



USER'S MANUAL



COMPEX NETPASSAGE SERIES

NetPassage 15B

NetPassage 15B

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NetPassage 15B

Manual number : U-0316-V1.1C

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- Connect the computer into an outlet on a circuit different from that to which the receiver is connected.
- Increase the separation between the computer and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

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

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

Declaration of Conformity

Compex, Inc. declares the following:

Product Name: **Broadband Internet Gateway** Model No.: **NetPassage 15B** conforms to the following Product Standards: Radiated Emission Standards: FCC: 47 CFR Part 15, Subpart B, ANSI C63.4-1992; 47 CFR Part 15, Subpart C (Section 15.247), ANSI C63.4-1992. ;ETSI EN 300 328-2: July 2000;EN55022. Conducted Emission Standards: FCC Part 15 Class B;ETS 300 826: Nov. 1997.;EN55022 conducted emission Immunity Standards: EN 55024 (FOR CE) Low Voltage Directive: EN 60 950:1992+A1: 1993+A2: 1993+A3; 1995+A4; 1996+A11: 1997 (FOR CE). **Therefore, this product is in conformity with the following regional standards:**

FCC Class B - following the provisions of FCC Part 15 directive;

CE Mark - following the provisions of the EC directive.

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

18th June 2002


Shi Jia Xiang
R & D Manager

Technical Support Information

The warranty information and the registration form are found in the Quick Install Guide. For technical support, you may contact COMPEX or its subsidiaries. For your convenience, you may also seek technical assistance from the local distributor, or from the authorized dealer/reseller that you have purchased this product from. For technical support by email, write to support@compex.com.sg.

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Technical Support Centers	
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 Call	Tel: +49 (0) 6074 - 98017 (8 a.m.-5 p.m. local time)
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 Write	Compex Systems Pte Ltd 135, Joo Seng Road #08-01, PM Industrial Building Singapore 368363
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Website:	http://www.cpx.com or http://www.compex.com.sg

About this Document

The product described in this document, Compex NetPassage 15B is a licensed product of Compex Systems Pte Ltd. This document contains instructions for installing, configuring and using the NetPassage 15B. It also gives an overview of the key applications and the networking concepts with respect to the product.

This documentation is for both Network Administrators and the end user with basic understanding and knowledge in the networking structure and protocols.

A few assumptions had been made, such as the host computer has already been installed with TCP/IP and already up & running and accessing the Internet. Procedures for Windows 95/98/ME/2000/XP operating systems are included in this document. However, for other operating system, you may need to refer to your operating system's documentation for networking.

Please take note that this User's Manual is written based on NetPassage 15B Firmware Release 2.74 build 1000.

Conventions

This document uses special conventions to present the information clearly. Please take note of the conventions used below.



NOTE

This section will consist of important features or instructions



CAUTION

This section concerns risk of injury, system damage or loss of data



WARNING

This section concerns risk of severe injury

References on Menu Command, Push Button, Radio Button, LED and Label appear in **Bold**. For example, "Press the **Save** button"

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Chapter 1 Product Overview



1.1 Introduction

Compex NetPassage 15B is a Broadband Internet Gateway supporting external Cable/ADSL modem for broadband Internet sharing. It is integrated with a 4-port 10/100Mbps Fast Ethernet Switch and can seamlessly distribute Internet access to the wired networks.

With the unique Parallel Broadband, NetPassage 15B delivers scalable Internet bandwidth to your network, supporting Load Balancing and Fail-Over Redundancy with multiple broadband channels.

In addition, Compex NetPassage 15B is also designed with advanced features such as Virtual Server, Time-based Access Management, IP Packet Filtering and Remote Management have been designed on NetPassage 15B. It is the perfect Internet solution for your home and office.

1.2 Key Features

Compex NetPassage 15B, the Broadband Internet Gateway, is designed with the following features:

Broadband Internet Sharing

Compex NetPassage 15B comes with a RJ45 Ethernet WAN port supporting external Cable or ADSL modem, sharing a single Cable/ADSL Internet subscription with multiple users.

Integrated 4-port 10/100Mbps Switch

Integrated with a 4-port 10/100Mbps Fast Ethernet Switch, Compex NetPassage 15B provides an immediate solution for four users on private LAN switching. With the auto-crossover mechanism, Hubs or Switches can be cascaded to NetPassage 15B easily to support more users.

Parallel Broadband

Parallel Broadband, uniquely found on NetPassage series broadband routers, delivers scalable Internet bandwidth to your office network. Multiple units of Compex NetPassage 15B may be installed in your network, enabling Load Balancing and Fail-Over Redundancy with multiple broadband channels.

Built-In DHCP Server

Compex NetPassage 15B is integrated with a DHCP server, dynamically assigns IP address, gateway information and DNS server address to your PCs in the wired and wireless networks. Simply configure your PCs to dynamically obtain IP addresses.

Virtual Server

Compex NetPassage 15B supports Virtual Server that enables hosting of Internet servers in your private network. Virtual Server based on Port Forwarding and IP Forwarding may be defined on NetPassage 15B.

Time-based Access Management

With Time-based Access Management, the network administrators may define administrative function on NetPassage 15B, restricting certain PCs to access to the Internet during a pre-defined time.

IP Packet Filtering

The network administrators may also define functions on NetPassage 15B to filter undesired Internet applications in the private network based on the TCP/UDP ports.

Web-based Configuration Interface

Compex NetPassage 15B is integrated with an embedded HTTP server, facilitating the configuration process with a user-friendly web-based interface. Simply connect to NetPassage 15B with a JAVA-enabled web browser and complete the configuration process in just a few minutes.

Remote Management

Remote Management may be activated on NetPassage 15B, enabling the network administrator to manage the Broadband Internet Gateway over the Internet with a HTTP or TELNET session.

1.3 Package Contents

Your NetPassage 15B retail package contains the following items:

- 1 x NetPassage 15B
- 1 x External Power Adapter (5V_{DC}, 3A)
- 1 x Quick Install Guide with Warranty Registration Form
- 1 x Product CD (consist of User's Manual, Firmware Recovery Tool & Utility)

1.4.2 Panel Description

Index	Indicator	Description
1	Power LED (Green)	<ul style="list-style-type: none">LED lights up steadily indicate that the power is applied to the router.
2	LAN 100Mb LED (Green)	<ul style="list-style-type: none">LED lights up steadily indicate that the respective LAN connection is at 100Mbps.LED lights off indicate that the respective LAN connection is at 10Mbps.
3	WAN Activity LED (Green)	<ul style="list-style-type: none">LED blinks indicate that the WAN connection has activity.
4	Diag LED (Green)	<ul style="list-style-type: none">Firmware diagnostic LED.
5	Conn LED (Green)	<ul style="list-style-type: none">LED blinks when WAN disconnects or not connected to the broadband service.
6	WAN Link LED (Green)	<ul style="list-style-type: none">LED lights up steadily indicate that there is a good cable connection to the WAN port.
7	LAN Link/Act LED (Green)	<ul style="list-style-type: none">LED blinks indicate that the LAN connection has activity.LED lights up steadily indicate that there is a good cable connection to the respective LAN ports.
8	WAN Port	<ul style="list-style-type: none">10Base-T Port connects to cable modem or xDSL modem.
9	Local LAN ports	<ul style="list-style-type: none">Up to a maximum of 4 10Base-T/100Base-TX Ethernet devices can be directly connected to the router.
10	5 V/3A Power Connector	<ul style="list-style-type: none">Accept 5V DC/3A input.

1.5 Technical Data

1.5.1 NetPassage 15B Specifications

◆	Industry Standards	Complies with: <ul style="list-style-type: none"> ▪ IEEE 802.3 10Base-T, ▪ IEEE 802.3u 100Base-TX, ▪ IEEE 802.3x Flow Control ▪ CE Mark, FCC Class B, Gost, C-Tick, UL
◆	WAN Interface	<ul style="list-style-type: none"> ▪ One RJ45 Ethernet port (for external Cable/ADSL modem)
◆	WAN Type	<ul style="list-style-type: none"> ▪ Static IP ▪ Dynamic IP ▪ PPP Over Ethernet (PPPoE) ▪ RAS
◆	LAN Interface	<ul style="list-style-type: none"> ▪ Integrated 4-port 10/100Mbps Switch
◆	IP Addressing	All Classful/Classless Subnets
◆	Built-In DHCP Server	Yes
◆	DHCP Reservation	By MAC Address
◆	NAT Firewall	Yes
◆	Load Balancing	Parallel Broadband
◆	Fail-Over Redundancy	Parallel Broadband
◆	Virtual Server	Based on Port Forwarding & IP Forwarding
◆	Time-based Access Management	Yes
◆	IP Packet Filtering	<ul style="list-style-type: none"> ▪ By TCP Port ▪ By Source IP
◆	IP Routing	Static & Dynamic Entry
◆	Routing Protocol	RIP1 & RIP2
◆	VPN Client Pass-Through	<ul style="list-style-type: none"> ▪ PPTP ▪ IPSec
◆	Microsoft NetMeeting	Yes
◆	Configuration Interface	<ul style="list-style-type: none"> ▪ Web-based Configuration Interface ▪ TELNET
◆	Remote Management	HTTP & TELNET Session
◆	Profile Backup & Restore	Yes
◆	Firmware Upgrade	Yes
◆	Environmental Requirement	
	Temperature	Operating: 0°C to 40°C Storage: -20°C to 70°C
	Humidity	Operating: 10% to 80% RH Storage: 5% to 90% RH
◆	Physical Dimensions	122mm x 119mm x 26mm (LxWxH)

Chapter 2 Getting Started

Complex NetPassage 15B may be used in different application. It is integrated with an embedded HTTP server providing a user-friendly web-based configuration interface to ensure fast and easy configuration process for these applications. This chapter provides the information on how to connect to the configuration interface, how to setup the hardware for configuration and operation.

