# BELKIN®

## High Speed ADSL2+ Modem-Router

# **BELKIN**.

High Speed ADSL2+ Modem-Router

# **Connect your PC for high-speed Internet access**



# **BELKIN**®

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# Introduction

Thank you for purchasing the Belkin ADSL 2+ Modem-Router. In minutes you will be able to connect to the Internet. The following is a list of features that make your Modem-Router an ideal solution for your home or small office. Please be sure to read through this User Manual completely.

#### **Product Features**

#### Compatibility with both PC's and Mac® Computers

The Modem-Router supports a variety of networking environments including Mac OS® 8.x, 9.x & v10.x, AppleTalk®, Linux®, Windows® 98SE, ME, NT, 2000 and XP and others. You need an Internet browser and a network adapter that supports TCP/IP (the standard language of the Internet).

#### Front-Panel LED Display

Lighted LED's on the front of the Modem-Router indicate which functions are in operation. You'll know at-a-glance whether your Modem-Router is connected to the Internet. This feature eliminates the need for advanced software and status-monitoring procedures.

#### Web-Based Advanced User Interface

You can set up the Modem-Router advanced functions easily through your web browser, without having to install additional software onto the computer. There are no disks to install or keep track of and, best of all, you can make changes and perform setup functions from any computer on the network quickly and easily.

#### Integrated 4 Port 10/100 Ethernet Switch

Your Modem-Router has the ability to connect to your PC's with 10/100 Ethernet. The Ethernet connection will support any OS that has an Ethernet connection and support for the TCP/IP Protocol.

#### **Built-in Dynamic Host Configuration Protocol (DHCP)**

Built-In Dynamic Host Configuration Protocol (DHCP) on-board makes for the easiest possible connection of a network. The DHCP server will assign IP addresses to each computer automatically so there is no need for a complicated networking setup.

#### NAT IP Address Sharing

Your Modem-Router employs Network Address Translation (NAT) to share the single IP address assigned to you by your Internet Service Provider while saving the cost of adding additional IP addresses to your Internet service account.

#### **SPI Firewall**

Your Modem-Router is equipped with a firewall that will protect your network from a wide array of common hacker attacks including IP Spoofing, Land Attack, Ping of Death (PoD), Denial of Service (DoS), IP with zero length, Smurf Attack, TCP Null Scan, SYN flood, UDP flooding, Tear Drop Attack, ICMP defect, RIP defect, and fragment flooding.

#### MAC Address Filtering

For added security, you can set up a list of MAC addresses (unique client identifiers) that are allowed access to your network. Every computer has its own MAC address. Simply enter these MAC addresses into a list using the web-based user interface and you can control access to your network.

#### Universal Plug-and-Play (UPnP) Compatibility

UPnP (Universal Plug-and-Play) is a technology that offers seamless operation of voice messaging, video messaging, games, and other applications that are UPnP-compliant.

#### Support for VPN Pass-Through

If you connect to your office network from home using a VPN connection, your Modem-Router will allow your VPN-equipped computer to pass through the Modem-Router and to your office network.

#### Package Contents

- ADSL Modem-Router
- RJ11 Telephone Cable
- RJ45 Ethernet Networking Cable
- Power Adapter
- User Manual CD

#### **System Requirements**

- An active ADSL service with a telephone wall jack for connecting the Modem-Router
- At least one computer with a Network Interface Card (NIC) and Internet browser installed and correctly configured
- TCP/IP networking protocol installed on each computer connected to the Modem-Router
- No other DHCP server on your local network assigning IP addresses to computers and devices

#### **Internet Connection Settings**

Please collect the following information from your Internet Service Provider (ISP) before setting up the ADSL Modem-Router.

- Internet connection protocol: \_\_\_\_\_ (PPPoE, PPPoA,1483 Bridged\*)
- Multiplexing method or Encapsulation: \_\_\_\_\_ (LLC or VC MUX)
- Virtual circuit: VPI (Virtual Path Identifier) \_\_\_\_\_ (a number between 0 and 255)
- VCI (Virtual Channel Identifier) \_\_\_\_\_ (a number between 1 and 65535)
- For PPPoE and PPPoA users: ADSL account user name \_\_\_\_\_\_
  and password \_\_\_\_\_\_
- IP address for Domain Name Server \_\_\_. \_\_. (If specified by your ISP)

\*1483 Bridged turns all advanced features off in the Modem-Router, such as Firewall & Dynamic DNS. The username and password is then sent via PPPoE connection software installed on your PC.

## Knowing Your Modem-Router

The Modem-Router is designed to be placed on a desktop. All of the cables exit from the rear of the Modem-Router for better organization and utility. The LED indicators are easily visible on the front of the Modem-Router to provide you with information about network activity and status.

#### **Front Panel**



#### 1. Power LED

When you apply power to the Modem-Router or restart it, a short period of time elapses while the Modem-Router boots up. When the Modem-Router has completely booted up, the Power LED becomes a SOLID light, indicating the Modem-Router is ready for use.

Off	Modem-Router is off
On	Modem-Router is on

#### 2. LAN Status LED

When a computer is properly connected to a LAN port on the rear of the Modem-Router, the associated LED will light. A solid light means a computer or a network-enabled device is connected. When information is being sent over the port, the LED blinks rapidly.

Off	Your computer is not connected
On - blinking	Connected and transmitting or receiving data
On	Your computer is connected

#### 3. ADSL DATA LED

The ADSL Data LED shows you when the Modem-Router is connected to the Internet. When the LED is OFF, the Modem-Router is NOT connected to the Internet. When the LED is solid light, the Modem-Router is connected to the Internet. When the LED is blinking, the Modem-Router is transmitting or receiving data from the Internet.

Off	Not connected to Internet
On - blinking	Connected and transmitting or receiving data
On	Connected to Internet

#### 4. ADSL SYNC LED

The ADSL LED flashes light during negotiation with your ISP. It stays light when the Modem-Router is connected properly to your ADSL service.

Off	No ADSL connection
On - blinking	Negotiating connection
On	ADSL link is up and connected

#### **Back Panel**



#### 5. ADSL

This port is for connection to your ADSL line. Connect your ADSL line to this port.

#### 6. Ethernet

The Ethernet port is RJ45, 10/100 auto-negotiation. Connect your network-enabled computers or any networking devices to this port.

#### 7. Reset

The "Reset" button is used in rare cases when the Modem-Router may function improperly. Resetting the Modem-Router will restore the Modem-Router's normal operation while maintaining the programmed settings. You can also restore the factory default settings by using the Reset button. Use the restore option in instances where you may have forgotten your custom password.

#### a. Resetting the Modem-Router

Push and hold the Reset button for one second then release it. When the PWR light becomes solid again the reset is complete.

#### b. Restoring the Factory Defaults

Push and hold the Reset button for ten seconds then release it. When the PWR light becomes solid again the restore is complete.

#### 8. Power Plug

Connect the included 12V 1A DC power supply to this inlet. Using the wrong type of power adapter may cause damage to your Modem-Router.

**Connecting your Computer via Ethernet** 

- 1. Power off your computer and Modem-Router
- Connect your computer to an Ethernet port on the rear of the Modem-Router by using an Ethernet networking cable (an Ethernet network cable is supplied).
- 3. Power on your computer and Modem-Router.

#### **Connecting your ADSL Line**

Connection for the Modem-Router to the ADSL line varies by country and region. Typically it involves line filter or a line filter with built-in splitter to allow simultaneous use of ADSL service and telephone service on the same telephone line. Please read the following steps carefully and select appropriate method.

 If your telephone service and ADSL service are on the same telephone line, ADSL line filters are needed for each telephone and device, such as answering machine, fax machine, and caller ID display. Additional splitters may be used to separate telephone lines for telephone and the Modem-Router.

Note: Do not connect the ADSL line filter between the wall jack and the Modem-Router—this will prevent ADSL service from reaching the Modem-Router.

2. If your telephone service and ADSL service are on the same telephone line and you are using an ADSL line filter with built-in splitter, connect the splitter to the telephone wall jack providing ADSL service. Then, connect the telephone cord from the ADSL line filter RJ11 port generally labelled "ADSL" to the RJ11 port labelled "ADSL" on the back of your Modem-Router. Connect telephony device to the other port on the ADSL splitter commonly labelled "Phone". An additional ADSL line filter is needed for another telephone and device on the same line.

Note: One RJ11 telephone cord is supplied. When inserting an RJ11 plug, be sure the tab on the plug clicks into position to ensure that it is properly seated.

