ZyWALL SSL 10

Integrated SSL-VPN Appliance

User's Guide

Version 1.00
12/2006
Edition 1

www.zyxel.com

About This User's Guide

Intended Audience

This manual is intended for people who want to log into a network over secure connections through the ZyWALL. You should have at least a basic knowledge of computer usage.

Related Documentation

- Web Configurator Online Help
  Embedded web help for descriptions of individual screens and supplementary information.
- ZyXEL Web Site
  Please refer to www.zyxel.com for additional support documentation and product certifications.

User Guide Feedback

Help us help you. Send all User Guide-related comments, questions or suggestions for improvement to the following address, or use e-mail instead. Thank you!

The Technical Writing Team,
ZyXEL Communications Corp.,
6 Innovation Road II,
Science-Based Industrial Park,
Hsinchu, 300, Taiwan.

E-mail: techwriters@zyxel.com.tw

Document Conventions

Warnings and Notes

These are how warnings and notes are shown in this User's Guide.

Warnings tell you about things that could harm you or your device.

Notes tell you other important information (for example, other things you may need to configure or helpful tips) or recommendations.

Syntax Conventions

- The ZyWALL SSL 10 may be referred to as the "ZyWALL", the "device", the "system" or the "product" in this User's Guide.
- Product labels, screen names, field labels and field choices are all in **bold** font.
- A key stroke is denoted by square brackets and uppercase text, for example, [ENTER] means the "enter" or "return" key on your keyboard.
- "Enter" means for you to type one or more characters and then press the [ENTER] key. "Select" or "choose" means for you to use one of the predefined choices.
- A right angle bracket (>) within a screen name denotes a mouse click. For example, **Maintenance > Log > Log Setting** means you first click **Maintenance** in the navigation panel, then the **Log** sub menu and finally the **Log Setting** tab to get to that screen.
- Units of measurement may denote the "metric" value or the "scientific" value. For example, "k" for kilo may denote "1000" or "1024", "M" for mega may denote "1000000" or "1048576" and so on.
- "e.g.," is a shorthand for "for instance", and "i.e.," means "that is" or "in other words".

Icons Used in Figures

Figures in this User's Guide may use the following generic icons. The ZyWALL icon is not an exact representation of your device.

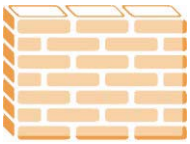
ZyWALL	Computer	Notebook computer
Server	DSLAM	Firewall 
Telephone	Switch	Router

Table of Contents

About This User's Guide **3**

Document Conventions **4**

Table of Contents **7**

List of Figures **9**

Part I: Remote User Access **11**

Chapter 1
Introduction **13**

1.1 Overview 13
1.1.1 Network Resource Access Methods 13
1.1.2 System Requirements 13
1.1.3 Required Information You Need 14
1.1.4 Certificate 14
1.2 Remote User Login 14
1.3 Remote User Screen 17
1.4 Bookmark 18
1.5 Logout 18

Chapter 2
Application **21**

2.1 Overview 21
2.1.1 The Application Screen 21
2.2 Accessing Web-based Application 22
2.3 Accessing Non-Web Based Application 22

Chapter 3
File Sharing **25**

3.1 Overview 25
3.2 Main File Sharing Screen 25
3.3 Opening a File or Folder 26
3.3.1 Downloading a File 27
3.3.2 Saving a File 27
3.4 Creating a New Folder 28
3.5 Renaming a File or Folder 28

3.6 Deleting a File or Folder 29
3.7 Uploading a File 30

Part II: Troubleshooting, Appendices and Index 31

Chapter 4
Troubleshooting 33

Appendix A Setting up Your Computer's IP Address 37

Appendix B Importing Certificates 53

Appendix C Legal Information 63

Appendix D Customer Support 65

List of Figures

Figure 1 Network Example 13
Figure 2 Enter the Address in a Web Browser 14
Figure 3 Login Security Screen 15
Figure 4 Login Screen 15
Figure 5 Software Upgrade Prompt 16
Figure 6 Login Warning Message 16
Figure 7 VPN Connection Network Icon 16
Figure 8 Remote User Screen 17
Figure 9 Add Favorite 18
Figure 10 Logout: Prompt 18
Figure 11 Logout: Information Window 18
Figure 12 Logout: Successful 19
Figure 13 Application 21
Figure 14 Application: Access Web-based Application 22
Figure 15 Application: Access Non-Web based Application 23
Figure 16 Application: Telnet Example 23
Figure 17 File Sharing 26
Figure 18 File Sharing: Enter Access User Name and Password 26
Figure 19 File Sharing: Open a Word File 27
Figure 20 File Sharing: Save a Word File 28
Figure 21 File Sharing: Save a Word File 28
Figure 22 File Sharing: Rename 29
Figure 23 File Sharing: Rename 29
Figure 24 File Sharing: Delete Prompt 30
Figure 25 File Sharing: File Upload 30
Figure 26 WIndows 95/98/Me: Network: Configuration 38
Figure 27 Windows 95/98/Me: TCP/IP Properties: IP Address 39
Figure 28 Windows 95/98/Me: TCP/IP Properties: DNS Configuration 40
Figure 29 Windows XP: Start Menu 41
Figure 30 Windows XP: Control Panel 41
Figure 31 Windows XP: Control Panel: Network Connections: Properties 42
Figure 32 Windows XP: Local Area Connection Properties 42
Figure 33 Windows XP: Internet Protocol (TCP/IP) Properties 43
Figure 34 Windows XP: Advanced TCP/IP Properties 44
Figure 35 Windows XP: Internet Protocol (TCP/IP) Properties 45
Figure 36 Macintosh OS 8/9: Apple Menu 46
Figure 37 Macintosh OS 8/9: TCP/IP 46
Figure 38 Macintosh OS X: Apple Menu 47

Figure 39 Macintosh OS X: Network 48
Figure 40 Red Hat 9.0: KDE: Network Configuration: Devices 49
Figure 41 Red Hat 9.0: KDE: Ethernet Device: General 49
Figure 42 Red Hat 9.0: KDE: Network Configuration: DNS 50
Figure 43 Red Hat 9.0: KDE: Network Configuration: Activate 50
Figure 44 Red Hat 9.0: Dynamic IP Address Setting in ifconfig-eth0 51
Figure 45 Red Hat 9.0: Static IP Address Setting in ifconfig-eth0 51
Figure 46 Red Hat 9.0: DNS Settings in resolv.conf 51
Figure 47 Red Hat 9.0: Restart Ethernet Card 51
Figure 48 Red Hat 9.0: Checking TCP/IP Properties 52
Figure 49 Security Certificate 53
Figure 50 Login Screen 54
Figure 51 Certificate General Information before Import 54
Figure 52 Certificate Import Wizard 1 55
Figure 53 Certificate Import Wizard 2 55
Figure 54 Certificate Import Wizard 3 56
Figure 55 Root Certificate Store 56
Figure 56 Certificate General Information after Import 57
Figure 57 ZyWALL Trusted CA Screen 58
Figure 58 CA Certificate Example 59
Figure 59 Personal Certificate Import Wizard 1 59
Figure 60 Personal Certificate Import Wizard 2 60
Figure 61 Personal Certificate Import Wizard 3 60
Figure 62 Personal Certificate Import Wizard 4 61
Figure 63 Personal Certificate Import Wizard 5 61
Figure 64 Personal Certificate Import Wizard 6 61
Figure 65 Access the ZyWALL Via HTTPS 62
Figure 66 SSL Client Authentication 62
Figure 67 ZyWALL Secure Login Screen 62

PART I
Remote User Access

- Introduction (13)
- Application (21)
- File Sharing (25)

1 Introduction

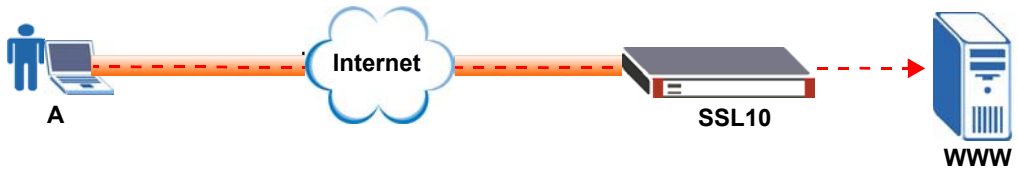
This chapter introduces secure network access and gives an overview of the remote user screens on the ZyWALL.

1.1 Overview

The ZyWALL provides secure connection to network resources such as applications, files, intranet sites or e-mails through web-based interface using Microsoft Outlook Web Access (OWA). No additional computer configuration or software installation is required.

The following figure shows a network example where a remote user (**A**) logs into the ZyWALL (**SSL10**) from the Internet to access the web server (**WWW**) on the local network.

Figure 1 Network Example



1.1.1 Network Resource Access Methods

As a remote user, you can access resources on the local network using one of the following methods.

- Using a standard web browser supported

  Once you have successfully logged in through the ZyWALL, you can access any intranet site, web-based applications or web-based e-mails using a standard web browser. You do not have to install or pre-launch any application on your computer.
- Using the Java thin clients

  The ZyWALL automatically load Java thin client programs to your computer after a successful login. With the thin clients, you can access servers, remote desktops and manage files as if you were on the local network.

1.1.2 System Requirements

The following lists the browser and computer system requirements for remote user access.

- Internet Explorer 5.5 with Microsoft XML (MSXML) service pack installed or 6.0 and above
- Netscape 7.2 and above
- Firefox 1.0 and above
- Mozilla 1.7.3 and above
- Windows 2000 Professional, Windows XP Home/Professional (with service pack 2 and above) or Linux.
- Sun Java Virtual Machine (JVM) installed with a minimum version of 1.4.2_07 for Netscape/Mozilla/Firefox and 1.4.2_02 for Internet Explorer and Linux computers.
- Java enabled in Internet Explorer on Windows computers.

1.1.3 Required Information You Need

Your network administrator should provide the following information that allows you to log in and access network resource.

- domain name or IP address of the ZyWALL.
- login account user name and password
- specific computer requirements. For example, if you must use Windows XP with service pack 2, etc.
- if also required, the user name and/or password to access the network resource.

1.1.4 Certificate

Your computer establishes an HTTPS connection to the ZyWALL to access the login screen. If instructed by your network administrator, you must install or import a certificate (provided by the ZyWALL or your network administrator).

Refer to Appendix B on page 53 for more information.

1.2 Remote User Login

This section shows you how to access and log into the network through the ZyWALL. Example screens for Internet Explorer are shown.

1 Open a web browser and enter the web site address or IP address of the ZyWALL. For example, “http://sslvpn.mycompany.com”.

Figure 2 Enter the Address in a Web Browser

2 Click **OK** or **Yes** if a security screen displays.

Figure 3 Login Security Screen

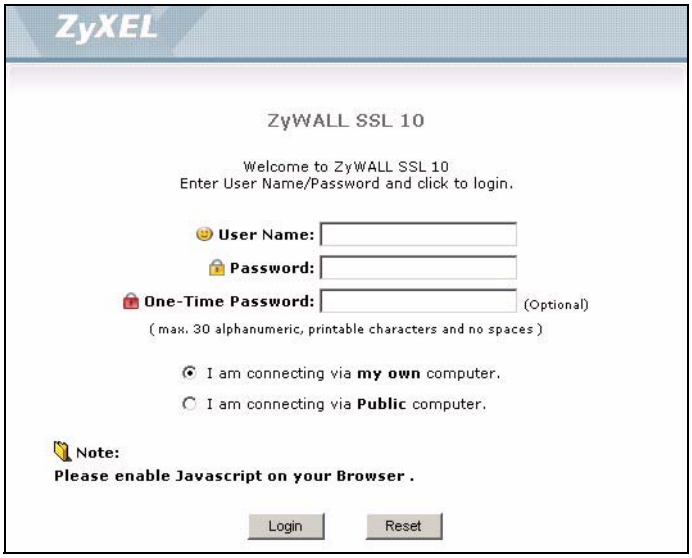
3 A login screen displays. Enter the user name and password of your login account. If a token password is also required, enter it in the **One-Time Password** screen. Click **Login**.

4 Select **I am connecting via my own computer** if you log in using your personal computer.

If you are using a public computer to log in, select **I am connecting via Public computer**. The ZyWALL automatically clears history information from your browser cache after you log out. This prevents anyone from obtaining information that may be stored in the browser cache.

5 Click **Login**.

Figure 4 Login Screen



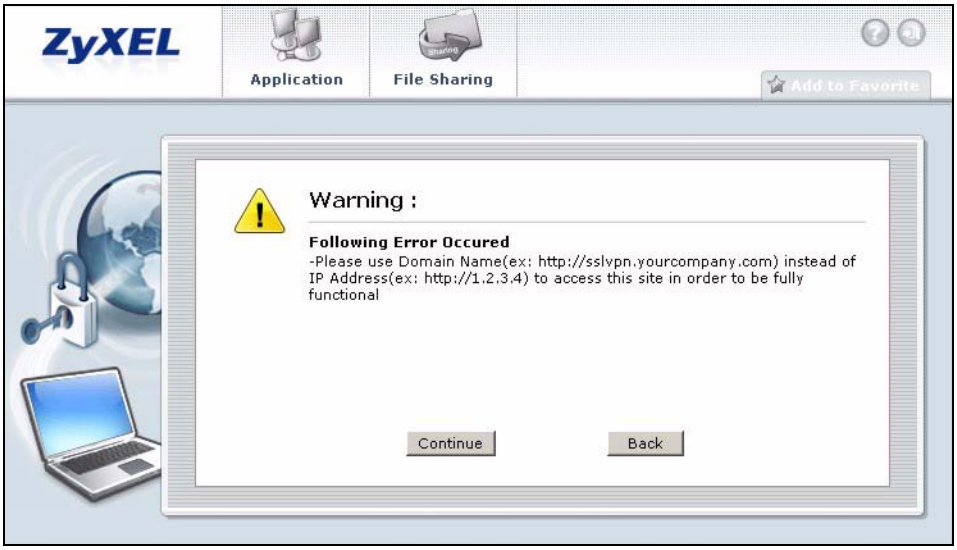
6 After the login is successful, your computer starts establishing a secure connection to the ZyWALL. This may take up to two minutes.