2.1 Hardware Setup

Complex NetPassage 15B may be installed in different applications. This section summarizes the hardware setup for each application.

2.1.1 Distributing Broadband Internet Access to Fast Ethernet Network

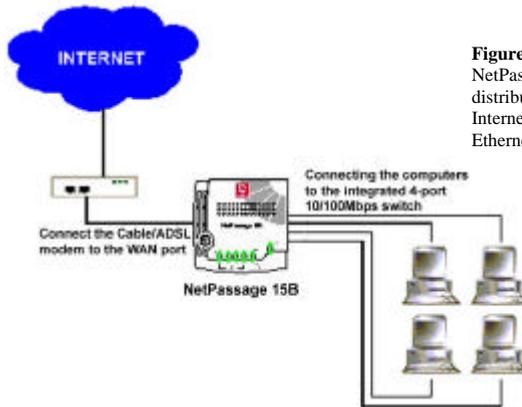


Figure 2.1.1-1
NetPassage 15B
distributes broadband
Internet access to the Fast
Ethernet segment

In this hardware setup, 4 computers are connected to the integrated 4-port 10/100Mbps Fast Ethernet Switch of NetPassage 15B. These computers are able to share a single broadband Internet account as well as their resources. You may also cascade the NetPassage 15B to another Hub or Switch to support more users. The Fast Ethernet ports of NetPassage 15B are designed with auto-crossover mechanism that can be easily connected to another Hub or Switch regardless of the orientation of the UTP cable (straight or crossover).

2.2 TCP/IP Configuration of the Computers

Compex NetPassage 15B is designed with a built-in DHCP server. You may manually configure the TCP/IP settings of your computers, or simply configure them to dynamically obtain IP address from the DHCP server. If you are not an expert user, you are advised to configure your computers to dynamically obtain IP addresses from the built-in DHCP server of NetPassage 15B.

Before proceeding, please take note of the following default settings of NetPassage 15B:

IP (LAN):	192.168.168.1
Subnet Mask:	255.255.255.0
DHCP Server:	Enabled

2.2.1 Configuring your Computer to Dynamically Obtain IP Address

To configure your computers to dynamically obtain IP address, gateway and DNS information from NetPassage 15B, perform the following actions:

For Microsoft Windows 95/98/ME

1. Open the **Control Panel** from the Start menu
2. Double-click on the **Network** icon, the network configuration window shall be displayed, as shown in Figure 2.2.1-1.

Please ensure that the TCP/IP protocol is installed and bind to the network adapter.



Figure 2.2.1-1
Network Configuration Window

3. Double-click on the TCP/IP that is bound to your network adapter, the TCP/IP configuration window shall be displayed, as shown in Figure 2.2.1-2.

Press on the **Obtain an IP address automatically** radio button and press the **OK** button.



Figure 2.2.1-2
Network Configuration Window

4. Press the **OK** button again to close the network configuration window. The Microsoft Windows will then prompt you to restart the computer. Press the **OK** button to reboot.

When the Microsoft Windows restarts, NetPassage 15B will assign an IP address, Subnet Mask and Gateway information to the computer.

For Microsoft Windows 2000/XP

1. Open the **Control Panel** from the Start menu
2. Double-click on the **Network Connections** icon.
3. Double-click on the network icon that you will be using to connect to NetPassage 15B for configuration, the network configuration window shall be displayed as shown in Figure 2.2.1-3.

Please ensure that the correct network adapter is selected.

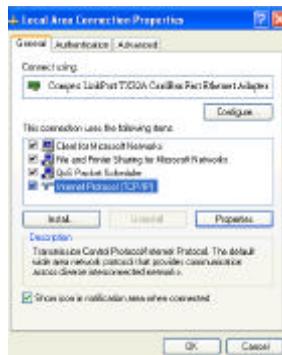


Figure 2.2.1-3
Network Configuration Window

4. Double-click on the TCP/IP connection, the TCP/IP configuration window shall be displayed, as shown in Figure 2.2.1-4.

Press on the **Obtain an IP address automatically** radio button and press the **OK** button.



Figure 2.2.1-4
Network Configuration Window

5. Press the **OK** button again to close the network configuration window. The new network configuration will be registered on your network card.

2.2.2 Configuring your Computer with Static IP Address

If you have chosen to configure your computer with Static IP address, please take note of the following default settings on NetPassage 15B.

IP (LAN): **192.168.168.1**
Netmask: **255.255.255.0**

To log on to the Web-based Configuration Interface of NetPassage 15B and to surf the Internet, you need to configure your computer with the following network settings:

IP: **192.168.168.X**
Subnet Mask: **255.255.255.0**
Gateway: **192.168.168.1**
DNS Server: **<IP address of DNS server>**

X is any integer from 2 to 254, and you cannot configure more than one computer with the same IP address.

<IP address of DNS server> is the IP address of a DNS server. This information is usually provided by your broadband Internet service provider.



NOTE

NetPassage 15B is pre-configured with a subnet of 192.168.168.0. If you wish to configure your network with another subnet, you may do so after logging on to the configuration interface of NetPassage 15B.

For Microsoft Windows 95/98/ME

1. Open the **Control Panel** from the Start menu

2. Double-click on the **Network** icon, the network configuration window shall be displayed, as shown in Figure 2.2.1-1.
3. Double-click on the TCP/IP that is bound to your network adapter, the TCP/IP configuration window shall be displayed, as shown in Figure 2.2.2-1.

Type in the **IP Address** and **Subnet Mask** of 192.168.168.X and 255.255.255.0 respectively.



Figure 2.2.2-1
Network Configuration Window

4. Select **Gateway** from the menu and the gateway configuration page shall be displayed, as shown in Figure 2.2.2-2.

Type in the **New gateway** as 192.168.168.1 and press the **Add** button.



Figure 2.2.2-2
Gateway Configuration Window

5. Select **DNS Configuration** from the menu and the DNS configuration page shall be displayed, as shown in Figure 2.2.2-3.

Select the **Enable DNS** button. Type in a preferred name as the **Host**. Type in the IP address of your DNS server in the **DNS Server Search Order** field and press the **Add** button. Press the **OK** button to close this window.



Figure 2.2.2-3
DNS Configuration Window



NOTE

You must not configure more than one computer with the same host name. This creates conflict in the network.



NOTE

The IP address of your DNS Server should be provided by your ISP. If you are still not sure about it, please contact your ISP.

6. Press the **OK** button again to close the network configuration window. The Microsoft Windows will then prompt you to restart the computer. Press the **OK** button to reboot.

For Microsoft Windows 2000/XP

1. Open the **Control Panel** from the Start menu
2. Double-click on the **Network Connections** icon.
3. Double-click on the network icon that you will be using to connect to NetPassage 15B for configuration, the network configuration window shall be displayed as shown in Figure 2.2.2-4.

Please ensure that the correct network adapter is selected.

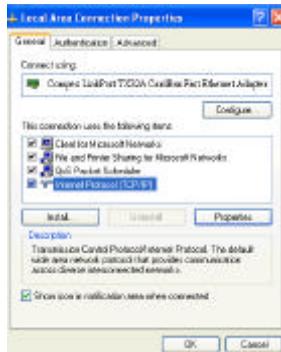


Figure 2.2.2-4
Network Configuration Window

4. Double-click on the TCP/IP connection, the TCP/IP configuration window shall be displayed, as shown in Figure 2.2.2-5.

Type in the **IP Address** and **Subnet Mask** of 192.168.168.X and 255.255.255.0 respectively. Type in the **Default gateway** as 192.168.168.1. Type in the IP address of your DNS server in the **Preferred DNS Server** field.

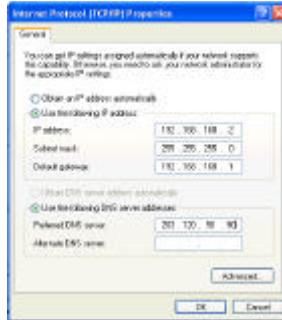


Figure 2.2.2-5
Network Configuration Window

5. Press the **OK** button again to close the network configuration window. The new network configuration will be registered on your network card.

2.3 Connecting to the Configuration Interface

Complex NetPassage 15B is integrated with an embedded HTTP Server to provide a user-friendly web-based configuration interface. Alternatively, you may also connect to the Command Console of NetPassage 15B via a TELNET session or a direct serial connection.

This section assumes that the IP address of your NetPassage 15B has not been changed. It is still the default IP of **192.168.168.1**.

This section also assumes that the TCP/IP settings of your computer have been configured properly. To make sure that the TCP/IP of your computer has been configured properly, perform the following command at the DOS prompt:

C:\WINDOWS>PING 192.168.168.1

If you receive replies from the above command, it indicates that your computer has been properly configured with TCP/IP.

