

13.1.2 Disabling Single Static IP – Single IP Address PassThrough

To disable Single Static IP, select Single Static IP from the Configuration menu. Click on disable.

🚈 Single Static IP Configuration - Microsoft Internet Explorer	-O×
File Edit View Favorites Tools Help	
	*
WESTELL	
Discover Better Broadband Home Status Configuration Maintenance Troubleshooting Help	
Single Static IP Configuration	
Configuration	
WAN ID Address · 10 16 90 8	
Single Static IP is currently enabled for salle-982.	
disable	
	T
	<u> </u>

If you clicked disable in the preceding screen, the following pop-up screen will be displayed. Click on OK.

Microsoft Interne	t Explorer 🛛 🔀
Disable	IP Passthrough?
OK .	Cancel

If you clicked **OK** in the **Disable IP Passthrough?** screen, the following pop-up screen will be displayed. This screen will allow the modem to be reset and the new configuration will take effect. Click on **OK**.





If you clicked **OK** in the preceding screen, the following screen will be displayed. The Router will be reset and the new configuration will take effect.



After a brief delay, the home page will be displayed. Confirm that you have a DSL sync and that your PPP session displays **UP.** (Click on the **connect** button to establish a PPP session). Next, Select **Single Static IP** from the **Configuration** menu to confirm that Single Static IP is **disabled**, as shown in the following screen.

Single Static IP Configuration	on - Microsoft Internet Explorer .
Discover Better Broadband Single Static IP Configuration	Home Status Configuration Maintenance Troubleshooting Help
	Please select which device will share your Single Static IP. If "User Configured PC" is selected, a local PC must be manually configured to have the Single Static IP address. WAN IP Address : 10.16.90.8
	User Configured PC solle-SR2
a	enable

STOP! After you disable Single Static IP, you must reboot your computer.



13.2 Service Configuration

The following settings will be displayed if you select **Services** from the **Configuration** menu.

Westell has developed an extensive list of NAT services and you may select any service from this list. By selecting your specific NAT service and setting up a NAT profile, you will ensure that the appropriate ports on the Router are open and that the required application traffic can pass through your LAN. For a list of supported services, go to section 17 (NAT Services).

NAT Profiles allow you to create specific service settings. The NAT profile may then be associated with a connection profile, allowing you to customize profiles for specific users. For example, if you want to attach specific NAT services to a profile, or if you want to set up a different connection setting for a profile, you can create new NAT profiles and customize them to your preference.

NOTE: You may create up to four NAT profiles and attach an unlimited number of services to each profile.

Service Configuration - Micr	osoft Internet Explorer					×
File Edit View Favorites	Tools Help					
Discover Boster Broadband Service Configuration	Home Status Configur	ation Maintenance	Troubleshooting	Help		
Current Profile:	Default 💌		new	edit		
Service Name UPNP Enable	Select a Service / * / Denotes Custom Serv	lice	enable	delete	edit	
Service Name	Service Mode	Host Device				
IPSEC ALG	Client	Dynamic	details		delete	
* [f your firewal define custo static NAT	l is enabled, the firewall ru. <mark>n service</mark>	'es take precedence o	ver the Services.			
à					Tetomet	<u> </u>

Current Profile	Displays the NAT (Network Address Translation) services that you have selected.
Service Name	Drop down selection menu of NAT (Network Address Translation) service you can
	select to configure your Router.
UPNP Enable	Factory Default = Disable
	Enabling UPNP (Universal Plug and Play) allows automatic device discovery by
	your operating system.



13.2.1 Configuring UPNP on your Router

Note: To use the UPNP functionality in the Router, your Windows XP operating system must also support UPNP. Please contact your computer manufacturer to verify that UPNP is enabled in your Windows XP operating system.

To enable UPNP on the Router perform the following steps:

- 1) Select Services from the Configuration menu.
- 2) Click the UPNP Enable box in the Service Configuration screen. A check mark will appear in the box.
- 3) Follow the instructions in the pop-up screens.
- 4) Click **OK** to reset the Router.

NOTE: When you are ready to disable UPNP, uncheck the UPNP Enable box in the Service Configuration screen.

If you click the **UPNP Enable** box in the **Service Configuration** screen, a check mark will appear in the box, as shown below.

2	Serv	rice Co	infiguri	ation - Mic	rosoft I	iternet Exp	lorer									×
j i	File	Edit	View	Favorites	Tools	Help										<u>.</u>
	Disco	Cont	STE etter B Servic	coadband CC ation	Hom	e Status	Configura	tion Mainter	nance T	roubleshooti	ing Hel	Þ				×
		c	urrent Servio UPI	t Profile: ce Name NP Enabl	Detau Selec	ta Service enotes Ω	ı Istom Servi			new enable		edit elete	ec	lit		
		5	ervic	e Name		Service	Mode	Host Devi	ice							
		I	PSEC	ALG		Client		Dynamic		det	ails		delete			
			^t [f yot defi stat	ur firewa ne custo ic NAT	ll is end m ser	ibled, the	firewall rule	s take precea	lence ove	er the Service	s.					
•															1	ľ
۲														Internet		11.

And the following pop-up screen will be displayed. Click on OK.





If you clicked **OK** in the preceding screen, the following screen will be displayed. Click on **OK** to reset the Router.

Microso	t Internet Explorer
?	The modem must be reset in order for the new configuration to take affect. Do you wish to reset now?
	Cancel

If you clicked **OK** in the preceding screen, the following screen will be displayed. The Router will be reset automatically, and the new configuration will take effect.



After a brief delay, the home page will be displayed. Confirm that you have a DSL sync and that your PPP session displays **UP.** (Click the **connect** button to establish a PPP session).



13.2.2 Creating a New NAT Service Profile

NAT Profiles allow you to create specific service settings. The NAT profile may then be associated with a connection profile, allowing you to customize profiles for specific users. For example, if you want to attach specific NAT services to a profile, or if you want to set up a different connection setting for a profile, you can create new NAT profiles and customize them to your preference.

NOTE: You may create up to four NAT profiles and attach an unlimited number of services to each profile.

ervice Co	onfigurat	ion - Micr	osoft In	ernet Exp	lorer									_1
e Edit	View	Favorites	Tools	Help										
		-												
~	1/													
~	Ó													
VES	ЗТЕ	LL									-			
scover e	Setter BIO	aoband	ноте	Status	Contigui	ration mainte	enance	Trouble	snooting	нер				
Con	Service figurat	e ion												
0011														
c	urrent	Profile:	Defaul						ew	ed	it i			
				_				_		_		_		
	Service	e Name	Select	a Service				🔹 🔄 en	able	dele	ete	edi	t	
	LIDN		, , , De	notes O.	istom Ser	VICO								
	OPN	P Enable	: L											
1	Service	Name		Service	Mode	Host De	vice			_				
1	PSEC A	LG		Client		Dynamic			detai	s		delete		
	* 16	. Annaal	l ic onai	had the	free all m	laa taka praa	dance e	var tha S	micaa					
	ij you	Jnemu	1 12 67141	neu, me	n eman ru	ies tuxe preci	dence o	ver the D	er viceo.					
	uerin	e custo	m serv	Ce .										
	statio	NAT												
	-													
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To create a new NAT profile, click **new** in the **Service Configuration** screen.

If you selected **new** from the preceding **Service Configuration** screen, the **Create new Service Profile?** pop-up screen will be displayed. Click on **OK** to begin creating your new NAT service profile. Click **Cancel** if you do not want to create a new NAT service profile.

Microsoft Internet	Explorer 🛛 🔀
? Create ne	ew Service Profile?
OK	Cancel



ne Eo	it View	Favorites To	ols Help						
	STE Better Br Servic Donfigurat	e tion	lome Status	Configuratio	n Maintenance	Troubleshooting	Help		
	Current	Profile: Do	sfault			new	edit)	
	Servic	e Name /*	fault New Service Pri ' Denotes Cus	ofile #1 tom Service		enable	delete	edit	
	Service	e Name	Service N	1ode I	Host Device				
	Service	e Name	Service N Client	1ode I	Host Device Dynamic	details		delete	
	Service IPSEC / * <i>if you</i> defin stati	e Name ALG <i>r firewall is</i> ne custom s c NAT	Service N Client enabled, the fi ervice	tode i I rewall rules to	H ost Device Dynamic ake precedence	details		delete	
	Service IPSEC / * [f you defin stati	e Nome ALG r firewall is re custom s c NAT	Service M Client enabled, the fi ervice	1ode I I rervall rules to	Host Device Dynamic ake precedence	details		delete	

If you clicked **OK**, the following screen will be displayed. Select **"A New Service Profile #1"** from the **Current Profile** drop-down arrow.

If you selected "A New Service Profile #1" from the Current Profile drop-down arrow, the following screen will be displayed. This screen shows that you have chosen to create a new NAT service profile. You may create up to four NAT service profiles and attach an unlimited number of services to each profile.

