



**LevelOne**

**FBR-2000**

**2-WAN Load Balance  
Broadband Router**

**User Manual**

# Table of Contents

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<b>System</b> .....	<b>1</b>
Admin .....	4
Settings.....	8
Entering the Settings window .....	8
Exporting Multi-Homing Gateway Gateway settings.....	9
Date/Time .....	17
Synchronizing the Multi-Homing Gateway with the System Clock .....	17
Multiple Subnet.....	19
Multiple Subnet settings .....	20
Add Multiple Subnet NAT Mode. ....	21
Modify Multiple Subnet .....	22
Delete Multiple Subnet .....	23
Hacker Alert.....	30
Auto Detect functions .....	30
Route Table .....	34
Entering the Route Table screen .....	34
Route Table functions .....	34
Adding a new Static Route .....	35
Removing a Static Route .....	37
DHCP .....	38
Entering the DHCP window .....	38
DHCP Address functions .....	38
DMZ Interface : .....	39
Enabling DHCP Support.....	40
Dynamic DNS .....	42
Modify dynamic DNS .....	46
Delete Dynamic DNS.....	47
Language.....	48

Permitted IPs .....	49
Add Permitted IP Address.....	50
Modify Permitted IP Address .....	51
Remove Permitted IP addresses .....	52
Logout.....	53
<b>Interface.....</b>	<b>55</b>
LAN.....	56
Internal Interface.....	57
WAN .....	58
Entering the Interface menu .....	58
WAN 1/2 Interface .....	60
DMZ.....	66
<b>Address .....</b>	<b>68</b>
LAN.....	69
Entering the LAN window .....	69
Adding a new LAN Address .....	70
Modifying an LAN Address .....	71
Removing an LAN Address .....	72
LAN Group.....	73
Entering the LAN Group window .....	73
Modifying an LAN Group .....	75
Removing an LAN Group .....	76
WAN .....	77
Entering the WAN window .....	77
Adding a new WAN Address.....	78
Modifying an WAN Address .....	79
Removing an WAN Address .....	80
WAN Group .....	81
Entering the WAN Group window .....	81
Adding an WAN Group .....	82

Modify an WAN Group.....	83
Removing an WAN Group .....	84
DMZ.....	85
<b>Service .....</b>	<b>94</b>
Pre-defined .....	95
Entering a Pre-defined window.....	95
Custom .....	96
Entering the Custom window .....	96
Adding a new Service.....	97
Modifying Custom Services .....	98
Removing Custom Services .....	99
Group.....	100
Accessing the Group window .....	100
Adding Service Groups.....	101
Modifying Service Groups.....	102
Removing Service Groups.....	103
<b>Schedule.....</b>	<b>104</b>
Accessing the Schedule window .....	105
Adding a new Schedule .....	106
Modifying a Schedule .....	107
<b>Content filtering .....</b>	<b>109</b>
URL Blocking.....	110
Entering the URL blocking window .....	110
Adding a URL Blocking policy.....	111
Modifying a URL Blocking policy .....	112
Script Blocking.....	115
<b>Virtual Server .....</b>	<b>117</b>
How to use Virtual Server and mapped IP.....	118
Mapped IP .....	119

Entering the Mapped IP window .....	120
Adding a new IP Mapping.....	121
Modifying a Mapped IP.....	122
Removing a Mapped IP .....	123
Virtual Server.....	124
Adding a Virtual Server.....	125
Modifying a Virtual Server IP Address .....	127
Removing a Virtual Server.....	128
Setting the Virtual Server's services .....	129
Adding New Virtual Server Service Configuration .....	130
Modifying the Virtual Server configurations .....	132
<b>VPN .....</b>	<b>135</b>
IPSec Autokey .....	136
PPTP Server.....	218
Entering the PPTP Server window .....	218
Modifying PPTP Server Design .....	219
Adding PPTP Server .....	220
Modifying PPTP Server .....	222
Removing PPTP Server.....	223
PPTP Client.....	224
Entering the PPTP Client window.....	224
Adding a PPTP Client.....	225
Modifying PPTP Client.....	227
Removing PPTP Client.....	228
<b>Policy .....</b>	<b>229</b>
Outgoing.....	230
Adding a new Outgoing Policy.....	232
Modifying an Outgoing policy.....	234
Removing the Outgoing Policy .....	235
Enabled Monitoring function: .....	236
Incoming.....	239

Enter Incoming window .....	239
Adding an Incoming Policy .....	241
Modifying Incoming Policy .....	243
Removing an Incoming Policy .....	244
<b>Log.....</b>	<b>257</b>
Traffic Log.....	258
Entering the Traffic Log window.....	258
Traffic Log Table .....	259
Downloading the Traffic Logs .....	259
Clearing the Traffic Logs.....	261
Event Log .....	262
Entering the Event Log window .....	262
Downloading the Event Logs.....	263
Clearing the Event Logs .....	264
Download Logs.....	266
Log Backup.....	268
Enable Log Mail Support & Syslog Message.....	269
Disable Log Mail Support & Syslog Message.....	270
<b>Alarm .....</b>	<b>271</b>
Traffic Alarm .....	272
Entering the Traffic Alarm window .....	272
Downloading the Traffic Alarm Logs .....	273
Clearing the Traffic Alarm Logs.....	274
Event Alarm .....	275
Entering the Event Alarm window .....	275
Clearing Event Alarm Logs .....	277
<b>Statistics.....</b>	<b>278</b>

What is Statistics .....	278
How to use Statistics .....	278
WAN Statistics .....	279
Entering the Statistics window by Time.....	280
Policy Statistics.....	282
Entering the Statistics window .....	282
Entering the Policy Statistics .....	283
<b>Status .....</b>	<b>284</b>
Interface Status.....	285
Entering the Interface Status window .....	285
ARP Table .....	286
Entering the ARP Table window.....	286
DHCP Clients .....	287
Entering the DHCP Clients window .....	287
<b>Setup Examples .....</b>	<b>288</b>

# System

The device **FBR-2000** 2-WAN Broadband Router Administration and monitoring control is set by the System Administrator. The System Administrator can add or modify System settings and monitoring mode. The sub Administrators can only read System settings but not modify them. In **System**, the System Administrator can:

- (1) Add and change the sub Administrator's names and passwords;
- (2) Back up all Multi-Homing Gateway settings into local files;
- (3) Set up alerts for Hackers invasion.

## What is System?

"System" is the managing of settings such as the privileges of packets that pass through the FBR-2000 2-WAN Broadband Router and monitoring controls. Administrators may manage, monitor, and configure Multi-Homing Gateway settings. All configurations are "read-only" for all users other than the Administrator; those users are not able to change any settings for the Multi-Homing Gateway.

The eleven sub functions under **System** are **Admin, Setting, Date/Time, Multiple Subnet, Hack Alert, Route Table, DHCP, DNS Proxy, Dynamic DNS, Logout** and **Software Update**.

**Admin:** has control of user access to the Multi-Homing Gateway. He/she can add/remove users and change passwords.

**Setting:** The Administrator may use this function to backup Multi-Homing Gateway configurations and export (save) them to an "**Administrator**" computer or anywhere on the network; or restore a configuration file to the device; or restore the Multi-Homing Gateway back to default factory settings. Under **Setting**, the Administrator may enable e-mail alert notification. This will alert Administrator(s) automatically whenever the Multi-Homing Gateway has experienced unauthorized access or a network hit (hacking or flooding). Once enabled, an IP address of a SMTP(Simple Mail Transfer protocol) Server is required. Up to two e-mail addresses can be entered for the alert notifications.

**Date/Time:** This function enables the Multi-Homing Gateway to be synchronized either with an Internet Server time or with the client computer's clock.

**Multiple Subnet** This function allows local port to set multiple subnet works and connect with the internet through different WAN 1 IP Addresses.

**Hacker Alert** When abnormal conditions occur, the Multi-Homing Gateway will send an e-mail alert to notify the Administrator, and also display warning messages in the **Event** window of **Alarm**.

**Route Table** Use this function to enable the Administrator to add static routes for the networks when the dynamic route is not efficient enough.

**DHCP** Administrator can configure DHCP (Dynamic Host Configuration Protocol) settings for the LAN (LAN) network.

**DNS-Proxy** The Multi-Homing Gateway Administrator may use the DNS Proxy function to make the Multi-Homing Gateway act as a DNS Server for the Internal and DMZ network. All DNS requests to a specific Domain Name will be routed to the Multi-Homing Gateway's IP address. For example, let's say an organization has their mail server (i.e., mail.MH200.com) in the DMZ network (i.e. 192.168.10.10). The outside Internet world may access the mail server of the organization easily by its domain name, providing that the Administrator has set up Virtual Server or Mapped IP settings correctly. However, for the users in the Internal network, their WAN DNS server will assign them a public IP address for the mail server. So for the Internal network to access the mail server (mail.MH2000.com), they would have to go out to the Internet, then come back through the Multi-Homing Gateway to access the mail server. Essentially, the internal network is accessing the mail server by a real public IP address, while the mail server serves their request by a NAT address and not a real one. This odd situation occurs when there are servers in the DMZ network and they are binded to real IP addresses. To avoid this, set up DNS Proxy so all the Internal network computers will use the Multi-Homing Gateway as a DNS server, which acts as the DNS Proxy.

**Dynamic DNS** The Dynamic DNS (require Dynamic DNS Service) allows you to alias a dynamic IP address to a static hostname, allowing your device to be more easily accessed by specific name. When this function is enabled, the IP address in Dynamic DNS Server will be automatically updated with the new IP address provided by ISP

**Language** The software provides **English version, German version, Traditional Chinese Version and Simplified Chinese Version** for you to choose.

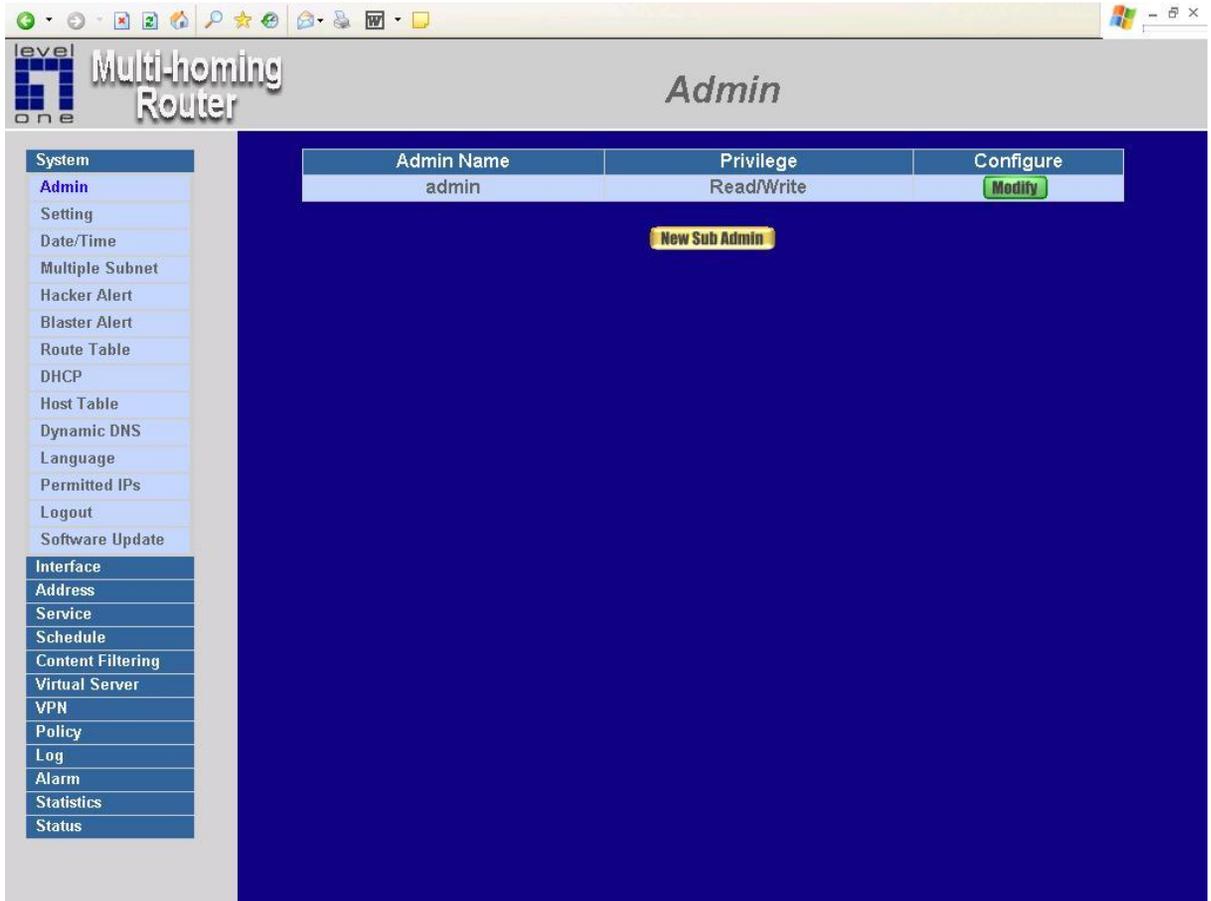
**Permitted IP** Only the authorized IP address is permitted to manage the Multi-Homing Gateway.

**Logout** Administrator logs out the Multi-Homing Gateway. This function protects your system while you are away.

**Software Update:** Administrators may visit distributor's web site to download the latest firmware. Administrators may update the device firmware to optimize its performance and keep up with the latest fixes for intruding attacks.

# Admin

On the left hand menu, click on **Setup**, and then select **Admin** below it. The current list of Administrator(s) shows up.



## Settings of the Administration table

**Administrator Name:** The username of Administrators for the Multi-Homing Gateway. The user **admin** cannot be removed.

**Privilege:** The privileges of Administrators (Admin or Sub Admin)

The username of the main Administrator is **Administrator** with **read / write** privilege.

Sub Admins may be created by the **Admin** by clicking **New Sub Admin**. Sub Admins have **read only** privilege.

**Configure:** Click **Modify** to change the "Sub Administrator's" password and click **Remove** to delete a "Sub Administrator."

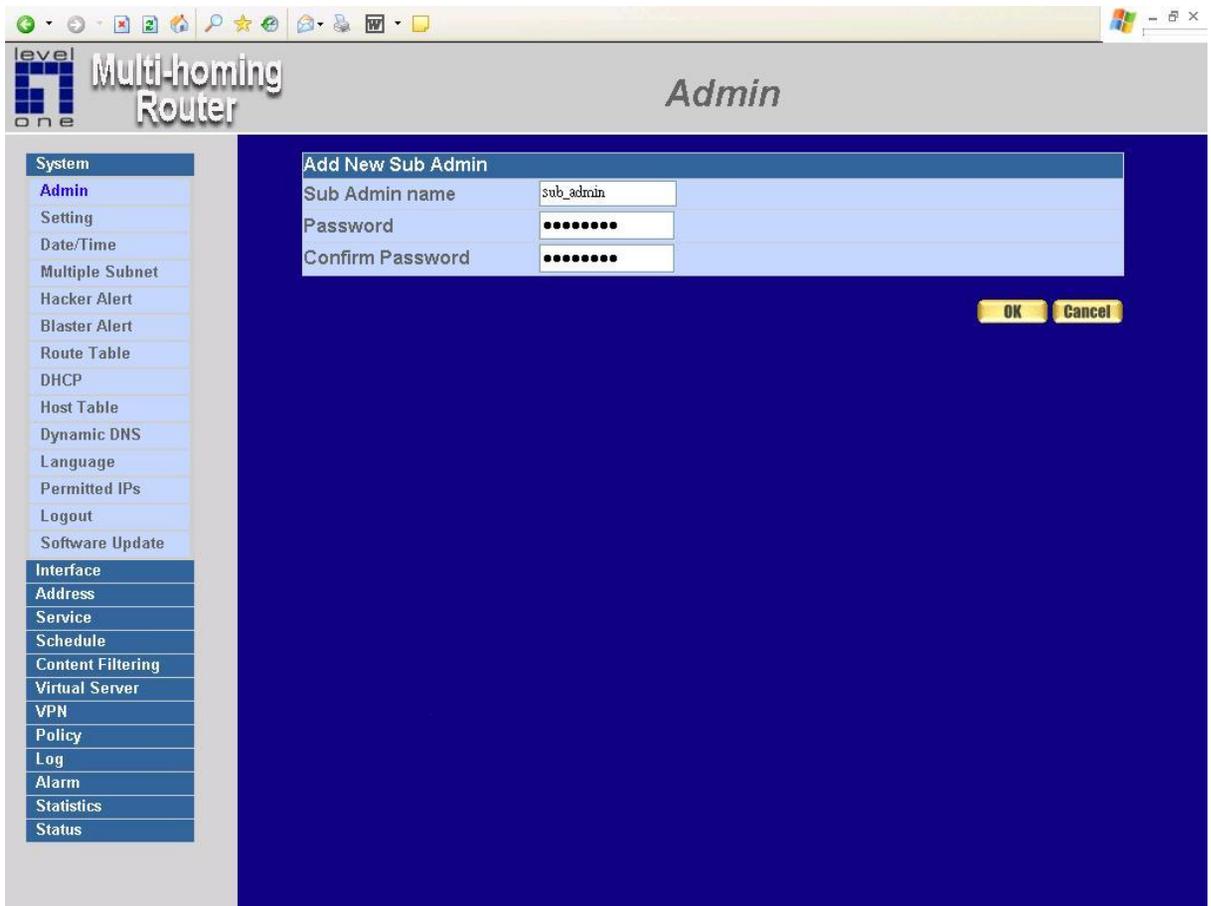
## Adding a new Sub Administrator

**Step 1.** In the **Admin** window, click the **New Sub Admin** button to create a new **Sub Administrator**.

**Step 2.** In the **Add New Sub Administrator** window:

- **Sub Admin Name:** enter the username of new **Sub Admin**.
- **Password:** enter a password for the new **Sub Admin**.
- **Confirm Password:** enter the password again.

**Step 3.** Click **OK** to add the user or click **Cancel** to cancel the addition.



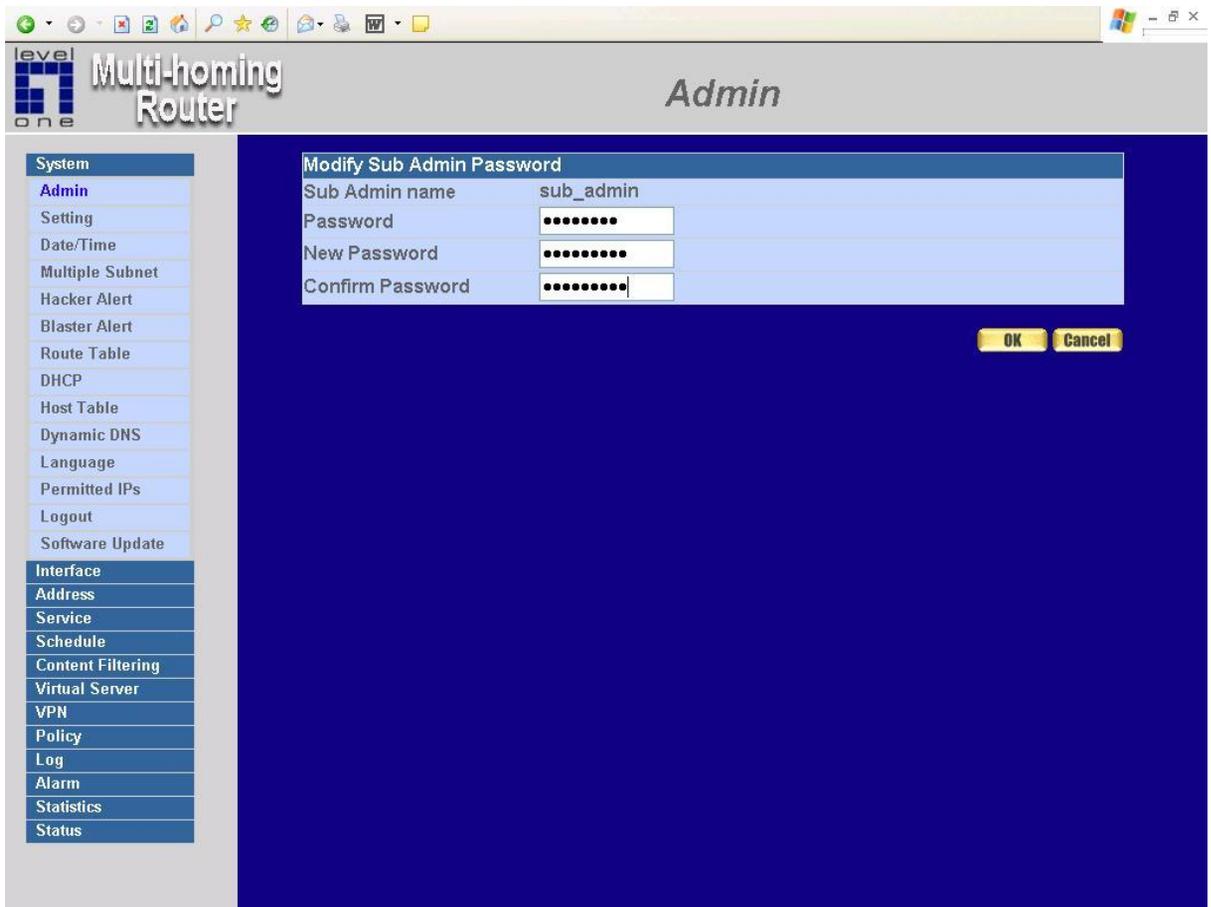
## Changing the Sub-Administrator's Password

**Step 1.** In the **Admin** window, locate the **Administrator** name you want to edit, and click on **Modify** in the **Configure** field.

**Step 2.** The **Modify Administrator Password** window will appear. Enter in the required information:

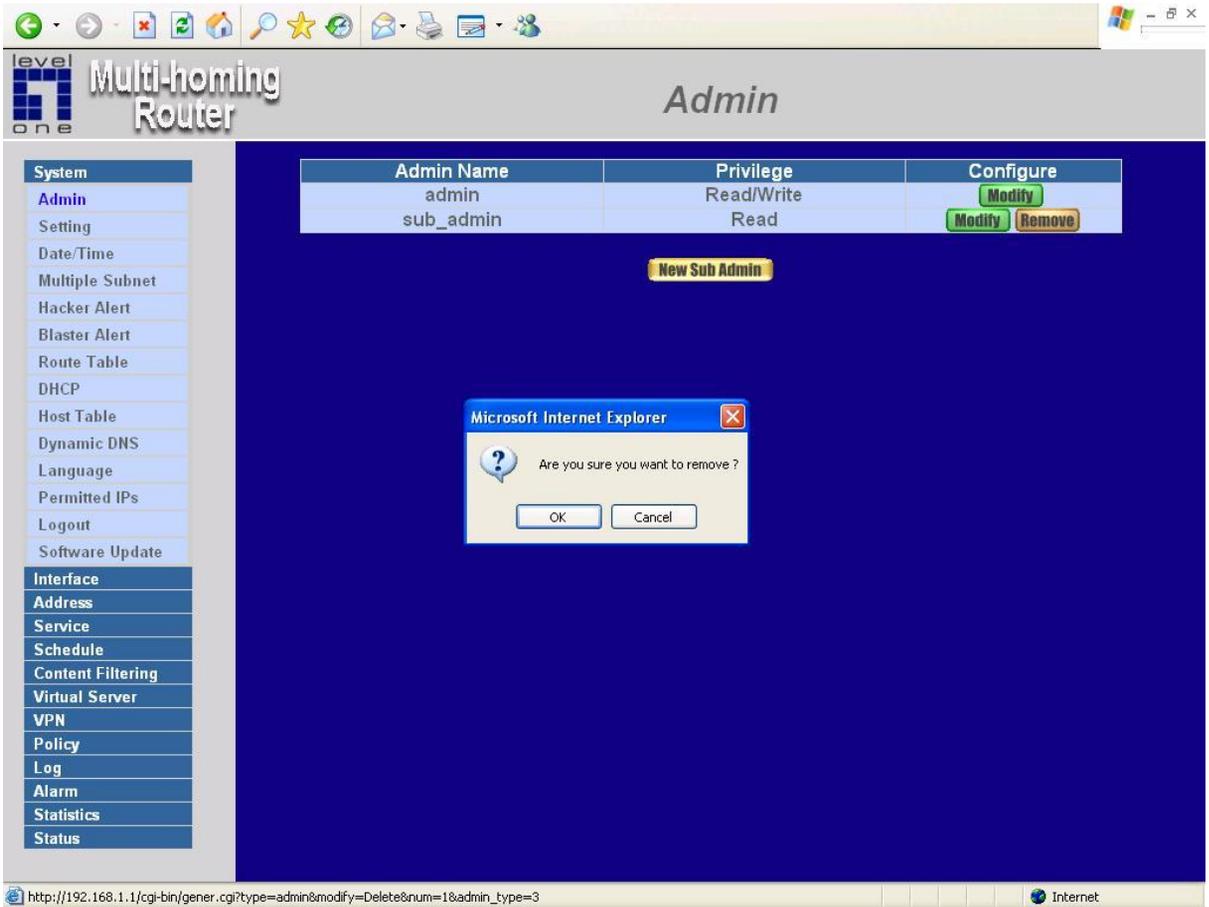
- **Password:** enter original password.
- **New Password:** enter new password
- **Confirm Password:** enter the new password again.

**Step 3.** Click **OK** to confirm password change or click **Cancel** to cancel it.



# Removing a Sub Administrator

- Step 1.** In the Administration table, locate the Administrator name you want to edit, and click on the Remove option in the Configure field.
- Step 2.** The Remove confirmation pop-up box will appear.
- Step 3.** Click **OK** to remove that Sub Admin or click **Cancel** to cancel.

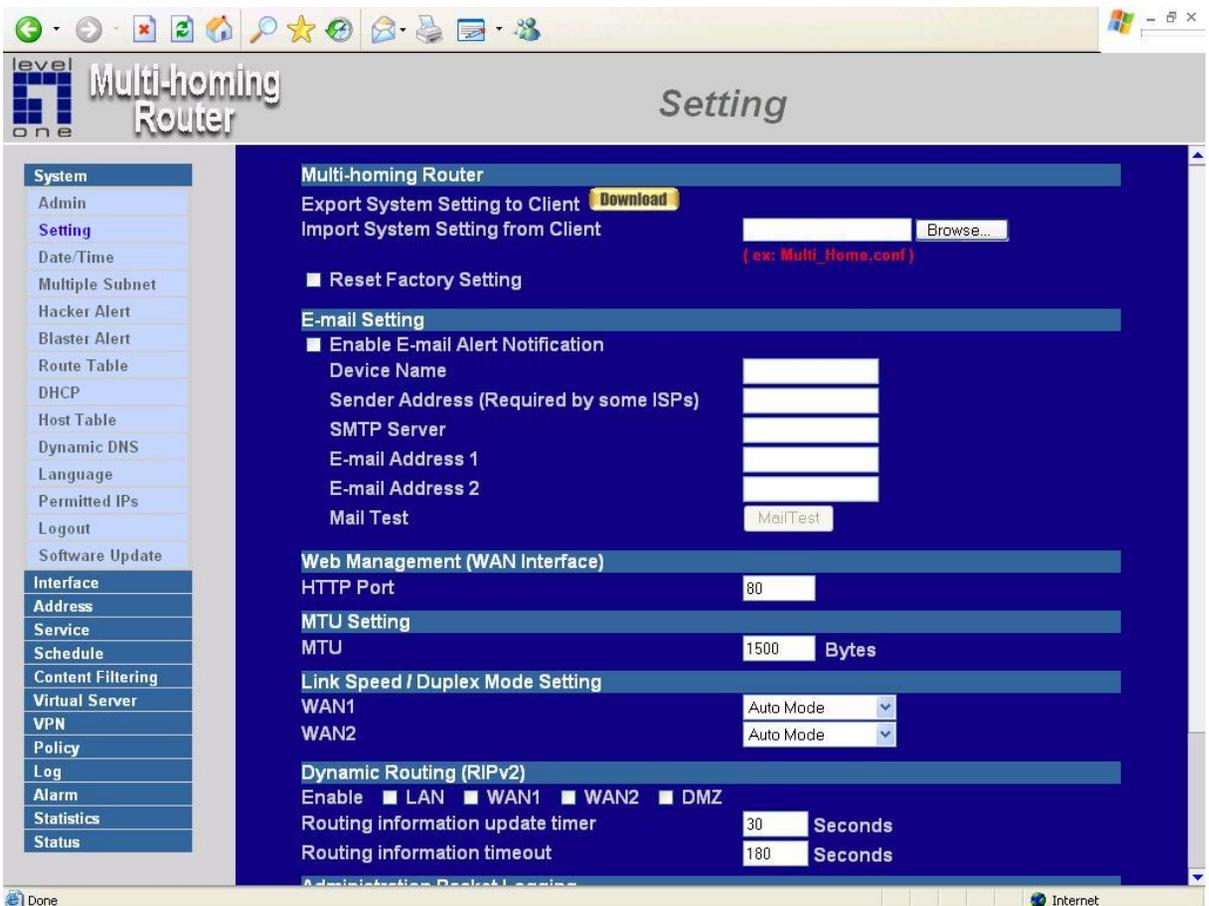


# Settings

The Administrator may use this function to backup the **FBR-2000** 2-WAN Broadband Router configurations and export (save) them to an “**Administrator**” computer or anywhere on the network; or restore a configuration file to the device; or restore the Multi-Homing Gateway back to default factory settings.

## Entering the Settings window

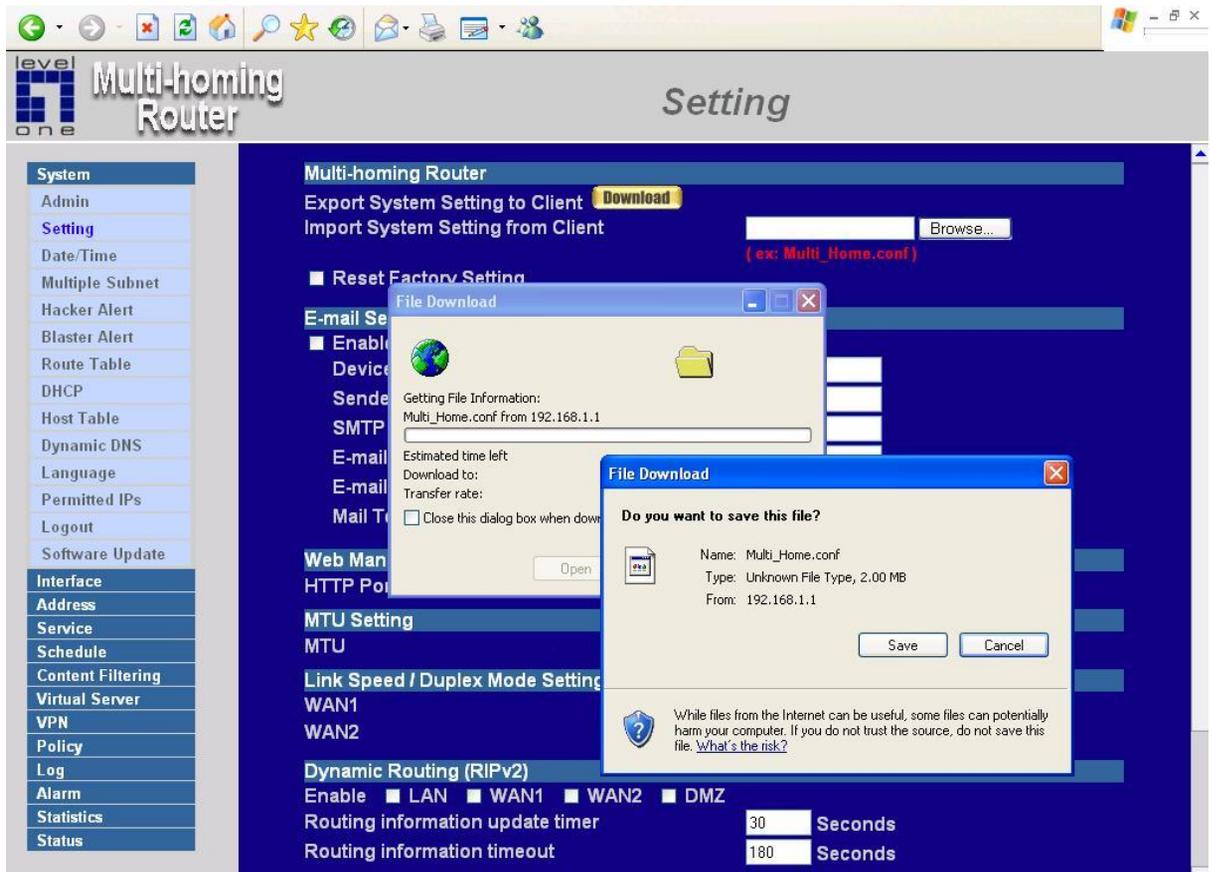
Click **Setting** in the **System** menu to enter the **Settings** window. The **Multi-Homing Gateway Configuration** settings will be shown on the screen.



# Exporting Multi-Homing Gateway Gateway settings

**Step 1.** Under **Multi-Homing Gateway Configuration**, click on the **Download** button next to **Export System Settings to Client**.

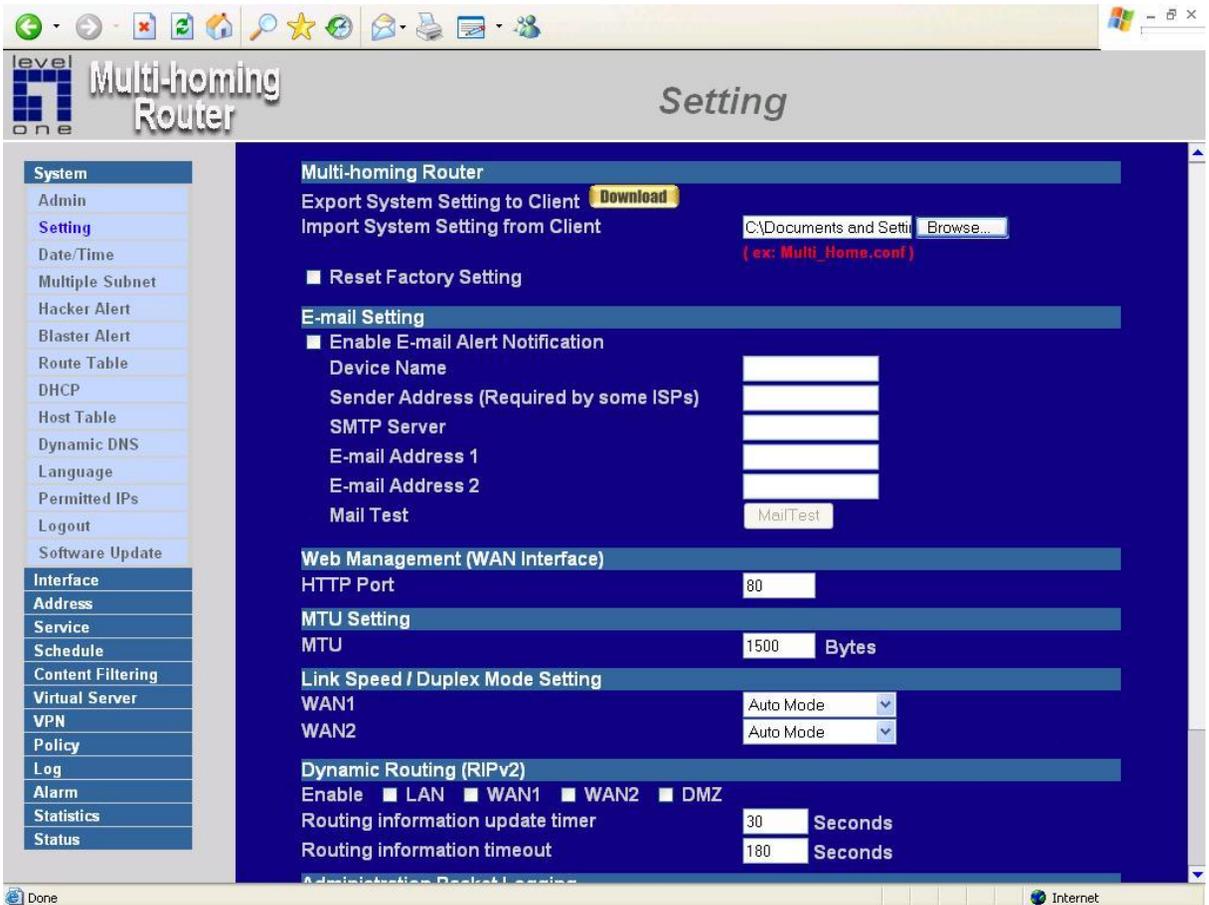
**Step 2.** When the **File Download** pop-up window appears, choose the destination place in which to save the exported file. The **Administrator** may choose to rename the file if preferred.



# Importing Multi-Homing Gateway settings

**Step 1.** Under **Multi-Homing Gateway Configuration**, click on the **Browse** button next to **Import System Settings**. When the **Choose File** pop-up window appears, select the file to which contains the saved Multi-Homing Gateway Settings, then click **OK**.

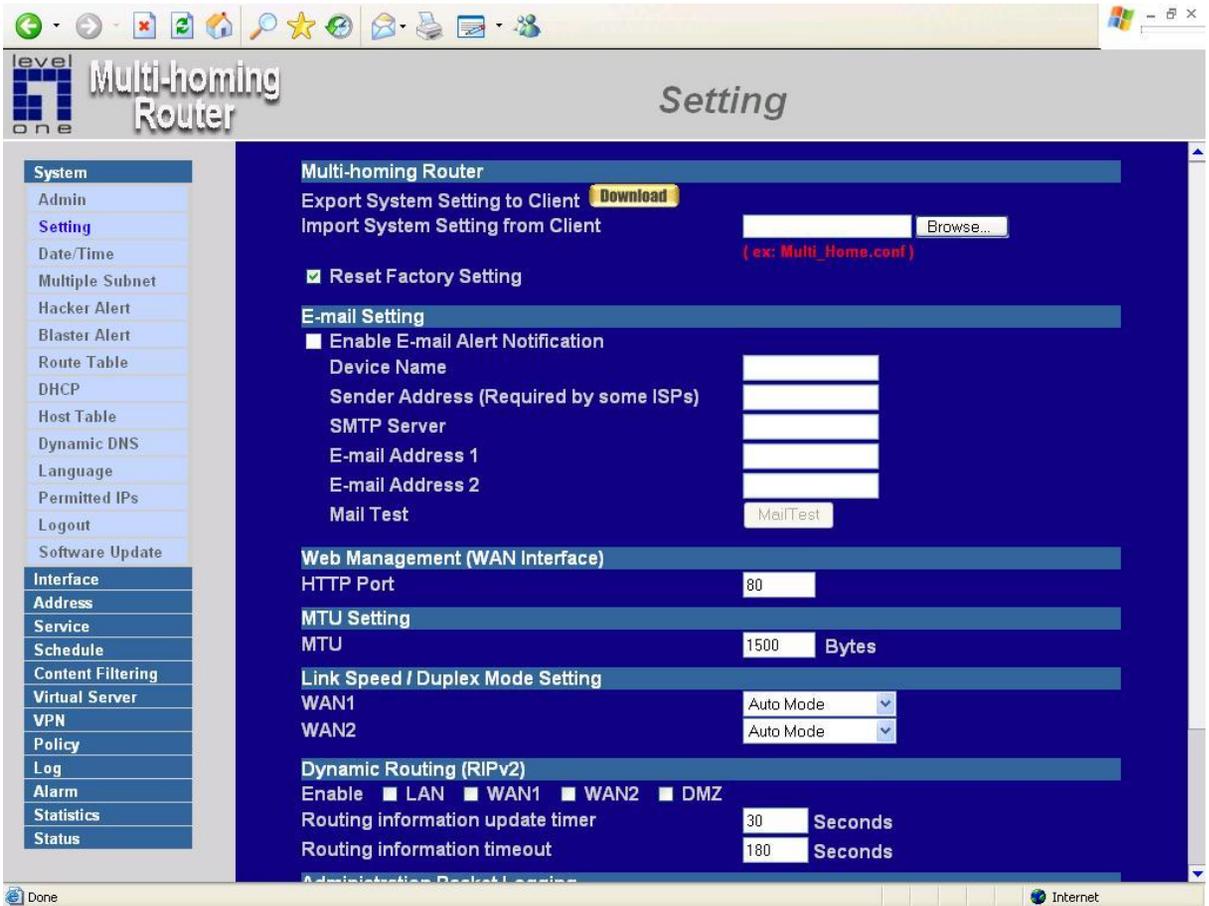
**Step 2.** Click **OK** to import the file into the **Multi-Homing Gateway** or click **Cancel** to cancel importing.



# Restoring Factory Default Settings

**Step 1.** Select **Reset Factory Settings** under **Multi-Homing Gateway Configuration**.

**Step 2.** Click **OK** at the bottom-right of the screen to restore the factory settings.



# Enabling E-mail Alert Notification

- Step 1.** Select **Enable E-mail Alert Notification** under **E-Mail Settings**. This function will enable the Multi-Homing Gateway to send e-mail alerts to the System Administrator when the network is being attacked by hackers or when emergency conditions occur.
- Step 2.** **Device Name:** Enter the Device Name.
- Step 3.** **Sender Address(Required by some ISPs):** Enter the Sender Address.(Some ISPs need Required.)
- Step 4.** **SMTP Server IP:** Enter SMTP server's IP address.
- Step 5.** **E-Mail Address 1:** Enter the first e-mail address to receive the alarm notification.
- Step 6.** **E-Mail Address 2:** Enter the second e-mail address to receive the alarm notification. (Optional)
- Step 7.** Click **OK** on the bottom-right of the screen to enable E-mail alert notification.

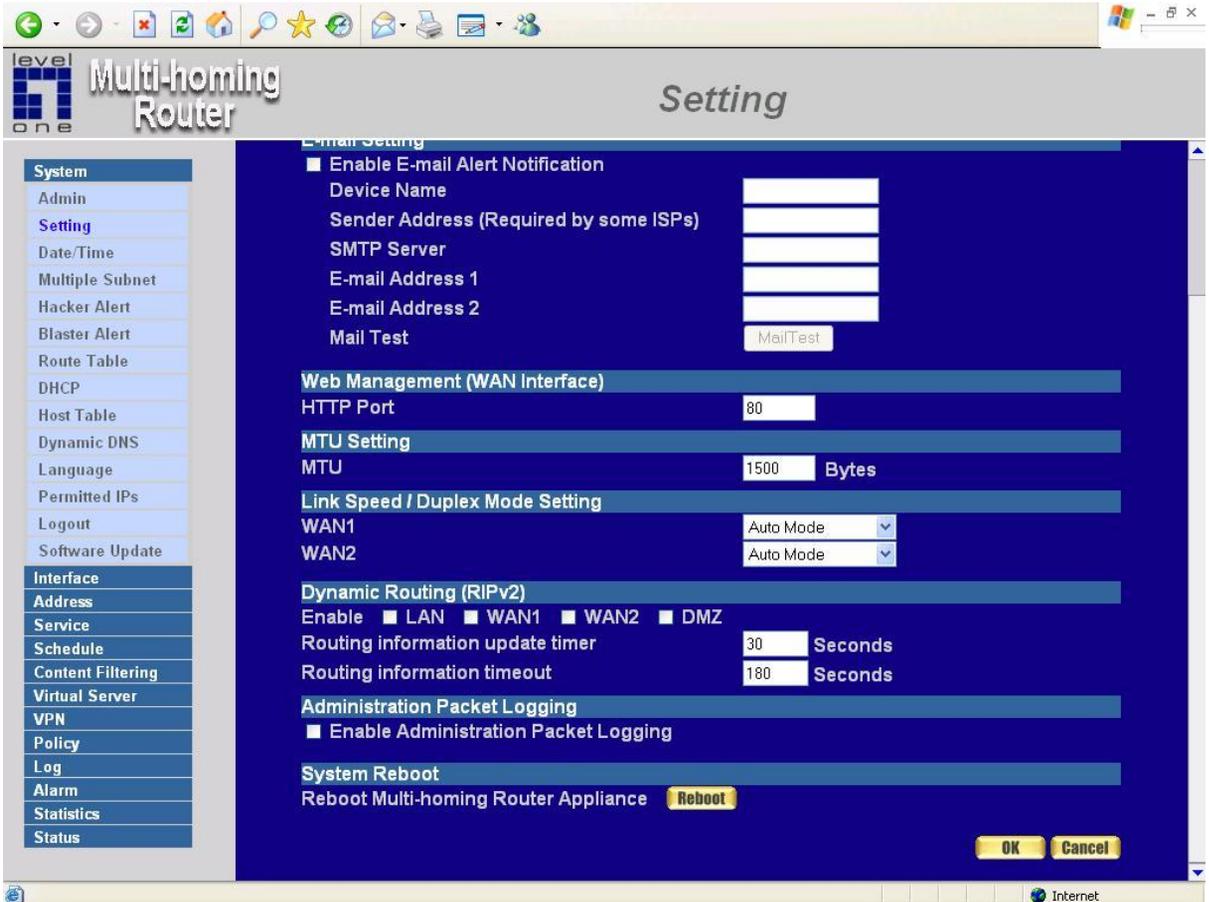
The screenshot displays the web management interface for a Multi-homing Router. The page title is "Setting". On the left, a navigation menu lists various system settings, with "Setting" currently selected. The main content area is titled "Multi-homing Router" and contains several configuration sections:

- Multi-homing Router**: Includes options for "Export System Setting to Client" (with a "Download" button) and "Import System Setting from Client" (with a "Browse..." button and an example "( ex: Multi\_homs.conf )").
- Reset Factory Setting**: A checkbox option.
- E-mail Setting**: This section is active, showing the following fields:
  - Enable E-mail Alert Notification
  - Device Name: FBR-2000
  - Sender Address (Required by some ISPs): level1.com
  - SMTP Server: mail.level1.com
  - E-mail Address 1: mis@mail.levelone
  - E-mail Address 2: mis1@mail.levelor
  - Mail Test: MailTest
- Web Management (WAN Interface)**: HTTP Port is set to 80.
- MTU Setting**: MTU is set to 1500 Bytes.
- Link Speed / Duplex Mode Setting**: WAN1 and WAN2 are both set to Auto Mode.
- Dynamic Routing (RIPv2)**: Includes checkboxes for "Enable", "LAN", "WAN1", "WAN2", and "DMZ". Below are "Routing information update timer" (30 Seconds) and "Routing information timeout" (180 Seconds).

# Web Management (WAN Interface) (Remote UI management)

The administrator can change the port number used by HTTP port anytime.  
(Remote UI management)

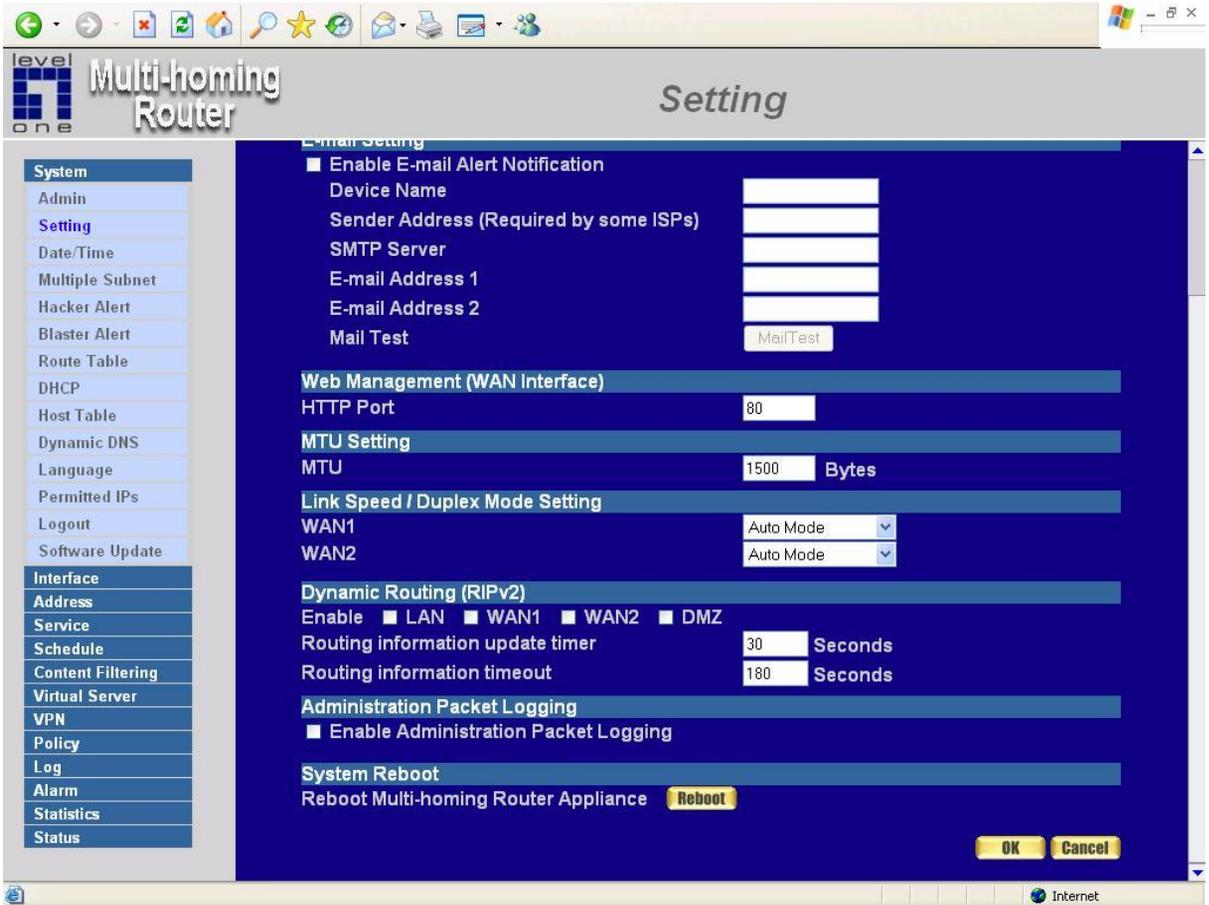
**Step 1. Set Web Management (WAN Interface).** The administrator can change the port number used by HTTP port anytime.



# MTU (set networking packet length)

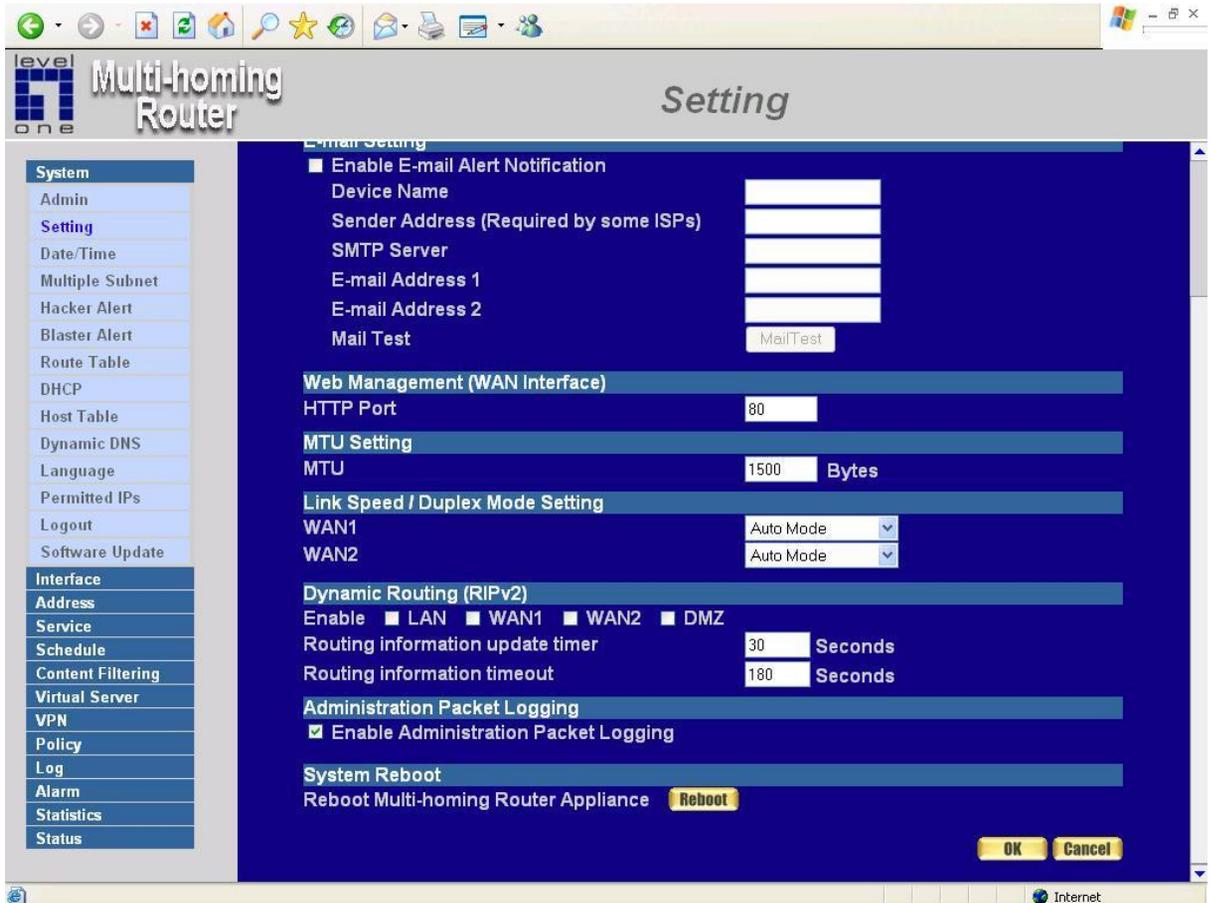
The administrator can modify the networking packet length.

**Step 1. MTU Setting.** The administrator can modify the networking packet length.



# To-Multi-Homing Gateway Packets Log

Select this option to the device's **To-Multi-Homing Gateway Packets Log**. Once this function is enabled, every packet to this appliance will be recorded for system manager to trace.



# Multi-Homing Gateway Reboot

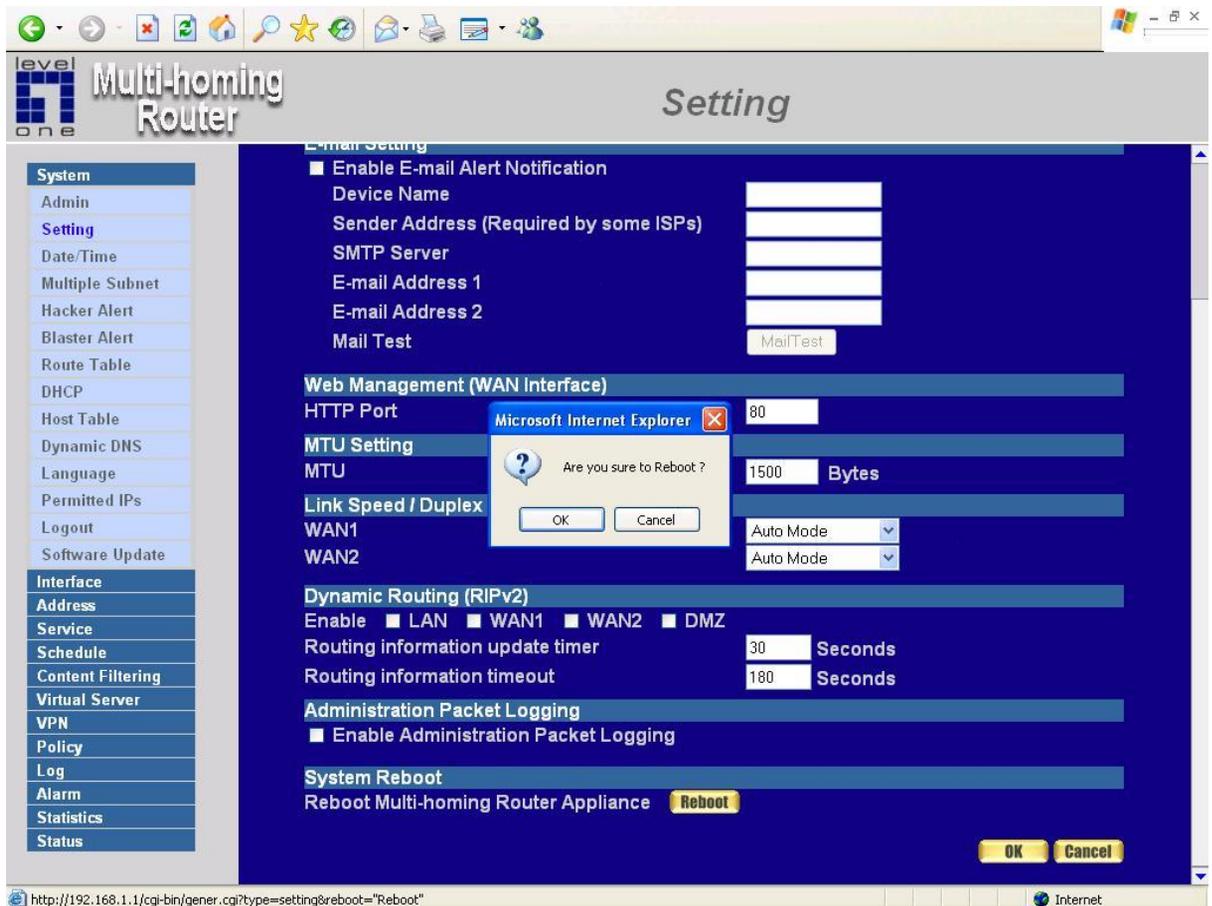
Select this option to the device's **Multi-Homing Gateway Reboot**. Once this function is enabled, **the Multi-Homing Gateway will be reboot**.

**Step 1.** Click **Setting** in the **Administration** menu to enter the settings window.

**Step 2.** Reboot Multi-Homing Gateway : Click **Reboot**.

**Step 3.** A confirmation pop-up box will appear.

**Step 4.** Follow the confirmation pop-up box, click **OK** to restart Multi-Homing Gateway or click **Cancel** to discard changes.



## Date/Time

### Synchronizing the Multi-Homing Gateway with the System Clock

Admin can configure the FBR-2000 Multi-Homing Gateway date and time by either syncing to an Internet Network Time Server (NTP) or by syncing to your computer clock.

#### Follow these steps to sync to an Internet Time Server

- Step 1.** Enable synchronization by checking the box.
- Step 2.** Click the down arrow to select the offset time from GMT.
- Step 3.** Enter the Server IP Address or Server name with which you want to synchronize.
- Step 4. Update system clock every 5 minutes** You can set the interval time to synchronize with outside servers. If you set it to 0, it means the device will not synchronize automatically.

#### Follow this step to sync to your computer clock.

- Step 1.** Click on the **Sync** button.

Click the **OK** button below to apply the setting or click **Cancel** to discard changes.

level  
one Multi-homing Router

## Date/Time

System time : Thu Jan 2 02:06:20 2003

### Synchronize system clock

Enable synchronize with an Internet time Server

Set offset  hours from GMT [Assist](#)

Server IP / Name  [Assist](#)

Update system clock every  minutes (0 : means update at booting time)

---

Synchronize system clock with this client

- System
- Admin
- Setting
- Date/Time**
- Multiple Subnet
- Hacker Alert
- Blaster Alert
- Route Table
- DHCP
- Host Table
- Dynamic DNS
- Language
- Permitted IPs
- Logout
- Software Update
- Interface
- Address
- Service
- Schedule
- Content Filtering
- Virtual Server
- VPN
- Policy
- Log
- Alarm
- Statistics
- Status

Done Internet

## Multiple Subnet

## NAT mode

Multiple Subnet allows local port to set multiple subnet works and connect with the internet through different WAN 1 IP Addresses.

For instance : The lease line of a company applies several real IP Addresses 168.85.88.0/24 , and the company is divided into R&D department, service, sales department, procurement department, accounting department , the company can distinguish each department by different subne works for the purpose of convenient management. The settings are as the following :

- 1.R&D department subnet work : 192.168.1.11/24(Internal)  $\leftrightarrow$  168.85.88.253(WAN 1)
2. Service department subnet work : 192.168.2.11/24(Internal)  $\leftrightarrow$  168.85.88.252(WAN 1)
- 3.Sales depam ent subnet work : 192.168.3.11/24(Internal)  $\leftrightarrow$  168.85.88.251(WAN 1)
- 4.Procurement department subnet work  
192.168.4.11/24(Internal)  $\leftrightarrow$  168.85.88.250(WAN 1)
- 5.Accounting department subnet work  
192.168.5.11/24(Internal)  $\leftrightarrow$  168.85.88.249(WAN 1)

The first department(R&D department) was set while setting interface IP, the other four ones have to be added in Multiple Subnet , after completing the settings, each deparm ent use the different WAN IP Address to connect to the internet. The settings of each department are as the following

Service IP Address : 192.168.2.1

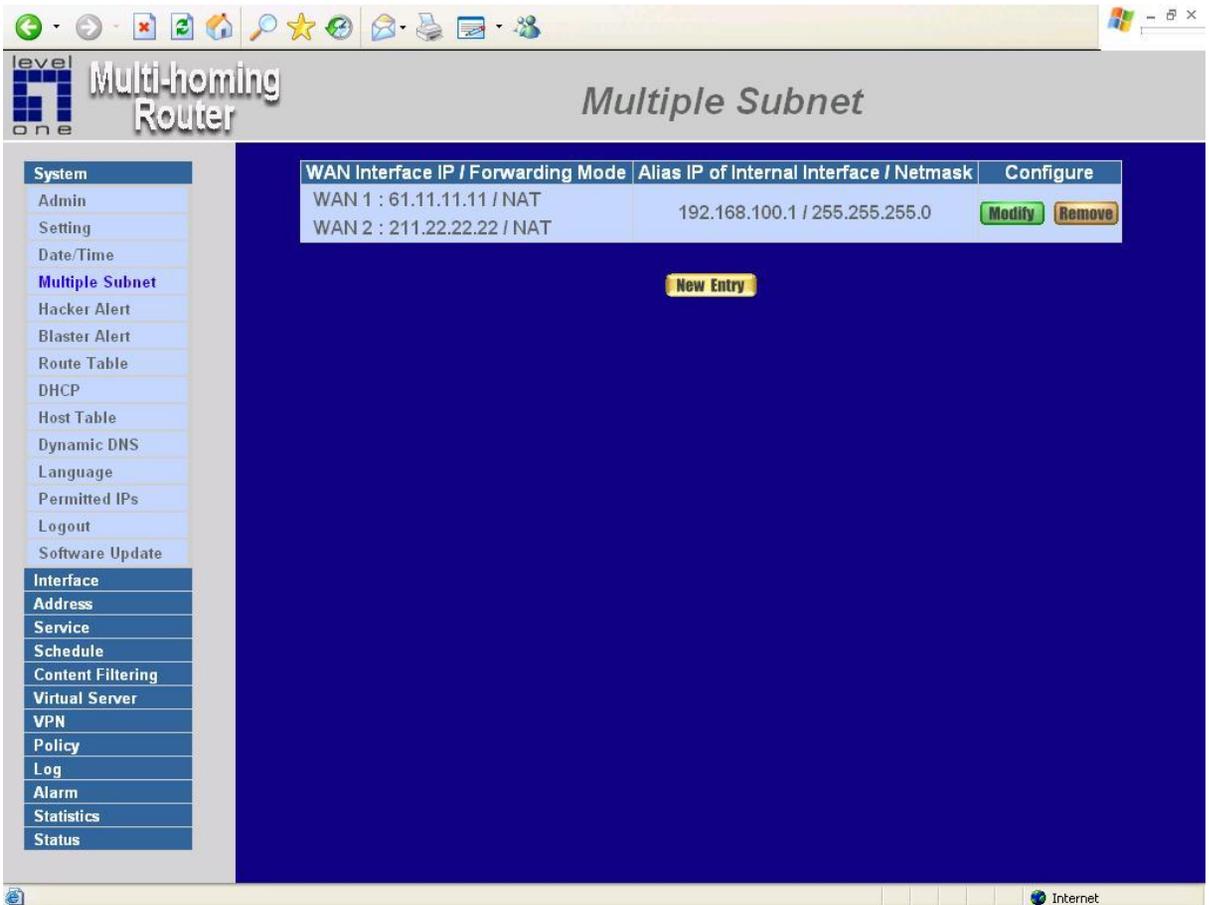
Subnet Mask : 255.255.255.0

Default Gateway : 192.168.2.11

The other departments are also set by groups, this is the function of Multiple Subnet.

## Multiple Subnet settings

Click **Multiple Subnet** in the **System** menu to enter Multiple Subnet window.



### Multiple Subnet

- **WAN Interface IP / Forwarding Mode** : Display WAN Port IP Address and Forwarding Mode.
- **Alias IP of Int. Interface / Netmask** : Local port IP Address and subnet Mask.
- **Modify** : Modify the settings of Multiple Subnet. Click **Modify** to modify the parameters of Multiple Subnet or click **Delete** to delete settings.

# Add Multiple Subnet NAT Mode.

**Step 1.** Click the **Add** button below to add Multiple Subnet.

**Step 2.** Enter the IP Address in the website name column of the new window.

Alias IP of LAN Interface : Enter Local port IP Address.

Netmask : Enter Local port subnet Mask.

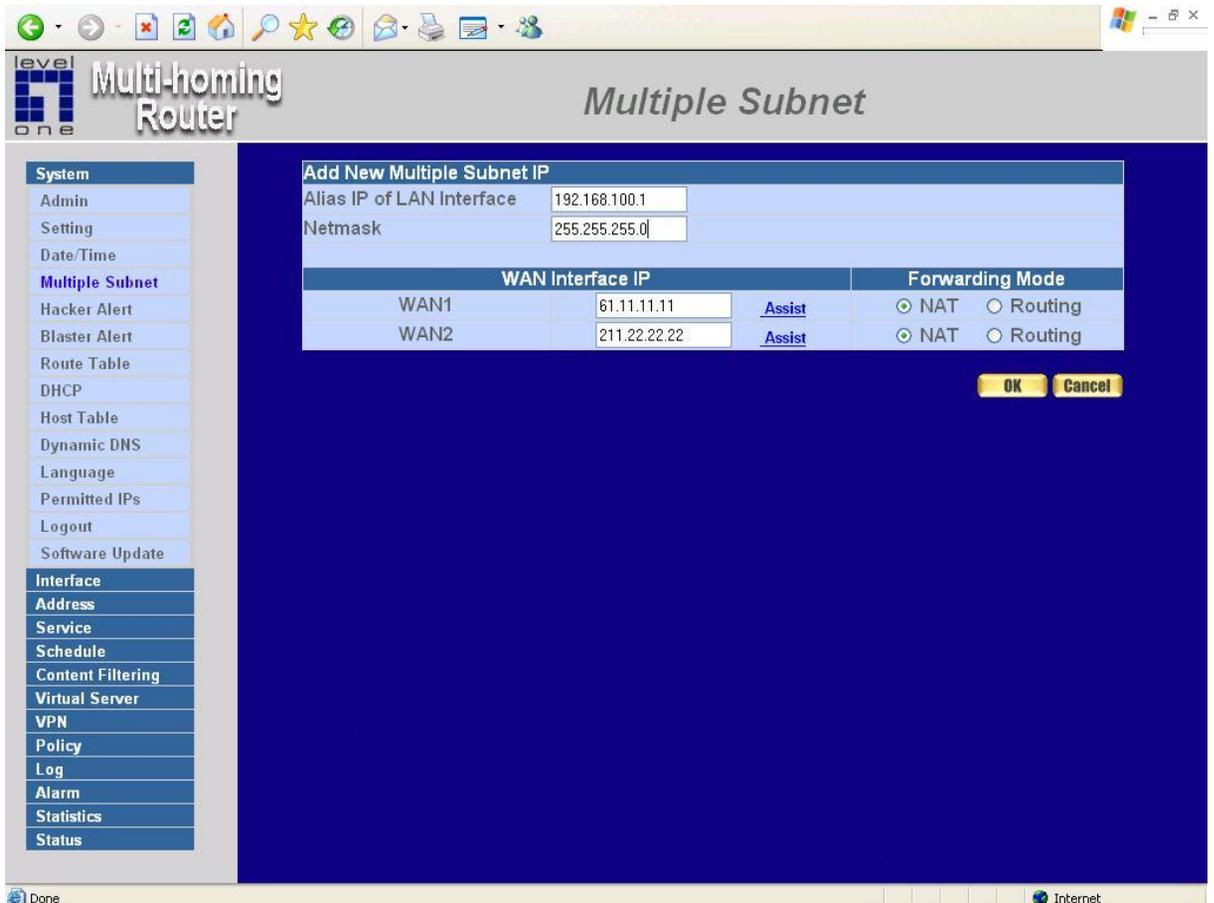
### WAN Interface IP

Add WAN 1 or WAN2 IP

### Forwarding Mode

Click the NAT button below to setting.

**Step 3.** Click **OK** to add Multiple Subnet or click **Cancel** to discard changes.

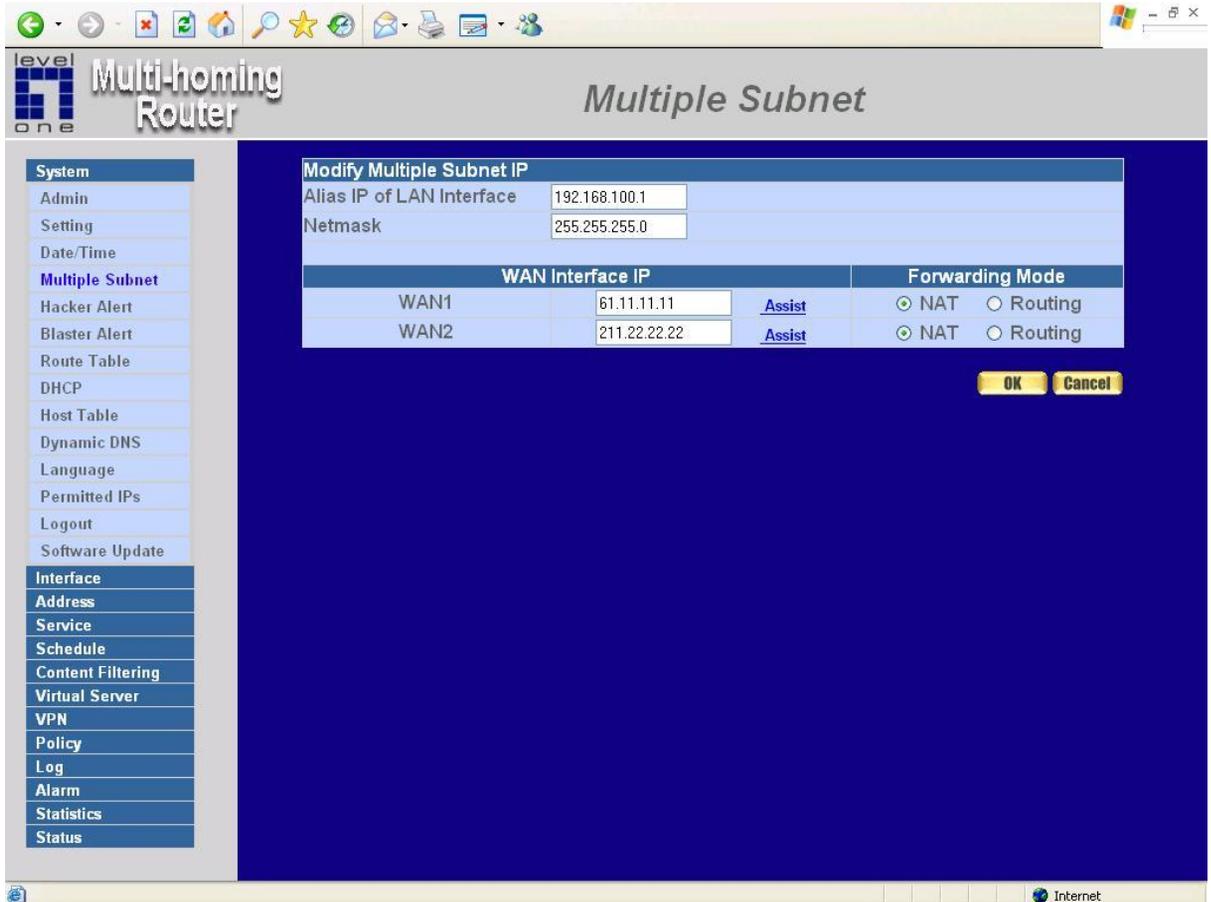


# Modify Multiple Subnet

**Step 1.** Find the IP Address you want to modify and click **Modify**

**Step 2.** Enter the new IP Address in **Modify Multiple Subnet** window.

**Step 3.** Click the **OK** button below to change the setting or click **Cancel** to discard changes.



# Delete Multiple Subnet

**Step 1.** Find the IP Address you want to delete and click **Delete**.

**Step 2.** A confirmation pop-up box will appear, click OK to delete the setting or click Cancel to discard changes.

The screenshot shows a web browser window displaying the configuration page for a "Multi-homing Router". The page title is "Multiple Subnet". On the left is a navigation menu with categories: System, Interface, and Status. The main content area contains a table with columns: "WAN Interface IP / Forwarding Mode", "Alias IP of Internal Interface / Netmask", and "Configure".

WAN Interface IP / Forwarding Mode	Alias IP of Internal Interface / Netmask	Configure
WAN 1 : 61.11.11.11 / NAT	192.168.100.1 / 255.255.255.0	<input type="button" value="Modify"/> <input type="button" value="Remove"/>
WAN 2 : 211.22.22.22 / NAT		

Below the table is a "New Entry" button. A "Microsoft Internet Explorer" dialog box is open in the foreground, asking "Are you sure you want to remove ?" with "OK" and "Cancel" buttons.

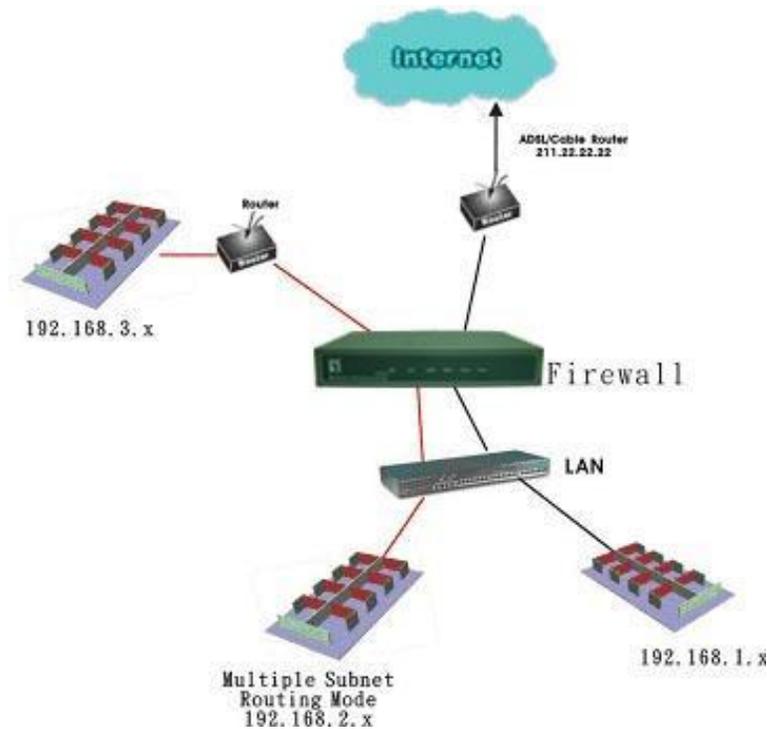
The browser's address bar shows the URL: `http://192.168.1.1/cgi-bin/multiple_nat.cgi?type=multiple_nat&modify=Delete&num=0&multiple_nat_type=3`. The status bar indicates "Internet".

# Routing Mode

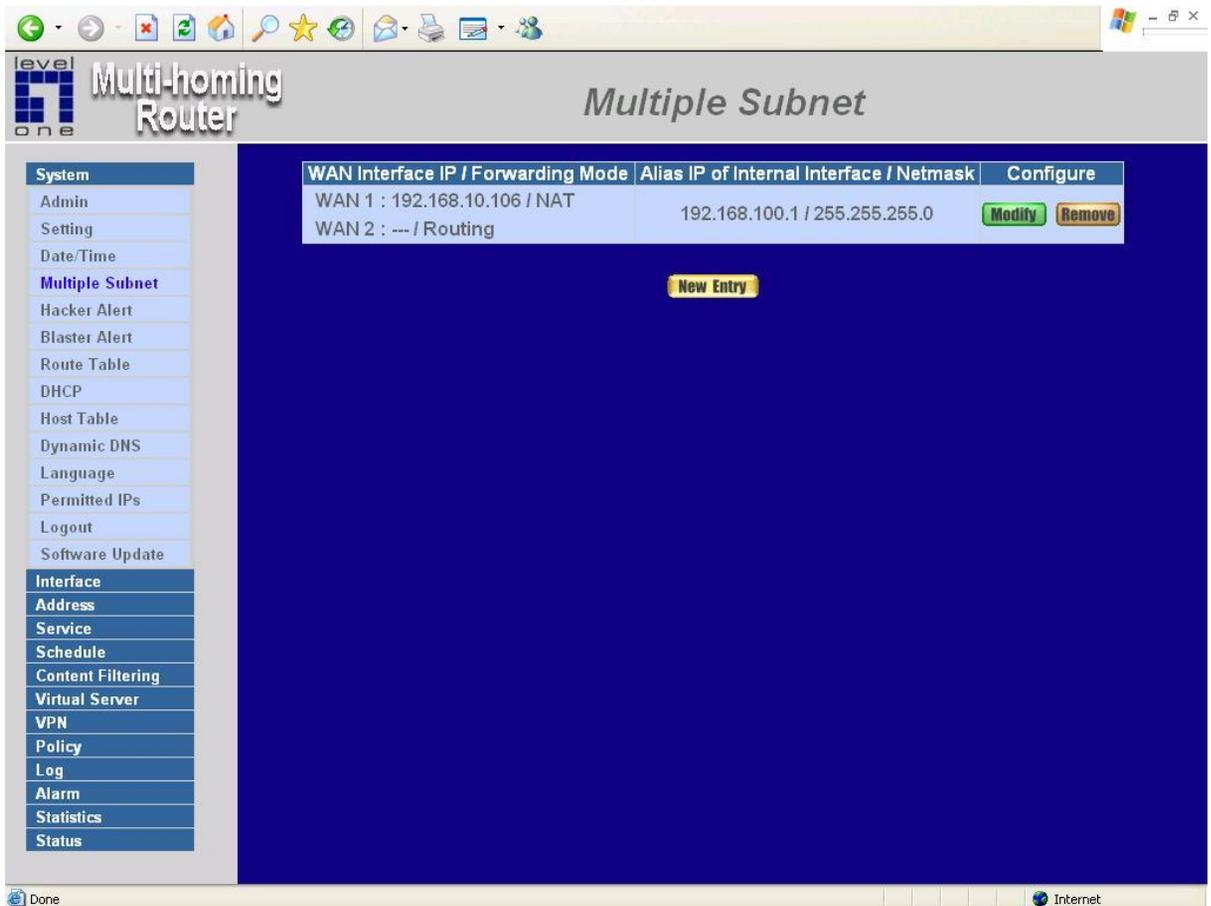
Multiple Subnet allows local port to set Multiple Subnet Routing Mode works and connect with the internet through different WAN IP Addresses.

For example, the leased line of a company applies several real IP Addresses 192.168.2.0/24 and the company is divided into R&D, Customer Service, Sales, Procurement, and Accounting Department. The company can distinguish each department by different subnet works for the purpose of convenient management.

The settings are as the following :



**Step 1.** Click **System Configuration** on the left side menu bar, then click **Multiple Subnet** below it. Enter **Multiple Subnet** window.



**Step 2.** The definition of Multiple Subnet :

- **Forwarding Mode** : Display Forwarding Mode which is NAT Mode or Routing Mode.
- **WAN Interface IP:** Display WAN Port IP Address.
- **Alias IP of Int. Interface / Subnet Mask** : Local port IP Address and subnet Mask.
- **Modify** : Modify the settings of Multiple Subnet. Click **Modify** to modify the parameters of Multiple Subnet or click **Delete** to delete settings.

## Adding a Multiple Subnet Routing Mode

**Step 1.** Click the **Add** button below to add Multiple Subnet.

**Step 2.** Enter the IP Address in **Add Multiple Subnet** window.

**Forwarding Mode :** Click the Routing button below to setting

**WAN Interface IP :** Add WAN IP.

**Alias IP of LAN Interface :** Enter Local port IP Address.

**Netmask :** Enter Local port subnet Mask.

**Step 3.** Click **OK** to add Multiple Subnet or click **Cancel** to discard changes.

The screenshot shows the 'Multiple Subnet' configuration window in the Multi-homing Router interface. The window is titled 'Add New Multiple Subnet IP' and contains the following fields and options:

WAN Interface IP		Forwarding Mode	
WAN1	192.168.10.106	<input type="radio"/> NAT	<input type="radio"/> Routing
WAN2	0.0.0.0	<input type="radio"/> NAT	<input checked="" type="radio"/> Routing

Below the table, there are 'OK' and 'Cancel' buttons. The background interface shows a sidebar with various configuration options like System, Admin, Setting, Date/Time, Multiple Subnet, Hacker Alert, Blaster Alert, Route Table, DHCP, Host Table, Dynamic DNS, Language, Permitted IPs, Logout, Software Update, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Statistics, and Status.

**Step 4:** Adding a new Incoming Policy. In the incoming window, click the **New Entry** button.

The screenshot shows the configuration interface for a Level One Multi-homing Router. The page title is "Multiple Subnet". On the left is a navigation menu with categories: System, Interface, and Status. The "Multiple Subnet" option is selected. The main content area displays a table with two columns: "WAN Interface IP / Forwarding Mode" and "Alias IP of Internal Interface / Netmask". Each row has "Configure" buttons labeled "Modify" and "Remove". Below the table is a "New Entry" button.

WAN Interface IP / Forwarding Mode	Alias IP of Internal Interface / Netmask	Configure
WAN 1 : 192.168.10.106 / NAT WAN 2 : --- / Routing	192.168.100.1 / 255.255.255.0	<a href="#">Modify</a> <a href="#">Remove</a>
WAN 1 : 192.168.10.106 / NAT WAN 2 : --- / Routing	192.168.2.1 / 255.255.255.0	<a href="#">Modify</a> <a href="#">Remove</a>

[New Entry](#)

## Modify a Multiple Subnet Routing Mode

**Step 1.** Find the IP Address you want to modify in **Multiple Subnet** menu, then click **Modify** button, on the right side of the service providers, click **OK**.

**Step 2.** Enter the new IP Address in **Modify Multiple Subnet** window.

**Step 3.** Click the **OK** button below to change the setting or click **Cancel** to discard changes.

**System**

- Admin
- Setting
- Date/Time
- Multiple Subnet**
- Hacker Alert
- Blaster Alert
- Route Table
- DHCP
- Host Table
- Dynamic DNS
- Language
- Permitted IPs
- Logout
- Software Update

**Interface**

- Address
- Service
- Schedule
- Content Filtering
- Virtual Server
- VPN
- Policy
- Log
- Alarm
- Statistics
- Status

### Multiple Subnet

#### Modify Multiple Subnet IP

Alias IP of LAN Interface: 192.168.2.1  
Netmask: 255.255.255.0

	WAN Interface IP		Forwarding Mode
WAN1	192.168.10.106	<a href="#">Assist</a>	<input checked="" type="radio"/> NAT <input type="radio"/> Routing
WAN2	0.0.0.0	<a href="#">Assist</a>	<input type="radio"/> NAT <input checked="" type="radio"/> Routing

**OK** **Cancel**

Internet

## Removing a Multiple Subnet Routing Mode

**Step 1.** Find the IP Address you want to delete in **Multiple Subnet** menu, then click **Delete** button, on the right side of the service providers, click **OK**.

**Step 2.** A confirmation pop-up box will appear, click **OK** to delete the setting or click **Cancel** to discard changes.

The screenshot shows the web interface of a Multi-homing Router. The main content area is titled "Multiple Subnet" and contains a table with the following data:

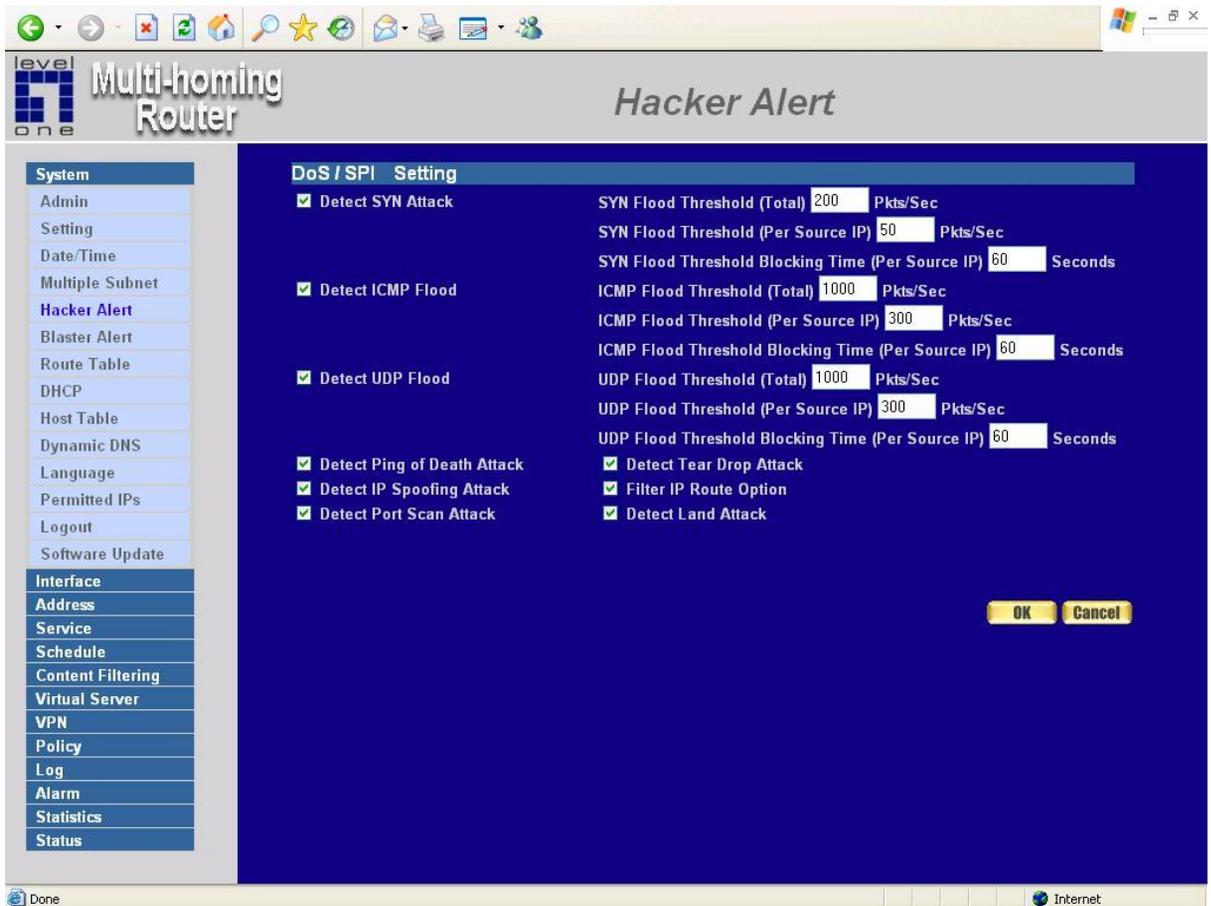
WAN Interface IP / Forwarding Mode	Alias IP of Internal Interface / Netmask	Configure
WAN 1 : 192.168.10.106 / NAT	192.168.100.1 / 255.255.255.0	<input type="button" value="Modify"/> <input type="button" value="Remove"/>
WAN 2 : --- / Routing		
WAN 1 : 192.168.10.106 / NAT	192.168.2.1 / 255.255.255.0	<input type="button" value="Modify"/> <input type="button" value="Remove"/>
WAN 2 : --- / Routing		

Below the table is a "New Entry" button. A confirmation dialog box from Microsoft Internet Explorer is overlaid on the page, asking "Are you sure you want to remove?" with "OK" and "Cancel" buttons.

The browser address bar shows the URL: [http://192.168.1.1/cgi-bin/multiple\\_nat.cgi?type=multiple\\_nat&modify=Delete&num=1&multiple\\_nat\\_type=3](http://192.168.1.1/cgi-bin/multiple_nat.cgi?type=multiple_nat&modify=Delete&num=1&multiple_nat_type=3)

## Hacker Alert

The Administrator can enable the device's auto detect functions in this section. When abnormal conditions occur, the Multi-Homing Gateway will send an e-mail alert to notify the Administrator, and also display warning messages in the **Event** window of **Alarm**.



## Auto Detect functions

- **Detect SYN Attack:** Select this option to detect TCP SYN attacks that hackers send to server computers continuously to block or cut down all the connections of the servers. These attacks will prevent valid users from connecting to the servers.

**【SYN Flood Threshold( Total) Pkts/Sec】** : The System Administrator can enter the maximum number of SYN packets per second that is allow to enter

the network/Multi-Homing Gateway.

**【SYN Flood Threshold( Per Source IP) Pkts/Sec】** : The System Administrator can enter the maximum number of SYN packets per second from attacking source IP Address that is allow to enter the network/Multi-Homing Gateway.

**【SYN Flood Threshold Blocking Time ( Per Source IP) Seconds】** : The System Administrator can enter the blocking time when the number of SYN packets per second from attacking source IP Address that is allow to enter the network/Multi-Homing Gateway exceed the maximum number (define as above). After blocking for certain seconds, the device will start to calculate the max number of SYN packets per second from attacking source IP Address, if the max number still exceed the define value, it will block the attacking IP Address continuously.

- **Detect ICMP Attack:** Select this option to detect ICMP flood attacks. When hackers continuously send PING packets to all the machines of the LAN networks or to the Multi-Homing Gateway via broadcasting, your network is experiencing an ICMP flood attack.

**【ICMP Flood Threshold( Total) Pkts/Sec】** : The System Administrator can enter the maximum number of ICMP packets per second that is allow to enter the network/Multi-Homing Gateway.

**【ICMP Flood Threshold( Per Source IP) Pkts/Sec】** : The System Administrator can enter the maximum number of ICMP packets per second from attacking source IP Address that is allow to enter the network / Multi-Homing Gateway.