2.3.1 Web-based Configuration Interface

To connect to the Web-based Configuration Interface of NetPassage 15B, all you need is a web browser. The requirement of the web browser is stated below:

Web Browser:	Netscape Navigator 4.0 & above or Internet Explorer 4.0 & above
JAVA:	Enabled
Proxy Settings:	Cleared
Proxy Auto Discovery:	Disabled

Connecting to Web-based Configuration Interface

1. Launch the Internet Explorer or Netscape Navigator
2. Open the URL using the default IP of NetPassage 15B. Eg. Type in <http://192.168.168.1> in the **Address** field of Internet Explorer.
3. The logon page will then be displayed, as shown in Figure 2.3.1-1. The default password of NetPassage 15B is “password” which is pre-filled in the password text box. Press the **Log On!** button to log in to NetPassage 15B’s Configuration Interface.

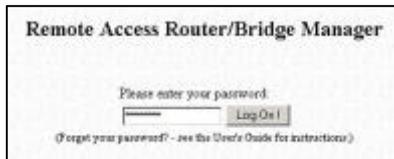


Figure 2.3.1-1
Logon Page



NOTE

If the proxy settings of your web browser is not cleared, you will not be able to connect to NetPassage 15B’s web-based configuration interface.

Once log on, you will see a web page consist of three frames, the **Command Menu**, **Configuration Window** and **Message Window**, as shown in Figure 2.3.1-2.

Command Menu	Enable the user to select feature to be configured
Configuration Window	Enable the user to configure the parameters associated with the selected feature
Message Window	Display the message (if any) associated with the configuration process

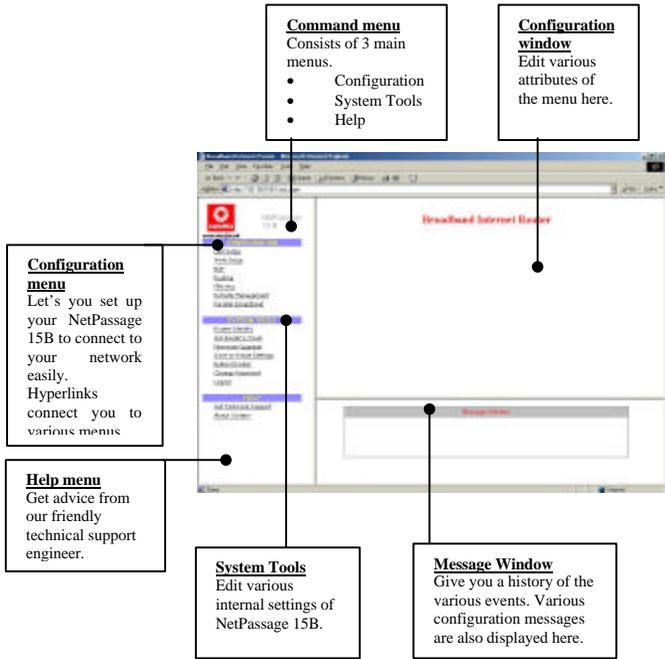


Figure 2.3.1-2
NetPassage 15B
Configuration Interface

2.3.2 TELNET Command Console

Alternatively, the user may connect to the Command Console of NetPassage 15B via a TELNET session to the default IP of NetPassage 15B, **192.168.168.1**. This section uses Microsoft TELNET command for instruction. You may use any TELNET client.

Connecting to NetPassage 15B's Command Console via TELNET

1. Connect to NetPassage 15B's Command Console with the following command at DOS prompt. The TELNET application will then be launched and connect to NetPassage 15B.

C:\WINDOWS\TELNET 192.168.168.1

2. At the login prompt, type in "password" (default password) and press the <ENTER> key, as shown in Figure 2.3.2-1. You will then login to the Command Console of NetPassage 15B.



Figure 2.3.2-1
Command Console Login



NOTE

Please refer to Appendix A for the list of commands available at the console.

Chapter 3 Configuring NetPassage 15B

This chapter explains the features of NetPassage 15B in sections and how to implement them.

3.1 Setting up your LAN

Complex NetPassage 15B is pre-configured with a default IP address **192.168.168.1** with a network mask of **255.255.255.0**. By default, the DHCP Server has also been pre-configured to assign IP addresses starting from **192.168.168.100** to **192.168.168.254**. If you do not wish to use these for your network, you may change these settings.

3.1.1 Configuring IP Addressing

If you wish to modify the IP addressing of your NetPassage 15B, you may do so in the web-based configuration interface.

1. Log on to the web-based configuration interface of NetPassage 15B with a web browser.
2. Click on the [LAN Setup](#) URL from the Command Menu and the LAN setup window shall appear, as shown in Figure 3.1.1-1

Figure 3.1.1-1
LAN Setup

3. Fill in the parameters in the respective text boxes:

IP Address This is the IP address of your NetPassage 15B

Network Mask This is the Network Mask of your NetPassage 15B's IP address. It decides the subnet of your NetPassage 15B. For example, if the IP address and network mask of your NetPassage 15B is 192.168.168.1 and 255.255.255.0 respectively, the subnet of your NetPassage 15B is 192.168.168.0.

DHCP Start IP Address	This is the first IP address where the built-in DHCP server of NetPassage 15B assigns. It should be in the same subnet as your NetPassage 15B. For example, if the IP address and network mask of your NetPassage 15B is 192.168.168.1 and 255.255.255.0 respectively, the DHCP Start IP Address should be 192.168.168.X
DHCP End IP Address	This is the last IP address where the built-in DHCP server of NetPassage 15B assigns. It should be in the same subnet as your NetPassage 15B. For example, if the IP address and network mask of your NetPassage 15B is 192.168.168.1 and 255.255.255.0 respectively, the DHCP End IP Address should be 192.168.168.X
Always use these DNS servers	This checkbox is associated with the built-in DHCP Server of NetPassage 15B. If this box is “checked”, the built-in DHCP Server will configure the DNS information of the computers. If this box is NOT “checked”, you need to manually configure the DNS information in every computer in the network.
Primary DNS IP Address	If the Always use these DNS servers checkbox is “checked”, fill in an IP address of a DNS server. This information is normally provided by your ISP.
Secondary DNS IP Address	This field contains the IP address of a secondary DNS server (optional)
DHCP Server	Enable or disable the DHCP server. If you disable the DHCP server, you need to manually configure the TCP/IP of every computer in the network.

4. Press the **Save** button followed by **Reboot** button to complete the process.

3.1.2 Advanced Option for DHCP Server

You may configure the built-in DHCP Server of NetPassage 15B to release a specific IP address to a specific computer via the web-based configuration interface. You may also view the IP releases online.

To reserve IP addresses for specific computers:

1. Press the **Dhcp Server Reservations** button from the LAN Setup window shown in Figure 3.1.1-1. The configuration window for DHCP server reservation will be displayed, as shown in Figure 3.1.2-1.



Figure 3.1.2-1
DHCP Server Reservations

- Specify the reserved **IP Address**, the **Host Name** or the **Hardware Address** in the respective text boxes:

- IP Address** This is the reserved IP address for a specific computer
- Host Name** This is the host name of the computer
- Hardware Address** This is the hardware MAC address of the Ethernet interface of the computer



NOTE

The reserved IP address must not be within the range of DHCP start and end IP addresses.

- Press the **Add** button to add this entry, and the **Apply** button to make it effective.

To view the IP released by the DHCP Server:

- Press the **Show Active Dhcp Leases** button in the LAN Setup window shown in Figure 3.1.1-1. The list of released IP addresses will be displayed, as shown in Figure 3.1.2-2.

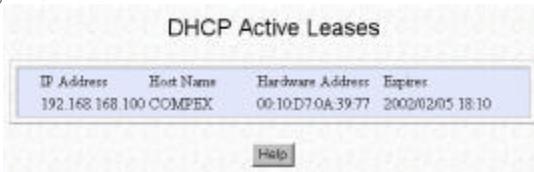


Figure 3.1.2-2
DHCP Server Reservations



NOTE

Invalid date and time shown under **Expires** column indicates that the router's clock of your NetPassage 15B has not been set. Refer to Section 3.8.2 on how to set the router's clock.

3.2 Configuring NetPassage 15B with your Broadband Internet Account

Compex NetPassage 15B shares a single Cable or ADSL Internet account with multiple computers in the network. It supports these broadband Internet connections with different types of WAN protocol. This includes Dynamic IP, Static IP and PPP over Ethernet (PPPoE). NetPassage 15B has also been customized to support Big Pond Cable Internet in Australia and Singtel Magix SuperSurf in Singapore. Successful configuration of NetPassage 15B to work with your broadband Internet account requires you to identify the type of broadband Internet connection you have subscribed. Refer to the following to select the correct WAN type for your broadband Internet subscription.

