ZyWALL 2

Internet Security Gateway

Compact Guide

Version 3.62
April 2004

ZyXEL
Unleash Networking Power

Table of Contents

1 Introducing the ZyWALL

The ZyWALL 2 is the ideal secure gateway for all data passing between the Internet and the LAN. By integrating NAT, firewall and VPN capability, ZyXEL’s ZyWALL 2 is a complete security solution that protects your Intranet and efficiently manages data traffic on your network. The embedded web configurator is easy to operate and totally independent of the operating system platform you use.

You should have an Internet account already set up and have been given most of the following information.

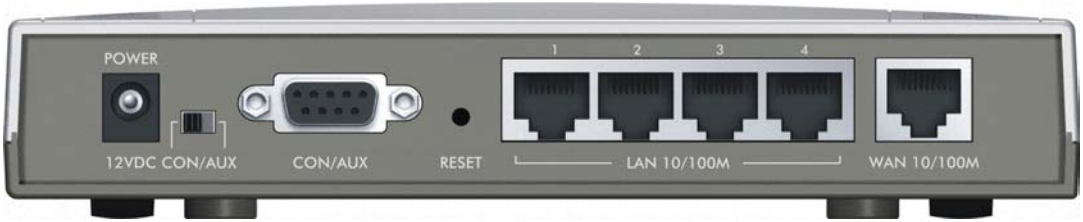
Internet Account Information

Your device’s WAN IP Address (if given): __________________ DNS Server IP Address (if given): Primary __________________, Secondary __________________			
Encapsulation:			
○	**Ethernet**	Service Type: ________________________	
		Login Server IP Address: ______________	
		User Name: ____________	Password: ____________
○	**PPTP**	User Name: ____________	Password: ____________
		Your WAN IP Address: ____________	PPTP Server IP Address: ___________
		Connection ID (if required): ____________	
○	**PPPoE**	(PPPoE) Service Name: ____________	
		User Name: ____________	Password: ____________

2 Hardware

This section provides details on hardware specifications.

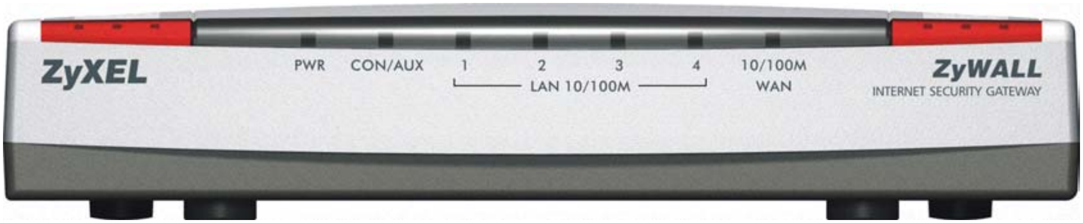
2.1 Rear Panel



LABEL	DESCRIPTION
1. LAN 10/100M 1-4	Connect a computer to one of these ports with an Ethernet cable. These ports are auto-negotiating (can connect at 10 or 100Mbps) and auto-sensing (automatically adjust to the type of Ethernet cable you use (straight-through or crossover).
2. WAN 10/100M	Connect your cable/DSL modem to this port with the cable that came with your modem.
3. POWER 12 VDC	Connect the included power adaptor (use only this adapter) to this power socket.
After you've made the connections, connect the power cable to a power supply and look at the front panel LEDs.	
CON/AUX switch CON/AUX port	Only connect this port if you want to configure the ZyWALL using the SMT via console port or set up a backup WAN connection; see your *User's Guide* for details. Set this switch to the "CON" side to use the **CON/AUX** port as a console port for local device configuration and management. Connect the 9-pin male end of the console cable to the console port of the ZyWALL and the other end to a serial port (COM1, COM2 or other COM port) on your computer. Your computer should have a terminal emulation communications program (such as HyperTerminal) set to VT100 terminal emulation, no parity, 8 data bits, 1 stop bit, no flow control and 9600 bps port speed. Set this switch to the "AUX" side to use the **CON/AUX** port as an auxiliary dial-up WAN connection. Use the included CON/AUX converter, with the console cable to connect the **CON/AUX** port to your modem or TA.
RESET	You only need to use this button if you've forgotten the ZyWALL's password. It returns the ZyWALL to the factory defaults (password is 1234, LAN IP address 192.168.1.1, terminal emulation settings as described above etc.; see your *User's Guide* for details).

2.2 The Front Panel LEDs

The **PWR** LED turns on when you connect the power. The **SYS** LED blinks while performing system testing and then stays on if the testing is successful. The **CON/AUX**, **LAN**, and **WAN** LEDs turn on if the ports are properly connected.



LED	COLOR	STATUS	MEANING
PWR	Green	On	The ZyWALL is turned on.
		Off	The ZyWALL is turned off.
SYS	Green	Off	The ZyWALL is not ready or failed.
		On	The ZyWALL is ready and running.
		Flashing	The ZyWALL is rebooting.
	Red	On	The power to the ZyWALL is too low.
LAN 10/100M 1-4	Green Orange	On On Flashing Off	The ZyWALL has a LAN connection of 10Mbps. The ZyWALL has a LAN connection of 100Mbps. The ZyWALL is sending/receiving packets. The ZyWALL does not have an Ethernet connection.
10/100M WAN	Green Orange	On On Flashing Off	The WAN link is connected at 10Mbps. The WAN link is connected at 100Mbps. The WAN link is sending/receiving packets. The WAN link is not ready, or has failed.
CON/AUX	Green	Off	The CON/AUX link is not ready, or has failed.
		On	The CON/AUX switch is set to CON and the CON/AUX port is connected to a management computer.
	Orange	Off	The CON/AUX link is not ready, or has failed.
		On	The CON/AUX switch is set to AUX and the CON/AUX port has an Internet connection through a dial-up modem.
		Flashing	The CON/AUX switch is set to AUX and the CON/AUX port is sending or receiving data through a dial-up modem.

3 Setting Up Your Computer’s IP Address

Skip this section if your computer is already set up to accept a dynamic IP address. This is the default for most new computers.

The ZyWALL is already set up to assign your computer an IP address. Use this section to set up your computer to receive an IP address or assign it a static IP address in the 192.168.1.2 to 192.168.1.254 range with a subnet mask of 255.255.255.0. This is necessary to ensure that your computer can communicate with your ZyWALL.

Your computer must have an Ethernet card and TCP/IP installed. TCP/IP should already be installed on computers using Windows NT/2000/XP, Macintosh OS 7 and later operating systems.

3.1 Windows 2000/NT/XP

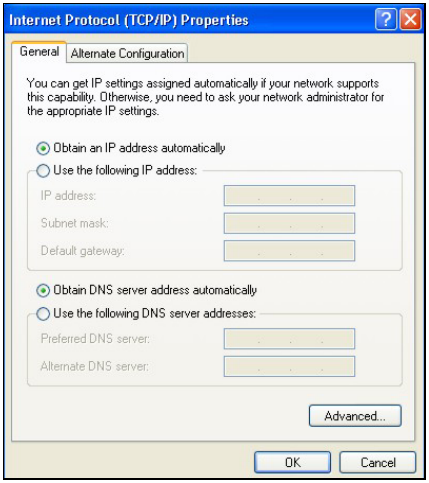
1. In Windows XP, click **start**, **Control Panel**. In Windows 2000/NT, click **Start**, **Settings**, **Control Panel**.
2. In Windows XP, click **Network Connections**.

   In Windows 2000/NT, click **Network and Dial-up Connections**.
3. Right-click **Local Area Connection** and then click **Properties**.
4. Select **Internet Protocol (TCP/IP)** (under the **General** tab in Win XP) and click **Properties**.

5. The **Internet Protocol TCP/IP Properties** screen opens (the **General tab** in Windows XP).

   - To have your computer assigned a dynamic IP address, click **Obtain an IP address automatically**.

   -To configure a static IP address, click **Use the following IP Address** and fill in the **IP address** (choose one from192.168.1.2 to 192.168.1.254), **Subnet mask** (255.255.255.0), and **Default gateway** (192.168.1.1) fields.



Internet Protocol (TCP/IP) Properties

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

● Obtain an IP address automatically

○ Use the following IP address:

IP address: . . .

Subnet mask: . . .

Default gateway: . . .

● Obtain DNS server address automatically

○ Use the following DNS server addresses:

Preferred DNS server: . . .

Alternate DNS server: . . .

6. Click **Advanced**. Remove any previously installed gateways in the **IP Setting**s tab and click **OK** to go back to the **Internet Protocol TCP/IP Properties** screen.

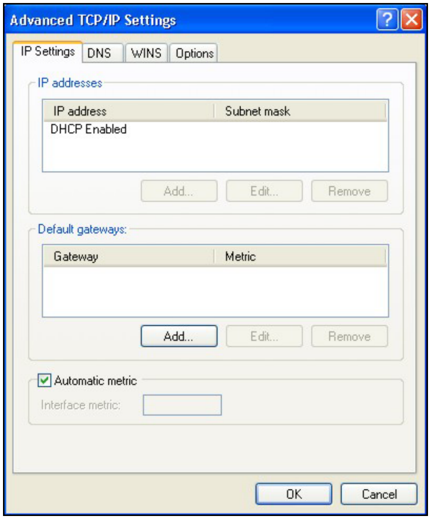
7. Click **Obtain DNS server address automatically** if you do not know your DNS server IP address(es).

   If you know your DNS server IP address(es), click **Use the following DNS server addresses**, and type them in the **Preferred DNS server** and **Alternate DNS server** fields.

   If you have more than two DNS servers, click **Advanced**, the **DNS** tab and then configure them using **Add**.

8. Click **OK** to close the **Internet Protocol (TCP/IP) Properties** window.

9. Click **OK** to close the **Local Area Connection Properties** window.



Advanced TCP/IP Settings

IP addresses

IP address	Subnet mask
DHCP Enabled	

Default gateways:

Gateway	Metric

☑ Automatic metric

Interface metric:

Checking Your Computer's IP Address

1. In the computer, click **Start**, **(All) Programs**, **Accessories** and then **Command Prompt**.
2. In the **Command Prompt** window, type "ipconfig" and then press **ENTER.** Your computer's IP address must be in the correct range (192.168.1.2 to 192.168.1.254) with subnet mask 255.255.255.0 in order to communicate with the ZyWALL.

Refer to your *User's Guide* for detailed IP address configuration for other Windows and Macintosh computer operating systems.

4 Configuring Your ZyWALL

This *Compact Guide* shows you how to use the web configurator wizard only. See your *User's Guide* for background information on all ZyWALL features and System Management Terminal (SMT) configuration.

- Web Configurator

4.1 Accessing Your ZyWALL Via Web Configurator

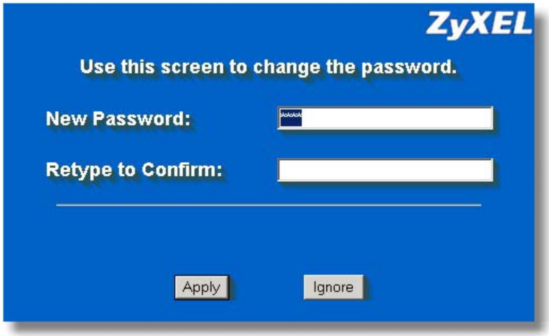
Step 1. Make sure your ZyWALL hardware is properly connected and prepare your computer/computer network to connect to the ZyWALL (refer to the *Quick Start Guide*).

Step 2. Launch your web browser.

Step 3. Type "192.168.1.1" as the URL.

Step 4. Type "1234" (default) as the password and click **Login**. In some versions, the default password appears automatically - if this is the case, click **Login**.

Step 5. You should see a screen asking you to change your password (highly recommended) as shown next. Type a new password (and retype it to confirm) and click **Apply** or click **Ignore**.

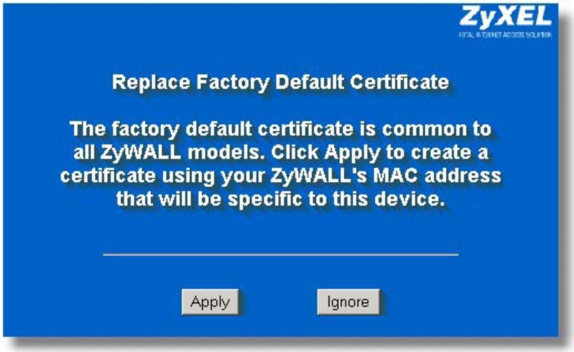


Use this screen to change the password.

New Password:

Retype to Confirm:

Step 6. Click **Apply** in the **Replace Certificate** screen to create a certificate using your ZyWALL's MAC address that will be specific to this device. This feature is not available on the ZyWALL 2WE.

