

ZyWALL 35

Internet Security Appliance

Quick Start Guide

Version 3.62

April 2004



Introducing the ZyWALL

The ZyWALL 35 is the ideal secure gateway for all data passing between the Internet and the LAN. By integrating NAT, firewall, content filtering, certificates and VPN capability, ZyXEL's ZyWALL 35 is a complete security solution that protects your Intranet and efficiently manages data traffic on your network. The ZyWALL increases network security by adding up to four De-Militarized Zone (DMZ) ports for use with publicly accessible servers. Dual WAN ports and dial backup enhance reliability. The PCMCIA/CardBus slot allows you to add a 802.11b/g-compliant wireless LAN. 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"/> Ethernet	Service Type: _____ Login Server IP Address: _____ User Name: _____ Password: _____
<input type="radio"/> PPTP	User Name: _____ Password: _____ Your WAN IP Address: _____ PPTP Server IP Address: _____ Connection ID (if required): _____
<input type="radio"/> PPPoE	(PPPoE) Service Name: _____ User Name: _____ Password: _____

Procedure to View a Product's Certification(s)

1. Go to 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 Connectors

Refer to section 1.3 on how to setup your ZyWALL.



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).
WAN 10/100 1/2	These ports are auto-negotiating (can connect at 10 or 100Mbps) and auto-crossover (automatically adjust to straight-through or crossover Ethernet cable).
LAN/DMZ 10/100 1-4	These ports are auto-negotiating (can connect at 10 or 100Mbps) and auto-crossover (automatically adjust to straight-through or crossover Ethernet cable).

1.2 Rear Panel and Connectors



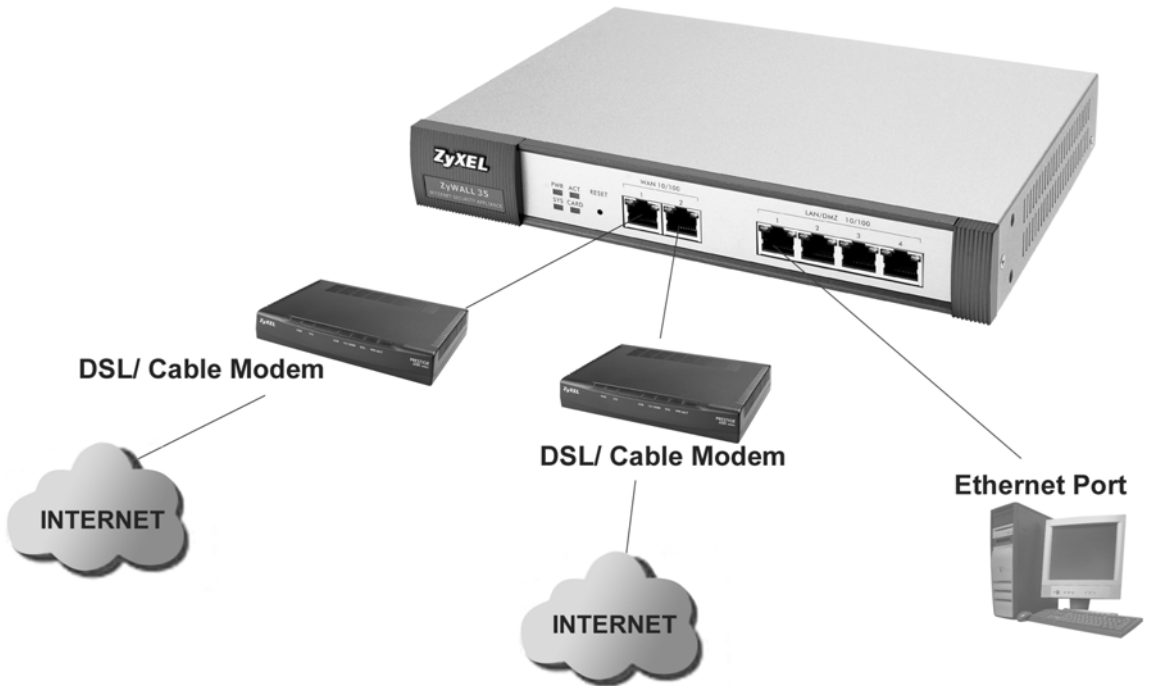
LABEL	DESCRIPTION
DIAL BACKUP	Only connect this port if you want to set up a backup WAN connection; see your <i>User's Guide</i> for details.
CONSOLE	Only connect this port if you want to configure the ZyWALL using the SMT (System Management Terminal) via console port; see your <i>User's Guide</i> for details. 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.

