

# *ZyWALL 70*

*Internet Security Appliance*

## *Quick Start Guide*

Version 3.62  
December 2003



# Introducing the ZyWALL

The ZyWALL 70 is the ideal secure gateway for all data passing between the Internet and the LAN. By integrating NAT, firewall, VPN capability and wireless LAN, ZyXEL's ZyWALL 70 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): _____	
Your device's WAN Default Gateway (if given): _____	
Your device's WAN Net Mask (if given): _____	
DNS Server IP Address (if given): Primary _____, Secondary _____, Third _____	
Encapsulation: (choose one below)	
<input type="radio"/> <b>Ethernet</b>	Service Type: _____ Login Server IP Address: _____ User Name: _____ Password: _____
<input type="radio"/> <b>PPTP</b>	User Name: _____ Password: _____ Your WAN IP Address: _____ PPTP Server IP Address: _____ Connection ID (if required): _____
<input type="radio"/> <b>PPPoE</b>	(PPPoE) Service Name: _____ User Name: _____ Password: _____

## Procedure to View a Product's Certification(s)

1. Go to [www.zyxel.com](http://www.zyxel.com).
2. Select your product from the drop-down list box on the ZyXEL home page to go to that product's page.
3. Select the certification you wish to view from this page.

# 1 Hardware Connections

## 1.1 Front Panel and Connections



LABEL	DESCRIPTION
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 below etc.; see your <i>User's Guide</i> for details).
LAN	Connect a computer to this port with an Ethernet cable. This port is auto-negotiating (can connect at 10 or 100Mbps) and auto-crossover (automatically adjust to the type of Ethernet cable you use (straight-through or crossover)).
WAN-1/2	Connect your cable/DSL modem to this port with the cable that came with your modem.
DMZ 10/100M	Connect publicly accessible servers (Web, FTP, etc.) to these ports to make them visible to the outside world. Use Ethernet cables to connect these ports to computers or switches.
DIAL BACKUP	<p>Only connect this port if you want to set up a backup WAN connection; see your <i>User's Guide</i> for details.</p> <p>Connect the 9-pin female end of your modem or TA cable to this port and the other end to your modem or TA.</p>
CONSOLE	<p>Only connect this port if you want to configure the ZyWALL using the SMT via console port; see your <i>User's Guide</i> for details.</p> <p>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.</p>

## 1.2 Rear Panel and Connections



LABEL	DESCRIPTION
Extension Card Slot	<p style="text-align: center;"><b>Do not insert or remove a card with the ZyWALL turned on.</b></p> <p>Turn off the ZyWALL before inserting or removing an 11 Mbps 802.11b-compliant wireless LAN PCMCIA card (to avoid damage).</p> <p>Slide the 64-pin connector end of the PCMCIA wireless LAN card into the slot as shown next.</p> <p style="text-align: center;"><b>Do not force, bend or twist the wireless LAN card.</b></p>
POWER 100-240VAC	Connect the included power cord (use only this cord) to this power socket.
After you've made the connections, connect the power cord to a power supply and push the power switch to the on position. Look at the front panel LEDs.	



### 1.3 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 **ACT**, **CARD**, **LAN**, **WAN** and **DMZ** LEDs turn on if the corresponding connections are properly made. Refer to the following table for more detailed LED descriptions.