**【ICMP Flood Threshold Blocking Time ( Per Source IP) Seconds】** : The System Administrator can enter the blocking time when the number of ICMP packets per second from attacking source IP Address that is allow to enter the network / Multi-Homing Gateway exceed the maximum number (define as above). After blocking for certain seconds, the device will start to calculate the max number of ICMP packets per second from attacking source IP Address, if the max number still exceed the define value, it will block the attacking IP Address continuously.

- **Detect UDP Attack:** The same as ICMP Flood.
  - 【UDP Flood Threshold( Total) Pkts/Sec】 : The System Administrator can enter the maximum number of UDP packets per second that is allow to enter the network/Multi-Homing Gateway.
  - 【UDP Flood Threshold( Per Source IP) Pkts/Sec】 : The System Administrator can enter the maximum number of UDP packets per second from attacking source IP Address that is allow to enter the network/Multi-Homing Gateway.
  - 【UDP Flood Threshold Blocking Time ( Per Source IP) Seconds】 : The System Administrator can enter the blocking time when the number of UDP packets per second from attacking source IP Address that is allow to enter the network/Multi-Homing Gateway exceed the maximum number (define as above). After blocking for certain seconds, the device will start to calculate the max number of UDP packets per second from attacking source IP Address, if the max number still exceed the define value, it will block the attacking IP Address continuously.
- **Detect Ping of Death Attack:** Select this option to detect the attacks of tremendous trash data in PING packets that hackers send to cause System malfunction This attack can cause network speed to slow down, or even make it necessary to restart the computer to get a normal operation.
- **Detect IP Spoofing Attack:** Select this option to detect spoof attacks. Hackers disguise themselves as trusted users of the network in **Spoof attacks**. They use a fake identity to try to pass through the Multi-Homing Gateway System and invade the network.
- **Detect Port Scan Attack:** Select this option to detect the port scans hackers use to continuously scan networks on the Internet to detect computers and vulnerable ports that are opened by those computers.
- **Detect Tear Drop Attack:** Select this option to detect tear drop attacks. These are packets that are segmented to small packets with negative length. Some Systems treat the negative value as a very large number, and copy enormous data into the System to cause System damage, such as a shut down or a restart.
- **Filter IP Source Route Option:** Each IP packet can carry an optional field that specifies the replying address that can be different from the source address

specified in packet's header. Hackers can use this address field on disguised packets to invade LAN networks and send LAN networks' data back to them.

- **Detect Land Attack:** Some Systems may shut down when receiving packets with the same source and destination addresses, the same source port and destination port, and when **SYN** on the TCP header is marked. Enable this function to detect such abnormal packets.

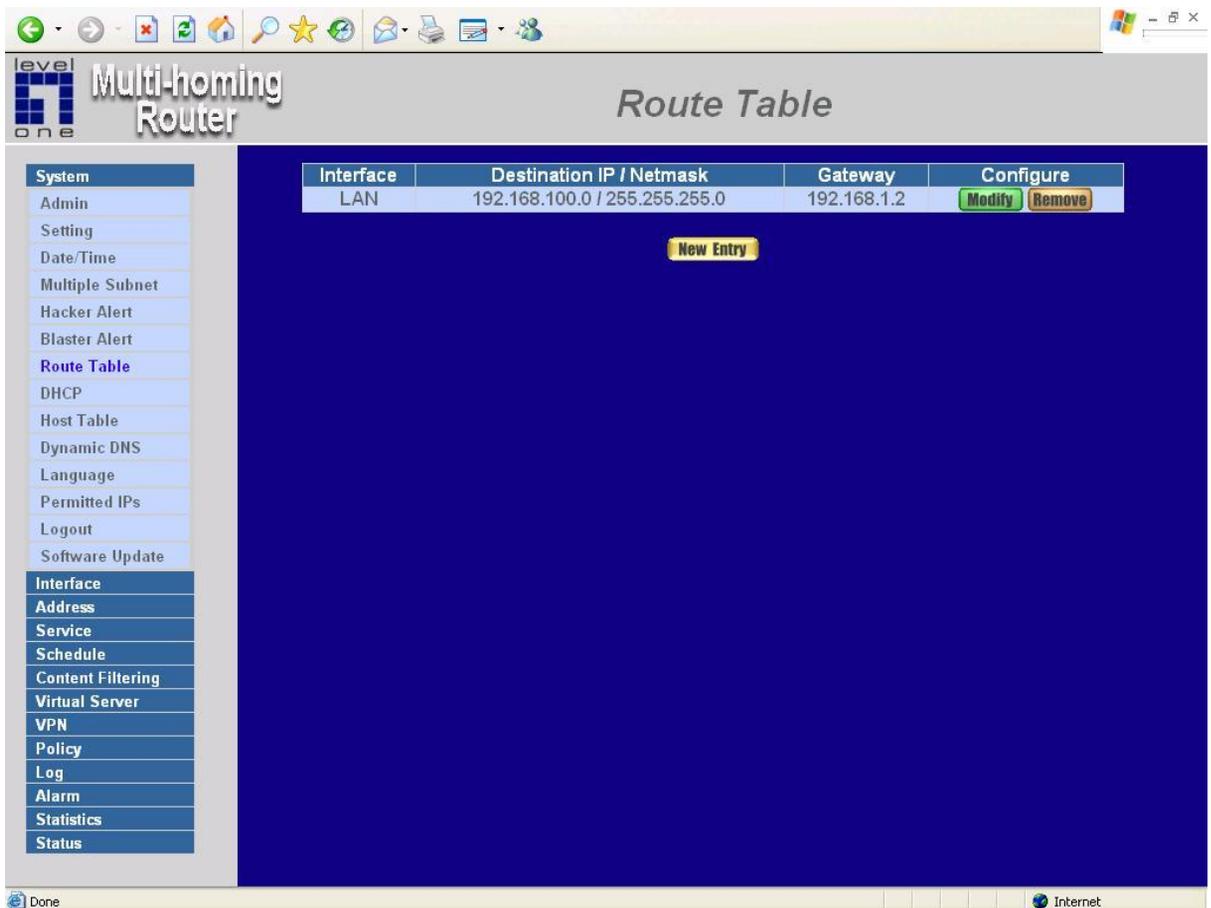
After enabling the needed detect functions, click **OK** to activate the changes.

# Route Table

In this section, the Administrator can add static routes for the networks.

## Entering the Route Table screen

Click **System** on the left side menu bar, then click **Route Table** below it. The Route Table window appears, in which current route settings are shown.



## Route Table functions

- **Interface:** Destination network , LAN or WAN 1/2 networks.
- **Destination IP:** IP address of destination network.

- **NetMask:** Netmask of destination network.
- **Gateway:** Gateway IP address for connecting to destination network.
- **Configure:** Change settings in the route table.

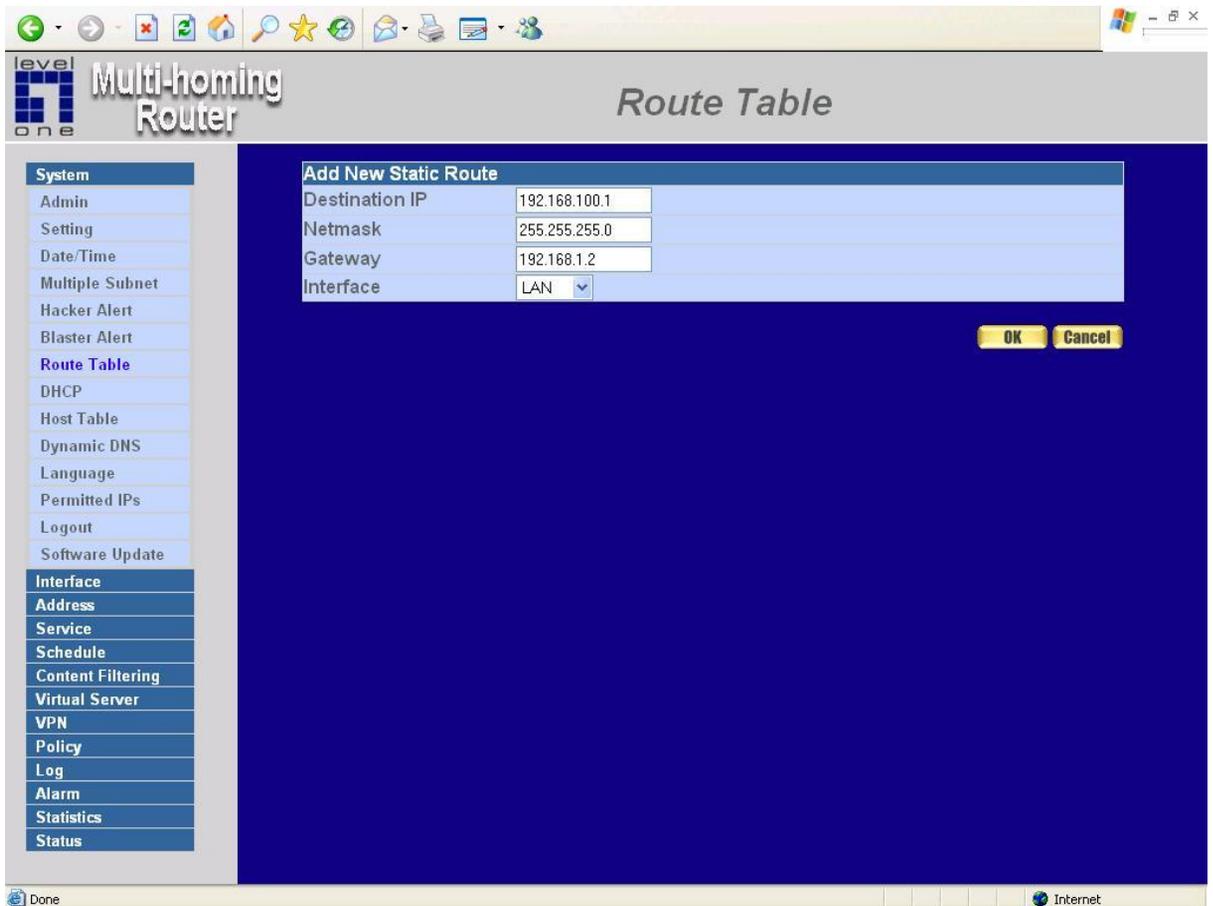
## Adding a new Static Route

**Step 1.** In the Route Table window, click the New Entry button.

**Step 2.** In the Add New Static Route window, enter new static route information.

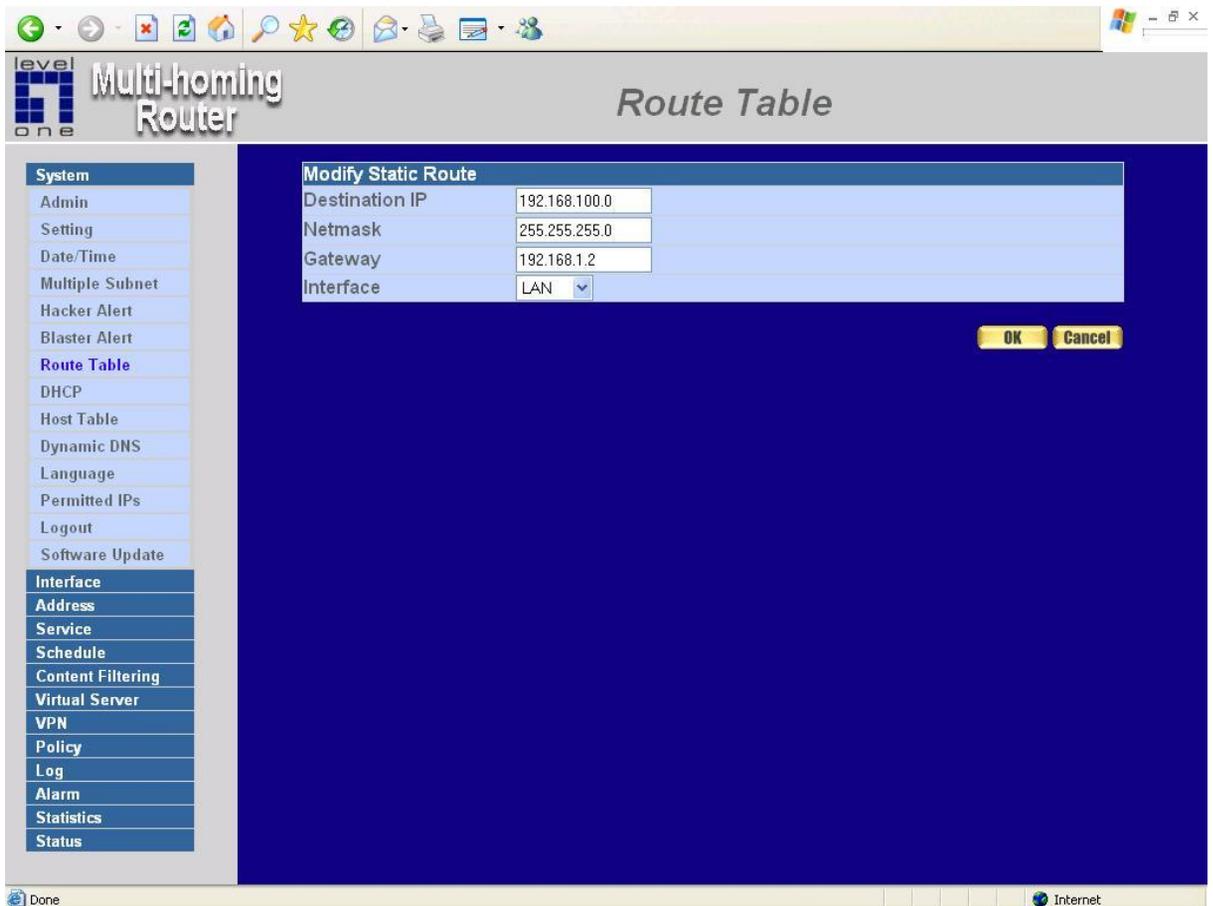
**Step 3.** In the Interface field's pull-down menu, choose the network to connect (Internal, WAN 1 or WAN 2).

**Step 4.** Click **OK** to add the new static route or click **Cancel** to cancel.



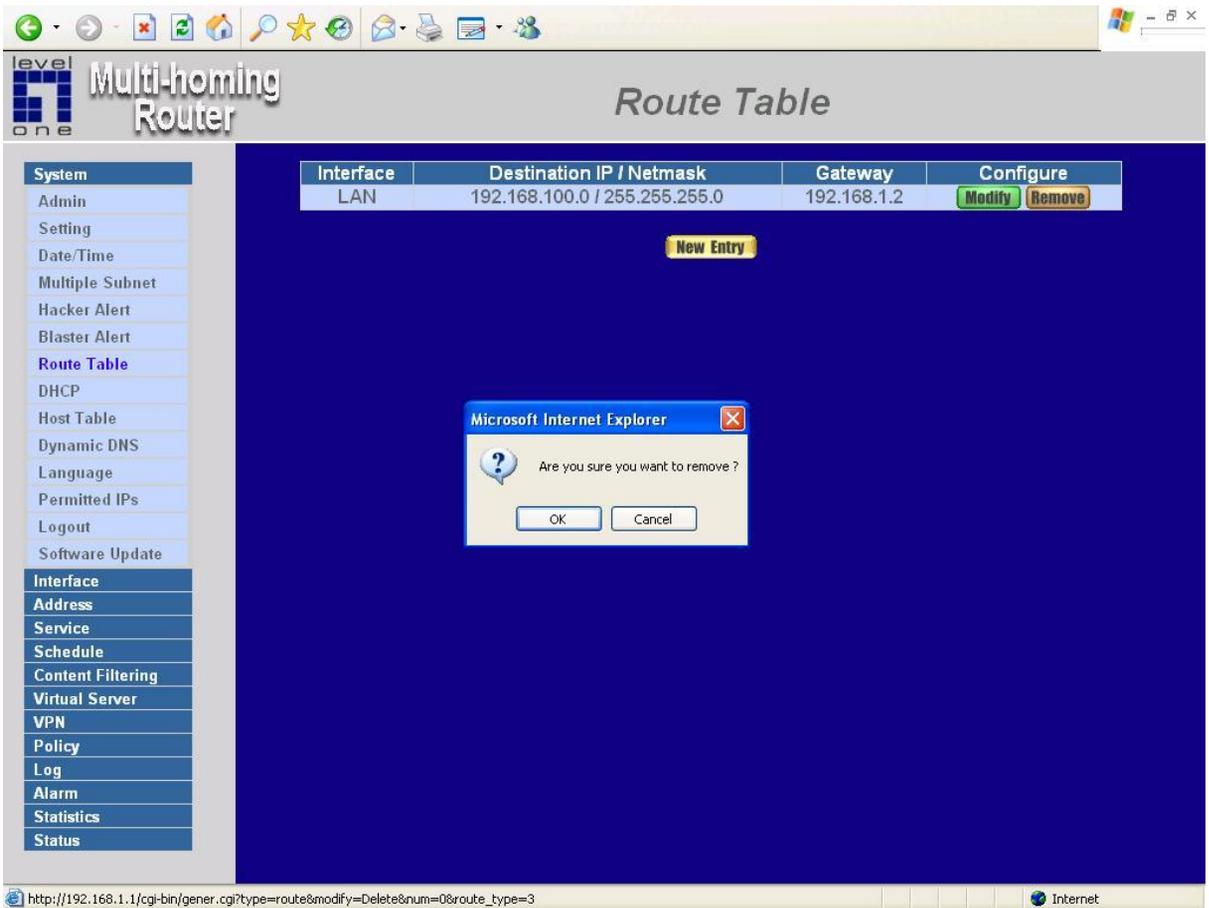
## Modifying a Static Route:

- Step 1.** In the Route Table menu, find the route to edit and click the corresponding Modify option in the Configure field.
- Step 2.** In the Modify Static Route window, modify the necessary routing addresses.
- Step 3.** Click **OK** to apply changes or click **Cancel** to cancel it.



# Removing a Static Route

- Step 1.** In the Route Table window, find the route to remove and click the corresponding Remove option in the Configure field.
- Step 2.** In the Remove confirmation pop-up box, click **OK** to confirm removing or click **Cancel** to cancel it.

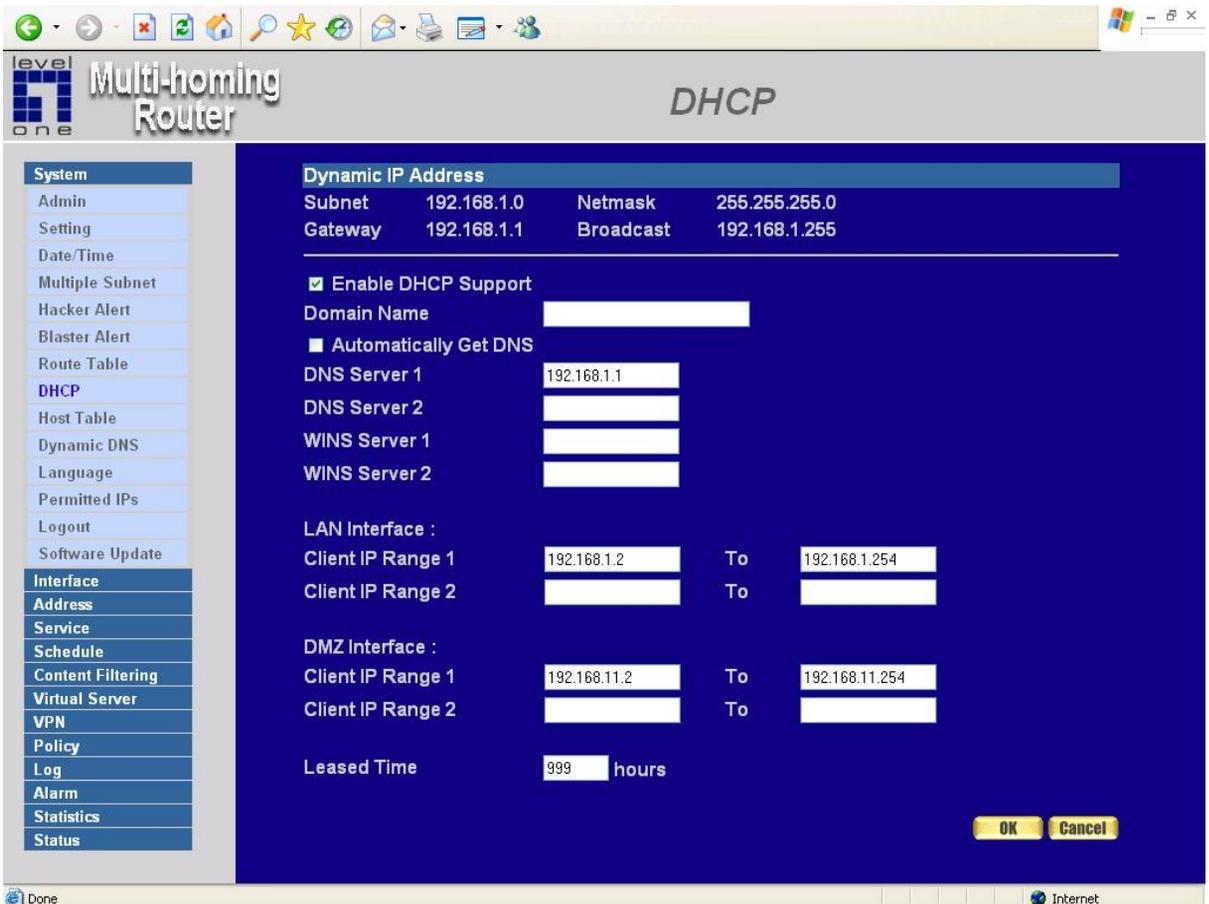


# DHCP

In the section, the Administrator can configure DHCP (Dynamic Host Configuration Protocol) settings for the LAN (LAN) network.

## Entering the DHCP window

**Step 1.** Click **System** on the left hand side menu bar, then click **DHCP** below it. The DHCP window appears in which current DHCP settings are shown on the screen.



## DHCP Address functions

**Enable DHCP Support** : Enable /Disable DCHP Support

**Domain Name** : Enter the Domain Name of DHCP

**Automatically Get DNS** : Automatically detect DNS Server.

- **DNS Server 1** : Enter the distributed IP address of DNS Server1.
- **DNS Server 2** : Enter the distributed IP address of DNS Server2.
- **WINS Server 1** : Enter the distributed IP address of WINS Server1.
- **WINS Server 2** : Enter the distributed IP address of WINS Server2.

**Internal Interface :**

- **Client IP Address Range 1**: Enter the starting and the ending IP address dynamically assigning to DHCP clients.
- **Client IP Address Range 2**: Enter the starting and the ending IP address dynamically assigning to DHCP clients. (Optional)

**DMZ Interface :**

- **Client IP Address Range 1**: Enter the starting and the ending IP address dynamically assigning to DHCP clients.
- **Client IP Address Range 2**: Enter the starting and the ending IP address dynamically assigning to DHCP clients. (Optional)
- **Leased Time**: Enter the leased time for DHCP.

## Enabling DHCP Support

**Step 1.** In the Dynamic IP Address window, click **Enable DHCP Support**.

**Step 2.**

**Enable DHCP Support** : Enable /Disable DCHP Support

■ **Domain Name** : Enter the Domain Name of DHCP

**Automatically Get DNS** : Automatically detect DNS Server.

■ **DNS Server 1** : Enter the distributed IP address of DNS Server1.

■ **DNS Server 2** : Enter the distributed IP address of DNS Server2.

■ **WINS Server 1** : Enter the distributed IP address of WINS Server1.

■ **WINS Server 2** : Enter the distributed IP address of WINS Server2.

**Internal Interface :**

■ **Client IP Address Range 1:** Enter the starting and the ending IP address dynamically assigning to DHCP clients.

■ **Client IP Address Range 2:** Enter the starting and the ending IP address dynamically assigning to DHCP clients. (Optional)

**DMZ Interface :**

■ **Client IP Address Range 1:** Enter the starting and the ending IP address dynamically assigning to DHCP clients.

■ **Client IP Address Range 2:** Enter the starting and the ending IP address dynamically assigning to DHCP clients. (Optional)

■ **Leased Time:** Enter the leased time for DHCP.

**Step 3.** Click **OK** to enable DHCP support.

level  
one Multi-homing Router DHCP

**System**

- Admin
- Setting
- Date/Time
- Multiple Subnet
- Hacker Alert
- Blaster Alert
- Route Table
- DHCP**
- Host Table
- Dynamic DNS
- Language
- Permitted IPs
- Logout
- Software Update

**Interface**

- Address**
- Service
- Schedule
- Content Filtering
- Virtual Server
- VPN
- Policy
- Log
- Alarm
- Statistics
- Status

**Dynamic IP Address**

Subnet	192.168.1.0	Netmask	255.255.255.0
Gateway	192.168.1.1	Broadcast	192.168.1.255

---

Enable DHCP Support

Domain Name

Automatically Get DNS

DNS Server 1

DNS Server 2

WINS Server 1

WINS Server 2

LAN Interface :

Client IP Range 1  To

Client IP Range 2  To

DMZ Interface :

Client IP Range 1  To

Client IP Range 2  To

Leased Time  hours

Internet

## Dynamic DNS

The **Dynamic DNS** (require Dynamic DNS Service) allows you to alias a dynamic IP address to a static hostname, allowing your device to be more easily accessed by specific name. When this function is enabled, the IP address in Dynamic DNS Server will be automatically updated with the new IP address provided by ISP.

Click **Dynamic DNS** in the **System** menu to enter Dynamic DNS window.

1. The nouns in Dynamic DNS window :

- **Update Status** [  Connecting;  Update succeed;  Update fail;  Unidentified error ]
- **Domain name** : Enter the password provided by ISP.
- **WAN IP Address** : IP Address of the WAN port.
- **Modify** : Modify dynamic DNS settings. Click **Modify** to change the DNS parameters; click Delete to delete the settings.

2. How to use dynamic DNS :

The Multi-Homing Gateway provides 3 service providers, users have to register first to use this function. For the usage regulations, see the providers' websites.

**How to register** : First, Click **Dynamic DNS** in the **System** menu to enter Dynamic DNS window, then click **Add** button on the right side of the service providers, click **Register**, the service providers' website will appear, please refer to the website for the way of registration.

level one Multi-homing Router *Dynamic DNS*

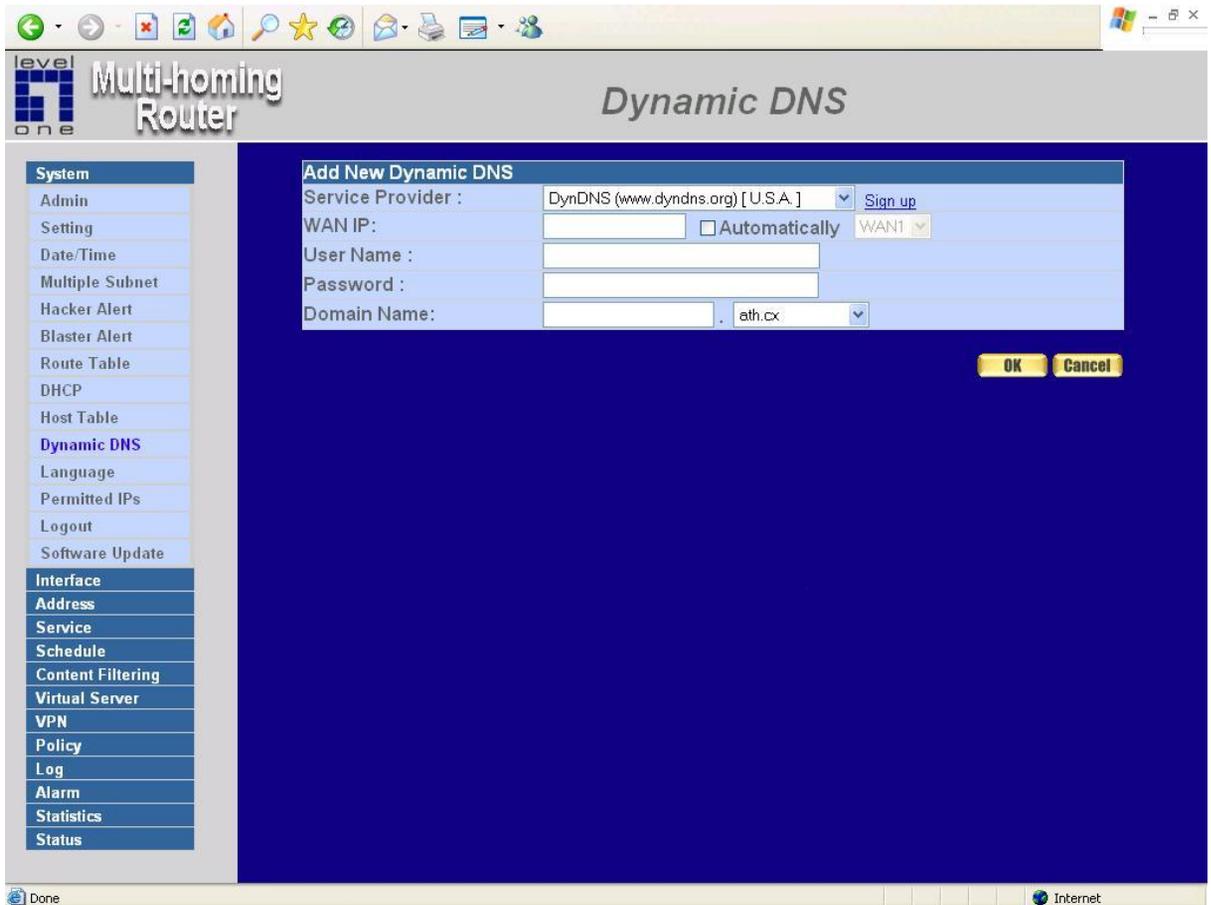
i	Domain Name	WAN IP	Configure
	level1.dyndns.tv	192.168.10.106	<a href="#">Modify</a> <a href="#">Remove</a>

[New Entry](#)

- System
  - Admin
  - Setting
  - Date/Time
  - Multiple Subnet
  - Hacker Alert
  - Blaster Alert
  - Route Table
  - DHCP
  - Host Table
  - Dynamic DNS**
  - Language
  - Permitted IPs
  - Logout
  - Software Update
- Interface
- Address
- Service
- Schedule
- Content Filtering
- Virtual Server
- VPN
- Policy
- Log
- Alarm
- Statistics
- Status

Done Internet

**How to register** : Firstly, Click **Dynamic DNS** in the **System** menu to enter Dynamic DNS window, then click **Add** button , on the right side of the service providers, click **Register**, the service providers' website will appear, please refer to the website for the way of registration.



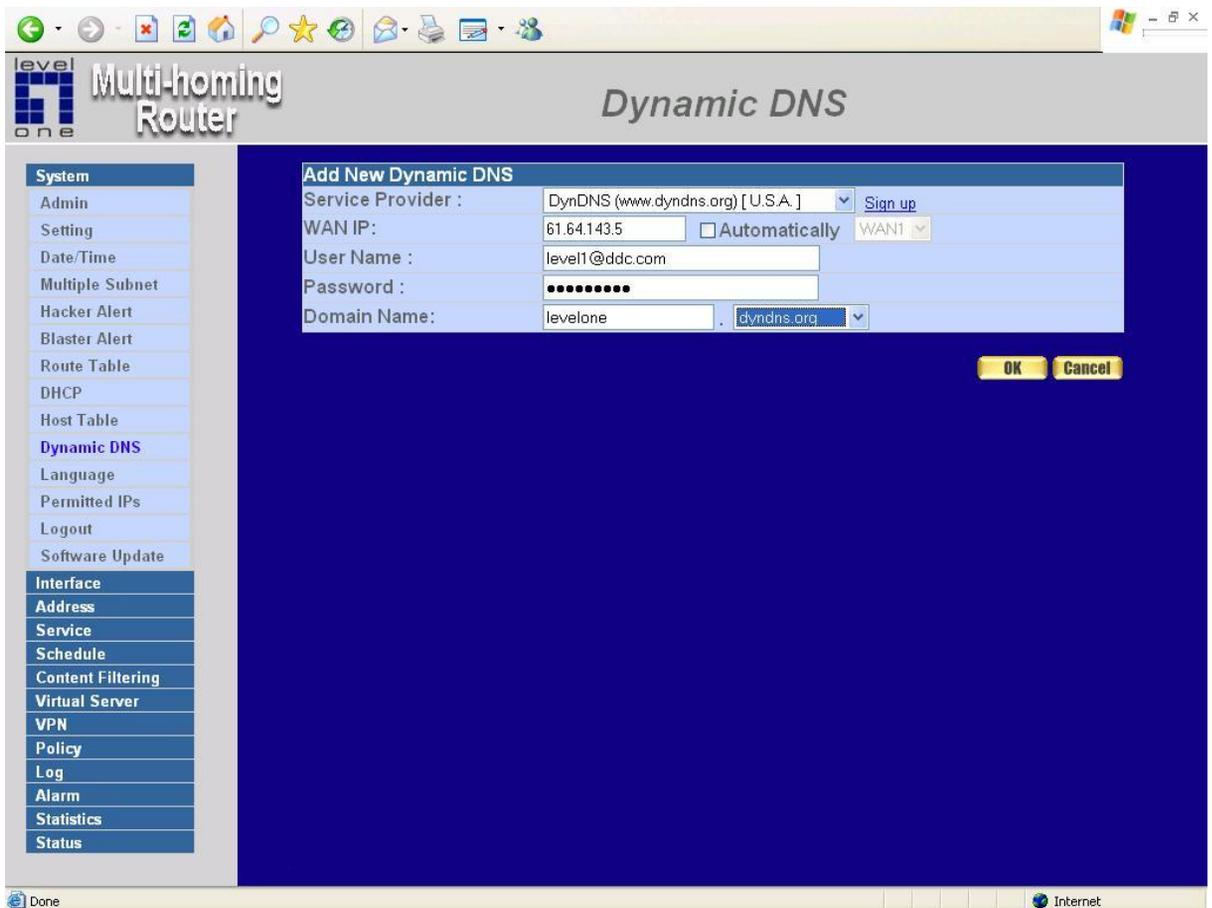
## Dynamic DNS settings

**Step 1:** Click **Add** button.

**Step 2:** Click the information in the column of the new window.

- **Service providers** : Select service providers.
- **Register** : to the service providers' website.
- **WAN IP Address** : IP Address of the WAN port.
- **automatically fill in the WAN 1/2 IP** : Check to automatically fill in the WAN 1/2 IP. ◦
- **User Name** : Enter the registered user name.
- **Password** : Enter the password provided by ISP(Internet Service Provider).
- **Domain name** : Your host domain name provided by ISP.

**Step 4:** Click **OK** to add dynamic DNS or click **Cancel** to discard changes.

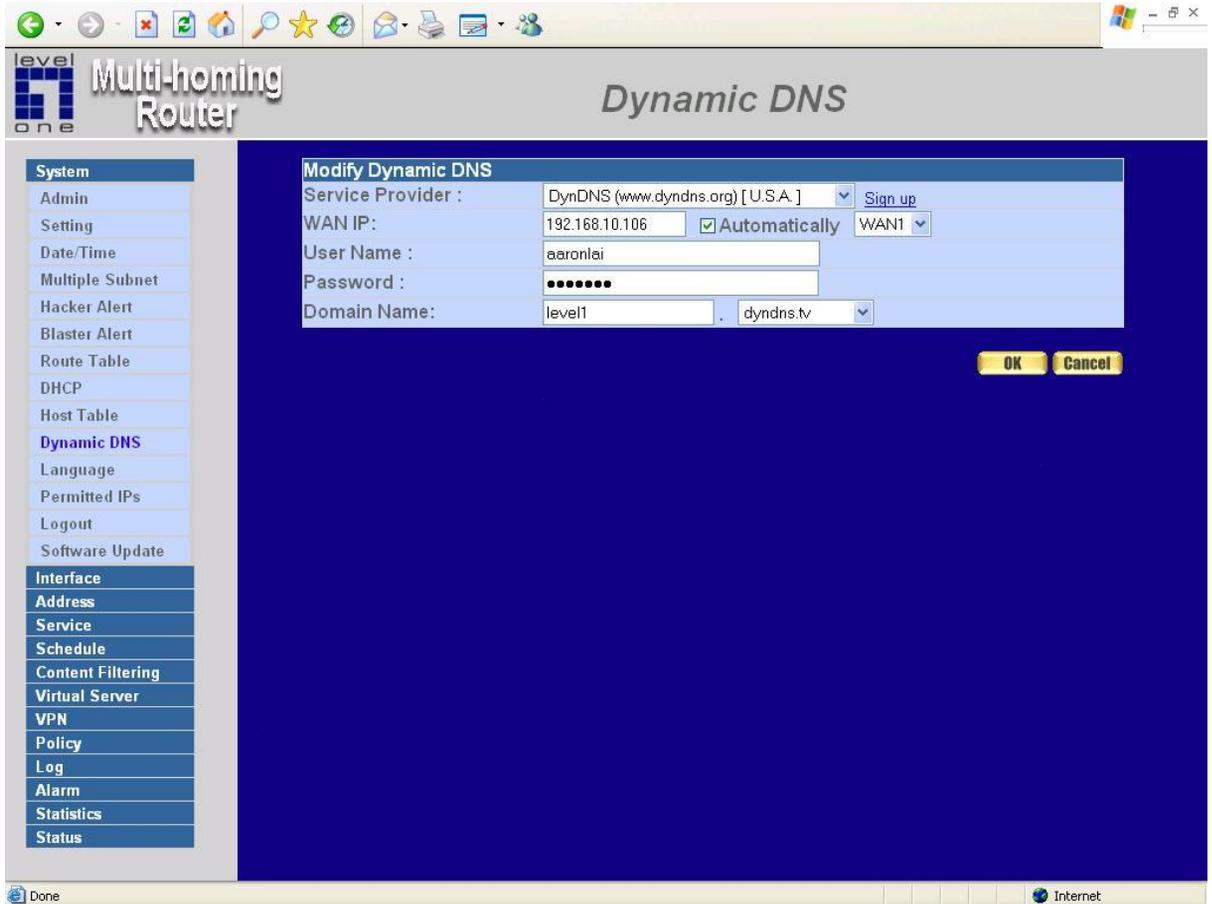


# Modify dynamic DNS

**Step 1:** Find the item you want to change and click **Modify**.

**Step 2:** Enter the new information in the Modify Dynamic DNS window.

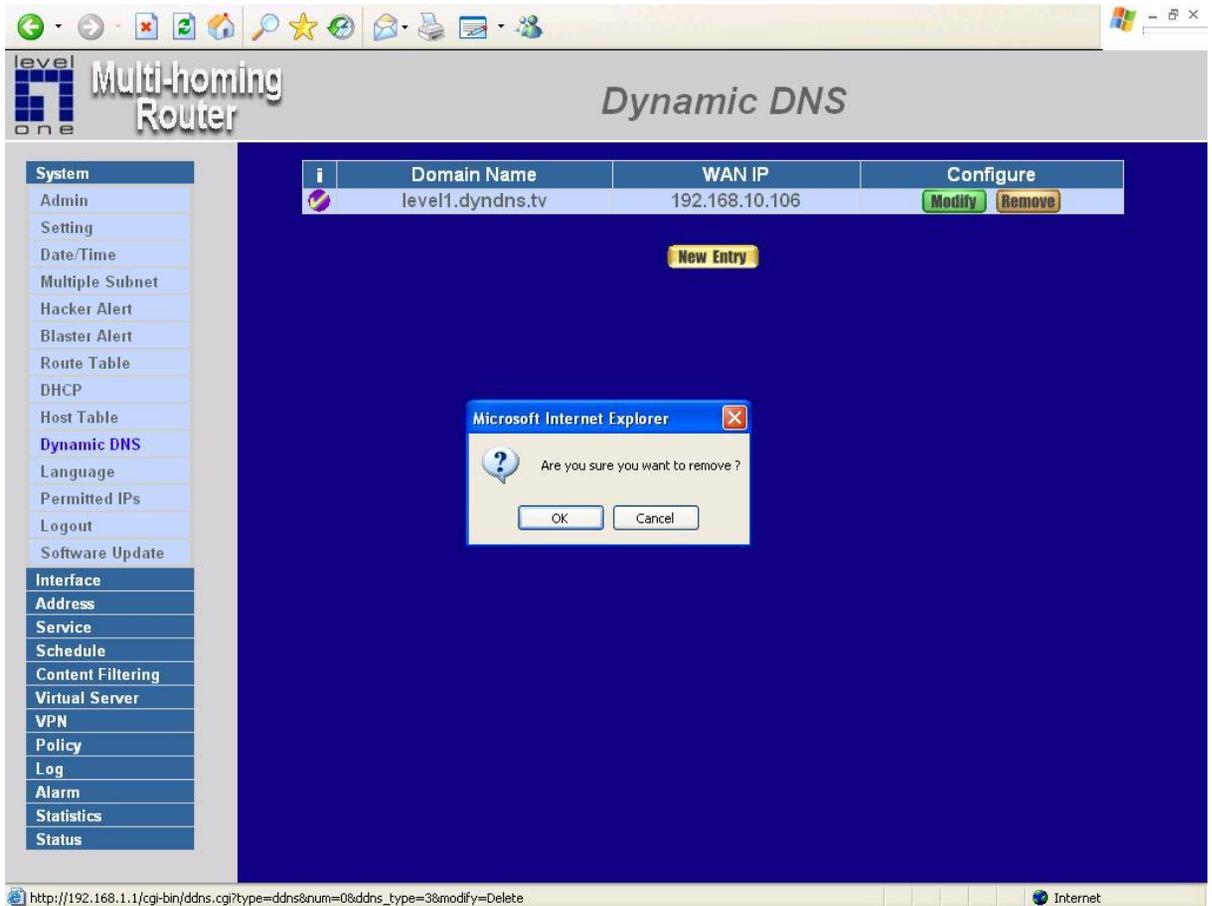
**Step 3:** Click **OK** to change the settings or click **Cancel** to discard changes.



# Delete Dynamic DNS

**Step 1:** Find the item you want to change and click **Delete**.

**Step 2:** A confirmation pop-up box will appear, click OK to delete the settings or click Cancel to discard changes.

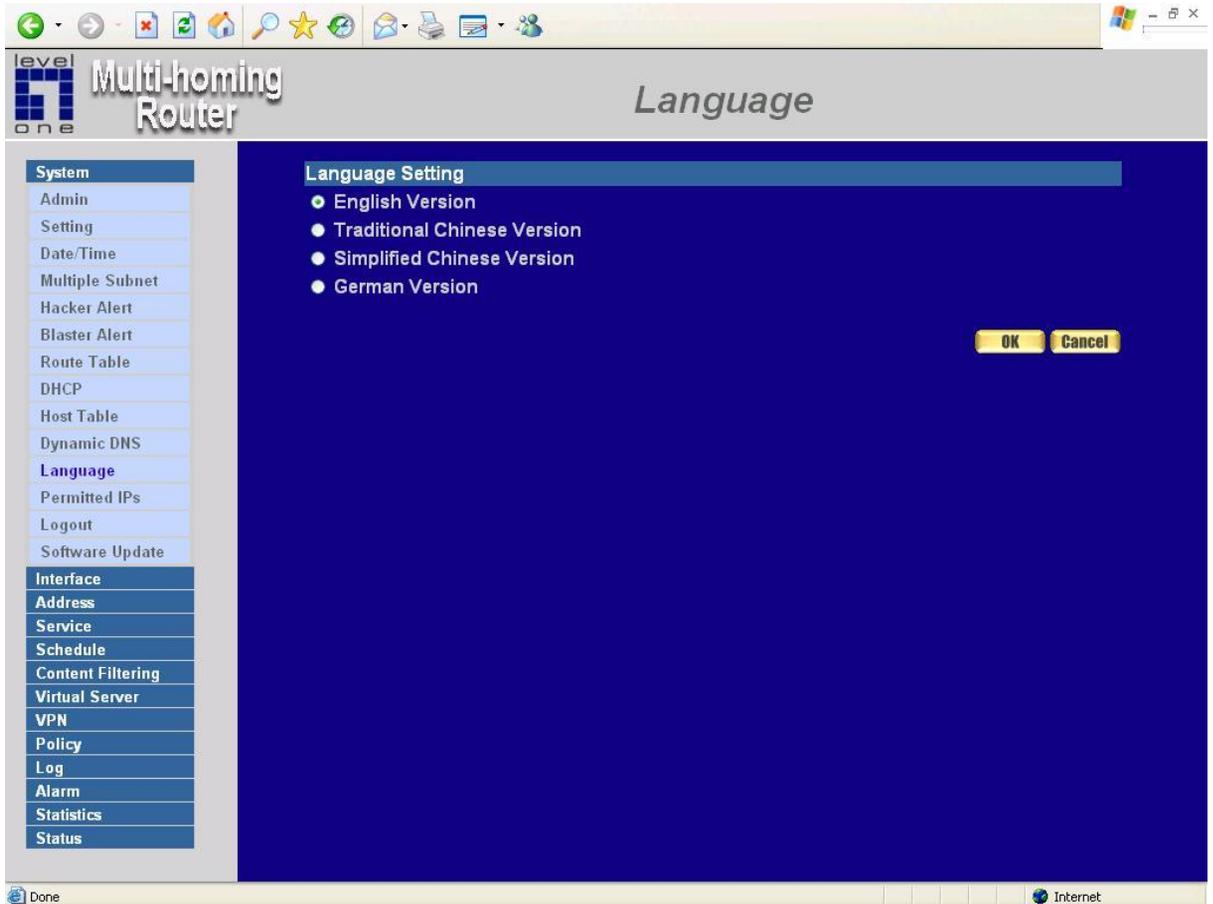


## Language

Admins can configure the Multi-Homing Gateway Select the Language version.

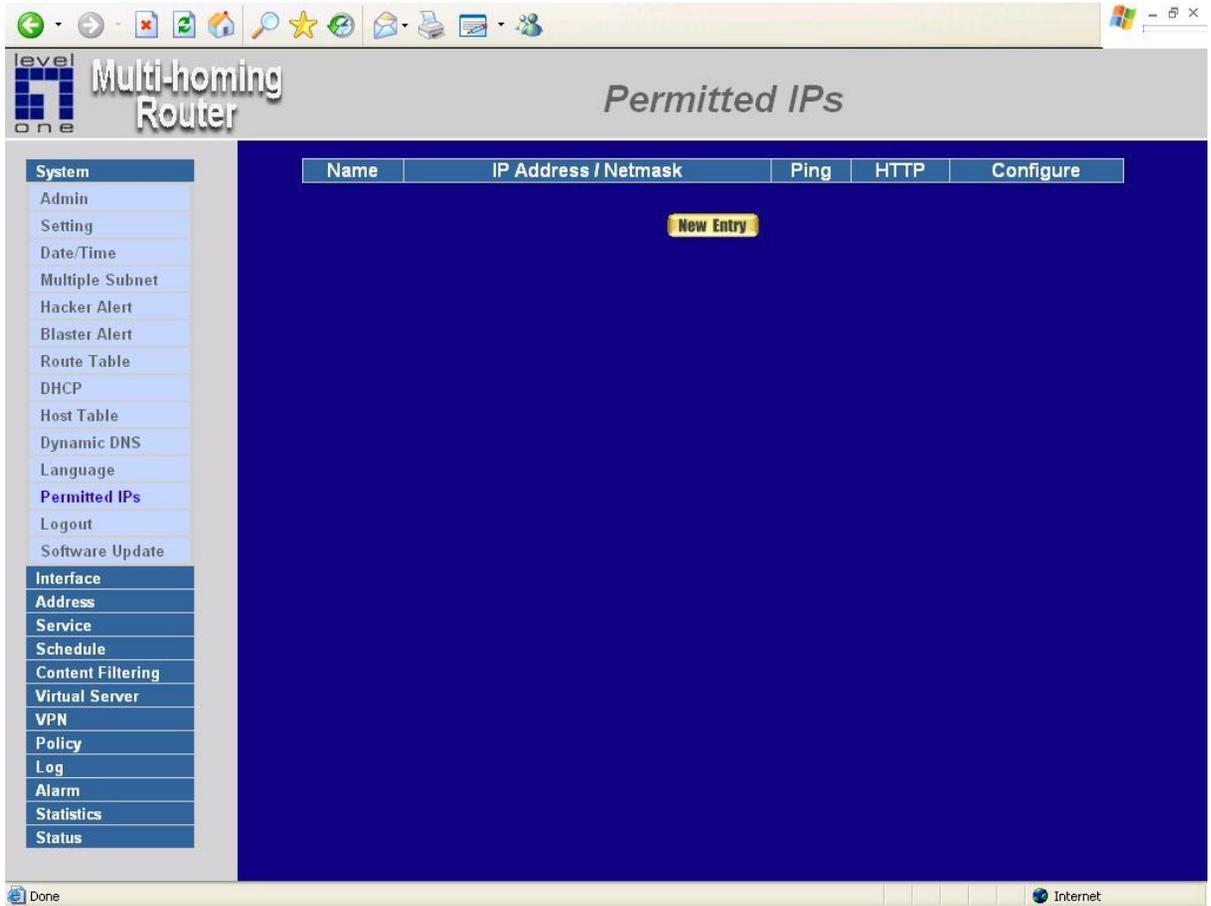
**Step 1.** Select the Language version (**English Version/German Version/Traditional Chinese Version** or **Simplified Chinese Version**).

**Step 2.** Click **【OK】** to set the Language version or click **Cancel** to discard changes.



# Permitted IPs

Only the authorized IP address is permitted to manage the Multi-Homing Gateway.



## Add Permitted IP Address

**Step 1.** Click **New Entry** button.

**Step 2.** In IP Address field, enter the LAN IP address or WAN IP address.

- **IP address** : Enter the LAN IP address or WAN IP address.
- **Netmask** : Enter the netmask of LAN/WAN.
- **Ping** : Select this to allow the external network to ping the IP Address of the Firewall.
- **Http** : Check this item, Web User can use HTTP to connect to the Setting window of Multi-Homing Gateway.

**Step 3.** Click **OK** to add Permitted IP or click **Cancel** to discard changes.

The screenshot displays the 'Multi-homing Router' web interface. The main content area is titled 'Permitted IPs' and features a form for adding new permitted IP addresses. The form fields are as follows:

Add New Permitted IPs	
Name	DDC
IP Address	172.16.1.100
Netmask	255.255.255.255
Service	<input checked="" type="checkbox"/> Ping <input checked="" type="checkbox"/> HTTP

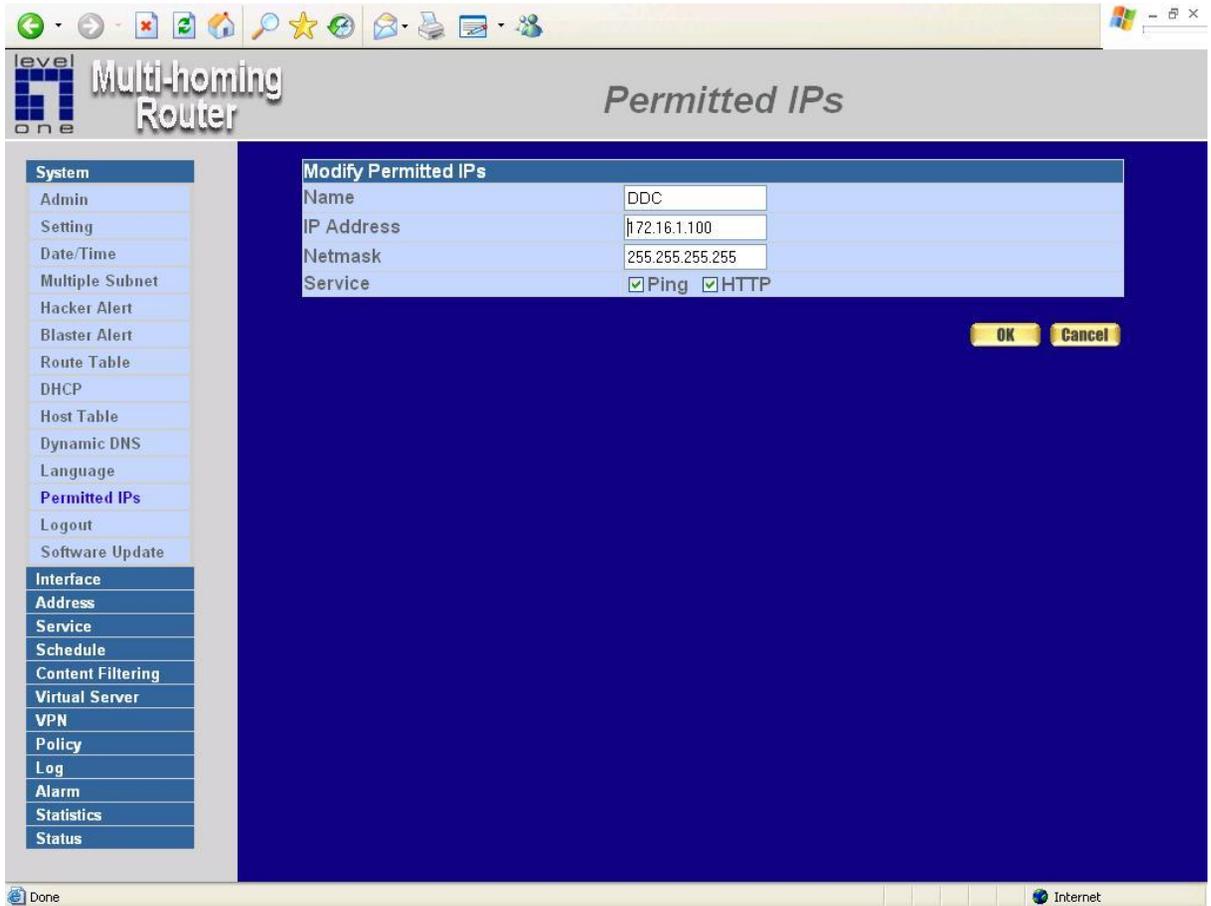
At the bottom right of the form, there are 'OK' and 'Cancel' buttons. The left sidebar menu includes the following items: System, Admin, Setting, Date/Time, Multiple Subnet, Hacker Alert, Blaster Alert, Route Table, DHCP, Host Table, Dynamic DNS, Language, Permitted IPs, Logout, Software Update, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Statistics, and Status. The top of the window shows a Windows taskbar with various icons and the system tray.

# Modify Permitted IP Address

**Step 1.** In the table of **Permitted IPs**, highlight the IP you want to modify, and then click **Modify**.

**Step 2.** In **Modify Permitted IP**, enter new IP address.

**Step 3.** Click **OK** to modify or click **Cancel** to discard changes.



## Remove Permitted IP addresses

**Step 1.** In the table of **Permitted IPs**, highlight the IP you want to remove, and then click **Remove**.

**Step 2.** In **Remove Permitted IP**, enter new IP address.

**Step 3.** In the confirm window, click **OK** to remove or click **Cancel** to discard changes.

The screenshot shows the web interface of a Multi-homing Router. The main content area displays a table of Permitted IPs. The table has the following data:

Name	IP Address / Netmask	Ping	HTTP	Configure
DDC	172.16.1.100 / 255.255.255.255			<input type="button" value="Modify"/> <input type="button" value="Remove"/>

Below the table is a **New Entry** button. A confirmation dialog box is open, asking "Are you sure you want to remove?". The dialog box has **OK** and **Cancel** buttons.

The left sidebar contains the following menu items:

- System
  - Admin
  - Setting
  - Date/Time
  - Multiple Subnet
  - Hacker Alert
  - Blaster Alert
  - Route Table
  - DHCP
  - Host Table
  - Dynamic DNS
  - Language
  - Permitted IPs**
  - Logout
  - Software Update
- Interface
  - Address
  - Service
  - Schedule
  - Content Filtering
  - Virtual Server
  - VPN
  - Policy
  - Log
  - Alarm
  - Statistics
  - Status

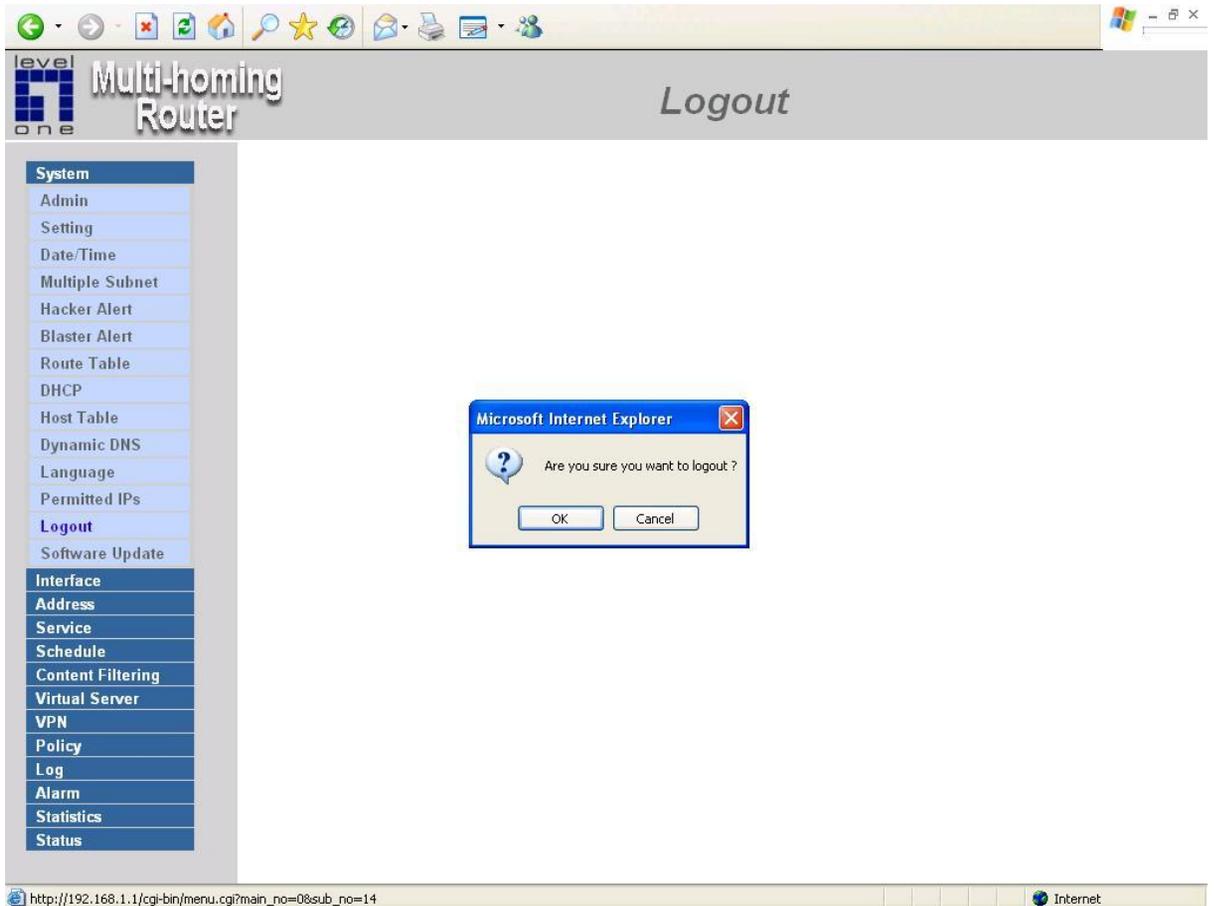
The browser address bar shows the URL: `http://192.168.1.1/cgi-bin/permit_ip.cgi?type=permit_ip&num=0&permit_ip_type=3&modify=Delete`

# Logout

Select this option to the device's **Logout** the Multi-Homing Gateway. This function protects your system while you are away.

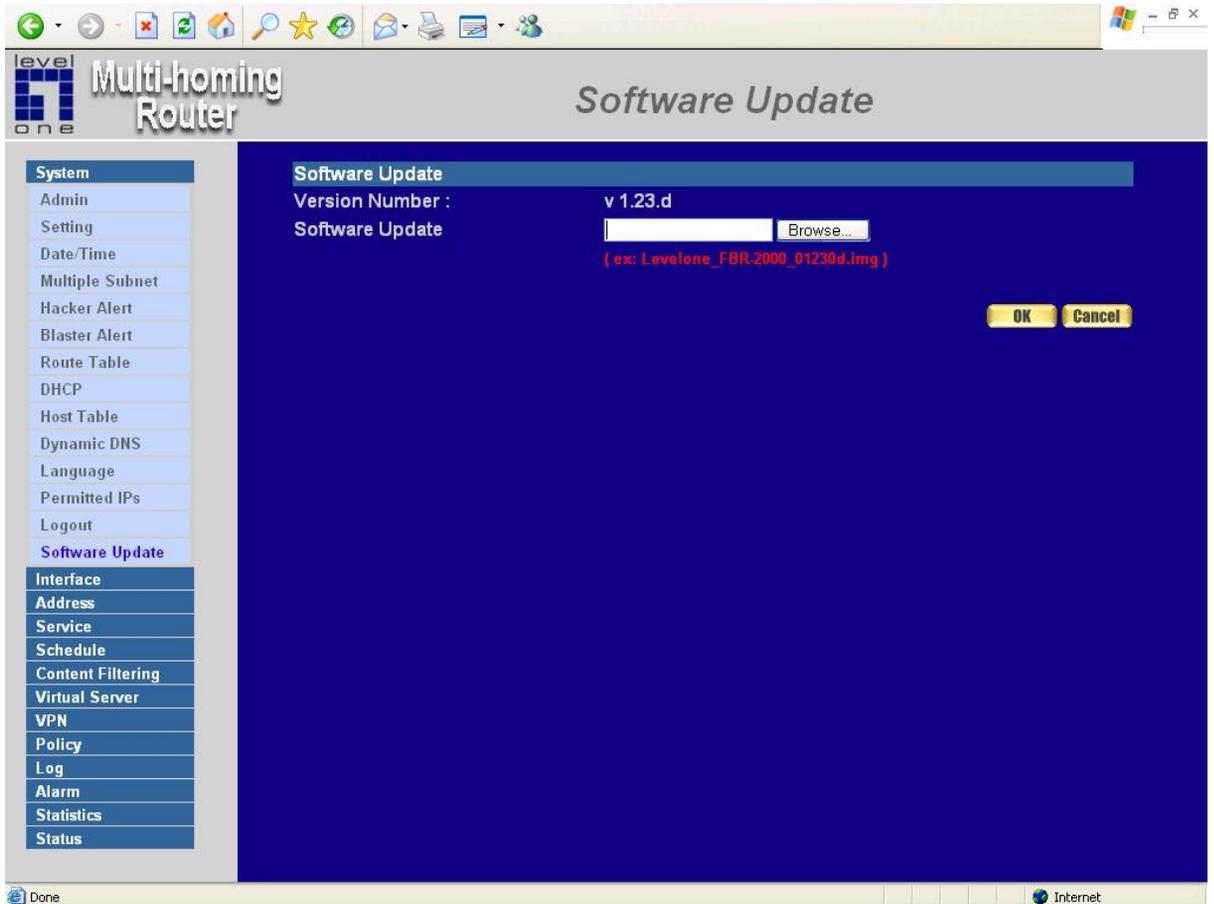
**Step 1.** Click Logout the Multi-Homing Gateway.

**Step 2.** Click OK to logout or click Cancel to discard the change.



# Software Update

Under **Software Update**, the admin may update the device's software with a newer software.



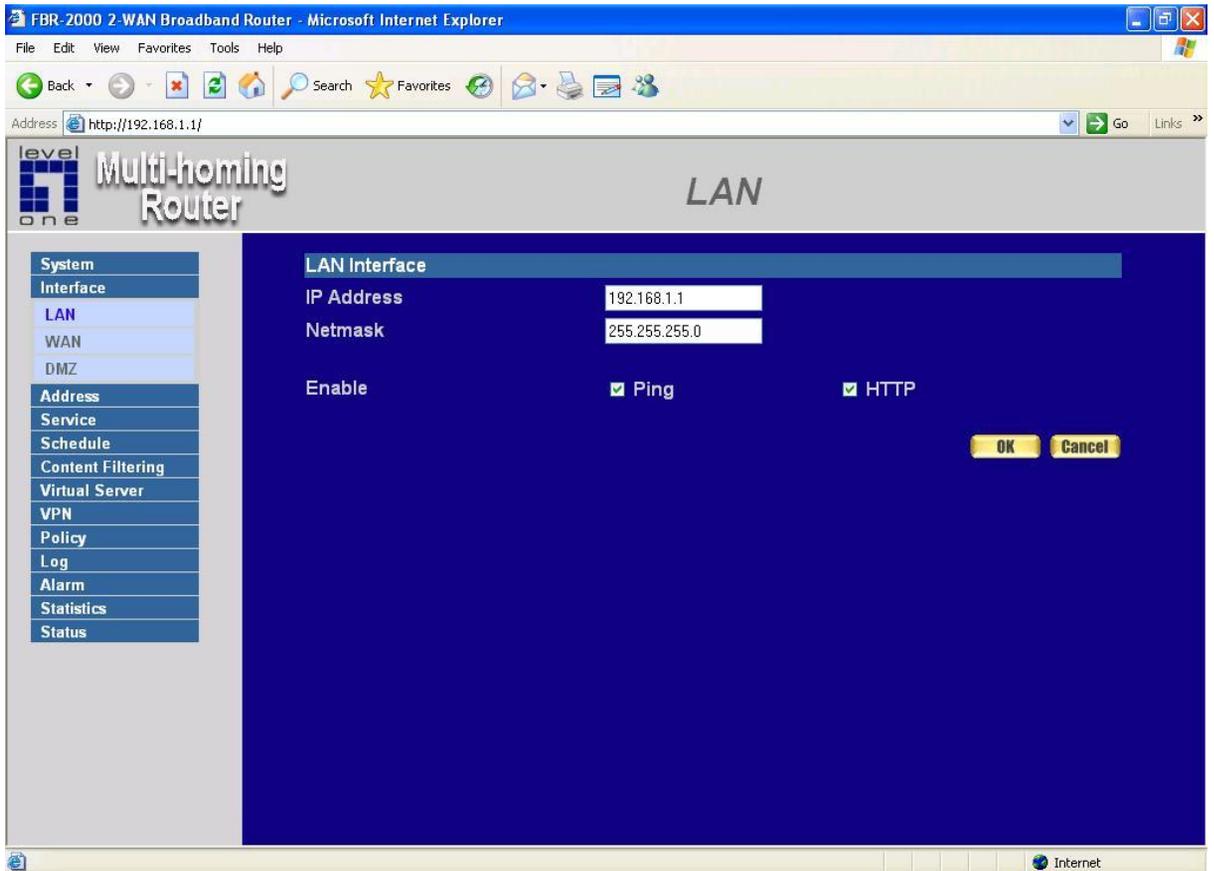
# Interface

In this section, the **Administrator** can set up the IP addresses for the office network. The Administrator may configure the IP addresses of the LAN network, the WAN 1/2 network, and the DMZ network. The netmask and gateway IP addresses are also configured in this section.



## Entering the Interface menu:

Click on **Interface** in the left menu bar. Then click on **LAN** below it. The current settings of the interface addresses will appear on the screen.



# Configuring the Interface Settings

## Internal Interface

Using the LAN **Interface**, the Administrator sets up the LAN network. The LAN network will use a private IP scheme. The private IP network will not be routable on the Internet.

**IP Address:** The private IP address of the Multi-Homing Gateway's LAN network is the IP address of the LAN port of the device. The default IP address is 192.168.1.1.

If the new LAN IP Address is not 192.168.1.1, the Administrator needs to set the IP Address on the computer to be on the same subnet as the Multi-Homing Gateway and restart the System to make the new IP address effective. For example, if the Multi-Homing Gateway's new LAN IP Address is 172.16.0.1, then enter the new LAN IP Address 172.16.0.1 in the URL field of browser to connect to Multi-Homing Gateway.

**NetMask:** This is the netmask of the LAN network. The default netmask of the device is 255.255.255.0.

**Ping:** Select this to allow the LAN network to ping the IP Address of the Multi-Homing Gateway. If set to enable, the device will respond to ping packets from the LAN network.

**Http:** Select this to allow the device WEBUI to be accessed from the LAN network.

# WAN

## Entering the Interface menu

Click on **Interface** in the left menu bar. Then click on **WAN** below it. The current settings of the interface addresses will appear on the screen.

WAN No.	Connect Mode	IP Address	Saturated Connections	Ping	HTTP	Configure	Priority
1	Static IP	61.11.11.11	1			<a href="#">Modify</a>	1
2	Static IP	211.22.22.22	1			<a href="#">Modify</a>	2

### Balance Mode :

**Auto:** The Multi-Homing Gateway distributes the WAN 1/2 download by proportion automatically according to the WAN download bandwidth. (For users who are using various download bandwidth.)

**Round-Robin:** The Multi-Homing Gateway distributes the WAN 1/2 download bandwidth 1:1, in other words, it selects the agent by order. (For users who are using same download

bandwidths.)

**By Traffic:** The Multi-Homing Gateway distributes the WAN 1/2 download bandwidth by traffic. (For users who are connected to the Internet via a fixed WAN IP address.)

**By Session:** The Multi-Homing Gateway distributes the WAN 1/2 download bandwidth by session. (For users who are connected to the Internet via a fixed WAN IP address.)

**By Packet:** The Multi-Homing Gateway distributes the WAN 1/2 download bandwidth by packet and saturated connection. (For users who are connected to the Internet via a fixed WAN IP address.)

**WAN No:** Set the WAN 1/2 order.

**Connect Mode:** Display the current connection mode: PPPoE, Dynamic IP Address (Cable Modem User) or Static IP Address.

**IP Address:** Display the current WAN IP Address.

**Saturated Connections:** Set the number for saturation whenever session numbers reach it, the Multi-Homing Gateway switches to the next agent on the list. This function is only applicable for **By Session** mode.

**Enable:** Display Ping/Http functions of WAN 1/2 to show if they are enabled or disabled.

**Configure:** Click **Modify** to modify WAN 1/2 settings.

**Priority:** Set priority of WAN 1/2 for Internet Access.

## WAN 1/2 Interface

Using the **WAN 1/2 Interface**, the Administrator sets up the **WAN 1/2** network. These IP Addresses are real public IP Addresses, and are routable on the Internet.

**For PPPoE (ADSL User):** This option is for PPPoE users who are required to enter a username and password in order to connect, such as ADSL users.

**Current Status:** Displays the current line status of the PPPoE connection.

**IP Address:** Displays the IP Address of the PPPoE connection

**Username:** Enter the PPPoE username provided by the ISP.

**Password:** Enter the PPPoE password provided by the ISP.

**IP Address provided by ISP:**

**Dynamic:** Select this if the IP address is automatically assigned by the ISP.

**Fixed:** Select this if you were given a static IP address. Enter the IP address that is given to you by your ISP.

Max. Upstream/Downstream Bandwidth: The bandwidth provided by ISP.

**Service-On-Demand:**

**Auto Disconnect:** The PPPoE connection will automatically disconnect after a length of idle time (no activities). Enter in the amount of idle minutes before disconnection. Enter '0' if you do not want the PPPoE connection to disconnect at all.

**Ping:** Select this to allow the WAN 1 network to ping the IP Address of the Multi-Homing Gateway. This will allow people from the Internet to be able to ping the Multi-Homing Gateway. *If set to enable, the device will respond to echo request packets from the WAN 1/2 network.*

**Http:** Select this to allow the device WEBUI to be accessed from the WAN 1 network. This will allow the WEBUI to be configured from a user on the Internet. Keep in mind that the device always requires a username and password to enter the WEBUI.

FBR-2000 2-WAN Broadband Router - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Print Mail

Address http://192.168.1.1/ Go Links

# level one Multi-homing Router WAN

**System**

**Interface**

LAN

**WAN**

DMZ

**Address**

**Service**

Schedule

Content Filtering

Virtual Server

VPN

Policy

Log

Alarm

Statistics

Status

Service : DNS DNS Server IP Address : 168.95.1.1 [Assist](#)

Domain name :  [Assist](#)

Wait 1 seconds between sending alive packet. (0 - 99 , 0 : means not checking)

- PPPoE (ADSL User)
- Dynamic IP Address (Cable Modem User)
- Static IP Address

IP Address	61.11.11.11
Netmask	255.255.255.0
Default Gateway	61.11.11.254
DNS Server 1	168.95.1.1
DNS Server 2	

Max. Downstream Bandwidth 100000 Kbps

Max. Upstream Bandwidth 100000 Kbps

Enable  Ping  HTTP

OK Cancel

Internet

**For Dynamic IP Address (Cable Modem User):** This option is for users who are automatically assigned an IP address by their ISP, such as cable modem users. The

following fields apply:

**IP Address:** The dynamic IP address obtained by the Multi-Homing Gateway from the ISP will be displayed here. This is the IP address of the WAN 1 (WAN) port of the device.

**MAC Address:** This is the MAC Address of the device.

**Hostname:** This will be the name assign to the device. Some cable modem ISP assign a specific hostname in order to connect to their network. Please enter the hostname here. If not required by your ISP, you do not have to enter a hostname.

**Ping:** Select this to allow the WAN 1 network to ping the IP Address of the Multi-Homing Gateway. This will allow people from the Internet to be able to ping the Multi-Homing Gateway. *If set to enable, the device will respond to echo request packets from the WAN 1 network.*

Max. Upstream/Downstream Bandwidth: The bandwidth provided by ISP.

**Http:** Select this to allow the device WEBUI to be accessed from the WAN 1 network. This will allow the WebUI to be configured from a user on the Internet. Keep in mind that the device always requires a username and password to enter the WebUI.

level  
one Multi-homing Router WAN

**System**  
Interface  
LAN  
WAN  
DMZ  
Address  
Service  
Schedule  
Content Filtering  
Virtual Server  
VPN  
Policy  
Log  
Alarm  
Statistics  
Status

**WAN1 Interface**

Service : **DNS** DNS Server IP Address : 168.95.1.1 [Assist](#)  
 Domain name :  [Assist](#)  
 Wait  seconds between sending alive packet. (0 - 99 , 0 : means not checking)

PPPoE (ADSL User)  
 Dynamic IP Address (Cable Modem User)  
 Static IP Address

IP Address 192.168.10.106 [Renew](#) [Release](#)  
 MAC Address 00:E0:98:BF:35:5E [Clone MAC Address](#)  
 Hostname   
 Domain Name   
 User Name (Required by DHCP+ protocol)   
 Password (Required by DHCP+ protocol)

Max. Downstream Bandwidth  Kbps  
 Max. Upstream Bandwidth  Kbps

Enable  Ping  HTTP

[OK](#) [Cancel](#)

Internet

**For Static IP Address:** This option is for users who are assigned a static IP Address from their ISP. Your ISP will provide all the information needed for this section such as IP Address, Netmask, Gateway, and DNS. Use this option also if you have more than one public IP Address assigned to you.

**IP Address:** Enter the static IP address assigned to you by your ISP. This will be the public IP address of the WAN 1 port of the device.

**Netmask:** This will be the Netmask of the WAN 1 network. (i.e. 255.255.255.0)

**Default Gateway:** This will be the Gateway IP address.

**Domain Name Server (DNS):** This is the IP Address of the DNS server.

Max. Upstream/Downstream Bandwidth: The bandwidth provided by ISP.

**Ping:** Select this to allow the WAN 1 network to ping the IP Address of the Multi-Homing Gateway. This will allow people from the Internet to be able to ping the Multi-Homing Gateway. *If set to enable, the device will respond to echo request packets from the WAN 1 network.*

**WebUI:** Select this to allow the device WEBUI to be accessed from the WAN 1 network. This will allow the WebUI to be configured from a user on the Internet. Keep in mind that the device always requires a username and password to enter the WebUI.

level Multi-homing Router WAN

System  
Interface  
LAN  
WAN  
DMZ  
Address  
Service  
Schedule  
Content Filtering  
Virtual Server  
VPN  
Policy  
Log  
Alarm  
Statistics  
Status

### WAN1 Interface

Service : **DNS** DNS Server IP Address :  [Assist](#)  
Domain name :  [Assist](#)  
Wait  seconds between sending alive packet. (0 -99 , 0 : means not checking)

- PPPoE (ADSL User)
- Dynamic IP Address (Cable Modem User)
- Static IP Address

IP Address	<input type="text" value="211.11.11.11"/>
Netmask	<input type="text" value="255.255.255.0"/>
Default Gateway	<input type="text" value="211.11.11.11"/>
DNS Server 1	<input type="text" value="168.95.1.1"/>
DNS Server 2	<input type="text"/>

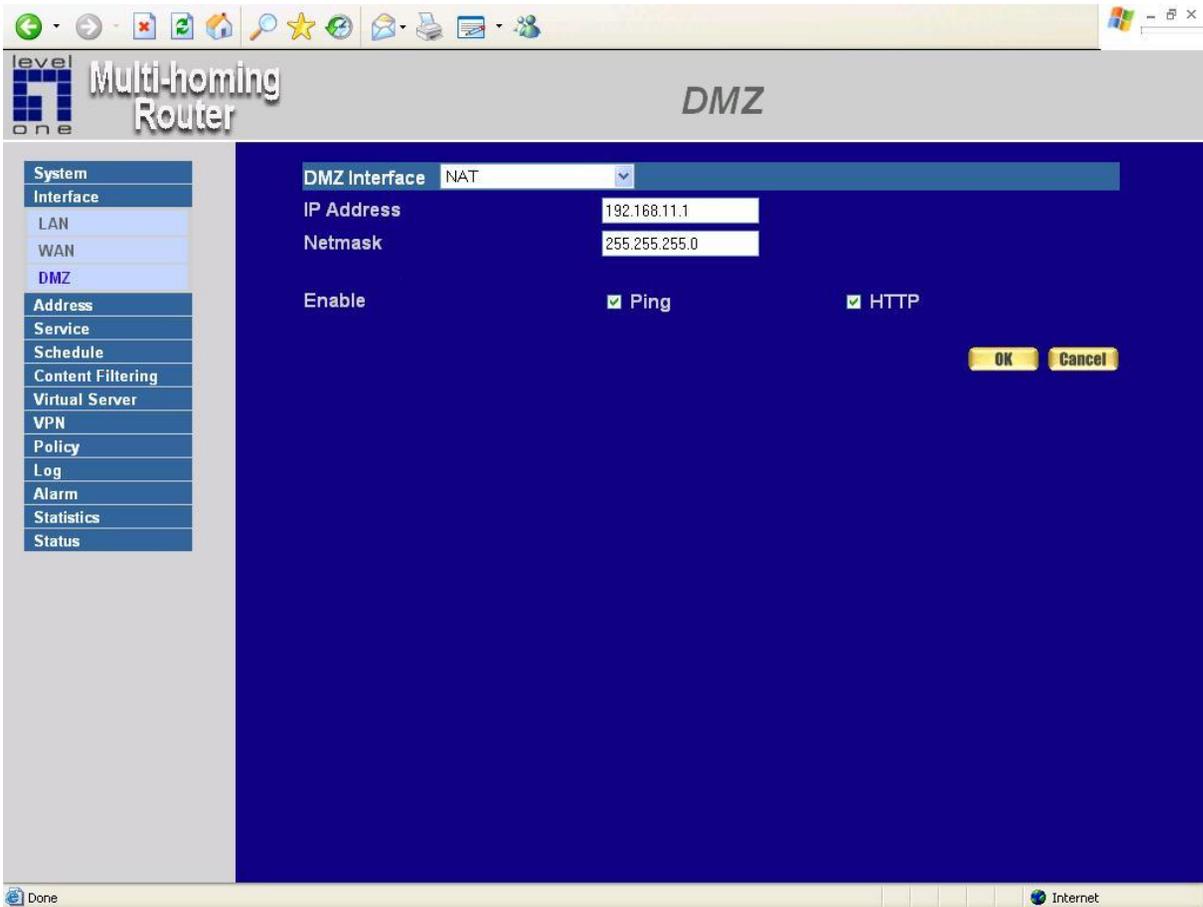
Max. Downstream Bandwidth  Kbps  
Max. Upstream Bandwidth  Kbps

Enable  Ping  HTTP

Done Internet

# DMZ

The Administrator uses the **DMZ Interface** to set up the DMZ network. The DMZ network consists of server computers such as FTP, SMTP, and HTTP (web). These server computers are put in the DMZ network so they can be isolated from the Internal (LAN) network traffic. Broadcast messages from the Internal network will not cross over to the DMZ network to cause congestions and slow down these servers. This allows the server computers to work efficiently without any slowdowns.



**DMZ Interface:** Display DMZ NAT Mode /DMZ TRANSPARENT Mode functions of DMZ to show if they are enabled or disabled.

**IP Address:** The private IP address of the Multi-Homing Gateway's DMZ interface. This will be the IP address of the DMZ port. The IP address the Administrator chooses will be a private IP address and cannot use the same network as the WAN or Internal network.

**NetMask:** This will be the netmask of the DMZ network.

**Ping:** Select this to allow the DMZ network to ping the IP Address of the Multi-Homing Gateway. This will allow people from the Internet to be able to ping the Multi-Homing Gateway. *If set to enable, the device will respond to echo request packets from the DMZ network.*

**Http:** Select this to allow the device WEBUI to be accessed from the DMZ network. This will allow the WebUI to be configured from a user on the Internet. Keep in mind that the device always requires a username and password to enter the WebUI.

# Address

The Multi-Homing Gateway allows the Administrator to set Interface addresses of the Internal network, Internal network group, WAN network, WAN network group, DMZ and DMZ group.

## **What is the Address Table?**

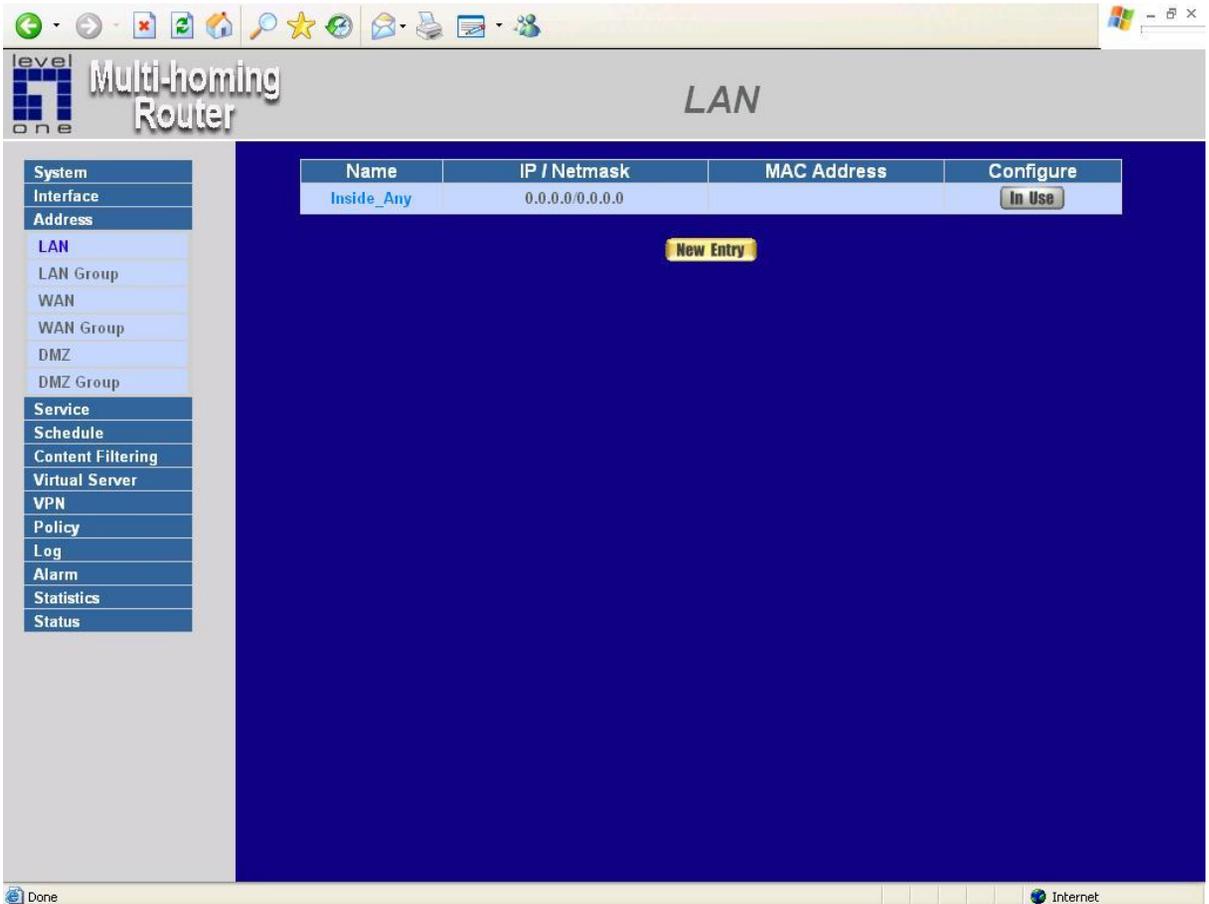
An IP address in the Address Table can be an address of a computer or a sub network. The Administrator can assign an easily recognized name to an IP address. Based on the network it belongs to, an IP address can be an internal IP address, WAN IP address or DMZ IP address. If the Administrator needs to create a control policy for packets of different IP addresses, he can first add a new group in the Internal Network Group or the WAN Network Group and assign those IP addresses into the newly created group. Using group addresses can greatly simplify the process of building control policies.

With easily recognized names of IP addresses and names of address groups shown in the address table, the Administrator can use these names as the source address or destination address of control policies. The address table should be built before creating control policies, so that the Administrator can pick the names of correct IP addresses from the address table when setting up control policies.

# LAN

## Entering the LAN window

**Step 1.** Click LAN under the **Address** menu to enter the LAN window. The current setting information such as the name of the LAN network, IP and Netmask addresses will show on the screen.

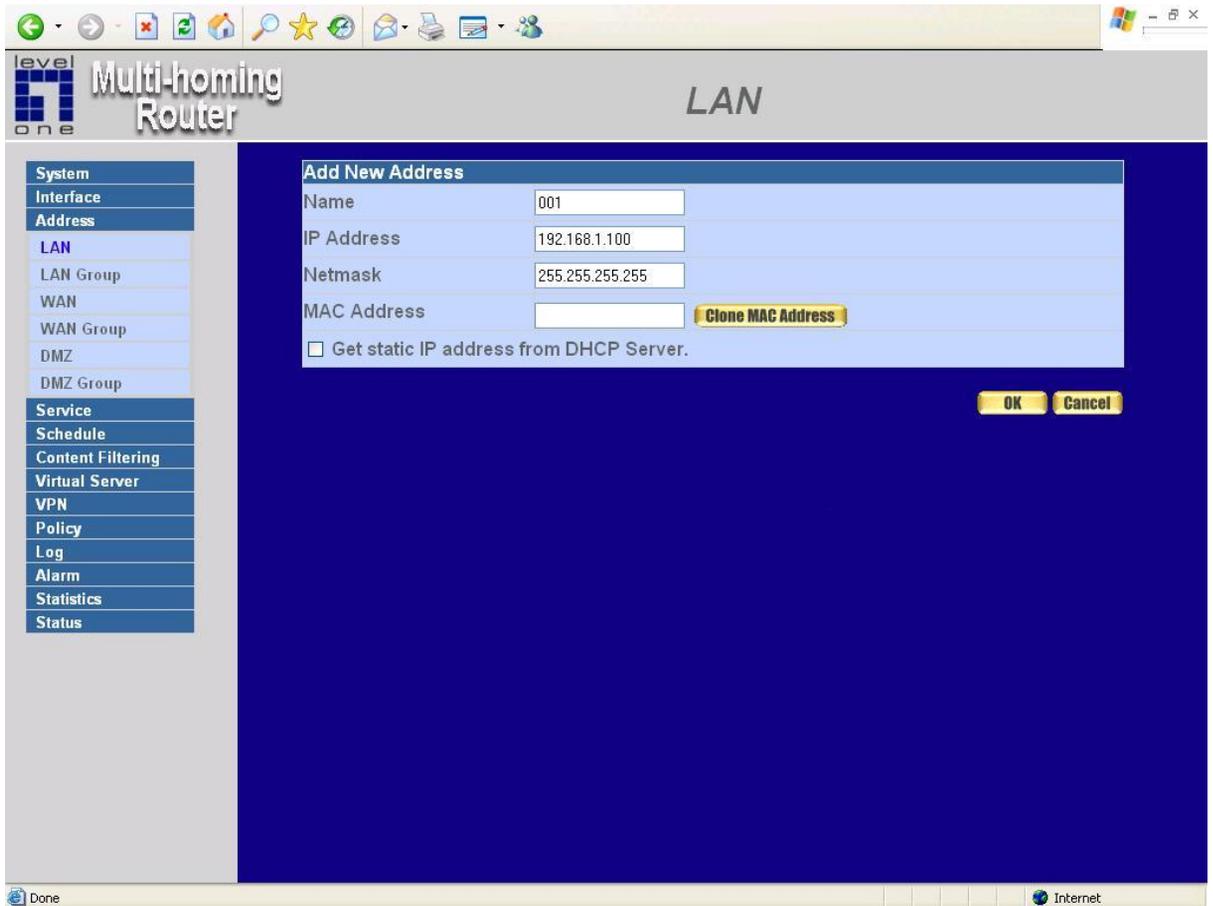


## Adding a new LAN Address

**Step 1.** In the LAN window, click the **New Entry** button.

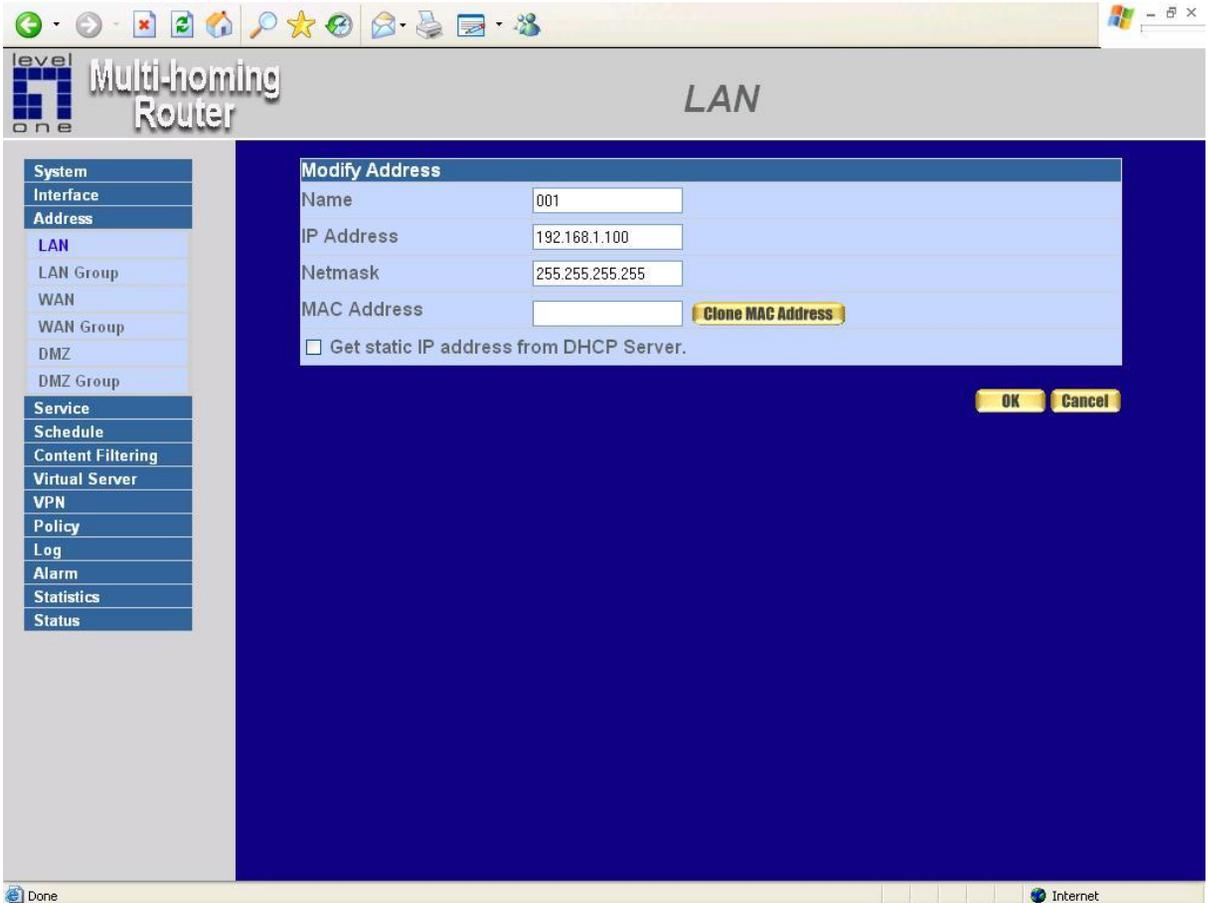
**Step 2.** In the **Add New Address** window, enter the settings of a new LAN network address.

