



## QUICK START GUIDE

### E200 Series – Cellular / WAN / LAN / Wi-Fi Router

Version 0.5

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### **This manual cover the following products:**

- »» Maestro E205XT02
- »» Maestro E205XT04
- »» Maestro E206XT

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# 1 Safety Precautions

## 1.1 General precautions

- » The router generates radio frequency (RF) power. When using the router, care must be taken to ensure safety as well as compliance with all the regulations surrounding the use of RF equipment.
- » Do not use the router in aircraft, hospitals and petrol stations or in places where using GSM products or other RF equipment is prohibited.
- » Be sure that the router will not be interfering with nearby equipment such as pacemakers or medical equipment. The antenna of the router should be directed away from computers, office equipment, home appliance, etc.
- » Always keep the router at a minimally safe distance of 26.6cm or more from a human body.
- » Do not put the antenna inside metallic boxes or other containers

## 1.2 Using the router in vehicle

- » Check for any regulation or law authorizing the use of GSM equipment in vehicles in your country before installing the router.
- » Installation of the router should be done by qualified personnel. Consult your vehicle dealer for any possible interference concerns related to the use of the router.
- » Be careful when the router is powered by the vehicle's main battery. The battery may be drained after extended period.

## 1.3 Protecting your router

To ensure error-free usage, please install and operate your router with care and comply with the following:

- » Do not expose the router to extreme conditions such as high humidity/rain, high temperatures, direct sunlight, caustic/harsh chemicals, dust, or water.
- » Do not try to disassemble or modify the router as there are no user serviceable parts inside and the warranty would be void in case of tampering.
- » Do not drop, hit or shake the router.
- » Do not use the router under extreme vibrating conditions.
- » Do not pull the power supply cable. Please attach or detach it by holding the connector after switching off the supply.
- » Install and connect the router in accordance to the instruction manual. Failure to do so will void the warranty.

## 2 Overview

### 2.1 Scope

This document provides you all the information you need to set-up, configure and use the Maestro E200 Series router.

### 2.2 Target audience

This document is intended for customers and integrators who understand basic telecommunications and information technology terminology and concepts.

## 3 Prerequisites

Before continuing with the installation of your E200 Series router, make sure you have a computer equipped with the following:

- » A computer with an Ethernet port or Wi-Fi connectivity
- » A web browser such as Google Chrome, Mozilla Firefox or Apple Safari



## 4 User manual conventions

The following symbols are used throughout the user manual:



The following symbol indicates **attention** must be paid



The following symbol indicates a **warning**



The following symbol provides **information**

PRELIMINARY

## 5 Product overview

### 5.1 E205 Series at a glance

- » Dual-band HSDPA (E205XT02), tri-band HSDPA (E205XT04)
- » GPRS/EDGE auto-fallback
- » LAN on RJ45 port
- » Switchable WAN/LAN on RJ45 port
- » Built-in Wi-Fi with an external RP-SMA antenna connector
- » Automatic WAN / 3G failover
- » Built-in GPS supporting active antenna via an external SMA connector
- » External SMA antenna connectors for 3G
- » One digital inputs/outputs
- » Six color LED's for displaying for Wi-Fi and network activity, signal, power and alarm
- » Device management and configuration via a web GUI
- » DIN rail mountable

## 5.2 E206 Series at a glance

- » Quad-band HSPA+ & dual-band EV-DO (E206XT)
- » GPRS/EDGE auto-fallback
- » LAN on RJ45 port
- » Switchable WAN/LAN on RJ45 port
- » Built-in Wi-Fi with an external RP-SMA antenna connector
- » Automatic WAN / 3G failover
- » Built-in concurrent diversity/GPS antenna supporting active antenna via an external SMA connector
- » External SMA antenna connectors for 3G
- » One digital inputs/outputs
- » Six color LED's for displaying for Wi-Fi and network activity, signal, power and alarm
- » Device management and configuration via a web GUI
- » DIN rail mountable

## 5.3 Bundle content

- » E200 Series router x 1
- » 1m Ethernet cable 8P8C x 1
- » 2G/3G/4G terminal antenna 90 degree hinged SMA x 1
- » 5 dBi, 2.4/5.1~5.9 GHz dipole antenna RP-SMA (M) hinged 90° x 1
- » Industrial grade 1.2 A power supply x 1
- » DIN clip x 1

If any of these items are missing or damaged, please contact Maestro Support immediately. The Maestro Support website can be found at:

<http://support.maestro-wireless.com/>

## 6 Product features

With high-speed cellular (3G and beyond), WAN, LAN and Wi-Fi connectivity, the E200 is a highly versatile, reliable and rugged router designed for mission-critical enterprise applications requiring faultless connectivity.

The E200 comes in two models; the cost-effective HSDPA ensures always-on connectivity for 2G migration or low-latency applications such as energy and sales & payment, while the HSPA+ penta-band is ideal for deployment in vertical markets requiring high-speed data or global roaming, such as security and transportation.

The E200 can be configured through an easy-to-use web interface; quick setup section will facilitate basic router configuration. Advanced configuration setting for functions such as Wi-Fi, failover, load balancing, VPN, firewall are also directly available through the web interface. Once configured, a set of 6 LED's on the top of the aluminum alloy casing will help the user ensure that the device is operating correctly. Users can also remotely manage the router is also available through an HTTPS connection over the LAN or WAN.

PRELIMINARY

## 7 Physical dimensions and LED

### 7.1 Physical dimensions




















E200 Series dimensions without connector

Lenght	83.9mm
Depth	60mm
Height	25mm
Weight	90g

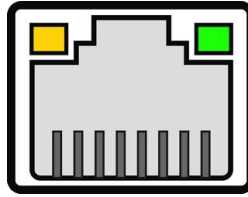
## 7.2 LED indicators

The E200 Series features 6 LEDs on the front to display critical system information

NAME	COLOUR	STATE	DESCRIPTION
<b>WI-FI</b>		<b>OFF</b>	Wi-Fi network is deactivated
		<b>Flashing</b>	Wi-Fi network connection traffic
		<b>ON</b>	Wi-Fi network is activated
<b>Activity</b>		<b>OFF</b>	Cellular data service is not connected
		<b>ON</b>	Cellular data service is connected
<b>Network</b>		<b>OFF</b>	SIM card is not inserted, or device is not registered on the cellular network
		<b>Flashing</b>	Device is registered on the cellular home network
		<b>ON</b>	Device is registered on the cellular roaming network
<b>Signal</b>		<b>OFF</b>	No signal (CSQ=0,99)
		<b>ON</b>	Weak signal (CSQ<7)
		<b>Flashing</b>	Strong signal (CSQ>7)
<b>Power</b>		<b>OFF</b>	Power off
		<b>ON</b>	Power on
<b>Alert</b> 		<b>OFF</b>	No alert, device is running smoothly
		<b>Flashing</b>	Software fault (crash, issues...)
		<b>ON</b>	Hardware fault (high temperature, problem with module or SIM card)

### 7.3 Ethernet port LED indicators

The E200 Series router features two Ethernet ports, each with with two LED.



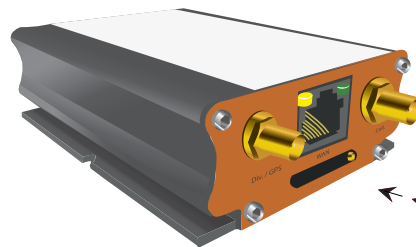
LED	STATUS	DESCRIPTION
Green	On	There is a valid network link.
	Off	No valid network link detected.
Amber	Flashing	There is activity on Ethernet port
	Off	There is not activity on the Ethernet port

PRELIMINARY

## 8 Hardware installation

### 8.1 Install the SIM card

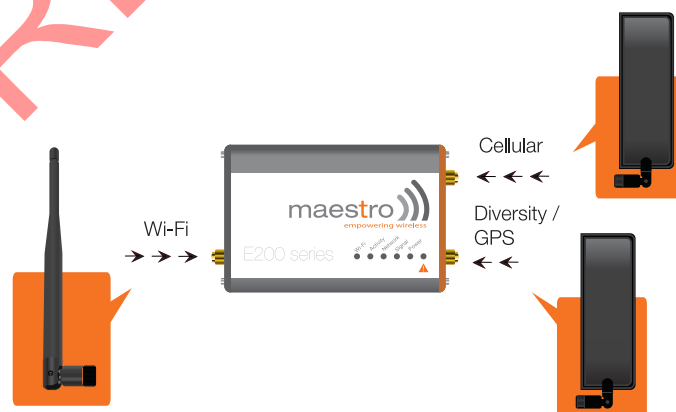
SIM card(s) should be inserted into the SIM tray as illustrated in the image below. SIM card contact should be face up.



### 8.2 Connect the Cellular (WWAN) Antenna(s)

Connect the cellular antenna to the “Cellular” connector (SMA Female) on the unit. If the unit is equipped with a secondary cellular antenna connector “Div.,” it is highly recommended to connect an additional antenna to this connector for diversification. Dual antennas will provide improved signal strength thus better performance.

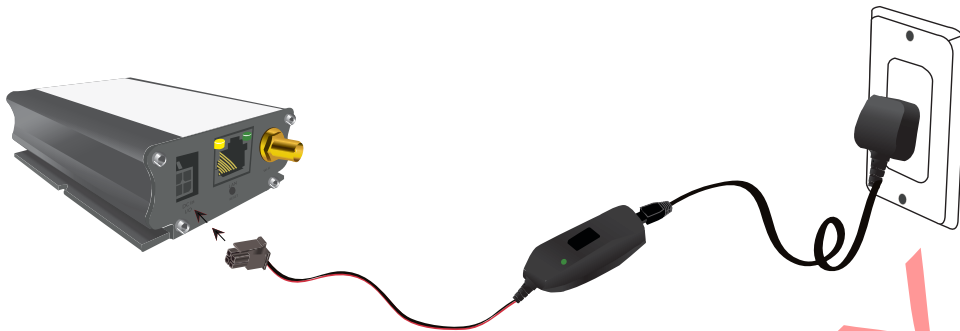
Note: For most applications, the antenna(s) included with the unit will provide suitable reception, but some circumstances/environments may require a higher quality antenna or one mounted in a different location. If this is the case, Maestro has many antenna options to choose from, please contact us or visit [maestro-wireless.com](http://maestro-wireless.com).





### 8.3 Connect the power supply

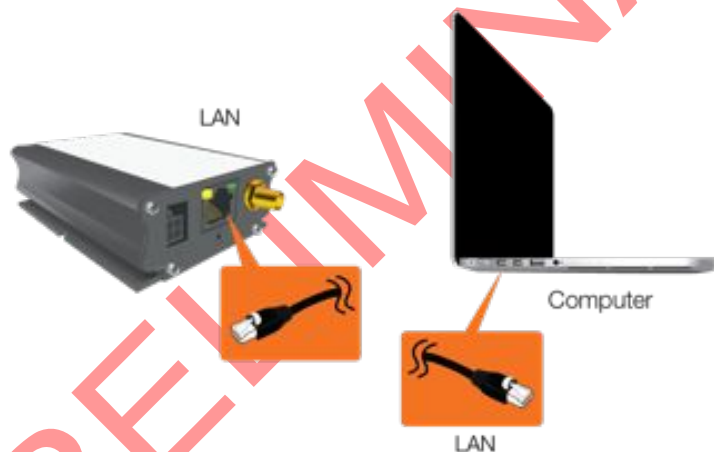
Connect the Micro-Fit 4-pin male connector of the power supply to the power connector located on the LAN side of the unit.



### 8.4 Connection to the device

#### 8.4.1 Connection with the LAN Cable

Connect one end of the Ethernet cable to the “LAN” port on the unit and the other end to a LAN port on a PC.



#### 8.4.2 Connection via Wi-Fi

Make sure Wi-Fi antenna is connected (see chapter 8.2) and Wi-Fi is ON on your computer, phone or tablette. Scan for network and select SSID “Maestro E200”. You will be prompted to enter a WPA/WPS-2 mixed-mode password. Default password is ‘**W1rele\$\$**’.

## 9 E205 Basic configuration

### 9.1 Connecting to the web interface

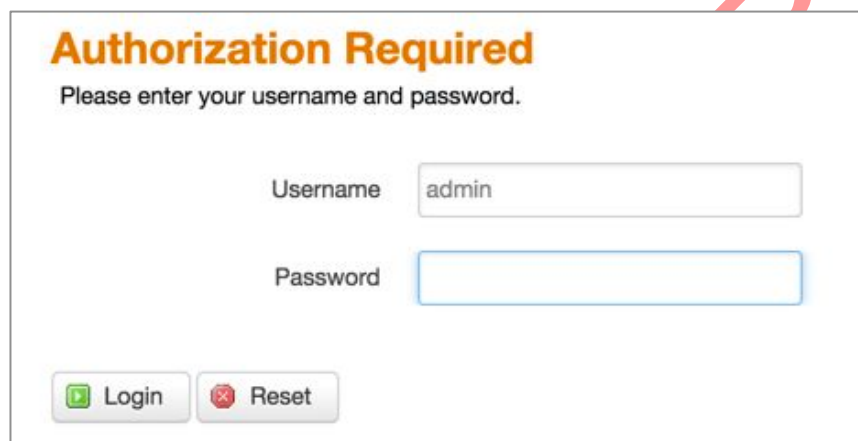
Connect the LAN interface of your E200 to a computer via the RJ-45 cable and start your web browser. Enter the device LAN IP address in the browser address field.

<http://192.168.1.1>



Note: If you change the IP address, remember to reboot the router and enter the new IP address into your browser address bar.

You will be invited to enter the admin username and password:



**Authorization Required**  
Please enter your username and password.

Username

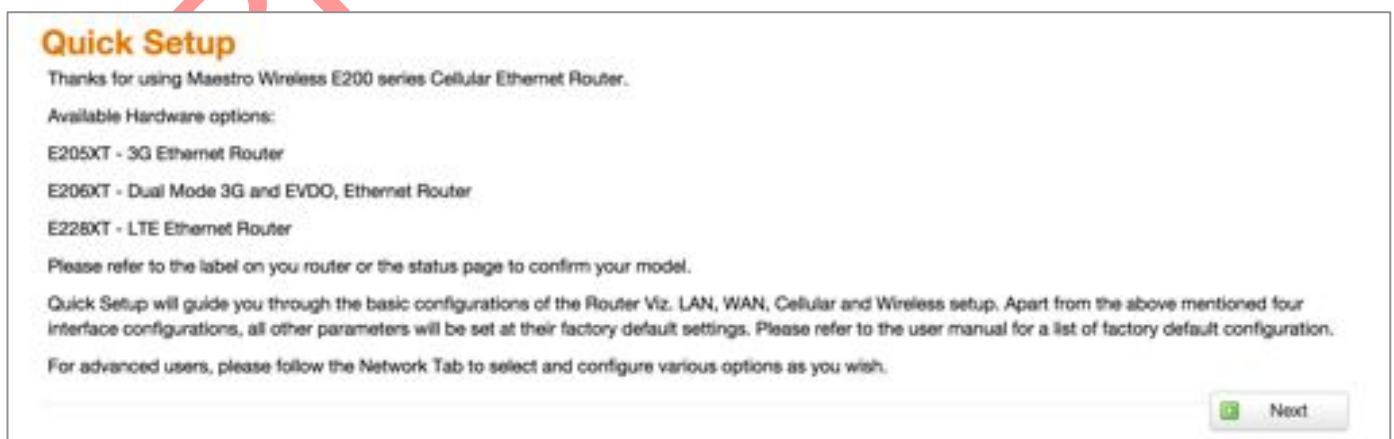
Password

» Default login – **admin**

» Default password – **admin**

(This is the default username and password for Maestro routers. The admin and read-only user passwords can be changed at **System>Administration**

After successfully login the **Quick Setup** page will show up



**Quick Setup**

Thanks for using Maestro Wireless E200 series Cellular Ethernet Router.

