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For example, if you select **UDP**, the following screen appears. Select the desired source port and destination port settings from the drop-down lists.

ver	on					
Main	Wireless	My Network	Firewall Settings	Parental Control	Advanced	System Monitoring
Main Edit Service Opened Ports			Edit Serv	ice Opened Ports		
Logout		Protocols Source Ports: Destination P	orts:	UDP V Any V Any	×	
			(↓ ок	Cancel		

Next, enter the desired source and destination port values in the fields provided, and click OK to continue.

ver	i <mark>zon</mark>					
Main	Wireless	My Network	Firewall Settings	Parental Control	Advanced	System Monitoring
Main Edit Service Opened Ports			Edit Serv	ice Opened Ports		
Logout		Protocols Source Ports Destination F	: Yorts:	UDP V Single 27 Single	28	
			(✓ ок	Cancel		



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If you clicked **OK**, the following screen appears. Click **OK** to continue.

Main	Wireless	My Network	Eirewall Settings	Barantal Control	Advanced	System Monitoring
Man	Wireless	My Network	Thewan Settings	Parental Control	Advanced	System Monitoring
Main			Edit Por	t Triggering Rule		
Edit Port Triggering Rule	Servio	e Name:	Application			
	Outgo	ing Trigger Ports				
Logout		Protocols		Server Ports		Action
	New T	rigger Ports				*
	Incom	ning Ports to Open				
		Protocols		Opened Ports		Action
	UDP		27 -> 28			N 🗱
	New C	pened Ports				4
			(1 ok	Cancel		

If you clicked **OK**, the following screen appears. This screen shows that the triggering rule has been added to the list of triggering services. Click **Apply** to save the settings. If you want to edit a rule, click the pencil icon next to the rule that you want to edit. To delete a rule, click the "X" icon next to the rule that you want to delete.

ET	2		3	<u>ک</u>	
Main	Wireless	My Network Fire	wall Settings Parent	al Control Advanced	System Monitoring
			Port Triage	rina	
Main			Trigger opening of ports fo	r incoming data.	
General			ringger opening of ports to	Theorem good and	
Access Control		Protocols	Outgoing Trigger Ports	Incoming Ports to Open	Action
Port Forwarding	L2TF	 Layer Two Tunneling Protocol 	UDP Any -> 1701	UDP Any -> Same as Initiating Port	s 💥
	TFTF	- Trivial File Transfer Protocol	UDP 1024-65535 -> 69	UDP Any -> Same as Initiating Port	s 🕌
DMZ Host	Appl	ication	TCP 20 -> 23		1
Port Triggering	Appl	ication	UDP 1701 -> Any	UDP 27 -> 28	18
Remote Administration	Add	*			
Remote Administration					
Static NAT					
Advanced Filtering					
Security Log			V OK Apply	X Cancel	
Connections					
Logout					



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13.5.2 Setting Up a Predefined Port Triggering Rule

To set up a predefined port triggering rule, in the Add drop-down list, select a predefined service.

ver	on				
FT		22	-		
Main	Wireless	My Network Fire	wall Settings Parent	al Control Advanced	System Monitoring
Main			Port Trigge	ring	
General			Trigger opening of ports fo	or incoming data.	
Access Control		Protocols	Outgoing Trigger Ports	Incoming Ports to Open	Action
Port Forwarding	L2TP	Layer Two Tunneling Protoco	UDP Any -> 1701	UDP Any -> Same as Initiating Ports	5 💥
-	TFTP	Trivial File Transfer Protocol	UDP 1024-65535 -> 69	UDP Any -> Same as Initiating Ports	s 🙀
DMZ Host	Applic	ation	TCP 20 -> 23		N 🗱
Port Triggering	Applic	ation	UDP 1701 -> Any	UDP 27 -> 28	N 🗱
Remote Administration	Add	V			
Static NAT	Add User Defin Show Bas	ed c Services			
Advanced Filtering	Delta Forc				
Security Log	ICQ Rainbow S Tiberian S	ix	VOK Apply	Cancel	
Connections					
Logout					

After you have selected a service, the following screen appears. The service that you selected will be displayed. Click **Apply** to save the settings.

Main	Wireless	My Network Fire	wall Settings Parer	tal Control	Advanced	System Monitoring
1ain General			Port Trigg Trigger opening of ports f	ering or incoming data	2	
Access Control		Protocols	Outgoing Trigger Port	s Incomine	Ports to Open	Action
Port Forwarding	✓ L2T	P - Layer Two Tunneling Protoco	UDP Any -> 1701	UDP Any -> Sa	me as Initiating Ports	*
	TFT	P - Trivial File Transfer Protocol	UDP 1024-65535 -> 69	UDP Any -> Sa	me as Initiating Ports	*
DMZ Host	App	lication	TCP 20 -> 23			N 🗱
Port Triggering	App	lication	UDP 1701 -> Any	UDP 27 -> 28		N 🗱
Demote Administration	🗸 Rair	nbow Six	TCP Any -> 2346	TCP Any -> 23	46	*
Remote Auministration	Add	*				
Static NAT						
Advanced Filtering						
Security Log		C	(or) Analy	Y Care		
		-	* OK * Apply	Canc		
Connections						



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13.6 Remote Admin

If you select **Firewall Settings** in the top navigation menu, and then select **Remote Administration** in the left submenu, the following screen appears.

It is possible to access and control your Router not only from within the home network, but also from the Internet. This allows you to view or change settings while traveling. It also enables you to allow your service provider to change settings or help you troubleshoot functionality or communication issues from a remote location. Remote access to your Router is blocked by default to ensure the security of your network. However, your Router supports the following services, and you can use the Remote Administration screen to selectively enable these services if they are needed.

WARNING: With Remote Administration enabled, your network will be at risk from outside attacks. Note that remote command line access (Telnet) is not enabled on this Router.

To configure Remote Administration, enter the appropriate settings, and then click **Apply** to save the settings.

Remote Administration	
Allowing remote administration to Wireless Broadband Router is a service risk	
Allow Incoming WAN Access to the Telnet Server	
Using Primary Telnet Port (23)	
Vising Secondary Telnet Port (8023) X Using Secure Telnet over SSL Port (992)	
Allow Incoming WAN Access to Web-Management	
Using Primary HTTP Port (80)	
Using Secondary HTTP Port (8080)	
Using Primary HTTPS Port (443)	
Using Secondary HTTPS Port (8443)	
Diagnostic Tools	
Allow Incoming WAN ICMP Echo Requests (e.g. pings and ICMP traceroute queries)	
Allow Incoming WAN UDP Traceroute Queries	
Cancel	



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13.7 Static NAT

If you select **Firewall Settings** in the top navigation menu and then select **Static NAT** in the left submenu, the following screen appears.

NOTE: A block of static IP addresses must be purchased from Verizon to configure this feature. This Router supports 253 static IP addresses.

Static NAT allows LAN devices to use public IP addresses (different from the Router's public IP address). The LAN devices are still configured with private IP addresses (either statically or dynamically through DHCP). Traffic between the LAN devices and the Internet is still "NAT'ed," but the Static NAT mappings allow packets from specific devices to use a distinct public IP address; and packets sent to different public IP addresses to be forwarded to specific devices.

With Static NAT, devices that are behind the firewall and that are configured with private IP addresses appear to have public IP addresses on the Internet. This allows an internal host, such as a Web server, to have an unregistered (private) IP address and still be reachable over the Internet. This section also allows you to perform port translations (NAPT).

There are three steps to setting up a Static NAT entry:

- 1. Create an address pool These are addresses on your WAN network side.
- 2. **Create a NAT rule** This defines the local computer to be NAT'd, the external IP address from the pool and the services that are allowed.
- 3. Create a Port Forwarding Rule This matches the NAT rule you created above and forwards the packets received on the WAN side to reach your internal computer.

To configure Static NAT, click the New Entry link.

veri	on					
Main	Wireless	My Network	Firewall Settings	Parental Control	Advanced Sys	tem Monitoring
Main			1	Static NAT		
General Access Control	Rule ID	Mapping Table Networked Computer / Device	Public IP Address	Status	Port Forwarding	Action
Port Forwarding	No entrie	s defined.				New Entry
DMZ Host Port Triggering		🗸 ок	Apply	X Cancel Resolve	Now Refresh	
Remote Administration						
Static NAT						
Security Log						
Connections						
Logout						



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The following screen appears.

ve	ri jon					
Main	Wireless	My Network	Firewall Settings	Parental Control	Advanced	System Monitoring
Main			Add	Static NAT		
Add Static NAT	Networ	ked Computer / Dev	vice	Specify Address 💉		
Logout	Public Enat	IF Address le Port Forwarding for	Static NAT	Cancel	<u>, , , , , , , , , , , , , , , , , , , </u>	. U

From the **Networked Computer/Device** drop-down list, select the device to which you will apply Static NAT. Or you can enter the device name in the field provided.

ve	rizon					
Main	Wireless	My Network	Firewall Settings	Parental Control	Advanced	System Monitoring
Main			Ado	Static NAT		
Add Static NAT	Netwo	rked Computer / De IP Address	vice	Specify Address V Specify Address) .0 .0	. 0
Logout	Ena	ble Port Forwarding for	Static NAT	SALLE-XP2 SALLE-XP3		
			С лок	X Cancel		

Next, you must first define what external (public) address will be assigned to this device. To use public IP addresses, you must first obtain them from Verizon. Enter your IP address in the Public IP Address fields. If you want to Enable Port Forwarding service, click the box next to Enable Port Forwarding for Static NAT. The **Protocol** drop-down list appears.





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Select the desired protocol from the **Protocol** drop-down list.

veriz	on					
Main	Wireless	My Network	Firewall Settings	Parental Control	Advanced	System Monitoring
Main			Ado	Static NAT		
Add Static NAT	Netwo	rked Computer / Dev	/ice	SALLE-XP3		
Add State NAT	Public	IP Address		Specify Address 🔽 0	. 0 . 0	. 0
Logout	🗹 Ena	ble Port Forwarding for	Static NAT	-		
	Protoc	ols		Any		
				User Defined	-	
			(104	Show Basic Services		
			V OK	CuSeeMe		
				Dark Reign 2		
				Decent 3		
				Delta Force		
				DHCP ALG Diablo_StarCraft(Battle r	net)	
				DirectX Games	1007	
				DNS ALG		
				H.323 Call Signaling		
				Heat.net		
				HTTP Secondary	-	
				HITP Web Access		

For example, if you select **IP Address** as the network object type, you must specify a single WAN IP address to add to the pool. Enter a valid WAN IP address then click **OK** to continue.

Note: NAT/NAPT configuration—User defined work object must be contained in the device's IP address pool. Refer to section 15.11, "Network Objects," for details.

veri	on					
Main	Wireless	My Network	Firewall Settings	Parental Control	Advanced	System Monitoring
Main			Add St	atic NAT		
Add Static NAT	Network	ed Computer / Device		Specify Address 💌		
Aut State NAT	Public IP	Address		Specify Address 💌 0	. 0 . 0	. 0
Logout	Enable	Port Forwarding for Stati	c NAT			
	Protocol	5				
		Name		Ports		Action
	Alien vs. 1	Predator	TCPAny -> 2300-4000 Any -> 7000-10000 UDPAny -> 2300-4000 Any -> 7000-10000 Any -> 80)		*
	Add	~				
			√ок	X Cancel		



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13.8 Advanced Filtering

If you select **Firewall Settings** in the top navigation menu and then select **Advanced Filtering** in the left submenu, the following screen appears.

Advanced filtering is designed to allow comprehensive control over the firewall's behavior. You can define specific input and output rules, control the order of logically similar sets of rules and make a distinction between rules that apply to WAN and LAN devices.

This screen is divided into two sections: one for Input Rule Sets and the other for Output Rule Sets, which are for configuring inbound and outbound traffic, respectively. Each section comprises subsets, which can be grouped into three main subjects:

- Initial rules—rules defined here will be applied first, on all gateway devices.
- Network device rules—rules can be defined per each gateway device.
- Final rules—rules defined here will be applied last, on all gateway devices.

To add rules to Input or Output rules sets, click the adjacent New Entry link.

Main	Wireless	My Netwo	nrk Firewall S	ettings Parental Co	entrol Advar	aced.	System Monitoring
				Advanced Filteri	20		
lain ieneral	Input Ru	le Sets Source	Destination	Advanced Filterin	'g		
ccess Control	Rule ID	Address	Address	Protocols	Operation	Status	Action
ort Forwarding	Network Ethernet	(Home/Office) Switch Rules) Rules				New Entry New Entry
MZ Host	Broadba Wireless	802.11g Acces	(Ethernet) Rules ss Point Rules				New Entry New Entry
ort Triggering	Final Rul	es					New Entry
emote Administration	Output R	ule Sets	Dectination				
tatic NAT	Rule ID	Address	Address	Protocols	Operation	Status	Action
dvanced Filtering	Initial Ru Network Ethernet	les (Home/Office) Switch Rules) Rules				New Entry New Entry New Entry
ecurity Log	Broadba	nd Connection	(Ethernet) Rules				New Entry
	Wireless WAN PPE	802.11g Acces	ss Point Rules				New Entry New Entry
onnections	Final Rul	es					New Entry
ogout	Advan	ced filt <mark>e</mark> ring rules	s between Ethernet switc	Attention	ports and MoCA lan po	orts are not su	upported.
		0		Y Cancel	Pecolve Now	Defrech	



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For example, in the preceding screen, under **Input Rule Sets**, if you click the **New Entry** link next to **Network** (**Home/Office**) **Rules**, the following screen appears.

ve	ri <mark>zon</mark>				
Main	Wireless My Network	Firewall Settings	Parental Control	Advanced	System Monitoring
Main		Add A	dvanced Filter		
Add Advanced Filter	Matching Source Address		Any 💌		
Logout	Destination Address Protocols		Any 💌 Any	~	
	Drop V	Drop packet	s.		
	Logging	Rule			
	Schedule		Always 💌		
		€ ✓ок	Cancel		

Select the desired address from the Source Address/Destination Address drop-down list.

	۲		>	۲		
Main	Wireless	My Network	Firewall Settings	Parental Control	Advanced	System Monitoring
Main			Add A	dvanced Filter		
Add Advanced Filter	Match	ing e Address		Any		
Logout	Destin	nation Address		Any User Defined		
	Opera	tion		SALLE-XP2 SALLE-XP3		
	Acce	ot Packet 💌	Accept pack Inspection (ets matching this rule onl SPI) to automatically acce	y. Do not use Statef opt packets related t	ful Packet to this session.
	Loggi	ng				
	Log	Packets Matched by Th	nis Rule			
	Sched	uie	(√ ок	X Cancel		



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Next, select the desired protocol from the Protocols drop-down list.

veri	on					
Main	Wireless	My Network	Firewall Settings	Parental Control	Advanced	System Monitoring
Main			Add Ad	vanced Filter		
Add Advanced Filter Logout	Matchi Source Destin Protoc Operal Loggin Logg Schedu	ng e Address ation Address ols ition It Packet v g Packets Matched by Th Jle	Accept packet Inspection (SF iis Rule	Any	e)	ful Packet to this session.

Select one of the following settings from the **Operation** drop-down list:

- Select **Drop** to drop packets.
- Select **Reject** to drop packets, and to send TCP Reset or ICMP Host Unreachable packets to the sender.
- Select Accept Connection to accept all packets related to this session.
- Select **Accept Packet** to accept packets matching this rule only. Do not use Stateful Packet Inspection (SPI) to automatically accept packets related to this session.

ver	ri zon					
Main	Wireless	My Network	Firewall Settings	Parental Control	Advanced	System Monitoring
Main			Add A	dvanced Filter		
Add Advanced Filter	Matchi Source	ng e Address ation Address		Any 🗸		
Logout	Protoc	tion		Any	*	
	Accep Drop L Reject	t Connection	Accept pack Inspection (ets matching this rule onl SPI) to automatically acco	y. Do not use Statef ept packets related t	ul Packet to this session.
	Sched	t Packet ed by Th ule	IS KUIE	Always 💌		
			√ ок	Cancel		



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After you have selected the desired values, the following screen appears. If you want to log packets matched by this rule, click the check box located under **Logging**. If you want to set up a schedule for this rule, refer to section 15.21 for instructions on creating a schedule rule. After you have finished entering the desired settings in this screen, click **OK** to continue.

Main	Wireless My Netwo	ork Firewall Settings Parental Control	Advanced System Monitoring
n		Add Advanced Filter	
1.4.1 1.0%	Matching		
Advanced rifter	Source Address		
jout	Name	Address	Action
	DHCP	SALLE-XP3	
	Add 💌		
	Destination Address		
	Name	Address	Action
	DHCP	SALLE-XP3	· · · · · · · · · · · · · · · · · · ·
	Add		
	Protocols	Ports	Action
	Delta Force	TCPAny -> 3100-3999 UDPAny -> 3568	*
	Add	×	
	Operation		
	Accept Packet	Accept packets matching this rule Inspection (SPI) to automatically a	only. Do not use Stateful Packet accept packets related to this session.
	Logging		
	Log Packets Matche	d by This Rule	
	Schedule	Always 🗸	

If you clicked **OK**, the following screen appears. The rule is now active. To add additional rules, click the **New Entry** link next to the rule that you want to set up.

