



The XiNCOM Corporation

XC-DPG402

Twin Wan Router

USERS MANUAL

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1: Introduction

Congratulations on the purchase of your new Twin Wan Router. The Twin Wan Router provides **Shared Broadband Internet Access** for all LAN users.

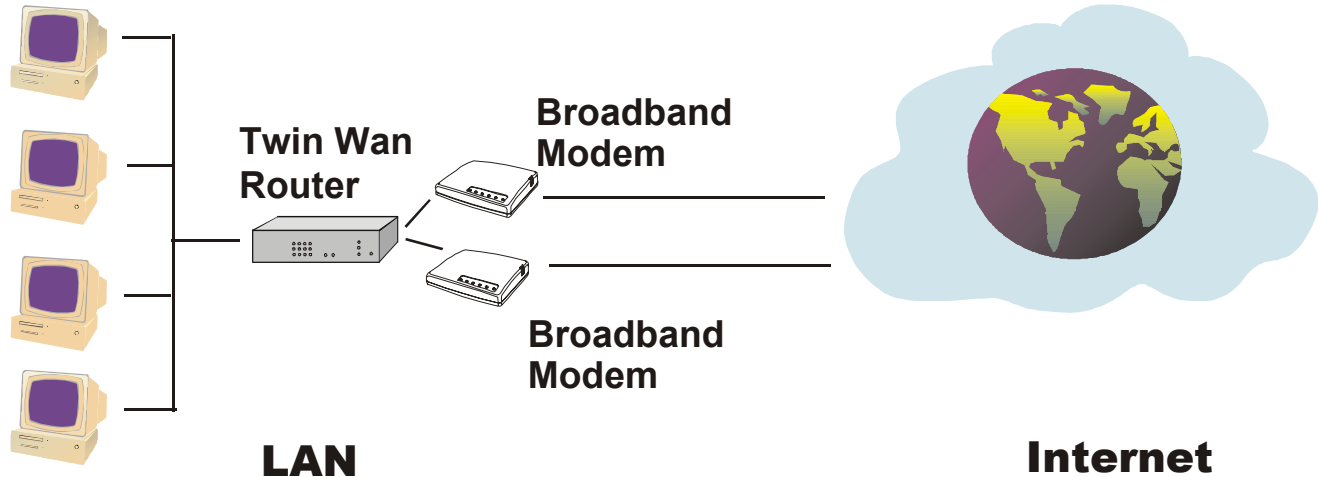


Figure 1: Twin Wan Router

Internet Features

- **Shared Broadband Internet Access**

All LAN users can access the Internet through the Twin Wan Router, by sharing one (1) or two (2) Broadband modems and connections.

- **High-Performance Dual Modem Support**

The Twin Wan Router has two (2) WAN ports, allowing connection of two (2) Broadband modems.

This gives twice the bandwidth of a single modem.

Flexible configuration allows each port to use a different type of modem and connection method. Also, you can determine how the Internet traffic is shared between the 2 modems.

- **Supports all common Connection Methods**

All popular DSL and Cable Modems and connection methods are supported, including Fixed IP, Dynamic IP, PPPoE, and PPTP.

- **PPPoE Session Management**

Multiple PPPoE sessions are supported and you can choose to “map” sessions to individual PCs if desired.

- **Multiple IP Address Support**

If your ISP allocates you multiple IP addresses, these are also supported and you can “map” IP addresses to individual PCs if desired.

Special Applications

This feature allows you to use some non-standard applications, where the port number used for the response is different to the port number used by the sender.

- ***Virtual Servers***

This feature allows Internet users to access Internet servers on your LAN. For standard servers such as Web, FTP or E-Mail servers, only the IP address of the server PC is required. You can also define your own Server types if required.

- ***Multiple DMZ***

A "DMZ" PC will receive incoming connection requests which would otherwise be blocked. For each IP address allocated by your ISP, a separate "DMZ" PC can be specified. So if your ISP has given you multiple IP addresses, you can have multiple "DMZ" PCs. Each "DMZ" PC has unrestricted 2-way Internet access, providing the ability to run programs which are otherwise incompatible with NAT routers like the Twin Wan Router.

- ***Access Filter***

The network Administrator can use the Access Filter to gain fine control over the Internet access and applications available to LAN users. Five (5) user groups are available, and each group can have different access rights.

- ***Block URL***

Use this feature to block access to undesirable Web sites by LAN users. You can even have different settings for different groups of PCs.

Other Features

- ***4-Port Switching Hub***

The Twin Wan Router incorporates a 4-port 10/100BaseT switching hub, making it easy to create or extend your LAN.

- ***DHCP Server Support***

Dynamic Host Configuration Protocol provides a dynamic IP address to PCs and other devices upon request. The Twin Wan Router can act as a **DHCP Server** for devices on your local LAN.

- ***Multi Segment LAN Support***

LANs containing one or more segments are supported, via the Twin Wan Router's built-in static routing table.

- ***ARP proxy***

The ARP proxy feature allows you to assign an external (Internet) IP address to the Twin Wan Router's LAN port. This allows Servers on your LAN to have external (Internet) IP addresses.

- ***Easy Setup***

Use your favorite WEB browser for configuration.

- ***Remote Management***

The Twin Wan Router can be managed from any PC on your LAN. And, if the Internet connection exists, it can also (optionally) be configured via the Internet.

- ***Password - protected Configuration***

Optional password protection is provided to prevent unauthorized users from modifying the configuration data and settings.

Package Contents

The following items should be included:

- The Twin Wan Router Unit
- Power Adapter
- Quick Installation Guide
- CD-ROM containing the on-line manual.

If any of the above items are damaged or missing, please contact your XiNCOM CORP. immediately at xincom@xincom.com.

Physical Details

Front Panel



Operation of the Front Panel LEDs is as follows:

LAN

- 100 M** ON – The corresponding LAN port is using 100BaseT.
OFF – No 100BaseT connection on the corresponding LAN port.
- 10 M** ON – The corresponding LAN port is using 10BaseT.
OFF – No 10BaseT connection on the corresponding LAN port.
- Dup** ON – The corresponding LAN port is using full Duplex mode.
OFF – The corresponding LAN port is not using full Duplex mode.

WAN

- Link 1** ON – Physical connection to the Broadband modem on WAN port 1 established.
OFF – No physical connection on WAN port 1.
- Link 2** ON – Physical connection to the Broadband modem on WAN port 2 established.
OFF – No physical connection on WAN port 2.

System

- WAN Data** ON – WAN connection is idle (no traffic)
OFF – No power.
Blinking – Data is being transferred via either WAN port.
- LAN Data** ON – LAN connection is idle.
OFF – No power.
Blinking – Data being received via any LAN port.
- Error** OFF – Normal operation.
ON – Firmware not loaded or Hardware error.
Blinking – Hardware Error condition detected by Firmware:
- Power** OFF – No power.
ON – Normal Operation.

Also, some Status and Error conditions are indicated by combinations of LEDs, as shown below

LED Action	Condition
LAN Data, Error LEDs flash alternatively.	Firmware Download in progress.
WAN Data, LAN Data, Error LEDs flash simultaneously 3 times	MAC address not assigned.

Rear Panel

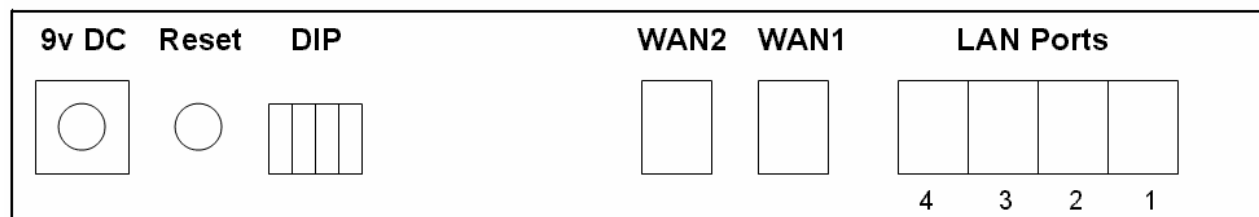


Figure 2: Rear Panel

- Power port (9V)** Connect the supplied power adapter here.
- Reset Button** When pressed and released, the Twin Wan Router will reboot (restart).
- DIP Switches** See the following DIP Switch table.
- WAN 2** Connect the 2nd Broadband Modem here, if available.
- WAN 1** Connect the primary Broadband Modem here.
- LAN Ports** Connect the PCs to these ports. Both 10BaseT and 100BaseT connections can be used simultaneously.

Note:

Any port will automatically operate as an "Uplink" port if required. Just use a normal LAN cable to connect to a normal port on another hub.

DIP Switch Table

SW1	SW2	SW3	SW4	Description
OFF	OFF	OFF	OFF	Normal Operation
OFF	OFF	OFF	ON	DHCP Disabled
OFF	OFF	ON	ON	TFTP Firmware Upgrade
ON	OFF	OFF	ON	Reset to Default settings See following section.
ON	ON	ON	ON	Forced TFTP Download See section below

Reset to Default Settings

The procedure is as follows:

1. Turn the power to the Twin Wan Router OFF.
2. Set DIP switch 1 and 4 ON, and 2 and 3 OFF, as shown above.
3. Turn the power to the Twin Wan Router ON.

4. When the Twin Wan Router has finished booting, all configuration settings will be set to the factory defaults, including:
 - *IP Address* set to its default value of 192.168.1.1, with a *Network Mask* of 255.255.255.0
 - *DHCP Server* is enabled
 - Password cleared (no password)

Forced TFTP Download

This setting should be used only if your Twin Wan Router is unusable, and you wish to restore it by downloading new firmware. Follow this procedure:

1. Power Off the Twin Wan Router.
2. Set the DIP switches to the *Forced TFTP Download* position.
3. Power On the Twin Wan Router.
4. Use the supplied Windows utility or a TFTP client program apply the new firmware. If using the supplied Windows TFTP program, the screen will look like the following example.

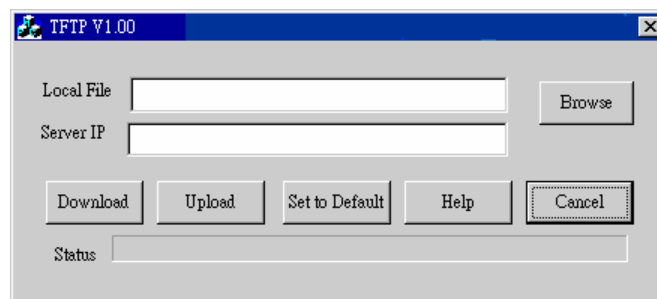


Figure 3: Windows TFTP utility

- Enter the name of the firmware upgrade file on your PC, or click the "Browse" button to locate the file.
 - Enter the LAN IP address of the Twin Wan Router in the "Server IP" field.
 - Click "Download" to send the file to the Twin Wan Router.
5. Power Off the Twin Wan Router, and set the DIP switches for *Normal Operation*.
 6. Power On the Twin Wan Router. It should then work normally, using the default settings.

Note:

The supplied Windows TFTP utility also allows you to perform three (3) other operations:

- Save the current configuration settings to your PC (use the "Upload" button).
- Restore a previously-saved configuration file to the Twin Wan Router (use the "Download" button).
- Set the Twin Wan Router to its default values (use the "Set to Default" button).

2: Basic Setup

Overview

Basic Setup of your Twin Wan Router involves the following steps:

1. Attach the Twin Wan Router to one (1) PC, and configure it for your LAN.
2. Install your Twin Wan Router in your LAN, and connect the Broadband Modem or Modems.
3. Configure your Twin Wan Router for Internet Access
4. Configure PCs on your LAN to use the Twin Wan Router.

Requirements

- One (1) or two (2) DSL or Cable modems, each with an Internet Access account with an ISP.
- Network cables. Use standard 10/100BaseT network (UTP) cables with RJ45 connectors
- TCP/IP network protocol must be installed on all PCs.

