

# EdgeWater Routers User Guide

**For use with 8x8 Service**

**May 2012**



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8x8 offers two Edgewater routers that integrate with 8x8 Virtual Office service:

- EdgeMarc 250w router for the home office to small business environment
- EdgeMarc 4550 routers for small to medium businesses

To get started with your router setup, you should initially refer to the appropriate Edgewater product documentation:

- [EdgeMarc 250w Quick Start Guide](#)
- [EdgeMarc 250w Hardware Installation Guide](#)
- [EdgeMarc 4550 Quick Start Guide](#)
- [EdgeMarc 4550 Hardware Installation Guide](#)
- [EdgeMarc Voice Operating System \(VOS\) Manual](#)

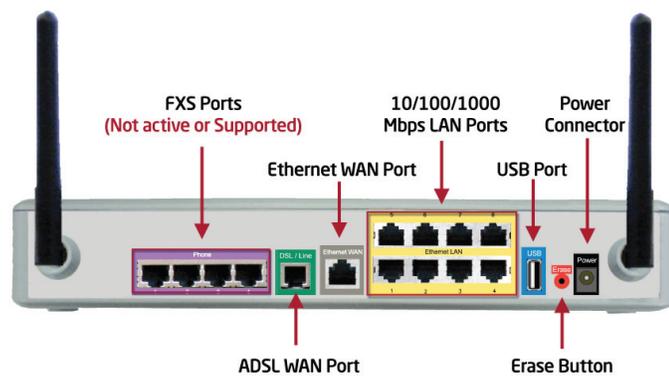
## EdgeMarc 250w Router Overview



The 250w is recommended for 5-25 users with minimal VPN requirements.

- Up to 10 heavy users (for example, call center workers or heavy data users, such as those using video/image intensive applications)
- Up to 25 normal users (for example, 10 concurrent calls, with each user having occasional video/image high data rate use)
- Supports modest VPN requirements – up to 3 Mbps VPN traffic and up to two concurrent VPN tunnels

The 250w is a good choice where location growth above 25 normal users is not planned.



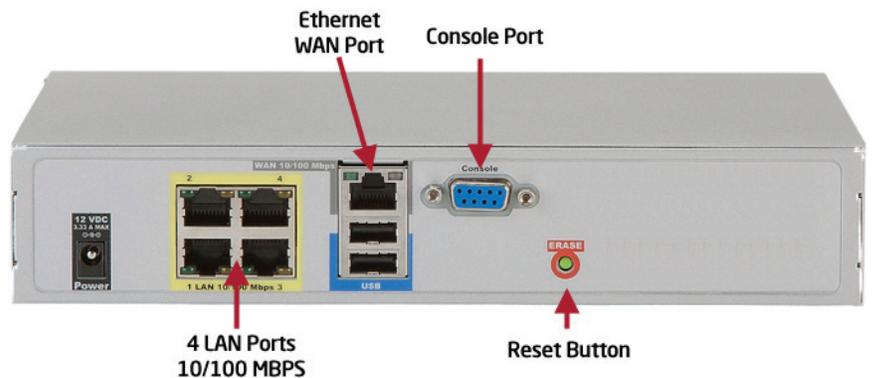
The EdgeMarc 250w router is a flexible, application-ready network services gateway that can be deployed as a low-cost WAN access router and includes applications such as hosted VoIP and video over IP. The 250w is an all-in-one box for DSL modem, router, Ethernet switch, VLANs, firewall, and VoIP – with a single management interface. Quality of Service capability includes packet prioritization and data traffic shaping for VoIP calls. The 250w includes one Ethernet WAN and one ADSL WAN as an interface to your broadband service and eight LAN interfaces to connect your office network to the Internet.

## EdgeMarc 4550-15 Router Overview



The 4550-15 is recommended for 10-100 users.

- Up to 30 heavy users (for example, call center workers or heavy data users, such as those using video/image intensive applications)
- Up to 100 normal users (30 concurrent calls, with each user having occasional video/image high data rate use)
- Supports heavy VPN requirements – up to 75 Mbps VPN Traffic and up to 22 concurrent VPN tunnels)
- Good for smaller businesses that plan to grow to these levels