7 Download the installation software if you are prompted to upgrade the JVM. Click the link to access the Sun Java software web site. It is recommended you select the **Offline Installation** option.

Figure 5 Software Upgrade Prompt

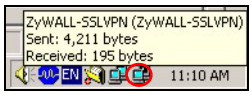
8 If you access the ZyWALL using an IP address, a warning screen displays, click **Continue**.

Figure 6 Login Warning Message



9 A new network icon displays in the system tray. This indicates that a VPN connection has been established between your computer and the ZyWALL.

Figure 7 VPN Connection Network Icon



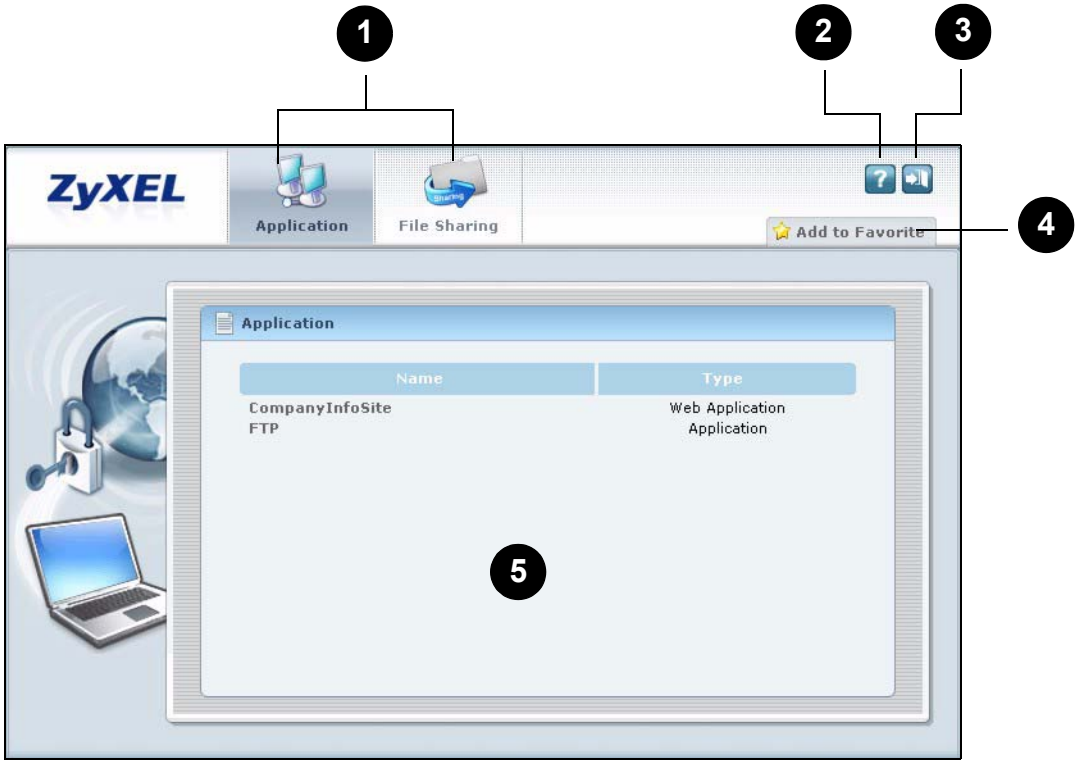
10 When the list of available resources displays in the Application screen, you have successfully logged into the network. See Figure 8 on page 17.

Available resource links vary depending on the configuration of your network administrator.

1.3 Remote User Screen

This section describes the main elements in the remote user screens.

Figure 8 Remote User Screen



The following table describes the various parts of a remote user screen.

Table 1 Remote User Screen Overview

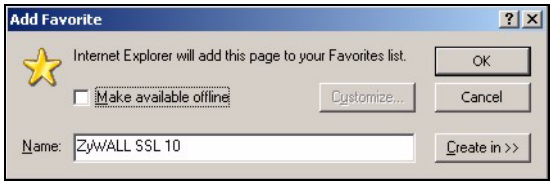
#	
1	Click on a menu tab to go to the **Application** or **File Sharing** screen.
2	Click this icon to display the on-line help window.
3	Click this icon to log out and terminate the secure connection.
4	Click **Add to Favorite** to create a bookmark for the ZyWALL in your web browser.
5	This part of the screen displays a list of the resources available to you. In the **Application** screen, click on a link to access or display the access method. In the **File Sharing** screen, click on a link to open a file or directory.

1.4 Bookmark

You can create a bookmark of the ZyWALL by clicking **Add to Favorite**. This allows you can access the ZyWALL using the bookmark without having to enter the address every time.

1. In any remote user screen, click **Add to favorite**.
2. A descriptive name is entered in the **Name** field. You can accept the default or enter a name.
3. Click **OK** to create a bookmark in your web browser.

Figure 9 Add Favorite



1.5 Logout

To properly terminate a connection, click on the Logout icon in any remote user screen.

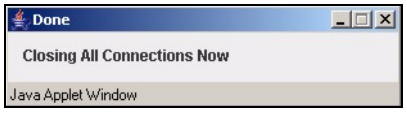
If you select **I am connecting via Public computer** in the login screen, history information in your browser cache is also erased once you log out.

1. Click the **Logout** icon in any remote user screen.
2. A prompt window displays. Click **OK** to continue.

Figure 10 Logout: Prompt

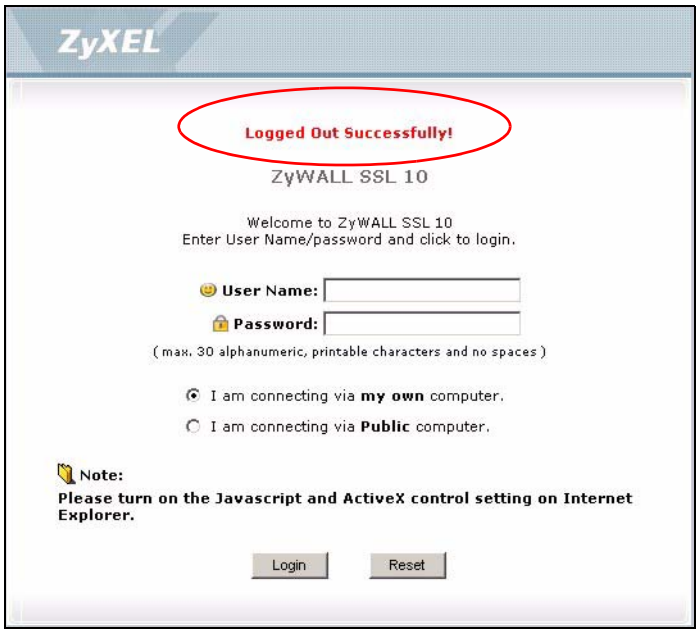
3. An information screen displays. This indicates that all connections have been successfully terminated.

Figure 11 Logout: Information Window



4. The login screen displays with the “Logged out successfully!” message.

Figure 12 Logout: Successful



2

Application

This chapter describes the Application screen you use to access an application on the network.

2.1 Overview

Depending on the configuration of your network administrator, you can use the Application screen to perform the following:

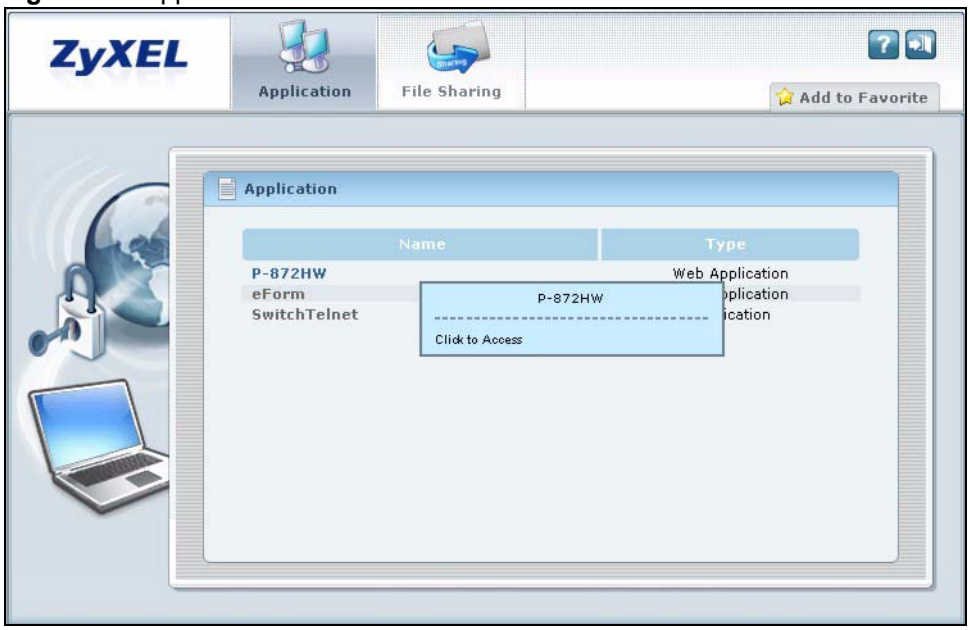
- Access a web-based application (such as a web site and e-mail).
- Display additional information on how to access a non-web based application (such as FTP).

2.1.1 The Application Screen

Click the **Application** tab to display the screen. The **Name** field displays the descriptive name for an application. The **Type** field displays **Web Application** to indicate a web-based application or **Application** for a non-web based application.

You can move your mouse over a link to display help information on how to access an application. The following shows an example.

Figure 13 Application

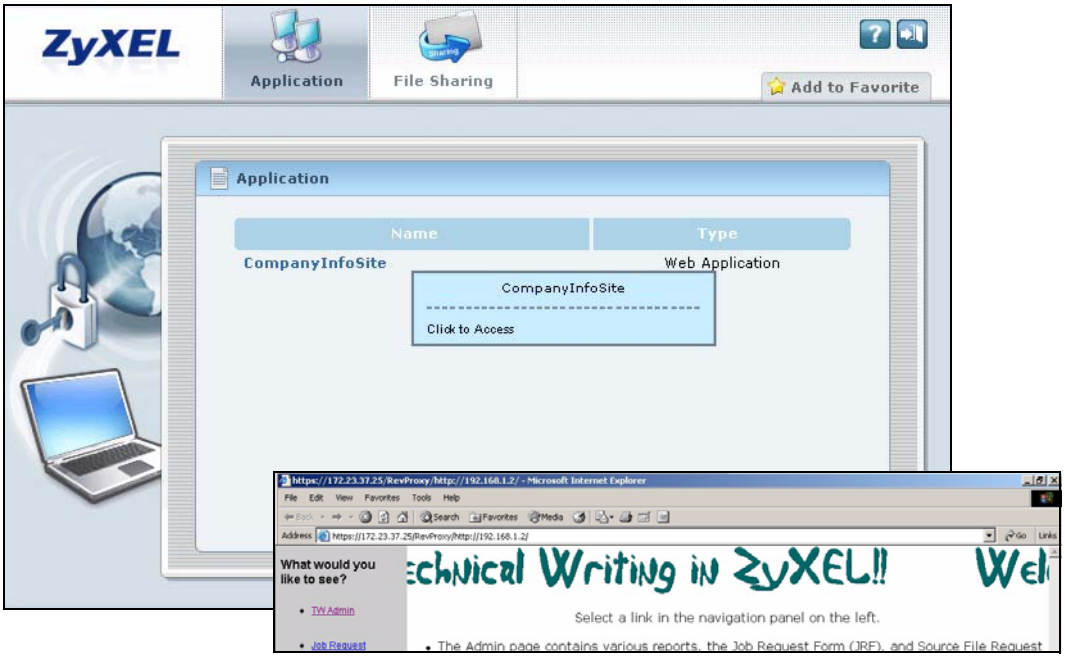


2.2 Accessing Web-based Application

To access a web-based application, simply click a link in the **Application** screen to display the web screen in a separate browser window.

The following shows an example.

Figure 14 Application: Access Web-based Application



2.3 Accessing Non-Web Based Application

To access a non-web based application, move your mouse over the link in the **Application** screen to display the access information.