Available Hardware options:

- E205XT - 3G Ethernet Router
- E206XT - Dual Mode 3G and EVDO, Ethernet Router
- E228XT - LTE Ethernet Router

Please refer to the label on your router or the status page to confirm your model.


Quick Setup will guide you through the basic configurations of the Router Viz. LAN, WAN, Cellular and Wireless setup. Apart from the above mentioned four interface configurations, all other parameters will be set at their factory default settings. Please refer to the user manual for a list of factory default configuration.

For advanced users, please follow the Network Tab to select and configure various options as you wish.

Figure 1: Quick Setup

If you need to access advanced feature you can navigate directly in the menu.

If you want to follow the quick user guide click on the **Next** button and you will enter quick setup page.


 Since E200 has multiple WAN interfaces, the default priority settings for switching between various WAN interfaces is as follows and cannot be changed in Quick setup. To make any changes on the WAN priority settings, please go to the **Network/Interfaces** and **Network/Load Balancing** Tab. By default the router is configured in failover mode with WAN priorities as listed below:

- » Priority 1 – Wired WAN
- » Priority 2 – Wi-Fi as WAN (WWAN) (Wi-Fi in Client Mode)
- » Priority 3 – Cellular

In the quick setup page, you can perform basic configuration settings for the **LAN, WAN, Cellular and Wi-Fi** interfaces. All other configurations will be set to the factory default or previously saved values..

## 9.2 LAN configuration

The LAN configuration page is used to configure the LAN settings of the router



**Network Setup**

**Local Network**

IPv4-Address: 192.168.1.1

IPv4-Netmask: 255.255.255.0

IPv4-Gateway:

The modem router is shipped preconfigured to use private IP addresses on the LAN side, and to act as a DHCP server. The modem router's default LAN IP configuration is as follows:

- » LAN IP address: 192.168.1.1
- » IPv4 Netmask : 255.255.255.0

These addresses are part of the designated private address range for use in private networks, and should be suitable in most applications. If your network

has a requirement to use a different IP addressing scheme, you can make those changes here and click.

The LAN TCP/IP Setup settings are

- » **IPv4 Address:** This is the LAN IP address of the modem router.
- » **IPv4 Netmask:** This is the LAN subnet mask of the modem router. Combined with the IP address, the IP subnet mask allows a device to know which other addresses are local to it, and which must be reached through a gateway or modem router.

Advanced LAN configuration parameters could be found under **Network/Interfaces**, under LAN parameters click **Edit > Advanced Settings**.

### 9.3 WAN configuration

By default the WAN is in **automatic** mode, you can also set it to **Manual** or **PPPoE**



#### 9.3.1 Manual




- » **IPv4 Address:** The IP address to assign to the selected WAN interface.
- » **IPv4 Netmask:** The Subnet mask of the IP address above.
- » **IPv4 Gateway:** The gateway to assign this WAN interface.
- » **DNS server:** The DNS server for the WAN interface.

#### 9.3.2 Automatic

The WAN will be setup automatically.

### 9.3.3 PPPoE (Point-to-Point Protocol over Ethernet)


Acquire IP Address automatically from your Provider using the PPPoE protocol.



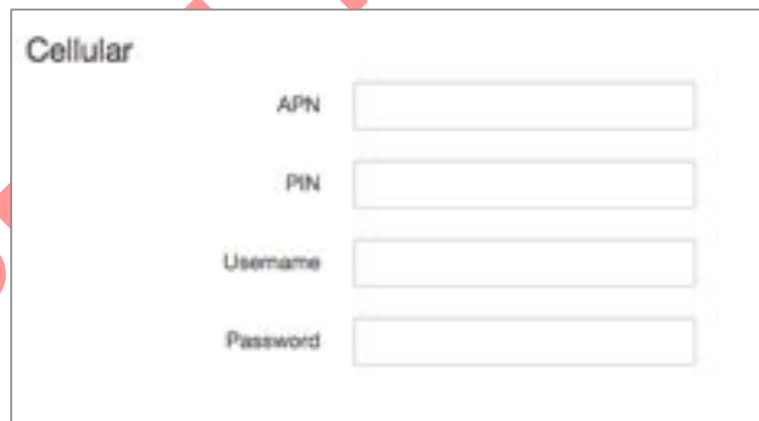
The screenshot shows a 'WAN' configuration window. It contains three fields: 'Protocol' is a dropdown menu set to 'PPPoE'; 'Username' is an empty text input field; and 'Password' is an empty text input field.

Many DSL providers use PPPoE. To acquire an IP Address from the PPPoE server, a username and password are required. Ask your provider for your username and password if you don't know them.

Advanced WAN configuration parameters could be found under **Network/Interfaces**, under WAN parameters click **Edit > Advanced Settings**.

 Selecting PPPoE in the quick setup will require some advance configurations.

## 9.4 Cellular Setup



The screenshot shows a 'Cellular' configuration window. It contains four fields: 'APN' is an empty text input field; 'PIN' is an empty text input field; 'Username' is an empty text input field; and 'Password' is an empty text input field.


You can enter the cellular settings like APN, SIM PIN for security, Username and Password corresponding to your cellular connection (SIM Card), which you will receive from your Cellular Operator.

- » **APN:** Access Point Name, enter the access point name provided by your network operator
- » **PIN:** If required please enter your SIM card's PIN code

- » **Username and Password:** If required enter login credentials provided by your network operator

Advanced cellular configuration parameters could be found under **Network/Interfaces**, under 3G parameters click **Edit > Advanced Settings**.

## 9.5 Wireless (Wi-Fi)



The screenshot shows a configuration window titled "WIRELESS". It contains two input fields: "SSID" with the value "Maestro E200" and "Password" with the value "W1rele\$\$".

By default, the Wi-Fi is in Access Point mode:

- » **Default SSID:** Maestro E200
- » **Default Password:** W1rele\$\$

The E200 Wi-Fi can be configured either as

- » An Access Point, in which case, the Wi-Fi acts as a LAN or
- » As a Wi-Fi Client in which case, the E200 connects to an external Wi-Fi source which will be the source of Internet or WAN for the E200.

Default security settings used are WPA-PSK, WPA2-PSK Mixed Mode. You can choose your encryption and change your password accordingly. Bring up on boot tick box in Wireless section by default is enabled. Ticking the box will enable the Wi-Fi (Wireless) interface every time the Router Reboots.


Wi-Fi section from this Quick setup page will disappear when

- The default Wi-Fi interface is removed from Network / Wi-Fi page
- When you scan for available Wi-Fi networks and convert the Router to Client Mode.



If you create multiple access point networks (Multiple SSID's), the additional Wi-Fi networks created will not show up in Quick Setup.

Advanced Wi-Fi configuration parameters could be found under **Network/Wi-Fi**, under Wireless Overview parameters click **Edit > Advanced Settings**.

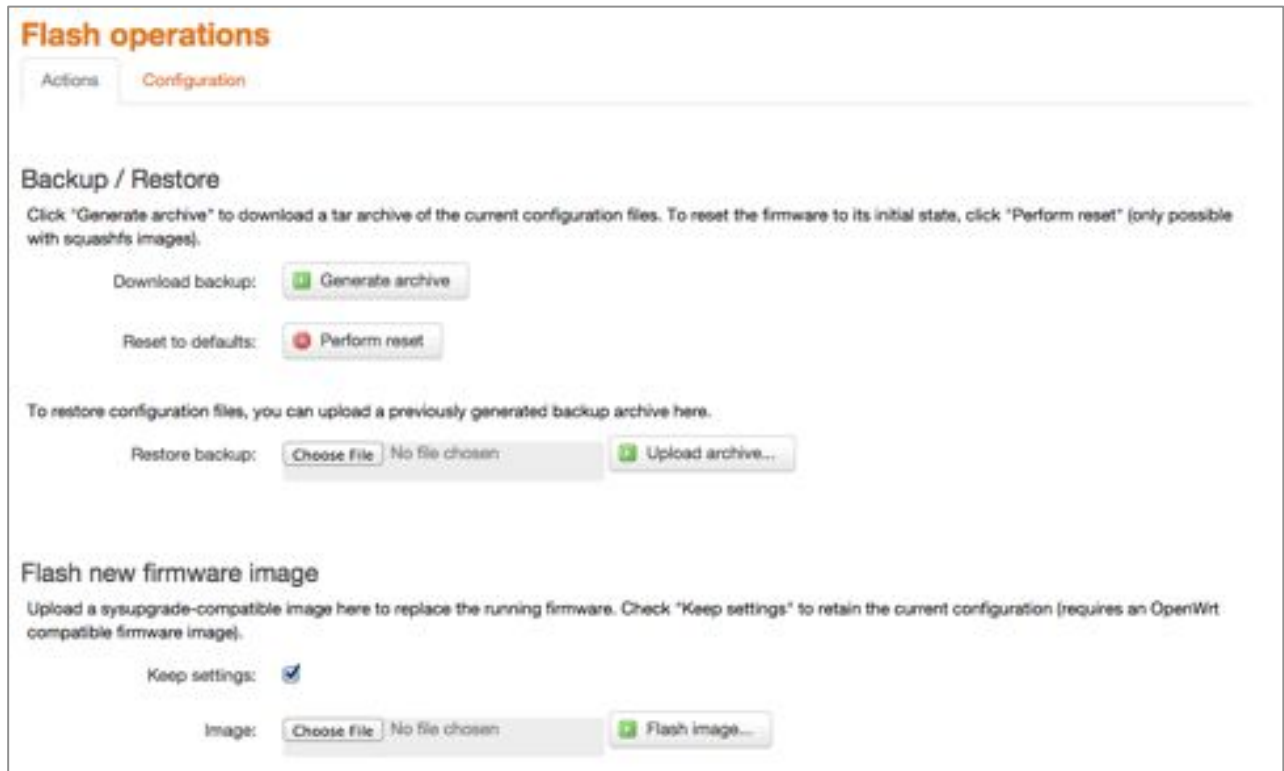
 Once the Quick Setup is done, you will have basic LAN connectivity, Internet access over WAN and/or Cellular and Wi-Fi will be configured as Access Point.

To verify that your setup were successfully applied and your router is now running go to **Network/Interfaces**.

# 10 E205 advanced configuration

## 10.1 Flashing firmware and updating your device

E200 Series can be updated through the web interface. Go to **System/Backup / Flash Firmware**.



**Flash operations**

Actions Configuration

**Backup / Restore**

Click "Generate archive" to download a tar archive of the current configuration files. To reset the firmware to its initial state, click "Perform reset" (only possible with squashfs images).

Download backup:

Reset to defaults:

To restore configuration files, you can upload a previously generated backup archive here.

Restore backup:  No file chosen

**Flash new firmware image**

Upload a sysupgrade-compatible image here to replace the running firmware. Check "Keep settings" to retain the current configuration (requires an OpenWrt compatible firmware image).

Keep settings: ☒

Image:  No file chosen

Under **Flash new firmware image**, click on Choose File and locate the .bin file on your computer.



**Flash new firmware image**

Upload a sysupgrade-compatible image here to replace the running firmware. Check "Keep settings" to retain the current configuration (requires an OpenWrt compatible firmware image).

Keep settings: ☒

Image:  **maestro-rami...-270215.bin**

Once the file located on the computer click **Flash image...**



### Flash Firmware - Verify

The flash image was uploaded. Below is the checksum and file size listed, compare them with the original file to ensure data integrity. Click "Proceed" below to start the flash procedure.

- Checksum: 486476dc8ec5dd1585238391beb18ce2
- Size: 6.50 MB (7.69 MB available)
- Configuration files will be kept.

Cancel Proceed

Click **Proceed**

### System - Flashing...

The system is flashing now.

**DO NOT POWER OFF THE DEVICE!**

Wait a few minutes before you try to reconnect. It might be necessary to renew the address of your computer to reach the device again, depending on your settings.



Waiting for changes to be applied...

The system will now be flashing.



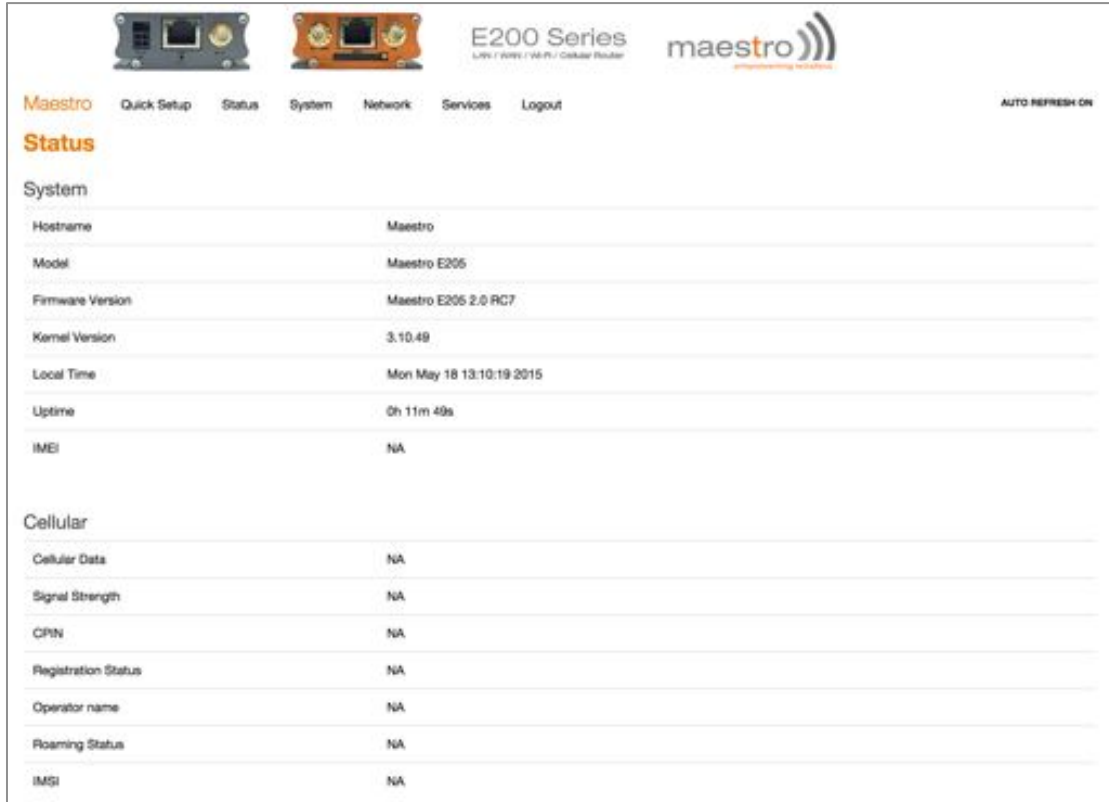
**DO NOT POWER OFF THE DEVICE!**

Wait a few minutes before you try to reconnect. It might be necessary to renew the address of your computer to reach the device again, depending on your settings.

## 11 Status pages explained

- » Open your browser on your computer with the address <http://192.168.1.1>
- » Enter the default login “admin” and password “admin”

By clicking on **Status** or **Overview** the page below will be displayed:



The screenshot shows the Maestro E200 Series web interface. At the top, there are images of the device and the text 'E200 Series' and 'maestro'. Below this is a navigation bar with links: Quick Setup, Status, System, Network, Services, and Logout. The 'Status' page is active, showing two sections: System and Cellular. The System section contains a table with fields like Hostname, Model, Firmware Version, Kernel Version, Local Time, Uptime, and IMEI. The Cellular section contains a table with fields like Cellular Data, Signal Strength, CPIN, Registration Status, Operator name, Roaming Status, and IMSI.