LED	COLOR	STATUS	DESCRIPTION	
PWR		Off	The ZyWALL is turned off.	
	Green	On	The ZyWALL is turned on.	
	Red	On	The power to the ZyWALL is too low.	
SYS	Green	Off	The ZyWALL is not ready or has failed.	
		On	The ZyWALL is ready and running.	
		Flashing	The ZyWALL is rebooting.	
ACT	Green	Off	The backup port is not connected.	
		Flashing	The backup port is sending or receiving packets.	
CARD	Green	Off	The wireless LAN is not ready, or has failed.	
		On	The wireless LAN is ready.	
		Flashing	The wireless LAN is sending or receiving packets.	
LAN 10/100		Off	The LAN is not connected.	
		Green	On	The ZyWALL has a successful 10Mbps Ethernet connection.
			Flashing	The 10M LAN is sending or receiving packets.
	Orange	On	The ZyWALL has a successful 100Mbps Ethernet connection.	
		Flashing	The 100M LAN is sending or receiving packets.	
WAN-1/2 10/100		Off	The WAN connection is not ready, or has failed.	
		Green	On	The ZyWALL has a successful 10Mbps WAN connection.
			Flashing	The 10M WAN is sending or receiving packets.

LED	COLOR	STATUS	DESCRIPTION
	Orange	On	The ZyWALL has a successful 100Mbps WAN connection.
		Flashing	The 100M WAN is sending or receiving packets.
DMZ 10/100	Green	Off	The DMZ connection is not ready, or has failed.
		On	The ZyWALL is connected to a 100Mbps DMZ.
	Orange	Flashing	The 10M DMZ is sending or receiving packets.
		On	The ZyWALL is connected to a 100Mbps DMZ.
	Flashing	The 100M DMZ is sending or receiving packets.	

## 2 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.**

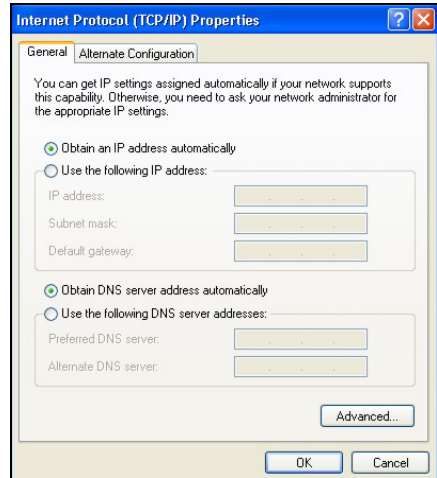
The ZyWALL is already set up to assign your computer an IP address. Use this section to set up your computer to receive an IP address or assign it a static IP address in the 192.168.1.2 to 192.168.1.254 range with a subnet mask of 255.255.255.0. This is necessary to ensure that your computer can communicate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

### 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 Windows XP) and click **Properties**.

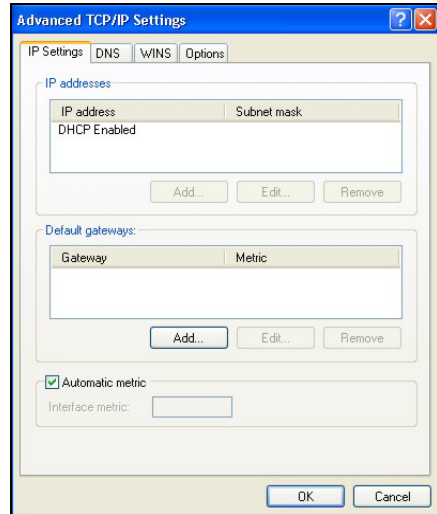
- The **Internet Protocol TCP/IP Properties** screen opens (the **General** tab in Windows XP).
  - To have your computer assigned a dynamic IP address, click **Obtain an IP address automatically**.
  - To configure a static IP address, click **Use the following IP Address** and fill in the **IP address** (choose one from 192.168.1.2 to 192.168.1.254), **Subnet mask** (255.255.255.0), and **Default gateway** (192.168.1.1) fields.



- Click **Advanced**. Remove any previously installed gateways in the **IP Settings** tab and click **OK** to go back to the **Internet Protocol TCP/IP Properties** screen.
- 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**.
- Click **OK** to close the **Internet Protocol (TCP/IP) Properties** window.
- Click **OK** to close the **Local Area Connection Properties** window.



## Checking Your Computer's IP Address

- In the computer, click **Start, (All) Programs, Accessories** and then **Command Prompt**.
- 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.

