

TWIN WAN FAMILY XC-DPG Series

XC-DPG402



XC-DPG502



XC-DPG602



User Guide

Welcome to XiNCOM's user guide for the Twin WAN Family network appliances. The Twin WAN Routers supported within are the XC-DPG402, XC-DPG502, and XC-DPG602. This user guide provides an in-depth description to all the XC-DPG series various features and their functions, installation, basic uses and setups, troubleshooting, and specification listings.

TABLE OF CONTENTS

1: INTRODUCTION	3
Twin WAN Router Features	3
Warranty Information	5
Package Contents	5
Physical Details	6
2: BASIC SETUP.....	10
Overview.....	10
1: Configuring the XC-DPG Twin WAN Router for your LAN	10
3: ADVANCED PORT SETUP.....	21
Overview.....	21
Port Options.....	21
Load Balance	23
Advanced PPPoE.....	25
Advanced PPTP	26
4: ADVANCED CONFIGURATION	27
Overview.....	27
Host IP Setup	27
Access Filter	31
Block URL	33
Virtual Servers	34
Custom Virtual Servers.....	36
Special Applications	38
Dynamic DNS	40
Multi DMZ	42
UPnP (Available in the XC-DPG502)	43
SNMP	44
Email Alert.....	45
Syslog.....	46
Advanced Features	48
7: QOS CONFIGURATION (502 AND 602 ONLY)	52
Overview.....	52
QoS Setup	52
Policy Configuration.....	53
Admin Password Screen.....	55
Upgrade Firmware	56
5: ADVANCED LAN CONFIGURATION.....	57
Overview.....	57
Existing DHCP Server	57
Routing.....	57
6: QOS CONFIGURATION (AVAILABLE IN XC-DPG502ONLY)	61
Overview.....	61
QoS Setup	61
Policy Configuration.....	62
7: OPERATION AND STATUS	63
Operation.....	63

System Status	63
WAN Status	66
NAT Status	67
APPENDIX A SPECIFICATIONS	69
APPENDIX B WINDOWS TCP/IP SETUP	70
Overview.....	70
TCP/IP Settings.....	70
APPENDIX C TROUBLESHOOTING.....	76
Overview.....	76
General Problems.....	76
Internet Access.....	76

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Document Version: 1.5

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1: Introduction

Congratulations on the purchase of your new Twin WAN Router. The Twin WAN Router provides you with shared internet across the entire LAN along with Load Balancing and Automatic Failover features.

This is the most typical network setup where the router is used to accommodate.

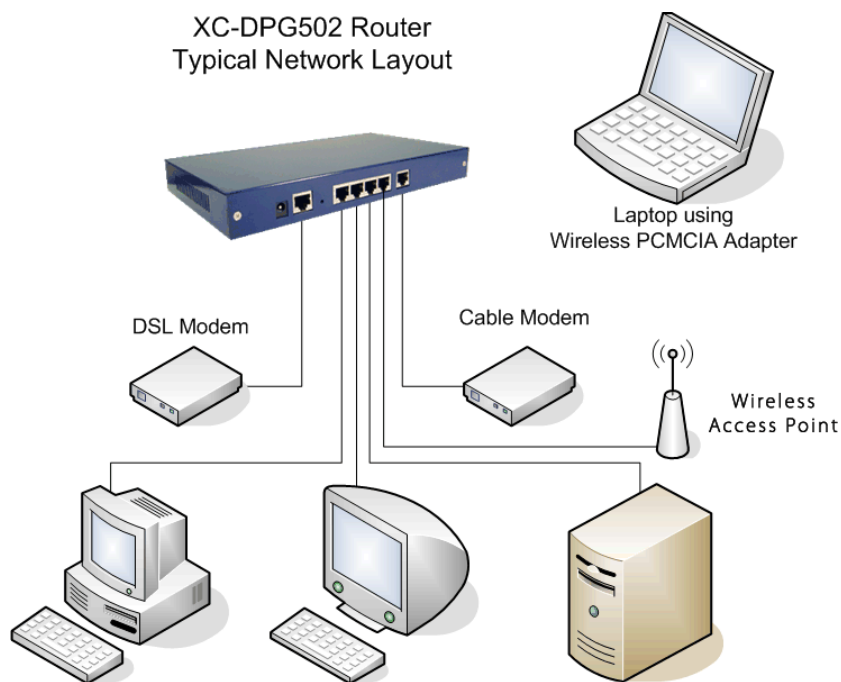


Figure 1: XC-DPG Twin WAN Router (502 Shown)

Twin WAN Router Features

- **2 x 10/100 WAN (Wide Area Network) Ports:** The XC-DPG502 incorporates 2-port 10/100 WAN ports, complete with auto-crossover for easy connection to an existing network. All popular DSL and Cable Modems and connection methods are supported, including Fixed IP, Dynamic IP, PPPoE, even multiple-session PPPoE.
- **4 x 10/100 LAN (Local Area Network) Ports:** The XC-DPG502 incorporates a 4-port 10/100 N-Way Ethernet Switch, complete with auto-crossover for easy connection to an existing network.
- **VPN Security:** Full VPN Endpoint with support for up to 100 VPN tunnels using the PPTP and IPsec encryption protocol.
- **Load Balancing:** Allows you to use both WAN ports simultaneously, increasing your available bandwidth. You can set load balance type by Packets, Bytes RX+TX and Sessions. Load balancing is session based

- **Stateful Packet Firewall:** Protects your network using advanced Stateful Packet Inspection against unwanted access from the outside along with malicious hackers, DoS and DDoS attacks.

Twin WAN Router Features (Continued)

- **Advanced NAT features:** Access Filters, DMZ, DDNS, Remote Management, Dynamic or Static Routing, Special Applications, URL blocking, Virtual Servers, SNMP. Supports up to 100,000 concurrent sessions on the 502 and 602 and 10,000 on the 402.
- **DHCP Server:** The built-in DHCP server assigns up to 253 dynamic IP addresses.
- **Multi DMZ:** Fully supports situations where your ISP allocates multiple IP addresses, up to 8 static IP addresses per port.
- **Transparent Bridge Mode:** Used when you would like to locate a firewall or a server behind the router while utilizing the routers load balancing and automatic failover function. Supports multiple IP addresses through the ARP proxy.
- **Remote Management:** Full configuration of the router through the internet, you can even upload updated firmware.
- **Special Applications:** Used for applications where the port number used for the response is different to the port number used by the sender. Such as online games and chats.
- **Access Filter:** 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.
- **URL Blocking:** Block access to web sites by the URL or IP address to increase employee productivity or prevent them to visit undesirable websites.
- **Virtual Servers:** Allow Internet users to access Internet servers on your LAN. Easy configuration of standard servers such as Web, FTP or E-Mail servers, plus the ability to define your own Server types if required.
- **Dynamic DNS:** Dynamic DNS allows use of a Domain name even with a dynamic IP address.
- **QoS (Available only on the XC-DPG-502 and 602 models):** Allows you to schedule and direct network traffic to speed up critical applications.
- **UPNP (Available only on the XC-DPG-502 and 602 models):** Universal plug and play for easy connectivity making it much more user friendly.
- **Remote Management:** The Twin WAN Router can be configured and managed by any computer on your LAN (Local Area Network) and if the router is configured to access the internet it can be configured remotely.
- **Multi-Segment LAN Support:** LANs (Local Area Network) containing one or more segments are supported via the Twin WAN Routers built in Static Routing table.
- **E-mail Alert:** When one of the WAN ports disconnects or the router detects an intruder, an E-mail will be sent out to the system administrator advising him of such.
- **System Log:** This feature generates real time hardware and software information about the router and is very useful to monitor the device.

Warranty Information

- 30 day money back guarantee
- 5-Year Limited Warranty
- Technical support and firmware upgrade for the life of the product.

If you need technical support you can contact us via Live Chat on our website, email us at support@xincom.com or call:

888.494.6266 (USA/Canada)

503.982.1328 (International)

You can download and read all about our latest firmware releases and view our technical support library can be viewed by going to <http://support.xincom.com>

Package Contents

The following items should be included:

- The XiNCOM XC-DPG402, 502 or a 602 Twin WAN Router
- 9V 1A Power Adapter (402 only)
- 5V 1.5A Power Adapter (502 and 602 only)
- Quick Installation Guide
- CD-ROM containing the user guide and supporting software

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

Physical Details

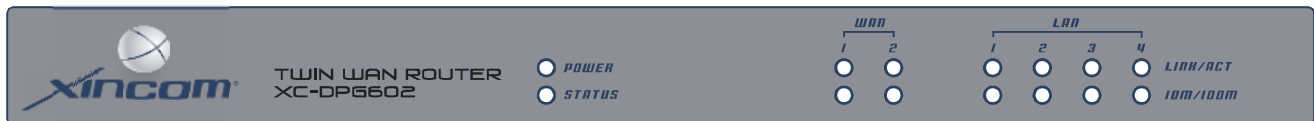
Front Panel of XC-DPG402:



Front Panel of XC-DPG502:



Front Panel of XC-DPG602:



Operation of the Front Panel LED is as follows:

LAN

- LINK/ACT** ON – Physical connection or data in/out.
 OFF – No physical connection.
- 10M/100M** ON – The corresponding LAN port is using 100BaseT.
 OFF – 10BaseT connection on the corresponding LAN port or no connection.

WAN

- LINK/ACT** ON – Physical connection to the Broadband modem on WAN port 1 or 2 is established.
- 10M/100M** OFF – No physical connection on WAN port 1/2.
 ON – Physical connection using 100BaseT on WAN port 1 or 2 is established.
 OFF – 10BaseT connection or no connection on WAN port 1/2.

System

- Power** OFF – No power.
 ON – Normal Operation
- Status** OFF – Normal operation.
 ON – Firmware not loaded or Hardware error.
 Blinking – Data in/out

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

LED Action	Condition
WAN1 LINK/ACT & 10M/100M LEDs flash alternatively.	Firmware Download in progress.
WAN1 LINK/ACT & 10M/100M LEDs flash concurrently.	MAC address not assigned.
WAN1 LINK/ACT & 10M/100M LEDs solid On	SDRAM error
WAN2 LINK/ACT & 10M/100M LEDs solid On	Timer/Interrupt error
LAN1 LINK/ACT & 10M/100M LEDs solid On	LAN/WAN error

Rear Panel

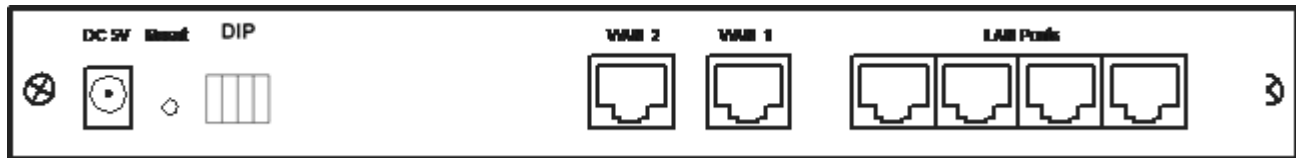


Figure 1: Rear panel of XC-DPG402 shown

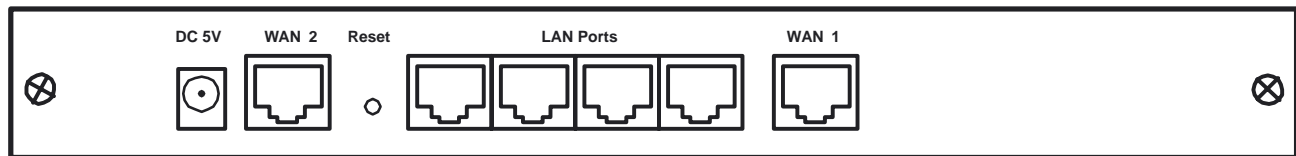


Figure 2: Rear Panel of XC-DPG502 and 602 shown

- WAN 1** Connect the broadband modem here. If not available contact your ISP.
- WAN 2** Connect the 2nd Broadband Modem here, if available.
- 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 or switch.

