RedPort

GMN
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NETWORKS


# RedPort Optimizer Enterprise

## Advanced User Guide for Installers/Network Administrators

### RedPort Router: wXa-524 (Optimizer Enterprise)

RedPort™

## Revision History

| Date | Version | Point of Contact |
|---|---|---|
| Nov 9, 2018 | Draft Version (v1.0) | Aaron Dickson |

Contents

# 1. About this Guide

This guide is intended for installers and network administrators of the RedPort Optimizer Enterprise wXa-524 routers. It features only those sections of the user interface that require configuration for a specific service or may need to be accessed to perform a specific function.

During normal daily operation, there is no need to access the full user interface that you see here. A separate document is designed for use by the onsite administrator that includes the login to the Home Page for access to the common tasks that will be used locally: generate PIN-Codes, create users, and look at call data records for the Captive Portal, create and manage crew email accounts, etc. See the Optimizer Enterprise Onsite Administrator Guide for details.

For information regarding the installation of the hardware, please see the RedPort Optimizer Enterprise Quickstart Guide.

**wXa refers to the webXaccelerator by RedPort, a trademark of Global Marine Networks, LLC.**

# 2. Introduction to the Optimizer Enterprise

Global Marine Networks (GMN), the leaders in advancing satellite data speeds and services, helps Fixed and Mobile Satellite Services providers and their customers by offering the industry's fastest, most reliable and easy-to-use email, web, VoIP and other hardware and software services to maritime, oil and gas, first responder and business continuity users. The company's products include XGate high-speed satellite email, weather and oceanographic data software, and vessel tracking systems.

Ship to shore network management solutions are sold by GMN under the RedPort Global brand name at redportglobal.com and as white-label solutions for the world's Enterprise satellite data service providers.

Optimizer Enterprise is a VoIP gateway and data router that provides an all-in-one solution for those looking to get the most out of all available data connections including long-range cellular and satellite broadband services.

## 2.1. Key Features

- Configurable to automatically select among available data connections to choose the lower-cost or preferred available service. Full-featured load balancing and least-cost routing.
- VoIP to circuit-switch conversion allows calls using a smartphone over the satellite connection. Some SatCom systems may require additional hardware.
- Compatible with RedPort VoIP service for voice call savings and controlled use.
- Flexible Routing to manage even the most complex network.
- Proxy Server enables HTTP filtering: whitelist/blacklist of URLs, domains, and rudimentary content filtering.
- Powerful firewall accommodates virtually any installation scenario, with advanced features including block or allow any range of port, IP address and protocols; port forwarding, network address translation and detailed whitelisting and blacklisting of websites and services.
- LTE/GSM Compatibility with optional LTE/GSM modem (and your own SIM card) and optional LTE/GSM external antenna and/or amplification.
- Remote Router Access available to manage the network from any Internet connection
- Supports Shared Web Compression with transparent proxy service.
- Captive Portal included for locally controlled access by crew and passenger.
- Supports RedPort XGate Email Service via included full POP/SMTP RedPort Mail Server for easy local email access.
- Supports GPS Tracking.
- Multi-Interface Failover and Load Balancing support.
- GPS NMEA Repeater reads the built-in GPS in any satellite broadband terminal and rebroadcasts via WiFi for access by an NMEA compliant device.
- Broadcasts data connection for use with WiFi enabled devices.
- Compatible with virtually any IP-based satellite broadband terminal.

## 2.2. Services Included

The following services are included:

- **Captive Portal for Crew Internet Access** – generate PIN codes that can be given away or sold to crew and/or passengers to control web access. **See Chapter 5.1**.
- **GPS NMEA Repeater** – allows other devices on-board/on-site to read your GPS location. For example, a navigation program running on an iPad could be used on your boat, or you could get weather information tailored to your location. **See Chapter 5.7**.
- **SMS Messaging** - allows smartphones to send SMS messages to others on the local area network for free, or over the satellite link at standard satellite airtime rates. Requires a supported satellite terminal. **See Chapter 5.5**.
- **Voice PBX** - allows smartphones to send/receive calls to others on the local area network for free, or over the satellite link at standard satellite airtime rates. Requires a supported satellite terminal. **See Chapter 5.8**.
- **GPS SMS Tracking** via satellite provider's SMS service with compatible satellite device. **See Chapter 5.6**.
- **Transparent Proxy** to redirect HTTP traffic for filtering. **See Chapter 5.2**.

- **LTE/GSM Support** with optional LTE/GSM modem and your own LTE/GSM SIM card. **See Chapter 9.10**.
- **Automatic Failover** as LTE/GSM > Sat1 > Sat2. Easily configurable to meet your needs. **See Chapter 9.13**.

## 2.3. Premium Services Available

The following additional services are available. Contact your RedPort dealer to purchase.

- **RedPort VoIP Service** - Transform your satellite device into a multi-user unit. Up to four users can send and receive phone calls and/or SMS (text) messages simultaneously. Experience significant price reduction in outbound calls when using VoIP in lieu of standard satellite airtime rates. Requires a supported satellite terminal. **See Chapter 5.8**.
- **RedPort Email** – is a multi-user satellite email service. Crew and/or passengers can access their RedPort Email account via smartphones, tablets or computers. **See Chapter 5.3** and the Optimizer RedPort Email Administrator's Guide.
- **Shared Web Compression** – routes all web traffic through a proxy service that works with an onshore server to deliver 3-5 times average web compression, along with virus detection and ad blocking. **See Chapter 5.2**.
- **GPS Tracking** - Using a GPS-enabled device, submit position reports to a RedPort Tracking central database for viewing on the tracking website. **See Chapter 5.6**.
- **Shared Captive Portal Pincode Service** - Upgrade the Captive Portal to our upstream pincode server for shared pincode service for your crew/team. These pincodes can be used at any of your installations with the Optimizer Enterprise router and Shared Pincode Service enabled. **See Chapter 5.1**.
- **Integrated LTE/GSM Capability** - **See Chapter 9.10**.
- **Internal Transparent Proxy for Web Filtering** (Including optional pay service for QL dialadele.com) - **See Chapter 5.2**.

# 3. Things to Know Before Getting Started

## 3.1. More Than Just a Router

The Optimizer Enterprise is more than just a router. It has some enhanced proxy services in addition to basic routing capabilities. There are three major data components:

### 3.1.1. Captive Portal

When enabled, it blocks access to the Internet without authentication. Authentication can be via username and password or Pin-Code or Mac address of a specific PC. The Captive Portal is enabled by default.

### 3.1.2. Proxy Server(s)

When Transparent proxy is enabled, all traffic on port 80 (http port) is redirected through the internal proxy server. This allows URL and DNS filtering (whitelist and blacklist sites), some content filtering (i.e. remove flash video) and you can turn on http logging to see what URLs are being accessed by the users. You also have the option to communicate upstream to a compression proxy server.

### 3.1.3. Firewall

A full-featured firewall is included. Block or allow IP address/ranges, port ranges, different protocols. Rules can be applied to any path in and out of the router. In a multi-wan environment, each interface can have separate rules applied.

CAUTION: This router is shipped to you with all WAN ports open, POP and SMTP are open to the WAN if you enable Email, if you enable the PBX it is listening on all ports. Without further configuration, this could leave you vulnerable to unwanted traffic. Please review **Chapter 4.3.1** How to Secure Your Router.

## 3.2. Designed Use of the Optimizer Enterprise

This router is designed for use in a multi-comm device environment for one or more users with the convenience of BYOD (bring your own device) for crew and passenger access to Email, Web Browsing and Voice. The idea is that you, as the installer or network administrator, will configure the router, using these guidelines, before installing it at its ultimate destination.

CAUTION: Prior to installation, review **Chapter 4.3.1** How to Secure Your Router.

Once installed, the onsite administrator will log in and land on the Home page. The Home page has the common tasks that will be used locally: generate PIN-Codes, create users, look at call data records for the Captive Portal, create and manage crew email accounts, etc.

The onsite administrator does not have access to the full user interface and therefore does not have the ability to re-configure the router. There is a separate user guide for the onsite administrator: Optimizer Enterprise Onsite Administrator Guide.

## 3.3. How It Works at First Launch (Out of the Box)

We ship the router ready for use with Captive Portal enabled for Crew Internet Access, Voice and SMS are enabled for use with compatible satellite devices, and Automatic Failover is configured in the order of LTE/GSM > WAN1 (Sat1) > WAN2(Sat2) to take advantage of the typically lower cost connections of LTE/GSM, if/when it is available.

NOTE: Prior to making modifications to the router configuration, please see Section 3.4 How Data Flows Through the Router to determine the customization required to best meet your needs.

BEST PRACTICE: Have a knowledgeable technician (someone who knows about proxy servers, firewalls, and routers) go through and generate a custom configuration.

Using the guidelines in Appendix A, the installer will want to address the following areas prior to first use:
- Configure the Captive Portal for Crew Internet Access.
- Configure the internal proxy server (Transparent Proxy).
- Configure LTE/GSM (requires configuration of PPP interface).
- Configure automatic failover/load balancing.
- Configure SMS.
- Configure Voice PBX.

OPTIONAL:
- Enable the upstream proxy for the benefit and cost savings of Shared Web Compression Service.
- Enable RedPort VoIP Service for savings on voice calls.
- Configure GPS interface.

In a fleet environment, the custom configuration can be recorded and used on other Optimizer Enterprise routers within the organization.

CAUTION: This router is shipped with all WAN ports open, POP and SMTP are open to the WAN if you enable Email, if you enable the PBX it is listening on all ports. Without further configuration, this could leave you vulnerable to unwanted traffic. Please review **Chapter 4.3.1** How to Secure Your Router.

## 3.4. How Data Flows Through the Router

It is important to understand how data flows through the router, so you can customize your configuration.

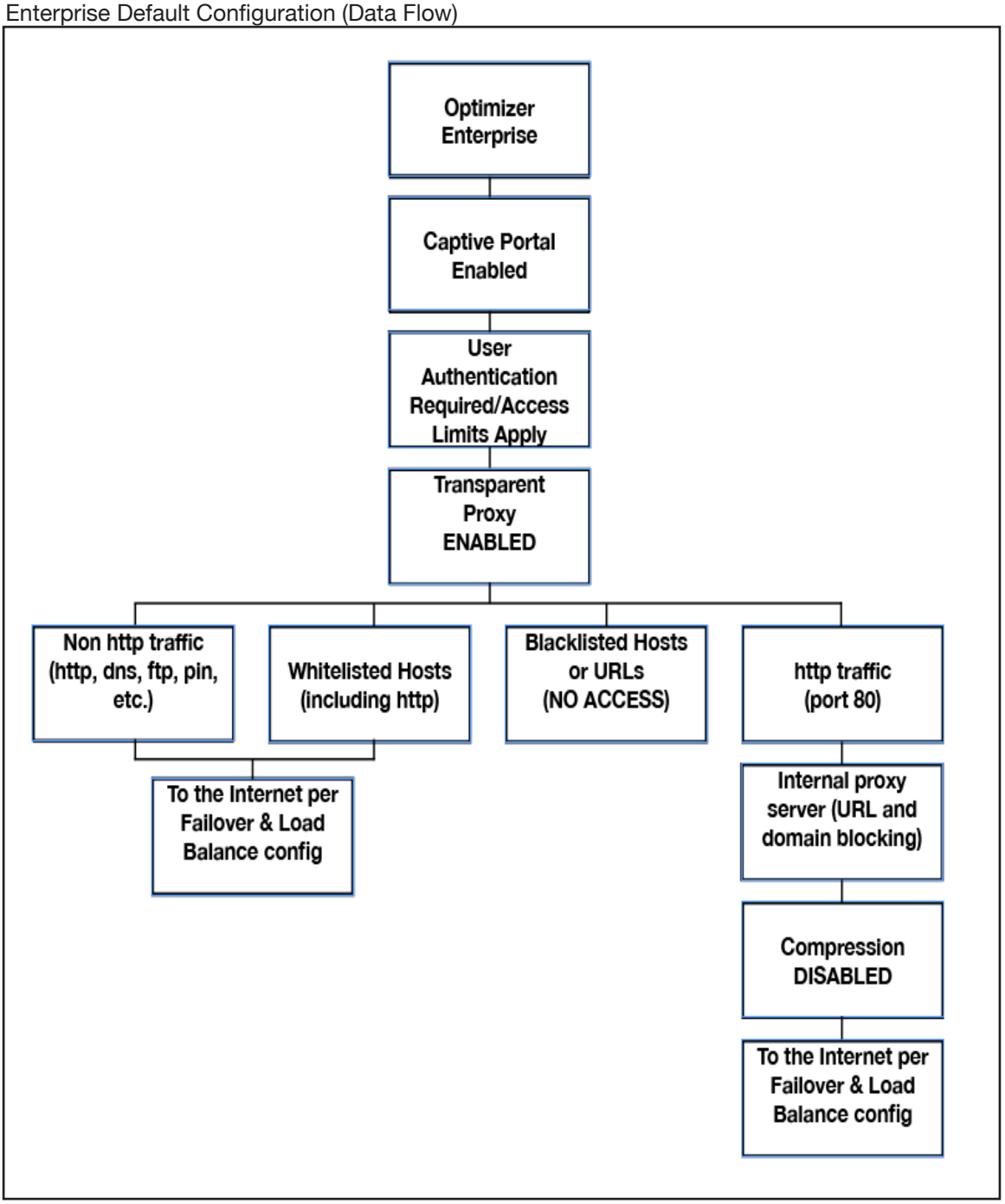
### 3.4.1. Default Configuration

- Captive Portal (Crew Internet Access) - enabled.
- Internal Transparent Proxy for http URL and content filtering - enabled Firewall - open.
- DNS - open.
- SMS - enabled, for compatible satellite devices.
- Voice Capability - for compatible satellite devices, disabled.
- Automatic Failover/Load Balance (All Traffic) - LTE/GSM > WAN1 > WAN2 Web Compression Service - disabled.
- RedPort Email Service - disabled GPS Tracking Service - disabled RedPort VoIP Service - disabled.

With the Captive Portal enabled, the firewall is automatically modified to allow data traffic through the router and users must ‘authenticate’ in order to access the Internet. You have several methods available for controlling user access to the Internet: you can whitelist and/or blacklist hosts and URLs; you can modify the firewall, you can modify the load balance to allow only certain traffic types through a certain interface, and you can require the use of
PIN-Codes.

When generating PIN-Codes you can set the amount of data the user can download, you can limit access to certain hours of the day, and you can limit the speed of their connection.

Optimizer Enterprise Default Configuration (Data Flow)




Once a user logs in to the Captive Portal, data can take one of three paths:

1. Non-http traffic goes straight to the Internet: https, dns lookups, ftp, ping, scp, etc. The firewall rules are totally open so there is nothing blocking full access to the Internet. You can limit access through the Captive Portal. **See Chapter 5.1.1**.

2. Traffic to a Whitelisted Host in the Captive Portal, including http, goes straight to the Internet, bypassing the internal proxy server. If you whitelist a web-server, that traffic goes straight to the Internet, bypassing the internal proxy server, so there is no filtering. Typically, you would not want to whitelist a web-server; however, you may want to whitelist a mail server, or a vpn. **See Chapter 5.1.1**.

3. All http traffic (on port 80), that is not Whitelisted, and only http (not https or secure traffic) is intercepted and

redirected to the internal proxy server. This is known as transparent proxy. The internal proxy server does URL blocking and domain blocking. Also, the internal proxy server can speak to an upstream proxy server to provide compression (premium service--fees apply). Traffic through the internal proxy server can take one of several paths, dependent upon whether or not compression is enabled.

- In the default state of compression DISABLED, all traffic goes straight to the Internet.
- With compression enabled, all the http traffic goes to the upstream compression proxy server and returns a compressed page. Ads are stripped out, text is compressed, images are re-sampled and more. On average, you will experience 3-5x compression on http traffic, thereby increasing the speed of your connection and your effective per Mb cost of your connection.
- With compression enabled, Whitelisted Hosts or URLs bypass the upstream compression proxy server and go straight to the Internet, bypassing compression.

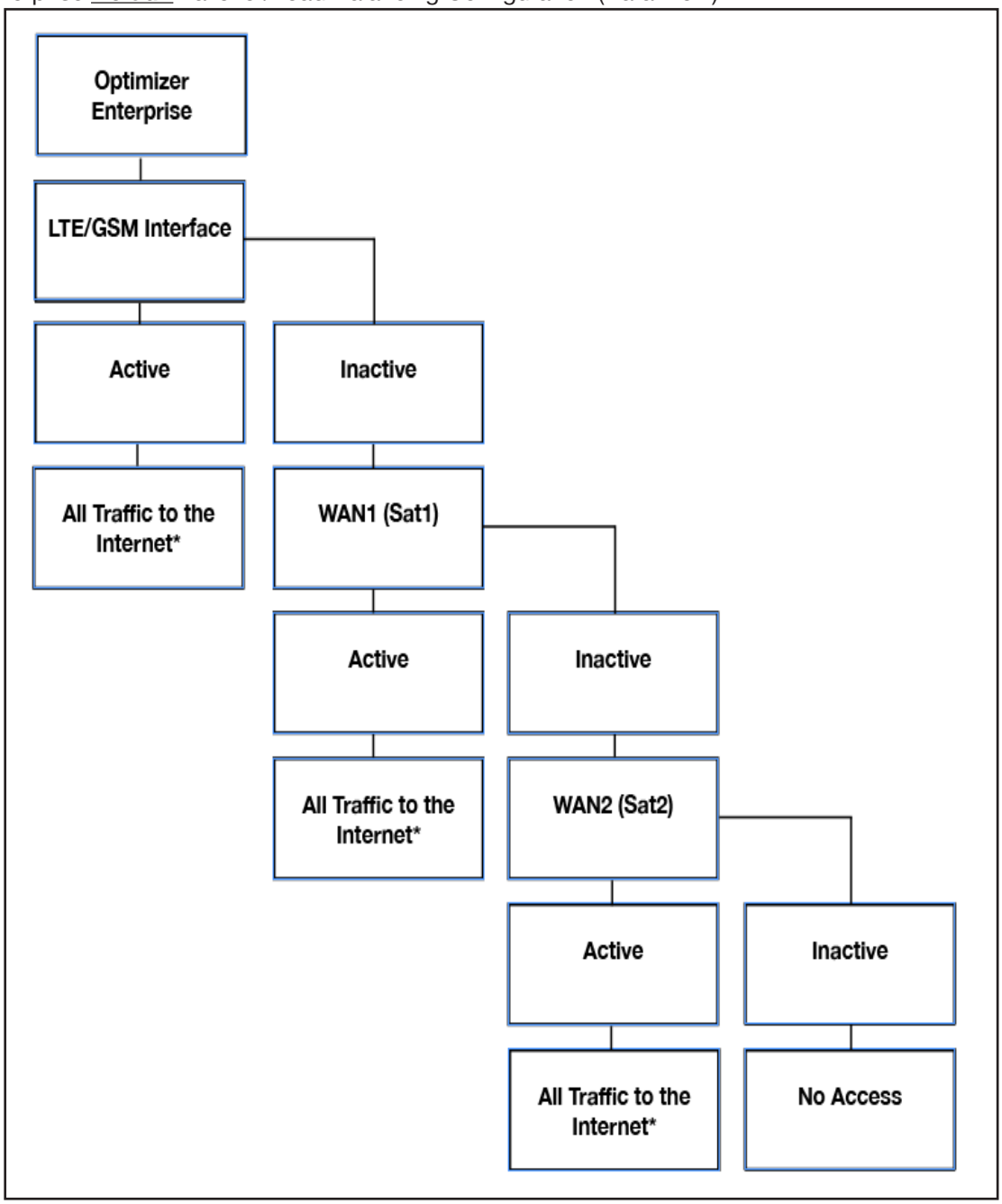
Blacklisted Hosts or URLs have no Internet access, regardless of compression status. **See Chapter 5.2.2**.

*The default Failover /Load Balancing configuration is as follows:

Setup is required for the LTE/GSM Interface.

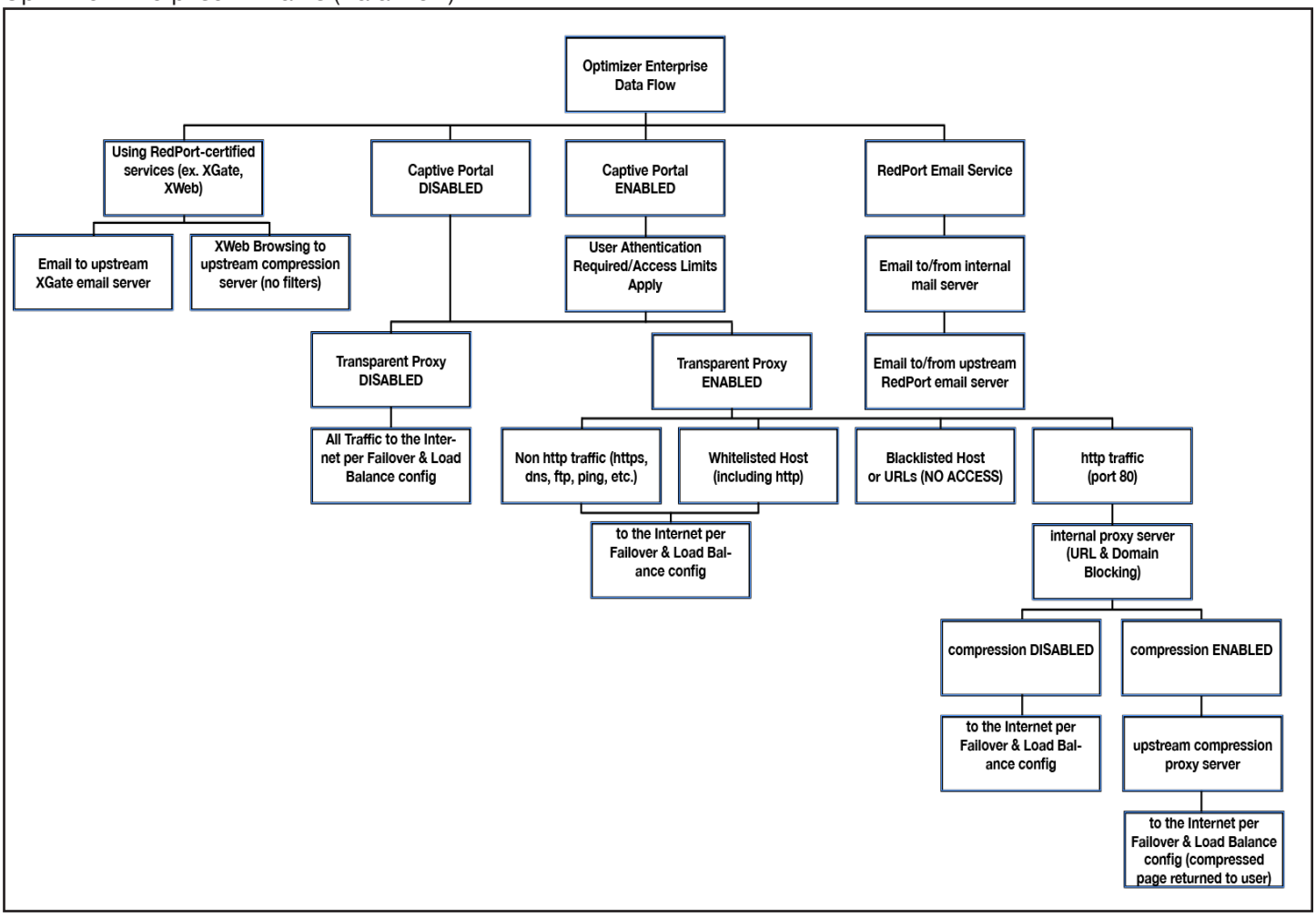
NOTE: All traffic to the Internet is subject to the firewall and load balance configuration. You can change the Failover configuration and you can Load Balance between and among the interfaces. For example, you can create rules to send all http traffic through the LTE/GSM Interface but never through the WAN ports. **See Chapter 9.13**.

Optimizer Enterprise **Default** Failover/Load Balancing Configuration (Data Flow)



### 3.4.2. Data Flow - All Paths

Optimizer Enterprise All Paths (Data Flow)




## 3.5. Navigating the User Interface

Access to the user interface depends upon how you log in to the router. There are two logins available: admin and superadmin. **See Chapter 4.1**.

The user interface is divided into sections; use the tabs to access the required service or information.

On many pages in the user interface you will see three buttons in the bottom corners:


- **Reset**: Returns the page to its previous saved state.
- **Save**: Saves the changes but does not yet apply the changes.
- **Save & Apply**: Saves the changes and applies them to the router configuration. In some cases, the router must reboot to apply the change. If reboot is required, it will be noted on the page.

# 4. Getting Started - User Interface Access

In a typical situation, the Optimizer Enterprise router arrives to you with the following services enabled:
- Captive Portal (Crew Internet Access).
- Internal Transparent Proxy for Web Filtering (Including optional Pay service for QL dialadele.com).
- SMS Messaging using smartphones (for compatible devices).
- GPS/NMEA Repeater Voice Capability using smartphones (for compatible devices).
- Automatic Failover from LTE/GSM to WAN1 to WAN2

NOTE: LTE/GSM must be configured.

There are also services available that are disabled:
- Web Compression (additional fees may apply)
- RedPort Email (additional fees may apply)
- GPS Tracking (additional fees may apply)
- RedPort VoIP for multi-user calls and SMS (additional fees may apply)

This guide is designed to help you understand how the router works so you can customize the configuration to meet your needs.

## 4.1. Access the Home page

To access the router's Home page, you must log in to the router. This can be accomplished in several ways however, the most popular method is to:

1. Connect to the WiFi Hotspot created by the router using a PC. Connect to the WiFi Hotspot just like you would any other WiFi connection:
- On a Windows PC, go to: Windows Start > Control Panel > Network Connections.
- On a MAC, go to: Apple > System Preferences > Network.

The Network Name will look something like: 'wxa-524-XXXX-2.4GHz' or 'wxa-524-XXXX-5GHz' where 'XXXX' is the last four digits of the Optimizer Enterprise's Mac address. Select this wireless network.

For alternative Home Page access methods, see the Optimizer Enterprise Quickstart Guide.

2. Open any web browser on the computer and enter one of the following:
- http://192.168.10.1 or http://10.1.5.1.

3. The Optimizer Enterprise ships with two existing administrative accounts:
- Admin - for normal day-to-day operation by the onsite administrator.
- Superadmin - for configuration and maintenance by the installer/technician, etc.

### 4.1.1. Onsite Administrator Login (Admin)

Onsite Administrator: username=admin, password=webxaccess.

This login opens to the Home page and gives the onsite administrator access to portions of the user interface and the ability to perform common tasks such as:

- Generate PIN-Codes (for captive portal use).
- Send/receive email (if email is enabled).
- Manage crew email accounts (if email is enabled).
- Monitor the system status.
- Manage the local WiFi setup (change the network name, password, etc.).
- Modify traffic routing if configured for Manual mode.
- Enable remote support for diagnostics and/or maintenance.

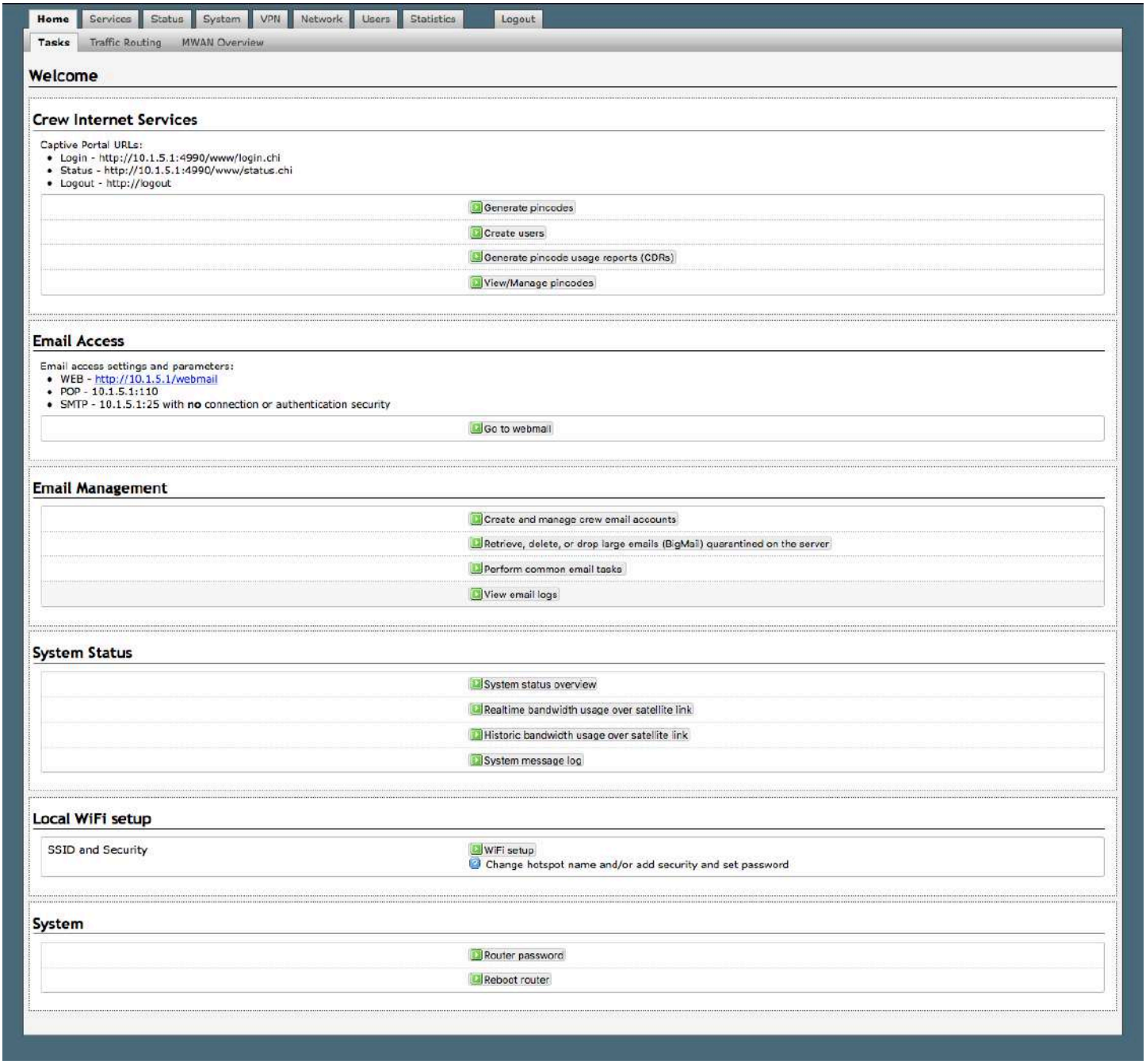
- Change the router password for the admin account, if necessary.
- Reboot the router, if necessary.

See the Optimizer Enterprise Onsite Administrator Guide for information in administering the most-used features.

### 4.1.2. Installer/Network Administrator Login (Superadmin)

Technician: username=superadmin, password=webxaccess.

This login opens to the Home page and provides full access to the user interface for configuration and maintenance of the router. Once logged in, you will see the router's Home page.




This Home Page is the onsite administrator's gateway to the most used features. See the Optimizer Enterprise

Onsite Administrator Guide for Home Page details and use.

From the Home Page you have access to the remaining sections of the user interface.

**Services:** allows access to all the services available on the router.


Each service is contained in its own tab under the Services section. This is where you will enable/disable the services and configure them for use.

**Status:** displays how much memory the router is using, who is connected via WiFi and other information you may find useful.


The System Log contains detailed information of the router's performance. It will report error messages and can be useful when troubleshooting connection issues. Realtime Graphs report how much data is being using by the different interfaces. All Status information is Read Only.

**System:** contains some of the router's basic settings for you to configure plus a few maintenance functions.


Use this section to set your time zone, change the 'admin' and/or 'superadmin' password, flash new firmware to the router, reboot the router if necessary. Profiles is a way to 'clone' the router configuration for use on another Optimizer Enterprise router.

**VPN:** Virtual Private Network permits a continuous shared private network across a public network.


Use this section to set up a VPN through PPTP, IPSec, OpenConnect VPN, or OpenVPN options to configure a private network that transcends through a public network.

**Network:** contains access to the network Interfaces, the Firewall, and Failover and Load Balancing setup.


Use this section to configure network interfaces, run diagnostics, or modify the firewall. You can also change the Failover sequence and configure the load balance.

**Users:** contains information about User(s) and User(s) access.


Use this section to edit both User accounts as well as allow/limit access for each User.

**Statistics:** contains information about resource usage.


Use this section to review system statistical data related to the router's Interfaces, Wireless, System Load, Memory, Processes, and Uptime.

## 4.2. How to Use with Default Setup

We ship the router ready for use as follows:

- Anyone with an existing Primary Account with a RedPort-certified compression email service (such as XGate) and/or web browsing account (such as XWeb) is able to immediately use the router to send/receive email or browse the web. There are no Internet access restrictions when using these services. Users simply connect a computer, iOS, or Android device to the Optimizer Enterprise's wireless network, set the email "Connection Type" to "Optimizer xxxx" where xxxx represents the satellite connection. See the XGate Help file for more information.

- Captive Portal and Transparent Proxy are enabled to control access to the Internet so anyone opening a web browser (outside of XGate/XWeb) and entering a URL will be re-directed to the Captive Portal. They will not be able to access the Internet until they are setup as a user. Users that are given access via the Captive Portal can go anywhere on the Internet unless the installer has configured the proxy server to restrict access. Individual user access can be restricted by time; by data; by time of day; by speed. **See Chapter 5.1**.

- Voice is enabled for use with compatible satellite devices using standard satellite airtime. **See Chapter 5.8**.

- SMS is enabled for use with compatible satellite devices using standard satellite airtime. **See Chapter 5.5**.

- Failover sequence is set to Automatic - LTE/GSM > WAN1 > WAN2. LTE/GSM must be configured for use. **See Chapter 9.13**.

- Load Balance is set to ALL traffic through the one Active interface. **See Chapter 9.13**.

- Firewall is Open allowing all traffic to pass. **See Chapter 9.18**.

This out-of-the-box configuration works well for single broadband users with an XGate and/or XWeb primary account and can be suitable for the multi-interface, multi-user environment where each person has a separate primary XGate email and/or XWeb browsing account.

If in a multi-user environment we recommend the optional RedPort Email service for easy access and management of crew accounts. **See Chapter 5.3**. Additional fees may apply. Contact your service provider for current pricing.

Enabling Web Compression Service will direct all http traffic to the upstream compression proxy server and return a compressed page to the user. Ads are stripped out, text is compressed, images are re-sampled and more. On average, you will experience 3-5x compression on http traffic, thereby increasing the speed of your connection and the effective per Mb cost of your connection. **See Chapter 5.2**. Additional fees may apply. Contact your service provider for current pricing.

Transform your satellite device into a multi-user voice unit with the optional RedPort VoIP Service. Up to four users can send/receive phone calls and/or SMS (text) messages simultaneously. Experience significant price reduction in outbound calls when using VoIP in lieu of standard satellite airtime rates. Requires a supported satellite terminal. **See Chapter 5.8**. Additional fees may apply. Contact your service provider for current pricing.

CAUTION: This router is shipped to you with all WAN ports open, POP and SMTP are open to the WAN if you

enable Email, if you enable the PBX it is listening on all ports. Without further configuration, this could leave you vulnerable to unwanted traffic. Please review **Chapter 4.3.1** How to Secure Your Router.

## 4.3. Router Security

By default, your router is open to the Internet:
- WAN ports are open.
- Voice PBX, if enabled, is listening on all ports.
- POP and SMTP are open to the WAN, if Email is enabled.

This setup could leave you vulnerable to unwanted traffic. Note that ports open to the Internet on satellite systems that have public IP addresses are vulnerable to attackers that run dictionaries trying to guess usernames and passwords on the router. These dictionary attacks, at best, can result in large amounts of accounted traffic; and, at worst, they are a security breach that could endanger communications on the vessel. Systems open to the public Internet must take special precautions to secure the router from intrusion. Web Proxy is not a problem, by default, unless you make changes since the software, by default, only listens to traffic on the LAN.

Before you block the WAN ports, read the next chapter. Blocking the WAN ports at this stage may lock you out of the router. We've built in some measures to help minimize that possibility but please pay special attention when making router configuration modifications.

### 4.3.1. How to Secure Your Router

First, confirm that the Disable anti-lock rule setting is "Unchecked" in System > System Settings. **See Chapter 7.1**. If it is checked, you want to uncheck it to Enable the anti-lock rule. The anti-lock rule prevents the administrator from inadvertently locking him/herself out of the router when programming firewall rules.

Confirm that in Network > Firewall > Firewall Rules that the first rule "BLOCK WAN" is disabled. If you Enable (check) this rule you will lock yourself OUT of the router, unless the anti- lock rule is enabled (unchecked). If you lock yourself out of the router you must perform a factory reset.

Confirm that in Services > Web Compression and Filtering > Advanced that Listen Interfaces is set to LAN. Do not change this to WAN unless you desire proxy service through the WAN port. If changing the default configuration to listen on the WAN, then firewall rules must be created to allow access to the proxy listen port (port 3128 by default).

Go to Services > Crew Internet Access > Tools and change the Admin password for the Captive Portal admin access. **See Chapter 5.1.4.1**.

Go to System > Router Password and change the router password for both the "superadmin" and the "admin" access. **See Chapter 7.2**.

If RedPort Email is enabled, the POP and SMTP servers are listening on ALL ports, so they are open to the WAN, leaving them vulnerable. If you enable RedPort Email, you should configure the firewall to block all but desired email traffic. **See Chapter 9.8**. Note that the BLOCK WAN firewall rule, if enabled, will prevent access to these ports.

If Voice PBX is enabled, it is listening on all ports. You can specify the Interface to Listen (such as Captive Portal or LAN) in Services > Voice PBX > Settings (**See Chapter 5.8**). OR, you can leave it to listen on all interfaces and use a firewall rule to restrict traffic (**See Chapter 9.8**).

CAUTION: Blocking WAN firewall rule, if enabled, will prevent access to these ports.

If planning to access the web user interface over the WAN port, then create firewall rules with higher precedence than the BLOCK ALL rule that allow traffic from your Internet IP address to the router.

CAUTION: Ports 80, 443 and 22 are open, if not disabled.

When you have completed and tested your configuration and are confident that it is working as desired, you can remove the Anti-Lock rule in System > System Settings. **See Chapter 7.1**.

Now you can Enable the BLOCK ALL from WAN firewall rule in Network > Firewall > Firewall Rules.

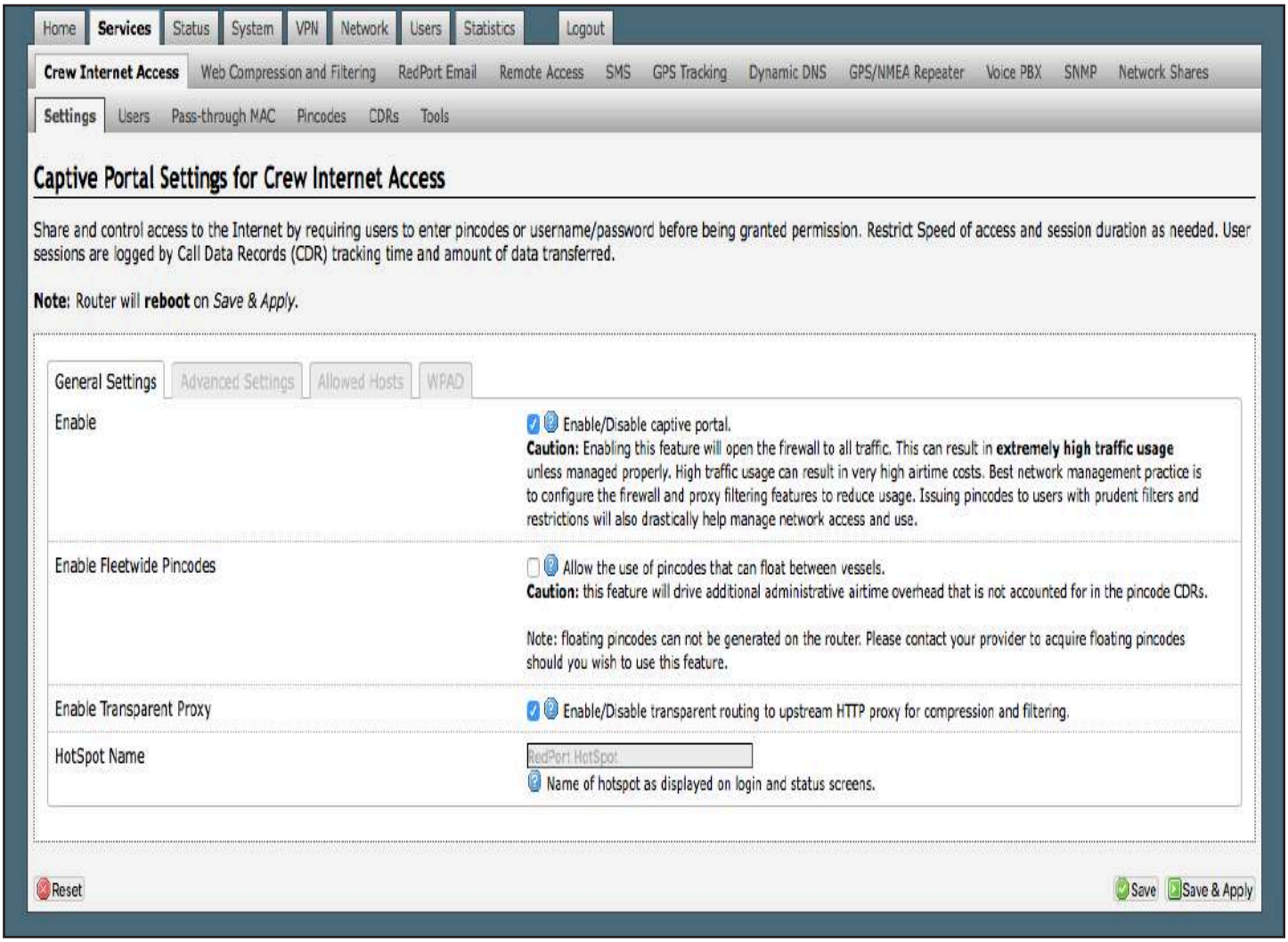
# 5. Services

## 5.1. Crew Internet Services (Captive Portal)

The Optimizer Enterprise is shipped with Captive Portal enabled. This allows controlled access to the Internet by requiring authentication by users. It blocks access to the Internet without authentication. Authentication can be via username and password or PIN-Code or Mac address of a specific PC. **See Chapter 5.1.2**.

PIN-Codes to restrict access can be created by the Onsite Administrator. In addition, the speed of access can be limited by the PIN-Code as can the duration/or time of the session. **See Chapter 5.1.2.3**.

User sessions are logged in Call Data Records (CDR) for tracking the amount of time on the service and the amount of data transferred. **See Chapter 5.8.3**.




The image above is the default state of the Captive Portal Settings as the router is shipped to you. See the Optimizer Enterprise Onsite Administrator Guide for information on how the onsite administrator manages Captive Portal use.

### 5.1.1. Captive Portal Settings

#### 5.1.1.1. General Settings

Requires ‘superadmin’ login.

With the Captive Portal enabled, all users trying to use the Internet will be redirected to a screen where they will be required to enter a PIN-Code or a username and password before they will be allowed to browse the Internet.

CAUTION: With Captive Portal enabled, the firewall is wide open to all traffic; so, it is important to configure a firewall and/or have internal Transparent Proxy enabled WITH filtering configured, to control usage.

Internal Transparent Proxy is enabled which means that all http traffic that is not whitelisted or blacklisted is redirected to the router’s internal proxy server. This internal proxy server can be configured for URL blocking and domain blocking.

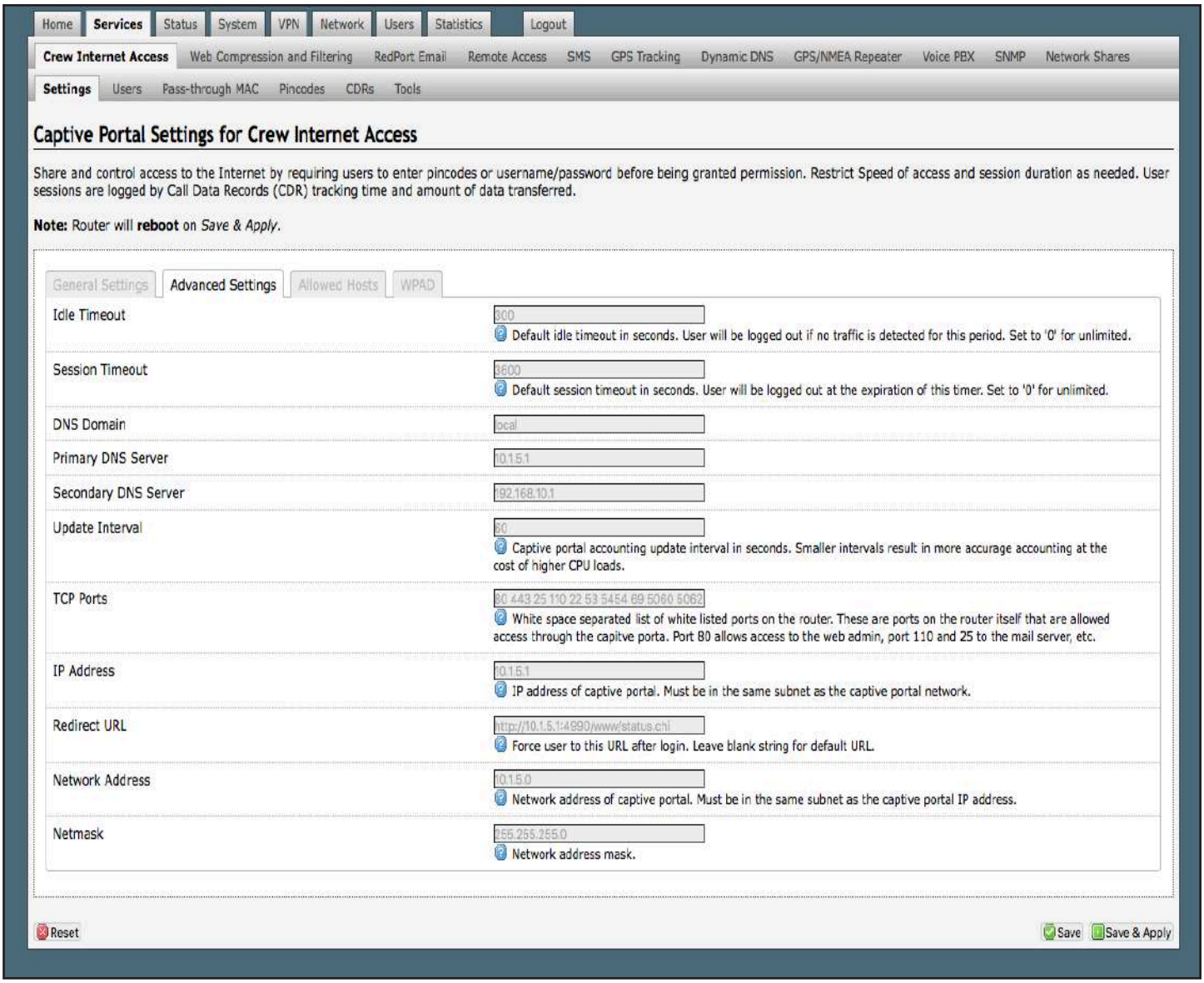
CAUTION: If you Disable Transparent Proxy then all http traffic goes straight to the Internet without any filtering.

HotSpot Name is the name on the page that is presented to the user when they log in. RedPort HotSpot is the default name. Customize the HotSpot Name by entering the text you prefer.

#### 5.1.1.2. Advanced Settings

Requires ‘superadmin’ login.

In general, there are only two items on this page that may require modification, Idle Timeout and Session Timeout.




**Idle Timeout** - The default is set to 300 seconds (5 minutes). If no traffic is detected for the idle timeout period, the user will be automatically logged out. They must log in again to continue.
**Session Timeout** - The default is set to 3600 seconds (60 minutes). The user will be automatically logged out at the end of the session timeout period. They must log in again to continue.

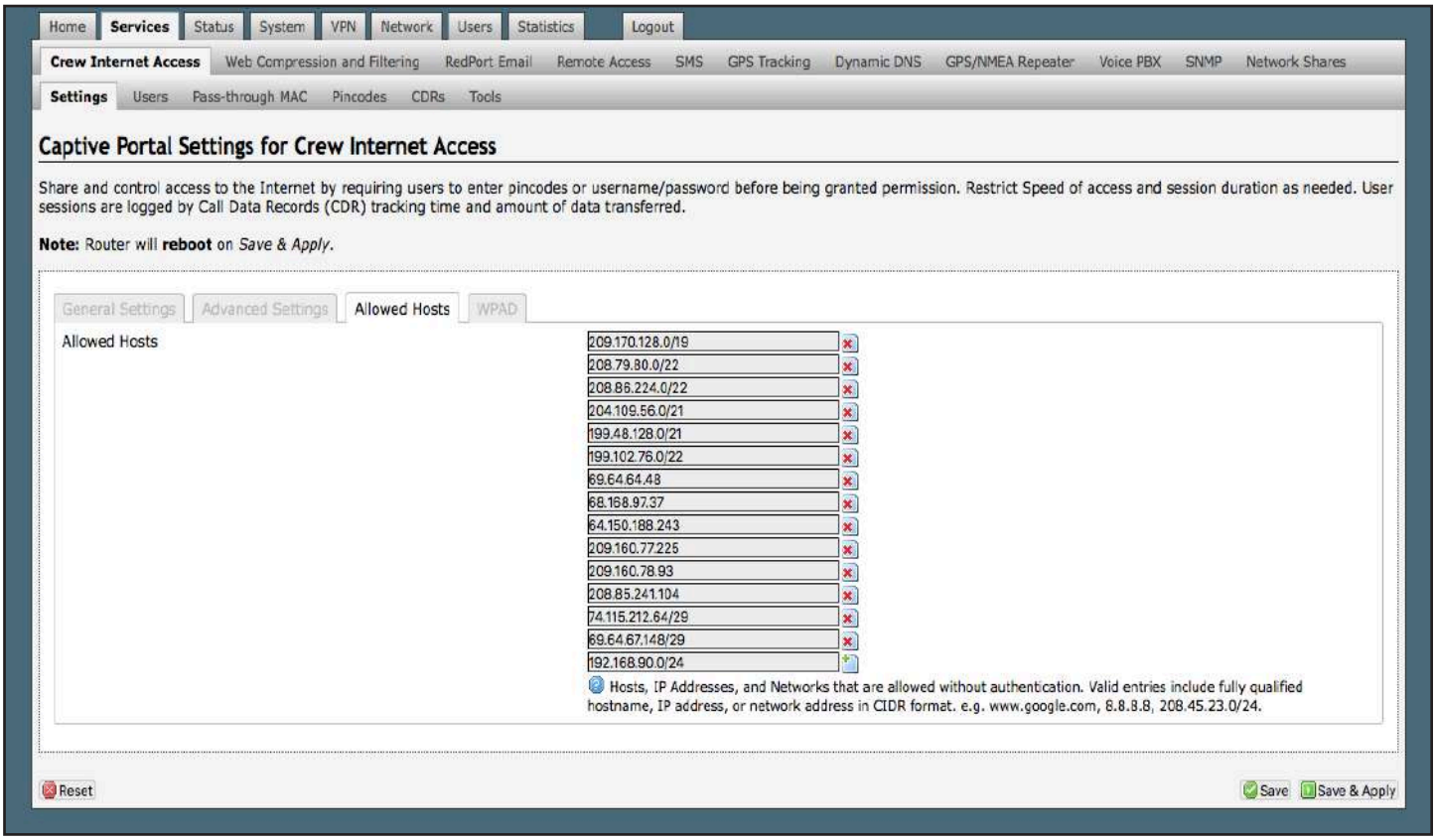
Both of these timers can be set to ‘0’ for unlimited time period; however, that is NOT recommended. Using Idle Timeout and Session Timeout minimizes the consumption of data without the user’s knowledge. For instance, using the default settings as an example, if a user is logged in and has Skype open, and then walks away from the computer, because Skype is running in the background, the Idle Timeout period will never be reached because traffic is detected. However, after 60 minutes, the Session Timeout period will expire. The user must log back in to use the Internet when they return to the computer regardless of the length of time they’ve been gone, 61 minutes or two days. By having a Session Timeout period, background data is stopped. If there is no background data running the user is logged out at the end of the Idle Timeout period.

### 5.1.1.3. Allowed Hosts

Requires ‘superadmin’ login.

This is the whitelist for the Captive Portal. These are the hosts that can be accessed without having to log in

through the captive portal.



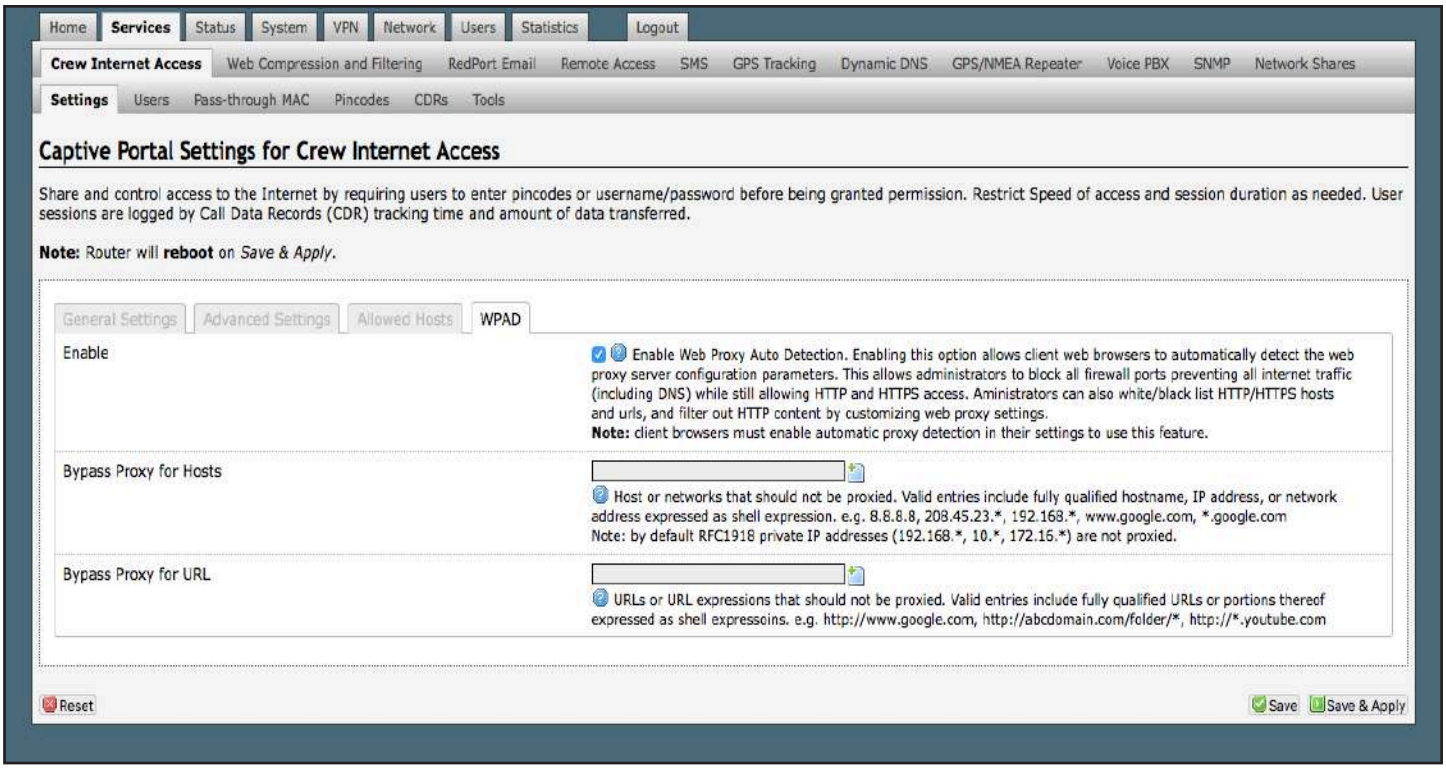

By default, there are a number of hosts there. They are all GMN hosts for our services (email, VOIP, etc.) If you don't want them, you can delete them.

NOTE: If you are using an email service that is not RedPort or XGate, this is where you would add the email servers of your chosen service.

### 5.1.1.4. WPAD

Requires 'superadmin' login.

WPAD is a special feature for auto configuring the proxy settings on the client's web browser for tighter control over access to the Internet.



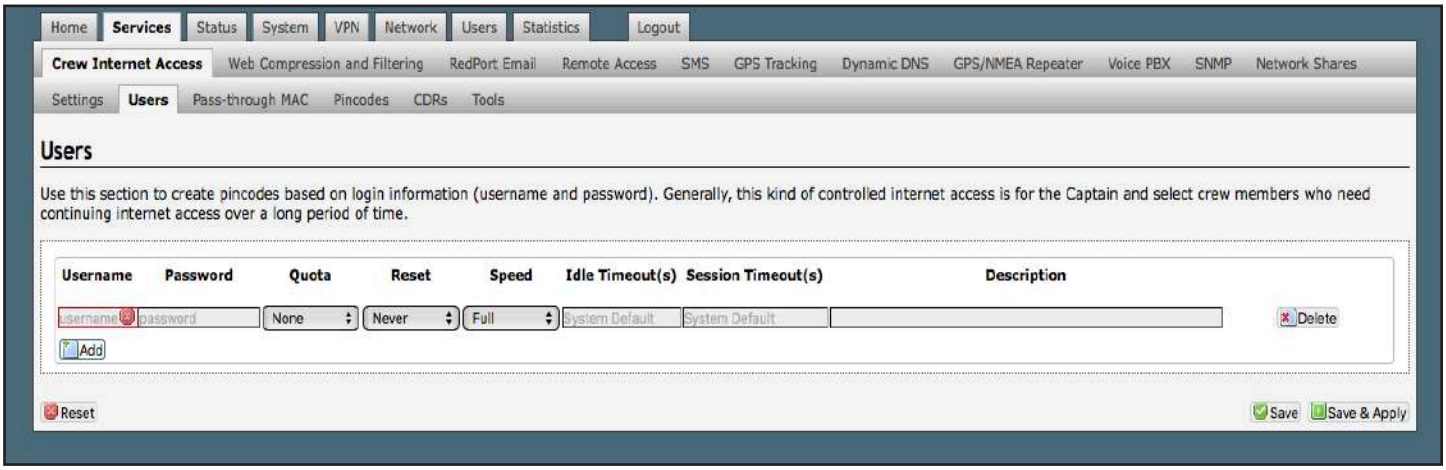

## 5.1.2. Allowing Individuals Access to the Internet

There are three ways to manage access to the Internet via the Captive Portal:

### 5.1.2.1. Users with Username and Password

Available to both ‘admin’ and ‘superadmin’ login.

Create Users with a username and password with the Users Tab. Use this section to restrict access in lieu of using PIN-Codes. Typically reserved for the onsite administrator and select crew who need continuing access over a long period of time.




NOTE: By default, there is one Captive Portal user that is not visible in the UI. It is username=admin, password=webxaccess. It is recommended that you change the password for this admin user. **See Chapter 5.1.4.1**.

- **Username:** A unique character string that this user will enter at log in.
- **Password:** A character string that the user will enter at log in. The Password must be different from the username.
- **Quota:** You can restrict the username to a specific amount of data transferred. The default is no restriction. To set a maximum, use the drop-down menu. When you set a maximum, the user has Internet access until the maximum is reached. When the maximum is reached the user will be disconnected from the Internet.
- **Reset:** The Quota assigned to a Username can be configured to reset periodically (daily, weekly, monthly) using the drop-down menu. When a reset period is selected, the Quota will renew automatically at the start of the new reset period.
- **Speed:** Set the maximum bandwidth allowed for this user.

NOTE: Maximum speed is dependent upon the speed of the satellite device/service.

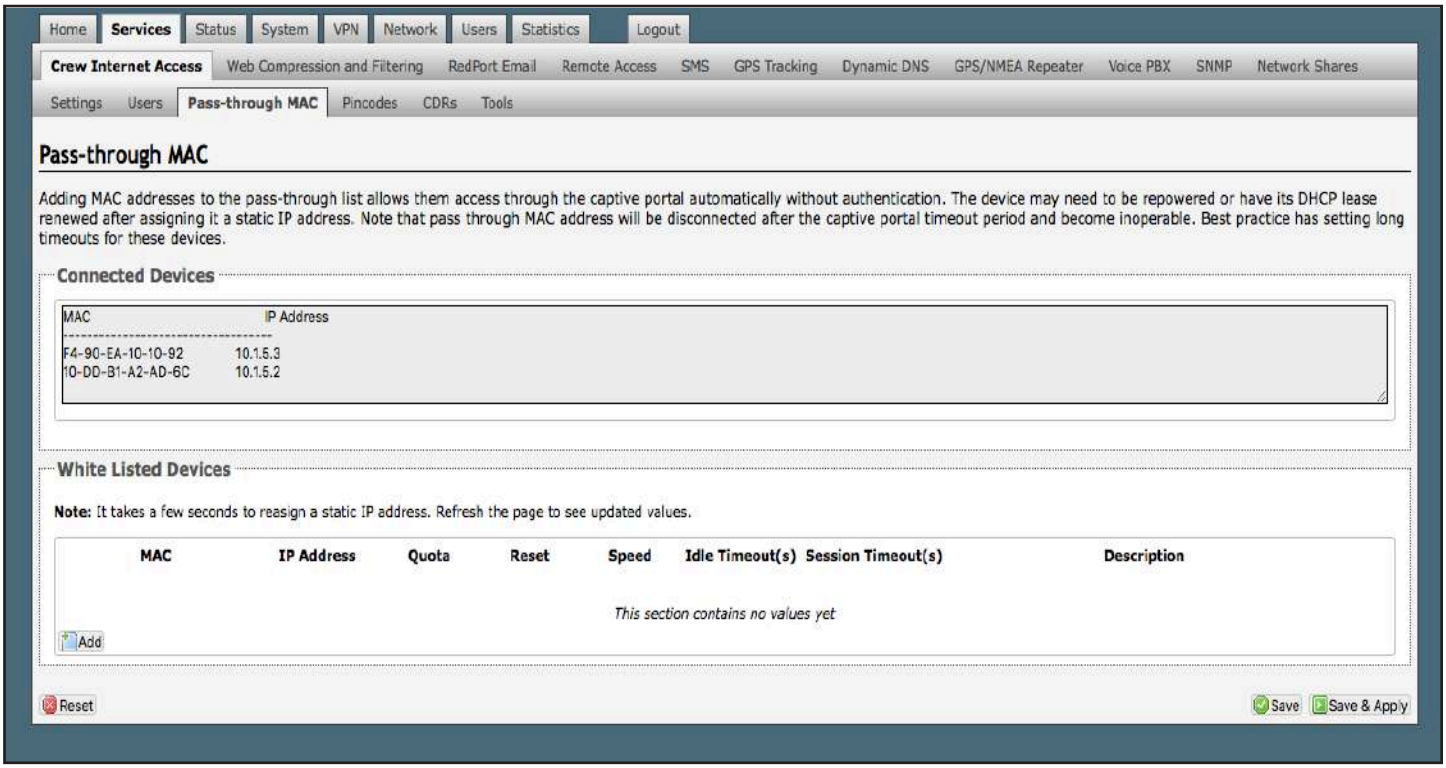
- **Idle Timeout(s):** Expressed in seconds, enter the idle timeout period to change it from the default. At the end of the idle period, the user will be logged out if no traffic has been detected during the period. The default period is configured at installation and can be found in Services > Crew Internet Access > Settings > Advanced Settings.
- **Session Timeout(s):** Expressed in seconds, enter the session timeout period to change it from the default. At the end of the timeout period the user will be logged out of the session. The default period is configured at installation and can be found in Services > Crew Internet Access > Settings > Advanced Settings.
- **Description:** Optional - Enter a short description of the account.

Click <Save> to enter more users or click <Save & Apply> when all users are entered. Wait for the message “Configuration Applied”.

### 5.1.2.2. Pass-Through MAC

Requires ‘superadmin’ login.

Allow specific devices on the local network to immediately access the Captive Portal without having to log in, by adding the MAC address of the device. (Not Recommended)



**See Chapter 5.1.2.3** for Quota, Reset, Speed and Timeout descriptions.

### 5.1.2.3. PIN-Codes

Available to both ‘admin’ and ‘superadmin’ login.

Generate PIN-Codes to limit Internet access. Sell them or give them to transient crew, passengers, or visitors.


- **Number of Pincodes:** Enter the quantity of pincodes that will have the same configuration/restrictions, up to the maximum of 100 pincodes can be created in a batch.

- **Prefix:** This can be useful for tracking pincode inventory. Enter up to a five-digit number that will be added to the pincode.
- **Quota:** You can restrict a pincode to a specific amount of data transferred. The default is no restriction. To set a maximum, use the drop-down menu. When you set a maximum, the user has Internet access until the maximum is reached. When the maximum is reached the pincode will stop working.
- **Reset:** The pincode can be configured to reset periodically (daily, weekly, monthly) using the drop-down menu. When a reset period is selected, the pincode configuration will renew automatically at the start of the new reset period. For example, if a pincode has a quota of 10Mb of data and the reset period is set to daily, that user will be allowed to transfer a maximum of 10Mb of data each day. Once the maximum data transfer of 10Mb is achieved the pincode will temporarily stop working until the start of the next period. If the Reset period is set to Never, once the maximum quota is achieved the pincode expires and it cannot be renewed.
- **Speed:** Set the maximum bandwidth allowed for this pincode.