- i. If you have subscribed to Cable Internet of which your ISP dynamically assigns IP address to you, please go to **Section 3.2.1** titled **Cable Internet with Dynamic IP Assignment**.
- ii. If you have subscribed to Cable Internet of which your ISP provides you with an IP or a range of IP addresses, please go to **Section 3.2.2** titled **Cable Internet with Static IP Assignment**.
- iii. If you have subscribed to ADSL Internet that requires standard PPP over Ethernet (PPPoE) for authentication, please go to **Section 3.2.3** titled **ADSL Internet using PPPoE**.
- iv. If you are a subscriber of Singtel Magix SuperSurf in Singapore, please go to **Section 3.2.4** titled **Singapore Singtel Magix SuperSurf**.
- v. If you are a subscriber of Big Pond Cable Internet in Australia, please go to **Section 3.2.5** titled **Australia Big Pond Cable Internet**.

You may find some important information concerning the broadband ISP in your country in Appendix B of this User's Manual.

3.2.1 Cable Internet with Dynamic IP Assignment

By default, Compex NetPassage 15B is pre-configured to support a WAN type that dynamically obtain an IP address from the ISP. If you have subscribed to Cable Internet of which your ISP dynamically assign an IP address, you do not need to configure the WAN type.

However, there are exceptional cases where additional configuration is required before an IP address is successfully obtained from the ISP:

- i. Certain ISPs log the MAC address of the first device connected to the broadband channel, and refuse to release an IP address unless the MAC address matches the one in the log. If this is not a new Cable Internet subscription and that the ISP refuses to release an IP address to you, you may clone the "approved" MAC address to NetPassage 15B. Refer to the paragraph titled **Cloning MAC Address to NetPassage 15B** in this section.
- ii. Certain ISPs requires a DHCP Client ID to be authenticated before releasing an IP address. To successfully obtain an IP address from such ISPs, you need to configure NetPassage 15B with a DHCP Client ID. NetPassage 15B uses

Router Identity as the DHCP Client ID to request for IP release. Refer to **Section 3.8.1** titled **Setting Router Identity**.

If your NetPassage 15B has previously been configured with other WAN type, you may re-configure it to support Cable Internet with Dynamic IP Assignment.

1. Click on the [WAN Setup](#) URL from the Command Menu and the WAN configuration page will be displayed, as shown in Figure 3.2.1-1.

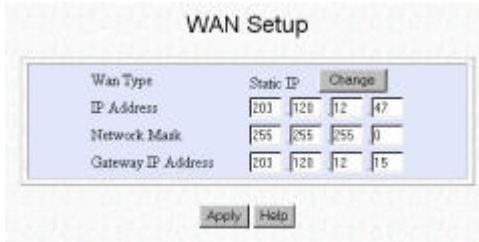


Figure 3.2.1-1
Changing WAN Type



NOTE

Figure 3.2.1-1 shows a WAN interface configured with static IP. If your NetPassage 15B has previously configured with PPPoE or other WAN type, this page will show the respective configuration page.

2. Press the **Change** button and the list of supported WAN type will be displayed, as shown in Figure 3.2.1-2.



Figure 3.2.1-2
Selecting the WAN Type

3. Check the **Dynamic IP Address** radio button and press the **Save** button.
4. Press the **Reboot** button to restart the NetPassage 15B.

Cloning MAC Address to NetPassage 15B

1. Click on the [WAN Setup](#) URL from the Command Menu and the WAN configuration page will be displayed, as shown in Figure 3.2.1-3.



Figure 3.2.1-3
Cloning MAC Address

2. Press the **Clone Mac** button to clone the MAC address of your managing computer to NetPassage 15B. The configuration interface will then prompt you to reboot the router. Press the **Reboot** button to restart your NetPassage 15B.

3.2.2 Cable Internet with Static IP Assignment

Certain ISPs lease a static IP for their Internet subscriptions. For such Cable Internet subscription, you need to configure the WAN interface of NetPassage 15B with static IP address.

3. Click on the [WAN Setup](#) URL from the Command Menu and the WAN configuration page will be displayed, as shown in Figure 3.2.2-1.



Figure 3.2.2-1
Changing WAN Type

4. Press the **Change** button and the list of supported WAN type will be displayed, as shown in Figure 3.2.1-2.
5. Check the **Static IP Address** radio button and press the **Save** button. The Static IP Configuration page will then be displayed, as shown in Figure 3.2.2-2.

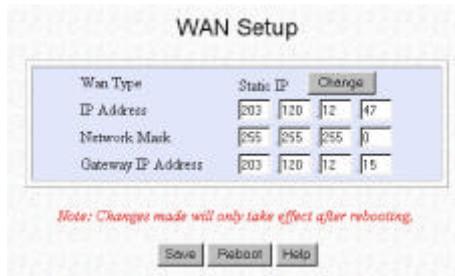


Figure 3.2.2-2
Static IP Configuration Page

6. Enter the **IP Address**, the **Network Mask** and the ISP's **Gateway IP Address** into the fields. These information are provided by your ISP. Press the **Save** button followed by the **Reboot** button to complete the configuration process.

3.2.3 ADSL Internet using PPP over Ethernet (PPPoE)

If you have subscribed to ADSL Internet service using standard PPP over Ethernet (PPPoE) for authentication, you need to configure your NetPassage 15B to support PPPoE.

1. Click on the [WAN Setup](#) URL from the Command Menu and the WAN configuration page will be displayed, as shown in Figure 3.2.2-1.

2. Press the **Change** button and the list of supported WAN type will be displayed, as shown in Figure 3.2.1-2.
3. Check the **PPP over Ethernet** radio button and press the **Save** button. The PPPoE Configuration page will then be displayed, as shown in Figure 3.2.3-1.



Figure 3.2.3-1
PPPoE Configuration Page

4. Fill in the parameters for your ADSL Internet service:

Username	Enter the username of your ADSL Internet subscription in this field
Password	Enter the password of the username
Service Name	Enter the service name of your ADSL Internet subscription (optional)
On-Demand	When this box is “checked”, your NetPassage 15B will automatically connect to the ISP when an Internet request is present in the network.
Idle Timeout	This field is associated with On-Demand option. This field allows you to specify the idling timeout value for NetPassage 15B to disconnect from the ISP. “0” value in this field disables idling timeout function. When set to “0”, NetPassage 15B remains connected unless disconnected by the ISP. Once disconnected, the NetPassage 15B will stay offline until the next Internet request is detected in the network.
Always-On	When this box is “checked”, your NetPassage 15B will always connect to the ISP, with and without Internet requests.

Reconnect Time Factor

This field is associated with **Always-On** option. This field allows you to specify a Reconnect Time Factor (RTF). The default value is 30 seconds. If **Always-On** option is selected with an RTF of 30 seconds, your NetPassage 15B will stay connected to the ISP even when there is no Internet traffic present. If disconnected by the ISP, NetPassage 15B will perform a delay for a random period between 1 to RTF seconds (for RTF value of 30, the random period is drawn between 1 to 30 seconds), and reconnect to the ISP.

Use non-standard PPPOE Ethernet type

Certain Ethernet-based ADSL modem requires non-standard PPP over Ethernet for authentication. If you are uncertain about this, DO NOT “check” this box.

5. Press the **Save** button followed by the **Reboot** button to complete the configuration process.

3.2.4 Singapore SingTel Magix SuperSurf

You should use this WAN type only if you are a subscriber of SingTel Magix SuperSurf in Singapore. If you have subscribed to SingNet Broadband or Pacific Internet Broadband, please go to **Section 3.2.3** titled **ADSL Internet using PPP over Ethernet (PPPoE)**.

1. Click on the [WAN Setup](#) URL from the Command Menu and the WAN configuration page will be displayed, as shown in Figure 3.2.2-1.
2. Press the **Change** button and the list of supported WAN type will be displayed, as shown in Figure 3.2.1-2.
3. Check the **Singapore ADSL (Ethernet 512K)** radio button and press the **Save** button. The configuration page for SingTel Magix SuperSurf will be displayed, as shown in Figure 3.2.4-1.

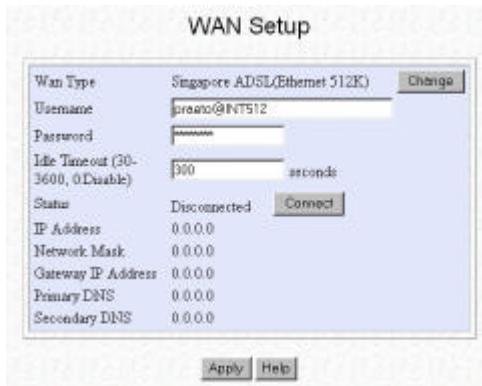


Figure 3.2.4-1
SingTel Magix SuperSurf
Configuration Page

4. Enter the **Username**, **Password** and **Idling Timeout** value to the fields and press the **Save** button.
5. Press the **Reboot** button to complete the configuration process.

3.2.5 Australia Big Pond Cable Internet

You should select this WAN type only if you are a subscriber of Big Pond Cable Internet in Australia. If you have subscribed to OPTUS in Australia, please go to **Section 3.2.1** titled **Cable Internet with Dynamic IP Assignment**. Please note that OPTUS requires a DHCP Client ID before releasing an IP address to you.

1. Click on the [WAN Setup](#) URL from the Command Menu and the WAN configuration page will be displayed, as shown in Figure 3.2.2-1.
2. Press the **Change** button and the list of supported WAN type will be displayed, as shown in Figure 3.2.1-2.
3. Check the **Australia BPA Cable** radio button and press the **Save** button. The configuration page for Big Pond Australia will be displayed, as shown in Figure 3.2.5-1.