- DIP Switches** See the following DIP switch table (402 only).

- Reset Button** When pressed and released, the XC-DPG Twin WAN Router will reboot (restart) within 1 second. It resets to default configuration when it is held for more than 5 seconds.

- DC 9V 1A** Connect the supplied power adapter here (402 only).

- DC 5V 1.5A** Connect the supplied power adapter here (502 and 602 only).

Default Settings

When the XC-DPG 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 (FOR 402 ONLY: Used DIP switches on the back to disable the DHCP Server if needed, refer to page 8)
- *User Name: admin*
- Password is cleared (no password)

TFTP Download

This setting can be used to update the firmware on your router when HTTP update is unsuccessful or unavailable:

1. Save your configuration in the router menu "Upgrade Firmware" you can also use the TFTP utility.
2. Power off the router and set DIP switches 3 and 4 down (402 only).
3. Power on the XC-DPG Twin WAN Router.
4. Use the supplied Windows TFTP utility or any other TFTP client program to apply the new firmware. If using the supplied Windows TFTP program, the screen will look like the following example.

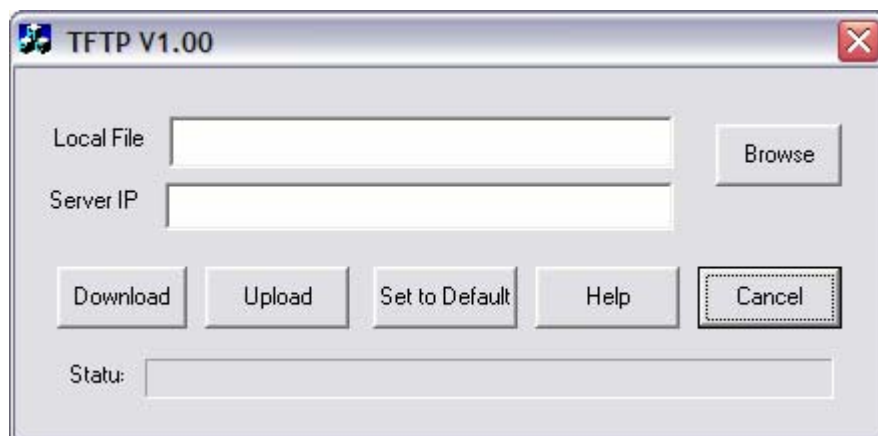


Figure 3: Windows TFTP utility

- Enter the name of the firmware file on your PC, or click the "Browse" button to locate the file.
 - Enter the LAN IP address of the XC-DPG Twin WAN Router in the "Server IP" field (default is 192.168.1.1)
 - Click "Download" to send the file to the XC-DPG Twin WAN Router.
5. When downloading is finished the router is reset to defaults .

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 XC-DPG Twin WAN Router (use the "Download" button).
- Set the XC-DPG Twin WAN Router to its default values (use the "Set to Default" button).

2: Basic Setup

Overview

Basic Setup of your XC-DPG Twin WAN Router involves the following steps:

1. Connect the XC-DPG Twin WAN Router to one (1) PC, and configure it for your LAN.
2. Connect your XC-DPG Twin WAN Router to your LAN, and connect the Broadband Modem or Modems.
3. Configure your XC-DPG Twin WAN Router for Internet Access.
4. Configure PCs on your LAN to use the XC-DPG 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.

1: Configuring the XC-DPG Twin WAN Router for your LAN

1. Using the included LAN cable, connect your computer to one of the routers LAN ports.
2. Connect the power adapter and power up the XC-DPG 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 will then obtain a new IP address from the XC-DPG Twin WAN Router.
4. Start your default 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.



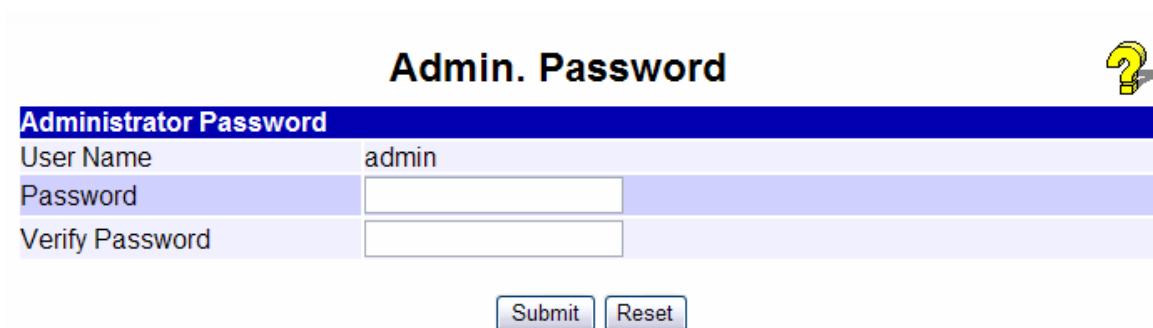
Figure 4: Password Dialog

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 XC-DPG Twin WAN Router is properly installed, LAN connection is OK, and it is powered ON.

8. 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."



Administrator Password	
User Name	admin
Password	<input type="text"/>
Verify Password	<input type="text"/>

Figure 5: Home Screen (Admin Password) XC-DPG502 shown

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 (ex. 255.255.255.0)				
DHCP Server Configuration					
DHCP Server Setup	<input checked="" type="radio"/> Enable <input type="radio"/> Disable				
Client Lease Time	60 Minutes				
Client Default DNS	DNS 1: 192.168.1.1 DNS 2: 192.168.1.1				
DHCP IP Address Range					
Offered Range	192.168.1.2 ~ 192.168.1.100 (ex. xxx.xxx.xxx.xxx)				
Free Entries	99				
ARP Proxy (Used only when LAN and WAN are on the same IP segment)					
Internal LAN IP Range	<input type="checkbox"/> Enable 0.0.0.0 ~ 0.0.0.0 (ex. xxx.xxx.xxx.xxx)				
<input type="button" value="Submit"/> <input type="button" value="Reset"/>					
DHCP Client List					
Name	Mac Address	IP Address	Type	Status	Time Left
<input type="button" value="Previous Page"/> <input type="button" value="Next Page"/> <input type="button" value="Refresh"/>					

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 XC-DPG Twin WAN Router in your LAN.*

Settings – LAN & DHCP

IP Address	IP address for the XC-DPG 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 XC-DPG Twin WAN Router is attached (the same value as the PCs on that LAN segment).
DHCP Server Configuration	<ul style="list-style-type: none"> • DHCP Server Setup - If Enabled, the XC-DPG 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>) • DHCP Server Setup - 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 XC-DPG Twin WAN Router as the <i>Default Gateway</i>. See Chapter 5: Advanced LAN Setup for

	<p>further details.</p> <ul style="list-style-type: none"> • Client Lease Time - The time expired which client' IP address is released and renewed again after. • Client Default DNS – The default DNS which are used by clients, but they can be changed.
DHCP IP Address Range	<ul style="list-style-type: none"> • 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	<p>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.</p> <p>If enabled, enter the IP address range used on your LAN.</p>
DHCP Client List	<p>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.</p> <ul style="list-style-type: none"> • 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. • Type – Indicates IP address to be dynamic or static. • 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. • Time Left – The time expired since which IP address is leased.