Procedure

1: Configuring the Twin Wan Router for your LAN

1. Use a standard LAN cable to connect your PC to any Hub port on the Twin Wan Router.
2. Connect the power adapter and power up the Twin Wan Router. Only use the power adapter provided; using a different one may cause hardware damage.
3. Start your PC. If your PC is already running, restart it. It will then obtain an IP address from the Twin Wan Router.
4. Start your WEB browser.
5. In the *Address* or *Location* box enter:
`HTTP://192.168.1.1`
6. You will be prompted for the User Name and password, as shown below.

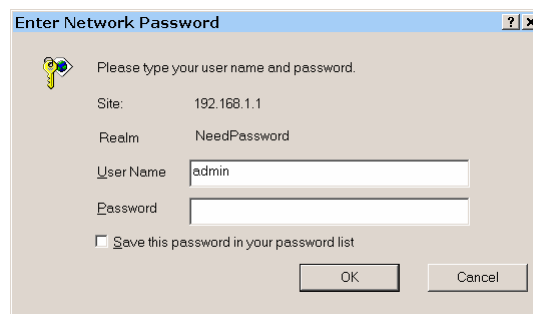


Figure 4: Password Dialog

7. Enter *admin* for the "User Name" and leave the "Password" blank.
 - The "User Name" is always *admin*

- You can and should set a password, using the following **Admin Password** screen.

No Response ?

- Is your PC using a Fixed IP address ?

If so, you must configure your PC to use an IP address within the range 192.168.1.2 to 192.168.1.254, with a *Network Mask* of 255.255.255.0. See *Appendix B – Windows TCP/IP Setup* for details.

- Check that the Twin Wan Router is properly installed, LAN connection is OK, and it is powered ON.

- After the login, you will then see the **Admin Password** screen, as shown below. Assign a password by entering it in the "Password" and "Verify Fields."

Admin. Password	
Administrator Password	
User Name	admin
Password	
Verify Password	
Submit Reset	

Figure 5 Home Screen (Admin Password)

9. Select **LAN & DHCP** from the menu. You will see a screen like the example below.



LAN & DHCP			
LAN IP Configuration			
IP Address	192.168.1.1 (ex. xxx.xxx.xxx.xxx)		
Subnet Mask	255.255.255.0 (255.255.255.0)		
DHCP Server Configuration			
DHCP Server Setup	☒ Enable ☐ Disable		
DHCP IP Address Range			
Offered Range	From 192.168.1.2 To 192.168.1.100 (ex. xxx.xxx.xxx.xxx)		
Free Entries	98		
ARP Proxy (Used only when LAN and WAN are on the same IP segment)			
Internal LAN IP Range	☐ Enable From 0.0.0.0 To 0.0.0.0 (ex. xxx.xxx.xxx.xxx)		
Submit Reset			
DHCP Client List			
Name	Mac Address	IP Address	Type
ethanQ	00-40-F4-51-EC-9A	192.168.1.2	Dynamic

Figure 6: LAN & DHCP

10. Ensure these settings are suitable for your LAN:

- The default settings are suitable for many situations.
- See the following table for details of each setting.

11. Save your data, then go to *Step 2, installing the Twin Wan Router in your LAN*.

Settings – LAN & DHCP

IP Address	IP address for the Twin Wan Router, as seen from the local LAN. Use the default value unless the address is already in use or your LAN is using a different IP address range. In the latter case, enter an unused IP Address from within the range used by your LAN.
Subnet Mask	The default value 255.255.255.0 is standard for small (class "C") networks. For other networks, use the Subnet Mask for the LAN segment to which the Twin Wan Router is attached (the same value as the PCs on that LAN segment).
DHCP Server	• If enabled, the Twin Wan Router will allocate IP Addresses to PCs (DHCP clients) on your LAN when they start up. The default and recommended value is "Enable". (Windows systems, by default, act as DHCP clients. This setting is called <i>Obtain an IP address automatically</i>.) • If you are already using a DHCP Server, the DHCP Server setting must be disabled, and the existing DHCP server must be set to provide the IP address of the Twin Wan Router as the <i>Default Gateway</i>. See Chapter 5: Advanced LAN Setup for further details. • Offered Range fields set the values used by the DHCP server when allocating IP Addresses to DHCP clients. This range also determines the number of DHCP clients supported. • Free Entries indicates how many DHCP entries are not currently allocated, and still available.

ARP Proxy	Enable this ONLY if the LAN port has an IP address in the same address range as the WAN port(s). This means that all PCs using this Gateway must have valid fixed external (Internet) IP addresses. If enabled, enter the IP address range used on your LAN.
DHCP Client List	This table shows the IP addresses which have been allocated by the DHCP Server function. For each address which has been allocated, the following information is shown. • Name – The "hostname" of the PC. In some cases, this may not be known. • MAC Address – The physical address (network adapter address) of the PC. • IP Address – The IP address allocated to this PC. • Status – If <i>Dynamic</i>, the IP address was allocated by this DHCP Server. If <i>Sniffed</i>, the IP address was detected by examining the LAN, rather than allocated by the DHCP Server. In this case, the <i>Name</i> is usually not known.

2. Installing the Twin Wan Router in your LAN

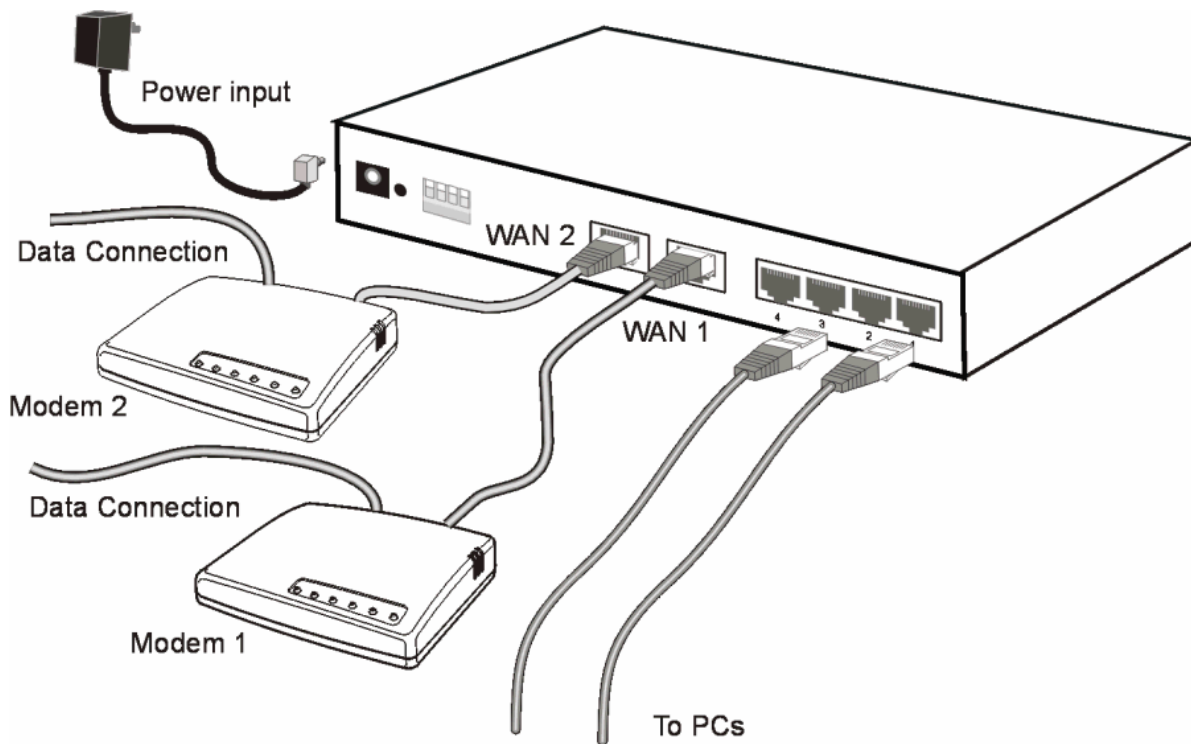


Figure 7: Installation Diagram

1. Ensure the Twin Wan Router and the DSL/Cable modem are powered OFF. Leave the modem or modems connected to their data line.
2. Connect the Broadband modem or modems to the Twin Wan Router.
 - If using only one (1) Broadband modem, connect it to the "WAN 1" port.
 - Use the cable supplied with your DSL/Cable modem. If no cable was supplied, use a standard cable.
3. Use standard LAN cables to connect PCs to the Switching Hub ports on the Twin Wan Router.
 - Both 10BaseT and 100BaseT connections can be used simultaneously.
 - If you need to connect the Twin Wan Router to another Hub, just use a standard LAN cable to connect any port on the Twin Wan Router to a standard port on another hub. Any LAN port on the Twin Wan Router will automatically act as an "Uplink" port when required.
4. Power Up
 - Power on the Cable or DSL modem or modems.
 - Connect the supplied power adapter to the Twin Wan Router and power up.
5. Check the LEDs
 - The **Power** LED should be ON.
 - The **WAN – Link** LED should be ON, if the corresponding WAN port is connected to a broadband modem.
 - The **Error** LED will flash during start up, but will then turn Off. If it stays On, there is an error condition.
 - For each PC connected to the LAN ports, the corresponding **LAN** LED (either **10** or **100**) should be ON.

3. Configuring the Twin Wan Router for Internet Access

Select *Primary Setup* from the menu, to see a screen like the example below.

- Configure WAN 1 and/or WAN 2 as required.
- For any of the following situations, refer to **Chapter 3: Advanced Port Setup** for any further configuration which may be required.
 - Using both ports
 - Multiple IP addresses on either port
 - Multiple PPPoE sessions
 - PPTP connection method



Primary Setup						
Connection	WAN 1		WAN 2			
Connection Mode	☒ Enable	☐ Disable	☐ Backup	☐ Enable	☒ Disable	☐ Backup
Connection Type	Dynamic IP v		Static IP v			
Address Info. (Static IP only)						
IP Address	0.0.0.0		0.0.0.0			
Subnet Mask	0.0.0.0		0.0.0.0			
Gateway	0.0.0.0		0.0.0.0			
PPPoE / PPTP Dialup (For PPPoE or PPTP)						
PPTP Connection	☐ Enable		☐ Enable			
PPTP Server IP Address	0.0.0.0		0.0.0.0			
User Name						
Password						
DNS (Optional for dynamic IP)						
DNS 1	168.95.1.1					
DNS 2	0.0.0.0		0.0.0.0			
DNS 3	0.0.0.0		0.0.0.0			
Optional						
Host Name	DBG00054E		DBG00054F			
Domain Name						
MAC Address	00-09-A3-00-05-4E		00-09-A3-00-05-4F			

Figure 8: Primary Setup Screen

Settings – Primary Setup

Connection Mode	Select the appropriate setting: • Enable – Select this if you have connected a broadband modem to this port. • Disable – Select this if there is no broadband modem connected to this port. • Backup – Use this if you have a broadband modem on each port, and wish to normally use only one. Select <i>Enable</i> for the primary port, and <i>Backup</i> for the secondary port. The <i>Backup</i> port will only be used if the primary port fails.
Connection Type	Check the data supplied by your ISP, and select the appropriate option. • Static IP – Select this if your ISP has provided a Fixed or Static IP address. Then enter the data into the <i>Address Info</i> fields. • Dynamic IP – Select this if your ISP provides an IP address automatically, when you connect. You can ignore the <i>Address Info</i> fields. • PPPoE – Select this if your ISP uses this method. (Usually, your ISP will provide some PPPoE software. This software is no longer required, and should not be used.) If this method is selected, you must complete the <i>PPPoE dialup</i> fields. Note: If using the PPTP connection method, select <i>Static IP</i> or <i>Dynamic IP</i>, as appropriate; according to the IP address method used by your ISP.
Address Info	This is for <i>Static IP</i> users only. Enter the address information provided by your ISP. If your ISP provided multiple IP address, you can use the Multi-DMZ screen to assign the additional IP addresses.
PPPoE / PPTP Dialup	This is for <i>PPPoE</i> and <i>PPTP</i> users only. • Enter the <i>Username</i> and <i>Password</i> provided by your ISP. • If using PPTP, enable the <i>PPTP Connection</i> checkbox, and enter the IP address of the PPTP server. Note: There are additional PPPoE/PPTP options on the Port Options screen. To use multiple PPPoE sessions on either port, configure the Advanced PPPoE screen.
DNS	If using a <i>Fixed IP</i> address, you MUST enter at least 1 DNS address. If using <i>Dynamic IP</i> or <i>PPPoE</i>, DNS information is optional.
Optional	• Host name – This is required by some ISPs. If your ISP provided a Host Name, enter it here. Otherwise, you can use the default value. • Domain name – This is required by some ISPs. If your ISP provided a Domain Name, enter it here. Otherwise, you can use the default value. • MAC address – Some ISP's record your MAC addresses (also called "Physical address" or "Network Adapter address"). If so, you can enter the MAC address expected by your ISP in this field. Otherwise, this should be left at the default value.

