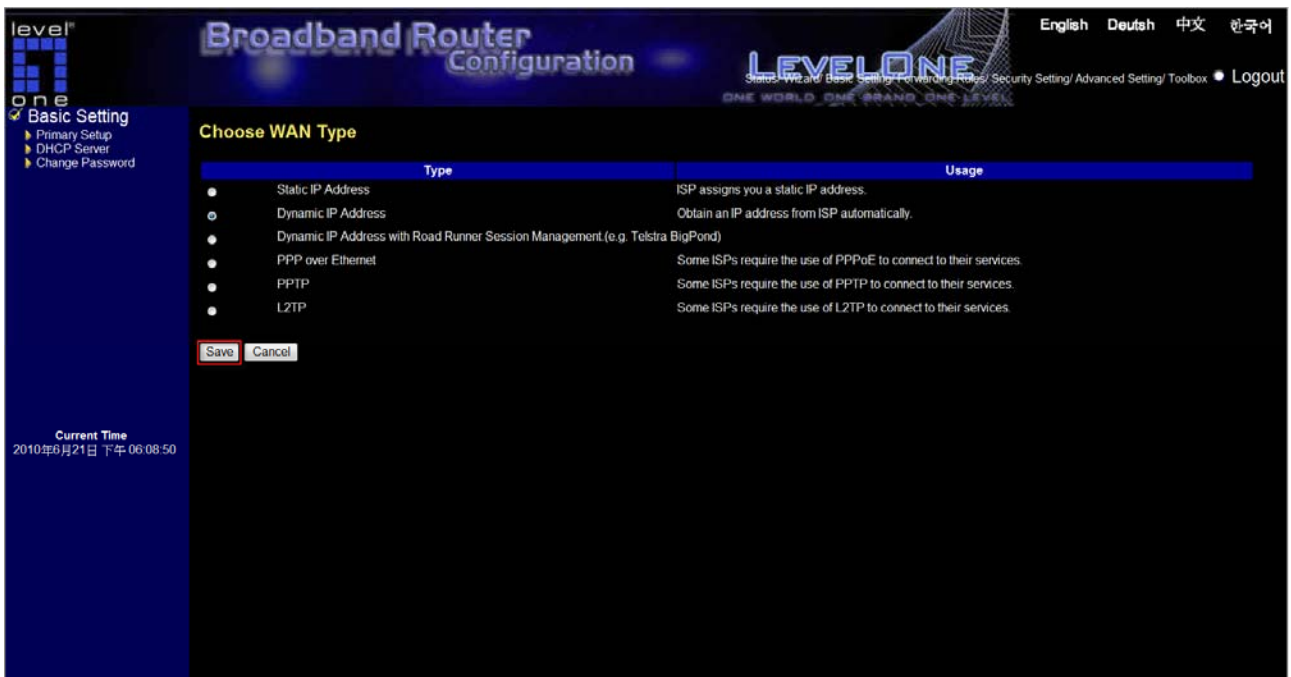
Main page of **Basic Setting**

### 4.4.1 Primary Setup – WAN Type, Virtual Computers



Press **“Change”**

## Choose WAN Type



This option is primary to enable this product to work properly. The setting items and the web appearance depend on the WAN type. Choose correct WAN type and “**Save**” before you start.

1. **LAN IP Address:** the local IP address of this device. The computers on your network must use the LAN IP address of your product as their Default Gateway. You can change it if necessary.
2. **WAN Type:** WAN connection type of your ISP. You can click **Change** button to choose a correct one from the following four options:

- A. **Static IP Address:** ISP assigns you a static IP address.
- B. **Dynamic IP Address:** Obtain an IP address from ISP automatically.
- C. **Dynamic IP Address with Road Runner Session Management.**(e.g. Telstra BigPond)
- D. **PPP over Ethernet:** Some ISPs require the use of PPPoE to connect to their services.
- E. **PPTP:** Some ISPs require the use of PPTP to connect to their services.
- F. **L2TP:** Some ISPs require the use of L2TP to connect to their services.

## A. Static IP Address

The screenshot shows the 'Primary Setup' configuration page for a LevelOne Broadband Router. The 'WAN Type' is set to 'Static IP Address'. The following table represents the configuration data visible in the interface:

Item	Setting
LAN IP Address	192.168.1.1
LAN Subnet Mask	255.255.255.0
WAN Type	Static IP Address <input type="button" value="Change..."/>
WAN IP Address	0.0.0.0
WAN Subnet Mask	255.255.255.0
WAN Gateway	0.0.0.0
Primary DNS	0.0.0.0
Secondary DNS	0.0.0.0
NAT	<input type="checkbox"/> Disable

Buttons at the bottom: Save, Undo, Virtual Computers..., Help, Reboot. A message states: 'Saved! The change doesn't take effect until router is rebooted!'

WAN IP Address, Subnet Mask, Gateway, Primary and Secondary DNS: enter the proper setting provided by your ISP.

## B. Dynamic IP Address

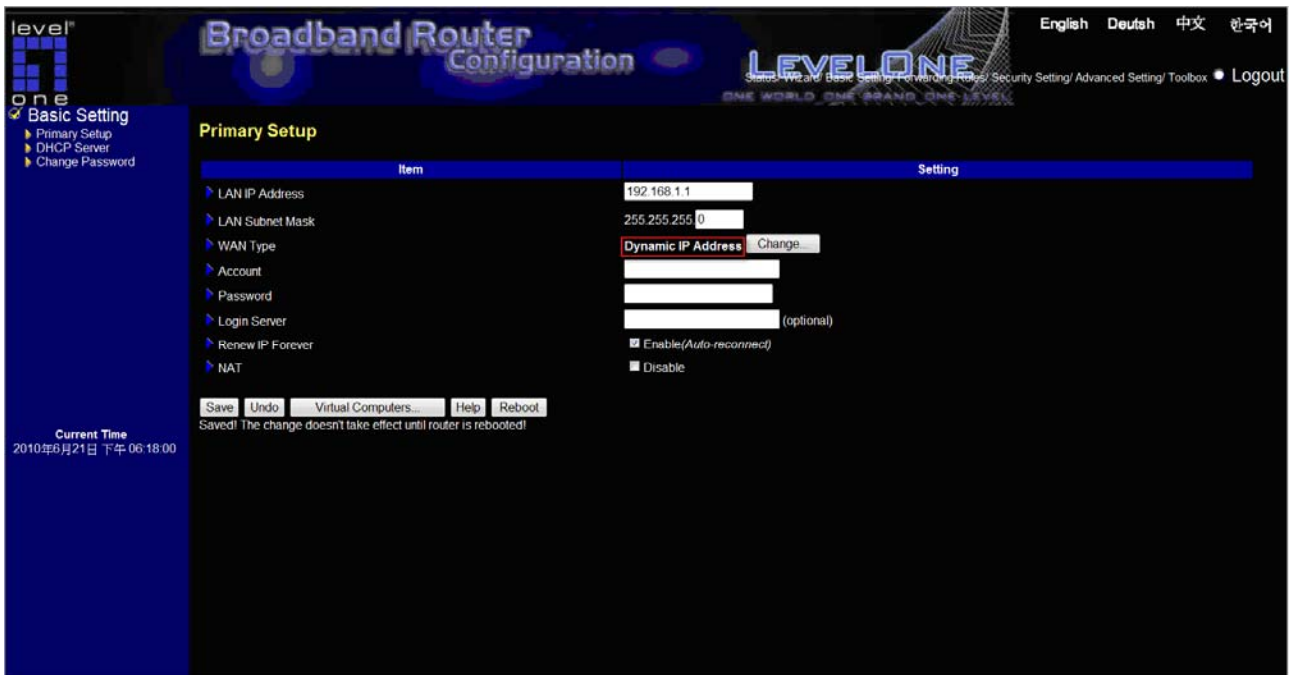
The screenshot shows the 'Primary Setup' configuration page for a LevelOne Broadband Router. The 'WAN Type' is set to 'Dynamic IP Address'. The following table represents the configuration data visible in the interface:

Item	Setting
LAN IP Address	192.168.1.1
LAN Subnet Mask	255.255.255.0
WAN Type	Dynamic IP Address <input type="button" value="Change..."/>
Host Name	WBR-1418TX (optional)
WAN's MAC Address	00-50-18-21-D3-D8 <input type="button" value="Clone MAC"/>
Renew IP Forever	<input checked="" type="checkbox"/> Enable(Auto-reconnect)
NAT	<input type="checkbox"/> Disable

Buttons at the bottom: Save, Undo, Virtual Computers..., Help. A 'Current Time' field shows 2010年6月21日 下午 06:16:41.

1. Host Name: optional. Required by some ISPs, for example, @Home.
2. Renew IP Forever: this feature enables this product to renew your IP address automatically when the lease time is expiring-- even when the system is idle.

### C. Dynamic IP Address with Road Runner Session Management.(e.g. Telstra BigPond)



1. LAN IP Address is the IP address of this product. It must be the default gateway of your computers.
2. WAN Type is Dynamic IP Address. If the WAN type is not correct, change it!
3. Host Name: optional. Required by some ISPs, e.g. @Home.
4. Renew IP Forever: this feature enable this product renews IP address automatically when the lease time is being expired even the system is in idle state.

## D. PPP over Ethernet

The screenshot shows the LevelOne Broadband Router Configuration interface. The main title is "Broadband Router Configuration" with the LevelOne logo and tagline "ONE WORLD ONE BRAND ONE STYLE". The navigation menu includes "Basic Setting", "Primary Setup", "DHCP Server", and "Change Password". The "Primary Setup" section is active, displaying a table of configuration items:

Item	Setting
LAN IP Address	192.168.1.1
LAN Subnet Mask	255.255.255.0
WAN Type	PPP over Ethernet <input type="button" value="Change"/>
PPPoE Account	
PPPoE Password	
Primary DNS	0.0.0.0
Secondary DNS	0.0.0.0
Maximum Idle Time	600 seconds <input checked="" type="checkbox"/> Auto-reconnect
Authentication method	Auto
NAT	<input type="checkbox"/> Disable

At the bottom of the configuration area, there are buttons for "Save", "Undo", "More>>", "Help", and "Reboot". A message below the buttons reads: "Saved! The change doesn't take effect until router is rebooted!". The current time is displayed as "2010年06月21日 下午 06:20:23".

1. PPPoE Account and Password: the account and password your ISP assigned to you. For security, this field appears blank. If you don't want to change the password, leave it empty.
2. PPPoE Service Name: optional. Input the service name if your ISP requires it. Otherwise, leave it blank.
3. Maximum Idle Time: the amount of time of inactivity before disconnecting your PPPoE session. Set it to zero or enable Auto-reconnect to disable this feature.
4. **Maximum Transmission Unit (MTU)**: Most ISP offers MTU value to users. The most common MTU value is 1492.

## E. PPTP

The screenshot shows the 'Primary Setup' configuration page for a LevelOne Broadband Router. The page is titled 'Broadband Router Configuration' and features the LevelOne logo. The navigation menu on the left includes 'Basic Setting', 'Primary Setup', 'DHCP Server', and 'Change Password'. The 'Primary Setup' section is active, displaying a table of configuration items and their current settings.

Item	Setting
LAN IP Address	192.168.1.1
LAN Subnet Mask	255.255.255.0
WAN Type	PPTP <input type="button" value="Change..."/>
IP Mode	Static IP Address
My IP Address	0.0.0.0
My Subnet Mask	255.255.255.0
My Gateway IP	0.0.0.0
Server IP Address	<input type="text"/>
PPTP Account	<input type="text"/>
PPTP Password	<input type="text"/>
Connection ID	<input type="text"/> (optional)
Maximum Idle Time	600 seconds <input checked="" type="checkbox"/> Auto-reconnect
NAT	<input type="checkbox"/> Disable

Buttons: Save, Undo, Help, Reboot

Message: Saved! The change doesn't take effect until router is rebooted!

Current Time: 2010年06月21日 下午 06:21:15

1. My IP Address and My Subnet Mask: the private IP address and subnet mask your ISP assigned to you.
2. Server IP Address: the IP address of the PPTP server.
3. PPTP Account and Password: the account and password your ISP assigned to you. If you don't want to change the password, keep it empty.
3. Connection ID: optional. Input the connection ID if your ISP requires it.
4. Maximum Idle Time: the time of no activity to disconnect your PPTP session. Set it to zero or enable Auto-reconnect to disable this feature. If Auto-reconnect is enabled, this product will automatically connect to ISP after system is restarted or connection is dropped.

## F. L2TP

The screenshot shows the 'Primary Setup' configuration page for a LevelOne Broadband Router. The page is titled 'Broadband Router Configuration' and features the LevelOne logo. The navigation menu on the left includes 'Basic Setting', 'Primary Setup', 'DHCP Server', and 'Change Password'. The 'Primary Setup' section is active, displaying a table of configuration items and their current settings.

Item	Setting
LAN IP Address	192.168.1.1
LAN Subnet Mask	255.255.255.0
WAN Type	L2TP <input type="button" value="Change"/>
IP Mode	Dynamic IP Address
IP Address	0.0.0.0
Subnet Mask	0.0.0.0
Gateway	0.0.0.0
Server IP Address	
L2TP Account	
L2TP Password	
Maximum Idle Time	600 seconds <input checked="" type="checkbox"/> Auto-reconnect
NAT	<input type="checkbox"/> Disable

Buttons: Save, Undo, Help, Reboot  
Saved! The change doesn't take effect until router is rebooted!

Current Time: 2010年6月21日 下午 06:23:29

1. IP Mode: The IP Mode assigned by your ISP. You can select either Static IP Address or Dynamic IP address.
2. My IP Address and My Subnet Mask: the private IP address and subnet mask your ISP assigned to you when your IP Mode is Static IP Address.
3. Server IP Address: the IP address of the L2TP server.
4. L2TP Account and Password: the account and password your ISP assigned to you. If you don't want to change the password, keep it empty.