LABEL	DESCRIPTION
EXTENSION CARD SLOT	<p data-bbox="387 213 1224 253">Do not insert or remove a card with the ZyWALL turned on.</p> <p data-bbox="333 277 1264 333">Turn off the ZyWALL before inserting or removing an 802.11b/g-compliant wireless LAN PCMCIA or CardBus card (to avoid damage).</p> <p data-bbox="387 357 1224 397">Do not force, bend or twist the wireless LAN card.</p>
POWER 12VDC	Connect the included power adaptor (use only this adaptor) to this power socket.

1.3 Setting Up Your ZyWALL

1. Connect your cable/DSL modem(s) to **WAN1** port and/or **WAN2** port with the Ethernet cable(s) that came with your modem(s).
2. Connect computers or hubs to **LAN** ports with Ethernet cables.

If you configure these ports as **DMZ** ports in the **LAN** or **DMZ** screen through the Web configurator, connect publicly accessible servers (Web, FTP, etc.) to these ports to make them visible to the outside world.

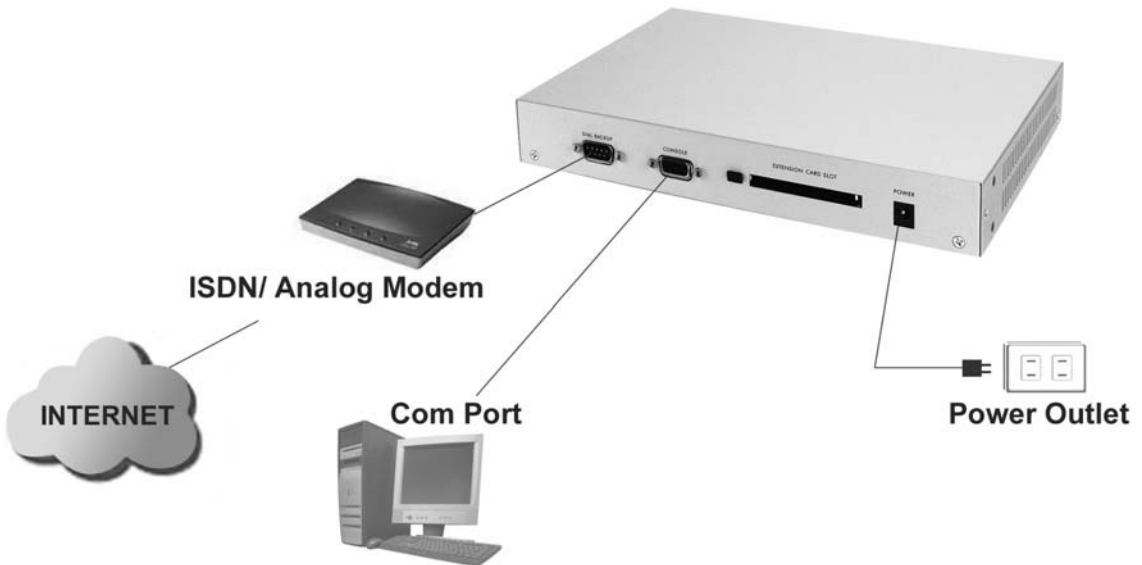


3. Slide the 64-pin connector end of the PCMCIA or CardBus wireless LAN card into the extension card slot if you want to add a 802.11b/g-compliant wireless LAN.