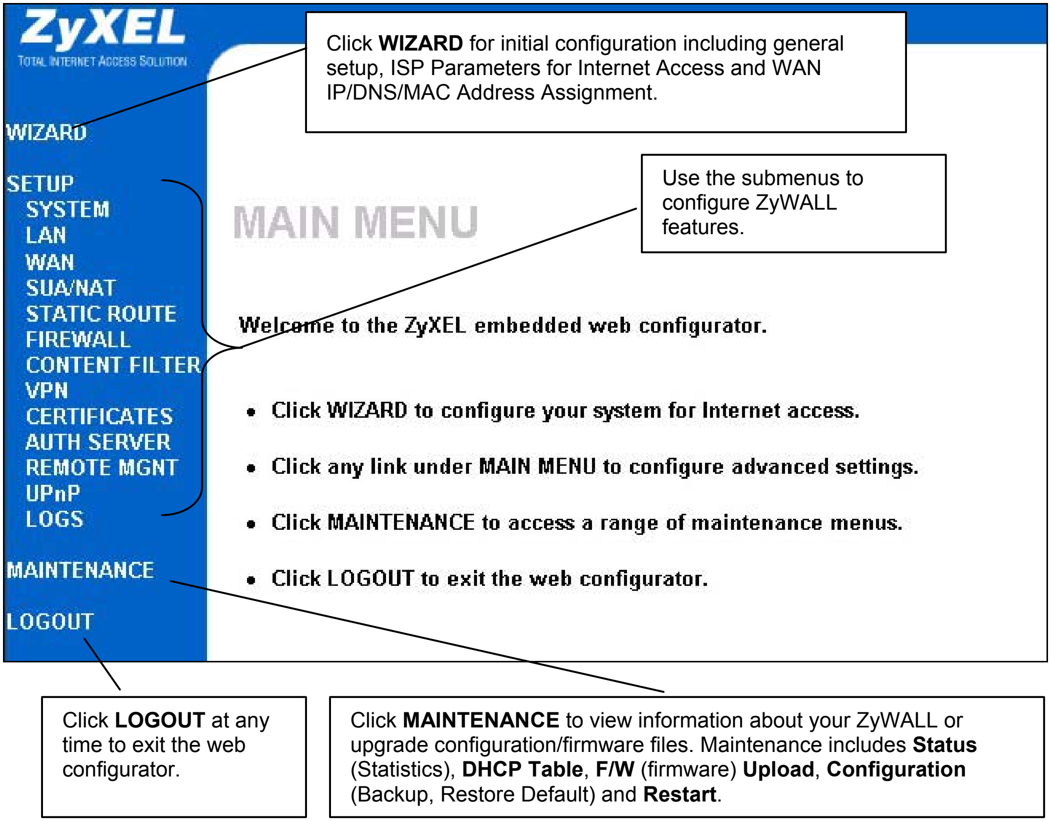


Replace Factory Default Certificate

The factory default certificate is common to all ZyWALL models. Click Apply to create a certificate using your ZyWALL's MAC address that will be specific to this device.

Step 7. You should now see the web configurator **MAIN MENU** screen.

- Click **WIZARD** to begin a series of screens to help you configure your ZyWALL for the first time.
- Click **MAINTENANCE** in the navigation panel to see ZyWALL performance statistics, upload firmware and back up, restore or upload a configuration file.
- Click **LOGOUT** when you have finished a ZyWALL management session. The ZyWALL automatically logs you out if it is left idle for five minutes; press **ENTER** to display the **Login** screen again and then log back in.



Welcome to the ZyXEL embedded web configurator.

- Click WIZARD to configure your system for Internet access.
- Click any link under MAIN MENU to configure advanced settings.
- Click MAINTENANCE to access a range of maintenance menus.
- Click LOGOUT to exit the web configurator.

Click **WIZARD** for initial configuration including general setup, ISP Parameters for Internet Access and WAN IP/DNS/MAC Address Assignment.

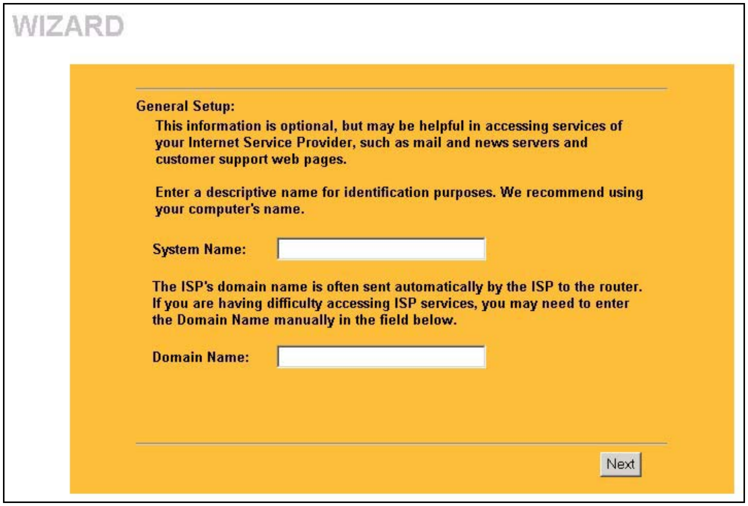
Use the submenus to configure ZyWALL features.

Click **LOGOUT** at any time to exit the web configurator.

Click **MAINTENANCE** to view information about your ZyWALL or upgrade configuration/firmware files. Maintenance includes **Status** (Statistics), **DHCP Table**, **F/W** (firmware) **Upload**, **Configuration** (Backup, Restore Default) and **Restart**.

4.2 Internet Access Using the Wizard

Step 1. Click **Wizard Setup** in the main menu to display the first wizard screen.



WIZARD

General Setup:

This information is optional, but may be helpful in accessing services of your Internet Service Provider, such as mail and news servers and customer support web pages.

Enter a descriptive name for identification purposes. We recommend using your computer's name.

System Name:

The ISP's domain name is often sent automatically by the ISP to the router. If you are having difficulty accessing ISP services, you may need to enter the Domain Name manually in the field below.

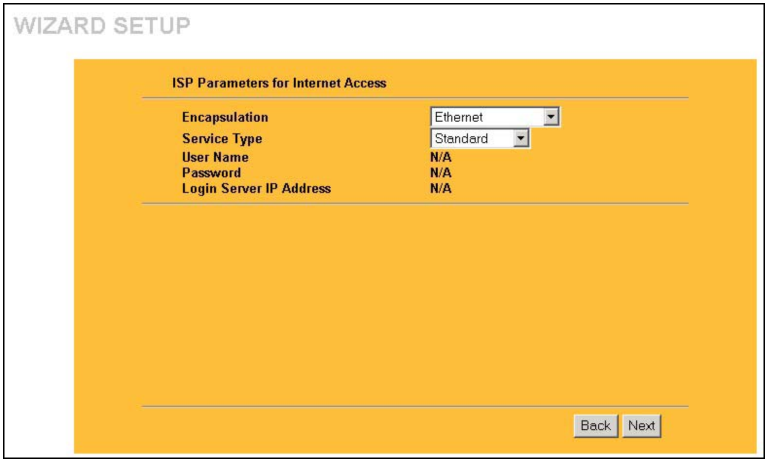
Domain Name:

System Name is for identification purposes. Enter your computer's "Computer Name".

The **Domain Name** entry is what is propagated to the DHCP clients on the LAN. If you leave this blank, the domain name obtained by DHCP from the ISP is used.

Click **Next** to continue.

Step 2. The second wizard screen has three variations depending on what encapsulation type you use. Use the information in *Internet Account Information* to fill in fields.



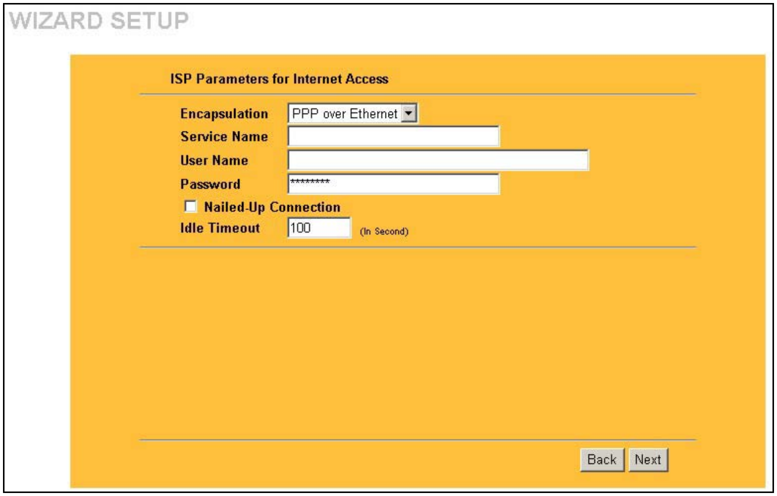
WIZARD SETUP

ISP Parameters for Internet Access

Encapsulation	Ethernet
Service Type	Standard
User Name	N/A
Password	N/A
Login Server IP Address	N/A

Choose **Ethernet** when the WAN port is used as a regular Ethernet. Choose from **Standard** or a RoadRunner version. You'll need **User Name**, **Password** and **Login Server IP Address** for some Roadrunner versions.

Click **Next** to continue.



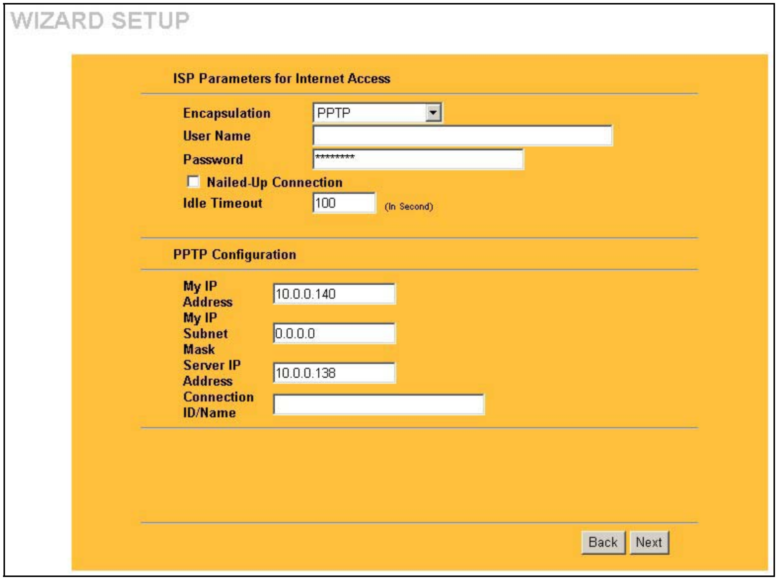
ISP Parameters for Internet Access

Encapsulation: PPP over Ethernet
Service Name:
User Name:
Password: ********
☐ Nailed-Up Connection
Idle Timeout: 100 (In Second)

Point-to-Point Protocol over Ethernet (**PPPoE**) functions as a dial-up connection. Therefore you'll also need a username and password and possibly the PPPoE service name. Your ISP will give you all needed information.

Select **Nailed Up Connection** if you do not want the connection to the PPPoE server to time out. Otherwise, enter the number of seconds to elapse before the ZyWALL disconnects from the server in the **Idle Timeout** field. The default value is 100 seconds. Enter "0" to prevent the connection from timing out.

Click **Next** to continue.



ISP Parameters for Internet Access

Encapsulation: PPTP
User Name:
Password: ********
☐ Nailed-Up Connection
Idle Timeout: 100 (In Second)

PPTP Configuration

My IP Address: 10.0.0.140
My IP Subnet Mask: 0.0.0.0
Server IP Address: 10.0.0.138
Connection ID/Name:

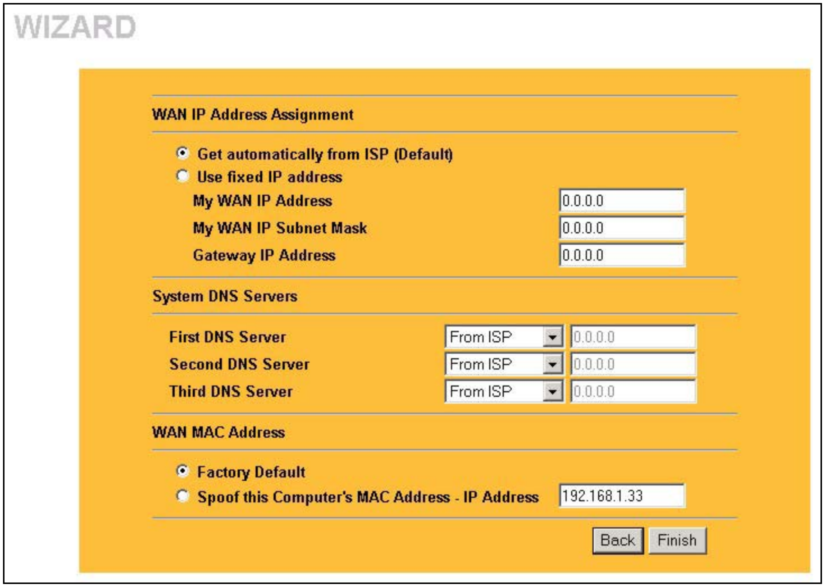
Choose **PPTP** if your service provider uses a DSL terminator with PPTP login. The ZyWALL must have a static IP address (**My IP Address**) in this case, and possibly a subnet mask (**My IP Subnet Mask**) if provided by your ISP.