Service	e Configur	ation - Mic	rosoft Int	ernet Expl	lorer								_ 0
ie E	dit View	Favorites	Tools	Help									4
		-											
	N												
-	B												
	STE Better B	roadband	Home	Status	Configur	ration Mainte	nance T	roubleshoot	ina Hel	n			
	Soruio	20	Tionic	outus	oomigu	actor manie	nunce n	ioubiconoot	ing rici				
С	onfigura	ition											
						_		new	d	elete	ed	it	
	Current	Profile:	A New	Service F	rofile #1 💌	1					_		
			Select	a Service			•	enable		elete	ed		
	Servi	ce Name	'*'De	notes Cu	stom Ser	vice		-			-		
	UP	NP Enabl	e 🗆										
	Servic	e Name		Service	Mode	Host Dev	vice						
	IPSEC	ALG		Client		Dynamic		det	ails		delete		
	* 11 200	ur fireven	ll is onal	and the	firewall ru	les take prece	dence cove	r the Service	ie.				
	defi	ne custo	m servi	ce									
	stat	IC NAT											
)
)



13.2.3 Editing a NAT Service Profile

After you have created a NAT service profile, you may edit the profile's name. If you select **edit** from the **Service Configuration** screen, the following screen will be displayed. By selecting the **edit** button, you can make changes to your profile name, and then add NAT services to or delete them from your profile. Type your new NAT service profile name in the field labeled **Profile Name**.



The following screen shows that a new profile name called 'My NAT Profile' was entered into the Profile Name field. If you want save the new profile, click on save. If you do not want to save the new NAT profile, click close.





If you clicked **save** in the **Edit Service Profile** screen, the following pop-up screen will be displayed. Click **OK** to save your new profile settings. If you click on **Cancel**, your new profile settings will not be saved.

Microsoft Interne	t Explorer	×
Save th	is Profile?	
OK	Cancel	

The following screen displays the current profile. If desired, you may create a new profile and delete or edit an existing profile.

ervice (Configur	ation - Micr	osoft Int	ernet Expl	orer									_ 0
le Edit	t Ylew	Favorites	Tools	Help										4
	STE Better B Servio	ELL iroadband ce stion	Home	Status	Configu	ration M	aintenance	Trout	leshootin	ıg Help				
	Current	t Profile:	My NA	T Profile	•				new	de	lete	e	dit	
	Servii UP	ce Name NP Enable	Select	a Service notes Qu	stom Ser	vice		•	enable	de	lete	e	dit	
	Servic	e Name		Service	Mode	Host	Device							
	IPSEC	ALG		Client		Dyna	mic		deta	ils		delet		
	* <i>lf yo</i> l defi stat	ur firewal ne custo ic NAT	<i>l is enal</i> m servi	led, the j	îrewall rı.	les take p	recedence :	over the	Services.					
\sim														/



13.2.4 Adding NAT Services to a Profile

This section explains how to add NAT services to your NAT service profile. Remember, you may attach an unlimited number of NAT services to any profile.

NOTE: Westell has developed an extensive list of NAT services and you may select any service from this list. By selecting your specific NAT service and setting up a NAT profile, you will ensure that the appropriate ports on the Router are open and that the required application traffic can pass through your LAN. For a list of supported NAT services, go to section 17 (NAT Services). **IPSEC ALG** is the Router's factory default NAT service.

To add a NAT service, select **Services** from the **Configuration** menu. Next, Select a NAT service from the options provided at the **Service Name** drop-down arrow.

NOTE: You can attach multiple NAT services to your profile. However, for each NAT service that you attach to your profile, you must first select the new NAT service. Then, you must load the new NAT Configuration, as explained in section 13.2.2 (Creating a New NAT Service Profile).

In the following screen, "Default' has been selected at the Current Profile that will host the desired NAT service. However, you can attach a NAT service to any profile.





For example, the screen below displays America Online as the NAT service selected. After you have selected a service, click enable.

Edit View Favorites	Tools Help				
M					
over Better Broadband	Home Status Config	uration Maintenance	Troubleshooting H	elp	
Configuration					
Current Profile:	Default 💌		new	edit	
Current Profile: Service Name	Default America Online * * * Denotes Custom Se	ervice	enable	edit delete	edit
Current Profile: Service Name UPNP Enable	Default	rvice	enable	edit delete	edit
Current Profile: Service Name UPNP Enable	Default	ervice	enabie	edit delete	edit
Current Profile: Service Name UPNP Enable Service Name	Default America Online * / Denotes Custom Se Service Mode	rvice Host Device	enable	edit delete	edit
Current Profile: Service Name UPNP Enable Service Name IPSEC ALG	Default America Online * * Denotes Custom Se Service Mode Client	rvice Host Device Dynamic	enable details	edit delete	edit
Current Profile: Service Name UPNP Enable Service Name IPSEC ALG * [f your firevali	Delauit America Online (* ' Denotes Oustorn Se Service Mode Client (is enabled, the firewall)	ervice Host Device Dynamic rules take precedence ov	er the Services.	delete	edit
Current Profile: Service Name UPNP Enable Service Name IPSEC ALG * [f your firewall define custor	Delauit America Online America Online (* * ' Denotes Custom Se Service Mode Client (is enabled, the firewall in n service	rvice Host Device Dynamic rules take precedence ov	enable details er the Services.	delete	edit
Current Profile: Service Name UPNP Enable Service Name IPSEC ALG * [f your firewall define custor static NAT	Delauit America Online ' * ' Denotes Custom Se Service Mode Client ' is enabled, the firewall in n service	ervice Host Device Dynamic rules take precedence ov	details er the Services.	edit delete	edit
Current Profile: Service Name UPNP Enable Service Name IPSEC ALG * if your firevall define custor Static NAT	Default America Online America Online (* * ' Denotes Custom Se Service Mode Client Client is enabled, the firewall in service	ervice Host Device Dynamic rules take precedence ov	details er the Services.	edit delete	delete
Current Profile: Service Name UPNP Enable Service Name IPSEC ALG * (f your firevall define custor static NAT	Delauit America Online America Online (* * ' Denotes Custom Se Service Mode Client (is enabled, the firewall) n service	ervice Host Device Dynamic rules take precedence ov	details er the Services.	edit delete	delete

If you click **enable**, the following pop-up screen will be displayed. If you click **OK**, you will allow incoming connections to be forwarded to a designated local PC. If you click **Cancel**, you will allow only outgoing connections from any local PC. Click **OK** or click **Cancel**.

NOTE: If you click **Cancel** in the following pop-up screen, the NAT service you selected in the **Service Configuration** screen is still configured; however, it will not be assigned to any device on the local LAN. You must click **OK** to host the NAT service.





If you clicked **OK** in the preceding pop-up screen, the **Host Device** screen will be displayed. The **Host Device** screen will allow you to select which device will host the NAT service you selected on your local area network. You must either select the device from the **Host Device** drop-down arrow or type an IP address in the field labeled **IP** Address. If you click on **Cancel**, the connection will be dynamically assigned. Click on **done**.

🖉 Host Device - Microsoft Internet Explorer 📃 🖃 🗙
Host Device salle-982 💌
or specify
IP Address
done

After you have selected a NAT service and you have saved it to your NAT service profile, the following screen will be displayed. It shows which NAT service is active for the selected profile.

	ools Help			
STELL Better Broadband Service onfiguration	Home Status Configurat	ion Maintenance Troubles	hooting Help	
Current Profile:	Default 💌		new edit	
Service Name	Select a Service * ' Denotes Custom Serv	rice 🔽 🧰	nable delete	edit
UPNP Enable				
UPNP Enable Service Name	C Service Mode	Host Device		
UPNP Enable Service Name America Online	Service Mode Port Forwarding	Host Device salle-982	details	delete
UPNP Enable Service Name America Online IPSEC ALG	Service Mode Port Forwarding Client	Host Device salle-982 Dynamic	details details	delete delete
UPNP Enable Service Name America Online IPSEC ALG * If your firewall define custom Static NAT	Service Mode Port Forwarding Client is enabled, the frewall rul service	Host Device salle-982 Dynamic es take precedence over the	details details Services.	delete delete
UPNP Enable Service Name America Online IPSEC ALG * [/your firewall define custon static NAT	Service Mode Port Forwarding Client is enabled, the frewall rul s service	Host Device salle-982 Dynamic es take precedence over the	details details Services.	delete delete



If you select the **details** button in the **Service Configuration** screen, the following screen will display the details of the selected NAT service. If you click on the **delete** button in the **Service Configuration** screen, you will remove that NAT service from your NAT service profile. Click **close** to continue.