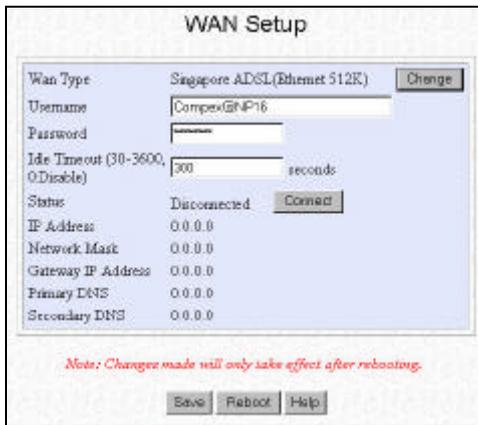


Figure 3.2.5-1
Big Pond Australia
Configuration Page

4. Enter the **Username**, **Password** and **Idling Timeout** to the fields and press the **Save** button.
5. Press the **Reboot** button to complete the configuration process.

3.3 Network Address Translator (NAT)

Complex NetPassage 15B has been designed with a Network Address Translator (NAT) that supports Port Address Translation (PAT), sharing a single public IP address with multiple computers in the private network by using different TCP ports for different computers. By default, the NAT is enabled.



CAUTION

Disabling the NAT will cause your computers not being able to share the broadband Internet service. **DO NOT** disable the NAT unless you are certain on what you are doing.

Due to the translation, the computers behind the NAT are not reachable from the Internet. However, with the support of Virtual Server, you may host the Internet servers behind the NAT based on Port Forwarding or IP Forwarding.

3.3.1 Introduction to Virtual Servers

Complex NetPassage 15B supports two types of Virtual Server, one based on Port Forwarding and the other based on IP Forwarding, where IP Forwarding option is only available when the WAN interface of NetPassage 15B has been configured with a static IP.

Virtual Server based on Port Forwarding

When Virtual Server based on Port Forwarding is implemented, Internet requests to the IP address of NetPassage 15B’s WAN interface will be forwarded to a specific computer in the private network based on the TCP port of the Internet request. Refer to Figure 3.3.1-1.

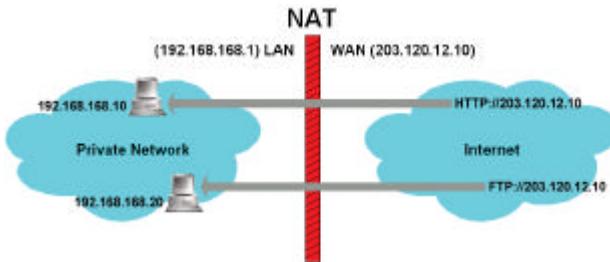


Figure 3.3.1-1
Virtual Server based on Port Forwarding

Figure 3.3.1-1 shows two Virtual Servers implemented, HTTP Virtual Server and FTP Virtual Server. To implement the Virtual Server, you need to know the TCP port that the intended application is using.

For example, suppose that your ISP has assigned an IP address of 203.120.12.10 to your NetPassage 15B, and you wish to host a web server in your private network on a computer with an IP address of 192.168.168.10; you need to define a Virtual Server at TCP Port 80 (used by HTTP by default) to be forwarded to 192.168.168.10. Once implemented, all “http://203.120.12.10” requests will be forwarded to the computer with 192.168.168.10 IP address. If you wish to host another FTP server in your private network on a computer with an IP address of 192.168.168.20; you will then need to define a Virtual Server at TCP Port 21 (used by FTP by default) to be forwarded to 192.168.168.20.

Virtual Server based on IP Forwarding

If you have subscribed to a range of IP addresses from your ISP, you may also define Virtual Servers based on IP Forwarding. This type of Virtual Server forwards all Internet requests, regardless of the TCP port of the application, to a computer in the private network. Refer to Figure 3.3.1-2.

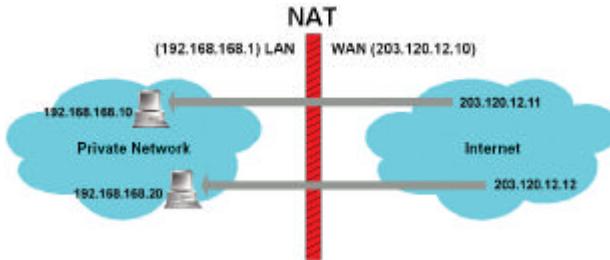


Figure 3.3.1-2
Virtual Server based on
IP Forwarding

Figure 3.3.1-2 shows two Virtual Servers based on IP Forwarding. One maps the public IP 203.120.12.11 to private IP 192.168.168.10, and the other maps the public IP 203.120.12.12 to private IP 192.168.168.20.

Defining Virtual Server based on De-Militarized Zone (DMZ)

Due to the nature of Network Address Translator (NAT), the subnet behind the NAT cannot be reached from the Internet. If you know the TCP/UDP port of an application, such as HTTP, you can easily define a Virtual Server based on Port Forwarding behind the NAT to support a Web Server in your private subnet. However, if you are uncertain on the TCP/UDP port used by an application (certain Internet games), or an application utilizes varying TCP/UDP port, you may define a DMZ host of which the NetPassage 15 will direct all the unresolved Internet requests to.

For example, if the WAN interface of NetPassage 15 has been assigned an IP address of 203.120.12.20 and you have defined a DMZ host with IP address of 192.168.168.10, all the unresolved Internet requests to 203.120.12.20 will be forwarded to 192.168.168.10, regardless of the TCP/UDP port.

3.3.2 Defining Virtual Server based on Port Forwarding

To define Virtual Server based on Port Forwarding:

1. Click on the [NAT](#) URL from the Command Menu and the NAT configuration page will be displayed, as shown in Figure 3.3.2-1.



Figure 3.3.2-1
NAT Configuration Page

2. Press the **Port Forwarding** button and the list of defined Virtual Server will be displayed, as shown in Figure 3.3.2-2.

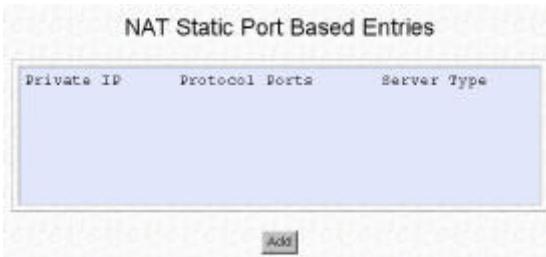


Figure 3.3.2-2
Table Showing Defined Virtual Server based on Port Forwarding

3. Press the **Add** button to define new Virtual Server, as shown in Figure 3.3.2-3.

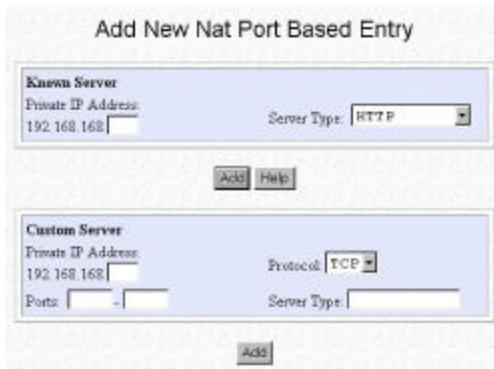


Figure 3.3.2-3
Defining New Virtual Server based on Port Forwarding

4. For **Known Server**, select the **Server Type** from the drop down menu and specify the private IP address of your Virtual Server.
For **Custom Server**, specify the IP address of the Virtual Server, select the **Protocol** used by this application from the drop down menu, specify the TCP/UDP port used by this application, and enter your preferred reference name in the **Server Type** field.
5. Press the **Add** button to add this new Virtual Server into the list.
6. Press the [Save or Reset Settings](#) URL from the Command Menu and press the **Save** button.

3.3.3 Defining Virtual Server based on IP Forwarding

If you have configured your NetPassage 15B with Static IP WAN type, you have the option to define Virtual Server based on IP Forwarding.

1. Click on the [NAT](#) URL from the Command Menu and the NAT configuration page will be displayed, as shown in Figure 3.3.3-1.



Figure 3.3.3-1
NAT Configuration
Window for Static IP
WAN Type

2. Press the **Static Ip Address Entries** button and the list of defined Virtual Server will be displayed, as shown in Figure 3.3.3-2.

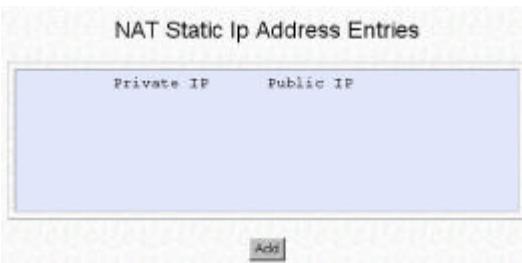


Figure 3.3.3-2
Table Showing Defined
Virtual Server based on IP
Forwarding

3. Press the **Add** button to define new Virtual Server, as shown in Figure 3.3.3-3.

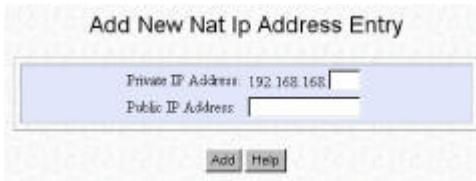


Figure 3.3.3-3
Defining New Virtual Server based on IP Forwarding

4. Enter the **Public IP Address** and the **Private IP Address** which it maps to. Please ensure that you have subscribed to this **Public IP Address**.
5. Press the **Add** button to add this new Virtual Server into the list.
6. Click on the [Save or Reset Settings](#) URL from the Command Menu and press the **Save** button.