2. Installing the XC-DPG Twin WAN Router in your LAN

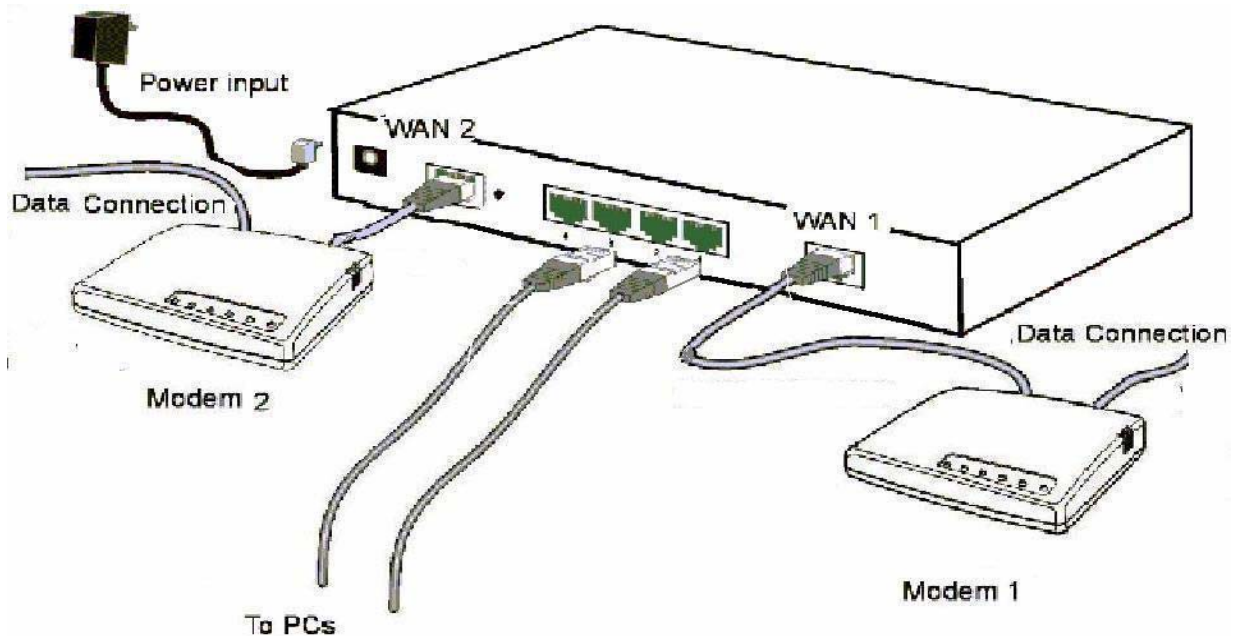


Figure 7: Installation Diagram

1. Ensure the XC-DPG 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 XC-DPG 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 XC-DPG Twin WAN Router.
 - Both 10BaseT and 100BaseT connections can be used simultaneously.
 - If you need to connect the XC-DPG Twin WAN Router to another Hub, just use a standard LAN cable to connect any port on the XC-DPG Twin WAN Router to a standard port on another hub. Any LAN port on the XC-DPG 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 XC-DPG 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 XC-DPG 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	<input checked="" type="radio"/> Enable	<input type="radio"/> Disable	<input type="radio"/> Backup	<input checked="" type="radio"/> Enable	<input type="radio"/> Disable	<input type="radio"/> Backup
Connection Type	Dynamic IP <input type="button" value="v"/>			Dynamic IP <input type="button" value="v"/>		
Address Info.(Static IP only)						
IP Address	<input type="text" value="0.0.0.0"/>			<input type="text" value="0.0.0.0"/>		
Subnet Mask	<input type="text" value="0.0.0.0"/>			<input type="text" value="0.0.0.0"/>		
Gateway	<input type="text" value="0.0.0.0"/>			<input type="text" value="0.0.0.0"/>		
PPPoE / PPTP Dialup (For PPPoE or PPTP)						
PPTP Connection	<input type="checkbox"/> Enable			<input type="checkbox"/> Enable		
PPTP Server IP Address	<input type="text" value="0.0.0.0"/>			<input type="text" value="0.0.0.0"/>		
User Name	<input type="text"/>			<input type="text"/>		
Password	<input type="text"/>			<input type="text"/>		
Host Name (Optional for PPPoE)	<input type="text"/>			<input type="text"/>		
DNS (Optional for dynamic IP)						
DNS 1	<input type="text" value="0.0.0.0"/>			<input type="text" value="0.0.0.0"/>		
DNS 2	<input type="text" value="0.0.0.0"/>			<input type="text" value="0.0.0.0"/>		
DNS 3	<input type="text" value="0.0.0.0"/>			<input type="text" value="0.0.0.0"/>		
Optional						
Host Name	<input type="text" value="DBG002BE2"/>			<input type="text" value="DBG002BE3"/>		
Domain Name	<input type="text"/>			<input type="text"/>		
MAC Address	<input type="text" value="00-09-A3-00-2B-E2"/>			<input type="text" value="00-09-A3-00-2B-E3"/>		

Figure 8: Primary Setup Screen

Settings – Primary Setup

Connection Mode	<p>Select the appropriate setting:</p> <ul style="list-style-type: none"> • 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	<p>Check the data supplied by your ISP, and select the appropriate option.</p> <ul style="list-style-type: none"> • 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. <p>Note:</p> <p>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.</p>
Address Info	<p>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.</p>
PPPoE / PPTP Dialup	<p>This is for <i>PPPoE</i> and <i>PPTP</i> users only.</p> <ul style="list-style-type: none"> • 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. • Host name (Optional for PPPoE), this field is used by a Host to uniquely associate an access concentrator to a particular Host request. <p>Note:</p> <p>There are additional PPPoE/PPTP options on the Port Options screen.</p> <p>To use multiple PPPoE sessions on either port, configure the Advanced PPPoE screen.</p>
DNS	<p>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.</p>

Optional	<ul style="list-style-type: none">• 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 PC's MAC address (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 XC-DPG 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 XC-DPG 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 XC-DPG 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 XC-DPG 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 XC-DPG 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 On Line) through the XC-DPG 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 "XC-DPG 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 "XC-DPG Twin WAN Router" location.

Macintosh Clients

From your Macintosh, you can access the Internet via the XC-DPG 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 XC-DPG Twin WAN Router's IP Address.
- Ensure your *DNS* settings are correct.

Linux Clients

To access the Internet via the XC-DPG Twin WAN Router, it is only necessary to set the XC-DPG 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 XC-DPG 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



Connection Validation	WAN 1	WAN 2	
Health Check	<input checked="" type="checkbox"/> Enable	<input checked="" type="checkbox"/> Enable	
Alive Indicator	<input type="text"/>	<input type="text"/>	
MTU	1514 Bytes	1514 Bytes	
PPPoE/PPTP Connection Option	WAN 1	WAN 2	
Auto Dialup	<input checked="" type="checkbox"/> Enable	<input checked="" type="checkbox"/> Enable	
Auto Disconnect After idle for	0 minutes	0 minutes	
Echo Time	30 seconds	30 seconds	
Echo Retry	3 times	3 times	
Transparent Bridge Option	WAN 1	WAN 2	
Bridge Mode	<input type="checkbox"/> Enable	<input type="checkbox"/> Enable	
Traffic Management	<input checked="" type="radio"/> Strict Binding	<input type="radio"/> Loose Binding	<input type="radio"/> Load Balancing
Arp Tables	32 Entries	<input type="button" value="Clear Tables"/>	<input type="button" value="View Tables"/>


Figure 9: Port Options XC-DPG502 shown

Settings – Port Options

Connection Validation	<ul style="list-style-type: none">• Alive Indicator – This is the IP address used to check if the WAN connection is operating. The XC-DPG 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.• Health Check – Disables the ICMP packets being sent to the router from the XC-DPG.
PPPoE / PPTP Connection Options	<ul style="list-style-type: none">• Auto Dialup – If set to <i>Enable</i> 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.
Transparent Bridge Option	<ul style="list-style-type: none">• Bridge Mode - If set to Enable, this WAN port doesn't use NAT & Load Balance function when LAN/WAN IP have the real IP addresses on the same network segment.• Traffic Management – <i>Strict Binding</i>, when the WAN port becomes disconnected, all the bridge mode client stay on that WAN port. <i>Loose Binding</i>, when the WAN port becomes disconnected the traffic becomes redirected to the 2nd WAN port. <i>Load Balancing</i>, the computers are using both lines.

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 %

NAT Statistics		WAN 1	WAN 2
Connection Status		Disconnected	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		0%	0%
Over All	Bytes received	0KB	0KB
	Bytes transmitted	0KB	0KB
	Total	0KB	0KB

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

<p>Load Balance Configuration</p>	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> Bytes rx+tx – Traffic is measured by Bytes received and transmitted. Packets rx+tx – Traffic is measured by Packets received and transmitted. Sessions established – Traffic is measured by Sessions established on each WAN port. 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. <p>Click the "Update" button to save your changes.</p>
--	--

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	<ul style="list-style-type: none">• 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 PPPoE Session

WAN IP Account

User Name
 Password
 Verify Password
 IP Address (ex. xxx.xxx.xxx.xxx)
 Host Name (Optional)

Action

Connection Status

WAN	Session	IP Address	Status


Figure 11: Advanced PPPoE

Settings – Advanced PPPoE

WAN Port PPPoE Session	Select the desired Port and Session, 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	<ul style="list-style-type: none"> 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. Host Name – This field is used by a Host to uniquely associate an access concentrator to a particular Host request.
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 IP Account

User Name
 Password
 Verify Password
 Server IP Address (ex. xxx.xxx.xxx.xxx)
 Static IP Address (only for static ISP account)

Action

Connection Status

WAN	IP Address (for PPTP)	Status

Figure 12: Advanced PPTP

Settings – Advanced PPTP

WAN Port	Select the desired Port, 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	<ul style="list-style-type: none"> 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
- Upgrade Firmware

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



Host & Group List							
Name	MAC Address	Group	DHCP	Reserve IP Address	WAN Binding	WAN Port	PPPoE Session
Previous Page Next Page Refresh							

Host Network Binding	
Binding WAN Port / Session	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Binding Method	<input type="radio"/> Strict Binding <input checked="" type="radio"/> Loose Binding
Select WAN Port	WAN 1
Select PPPoE Session	Session 1

[Add](#) [Delete](#) [Update](#) [Reset](#)

Host Network Identity	
Host List	<input type="text"/> Select
Host Name	<input type="text"/>
MAC Address	00-00-00-00-00-00 ex.(FF-FF-FF-FF-FF-FF)
Select Group	Default
Reserve in DHCP	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Reserved IP Address	0.0.0.0 ex.(xxx.xxx.xxx.xxx)

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 *Physical Address* or *Network Adapter Address*. Enter the MAC address of this host.
- **Select Group** – Select the group you wish to put this host into.
- **Reserve in DHCP** – Select *Enable* 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 *Enable*. Otherwise, ignore this field.

Host Network Binding	<ul style="list-style-type: none"> • 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. • Binding Method – Suppose your PC is bound to WAN1 port, now you are selecting “Strict Binding”. If WAN1 port is disconnected, your packets cannot go out through WAN2 port, if WAN2 port is still alive. If you are selecting “Loose Binding” then when WAN1 port is disconnected, your packets will automatically go to WAN2, if WAN2 is alive. • Select WAN Port/Select PPPoE session – If the setting above is <i>Enable</i>, select the desired Port and Session. Otherwise, ignore these settings. <p>Note: Multiple PPPoE sessions are defined on the Advanced PPPoE screen.</p>
Buttons	<ul style="list-style-type: none"> • 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 XC-DPG Twin WAN Router.
Host & Group List	This table shows the current bindings.

Static Routing:

If there is more than one router on a network, this Routing table must be configured because the router needs to know what packet goes to which router. A routing table entry is required for each LAN segment on the network.



Static Routing

Static Routing Entry

Entry Index	<input type="text" value="0"/>	<input type="button" value="Select"/>	
Network Address	<input type="text" value="0.0.0.0"/>		
Netmask	<input type="text" value="0.0.0.0"/>		
Gateway	<input type="text" value="0.0.0.0"/>		
Interface	<input type="text" value="LAN"/>	<input type="button" value="v"/>	
Metric	<input type="text" value="0"/>	<input type="text" value="(2~15)"/>	

Routing List

Index	Destination IP	Subnet Mask	Gateway	Interface	Metric	Type

Figure 144: Static Routing Setup

Static Routing Entry:

Entry Index: If the index is 0, this is a System entry you cannot edit or delete. For other entries, you can update or delete your previously entered settings by selecting from this pull down menu. After you select an entry, click the **select** button to display and modify your settings. Click Update when finished.

Network Address: is the network address of the remote network segment.

Metric is the number of routers that must be traversed to reach the remote LAN segment.

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

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

ICMP Filters

Block Selected Packet Types
 Echo Request
 Timestamp Request
 Information Request
 Address Mask Request

User-Defined Ports To Block

Name	TCP / UDP Packets	Port No. Range
<input type="text"/>	TCP <input type="button" value="v"/>	0 <input type="text"/> ~ 0 <input type="text"/>
<input type="text"/>	TCP <input type="button" value="v"/>	0 <input type="text"/> ~ 0 <input type="text"/>
<input type="text"/>	TCP <input type="button" value="v"/>	0 <input type="text"/> ~ 0 <input type="text"/>
<input type="text"/>	TCP <input type="button" value="v"/>	0 <input type="text"/> ~ 0 <input type="text"/>
<input type="text"/>	TCP <input type="button" value="v"/>	0 <input type="text"/> ~ 0 <input type="text"/>
<input type="text"/>	TCP <input type="button" value="v"/>	0 <input type="text"/> ~ 0 <input type="text"/>
<input type="text"/>	TCP <input type="button" value="v"/>	0 <input type="text"/> ~ 0 <input type="text"/>
<input type="text"/>	TCP <input type="button" value="v"/>	0 <input type="text"/> ~ 0 <input type="text"/>
<input type="text"/>	TCP <input type="button" value="v"/>	0 <input type="text"/> ~ 0 <input type="text"/>
<input type="text"/>	TCP <input type="button" value="v"/>	0 <input type="text"/> ~ 0 <input type="text"/>

Figure 15: Access Filter

Settings – Block URL

Setup Access Group	<p>This allows you have different access rights for different Groups of PCs.</p> <ul style="list-style-type: none"> • 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	<p>Select the desired option for this Group:</p> <ul style="list-style-type: none"> • 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	<p>Select the services you wish to block. The current group will not be able to use any services which are checked.</p>
ICMP Filters	<p>A set of filters that prevents certain types of packets from going out on the WAN interface.</p>
User-defined Ports to Block	<p>This section is optional. It allows you to define your own filters if required. For each filter, the following information is required.</p> <ul style="list-style-type: none"> • 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.