Setup of the Twin Wan Router is now complete. PCs on your LAN must now be configured. See the following section for details.

4: Configure PCs on your LAN

Overview

For each PC, the following may need to be configured:

- TCP/IP network settings
- Internet Access configuration

TCP/IP Settings

If using the default Twin Wan Router settings, and the default Windows 95/98/ME/2000/XP TCP/IP settings, no changes need to be made. Just start (or restart) your PC.

- By default, the Twin Wan Router will act as a DHCP Server, automatically providing a suitable IP Address (and related information) to each PC when the PC boots.
- For all non-Server versions of Windows, the default TCP/IP setting is to act as a DHCP client. In Windows, this is called *Obtain an IP address automatically*. Just start (or restart) your PC, and it will obtain an IP address from the Twin Wan Router.
- If using fixed IP addresses on your LAN, or you wish to check your TCP/IP settings, refer to **Appendix B – Windows TCP/IP Setup**.

Internet Access

To configure your PCs to use the Twin Wan Router for Internet access, follow this procedure:

For Windows 9x/2000

1. Select *Start Menu - Settings - Control Panel - Internet Options*.
2. Select the *Connection* tab, and click the *Setup* button.
3. Select "I want to set up my Internet connection manually, or I want to connect through a local area network (LAN)" and click *Next*.
4. Select "I connect through a local area network (LAN)" and click *Next*.
5. Ensure all of the boxes on the following *Local area network Internet Configuration* screen are **unchecked**.
6. Check the "No" option when prompted "Do you want to set up an Internet mail account now?"
7. Click *Finish* to close the Internet Connection Wizard.
Setup is now completed.

For Windows XP

1. Select *Start Menu - Control Panel - Network and Internet Connections*.
2. Select *Set up or change your Internet Connection*.
3. Select the *Connection* tab, and click the *Setup* button.
4. Cancel the pop-up "Location Information" screen.
5. Click *Next* on the "New Connection Wizard" screen.
6. Select "Connect to the Internet" and click *Next*.
7. Select "Set up my connection manually" and click *Next*.
8. Check "Connect using a broadband connection that is always on" and click *Next*.
9. Click *Finish* to close the New Connection Wizard.
Setup is now completed.

Accessing AOL

To access AOL (America Online) through the Twin Wan Router, the *AOL for Windows* software must be configured to use TCP/IP network access, rather than a dial-up connection. The configuration process is as follows:

- Start the *AOL for Windows* communication software. Ensure that it is Version 2.5, 3.0 or later. This procedure will not work with earlier versions.
- Click the *Setup* button.
- Select *Create Location*, and change the location name from "New Locality" to "Twin Wan Router".
- Click *Edit Location*. Select *TCP/IP* for the *Network* field. (Leave the *Phone Number* blank.)
- Click *Save*, then *OK*.
Configuration is now complete.
- Before clicking "Sign On", always ensure that you are using the "Twin Wan Router " location.

Macintosh Clients

From your Macintosh, you can access the Internet via the Twin Wan Router. The procedure is as follows.

1. Open the TCP/IP Control Panel.
2. Select *Ethernet* from the *Connect via* pop-up menu.
3. Select *Using DHCP Server* from the *Configure* pop-up menu. The DHCP Client ID field can be left blank.
4. Close the TCP/IP panel, saving your settings.

Note:

If using manually assigned IP addresses instead of DHCP, the required changes are:

- Set the *Router Address* field to the Twin Wan Router's IP Address.
- Ensure your *DNS* settings are correct.

Linux Clients

To access the Internet via the Twin Wan Router, it is only necessary to set the Twin Wan Router as the "Gateway", and ensure your *Name Server* settings are correct.

Ensure you are logged in as "root" before attempting any changes.

Fixed IP Address

By default, most Unix installations use a fixed IP Address. If you wish to continue using a fixed IP Address, make the following changes to your configuration.

- Set your *Default Gateway* to the IP Address of the Twin Wan Router.
- Ensure your *DNS* (Name server) settings are correct.

To act as a DHCP Client (recommended)

The procedure below may vary according to your version of Linux and X -windows shell.

1. Start your X Windows client.
2. Select *Control Panel - Network*
3. Select the "Interface" entry for your Network card. Normally, this will be called "eth0".
4. Click the *Edit* button, set the "protocol" to "DHCP", and save this data.
5. To apply your changes

Use the "Deactivate" and "Activate" buttons, if available.

OR, restart your system.

3: Advanced Port Setup

Overview

There are 3 screens in this section:

- **Port Options** contains some options which can be set on either or both WAN ports. For most situations, the default values are satisfactory.
- **Load Balance** screen is only functional if you are using both WAN ports. It allows you to determine the proportion of WAN traffic sent through each port.
- **Advanced PPPoE** setup is required if you wish to use multiple sessions on one or both of the WAN ports. It can also be used to manually connect or disconnect a PPPoE session. Otherwise, this screen can be ignored.
- **Advanced PPTP** setup is required if using the PPTP connection method.

Port Options



Port Options		
Connection Validation	WAN 1	WAN 2
Alive Indicator		
MTU	1514 Bytes	1514 Bytes
PPPoE/PPTP Connection Option	WAN 1	WAN 2
Auto Dialup	☒ Enable	☒ Enable
Auto Disconnect	After idle for minutes	After idle for minutes
Echo Time	seconds	seconds
Echo Retry	times	times

Figure 9: Port Options

Settings – Port Options

Connection Validation	• Alive Indicator – This is the IP address used to check if the WAN connection is operating. The Twin Wan Router will contact this system to check if the WAN connection is working. Change this address if you wish. Note: This is not used for PPPoE connections. • MTU – The Maximum Transmission Unit is used when determining the packet size to be used on the WAN interface. Normally, this does not need to be changed, but if your ISP advises you to use a particular MTU, enter it here.
-----------------------	---

PPPoE / PPTP Connection Options

- **Auto Dialup** – If set to *Enable* a connection will be established whenever outgoing WAN traffic is detected. If not Enabled, you must establish a connection manually.
- **Auto Disconnect** – This determines when an idle connection will be terminated. Enter the required time period.
- **Echo Time** – This determines how often an Echo request is sent to the PPPoE server. The Echo request is used to determine if the connection is still valid. Normally, there is no need to change the default value.
- **Echo Retry** – The number of time the Echo request will be sent, if there is no response to the first request. Normally, there is no need to change the default value.

Load Balance

This screen is only operational if using Internet connections on both WAN ports.

Load Balance 

Load Balance Configuration		
Enable	☒	
Balance Type	Based on Bytes rx+tx	
Loading Share on WAN1	50 %	
Update		

NAT Statistics		WAN 1	WAN 2
Connection Status		Connected	Disconnected
Default Loading Share		50%	50%
Current Loading Share		50 %	50 %
Current Loading	Sessions	1	1
	Bytes	1	1
	Packets	1	1
Current Bandwidth	Download Speed	0Bytes/s	0Bytes/s
	Upload Speed	0Bytes/s	0Bytes/s

Interface Statistics		WAN 1	WAN 2
Interface Usage		85%	14%
Over All	Bytes received	1818KB	0KB
	Bytes transmitted	933KB	464KB
	Total	2752KB	464KB

Figure 10: Load Balance

These settings are only functional if using both WAN ports. If using both WAN ports, these settings determine the proportion of traffic sent over each port.

Settings – Load Balance

Load Balance Configuration	• Enable – Use this to enable your Load Balance settings. Unless this is checked, the other settings on this screen have no effect. • Balance Type – Select the desired option: • Bytes rx+tx – Traffic is measured by Bytes. • Packets rx+tx – Traffic is measured by Packets. • Sessions established – Traffic is measured by Sessions. • Loading Share on WAN 1 – Enter the percentage (%) of traffic to be sent over WAN 1. If one WAN port connection has greater bandwidth than the other, the one with the greater bandwidth should be given a higher percentage of traffic than the other. Click the "Update" button to save your changes.
NAT Statistics	This section displays the current data about WAN 1 and WAN 2. You can use this information to help you "fine-tune" the settings above.
Interface Statistics	This section displays cumulative statistics. Use the "Restart Counters" button to restart these counters when required.
Buttons	• Update – Save the settings on this screen. • Refresh – Update the data on screen. • Restart Counters – Restart the counters used in the "Interface Statistics" section.

Advanced PPPoE

The screen is required in order to use multiple PPPoE sessions on the same WAN port. It can also be used to manually connect or disconnect a PPPoE session.

Advanced PPPoE

?

Select WAN Port & Session

WAN Port

WAN 1

PPPoE Session

Session 1

Select

WAN IP Account

User Name

Password

Verify Password

IP Address

0.0.0.0

(ex. xxx.xxx.xxx.xxx)

Action

Connect

Disconnect

Submit

Reset

Connection Status

WAN

Session

IP Address

Status

Figure 11: Advanced PPPoE

Settings – Advanced PPPoE

WAN Port PPPoE Session	Select the desired Port and Session, and then click the "Select" button. The data for the selected Port/Session will then be displayed in the <i>WAN IP Account</i> section.
WAN IP Account	• User Name – Enter the PPPoE user name assigned by your ISP. • Password – Enter the PPPoE password assigned by your ISP. • Verify Password – Re-enter the PPPoE password assigned by your ISP. • IP Address – If you have a fixed IP address, enter it here. Otherwise, this field should be left at 0.0.0.0.
Action	Use the "Connect" and "Disconnect" buttons to establish or terminate a connection on this session, if required.
Connection Status	This displays the current connection status for each session.

Advanced PPTP

This screen is only useful if using the PPTP connection method.

Advanced PPTP

?

Select WAN Port

WAN Port

WAN 1

Select

WAN IP Account

User Name

jonathan

Password

XXXXX

Verify Password

XXXXX

Server IP Address

172.16.2.100

 (ex. xxx.xxx.xxx.xxx)

Static IP Address

0.0.0.0

 (only for static ISP account)

Action

Connect

Disconnect

Submit

Reset

Connection Status

WAN

IP Address (for PPTP)

Status

Figure 12 Advanced PPTP

Settings – Advanced PPPoE

WAN Port	Select the desired Port, and then click the "Select" button. The data for the selected Port will then be displayed in the <i>WAN IP Account</i> section.
WAN IP Account	User Name – The PPTP user name (login name) assigned by your ISP. Password – The PPTP password associated with the <i>User Name</i> above. This is assigned by your ISP, and used to login to the PPTP Server. Verify Password – Re-enter the PPTP password assigned by your ISP. Server IP Address – Enter the IP address of the PPTP Server, as provided by your ISP. Static IP Address – If you have a fixed IP address, enter if here. Otherwise, this field should be left at 0.0.0.0.
Action	Use the "Connect" and "Disconnect" buttons to establish or terminate a connection on this session, if required.
Connection Status	This displays the current connection status.