System	
Hostname	Maestro
Model	Maestro E205
Firmware Version	Maestro E205 2.0 RC7
Kernel Version	3.10.49
Local Time	Mon May 18 13:10:19 2015
Uptime	0h 11m 49s
IMEI	NA

Cellular	
Cellular Data	NA
Signal Strength	NA
CPIN	NA
Registration Status	NA
Operator name	NA
Roaming Status	NA
IMSI	NA

The Status menu is divided in 5 sub-menus:

- » Overview
- » Firewall
- » Routes
- » System Log
- » Real time Graphs

## 11.1 Overview:

### 11.1.1 System

The system tabs displays all information related to your device hardware and software version as well as basic settings:

Status	
System	
Hostname	Maestro
Model	Maestro E205
Firmware Version	Maestro E205 2.0 RC7
Kernel Version	3.10.49
Local Time	Mon May 18 13:11:14 2015
Uptime	0h 12m 44s
IMEI	NA

ITEM	DEFINITION
Hostname	The name assigned to your router
Model	Model of your router
Firmware Version	The firmware version that is currently residing and controlling the router
Kernel Version	The Linux kernel version on the router
Local time	The date and time set up on the router
Uptime	The time in HH: MM: SS, for which the router is working since last power ON
IMEI	The IMEI (International Mobile Equipment Identity) of the router, a unique code for identifying devices on a GSM network.

### 11.1.2 Cellular

The Cellular group provides the status of the SIM card inserted in the router.

Cellular	
Cellular Data	NA
Signal Strength	NA
CPIN	NA
Registration Status	NA
Operator name	NA
Roaming Status	NA
IMSI	NA

ITEM	DEFINITION
Signal Strength	Scale from 0 to 32. For a good cellular data connection Signal Strength must be 15 or above.
Registration Status	Indicates if the device is registered on the cellular network
Operator Name	Name of the cellular service provider
Roaming Status	Indicate if the device is roaming on another network
Uptime	The time in HH: MM: SS, for which the router is working since last power ON
Imsi	The International Mobile Subscriber Identity or IMSI is used to identify the user of a cellular network and is a unique identification associated with all cellular networks.

### 11.1.3 Memory

The Memory group provides information on the memory in KB available with the router.

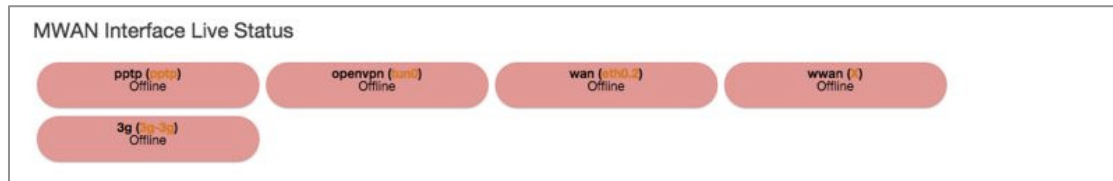
Memory	
Total Available	13508 kB / 29460 kB (45%)
Free	3088 kB / 29460 kB (10%)
Cached	7820 kB / 29460 kB (26%)
Buffered	2600 kB / 29460 kB (8%)

ITEM	DEFINITION
Total available	Total available RAM memory
Free	Free RAM memory
Cached	Memory used to cache internal router data
Buffered	Amount of memory used as an internal router buffer



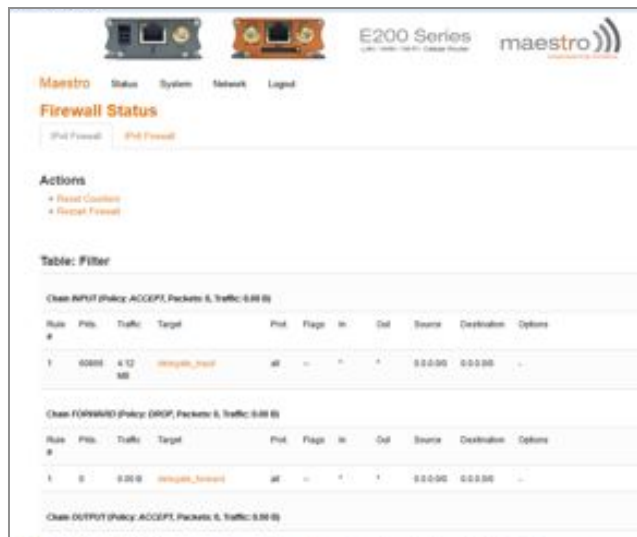
### 11.1.7 MWAN Interface Live status

MWAN Interface provides a live view of all the available and connected WAN options. In the above screenshot, you can see that the interfaces marked in Green are live and connected while the ones in red are available but offline.



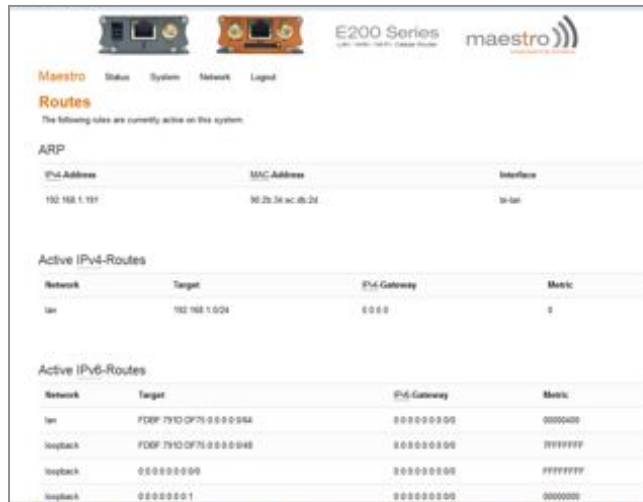
## 11.2 Firewall

You can verify parameters related to firewall and its settings here. Status of firewalls for both IPv4 and IPv6 can be seen here.



## 11.3 Routes

The rules that are currently active on this E205 are shown here.



Maestro Routes			
The following rules are currently active on this system:			
<b>ARP</b>			
IP Address	MAC Address	Interface	
192.168.1.191	98:2b:34:ac:db:2d	lan	
<b>Active IPv4-Routes</b>			
Network	Target	IPv4 Gateway	Metric
lan	192.168.1.0/24	0.0.0.0	0
<b>Active IPv6-Routes</b>			
Network	Target	IPv6 Gateway	Metric
lan	FD0F:791D:CF76:000:0000:0000:0000:0000	00000000	00000000
loopback	FD0F:791D:CF76:000:0000:0000:0000:0000	00000000	FFFFFFFF
loopback	00000000	00000000	FFFFFFFF
loopback	00000001	00000000	00000000

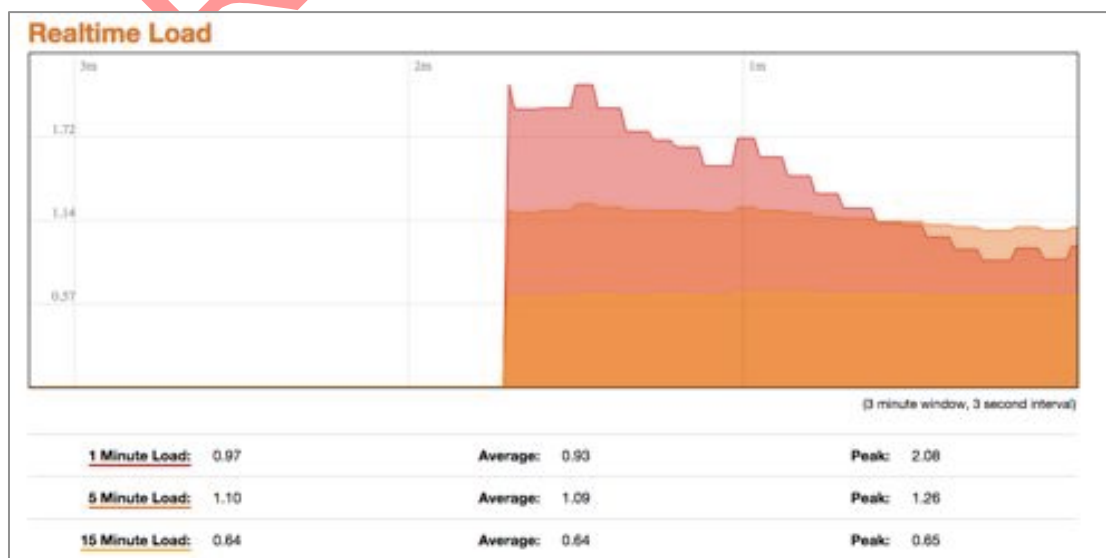
## 11.4 System Log

The log of all configured events regarding this E200 is displayed here.

## 11.5 Realtime graphs

This screen provides real time graphs of:

ITEM	DEFINITION
Load	Load indicates the load on CPU
Traffic	Traffic indicates the WAN side incoming and outgoing traffic
Wireless	Wireless indicates the traffic on Wi-Fi irrespective on whether Wi-Fi is used as an access point (LAN) or Client (WAN)
Connections	This page gives an overview over currently active network connections.

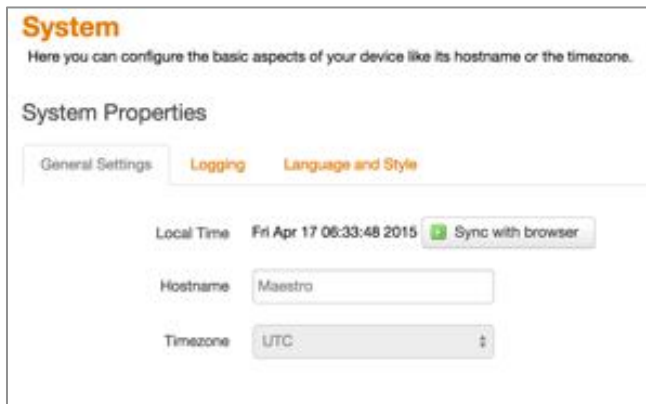


# 12 System

## 12.1 System properties

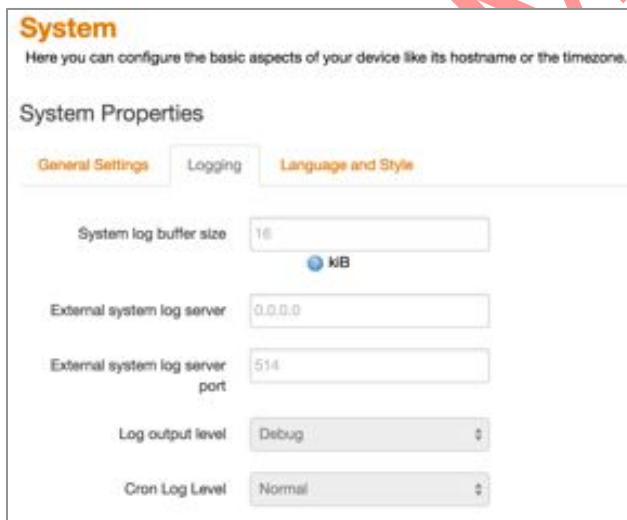
### 12.1.1 General Setting

This page allows you to configure the basic aspects of your device like its hostname or the time zone.



### 12.1.2 Logging

Parameters about system log like buffer size and log output level can be set here.



ITEM	DEFINITION	
System log buffer size	Size of log displayed under Status page / Logs. Default is 16KiB	
External system log server	IP address of any external TCP server where the real time log will be posted	
External system log server port	Port of any external TCP server where the real time log will be posted	
Log output level	Debug	Provides Information useful for



		developers for debugging the application,not useful during operations.
	Info	Normal operational messages which provide information which can be used for general purposes like reporting.
	Notice	Events which are unusual but not an error. Used to spot potential problems. Immediate action is not necessary.
	Warning	Warning messages but not error, indicating that error might occur if action is not taken
	Error	Error conditions which should be relayed to developers or admins for resolution.
	Critical	Should be corrected immediately but indicates failure in the secondary systems.
	Alert	Problems which should be corrected immediately.
	Emergency	System is Unusable.
Cron Log Level	Debug	Helps you debug cron process which has failed during runtime.
	Normal	Normal informational messages
	Warning	Indicates some issues can happen or error could be generated in Cron process.

## 12.2 Administration

### 12.2.1 Router Password

On this page you can change the administrator password for accessing the device.



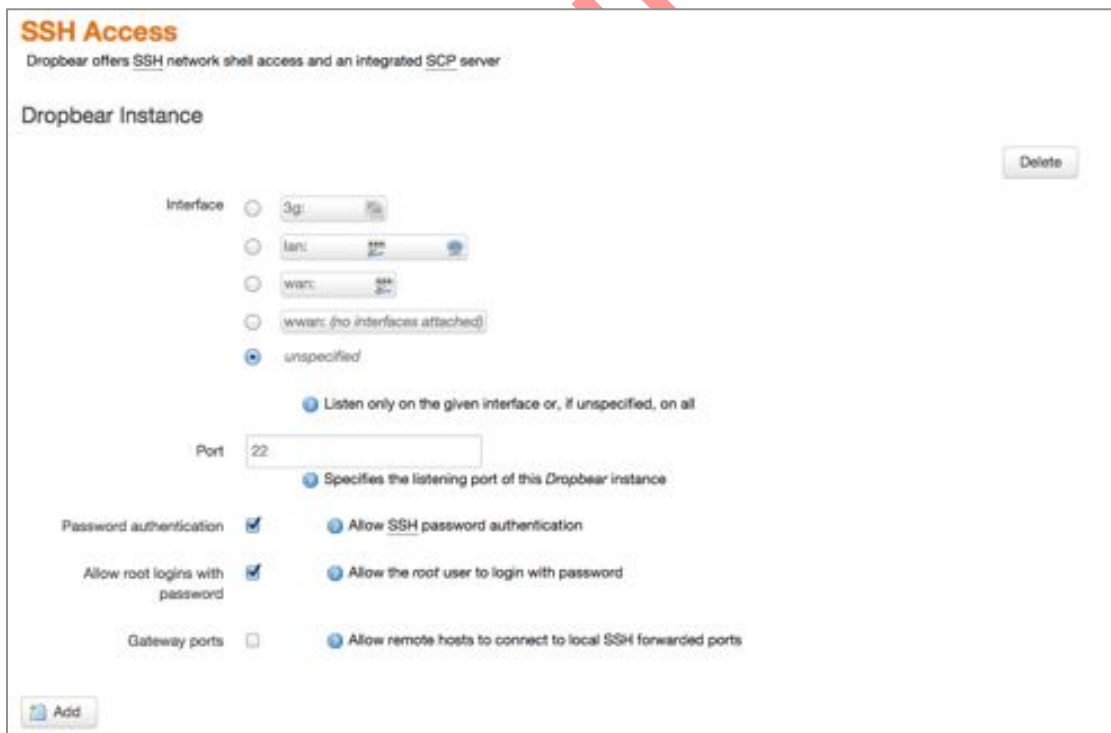
**Router Password**  
Changes the administrator password for accessing the device

Password

Confirmation

### 12.2.2 SSH access

The E200 integrate Dropbear which offers SSH network shell access and an integrated SCP server.