Settings – Block URL

Access Group	<p>This allows you have different blocking rules for different Groups of PCs.</p> <ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 XC-DPG Twin WAN Router.

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

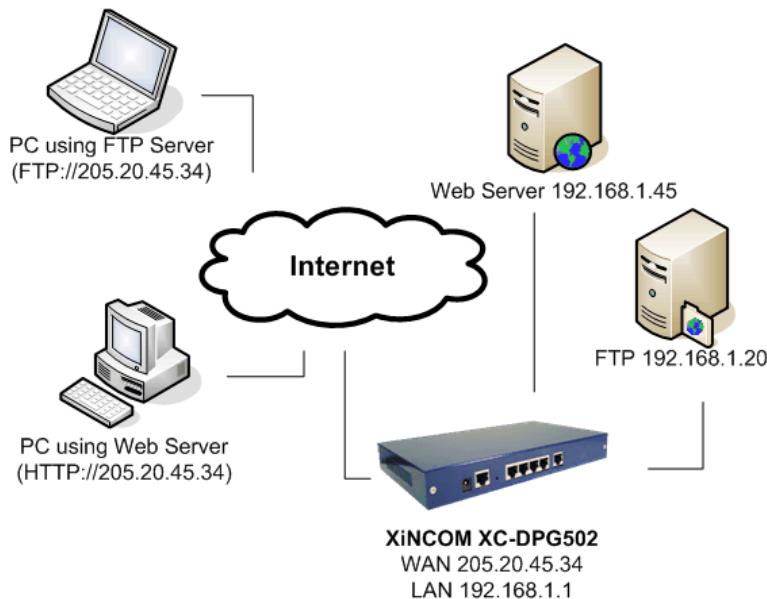


Figure 17: Virtual Servers shown with XC-DPG502

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 XC-DPG 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
<input type="checkbox"/>	DNS	0.0.0.0 <small>ex.(xxx.xxx.xxx.xxx)</small>
<input type="checkbox"/>	Finger	0.0.0.0
<input type="checkbox"/>	FTP Server	0.0.0.0
<input type="checkbox"/>	Gopher	0.0.0.0
<input type="checkbox"/>	IPsec	0.0.0.0
<input type="checkbox"/>	Mail Server (POP3)	0.0.0.0
<input type="checkbox"/>	Mail Server (SMTP)	0.0.0.0
<input type="checkbox"/>	News (NNTP)	0.0.0.0
<input type="checkbox"/>	PPTP	0.0.0.0
<input type="checkbox"/>	Telnet	0.0.0.0
<input type="checkbox"/>	Web Server (HTTP)	0.0.0.0
<input type="checkbox"/>	Whois	0.0.0.0


Figure 18 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

Custom Server Configuration

Server Name

State Enable Disable

Server IP (ex.xxx.xxx.xxx)

Protocol Type

LAN Port Range ~

WAN Port Range ~

Interface Binding

Custom Virtual Server List

State	Server Name	Server IP	Protocol	LAN Port Range	WAN Port Range	Interface Binding

Figure 19: 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: <ul style="list-style-type: none"> 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 <i>Host IP</i> 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,

	<p>enter it in both fields.</p> <ul style="list-style-type: none"> • 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 • Interface Binding – This selection allows the servers binding WAN1 port or WAN2 port, or even both WAN1 and WAN2 ports together.
Buttons	<ul style="list-style-type: none"> • 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	<p>This table shows details of all Custom Virtual Servers which have been defined.</p>

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 XC-DPG 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 Name Item ▼ Select

Special Application Configuration

Enable	Name	Outgoing Protocol	Outgoing Port Range	Incoming Protocol	Incoming Port Range
<input type="checkbox"/>	<input style="width: 80%;" type="text"/>	TCP ▼	0 ~ 0	TCP ▼	0 ~ 0

Add
Delete
Update
Cancel

Special Application List

State	Name	Outgoing Protocol	Outgoing Port Range	Incoming Protocol	Incoming Port Range

Figure 20: Special Applications

Settings – Special Applications

Select Special Application Name	
Select Name Item	This lists any special applications, which are currently defined. <ul style="list-style-type: none"> 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, and 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	<ul style="list-style-type: none"> • 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 XC-DPG 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>
- 3322 is available in China at <http://www.3322.org>

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 XC-DPG 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 3322 (In China)

WAN Port Binding

WAN 1 WAN 2

TZO Custom Dynamic DNS Service

Key

E-Mail

Domain

Standard Client or 3322

User Name

Password

Verify Password

Server

Host Name

Additional Standard Client or 3322 Settings

Enable Wildcard

Enable Backup MX

Mail Exchanger

Figure 21: Dynamic DNS

Settings – Dynamic DNS

Dynamic DNS Service	<p>Use this to Enable/Disable the Dynamic DNS feature, and select the required service provider.</p> <ul style="list-style-type: none"> • 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. • 3322(in China) – This is available in China. It is similar to “Standard client”
WAN Port Binding	<ul style="list-style-type: none"> • 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	<p>If you have registered for this service, complete these fields.</p> <ul style="list-style-type: none"> • 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 or 3322	<p>If you have registered for this service, complete these fields.</p> <ul style="list-style-type: none"> • User Name – Enter the user name recorded by the service provider. • Password – Enter the password recorded by the service provider. • Verity 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 or 3322 Settings	<p>These options are available if using the standard client.</p> <ul style="list-style-type: none"> • 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	WAN	Session	Private IP Address (LAN)
<input type="checkbox"/>	<input type="text"/>	WAN 1 ▾	DHCP ▾	0.0.0.0
<input type="checkbox"/>	<input type="text"/>	WAN 1 ▾	DHCP ▾	0.0.0.0

For Dynamic IP Use


Figure 22 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. You are allowed up to 8 IP addresses per port total.
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	<ul style="list-style-type: none"> 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.)

UPnP (Available in the XC-DPG502)

With UPnP (Universal Plug & Play) function, it can easily setup and configure an entire network, enable discovery and control of networked devices and services.



UPnP

UPnP Option

UPnP Enable Disable

UPnP Port Mapping List

Enable	Application Name	External Port	Protocol	Internal Port	Internal IP
Disabled	DNS	53 ~ 53	UDP	53 ~ 53	0.0.0.0
Disabled	FINGER	79 ~ 79	UDP	79 ~ 79	0.0.0.0
Disabled	FTP	21 ~ 21	TCP	21 ~ 21	0.0.0.0
Disabled	GOPHER	70 ~ 70	TCP	70 ~ 70	0.0.0.0
Disabled	IPSEC	500 ~ 500	UDP	500 ~ 500	0.0.0.0
Disabled	POP3	110 ~ 110	TCP	110 ~ 110	0.0.0.0
Disabled	SMTP	25 ~ 25	TCP	25 ~ 25	0.0.0.0
Disabled	NNTP	119 ~ 119	TCP	119 ~ 119	0.0.0.0
Disabled	PPTP	1723 ~ 1723	TCP	1723 ~ 1723	0.0.0.0
Disabled	TELNET	23 ~ 23	TCP	23 ~ 23	0.0.0.0
Disabled	HTTP	80 ~ 80	TCP	80 ~ 80	0.0.0.0
Disabled	WHOIS	6677 ~ 6677	TCP	6677 ~ 6677	0.0.0.0

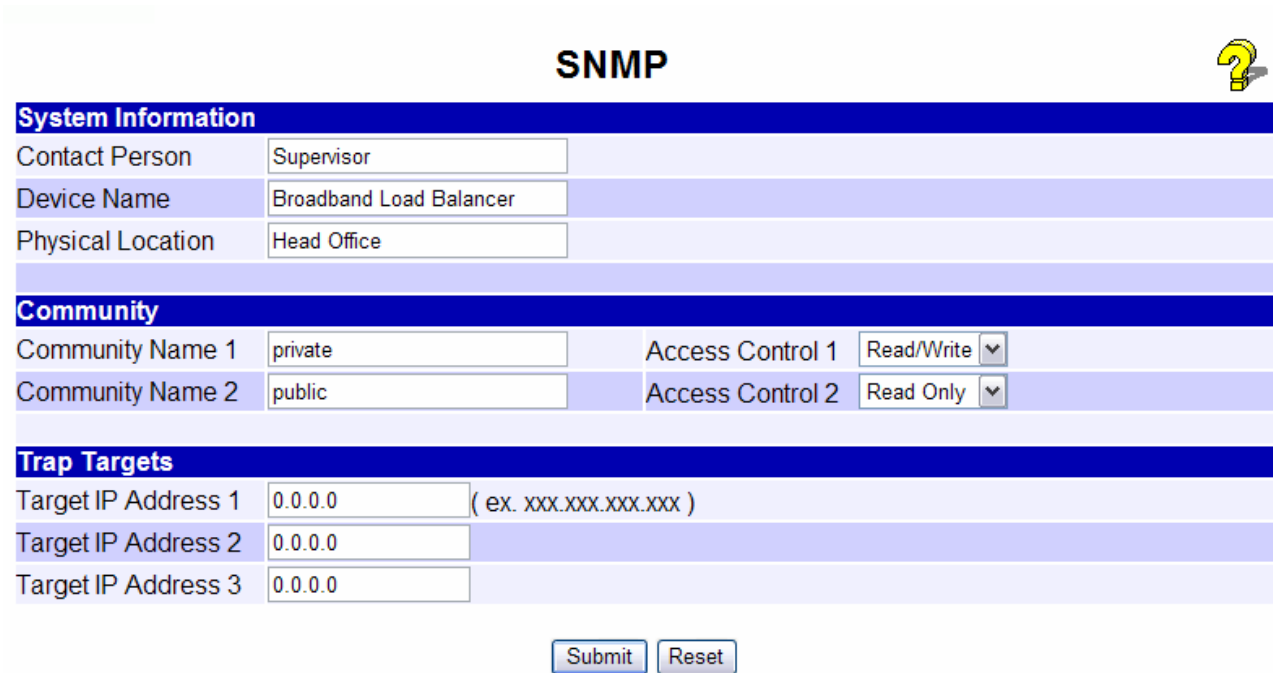
Figure 22 UPnP

Settings – UPnP

UPnP Option	<p>If you Enable UPnP, then this two wan router will become one of the entire local network. You can find out there is an DPG502 icon show up on network neighborhood on the window XP OS.</p> <p>Every time you add a new network device with port mapping, The new network device will appear on the mapping list.</p>
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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 XC-DPG Twin WAN Router.