 If you have a dedicated ADSL service telephone line with an RJ11 wall jack, simply connect a telephone cord from the wall jack to the RJ11 port labelled "ADSL" on the back of your Modem-Router. In order for your computer to properly communicate with your Modem-Router, you will need to change your computer's "TCP/IP Ethernet" settings to "Obtain an IP address automatically/Using DHCP". This is normally the default setting in most home computers.

Manually Configuring Network Adapters in Windows XP, 2000, or NT

- 1. Click "Start", "Settings", and then "Control Panel".
- Double-click on the "Network and dial-up connections" icon (Windows 2000) or the "Network Connections" icon (Windows XP).
- 3. Right-click on

the "Local Area Connection" associated with your network adapter and select "Properties" from the drop-down menu.

4.	In the "Local
	Area Connection
	Properties" window,
	click "Internet
	Protocol (TCP/
	IP)" and click the
	"Properties" button.

u can get IP settings assigned automatically if your ne s capability. Otherwise, you need to ask your network s appropriate IP settings.	
Qotain an IP address automatically	
C Uge the following IP address:	
IP address:	
Sybnet mask:	
Default gateway	
<ul> <li>Ogtain DNS server address automatically</li> </ul>	
Use the following DNS server addresses:	
Preferred DNS server.	
Alternate DNS server:	

 If not already selected, select "Obtain an IP address automatically" and "Obtain DNS server address automatically". Click "OK".

Your network adapter(s) are now configured for use with the Modem-Router.

Manually Configuring Network Adapters in Windows 98SE or Me

- 1. Right-click on "My Network Neighbourhood" and select "Properties" from the drop-down menu.
- Select "TCP/IP -> settings" for your installed network adapter.
- If not already selected, select "Obtain an IP address automatically" on the IP address tab.
- Click the "Gateway" tab. Highlight anything listed under "Installed Gateways", and click "Remove"

Bindings	Adv	anced	N	etBIOS
DNS Configuration	Gateway	WINS Con	figuration	IP Addres
An IP address car If your network do your network adm the space below.	es not auton	natically assi	gn IP addre	esses, ask
Obtain an IP	address aut	omatically		
C Specify an If	P address:			
	k. 🗌			

- 5. Click the "DNS Configuration" tab. Click "Disable DNS"
- 6. Click "OK".

Restart the computer. When the computer restarts, your network adapter(s) are now configured for use with the Modem-Router.

# Setting up your Computer

Manually Configuring Network Adapters in Mac OS up to 9.x

In order for your computer to properly communicate with your Modem-Router, you will need to change your Mac computer's TCP/IP settings to DHCP.

- 1. Pull down the Apple menu. Select "Control Panels" and select "TCP/IP".
- 2. You will see the TCP/IP control panel. Select "Ethernet Built-In" or "Ethernet" in the "Connect via:" drop-down menu.
- 3. Next to "Configure", if not already set, choose "Using DHCP Server". This will tell the computer to obtain an IP address from the Modem-Router.

Manually Configuring Network Adapters in Mac OS X

- 1. Click on the "System Preferences" icon.
- 2. Select "Network" from the "System Preferences" menu.
- 3. Select "Built-in Ethernet" next to "Show" in the Network menu.
- 4. Select the "TCP/IP" tab. next to "Configure", you should see "Manually" or "Using DHCP". If you do not, check the PPPoE tab to make sure that "Connect using PPPoE" is NOT selected.
- 5. If not already selected, select "Using DHCP" next to "Configure", then click "Apply Now".
- Your network adapter(s) are now configured for use with the Modem-Router.

**Recommended Web Browser Settings** 

In most cases, you will not need to make any changes to your web browser's settings. If you are having trouble accessing the Internet or the advanced web-based user interface, then change your browser's settings to the recommended settings in this section.

#### Internet Explorer 4.0 or Higher

- 1. Start your web browser. Select "Tools" then "Internet Options".
- 2. In the "Internet Options" screen, there are three selections:

"Never dial a connection", "Dial whenever a network connection is not present", and "Always dial my default connection". If you can make a selection, select "Never dial a connection". If you cannot make a selection, go to the next step.

- 3. Under the "Internet Options" screen, click on "Connections" and select "LAN Settings...".
- 4. Make sure there

are no check marks next to any of the displayed options: "Automatically detect settings", "Use automatic configuration script", and "Use a proxy server". Click "OK". Then click "OK" again in the "Internet Options" page.

	onfiguration m al settings, dis			ngs. To ensure ation.
Automat	ically detect s	ettings		
🗌 Use auto	matic configu	ration <u>s</u> cript		
Address				_
	o <u>x</u> y server for r VPN connect		nese setting	gs will not apply t
Addr <u>e</u> ss:		Por	t:	Advanged,
E Bunn	ss proxy serv	er for local an	Idresses	

#### Netscape Navigator 4.0 or Higher

- 1. Start Netscape, click on "Edit" then "Preferences".
- In the "Preferences" window, click on "Advanced" then select "Proxies". In the "Proxies" window, select "Direct connection to the Internet".

ategory	Proxies	
Languages     Harps Application     Security     Harps Application     Security     Tabled Biowings     Downloads     Downl	Proxies Corligue Process the Internet Oticologue To Access the Internet Filter Progr. EIP Progr. EIP Progr. SQRS Heat SQRS Heat E SODS v4 © SODS No Progr Internet Anomalia progr. configuration URL: Advandate progr. Advandate progr.	Pot 0 Pot 0 Pot 0 Pot 0 Pos 0 S +5

#### Mozilla FireFox 1.0 or Higher

- 1. Start FireFox, click on "Tools" then "Options"
- 2. In the "General" tab, click "Connection Settings"
- Select "Direct connection to the Internet" and then click OK.

#### MAC OS – Safari

- 1. Start Safari
- 2. Click "Preferences".
- 3. Click the "Advanced" tab.
- 4. Click "Change Settings". The Network panel will open to the Proxies tab.
- 5. Verify all boxes are unchecked. To remove a checkmark, click in the box once.
- 6. Click the "Apply Now" button.
- 7. Close "System Preferences"
- 8. Close the "Preferences".

<ul> <li>Direct connection</li> </ul>			
Auto-detect prox	cy settings for th	s network	
Manual proxy cor	nfiguration		
	Use the sam	e proxy for all prot	ocols
HTTP Proxy:		Port	: 0
SSL Proxy:		Port	: 0
ETP Proxy:		Port	: 0
Gopher Proxy:		Port	: 0
SOCKS Host:		Port	0
	O SOCKS v4	SOCKS v5	
No Proxy for:		.0.1	
	Example: .mozili	a.org, .net.nz, 192	.168.1.0/24
Automatic proxy	configuration UR	Lt -	

#### Understanding the Web-Based User Interface

The Modem-Router can be configured by any browser such as Internet Explorer 4.0 or above. Using the web management interface, you may configure the Modem-Router and view statistics to monitor network activity. Type "10.1.1.1" (do not type in anything else such as "http://" or "www") in your browser's address bar. Then press the "Enter" key.

Manually Configuring your Modem-Router

The following screen will appear in your browser to prompt you to log in. The default Password is "admin". Enter the Password, and then click the "Log In" button to log in.



#### Navigating the Web Browser Interface

The Modem-Router's management interface consists of a Setup Wizard and an Advanced Setup section.

#### Setup Wizard

Use the Setup Wizard to quickly configure the Modem-Router with your username and password.

#### Advanced Setup

Advanced Setup offers more advanced functions such as hacker attack detection, IP and MAC address filtering, virtual server setup, virtual DMZ host, and many more functions.

#### Making Configuration Changes

Configurable parameters have a dialog box or a drop-down list. Once a configuration change has been made on a page, most times you will need to click the "SAVE SETTINGS" or "NEXT" button at the bottom of the page to enable the new setting. Some options may also have an "ADD" button also.

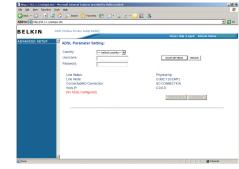
Note: To ensure proper screen refresh after a command entry, be sure that Internet Explorer 5.0 and above is configured as follows: Under the menu Tools/Internet Options/General/Temporary Internet Files/ Settings, the setting for "Check for newer versions of stored pages" should be "Every visit to the page."

#### **Setup Wizard**

After successfully logging into the Modem-Router, you will be prompted with the following screen. You can quickly select your country, add in your username and password for your ISP into the Modem-Router. Once you have added all details correctly, click "Save Settings".