You'll also need a username, associated password, and the DSL terminator IP address (**Server IP Address**). If your ISP has provided a connection ID name, enter it in the **Connection ID/Name** field.

See the PPPoE encapsulation above for information on the **Nailed Up Connection** and **Idle Timeout** fields.

Click **Next** to continue.

Step 3. Fill in the fields and click **Finish** to save and complete the wizard setup.



WAN IP Address Assignment

● Get automatically from ISP (Default)

○ Use fixed IP address

My WAN IP Address	0.0.0.0
My WAN IP Subnet Mask	0.0.0.0
Gateway IP Address	0.0.0.0

System DNS Servers

First DNS Server	From ISP	0.0.0.0
Second DNS Server	From ISP	0.0.0.0
Third DNS Server	From ISP	0.0.0.0

WAN MAC Address

● Factory Default

○ Spoof this Computer's MAC Address - IP Address 192.168.1.33

WAN IP Address Assignment

Select **Get automatically from ISP** if your ISP did not assign you a fixed IP address. Select **Use fixed IP address** if the ISP assigned a fixed IP address and then enter your IP address and subnet mask in the next two fields. Enter the gateway IP address in this field (if provided) when you select **Use Fixed IP Address**.

DNS Server Assignment

Select **From ISP** if your ISP dynamically assigns DNS server information (and the ZyWALL's WAN IP address).

Select **User-Defined** if you have the IP address of a DNS server.

Select **None** if you do not want to configure DNS servers.

WAN MAC Address

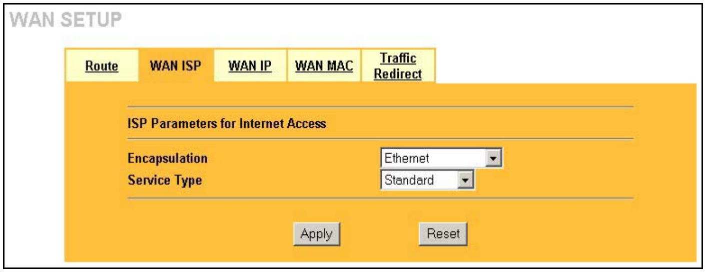
Select **Factory Default** to use the factory assigned default MAC address. Alternatively, select **Spoof this Computer's MAC address - IP Address** and enter the IP address of the computer on the LAN whose MAC address you are cloning.

4.3 Test Your Internet Connection

Launch your web browser and navigate to www.zyxel.com. You don’t need a dial-up program such as Dial Up Networking. Internet access is just the beginning. Refer to the *User’s Guide* for more detailed information on the complete range of ZyWALL features. If you cannot access the Internet, open the web configurator again to confirm that the WAN settings you configured in the Wizard Setup are correct.

Refer to the Troubleshooting section if you have trouble logging in.

4.4 Check Your WAN Setup

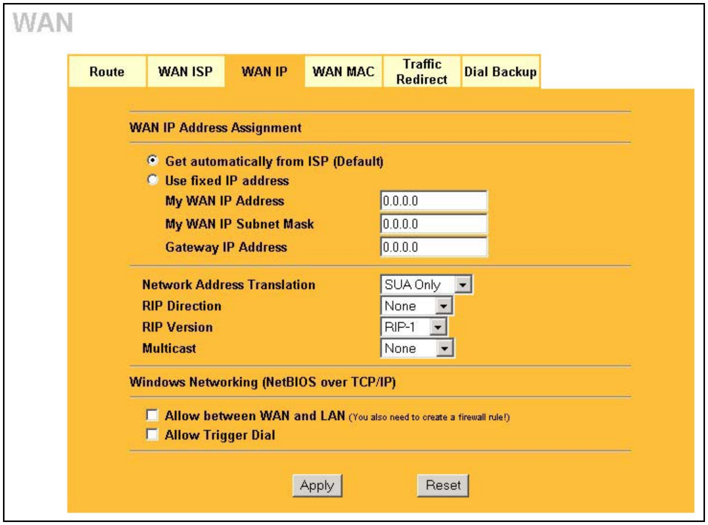


WAN SETUP

ISP Parameters for Internet Access

Encapsulation: Ethernet

Service Type: Standard



WAN

WAN IP Address Assignment

● Get automatically from ISP (Default)

○ Use fixed IP address

My WAN IP Address: 0.0.0.0

My WAN IP Subnet Mask: 0.0.0.0

Gateway IP Address: 0.0.0.0

Network Address Translation: SUA Only

RIP Direction: None

RIP Version: RIP-1

Multicast: None

Windows Networking (NetBIOS over TCP/IP)

□ Allow between WAN and LAN (You also need to create a firewall rule!)

□ Allow Trigger Dial

Click **WAN** and then the **WAN ISP** and **WAN IP** tabs.

The screens look very similar to screens 2 and 3 in the Wizard Setup. If the information is incorrect, make changes and click **Apply**. Click **Reset** to begin configuring this screen afresh.

4.5 Common Screen Command Buttons

The following table shows common command buttons found on many web configurator screens.

Apply	Click **Apply** to save your changes back to the ZyWALL.
Reset	Click **Reset** to begin configuring this screen afresh.
Cancel	Click **Cancel** to go to the previous screen.

5 Advanced Configuration

This section shows you how to configure some of the advanced features of the ZyWALL.

5.1 Network Address Translation Overview

NAT (Network Address Translation - NAT, RFC 1631) is the translation of the IP address of a host in a packet. For example, the source address of an outgoing packet, used within one network is changed to a different IP address known within another network.

If you have a single public IP address then choose **SUA Only** in the **Network Address Translation** field of the **WAN ISP** screen (see *section 4.4*). If you have multiple public IP addresses then you may use full feature mapping types (see the *User's Guide* for more details).

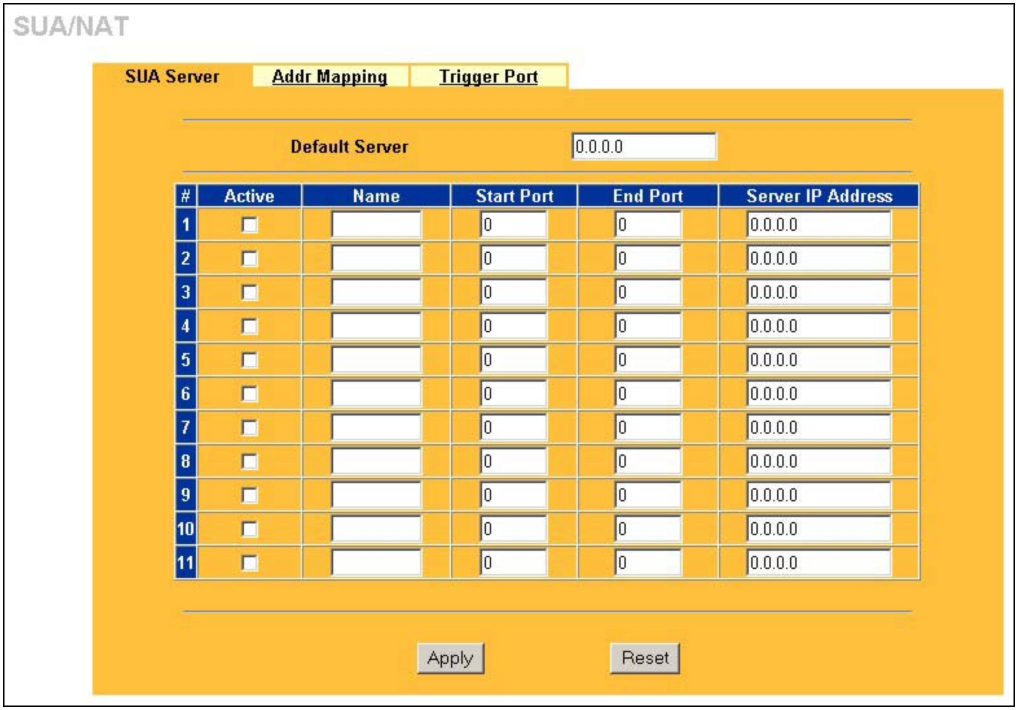
NAT supports five types of IP/port mapping. They are:

1. **One-to-One**: One-to-one mode maps one local IP address to one global IP address. Note that port numbers do not change for One-to-One NAT mapping type.
2. **Many-to-One**: Many-to-One mode maps multiple local IP addresses to one global IP address. This is equivalent to SUA (that is, PAT, port address translation), ZyXEL's Single User Account feature.
3. **Many-to-Many Overload**: Many-to-Many Overload mode maps multiple local IP addresses to shared global IP addresses.
4. **Many One-to-One**: Many One-to-One mode maps each local IP address to unique global IP addresses.
5. **Server**: This type allows you to specify inside servers of different services behind the NAT to be accessible to the outside world.

5.2 Configuring SUA Server

A SUA server set is a list of inside (behind NAT on the LAN) servers, for example, web or FTP, that you can make visible to the outside world even though SUA makes your whole inside network appear as a single computer to the outside world.

Click **SUA/NAT** to open the **SUA Server** screen.



Default Server: 0.0.0.0

#	Active	Name	Start Port	End Port	Server IP Address
1	□		0	0	0.0.0.0
2	□		0	0	0.0.0.0
3	□		0	0	0.0.0.0
4	□		0	0	0.0.0.0
5	□		0	0	0.0.0.0
6	□		0	0	0.0.0.0
7	□		0	0	0.0.0.0
8	□		0	0	0.0.0.0
9	□		0	0	0.0.0.0
10	□		0	0	0.0.0.0
11	□		0	0	0.0.0.0

The following table describes the fields in this screen.

LABEL	DESCRIPTION
Default Server	In addition to the servers for specified services, NAT supports a default server. A default server receives packets from ports that are not specified in this screen. If you do not assign a default server IP address, then all packets received for ports not specified in this screen will be discarded.
#	This is the number of an individual SUA server entry.
Active	Select this check box to enable the SUA server entry. Clear this checkbox to disallow forwarding of these ports to an inside server without having to delete the entry.
Name	Enter a name to identify this port-forwarding rule.
Start Port	Type a port number in this field. To forward only one port, type the port number again in the **End Port** field. To forward a series of ports, type the start port number here and the end port number in the **End Port** field.
End Port	Type a port number in this field. To forward only one port, type the port number in the **Start Port** field above and then type it again in this field. To forward a series of ports, type the last port number in a series that begins with the port number in the **Start Port** field above.

LABEL	DESCRIPTION
Server IP Address	Enter the inside IP address of the server here.

5.3 Firewall Overview

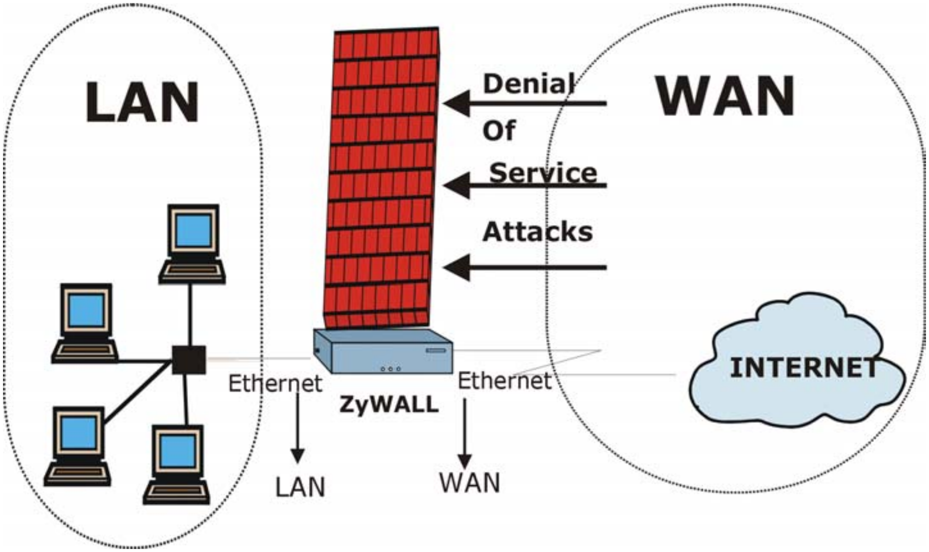
The ZyWALL firewall is a stateful inspection firewall and is designed to protect against Denial of Service attacks when activated. The ZyWALL's purpose is to allow a private Local Area Network (LAN) to be securely connected to the Internet. The ZyWALL can be used to prevent theft, destruction and modification of data, as well as log events, which may be important to the security of your network. The ZyWALL also has packet-filtering capabilities.