Mam	Wireless	My Netw	rork Firev	vall Settings	Parental Con	trol Adva	nced	System Monitoring
in				Advance	ed Filtering	9		
neral	Input Ru Rule ID	le Sets Source	Destination	Proto	cols	Operation	Status	Action
cess Control	Initial R	ules	Autress					New Entry
t Forwarding	Network	SALLE-XP3	Any	Delta Force - UDI	P Any -> 3560	Accept Packet	Active	X #
Z Host	New			Ter Pary P	5100 5777	no connector		4
rt Triggering mote Administration stic NAT	Entry Etherne Broadba Wireless WAN PP Final Ru	t Switch Rules ind Connection 8 802.11g Acce PoE Rules les	(Ethernet) Rule Iss Point Rules	5				New Entry New Entry New Entry New Entry New Entry
vanced Filtering	Output P	ule Sets						
	Rule ID	Address	Destination	Proto	cols	Operation	Status	Action
inty Log nections	Initial R Network Etherne	ules : (Home/Office t Switch Rules	e) Rules					New Entry New Entry New Entry
out	Broadba	nd Connection 802.11g Acce	(Ethernet) Rule ss Point Rules	s				New Entry New Entry
	Final Ru	PoE Rules						New Entry
	Adva	nced filtering rule	is between Ethernel	t switch ports or Eth	Attention ernet switch p	orta and MoCA lan p	rorta are not au	ipported.



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The order of the rules appearance represents both the order in which they were defined and the sequence by which they will be applied. By clicking the Move Up and Move Down action icons, you can change this order after your rules are already defined (without having to delete and then re-add them). After you click the desired icon, the screen will refresh and display the change.

0	10.10.1.5	192.168.1.50	Dark Reign 2 - TCP Any -> 26214 UDP Any -> 26214	Drop	Active	↓ \ X
<u>1</u>	234.10.65.25	192.168.1.51	FTP - TCP Any -> 21	Accept Connection	Active	1 1 1

13.9 Security Log

If you select **Firewall Settings** in the top navigation menu and then select **Security Log** in the left submenu, the following screen appears.

This screen alerts you of noteworthy information sent to the Router from the Internet. The screen can contain 1000 entries, but a maximum of 50 entries are displayed at a time. Once 1000 entries have been logged, the oldest entry is removed to make space for the new entries as they occur. In this screen, do any of the following:

- Click **Close** to close the security log screen.
- Click **Clear** Log to remove all entries from the log.
- Click **Save** to save the settings to a syslog server.
- Click Settings to configure the security settings. Clicking this button opens a new window that contains configuration options for selecting the information that you want logged.
- Click **Refresh** to refresh the security log screen.

To configure the security log settings, click the **Settings** button.

ver	i <mark>on</mark>						
	۷		<u>t</u>		۷		
Main	Wireless	My N	etwork	Firewall Setting	s Parental Control	Advanced	System Monitoring
Main					Security Log		
General		G	Close	Ciear Lon	Save Log Settin	as Refre	sh
Access Control		-	1000	Press the Pe	fresh button to undate the da		
Access Control				riess the Re	an can botton to update the da		
Port Forwarding		Time	Event	Event-Type		Details	
DMZ Host		Jan 8 15:36:24	Firewall	Firewall internal	Firewall configuration succee	ded	
Port Triggering		Jan 8 15:36:24	Firewall	Firewall internal	Starting firewall configuration	1	
Remote Administration		Jan 8 15:28:34	WBM Login	User authentication	Username: admin		
Static NAT		Jan 8 15:08:26	Firewall	Firewall internal	Firewall configuration succee	ded	
Advanced Filtering		Jan 8 15:08:26	Firewall	Firewall internal	Starting firewall configuration	1	
Security Log		Jan 8 15:07:03	Firewall	Firewall internal	Firewall configuration succee	ded	
Connections		Jan 8 15:07:02	Firewall	Firewall internal	Starting firewall configuration	1	
Logout		Jan 8 11:54:16 2009	WBM Login	User authentication success	Username: admin [repeated 2009]	4 times, last time on	Jan 8 15:03:52
		Dec 31 19:00:26 2002	Firewall Setup	Firewall internal	Failed adding rule /fw/policy/ times, last time on Dec 31 19	0/chain/trans_pxy/ri 0:00:27 2002]	ule/0 [repeated 4
		Dec 31 19:00:20 2002	WBM Login	User authentication success	Username: admin		
		Dec 31 19:00:11 2002	Firewall Setup	Firewall internal	Failed adding rule /fw/policy/ times, last time on Dec 31 19	0/chain/trans_pxy/ri 0:00:11 2002]	ule/0 [repeated 4
		Dec 31 19:00:10 2002	Firewall	Firewall internal	Firewall configuration succee	ded	
		Dec 31 19:00:10 2002	Firewall	Firewall internal	Failed adding rule /fw/policy/ times, last time on Dec 31 19	0/chain/trans_pxy/ri 0:00:10 20021	ule/0 [repeated 2
		Dec 31 19:00:10 2002	Firewall	Firewall internal	Starting firewall configuration	1	
		Dec 31	Finewall	Finawall status			



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If you clicked **Settings**, the following screen appears. Select the desired settings by clicking the check boxes (a checkmark will appear in the box when a setting is enabled). Then, click **Apply** to save the settings.

Main	Wireless	My Network	Firewall Settings	Parental Control	Advanced	System Monitoring
Main Security Log Settings Logout		Accepted Events Accepted Incoming Conr Accepted Outgoing Conn Blocked Puents	Securi ections ections	ty Log Settings		
		Winnuke	Multi	cast/Broadcast	ICMP Re	play
		Defragmentation Error	Spoo	fed Connection	ICMP Re	direct
		Blocked Fragments	Pack	et Illegal Options	ICMP Mu	lticast
		Syn Flood	UDP	Flood	ICMP Flo	od
		Echo Chargen				
		Other Events Remote Administration A Connection States Log Buffer Prevent Log Overrun	ttempts	i Apply	icel	

Select the types of activities for which you would like to have a log message generated:

• Accepted Events

Accepted Incoming Connections: Write a log message for each successful attempt to establish an inbound connection to the home network.

Accepted Outgoing Connections: Write a log message for each successful attempt to establish an outgoing connection to the public network.

Blocked Events

All Blocked Connection Attempts: Write a log message for each blocked attempt to establish an inbound connection to the home network or vice versa. You can enable logging of blocked packets of specific types by disabling this option, and enabling some of the more specific options below it.

Specific Events: Specify the blocked events that should be monitored. Use this to monitor specific event such as SynFlood. A log message will be generated if either the corresponding check-box is checked, or the "All Blocked Connection Attempts" check-box is checked.

• Other Events

Remote Administration Attempts: Write a log message for each remote-administration connection attempt, whether successful or not.

Connection States: Provide extra information about every change in a connection opened by the firewall. Use this option to track connection handling by the firewall and the Application Level Gateways (ALGs).

• Log Buffer

Prevent Log Overrun: Select this check box in order to stop logging firewall activities when the memory allocated for the log fills up.



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13.10 Connections

If you select **Firewall Settings** in the top navigation menu and then select **Connections** in the left submenu, the following screen appears.

The connections list displays all the connections that are currently open on the firewall, as well as various details and statistics. You can use this list to close undesired connections by clicking the "X" icons. The basic display includes the protocol type, the different ports it uses, and the direction of the secured traffic.

- Active Connections—this value represents the number of active concurrent connections.
- Approximate Max. Connections—this value represents the amount of additional concurrent connections possible.
- Connections Per Page—use this drop-down list to select the number of connections to display at once.

Click the **Advanced** button to display a more detailed connection list.

Main	Wireless	My Ne	stwork F	irewall Settings	Parental Control	Advanced	System Mo	nitoring
lain Seneral .ccess Control			Active Appros Connec	Co Connections: cimate Max. ctions:	nnections 4 159231			
Port Forwarding	Number	on List Protocols	LAN IP:Port	Wireless Broa	dband Router IP:Port	WAN IP:Port	Direction	Action
orerormanang	1	TCP	10.16.90.12:80	10.16.90.12:80		10.16.54.19:2127	Incoming	*
MZ Host	2	тср	10.16.90.12:80	10.16.90.12:80		10.16.54.19:2126	Incoming	*
ort Triggering	3	TCP	10.16.90.12:80	10.16.90.12:80		10.16.54.19:2125	Incoming	*
	4	TCP	10.16.90.12:80	10.16.90.12:80		10.16.54.19:2124	Incoming	*
tatic NAT dvanced Filtering ecurity Log onnections			(√ ок	Apply	Advanced >>	Refresh		

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If you clicked **Advanced**, the following screen appears. Additional details in this page include connection status (LAN/WAN), time-to-live, number of kilo-bytes and packets received and transmitted, ALG device, routing mode, and flags. To close a undesired connection, click the adjacent "X" icon.

	veri	on													
Main		Wireless			ork	Firewall Settings				Advanced		System Monitoring			
Main General Access	Connec	tion List		Active Approx	Connections: cimate Max. Con	Connect	ions 9229								
Control Port Forwarding	Numbe	r Protocols	LAN IP:Port	Wireless Broadband Router IP:Port	WAN IP:Port	Status LAN/W	AN	Time To Live (seconds)	Kbytes Rx/Tx	Packets Rx/Tx	ALG Device	Routing Mode	Direction	Flags	Action
OMZ Host Port	1	тср	10.16.90.12:80	10.16.90.12:80	10.16.54.19:2129	ESTABLISHED/ESTAB	BLISHED	431999	0.7/0.0	3/2	WAN PPPoE	Route	Incoming	FP-CAP	*
emote dministration	2	TCP	10.16.90.12:80	10.16.90.12:80	10.16.54.19:2128	TIME_WAIT/CLOSED		C	0.9/0.9	5/5	PPPoE	Route	Incoming	FP-CAP	*
Static NAT															
iltering Security Log					🗸 ок	(Apply	Basic «	~	🗘 Refre	sh					
Connections															
ogout															



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14. PARENTAL CONTROLS

If you select **Parental Controls** in the top navigation menu, the following screen appears. The Router provides basic Parental Controls that allow you to create a list of Web site addresses and keywords embedded in website addresses that will limit the computer user's Internet access. Simply follow the 3 steps below, and click the **Apply** button to set up your Parental Controls.

While these basic Parental Controls are a great way to limit access to particular sites, there are other computer software applications that provide computer Monitoring and computer Content Cleanup. Monitoring involves keeping records of the computer user's activity for later review. Content Cleanup involves scanning the actual content of websites, emails, and attachments for specific words to block or for spyware, popups, adware, etc.

The following steps guide you through configuring Parental Controls. If you have questions about a feature, click the ? What's This? icon to learn more about that feature.

Wireless	My Network	Firewall Settings	Parental Control	Advanced	System Monitoring
		Par	ental Control		
	The Router provides basic Parer	tal Controls that allo	w you to create a list of	website addresses ar	d keywords
	and click the Apply button to set	up your Parental Co	introls.	coup, onipy toron t	14 3 30628 0610H
	While these basic Parental Controls software applications that provide records of the computer user's in websites, emails, and attachment websites.	tols are a great way le computer Monitori activity for later revis its for specific words	to limit access to particul ng and computer Conter tw. Content Cleanup inv to block or for spyware	lar sites, there are of st Cleanup. Monitoring olves scanning the ac , popups, adware, etc	her computer involves keeping tual content of
	Step 1. Select the Networke	d Computer/Devic	e for this Allow or Blo	ick Role.	
	Networked Computer/Device:		Selected Devices:		
	192 168 1.2	~		~	
	192.168.1.4				
		Add to list			
		<u>N.</u>		- 20	
			Remove fr	om list	
	Step 2. Create the Parental	Control Rules and	Schedules.		
	Limit Access By: What's T	his?	and a like a strake in		
	Allow the following Website	and Embedded Key	words within a Website		
	Slocking ALL Internet Acces	6			
	Website:				141
	Example: www.example.com				2
			Add to list		8
	Embedded keyword within a We	bsiter			
	Example: "sample" within www.	ample.com			
				Remove fro	m list
	Create Schedule: ? What's	This?			
	Days:				
	Monday Duesday	Wednesday	Thurday EFri	day 🔲 Saturday	Sunday
	Times:				
	Rule will be active at the sci	heduled time.			
	O Rule will be inactive at the s	cheduled time.			
	C Rule will be inactive at the s Start Time 1 : 00 · C	AM/ O PM			
	C Rule will be inactive at the s Start Time 1 V: 00 V C End Time 1 V: 00 V O	AM/ O PM			
	O Rule will be inactive at the s Start Time 1 ♥: 00 ♥ 0 End Time 1 ♥; 00 ♥ 0 Create Rule Name ? What's	cheduled time. AM/ O PM AM/ O PM This?			
	Rule will be inactive at the s Start Time 1 4:00 0 End Time 1 4:00 0 Create Rule Name ? What's Create your Rule Name and De	cheduled time. AM/ O PM AM/ O PM This? scription			
	Rule will be inactive at the s Start Time 1 End Time 1 Image: Start Time 0 Create Rule Name 0 Create your Rule Name and De Rule Name:	cheduled time. AM/ O PM AM/ O PM This? scription			
	○ Rule will be inactive at the or Start Time 1 →: 00 → 0 End Time 1 →: 00 → 0 <u>Create Rule Name</u> ? What's Create Your Rule Name and De Rule Name: Description:	cheduled time. AM/ O PM AM/ O PM This? scription			
	Rule will be inactive at the instruction of the inactive at the instruction of the instruction o	cheduled time. ANY O PM ANY O PM This? scription n to save and app	ly your settings,		
	Caule will be inactive at the a Start Time [] will (0) will (0) End Time [] will (0) will (0) Create Bulk Rame? Piwher Create Bulk Rame? Piwher Create Sub Rame? Piwher Create Sub Rame? Bulk Rame: Description: Step 3. Click the Apply buttor	cheduled time. AN/ O PM AN/ O PM This? scription n to save and app	ly your settings.		



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1. In the **Networked Computer/Device** box, select the device that will receive this rule. Then click the **Add to list** button.

Note: You can select only specified devices, not specific accounts on these devices.

	Parental Control					
The Router provides basic Parental Controls that allow you to create a list of website addresses and keywords embedded in website addresses that will limit the computer user's Internet access. Simply follow the 3 Steps below and click the Apply button to set up your Parental Controls.						
While these basic Parental Controls are a great way to limit access to particular sites, there are other computer software applications that provide computer Monitoring and computer Content Cleanup. Monitoring involves keeping records of the computer user's activity for later review. Content Cleanup involves scanning the actual content of websites, emails, and attachments for specific words to block or for spyware, popups, adware, etc.						
Step 1. Select the Networked Compu	iter/Device for this Allow or Block Rule.					
? What's This?						
Networked Computer/Device:	Selected Devices:					
192.168.1.2 192.168.1.4	Add to list					

The selected device will appear in the **Selected Devices** box. If you want to remove a device from the **Selected Devices** panel, click the **Remove from list** button.

Parental Control								
The Router provides basic Parental Controls that allow you to create a list of website addresses and keywords embedded in website addresses that will limit the computer user's Internet access. Simply follow the 3 Steps below and click the Apply button to set up your Parental Controls.								
While these basic Parental Controls are a great way to limit access to particular sites, there are other computer software applications that provide computer Monitoring and computer Content Cleanup. Monitoring involves keeping records of the computer user's activity for later review. Content Cleanup involves scanning the actual content of websites, emails, and attachments for specific words to block or for spyware, popups, adware, etc.								
Step 1. Select the Networked Co	mputer/Device for this Allow or Block Rule.							
? What's This?								
Networked Computer/Device:	Selected Devices:							
192.168.1.2 192.168.1.4	Add to list							
	Remove from list							



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2. Below Limit Access By, click the option button next to the rule that you want to apply. Then in the box labeled Website, enter a website domain name (for example, www.example.com) and click the Add to list button.

IMPORTANT: The Router does not block or allow based on content of websites, emails, or attachments, only based on website addresses or keywords embedded in those website addresses.

Limit Access By: " What's This?	
Block the following Websites and Embed	ded Keywords within a Website
O Allow the following Websites and Embed	ded Keywords within a Website
O Blocking ALL Internet Access	
Website: www.dogpile.com	
Example: www.example.com	
	Add to list
Embedded keyword within a Website:	
Example: "sample" within www.sample.com	

The domain name will appear in the Add to list box.

Limit Access By: # What's This?		
Block the following Websites and Embedded	Keywords within a Website	
O Allow the following Websites and Embedded	Keywords within a Website	
O Blocking ALL Internet Access		
Website: www.dogpile.com Example: www.example.com	website: www.dogpile.com	
	Add to list	
Embedded keyword within a Website:	Add to list	
Example: "sample" within www.sample.com		

If you want to embed a keyword, type the word in the box provided, and then click the **Add to list** button. If you want to remove a website domain name from the box, click the **Remove from list** button.

Step 2. Create the Parental Control Rules and Schedule	es.					
Limit Access By: ? What's This?						
OBlock the following Websites and Embedded Keywords within a Website						
Allow the following Websites and Embedded Keywords within a Website						
O Blocking ALL Internet Access						
Website: www.dogolie.com Example: www.example.com	website: www.dogolie.com					
Embedded keyword within a Website: [ample Example: "sample" within www.sample.com						
	Remove from list					



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To set up a schedule rule for the website restriction in the section labeled <u>Create a Schedule</u>, enter the desire settings in the fields provided. Then in the section labeled <u>Create Rule Name</u>, enter the desired rule name and description.