Service Details - Microsoft Internet Explorer	_
Service Details	
Service Name America Online Type Port Forwarding	
Port 1	
Protocol: TCP	
Bace Host Port(5): 5190	
close	
Construction of the second	

NOTE: If you would like to set up additional Advanced Service Configuration options, refer to section 14 (Setting Up Advanced Service Configuration).



13.3 Firewall Configuration

The following settings will be displayed if you select Firewall from the Configuration menu.

NOTE: Westell recommends that you do not change the settings in the **User Defined Firewall Rules** screen. If you need to reset the Router to factory default settings, push the reset button on the rear of the Router.



	Security Level				
High	High security level only allows basic Internet functionality. Only Mail, News, Web,				
	FTP, and IPSEC are allowed. All other traffic is prohibited.				
Medium	Like High security, Medium security only allows basic Internet functionality by				
	default. However, Medium security allows customization through NAT configuration				
	so that you can enable the traffic that you want to pass.				
Low	Factory Default = Low				
	The Low security setting will allow all traffic except for known attacks. With Low				
	security, the Router is visible to other computers on the Internet.				
None	Firewall is disabled. (All traffic is passed)				
Custom	Custom is an advanced configuration option that allows you to edit the firewall				
	configuration directly. NOTE: only the most advanced users should try this.				
Remote Logging					
Enable	Factory Default = Disable				
	If enabled, the Router will send firewall logs to a syslog server.				
Remote IP Address	The IP address of the syslog server machine to which the diagnostics logs to be sent.				

If you select **Edit** from the **Security Level** screen, the **User Defined Firewall Rules** screen will be displayed. This screen allows you to change the security parameters on your Inbound and Outbound Firewall rules via the **User Defined Firewall Rules** drop-down arrow. If you select **Inbound**, this will restrict inbound traffic from the WAN to the LAN. **Outbound** restricts outbound traffic to the WAN from the LAN. To apply the new settings, click **Apply** in the screen labeled **User Defined Firewall Rules**.



The information displayed in the following screen depends upon the Firewall security setting you have selected. If you selected "None" in the preceding Firewall **Security Level** screen, no values will be displayed in the following **User Defined Firewall Rules** screen.



If you clicked **Apply** in the **User Define Firewall Rules** screen, the following pop-up screen will be displayed. Click on **OK** if you want your new firewall setting to take effect. If you click **Cancel**, your new firewall settings will not take effect.

Microsoft	Internet Explor	'er	×
2	Do you wish to sa and switch your S	ave these Rules to Fl Security Level to "Cu:	ash stom"?
	ОК	Cancel	

If you want to save your new firewall settings, click save in the screen labeled User Define Firewall Rules.

NOTE: Westell recommends that you do not change the settings in the **User Defined Firewall Rules** screen. If you need to reset the Router to factory default settings, push the reset button on the rear of the Router.



	vall R	ules - N	1icrosoft II	nternet	Explorer					_
File	Edit	View	Favorites	Tools	Help					
			User D	efined	Firew	all Rules	nbound	-		
tit:	le		[Secur	ity Le	evel Lo	w IN rul	es]			A
seg: Rule	in esPa:	33								
pass	s al	1								
Rule	esDr: n fr:	opAdd	ress dr 0 0 1		done	alart 4	r n n	0 0 50	urce TE	
Addı	ress)]	ur 0.0.	//	- uone,	alert 1	[0.0	.0.0 .0	uice ir	
Rule	esPa:	ssUDP								
pass	s pro	otoco	l udp,	to por	t 53 :	> done				
pass	s pro	oroco	i udp,	rrom 1	ort 53	>> done				
Rule	esDr	opICM	P							
droj	p pr	otoco	l icmp :	>> ale	ert 4	ICMP Mes	sage T	o VAN I	P]	
end										
No	ote:	The	inform	ation	ı displ	ayed in	this s	creen d	lepend	S
on	the	leve	el of sec	curity	y ou l	have sele	ected.			
										-
									help	
			6	apple			WO I			
				арріу		Se	WC I			
					cl	ose				
					-					

If you clicked **save** in the User Define Firewall Rules screen, the following pop-up screen will be displayed. Click **OK** when asked **Do you wish to save these Rules to Flash and switch you Security Level to "User"?** This will save your new firewall settings. If you click **Cancel**, your new firewall settings will not be saved.

Microsoft Internet Explorer						
?	Do you wish to save these Rules to Flash and switch your Security Level to "Custom"?					
	OK Cancel					



User Guide

If you select **Help** in the screen labeled **User Defined Firewall Rules**, the following screen will be displayed. This screen gives a detailed explanation of the Firewall Rules.

	uner format is broked into two sections. The first portion of the file defines any number of keys and associated values. The ontains the filtering rule definitions.
ey Definition	Section
key definition c	onsists of the key followed by the associated value. A value is actually a character string. The string is delimited by the open e brackets. An example of a keyword definition would look like the following
title Hial	s and the country RDL file 1
he packet filter	engine does not use keys. They are intended to provide information associated with the file. The user interface treats the key
efinition and val	ue pairs as standard text.
tules Section	
he rules section nd converted to IDL source. Oni ompare the folli	o of the RDL file or buffer is delimited by the bogin an end keywords. The rules listed between these delimiters are parsed a decision the delist subture used by the packet filter engine. The rules listed is emplemented sequentially as listed in the ce the packet filter engine finds a match for a rule filt will note the filter action to be taken gass or dropp and continue to wing rules with the engine finds a match for a rule filt (see the description of the dom each on its ection 21.2.3).
lule Names	
IDL rules may b bliowing its decl haracters begin	e given names. The packet logging facility and the user infortace uses these rule names. A name applies to all rules andion in the Rules Section unit another name is defaued or the end statement. An identifiar (one or more alphanumeric ming with an alpha character) on a line by itself declares a new name for the following rule(s).
DL Comment	S
omments begi	n with the # character. The parser ignores all characters following the comment character to the end of the line.
DL Command	/ Syntax
n RDL commar	id consists of a filter keyword followed by a condition expression optionally followed by one or more action keywords.
Filler Cor	xilition [, Condition2,] [>> Action, Action2,]
he filter keywori will be compan	s specifies if the packet will be passed or dropped. The condition defines the portion of the packet and the bit string to which ed. The action keyword may specify additional action(s) to be taken.
ilter Keyword	is
he RDL filter to	ken may be either passed or dropped.
pass Sp	 recifies that the matching packet is to be passed onto the associated interface or the SENS MUX.
drop Sp	ecifies that the matching packet will not be forwarded to the associated interface or the SENS MUX.
Condition Key	words
he condition exp	pression determines if the rule is a match for the given packet.
all Spec	ifies all packets. If the all condition is specified in a rule, all other conditions are ignored.
This keyw (Ethernet comparis stringlt is mask valu number a	rord is followed by three parameters. The first numeric parameter is the header layer, valid values include 2 hough 4 = 2, ip = 3, topulopic noglimp = 0. The second numeric parameter is the offest into the packets begin the on. T and the hind third parameter, is the representation of the bit string and comparision bit masksteff. The bit of the offest of the second numeric parameter is no offest of the second numeric parameter is the offest of a second numeric parameter is the second numeric parameter is no offest offest of the second numeric parameter is of a second numeric parameter is the second numeric parameter is no presented by a two character hexadecimal and is separated by white space from the previous byte representation.
from to TCP/UDF destinatio is to be s port num!	[adit /j-addt/mask] []port (art /, iport >> port >>
ad IP 31 as	for Specifies the source or destination IP address field and comparison mask. This keyword is followed by a address in dotted-decimal notation and mask separated by a forward slash. The mask is a number from 1 to and is signifies how many bits of the IP address are compared. If no mask is provided, a mask value of 32 is sumed.
pe nu ra	xf Specifies the source or destination UDP/TCP port number. This keyword is followed by the 16 bit port imber represented hexadecimal or decimal format. Using the ≻e or ≻= operators allows for matching on nges of ports.
protocol paramete different p	leg ludy icemp i yawe. Specifies the value of the protocol field found in the IP header. It is followed by a trait aspecifies the protocol value. There are built in dependent for the TC-V, DUP ICMP and Other Protocols, if a protocol value is required, it may be represented by a decimal or hexadecimal value between 0 and 255.
tc	p Specifies the TCP protocol.
uc	Ip Specifies the UDP protocol.
ic	mp Specifies the ICMP protocol.
ig	mp Specifies the IGMP protocol.
flags urg paramete iomo-tvo	[:zack:paph;izst;izsyn_izim: Specifies some combination of the flag bits found in the TCP header. The rs following the keyword should be represented in a colon delimited list. eucory: report: Specifies the IOMP packet two found in the IOMP header. The report two checks for both version 1
and versi include th	on 2 bype codes. No check is made by the parser to verify that the IOMP protocol is specified. So it is up to the user to e protocol group condition in a rule using the igmp-type condition.
that the IC condition	er equest, reger specified. So it is up to the user to include in the cum measure, no critex is made by the parser to remy MP protocol is specified. So it is up to the user to include the protocol icmp condition in a rule using the kmp-type
waan keywor	us
pecmes any fur log <i>level</i> is a mech rule. The	urer acuor to ve taken topon a maich bereven me ruie conomon and the packet content. Specifies that the contents of any matching packet header should be recorded in the log table. The sevel parameter ramism to indicate the source of the log entry. This value rule name is stored with each log entry resulting from this log may subsequently be searched or soled by this valuee rule name. Log entry inter sapare in the table with a default
severity o alert sev with the c delimited	10. The revervalue is represented by a decimal or hexadecimal value between 0 and 255. workly (Avert Kext) Specifies that the contents of any matching packet header should be recorded oin the log table orresponding severity value and text explanation. Severity is a decimal number between 0 and 4. The alert text is by brackstBracksted belimit the alert text.
done Sp provides	ecifies that the filtering engine should stop checking any subsequent rules should this rule match. This action a mechanism to optimize the decision tree implemented by the filtering engine.