## 3 Configuring Your ZyWALL

**Choose one of these methods to access and configure the ZyWALL. This *Quick Start Guide* shows you how to use the web configurator wizards only. See your *User's Guide* for background information on all ZyWALL features and SMT configuration. Click the web configurator online help for screen-specific web help.**

- Web Configurator
- SMT (System Management Terminal). Access the SMT via:
  - o Console port using terminal emulation software
  - o LAN, WLAN, DMZ or WAN using Telnet

### 3.1 Accessing Your ZyWALL Via Web Configurator

**Step 1.** Launch your web browser. Enter “192.168.1.1” as the web site address.



**Step 2.** The default password (“1234”) is already in the password field (in non-readable format). Click **Login** to proceed to a screen asking you to change your password. Click **Reset** to revert to the default password in the password field.





**Step 3.** It is highly recommended you change the default password! Enter a new password, retype it to confirm and click **Apply**; alternatively click **Ignore** if you do not want to change the password now.



**Step 1.** Click **Apply** in the **Replace Certificate** screen to create a certificate using your ZyWALL's MAC address that will be specific to this device.



**Step 4.** You should now see the web configurator **HOME** screen.

- Click **Internet Access** and **VPN Wizard** to begin setup wizards screens to help you configure your ZyWALL for the first time.
- Click a link in the navigation panel to configure that ZyWALL feature.
- Click **MAINTENANCE** in the navigation panel to upload firmware and back up, restore or upload a configuration file.
- Click **Renew** to renew the WAN IP address.
- Click **Show Statistics** to see ZyWALL performance statistics.
- Click **Show DHCP Table** to show current DHCP client information.

- Click **VPN Status** to display the active VPN connections.
- 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 **Refresh** to display the **Login** screen again and then log back in. This idle timeout timer is one of the many ZyWALL features that you may edit using the web configurator.

The screenshot displays the ZyWALL 70 web management interface. On the left is a dark blue navigation sidebar with the following menu items: HOME, NETWORK (LAN, WIRELESS LAN, WAN, DMZ), SECURITY (FIREWALL, CONTENT FILTER, VPN, CERTIFICATES, AUTH SERVER), ADVANCED (SUA/NAT, STATIC ROUTE, POLICY ROUTE, BW MGMT, REMOTE MGMT, UPnP), LOGS, MAINTENANCE, and LOGOUT. The main content area is titled 'HOME' and contains several sections:

- Wizards:** A section with a 'Wizards...' header and a 'Wizard for Quick Setup' sub-section. It contains two buttons: 'Internet Access' and 'VPN Wizard'. A callout box labeled 'Wizards' points to this section.
- Device Information:** A section with a 'Navigation panel' callout box pointing to its right side. It displays system details:
  - System Name:
  - Firmware Version: V3.62(WM.0) | 12/19/2003
  - Routing Protocol: IP
  - Current Time: 5 : 21 : 9
  - Current Date: 2003 - 12 - 22
  - Memory: (8160/21098KB) with a green progress bar.
  - NAT Session: (0/4096)
  - Policy Route: (1/24) with a green progress bar.
- Network Status:** A table showing the status of various network interfaces.

At the bottom of the main content area, there are three buttons: 'Show Statistics', 'Show DHCP Table', and 'VPN Status'. A callout box labeled 'LOGOUT' points to the 'LOGOUT' link in the sidebar.

Interface	Status	IP Address	Subnet Mask	DHCP	Renew
WAN 1	100M/Full	172.1.2.3	255.255.0.0	Client	Renew
WAN 2	Down	0.0.0.0	0.0.0.0	None	
LAN	100M/Full	192.168.1.1	255.255.255.0	Server	N/A
WLAN	Active	N/A	N/A	N/A	N/A
DMZ	100M/Full	0.0.0.0	0.0.0.0	N/A	N/A

## 3.2 Using the Wizard to Configure for Internet Access

**Step 1.** Click **Internet Access** in the **HOME** screen to help you configure your WAN1 on the ZyWALL to access the Internet. The first wizard screen has three variations depending on what encapsulation type you use. Use the information in *Internet Account Information* to fill in fields.