When activated, the firewall allows all traffic to the Internet that originates from the LAN, and blocks all traffic to the LAN that originates from the Internet. In other words the ZyWALL will:

Allow all sessions originating from the LAN to the WAN
Deny all sessions originating from the WAN to the LAN

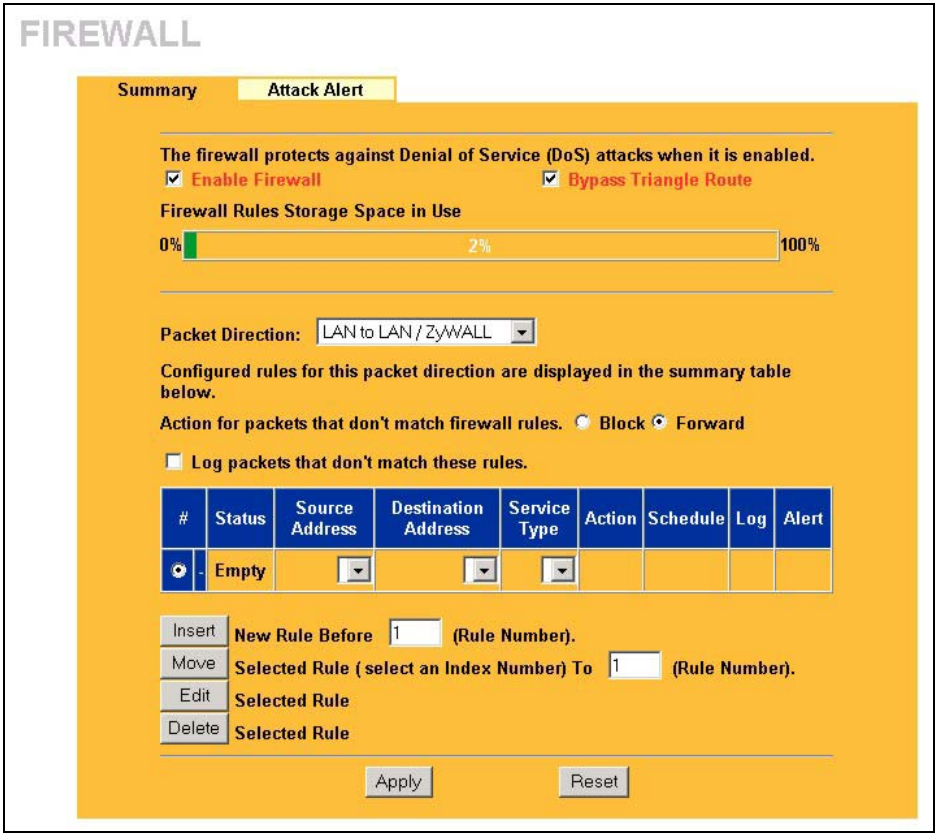
LAN-to-WAN rules are local network to Internet firewall rules. The default is to forward all traffic from your local network to the Internet.

The following figure illustrates a ZyWALL firewall application.



5.4 Configuring Firewall

Click **FIREWALL** to open the **Summary** screen. Enable (or activate) the firewall by selecting the **Enable Firewall** check box as seen in the following screen.



The firewall protects against Denial of Service (DoS) attacks when it is enabled.

☑ Enable Firewall ☑ Bypass Triangle Route

Firewall Rules Storage Space in Use

0% 2% 100%

Packet Direction: LAN to LAN / ZyWALL

Configured rules for this packet direction are displayed in the summary table below.

Action for packets that don't match firewall rules. ○ Block ● Forward

□ Log packets that don't match these rules.

#	Status	Source Address	Destination Address	Service Type	Action	Schedule	Log	Alert
● -	Empty							

Insert New Rule Before 1 (Rule Number).

Move Selected Rule (select an Index Number) To 1 (Rule Number).

Edit Selected Rule

Delete Selected Rule

The following table describes the fields in this screen.

LABEL	DESCRIPTION
Enable Firewall	Select this check box to activate the firewall. The ZyWALL performs access control and protects against Denial of Service (DoS) attacks when the firewall is activated.
Bypass Triangle Route	Select this check box to have the ZyWALL firewall ignore the use of triangle route topology on the network. See your *User's Guide- Appendices* for more on triangle route topology.

LABEL	DESCRIPTION
Firewall Rules Storage Space in Use	This read-only bar shows how much of the ZyWALL's memory for recording firewall rules it is currently using. When you are using 80% or less of the storage space, the bar is green. When the amount of space used is over 80%, the bar is red.
Packet Direction	Use the drop-down list box to select a direction of travel of packets (**LAN to LAN/ZyWALL**, **LAN to WAN**, **WAN to LAN**, **WAN to WAN/ZyWALL**) for which you want to configure firewall rules.
Block/ Forward	Use the option buttons to select whether to **Block** (silently discard) or **Forward** (allow the passage of) packets that are traveling in the selected direction.
Log	Select the check box to create a log (when the above action is taken) for packets that are traveling in the selected direction and do not match any of the rules below.
The following read-only fields summarize the rules you have created that apply to traffic traveling in the selected packet direction. The firewall rules that you configure (summarized below) take priority over the general firewall action settings above.	
#	This is your firewall rule number. The ordering of your rules is important as rules are applied in turn. The **Move** field below allows you to reorder your rules.
Status	This field displays whether a firewall is turned on (**Active**) or not (**Inactive**). Rules that have not been configured display **Empty**.
Source Address	This drop-down list box displays the source addresses or ranges of addresses to which this firewall rule applies. Please note that a blank source or destination address is equivalent to **Any**.
Destination Address	This drop-down list box displays the destination addresses or ranges of addresses to which this firewall rule applies. Please note that a blank source or destination address is equivalent to **Any**.
Service Type	This drop-down list box displays the services to which this firewall rule applies. Please note that a blank service type is equivalent to **Any**.
Action	This is the specified action for that rule, either **Block** or **Forward**. Note that **Block** means the firewall silently discards the packet.
Schedule	This field tells you whether a schedule is specified (**Yes**) or not (**No**).
Log	This field shows you if a log is created for packets that match the rule (**Match**), don't match the rule (**Not Match**), both (**Both**) or no log is created (**None**).
Alert	This field tells you whether this rule generates an alert (**Yes**) or not (**No**) when the rule is matched.
Insert	Type the index number for where you want to put a rule. For example, if you type “6”, your new rule becomes number 6 and the previous rule 6 (if there is one) becomes rule 7. Click **Insert** to display this screen and refer to the following table for information on the fields.

LABEL	DESCRIPTION
Move	Select a rule's Index option button and type a number for where you want to put that rule. Click **Move** to move the rule to the number that you typed. The ordering of your rules is important as they are applied in order of their numbering.
Edit	Click **Edit** to create or edit a rule.
Delete	Click **Delete** to delete an existing firewall rule. Note that subsequent firewall rules move up by one when you take this action.

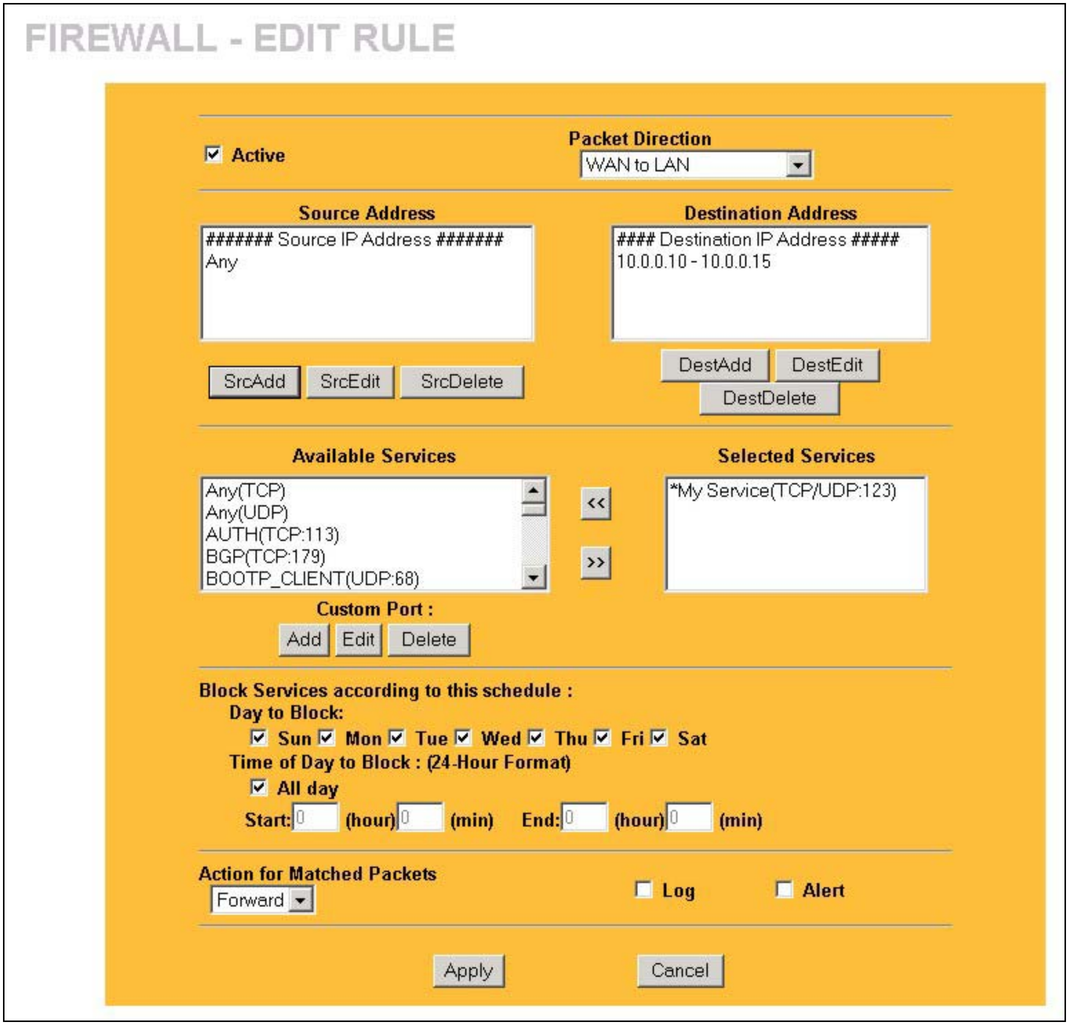
5.5 Procedure for Configuring Firewall Rules

Follow these directions to create a new rule.

Step 1. In the **Summary** screen, click the **Insert** button and enter the Rule Number before which you want the new rule to be located.

Step 2. In the **Available Services** text box, select the services you want. Configure customized ports for services not predefined by the ZyWALL by clicking the **Add** or **Edit** buttons under **Custom Port**. For a comprehensive list of port numbers and services, visit the IANA (Internet Assigned Number Authority) web site.

Step 3. Configure the **Source Address** and **Destination Address** for the rule.



FIREWALL - EDIT RULE

☑ Active

Packet Direction: WAN to LAN

Source Address

####### Source IP Address #######
Any

Destination Address

Destination IP Address
10.0.0.10 - 10.0.0.15

Available Services

Any(TCP)
Any(UDP)
AUTH(TCP:113)
BGP(TCP:179)
BOOTP_CLIENT(UDP:68)

Selected Services

*My Service(TCP/UDP:123)

Block Services according to this schedule :

Day to Block:

☑ Sun ☑ Mon ☑ Tue ☑ Wed ☑ Thu ☑ Fri ☑ Sat

Time of Day to Block : (24-Hour Format)

☑ All day

Start: 0 (hour) 0 (min) End: 0 (hour) 0 (min)

Action for Matched Packets: Forward

□ Log □ Alert

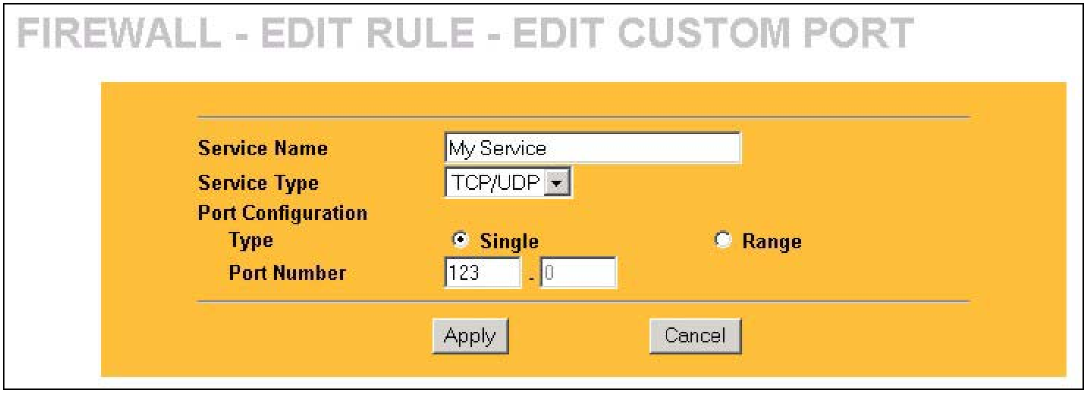
The following table describes the fields in this screen.