Create Sche	<u>:dule:</u> ? What's	This?						
Days:								
🗹 Monday	Tuesday	Wednesday	Thurday	🗌 Friday	Saturday	Sunday		
Times:								
💿 Rule will b	Rule will be active at the scheduled time.							
🔘 Rule will b	Rule will be inactive at the scheduled time.							
Start Time	Start Time 2 💌: 00 💌 🐵 AM/ 🔿 PM							
End Time 4 💌: 00 💌 🐵 AM/ 🛇 PM								
Create Rule Name ? What's This?								
Create your F	Create your Rule Name and Description							
Rule Name:		Rule No. 1						
Description:		Block Dogpile	:					

3. After you have entered the desired settings, click the **Apply** button to save the settings to the Router.

Create Sche	dule: 🖓 What's	This?					
Monday	Tuesday	Wednesday	Thurday	Friday	Saturday	Sunday	
Times:							
💿 Rule will b	e active at the s	cheduled time.					
○ Rule will b	e inactive at the	scheduled time.					
Start Time	2 💌: 00 💌 🤇	🖲 ам/ 🔘 рм					
End Time 4	💌: 00 💌 📀	АМ/ 🔘 РМ					
Create Rule	Name ? What'	s This?					
Create your I	Rule Name and D	escription					
Rule Name:		Rule No. 1					
Description:		Block Dogpile	•				
Step 3. Click	Step 3. Click the Apply button to save and apply your settings.						

After you click **Apply**, the following screen appears. Click any of the icons (view, edit, or delete) next to the website rule that you want to view or modify.

		Rule Summary							
Description	Computer/	Device	View Rule	Edit Rule	Delete Rule				
lock Dogpile	192.168.1.2	*	2	1	*				
lock Yahoo	192.168.1.4	~	2	7	*				
le	Description ock Dogpile ock Yahoo	Description Computer/ ock Dogpile 192.168.1.2 ock Yahoo 192.168.1.4	Description Computer/Device ock Dogpile 192 168 1.2 Image: Computer Period ock Yahoo 192.168.1.4 Image: Computer Period	Description Computer/Device View Rule ock Dogpile 192 168 1.2 9 9 ock Yahoo 192 168.1.4 9 9	Description Computer/Device View Rule Edit Rule sck Dogpile 192.168.1.2 Image: Computer Provided HTML Representation of the Provided HTML				

If you click the **View Rule** icon, the following screen appears. After viewing this screen, click **Close** to return to the **Rule Summary** page.

	View Rule
Rule Name: Rule Description: Computer/Device:	Rule 1 Block Dogpile 192.168.1.2
Blocked Website and Embedded Keyword:	webste: www.dogpile.com keyword: sample
Schedule:	ev Close



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15. ADVANCED

If you select **Advanced** in the top navigation menu, the following screen appears. The Advanced section of this User Guide is intended to provide assistance with configuring the Advanced features of your Verizon FiOS Router and assumes that the user has an in-depth understanding of computers, routing, and Internet networking.

Click Yes to proceed to the Router's Advanced screen.

ve	ri <mark>zon</mark>							
Main	Wireless	My Network	Firewall Settings	Parental Control	Advanced	System Monitoring		
Main Advanced Logout		Advanced Modifying configuration options on the following page may affect the Router's performance. Do you want to proceed?						
			Yes	No				

Clicking the links in the Advanced screen allows you to access various configurable settings in your Router.





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15.1 Diagnostics

If you click the **Diagnostics** link in the **Advanced** screen, the following screen appears. Using this screen, you can run the following diagnostics tests:

- To run a PING test, type the appropriate IP address or host name in the field provided, and then click Go.
- To run a Traceroute test, type the appropriate IP address or host name in the field provided, and then click Go.

	Diagnostics						
Ping (ICMP Echo) Destination: Number of pings: Status:	4	Go					
Traceroute Destination: Status:		Go					
	Press the Refresh button to update the status.						
	Close Refresh						

For example, if you enter a host name in the **Destination** field and then click **Go**, the following screen appears. This screen shows that the Ping test succeeded. Click **Close** to return to the **Advanced** screen.

	Diagnostics			
Ping (ICMP Echo) Destination: Number of pings: Status: Packets:	www.yahoo.com Go 4 Test Succeeded 4/4 transmitted, 4/4 received, 0% loss Minimum = 37 ms			
Round Trip Time:	Maximum = 64 ms			
Traceroute Destination: <u>Status:</u>	Go			
Press the Refresh button to update the status.				
Close Refresh				



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15.2 Restore Defaults

If you click the **Restore Defaults** link in the **Advanced** screen, the following screen appears. Click **OK** to allow the Router to be reset to factory default settings. After the Router has rebooted, you will need to log in to the Router.

IMPORTANT: If you click **OK**, any settings that you have configured in the Router will be erased, and any data that the Router has reported will be lost.

	Restore Defaults				
The following items will be set					
User Defined Settings Network Connections (All c Also, Wireless Broadband Rou	onnected DHCP clients will need to request new IP addresses) iter will have to reboot.				
Are you sure you want to restore Wireless Broadband Router manufacturer defaults?					
	✓ OK Cancel				



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15.3 Reboot

If you click the **Reboot** link in the **Advanced** screen, the following screen appears. Rebooting the Router allows the Router to be restarted. Click **OK** to allow the Router to reboot. Please wait a brief moment while the Router is rebooting. Afterwards, you will need to log in to the Router.

IMPORTANT: The **Reboot** feature does not reset the Router to factory default settings. If you want to reset the Router to factory default settings, follow the instructions in section 15.2, "Restore Defaults."

Ret	oot
Are you sure you want to rebo	ot Wireless Broadband Router ?
С	X Cancel

15.4 MAC Cloning

If you click the **MAC Cloning** link in the **Advanced** screen, the following screen appears. A Media Access Control (MAC) address is a hexadecimal code that identifies a device on a network, such as a router. All networking devices have a MAC address, and in some cases, your service provider may need you to provide the MAC address of your network device. If you use MAC Cloning, you can simply enter the MAC address of the "old" Router into your Verizon Router, bypassing the need to contact the service provider with "new" MAC Address values (from the Verizon Router).

To configure MAC Cloning, enter the MAC Address of the Router you are replacing. Then, click **Apply** to save the settings.

NOTE: By default, this screen displays the MAC address of the Verizon Router. Replace these values with the MAC address of your "old" Router and click **Apply**.

	MAC Cloning				
Set MAC of Device:Broadband Connection (Ethernet)To Physical Address:00:18:3a:0c:5b					
C V OK Ppply Cancel					



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15.5 ARP Table

If you click the **ARP Table** link in the **Advanced** screen, the following screen appears. This screen allows you to set up static DHCP connections using Host Names, IP Addresses, or MAC addresses. To configure a static DHCP connection, click the **New Static Connection** link.

DHCP Connections							
Host Name	IP Address	Physical Address	Lease Type	Connection Name	Status	Expires In	Action
SALLE-XP2	192.168.1.3	00:03:c9:4f:12:66	Dynamic	Network (Home/Office)	Active	1315 Minutes	2 🔪 Я
SALLE-XP3	192.168.1.2	00:11:11:83:e9:53	Dynamic	Network (Home/Office)	Active	1392 Minutes	2 🔪 🗶
New Static Connection							
Press the Refresh button to update the data.							
Close Refresh							

If you clicked **New Static Connection**, the following screen appears. Enter the appropriate values in the fields provided, and then click **OK** to continue.

NOTE: You can have a total of 253 static LAN devices connected to your Verizon Router.

- Enter a host name for this connection.
- Enter the fixed IP address to assign to the computer.
- Enter the MAC address of the computer's network card.

NOTE: A device's fixed IP address is actually assigned to the specific network card's MAC address installed on the network computer. If this network card is replaced, the device's entry in the DHCP Connections list must be updated with the new network card's MAC address.

DHCP Connection Settings					
Host Name: IP Address: MAC Address:	new-host 0 . 0 . 00 : <				
✓ OK Cancel					



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For example, if you enter an IP Address and a MAC address and then click **OK**, the following screen appears. The screen shows that the entry has been added to the list of static DHCP connections. To run a diagnostics test on a

DHCP connection, click the diagnostics icon $\stackrel{\text{$\swarrow$}}{\sim}$ adjacent to the connection you want to test. To remove a host from the table, click the appropriate "X" icon in the Action column.

DHCP Connections							
Host Name	IP Address	Physical Address	Lease Type	Connection Name	Status	Expires In	Action
SALLE-XP2	192.168.1.3	00:03:c9:4f:12:66	Dynamic	Network (Home/Office)	Active	1312 Minutes	2 🔪 🎗
SALLE-XP3	192.168.1.2	00:11:11:83:e9:53	Dynamic	Network (Home/Office)	Active	1389 Minutes	2 🔪 🗶
new-host1 192.168.1.16 00:16:04:05:06:07 Static Network (Home/Office) Expired							
New Static Connection							4
Press the Refresh button to update the data.							

If you clicked the diagnostics icon, the following screen appears. Review the status of the diagnostics test, and then click **Close** to return to the **DHCP Connections** screen.

	Diagnostics	
Ping (ICMP Echo)		
Destination:	192.168.1.16	Cancel
Status: Packets:	Testing 0/4 transmitted, 0/4 received	
Traceroute		
Destination:		Go
Status:		
	Dress the Defence by the to undate the st	
	Press the Refresh button to update the sta	atus.



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15.6 Users

If you click the **Users** link in the **Advanced** screen, the following screen appears. This feature allows you to configure user settings in the Router.

Users					
Users					
Full Name	User Name	P	ermissions	Action	
Administrator	admin	Web-based Manage	ment Access	<u>\</u>	
New User					
Groups Name Description Members Action					
Users				<u>\</u>	
New Group				-	
Close					

15.6.1 Users—Adding a New Administrator

If you click the **Administrator** link in the **Users** screen, the following screen appears. This screen allows you to set up the desired Administrator values. Enter the appropriate values, and then click **OK** to save the changes.

NOTE: If the Router is password protected and you are not an authorized user, you will not be allowed to change and save the values in this screen. (The Router cannot be configured unless the user is logged in.) Contact your network administrator for further instructions.

- Full Name—Enter the user's full name.
- User Name—Enter the name a remote user will use to access the home or office network. This field is casesensitive.
- New Password/Retype New Password—Enter the password for the user (and enter it again to confirm).
- Permissions—Click the check box to enable web-based management access.

General Full Name: Administrator User Name: admin New Password: ••••••• Retype New Password: ••••••• Permissions: ✓ Web-based Management Access	User Settings				
User Name: admin New Password: Retype New Password: Permissions: V Web-based Management Access					
New Password: •••••••• Retype New Password: ••••••• Permissions: ✓ Web-based Management Access					
Retype New Password: ••••••• Permissions: ✓ Web-based Management Access					
Permissions: Veb-based Management Access					
Permissions:					



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15.6.2 Users—Adding a New User

If you click the **New User** link, the following screen appears. This screen allows specific users to have administrative permissions in the Router.

User Settings				
General Full Name:				
User Name:				
New Password: Retype New Password:				
Permissions:	Web-based Management Access			
	K Zancel			

To configure User Settings, enter the appropriate values, and then click **OK** to save the changes.

NOTE: The User Name and Password values must be at least 6 characters, and should consist of standard characters only (ASCII 32-126), excluding the special character space and any of these characters :@''|/=+<>[]*?,;. Also, user names containing capital letters are not recommended. It might cause connectivity problems on Windows 98 hosts.

	User Settings					
General Full Name: User Name:	joeplum					
New Password: Retype New Password:	••••••					
Permissions:	Web-based Mana	gement Access				
✓ OK X Cancel						



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After you have entered the appropriate values and click **OK**, the following screen appears. The user information has been added to the Router. If desired, repeat the preceding instructions to add additional users to the administrator permissions list.

Users				
Full Name	User Name	I	Permissions	Action
Administrator	admin	Web-based Manag	ement Access	<u>\</u>
joeplum	joeplum	Web-based Manag	ement Access	🔨 🗶 🔰
New User				
Groups Name		escription	Members	Action
Users			joeplum	1
New Group				-

15.6.3 Users—Removing a User

To remove a user from the list, click the "X" icon. The following screen appears. Click **OK** to continue.

	Users
You are about to remove	Attention
a user:	Press OK to confirm.
	✓ OK Cancel



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15.6.4 Groups—Adding a New Group

To add a new group, click the **New Group** link.

Full Name	User Name	P	ermissions	Action
Administrator	admin	Web-based Manage	ement Access	<u>\</u>
New User				
Name Users	D	escription	Members	
New Group				-
		Close		

If you clicked the **New Group** link, the following screen appears. Using this screen, you can configure additional groups in the Router. At this screen, do the following:

- 1. Enter a Group Name of your choice.
- 2. Enter a description of your choice.
- 3. If you want to assign administrative permissions to the group, click the **Group Members Administrator** check box; otherwise, leave this box empty.
- 4. Click **OK** to save the settings.

	Group Settings
Name: Description:	Group
Group Members	
	✓ OK Cancel



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After you have entered the desired values and clicked **OK**, the following screen will display the group attributes. Click **Close** to return to the **Advanced** screen.

Users				
Full Name	User Name	P	ermissions	Action
Administrator	admin	Web-based Manage	ment Access	<u> </u>
New User				
Variation Name	De	escription	Members	Action
Group	Home Grou	ıp		X X
New Group				-
		Close		

15.6.5 Groups—Add a User to a Group

To set up new users for a group, click the **User** link in the **Groups** section of the screen. The following screen appears. Using this screen, you can assign users to a designated group.

At this screen, do the following:

- 1. Enter a User name of your choice.
- 2. Enter a description of your choice.
- 3. If you want to assign administrative permissions to the user, click the **Group Members Administrator** check box; otherwise, leave this box empty.
- 4. Click **OK** to save the settings.

	Group Settings
Name: Description:	Users User 1
Group Members	
(
	Califer



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After you have entered the desired values and clicked **OK**, the following screen will display the group attributes. Click **Close** to return to the **Advanced** screen.

Users		-		• -•
Full Name	User Name	P	ermissions	Action
Administrator	admin	Web-based Manage	ment Access	<u>\</u>
New User				
Name Users	D User 1	escription	Members	Action
osers	User I			
Group	Home Grou	q		~~~
New Group				



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15.7 Quality of Service

The QoS feature allows you to configure Quality of Service parameters in your Router. Network-based applications and traffic are growing at a high rate, producing an ever-increasing demand for bandwidth and network capacity. Bandwidth and capacity cannot be expanded infinitely, requiring that bandwidth-demanding services be delivered over existing infrastructure, without incurring additional expensive investments. The next logical means of ensuring optimal use of existing resources are Quality of Service (QoS) mechanisms for congestion management and avoidance. Quality of Service refers to the capability of a network device to provide better service to selected network traffic. This is achieved by shaping the traffic and processing higher priority traffic before lower priority traffic.

15.7.1 General

If you click the **Quality of Service** link in the **Advanced** screen, the following screen appears. This screen allows you to configure general QoS settings. Enter the appropriate settings, and then click **Apply**.

NOTE: Choosing a new QoS profile will cause all previous QoS settings to be lost.

Before selecting the QoS profile that mostly suits your needs, select your bandwidth from this combo-box. If you do not see an appropriate entry, select 'User Defined', and enter your Tx and Rx bandwidths manually.

- Enter your Tx bandwidth in Kbits per second.
- Enter your Rx bandwidth in Kbits per second.

Select the profile that mostly suits your bandwidth usage. Each profile entry displays a quote describing what the profile is best used for, and the QoS priority levels granted to each bandwidth consumer in this profile.

- Default No QoS preferences
- P2P User Peer-to-peer and file sharing applications will receive priority
- Triple Play User VoIP and video streaming will receive priority
- Home Worker VPN and browsing will receive priority
- Gamer Game-related traffic will receive priority
- Priority By Host This entry provides the option to configure which computer in your LAN will receive the highest priority and which the lowest. If you have additional computers, they will receive medium priority.

High Priority Host: Enter the host name or IP address of the computer to which you would like to grant the highest bandwidth priority.

Low Priority Host: Enter the host name or IP address of the computer to which you would like to grant the lowest bandwidth priority.



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	General
WAN Devices Bandwidth (Rx/Tx):	User Defined
Rx Bandwidth:	0 Kbits/s
Tx Bandwidth:	0 Kbits/s
QoS Profiles Default	
No Quality of Service preferences	
O P2P User	
"I use peer-to-peer and file-sharing ap browser without interference."	oplications. I still want to be able to use my
HTTP/HTTPS: Medium Other: Low	
O Triple Play User	
"I use VoIP applications and video stre possible."	eaming. I want these applications to be as fast as
VoIP (SIP, H323): High	
Video: High-Medium	
Other: Low	
O Home Worker	
"I work from home, and want my VPN	and browser to have priority over other traffic."
VPN (IPsec, L2TP, PPTP): Medium	
HTTP/HTTPS: Medium Other: Low	
🔘 Gamer	
"I play games over the Internet and w possible."	ant the games-related traffic to be as fast as
Games Related Traffic: Medium	
other: LOW	
O Priority By Host	
"I want to give different hosts in my ne public network."	etwork different priorities when accessing the
High Priority Host:	
Low Priority Host:	
Other: Low	
Note: Choosing a new QoS profile will ca	use all previous configuration settings to be lost



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15.7.2 Traffic Priority

If you click the **Quality of Service** link in the **Advanced** screen and then click **Traffic Priority** in the left submenu, the following screen appears. This screen allows you to configure QoS to prioritize input and output traffic.