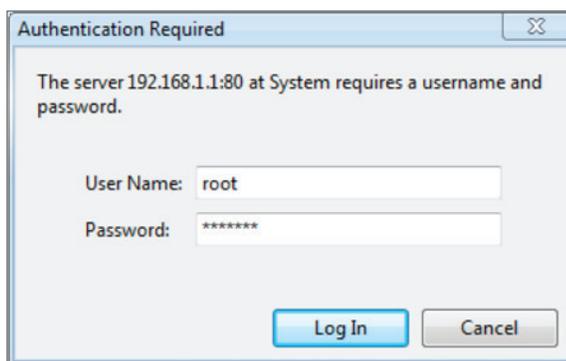
The EdgeMarc 4550 router is a flexible, application-ready network services gateway that can be deployed as a low-cost WAN access router and includes applications such as hosted VoIP and video over IP. The 4550 is an all-in-one box for DSL router, Ethernet switch, VLANs, firewall, and VoIP – with a single management interface. Quality of Service capability includes packet prioritization and data traffic shaping for VoIP calls. The 4550 also includes one Ethernet WAN as an interface to your broadband service and four LAN interfaces to connect your office network to the Internet.

Refer to **Appendix on page 19** for EdgeMarc 200AE1 Router.

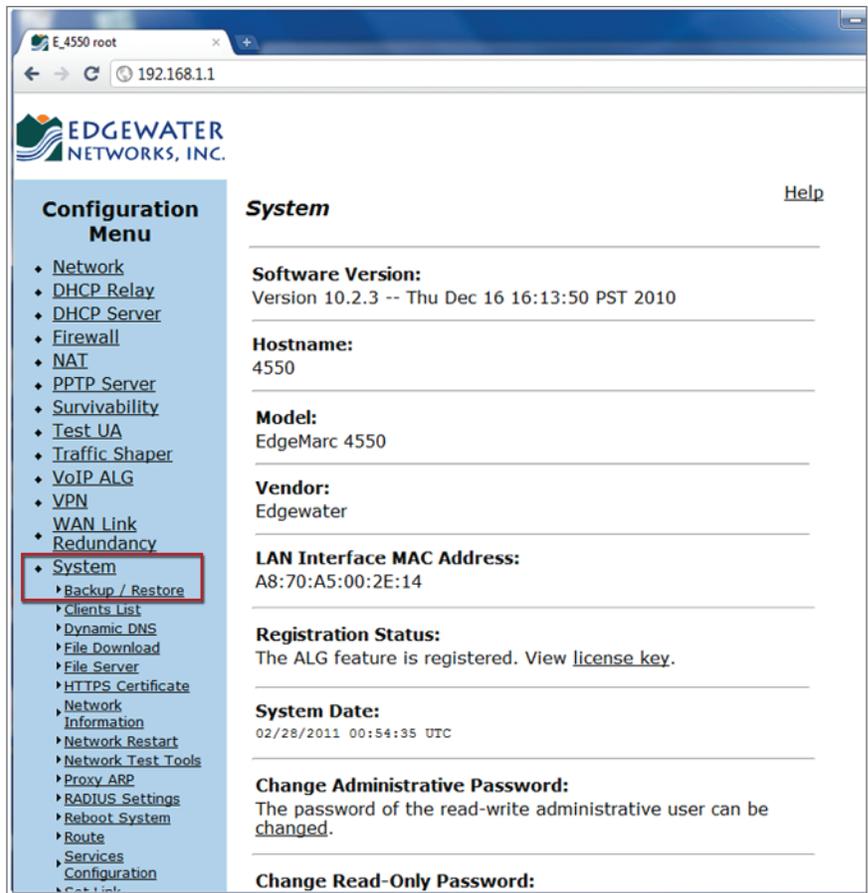
## Basic Setup of the 250w, 200AE1 and 4550

### (Router Access via Web Browser)

1. Connect your PC or Laptop to **LAN port 1** on the 250w or 4550 router or to LAN port 4 on the 200AE1 router.
2. Connect your router WAN port to an Internet connection.
3. Power up your router.
4. Open a browser and point it to <http://192.168.1.1> The following screen appears:



5. Type **root** in the User Name field and **default** in the Password field and click on **Log In**. The system screen appears.



6. Be sure that you have software version 10.2.3 or later pre-installed on the 4450 Router or the 200AE1 Router. You can also have version 11.6.6 pre-installed on the 250w Router. If these software version have not been pre-installed, contact 8x8 support to upgrade the firmware.

**Note:** Your router should also arrive pre-configured for 8x8 service. If for any reason you need to restore the router to the 8x8 default configuration, you can restore it using the procedure described in [Restoring the Router to 8x8 Default QoS Settings Configuration on page 16](#).