**Step 3.** Click **OK** to add the specified LAN network or click **Cancel** to cancel the changes.



# Modifying an LAN Address

- Step 1.** In the LAN window, locate the name of the network to be modified. Click the **Modify** option in its corresponding **Configure** field. The **Modify Address** window appears on the screen immediately.
- Step 2.** In the **Modify Address** window, fill in the new addresses.
- Step 3.** Click **OK** to save changes or click **Cancel** to discard changes.



## Removing an LAN Address

**Step 1.** In the LAN window, locate the name of the network to be removed. Click the **Remove** option in its corresponding **Configure** field.

**Step 2.** In the **Remove** confirmation pop-up box, click **OK** to remove the address or click **Cancel** to discard changes.

The screenshot shows the Multi-homing Router LAN configuration page. The page title is "LAN". On the left, there is a navigation menu with the following items: System, Interface, Address, LAN, LAN Group, WAN, WAN Group, DMZ, DMZ Group, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Statistics, and Status. The main content area displays a table of LAN addresses:

Name	IP / Netmask	MAC Address	Configure
Inside_Any	0.0.0.0/0.0.0.0		In Use
001	192.168.1.100/255.255.255.255		Modify Remove
002	192.168.1.50/255.255.255.255		Modify Remove
003	192.168.1.60/255.255.255.255		Modify Remove

Below the table is a "New Entry" button. A confirmation dialog box is open, titled "Microsoft Internet Explorer", with the text "Are you sure you want to remove?" and "OK" and "Cancel" buttons.

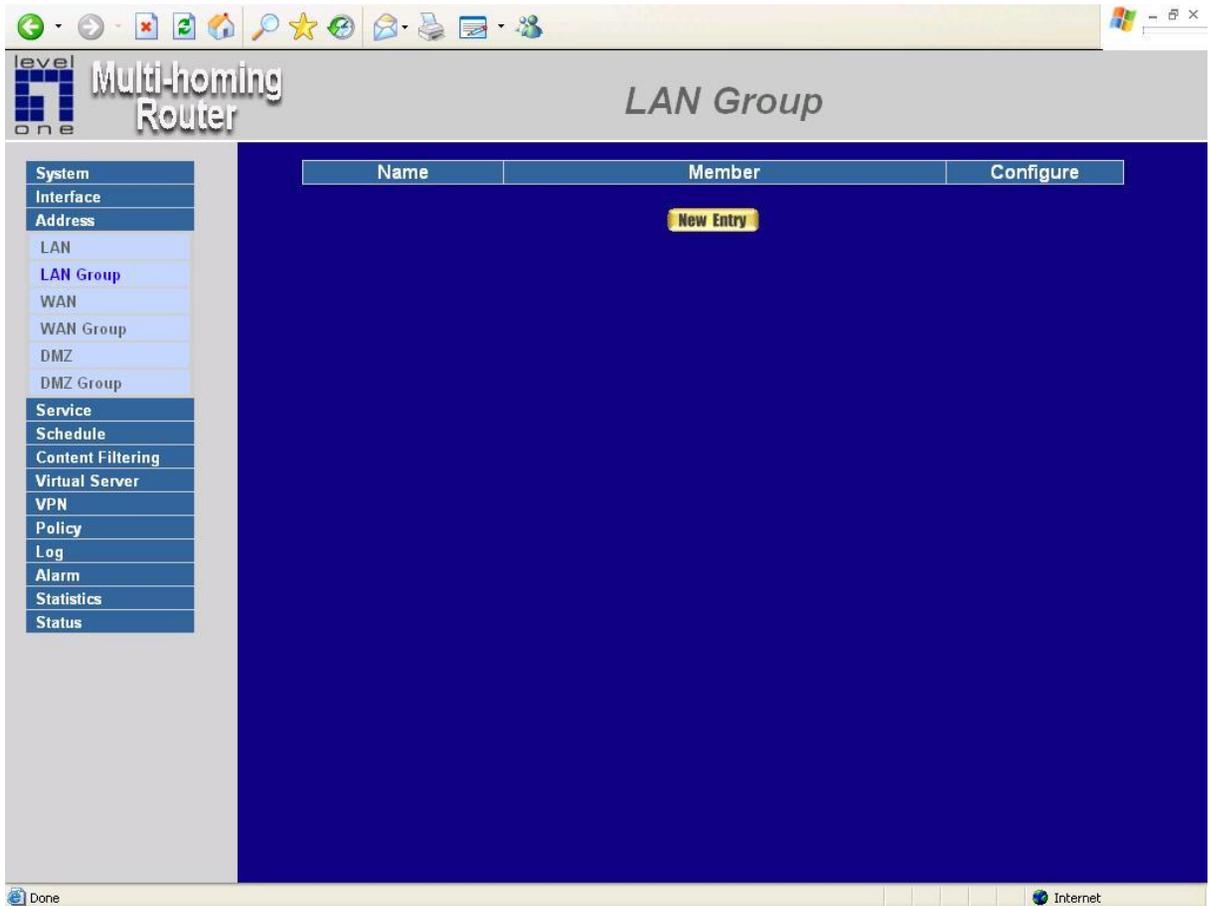
The browser address bar shows the URL: <http://192.168.1.1/cgi-bin/address.cgi?del=12&sq=4>

# LAN Group

## Entering the LAN Group window

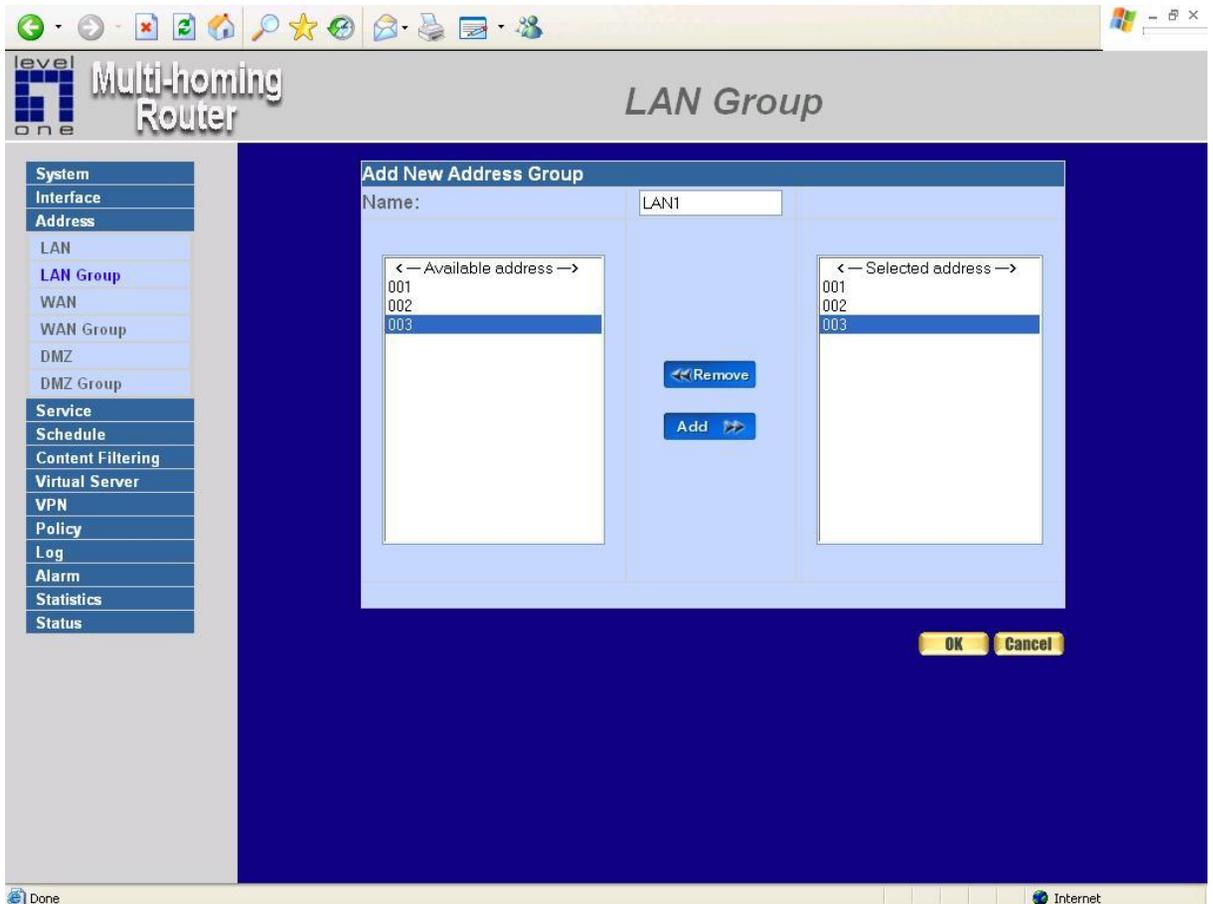
The LAN Addresses may be combined together to become a group.

Click LAN **Group** under the **Address** menu to enter the LAN Group window. The current setting information for the LAN network group appears on the screen.



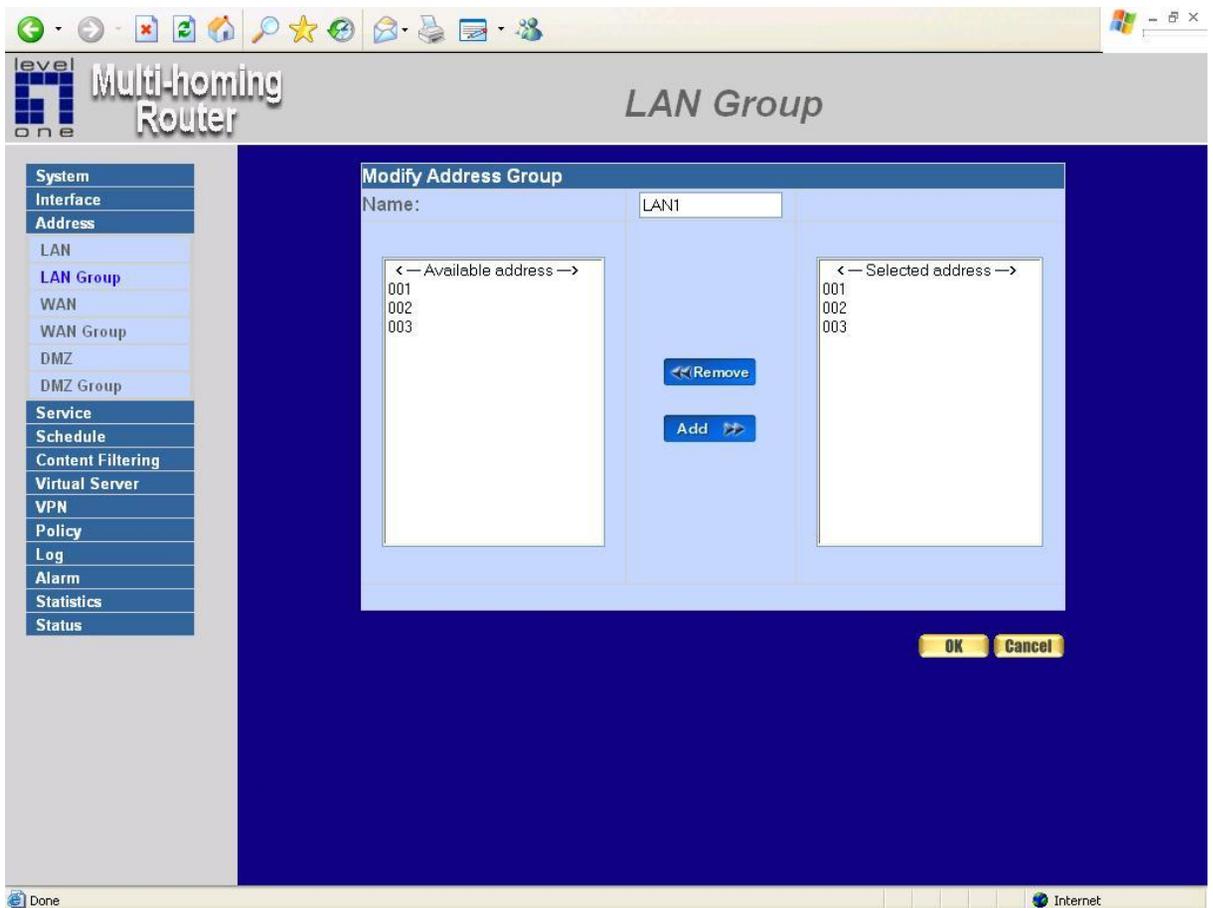
## Adding an LAN Group

- Step 1.** In the **LAN Group** window, click the **New Entry** button to enter the **Add New Address Group** window.
- Step 2.** In the **Add New Address Group** window:
  - **Available Address:** list the names of all the members of the LAN network.
  - **Selected Address:** list the names to be assigned to the new group.
  - **Name:** enter the name of the new group in the open field.
- Step 3.** **Add members:** Select names to be added in Available Address list, and click the **Add>>** button to add them to the Selected Address list.
- Step 4.** **Remove members:** Select names to be removed in the Selected Address list, and click the **<<Remove** button to remove these members from Selected Address list.
- Step 5.** Click **OK** to add the new group or click **Cancel** to discard changes.



## Modifying an LAN Group

- Step 1.** In the **LAN Group** window, locate the network group desired to be modified and click its corresponding **Modify** option in the **Configure** field.
- Step 2.** A window displaying the information of the selected group appears:
  - **Available Address:** list names of all members of the LAN network.
  - **Selected Address:** list names of members which have been assigned to this group.
- Step 3.** **Add members:** Select names in **Available Address** list, and click the **Add>>** button to add them to the **Selected Address** list.
- Step 4.** **Remove members:** Select names in the **Selected Address** list, and click the **<<Remove** button to remove these members from the **Selected Address** list.
- Step 5.** Click **OK** to save changes or click **Cancel** to discard changes.



## Removing an LAN Group

- Step 1.** In the LAN **Group** window, locate the group to be removed and click its corresponding **Remove** option in the **Configure** field.
- Step 2.** In the **Remove** confirmation pop-up box, click **OK** to remove the group or click **Cancel** to discard changes.

The screenshot shows the 'LAN Group' configuration page of a 'level one' Multi-homing Router. The page features a left-hand navigation menu with categories like System, Interface, Address, Service, and Status. The main content area displays a table of LAN groups. A 'Remove' button is visible in the 'Configure' column for the 'LAN1' group. A 'Microsoft Internet Explorer' dialog box is overlaid on the page, asking 'Are you sure you want to remove?' with 'OK' and 'Cancel' buttons.

Name	Member	Configure
LAN1	001, 002, 003	<input type="button" value="Modify"/> <input type="button" value="Remove"/>

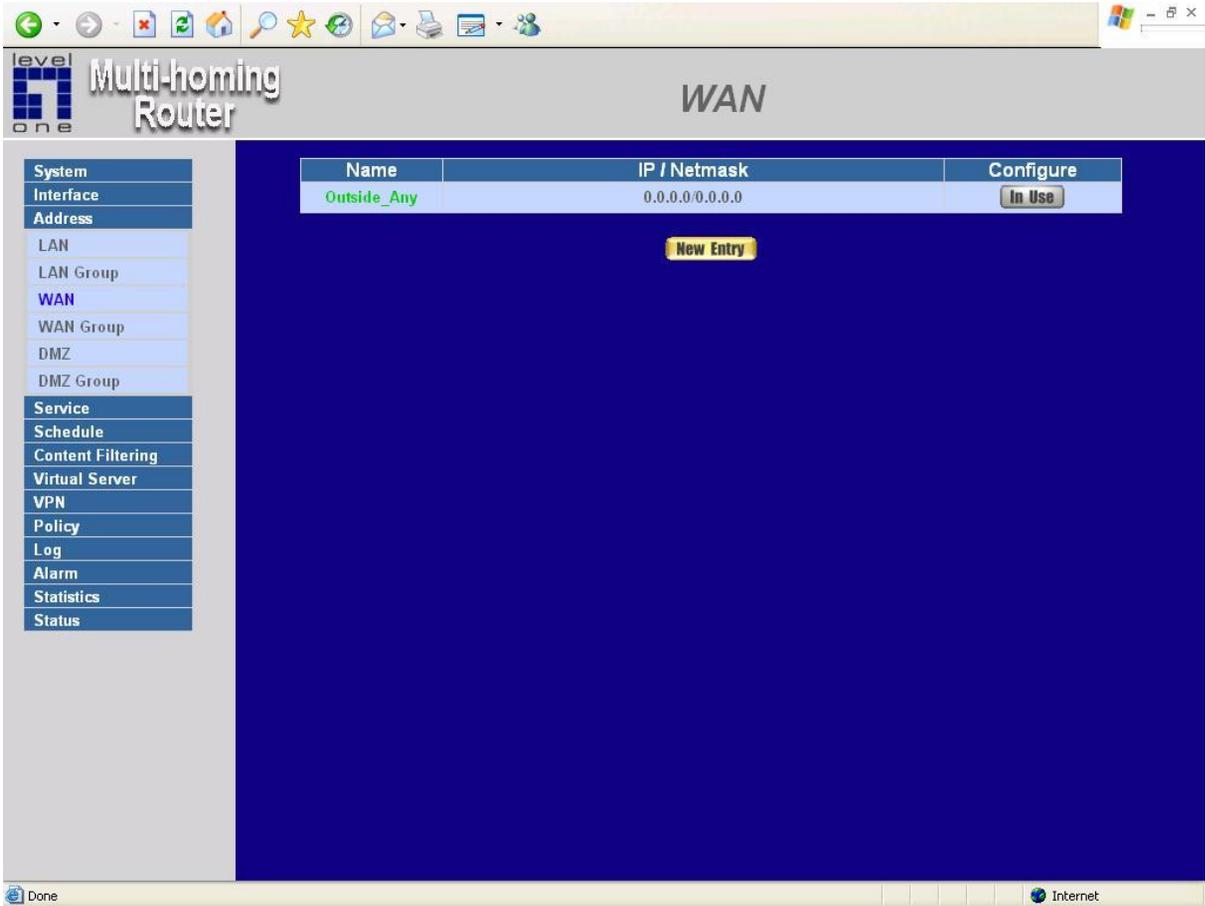
Microsoft Internet Explorer  
? Are you sure you want to remove?

http://192.168.1.1/cgi-bin/address.cgi?gdel=15&sq=1

# WAN

## Entering the WAN window

Click **WAN** under the **Address** menu to enter the WAN window. The current setting information, such as the name of the WAN network, IP and Netmask addresses will show on the screen.

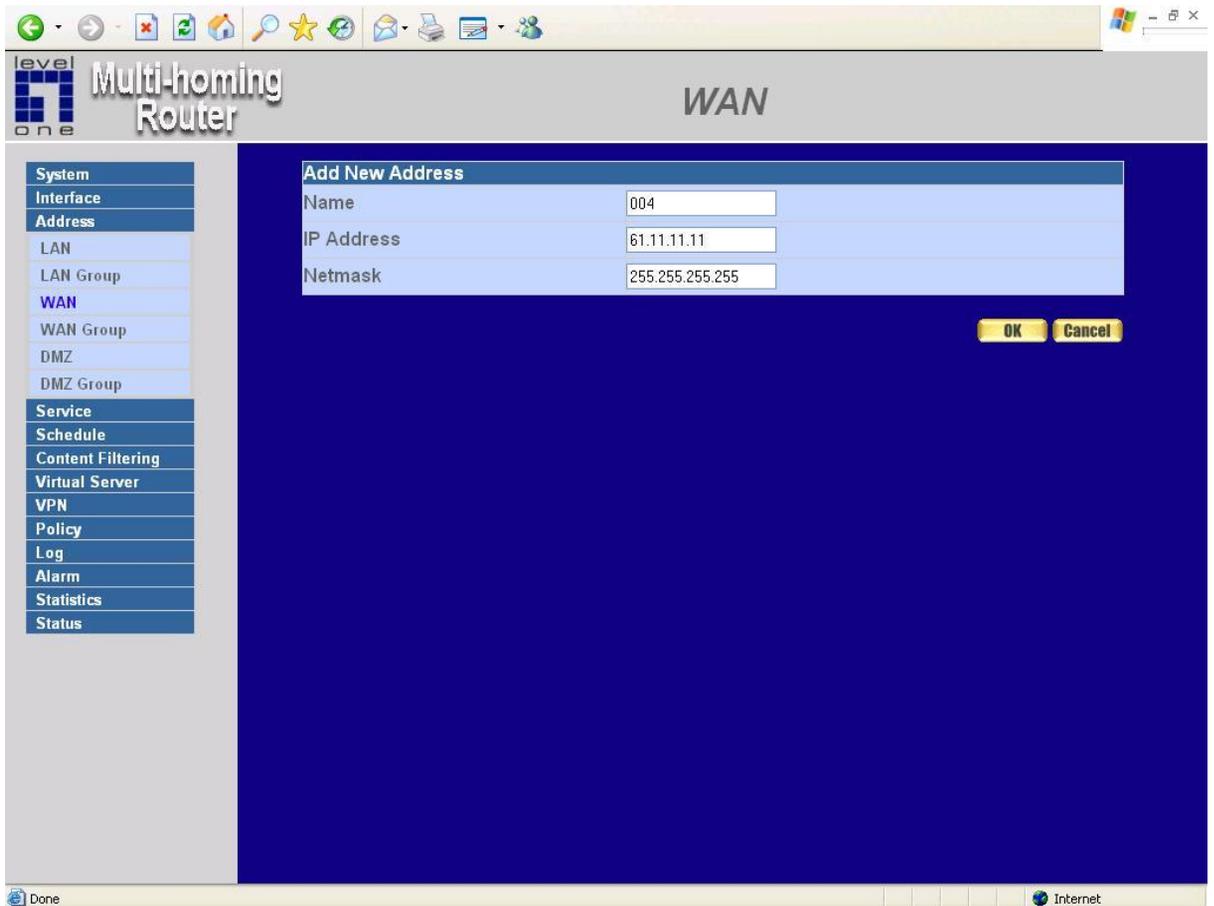


## Adding a new WAN Address

**Step 1.** In the WAN window, click the **New Entry** button.

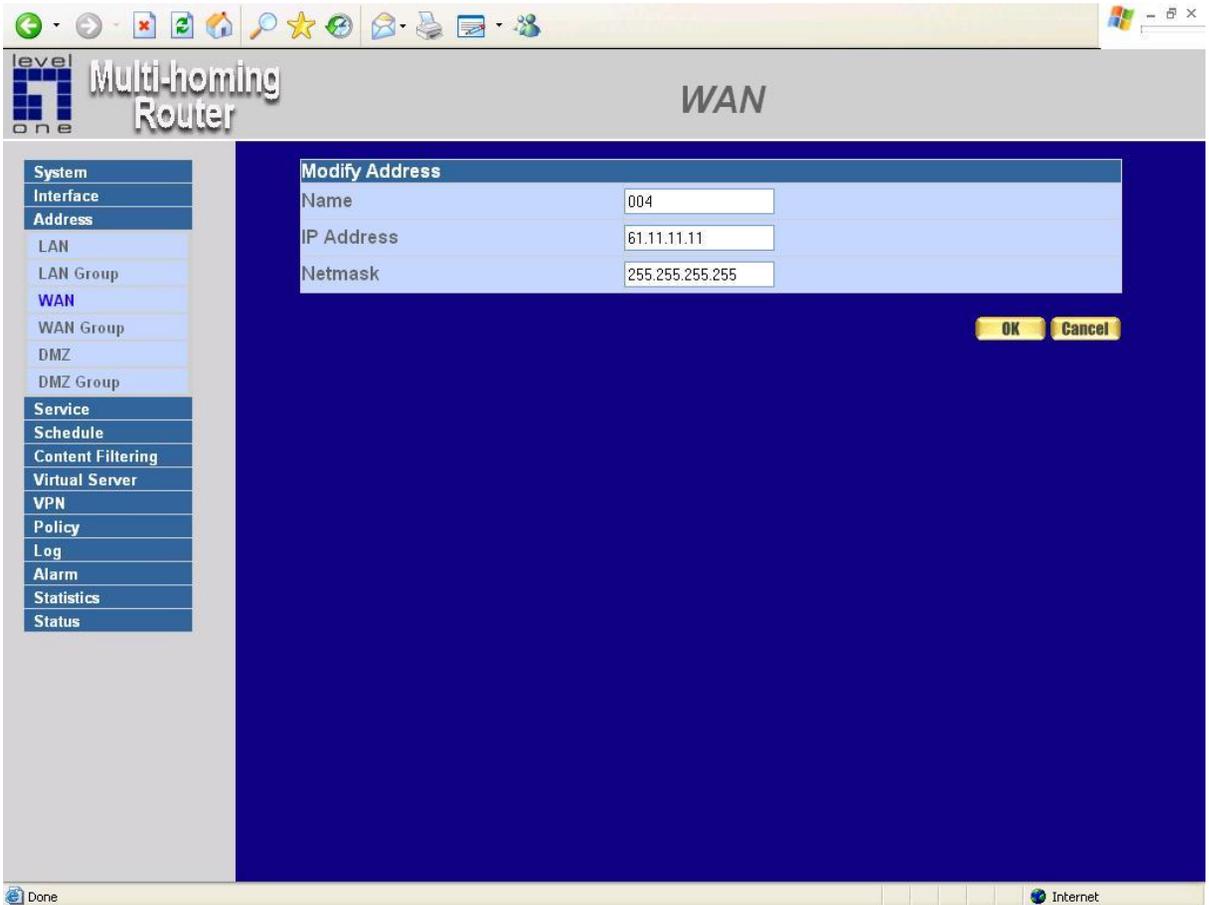
**Step 2.** In the **Add New Address** window, enter the settings for a new WAN network address.

**Step 3.** Click **OK** to add the specified WAN network or click **Cancel** to discard changes.



# Modifying an WAN Address

- Step 1.** In the WAN table, locate the name of the network to be modified and click the **Modify** option in its corresponding **Configure** field.
- Step 2.** The **Modify Address** window will appear on the screen immediately. In the **Modify Address** window, fill in new addresses.
- Step 3.** Click **OK** to save changes or click **Cancel** to discard changes.



## Removing an WAN Address

**Step 1.** In the **WAN** table, locate the name of the network to be removed and click the **Remove** option in its corresponding **Configure** field.

**Step 2.** In the **Remove confirmation** pop-up box, click **OK** to remove the address or click **Cancel** to discard changes.

The screenshot shows the WAN configuration page of a Multi-homing Router. The page has a left sidebar with a navigation menu and a main content area. The navigation menu includes: System, Interface, Address, LAN, LAN Group, WAN, WAN Group, DMZ, DMZ Group, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Statistics, and Status. The main content area is titled "WAN" and contains a table with the following data:

Name	IP / Netmask	Configure
Outside_Any	0.0.0.0/0.0.0.0	In Use
004	61.11.11.11/255.255.255.255	Modify Remove
005	61.22.22.22/255.255.255.255	Modify Remove
006	61.33.33.33/255.255.255.255	Modify Remove

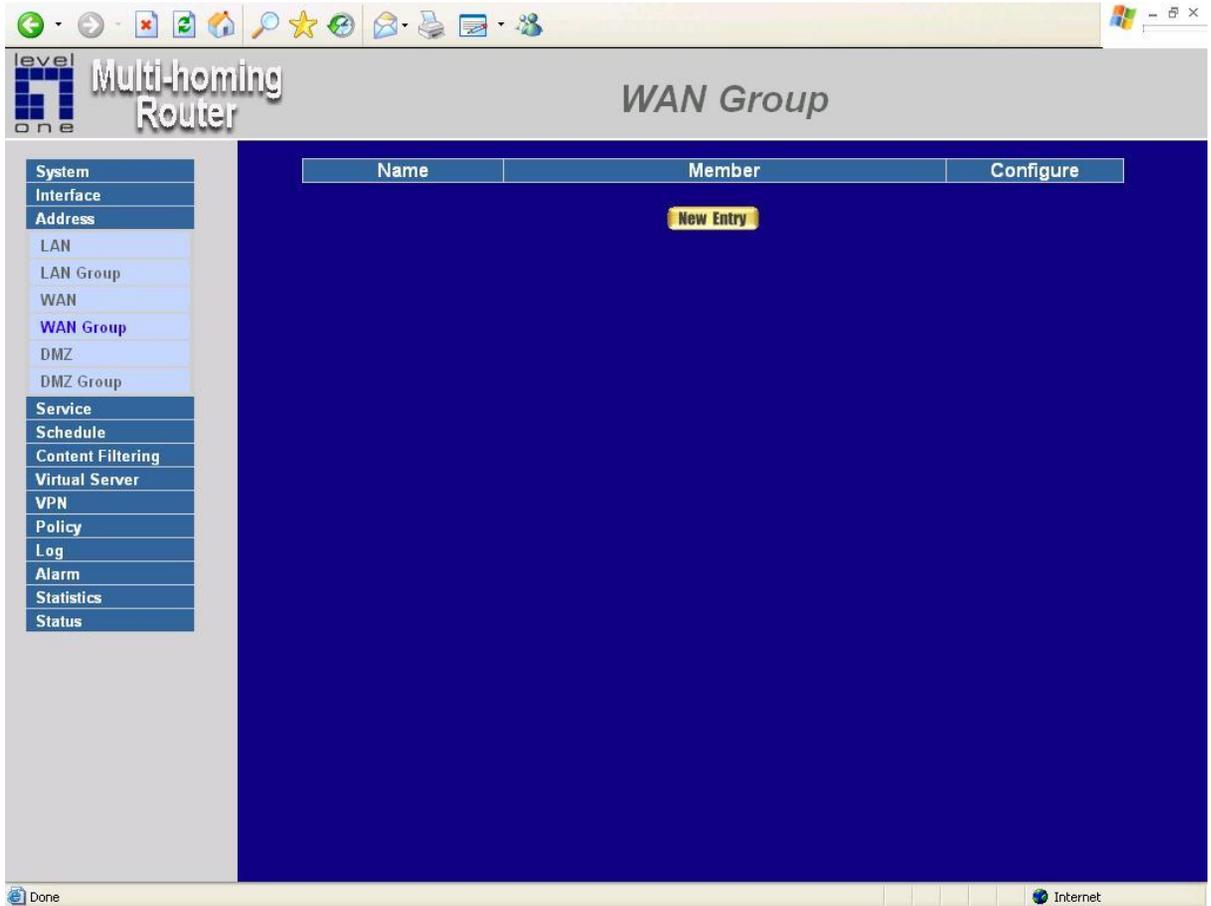
Below the table is a "New Entry" button. A confirmation dialog box titled "Microsoft Internet Explorer" is open, asking "Are you sure you want to remove?" with "OK" and "Cancel" buttons.

The browser address bar shows: <http://192.168.1.1/cgi-bin/address.cgi?del=13&sq=4>

# WAN Group

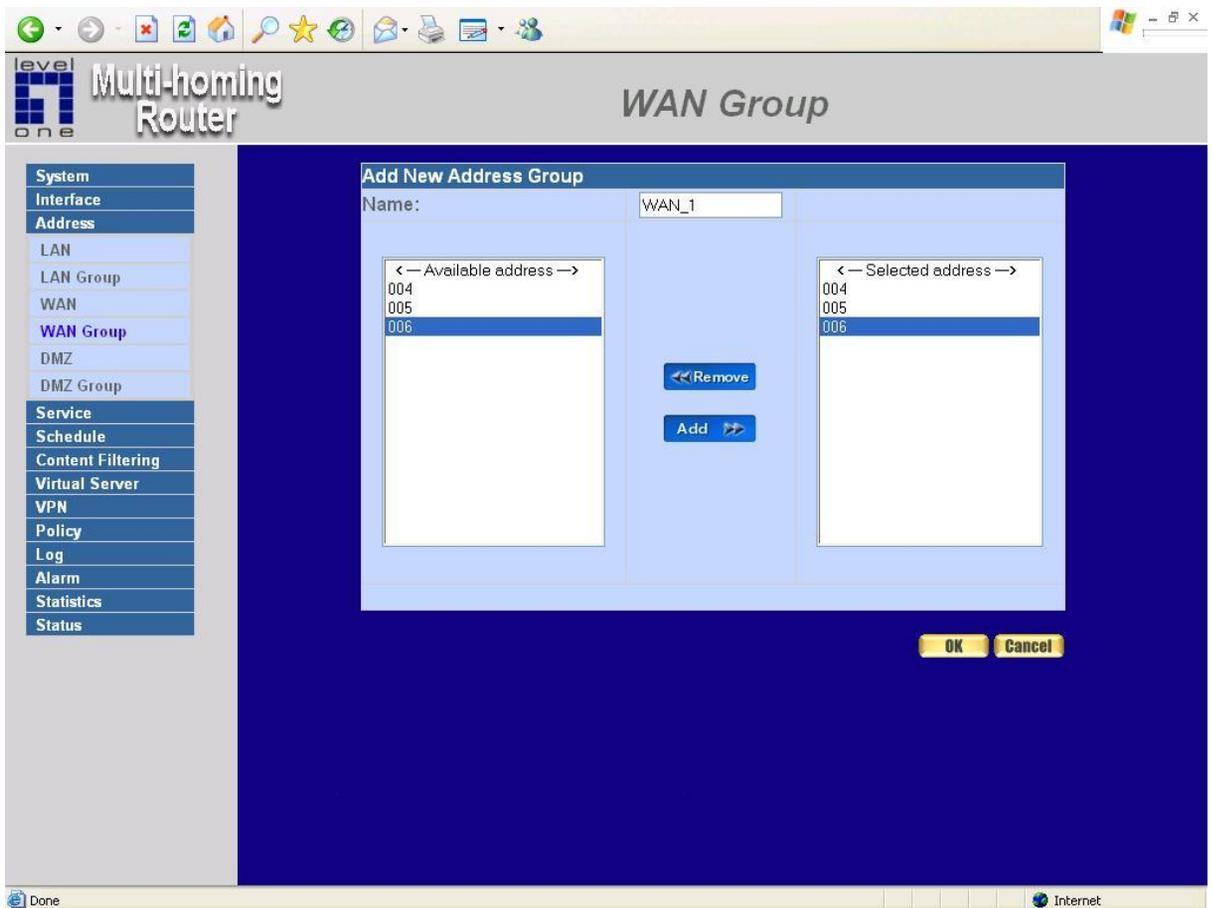
## Entering the WAN Group window

Click the **WAN Group** under the **Address** menu bar to enter the WAN window. The current settings for the WAN network group(s) will appear on the screen.



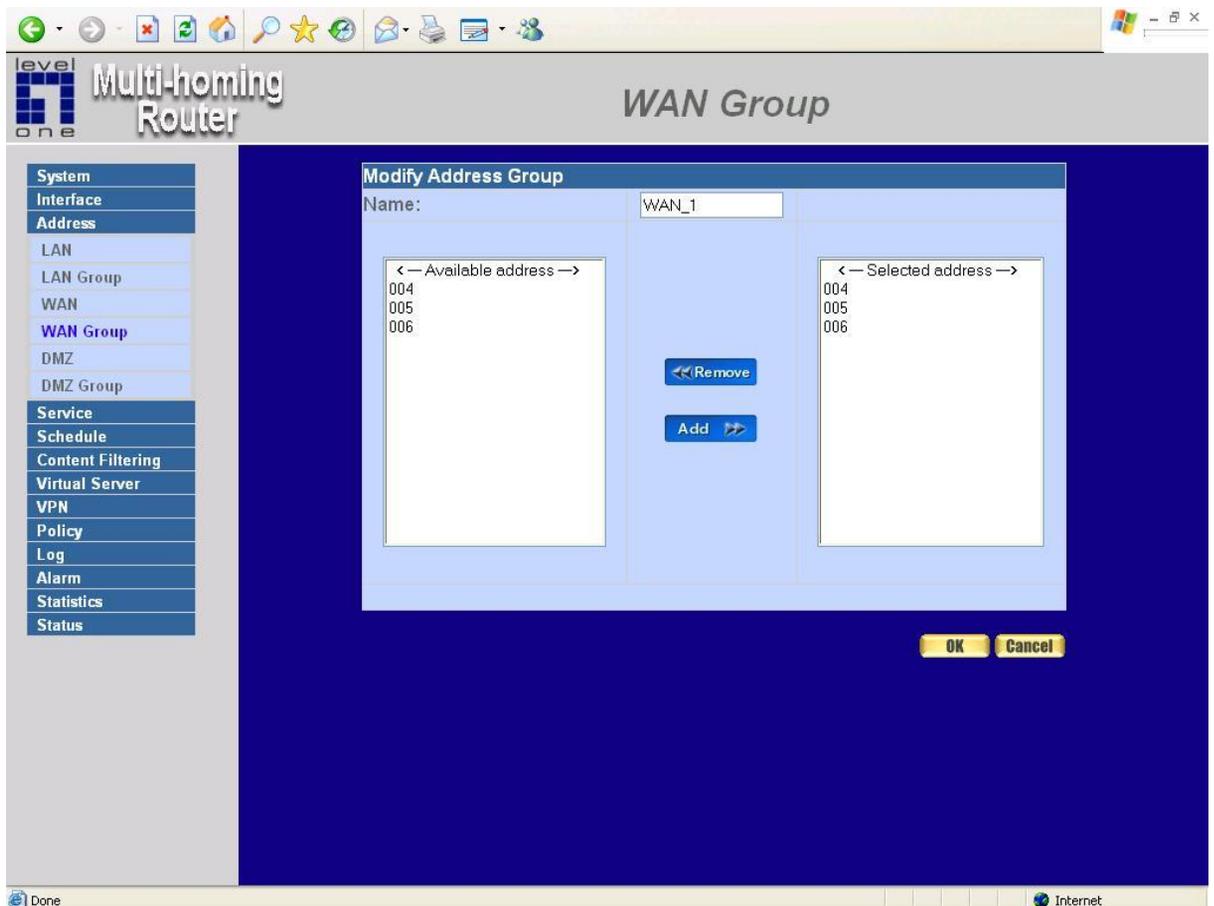
## Adding an WAN Group

- Step 1.** In the **WAN Group** window, click the **New Entry** button and the **Add New Address Group** window will appear.
- Step 2.** In the **Add New Address Group** window the following fields will appear:
  - **Name:** enter the name of the new group.
  - **Available Address:** List the names of all the members of the WAN network.
  - **Selected Address:** List the names to assign to the new group.
- Step 3.** **Add members:** Select the names to be added in the **Available Address** list, and click the **Add>>** button to add them to the **Selected Address** list.
- Step 4.** **Remove members:** Select the names to be removed in the **Selected Address** list, and click the **<<Remove** button to remove them from the **Selected Address** list.
- Step 5.** Click **OK** to add the new group or click **Cancel** to discard changes.



## Modify an WAN Group

- Step 1.** In the **WAN Group** window, locate the network group to be modified and click its corresponding **Modify** button in the **Configure** field.
- Step 2.** A window displaying the information of the selected group appears:
  - **Available Address:** list the names of all the members of the WAN network.
  - **Selected Address:** list the names of the members that have been assigned to this group.
- Step 3.** **Add members:** Select the names to be added in the **Available Address** list, and click the **Add>>** button to add them to the **Selected Address** list.
- Step 4.** **Remove members:** Select the names to be removed in the **Selected Address** list, and click the **<<Remove** button to remove them from the **Selected Address** list.
- Step 5.** Click **OK** to save changes or click **Cancel** to discard changes.



## Removing an WAN Group

- Step 1.** In the **WAN Group** window, locate the group to be removed and click its corresponding **Modify** option in the **Configure** field.
- Step 2.** In the **Remove confirmation** pop-up box, click **OK** to remove the group or click **Cancel** to discard changes.

The screenshot shows the 'WAN Group' configuration page of a 'level one Multi-homing Router'. The page features a left-hand navigation menu with options like System, Interface, Address, LAN, LAN Group, WAN, WAN Group, DMZ, DMZ Group, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Statistics, and Status. The main content area displays a table with columns for Name, Member, and Configure. A single entry 'WAN\_1' is listed with member '004, 005, 006' and 'Modify' and 'Remove' buttons. A 'New Entry' button is also present. A 'Microsoft Internet Explorer' dialog box is overlaid on the page, asking 'Are you sure you want to remove?' with 'OK' and 'Cancel' buttons. The browser's address bar shows 'http://192.168.1.1/cgi-bin/address.cgi?gdel=168&sq=1'.

Name	Member	Configure
WAN_1	004, 005, 006	<input type="button" value="Modify"/> <input type="button" value="Remove"/>

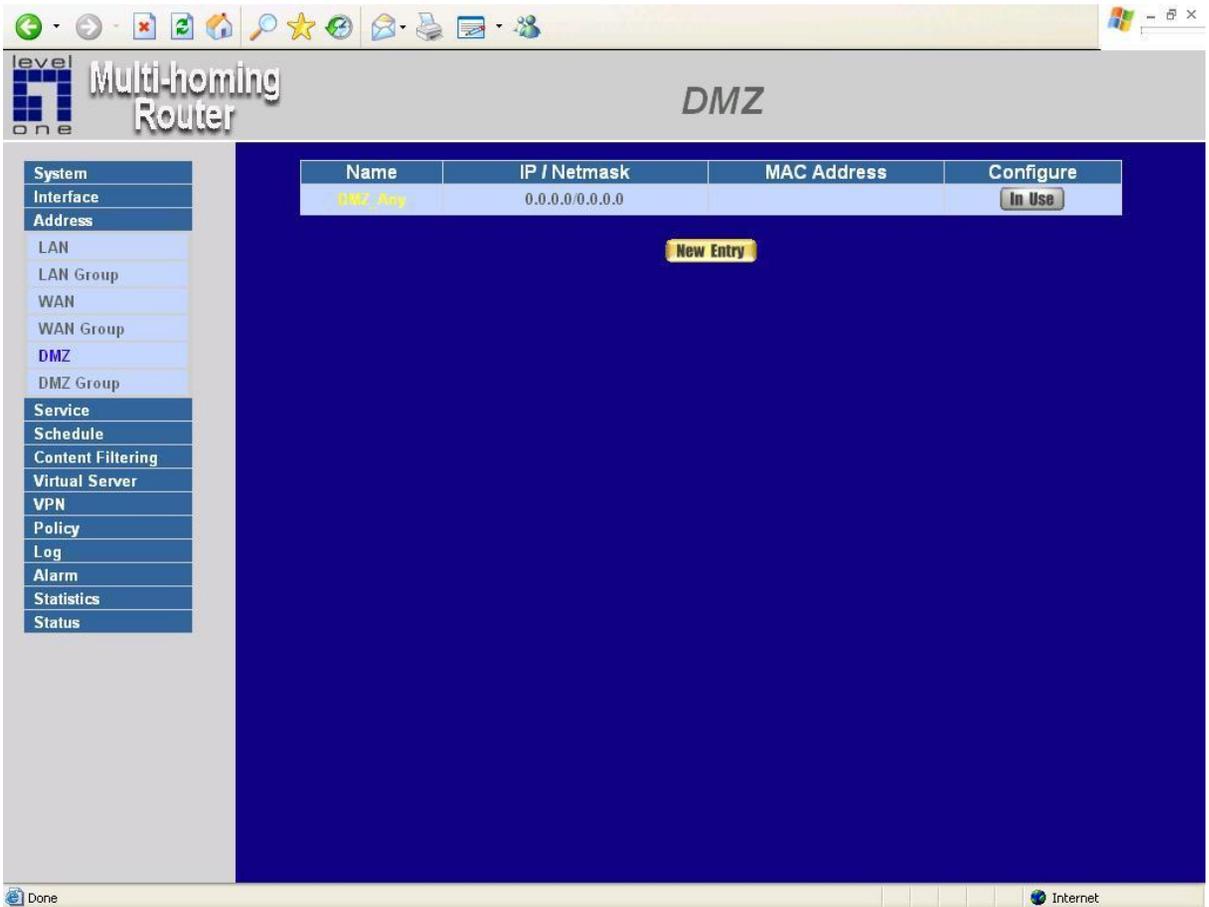
Microsoft Internet Explorer  
? Are you sure you want to remove?

http://192.168.1.1/cgi-bin/address.cgi?gdel=168&sq=1

# DMZ

## Entering the DMZ window:

Click **DMZ** under the **Address** menu to enter the **DMZ** window. The current setting information such as the name of the internal network, IP, and Netmask addresses will show on the screen.

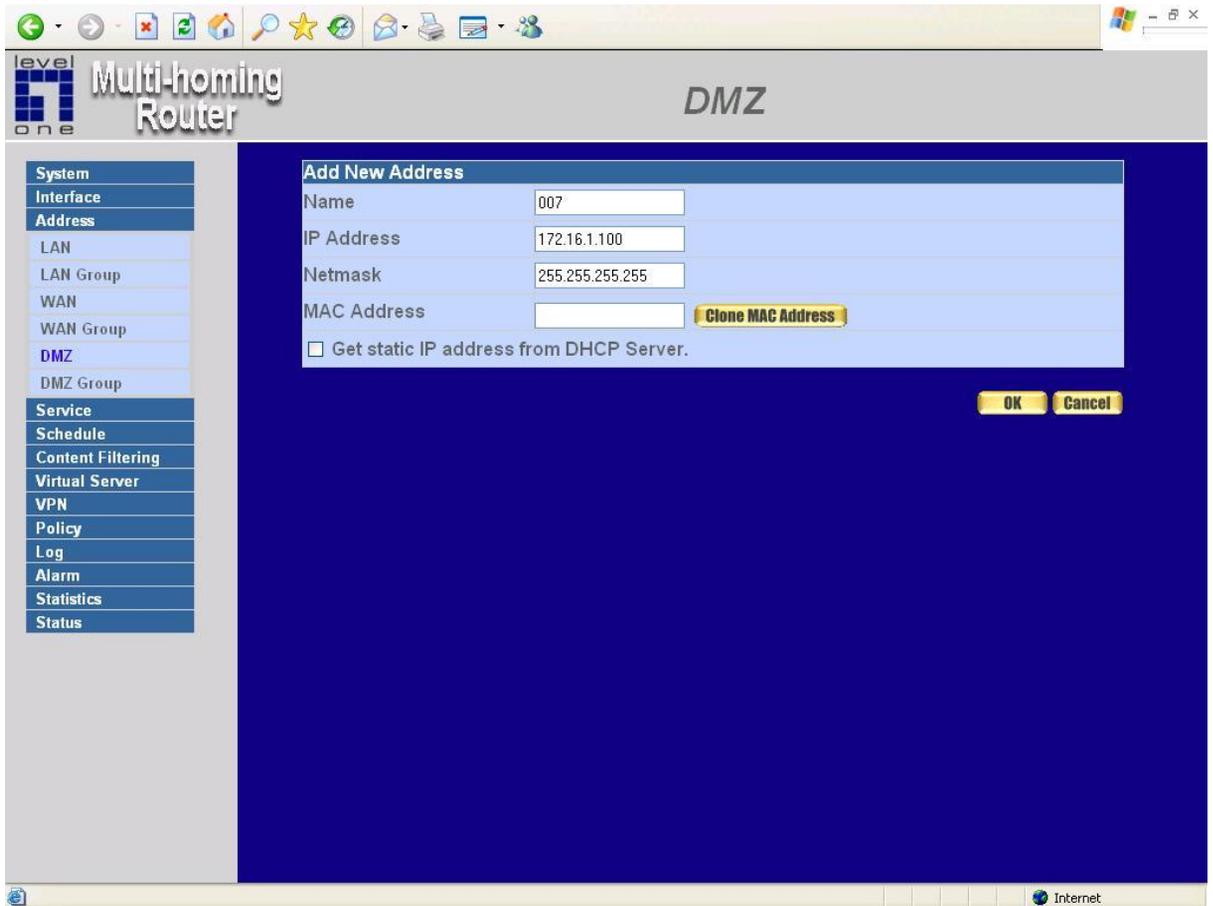


## Adding a new DMZ Address:

**Step 1.** In the DMZ window, click the **New Entry** button.

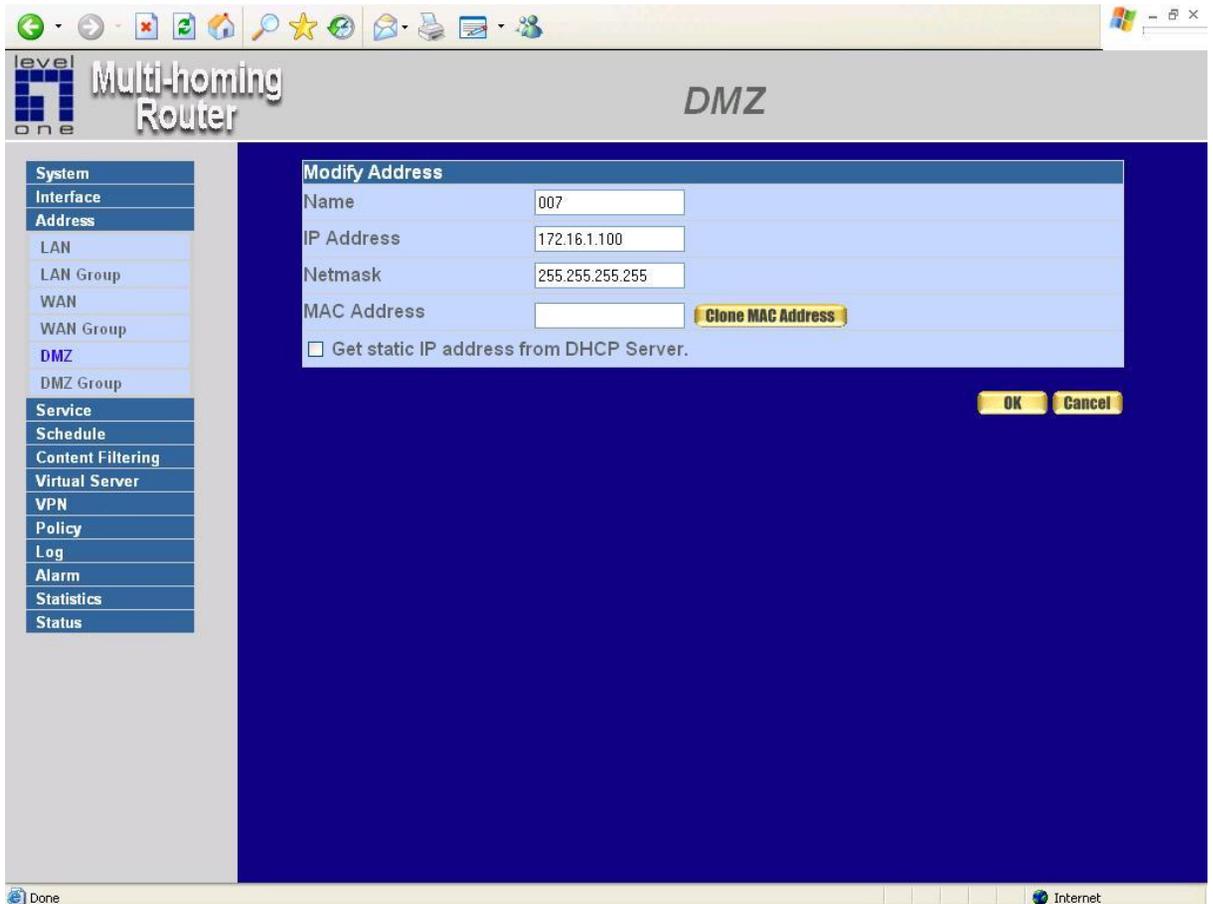
**Step 2.** In the **Add New Address** window, enter the settings for a new DMZ address.

**Step 3.** Click **OK** to add the specified DMZ or click **Cancel** to discard changes.



## Modifying a DMZ Address:

- Step 1.** In the **DMZ** window, locate the name of the network to be modified and click the **Modify** option in its corresponding **Configure** field.
- Step 2.** In the **Modify Address** window, fill in new addresses.
- Step 3.** Click **OK** on save the changes or click **Cancel** to discard changes.



## Removing a DMZ Address:

- Step 1.** In the **DMZ** window, locate the name of the network to be removed and click the **Remove** option in its corresponding **Configure** field.
- Step 2.** In the **Remove** confirmation pop-up box, click **OK** to remove the address or click **Cancel** to discard changes.

The screenshot shows the web interface of a Multi-homing Router. The main heading is "DMZ". On the left is a navigation menu with options: System, Interface, Address, LAN, LAN Group, WAN, WAN Group, DMZ, DMZ Group, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Statistics, and Status. The "DMZ" menu item is selected. The main content area displays a table of DMZ addresses:

Name	IP / Netmask	MAC Address	Configure
DMZ_Ang	0.0.0.0/0.0.0.0		In Use
100	172.16.1.100/255.255.255.255		Modify Remove
101	172.16.1.101/255.255.255.255		Modify Remove
102	172.16.1.102/255.255.255.255		Modify Remove

Below the table is a "New Entry" button. A confirmation dialog box from Microsoft Internet Explorer is overlaid on the screen, asking "Are you sure you want to remove?" with "OK" and "Cancel" buttons.

The browser address bar shows: <http://192.168.1.1/cgi-bin/address.cgi?del=14&sq=4>

## DMZ Group

### Entering the DMZ Group window:

Click **DMZ Group** under the **Address** menu to enter the **DMZ** window. The current settings information for the DMZ group appears on the screen.

The screenshot displays the web interface of a Multi-homing Router. The browser's address bar shows the URL <http://192.168.1.1>. The page title is "Multi-homing Router" and the current page is "DMZ Group".

On the left side, there is a navigation menu with the following items:

- System
- Interface
- Address
  - LAN
  - LAN Group
  - WAN
  - WAN Group
  - DMZ
  - DMZ Group**
- Service
- Schedule
- Content Filtering
- Virtual Server
- VPN
- Policy
- Log
- Alarm
- Statistics
- Status

The main content area is a table with the following structure:

Name	Member	Configure
<a href="#">New Entry</a>		

The table is currently empty, showing only the "New Entry" button. The status bar at the bottom of the browser window shows "Done" on the left and "Internet" on the right.

## Adding a DMZ Group:

**Step 1.** In the DMZ Group window, click the **New Entry** button.

**Step 2.** In the **Add New Address** Group window:

- **Available Address:** list names of all members of the DMZ.
- **Selected Address:** list names to assign to a new group.

**Step 3.** **Name:** enter a name for the new group.

**Step 4. Add members:** Select the names to be added from the **Available Address** list, and click the **Add>>** button to add them to the **Selected Address** list.

**Step 5. Remove members:** Select names to be removed from the **Selected Address** list, and click the **<<Remove** button to remove them from the **Selected Address** list.

**Step 6.** Click **OK** to add the new group or click **Cancel** to discard changes.

level  
one

# Multi-homing Router

## DMZ Group

**Add New Address Group**

Name:

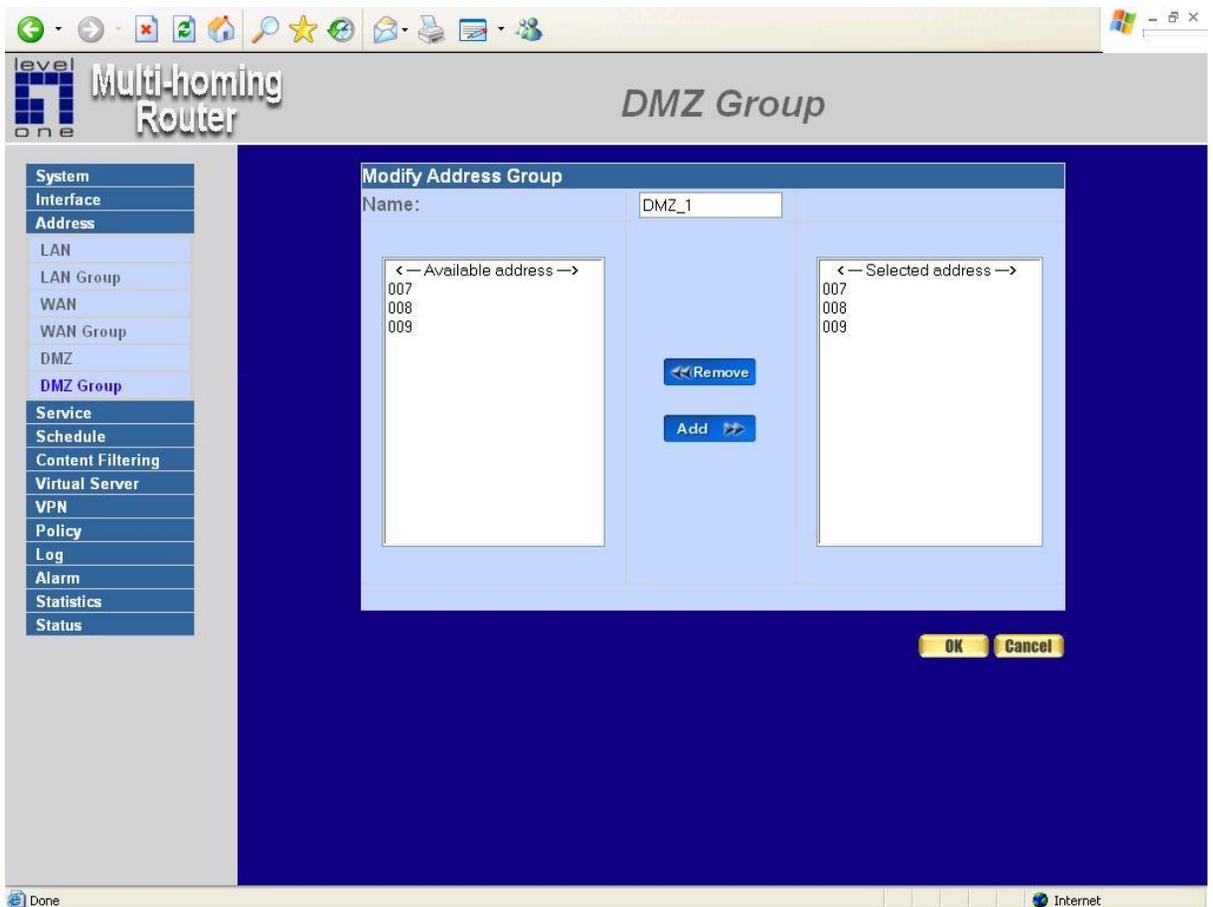
< -- Available address -->		< -- Selected address -->
007		007
008		008
009		009

System  
Interface  
Address  
LAN  
LAN Group  
WAN  
WAN Group  
DMZ  
**DMZ Group**  
Service  
Schedule  
Content Filtering  
Virtual Server  
VPN  
Policy  
Log  
Alarm  
Statistics  
Status

Done Internet

## Modifying a DMZ Group:

- Step 1.** In the **DMZ Group** window, locate the **DMZ** group to be modified and click its corresponding **Modify** button in the **Configure** field.
- Step 2.** A window displaying information about the selected group appears:
  - **Available Address:** list the names of all the members of the DMZ.
  - **Selected Address:** list the names of the members that have been assigned to this group.
- Step 3.** **Add members:** Select names to be added from the **Available Address** list, and click the **Add>>** button to add them to the **Selected Address** list.
- Step 4.** **Remove members:** Select names to be removed from the **Selected Address** list, and click the **<<Remove** button to remove them from **Selected Address** list.
- Step 5.** Click **OK** to save changes or click **Cancel** to cancel editing.



## Removing a DMZ Group:

**Step 1.** In the **DMZ Group** window, locate the group to be removed and click its corresponding **Remove** option in the **Configure** field.

**Step 2.** In the **Remove confirmation** pop-up box, click **OK** to remove the group.

The screenshot shows the 'Multi-homing Router' web interface. The main heading is 'DMZ Group'. On the left is a navigation menu with options: System, Interface, Address, LAN, LAN Group, WAN, WAN Group, DMZ, DMZ Group, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Statistics, and Status. The 'DMZ Group' menu item is selected. The main content area displays a table with the following data:

Name	Member	Configure
DMZ_1	net.800.100	<input type="button" value="Modify"/> <input type="button" value="Remove"/>

Below the table is a 'New Entry' button. A 'Microsoft Internet Explorer' dialog box is overlaid on the screen, asking 'Are you sure you want to remove?' with 'OK' and 'Cancel' buttons.

The browser's address bar shows the URL: <http://192.168.1.1/cgi-bin/address.cgi?gdel=17&sq=1>

# Service

In this section, network services are defined and new network services can be added. There are three sub menus under Service which are: **Pre-defined**, **Custom**, and **Group**. The Administrator can simply follow the instructions below to define the protocols and port numbers for network communication applications. Users then can connect to servers and other computers through these available network services.

## What is Service?

TCP and UDP protocols support varieties of services, and each service consists of a TCP Port or UDP port number, such as TELNET(23), SMTP(21), POP3(110),etc. The 10/100M 2 WAN /1 LAN /1 DMZ Multi-Homing Gateway defines two services: pre-defined service and custom service. The common-use services like TCP and UDP are defined in the pre-defined service and cannot be modified or removed. In the custom menu, users can define other TCP port and UDP port numbers that are not in the pre-defined menu according to their needs. When defining custom services, the client port ranges from 1024 to 65535 and the server port ranges from 0 to 1023.

## How do I use Service?

The Administrator can add new service group names in the **Group** option under **Service** menu, and assign desired services into that new group. Using service group the Administrator can simplify the processes of setting up control policies. For example, there are 10 different computers that want to access 5 different services on a server, such as HTTP, FTP, SMTP, POP3, and TELNET. Without the help of service groups, the Administrator needs to set up 50 (10x5) control policies, but by applying all 5 services to a single group name in the **service** field, it takes only one control policy to achieve the same effect as the 50 control policies.

## Pre-defined

### Entering a Pre-defined window

Click **Service** on the menu bar on the left side of the window. Click **Pre-defined** under it. A window will appear with a list of services and their associated IP addresses. This list cannot be modified.

The screenshot shows the 'Multi-homing Router' interface. On the left is a navigation menu with the following items: System, Interface, Address, Service, Pre-defined (selected), Custom, Group, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Statistics, and Status. The main area is titled 'Pre-defined' and displays a grid of service buttons. Each button shows the protocol, service name, and a count in parentheses. The services listed are:

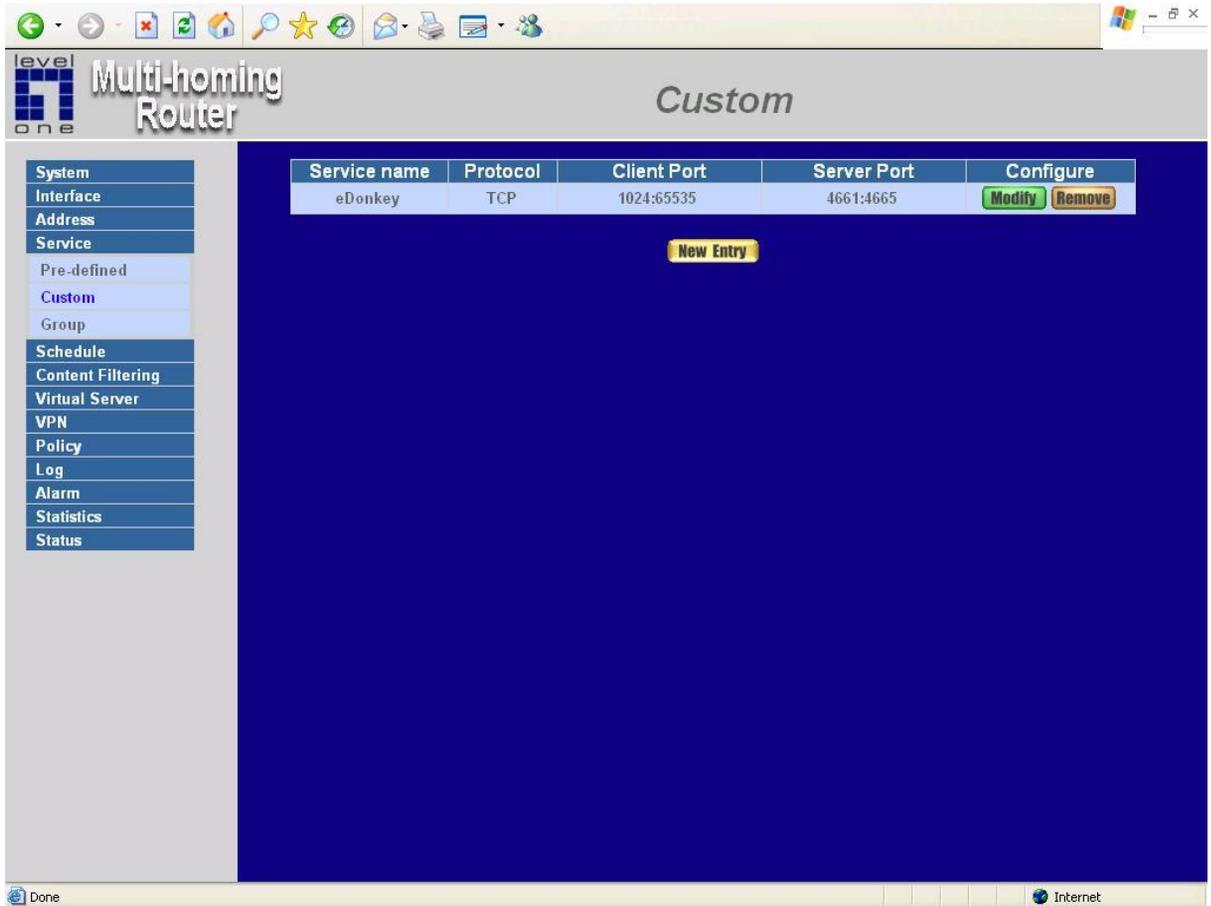
ANY ANY (Any)	TCP IMAP (143)	TCP POP3 (110)	TCP TELNET (23)
TCP AFPOverTCP (548)	TCP InterLocator (389)	TCP PPTP (1723)	UDP TFTP (69)
TCP AOL (5190-5194)	TCP IRC (6660-6669)	TCP Real-Media (7070)	ICMP Traceroute (3,11)
TCP BGP (179)	TCP L2TP (1701)	UDP RIP (520)	UDP UDP-ANY (Any)
UDP DNS (53)	TCP LDAP (389)	TCP RLOGIN (513)	UDP UUCP (540)
TCP FINGER (79)	TCP NetMeeting (389&1603&1720)	TCP SMTP (25)	TCP VDO-Live (7000-7010)
TCP FTP (20-21)	UDP NFS (111)	UDP SNMP (161)	TCP WAIS (210)
TCP GOPHER (70)	TCP NNTP (119)	TCP SSH (22)	TCP WINFRAME (1494)
TCP HTTP (80)	UDP NTP (123)	UDP SYSLOG (514)	TCP X-Windows (8000-8083)
TCP HTTPS (443)	UDP PC-Anywhere (5631-5632)	UDP TALK (517-518)	TCP MSN (1883)
UDP IKE (500)	ICMP PING (Any)	TCP TCP-ANY (Any)	

The interface also shows a Windows taskbar at the top and a system tray at the bottom right with an 'Internet' icon.

# Custom

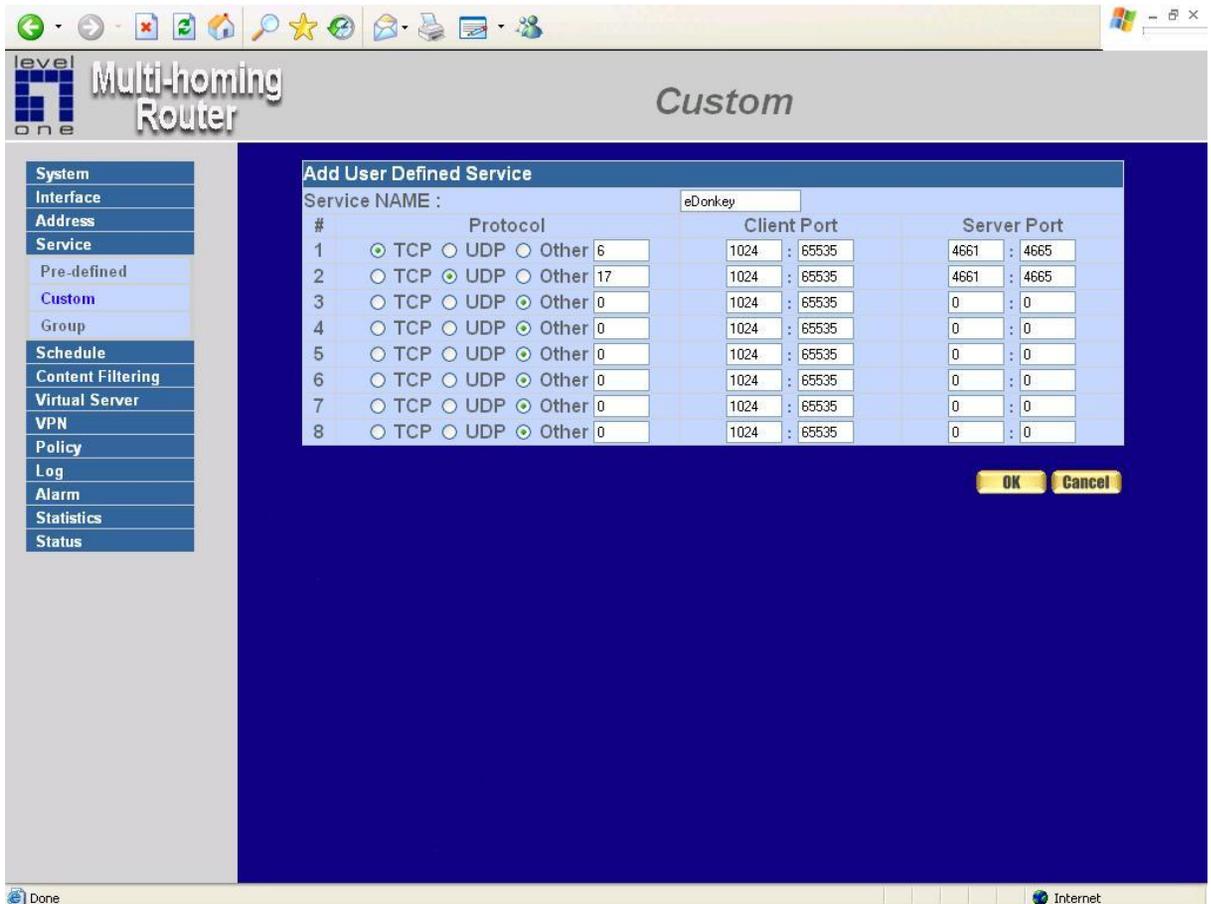
## Entering the Custom window

Click **Service** on the menu bar on the left side of the window. Click **Custom** under it. A window will appear with a table showing all services currently defined by the Administrator.



## Adding a new Service

**Step 1** In the **Custom** window, click the **New Entry** button and a new service table appears.



**Step 2** In the new service table:

- **New Service Name:** This will be the name referencing the new service.
- **Protocol:** Enter the network protocol type to be used, such as TCP, UDP, or Other (please enter the number for the protocol type).
- **Client Port:** enter the range of port number of new clients.
- **Server Port:** enter the range of port number of new servers.

*The client port ranges from 1024 to 65535 and the server port ranges from 0 to 1023.*

**Step 3** Click **OK** to add new services, or click **Cancel** to cancel.

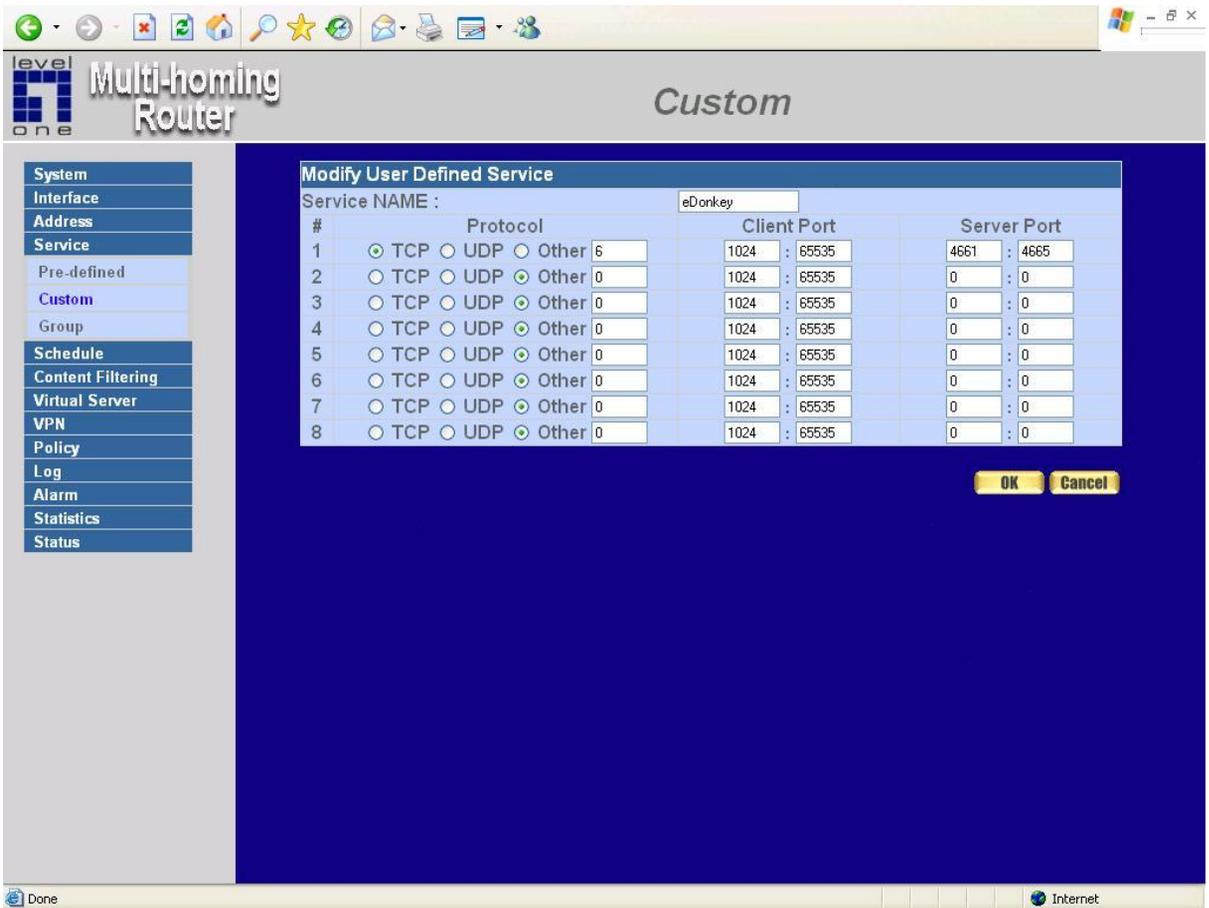
# Modifying Custom Services

**Step 1.** In the **Custom** table, locate the name of the service to be modified. Click its corresponding **Modify** option in the **Configure** field.

**Step 2.** A table showing the current settings of the selected service appears on the screen

**Step 3.** Enter the new values.

**Step 4.** Click **OK** to accept editing; or click **Cancel**.



## Removing Custom Services

- Step 1.** In the **Custom** window, locate the service to be removed. Click its corresponding **Remove** option in the **Configure** field.
- Step 2.** In the **Remove** confirmation pop-up box, click **OK** to remove the selected service or click **Cancel** to cancel action.

The screenshot shows the web interface of a Multi-homing Router. The main content area is titled "Custom" and displays a table of services. A confirmation dialog box is overlaid on the page, asking "Are you sure you want to remove?".

Service name	Protocol	Client Port	Server Port	Configure
eDonkey	TCP	1024:65535	4661:4665	<input type="button" value="Modify"/> <input type="button" value="Remove"/>

Below the table is a "New Entry" button.

The confirmation dialog box is titled "Microsoft Internet Explorer" and contains the text "Are you sure you want to remove?". It has "OK" and "Cancel" buttons.

The browser address bar shows the URL: <http://192.168.1.1/cgi-bin/service.cgi?del=188sq=1>

# Group

## Accessing the Group window

Click **Service** in the menu bar on the left hand side of the window. Click **Group** under it. A window will appear with a table displaying current service group settings set by the Administrator.

The screenshot shows a web-based configuration interface for a Multi-homing Router. The window title is "Group". On the left side, there is a navigation menu with the following items: System, Interface, Address, Service, Pre-defined, Custom, Group (highlighted), Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Statistics, and Status. The "Service" menu item is also highlighted. The main content area displays a table with the following data:

Group name	Service	Configure
Service_1	FTP,HTTP,HTTPS	<a href="#">Modify</a> <a href="#">Remove</a>

Below the table, there is a "New Entry" button.

# Adding Service Groups

**Step 1.** In the **Group** window, click the **New Entry** button.

In the **Add Service Group** window, the following fields will appear:

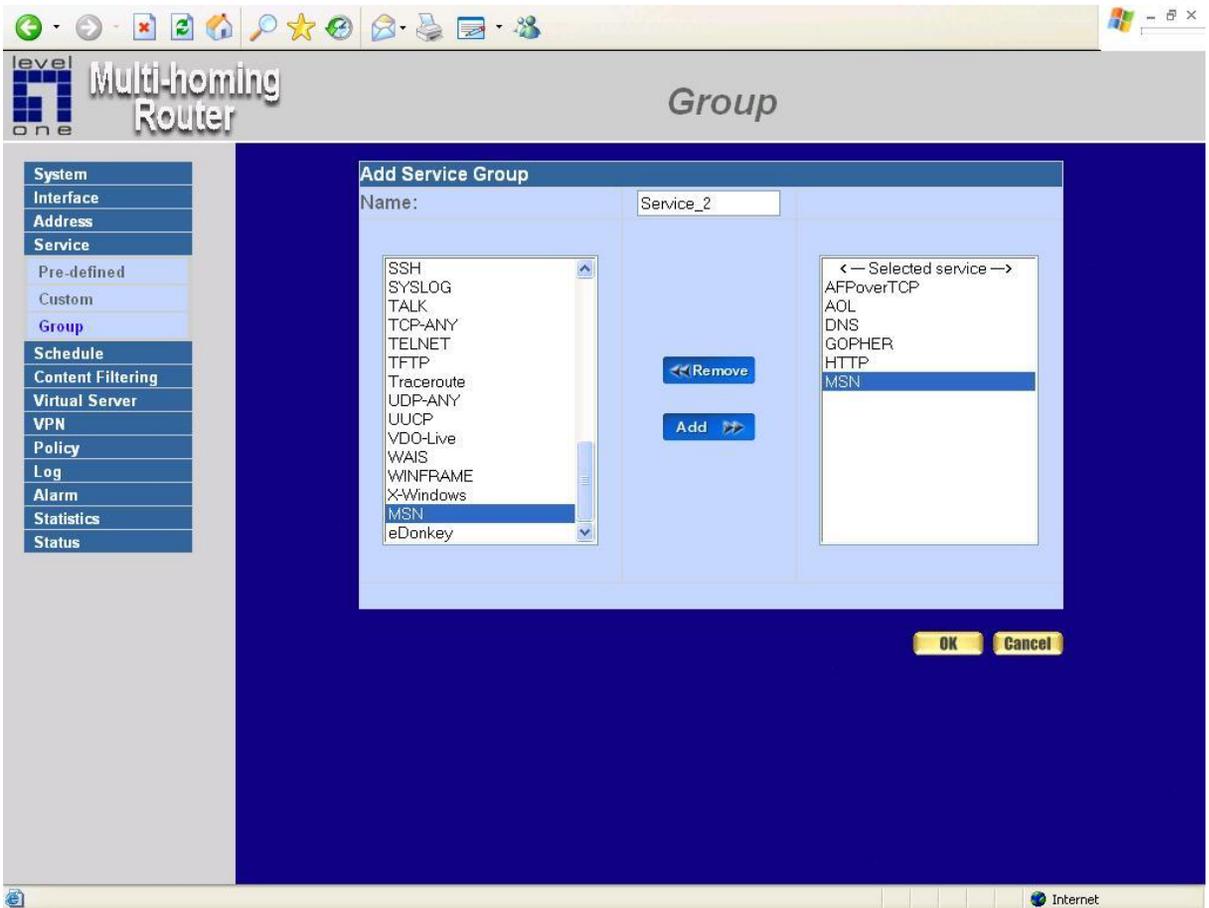
- **Available Services:** list all the available services.
- **Selected Services:** list services to be assigned to the new group.

**Step 2.** Enter the new group name in the group **Name** field. This will be the name referencing the created group.

**Step 4. To add new services:** Select the services desired to be added in the **Available Services** list and then click the **Add>>** button to add them to the group.

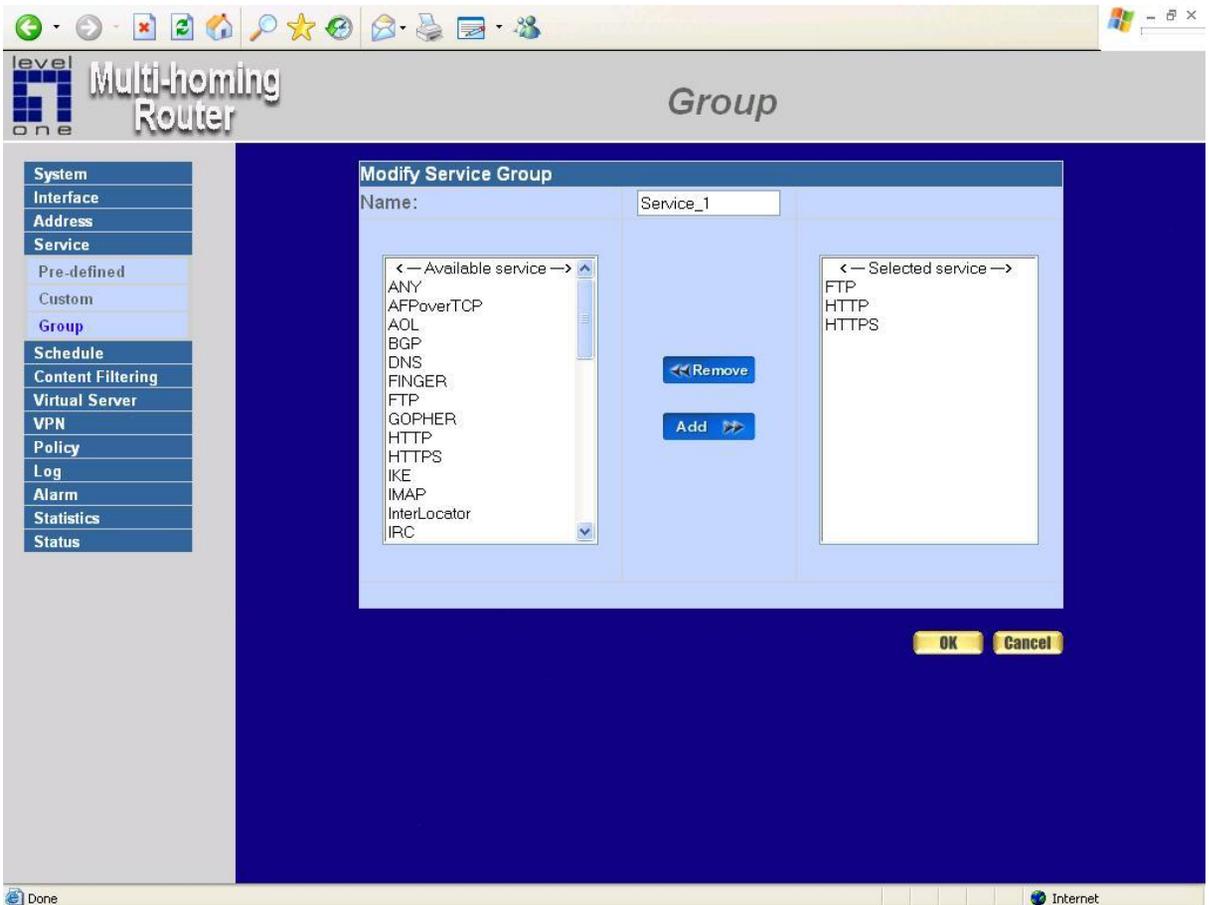
**Step 5. To remove services:** Select services desired to be removed in the **Available Services**, and then click the **<<Remove** button to remove them from the group.

**Step 6.** Click **OK** to add the new group.



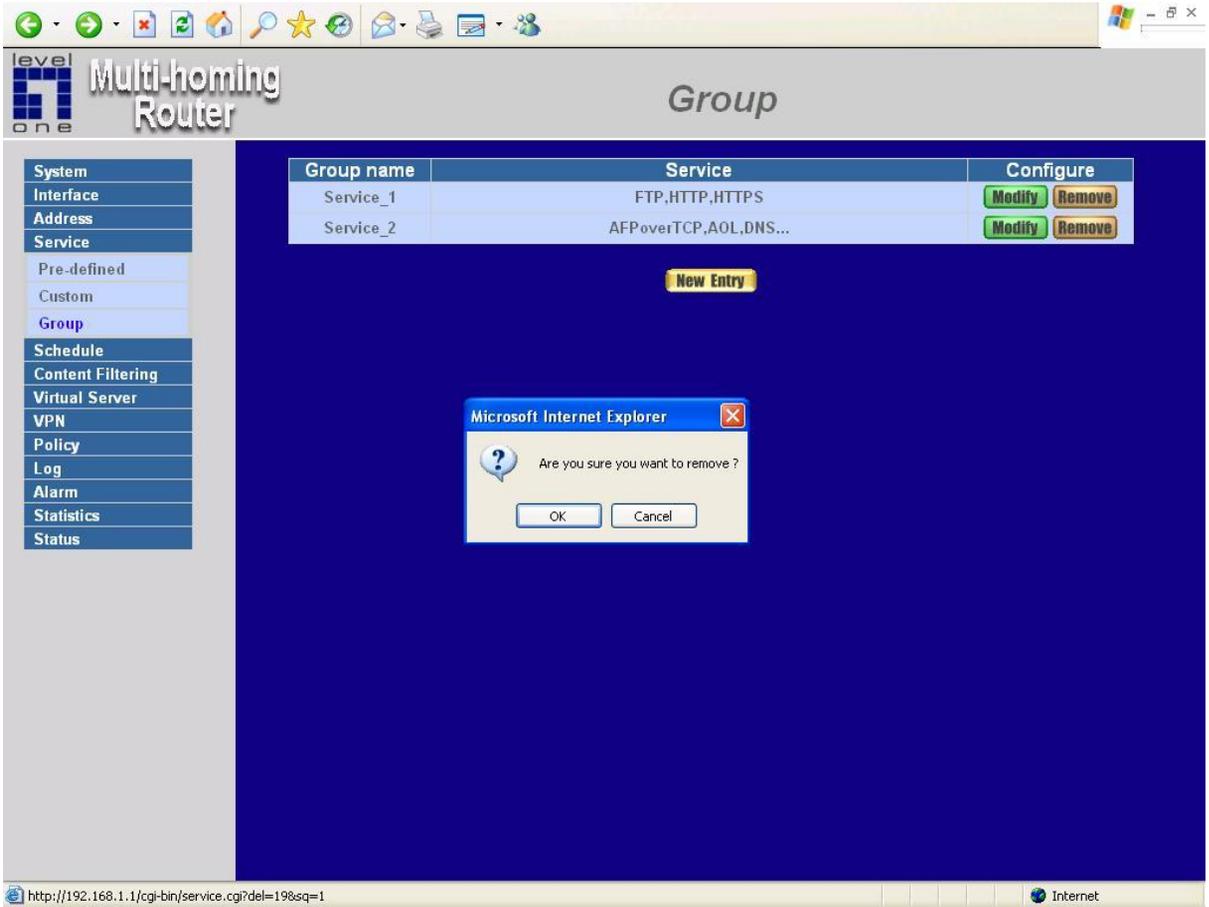
# Modifying Service Groups

- Step 1.** In the **Group** window, locate the service group to be edited. Click its corresponding **Modify** option in the **Configure** field.
- Step 2.** In the **Mod (modify) group** window the following fields are displayed:
  - **Available Services:** lists all the available services.
  - **Selected Services:** list services that have been assigned to the selected group.
- Step 3.** **Add new services:** Select services in the **Available Services** list, and then click the **Add>>** button to add them to the group.
- Step 4.** **Remove services:** Select services to be removed in the **Selected Services** list, and then click the **<<Remove** button to remove these services from the group.
- Step 5.** Click **OK** to save editing changes.