The status section shows:

- Line Status detects if the telephone line has correct line sync
- Line Mode This shows the current line mode, (G.DMT is common for ADSL and ADSL2/ADSL2+)
- Connected/NO Connection Shows current Internet connection status
- WAN IP This is the IP Address that the ISP has assigned to the Modem-Router.

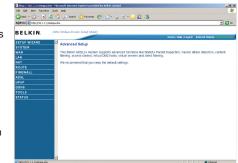


# Manually Configuring your Modem-Router

#### Advanced Setup

Clicking the Home icon returns you to the home page. The Main Menu links are used to navigate to other menus that display configuration parameters and statistics.

The Modem-Router's advanced management interface contains 14 main menu items as described in the following table.



#### Menu Description

Menu	Description
System	Sets the local time zone, the password for administrator access, the IP address of a PC that will be allowed to manage the Modem-Router remotely, and the IP address of a Domain Name Server.
WAN	Specifies the Internet connection settings.
LAN	Sets the TCP/IP configuration for the Modem- Router LAN interface and DHCP clients.
NAT	Shares a single ISP account with multiple users, sets up Port forwarding.
Route	Sets routing parameters and displays the current routing table.
Firewall	Configures a variety of security and specialized functions including: Access Control, URL blocking, Internet access control scheduling, Intruder detection, and DMZ.
ADSL	Sets the ADSL operation type and shows the ADSL status.

UPnP	Configures the Modem-Router's Universal Plug and Play features.
DDNS	Configures the Dynamic DNS function.
Tools	Contains options to back up and restore the current configuration, restore all configuration settings to the factory defaults, update system firmware, or reset the system.
Status	Provides WAN connection type and status, firmware and hardware version numbers, system IP settings, as well as DHCP, NAT, and firewall information.

#### **System Settings**

#### **Time Settings**

Set the time zone and time server for the Modem-Router. This information is used for log entries and client access control.

Check "Enable Automatic Time Server Maintenance" to automatically maintain the Modem-Router's system time by synchronizing with

a public time server over the Internet. Then configure two different time servers by selecting the options in the Primary Server and Secondary Server fields.

Ntp://10.1.1.1/sebapa.str	n - Microsoft Internet Explorer provided by Belkin Limited	9 X
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Address 👔 http://00.1.1.1/m	bipaster 💌 🔁	60
BELKIN	ADS: Meeloon Revolat Solice Solice Solice	
DELKIN.	Home (Help   Lopest - Internet Status: Connected	
SETUP WIZARD	A Set Time Zone:03.06.2005 17:38:15	
	Use this setting to ensure the time-based client filtering feature and system log entries are based on the correct localised time.	10
	(SMT+10:08)Camberre, Melbourne, Sydney	- 11
	Configure Time Server (NTP):	
VAN	Configure time server (NTP):	
.AN	You can automatically maintain the system time on your ADGL router by synchronising with a public time server over the	
(AT	Internet.	
ROUTE		
IREWALL	Enable Automatic Time Server Maintenance	
DSL		
UPnP	When you enable this option you will need to configure two different time servers, use the options below to set the primary and secondary NTP servers in your area:	
DDNS	and belondary with servers in your area.	
	Primary Server: 132.163.4.112-North America *	
STATUS	Secondary Server: 132.163.4.102-North America	
	Time Synchronization interval (1-72 hours) To enable daylight saving place a dick in the Enable Daylight Saving box, this will automatically adjust the reported line by one hour. What you respon is not developing played is siving take the text out of the box for the connect time to be reported.	
	Enable Daylight Savings     I area in a control of the second secon	

# Manually Configuring your Modem-Router

#### **Password Settings**

Use this page to restrict access based on a password. By default, the password is "admin".

Passwords can contain from 3 to12 alphanumeric characters which are case sensitive.

Note: If your password is lost, or you cannot gain access to the user interface, press the reset button on the rear panel (holding it down for at

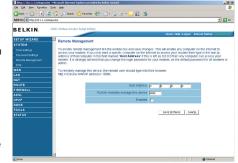


least 10 seconds) to restore the factory defaults. (By default the password is "admin" password.)

Enter a maximum Idle Time Out (in minutes) to define a maximum period of time an inactive login session will be maintained. If the connection is inactive for longer than the maximum idle time, it will be logged out, and you will have to login to the web management system again. (Default: 10 minutes)

#### Remote Management

By default, management access is only available to users on your local network. However, you can also manage the Modem-Router from a remote host by checking the Enabled check box, and if you wish you can set a HOST ADDRESS, which will only allow that computer to use remote management. The port field should be left as the default setting of 8080



unless you need to change it. After any changes are made you must click on "Save Settings" to apply them.

Note: If you check "Enabled" and specify an IP address of 0.0.0.0, any host can manage the Modem-Router.

For remote management via WAN IP address you need to connect using port 8080. Simply enter WAN IP address followed by :8080 in the address field of your web browser, for example, 123.123.123.123.123.8080. This applies unless you change the port setting, in which case you need to substitute the 8080 for whatever port you assign.

#### DNS

Domain Name Servers are used to map a domain name (e.g., www.somesite.com) to the equivalent numerical IP address (e.g., 64.147.25.20). Your ISP should provide the IP address of one or more Domain Name Servers. If your ISP requires you to manually specify the addresses, enter them on this page.

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ddress 👔 http://30.1.1.1/	retupa stre				🕑 🔁 🐼
BELKIN	ADSL .	Modeen Router Soliup I	onoko-		
				Home   Help   Legest	Internet Status: Connected
ETUP WIZARD		DDNS (Dynamic D	NS) Settings		
YSTEM	- 1.	Descent Diff. con the	· · · · · · · · · · · · · · · · · · ·	ethod to the their domain name(s) to computers or	contract DOME others
AN		your domain name to	follow your IP address aut	matically by having your DNS records changed wit	en your IP address
AT	-12	changes.			
OUTE				web site, email server, FTP site and more at your	own location even if you
IREWALL		have a dynamic IP ad	press.		
DSL		This modem supports	both DynONS and TZO D	DNS connections only.	
PnP					_
DNS			Dynamic DNS	C Enable @ Disable	
OOLS			Provider	DynDNS.org *	
TATUS	_		DONS Domain Name	DysDNS.org	-
				T20.com	
			DDNS Account / Email		-
			DONS Password / Key	1	-
			,	1	
				SAVE SETTINGS CAN	cn 1
				acte activity of	uu.

#### WAN

Specify the WAN (Wide Area Network) connection parameters provided by your Internet Service Provider (ISP).

#### ATM PVC

The Modem-Router uses ATM (Asynchronous Transfer Mode) as its WAN interface. Click on each ATM VC for WAN configuration.

BELKIN					- 🔁 🛛
	IDSL Modeon Router Setup Ditikity				
SETUP WIZARD			Hon	ne   Holp   Logout - Internet Statu	e Connectes
SYSTEM	ATM PVC				
WAN	This modern uses ATM as its la	and Department of The Pr	The state of second second second	the state are a 1874 M interdesion. T	and Continuous
WAN ATM PVD	supports up to 8 ATM PVCs.	yer 2 protocol, Armite	C IS a WOOR CONTRECTOR WID	an acts as a www.interrate. I	ie Galenay
Clone NAC Address					
LAN	Description	VPI/VCI	Encapsulation	Protocol	
NAT	MC1	-1-			
ROUTE	¥02	~~			
FIREWALL	VC3	-14-			
ADSL	VC4	14			
UPnP	VCS	-			
DDNS	VC6	-			
TOOLS	VC7				
STATUS					
	VC0	-			

See the table below for a description of the parameters.

Parameter	Description
Description	Click on the VC to set the values for the connection.
VPI/VCI	Virtual Path Identifier (VPI) and Virtual Circuit Identifier (VCI).
Encapsulation	Specifies how to handle multiple protocols at the ATM transport layer.
	• VC-MUX - Point-to-Point Protocol over ATM Virtual Circuit Multiplexer (null encapsulation) allows only one protocol running per virtual circuit with less overhead.
	<ul> <li>LLC - Point-to-Point Protocol over ATM Logical Link Control (LLC) allows multiple protocols running over one virtual circuit (using slightly more overhead).</li> </ul>
Protocol	Protocol used for the connection

#### **ATM Interface**

Clicking on the ATM VC brings up the following screen. The Modem-Router uses ATM as its WAN interface. Protocols including 1483 Routing, 1483 Bridging, MAC Encapsulated Routing (MER), PPPoA and PPPoE with LLC-SNAP and VC-Mux encapsulations are supported for each ATM PVC.