13.4 Wireless Configuration (Models 328W10, 328W11)



13.4.1 Wireless Basic

The following fields will be displayed if you select **Wireless** > **Basic** from the **Configuration** menu. If you change any settings in this screen, you must click **save** to save the settings.



IMPORTANT: If you are connecting to the Router via a wireless network adapter, the service set ID (SSID) must be the same for both the Westell Router and your PC's wireless network adapter. The default SSID for the Router is the serial number of the unit (located below the bar code on the bottom of the unit and also on the Westell shipping carton). Locate and run the utility software provided with your PC's Wireless network adapter and enter the SSID value. The PC's wireless network adapter must be configured with the SSID (in order to communicate with the Router) before you begin the Router's account setup and configuration procedures. For privacy, you should change the **Network Name** (SSID) value in the **Wireless Configuration** screen to your desired value.



	Wireless Configuration
Wireless Operation	Factory Default = Enabled.
_	When disabled, no stations will be able to connect to the Router.
Network Name (SSID)	This string, (32 characters or less) is the name associated with the AP. To connect to the AP, the SSID on a Station card must match the SSID on the AP card or be set to
	"ANY."
Channel	Factory Default = 6
	The AP transmits and receives data on this channel. The number of channels to choose from is pre-programmed into the AP card. Station cards do not have to be set to the
	same channel as the AP; the Stations scan all channels, and look for an AP to connect
	to.
Mode	Factory Default = Mixed
	This setting allows station to communicate with the Router.
	Possible Responses:
	Mixed: Station using any of the 802.11b, 802.11b+, and 802.11g rates can communicate with the Router.
	Legacy Mixed: Same as Mixed, but also allows older 802.11b cards to communicate with the Router.
	11b only: Communication with the Router is limited to 802.11b
	11b+: Stations using any of the 802.11b and 802.11b+ rates can communicate with the
	Router
	11g only: Communication with the Router is limited to 802.11g
Frameburst Mode	Factory Default = Disabled
	When selected, this enables/disables the frameburst option.
	If enabled, additional algorithms are used for increased throughput.
Hide SSID	Factory Default = Disabled.
	If Enabled, the Router will not broadcast the SSID. Stations must configure the SSID
	to match the Network Name (SSID) to connect to the Router.

If you clicked **save** in the **Wireless Configuration** screen, the following pop-up will be displayed. Click **OK** to continue.

Microsof	t Internet Explorer X
?	Wireless access will be interrupted and the wireless stations may require reconfiguration, continue?
	Cancel



13.4.2 Wireless Security

The following screen will be displayed if you select **Wireless** > **Security** from the **Configuration** menu.

File Edit	View	Favorites	Tools	Help							4
VES Viscover 8 Wirel	Batter B Better B	ELL roadband ecurity	Hom	e Status Co	onfiguratic	on Maintena	nce Troubl	eshooting	Help		
			Wirele Wirele	ss Security		Dis	abled 💌				
						save	reset				

Select the desired security option from the Wireless Security drop-down menu.

IMPORTANT: Client PCs can use any Wireless Fidelity (Wi-Fi) 802.11b/g/g+ certified card to communicate with the Router. The Wireless card and Router must use the same security code type. If you use WPA-PSK or WEP wireless security, you must configure your computer's wireless adapter for the security code that you use. You can access the settings in the advanced properties of the wireless network adapter.

🙆 Wireless Security - Microsof	t Internet Explorer	<u>_0×</u>
File Edit View Favorites	Tools Help	
Wireless Security	Home Status Configuration Maintenance Troubleshooting Help	
	Wireless Security Disabled • Disabled • Disabled • Savy WFA PAPSK set	
)	
<u>را</u> ۱		Internet



13.4.2.1 Enabling WEP Security

If you select **WEP** from the **Wireless Security** drop-down menu, the following screen will be displayed. After you have entered the appropriate values in the fields provided, click **save** to save the settings.

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NEGTEL			
Discover Better Broadit	Home Status Configuration Main	tenance Troubleshooting Help	
Wireless Secur	ty		
	Wireless Security		
	Wireless Security		
	Wireless Security Wireless Security WEP	<u>×</u>	
	Wireless Security Wireless Security WEP Authentication Type Open S	ystem y	
	Wireless Security Wireless Security WEP Authentication Type Open S Key Select Key 1	ystem V	
	Wireless Security WEP Wireless Security WEP Authentication Type OpenS Key Select Key1	ystem z 64 bit z	
	Wireless Security WEP Authentication Type OpenS Key Select Key1 Key 1 Key 2	ystem v 64 bit v 64 bit v	
	Wireless Security WEP Authentication Type OpenS Key Select Key T Key 2	ystem v 64 bit v 64 bit v 64 bit v	
	Wireless Security WEP Authentication Type OpenS Key Select Key1 Key 2 Common Select Key 3 Common Select Key 4 Common Select	ystem y 64 bit y 64 bit y 64 bit y 64 bit y	
	Wireless Security WEP Authentication Type OpenS Key Select Key1 Key 2 Image: Select Security Key 3 Image: Security Key 4 Image: Security		
	Wireless Security WEP Wireless Security WEP Authentication Type OpenS Key Select Key1 Key 1 Key 2 Key 3 Key 3 Key 4 Select 44 (Select 12) *WEP keys: 64 bit (Select 12)		
	Wireless Security WEP Authentication Type OpenS Key Select Key1 Key 1	5 text or 26 hexadecimal digits)	
	Wireless Security WEP Authentication Type Opens 1 Key Select Key 1 Key 2	ystem v 64 bit v 64 bit v 64 bit v 64 bit v 64 bit v 5 text or 10 havadecimal digits) (13 text or 26 hexadecimal digits)	
	Wireless Security WEP Authentication Type OpenS Key Select Key 1 Key 2 Key 3 Key 3 Key 4 *WEP keys: 64 bit 128 bit	Steve of the second sec	

	Wireless Security
Wireless Security	Factory Default = Disabled. Possible Response: Disabled: If selected, wireless security will be disabled on the Router and any station can connect to the AP as long as its SSID matches the AP's SSID. WPA-PSK: Selecting this will enable you to set up WPA-PSK security on the Router. WEP: Selecting this will enable you to set up WEP security on the Router. The AP card supports 64-bit, 128-bit, or 256-bit WEP encryption. If WEP is selected, any station can connect to the AP (as long as its SSID matches the AP SSID). If wireless security is disabled, the risk of someone nearby accessing the AP is maximized.
Authentication Type	Factory Default = Open System Possible Response: Open System: Open System authentication is the default selection. Shared Key: To use Shared Key authentication, WEP must be enabled, and a valid WEP key must be present. Enabling WEP does not force the use of Shared Key authentication. It is permissible to have WEP enabled and still use Open System authentication.
Key Select	If selected, the WEP Key is treated as a string of text characters, and the number of characters must be either 5 (for 64-bit encryption) or 13 (for 128-bit encryption) or 29 (for 256-bit encryption). If not selected, the WEP key is treated as a string of hexadecimal characters, and the number of characters must either be 10 (for 64-bit encryption), 26 (for 128-bit encryption), or 58 (for 256-bit encryption). The only allowable hexadecimal characters are 0-9 and A-F. NOTE: The WEP key must be the same value and type for both the Router and the wireless network adapter. "Pass Phrase" is not the same as "text" and should not be used.



13.4.2.2 Enabling WPA-PSK Security

If you select **WPA-PSK** from the **Wireless Security** drop-down menu, the following screen will be displayed. After you have entered the appropriate values in the fields provided, click **save** to save the settings.