Maximum Idle Time: the time of no activity to disconnect your L2TP session. Set it to zero or enable Auto-reconnect to disable this feature. If Auto-reconnect is enabled, this product will automatically connect to ISP after system is restarted or connection is dropped.



# Virtual Computers



Click "Primary" → "Virtual Computer"



Virtual Computer enables you to use the original NAT feature, and allows you to setup the one-to-one mapping of multiple global IP address and local IP address.

- Global IP: Enter the global IP address assigned by your ISP.
- Local IP: Enter the local IP address of your LAN PC corresponding to the global IP address.
- Enable: Check this item to enable the Virtual Computer feature.

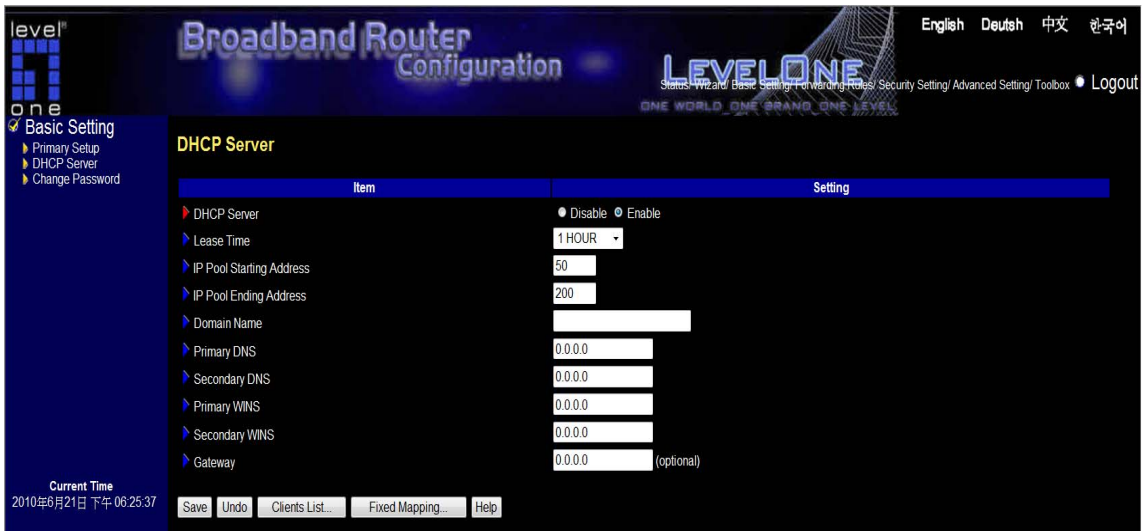
This feature is only available in WAN type of Static IP Address, Dynamic IP Address and Dynamic IP Address with Road Runner Session.



## 4.4.2 DHCP Server



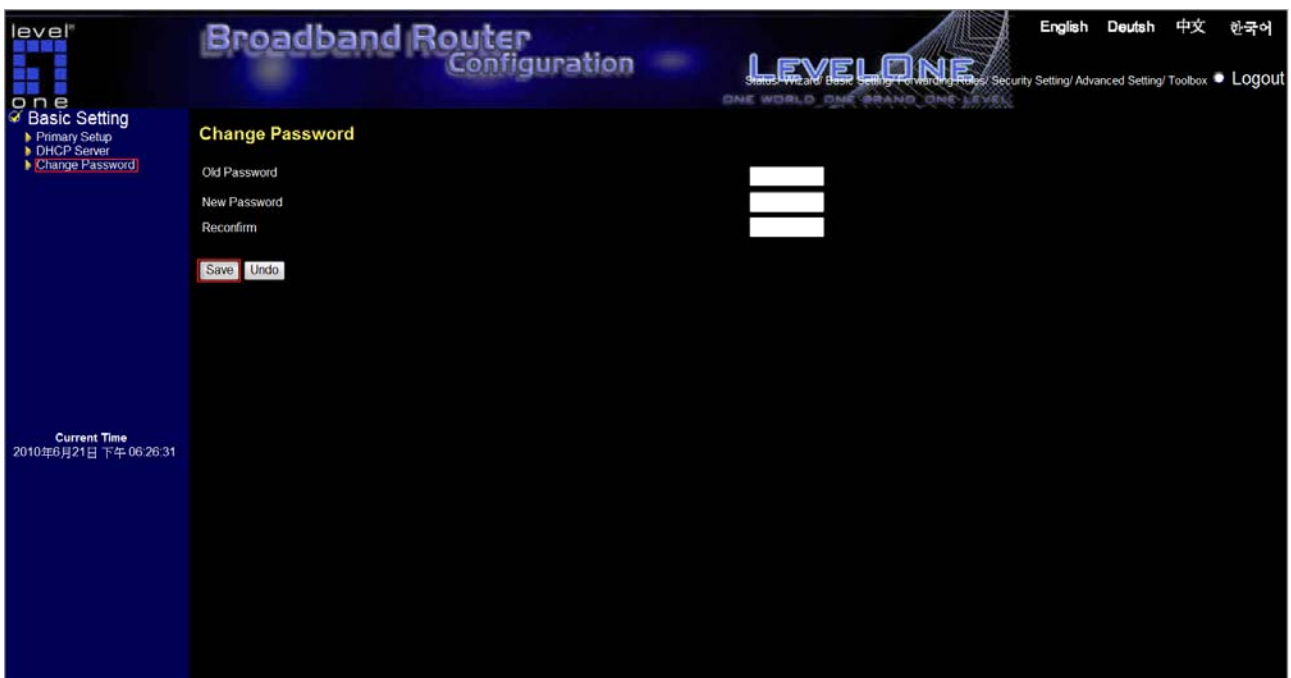
Press **“More>>”**



The settings of a TCP/IP environment include host IP, Subnet Mask, Gateway, and DNS configurations. It is not easy to manually configure all the computers and devices in your network. Fortunately, DHCP Server provides a rather simple approach to handle all these settings. This product supports the function of DHCP server. If you enable this product's DHCP server and configure your computers as "automatic IP allocation" mode, then when your computer is powered on, it will automatically load the proper TCP/IP settings from this product. The settings of DHCP server include the following items:

1. **DHCP Server:** Choose “Disable” or “Enable.”
2. **Lease Time:** this feature allows you to configure IP’s lease time (DHCP client).
3. **IP pool starting Address/ IP pool starting Address:** Whenever there is a request, the DHCP
4. Server will automatically allocate an unused IP address from the IP address pool to the requesting computer. You must specify the starting and ending address of the IP address pool.
5. **Domain Name:** Optional, this information will be passed to the client.
6. **Primary DNS/Secondary DNS:** This feature allows you to assign DNS Servers
7. **Primary WINS/Secondary WINS:** This feature allows you to assign WINS Servers
8. **Gateway:** The Gateway Address would be the IP address of an alternate Gateway.
9. This function enables you to assign another gateway to your PC, when DHCP server offers an IP to your PC.

### 4.4.3 Change Password



You can change Password here. We **strongly** recommend you to change the system password for security reason.

## 4.5 Forwarding Rules

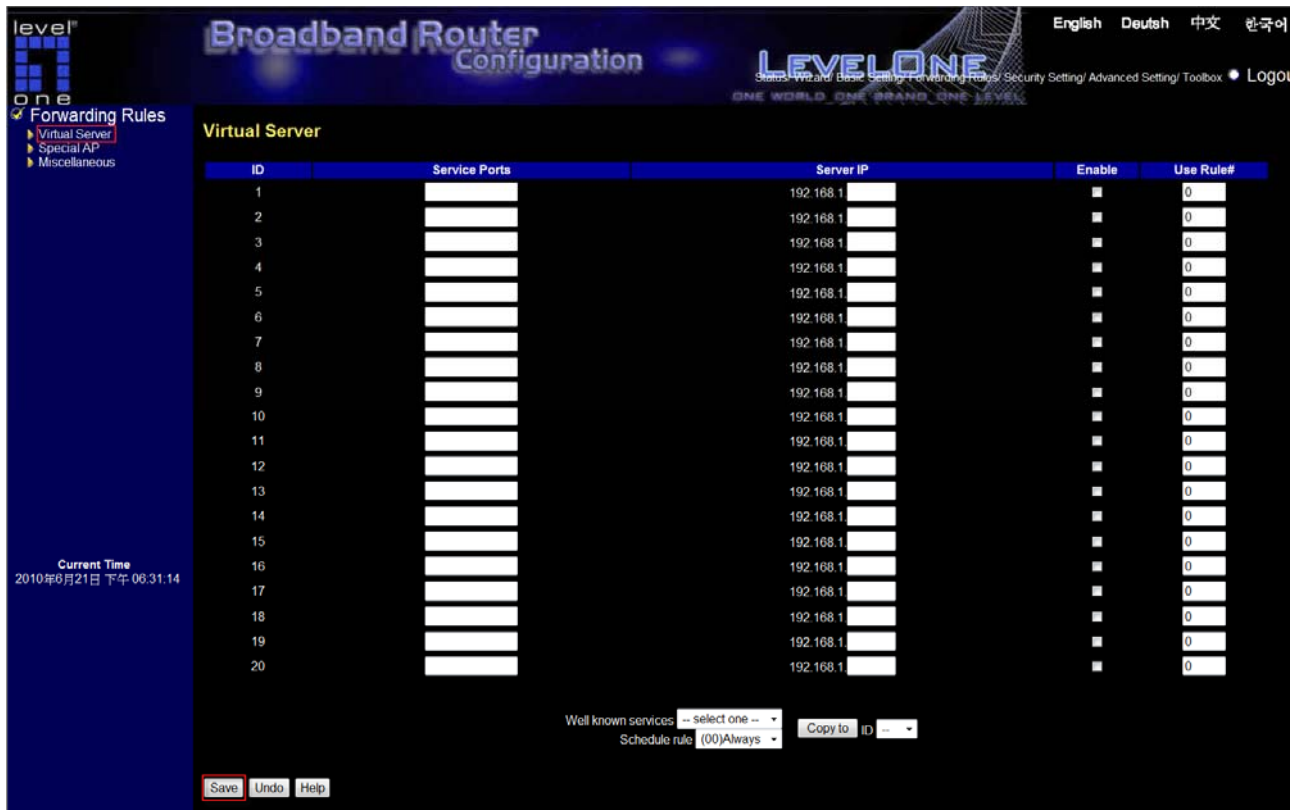
The screenshot shows the LevelOne Broadband Router Configuration interface. The top navigation bar includes the LevelOne logo, the title "Broadband Router Configuration", and language options: English, Deutsch, 中文, and 한국어. A secondary navigation bar contains links for Status, Wizard, Basic Setting, Forwarding Rules (highlighted), Security Setting, Advanced Setting, and Toolbox, along with a Logout button. The left sidebar menu lists "Forwarding Rules" with sub-items: Virtual Server, Special AP, and Miscellaneous. The main content area, titled "Forwarding Rules", lists three categories with their descriptions:

- Virtual Server**
  - Allows others to access WWW, FTP, and other services on your LAN.
- Special AP**
  - This configuration allows some applications to connect, and work with the NAT router.
- Miscellaneous**
  - IP Address of DMZ Host: Allows a computer to be exposed to unrestricted 2-way communication. Note that, this feature should be used only when needed.
  - Non-standard FTP port: You have to configure this item if you want to access an FTP server whose port number is not 21 (when Client uses active mode).

At the bottom left of the sidebar, the "Current Time" is displayed as 2010年6月21日 下午 06:29:56.

Main Page of **Forwarding Rules**

## 4.5.1 Virtual Server



This product's NAT firewall filters out unrecognized packets to protect your Intranet, so all hosts behind this product are invisible to the outside world. If you wish, you can make some of them accessible by enabling the Virtual Server Mapping.

A virtual server is defined as a **Service Port**, and all requests to this port will be redirected to the computer specified by the **Server IP**. **Virtual Server** can work with **Scheduling Rules**, and give user more flexibility on Access control. For Detail, please refer to **Scheduling Rule**.

For example, if you have an FTP server (port 21) at 192.168.1.2, a Web server (port 80) at 192.168.1.3, and a VPN server at 192.168.1.6, then you need to specify the following virtual server mapping table:

Service Port	Server IP	Enable
21	192.168.1.2	V
80	192.168.1.3	V
1723	192.168.1.6	V

## 4.5.2 Special AP



Some applications require multiple connections, like Internet games, Video conferencing, Internet telephony, etc. Because of the firewall function, these applications cannot work with a pure NAT router. The **Special Applications** feature allows some of these applications to work with this product. If the mechanism of Special Applications fails to make an application work, try setting your computer as the **DMZ** host instead.

1. **Trigger**: the outbound port number issued by the application.
2. **Incoming Ports**: when the trigger packet is detected, the inbound packets sent to the specified port numbers are allowed to pass through the firewall.

This product provides some predefined settings. Select your application and click **“Copy”** to add the predefined setting to your list.

Note! At any given time, only one PC can use each Special Application tunnel.

## 4.5.3 Miscellaneous Items



### IP Address of DMZ Host

DMZ (De-Militarized Zone) Host is a host without the protection of firewall. It allows a computer to be exposed to unrestricted 2-way communication for Internet games, Video conferencing, Internet telephony and other special applications.

NOTE: This feature should be used only when needed.

### Non-standard FTP port

You have to configure this item if you want to access an FTP server whose port number is not 21. This setting will be lost after rebooting.

### UPnP Setting

The device also supports this function. If the OS supports this function, Enable it.