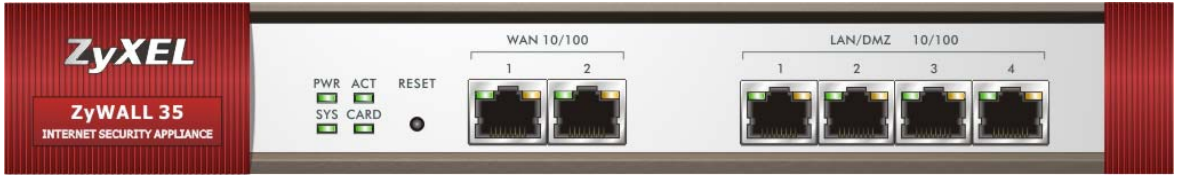


4. If you want to set up a backup WAN connection, connect the 9-pin female end of your modem or Terminal Adaptor (TA) cable to **DIAL BACKUP** port and the other end to your modem or TA.
5. If you want to configure the ZyWALL using the SMT (System Management Terminal) via **CONSOLE** port, connect the 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.
6. After you've made the connections, connect the included power adaptor to the power socket and connect the power adaptor to a power supply (outlet).

The **PWR** LED turns on green when you connect the power. The **SYS** LED blinks for about 30 seconds while performing system testing and then stays on if the testing is successful. The **ACT**, **CARD**, **WAN** and **LAN/DMZ** LEDs turn on if the corresponding connections are properly made. Please see section 1.4 for detailed LED descriptions.



1.4 Front Panel LEDs



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 restarting.
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.
WAN 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.
	Orange	On	The ZyWALL has a successful 100Mbps WAN connection.
		Flashing	The 100M WAN is sending or receiving packets.
LAN/DMZ 10/100		Off	The LAN/DMZ 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.

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.

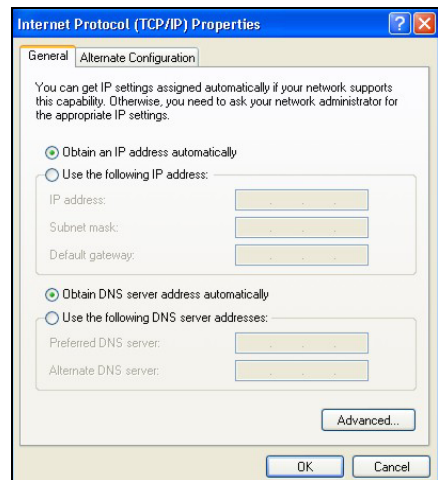
Windows 2000/NT/XP

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**.
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 from 192.168.1.2 to 192.168.1.254), **Subnet mask** (255.255.255.0), and **Default gateway** (192.168.1.1) fields.



6. 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.

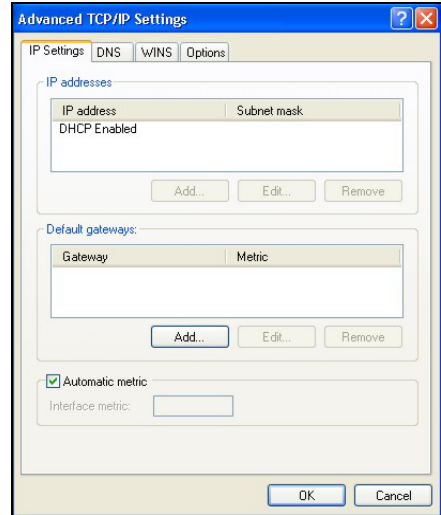
7. Click **Obtain DNS server address automatically** if you do not know your DNS server IP address(es).

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.



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.