Wireless Security	10 X 10 X
Wireless Security	*
Wireless Security Wireless Security WPA Shared Key	
WPA Group Rekey Interval 0 Data Encryption TKIP *WPA key: must be 8 to 63 text characters or 64 hexadecimal	
digits in length	T
👔 👔 Internet	

	Wireless Security
Wireless Security	Factory Default = Disabled.
	Possible Response:
	Disabled: Wireless security will be disabled on the Router.
	WPA-PSK: Selecting this will enable you to set up WPA-PSK security on the Router.
	WEP: Selecting this will enable you to set up WEP security on the Router. The AP card
	supports 64-bit, 128-bit, or 256-bit WEP encryption. If WEP is selected, any station can connect
	to the AP (as long as its SSID matches the AP SSID).
	If wireless security is disabled, the risk of someone nearby accessing the AP is maximized.
WPA Shared	This is a passphrase (also called a shared secret) that must be entered in both the wireless router
Key	and the wireless client. This shared secret can be between 8 to 63 text characters (or 64
	hexadecimal characters) and can include special characters and spaces. The WPA Shared Key
	should be a random sequence of either keyboard characters (upper and lowercase letters,
	numbers, and punctuation), at lease 20 characters long, or hexadecimal digits (numbers 0-9 and
	letters A-F) at least 24 hexadecimal digits long. The more random your WPA Shared Key, the
	safer it is to use.
WPA Group	Factory Default = 3600
Rekey Interval	The number of seconds between rekeying the WPA group key. A zero "0" means that rekeying
	is disabled.
Data Encryption	Factory Default = TKIP
	Possible Respone:
	TKIP- Selecting this option enables the Temporal Key Integrity Protocol for data encryption.
	AES- Selecting this option enables the Advanced Encryption Standard for data encryption.
	TKIP/AES- Selecting this option enables the Router to accept either TKIP or AES encryption



13.4.3 Wireless MAC Filter Table

The following screen will be displayed if you select **Wireless** > **MAC Filter** from the **Configuration** menu. To enable MAC Address filtering, click the box adjacent to **Enable MAC Address Filtering**. A check mark will appear in the box. Next, click **save** to save the setting. To add or edit a MAC Address setting, click the **add** button.

Wireless Filter Table - Micros	oft Internet Explorer	_O×
M		×
WESTELL Discover Better Broadband Wireless Filter Table	Home Status Configuration Maintenance Troubleshooting Help	
	Wireless MAC Address Filter Table	
	Enable MAC Address Filtering	
	When the MAC Address Filter is enabled, only the stations that are in this table, and set to 'Allowed', will be accepted. All others will be blocked.	
	Gurrently the MAC Address table is empty.	
	add	
Done	1.1.1	Internet

If you clicked save in the Wireless Filter Table screen, following pop-up screen will be displayed. Click OK to continue.

Microso	ft Internet Explorer
?	Wireless access will be interrupted and the wireless stations may require reconfiguration, continue?
	OK Cancel

If you clicked **add** in the **Wireless Filter Table** screen, the following screen will be displayed. Enter the appropriate values for your MAC Address settings, and then click **save** to save the settings. Click **cancel** in this screen if you do not wish to add MAC Address setting.



Traffic	Allowed: When the MAC Filter is enabled, only stations in the MAC Filter Table
	(which are set to "Allowed") will have access to the AP.
	Blocked: This allows the station to remain in the table, but no access to the Router
	is allowed.
MAC Address	The MAC address assigned to the station that you want to allow access to.
Station Name	The station name or description that the MAC address is assigned to. This is an
	optional field that is useful in identifying the station.



13.4.4 Wireless Advanced Configuration

The following screen will be displayed if you select **Wireless** > **Advanced** from the **Configuration** menu. If you change the settings in this screen, you must click **save** to save the settings.



Wireless Advanced Configuration				
Beacon Period	The time interval between beacon frame transmissions. Beacons contain rate and			
	capability information. Beacons received by stations can be used to identify the			
	access points in the area.			
RTS Threshold	RTS/CTS handshaking will be performed for any data or management MPDU			
	containing a number of bytes greater than the threshold. If this value is larger than			
	the MSDU size (typically set by the fragmentation threshold), no handshaking will			
	be performed. A value of zero will enable handshaking for all MPDUs.			
Fragmented Threshold	Any MSDU or MMPDU larger than this value will be fragmented into an MPDU			
	of the specified size.			
DTIM Interval	The number of Beacon intervals between DTIM transmissions. Multicast and			
	broadcast frames are delivered after every DTIM			
Supported Rates	These are the allowable communication rates that the Router will attempt to use.			
802.11b Rates (Mbps)	The rates are also broadcast within the connection protocol as the rates supported			
802.11g Rates (Mbps)	by the Router.			

If you clicked save in the preceding screen, the following pop-up screen will be displayed. Click OK to continue.





13.5 Advanced LAN



This section explains the configurable features of the Router that are available if you select **Advanced LAN** from the **Configuration** menu.

NOTE: If the Router is configured for **ETHERNET PORT 1**, **VLAN** will not be displayed. You must configure the Router for **DSLATM PORT** to access **VLAN** in the **Advanced LAN** drop-down menu. Refer to section 13.6.3.1 for details on enabling and disabling DSLATM PORT and ETHERNET PORT 1.

13.5.1 DNS Configuration

The following settings will be displayed if you select Advanced LAN > DNS from the Configuration menu.





User Guide

User Assigned DNS						
Domain Name	This field allows you to enter a Domain Name for the Router.					
NOTE: Some ISP's may	To add a Domain Name, in the field under User Assigned DNS, type in your new					
require the name for	domain name and click Set.					
identification purposes.						
	Static Host Assignment					
Host Name	This field allows you to enter a HOST name for the Router.					
	To add a new Host name, in the field under Static Host Assignment, type in the Host					
	Name and the IP address and click Set.					
IP Address	Displays the IP address that is assigned to the Host Name.					
Discover Local Devices						
This field displays a list of	This field displays a list of the computers on the LAN that were assigned a DHCP Address. The DNS name and					
IP address entry of each dis	covered device is displayed. (NOTE: The values in this field will be displayed barring					
any propagation delays If '	any propagation delays. If 'No Discovered Devices' is displayed manually refresh the screen)					

If you want to add a new Host Name and IP address to your DNS server, enter the Router's **Host Name** and **IP Address** in the fields provided in the **Static Host Assignment** section.

DNS Configuration - I File Edit View Fav	Microsoft Internet Explorer avorites Iools Help	_ D ×
DISCOVER Better Broads	LL Iband Home Status Configuration Maintenance Troubleshooting Help tion	
	User Assigned DNS Domain Name myhome.westell.com set	
	Static Host Assignment Host Name IP Address dslrouter 192.168.1.1	
	deviceweb 192.168.1.1 delete SmartDevice 192.168.1.1 delete 0.0.0.0 add	
	Discovered Local Devices No Discovered Devices	
4		ء <u>اع</u>



The following screen displays a Host Name and an IP Address in the fields. Now click on add.

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UNS C	onngura	tion						
					N040 899 84 8			
		(L	lser A	ssigned	DNS			
		1 6	omai	n Name	myhome wes	stell com	set	
					1.3			
		s	tatic I	Host Ass	signment			
				1	Host Name	IP Address		
		- L - E	delroute	∋r		192.168.1.1	set	
		19	Janoute				and the second se	
		¢	levice	web		192.168.1.1	delete	
		d S	levice) imartD	web Ievice		192.168.1.1	delete delete	
		् व ड ि	levicev imartD dnsnan	web Jevice nehere		192.168.1.1 192.168.1.1 192.168.1.25	delete delete add	
		d S G	levice: imartD dnsnan	web Jevice nehere		192.168.1.1 192.168.1.1 192.168.1.25	delete delete add	
		ן כ ק ס	isiroud imartD dosnan iscov	web Jevice nehere ered Lo o	cal Devices	192.168.1.1 192.168.1.1 192.168.1.25	delete delete add	
		id S F D N	isiroud imartD dosoan iscov	web Device nehere ered Loc covered E	cal Devices Devices	192.168.1.1 192.168.1.1 192.168.1.25	delete delete add	
		ין s ק ס א	levicev GmartD dnsnan <mark>Iscov</mark> Jo Disc	web Jevice nehere ered Loc covered E	cal Devices Devices	192.168.1.1 192.168.1.1 192.168.1.25	delete delete add	
			ievicev imartD dnsnan iscov Jo Disc	web Device nehere ered Loc covered C	cal Devices Devices	192.168.1.1 192.168.1.1 [192.168.1.25]	delete delete add	

If you clicked **add**, the following screen will be displayed. The **Host Name** and **IP Address** have been added to the Static Host Assignment.