4: Advanced Configuration

Overview

The following advanced features are provided.

- Host IP Setup
- Access Filter
- Block URL
- Virtual Servers
- Special Applications
- Dynamic DNS
- Multi DMZ
- Advanced Features
- Password

This chapter contains details of the configuration and use of each of these features.

Host IP Setup

This feature is used in the following situations:

- You have Multi-Session PPPoE, and wish to bind each session to a particular PC on your LAN.
- You wish to use the **Access Filter** feature. This requires that each PC be identified by using the **Host IP Setup** screen.
- You wish to have different **Block URL** settings for different PCs. This requires that each PC be identified by using the **Host IP Setup** screen. (You do not have to use the Host IP feature to apply the same **Block URL** settings to all PCs.)
- You wish to reserve a particular (LAN) IP address for a particular PC on your LAN. This allows the PC to use DHCP (Windows calls this "Obtain an IP address automatically") while gaining the benefits of a fixed IP address. The PC's IP address will never change, so it can be provided to other people and applications.

?

Host IP Setup

Host Network Identity

Host List	NoteBook Select
Host Name	NoteBook
MAC Address	00-00-E2-6A-F7-AB ex (FF-FF-FF-FF-FF-FF)
Select Group	Default
Reserve in DHCP	☐ Enable ☒ Disable
Reserved IP Address	0.0.0.0 ex (xxx.xxx.xxx.xxx)

Host Network Binding

Bind WAN Port / Session	☒ Enable ☐ Disable
Select WAN Port	WAN 2
Select PPPoE Session	Session 2

Host & Group List

Name	MAC Address	Group	DHCP	Reserve IP Address	WAN Binding	WAN Port	PPPoE Session
Ethan	00-40-F4-51-EC-9A	Default	Disabled	0.0.0.0	Enabled	WAN 2	Session 1

Figure 13 Host IP Setup

Settings – Host IP Setup

Host Network Identity	This section identifies each Host (PC) Host List – When adding a new Host, ignore this list. To edit an existing entry, select it from the list, and click the "Select" button. The data fields will then be updated with data for the selected entry. Host name – Enter a suitable name. Generally, you should use the "Hostname" (computer name) defined on the Host itself. MAC Address – Also called <i>Physical Address</i> or <i>Network Adapter Address</i>. Enter the MAC address of this host. Select Group – Select the group you wish to put this host into. Reserve in DHCP – Select <i>Enable</i> to reserve a particular (LAN) IP address for a particular PC on your LAN. This allows the PC to use DHCP (Windows calls this "obtain an IP address automatically") while having an IP address which never changes. Reserved IP – Enter the IP address you wish to reserve, if the setting above is <i>Enable</i>. Otherwise, ignore this field.
Host Network Binding	Bind WAN port/Session – Select <i>Enable</i> if you wish to associate this PC with a particular PPPoE Session. All traffic for that PC will then use the selected PPPoE port and session. Select WAN Port/Select PPPoE session – If the setting above is <i>Enable</i>, select the desired Port and Session. Otherwise, ignore these settings. Note: Multiple PPPoE sessions are defined on the Advanced PPPoE screen.
Buttons	Add – Use this to add a new entry to the database, using the data shown on screen. Delete – Click this to delete the selected entry. Update – Use this to update the selected entry, after making the desired changes. Reset – Reverse any changes you have made since loading the data from the Twin Wan Router.
Host & Group List	This table shows the current bindings.

Access Filter

The network Administrator can use the Access Filter to gain fine control over the Internet access and applications available to LAN users.

- Five (5) user groups are available, and each group can have different access rights.
- All PCs (users) are in the *Default* group, unless assigned to another group on the **Host IP** screen.

Access Filter 

Setup Access Group

Select Group: Default Select

Filter Setting

☐ No Filtering
 ☐ Block All Access
 ☒ Block Selected Items

Block Well-Known Ports

☒ Archie	☐ DNS	☐ FTP	☐ Gopher	☐ HTTP	☐ Mail
☐ News	☐ Real Audio	☐ SNMP	☐ Telnet	☐ TFTP	☐ VPN

User-Defined Ports To Block

Name	TCP / UDP Packets	Port No. Range
	TCP	0 ~ 0
	TCP	0 ~ 0
	TCP	0 ~ 0
	TCP	0 ~ 0
	TCP	0 ~ 0
	TCP	0 ~ 0
	TCP	0 ~ 0
	TCP	0 ~ 0
	TCP	0 ~ 0
	TCP	0 ~ 0

Submit
Reset

Figure 14: Access Filter

Settings – Block URL

Setup Access Group	This allows you have different access rights for different Groups of PCs. • If you want the same restrictions to apply to everyone, select <i>Default</i> for the Group. In this case, there is no need to enter any Hosts on the Host IP screen. • If you wish to apply different restrictions on different Groups, select the desired Group, and click the "Select" button. The screen will update with data for the selected Group.
Filter Setting	Select the desired option for this Group: • No filtering – Nothing is blocked, Internet access is not restricted. • Block All Access – Everything is blocked, Internet access is not available. • Block selected items – Items selected on this screen are blocked. You can block well known services by using the checkboxes, or define your own filters.

Block Well-known ports	Select the services you wish to block. The current group will not be able to use any services which are checked.
User-defined Ports to Block	This section is optional. It allows you to define your own filters if required. For each filter, the following information is required. • Name – Enter a meaningful name for this filter. • TPC/UDP Packets – Select either TCP or UDP, depending on which protocol is used by the service you wish to block. • Port No. Range – Enter the range of port numbers used by the service you wish to block. If only a single port is required, enter it in both fields.

Block URL

This feature allows you to block access to undesirable Web sites. You can block by URL, IP address, or Keyword. You can also have different blocking settings for different groups of PCs.

- In operation, every URL is searched to see if it matches or contains any of the URL or keywords entered here. Then, after a DNS lookup determines the IP address of the requested site, the site's IP address is checked against IP address entries on this screen.
- Note that a single IP address may host many Web sites. Entering the IP address on this screen will block all Web sites hosted on that IP address.

Block URL 

Access Group	
Select One Group	Default Select
Block Internet Access	
Enable / Disable	Block URL / IP / Keyword On Web Site
☒ Enable ☐ Disable	hinet.net
☒ Enable ☐ Disable	192.168.9.97
☐ Enable ☒ Disable	
☐ Enable ☒ Disable	
☐ Enable ☒ Disable	
☐ Enable ☒ Disable	
☐ Enable ☒ Disable	
☐ Enable ☒ Disable	
☐ Enable ☒ Disable	
☐ Enable ☒ Disable	

Figure 15 Block URL

Settings – Block URL

Access Group	This allows you have different blocking rules for different Groups of PCs. • All PCs (users) are in the <i>Default</i> Group unless moved to another group on the Host IP screen. • If you want the same restrictions to apply to everyone, select <i>Default</i> for the Group. In this case, there is no need to enter any Hosts on the Host IP screen. • If you wish to apply different restrictions on different Groups, select the desired Group, and click the "Select" button. The screen will update with data for the selected Group.
Block Internet Access	• Enable/Disable – Use this to Enable or Disable each setting, as required. • Block URL/IP/Keyword – Enter the URL, IP address or keyword you wish to block.

Virtual Servers

This feature allows you to make Servers on your LAN accessible to Internet users. Normally, Internet users would not be able to access a server on your LAN because:

- Your Server's IP address is only valid on your LAN, not on the Internet.
- Attempts to connect to devices on your LAN are blocked by the firewall in the Twin Wan Router.

The "Virtual Server" feature solves these problems and allows Internet users to connect to your servers, as illustrated below.

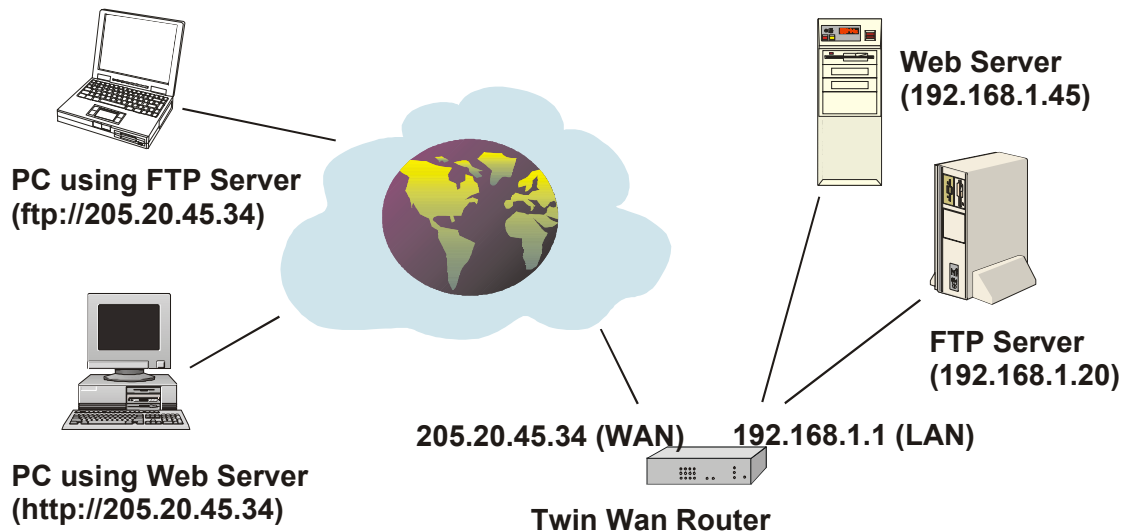


Figure 16: Virtual Servers

Note that, in this illustration, both Internet users are connecting to the same IP Address, but using different protocols.

Connecting to the Virtual Servers

Once configured, anyone on the Internet can connect to your Virtual Servers. They must use the Twin Wan Router's Internet IP Address (the IP Address allocated by your ISP).

e.g.

`http://205.20.45.34`

`ftp://205.20.45.34`

- To Internet users, all virtual Servers on your LAN have the same IP Address. This IP Address is allocated by your ISP.
- This address should be static, rather than dynamic, to make it easier for Internet users to connect to your Servers. However, you can use the *Dynamic DNS* feature (explained later in this chapter) to allow users to connect to your Virtual Servers using a URL, instead of an IP Address.

e.g.

`HTTP://my_domain_name.dyndns.org`

`FTP://my_domain_name.dyndns.org`

Virtual Server

Virtual Server		
Enable	Server Type	LAN IP Address
☐	DNS	0.0.0.0 ex. (xxx.xxx.xxx.xxx)
☐	Finger	0.0.0.0
☐	FTP Server	0.0.0.0
☐	Gopher	0.0.0.0
☐	IPsec	0.0.0.0
☐	Mail Server (POP3)	0.0.0.0
☐	Mail Server (SMTP)	0.0.0.0
☐	News (NNTP)	0.0.0.0
☐	PPTP	0.0.0.0
☐	Telnet	0.0.0.0
☐	Web Server (HTTP)	0.0.0.0
☐	Whois	0.0.0.0

Figure 17 Virtual Server

Settings – Virtual Server

Enable	Use this to Enable or Disable each Virtual server as required.
Server Type	Select the desired Server type. If the type of Server you wish to use is not listed, use the Custom Virtual Server screen to define your own type.
LAN IP Address	Enter the IP address of the PC on your LAN which is running the required Server software. Each PC should have a fixed IP address, or have a reserved IP address. (See the Host IP section earlier in this chapter for details on reserving an IP address.)