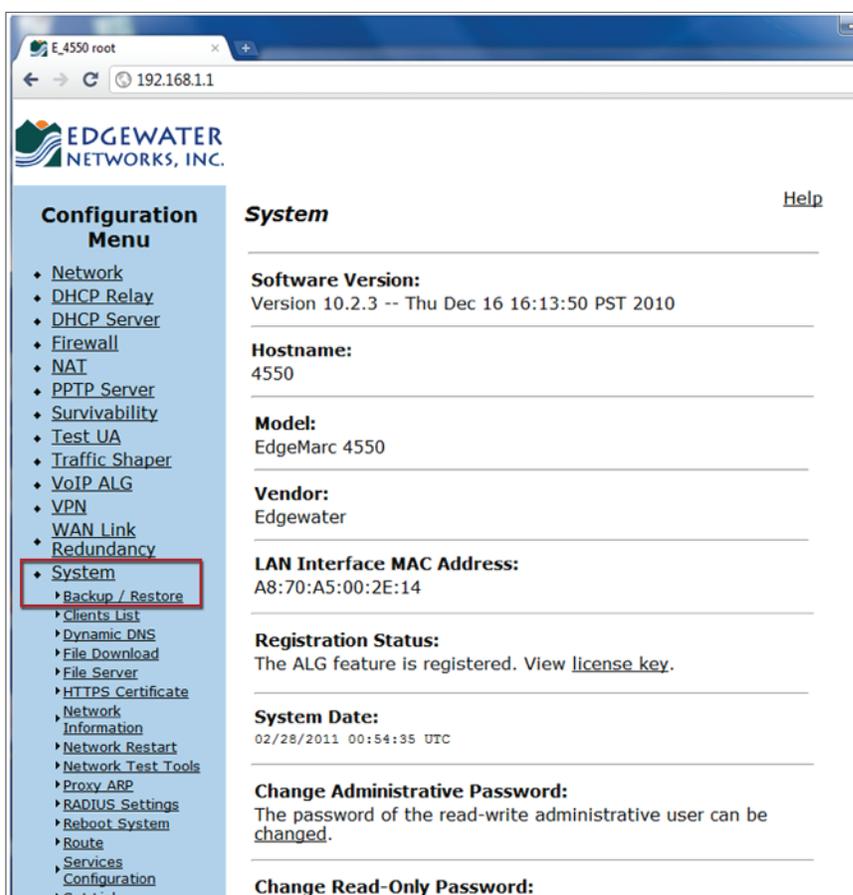
As you customize the configuration of your router, for example to configure your router to connect to your Internet service, you should routinely back up your configuration and save that configuration to a separate location. These procedures are described in [Backing Up and Restoring Your Configuration on page 7](#).

## Backing Up and Restoring Your Configuration

When you make further changes to your EdgeMarc router (for example, entering the Network settings to access the Internet via your Internet Service Provider, configuring traffic shaping settings for your Internet connection speed, changing the firewall settings or setting up VPNs), you will want to create a backup of your configuration so that you can restore it in the event of a failure.

### To back up your current configuration

1. Log in to the EdgeMarc router.



2. Under **System** in the left column, click **Backup/Restore**.  
The Backup/Restore screen appears:

**EDGEWATER NETWORKS, INC.**

**Configuration Menu**

- ◆ [Network](#)
- ◆ [DHCP Relay](#)
- ◆ [DHCP Server](#)
- ◆ [Firewall](#)
- ◆ [NAT](#)
- ◆ [PPTP Server](#)
- ◆ [Survivability](#)
- ◆ [Test UA](#)
- ◆ [Traffic Shaper](#)
- ◆ [VoIP ALG](#)
- ◆ [VPN](#)
- ◆ [WAN Link](#)
- ◆ [Redundancy](#)
- ◆ [System](#)
  - ▶ [Backup / Restore](#)
  - ▶ [Clients List](#)
  - ▶ [Dynamic DNS](#)

**Backup / Restore Configuration**

Backup or Restore configuration.

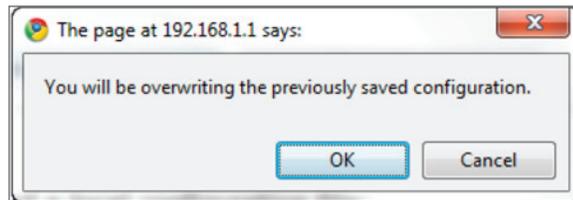
System Saved Configuration		
	Backup File	Date
Backup	<a href="#">upload-8x8 QoS config 4550.conf1</a>	Mon Feb 2

Upload a local configuration file:

No file chosen

3. Click **Create New Config Backup**.

**Note:** This will overwrite your current backup.



- Click **OK**.  
The new backup file is created.