13.5.2 DHCP Configuration (Private LAN)

The following settings will be displayed if you select Advanced LAN > DHCP from the Configuration menu.

ile <u>E</u> dit	⊻iew	Favorites	Tools	<u>i</u> elp					
	Better B	ELL roadband juration	Home	Status Configuration	Maintenance	? Troublesh	ooting Help		
				DHCP. Server Priv	ete AN 💌				
				HCP Start Address 192. HCP End Address 192. HCP Lease Time 1	168.1.15 168.1.47 ; 0	CP Set	tings		
				bay	s Hours	Minutes :	ieconds		

DHCP Server	This setting allows the Router to automatically assign IP addresses to local devices connected on the LAN. Westell advises setting this to enabled for the private LAN. Off = DHCP Server is disabled Private LAN = DHCP addresses will be saved into the Private LAN configuration. Public LAN = DHCP addresses will be saved into the Public LAN configuration. This option is only available if the Public LAN DHCP server is enabled.
	NOTE: These addresses will be overwritten if the Internet Service Provider supports dynamic setting of these values.
DHCP Start Address	Factory Default = 192.168.1.15 This field displays the first IP address that the DHCP server will provide. The DHCP Start Address must be within the IP address and lower than the DHCP End Address. You may use any number from 0 to 254 in this address.
DHCP End Address	Factory Default = 192.168.1.47 This field displays the last IP address that the DHCP server will provide. The DHCP End Address must be within the IP address and higher than the DHCP Start Address. You may use any number from 0 to 254 in this address.
DHCP Lease Time	Factory Default = 01:00:00:00 Displays the amount of time the provided addresses will be valid, after which the DHCP client will usually re-submit a request. NOTE: DHCP Lease Time is displayed in the format (dd:hh:mm:ss)*. This value must be greater than 10 seconds. Seconds must be between 0 and 59, minutes must be between 0 and 59, and hours must be between 0 and 23. *(dd = days, hh = hours, mm = minutes, ss = seconds)



13.5.3 Disabling the DHCP Server

If you click on the drop-down arrow at **DHCP Server:**, a list of options will be displayed. If you want to disable your DHCP server, select **Off** from the **DHCP Server** drop-down arrow. Click on **save**.

DHCP C Eile Ed	<mark>Configurat</mark> it <u>V</u> iew	ion - Micro F <u>a</u> vorites	osoft Internet Explorer Iools Help	
Discover	Better Br	ELL oadband uration	Home Status Configuration Maintenance Troubleshooting Help	A
			DHCP Start Address 192.168.1.15 DHCP End Address 192.168.1.47 DHCP Lease Time 1 : 0 : 0 : 0 Days Hours Minutes Seconds	
			save reset	
4				



If you selected **Off** at **DHCP Server:**, the following screen will be displayed. Click on **save** to save the **DHCP Server** setting.

DHC	P Cor	figurat	ion - Micro	Toolo	net Explorer	
Tue		1	- gvones	Tools		
Disco	ES over Br	® TE atter Br	eLL oadband uration	Home	Status Configuration Maintenance Troubleshooting Help	
					DHCP Server Off	
					save reset	

If you clicked on **save**, in the preceding **DHCP Configuration** screen, the following pop-up screen will appear. Click **OK**.

Microsoft	Internet Explorer 🛛 🔀
?	Save and reconfigure DHCP?
	OK Cancel

STOP: After you disable the DHCP server, you must reboot your PC



13.5.4 Enabling the DHCP Server

If you want to enable your DHCP Server settings, select Private LAN at the DHCP Server drop-down arrow.

<u>File E</u> dit	⊻iew	Favorites	ools <u>H</u> elp	
	Config	ELL coadband uration	Home Status Configuration Main	tenance Troubleshooting Help
			DHCP Server Private L	
			DHCP Start Address 192.166.1 DHCP End Address 192.166.1 DHCP Lease Time 1 DHCP Lease Time 1 DHCP Lease Time 1 DHCP Lease Time 1 Days	CP Settings
			save	reset

If you have recently disabled the DHCP Server for Private LAN, select Private LAN while in the following screen.

DHCP Cor	nfigurat	ion - Micro	soft Inte	ernet Explo	er		
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Discover B	BTE etter Br Config	ELL oadband uration	Home	e Status	Configuration Maintenance Troubleshooting Help		
					DHCP Server Off Off Private LAN save reset		
						 /	
4							×



If you selected **Private LAN**, the following screen will be displayed automatically. Click on **save** to save your DHCP Server setting. If you click on **reset**, your DHCP Server will be reset to factory default. (Private LAN is the factory default for the DHCP Server.)



If you clicked on **save**, the following pop-up screen will appear. Click on **OK**.



STOP: After you enable the DHCP server, you must reboot your PC



13.5.5 Private LAN Configuration – Configuring NAT

The following settings will be displayed if you select **Advanced LAN > Private LAN** from the **Configuration** menu. (Private LAN is the default configuration for the Router.)

NOTE: Private LAN allows you to set up a network behind the Router.

If you change the settings in this screen, click save. If you click on reset, the changes will not take effect.

Private LAN Configurati	on - Microsoft Internet Explorer	_ 🗆 🗡
<u>Eile E</u> dit <u>V</u> iew F <u>a</u> voril	tes Iools Help	
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WESTELL Discover Better Broadban	Mana Statue Configuration Maintenance Troubleshooting Help	
Dejusto LAN	The status configuration maintenance froubleshooting freep	
Configuration		
	—	
	Private LAN DHCP Server Enable M Private LAN Enable M	
	Modem ID Address 19216811	
	Subpet Mask 255 255 0	
	Private LAN DHCP Settings	
	DHCP Start Address 192.168.1.15	
	DHCP End Address 192.168.1.47	
	DHCP Lease Time 1 : 0 : 0 : 0	
	Days Hours Minutes Seconds	
	save reset	
L.		
		•

If you made changes and clicked on **save**, the following pop-up screen will be displayed. Click on **OK**. This will save your **Private LAN Configuration** settings. If you click **Cancel**, your new settings will not take effect.

Microsoft	Internet Explorer 🛛 🗙
?	Load new Private LAN configuration?
	OK Cancel



User Guide

Private LAN DHCP Server Enable	Default = CHECKED
	If this box is CHECKED, it enables DHCP addresses to be served from
	the Private LAN pool.
Private LAN Enable	Default = CHECKED
	If this box is CHECKED, it enables the addresses from the Private LAN to
	use the NAT interface.
Modem IP Address	Displays the Router's IP address
Subnet Mask	Displays the Subnet Mask, which determines what portion of an IP
	address is controlled by the network and which portion is controlled by the
	host.
DHCP Start Address	Displays the first IP address that the DHCP server will provide.
DHCP End Address	Displays the last IP address that the DHCP server will provide.
DHCP Lease Time	Displays the amount of time the provided addresses will be valid, after
	which the DHCP client will usually re-submit a request.

NOTE: DHCP Lease Time is displayed in the following format: $(dd:hh:mm:ss)^*$ This value must be greater than 10 seconds. The default = 01:00:00:00. Seconds must be between 0 and 59, minutes must be between 0 and 59, and hours must be between 0 and 23.

*(dd = days, hh = hours, mm = minutes, ss = seconds).

If the settings you have entered in the **Private LAN Configuration** screen are incorrect, the following warnings messages may be displayed via pop-up screens. If this occurs, check the settings in the **Private LAN Configuration** screen.

Warning Message	Check Private LAN DHCP Settings
Start Address is not part of the Subnet	Check the value in the DHCP Start Address field
End Address is not part of the Subnet	Check the value in the DHCP End Address field
End Address is below the Start Address	Check the value in the DHCP End Address field
Lease time must be greater than 10 seconds	Check the values in the DHCP Lease Time fields
Seconds must be between 0 and 59	Check the Seconds value in the DHCP Lease Time field
Minutes must be between 0 and 59	Check the Minutes value in the DHCP Lease Time field
Hours must be between 0 and 23	Check the Hours value in the DHCP Lease Time field

13.5.6 Public LAN Configuration – Multiple IP Address PassThrough

The following screen will be displayed if you select **Advanced LAN > Public LAN** from the **Configuration** menu. Click in the **Public LAN DHCP Server Enable** box. A check mark will appear in the box.

NOTE: The Public LAN feature, if available from your service provider, allows the Router to use LAN IP addresses that are accessible from the WAN. Public LAN allows your computer to have global address ability. To utilize the Public LAN feature on the Router, your ISP must support Public LAN and Static IP. Contact your ISP for details.



Public LAN Configuration - <u>File</u> Edit <u>View</u> Favorites	Microsoft Internet Explorer I I I I I I I I I I I I I I I I I I
Discover Better Broadband Public LAN Configuration	Home Status Configuration Maintenance Troubleshooting Help
	Public LAN DHCP Server Enable Public LAN Enable Public LAN IP Address 192.168.2.1 Public LAN Subnet Mask 255.255.25.0
	save reset
*	•

The public devices are visible on the Internet unlike a local NAT'ed PC. The example below shows four NAT'ed PCs and one global PC. The arrows show the data path for each flow.