Custom Virtual Servers

This screen allows you to define your own Server types, for situations when the desired Server type is not listed on the **Virtual Servers** screen.



Custom Virtual Server

Select Custom Server Name

Server List Test1 Select

Custom Server Configuration

Server Name

State ☐ Enable ☒ Disable

Server IP 192.168.1.51 (ex.xxx.xxx.xxx.xxx)

Protocol Type TCP

LAN Port Range From 1003 To 1004

WAN Port Range From 1005 To 1006

Add
Delete
Update
Cancel

Custom Virtual Server List

State	Server Name	Server IP	Protocol	LAN Port Range	WAN Port Range
Disabled	Test1	192.168.1.51	TCP	1003 ~ 1004	1005 ~ 1006
Enabled	Test2	192.168.1.55	TCP	2002 ~ 2002	2002 ~ 2002

Figure 18 Custom Virtual Servers

Settings – Custom Virtual Servers

Select Custom Server Name	Server List If creating a new entry, ignore this list. To edit an existing entry, select it, and then click the "Select" button. The screen will update with data for the selected entry.
Custom Server Configuration	This data defines the Custom Virtual Server: Server Name – Enter a suitable name for this server. State – Use this to Enable or Disable the server as required. Server IP – Enter the IP address of the PC on you LAN which is running the required Server software. Each PC should have a fixed IP address, or have a reserved IP address. (See the Host IP section earlier in this Chapter for details on reserving an IP address.) Each PC must be running the appropriate Server software. Protocol Type – Select the network protocol used by this sever type. LAN Port Range – Enter the range of port number used for outgoing traffic from this Server. If only a single port is required, enter it in both fields. WAN Port Range – Enter the range of port number used for incoming traffic to this Server. If only a single port is required, enter it in both fields

Buttons	• Add – Create a new Special Application entry. • Delete – Delete the selected entry. • Update – Save any changes you have made to the current entry. • Cancel – Cancel any changes you have made since the last save operation.
Custom Virtual Server List	This table shows details of all Custom Virtual Servers which have been defined.

Special Applications

If you use Internet applications which have non-standard connections or port numbers, you may find that they do not function correctly because they are blocked by the firewall in the Twin Wan Router. In this case, you can define the application as a "Special Application" in order to make it work.

Note that the terms "Incoming" and "Outgoing" on this screen refer to traffic from the client (PC) viewpoint



Special Application

Select Special Application Name
Select entry: Test1 Select

Special Application Configuration

Enable	Name	Outgoing Protocol	Outgoing Port Range	Incoming Protocol	Incoming Port Range
☐		TCP	0 ~ 0	TCP	0 ~ 0

Add Delete Update Cancel

Special Application List

Enable	Name	Outgoing Protocol	Outgoing Port Range	Incoming Protocol	Incoming Port Range
ENABLE	Test1	UDP	5010 ~ 5020	UDP	5030 ~ 5040

Figure 19 Special Applications

Settings – Special Applications

Select Special Application Name	
Select Name Item	This lists any special applications which are currently defined. - If adding a new Special Application, ignore this list. Just enter your data in the <i>Special Application Configuration</i> section, and click the "Add" button. - To edit an existing entry, select it from this list, and click the "Select" button. The data for the selected application will then be displayed in the <i>Special Application Configuration</i> section. Make any required changes, then click the "Update" button.
Special Application Configuration	
Enable	Use this to Enable or Disable this Special Application as required.
Name	Enter a descriptive name to identify this Special Application.
Outgoing Protocol	Select the protocol used by this application, when sending data to the remote server or PC.
Outgoing Port Range	Enter the beginning and end of the range of port numbers used by the application server, for data you send. If the application uses a single port number, enter it in both fields.
Incoming Protocol	Select the protocol used by this application, when receiving data from the remote server or PC.

Incoming Port Range	Enter the beginning and end of the range of port numbers used by the application server, for data you receive. If the application uses a single port number, enter it in both fields.
Buttons	• Add – Create a new Special Application entry. • Delete – Delete the selected entry. • Update – Save any changes you have made to the current entry. • Cancel – Cancel any changes you have made since the last save operation.
Special Application List	This shows details of all Special Applications which are currently defined.

Using a Special Application on your PC

- Once the *Special Applications* screen is configured correctly, you can use the application on your PC normally. Remember that only one (1) PC can use each Special application at any time.
- Also, when 1 PC is finished using a particular Special Application, there may need to be a "Time-out" period before another PC can use the same Special Application.
- If an application still cannot function correctly, try using the "DMZ" feature, if possible.

Dynamic DNS

Dynamic DNS is very useful when combined with the *Virtual Server* feature. It allows Internet users to connect to your Virtual Servers using a URL, rather than an IP Address.

This also solves the problem of having a dynamic IP address. With a dynamic IP address, your IP address may change whenever you connect to your ISP, which makes it difficult to connect to you.

You must register for the Dynamic DNS service. The Twin Wan Router supports 2 types of service providers:

- Standard client, available at <http://www.dyndns.org>
Other sites may offer the same service, but can not be guaranteed to work.
- TZO at <http://www.tzo.com>

To use the Dynamic DNS feature

1. Register for the service from your preferred service provider.
2. Follow the service provider's procedure to have a Domain Name (Host name) allocated to you.
3. Configure the **Dynamic DNS** screen, as described below.
4. The Twin Wan Router will then automatically update your IP Address recorded by the Dynamic DNS service provider.
5. From the Internet, users will now be able to connect to your Virtual Servers (or DMZ PC) using your Domain name.



Dynamic DNS	
Dynamic DNS Service	
Dynamic DNS	☒ Disable ☐ TZO ☐ Standard Client
WAN Port Binding	
☒ WAN 1 ☐ WAN 2	
Force Update	
TZO Custom Dynamic DNS Service	
Key	
E-Mail	
Domain	
Standard Client	
User Name	
Password	
Verify Password	
Server	
Host Name	
Additional Standard Client Settings	
Enable Wildcard	☐
Enable Backup MX	☐
Mail Exchanger	
Submit Reset	

Figure 20 Dynamic DNS

Settings – Dynamic DNS

Dynamic DNS Service	Use this to Enable/Disable the Dynamic DNS feature, and select the required service provider. • Disable – Dynamic DNS is not used. • TZO – Select this to use the TZO service (www.tzo.com). You must configure the <i>TZO</i> section of this screen. • Standard Client – Select this to use the standard service (from www.dyndns.org or other provider). You must configure the <i>Standard Client</i> section of this screen.
WAN Port Binding	• Select the WAN port on which the Dynamic DNS is used. • The "Force Update" button will update your record on the Dynamic DNS Server immediately.
TZO Custom Dynamic DNS Service	If you have registered for this service, complete these fields. • Key – Enter your Key, as recorded on the TZO Web site. • E-mail – Enter your E-mail address, as recorded on the TZO Web site. • Domain – Enter the domain name allocated to you by TZO.
Standard Client	If you have registered for this service, complete these fields. • User Name – Enter the user name recorded by the service provider. • Password – Enter the password recorded by the service provider. • Verify Password – Re-enter the password above. • Server – Enter the name or IP address of the service provider's Server. • Host Name - Enter the domain name allocated to you by the service provider.
Additional Standard Client Settings	These options are available if using the standard client. • Enable Wildcard – If selected, traffic sent to sub-domains (of your Domain name) will also be forwarded to you. • Enable backup MX – If enabled, you must enter the <i>Mail Exchanger</i> address below. • Mail Exchanger – If the setting above is enabled, enter the address of the backup Mail Exchanger.

Multi DMZ

This feature allows each WAN port IP address to be associated with one (1) computer on your LAN. All outgoing traffic from that PC will be associated with that WAN port IP address. Any traffic sent to that IP address will be forwarded to the specified PC, allowing unrestricted 2-way communication between the "DMZ PC" and other Internet users or Servers.

Note:

The "DMZ PC" is effectively outside the Firewall, making it more vulnerable to attacks. For this reason, you should only enable the DMZ feature when required

Multi DMZ 

Enable	Name	Public IP Address (WAN)	Private IP Address (LAN)
☒		192.168.12.107	192.168.8.107
☒		192.168.9.108	192.168.8.108
☒		192.168.9.109	192.168.8.109
☒		192.168.9.110	192.168.8.110
☒		192.168.9.111	192.168.8.111
* For Static IP Use *		(ex. xxx.xxx.xxx.xxx)	(ex. xxx.xxx.xxx.xxx)

Enable	Name	WAN	Session	Private IP Address (LAN)
☐		WAN1	DHCP	0.0.0.0
☐		WAN1	DHCP	0.0.0.0
☐		WAN1	DHCP	0.0.0.0
☐		WAN1	DHCP	0.0.0.0
☐		WAN1	DHCP	0.0.0.0
* For Dynamic IP Use *				

Figure 21 Multi DMZ

Settings – Multi DMZ

Enable	Use this to enable or disable the DMZ setting, as required.
Name	Enter a name to assist you to remember this setting. This name has no effect on the operation.
For Static IP	
Public IP address	Enter the WAN port (Internet) IP address you wish to associate to a PC. This IP address must have been allocated to you by your ISP.
Private IP Address (LAN)	Enter the IP address of the PC you wish to associate with this WAN port IP address. This IP address should be fixed, or reserved. (See the Host IP section for details on reserving an IP address.)
For Dynamic IP	
WAN	Select the desired WAN port.

Session	• Select "DHCP" if the IP address on this WAN port is dynamically assigned. You can only select assign one (1) Private (LAN) IP address to each port. • If using multi-session PPPoE, select the desired PPPoE session. These sessions are defined on the Advanced PPPoE screen. You can assign one (1) one (1) Private (LAN) IP address to each PPPoE session.
Private IP Address (LAN)	Enter the IP address of the PC you wish to associate with this WAN port IP address. This IP address should be fixed, or reserved. (See the Host IP section for details on reserving an IP address.)

SNMP

This section is only useful if you have SNMP (Simple Network Management Protocol) software on your PC. If you have SNMP software, you can use a standard MIB II file with the Twin Wan Router.

SNMP

System Information	
Contact Person	Supervisor
Device Name	Dual-Port Boardband Gateway
Physical Location	Head Office

Trap Targets	
Target IP Address 1	0.0.0.0 (ex. xxx.xxx.xxx.xxx)
Target IP Address 2	0.0.0.0
Target IP Address 3	0.0.0.0

Figure 22 SNMP

Settings – SNMP

System Information	• Contact Person – The name of the person responsible for this device. • Device name – The name of the Twin Wan Router. • Physical Location – The location of the Twin Wan Router.
Trap Targets	Enter the IP address of any targets (PCs running SNMP software) to which you want traps to be sent. All traps are level 1.

Advanced Features

This screen allows you to change some advanced settings:

- **NAT** – NAT (Network Address Translation) is the technology which allows a number of LAN PCs to share one (1) Internet IP address. These settings rarely need to be changed.
- **Remote Access Configuration** – This feature allows you to manage the Twin Wan Router via the Internet. You can restrict access to a specified IP address or address range.
- **External Filters Configuration** – These settings determine whether or not the Twin Wan Router should respond to ICMP (ping) requests received from the WAN port.
- **Interface Binding** – Use these to ensure that certain traffic is sent by a particular WAN port, and thereby a particular ISP account. These settings are only useful if using both WAN ports.