## 4.6 Security Settings

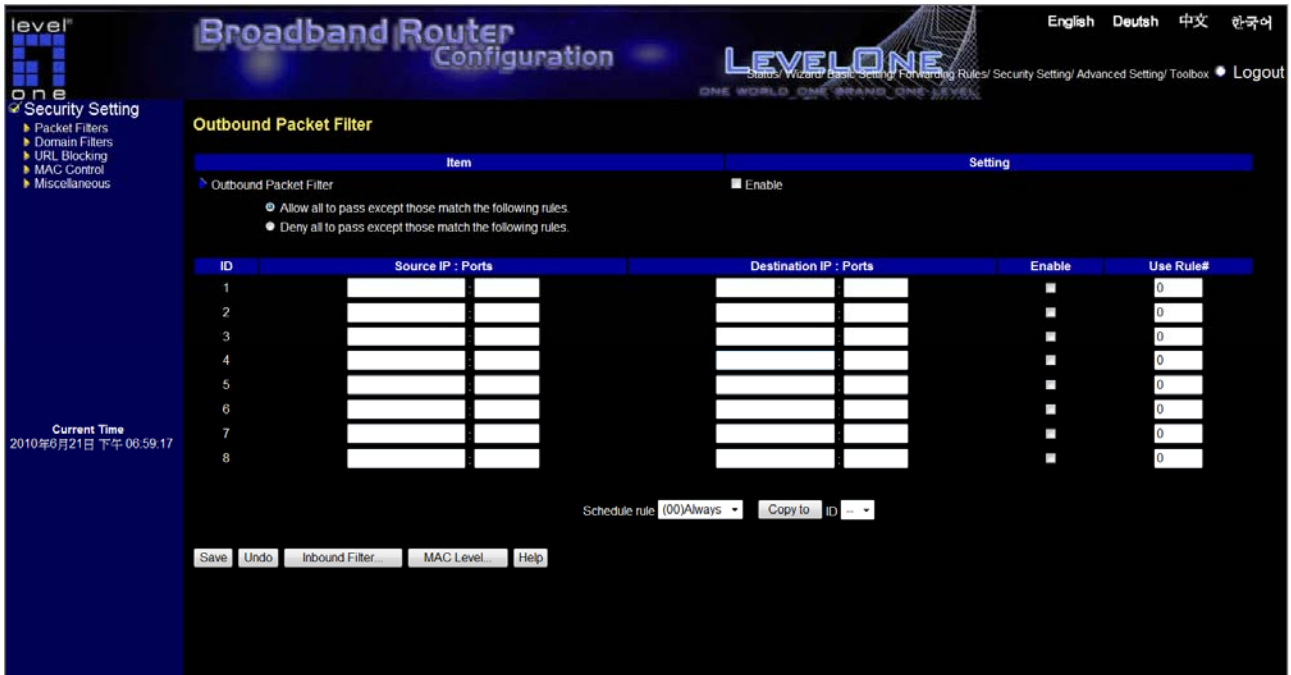
The screenshot shows the LevelOne Broadband Router Configuration interface. The top navigation bar includes the LevelOne logo, the title "Broadband Router Configuration", and language options: English, Deutsch, 中文, and 한국어. A breadcrumb trail shows the path: Home > Wizard > Host > Security > Forwarding Rules > Security Setting > Advanced Setting > Toolbox > Logout. The left sidebar contains a tree view with "Security Setting" selected, and sub-items: Packet Filters, Domain Filters, URL Blocking, MAC Control, and Miscellaneous. The main content area is titled "Security Setting" and lists several features with brief descriptions:

- Packet Filters**
  - Allows you to control access to a network by analyzing the incoming and outgoing packets and letting them pass or halting them based on the IP address of the source and destination.
- Domain Filters**
  - Let you prevent users under this device from accessing specific URLs.
- URL Blocking**
  - URL Blocking will block LAN computers to connect to pre-defined websites.
- MAC Control**
  - MAC Address Control allows you to assign different access right for different users and to assign a specific IP address to a certain MAC address.
- Miscellaneous**
  - Remote Administrator Host: In general, only Intranet user can browse the built-in web pages to perform administration task. This feature enables you to perform administration task from remote host.
  - Administrator Time-out: The amount of time of inactivity before the device will automatically close the Administrator session. Set this to zero to disable it.
  - Discard PING from WAN side: When this feature is enabled, hosts on the WAN cannot ping the Device.

At the bottom left of the sidebar, the "Current Time" is displayed as "2010年05月21日 下午 06:37:32".

Main page of **Security Settings**

## 4.6.1 Packet Filter



Packet Filter enables you to control what packets are allowed to pass the router. Outbound filter applies on all outbound packets. However, Inbound filter applies on packets that destined to Virtual Servers or DMZ host only. You can select one of the two filtering policies:

1. Allow all to pass except those match the specified rules
2. Deny all to pass except those match the specified rules

You can specify 8 rules for each direction: inbound or outbound. For each rule, you can define the following:

- Source IP address
- Source port address
- Destination IP address
- Destination port address
- Protocol: TCP or UDP or both.
- Use Rule#



For source or destination IP address, you can define a single IP address (4.3.2.1) or a range of IP addresses (4.3.2.1-4.3.2.254). An empty implies all IP addresses.

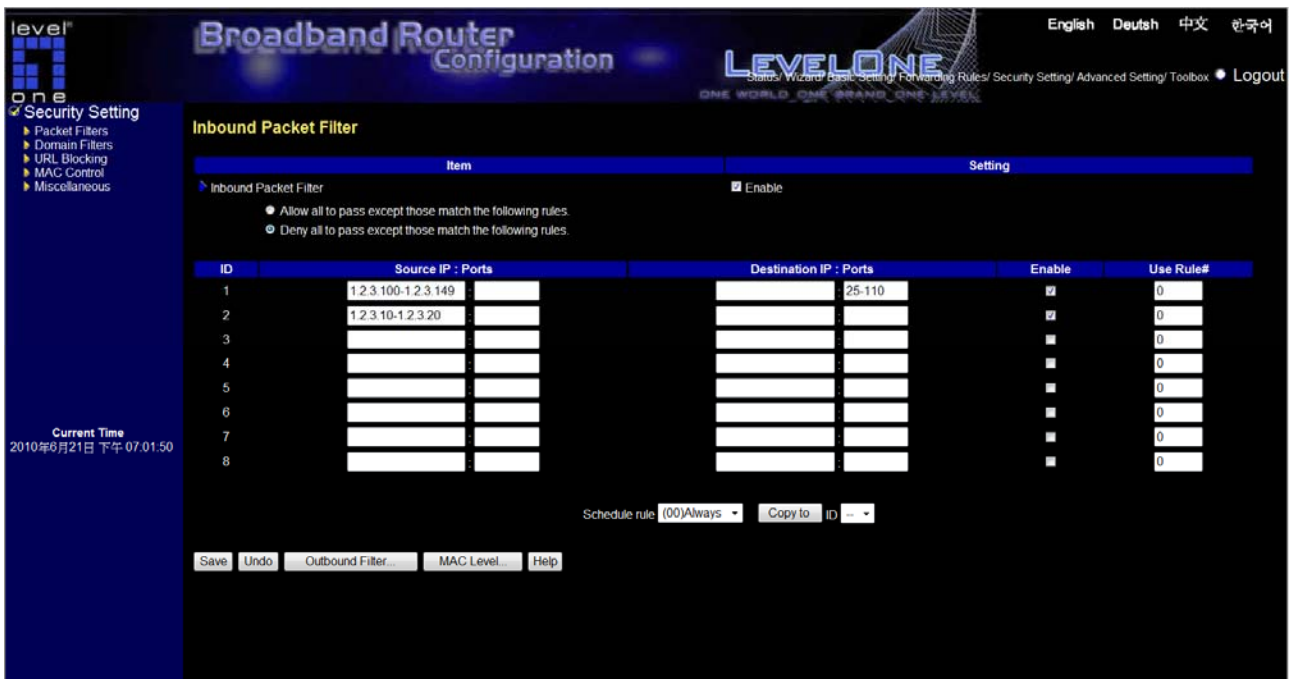
For source or destination port, you can define a single port (80) or a range of ports (1000-1999). Add prefix "T" or "U" to specify TCP or UDP protocol. For example, T80, U53, U2000-2999. No prefix indicates both TCP and UDP are defined. An empty implies all port addresses. **Packet Filter** can work with **Scheduling Rules**, and give user more flexibility on Access control. For Detail, please refer to **Scheduling Rule**.

Each rule can be enabled or disabled individually.

### Inbound Filter:

To enable Inbound Packet Filter click, please check the box next to Enable in the Inbound Packet Filter field. Suppose you have SMTP Server (25), POP Server (110), Web Server (80), FTP Server (21), and News Server (119) defined in Virtual Server or DMZ Host.

### Example 1:

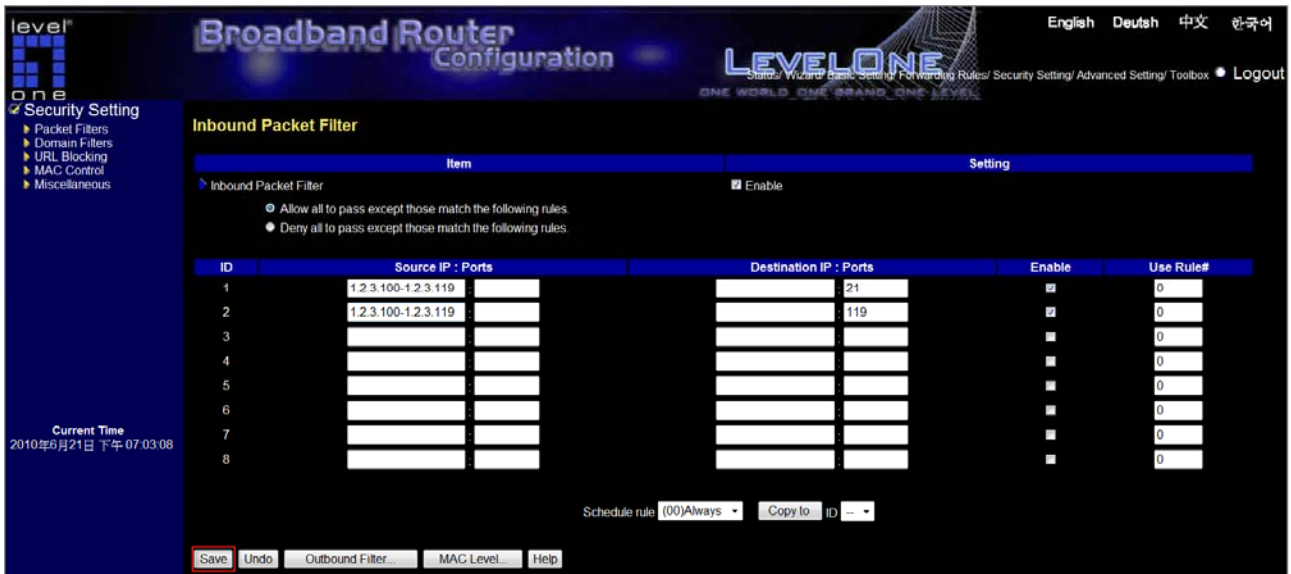


➤ (1.2.3.100-1.2.3.149): They are allow to send mail (port 25), receive mail (port 110), and browse the Internet (port 80)

➤ (1.2.3.10-1.2.3.20): They can do everything (block nothing)

Others are all blocked.

Example 2:



- (1.2.3.100-1.2.3.119) They can do everything except read net news (port 119) and transfer files via FTP (port 21)

Others are all allowed.

After **Inbound Packet Filter** setting is configured, click the **“Save”** button.

## Outbound Filter:

To enable **Outbound Packet Filter** click the check box next to **Enable** in the **Outbound Packet Filter** field.

### Example 1:

The screenshot shows the 'Outbound Packet Filter' configuration page. The 'Enable' checkbox is checked. Below the checkbox are two radio buttons: 'Allow all to pass except those match the following rules.' (selected) and 'Deny all to pass except those match the following rules.' Below this is a table with 8 rows of filter rules.

ID	Source IP : Ports	Destination IP : Ports	Enable	Use Rule#
1	12.3.100-12.3.149	25-110	<input checked="" type="checkbox"/>	0
2	12.3.10-12.3.20		<input checked="" type="checkbox"/>	0
3			<input type="checkbox"/>	0
4			<input type="checkbox"/>	0
5			<input type="checkbox"/>	0
6			<input type="checkbox"/>	0
7			<input type="checkbox"/>	0
8			<input type="checkbox"/>	0

At the bottom of the page, there are buttons for 'Save', 'Undo', 'Inbound Filter...', 'MAC Level...', and 'Help'. There is also a 'Schedule rule' dropdown set to '(00)Always' and a 'Copy to ID' dropdown.

➤ (12.3.100-12.3.149) They are allowed to send mail (port 25), receive mail (port 110), and browse Internet (port 80); port 53 (DNS) is necessary to resolve the domain name.

➤ (1.2.3.10-192.1.2.3.20) They can do everything (block nothing)

Others are all blocked.