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#### When you have finished

entering your connection parameters, click "SAVE SETINGS". You can verify that you have established an ADSL connection by clicking Status at the bottom of the left-hand menu.

See the table for a description of the parameters.

# Manually Configuring your Modem-Router

Parameter	Description
Protocol	Disable: Disables the connection.
	• 1483 Bridging: Bridging is a standardized layer 2 technology. It is typically used in corporate networks to extend the physical reach of a single LAN segment and increase the number of stations on a LAN without compromising performance. Bridged data is encapsulated using the RFC1483 protocol to enable data transport.
	• PPPoA: Point-to-Point Protocol over ATM is a method of encapsulating data for transmission to a far point.
	• 1483 Routing: 1483 Routing allows a simple, low- cost connection to the Internet via a standard Ethernet port. The Modem-Router looks up the network address for each packet seen on the LAN port. If the address is listed in the routing table as local, it is filtered. If the address is listed under the ADSL port, it is forwarded. Or if the address is not found, then it is automatically forwarded to the default Modem-Router (i.e., the Modem-Router at the head end).
	• PPPoE: Point-to-Point over Ethernet is a common connection method used for xDSL.
	• MAC Encapsulated Routing: If your ADSL service is a Bridged mode service and you want to share the connection to multiple PC's, please select MAC Encapsulated Routing. MER is a protocol that allows you do IP routing with NAT enabled.

VPI/VCI	See Virtual Path Identifier (VPI) and Virtual Circuit Identifier (VCI). Data flows are broken up into fixed length cells, each of which contains a Virtual Path Identifier (VPI) that identifies the path between two nodes, and a Virtual Circuit Identifier (VCI) that identifies the data channel within that virtual path. Each virtual circuit maintains a constant flow of cells between the two end points. When there is no data to transmit, empty cells are sent. When data needs to be transmitted, it is immediately inserted into the cell flows.
Encapsulation	Shows the packet encapsulation type.
	Packet encapsulation specifies how to handle multiple protocols at the ATM transport layer.
	• VC-MUX: Point-to-Point Protocol over ATM Virtual Circuit Multiplexer (null encapsulation) allows only one protocol running per virtual circuit with less overhead.
	LLC: Point-to-Point Protocol over ATM Logical Link Control allows multiple protocols running over one virtual circuit (using slightly more overhead).
QoS Class	ATM QoS classes including CBR, UBR and VBR.
PCR/SCR/MBS	QoS Parameters - PCR (Peak Cell Rate), SCR (Sustainable Cell Rate) and MBS (Maximum Burst Size) are configurable.
IP Address	If your IP address is assigned by the ISP each time you connect, leave this field all zeros. Otherwise, enter your ISP supplied static IP address here.
Subnet Mask	If your subnet mask is assigned by the ISP each time you connect, leave this field all zeros. Otherwise, enter your subnet mask here.
Connect Type	Sets connection mode to always connected, automatic or manual connection.
	Idle Time Enter the maximum idle time for the Internet connection. (minutes) After this time has been exceeded the connection will be terminated.

### Manually Configuring your Modem-Router

Username	Enter user name.
Password	Enter password
Confirm password	Confirm Password
MTU	Leave the Maximum Transmission Unit (MTU) at the default value (1500) unless you have a particular reason to change it.

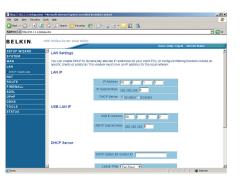
#### **Clone MAC Address**

Clicking on the Clone MAC Address brings up the following screen.

Some ISPs may require that you register your MAC address with them. If this is the case, the MAC address of the Modem-Router must be changed manually to the MAC address that you have registered with your ISP. Most ISP's in Australia and New Zealand do not require this option. Construction
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#### LAN

Use the LAN (Local Area Network) menu to configure the LAN IP address and to enable the DHCP server for dynamic client address allocation.



Parameter	Description
IP Address	The IP address of the Modem-Router.
IP Subnet Mask	The subnet mask of the Modem-Router.
DHCP Server	To dynamically assign an IP address to client PCs, enable the DHCP (Dynamic Host Configuration Protocol) Server.
Lease Time	Set the DHCP Lease Time
DHCP Option 60 Vendor ID	If you wish you can Specify the Name of your DHCP Server (Optional)
Lease Time	Specify the length of time that the DHCP will assign an IP address to a computer for.
Start IP	Specify the start IP address of the DHCP pool. Do not include the gateway address of the Modem- Router in the client address pool. (See "TCP/IP Configuration"). If you attempt to include the Modem-Router gateway address (10.1.1.1 by default) in the DHCP pool, an error dialog box will appear. If you change the pool range, make sure the first three octets match the gateway's IP address, i.e., 10.1.1.xxx.
End IP	Specify the end IP address of the DHCP pool.
Domain Name	If your network uses a domain name, enter it here. Otherwise, leave this field blank.

#### **DHCP Client List**

The DHCP Clients List displays the IP Address, Host Name and MAC Address of each client that has requested an IP address since the last reboot of the Modem-Router. Check the FIX box to have the IP address and the MAC address linked so that the IP address will always be assigned as it is on this screen.

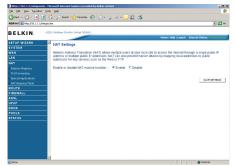


#### NAT

From this section you can configure the Virtual Server, and Special Application features that provide control over the TCP/ UDP port openings in the Modem-Router's firewall. This section can be used to support several Internet based applications such as web, email, FTP, and Telnet.

#### **NAT Settings**

NAT allows one or more public IP addresses to be shared by multiple internal users. You can enable or disable NAT here. Recommended setting = Enable.



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#### Address Mapping

Use Address Mapping to allow a limited number of public IP addresses to be translated into multiple private IP addresses for use on the internal LAN network. This also hides the internal network for increased privacy and security.

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		4. Global IP 0	0	0	0	is transformed as multiple virtual IPs	
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		5. Global IP	0	0	0	is transformed as multiple virtual IPs	
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Done	-					Diteret	

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#### Port Forwarding

If you configure the Port Forwarding settings. remote users accessing services such as web or FTP at your local site via public IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on the requested service (TCP/ UDP port number), the Modem-Router redirects

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	YO	u can configure tr	e router as a virtual	server so that rem	ote users accessing serv	ices such as the Wel	o or FTP at your	
	100	al site via public li er words, depend	Paddresses can be a incline the requester	sutomatically redin Liservice (TCR/LID)	ected to local servers con port number), this mode	ingured with private I are redirects the extern	Plabaresses. In mail service	
	rec	uest to the appro-	priate server (locate)	s at another intern	al IP address). This tool	can support both port	ranges, multiple	e
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the external service request to the appropriate server (located at another internal IP address).

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For example, if you set Type/Public Port to TCP/80 (HTTP or web) and the LAN IP Address/LAN Port to 10.1.1.3/80, then all HTTP requests from outside users will be transferred to 10.1.1.3 on port 80. Therefore, by just entering the IP address provided by the ISP, Internet users can access the service they need at the local address to which you redirect them.

The more common TCP service ports include:

HTTP: 80, FTP: 21, Telnet: 23, and POP3: 110.

#### **Special Applications**

Some applications, such as Internet gaming. video conferencing, Internet telephony and others, require multiple connections. These applications cannot work with Network Address Translation (NAT) enabled. If you need to run applications that require multiple connections, use the following screen to specify the additional

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WAN	9	ome applications requ	are multiple connection	<ol> <li>such as Internet gaming, video confe Address Translation (NAT) is enabled.</li> </ol>	rencing, internet telephon	y and ot
LAN		nese applications car iquite multiple contrel	tions, specify the port	contaily associated with an application	In the "Tripper Port" field	select In
	p	rotocol type as TCP of	r UDP, then enter the p Tripper Ports is from 1	ublic ports associated with the trigger p	ort to open them for inbou	nd traffi
		ose: The range or the	ingger Ports is iron i	10 60030.		
e Fort Fanvarding			Popular applic	ations - select one - · · COPY TO		
e Special Applications						
e NAT Mapping Table	- 11	Trigger Port	Trigger Type	Public Port	Public Type	Enat
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STATUS	- 11	· · · · · ·		1		
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		6.	TCP C UDP		C TCP C UDP	
		7.	TCP C UDP		C TOP C UDP	
		8.	C TOP C UDP		C TOP C UOP	
		9.	R TOP C UDP		C TCP C UOP	r
	21	10	& TOP CLIDE		@ TCP C UDP	

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section

public ports to be opened for each application.