Advanced Feature 

NAT Configuration				
NAT Routing	☒ Enable			
TCP Timeout	300	seconds	UDP Timeout	120 seconds
TCP Window Limit	0	(value 0 indicating no limit)	TCP MSS Limit	0 (value 0 indicating no limit)

Remote Access Configuration		
Remote Upgrade	☐ Enable	
Remote Web-based Setup	☒ Enable	Port 8080
Allowed IP Range	From 0.0.0.0 To 0.0.0.0 (ex. xxx.xxx.xxx.xxx)	

External Filters Configuration				
External ICMP Filters	☐ Block Selected Packet Types			
	☒ Echo Request	☒ Timestamp Request	☒ Information Request	☒ Address Mask Request

Interface Binding		
SMTP Binding	☐ Enable	
	☒ WAN 1	☐ WAN 2

Protocol & Port Binding			
Enable	Protocol	Port Range	WAN
☐	TCP	0 ~ 0	WAN1
☐	TCP	0 ~ 0	WAN1
☐	TCP	0 ~ 0	WAN1
☐	TCP	0 ~ 0	WAN1
☐	TCP	0 ~ 0	WAN1

Figure 23: Advanced Features

Settings – Advanced Features

NAT Configuration	• NAT Routing – NAT (Network Address Translation) is the technology which allows one (1) WAN (Internet) IP address to be used by many LAN users. • If you disable NAT, Internet access is only possible if all PCs are configured with valid Internet IP addresses. (The Twin Wan Router needs 2 addresses, 1 for the LAN port, and 1 for the WAN port.) • Generally, NAT is disabled only when you wish to use the Twin Wan Router as a Static Router. • TCP Timeout – Enter the desired value to use on both WAN ports. The default is 300. • UDP Timeout – Enter the desired value to use on both WAN ports. The default is 120. • TCP Window Limit – Enter the desired value to use on both WAN ports. The default is 0 (no limit). • TCP MSS Limit – Enter the required MSS (Maximum Segment Size) to use on both WAN ports. The default is 0 (no limit).
Remote Access Configuration	• Remote Upgrade – If enabled, you can use the supplied Windows program to remotely upgrade the Firmware. If not enabled, upgrades must be performed by a PC on the LAN. • Remote Web-based setup – If enabled, access to the Web-based interface is available via the Internet. (See below for details.) If not enabled, access is only available to PCs on the LAN. • Port – The port number used when connecting remotely. See below for details. • Allowed IP range – Remote access is only available to the IP addresses entered here. • Leaving these fields blank will allow access by all PCs. • These addresses must be Internet IP addresses, not addresses on the local LAN. • To specify a single address, enter it in both fields.
External Filters Configuration	These settings determine whether or not the Twin Wan Router should respond to ICMP (ping) requests received from the WAN port. • Block Selected packet types – This acts as "master" switch. If checked, the selected packet types are blocked. Otherwise, they are accepted. • Echo Request, Timestamp Request, Select the packet types you wish to block, using the checkboxes.

Interface Binding	SMTP (Simple Mail Transport Protocol) Binding Unless you are using E-mail accounts from different ISPs on each port, you can ignore these settings. Some ISPs configure their E-mail Servers so they will not accept E-mail from IP addresses not allocated by themselves. If you are using accounts from different ISPs, sending E-mail over the wrong port may result in non-acceptance of the mail. In this case, you can use these settings to correct the problem. • Enable - If enabled, the port you specify below will be used for all outgoing SMTP traffic. If not enabled, either port will be used. • WAN 1 / WAN 2 – Select the desired port. Protocol and Port Binding Use these settings if you wish to ensure that particular traffic is sent by a particular WAN port, and thereby a particular ISP account. • Enable - Enable or disable each item as required. • Protocol - Select the protocol used by the traffic you wish to configure. • Port Range - Enter the beginning and end of the port range used by the traffic you wish to configure. If only a single port is used, enter the port number in both fields. • WAN - Select the port you wish this traffic to use.
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Using Remote Web-based Setup

To connect to the Twin Wan Router from a remote PC via the Internet:

1. Ensure that both your PC and the Twin Wan Router are connected to the Internet.
2. Start your Web Browser.
3. In the "Address" bar, enter "HTTP://" followed by the Internet IP Address of the Twin Wan Router. If the port number is not 80, the port number is also required. (After the IP Address, enter ":" followed by the port number.)
e.g.

HTTP://123.123.123.123:8080

- This example assumes the WAN IP Address is 123.123.123.123, and the port number is 8080.
- If using the **Dynamic DNS** feature, you can connect using the domain name allocated to you.
e.g.

HTTP://my_domain_name.dyndns.org:8080

Admin Password Screen

The password screen allows you to assign a password to the Twin Wan Router.

Admin. Password 

Administrator Password	
User Name	admin
Password	
Verify Password	

Figure 24: Admin Password Screen

Enter the desired password, re-enter it in the *Verify Password* field, then save it.

When you connect to the Dual-Port Broadband Gateway with your Browser, you will be prompted for the password when you connect, as shown below.

Enter Network Password  

 Please type your user name and password.

Site: 192.168.1.1

Realm: NeedPassword

User Name:

Password:

☐ Save this password in your password list

Figure 25: Password Dialog

- Enter "Admin" for the *User Name*.
- Enter the password for the Twin Wan Router, as set on the *Admin Password* screen above.

5: Advanced LAN Configuration

Overview

These screens and settings are provided to deal with non-standard situations, or to provide additional options for advanced users.

Existing DHCP Server

If your LAN already has a DHCP Server, and you wish to continue using it, the following configuration is required.

- The DHCP Server function in the Twin Wan Router must be **disabled**. This setting is on the **LAN & DHCP** screen.
- Your DHCP Server must be configured to provide the Twin Wan Router's LAN IP address as the "Default Gateway".
- Your DHCP Server must provide correct DNS addresses to the PCs.

Routing

This section is only relevant if your LAN has other Routers or Gateways.

- If you don't have other Routers or Gateways on your LAN, you can ignore the **Static Routing** page completely.
- If your LAN has other Gateways and Routers, you must configure the Static Routing screen as described below. You also need to configure the other Routers.

Static Routing

Static Routing Entry

Entry Index

Select

Network Address

0.0.0.0

Netmask

0.0.0.0

Gateway

0.0.0.0

Interface

LAN

Metric

0

(2~15)

Add

Delete

Update

Reset

Routing List

Index	Destination IP	Subnet Mask	Gateway	Interface	Metric	Type
0	192.168.9.1	255.255.255.255	192.168.9.1	WAN1	15	System
0	192.168.1.2	255.255.255.255	192.168.1.2	LAN	15	System
1	192.168.10.1	255.255.255.255	192.168.10.1	WAN2	2	Manual
0	192.168.9.7	255.255.255.255	192.168.9.7	WAN1	15	System

Figure 26: Static Routing

Note:

If there is an entry or entries in the Routing table with an Index of zero (0), these are System entries. You can not modify or delete these entries.

Settings – Static Routing

Entry Index	• If adding a new entry, ignore this field. • To edit an existing entry, select it from the list, and click the "Select" button. The screen will then update with the data for the selected entry. • If the Index is 0, this is a System entry which you can neither delete nor modify.
Network Address	The network address of the remote LAN segment. For standard class "C" LANs, the network address is the first 3 fields of the Destination IP Address. The 4th (last) field can be left at 0.
Netmask	The Network Mask for the remote LAN segment. For class "C" networks, the default mask is 255.255.255.0
Gateway	The IP Address of the Gateway or Router which the Twin Wan Router must use to communicate with the destination above. (NOT the router attached to the remote segment.)
Interface	Select the correct interface, usually "LAN". The "WAN" interface is only available if NAT (Network Address Translation) is disabled.
Metric	The number of "hops" (routers) to pass through to reach the remote LAN segment. The shortest path will be used.

Configuring Other Routers on your LAN

All traffic for devices not on the local LAN must be forwarded to the Twin Wan Router, so that they can be forwarded to the Internet. This is done by configuring other Routers to use the Twin Wan Router as the *Default Route* or *Default Gateway*, as illustrated by the example below.

Static Routing - Example

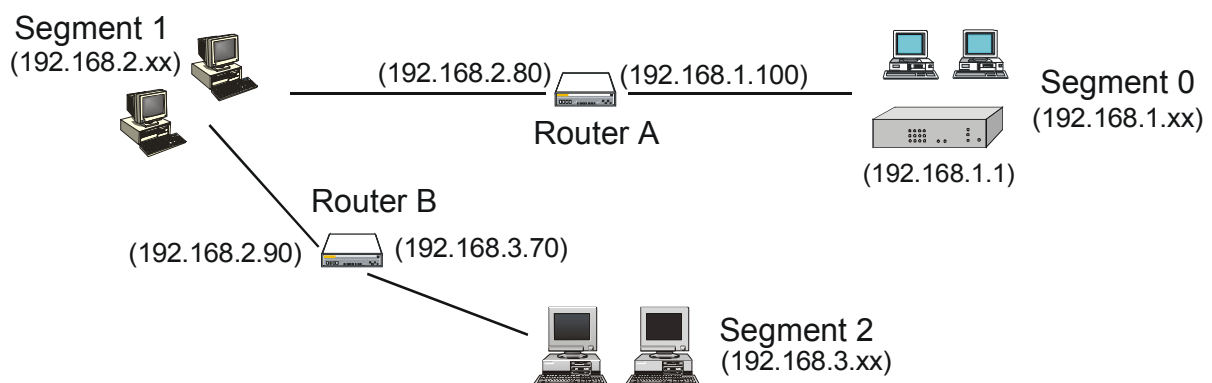


Figure 27: Routing Example

For the Twin Wan Router's Routing Table

For the LAN shown above, with 2 routers and 3 LAN segments, the Twin Wan Router requires 2 entries as follows.

Entry 1 (Segment 1)	
Destination IP Address	192.168.2.0
Network Mask	255.255.255.0
Gateway IP Address	192.168.1.100
Interface	LAN
Metric	2
Entry 2 (Segment 2)	
Destination IP Address	192.168.3.0
Network Mask	255.255.255.0 (Standard Class C)
Gateway IP Address	192.168.1.100
Interface	LAN
Metric	3

For Router A's Default Route

Destination IP Address	0.0.0.0
Network Mask	0.0.0.0
Gateway IP Address	192.168.1.1
Metric	2

For Router B's Default Route

Destination IP Address	0.0.0.0
Network Mask	0.0.0.0
Gateway IP Address	192.168.2.80
Interface	LAN
Metric	3

6: Operation and Status

Operation

Once both the Twin Wan Router and the PCs are configured, operation is automatic.

However, there are some situations where additional Internet configuration may be required:

Refer to *Chapter 4 - Advanced Features* for further details.

System Status

Use the **System Status** link on the main menu to view this screen.

System Status

WAN Information	WAN 1	WAN 2
Connection Status	Connected	Disconnected
Connection Type	Static IP	DHCP Force Renew
IP Address	210.200.240.173	0.0.0.0
Subnet Mask	255.255.255.0	0.0.0.0
Gateway	210.200.240.174	0.0.0.0
DNS IP Address	168.95.1.1	0.0.0.0
MAC Address	00-09-A3-00-05-4E	00-09-A3-00-05-4F

LAN Information

IP Address	192.168.1.1
Subnet Mask	255.255.255.0
MAC Address	00-09-A3-00-05-4D
DHCP Server	Enabled

Device Information

Firmware Version	Ver 2.0 Rel 00
Virtual Server	Enabled
Special Application	Disabled
DMZ	Disabled
Hardware ID	00000004200043000000000000

Refresh

Restart

Restore Factory Defaults

Figure 28: System Status

Data – System Status

WAN Information	• Connection Status – Current status – either "Connected" or "Not connected". • Connection Type – The type of connection used – DHCP, Fixed IP, PPPoE, or PPTP. • "Force Renew" button– Only available if using a dynamic IP address (DHCP). Clicking this button will perform a DHCP "Renew" transaction with the ISP's DHCP server. This will extend the period for which the current WAN IP address is allocated to you. • IP Address – The IP address of the Twin Wan Router, as seen from the Internet. This IP Address is allocated by the ISP (Internet Service Provider) • Subnet Mask – The Network Mask (Subnet Mask) for the IP Address above. • Domain Name IP Address – The address of the current DNS (Domain Name Server). • MAC Address – The MAC (physical) address of the Twin Wan Router, as seen from the Internet.
LAN Information	• IP Address – The LAN IP Address of the Twin Wan Router. • Subnet Mask – The Network Mask (Subnet Mask) for the IP Address above. • MAC Address – The MAC (physical) address of the Twin Wan Router, as seen from the local LAN. • DHCP Server – The status of the DHCP Server function - either "Enabled" or "Disabled".
Device Information	• Firmware Version – Version of the Firmware currently installed. • Virtual Server – Status of the <i>Virtual Server</i> feature – either "Enabled" or "Disabled". • Special Applications – Status of the <i>Special Applications</i> feature – either "Enabled" or "Disabled". • DMZ – Status of the <i>DMZ</i> feature – either "Enabled" or "Disabled". • Hardware ID – The manufacturers ID for this particular device.
Buttons	• Refresh – Update the data on screen. • Restart – Restart (reboot) the Twin Wan Router. • Restore Factory Defaults – This will delete all existing settings, and restore the factory default settings. See below for details.