**SSH Access**  
Dropbear offers SSH network shell access and an integrated SCP server

Dropbear Instance Delete

Interface ☐ 3g: ☐ lan: ☐ wlan: ☐ wlan: (no interfaces attached) ☒ unspecified

☐ Listen only on the given interface or, if unspecified, on all

Port  ☐ Specifies the listening port of this Dropbear instance

Password authentication ☒ ☐ Allow SSH password authentication

Allow root logins with password ☒ ☐ Allow the root user to login with password

Gateway ports ☐ ☐ Allow remote hosts to connect to local SSH forwarded ports

Add

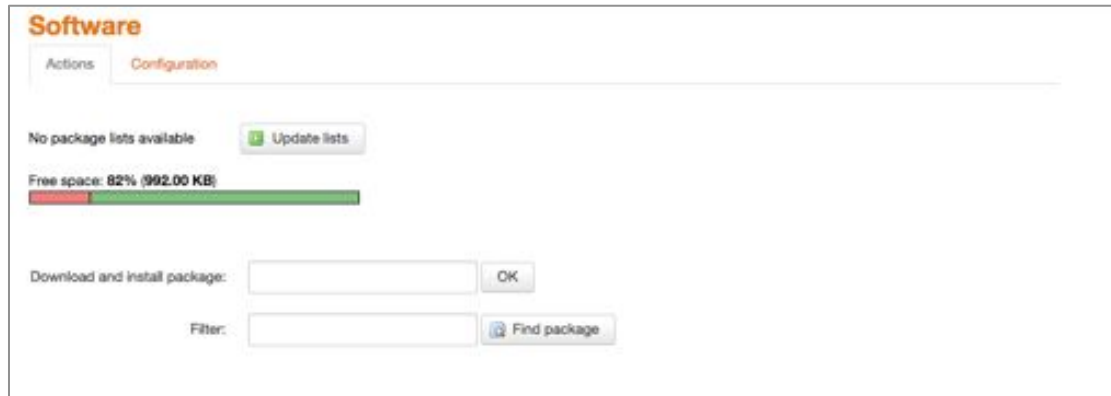
You can also set parameters for Dropbear Instance for SSH Access and you can paste public SSH-Keys (one per line) for SSH public-key authentication.

By default the remote SSH access over WAN is disabled, you need to send an SMS from a registered admin number to enable remote SSH access.

Please refer to section Services / SMS

## 12.3 Software

Software page give you access to the list of package installed, you can also add package or filter packaged installed on your router.

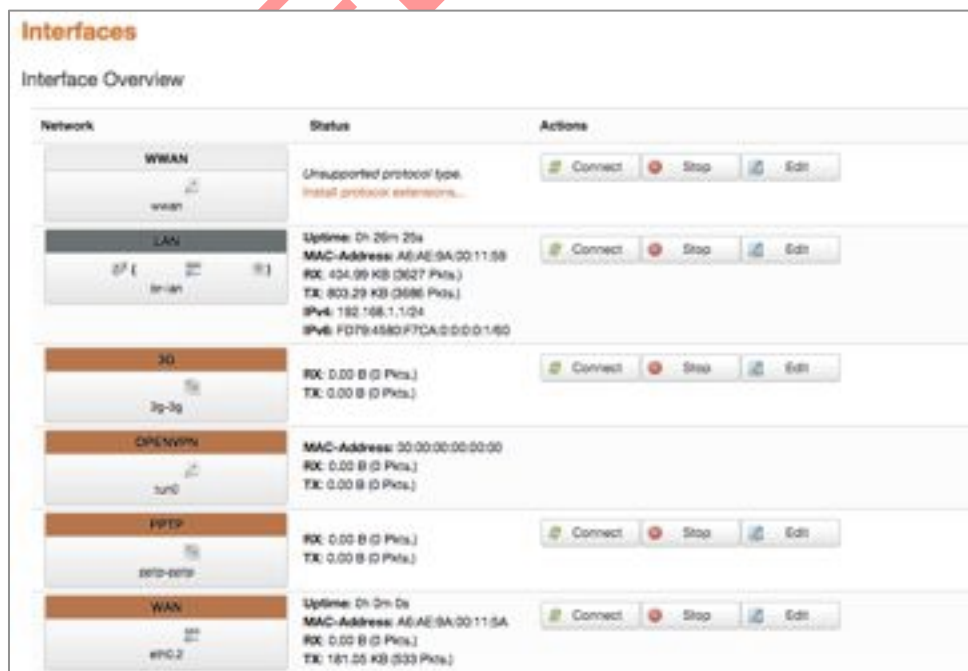


## 13 Network

### 13.1 Interfaces

The E200 has various physical interfaces namely,

- »» Wired LAN
- »» Wired WAN
- »» Wi-Fi
- »» Cellular



In addition to these pre-created interfaces, you can add Virtual interfaces. You can also delete those virtual interfaces

However, you cannot delete the LAN, WAN and cellular interface.

When Wi-Fi is set-up as Client, interface WWAN will turn active.

Next to the interfaces, there is information regarding the interfaces like connection time, Packets sent, Packets received and IP address.

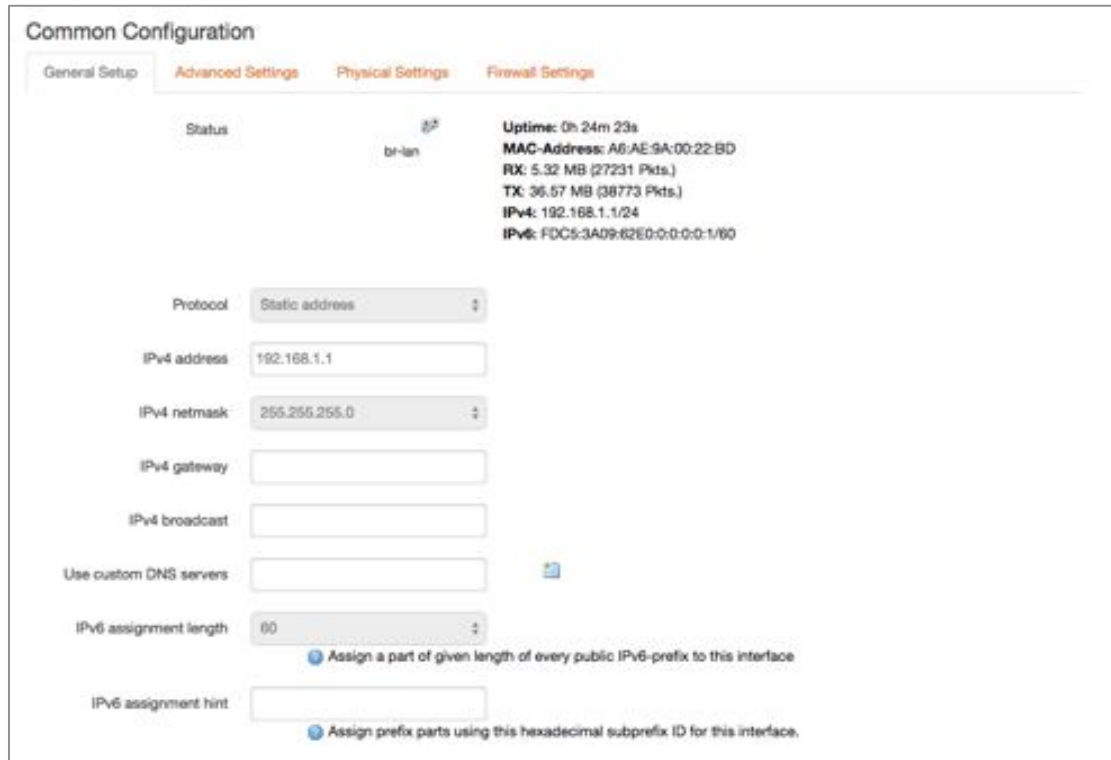
Connect button will connect the interface or reconnect if already connected. Stop will stop the interface. Click Edit to change the Interface Parameters.


PRELIMINARY

## 13.2 LAN interface

### 13.2.1 General Setup

Click **edit** next to the LAN interface to access configurations



ITEM	DEFINITION
Protocol	 Be absolutely sure that you choose <b>Static address</b> for LAN else you will end up losing access to Web-Interface.  Accidentally if you choose any other option other than Static address for LAN and loose access to the Web Page. Please perform a Hardware factory reboot.
IPv4 address	The IPv4 address of your LAN interface
IPv4 netmask	The IPv4 netmask of your LAN interface
IPv4 broadcast	
Use custom DNS server	
IPv6 assignment length	Assign a part of given length of every public IPv6-prefix to this interface
IPv6 assignment hint	Assign prefix parts using this hexadecimal subprefix ID for this interface.

### 13.2.2 Advanced Settings

**Interfaces - LAN**

On this page you can configure the network interfaces. You can bridge several interfaces by ticking the "bridge interfaces" field and enter the names of several network interfaces separated by spaces. You can also use VLAN notation `INTERFACE.VLANNR` (e.g.: `eth0.1`).

**Common Configuration**

[General Setup](#) [Advanced Settings](#) [Physical Settings](#) [Firewall Settings](#)


Bring up on boot ☒

Use builtin IPv6-management ☒

Override MAC address

Override MTU

Use gateway metric

ITEM	DEFINITION
Bring up boot	<p>This option will enable LAN interface to start on every boot.</p> <p> Please be aware that un-ticking this box will not bring up the LAN interface in the next boot cycle and you will no longer be able to access the Web Interface of the Router until you perform a Factory Reboot.</p>
Use built-in IPv6 management	If ticked it enables IPv6 support in the LAN side.
Override MAC address	
Override MTU	
Use gateway metric	<p>It is advisable to enter metric for every interface.</p> <p>Metric indicates the priority of the interface. The lower the value the higher the priority of the interface. If no metric is added, it will assume a default value of "0"</p> <p>The default metric for LAN interface is "0"</p>

### 13.2.3 Physical Settings



**Interfaces - LAN**

On this page you can configure the network interfaces. You can bridge several interfaces by ticking the "bridge interfaces" field and enter the names of several network interfaces separated by spaces. You can also use VLAN notation INTERFACE.VLANID (e.g.: eth0.1).

**Common Configuration**

General Setup   Advanced Settings   **Physical Settings**   Firewall Settings

Bridge interfaces ☒ creates a bridge over specified interface(s)

Enable STP ☐ Enables the Spanning Tree Protocol on this bridge


Interface

- ☐ Ethernet Switch: "eth0"
- ☒ VLAN Interface: "eth0.1" (lan)
- ☐ VLAN Interface: "eth0.2" (wan)
- ☐ Ethernet Adapter: "gnetap0"
- ☒ Wireless Network Master "Maestro E200" (lan)
- ☐ Custom Interface:



The configuration shown above is the default configuration. Unless you are an advanced user, we recommend not making any changes to this page.

### 13.2.4 Firewall Settings



**Interfaces - LAN**

On this page you can configure the network interfaces. You can bridge several interfaces by ticking the "bridge interfaces" field and enter the names of several network interfaces separated by spaces. You can also use VLAN notation INTERFACE.VLANID (e.g.: eth0.1).

**Common Configuration**

General Setup   Advanced Settings   Physical Settings   **Firewall Settings**

Create / Assign firewall-zone

- ☒ lan:
- ☐ wan:
- ☐ unspecified -or- create:

Choose the firewall zone you want to assign to this interface. Select unspecified to remove the interface from the associated zone or fill out the create field to define a new zone and attach the interface to it.



It is extremely critical that you assign every interface to a Firewall Zone. By default LAN is assigned to a LAN firewall Zone.

You can also create a different Firewall Zone and assign your interface to the New Created Zone.


Why creating a different Firewall Zone?

You can create a different VLAN interface and assign the same to a different Firewall Zone. You can then set rules and policies in the firewall section on how you want to channelize the Traffic between two LAN zones. For details, please refer to the firewall section.

### 13.2.5 DHCP server

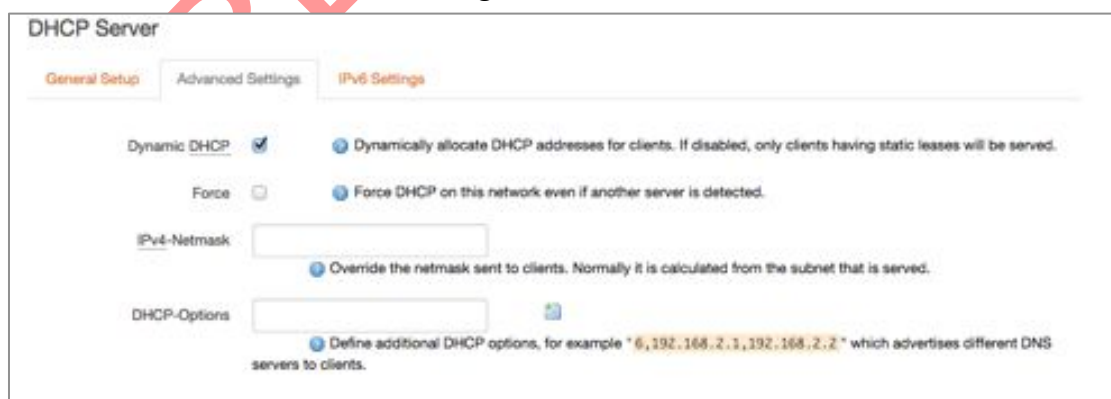
Here you can set your LAN side DHCP network.

#### 13.2.5.1 General Setup



ITEM	DEFINITION
Ignore interface	Disable DHCP for this interface. Please note that if you disable DHCP for this interface, all the LAN devices connected to the router should have a static LAN IP configured
Start	Lowest leased address as offset from the network address.
Limit	Maximum number of leased addresses.
Leasetime	Expiry time of leased addresses, minimum is 2 minutes. Please note that the IP address allocated by the router will disappear from the Wi-Fi / Overview / Associates stations list only after individual lease time for each IP expires.

#### 13.2.5.2 Advanced Settings



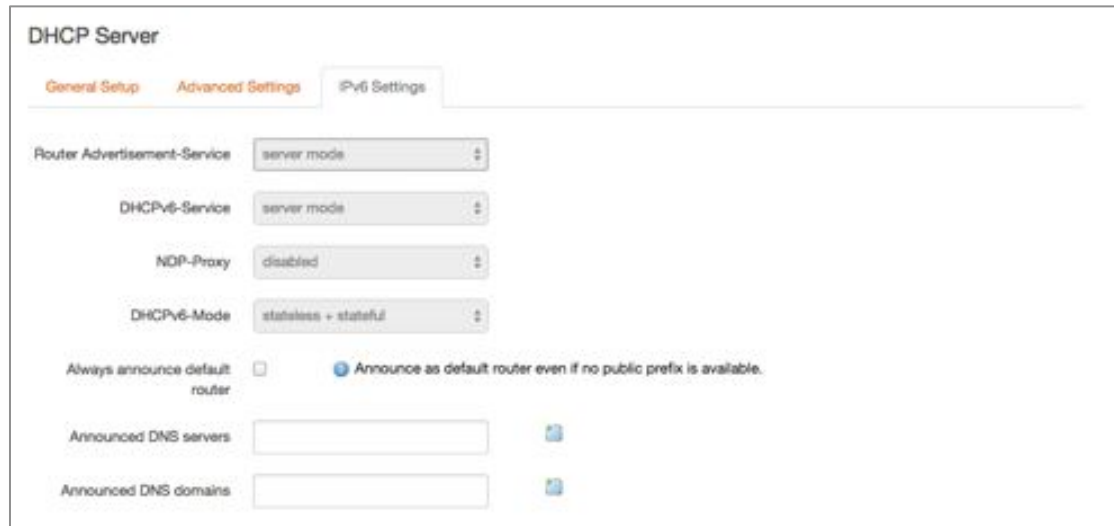
ITEM	DEFINITION
Dynamic DHCP	Dynamically allocate DHCP addresses for clients. If disabled, only clients having static leases will be served.
Force	Force DHCP on this network even if another server is detected.



IPv4-Netmask	Override the netmask sent to clients. Normally it is calculated from the subnet that is served.
DHCP-Options	Define additional DHCP options, for example "6,192.168.2.1,192.168.2.2" which advertises different DNS servers to clients.

### 13.2.5.3 IPv6 Settings

This help will help you setup a DHCP IPv6 network on your LAN side.



ITEM	DEFINITION	
Router Advertisement-Service	Disabled	
	server mode	
	relay mode	
	hybrid mode	
DHCPv6-Service	Disabled	
	server mode	
	relay mode	
	hybrid mode	
NDP-Proxy	Disabled	
	relay mode	
	hybrid mode	
	stateless	
DHCPv6-Mode	stateless + stateful	
	Stateful only	
Always announce default router	If ticked Announce as default router even if no public prefix is available.	
Announced DNS servers		
Announced DNS domains		

## 13.3 Wired WAN interface

Click **edit** next to the wired WAN interface to access configurations

### 13.3.1 General Setup

### Interfaces - WAN

On this page you can configure the network interfaces. You can bridge several interfaces by ticking the "bridge interfaces" field and enter the names of several network interfaces separated by spaces. You can also use VLAN notation `INTERFACE.VLANID` (e.g.: `eth0.1`).