Example 2:

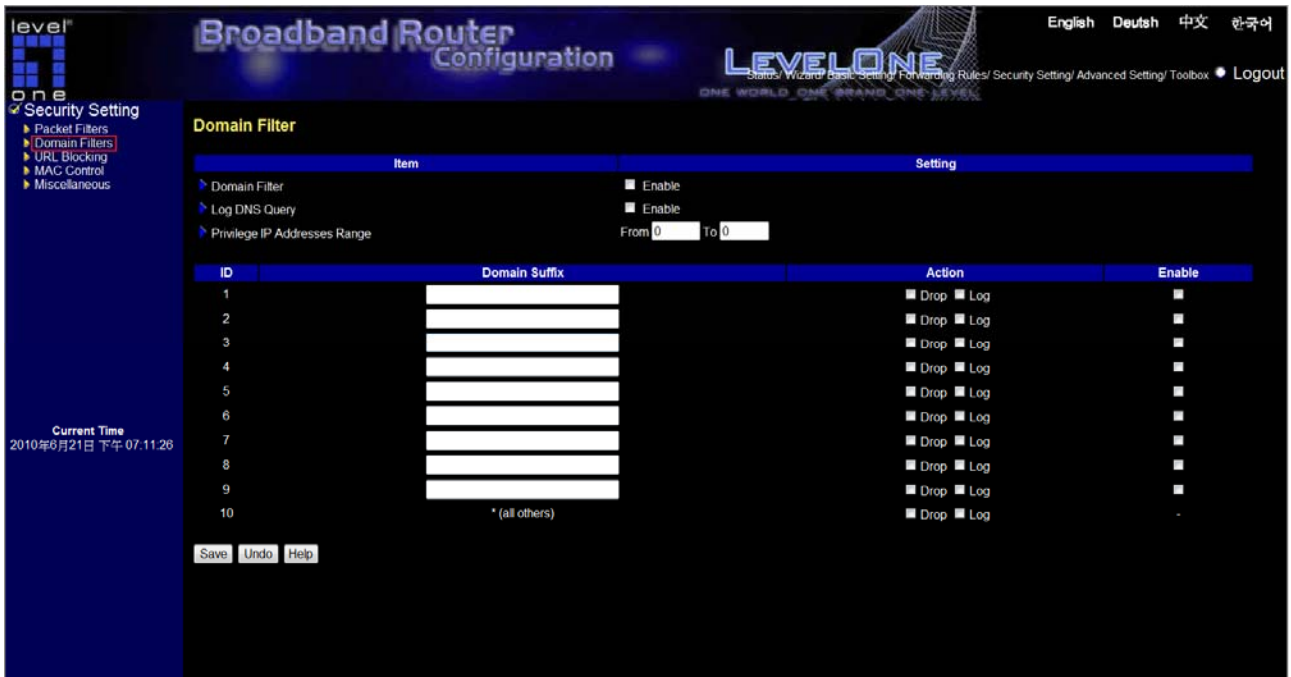


(192.168.123.100-192.168.123.119) They can do everything except read net news (port 119) and transfer files via FTP (port 21)

Others are allowed

After **Outbound Packet Filter** setting is configured, click the **“Save”** button.

## 4.6.2 Domain Filter



### Domain Filter

Allow you to prevent users under this device from accessing specific URLs.

### Domain Filter Enable

Check if you want to enable Domain Filter.

### Log DNS Query

Check if you want to log the action when someone accesses the specific URLs.

### Privilege IP Addresses Range

Setting a group of hosts and privilege these hosts to access network without restriction.

### Domain Suffix

A suffix of URL to be restricted. For example, ".com", "xxx.com".

### Action

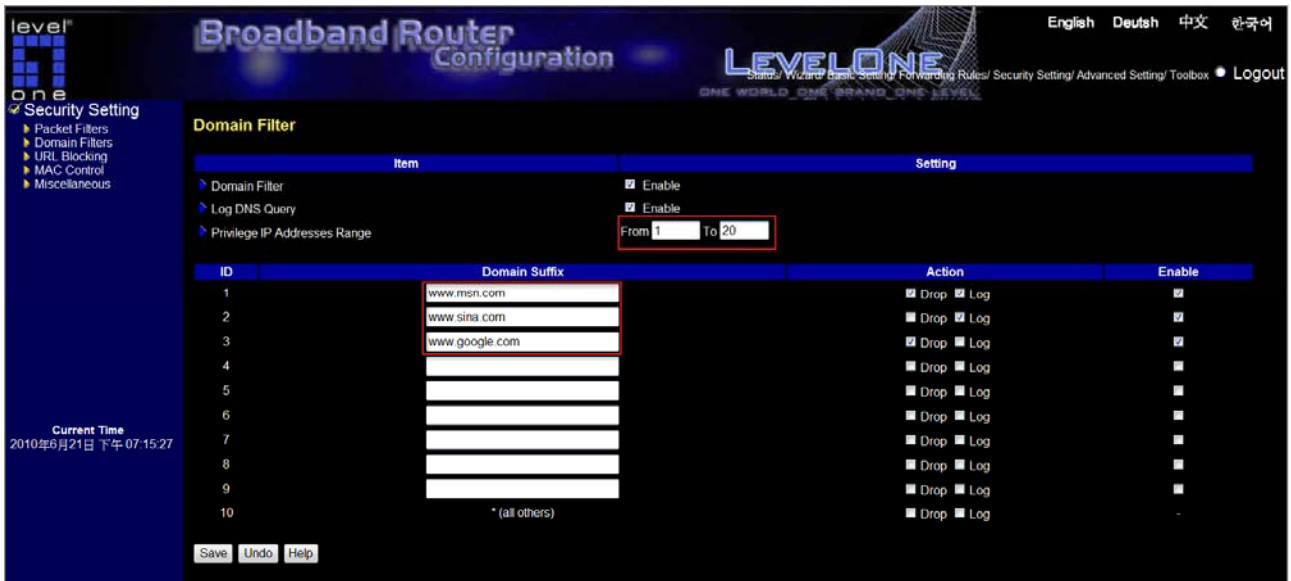
When someone is accessing the URL met the domain-suffix, what kind of action you want.

Check drop to block the access. Check log to log these accesses.

### Enable

Check to enable each rule.

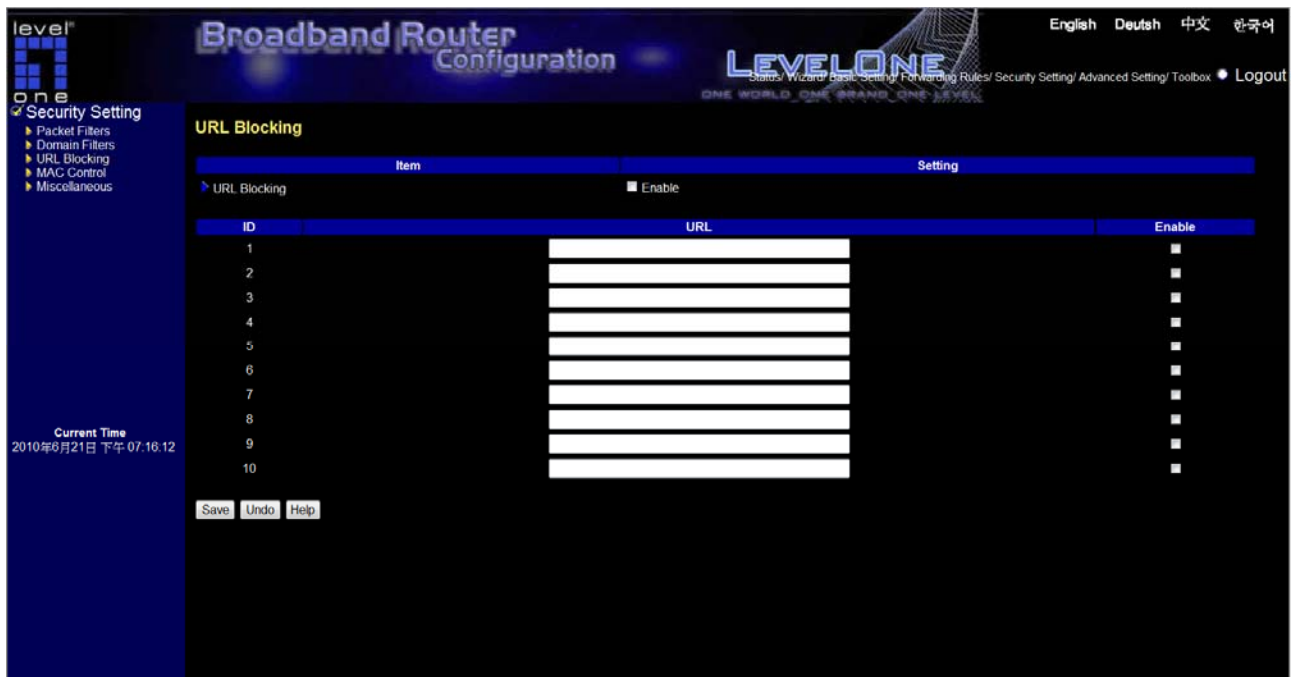
Example:



In this example:

1. Privilege IP address range: X.X.X.1~ X.X.X.20 can access network without restriction.
2. URL include "www.msn.com" will be blocked, and the action will be record in log-file.
3. URL include "www.sina.com" will not be blocked, but the action will be record in log-file.
4. URL include "www.google.com" will be blocked, but the action will not be record in log-file.

## 4.6.3 URL Blocking



**URL Blocking** will block LAN computers to connect to pre-defined Websites.

The major difference between "Domain filter" and "URL Blocking" is Domain filter require user to input suffix (like .com or .org, etc), while URL Blocking require user to input a keyword only. In other words, Domain filter can block specific website, while URL Blocking can block hundreds of websites by simply a **keyword**.

### URL Blocking Enable

Check if you want to enable URL Blocking.

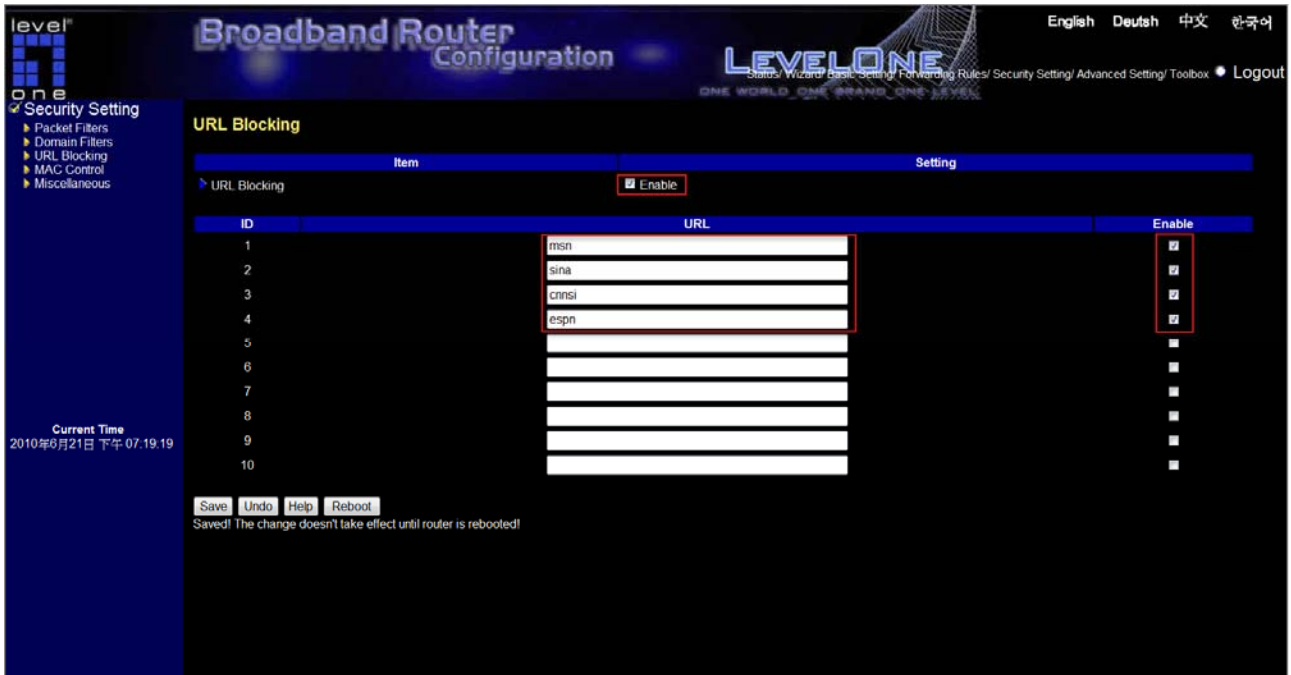
### URL

If any part of the Website's URL matches the pre-defined word, the connection will be blocked.

For example, you can use pre-defined word "**sex**" to block all websites if their URLs contain pre-defined word "**sex**".

## Enable

Checked to enable each rule.



In this example:

1. URL include "msn" will be blocked, and the action will be record in log-file.
2. URL include "sina" will be blocked, but the action will be record in log-file
3. URL include "cnnsi" will not be blocked, but the action will be record in log-file.
4. URL include "espn" will be blocked, but the action will be record in log-file



## 4.6.4 MAC Address Control

The screenshot shows the 'MAC Address Control' configuration page in the LevelOne Broadband Router Configuration interface. The page is titled 'MAC Address Control' and features a navigation menu on the left with 'MAC Control' selected. The main content area includes a table with columns for 'Item' and 'Setting'. The 'MAC Address Control' item is checked, and the 'Connection control' checkbox is also checked. Below this, there is a text field for 'Clients with C checked can connect to this device; and allow unspecified MAC addresses to connect.' A table with four columns (ID, MAC Address, IP Address, C) is present, with four rows of input fields. At the bottom, there is a 'DHCP clients' dropdown menu and a 'Copy to' button. The current time is displayed as 2010年6月23日 下午 02:31:12.

Item	Setting
MAC Address Control	<input checked="" type="checkbox"/> Enable
Connection control	<input checked="" type="checkbox"/> Clients with C checked can connect to this device; and allow unspecified MAC addresses to connect.

ID	MAC Address	IP Address	C
1	<input type="text"/>	192.168.1. <input type="text"/>	<input type="checkbox"/>
2	<input type="text"/>	192.168.1. <input type="text"/>	<input type="checkbox"/>
3	<input type="text"/>	192.168.1. <input type="text"/>	<input type="checkbox"/>
4	<input type="text"/>	192.168.1. <input type="text"/>	<input type="checkbox"/>

DHCP clients: -- select one -- Copy to ID --

MAC Address Control allows you to assign different access right for different users and to assign a specific IP address to a certain MAC address.