# Removing Service Groups

- Step 1.** In the **Group** window, locate the service group to be removed and click its corresponding **Remove** option in the **Configure** field.
- Step 2.** In the **Remove** confirmation pop-up box, click **OK** to remove the selected service group or click **Cancel** to cancel removing.

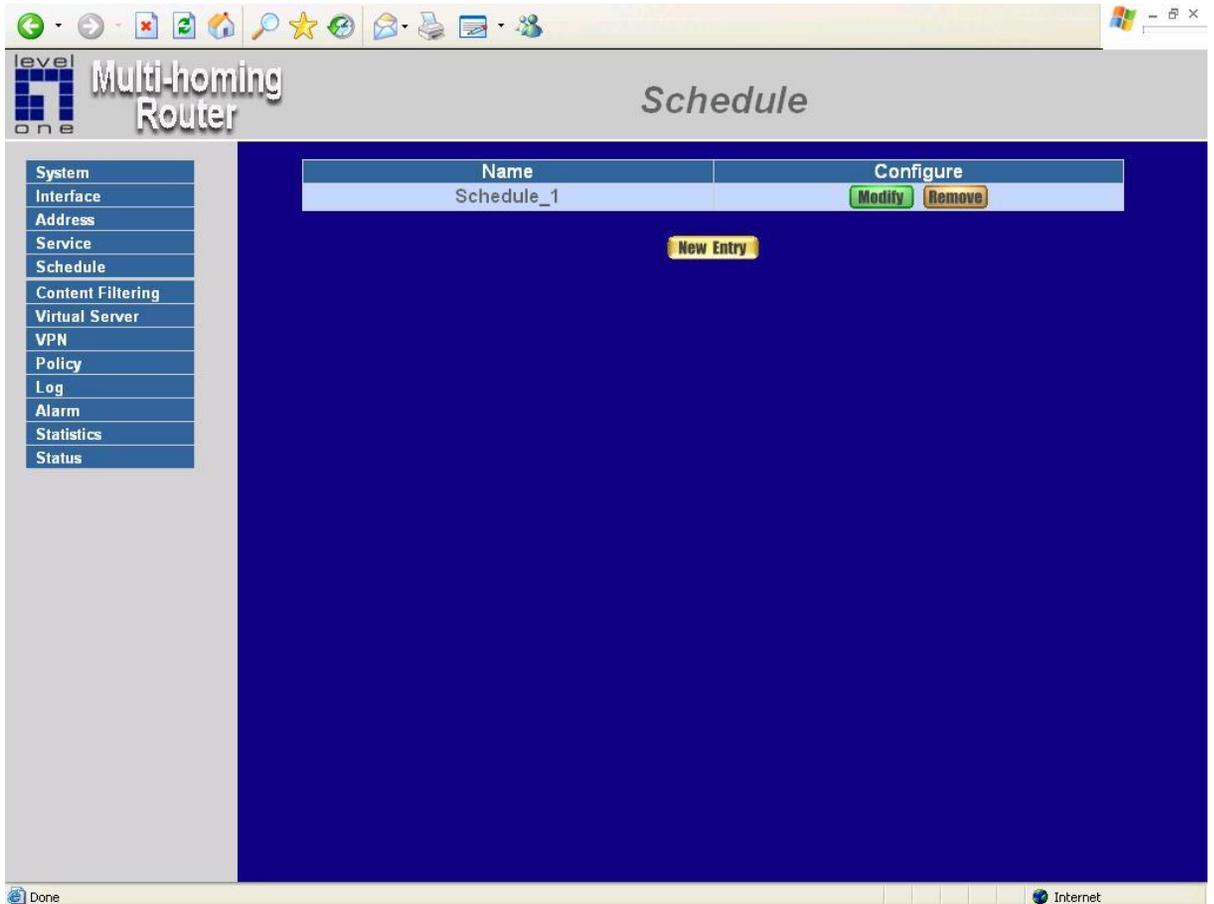


# Schedule

The Multi-Homing Gateway allows the Administrator to configure a schedule for policies to take affect. By creating a schedule, the Administrator is allowing the Multi-Homing Gateway policies to be used at those designated times only. Any activities outside of the scheduled time slot will not follow the Multi-Homing Gateway policies therefore will likely not be permitted to pass through the Multi-Homing Gateway. The Administrator can configure the start time and stop time, as well as creating 2 different time periods in a day. For example, an organization may only want the Multi-Homing Gateway to allow the internal network users to access the Internet during work hours. Therefore, the Administrator may create a schedule to allow the Multi-Homing Gateway to work Monday-Friday, 8AM-5PM only. During the non-work hours, the Multi-Homing Gateway will not allow Internet access.

## Accessing the Schedule window

Click on **Schedule** on the menu bar and the schedule window will appear displaying the active schedules.



The following items are displayed in this window:

**Name:** the name assigned to the schedule

**Comment:** a short comment describing the schedule

**Configure:** modify or remove

# Adding a new Schedule

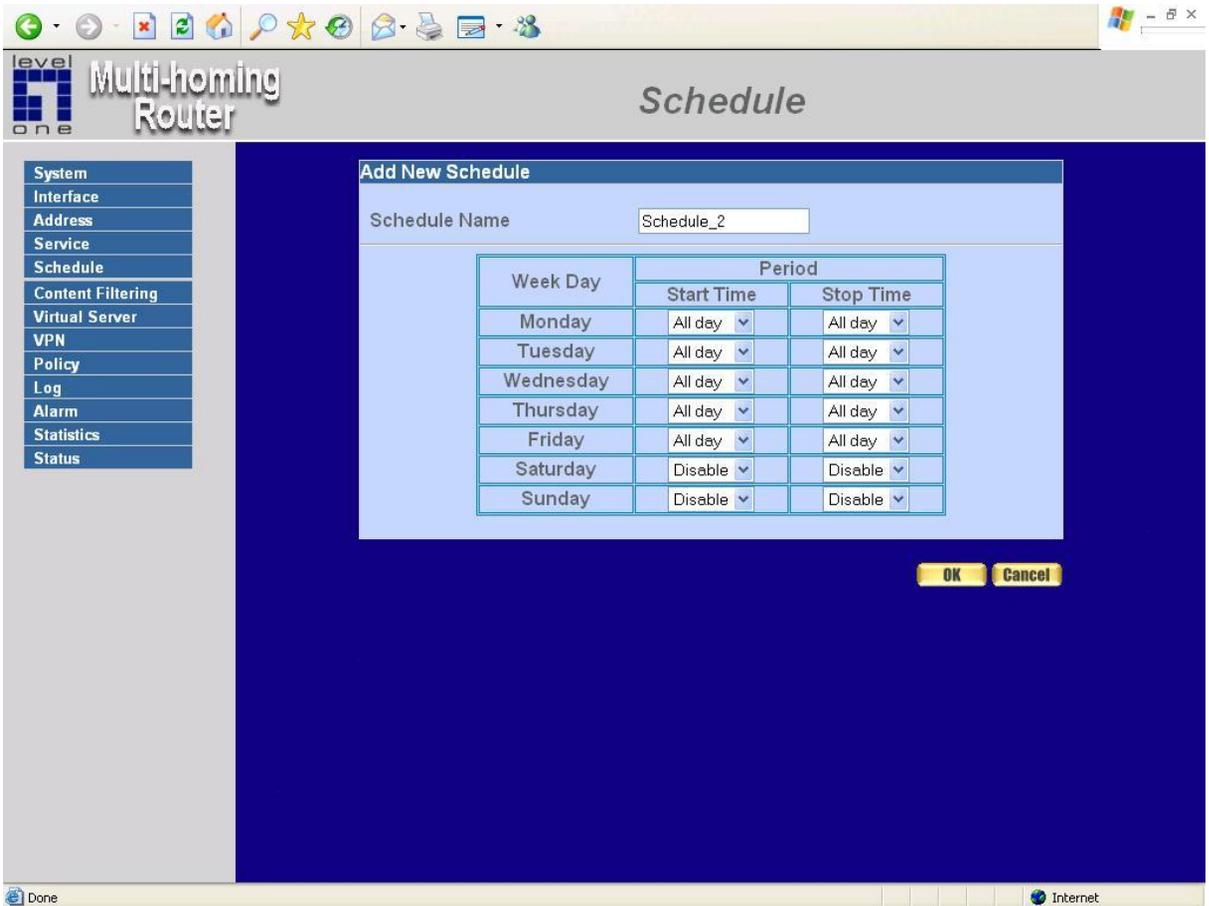
**Step 1:** Click on the **New Entry** button and the **Add New Schedule** window will appear.

**Step 2:**

**Schedule Name:** Fill in a name for the new schedule.

**Period 1:** Configure the start and stop time for the days of the week that the schedule will be active.

**Step 3:** Click Ok to save the new schedule or click Cancel to cancel adding the new schedule.

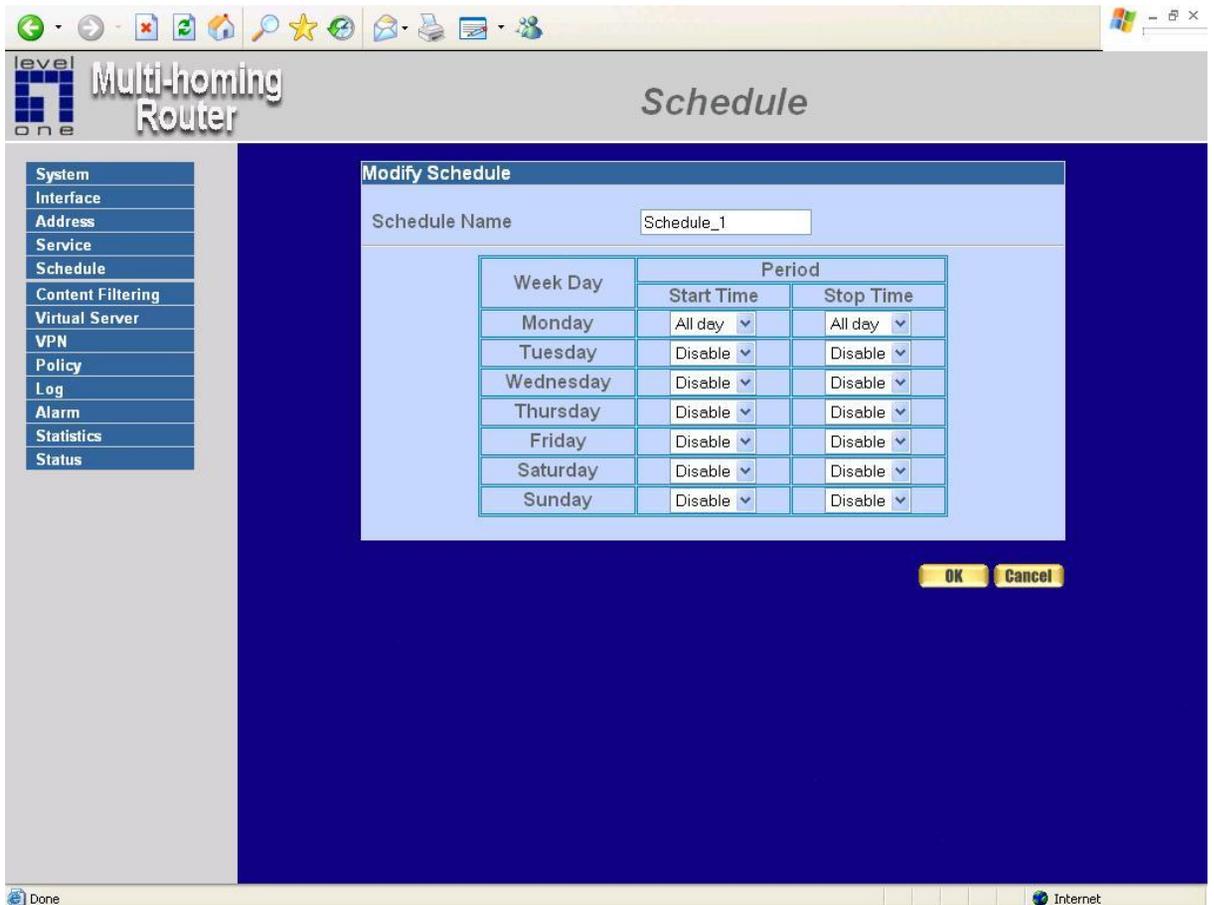


# Modifying a Schedule

**Step 1:** In the **Schedule** window, find the policy to be modified and click the corresponding **Modify** option in the **Configure** field.

**Step 2:** Make needed changes.

**Step 3:** Click **OK** to save changes.



## Removing a Schedule

**Step 1:** In the **Schedule** window, find the policy to be removed and click the corresponding **Remove** option in the **Configure** field.

**Step 2:** A confirmation pop-up box will appear, click on **OK** to remove the schedule.

The screenshot shows the web interface of a Multi-homing Router. The page title is "Schedule". On the left, there is a navigation menu with the following items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Statistics, and Status. The main content area displays a table with the following structure:

Name	Configure
Schedule_1	<input type="button" value="Modify"/> <input type="button" value="Remove"/>

Below the table, there is a "New Entry" button. A confirmation dialog box from Microsoft Internet Explorer is overlaid on the page, asking "Are you sure you want to remove?" with "OK" and "Cancel" buttons.

The browser's address bar shows the URL: <http://192.168.1.1/cgi-bin/sche.cgi?del=20&sq=1>

# Content filtering

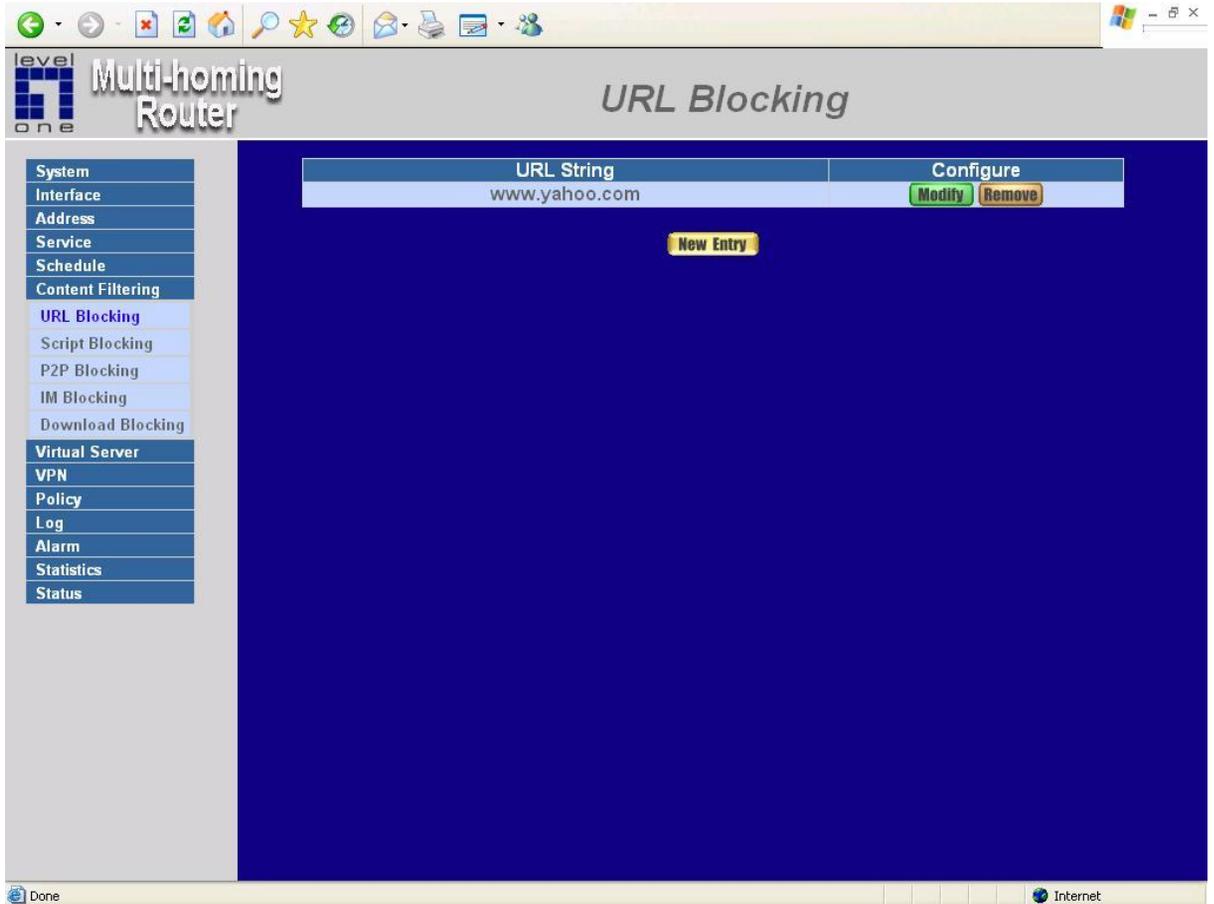
The Administrator may setup URL Blocking to prevent LAN network users from accessing a specific website on the Internet. Any web request coming from an LAN network computer to a blocked website will receive a blocked message instead of the website.

# URL Blocking

## Entering the URL blocking window

Click on **URL Blocking** under the **Configuration** menu bar.

Click on **New Entry**.

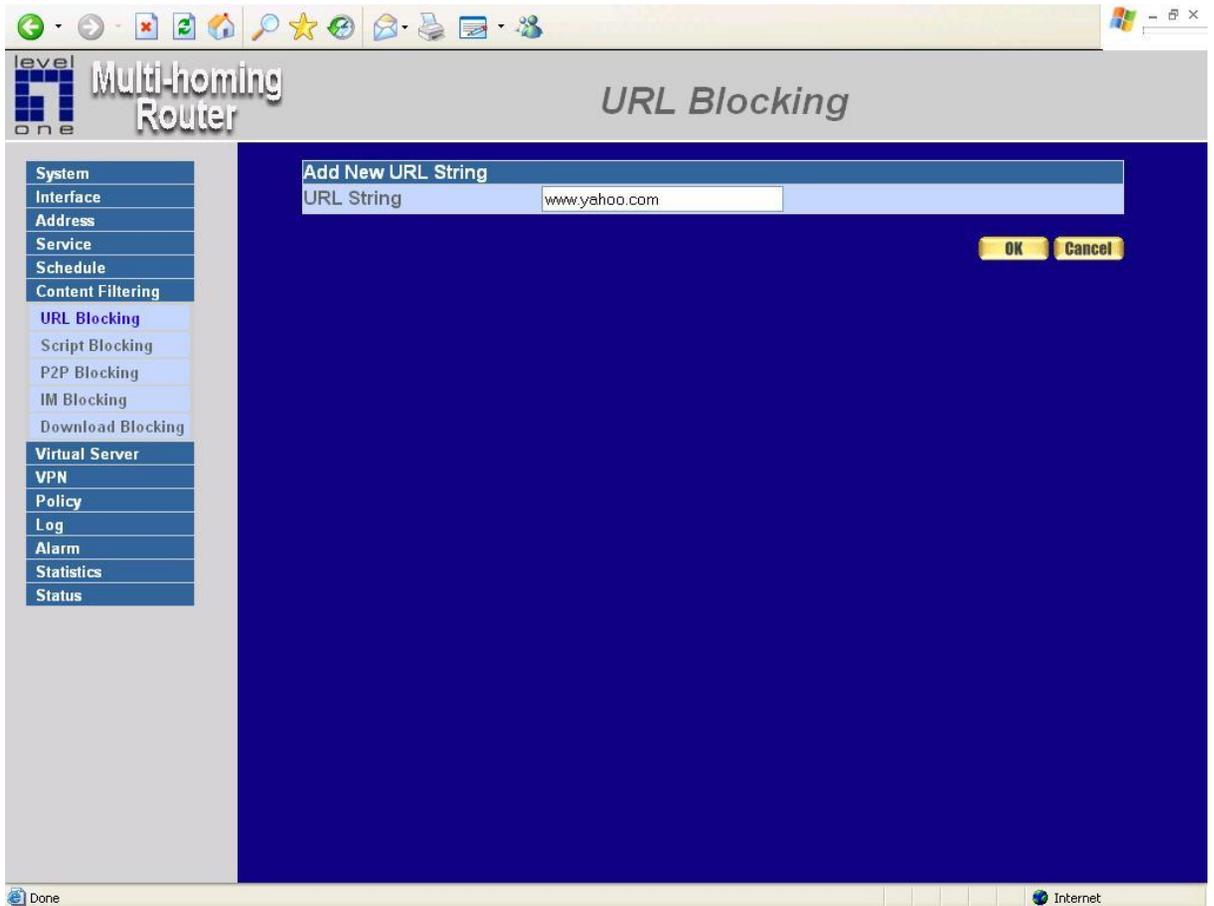


## Adding a URL Blocking policy

**Step 1:** After clicking **New Entry**, the **Add New Block String** window will appear.

**Step 2:** Enter the URL of the website to be blocked.

**Step 3:** Click **OK** to add the policy. Click **Cancel** to discard changes.

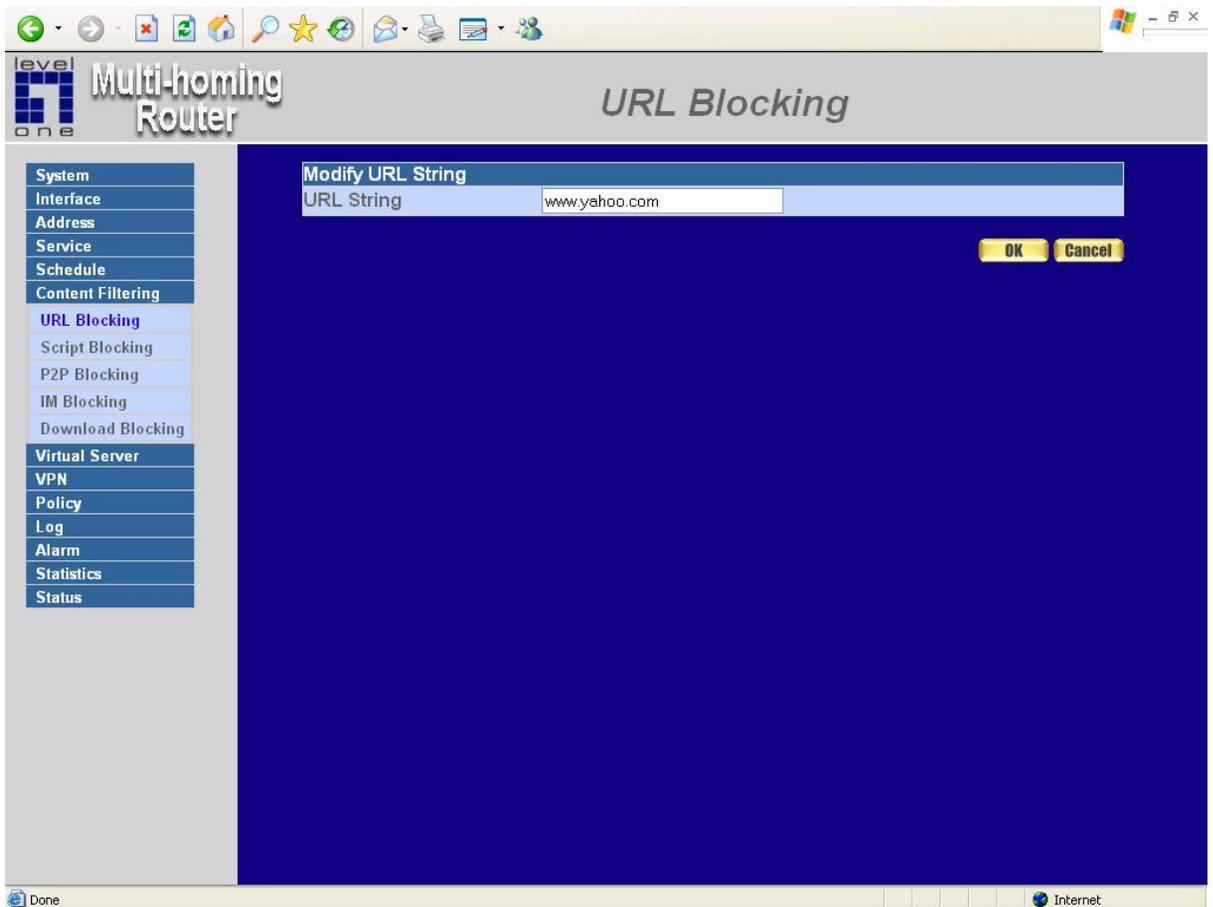


## Modifying a URL Blocking policy

**Step 1:** In the **URL Blocking** window, find the policy to be modified and click the corresponding **Modify** option in the **Configure** field.

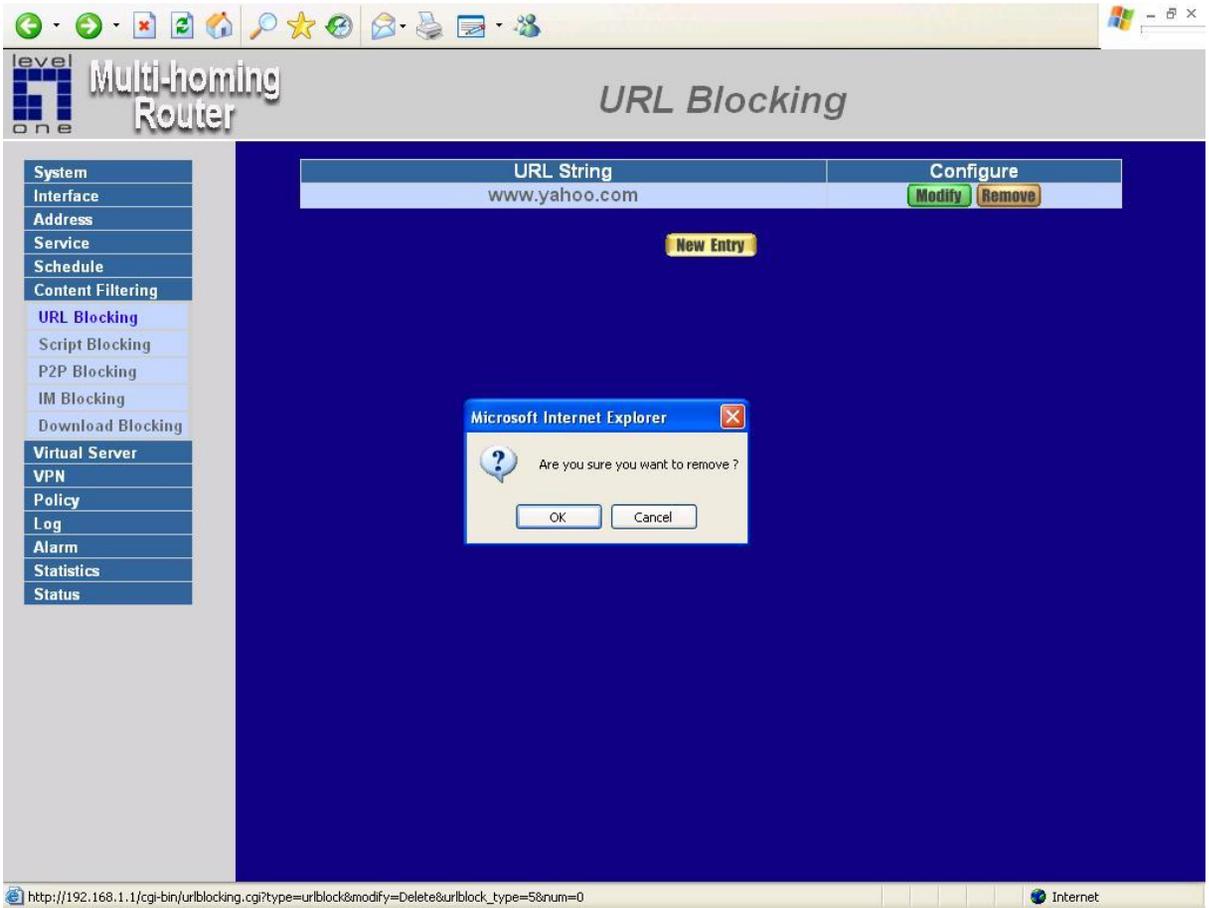
**Step 2:** Make the necessary changes needed.

**Step 3:** Click on **OK** to save changes or click on **Cancel** to cancel modifications.



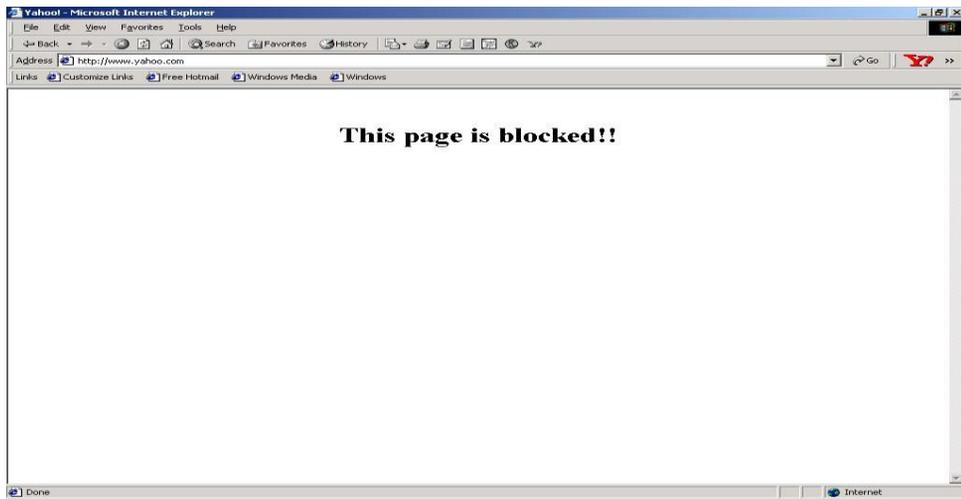
# Removing a URL Blocking

- Step 1:** In the **URL Blocking** window, find the policy to be removed and click the corresponding **Remove** option in the **Configure** field.
- Step 2:** A confirmation pop-up box will appear, click on **OK** to remove the policy or click on **Cancel** to discard changes.



## Blocked URL site:

When a user from the LAN network tries to access a blocked URL, the error below will appear.



## Script Blocking

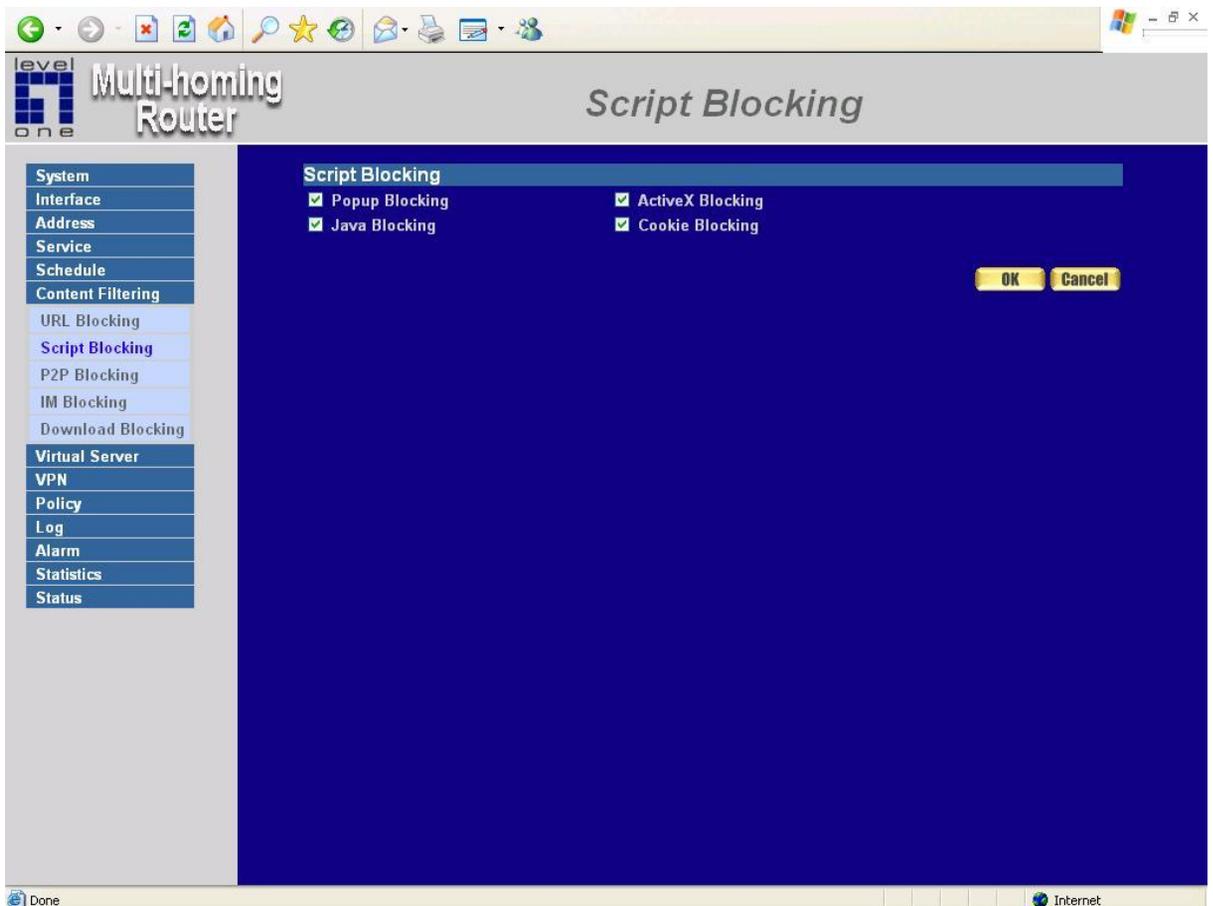
To let Popup 、ActiveX 、Java 、Cookie in or keep them out.

**Step 1:** Click **Content Filtering** in the menu.

**Step 2:** 【**General Blocking**】 detective functions.

- Popup filtering : Prevent the pop-up boxes appearing.
- ActiveX filtering : Prevent ActiveX packets.
- Java filtering : Prevent Java packets.
- Cookie filtering : Prevent Cookie packets.

**Step 3:** After selecting each function, click the **OK** button below.





***When the system detects the setting, the Multi-Homing Gateway Gateway will spontaneously work.***

# Virtual Server

The Multi-Homing Gateway separates an enterprise's Intranet and Internet into LAN networks and WAN 1/2 networks respectively. Generally speaking, in order to allocate enough IP addresses for all computers, an enterprise assigns each computer a private IP address, and converts it into a real IP address through Multi-Homing Gateway Gateway's NAT (Network Address Translation) function. If a server which provides service to the WAN 1/2 networks, is located in the LAN networks, outside users can't directly connect to the server by using the server's private IP address.

The Multi-Homing Gateway Gateway's Virtual Server can solve this problem. A virtual server has set the real IP address of the Multi-Homing Gateway Gateway's WAN 1/2 network interface to be the Virtual Server IP. Through the virtual server feature, the Multi-Homing Gateway translates the virtual server's IP address into the private IP address of physical server in the LAN network. When outside users on the Internet request connections to the virtual server, the request will be forwarded to the private LAN server.

Virtual Server owns another feature know as one-to-many mapping. This is when one virtual server IP address on the WAN 1/2 interface can be mapped into LAN network server private IP addresses. This option is useful for Load Balancing, which causes the virtual server to distribute data packets to each private IP addresses (which are the real servers). By sending all data packets to all similar servers, this increases the server's efficiency, reduces risks of server crashes, and enhances servers' stability.

## How to use Virtual Server and mapped IP

Virtual Server and Mapped IP are part of the IP mapping scheme. By applying the incoming policies, Virtual Server and IP mapping work similarly. They map real IP addresses to the physical servers' private IP addresses (which is opposite to NAT), but there still exists some differences:

- Virtual Server can map one real IP to several LAN physical servers while Mapped IP can only map one real IP to one LAN physical server (1-to-1 Mapping). The Virtual Servers' load balance feature can map a specific service request to different physical servers running the same services.
- Virtual Server can only map one real IP to one service/port of the LAN physical servers while Mapped IP maps one real IP to all the services offered by the physical server.

IP mapping and Virtual Server work by binding the IP address of the WAN 1/2 virtual server to the private LAN IP address of the physical server that supports the services. Therefore users from the WAN network can access servers of the LAN network by requesting the service from the IP address provided by Virtual Server.

## **Mapped IP**

Internal private IP addresses are translated through NAT (Network Address Translation). If a server is located in the LAN network, it has a private IP address, and outside users cannot connect directly to LAN servers' private IP address. To connect to a LAN network server, outside users have to first connect to a real IP address of the WAN 1/2 network, and the real IP is translated to a private IP of the LAN network. Mapped IP and Virtual Server are the two methods to translate the real IP into private IP. Mapped IP maps IP in one-to-one fashion; that means, all services of one real WAN 1/2 IP address is mapped to one private LAN IP address.

## Entering the Mapped IP window

**Step 1.** Click **Mapped IP** under the **Virtual Server** menu bar and the Mapped IP configuration window will appear.

WAN IP	Map To Virtual IP	Configure
211.22.22.5	192.168.1.100	<input type="button" value="Modify"/> <input type="button" value="Remove"/>

### Definition:

**External IP** : WAN IP Address.

**Map to Virtual IP** : The IP address which WAN maps to the virtual network in the server.

**Configure** : To change the setting, click Configure to modify the parameters; click delete to delete the setting.

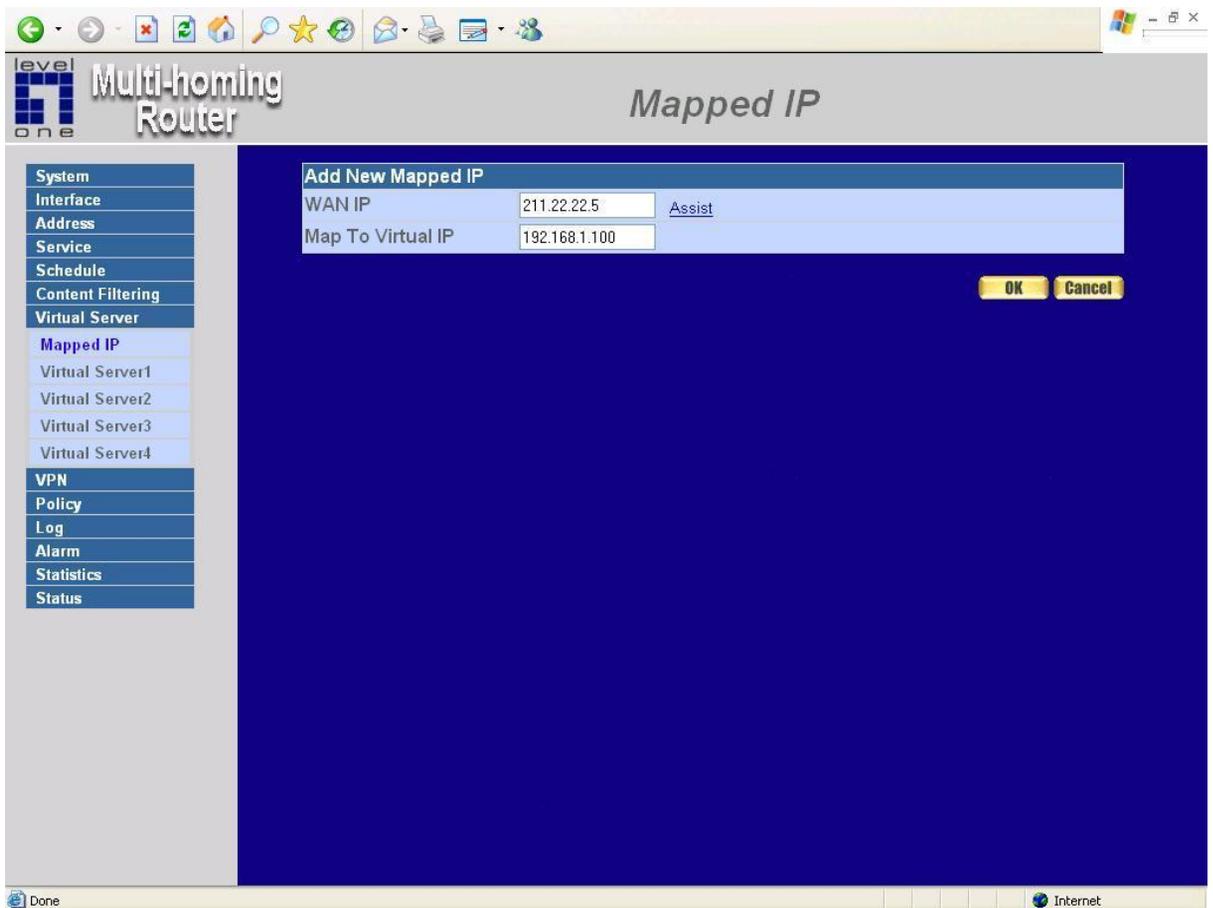
## Adding a new IP Mapping

**Step 1.** In the **Mapped IP** window, click the New Entry button. The Add New Mapped IP window will appear.

■ **WAN IP:** select the WAN public IP address to be mapped.

■ **Internal IP:** enter the LAN private IP address will be mapped 1-to-1 to the WAN IP address.

**Step 2.** Click **OK** to add new IP Mapping or click **Cancel** to cancel adding.

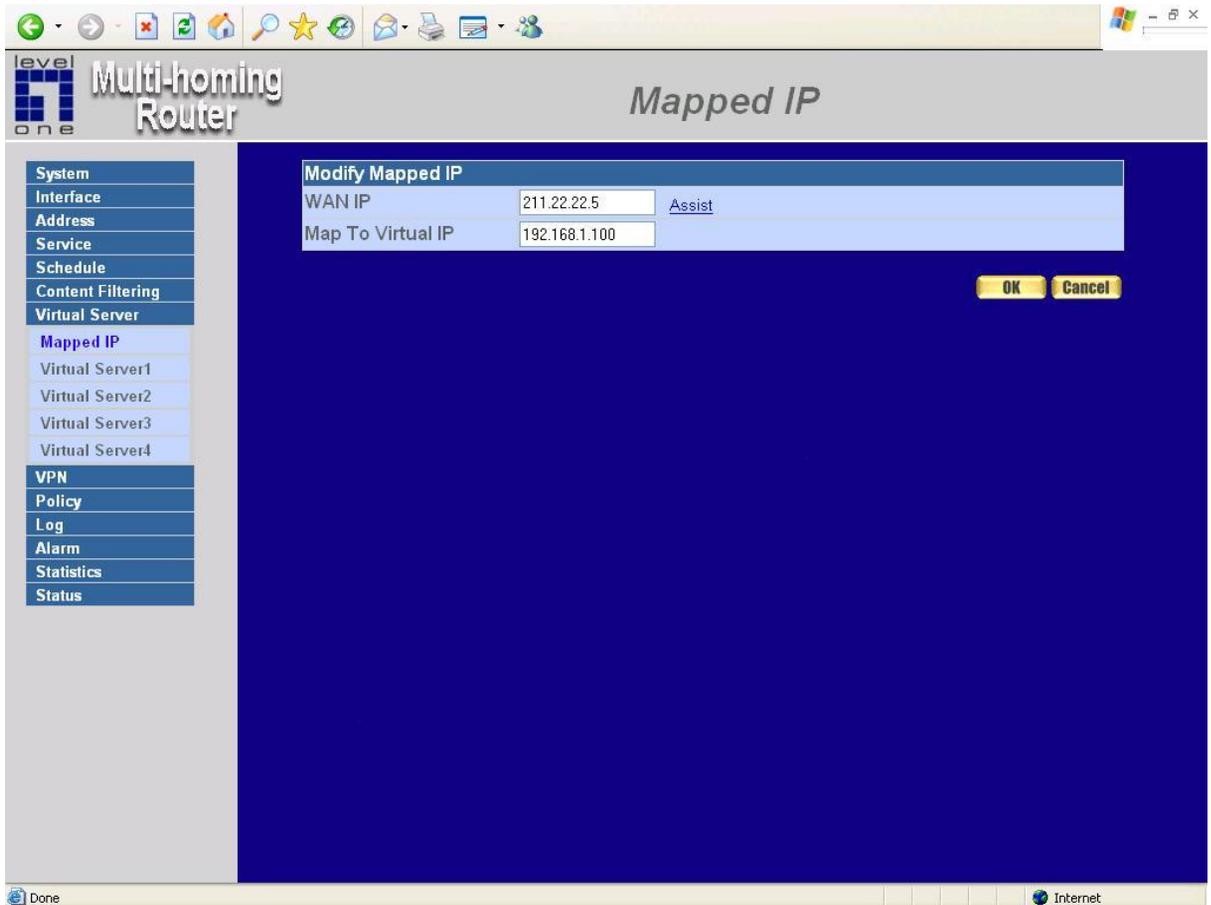


## Modifying a Mapped IP

**Step 1.** In the **Mapped IP** table, locate the Mapped IP you want it to be modified and click its corresponding Modify option in the Configure field.

**Step 2.** Enter settings in the Modify Mapped IP window.

**Step 3.** Click **OK** to save change or click **Cancel** to cancel.



**Note:** A Mapped IP cannot be modified if it has been assigned/used as a destination address of any Incoming policies.

## Removing a Mapped IP

**Step 1.** In the Mapped IP table, locate the Mapped IP desired to be removed and click its corresponding Remove option in the Configure field.

**Step 2.** In the Remove confirmation pop-up window, click **OK** to remove the Mapped IP or click **Cancel** to cancel.

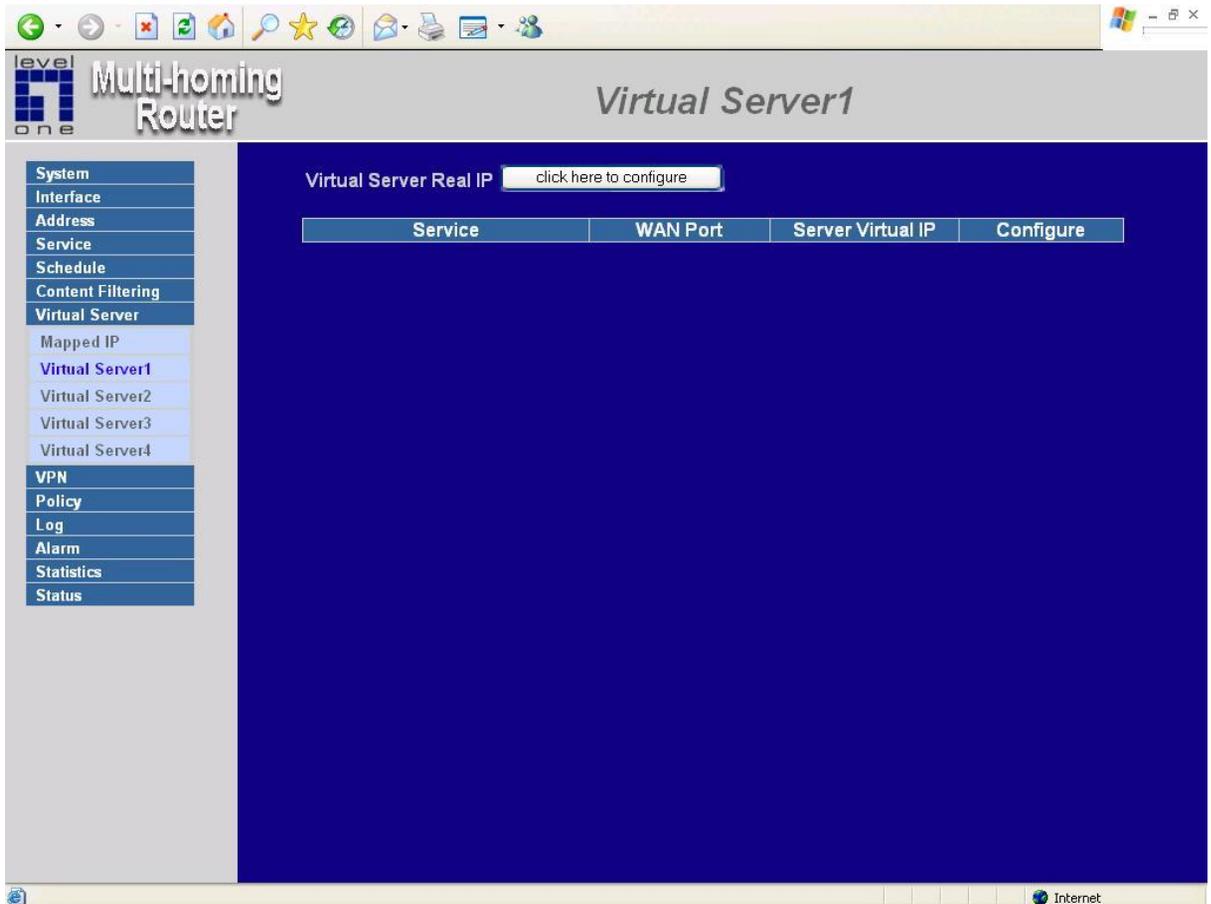
The screenshot shows the 'Mapped IP' configuration page in a web browser. The page title is 'Multi-homing Router' and the sub-page is 'Mapped IP'. A table lists the mapped IP entries:

WAN IP	Map To Virtual IP	Configure
211.22.22.5	192.168.1.100	<input type="button" value="Modify"/> <input type="button" value="Remove"/>

Below the table is a 'New Entry' button. A confirmation dialog box is open, asking 'Are you sure you want to remove?'. The dialog has 'OK' and 'Cancel' buttons. The browser's address bar shows the URL: `http://192.168.1.1/cgi-bin/gener.cgi?type=mip&modify=Delete&num=0&mip_type=3`. The browser window title is 'Microsoft Internet Explorer'.

## Virtual Server

Virtual server is a one-to-many mapping technique, which maps a real IP address from the WAN interface to private IP addresses of the LAN network. This function provides services or applications defined in the Service menu to enter into the LAN network. Unlike a mapped IP which binds an WAN IP to an LAN IP, virtual server binds WAN IP ports to LAN IP ports.



### Definition:

**Virtual Server IP** : The WAN IP address configured by the virtual server. Click “**Click here to configure**” button to add new virtual server address.

**Service name** : The service names that provided by the virtual server.

**Port** : The TCP/UDP ports that present the service items provided by the virtual server.

**Server Virtual IP** : The virtual IP which mapped by the virtual server.

**Configure** : To change the service configuration, click **Configure** to change the parameters; click **Delete** to delete the configuration.

This virtual server provides four real IP addresses, which means you can setup four virtual servers at most ( Setup under the Virtual Server sub-selections Virtual Server 1/2/3/4 in the menu bar on the left hand side. ) The administrator can select Virtual Server1/2under Virtual Server selection in the menu bar on the left hand side, click **Server Virtual IP** to add or change the virtual server IP address; click **“Click here to configure”** to add or change the virtual server service configuration.

## Adding a Virtual Server

- Step 1.** Click an available virtual server from **Virtual Server** in the **Virtual Server** menu bar to enter the virtual server configuration window. In the following, Virtual Server is assumed to be the chosen option:
- Step 2.** Click the **click here to configure** button and the Add new Virtual Server IP window appears and asks for an IP address from the WAN network.
- Step 3.** Select an IP address from the drop-down list of available WAN network IP addresses.
- Step 4.** Click **OK** to add new Virtual Server or click **Cancel** to cancel adding.

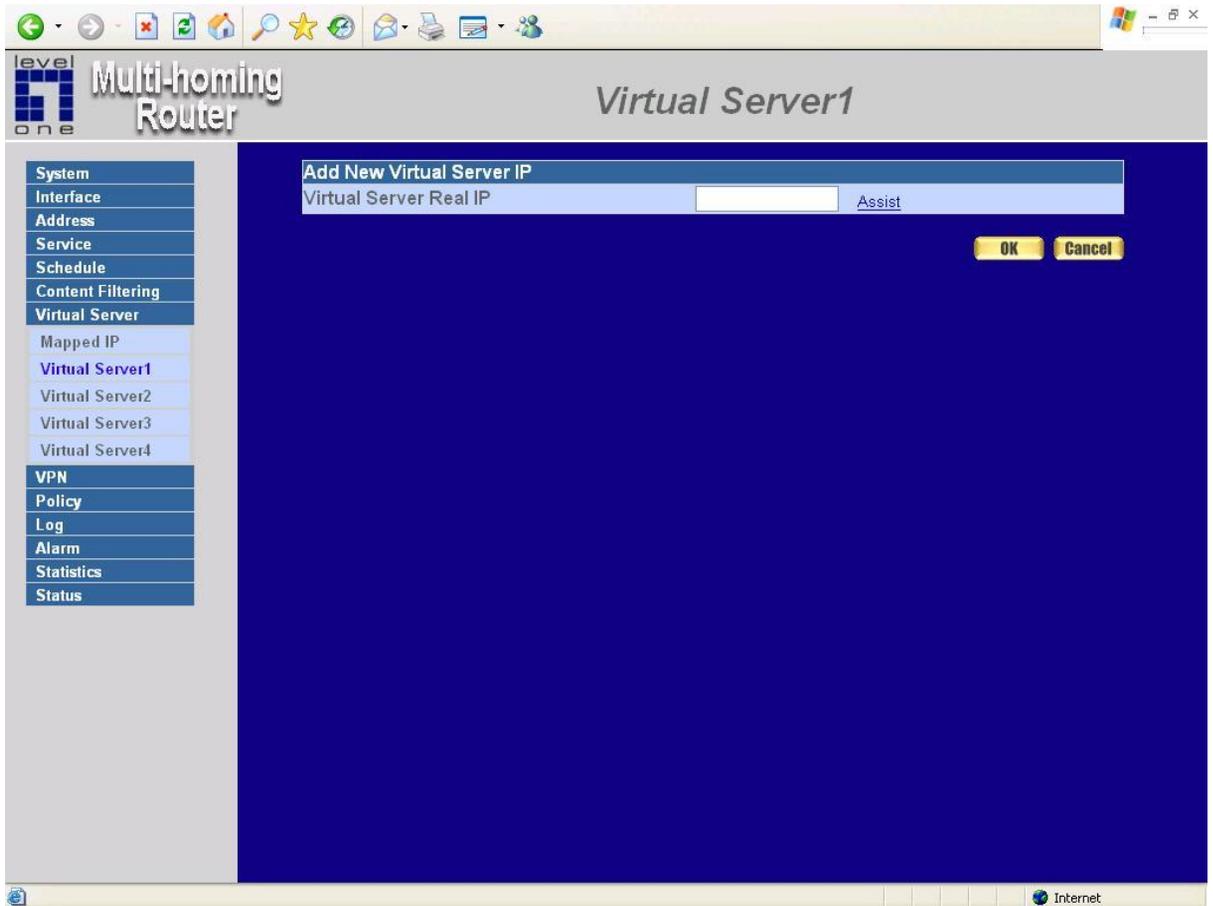
The screenshot shows a web-based configuration interface for a "level one Multi-homing Router". The main title is "Virtual Server1". On the left is a navigation menu with the following items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, Mapped IP, Virtual Server1 (highlighted), Virtual Server2, Virtual Server3, Virtual Server4, VPN, Policy, Log, Alarm, Statistics, and Status. The main content area is titled "Add New Virtual Server IP" and contains a form with the following fields and buttons:

Virtual Server Real IP	<input type="text" value="211.22.22.16"/>	<a href="#">Assist</a>
------------------------	---	------------------------

At the bottom right of the form are two buttons: "OK" and "Cancel". The status bar at the bottom of the window shows "Done" on the left and "Internet" on the right.

## Modifying a Virtual Server IP Address

- Step 1.** Click the virtual server to be modified Virtual Server under the **Virtual Server** menu bar. A new window appears displaying the IP address and service of the specified virtual server.
- Step 2.** Click on the Virtual Server's IP Address button at the top of the screen.
- Step 3.** Choose a new IP address from the drop-down list.
- Step 4.** Click **OK** to save new IP address or click **Cancel** to discard changes.



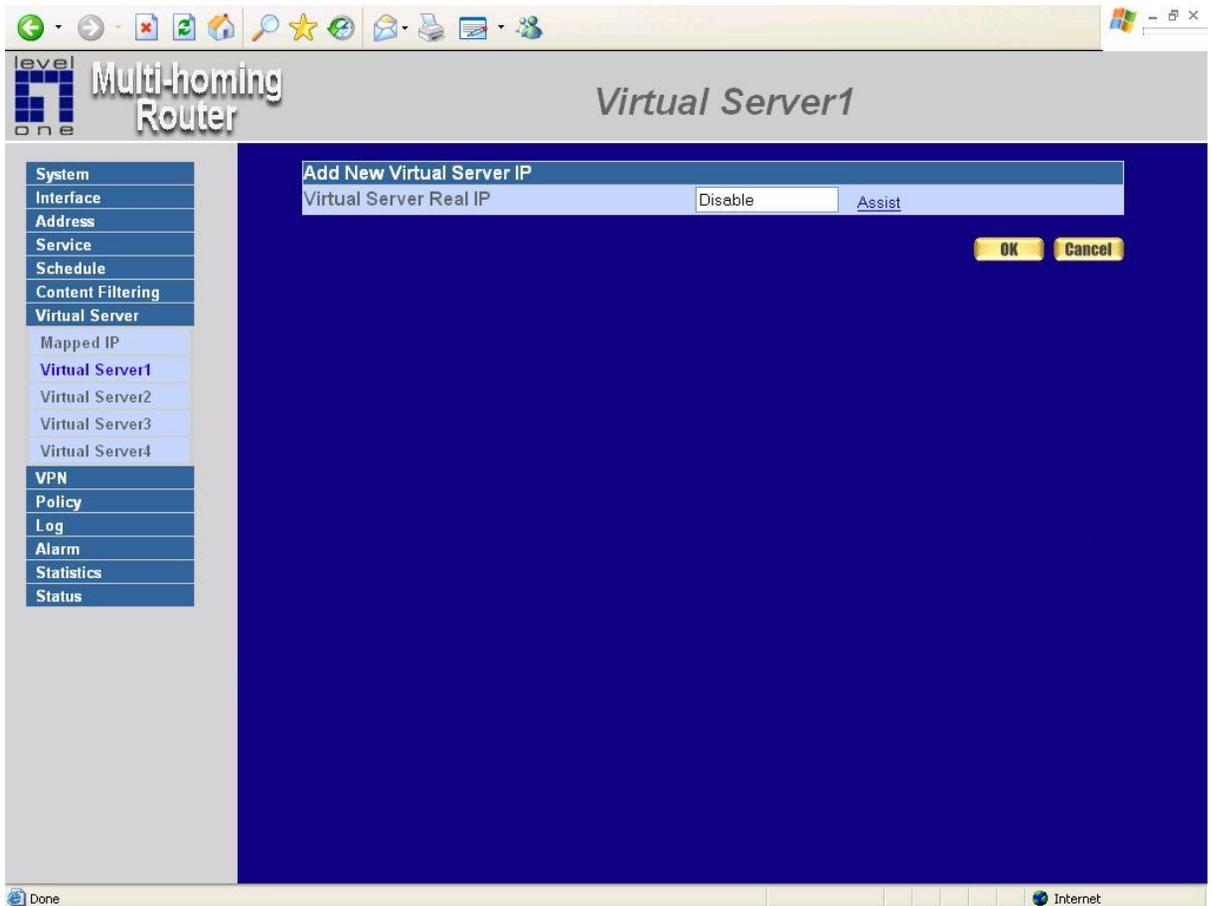
## Removing a Virtual Server

**Step 1.** Click the virtual server to be removed in the corresponding Virtual Server option under the **Virtual Server** menu bar. A new window displaying the virtual server's IP address and service appears on the screen.

**Step 2.** Click the Virtual Server's IP Address button at the top of the screen.

**Step 3.** Select Disable in the drop-down list in.

**Step 4.** Click **OK** to remove the virtual server.



## Setting the Virtual Server's services

**Step 1.** For the Virtual Server which has already been set up with an IP address, click the New Service button in the table.

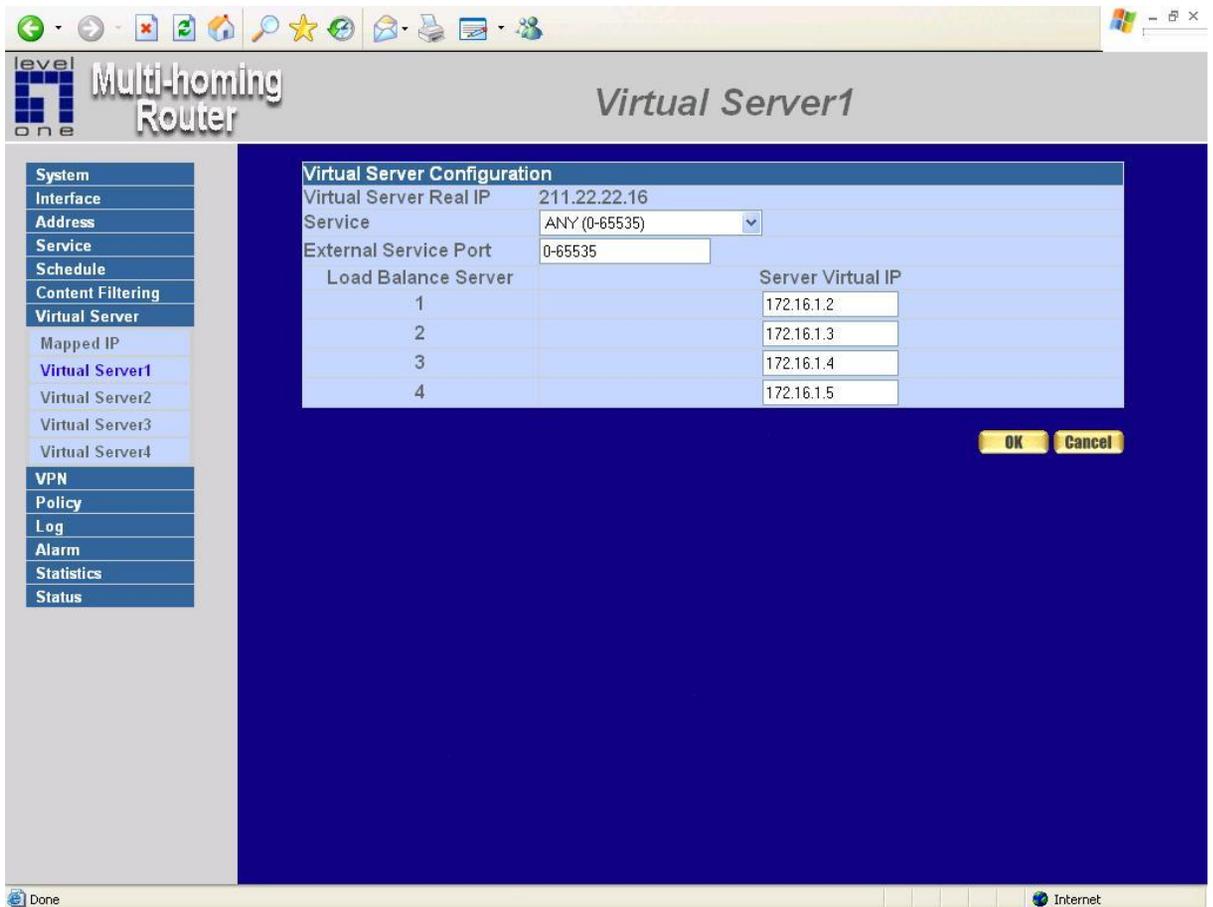
**Step 2.** In the Virtual Server Configurations window:

- **Server Virtual IP:** displays the WAN IP address assigned to the Virtual Server
- **External Service Port:** select the port number that the virtual server will use. Changing the Service will change the port number to match the service.
- **Service:** select the service from the pull down list that will be provided by the Virtual Server.
- **Internal Server IP :** The internal server IP address mapped by the virtual server. Four computer IP addresses can be set at most, and the load can be maintained in a balance.

**Step 3.** Enter the IP address of the LAN network server(s), to which the virtual server will be mapped. Up to four IP addresses can be assigned at most.

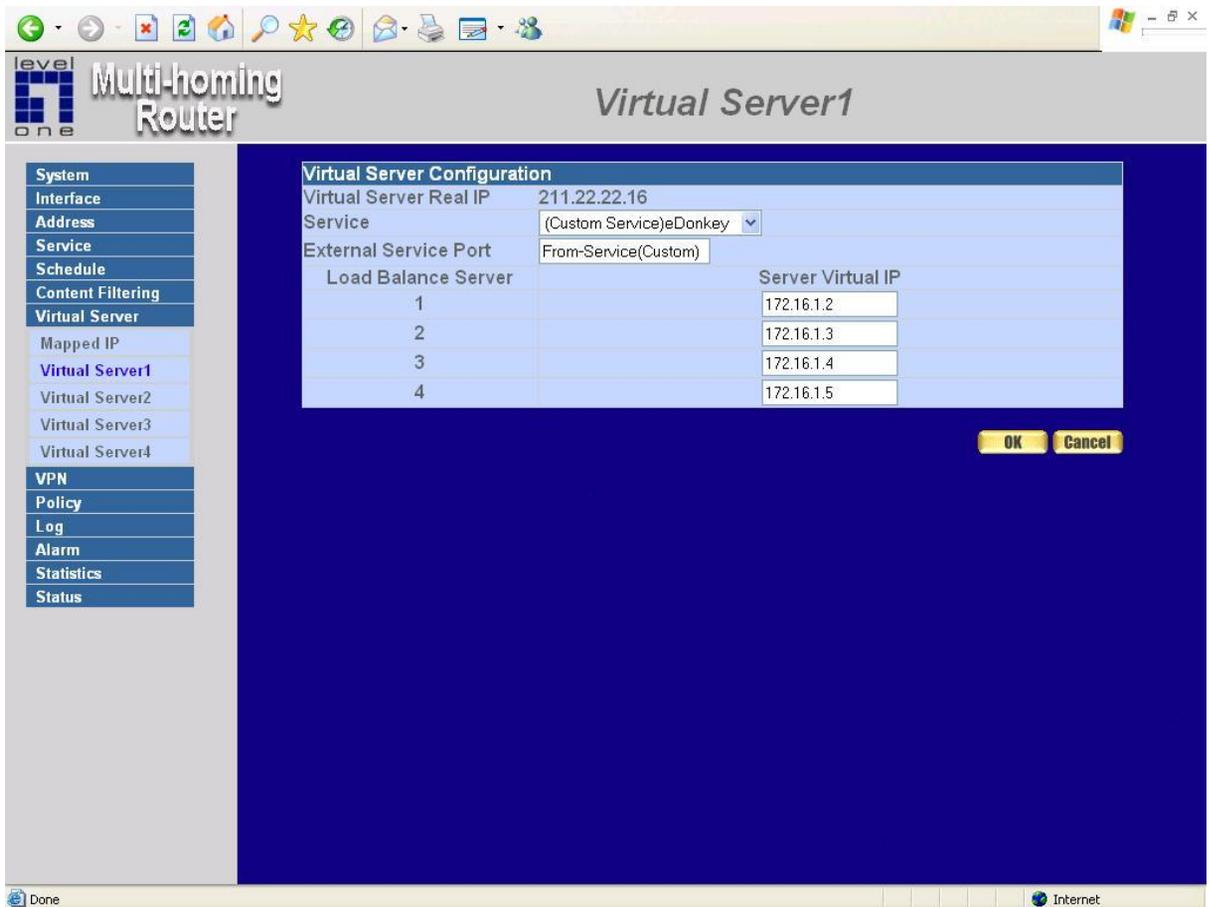
**Step 4.** Click **OK** to save the settings of the Virtual Server.

**Note:** *The services in the drop-down list are all defined in the Pre-defined and Custom section of the **Service** menu.*



## Adding New Virtual Server Service Configuration

- Step 1.** Select Virtual Server in the menu bar on the left hand side, and then select Virtual Server 1/2/3/4 sub-selections.
- Step 2.** In Virtual Server 1/2/3/4/3/4 Window, click “Click here to configure” button.
- Step 3.** Enter the parameters in the Server Virtual IP column.



**WAN** : Enter the WAN IP address that configured by the virtual server.

**Server Virtual IP** : Enter the WAN IP address configured by the virtual server.

**Service Name (Port)** : Click the pull-down menu the system will display you the service item port.

**External Service Port** : The External Service Port that provided by the virtual server.

**Service Name** : The service names that provided by the virtual server.

**Internal Server IP** : The internal server IP address mapped by the virtual server. Four computer IP addresses can be set at most, and the load can be maintained in a balance.

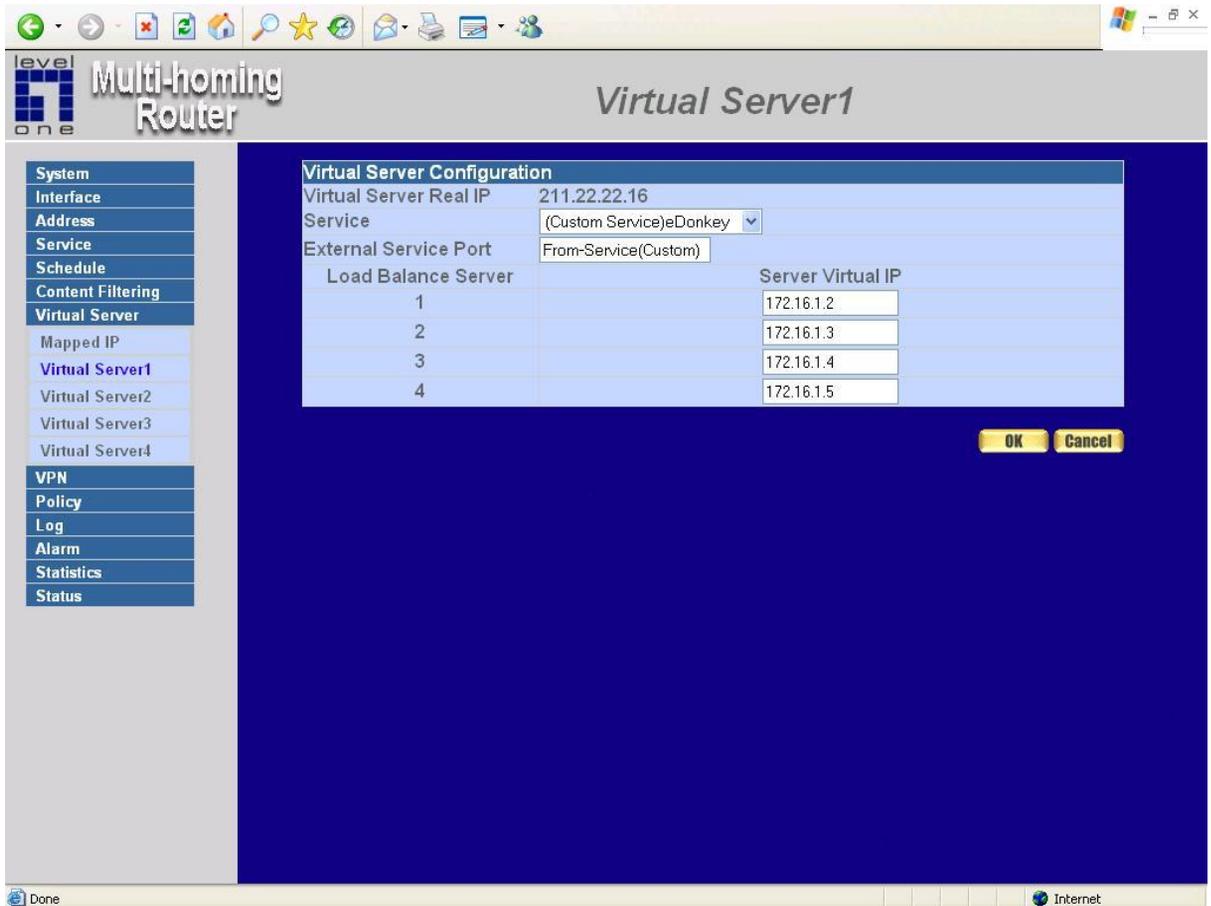
Click **OK** to execute adding new virtual server service, or click **Cancel** to discard adding. The administrator can click the “**Click here to configure**” button in the Virtual Server window to add the service items of virtual server. Remember to configure the service items of virtual server before you configure Policy, or the service names will not be shown in Policy.

## Modifying the Virtual Server configurations

**Step 1.** In the Virtual Server window's service table, locate the name of the service desired to be modified and click its corresponding Modify option in the Configure field.

**Step 2.** In the Virtual Server Configuration window, enter the new settings.

**Step 3.** Click **OK** to save modifications or click **Cancel** to discard changes.



**WAN :** Enter the WAN IP address that configured by the virtual server.

**Server Virtual IP :** Enter the WAN IP address configured by the virtual server.

**Service Name (Port) :** Click the pull-down menu the system will display you the service item port.

**External Service Port :** The External Service Port that provided by the virtual server.

**Service Name :** The service names that provided by the virtual server.

**Internal Server IP :** The internal server IP address mapped by the virtual server. Four

computer IP addresses can be set at most, and the load can be maintained in a balance. Click **OK** to execute the change of the virtual server, or click **Cancel** to discard changes.



If the destination Network in Policy has set a virtual server, it will not be able to change or configure this virtual server, you have to remove this configuration of Policy, and then you can execute the modification or configuration.

## Removing the Virtual Server service

**Step 1.** In the Virtual Server window's service table, locate the name of the service desired to be removed and click its corresponding Remove option in the Configure field.

**Step 2.** In the Remove confirmation pop-up box, click **OK** to remove the service or click **Cancel** to cancel removing.

Virtual Server Real IP: 211.22.22.16

Service	WAN Port	Server Virtual IP	Configure
eDonkey	From-Service (Custom)	172.16.1.2 172.16.1.3 172.16.1.4 172.16.1.5	<input type="button" value="Modify"/> <input type="button" value="Remove"/>

New Entry

Microsoft Internet Explorer

Are you sure you want to remove?

http://192.168.1.1/cgi-bin/gener.cgi?chain=0&type=vip&modify=Delete&num=0&vip\_type=8&oldservice=eDonkey



*If the destination Network in Policy has set a virtual server, it will not be able to change or configure this virtual server unless you have already removed this configuration of Policy.*

# VPN

The Multi-Homing Gateway's VPN (Virtual Private Network) is set by the System Administrator. The System Administrator can add, modify or remove VPN settings.

## What is VPN?

To set up a **Virtual Private Network (VPN)**, you *don't need* to configure an Access Policy to enable encryption. Just fill in the following settings: VPN Name, Source Subnet, Destination Gateway, Destination Subnet, Authentication Method, Preshare key, Encapsulation and IPSec lifetime. The Multi-Homing Gateways on both ends must use the same **Preshare** key and **IPSec** lifetime to make a **VPN** connection.

PPTP Server: The administrator could enter the relate setting of VPN-PPTP Server.

PPTP Client: The administrator could enter the relate setting of VPN-PPTP Client.

## IPSec Autokey

The fields in the IPSec window are:

- **Name:** The VPN name to identify the VPN tunnel definition. The name must be different for the two sites creating the tunnel.
- **Gateway IP:** The WAN interface IP address of the remote Multi-Homing Gateway.
- **Destination Subnet:** Destination network subnet.
- **Algorithm:** The display the Algorithm way.
- **Status:** Connect/Disconnect or Connecting/Disconnecting.
- **Configure:** Connect, Disconnect, Modify and Delete.

The screenshot shows the 'IPSec Autokey' configuration window in a web browser. The window title is 'Multi-homing Router IPSec Autokey'. On the left is a navigation menu with items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, IPSec Autokey (selected), PPTP Server, PPTP Client, Policy, Log, Alarm, Statistics, and Status. The main area displays a table with the following data:

Name	Gateway IP	Destination Subnet	Algorithm	Status	Configure
VPN_A	211.22.22.22	192.168.20.0	None	Disconnect	Connecting Modify Remove

Below the table is a 'New Entry' button. The browser's status bar at the bottom shows 'Done' on the left and 'Internet' on the right.

There are 4 examples of VPN setting.

**Example 1.** Create a VPN connection between two Multi-Homing Gateway.

**Example 2.** Create a VPN connection between the Multi-Homing Gateway and Windows

2000 VPN Client.

**Example 3.** Create a VPN connection between two Multi-Homing Gateway using Aggressive mode Algorithm (3 DES and MD5), and data encryption for IPSec Algorithm (3DES and MD5)

**Example 4.** Create a VPN connection between two Multi-Homing Gateway using ISAKMP Algorithm (3DES and MD5), data encryption for IPSec Algorithm (3DES and MD5) and GRE.

The definition of VPN:

**IPSec Algorithm:** The administrator could fill in the following further settings to setup VPN; IPSec Lifetime and Perfect Forward Secrecy to enable the Multi-Homing Gateway select or update randomly the unrecognized AutoKey.

■ **Preshare Key:** The IKE VPN must be defined with a Preshared Key. The Key may be up to 128 bytes long.

### **ISAKMP Algorithm**

■ **Encryption Algorithm:** The device selects 56 bit DES-CBC or 168-bit Triple DES-CBC encryption algorithm. The default algorithm 56 bit DES-CBC.

■ **ESP-Authentication Method:** The device -selects MD5 or SHA-1 authentication algorithm. The default algorithm is MD5.

**IPSec Algorithm:** The device Select Data Encryption + Authentication or Authentication Only.

### **Data Encryption + Authentication**

**Encryption Algorithm:** The device selects 56 bit DES-CBC or 168-bit Triple DES-CBC or AES or NULL encryption algorithm. The default algorithm is 56 bit DES-CBC.

■ **ESP-Authentication Method:** The device -selects MD5 or SHA-1 authentication algorithm. The default algorithm is MD5.

■ **IPSec Lifetime:** New keys will be generated whenever the lifetime of the old keys is exceeded. The Administrator may enable this feature if needed and enter the lifetime in seconds to re-key. The default is 28800 seconds (eight hours). Selection of small values could lead to frequent re-keying, which could affect performance.

**Keep alive IP :** Check to allow Remote Client computer IP Address connected to keep alive.

**Aggressive mode:** The device Select Aggressive mode Algorithm.

**GRE/IPSec:** The device Select GRE/IPSec (Generic Routing Encapsulation) packet seal technology.

level  
one Multi-homing Router IPsec Autokey

System  
Interface  
Address  
Service  
Schedule  
Content Filtering  
Virtual Server  
VPN  
IPsec Autokey  
PPTP Server  
PPTP Client  
Policy  
Log  
Alarm  
Statistics  
Status

**VPN Auto Keyed Tunnel**

Name

From Source  LAN  DMZ  
Use interface  WAN1  WAN2

Subnet / Mask  / 255.255.255.0

To Destination

Remote Gateway -- Fixed IP   
Subnet / Mask  / 255.255.255.0

Remote Gateway -- Dynamic IP  
Subnet / Mask  / 255.255.255.0

Remote Client -- Fixed IP or Dynamic IP

Authentication Method

Preshared Key

Encapsulation

ISAKMP Algorithm

ENC Algorithm

AUTH Algorithm

Group

IPsec Algorithm

Data Encryption + Authentication

ENC Algorithm

AUTH Algorithm

Authentication Only

Perfect Forward Secrecy

IPsec Lifetime  Seconds

Keep alive IP :

Aggressive mode

Done Internet

**Example 1.** Create a VPN connection between two Multi-Homing Gateways.

Preparation Task:

Company A External IP is 61.11.11.11

Internal IP is 192.168.10.X

Company B External IP is 211.22.22.22

Internal IP is 192.168.20.X

To suppose Company A, 192.168.10.100 create a VPN connection with company B, 192.168.20.100 for downloading the sharing file.

The Gateway of Company A is 192.168.10.1. The settings of company A are as the following.

Step 1. Enter the default IP of Company A's Multi-Homing Gateway, 192.168.10.1. Click VPN in the menu bar on the left hand side, and then select the sub-select IPsec Autokey. Click Add.

The screenshot shows a web browser window displaying the configuration page for a Level One Multi-homing Router. The page title is "IPSec Autokey". On the left side, there is a vertical navigation menu with the following items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, IPsec Autokey (highlighted), PPTP Server, PPTP Client, Policy, Log, Alarm, Statistics, and Status. The main content area features a table with the following headers: Name, Gateway IP, Destination Subnet, Algorithm, Status, and Configure. Below the table header, there is a yellow button labeled "New Entry". The browser's status bar at the bottom shows "Done" on the left and "Internet" on the right.

Step 2. Enter the VPN name, VPN\_A in IPsec Autokey window, and choose From Source to be Internal. Fill the subnet IP, 192.168.10.0 and subnet mask, 255.255.255.0.

VPN Auto Keyed Tunnel	
Name	VPN_A
From Source	<input checked="" type="radio"/> LAN <input type="radio"/> DMZ
Use interface	<input checked="" type="radio"/> WAN1 <input type="radio"/> WAN2
Subnet / Mask	192.168.10.0 / 255.255.255.0

Step 3. In To Destination table, choose Remote Gateway-Fixed IP, enter the IP desired to be connected, company B's subnet IP and mask.

To Destination	
<input checked="" type="radio"/> Remote Gateway -- Fixed IP	211.22.22.22
Subnet / Mask	192.168.20.0 / 255.255.255.0
<input type="radio"/> Remote Gateway -- Dynamic IP	
Subnet / Mask	/ 255.255.255.0
<input type="radio"/> Remote Client -- Fixed IP or Dynamic IP	

Step 4. In Authentication Method Table, choose Preshare and enter the Preshared Key. ( The max length is 100 bits.)

Authentication Method	Preshare
Preshared Key	123456789

Step 5. In Encapsulation or Authentication table, choose ISAKMP Algorithm. For communication via VPN, we choose 3DES for ENC Algorithm and MD5 for AUTH Algorithm. And select Group to connect.

Encapsulation	
ISAKMP Algorithm	
ENC Algorithm	3DES
AUTH Algorithm	MD5
Group	GROUP 1

Step 6. In IPsec Algorithm Table , choose Data Encryption + Authentication. We choose 3DES for ENC Algorithm and MD5 for AUTH Algorithm.

IPsec Algorithm

Data Encryption + Authentication

ENC Algorithm

AUTH Algorithm

Authentication Only

Step 7. Choose Perfect Forward Secrecy, and enter 28800 seconds in IPsec Lifetime and Keep alive IP to keep connecting.

Perfect Forward Secrecy

IPsec Lifetime  Seconds

Keep alive IP :

Step 8. Click the down arrow to select the policy of schedule, which was pre-determined in Schedule. Refer to the corresponding section for details.

Schedule

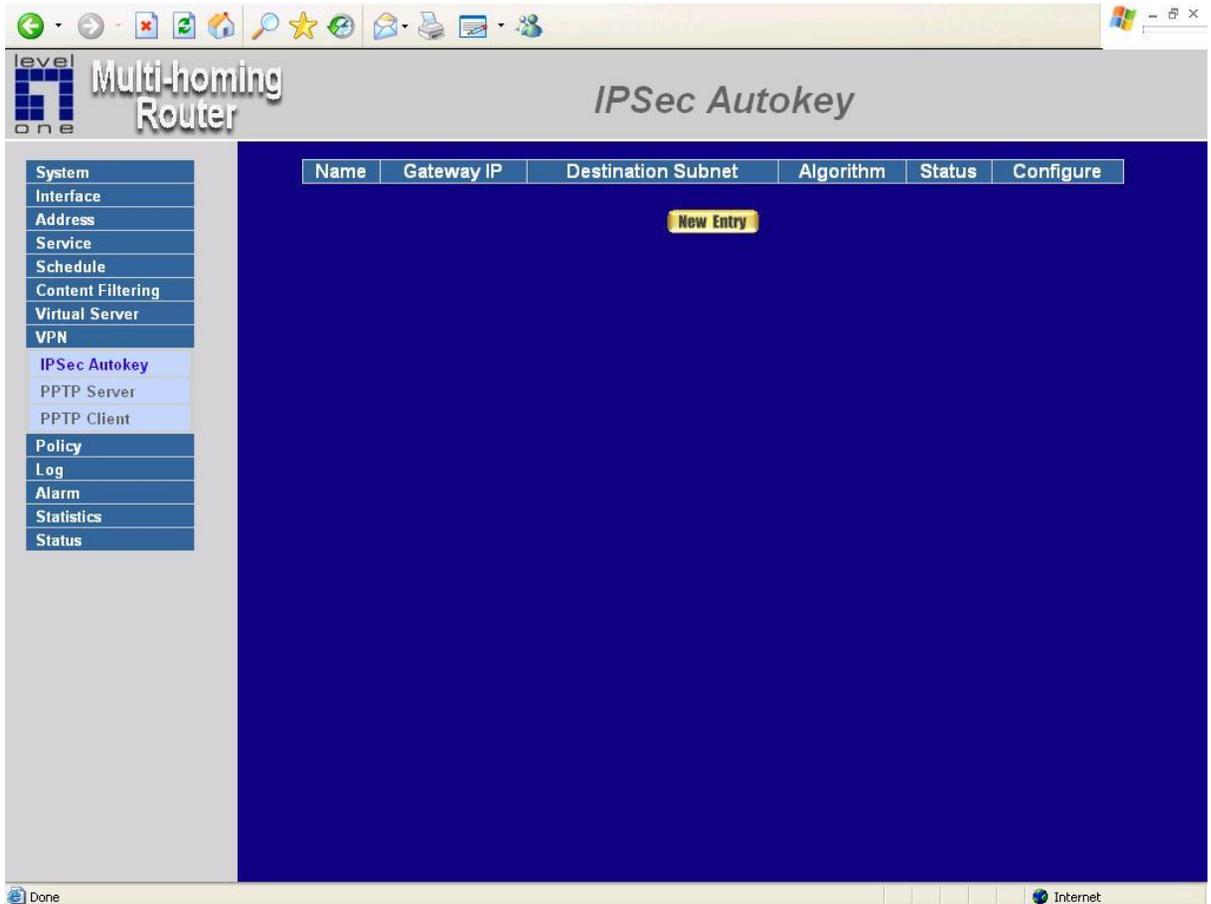
Step 9. Click OK to finish the setting of Company A.

## IPsec Autokey

Name	Gateway IP	Destination Subnet	Algorithm	Status	Configure		
VPN_A	211.22.22.22	192.168.20.0	None	Disconnect	Connecting	Modify	Remove

The Gateway of Company B is 192.168.20.1. The settings of company B are as the following.

Step 1. Enter the default IP of Company B's Multi-Homing Gateway, 192.168.20.1. Click VPN in the menu bar on the left hand side, and then select the sub-select IPsec Autokey. Click Add.



Step 2. Enter the VPN name, VPN\_B in IPSec Autokey window, and choose From Source to be Internal. Fill the subnet IP, 192.168.20.0 and subnet mask, 255.255.255.0.

VPN Auto Keyed Tunnel	
Name	VPN_B
From Source	<input checked="" type="radio"/> LAN <input type="radio"/> DMZ
Use interface	<input checked="" type="radio"/> WAN1 <input type="radio"/> WAN2
Subnet / Mask	192.168.20.0 / 255.255.255.0

Step 3. In To Destination table, choose Remote Gateway-Fixed IP, enter the IP desired to be connected, company A's subnet IP and mask, 192.168.10.0 and 255.255.255.0 respectively.

To Destination	
<input checked="" type="radio"/> Remote Gateway -- Fixed IP	61.11.11.11
Subnet / Mask	192.168.10.0 / 255.255.255.0
<input type="radio"/> Remote Gateway -- Dynamic IP	
Subnet / Mask	/ 255.255.255.0
<input type="radio"/> Remote Client -- Fixed IP or Dynamic IP	

Step 4. In Authentication Method Table, choose Preshare and enter the Preshared Key. ( The max length is 100 bits.)

Authentication Method	Preshare
Preshared Key	123456789

Step 5. In Encapsulation or Authentication table, choose ISAKMP Algorithm. For communication via VPN, we choose 3DES for ENC Algorithm and MD5 for AUTH Algorithm. And select Group to connect.

Encapsulation	
ISAKMP Algorithm	
ENC Algorithm	3DES
AUTH Algorithm	MD5
Group	GROUP 1

Step 6. In IPsec Algorithm Table , choose Data Encryption + Authentication. We choose 3DES for ENC Algorithm and MD5 for AUTH Algorithm.

IPsec Algorithm

Data Encryption + Authentication

ENC Algorithm

AUTH Algorithm

Authentication Only

Step 7. Choose Perfect Forward Secrecy, and enter 28800 seconds in IPsec Lifetime and Keep alive IP to keep connecting.

Perfect Forward Secrecy

IPsec Lifetime  Seconds

Keep alive IP :

Step 8. Click the down arrow to select the policy of schedule, which was pre-determined in Schedule . Refer to the corresponding section for details.

Schedule

Step 9. Click OK to finish the setting of Company B.

*IPsec Autokey*

Name	Gateway IP	Destination Subnet	Algorithm	Status	Configure		
VPN_B	61.11.11.11	192.168.10.0	None	Disconnect	Connecting	Modify	Remove

**New Entry**

**Example 2.** Create a VPN connection between the Multi-Homing Gateway and Windows 2000 VPN Client.

Preparation Task:

Company A External IP is 61.11.11.11

Internal IP is 192.168.10.X

Company B External IP is 211.22.22.22

Internal IP is 192.168.20.X

To suppose Company A, 192.168.10.100 create a VPN connection with company B, 192.168.20.100 for downloading the sharing file.

The Gateway of Company A is 192.168.10.1. The settings of company A are as the following.

Step 1. Enter the default IP of Company A's Multi-Homing Gateway, 192.168.10.1. Click VPN in the menu bar on the left hand side, and then select the sub-select IPsec Autokey. Click Add.

The screenshot shows a web browser window displaying the configuration page for a Level One Multi-homing Router. The page title is "IPsec Autokey". On the left side, there is a vertical navigation menu with the following items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, IPsec Autokey (highlighted), PPTP Server, PPTP Client, Policy, Log, Alarm, Statistics, and Status. The main content area features a table with the following headers: Name, Gateway IP, Destination Subnet, Algorithm, Status, and Configure. Below the table header, there is a yellow button labeled "New Entry". The browser's taskbar at the bottom shows "Done" on the left and "Internet" on the right.

Step 2. Enter the VPN name, VPN\_A in IPsec Autokey window, and choose From Source to be Internal. Fill the subnet IP, 192.168.10.0 and subnet mask, 255.255.255.0.