NOTE: maximum speed is dependent upon the speed of the satellite device/service.

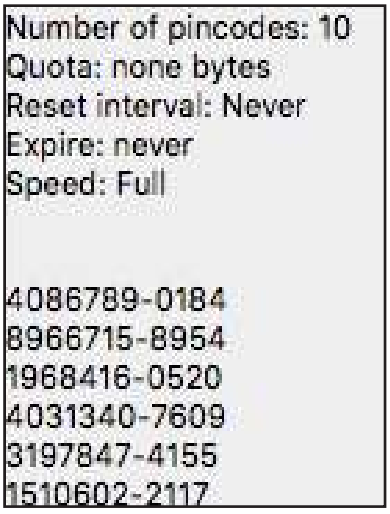
- **Start Time:** Use Start Time in conjunction with Stop Time to limit the time of day a pincode can be used. Select a Start Time from the drop-down menu.

NOTE: A Stop Time must also be selected.

- **Stop Time:** Use Stop Time in conjunction with Start Time to limit the time of day a pincode can be used. Select a Stop Time from the drop-down menu.

NOTE: A Start Time must also be selected.

- **Pincodes:** When all the parameters of the pincode are selected in the fields above, click <Create> to generate the pincodes. The list of pincodes will display in the text window.



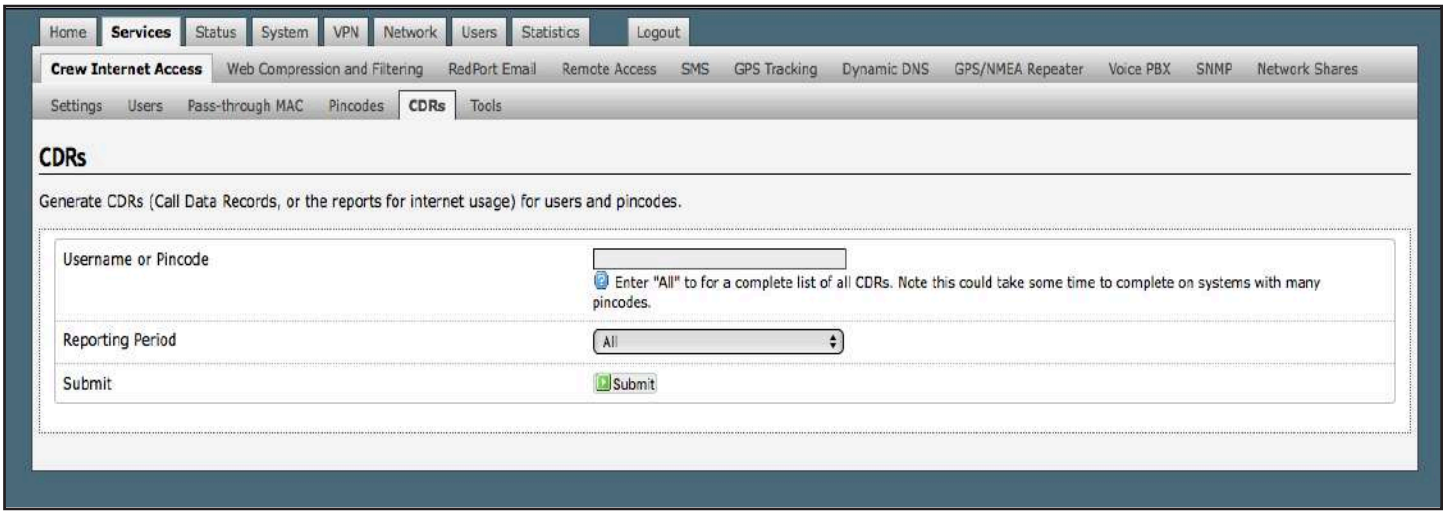

- **Enter Filename:** Use in conjunction with Download to create a .csv file as the new pincodes are generated. Enter a name for the .csv file.
- **Download:** Use in conjunction with Enter Filename to create a .csv file as the new pincodes are generated. Click <Download> and Save the file to the computer. Open the .csv file to see the pincodes.

### 5.1.3. CDRs (Call Data Records)

Available to both ‘admin’ and ‘superadmin’ login.

Call Data Records (CDRs) are usage logs. They are the accounting for the Captive Portal system. Usage quotas, time restrictions and resets all use the CDRs. Anyone that logs into the Captive Portal will have a CDR. They can

be generated for any PIN-Code or any username or any MAC address.

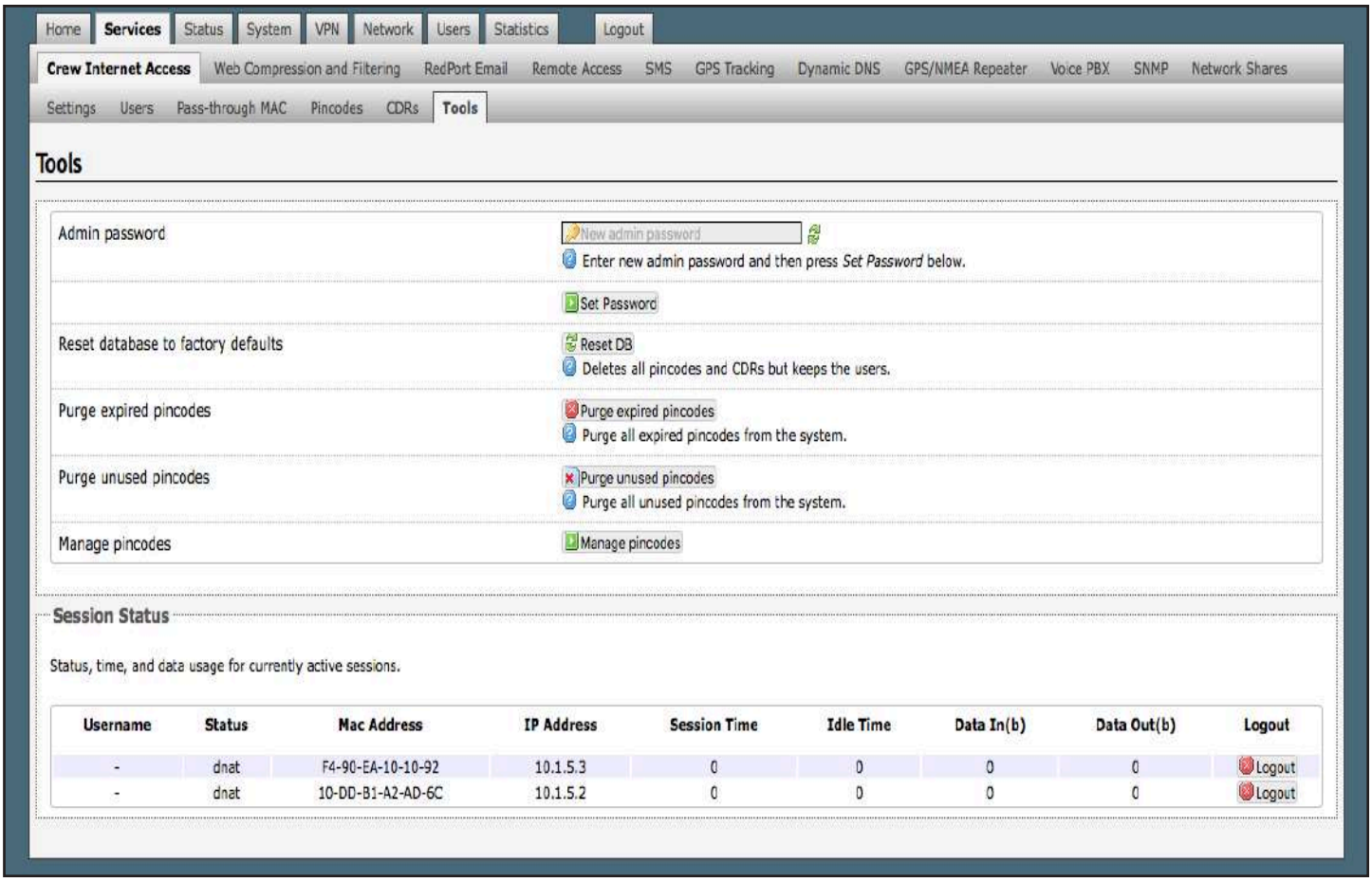



- **Username or Pincode:** Enter the username or pincode for the CDR you want to view, download or remove.
- **Reporting Period:** Select the period from the drop-down menu.
- **Submit:** Select this to view the log for the username or pincode entered above.
- **Enter Filename:** Use in conjunction with Download to create a .csv file of the CDR. Enter a name for the .csv file.
- **Download CSV:** Use in conjunction with Enter Filename to create a .csv file of the CDR. Click <Download> and Save the file to the computer. Open the .csv file to see the CDR.
- **Remove CDRs:** Click <Remove> to delete the CDRs for the username or pincode.

### 5.1.4. Tools

Requires ‘superadmin’ login.

This section can be used to change the Admin password for the Captive Portal and for Captive Portal clean up.




### 5.1.4.1. Admin password

This can be used to change the admin password for the Captive Portal. This is NOT the admin password to the router itself. By default, the Captive Portal login is: username=admin, password=webxaccess. You will notice that it happens to be the same as the admin password for the router. Best Practice: Create a new password here for the Captive Portal ‘admin’ login.

To change the password, enter the new password in the text box and click <Set Password>.

### 5.1.4.2. Reset Database to Factory Defaults

This wipes out the entire pincode database including CDRs.

CAUTION: This action CANNOT be undone.

### 5.1.4.3. Purge Expired PIN-Codes

Over time, as the database builds, you may want to purge expired PIN-Codes to free up space.

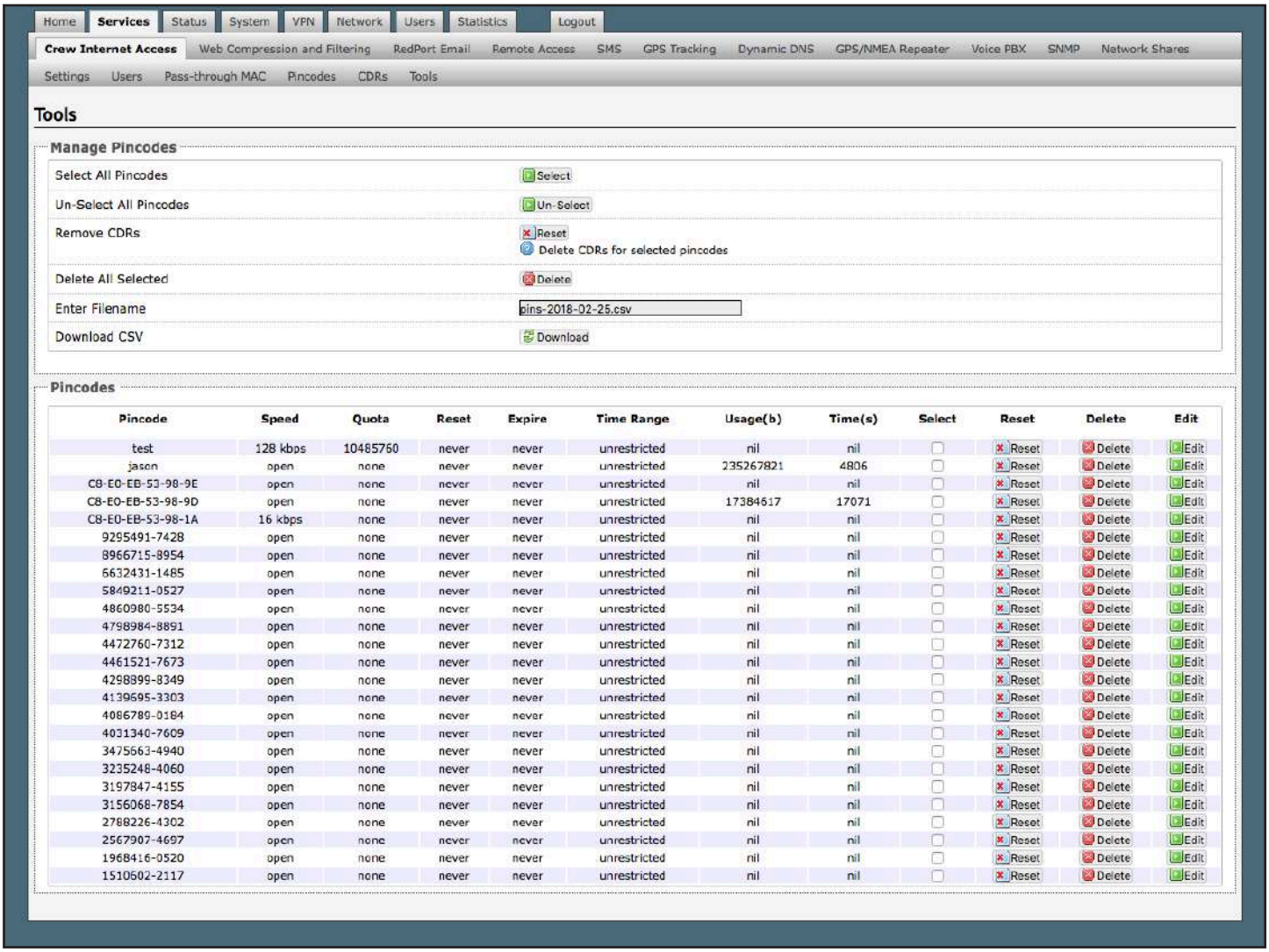
### 5.1.4.4. Purge Unused PIN-Codes

Use this to purge unused PIN-Codes from the system.

### 5.1.4.5. Manage PIN-Codes

This will show a summary of all the PIN-Codes, all the usernames, and all the MAC addresses that are active in the

Captive Portal. Each one appears as a separate line item in the PIN- Codes table.

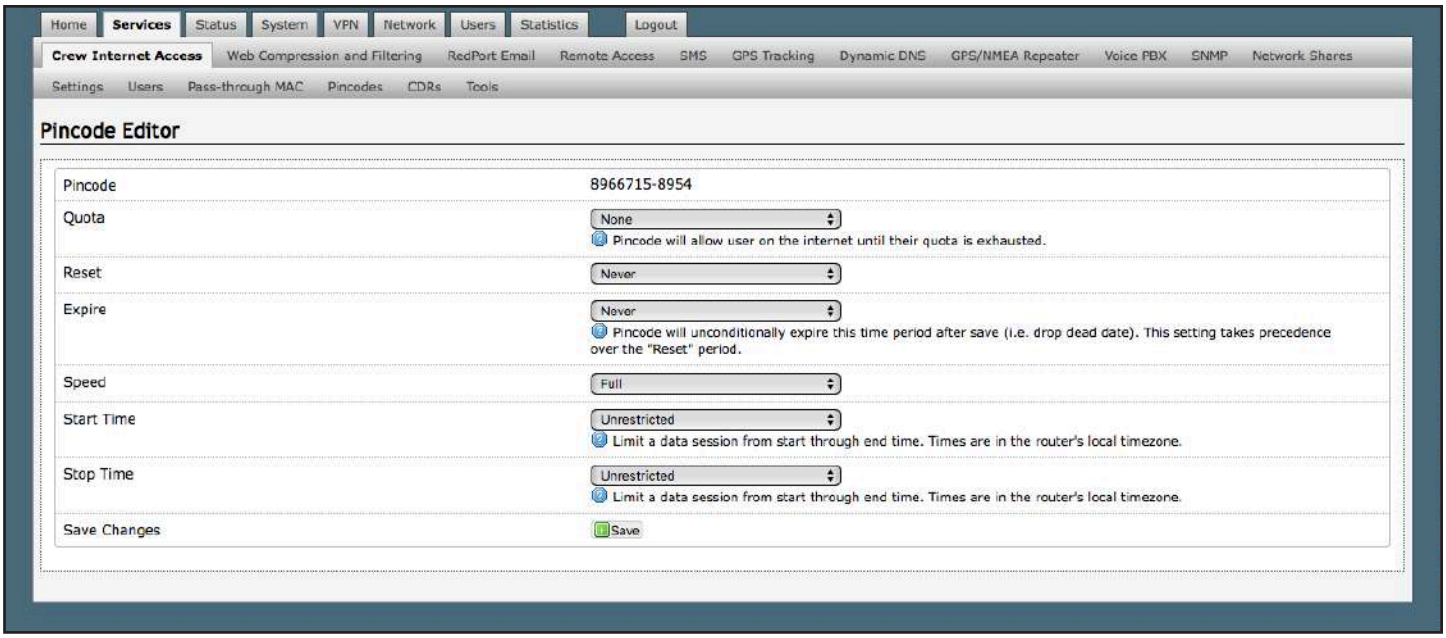



Using the top section of this screen you can:

- Remove CDRs for one or more ‘PIN-Codes’.
- Delete one or more ‘PIN-Codes’.
- Download the table to a .csv file.

In addition, using the buttons in the PIN-Codes table, you can:

- Reset the Quota of an individual PIN-Code.
- Delete the PIN-Code from the system, including the CDRs.
- Edit the parameters of the PIN-Code.




In the example above, we have elected to edit the PIN-Code 8966715-8954. **See Chapter 5.1.2.3** for information on PIN-Code parameters.

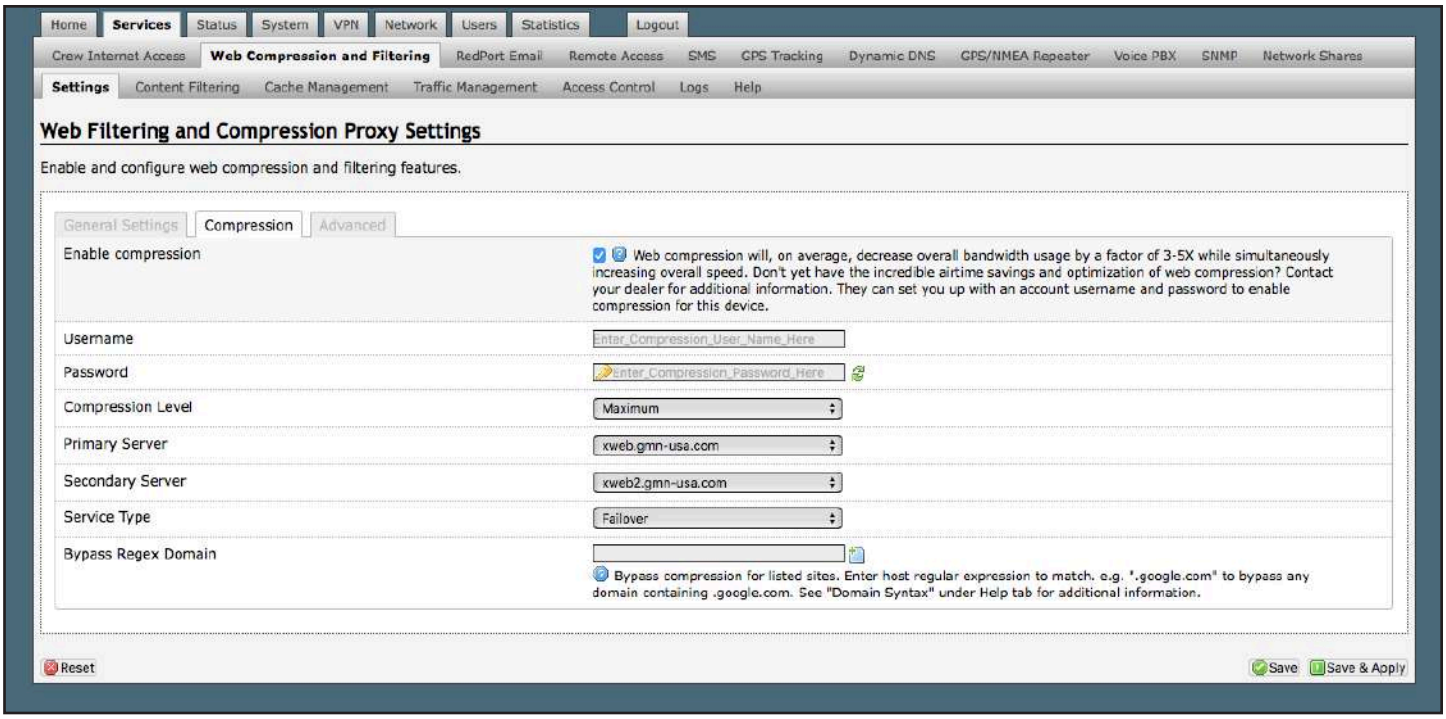
## 5.2. Web Compression and Filtering

This section is used to:

- Configure filters for the internal proxy server when compression is not enabled.
- Enable compression so that traffic is passed to the upstream proxy server.
- Configure filters for the proxy server (internal or upstream).
- View traffic logs.

### 5.2.1. Settings

Requires ‘superadmin’ login.



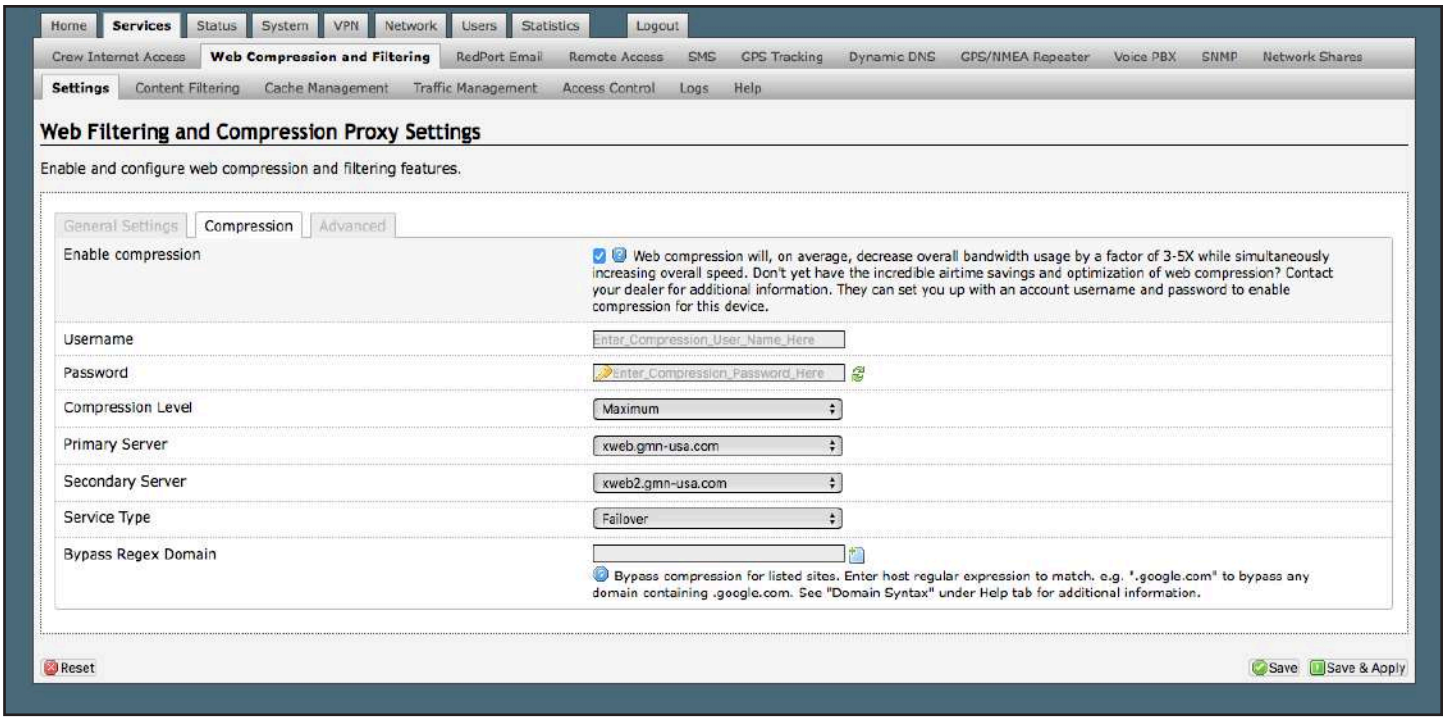

### 5.2.1.1. Compression

Requires ‘superadmin’ login.

By default, the router is shipped with web compression Disabled. Web compression is a premium service that carries an additional charge. Contact your service provider for details and pricing.

- **Enable Compression:** If you have purchased Shared Web Compression service, click the checkbox to Enable compression. The page will expand, see With Compression Enabled below.
- **Username:** Enter the Username given to you by your service provider. This username is specific to the compression service.
- **Password:** Enter the Password given to you by your service provider. This password is specific to the compression service.
- **Bypass Regex Domain:** This is the ‘whitelist’ of sites that should not be compressed. To add a site, select the Add Icon. Proper syntax must be used to successfully bypass compression. See the Help tab for guidance and examples of using regular expressions.

With Compression Enabled, the page expands to reveal Proxy Authentication by Client, Server, and Compression Level.




- **Proxy Authentication by Client:** By default, this is unchecked as it does not work with the Captive Portal enabled. In this state, unchecked, the upstream proxy server will log in on your behalf. If this is checked, then the authentication happens at the user end, which means that when a user goes to any website they will be prompted for a username and password.
- **Server:** Do not change this unless instructed to do so by your service provider.
- **Compression Level:** Set the level of compression that meets your needs. Those on entry level airtime plans should select “Maximum”. Those on high data plans may prefer “Standard” or “Minimum”.

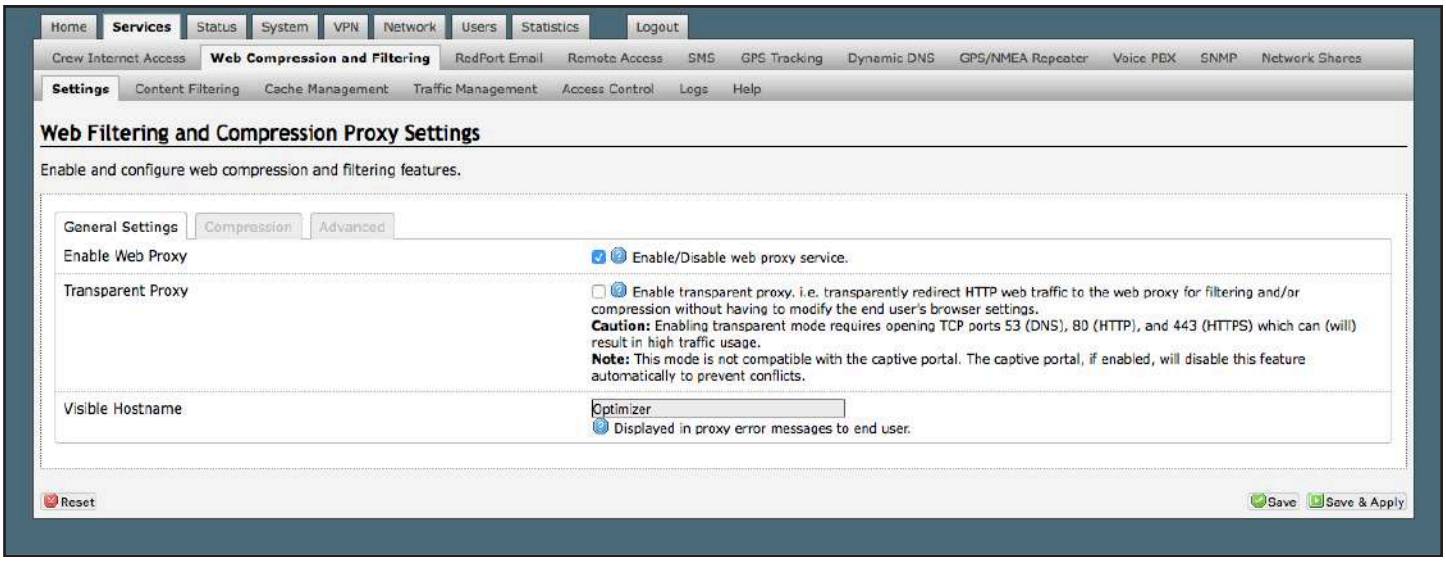
### 5.2.1.2. General Settings

Requires ‘superadmin’ login.

These are the general settings for the internal proxy service when the Captive Portal is Disabled.

Since the Captive Portal is enabled by default, there is no need to change anything on this page. In fact, if the Captive Portal is enabled, the features on this page will automatically be disabled to prevent conflicts.

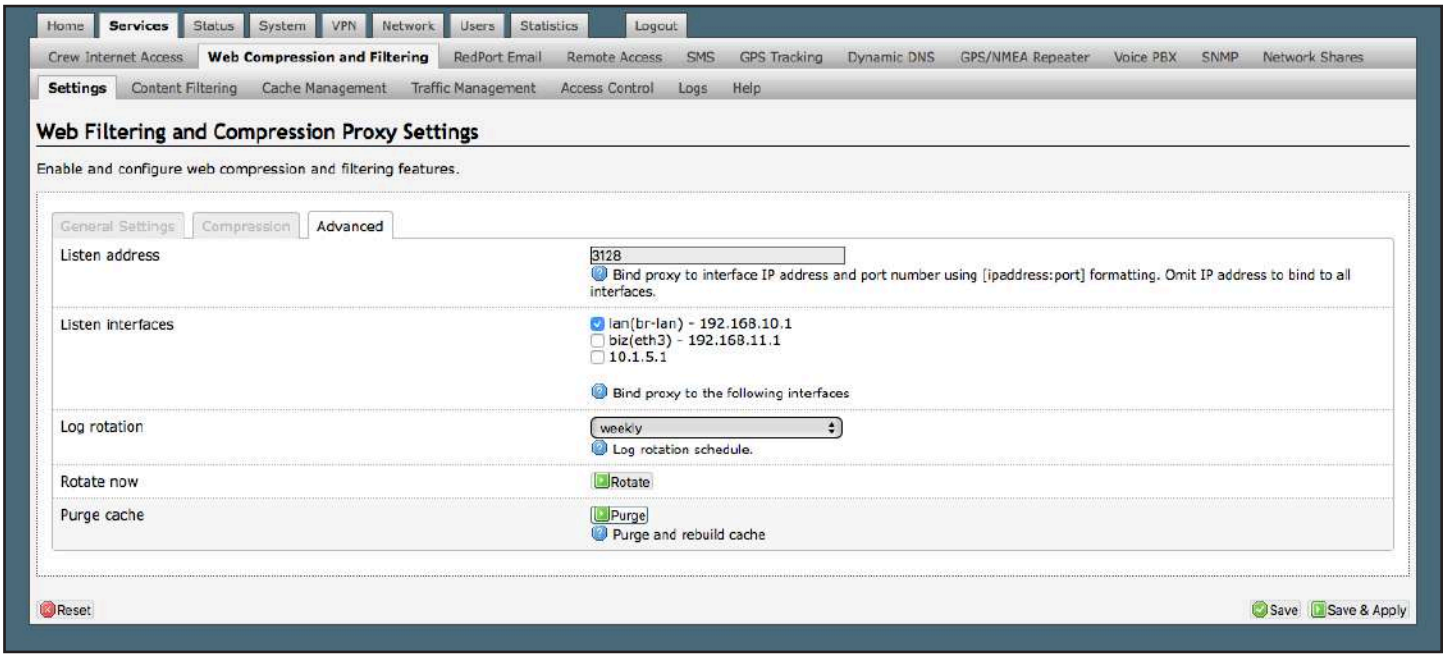
You can still use the internal proxy server and enable transparent proxy to redirect all http traffic for filtering.




## 5.2.1.3. Advanced Settings

Requires ‘superadmin’ login.

Under normal operating conditions there is little to change here. See the next page for possible exceptions.




Some items of interest include:

- **Default Filtering Scheme:** This setting affects the amount of content filtering that is applied to a website by removing elements before presenting it to the end user. It determines the amount of filtering to be done to the page. “Light” has the least impact and is not recommended for those on low data airtime plans. “Aggressive” has the most impact and is suggested for the best bandwidth utilization. The Aggressive setting blocks YouTube, flash, etc.
- **Debug Level:** The settings here determine what will show on the Web Compression and Filtering ‘Log’ page. Adding the debug level of “1”, all URLs will be logged and will appear on the Log page, one line per URL.

CAUTION: Utilization of debug level 1 is not recommended for normal operation. The Log files are kept in RAM and with debug level 1 activated you run the risk of RAM filling up, the Swap Partition filling up and the router may

crash.

BEST PRACTICE: Activate debug level 1 for testing that your setup is working as you intend, i.e. the proxy server working as expected, whitelists and blacklists are working. Deactivate debug level 1 when testing is complete.

### 5.2.2. Filters (Content Filtering through Diladele)

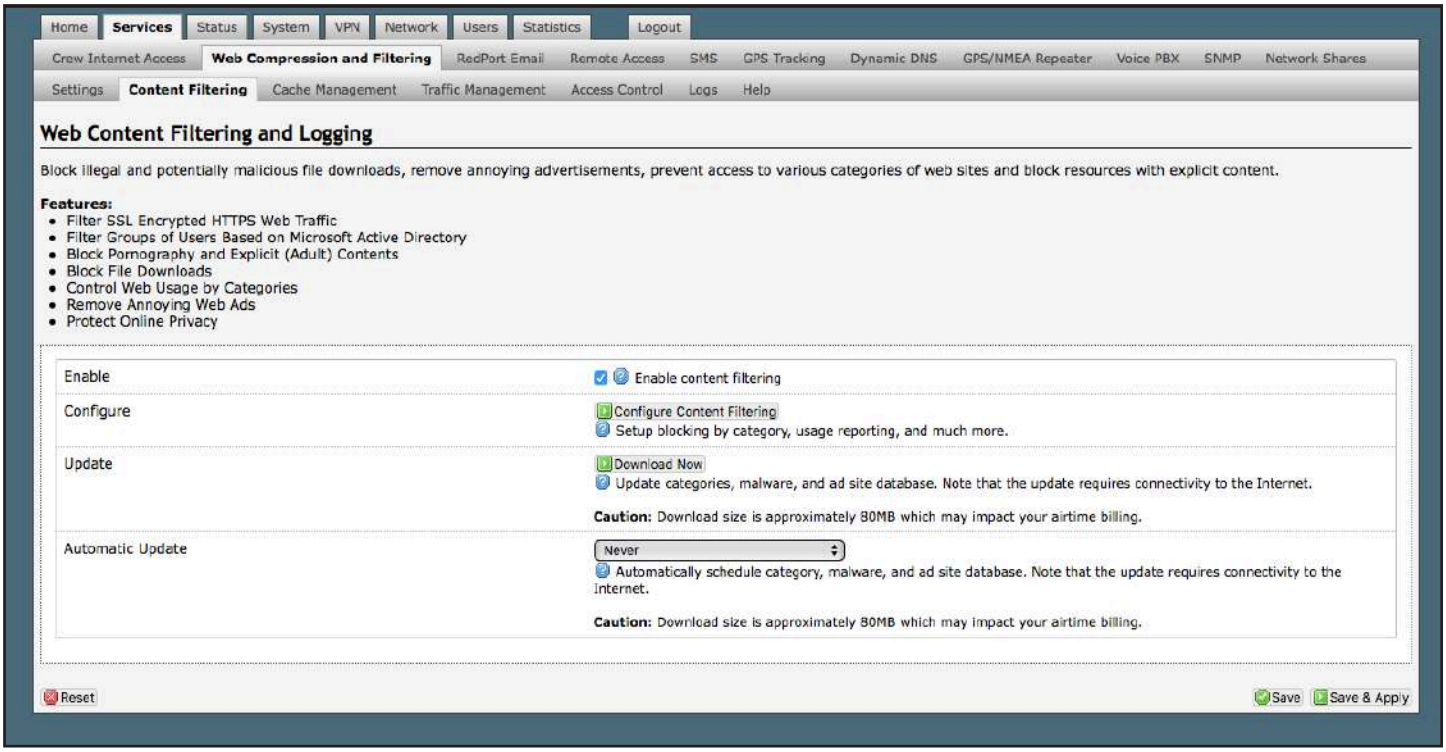
Requires ‘superadmin’ login.

By default, you have control over what sites are ALLOWED (whitelist) and what sites are BLOCKED (blacklist) and some control over content filtering without having compression enabled. See next page for details.

Increased Content Filtering is available through a Third-party company, Diladele. This robust pay service provides:

- Web filtering for HTTP and HTTPS traffic.
- Prevention of access to various categories of sites.
- Blockage of explicit content.
- Removal of advertisements.
- Control of downloads.
- Monitoring of traffic.
- Creation of activity reports.

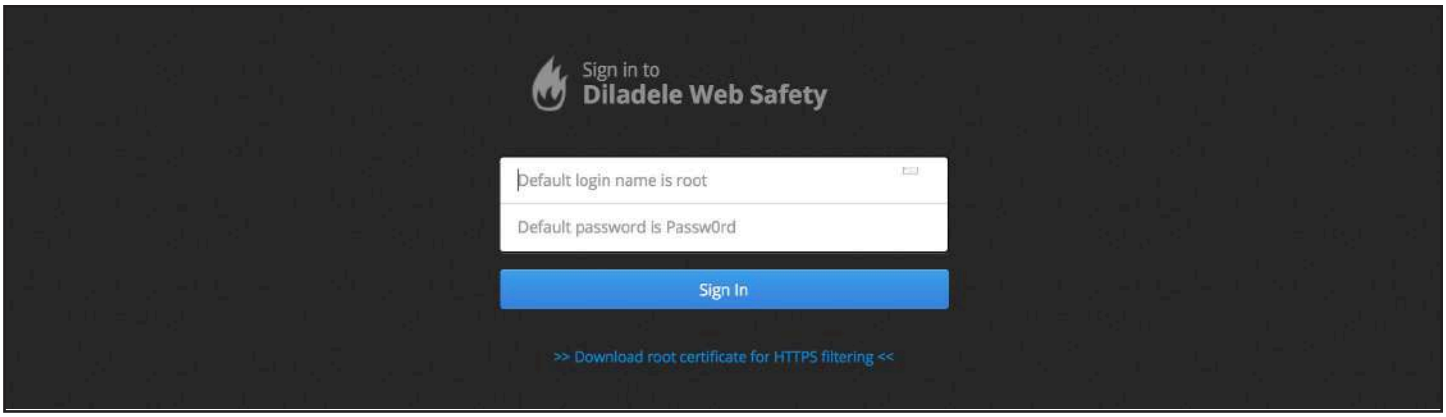
Navigate to <Services> tab, then to <Web Compression and Filtering> tab, then to <Content Filtering>.




Obtain license from RedPort authorized dealers.

Click “Enable content filtering”.

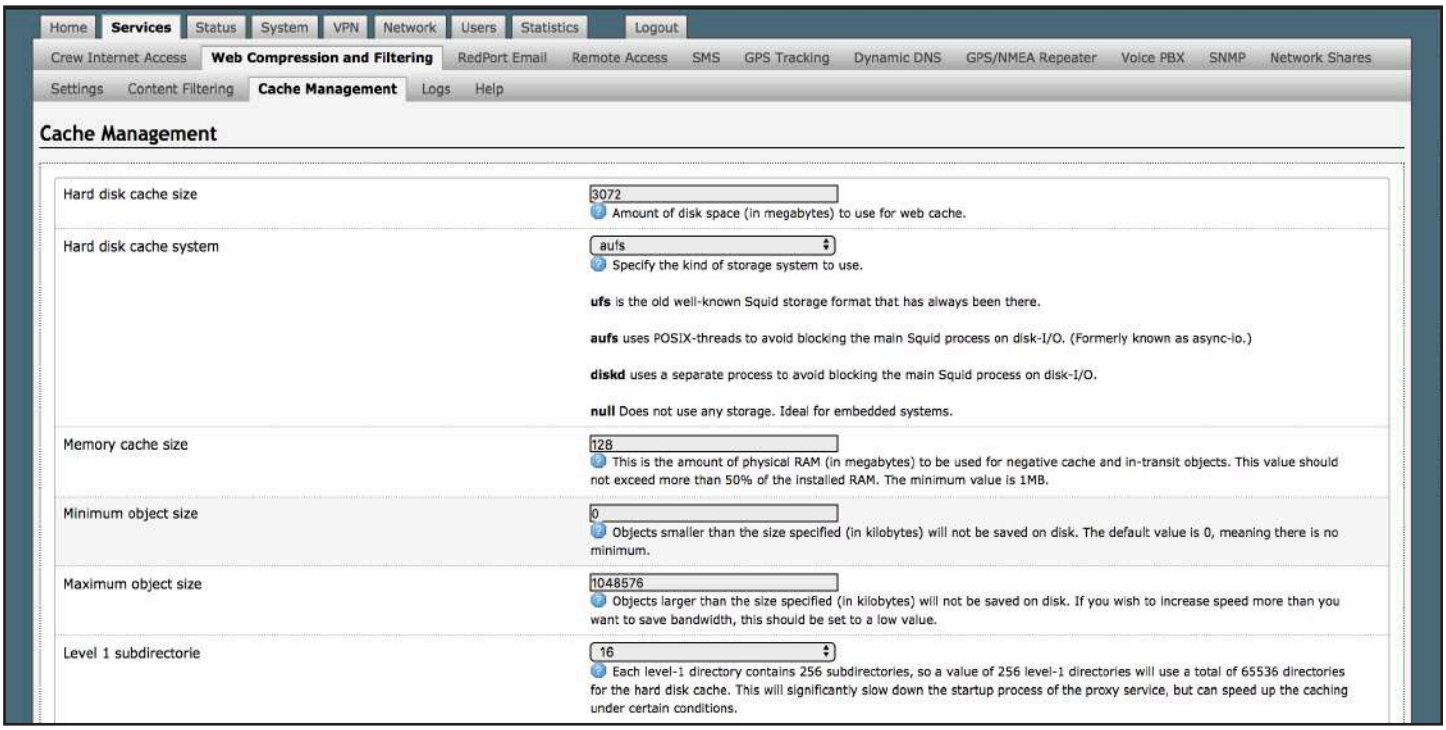
Click “Configure Content Filtering”.

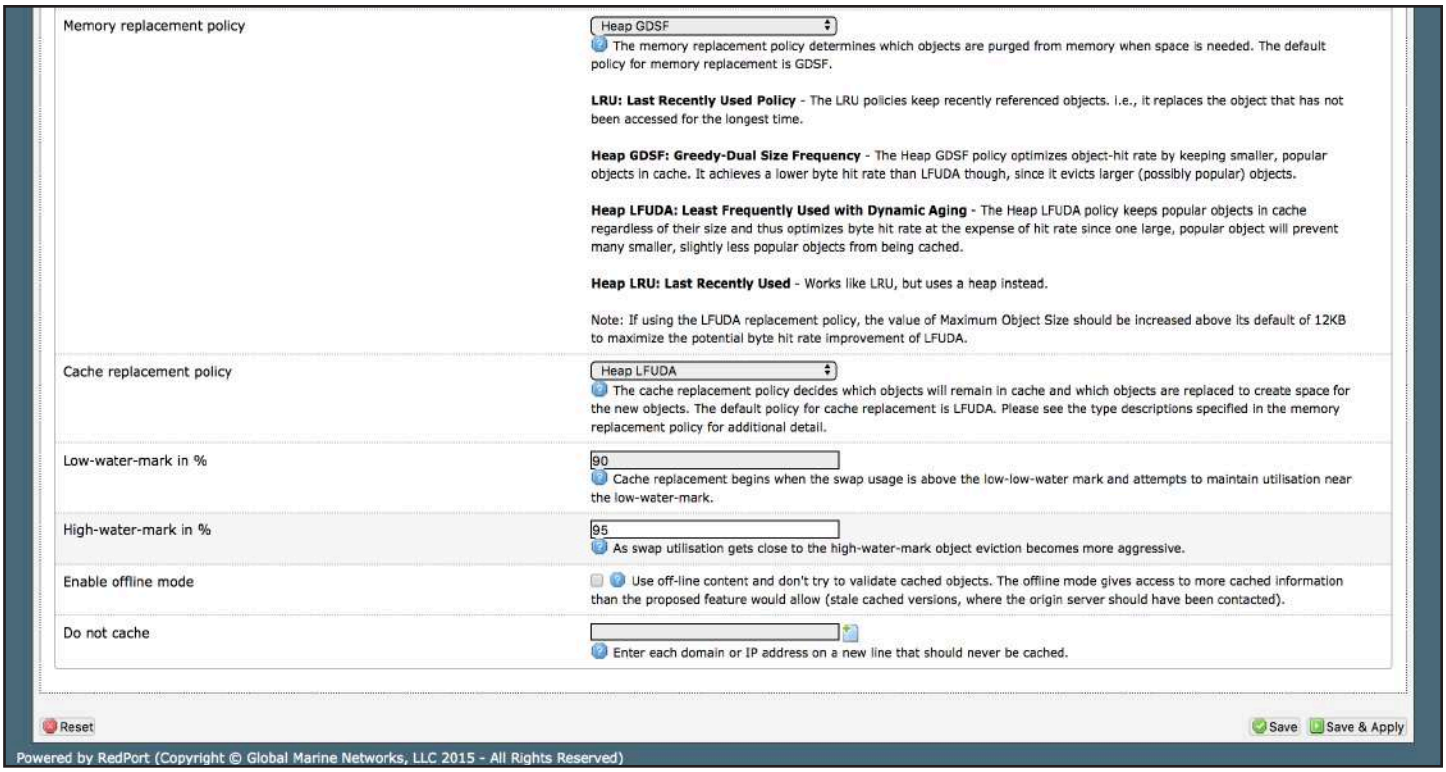



Enter Diladele login and password supplied by RedPort authorized dealer.

### 5.2.3. Cache Management

Requires ‘superadmin’ login.

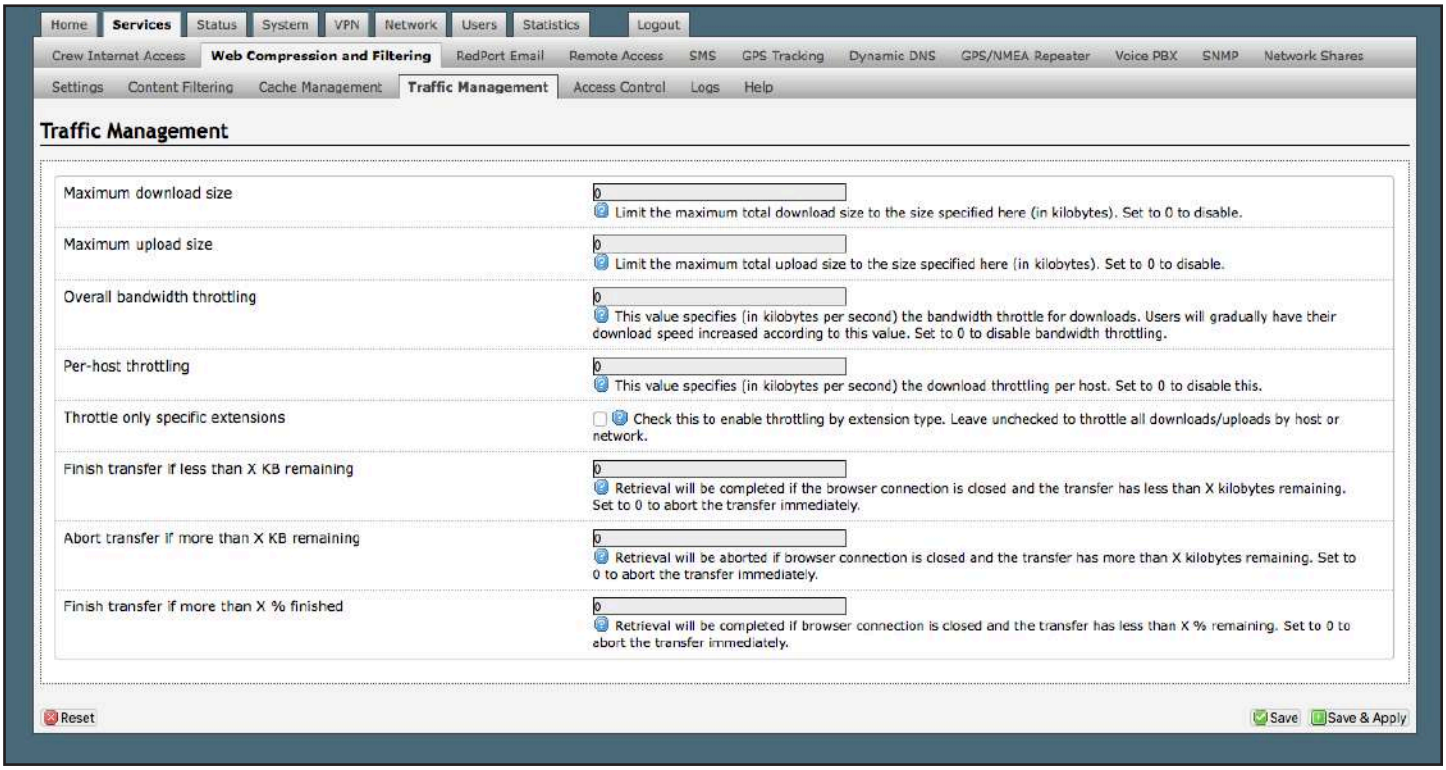





## 5.2.4. Traffic Management

Requires ‘superadmin’ login.

The <Traffic Management> tab is available when “Content Filtering” is not enabled.



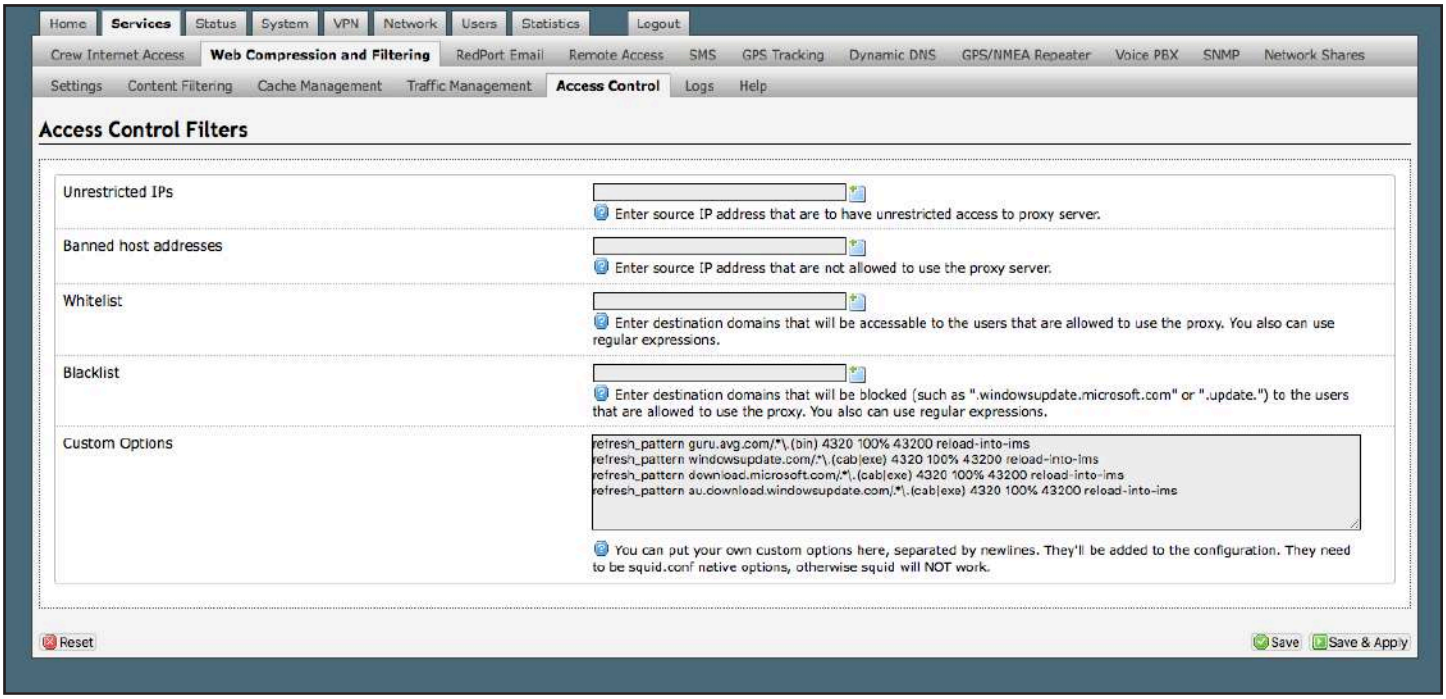

Traffic Management allows you to oversee:

- Maximum download and upload sizes.
- Throttling parameters.
- Transfer restrictions.

### 5.2.5. Access Control

Requires ‘superadmin’ login.

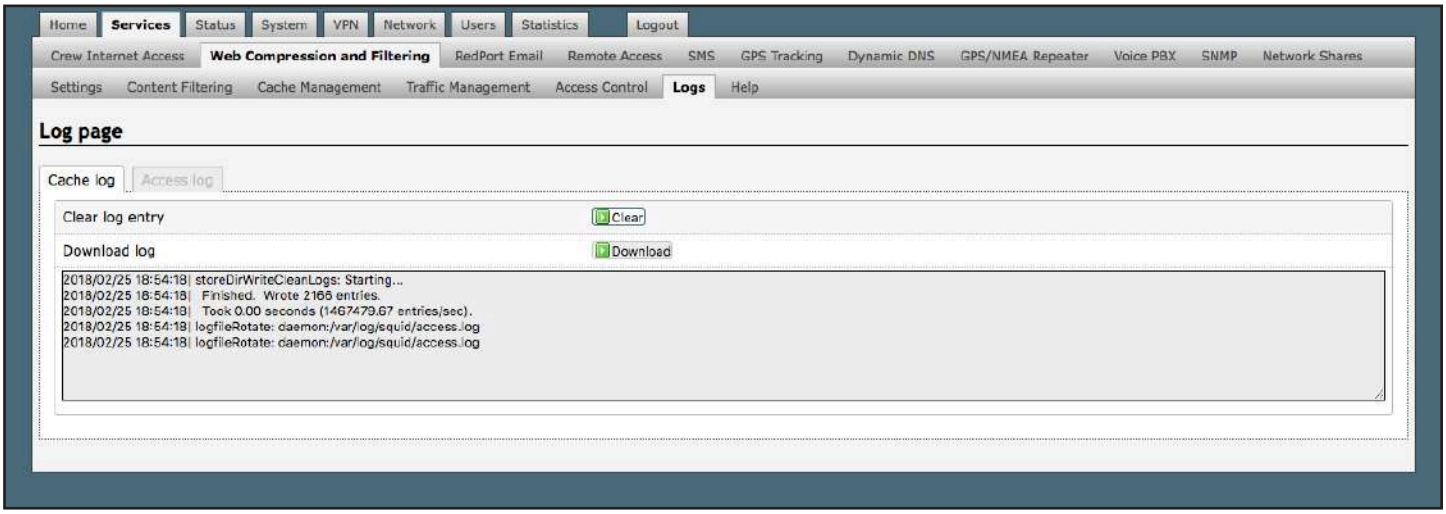
The <Access Control> tab is available when “Content Filtering” is not enabled.




### 5.2.6. Logs

Requires ‘superadmin’ login.

The Log shows activity on the router. How much activity is logged is determined by the entry in Web Compression and Filtering > Settings > Advanced > Debug Level. Descriptions of debug levels can be found in the Help tab (**See Chapter 5.2.7**).



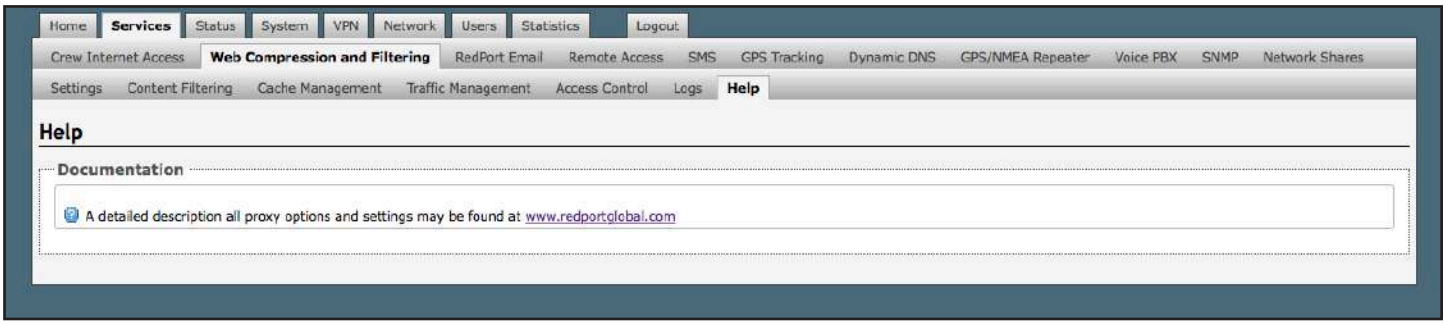
Log files are kept in RAM and are rotated weekly, by default. You can change the Log Rotation schedule in Web Compression and Filtering > Settings > Advanced > Log Rotation.

Log files can be downloaded to a .csv file if history must be maintained.

### 5.2.7. Help

Requires ‘superadmin’ login.

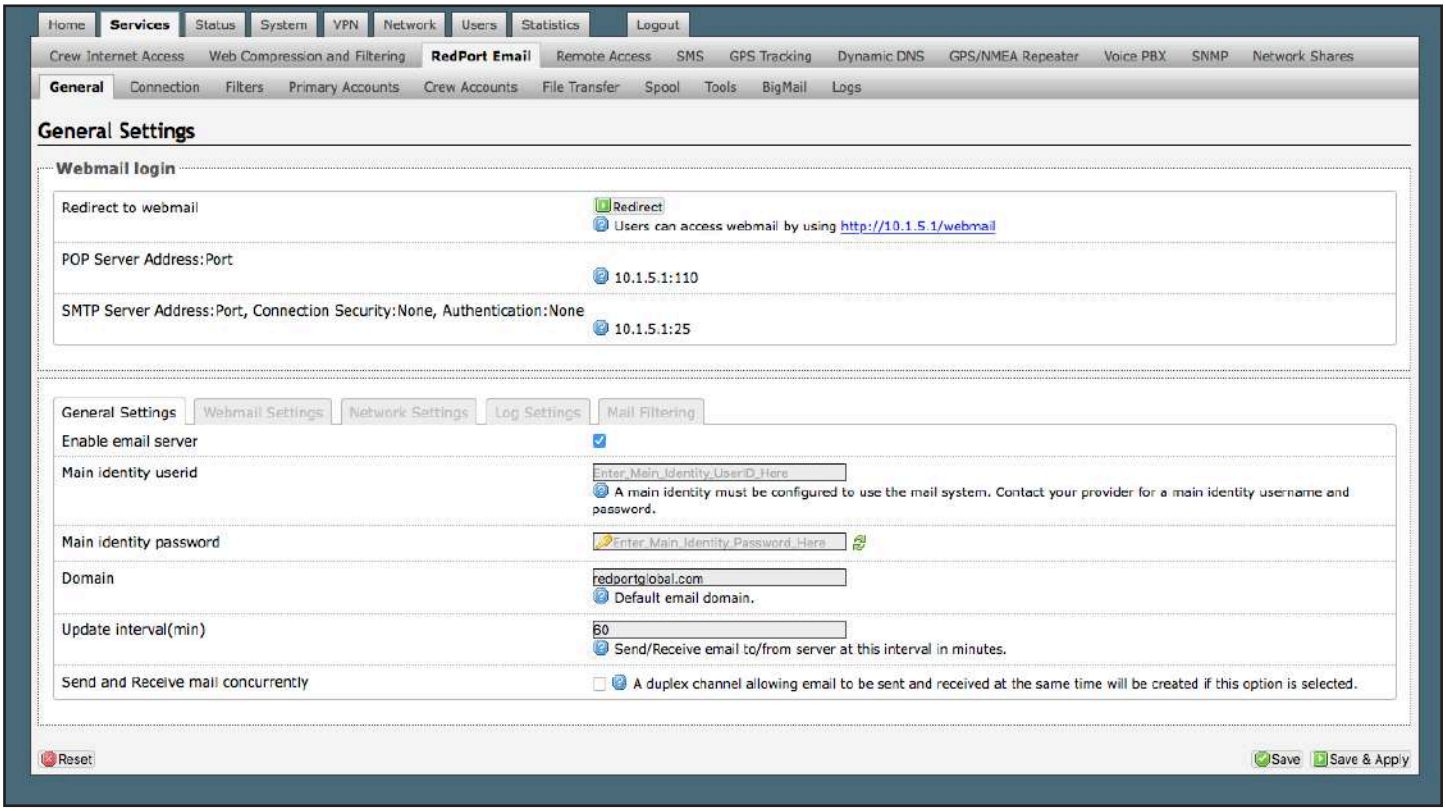
For your convenience the Help page includes a link to the RedPort Global website.




## 5.3. RedPort Email

Requires ‘superadmin’ login.

This is a full-featured Crew solution that runs on the router. RedPort email is designed specifically for use over satellite connections. It uses block compression, mid-file restart, BigMail quarantine and more to maximize data transfers.



Once enabled, the onsite administrator can manage email for the entire crew. The users can log in to a webmail program to view their email, so they do not need special software on their computer or device. The Optimizer Enterprise is a POP and SMTP server as well, so users can access email using their preferred email client instead of webmail access, if desired.

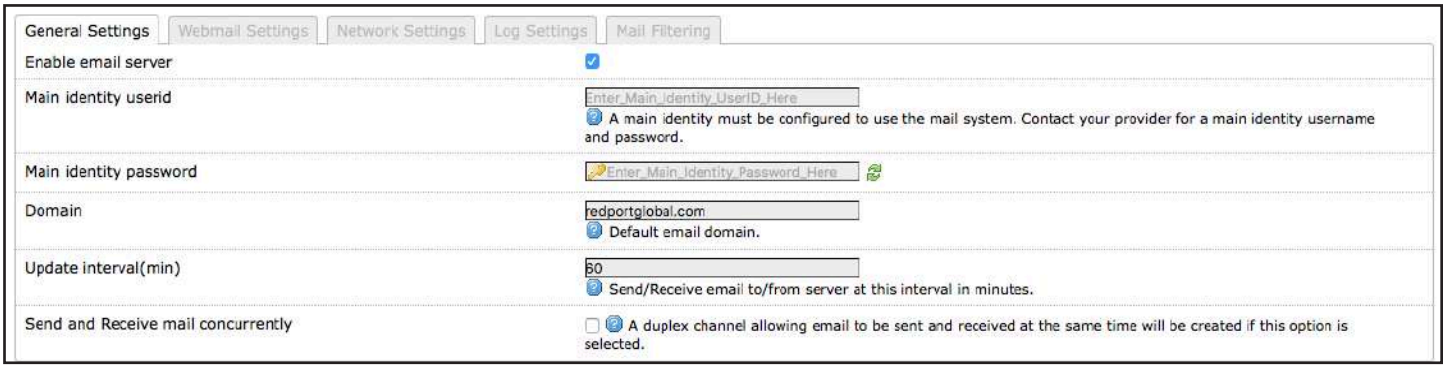
Contact your service provider for details and pricing.

The onsite administrator using the 'admin' login to the user interface does not have access to the RedPort Email Settings.

### 5.3.1. Enable and Configure RedPort Email

Requires 'superadmin' login.

In the RedPort Email General Settings:




1. Enable Email Server: Click the checkbox to enable email.

2. Main Identity Userid: Enter the username assigned to the Main Identity Primary Account for email, as given to you by your service provider.

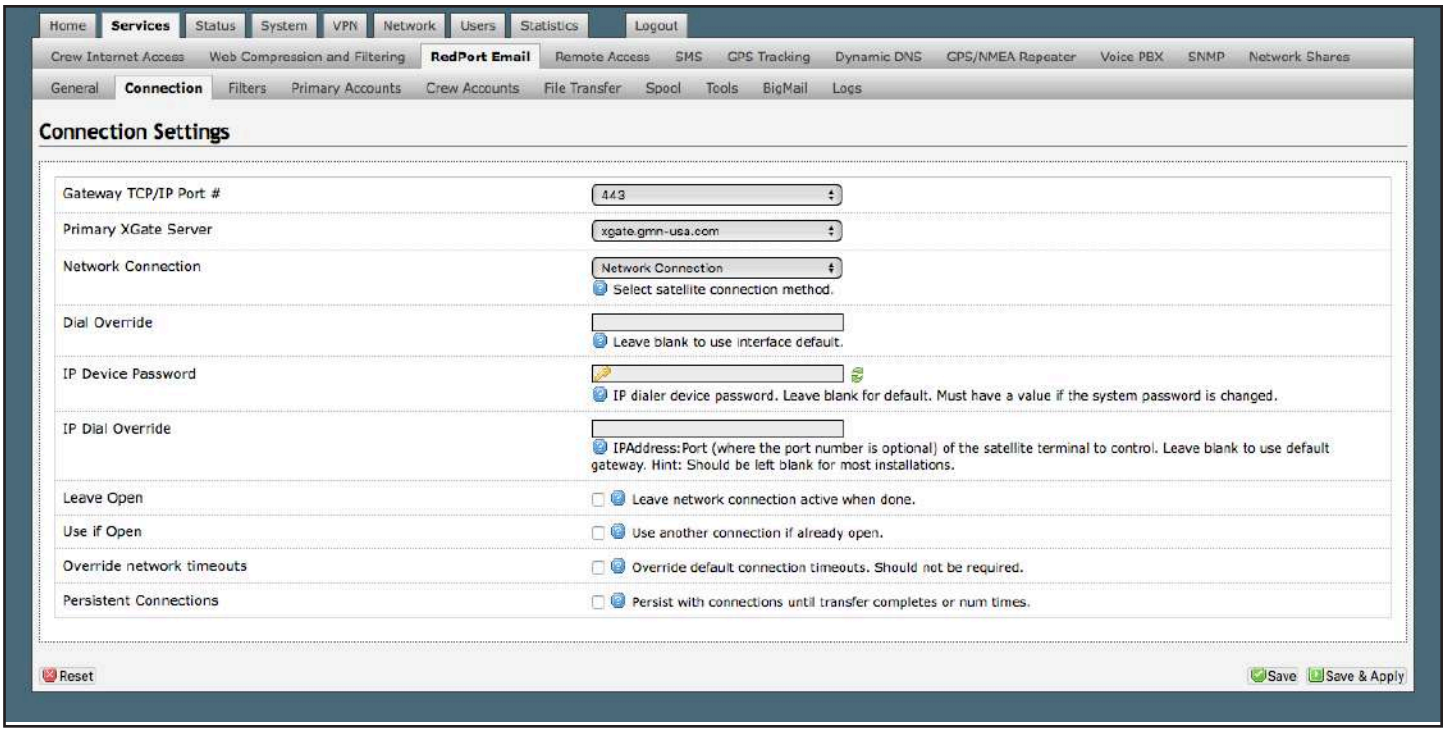
3. Main Identity Password: Enter the password assigned to the Main Identity Primary Account, as given to you by your service provider.