**MAC Address Control** Select "Enable" to enable the "MAC Address Control". All of the settings in this page will take effect only when "Enable" is checked.

**Connection control** Select "Connection control" to enable the controlling of which wired can connect to this device. If a client is denied to connect to this device, it means the client can't access to the Internet either. Choose "allow" or "deny" to allow or deny the clients, whose MAC addresses are not in the "Control table" (please see below), to connect to this device.

## Control table

ID	MAC Address	IP Address	C
1	<input type="text"/>	192.168.1 <input type="text"/>	<input type="checkbox"/>
2	<input type="text"/>	192.168.1 <input type="text"/>	<input type="checkbox"/>
3	<input type="text"/>	192.168.1 <input type="text"/>	<input type="checkbox"/>
4	<input type="text"/>	192.168.1 <input type="text"/>	<input type="checkbox"/>

DHCP clients   ID

<< Previous   Next >>   Save   Undo   Help

"Control table" is the table at the bottom of the "MAC Address Control" page. Each row of this table indicates the MAC address and the expected IP address mapping of a client. There are four columns in this table:

<b>MAC Address</b>	MAC address indicates a specific client.
<b>IP Address</b>	Expected IP address of the corresponding client. Keep it empty if you don't care its IP address.
<b>C</b>	When " <b>Connection control</b> " is checked, check " <b>C</b> " will allow the corresponding client to connect to this device.

In this page, we provide the following Combobox and button to help you to input the MAC address.

DHCP clients   ID

You can select a specific client in the "DHCP clients" Combobox, and then click on the "Copy" button to copy the MAC address of the client you select to the ID selected in the "ID" Combobox.

**Previous page and Next Page** To make this setup page simple and clear, we have divided the "Control table" into several pages. You can use these buttons to navigate to different pages.

## 4.6.5 Miscellaneous Items



### Remote Administrator Host/Port

In general, only Intranet user can browse the built-in web pages to perform administration task. This feature enables you to perform administration task from remote host. If this feature is enabled, only the specified IP address can perform remote administration. If the specified IP address is 0.0.0.0, any host can connect to this product to perform administration task. You can use subnet mask bits "/nn" notation to specified a group of trusted IP addresses. For example "10.1.2.0/24".

**NOTE:** When Remote Administration is enabled, the web server port will be shifted to 8080. You can change web server port to other port, too.

### Administrator Time-out

The lasting time of logout automatically if there is no activity. Set it to zero to disable this feature.

### Discard PING from WAN side

When this feature is enabled, any host on the WAN cannot ping this product.

### SPI Mode

When this feature is enabled, the router will record the packet information pass through the router like IP address, port address, ACK, SEQ number and so on. And the router will check every incoming packet to detect if this packet is valid.

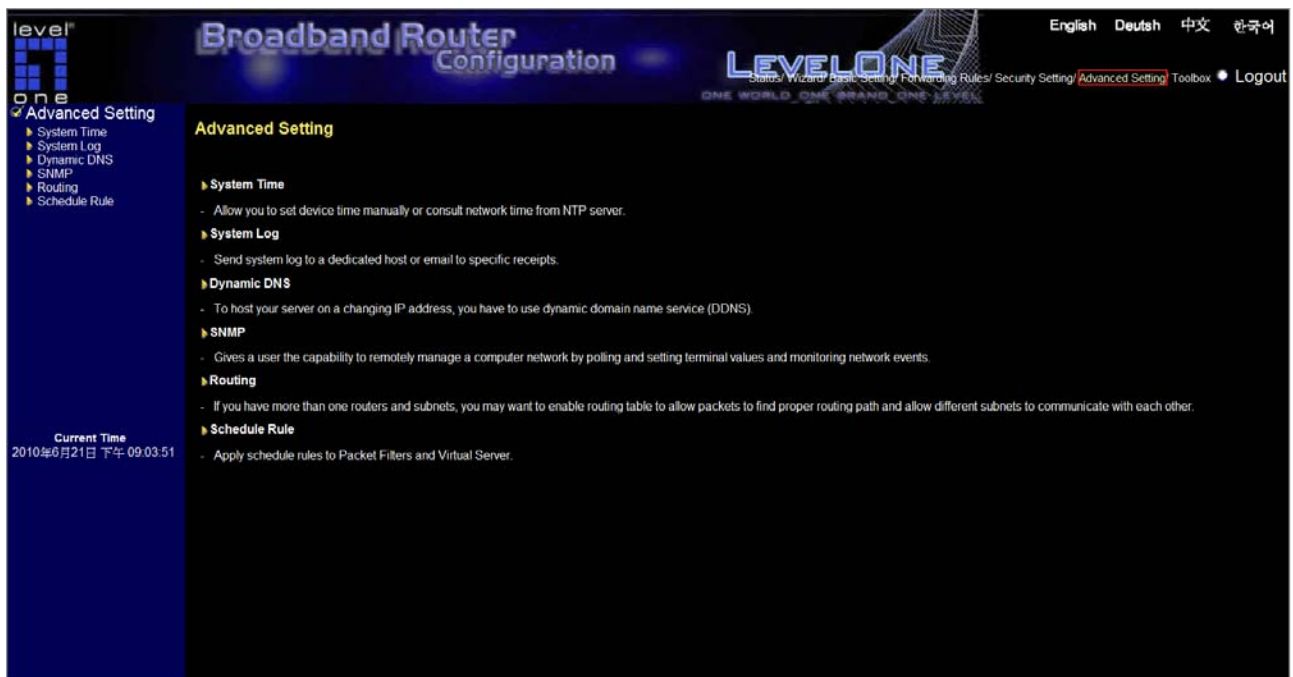
### DoS Attack Detection

When this feature is enabled, the router will detect and log the DoS attack comes from the Internet. Currently, the router can detect the following DoS attack: SYN Attack, WinNuke, Port Scan, Ping of Death, Land Attack etc.

### VPN PPTP/IPSec Pass-Through

Please enable this feature, if you need to establish a PPTP or IPSEC connection that will pass through this device.

## 4.7 Advanced Settings



Main Page of Advanced Settings

## 4.7.1 System Time

level  
Broadband Router Configuration  
LEVELONE  
English Deutsch 中文 한국어  
Status Wizard Basic Setting Forwarding Rules Security Setting Advanced Setting Toolbox Logout

Advanced Setting  
System Time  
System Log  
Dynamic DNS  
SNMP  
Routing  
Schedule Rule

System Time

Item	Setting
<input checked="" type="radio"/> Get Date and Time by NTP Protocol	Sync Now 1
Time Server	time.nist.gov
Time Zone	(GMT-08:00)Pacific Time (US & Canada), Tijuana
<input type="radio"/> Set Date and Time using PC's Date and Time	
PC Date and Time:	2010年6月22日 下午 01:12:46
<input type="radio"/> Set Date and Time manually	
Date	Year: 2005, Month: Jan, Day: 1
Time	Hour: 0 (0-23), Minute: 0 (0-59), Second: 0 (0-59)
Daylight Saving	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Start	Month: Jan, Day: 1, Hour: 0
End	Month: Jan, Day: 1, Hour: 0

Current Time  
2010年6月21日 下午 09:12:01

Save Undo Help

### Get Date and Time by NTP Protocol

Select if you want to Get Date and Time by NTP Protocol.

**Sync Now:** Synchronize system time with network time server

**Time Server:** Select a NTP time server to consult UTC time

**Time Zone:** Select a time zone where this device locates.

**Set Date and Time using PC's Date and Time:** Synchronize system time with your PC.

**Set Date and Time manually:** Select if you want to Set Date and Time manually.

## 4.7.2 System Log



This page support two methods to export system logs to specific destination by means of syslog(UDP) and SMTP(TCP). The items you have to setup including:

### IP Address for Syslog

Host IP of destination where syslogs will be sent to.

Check **Enable** to enable this function.

### E-mail Alert Enable

Check if you want to enable Email alert(send syslog via email).

### SMTP Server IP and Port

Input the SMTP server IP and port, which are concated with '!'. If you do not specify port number, the default value is 25.

For example, "mail.your\_url.com" or "192.168.1.100:26".

### Send E-mail alert to

The recipients who will receive these logs. You can assign more than 1 recipient, using ';' or ',' to separate these email addresses.

## 4.7.3 Dynamic DNS



To host your server on a changing IP address, you have to use dynamic domain name service (DDNS).

So that anyone wishing to reach your host only needs to know the name of it. Dynamic DNS will map the name of your host to your current IP address, which changes each time you connect your Internet service provider.

Before you enable **Dynamic DNS**, you need to register an account on one of these Dynamic DNS servers that we list in **provider** field.

To enable **Dynamic DNS** click the check box next to **Enable** in the **DDNS** field.

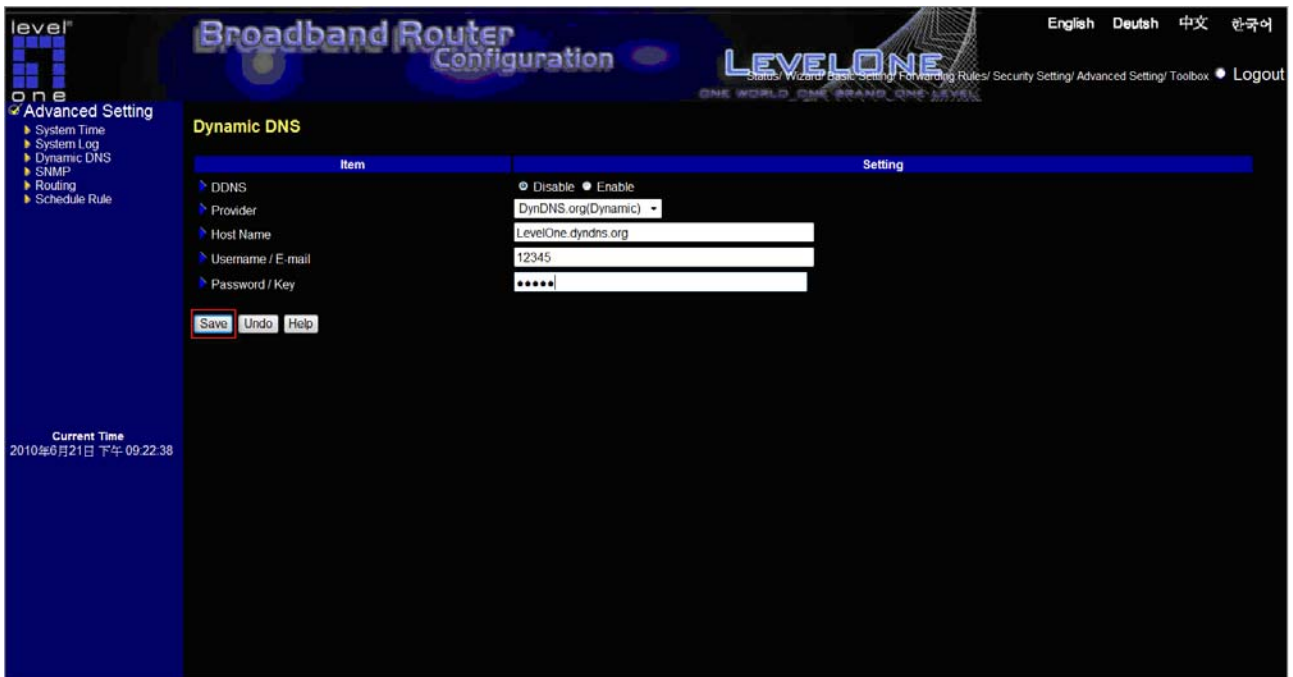
Next you can enter the appropriate information about your Dynamic DNS Server.

You have to define:

- **Provider**
- **Host Name**
- **Username/E-mail**
- **Password/Key**

You will get this information when you register an account on a Dynamic DNS server.

Example:



After Dynamic DNS setting is configured, click the **“save”** button.



## 4.7.4 SNMP Setting



In brief, SNMP, the Simple Network Management Protocol, is a protocol designed to give a user the capability to remotely manage a computer network by polling and setting terminal values and monitoring network events.

### Enable SNMP

You must check either Local or Remote or both to enable SNMP function. If Local is checked, this device will response request from LAN. If Remote is checked, this device will response request from WAN.

### Get Community

Setting the community of GetRequest your device will response.

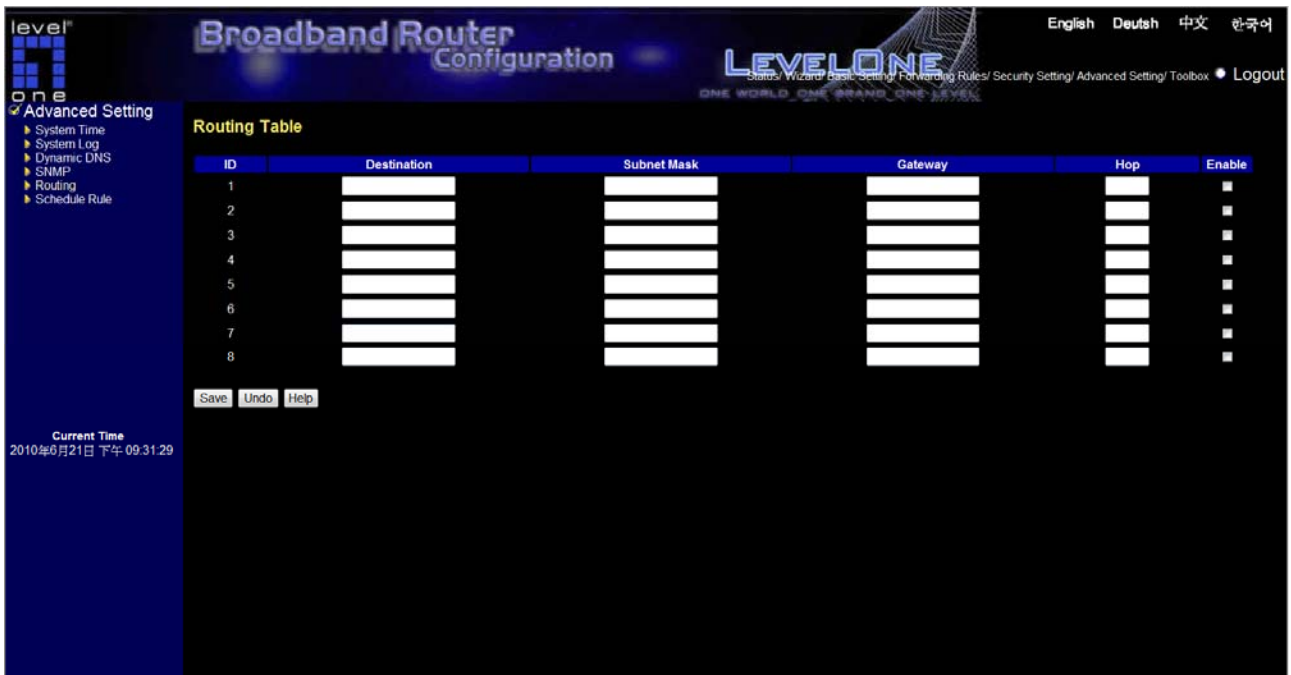
### Set Community

Setting the community of SetRequest your device will accept.