The image shows a web-based configuration page for SNMP. At the top center is the title "SNMP" in bold black text, and to its right is a yellow question mark icon. Below the title is a blue header bar with the text "System Information" in white. Under this header, there are three rows of form fields: "Contact Person" with the value "Supervisor", "Device Name" with "Broadband Load Balancer", and "Physical Location" with "Head Office". Below this is another blue header bar with the text "Community" in white. Underneath, there are two rows: "Community Name 1" with "private" and "Access Control 1" with a dropdown menu showing "Read/Write"; and "Community Name 2" with "public" and "Access Control 2" with a dropdown menu showing "Read Only". Below that is a third blue header bar with the text "Trap Targets" in white. Underneath, there are three rows for "Target IP Address 1", "Target IP Address 2", and "Target IP Address 3", each with a text input field containing "0.0.0.0" and a small note "(ex. xxx.xxx.xxx.xxx)". At the bottom of the form are two buttons: "Submit" and "Reset".

Figure 23: SNMP

Settings – SNMP

System Information

- **Contact Person** – The name of the person responsible for this device.
- **Device name** – The name of the XC-DPG Twin WAN Router.
- **Physical Location** – The location of the XC-DPG 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.

Email Alert


This feature will send an warning Email, inform system administrator that one of the WAN ports was disconnected.

Email Alert – You can choose to enable or disable it to send a warning email.

Email Sender Address – It is an email address which will send the warning email.

Email (SMTP) Server Address – It is an email server address the warning email will be sent to.

Email Recipient Address – It is an email address of system administrator the email will be sent to.



Email Alert

Enable / Disable Email Alert		
Email Alert	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	
Email Alert Configuration		
	WAN1	WAN2
Email Sender Address	<input type="text"/>	<input type="text"/>
Email (SMTP) Server Address	<input type="text"/>	<input type="text"/>
Email (SMTP) Server User Name	<input type="text"/>	<input type="text"/>
Email (SMTP) Server Password	<input type="text"/>	<input type="text"/>
Email Recipient Address	<input type="text"/>	<input type="text"/>
Excessive Ping Notification		
Ping Attack Notification	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	
Pings Before Notification	<input type="text" value="0"/> times/min.	

Figure 24: Email Alert

Settings – Email Alert


Email Alert	<ul style="list-style-type: none"> Enable – This will enable email alert to send a warning email when WAN port was disconnected. Disable – This will disable email alert not to send a warning email when WAN port was disconnected.
Email Sender Address	It is an email address that sends a warning email to a recipient. Inform that a recipient checks if there is any problem on WAN ports or not.
Email (SMTP) Server Address	It is an email sever a warning email will be sent to. If you are enabled email alert. For example: mail.domain.com
Email (SMTP) Server User Name	Username to authenticate with your mail server.
Email (SMTP) Server Password	The password associated with the user name on your mail server.
Email Recipient Address	It is an email address a warning email will be sent to. Usually it is system administrator email address. For example:admin@mail.domain.com

Syslog

This feature can send real time system information on the web page or to the specified PC.

Syslog Configuration – Syslog Configuration allow you where to send system information to other machine or not. There are up to three machines you can choose to send your system log.

Message Status– Messages send only keep when “keep send message” checked. Currently we keep last 100 messages in the RAM area, they will clear when reboot or power off.



Syslog

Syslog Configuration				
Syslog Global	<input type="checkbox"/> Enable		Keep Sent Message	<input type="checkbox"/> Enable
	Enable	IP Address	Port (Default:514)	Log Priority Level
Syslog Server 1	<input type="checkbox"/>	0.0.0.0	514	Emerg. ▾
Syslog Server 2	<input type="checkbox"/>	0.0.0.0	514	Emerg. ▾
Syslog Server 3	<input type="checkbox"/>	0.0.0.0	514	Emerg. ▾

Message Status: 0 messages sent, 100 messages unsent			
Time	Priority	Module	Messages
4 21:43:03	Info.	dhcp	Receive DHCP Request from LAN.
4 21:43:03	Info.	dhcp	Send DHCP ACK to LAN.
4 21:43:53	Info.	dhcp	Send DHCP Discover to WAN1.
4 21:44:00	Info.	dhcp	Receive DHCP Request from LAN.
4 21:44:00	Info.	dhcp	Send DHCP ACK to LAN.
4 21:44:57	Info.	dhcp	Send DHCP Discover to WAN1.
4 21:46:02	Info.	dhcp	Send DHCP Discover to WAN1.
4 21:47:06	Info.	dhcp	Send DHCP Discover to WAN1.
4 21:48:10	Info.	dhcp	Send DHCP Discover to WAN1.
4 21:49:14	Info.	dhcp	Send DHCP Discover to WAN1.
4 21:50:08	Info.	dhcp	Receive DHCP Request from LAN.
4 21:50:08	Info.	dhcp	Send DHCP ACK to LAN.
4 21:50:18	Info.	dhcp	Send DHCP Discover to WAN1.
4 21:50:20	Info.	dhcp	Receive DHCP Request from LAN.
4 21:50:20	Info.	dhcp	Send DHCP ACK to LAN.

Figure 25 Syslog

Syslog Configuration

Syslog Global	<ul style="list-style-type: none">• Enable – Set to “enable”, if you want to send system log messages to other machine.
Keep Sent Messages	<ul style="list-style-type: none">• Enable – Checked this, if you want to keep sent messages, otherwise the sent messages will be deleted.
Syslog Server	<ul style="list-style-type: none">• IP address: Up to 3 syslog servers can be used.• Enable: You can enable or disable each server temporarily.• Port: If your syslog server does not use the default port, you can change it.• Log Priority Level: The syslog messages are divided into 8 levels, from Emergency to Debug level. The lower level, the less messages will be generated. Emergency is the lowest priority level, and Debug is the highest one.

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 XC-DPG 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 XC-DPG 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.
 - **Protocol & Port Binding** – This allows you binding WAN1 or WAN2 ports by selecting TCP/UDP protocol.

Advanced Feature

NAT Configuration			
NAT Routing	<input checked="" type="checkbox"/> 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)
Disable Port Translation	<input type="checkbox"/> Enable	From 0	To 0
	<input type="checkbox"/> Enable	From 0	To 0
	<input type="checkbox"/> Enable	From 0	To 0
	<input type="checkbox"/> Enable	From 0	To 0
	<input type="checkbox"/> Enable	From 0	To 0
Remote Access Configuration			
Remote Upgrade	<input type="checkbox"/> Enable		
Remote Web-based Setup	<input type="checkbox"/> Enable	Port	8080
Allowed IP Range	0.0.0.0 ~ 0.0.0.0 (ex. xxx.xxx.xxx.xxx)		
IDENT Port	<input type="checkbox"/> Enable (Make it seem closed, not stealth)		
External Filters Configuration			
External ICMP Filters			
<input type="checkbox"/> Block Selected Packet Types	<input checked="" type="checkbox"/> Echo Request		
	<input checked="" type="checkbox"/> Timestamp Request		
	<input checked="" type="checkbox"/> Information Request		
	<input checked="" type="checkbox"/> Address Mask Request		

Figure 26a: Advanced Features

Dynamic Routing							
RIP v2	<input type="checkbox"/> Enable						
	<input type="checkbox"/> LAN	<input type="checkbox"/> WAN1	<input type="checkbox"/> WAN2				
DNS Loopback							
Domain Name				Private IP			
				0.0.0.0			
				0.0.0.0			
				0.0.0.0			
				0.0.0.0			
				0.0.0.0			
Interface Binding							
SMTP Binding	<input type="checkbox"/> Enable						
	<input checked="" type="radio"/> WAN 1			<input type="radio"/> WAN 2			
Protocol & Port Binding							
Enable	Source IP	Destination IP	Subnet Mask	Protocol	Port Range	WAN	
<input type="checkbox"/>	0.0.0.0	0.0.0.0	0.0.0.0	TCP	0 ~ 0	WAN 1	
<input type="checkbox"/>	0.0.0.0	0.0.0.0	0.0.0.0	TCP	0 ~ 0	WAN 1	
<input type="checkbox"/>	0.0.0.0	0.0.0.0	0.0.0.0	TCP	0 ~ 0	WAN 1	
<input type="checkbox"/>	0.0.0.0	0.0.0.0	0.0.0.0	TCP	0 ~ 0	WAN 1	
<input type="checkbox"/>	0.0.0.0	0.0.0.0	0.0.0.0	TCP	0 ~ 0	WAN 1	
<input type="checkbox"/>	0.0.0.0	0.0.0.0 ~ 0.0.0.0	0.0.0.0	TCP	0 ~ 0	WAN 1	
<input type="checkbox"/>	0.0.0.0	0.0.0.0 ~ 0.0.0.0	0.0.0.0	TCP	0 ~ 0	WAN 1	
<input type="checkbox"/>	0.0.0.0	0.0.0.0 ~ 0.0.0.0	0.0.0.0	TCP	0 ~ 0	WAN 1	
<input type="checkbox"/>	0.0.0.0	0.0.0.0 ~ 0.0.0.0	0.0.0.0	TCP	0 ~ 0	WAN 1	
<input type="checkbox"/>	0.0.0.0	0.0.0.0 ~ 0.0.0.0	0.0.0.0	TCP	0 ~ 0	WAN 1	

Figure 26b: Advanced Features

Settings – Advanced Features

<p>NAT Configuration</p>	<ul style="list-style-type: none"> <p>NAT Routing – NAT (Network Address Translation) is the technology which allows one (1) WAN (Internet) IP address to be used by many LAN users.</p> <ul style="list-style-type: none"> If you disable NAT, Internet access is only possible if all PCs are configured with valid Internet IP addresses. (The XC-DPG 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 XC-DPG Twin WAN Router as a Static Router. <p>TCP Timeout – Enter the desired value to use on both WAN ports. The default is 300.</p> <p>UDP Timeout – Enter the desired value to use on both WAN ports. The default is 120.</p> <p>TCP Window Limit – Enter the desired value to use on both WAN ports. The default is 0 (no limit).</p> <p>TCP MSS Limit – Enter the required MSS (Maximum Segment Size) to use on both WAN ports. The default is 0 (no limit).</p> <p>Disable Port Translation – Enter the desired port range of all packets which aren't translated via WAN port.</p>
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Remote Access Configuration	<ul style="list-style-type: none"> • 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. <ul style="list-style-type: none"> • 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	<p>These settings determine whether or not the XC-DPG Twin WAN Router should respond to ICMP (ping) requests received from the WAN port.</p> <ul style="list-style-type: none"> • 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.
Dynamic Routing	<ul style="list-style-type: none"> • RIP v2 – This acts as “master” switch. If enabled, the selected WAN or LAN will run RIPv1/v2, otherwise they don’t have RIP function. • LAN, WAN1, WAN2 – If enabled, any WAN or LAN can execute RIP function.
DNS Loopback	<p>When you have some servers on LAN and their domain names have already registered on public DNS. To avoid DNS loopback problem, please enter the following fields.</p> <ul style="list-style-type: none"> • Domain Name – Enter the domain name specified by you for local host/server. • Private IP – Enter the private IP address of your local host/server.
Interface Binding	<p>SMTP (Simple Mail Transport Protocol) Binding</p> <p>Unless you are using E-mail accounts from different ISPs on each port, you can ignore these settings.</p> <p>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.</p> <ul style="list-style-type: none"> • 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 & Port Binding	<p>Protocol and Port Binding</p> <p>Use these settings if you wish to ensure that particular traffic is sent by a particular WAN port, and thereby a particular ISP account.</p> <ul style="list-style-type: none"> • Enable - Enable or disable each item as required. • Source IP - IP address of source which packets are sent from. • Destination IP – IP address of destination which packets are sent to. • Subnet Mask – With subnet mask other than 255.255.255.255, you can make a IP sub-network as your destination. • 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 XC-DPG Twin WAN Router from a remote PC via the Internet:

1. Ensure that both your PC and the XC-DPG 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 XC-DPG 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

7: QoS Configuration (502 and 602 ONLY)

Overview

The Link Balancer provides QoS which supports the high quality of network service. Because it will classify outgoing packets based on some policies defined by users, make some real-time applications to get better response or performance.