**EDGEWATER NETWORKS, INC.**

**Configuration Menu**

- Network
- DHCP Relay
- DHCP Server
- Firewall
- NAT
- PPTP Server
- Survivability
- Test UA
- Traffic Shaper
- VoIP ALG
- VPN
- WAN Link
- Redundancy
- System
  - Backup / Restore
  - Clients List
  - Dynamic DNS

**Backup / Restore Configuration**

Backup Complete.

System Saved Configuration		
	Backup File	
Backup	backup-4550-10_2_3-02-28-11-01:11:49.conf1	Mon 2011

Create New Config Backup Restore Saved Configuration...

Upload a local configuration file:

Choose File No file chosen Upload File

### To save a local copy of your configuration

On the **Backup/Restore Configuration** page, click on the name of the backup configuration file.

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**Configuration Menu**

- Network
- DHCP Relay
- DHCP Server
- Firewall
- NAT
- PPTP Server
- Survivability
- Test UA
- Traffic Shaper
- VoIP ALG
- VPN
- WAN Link
- Redundancy
- System
  - Backup / Restore
  - Clients List
  - Dynamic DNS

**Backup / Restore Configuration**

Backup Complete.

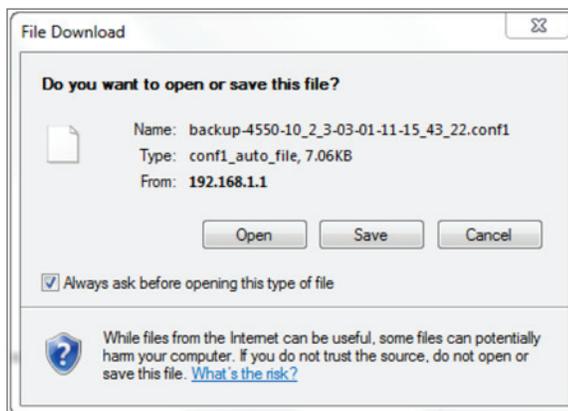
System Saved Configuration		
	Backup File	
Backup	backup-4550-10_2_3-02-28-11-01:11:49.conf1	Mon 2011

Create New Config Backup Restore Saved Configuration...

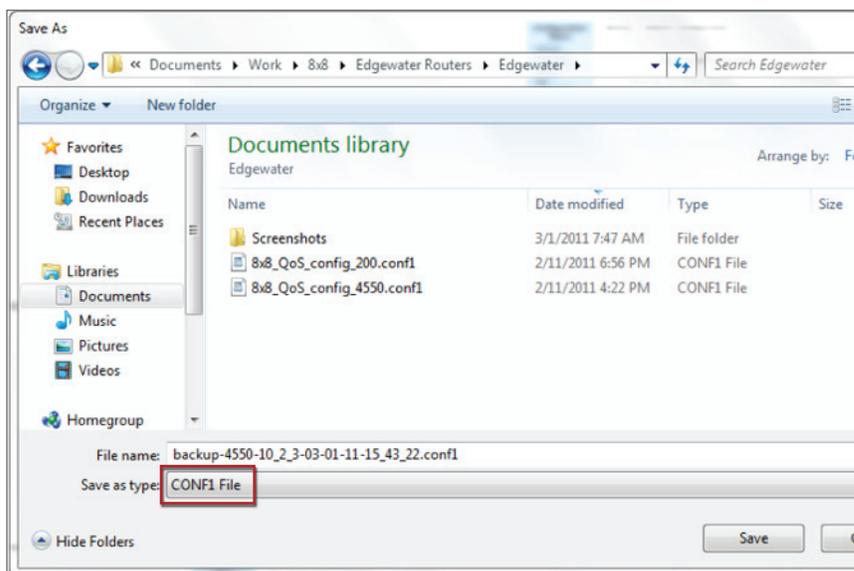
Upload a local configuration file:

Choose File No file chosen Upload File

1. The **File Download** screen opens, asking whether you want to save the file.



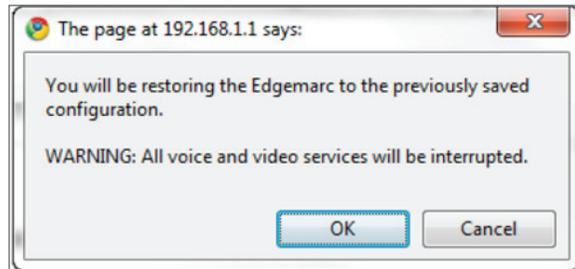
2. Click **Save**.  
The Save As dialog opens.