VPN Auto Keyed Tunnel	
Name	VPN_A
From Source	<input checked="" type="radio"/> LAN <input type="radio"/> DMZ
Use interface	<input checked="" type="radio"/> WAN1 <input type="radio"/> WAN2
Subnet / Mask	192.168.10.0 / 255.255.255.0

Step 3. In To Destination table, choose Remote Gateway-Fixed IP, enter the IP desired to be connected, company B's subnet IP and mask.

To Destination	
<input checked="" type="radio"/> Remote Gateway -- Fixed IP	211.22.22.22
Subnet / Mask	192.168.20.0 / 255.255.255.0
<input type="radio"/> Remote Gateway -- Dynamic IP	
Subnet / Mask	/ 255.255.255.0
<input type="radio"/> Remote Client -- Fixed IP or Dynamic IP	

Step 4. In Authentication Method Table, choose Preshare and enter the Preshared Key. ( The max length is 100 bits.)

Authentication Method	Preshare
Preshared Key	123456789

Step 5. In Encapsulation or Authentication table, choose ISAKMP Algorithm. For communication via VPN, we choose 3DES for ENC Algorithm and MD5 for AUTH Algorithm. And select Group to connect.

Encapsulation	
ISAKMP Algorithm	
ENC Algorithm	3DES
AUTH Algorithm	MD5
Group	GROUP 1

Step 6. In IPSec Algorithm Table , choose Data Encryption + Authentication. We choose 3DES for ENC Algorithm and MD5 for AUTH Algorithm.

IPSec Algorithm

Data Encryption + Authentication

ENC Algorithm

AUTH Algorithm

Authentication Only

Step 7. Choose Perfect Forward Secrecy, and enter 28800 seconds in IPSec Lifetime and Keep alive IP to keep connecting.

Perfect Forward Secrecy

IPSec Lifetime  Seconds

Keep alive IP :

Step 8. Click the down arrow to select the policy of schedule, which was pre-determined in Schedule. Refer to the corresponding section for details.

Schedule

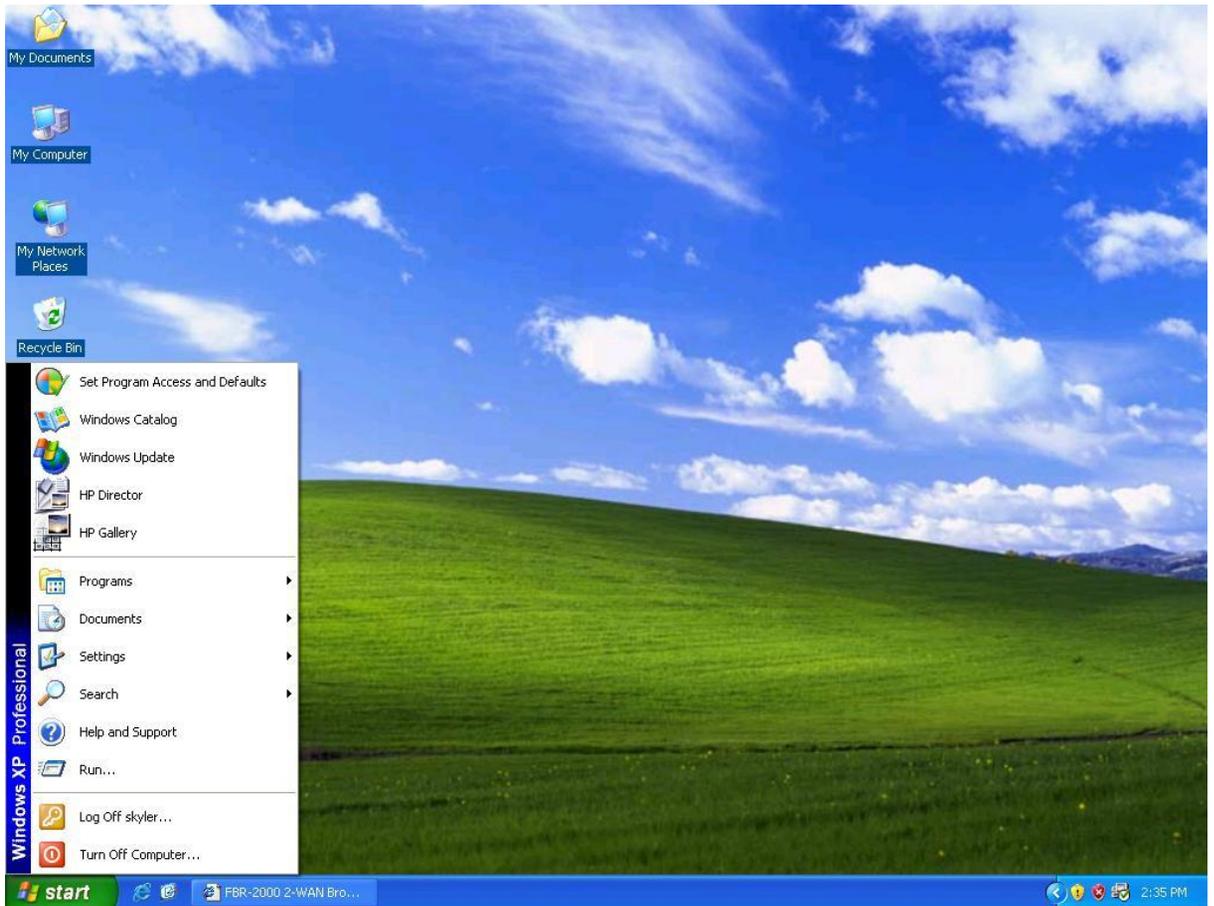
Step 9. Click OK to finish the setting of Company A.

*IPSec Autokey*

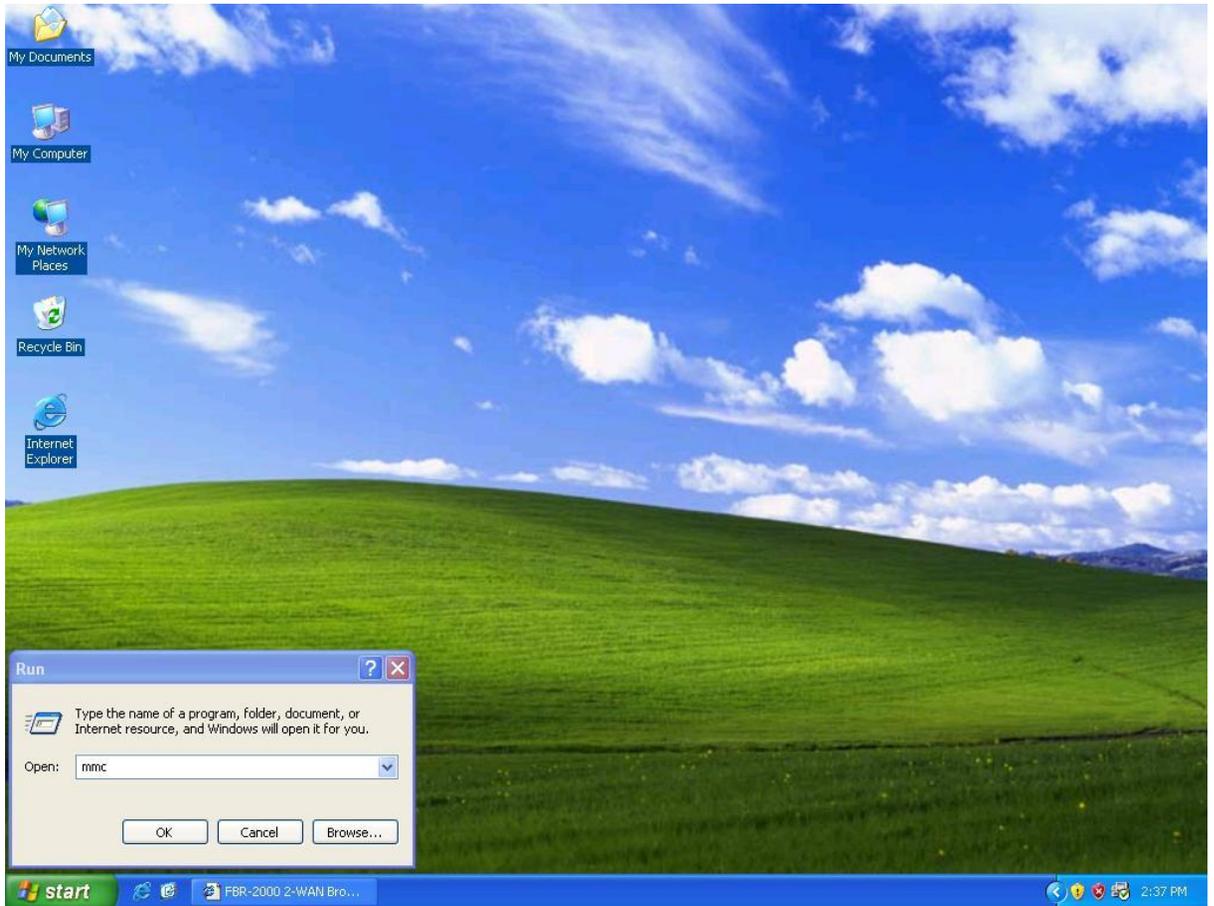
Name	Gateway IP	Destination Subnet	Algorithm	Status	Configure
VPN_A	211.22.22.22	192.168.20.0	None	Disconnect	<input type="button" value="Connecting"/> <input type="button" value="Modify"/> <input type="button" value="Remove"/>

The Gateway of Company B is 192.168.20.100. The settings of company B are as the following.

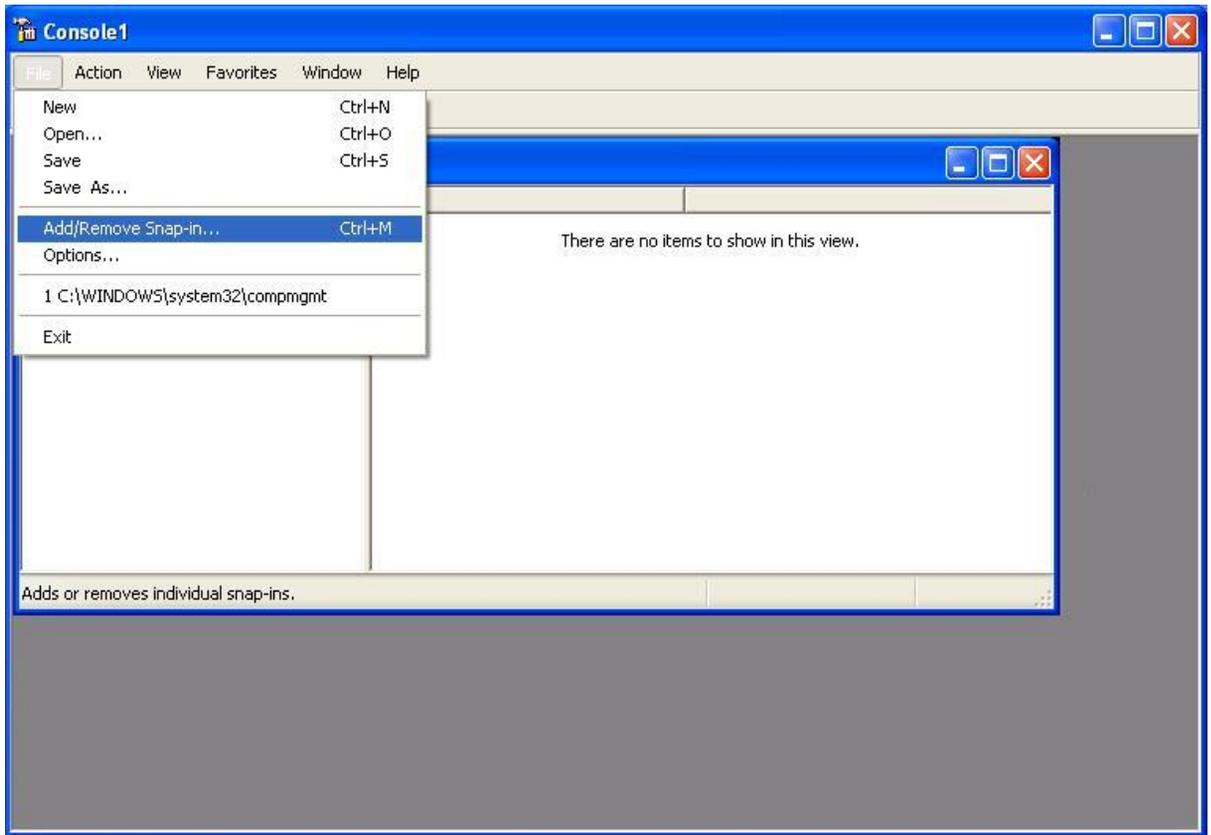
Step 1. Enter Windows XP, click Start and click Execute function.



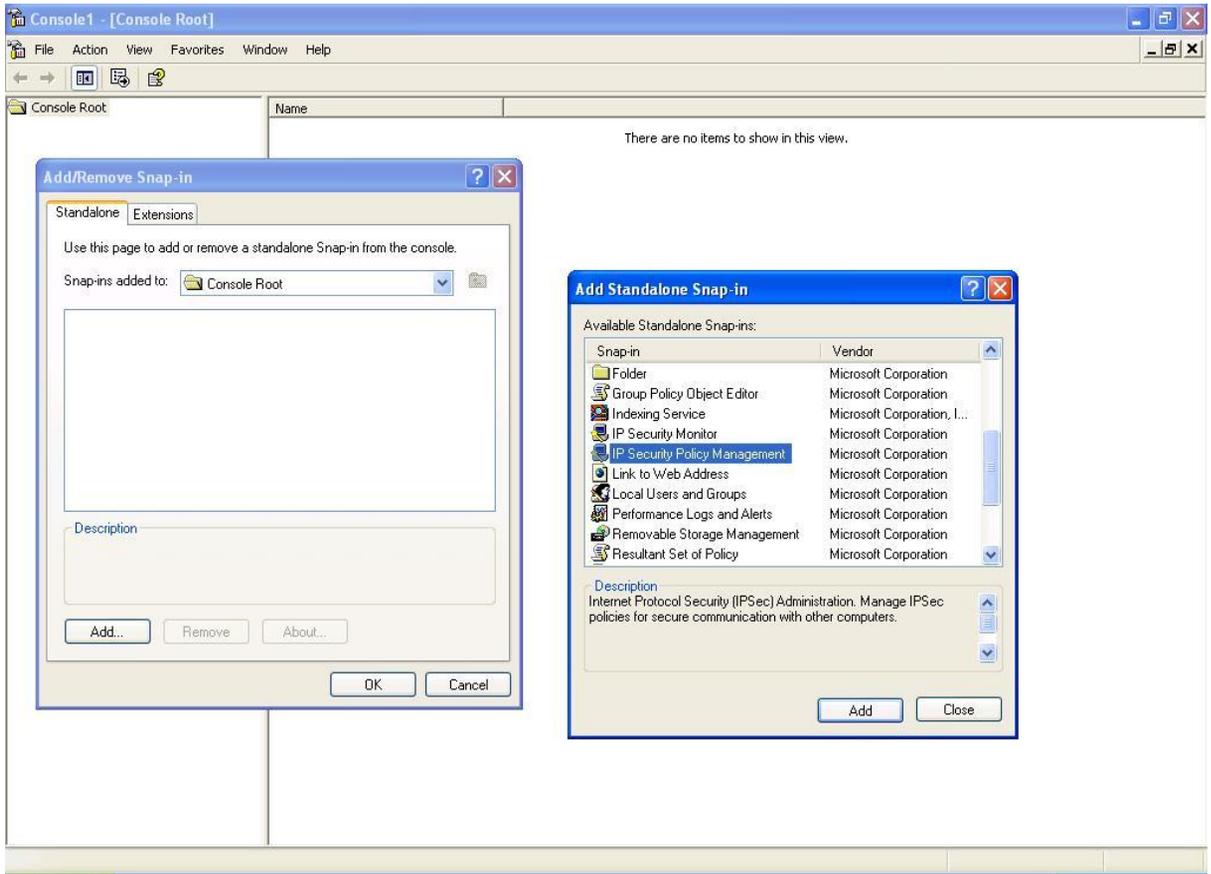
Step 2. In the Execute window, enter the command, MMC in Open.



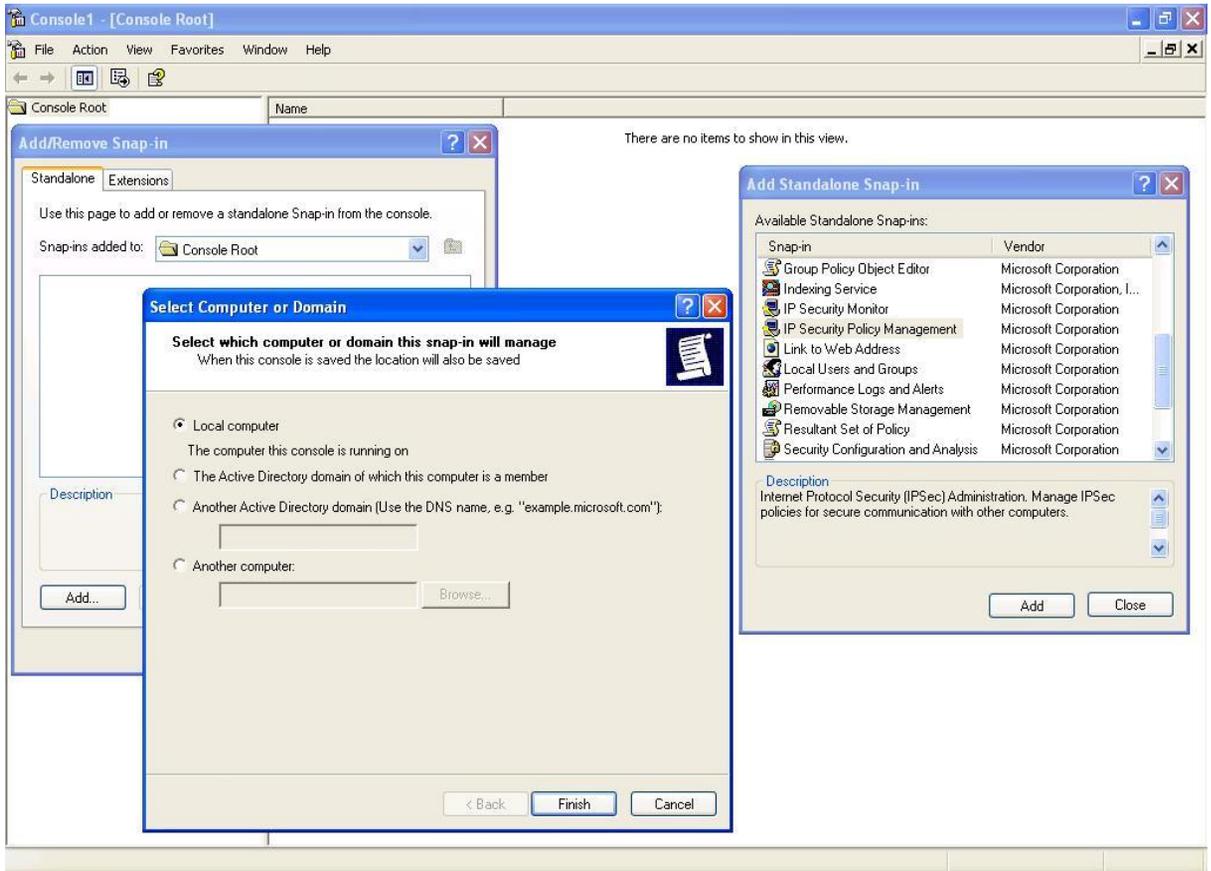
Step 3. Enter the Console window, click Console(C) option and click Add/Remove Embedded Management Option.



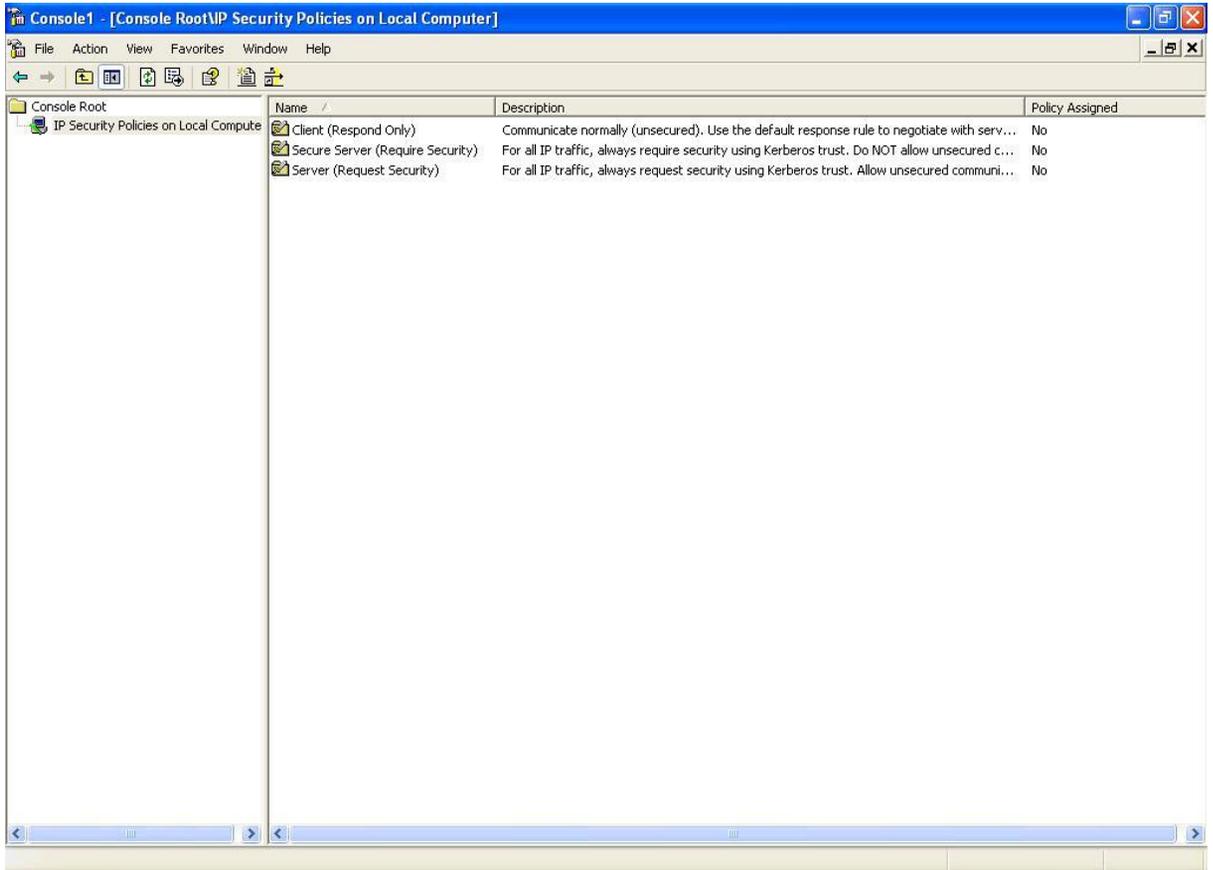
Step 4. Enter Add/Remove Embedded Management Option window and click Add. In Add/Remove Embedded Management Option window, click Add to add Create IP Security Policy.



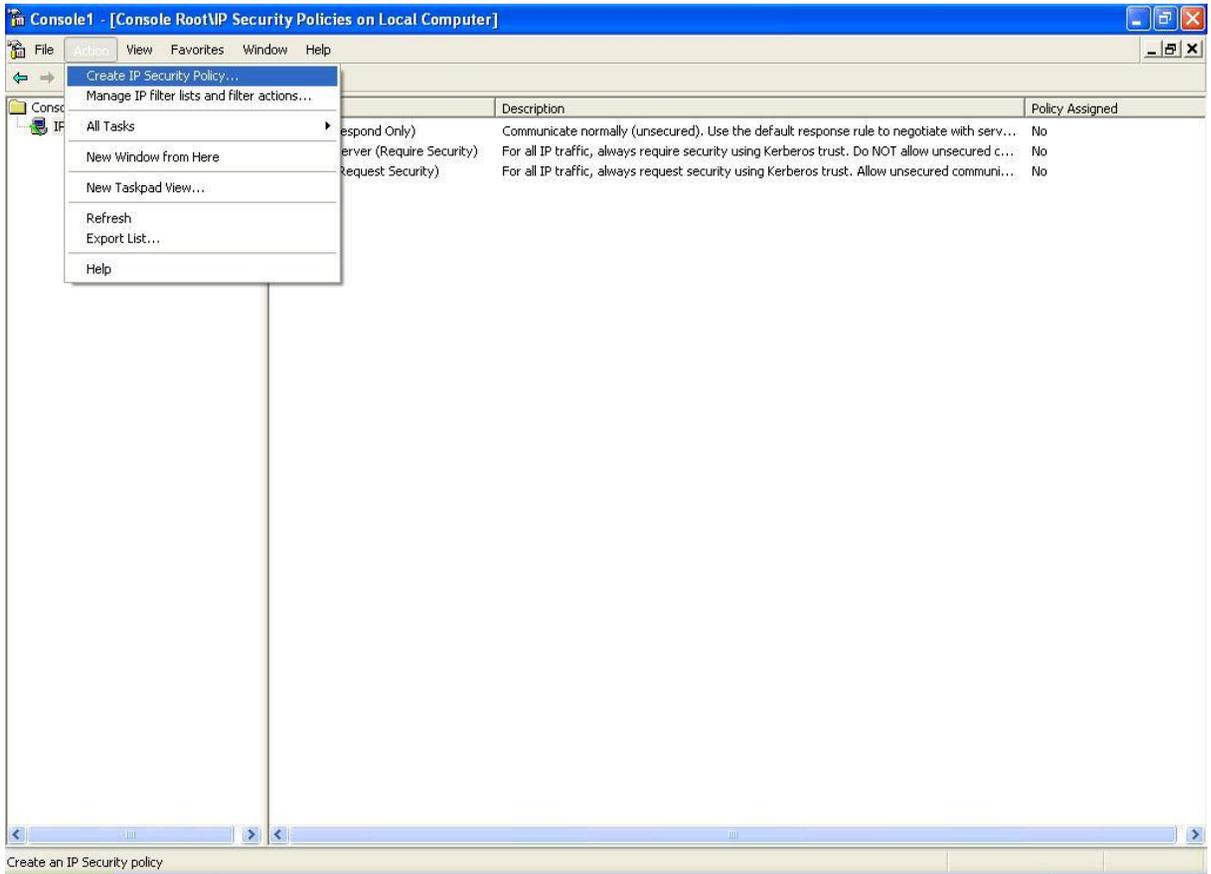
Step 5. Choose Local Machine (L) for finishing the setting of Add.



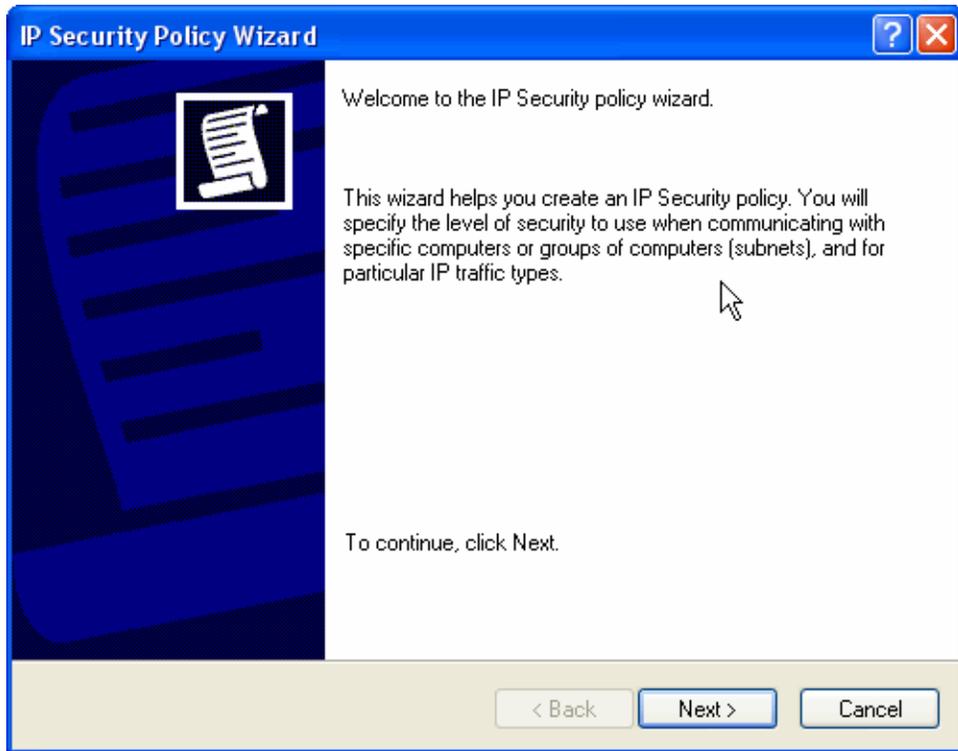
## Step 6. Finish the setting of Add.



Step 7. Click the right button of mouse in IP Security Policies on Local Machine and choose Create IP Security Policy(C) option.



Step 8. Click Next.



Step 9. Enter the Name of this VPN and optionally give it a brief description.

**IP Security Policy Wizard**

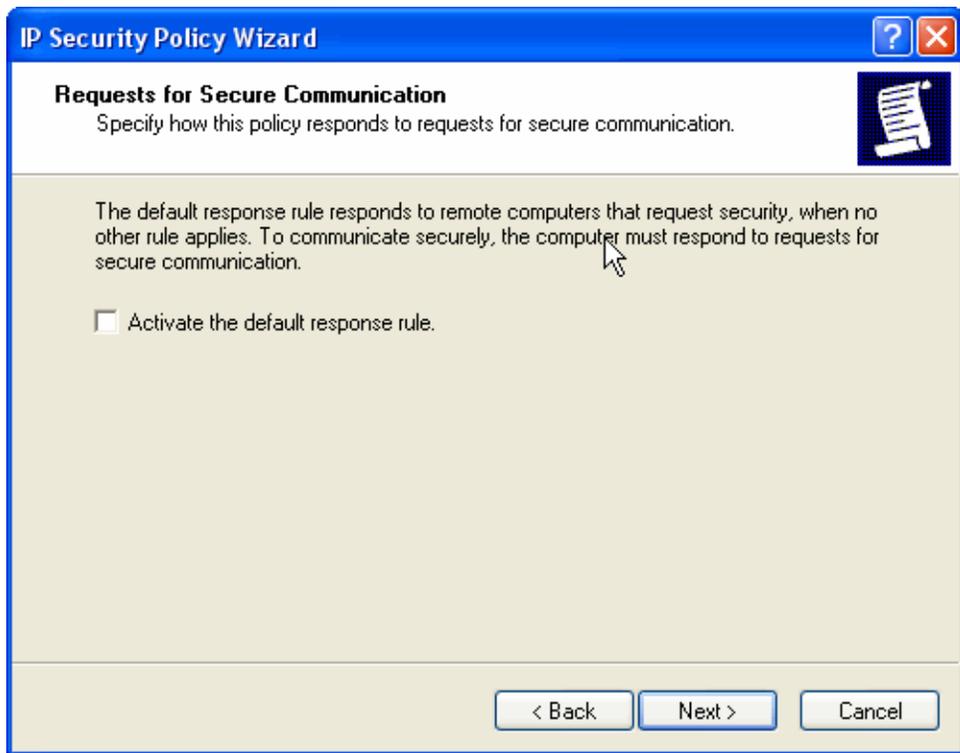
**IP Security Policy Name**  
Name this IP Security policy and provide a brief description

Name:  
Site A to Site B

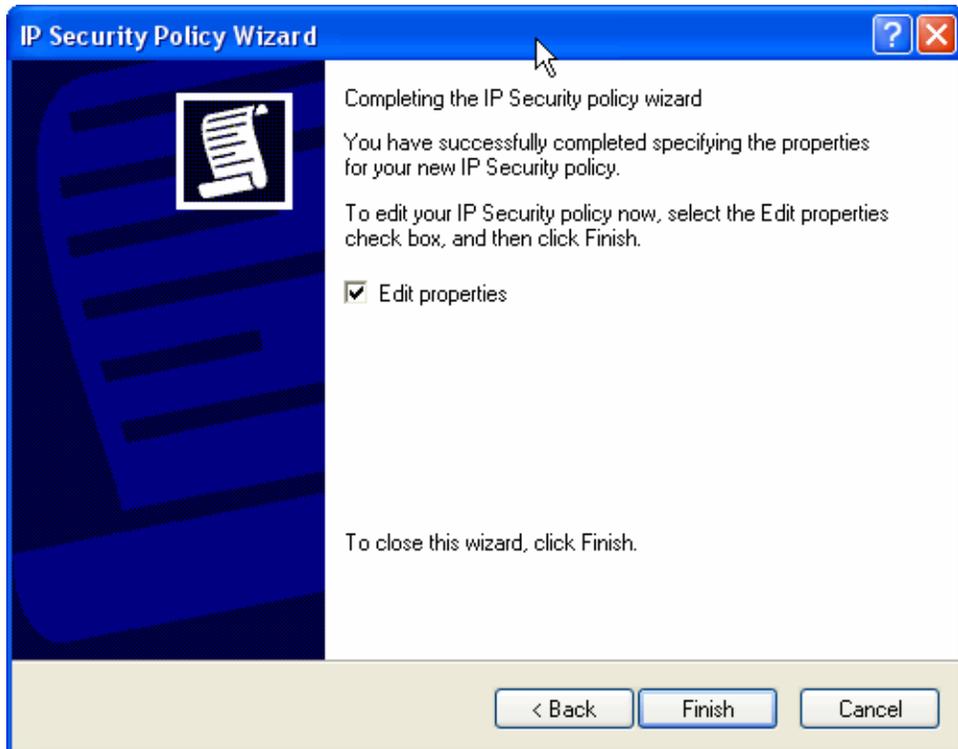
Description:  
IPSec Tunnel Side A to Side B

< Back    Next >    Cancel

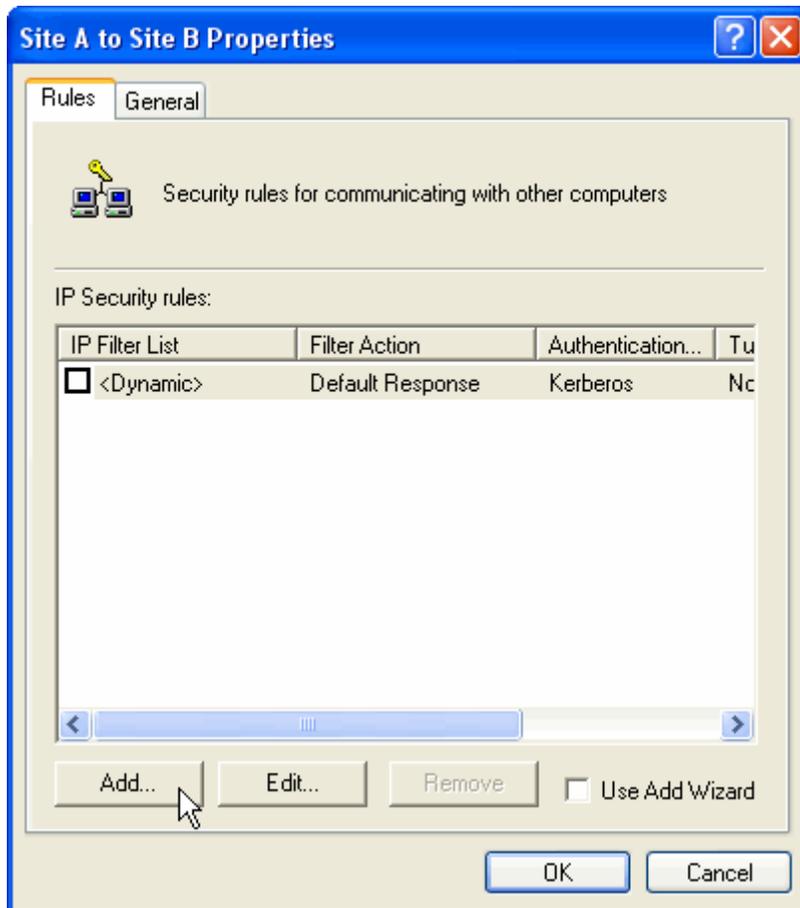
Step 10. Disable Activate the default response rule. And click Next.



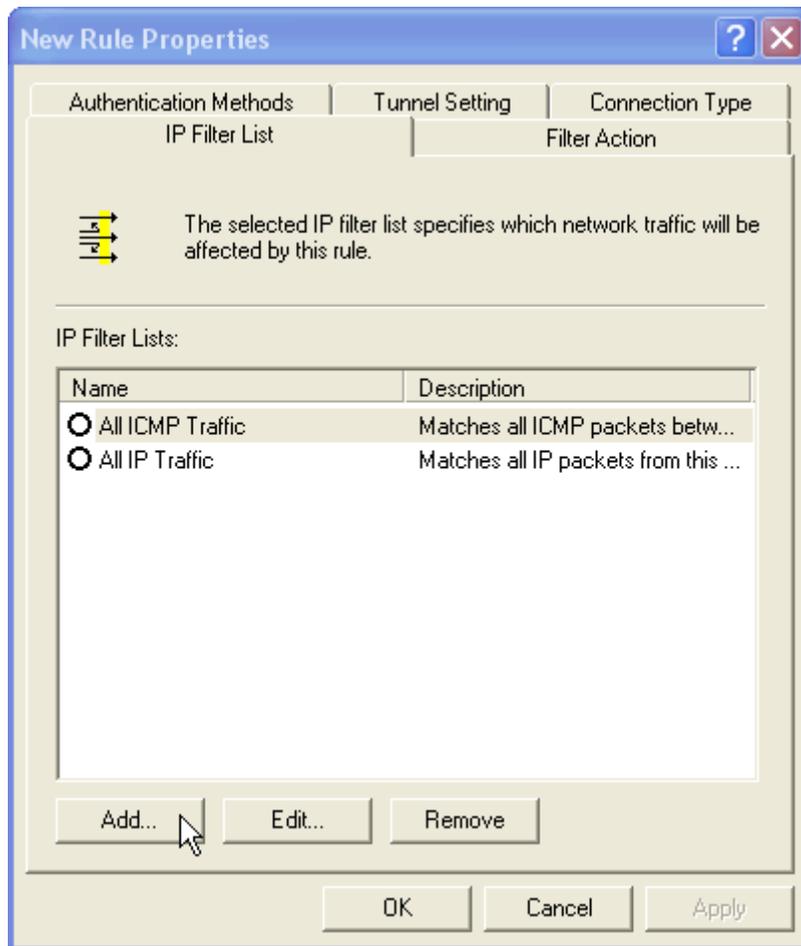
Step 11. Completing the IP Security Policy setting and click Finish. Enable Edit properties.



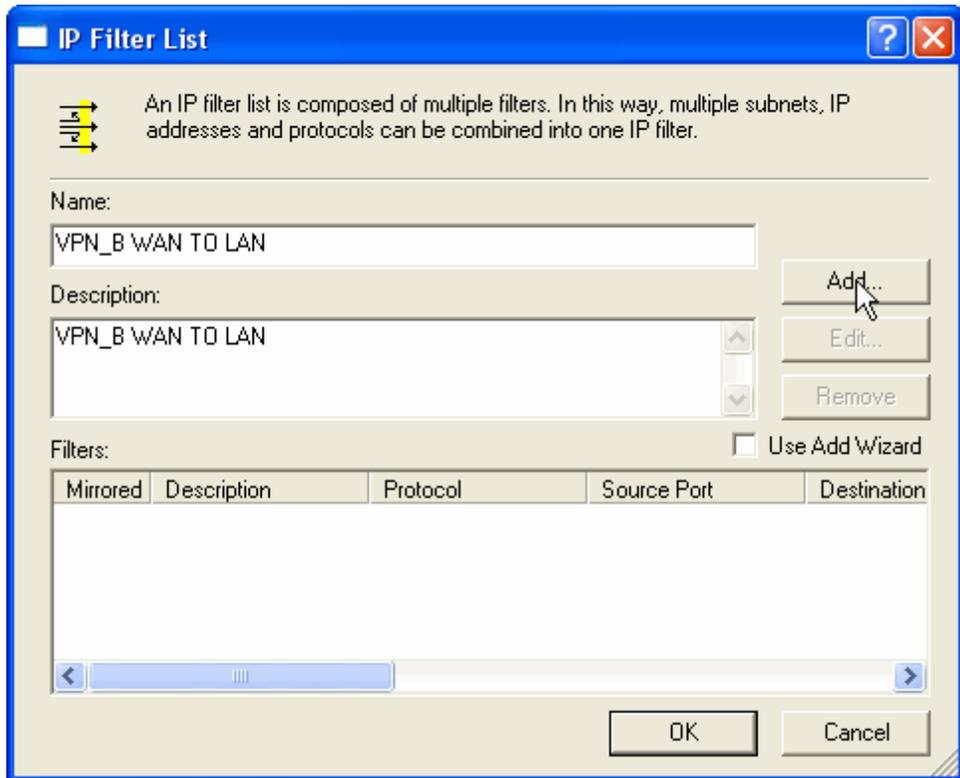
Step 12. In VPN\_B window, click Add and please don't click Use Add Wizard.



Step 13. In IP Filter List tab, click Add.



Step 14. In IP Filter List window, please don't choose Use Add Wizard and change Name to VPN\_B WAN TO LAN. Click Add.



Step 15. In Filter Properties window, in Source address, click down the arrow to select the specific IP Subnet and fill Company B's IP Address, 211.22.22.22 and Subnet mask, 255.255.255.255. In Destination address, click down the arrow to select the specific IP Subnet and fill Company A's IP Address, 192.168.10.0 and Subnet mask 255.255.255.0. Please disable Mirrored. Also match packets with the exact opposite source and destination addresses.

The image shows a screenshot of the "Filter Properties" dialog box. The dialog has three tabs: "Addressing", "Protocol", and "Description". The "Addressing" tab is selected. It contains two main sections: "Source address:" and "Destination address:".

**Source address section:**

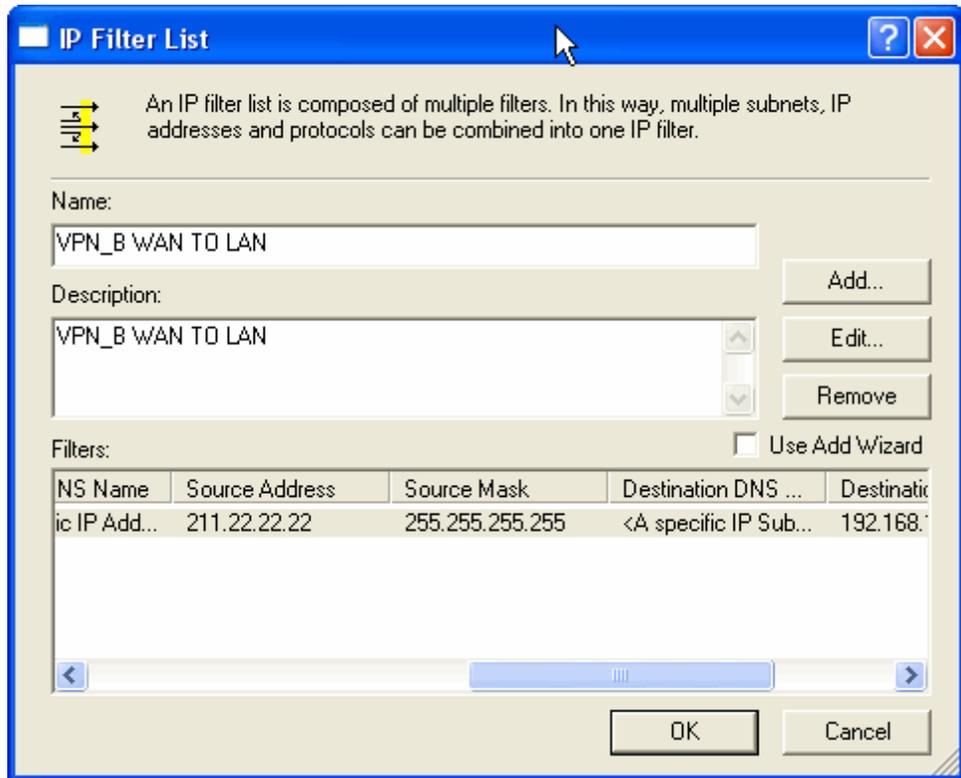
- A dropdown menu is set to "A specific IP Subnet".
- The "IP Address:" field contains "211 . 22 . 22 . 22".
- The "Subnet mask:" field contains "255 . 255 . 255 . 255".

**Destination address section:**

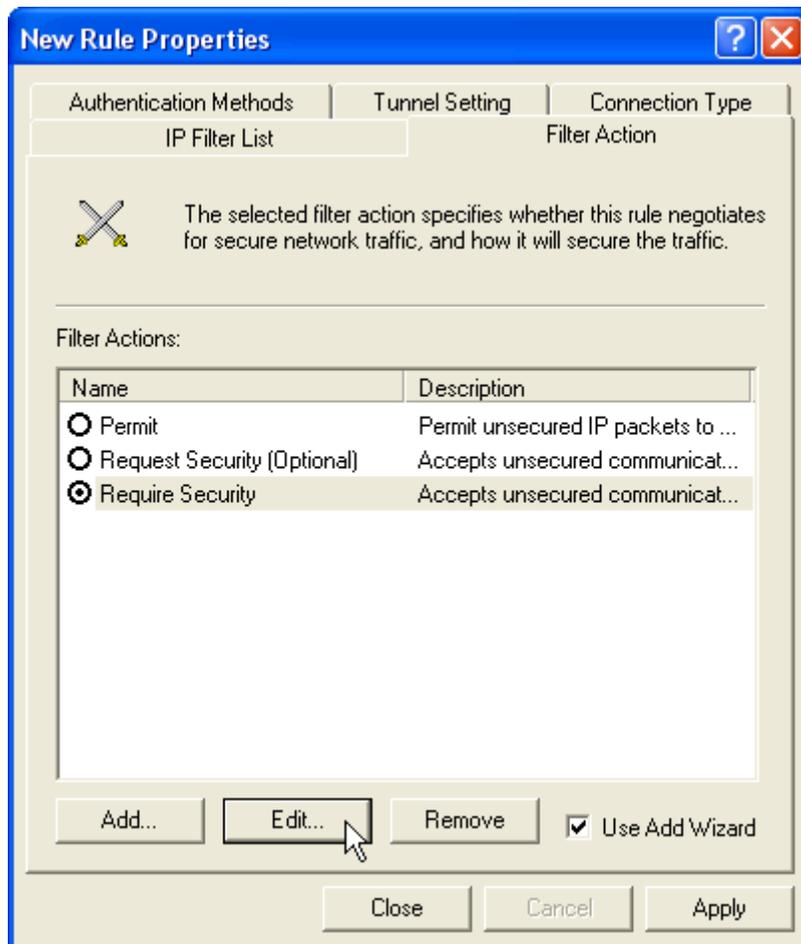
- A dropdown menu is set to "A specific IP Subnet".
- The "IP address:" field contains "192 . 168 . 10 . 0".
- The "Subnet mask:" field contains "255 . 255 . 255 . 255".

At the bottom of the dialog, there is a checkbox labeled "Mirrored. Also match packets with the exact opposite source and destination addresses." which is currently unchecked. Below the checkbox are "OK" and "Cancel" buttons.

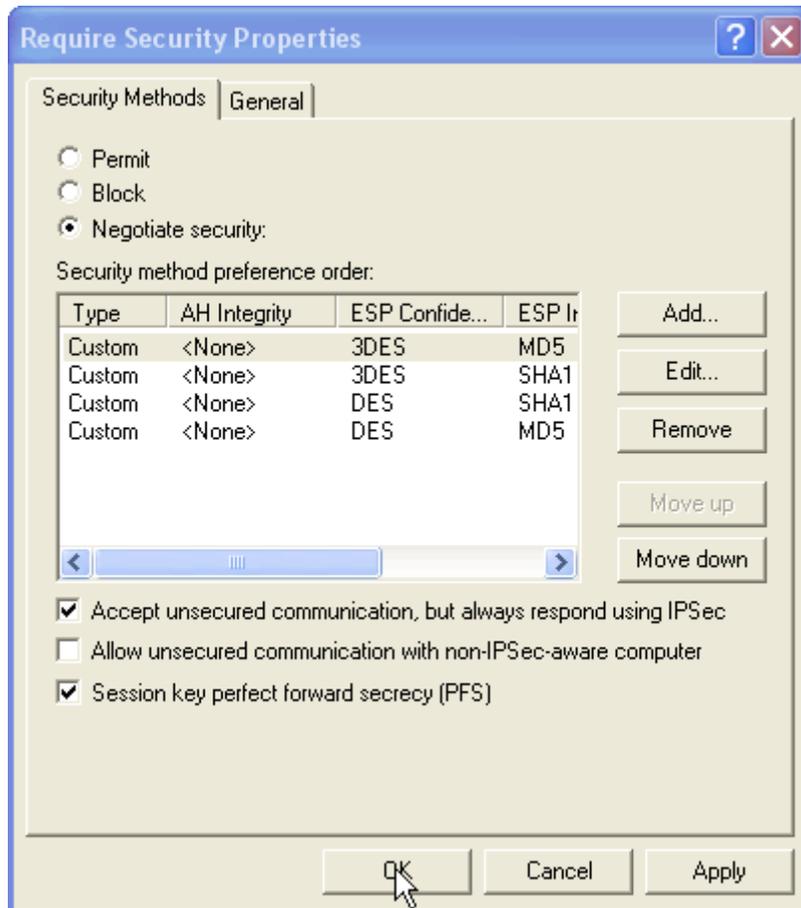
Step 16. Finish the setting and close IP Filter List window.



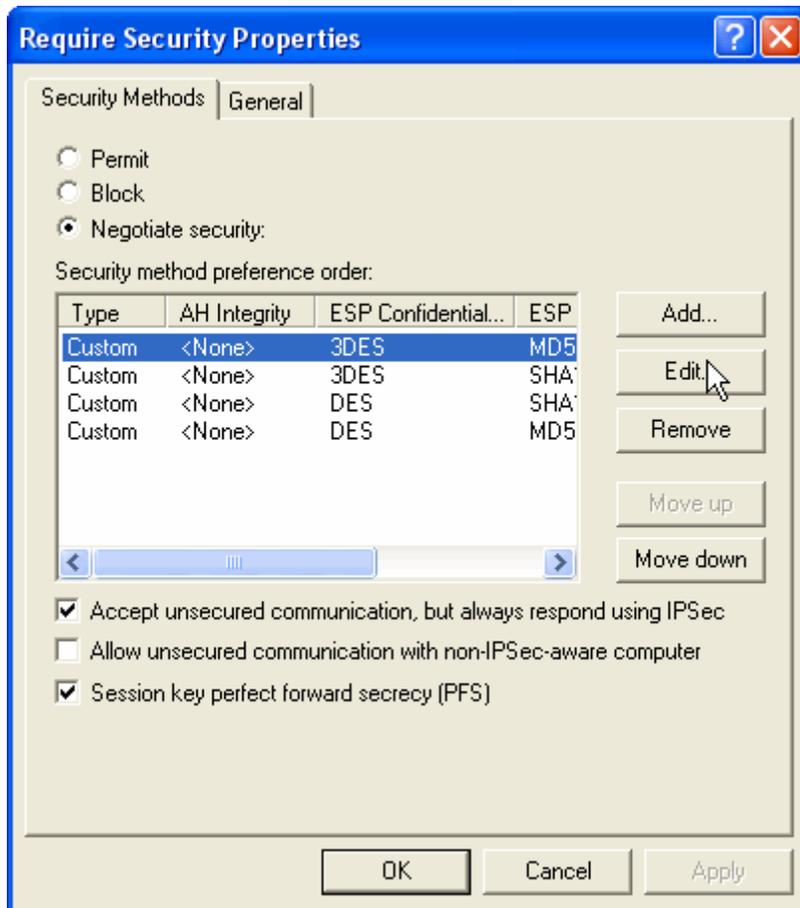
Step 17. Click Filter Action tab and choose Require Security. Click Edit.



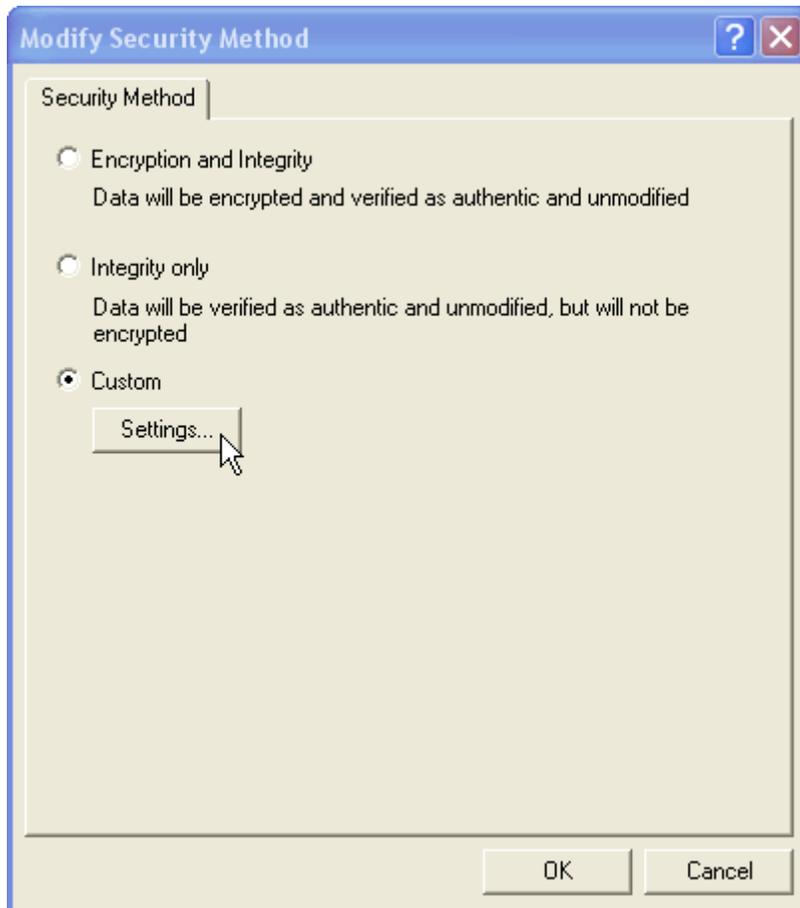
Step 18. In Security Methods tab, choose accept unsecured communication, but always respond using IPSec.



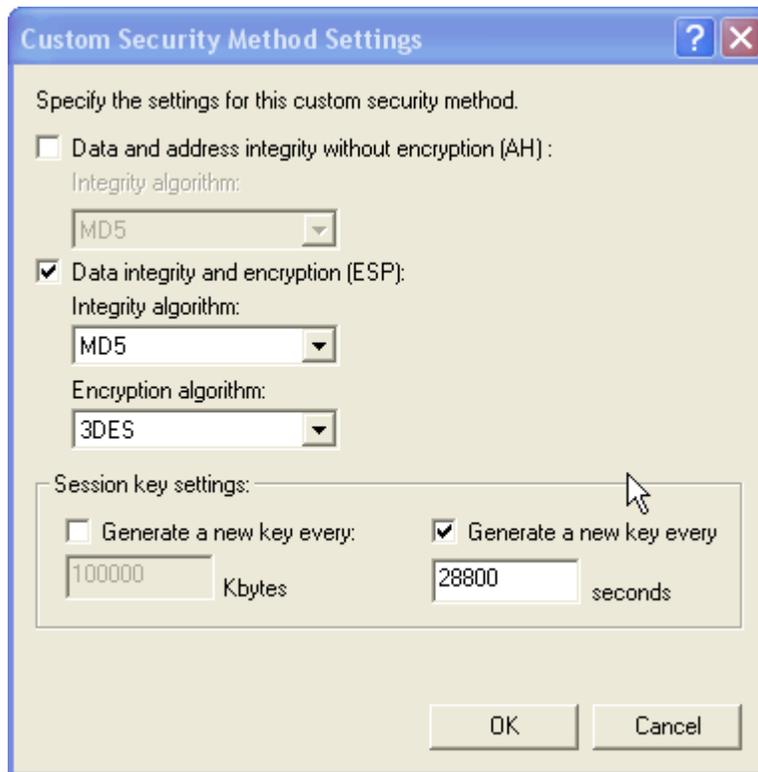
Step 19. Click Edit in Custom/ None/ 3DES/ MD5.



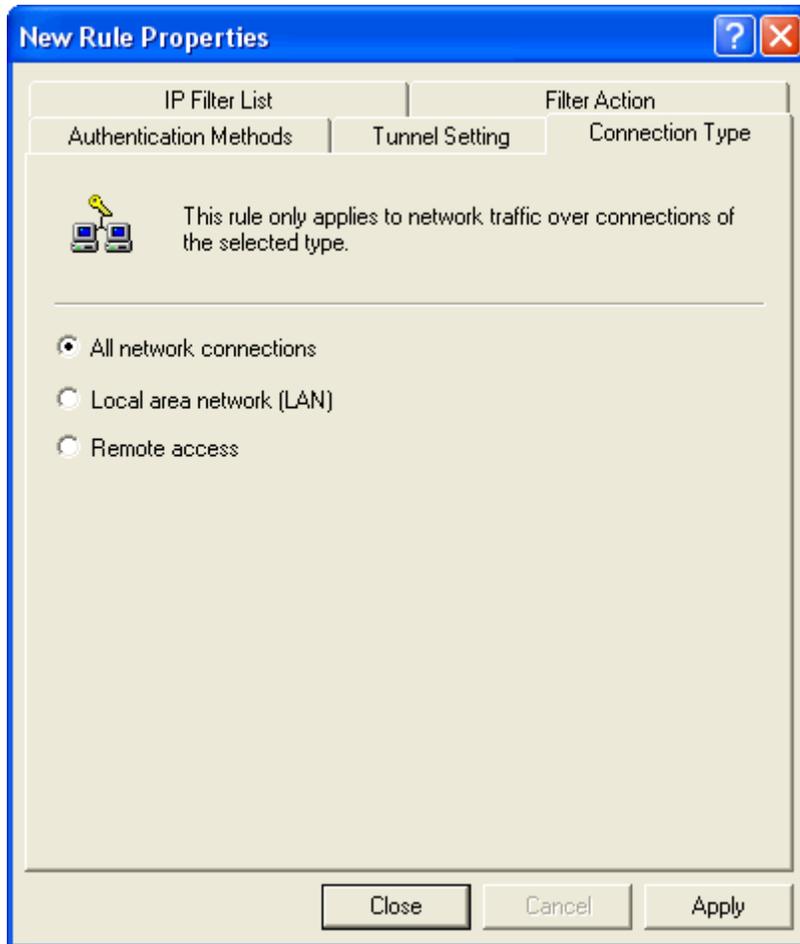
Step 20. Click Custom(For professional user) and click Edit.



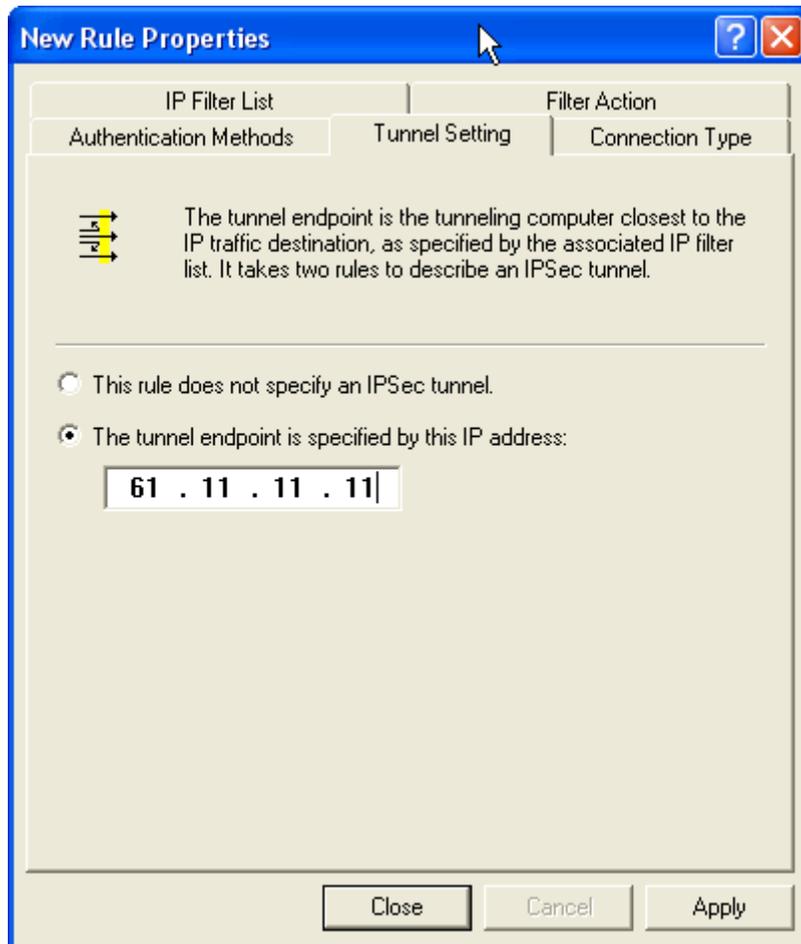
Step 21. Click Data Integrity and Encapsulation and choose MD5 and 3DES. Click Generate a New key after every 28800 seconds. And click 3 times OK to return.



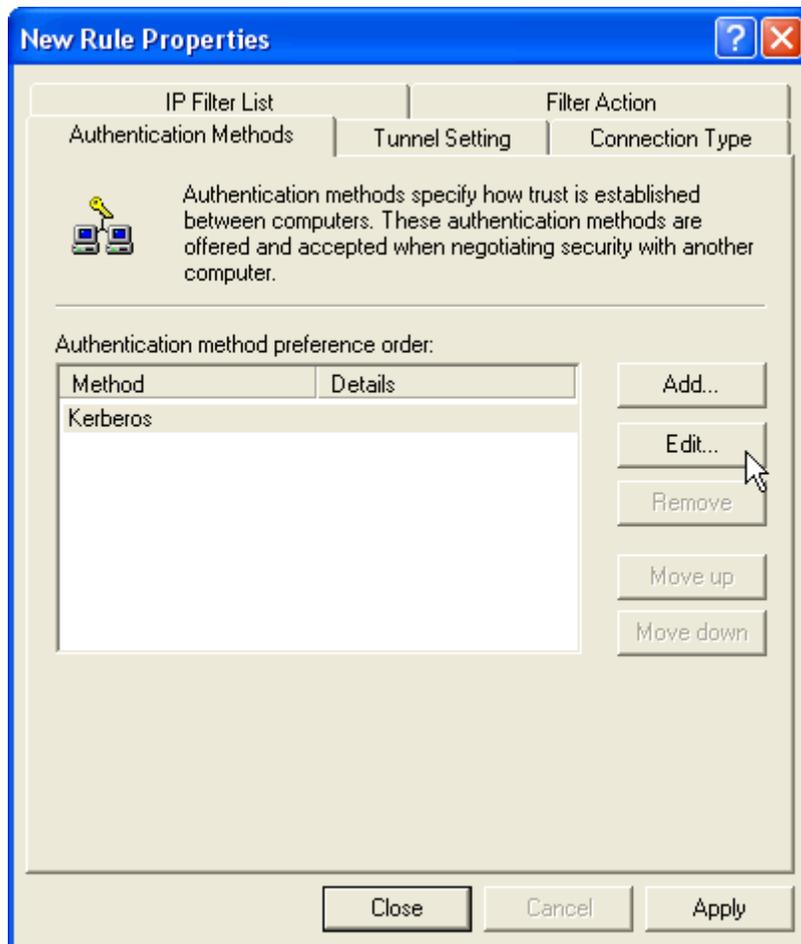
Step 22. Click Connection Type tab and click all network connections.



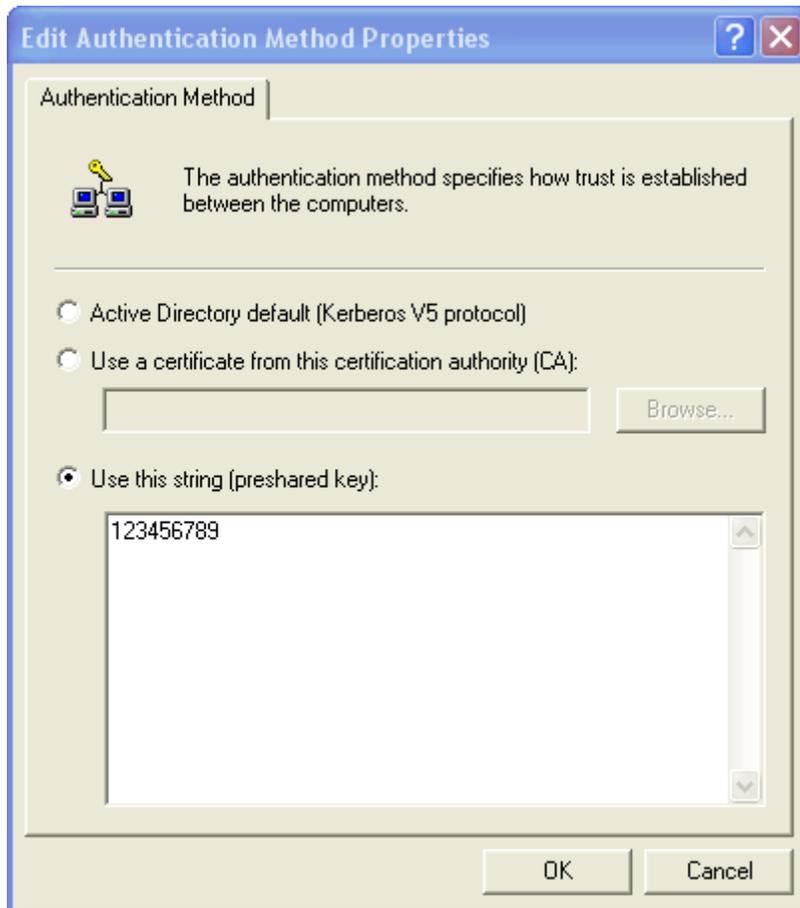
Step 23. Click Tunnel Setting tab, and click The tunnel endpoint is specified by the IP Address. Enter the WAN IP of Company A, 61.11.11.11.



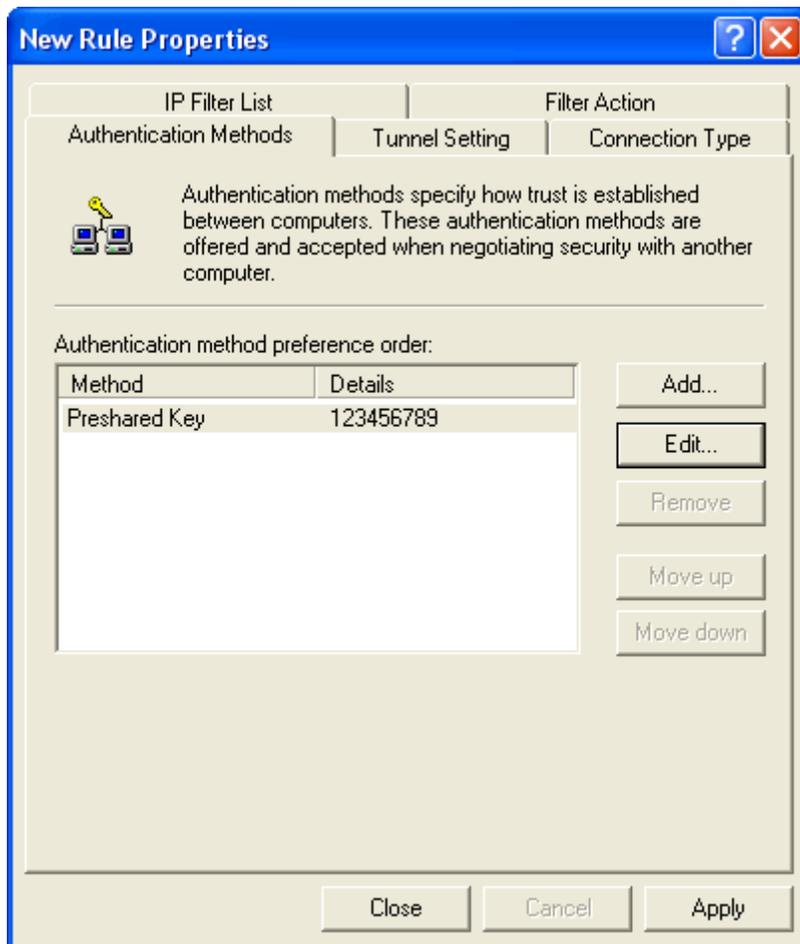
Step 24. Click Authentication Methods and click Edit.



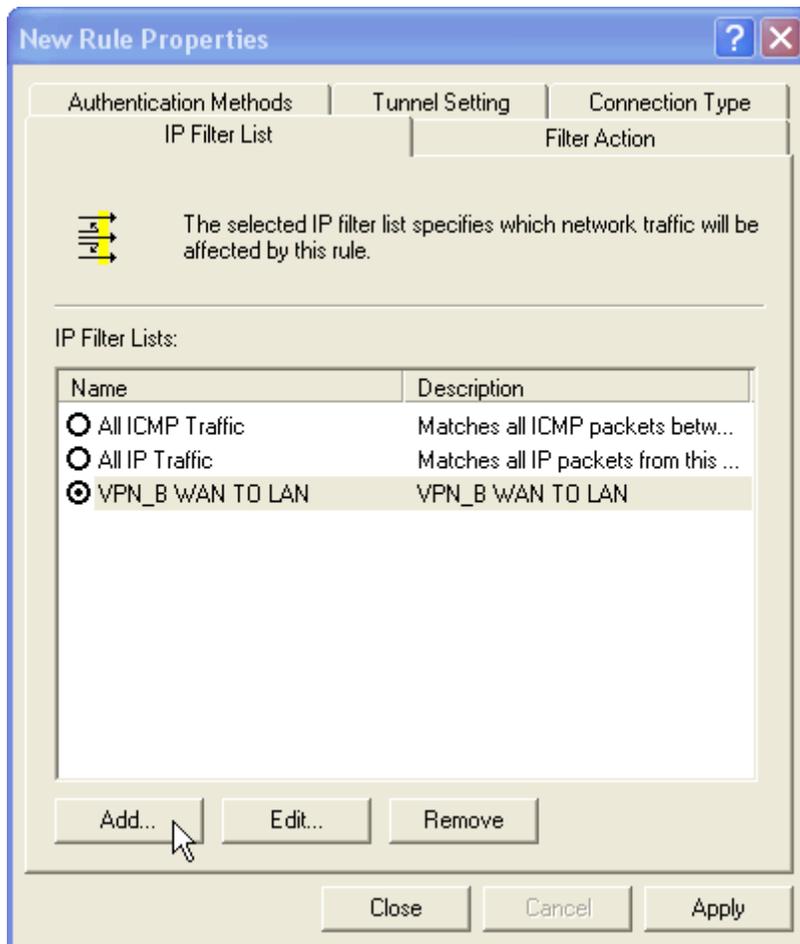
Step 25. Choose Use this string to protect the key exchange (Preshared Key). And enter the key, 123456789.



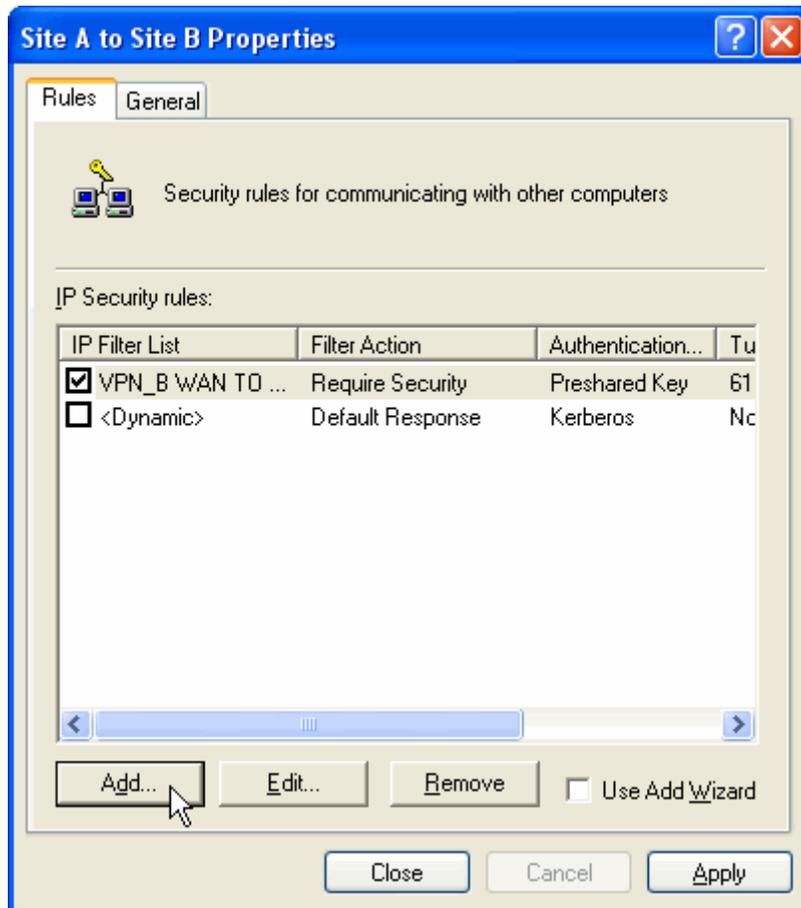
Step 26. Finish the setting, and close the window.



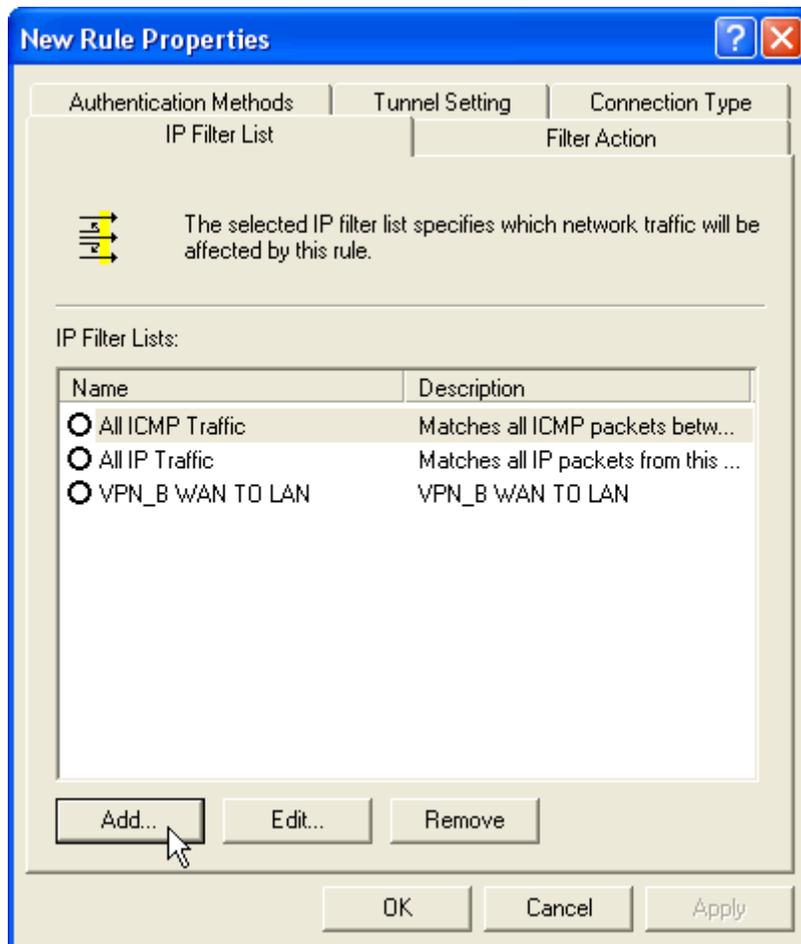
Step 27. Finish the Policy setting of VPN\_B WAN TO LAN.



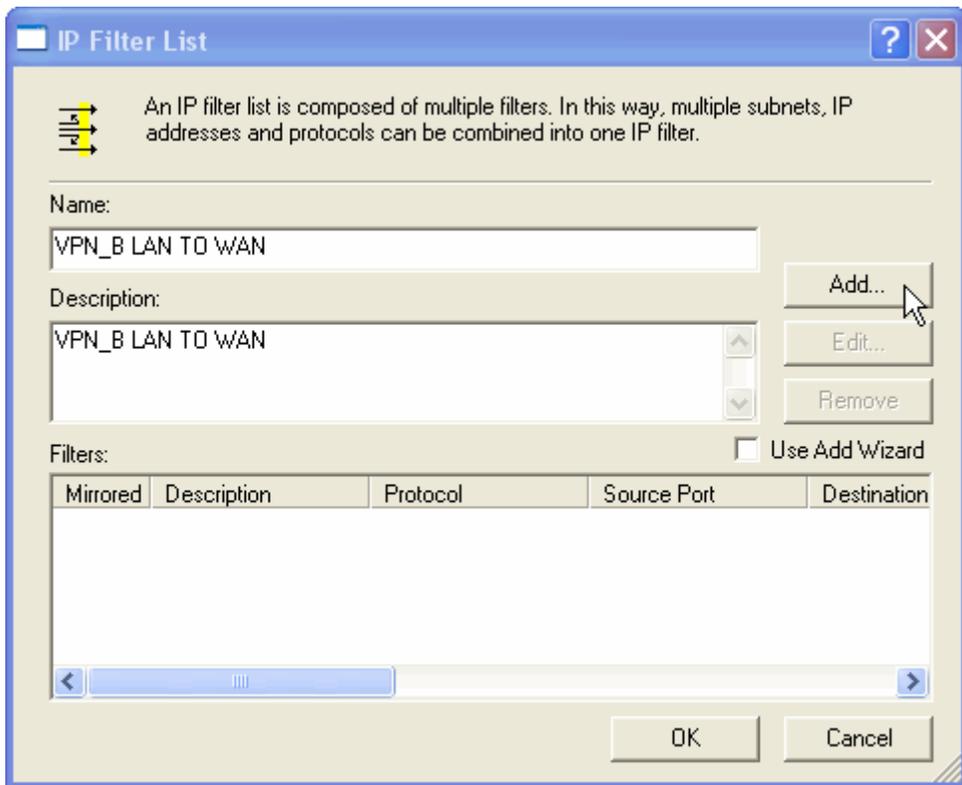
Step 28. Enter VPN\_B window again and click Add to add second IP Security Policy. **Please don't enable Use Add Wizard.**



Step 29. In New Rule Properties, click Add.



Step 30. In IP Filter List window, **please disable Use Add Wizard**, and change Name to VPN\_B LAN TO WAN. Click Add.



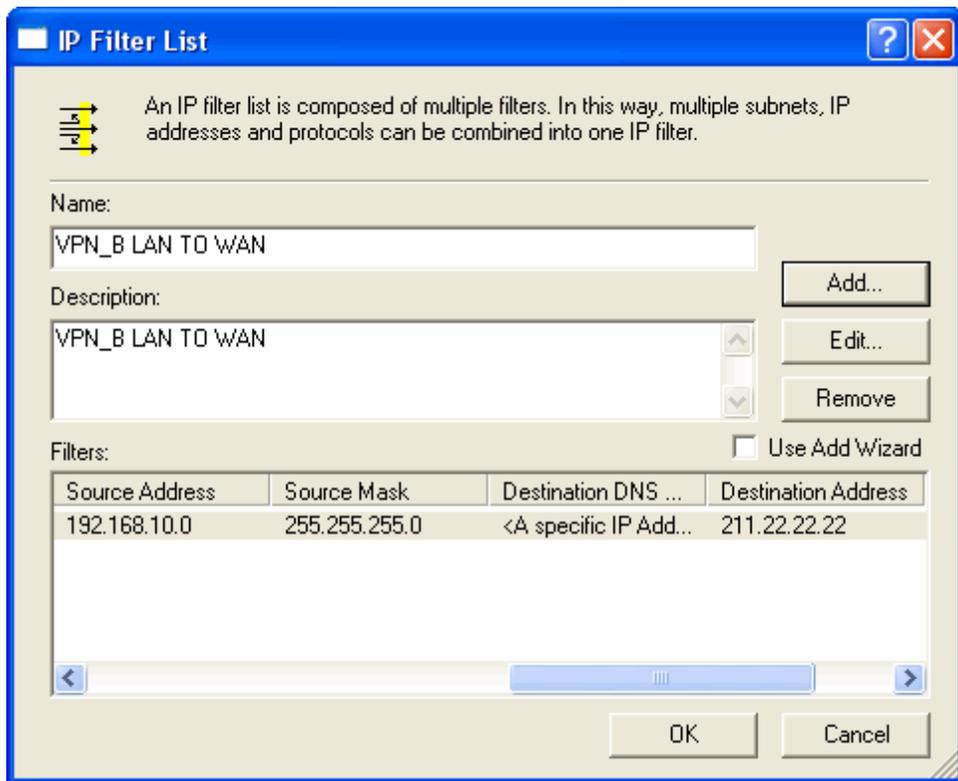
Step 31. In Filter Properties window,

in Source address, click down the arrow to select the specific IP Subnet and fill Company A's IP Address, 192.168.10.0 and Subnet mask 255.255.255.0.

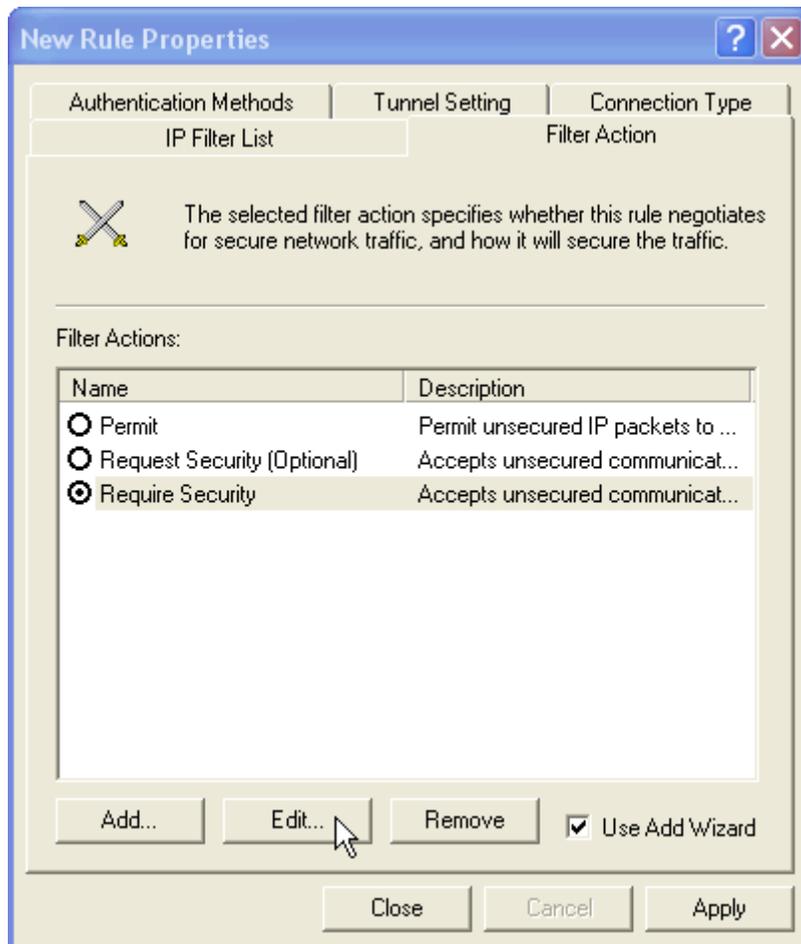
In Destination address click down the arrow to select the specific IP Subnet and fill Company B's IP Address, 211.22.22.22 and Subnet mask, 255.255.255.255., Please disable Mirrored. Also match packets with the exact opposite source and destination addresses.

The image shows a screenshot of the "Filter Properties" dialog box. The dialog has a blue title bar with a question mark icon and a close button. It contains three tabs: "Addressing", "Protocol", and "Description". The "Addressing" tab is selected. The "Source address" section has a dropdown menu set to "A specific IP Subnet", an "IP Address" field with "192 . 168 . 10 . 0", and a "Subnet mask" field with "255 . 255 . 255 . 0". The "Destination address" section has a dropdown menu set to "A specific IP Address", an "IP address" field with "211 . 22 . 22 . 22", and a "Subnet mask" field with "255 . 255 . 255 . 255". At the bottom, there is a checkbox labeled "Mirrored. Also match packets with the exact opposite source and destination addresses." which is currently unchecked. "OK" and "Cancel" buttons are at the bottom right.

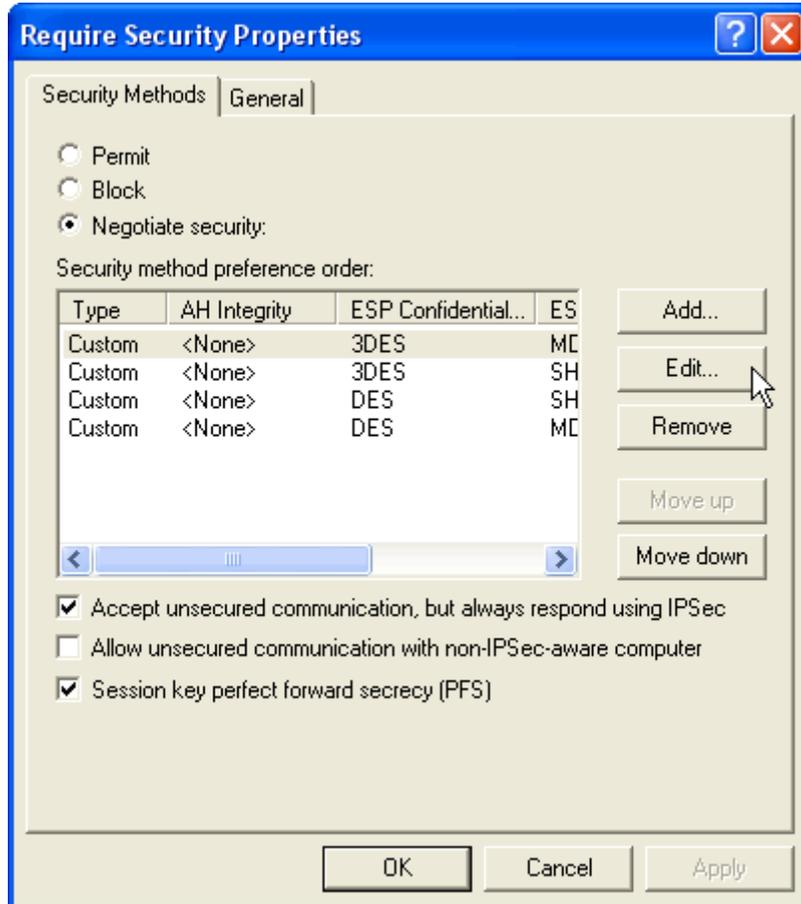
Step 32. Finish the setting and close IP Filter List window.



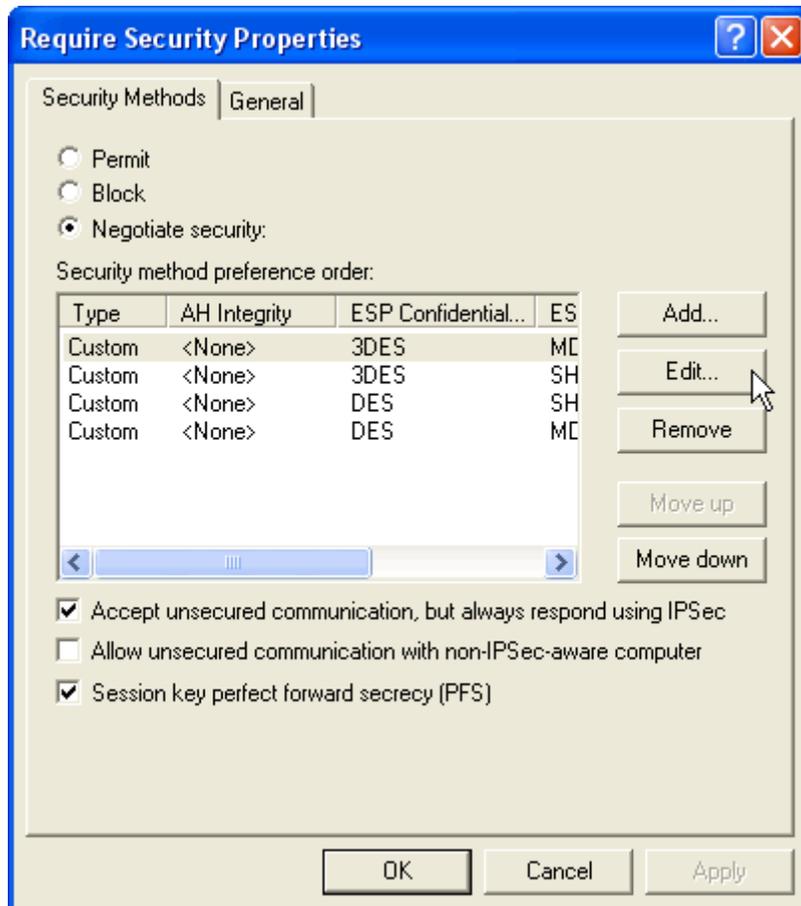
Step 33. Click Filter Action tab and choose Require Security. Click Edit.