Public LAN DHCP Server Enable	Default = NOT CHECKED
	If this box is CHECKED, it enables DHCP addresses to be served from
	the Public LAN pool.
Public LAN Enable	Default = NOT CHECKED
	If this box is CHECKED, it enables the addresses from the Public LAN to
	bypass the NAT interface.
Public LAN IP Address	Provides a Public IP Address if the service provider does not
	automatically provide one.
Public LAN Subnet Mask	Provides a Public Subnet Mask if the service provider does not
	automatically provide one.

If you clicked the **Public LAN DHCP Server Enable** box, the following screen will be displayed. Click on the **Public LAN Enable** box to enable Public LAN.

NOTE: By enabling the Public LAN DHCP Server, you automatically disable the Private LAN DHCP Server on the Router.

Public LAN Configuration - I	Microsoft Internet Explorer	_ 🗆 X
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites	Iools Help	
N		
WESTELL		
Discover Better Broadband	Home Status Configuration Maintenance Troubleshooting Help	
Public LAN Configuration		
	Bublic I AN DHCB Server Enable 🛛 🔽	
	Public LAN IP Address 192.168.2.1	
	Public LAN Subnet Mask 255,255,255.0	
	Public LAN DHCP Settings	
	Vertex V v. etc. 16 (3.4.4.)	
	DHCP Start Address 192.168.2.15	
	DHCP End Address 192.168.2.215	
	DHCP Lease Time 1 : 0 : 0 : 0	
	Days Hours Minutes Seconds	
	save reset	
		_
		•



If you clicked the **Public LAN Enable** box, the following screen will be displayed, showing the Public LAN Enable box selected. Click on **save**.

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VĒ	STE	ELL		
cover	Better B	oadband	Home Status Configuration Maintenance Troubleshooting Help	
Co	nfigura	an tion	L	
			Public LAN DHCP Server Enable	
			Public LAN Enable	
			Public LAN IP Address 192.168.2.1	
			Public LAN Subnet Mask 255.255.255.0	
			Public LAN DHCP Settings	
			DHCP Start Address 192.168.2.15	
			DHCP End Address 1192.168.2.215	
			Days Hours Minutes Seconds	
			save reset	
		1		

If you selected **Public LAN Enable**, or if you made other changes in the **Public LAN Configuration** screen and clicked **save**, the following pop-up screen will be displayed. Click **OK** to save the new settings. If you click on **Cancel**, your new settings will not take effect.

Microsoft Internet Explorer			
Load new Pub	lic LAN configuration?		
ОК	Cancel		

NOTE: DHCP Lease Time is displayed in the following format: $(dd:hh:mm:ss)^*$. This value must be greater than 10 seconds. The default = 01:00:00:00. Seconds must be between 0 and 59, minutes must be between 0 and 59, and hours must be between 0 and 23. *(dd = days, hh = hours, mm = minutes, ss = seconds).

If the settings you have entered in the **Public LAN Configuration** screen are incorrect, the following warnings messages may be displayed via pop-up screens. If this occurs, check settings in the **Public LAN Configuration** screen.



Warning Message	Check Public LAN DHCP Settings
Start Address is not part of the Subnet	Check the value in the DHCP Start Address field
End Address is not part of the Subnet	Check the value in the DHCP End Address field
End Address is below the Start Address	Check the value in the DHCP End Address field
Lease time must be greater than 10 seconds	Check the values in the DHCP Lease Time fields
Seconds must be between 0 and 59	Check the Seconds field at DHCP Lease Time
Minutes must be between 0 and 59	Check the Minutes field at DHCP Lease Time
Hours must be between 0 and 23	Check the Hours field at DHCP Lease Time

If you clicked on **OK** in the **Load new Public LAN configuration?** screen, the following pop-up screen will be displayed. This will allow the modem to be reset and the new configuration will take effect. Click on **OK**.

Microsoft	Internet Explorer
?	The modem must be reset in order for the new configuration to take affect. Do you wish to reset now?
	OK Cancel

If you clicked on **OK** in the preceding screen, the following screen will be displayed. The Router will be reset and the new configuration will take effect.



After a brief delay, the home page will be displayed. Confirm that you have a DSL sync and that your PPP session displays **UP**. (Click on the **connect** button to establish a PPP session).

NOTE: Whenever the PPP Status displays **DOWN**, you do not have a PPP session established. If your Router's connection setting is set to "Always On," after a brief delay the PPP session will be established automatically and the PPP Status will display **UP**. If the connection setting is set to "Manual," you must click on the **Connect** button to establish a PPP session. Once the PPP session has been established (PPP Status displays **UP**), you may proceed with your Router's configuration.



13.5.7 VLAN

The following settings will be displayed if you select Advanced LAN > VLAN from the Configuration menu.

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LAN	Config	uration					<u> </u>			
			VLAN Enable							
			VLAN Configu	ration						
			LAN Port:			Ethernet Port 1	•			
		0	VLAN ID:			1 💌				
		Â,	VLAN Priority	4		3 💌				
		2	Outgoing VL	4N Tag:		REMOVE -				
					save	reset				
								/	/	

VLAN Enable	Factory Default = DISABLED
	If this box is check, VLAN will be Enabled. This will allow VLAN
	tagging to occur according to the data port's configuration.
LAN Port	This allows you to select the LAN port that you wish to configure.
	Possible response:
	Ethernet Port 1
	Ethernet Port 2
	Ethernet Port 3
	Ethernet Port 4
	USB Port*
	WLAN Port
VLAN ID	This allows you to assign a VLAN ID to the port.
	Possible response:
	1 through 8
VLAN Priority	This allows you to set the VLAN priority for the port.
	Possible response:
	0 through 7
Outgoing VLAN Tag	This allows you to keep or remove the VLAN tag on the port when data is
	outgoing.
*USB Port is available in Models 7400 and 323	8W10 only.



To enable VLAN, click on the box adjacent to the **VLAN Enable** field. A check mark will appear in the box. Click **save** to save the settings.

NOTE: For VLAN to function properly, the VLAN ID must be set to a value other than '1' in **VLAN Configuration** screen and in the **VC 1 Configuration** screen when the you are using the Bridge (VLAN Bridge) protocol. See Advanced WAN section for configuring VC's (refer to section 13.6.6).

VLAN Configuration	- Microsoft Internet Explorer			
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	VLAN Configuration			
	LAN Port:	Ethernet Port 1 💌		
	VLAN ID:	1 💌		
	VLAN Priority:	3 💌		
	Outgoing VLAN Tag:	REMOVE -		
		reset		
-				₹

NOTE: If you change the values in the **VLAN Configuration** screen and click the **reset** button, the screen will display the previously set values for the LAN Port you have selected. If you change the settings in this screen, you must click **save** to save the new settings.

If you click on **save**, the following pop-up screen will appear. Click **OK** in the pop-up screen to allow the new settings to take effect.





13.6 Advanced WAN

This section explains the configurable features of the Router that are available if you select **Advanced WAN** from the **Configuration** menu.

NOTE: If you are using Model 328W10 or 328W11, options in the **Advanced WAN** drop-down menu may or may not be displayed depending on the Router's WAN Configuration (DSLATM PORT or ETHERNET PORT 1). However, all menu options are displayed if the Router is configured for DSLATM PORT 1. The following sections provide further details on the Troubleshooting menu.

If you are using Models 7400, 7401, the following Advanced WAN menu options will be displayed.



If you are using Models 328W10, 328W11, the following Advanced WAN menu options will be displayed.

NOTE: If Model 328W10, or 328W11 is configured for **ETHERNET PORT 1**, the **QOS** option will not be displayed in the **Advanced WAN** drop-down menu. You must configure the Router for **DSLATM PORT** to access **QOS**. Refer to section 13.6.3.1 for details on enabling and disabling DSLATM PORT and ETHERNET PORT 1.





13.6.1 ATM Loopbacks

The following settings will be displayed if you select **Advanced WAN > ATM Loopbacks** from the **Configuration** menu.

NOTE: When the **Enable ATM 0/21** box is checked, this feature is enabled. If the box does not display a check mark, this feature is disabled. If you change the setting in this screen, you must click **save** to save the setting. **Westell does not recommend that you change this setting.**

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A1	TM Lo	opb	ack		and an	
					Enable ATM 0/21 Loopback 🗹	
					save	
		_				

Enable ATM 0/21 Loopback:	Factory Default = ENABLED
	This option enables the 0/21 loopback, which is used by your ISP. NOTE: Westell does not recommend that you change this setting.