4. Update Interval: This is how often (expressed in minutes) the mail program will automatically log in to the satellite device to send any pending email and to receive any email pending. The default is set to 60 minutes but can be modified to fit business needs. (See Appendix A of the RedPort Email Guide for information on email block compression and its impact on Update intervals).

5. Click <Save>.

NOTE: Typically, the Main Identity is the onsite email administrator. The Main Identity must be a Primary Account. There must be at least one primary account present on the system before sub/crew accounts can be created. **See Chapter 5.3.2** for more information regarding primary accounts.

6. Go to the Connection tab:




7. Click on <Network Connection> to open up the drop-down menu.


8. Select the appropriate setting for your satellite connection method. This tells the router which satellite device you are using and instructs the router to bring up the connection prior to attempting to send email. Otherwise, it will attempt to send email before the connection is up and because it cannot open the socket to the server it will fail due to a timeout error.

The router supports both Managed and Unmanaged connections for broadband terminals.

9. Click <Save & Apply> to apply the change.

For more comprehensive information about RedPort Email setup and use, please see the separate document, Optimizer - RedPort Email Guide.

### 5.3.2. Primary Accounts

Requires ‘superadmin’ login.

The Main Identity must be a Primary Account. There must be at least one primary account present on the system. The username and password are assigned to you by your service provider.

Typically, there is only one Primary Account, however RedPort Email allows access to multiple primary accounts, if needed. For example, a fleet manager that travels from vessel to vessel would have a primary account and would need access to that account from each vessel in the fleet.

Primary accounts have access to email whether on or off the vessel as the account exists on the GMN/RedPort mail servers.

Primary accounts also have access to Filters to customize settings to meet the account needs. These filters include:

- Mail Management including BigMail (**See Chapters 6.0 and 8.0** of the Optimizer RedPort Email Guide for details).
- Inbound Mail Filter (**See Chapter 7.0** of the Optimizer RedPort Email Guide for details).
- Outbound Mail Filter (**See Chapter 7.0** of the Optimizer RedPort Email Guide for details).

The Primary Account receives all Email system messages.

The email address of the primary account will be: username@redportglobal.com. See Appendix A of the RedPort Email Guide for information on using a custom domain name for the email address.

NOTE: The Main Identity Primary Account is reserved for the Onsite Email Administrator. The Onsite Email Administrator does NOT have a crew/sub account. With this arrangement, the Onsite Email Administrator will receive the system messages that cannot be viewed via a crew/sub account.

Once the Primary Account is setup, the onsite administrator can setup and manage the sub/crew accounts.

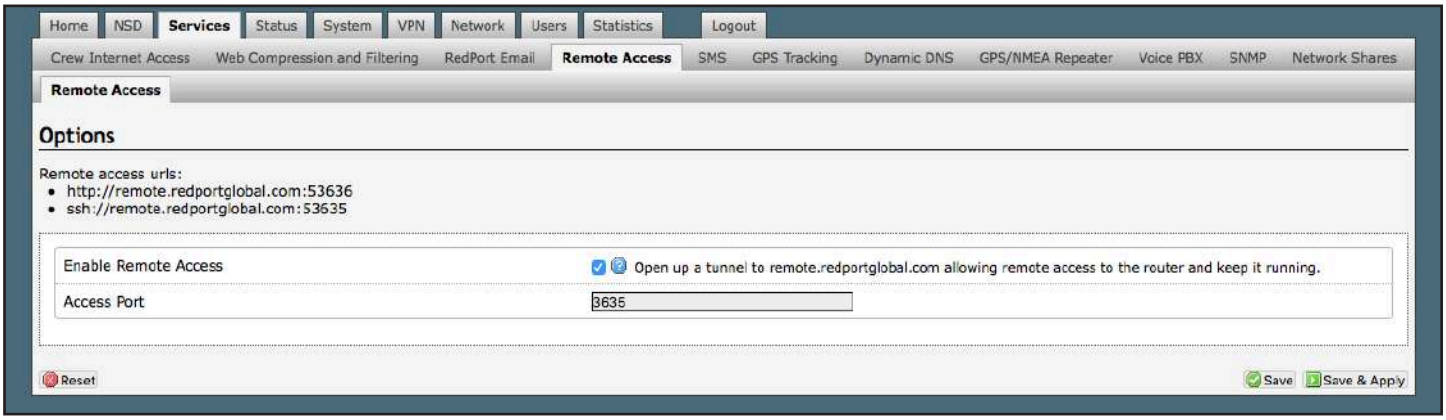
Please see the Optimizer RedPort Email Guide for comprehensive information on the use of RedPort Email service.

## 5.4. Remote Access

Requires ‘superadmin’ login.

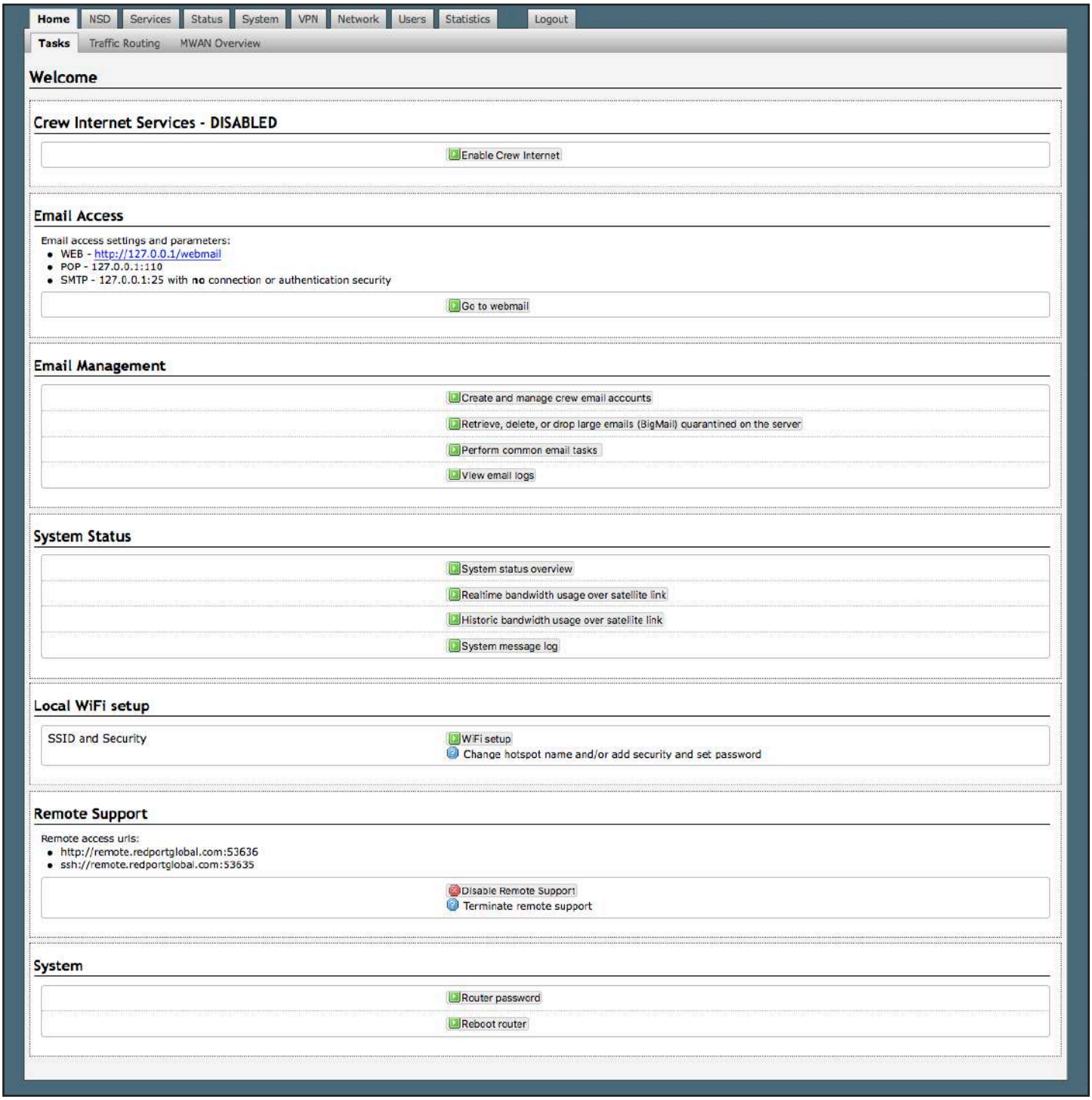
Used to permit Remote Access to the router UI. Access permits technical support members the ability to log into the router from the Internet.

NOTE: Do not set your OE remote Access Port to the presented port in this document’s example. The OE will present you a port. Do not attempt to log in to the example remote login, it is just presented for your knowledge.



Remote login from the <Services> tab sets up a persistent access that will remain available until disabled.

Click “Enable Remote Access”. Remote access URLs will be presented. The URLs can be utilized by the customer or passed to technical support members to allow access to the router.




Optionally, temporary Remote Access can also be given through the <Home> tab.

This access will automatically be disabled when the router is rebooted. The access can also be disabled by clicking <Disable Remote Support>.

## 5.5. SMS Messaging

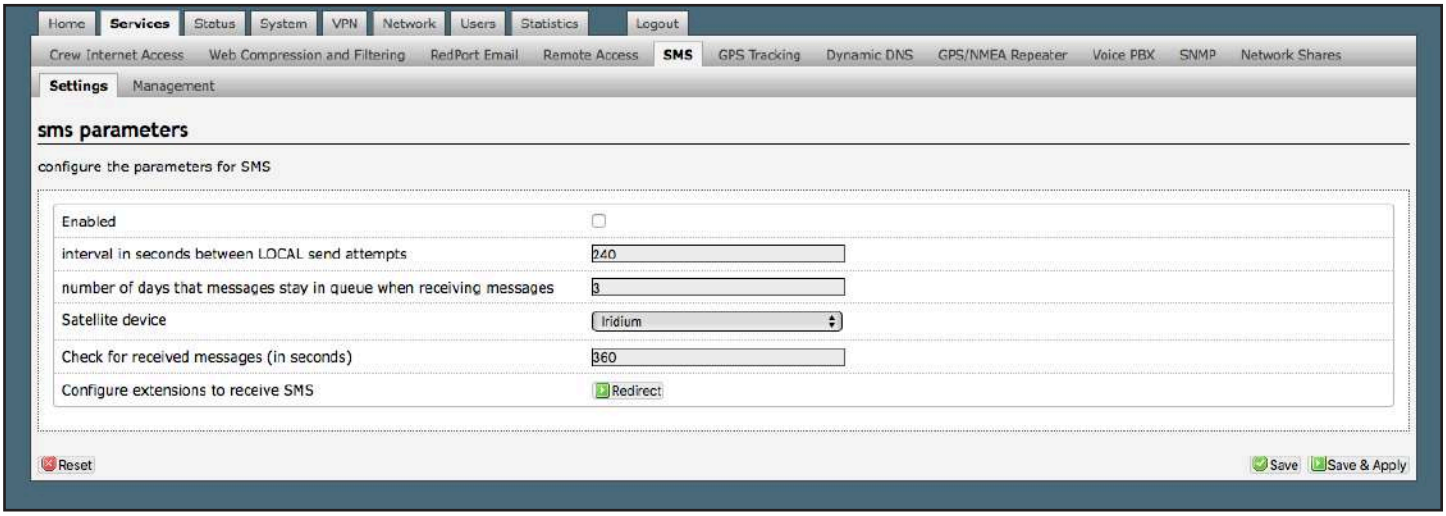
Requires ‘superadmin’ login.

If using a compatible satellite device, it is possible to send and receive SMS messages directly from the Optimizer Enterprise router and to route incoming SMS messages to one or more smartphones connected to the local wireless network.

### 5.5.1. SMS Settings

Requires ‘superadmin’ login.

Use Settings to enable and configure the SMS parameters.



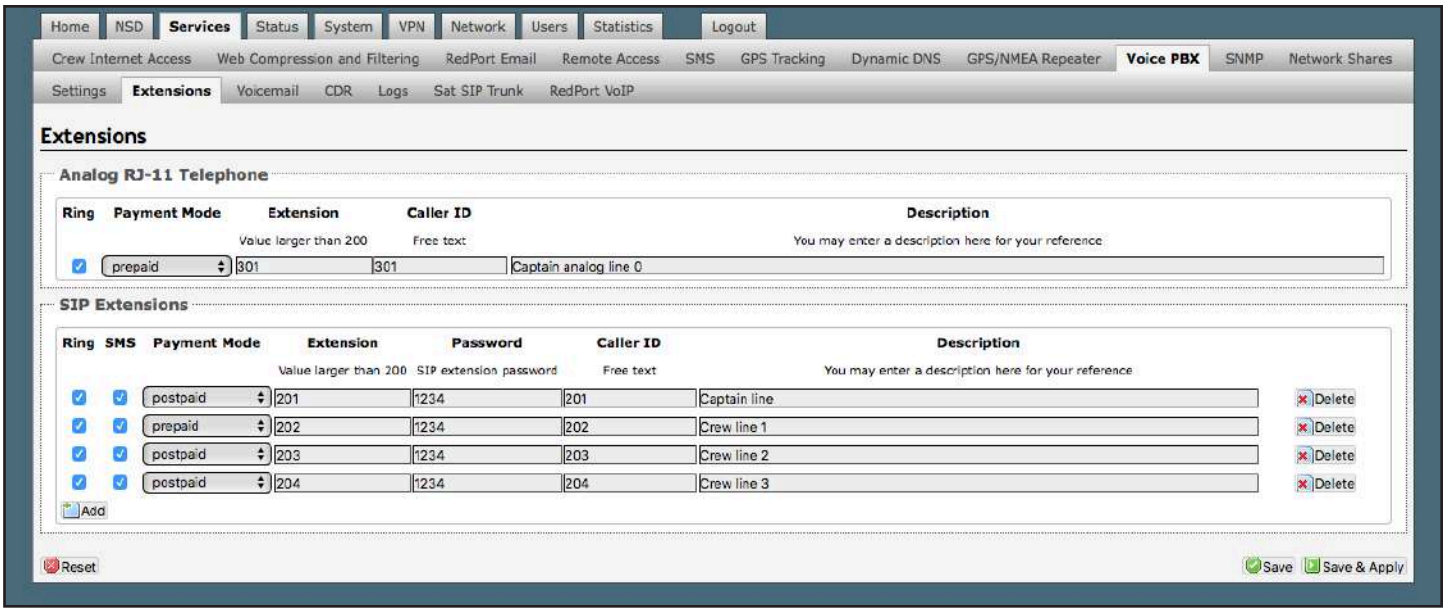

1. Click the checkbox to enable SMS.
2. Click the appropriate Satellite device from the drop-down menu.


3. Click <Save & Apply>.

### 5.5.2. Configure SIP Extensions to Receive SMS Messages

Requires ‘superadmin’ login.

With SMS enabled, click <Redirect> (see SMS Settings screen above) to configure which extensions are to receive incoming SMS messages.




To enable an extension to receive SMS messages, use the checkbox in the SMS column. For more information on configuring SIP Extensions **See Chapter 5.5**.

## 5.5.3. How to Send/Receive SMS Messages

To use a smartphone or tablet to send/receive SMS messages requires XGate Phone App installed on the smartphone or tablet. The XGate Phone App can be found in Apple iTunes App Store for iOS devices and the Google Play store for Android devices.

Using the smartphone or tablet Settings, connect to the Optimizer Enterprise wireless network ‘wxa-524-xxxx’.


Open the XGate Phone App. Click <Chat> to send a SMS message or to view a SMS message received.

Only one SMS message can be sent at a time. Standard SMS message rates apply.

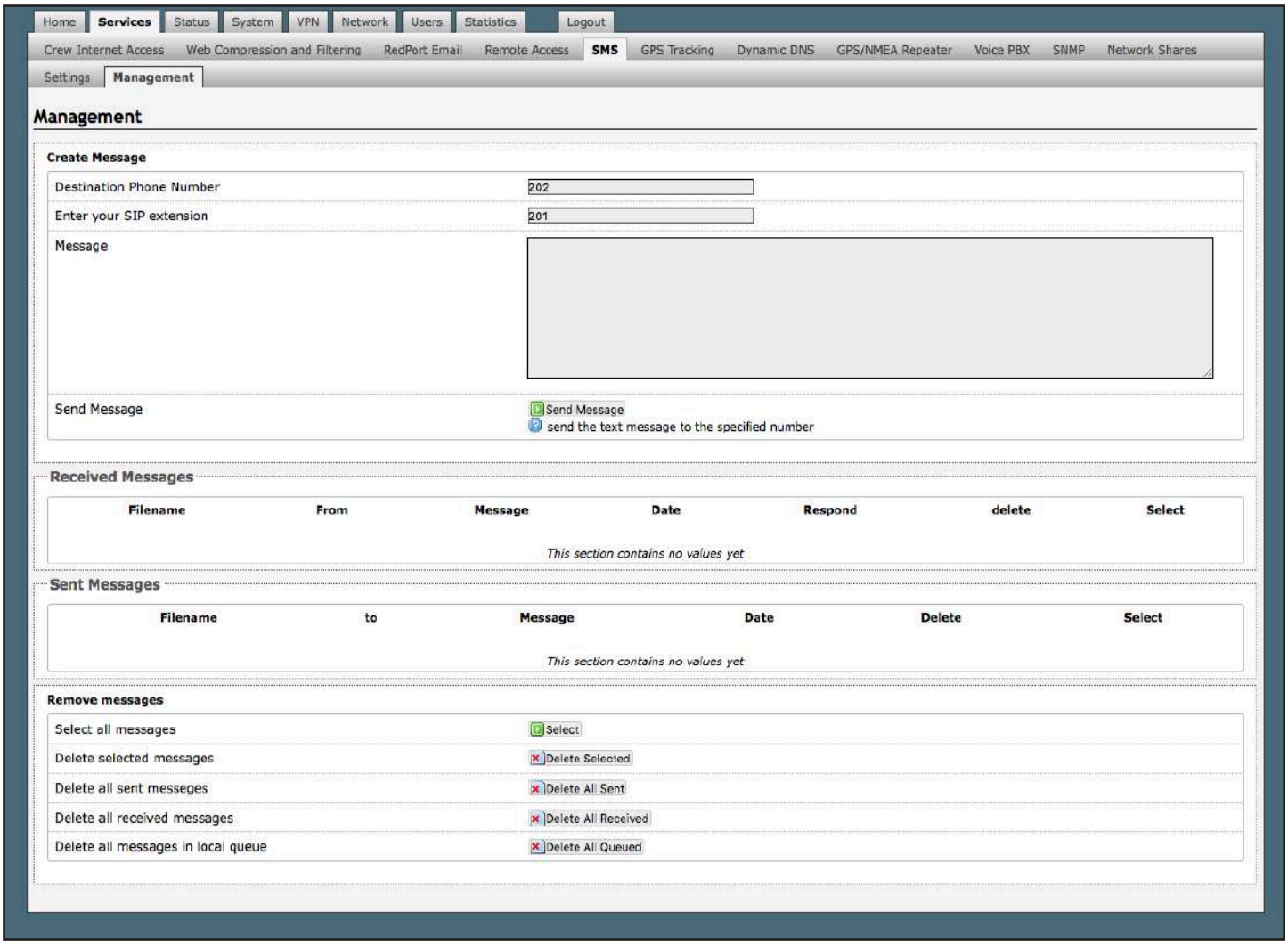
Multi-user Voice and SMS is possible with the optional RedPort VoIP service. Contact your service provider for

details.

### 5.5.4. SMS Management

Requires ‘superadmin’ login.

With SMS enabled you can send SMS messages directly from the Optimizer Enterprise user interface and you can manage SMS messages that have been sent and received.




Using the <Select> checkbox you can specify which messages to delete or you can delete all messages.

## 5.6. GPS Tracking

Requires ‘superadmin’ login.

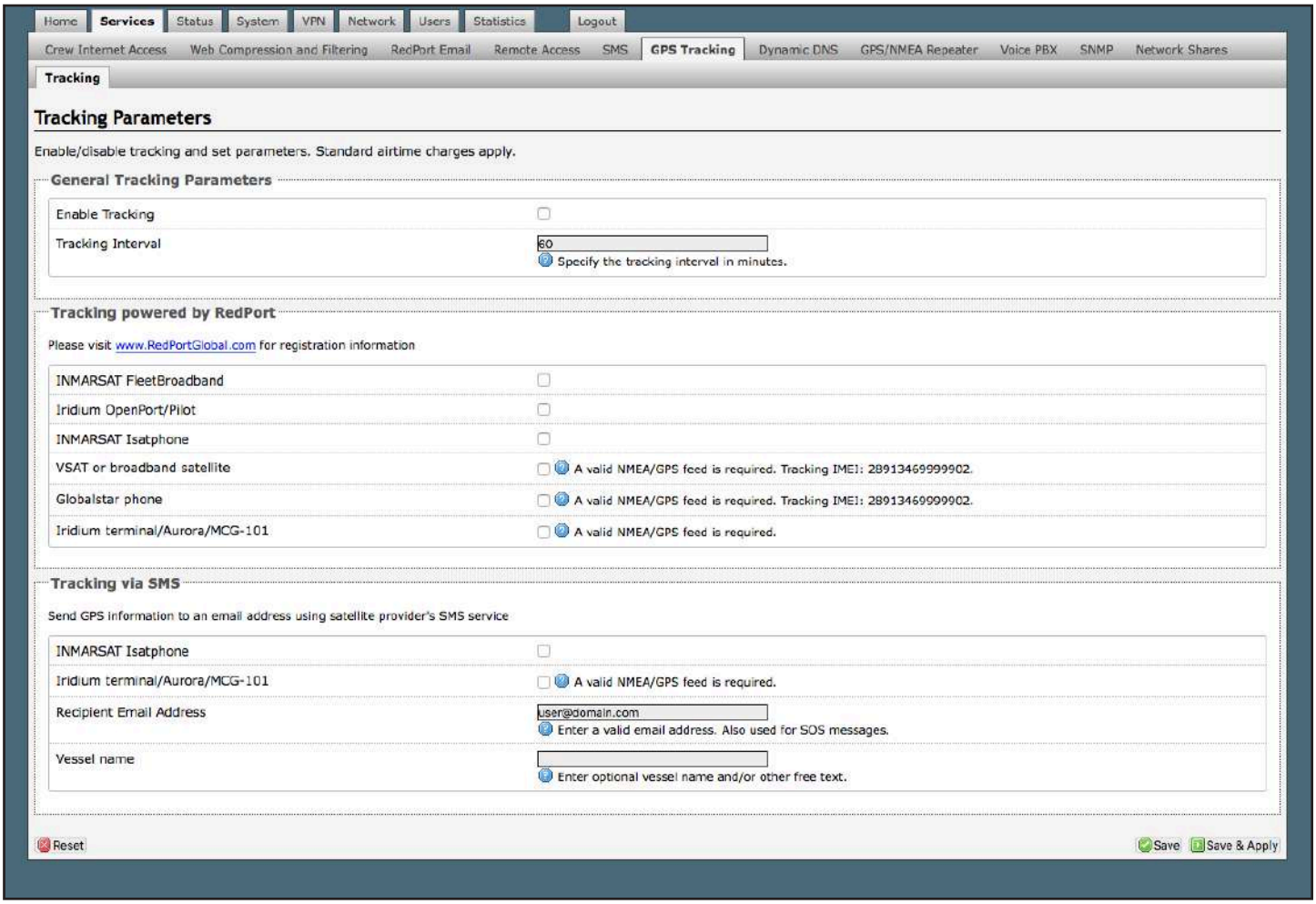
If you wish to have tracking service using your satellite device, the Optimizer offers GPS Tracking service powered by GSatTrack or Tracking service via SMS message.

### 5.6.1. Tracking powered by RedPort with GSatTrack

Requires ‘superadmin’ login.

Using a GPS-enabled satellite device, the Optimizer can be configured to submit position reports to a central database for viewing on the tracking website.

This tracking service must be purchased separately. See your satellite service provider for details.

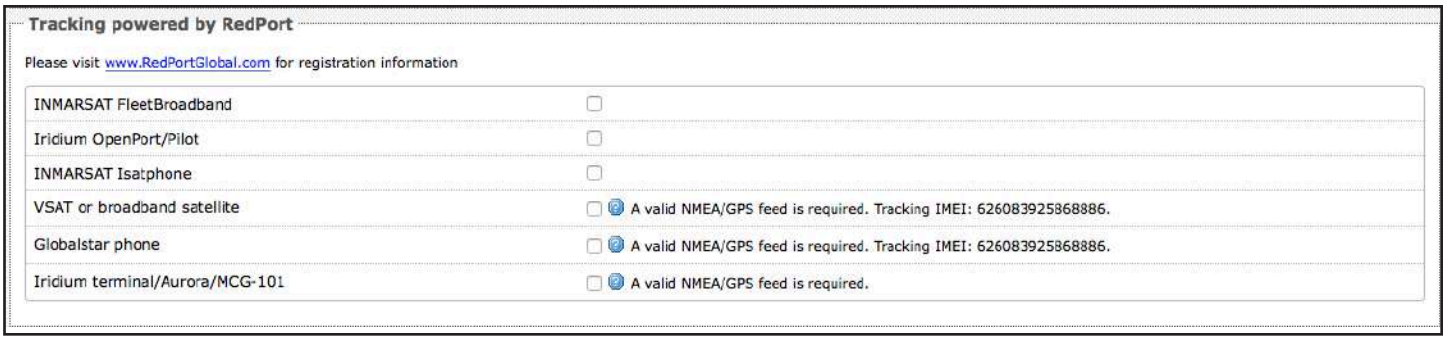



1. Enable Tracking by clicking the checkbox.

2. Enter the Tracking Interval in minutes; the default is set to hourly reporting (60 minutes). This means that every 60 minutes a position report will be transmitted over the satellite link. Keep in mind that standard airtime charges will apply to each position report. Adjust the Tracking Interval to meet your needs.

3. Go to Tracking powered by RedPort and select the satellite terminal you are using.

NOTE: A valid NMEA/GPS feed is required when using some satellite devices.

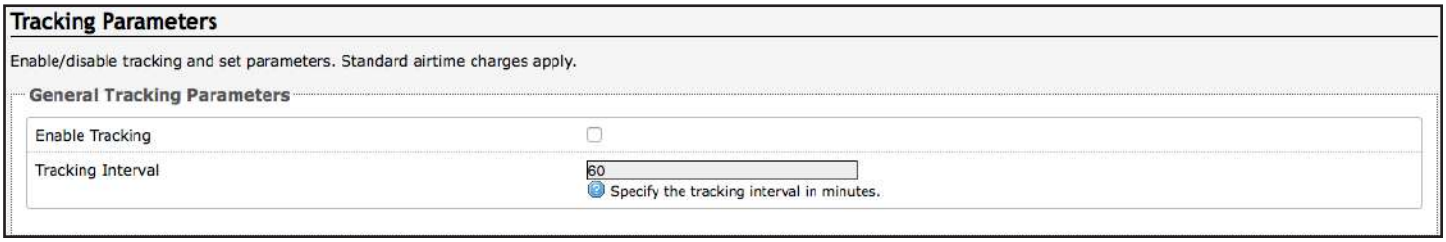



4. Click <Save & Apply>.

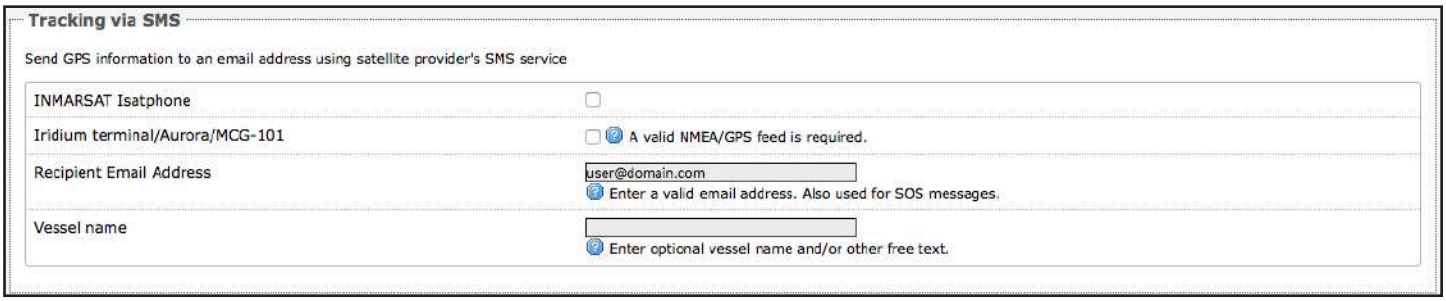
## 5.6.2. Tracking via SMS

Requires 'superadmin' login.

If using certain satellite devices, GPS information can be sent to an email address using your satellite provider's SMS service. Standard SMS charges may apply; check with your satellite airtime provider for details.




-- / / --




1. Enable Tracking by clicking the checkbox.

2. Enter the Tracking Interval in minutes; the default is set to hourly reporting (60 minutes). This means that every 60 minutes a position report will be transmitted via the SMS service provided by your satellite provider network. Keep in mind that standard SMS charges may apply to each position report. Adjust the Tracking Interval to meet your needs.

3. Go to Tracking via SMS and select which satellite device you are using. At this time, tracking via SMS is available with the Inmarsat IsatPhone, Iridium handheld 9575 Extreme, Iridium GO! or an Iridium terminal such as the Pilot.

NOTE: A valid NMEA/GPS feed is required when using an Iridium terminal.

4. Enter the recipient's email address. The SMS message with the GPS information will be sent to this email address at the interval entered in Step 1.

5. Click <Save & Apply>.

## 5.7. GPS/NMEA Repeater

Requires ‘superadmin’ login.

The Optimizer Enterprise supports USB and RS-232 NMEA devices allowing multiple applications to share the GPS/NMEA data. If you have a NMEA RS-422 device, adding a RS-422 to RS-232 converter to your setup may allow the sharing of data.

The Optimizer Enterprise does not transmit data but can be configured to receive and repeat GPS/NMEA data from:

- A USB connected GPS or NMEA device.
- A serial port connected GPS or NMEA device with appropriate USB to Serial Adapter.

### 5.7.1. Equipment Setup

A physical connection is required from the source (GPS/NMEA device) to the Optimizer Enterprise.

#### 5.7.1.1. USB NMEA Device

When using a NMEA device that supports a USB connection, connect the NMEA device to the USB port on the rear of the Optimizer Enterprise with an appropriate USB to NMEA device cable as indicated by the NMEA device manufacturer.

CAUTION: It is not recommended to have a USB Satphone and LTE/GSM modem connected at the same time via a USB Hub. It may create conflicts.


The Optimizer Enterprise will broadcast the GPS signal over WiFi, so you can connect your computer to the WiFi network in order to establish a successful connection with your destination software.

#### 5.7.1.2. RS-232 NMEA Device

With Serial Port Connector:

When using a NMEA device with Serial Port connection, a USB to Serial Adapter (PL-2303HX or FTDI Chip) is required.

CAUTION: While all standard USB to serial adapters may work, the PL-2303HX and the FTDI Chip are the only USB to Serial Adapters that we recommend as compatible with the Optimizer.


Connect the NMEA device to the USB port on the rear of the Optimizer with an appropriate USB to Serial Adapter.

The Optimizer will broadcast the GPS signal over WiFi, so you can connect your computer to the WiFi network in order to establish a successful connection with your destination software.

Without Serial Port Connector:

Some NMEA devices do not have a serial port; instead they have a group of wires extending from the back or bottom of the unit. These devices require proper wiring to a serial port.

As the Optimizer does not transmit, it only repeats the data you will only need two of the wires. The Receive (RD) wire goes to pin 2 and the Ground (SG) wire goes to pin 5.

A simple solution is to use a terminal block as shown here. Simply connect the RD wire to pin2 and the SG wire to pin 5. Then connect the terminal block to a PL- 2302HX or a FTDI Chip USB to serial adapter as noted above.

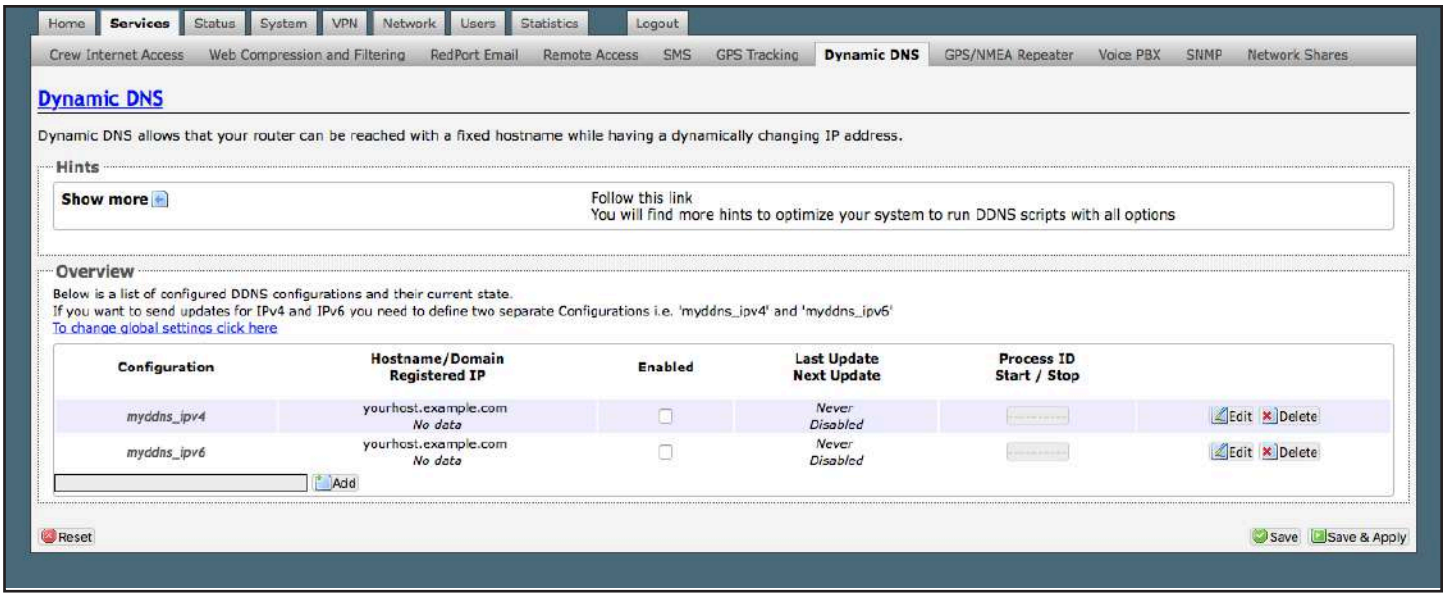
### 5.7.1.3. Connecting Multiple NMEA Devices

It is possible to connect up to four NMEA devices if you have the proper hardware. It will require a USB to RS-232 4-port Hub or a RS-232 4-port terminal block that you would simply plug into the Optimizer's USB port.

NOTE: The Optimizer supports RS232. If you have a NMEA RS- 422 device, adding a properly wired RS-422 to RS-232 converter to your setup may allow the sharing of data.

## 5.7.2. Dynamic DNS

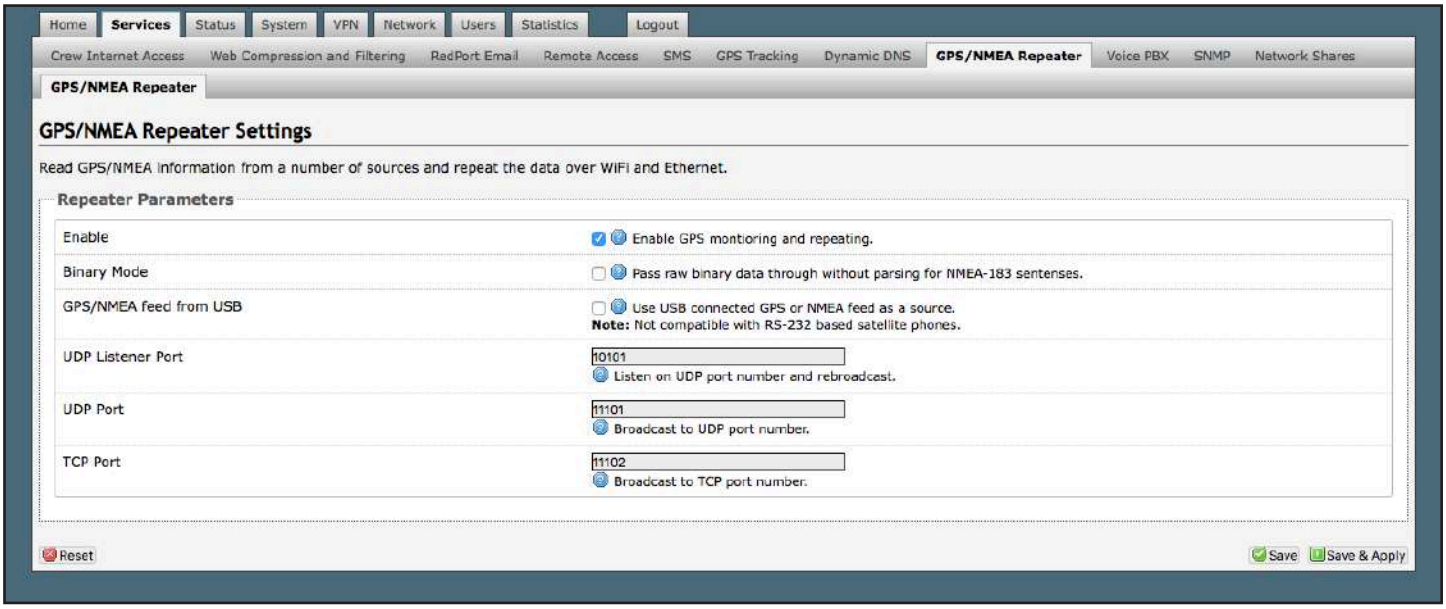
Requires 'superadmin' login.




## 5.7.3. GPS/NMEA Repeater Parameters Configuration

Requires ‘superadmin’ login.

In order for the destination software to properly route the GPS data you must configure the GPS/NMEA Repeater Parameters in the Optimizer Enterprise User Interface.




1. Enable - Click this checkbox to Enable GPS monitoring and repeating.

2. GPS/NMEA feed from USB - Select this when connecting a GPS or NMEA device via USB cable.

3. NMEA Baud Rate - Using the drop-down menu, select the baud rate required for the destination software. By default, most NMEA 183 devices (GPS) and applications use 4800 baud for this setting.

4. UDP Listener Port - Enter the UDP port number that the GPS is connected to. The default is set to the standard UDP Listener Port for NMEA 183 devices of 10101.

5. UDP Port - Enter the UDP port number to broadcast the GPS data to. The default is set to the standard UDP Port for NMEA 183 devices of 11101.

Configure the destination software to match this port number; or, change this entry to match the requirements of the destination software.

6. TCP Port - Enter the TCP port number to broadcast the GPS data to. The default is set to the standard TCP Port for NMEA 183 devices of 11102.

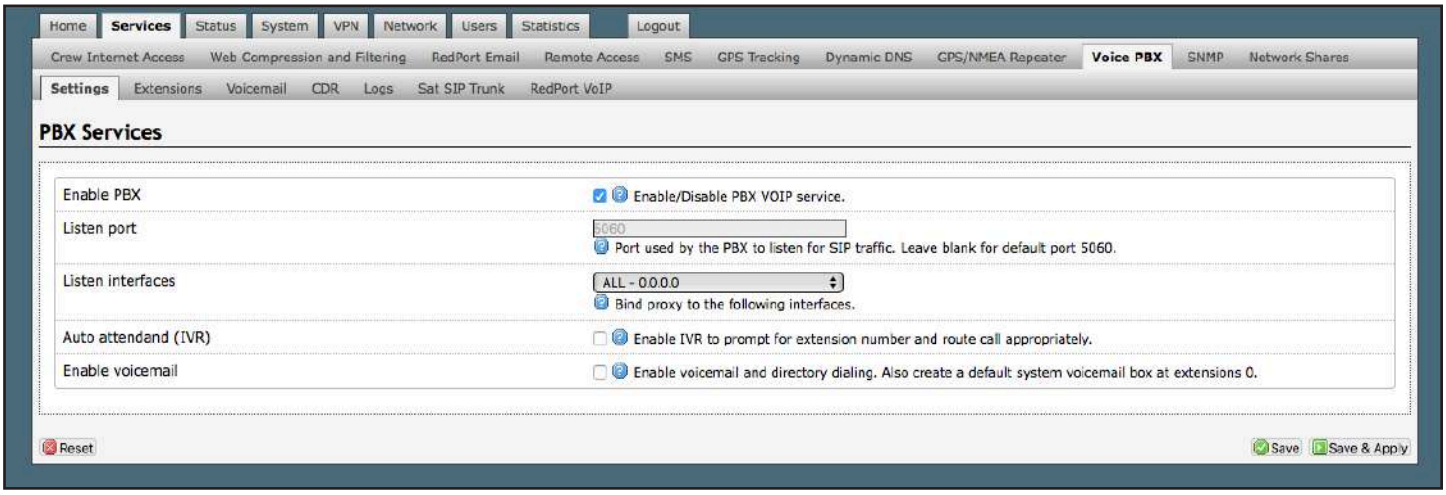
Configure the destination software to match this port number; or, change this entry to match the requirements of the destination software.

The data will be broadcast to both the UDP Port and the TCP Port. It is important to make sure that these two ports are NOT set to the same port number.

To use the GPS Repeater feature, your computer must be connected to the Optimizer's WiFi network or directly connected to one of the Optimizer's Ethernet ports (i.e. the BIZ port and the WAN ports, by default, are open). Any port that is configured to go through the Captive Portal will not work with the GPS/NMEA Repeater feature.

## 5.8. VOICE PBX

Requires 'superadmin' login.




Users with smartphones can send/receive voice calls and SMS messages over the following satellite communication setups:

- Sailor FBB terminal - requires XGate Phone app*. (**See Chapter 5.8.5**).
- IsatHub iSavi - requires IsatHub Control app and either IsatHub Voice app or XGate Phone app*. (See Optimizer Voice iSavi Addendum for information on how to pair the iSavi with the Optimizer Enterprise).
- Any satellite terminal with a RJ-11 port - requires XGate Phone app* AND an ATA adapter. (We support the Grandstream HT701 and the Cisco SPA 112).

This configuration allows one voice call or SMS message at a time and standard satellite voice airtime rates apply.

Multi-Voice capability is available with the optional RedPort VoIP service on virtually any satellite terminal. This VoIP service allows you to make calls for considerably less than standard satellite voice airtime costs and allows up to four users sending/receiving phone calls and/or SMS messages simultaneously. **See Chapter 5.8.6**.

As of this writing, Multi-VoIP is compatible with the following:

- FBB.
- BGAN.

- VSAT.
- RedPort Aurora.
- Iridium Pilot.
- Thuraya IP.
- IsatHub iSavi.

The Optimizer Enterprise allows unlimited SIP extensions with free local calling and text messaging within your local area network using the XGate Phone app*.

*XGate Phone app is available for free in the Apple iTunes App Store and in the Google Play store.

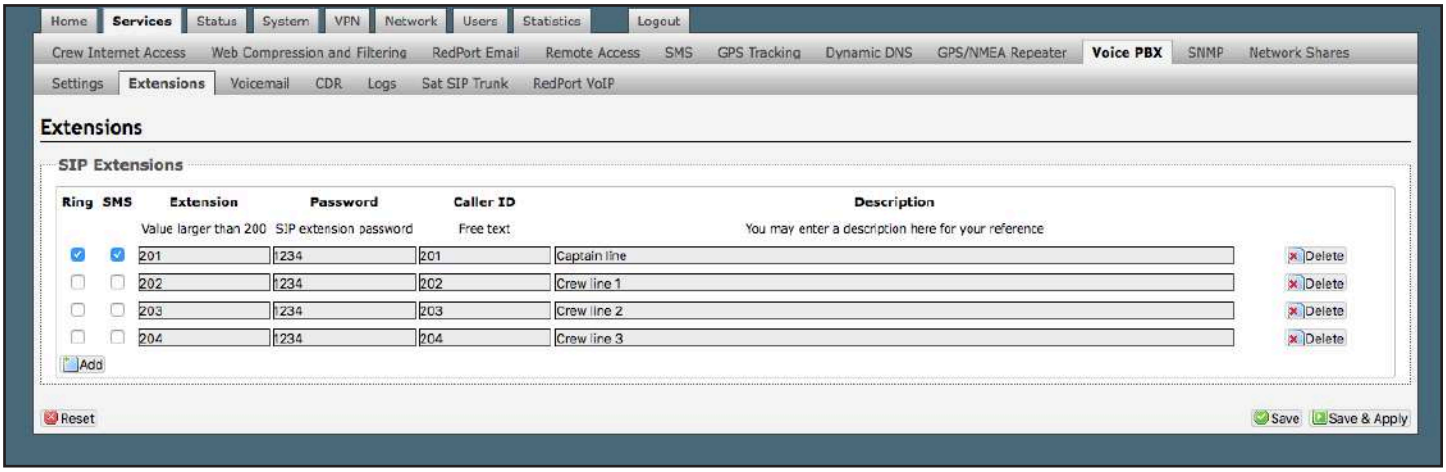
### 5.8.1. Setup Extensions

Requires ‘superadmin’ login.

By default, there are 4 extensions enabled. Extension 201 is enabled for inbound and outbound calling. The remaining extensions are enabled but are configured for outbound calling only.

Incoming calls will ring on those extensions with Ring enabled.

To enable Ring (or SMS) on an extension simply check the box for the service you want enabled.




When Ring is checked, the smartphone configured with the corresponding Extension will Ring with every incoming call.

When SMS is checked, that smartphone will receive every incoming SMS message.

To use a smartphone to send/receive phone calls requires the XGate Phone app installed on the smartphone. The XGate Phone app can be found in Apple iTunes App Store for iOS devices and the Google Play store for Android devices.

The smartphone user configures the XGate Phone app with their corresponding SIP Extension. On this page, you can also:

- Change the SIP extension password.
- Change the outgoing CallerID display.
- Enter a description for your reference.

#### 5.8.1.1. How to Make/Receive Voice Calls

Using the smartphone or tablet Settings, connect to the Optimizer wireless network ‘wxa-524- xxxx’.

Open the XGate Phone App to make and receive calls.

NOTE: Standard voice calling rates apply.

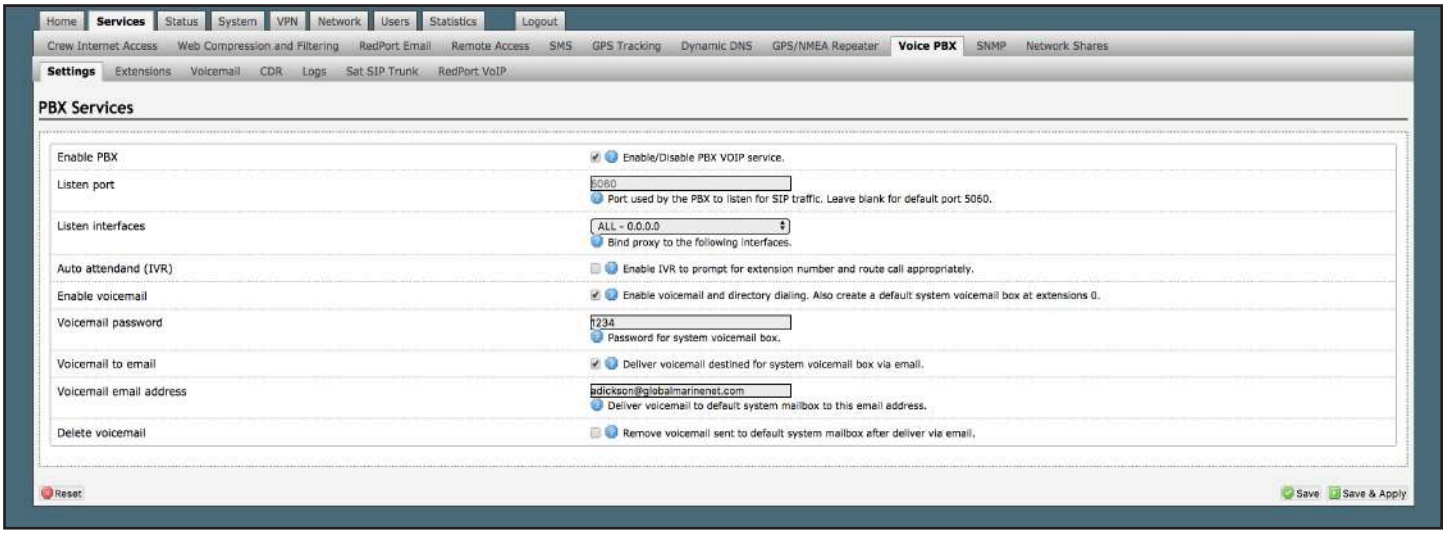
Only one phone call can be active at a time. (Multi-user Voice and SMS is possible -- up to four consecutive sessions -- with the optional RedPort VoIP service. Contact your service provider for details. **See Chapter 5.8**)


NOTE: Inmarsat IsatHub (iSavi) users. Please see redportglobal.com for the iSavi Quick Start Guide containing information and instructions for setup and use of the Optimizer with the iSavi terminal for voice calls and SMS messaging.

### 5.8.2. Voicemail

Requires ‘superadmin’ login.

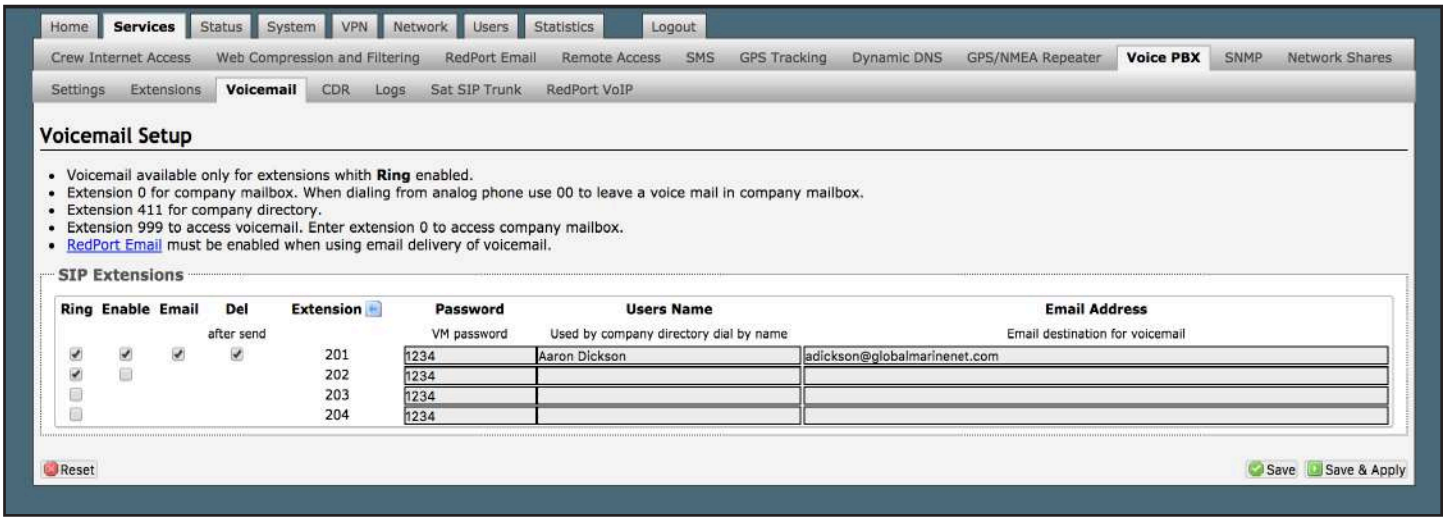
Voicemail options will only be available if Voicemail is enabled on <Services> tab, then <Voice PBX>, and then <Settings> tab:




- Click “Enable voicemail and directory dialing”.

- Modify Voicemail password if desired.
- If desired, click “Deliver voicemail destined for system voicemail box via email”.
- Enter desired email address for voicemail message forwarding.
- If desired, click “Delete voicemail sent to default system mailbox after deliver via email”.
- Click <Save & Apply>.

Navigate to <Services> tab, then to <Voice PBX> tab, and then to <Voicemail> tab:



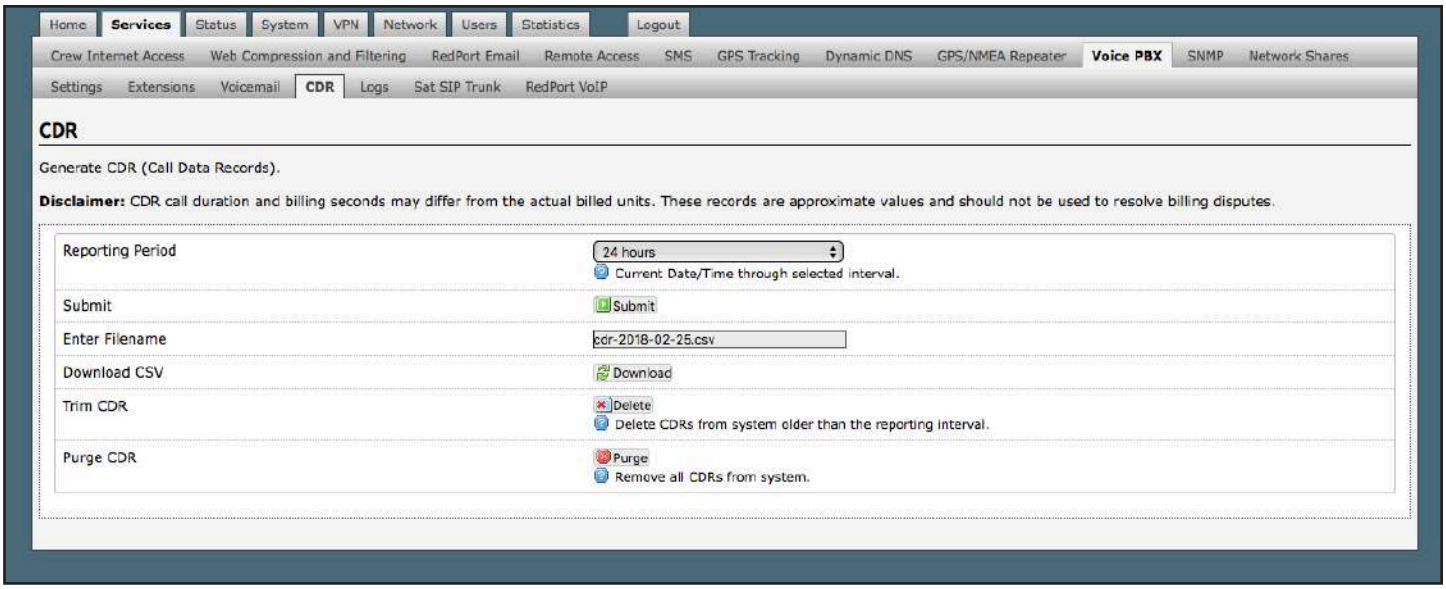

To set up Voicemail:

- Click Ring.
- Click Enable.
- Click Email if desired - to enable delivery of voicemail to email.
- Click Del (delete) if desired - to delete the voicemail from the system after being sent to email.
- Fill in desired Password - will be entered when retrieving voicemails via phone.
- Fill in desired Users Name - will allow user name system search via phone system.
- Fill in desired Email Address - required to permit system to email voicemails.
- Click <Save & Apply>.

## 5.8.3. CDR (Call Data Records)

Requires ‘superadmin’ login.

It is possible to view and download the Call Data Records. The Call Data Records stored on the Optimizer are approximate values and should not be used to resolve billing disputes. They are presented here for your convenience.

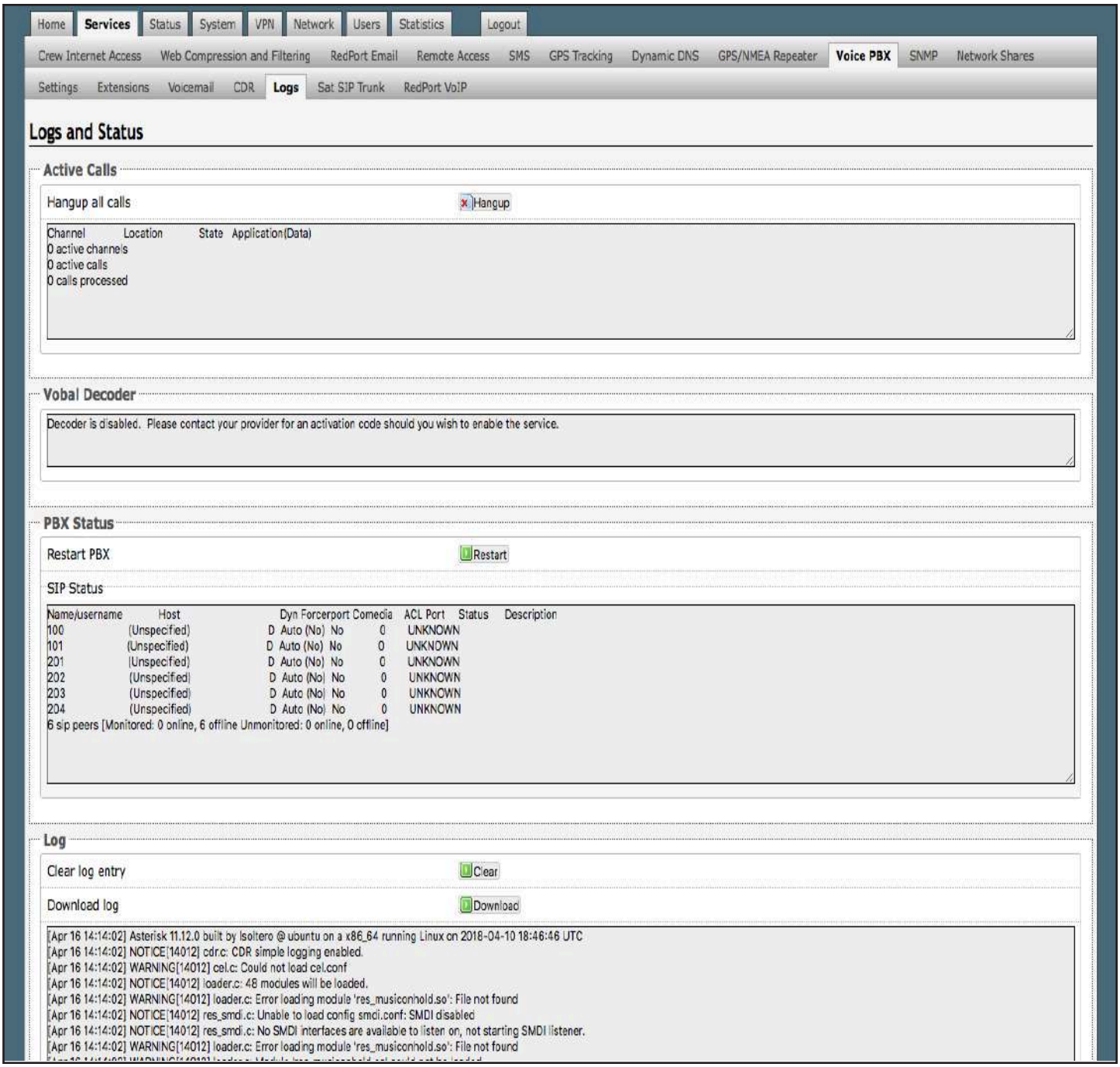



On active systems, the call data records can quickly use up memory. It is recommended that you periodically Trim CDR or Purge CDR records from the system.

### 5.8.4. Logs

Requires ‘superadmin’ login.

This screen provides PBX status information and some management.

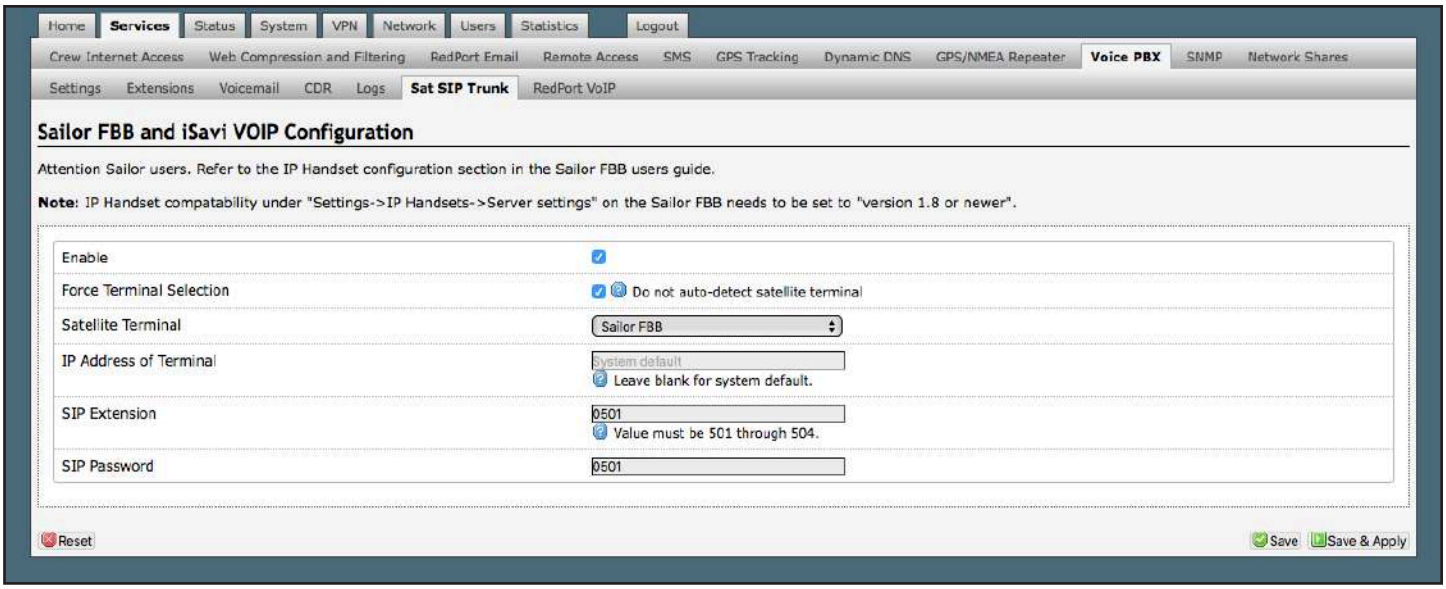



- **Active Calls:** Displays all active channels in use. Click <Hangup> to immediately hang up all active calls.
- **Vobal Decoder:** Displays the VoIP Activation Key when RedPort VoIP service is enabled. **See Chapter 5.8.6.**
- **PBX Status:** Displays the current status of all SIP extensions. Click <Restart> to reboot the PBX service.
- **Log:** Displays the current Log of PBX usage. Click <Clear> to remove the log content. Click <Download> to Open or Save the PBX Log.

### 5.8.5. Sat SIP Trunk (for Sailor FBB terminal only)

Requires ‘superadmin’ login.

Use this screen to enable and configure SIP calling when using a Sailor FBB terminal.



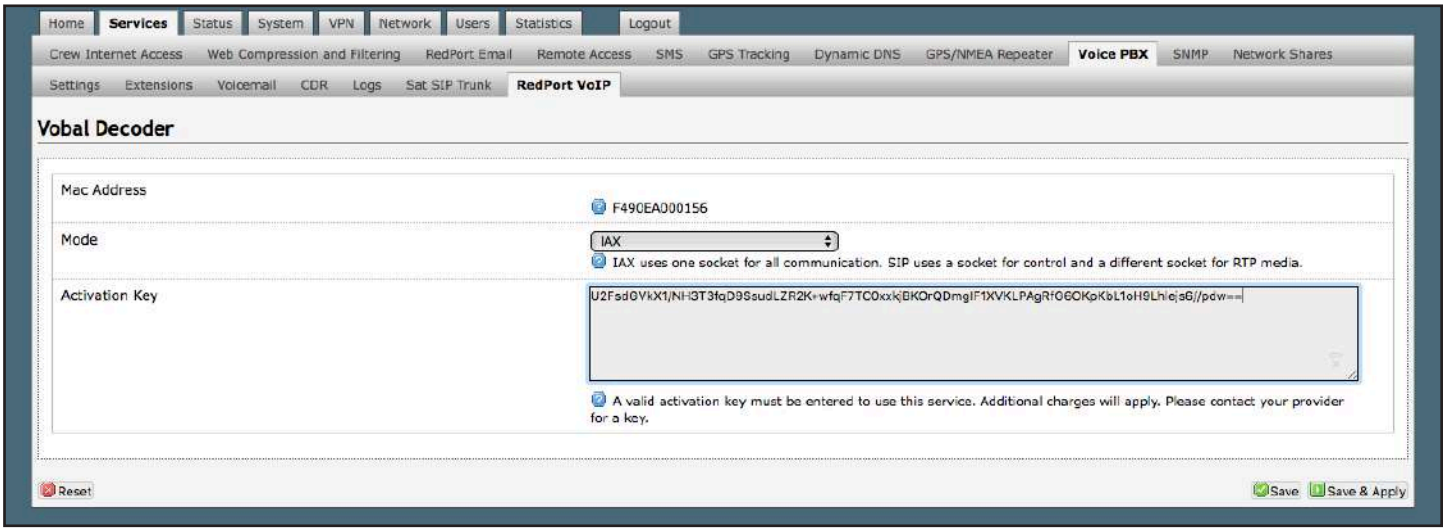

NOTE: You may need to edit the IP Handset configuration in the Sailor FBB user interface. Settings > IP Handsets > Server Settings on the Sailor FBB must be set to version 1.8 or newer. (Refer to the Sailor FBB users guide for how to access the Sailor FBB Settings).