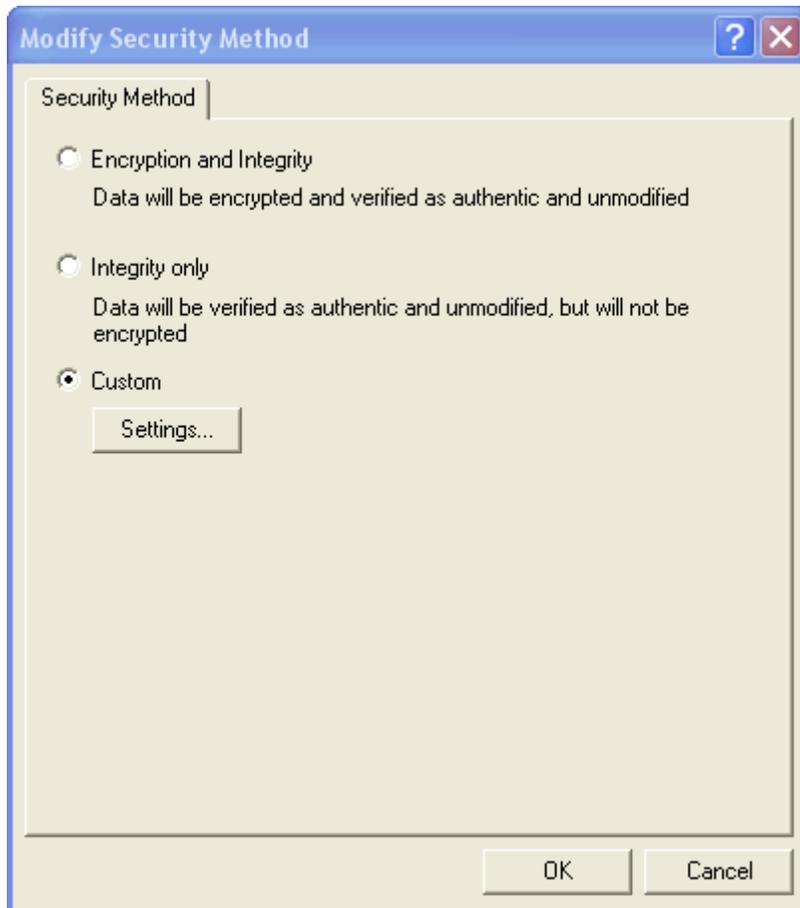
Step 34. In Security Methods tab, choose accept unsecured communication, but always respond using IPSec.



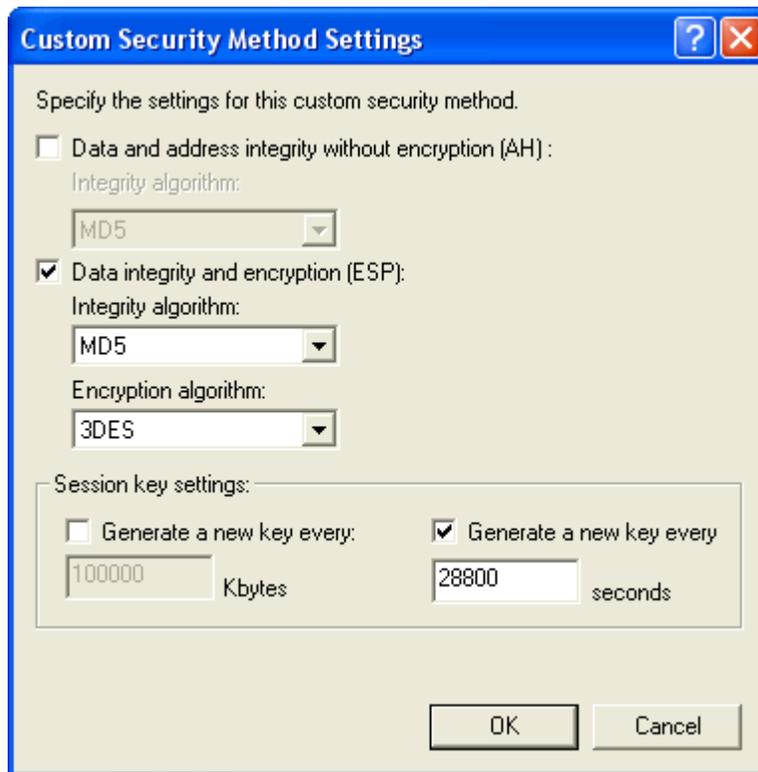
Step 35. Click Edit in Custom/ None/ 3DES/ MD5.



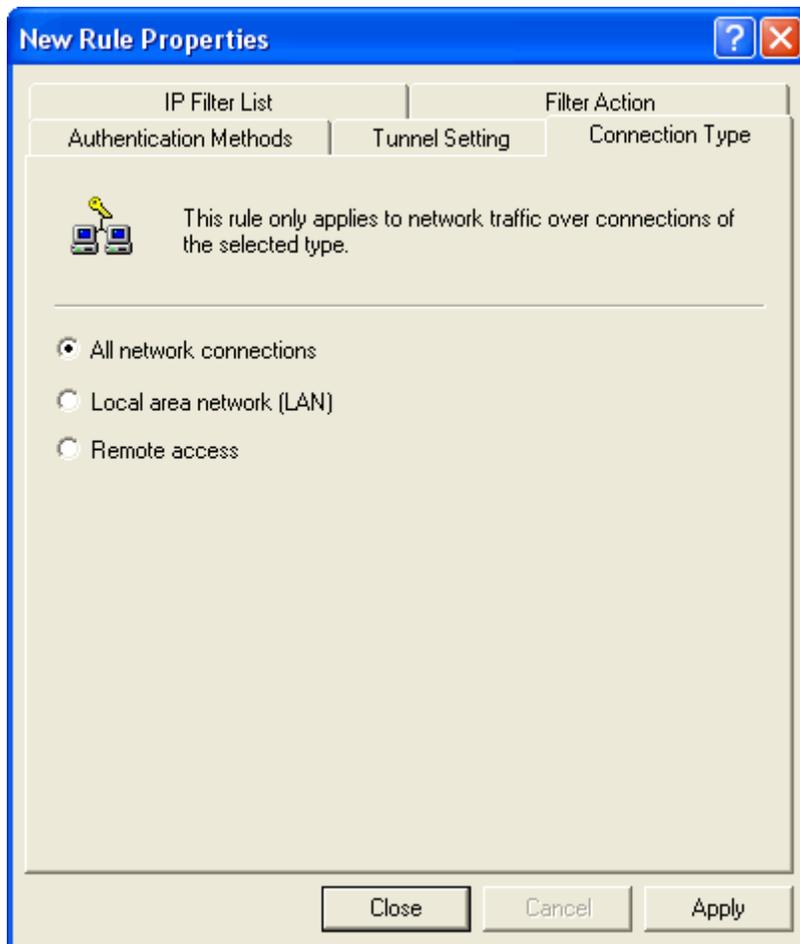
Step 36. Click Custom(For professional user) and click Edit.



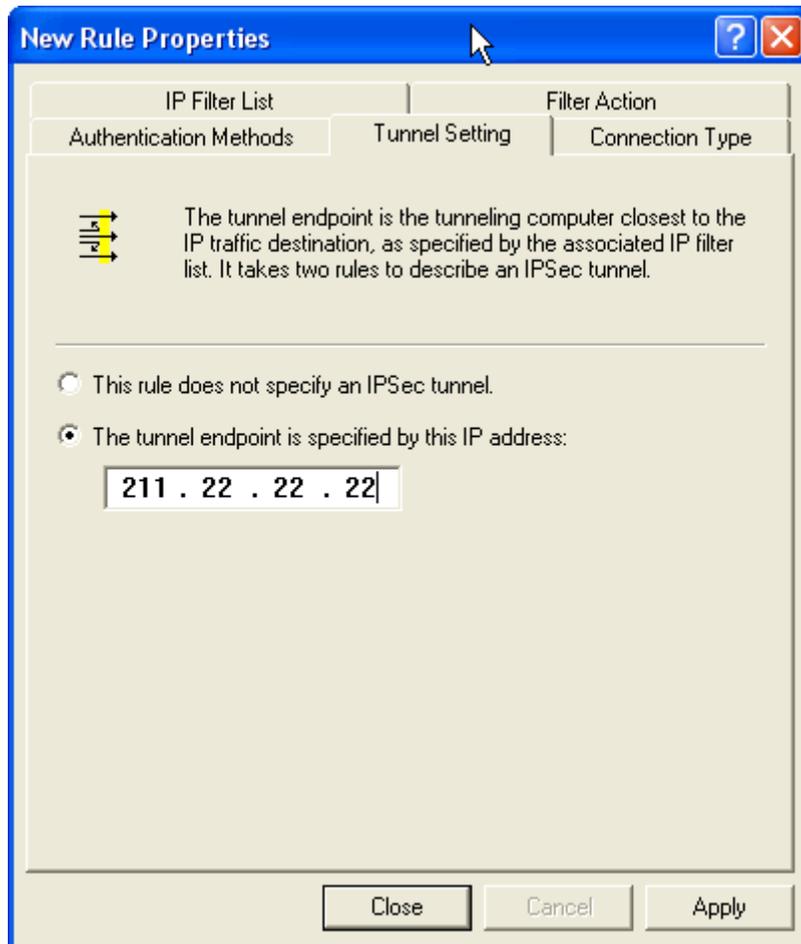
Step 37. Click Data Integrity and Encapsulation and choose MD5 and 3DES. Click Generate a New key after every 28800 seconds. And click 3 times OK to return.



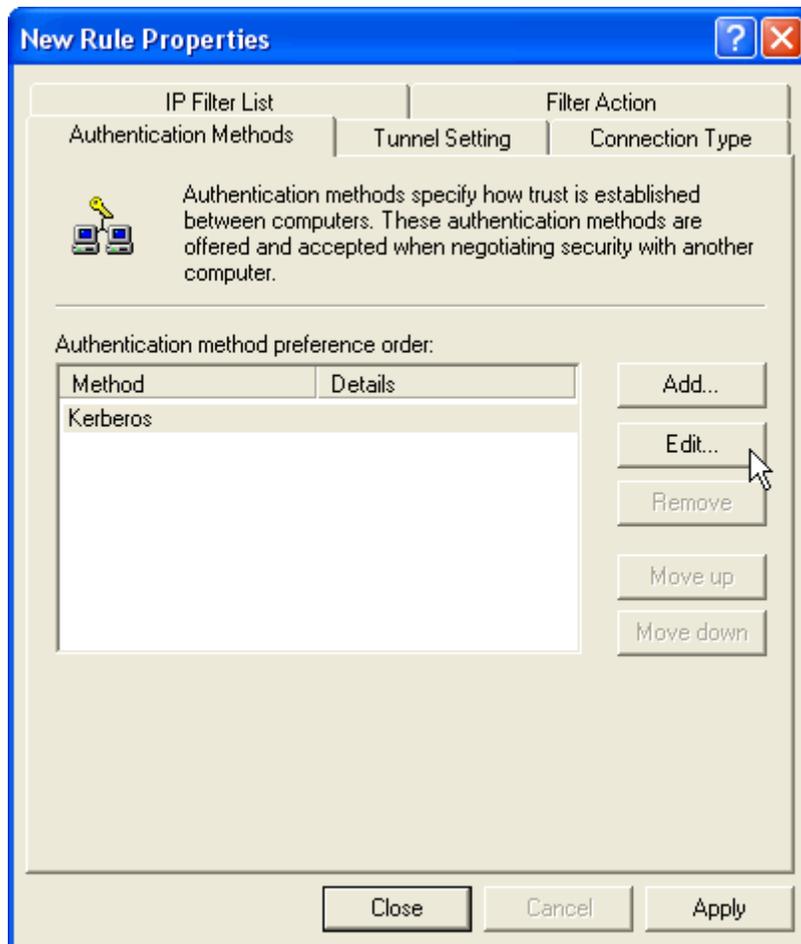
Step 38. Click Connection Type tab and click all network connections.



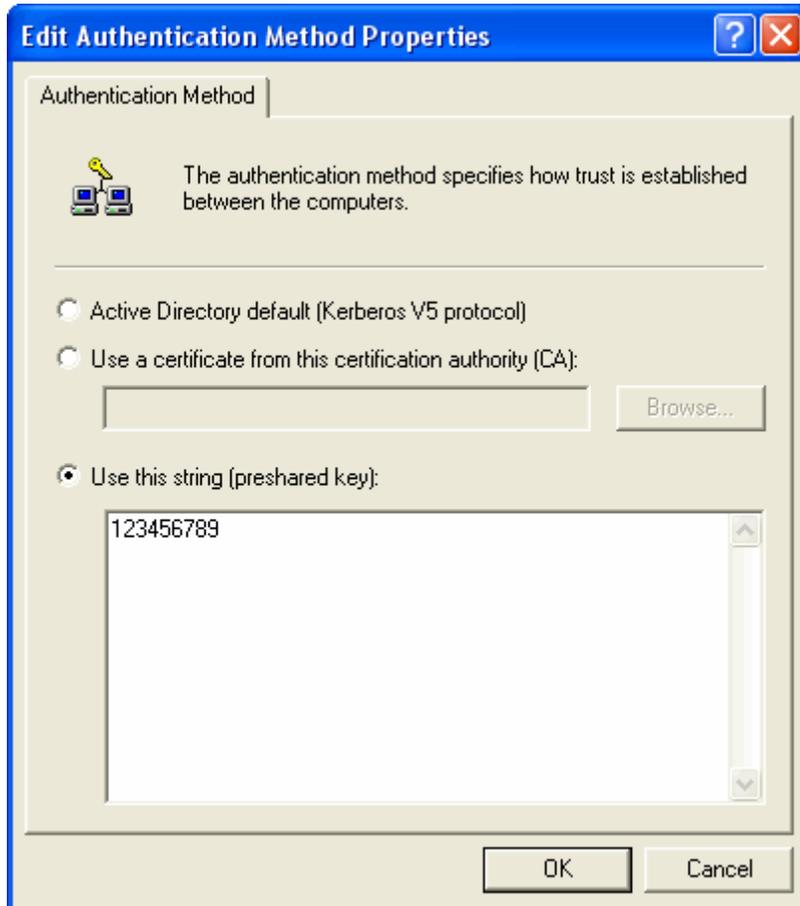
Step 39. Click Tunnel Setting tab, and click The tunnel endpoint is specified by the IP Address. Enter the WAN IP of Company B, 211.22.22.22.



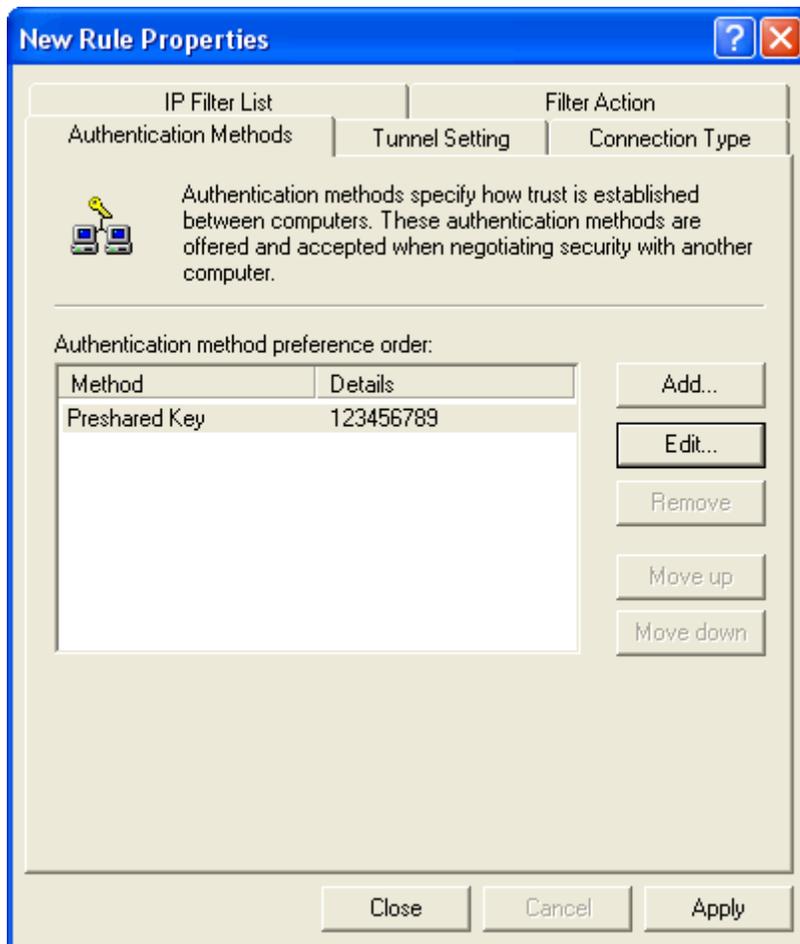
Step 40. Click Authentication Methods and click Edit.



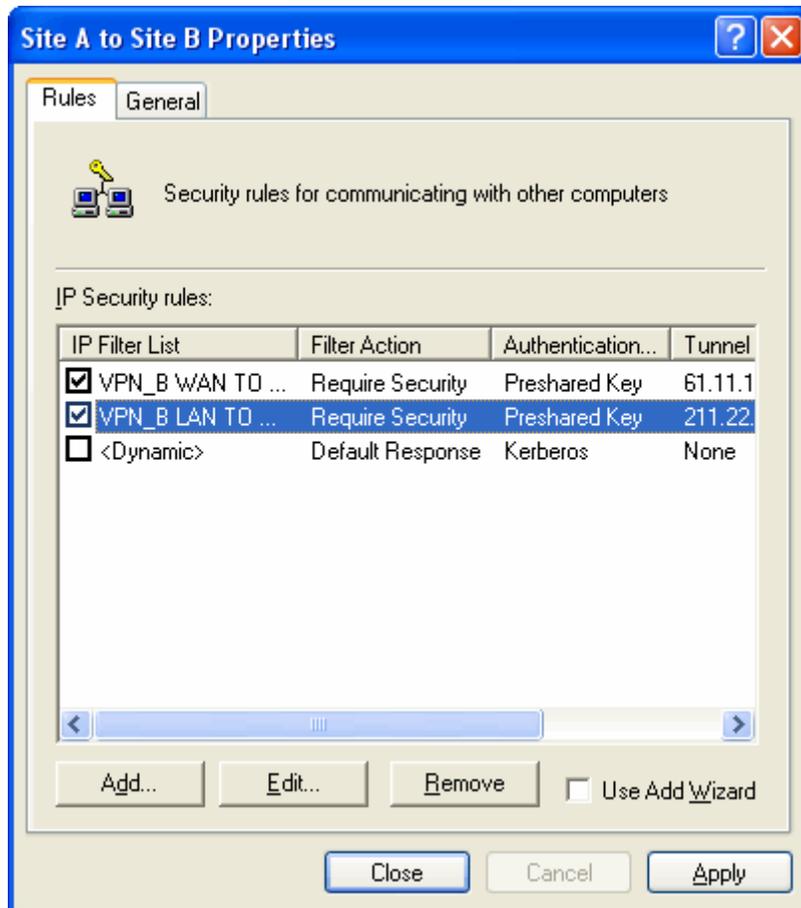
Step 41. Choose Use this string to protect the key exchange (Preshared Key). And enter the key, 123456789.



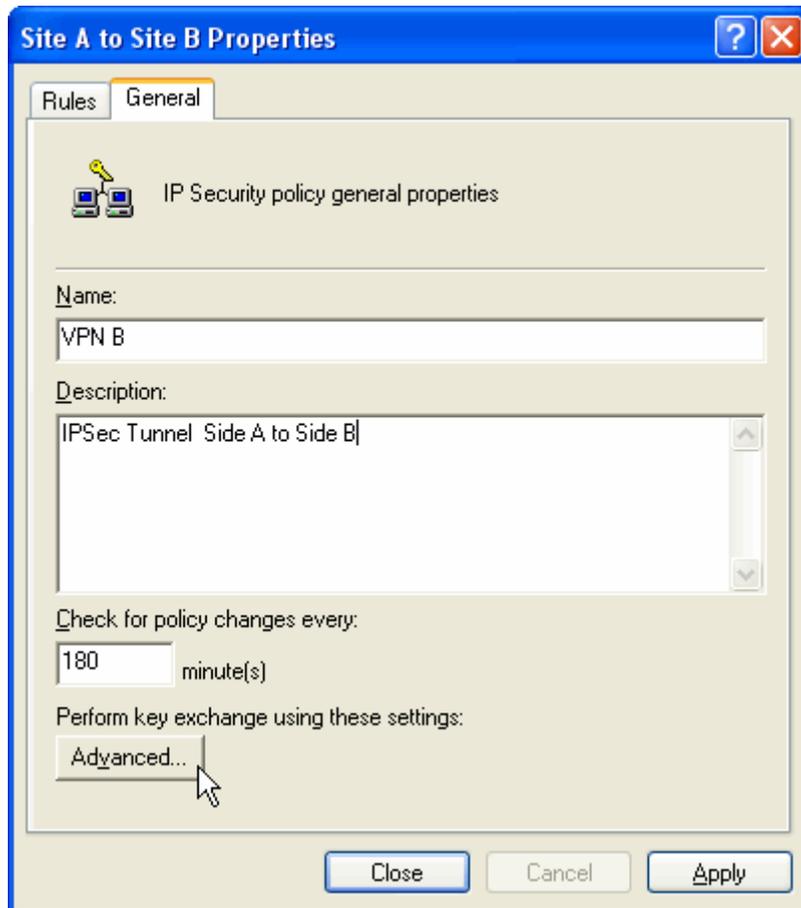
Step 42. Finish the setting, and close the window.



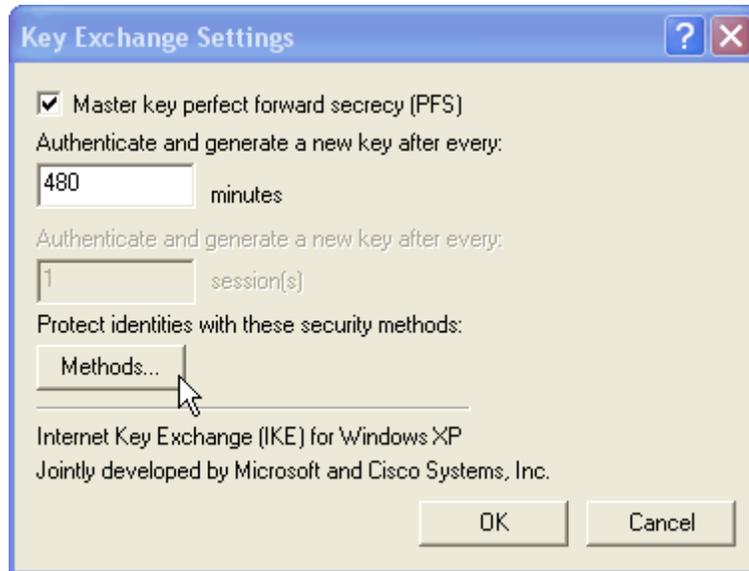
Step 43. Finish the Policy setting of VPN\_B LAN TO WAN.



Step 44. In VPN\_B window, click General tab. And click Advanced for Key Exchange using these settings.



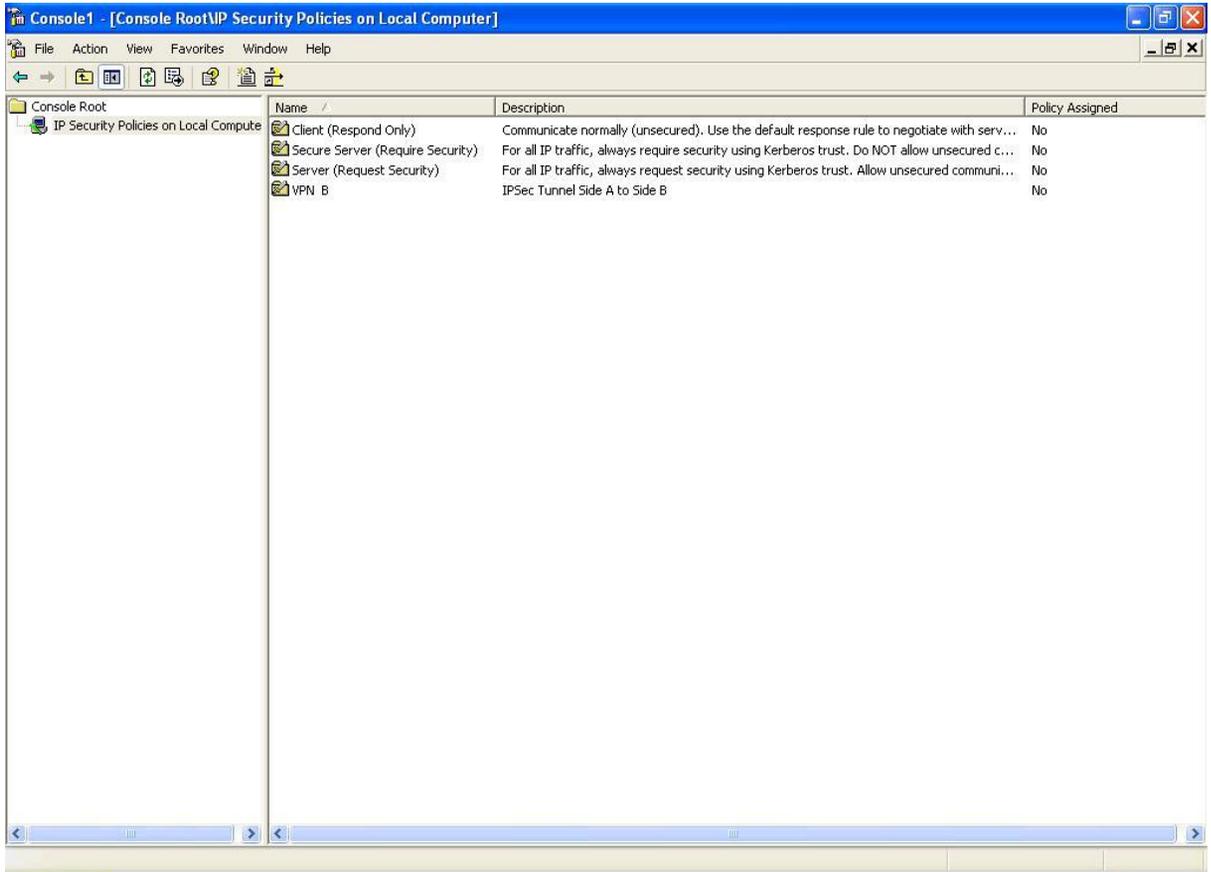
Step 45. Click Master key Perfect Forward Security.



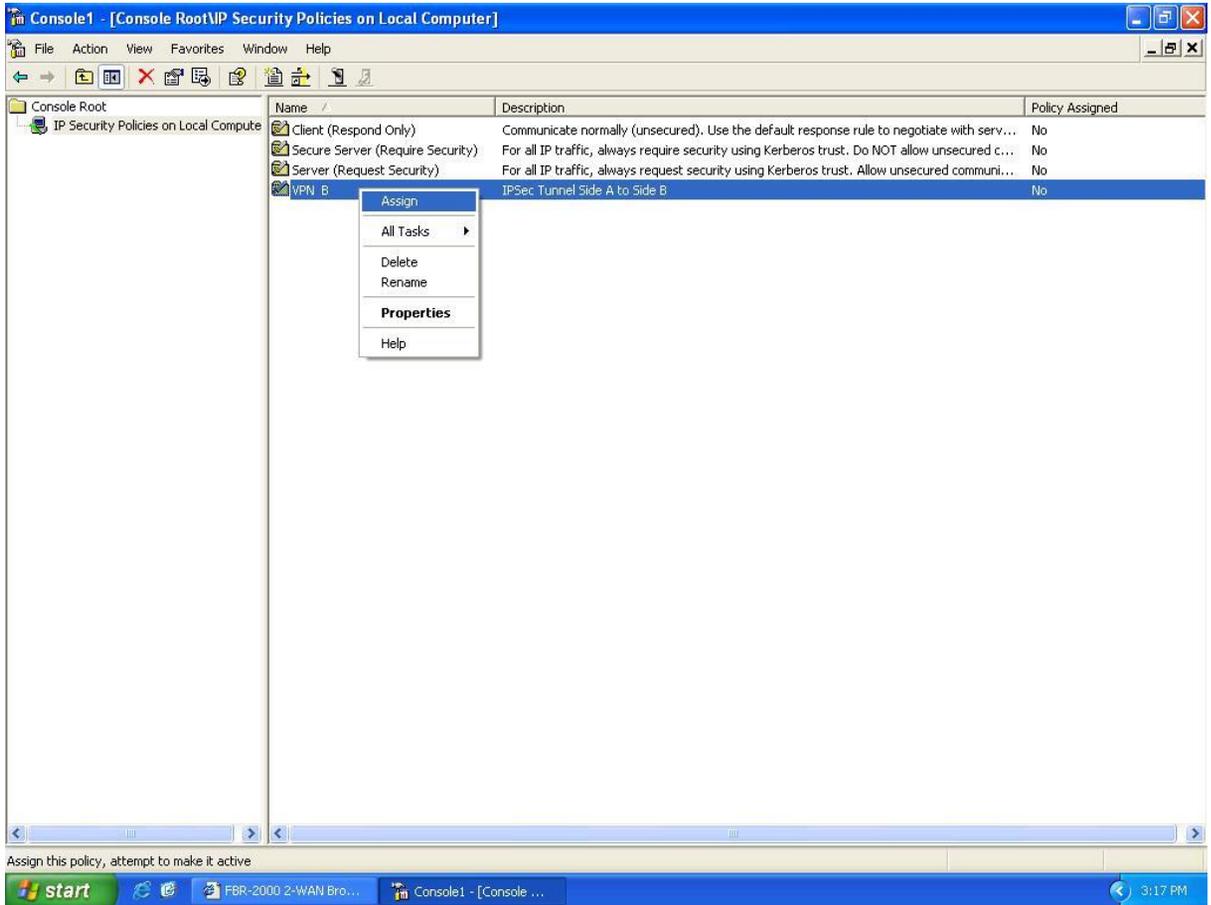
Step 46. Move IKE/ 3DES/ MD5/ up to the highest order. Finish all settings.



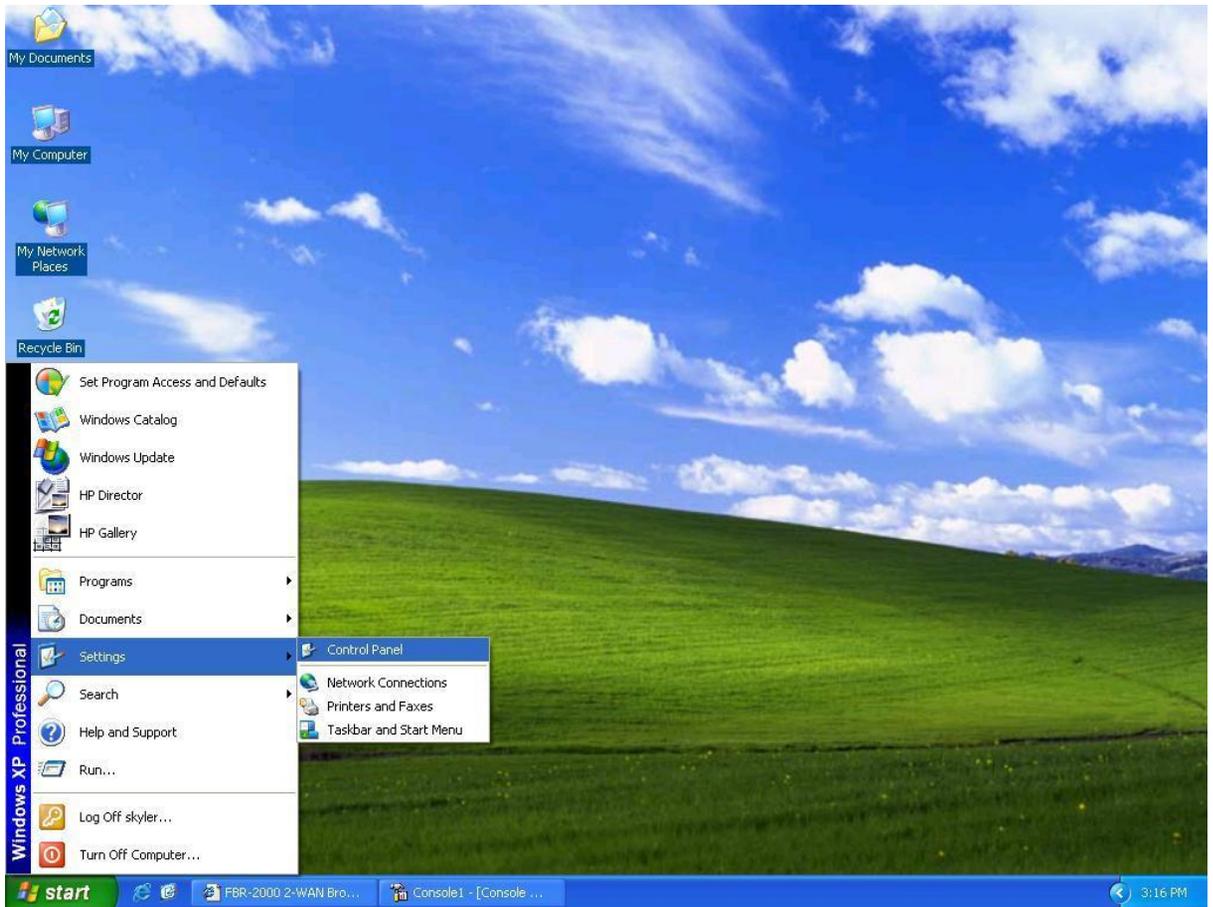
Step 47. Finish the settings of Company B's Windows 2000 VPN.



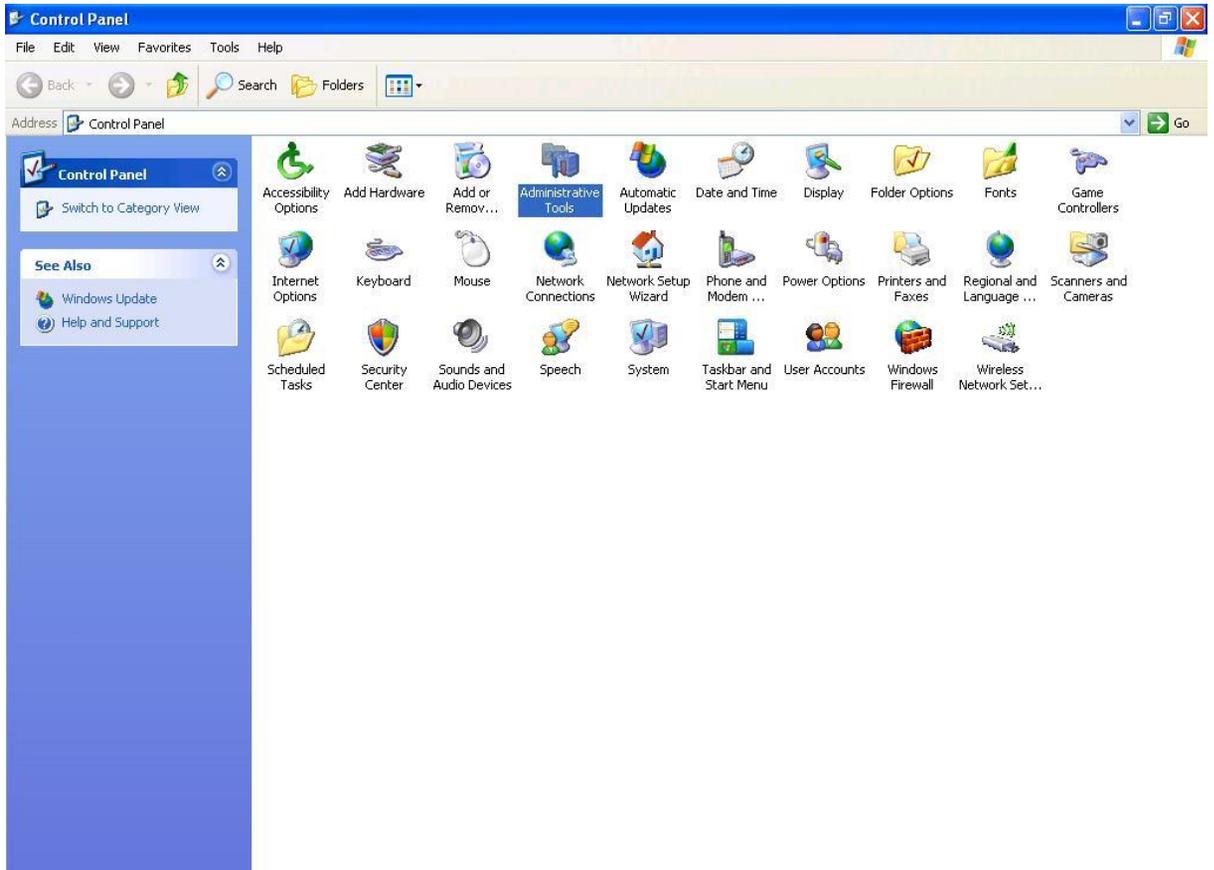
Step 48. Click the right button of mouse in VPN\_B and enable Assign.



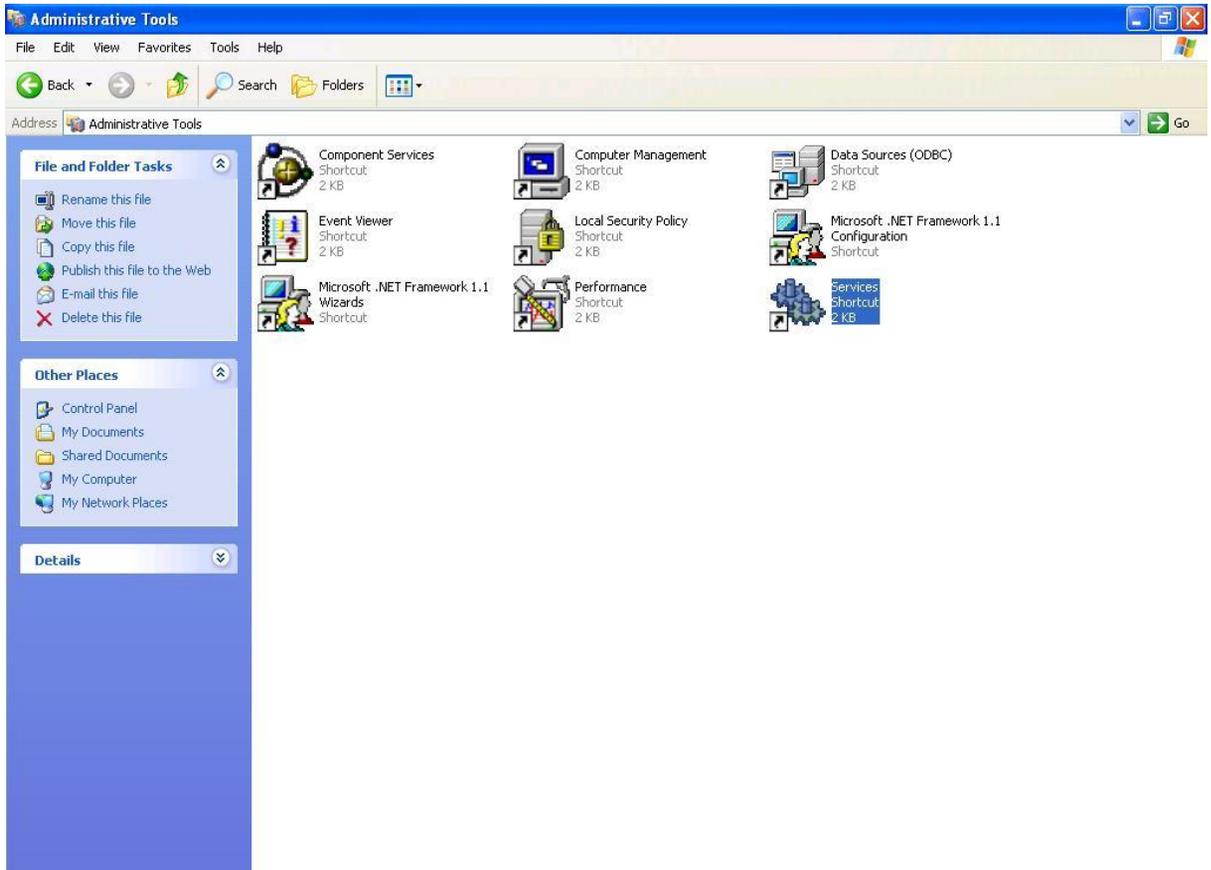
Step 49. To restart IPsec by Start→Settings→Control Panel



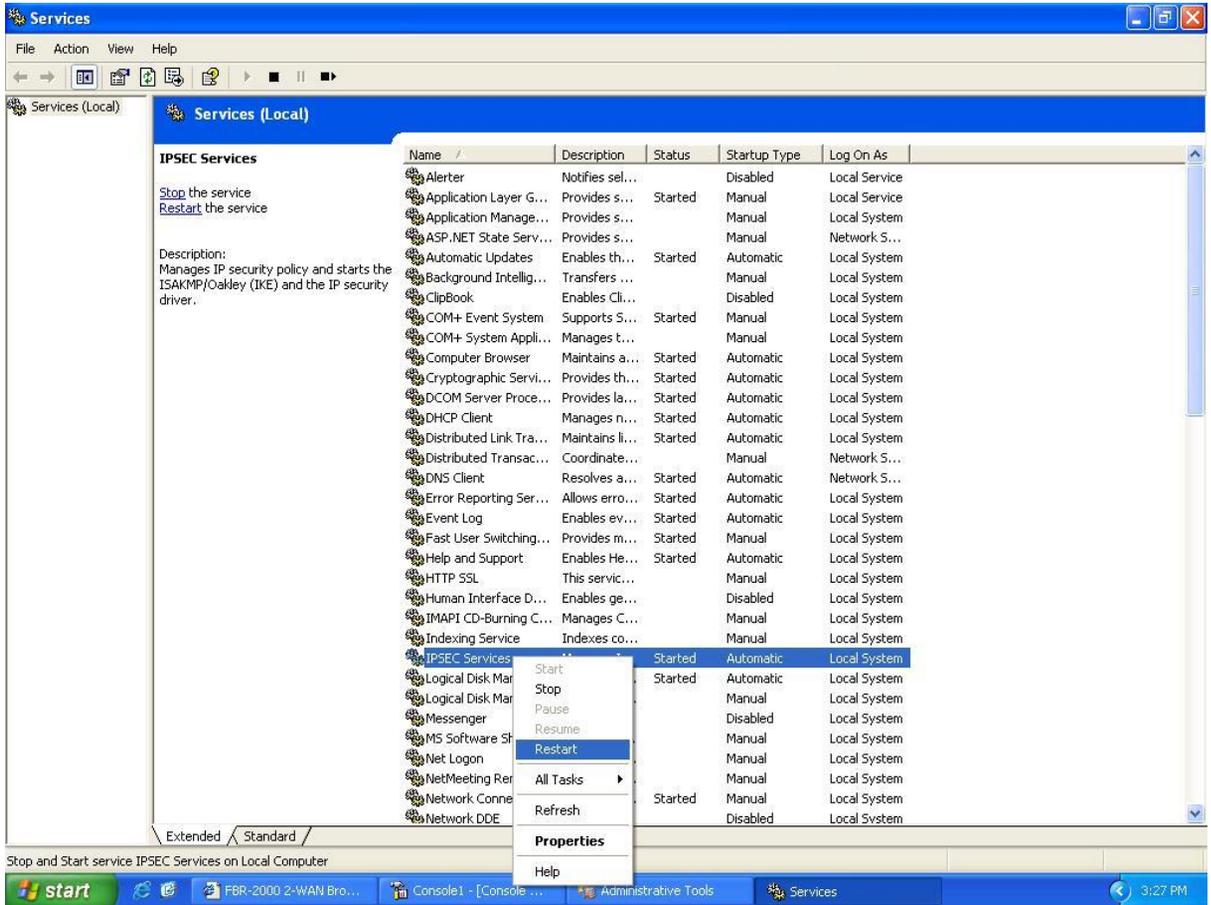
Step 50. Enter Control Panel and click Administrative Tools.



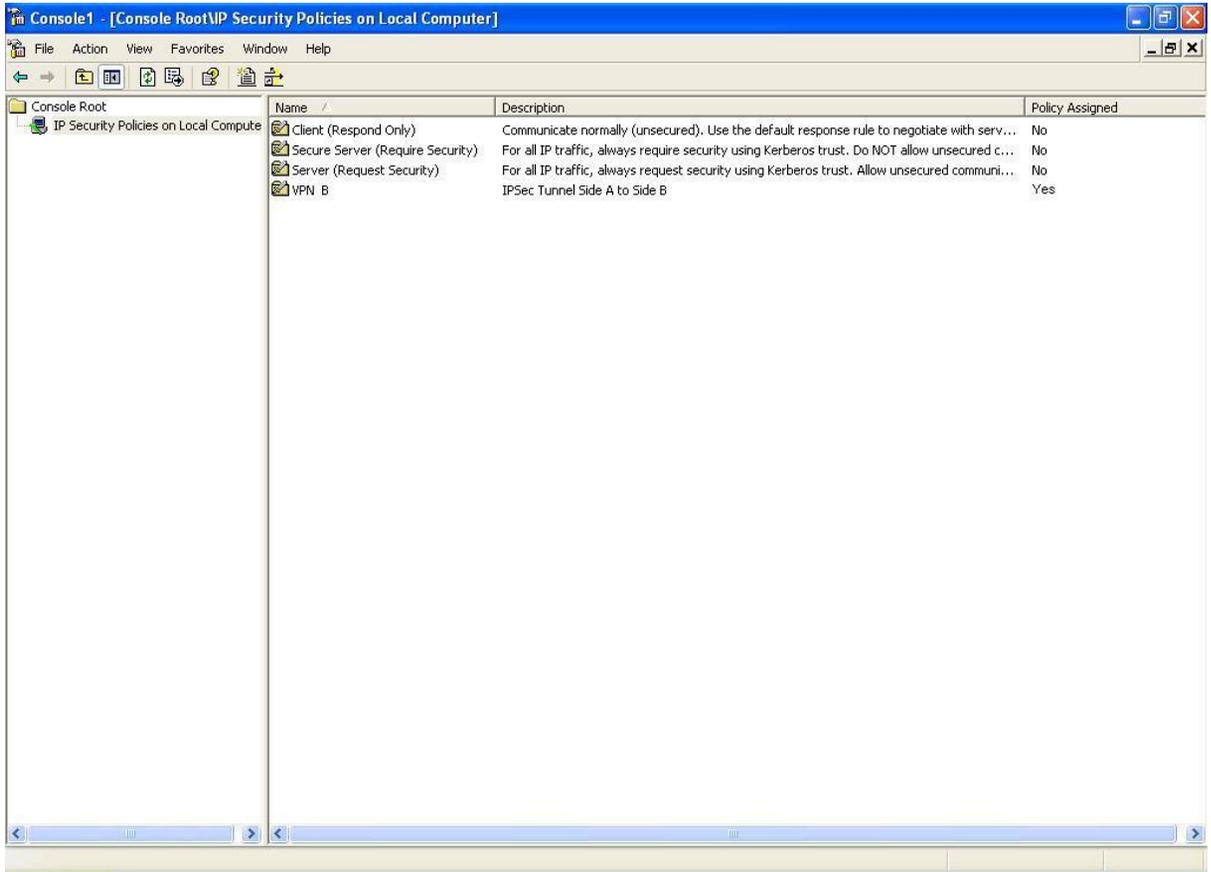
Step 51. After entering Administrative Tools, click Services.



Step 52. After entering Service, click IPsec Services, Restart the Service.



Step 53. Finish all settings.



**Example 3.** Create a VPN connection between two Multi-Homing Gateway using Aggressive mode Algorithm (3 DES and MD5), and data encryption for IPSec Algorithm (3DES and MD5)

Preparation Task:

Company A External IP is 61.11.11.11

Internal IP is 192.168.10.X

Company B External IP is 211.22.22.22

Internal IP is 192.168.20.X

To suppose Company A, 192.168.10.100 create a VPN connection with company B, 192.168.20.100 for downloading the sharing file by Aggressive mode Algorithm.

The Gateway of Company A is 192.168.10.1. The settings of company A are as the following.

Step 1. Enter the default IP of Company A's Multi-Homing Gateway, 192.168.10.1. Click VPN in the menu bar on the left hand side, and then select the sub-select IPSec Autokey. Click Add.

The screenshot shows a web browser window displaying the configuration page for a Level One Multi-homing Router. The page title is "IPSec Autokey". On the left side, there is a vertical navigation menu with the following items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, IPsec Autokey (highlighted), PPTP Server, PPTP Client, Policy, Log, Alarm, Statistics, and Status. The main content area features a table with the following headers: Name, Gateway IP, Destination Subnet, Algorithm, Status, and Configure. Below the table header, there is a yellow button labeled "New Entry". The browser's status bar at the bottom shows "Done" on the left and "Internet" on the right.

Step 2. Enter the VPN name, VPN\_A in IPsec Autokey window, and choose From Source to be Internal. Fill the subnet IP, 192.168.10.0 and subnet mask, 255.255.255.0.

VPN Auto Keyed Tunnel	
Name	VPN_A
From Source	<input checked="" type="radio"/> LAN <input type="radio"/> DMZ
Use interface	<input checked="" type="radio"/> WAN1 <input type="radio"/> WAN2
Subnet / Mask	192.168.10.0 / 255.255.255.0

Step 3. In To Destination table, choose Remote Gateway-Fixed IP, enter the IP desired to be connected, company B's subnet IP and mask.

To Destination	
<input checked="" type="radio"/> Remote Gateway -- Fixed IP	211.22.22.22
Subnet / Mask	192.168.20.0 / 255.255.255.0
<input type="radio"/> Remote Gateway -- Dynamic IP	
Subnet / Mask	/ 255.255.255.0
<input type="radio"/> Remote Client -- Fixed IP or Dynamic IP	

Step 4. In Authentication Method Table, choose Preshare and enter the Preshared Key. (The max length is 100 bits.)

Authentication Method	Preshare
Preshared Key	123456789

Step 5. In Encapsulation or Authentication table, choose Aggressive mode Algorithm. For communication via VPN, we choose 3DES for ENC Algorithm and MD5 for AUTH Algorithm. And select Group 2 to connect.

Enter Local ID/ Remote ID optionally. If we choose to enter Local ID/ Remote ID, they couldn't be equal. For instance, Local ID is 11.11.11.11 and Remote ID is 22.22.22.22. Add @ before number or text, for instance, @123A and @Abcd1.

<input checked="" type="checkbox"/> Aggressive mode	
My ID	@bc123
Peer ID	11.11.11.11

Step 6. In IPsec Algorithm Table , choose Data Encryption + Authentication. We choose 3DES for ENC Algorithm and MD5 for AUTH Algorithm.

IPsec Algorithm

Data Encryption + Authentication

ENC Algorithm

AUTH Algorithm

Authentication Only

Step 7. Choose Perfect Forward Secrecy, and enter 28800 seconds in IPsec Lifetime and Keep alive IP to keep connecting.

Perfect Forward Secrecy

IPsec Lifetime  Seconds

Keep alive IP :

Step 8. Click the down arrow to select the policy of schedule, which was pre-determined in Schedule. Refer to the corresponding section for details.

Schedule

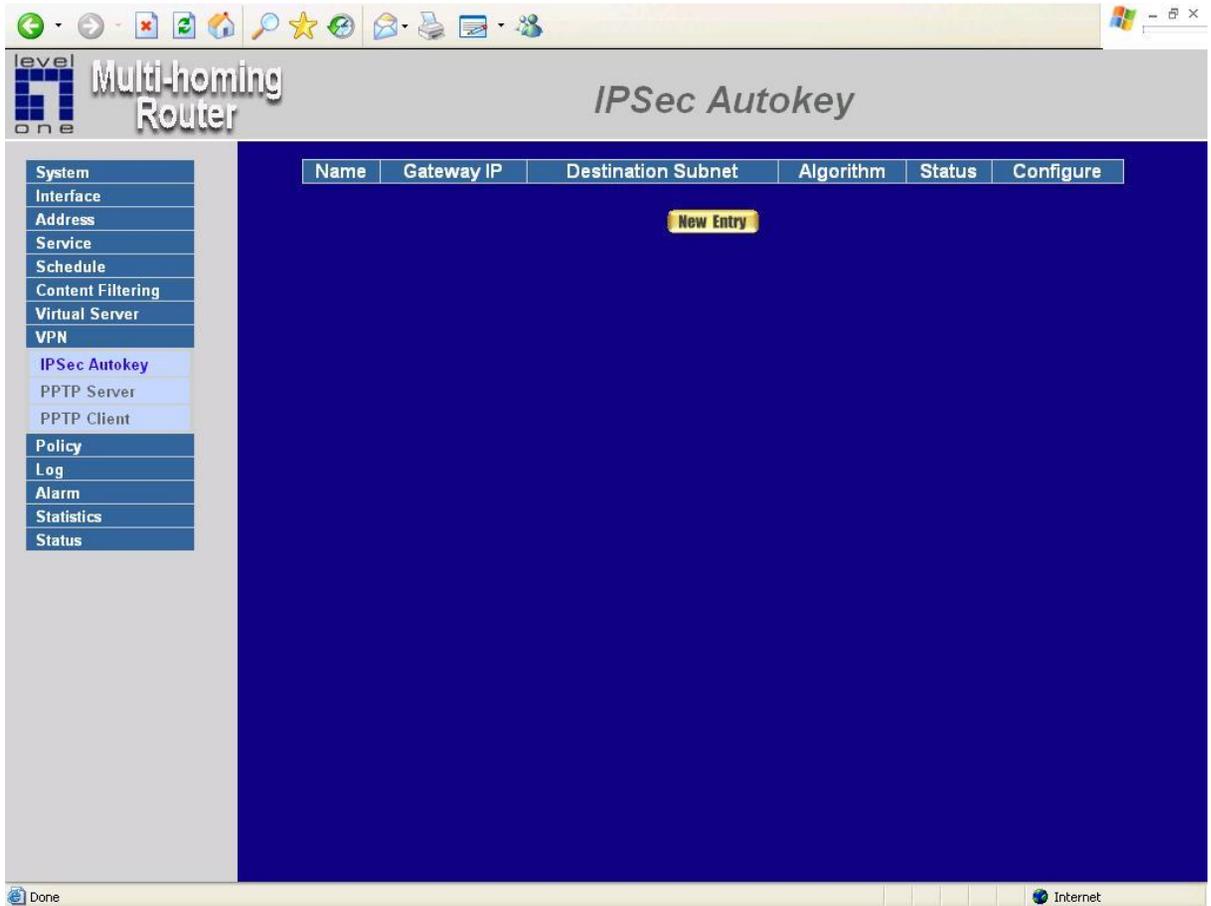
Step 9. Click OK to finish the setting of Company A.

*IPsec Autokey*

Name	Gateway IP	Destination Subnet	Algorithm	Status	Configure
VPN_A	211.22.22.22	192.168.20.0	None	Disconnect	<input type="button" value="Connecting"/> <input type="button" value="Modify"/> <input type="button" value="Remove"/>

The Gateway of Company B is 192.168.20.1. The settings of company B are as the following.

Step 1. Enter the default IP of Company B's Multi-Homing Gateway, 192.168.20.1. Click VPN in the menu bar on the left hand side, and then select the sub-select IPsec Autokey. Click Add.



Step 2. Enter the VPN name, VPN\_B in IPsec Autokey window, and choose From Source to be Internal. Fill the subnet IP, 192.168.20.0 and subnet mask, 255.255.255.0.

VPN Auto Keyed Tunnel	
Name	VPN_B
From Source	<input checked="" type="radio"/> LAN <input type="radio"/> DMZ
Use interface	<input checked="" type="radio"/> WAN1 <input type="radio"/> WAN2
Subnet / Mask	192.168.20.0 / 255.255.255.0

Step 3. In To Destination table, choose Remote Gateway-Fixed IP, enter the IP desired to be connected, company A's subnet IP and mask, 192.168.10.0 and 255.255.255.0 respectively.

To Destination	
<input checked="" type="radio"/> Remote Gateway -- Fixed IP	61.11.11.11
Subnet / Mask	192.168.10.0 / 255.255.255.0
<input type="radio"/> Remote Gateway -- Dynamic IP	
Subnet / Mask	/ 255.255.255.0
<input type="radio"/> Remote Client -- Fixed IP or Dynamic IP	

Step 4. In Authentication Method Table, choose Preshare and enter the Preshared Key. ( The max length is 100 bits.)

Authentication Method	Preshare
Preshared Key	123456789

Step 5. In Encapsulation or Authentication table, choose ISAKMP Algorithm. For communication via VPN, we choose 3DES for ENC Algorithm and MD5 for AUTH Algorithm. And select Group 2 to connect.

Enter Local ID/ Remote ID optionally. If we choose to enter Local ID/ Remote ID, they couldn't be equal. For instance, Local ID is 11.11.11.11 and Remote ID is 22.22.22.22. Add @ before number or text, for instance, @123A and @Abcd1.

<input checked="" type="checkbox"/> Aggressive mode	
My ID	11.11.11.11
Peer ID	@bc123

Step 6. In IPsec Algorithm Table , choose Data Encryption + Authentication. We choose 3DES for ENC Algorithm and MD5 for AUTH Algorithm.

IPsec Algorithm

Data Encryption + Authentication

ENC Algorithm

AUTH Algorithm

Authentication Only

Step 7. Choose Perfect Forward Secrecy, and enter 28800 seconds in IPsec Lifetime and Keep alive IP to keep connecting.

Perfect Forward Secrecy

IPsec Lifetime  Seconds

Keep alive IP :

Step 8. Click the down arrow to select the policy of schedule, which was pre-determined in Schedule. Refer to the corresponding section for details.

Schedule

Step 9. Click OK to finish the setting of Company B.

*IPsec Autokey*

Name	Gateway IP	Destination Subnet	Algorithm	Status	Configure
VPN_B	61.11.11.11	192.168.10.0	None	Disconnect	<input type="button" value="Connecting"/> <input type="button" value="Modify"/> <input type="button" value="Remove"/>

**Example 4.** Create a VPN connection between two Multi-Homing Gateway using ISAKMP Algorithm (3DES and MD5), data encryption for IPSec Algorithm (3DES and MD5) and GRE.

Preparation Task:

Company A External IP is 61.11.11.11

Internal IP is 192.168.10.X

Company B External IP is 211.22.22.22

Internal IP is 192.168.20.X

To suppose Company A, 192.168.10.100 create a VPN connection with company B, 192.168.20.100 for downloading the sharing file by GRE/ IPSec Algorithm.

The Gateway of Company A is 192.168.10.1. The settings of company A are as the following.

Step 1. Enter the default IP of Company A's Multi-Homing Gateway, 192.168.10.1. Click VPN in the menu bar on the left hand side, and then select the sub-select IPSec Autokey. Click Add.

The screenshot shows a web browser window displaying the configuration page for a Level One Multi-homing Router. The page title is "IPSec Autokey". On the left side, there is a vertical navigation menu with the following items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, IPsec Autokey (highlighted), PPTP Server, PPTP Client, Policy, Log, Alarm, Statistics, and Status. The main content area features a table with the following headers: Name, Gateway IP, Destination Subnet, Algorithm, Status, and Configure. Below the table header, there is a yellow button labeled "New Entry". The browser's status bar at the bottom shows "Done" on the left and "Internet" on the right.

Step 2. Enter the VPN name, VPN\_A in IPsec Autokey window, and choose From Source to be Internal. Fill the subnet IP, 192.168.10.0 and subnet mask, 255.255.255.0.

VPN Auto Keyed Tunnel	
Name	VPN_A
From Source	<input checked="" type="radio"/> LAN <input type="radio"/> DMZ
Use interface	<input checked="" type="radio"/> WAN1 <input type="radio"/> WAN2
Subnet / Mask	192.168.10.0 / 255.255.255.0

Step 3. In To Destination table, choose Remote Gateway-Fixed IP, enter the IP desired to be connected, company B's subnet IP and mask.

To Destination	
<input checked="" type="radio"/> Remote Gateway -- Fixed IP	211.22.22.22
Subnet / Mask	192.168.20.0 / 255.255.255.0
<input type="radio"/> Remote Gateway -- Dynamic IP	
Subnet / Mask	/ 255.255.255.0
<input type="radio"/> Remote Client -- Fixed IP or Dynamic IP	

Step 4. In Authentication Method Table, choose Preshare and enter the Preshared Key. (The max length is 100 bits.)

Authentication Method	Preshare
Preshared Key	123456789

Step 5. In Encapsulation or Authentication table, choose ISAKMP Algorithm. For communication via VPN, we choose 3DES for ENC Algorithm and MD5 for AUTH Algorithm. And select Group to connect.

Encapsulation	
ISAKMP Algorithm	
ENC Algorithm	3DES
AUTH Algorithm	MD5
Group	GROUP 1

Step 6. Choose GRE/ IPsec and enter GRE Source IP, 192.168.50.100 and GRE Remote IP, 192.168.50.200.

Note. The Source IP and Remote IP should be in the same C Class and modified by Administrator.

<input checked="" type="checkbox"/> GRE/IPsec	
GRE Local IP	192.168.50.200
GRE Remote IP	192.168.50.100

Step 7. In IPsec Algorithm Table , choose Data Encryption + Authentication. We choose 3DES for ENC Algorithm and MD5 for AUTH Algorithm.

IPsec Algorithm	
<input checked="" type="radio"/> Data Encryption + Authentication	
ENC Algorithm	3DES
AUTH Algorithm	MD5
<input type="radio"/> Authentication Only	

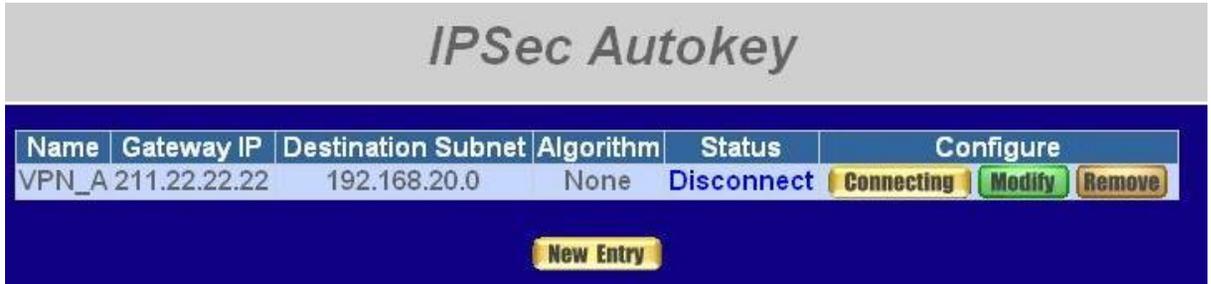
Step 8. Choose Perfect Forward Secrecy, and enter 28800 seconds in IPsec Lifetime and Keep alive IP to keep connecting.

<input checked="" type="checkbox"/> Perfect Forward Secrecy		
IPsec Lifetime	28800	Seconds
Keep alive IP :	192.168.20.100	

Step 9. Click the down arrow to select the policy of schedule, which was pre-determined in Schedule. Refer to the corresponding section for details.

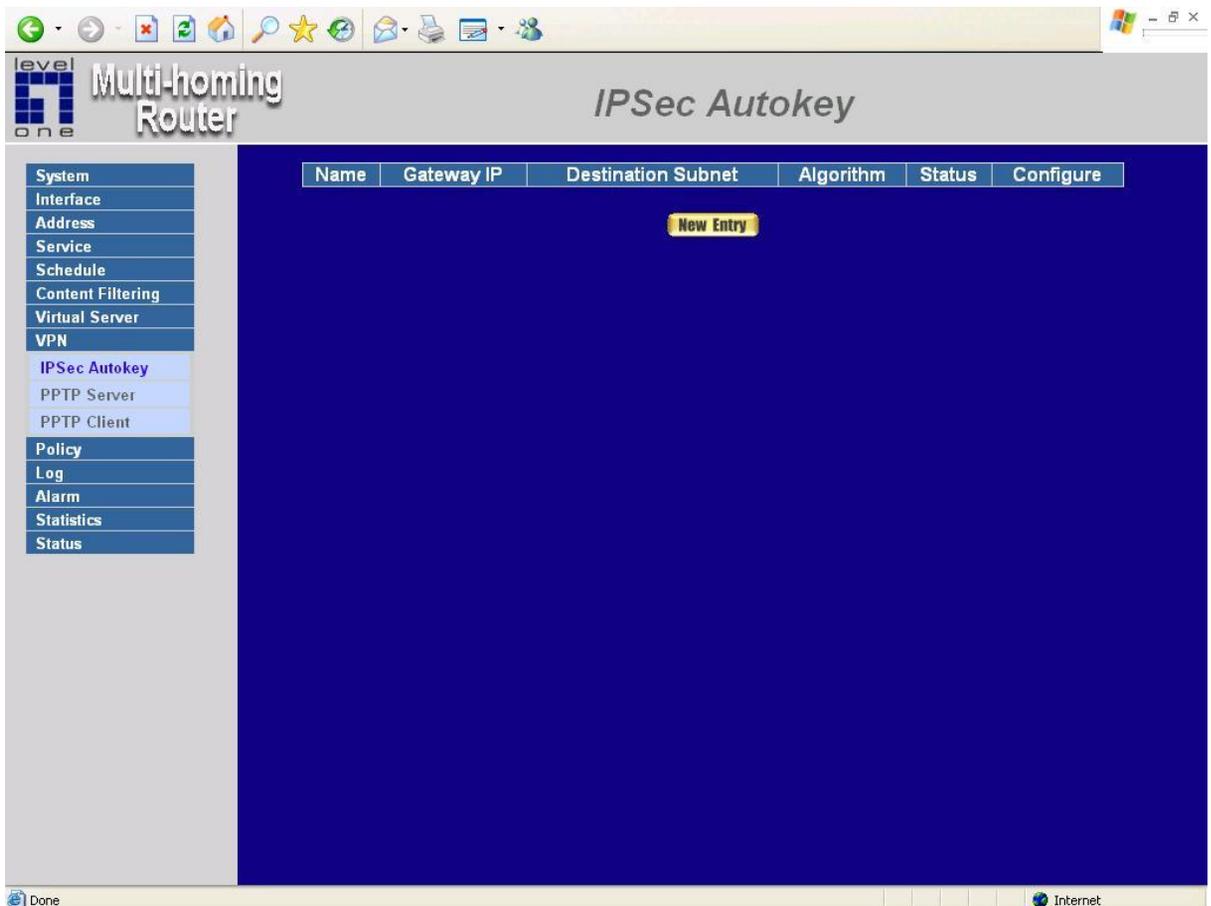
Schedule	None
----------	------

Step 10. Click OK to finish the setting of Company A.



The Gateway of Company B is 192.168.20.1. The settings of company B are as the following.

Step 1. Enter the default IP of Company B's Multi-Homing Gateway, 192.168.20.1. Click VPN in the menu bar on the left hand side, and then select the sub-select IPsec Autokey. Click Add.



Step 2. Enter the VPN name, VPN\_B in IPsec Autokey window, and choose From Source to be Internal. Fill the subnet IP, 192.168.20.0 and subnet mask, 255.255.255.0.

VPN Auto Keyed Tunnel	
Name	VPN_B
From Source	<input checked="" type="radio"/> LAN <input type="radio"/> DMZ
Use interface	<input checked="" type="radio"/> WAN1 <input type="radio"/> WAN2
Subnet / Mask	192.168.20.0 / 255.255.255.0

Step 3. In To Destination table, choose Remote Gateway-Fixed IP, enter the IP desired to be connected, company A's subnet IP and mask, 192.168.10.0 and 255.255.255.0 respectively.

To Destination	
<input checked="" type="radio"/> Remote Gateway -- Fixed IP	61.11.11.11
Subnet / Mask	192.168.10.0 / 255.255.255.0
<input type="radio"/> Remote Gateway -- Dynamic IP	
Subnet / Mask	/ 255.255.255.0
<input type="radio"/> Remote Client -- Fixed IP or Dynamic IP	

Step 4. In Authentication Method Table, choose Preshare and enter the Preshared Key. (The max length is 100 bits.)

Authentication Method	Preshare
Preshared Key	123456789

Step 5. In Encapsulation or Authentication table, choose ISAKMP Algorithm. For communication via VPN, we choose 3DES for ENC Algorithm and MD5 for AUTH Algorithm. And select Group 1 to connect.

Encapsulation	
ISAKMP Algorithm	
ENC Algorithm	3DES
AUTH Algorithm	MD5
Group	GROUP 1

Step 6. Choose GRE/ IPsec and enter GRE Source IP, 192.168.50.200 and GRE Remote IP, 192.168.50.100.

Note. The Source IP and Remote IP should be in the same C Class and modified by Administrator.

<input checked="" type="checkbox"/> GRE/IPsec	
GRE Local IP	192.168.50.200
GRE Remote IP	192.168.50.100

Step 6. In IPsec Algorithm Table , choose Data Encryption + Authentication. We choose 3DES for ENC Algorithm and MD5 for AUTH Algorithm.

IPsec Algorithm	
<input checked="" type="radio"/> Data Encryption + Authentication	
ENC Algorithm	3DES
AUTH Algorithm	MD5
<input type="radio"/> Authentication Only	

Step 7. Choose Perfect Forward Secrecy, and enter 28800 seconds in IPsec Lifetime and Keep alive IP to keep connecting.

<input checked="" type="checkbox"/> Perfect Forward Secrecy	
IPsec Lifetime	28800 Seconds
Keep alive IP :	192.168.10.100

Step 8. Click the down arrow to select the policy of schedule, which was pre-determined in Schedule. Refer to the corresponding section for details.

Schedule	None
----------	------

Step 9. Click OK to finish the setting of Company B.

## IPSec Autokey

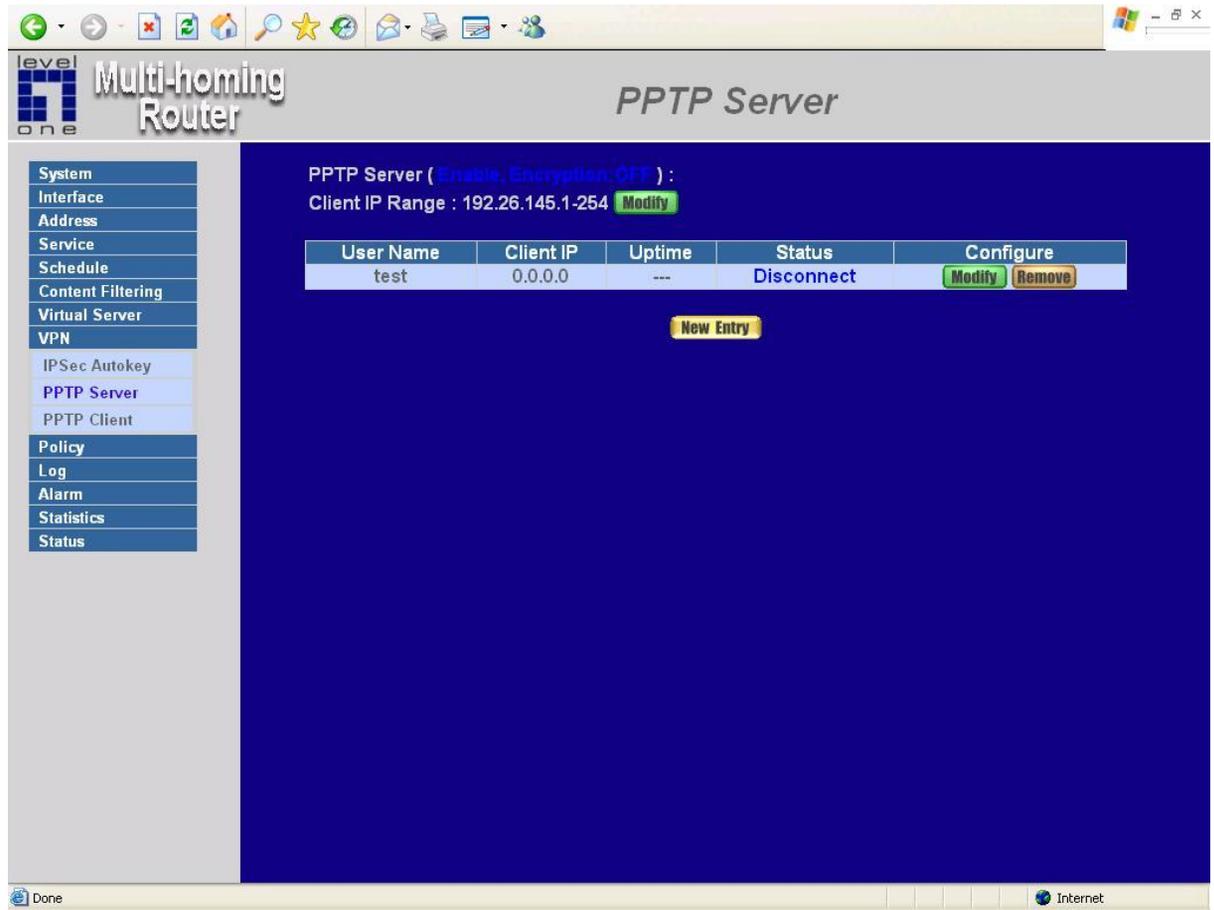
Name	Gateway IP	Destination Subnet	Algorithm	Status	Configure		
VPN_B	61.11.11.11	192.168.10.0	None	Disconnect	Connecting	Modify	Remove

**New Entry**

# PPTP Server

## Entering the PPTP Server window

**Step 1.** Select VPN→PPTP Server.



- **PPTP Server** : Click [Modify](#) to select Enable or Disable.
- **Client IP Range**: [192.26.145.1-254](#): Display the IP addresses range for PPTP Client connection.
- **User Name** : Displays the PPTP Client user's name for authentication.
- **Client IP** : Displays the PPTP Client's IP address for authentication. °
- **Uptime** : Displays the connection time between PPTP Server and Client.
- **Status** : Displays current connection status between PPTP Server and PPTP client.

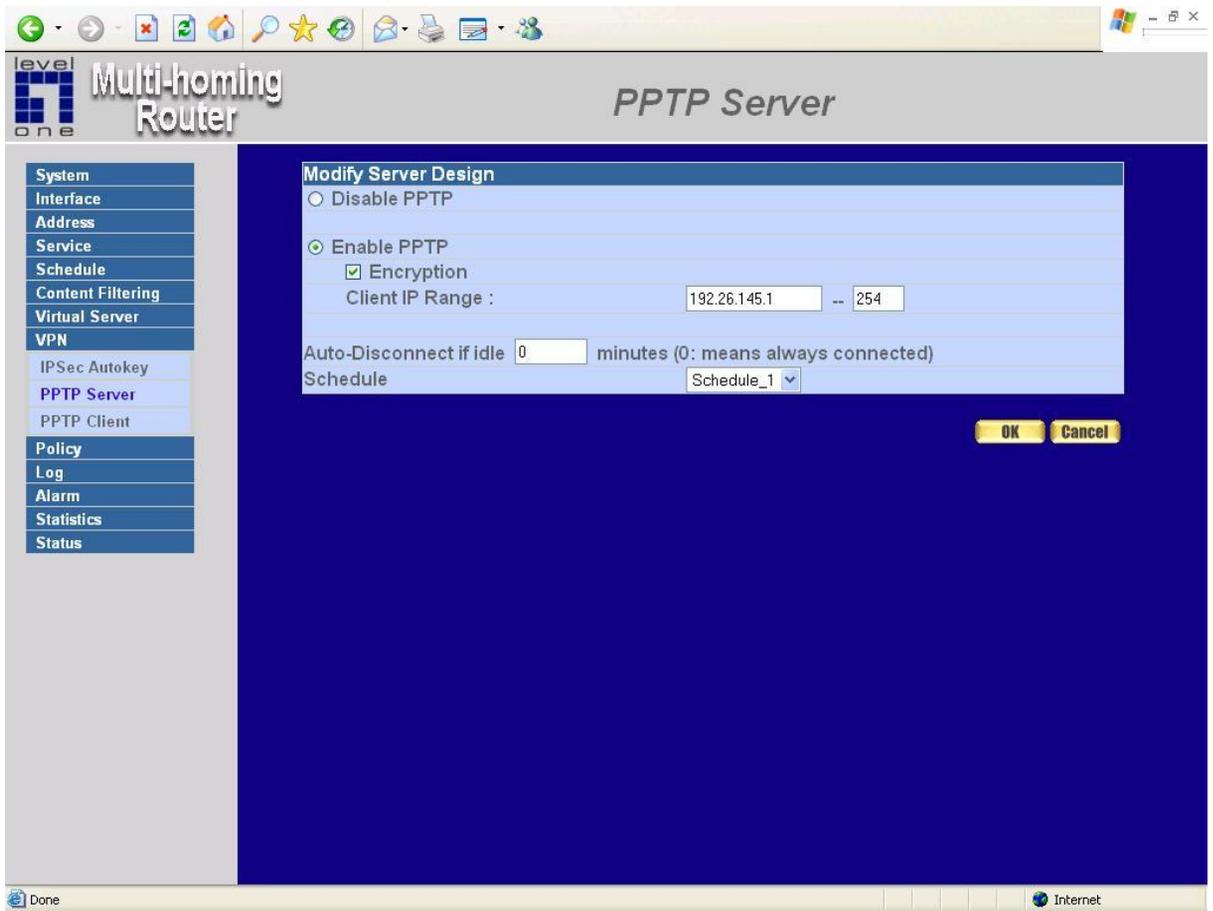
- **Configure** : Click **【Modify】** to modify the PPTP Client settings or click **【Remove】** to remove the item.

## Modifying PPTP Server Design

**Step 1.** Select VPN→PPTP Server.

**Step 2.** Click **【Modify】** after the Client IP Range.

**Step 3.** In the **【Modify Server Design】** Window, enter appropriate settings.



- **Disable PPTP** : Check to disable PPTP Server.
- **Enable PPTP** : Check to enable PPTP Server.
  - 1.Encryption: the default is set to disabled.
  - 2.Client IP Range : Enter the IP range allocated for PPTP Client to connect to

the PPTP server.

- **Auto-Disconnect if idle**  **minutes**: Configure this device to disconnect to the PPTP Server when there is no activity for a predetermined period of time. To keep the line always connected, set the number to 0.
- **Schedule** : Click the down arrow to select the schedule, which was pre-determined in Schedule. Refer to the corresponding section for details.

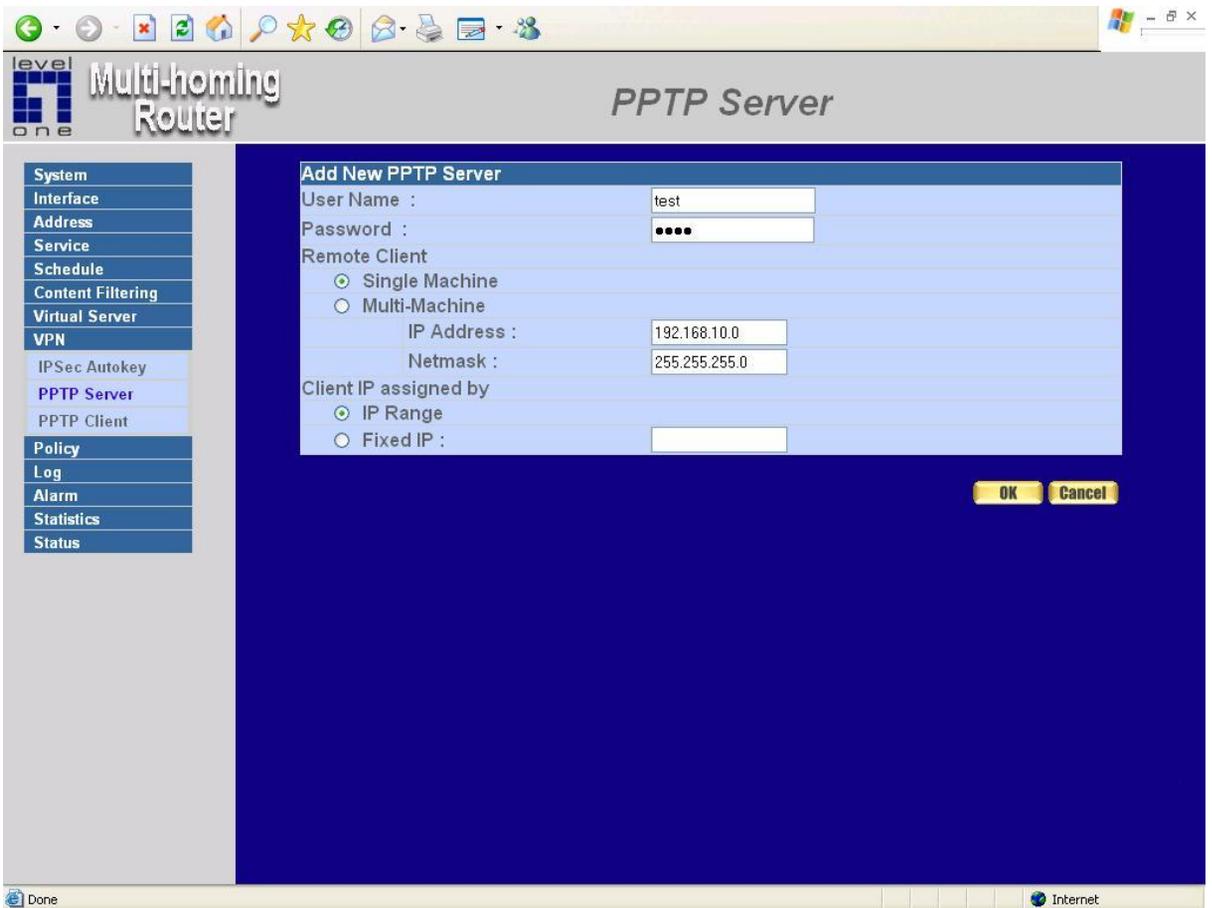
**Step 4.** Click **OK** to save modifications or click **Cancel** to cancel modifications

## Adding PPTP Server

**Step 1.** Select **VPN**→**PPTP Server**. Click **NewEntry**.

**Step 2.** Enter appropriate settings in the following window.

- User name: Specify the PPTP client. This should be unique.
  - Password: Specify the PPTP client password.
  - Remote Client :
    - Single Machine: Check to connect to single computer.
    - Multi-Machine: Check to allow multiple computers connected to the PPTP server.
- IP Address: Enter the PPTP Client IP address.
- Netmask: Enter the PPTP Client Sub net mask.
- Client IP assigned by :
    1. IP Range: check to enable auto-allocating IP for PPTP client to connect.
    2. Fixed IP: check and enter a fixed IP for PPTP client to connect.



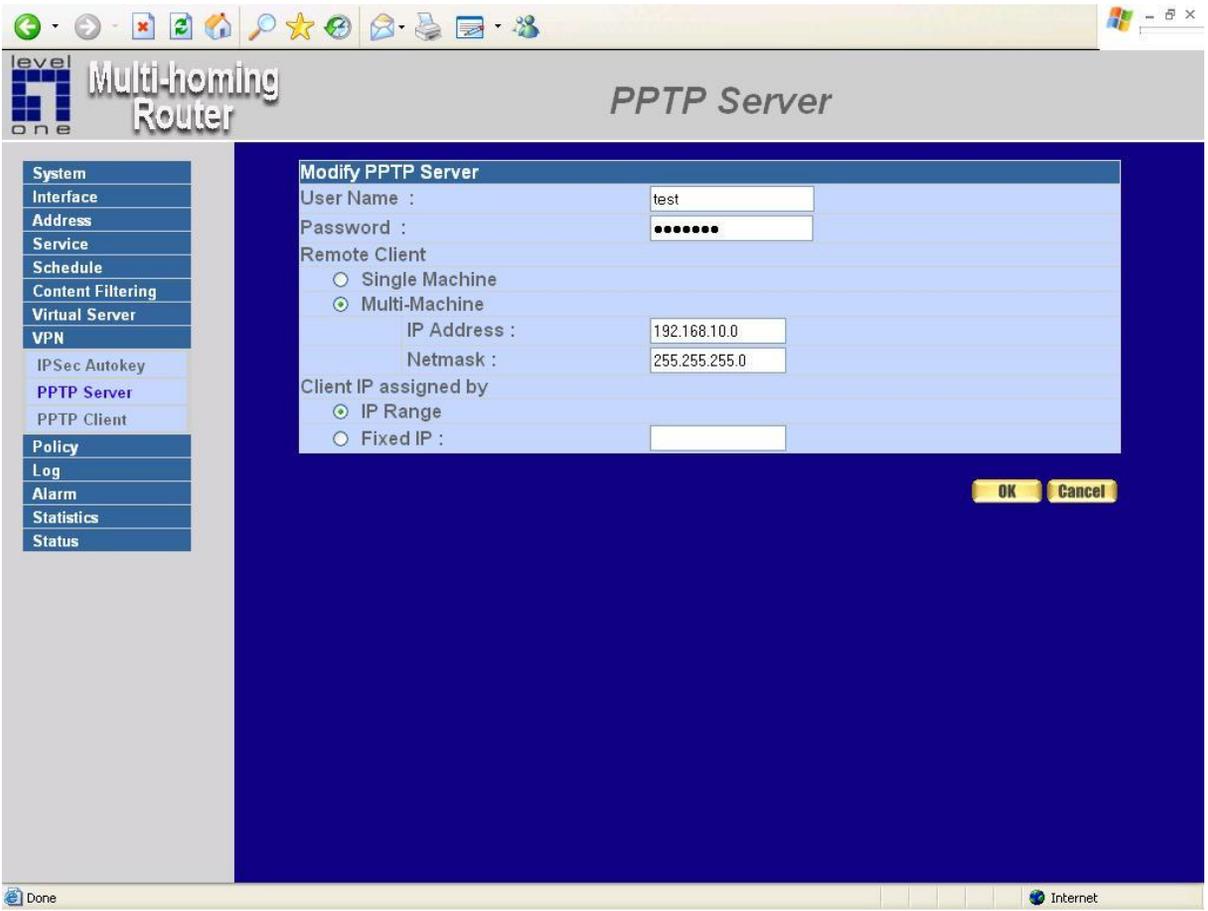
**Step 3.** Click **OK** to save modifications or click **Cancel** to cancel modifications

## Modifying PPTP Server

**Step 1.** Select VPN→PPTP Server.

**Step 2.** In the 【PPTP Server】 window, find the PPTP server that you want to modify. Click 【Configure】 and click 【Modify】 .

**Step 3.** Enter appropriate settings.



**Step 4.** Click OK to save modifications or click **Cancel** to cancel modifications

## Removing PPTP Server

**Step 1.** Select VPN→PPTP Server.

**Step 2.** In the [PPTP Server] window, find the PPTP server that you want to modify. Click [Configure] and click [remove] .

**Step 3.** Click OK to remove the PPTP server or click Cancel to exit without removal.

The screenshot shows the 'PPTP Server' configuration page in a web browser. The browser's address bar shows the URL: `http://192.168.1.1/cgi-bin/pptp.cgi?type=PPTP&num=0&id=Server&pptp_type=5&ui=Server&modify=Delete`. The page title is 'PPTP Server'. On the left, there is a navigation menu with options like System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, IPsec Autokey, PPTP Server, PPTP Client, Policy, Log, Alarm, Statistics, and Status. The main content area shows 'PPTP Server ( Enable Encryption: ON ) : Client IP Range : 192.26.145.1-254'. Below this is a table with the following data:

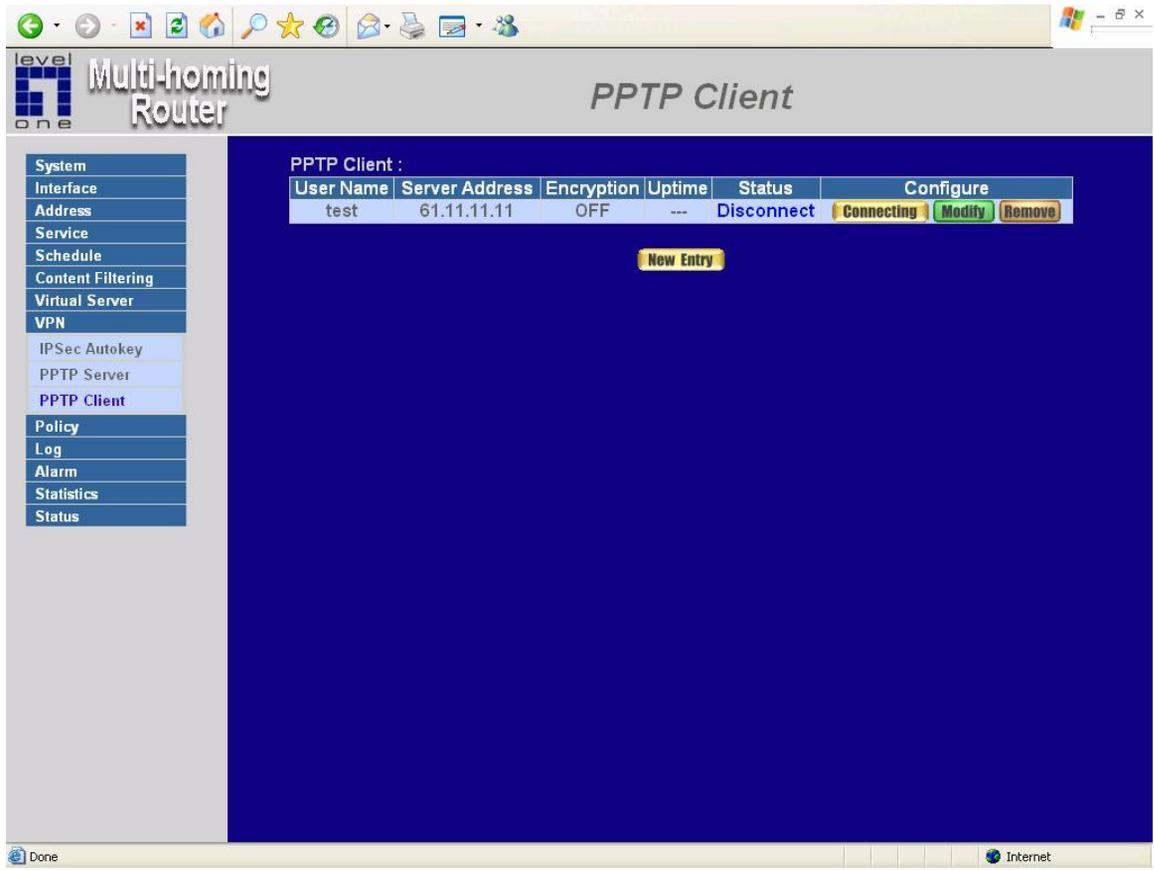
User Name	Client IP	Uptime	Status	Configure
test	0.0.0.0	---	Disconnect	Modify Remove

Below the table is a 'New Entry' button. A dialog box titled 'Microsoft Internet Explorer' is open, asking 'Are you sure you want to remove?' with 'OK' and 'Cancel' buttons.