LABEL	DESCRIPTION
Active	Check the **Active** check box to have the ZyWALL use this rule. Leave it unchecked if you do not want the ZyWALL to use the rule after you apply it
Packet Direction	Use the drop-down list box to select the direction of packet travel to which you want to apply this firewall rule.

LABEL	DESCRIPTION
Source Address	Click **SrcAdd** to add a new address, **SrcEdit** to edit an existing one or **SrcDelete** to delete one.
Destination Address	Click **DestAdd** to add a new address, **DestEdit** to edit an existing one or **DestDelete** to delete one.
Available/ Selected Services	Highlight a service from the **Available Services** box on the left, then click **>>** to add it to the **Selected Services** box on the right. To remove a service, highlight it in the **Selected Services** box on the right, then click **<<**.
Custom Port	
Add	Click this button to bring up the screen that you use to configure a new custom service that is not in the predefined list of services.
Edit	Select a custom service (denoted by an "*") from the **Available Services** list and click this button to edit the service.
Delete	Select a custom service (denoted by an "*") from the **Available Services** list and click this button to remove the service.
Block Services according to this schedule :	
Day to Block	Select everyday or the day(s) of the week to activate blocking.
Time of Day to Block (24-Hour Format)	Select **All Day** or enter the start and end times in the hour-minute format to activate blocking.
Action for Matched Packets	Use the drop down list box to select whether to discard (**Block**) or allow the passage of (**Forward**) packets that match this rule.
Log	This field determines if a log is created for packets that match the rule (**Match**), don't match the rule (**Not Match**), both (**Both**) or no log is created (**None**). Go to the **Log Settings** page and select the **Access Control** logs category to have the ZyWALL record these logs.
Alert	Check the **Alert** check box to determine that this rule generates an alert when the rule is matched.

5.6 Configuring Source and Destination Addresses

To add a new source or destination address, click **SrcAdd** or **DestAdd** from the previous screen. To edit an existing source or destination address, select it from the box and click **SrcEdit** or **DestEdit** from the previous screen**.** Either action displays the following screen.



FIREWALL - EDIT RULE - EDIT CUSTOM PORT

Service Name	My Service	
Service Type	TCP/UDP	
Port Configuration		
Type	● Single	○ Range
Port Number	123 - 0	

The following table describes the fields in this screen.

LABEL	DESCRIPTION
Address Type	Do you want your rule to apply to packets with a particular (single) IP address, a range of IP addresses (e.g., 192.168.1.10 to 192.169.1.50), a subnet or any IP address? Select an option from the drop down list box
Start IP Address	Enter the single IP address or the starting IP address in a range here.
End IP Address	Enter the ending IP address in a range here.
Subnet Mask	Enter the subnet mask here, if applicable.

5.7 Content Filtering Overview

Content filtering allows you to block certain web features, such as Cookies, and/or restrict specific websites. With content filtering, you can do the following:

5.7.1 Restrict Web Features

The ZyWALL can block web features such as ActiveX controls, Java applets, cookies and disable web proxies.

5.7.2 Create a Filter List

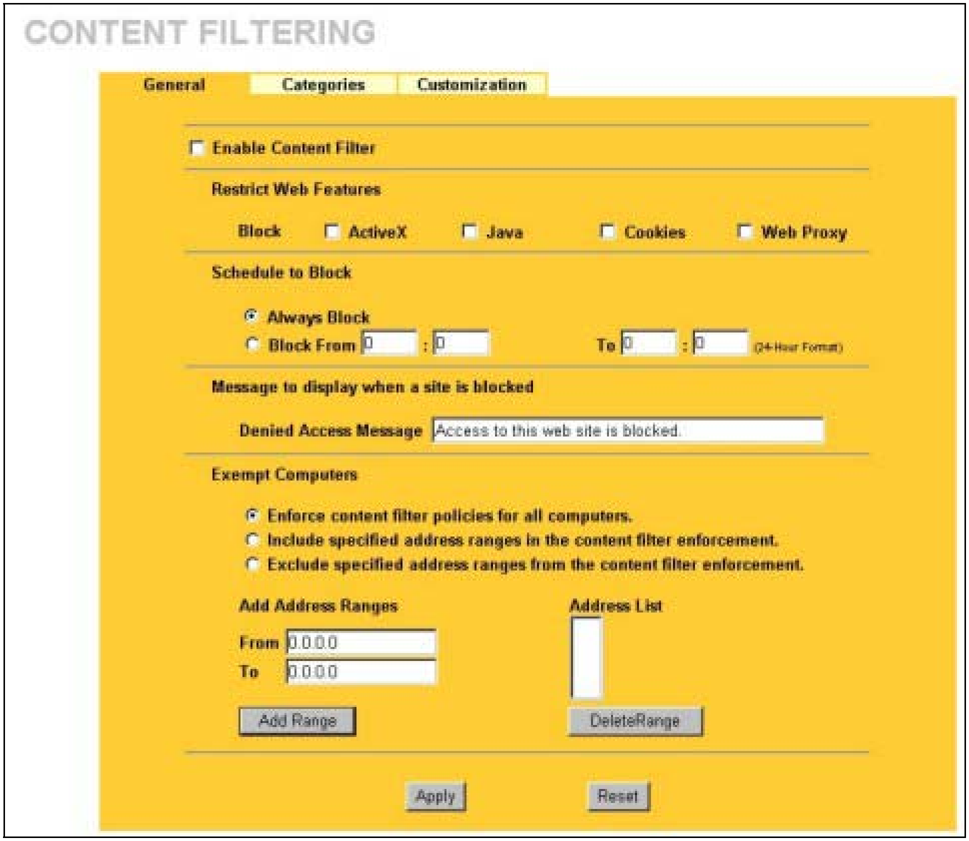
You can select categories, such as pornography or racial intolerance, to block from a pre-defined list.

5.7.3 Customize Web Site Access

You can specify URLs to which the ZyWALL blocks access. You can alternatively block access to all URLs except ones that you specify. You can also have the ZyWALL block access to URLs that contain key words that you specify.

5.7.4 General Content Filter Configuration

Click **CONTENT FILTER** to open the **CONTENT FILTERING** screen. The **General** tab displays as shown. Use this screen to enable content filtering, configure a schedule, and create a denial message. You can also choose specific computers to be included in or excluded from the content filtering configuration.



□ Enable Content Filter

Restrict Web Features

Block □ ActiveX □ Java □ Cookies □ Web Proxy

Schedule to Block

● Always Block
○ Block From 0 : 0 To 0 : 0 (24-Hour Format)

Message to display when a site is blocked

Denied Access Message: Access to this web site is blocked.

Exempt Computers

● Enforce content filter policies for all computers.
○ Include specified address ranges in the content filter enforcement.
○ Exclude specified address ranges from the content filter enforcement.

Add Address Ranges

From 0.0.0.0
To 0.0.0.0

Address List

5.8 Content Filtering with an External Server

Your ZyWALL uses an application services company that provides outsourced content filtering. If you enable the content filter, your ZyWALL will have access to an external database, which contains dynamically updated ratings of millions of web sites. The content filtering lookup process is described below.

5.9 A Procedure to Enable External Database Content Filtering

The following is an example procedure for using external database content filtering.

Step 1. Enable content filtering in the **Content Filtering General** screen.

Step 2. In the **Content Filtering Categories** screen, register for external database content filtering.

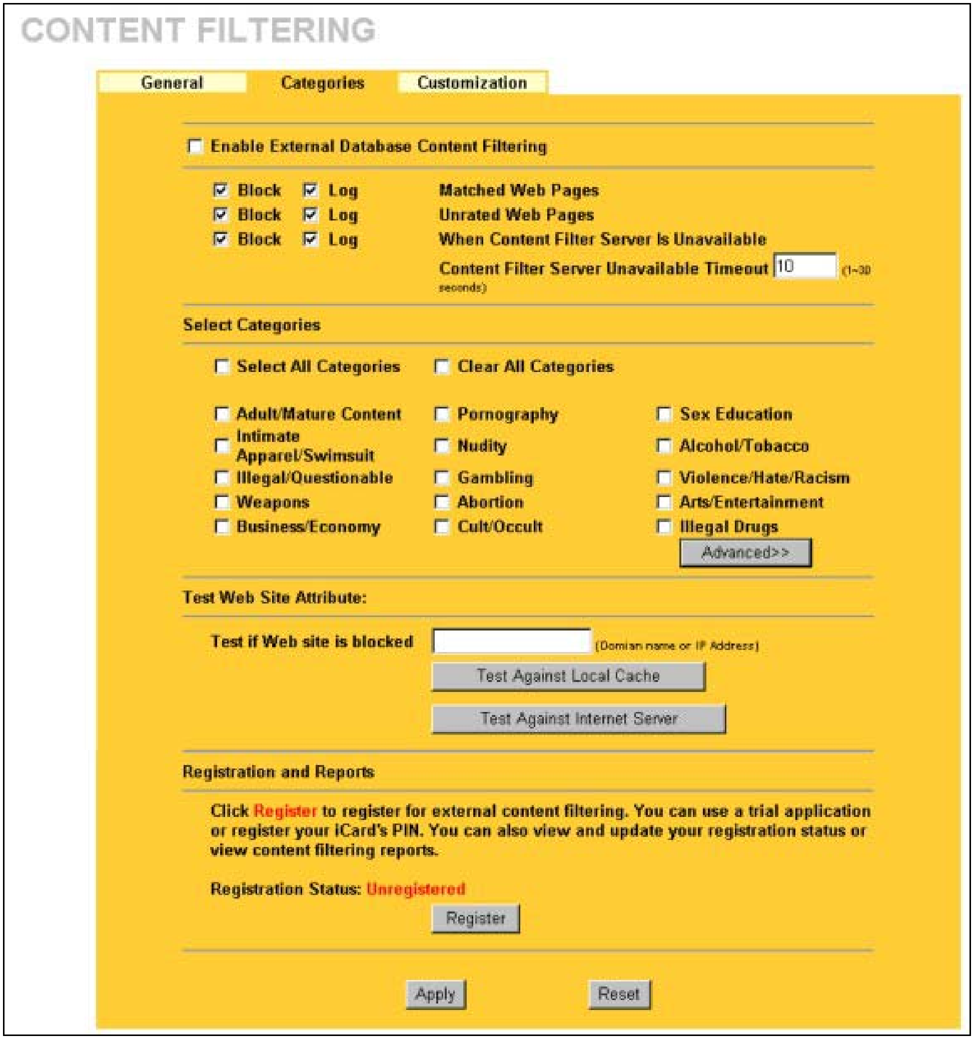
Step 3. In the **Content Filtering Categories** screen, select **Enable External Database Content Filtering**.

Step 4. In the **Content Filtering Categories** screen, select **Block Matched Web Pages**.

Step 5. In the **Content Filtering Categories** screen, select categories to block.

5.10 Configuring for Registering and Categories

To register for and configure category-based content filtering, click **CONTENT FILTER**, and then the **Categories** tab. The screen appears as shown.



□ Enable External Database Content Filtering

☑ Block ☑ Log Matched Web Pages

☑ Block ☑ Log Unrated Web Pages

☑ Block ☑ Log When Content Filter Server Is Unavailable

Content Filter Server Unavailable Timeout 10 (1~30 seconds)

Select Categories

□ Select All Categories □ Clear All Categories

□ Adult/Mature Content
□ Intimate Apparel/Swimsuit
□ Illegal/Questionable
□ Weapons
□ Business/Economy

□ Pornography
□ Nudity
□ Gambling
□ Abortion
□ Cult/Occult

□ Sex Education
□ Alcohol/Tobacco
□ Violence/Hate/Racism
□ Arts/Entertainment
□ Illegal Drugs

Test Web Site Attribute:

Test if Web site is blocked (Domian name or IP Address)

Registration and Reports

Click Register to register for external content filtering. You can use a trial application or register your iCard's PIN. You can also view and update your registration status or view content filtering reports.