Traffic Priority manages and avoids traffic congestion by defining inbound and outbound priority rules for each device on the Router. These rules determine the priority that packets, traveling through the device, will receive. QoS parameters (DSCP marking and packet priority) are set per packet, on an application basis.

QoS can be configured using flexible rules, according to the following parameters:

- Source/destination IP address, MAC address, or host name
- Device
- Source/destination ports
- Limit the rule for specific days and hours

The Router supports two priority marking methods for packet prioritization:

- DSCP
- 802.1p Priority

The matching of packets by rules, also known as Stateful Packet Inspection is connection-based and uses the Router's firewall mechanism. Once a packet matches a rule, all subsequent packets with the same attributes receive the same QoS parameters, both inbound and outbound.

A packet can match more than one rule. Therefore:

- The first class rule has precedence over all other class rules (scanning is stopped once the first rule is reached).
- The first traffic-priority (classless) rule has precedence over all other traffic-priority rules.
- There is no prevention of a traffic-priority rule conflicting with a class rule. In this case, the priority and DSCP setting of the class rule (if given) will take precedence.

To set up a traffic priority rule, click the adjacent New Entry link for the input/output device you want to configure.

			Traffic Priority			
QoS Input	Rules					
Rule ID	Source Address	Destination Address	Protocols	Operation	Status	Action
All Device	5					New Entry
Network (Home/Office)	Rules				New Entry
Ethernet	Switch Rules					New Entry
Broadban	d Connection (Ethernet) Rules				New Entry
Wireless	802.11g Acces	s Point Rules				New Entry
WAN PPPe	DE Rules					New Entry
QoS Outpu	ut Rules					
Rule ID	Source Address	Address	Protocols	Operation	Status	Action
All Device	5					New Entry
Network (Home/Office)	Rules				New Entry
Ethernet	Switch Rules					New Entry
Broadban	d Connection (Ethernet) Rules				New Entry
Wireless	802.11g Acces	s Point Rules				New Entry
WAN PPPe	E Rules					New Entry
		ок і А	Apply X Cancel R	Resolve Now	🔾 Refresh	



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If you clicked New Entry, the following screen appears. At this screen, do the following:

- 1. Select the desired Source Address, Destination Address, and Protocol options from the drop-down lists.
- 2. Click the **Device** check box if you will apply the settings to a device. By default this box is cleared.
- 3. Select the desired option from the Set Priority drop-down list. (Zero is the lowest priority level.)
- 4. Click **OK** to save the settings.

	Add Traffic Priority Rule
Matching	
Source Address	Any 💌
Destination Address	Any 💌
Protocols	Any
Operation	
Set Priority	0 - Low 💙
	✓ OK X Cancel

Source Address—The source address of packets sent or received from the LAN computer. The drop-down list displays all the host names or IP addresses of currently connected LAN computers, as well as the options 'Any' and 'User Defined'. Select an address from the list, or select **Any** to apply the rule on all computers. If you would like add a new address, select the **User Defined** option in the drop-down list. This will commence a sequence that will add a new network object, representing the LAN computer. The network object may be an IP address, subnet or range, a MAC address or a host name.

Destination Address—The destination address of packets sent or received from the network object. This address can be configured in the same manner as the source address. This entry enables further filtration of the packets.

Protocols—You may also specify a traffic protocol. Selecting the **Show All Services** option in the drop-down list will expand the list of available protocols. Select a protocol or add a new one using the **User Defined** option. This will commence a sequence that will add a new service, representing the protocol.

Operation—Set rule priority with Quality of Service:

Set Priority—Check this check-box to add a priority to the rule then select between one of eight priority levels, zero being the lowest and seven the highest (each priority level is mapped to low/medium/high priority). This sets the priority of a packet on the connection matching the rule, while routing the packet.

The order of the rules' appearance represents both the order in which they were defined and the sequence by which they will be applied. You may change this order after your rules are already defined (without having to delete and then re-add them), by using the Move Up and Move Down action icons as shown in the following image.

0	Any	192.168.1.50	FTP - TCP Any -> 21	Priority 7 - High No Connection	Active	*7*
<u> 1</u>	Any	192.168.1.50	FTP - TCP Any -> 21	Priority 0 - Low No Connection	Active	1 × 1



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15.7.3 Traffic Shaping

If you click the **Quality of Service** link in the **Advanced** screen and then click **Traffic Shaping** in the left submenu, the following screen appears.

Traffic Shaping is the solution for managing and avoiding congestion where the network meets limited broadband bandwidth. Typical networks use a 100 Mbps Ethernet LAN with a 100 Mbps WAN interface router. This is where most bottlenecks occur. A traffic shaper is essentially a regulated queue that accepts uneven and/or bursty flows of packets and transmits them in a steady, predictable stream so that the network is not overwhelmed with traffic. While traffic priority allows basic prioritization of packets, traffic shaping provides more sophisticated definitions, such as:

- Bandwidth limit for each device
- Bandwidth limit for classes of rules
- Prioritization policy
- TCP serialization on a device

Additionally, QoS traffic shaping rules can be defined for a default device. These rules will be used on a device that has no definitions of its own. This enables the definition of QoS rules on the default WAN, for example, and their maintenance even if the PPP or bridge device over the WAN is removed.

The matching of packets by rules is connection-based, known as Stateful Packet Inspection (SPI), using the Router's firewall mechanism. Once a packet matches a rule, all subsequent packets with the same attributes receive the same QoS parameters, both inbound and outbound. Connection-based QoS also allows inheriting QoS parameters by some of the applications that open subsequent connections. For instance, QoS rules can be defined on SIP, and the rules will apply to both control and data ports (even if the data ports are unknown). Applications that support such inheritance have an application-level gateway (ALG) in the firewall.

Traffic Shaping						
Device	Tx Bandwidth (Kbits/s)	Rx Bandwidth (Kbits/s)	TCP Serialization	Action		
New Entry				-		
	✓ ок С ТА	pply 🔪 🗶 Can	cel			

To add a traffic shaping rule, click the **New Entry** link.


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If you clicked **New Entry**, the following screen appears. Select a device from the **Device** drop-down list. Then, click **OK** to continue.

Add Device Traffic Shaping				
Device:	Default WAN device			
	✓ OK X Cancel			

After you have selected a device and clicked **OK** in the preceding screen, the following screen appears. Enter the bandwidth values for transmit (Tx) and receive (Rx), and then select the desired option from the TCP Serialization drop-down list. Next, click the desired **New Entry** link to add a class.

Edit Device Traffic Shaping						
Device:			Defaul	WAN device		
Tx Traffic Shaping 97656 Kbits/s Tx Bandwidth: Disabled Disabled						
Class ID	Name	Priority	Bandwie	lth (Kbits/s)	Status	Action
New Entry			Reserved	Maximum		4
Rx Traffic Policir Rx Bandwidth:	ıg		97656	Kbits/s		
Class ID	Name	Per	Bandwidth (K	oits/s) Maximum	Status	Action
New Entry		KCS	cived	Huximum		4
✓ OK Apply X Cancel						

Tx Traffic Shaping

The bandwidth of a device can be divided in order to reserve constant portions of bandwidth to predefined traffic types. Such a portion is known as a Shaping Class. When not used by its predefined traffic type, or owner (for example VoIP), the class will be available to all other traffic. However when needed, the entire class is reserved solely for its owner. Moreover, you can limit the maximum bandwidth that a class can use even if the entire bandwidth is available. Configure the following fields:

Tx Bandwidth

This parameter limits the gateway's bandwidth transmission rate. The purpose is to limit the bandwidth of the WAN device to that of the weakest outbound link, for instance, the DSL speed provided by the ISP. This forces the router to be the network bottleneck, where sophisticated QoS prioritization can be performed. If the device's bandwidth is not limited correctly, the bottleneck will be in an unknown router or modem on the network path, rendering this router's QoS useless.



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TCP Serialization

You can enable TCP Serialization in its combo box, either for active voice calls only or for all traffic. The screen will refresh, adding a 'Maximum Delay' field. This function allows you to define the maximal allowed transmission time frame (in milliseconds) of a single packet. Any packet that requires a longer time to be transmitted, will be fragmented to smaller sections. This avoids transmission of large, bursty packets that may cause delay or jitter for real-time traffic such as VoIP. If you insert a delay value in milliseconds, the delay in number of bytes will be automatically updated on refresh.

Tx Traffic Shap Tx Bandwidth:	ing		97656	Kbits/s		
TCP Serializatio Maximum Delay	on: v:		Enabled [60	ms (7500026 l	ovtes)	
		Bandwidth (Kbits/s)		Chathar		
Class ID	Class ID Name	Priority	Reserved	Maximum	Status	Action
New Entry						4

For example, if you click the New Entry link in the **Tx Traffic Shaping** section of the **Edit Device Traffic Shaping** screen the **Add Shaping Class** screen will appear.

	Add Shaping Class	
Name:	Class	
	✓ OK Cancel	

Name the new class and click **OK** to save the settings, e.g., Class A. Now click the class name to edit the shaping class or alternatively, click its pencil (edit) icon in the Action column.

		Edit Dev	vice Traffic S	haping		
Device:			Default V	VAN device		
Tx Traffic Shap Tx Bandwidth: TCP Serializatio	oing on:		97656 Disabled	Kbits/s		
Class ID	Name	Deiceity	Bandwidt	h (Kbits/s)	Ctatur	Action
Class ID	Name	Fliolity	Reserved	Maximum	Status	ACTION
V 0	Class A	0	0	Unlimited	Active	- 🔪 🗱 -
New Entry						-



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If you clicked the edit icon in the preceding screen, the Edit Shaping Class screen will appear.

Configure the following fields by entering or selecting the desired values:

Name—The name of the class.

Class Priority—The class can be granted one of eight priority levels, zero being the highest and seven the lowest (note the obversion when compared to the rules priority levels). This level sets the priority of a class in comparison to other classes on the device.

Bandwidth—The reserved transmission bandwidth in kilo-bits per second. You can limit the maximum allowed bandwidth by selecting **Specify** in the drop-down list. The screen will refresh, adding yet another Kbits/s.

Policy—The class policy determines the policy of routing packets inside the class. Select one of the four options:

Priority—Priority queuing utilizes multiple queues, so that traffic is distributed among queues based on priority. This priority is defined according to packet's priority, which can be defined explicitly, by a DSCP value, or by a 802.1p value.

FIFO—The "First In, First Out" priority queue. This queue ignores any previously-marked priority that packets may have.

Fairness—The fairness algorithm ensures no starvation by granting all packets a certain level of priority.

RED— The Random Early Detection algorithm utilizes statistical methods to drop packets in a "probabilistic" way before queues overflow. Dropping packets in this way slows a source down enough to keep the queue steady and reduces the number of packets that would be lost when a queue overflows and a host is transmitting at a high rate.

Schedule—By default, the class will always be active. However, you can configure scheduler rules in order to define time segments during which the class may be active. Refer to section 15.21, "Scheduler Rule," for details on setting up schedule rules.

Rx Traffic Policing: Allows you to configure the following fields:

Rx Bandwidth This parameter specifies the maximum traffic the policing can receive from the ISP.

Class ID Name Bandwidth (Kbits/s) Status Action	Rx Traffic Policing Rx Bandwidth:		97	656 Kbits/s		
	Class ID	Name	Bandwidt	n (Kbits/s)	Status	Action
	New Entry					-



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For example, if you click the **New Entry** link in the **Rx Traffic Policing** section of the **Edit Device Traffic Shaping** screen, the **Add Policing Class** screen will appear.

	Add Policing Class	
Name:	ClassB	

Name the new class and click **OK** to save the settings, e.g. Class B. Next, click the class name to edit the shaping class or alternatively, click its pencil (edit) action icon in the Action column.

Class TD	Name	Bandwidt	Chattan	Action	
Class ID	Name	Reserved	Maximum	Status	Action
0	ClassB	0	Unlimited	Active	- 🔨 🗱 -
New Entry					-

The Edit Policing Class screen will appear.

Edit Policing Class					
Name:	ClassB				
Bandwidth:	Reserved 0	Maximum Unlimited 💙 Kbits/s			
Schedule	Always 💉				
	✓ OK	cel Resolve Now Refresh			

Configure the following fields:

Name—The name of the class.

Bandwidth—The reserved reception bandwidth in kilo-bits per second. You can limit the maximum allowed bandwidth by selecting the 'Specify' option in the combo box. The screen will refresh, adding yet another Kbits/s field.

Schedule—By default, the class will always be active. However, you can configure scheduler rules in order to define time segments during which the class may be active. Refer to section 15.21, "Scheduler Rules," for details on setting up schedule rules.



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15.7.4 Differentiated Service Code Point (DSCP) Settings

If you click the **Quality of Service** link in the **Advanced** screen and then click **DSCP Settings** in the left submenu, the following screen appears.

Familiarity with the Differentiated Services model is essential to understanding DSCP. Differentiated Services (Diffserv) is a Class of Service (CoS) model that enhances best-effort Internet services by differentiating traffic by users, service requirements, and other criteria. Packets are specifically marked, allowing network nodes to provide different levels of service, as appropriate for voice calls, video playback, or other delay-sensitive applications, via priority queuing or bandwidth allocation, or by choosing dedicated routes for specific traffic flows.

Diffserv defines a field in IP packet headers referred to as the Differentiated Services Codepoint (DSCP). Hosts or routers passing traffic to a Diffserv-enabled network will typically mark each transmitted packet with an appropriate DSCP. The DSCP markings are used by Diffserv network routers to appropriately classify packets and to apply a particular queue handling or scheduling behavior to packets.

The Router provides a table of predefined DSCP values, which are mapped to 802.1p priority marking method. Any of the existing DSCP setting can be edited or deleted, and new entries can be added. To add a new DSCP value, press the **New Entry** link at the bottom of this screen.

DSCP Value (nex) BS2.1p Priority 0x20 4 - Medium 0x21 4 - Medium 0x22 4 - Medium 0x23 4 - Medium 0x24 4 - Medium 0x25 4 - Medium 0x26 4 - Medium 0x27 4 - Medium 0x28 5 - Medium 0x29 5 - Medium 0x2A 5 - Medium	
0x20 4 - Medium 0x21 4 - Medium 0x22 4 - Medium 0x23 4 - Medium 0x24 4 - Medium 0x25 4 - Medium 0x26 4 - Medium 0x27 4 - Medium 0x28 5 - Medium 0x29 5 - Medium 0x24 5 - Medium	
0x21 4 - Medium 0x22 4 - Medium 0x23 4 - Medium 0x24 4 - Medium 0x25 4 - Medium 0x26 4 - Medium 0x28 5 - Medium 0x29 5 - Medium 0x29 5 - Medium	
0x22 + - Medium 0x23 4 - Medium 0x24 4 - Medium 0x25 4 - Medium 0x26 4 - Medium 0x27 4 - Medium 0x28 5 - Medium 0x29 5 - Medium 0x29 5 - Medium	
0x23 4 - Medium 0x24 4 - Medium 0x25 4 - Medium 0x26 4 - Medium 0x27 4 - Medium 0x28 5 - Medium 0x29 5 - Medium 0x2A 5 - Medium	
0x24 4 - Medium 0x25 4 - Medium 0x26 4 - Medium 0x27 4 - Medium 0x28 5 - Medium 0x29 5 - Medium 0x2A 5 - Medium	
0x25 4 - Medium 0x26 4 - Medium 0x27 4 - Medium 0x28 5 - Medium 0x29 5 - Medium 0x2A 5 - Medium	
0x26 4 - Medium 0x27 4 - Medium 0x28 5 - Medium 0x29 5 - Medium 0x2A 5 - Medium	1
0x27 4 - Medium 0x28 5 - Medium 0x29 5 - Medium 0x2A 5 - Medium	
0x28 5 - Medium 0x29 5 - Medium 0x2A 5 - Medium	
0x29 5 - Medium 0x2A 5 - Medium	
0x2A 5 - Medium	
0x2B 5 - Medium	
0x2C 5 - Medium	
0x2D 5 - Medium	
0x2E 5 - Medium	
0x2F 5 - Medium	<u> </u>
0x30 6 - High	
0x31 6 - High	<u> </u>
0x32 6 - High	- 🔪 🗱
0x33 6 - High	- 🔪 🗱
0x34 6 - High	- 🔨 🗱
0x35 6 - High	- 🔪 🗱
0x36 6 - High	- 🔨 🗱
0x37 6 - High	- 🔪 🗱
0x38 7 - High	- 🔨 🗱
0x39 7 - High	- 🔪 🗱
0x3A 7 - High	- 🔨 🗱
0x3B 7 - High	- 🔪 🎗
0x3C 7 - High	- 🔪 🗱
0x3D 7 - High	- N 🗱
0x3E 7 - High	A 🗶
0x3F 7 - High	\ X
New Entry	4



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If you clicked **New Entry**, the following screen appears. Enter your hexadecimal value, and then set the priority for this value. Click **Apply** to continue.