### WAN Access IP Address

If the user wants to limit to specific the IP address, please input in the item. The default 0.0.0.0 and means every IP of Internet can get some information of device with SNMP protocol.

## 4.7.5 Routing Table

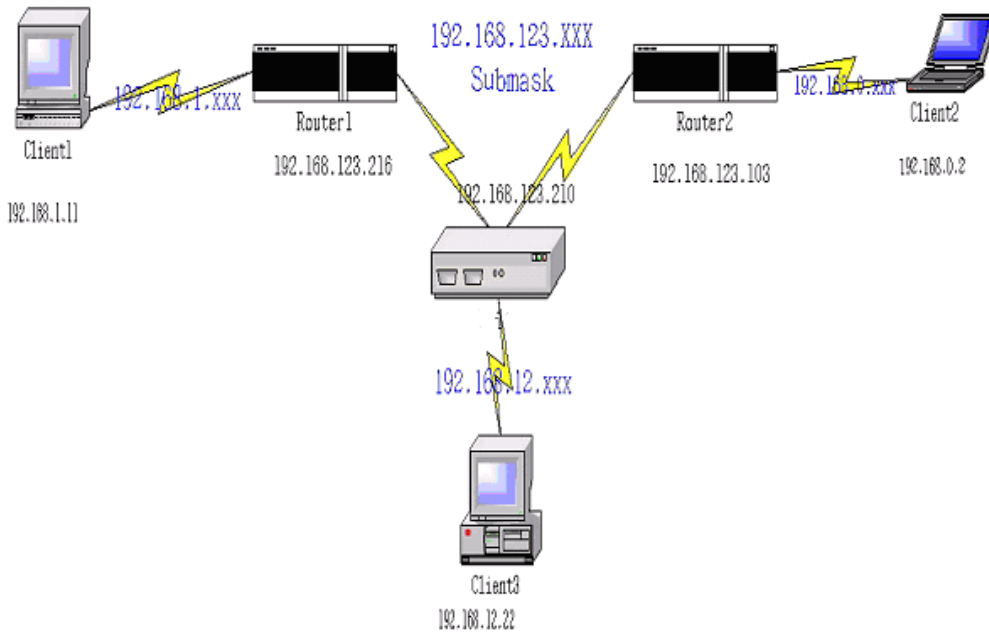


**Routing Tables** allow you to determine which physical interface address to use for outgoing IP data grams. If you have more than one routers and subnets, you will need to enable routing table to allow packets to find proper routing path and allow different subnets to communicate with each other.

Routing Table settings are settings used to setup the functions of static.

**Static Routing:** For static routing, you can specify up to 8 routing rules. You can enter the destination IP address, subnet mask, gateway, hop for each routing rule, and then enable or disable the rule by checking or un-checking the Enable checkbox.

**Example:**



Configuration on NAT Router

Destination	SubnetMask	Gateway	Hop	Enabled
192.168.1.0	255.255.255.0	192.168.123.216	1	✓
192.168.0.0	255.255.255.0	192.168.123.103	1	✓

So if, for example, the client3 wanted to send an IP data gram to 192.168.0.2, it would use the above table to determine that it had to go via 192.168.123.103 (a gateway),

And if it sends Packets to 192.168.1.11 will go via 192.168.123.216

Each rule can be enabled or disabled individually.

After **routing table** setting is configured, click the **“save”** button.

## 4.7.6 Schedule Rule



You can set the schedule time to decide which service will be turned on or off. Select the “enable” item.

Press **“Add New Rule”**

You can write a rule name and set which day and what time to schedule from “Start Time” to “End Time”. The following example configure “ftp time” as everyday 14:10 to 16:20



Click **“Save”** button

After configure Rule 1→



### Schedule Enable

Selected if you want to Enable the Scheduler.

### Edit

To edit the schedule rule.

### Delete

To delete the schedule rule, and the rule# of the rules behind the deleted one will decrease one automatically.

Schedule Rule can be apply to Virtual server and Packet Filter, for example:

Example 1: Forwarding Rules → **Virtual Server** – Apply Rule#1 (ftp time: everyday 14:10 to 16:20)

**Virtual Server**

ID	Service Ports	Server IP	Enable	Use Rule#
1	21	192.168.1.33	<input checked="" type="checkbox"/>	1
2		192.168.1.	<input type="checkbox"/>	0
3		192.168.1.	<input type="checkbox"/>	0
4		192.168.1.	<input type="checkbox"/>	0
5		192.168.1.	<input type="checkbox"/>	0
6		192.168.1.	<input type="checkbox"/>	0
7		192.168.1.	<input type="checkbox"/>	0
8		192.168.1.	<input type="checkbox"/>	0
9		192.168.1.	<input type="checkbox"/>	0
10		192.168.1.	<input type="checkbox"/>	0

Example 2: Security Setting → **Outbound Packet Filter** – Apply Rule#1 (ftp time: everyday 14:10 to 16:20).

**Outbound Packet Filter**

Item	Setting
<input checked="" type="checkbox"/> Outbound Packet Filter <ul style="list-style-type: none"> <li><input checked="" type="radio"/> Allow all to pass except those match the following rules.</li> <li><input type="radio"/> Deny all to pass except those match the following rules.</li> </ul>	<input checked="" type="checkbox"/> Enable

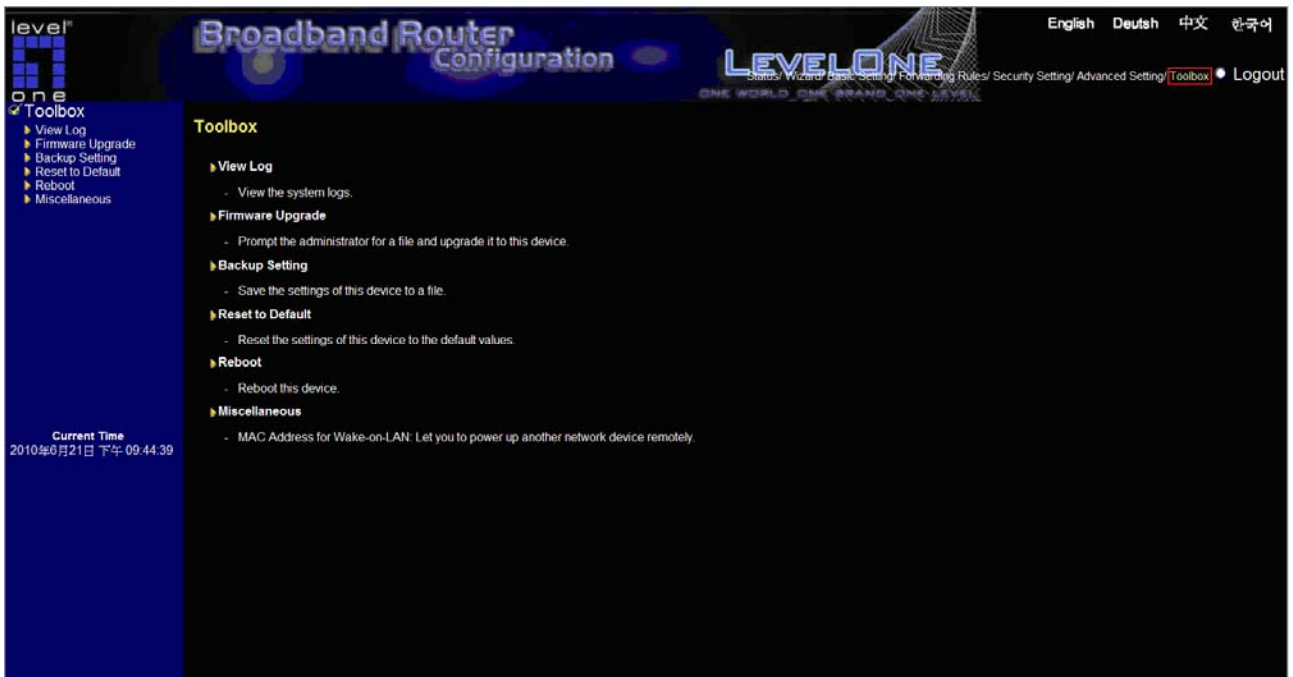
  

ID	Source IP : Ports	Destination IP : Ports	Enable	Use Rule#
1			<input checked="" type="checkbox"/>	1
2			<input type="checkbox"/>	0
3			<input type="checkbox"/>	0
4			<input type="checkbox"/>	0
5			<input type="checkbox"/>	0
6			<input type="checkbox"/>	0
7			<input type="checkbox"/>	0
8			<input type="checkbox"/>	0

Schedule rule: (00)Always    Copy to: ID --

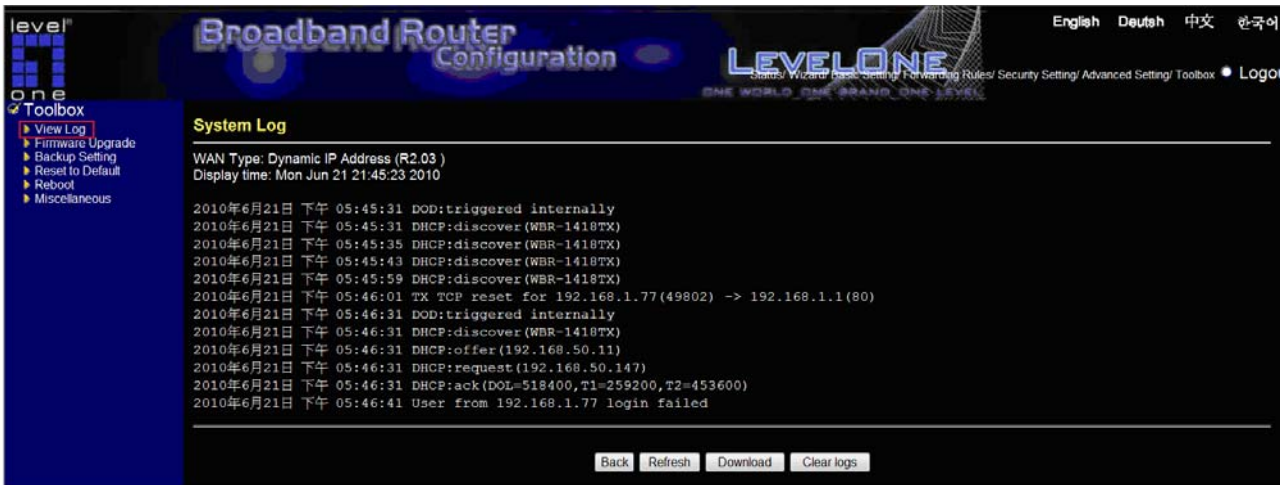
Save    Undo    Inbound Filter...    MAC Level...    Help