Registration Status: Unregistered

Click **Register** to go to a web site where you can register for category-based content filtering (using an external database). You can use a trial application or register your iCard’s PIN. Refer to the web site’s on-line help for details.

The web site displays a registration successful web page. It may take up to another ten minutes for content filtering to be activated.

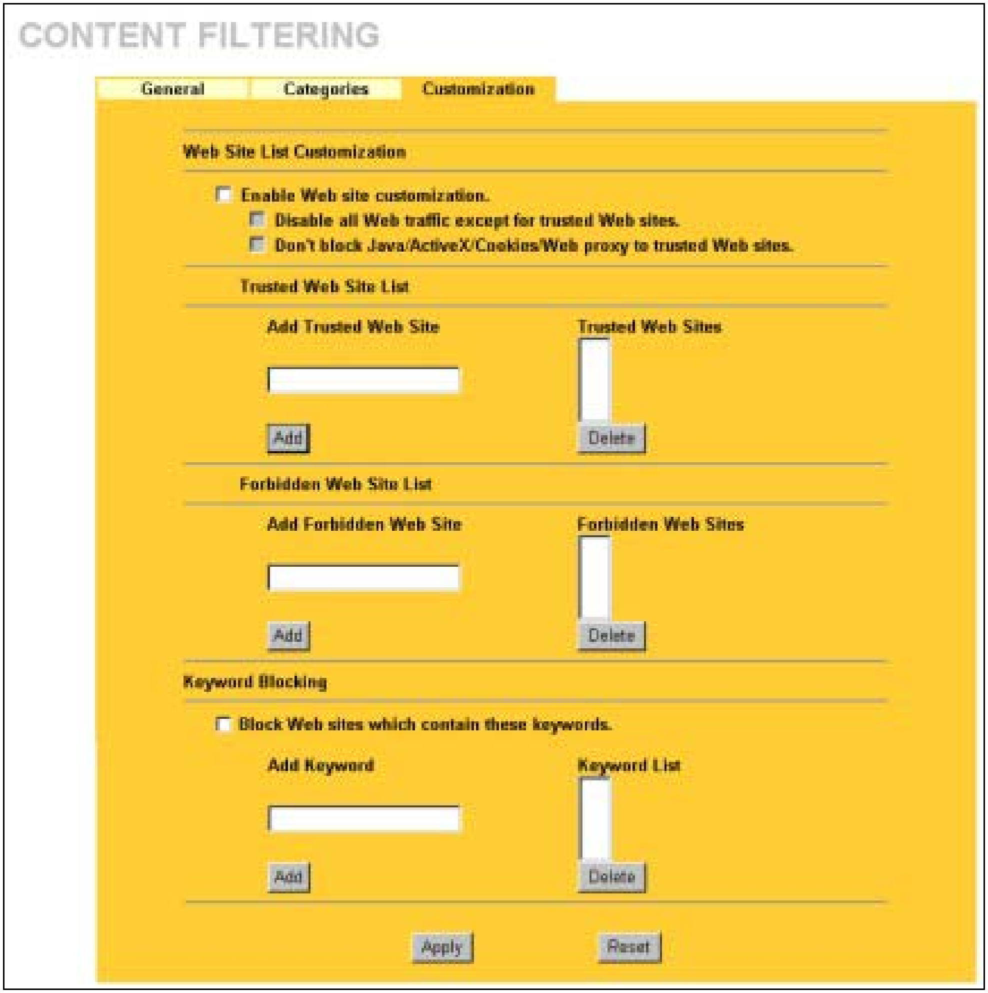
You can manage your registration status or view content filtering reports after you register this device.

You may not be able to access the web site if you have enabled content filtering in the **Content Filter General** screen and blocked access to web pages that use Java and/or cookies.

Do not close the Web Configurator's window during the registration process.

5.11 Configuring Customization

To customize the content filter list by adding or removing specific sites from the filter list on your ZyWALL, click **CONTENT FILTER**, then the **Customization** tab. The screen appears as shown.



CONTENT FILTERING

Web Site List Customization

☐ Enable Web site customization.

☐ Disable all Web traffic except for trusted Web sites.

☐ Don't block Java/ActiveX/Cookies/Web proxy to trusted Web sites.

Trusted Web Site List

Add Trusted Web Site

Trusted Web Sites

Forbidden Web Site List

Add Forbidden Web Site

Forbidden Web Sites

Keyword Blocking

☐ Block Web sites which contain these keywords.

Add Keyword

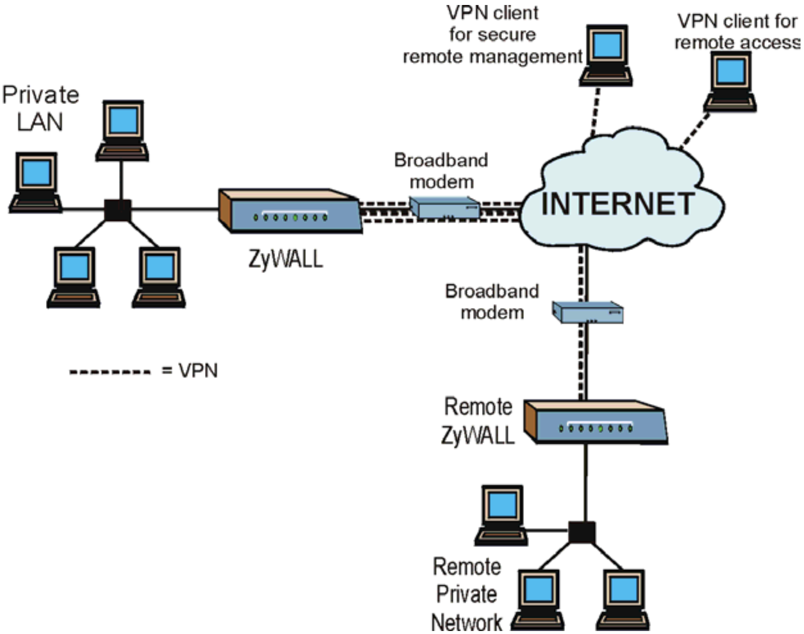
Keyword List

5.12 VPN Overview

A VPN (Virtual Private Network) provides secure communications between sites without the expense of leased site-to-site lines. A secure VPN is a combination of tunneling, encryption, authentication, access control and auditing technologies/services used to transport traffic over the Internet or any insecure network that uses the TCP/IP protocol suite for communication.

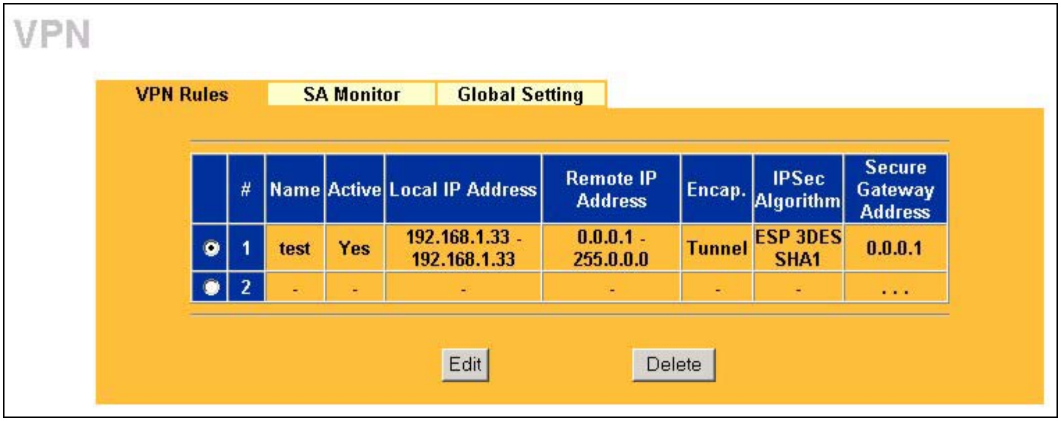
5.13 Summary Screen

The following figure provides an example of a VPN application.



Local and remote IP addresses must be static.

Click **VPN** to open the **Summary** screen. This is a read-only menu of your IPSec rules (tunnels). Edit or create an IPSec rule by selecting an index number and then clicking **Edit** to configure the associated submenus.



	#	Name	Active	Local IP Address	Remote IP Address	Encap.	IPSec Algorithm	Secure Gateway Address
◉	1	test	Yes	192.168.1.33 - 192.168.1.33	0.0.0.1 - 255.0.0.0	Tunnel	ESP 3DES SHA1	0.0.0.1
○	2	-	-	-	-	-	-	. . .

The following table describes the fields in this screen.

LABEL	DESCRIPTION
#	This field displays the VPN rule number.
Name	This field displays the identification name for this VPN policy.
Active	**Y** signifies that this VPN rule is active.
Local IP Address	This is the IP address(es) of computer(s) on your local network behind your ZyWALL. The same (static) IP address is displayed twice when the **Local Address Type** field in the **Edit VPN Rule** (or **Manual Key**) screen is configured to **Single Address**. The beginning and ending (static) IP addresses, in a range of computers are displayed when the **Local Address Type** field in the **Edit VPN Rule** (or **Manual Key**) screen is configured to **Range Address**. A (static) IP address and a subnet mask are displayed when the **Local Address Type** field in the **Edit VPN Rule** (or **Manual Key**) screen is configured to **Subnet Address**.
Remote IP Address	This is the IP address(es) of computer(s) on the remote network behind the remote IPSec router. This field displays **N/A** when the **Secure Gateway Address** field displays **0.0.0.0**. In this case only the remote IPSec router can initiate the VPN. The same (static) IP address is displayed twice when the **Remote Address Type** field in the **Edit VPN Rule** (or **Manual Key**) screen is configured to **Single Address**. The beginning and ending (static) IP addresses, in a range of computers are displayed when the **Remote Address Type** field in the **Edit VPN Rule** (or **Manual Key**) screen is configured to **Range Address**. A (static) IP address and a subnet mask are displayed when the **Remote Address Type** field in the **Edit VPN Rule** (or **Manual Key**) screen is configured to **Subnet Address**.
Encap.	This field displays **Tunnel** or **Transport** mode (**Tunnel** is the default selection).

LABEL	DESCRIPTION
IPSec Algorithm	This field displays the security protocols used for an SA. Both **AH** and **ESP** increase ZyWALL processing requirements and communications latency (delay).
Secure Gateway Address	This is the static WAN IP address or URL of the remote IPSec router. This field displays **0.0.0.0** when you configure the **Secure Gateway Address** field in the **Edit VPN Rule** screen to **0.0.0.0.**
Edit	Click **Edit** to edit the VPN policy.
Delete	Click **Delete** to remove the VPN policy.

5.14 Configuring VPN Policies

5.14.1 X-Auth (Extended Authentication)

Extended authentication provides added security by allowing you to use usernames and passwords for VPN connections. This is especially helpful when multiple ZyWALLs use one VPN rule to connect to a single ZyWALL. An attacker cannot make a VPN connection without a valid username and password.