QoS Setup

The following web page management are guiding you how to setup QoS and make QoS work

QoS Setup

QoS Features	
Enable QoS	<input checked="" type="checkbox"/> Enable
Queuing Method	Priority Queuing ▾
IP TOS(type of service) Features	
Process TOS Field	<input type="checkbox"/> Enable
Overwrite Policy Priority	<input type="checkbox"/> Yes


Figure 32: QoS Setup

Data – QoS Setup.

QoS Feature	<ul style="list-style-type: none"> ◆ Enable QoS – This will allow users enable QoS function. • Queuing Method – The methods that how you manage your queue.” Priority queuing”. It is one of the first queuing variations to be wildly implemented.
IP TOS (Type of Service) Feature	<ul style="list-style-type: none"> • Process TOS Field –An 8 bits field in the IP packet header designed to contain values indicating how each packet should be handled in the network. If you choose "enable" then it will enable this function to process IP Type of Service field. • Overwrite policy priority – Choose “yes” to set the priority of TOS field in IP packet overwrite the priority defined in policy configuration

Policy Configuration

When you use QoS, you must define some policies to make some packets to have higher priority to pass through.

Policy Configuration 

Policy Priority			
Policy Name List	<input type="text"/>	<input type="button" value="Select"/>	
Policy Name	<input type="text"/>		
Source Address	IP Address <input type="text"/>	<input type="button" value="Select 1"/>	
	From <input type="text" value="0.0.0.0"/>	To <input type="text" value="0.0.0.0"/>	
Destination Address	IP Address <input type="text"/>	<input type="button" value="Select 2"/>	
	From <input type="text" value="0.0.0.0"/>	To <input type="text" value="0.0.0.0"/>	
Protocol Type	TCP <input type="text"/>		
Source Port	From <input type="text" value="0"/>	To <input type="text" value="0"/>	
Destination Port	From <input type="text" value="0"/>	To <input type="text" value="0"/>	
Priority Queue	High <input type="text"/>		
<input type="button" value="Add"/> <input type="button" value="Delete"/> <input type="button" value="Update"/> <input type="button" value="Reset"/>			
Policy List			
Policy Name	Source Address / Port	Destination Address / Port	Protocol Queue

Figure 33: Policy Configuration.

Data – Policy Configuration.

Network Admission Policy	<p>This section identifies each policy</p> <ul style="list-style-type: none"> • Policy Name List – When adding a new Policy, 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. • Policy Name – Enter a suitable name. Generally, you should use the "Policy Name" for the network traffic. • Source Address – Define the source address of packets here. It has two types like IP address or MAC address. If you select IP address, you can define IP address range, otherwise define up to four MAC addresses. • Destination Address – Define the destination address of packets here. The explanation is as the same as above. • Protocol Type – The field defines traffic packet type, i.e. IP, TCP and UDP. • Source Port – Define the source port of packets here. • Destination Port – Define the destination port of packets here. • Priority Queue – It defines a packet if it meets all conditions defined above, it will be serviced with some priority level.
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QoS Setup



QoS Features

Enable QoS Enable

Queuing Method

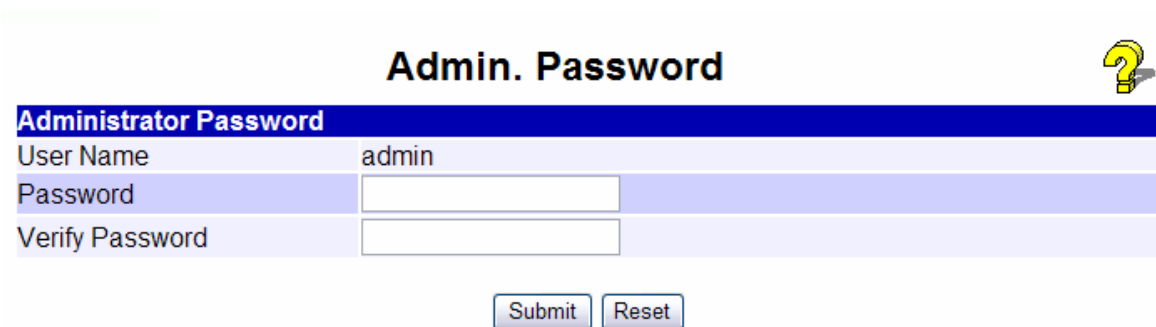
IP TOS(type of service) Features

Process TOS Field Enable

Overwrite Policy Priority Yes

Admin Password Screen

The password screen allows you to assign a password to the XC-DPG Twin WAN Router.

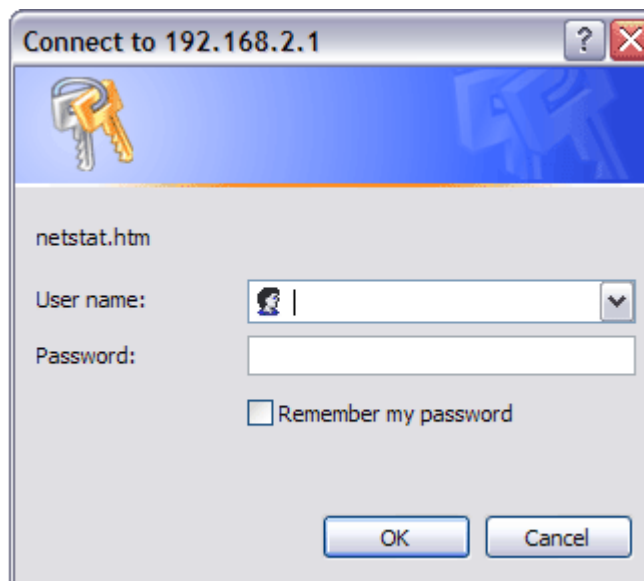


Administrator Password	
User Name	admin
Password	<input type="password"/>
Verify Password	<input type="password"/>

Figure 27: Admin Password Screen

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

When you connect to the XC-DPG Twin WAN Router with your Browser, you will be prompted for the password when you connect, as shown below.



Connect to 192.168.2.1

netstat.htm

User name:

Password:

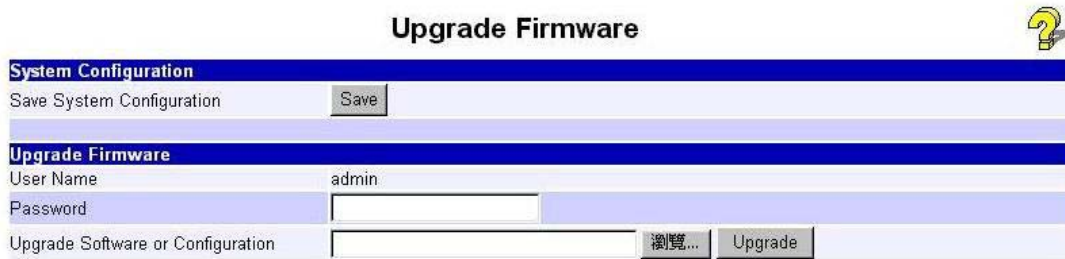
Remember my password

Figure 28: Password Dialog

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

Upgrade Firmware

This Upgrade Firmware Screen allows you to upgrade firmware or backup system configuration by using HTTP upgrade.



The screenshot shows a web interface titled "Upgrade Firmware" with a yellow question mark icon in the top right corner. The interface is divided into two main sections:

- System Configuration:** This section contains a "Save System Configuration" label and a "Save" button.
- Upgrade Firmware:** This section contains a "User Name" field with the value "admin", a "Password" field, and an "Upgrade Software or Configuration" field. The "Upgrade Software or Configuration" field has a "瀏覽..." (Browse...) button next to it, and an "Upgrade" button is located to the right of the field.

Figure 29: Firmware Upgrade Screen

- ◆ You can backup your system configuration by pressing the “save” button of Save System Configuration. It will save the system configuration for you. (Notice: You have to refresh the browser after you saved the system configuration file)
- ◆ You also can do firmware upgrade by inputting the correct password and the file name of your firmware. Remember do not reset or Restart the device while updating the new firmware, because it may cause the system to crash. Upgrading the firmware through the FTP utility is recommended rather than through the router interface.

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 XC-DPG Twin WAN Router must be **disabled**. This setting is on the **LAN & DHCP** screen.
- Your DHCP Server must be configured to provide the XC-DPG 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	<input type="text"/>	<input type="button" value="Select"/>				
Network Address	<input type="text" value="0.0.0.0"/>					
Netmask	<input type="text" value="0.0.0.0"/>					
Gateway	<input type="text" value="0.0.0.0"/>					
Interface	<input type="text" value="LAN"/>					
Metric	<input type="text" value="0"/> (2~15)					

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 30: 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	<ul style="list-style-type: none">• 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.
Net mask	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 XC-DPG 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 XC-DPG Twin WAN Router, so that they can be forwarded to the Internet. This is done by configuring other Routers to use the XC-DPG Twin WAN Router as the *Default Route* or *Default Gateway*, as illustrated by the example below.