## 4.8 Toolbox



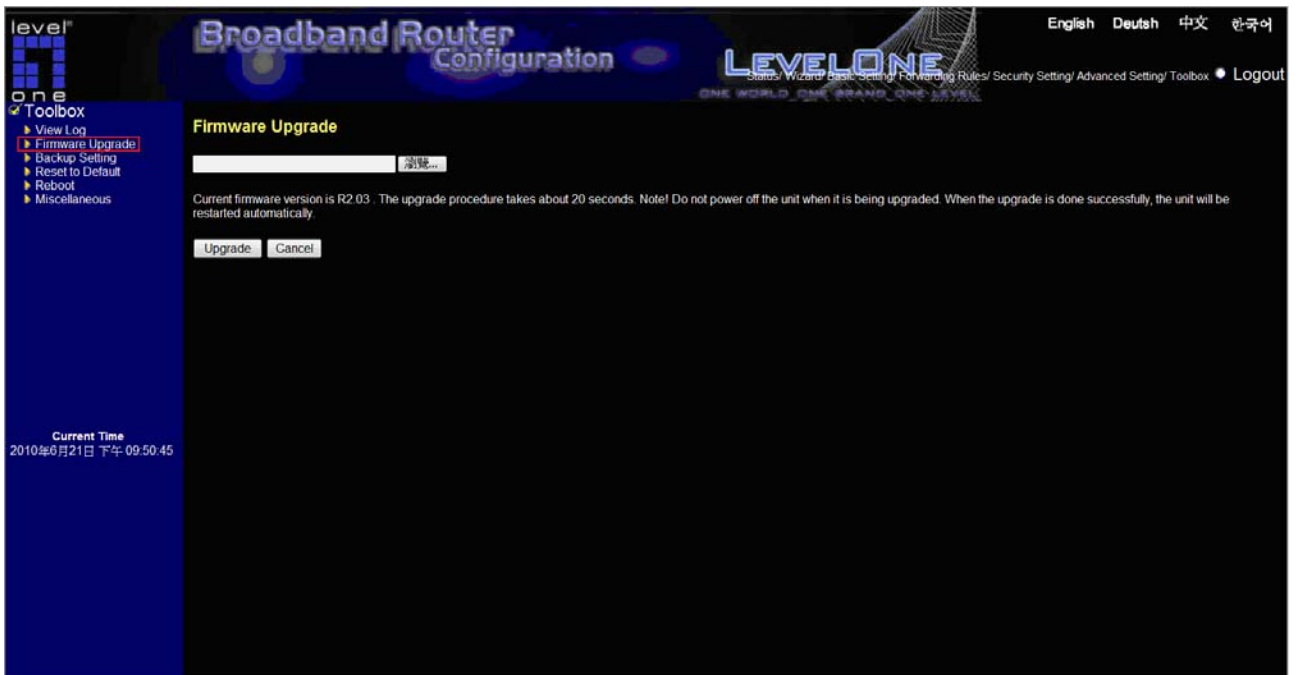
Main Page of Toolbox

## 4.8.1 System Log



You can View system log by clicking the **View Log** button

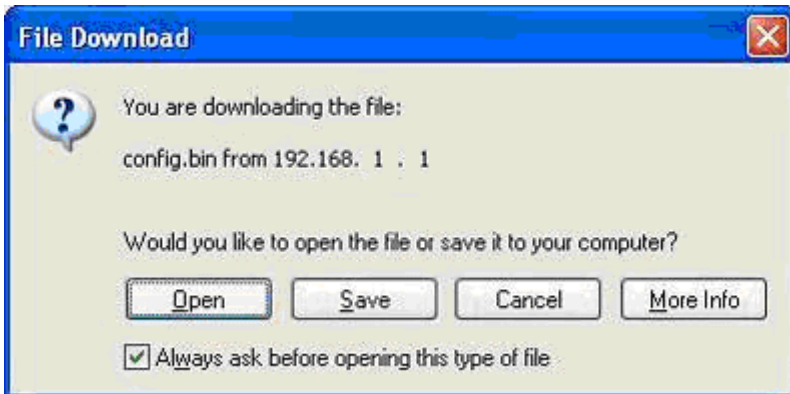
## 4.8.2 Firmware Upgrade



You can upgrade firmware by clicking **Firmware Upgrade** button.



### 4.8.3 Backup Setting



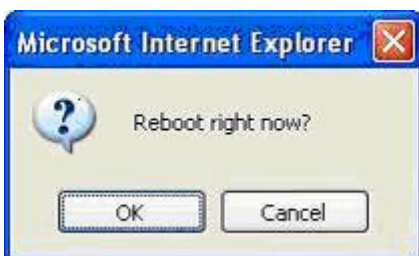
You can backup your settings by clicking the **Backup Setting** button and save it as a bin file. Once you want to restore these settings, please click **Firmware Upgrade** button and use the bin file you saved.

### 4.8.4 Reset to default



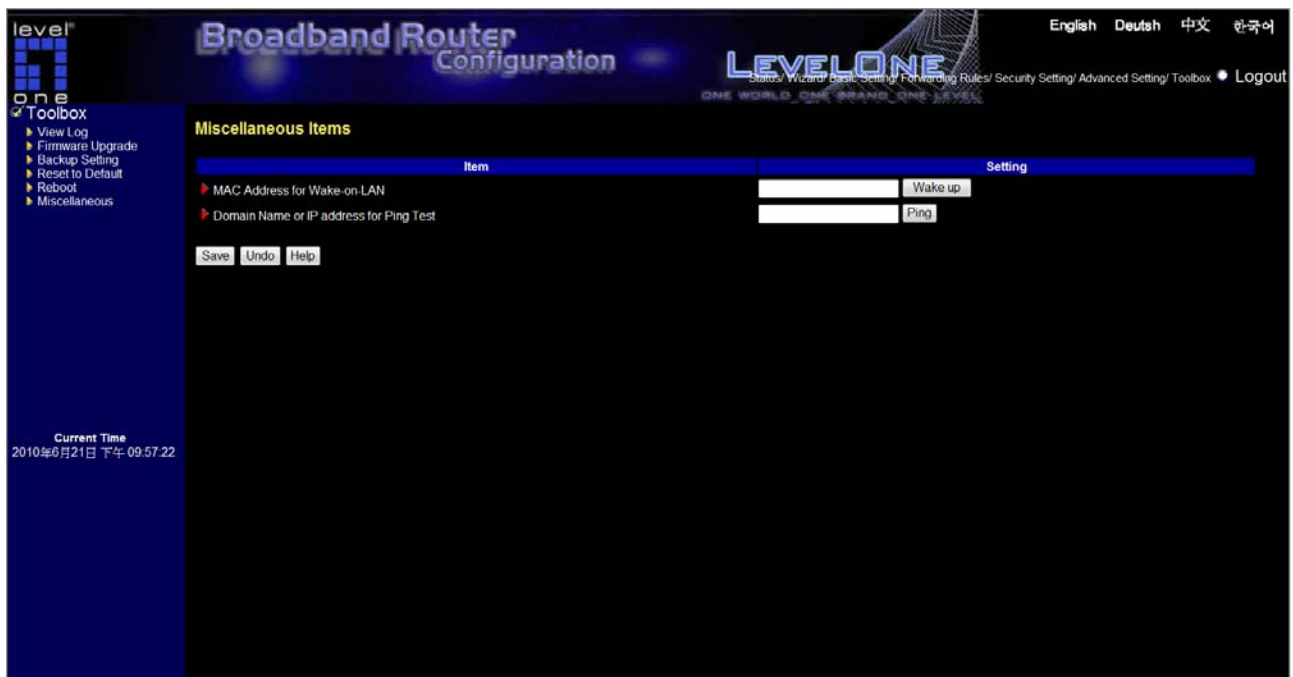
You can also reset this product to factory default by clicking the **Reset to default** button.

### 4.8.5 Reboot



You can also reboot this product by clicking the **Reboot** button.

## 4.8.6 Miscellaneous Items



### MAC Address for Wake-on-LAN

Wake-on-LAN is a technology that enables you to power up a networked device remotely. In order to enjoy this feature, the target device must be Wake-on-LAN enabled and you have to know the MAC address of this device, say 00-11-22-33-44-55. Clicking "Wake up" button will make the router to send the wake-up frame to the target device immediately.

### Domain Name or IP address for Ping Test

Allow you to configure an IP, and ping the device. You can ping a specific IP to test whether it is alive.

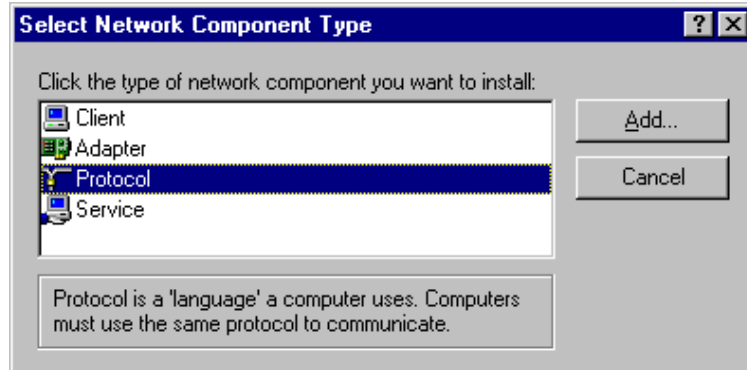
# Appendix A

## TCP/IP Configuration for Windows 95/98

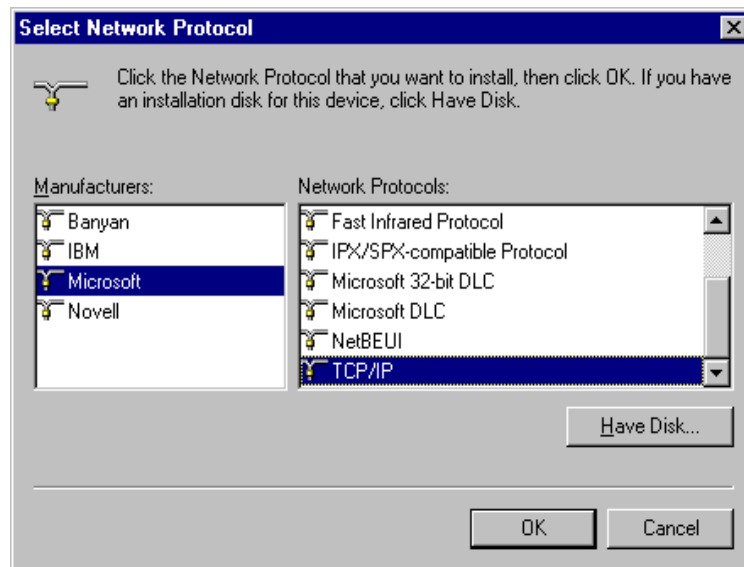
This section introduces you how to install TCP/IP protocol into your personal computer. And suppose you have been successfully installed one network card on your personal computer. If not, please refer to your network card manual. Moreover, the Section B.2 tells you how to set TCP/IP values for working with this NAT Router correctly.

### A.1 Install TCP/IP Protocol into Your PC

1. Click **Start** button and choose **Settings**, then click **Control Panel**.
2. Double click **Network** icon and select **Configuration** tab in the Network window.
3. Click **Add** button to add network component into your PC.
4. Double click **Protocol** to add TCP/IP protocol.



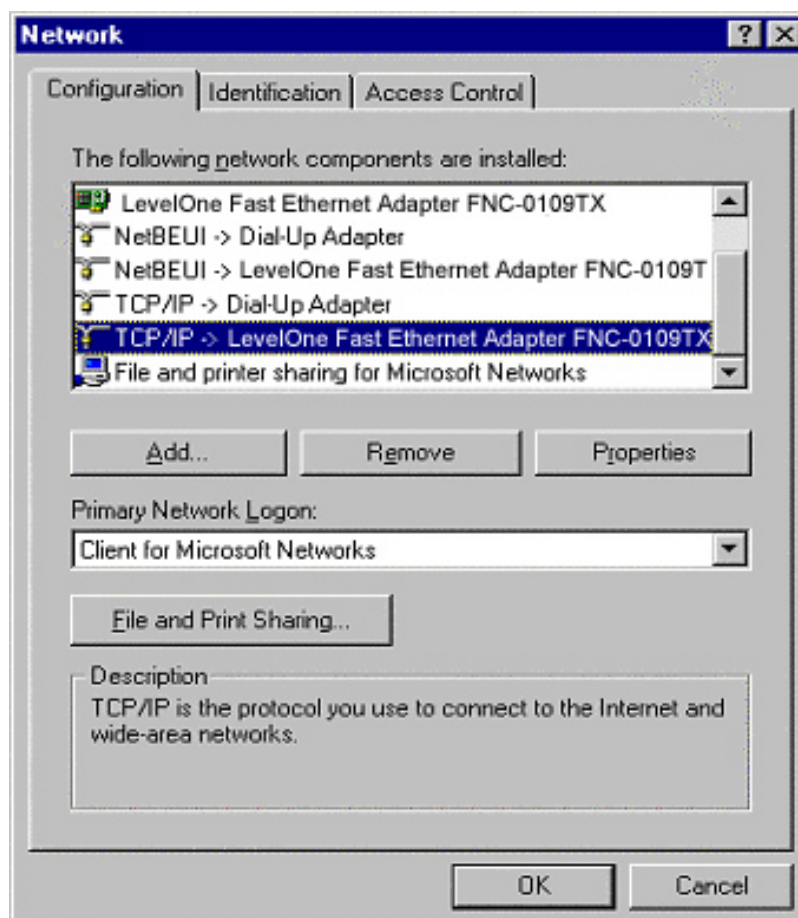
5. Select **Microsoft** item in the manufactures list. And choose **TCP/IP** in the Network Protocols. Click **OK** button to return to Network window.



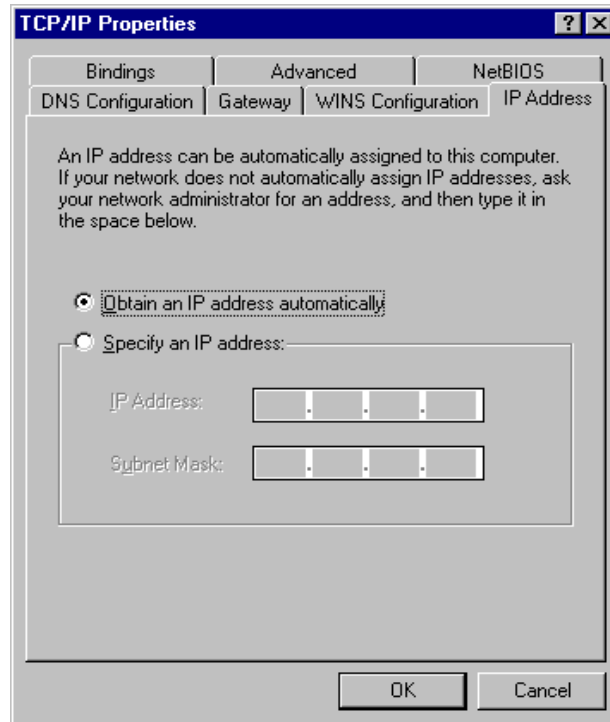
6. The TCP/IP protocol shall be listed in the Network window. Click **OK** to complete the install procedure and restart your PC to enable the TCP/IP protocol.