Restore Factory Defaults

When the "Restore Factory Defaults" button on the **Status** screen above is clicked, the following screen is displayed.

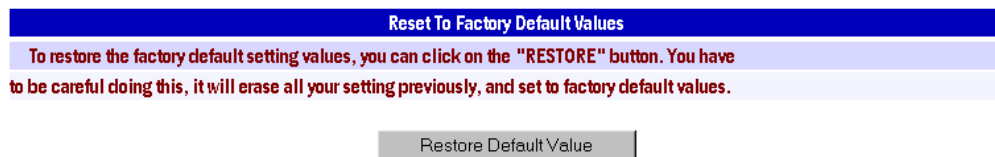


Figure 29: Restore Factory Defaults

If the "Restore Default Value" button on this screen is clicked:

- ALL of your settings will be erased.
- The default IP address, password and ALL other settings will be restored to the factory default values.
- The DHCP server function will be enabled.

These changes may mean that the current connection is invalid, and you will have to re-connect to the Twin Wan Router using its default IP address (192.168.1.1).

WAN Status

Use the **WAN Status** link on the main menu to view this screen.

WAN Status

?

NAT Statistics		WAN 1	WAN 2
Connection Status		Connected	Connected
Default Loading Share		50%	50%
Current Loading Share		0 % (0/1)	0 % (0/1)
Current Loading	Sessions	0	0
	Bytes	0	0
	Packets	0	0
Current Bandwidth	Download Speed	0	0
	Upload Speed	0	0
Check NAT Detail			
Interface Statistics		WAN 1	WAN 2
Interface Usage		83%	16%
Over All	Bytes received	34396	16009
	Bytes transmitted	52961	1382
	Total	87658	17391
Refresh Restart Counters			

Figure 30 WAN Status

Data – System Status

NAT Statistics	This section displays data for each WAN port. • Connection status – This will display either <i>Connected</i> or <i>Not Connected</i>. • Default Loading Share - The default traffic loading between the WAN ports. • Current Loading Share – The current traffic loading between the WAN ports. • Current Loading – The number of sessions, Bytes and Packets currently being processed on each port. • Current Bandwidth – The current Download and Upload speeds on each WAN port. • "Check NAT Detail" will display the NAT Status screen, described below.
Interface Statistics	This section displays cumulative statistics. Use the "Restart Counter" button to restart these counters when required.

NAT Status

This screen is displayed when you click the "Check NAT Detail" button on the **WAN Status** screen.

NAT Status 			
LAN IP Info.			
IP Address	192.168.1.1	Mask Address	255.255.255.0
Active WAN IP Info.			
IP Address	192.168.9.5	Mask Address	255.255.255.0
IP Address	192.168.9.14	Mask Address	255.255.255.0
NAT Timeouts			
TCP	300	UDP	120
TCP Prosperity			
Max. Segment Size	0	Max. Windows Size	0
NAT Traffic			
	Local To Internet		Internet To Local
Bytes	15		1021
Packets	11		682
Connections			
TCP	0	UDP	0
ICMP			0
Created	3	Deleted	3
View Connection List			
Errors			
Checksum	0	Retries	0
Bad Packets			0
Misc.			
Total IP Packets	479	Reserved Address	247
Refresh			

Figure 31 NAT Status

Data – NAT Status

LAN IP Info	• IP Address – The LAN IP Address of the Twin Wan Router. • Mask Address – The Network Mask (Subnet Mask) for the IP Address above.
Active WAN IP Info	There is one (1) row for each active connection. For each connection, the following data is shown. • IP Address – The WAN (Internet) IP Address of the Twin Wan Router. • Mask Address – The Network Mask (Subnet Mask) for the IP Address above
NAT Timeouts	This displays the current timeout values for TCP and UDP connections.
TCP Prosperity	This displays the MSS (Maximum Segment Size) and Maximum Windows size for TCP packets.
NAT Traffic	This section displays statistics for both outgoing (LAN to Internet) and Incoming (Internet to Local) traffic.
NAT Connections	This displays the current number of active connections. For further details, click the "View Connection" list button.
Errors	Statistics are displayed for Checksum errors, number of retries, and number of bad packets.
Misc.	This displays the total IP packets and reserved address.

Appendix A

Specifications

Model	Twin Wan Router
Dimensions	245mm (W) x 137mm (D) x 30mm (H)
Operating Temperature	0° C to 40° C
Storage Temperature	-10° C to 70° C
Network Protocol:	TCP/IP
Network Interface:	6 Ethernet: 4 * 10/100BaseT (RJ45) auto-Switching Hub ports for LAN devices 2 * 10BaseT (RJ45) for WAN
LEDs	12 LAN 2 WAN 3 System Status 1 Power
External Power Adapter	9 V 1A DC

FCC Statement

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

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

CE Marking Warning

This is a Class B product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Appendix B

Windows TCP/IP Setup

Overview

TCP/IP Settings

If using the default Twin Wan Router settings, and the default Windows 95/98/ME/2000 TCP/IP settings, no changes need to be made.

- By default, the Twin Wan Router will act as a DHCP Server, automatically providing a suitable IP Address (and related information) to each PC when the PC boots.
- For all non-Server versions of Windows, the default TCP/IP setting is to act as a DHCP client.
- If you wish to check your TCP/IP settings, the procedure is described in the following sections.
- If your LAN has a Router, the LAN Administrator must re-configure the Router itself. Refer to *Chapter 5 – Advanced LAN Setup* for details.

Checking TCP/IP Settings - Windows 9x/ME:

1. Select *Control Panel - Network*. You should see a screen like the following:

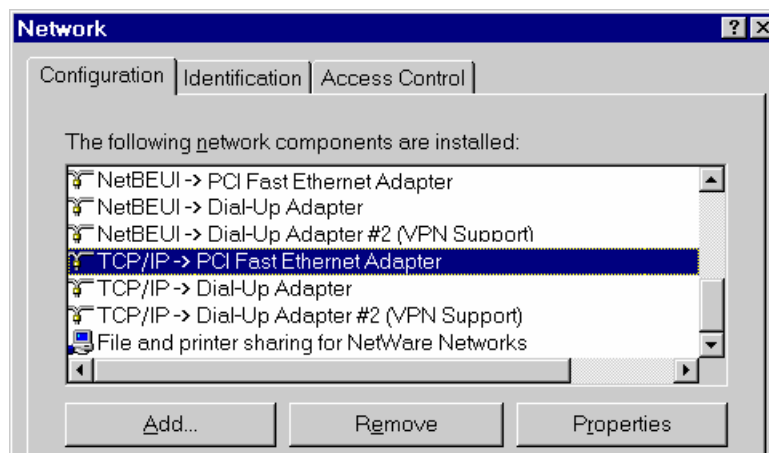


Figure 32: Network Configuration

2. Select the *TCP/IP* protocol for your network card.
3. Click on the *Properties* button. You should then see a screen like the following.

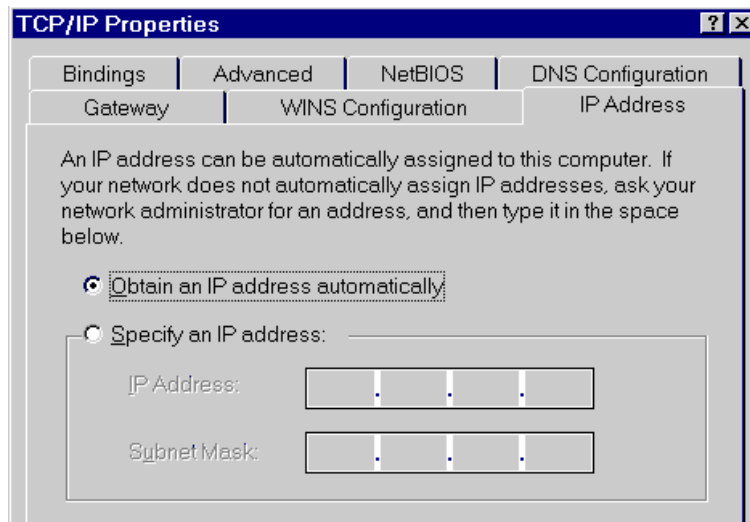


Figure 33: IP Address (Win 95)

Ensure your TCP/IP settings are correct, as follows:

Using DHCP

To use DHCP, select the radio button *Obtain an IP Address automatically*. This is the default Windows settings.

Restart your PC to ensure it obtains an IP Address from the Twin Wan Router.

Using "Specify an IP Address"

If your PC is already configured, check with your network administrator before making the following changes:

- If the *DNS Server* fields are empty, select *Use the following DNS server addresses*, and enter the DNS address or addresses provided by your ISP, then click *OK*.
- On the *Gateway* tab, enter the Twin Wan Router's IP address in the *New Gateway* field and click *Add*, as shown below. (Your LAN administrator can advise you of the IP Address they assigned to the Twin Wan Router.)

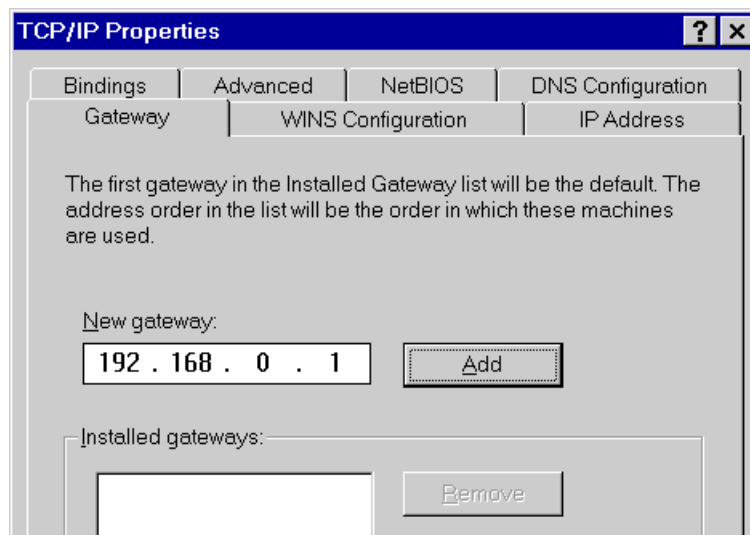


Figure 34: Gateway Tab (Win 95/98)

- On the *DNS Configuration* tab, ensure *Enable DNS* is selected. If the *DNS Server Search Order* list is empty, enter the DNS address provided by your ISP in the fields beside the *Add* button, then click *Add*.