Specify the public port number normally associated with an application in the Trigger Port field. Set the protocol type to TCP or UDP, and then enter the ports that the application requires. The ports may be in the format 7, 11, 57, or in a range, e.g., 72-96, or a combination of both, e.g., 7, 11, 57, 72-96.

Popular applications requiring multiple ports are listed in the Popular Applications field. From the drop-down list, choose the application and then choose a row number to copy this data into.

Note: Choosing a row

settings.

that already contains data

will overwrite the current

-- select one ---- select one --Battle.net Dialpad ICU II MSN Gaming Zone PC-to-Phone

Quick Time 4

#### **NAT Mapping Table**

NAT Mapping Table displays the current NAPT (Network Address Port Translation) address mappings. The NAT address mappings are listed 20 lines per page, click the control buttons to move forwards and backwards. As the NAT mapping is dynamic, a Refresh button is provided to refresh the NAT Mapping Table with the most up-to-date values.

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		Index	Protocol	Local IP	Local Port	Pseudo IP	Pseudo Port	Peer IP	Peer Port
		1	TCP	10.1.1.4	1035	203.206.128.31	1035	172.16.40.136	2967
		2	TCP	10.1.1.4	1041	203.206.128.31	1041	172.16.40.136	2967
		3	TEP	10.1.1.3	1477	203 206 128 31	1477	205 166 232 45	10
AT Mapping Table	_	4	TCP	10.1.1.3	1478	203 206 128 31	1478	205.168.232.45	80
REWALL	-	5	TEP	10.1.1.4	1039	203 206 128 31	1029	205 166 232 45	445
SL	-	-	TCP	10.1.1.3		203 206 128 31		86.102.7.99	80
'nP		6			1484		1484		
INS		7	TCP	10.1.1.3	1485	203.206.128.31	1485	65.54.152.126	80
OLS		8	TCP	10.1.1.3	1486	203.206.128.31	1486	210.8.175.253	80
	_	9	TCP	10.1.1.4	1047	203.206.128.31	1047	172.16.40.136	2967
		10	TCP	10.1.1.3	1497	203.206.128.31	1497	65.54.152.126	80
		11	TCP	10.1.1.4	1042	203 206 128 31	1042	205.168.232.45	80
		12	TCP	10.1.1.3	1492	203.206.128.31	1492	210.8.175.222	80
		13	TCP	10.1.1.3	1493	203 206 128 31	1493	207.68.178.239	80
		14	TCP	10.1.1.3	1494	203 206.128.31	1494	207.68.178.239	80
		15	TCP	10.1.1.3	1495	203 206 128 31	1495	207.68.178.239	00

The content of the NAT Mapping Table is described as follows:

- Protocol protocol of the flow.
- Local IP local (LAN) host's IP address for the flow.
- Local Port local (LAN) host's port number for the flow.
- Pseudo IP translated IP address for the flow.
- Pseudo Port translated port number for the flow.
- Peer IP remote (WAN) host's IP address for the flow.
- Peer Port remote (WAN) host's port number for the flow.

#### Route

These pages define routing related parameters, including static routes and Routing Information Protocol (RIP) parameters.

#### **Static Route Parameters**

Static routing is the manual method used to set up routing. A network administrator enters routes into the Modem-Router using the following screens. This method has

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SETUP WIZARD	8				Home   Help   Logout   Interne	Conne Conne
SYSTEM	Static	Route Parameter				
WAN	Please	Enter the Following Co	onfiguration Parameter	ĸ		
LAN						
NAT	Index	Network Address	Subnet Mask	Gateway	Configure	
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e Static Route	Add					
• RP						
e Routing Table					SAVE SETTINGS CANCEL	
FIREWALL						
ADSL						
UPnP DDNS						
TOOLS						
STATUS						

the advantage of being predictable, and simple to set up. It is easy to manage in small networks but does not scale well.

Parameter	Description
Index	Displays the number of the route.
Network Address	Displays the IP address of the remote computer for which to set a static route.
Subnet Mask	Displays the subnet mask of the remote network for which to set a static route.
Gateway	Displays the WAN IP address of the gateway to the remote network.
Configure	Allows you to modify or delete configuration settings

Click Add or Edit to display the following page and add a new static route to the list.

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Address 🗿 http://30.3.1.1/o	rtupa.stm						💌 🔁 6
BELKIN	ADSI Modeur	Resider Setup Ditikity					
					Horne   Holp	Logout Internet State	x Connecter
SETUP WIZARD	Static	<b>Route Parameter</b>					
SYSTEM	_						
WAN	Please	Enter the Following C	orfiguration Paramete	rsc			
LAN	Index	Network Address	Subnet Mask	Gabeway	Contigure		
NAT							
ROUTE	1	0.0.0.0	255.255.255.0	10.1.1.45	NGA.		
Etatic Rocte							
RP					SAVE SETTINGS	CANCEL	
<ul> <li>Routing Table</li> </ul>							
FIREWALL							
UPnP							
DDNS	_						
TOOLS							
STATUS							

Parameter	Description
Index	Displays the number of the route.
Network Address	Enter the IP address of the remote computer for which to set a static route.
Subnet Mask	Enter the subnet mask of the remote network for which to set a static route.
Gateway	Enter the WAN IP address of the gateway to the remote network.

# Manually Configuring your Modem-Router

#### **RIP Parameter**

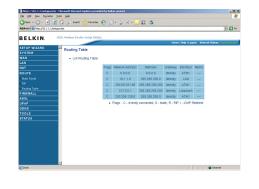
The device supports Routing Information Protocol (RIP) v1 and v2 to dynamically exchange routing information with adjacent Modem-Routers.

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BELKIN	ADSI Modeus Router Se	tue prokty								
DEEKIN		-				He	me   H	elp   Logout Inf	ernet Slatur: Co	
SETUP WIZARD	RIP Parameter									
SYSTEM	Fur Farameter									
WAN	Please Enter the	fallowing Co	nfiguration Param	ebers:						
LAN	General R	IR assessed								
NAT	<ul> <li>RP node:</li> </ul>		tie @ Disable							
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FIREWALL	_	Interface	Operation Mode	Version	Polson	Regula	node brit	Authentication Code		
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Parameter	Description				
RIP mode	Globally enables or disables RIP.				
Auto summary	If Auto summary is disabled, then RIP packets will include sub-network information from all sub¬net works connected to the ADSL Modem-Router. If enabled, this sub-network information will be summarized to one piece of information covering all sub-networks.				
Interface	The WAN interface to be configured.				
Operation	Disable: RIP disabled on this interface.				
Mode	Enable: RIP enabled on this interface.				
	Silent: Listens for route broadcasts and updates its route table. It does not participate in sending route broadcasts.				
Version	Sets the RIP version to use on this interface.				
Poison Reverse	A method for preventing loops that would cause endless retransmission of data traffic.				

Authentication	None: No authentication.
Required	Password: A password authentication key is included in the packet. If this does not match what is expected, the packet will be discarded. This method provides very little security as it is possible to learn the authentication key by watching RIP packets.
	MD5: An algorithm that is used to verify data integrity through the creation of a 128-bitmessage digest from data input (which may be a message of any length) that is claimed to be as unique to that specific data as a fingerprint is to a specific individual.
Authentication Code	Password or MD5 Authentication key.

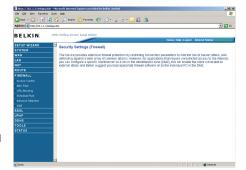
RIP sends routing-update messages at regular intervals and when the network topology changes. When a Modem-Router receives a routing update that includes changes to an entry, it updates its routing table to reflect the new route. RIP Modem-Routers maintain only the best route to a destination. After updating its routing table, the Modem-Router immediately begins transmitting routing updates to inform other network Modem-Routers of the change. Routing Table



Parameter	Description
Flags	Indicates the route status: C = Direct connection on the same subnet. S = Static Modem-Router R = RIP (Routing Information Protocol) assigned route. I = ICMP (Internet Control Message Protocol) Redirect route.
Network Address	Destination IP address
Netmask	The subnetwork associated with the destination.
	This is a template that identifies the address bits in the destination address used for routing to specific subnets. Each bit that corresponds to a "1" is part of the subnet mask number; each bit that corresponds to "0" is part of the host number.
Gateway	The IP address of the Modem-Router at the next hop to which frames are forwarded.
Interface	The local interface through which the next hop of this route is reached.
Metric	When a Modem-Router receives a routing update that contains a new or changed destination network entry, the Modem-Router adds 1 to the metric value indicated in the update and enters the network in the routing table.