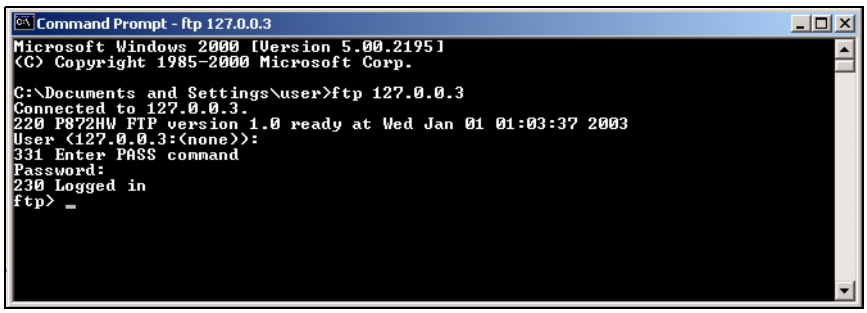
The following example shows you how to establish an FTP connection to a switch for device management.

1 In the **Application** screen, move your mouse over a link to display the pop-up information window.

Figure 15 Application: Access Non-Web based Application

2 Launch an FTP application and connect to the IP address provided. The following figure shows an example using Windows Command Prompt.

Figure 16 Application: Telnet Example



3

File Sharing

This chapter describes the **File Sharing** screen you use to access files on a Windows or Linux file server.

3.1 Overview

Use the **File Sharing** screen display and access shared files/folders on a file server.

You can also perform the following actions:

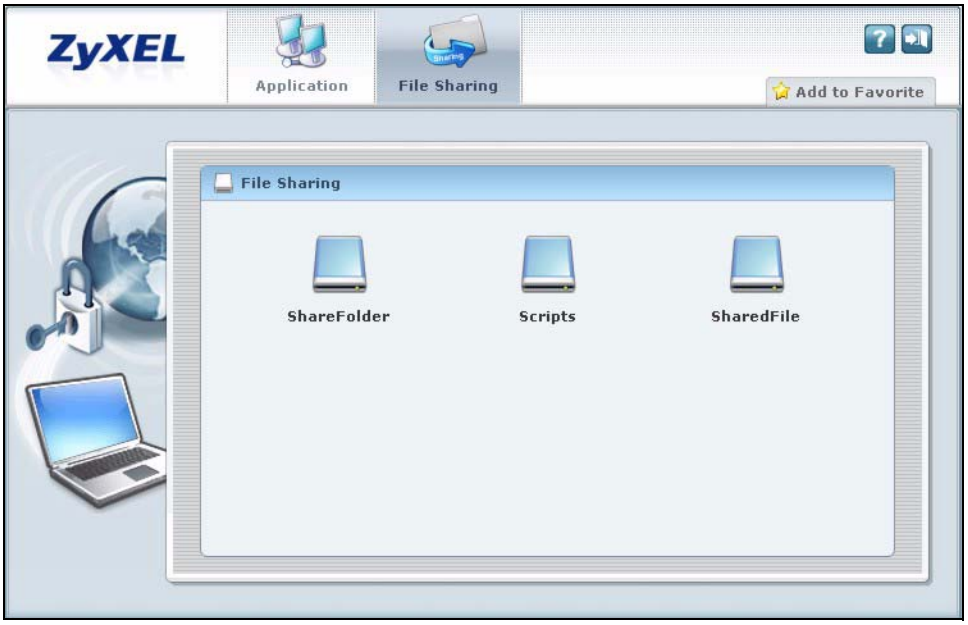
- Access a folder.
- Open a file (if your web browser cannot open the file, you are prompted to download it).
- Save a file to your computer.
- Create a new folder.
- Rename a file or folder.
- Delete a file or folder.
- Upload a file.

Available actions you can perform in the **File Sharing** screen vary depending on the rights granted to your user account on the file server.

3.2 Main File Sharing Screen

The first **File Sharing** screen displays the name(s) of the shared folder(s) available. The following figure shows an example with three file shares.

Figure 17 File Sharing

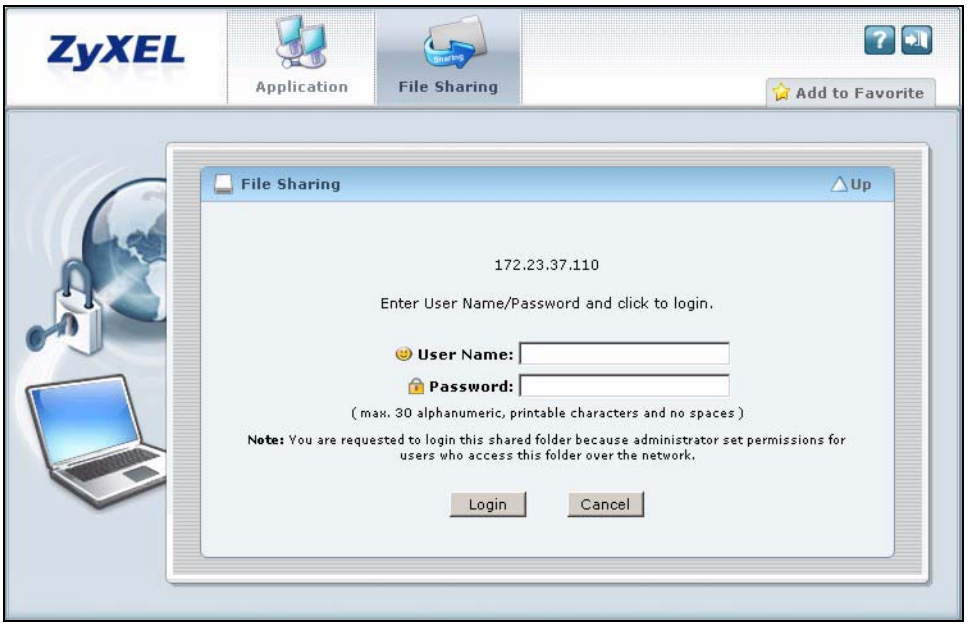


3.3 Opening a File or Folder

You can open a file if the file extension is recognized by the web browser and the associated application is installed on your computer.

1. Log in as a remote user and click the **File Sharing** tab.
2. Click on a file share icon.
3. If an access user name and password are required, a screen displays as shown in the following figure. Enter the account information and click **Login** to continue.

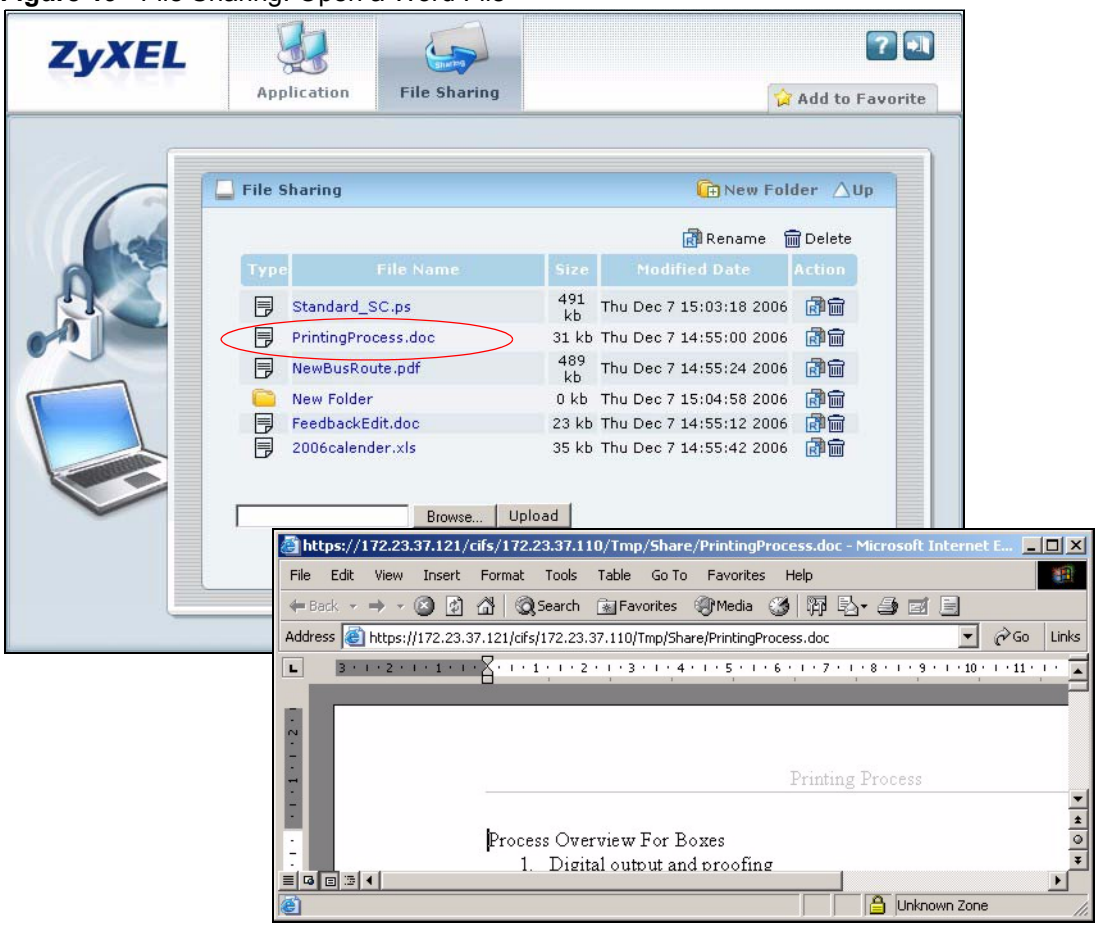
Figure 18 File Sharing: Enter Access User Name and Password



4 A list of files/folders displays. Click on a file to open it in a separate browser window. You can also click a folder to access it.

For this example, click on a .doc file to open the Word document.

Figure 19 File Sharing: Open a Word File



3.3.1 Downloading a File

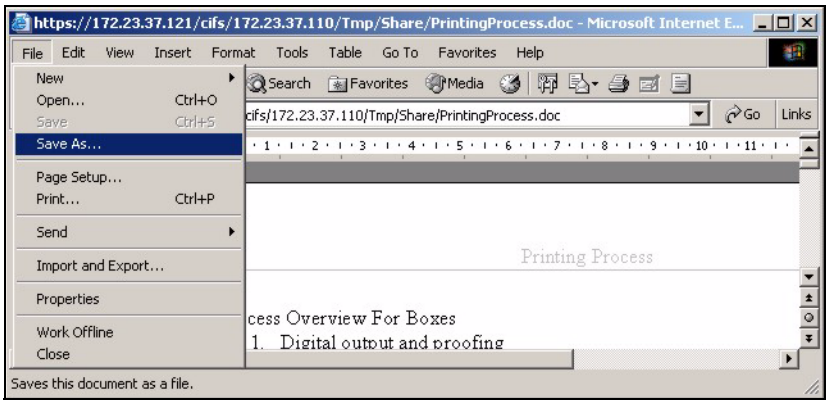
You are prompted to download a file which cannot be opened using a web browser.

You can follow the on-screen instruction to download and save the file to your computer. Then launch the associated application to open the file.

3.3.2 Saving a File

After you have opened a file in a web browser, you can save a copy of the file by clicking **File > Save As** and follow the on-screen instruction.

Figure 20 File Sharing: Save a Word File



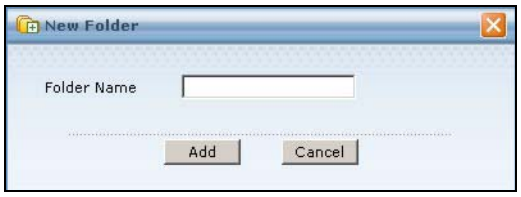
3.4 Creating a New Folder

To create new folder in the file share location, click the **New Folder** icon.

Specify a descriptive name for the folder. You can enter up to 128 characters (“a-z”, “A-Z”, “0-9”, “-”, “_”, with spaces allowed). Then click **Add**.

Make sure the length of the folder name does not exceed the maximum allowed on the file server.

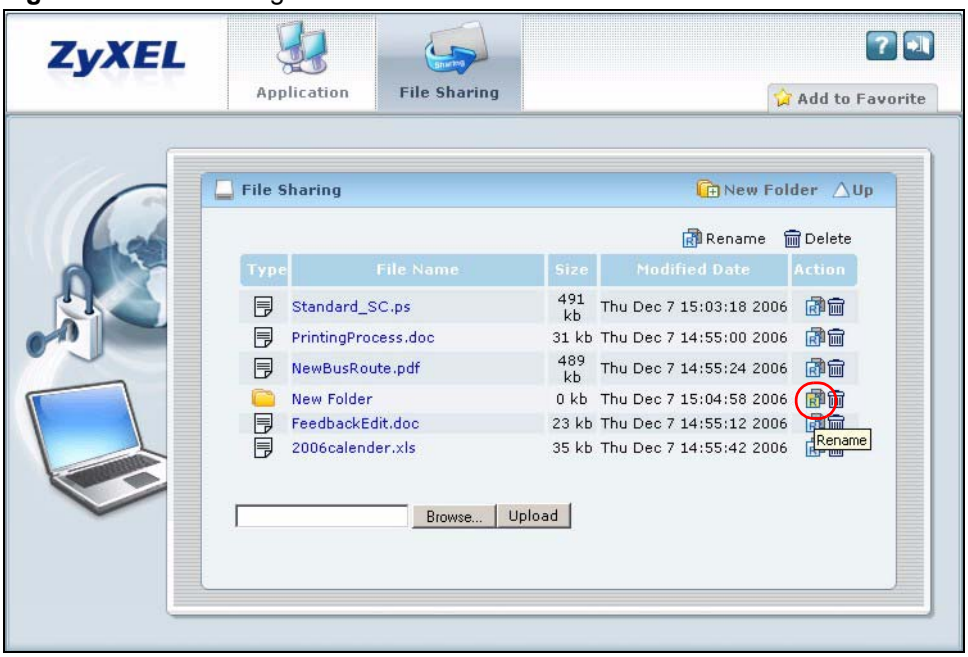
Figure 21 File Sharing: Save a Word File



3.5 Renaming a File or Folder

To rename a file or folder, click the **Rename** icon next to the file/folder.