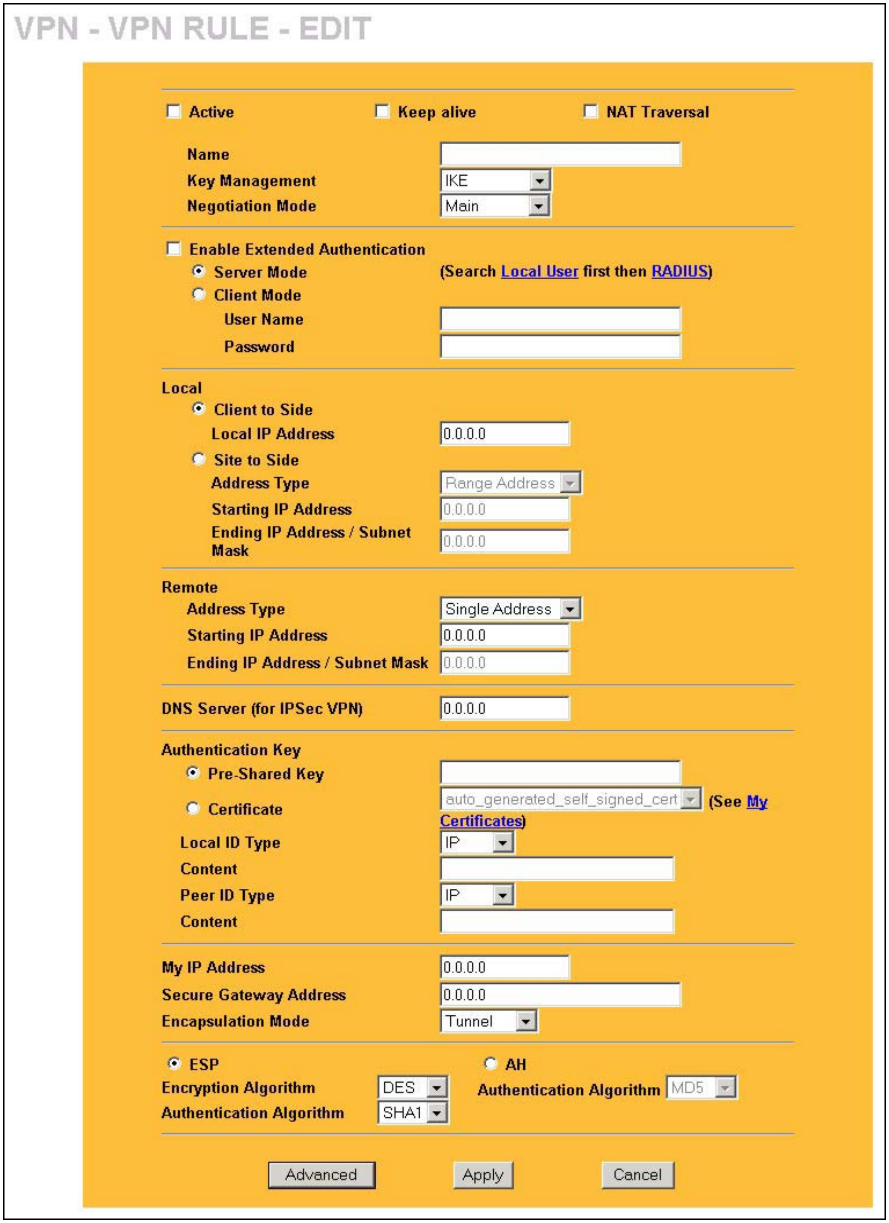
The extended authentication server checks the user names and passwords of the extended authentication clients before completing the IPSec connection.

A ZyWALL can be an extended authentication server for some VPN connections and an extended authentication client for other VPN connections.

5.14.2 Certificates

The ZyWALL can use certificates (also called digital IDs) to authenticate users. Certificates are based on public-private key pairs. Certificates provide a way to exchange public keys for use in authentication.

Click **Edit** on the **Summary** screen to edit VPN policies.



VPN - VPN RULE - EDIT

☐ Active ☐ Keep alive ☐ NAT Traversal

Name	
Key Management	IKE
Negotiation Mode	Main

☐ Enable Extended Authentication

● Server Mode (Search Local User first then RADIUS)

○ Client Mode

User Name	
Password	

Local

● Client to Side

Local IP Address	0.0.0.0

○ Site to Side

Address Type	Range Address
Starting IP Address	0.0.0.0
Ending IP Address / Subnet Mask	0.0.0.0

Remote

Address Type	Single Address
Starting IP Address	0.0.0.0
Ending IP Address / Subnet Mask	0.0.0.0

DNS Server (for IPSec VPN)	0.0.0.0

Authentication Key

● Pre-Shared Key	
○ Certificate	auto_generated_self_signed_cert (See My Certificates)
Local ID Type	IP
Content	
Peer ID Type	IP
Content	

My IP Address	0.0.0.0
Secure Gateway Address	0.0.0.0
Encapsulation Mode	Tunnel

● ESP ○ AH

Encryption Algorithm	DES
Authentication Algorithm	SHA1
Authentication Algorithm (AH)	MD5

The following table describes the fields in this screen.

LABEL	DESCRIPTION
Active	Select this check box to activate this VPN tunnel. This option determines whether a VPN rule is applied before a packet leaves the firewall.
Keep Alive	Select this check box to turn on the keep alive feature for this SA. Turn on Keep Alive to have the ZyWALL automatically reinitiate the SA after the SA lifetime times out, even if there is no traffic. The remote IPSec router must also have keep alive enabled in order for this feature to work.
NAT Traversal	Select this check box to enable NAT traversal. NAT traversal allows you to set up a VPN connection when there are NAT routers between the two IPSec routers. The remote IPSec router must also have NAT traversal enabled. You can use NAT traversal with **ESP** protocol using **Transport** or **Tunnel** mode, but not with **AH** protocol nor with manual key management. In order for an IPSec router behind a NAT router to receive an initiating IPSec packet, set the NAT router to forward UDP port 500 to the IPSec router behind the NAT router.
Name	Type up to 32 characters to identify this VPN policy. You may use any character, including spaces, but the ZyWALL drops trailing spaces.
Key Management (or IPSec Keying Mode)	Select **IKE** or **Manual Key** from the drop-down list box. **IKE** provides more protection so it is generally recommended. **Manual Key** is a useful option for troubleshooting.
Negotiation Mode	Select **Main** or **Aggressive** from the drop-down list box. Multiple SAs connecting through a secure gateway must have the same negotiation mode.
Enable Extended Authentication	Select this check box to activate extended authentication.
Server Mode	Select **Server Mode** to have this ZyWALL authenticate extended authentication clients that request this VPN connection. You must also configure the extended authentication clients' usernames and passwords in the auth server's local user database or a RADIUS server. Click **Local User** to go to the **Local User Database** screen where you can view and/or edit the list of users and passwords. Click **RADIUS** to go to the **RADIUS** screen where you can configure the ZyWALL to check an external RADIUS server. During authentication, if the extended authentication server does not find the extended authentication clients' user name in its internal user database and an external RADIUS server has been enabled, it attempts to authenticate the client through the RADIUS server.

Client Mode	Select **Client Mode** to have your ZyWALL use a username and password when initiating this VPN connection to the extended authentication server ZyWALL. Only a VPN extended authentication client can initiate this VPN connection.
User Name	Enter a user name for your ZyWALL to be authenticated by the external extended authentication server. The user name can be up to 31 case-sensitive ASCII characters, but spaces are not allowed. You must enter a user name and password when you select client mode.
Password	Enter the corresponding password for the above user name. The password can be up to 31 case-sensitive ASCII characters, but spaces are not allowed.
Local: Local IP addresses must be static and correspond to the remote IPSec router's configured remote IP addresses. Two active SAs can have the same configured local or remote IP address, but not both. You can configure multiple SAs between the same local and remote IP addresses, as long as only one is active at any time. In order to have more than one active rule with the **Secure Gateway Address** field set to **0.0.0.0**, the ranges of the local IP addresses cannot overlap between rules. If you configure an active rule with **0.0.0.0** in the **Secure Gateway Address** field and the LAN's full IP address range as the local IP address, then you cannot configure any other active rules with the **Secure Gateway Address** field set to **0.0.0.0**.	
Client to Site	Select this radio button to build a client to site VPN connection.
Local IP Address	Enter a static local IP address. The local IP address must correspond to the remote IPSec router's configured remote IP addresses.
Site to Site	Select this radio button to establish a VPN between two sites (groups of IP addresses).
Address Type	Use the drop-down menu to choose **Range Address** or **Subnet Address**. Select **Range Address** for a specific range of IP addresses. Select **Subnet Address** to specify IP addresses on a network by their subnet mask.
Starting IP Address	When the **Address Type** field is configured to **Range Address**, enter the beginning (static) IP address, in a range of computers on your LAN behind your ZyWALL. When the **Address Type** field is configured to **Subnet Address**, this is a (static) IP address on the LAN behind your ZyWALL.
Ending IP Address/ Subnet Mask	When the **Address Type** field is configured to **Range Address**, enter the end (static) IP address, in a range of computers on the LAN behind your ZyWALL. When the **Address Type** field is configured to **Subnet Address**, this is a subnet mask on the LAN behind your ZyWALL.

Remote: Remote IP addresses must be static and correspond to the remote IPSec router's configured local IP addresses. The remote fields do not apply when the **Secure Gateway Address** field is configured to **0.0.0.0**. In this case only the remote IPSec router can initiate the VPN. Two active SAs cannot have the local and remote IP address(es) both the same. Two active SAs can have the same local or remote IP address, but not both. You can configure multiple SAs between the same local and remote IP addresses, as long as only one is active at any time.	
Address Type	Use the drop-down menu to choose **Single Address**, **Range Address**, or **Subnet Address**. Select **Single Address** with a single IP address. Select **Range Address** for a specific range of IP addresses. Select **Subnet Address** to specify IP addresses on a network by their subnet mask.
Starting IP Address	When the **Address Type** field is configured to **Single Address**, enter a (static) IP address on the network behind the remote IPSec router. When the Addr Type field is configured to **Range Address**, enter the beginning (static) IP address, in a range of computers on the network behind the remote IPSec router. When the **Address Type** field is configured to **Subnet Address**, enter a (static) IP address on the network behind the remote IPSec router.
Ending IP Address/ Subnet Mask	When the **Address Type** field is configured to **Single Address**, this field is N/A. When the **Address Type** field is configured to **Range Address**, enter the end (static) IP address, in a range of computers on the network behind the remote IPSec router. When the **Address Type** field is configured to **Subnet Address**, enter a subnet mask on the network behind the remote IPSec router.
DNS Server (for IPSec VPN)	If there is a private DNS server that services the VPN, type its IP address here. The ZyWALL assigns this additional DNS server to the ZyWALL's DHCP clients that have IP addresses in this IPSec rule's range of local addresses. A DNS server allows clients on the VPN to find other computers and servers on the VPN by their (private) domain names.
Authentication Key	
Pre-Shared Key	Select the **Pre-Shared Key** radio button and type your pre-shared key in this field. A pre-shared key identifies a communicating party during a phase 1 IKE negotiation. It is called "pre-shared" because you have to share it with another party before you can communicate with them over a secure connection. Type from 8 to 31 case-sensitive ASCII characters or from 16 to 62 hexadecimal ("0-9", "A-F") characters. You must precede a hexadecimal key with a "0x” (zero x), which is not counted as part of the 16 to 62 character range for the key. For example, in "0x0123456789ABCDEF", “0x” denotes that the key is hexadecimal and “0123456789ABCDEF” is the key itself. Both ends of the VPN tunnel must use the same pre-shared key. You will receive a “PYLD_MALFORMED” (payload malformed) packet if the same pre-shared key is not used on both ends.

Certificate	Select the **Certificate** radio button to identify the ZyWALL by a certificate. Use the drop-down list box to select the certificate to use for this VPN tunnel. You must have certificates already configured in the **My Certificates** screen. Click **My Certificates** to go to the **My Certificates** screen where you can view the ZyWALL's list of certificates.
Local ID Type	Select **IP** to identify this ZyWALL by its IP address. Select **DNS** to identify this ZyWALL by a domain name. Select **E-mail** to identify this ZyWALL by an e-mail address. You do not configure the local ID type and content when you set **Authentication Method** to **Certificate**. The ZyWALL takes them from the certificate you select.
Content	When you select **IP** in the **Local ID Type** field, type the IP address of your computer in the local **Content** field. The ZyWALL automatically uses the IP address in the **My IP Address** field (refer to the **My IP Address** field description) if you configure the local **Content** field to **0.0.0.0** or leave it blank. It is recommended that you type an IP address other than **0.0.0.0** in the local **Content** field or use the **DNS** or **E-mail** ID type in the following situations. ➢ When there is a NAT router between the two IPSec routers. ➢ When you want the remote IPSec router to be able to distinguish between VPN connection requests that come in from IPSec routers with dynamic WAN IP addresses. When you select **DNS** or **E-mail** in the **Local ID Type** field, type a domain name or e-mail address by which to identify this ZyWALL in the local Content field. Use up to 31 ASCII characters including spaces, although trailing spaces are truncated. The domain name or e-mail address is for identification purposes only and can be any string.
Peer ID Type	Select from the following when you set **Authentication Method** to **Pre-shared Key**. ➢ Select **IP** to identify the remote IPSec router by its IP address. ➢ Select **DNS** to identify the remote IPSec router by a domain name. ➢ Select **E-mail** to identify the remote IPSec router by an e-mail address. Select from the following when you set **Authentication Method** to **Certificate**. ➢ Select **IP** to identify the remote IPSec router by the IP address in the subject alternative name field of the certificate it uses for this VPN connection. ➢ Select **DNS** to identify the remote IPSec router by the domain name in the subject alternative name field of the certificate it uses for this VPN connection. ➢ Select **E-mail** to identify the remote IPSec router by the e-mail address in the subject alternative name field of the certificate it uses for this VPN connection. ➢ Select **Subject Name** to identify the remote IPSec router by the subject name of the certificate it uses for this VPN connection. ➢ Select **Any** to have the ZyWALL not check the remote IPSec router's ID.