#### Firewall

The Modem-Router's firewall enables access control of client PCs, blocks common hacker attacks, including IP Spoofing, Land Attack, Ping of Death, IP with zero length, Smurf Attack, UDP port loopback, Snork Attack, TCP null scan, and TCP SYN flooding.



#### **Access Control**

Access Control allows

users to define the outgoing traffic permitted or not-permitted through the WAN interface.

The Modem-Router can also limit the access of hosts within the local area network (LAN). The MAC Filtering Table allows the Modem-Router to enter up to 32 MAC addresses that are not allowed access to the WAN port.

The following items are displayed on the Access Control screen:

Parameter	Description
Enable Filtering	Enables or disables the filtering function. Function
Normal Filtering Table	Displays the IP address (or an IP address range) filtering table.

Click Add PC on the Access Control screen to view the following page.

#### Access Control Add PC

The settings in the screen shot below will block all email sending and receiving.

Define the appropriate settings for client PC services (as shown above). Click "OK" to save your settings. The added PC will now appear in the Access Control page.

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BELKIN	ADSI Modeo	e Router Setup Ottikity	Home   Hota   Looput   In			
SETUP WIZARD	8		INTE   IND   COPUE			
SYSTEM	Acces	ss Control Add PC				
NAN	This p	age allows users to define ser	vice limitations of client PCs, including IP address, service type an	id scheduling rule		
.AN	criteria	For the URL blocking function	on, you need to configure the URL address first on the "URL Block to configure the schedule rule first on the "Schedule Rule" page.	ing Site* page. For t		
(AT	- Soliton	ang rancian, you and rised a	o compare one activities reactivities occurring the page.			
OUTE		Client PC Description TEST				
		Client PC IP Address :10.1.1.	3 - 3			
		Cleat PC Service				
		orener o dernice.				
		Service Name	Detail Description	Blocking		
Intrusion Detection DM7		www	HTTP, TCP Port 80, 3128, 8000, 8001, 8080			
DSL	_	WWW with URL Blocking	HTTP (Ref. URL Blocking Ste Page)			
PnP		Email Senting	SMTP, TCP Port 25			
DNS				R		
		News Forums	NNTP, TCP Port 119	•		
TATUS		Email Receiving	POP3, TCP Port 110	R		
		Secure HTTP	HTTPS, TCP Port 643	-		
		File Transfer	FTP, TCP Port 21	<b>E</b>		
		Teinet Service	TCP Port 23	-		
		AM	AOL Instant Messenger, TCP Port 5190	-		
Done	14			Caterost		

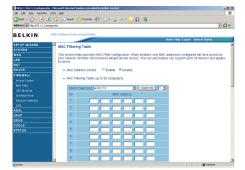
2

section

#### MAC Filter

Use this page to block access to your network using MAC addresses.

The Modem-Router can also limit the access of hosts within the local area network (LAN). The MAC Filtering Table allows the Modem-Router to enter up to 32 MAC addresses that are allowed access to the WAN port. All other devices will be denied access.



#### URL Blocking

To configure the URL Blocking feature, use the table below to specify the web sites (www.somesite. com) and/or keywords you want to filter on your network.

To complete this configuration, you will need to create or modify an access rule in "Access Control". To modify an existing rule, click the Edit option next to the rule you

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AT		can block access	to certain web	sites from a particular P	by entening ett	ner a full URL address o	or just a neyword or the
	_						
	To s	pecify the particul mal Filtering Table	ar PC, go back	to the "Access Control"	page and check	the box for "Http with UP	8. Blockingfin the
	1421	internating room					
			Rule Number	URL/Keyword	Rule Number	URL / Keyword	
			Sibe 1		Site 16		
			Sibe 2		Site 17		
			Sibe 3		Site 18		
	_		Sibe 4		Site 19		
	_		Sibe 6		Site 20		
PnP	_		S08 6		Site 21		
DNS OOLS	_		Sibt 7		Site 22		
TATUS	_		Sibe 8		Site 23		
	_		Site 9		Site 24		
			Site 10		Site 25		
			Site 11		Site 26		
			Ste 12		Site 27		
			Ste 13		Ste 20		
	21		Ste 14		Ste 28		-
) Done							internet

want to modify. To create a new rule, click on the Add PC option.

From the Access Control Page, Add PC section, check the option for "WWW with URL Blocking" in the Client PC Service table to filter out the web sites and keywords selected below, on a specific PC.

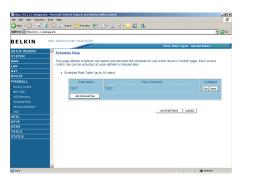
The Modem-Router allows the user to block access to web sites from a particular PC by entering either a full URL address or just a keyword. This feature can be used to protect children from accessing violent or pornographic web sites.

#### Schedule Rule

You may filter Internet access for local clients based on rules.

Each access control rule may be activated at a scheduled time. Define the schedule on the Schedule Rule page, and apply the rule on the Access Control page.

Click Add Schedule Rule.

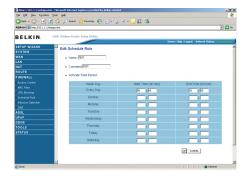


# Manually Configuring your Modem-Router

#### Edit Schedule Rule

You can create and edit schedule rules on this page.

Define the appropriate settings for a schedule rule (as shown on the above screen). The rule in the screen shot above prohibits emailing after 8.00am to 11.59pm. Upon completion, click "OK" to save your schedule rules.



#### Intrusion Detection

The Modem-Router's firewall inspects packets at the application layer, maintains TCP and UDP session information including timeouts and number of active sessions, and provides the ability to detect and prevent certain types of network attacks such as Denial-of-Service (DoS) attacks.

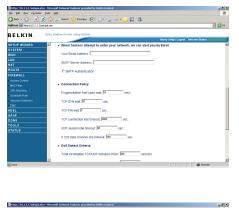


37

Network attacks that deny access to a network device are called DoS attacks. DoS attacks are aimed at devices and networks with a connection to the Internet. Their goal is not to steal information, but to disable a device or network so users no longer have access to network resources.

The Modem-Router protects against DoS attacks including: Ping of Death (Ping flood) attack, SYN flood attack. IP fragment attack (Teardrop Attack), Brute-force attack, Land Attack, IP Spoofing attack, IP with zero length, TCP null scan (Port Scan Attack), UDP port loopback, Snork Attack.

Note: The firewall does not significantly affect system performance, so we advise enabling the prevention features to protect your network.



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N H 323 data channel ide timeout 100 sec.	
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Coss Control ID Filter Total Incomplete TCP/UDP sessions LCW: 199 session	
RL Broking) Incomplete TCP/UDP sessions (per min) HIGH: 1990 session recoupling	
usion Detection Incomplete TCP/UDP sessions (per min) LOW: 1980 session	
AL Maximum incomplete TCP/UDP sessions number from same host. 19	
No incomplete TCP/UCP sessions detect sensitive time period. 900 msec.	
Atus Maximum half-open fragmentation packet number from same host (20)	- 1
Half-open fragmentation detect sensitive time period: 18000 msec.	- 1
Flooding cracker block time, 200 sec.	- 1
SAVE SETTING C	ANCEL V
one 🖉 🖉 Diternet	

Parameter	Defaults	Description
Enable SPI and Anti- DoS firewall protection	Yes	The Intrusion Detection feature of the VoIP Modem-Router limits the access of incoming traffic at the WAN port. When the Stateful Packet Inspection (SPI) feature is turned on, all incoming packets are blocked except those types marked with a check in the Stateful Packet Inspection section at the top of the screen.

Stateful Packet Inspection	This option allows you to select different application types that are using dynamic port numbers. If you wish to use Stateful Packet Inspection (SPI) for blocking packets, click on the Yes radio button in the "Enable SPI and Anti-DoS firewall protection" field and then check the inspection type that you need, such as Packet Fragmentation, TCP Connection, UDP Session, FTP Service, H.323 Service, and TFTP Service. It is called a "Stateful" packet inspection because it examines the contents of the packet to determine the state of the communication; i.e., it ensures that the stated destination computer has previously requested the current communication. This is a way of ensuring that all communications are initiated by the recipient computer and are taking place only with sources that are known and trusted from previous interactions. In addition to being more rigorous in their inspection of packets, stateful inspection firewalls also close off ports until a connection to the specific port is requested. When particular types of traffic initiated from the internal LAN will be allowed. For example, if the user only checks FTP Service in the Stateful Packet Inspection section, all incoming traffic will be blocked except for FTP connections initiated from the local LAN.
Discard Ping from WAN Discard	Prevents a ping on the Modem- Router's WAN port from being routed to the network.