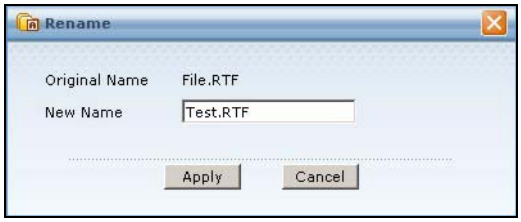
Figure 22 File Sharing: Rename



A popup window displays. Specify the new name and/or file extension in the field provided. You can enter up to 128 characters (“a-z”, “A-Z”, “0-9”, “-”, “_”, with spaces allowed). Then click **Apply**.

Make sure the length of the name does not exceed the maximum allowed on the file server.
You may not be able to open a file if you change the file extension.

Figure 23 File Sharing: Rename



3.6 Deleting a File or Folder

To delete a file or folder, click the Delete icon next to the file/folder and then OK in a prompt screen that displays.

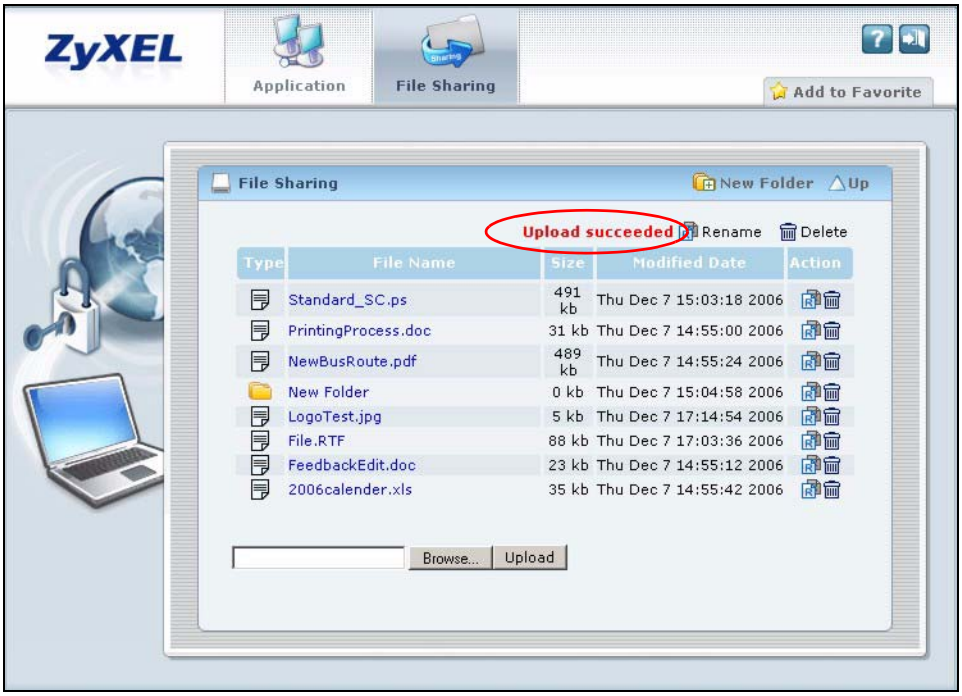
Figure 24 File Sharing: Delete Prompt

3.7 Uploading a File

Follow the steps below to upload a file to the file server.

1. Log into the remote user screen and click the **File Sharing** tab.
2. Specify the location and/or name of the file you want to upload. Or click **Browse** to locate it.
3. Click **Upload** to send the file to the file server.
4. After the file is uploaded successfully, you should see the name of the file and the message in the screen.

Figure 25 File Sharing: File Upload



Uploading a files with the same name and file extension replaces the existing file on the file server. No warning message is displayed.

PART II Troubleshooting, Appendices and Index

- Troubleshooting (33)
- Setting up Your Computer's IP Address (37)
- Importing Certificates (53)
- Legal Information (63)
- Customer Support (65)

4

Troubleshooting

This chapter provides tips to solve common problems. You should contact your network administrator if a problem persists.

I forgot my account user name and/or password.

- Your account information is provided by your network administrator. If you have forgotten this information, contact your network administrator for assistance.

I cannot see or access the **Login** screen in the web configurator.

1. Make sure you enter the correct IP address or domain name of the ZyWALL. Check with your network administrator to verify this information.
2. Make sure your computer meets the system requirements. See Section 1.1.2 on page 13.
3. Make sure your computer meets any other requirements specified by your network administrator. This may include the version of your operating system, service pack, etc.
4. If there is a DHCP server on your network, make sure your computer is using a dynamic IP address.
5. If the problem continues, contact the network administrator.

I can see the **Login** screen, but I cannot log in to the ZyWALL.

- Make sure you have entered the user name and password exactly as provided by your network administrator. These fields are case-sensitive, so make sure [Caps Lock] is not on.
- You cannot log in to the web configurator if someone has already logged in using the same user account. In this case, inform that person to log out or contact your network administrator for assistance.

The connection is slow or intermittent.

- Transmission speed varies depending on your network connection to the ZyWALL and the traffic load. Check with your network administrator and ask for more bandwidth assigned to you.

I cannot access a web site (on Mondays).

- Check that the web site is available for access.
- Check that the network administrator has not blocked you from accessing the web site during specific times.

I cannot access a non-web based application.

- Check that the application is available for access.
- Make sure you have following the instruction in the pop-up information window to access the application.
- If required, make sure you enter the access account information correctly.

I cannot access a file share.

- Check that the file server is configured properly and is available for access.
- If required, make sure you enter the access account information correctly.
- Contact your network administrator for assistance if the problem persists.

I cannot open a file.

- If your web browser cannot open a file, you are prompted to download it to your computer. You can then launch the appropriate application to open the file.

I cannot rename/delete/upload a file and/or folder.

- You must have read/write access rights for the file share. Check with your network administrator for this information.

A

Setting up Your Computer's IP Address

All computers must have a 10M or 100M Ethernet adapter card and TCP/IP installed.

Windows 95/98/Me/NT/2000/XP, Macintosh OS 7 and later operating systems and all versions of UNIX/LINUX include the software components you need to install and use TCP/IP on your computer. Windows 3.1 requires the purchase of a third-party TCP/IP application package.

TCP/IP should already be installed on computers using Windows NT/2000/XP, Macintosh OS 7 and later operating systems.

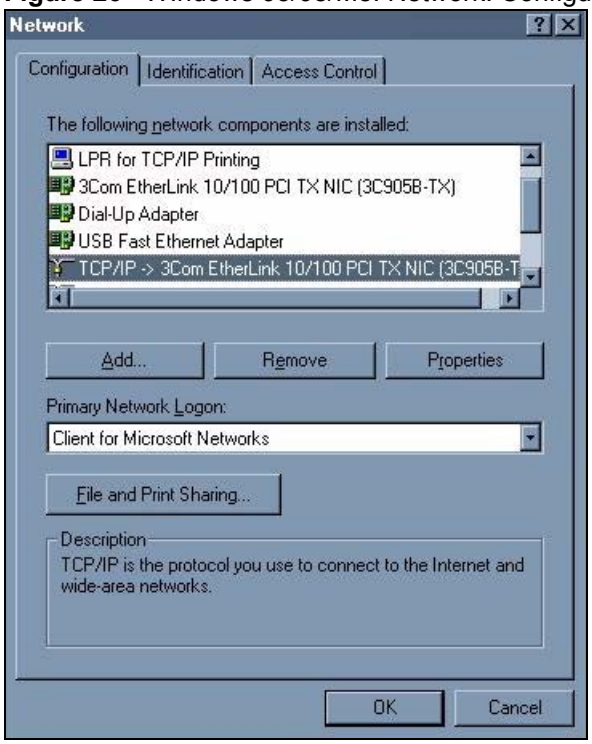
After the appropriate TCP/IP components are installed, configure the TCP/IP settings in order to "communicate" with your network.

If you manually assign IP information instead of using dynamic assignment, make sure that your computers have IP addresses that place them in the same subnet as the ZyWALL's LAN port.

Windows 95/98/Me

Click **Start**, **Settings**, **Control Panel** and double-click the **Network** icon to open the **Network** window.

Figure 26 WIndows 95/98/Me: Network: Configuration



Installing Components

The **Network** window **Configuration** tab displays a list of installed components. You need a network adapter, the TCP/IP protocol and Client for Microsoft Networks.

If you need the adapter:

1. In the **Network** window, click **Add**.
2. Select **Adapter** and then click **Add**.
3. Select the manufacturer and model of your network adapter and then click **OK**.

If you need TCP/IP:

1. In the **Network** window, click **Add**.
2. Select **Protocol** and then click **Add**.
3. Select **Microsoft** from the list of **manufacturers**.
4. Select **TCP/IP** from the list of network protocols and then click **OK**.

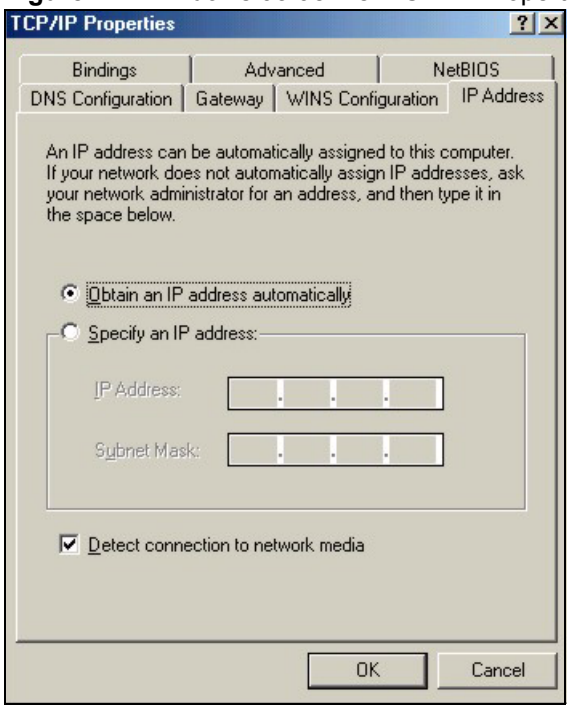
If you need Client for Microsoft Networks:

1. Click **Add**.
2. Select **Client** and then click **Add**.
3. Select **Microsoft** from the list of manufacturers.
4. Select **Client for Microsoft Networks** from the list of network clients and then click **OK**.
5. Restart your computer so the changes you made take effect.

Configuring

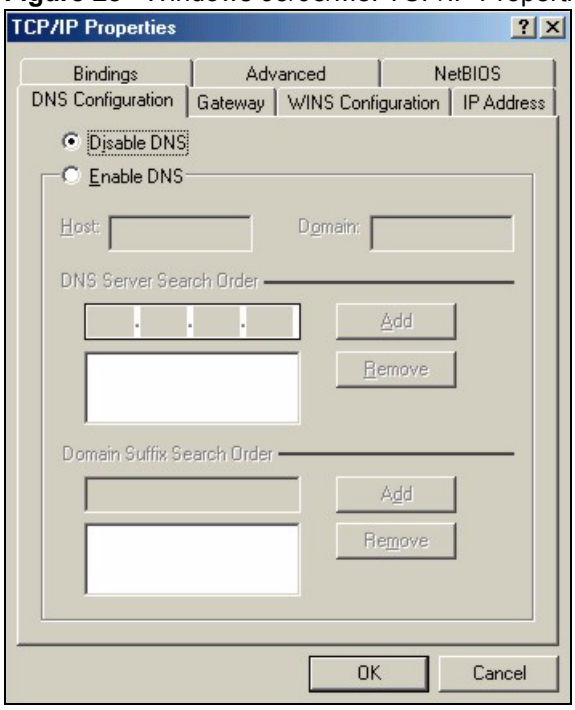
1. In the **Network** window **Configuration** tab, select your network adapter's TCP/IP entry and click **Properties**
2. Click the **IP Address** tab.
   - If your IP address is dynamic, select **Obtain an IP address automatically**.
   - If you have a static IP address, select **Specify an IP address** and type your information into the **IP Address** and **Subnet Mask** fields.

Figure 27 Windows 95/98/Me: TCP/IP Properties: IP Address



3. Click the **DNS** Configuration tab.
   - If you do not know your DNS information, select **Disable DNS**.
   - If you know your DNS information, select **Enable DNS** and type the information in the fields below (you may not need to fill them all in).

Figure 28 Windows 95/98/Me: TCP/IP Properties: DNS Configuration



4 Click the **Gateway** tab.
   - If you do not know your gateway's IP address, remove previously installed gateways.
   - If you have a gateway IP address, type it in the **New gateway field** and click **Add**.
5 Click **OK** to save and close the **TCP/IP Properties** window.
6 Click **OK** to close the **Network** window. Insert the Windows CD if prompted.
7 Turn on your ZyWALL and restart your computer when prompted.