#### Common Configuration

General Setup
Advanced Settings
Physical Settings
Firewall Settings

Status

eth0.2

Uptime: 1h 23m 6s  
MAC-Address: AB:AE:9A:00:22:BE  
RX: 96.69 MB (68942 Pkts.)  
TX: 13.81 MB (62013 Pkts.)  
IPv4: 192.168.81.142/24

Protocol
DHCP client

Hostname to send when requesting DHCP
Maestro

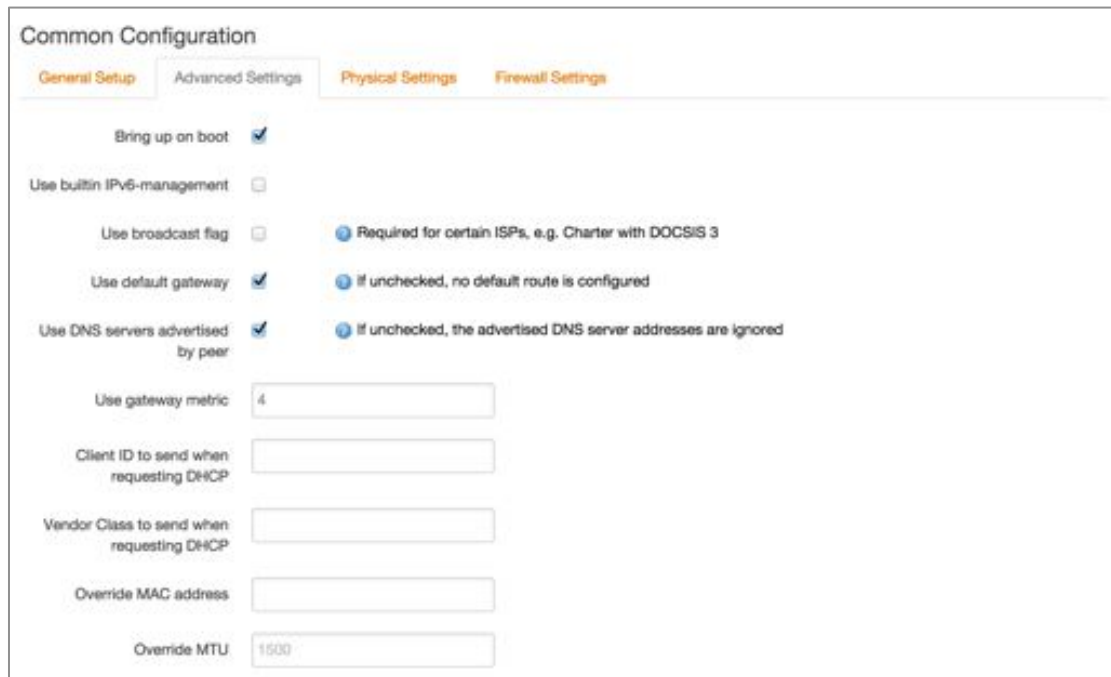
ITEM	DEFINITION
Static address	This option will enable the user the assign WAN side IP address to E200. Be sure that the IP that you enter in Static address mode is in the same LAN domain as the Router or ISP that it is connected to.
DHCP client	This will enable the Router to acquire WAN IP from the DHCP Router it is connected to
PPPoE	This option will enable dial-up over Ethernet network. Your ISP should support PPPoE and you need appropriate login credentials for the same
PPPoATM	This is a specialized protocol supported by a few ISPs. You need appropriate login credentials from your ISP for the same



Do not select any other protocol other than DHCP, Static, PPPoE or PPPoATM.

### 13.3.2 Advanced Settings

The configuration options are mostly similar to the LAN options.



**Common Configuration**

General Setup | **Advanced Settings** | Physical Settings | Firewall Settings

Bring up on boot ☒

Use builtin IPv6-management ☐

Use broadcast flag ☐ Required for certain ISPs, e.g. Charter with DOCSIS 3

Use default gateway ☒ If unchecked, no default route is configured

Use DNS servers advertised by peer ☒ If unchecked, the advertised DNS server addresses are ignored

Use gateway metric

Client ID to send when requesting DHCP

Vendor Class to send when requesting DHCP

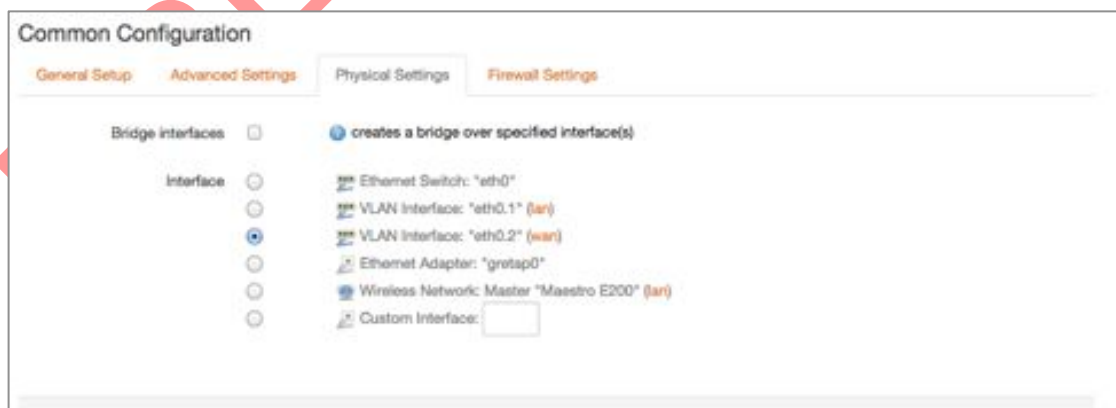
Override MAC address

Override MTU

ITEM	DEFINITION
Use Gateway metric	The default value is "3". Between all the available physical WANs, this interface has the highest default priority.

The Load Balancer will use these Metric Values to determine priority of a particular WAN.

### 13.3.3 Physical Settings



**Common Configuration**

General Setup | Advanced Settings | **Physical Settings** | Firewall Settings

Bridge interfaces ☐ creates a bridge over specified interface(s)

Interface ☒ Ethernet Switch: "eth0"

☐ VLAN Interface: "eth0.1" (lan)

☐ VLAN Interface: "eth0.2" (wan)

☐ Ethernet Adapter: "gnetap0"

☐ Wireless Network: Master "Maestro E200" (lan)

☐ Custom Interface:



Unless you are an advanced user do not change setting of this page.

### 13.3.4 Firewall Settings



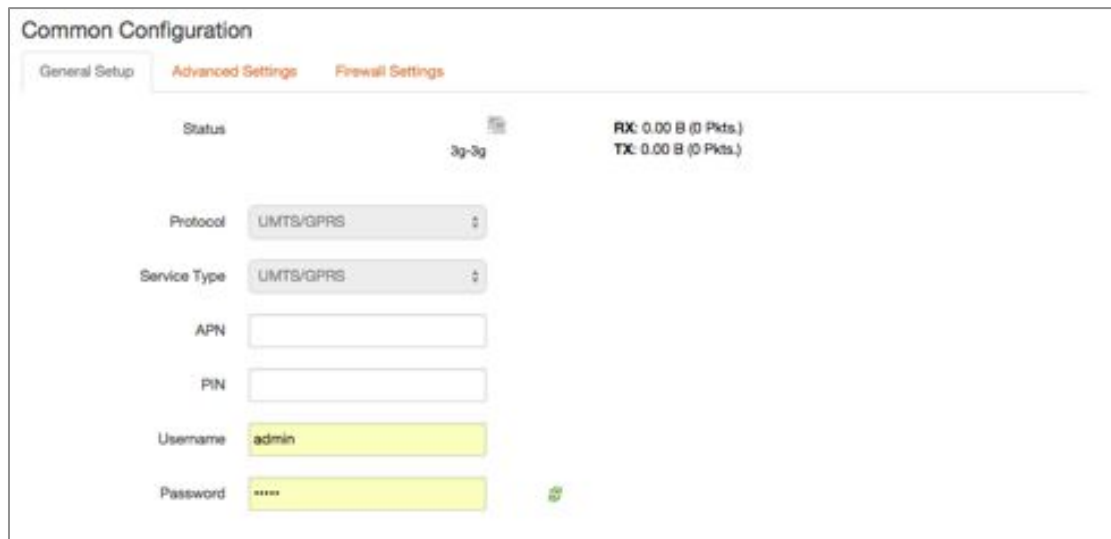

It is extremely critical that you assign every interface to a Firewall Zone. By default the WAN interfaces is assigned to a 'wan' firewall zone. In firmware version 2.0, you cannot create a WAN side firewall zone (Planned in firmware release 2.1). Hence it is advisable to keep this configuration untouched.


PRELIMINARY

## 13.4 Cellular interface (3G or 4G)

Click **edit** next to the 3G interface to access configurations

### 13.4.1 General Setup



ITEM	DEFINITION	
Protocol	 Be absolutely sure that you select only UMTS/GPRS incase of E205 and UMTS/GPRS or EVDO in case of E206. Please do not select any other protocol.	
Service Type	UMTS/GPRS	The router will select the best service available
	UMTS	The router will connect only to 3G/ UMTS network
	GPRS	The router will connect only to GPRS network
APN	Enter the APN provided by your network operator	
PIN	Enter the SIM PIN if any	
Username	Username for your SIM card if any	
Password	Password for your SIM card if any	

### 13.4.2 Advanced Settings

**Common Configuration**

**General Setup** | **Advanced Settings** | **Firewall Settings**

Bring up on boot ☒

Use builtin IPv6-management ☒

Enable IPv6 negotiation on the PPP link ☐

Modem init timeout  Maximum amount of seconds to wait for the modem to become ready

Use default gateway ☒ If unchecked, no default route is configured

Use gateway metric

Use DNS servers advertised by peer ☒ If unchecked, the advertised DNS server addresses are ignored

LCP echo failure threshold  Presume peer to be dead after given amount of LCP echo failures, use 0 to ignore failures

LCP echo interval  Send LCP echo requests at the given interval in seconds, only effective in conjunction with failure threshold

Inactivity timeout  Close inactive connection after the given amount of seconds, use 0 to persist connection

ITEM	DEFINITION
Bring up boot	Keep the tick on for “Bring up on Boot” if you want the 3G Interface to be live on every reboot.
Use gateway metric	Enter the gateway metric if you wish to use this WAN as a failover
LCP echo failure threshold	Enter LCP details only if you have the correct information on the same from your operator else leave them to their default value
Inactivity timeout	“0” value will keep the 3G connection always on. Any other value ‘X’ will turn off the 3G connection after ‘X’ seconds of inactivity

### 13.4.3 Firewall Settings



### 13.5 Add VPN interface

In addition to configuring the above-mentioned 3 basic interfaces, you can add virtual interfaces by clicking on the “Add VPN Interface” Button.



You can add either PPTP or L2TP interface.

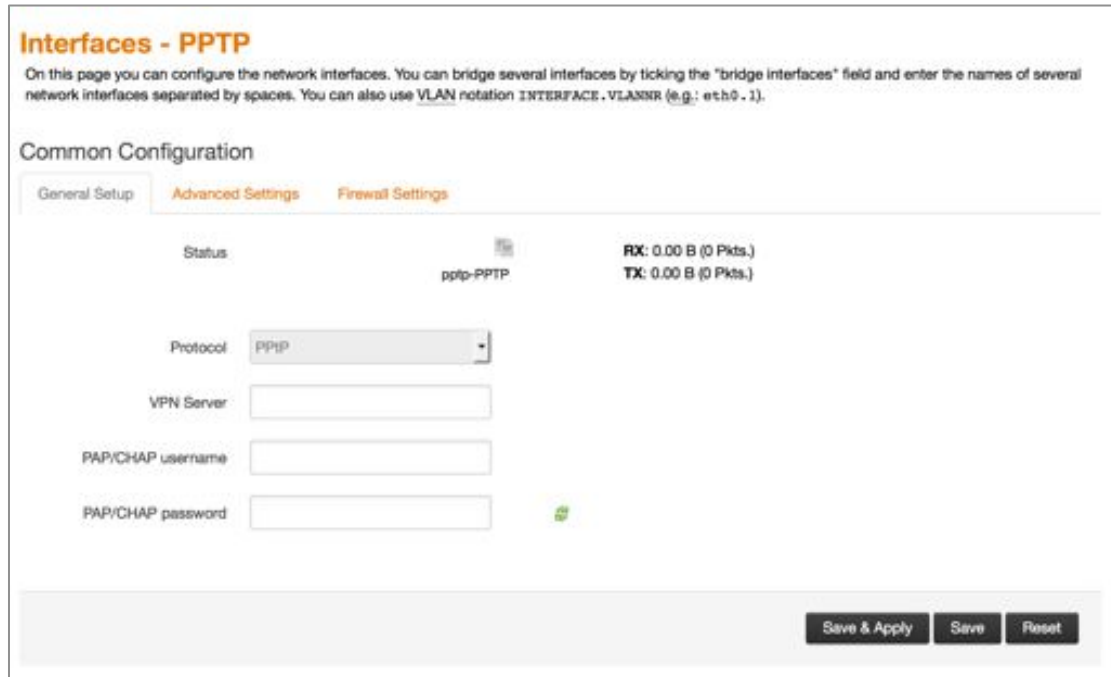
For more details on adding PPTP or L2TP interface, please refer to the PPTP and L2TP configuration guides.

## 13.5.1 PPTP

### 13.5.1.1 General Setup

Point-to-Point Tunneling Protocol (PPTP) is used for creating VPN tunnels over the Internet between two networks.

When you create a new VPN interface (refer to chapter 13.5) select PPTP



**Interfaces - PPTP**

On this page you can configure the network interfaces. You can bridge several interfaces by ticking the "bridge interfaces" field and enter the names of several network interfaces separated by spaces. You can also use VLAN notation INTERFACE.VLANNR (e.g.: eth0.1).

**Common Configuration**

General Setup | Advanced Settings | Firewall Settings

Status: pptp-PPTP RX: 0.00 B (0 Pkts.)  
TX: 0.00 B (0 Pkts.)

Protocol: PPTP

VPN Server:

PAP/CHAP username:

PAP/CHAP password:

**Save & Apply** **Save** **Reset**

Enter the IP address of the VPN server in your network, followed by the username and password for this server. Click **save and apply** to add the PPTP VPN interface.



### 13.5.1.2 Advanced Settings

#### Interfaces - PPTP

On this page you can configure the network interfaces. You can bridge several interfaces by ticking the "bridge interfaces" field and enter the names of several network interfaces separated by spaces. You can also use VLAN notation INTERFACE.VLANID (e.g.: eth0.1).

#### Common Configuration

General Setup
Advanced Settings
Firewall Settings

Bring up on boot

☒

Use builtin IPv6-management

☒

Use default gateway

☒

If unchecked, no default route is configured

Use gateway metric

Use DNS servers advertised by peer

☒

If unchecked, the advertised DNS server addresses are ignored

LCP echo failure threshold

Presume peer to be dead after given amount of LCP echo failures, use 0 to ignore failures

LCP echo interval

Send LCP echo requests at the given interval in seconds, only effective in conjunction with failure threshold

Inactivity timeout

Close inactive connection after the given amount of seconds, use 0 to persist connection

Override MTU

Save & Apply

Save


Reset

ITEM	DEFINITION
Bring up boot	Keep the tick on for "Bring up on Boot" if you want the 3G Interface to be live on every reboot.
Use builtin IPv6-management	
Use gateway metric	Enter the gateway metric if you wish to use this WAN as a failover. If unchecked, no default route is configured.
Use DNS servers advertised by peer	If unchecked, the advertised DNS server addresses are ignored
LCP echo failure threshold	Enter LCP details only if you have the correct information on the same from your operator else use 0 to ignores failures
LCP echo interval	Send LCP echo requests at the given interval in seconds, only effective in conjunction with failure threshold
Inactivity timeout	"0" value will keep the 3G connection always on. Any other value 'X' will turn off the 3G connection after 'X' seconds of inactivity
Override MTU	


Press **Save and Apply** to apply your settings.