WIZARD - Internet Access

ISP Parameters for Internet Access

Encapsulation	Ethernet
Service Type	PP-TPshiba
User Name	
Password	
Retype Password	
Login Server IP Address	0 . 0 . 0 . 0

Next

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.

Point-to-Point Protocol over Ethernet (**PPPoE**) also 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.

Choose **PPTP** if your service provider uses a DSL terminator with PPTP login. The ZyWALL must have a static IP address in this case. You'll also need a login name, associated password, the DSL terminator IP address and possibly a connection ID.

Click **Next** to continue.

**Step 2.** Fill in the fields and click **Finish** to save and complete the wizard setup.

WIZARD - Internet Access

WAN IP Address Assignment

Get automatically from ISP  
 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	172.20.0.63
Second DNS Server	From ISP	172.20.0.27
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
--	--------------------

Back Finish

### 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**.

### System DNS Servers

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. Enter the DNS server's IP address in the field to the right. Select **None** if you do not want to configure DNS servers. If you do not configure a DNS server, you must know the IP address of a machine in order to access it.

### 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.

## 3.3 Test Your Internet Connection

Launch your web browser and navigate to [www.zyxel.com](http://www.zyxel.com). You don't need a dial-up program such as Dial Up Networking. Refer to the *User's Guide* for more detailed information on the complete range of ZyWALL features.

## 3.4 Using the Wizard to Configure a VPN Policy

**Step 1.** Click **VPN Wizard** in the **HOME** screen to help you edit a VPN rule that use a pre-shared key and configure IKE settings to establish a VPN tunnel.

The screenshot shows the 'WIZARD - VPN' configuration screen. Under the 'Gateway Setting' section, there are two main fields: 'My IP Address' and 'Secure Gateway Address'. The 'My IP Address' field contains the text '0 . 0 . 0 . 0'. The 'Secure Gateway Address' section has two radio buttons: 'IP Address' (which is selected) and 'Domain Name'. Below the radio buttons is a text input field containing '0.0.0.0'. At the bottom right of the screen is a 'Next' button.

Enter the WAN IP address of your ZyWALL. The ZyWALL uses its current WAN IP address (static or dynamic) in setting up the VPN tunnel if you leave this field as **0.0.0.0**.

Select **IP Address** and then enter IP address to identify the remote IPsec router by its IP address.

Otherwise, select **Domain Name** and enter the domain name.

Click **Next** to continue.

**Step 2.** Fill in the fields and click **Next** to continue.

The screenshot shows the 'WIZARD - VPN' configuration screen for 'Network Setting'. It is divided into two sections: 'Local Network' and 'Remote Network'. Each section has three radio buttons: 'Single' (selected), 'Range IP', and 'Subnet'. Below the radio buttons are two text input fields: 'Starting IP Address' and 'Ending IP Address / Subnet Mask'. All four input fields contain the text '0 . 0 . 0 . 0'. At the bottom of the screen are 'Back' and 'Next' buttons.

Select **Single** for a single IP address. Select **Range IP** for a specific range of IP addresses. Select **Subnet** to specify IP addresses on a network by their subnet mask.