Verifying Settings

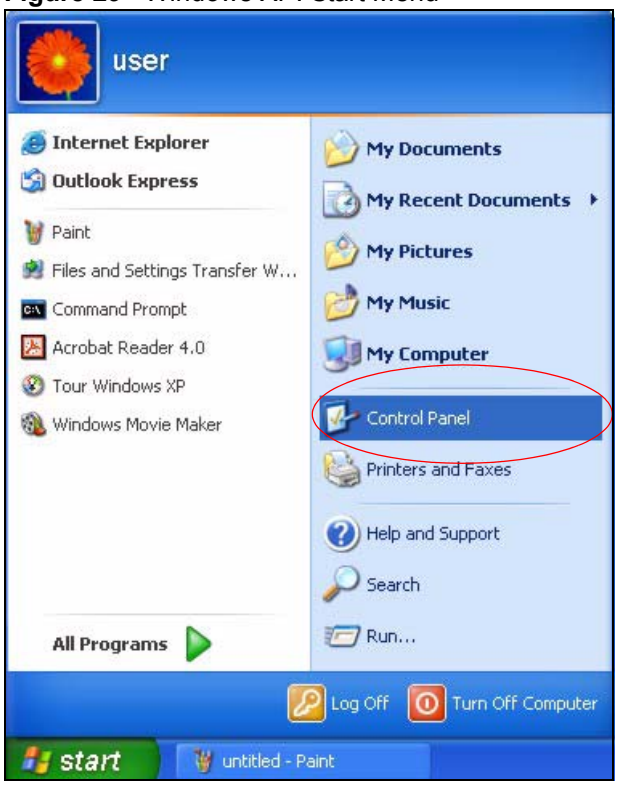
1 Click **Start** and then **Run**.
2 In the **Run** window, type "winipcfg" and then click **OK** to open the **IP Configuration** window.
3 Select your network adapter. You should see your computer's IP address, subnet mask and default gateway.

Windows 2000/NT/XP

The following example figures use the default Windows XP GUI theme.

1 Click **start** (**Start** in Windows 2000/NT), **Settings**, **Control Panel**.

Figure 29 Windows XP: Start Menu

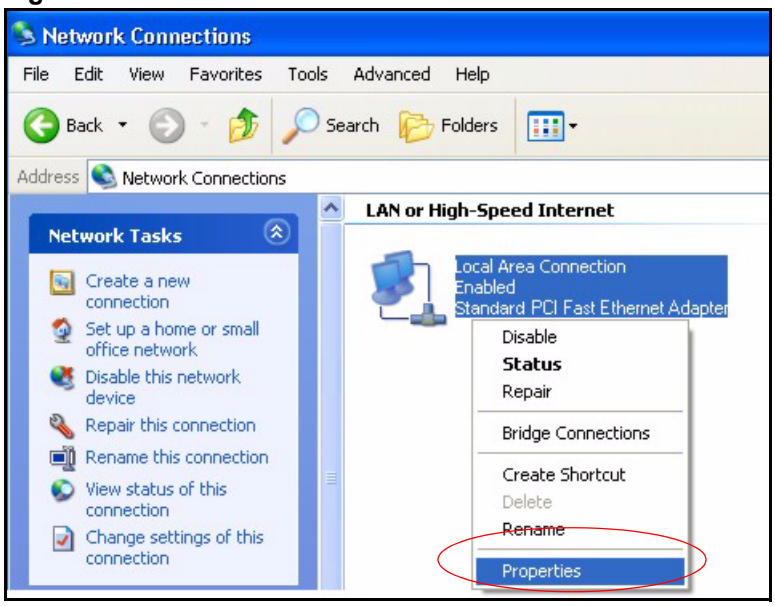


2 In the **Control Panel**, double-click **Network Connections** (**Network and Dial-up Connections** in Windows 2000/NT).

Figure 30 Windows XP: Control Panel

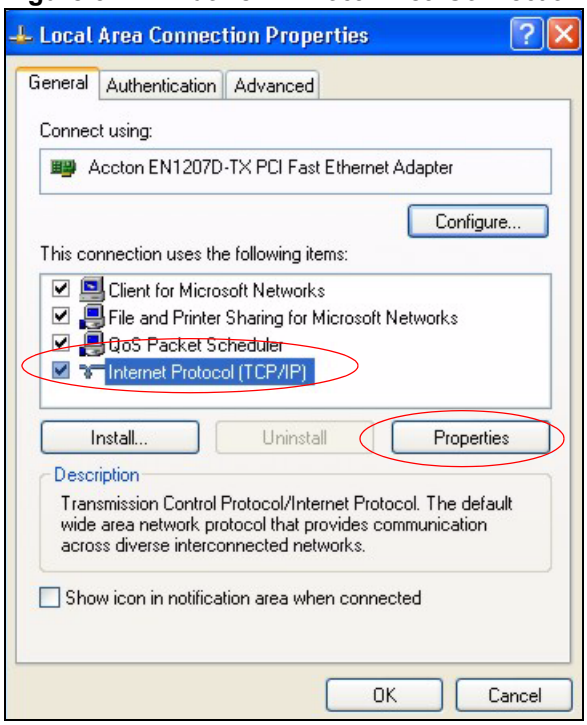
3 Right-click **Local Area Connection** and then click **Properties**.

Figure 31 Windows XP: Control Panel: Network Connections: Properties



4 Select **Internet Protocol (TCP/IP)** (under the **General** tab in Win XP) and then click **Properties**.

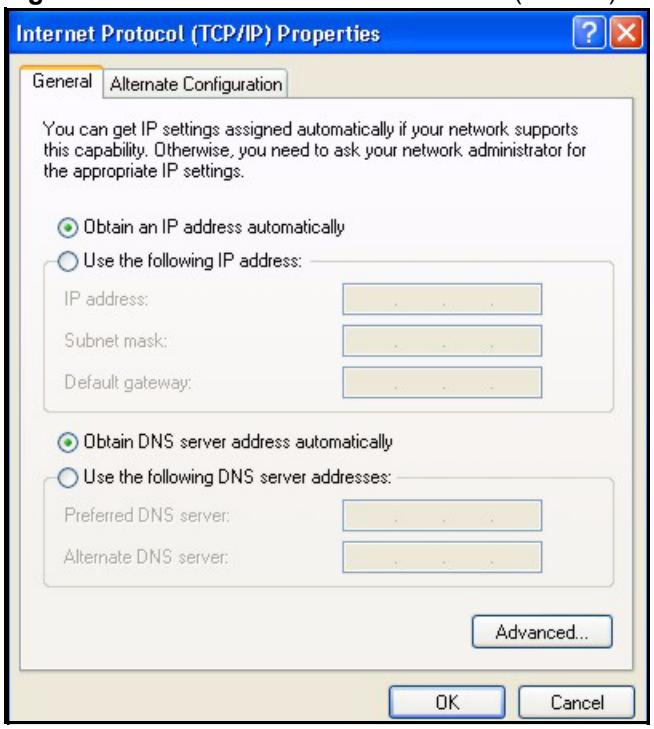
Figure 32 Windows XP: Local Area Connection Properties



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

- If you have a dynamic IP address click **Obtain an IP address automatically**.
- If you have a static IP address click **Use the following IP Address** and fill in the **IP address**, **Subnet mask**, and **Default gateway** fields.
- Click **Advanced**.

Figure 33 Windows XP: Internet Protocol (TCP/IP) Properties

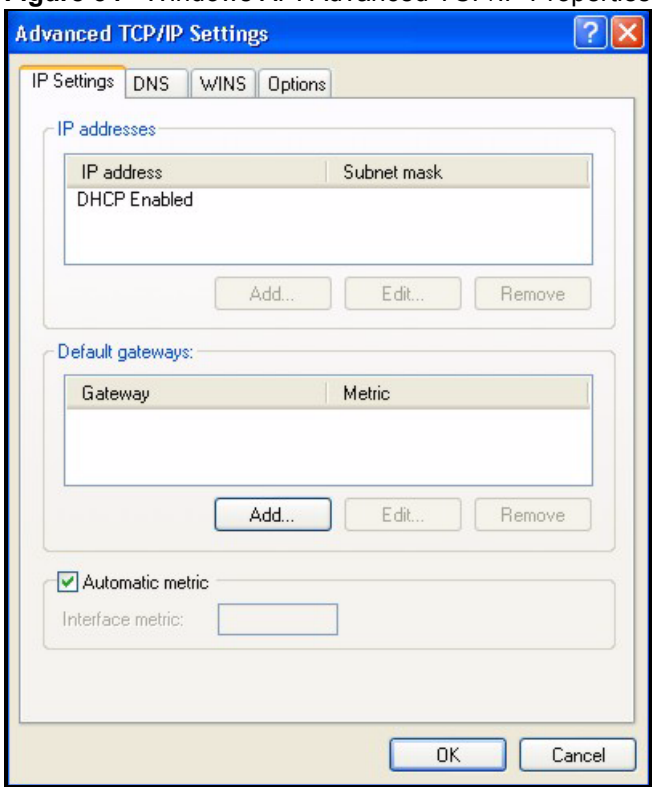


6 If you do not know your gateway's IP address, remove any previously installed gateways in the **IP Settings** tab and click **OK**.

Do one or more of the following if you want to configure additional IP addresses:

- In the **IP Settings** tab, in IP addresses, click **Add**.
- In **TCP/IP Address**, type an IP address in **IP address** and a subnet mask in **Subnet mask**, and then click **Add**.
- Repeat the above two steps for each IP address you want to add.
- Configure additional default gateways in the **IP Settings** tab by clicking **Add** in **Default gateways**.
- In **TCP/IP Gateway Address**, type the IP address of the default gateway in **Gateway**. To manually configure a default metric (the number of transmission hops), clear the **Automatic metric** check box and type a metric in **Metric**.
- Click **Add**.
- Repeat the previous three steps for each default gateway you want to add.
- Click **OK** when finished.

Figure 34 Windows XP: Advanced TCP/IP Properties

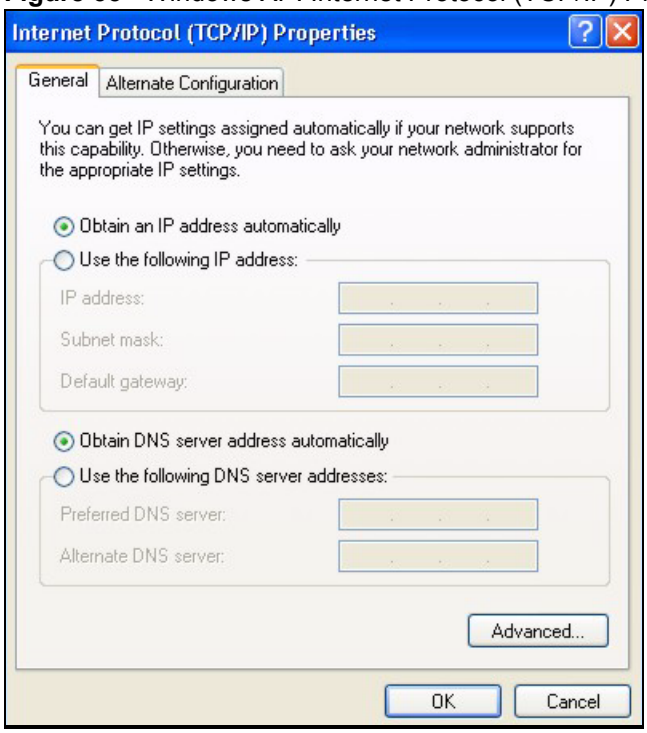


7 In the **Internet Protocol TCP/IP Properties** window (the **General** tab in Windows XP):

- 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 previously configured DNS servers, click **Advanced** and then the **DNS** tab to order them.

Figure 35 Windows XP: Internet Protocol (TCP/IP) Properties



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

9 Click **Close** (**OK** in Windows 2000/NT) to close the **Local Area Connection Properties** window.

10 Close the **Network Connections** window (**Network and Dial-up Connections** in Windows 2000/NT).

11 Turn on your ZyWALL and restart your computer (if prompted).

Verifying Settings

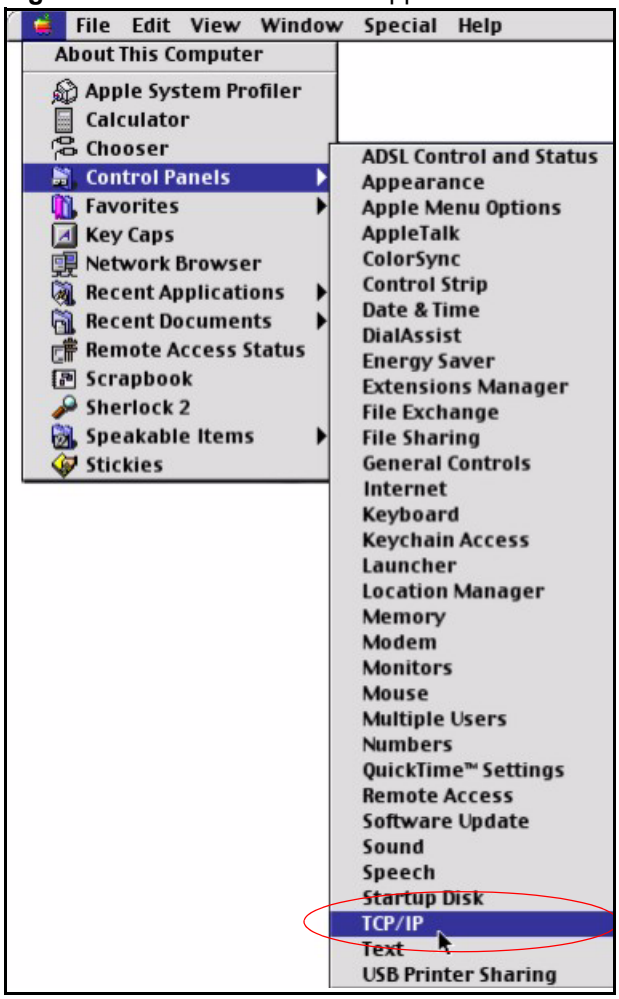
1 Click **Start**, **All Programs**, **Accessories** and then **Command Prompt**.