### 13.5.1.3 Firewall Settings

The firewall settings tabs show you the existing firewall zone.



You can choose to add the new interface to the WAN zone or create a new zone for the interface. Choose the appropriate button, and enter a name for the new zone and click on **SAVE AND APPLY** button.

 When you assign the new VPN interface to a zone it implies that the properties associated with that zone get applied to the VPN interface. The properties of a zone can be set under **Network > Firewall**. Please refer to the document on Firewalls and Port forwarding.

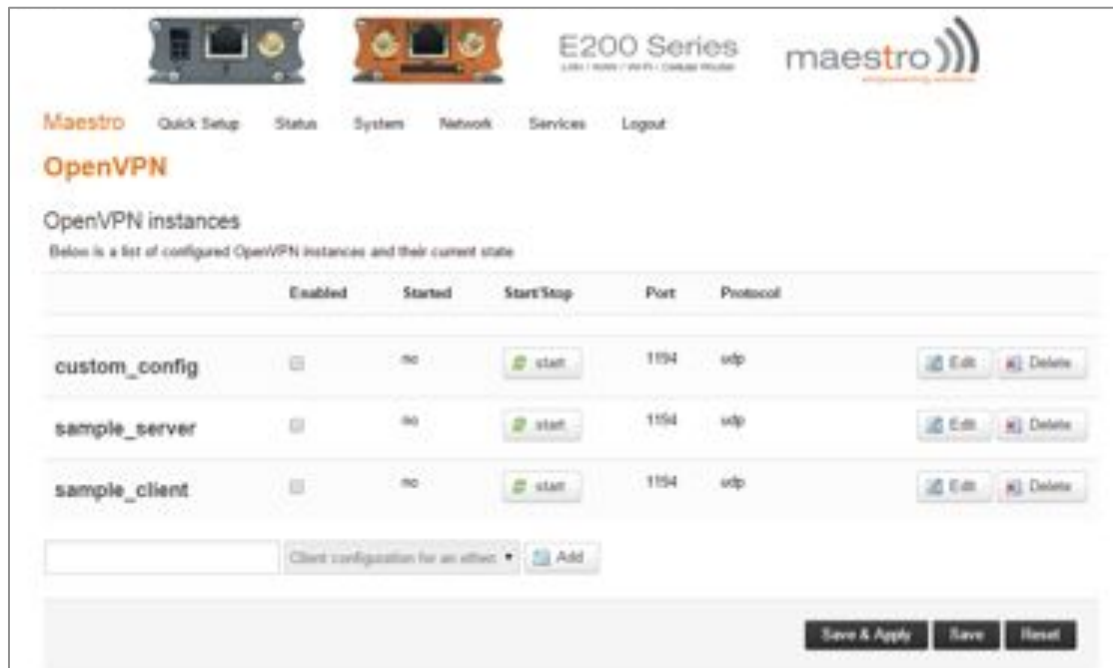
 **Implications of the VPN Interface:** Once you create a VPN interface on the router, it implies that the router is placed in the company network, even if it is located at a remote location. It can be accessed by a device in the company network for controlling it and acquiring any data associated with it.

### 13.5.2 OpenVPN

Open VPN is an open-source software application that implements virtual private network (VPN) techniques for creating secure point-to-point or site-to-site connections. It uses the Open SSL library to provide encryption of both the data and control channels. Open VPN can run over User Datagram Protocol (UDP) or Transmission Control Protocol (TCP) transports, multiplexing created SSL tunnels on a single TCP/UDP port. Open VPN fully supports IPv6 as protocol of the virtual network inside a tunnel and the Open VPN applications can also establish connections via IPv6. It has the ability to work through most proxy servers (including HTTP) and is good at working through Network address translation (NAT) and getting out through firewalls. The server configuration has the ability to "push" certain network configuration

options to the clients. These include IP addresses, routing commands, and a few connection options

E200 series supports Open VPN client, Server and Pass Through.



### 13.5.2.1 OpenVPN client

You can access the OpenVPN client under **Services / OpenVPN**.

OpenVPN Client will attach itself to the configured OpenVPN server over any available WAN interface. If the auto-connect function is enables, OpenVPN will not only connect over available WAN but also switch between WANs as and when one WAN fails-over to another and also auto starts in every reboot. This can be achieved by clicking on the '**enabled**' tick box.

You can either edit the sample client or create your own configuration from ground up.

Click on the Edit sample\_client and you will see the following menu



The screenshot shows the 'OpenVPN' configuration page for 'Instance "sample\_client"'. It includes a 'Switch to advanced configuration' link. The settings are as follows:

- verb:** 1 (Set output verbosity)
- tun\_ipv6:** ☐ (Make tun device IPv6 capable)
- nobind:** ☒ (Do not bind to local address and port)
- comp\_lzo:** yes (Use fast LZO compression)
- proto:** udp (Use protocol)
- client:** ☒ (Configure client mode)
- client\_to\_client:** ☐ (Allow client-to-client traffic)
- remote:** my\_server\_1:1194 (Remote host name or ip address)

At the bottom, there is an 'Additional Field' section with an 'Add' button.

This is the basic configuration menu, which you need to configure

ITEM	DEFINITION
Verb	Here you can set the output verbosity level. Higher the verbosity, higher will be the internal log details
Tun_ipv6	This will make the tunnel IPv6 capable
Nobind	Does not bin local address and port
Comp_lzo	Uses lzo compression

Proto	Allows you to choose between TCP and UDP
Client	Tick for client mode and on tick for Open VPN server Mode
Client to Client	Facilitates client to client communication for clients connected to the same VPN server
Remote	VPN server IP

In addition to the above configuration, you need to add the following for basic Open VPN client creation.



ITEM	DEFINITION
Port	Open VPN server Port
Ca	Authority certificate common to both Server and Client. Browse to the location where Ca certificate is located on the computer. Select and upload
Cert	Client certificate generated at the server side. Browse to the location where client.cert certificate is located on the computer. Select and upload
Key	Client key generated at the server side. Browse to the location where client key is located on the computer. Select and upload

(Select each and add to enter configuration)

Once you have the entire configuration loaded and certificates loaded, your screen should look like this:



The screenshot displays the Maestro E200 Series configuration interface. At the top, there are icons for a laptop and a server, followed by the text "E200 Series" and the Maestro logo. Below this is a navigation bar with tabs: "Maestro", "Quick Setup", "Status", "System", "Network", "Services", and "Logins".

The main configuration area includes several settings with help icons:

- version:** A dropdown menu set to "1", with a link "Get latest version".
- port:** A text input field set to "1100", with a link "TCP/UDP port for both local and remote".
- out\_port:** A text input field set to "0", with a link "Make out device IP configurable".
- remote:** A text input field set to "0", with a link "Do not bind to local address and port".
- compress:** A dropdown menu set to "off", with a link "Use real-time compression".
- proto:** A dropdown menu set to "udp", with a link "Use protocol".
- client:** A text input field set to "0", with a link "Configure client mode".
- client\_to\_client:** A text input field set to "0", with a link "Allow client-to-client traffic".
- remote:** A text input field set to "223.20.100.00", with a link "Remote host name or IP address".
- CA:** A section for "Uploaded File (3.35 KiB)" with a link "Certificate authority".
- cert:** A section for "Uploaded File (0.80 KiB)" with a link "Local certificate".
- key:** A section for "Uploaded File (0.00 KiB)" with a link "Local private key".

At the bottom, there is a section for "Additional Tools" with a dropdown menu and an "Add" button.

Once this is configured, go to advanced option and choose configuration as per your VPN scheme.

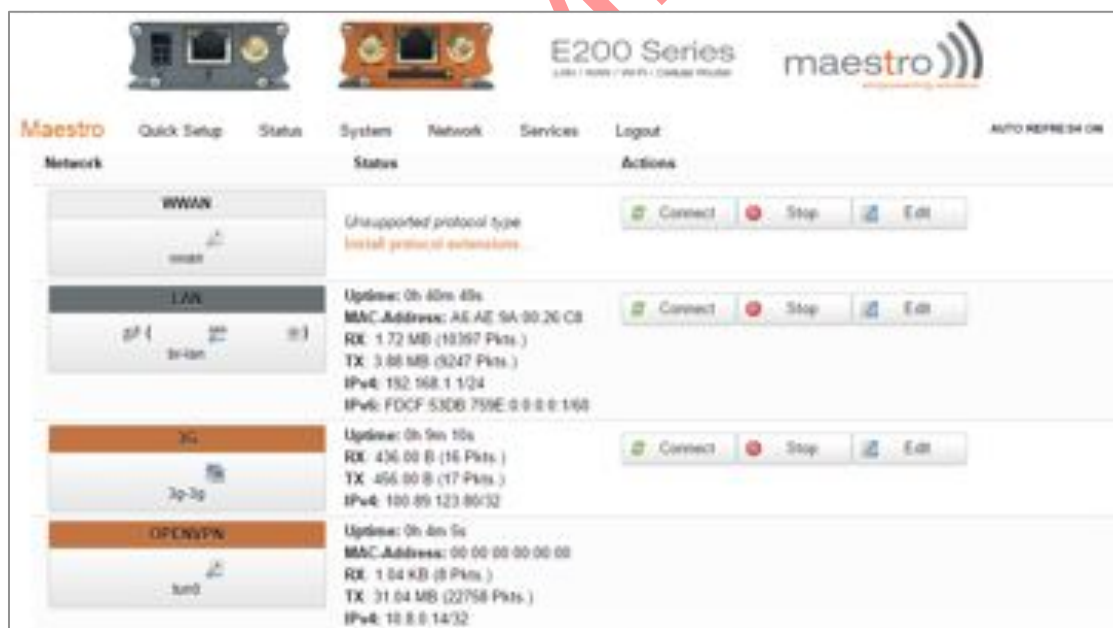


Pull – Accept options pushed from the Server – enabling this option will enable the router to accept the routes pushed from the OpenVPN server. It is recommended to keep it ticked.

Once you have the entire configuration in place, you can start the VPN service as follows



The above screen shows that Open VPN service has started and the below screen shows OpenVPN is connected and running smoothly.





# 14 Wi-Fi

## 14.1 Introduction

The router can work in 2 modes:

- » **Wi-Fi as access point:** It provides Internet to other host machines in its network over Wi-Fi. It can get Internet connection from WAN or cellular. If you have a cellular SIM card inserted in the router, it has a capability to switch between WAN and cellular in case either of them fails. However, at any point of time only one of the networks will be active.
- » **Wi-Fi as client mode:** the router will act as a client to existing wireless networks. The router will accept the Internet access through wireless access provided by another service provider and then distribute the access to the machines connected to the router on its LAN interface.

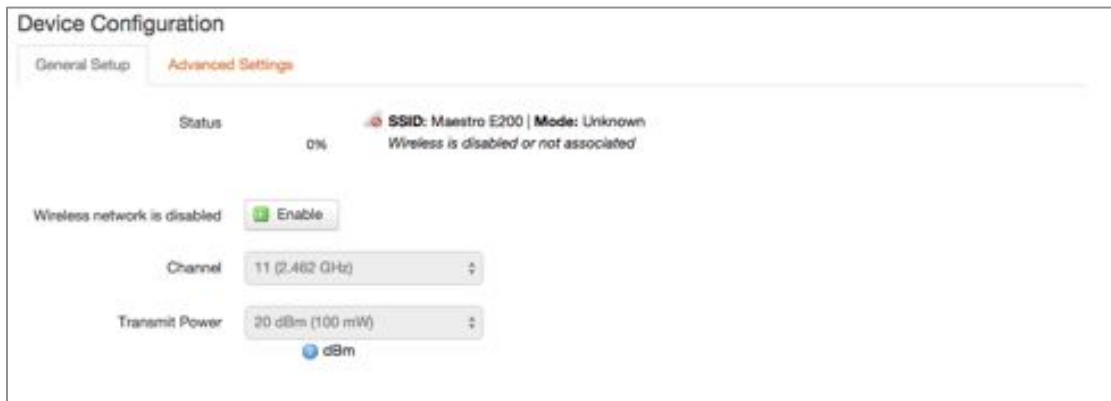
At any point of time, the router can work either in client mode or in Master mode.

## 14.2 Wi-Fi as Access Point



It shows a Generic connection, with no network configured on the router. To enable connection click the edit button to configure the default network with the SSID Maestro E200.

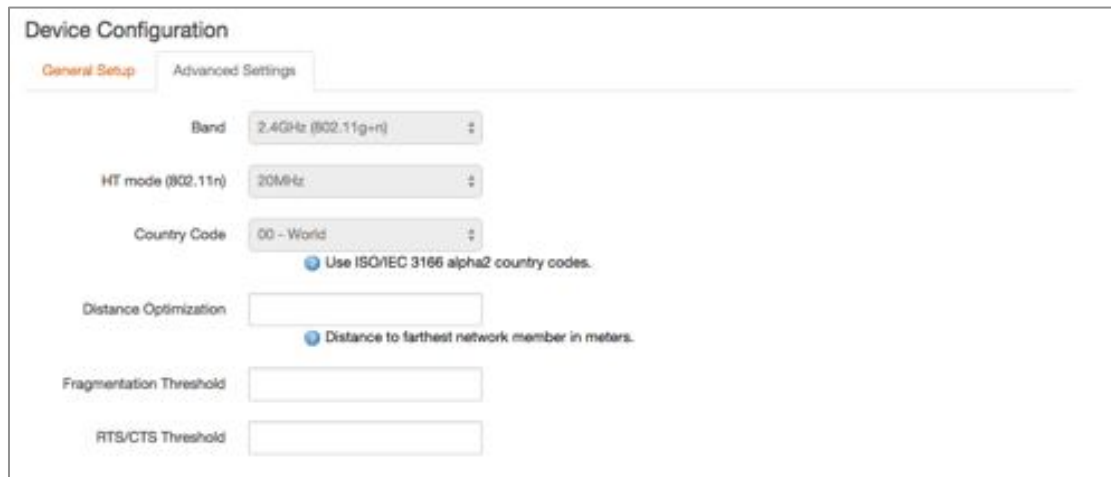
### 14.2.1 Device Configuration - General Setup




You can choose the channel frequency from the drop down menu, or choose 'auto', to select it automatically.

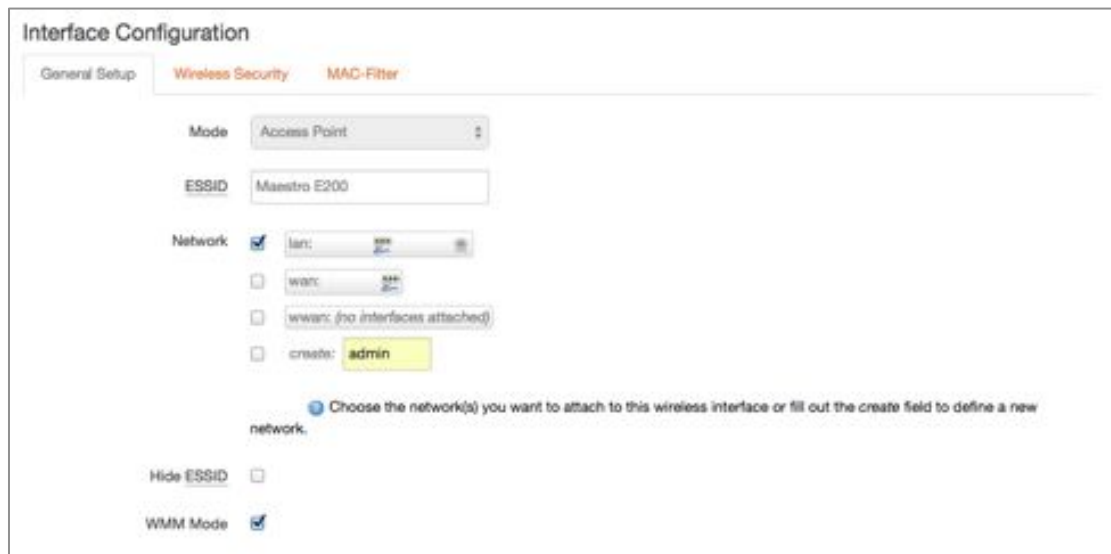
You can also choose transmit power, the default being 20dBm or 100mW, which is the maximum value.