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:
 - Console port using terminal emulation software
 - LAN, WLAN, DMZ or WAN using Telnet

3.1 Accessing Your ZyWALL Via Web Configurator

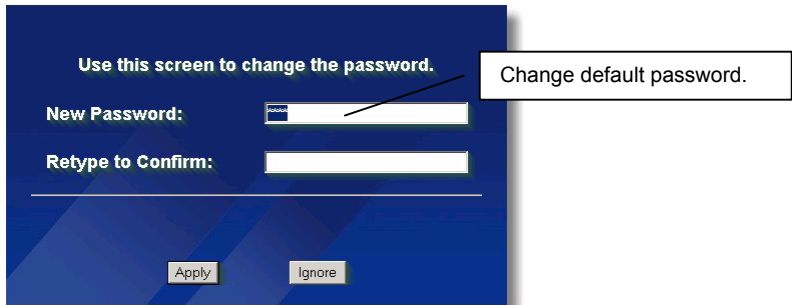
1. Launch your web browser. Enter “192.168.1.1” as the web site address.



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.



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.



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



5. 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 see current DHCP (Dynamic Host Configuration Protocol) client information.
 - Click **VPN Status** to display the active VPN (Virtual Private Network) 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. If this happens to you, simply log back in. This idle timeout timer is one of the many ZyWALL features that you may edit using the web configurator.

The screenshot shows the ZyWALL web configurator interface. On the left is a navigation menu with categories: 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 a 'Wizards' section with 'Wizards...' and 'Wizard for Quick Setup' (with buttons for 'Internet Access' and 'VPN Wizard'). Below is the 'Device Information' section, which includes system details for 'Zy35' and a 'Network Status' table. A 'LOGOUT' button is located in the bottom left of the main content area. Callout boxes point to the 'Wizards' section, the 'Device Information' section, and the 'LOGOUT' button.

Device Information

System Name: Zy35
 Firmware Version: V3.62(WZ.0)-0227 | 02/27/2004
 Routing Protocol: IP
 Current Time: 03 : 18 : 08
 Current Date: 2004 - 03 - 01
 Memory: (11770/20532KB)
 NAT Concurrent Session: (11/10000)
 Policy Route: (0/72)

Network Status

Interface	Status	IP Address	Subnet Mask	DHCP	Renew
WAN 1	100M/Full	172.21.4.6	255.255.0.0	Client	Renew
WAN 2	Down	0.0.0.0	0.0.0.0	Client	Renew
LAN	100M/Full	192.168.1.1	255.255.255.0	Server	N/A
WLAN	Inactive	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

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	RR-Toshiba
User Name	
Password	XXXXXXXXXX
Retype Password	XXXXXXXXXX
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 a user name, password and login server IP address for some Roadrunner versions.

Click **Next** to continue.

Internet Connection with Ethernet

WIZARD - Internet Access

ISP Parameters for Internet Access

Encapsulation	PPP over Ethernet
Service Name	
User Name	
Password	XXXXXXXXXX
Retype Password	XXXXXXXXXX
<input type="checkbox"/> Nailed-Up Connection	
Idle Timeout	100 (Seconds)

Next

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.

Click **Next** to continue.

Internet Connection with PPPoE

WIZARD - Internet Access

ISP Parameters for Internet Access

Encapsulation: PPTP

User Name: [REDACTED]

Password: [REDACTED]

Retype Password: [REDACTED]

Nailed-Up Connection

Idle Timeout: 100 (Seconds)

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: [REDACTED]

Next

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.

Internet Connection with PPTP

- 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. 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

Refer to your *User's Guide* for more background information about VPN.

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. Click **Next** to continue.

WIZARD - VPN

Gateway Setting

My IP Address: 0 . 0 . 0 . 0

Secure Gateway Address: IP Address Domain Name
0.0.0.0

Next

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 an IP address to identify the remote IPSec router by its IP address. Otherwise, select **Domain Name** and enter the domain name.