Manually Configuring your Modem-Router

RIP Defect	Enabled	If the Modem-Router does not reply to an IPX RIP request packet, it will stay in the input queue and not be released. Accumulated packets could cause the input queue to fill, causing severe problems for all protocols. Enabling this feature prevents the packets accumulating.
Your E-mail Address		Enter your email address.
SMTP Server Address		Enter your SMTP server address (usually the part of the email address following the "@" sign).
POP3 Server Address		Enter your POP3 server address (usually the part of the email address following the "@" sign).
User Name		Enter your email account user name.
Password		Enter your email account password.
Fragmentation half-open wait	10 secs	Configures the number of seconds that a packet state structure remains active. When the timeout value expires, the Modem-Router drops the unassembled packet, freeing that structure for use by another packet.
TCP SYN wait	30 secs	Defines how long the software will wait for a TCP session to reach an established state before dropping the session.
TCP FIN wait	5 secs	Specifies how long a TCP session will be managed after the firewall detects a FIN-exchange.
TCP connection idle timeout		3600 secs (1 hour) The length of time for which a TCP session will be managed if there is no activity.
UDP session idle timeout	30 secs	The length of time for which a UDP session will be managed if there is no activity.

H.323 data channel idle timeout	180 secs	The length of time for which an H.323 session will be managed if there is no activity.
Total incomplete TCP/UDP sessions HIGH	300 sessions	Defines the rate of new un-established sessions that will cause the software to start deleting half-open sessions.
Total incomplete TCP/UDP sessions LOW	250 sessions	Defines the rate of new un-established sessions that will cause the software to stop deleting half-open sessions.
Incomplete TCP/UDP sessions (per min.) HIGH	250 sessions	Maximum number of allowed incomplete TCP/UDP sessions per minute.
Incomplete TCP/UDP sessions (per min.) LOW	200 sessions	Minimum number of allowed incomplete TCP/UDP sessions per minute.
Maximum incomplete TCP/UDP sessions number from same host	10	Maximum half-open fragmentation packet number from same host
Incomplete TCP/UDP sessions detect sensitive time period	300 secs	Length of time before an incomplete TCP/UDP session is detected as incomplete
Maximum half-open fragmentation packet number from same host	30	Maximum number of half-open fragmentation packets from the same host.

Maximum number of half-open fragmentation packets from the same host.	1 secs	Length of time before a half-open fragmentation session is detected as half-open.
Flooding cracker block time	300 secs	Length of time from detecting a flood attack to blocking the attack.

#### DMZ

If you have a client PC that cannot run an Internet application properly from behind the firewall, you can open the client up to unrestricted two-way Internet access. Enter the IP address of a DMZ (Demilitarized Zone) host on this screen. Adding a client to the DMZ may expose your local network to a variety of security risks, so it is only recommended that this is used option as a last resort.

into the DMZ.

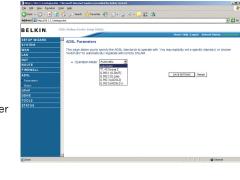
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ETUP WIZARD	DMZ(Demilitari	sed Zone				
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	external attack and	1 Belkin sug	gest you loa	d appropriate firewall so	rovare on to the individual PC in	the DNZ.
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IREWALL	<ul> <li>Multiple DCs</li> </ul>	can be ex	opent to the l	mercel for two way on	mmunications e.g. Internet gami	ina video contenenciao, or
					P address for that PC.	ig, moor territering, er
	VPN connect					
	VPN connec	tions. To u	se the DMZ,	you must set a static P	- address for long P.C.	
	VPN connec	tions. To u				_
URL Blocking Boteculo Rule	VPN connec			Public IP Address	Client PC IP Address	5
URL Blocking Schedulo Rule Intrusion Detection	VPN connec			Public IP Address		5
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URL Blocking Schedulo Rule Marusian Detection DM2 DSL PnP DNS DOLS	VPN connec	1. 2. 3. 4.	203 206 120 8 0 8 0 8 0	Public IP Address 3 6 0 6 0 6 0 6 0 6 0 6 0	Client PC P Address 10.1.10 10.1.10 10.1.10 10.1.10 10.1.10 10.1.10	8
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# Manually Configuring your Modem-Router

#### ADSL

#### **ADSL** Parameters

We recommend leaving the Operation Mode at the default Automatic setting, to automatically negotiate with remote DSLAM (Digital Subscriber Line Access Multiplexer). A DSLAM is owned and managed by your ISP, if the Modem-Router is having problems connecting to the Internet, it may be necessary to force the Operation Mode to your ISP's preferred connection.



#### **Operation Mode**

- Automatic ٠
- T1.413 Issue 2 .
- G.992.1 (G.DMT)
- G.922.2 (G.Lite)

It is also recommended that you disable and software firewall installed on your PC, this will continue to block ports even if the PC is entered

#### Status

The Status page displays ADSL status information.

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		Status Information:				
LAN		Status				
NAT		Data Rate Informatio Defect/Failure Indica				
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· Parameters			Configured	Current	_	
e Status		Line Status		SHOWTIME	_	
UPnP		Link Type	-	Fast Path		
DDNS		[Go Top]				
TOOLS	<ul> <li>Data</li> </ul>	Rife				
STATUS		Stream Type	Actua	/ Data Rate		
		Up Stream	25	6 (Kops.)		
		Down Stream	15	6 (K8ps.)		
		[Go Top]				
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		Alteruation	63 dB	55 dB		
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SYSTEM	Abiroadon	63.00	50 UD		
WAN	Indicator Name	Near End Indicator	Ear End Industor		
LAN	East Path EEC Correcti		0		
NAT	Interleaved Path FEC Corr		0		
ROUTE	Fast Path CRC Error		115		
FIREWALL	Interleaved Path CRC B	rror 0	0		
ADSL	Loss of Signal Defect	t 0			
Parameters	Fast Path HEC Error	0	0		
<ul> <li>Status</li> </ul>	Interleaved Path HEC Er	mor 0	0		
UPnP	<ul> <li>[Go Top]</li> </ul>				
DDNS					
TOOLS	Statistics:     Receiver		16530		
STATUS			8432		
	Transmith	ea cells	8432		
	<ul> <li>[Go Top]</li> </ul>				
				Reheah	

Parameter	Description
Line Status	Shows the current status of the ADSL line.
Data Rate: Upstream	Actual and maximum upstream data rate.
Downstream	Actual and maximum downstream data rate.
Downstream	

# Manually Configuring your Modem-Router

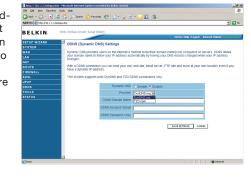
Noise Margin:	
Upstream	Minimum noise margin upstream.
Downstream	Minimum noise margin downstream. Maximum fluctuation in the output power
Output Power A	ttenuation:
Upstream	Maximum reduction in the strength of the upstream signal.
Downstream	Maximum reduction in the strength of the downstream signal.
Fast Path FEC Correction	There are two latency paths that may be used: fast and interleaved. For either path a forward error correction (FEC) scheme is employed to ensure higher data integrity. For maximum noise immunity, an interleaver may be used to supplement FEC.
Interleaved Path FEC Correction	An interleaver is basically a buffer used to introduce a delay, allowing for additional error correction techniques to handle noise Interleaving slows the data flow and may not be optimal for real-time signals such as video transmission.
Fast Path CRC Error	Indicates the number of Fast Path Cyclic Redundancy Check errors.
Interleaved Path CRC Error	Indicates the number of Interleaved Path Cyclic Redundancy Check errors.
Loss of Signal Defect	Momentary signal discontinuities.
Loss of Frame Defect	Failures due to loss of frames.
Loss of Power Defect	Failures due to loss of power.
Fast Path HEC Error	Fast Path Header Error Concealment errors.
Interleaved Path HEC Error	Interleaved Path Header Error Concealment errors.

Statistics	(Superframes represent the highest level of data presentation.
	Each superframe contains regular ADSL frames, one of which is used to provide superframe synchronization, identifying the start of a superframe. Some of the remaining frames are also used for special functions.)
Received Superframes Interleaved	Number of interleaved superframes received.
Transmitted Superframes Interleaved	Number of interleaved superframes transmitted.
Received Superframes Fast	Number of fast superframes received.
Transmitted Superframes Fast	Number of fast superframes transmitted.