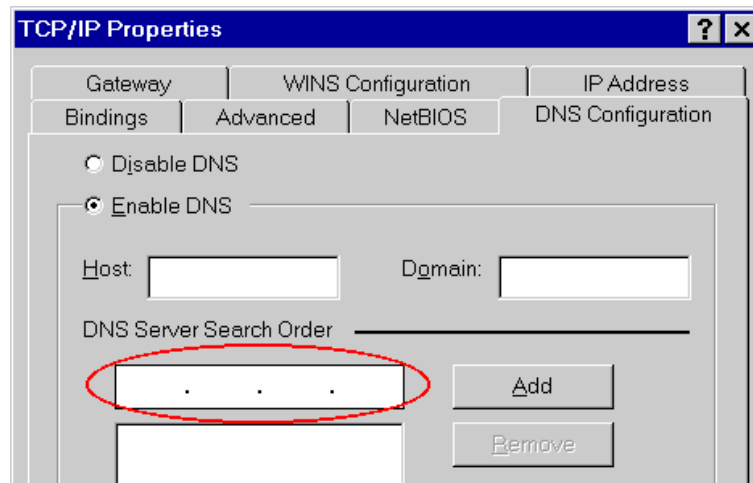


Figure 35: DNS Tab (Win 95/98)

Checking TCP/IP Settings - Windows 2000:

- Select *Control Panel - Network and Dial-up Connection*.
- Right click the *Local Area Connection* icon and select *Properties*. You should see a screen like the following:

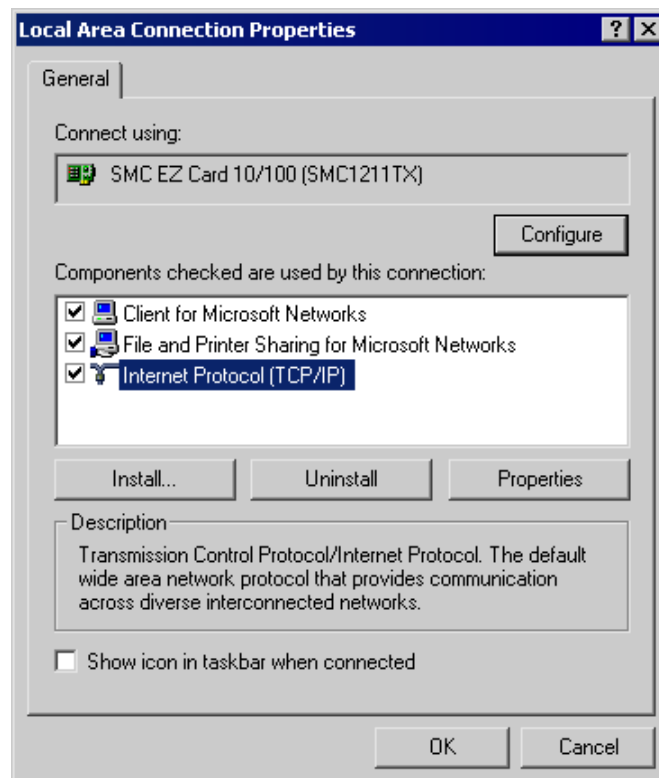


Figure 36: Network Configuration (Win 2000)

- Select the *TCP/IP* protocol for your network card.
- Click on the *Properties* button. You should then see a screen like the following.

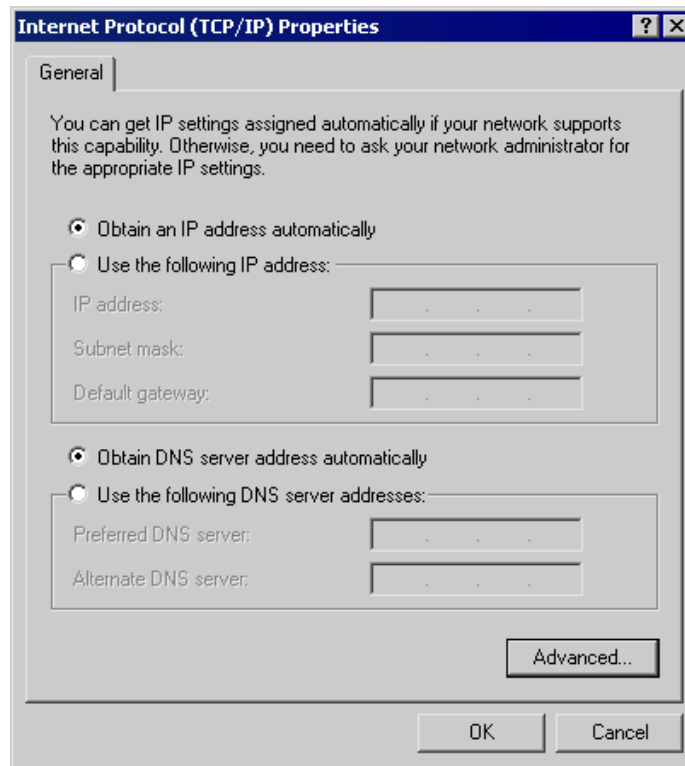


Figure 37: TCP/IP Properties (Win 2000)

5. Ensure your TCP/IP settings are correct:

Using DHCP

To use DHCP, select the radio button *Obtain an IP Address automatically*. This is the default Windows settings.

Restart your PC to ensure it obtains an IP Address from the Twin Wan Router.

Using a fixed IP Address ("Use the following IP Address")

If your PC is already configured, check with your network administrator before making the following changes:

- Enter the Twin Wan Router's IP address in the *Default gateway* field and click *OK*. (Your LAN administrator can advise you of the IP Address they assigned to the Twin Wan Router.)
- If the *DNS Server* fields are empty, select *Use the following DNS server addresses*, and enter the DNS address or addresses provided by your ISP, then click *OK*.

Checking TCP/IP Settings - Windows XP:

1. Select Control Panel - Network Connection.
2. Right click the *Local Area Connection* and choose *Properties*. You should see a screen like the following:

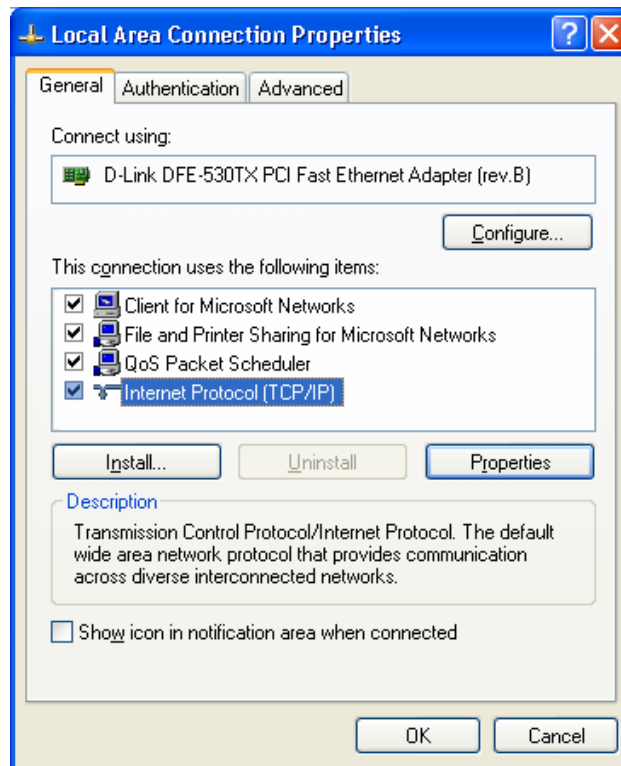


Figure 38: Network Configuration (Windows XP)

3. Select the *TCP/IP* protocol for your network card.
4. Click on the *Properties* button. You should then see a screen like the following.

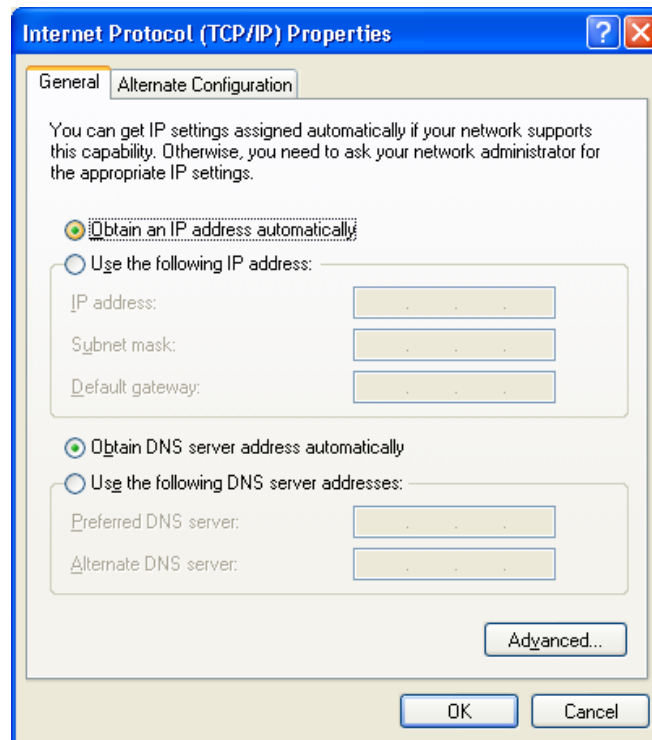


Figure 39: TCP/IP Properties (Windows XP)

5. Ensure your TCP/IP settings are correct.

Using DHCP

To use DHCP, select the radio button *Obtain an IP Address automatically*. This is the default Windows settings.

Restart your PC to ensure it obtains an IP Address from the Twin Wan Router.

Using a fixed IP Address ("Use the following IP Address")

If your PC is already configured, check with your network administrator before making the following changes.

- Enter the Twin Wan Router's IP address in the *Default gateway* field and click *OK*. (Your LAN administrator can advise you of the IP Address they assigned to the Twin Wan Router.)
- If the *DNS Server* fields are empty, select *Use the following DNS server addresses*, and enter the DNS address or addresses provided by your ISP, then click *OK*.

Appendix C

Troubleshooting

Overview

This chapter covers some common problems that may be encountered while using the Twin Wan Router and some possible solutions to them. If you follow the suggested steps and the Twin Wan Router still does not function properly, contact your XiNCOM tech support.

General Problems

Problem 1: Can't connect to the Twin Wan Router to configure it.

Solution 1: Check the following:

- The Twin Wan Router is properly installed, LAN connections are OK, and it is powered ON.
- Ensure that your PC and the Twin Wan Router are on the same network segment. (If you don't have a router, this must be the case.)
- If your PC is set to "Obtain an IP Address automatically" (DHCP client), restart it.
- If your PC uses a Fixed (Static) IP address, ensure that it is using an IP Address within the range 192.168.1.2 to 192.168.1.254 and thus compatible with the Twin Wan Router's default IP Address of 192.168.1.1. Also, the Network Mask should be set to 255.255.255.0 to match the Twin Wan Router.
In Windows, you can check these settings by using *Control Panel-Network* to check the *Properties* for the TCP/IP protocol.

Internet Access

Problem 1: When I enter a URL or IP address I get a time out error.

Solution 1: A number of things could be causing this. Try the following troubleshooting steps.

- Check if other PCs work. If they do, ensure that your PCs IP settings are correct. If using a Fixed (Static) IP Address, check the Network Mask, Default gateway and DNS as well as the IP Address.
- If the PCs are configured correctly, but still not working, check the Twin Wan Router. Ensure that it is connected and ON. Connect to it and check its settings. (If you can't connect to it, check the LAN and power connections.)
- If the Twin Wan Router is configured correctly, check your Internet connection (DSL/Cable modem etc) to see that it is working correctly.

Problem 2: Some applications do not run properly when using the Twin Wan Router.

Solution 2: The Twin Wan Router processes the data passing through it, so it is not transparent.

Use the *Special Applications* feature to allow the use of Internet applications which do not function correctly.

If this does solve the problem you can use the *DMZ* function. This should work with most applications, but:

- It is a security risk, since the firewall is disabled for the *DMZ* PC.
- Only one (1) PC can use this feature.