Add	DSCP Setting
DSCP Value (hex): 802.1p Priority:	0 - Low
С	Apply X Cancel

If you clicked **Apply**, the following screen appears. Click **OK** to confirm. Value will be added to the **DSCP Settings** screen.

	Add DSCP Setting	
Browser Reload:	Attention Wireless Broadband Router Management Console might require reloading.	
	Press OK to confirm.	
	✓ OK Cancel	



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15.7.5 802.1P Settings

If you click the **Quality of Service** link in the **Advanced** screen and then click **802.1P Settings** in the left submenu, the following screen appears.

The IEEE 802.1p priority marking method is a standard for prioritizing network traffic at the data link/Mac sublayer. 802.1p traffic is simply classified and sent to the destination, with no bandwidth reservations established.

The 802.1p header includes a 3-bit prioritization field, which allows packets to be grouped into eight levels of priority. By default, the highest priority is seven, which might be assigned to network-critical traffic. Values five and six may be applied to delay-sensitive applications such as interactive video and voice. Data classes four through one range from controlled-load applications down to "loss eligible" traffic. Zero is the value for unassigned traffic and is used as a best effort default, invoked automatically when no other value has been set.

A packet can match more than one rule. This means the following:

- The first class rule has precedence over all other class rules (scanning is stopped once the first rule is reached).
- The first traffic-priority (classless) rule has precedence over all other traffic priority rules.
- There is no prevention of a traffic-priority rule conflicting with a class rule. In this case, the priority and DSCP setting of the class rule (if given) will take precedence.

Select the desired values from the drop-down lists, and then click **Apply** to save the settings.

802.1p Settings				
802.1p Value	Priority			
0	Low 💌			
1	Low 💌			
2	Low 💌			
3	Low 💌			
4	Medium 💌			
5	Medium 💌			
6	High 💌			
7	High 💌			
	Apply X Cancel			

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15.7.6 Class Statistics

If you click the **Quality of Service** link in the **Advanced** screen and then click **Class Statistics** in the left submenu, the following screen appears.

The Router provides accurate, real-time information on the traffic moving through the defined device classes. For example, the amount of packets sent, dropped, or delayed are just a few of the parameters monitored per each shaping class.

NOTE: Class statistics will be available only after defining at least one class (otherwise the screen will not display any values).

If you do not want the screen to refresh automatically, click Automatic Refresh Off.

		Cla	ss Statistics			
Class	Packets Sent	Bytes Sent	Packets Dropped	Packets Delayed	Rate (bytes/s)	Packet Rate
Network (Home/	Office)					
Broadband Conne	ection (Ethernet)					
WAN PPPoE						
	-	Close	matic Refresh On	Refresh		



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15.8 Remote Administration

If you click **Advanced** in the top navigation menu and then select the **Remote Administration** link, the following screen appears.

It is possible to access and control your Router not only from within the home network, but also from the Internet. This allows you to view or change settings while traveling. It also enables you to allow Verizon to change settings or help you troubleshoot functionality or communication issues from a remote location. Remote access to your Router is blocked by default to ensure the security of your network. However, your Router supports the following services, and you may use the Remote Administration Security screen to selectively enable these services if they are needed.

WARNING: With Remote Administration enabled, your network will be at risk from outside attacks.

To configure Remote Administration, enter the appropriate settings, and then click **Apply** to save the settings.

NOTE: This Router ships with Telnet disabled.

Remote Administration	
Allowing remote administration to Wireless Broadband Router is a security risk.	
Allow Incoming WAN Access to the Telnet Server	
Using Secondary Telnet Port (8023)	
X Using Secure Telnet over SSL Port (992) Allow Incoming WAN Access to Web-Management	
Using Primary HTTP Port (80)	
Using Primary HTTPS Port (443)	
Diagnostic Tools Allow Incoming WAN ICMP Echo Requests (e.g. pings and ICMP traceroute	
Allow Incoming WAN UDP Traceroute Queries	
✓ OK Apply Cancel	



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15.9 DNS

If you click Advanced in the top navigation menu and then select the DNS link, the following screen appears.

The Router contains a built-in DNS server. When an IP address is assigned, the Router will interrogate the new device for a machine name using several well-known networking protocols. Any names learned will dynamically be added to the DNS server's table of local hosts.

You can do any of the following:

- To rename the domain name, click a host name link.
- To add a host name, click the **New DNS Entry** link.

Host Name	IP Address	Source	Action
SALLE-XP2	192.168.1.3	DHCP	<u> </u>
SALLE-XP3	192.168.1.2	DHCP	<u> </u>
New DNS Entry			4

To add a new entry, click the **New DNS Entry** link. The following screen appears. Enter the desired host name, and then enter the appropriate IP address. Next, click **OK** to continue.

NOTE: Names may not contain spaces. Only letters, digits and the special characters dash (-), underscore (_) and dot (.) may be used. These special characters may not appear at the beginning or at the end of a name. The maximum length of a name can be is 63 characters.

iew-host
X Cancel

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If you have entered values in the preceding screen and clicked **OK**, the following screen appears. The changes have been saved to the Router.

Host Name	IP Address	Source	Action
SALLE-XP2	192.168.1.3	DHCP	- 🔨 🗱 -
SALLE-XP3	192.168.1.2	DHCP	🔰 👗 🗱
newcomputer	192.168.1.4	User Defined	- 🔨 🗱
New DNS Entry			-

15.10 Personal Domain (Dynamic DNS)

If you click **Advanced** in the top navigation menu and then select the **Personal Domain Name** link, the following screen appears.

Dynamic DNS (Domain Name Server) a dynamic IP address to be aliased to a static hostname, allowing a computer on the network to be more easily accessible from the Internet. Typically, when connecting to the Internet, the service provider assigns an unused IP address from a pool of IP addresses, and this address is used only for the duration of a specific connection. Dynamically assigning addresses extends the usable pool of available IP addresses, while maintaining a constant domain name. This allows to user to access a device from a remote location, since the device will always have the same IP address.

When using Dynamic DNS, each time the IP address provided by the service provider changes, the DNS database changes accordingly to reflect the change. If the IP address of the computer changes often, its domain name remains constant and accessible.

NOTE: To use Dynamic DNS, you must subscribe to this service via your service	provider.
--	-----------

To configure a new dynamic DNS entry, click the New Dynamic DNS Entry link.

Personal Domain Name (Dynamic DNS)						
Host Name Status Provider User Name Action						
New Dynamic DNS Entry						
Press the Refresh button to update the status.						
Close Refresh						



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The following screen appears. Enter the appropriate values in the fields provided, and then click **OK** to continue.

NOTE: Your service provider will provide you with the appropriate values to use in this screen.

Enable	
Host Name:	
rovider: lick Here to Initiate and Manage ser Name:	dyndns.org 🔽 your Subscription
assword: Wildcard	
Mail Exchanger:	
offline	None 💌
Mode:	None 💌

If you click the **Click Here to Initiate and Manage your Subscription** link, the following screen appears. Enter the user name and password (provided by your service provider) in the fields provided to access your account.

NOTE: The screen displayed in this document may differ from the actual screen.

🔿 Dyn	DNS			User:	Lost Pass	Pass:	Logi
	About	Services	Account	Support	News		
My Account	Login						
Create Account							
Login	Account Login	Username:		Password:	Log	jin	
Lost Password?							
Search			Don't <u>Create c</u>	have an account? one now - it's free!			
Search							
		© 1998-2008 Dynamic Ne	etwork Services, Inc.	Legal Notices - Contacts			



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15.11 Network Objects

Network Objects is a method used to abstractly define a set of LAN hosts, according to one or more MAC address, IP address, and host name. Defining such a group can assist when configuring system rules. For example, network objects can be used when configuring the Router's security filtering settings such as IP address filtering, host name filtering or MAC address filtering. You can use network objects to apply security rules based on host names instead of IP addresses. This may be useful, since IP addresses change from time to time. Moreover, it is possible to define network objects according to MAC addresses, making rule application more persistent against network configuration settings.

If you click **Advanced** in the top navigation menu and then select the **Network Objects** link, the following screen appears. To configure a new network object, click the **New Entry** link.

	Networ	k Objects		
A Network Object i	is a set of host names, IP addresses or MAC using Netw	addresses. Security rule vork Objects.	s can be applied to a	distinct LAN sub:
	Network Object	Items	Action	
	New Entry		-	
	و	Close		

If you clicked **New Entry** in the preceding screen, the following screen appears. Enter a name for the network object in the **Network Object Description** field, and then click the **New Entry** link or the plus icon to create it.

Add Network Object		
Network Object Description:	Global	Dbject
Items		
	Item	Action
New Entry		
	С ок	Cancel



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If you clicked **New Entry**, the following screen appears. The source address can be entered using one of the following methods listed in the **IP Address** drop-down menu:

- IP Address
- IP Subnet
- IP Range
- MAC Address
- Host Name
- DHCP Option

After you select the desired method, the screen will refresh. Enter the appropriate values in the fields provided, and then click **OK** to save the settings.

	Add Item
Network Object Type: IP Address:	IP Address IP Subnet IP Subnet IP Range MAC Address Host Name DHCP Option

If you have entered the desired values in the preceding screen and clicked **OK**, the following screen appears. The network object has been configured. Click **OK** to save the configuration.

Add	l Network Object
Network Object Description:	Global Object
Items	
Item	Action
192.16.1.4	💫 🖉
New Entry	
	DK Cancel

If you clicked **OK**, the following screen appears. The network object has been saved to the Router. Click **Close** to return to the **Advanced** screen.

	Networ	k Objects		
A Network Object i	is a set of host names, IP addresses or MAC using Netv	addresses. Security rule: work Objects.	s can be applied to a d	listinct LAN subset
	Network Object	Items	Action	
	Global Object	192.16.1.4	🔨 🗶	
	New Entry		-	
		Close		



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15.12 Protocol

If you click **Advanced** in the top navigation menu and then select the **Protocol** link, the following screen appears. For your convenience, the Router supports protocols for Applications, Games, and VPN-specific programs. The following chart provides port/protocol information for the supported services. The Protocol screen allows you to select the desired view: Basic Service and Advanced Service. The following sections explain the features of each service.

	Protocols	
Protocols	Ports	Action
FTP	TCPAny -> 21	
нттр	TCPAny -> 80	
HTTPS	TCPAny -> 443	
IMAP	TCPAny -> 143	
L2TP	UDPAny -> 1701	
Ping	ICMPEcho Request	
POP3	TCPAny -> 110	
SMTP	TCPAny -> 25	
SNMP	UDPAny -> 161	
Telnet	TCPAny -> 23	
TFTP	UDP1024-65535 -> 69	
Traceroute	UDP32769-65535 -> 33434-33523	
New Entry		
	Close Advanced >>	



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15.12.1 Basic Service

To access the basic service Protocols screen (if you are in the Advanced screen), click the Basic button.

Protocols	Ports	Action
Nien vs. Predator	TCPAny -> 2300-4000 Any -> 7000-10000 UDPAny -> 2300-4000	
	Any -> 7000-10000 Any -> 80 TCPAny -> 1503	
CuSeeMe	Any -> 7640 Any -> 7642 Any -> 7642 Any -> 7648-7649 UDPAny -> 24032 Any -> 1424 Any -> 1424 Any -> 1424 Any -> 1424 Any -> 7548 Any -> 7548	×#
Dark Reign	UDPAny -> 21154-21157	1 1
	TCPAny -> 26214	5.00
Dark Reign 2	UDPAny -> 26214	-2.96
Decent 3	TCPAny -> 7170 UDPAny -> 2092 Any -> 3445	× 38
Decent Preespace	TCPAny -> 3999 UDPAny -> 4000 Any -> 7000 Any -> 3493 Any -> 3440	× #
Calles Factor	TCPAny -> 3100-3999	1.00
	UDPAny -> 3568	1 00
DHCP ALG	UDP67-68 -> 67	
Diablo, StarCraft(Battle.net)	Any -> 116-118 UDPAny -> 6112 TCPAny -> 6112	18
DirectX Games	Any -> 2300-2400 Any -> 28800-28912 UDPAny -> 47624-47625 Any -> 2300-2400	×#
DNS ALG	UDPAny -> 53	12
ттр	TCPAny -> 21	1 38
H.323 Call Signaling	TCPAny -> 1720 Any -> 1503	× #
Heat.net	UDPAny -> 1398 Any -> 5500-5600 Any -> 8000-9000	× #
HTTP	TCPAny -> 80	1 28
HTTP Secondary	TCPAny -> 8080	1 38
HTTP Web Access	TCPAny -> 3127-3128 Any -> 80-81 Any -> 8080 Any -> 8080	1.18
	Any -> 8888	
HTTPS	TCPAny -> 443	18
HTTPS Secondary	TCPAny -> 8443	12
CQ	UDPAny -> 4000	N#
IMAR	TCPAny -> 143	1%
IPSec	ESP	18
	AH	1.00
219	UDPANY -> 1701	23
Nicrosoft Direct Play	UDPAny -> 1000-4999 Any -> 40000-60000	1 34
Microsoft Windows Network / Samba	TCPAny -> 139 Any -> 445 UDPAny -> 139	×#
NCN Messenner	TCPAny -> 1863	1.14
North messenger Moth	TCPAny -> 3453	12.2
Need for Sneed 5 (Poroche)	10PAny -> 9395-9405	11
Non	ICMPEcho Request	1
Na. Platen 3	TCPAny -> 10070-10080	1.90
nay-stations	UDPAny -> 10070	2.2
POP3	TCPAny -> 110 TCPAny -> 1723	1
Challent .	GRE TCPAny -> 27910	100
quanell	UDPAny -> 27910	
Quake111	UDPAny -> 27660-27670	73
Rainbow Six	TCPAny -> 2346	13
Red Alert	UDPAny -> 5009 TCPAny -> 554 Any -> 7070 Any -> 5005 UDPAny -> 554	13
216	Any -> 7070 Any -> 5005	
SMTP	TCPAny +> 25	1
SNMP	UDPAny -> 161	1
SSH	TCPAny -> 22	1 1
Teinet	TCPAny -> 23	1
TFTP	UDP1024-65535 -> 69	1 1
Tiberian Sun	TCPAny -> 4000 Any -> 1140-1234	1.1
Total Annihilation	TCPAny -> 1000-4999 UDPAny -> 47624 Any -> 1000-4999	1.
Traceroute	UDP32769-65535 -> 33434-33523	12
Unreal - Master Server List	UDPAny -> 27900	1 2
Unreal, Unreal Tournament	UDPAny -> 7777-7779	1 18
Vonage VoIP Phone Service	Any -> 27900 TCPAny -> 5060-5070 Any -> 10000-25000	1.8
Worms 2	TCPAny -> 1031-2210 Any -> 2220-3212	1.
XBoX	TCPAny -> 1000-1029 TCPAny -> 3074 UDPAny -> 88	18
	Any -> 3074	-
Name Entry		



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If you clicked the **Basic** button in the preceding screen, the following screen appears.

At this screen, you can:

- Configure ports for predefined protocols by clicking the desired link.
- Configure a new user-defined port for a protocol by clicking the **New Entry** link.

FTP TCPAny -> 21 HTTP TCPAny -> 80 HTTPS TCPAny -> 443 IMAP TCPAny -> 143 L2TP UDPAny -> 1701	
HTTP TCPAny -> 80 HTTPS TCPAny -> 443 IMAP TCPAny -> 143 L2TP UDPAny -> 1701	
HTTPS TCPAny -> 443 IMAP TCPAny -> 143 L2TP UDPAny -> 1701	
IMAP TCPAny -> 143 L2TP UDPAny -> 1701	- 🔪 🗱 -
L2TP UDPAny -> 1701	
	- 🔪 🗱 -
Ping ICMPEcho Request	🔨 🎇
POP3 TCPAny -> 110	- 🔪 🗱 -
SMTP TCPAny -> 25	- 🔪 🗱 -
SNMP UDPAny -> 161	- 🔪 🗱 -
Telnet TCPAny -> 23	- 🔪 🗱 -
TFTP UDP1024-65535 -> 69	- 🔪 🗱 -
Traceroute UDP32769-65535 -> 33434-33523	- 🔪 🗱 -
New Entry	-

15.12.1.1 Configuring a Predefined Protocol Service

To configure the Router for a predefined protocol service, click the desired protocol link.

	Protocols	
Protocols	Ports	Action
FTP	TCPAny -> 21	
HTTP	TCPAny -> 80	🔨 🗶
HTTPS	TCPAny -> 443	🔨 🎉
IMAP	TCPAny -> 143	🔨 🎉
L2TP	UDPAny -> 1701	🔨 🎇
Ping	ICMPEcho Request	🔨 🎇
POP3	TCPAny -> 110	🔨 🎉
<u>SMTP</u>	TCPAny -> 25	🔨 🎇
SNMP	UDPAny -> 161	🔨 🎉
Telnet	TCPAny -> 23	🔨 🎉
TFTP	UDP1024-65535 -> 69	🔨 🎇
Traceroute	UDP32769-65535 -> 33434-33523	🔨 🎉
New Entry		
	Close Advanced >>	

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For example, if you clicked **FTP** in the preceding screen, the following screen appears. Next, click the **TCP** link to configure the service protocol values.