### 5.8.6. RedPort VoIP Activation

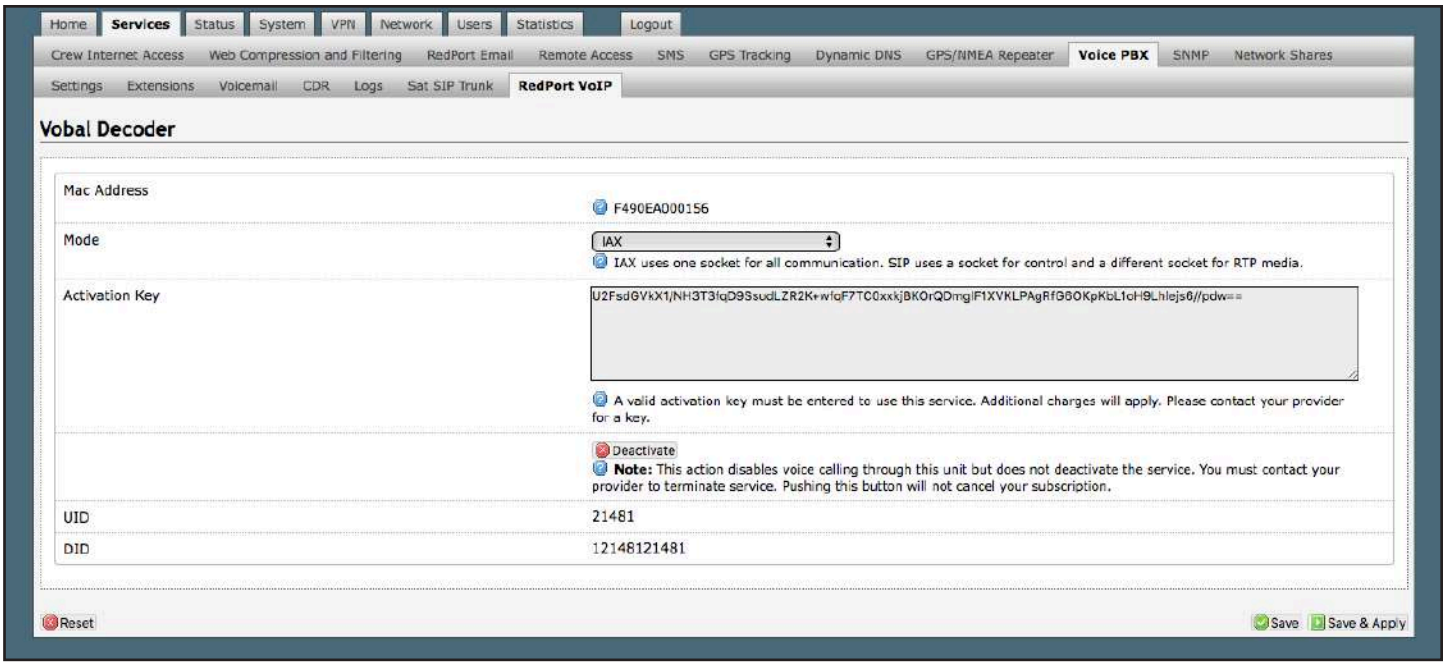
Requires ‘superadmin’ login.

With optional RedPort VoIP service, up to four users can send/receive phone calls and/or text messages simultaneously. Outbound calls are typically less expensive VoIP calls than standard circuit switch (PSTN) calls at regular satellite airtime rates. Contact your satellite service provider to purchase the RedPort VoIP service.

When the service is activated, you will be given a “Key”. This key is a long alpha-numeric string that must be entered into the Optimizer user interface.

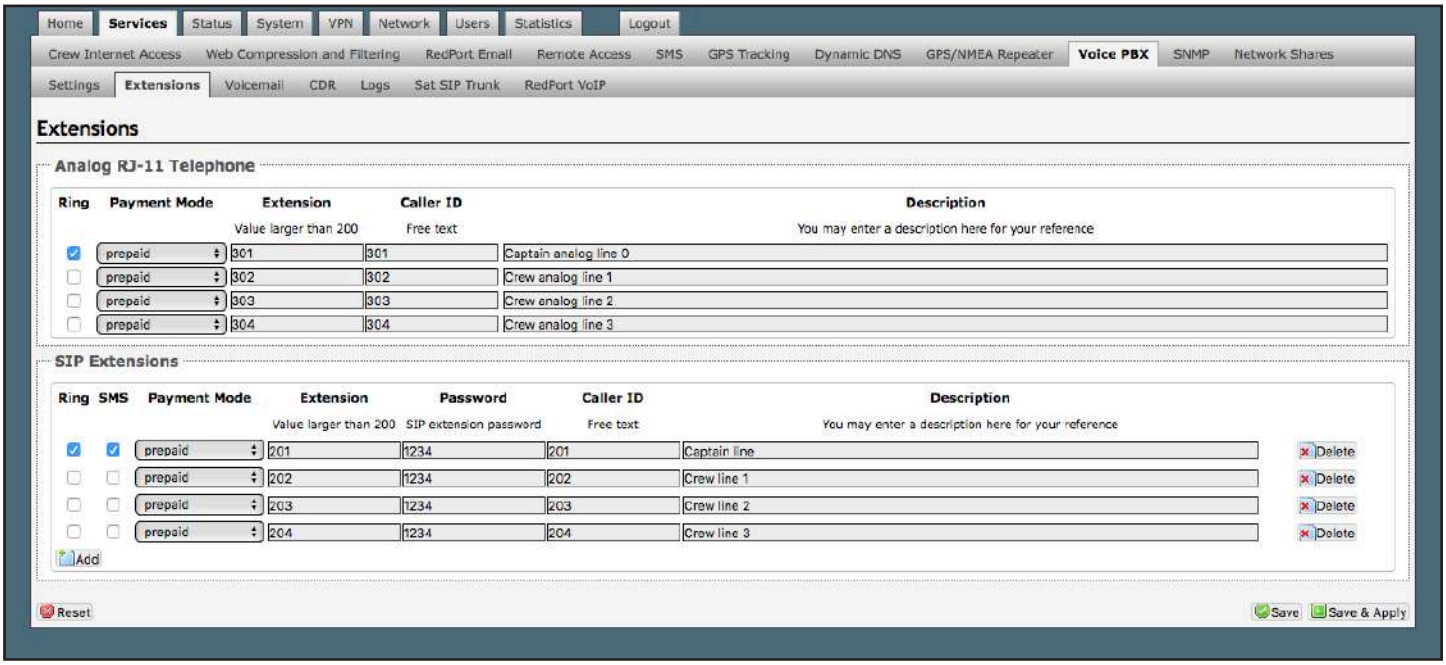



Enter the Key and click <Save & Apply>.




With RedPort VoIP service activated, the new RedPort VoIP telephone number is displayed.

Configure the SIP extensions for Ring and/or SMS by clicking the checkbox next to the SIP extension. **See Chapter 5.8.1**.




Select the payment method of each Analog or SIP extension (prepaid or postpaid). There must be at least one postpaid line. By default, Line 1 always Postpaid.

On this page, you can also:

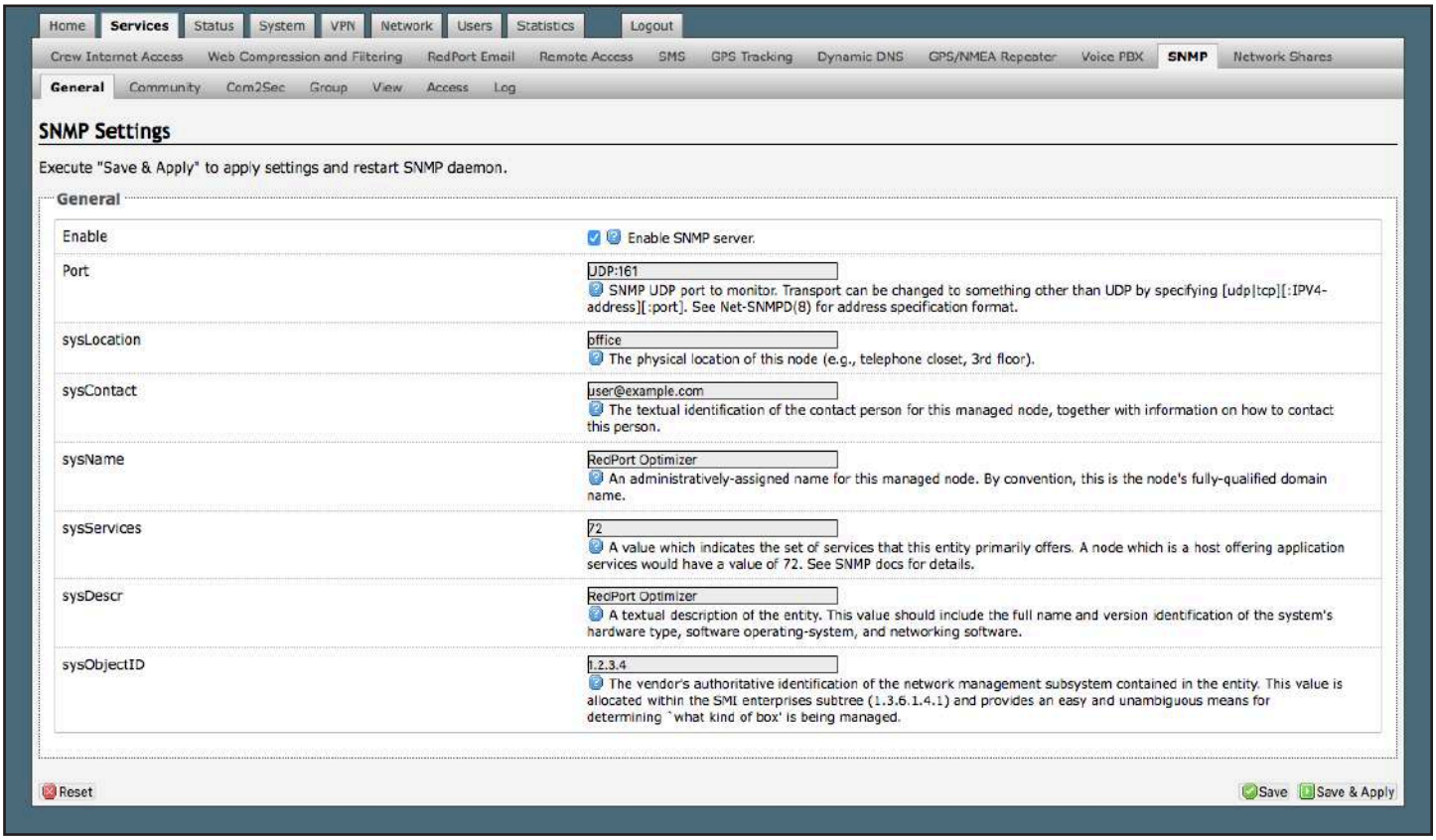
- Change the extension password.
- Change the outgoing CallerID display.
- Enter a description for your reference.

When the configuration of the Analog/SIP extensions is complete, click <Save & Apply>.

## 5.9. SNMP

SNMP - Simple Network Management Protocol.

Requires ‘superadmin’ login.



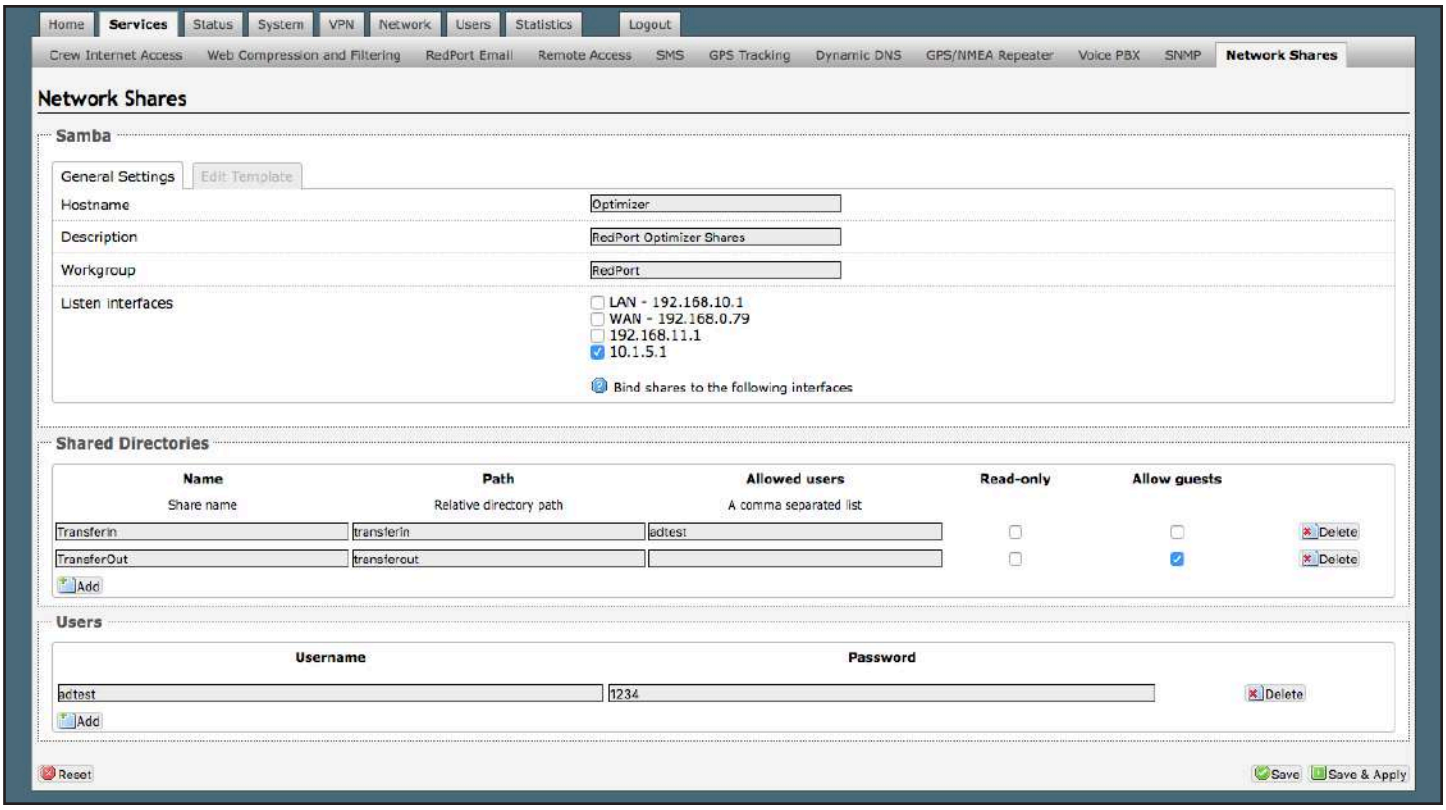

## 5.10. Network Shares

Available to both ‘admin’ and ‘superadmin’ login.

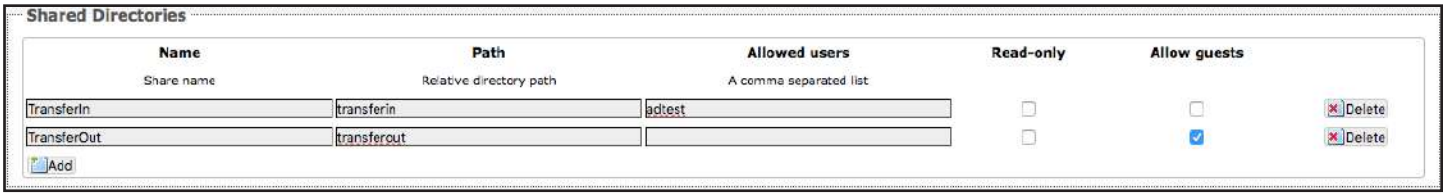
Network Shares allows the sharing of files without the requirement of a wired local network of computers. The Optimizer router can be configured with one or more Shared Directories that are available, with or without password protection, to any Windows or Mac PC that has access to the Optimizer’s WiFi Hotspot.

Network Shares also allows the ability to automatically transfer files via inbound and outbound email (see Optimizer RedPort Email Guide > Appendix: File Transfer for details).

### 5.10.1. Create a Shared Directory




Click <Add> to create a new Shared Directory:

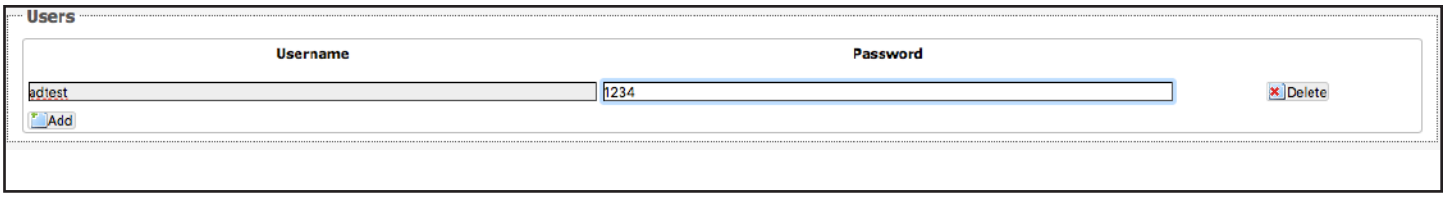



- **Name:** This is the Share Name that is visible on the network. It is the 'volume' name that you will use when connecting to the shared directory.
- **Path:** This is the name of the Folder that appears on the Optimizer that will be used to store files.
- **Allowed users:** You can limit the users that have access to the files in the Path Folder by assigning usernames and passwords to selected individuals (see Add Users below). Enter the usernames here, separated by a comma if more than one user will have access to the files.
- **Read-only:** Use this checkbox to protect the files in the Path Folder from being changed.
- **Allow guests:** Use this checkbox to make the files available to anyone with network access. With this box checked, users will not be prompted to enter a username and password when accessing the Path Folder.
- **Delete:** Use this to delete the Shared Directory. Click <Save & Apply>.

### 5.10.2. Add Users

If you want to password protect access to the Shared Directories, you can assign usernames and passwords to each directory.

Click <Add> to add a new username and password.



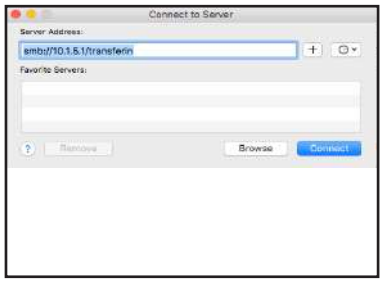

Click <Save & Apply>.

## 5.10.3. How to Access the Shared Directory and Path Folders:

### 5.10.3.1. From a Mac PC

Go to Finder > Go > Connect to Server.

Enter the Server Address as the LAN address for the Optimizer / plus the Path Folder.

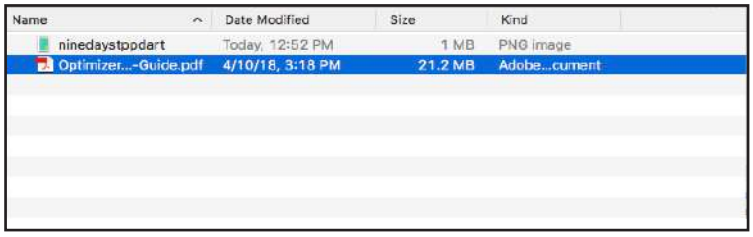



Click <Connect>.

If the Shared Directory is restricted (i.e. does not allow Guests) you must enter a username and password to access the files.


If the Shared Directory is not restricted (i.e. Allow Guests is checked in Network Shares) you can connect as a Guest without entering a username and password.

A Finder window opens to the selected Folder for access to the transferred file(s).

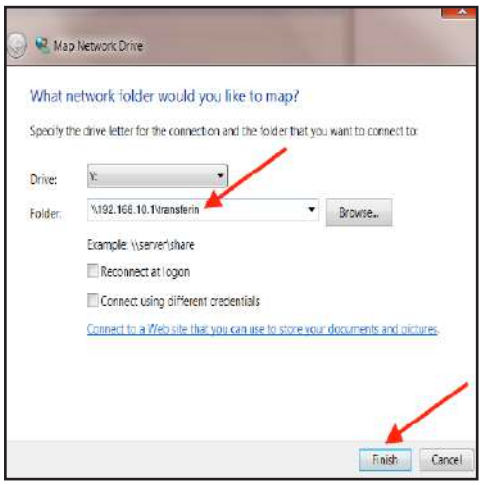



### 5.10.3.2. From a Windows PC

Map a Network drive to the appropriate location.

Go to Start Menu > Computer > Map Network Drive.

In the Folder box, following the Example, enter \\the LAN address for the Optimizer CrewComm\the Path Folder.

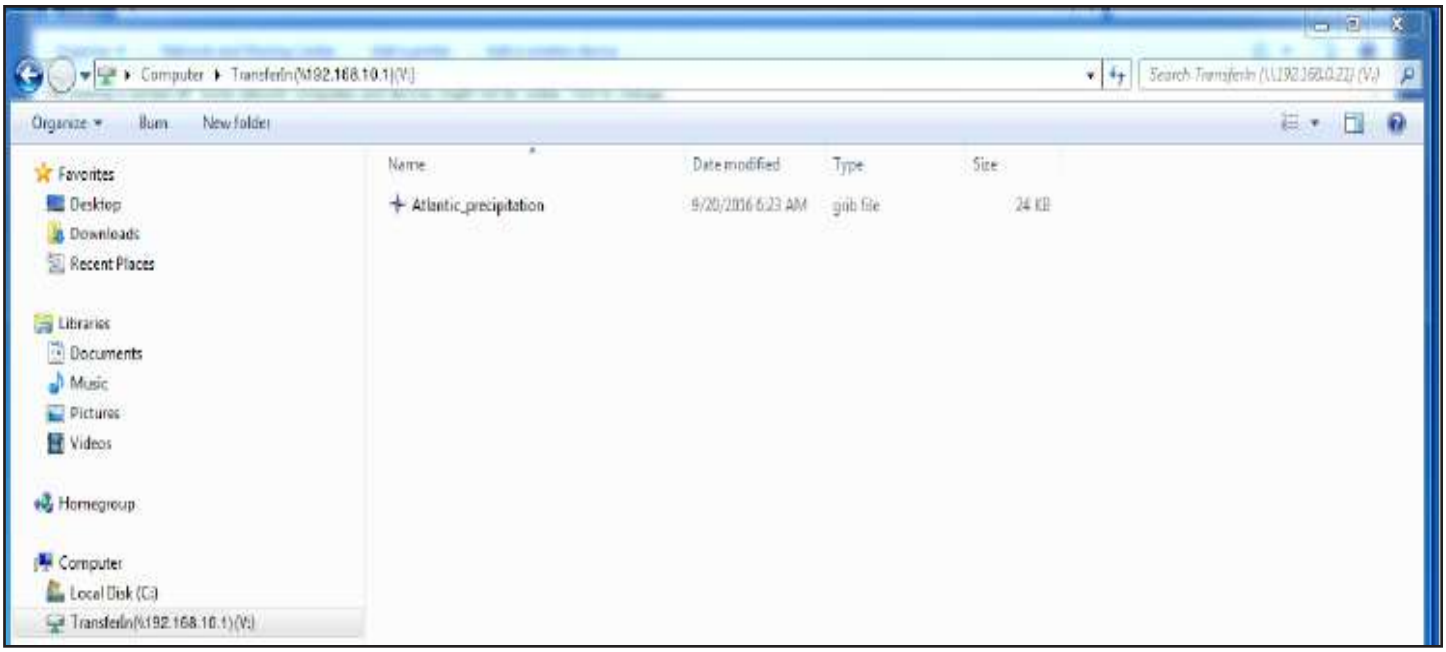



Click <Finish>.


If the Shared Directory is restricted (i.e. does not Allow Guests) you must enter a username and password to access the files.

If the Shared Directory is not restricted (i.e. Allow Guests is checked in Network Shares) you can connect as a Guest without entering a username and password.

An Explorer window opens to the selected Folder for access to the transferred file(s).



# 6. Status

Available to both ‘admin’ and ‘superadmin’ login.

Use the Status tab to display current information of the router’s performance.


The information provided here includes:

Overview tab - general status.
- System.
- Memory.
- Swap.
- Network.
- DHCP Leases.
- DHCPv6 Leases.
- Wireless.
- Associated Stations.
- Dynamic DNS.
- MWAN.
- Active OpenConnect Users.

Firewall tab - Firewall Status.
- IPv4 Firewall details.
- IPv6 Firewall details.

Routes tab.
- ARP details.
- Active IPv4-Routes.
- Active IPv6-Routes.
- IPv6 Neighbours.

System Log tab.
- Detailed System log.

Kernel Log tab.
- Detailed Kernel log.

Realtime Graphs tab.
- Load graph.
- Traffic graph.
- Wireless graph.
- Connections graph.

All Status information is READ ONLY.

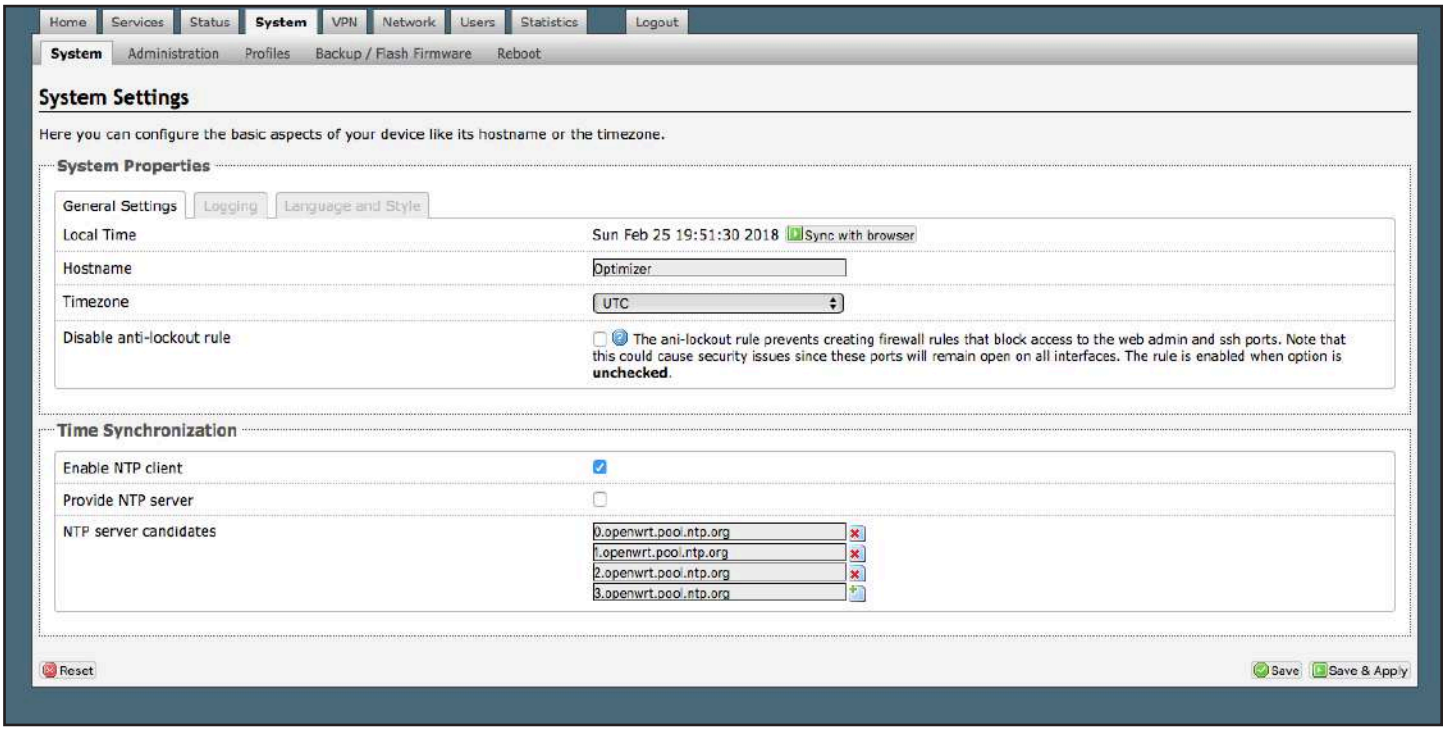
# 7. System

Requires ‘superadmin’ login.

This section contains some of the router’s basic settings for you to configure plus a few maintenance functions.

## 7.1. System Settings

Use this section to configure the basic aspects of your device (i.e. hostname and/or time zone).



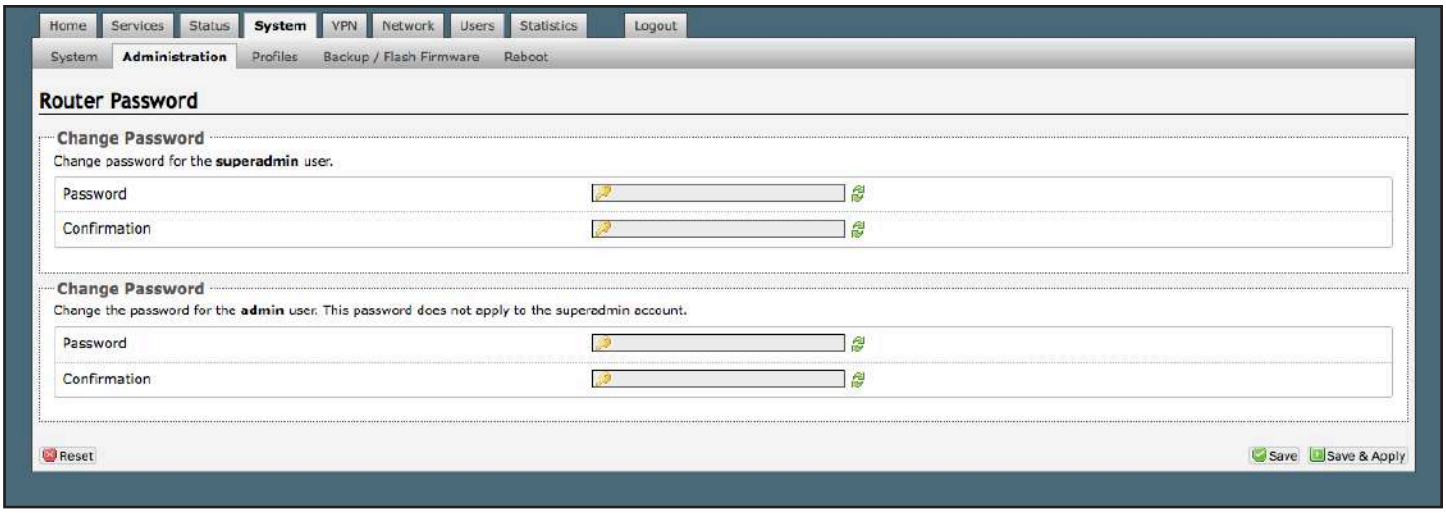

**Disable anti-lockout rule:** The anti-lock rule prevents you from creating a firewall rule that will lock you out of the router. The rule is Enabled when the box is Unchecked. Best Practice is to complete the router configuration, test it thoroughly to make sure everything works as intended, then disable the anti-lock role.

For example, if you want to be able to log in to the router from your office, once the router has been installed on a vessel; if you have WAN blocked and the Anti-Lock Rule is enabled, you will not be able to log in. First you want to create a firewall rule to allow the office IP into the router, then “Disable anti-lock rule” by checking the checkbox and now you can Block WAN in the Firewall Rules, if desired.

CAUTION: If you lock yourself out of the router, you must perform a factory reset. This will eliminate your custom configuration requiring you to start a new configuration.

## 7.2. Administration

The default password to access the Optimizer Enterprise User Interface for both the “superadmin” login and the “admin” login are set to: “webxaccess”. The onsite administrator using the “admin” login can change the password for the “admin” login only, from the Home Page. Anyone using the ‘superadmin” login can change the password for both “admin” and “superadmin” login.




Use the top section to change the password for the ‘superadmin’ user; the bottom section to change the password for the ‘admin’ user.

1. Enter the new password in the password text box.

2. Enter the same password again in the Confirmation text box.

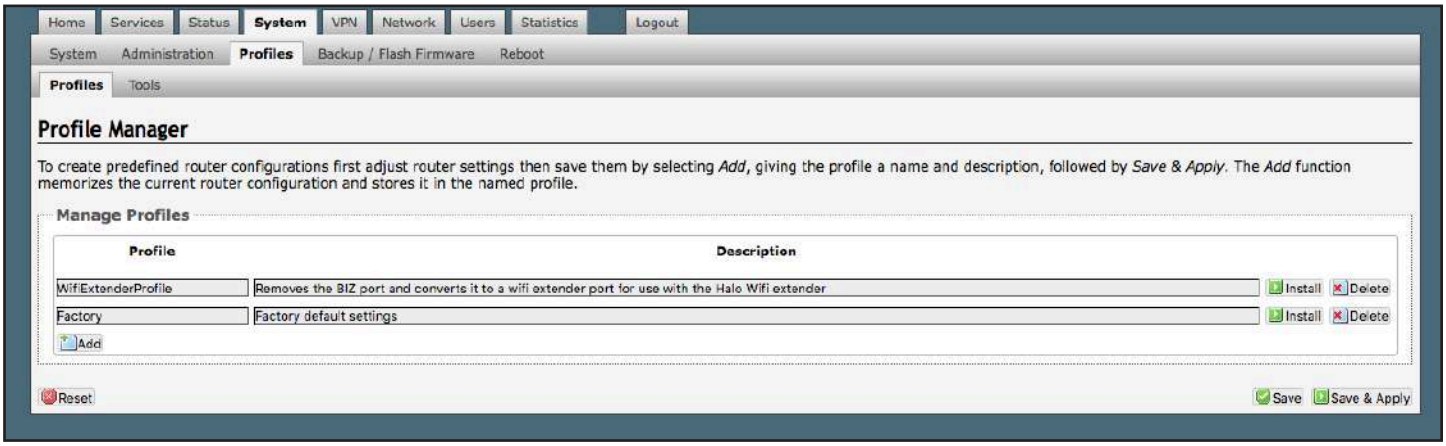
3. Click <Save & Apply>.

This procedure changes the password for the Superadmin or the Admin login ONLY. When connecting a computer, iOS or Android device to the wireless network, do NOT use either of these login passwords. These passwords are used only to access the Optimizer Enterprise User Interface.

## 7.3. Profiles

Requires ‘superadmin’ login.

Profiles is designed for users of multiple satellite devices and integrators of custom installations.



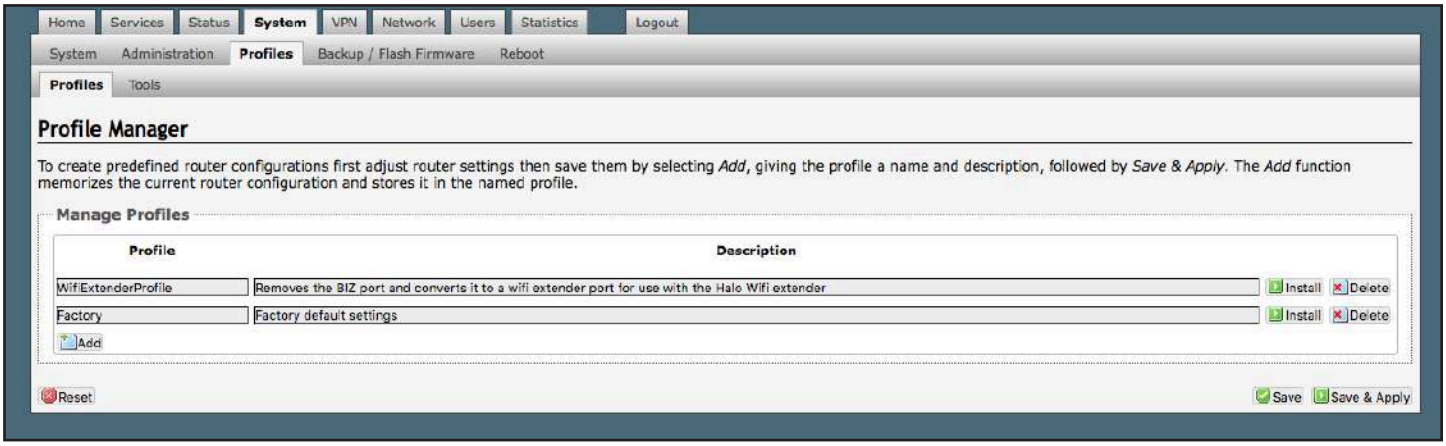

You can configure the Optimizer Enterprise for a specific satellite device and save the profile. This is good for failover situations when using multiple devices. An extreme example would be that you might have the firewall wide open on a VSAT device but in an emergency must use an Iridium handheld device where you want the full protection of the Optimizer firewall. Have a profile for each configuration and select the appropriate one for the satellite device being used.

Once a profile is saved it can be exported for use in another Optimizer Enterprise router.

### 7.3.1. Add a Profile

Before adding a Profile, complete the router configuration. Then access the Profile Manager.

To create and use the new Profile:




1. Click <Add>.

2. Enter a Name of the new profile and a description.

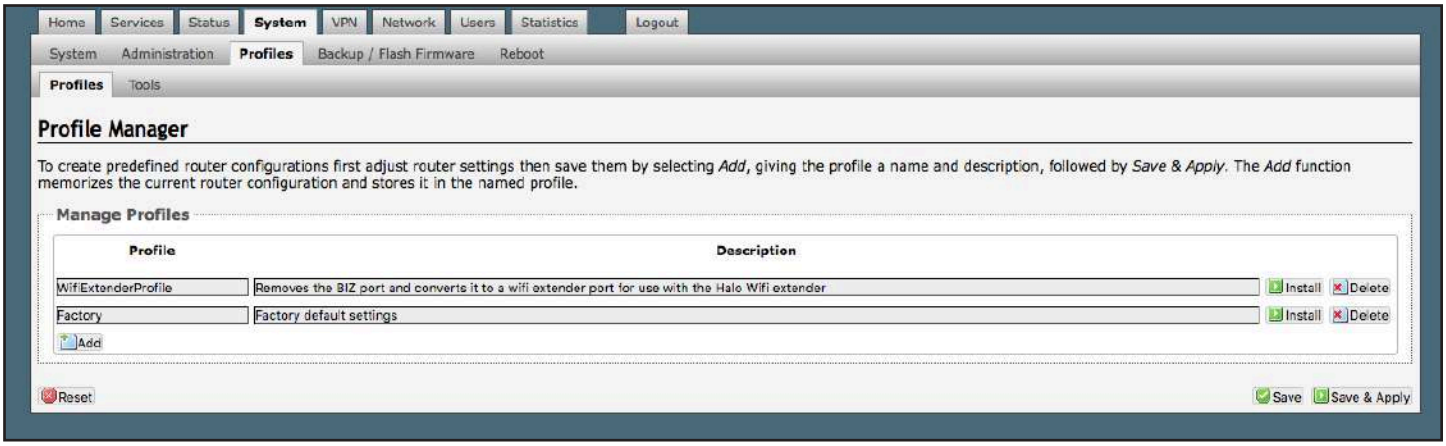
3. Click <Save & Apply>.

The Add function memorized the current router configuration and stores it in the named profile.

### 7.3.2. Change to Another Saved Profile

NOTE: Changing profiles will cause the router to reboot.

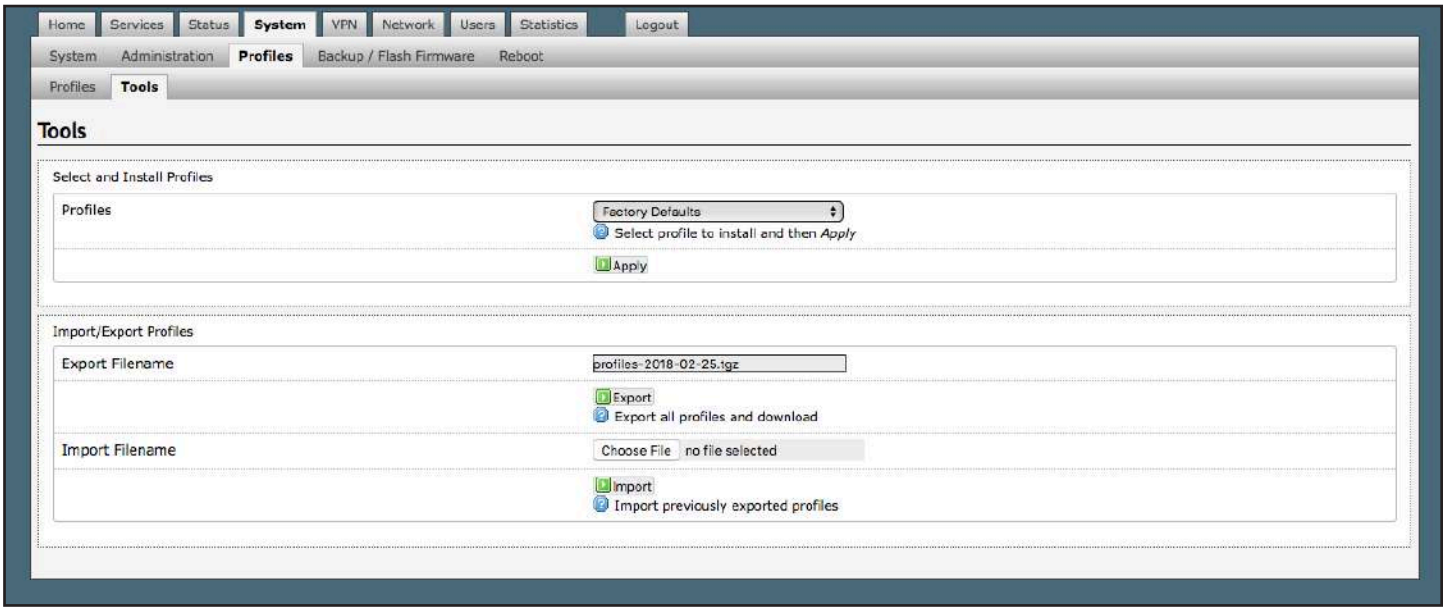
There are two ways under the Profile tab to change to a different saved profile. To change from one profile to different profile from the Profiles > Profiles tab:




1. Click <Install> next to the new profile of choice.

2. New profile will be installed and the router will reboot.

To change to a new profile from the Profiles > Tools tab:



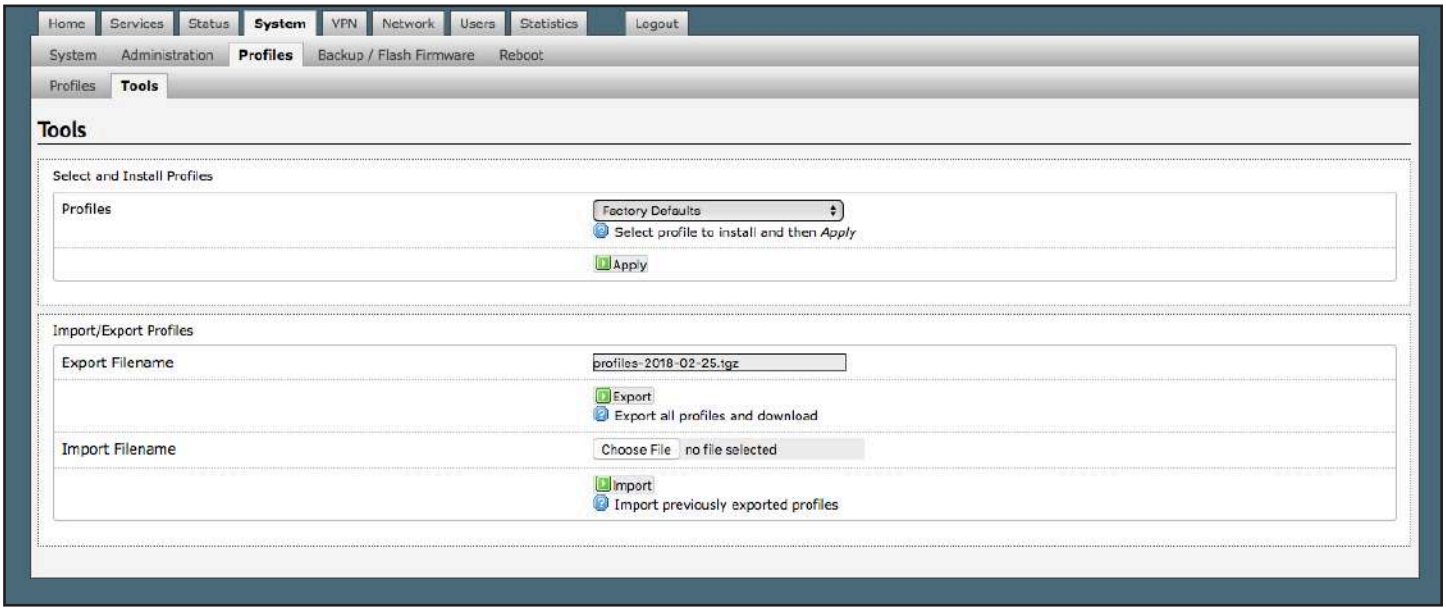

1. Click <"Profile Name"> from the drop-down arrow in the "Profiles" section.

2. Click <Apply>.

3. New profile will be installed, and the router will reboot.

### 7.3.3. Tools - Export a Profile

You can export the profiles from the router and use the exported file to 'clone' another Optimizer Enterprise router in System > Profiles > Tools.

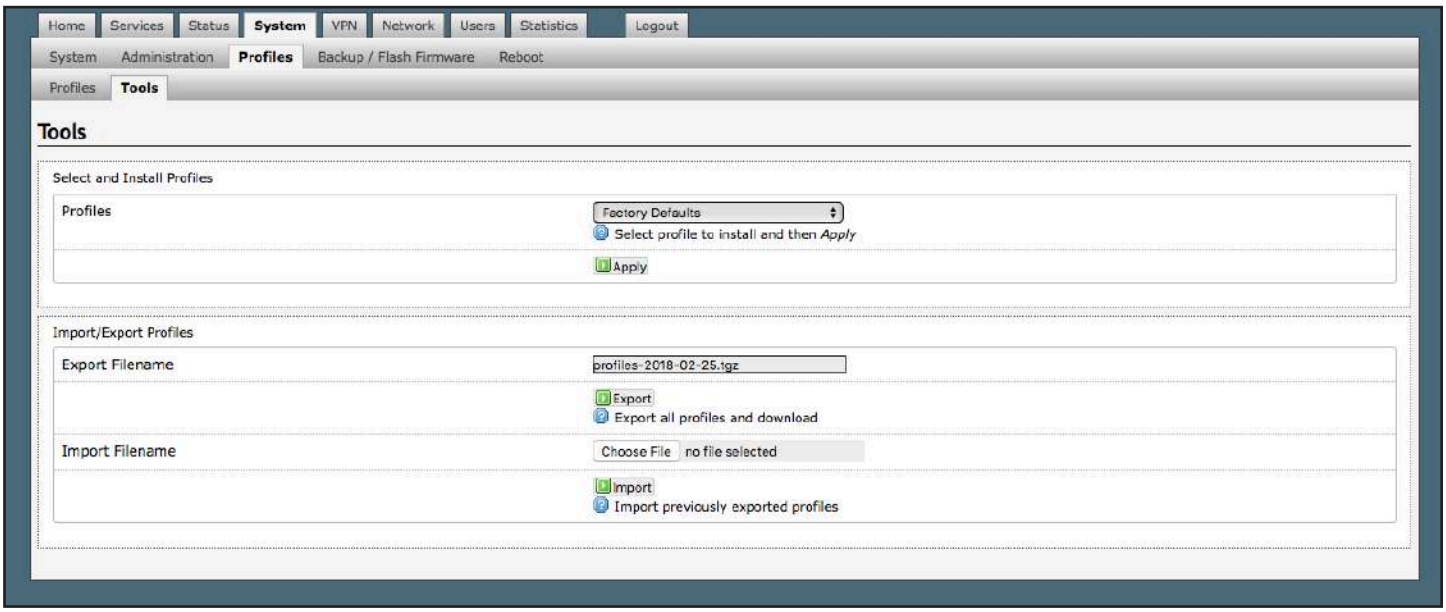



1. Enter a filename or use the default name.

2. Click <Export> and save the file.

### 7.3.4. Import a Profile

You can import profiles from another Optimizer Enterprise router in System > Profiles > Tools.



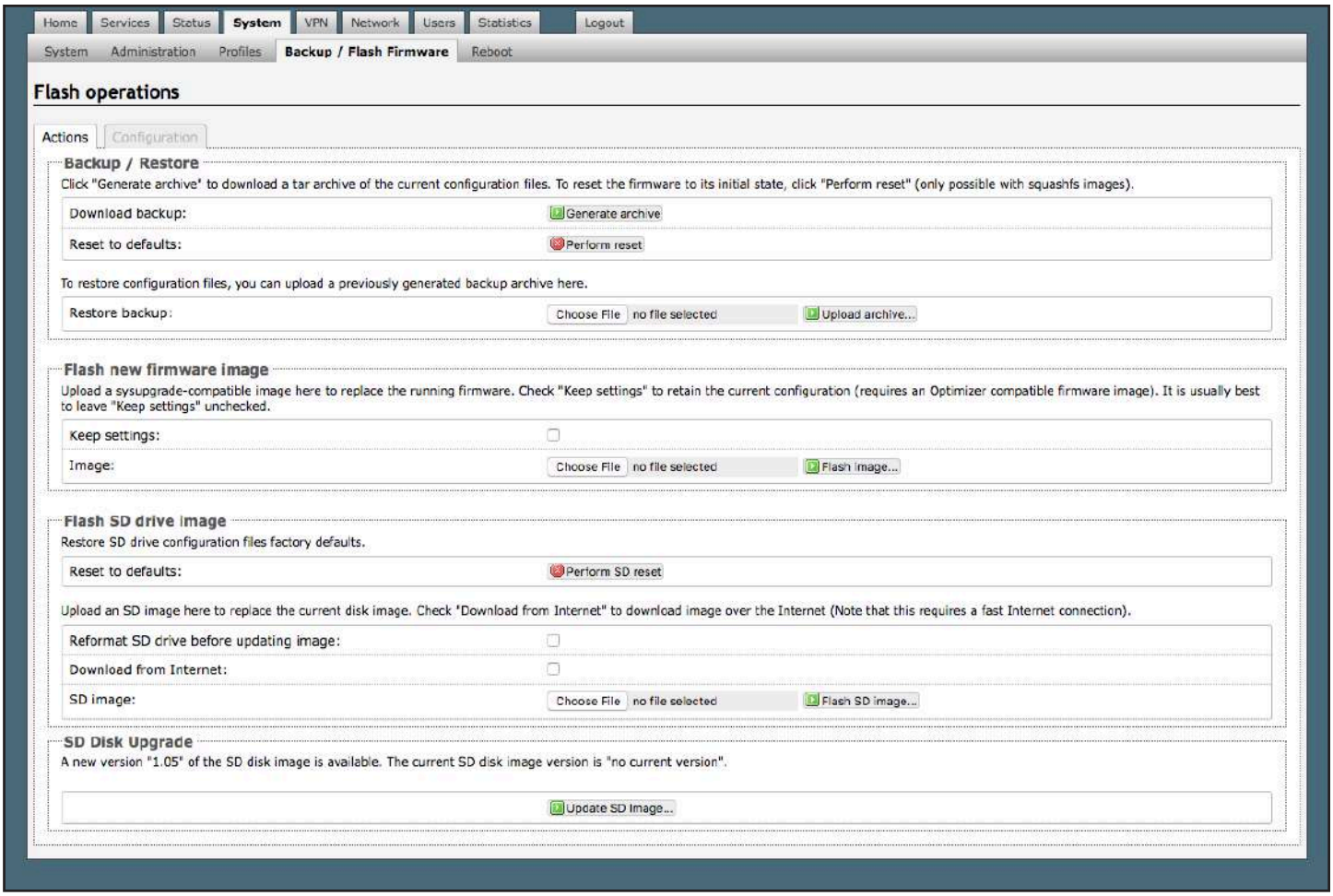

1. Click <Choose File> to locate the saved profiles .tgz file.

2. Click <Import>.

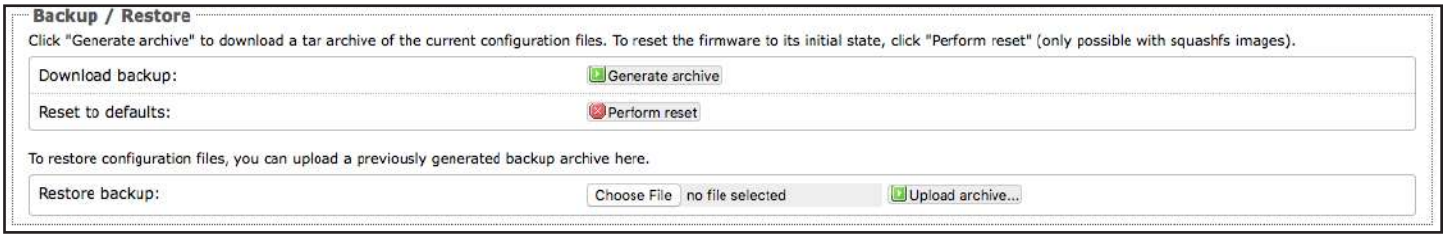
## 7.4. Backup/Flash Firmware

Requires ‘superadmin’ login.

Use this screen to generate backups of current configuration files, resets, restores, and firmware upgrades.




## 7.4.1. Backup/Restore




- **Download backup <Generate archive>:** Create and save a Backup archive of the current configuration.
- **Reset to defaults <Perform reset>:** Reset the router to the default configuration.
- **Restore backup <Choose File>, then <Upload archive>:** Restore the router to a previously saved configuration.

To apply the same configuration among several Optimizer Enterprise routers (for example in a fleet situation) create and save a Profile of the configuration that can be applied to other Optimizer Enterprise routers. **See Chapter 7.4**.

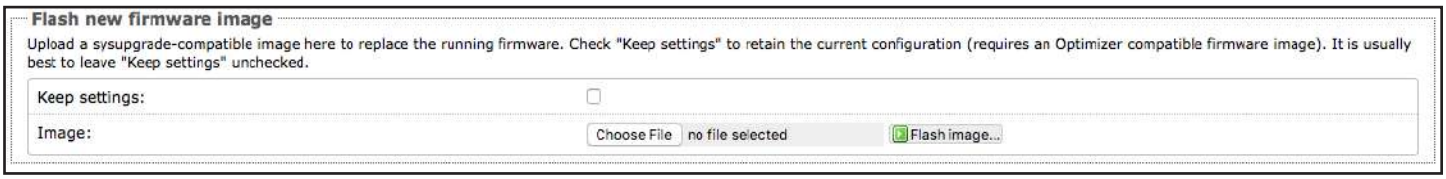
## 7.4.2. Flash New Firmware Image

NOTE: Changing the firmware will cause the router to reboot.

Get the latest Optimizer firmware version from here: redportglobal.com/support/technical-downloads/.

Save the .bin file to your computer (PC or mac).

BEST PRACTICE: If you have created any Profiles you may want to Export them before flashing new firmware and Import them when done.




1. Keep Settings: Click this box to maintain current settings if you have made changes to the configuration. Failure to check this box will revert the Optimizer back to the default settings.

2. Click <Choose File> to where you saved the .bin file and select that file.

CAUTION: Loading incorrect firmware on your device could render it useless. Be sure to select the appropriate firmware for your device.

3. Click <Flash Image>.

4. The router will reboot.

5. Wait for the lights on the front of the Optimizer Enterprise to begin flashing. When the flashing lights stop, the firmware update is complete. This typically takes several minutes.

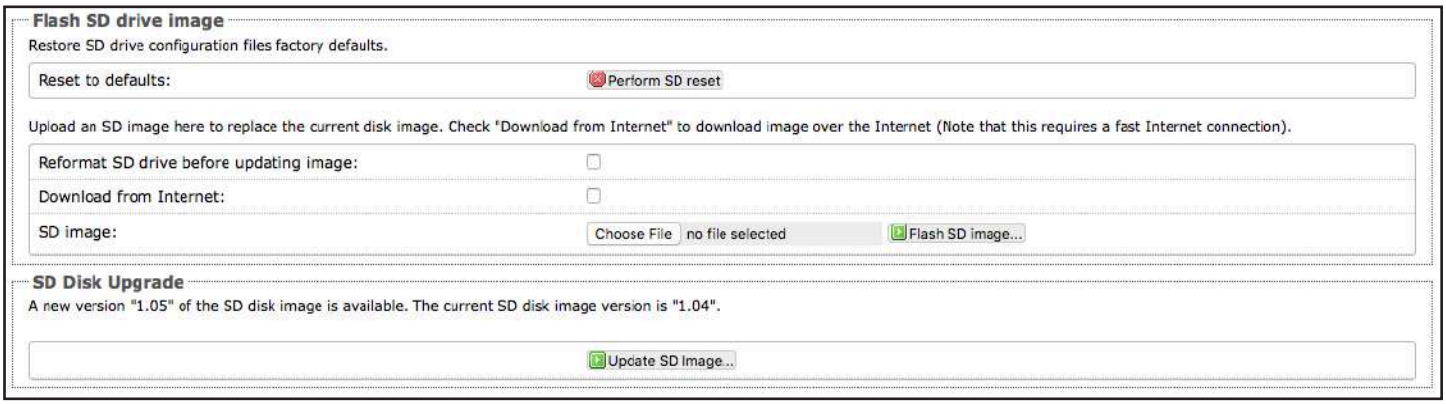
To confirm the firmware upgrade, log in to the Optimizer Enterprise Home Page. The firmware version displays in the top banner of the User Interface.



## 7.4.3. Flash SD Drive Image

NOTE: Changing the SD Drive Image will cause the router to reboot.

NOTE: If there is an SD Disk Upgrade message informing you of a new version, it is recommended that you update the Image to the most current version.




Reset to defaults <Perform SD reset> : Restores the SD drive configuration to its default state.

Reformat SD drive before updating image: If the SD drive goes bad, use this to reformat the drive before updating

the image.

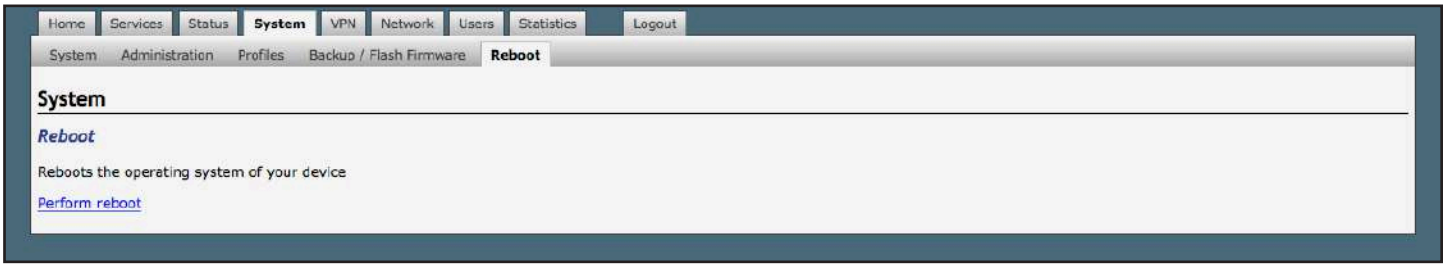
Download from Internet: Use this only if you have a fast Internet connection to obtain the file. As an alternative, you can obtain the disk image file from our website and save it for use: redportglobal.com/support/technical-downloads/.

SD image: Click <Choose File> if you have the file saved to your computer. Click <Flash SD Image> to start the flash process.

SD Disk Upgrade (only displayed if there is a known new version) <Update SD Image>.

## 7.5. Reboot

You can reboot the Optimizer Enterprise from within the user interface in lieu of using the reset button on the router itself.




If you have made changes to the configuration without clicking <Save & Apply> you will receive a Warning message:

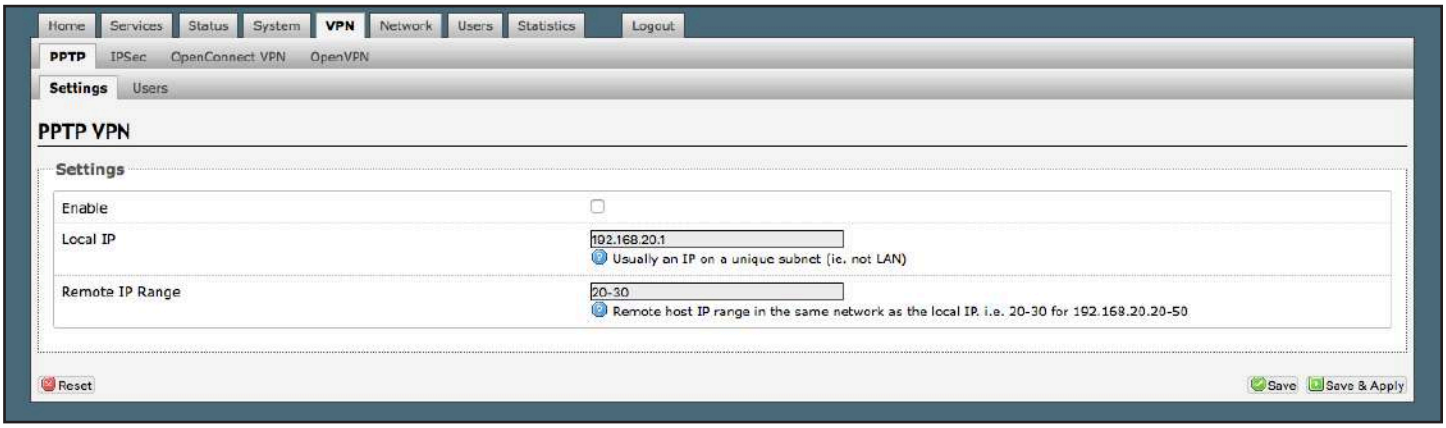
# 8. Virtual Private Network (VPN)

Requires ‘superadmin’ login.

A Virtual Private Network permits a continuous shared private network across a public network.

Use this section to set up a VPN through PPTP, IPSec, OpenConnect VPN, or OpenVPN options to configure a private network that transcends through a public network.