# Manually Configuring your Modem-Router

#### UPnP

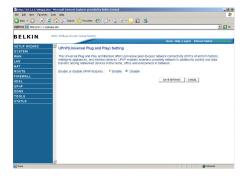
UPnP (Universal Plug-and-Play) is a technology that offers seamless operation of voice messaging, video messaging, games, and other applications that are UPnP-compliant. Some applications require the Modem-Router's firewall to be configured in a specific way to operate properly. This usually requires opening TCP and UDP ports, and in some instances, setting



trigger ports. An application that is UPnP compliant has the ability to communicate with the Modem-Router, basically "telling" the Modem-Router which way it needs the firewall configured. The Modem-Router ships with the UPnP feature disabled. If you are using any applications that are UPnP-compliant, and wish to take advantage of the UPnP features, you can enable the UPnP feature. Click on the "Enable" button then click on the "SAVE SETTINGS" button to save your settings.

#### DDNS

DDNS (Dynamic Domain Name Server) provides a way to tie a domain name to the Modem-Routers WAN IP. DDNS allows your domain name to follow your IP Address automatically by having your DNS records changed when your IP Address changes.



With a DDNS connection you can host your own web site, email server,

FTP site and more at your own location even if you have a dynamic IP Address.

This Modem-Router supports both DynDNS (www.dyndns.org) and TZO (www.TZO.com) DDNS connections only. You will need to register an account with either of these Dynamic DNS websites in order to utilize this function.

Parameter	Description
Provider	Select either DynDNS or TZO
Dynamic DNS	Enable or Disable DDNS Function
DDNS Domain Name	Type in your domain name (e.g. mydns.dyndns.org)
DDNS Account/ Email	Add your account username or email address (DDNS Provider will specify)
DDNS Password/Key	Add your account password

#### Tools

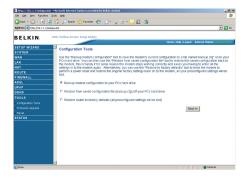
Use the Tools menu to back-up the current settings, to restore previously saved settings, or to restore the factory default settings.

# Manually Configuring your Modem-Router

#### **Configuration Tools**

Check Backup Modem-Router Configuration and click "NEXT" to save your Modem-Router's configuration to a file named "backup.cfg" on your PC.

You can then check Restore from saved Configuration file (backup. cfg) to restore the saved backup configuration file.



section

2

5

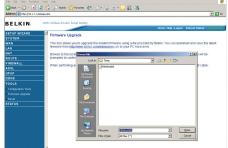
#### To restore the factory

settings, check Restore Modem-Router to Factory Defaults and click "NEXT." You will be asked to confirm your decision. Click "APPLY" to proceed, or "CANCEL" to go back.

#### Firmware Upgrade

Use this screen to update the firmware or user interface to the latest versions. You can download the latest firmware from http://www. belkin.com/dslModem-Routers.

It is recommended that you back up your Modem-Router's settings prior to updating the firmware, you may loose all your current settings. Refer to "Backup Modem-Router Configuration".



## Manually Configuring your Modem-Router

Please note: If your Modem-Router is functioning correctly, we do not recommend you update the firmware. Belkin is not responsible for any consequence as result of a firmware update. Please consult Belkin Technical Support prior to updating the Modem-Router's firmware.

Download the file to your hard drive. Then click Browse... to find the file on your computer. Select the firmware file and click "Open." Click "BEGIN UPGRADE" to start the upgrade process.

#### Reset

This function will reboot the Modem-Router, no settings will be lost during this proccess.

Should your unit become unresponsive for any reason, you can simply perform a reset from this page. Performing a reset will reboot the device. Your configuration settings will remain the same.

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LAN	modern. Your settings will not be changed or fost by doing this process. To perform the restart, click on the REB ROUTER futtion below.	оот
NAT	ROOTER SUBDITIDEROW.	
ROUTE	You will be asked to confirm your decision.	
FIREWALL		
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UPnP	REBOOT ROUTER	
DDNS		
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e Firmwani Upgrade		
e Reset		
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#### Status

The Status screen displays WAN/LAN connection status, firmware and hardware version numbers, as well as information on DHCP clients connected to your network.

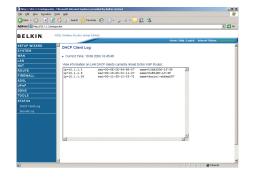
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ETUP WIZARD	Status			-
YSTEM				
AN			odem's LAN and WAN Interfaces, firmware and rk, as well as information on all DHCP client PCs	
AN	currently connected to your netw	trk.		
AT	Current Time: 19.05 2006			
REWALL	<ul> <li>Current Time: 19.06.2006</li> </ul>	16:45:09		
DSI	INTERNET	GATEWAY	INFORMATION	
PoP	ADSL: CONNECTED Mode: G.992.1 (G.DMT)	IP Address: 10.1.1.1 Subriet Mark: 255 255 255	Numbers of DHCP Clients: 3	_
DNS	Upload: 256 kbps.	DHCP Server, Enabled	0.53 (May 16 2006 07 32 32)	
0018	Download: 1536 Hops. UPTIME: 0.04 46 37	Firewalt Enabled	Boot Code Version: 0.73.05 ADSL Modem Code Version: 05.00.02.00A+	
TATUS	WAN IP: 203/206/128/31		LAN MAC Address: 00-12-8F-28-2A-4A	
DHCP ClientLog	Subnet Mask: 255.255.25 Gateway: 203.55.231.88	16.0	WAN MAC Address: 00-12-BF-2B-2A-4B Hardware Version: 08	
Security Log	Primary DNS: 203.0.178.	191	Serial Num: J615018201	
	Secondary DNS: 0.0.0.0			
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	<ul> <li>ATM PVC</li> </ul>			
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		/35		
		LC	Contraction of the second	
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Manually Configuring your Modem-Router

The following items are included on the Status screen:

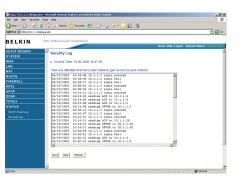
Parameter	Description
INTERNET	Displays WAN connection type and status. Release Click on this button to disconnect from the WAN. Renew Click on this button to establish a connection to the WAN.
GATEWAY	Displays system IP settings, as well as DHCP Server and Firewall status.
INFORMATION	Displays the number of attached clients, the firmware versions, and the physical MAC address for each media interface and for the Modem- Router, as well as the hardware version and serial number.
ATM PVC	Displays ATM connection type and status.

#### **DHCP Client List**



#### Security Log

The security log may be saved to a file by clicking "Save" and choosing a location. DHCP Client Log displays information on DHCP clients on your network.



Parameter	Description
Security Log	Displays illegal attempts to access your network.
Save	Click on this button to save the security log file.
Refresh	Click on this button to refresh the screen.
Clear	Click on this button to delete the access log.

# New Zealand Telepermit Special Conditions

#### **PTC General Warning**

The grant of a Telepermit for any item of terminal equipment indicates only that Telecom has accepted that the item complies with minimum conditions for connection to its network. It indicates no endorsement of the product by Telecom, nor does it provide any sort of warranty. Above all, it provides no assurance that any item will work correctly in all respects with another item of Telepermitted equipment of a different make or model, nor does it imply that any product is compatible with all of Telecom's network services.

#### This Belkin F5D5730au ADSL Router on Long Lines

This Belkin F5D5730au ADSL Router may not achieve the type of "high speed" operation expected when attached to a line that is longer than intended by the ITU-T ADSL standard i.e. >3 km of 0.4mm cable or a shorter cable length with several tails or multiples. If the Router is installed in such conditions and does not give the expected performance do not refer the matter to the Telecom Fault Service.

#### The Service Covered by These Telepermits

This Telepermit shows that this Belkin F5D5730au ADSL Router is suitable for connection to Telecom's existing ADSL1 service. This service is defined by the specification PTC270. When compliance with the specification is proved a PTC272 Telepermit is issued for each product. This Telepermit does not show suitability for connection to a new ADSL2 service when Telecom introduces it. Telecom will require proof of compliance with a new PTC specification when the new ADSL2 service is introduced. This note should be attached to each of the boxes containing these Belkin F5D5730au ADSL Routers:

#### ADSL2 & ADSL2+ Services

ADSL2 and ADSL2+ services are only available from the network of the ADSL Service Provider. Telecom does not currently provide either of the services to customers from its Broadband network. When Telecom introduces either ADSL2 and/or ADSL2+ service this Belkin F5D5730au ADSL Router will have to prove itself suitable for connection to the service.