Service Name:	FTP		
Service Description:	File Transfer		
Server Ports			
Protocols		Server Ports	Action
ТСР	Any -> 21		🔨 🎇
New Server Ports			

If you clicked **TCP** in the **Edit Service** screen, the following screen appears. Enter the desired values, and then click **OK** to continue.

		Edit Service Server Ports	
Pi	rotocols	TCP V	
De De	ource Ports: estination Ports:	Any Y Single 21	
		✓ OK X Cancel	



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If you have entered values and clicked **OK** in the preceding screen, the following screen appears. A protocol service has been configured. Click **OK** to save the settings.

Service Name:	FTP	
Service Description:	File Transfer	
Server Ports		
Protocols	Server Ports	Action
ТСР	4 -> 21	S 🗱 🕹
New Server Ports		

If you clicked **OK** in the preceding screen, the following screen appears. The protocol service has been saved to the Router.

	Protocols	
Protocols	Ports	Action
FTP	TCP4 -> 21	🔨 🎇
НТТР	TCPAny -> 80	A 🗶
HTTPS	TCPAny -> 443	🔨 🎇
IMAP	TCPAny -> 143	🔨 🎇
L2TP	UDPAny -> 1701	A 🗶
Ping	ICMPEcho Request	🔨 🎇
POP3	TCPAny -> 110	🔨 🎉
SMTP	TCPAny -> 25	A 🗶
SNMP	UDPAny -> 161	🔨 🎉
Telnet	TCPAny -> 23	🔨 🎇
TFTP	UDP1024-65535 -> 69	🔨 🎉
Traceroute	UDP32769-65535 -> 33434-33523	🔨 🎉
New Entry		
	Advanced >>	



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15.12.1.2 Configuring a User-defined Protocol Service

To configure the Router for a user-defined protocol service, click the New Entry link.

Protocols	Ports	Action
FTP	TCP4 -> 21	X
нттр	TCPAny -> 80	× ×
HTTPS	TCPAny -> 443	A 🗶
IMAP	TCPAny -> 143	A 🗶
L2TP	UDPAny -> 1701	🔨 🎇
Ping	ICMPEcho Request	🔨 🎇
POP3	TCPAny -> 110	
SMTP	TCPAny -> 25	A 🗶
SNMP	UDPAny -> 161	🔨 🎇
Telnet	TCPAny -> 23	🔨 🎉
TFTP	UDP1024-65535 -> 69	
Traceroute	UDP32769-65535 -> 33434-33523	
New Entry		

If you clicked **New Entry**, the following screen appears. Enter a service name and service description in the fields provided. Next, click the **New Server Ports** link.

Service Name: Global Application	
Service Description:	
Server Ports	
Protocols Server Ports	Action
New Server Ports	
Server Ports Protocols Server Ports New Server Ports	Action



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If you clicked **New Server Ports**, the following screen appears. Select a protocol from the drop-down list, and then enter a protocol number. Click **OK** to continue.

	Edit Service Server Ports	
Protocols Protocol Number:	Other Contraction of the Contrac	
	✓ OK Cancel	

If you clicked **OK**, the following screen appears. Click **OK** to save the settings.

Service Name:	Global Application	
Service Description:		
Server Ports		
Protocols	Server Ports	Action
UDP	87-65535 -> 88-65535	🔨 🎉 🕹
New Server Ports		



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If you clicked **OK**, the following screen appears. The protocol settings have been saved to the Router.

Protocols	Ports	Action
FTP	TCP4 -> 21	
Global Application	UDP87-65535 -> 88-65535	
нттр	TCPAny -> 80	
HTTPS	TCPAny -> 443	
IMAP	TCPAny -> 143	
L2TP	UDPAny -> 1701	
Ping	ICMPEcho Request	
POP3	TCPAny -> 110	
SMTP	TCPAny -> 25	
SNMP	UDPAny -> 161	
Telnet	TCPAny -> 23	
TFTP	UDP1024-65535 -> 69	
Traceroute	UDP32769-65535 -> 33434-33523	
New Entry		

15.12.2 Advanced Protocol Service

To access the advanced service **Protocols** screen (if you are in the Basic screen), click the **Advanced** button. The following advanced **Protocols** screen will appear.

At the Advanced screen, you can:

- Configure predefined application by clicking the desired link.
- Configure a new user-defined application by clicking the **New Entry** link.



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15.12.2.1 Configuring a Predefined Application

To configure the Router for a predefined application, click the desired link.

Frenetons	TCPAny -> 2300-4000	Action
Alien vs. Predator	Any -> 7000-10000 UDPAny -> 2500-4000 Any -> 7000-10000	N 38
	Any -> 80 TCPAny -> 1503 Any -> 7640 Any -> 7642 Any -> 7642	
CuSeeMe	Any -> 1414 Any -> 1424 Any -> 1424 Any -> 1612-1813 Any -> 7648 Any -> 56800	1.24
Dark Reign	UDPAny -> 21154-21157	1.24
Dark Reign 3	TCPAny -> 26214	1.34
	TCPAny -> 7170	
Decent 3	UDPAny -> 2092 Any -> 3445 TCPAny -> 3999	1.34
Decent Presspace	UDPAny -> 4000 Any -> 7000 Any -> 3493 Any -> 3440	× 38
Darba Brena	TCPAny -> 3100-3999	5.00
Dena Porte	UDPAny -> 3568	
DHCF ALS	UDP57-68 -> 67	
Diable, StarCraft(Battle.net)	Any -> 116-118	N 28
	UDPAny -> 6112 TCPAny -> 47624-47625 Any -> 2300-2400	
DirectX Gemes	Any -> 28800-28912 UDPAny -> 47624-47625	1.3
DNS ALG	UDPAny -> 53	1.18
414	TOPAny -> 21	1.58
H.323 Cell Signaling	TCPAny -> 1720	1.14
	TCPAny -> 1303 UDPAny -> 8000-8999 UDPAny -> 1398	1.00
	Any -> \$500-5600 Any -> 8000-9000	
HTTP	TCFAny -> 80	1.12
HTTP Secondary	TCPAny -> 8080	N 28
HTTP Web Access	TCPAny -> 3127-3128 Any -> 80-81 Any -> 8080 Any -> 8080	1.8
	Any -> 8888	
HTTPS	TCPAny -> 443	0.2
HTTPS Secondary	TCPAny -> 8443	0.00
icq	UDPARY -> 4000	2.2
	UDP500 -> 500	
IPSec .	ESP	N 38
972	UDPAny -> 1701	5.34
HIGCP ALG	UDPAny -> 2727	1.24
Hicrosoft Direct Flay	UDPAny -> 1000-4999 Any -> 40000-60000	1.34
Mcrosoft Windows Network / Sembe	Any -> 445 UOPAny -> 137 Any -> 138	2.35
MSN Messenger	TCFAny -> 1863	N 34
Hyth	TOPAny -> 3453	1 34
Need for Speed 5 (Porsche)	UDPAny -> 9395-9405	N 34
Ping	ICHPEcho Request	1 34
Play-Station2	TCPAny -> 10070-10080 UDPAny -> 10070	N#
POP3	TCPAny -> 110	1.24
PPTP	TCPAny -> 1723	1.20
Quakall	TCPAny -> 27910	5.90
Carles Mile	UDPAny -> 27910	
QuakeIII	UDPAny -> 27660-27670	1 2 2
Rainbow Sie	TCPAny -> 2346	13
Red Alert	UDPARy -> 5008	2.24
RISP	Any -> 7070 Any -> 5005 UDPAny -> 554 Any -> 7070 Any -> 5005	× 88
104	UDPAny -> \$060	N 28
SHITP	TCPAny -> 25	1 34
SMHP	UDPAny -> 161	1.24
SSH	TCPAny -> 22	1 24
Teinet	TCPAny -> 23	1 24
TPTP	UDP1024-65535 -> 69	1 24
Tiberian Sun	Any -> 1140-1234 UDPAny -> 1140-1234	2.38
Total Annihilation	UCPAny -> 1000-4999 UCPAny -> 47624 Any -> 1000-4999	1.38
Treceroute	UDP32769-65535 -> 33434-33523	18
Unreal - Master Server List	UDPAny -> 27900	18
Unreal, Unreal Tournament	Any -> 27900	7.38
Vonage VolP Phone Service	TCPAny -> 5060-5070 Any -> 10000-25000 TCPAny -> 1031-2210	13
Worms 2	Any -> 2220-3212 UDPAny -> 1000-1029	1 38
хвах	TCPAny -> 3074 UOPAny -> 88	1.58



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For example, if you clicked the link of a predefined service in the preceding screen, the following screen appears. If desired, enter a description in the **Service Description** field. Next, click the desired TCP or UDP link.

Service Name:	Alien vs. Predator	
Service Description:		
Server Ports Protocols	Server Ports	Action
ТСР	Any -> 2300-4000	N 🗱
ТСР	Any -> 7000-10000	🔪 🎉
UDP	Any -> 2300-4000	🔪 🎉
UDP	Any -> 7000-10000	🔪 🎉
UDP	Any -> 80	🔨 🗶
New Server Ports		-

If you selected TCP (Any -> 2300-4000) the following screen appears. Select the desired source port and destination port values from the drop-down lists, and then click **OK**.

NOTE: For the Source and Destination ports, you can select a single port or a range of ports. In this example, the range for the Source port can be any value from 0 through 65535. And the range for the Destination port can be any value from 2300-4000.

	Edit Service Server Ports
Protocols Source Ports: Destination Ports:	TCP Any Range 2300 - 4000
	✓ OK Cancel



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After you have entered the desired values and click **OK** in the preceding screen, the following screen appears. The TCP protocol values have been configured. Next, click **OK** to save the settings.

Service Name: Service Description:	Alien vs. Predator	
Server Ports		
Protocols	Server Ports	Action
TCP	Any -> 2300-4000	🔪 🌽
ТСР	Any -> 7000-10000	A 🗱
UDP	Any -> 2300-4000	🔪 🗶
UDP	Any -> 7000-10000	🔪 🎉
UDP	Any -> 80	🔪 🎉
New Server Ports		-

If you clicked **OK**, the protocol values will be saved to the Router, and the following screen will display the entry.

	Protocols	
Protocols	Ports	Action
Alien vs. Predator	TCPAny -> 2300-4000 Any -> 7000-10000 UDPAny -> 2300-4000 Any -> 7000-10000 Any -> 80	2 🗱
CuSeeMe	TCPAny -> 1503 Any -> 7640 Any -> 7642 UDPAny -> 24032 Any -> 1414 Any -> 1424 Any -> 1812-1813 Any -> 7648 Any -> 56800	7 38
Dark Reign	UDPAny -> 21154-21157	🔨 🗶
Dark Reign 2	TCPAny -> 26214 UDPAny -> 26214	🔨 🗶
Decent 3	TCPAny -> 7170 UDPAny -> 2092 Any -> 3445	N 🗱
Decent Freespace	TCPAny -> 3999 UDPAny -> 4000 Any -> 7000 Any -> 3493 Any -> 3440	× #
Delta Force	TCPAny -> 3100-3999 UDPAny -> 3568	🔨 🎗
DHCP ALG	UDP67-68 -> 67	🔨 🎉
Diablo, StarCraft(Battle.ne	t) TCPAny -> 6112 Any -> 116-118 UDPAny -> 6112	A 🗱
DirectX Games	TCPAny -> 47624-47625 Any -> 2300-2400 Any -> 28800-28912 UDPAny -> 47624-47625 Any -> 2300-2400	2.8



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15.12.2.2 Configuring a New User-Defined Application

To configure new user-defined application, click the New Server Ports link in the Edit Service screen.

Service Name:	Alien vs. Predator	
service Description:		
Server Ports Protocols	Server Ports	Action
ТСР	Any -> 2300-4000	🔪 🎉
ТСР	Any -> 7000-10000	× ×
UDP	Any -> 2300-4000	× ×
UDP	Any -> 7000-10000	× ×
UDP	Any -> 80	🕹 🎉
New Server Ports		

If you clicked **New Server Ports**, the following screen appears. Select the desired protocol from the **Protocol** dropdown list, and then enter the protocol number.

Edit Service Server Ports	
Protocols	Other 💌
Protocol Number:	
	✓ OK X Cancel



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								-		
Eca	arramala	thin	0.000.000	chorre	ammonuiat	a realized	aliale	OV +	o continu	~
FOF	example.	THIS	screen	SHOWS	addrodriai	e vanies.	СИСК	UN 1	O COMINUE	÷.,
				0110 110	appropriat	• • ••••••		· · · ·	0.00111110	•••

	Edit Service Server Ports	
Protocols Source Ports:	UDP 💌	
Destination Ports:	Range 💌 1700 - 1800	
	✓ OK X Cancel	

If you clicked **OK**, the following screen appears. The UDP port values have been configured. Next, click **OK** to save the settings.

Service Name:	Alien vs. Predator			
Server Ports				
Protocols	Server Ports	Action		
TCP	Any -> 2300-4000	🔨 🎉		
ТСР	Any -> 7000-10000	N 🗱		
UDP	Any -> 2300-4000	🔨 🎉		
UDP	Any -> 7000-10000	🔨 🎉		
UDP	Any -> 80	N 🗱		
UDP	Any -> 1700-1800	🔨 🎉		
New Server Ports				



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If you clicked **OK**, the following screen appears. The user-defined UDP port settings are now saved to the Router.

	Protocols	
Protocols	Ports	Action
Alien vs. Predator	TCPAny -> 2300-4000 Any -> 7000-10000 UDPAny -> 2300-4000 Any -> 7000-10000 Any -> 80 Any -> 1700-1800	× #
CuSeeMe	TCPAny -> 1503 Any -> 7640 Any -> 7640 UDPAny -> 7648-7649 UDPAny -> 24032 Any -> 1414 Any -> 1424 Any -> 1812-1813 Any -> 7648 Any -> 56800	× 98
Dark Reign	UDPAny -> 21154-21157	A 🕺
Dark Reign 2	TCPAny -> 26214 UDPAny -> 26214	1 2 2
Decent 3	TCPAny -> 7170 UDPAny -> 2092 Any -> 3445	1.8
Decent Freespace	TCPAny -> 3999 UDPAny -> 4000 Any -> 7000 Any -> 3493 Any -> 3440	× #
Delta Force	TCPAny -> 3100-3999 UDPAny -> 3568	× #
DHCP ALG	UDP67-68 -> 67	1 2
Diablo, StarCraft(Battle.net)	TCPAny -> 6112 Any -> 116-118 UDPAny -> 6112	1.8
DirectX Games	TCPAny -> 47624-47625 Any -> 2300-2400 Any -> 28800-28912 UDPAny -> 47624-47625 Any -> 2300-2400	× #

15.13 MGCP ALG

If you click **Advanced** in the top navigation menu and then select the **MGCP ALG** link, the following screen appears. The UltraLine Series3 includes a Media Gateway Control Protocol (MGCP) Application-level Gateway (ALG). MGCP is a signaling and call control protocol used by some Voice over IP (VoIP) systems. This ALG enables use of MGCP devices behind your firewall without the need to create pinholes or custom firewall rules for this specific type of traffic.

To enable the MGCP ALG, select **Enabled** from the MGCP ALG drop-down list. Then click **Apply** to save the setting.

NOTE: Do not enable this setting unless your service provider instructs you to do so.

	MGCP ALG	
MGCP ALG:	Disabled 🗸	
√ ок	Apply X Cancel	



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15.14 SIP ALG

If you click **Advanced** in the top navigation menu and then select the **SIP ALG** link, the following screen appears. The UltraLine Series3 includes a Session Initiation Protocol (SIP) Application-level Gateway. SIP is a signaling protocol used by multimedia applications, most commonly a Voice over IP (VoIP) system. This ALG enables use of SIP devices behind your firewall without the need to create pinholes or custom firewall rules for this specific type of traffic.

To enable SIP ALG, select Enabled from the SIP ALG drop-down list. Then, click Apply to save the setting.

	STD ALC	
CTR ALC:		
SIP ALG:		

15.15 UPnP

If you click **Advanced** in the top navigation menu and then select the **UPnP** link, the following screen appears. This feature advertises the presence of your Router on the LAN. Universal Plug-and-Play is a networking architecture that provides compatibility among networking equipment, software and peripherals. Products that have UPnP can seamlessly connect and communicate with other Universal Plug-and-Play enabled devices, without the need for user configuration, centralized servers, or product-specific device drivers.

To configure UPnP enter the desired values and then click Apply to save the settings.

Unive	rsal Plug and Play
Allow Other Network Users to Cor Enable Automatic Cleanup of Old	ntrol Wireless Broadband Router's Network Features Unused UPnP Services
WAN Connection Publication:	Publish Only the Main WAN Connection 💌
 ✓ ок 	Papply Cancel



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15.16 System Settings

If you click **Advanced** in the top navigation menu and then select the **System Settings** link, the following screen appears. Use this page to configure various system settings. Enter the desired system settings and then click **Apply** to save the settings.

NOTE: This Router ships with Telnet disabled. If Telnet is enabled, you can configure Secure Telnet over SSL Port/Client Authentication.