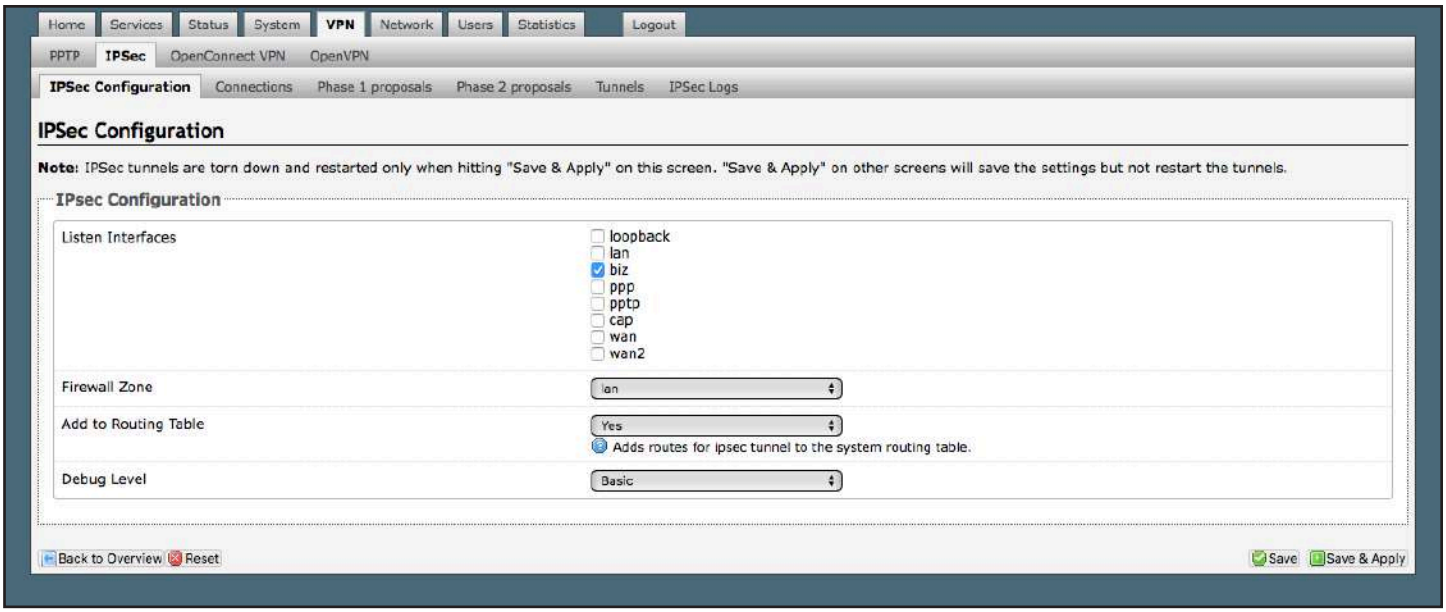
## 8.1. Point-to-Point Tunneling Protocol PPTP



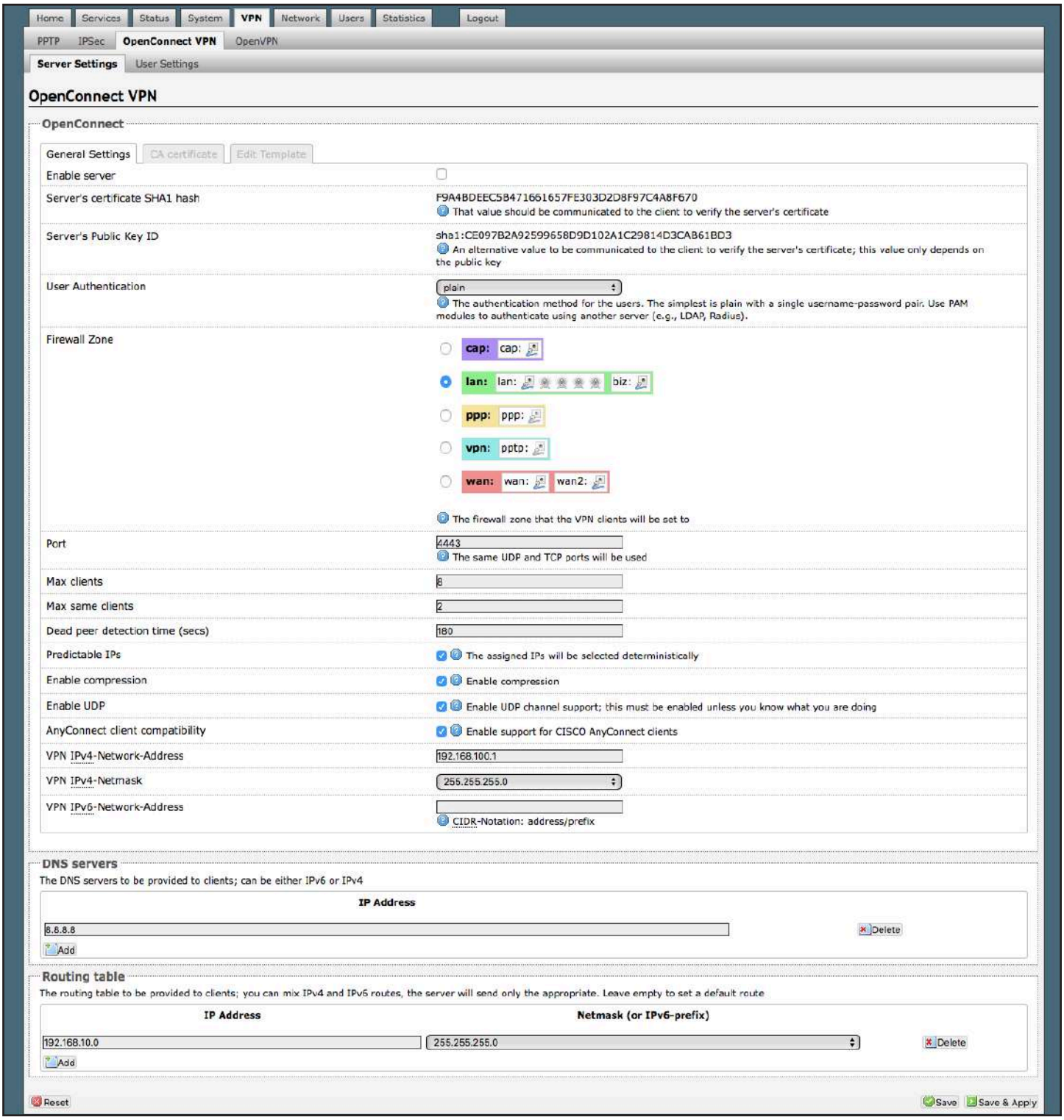


## 8.2. IPSec

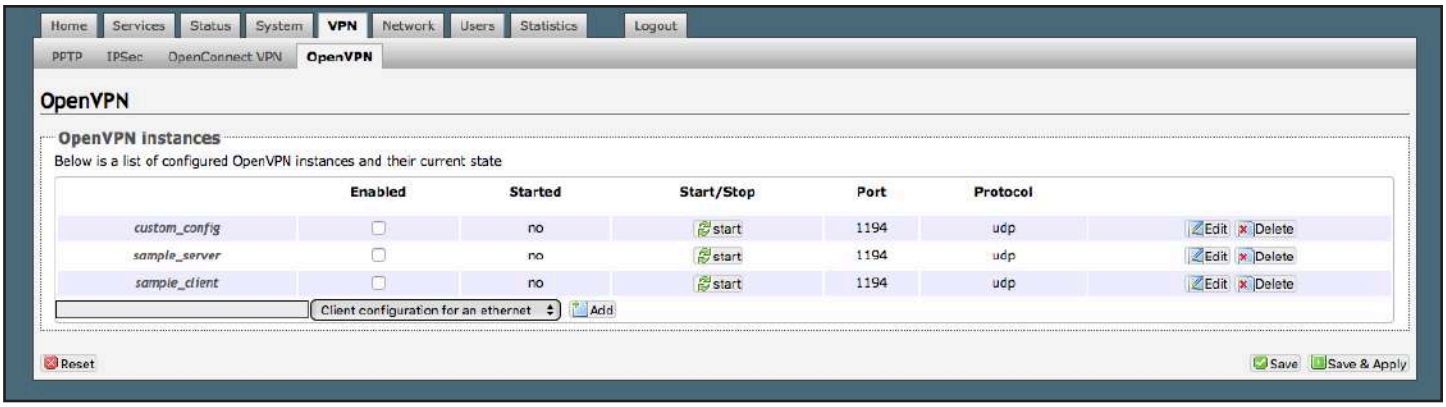
IPSec - Internet Protocol Security




## 8.3. OpenConnect VPN




## 8.4. OpenVPN



# 9. Network

Requires ‘superadmin’ login.

Use this section to configure network interfaces, run diagnostics, or modify the firewall.

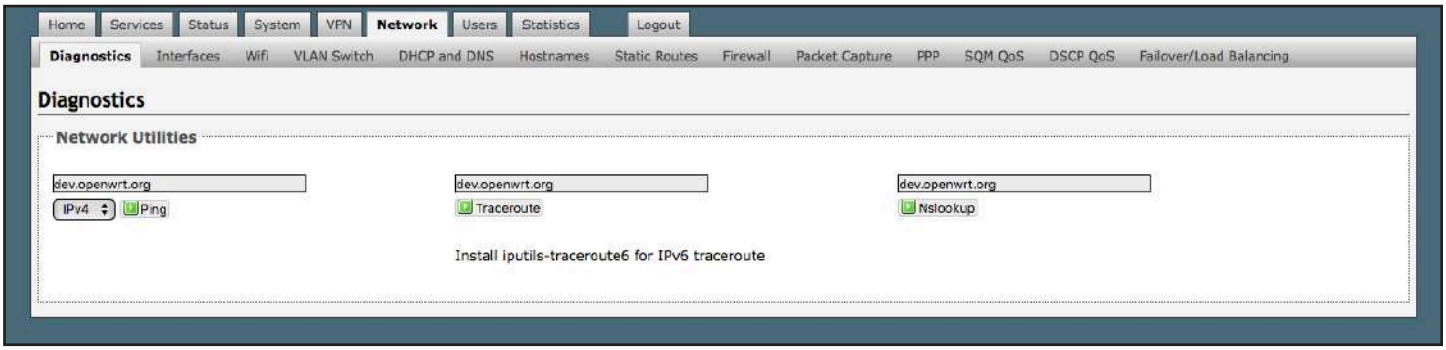
CAUTION: This gives you complete control over the router behavior.

BEST PRACTICE: Modifications to the default configuration is best left to those with a full understanding of router/network behavior, firewall rules, etc. Creating conflicts in the configuration may render the router useless.

## 9.1. Diagnostics

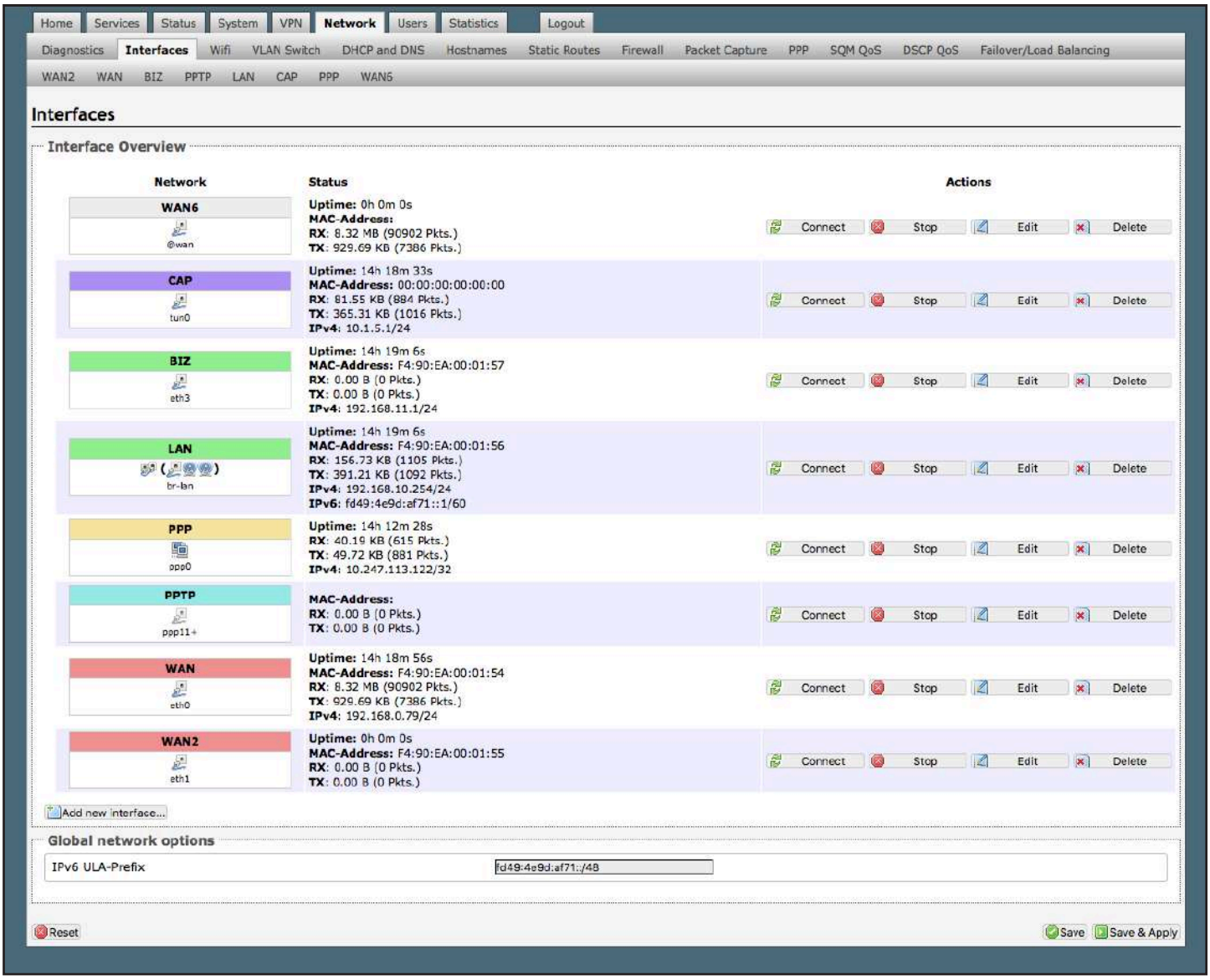
This screen provides diagnostic network utilities:

- **Ping:** Click <Ping> to send a set of packet data to a designated website to determine whether the website is reachable as well as the time required for the action.
- **Traceroute:** Click <Traceroute> to send a packet of data to a designated website and return the pathway along the transmission to provide diagnostic data.
- **Nslookup:** Click <Nslookup> to determine information about Internet servers.



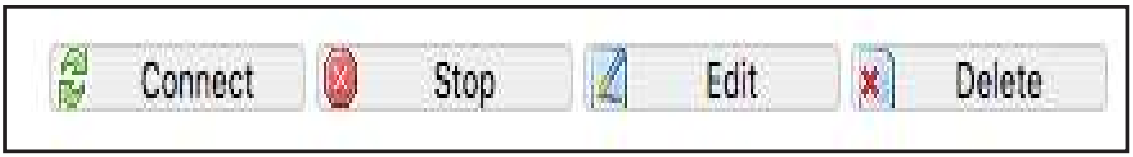

## 9.2. Interfaces Overview

This screen is an at-a-glance view of the current status of each network interface and provides easy access to edit the interface. Each interface can have its own firewall rules (**See Chapter 9.8**).




- **CAP:** This is reserved for the Captive Portal. If the Captive Portal is enabled, all traffic that comes through the Captive Portal will be subject to this interface configuration. This allows you to create rules that apply to the Captive Portal only.
- **BIZ:** This is the business port. By default, it is wide open; any computer directly connected to the BIZ port on the router has full access to the Internet without restrictions.
- **BEST PRACTICE:** Restrict access to this port, protect the router under lock and key OR disable the BIZ interface.
- **LAN:** This is reserved for the local area network. All traffic not routing through the Captive Portal will be subject to this interface configuration.
- **PPP:** This is reserved for USB connected satellite phones and LTE/GSM modems.
- **WAN:** This is typically used for the primary satellite system.
- **WAN2:** This is typically used for the secondary satellite system.

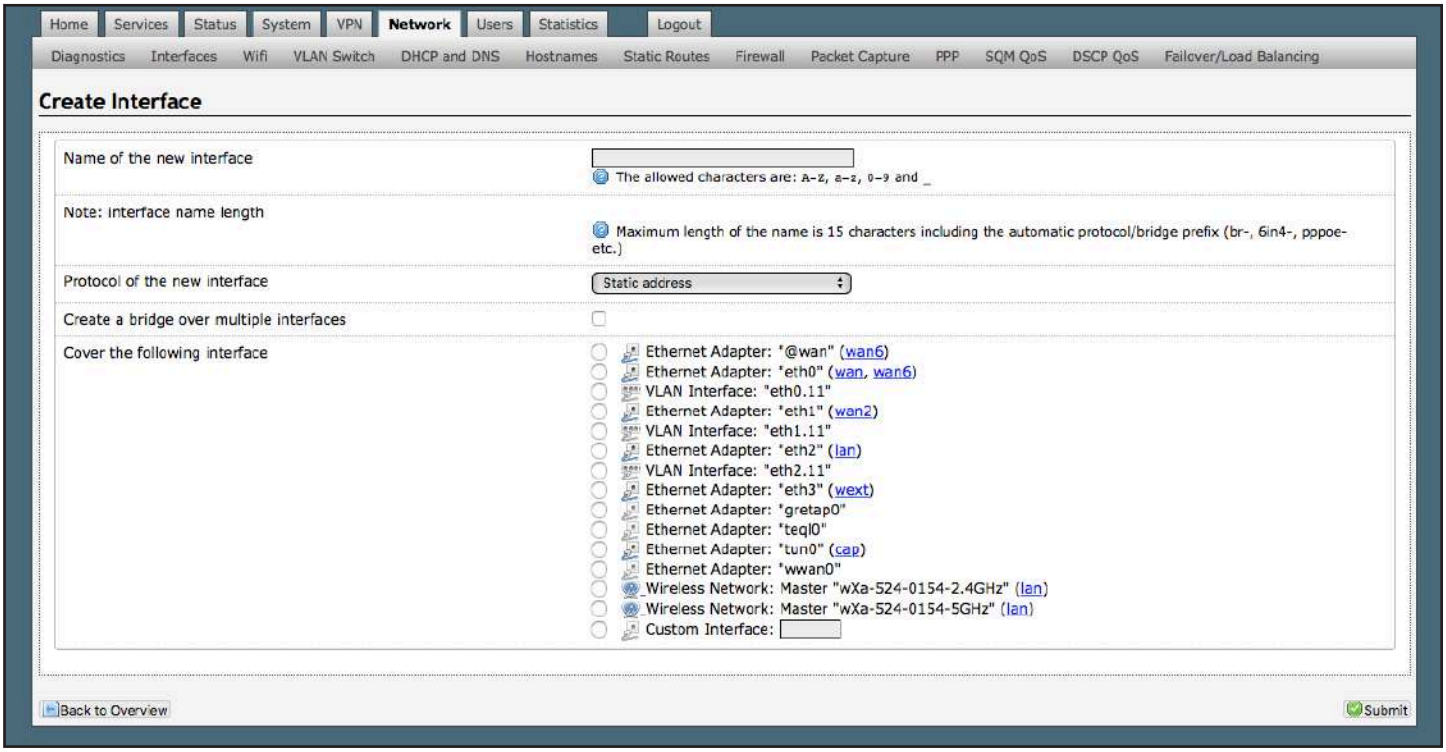
### 9.2.1. Interface Actions




- **Connect** - Enable an interface.
- **Stop** - Disable an interface.
- **Edit** - Modify the configuration of the interface.
- **Delete** - Remove the interface. CAUTION: This action cannot be Undone!

### 9.2.2. Add a New Interface

To add a new interface, click <Add new interface> button on the Interface Overview page.



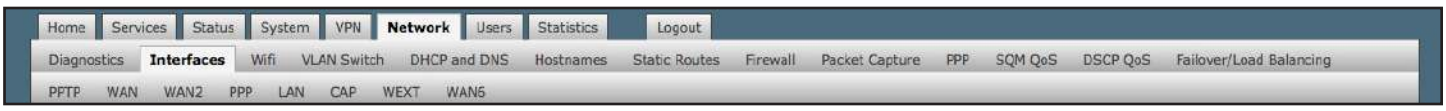

Complete the Create Interface screen and click <Submit> to apply the change. Once configured, the new interface will show on the Interface Overview screen and it will have its own Tab at the top of the Interface Overview page.

The name of the new interface must not match the name of a current interface, member, policy or rule.

If adding a new WAN Interface, be sure to Edit the Interface to complete the configuration.

### 9.2.3. Select Interfaces Tabs

Use these tabs to select an interface for configuration and/or modification.

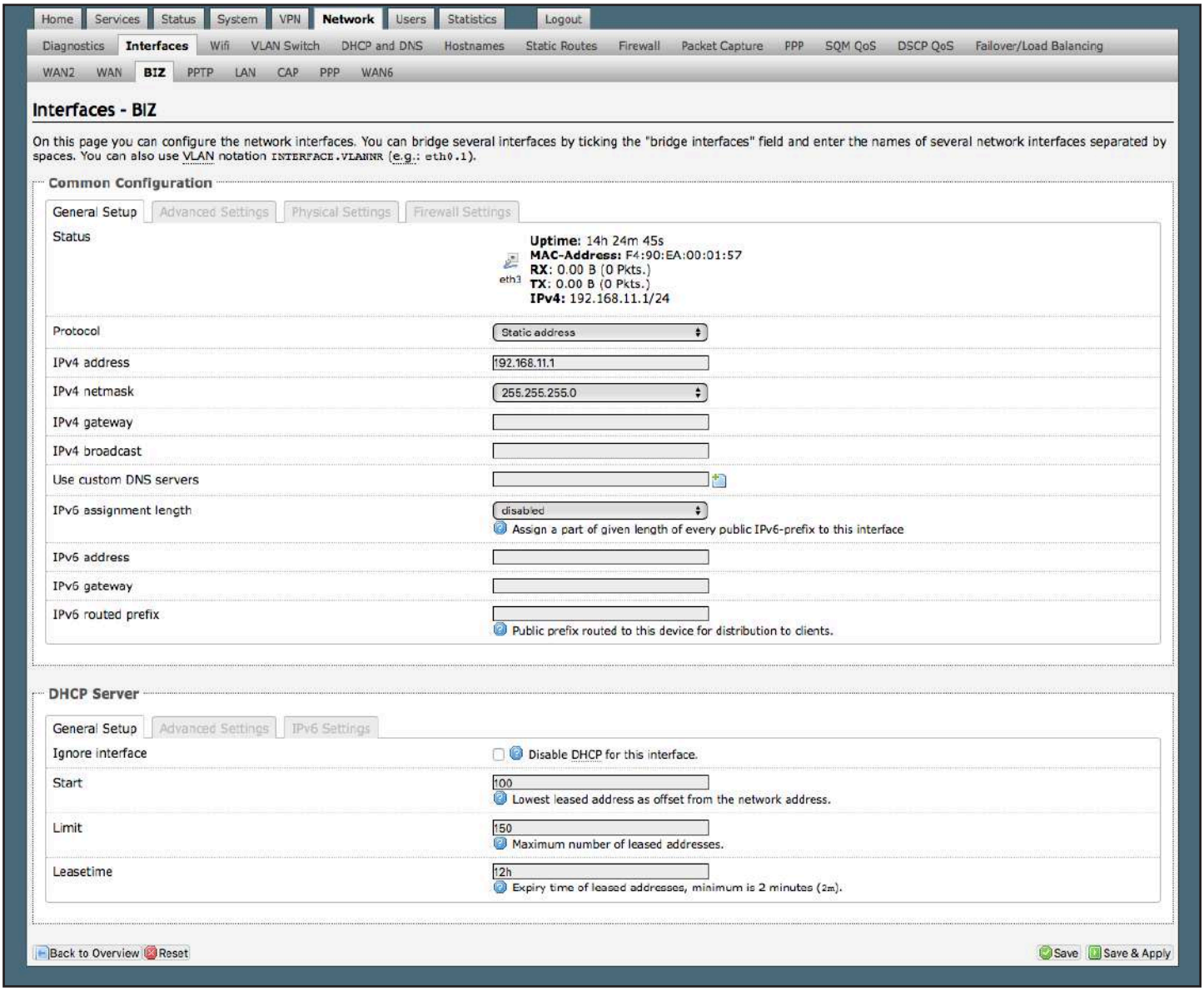



Use these tabs within a specific interface tab to configure the network interfaces.


The information and selections available will depend upon the Protocol selection for that interface.

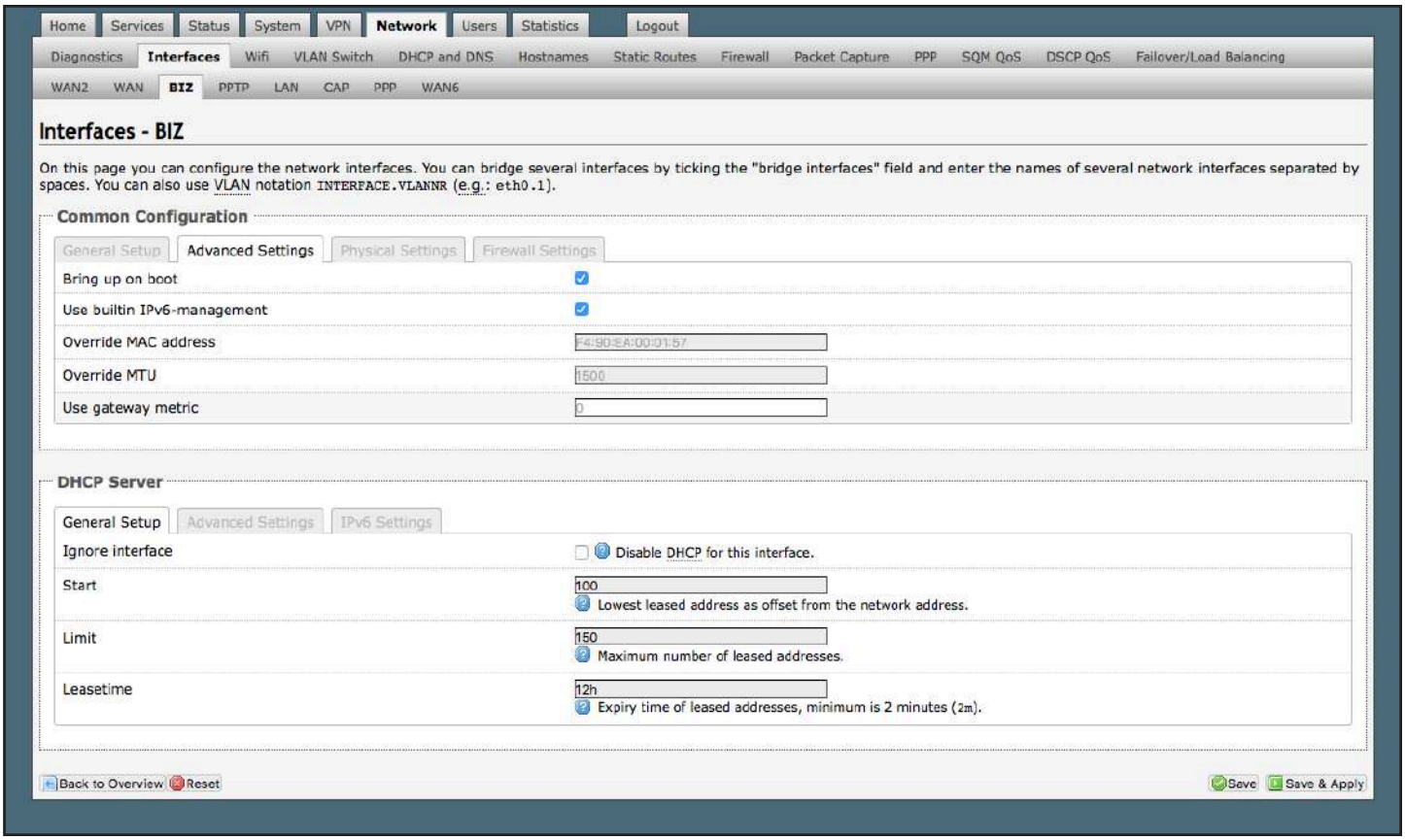
### 9.2.3.1. General Setup

Use General Setup to switch the protocol for the interface and configure the setup for that protocol including Static IP Addresses, DHCP Server Setup, etc.




### 9.2.3.2. Advanced Settings

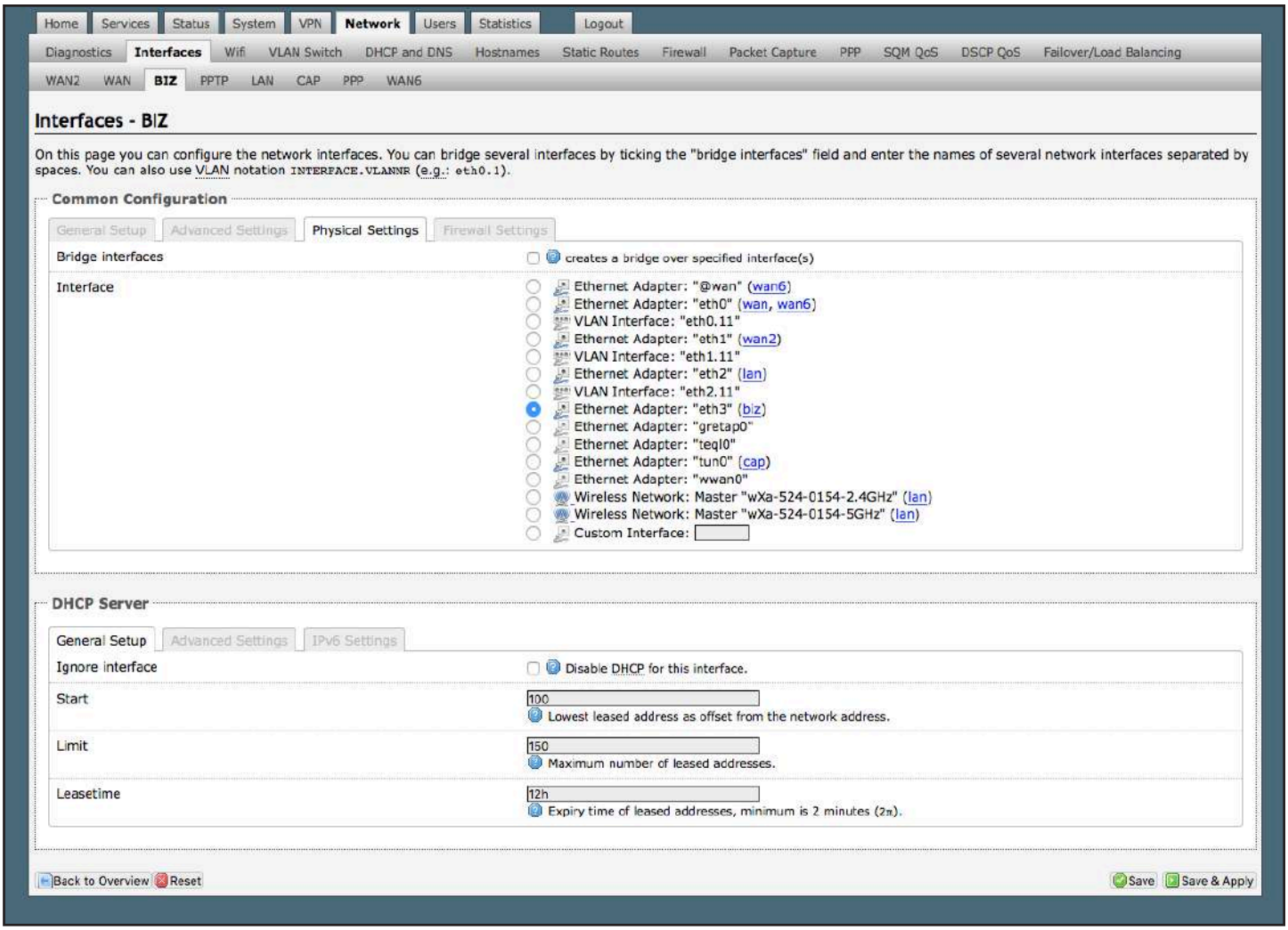
Use Advanced Settings if you want to bring up the interface automatically on boot up of the router and to configure the DHCP Server Settings.




NOTE: Each WAN interface must be assigned a unique number in the “Use gateway metric” field. This number is required for configuring Failover/Load Balancing.

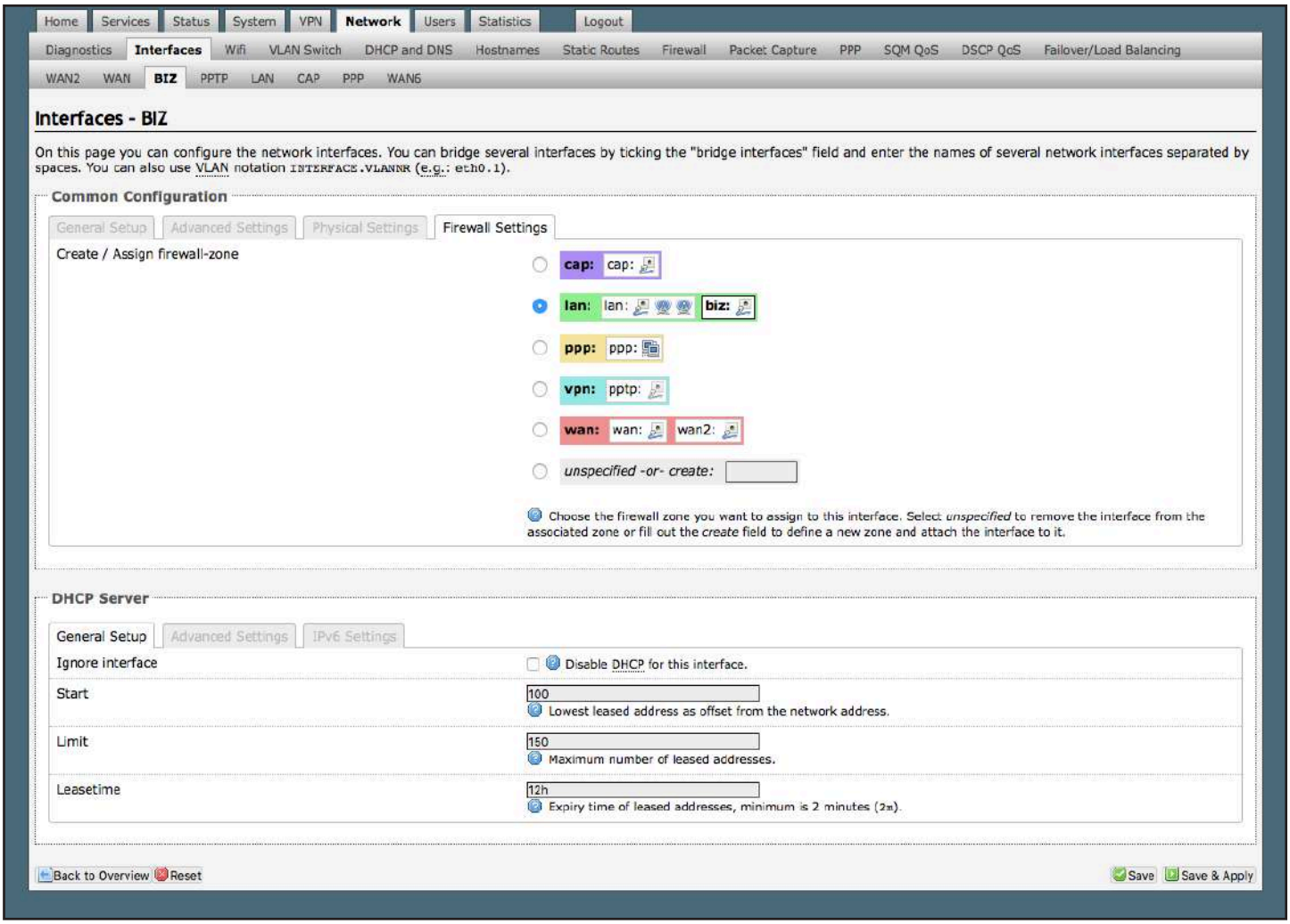
### 9.2.3.3. Physical Settings

Use this page to bridge interfaces and configure the DHCP Server Settings.

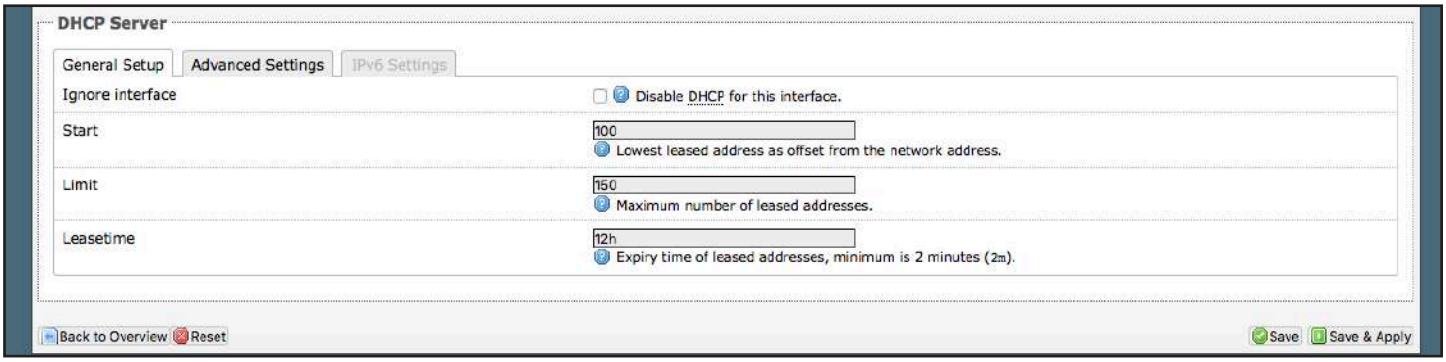



### 9.2.3.4. Firewall Settings

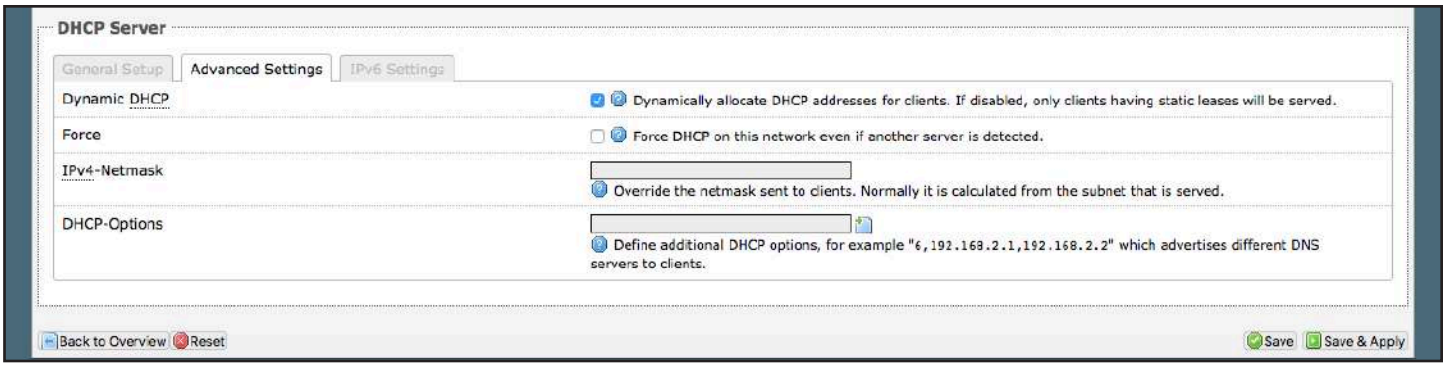
Use this to select the Firewall Zone you want to assign to the Interface. **See Chapter 9.8** for Firewall Zone details. You can also configure the DHCP Server Settings from this page.



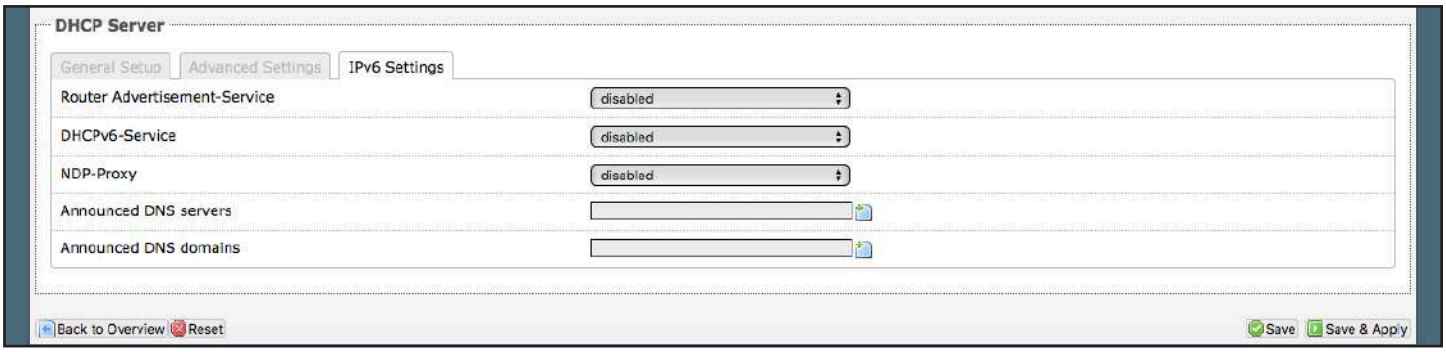

## 9.2.3.5. DHCP Server - General Setup




## 9.2.3.6. DHCP Server Advanced



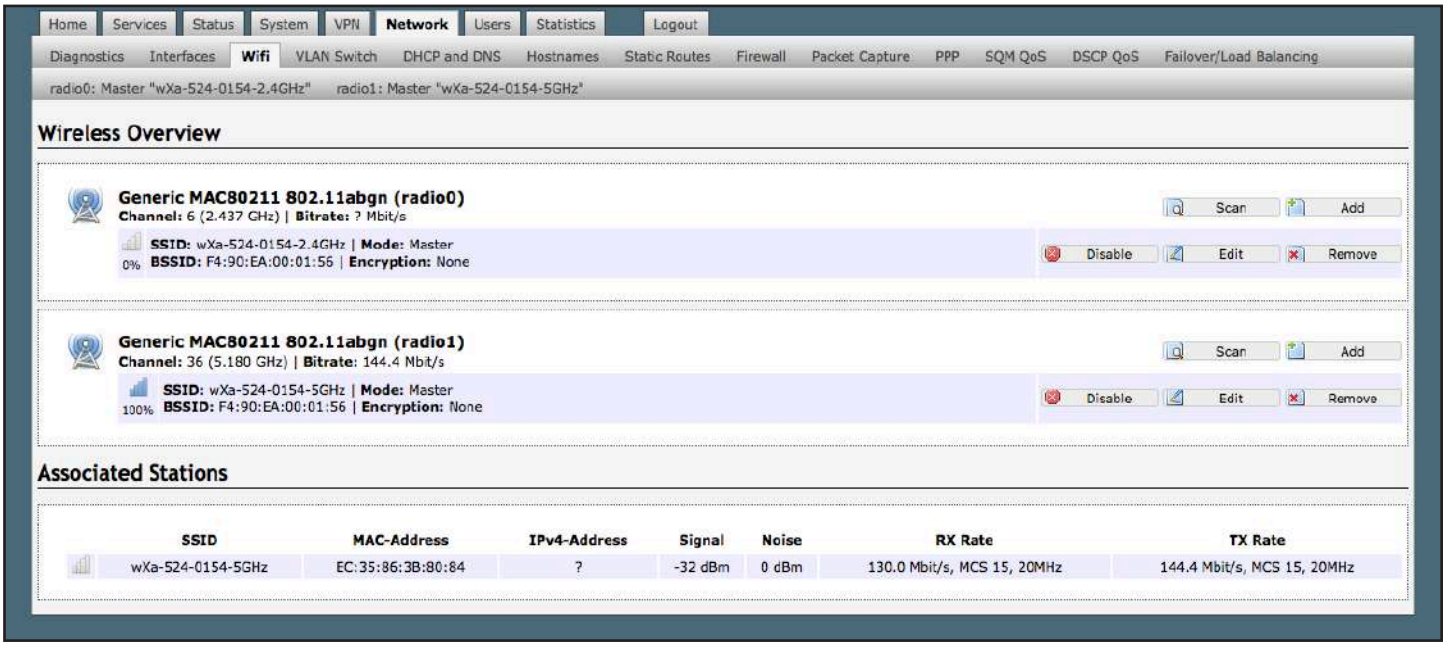

### 9.2.3.7. DHCP Server IPv6 Settings

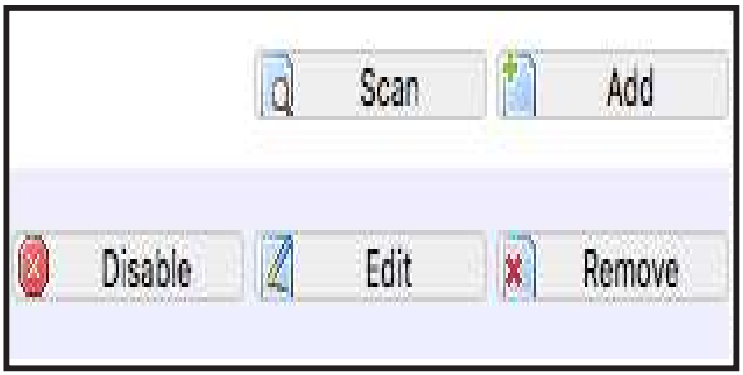



## 9.3. WiFi

Requires “superadmin” login.

This screen shows the current status of the wireless hotspot created by the Optimizer.

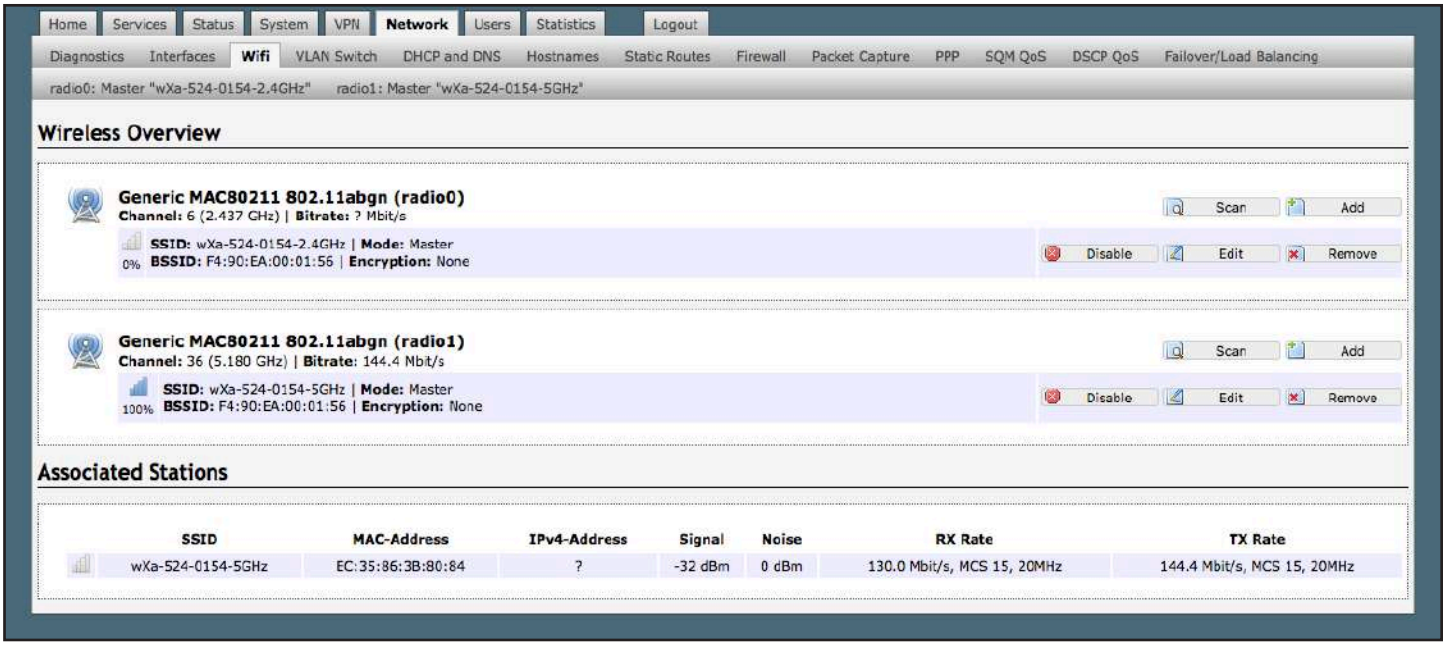




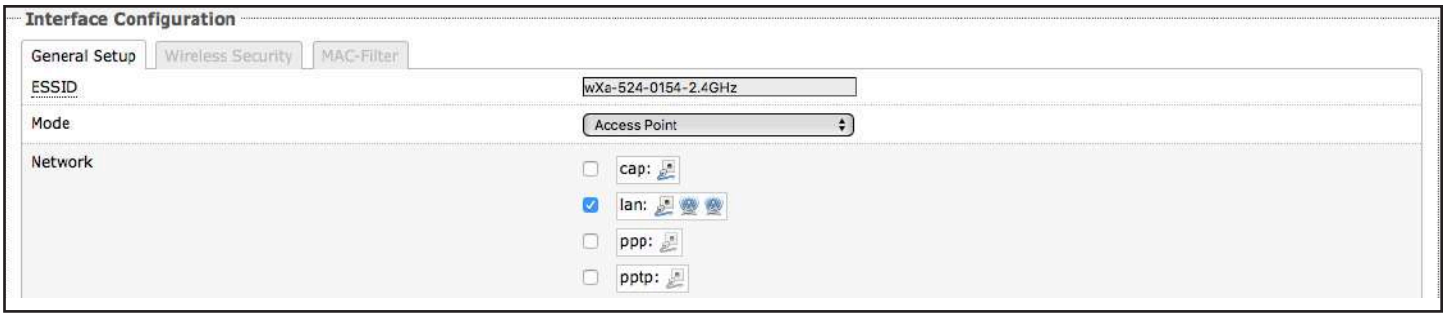

- **Scan:** Scans for other wireless hotspot signals available in the area.
- **Add:** Add a new WiFi interface.
- **Disable:** Disable the selected WiFi interface but it remains on the list.
- **Edit:** Edit the selected WiFi interface.
- **Remove:** Remove the selected WiFi interface.

### 9.3.1. Rename the Wireless Network

The default name of the Optimizer Enterprise's wireless network is wXa-524-xxxx where the xxxx represents a unique number. This is the name of the wireless network that you connect to using your computer or iOS or Android device. It is possible to change the name of your wireless network.




Locate the wXa WiFi network and click <Edit>.



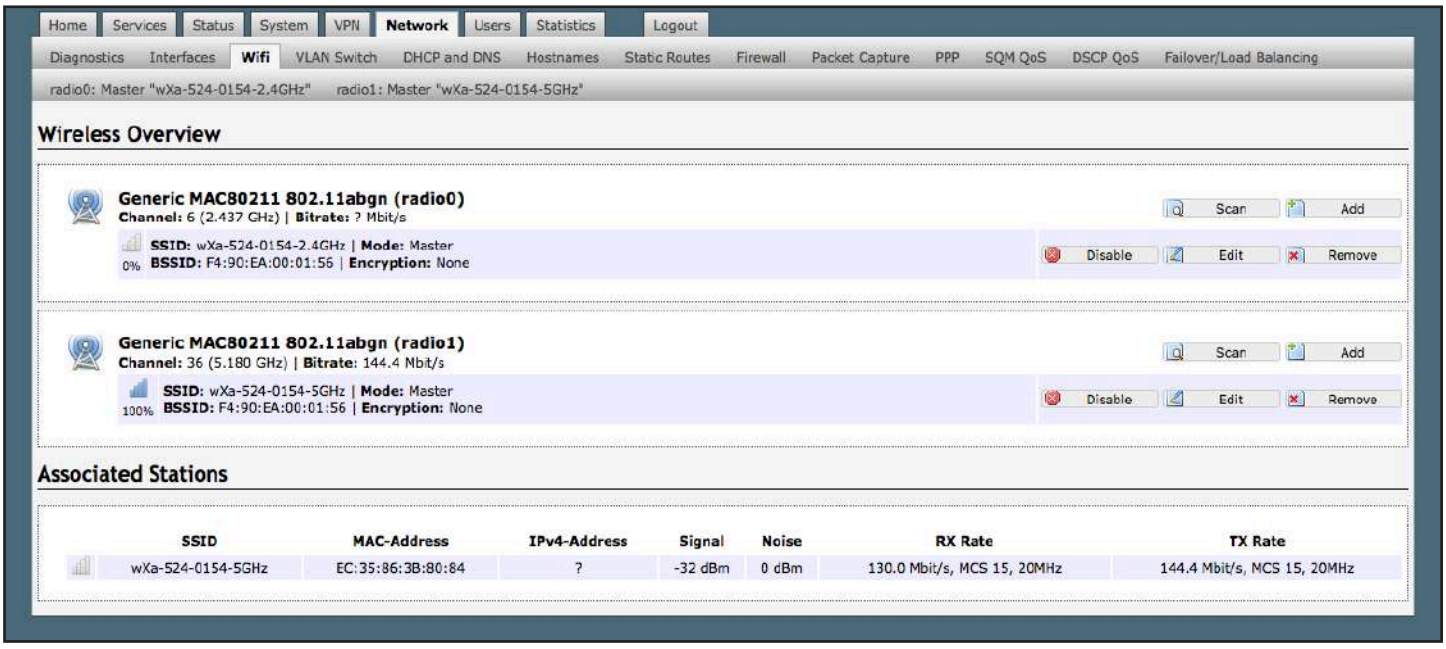

1. Enter the new wireless network name in ESSID field.

2. Click <Save & Apply>.

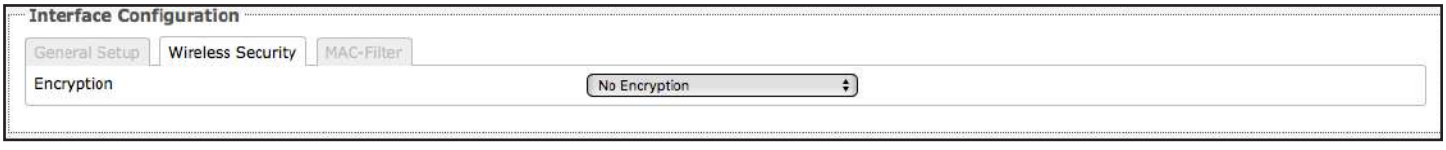
This procedure changes the name for the WiFi hotspot only. When connecting your computer, iOS or Android device to the wireless network, this is the network name that will appear in the wireless network list. This name does not change the router superadmin or admin name when logging in to access the Optimizer user interface.

### 9.3.2. Restrict Wireless Network Access

When in public locations, for example, a busy port, you may want to restrict access to the WiFi hotspot created by your satellite device and the Optimizer. You can password protect the WiFi hotspot so others cannot use it.




Locate the wXa WiFi network and click <Edit>.




1. Select the Encryption mode from the drop-down menu.

2. Enter your desired password in the Key field.

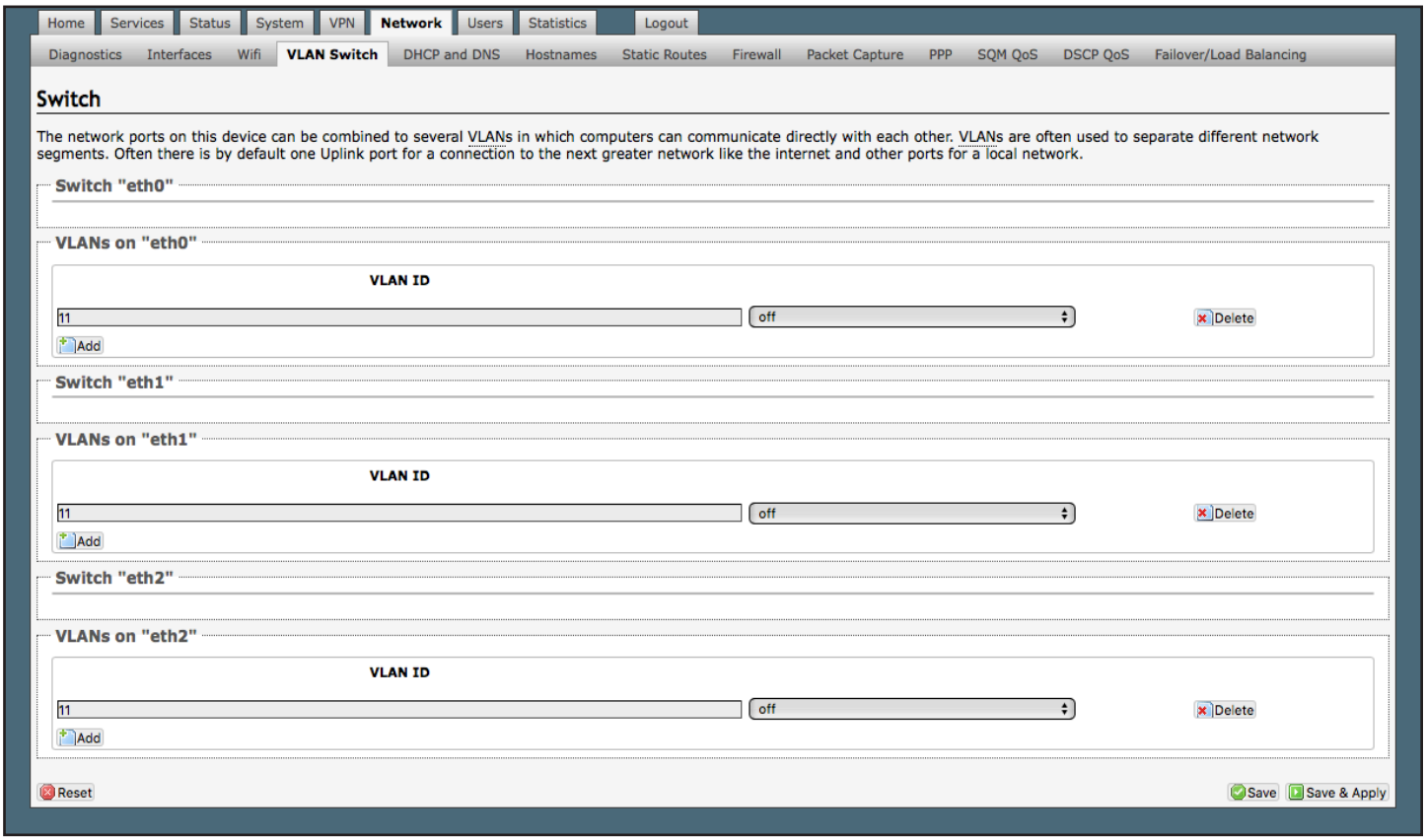
3. Click <Save & Apply>.

This procedure adds/changes the password for the WiFi hotspot only. When connecting your computer, iOS or Android device to the wireless network, this is the password you will use. This password does not change the router superadmin or admin password when logging in to access the Optimizer user interface.

## 9.4. VLAN Switch

VLAN - Virtual Local Area Network

Requires “superadmin” login.



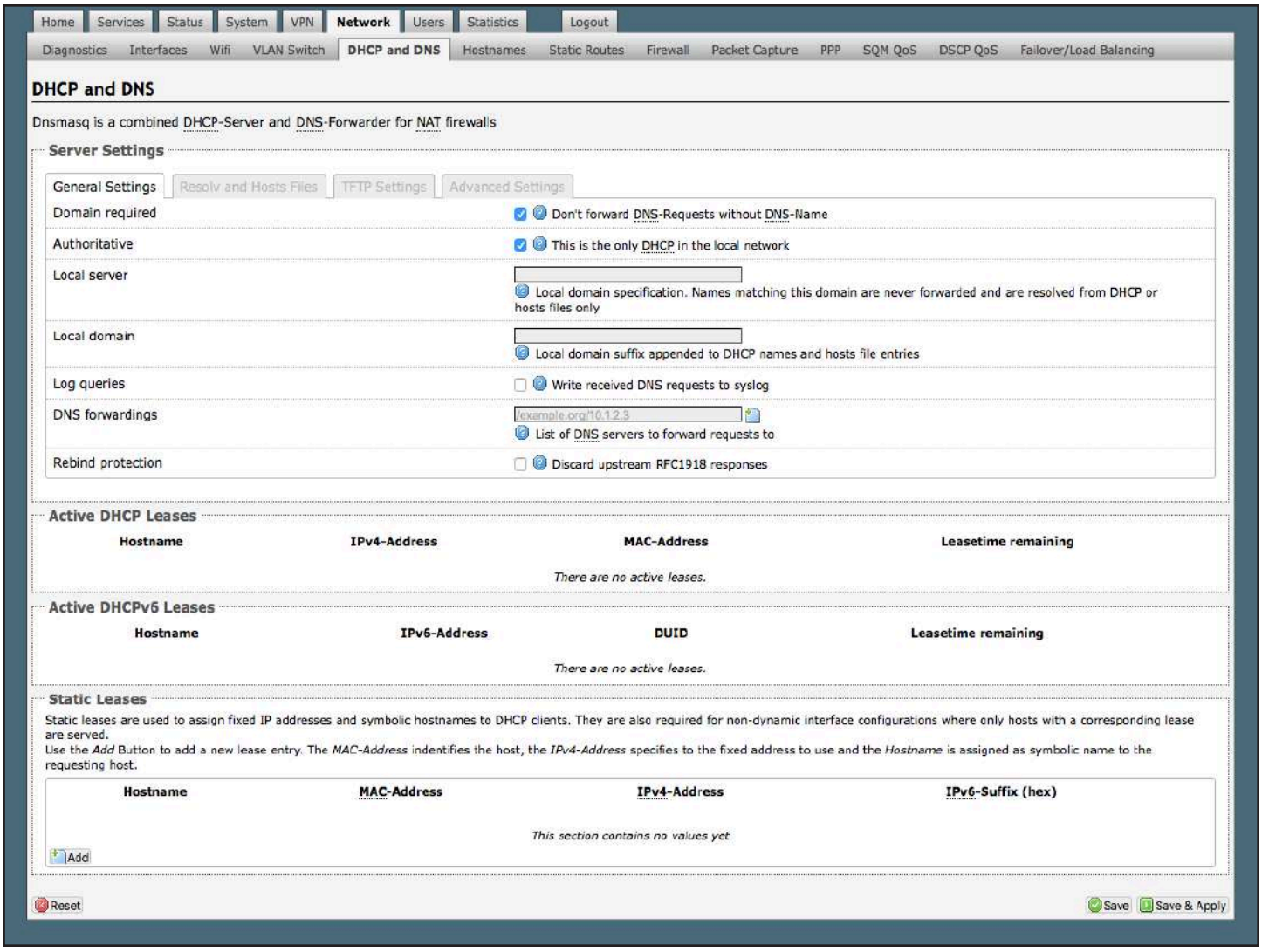

## 9.5. DHCP and DNS

DHCP - Dynamic Host Configuration Protocol
DNS - Domain Name System

Requires “superadmin” login.

The Optimizer Enterprise is a DNS server.

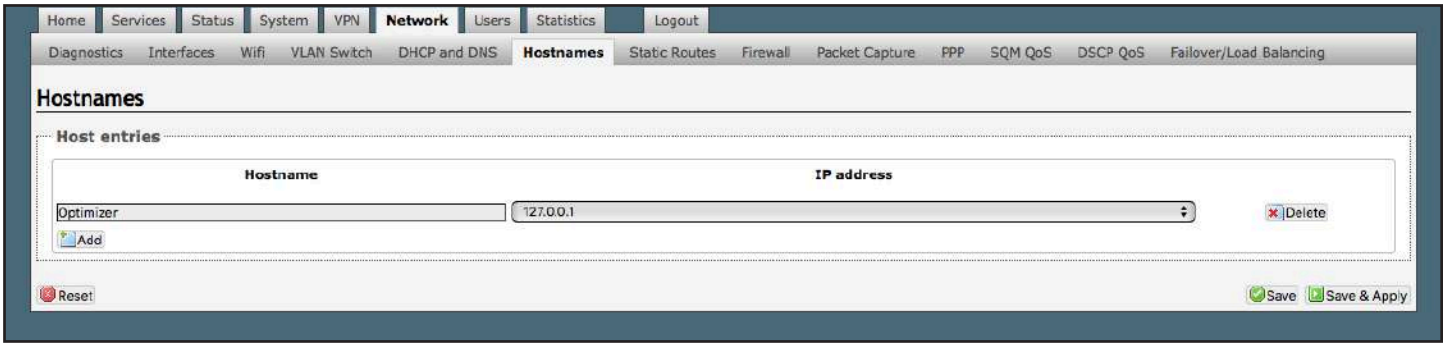
With the Captive Portal enabled, DHCP and DNS all happen within the Captive Portal, therefore there is no reason to modify these settings.



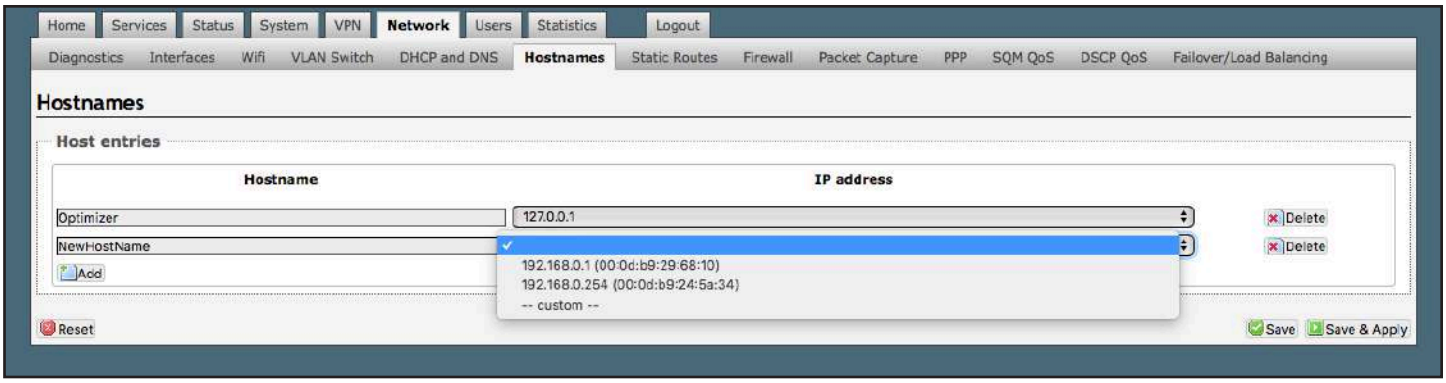

## 9.6. Hostnames

Requires “superadmin” login.

Use this page to associate a hostname with an IP address.




### 9.6.1. Add Hostname




1. Click <Add>.

2. Enter the new Hostname.

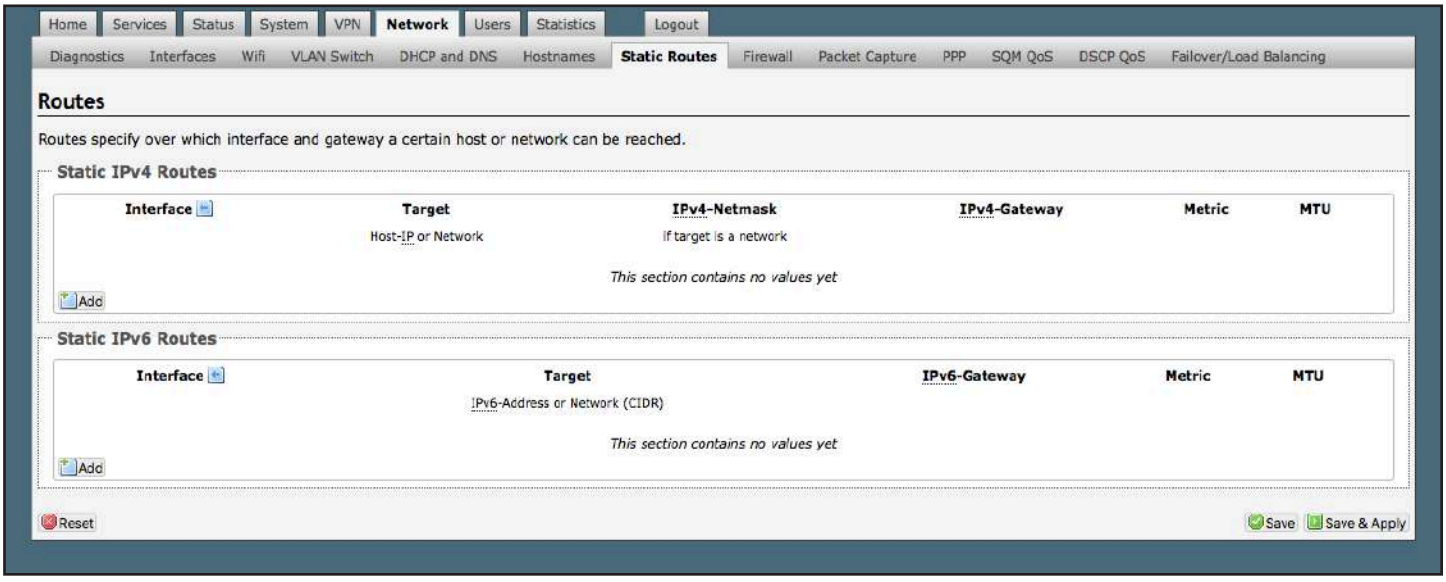
3. Select the IP address from the drop-down list OR select custom to enter the IP address.