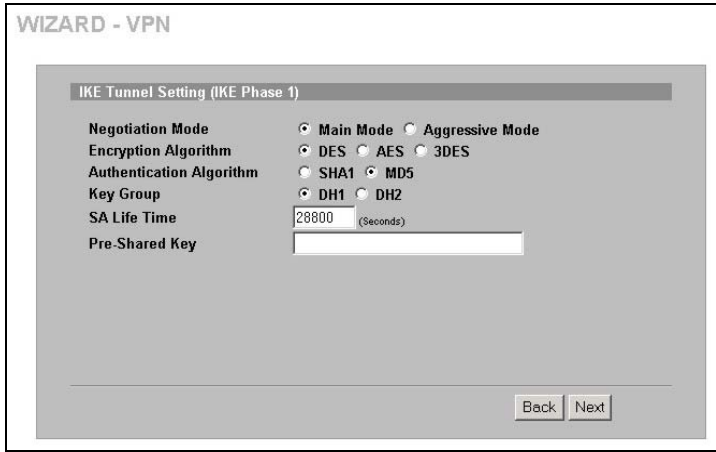
### Local Network

If the **Local Network** field is configured to **Single**, enter a (static) IP address on the LAN behind your ZyWALL. If the **Local Network** field is configured to **Range IP**, enter the beginning and end (static) IP address, in a range of computers on the LAN behind your ZyWALL. If the **Local Network** field is configured to **Subnet**, enter a (static) IP address and subnet mask on the LAN behind your ZyWALL.

**Remote Network**

If the **Remote Network** field is configured to **Single**, enter a (static) IP address on the network behind the remote IPSec router. If the **Remote Network** field is configured to **Range IP**, enter the beginning and end (static) IP address, in a range of computers on the network behind the remote IPSec router. If the **Remote Network** field is configured to **Subnet**, enter a (static) IP address and subnet mask on the network behind the remote IPSec router.

**Step 3.** Use the third wizard screen to configure IKE tunnel settings.



**Negotiation Mode**

Select **Main Mode** or **Aggressive Mode**. Multiple SAs connecting through a secure gateway must have the same negotiation mode.

**Encryption Algorithm**

Select the method of data encryption using a private (secret) key. 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**.

**Authentication Algorithm**

**MD5** (Message Digest 5) and **SHA1** (Secure Hash Algorithm) are hash algorithms used to authenticate packet data. Select **MD5** for minimal security and **SHA-1** for maximum security.

**Key Group**

Choose a key group for phase 1 IKE setup. **DH1** (default) refers to Diffie-Hellman Group 1 a 768 bit random number. **DH2** refers to Diffie-Hellman Group 2 a 1024 bit (1Kb) random number.

**SA Life Time (Minutes)**

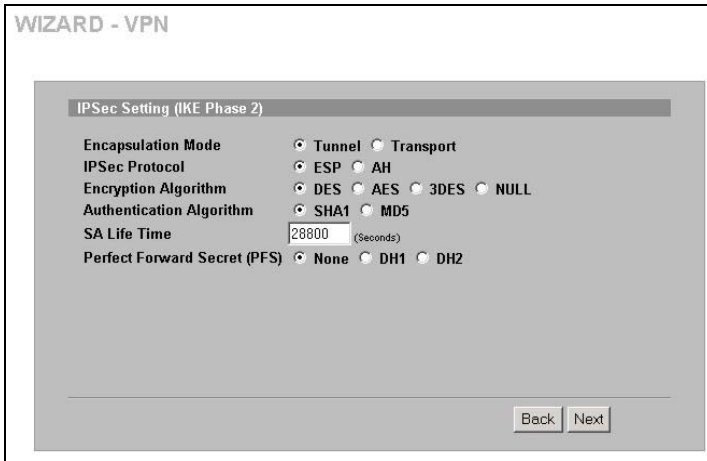
Define the length of time before an IKE SA automatically renegotiates in this field. The minimum value is 180 seconds.

**Pre-Shared Key**

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.

Click **Next** to continue.

**Step 4.** Use the forth wizard screen to configure IPSec settings.



Choose **Tunnel** mode or **Transport** mode.

Choose which protocol to use (**ESP** or **AH**) for the IKE key exchange.