Systen	1 Settings
System Wireless Broadband Router's Hostname:	myrouter
Local Domain:	home
Wireless Broadband Router Mana	agement Console
Automatic Refresh of System Mor	litoring Web Pages
Warn User Before Configuration (Changes
Session Lifetime:	600 Seconds
Management Application Ports	
Primary HTTP Management Ports	80
Secondary HTTP Management	0000
Port:	8080
Primary HTTPS Management Por	t: 443
Secondary HTTPS Management	8443
Primary Telnet Port:	23
Secondary Telnet Port:	8023
Secure Telnet over SSI Port	992
Secure relief over SSE Ford	552
Management Application SSL Au	hentication Options
Primary HTTPS Management Client Authentication:	None 💌
Secondary HTTPS Management	Nees
Client Authentication:	None V
Authentication:	None 💌
System Logging	100 100
System Log Butter Size:	Next to
Remote System Notify Level:	None
Security Logging	
Security Log Buffer Size:	100 KB
Remote Security Notify Level:	None 💌
Hardware Acceleration	
Enable Hardware Acceleration of	Network Traffic
C LOV	Apply Y Cancel
V OK	Apply

Hostname—Specify the Router's host name. The host name is the Router's URL address. Local Domain—Specify your network's local domain.

Wireless Broadband Router Management Console

Automatic Refresh of System Monitoring Web Pages—select this check box to enable the automatic refresh of system monitoring web pages.

Warn User Before Network Configuration Changes—select this check box to activate user warnings before network configuration changes take effect.

Session Lifetime—this value represents duration of idle time (in seconds) in which the Router will remain active. When this duration times out, the user will have to re-login.



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Management Application Ports

You can configure the following management application ports:

- Primary/Secondary HTTP Management Port
- Primary/Secondary HTTPS Management Port
- Primary/Secondary Telnet Port HTTPs
- Secure Telnet over SSL Port

Management Application SSL Authentication Options

You can configure the Primary and Secondary HTTPS Management Client Authentication. Select the desired option from the drop-down lists:

- Select **None** if you do not want to use client authentication.
- Select **Optional** if you want client authentication to be optional.
- Select **Required** if you want client authentication to be required.

Drimony HTTDE Management	
Client Authentication:	None 💙
Secondary HTTPS Management	None
Client Authentication:	Optional
Secure Telnet over SSL Client	Required
Authentication:	Hono .

System Logging—configure system logging parameters.

System Log Buffer Size—set the size of the system log buffer in Kilobytes.

Remote System Notify Level-select one of the following remote system notification level from the drop-down list:

- None
- Error
- Warning
- Information



Security Logging—configure security logging parameters.

Security Log Buffer Size—set the size of the security log buffer in Kilobytes.

Remote Security Notify Level—select one of the following remote security notification levels from the drop-down list:

- None
- Error
- Warning
- Information

Hardware Acceleration—To enable this feature, click the **Enable Hardware Acceleration of Network Traffic** check box (if it is not already checked).



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Security Logging Security Log Buffer Size: Remote Security Notify Level: Hardware Acceleration V Enable Hardware Acceleration of Ne Warning Information V OK Apply Cancel

After you have configured the desired settings, click **Apply** to allow the settings to take effect in the Router.

15.17 Configuration File

If you click **Advanced** in the top navigation menu and then select the **Configuration File** link, the following screen appears.

IMPORTANT: Do not change the settings in this page unless instructed by Verizon.

Configuration File	
(rg conf	~
(dev	
(br0	
(type(bridge))	
(logical network(2))	
(is_sync(1))	
(enabled(1))	
(enslaved	
(eth0	
(stp(1))	
(ath0	
(stp(0))	
(bro	
(stp(1))	
(route_level(1))	
(metric(4))	
$(\operatorname{intu}_{\operatorname{mode}}(1))$	
(b_{1})	
$(\operatorname{ins}_{-1}p(z))$	~
	>
	<u> </u>
Close Load Configuration File Save Configuration File	



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15.18 Date and Time Rules

If you click **Advanced** in the top navigation menu and then select the **Date and Time** link, the following screen appears. Enter the desired values in this screen, and then click **Apply** to save the settings.

The Router can automatically detect daylight saving setting for selected time zones. If the daylight saving settings for a time zone are not automatically detected, the following fields will be displayed:

- Enabled—Click this check box to enable daylight saving time (a check mark will appear in the box).
- Start—Enter the date and time when daylight saving starts.
- End—Enter the date and time when daylight saving ends.
- Offset—Enter the time amount daylight saving time changes.
- Automatic Time Update—Click the check box to activate automatic time update (a check mark will appear in the box).
- Protocols—Click the radio button for the protocol used to perform the time update.
- Update Every—Enter the desired value (in Hours) to specify how often to perform the update.
- Time Server—This table lists the address of the time server.
- Status—Displays a time update status.
- Sync Now—Click this button to synchronize the Router's time with your computer operating system's time.

	Date and Time	
Localization Local Time: Time Zone:	Jan 12, 2009 17:11:14 EST (GMT-05:00)	
Daylight Saving Time		
Start Time	Mar 💙 28 💙 00 · 00	
End Time:	Oct V 28 V 01 : 00	
Offset:	60 Minutes	
Automatic Time Update	Time Of Day (TOD) Network Time Protocol (NTP)	
Update Every:	24 Hours	Sync Now
Time Server	Action	
pool.ntp.org	1 × 2	
New Entry		
Status:	Got time update from server, Last Update: Mon Ja Press the Refresh button to update the stat	an 12 08:15: <mark>11</mark> 2009 rus.
√ок	Apply Cancel Clock :	Set



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15.19 Editing the Time Server Table

If you click the **New Entry** link under **Time Server**, the following screen appears. Enter a server IP address or domain name in the field provided, and then click **OK** to continue.

	Time Server Settings
	Enter server IP address or domain name:
Time Server:	
	✓ OK Cancel

The entry will be added to the time server table. To remove server address from the Time Server table, click the "X" icon next to the server to want to remove. Then, click **Apply** to save the changes.

	Date and Time	
Localization		
Local Time:	Jan 12, 2009 17:16:16	
Time Zone:	EST (GMT-05:00)	
Daylight Saving Time		
Enabled		
Start Time:	Mar 💙 28 💙 00 : 00	
End Time:	Oct 💌 28 💌 01 : 00	
Offset:	60 Minutes	
Automatic Time Update		
Enabled		
	() Time Of Day (TOD)	
Protocols:	Network Time Protocol (NTP)	
Update Every:	24 Hours	Sync Now
Time Server	Action	
pool.ntp.org	N 🕺 🕺	
www.server.com	🔍 🎉	
New Entry		
Status	Cat time undate from convex 1 pet lindate: Man Jan	12 08-15-11 2000
Status.	out time aparte nom server, Last opdate. Hon san	12 00.15.11 2005
	Press the Refresh button to update the status	B. (



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15.20 Editing Clock Set

If you click the **Clock Set** button in the **Date and Time** screen, the following screen appears. Enter your local time by selecting the appropriate values from the month, day, and year drop-down lists. Next, enter your local time (starting with hours, minutes, and seconds) in the fields provided. Click **Apply** to save the settings. Then click **OK** to return to the **Date and Time** screen.

	Clock Set
Local Date: Local Time:	Jan I2 2009 17 : 17 : 40
	✓ OK Apply X Cancel

15.21 Scheduler Rules

If you click **Advanced** in the top navigation menu and then select the **Scheduler Rules** link, the following screen appears. To configure a schedule rule, click the **New Entry** link.

Scheduler Rules					
Scheduler rules are used for limiting the activation of firewall rules to specific time periods, either for days of the week, or for hours of each day.					
	Name	Settings	Status	Action	
	New Entry			4	
Close Refresh					

The following screen appears. Click the New Time Segment Entry link or, alternatively, click the plus icon.

Edit Sche	duler Rule
Name: Scheduler Rule]
Rule Activity Settings	
Time Segments	Action
New Time Segment Entry	
 ✓ ок 	X Cancel



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If you clicked New Time Segment Entry, the following appears. Click the New Hours Range Entry link.

Days of Week Monday Tuesday		
☐ Monday ☐ Tuesday		
Tuesday		
Wednesday		
Thursday		
Eriday		
Saturday		
Sunday		
Hours Range Start Time End Time Action		
New Hours Bango Entry		
New Hours Kange End y		
✓ OK Cancel		

The following screen appears. Enter the desired start time and end time values in the fields provided.

Note: Use military time to edit the Hour range. For example, 2:00 P.M. standard time is equivalent to 14:00 military time, as indicated in the following chart.

Edit Hour Range			
Note: Use military time l Start Time: End Time:	to edit the hour range. (e.g. 2:30pm = 14:30).		
	/ OK Cancel		

Military Time Chart				
Standard Time	Military Time			
1:00 A.M.	0100			
2:00 A.M.	0200			
3:00 A.M.	0300			
4:00 A.M.	0400			
5:00 A.M.	0500			
6:00 A.M.	0600			
7:00 A.M.	0700			
8:00 A.M.	0800			
9:00 A.M.	0900			
10:00 A.M.	1000			
11:00 A.M.	1100			
12:00 P.M. (Noon)	1200			
1:00 P.M.	1300			
2:00 P.M.	1400			
3:00 P.M.	1500			
4:00 P.M.	1600			
5:00 P.M.	1700			
6:00 P.M.	1800			
7:00 P.M.	1900			
8:00 P.M.	2000			
9:00 P.M.	2100			
10:00 P.M.	2200			
11:00 P.M.	2300			
12:00 A.M. (Midnight)	0000			
A.M. = Ante Meridiem. The period from midnight until noon.				
P.M. = Post Meridiem. The period between noon and midnight.				


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For an example, the values in the following screen represent military hours. After you have entered your desired values, click **OK** to continue.

	Edit Hour Range
Note: Use military time t Start Time: End Time:	to edit the hour range. (e.g. 2:30pm = 14:30).
	OK Cancel

If you clicked **OK** the following screen appears. Click the check box for each day that you want to apply the time segment (a check mark will appear in the box). Click **OK** to continue.

Ec	dit Time Segment	
Days of Week Monday Tuesday Wednesday Thursday Friday Saturday V Sunday		
Start Time	End Time	Action
14:30	16:30	N 🗱
New Hours Range Entry		4
	OK X Cancel	

After you have set up the desired time segment and clicked **OK**, the following screen appears. If desired, you can enter a name for the schedule rule in the **Name** field.

Under **Rule Activity Settings**, be sure to click the setting that you want assigned to the rule:

- Click the first radio button to allow the rule to be active at the scheduled time.
- Click the second radio button to allow the rule to be inactive at the scheduled time.

For example, this screen shows that a schedule has been added to the **Time Segments** table, and that the rule will be active at the scheduled time. To add additional schedule rules to your Router, repeat the preceding scheduler rules instructions. Then, click **OK** in the **Edit Scheduler Rule** screen to allow the settings to take effect in the Router.

Edit Sched	luler Rule	
Name: Scheduler Rule		
Rule Activity Settings		
Time Segments	Actio	n
Sun between 14:30-16:30	S \$	\$
New Time Segment Entry		
√ ок	X Cancel	



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15.22 Firmware Upgrade

If you click **Advanced** in the top navigation menu and then select the **Firmware Upgrade** link, the following screen appears. This screen is used to update the firmware that controls the operation of your Router. The updated firmware may be loaded from a CD-ROM, from a file stored on a local hard drive within your network, or from an update file stored on an Internet server.

IMPORTANT: The configurable settings of your Router may be erased during the upgrade process.

Do any of the following:

• Select the desired option from the **Upgrade from the Internet** drop-down list. You can choose to perform an automatic check at the specified number of hours and URL. Or you can disable automatic check.

NOTE: The URL must be in the format: protocol://user:password@host:port/path where protocol is one of http, https, ftp or tftp. Either user or password, or both, may be left out. The port number is also optional.

• Click **Check Now** to retrieve the firmware update file and display any available update information. You must be connected to the Internet to use this option.

NOTE: If you click **Check Now** and the page returns "No new version available," this indicates that the firmware update file is not available.

• Click **Force Upgrade** to download the firmware update file and to automatically update the Router firmware if an update is available and applicable. You must be connected to the Internet to use this option.

NOTE: The URL must be in the format: protocol://user:password@host:port/path where protocol is one of http, https, ftp or tftp. Either user or password, or both, may be left out. The port number is also optional.

• Click Upgrade Now to retrieve the firmware update file from a local hard drive or CD-ROM on your Network. Internet connection is not required for this option.

For example, to upgrade your Router, click the Upgrade Now button.

Wireless Broadban	d Router Firmware Upgrade
Current Version: 1.03.00.02	
Upgrade From the Internet	
Automatic Check Disabled	×
Check at URL	
Check Now	
Status: OK	
Internet Version: No new version available	
Force Upgrade	
Upgrade From a Computer in the Netwo Select an updated Wireless Broadband Route network Upgrade Now	rk r firmware file from a computer's hard drive or CD on the
✓ ok	? Apply



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Next, click the **Browse** button to navigate to the location of the upgrade file.

Upgrade From a Computer in the Network	
Browse to locate the file, then press OK to begin the firmware upgrade process. Browse_	
✓ OK X Cancel	

Once you have located the file, double-click the file to select it.

File Upload					? 🗙
Look in:	🚞 Upgrade File		~ (3 🤣 📂 🛄	
My Recent Documents	A90-9100EM15	-10=1.03.00.02.rmt			
Desktop					
My Documents					
My Computer					
	File name:	A90-9100EM15-10=1.0	3.00.02.mt	~	Open
My Network	Files of type:	All Files		~	Cancel

The pathname of the file will appear in the Browse field, as shown below. Click **OK** to continue.





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Next, the Router will prompt you to confirm that you want to load the new version. Click **OK** to load the new version.

IMPORTANT: Please do not attempt to use the Router during the upgrade process. Interrupting the upgrade process may result in an inoperable device.

Wireless Broa	dband Router Firmware Upgrade
Storing the firmware upgrade file may take a few Interrupting the upgrade process may result in a	w minutes. an inoperable device.
A new firmware was succ Current Version: New Version:	essfully downloaded to Wireless Broadband Router WSTL_ULS3_DUAL_MOCA_USB_64 version 1.03.00.00 WSTL_ULS3_DUAL_MOCA_USB_64 version 1.03.00.02
Do yo	u want to load the new version?

The Router will begin the upgrade process. Please wait a brief moment for the upgrade to complete.

NOTE: If the page does not refresh automatically in a minute, click the Login button.



After the upgrade has completed, the following screen will appear. Please type your user name and password to log in to your Router.

	Login
Wireless Broadband	Router Management Console is up again, please login:
User Name: Password:	
	✓ OK



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15.23 Routing

If you click **Advanced** in the top navigation menu and then select the **Routing** link, the following screen appears. You can choose to setup your Router to use static or dynamic routing. Dynamic routing automatically adjusts how packets travel on the network, whereas static routing specifies a fixed routing path to neighboring destinations.

15.23.1 Basic Routing Settings

To create a new route, click the **New Route** link. If you change any settings in this screen, click **Apply** to save the settings.

		Routi	ng			
Routing Table						
Name	Destination	Gateway	Netmask	Metric	Status	Action
New Route						-
Routing Protocols	on Protocol (RIP)					
Poison Revers	se					
Do not Advert	tise Direct Connected Ro	outes				
Internet Group Ma	anagement Protocol (IGN	1P)				
IGMP Fast Lea	ave					
IGMP Multicas	t to Unicast					
Domain Routing (add route entry according to	o interface from which	DNS record is recei	ved)		
	✓ ok	7 Apply	X Cancel	Advanced >>		

If you clicked **New Route**, the following screen appears. Configure the settings in this screen, and then click **OK** to continue.

- Rule Name—Select the type of network from the drop-down list.
- Destination—Enter the destination is the destination host, subnet address, network address, or default route. The destination for a default route is 0.0.0.
- Netmask—Enter the network mask is used in conjunction with the destination to determine when a route is used.
- Gateway—Enter the Router's IP address.
- Metric—Enter the desired measurement of the preference of a route. Typically, the lowest metric is the most preferred route. If multiple routes exist to a given destination network, the route with the lowest metric is used.

Route	Settings
Name:	Network (Home/Office) 🔽
Destination:	0.0.0.0
Netmask:	255 . 255 . 255 . 2
Gateway:	0.0.0.0
Metric:	0
√ ок	X Cancel



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15.23.2 Advanced Routing Settings

To configure advanced routing settings, click the Advanced button in the Routing screen.

Routing						
Routing Table						
Name	Destination	Gateway	Netmask	Metric	Status	Action
New Route						
Routing Protocols Contemporation Routing Information Poison Revers	on Protocol (RIP) e					
Do not Adverti	ise Direct Connected Ro	utes				
Internet Group Ma	nagement Protocol (IGN	IP)				
IGMP Past Lea	t to Unicast					
Domain Routing (a	add route entry according to	interface from which	DNS record is receiv	/ed)		
	(✓ ок	! Apply	X Cancel	Advanced >>		

If you clicked the **Advanced** button, the following screen appears. If you change any settings in this screen, click **Apply** to save the settings.