4. Click <Save & Apply>.

## 9.7. Static Routes

Requires “superadmin” login.

This Static Routes table is available for those with a complex network that may include multiple routers. Use this page to specify how a certain host or network can be reached.




Static routes take precedent over MWAN Traffic Rules.

## 9.8. Firewall

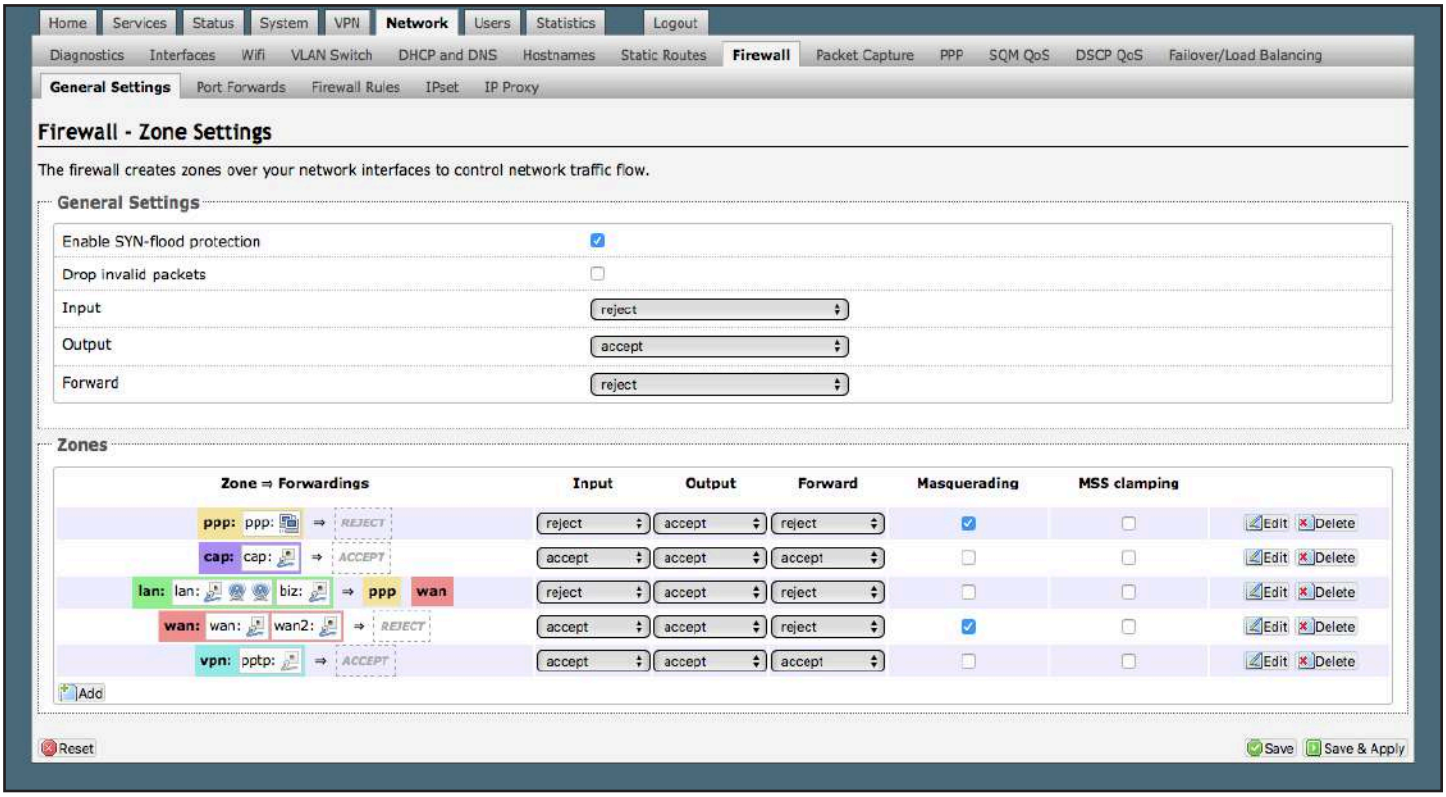
Requires “superadmin” login.

The Firewall allows you to control network traffic flow over each interface. Most installations do not require any firewall modifications due to the flexibility of the Captive Portal configuration (**See Chapter 5.1**) and the Failover/Load Balancing configuration (**See Chapter 9.13**).

CAUTION: It is important to have an in-depth understanding of network administration including management and maintenance of routers, firewalls, etc. before attempting to modify the firewall settings of the Optimizer Enterprise. USE WITH CAUTION AND AT YOUR OWN RISK!

### 9.8.1. General Settings

Use this screen to create and edit Firewall zones. Each Firewall Zone can have its own firewall rules. Each Interface must be assigned a Firewall Zone.




It is important to understand the following before considering modifications:

- **Input:** This is accessing the router itself.
- **Output:** This is the router accessing the “lan”. DO NOT MODIFY.
- **Forward:** This is traffic through the router via an interface and out of the router. If Forward is allowed, you must configure the Inter-Zone Forwarding.
- **Accept:** This setting allows traffic unless there is a Rule to block it.
- **Reject:** This setting blocks traffic unless there is a Rule to allow it. An error is displayed to the end user.
- **Drop:** This setting drops the traffic with no indication to the end user.

The router is shipped to you with several Firewall Zones configured and interfaces assigned to them:


The “ppp” firewall zone has only the ppp interface assigned to it. This is the zone for dialup connections. In this default configuration, only Output traffic is allowed. Input and Forwarded traffic is rejected.


The “cap” firewall zone has only the cap interface assigned to it. This is the zone for the Captive Portal. In this default configuration, all traffic is allowed but subject to the Captive Portal settings.


The “lan” firewall zone has the lan and biz interfaces assigned to it. This is the zone for the internal local network. In this default configuration, only Output traffic is allowed.


The “wan” firewall zone has the wan, wan2 and wext interfaces assigned to it. This is the zone for satellite connections. In this default configuration, only Output traffic is allowed.


The “vpn” firewall zone has the pptp interface assigned to it. This is the zone for virtual private networks.

CAUTION: While it is possible to edit these zones and add new zones, Best Practice is to leave these zones alone and create MWAN Traffic Rules instead, assigning the new rules to a Zone. **See Chapter 9.13.2.5**.

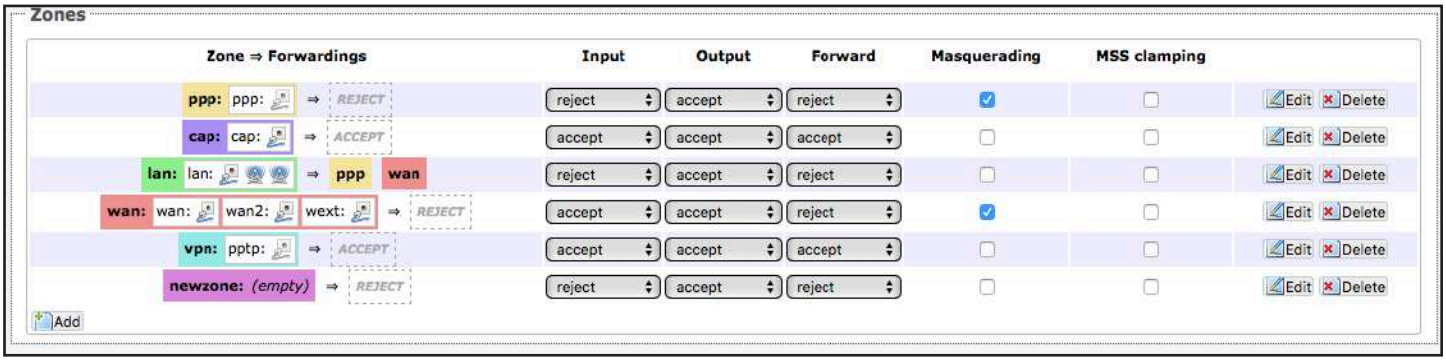
FOR EXAMPLE: If a system administrator wants to create firewall zones that are different for each device, such as firewall rules for WiFi to allow all, rules for vsat to allow dns and http but nothing else, for fbb do not allow anything but email. You could create three new zones; one for each wan interface, then create firewall rules that pertain to each of the new zones. You then edit the lan interface to add the three new zones.

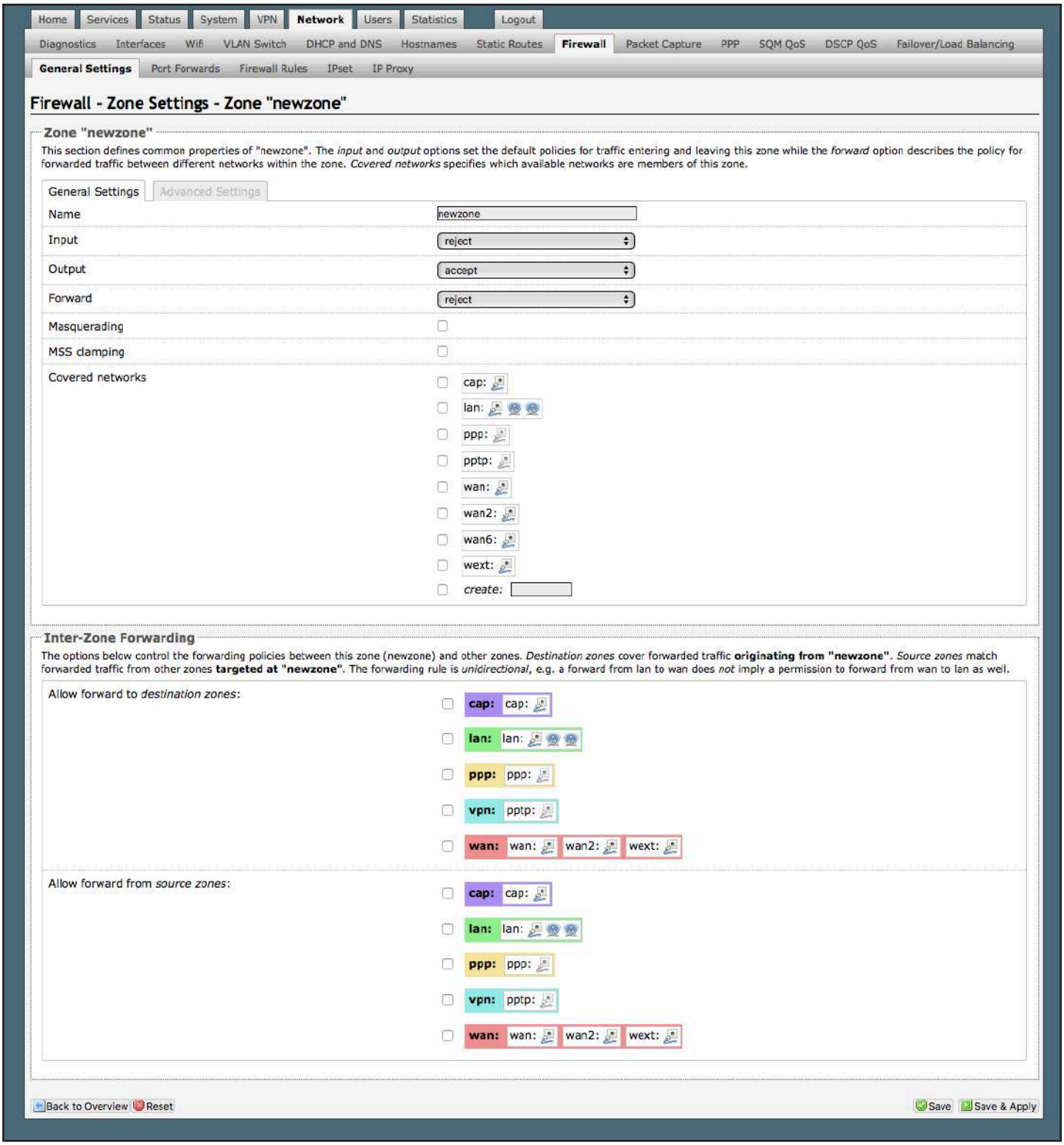
OR, do not create zones but use IP addresses added to the mwan traffic rules (not the firewall rules). Leave the zones the same, use MWAN traffic rules, assigning the rule to a zone and use IP source address or a specific IP address. The destination can be any address and apply to any zone. **See Chapter 9.13.2.5**.

### 9.8.1.1. Add a Firewall Zone

Requires “superadmin” login.

To add a new Firewall Zone, click <Add> on the General Settings page, in the ‘Zones’ section.






Enter the desired General and Advanced Settings. Click <Save & Apply>.

### 9.8.1.2. Delete a Firewall Zone

CAUTION: This action CANNOT be undone.

To permanently remove a firewall zone, click the Delete icon.

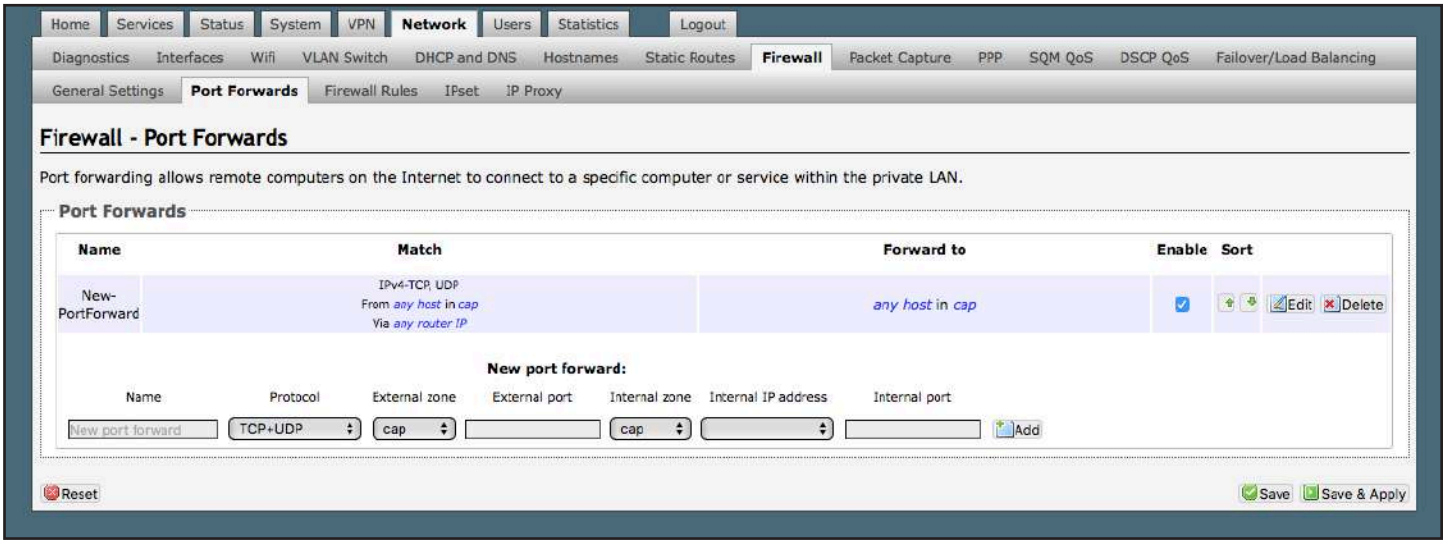

## 9.8.2. Port Forwards

Requires “superadmin” login.

To allow remote access to a specific computer or service within the private LAN requires Port forwarding.

CAUTION: It is important to understand networking before making changes to Port Forwards.


This page shows a list of the enabled port forwards configured. To add a new port forward, enter the desired parameters and click <Add>. To save the configuration, click <Save & Apply>. The new port forward will appear in the list.




You can now enable/disable them, change the sort order, and edit the parameters.

CAUTION: The Delete function cannot be undone.

### 9.8.3. Firewall - Traffic Rules

This page is the firewall traffic rules table. The table includes all the firewall rules on the router that will allow you to enable and disable ports and IP address, etc.

While you can add rules, delete rules and each interface can have its own set of rules, BEST PRACTICE is to manage router traffic via the Failover/Load Balancing MWAN Traffic Rules (**See Chapter 9.13.2.5**).

By default, the router is shipped to you with six rules that all say DO NOT MODIFY. They are: ALL, Pass DNS, DNS, HTTP, HTTPS and FTP. These are the rules that the Captive Portal and Proxy Server automatically enable and disable so the components work without you having to make modifications to the Firewall Traffic Rules Table. When enabled, these rules Allow that particular traffic to pass through the firewall. This means that the Firewall is totally OPEN by default. When you configure the Captive Portal and Failover/Load Balancing you can restrict the allowed traffic through an interface.

All the firewall rules can easily be enabled (checked) or disabled (unchecked).

The first rule name “ALL”, when enabled, means the firewall is totally open and all traffic goes straight through the firewall. To disable the rule, uncheck it, scroll to the bottom of the page and hit <Save & Apply>. With the ALL rule disabled, the remaining rules spring into action.

Rules are evaluated from top to bottom. As soon as traffic hits a rule that matches, it will stop. For example, if you want to allow all traffic except http traffic:

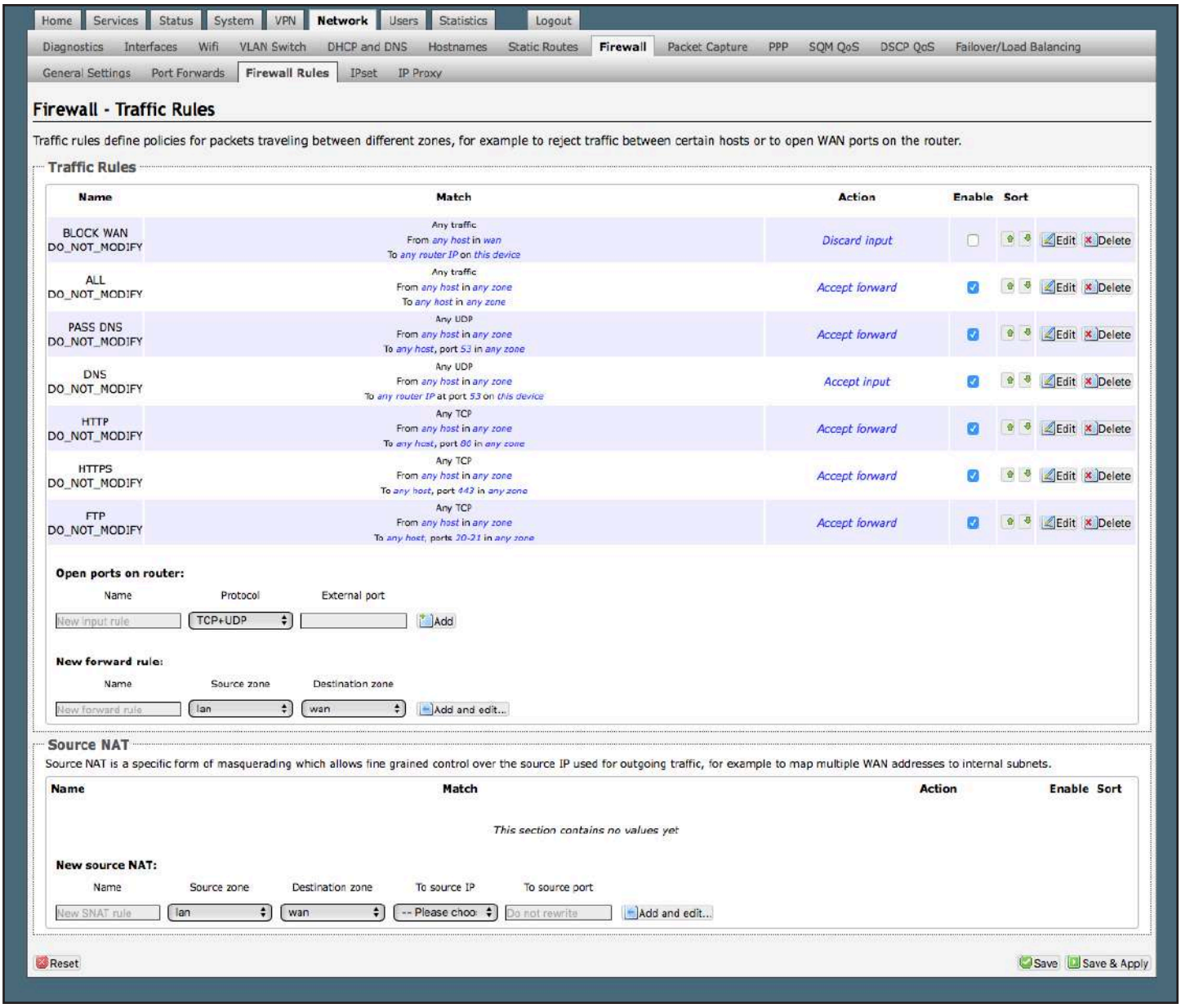
- Disable (uncheck) the first rule “ALL-DO NOT MODIFY”. This forces the remaining rules to take precedent.
- Disable (uncheck) the rule “HTTP-DO NOT MODIFY”. This blocks http traffic from passing through the firewall.

With the ALL rule disabled (unchecked) you can enable/disable the others very quickly. The next one is DNS. Do you want DNS? Yes (checked), No (unchecked). Do you want http? Yes (checked), No (unchecked), etc.

You can also create a custom rule.

#### 9.8.3.1. Create a Custom Rule

Requires “superadmin” login.




Scroll down to the bottom of the page to the “New forward rule” section. Click <Add and Edit>.


Here you can give the new rule a name, specify the protocol, restrict the rule to a certain zone, identify the source IP address, the destination IP address, port numbers, etc.

This is standard firewall convention. Once the rule is created, click <Save & Apply>. Place the rule where you want it on the traffic rule list using the Sort column arrows for up and down.

This is a full-featured firewall that you can customize to meet your needs.

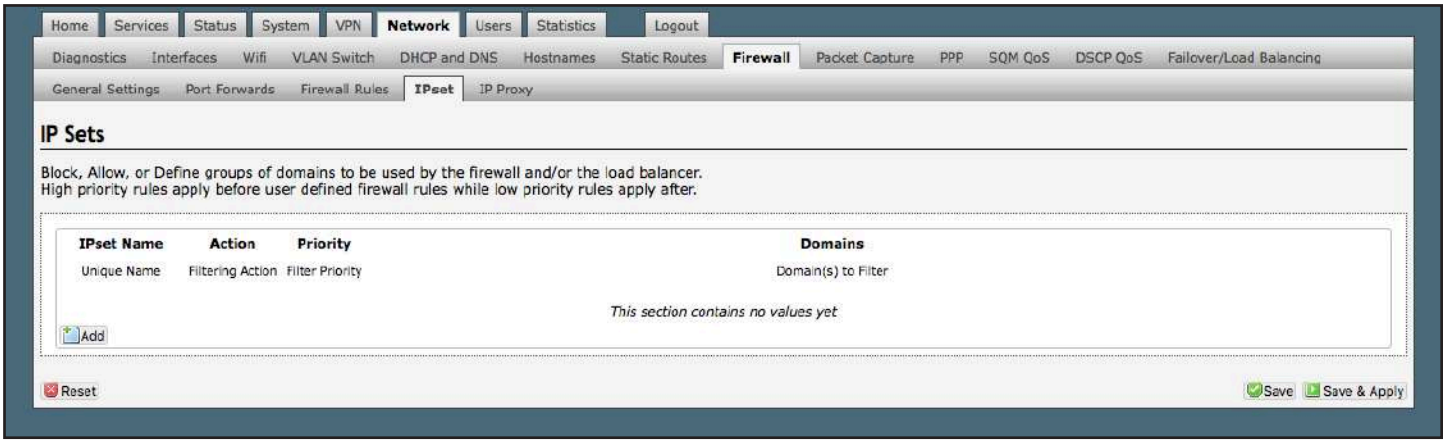
Make the Rules as desired, then click <Save & Apply>.

See IP Sets (**See Chapter 9.8.4**) for creating block and allow rules by domain name instead of IP address.

### 9.8.4. IP Sets

Requires “superadmin” login.

Use IP sets for cloud-based services where standard firewall rules will not work. This allows block and allow rules by domain name instead of by IP address. IP sets rules take priority over anything in the firewall.




Click <Add> to create a new IP set rule.

Action Definitions:

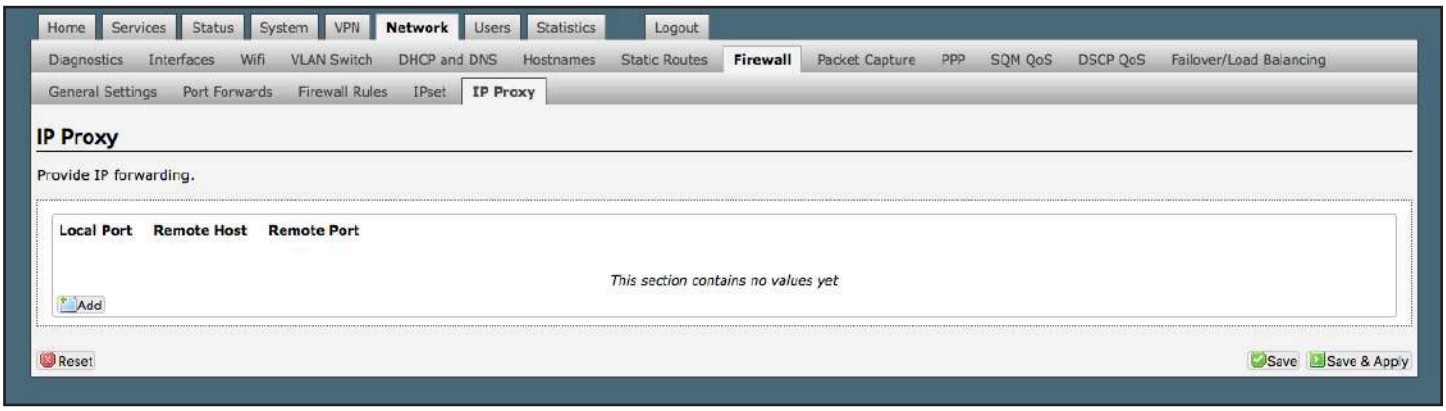
- **Block:** Rejects the domain.
- **Pass:** Allows the domain.
- **Define:** Defines the domain only. It neither blocks nor allows. You can specify how routing occurs for that domain in the Failover/Load Balancing Rules. (**See Chapter 9.13**).

You can group multiple domain names into one IP set rule.

Each IP set rule must be assigned to a Policy (**See Chapter 9.13.2.4**).

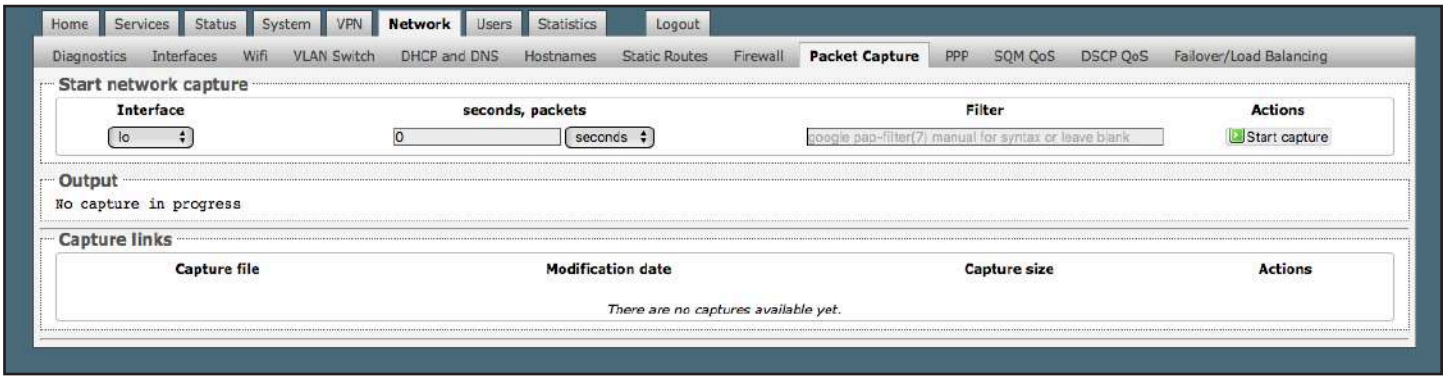
### 9.8.5. IP Proxy

Requires “superadmin” login.




## 9.9. Packet Capture

Requires “superadmin” login.

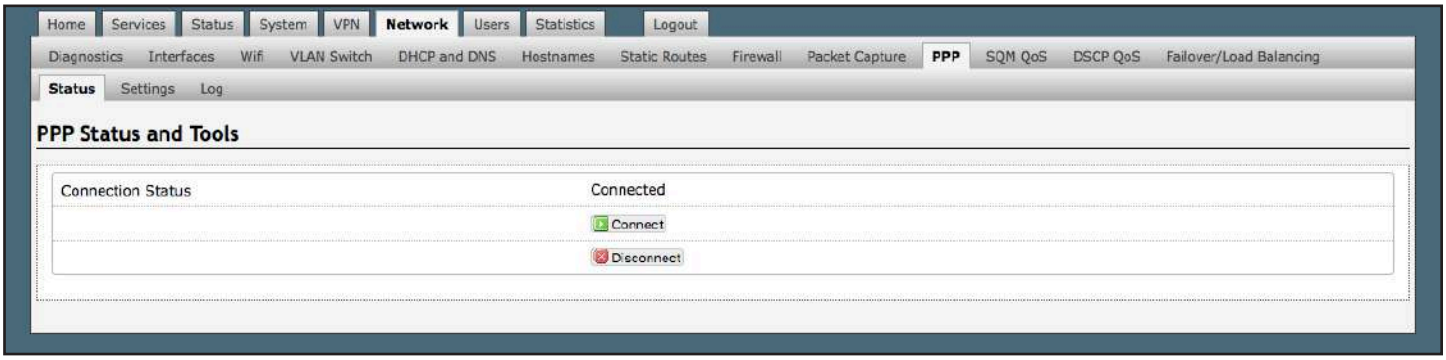



## 9.10. PPP

Requires “superadmin” login.

It is possible to use a USB connected satellite phone or LTE/GSM modem that does PPP to connect for email and web browsing (for example: IsatPhone Pro or Iridium handheld).

NOTE: web browsing is not recommended when using a low bandwidth device.

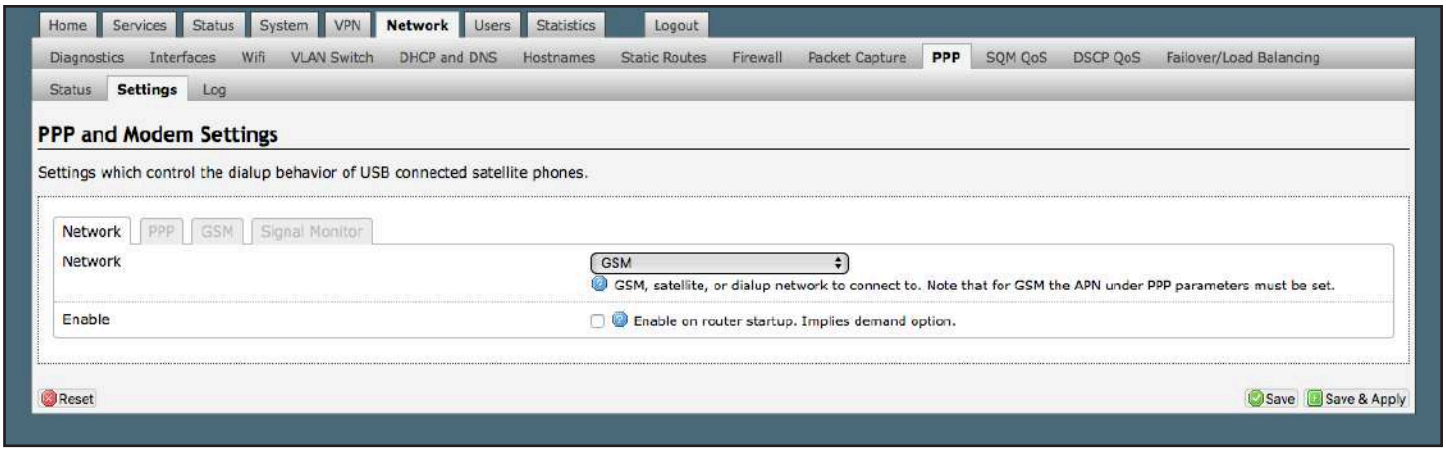



With PPP configured, you can bring up the connection manually; it will stay connected until you disconnect, or the idle timeout is reached. If not using the Demand feature, you must bring up the PPP connection manually. **See Chapter 9.8.1**.

### 9.10.1. PPP Settings Configuration for USB Connected Satellite Device

Requires “superadmin” login.

Use the following to configure the PPP interface for use with a USB connected satellite phone.

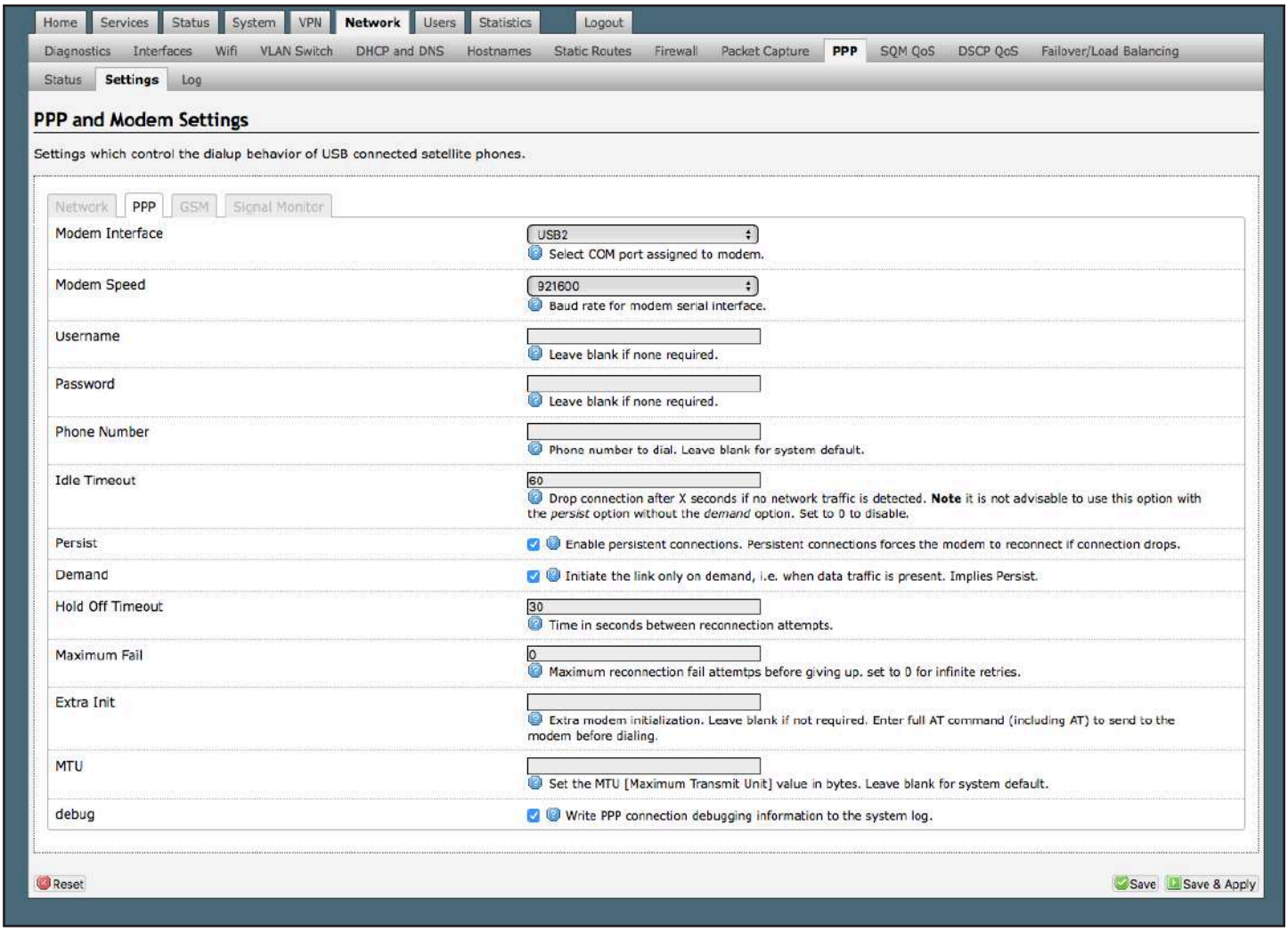



1. Using the drop-down menu, click the appropriate satellite network.


2. Click the Enable checkbox to maintain this setting during router startup. Otherwise, you must re-configure for PPP use with each router startup.

3. Click <Save & Apply> to apply the change.

Move to the Settings > PPP Tab:

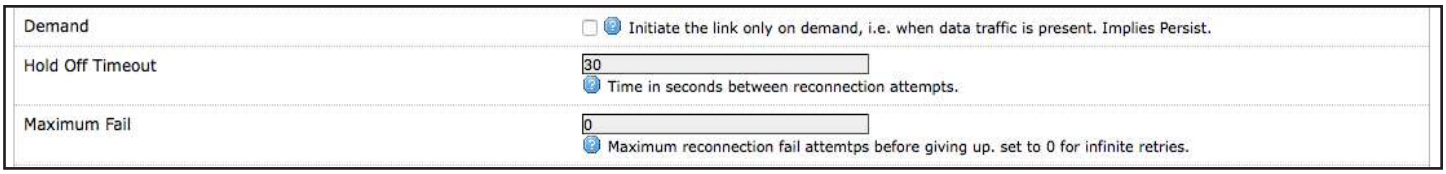



Configure the PPP Settings as necessary. These PPP Settings apply to both USB connected satellite phones and LTE/GSM (cellular) modems. In addition, LTE/GSM equipped OEs will also require PPP Settings configuration.

- **Reset LTE/GSM Modem:** (Present within LTE/GSM capable OE)
- **Modem Interface:** Do not modify from “System Default” unless you have trouble connecting. If required, use the drop-down list, select the COM port assigned to the USB connected satphone.
- **Modem Speed:** Do not modify from “System Default” unless you have trouble connecting. If required, use the drop-down list, select the baud rate for the USB connected satphone.
- **Username:** If the satellite network provider requires a username in order to connect to their network, enter it here. (If you use the APN Wizard, this will be completed automatically).
- **Password:** If the satellite network provider requires a password in order to connect to their network, enter it here. (If you use the APN Wizard, this will be completed automatically).
- **Phone number:** The Optimizer is pre-configured with the standard number to dial for the different satellite networks. Unless your satellite airtime provider requires an alternate phone number, this field can be left blank in order to use the default dialup number.
- **Idle Timeout:** The default is set to 60 seconds. If no network traffic is detected during this Idle Timeout period, the connection will drop. To disable the Idle Timeout feature, set to 0.

NOTE: If Persist is enabled with Demand disabled, the Idle Timeout is ignored.

- **Persist:** Check this box to enable persistent connections. If the connection drops the modem will attempt to reconnect. With Persist selected, three additional settings appear:




- **Demand:** Check this box to bring up the link only on demand, such as when data traffic is present. The satphone or LTE/GSM modem that does PPP, the link remains down until it detects network traffic. It will bring up the link automatically and stay up when there is traffic or until the Idle Timeout setting reached. With Demand selected, Persist is implied. See Persist above.
- **Hold Off Timeout:** The default is 30 seconds. If the link is dropped, this is the time it will wait to try connection again.
- **Maximum Fail:** The default is never. This is the number of times it will try to re- connect. If re-connection does not happen within this number, it will stop trying.
- **Best Practice:** When using LTE/GSM in the load-balancing mode, enable this Demand feature so that when there is PPP traffic the modem will go online, when no traffic the connection is terminated.
- **Extra Init:** If required, enter the full AT command to send to the modem before dialing.
- **MTU (Maximum Transmit Unit):** This should be blank to use the system default; or, you can set the limit here, in bytes. Only change this setting if required to do so by your satellite provider.
- **Debug:** If you are having trouble with the PPP connection this debug log may help you diagnose the problem.

Click <Save & Apply>.

## 9.10.2. PPP Settings Configuration for LTE/GSM Modems

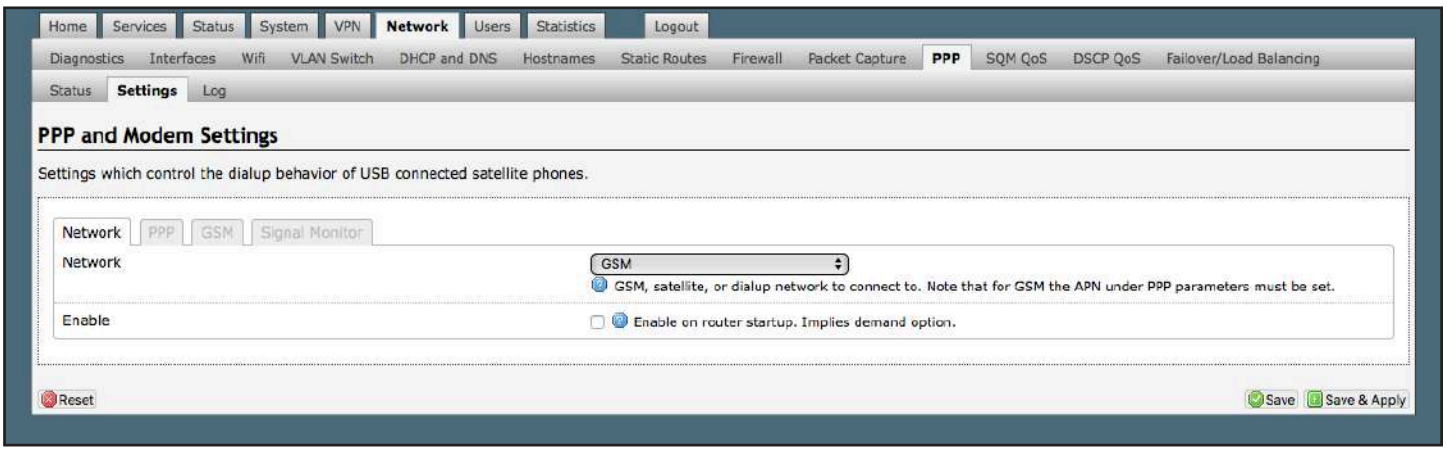
Requires “superadmin” login.

The LTE/GSM feature is offered for your convenience, but we are not able to support it. The information provided here is general in nature but may not be sufficient to establish a connection. If you run into any difficulties, you must contact your cellular network provider for support.

If you have an LTE/GSM-based cellular phone, it may be possible to use the LTE/GSM network, when available, for Email and Web Browsing data over the Optimizer. You will get the benefits of compression and a faster data transfer rate than over a satellite phone which typically equates to cost savings.

Only LTE/GSM-based service can be configured here. CDMA-based service will NOT work. If you are unsure of which service you have, contact your cellular provider before attempting to configure for connection.

Use the following to configure the PPP interface for use with an LTE/GSM modem.

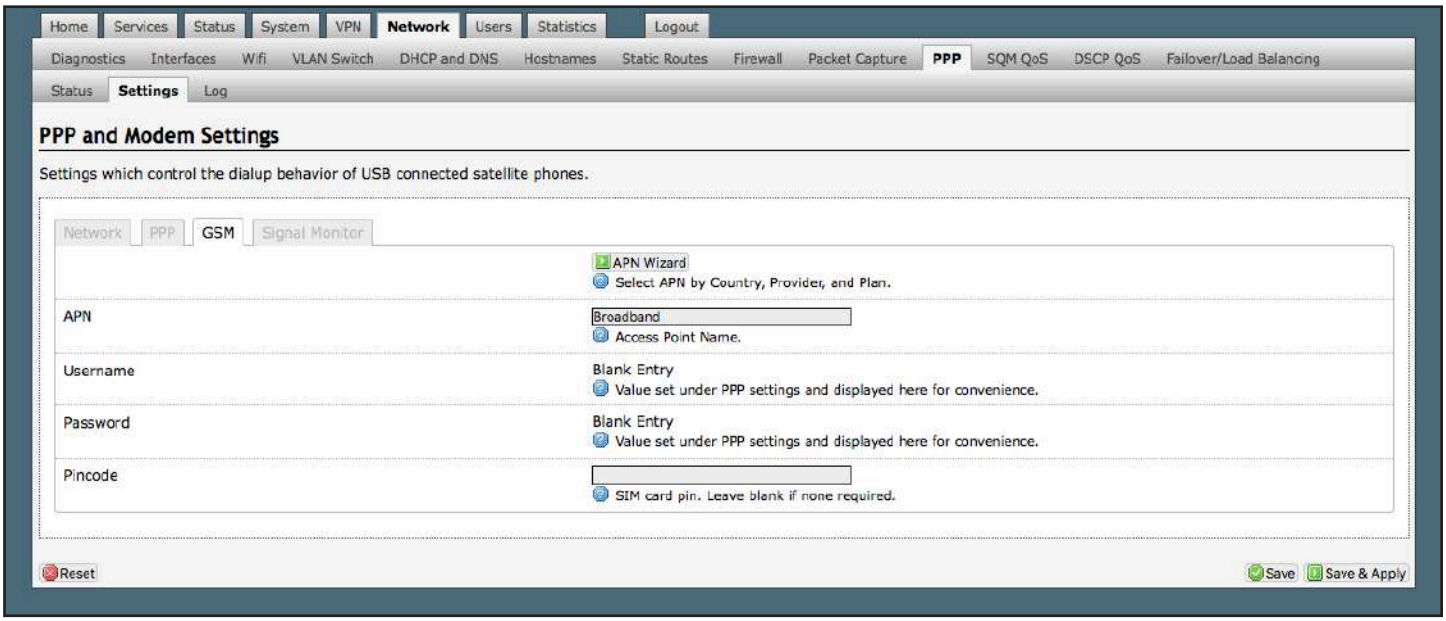



1. Using the drop-down menu, click GSM.


2. Click the Enable checkbox to maintain this setting during router startup. Otherwise, you must re-configure for PPP use with each router startup.

3. Click <Save & Apply> to apply the change.

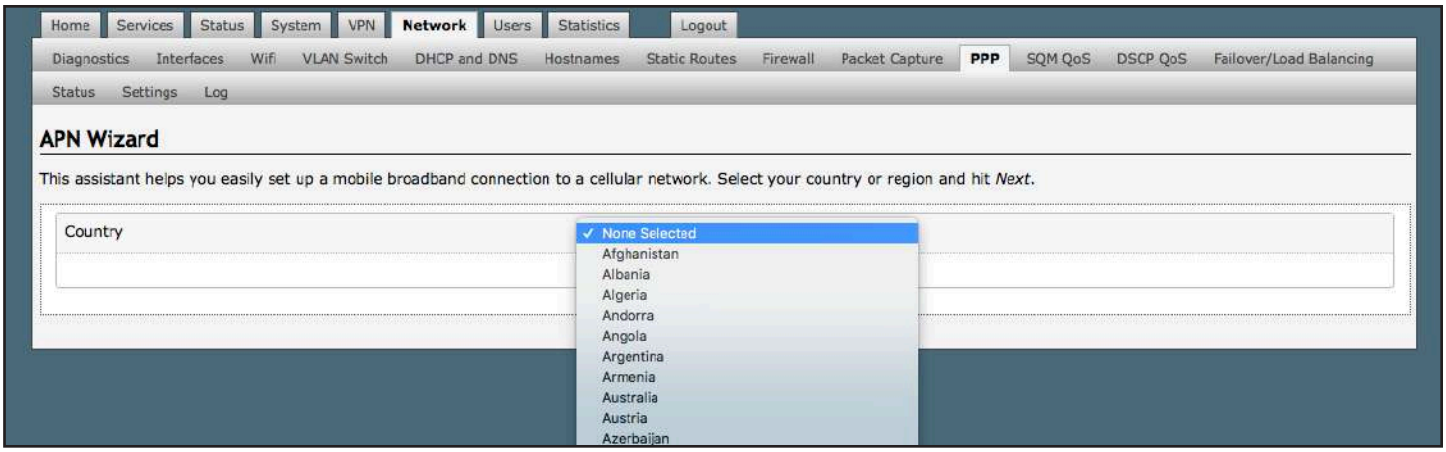
Move to the Settings > GSM Tab:



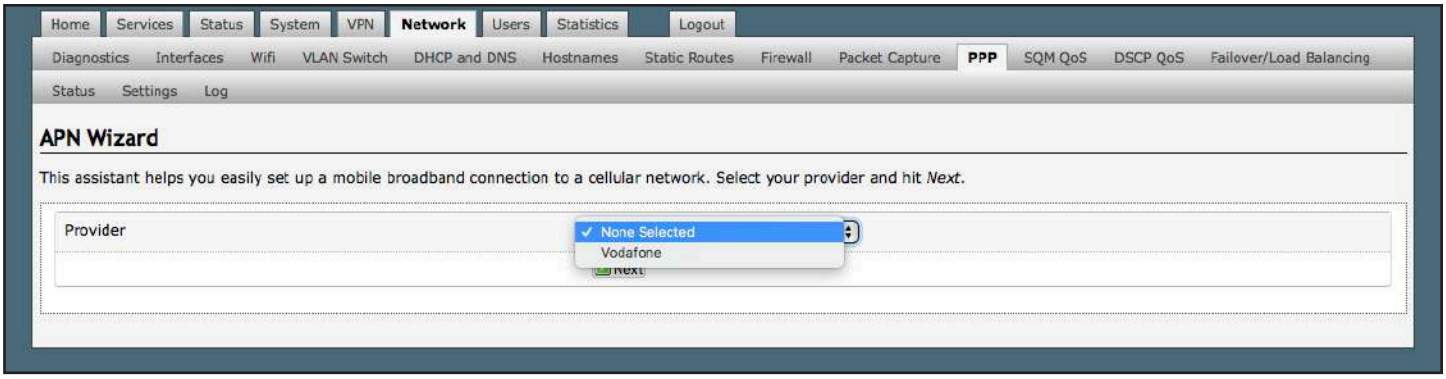

Before you can configure the Optimizer for LTE/GSM, you must:

- Obtain a USB data dongle from your cellular provider. Your provider may require you to purchase a data plan.
- Activate the USB data dongle with your cellular carrier and test it to make sure it works. Typically, testing requires only that you plug the USB Data Dongle into your computer and see if you can get on the Internet. If testing fails, contact your cellular carrier for support.

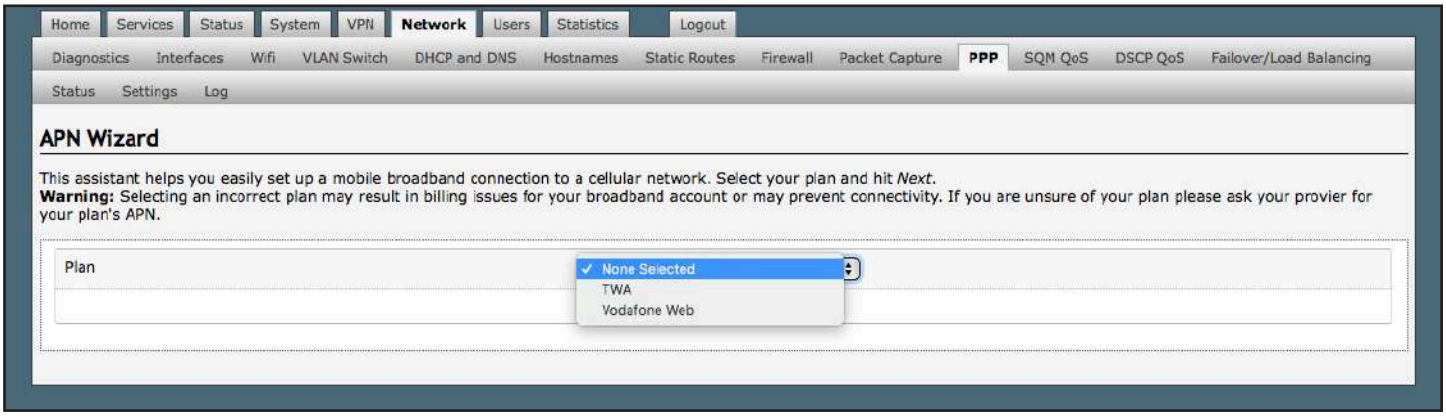
The APN Wizard contains many providers and plans. Using it will automatically set the configuration for you. Click <APN Wizard> to start the configuration:



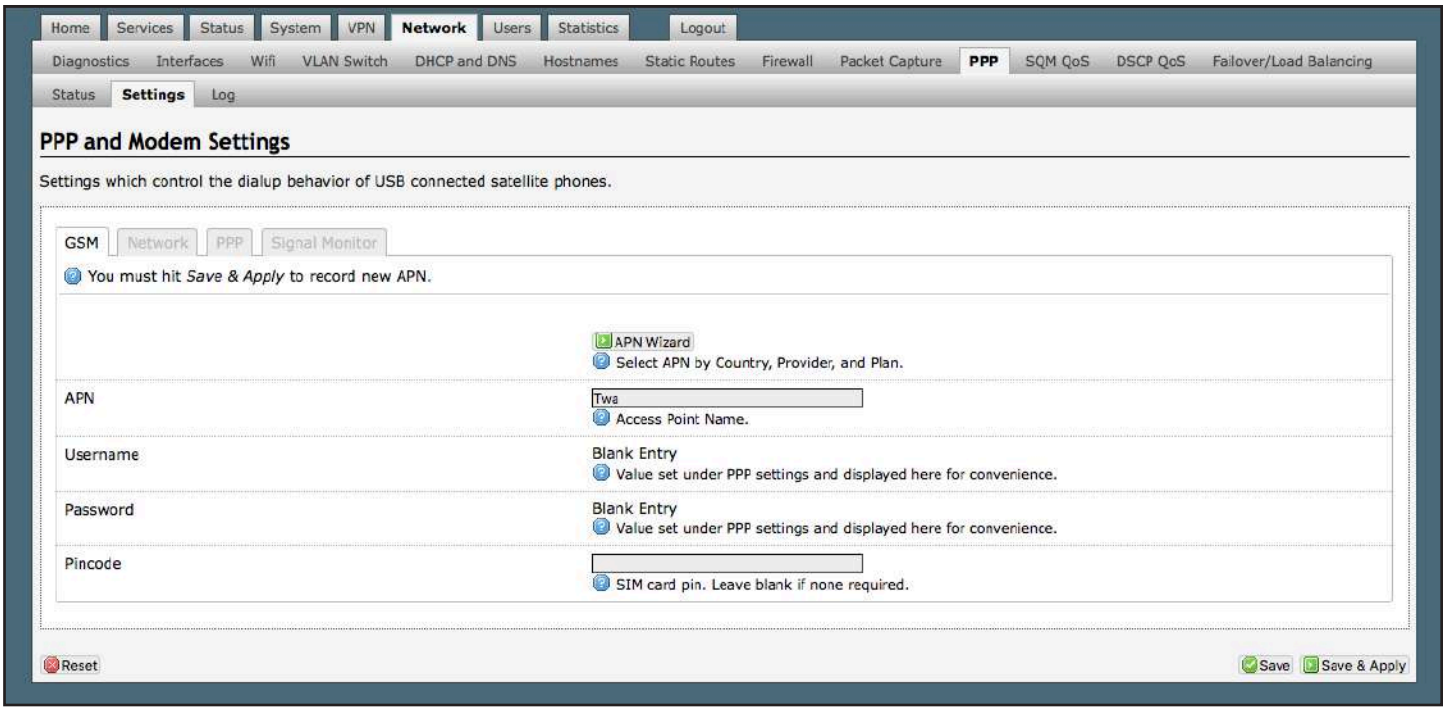

Select the appropriate country from the drop-down list and then, click <Next>.




Select your Cell Provider from the drop-down list and then, click <Next>.




Select your Plan from the drop-down list and then, click <Next>.




If you have protected your cellular SIM card with a PIN-Code, enter the PIN-Code in the Pincode text box.

Click <Save & Apply> to complete the configuration.

NOTE: If the APN Wizard does not contain the information for your provider or plan, contact your cellular provider to obtain the information required to connect to their LTE/GSM network.

The information may include:
- Access Point Name (APN).
- Username required for access to the APN.
- Password required for access to the APN .

Enter the required information in the PPP Settings pages.

**See Chapter 9.13** for additional PPP Settings.

### 9.10.2.1. Using LTE/GSM

When you want to use LTE/GSM service instead of satellite service we recommend that you disconnect the satellite terminal from the Optimizer before attempting an LTE/GSM connection.

Plug the USB data dongle you obtained from your cellular provider into the USB/LTE/GSM port of the Optimizer.

With the LTE/GSM interface properly configured, it becomes an important component of the Failover sequence.

### 9.10.2.2. Changing from LTE/GSM service to satellite service

When you travel beyond LTE/GSM range you must:
- Remove the LTE/GSM data dongle from the Optimizer's USB/LTE/GSM port.
- Reconnect your satellite phone/terminal to the Optimizer.

NOTE: We are not able to support the LTE/GSM feature. If you experience any connection difficulties when using this feature, you must contact your LTE/GSM network provider for support.

### 9.10.2.3. LTE/GSM capable OE

Requires “superadmin” login.

RedPort Optimizer Enterprise with LTE/GSM capability routers have wireless hardware installed internally and have an externally accessible SIM Card slot. Using LTE/GSM capability will allow (when available) cellular data connections for Email, Web Browsing, and SIP phone calling from the router. You will get the benefits of compression and a faster transfer rate compared to a satellite connection which typically equates to cost savings.

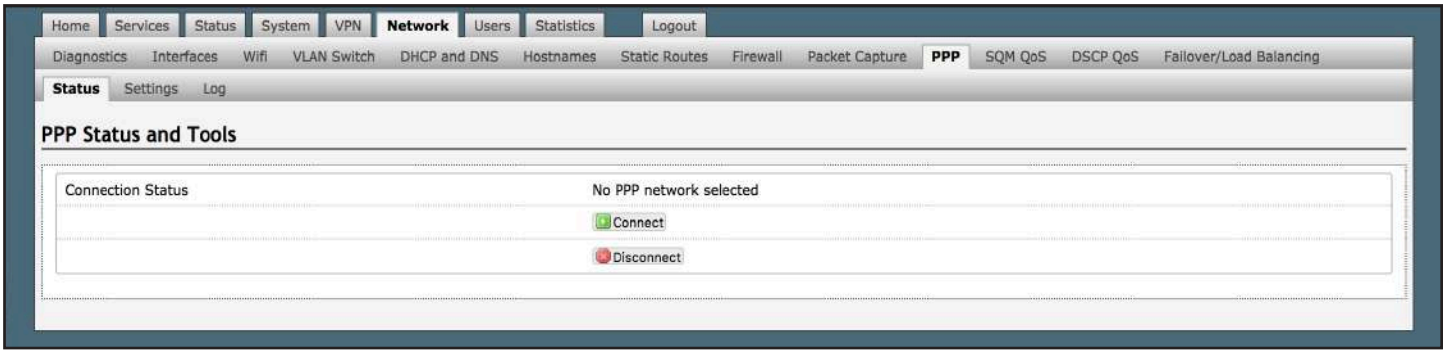
Some recommendations include:

- GSM or LTE SIM cards only, CDMA-based services will not work.
- Some LTE/GSM plans have restrictions and limitations or cost increases when used outside of home range (Country).
- SIM cards will need to be either “Standard” SIM card size or use a SIM card adapter for an ending “Standard” size card.
- Require use of SIM cards provisioned with HOTSPOT, MiFi, or Data capability. Some phone only SIM cards will work depending on Network provider limitations. Some Pre-paid cell phone SIM cards will not work.
- RedPort Global does not support LTE/GSM SIM card issues. The material provided is general in nature but may not be sufficient to establish a connection. If you have issues with the SIM card or connectivity you must contact your cellular network provider for support.

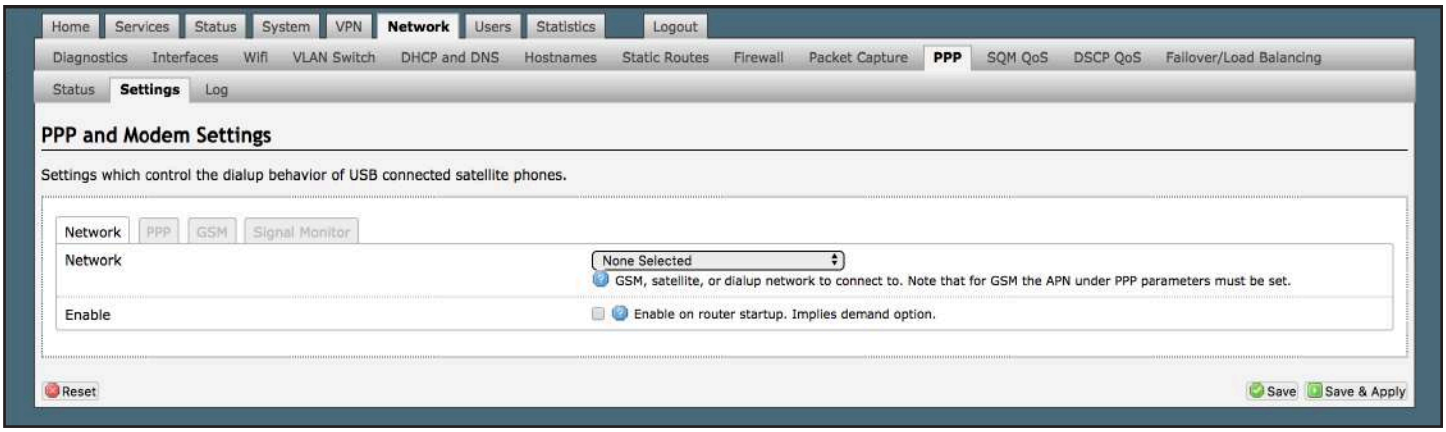
If you have a GSM-based or LTE-based cellular phone, it may be possible to use the LTE/GSM network, when available, for Email and Web Browsing data over the Optimizer. You will get the benefits of compression and a faster data transfer rate than over a satellite phone which typically equates to cost savings.

Use the following to configure the PPP interface for use with an LTE/GSM modem.

Navigate to <Network> tab, then to <PPP> tab, then to the <Status> tab.




Navigate to the <Settings> tab then to the <Network> tab.

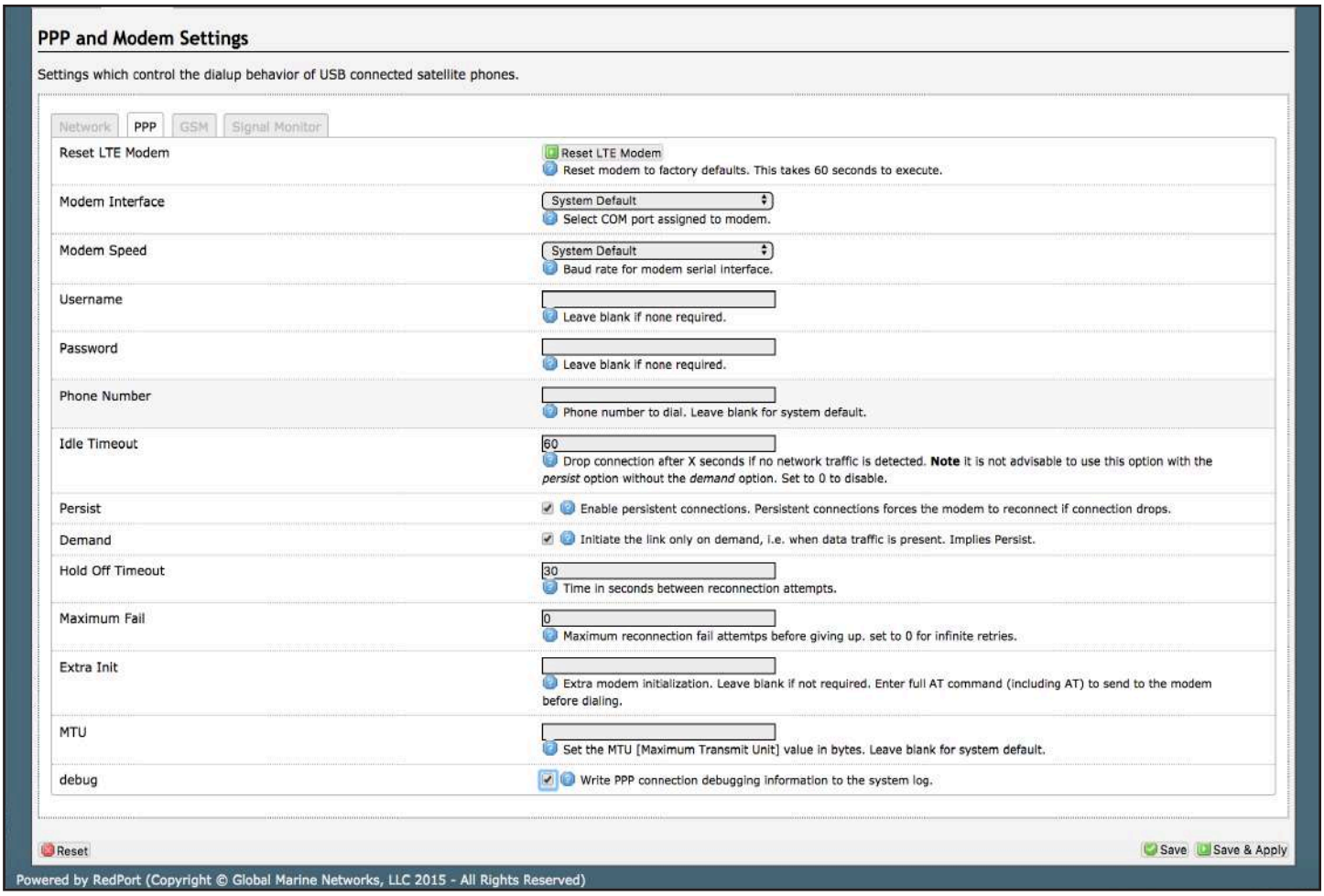



1. Using the drop-down menu, click GSM.


2. Click the Enable checkbox to maintain this setting during router startup. Otherwise, you must re-configure for PPP use with each router startup.