Static Routing - Example

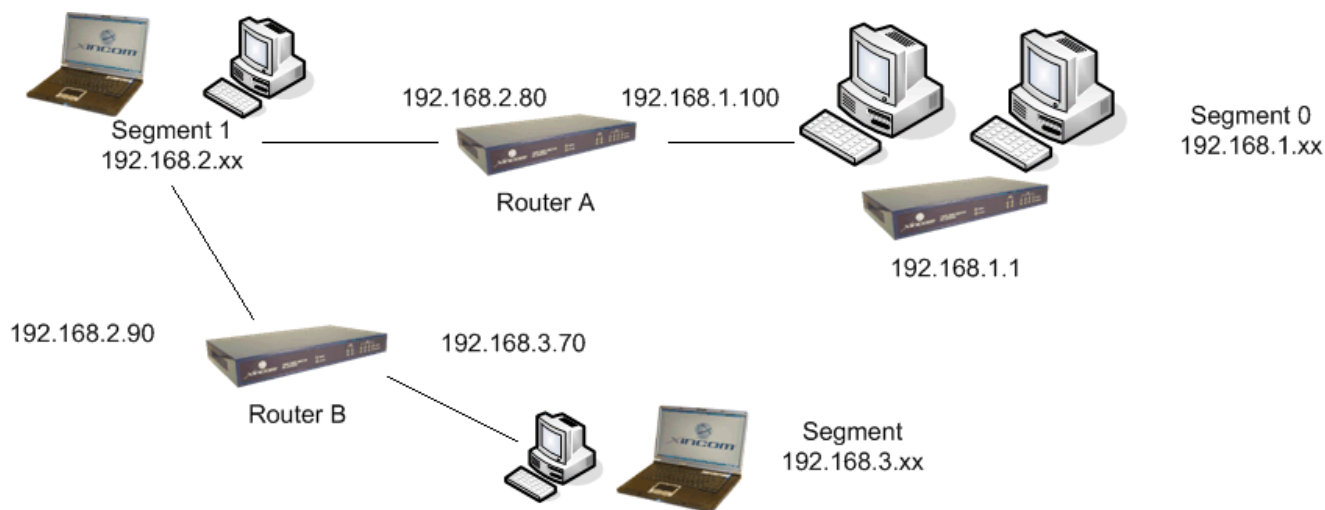


Figure 31 Routing Example

For the XC-DPG Twin WAN Router Gateway's Routing Table

For the LAN shown above, with 2 routers and 3 LAN segments, the XC-DPG502Twin 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: QoS Configuration (Available in XC-DPG502only)

Overview

The XC-DPG Twin WAN Router provides QoS which supports the highest quality of network service. Because it will classify outgoing packets based on the policies defined by users, make some real-time applications get better responses and performance.

QoS Setup

The following web page management will guide you to setup QoS and make it work properly.



QoS Setup

QoS Features	
Enable QoS	<input checked="" type="checkbox"/> Enable
Queuing Method	Priority Queuing ▾
IP TOS(type of service) Features	
Process TOS Field	<input type="checkbox"/> Enable
Overwrite Policy Priority	<input type="checkbox"/> Yes


Figure 32 QoS Setup

Data – QoS Setup.

QoS Feature	<ul style="list-style-type: none"> ◆ Enable QoS – This will allow users to enable the QoS function. ● Queuing Method – This method allows you to manage your queue.” Priority queuing”. This is one of the first queuing variations to be wildly implemented.
IP TOS (Type of Service) Feature	<ul style="list-style-type: none"> ● Process TOS Field –An 8 bit field in the IP packet header designed to contain values indicating how each packet should be handled in the network. If you choose "enable" then it will enable this function to process IP Type of Service field. ● Overwrite policy priority – Choose “yes” to set the priority of TOS field in IP packet overwrite the priority defined in policy configuration

Policy Configuration

When you use QoS, you must define the policies to make packets receive higher priority for pass through.



Policy Configuration

Policy Priority	
Policy Name List	<input type="button" value="Select"/>
Policy Name	<input type="text"/>
Source Address	IP Address <input type="button" value="Select 1"/>
	From <input type="text" value="0.0.0.0"/> To <input type="text" value="0.0.0.0"/>
Destination Address	IP Address <input type="button" value="Select 2"/>
	From <input type="text" value="0.0.0.0"/> To <input type="text" value="0.0.0.0"/>
Protocol Type	TCP <input type="button" value="Select"/>
Source Port	From <input type="text" value="0"/> To <input type="text" value="0"/>
Destination Port	From <input type="text" value="0"/> To <input type="text" value="0"/>
Priority Queue	High <input type="button" value="Select"/>

Policy List			
Policy Name	Source Address / Port	Destination Address / Port	Protocol Queue

Figure 33 Policy Configuration

Data – Policy Configuration.

Network Admission Policy	<p>This section identifies each policy</p> <ul style="list-style-type: none"> Policy Name List – When adding a new Policy, 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 for the selected entry. Policy Name – Enter a suitable name. Generally, you should use the "Policy Name" for the network traffic. Source Address – Define the source address of packets here. It has two types like IP address or MAC address. If you select IP address, you can define IP address range, otherwise define up to four MAC addresses. Destination Address – Define the destination address of packets here. The explanation is as the same as above. Protocol Type – The field defines traffic packet type, i.e. IP, TCP and UDP. Source Port – Define the source port of packets here. Destination Port – Define the destination port of packets here. Priority Queue – It defines a packet if it meets all conditions defined above, it will be serviced with some priority level.
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7: Operation and Status

Operation

Once both the XC-DPG 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	Disconnected	Disconnected
Connection Type	DHCP Force Renew	DHCP Force Renew
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
DNS IP Address	203.79.224.30	0.0.0.0
MAC Address	00-09-A3-22-44-67	00-09-A3-22-44-68
LAN Information		
IP Address	192.168.1.1	
Subnet Mask	255.255.255.0	
MAC Address	00-09-A3-22-44-66	
DHCP Server	Enabled	
Device Information		
Firmware Version	Ver 2.0 Rel 0C	
NAT	Enabled	
Load Balance	Enabled	
Virtual Server	Disabled	
Special Application	Disabled	
Multi DMZ	Disabled	
Block URL	Disabled	
Hardware ID	000000042000430000000000	
Device Statistics		
System UpTime	0 minutes, 4 seconds	
CPU Usage	1 %	
Memory Usage	Heap	0%
	Queue	0%

Refresh
Restart
Restore Factory Defaults

Figure 34: System Status

Data – System Status

WAN Information	<ul style="list-style-type: none"> • 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 XC-DPG 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 XC-DPG Twin WAN Router, as seen from the Internet.
LAN Information	<ul style="list-style-type: none"> • IP Address – The LAN IP Address of the XC-DPG Twin WAN Router. • Subnet Mask – The Network Mask (Subnet Mask) for the IP Address above. • MAC Address – The MAC (physical) address of the XC-DPG Twin WAN Router, as seen from the local LAN. • DHCP Server – The status of the DHCP Server function - either "Enabled" or "Disabled".
Device Information	<ul style="list-style-type: none"> • Firmware Version – Version of the Firmware currently installed. • NAT – Status of the <i>NAT</i> feature – either "Enable" or "Disable". • Load Balance – Status of the <i>Load Balance</i> feature – either "Enable" or "Disable". • 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". • Block URL – Status of the <i>Block URL</i> feature – either "Enable" or "Disable". • Hardware ID – The manufacturers ID for this particular device.
Device Statistics	<ul style="list-style-type: none"> • System UpTime – The time since the system of a device was last reinitialized. • CPU Usage – The current usage percentage of CPU. • Memory Usage – The current usage percentage of Memory (Heap & Queue).

Buttons	<ul style="list-style-type: none">• Refresh – Update the data on screen.• Restart – Restart (reboot) the XC-DPG Twin WAN Router.• Restore Factory Defaults – This will delete all existing settings, and restore the factory default settings. See below for details.
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Restore Factory Defaults

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

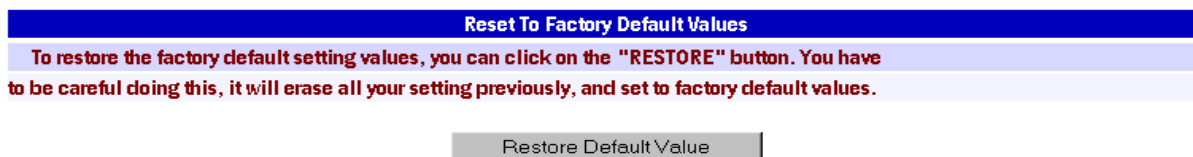


Figure 35: Restore Factory Defaults

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 XC-DPG 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
<input type="button" value="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
<input type="button" value="Refresh"/> <input type="button" value="Restart Counters"/>			

Figure 36 WAN Status

Data – System Status

NAT Statistics	<p>This section displays data for each WAN port.</p> <ul style="list-style-type: none"> • 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 is 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	<p>This section displays cumulative statistics.</p> <p>Use the "Restart Counter" button to restart these counters when required.</p>

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
Created	3	Deleted	3
<input type="button" value="View Connection List"/>			
Errors			
Checksum	0	Retries	0
		Bad Packets	0
Misc.			
Total IP Packets	479	Reserved Address	247
<input type="button" value="Refresh"/>			

Figure 37 NAT Status

Data – NAT Status

LAN IP Info	<ul style="list-style-type: none"> • IP Address – The LAN IP Address of the XC-DPG Twin WAN Router. • Mask Address – The Network Mask (Subnet Mask) for the IP Address above.
Active WAN IP Info	<p>There is one (1) row for each active connection. For each connection, the following data is shown.</p> <ul style="list-style-type: none"> • IP Address – The WAN (Internet) IP Address of the XC-DPG 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	XC-DPG 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 * 10/100BaseT (RJ45) for WAN
LEDs	8 LAN 4 WAN 1 Status 1 Power
External Power Adapter	5 V 1.5A 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 A 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 XC-DPG Twin WAN Router settings, and the default Windows 95/98/ME/2000 TCP/IP settings, no changes need to be made.

- By default, the XC-DPG 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:

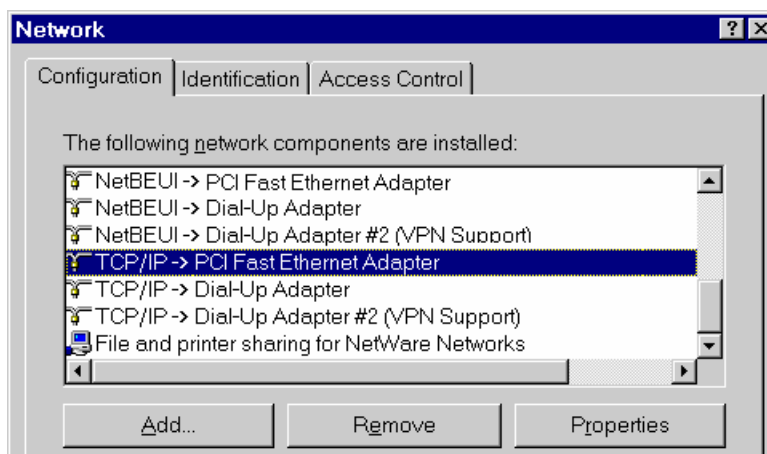


Figure 38: Network Configuration

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.