If the remote secure gateway has a dynamic WAN IP address and does not use DDNS, enter 0.0.0.0 as the secure gateway's address. In this case only the remote secure gateway can initiate SAs.

2. Fill in the fields and click **Next** to continue. Use this screen to configure the IP addresses of the devices that can use the VPN tunnel. Local network refers to the devices behind the ZyWALL and remote network refers to the devices behind the remote IPSec router.

WIZARD - VPN

Network Setting

Local Network: Single Range IP Subnet
Starting IP Address: 0 . 0 . 0 . 0
Ending IP Address / Subnet Mask: 0 . 0 . 0 . 0

Remote Network: Single Range IP Subnet
Starting IP Address: 0 . 0 . 0 . 0
Ending IP Address / Subnet Mask: 0 . 0 . 0 . 0

Back Next

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.

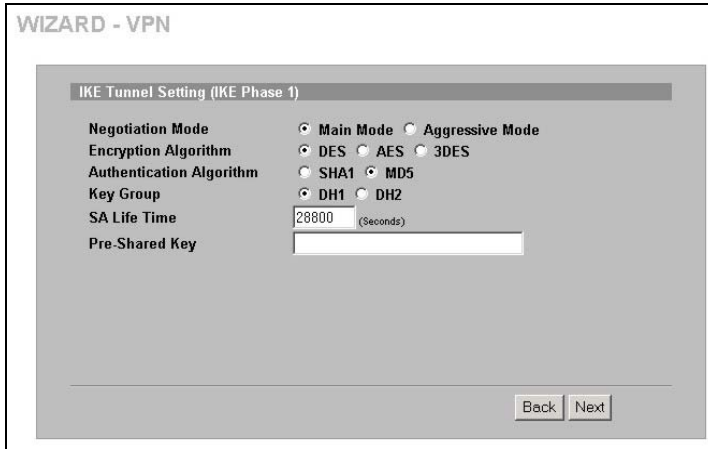
Local Network

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.

- Use the third wizard screen to configure IKE (Internet Key Exchange) 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 (Seconds)

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.

4. Use the forth wizard screen to configure IPSec settings and click **Next** to continue.

WIZARD - VPN

IPSec Setting (IKE Phase 2)

Encapsulation Mode Tunnel Transport

IPSec Protocol ESP AH

Encryption Algorithm DES AES 3DES NULL

Authentication Algorithm SHA1 MD5

SA Life Time (Seconds)

Perfect Forward Secret (PFS) None DH1 DH2

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).

5. This read-only screen shows a summary of the VPN rule's settings. Check whether what you have configured is correct.

WIZARD - VPN

Status

Gateway Setting

My IP Address 0.0.0.0

Secure Gateway Address 0.0.0.0

Network Setting

Local Network

Starting IP Address 192.168.1.33

Ending IP Address N/A

Remote Network

Starting IP Address 0.0.0.0

Ending IP Address N/A

IKE Tunnel Setting (IKE Phase 1)

Negotiation Mode Main Mode

Encryption Algorithm DES

Authentication Algorithm MD5

Key Group DH1

SA Life Time 28800(Seconds)

Pre-Shared Key qwer1234

IPSec Setting (IKE Phase 2)

Encapsulation Mode Tunnel Mode

IPSec Protocol ESP

Encryption Algorithm DES

Authentication Algorithm SHA1

SA Life Time 28800(Seconds)

Perfect Forward Secret (PFS) NONE

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 adaptor connected to the ZyWALL and plugged in to an appropriate power source. 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/DMZ 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 WAN and then the WAN1 or WAN2 tab, select Spoof WAN MAC Address 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 System Name field in the MAINTENANCE General screen (refer to the <i>Maintenance</i> part in the <i>User's Guide</i>).</p>
Cannot access the Internet.	<p>Check the ZyWALL's connection to the cable/DSL device.</p>
	<p>Click WAN to verify your settings.</p>