2 In the **Command Prompt** window, type "ipconfig" and then press [ENTER]. You can also open **Network Connections**, right-click a network connection, click **Status** and then click the **Support** tab.

Macintosh OS 8/9

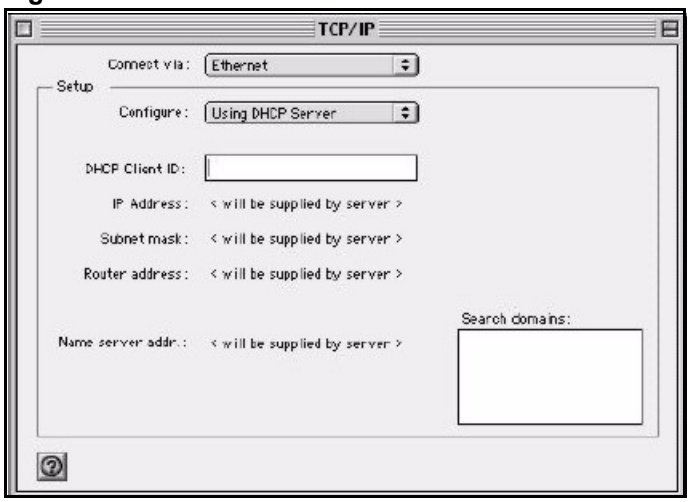
1 Click the **Apple** menu, **Control Panel** and double-click **TCP/IP** to open the **TCP/IP Control Panel**.

Figure 36 Macintosh OS 8/9: Apple Menu



2 Select **Ethernet built-in** from the **Connect via** list.

Figure 37 Macintosh OS 8/9: TCP/IP



3 For dynamically assigned settings, select **Using DHCP Server** from the **Configure:** list.

4 For statically assigned settings, do the following:

- From the **Configure** box, select **Manually**.

- Type your IP address in the **IP Address** box.
- Type your subnet mask in the **Subnet mask** box.
- Type the IP address of your ZyWALL in the **Router address** box.

5 Close the **TCP/IP Control Panel**.

6 Click **Save** if prompted, to save changes to your configuration.

7 Turn on your ZyWALL and restart your computer (if prompted).

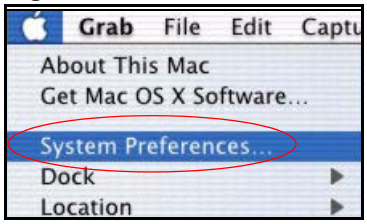
Verifying Settings

Check your TCP/IP properties in the **TCP/IP Control Panel** window.

Macintosh OS X

1 Click the **Apple** menu, and click **System Preferences** to open the **System Preferences** window.

Figure 38 Macintosh OS X: Apple Menu

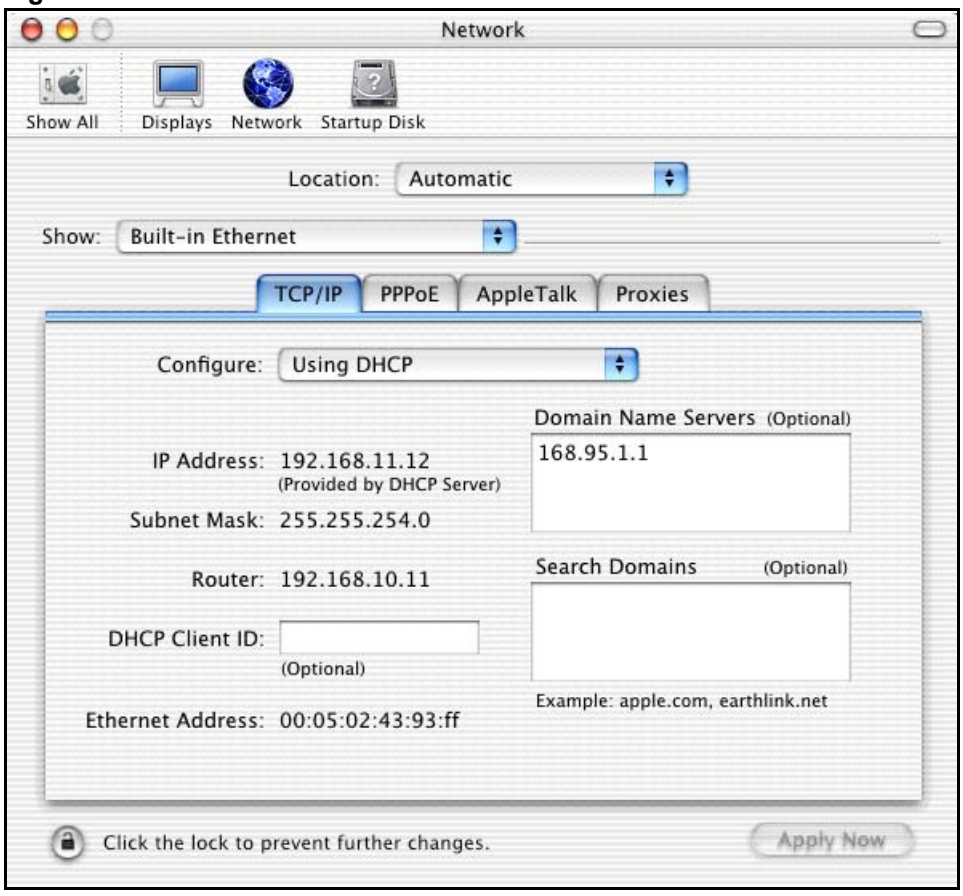


2 Click **Network** in the icon bar.

- Select **Automatic** from the **Location** list.
- Select **Built-in Ethernet** from the **Show** list.
- Click the **TCP/IP** tab.

3 For dynamically assigned settings, select **Using DHCP** from the **Configure** list.

Figure 39 Macintosh OS X: Network



4 For statically assigned settings, do the following:
   - From the **Configure** box, select **Manually**.
   - Type your IP address in the **IP Address** box.
   - Type your subnet mask in the **Subnet mask** box.
   - Type the IP address of your ZyWALL in the **Router address** box.
5 Click **Apply Now** and close the window.
6 Turn on your ZyWALL and restart your computer (if prompted).

Verifying Settings

Check your TCP/IP properties in the **Network** window.

Linux

This section shows you how to configure your computer's TCP/IP settings in Red Hat Linux 9.0. Procedure, screens and file location may vary depending on your Linux distribution and release version.

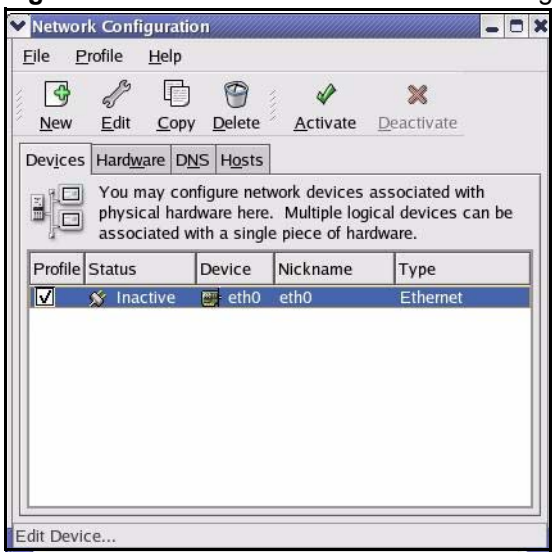
Make sure you are logged in as the root administrator.

Using the K Desktop Environment (KDE)

Follow the steps below to configure your computer IP address using the KDE.

1 Click the Red Hat button (located on the bottom left corner), select **System Setting** and click **Network**.

Figure 40 Red Hat 9.0: KDE: Network Configuration: Devices



2 Double-click on the profile of the network card you wish to configure. The **Ethernet Device General** screen displays as shown.

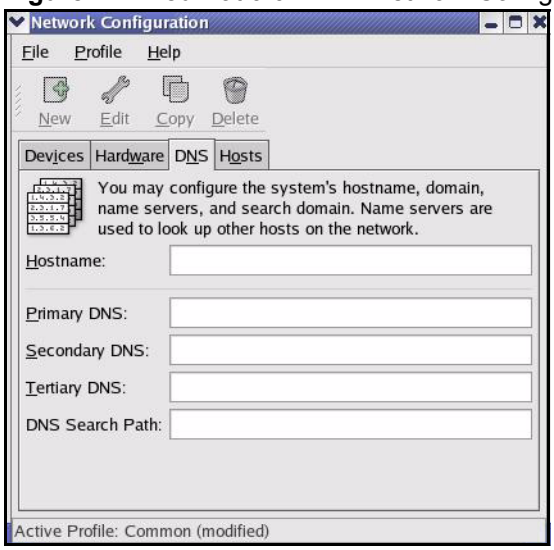
Figure 41 Red Hat 9.0: KDE: Ethernet Device: General

- If you have a dynamic IP address, click **Automatically obtain IP address settings with** and select **dhcp** from the drop down list.
- If you have a static IP address, click **Statically set IP Addresses** and fill in the **Address**, **Subnet mask**, and **Default Gateway Address** fields.

3 Click **OK** to save the changes and close the **Ethernet Device General** screen.

4 If you know your DNS server IP address(es), click the **DNS** tab in the **Network Configuration** screen. Enter the DNS server information in the fields provided.

Figure 42 Red Hat 9.0: KDE: Network Configuration: DNS



5 Click the **Devices** tab.

6 Click the **Activate** button to apply the changes. The following screen displays. Click **Yes to save the changes in all screens.**

Figure 43 Red Hat 9.0: KDE: Network Configuration: Activate

7 After the network card restart process is complete, make sure the **Status** is **Active** in the **Network Configuration** screen.

Using Configuration Files

Follow the steps below to edit the network configuration files and set your computer IP address.

1 Assuming that you have only one network card on the computer, locate the `ifconfig-eth0` configuration file (where `eth0` is the name of the Ethernet card). Open the configuration file with any plain text editor.

- If you have a dynamic IP address, enter **`dhcp`** in the `BOOTPROTO=` field. The following figure shows an example.

Figure 44 Red Hat 9.0: Dynamic IP Address Setting in ifconfig-eth0

```
DEVICE=eth0
ONBOOT=yes
BOOTPROTO=dhcp
USERCTL=no
PEERDNS=yes
TYPE=Ethernet
```

- If you have a static IP address, enter **static** in the BOOTPROTO= field. Type IPADDR= followed by the IP address (in dotted decimal notation) and type NETMASK= followed by the subnet mask. The following example shows an example where the static IP address is 192.168.1.10 and the subnet mask is 255.255.255.0.

Figure 45 Red Hat 9.0: Static IP Address Setting in ifconfig-eth0

```
DEVICE=eth0
ONBOOT=yes
BOOTPROTO=static
IPADDR=192.168.1.10
NETMASK=255.255.255.0
USERCTL=no
PEERDNS=yes
TYPE=Ethernet
```

2. If you know your DNS server IP address(es), enter the DNS server information in the resolv.conf file in the /etc directory. The following figure shows an example where two DNS server IP addresses are specified.

Figure 46 Red Hat 9.0: DNS Settings in resolv.conf

```
nameserver 172.23.5.1
nameserver 172.23.5.2
```

3. After you edit and save the configuration files, you must restart the network card. Enter ./network restart in the /etc/rc.d/init.d directory. The following figure shows an example.

Figure 47 Red Hat 9.0: Restart Ethernet Card

```
[root@localhost init.d]# network restart

Shutting down interface eth0:                [OK]
Shutting down loopback interface:            [OK]
Setting network parameters:                  [OK]
Bringing up loopback interface:              [OK]
Bringing up interface eth0:                  [OK]
```

Verifying Settings

Enter `ifconfig` in a terminal screen to check your TCP/IP properties.

Figure 48 Red Hat 9.0: Checking TCP/IP Properties

```
[root@localhost]# ifconfig
eth0      Link encap:Ethernet  HWaddr 00:50:BA:72:5B:44
          inet addr:172.23.19.129  Bcast:172.23.19.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:717 errors:0 dropped:0 overruns:0 frame:0
          TX packets:13 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:100
          RX bytes:730412 (713.2 Kb)  TX bytes:1570 (1.5 Kb)
          Interrupt:10 Base address:0x1000
[root@localhost]#
```

B

Importing Certificates

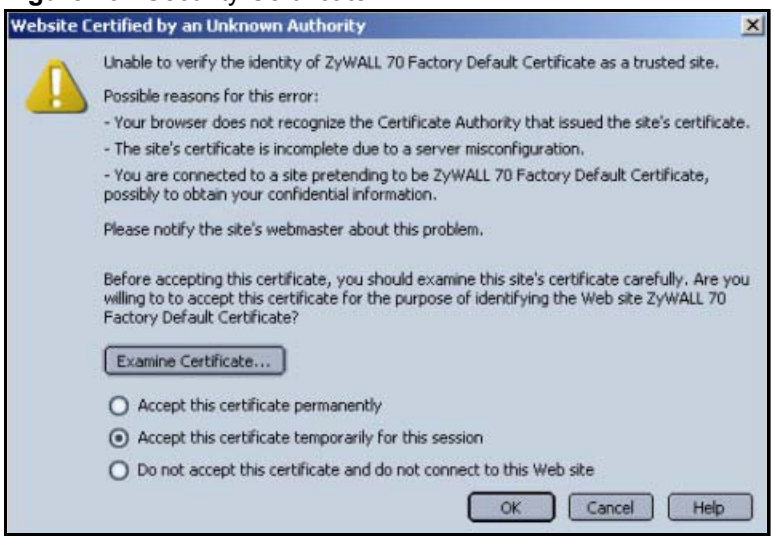
This appendix shows importing certificates examples using Internet Explorer 5.