3. Select the location to save the file and type the filename that you want the configuration file to have. Be sure the filename has an extension of **.conf1**.
4. Click **Save**.

## To restore your EdgeMarc router to a saved configuration

1. On the **Backup/Restore Configuration** page, verify that the current backup is the configuration you want to restore to.
2. If you want to restore to another saved configuration, upload a local configuration file by clicking **Browse**, selecting the desired configuration file, then clicking **Upload File**.
3. Click **Restore Saved Configuration**.



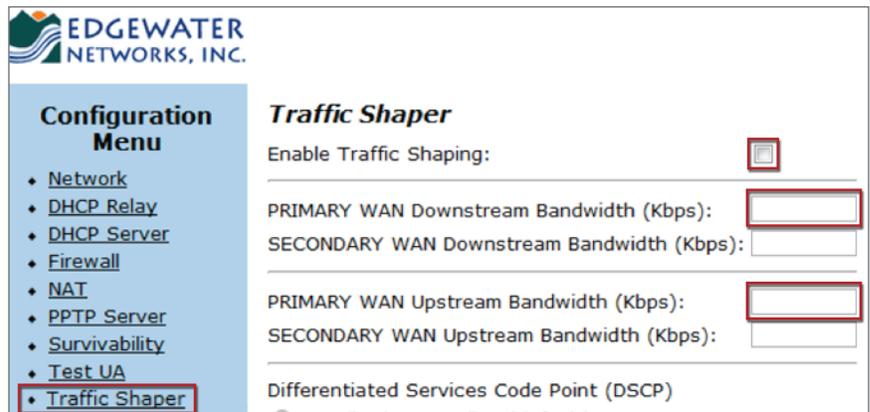
This will restore your EdgeMarc to your currently saved backup file.

## Configuration Settings Specific for 8x8 Virtual Office Service

The 8x8 default configuration provides the basic settings you need to get your EdgeMarc router up and running with Virtual Office. You can of course make further modifications to the router configuration to meet your specific business needs. However, there are a few configuration settings that can affect the Virtual Office service:

To configure the **Traffic Shaper**:

1. Check the **Enable Traffic Shaping** checkbox
2. Use the link <http://www.8x8.com/Resources/Tools/VoIPTest.aspx> and enter the average of a few readings for your **WAN Downstream** and **WAN Upstream** bandwidth. These values **MUST** be entered for the Traffic Shaping part of the QoS to function. This is important for voice quality.



**WARNING:** Do NOT make any changes to the **Advanced Traffic Shaper** configuration. These settings are pre-defined in the default 8x8 configuration.

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**Advanced Traffic Shaping** [Help](#)

Classes of Service **Classification Rules**

**Classification Rules**

Select: All None Action: [Delete](#)

	Direction	IP Address	Source Port	Destination Port	Protocol	DSCP
<input type="checkbox"/>	N/A	0.0.0.0	any	5199	udp	EF
<input type="checkbox"/>	N/A	0.0.0.0	5199	any	udp	EF
<input type="checkbox"/>	N/A	0.0.0.0	any	3479	udp	EF
<input type="checkbox"/>	N/A	0.0.0.0	3479	any	udp	EF
<input type="checkbox"/>	N/A	0.0.0.0	any	15044	udp	EF
<input type="checkbox"/>	N/A	0.0.0.0	15044	any	udp	EF
<input type="checkbox"/>	N/A	0.0.0.0	2222-2269	any	udp	EF
<input type="checkbox"/>	N/A	0.0.0.0	any	2222-2269	udp	EF
<input type="checkbox"/>	N/A	0.0.0.0	16384-16404	any	udp	EF
<input type="checkbox"/>	N/A	0.0.0.0	any	16384-16404	udp	EF

List of prioritized Traffic

**WARNING:** Do NOT configure **VoIP ALG** (Application Layer Gateway) settings. These are not recommended, supported, or required.

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**VoIP ALG** [Help](#)

ALG allows the system to recognize and register network devices.

Enable LLDP:

LLDP Broadcast Interval (sec):

TFTP Server IP address:

In some cases, the ALG addresses will not correspond to the addresses of the LAN or the WAN ports (e.g. when Stateful Failover is enabled). The addresses will be alias addresses that have been configured on the ports. In general, the user should leave this feature disabled.