13.6.2 VC Configuration (Models 7400, 7401)

The following screen will be displayed if you select **Advanced WAN > VC** from the **Configuration** menu. If you change the **Bridge Broadcast, Bridge Multicast,** or **Spanning Tree Protocol** configurations in this screen, click on the **save filter settings** button to allow these changes to take effect. If you change any of the **Status** configurations, a pop-up screen will prompt you to reset the Router. After the Router has been reset, the **Status** configurations will take effect. The **edit** button allows you to change the VC configuration settings of the Router. Details on the **edit** button are explained later in section 13.6.4.

NOTE: The actual information displayed in this screen may vary, depending on the network connection established.

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				Disable 💌	0	36	Bridge	edit		
				Disable 💌	0	37	Bridge	edit		
				Disable 💌	0	38	Bridge	edit		
				Disable 💌	0	39	Bridge	edit		
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						save fi	lter settings			
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If you are using Model 7400 or Model 7401, the following screen will be displayed.

Status	Allows you to enable or disable your VC (Virtual Connection)
VDI	Displays the VPI (Virtual Path Indicator) value for a particular VC, which is
VFI	defined by your Service Provider.
VCI	Displays the VCI (Virtual Channel Indicator) value for a particular VC, which
VCI	is defined by your Service Provider.
Protocol	Displays the Protocol for each VC, which is specified by your Service
	Provider.
	Possible Response:
NOTE: The configuration	PPPoA = Point to Point Protocol over ATM (Asynchronous Transfer Mode)
specified by your Service	PPPoE = Point to Point Protocol over Ethernet
Provider will determine which	Bridge = Bridge Protocol
Protocols are available to you.	Classical IPoA = Internet Protocol over ATM (Asynchronous Transfer Mode).
	This is an ATM encapsulation of the IP protocol.



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Bridge Broadcast	Factory Default = CHECKED
	When this setting is CHECKED, the Router will allow Broadcast IP packets
	to/from the WAN.
	When this setting is NOT CHECKED, the Router will block Broadcast IP
	packets to/from the WAN.
	This setting is only valid if one of the Virtual Channels is configured for
	Bridge mode.
Bridge Multicast	Factory Default = CHECKED
_	When this setting is CHECKED, the Router will allow Multicast IP packets
	to/from the WAN.
	When this setting is NOT CHECKED, the Router will block Multicast IP
	packets to/from the WAN.
	This setting is only valid if one of the Virtual Channels is configured for
	Bridge mode.
Spanning Tree Protocol	Factory Default = DISABLED
	Spanning Tree Protocol is a link management protocol that provides path
	redundancy while preventing undesirable loops in the network. For Ethernet
	network to function properly, only one active path can exist between two
	stations.
	When ENABLED, two bridges are used to interconnect the same two
	computer network segments. Spanning Tree Protocol will allow the bridges to
	exchange information so that only one of them will handle a given message
	that is being sent between two computers within the network.
	NOTE: Spanning Tree can't be enabled if VLAN is enabled.
Status	Allows you to enable or disable your VC (Virtual Connection)



13.6.3 WAN Configuration (Models 328W10, 328W11)

The following screen will be displayed if you select **Advanced WAN > WAN** from the **Configuration** menu. If you change the **Bridge Broadcast, Bridge Multicast,** or **Spanning Tree Protocol** configurations in this screen, click on the **save filter settings** button to allow these changes to take effect. If you change any of the **Status** configurations, a pop-up screen will prompt you to reset the Router. After the Router has been reset, the **Status** configurations will take effect. The **edit** button allows you to change the VC configuration settings of the Router. Details on the **edit** button are explained later in section 13.6.4.

NOTE: The actual information displayed in this screen may vary, depending on the network connection established.

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		Disable 💌	0	36	Bridge	edit		
		Disable 💌	0	37	Bridge	edit		
		Disable 💌	0	38	Bridge	edit		
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		Disable 💌	0	40	Bridge	edit		
		Disable 💌	0	41	Bridge	edit		
		1	Bridge	Broad	cast 🔽			
		1	Bridge Spanni	Multic ing Tre	ast			
			sa	ve filte	r settings			
			sa	ve filte	r settings			

If you are using Model 328W10 or Model 328W11, the following screen will be displayed.

WAN PORT	Factory Default = DSLATM PORT Possible Responses: DSLATM PORT - Selecting this will enable the Router's DSL transceiver. This will disable the WAN Ethernet port and allow the WAN interface to use the DSL port. ETHERNET PORT 1 – Selecting this will disable the Router's DSL transceiver. This will enable the WAN Ethernet port and allow the WAN
Status	Allows vou to enable or disable vour VC (Virtual Connection)
VPI	Displays the VPI (Virtual Path Indicator) value for a particular VC, which is defined by your Service Provider.
VCI	Displays the VCI (Virtual Channel Indicator) value for a particular VC, which is defined by your Service Provider.



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Protocol	Displays the Protocol for each VC, which is specified by your Service
	Provider.
NOTE: The configuration	DDDoA - Doint to Doint Drotocol over ATM (Asymphronous Transfer Mode)
specified by your Service	$PDD_{0}E = Doint to Doint Protocol over ATM (Asynchronous Maisler Mode)$
Provider will determine which	Pridge – Pridge Protocol
Provider will determine which Protocols are available to you	Classical IDo A = Internet Protocol over ATM (Asymphronous Transfer
Fiolocols are available to you.	Mode) This is an ATM encansulation of the IP protocol
Bridge Broadcast	Factory Default - CHECKED
Bluge Bloadcast	When this setting is CHECKED the Pouter will allow Proceeding ID pockets
	to/from the WAN
	When this setting is NOT CHECKED, the Router will block Broadcast IP
	nackets to/from the WAN
	This setting is only valid if one of the Virtual Channels is configured for
	Bridge mode.
Bridge Multicast	Factory Default = CHECKED
	When this setting is CHECKED, the Router will allow Multicast IP packets
	to/from the WAN.
	When this setting is NOT CHECKED, the Router will block Multicast IP
	packets to/from the WAN.
	This setting is only valid if one of the Virtual Channels is configured for
	Bridge mode.
Spanning Tree Protocol	Factory Default = DISABLED
	Spanning Tree Protocol is a link management protocol that provides path
	redundancy while preventing undesirable loops in the network. For Ethernet
	network to function properly, only one active path can exist between two
	stations.
	When ENADLED two bridges are used to interconnect the same two
	when ENABLED, two bildges are used to interconnect the same two
	exchange information so that only one of them will handle a given message
	that is being sent between two computers within the network
	that is being sent between two computers within the network.
	NOTE: Spanning Tree can't be enabled if VLAN is enabled.



13.6.3.1 Enabling DSLATM PORT – Disabling ETHERNET PORT 1 (Models 328W10 and 328W11 only)

NOTE: When using the optional UPLINK/E1 port, Ethernet LAN connection is limited to E2, E3, and E4. The UPLINK feature is optional. If UPLINK is not enabled, the Router will use DSL and wireless only.

To configure the Router so that it uses the DSL port, select **DSLATM PORT** from the **WAN PORT** drop-down arrow. By selecting **DSLATM PORT**, you will enable the Router's DSL transceiver. This will disable the WAN Ethernet port and allow the WAN interface to use the DSL port.

NOTE: All of the Router's menu options are displayed if the Router is configured for DSLATM PORT.





If you select **DSLATM PORT** from the **WAN Port** drop-down arrow, the following screen will be displayed. Click **OK.**



If you click **OK** in the preceding pop-up screen, the following screen will be displayed. Click on **OK**. If you click on **Cancel**, the change will not take effect.

Microsof	t Internet Explorer 🔀
?	Are you sure you wish to change your WAN port and enable DSL
	OK Cancel

If you clicked on **OK** in the preceding pop-up screen, the following pop-up screen will appear. The Router must be reset to allow the new configuration to take effect. Click on **OK**.





If you clicked on **OK** in the preceding screen, the following screen will be displayed. The Router will be reset and the new configuration will take effect.



After a brief delay, the home page will be displayed. Confirm that you have a DSL sync and that your PPP session displays **UP.** (Click on the **connect** button to establish a PPP session).



13.6.3.2 Disabling DSLATM PORT – Enabling ETHERNET PORT 1 (Models 328W10 and 328W11 only)

To configure the Router so that it uses the WAN Ethernet Port, select **ETHERNET PORT 1** from the **WAN PORT** drop-down arrow. By selecting **ETHERNET PORT 1**, you will disable the Router's DSL transceiver. This will disable the DSL Port and allow the WAN interface to use the WAN Ethernet Port.

NOTE: If ETHERNET PORT 1 is configured, the Router's menu options may or may not be displayed. The sections explained throughout this document will indicate when a menu item is unavailable. The UPLINK feature is optional, and if UPLINK is not enabled in the .ini file, the Router will use DSL and Wireless only.



NOTE: If you experience any problems, please reset the Router via the external hardware reset button or via the procedure defined in section 15.1(Backup/Restore) from the **Maintenance** menu. Click the **restore** button adjacent to 'Factory defaults become Current configuration'.