3.3.4 Defining De- Militarized Zone

To define a DMZ host:

7. Click on the [NAT](#) URL from the Command Menu and the NAT configuration page will be displayed, as shown in Figure 3.3.4-1.

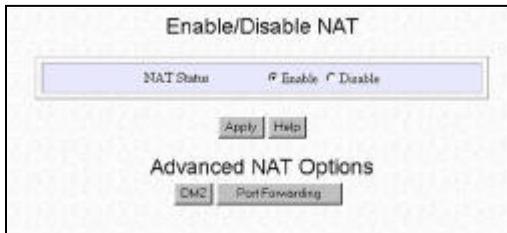


Figure 3.3.4-1
NAT Configuration Page

8. Press the **DMZ** button and the DMZ Host Definition Window will be displayed, as shown in Figure 3.3.4-2.



Figure 3.3.4-2
Configuring DMZ

9. Enter the IP address of your designated computer and press the **Apply** button.
10. Save the configuration profile.



NOTE

To disable DMZ, please enter the IP address as 0.0.0.0.

3.4 Configuring Routing Protocol

Complex NetPassage 15B allows the network administrator to add a static routing entry into the routing table. Other than the default gateway to the Internet, NetPassage 15B may reroute the IP packets to another network. This is very useful for a network with more than one router.



CAUTION

If you are configuring NetPassage 15B for broadband Internet sharing, you DO NOT need to configure any routing information. The default routing settings of NetPassage 15B are sufficient for broadband Internet sharing. Improper routing configuration will cause undesired effect.

For example, if you have two routers in the network, where one functions as an Internet gateway and the other as a gateway to a remote office. You may define a static route in NetPassage 15B to re-route the packets to the remote office. Refer to Figure 3.4-1.

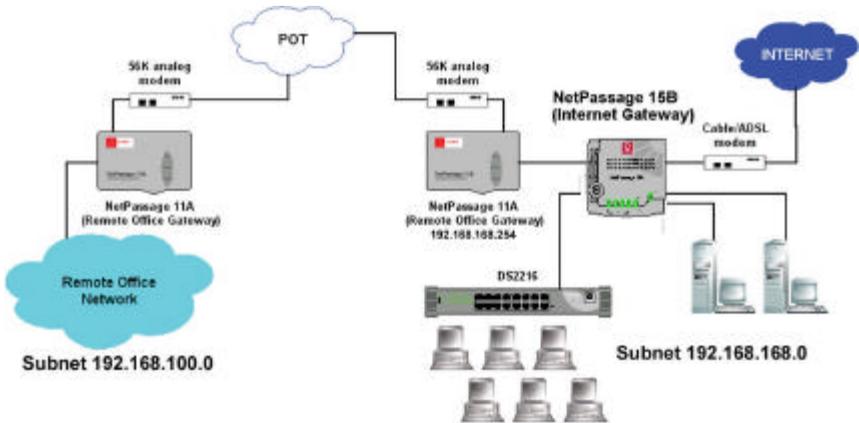


Figure 3.4-1
Network with multiple gateways. One to the Internet and the other to the remote office.

In this network, the main office of subnet 192.168.168.0 contains two routers, one connected to the broadband Internet via NetPassage 15B (IP 192.168.168.1) and the other connected to a remote office via NetPassage 11A (IP 192.168.168.254). The remote location resides on subnet 192.168.100.0. You may add a static routing entry into NetPassage 15B's routing table to point the gateway 192.168.168.254 to subnet 192.168.100.0. Once added, packets with destination IP address of 192.168.100.X will be re-routed to NetPassage 11A (IP 192.168.168.254).

Alternatively, you may also activate dynamic routing protocol on NetPassage 15B. Complex NetPassage 15B supports two types of routing protocol, RIP1 and RIP2.

3.4.1 Static Routing

To add a static routing entry into NetPassage 15B's routing table:

1. Click on the [Routing](#) URL from the Command Menu, and the routing configuration page will be displayed, as shown in Figure 3.4.1-1.



Figure 3.4.1-1
Routing Configuration Page

2. To define a new static routing entry into the routing table, press the **Add** button. The following page will be displayed, as shown in Figure 3.4.1-2.



Figure 3.4.1-2
Adding New Static Routing Entry into the Routing Table

3. Enter the destination network address into the **Destination IP Address** field and the IP address of the gateway connected to this network into the **Gateway IP Address** field. For example if a gateway of IP 192.168.168.254 is connected to a remote network 192.168.100.0, enter the **Destination IP Address** and **Gateway IP Address** as 192.168.100.0 and 192.168.168.254 respectively.
4. Press the **Apply** button to add the new static routing entry into NetPassage 15B's routing table

3.4.2 Dynamic Routing

To enable dynamic routing protocol:

1. Click to expand the **Dynamic Routing** drop down menu and select the preferred dynamic routing protocol, RIP1 or RIP2. (Figure 3.4.1-1)
2. Press the **Apply** button for the changes to be effective.

3.5 IP Packet Filtering

Complex NetPassage 15B enables the users to define administrative functions based on packet filtering rule. With IP packet filtering, you may perform **Time-based Access Management** and **Internet Application Filtering**.

Time-based Access Management selectively allow or disallow certain computers in the network to access to the Internet in different time frame. For example, you may define a function to allow your children to access to the Internet only between 8:00PM to 10:00PM.

Internet Application Filtering selectively allow/disallow certain application to connect to the Internet. For example, if you wish to allow only web browsing in the network, you may define a function to allow only HTTP protocol to pass through the NetPassage 15B.

3.5.1 Time-based Access Management

To define a function for Time-based Access Management:

1. Before proceeding to define a function for **Time-based Access Management**, ensure that your NetPassage 15B's router clock has been synchronized with your computer. Refer to **Section 3.8.2** titled **Synchronizing Router's Clock with your Computer** on how to synchronize the router's clock.
2. Click on the **Filtering** URL from the Command Menu and the table listing defined packet filter function will be displayed, as shown in Figure 3.5.1-1. In this page, you may **Add**, **Delete** or **Edit** a filtering function. You may also select to send or discard the packet if it matches the filtering rules.

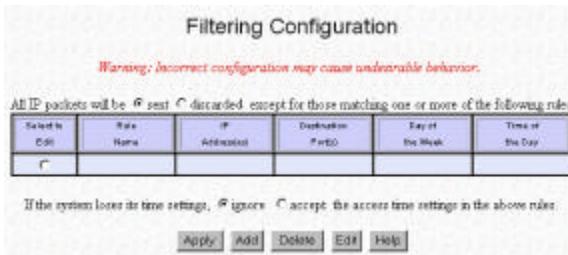


Figure 3.5.1-1
Table Listing Defined Filter Functions

3. Press the **Add** button to define a new function for **Time-based Access Management**. The following page will be displayed, as shown in Figure 3.5.1-2.

The screenshot shows a dialog box titled "IP Filter Configuration" with the subtitle "Add a new rule". The dialog contains the following fields and values:

- Rule Name: [Empty text box]
- IP Address: Any (dropdown menu)
- (From): 192.168.168 (text box)
- (To): 192.168.168 (text box)
- Destination Port: Any (dropdown menu)
- (From): [Empty text box]
- (To): [Empty text box]
- Day of the Week: Any (dropdown menu)
- (From): Sun (dropdown menu)
- (To): Sun (dropdown menu)
- Time of the Day: Any (dropdown menu) (hh: mm: 00-23, mm: 00-59)
- (From): [Empty text box] (hh:mm)
- (To): [Empty text box] (hh:mm)

At the bottom of the dialog are three buttons: Apply, Cancel, and Help.

Figure 3.5.1-2
Defining Filtering
Function

- To define a rule for **Time-based Access Control**, you need to know the IP address of the computers where this rule applies. For example, if you wish to disallow two computers (IP address of 192.168.168.10 and 192.168.168.11) to access to the Internet between 10:00PM to 8:00AM, you may define a rule with the following parameters:

Rule Name	Enter your preferred name for this rule
IP Address	Select Range from the drop down menu
(From)	192.168.168.10
(To)	192.168.168.11
Destination Port	Any
(From)	<blank>
(To)	<blank>
Day of the Week	Any
(From)	Sun
(To)	Sun
Time of the day	Select Range from the drop down menu
(From)	22:00
(To)	08:00

- Press the **Apply** button to add this filtering function into the list.
- Ensure that the **Sent** radio button is "checked".
- Press the **Apply** button for the changes to be effective.