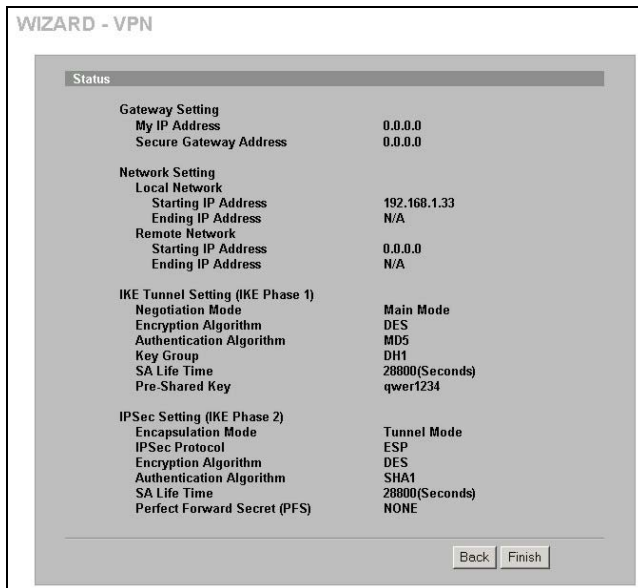
Choose an encryption algorithm or select **NULL** to set up a tunnel without encryption.

Choose an authentication algorithm.

Set the IPSec SA lifetime. This field allows you to determine how long the IPSec SA should stay up before it times out.

Choose whether to enable Perfect Forward Secrecy (PFS) using Diffie-Hellman public-key cryptography. Select **None** (the default) to disable PFS. **DH1** refers to Diffie-Hellman Group 1 a 768 bit random number. **DH2** refers to Diffie-Hellman Group 2 a 1024 bit (1Kb) random number (more secure, yet slower).

**Step 5.** This read-only screen shows the status of the current VPN setting. Use the summary table to check whether what you have configured is correct.



Click **Finish** to save and complete the wizard setup. Otherwise, click **Back** to return to the previous screen.

## 4 Troubleshooting

PROBLEM	CORRECTIVE ACTION
None of the LEDs turn on when you turn on the ZyWALL.	<p>Make sure that you have the power cord connected to the ZyWALL and an appropriate power source. Make sure the fuse is not burnt out (see the <i>User's Guide</i> appendices for details). Check all cable connections.</p> <p>If the LEDs still do not turn on, you may have a hardware problem. In this case, you should contact your local vendor.</p>
Cannot access the ZyWALL from the LAN.	<p>Check the cable connection between the ZyWALL and your computer or hub. Refer to the section on front panel for details.</p> <p>Ping the ZyWALL from a LAN computer. Make sure your computer's Ethernet card is installed and functioning properly.</p>
Cannot ping any computer on the LAN.	<p>If the 10/100M LAN LEDs are off, check the cable connections between the ZyWALL and your LAN computers.</p> <p>Verify that the IP address and subnet mask of the ZyWALL and the LAN computers are in the same IP address range.</p>
Cannot get a WAN IP address from the ISP.	<p>The WAN IP is provided after the ISP verifies the MAC address, host name or user ID.</p> <p>Find out the verification method used by your ISP and configure the corresponding fields.</p> <p>If the ISP checks the WAN MAC address, you should clone the MAC address from a LAN computer. Click <b>WAN</b> and then the <b>WAN1</b> or <b>WAN2</b> tab, select <b>Spoof WAN MAC Address</b> and enter the IP address of the computer on the LAN whose MAC address you are cloning.</p> <p>If the ISP checks the host name, enter your computer's name in the <b>System Name</b> field in the <b>MAINTENANCE General</b> screen (refer to the <i>Maintenance</i> part in the <i>User's Guide</i>).</p> <p>If the ISP checks the user ID, click <b>WAN</b> and then the <b>WAN1</b> or <b>WAN2</b> tab. Check your service type, user name, and password.</p>
Cannot access the Internet.	<p>Check the ZyWALL's connection to the cable/DSL device.</p> <p>Click <b>WAN</b> to verify your settings.</p>