# PPTP Client

## Entering the PPTP Client window

**Step 1.** Select VPN→PPTP Client.

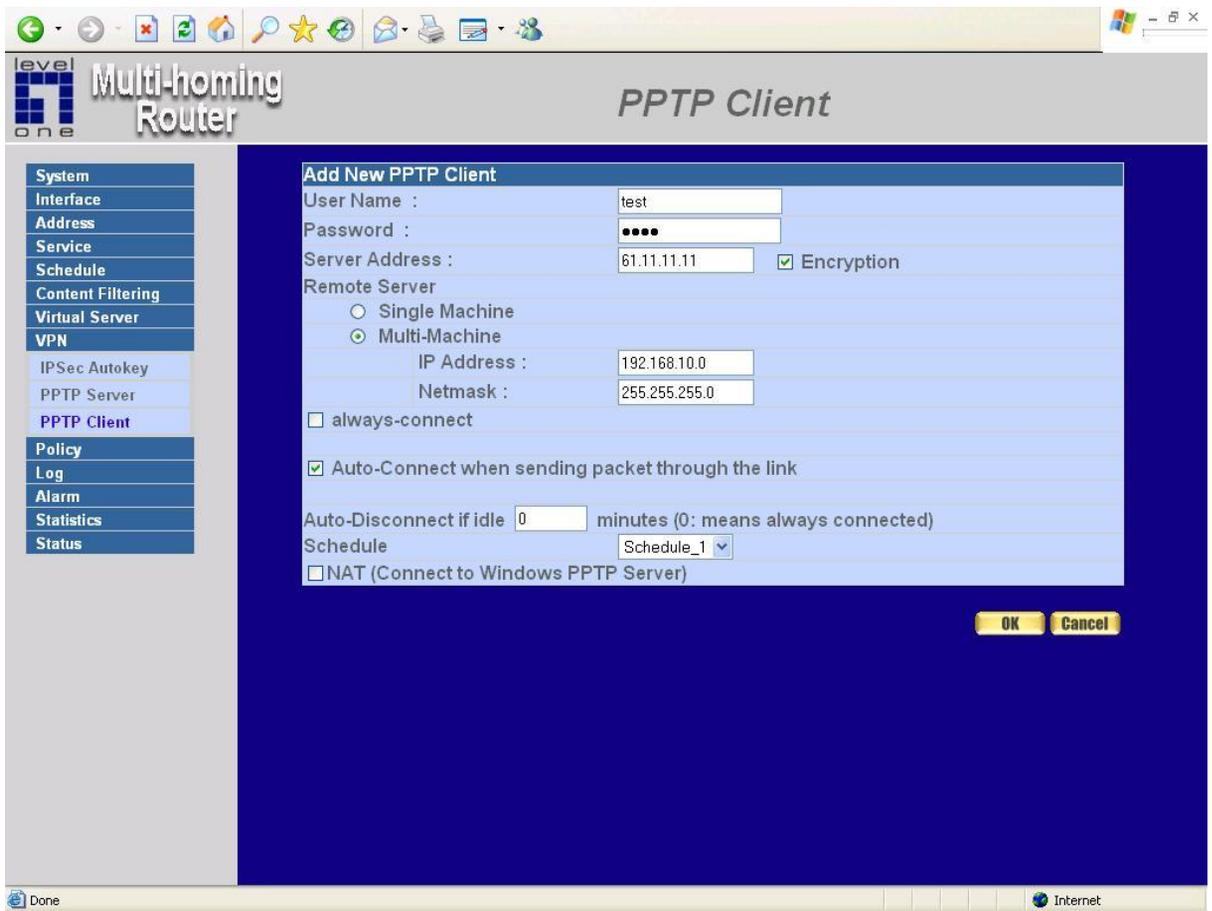


- **Server Address** : Display the PPTP Server IP addresses..
- **User Name** : Displays the PPTP Client user's name for authentication.
- **Server IP** : Displays the PPTP Server's IP address for authentication. °
- **Encryption** : Displays the PPTP Client Encryption ON or OFF
- **Uptime** : Displays the connection time between PPTP Server and Client.
- **Status** : Displays current connection status between PPTP Server and PPTP client.
- **Configure** : Click **【Modify】** to modify the PPTP Client settings or click **【Remove】** to remove the item.

# Adding a PPTP Client

## Step 1. Select VPN→PPTP Client.

- User name: Specify the PPTP client. This should be unique.
  - Password: Specify the PPTP client password.
  - Server Address: Enter the PPTP Server's IP address.
  - Encryption : Enable or Disabled the Encryption .
  - Remote Client :
    - Single Machine: Check to connect to single computer.
    - Multi-Machine: Check to allow multiple computers connected to the PPTP server.
- IP Address** : Enter the PPTP Client IP address.
- Netmask**: Enter the PPTP Client Sub net mask.



- **Auto-Connect when sending packet through the link:** Check to enable the auto-connection whenever there's packet to transmit over the connection.
- **Auto-Disconnect if idle  minutes:** Configure this device to disconnect to the PPTP Server when there is no activity for a predetermined period of time. To keep the line always connected, set the number to 0.
- **Schedule :** Click the down arrow to select the schedule, which was pre-determined in Schedule. Refer to the corresponding section for details.

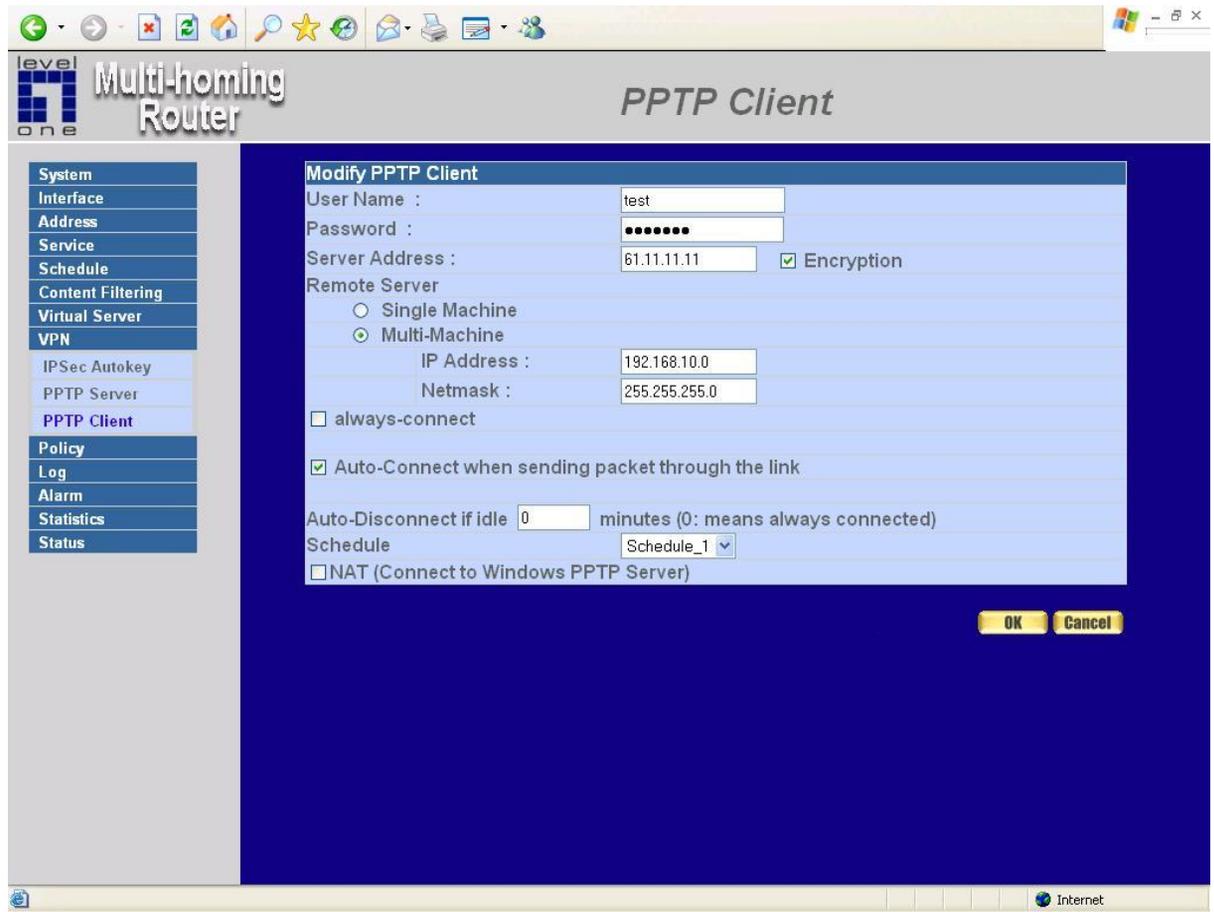
**Step 4.** Click **OK** to save modifications or click **Cancel** to cancel modifications.

## Modifying PPTP Client

**Step 1.** Select VPN→PPTP Client.

**Step 2.** In the 【PPTP Client】 window, find the PPTP server that you want to modify. Click 【Configure】 and click 【Modify】 .

**Step 3.** Enter appropriate settings.



**Step 4.** Click OK to save modifications or click **Cancel** to cancel modifications

## Removing PPTP Client

**Step 1.** Select VPN→PPTP Client.

**Step 2.** In the **[ PPTP Client ]** window, find the PPTP client that you want to modify. Click **[ Configure ]** and click **[ remove ]** .

**Step 3.** Click **OK** to remove the PPTP client or click **Cancel** to exit without removal.

The screenshot shows the 'Multi-homing Router' web interface. The left sidebar contains a menu with the following items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, IPsec Autokey, PPTP Server, PPTP Client (highlighted), Policy, Log, Alarm, Statistics, and Status. The main content area is titled 'PPTP Client' and displays a table of clients. The table has columns for User Name, Server Address, Encryption, Uptime, Status, and Configure. A single client is listed with User Name 'test', Server Address '61.11.11.11', Encryption 'ON', Uptime '---', and Status 'Disconnect'. The 'Configure' column for this client contains three buttons: 'Connecting', 'Modify', and 'Remove'. Below the table is a 'New Entry' button. A 'Microsoft Internet Explorer' dialog box is overlaid on the page, asking 'Are you sure you want to remove?' with 'OK' and 'Cancel' buttons. The browser's address bar shows the URL: http://192.168.1.1/cgi-bin/pptp.cgi?type=PPTP&num=0&id=Client&pptp\_type=6&ui=Client&modify=Delete&chainname=1105959547.

User Name	Server Address	Encryption	Uptime	Status	Configure
test	61.11.11.11	ON	---	Disconnect	Connecting Modify Remove

# Policy

This section provides the Administrator with facilities to set control policies for packets with different source IP addresses, source ports, destination IP addresses, and destination ports. Control policies decide whether packets from different network objects, network services, and applications are able to pass through the Multi-Homing Gateway.

## What is Policy?

The device uses policies to filter packets. The policy settings are: source address, destination address, services, permission, packet log, packet statistics, and flow alarm. Based on its source addresses, a packet can be categorized into:

- (1). Outgoing: a client is in the LAN networks while a server is in the WAN 1/2 networks.
- (2) Incoming, a client is in the WAN 1/2 networks, while a server is in the LAN networks.
- (3) To DMZ: a client is either in the internal networks or in the WAN networks while, server is in DMZ.
- (4) From DMZ, a client is in DMZ while server is either in the internal networks or in the WAN networks.

## How do I use Policy?

The policy settings are source addresses, destination addresses, services, permission, log, statistics, and flow alarm. Among them, source addresses, destination addresses and IP mapping addresses have to be defined in the **Address** menu in advance. Services can be used directly in setting up policies, if they are in the Pre-defined Service menu. Custom services need to be defined in the **Custom** menu before they can be used in the policy settings.

If the destination address of an incoming policy is a Mapped IP address or a Virtual Server address, then the address has to be defined in the **Virtual Server** section instead of the **Address** section.

### Policy Directions:

- Step 1.** In **Address**, set names and addresses of source networks and destination networks.
- Step 2.** In **Service**, set services.
- Step 3.** In **Virtual Server**, set names and addresses

## Outgoing

This section describes steps to create policies for packets and services from the LAN network to the WAN 1/2 network.

### Entering the Outgoing window:

Click **Policy** on the left hand side menu bar, then click **Outgoing** under it. A window will appear with a table displaying currently defined Outgoing policies.

Source	Destination	Service	Action	Option	Configure	Move
Inside_Any	Outside_Any	ANY	ANY		Modify Remove	To 1

New Entry

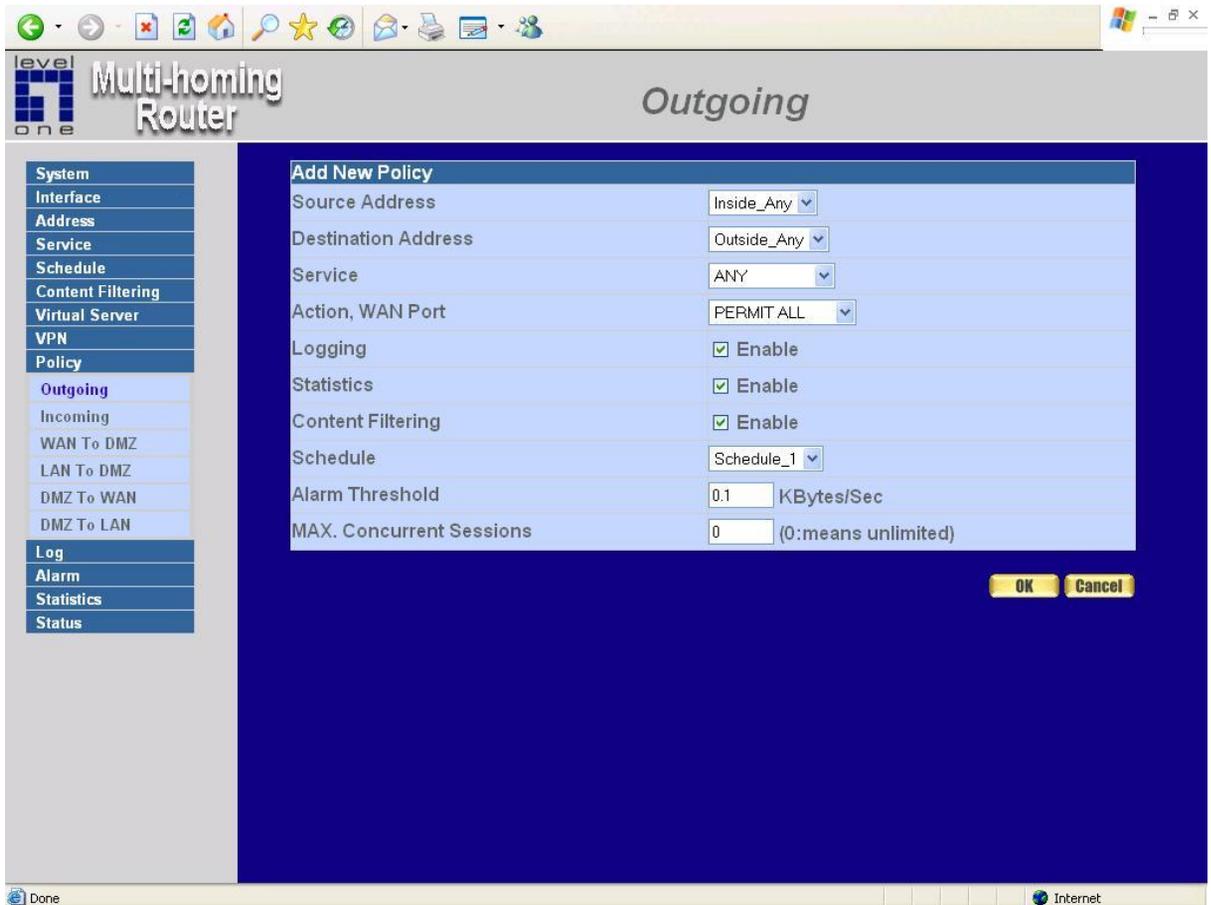
The fields in the Outgoing window are:

- **Source:** source network addresses that are specified in the LAN section of **Address** menu, or all the LAN network addresses.
- **Destination:** destination network addresses that are specified in the **WAN** section of the **Address** menu, or all of the WAN network addresses.
- **Service:** specify services provided by WAN network servers.

- **Action:** control actions to permit or deny packets from LAN networks to WAN 1/2 network travelling through the Multi-Homing Gateway.
- **Option:** specify the monitoring functions on packets from LAN networks to WAN 1/2 networks travelling through the Multi-Homing Gateway.
- **Configure:** modify settings.
- **Move:** this sets the priority of the policies, number 1 being the highest priority.

## Adding a new Outgoing Policy

**Step 1:** Click on the New Entry button and the Add New Policy window will appear.



**Step 2:**

**Source Address:** Select the name of the LAN network from the drop down list. The drop down list contains the names of all LAN networks defined in the LAN section of the **Address** menu. To create a new source address, please go to the LAN section under the **Address** menu.

**Destination Address:** Select the name of the WAN 1/2 network from the drop down list. The drop down list contains the names of all WAN 1/2 networks defined in the WAN 1/2 section of the **Address** window. To create a new destination address, please go to the WAN 1/2 section under the **Address** menu.

**Service:** Specified services provided by WAN 1/2 network servers. These are services/application that are allowed to pass from the LAN network to the WAN 1/2 network. Choose ANY for all services.

**Action:** Select Permit , Permit WAN 1 , Permit WAN 2 or Deny from the drop down list to allow or reject the packets travelling between the source network and the destination network.

**Logging:** Select Enable to enable flow monitoring.

**Statistics:** Select Enable to enable flow statistics.

**Content Filtering:** Select Enable to enable Content Filtering.

**Schedule:** Select the item listed in the schedule to enable the policy to automatically execute the function in a certain time and range.

**Alarm Threshold:** set a maximum flow rate (in Kbytes/Sec). An alarm will be sent if flow rates are higher than the specified value.

**Step 3:** Click **OK** to add a new outgoing policy; or click **Cancel** to cancel adding a new outgoing policy.

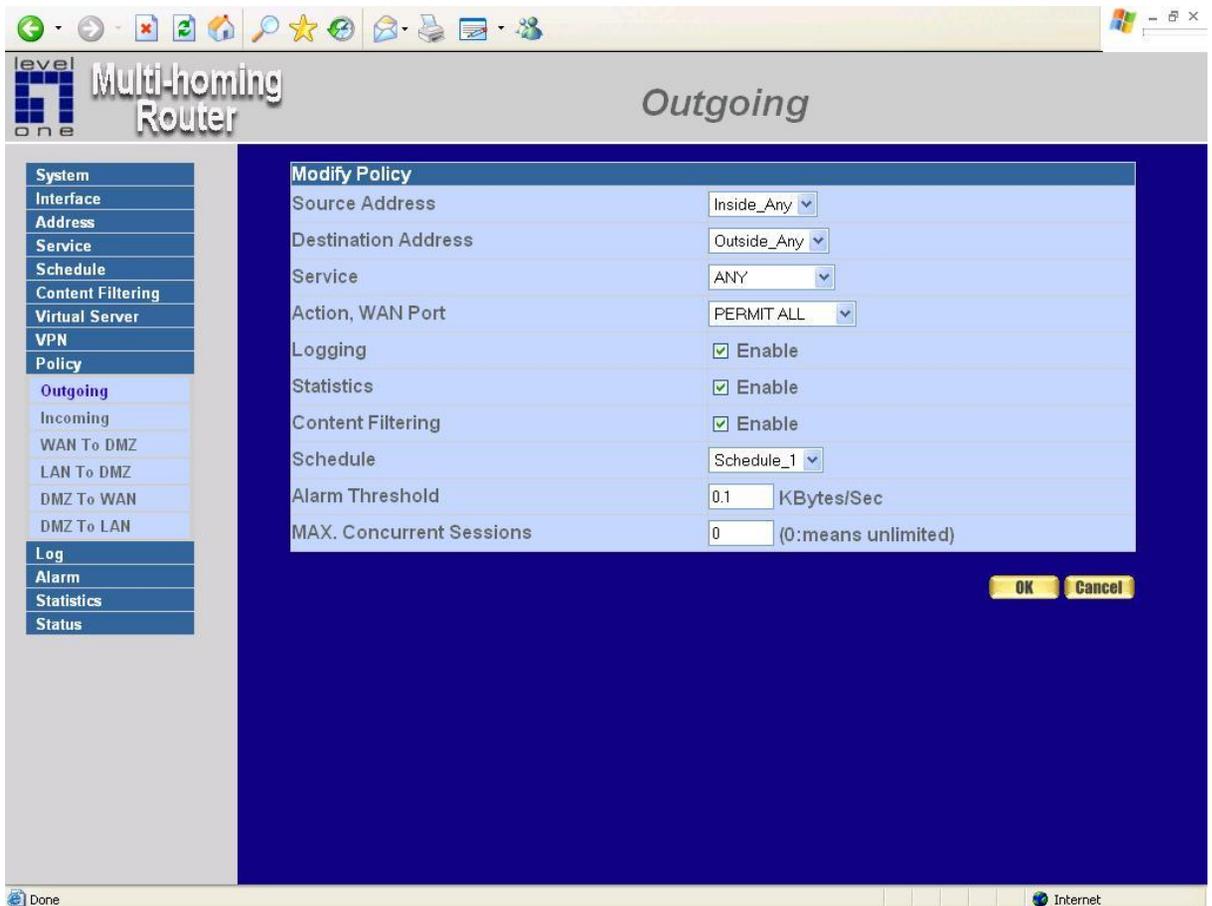
## Modifying an Outgoing policy

**Step 1:** In the **Outgoing** policy section, locate the name of the policy desired to be modified and click its corresponding Modify option under the Configure field.

**Step 2:** In the **Modify Policy** window, fill in new settings.

**Note:** To change or add selections in the drop-down list for source or destination address, go to the section where the selections are setup. (Source Address→LAN of **Address** menu; Destination Address → WAN 1 of **Address** menu; Service→ [Pre-defined],[Custom] or Group under **Service**).

**Step 3:** Click **OK** to do confirm modification or click **Cancel** to cancel it.



## Removing the Outgoing Policy

**Step 1.** In the **Outgoing** policy section, locate the name of the policy desired to be removed and click its corresponding **Remove** option in the **Configure** field.

**Step 2.** In the **Remove** confirmation dialogue box, click **OK** to remove the policy or click **Cancel** to cancel removing.

The screenshot shows a web-based configuration interface for a Multi-homing Router. The main heading is "Outgoing". On the left, there is a navigation menu with the following items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Outgoing (highlighted), Incoming, WAN To DMZ, LAN To DMZ, DMZ To WAN, DMZ To LAN, Log, Alarm, Statistics, and Status. The main content area displays a table of outgoing policies:

Source	Destination	Service	Action	Option	Configure	Move
Inside_Any	Outside_Any	ANY			<input type="button" value="Modify"/> <input type="button" value="Remove"/>	To 1

Below the table is a "New Entry" button. A confirmation dialog box from Microsoft Internet Explorer is overlaid on the screen, asking "Are you sure you want to remove?" with "OK" and "Cancel" buttons.

The browser's address bar shows the URL: <http://192.168.1.1/cgi-bin/policy.cgi?accedel=68&sq=1>

## Enabled Monitoring function:

**Log:** If Logging is enabled in the outgoing policy, the MULTI-HOMING GATEWAY will log the traffic and event passing through the Multi-Homing Gateway. The Administrator can click **Log** on the left menu bar to get the flow and event logs of the specified policy.

Multi-homing Router Traffic Log

System  
Interface  
Address  
Service  
Schedule  
Content Filtering  
Virtual Server  
VPN  
Policy  
Log  
Traffic Log  
Event Log  
Connection Log  
Log Backup  
Alarm  
Statistics  
Status

Back Jan 18 01:42:04 Next

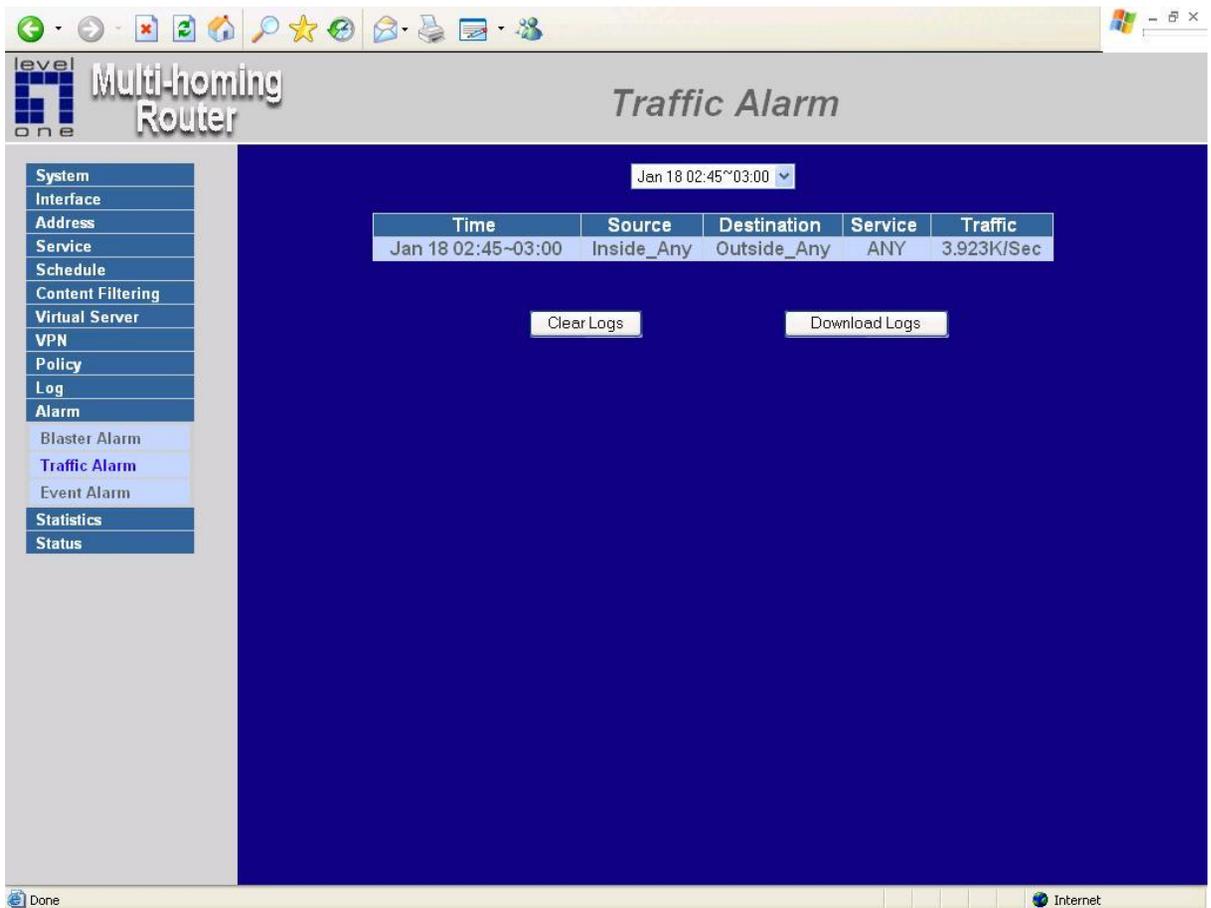
Time	Source	Destination	Protocol	Port	Disposition
Jan 18 01:42:04	192.168.1.3	192.168.1.1	TCP	1186 => 80	
Jan 18 01:42:03	192.168.1.3	192.168.1.1	TCP	1185 => 80	
Jan 18 01:40:38	192.168.1.3	192.168.1.1	TCP	1169 => 80	
Jan 18 01:40:34	192.168.1.3	192.168.1.1	TCP	1168 => 80	
Jan 18 01:09:14	61.10.7.133	218.167.16.170	TCP	22904 => 80	
Jan 18 01:09:14	61.18.109.27	218.167.16.170	ICMP	TYPE=8	
Jan 18 00:51:41	218.148.14.84	218.167.16.170	TCP	1985 => 80	
Jan 17 22:58:25	213.149.188.15	218.167.16.170	ICMP	TYPE=8	
Jan 17 18:47:20	61.229.175.201	218.167.16.170	TCP	1345 => 80	
Jan 17 18:41:10	67.95.67.178	218.167.16.170	ICMP	TYPE=8	
Jan 17 17:05:30	218.232.25.148	218.167.16.170	ICMP	TYPE=8	
Jan 17 15:42:29	68.68.0.186	218.167.16.170	TCP	3294 => 80	
Jan 17 15:33:45	61.58.123.102	218.167.13.57	TCP	3367 => 80	
Jan 17 15:30:42	61.58.123.102	218.167.13.57	TCP	3314 => 80	
Jan 17 15:27:39	61.58.123.102	218.167.13.57	TCP	3261 => 80	
Jan 17 15:24:36	61.58.123.102	218.167.13.57	TCP	3204 => 80	
Jan 17 15:21:33	61.58.123.102	218.167.13.57	TCP	3161 => 80	
Jan 17 15:18:30	61.58.123.102	218.167.13.57	TCP	3113 => 80	

Clear Logs Download Logs

Internet

**Note:** System Administrator can back up and clear logs in this window. Check **the chapter entitled "Log"** to get details about the log and ways to back up and clear logs.

**Alarm:** If Logging is enabled in the outgoing policy, the Multi-Homing Gateway will log the traffic alarms and event alarms passing through the Multi-Homing Gateway. The Administrator can click **Alarm** on the left menu to get the logs of flow and event alarms of the specified policy.



**Note:** The Administrator can also get information on alarm logs from the Alarm window. Please refer to the section entitled “**Alarm**” for more information.

**Statistics:** If Statistics is enabled in the outgoing policy, the Multi-homing Gateway will display the flow statistics passing through the Multi-Homing Gateway.

The screenshot shows the 'Interface Statistics' page of a Multi-homing Router. The left sidebar contains a navigation menu with the following items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Statistics, Interface Statistics (highlighted), Policy Statistics, and Status. The main content area displays a table with the following data:

WAN	Time					
	Minute	Hour	Day	Week	Month	Year
WAN 1						
All WAN Interface						

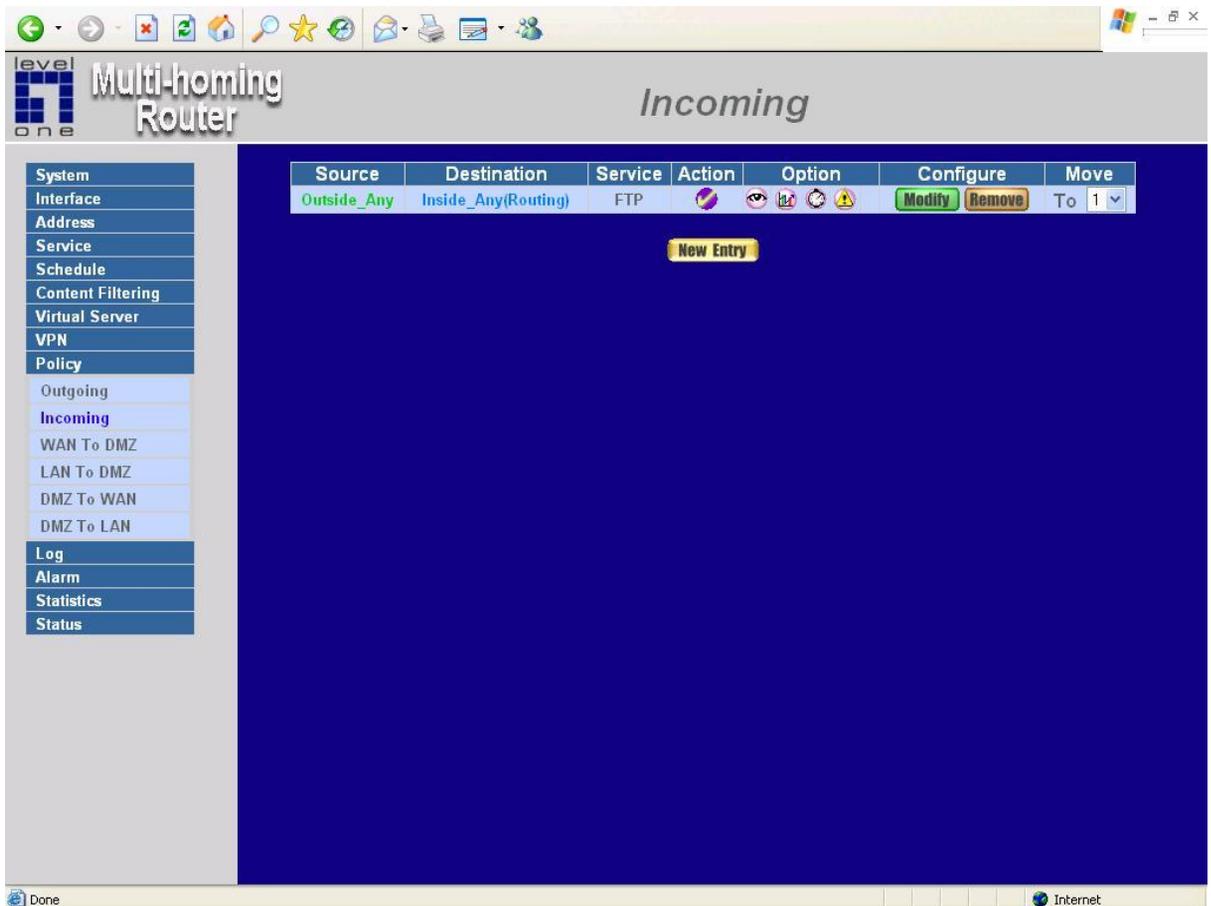
**Note:** The Administrator can also get flow statistics in **Statistics**. Please refer to **Statistics** in Chapter 11 for more details.

# Incoming

This chapter describes steps to create policies for packets and services from the WAN 1/2 network to the LAN network including Mapped IP and Virtual Server.

## Enter Incoming window

**Step 1:** Click **Incoming** under the **Policy** menu to enter the Incoming window. The Incoming table will display current defined policies from the WAN 1/2 network to assigned Mapped IP or Virtual Server.



**Step 2:** The fields of the **Incoming** window are:

- **Source:** source networks which are specified in the **WAN** section of the **Address** menu, or all the WAN network addresses.
- **Destination:** destination networks, which are IP Mapping addresses or Virtual server

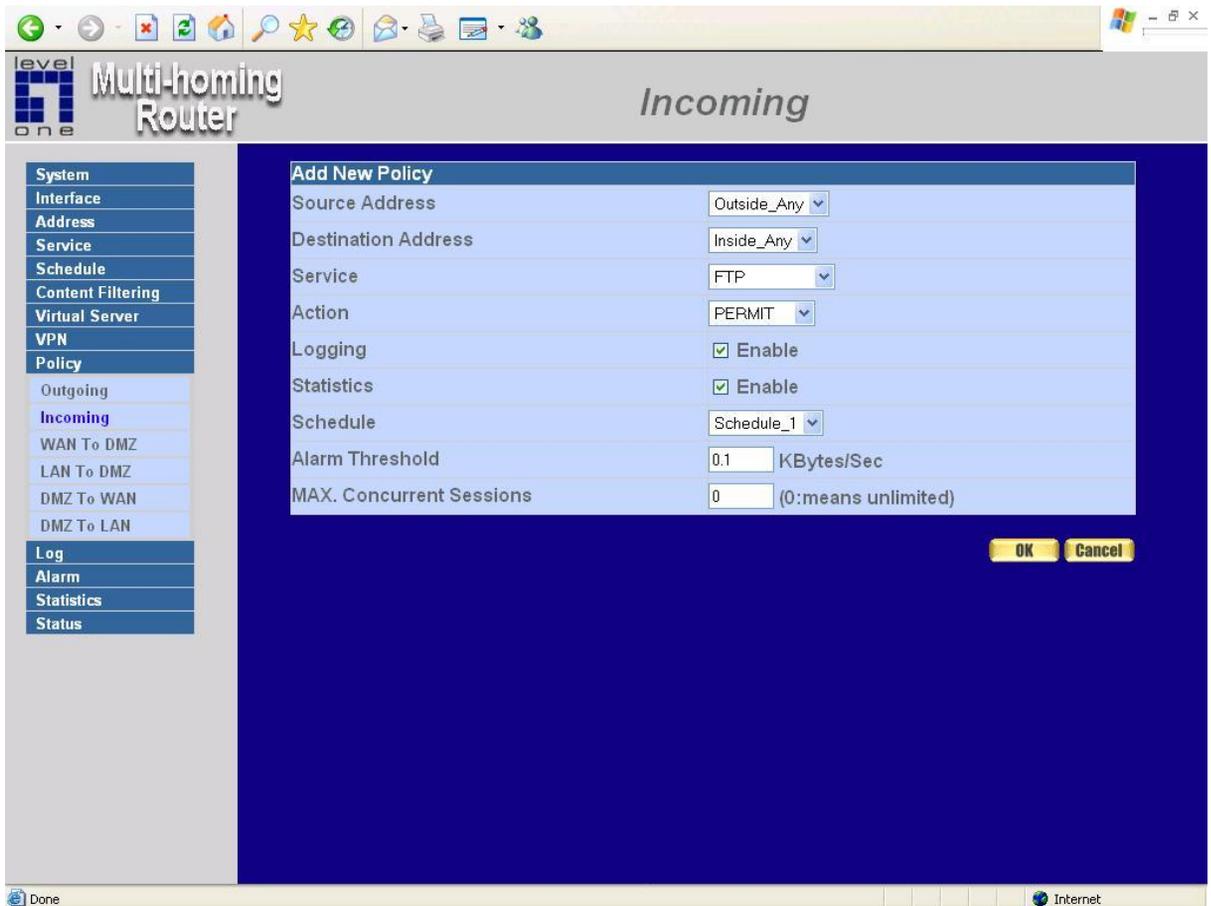
network addresses created in **Virtual Server** menu.

- **Service:** services supported by Virtual Servers (or Mapped IP).
- **Action:** control actions to permit or deny packets from WAN networks to Virtual Server/Mapped IP travelling through the device.
- **Option:** specify the monitoring functions on packets from WAN networks to Virtual Server/Mapped IP travelling through the Multi-Homing Gateway.
- **Configure:** modify settings or remove incoming policy.

**Move:** this sets the priority of the policies, number 1 being the highest priority.

# Adding an Incoming Policy

**Step 1:** Under **Incoming** of the **Policy** menu, click the New Entry button.



**Step 2:**

**Source Address:** Select names of the WAN networks from the drop down list. The drop down list contains the names of all WAN networks defined in the **WAN** section of the **Address** menu. To create a new source address, please go to the LAN section under the **Address** menu.

**Destination Address:** Select names of the LAN networks from the drop down list. The drop down list contains the names of IP mapping addresses specified in the **Mapped IP** or the **Virtual Server** sections of **Virtual Server** menu. To create a new destination address, please go to the **Virtual Server** menu.

**Service:** Specified services provided by LAN network servers. These are services/application that are allowed to pass from the network to the LAN network. Choose ANY for all services.

**Action:** Select Permit or Deny from the drop down list to allow or reject the packets travelling between the specified WAN network and Virtual Server/Mapped IP.

**Logging:** select Enable to enable flow monitoring.

**Statistics:** select Enable to enable flow statistics.

**Schedule:** Select the item listed in the schedule to enable the policy to automatically execute the function in a certain time and range.

**Alarm Threshold:** set a maximum flow rate (in Kbytes/Sec). An alarm will be sent if flow rates are higher than the specified value.

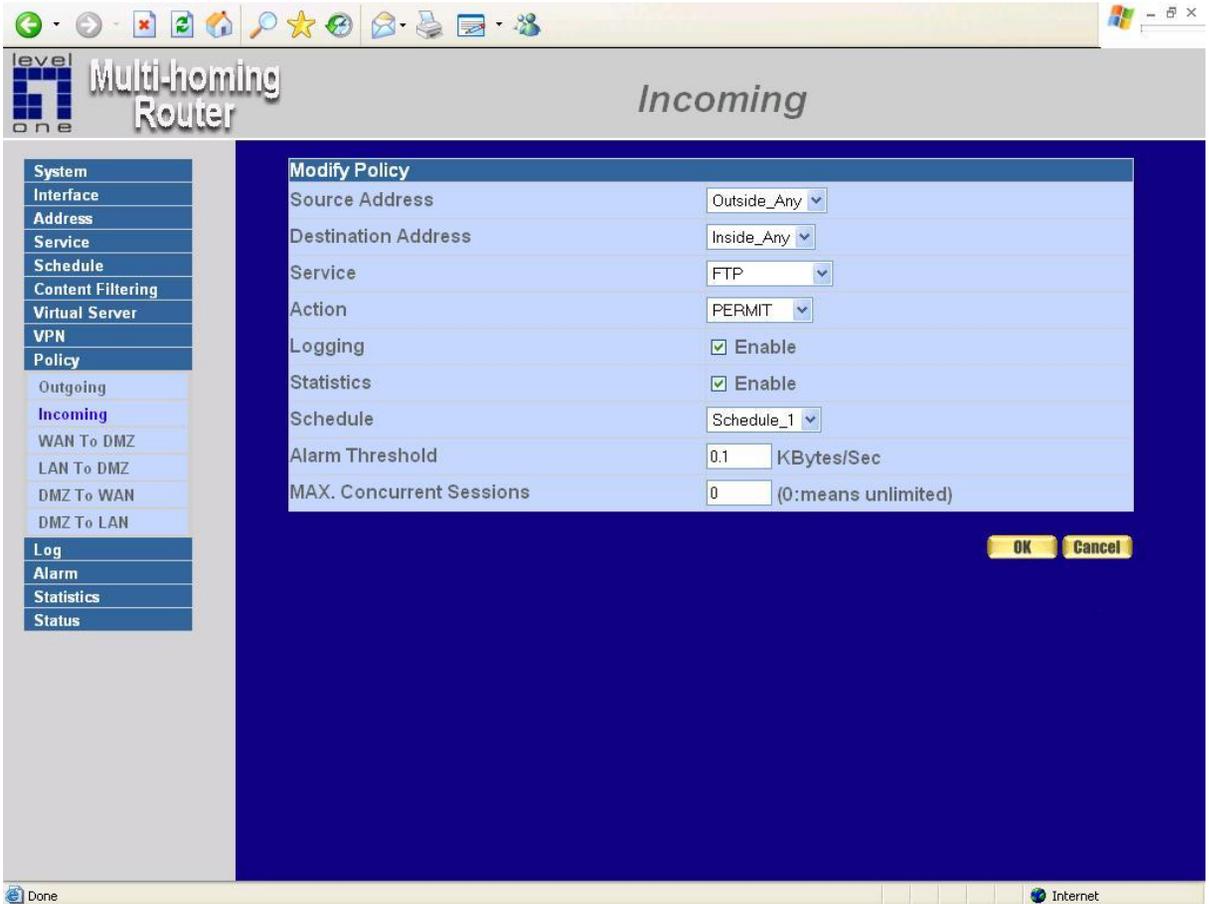
**Step 3:** Click **OK** to add new policy or click **Cancel** to cancel adding new incoming policy.

# Modifying Incoming Policy

**Step 1:** In the **Incoming** window, locate the name of policy desired to be modified and click its corresponding **Modify** option in the Configure field.

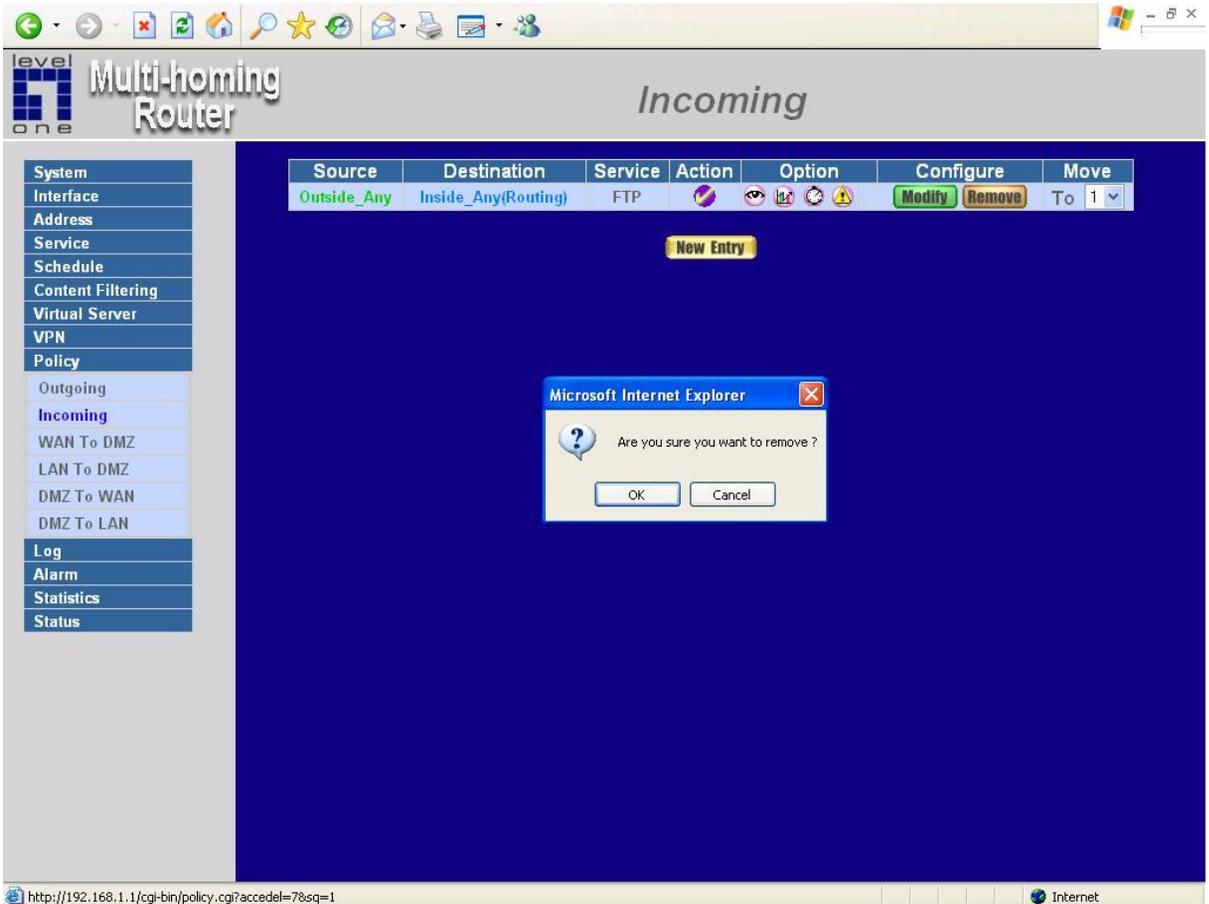
**Step 2:** In the Modify Policy window, fill in new settings.

**Step 3:** Click **OK** to save modifications or click **Cancel** to cancel modifications.



# Removing an Incoming Policy

- Step 1:** In the **Incoming** window, locate the name of policy desired to be removed and click its corresponding **[Remove]** in the Configure field.
- Step 2:** In the Remove confirmation window, click **Ok** to remove the policy or click **Cancel** to cancel removing.



## WAN To DMZ & LAN To DMZ

This section describes steps to create policies for packets and services from the WAN networks to the DMZ networks. Please follow the same procedures for LAN networks to DMZ networks.

**Enter [WAN To DMZ] or [LAN To DMZ] window:**

Click **WAN To DMZ** under **Policy** menu to enter the **WAN To DMZ** window. The WAN To DMZ table will show up displaying currently defined policies.

level  
Multi-homing  
Router

WAN To DMZ

Source	Destination	Service	Action	Option	Configure	Move
Outside_Any	Virtual Server 1 (192.168.10.176)	SMTP(25)	Deny		<a href="#">Modify</a> <a href="#">Remove</a>	To 1

[New Entry](#)

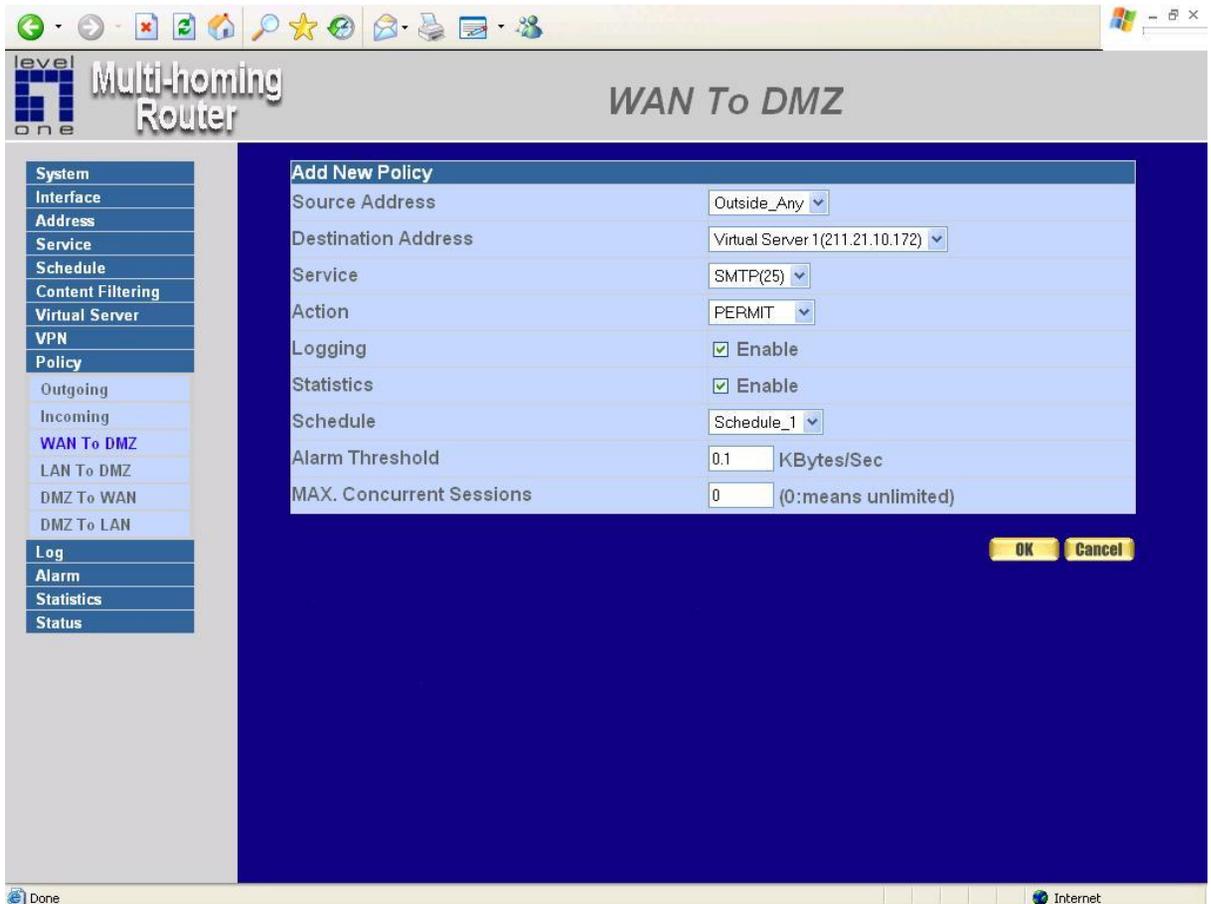
Done Internet

## The fields in WAN To DMZ window:

- **Source:** source networks, which are addresses specified in the **WAN** section of the **Address** menu, or all the WAN network addresses.
- **Destination:** destination networks, which are addresses specified in **DMZ** section of the **Address** menu and **Mapped IP** addresses of the **Virtual Server** menu.
- **Service:** services supported by servers in DMZ network.
- **Action:** control actions, to permit or deny packets from WAN networks to DMZ travelling through the Multi-Homing Gateway.
- **Option:** specify the monitoring functions of packets from WAN network to DMZ network travelling through Multi-Homing Gateway.
- **Configure:** modify settings or remove policies.

## Adding a new WAN To DMZ Policy:

**Step 1:** Click the New Entry button and the Add New Policy window will appear.



### Step 2:

**Source Address:** Select names of the WAN networks from the drop down list. The drop down list contains the names of all WAN networks defined in the **WAN** section of the **Address** menu. To create a new source address, please go to the **Internal** section under the **Address** menu.

**Destination Address:** Select the name of the DMZ network from the drop down list. The drop down list contains the names of the DMZ network created in the **Address** menu. It will also contain Mapped IP addresses from the **Virtual Server** menu that were created for the

DMZ network. To create a new destination address, please go to the **Virtual Server** menu. (Please refer to the sections entitled **Address** and **Virtual Server** for details)

**Service:** Select a service from drop down list. The drop down list will contain services defined in the **Custom** or **Group** section under the **Service** menu. These are services/application that are allowed to pass from the WAN network to the DMZ network. Choose ANY for all services. To add or modify these services, please go to the **Service** menu. (Please refer to the section entitled **Services** for details)

**Action:** Select Permit or Deny from the drop down list to allow or reject the packets travelling from the specified WAN network to the DMZ network.

**Logging:** select Enable to enable flow monitoring.

**Statistics:** select Enable to enable flow statistics.

**Schedule:** Select the item listed in the schedule to enable the policy to automatically execute the function in a certain time and range.

**Alarm Threshold:** set a maximum flow rate (in Kbytes/Sec). An alarm will be send if a flow rate exceeds the specified value.

**Step 3:** Click **OK**.

## Modifying an WAN To DMZ policy:

**Step 1:** In the **WAN To DMZ** window, locate the name of policy desired to be modified and click its corresponding **Modify** option in the **Configure** field.

**Step 2:** In the **Modify Policy** window, fill in new settings.

**Step 3:** Click **OK** to do save modifications.

The screenshot shows the 'Multi-homing Router' interface with the 'WAN To DMZ' configuration window open. The 'Modify Policy' dialog is displayed, allowing for the configuration of a specific policy. The dialog includes the following fields and options:

Modify Policy	
Source Address	Outside_Any
Destination Address	Virtual Server 1(211.21.10.172)
Service	SMTP(25)
Action	PERMIT
Logging	<input checked="" type="checkbox"/> Enable
Statistics	<input checked="" type="checkbox"/> Enable
Schedule	Schedule_1
Alarm Threshold	0.1 KBytes/Sec
MAX. Concurrent Sessions	0 (0:means unlimited)

At the bottom right of the dialog, there are 'OK' and 'Cancel' buttons. The left sidebar of the router interface shows a navigation menu with the following items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Outgoing, Incoming, WAN To DMZ (highlighted), LAN To DMZ, DMZ To WAN, DMZ To LAN, Log, Alarm, Statistics, and Status. The top of the window displays the 'level one' logo and the title 'WAN To DMZ'. The bottom status bar shows an 'Internet' connection icon.

## Removing an WAN To DMZ Policy:

**Step 1:** In the **WAN To DMZ** window, locate the name of policy desired to be removed and click its corresponding **Remove** option in the **Configure** field.

**Step 2:** In the **Remove** confirmation pop-up box, click **OK** to remove the policy.

The screenshot shows the configuration interface for a Multi-homing Router, specifically the WAN To DMZ section. The interface includes a navigation menu on the left and a main configuration area with a table of policies.

**Navigation Menu:**

- System
- Interface
- Address
- Service
- Schedule
- Content Filtering
- Virtual Server
- VPN
- Policy
- Outgoing
- Incoming
- WAN To DMZ**
- LAN To DMZ
- DMZ To WAN
- DMZ To LAN
- Log
- Alarm
- Statistics
- Status

**WAN To DMZ Table:**

Source	Destination	Service	Action	Option	Configure	Move
Outside_Any	Virtual Server 1 (219.15.18.42)	SMTP(25)			<a href="#">Modify</a> <a href="#">Remove</a>	To 1

**Confirmation Dialog Box:**

Microsoft Internet Explorer

Are you sure you want to remove ?

The browser address bar shows: <http://192.168.1.1/cgi-bin/policy.cgi?accedel=98sq=1>

## DMZ To WAN & DMZ To LAN

This section describes steps to create policies for packets and services from DMZ networks to WAN (WAN) networks. Please follow the same procedures for DMZ networks to LAN networks.

### Entering the DMZ To WAN window:

Click **DMZ To WAN** under **Policy** menu and the **DMZ To WAN** table appears displaying currently defined **DMZ To WAN** policies.

Source	Destination	Service	Action	Option	Configure	Move
DMZ_Any	Outside_Any	ANY	ANY		Modify Remove	To 1

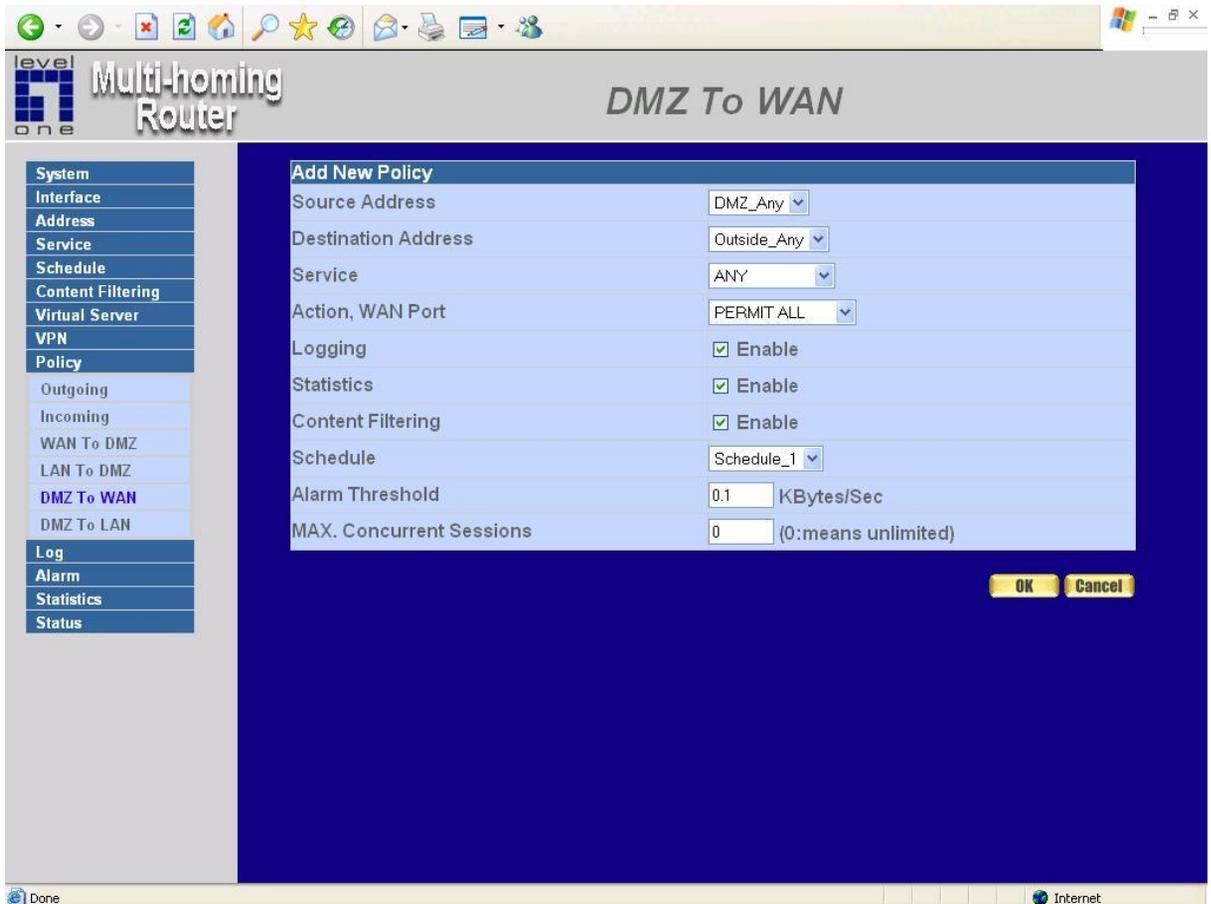
### The fields in the DMZ To WAN window are:

- **Source:** source network addresses which are specified in the **DMZ** section of the **Address** window.
- **Destination:** destination networks, which is the WAN network address
- **Service:** services supported by Servers of WAN networks.

- **Action:** control actions, to permit or deny packets from the DMZ network to WAN networks travelling through the MULTI-HOMING GATEWAY.
- **Option:** specify the monitoring functions on packets from the DMZ network to WAN networks travelling through the Multi-Homing Gateway.
- **Configure:** modify settings or remove policies
- **Move:** this sets the priority of the policies, number 1 being the highest priority.

## Adding a DMZ To WAN Policy:

**Step 1:** Click the New Entry button and the Add New Policy window will appear.



**Step 2:**

**Source Address:** Select the name of the DMZ network from the drop down list. The drop down list will contain names of DMZ networks defined in **DMZ** section of the **Address** menu. To add a new source address, please go to the **DMZ** section under the **Address** menu.

**Destination Address:** Select the name of the WAN network from the drop down list. The drop down list lists names of addresses defined in **WAN** section of the **Address** menu. To add a new destination address, please go to **WAN** section of the **Address** menu.

**Service:** Select a service from drop down list. The drop down list will contain services defined in the **Custom** or **Group** section under the **Service** menu. These are services/application that

are allowed to pass from the DMZI network to the WAN network. Choose ANY for all services. To add or modify these services, please go to the **Service** menu.

**Action:** Select Permit or Deny from the drop down list to allow or reject the packets travelling from the specified DMZ network to the WAN network.

**Logging:** Select Enable to enable flow monitoring.

**Statistics:** Select Enable to enable flow statistics.

**Content Filtering:** Select Enable to enable Content Filtering.

**Schedule:** Select the item listed in the schedule to enable the policy to automatically execute the function in a certain time and range.

**Alarm Threshold:** set a maximum flow rate (in Kbytes/Sec). An alarm will be sent if flow rates are higher than the specified value.

**Step 3:** Click **OK** to add new policy or click **Cancel** to cancel adding.

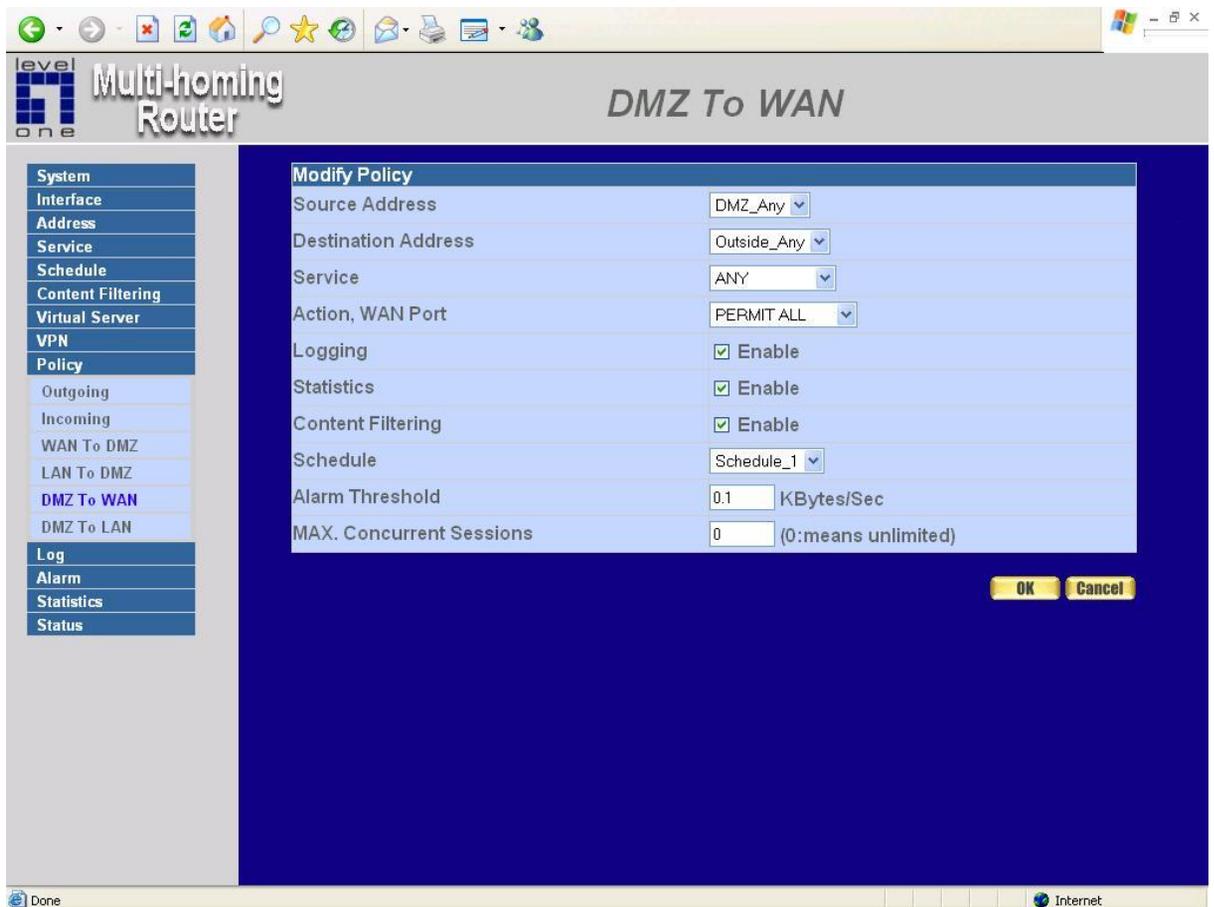
## Modifying a DMZ To WAN policy:

**Step 1:** In the DMZ to WAN window, locate the name of policy desired to be modified and click its corresponding Modify option in the Configure field.

**Step 2:** In the Modify Policy window, fill in new settings.

*Note: To change or add selections in the drop-down list, go to the section where the selections are setup. (Source Address→DMZ of Address; Destination Address→WAN, Service→Pre-defined Service, Custom or Group under Service.)*

**Step 3:** Click OK to save modifications or click Cancel to cancel modifications.



The screenshot displays the 'Multi-homing Router' interface for configuring a 'DMZ To WAN' policy. The 'Modify Policy' window is open, showing the following settings:

Field	Value
Source Address	DMZ_Any
Destination Address	Outside_Any
Service	ANY
Action, WAN Port	PERMIT ALL
Logging	<input checked="" type="checkbox"/> Enable
Statistics	<input checked="" type="checkbox"/> Enable
Content Filtering	<input checked="" type="checkbox"/> Enable
Schedule	Schedule_1
Alarm Threshold	0.1 KBytes/Sec
MAX. Concurrent Sessions	0 (0:means unlimited)

At the bottom right of the window, there are 'OK' and 'Cancel' buttons. The left sidebar shows a navigation menu with 'DMZ To WAN' selected. The status bar at the bottom indicates 'Done' and 'Internet'.

## Removing a DMZ To WAN Policy:

**Step 1.** In the **DMZ To WAN** window, locate the name of policy desired to be removed and click its corresponding Remove option in the Configure field.

**Step 2.** In the **Remove confirmation** dialogue box, click **OK**.

The screenshot displays the 'Multi-homing Router' web interface, specifically the 'DMZ To WAN' configuration page. The interface features a left-hand navigation menu with options such as System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Outgoing, Incoming, WAN To DMZ, LAN To DMZ, DMZ To WAN (highlighted), DMZ To LAN, Log, Alarm, Statistics, and Status. The main content area shows a table with columns for Source, Destination, Service, Action, Option, Configure, and Move. A single entry is visible with Source 'DMZ\_Any', Destination 'Outside\_Any', and Service 'ANY'. The 'Configure' column for this entry contains 'Modify' and 'Remove' buttons. A 'New Entry' button is also present. A 'Microsoft Internet Explorer' dialog box is overlaid on the screen, asking 'Are you sure you want to remove?' with 'OK' and 'Cancel' buttons. The browser's address bar shows the URL 'http://192.168.1.1/cgi-bin/policy.cgi?accedel=11&sq=1'.

Source	Destination	Service	Action	Option	Configure	Move
DMZ_Any	Outside_Any	ANY			Modify Remove	To 1

# Log

The Multi-Homing Gateway supports traffic logging and event logging to monitor and record services, connection times, and the source and destination network address. The Administrator may also download the log files for backup purposes. The Administrator mainly uses the Log menu to monitor the traffic passing through the Multi-Homing Gateway .

## **What is Log?**

Log records all connections that pass through the Multi-Homing Gateway Gateway's control policies. Traffic log's parameters are setup when setting up control policies. Traffic logs record the details of packets such as the start and stop time of connection, the duration of connection, the source address, the destination address and services requested, for each control policy. Event logs record the contents of System Configuration changes made by the Administrator such as the time of change, settings that change, the IP address used to log on, etc.

## **How to use the Log**

The Administrator can use the log data to monitor and manage the device and the networks. The Administrator can view the logged data to evaluate and troubleshoot the network, such as pinpointing the source of traffic congestions.

## Traffic Log

The Administrator queries the Multi-Homing Gateway for information, such as source address, destination address, start time, and Protocol port, of all connections.

### Entering the Traffic Log window

Click the **Traffic Log** option under **Log** menu to enter the Traffic Log window.

Multi-homing Router Traffic Log

System  
Interface  
Address  
Service  
Schedule  
Content Filtering  
Virtual Server  
VPN  
Policy  
Log  
Traffic Log  
Event Log  
Connection Log  
Log Backup  
Alarm  
Statistics  
Status

Back Jan 18 01:42:04 Next

Time	Source	Destination	Protocol	Port	Disposition
Jan 18 01:42:04	192.168.1.3	192.168.1.1	TCP	1186 => 80	
Jan 18 01:42:03	192.168.1.3	192.168.1.1	TCP	1185 => 80	
Jan 18 01:40:38	192.168.1.3	192.168.1.1	TCP	1169 => 80	
Jan 18 01:40:34	192.168.1.3	192.168.1.1	TCP	1168 => 80	
Jan 18 01:09:14	61.10.7.133	218.167.16.170	TCP	22904 => 80	
Jan 18 01:09:14	61.18.109.27	218.167.16.170	ICMP	TYPE=8	
Jan 18 00:51:41	218.148.14.84	218.167.16.170	TCP	1985 => 80	
Jan 17 22:58:25	213.149.188.15	218.167.16.170	ICMP	TYPE=8	
Jan 17 18:47:20	61.229.175.201	218.167.16.170	TCP	1345 => 80	
Jan 17 18:41:10	67.95.67.178	218.167.16.170	ICMP	TYPE=8	
Jan 17 17:05:30	218.232.25.148	218.167.16.170	ICMP	TYPE=8	
Jan 17 15:42:29	68.68.0.186	218.167.16.170	TCP	3294 => 80	
Jan 17 15:33:45	61.58.123.102	218.167.13.57	TCP	3367 => 80	
Jan 17 15:30:42	61.58.123.102	218.167.13.57	TCP	3314 => 80	
Jan 17 15:27:39	61.58.123.102	218.167.13.57	TCP	3261 => 80	
Jan 17 15:24:36	61.58.123.102	218.167.13.57	TCP	3204 => 80	
Jan 17 15:21:33	61.58.123.102	218.167.13.57	TCP	3161 => 80	
Jan 17 15:18:30	61.58.123.102	218.167.13.57	TCP	3113 => 80	

Clear Logs Download Logs

Internet

## Traffic Log Table

The table in the Traffic Log window displays current System statuses:

- **Time:** The start time of the connection.
- **Source:** IP address of the source network of the specific connection.
- **Destination:** IP address of the destination network of the specific connection.
- **Protocol & Port:** Protocol type and Port number of the specific connection.
- **Disposition:** Accept or Deny.

## Downloading the Traffic Logs

The Administrator can backup the traffic logs regularly by downloading it to the computer.

**Step 1.** In the Traffic Log window, click the Download Logs button at the bottom of the screen.

**Step 2.** Save the traffic logs into a specified directory on the hard drive.

- System
- Interface
- Address
- Service
- Schedule
- Content Filter
- Virtual Server
- VPN
- Policy
- Log
  - Traffic Log
  - Event Log
  - Connection Log
  - Log Backup
- Alarm
- Statistics
- Status

```

traffic[2] - Notepad
File Edit Format View Help
New Ctrl+N
Open... Ctrl+O
Save Ctrl+S
Save As...
Page Setup...
Print... Ctrl+P
Exit

Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 219.112.51.55 TCP 14924 2152 #
Jan 18 03:04:21 2005 ACCEPT 219.112.51.55 192.168.1.3 TCP 14924 2152 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 219.112.51.55 TCP 2152 14924 #
Jan 18 03:04:21 2005 ACCEPT 219.112.51.55 192.168.1.3 TCP 14924 2152 #
Jan 18 03:04:21 2005 ACCEPT 219.112.51.55 192.168.1.3 TCP 14924 2152 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 219.112.51.55 TCP 2152 14924 #
Jan 18 03:04:21 2005 ACCEPT 219.112.51.55 192.168.1.3 TCP 14924 2152 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 219.112.51.55 TCP 14924 2152 #
Jan 18 03:04:21 2005 ACCEPT 219.112.51.55 192.168.1.3 TCP 14924 2152 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 219.112.51.55 TCP 2152 14924 #
Jan 18 03:04:21 2005 ACCEPT 219.112.51.55 192.168.1.3 TCP 14924 2152 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 219.112.51.55 TCP 2152 14924 #
Jan 18 03:04:21 2005 ACCEPT 219.112.51.55 192.168.1.3 TCP 14924 2152 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 219.112.51.55 TCP 2152 14924 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 24.4.169.227 TCP 1984 8575 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 60.36.233.224 TCP 2159 18662 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 219.78.51.132 TCP 2051 16963 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 218.165.216.141 TCP 2022 26916 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 218.186.249.40 TCP 1989 6881 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 218.45.168.51 TCP 2059 14706 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 218.176.48.48 TCP 1992 17005 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 165.76.164.105 TCP 2058 6891 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 69.229.97.64 TCP 2049 6881 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 210.168.245.102 TCP 1995 11295 #
Jan 18 03:04:21 2005 ACCEPT 192.168.1.3 219.98.94.64 TCP 2115 14259 #
    
```

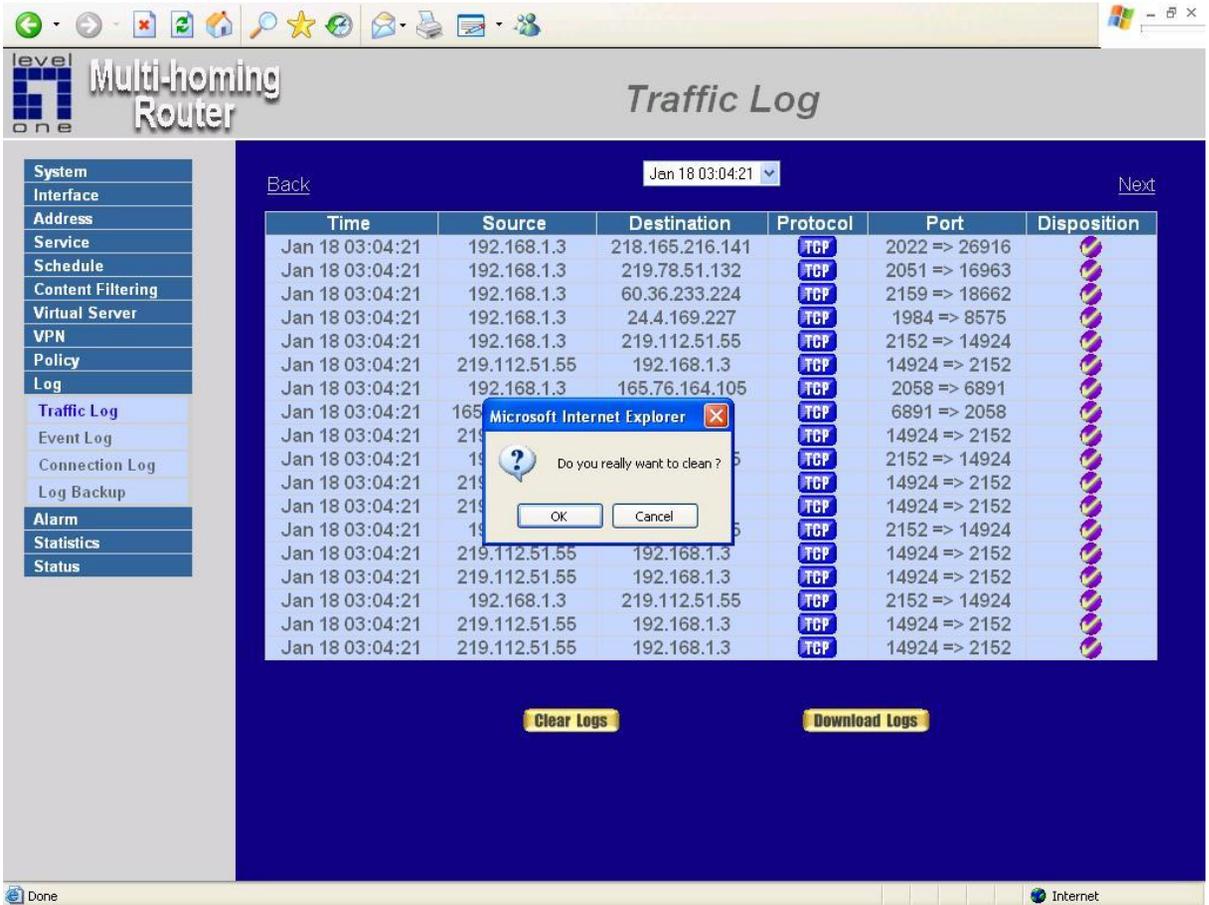
Disposition

# Clearing the Traffic Logs

The Administrator may clear on-line logs to keep just the most updated logs on the screen.

**Step 1.** In the Traffic Log window, click the Clear Logs button at the bottom of the screen.

**Step 2.** In the Clear Logs pop-up box, click **Ok** to clear the logs or click **Cancel** to cancel it.



## Event Log

When the Multi-Homing Gateway detects events, the Administrator can get the details, such as time and description of the events from the Event Logs.

### Entering the Event Log window

Click the **Event Log** option under the **Log** menu and the Event Log window will appear.

Time	Event
Jan 18 03:09:02	admin Modify [Policy](DMZ to External,DMZ_Any=>Outside_Any,ANY,permit) from 192.168.1.6
Jan 18 03:06:12	admin Modify [Policy](External to DMZ,Outside_Any=>211.21.10.172,SMTP (25),permit) from 192.168.1.6
Jan 18 03:03:50	admin Modify [WAN2 Interface] from 192.168.1.3
Jan 18 03:03:30	user admin [Login success] from 192.168.1.3
Jan 18 03:02:56	user admin [Login failure] from 192.168.1.3
Jan 18 03:02:46	user admin [Login failure] from 192.168.1.3
Jan 18 03:02:40	user admin [Login failure] from 192.168.1.3
Jan 18 03:02:26	admin Add [Policy](DMZ to External,DMZ_Any=>Outside_Any,ANY,permit) from 192.168.1.3
Jan 18 03:02:15	admin Add [Policy](External to DMZ,Outside_Any=>211.21.10.172,SMTP (25),permit) from 192.168.1.3
Jan 18 03:01:55	admin Add [SMTP] (Virtual Server 1) from 192.168.1.3
Jan 18 03:01:43	admin Add [Virtual Server 1] from 192.168.1.3
Jan 18 03:00:56	admin Modify [WAN2 Interface] from 192.168.1.3
Jan 18 03:06:35	admin Modify [DMZ Interface] from 192.168.1.3
Jan 18 03:03:13	admin Add [Policy](Incoming,Outside_Any=>Inside_Any (Routing),FTP,permit) from 192.168.1.6
Jan 18 03:02:57	admin Modify [Policy](Outgoing,Inside_Any=>Outside_Any,ANY,permit) from 192.168.1.3
Jan 18 02:55:09	admin Modify [Policy](Outgoing,Inside_Any=>Outside_Any,ANY,permit) from 192.168.1.3
Jan 18 02:54:59	admin Modify [Policy](Outgoing,Inside_Any=>Outside_Any,ANY,permit) from 192.168.1.3
Jan 18 02:54:03	user admin [Login success] from 192.168.1.3

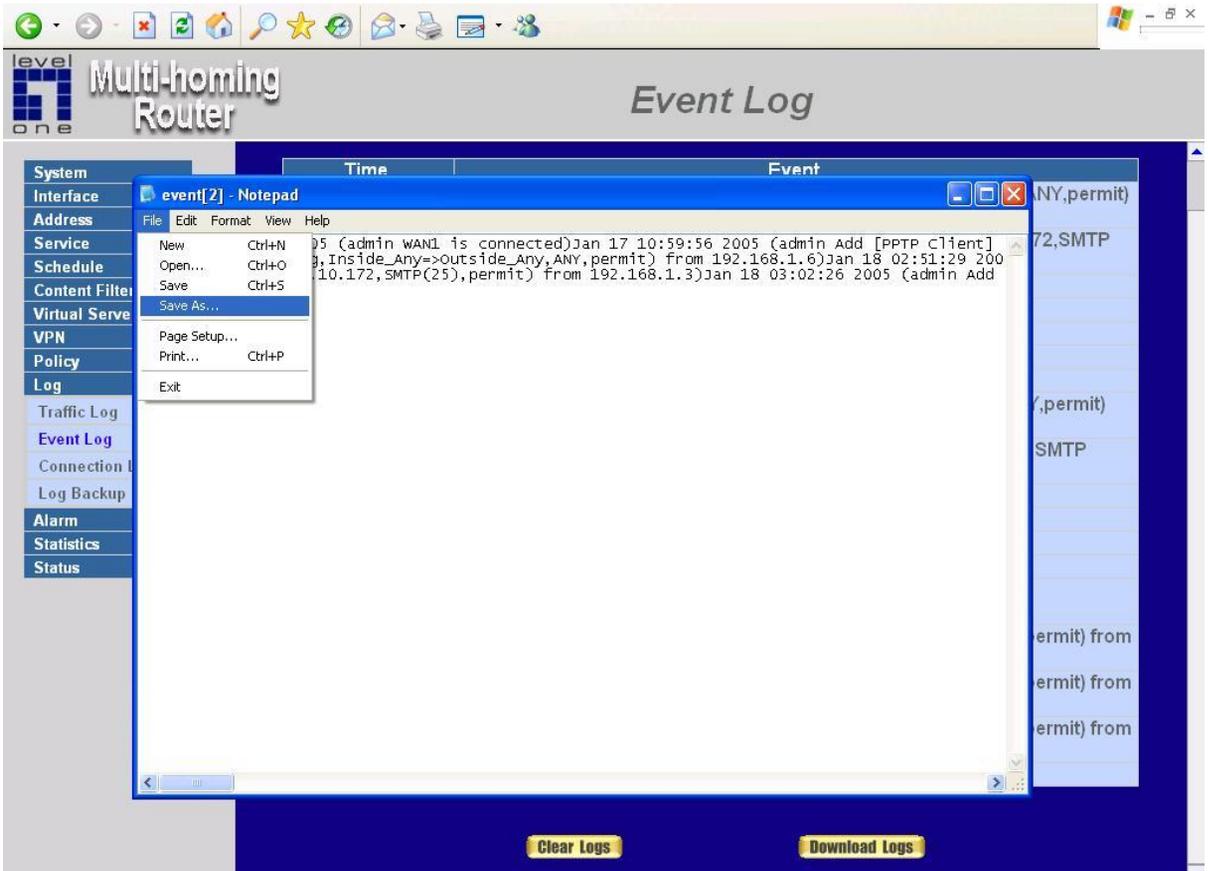
The table in the Event Log window displays the time and description of the events.

- **Time:** time when the event occurred.
- **Event:** description of the event.

# Downloading the Event Logs

**Step 1.** In the Event Log window, click the Download Logs button at the bottom of the screen.

**Step 2.** Save the event logs into a specific directory on the hard drive.

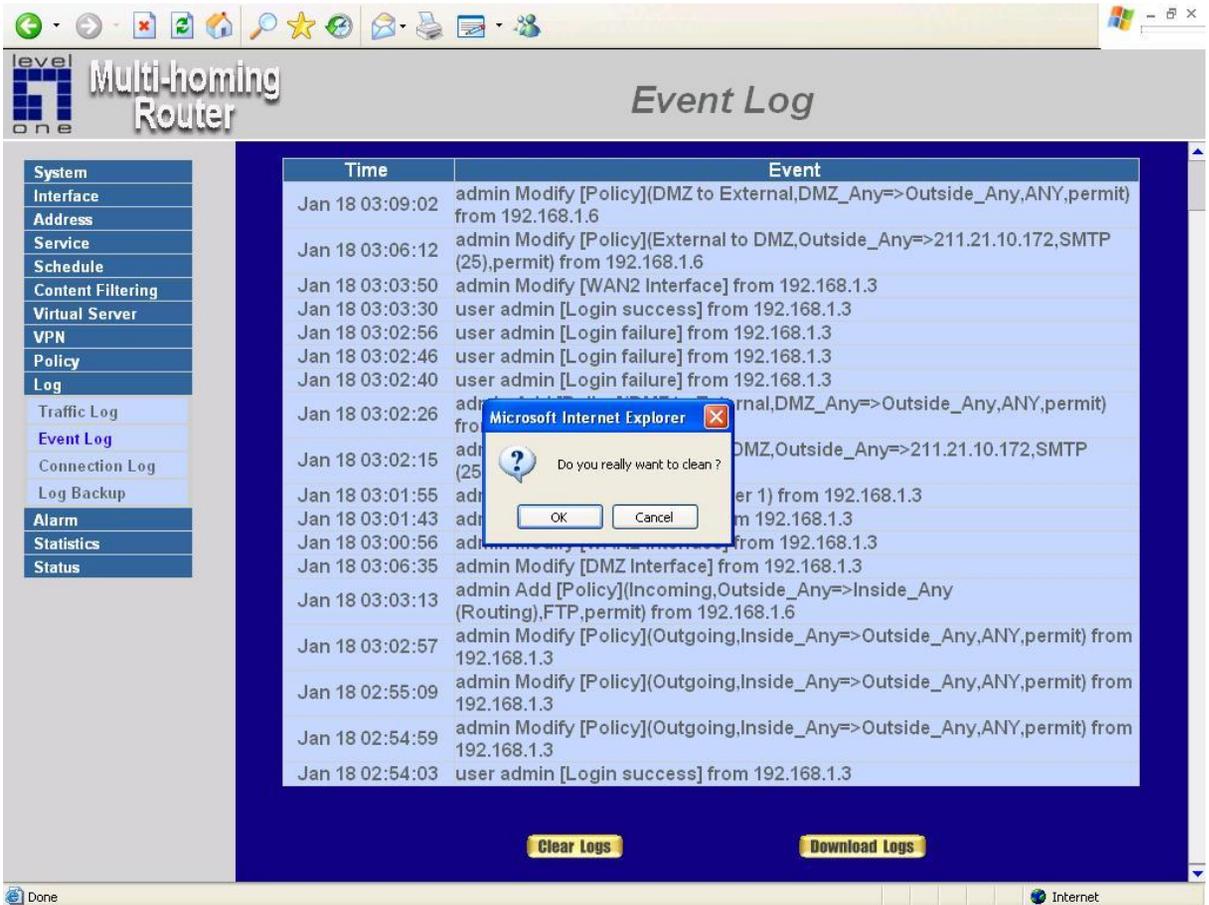


# Clearing the Event Logs

The Administrator may clear on-line event logs to keep just the most updated logs on the screen.

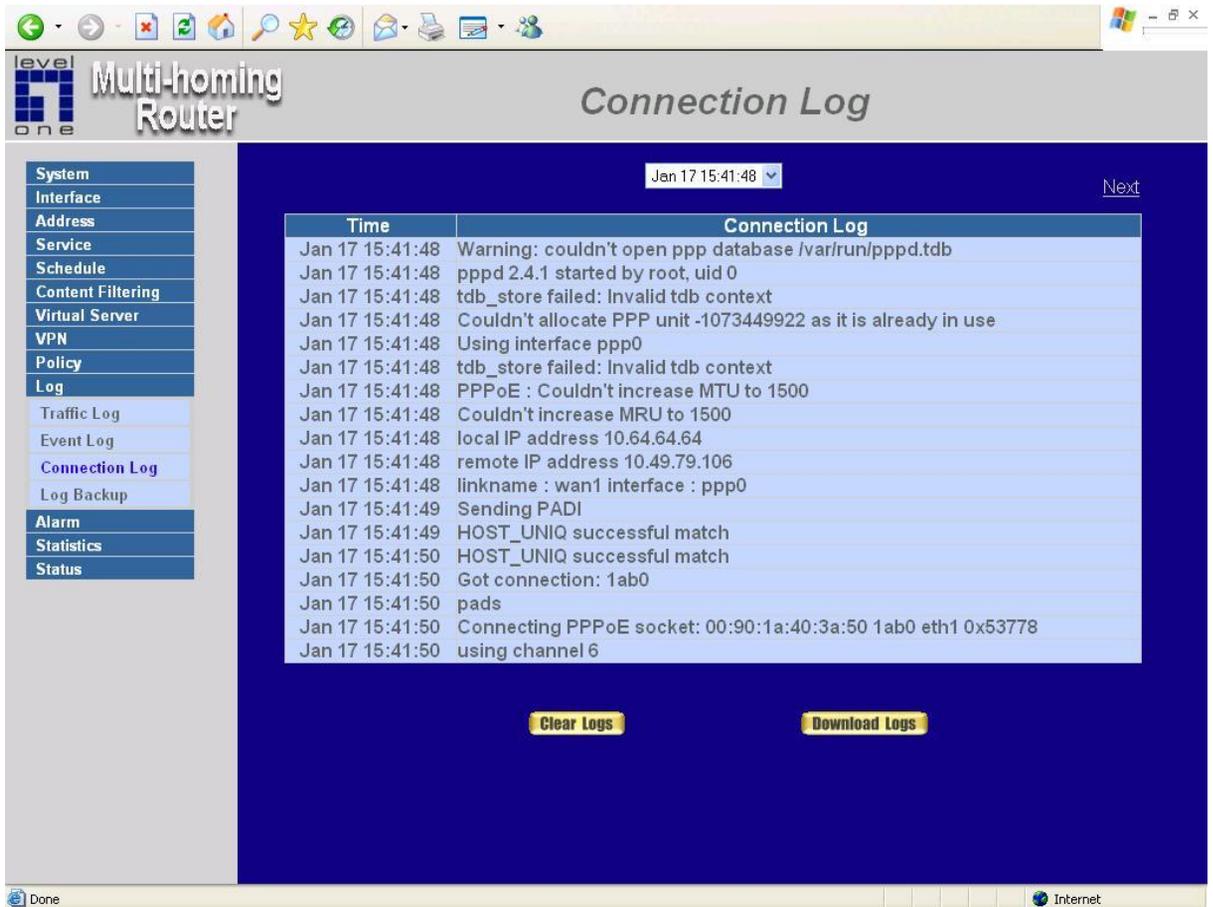
**Step 1.** In the Event Log window, click the Clear Logs button at the bottom of the screen.