3. Click <Save & Apply> to apply the change.

Move to the <Settings> tab, then to the <PPP> Tab:

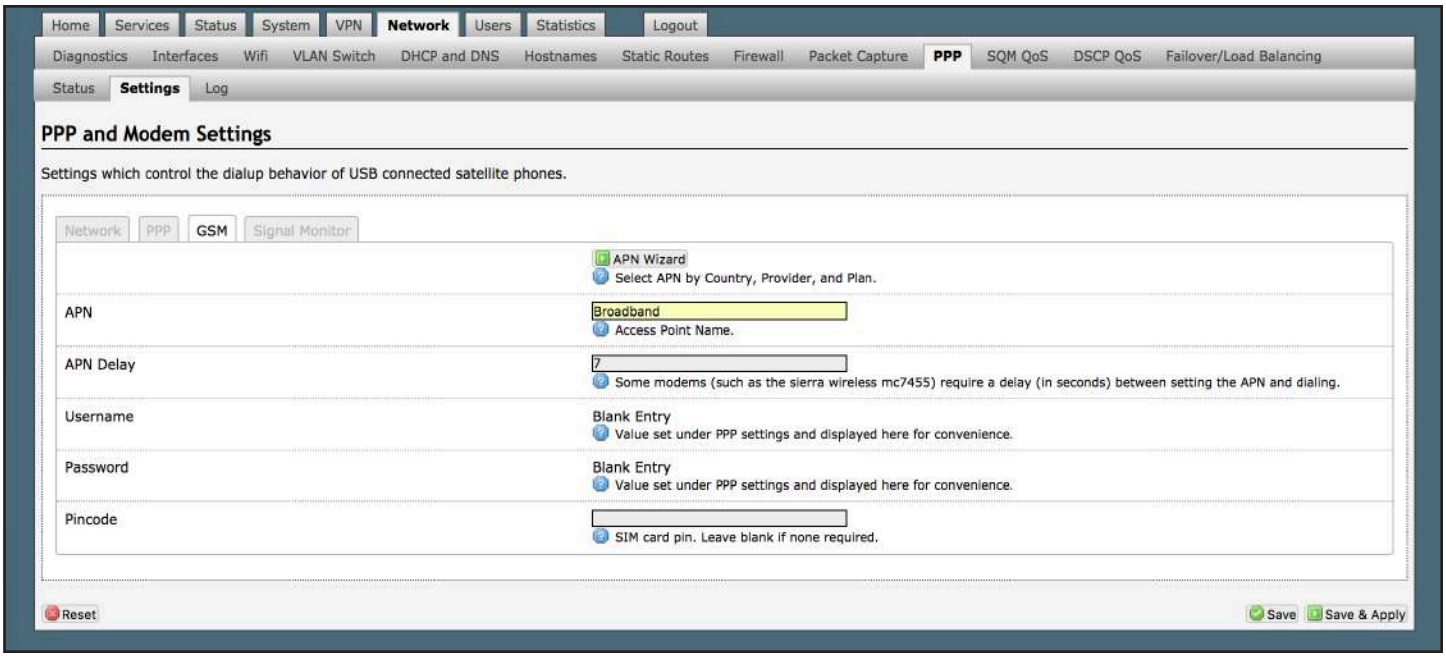



4. Select the “Enable persistent connections.” This permits reconnection automatically if a connection is lost.

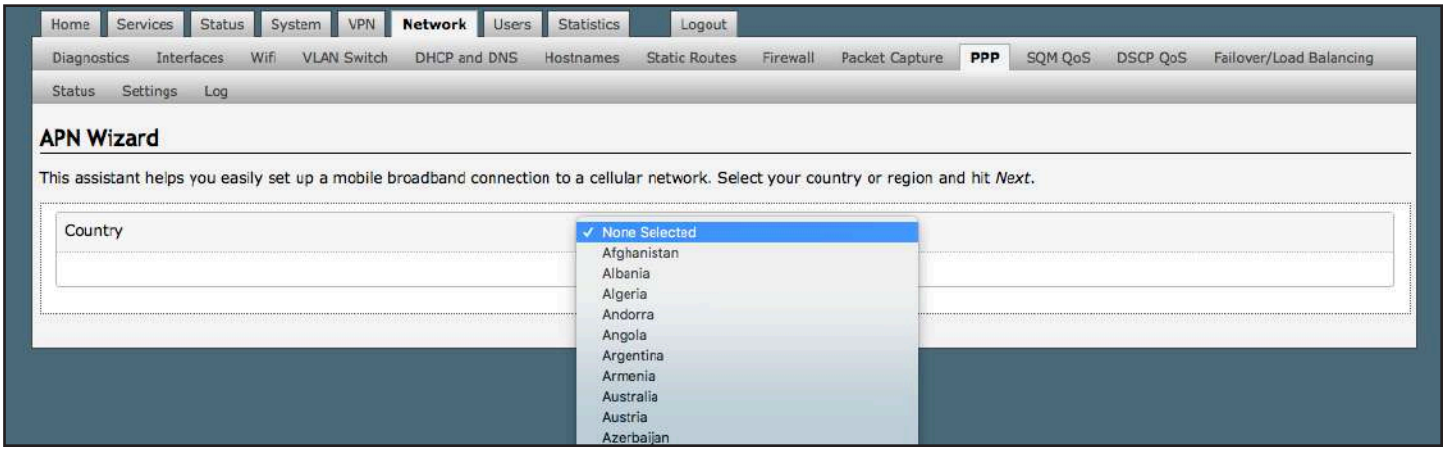
5. Select the “Initiate the link only on demand.” This causes the LTE/GSM to be started when there is a demand.

6. Click <Save & Apply>

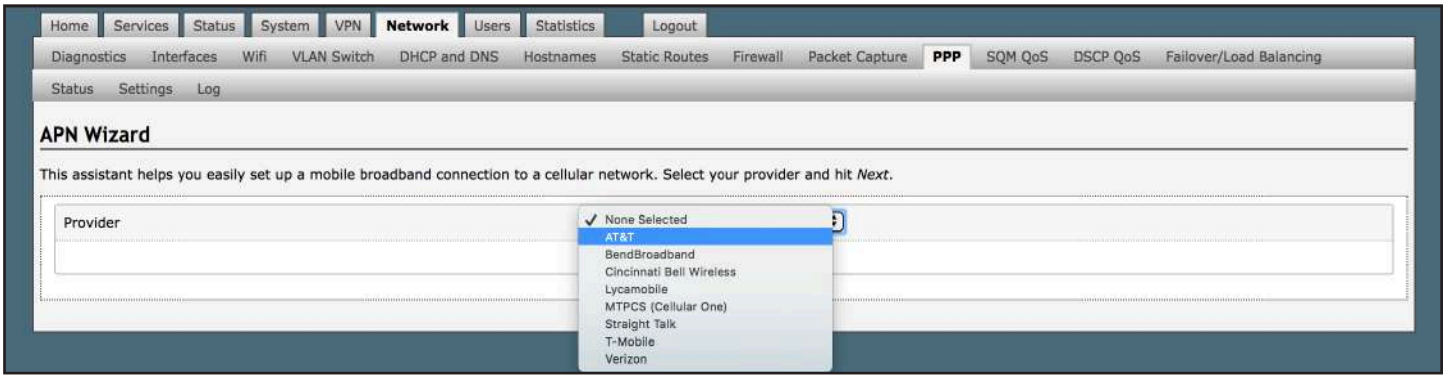
Navigate to the <Settings> tab, then to the <GSM> Tab:



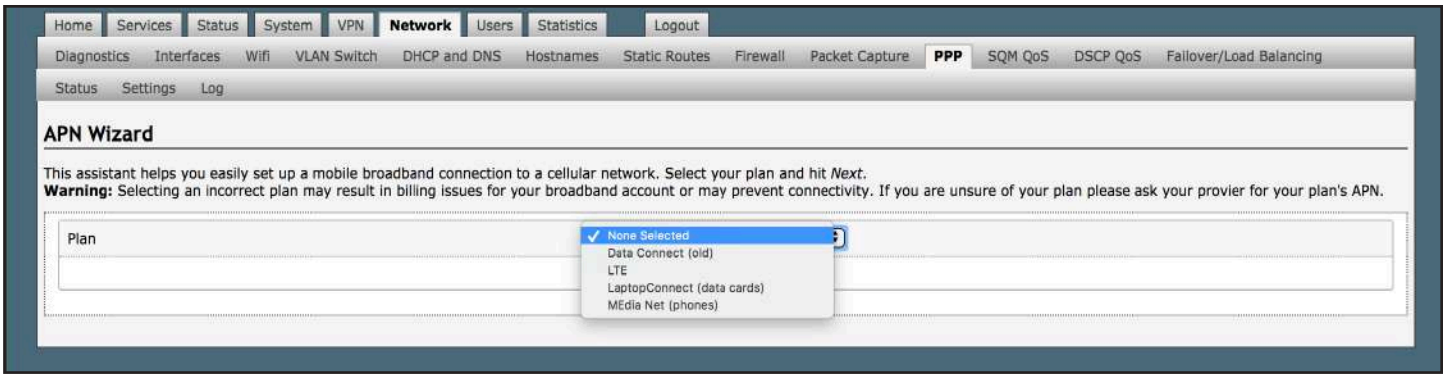

The APN Wizard contains many providers and plans. Using it will automatically set the configuration for you. Click <APN Wizard> to start the configuration:



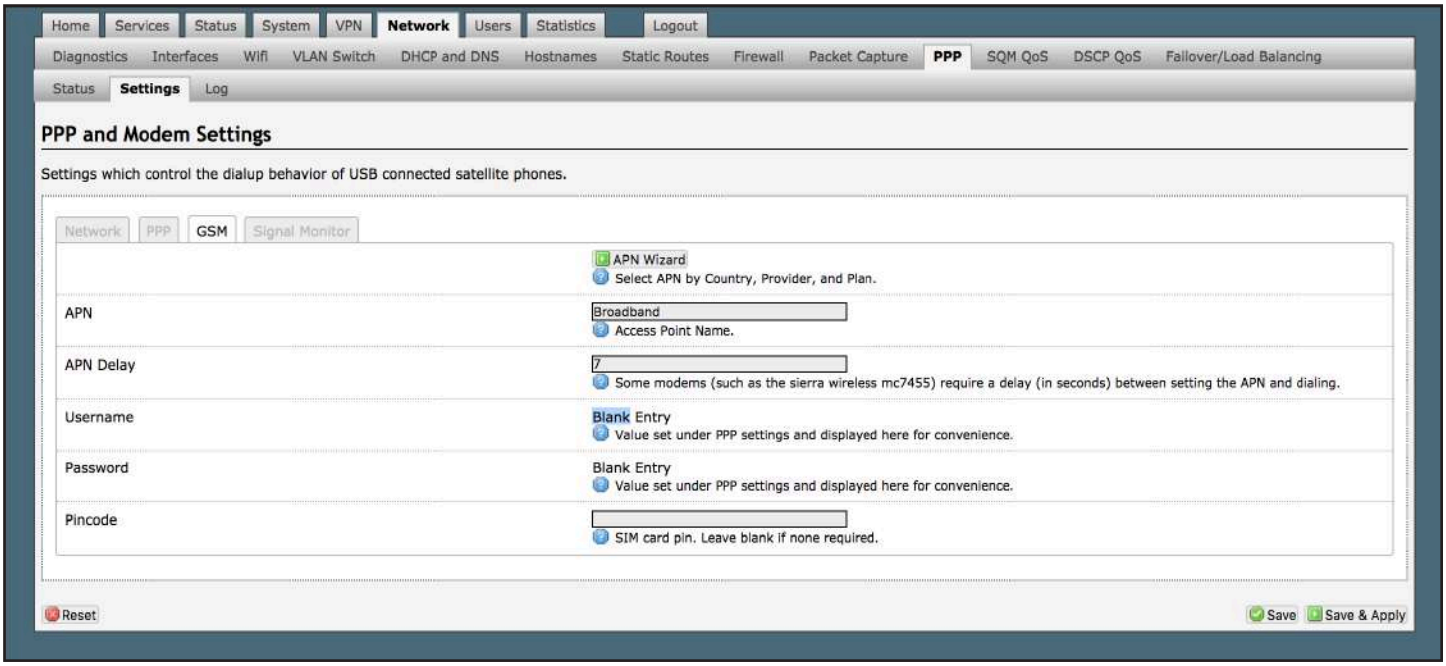

7. Select the appropriate country from the drop-down list and then, click <Next>.




8. Select your Cell Provider from the drop-down list and then, click <Next>.




9. Select your Plan from the drop-down list and then, click <Next>.




If you have protected your cellular SIM card with a PIN-Code, enter the PIN-Code in the Pincode text box.

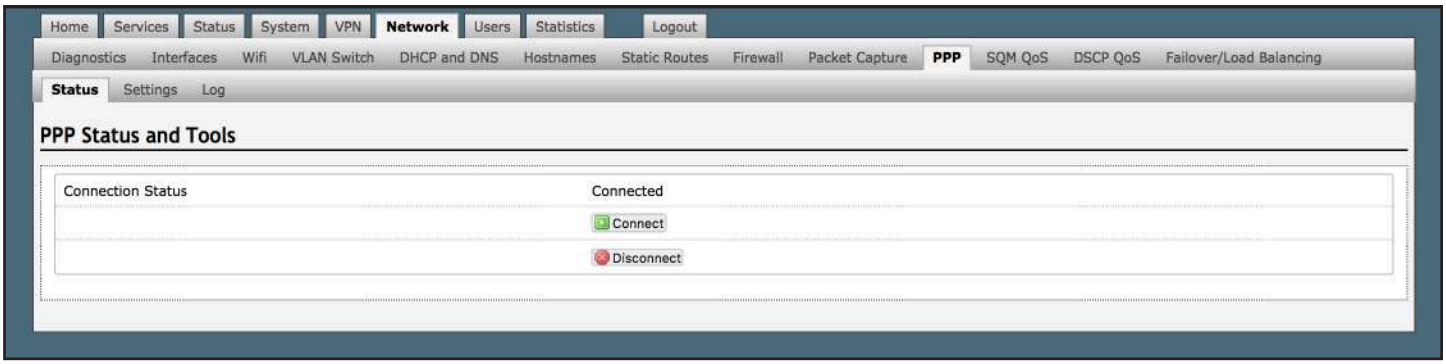
10. Click <Save & Apply> to complete the configuration.

NOTE: If the APN Wizard does not contain the information for your provider or plan, contact your cellular provider to obtain the information required to connect to their GSM network.

The information may include:
- Access Point Name (APN).
- Username required for access to the APN.
- Password required for access to the APN.

Enter the required information in the PPP Settings pages.

When all actions are complete, navigating to the <Network> tab, then to the <PPP> tab, then to the <Status> tab will display the following:




With the GSM interface properly configured, it becomes an important component of the Failover sequence.

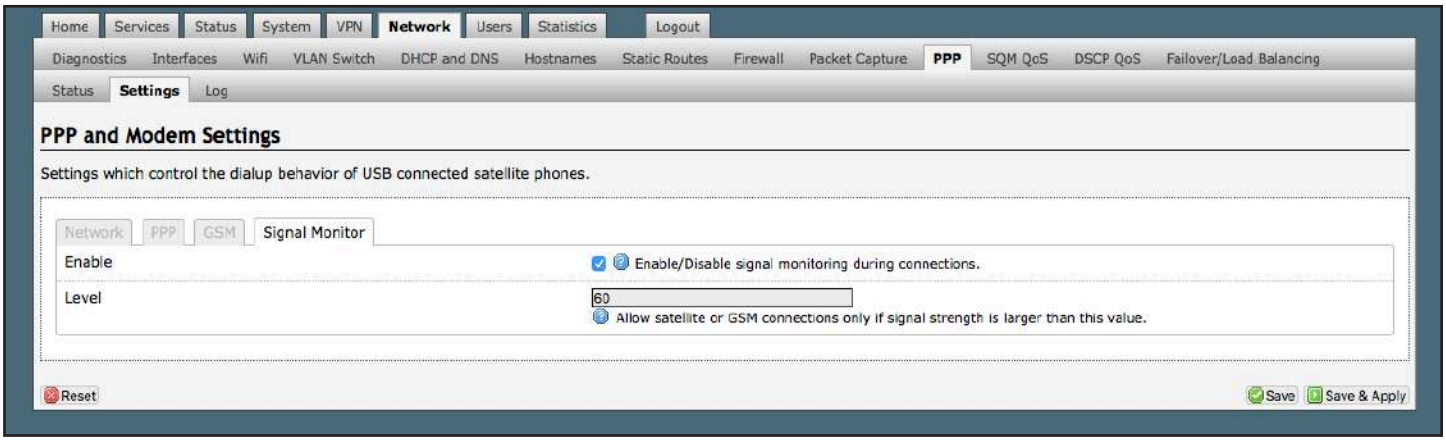
**See Chapter 9.13** for additional PPP Settings.

### 9.10.3. Signal Monitor

Requires “superadmin” login.

Signal monitor queries your satellite device or GSM modem to determine if the signal strength is sufficient to make a successful data connection. Typically, a minimum of 60% signal is required; however, 100% is ideal for the fastest possible data transfer rate.

NOTE: Some older satellite phones (for example, the Iridium 9505a) do not support the signal monitor feature. For these older satellite phones, the signal monitor MUST be DISABLED for a successful data connection.




From this screen you can enable or disable signal monitor using the “Enable/Disable signal monitoring during connections.” checkbox.

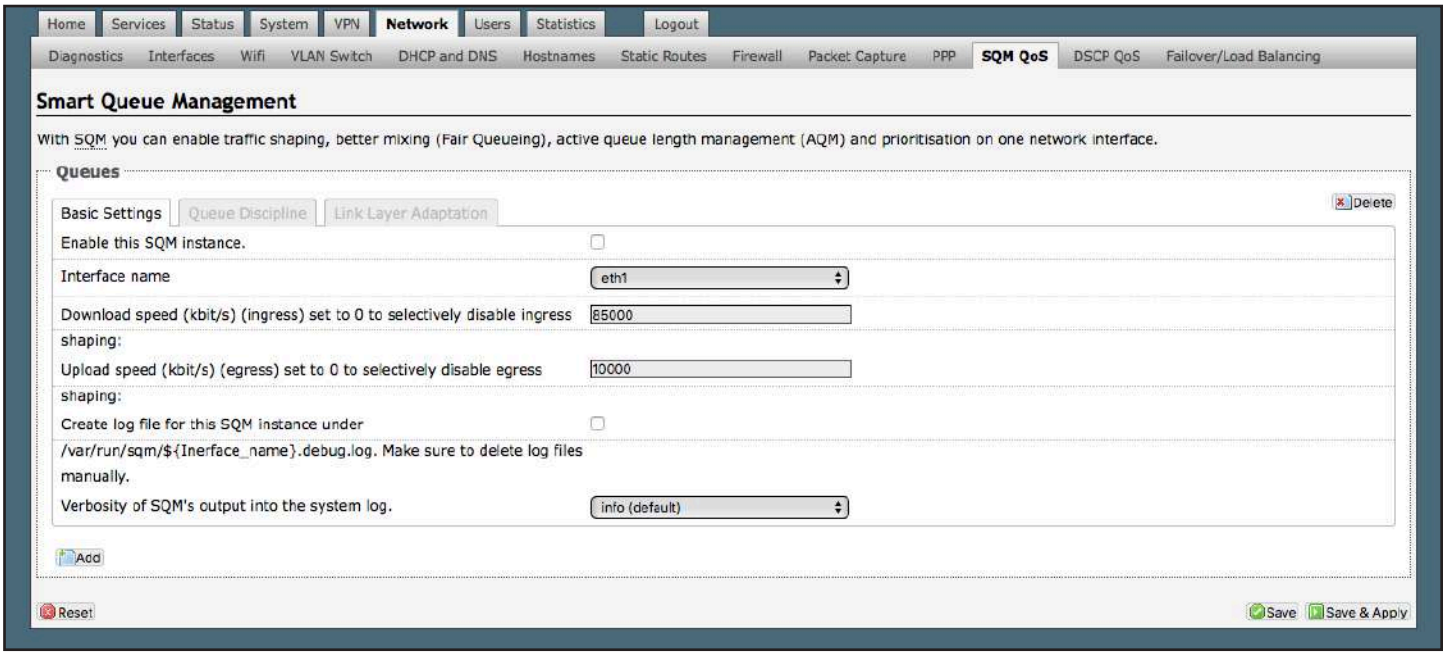
You can change the level of the Signal Monitor. Keep in mind that 60% is typically the minimum required for a successful data connection. If you must change the Signal Monitor, we recommend lowering the Level vs. disabling it. Many IsatPhonePro users have had success by lowering the level to 40 or 30.

CAUTION: Reducing the signal strength to less than 60% or disabling it altogether may cause lengthy data connections due to poor signal.

When you are done making changes, click <Save & Apply>.

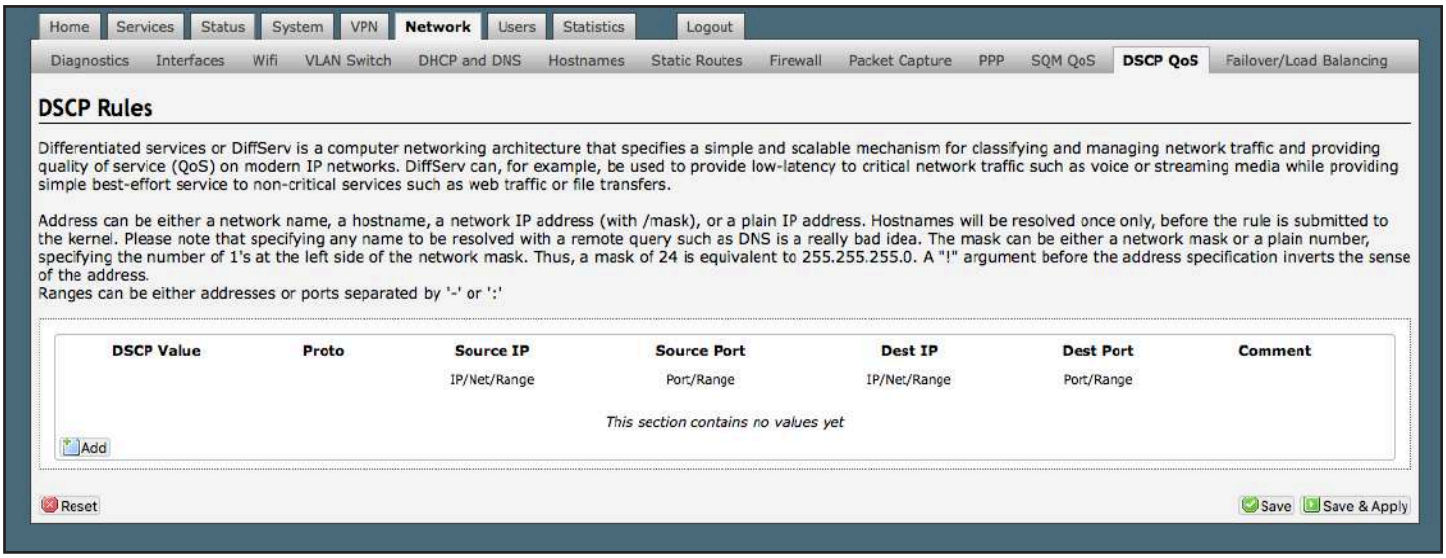
## 9.11. SQM QoS

Requires “superadmin” login.



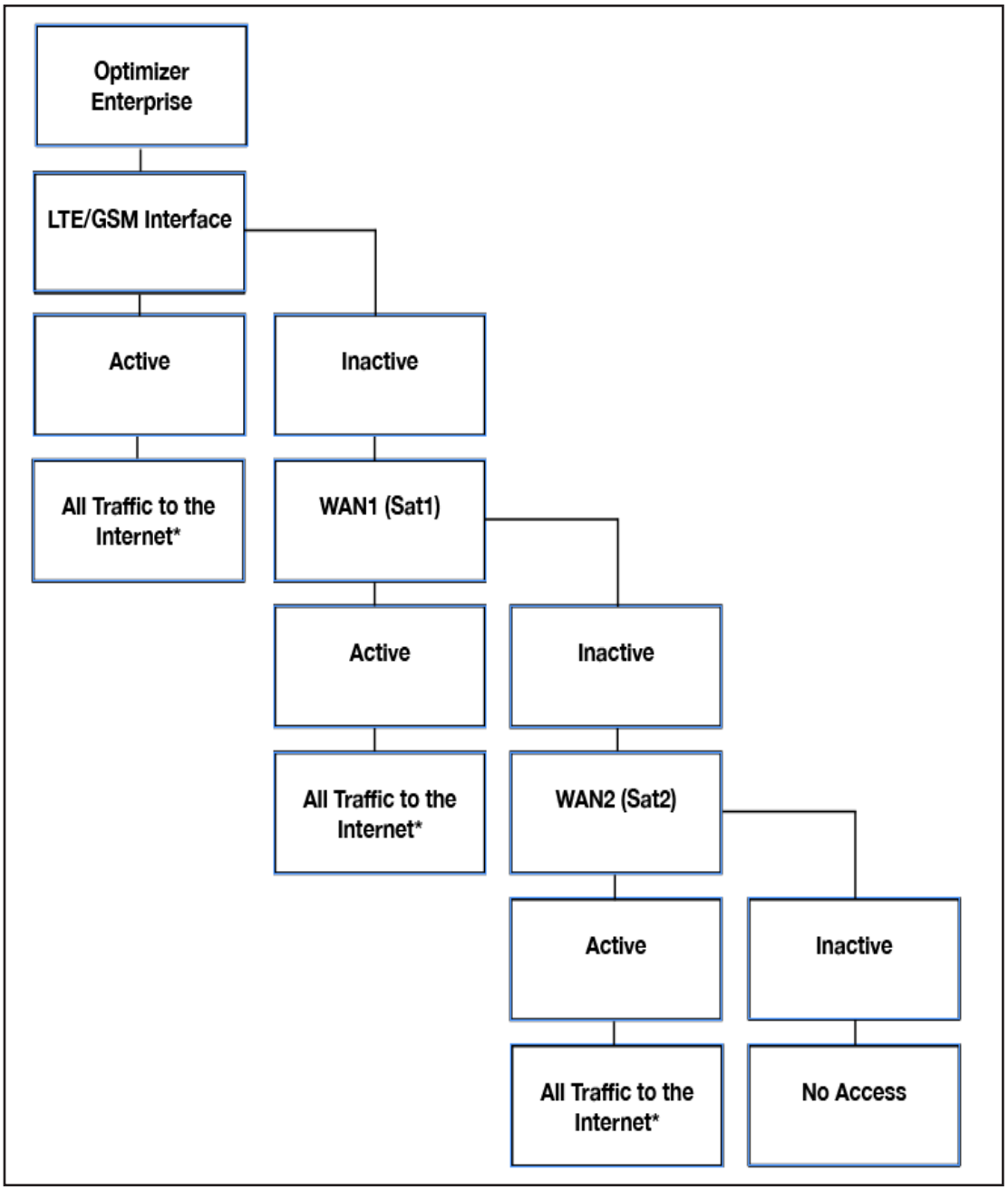

## 9.12. DSCP QoS

Requires “superadmin” login.




## 9.13. Failover/Load Balancing

The default Failover sequence and Load Balance configuration are as follows:




Setup is required for the LTE/GSM Interface.

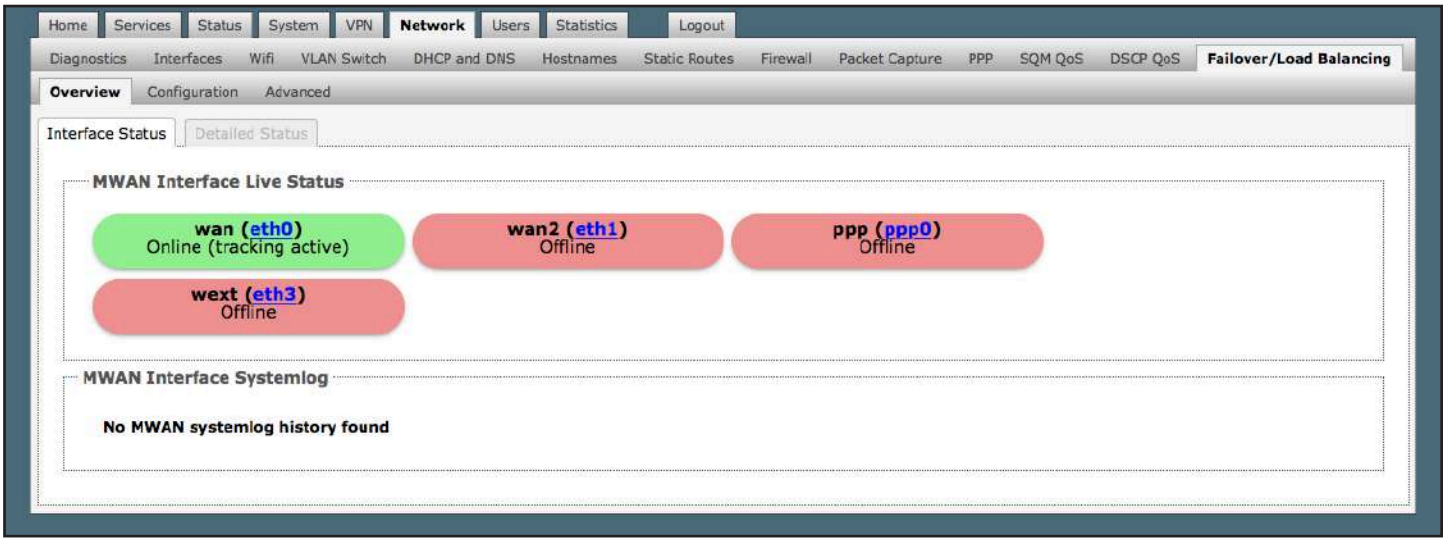
*All traffic to the Internet is subject to the firewall and the load balance configuration. You can change the Failover configuration and you can Load Balance between and among the interfaces. For example, you can create rules to send all http traffic through the LTE/GSM Interface but never through the WAN ports. **See** **Chapter 9.13.2** MWAN Configuration.

This default configuration will work out-of-the-box for those with a LTE/GSM connection and one or two satellite systems. If your setup differs from the default you will need to modify the Failover/Load Balancing configuration using the information in this chapter. There are examples of a few failover/load balancing configurations in **Chapter 9.13**.

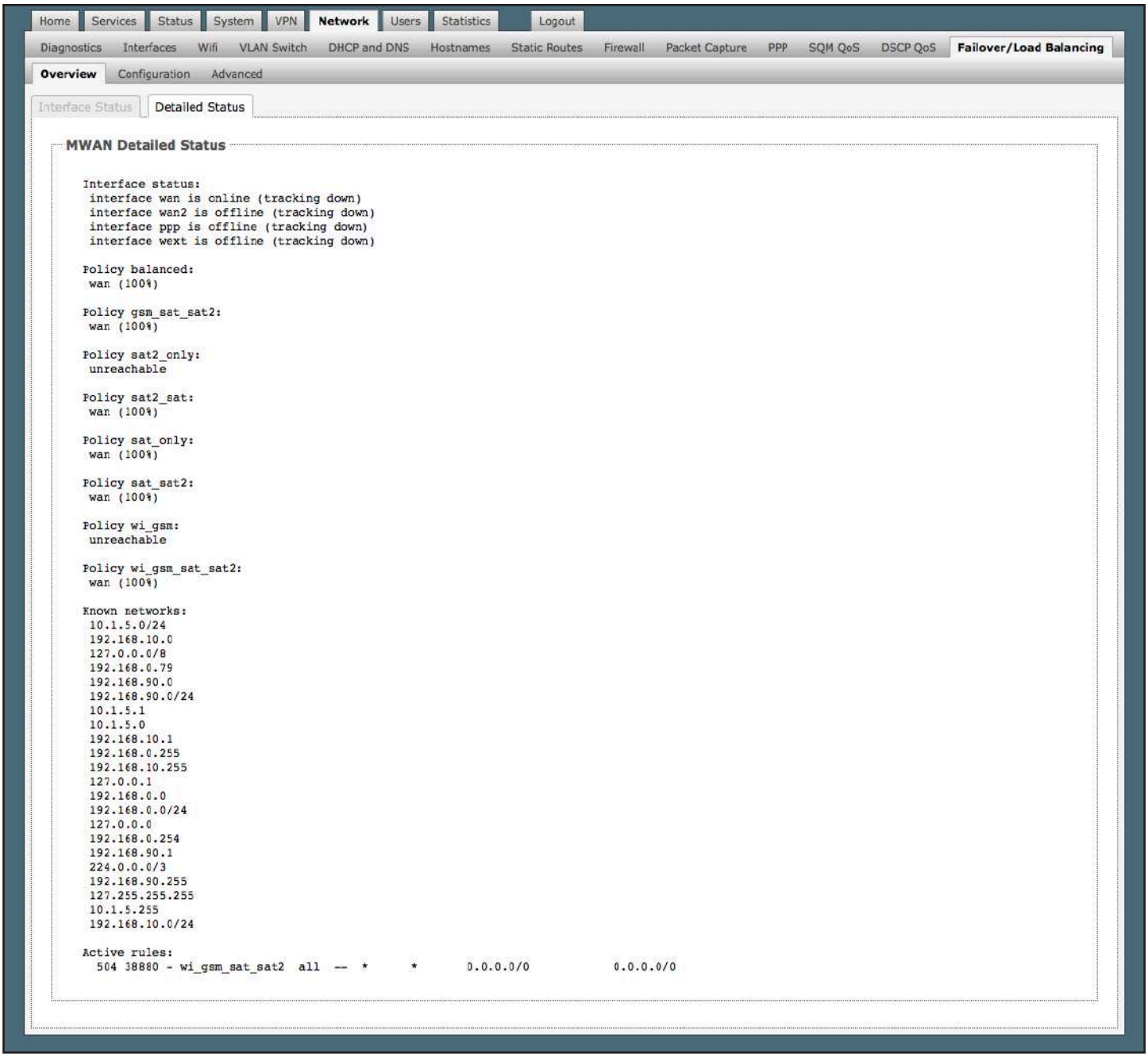
### 9.13.1. MWAN Overview

The Interface Status screen shows you an at-a-glance view of which interfaces are currently online and which

interfaces are offline. In addition, the MWAN Interface System Log shows the most recent log entries.




The Detailed Status screen shows more details of the current state of the router.




## 9.13.2. MWAN Configuration

Requires “superadmin” login.

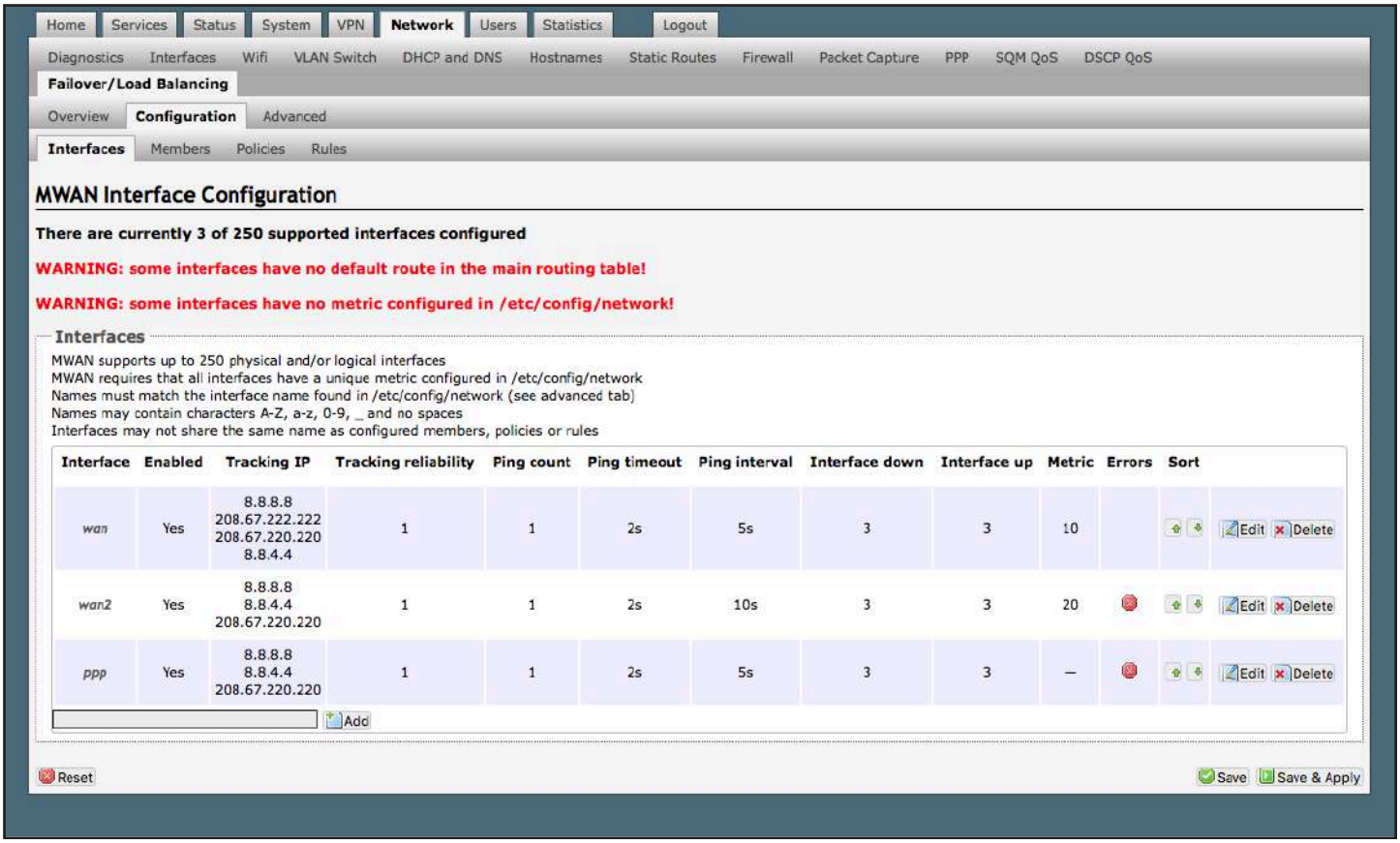
The Optimizer Enterprise offers sophisticated Failover and Load Balancing options. You can block or allow certain traffic over one or more specific interfaces.

First, let’s define the various components discussed in this section:

- **MWAN Interfaces:** This is the connection “type” to the Internet. The default is four interfaces.
- **MWAN Members:** These are profiles whereby each interface is assigned a level of importance relative to the other interfaces. The default is 16 members.
- **MWAN Policies:** These are member groupings that control how traffic is distributed among the interfaces. The default is 7 policies.
- **MWAN Rules:** These are rules that specify which traffic will use a particular interface. The default is 1 rule.

### 9.13.2.1. Interfaces

Requires “superadmin” login.



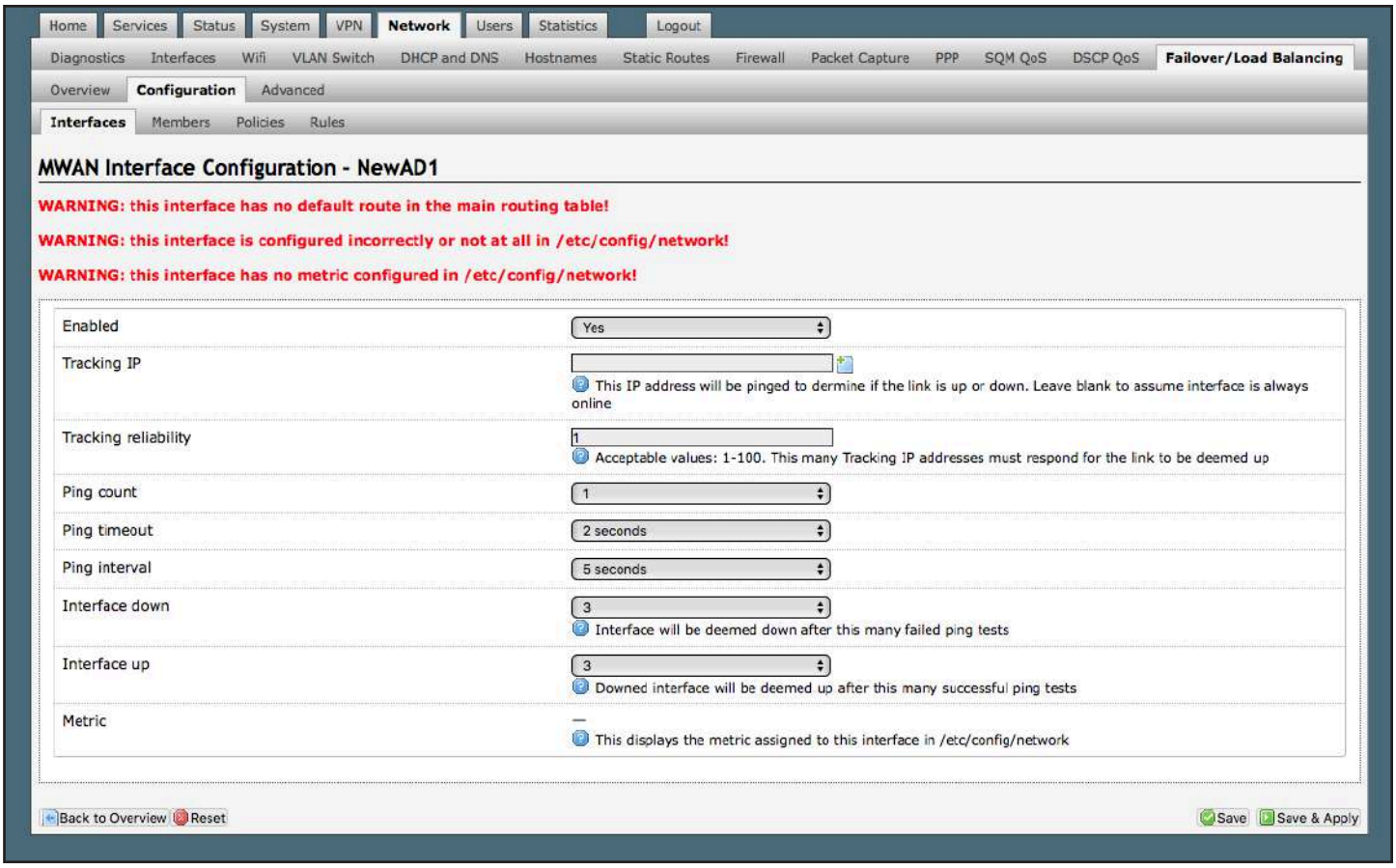

An MWAN Interface represents the connection type to the Internet. The default interfaces are:

- **wan:** The primary satellite device.
- **wan2:** The backup satellite device.
- **ppp:** The LTE/GSM device.

If you have added a new interface to Network > Interfaces (**See Chapter 9.2.2**) and want to include that new interface into the MWAN Failover/Load Balancing distribution it must be added to the MWAN Interface Configuration:

Enter the name of the interface into the text box and click <Add>.


You may accept these settings as they are or modify if required.




- **Enabled:** Select Yes to Enable or select No to Disable this MWAN interface. The default is “Yes”.
- **Tracking IP:** The IP address(or addresses) to be pinged to determine if the link is up or down. If left blank, it is assumed the interface is always online.

NOTE: In some cases, it may be advantageous and more cost effective to track the IP address of the interface itself rather than an IP address on the Internet.

- **Tracking reliability:** Number of IP addresses (in Tracking IP above) that must respond in order for the link the be determined as Up. The default is “1”.
- **Ping count:** Number of pings to be sent in the ping burst. The default is “1”.
- **Ping timeout:** How long (in seconds) to wait to see if the ping fails. The default is “2”. Iridium Pilot users please see suggestions below.
- **Ping interval:** How long (in seconds) to wait between pings. Iridium Pilot users please see suggestions below.
- **Interface down:** Number of failed responses before determining that the interface is Down.
- **Interface up:** Number of successful responses before determining that the interface is Up.
- **Metric:** Read-only display of the gateway metric assigned to the interface when it was created in Network > Interfaces. **See Chapter 9.2**.

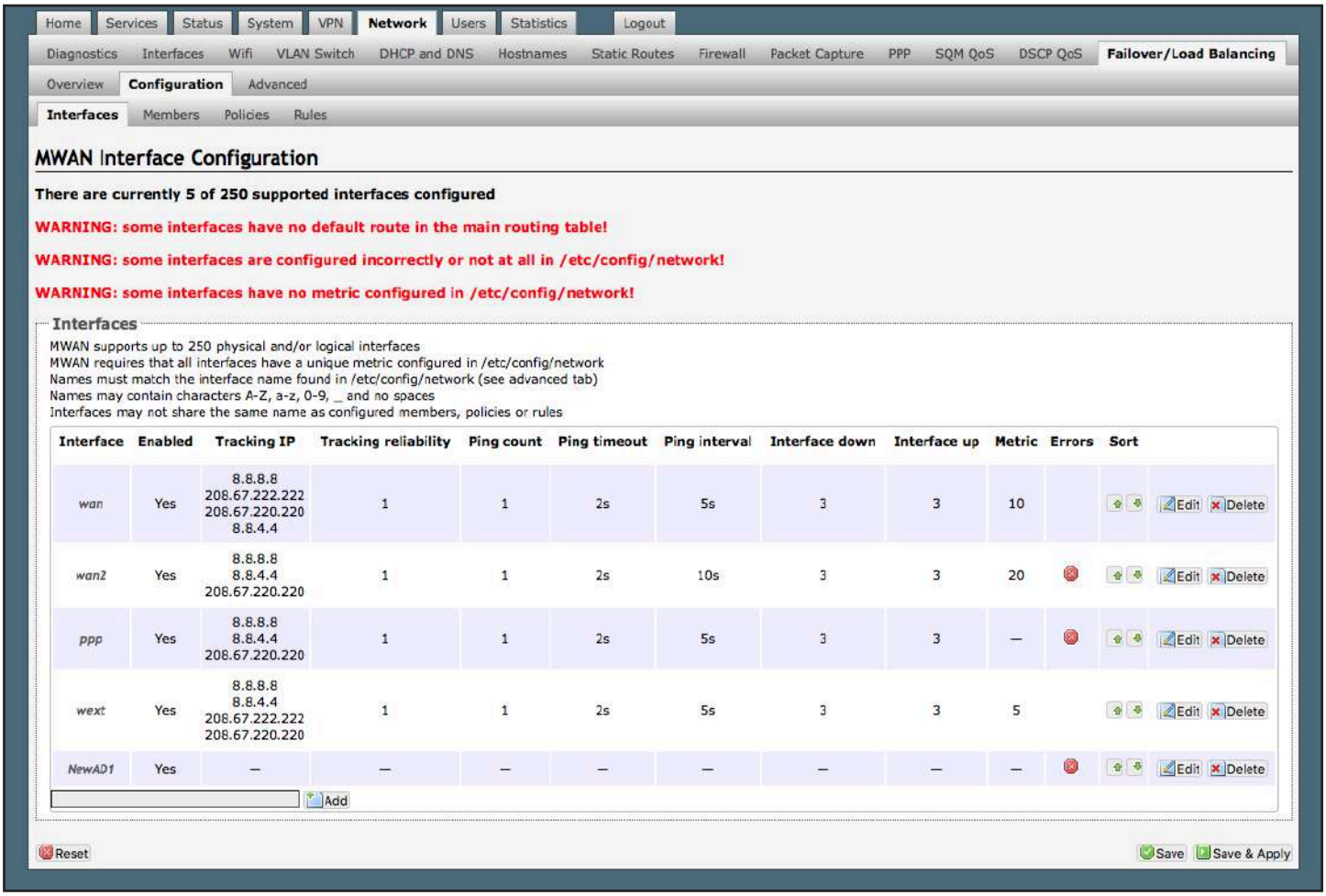
Click <Save & Apply>.

Some suggestions:

When you have a PPP interface in the failover sequence you may want to set the Ping Timeout to 10 seconds, set the Ping Count to 2. The PPP interface has to come up at least once, so the system knows that it is a viable interface, so it must ping at least once. In addition, you may want to change the Tracking IP to the IP of the router, so you are pinging yourself instead of pinging an address on the Internet.

For Iridium Pilot Users:

The default settings for wan2 is Ping Timeout = 5 seconds and Ping Interval = 1 minute. This is designed to keep bandwidth usage low. If you have an Iridium Pilot as your wan2 interface, however, these settings are not helpful because the Pilot automatically goes offline after 20 seconds of idle time and it takes about 10-15 seconds to bring it back online. Doing a ping every minute with a 5 second timeout is most likely to fail. Changing the Tracking IP to the IP Address of the Pilot unit itself assures that the ping will always work so the interface will show as available for failover. With wan2 at the end of your failover sequence, this tricks the Optimizer into believing there is connectivity, minimizing bandwidth usage.



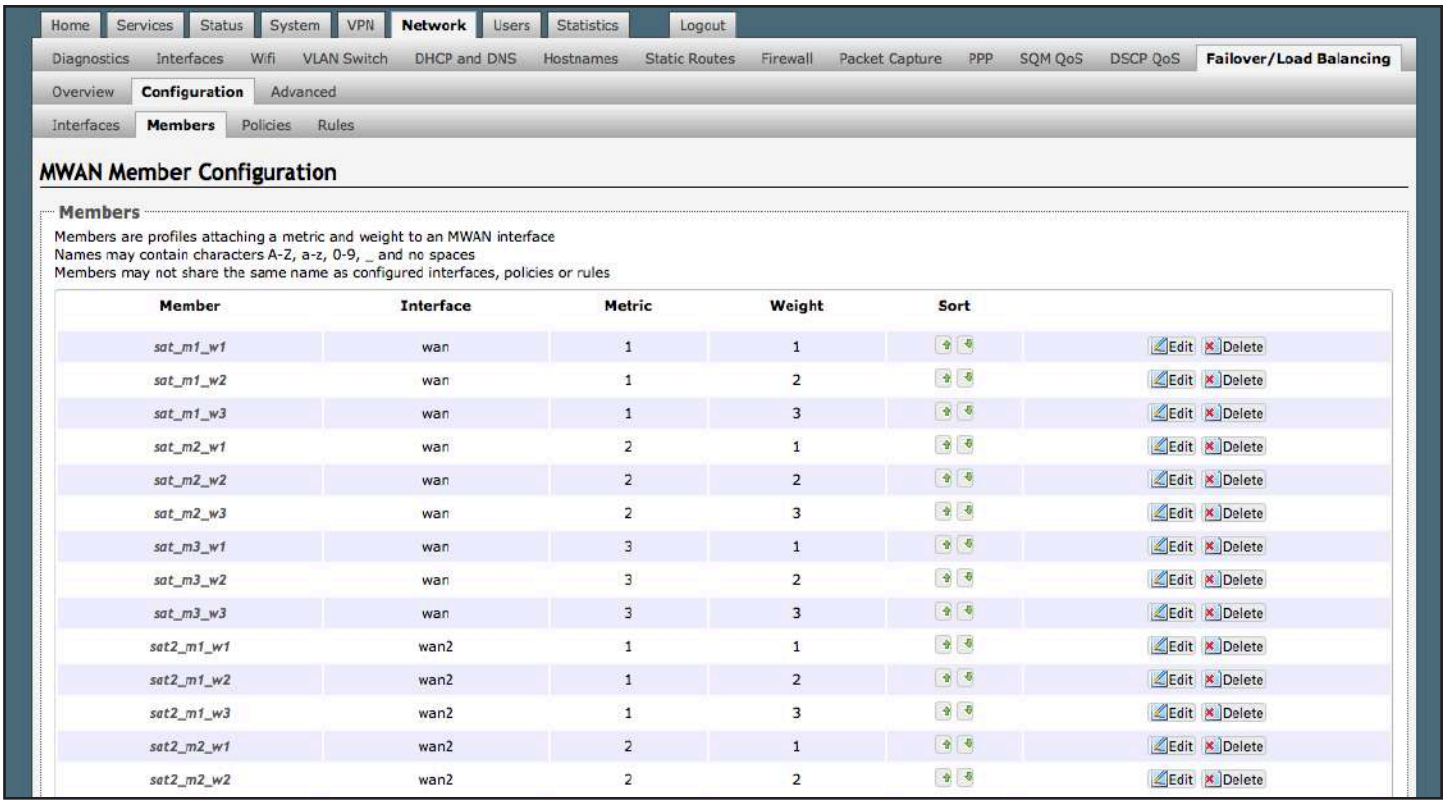

The new MWAN Interface is now available for Failover/Load Balancing configuration.

Use the <Edit> button to edit a MWAN Interface.

Use the <Delete> button to remove a MWAN Interface. The Delete action cannot be undone.

### 9.13.2.2. Members

Each MWAN Interface should have one or more Member profiles.




There are 16 default Members (four profiles for each of the four default interfaces).

Each Member is assigned a Metric and a Weight.

The Metric hierarchy is lowest number to highest number; therefore Metric 1 (m1) has a higher standing than Metric 2 (m2), etc.

The Weight hierarchy is the reverse; highest number to lowest number; therefore Weight 4 (w4) has a higher standing than Weight 3 (w3), etc.

Metric and Weight play an important role in controlling the distribution of traffic.

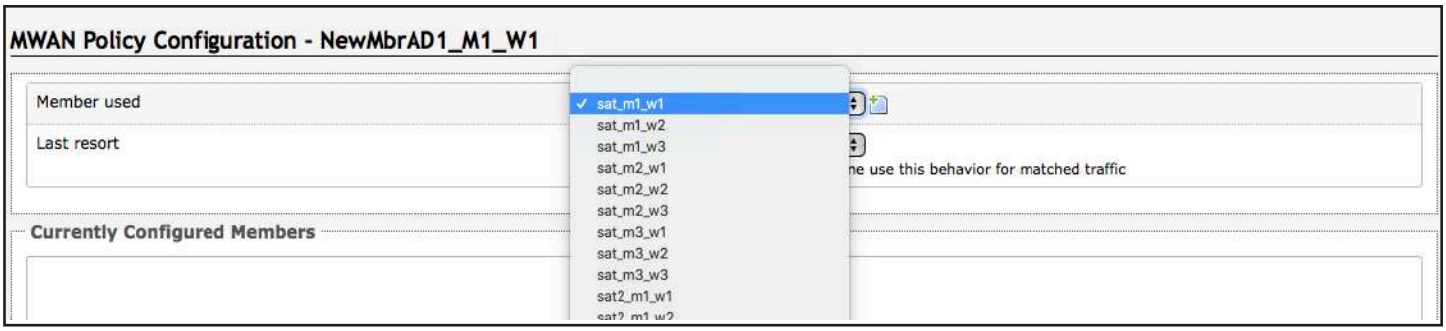
### 9.13.2.3. Creating New Member

Requires “superadmin” login.

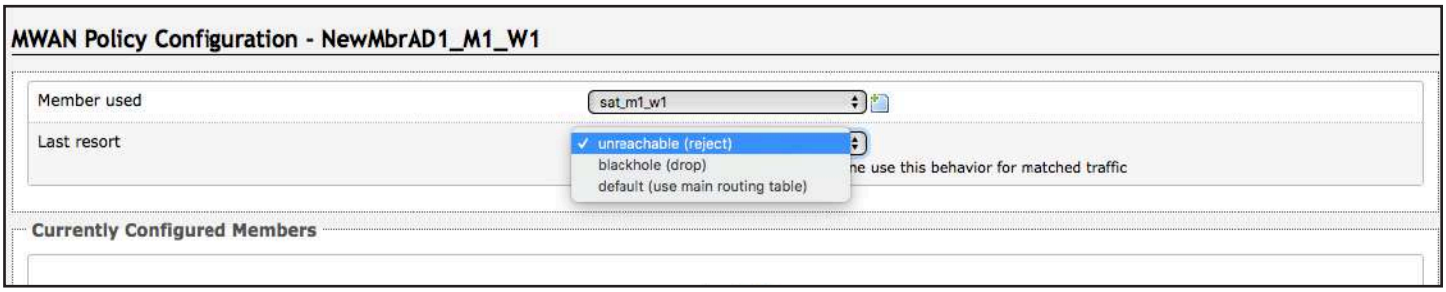
To add a new Member, enter the Member name in the text box and click <Add>.


When creating new Members, it is a good idea to include the metric number and weight number in the Member name for easy identification on the page.

Select the MWAN Interface associated with this Member and assign a Metric (1-4) and a Weight (4-1).




Select the MWAN Interface associated with this Member and assign a Metric (1-4) and a Weight (4-1).




Click <Save & Apply>.

The new Member now appears on the list.


Click <Edit> button to edit a Member.

Click <Delete> button to remove a Member. The Delete action cannot be undone.

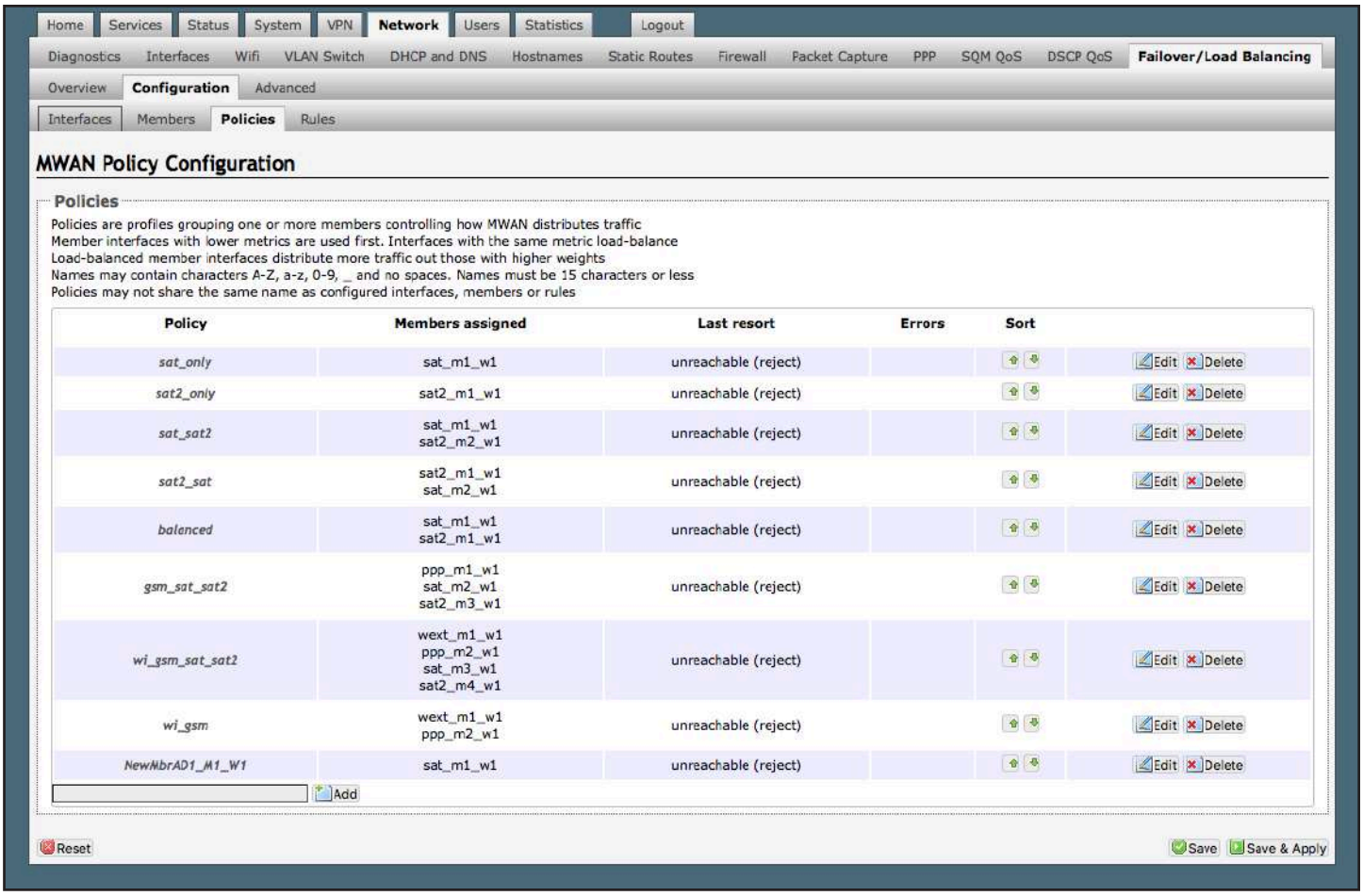
### 9.13.2.4. Policies

Requires “superadmin” login.

Policies are groupings of members. Each policy must have one or more members. As you create Rules (**See Chapter 9.8.3**) you must assign the rule to one of these policies.

These policies will be used to control how MWAN distributes traffic.

There are 7 default Policies:




When there is only one Member assigned to a Policy, all traffic matching the Rule will flow through the one interface.

| | | | | |
|---|---|---|---|---|
| *sat2_only* | sat2_m1_w1 | unreachable (reject) | | Edit Delete |

When multiple Members are assigned to a policy, the traffic will be distributed based on the Metric and Weight of the Members assigned.

| | | | | |
|---|---|---|---|---|
| *balanced* | sat_m1_w1<br>sat2_m1_w1 | unreachable (reject) | | Edit Delete |

| | | | | |
|---|---|---|---|---|
| *gsm_sat_sat2* | ppp_m1_w1<br>sat_m2_w1<br>sat2_m3_w1 | unreachable (reject) | | Edit Delete |

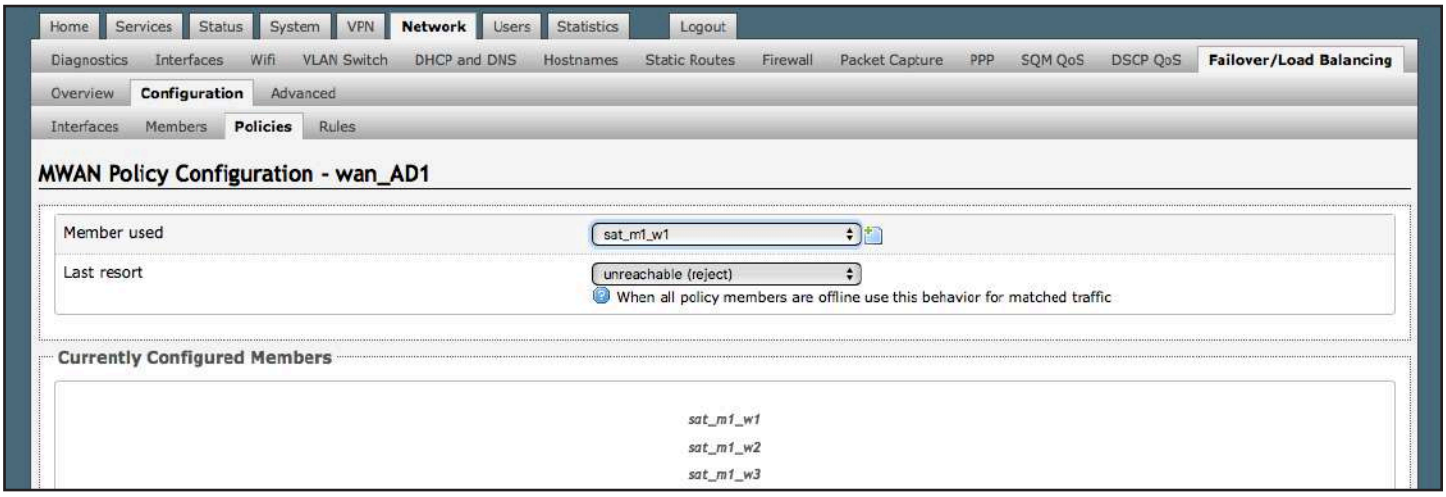
Here are some examples:

- **balanced:** Because the Metric is 1 for both Member profiles, 1/2 the traffic will flow through the wan interface and 1/2 the traffic will flow through the wan2 interface.
- **wan_wan2:** Because the Metric is 1 for the wan and the Metric is 2 for the wan2 and the Weight is 1 for both; all traffic will flow through the wan interface if it is Active. If the wan interface is not available, the traffic will automatically failover to the wan2 interface.
- **wan2_wan:** This policy is the reverse of the one above. All traffic will flow through the wan2 interface if it is active and if not, it will failover to the wan interface.
- **wan_heavy:** This example is not on the default list but helps further explain how Metric and Weight are applied. In the fictional Policy “wan_heavy” there are two Members assigned to it: “wan_m1_w4” and “wan2_m1_w1”. This looks a lot like the balanced policy, however, because the Weight value is higher for the wan interface

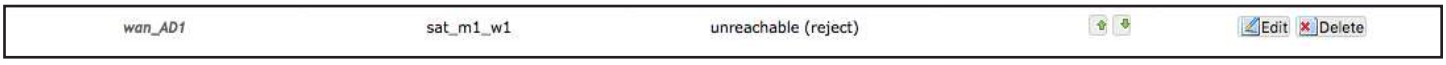
(w4) than it is for the wan2 interface (w1), the wan interface will pass more traffic than the wan2 interface. On average, for every four packets that flow through the wan, only one packet will flow through the wan2.