3.5.2 Internet Application Filtering

To define a function to perform **Internet Application Filtering**:

- Press the **Add** button at the filtering configuration page as shown in Figure 3.5.1-1.
- To define a rule to perform Internet Application Filtering, you need to know the TCP port of the application of which this rule applies. For example, if you wish to

stop the computers from connecting to the Internet via a TELNET (uses TCP Port 23) session, you may define a rule with the following parameters:

Rule Name	Enter your preferred name for this rule
IP Address (From)	Select Any from the drop down menu
(To)	<blank>
Destination Port (From)	Select Single from the drop down menu
(To)	23
Day of the Week (From)	Any
(To)	Sun
Time of the day (From)	Sun
(To)	Select Any from the drop down menu
(From)	<blank>
(To)	<blank>

3. Press the **Apply** button to add this filtering function into the list.
4. Ensure that the **Sent** radio button is “checked”.
5. Press the **Apply** button for the changes to be effective.

3.6 Managing NetPassage 15B from the Internet

Compex NetPassage 15B is integrated with an HTTP Server, enabling router management from the private network with just a JAVA-enabled web browser. It may also be managed via a Command Console. In addition, Compex NetPassage 15B supports Remote Router Management, allowing the network administrators to manage the router from the Internet, either by a web browser or via a TELNET session.

3.6.1 Activating Remote Router Management

To activate Remote Router Management from the Internet:

1. Click on the [Remote Management](#) URL from the Command Menu and the remote management activation page will be displayed, as shown in Figure 3.6.1-1.



Figure 3.6.1-1
Activating Remote Router Management

2. Enter the desired TCP port that you wish to use for Remote Router Management. Default value of “0” disables this feature.

HTTP Port Specify the desired port for remote router management via a web browser. If you have specified a non-standard TCP port for this field, you need to specify the port number when you connect to the management interface from the Internet.

For example, if your ISP has assigned 203.120.12.30 to NetPassage 15B’s WAN interface and you have chosen to use port 2000 for HTTP remote management, you may connect to the router management interface by using <http://203.120.12.30:2000>.

TELNET Port Specify the desired port for remote router management via a TELNET session (Command Console). If you have specified a non-standard TCP port for this field, you need to specify the port number when you connect to the command console from the Internet.

For example, if your ISP has assigned 203.120.12.30 to NetPassage 15B’s WAN interface and you have chosen to use port 5000 for TELNET remote console management, you may connect to the router command console by TELNET to port 5000 of 203.120.12.30

3. Press the **Save** button followed by the **Reboot** button to complete the process.

3.7 Load Balancing & Fail-Over Redundancy with Parallel Broadband

Designed with the unique **Parallel Broadband** technology, Compex NetPassage 15B provides scalable Internet bandwidth with Load Balancing and Fail-Over Redundancy. If multiple units of NetPassage 15B are installed in the network, the Internet traffic will be balanced across multiple broadband channels, delivering virtually a combined aggregated bandwidth while functioning as Fail-Over Redundancy.

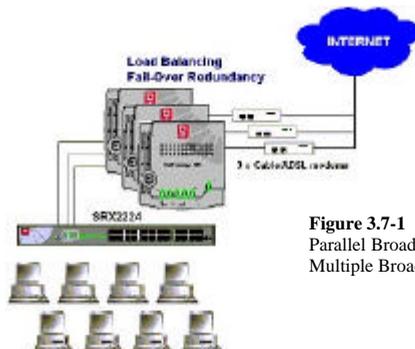


Figure 3.7-1
Parallel Broadband with
Multiple Broadband Channels

3.7.1 Implementing Parallel Broadband

To implement Parallel Broadband, you need to install two or more units of NetPassage 15B in the network, each connected to its broadband Internet service account. There is no restriction on the type of broadband Internet accounts that they are connected to. For example, if you have two NetPassage 15Bs in the network, you may have one connected to Cable Internet whereas the other connected to ADSL line. Once the Parallel Broadband is implemented, these two NetPassage 15Bs will balance the Internet traffic among them while functioning as Fail-Over Redundancy to each other.

To activate Parallel Broadband:

1. Click on the [Parallel Broadband](#) URL from the Command Menu and the Parallel Broadband activation page will be displayed, as shown in Figure 3.7.1-1.

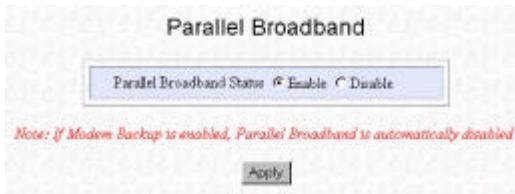


Figure 3.7.1-1
Activating Parallel
Broadband

2. Check the **Enable** radio button and press the **Apply** button.



NOTE

You **DO NOT** need to implement Parallel Broadband for Internet sharing using one unit of NetPassage 15B.

3.8 NetPassage 15B's System Tools

The web-based configuration interface of NetPassage 15B comes with a set of system tools for you to define name for your NetPassage 15B, setting the router's clock, upgrading the firmware, saving & restore router's profile and changing the administrative password.

3.8.1 Setting Router Identity

You may define a name for your NetPassage 15B. This name will also be used as a DHCP Client ID when it negotiates for an IP release from your ISP.

1. Click on the [Router Identity](#) URL from the Command Menu and the router identity configuration page will be displayed, as shown in Figure 3.8.1-1.



Router Identity	
System Name	Internet Access Router
System Contact	unknown
System Location	unknown

Apply Help

Figure 3.8.1-1
Configuring Router's Identity

2. Enter the Name, the Contact person and the Location of the NetPassage 15B.
3. Press the **Apply** button for the changes to be effective.

3.8.2 Synchronizing Router's Clock with your Computer

Complex NetPassage 15 is specially designed with a SNTP compatibility and router's clock that can be synchronized with the managing computer. The administrative function such as Time-based Access Control relies on the router's clock. Therefore, it is important that the router's clock is set correctly.

1. Click on the [Set Router's Clock](#) URL from the Command Menu and the System Time Setting window will be displayed, as shown in Figure 3.8.2-1.



Figure 3.8.2-1
Synchronizing Router's Clock

2. The **Proposed Router Time** will display the system time of your managing computer.
3. Select the **Enable** radio button at **Auto Time Setting** and enter your preferred time server in the text box. (please refer to Figure 3.8.2-1)
4. Press the **Apply** button for the changes to be effective.
5. Save the configuration profile.

3.8.3 Upgrading Router's Firmware

Compex NetPassage 15B comes with the firmware upgrade capability. You may download the latest firmware from Compex corporate website (<http://www.compex.com.sg> or <http://www.cpx.com>) and update the firmware of your NetPassage 15B.

1. Click on the **Firmware Upgrade** URL from the Command Menu and the firmware upgrade page will be displayed, as shown in Figure 3.8.3-1



Figure 3.8.3-1
Upgrading Router's Firmware

2. Press the **Browse** button and locate the firmware image from your computer.
3. Press the **Upgrade** button to update your NetPassage 15B's firmware. It is critical that the power supply is not cut off during the firmware upgrade process. Once the firmware upgrade process is completed, your NetPassage 15B will restart.



CAUTION

Make sure that the power supply is not cut off during the firmware upgrade process. If the NetPassage 15B loses power supply during firmware upgrade process, the firmware will be corrupted and the NetPassage 15B will no longer be functional.

3.8.4 Profile Saving, Restore & Reset to Defaults

You may save the configuration profile of your NetPassage 15B onto the hard disk of your managing computer and restore this profile in a later time. You may also reset the configuration of your NetPassage 15B to factory defaults.

1. Click on the [Save or Reset Settings](#) URL from the Command Menu and the following page will be displayed, as shown in Figure 3.8.4-1.

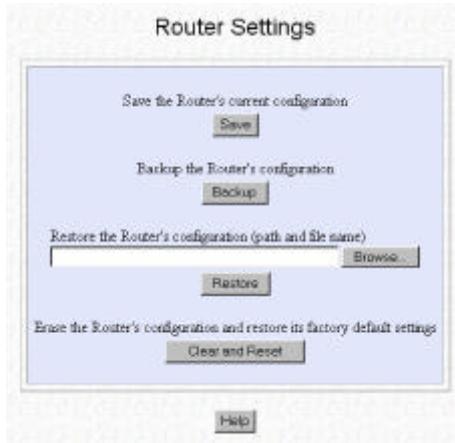


Figure 3.8.4-1
Saving, Restore and Reset Profile

2. Press the **Save** button if you wish to save the configuration profile into NetPassage 15B's flash ROM. Press the **Backup** button if you want to save the configuration profile onto the hard disk. If you want to restore a profile, press the **Browse** button to select the file from the hard disk and press the **Restore** button. If you wish to reset your NetPassage 15B back to factory defaults, press the **Clear and Reset** button.



CAUTION

Pressing the **Clear and Reset** button will discard all the configuration you have saved to NetPassage 15B's flash ROM.

3.8.5 Rebooting NetPassage 15B

You may reboot your NetPassage 15B manually from the web-based management interface. Please always ensure that the changes have been saved before rebooting the router.



CAUTION

If you reboot the NetPassage 15B without saving the configuration, all the unsaved configuration will be lost after reboot.

1. Click on the [Reboot Router](#) URL from the Command Menu.
2. Press the **Yes** button to reboot the router.

3.8.6 Changing Administrative Password

By default, the administrative password is “password”. You may change the password to your preferred string.

1. Click on the [Change Password](#) URL from the Command Menu.
2. Type in the **Old Password**, the **New Password** and **Confirm Password**. Press the **Change Password** button to make the changes effective.