Use ALG Alias IP Addresses:

ALG LAN Interface IP Address: 192.168.1.1

ALG WAN Interface IP Address: 192.168.1.69

## Standard Configuration Settings

This section describes standard configuration settings available on your router. These settings will manage your connection to the Internet (provided by your Internet Service Provider). Your ISP will provide your settings for connecting to the Internet. For detailed treatment of all the settings and advanced settings available, refer to the [EdgeMarc Voice Operating System \(VOS\) Manual on page 3](#).

### Network

Use this page to configure the LAN interface, the WAN interface (including interface type), the default gateway, and DNS settings.

**EDGEWATER NETWORKS, INC.**

**Configuration Menu**

- Network
- Basic Configuration
- Subinterfaces
- VLAN Configuration
- DHCP Relay
- DHCP Server
- Firewall
- NAT
- Survivability
- SIP UA
- SIP GW
- Test UA
- Traffic Shaper
- VoIP ALG
- VPN
- WAN Link
- Redundancy
- System
  - Clients List
  - Dynamic DNS
  - File Download
  - File Server
  - HTTPS Certificate
  - Network Information
  - Network Restart
  - Network Test Tools
  - Proxy ARP
  - RADIUS Settings
  - Reboot System
  - Route
  - Services Configuration
  - Set Link
  - System Information
  - System Time
  - TACACS Settings
  - Upgrade Firmware
  - User Commands

**Network** [Help](#)

Networking configuration information for the public and private networks.

**LAN Interface Settings:**

IP Address: 192.168.1.1 [Configure LAN Info here](#)

Subnet Mask: 255.255.255.0

Enable VLAN support:

**WAN Interface Settings:**

ADSL

Ethernet-PPPoE

Ethernet-DHCP [Configure WAN Info here](#)

Ethernet-Static IP

IP Address: 12.48.202.180

Subnet Mask: 255.255.255.0

**Network Settings:**

Default Gateway: 12.48.202.1 [Configure default GW on WAN](#)

Note: In case of dynamic links, this DNS server address will override the DNS server address obtained from the Servers. Default value for dynamic links is obtained from the server, if left blank.

Primary DNS Server: 4.2.2 [Configure DNS here](#)

Secondary DNS Server: 68.94.157.1

**Primary WAN Redundancy Settings:**

Enable Ping based status detection:

Ping Host:

Note: If the Ping host is left blank, the default gateway for the interface will be pinged.

[To configure Secondary Interface click here](#)

## DHCP Server

Use this page to define the DHCP server on the router. If you change the LAN subnet on the router, you must come here to configure new IP address ranges so that the router can serve out IP addresses in the new LAN block.

**EDGEWATER NETWORKS, INC.**

**Configuration Menu**

- Network
- DHCP Relay
- **DHCP Server**
  - DHCP Leases
- Firewall
- NAT
- Survivability
- SIP UA
- SIP GW
- Test UA
- Traffic Shaper
- VoIP ALG
- VPN
- WAN Link
- Redundancy
- System
  - Clients List
  - Dynamic DNS
  - File Download
  - File Server
  - HTTPS Certificate
  - Network Information
  - Network Restart
  - Network Test Tools
  - Proxy ARP
  - RADIUS Settings
  - Reboot System
  - Route
  - Services Configuration
  - Set Link

**DHCP Server** [Help](#)

DHCP IP Address Ranges		
Start Address	End Address	Action
192.168.1.150	192.168.1.199	
192.168.1.2	192.168.1.2	<b>Add</b>

Enable DHCP Server:

Subnet Mask: 255.255.255.0  
Lease Duration (Days): 7  
Time Offset, +/- hours (option 2):  
NTP Server Address (option 42):  
WINS Address (option 44):  
TFTP/FTP Server Name (option 66): 0.0.0.0  
Boot File Name (option 67):  
VLAN ID Discovery (option 129):  
Option 150: 192.168.1.1  
Option 159:  
Option 160:

From [Network](#) page:  
Primary DNS: 4.2.2.2  
Secondary DNS: 68.94.157.1  
Default Gateway: 192.168.1.1

**Submit** **Reset**

## Firewall

On the **Firewall** page, enable HTTP and SSH access through the firewall to allow remote management of the router.