## 14.2.2 Device Configuration - Advanced Settings



ITEM	DEFINITION
Band	Default value is 2.4GHz
HT mode	Default value is 20MHz, this can be set to 40MHz or disabled
Country Code	Choose the country code corresponding to the country where the router is operational. This ensures that the channels available in that country are enabled. By choosing '00' (World), the router will select the appropriate channel in your country.
Distance Optimization	You can optimize the operation of your Wi-Fi network, if you know the distance of the farthest machine in your network from the router. Value is meter.
Fragmentation Threshold	Choose Fragmentation threshold value (in number of bytes). Fine-tuning Fragmentation Threshold parameter can result in good throughput but a wrong value can result in low throughput. The range of values is 256 to 2346 bytes. In a noisy environment, a smaller value of Fragmentation Threshold may result in more efficient communication.
RTS/CTS Threshold	<p>You can choose RTS/CTS threshold between 0 to 2347 bytes, typical value being 500. This setting is for advanced users. It prevents collision of wireless packets, particularly in case of hidden nodes or in a noisy environment.</p> <p> In case of access point setting, it is recommended not to use RTS/CTS threshold.</p>

### 14.2.3 Interface Configuration – General Setup



Interface Configuration

General Setup | **Wireless Security** | MAC Filter


Mode: Access Point

ESSID: Maestro E200

Network: ☒ lan: ☐ wan: ☐ wwlan: (no interfaces attached) ☐ create: admin

Choose the network(s) you want to attach to this wireless interface or fill out the create field to define a new network.

Hide ESSID: ☐ WMM Mode: ☒

ITEM	DEFINITION
Mode	Should be set-up as Access Point
ESSID	ESSID shows the device name you have assigned to the router, by default, it is Maestro E200
Network	In Access Point LAN must be selected, as the router will supply Wi-Fi internet to its clients on LAN
Hide ESSID	Select Hide SSID, if you want your router SSID to be hidden when client machines scan for available Wi-Fi networks
WMM	<p>Wi-Fi Multimedia (WMM), is a subset of the 802.11e wireless LAN (WLAN) specification that enhances quality of service (QoS) on a network by prioritizing data packets.</p> <p> 802.11n spec requires devices to support 802.11e (Quality of Service [QoS] enhancements for wireless LAN) in order to use HT (High Throughput) link rates, i.e. higher than 54 Mbps. WMM's Traffic Identifier (TID) field is key to aggregation mechanisms, including block acknowledgement (block ACK), that enable 802.11n's high throughput rates.</p> <p>Since WMM support is required for products to be certified for 802.11n, WMM comes enabled by default in all Wi-Fi Certified n APs and wireless routers. So even if you don't have any WMM-aware devices on your network, leave WMM enabled or you may find your clients connecting only at 54 Mbps rates.</p>

#### 14.2.4 Interface Configuration – Wireless Security



ITEM	DEFINITION
Encryption	Choose the type of encryption for your Wi-Fi network, default is WPA-PSK/WPA2-PSK Mixed mode
Cypher	Choose the cipher type from the drop down as appropriate for your router. Similarly enter the key that a client machine must enter to join this network.
Key	Enter the key corresponding to your cypher type

#### 14.2.5 Interface Configuration – MAC-filter



You can:

- » Disable
- » Allow listed Mac addresses
- » Allow all EXCEPT listed MAC addresses.

When entering the last 2 options, use '+' button to the right of the MAC Address List field. You can choose the MAC addresses that are currently connected to the router. If you choose 'Custom' a new field is added to the screen, in which you may enter any other MAC address likely to join the network. Please take care that you enter the MAC address in the required format, else, the field will be shown RED.

After you are satisfied with all your selections, press SAVE AND APPLY button. Your settings will be applied to the router.

### 14.3 Wi-Fi as Client

In Client mode, the router will act as a client to existing wireless networks. The router will accept the Internet access through wireless access provided by another network and then distribute the access to the machines connected to the router on its LAN interface.

At any point of time, the router can work either in client mode or in Master mode. To change from Access Point mode to client mode, you have to remove all networks in Access Point mode.

Under **Network > Wi-Fi** click on **Scan**.



Select the Wi-Fi network you want to join and click **Join Network**.



ITEM	DEFINITION
WPA passphrase	Enter the WPA pass phrase for the chosen network.
Create / Assign firewall-zone	Assign this network to firewall zone. Since you want your router to work in client mode, the internal network is connected on LAN so the firewall must be on the WAN side. Alternatively you can create your own firewall zone.

## 14.4 Creating multiple SSID

Though only one router is physically present to provide Internet access to any host machines in your network, it is possible to create virtual interface so that you can restrict and control access to different groups of users based on security and functionality. This is achieved by creating multiple SSIDs and assigning separate SSIDs to group of users. Please note that only one router is servicing multiple SSIDs.



Click on **Add** button (next to Generic interface) to add another network (SSID).

Follow the same procedure as given in Wi-Fi section to create ANOTHER interface in Access Point mode. Please note that the device configuration for both interfaces remain the same. However, the Interface configuration can be different.

Assign a new ESSID to the interface.

You can make different choices for Network, Security and MAC address filtering, so that you can differentiate between different groups of users.

For example, you can choose one interface with MAC Address filtering DISABLED whereas another with 'ALLOW only listed MAC Addresses'. This way, you can provide full Internet access to only second group while restricting it for former group.

After you make all the settings, click on SAVE AND APPLY button to create the new interface.

Back to the **Network / Wi-Fi** you will see the second SSID.

Channel: 2 (2.417 GHz) | Bitrate: 52 Mbit/s

SSID: Maestro | Mode: Master  
 98% BSSID: A4:AE:9A:00:26:C5 | Encryption: mixed WPA/WPA2 PSK (CCMP) [Disable] [Edit] [Remove]

SSID: Maestro2 | Mode: Master  
 60% BSSID: A4:AE:9A:00:26:C4 | Encryption: None [Disable] [Edit] [Remove]

### Associated Stations

SSID	MAC Address	IPv4 Address	Signal	Noise	RX Rate	TX Rate
Maestro	64:09:80:C6:B3:F8	192.168.1.216	-41 dBm	0 dBm	6.0 Mbit/s, MCS 0, 20MHz	72.2 Mbit/s, MCS 7, 20MHz
Maestro2	00:73:8D:6A:C6:6A	?	-68 dBm	0 dBm	65.0 Mbit/s, MCS 7, 20MHz	52.0 Mbit/s, MCS 5, 20MHz

PRELIMINARY



# 15 Setting up Failover and Load Balancing

Maestro E200 and E220 series Router can be configured in a way that it could have 3 sources of WAN:

- » Wired Ethernet WAN
- » Wi-Fi when configured in Client Mode (WWAN)
- » Cellular

You can setup the Load Balancing functions in two different way depending what you want to achieve:

- » Failover – to provide connectivity persistency
- » Load Balancing – to distribute traffic among different WAN



Please note that once configured for load balancing, the router can't be used for failover and will assume that all available WAN are connected. The router will balance the load among WANs as per the policies and rules set.

If configured for failover, the router will only use 1 WAN at a time.

## 15.1 Failover mode configuration

By default the following is the priority assigned to each interface

- » Priority 1 – Wired WAN
- » Priority 2 – Wi-Fi WAN (Wi-Fi setup in Client Mode)
- » Priority 3 – Cellular

This section will guide you through the following

- » Change the priority of WAN interfaces
- » Setup failover policies to facilitate automatic failover between various WAN interfaces

Once all the three interfaces are setup as WAN, go to **Network > Load Balancing**. The page will show live view of available active and available inactive WAN Interfaces.

## 15.1.1 Setting up Load Balancing for Failover

### 15.1.1.1 Overview



Above screenshot indicated that wired Wan is available and connected as well as 3G is available and connected while Wi-Fi WAN is offline.

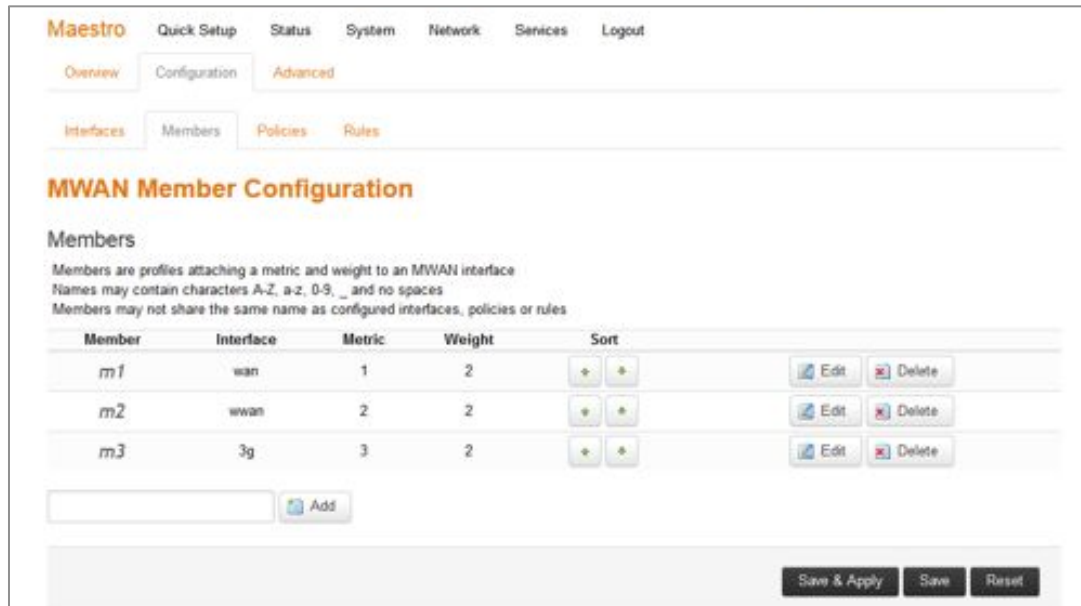


Above screenshot indicates all three interfaces active

When all three interfaces are active, the one used for data transmission is as per the priority setup in **Load Balancing / Configuration** tab as shown below. Rest of the interfaces are still being used for “tracking interface up / down” purposes.

You can re-assign or change the interface priority and failover policies by clicking on the **Configuration** tab.

### 15.1.1.2 Configuration



**Maestro** Quick Setup Status System Network Services Logout

Overview Configuration **Advanced**

Interfaces Members **Policies** Rules

### MWAN Member Configuration

**Members**

Members are profiles attaching a metric and weight to an MWAN interface  
 Names may contain characters A-Z, a-z, 0-9, \_ and no spaces  
 Members may not share the same name as configured interfaces, policies or rules

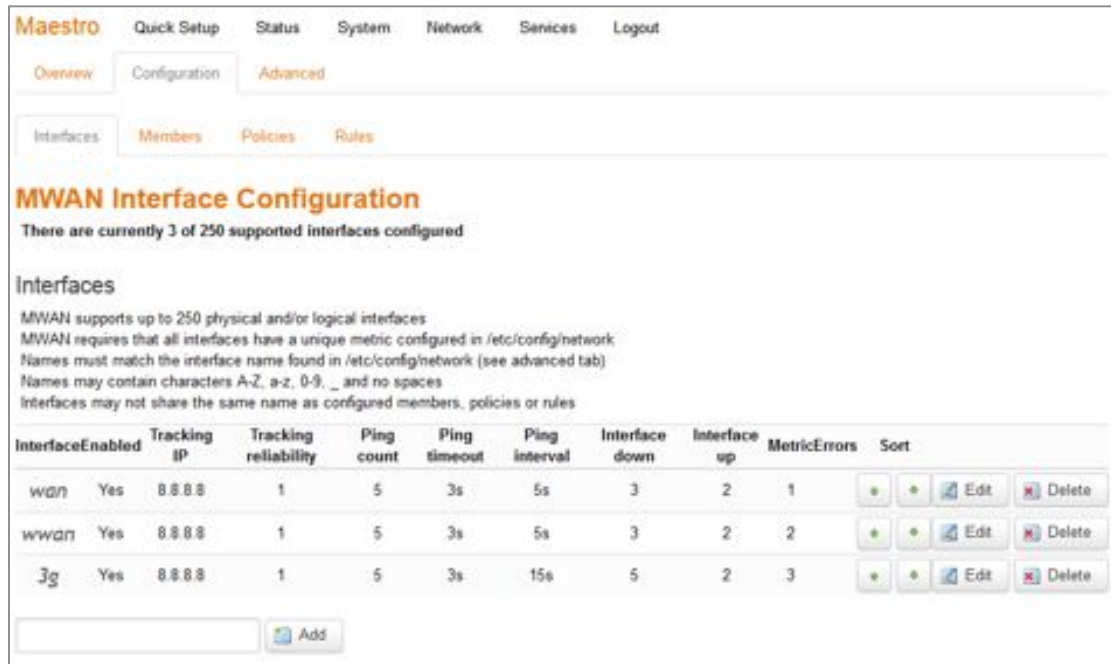
Member	Interface	Metric	Weight	Sort	
m1	wan	1	2	+	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
m2	wwan	2	2	+	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
m3	3g	3	2	+	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

Metric defines the priority. The screenshot shown above is the default configuration.



*You assign **Rules** for **Policies** which are associated with **Members** which are linked to **Interfaces***

#### 15.1.1.2.1 Interface



**Maestro** Quick Setup Status System Network Services Logout

Overview Configuration **Advanced**

Interfaces **Members** Policies Rules

### MWAN Interface Configuration

There are currently 3 of 250 supported interfaces configured

**Interfaces**

MWAN supports up to 250 physical and/or logical interfaces  
 MWAN requires that all interfaces have a unique metric configured in /etc/config/network  
 Names must match the interface name found in /etc/config/network (see advanced tab)  
 Names may contain characters A-Z, a-z, 0-9, \_ and no spaces  
 Interfaces may not share the same name as configured members, policies or rules

Interface	Enabled	Tracking IP	Tracking reliability	Ping count	Ping timeout	Ping interval	Interface down	Interface up	MetricErrors	Sort
wan	Yes	8.8.8.8	1	5	3s	5s	3	2	1	[+][+][Edit][Delete]
wwan	Yes	8.8.8.8	1	5	3s	5s	3	2	2	[+][+][Edit][Delete]
3g	Yes	8.8.8.8	1	5	3s	15s	5	2	3	[+][+][Edit][Delete]

Here you can see that there are 3 Interfaces: wan, wwan and 3g.

ITEM	DEFINITION
Tracking IP	This IP will be used to determine if the interface is active or inactive. You can enter more than one Tracking IP
Tracking Reliability	"1" determines the number of Tracking IP successes to be considered. Meaning, if there are more than one Tracking IP set, the above configuration will determine WAN active or inactive status depending on the result of any one Tracking IP.
Ping Count	Indicates the number of PING packets sent in every Ping Session to determine the interface availability / un-availability
Ping Timeout	Time to wait for PING response
Ping Interval	How frequently should the PING packets be sent
Interface down / interface up	Number of iterations before declaring interface up/down and eventually switching to another interface
Metrics	These are Network Interface Metrics, the default values are 1 for WAN, 2 for WWAN and 3 for 3G. It is extremely critical these values are exactly same as the values in Load Balancing / Members. If you choose to change these values, please ensure that they are same at both places.