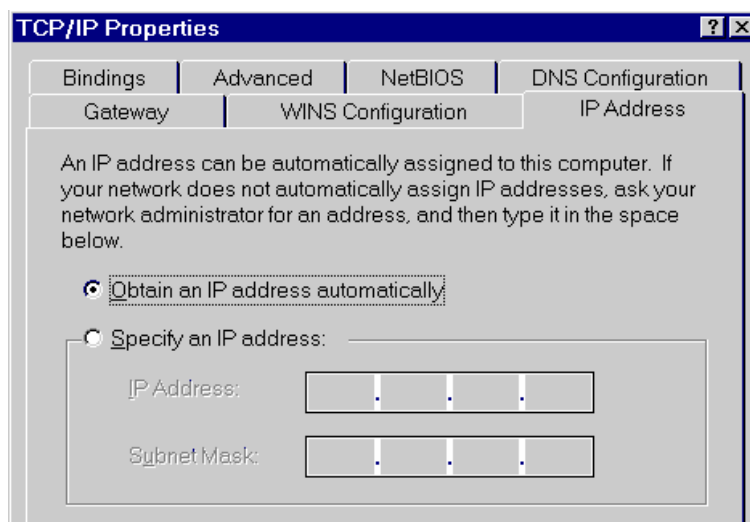


Figure 39: IP Address (Win 95)

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 XC-DPG 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 XC-DPG 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 XC-DPG Twin WAN Router.)

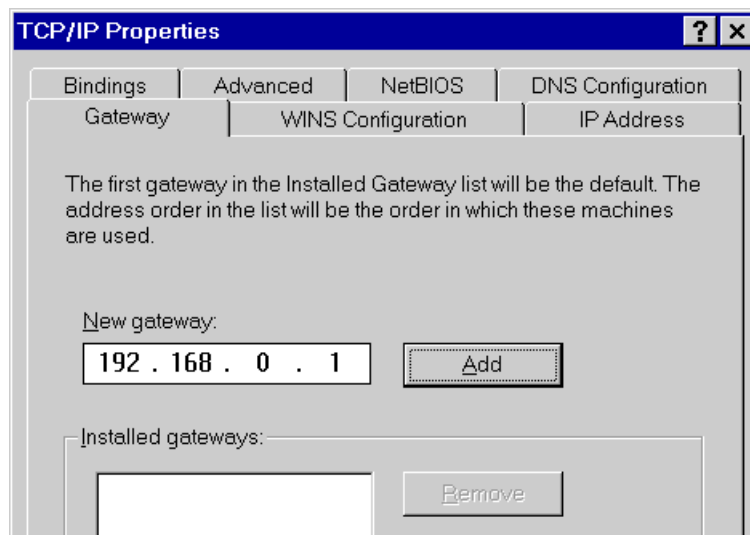


Figure 40: Gateway Tab (Win 95/98)

- 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*.

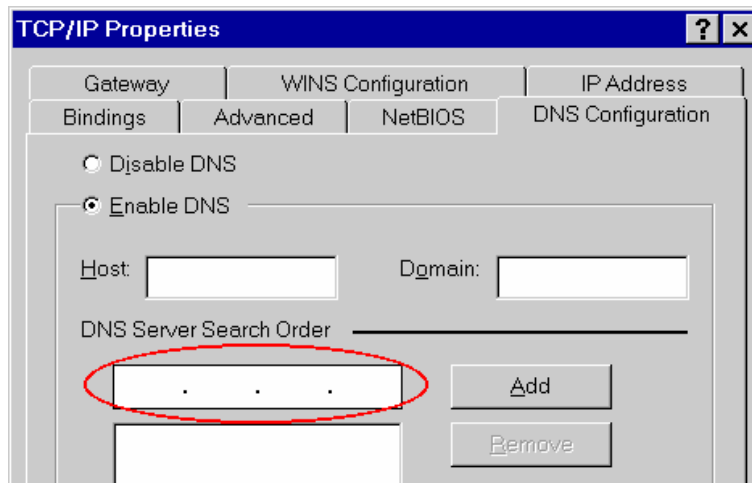


Figure 41: DNS Tab (Win 95/98)

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:

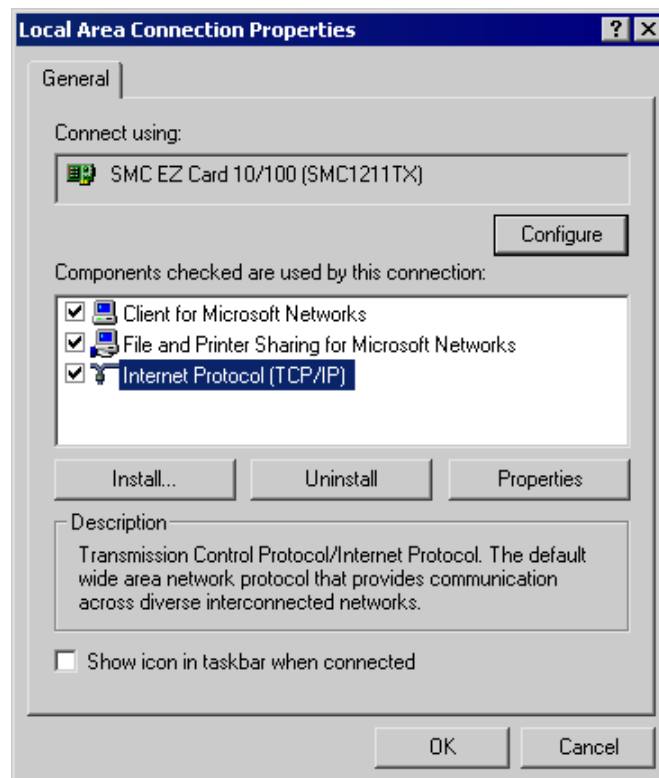


Figure 42: Network Configuration (Win 2000)

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

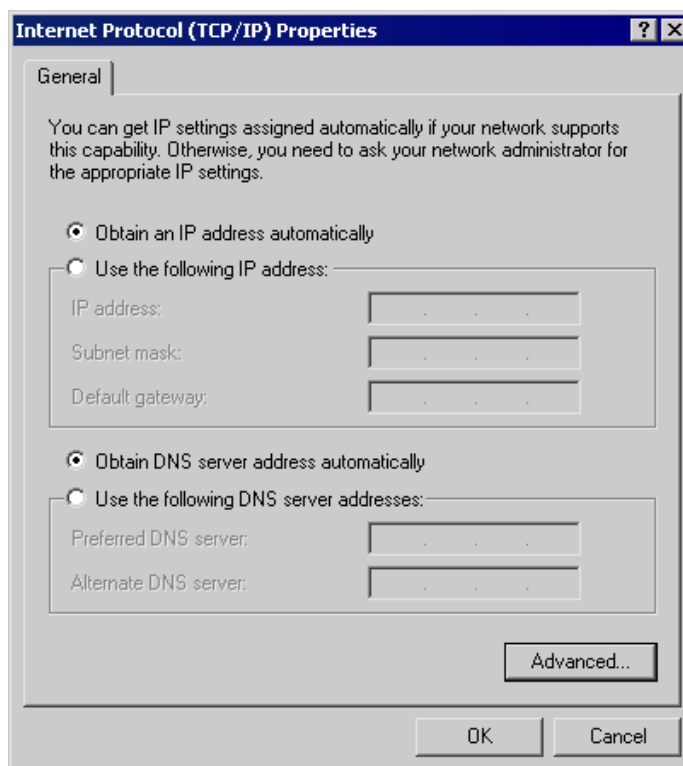


Figure 43: TCP/IP Properties (Win 2000)

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 XC-DPG 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 XC-DPG 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 XC-DPG 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:

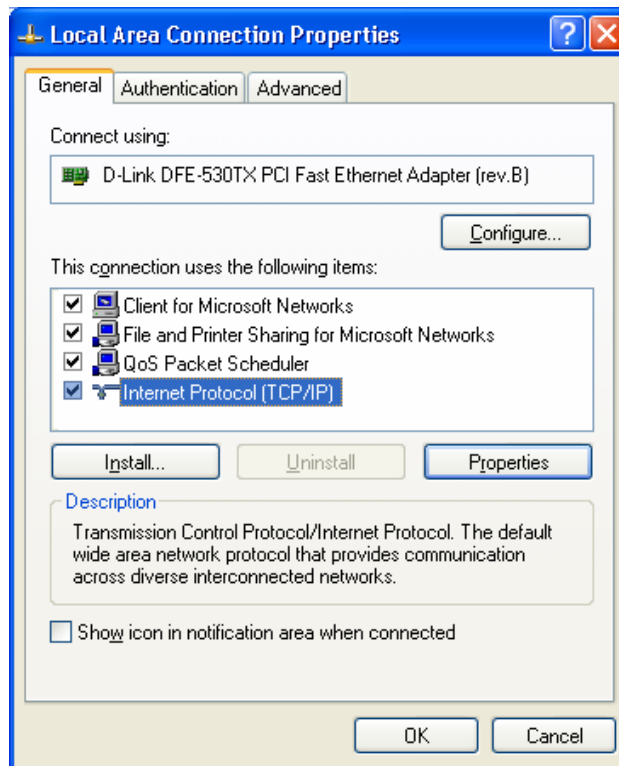


Figure 44: Network Configuration (Windows XP)

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.

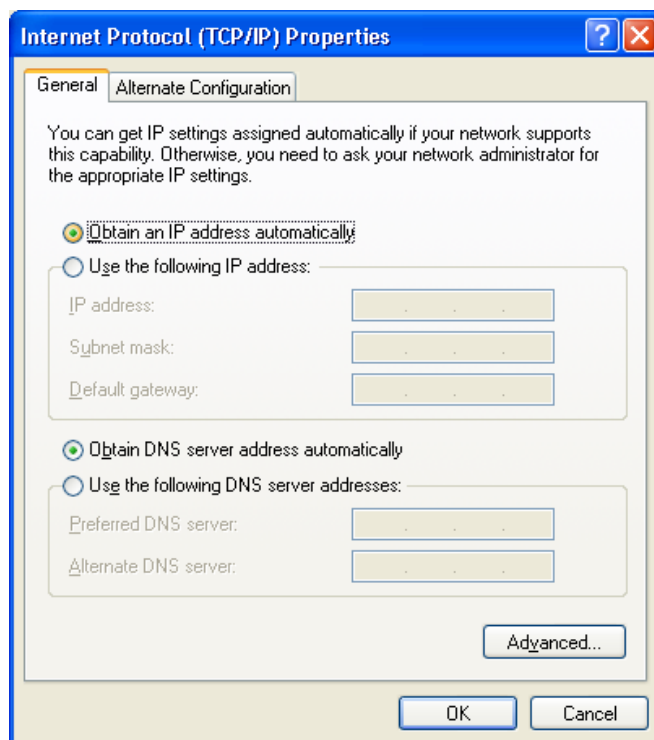


Figure 45: TCP/IP Properties (Windows XP)

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 XC-DPG 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 XC-DPG 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 XC-DPG 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 XC-DPG Twin WAN Router and some possible solutions to them. If you follow the suggested steps and the XC-DPG Twin WAN Router still does not function properly, contact your dealer for further advice.

General Problems

Problem 1: Can't connect to the XC-DPG Twin WAN Router to configure it.

Solution 1: Check the following:

- The XC-DPG Twin WAN Router is properly installed, LAN connections are OK, and it is powered ON.
- Ensure that your PC and the XC-DPG 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 XC-DPG 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 XC-DPG 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 XC-DPG 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 XC-DPG 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 XC-DPG Twin WAN Router.

Solution 2: The XC-DPG 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.