**Step 2.** In the Clear Logs pop-up box, click **OK** to clear the logs or click **Cancel** to cancel it.



## Connection Log

Click Log in the menu bar on the left hand side, and then select the sub-selection Connection Log.



The screenshot displays the 'Multi-homing Router' web interface. The title bar shows 'level one' and 'Connection Log'. A navigation menu on the left includes 'System', 'Interface', 'Address', 'Service', 'Schedule', 'Content Filtering', 'Virtual Server', 'VPN', 'Policy', 'Log', 'Traffic Log', 'Event Log', 'Connection Log', 'Log Backup', 'Alarm', 'Statistics', and 'Status'. The 'Log' section is expanded to show 'Connection Log'. The main content area shows a table of logs for the date 'Jan 17 15:41:48'. The table has two columns: 'Time' and 'Connection Log'. The logs include various messages such as 'Warning: couldn't open ppp database /var/run/pppd.tdb', 'pppd 2.4.1 started by root, uid 0', 'tdb\_store failed: Invalid tdb context', 'Couldn't allocate PPP unit -1073449922 as it is already in use', 'Using interface ppp0', 'PPPoE : Couldn't increase MTU to 1500', 'Couldn't increase MRU to 1500', 'local IP address 10.64.64.64', 'remote IP address 10.49.79.106', 'linkname : wan1 interface : ppp0', 'Sending PADI', 'HOST\_UNIQ successful match', 'Got connection: 1ab0', 'pads', 'Connecting PPPoE socket: 00:90:1a:40:3a:50 1ab0 eth1 0x53778', and 'using channel 6'. There are 'Clear Logs' and 'Download Logs' buttons at the bottom of the log table.

Time	Connection Log
Jan 17 15:41:48	Warning: couldn't open ppp database /var/run/pppd.tdb
Jan 17 15:41:48	pppd 2.4.1 started by root, uid 0
Jan 17 15:41:48	tdb_store failed: Invalid tdb context
Jan 17 15:41:48	Couldn't allocate PPP unit -1073449922 as it is already in use
Jan 17 15:41:48	Using interface ppp0
Jan 17 15:41:48	tdb_store failed: Invalid tdb context
Jan 17 15:41:48	PPPoE : Couldn't increase MTU to 1500
Jan 17 15:41:48	Couldn't increase MRU to 1500
Jan 17 15:41:48	local IP address 10.64.64.64
Jan 17 15:41:48	remote IP address 10.49.79.106
Jan 17 15:41:48	linkname : wan1 interface : ppp0
Jan 17 15:41:49	Sending PADI
Jan 17 15:41:49	HOST_UNIQ successful match
Jan 17 15:41:50	HOST_UNIQ successful match
Jan 17 15:41:50	Got connection: 1ab0
Jan 17 15:41:50	pads
Jan 17 15:41:50	Connecting PPPoE socket: 00:90:1a:40:3a:50 1ab0 eth1 0x53778
Jan 17 15:41:50	using channel 6

**Definition:**

**Time :** The start and end time of connection.

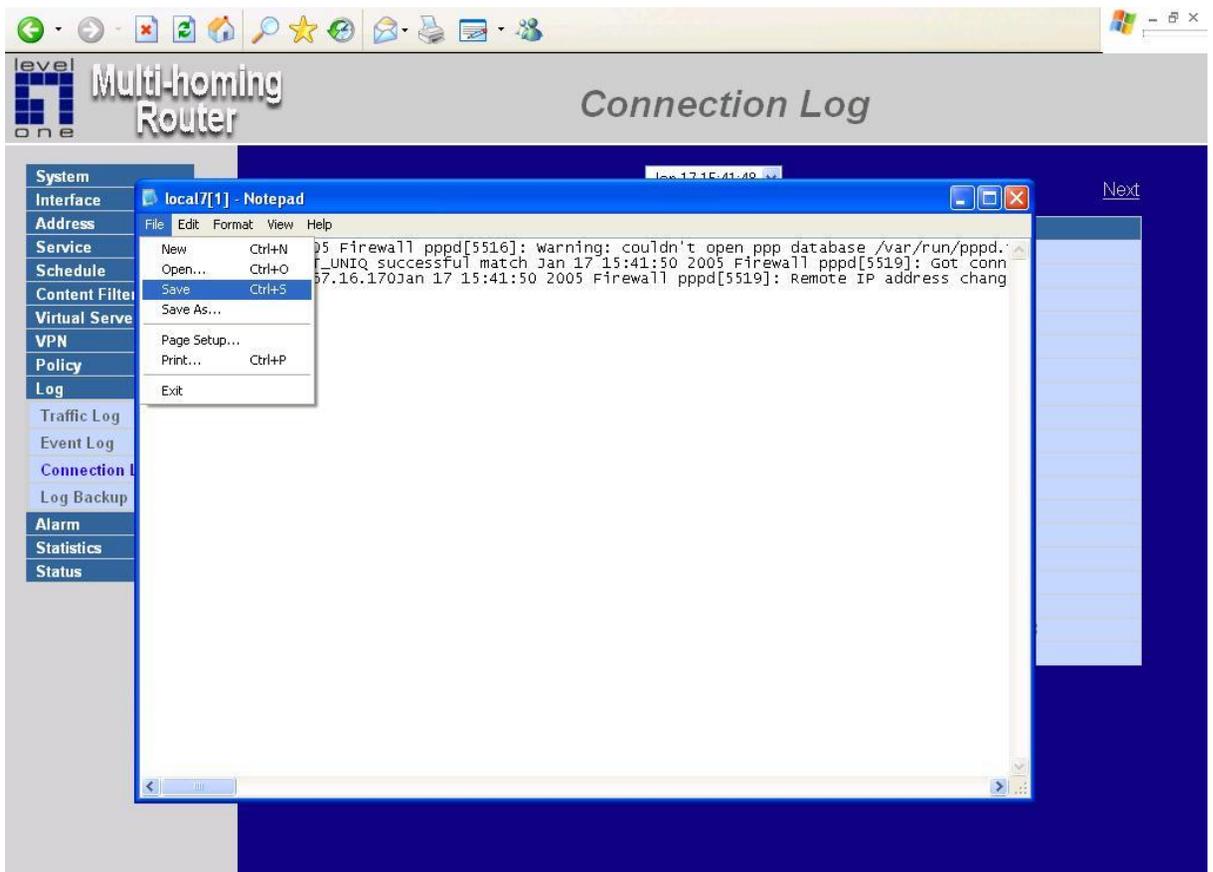
**Connection Log :** Event description during connection.

## Download Logs

**Step 1.** Click **Log** in the menu bar on the left hand side and then select the sub-selection **Connection Log**.

**Step 2.** In Connection Log window, click the **Download Logs** button.

**Step 3.** Save the logs to the specified location.



## Clear Logs

**Step 1.** Click **Log** in the menu bar on the left hand side, and then select the sub-selection **Connection Logs**.

**Step 2.** In Connection Log window, click the **Clear Logs** button.

**Step 3.** In Clear Logs window, click **OK** to clear the logs or click **Cancel** to discard changes.

The screenshot displays the 'Multi-homing Router' web interface. The main content area is titled 'Connection Log' and shows a list of log entries. A dialog box is open over the log entries, asking for confirmation to clear the logs. The log entries are as follows:

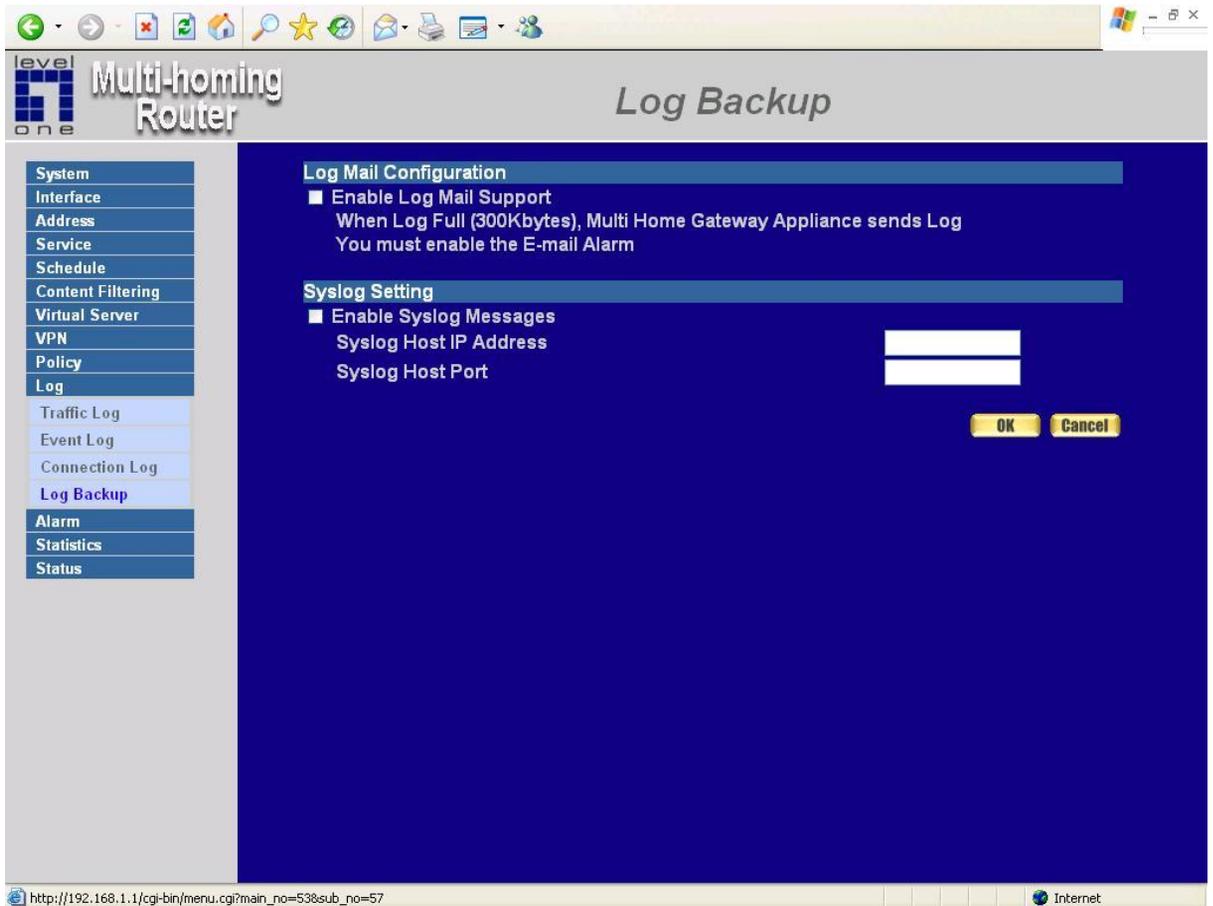
Time	Connection Log
Jan 17 15:41:48	Warning: couldn't open ppp database /var/run/pppd.tdb
Jan 17 15:41:48	pppd 2.4.1 started by root, uid 0
Jan 17 15:41:48	tdb_store failed: Invalid tdb context
Jan 17 15:41:48	Couldn't allocate PPP unit -1073449922 as it is already in use
Jan 17 15:41:48	Using interface ppp0
Jan 17 15:41:48	tdb_store failed: Invalid tdb context
Jan 17 15:41:48	PPPoE : Couldn't increase MTU to 1500
Jan 17 15:41:48	Co
Jan 17 15:41:48	loc
Jan 17 15:41:48	ren
Jan 17 15:41:48	link
Jan 17 15:41:49	Se
Jan 17 15:41:49	HO
Jan 17 15:41:50	HOST_UNIQ successful match
Jan 17 15:41:50	Got connection: 1ab0
Jan 17 15:41:50	pads
Jan 17 15:41:50	Connecting PPPoE socket: 00:90:1a:40:3a:50 1ab0 eth1 0x53778
Jan 17 15:41:50	using channel 6

The interface also features a 'Clear Logs' button and a 'Download Logs' button at the bottom. A 'Microsoft Internet Explorer' dialog box is overlaid on the log entries, asking 'Do you really want to clean?' with 'OK' and 'Cancel' buttons.

# Log Backup

## The Log Backup

**Step 1.** Click **Log** → **Log Backup**.



**Step 2.**

- **Log Mail Configuration** : When the Log Mail files accumulated up to 300Kbytes, router will notify administrator by email with the traffic log and event log. ◦  
**Note:** Before enabling this function, you have to enable E-mail Alarm in Administrator.
- **Syslog Settings** : If you enable this function, system will transmit the Traffic Log and the Event Log simultaneously to the server which supports Syslog function.

# Enable Log Mail Support & Syslog Message

## Log Mail Configuration /Enable Log Mail Support

**Step 1.** Firstly, go to **Admin** –Select **Enable E-mail Alert Notification** under **E-Mail Settings**. Enter the e-mail address to receive the alarm notification. Click **OK**.

**Step 2.** Go to **LOG** →**Log Backup**. Check to enable **Log Mail Support**. Click **OK**.

## System Settings/Enable Syslog Message

**Step 3.** Check to enable Syslog Message. Enter the Host IP Address and Host Port number to receive the Syslog message.

**Step 4.** Click **OK**.

The screenshot shows the configuration interface for a Multi-homing Router. The window title is "Log Backup". On the left is a navigation menu with the following items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Traffic Log, Event Log, Connection Log, Log Backup (highlighted), Alarm, Statistics, and Status. The main content area is divided into two sections:

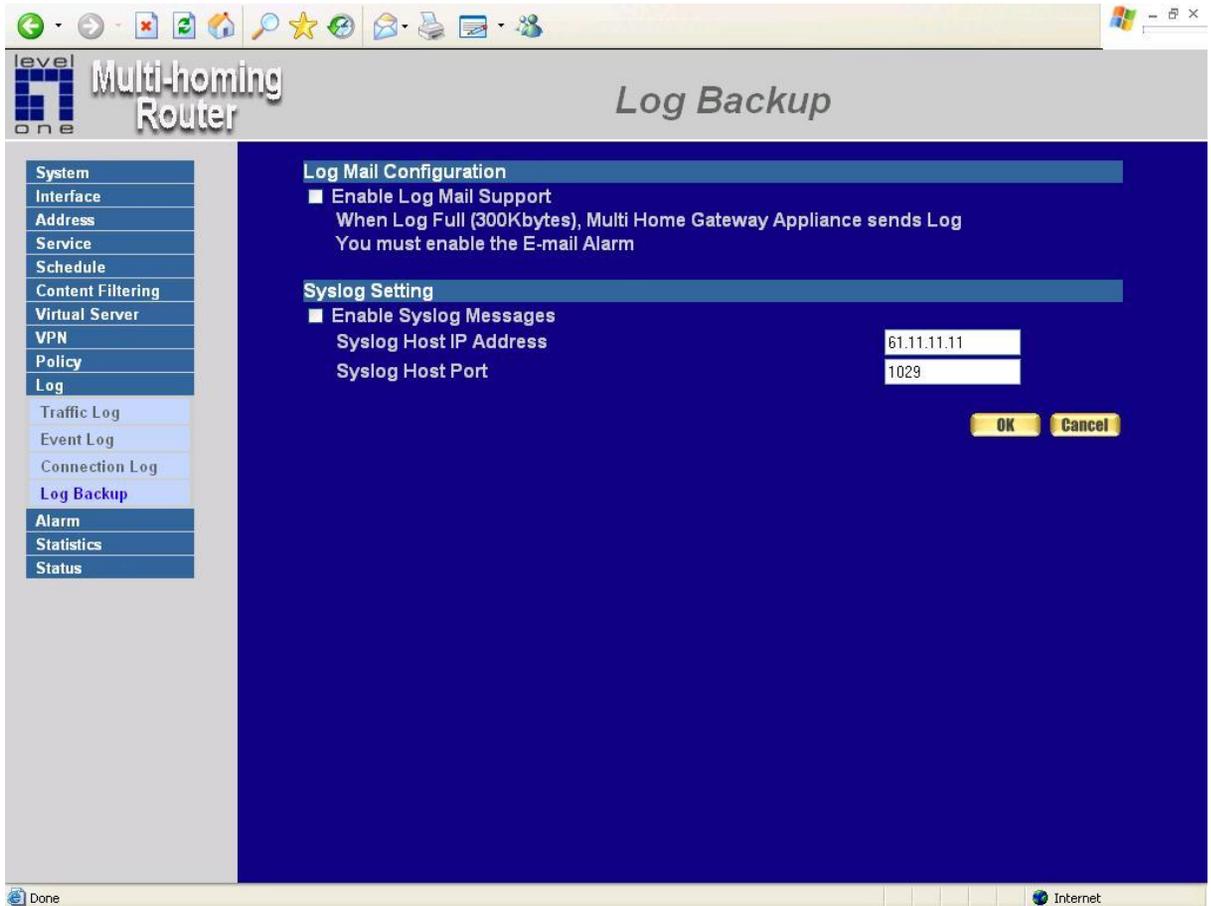
- Log Mail Configuration:**
  - Enable Log Mail Support
  - When Log Full (300Kbytes), Multi Home Gateway Appliance sends Log
  - You must enable the E-mail Alarm
- Syslog Setting:**
  - Enable Syslog Messages
  - Syslog Host IP Address: 61.11.11.11
  - Syslog Host Port: 1029

At the bottom right of the configuration area are two buttons: **OK** and **Cancel**. The Windows taskbar at the bottom shows "Done" on the left and "Internet" on the right.

# Disable Log Mail Support & Syslog Message

**Step 1.** Go to **LOG** → **Log Backup**. Uncheck to disable **Log Mail Support**. Click **OK**.

**Step 2.** Go to **LOG** → **Log Backup**. Uncheck to disable **Settings Message**. Click **OK**.



# Alarm

In this chapter, the Administrator can view traffic alarms and event alarms that occur and the Multi-Homing Gateway has logged.

Multi-Homing Gateway has two alarms: **Traffic Alarm** and **Event Alarm**.

## **Traffic alarm:**

In control policies, the Administrator set the threshold value for traffic alarm. The System regularly checks whether the traffic for a policy exceeds its threshold value and adds a record to the traffic alarm file if it does.

## **Event alarm:**

When Multi-Homing Gateway detects attacks from hackers, it writes attacking data in the event alarm file and sends an e-mail alert to the Administrator to take emergency steps.

## Traffic Alarm

### Entering the Traffic Alarm window

Click the **Traffic Alarm** option below **Alarm** menu to enter the Traffic Alarm window.

Time	Source	Destination	Service	Traffic
Jan 18 03:30~03:45	Inside_Any	Outside_Any	ANY	0.572K/Sec
Jan 18 03:15~03:30	Inside_Any	Outside_Any	ANY	0.207K/Sec
Jan 18 03:00~03:15	Inside_Any	Outside_Any	ANY	0.797K/Sec
Jan 18 02:45~03:00	Inside_Any	Outside_Any	ANY	9.205K/Sec
Jan 18 02:45~03:00	Inside_Any	Outside_Any	ANY	3.923K/Sec

The table in the Traffic Alarm window displays the current traffic alarm logs for connections.

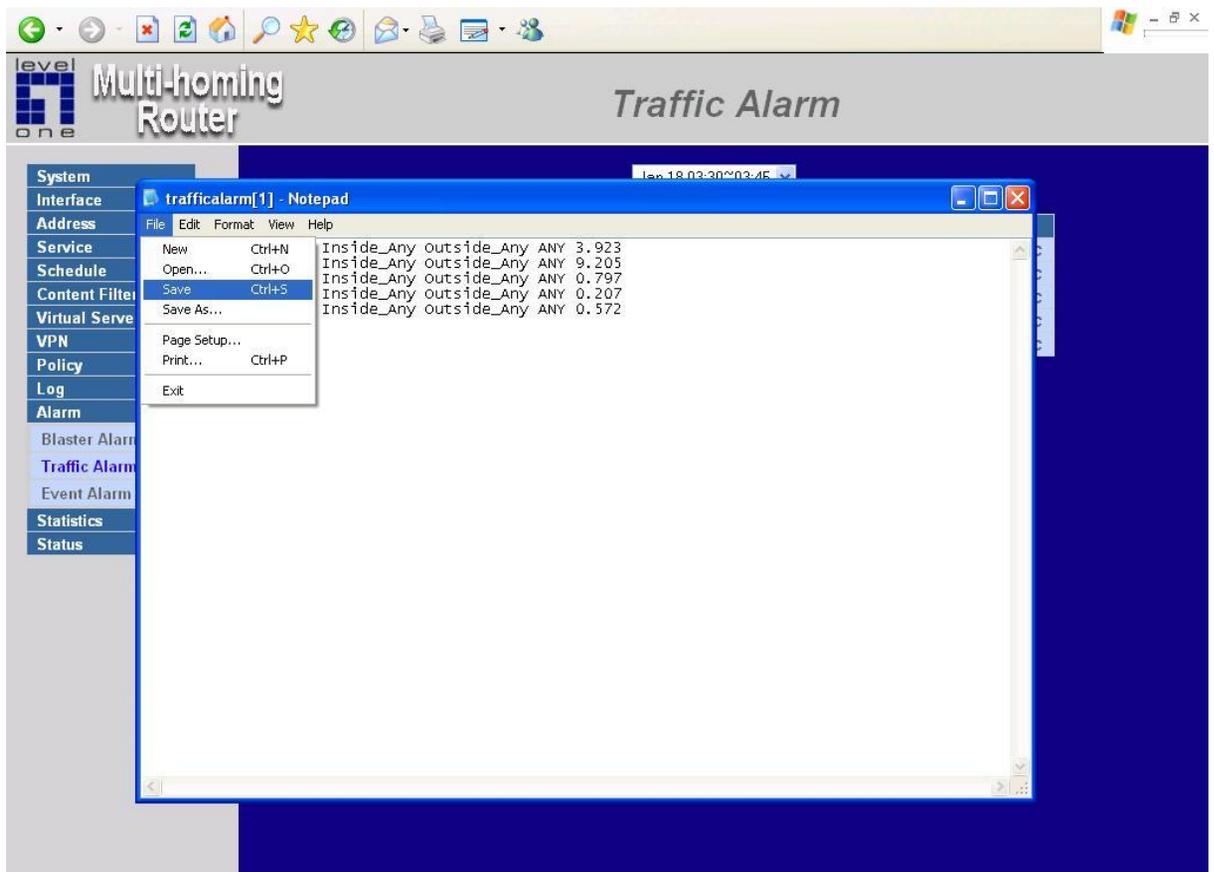
- **Time:** The start and stop time of the specific connection.
- **Source:** Name of the source network of the specific connection.
- **Destination:** Name of the destination network of the specific connection.
- **Service:** Service of the specific connection.
- **Traffic:** Traffic (in Kbytes/Sec) of the specific connection.

## Downloading the Traffic Alarm Logs

The Administrator can back up traffic alarm logs regularly and download it to a file on the computer.

**Step 1.** In the Traffic Alarm window, click the Download Logs button on the bottom of the screen.

**Step 2.** Save the traffic alarm logs into specific directory on the hard drive.



# Clearing the Traffic Alarm Logs

**Step 1.** In the Traffic Alarm window, click the Clear Logs button at the bottom of the screen.

**Step 2.** In the Clear Logs pop-up box, click **Ok** to clear the logs or click **Cancel** to cancel.

The screenshot shows the 'Traffic Alarm' window of a 'level one Multi-homing Router'. The interface includes a sidebar menu with options like System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Blaster Alarm, Traffic Alarm, Event Alarm, Statistics, and Status. The main area displays a table of traffic alarm logs for the time range 'Jan 18 03:30~03:45'. Below the table are 'Clear Logs' and 'Download Logs' buttons. A 'Microsoft Internet Explorer' dialog box is open, asking 'Do you really want to clean?' with 'OK' and 'Cancel' buttons.

Time	Source	Destination	Service	Traffic
Jan 18 03:30~03:45	Inside_Any	Outside_Any	ANY	0.572K/Sec
Jan 18 03:15~03:30	Inside_Any	Outside_Any	ANY	0.207K/Sec
Jan 18 03:00~03:15	Inside_Any	Outside_Any	ANY	0.797K/Sec
Jan 18 02:45~03:00	Inside_Any	Outside_Any	ANY	9.205K/Sec
Jan 18 02:45~03:00	Inside_Any	Outside_Any	ANY	3.923K/Sec

# Event Alarm

## Entering the Event Alarm window

Click the **Event Alarm** option below the **Alarm** menu to enter the Event Alarm window.

The table in Event Alarm window displays current traffic alarm logs for connections.

- **Time:** log time.
- **Event:** event descriptions.

The screenshot shows the 'Event Alarm' window of a 'level one Multi-homing Router'. The window title is 'Event Alarm' and the current time is 'Jan 18 06:18:13'. A table displays the following logs:

Time	Event
Jan 18 06:18:13	The system has detected the attack of TCP port scan , suspected to be 218.167.20.94
Jan 18 06:17:38	The system has detected the attack of TCP port scan , suspected to be 218.167.20.94
Jan 18 06:17:37	The system has detected the attack of TCP port scan , suspected to be 218.167.20.94

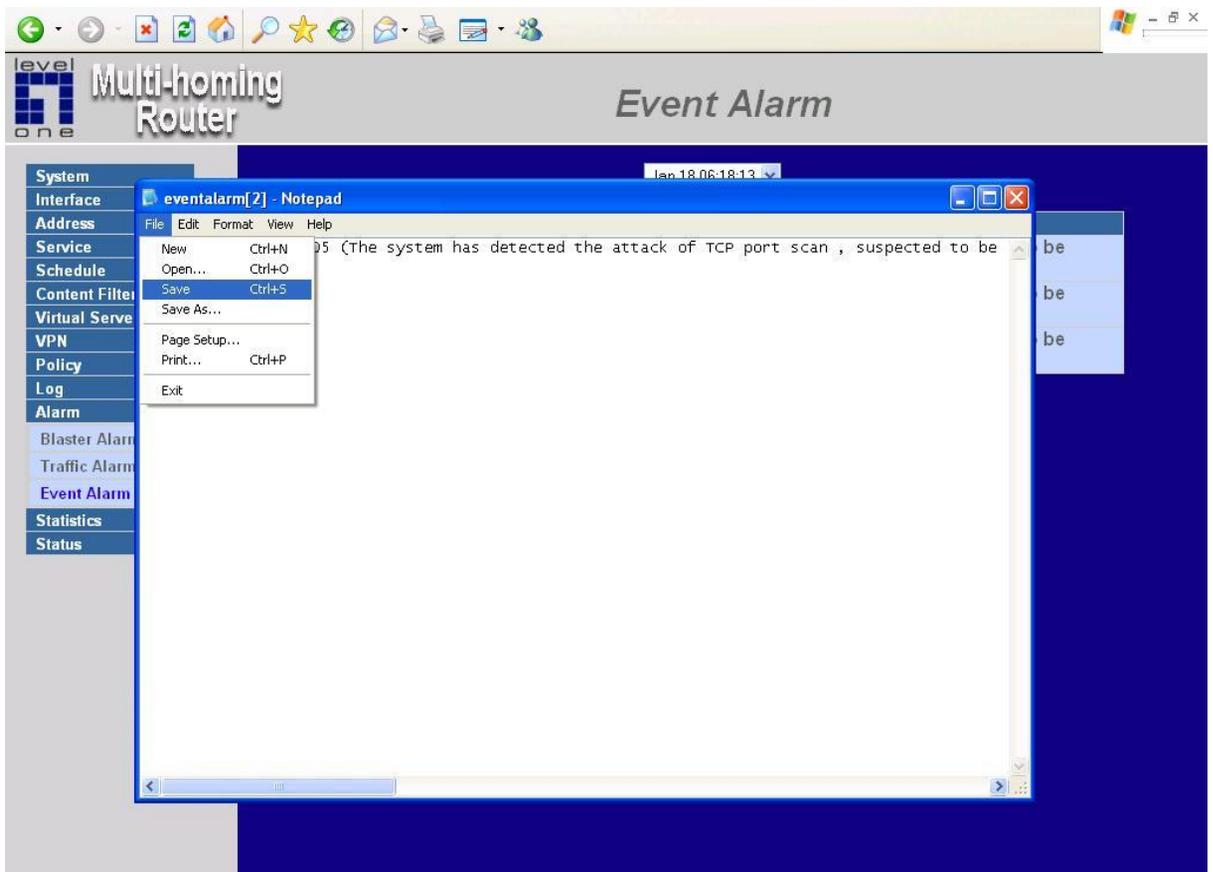
Buttons for 'Clear Logs' and 'Download Logs' are visible below the table. The left sidebar contains a menu with options: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Blaster Alarm, Traffic Alarm, Event Alarm (highlighted), Statistics, and Status. The status bar at the bottom shows 'Done' and 'Internet'.

## Downloading the Event Alarm Logs

The Administrator can back up event alarm logs regularly by downloading it to a file on the computer.

**Step 1.** In the Event Alarm window, click the Download Logs button at the bottom of the screen.

**Step 2.** Save the event alarm logs into specific directory on the hard drive.

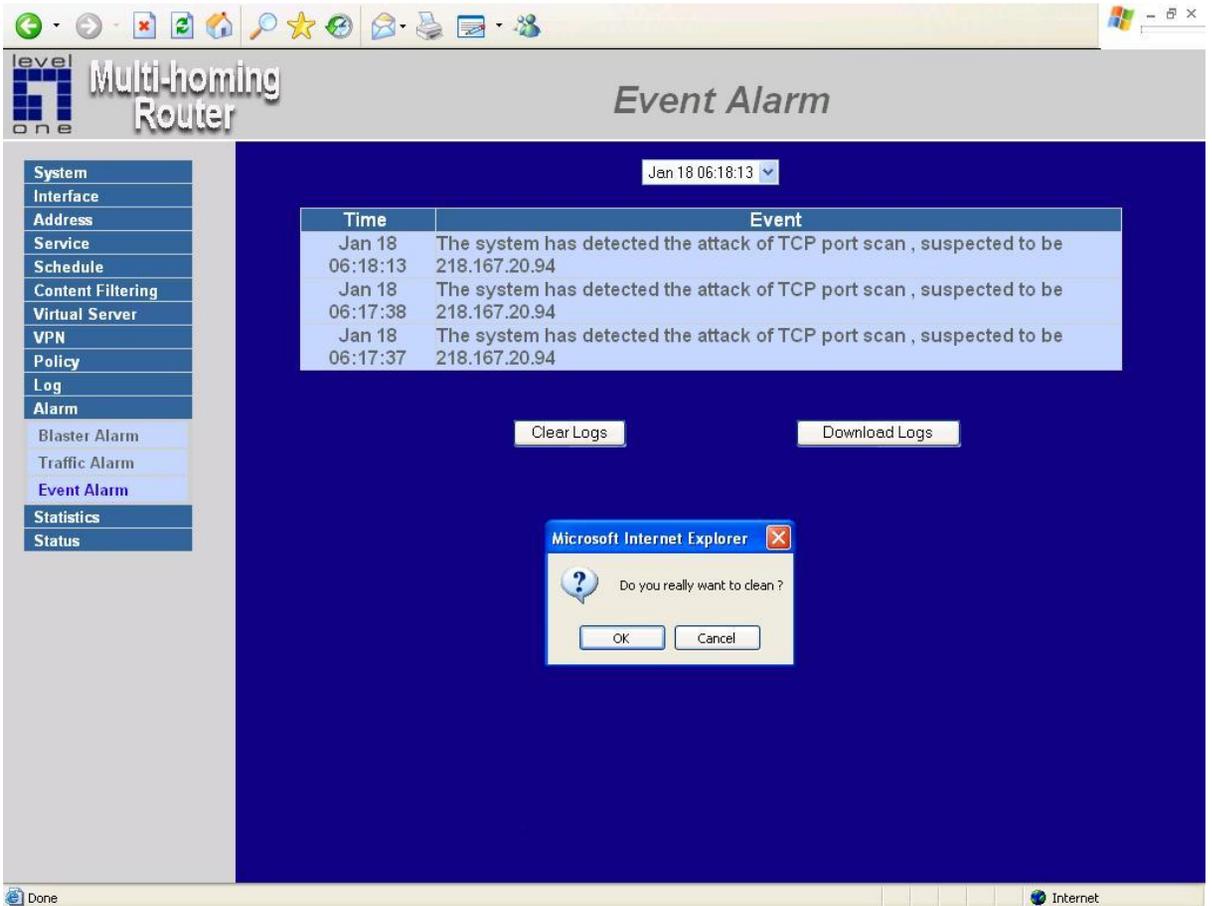


# Clearing Event Alarm Logs

The Administrator may clear on-line logs to keep the most updated logs on the screen.

**Step 1.** In the Event Alarm window, click the Clear Logs button at the bottom of the screen.

**Step 2.** In the Clear Logs pop-up box, click **OK**.



# Statistics

In this chapter, the Administrator queries the Multi-Homing Gateway for statistics of packets and data which passes across the Multi-Homing Gateway. The statistics provides the Administrator with information about network traffics and network loads.

## **What is Statistics**

Statistics are the statistics of packets that pass through the Multi-Homing Gateway by control policies setup by the Administrator.

## **How to use Statistics**

The Administrator can get the current network condition from statistics, and use the information provided by statistics as a basis to manage networks.

# WAN Statistics

**Step 1.** Click Statistics in the menu bar on the left hand side, and then select WAN Statistics.

**Step 2.** The WAN Statistics will be displayed.

The screenshot shows a web interface for a 'Multi-homing Router'. The main title is 'Interface Statistics'. On the left is a navigation menu with the following items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Statistics, Interface Statistics (highlighted), Policy Statistics, and Status. The main content area displays a table with the following data:

WAN	Time					
	Minute	Hour	Day	Week	Month	Year
WAN 1						
WAN 2						
All WAN Interface						

The interface also shows a Windows taskbar at the top with various icons and a system tray at the bottom with 'Done' and 'Internet' indicators.

## Entering the Statistics window by Time

The Statistics window displays the statistics of network connections (downstream and upstream as well) by minute, hour, or day.

**All WAN Interface** : Displays statistics of WAN 1/2 network connections (downstream and upstream as well) in a total amount by minute, hour or day.

**Step 1.** Click **Statistics** in the menu bar on the left hand side, and then select **WAN Statistics**.

**Step 2.** In Statistics window, find the domain name you want to view.

**Step 3.** In the Statistics window, find the network you want to view and click Minute on the right hand side, and then you will be able to view the Statistics figure every minute; click Hour to view the Statistics figure every hour; click Day to view the Statistics figure every day.

**Real-Time:** Real display Download speed (KBytes/Sec) and Upload speed (KBytes/Sec)

**Y-Coordinate** : Network Traffic ( Kbytes/Sec ) .

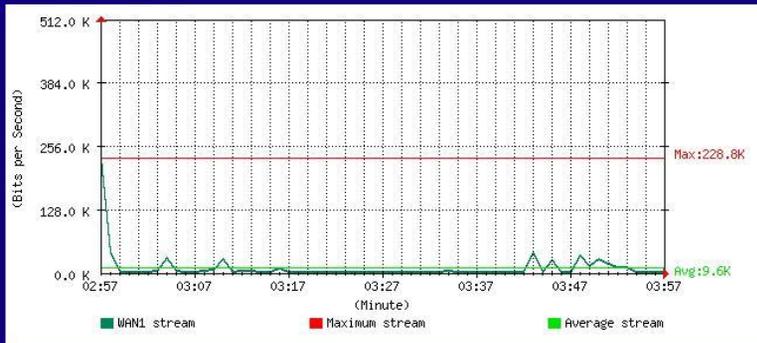
**X-Coordinate** : Time ( Hour/Minute/Day ) .

- System
- Interface
- Address
- Service
- Schedule
- Content Filtering
- Virtual Server
- VPN
- Policy
- Log
- Alarm
- Statistics
- Interface Statistics
- Policy Statistics
- Status

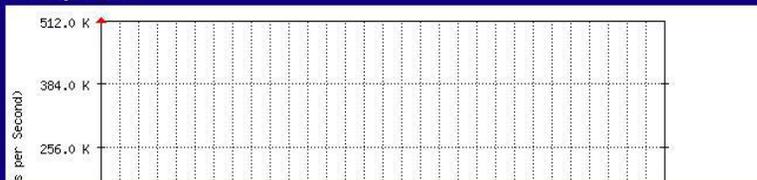
Bits/Sec Bytes/Sec Utilization Total

Minute Hour Day Week Month Year

**WAN1 Downstream**



**WAN1 Upstream**



# Policy Statistics

## Entering the Statistics window

**Step 1.** The Statistics window displays the statistics of current network connections.

- **Source:** the name of source address.
- **Destination:** the name of destination address.
- **Service:** the service requested.
- **Action:** permit or deny
- **Time:** viewable by minutes, hours, or days

Source	Destination	Service	Action	Time					
Inside_Any	Outside_Any	ANY	PERMIT	Minute	Hour	Day	Week	Month	Year
Outside_Any	Inside_Any(Routing)	FTP	PERMIT	Minute	Hour	Day	Week	Month	Year
Outside_Any	211.21.10.172	SMTP(25)	PERMIT	Minute	Hour	Day	Week	Month	Year
DMZ_Any	Outside_Any	ANY	PERMIT	Minute	Hour	Day	Week	Month	Year

# Entering the Policy Statistics

**Step 1.** Click **Statistics** in the menu bar on the left hand side, and then select **WAN Statistics**.

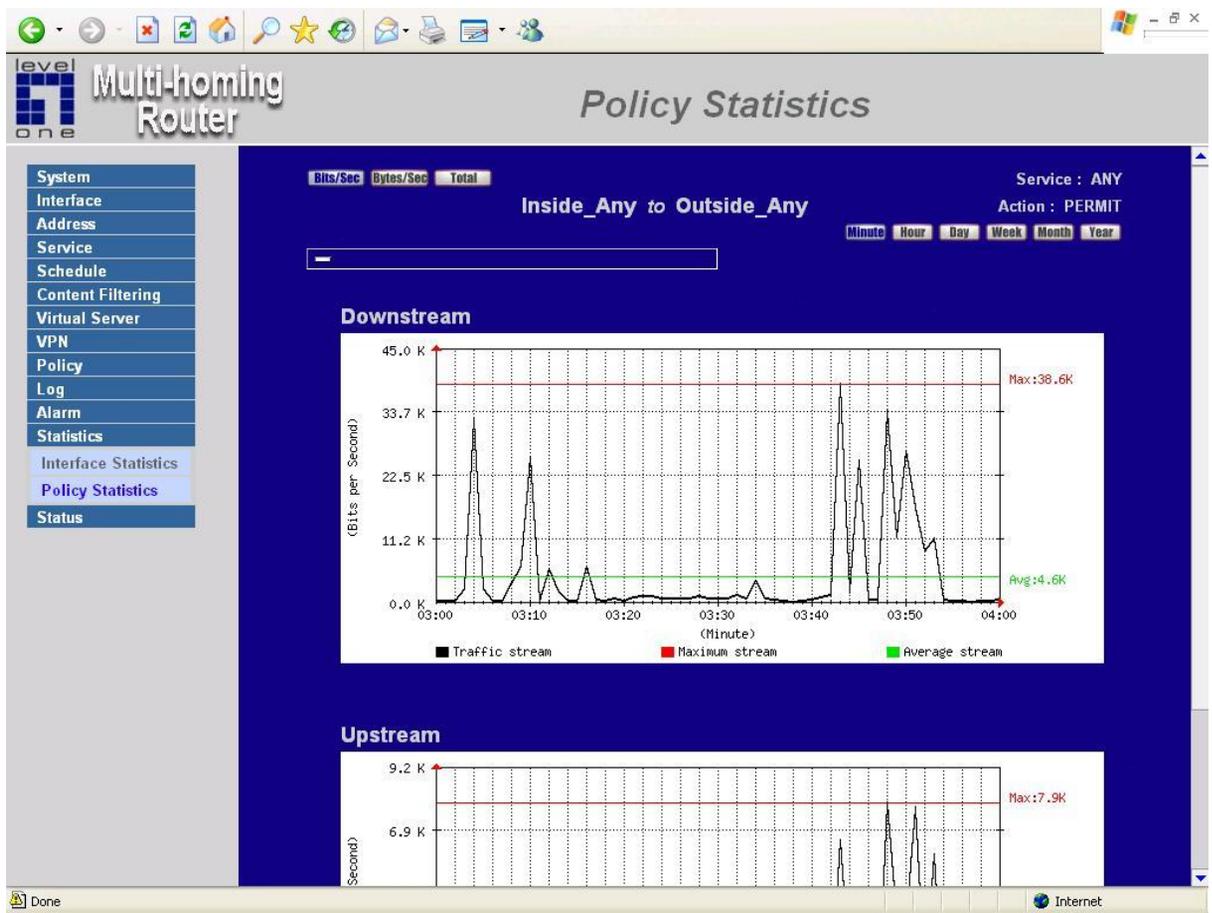
**Step 2.** In Statistics window, find the domain name you want to view

**Step 3.** In the Statistics window, find the network you want to view and click Minute on the right hand side, and then you will be able to view the Statistics figure every minute; click Hour to view the Statistics figure every hour; click Day to view the Statistics figure every day.

**Real-Time:** Real display Download speed (KBytes/Sec) and Upload speed (KBytes/Sec)

**Y-Coordinate :** Network Traffic ( Kbytes/Sec ) .

**X-Coordinate :** Time ( Hour/Minute/Day ) .



# Status

In this section, the device displays the status information about the Multi-Homing Gateway. Status will display the network information from the Configuration menu. The Administrator may also use Status to check the DHCP lease time and MAC addresses for computers connected to the Multi-Homing Gateway.

# Interface Status

## Entering the Interface Status window

Click on **Status** in the menu bar, then click **Interface Status** below it. A window will appear providing information from the **Configuration** menu. **Interface Status** will list the settings for LAN Interface, WAN 1/2 Interface, and the DMZ Interface.

Active Sessions Number : 8

System Uptime  
0 Day 17 Hour 31 Min 32 Sec

	LAN	WAN1	WAN2	DMZ
Forwarding Mode	NAT	PPPoE	Static IP	NAT
Connection Status	---			---
Max. Downstream / Upstream	---	512 / 512 Kbps	512 / 512 Kbps	---
Downstream Alloca.	---	100%	0%	---
Upstream Alloca.	---	90%	10%	---
Connect Time	---	0 : 04 : 50	---	---
MAC Address	00:e0:98:bf:35:5d	00:e0:98:bf:35:5e	00:e0:98:bf:35:5f	00:e0:98:bf:35:60
IP Address	192.168.1.1	218.167.11.37	211.21.10.171	192.168.11.1
Netmask	255.255.255.0	255.255.255.255	255.255.255.248	255.255.255.0
Default Gateway	---	218.167.0.254	211.21.10.169	---
DNS1	---	168.95.192.1	168.95.192.1	---
DNS2	---	168.95.1.1	168.95.1.1	---
Rx Pkts, Error Pkts	550, 0	418, 0	0, 0	0, 0
Tx Pkts, Error Pkts	712, 0	306, 0	78, 0	0, 0
Ping		---		
HTTP		---		

# ARP Table

## Entering the ARP Table window

Click on **Status** in the menu bar, then click **ARP Table** below it. A window will appear displaying a table with IP addresses and their corresponding MAC addresses. For each computer on the LAN, WAN 1/2/3/4, and DMZ network that replies to an ARP packet, the device will list them in this ARP table.

The screenshot shows a web-based interface for a 'Multi-homing Router'. The main area displays the 'ARP Table' with the following data:

IP Address	MAC Address	Interface
192.168.1.2	00:09:6B:8D:36:8C	LAN
192.168.1.6	00:00:E8:71:5F:78	LAN

The left sidebar menu includes: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Statistics, Status, Interface Status, ARP Table, and DHCP Clients. The 'Status' and 'ARP Table' items are highlighted.

**IP Address:** The IP address of the host computer

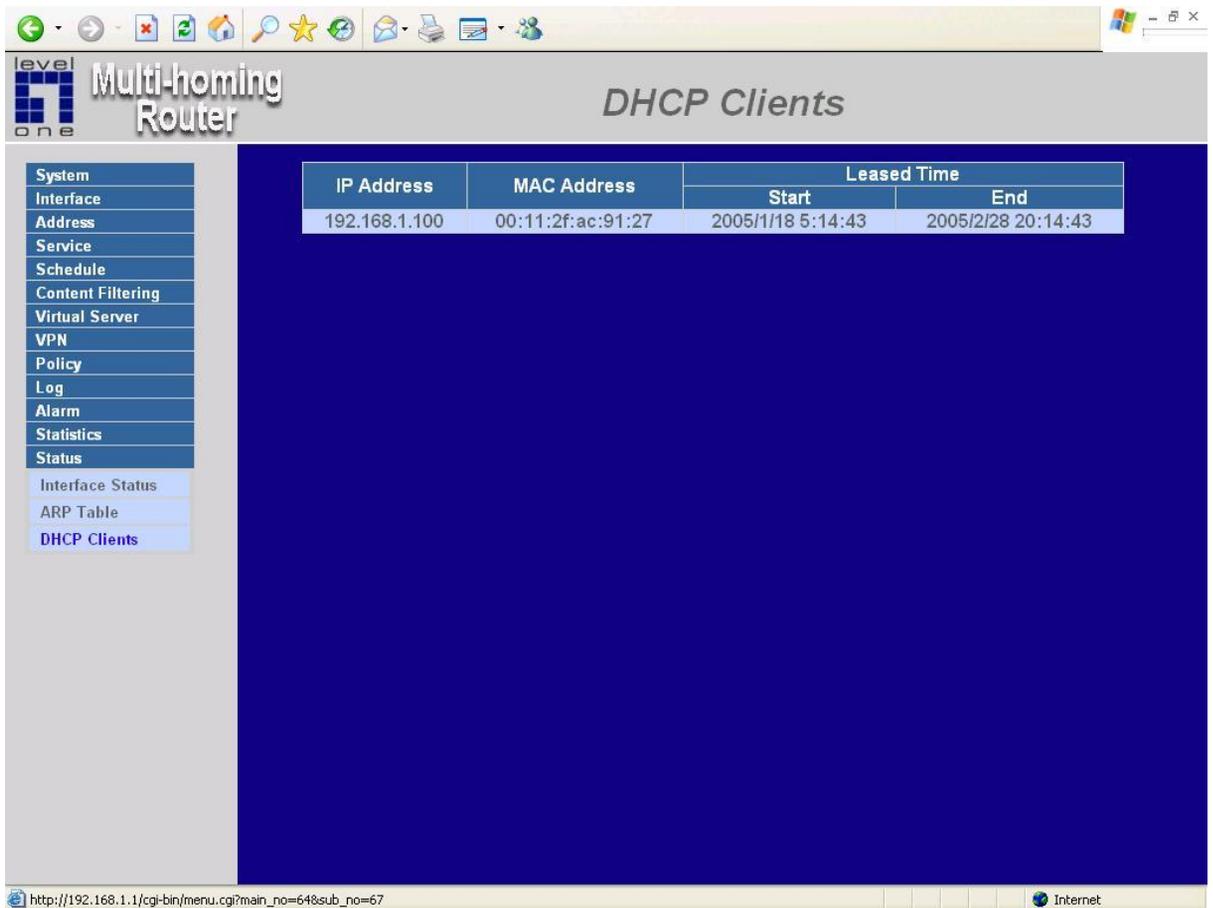
**MAC Address:** The MAC address of that host computer

**Interface:** The port that the host computer is connected to (LAN, WAN 1/2/3/4, DMZ)

# DHCP Clients

## Entering the DHCP Clients window

Click on **Status** in the menu bar, then click on **DHCP Clients** below it. A window will appear displaying the table of DHCP clients that are connected to the device. The table will list host computers on the LAN network that obtain its IP address from the Multi-Homing Gateway's DHCP server function.



The screenshot shows the web interface of a Multi-homing Router. The title bar reads "Multi-homing Router" and "DHCP Clients". On the left is a navigation menu with "Status" selected and "DHCP Clients" highlighted. The main area displays a table of DHCP clients.

IP Address	MAC Address	Leased Time	
		Start	End
192.168.1.100	00:11:2f:ac:91:27	2005/1/18 5:14:43	2005/2/28 20:14:43

The browser address bar shows the URL: [http://192.168.1.1/cgi-bin/menu.cgi?main\\_no=648sub\\_no=67](http://192.168.1.1/cgi-bin/menu.cgi?main_no=648sub_no=67)

**IP Address:** the IP address of the LAN host computer

**MAC Address:** MAC address of the LAN host computer

**Leased Time:** The Start and End time of the DHCP lease for the LAN host computer.

# Setup Examples

**Example 1:** Allow the LAN network to be able to access the Internet

**Example 2:** The LAN network can only access Yahoo.com website

**Example 3:** Outside users can access the LAN FTP server through Virtual Servers

**Example 4:** Install a server inside the LAN network and have the Internet (WAN 1) users access the server through IP Mapping

*Please see the explanation of the examples below:*

## Example 1: Allow the LAN network to be able to access the Internet

**Step 1** Enter the Outgoing window under the Policy menu.

**Step 2** Click the New Entry button on the bottom of the screen.

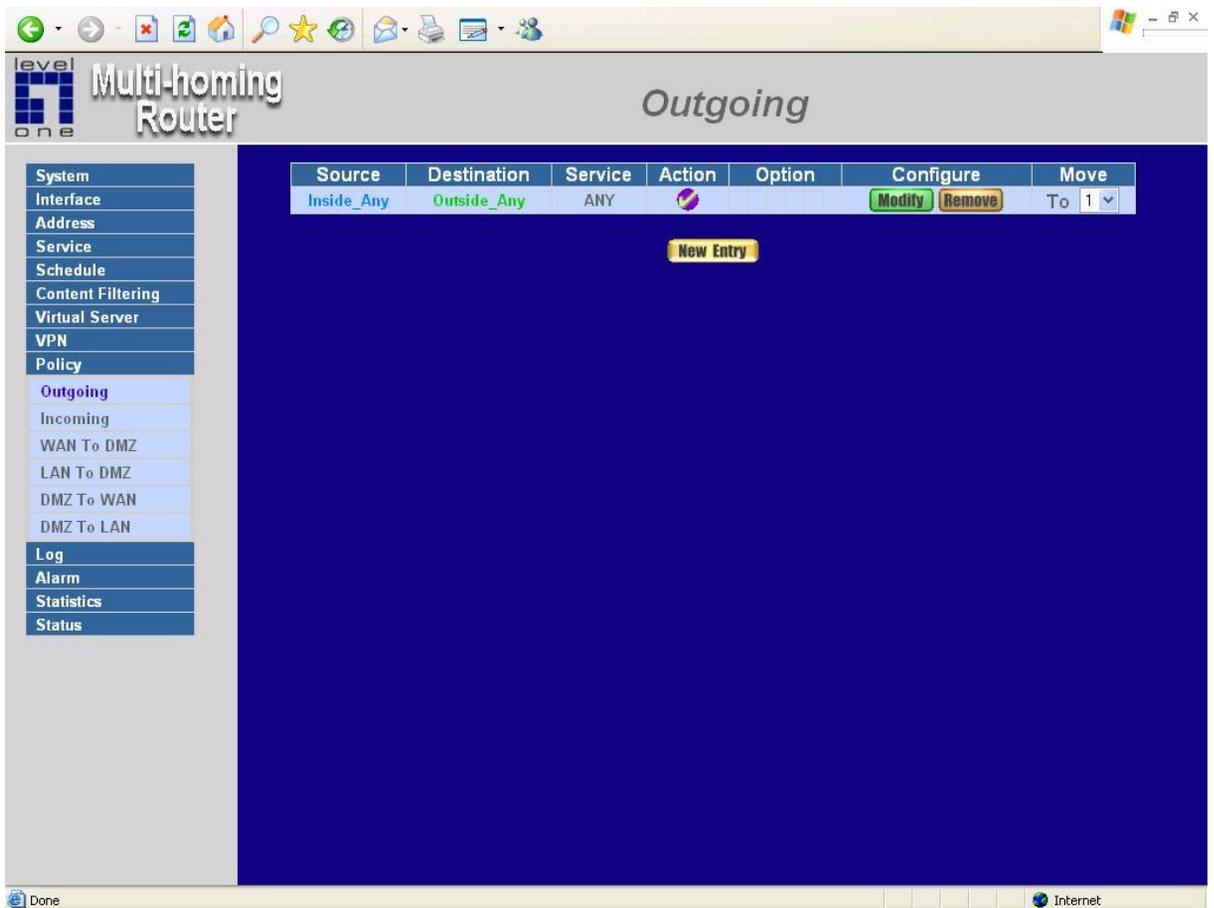
**Step 3** In the Add New Policy window, enter each parameter, then click OK.

The screenshot displays the configuration interface for a 'Multi-homing Router'. The main window is titled 'Outgoing' and contains a table for configuring a new policy. The table has the following fields and values:

Add New Policy	
Source Address	Inside_Any
Destination Address	Outside_Any
Service	ANY
Action, WAN Port	PERMIT ALL
Logging	<input type="checkbox"/> Enable
Statistics	<input type="checkbox"/> Enable
Content Filtering	<input type="checkbox"/> Enable
Schedule	None
Alarm Threshold	0.0 KBytes/Sec
MAX. Concurrent Sessions	0 (0:means unlimited)

At the bottom right of the configuration area, there are two buttons: 'OK' and 'Cancel'. On the left side of the interface, there is a navigation menu with the following items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Outgoing (selected), Incoming, WAN To DMZ, LAN To DMZ, DMZ To WAN, DMZ To LAN, Log, Alarm, Statistics, and Status. The status bar at the bottom shows 'Done' on the left and 'Internet' on the right.

**Step 4** When the following screen appears, the setup is completed.



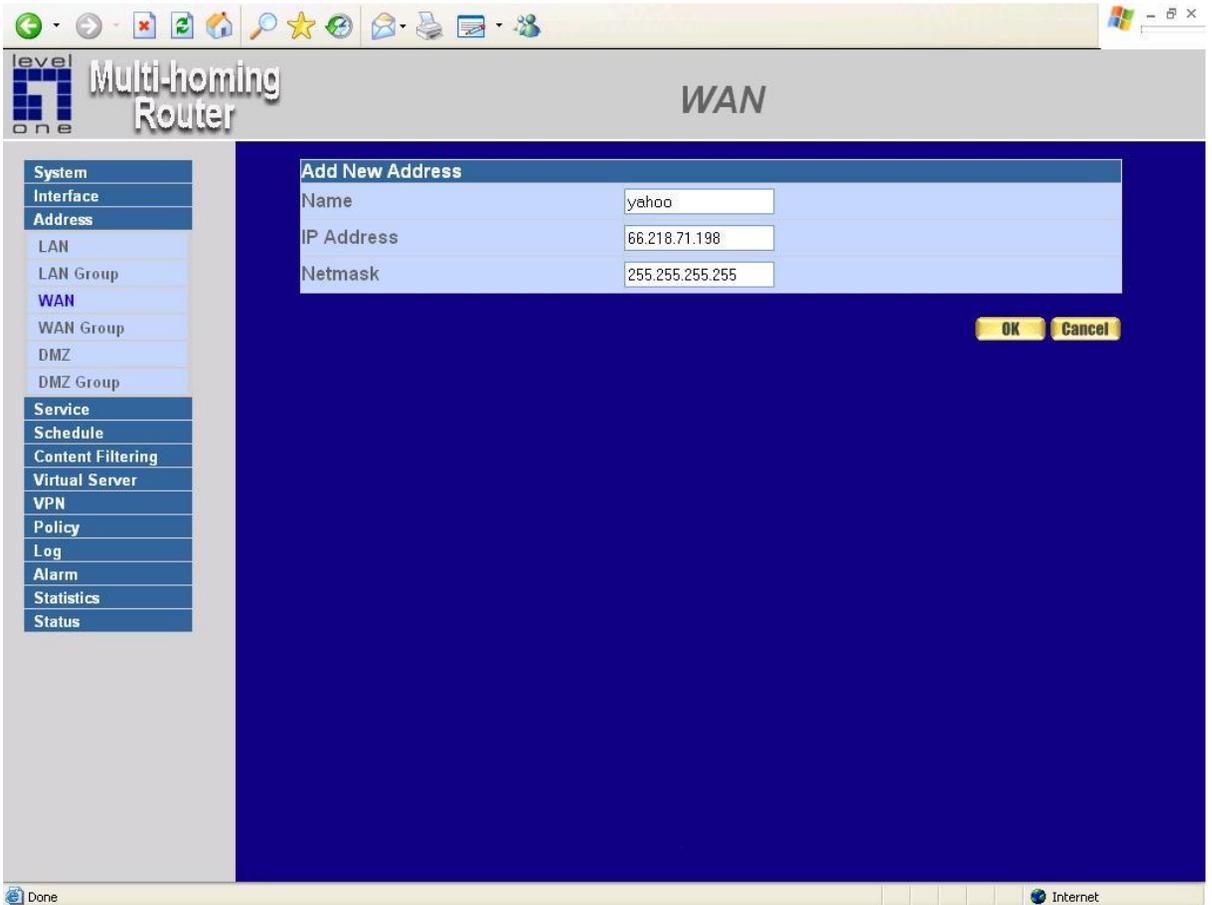
**Example 2:** The LAN network can only access Yahoo.com website.

Step 1. Enter the WAN window under the Address menu.

Step 2. Click the New Entry button.

Step 3. In the Add New Address window, enter relating parameters.

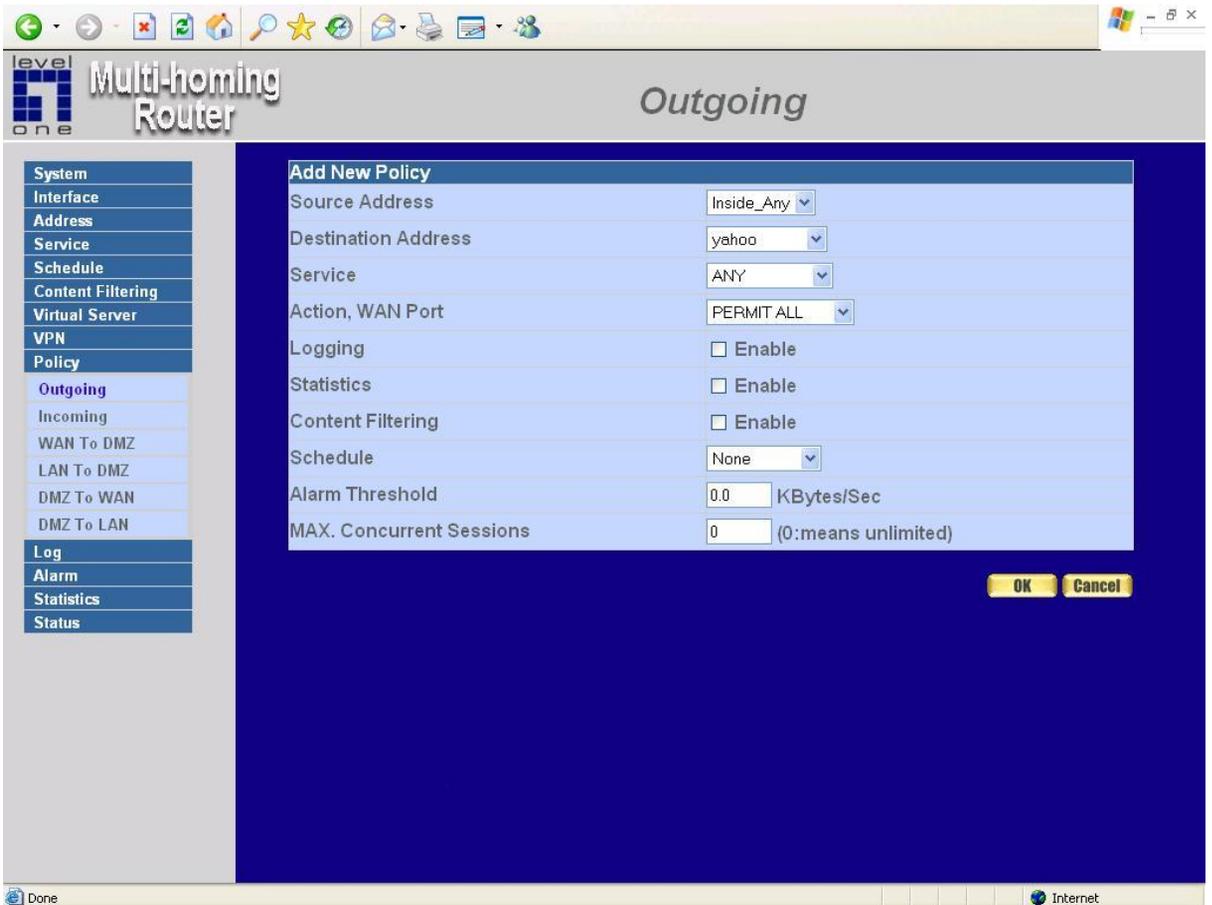
Step 4. Click **OK** to end the address table setup.



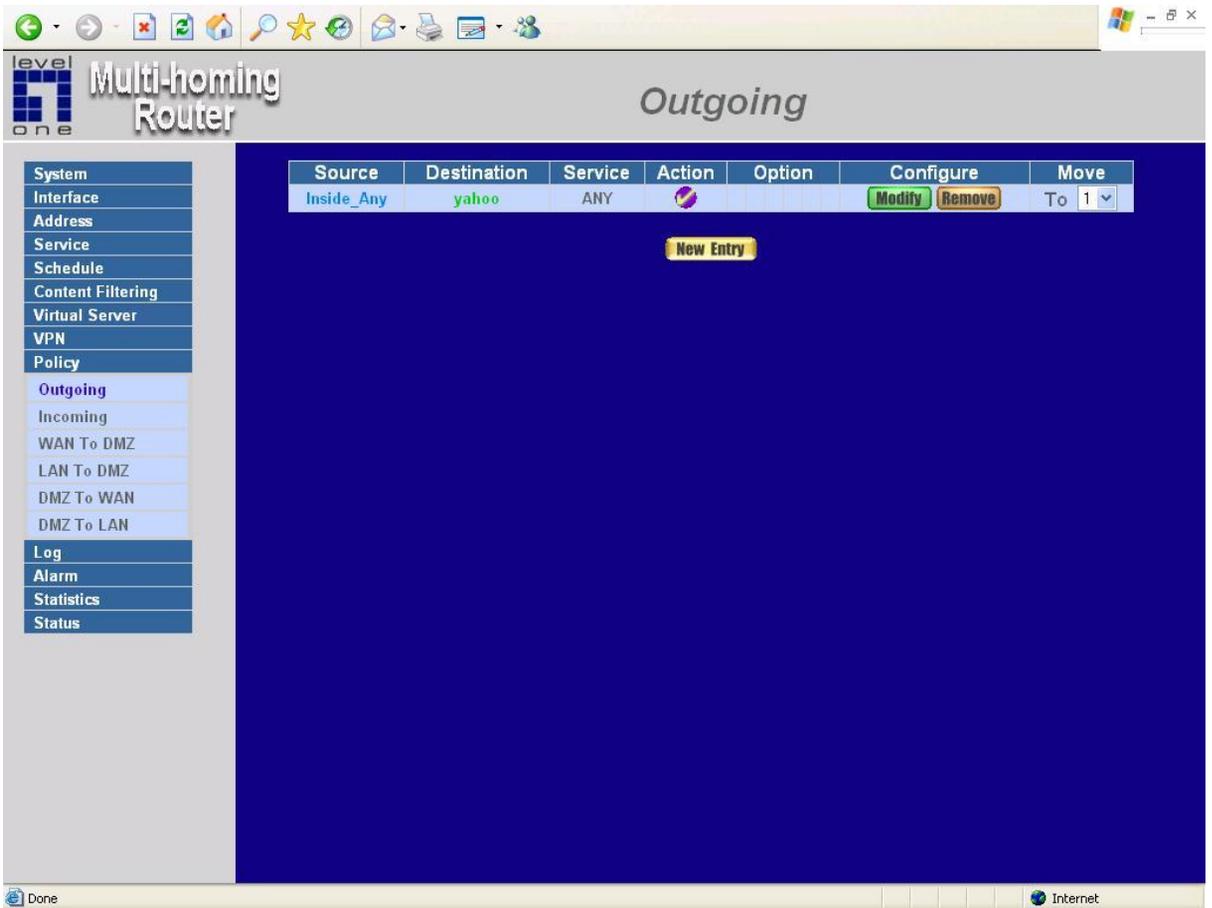
Step 5. Go to the Outgoing window under the Policy menu.

Step 6. Click the New Entry button.

Step 7. In the Add New Policy window, enter corresponding parameters. Click **OK**.

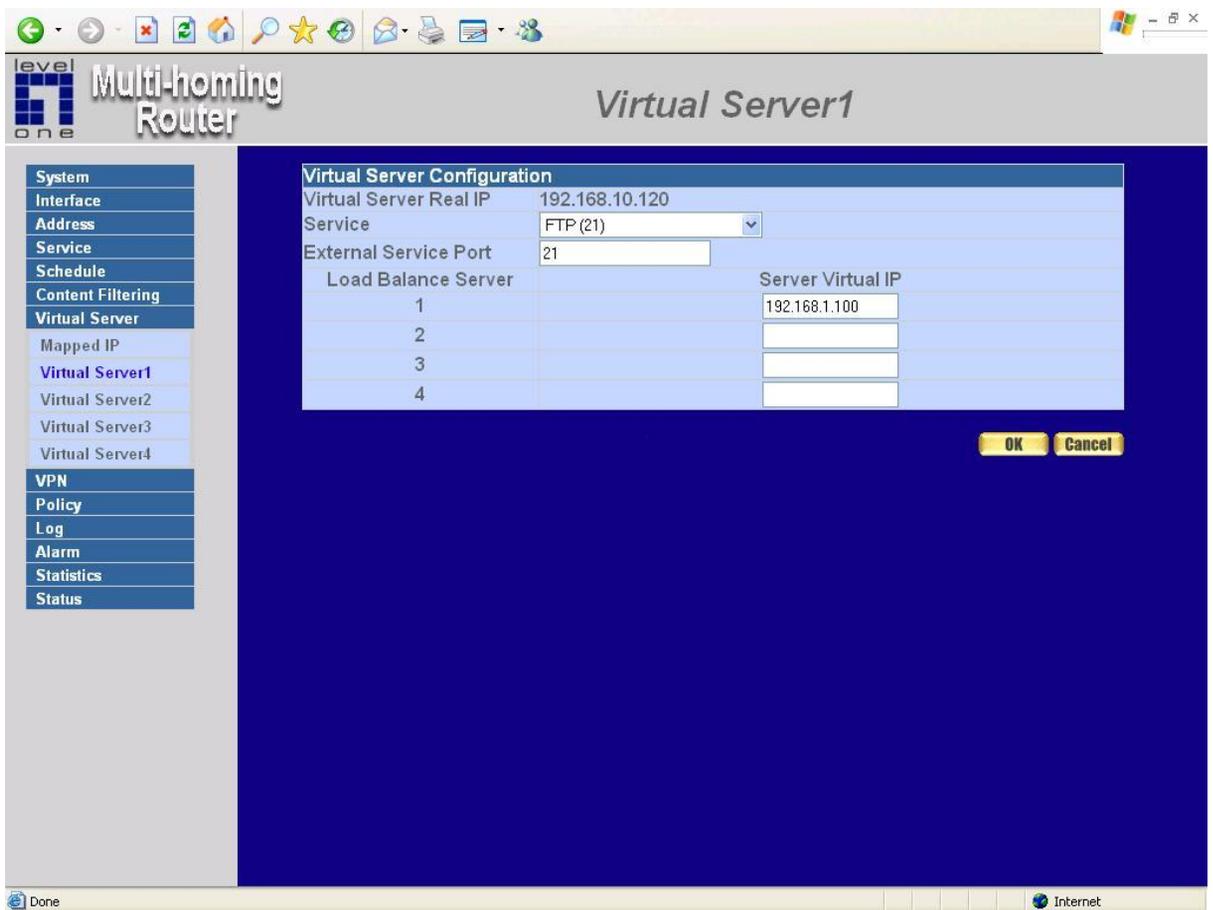


Step 8. When the following screen appears, the setup is completed.



### Example 3: Outside users can access the LAN FTP server through Virtual Servers

- Step 1. Enter Virtual Server under the Virtual Server menu.
- Step 2. Click the 'click here to configure' button.
- Step 3. Select an WAN 1/2 IP address, then click OK.
- Step 4. Click the New Service button on the bottom of the screen.
- Step 5. Add the FTP service pointing to the LAN server IP address.
- Step 6. Click OK.



Step 7. A new Virtual Service should appear.

The screenshot shows the configuration page for 'Virtual Server1' on a 'level one Multi-homing Router'. The interface includes a sidebar with navigation options and a main content area with a table of virtual services.

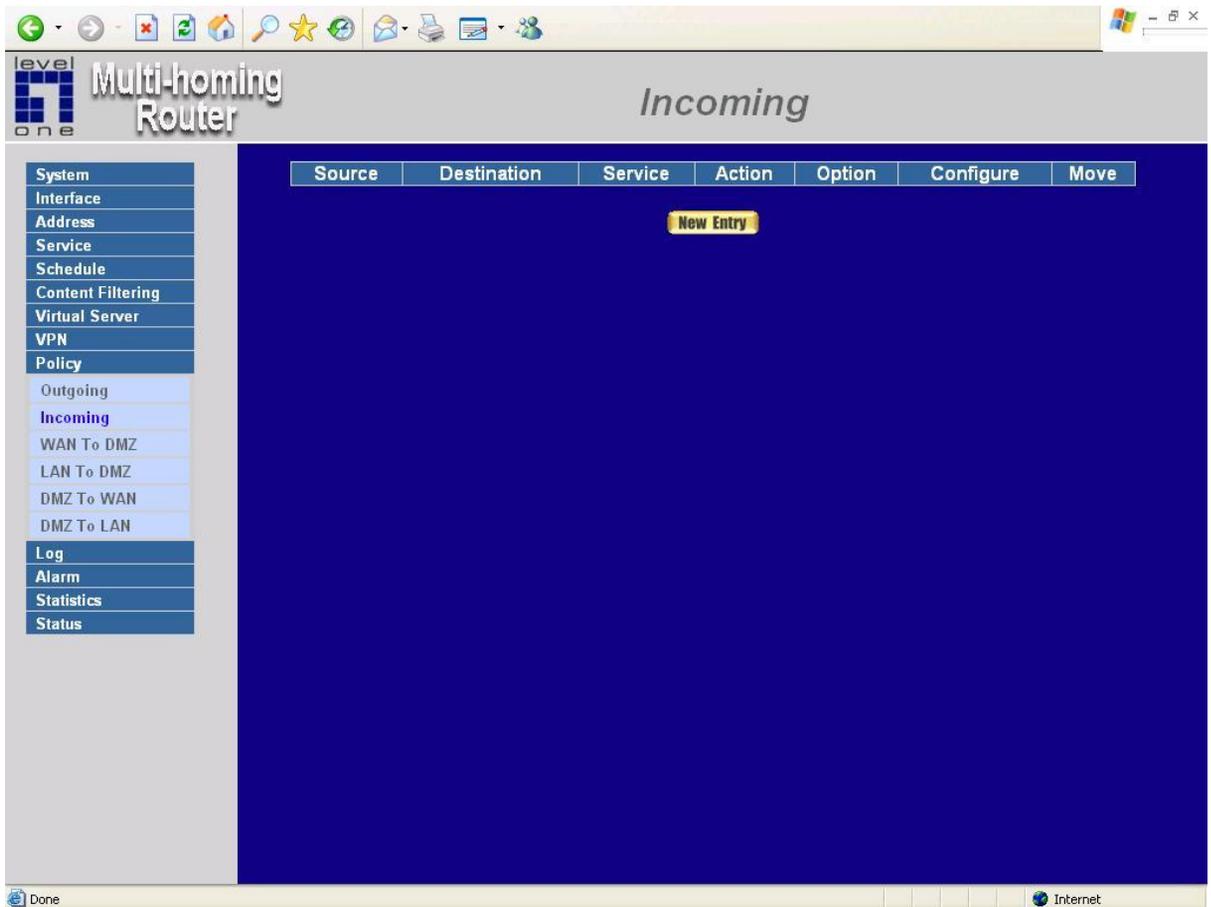
Virtual Server Real IP: 192.168.10.120

Service	WAN Port	Server Virtual IP	Configure
FTP (21)	21	192.168.1.100	<a href="#">Modify</a> <a href="#">Remove</a>

[New Entry](#)

The sidebar contains the following menu items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server (selected), Mapped IP, Virtual Server1, Virtual Server2, Virtual Server3, Virtual Server4, VPN, Policy, Log, Alarm, Statistics, and Status.

Step 8. Go to the Incoming window under the Policy menu, then click on the New Entry button.



Step 9. In the Add New Policy window, set each parameter, then click OK.

The screenshot shows the configuration interface for a Multi-homing Router. The main window is titled "Incoming" and displays the "Add New Policy" configuration form. The form includes the following fields and values:

Field	Value
Source Address	Outside_Any
Destination Address	Virtual Server 1(192.168.10.120)
Service	FTP(21)
Action	PERMIT
Logging	<input type="checkbox"/> Enable
Statistics	<input type="checkbox"/> Enable
Schedule	None
Alarm Threshold	0.0 KBytes/Sec
MAX. Concurrent Sessions	0 (0:means unlimited)

At the bottom right of the form, there are two buttons: "OK" and "Cancel".

The left sidebar contains a navigation menu with the following items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Outgoing, Incoming (highlighted), WAN To DMZ, LAN To DMZ, DMZ To WAN, DMZ To LAN, Log, Alarm, Statistics, and Status.

The top of the window shows a standard Windows taskbar with various icons and the system tray area containing "Done" and "Internet" indicators.

Step 10. An Incoming FTP policy should now be created.

The screenshot displays the configuration interface for a LevelOne Multi-homing Router. The main title is "Incoming". On the left, a navigation menu lists various settings: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Outgoing, Incoming (highlighted), WAN To DMZ, LAN To DMZ, DMZ To WAN, DMZ To LAN, Log, Alarm, Statistics, and Status. The main area shows a table of policy entries:

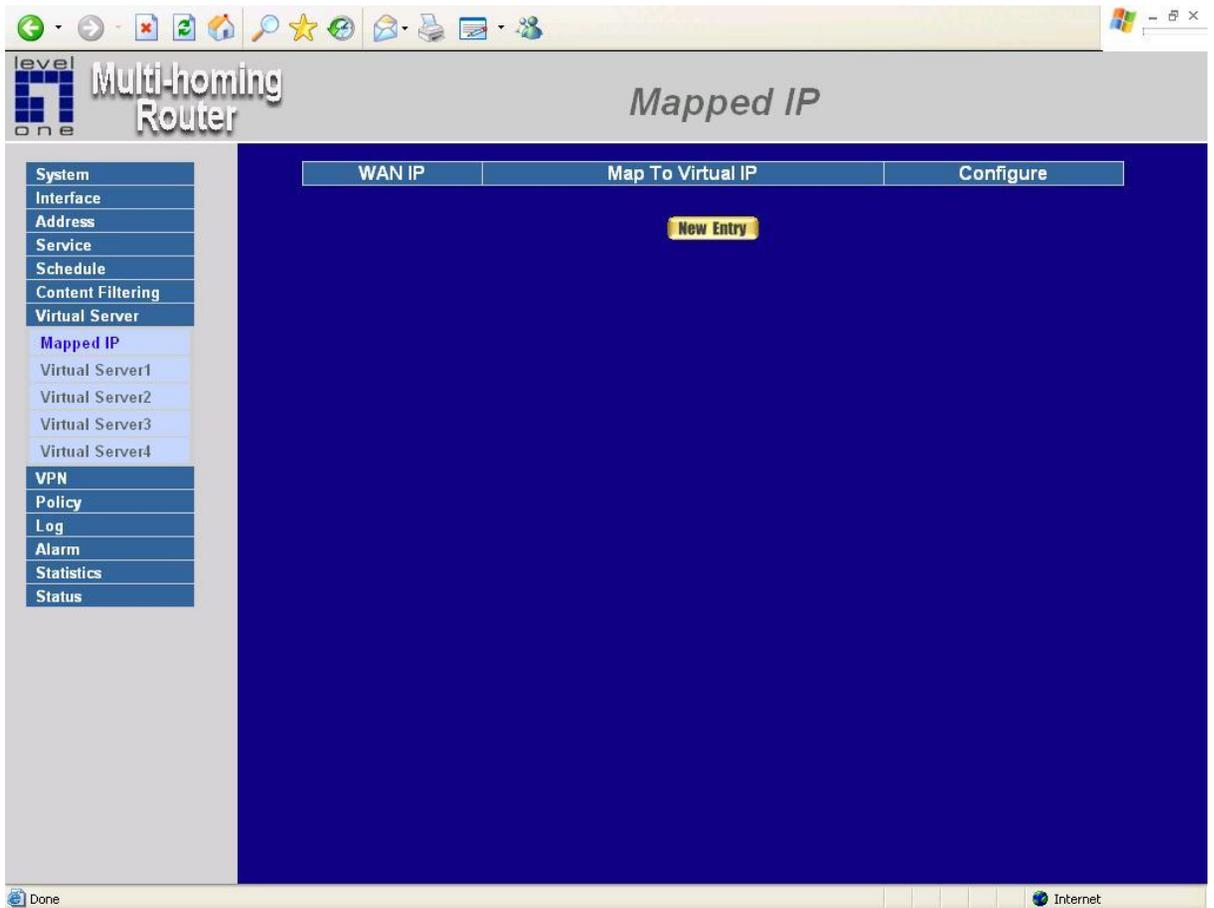
Source	Destination	Service	Action	Option	Configure	Move
Outside_Any	Virtual Server 1 (192.168.10.120)	FTP(21)			<a href="#">Modify</a> <a href="#">Remove</a>	To 1

Below the table is a "New Entry" button. The status bar at the bottom shows "Done" on the left and "Internet" on the right.

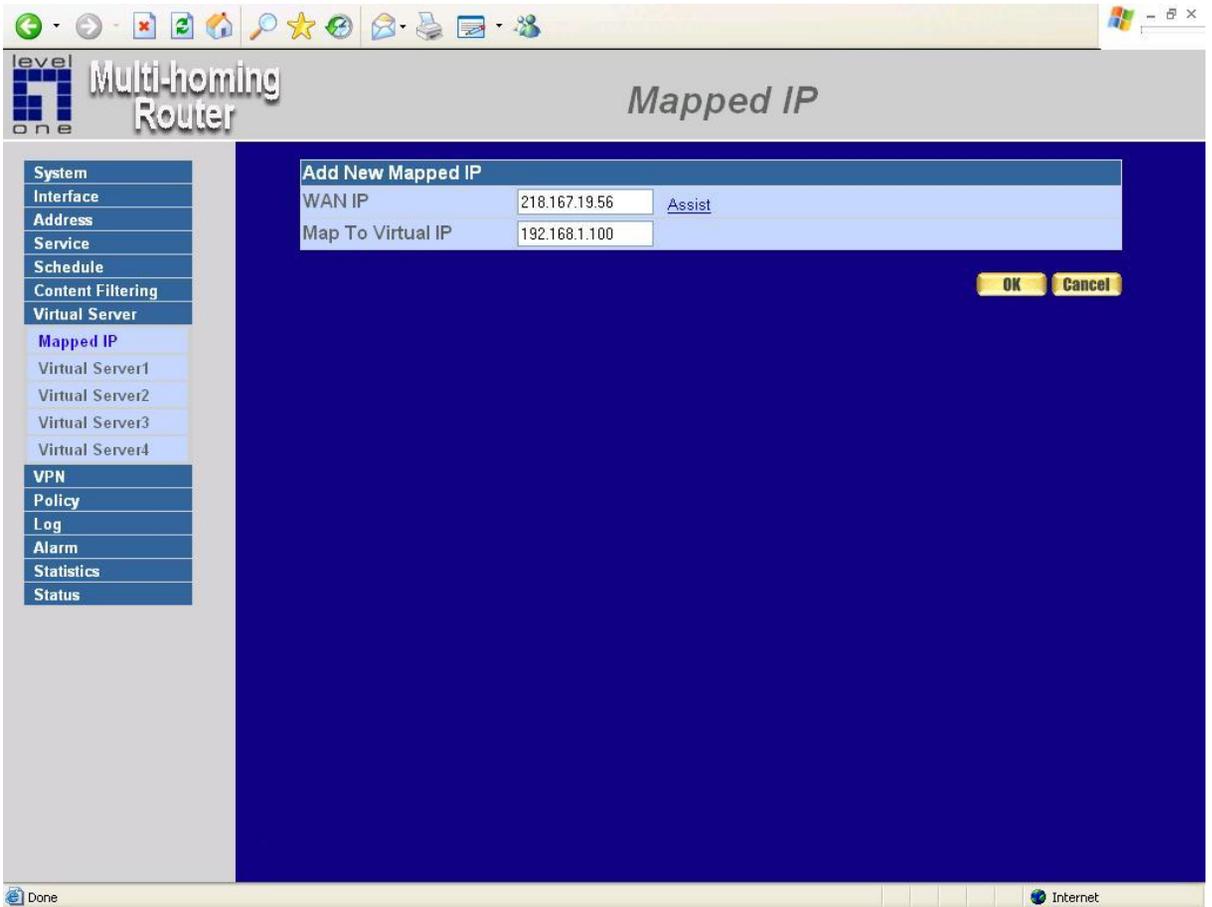
**Example 4:** Install a server inside the LAN network and have the Internet (WAN 1) users access the server through IP Mapping

Step 1. Enter the Mapped IP window under the Virtual Server menu.

Step 2. Click the New Entry button.



Step 3. In the Add New IP Mapping window, enter each parameter, and then click OK.



Step 4. When the following screen appears, the IP Mapping setup is completed.

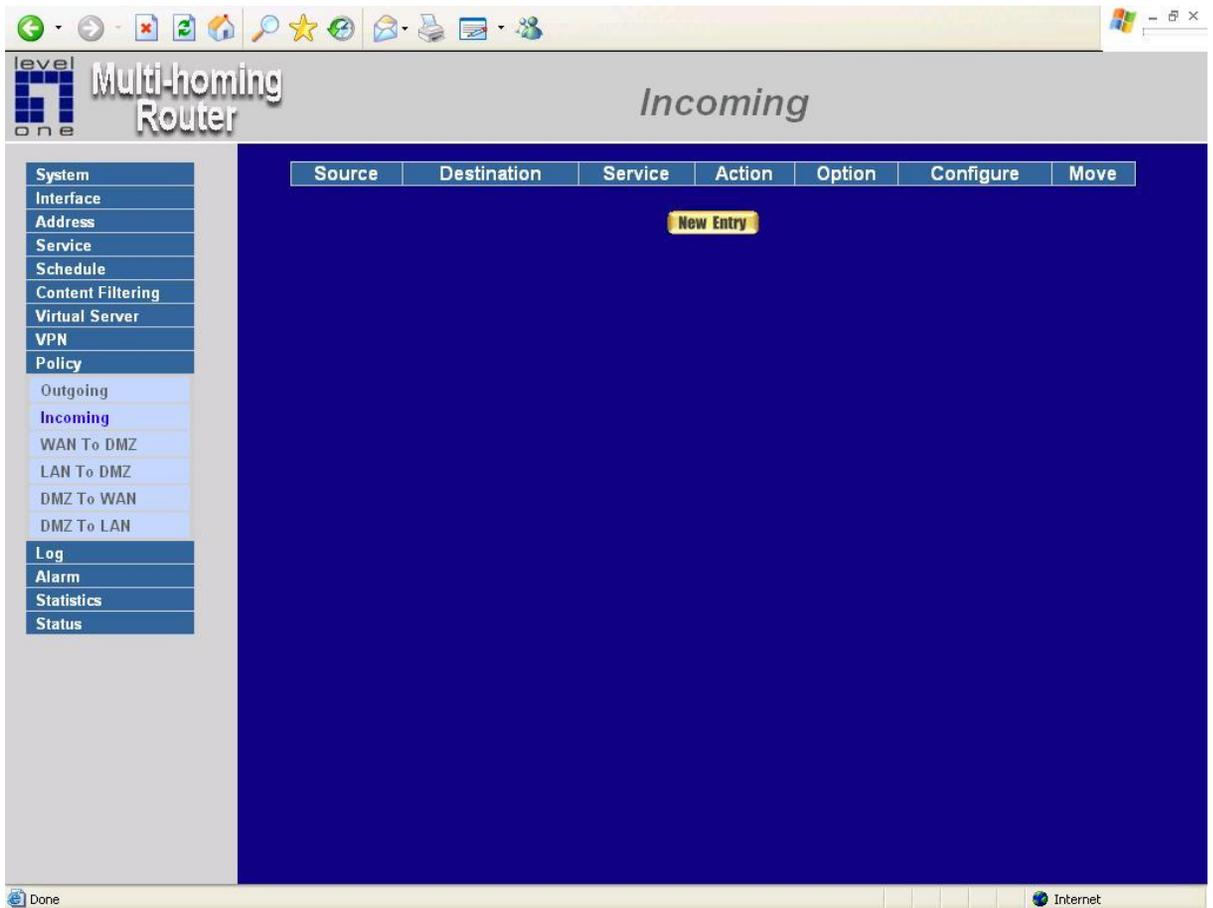
The screenshot shows the 'Mapped IP' configuration page in a web browser. The browser's address bar is empty, and the page title is 'Mapped IP'. The page header includes the 'level one' logo and the text 'Multi-homing Router'. The main content area features a table with the following data:

WAN IP	Map To Virtual IP	Configure
218.167.19.56	192.168.1.100	<a href="#">Modify</a> <a href="#">Remove</a>

Below the table is a yellow button labeled 'New Entry'. On the left side, there is a navigation menu with the following items: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, Mapped IP (highlighted), Virtual Server1, Virtual Server2, Virtual Server3, Virtual Server4, VPN, Policy, Log, Alarm, Statistics, and Status. The browser's status bar at the bottom shows 'Done' on the left and 'Internet' on the right.

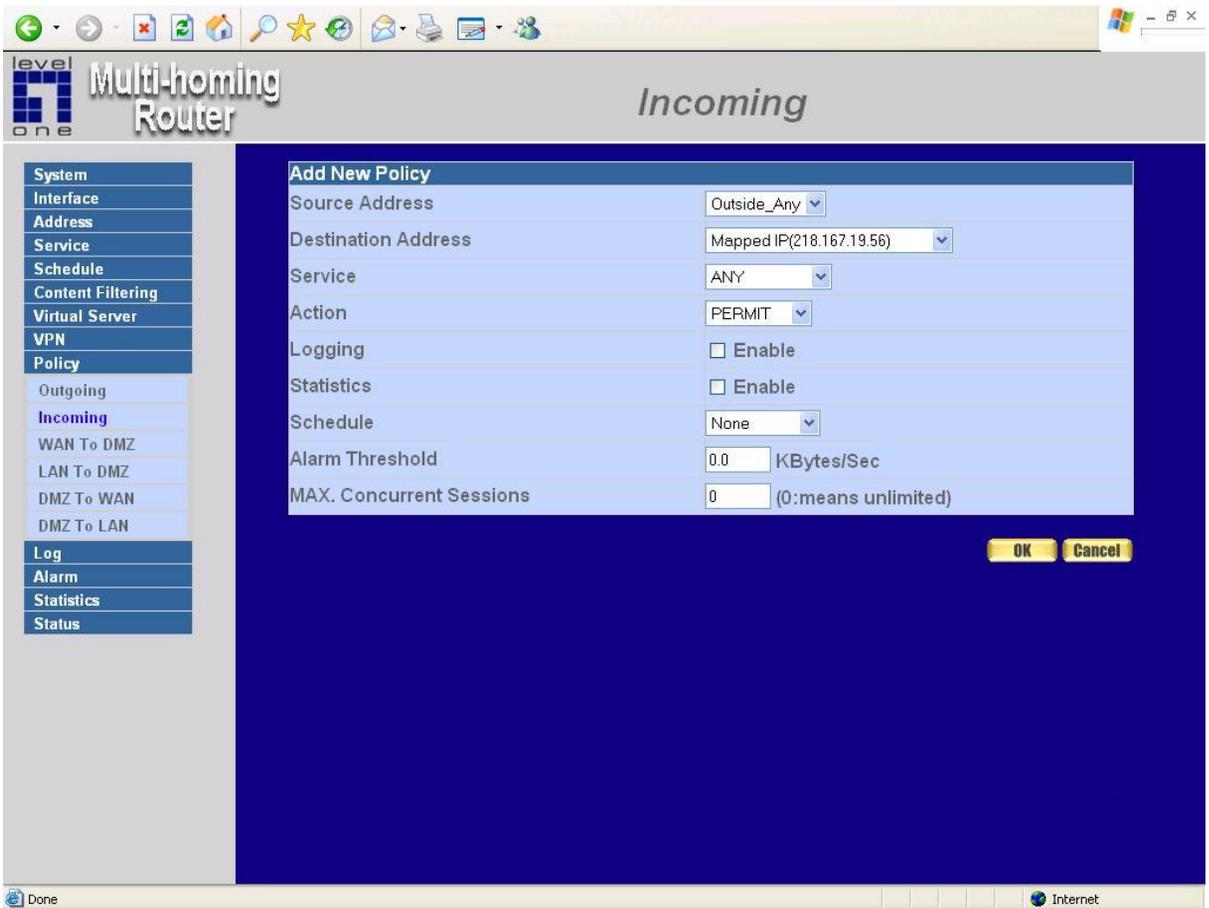
Step 5. Go to the Incoming window under the Policy menu.

Step 6. Click the New Entry button.



Step 7. In the Add New Policy window, set each parameter, then click OK.

Step 8. Open all the services. (ANY)



Step 9. The setup is completed.

The screenshot displays the configuration interface for a Multi-homing Router. The main title is "Incoming". On the left, a navigation menu lists various settings: System, Interface, Address, Service, Schedule, Content Filtering, Virtual Server, VPN, Policy, Log, Alarm, Statistics, and Status. The "Policy" section is expanded, showing options for Outgoing, Incoming, WAN To DMZ, LAN To DMZ, DMZ To WAN, and DMZ To LAN. The "Incoming" policy is selected and active.

Source	Destination	Service	Action	Option	Configure	Move
Outside_Any	Mapped IP(218.167.19.56)	ANY			<a href="#">Modify</a> <a href="#">Remove</a>	To 1 ▾

A "New Entry" button is located below the table.

The status bar at the bottom shows "Done" on the left and "Internet" on the right.

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