Import ZyWALL Certificates into Netscape Navigator

In Netscape Navigator, you can permanently trust the ZyWALL's server certificate by importing it into your operating system as a trusted certification authority.

Select **Accept This Certificate Permanently** in the following screen to do this.

Figure 49 Security Certificate



Importing the ZyWALL's Certificate into Internet Explorer

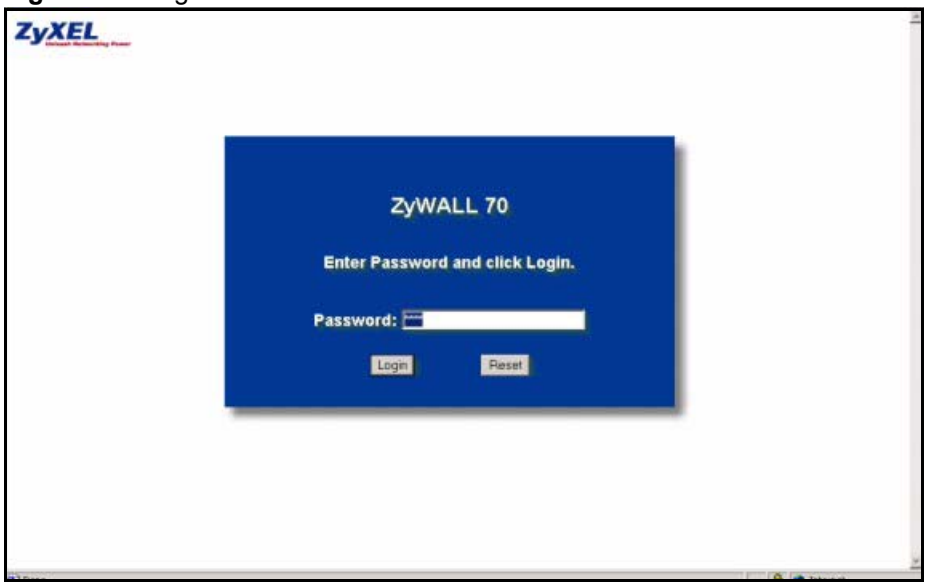
For Internet Explorer to trust a self-signed certificate from the ZyWALL, simply import the self-signed certificate into your operating system as a trusted certification authority.

To have Internet Explorer trust a ZyWALL certificate issued by a certificate authority, import the certificate authority's certificate into your operating system as a trusted certification authority.

The following example procedure shows how to import the ZyWALL's (self-signed) server certificate into your operating system as a trusted certification authority.

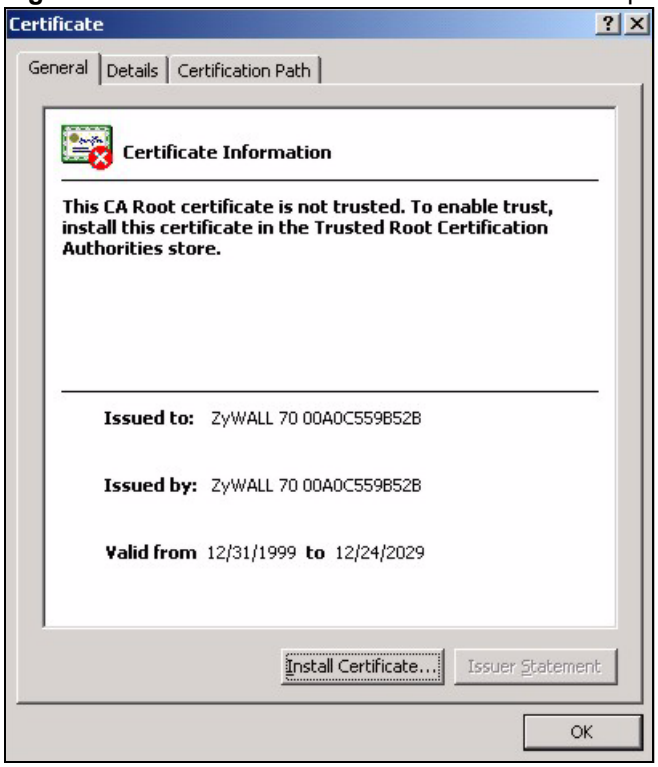
1 In Internet Explorer, double click the lock shown in the following screen.

Figure 50 Login Screen



2 Click **Install Certificate** to open the **Install Certificate** wizard.

Figure 51 Certificate General Information before Import



3 Click **Next** to begin the **Install Certificate** wizard.

Figure 52 Certificate Import Wizard 1

4 Select where you would like to store the certificate and then click **Next**.

Figure 53 Certificate Import Wizard 2

5 Click **Finish** to complete the **Import Certificate** wizard.

Figure 54 Certificate Import Wizard 3

6 Click **Yes** to add the ZyWALL certificate to the root store.

Figure 55 Root Certificate Store

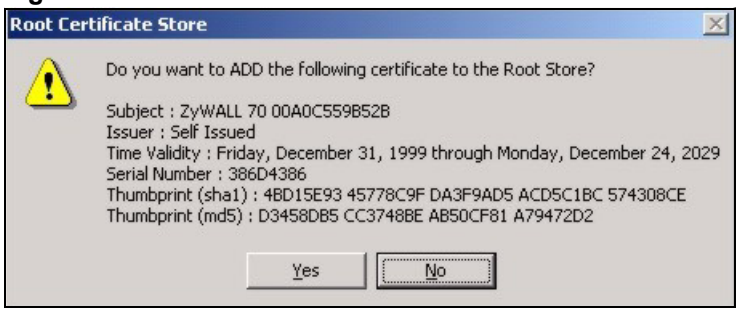
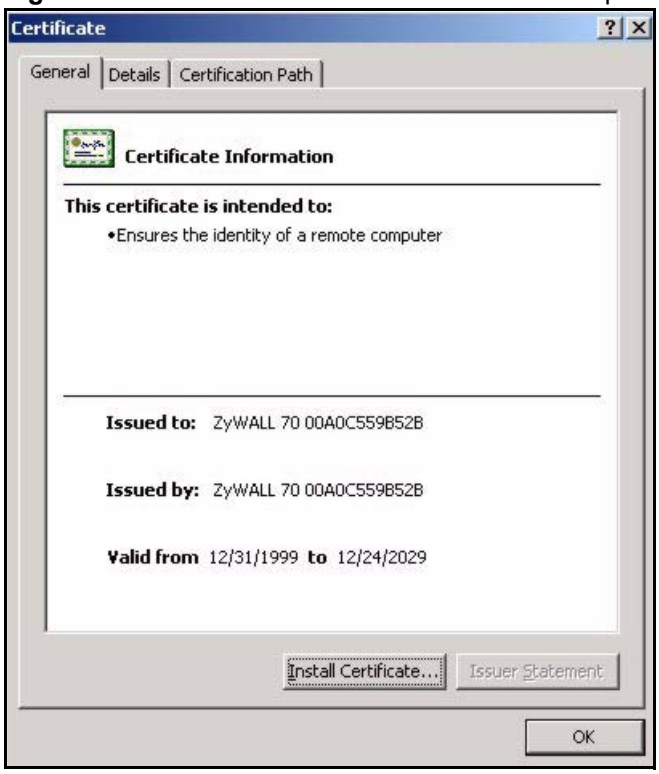


Figure 56 Certificate General Information after Import



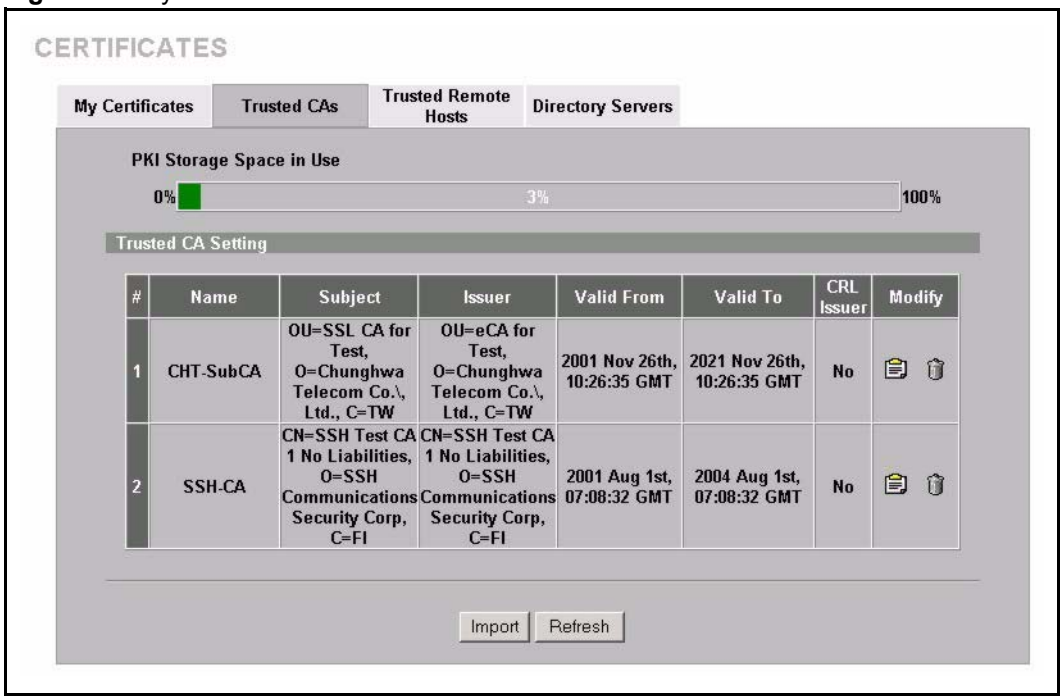
Enrolling and Importing SSL Client Certificates

The SSL client needs a certificate if **Authenticate Client Certificates** is selected on the ZyWALL.

You must have imported at least one trusted CA to the ZyWALL in order for the **Authenticate Client Certificates** to be active (see the Certificates chapter for details).

Apply for a certificate from a Certification Authority (CA) that is trusted by the ZyWALL (see the ZyWALL's **Trusted CA** web configurator screen).

Figure 57 ZyWALL Trusted CA Screen

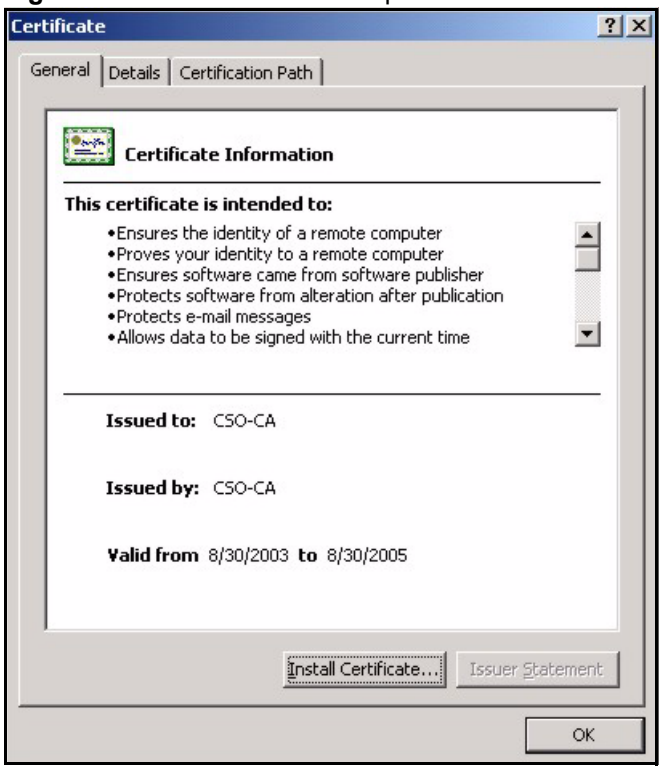


The CA sends you a package containing the CA's trusted certificate(s), your personal certificate(s) and a password to install the personal certificate(s).