### A.2 Set TCP/IP Protocol for Working with NAT Router

1. Click **Start** button and choose **Settings**, then click **Control Panel**.
2. Double click **Network** icon. Select the TCP/IP line that has been associated to your network card in the **Configuration** tab of the Network window.



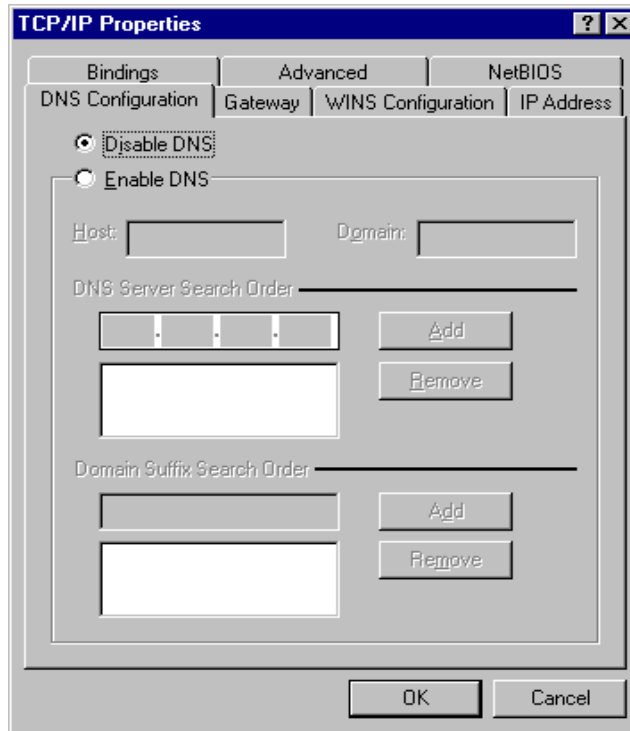
3. Click **Properties** button to set the TCP/IP protocol for this NAT Router.
4. Now, you have two setting methods:
  - a. Select **Obtain an IP address automatically** in the IP Address tab.



- b. Don't input any value in the Gateway tab.

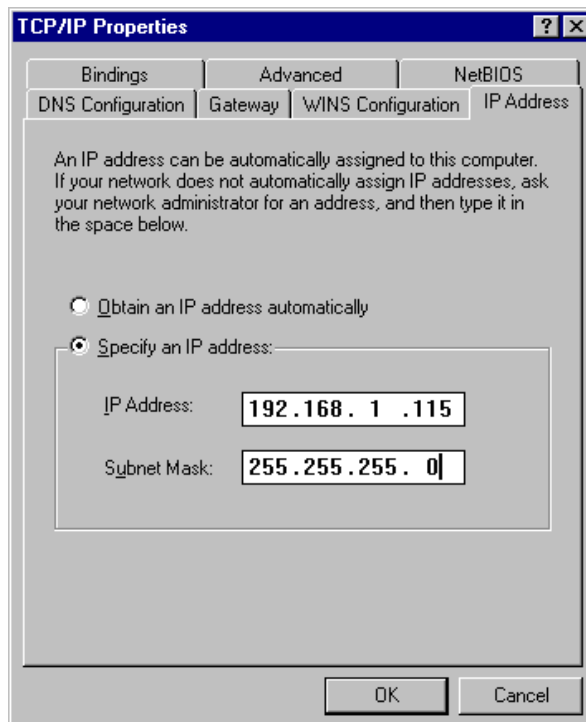


- c. Choose **Disable DNS** in the DNS Configuration tab.

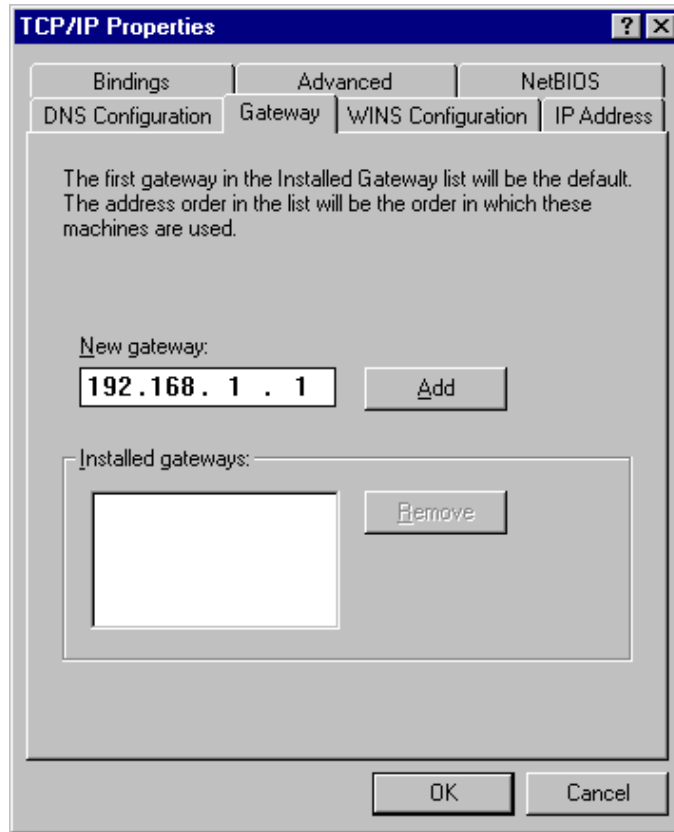


B. Configure IP manually

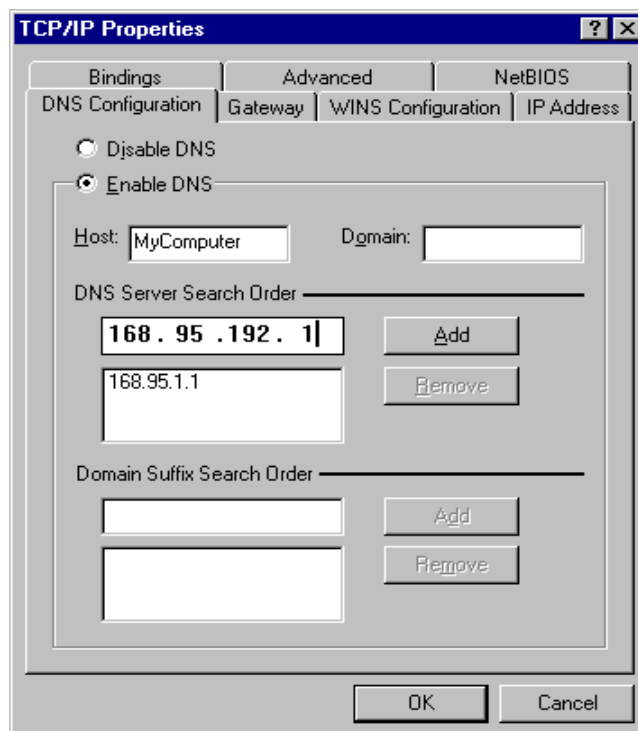
- a. Select **Specify an IP address** in the IP Address tab. The default IP address of this product is 192.168.1.1. So please use 192.168.1.xxx (xxx is between 1 and 253) for IP Address field and 255.255.255.0 for Subnet Mask field.



- b. In the Gateway tab, add the IP address of this product (default IP is 192.168.1.1) in the New gateway field and click **Add** button.



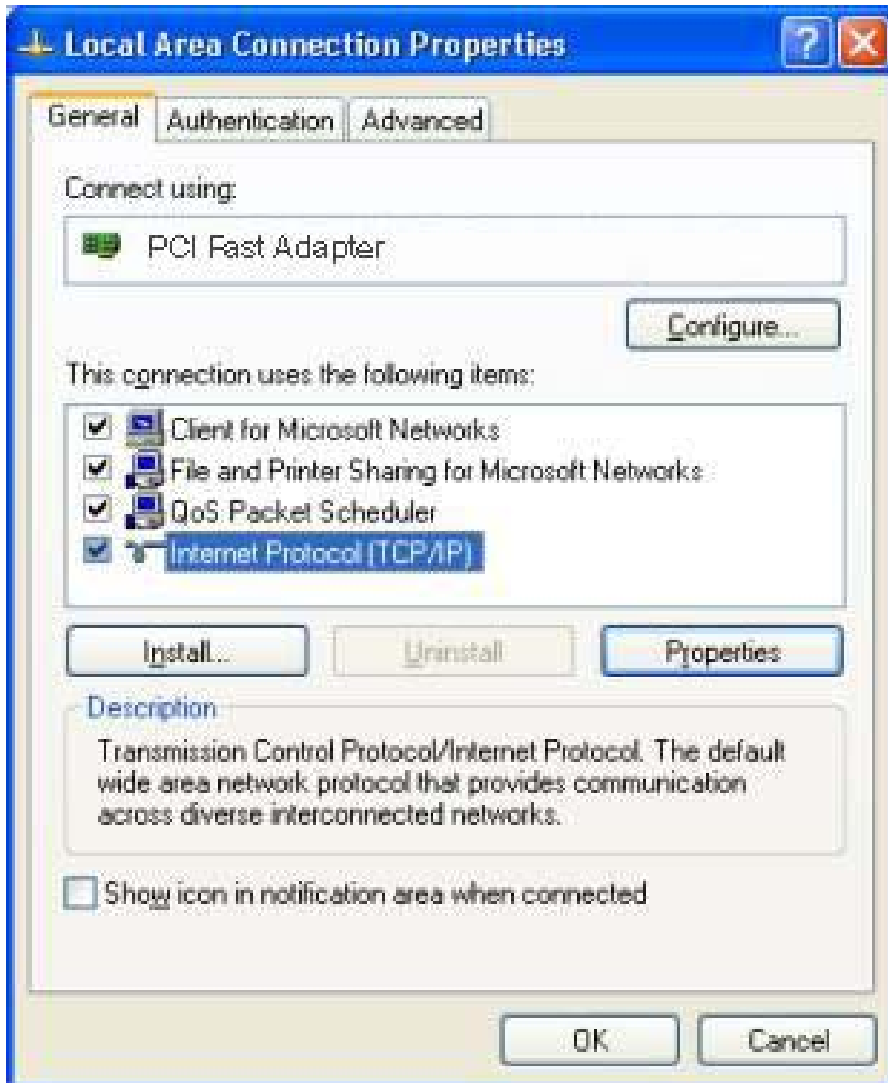
- c. In the DNS Configuration tab, add the DNS values which are provided by the ISP into DNS Server Search Order field and click **Add** button.



# TCP/IP Configuration for Windows XP

## Checking TCP/IP Settings - Windows XP

1. Select *Control Panel - Network Connection*.
2. Right click the *Local Area Connection* and choose *Properties*. You should see a screen like the following:

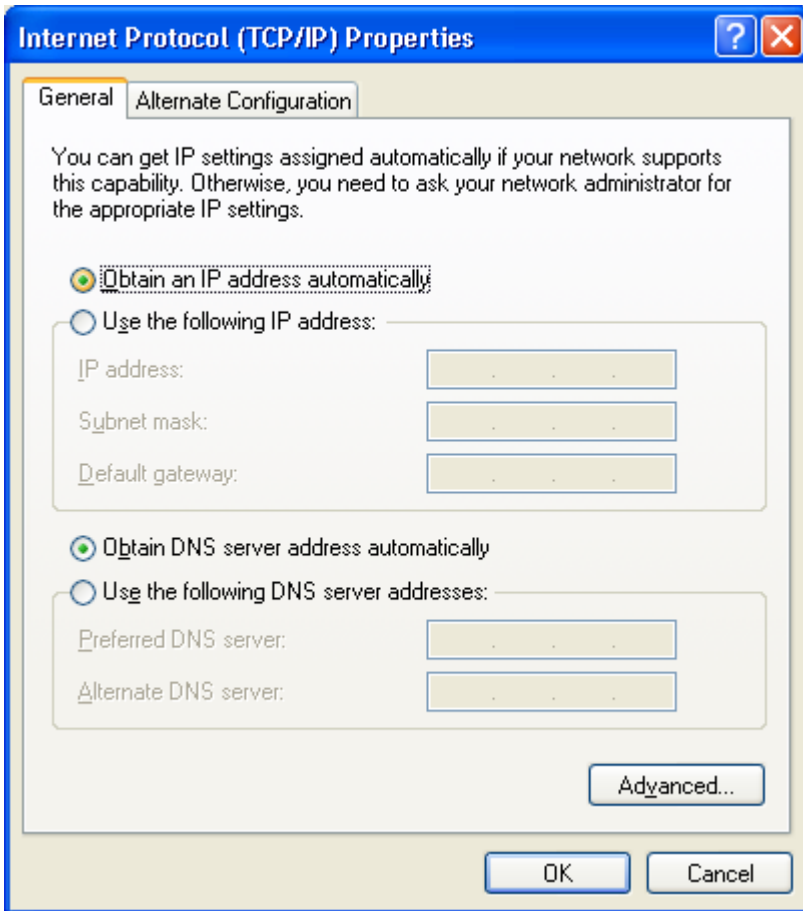


## Network Configuration (Windows XP)

3. Select the *TCP/IP* protocol for your network card.



4. Click on the *Properties* button. You should then see a screen like the following.



### TCP/IP Properties (Windows XP)

5. Ensure your TCP/IP settings are correct.

### Using DHCP

To use DHCP, select the radio button *Obtain an IP Address automatically*. This is the default Windows setting.

**Using this is recommended.** By default, the Wireless Router will act as a DHCP Server.

Restart your PC to ensure it obtains an IP Address from the Wireless Router.

### Using a fixed IP Address ("Use the following IP Address")

If your PC is already configured, check with your network administrator before making the following changes.

- In the *Default gateway* field, enter the Wireless Router's IP address and click *OK*. Your LAN administrator can advise you of the IP Address they assigned to the Wireless Router.
  - If the *DNS Server* fields are empty, select *Use the following DNS server addresses*, and enter the DNS address or addresses provided by your ISP, then click *OK*.