**EDGEWATER NETWORKS, INC.**

**Configuration Menu**

- [Network](#)
- [DHCP Relay](#)
- [DHCP Server](#)
- **Firewall**
  - ▶ [MOTD](#)
  - ▶ [Pass-Through Rules](#)
  - ▶ [Trusted Hosts](#)
- [NAT](#)
- [Survivability](#)
- [SIP UA](#)
- [SIP GW](#)
- [Test UA](#)
- [Traffic Shaper](#)
- [VoIP ALG](#)
- [VPN](#)
- [WAN Link](#)
- [Redundancy](#)
- [System](#)
  - ▶ [Clients List](#)
  - ▶ [Dynamic DNS](#)
  - ▶ [File Download](#)
  - ▶ [File Server](#)
  - ▶ [HTTPS Certificate](#)
  - ▶ [Network Information](#)

**Firewall**

Enable Firewall for WAN:

---

**Basic WAN Firewall Settings:**  
These settings apply to services that are running on the System.

Allow HTTP access through firewall:

Allow HTTPS access through firewall:

Allow TELNET access through firewall:

Allow SSH access through firewall:

Allow SNMP access through firewall:

Enable Firewall Logging:

---

**Forwarding WAN Firewall Settings:**  
These settings apply to packets being forwarded to systems running behind firewall. They do not apply to the PPTP server running on the system. Enabling PPTP server pass-through and the PPTP server on this system can cause intermittent behavior on both server. It is recommended that only one server be enabled.

Enable PPTP Server Pass-through:

PPTP Server IP Address:

---

## Restoring the Router to 8x8 Default QoS Settings Configuration

**Note:** If your router does not have the 8x8 default configuration pre-installed or if you need to reinstall it because the settings have been damaged, download the file for the appropriate router at:

<http://www.8x8.com/support/BusinessSupport/Downloads.aspx>.

There will be two files to download for your router model, one is optimized for networks that have 2-way live voice plus data traffic. The other file is optimized for networks that have both 2-way live voice and 2-way live video. (Either file works fine with 1-way or streaming video).

You may keep these file on hand along with your own router settings and configuration backups in case you need to restore your EdgeMarc router to the default configuration. Restoring the router to the 8x8 default configuration will overwrite your current custom configuration; so be sure to make backups of your good working configurations along the way.

1. Under **System** in the left column, click **Backup/Restore**.

**EDGEWATER NETWORKS, INC.**

**Configuration Menu**

- ◆ Network
- ◆ DHCP Relay
- ◆ DHCP Server
- ◆ Firewall
- ◆ NAT
- ◆ PPTP Server
- ◆ Survivability
- ◆ Test UA
- ◆ Traffic Shaper
- ◆ VoIP ALG
- ◆ VPN
- ◆ WAN Link
- ◆ Redundancy
- ◆ **System**
  - ▶ Backup / Restore
  - ▶ Clients List
  - ▶ Dynamic DNS

**Backup / Restore Configuration**

Backup or Restore configuration.

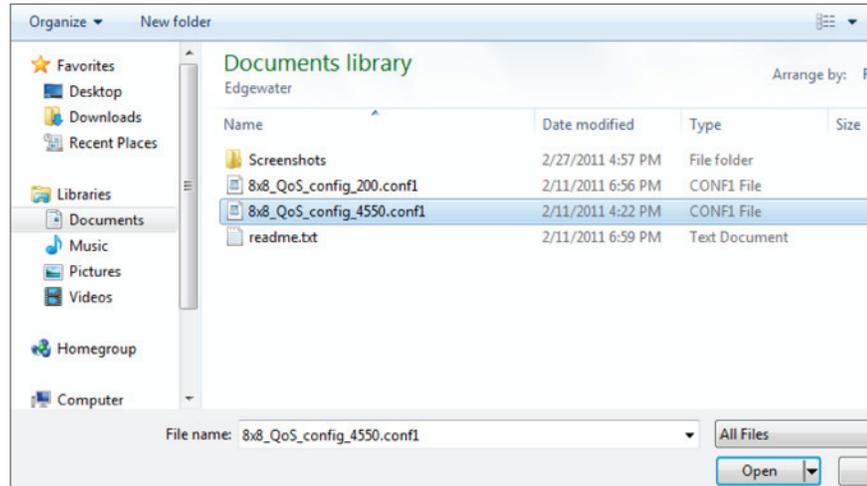
System Saved Configuration		
	Backup File	Date Created
Backup		Mon Feb 28 00:56:53 2011

Upload a local configuration file:

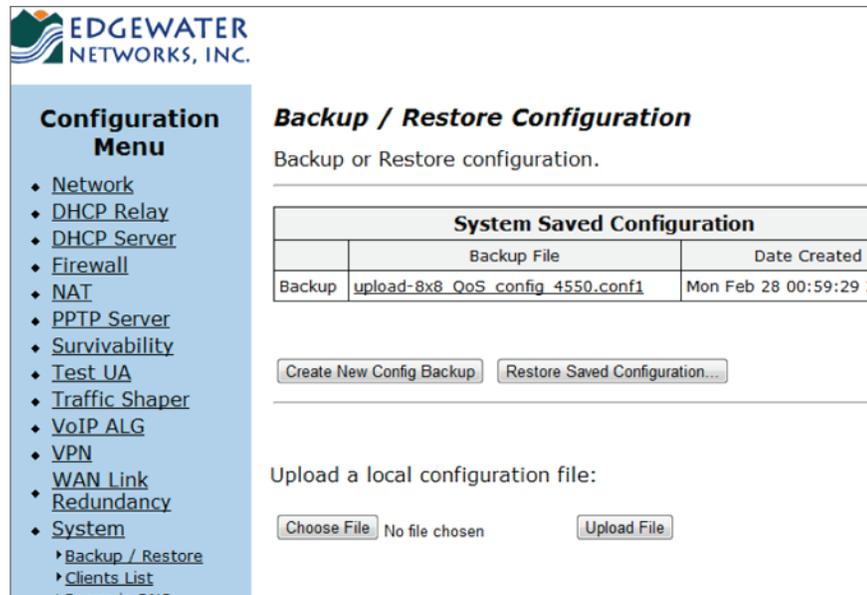
No file chosen

The **Backup/Restore** screen appears:

2. Click **Choose File** to upload the appropriate 8x8 default configuration file.
3. Select the appropriate 8x8 default configuration file for your model of router and click **Open**.



4. Click Upload File.



The 8x8 default configuration file appears as the backup file.

5. Click Restore Saved Configuration.

**EDGEWATER NETWORKS, INC.**

**Configuration Menu**

- ◆ Network
- ◆ DHCP Relay
- ◆ DHCP Server
- ◆ Firewall
- ◆ NAT
- ◆ PPTP Server
- ◆ Survivability
- ◆ Test UA
- ◆ Traffic Shaper
- ◆ VoIP ALG
- ◆ VPN
- ◆ WAN Link
- ◆ Redundancy
- ◆ System
  - Backup / Restore
  - Clients List
  - System DNS

**Backup / Restore Configuration**

Restore Complete.

System Saved Configuration		
	Backup File	Date Created
Backup	upload-8x8_QoS_config_4550.conf1	Mon Feb 28 00:59:29

Upload a local configuration file:

No file chosen

6. The 8x8 default configuration is now loaded on your EdgeMarc router.

## Appendix

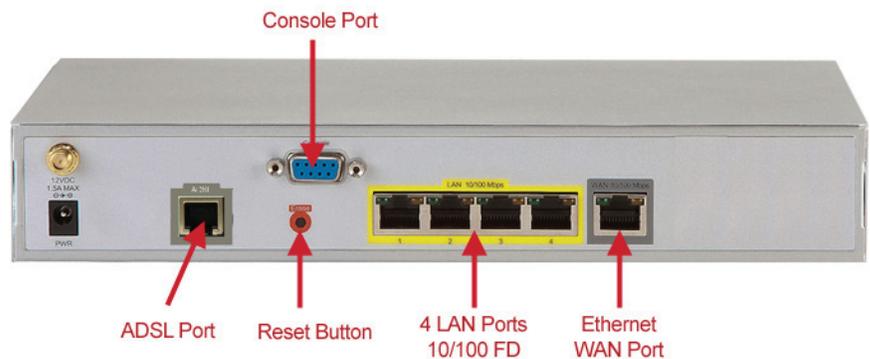
### EdgeMarc 200AE1-10 Router Overview



The 200AE1-10 is recommended for 5-25 users with minimal VPN requirements.

- Up to 10 heavy users (for example, call center workers or heavy data users, such as those using video/image intensive applications)
- Up to 25 normal users (for example, 10 concurrent calls, with each user having occasional video/image high data rate use)
- Supports modest VPN requirements – up to 3 Mbps VPN traffic and up to two concurrent VPN tunnels

The 200AE1 is a good choice where significant location growth is not planned.



The EdgeMarc 200AE1 router is a flexible, application-ready network services gateway that can be deployed as a low-cost WAN access router and includes applications such as hosted VoIP and video over IP. The 200AE1 is an all-in-one box for DSL router, Ethernet switch, VLANs, firewall, and VoIP – with a single management interface. Quality of Service capability includes packet prioritization and data traffic shaping for VoIP calls. The 200AE1 also includes one Ethernet WAN or one ADSL WAN as an interface to your broadband service and four LAN interfaces to connect your office network to the Internet.