To add a new Policy, enter the new Policy name in the text box and click <Add>.


Using the drop-down list, select one or more Members to assign to the new Policy in accordance with how you want traffic distributed when a Rule invokes this Policy. Click <Save & Apply>.




The new Policy now appears on the list. Notice that when this Policy is used traffic will be balanced between wan interface and the db1 interface.




Click <Edit> to edit a Policy.

Click <Delete> to remove a Policy. The Delete action cannot be undone.

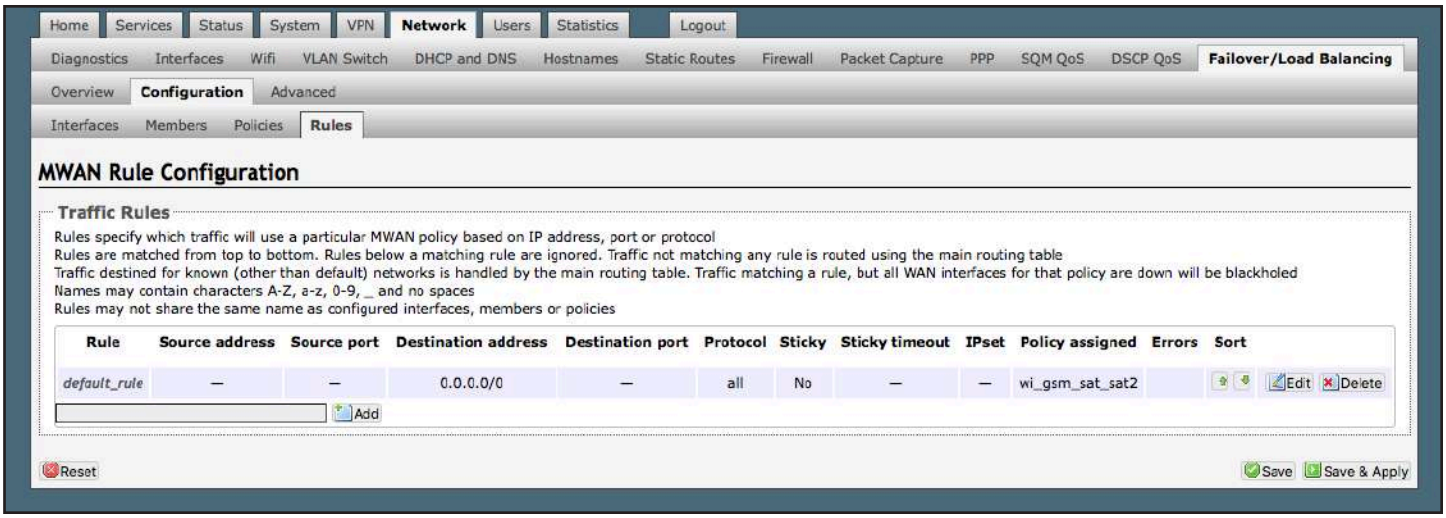
### 9.13.2.5. Rules

Requires “superadmin” login.

Rules allow you flexibility in the distribution of MWAN traffic. They can be based on IP address, port, or protocol.

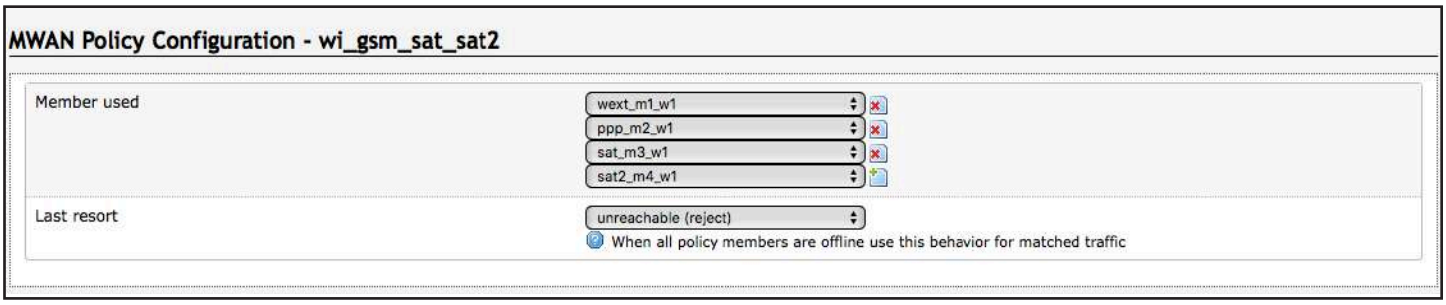
Rules are matched from top to bottom. When a Rule is matched, the rules below that match are ignored. If traffic does not match any rule, it is routed to the main routing table. (The main routing table can be found in under the Status Tab > Routes.) If traffic does match a rule, but the interface is down for that policy, the traffic will be blackholed.

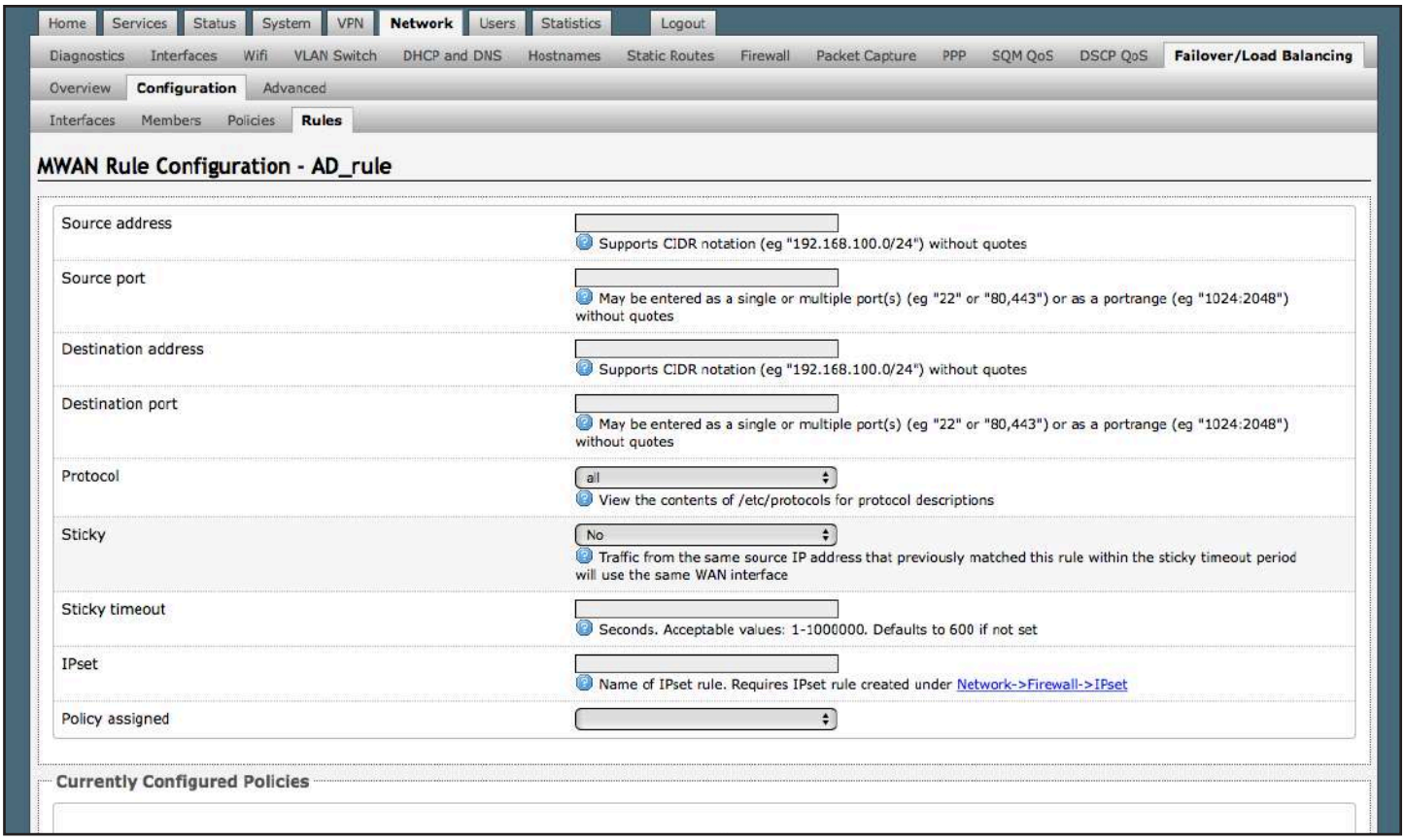
There is one default rule:




With this Default Rule, any traffic FROM any source and TO any destination (i.e. ALL traffic) will use the Policy “wi_gsm_sat_sat2”.

Taking a look at the Policy “wi_gs_w_w2” we can see the Members assigned to this policy and determine the failover/load balancing sequence. Because the Weight value is 1 (w1) for each Member this means that all traffic will be routed through the “wext” interface if it is up. If “wext” is down, all traffic will be routed through the “ppp” interface if it is configured and up. If the “ppp” interface is down, then all traffic will be routed through the “wan” interface, if it is up. If the “wan” interface is down, then all traffic will be routed through the “wan2” interface, if it is up. If the “wan2” interface is down, then all traffic will be blackholed. If the Weight values varied traffic would be allocated among the interfaces in accordance with the Weight values assigned to the Members.

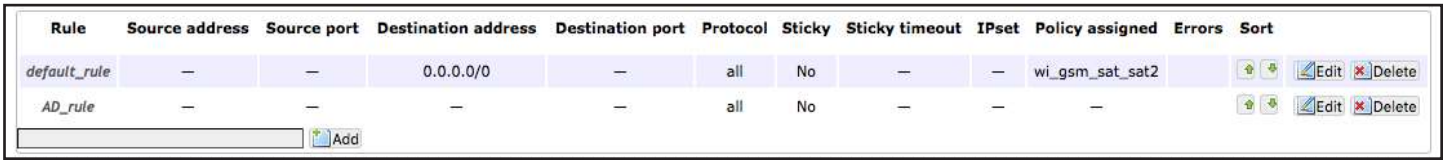



Complete this screen in accordance with the Rule you want to create:

- **Source address:** Restrict incoming traffic arriving from a specific IP address or range.
- **Source port:** Restrict incoming traffic arriving from a certain port or multiple ports.
- **Destination address:** Restrict outgoing traffic to a specific IP address or range.
- **Destination port:** Restrict outgoing traffic to a specific port or multiple ports.
- **Protocol:** Restrict only traffic of a certain protocol, select from the drop-down list, or select -- custom-- and enter the protocol here.
- **Sticky:** This is important for smooth traffic flow when load-balancing among interfaces with different Weight values. With <Yes> selected, once connected, the same interface will be used for that traffic up to the Sticky Timeout period.
- **Sticky Timeout:** This is like an idle timeout period. If Sticky is set to <Yes> above, Sticky Timeout represents the number of seconds the system will wait for more traffic to flow through the specific interface. Once the Sticky Timeout period is reached it will revert back to the original load balance configuration.
- **IPset:** If you have an IPset defined in Network > Firewall > IPset (**See Chapter 9.8.4**), you can restrict traffic to that location by selecting the IPSet rule from the drop-down list.
- **Policy assigned:** Select which Policy you want this Rule assigned to using the drop-down menu. Every Rule MUST be assigned to a Policy.

Click <Save & Apply>.




The new rule now appears on the list. This Rule will never allow Facebook traffic over the wan2 interface. However, in order for the Rule to apply, it must be moved up the list using the Sort Up button so that it appears before the default rule that allows all traffic.

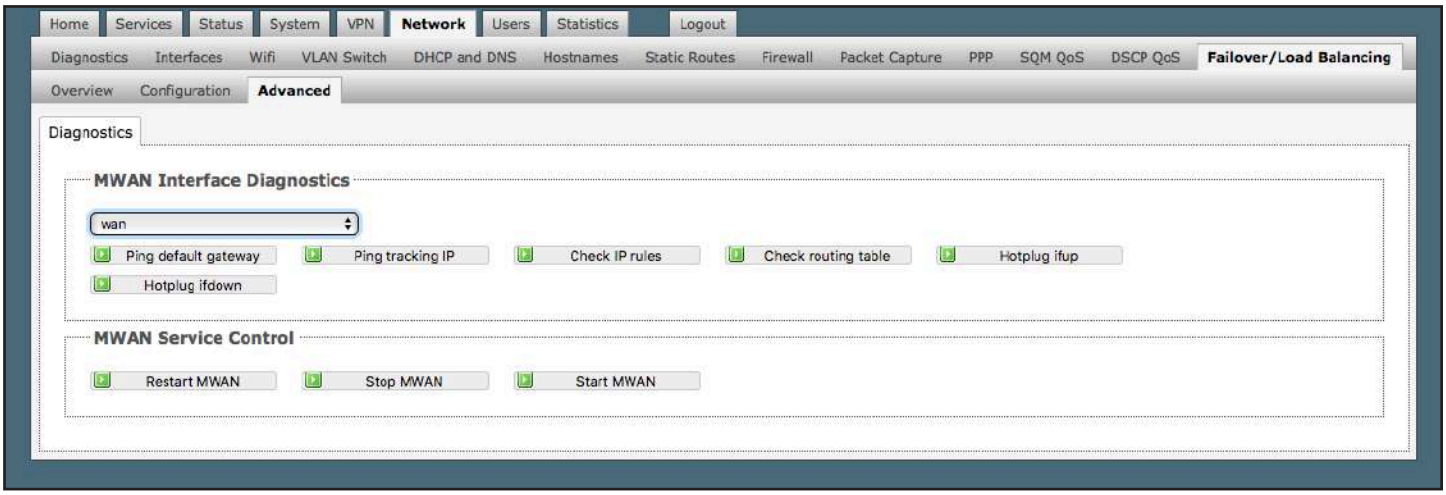
Click <Edit> to edit a Rule.

Click <Delete> to remove a Rule. The Delete action cannot be undone.

### 9.13.3. Advanced

Requires “superadmin” login.

Select the MWAN Interface using the drop-down list and run diagnostics for that interface.

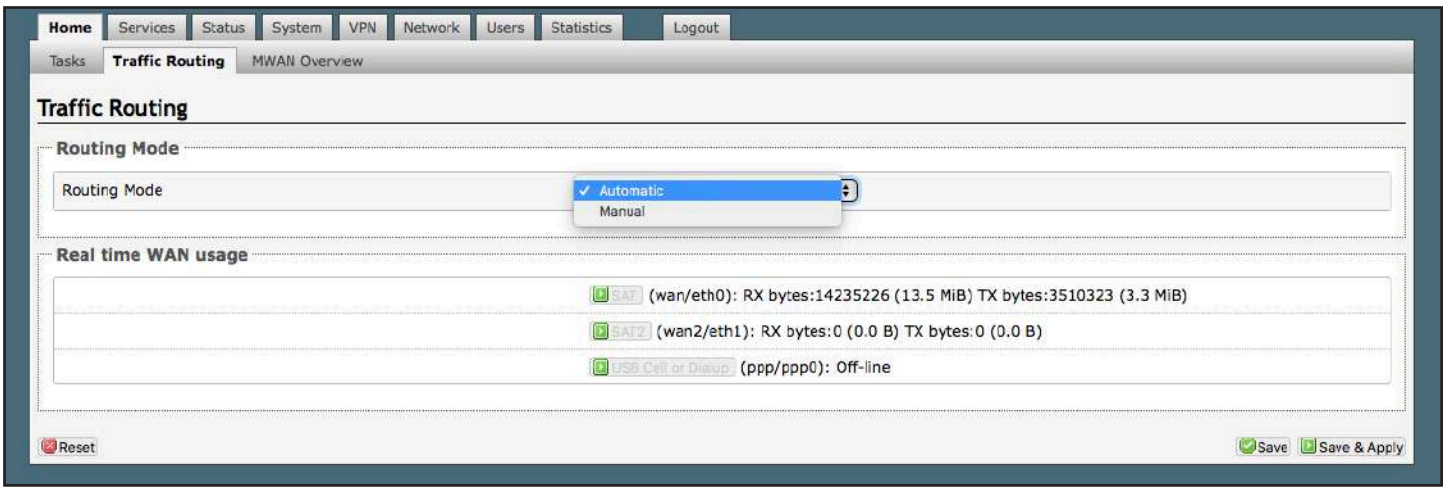



Use MWAN Service Control to manually bring up or take down interfaces.

### 9.13.4. Failover Mode - Automatic or Manual

Requires “superadmin” login.

There are two Failover modes available:




Automatic Failover (default setting) requires no intervention; if a MWAN interface is unavailable, traffic will automatically by routed per the Failover/Load Balancing Rules. Real time WAN usage is also displayed on this screen.

Manual Failover requires the “superadmin” or “admin” to select which available interface to use for ALL traffic. Real

time WAN usage is also displayed on this screen. Only available interfaces can be enabled. Unavailable interfaces with no route to the Internet are disabled. Only one can be selected. The “Default Route” designation indicates which interface is currently routing traffic.

Some Important Things to Know:
- Only the ‘superadmin’ login can change the Failover Traffic Routing mode.
- The “admin” login displays the Failover Traffic Routing mode as read-only.
- Real time usage for each interface is displayed in either automatic or manual mode.
- The currently selected Default Route only displays in Manual mode.
- When set to Manual mode both “superadmin” and “admin” logins can select which interface to use for routing.

### 9.13.5. Failover/Load Balancing Scenarios

The scenarios below represent some commonly requested configurations.

#### 9.13.5.1. Scenario 1

SatCom setup is a FleetBroadband Terminal, a handheld satphone like an Iridium 9555 and GSM.

A more useful Failover configuration may be: GSM >FBB > PPP.

1. Configure the PPP interface for the Iridium 9555 satphone under Network > PPP (**See Chapter 9.2**).

2. Connect the Iridium satphone to the Optimizer Enterprise’s USB port with the appropriate cable.

3. Create a MWAN Policy in Network > Failover/Load Balancing > Configuration > Policies (**See Chapter 9.13.2.4**).

The Policy might be named “wext_wan_ir”.

The Members Assigned should be “wext_m1_w1”, “wan_m1_w1” and “ppp_m1_w1”.

4. Create a MWAN Rule in Network > Failover/Load Balancing > Configuration > Rules (**See Chapter 9.13.2**). Give the rule a unique name.

When defining the Rule, the only field that requires an entry is the Policy Assigned field. Select the Policy name that you created in step 3 “wext_wan_ir”.

5. Move this new Rule to the top of the list using the Sort Up button.

With this setup, all traffic will flow through the GSM, if it is up. If the GSM is not up, all traffic will flow through the FleetBroadband satellite terminal, if it is up. If the FBB is not up, all traffic will flow through the Iridium 9555.

#### 9.13.5.2. Scenario 2

Allow all http traffic through the GSM interface only and never through the satellite terminal.

Use the following to restrict all http traffic to the GSM interface only.

1. Create a MWAN Policy in Network > Failover/Load Balancing > Configuration > Policies (**See Chapter 9.13.2**).

The Policy might be named “gsmonly”.

The Members Assigned should be “wext_m1_w1”.

Last resort should be set to “reject” as you do not want the last resort to route through the default rule.

2. Create a MWAN Rule in Network > Failover/Load Balancing > Configuration > Rules (**See Chapter 9.13.2**). Give the rule a unique name. When defining the Rule, set:
Destination Port = 80,443 Protocol = tcp.
Policy Assigned = select the Policy name that you created in step 1 “gsmonly”.

3. Move this new Rule to the top of the list using the Sort Up button.

With this setup, all http traffic (i.e. port 80 and port 443) will flow through the LTE/GSM interface only, if it is up. If the LTE/GSM is not up, all http traffic will be rejected.

### 9.13.5.3. Block Skype or other P2P applications

Skype and other Peer-to-Peer Applications are designed to circumvent firewalls allowing users to communicate and share data. They consume a lot of satellite airtime resources and are very difficult to block. In order to block Skype or other Peer-to-Peer Applications you must configure the firewall to block all traffic and then route all http and https traffic through Optimizer Enterprise Proxy Server that allows you to Block sites. The Captive Portal must be Enabled.

This configuration blocks all traffic to the Internet. Users must log in through the Captive Portal to have access to http and https traffic.

1. Captive Portal must be enabled. (**See Chapter 5.1**).

2. Go to Services > Web Compression and Filtering > Filters to enter the sites you wish to block. (**See Chapter 5.2.2**).

3. Go to Network > Firewall > Firewall Rules and disable (uncheck) these six rules:
- ALL.
- PASS DNS.
- DNS.
- HTTP.
- HTTPS.
- FTP.

4. Click <Save & Apply>. This will modify the firewall to block access to all traffic, including DNS.

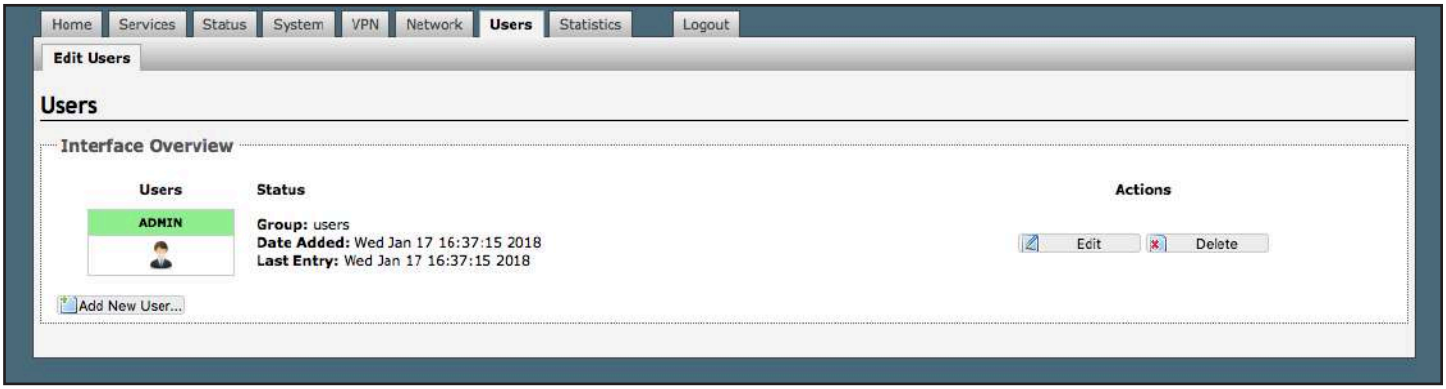
5. The web browser configuration of each end user’s device must be modified to enable “Automatic Proxy Detection.” (PC users with Firefox do this in Preferences > Advanced > Network > Settings by selecting “Auto-detect proxy settings for this network”. Other browsers can be configured similarly.)

6. Users will log in to the Captive Portal by entering: http://10.1.5.1:4990/www/login.chi.

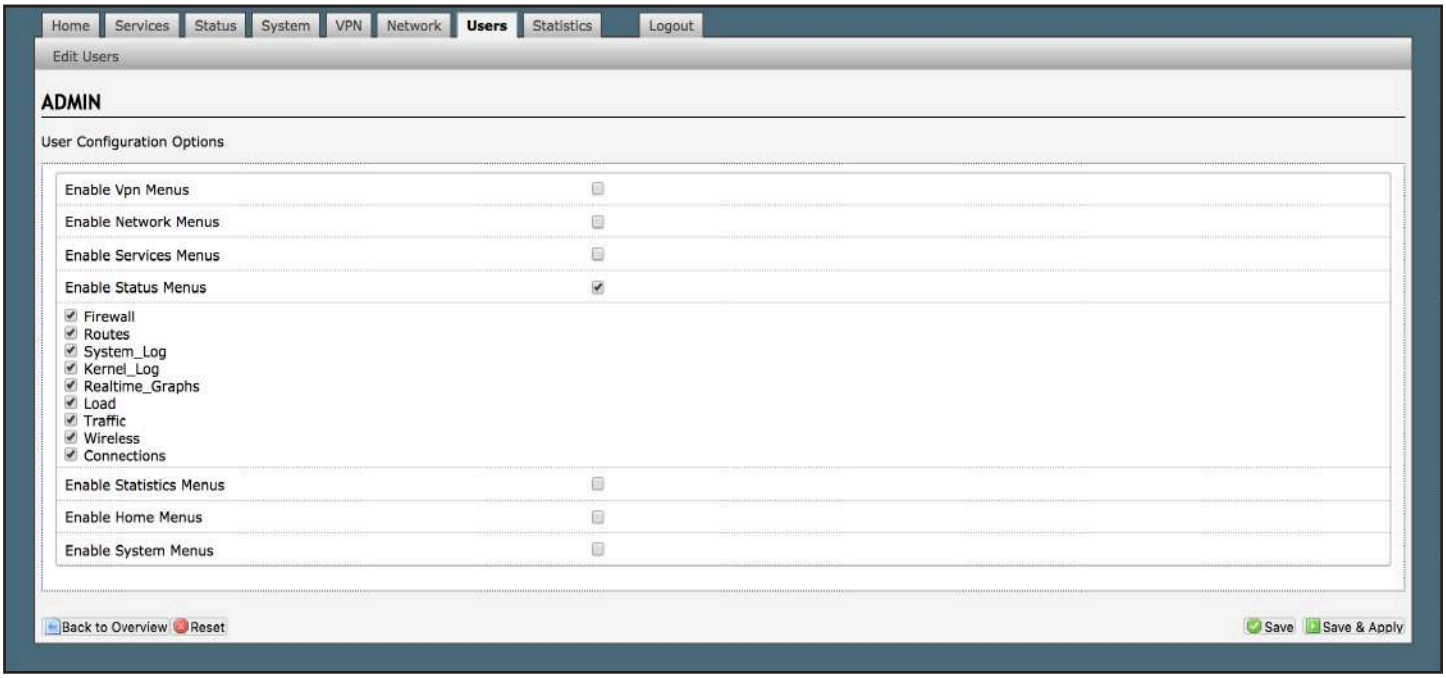
# 10. Users

Requires “superadmin” login.

The User tab permits the Superadmin login to manage both the Admin login as well as additional desired logins. Through the <User> tab, Superadmin may permit or restrict User log in access.

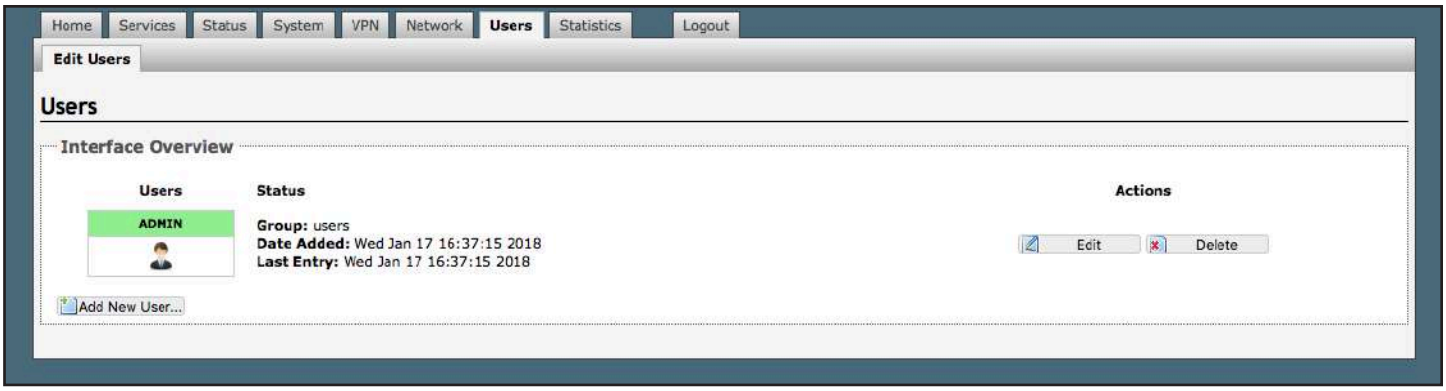



To manage Admin login, click <Edit> located under “Actions”.

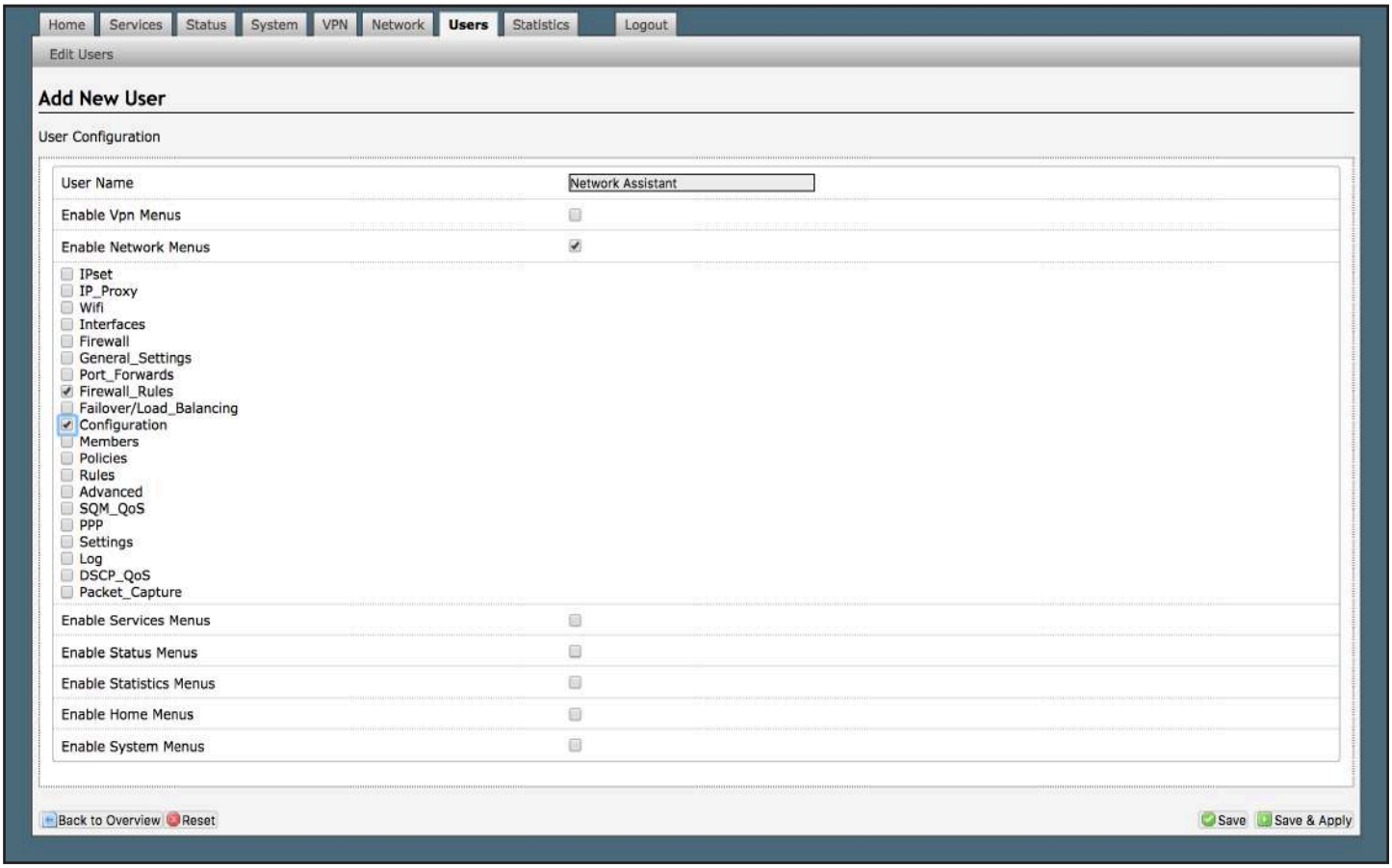



Manage options by clicking (enabling and disabling) options.
Click <Save & Apply> when complete.

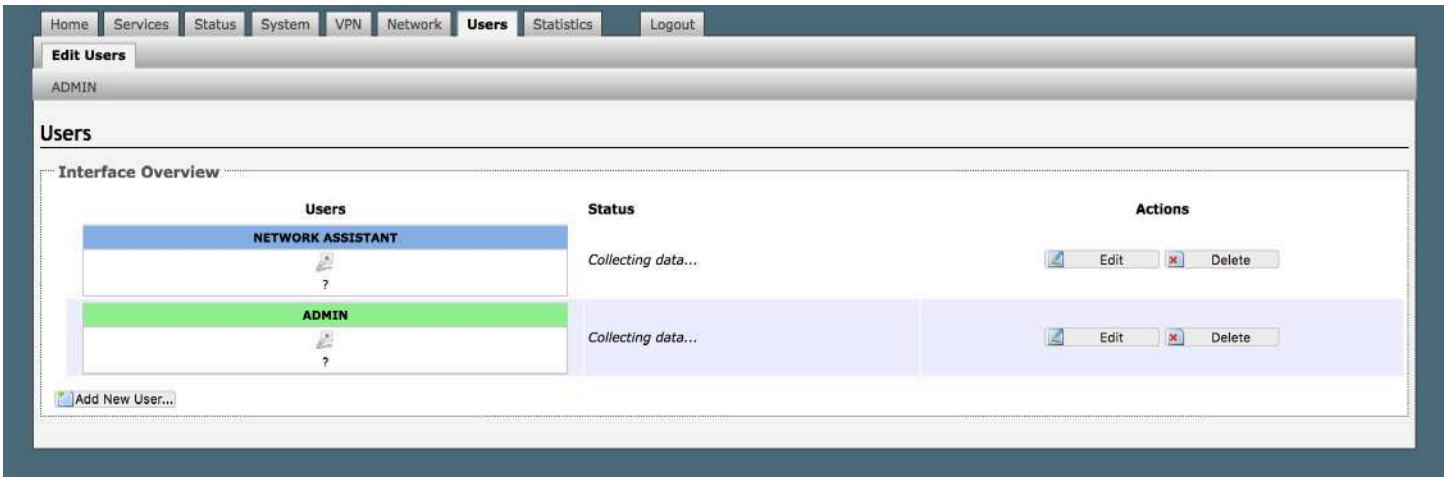
To create new a new User, Navigate back to <User> tab.




Click <Add New User...>




Create desired User Name.
Click desired menus.
Click <Save & Apply>.

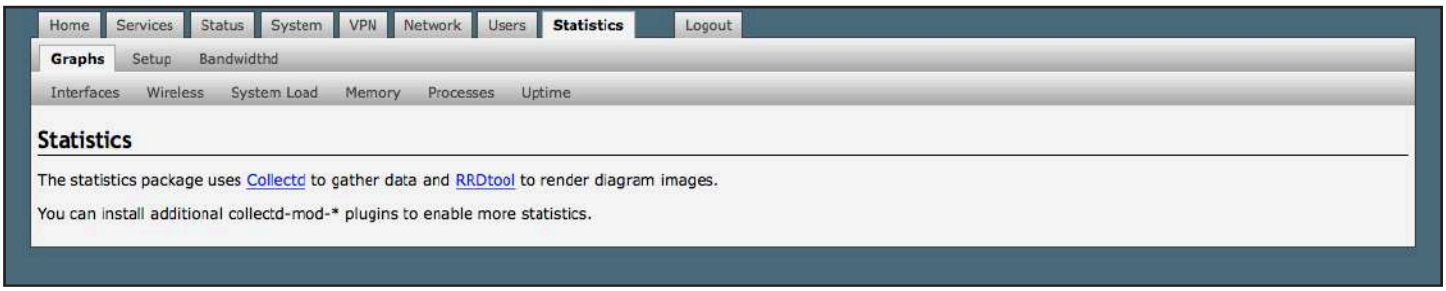


# 11. Statistics

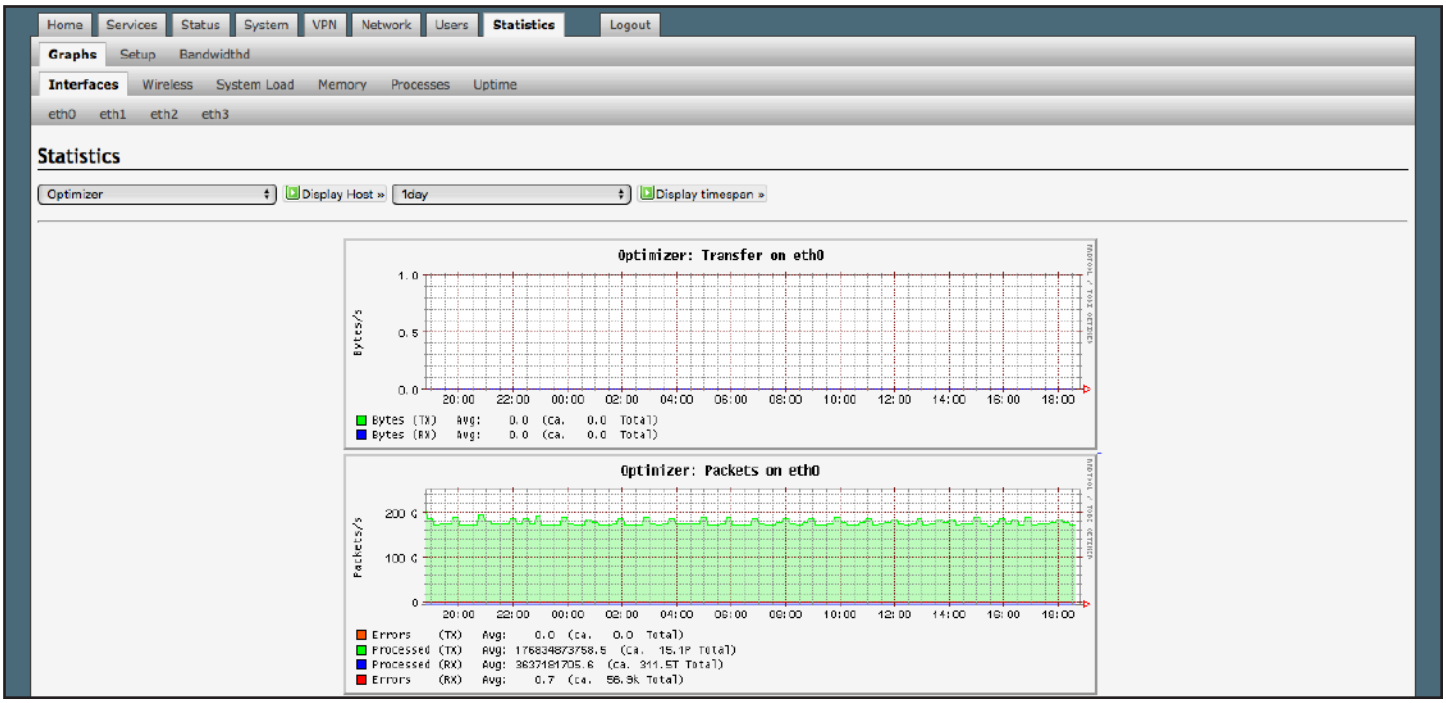
Requires “superadmin” login.


## 11.1. Graphs

Requires “superadmin” login.




Similar to the Realtime Graphs in the Status tab, Statistics Graphs shows usage over a specific timespan.

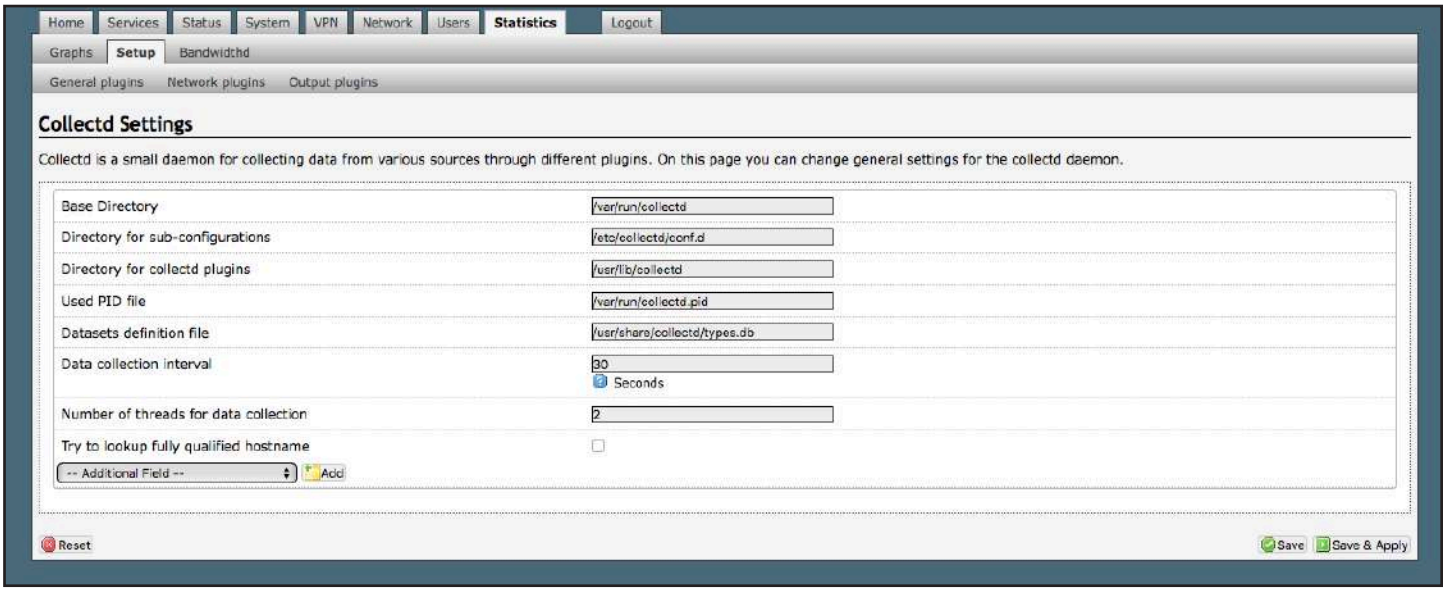



To modify the time span, use the down arrow next to <Display timespan>, then click <Display timespan> to view the graph.

## 11.2. Setup

Requires “superadmin” login.

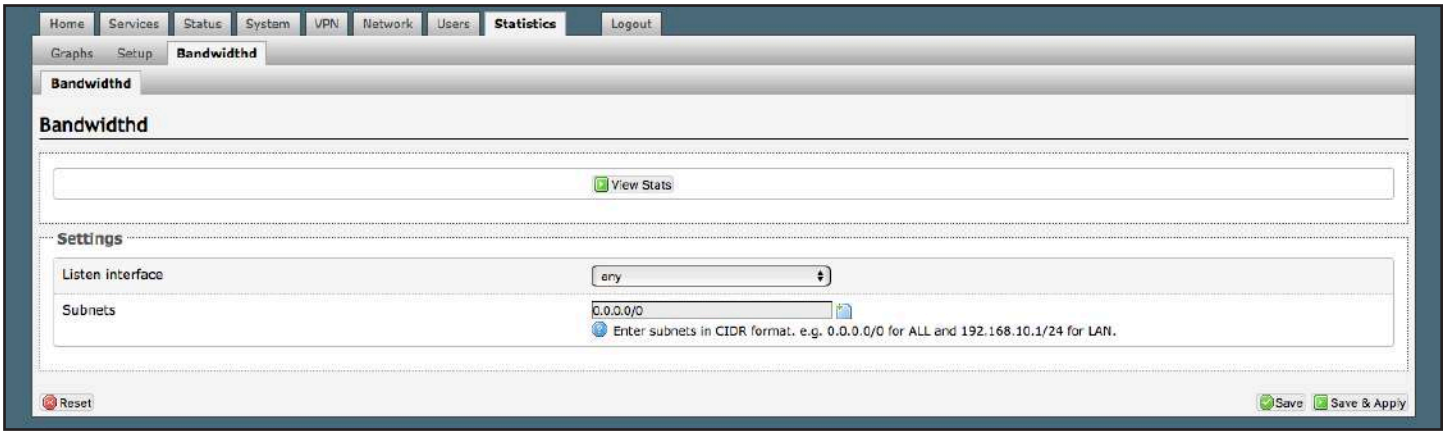
The Optimizer Enterprise uses several tools for collecting data statistics. Use Setup to change general settings for the collectd.




## 11.3. Bandwidth

Requires “superadmin” login.

Bandwidth tracks TCP/IP subnet and data usage and provides a formulated representation.




Click <View Stats> to be presented with the chart:

RedPort

Tue Sep 11 19:55:06 2018


Programmed by David Hinkle, Commissioned by DerbyTech wireless networking.

- Daily -- Weekly -- Monthly -- Yearly -

Pick a Subnet:
- Top20 -- 0.0.0.0 -

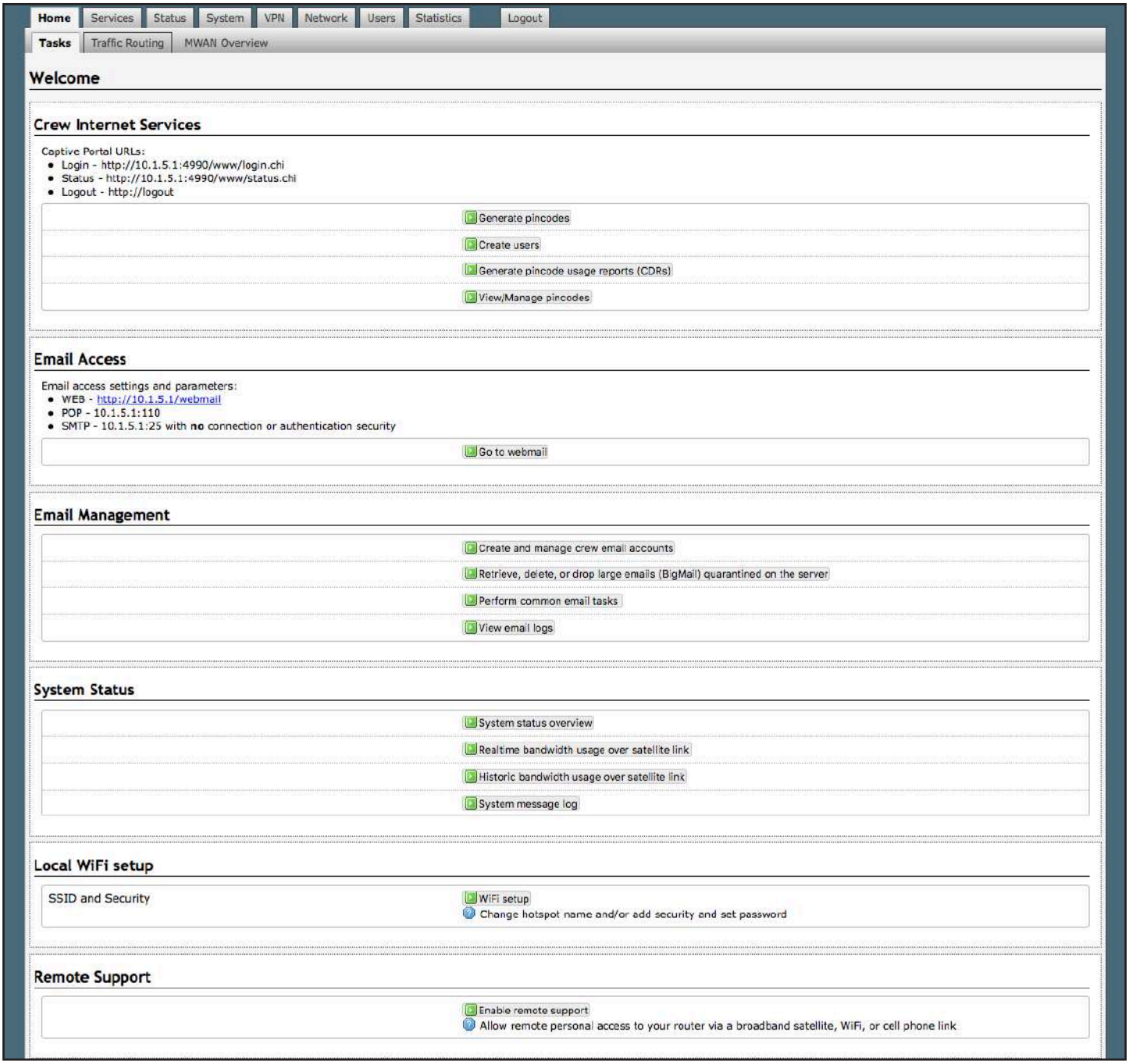
# Top 20 IPs by Traffic - Daily

| Ip and Name | Total | Total Sent | Total Received | FTP | HTTP | SMTP | TCP | UDP | ICMP |
|---|---|---|---|---|---|---|---|---|---|
| Total | 5.8G | 2.9G | 2.9G | 0 | 5.7G | 0 | 5.7G | 32.9M | 3.7M |
| 199.48.130.178 | 2.6G | 28.0M | 2.6G | 0 | 2.6G | 0 | 2.6G | 0 | 0 |
| 10.1.5.4 | 1.6G | 1.5G | 117.9M | 0 | 1.6G | 0 | 1.6G | 5.7M | 60.9K |
| 172.16.0.186 | 692.7M | 584.9M | 107.9M | 0 | 688.8M | 0 | 689.0M | 2.9M | 805.4K |
| 10.1.5.10 | 493.2M | 488.7M | 4.4M | 0 | 491.4M | 0 | 492.9M | 271.7K | 4.5K |
| 23.72.224.56 | 147.6M | 138.1M | 9.5M | 0 | 147.6M | 0 | 147.6M | 0 | 0 |
| 10.135.144.136 | 61.1M | 40.2M | 21.0M | 0 | 54.9M | 0 | 55.3M | 4.9M | 1.0M |
| 10.1.5.15 | 32.1M | 29.4M | 2.7M | 0 | 30.5M | 0 | 31.7M | 342.6K | 2.4K |

# 12. Remote Support

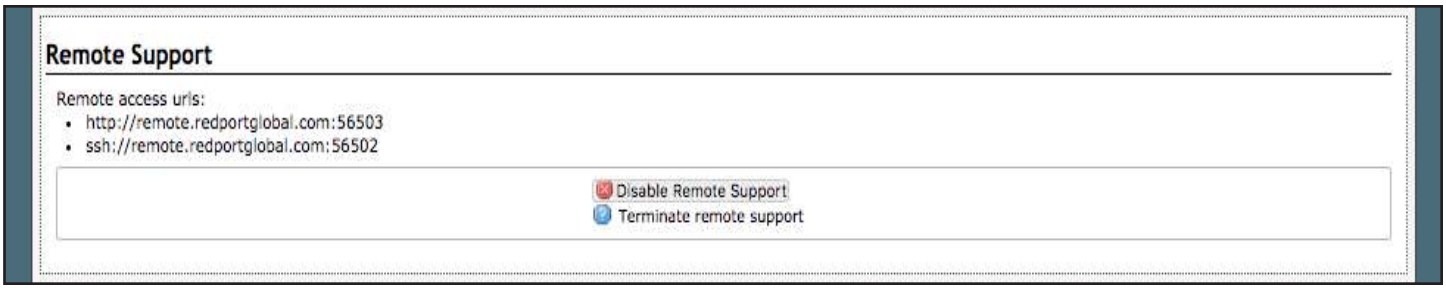
Remote Support Access can be granted from two locations, each with some differences.

Option 1 - navigate to <Home> tab, scroll down to the “Remote Access” section

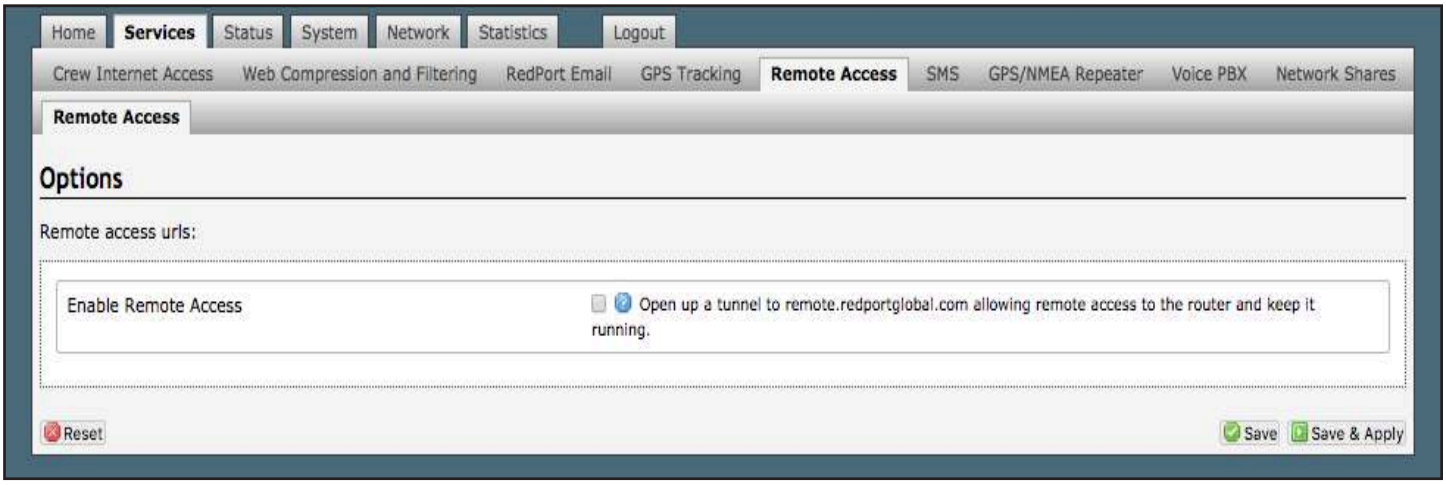



Click <Enable remote support> under “Remote Support” section of the <Home> tab.

When remote support is enabled Remote Access URLs are displayed.

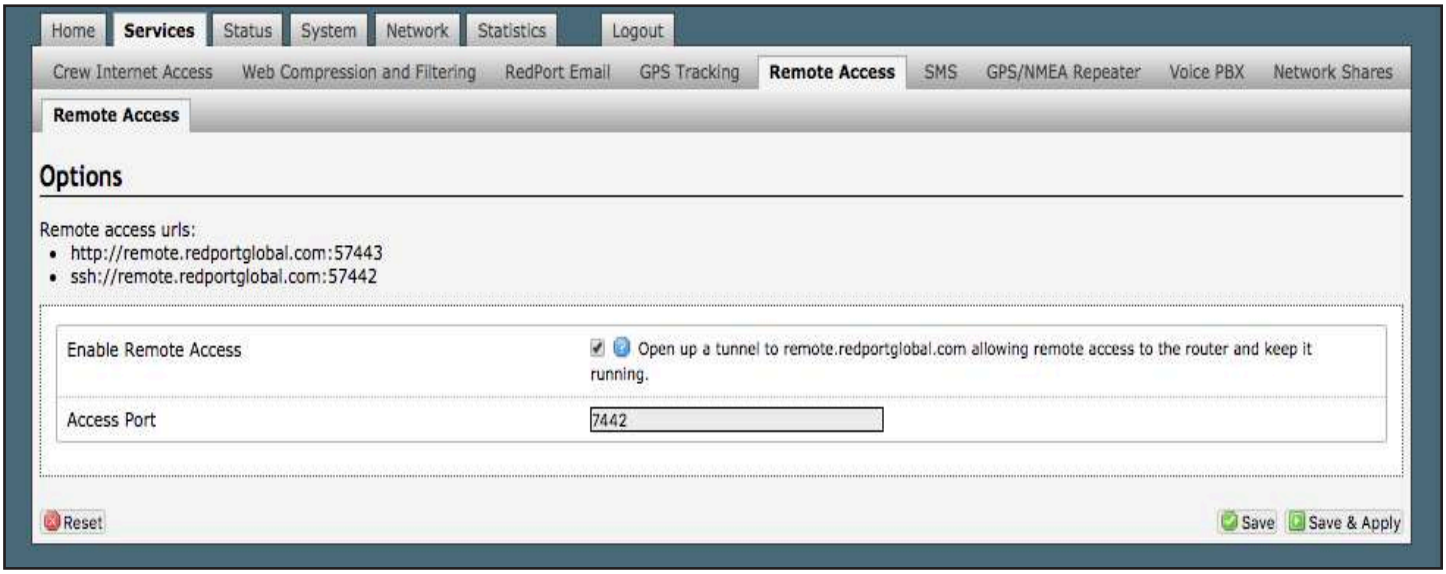



Option 2 - Navigate to <Services> tab, then to <Remote Access>




Click “Enable Remote Support”

When remote support is enabled Remote Access URLs are displayed.




Remote Support will remain enabled until Disabled or the router’s firmware / SD Image is updated.

RedPort

# 13. Appendix A

| Optimizer Enterprise Guidelines | | |
|---|---|---|
| The router is shipped in the following Default State: (Legend: E=Enabled, D=Disabled, O=Open) | | |
| Captive Portal | E | |
| Transparent Proxy | E | |
| Firewall | O | |
| DNS | O | |
| Web Compression | D | |
| RedPort Email | D | |
| SMS | E | |
| GPS Tracking | D | |
| Voice | D | |
| RedPort VoIP | D | |
| Automatic Failover | * | |
| The list below is designed as a general guideline for customizing the router to meet your needs. Be sure to read Chapter ??? "How to Secure Your Router" before you begin. | | |
| Configuration | Actions | Location in the UI |
| Captive Portal Use | | |
| 1 | Change Captive Portal Admin Password | Services > Crew Internet Access > Tools |
| 2 | Add user account | Services > Crew Internet Access > Users |
| 3 | Add to Allowed Hosts table | Services > Crew Internet Access > Settings > Allowed Hosts |
| 4 | Set Content Filtering Sceme | Services > Web Compression and Filtering > Content Filtering |
| 5 | Firewall Rules | Network > Firewall > Firewall Rules |
| 6 | Add end user accounts | Services > Crew Internet Access > Users |
| 7 | Create Pincodes for Users | Services > Crew Internet Access > Pincodes |
| Web Compression (Premium Service - fees may apply) | | |
| 1 | Must be enabled | Services > Web Compression and Filtering > Settings > Compression |
| 2 | Enter User ID and Password | Services > Web Compression and Filtering > Settings > Compression |
| 3 | Set Compression Level | Services > Web Compression and Filtering > Settings > Compression |
| 4 | Set Content Filtering Scheme | Services > Web Compression and Filtering > Content Filtering |
| 5 | Establish Domain and Path Filters | Services > Web Compression and Filtering > Content Filtering |
| 6 | Firewall Rules | Network > Firewall > Firewall Rules |
| RedPort Email (Premium Service - fees may apply) | | |
| 1 | Must be enabled | Services > RedPort Email > General > General Settings |
| 2 | Enter Main Identify Login Info | Services > RedPort Email > General > General Settings |
| 3 | Select Satellite connection method | Services > RedPort Email > Connection |
| 4 | Set Inbound Email Filter Size | Services > RedPort Email > Filters |
| 5 | Set Outbound Email Filter Size | Services > RedPort Email > Filters |
| 6 | Enter Primary Accounts Purchased | Services > RedPort Email > Primary Accounts |
| 7 | Add Crew/Sub Accounts | Services > RedPort Email > Crew Accounts |
| SMS | | |
| 1 | Set Satellite Device | Services > SMS > Settings |
| 2 | Configure Extensions | Services > Voice PBX > Extensions |
| GPS Tracking via SMS | | |
| 1 | Configure Tracking Parameters | Services > GPS Tracking > Tracking Via SMS |

| | | | |
|---|---|---|---|
| GPS Tracking via RedPort (Premium Service - fees may apply) | | | |
| | 1 | Configure Tracking Parameters | Services > GPS Tracking > Tracking powered by RedPort |
| Voice | | | |
| | 1 | Must be enabled | Services > Voice PBX > Settings |
| | 2 | Configure Extensions | Services > Voice PBX > Extensions |
| RedPort VoIP (Premium Service - fees may apply) | | | |
| | 1 | Must be activated | Services > Voice PBX > RedPort VoIP |
| | 2 | Configure Extensions | Services > Voice PBX > Extensions |
| Failover / Load Balancing | | | |
| | 1 | Configure PPP/GSM, if needed | Network > PPP > Settings |
| | 2 | Create Network Interface(s), if needed | Network > Interfaces |
| | 3 | Create MWAN Member(s), if needed | Network > Failover/Load Balancing > Configuration > Members |
| | 4 | Create MWAN Policie(s), if needed | Network > Failover/Load Balancing > Configuration > Policies |
| | 5 | Create MWAN Traffic Rule(s), if needed | Network > Failover/Load Balancing > Configuration > Rules |
| Firewall (See Advanced User Guide before attempting modifcations to the firewall) | | | |
| | 1 | Create additional firewall zone(s), if needed | Network > Firewall > General Settings |
| | 2 | Assign each interface to a firewall zone | Network > Interfaces |
| | 3 | Create new firewall rule(s) if needed | Network > Firewall > Firewall Rules |

# 14. Appendix B

**Access to Optimizer Enterprise User Interface (UI) Based on Login Credentials**

**SUPERADMIN ACCESS**

| Home Tab | |
|---|---|
| Tasks | |
| Traffic Routing | |
| MWAN Overview | |
| **Services Tab** | |
| Crew Internet Access | |
| | Settings |
| | Users |
| | Pass-through MAC |
| | Pincodes |
| | CDRs |
| | Tools |
| Web Compression and Filtering | |
| | Settings |
| | Content Filtering |
| | Cache Management |
| | Traffic Management |
| | Access Control |
| | Logs |
| | Help |
| RedPort Email | |
| | General |
| | Connection |
| | Filters |
| | Primary Accounts |
| | Crew Accounts |
| | File Transfer |
| | Spool |
| | Tools |
| | BigMail |
| | Logs |
| Remote Access | |
| | Remote Access |
| SMS | |
| | Settings |
| | Management |
| GPS Tracking | |
| | Tracking |
| Dynamic DNS | |
| GPS/NMEA Repeater | |
| | GPS/NMEA Repeater |
| Voice PBX | |
| | Settings |
| | Extensions |
| | Voicemail |
| | Logs |
| | Sat SIP Trunk |
| | RedPort VoIP |

| Services Tab continued | | |
|---|---|---|
| SNMP | | |
| | General | |
| | Community | |
| | Com2Sec | |
| | Group | |
| | View | |
| | Access | |
| | Log | |
| Network Shares | | |
| **Status Tab** | | |
| Overview | | |
| Firewall | | |
| Routes | | |
| System Log | | |
| Kernel Log | | |
| Realtime Graphs | | |
| **System Tab** | | |
| System | | |
| Administration | | |
| Profiles | | |
| | Profiles | |
| | Tools | |
| Backup / Flash Firmware | | |
| Reboot | | |
| **VPN Tab** | | |
| PPTP | | |
| | Settings | |
| | Users | |
| IPSec | | |
| | IPSec Configuration | |
| | Connections | |
| | Phase 1 proposals | |
| | Phase 2 proposals | |
| | Tunnels | |
| | IPSec Logs | |
| OpenConnect VPN | | |
| | Server Settings | |
| | User Settings | |
| OpenVPN | | |
| **Network Tab** | | |
| Diagnostics | | |
| Interfaces | | |
| | PPTP | |
| | WAN | |
| | WAN2 | |
| | PPP | |
| | LAN | |
| | CAP | |

| Network Tab continued | | |
|---|---|---|
| Interfaces continued | | |
| | WEXT | |
| | WAN6 | |
| Wifi | | |
| VLAN Switch | | |
| DHCP and DNS | | |
| Hostnames | | |
| Static Routes | | |
| Firewall | | |
| | General Settings | |
| | Port Forwards | |
| | Fireall Rules | |
| | IPset | |
| | IP Proxy | |
| Packet Capture | | |
| PPP | | |
| | Status | |
| | Settings | |
| | Log | |
| SQM QoS | | |
| DSCP QoS | | |
| Failover/Load Balancing | | |
| | Overview | |
| | Configuration | |
| | | Interfaces |
| | | Members |
| | | Policies |
| | | Rules |
| **Users Tab** | | |
| Edit Users | | |
| Graphs | | |
| | Interfaces | |
| | Wireless | |
| | System Load | |
| | Memory | |
| | Processes | |
| | | asterisk |
| | | chilli |
| | | radiusd |
| | | xgate |
| | Uptime | |
| Setup | | |
| | General plugins | |
| | | System Load |
| | | Memory |
| | | Processes |
| | | Uptime |
| | Network plugins | |

| Users Tab Continued | | |
|---|---|---|
| | | Interfaces |
| | | Wireless |
| | Output plugins | |
| | | Network |
| | | RRDTool |
| Bandwidthd | | |
| | Bandwidthd | |
| **Logout Tab** | | |
| **ADMIN ACCESS** | | |
| **Status Tab** | | |
| Overview | | |
| Firewall | | |
| Routes | | |
| System Log | | |
| Kernel Log | | |
| Realtime Graphs | | |
| | Load | |
| | Traffic | |
| | Wireless | |
| | Connections | |
| **Admin Options Tab** | | |
| Password | | |
| **Logout Tab** | | |

# 15. Corporate Contact Information

For any questions, concerns, or recommendations, please contact us:

**RedPort Company Information**
For product orders, support or returns, please contact:
Phone: International: +1 865.379.8723
USA: 877.379.8723
Email: info@redportglobal
Sales: sales@redportglobal.com
Web: redportglobal.com

**RedPort Corporate Address**
RedPort Global
3224 Wrights Ferry Road
Louisville, TN 37777