Content	The configuration of the peer content depends on the peer ID type. Do the following when you set **Authentication Method** to **Pre-shared Key**. ➢ For **IP**, type the IP address of the computer with which you will make the VPN connection. If you configure this field to **0.0.0.0** or leave it blank, the ZyWALL will use the address in the **Secure Gateway Address** field (refer to the **Secure Gateway Address** field description). ➢ For **DNS** or **E-mail**, type a domain name or e-mail address by which to identify the remote IPSec router. Use up to 31 ASCII characters including spaces, although trailing spaces are truncated. The domain name or e-mail address is for identification purposes only and can be any string. It is recommended that you type an IP address other than **0.0.0.0** or use the **DNS** or **E-mail** ID type in the following situations: ➢ When there is a NAT router between the two IPSec routers. ➢ When you want the ZyWALL to distinguish between VPN connection requests that come in from remote IPSec routers with dynamic WAN IP addresses. Do the following when you set **Authentication Method** to **Certificate**. ➢ For **IP**, type the IP address from the subject alternative name field of the certificate the remote IPSec router will use for this VPN connection. If you configure this field to **0.0.0.0** or leave it blank, the ZyWALL will use the address in the **Secure Gateway Address** field (refer to the **Secure Gateway Address** field description). ➢ For **DNS** or **E-mail**, type the domain name or e-mail address from the subject alternative name field of the certificate the remote IPSec router will use for this VPN connection. ➢ For **Subject Name**, type the subject name of the certificate the remote IPSec router will use for this VPN connection. ➢ For **Any**, the peer **Content** field is not available. Regardless of how you configure the **ID Type** and **Content** fields, two active SAs cannot have both the local and remote IP address ranges overlap between rules.
My IP Address	Enter the WAN IP address of your ZyWALL. The VPN tunnel has to be rebuilt if this IP address changes. The following applies if this field is configured as **0.0.0.0**: ➢ The ZyWALL uses the current ZyWALL WAN IP address (static or dynamic) to set up the VPN tunnel. ➢ If the WAN connection goes down, the ZyWALL uses the dial backup IP address for the VPN tunnel when using dial backup or the LAN IP address when using traffic redirect. See the *User's Guide* for details on dial backup and traffic redirect.

Secure Gateway Address	Type the WAN IP address or the URL (up to 31 characters) of the IPSec router with which you're making the VPN connection. Set this field to **0.0.0.0** if the remote IPSec router has a dynamic WAN IP address (the **Key Management** (or **IPSec Keying Mode**) field must be set to **IKE**). In order to have more than one active rule with the **Secure Gateway Address** field set to **0.0.0.0**, the ranges of the local IP addresses cannot overlap between rules. If you configure an active rule with **0.0.0.0** in the **Secure Gateway Address** field and the LAN's full IP address range as the local IP address, then you cannot configure any other active rules with the **Secure Gateway Address** field set to **0.0.0.0**.
Encapsulation Mode	Select **Tunnel** mode or **Transport** mode from the drop-down list box.
ESP	Select ESP if you want to use ESP (Encapsulation Security Payload). The ESP protocol (RFC 2406) provides encryption as well as some of the services offered by AH. If you select ESP here, you must select options from the **Encryption Algorithm** and **Authentication Algorithm** fields (described below).
Encryption Algorithm	Select **DES**, **3DES**, **AES** or **NULL** from the drop-down list box. When you use one of these encryption algorithms for data communications, both the sending device and the receiving device must use the same secret key, which can be used to encrypt and decrypt the message or to generate and verify a message authentication code. The DES encryption algorithm uses a 56-bit key. Triple DES (**3DES**) is a variation on DES that uses a 168-bit key. As a result, **3DES** is more secure than **DES**. It also requires more processing power, resulting in increased latency and decreased throughput. This implementation of AES uses a 128-bit key. **AES** is faster than **3DES**. Select **NULL** to set up a tunnel without encryption. When you select **NULL**, you do not enter an encryption key.
Authentication Algorithm	Select **SHA1** or **MD5** from the drop-down list box. **MD5** (Message Digest 5) and **SHA1** (Secure Hash Algorithm) are hash algorithms used to authenticate packet data. The **SHA1** algorithm is generally considered stronger than **MD5**, but is slower. Select **MD5** for minimal security and **SHA-1** for maximum security.
AH	Select **AH** if you want to use AH (Authentication Header Protocol). The AH protocol (RFC 2402) was designed for integrity, authentication, sequence integrity (replay resistance), and non-repudiation but not for confidentiality, for which the ESP was designed. If you select **AH** here, you must select options from the **Authentication Algorithm** field (described below).
Authentication Algorithm	Select **SHA1** or **MD5** from the drop-down list box. **MD5** (Message Digest 5) and **SHA1** (Secure Hash Algorithm) are hash algorithms used to authenticate packet data. The **SHA1** algorithm is generally considered stronger than **MD5**, but is slower. Select **MD5** for minimal security and **SHA-1** for maximum security.
Advanced	Click **Advanced** to configure more detailed settings of your IKE key management.

5.15 Viewing SA Monitor

A Security Association (SA) is the group of security settings related to a specific VPN tunnel. This screen displays active VPN connections. Use **Refresh** to display active VPN connections. This screen is read-only.

In the web configurator, click **VPN** and the **SA Monitor** tab to view Security Associations.

When there is outbound traffic but no inbound traffic, the SA times out automatically after two minutes. A tunnel with no outbound or inbound traffic is "idle" and does not timeout until the SA lifetime period expires.

5.16 Remote Management

Remote management allows you to determine which services/protocols can access which ZyWALL interface (if any) from which computers.

When you configure remote management to allow management from the WAN, you still need to configure a firewall rule to allow access. See the firewall chapters for details on configuring firewall rules.

You may manage your ZyWALL from a remote location via:

- Internet (WAN only)
- LAN only,
- ALL (LAN and WAN)
- Neither (Disable).

When you Choose WAN only **or** ALL **(LAN & WAN), you still need to configure a firewall rule to allow access.**

To disable remote management of a service, select **Disable** in the corresponding **Server Access** field.

You may only have one remote management session running at a time. The ZyWALL automatically disconnects a remote management session of lower priority when another remote management session of higher priority starts. The priorities for the different types of remote management sessions are as follows.

1. Console port
2. SSH
3. Telnet
4. HTTPS and HTTP

5.16.1 HTTPS

HTTPS (HyperText Transfer Protocol over Secure Socket Layer, or HTTP over SSL) is a web protocol that encrypts and decrypts web sessions. Secure Socket Layer (SSL) is an application-level protocol that enables secure transactions of data by ensuring confidentiality (an unauthorized party cannot read the transferred data), authentication (one party can identify the other party) and data integrity (you know if data has been changed).

HTTPS on the ZyWALL relies upon certificates, public keys, and private keys to securely access the ZyWALL using the web configurator. The SSL protocol specifies that the SSL server (the ZyWALL) must always authenticate itself to the SSL client (the computer which requests the HTTPS connection with the ZyWALL), whereas the SSL client only should authenticate itself when the SSL server requires it to do so (select **Authenticate Client Certificates** in the **Remote Mngt, WWW** screen). **Authenticate Client Certificates** is optional and if selected means the SSL-client must send the ZyWALL a certificate. You must apply for a certificate for the browser from a CA that is a trusted CA on the ZyWALL.

5.16.2 SSH

SSH (Secure Shell) is a secure communication protocol that combines authentication and data encryption to provide secure encrypted communication between two hosts over an unsecured network.

5.17 UPnP Overview

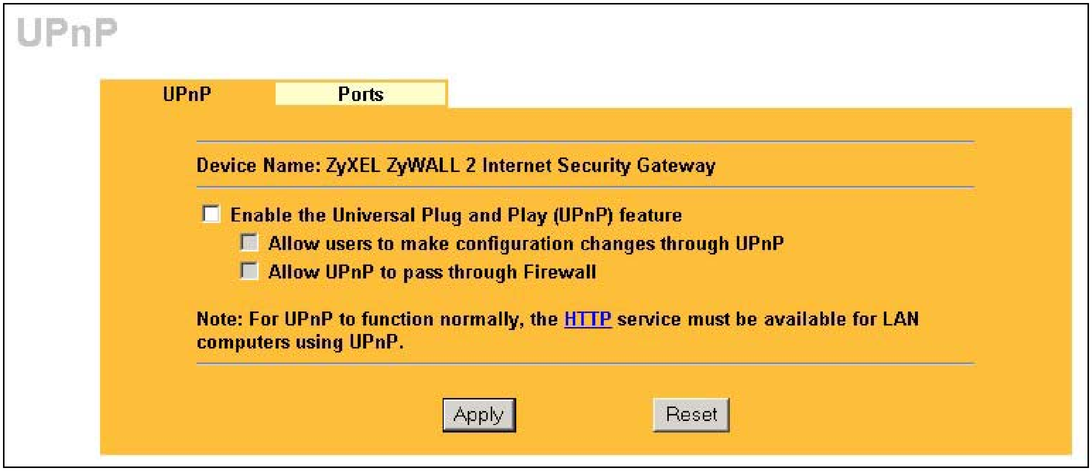
Universal Plug and Play (UPnP) is a distributed, open networking standard that uses TCP/IP for simple peer-to-peer network connectivity between devices. A UPnP device can dynamically join a network, obtain an IP address, convey its capabilities and learn about other devices on the network. In turn, a device can leave a network smoothly and automatically when it is no longer in use.

All UPnP-enabled devices may communicate freely with each other without additional configuration. Disable UPnP if this is not your intention.

Windows ME and Windows XP support UPnP. See the Microsoft website for information about other Microsoft operating systems.

5.18 Configuring UPnP

Click **UPnP** to open the **UPnP** screen.


UPnP

Device Name: ZyXEL ZyWALL 2 Internet Security Gateway

□ Enable the Universal Plug and Play (UPnP) feature

□ Allow users to make configuration changes through UPnP

□ Allow UPnP to pass through Firewall

Note: For UPnP to function normally, the HTTP service must be available for LAN computers using UPnP.

The following table describes the fields in this screen.

LABEL	DESCRIPTION
Device Name	This identifies the device in UPnP applications.
Enable the Universal Plug and Play (UPnP) feature	Select this checkbox to activate UPnP. Be aware that anyone could use a UPnP application to open the web configurator's login screen without entering the ZyWALL's IP address (although you must still enter the password to access the web configurator).
Allow users to make configuration changes through UPnP	Select this check box to allow UPnP-enabled applications to automatically configure the ZyWALL so that they can communicate through the ZyWALL, for example by using NAT traversal, UPnP applications automatically reserve a NAT forwarding port in order to communicate with another UPnP enabled device; this eliminates the need to manually configure port forwarding for the UPnP enabled application.
Allow UPnP to pass through Firewall	Select this check box to allow traffic from UPnP-enabled applications to bypass the firewall. Clear this check box to have the firewall block all UPnP application packets (for example, MSN packets).

6 Troubleshooting

For advanced troubleshooting help, see the Logs section in the *User's Guide*.

PROBLEM	CORRECTIVE ACTION
None of the LEDs turn on when you turn on the ZyWALL.	Make sure that you have the correct power adaptor connected to the ZyWALL and plugged in to an appropriate power source. Check all cable connections. If the LEDs still do not turn on, you may have a hardware problem. In this case, you should contact your local vendor.
Cannot access the ZyWALL from the LAN.	Check the cable connection between the ZyWALL and your computer or hub. Refer to the *Rear Panel* section for details. Ping the ZyWALL from a LAN computer. Make sure your computer Ethernet card is installed and functioning properly.
Cannot ping any computer on the LAN.	If the 10/100M LAN LEDs are off, check the cable connections between the ZyWALL and your LAN computers. Verify that the IP address and subnet mask of the ZyWALL and the LAN computers are in the same IP address range.
Cannot get a WAN IP address from the ISP.	The WAN IP is provided after the ISP verifies the MAC address, host name or user ID. Find out the verification method used by your ISP and configure the corresponding fields.
	If the ISP checks the WAN MAC address, you should clone the MAC address from a LAN computer. Click **WAN** and then the **MAC** tab, select **Spoof this Computer's MAC address - IP Address** and enter the IP address of the computer on the LAN whose MAC address you are cloning.
	If the ISP checks the host name, enter your computer's name (refer to the *Wizard Setup* section in the *User's Guide*) in the **System Name** field in the first screen of the **WIZARD**.
	If the ISP checks the user ID, click **WAN** and then the **ISP** tab. Check your service type, user name, and password.
Cannot access the Internet.	Check the ZyWALL's connection to the cable/DSL device. Check whether your cable/DSL device requires a crossover or straight-through cable.
	Click **WAN** to verify your settings.
	Check that you entered the password correctly. Some ISPs may lock you out after several unsuccessful attempts.