		KUUL	ing			
Routing Table	Destination	Cateway	Netmask	Matric	Status	Action
New Route	Destination	Gateway	Nethask	Hetric	Status	4
Default Routes	e	Metric	State	15	Action	
WAN PPPoE	1	Tietrie	Connected		- î	
DSCP-Based Policy Route all traffic with r Warning: If the chose	Routing natching DSCP values in device is marked a	s to the chosen devic s a default route, otl	ces. her traffic may also	be routed to	it.	
Nam Danka	DSCP		Device		Actio	n
Enabled Routing Protocols ♥ Routing Information Poison Revers Do not Advert ♥ Internet Group Ma ♥ IGMP Fast Lea IGMP Multicas Domain Routing (on Protocol (RIP) se ise Direct Connected inagement Protocol () ive t to Unicast add route entry accordin	Routes IGMP) Ig to interface from whic	h DNS record is recei	ved)		
	1 OK	Apply	X Cancel	Basis		



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15.24 IGMP Configuration

If you click **Advanced** in the top navigation menu and then select the **IGMP Configuration** link, the following screen appears. This screen allows you to configure IGMP LAN Proxy configuration settings in your Router.

The Router supports IGMP multicasting, which allows hosts connected to a network to be updated whenever an important change occurs in the network. A multicast is simply a message that is sent simultaneously to a predefined group of recipients. Each member of the multicast group will receive all messages addressed to the group.

IGMP proxy enables multicast packets to be routed according to the IGMP requests of local network devices requesting to join multicast groups. To enable IGMP Proxy, click the adjacent check box, a check mark will appear in the box. Next, enter the appropriate values in the fields provided and click **Apply** to save the settings.

Internet Group Management Pr	otocol (IG	MP) Configur	ation Page	
IGMP LAN Proxy Configuration				
IGMP Proxy Enable:	Enabled			
IGMP Query Version:	IGMPv3 💌			
IGMP Fast Leave:	IGMP Fa	st Leave		
Robustness Variable:	2			
Query Interval:	5			
Query Response Interval:	4			
Last Member Query Count:	2			
Last Member Query Interval:	1			
Client Unsolicited Report Interval:	10			
Startup Query Count:	2			
Startup Query Interval:	2			
Snooping Fast Leave:	Enabled			
Snooping Robustness:	2			
Snooping Query Timeout:	10			
Filter Membership Messages				
Interface Ethernet F	Port	Host IP	Action	
New Membership Filter				
Multicast Group Filtering				
Multicast Group Ra	inge		Action	
239.0.0.0 - 239.255.255.255			<u> </u>	
New Multicast Range				
✓ ок	Apply	← Close		

15.24.1 New Membership Filter

If you clicked the New Membership Filter link in the preceding screen, the following screen appears.

	IGMP Membership Filt	tering	
Interface: Ethernet Port: Host IP:	Any V 0 .0	et 💌	
Multicast Address Filte	r List		
	Multicast Address	Action	
New Multicast Address	✓ OK I Apply	€ Close	



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Select the desired settings for the membership filter you want to create. Then click Apply to save the settings.

Interface:	LAN Ethemet 🐱	
Ethernet Port: Host IP:	Uireless LAN MOCA	
Multicast Address Filter List		
Multicast Addres	s	Action
New Multicast Address		

15.24.2 New Multicast Address

If you clicked the **New Multicast Address** link in the preceding screen, the following screen appears. Enter multicast address and then click **Apply**. If desired, repeat this process to enter additional multicast addresses. After you have finished entering addresses, click **Close** to return to the IGMP Membership Filtering screen.

	Multicast Filter Address
Multicast Address:	0.0.0.0 ✓ OK Apply Close

The addresses will be displayed in the list of Multicast Addresses.

IGM	IP Membership Filtering
Interface:	LAN Ethernet 🔽
Ethernet Port:	Any 🔽
Host IP:	0.0.0.0
Multicast Address Filter List	/
Multicast	Address Action
192.168.1.6	🔪 🗶
192.168.1.11	N 🗱 🕹
New Multicast Address	



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15.25 IGMP Status

If you click **Advanced** in the top navigation menu and then select the **IGMP Status** link, the following screen appears.

NOTE: If IGMP proxy is not enabled, the IGMP Proxy Status panel will be empty.

IGMP Proxy Status
IGMP Proxy Status: Not Available

15.26 PPPoE Relay

If you click **Advanced** in the top navigation menu and then select the **PPPoE Relay** link, the following screen appears. PPPoE Relay enables the Router to relay packets on PPPoE connections, while keeping its designated functionality for any additional connections.

To activate PPPoE Relay, click the check box (check mark will appear in the box). Click **Apply** to save the settings.

PPPoE Relay	
Enabled	
Cancel	



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15.27 IP Address Distribution

If you click **Advanced** in the top navigation menu and then select the **IP Address Distribution** link, the following screen appears.

Your Router's Dynamic Host Configuration Protocol (DHCP) server makes it possible to easily add computers that are configured as DHCP clients to the home network. It provides a mechanism for allocating IP addresses and delivering network configuration parameters to such hosts. The Router's default DHCP server is the LAN bridge.

A client (host) sends out a broadcast message on the LAN requesting an IP address for itself. The DHCP server then checks its list of available addresses and leases a local IP address to the host for a specific period and simultaneously designates this IP address as "taken." At this point the host is configured with an IP address for the duration of the lease.

To configure the DHCP Sever settings, click the Network (Home/Office) link, the following screen appears. Enter the desired DHCP settings in the fields provided, and then click **Apply** to save the settings.

Service			
IP Address Distrik	oution:	DHCP Server 💌	
DHCP Server			
Start IP Address:		192 . 168 . 1 . 1	
End IP Address:		192 . 168 . 1 . 254	ŧ
Subnet Mask:		255 . 255 . 255 . 0	
WINS Server:		0.0.0.0	
Lease Time in Min	utes:	1440	
Provide Host Nar	ne If Not Specified by Client		
IP Address Distrib	oution using DHCP Option (60 (Vendor Class Identifier)	
Vendor ID	IP	Range	QoS
	102 169 1 100 - 102 169 1	150	5 - Medium



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16. SYSTEM MONITORING

16.1 Router Status

If you click **System Monitoring** in the top navigation menu, the following screen appears. After you have finished viewing information about your Router, click **Close**.

Firmware Version:	1.03.00.02
Model Name:	A90-9100EM15-10
Hardware Version:	A
Serial Number:	08AK07010715
INI File Name:	096-900205-02
INI File Version:	A
Physical Connection Type:	Ethernet
Broadband Connection Type:	PPPoE
Broadband Connection Status:	Connected
Broadband IP Address:	10.16.90.12
Subnet Mask:	255.0.0.0
Broadband MAC Address:	00:18:3a:a3:0c:5b
Default Gateway:	10.16.90.1
DNE Former(s)	10.16.16.8
DNS Server(s):	10.16.16.2
Active Status(Router Has Been Active For):	15 hrs 56 mins 8 secs

Router Status				
Firmware Version	The Router's software version.			
Model Number	The Router manufacturer's model number.			
Hardware Version	The Router manufacturer's hardware version.			
Serial Number	The Router's serial number			
INI File Name	The Router's INI file name.			
INI File Version	The Router's INI file version.			
Physical Connection Type	The Interface used for the Router's broadband connection.			
Broadband Connection Type	The Protocol used for the Router's broadband connection			
Broadband Connection Status	The status (connected or disconnected) of the Router's broadband connection.			
Broadband IP Address	The Router's broadband (WAN) IP address.			
Subnet Mask	The Router's subnet address.			
Broadband MAC Address	The Router's media access controller address-hardware address of the Router.			
Default Gateway	The Router's default gateway IP address.			
DNS Server(s)	The gateway's DNS server(s) addresses.			
Active Status	The period that the Router has had an active broadband connection.			



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16.2 Advanced Status

If you click **System Monitoring** in the top navigation menu, and then click **Advanced Status** in the left submenu, the following screen appears. Click **Yes** to proceed.

Only the advanced technical user should enter this section.	
Do you want to proceed?	

The following screen displays connection information for devices connected to your Router. Click the link that you wish to review.

Advanced Status
Click on the link that you wish to review.
NOTE: Only advanced technical user should use these features.
System Log
Full Status/System wide Monitoring of Connections
Traffic Monitoring
← Close



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16.2.1 System Log

If you click the **System Log** link, the following screen appears. This screen displays the details of your system's logged events.

NOTE: Only the advanced technical user should enter this section.

At this screen, you can do any of the following:

- Click the **Refresh** button to manually update this screen to display the most current details.
- Click Advanced to go to the advanced System Log screen.
- Click **Save Log**, and then follow the instructions to save the system log to the desired location.
- Click **Clear Log** to remove all logs from the list.
- Click **Close** to return to the **Advanced Status** screen.

			System Log			
Close Clear Log Save Log Advanced >> Refresh Press the Refresh button to update the data.						
Time	Event	Event-Type	Details			
Jan 13 14:34:14 2009	WBM Login	User authentication failure	Unauthorized User "admin"			
Jan 13 10:26:55 2009	System Log	Message	DHCP LAN Connection IP:192.168.1.2, DNS:192.168.1.1, GTW:192.168.1.1, Subnet:255.255.255.0			
Jan 13 09:22:32 2009	System Log	Message	DHCP LAN Connection IP:192.168.1.3, DNS:192.168.1.1, GTW:192.168.1.1, Subnet:255.255.255.0 [repeated 2 times, last time on Jan 13 09:22:34 2009]			
Jan 12 10:26:56 2009	System Log	Message	DHCP LAN Connection IP:192.168.1.2, DNS:192.168.1.1, GTW:192.168.1.1, Subnet:252.525.255.0 [repeated 2 times, last time on Jan 12 22:26:55 2009]			
Jan 12 09:09:43 2009	System Log	Message	DHCP LAN Connection IP:192.168.1.3, DNS:192.168.1.1, GTW:192.168.1.1, Subnet:255.255.255.0 [repeated 4 times, last time on Jan 12 09:09:54 2009]			
Jan 9 22:26:55 2009	System Log	Message	DHCP LAN Connection IP:192.168.1.2, DNS:192.168.1.1, GTW:192.168.1.1, Subnet:252.552.55.0 [repeated 5 times, last time on Jan 11 22:26:55 2009]			
Jan 9 18:21:16 2009	System Log	Message	DHCP LAN Connection IP:192.168.1.4, DNS:192.168.1.1, GTW:192.168.1.1, Subnet:255.255.255.0			
Jan 9 10:26:55 2009	System Log	Message	DHCP LAN Connection IP:192.168.1.2, DNS:192.168.1.1, GTW:192.168.1.1, Subnet:255.255.255.0			
Jan 9 09:39:57 2009	System Log	Message	DHCP LAN Connection IP:192.168.1.4, DNS:192.168.1.1, GTW:192.168.1.1, Subnet:255.255.255.0			
Jan 8 22:26:55 2009	System Log	Message	DHCP LAN Connection IP:192.168.1.2, DNS:192.168.1.1, GTW:192.168.1.1, Subnet:255.255.255.0			
Dec 31 19:00:38 2002	System Log	Message	CONNECTION LOG: WAN status changed from No Internet Connection to Connected, IP address=10.16.90.12			



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16.2.2 Full Status/System Wide Monitoring of Connection

If you click the **Full Status/System Wide Monitoring of Connections** link, the following screen appears. This screen displays the details of your system's logged connections.

NOTE: Only the advanced technical user should enter this section.

At this screen, you can do any of the following:

- Click the Automatic Refresh On/Off button to turn on/off Automatic Refresh. When Automatic Refresh is On, the screen will be updated automatically to display the most current statistics.
- Click **Refresh** to manually update this screen to display the most current details.
- Click the links in this screen to access the Router's settings.
- Click **Close** to return to the **Advanced Status** screen.

		Full Statu	ıs/System wid	le Monitori	ng of Connecti	ons	
Name	Network (Home/Office)	Ethernet Switch	Broadband Connection (Ethernet)	Coax	Broadband Connection (Coax)	Wireless 802.11g Access Point	WAN PPPoE
Status	Connected	1 Ports Connected	Connected	Down	Down	Connected	Connected
Network	Network (Home/Office)	Network (Home/Office)	WAN	Network (Home/Office)	WAN	Network (Home/Office)	WAN
Underlying Device	Ethernet Switch Coax Wireless 802.11g Access Point						Broadband Connection (Ethernet)
Connection Type	Bridge	Hardware Ethernet Switch	Ethernet	Multimedia over Coax (MOCA)	Multimedia over Coax (MOCA)	Wireless 802.11g Access Point	PPPoE
MAC Address	00:18:3a:a3:0c:5a	a00:18:3a:a3:0c:5a	00:18:3a:a3:0c:5b	0	00:18:3a:a3:0c:5b	00:21:63:22:19:de	•
IP Address	192.168.1.1						10.16.90.12
Subnet Mask	255.255.255.0						
Default Gateway							10.16.90.1
DNS Server							10.16.16.8 10.16.16.2
IP Address Distribution	DHCP Server	Disabled	Disabled			Disabled	
Service Name							
User Name							verizonfios
Received Packets	75688	98888	191688	0	0	9240	0
Sent Packets	338611	298050	160320	0	0	41459	0
	124:23:11	124:23:11	124:22:47			124:23:03	124:22:35



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16.2.3 Traffic Monitoring

If you click the **Traffic Monitoring** link, the following screen appears. This screen displays the details of your system's logged traffic.

NOTE: Only the advanced technical user should enter this section.

At this screen, you can do any of the following:

- Click the Automatic Refresh On/Off button to turn on/off Automatic Refresh. When Automatic Refresh is On, the screen will be updated automatically to display the most current statistics.
- Click **Refresh** to manually update this screen to display the most current details.
- Click the links in this screen to access the Router's settings.
- Click Close to return to the Advanced Status screen.

Name	Network (Home/Office)	Ethernet Switch	Broadband Connection (Ethernet)	Coax	Broadband Connection (Coax)	Wireless 802.11g Access Point	WAN PPPoE
Status	Connected	1 Ports Connected	Connected	Down	Down	Connected	Connected
Network	Network (Home/Office)	Network (Home/Office)	WAN	Network (Home/Office)	WAN	Network (Home/Office)	WAN
Underlying Device	Ethernet Switch Coax Wireless 802.11g Access Point						Broadband Connection (Ethernet)
Connection Type	Bridge	Hardware Ethernet Switch	Ethernet	Multimedia over Coax (MOCA)	Multimedia over Coax (MOCA)	Wireless 802.11g Access Point	PPPoE
IP Address	192.168.1.1						10.16.90.12
Received Packets	75753	98970	191897	0	0	9255	0
Sent Packets	338867	298291	160540	0	0	41484	0
Received Bytes	22189273	18032559	20090307	0	0	1202580	0
Sent Bytes	20049358	33704739	35426513	0	0	11582549	0
Receive Errors	0	0	0	0	0	0	0
Receive Drops	0	0	2	0	0	0	0
Time Span	124:30:02	124:30:02	124:29:38			124:29:54	124:29:26



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17. TECHNICAL SUPPORT INFORMATION

Contact your Internet service provider for technical support.

18. PRODUCT SPECIFICATIONS

System Requirements for 10/100 Base-T/Ethernet

- Pentium[®] or equivalent class machines or higher
- Microsoft Windows (Vista, XP, 2000, ME, NT 4.0, 98 SE) Macintosh® OS X, or Linux installed
- 64 MB RAM (128 MB recommended)
- 10 MB of free hard drive space
- 10/100 Base-T Network Interface Card (NIC)
- Internet Explorer 5.5 or higher or Netscape Navigator 7.x or higher
- Computer Operating System CD-ROM

System Requirements for Wireless

- Pentium® or equivalent class machines or higher
- Microsoft Windows (Vista, XP, 2000, ME, 98 SE) installed
- 64 MB RAM (128 MB recommended)
- 10 MB of free hard drive space
- Internet Explorer 5.5 or higher or Netscape Navigator 7.x or higher
- Computer operating system CD-ROM
- IEEE 802.11b/g PC adapter

System Requirements for Coax

- Pentium[®] or equivalent class machines or higher
- Microsoft Windows (Vista, XP, 2000, ME, 98 SE) installed
- 64 MB RAM (128 MB recommended)
- 10 MB of free hard drive space
- Internet Explorer 5.5 or later or
- Netscape Navigator 7.x or higher or
- Firefox 1.0.7 or later
- Computer operating system CD-ROM

LEDs

- Power
- WAN Coax
- WAN Ethernet
- Internet
- Wi-Fi Protected Setup
- USB
- LAN Ethernet 1 through 4
- LAN Coax
- Wireless

Connectors

- COAX
- USB
- Ethernet: Four 8-pin RJ-45 modular jacks
- WAN: 8-pin RJ-45 modular jack
- Power: Barrel connector

Power

• Power Supply: 120 VAC to 12 VDC wallmount power supply

Dimensions

- Height: 1.7 in. (4.3 cm)
- Width: 9.0 in. (22.9 cm)
- Depth: 5.75 in. (14.6 cm)

Weight

• Approx. 1.25 lb (0.57 kg)

Environmental

- Relative Humidity: 5 to 95%, non-condensing
- Storage Temperature: -20 °C to 85 °C (-4 °F to 185 °F)
- Ambient Temperature: 23 °C (73 °F)

EMC/Safety/Regulatory Certifications

- FCC Part 15, Class B
- FCC Part 68
- ANSI/UL Standard 60950-1
- CAN/CSA C22.2 No. 60950-1



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20. PUBLICATION INFORMATION

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