Installing the CA's Certificate

1 Double click the CA's trusted certificate to produce a screen similar to the one shown next.

Figure 58 CA Certificate Example



2 Click **Install Certificate** and follow the wizard as shown earlier in this appendix.

Installing Your Personal Certificate(s)

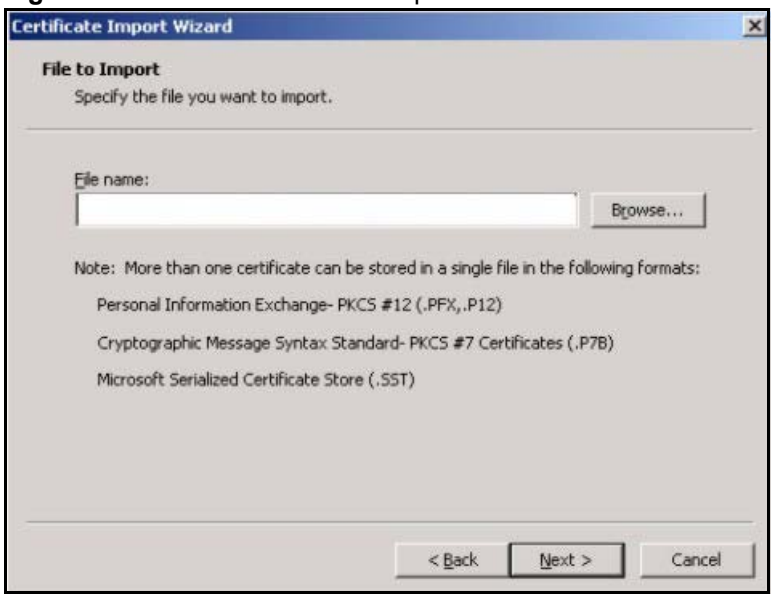
You need a password in advance. The CA may issue the password or you may have to specify it during the enrollment. Double-click the personal certificate given to you by the CA to produce a screen similar to the one shown next

1 Click **Next** to begin the wizard.

Figure 59 Personal Certificate Import Wizard 1

2 The file name and path of the certificate you double-clicked should automatically appear in the **File name** text box. Click **Browse** if you wish to import a different certificate.

Figure 60 Personal Certificate Import Wizard 2

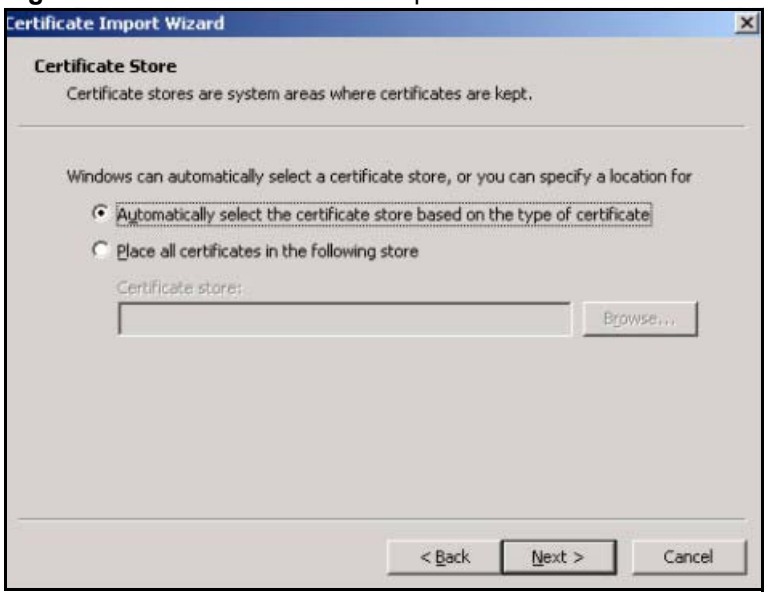


3 Enter the password given to you by the CA.

Figure 61 Personal Certificate Import Wizard 3

4 Have the wizard determine where the certificate should be saved on your computer or select **Place all certificates in the following store** and choose a different location.

Figure 62 Personal Certificate Import Wizard 4



5 Click **Finish** to complete the wizard and begin the import process.

Figure 63 Personal Certificate Import Wizard 5

6 You should see the following screen when the certificate is correctly installed on your computer.

Figure 64 Personal Certificate Import Wizard 6

Using a Certificate When Accessing the ZyWALL Example

Use the following procedure to access the ZyWALL via HTTPS.

1 Enter 'https://ZyWALL IP Address/ in your browser's web address field.

Figure 65 Access the ZyWALL Via HTTPS

2 When **Authenticate Client Certificates** is selected on the ZyWALL, the following screen asks you to select a personal certificate to send to the ZyWALL. This screen displays even if you only have a single certificate as in the example.

Figure 66 SSL Client Authentication

3 You next see the ZyWALL login screen.

Figure 67 ZyWALL Secure Login Screen

C

Legal Information

Copyright

Copyright © 2006 by ZyXEL Communications Corporation.

The contents of this publication may not be reproduced in any part or as a whole, transcribed, stored in a retrieval system, translated into any language, or transmitted in any form or by any means, electronic, mechanical, magnetic, optical, chemical, photocopying, manual, or otherwise, without the prior written permission of ZyXEL Communications Corporation.

Published by ZyXEL Communications Corporation. All rights reserved.

Disclaimer

ZyXEL does not assume any liability arising out of the application or use of any products, or software described herein. Neither does it convey any license under its patent rights nor the patent rights of others. ZyXEL further reserves the right to make changes in any products described herein without notice. This publication is subject to change without notice.

Certifications

Federal Communications Commission (FCC) Interference Statement

The device complies with Part 15 of FCC rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operations.

This device has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this device does cause harmful interference to radio/television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and the receiver.

3 Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4 Consult the dealer or an experienced radio/TV technician for help.

Notices

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Viewing Certifications

1 Go to http://www.zyxel.com.
2 Select your product on the ZyXEL home page to go to that product's page.
3 Select the certification you wish to view from this page.

ZyXEL Limited Warranty

ZyXEL warrants to the original end user (purchaser) that this product is free from any defects in materials or workmanship for a period of up to two years from the date of purchase. During the warranty period, and upon proof of purchase, should the product have indications of failure due to faulty workmanship and/or materials, ZyXEL will, at its discretion, repair or replace the defective products or components without charge for either parts or labor, and to whatever extent it shall deem necessary to restore the product or components to proper operating condition. Any replacement will consist of a new or re-manufactured functionally equivalent product of equal or higher value, and will be solely at the discretion of ZyXEL. This warranty shall not apply if the product has been modified, misused, tampered with, damaged by an act of God, or subjected to abnormal working conditions.

Note

Repair or replacement, as provided under this warranty, is the exclusive remedy of the purchaser. This warranty is in lieu of all other warranties, express or implied, including any implied warranty of merchantability or fitness for a particular use or purpose. ZyXEL shall in no event be held liable for indirect or consequential damages of any kind to the purchaser.

To obtain the services of this warranty, contact ZyXEL's Service Center for your Return Material Authorization number (RMA). Products must be returned Postage Prepaid. It is recommended that the unit be insured when shipped. Any returned products without proof of purchase or those with an out-dated warranty will be repaired or replaced (at the discretion of ZyXEL) and the customer will be billed for parts and labor. All repaired or replaced products will be shipped by ZyXEL to the corresponding return address, Postage Paid. This warranty gives you specific legal rights, and you may also have other rights that vary from country to country.

Registration

Register your product online to receive e-mail notices of firmware upgrades and information at www.zyxel.com for global products, or at www.us.zyxel.com for North American products.

D

Customer Support

Please have the following information ready when you contact customer support.

Required Information

- Product model and serial number.
- Warranty Information.
- Date that you received your device.
- Brief description of the problem and the steps you took to solve it.

Corporate Headquarters (Worldwide)

- Support E-mail: support@zyxel.com.tw
- Sales E-mail: sales@zyxel.com.tw
- Telephone: +886-3-578-3942
- Fax: +886-3-578-2439
- Web Site: www.zyxel.com, www.europe.zyxel.com
- FTP Site: ftp.zyxel.com, ftp.europe.zyxel.com
- Regular Mail: ZyXEL Communications Corp., 6 Innovation Road II, Science Park, Hsinchu 300, Taiwan

Costa Rica

- Support E-mail: soporte@zyxel.co.cr
- Sales E-mail: sales@zyxel.co.cr
- Telephone: +506-2017878
- Fax: +506-2015098
- Web Site: www.zyxel.co.cr
- FTP Site: ftp.zyxel.co.cr
- Regular Mail: ZyXEL Costa Rica, Plaza Roble Escazú, Etapa El Patio, Tercer Piso, San José, Costa Rica

Czech Republic

- E-mail: info@cz.zyxel.com
- Telephone: +420-241-091-350
- Fax: +420-241-091-359
- Web Site: www.zyxel.cz
- Regular Mail: ZyXEL Communications, Czech s.r.o., Modranská 621, 143 01 Praha 4 - Modrany, Ceská Republika

Denmark

- Support E-mail: support@zyxel.dk
- Sales E-mail: sales@zyxel.dk
- Telephone: +45-39-55-07-00
- Fax: +45-39-55-07-07
- Web Site: www.zyxel.dk
- Regular Mail: ZyXEL Communications A/S, Columbusvej, 2860 Soeborg, Denmark

Finland

- Support E-mail: support@zyxel.fi
- Sales E-mail: sales@zyxel.fi
- Telephone: +358-9-4780-8411
- Fax: +358-9-4780 8448
- Web Site: www.zyxel.fi
- Regular Mail: ZyXEL Communications Oy, Malminkaari 10, 00700 Helsinki, Finland

France

- E-mail: info@zyxel.fr
- Telephone: +33-4-72-52-97-97
- Fax: +33-4-72-52-19-20
- Web Site: www.zyxel.fr
- Regular Mail: ZyXEL France, 1 rue des Vergers, Bat. 1 / C, 69760 Limonest, France

Germany

- Support E-mail: support@zyxel.de
- Sales E-mail: sales@zyxel.de
- Telephone: +49-2405-6909-0
- Fax: +49-2405-6909-99
- Web Site: www.zyxel.de
- Regular Mail: ZyXEL Deutschland GmbH., Adenauerstr. 20/A2 D-52146, Wuerselen, Germany

Hungary

- Support E-mail: support@zyxel.hu
- Sales E-mail: info@zyxel.hu
- Telephone: +36-1-3361649
- Fax: +36-1-3259100
- Web Site: www.zyxel.hu
- Regular Mail: ZyXEL Hungary, 48, Zoldlomb Str., H-1025, Budapest, Hungary

Kazakhstan

- Support: http://zyxel.kz/support
- Sales E-mail: sales@zyxel.kz

- Telephone: +7-3272-590-698
- Fax: +7-3272-590-689
- Web Site: www.zyxel.kz
- Regular Mail: ZyXEL Kazakhstan, 43, Dostyk ave.,Office 414, Dostyk Business Centre, 050010, Almaty, Republic of Kazakhstan

North America

- Support E-mail: support@zyxel.com
- Sales E-mail: sales@zyxel.com
- Telephone: +1-800-255-4101, +1-714-632-0882
- Fax: +1-714-632-0858
- Web Site: www.us.zyxel.com
- FTP Site: ftp.us.zyxel.com
- Regular Mail: ZyXEL Communications Inc., 1130 N. Miller St., Anaheim, CA 92806-2001, U.S.A.

Norway

- Support E-mail: support@zyxel.no
- Sales E-mail: sales@zyxel.no
- Telephone: +47-22-80-61-80
- Fax: +47-22-80-61-81
- Web Site: www.zyxel.no
- Regular Mail: ZyXEL Communications A/S, Nils Hansens vei 13, 0667 Oslo, Norway

Poland

- E-mail: info@pl.zyxel.com
- Telephone: +48 (22) 333 8250
- Fax: +48 (22) 333 8251
- Web Site: www.pl.zyxel.com
- Regular Mail: ZyXEL Communications, ul. Okrzei 1A, 03-715 Warszawa, Poland

Russia

- Support: http://zyxel.ru/support
- Sales E-mail: sales@zyxel.ru
- Telephone: +7-095-542-89-29
- Fax: +7-095-542-89-25
- Web Site: www.zyxel.ru
- Regular Mail: ZyXEL Russia, Ostrovityanova 37a Str., Moscow, 117279, Russia

Spain

- Support E-mail: support@zyxel.es
- Sales E-mail: sales@zyxel.es
- Telephone: +34-902-195-420
- Fax: +34-913-005-345

- Web Site: www.zyxel.es
- Regular Mail: ZyXEL Communications, Arte, 21 5ª planta, 28033 Madrid, Spain

Sweden

- Support E-mail: support@zyxel.se
- Sales E-mail: sales@zyxel.se
- Telephone: +46-31-744-7700
- Fax: +46-31-744-7701
- Web Site: www.zyxel.se
- Regular Mail: ZyXEL Communications A/S, Sjöporten 4, 41764 Göteborg, Sweden

Ukraine

- Support E-mail: support@ua.zyxel.com
- Sales E-mail: sales@ua.zyxel.com
- Telephone: +380-44-247-69-78
- Fax: +380-44-494-49-32
- Web Site: www.ua.zyxel.com
- Regular Mail: ZyXEL Ukraine, 13, Pimonenko Str., Kiev, 04050, Ukraine

United Kingdom

- Support E-mail: support@zyxel.co.uk
- Sales E-mail: sales@zyxel.co.uk
- Telephone: +44-1344 303044, 08707 555779 (UK only)
- Fax: +44-1344 303034
- Web Site: www.zyxel.co.uk
- FTP Site: ftp.zyxel.co.uk
- Regular Mail: ZyXEL Communications UK, Ltd.,11 The Courtyard, Eastern Road, Bracknell, Berkshire, RG12 2XB, United Kingdom (UK)

"+" is the (prefix) number you dial to make an international telephone call.