Appendix A Console Commands

SHOW Command

SYNTAX

SHOW IP
SHOW IP STAT
SHOW ICMP STAT
SHOW UDP STAT
SHOW TCP STAT
SHOW IP ROUTE TABLE
SHOW IP STATIC NAT TABLE
SHOW PORT STATIC NAT TABLE
SHOW SYSTEM
SHOW RIP
SHOW GATEWAY
SHOW DHCP
SHOW DHCP RESERVE
SHOW DHCP LEASE
SHOW ETHERNET ADDRESS
SHOW TELNET SESSION
SHOW TIME
SHOW NAT STAT
SHOW ARP TABLE
SHOW FILTER

DESCRIPTION

Display the IP information of the LAN and WAN interface
Display the statistics of the IP packets
Display the statistics of the ICMP packets
Display the statistics of the UDP packets
Display the statistics of the TCP packets
Display the routing table
List defined virtual servers based on IP forwarding
List defined virtual servers based on port forwarding
Display the system information
Display the status of the dynamic routing protocol
Display the gateway IP address of the WAN interface
Display the DHCP information
Display the DHCP reservations
Display the leased IP information
Display the MAC address of the LAN & WAN interface
Display the source IP of the open TELNET console session
Display current router's time
Display the status of the NAT
Display the ARP table in the router
List defined IP packet filtering rules

SET Command

SYNTAX

SET IP LAN <IP ADDR> <NETMASK>
SET IP WAN <IP ADDR> <NETMASK>
SET GATEWAY <IP ADDR>
SET SYSTEM NAME <STRING>
SET SYSTEM CONTACT <STRING>
SET SYSTEM LOCATION <STRING>
SET PASSWORD
SET TIMEZONE <GMT DIFF>
SET TIME <HH:MM:SS>
SET DATE <MM/DD/YYYY>
SET DHCP SERVER
SET PROMPT "<STRING>"
SET WAN TYPE
SET FILTER MODE

DESCRIPTION

Set the IP address of the LAN interface
Set the IP address of the WAN interface
Set the gateway IP address of the WAN interface
Set the router's identity
Specify the contact person for this router
Specify the location of this router
Changing the administrative password
Set the timezone based on GMT time difference
Set the router's time
Set the router's date
Configure the DHCP server
Set the text appear at the command console
Select the WAN type
Set the option on IP packet filtering rules

PING Command

SYNTAX

PING <IP ADDR>

DESCRIPTION

Ping a host by its IP address

DELETE Command

SYNTAX

DELETE ARP <IP ADDR>
DELETE IP ROUTE <DES> <GATEWAY>
DELETE IP STATIC NAT <INDEX>

DESCRIPTION

Remove an IP address from the ARP table
Remove an entry from the routing table
Delete an entry from the list of defined virtual server based on IP

DELETE PORT STATIC NAT <INDEX>	forwarding. You may obtain the <INDEX> by listing the defined IP forwarding table with the command “SHOW IP STATIC NAT TABLE” Delete an entry from the list of defined virtual server based on port forwarding. You may obtain the <INDEX> by listing the defined port forwarding table with the command “SHOW PORT STATIC NAT TABLE”
DELETE DHCP RESERVE <INDEX>	Delete a DHCP reservation from the list. The <INDEX> is the sequence from top by listing the DHCP reservation table with the command “SHOW DHCP RESERVE”
DELETE FILTER <INDEX>	Delete an IP packet filtering rule. You may obtain the <INDEX> by listing the defined IP filtering rule with the command “SHOW FILTER”

RESET Command

SYNTAX

RESET SYSTEM
RESET CONFIG

DESCRIPTION

Reboot the router
Reset the configuration back to factory defaults

ADD Command

SYNTAX

ADD IP ROUTE <DES> <GATEWAY>
ADD IP STATIC NAT <PRI IP> <PUB IP>
ADD PORT STATIC NAT <PRI IP>
<TCP/UDP> <FROM PORT> <TO PORT>
“<RULE NAME>”
ADD DHCP RESERVE <PRIV IP> “<HOST
NAME>” <MAC ADDR>
ADD FILTER

DESCRIPTION

Add an entry to the routing table
Add a virtual server based on IP forwarding
Add a virtual server based on Port Forwarding
Add a DHCP reservation
Add a IP packet filtering rule

ENABLE Command

SYNTAX

ENABLE RIP <VERSION>
ENABLE NAT
ENABLE DHCP SERVER

DESCRIPTION

Enable RIP version 1 or 2
Enable Network Address Translator
Enable DHCP server

DISABLE Command

SYNTAX

DISABLE RIP
DISABLE NAT
DISABLE DHCP SERVER

DESCRIPTION

Disable RIP
Disable Network Address Translator
Disable DHCP server

SAVE Command

SYNTAX

SAVE CONFIG

DESCRIPTION

Save the changes in configuration to the router’s flash ROM

DISCONNECT Command

SYNTAX

DISCONNECT TELNET SESSION

DESCRIPTION

Disconnect from the TELNET console management

EDIT Command

SYNTAX

EDIT FILTER <INDEX>

DESCRIPTION

Edit a defined IP packet filtering rule

Appendix B ISP-Specific Notes

B.1 Singapore SingNet Broadband

WAN Type: PPP over Ethernet (PPPoE)
Username Format: <username>@singnet.com

B.2 Singapore Pacific Internet Broadband

WAN Type: PPP over Ethernet (PPPoE)
Username Format: <username>@pacific.net.sg

B.3 Germany T-DSL & T-Online

WAN Type: PPP over Ethernet (PPPoE)
Username Format: <Connection ID><T-Online Number>#0001@t-online.de



NOTE

The <Connection ID> and <T-Online Number> are provided by German Telecom.

B.4 Australia Optus@Home

WAN Type: Dynamic IP
DHCP Client ID: Set as Router's Identity

Appendix C Frequently Asked Questions

C.1 **Based on which firmware release is this User's Manual written?**

This User's Manual is written based on NetPassage 15B firmware release 2.74 build 1000.

C.2 **I have forgotten the IP address that I have set on my NetPassage 15B, what should I do?**

You may run the utility NPFIND.EXE located in the Product CD, it will report the IP address of the NetPassage 15B found in the network.

C.3 **The "CONN" LED on my NetPassage 15B is flashing rapidly, and I cannot connect to the web-based configuration interface, why?**

The rapid flashing of the "CONN" LED indicates that the router firmware has been corrupted. The firmware recovery utility may be found on the Product CD.

C.4 **I have configured NetPassage 15B with my broadband Internet account. I am able to PING the ISP gateway IP address. However, I cannot surf the Internet.**

If you have not configured the DHCP server to configure the DNS information of the computers in the network, you need to manually configure the DNS entry on every computer. Without the DNS server, you will not be able to resolve domain name (eg www.compex.com.sg) into IP address. Refer to Section 2.2.2 on how to configure for DNS server on the computer.

C.5 **I am using Cable Internet and have tried to configure NetPassage 15B to work with it. I just couldn't get the ISP to release an IP to me. When I connected my computer directly to the Cable modem, I am able to surf the Internet.**

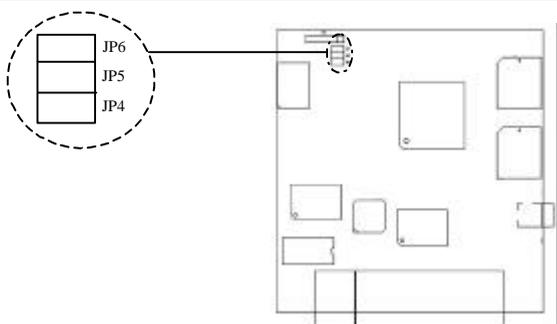
Your ISP has probably logged the MAC address of your computer. You should clone the MAC address of your computer to NetPassage 15B. Refer to paragraph titled **Cloning MAC Address to NetPassage 15B** under Section 3.2

C.6 **I have forgotten the IP address and the log in password. Is there any possibility to reset NetPassage 15B to factory's default.**

You can perform a hardware reset by first removing the covering case of NetPassage 15B. Manipulate the jumpers according to the table below to achieve the desired effect.

Action	Normal	Reset Password to default value	Reset to factory default setting
JP4	Closed	Closed	Closed
JP5	Closed	Open	Closed
JP6	Closed	Closed	Open

*Note: JP4: Reserved for future use. It is always Closed.



Procedure for resetting password to default:

1. Switch OFF NetPassage 15B.
2. Remove jumper JP5.
3. Switch ON the router. The DIAG led will light up for a few seconds and off.
4. Switch OFF the router again and put back the jumper.
5. The password for the router will then be reset. To confirm this has been done, switch ON the router and log on to the Remote Access Router Manager again.
(Refer to Section 2.3, “**Connecting to the Configuration Interface**”)

Procedure for resetting to factory default:

1. Switch OFF the NetPassage 15B.
2. Remove jumper JP6.
3. Switch ON the router. The DIAG led will light up for a few seconds and off.
4. Switch OFF the router again and put back jumper.
5. The router configuration will then be reset. To confirm this has been done, switch ON the router and log on to the Remote Access Router Manager again.
(Refer to Section 2.3, “**Connecting to the Configuration Interface**”)