The above configuration will facilitate failover between WAN, WWAN and 3G in order of priority and will facilitate roll back when connection on respective interface is back as per order of priority.

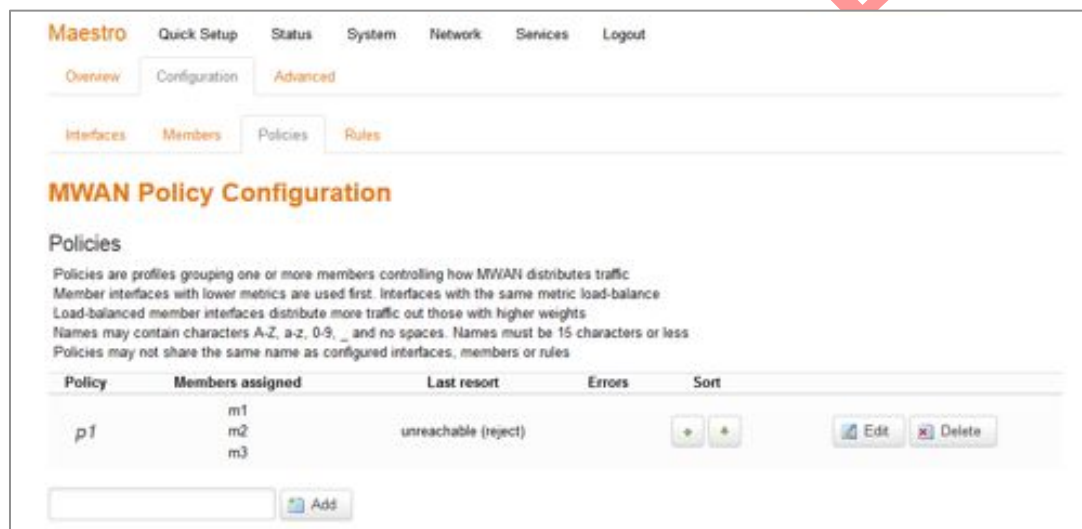
Please note that Tracking IP, Ping Count and Ping Interval will consume data.



High Tracking IPs, Higher Ping count and low Ping interval will result in faster switchover but will consume high amount of data and vice-versa. Please be careful in adjusting these values as per your requirements.

#### 15.1.1.2.2 Policies and Rules

You need to note that in Failover Mode, the following is the configuration for Policies and Rules. Changing these parameters will revert the router in Load Balancing.



**Maestro** Quick Setup Status System Network Services Logout

Overview Configuration **Advanced**

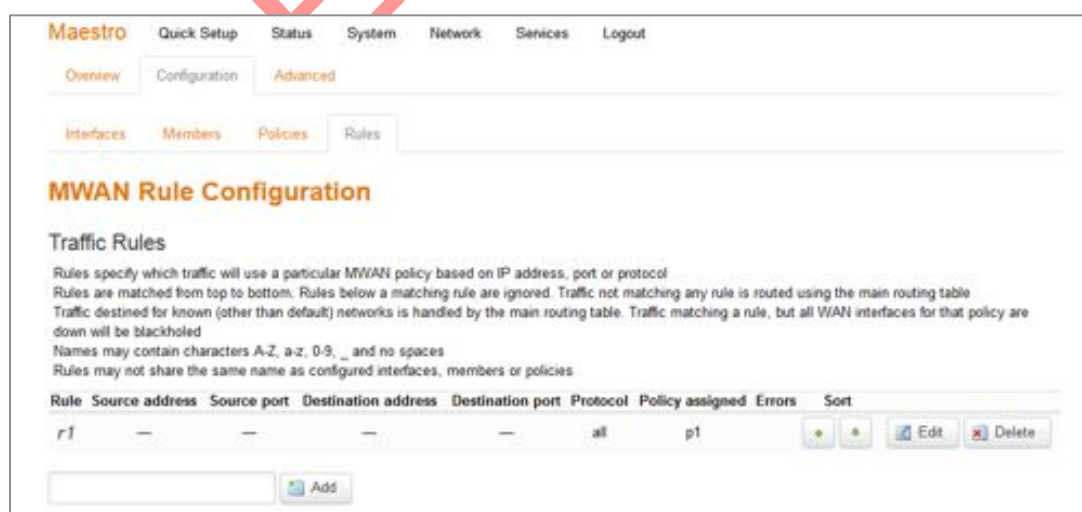
Interfaces Members Policies **Rules**

### MWAN Policy Configuration

**Policies**

Policies are profiles grouping one or more members controlling how MWAN distributes traffic  
 Member interfaces with lower metrics are used first. Interfaces with the same metric load-balance  
 Load-balanced member interfaces distribute more traffic out those with higher weights  
 Names may contain characters A-Z, a-z, 0-9, \_ and no spaces. Names must be 15 characters or less  
 Policies may not share the same name as configured interfaces, members or rules

Policy	Members assigned	Last resort	Errors	Sort
p1	m1 m2 m3	unreachable (reject)		



**Maestro** Quick Setup Status System Network Services Logout

Overview Configuration **Advanced**

Interfaces Members Policies **Rules**

### MWAN Rule Configuration

**Traffic Rules**

Rules specify which traffic will use a particular MWAN policy based on IP address, port or protocol  
 Rules are matched from top to bottom. Rules below a matching rule are ignored. Traffic not matching any rule is routed using the main routing table  
 Traffic destined for known (other than default) networks is handled by the main routing table. Traffic matching a rule, but all WAN interfaces for that policy are down will be blackholed  
 Names may contain characters A-Z, a-z, 0-9, \_ and no spaces  
 Rules may not share the same name as configured interfaces, members or policies

Rule	Source address	Source port	Destination address	Destination port	Protocol	Policy assigned	Errors	Sort
r1	-	-	-	-	all	p1		

## 15.2 Load balancing mode configuration

Load Balancing Mode configuration will enable the router to use all three WANs simultaneously and facilitate the user to associate policies and rules for each interface.

Examples”

- » You can bind a particular interface with a particular source or destination IP;
- » You can bind a particular interface with a particular protocol like TCP, UDP, L2TP etc.

To set the Router in Load Balancer Mode, you need to first assign Metric and Weight to all the Members and create more Members if necessary

### MWAN Member Configuration

**Members**

Members are profiles attaching a metric and weight to an MWAN interface  
Names may contain characters A-Z, a-z, 0-9, \_ and no spaces  
Members may not share the same name as configured interfaces, policies or rules

Member	Interface	Metric	Weight	Sort	
m1	wan	1	2	<div>+</div> <div>+</div>	<div>Edit</div> <div>Delete</div>
m2	wwan	2	2	<div>+</div> <div>+</div>	<div>Edit</div> <div>Delete</div>
m3	3g	3	2	<div>+</div> <div>+</div>	<div>Edit</div> <div>Delete</div>

Add

Next step would be to create Policies corresponding to each Member

### MWAN Policy Configuration

**Policies**

Policies are profiles grouping one or more members controlling how MWAN distributes traffic  
Member interfaces with lower metrics are used first. Interfaces with the same metric load-balance  
Load-balanced member interfaces distribute more traffic out those with higher weights  
Names may contain characters A-Z, a-z, 0-9, \_ and no spaces. Names must be 15 characters or less  
Policies may not share the same name as configured interfaces, members or rules

Policy	Members assigned	Last resort	Errors	Sort	
p1	m1	unreachable (reject)		<div>+</div> <div>+</div>	<div>Edit</div> <div>Delete</div>
p2	m2	unreachable (reject)		<div>+</div> <div>+</div>	<div>Edit</div> <div>Delete</div>
p3	m3	unreachable (reject)		<div>+</div> <div>+</div>	<div>Edit</div> <div>Delete</div>

Next would be create rules for each Policy



In the above screenshot, you can see that there are 3 rules created

Rule r1 is linked to policy p1 which is linked to member m1 which is linked to Interface wan

Rule r2 is linked to policy p2 which is linked to member m2 which is linked to Interface wwan

Rule r3 is linked to policy p3 which is linked to member m3 which is linked to Interface 3G

The above configuration means

- » UDP connections from LAN IP 192.168.1.104 will be sent via WAN
- » All requests to WAN IP 223.30.182.58 on Port 2404 will be sent via WWAN
- » All incoming and outgoing PING will be sent via 3G

## 16 Firewall Basics

E200 and E220 Series follows a Zone Based firewall concept.

Every interface of E200 Router physical or virtual needs to be assigned to a firewall zone however one firewall zone can have multiple interfaces.

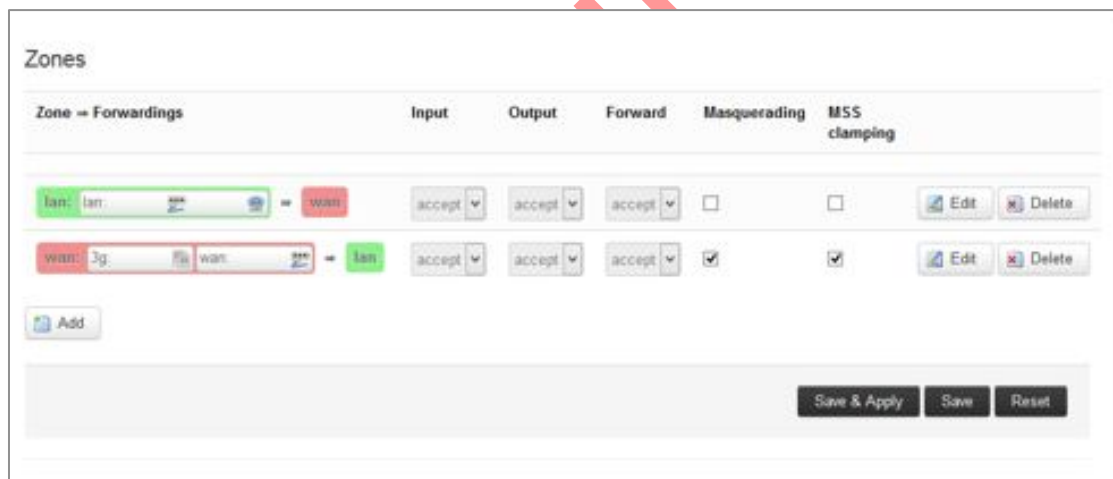
By default, two zones exists namely LAN zone and WAN zone as shown in the screenshot below.

You can create a new zone either from the Firewall section under **Network / Firewall** or when you create an additional network interface.



*For the current version of Firmware, only LAN side Firewall Zones can be created and you can associate multiple VLANs to the LAN side firewall Zones. However there will be a single WAN side firewall*

*zone.*



Zone	Forwardings	Input	Output	Forward	Masquerading	MSS clamping	Actions
lan	lan	accept	accept	accept	<input type="checkbox"/>	<input type="checkbox"/>	Edit Delete
wan	wan	accept	accept	accept	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Edit Delete

Buttons: Add, Save & Apply, Save, Reset



## 17 Services

### 17.1 Dynamic DNS

The E200 and E220 series router gets the internet access through WAN or 3G. The LAN interface is used for connecting to the local network. The service provider for WAN or 3G will periodically change the IP address assigned to the router, unless you ask for a static IP address.

However, it is not possible for a remote client of the router to change the address in tune with the service provider. In such case, Dynamic DNS or DynDNS comes in handy. The concept is same as DNS, however, it retains the “Name” given to the router even if the underlying IP address is changed.

For this, you need to register with the provider of dynamic DNS and configure the router with the details. Dynamic DNS allows that your router can be reached with a fixed hostname while having a dynamically changing IP address.

The following note describes the procedure to create Dyn DNS.

Click on **Services / Dynamic DNS**.

## Dynamic DNS

Dynamic DNS allows that your router can be reached with a fixed hostname while having a dynamically changing IP address.

Delete

### MYDDNS

Enable ☐

Event interface    
Network on which the ddns-updater scripts will be started

Service

Hostname

Username

Password

Source of IP address

URL

Check for changed IP every

Check-time unit

Force update every

Force-time unit

ITEM	DEFINITION
Enable	Enable DynDNS service
Event interface	Network on which the ddns-updater scripts will be started
Service	Your DynDNS service provider
Hostname	Hostname received from your DynDNS service provider
Username	Username received from your DynDNS service provider
Password	Password received from your DynDNS service provider

Next, you have to choose the source of IP address and the network. The source of IP address can be either Network or Interface or URL. This is the mechanism through which an IP address is assigned to the router.

If you choose Network, then you have to choose the type of network namely WAN or 3G.

Similarly, if you choose Interface, then you have to choose the appropriate interface from the dropdown.

If you select the option URL, then a URL needs to be given which fetches IP address of the router from Internet. An example of such URL is <http://checkip.dyndns.com/> and appears by default.

Next, choose the frequency with which you want to check, if the IP address is changed, minutes or hours.

You can also force a change in IP address, after an assigned period of time.

After making these entries, you can enable the new DDNS entry by checking the **Enable** box at the top of the page.

Choose **Save and Apply** to effect the change. You will see the new entry with your parameters in addition to any old entries.

Now, you will be able to access the router with the hostname assigned, rather than the IP address.

You can add a new DynDNS by choosing a name and clicking on ADD button.

## 17.2 SMS diagnostic

SMS diagnostic let you configure up to 4 admins to receive diagnostic information of the router after a command is send by SMS.

International number format is as follow: <countrycode><phonenumber>

### SMS Configuration

SMS Configuration

SMS Administrator	Mobile Number
	Please enter the mobile number with country code
Admin 1	<input type="text" value="0"/>
Admin 2	<input type="text" value="0"/>
Admin 3	<input type="text" value="0"/>
Admin 4	<input type="text" value="0"/>

COMMAND	DEFINITION
AT+REBOOT=1	Reboot: reboot the modem
AT+CELLDIAG?	Cell diagnostics: will give you IMEI, CREG, COP, CSIG
AT+LANDIAG?	LAN diagnostics: Will give LAN IP address,
AT+WANDIAG?	Wired WAN diagnostics:
AT+WANPING=<IPA>	Wired WAN ping: will ping the wired WAN interface
AT+LANPING=<IPA>	LAN ping: will ping the wired LAN interface
AT+REMACC=<1/0>	Remote access: will enable; AT+REMACC=<1> or disable AT+REMACC=<0> remote access
AT+HWI?	Hardware information: will give you hardware information such as model number
AT+SWI?	Software information: will give you software information such as firmware version

List of Commands		
No.	Command name	Command
1	Reboot	AT+REBOOT=1
2	Cell Diagnostics	AT+CELLDIAG?
3	LAN Diagnostics	AT+LANDIAG?
4	WAN Diagnostics	AT+WANDIAG?
5	WAN Ping	AT+WANPING=<IPA>
6	LAN Ping	AT+LANPING=<IPA>
7	Enable Remote access	AT+REMACC=<1/0>
8	Hardware information	AT+HWI?
9	Software information	AT+SWI?

### 17.3 DOTA

DOTA (download over the air) will allow you to remotely update your firmware, enter your server IP address the filename, username and password

**DOTA**

Server

Filename

User

Password

## 17.4 GPS

You can get GPS parameters as describes below

### GPS

Parameter	Value
Time	GPS_ERROR
Latitude	GPS_ERROR
N/S-Indicator	GPS_ERROR
Longitude	GPS_ERROR
E/W-Indicator	GPS_ERROR
Position-Fix-Indicator	GPS_ERROR
Satellites-Used	GPS_ERROR
HDOP	GPS_ERROR
MSL-Altitude	GPS_ERROR

#### Protocol

Enable Data Send
☐

By clicking **Enable Data Send** you will open a new menu where you could select the IP address, the port and the protocol format to receive the data, either TCP, UDP or HTTP. You can also setup a backup server by clicking on the **Backup** checkbox

### Protocol

Enable Data Send
☒

Protocol

TCP

IP1

0.0.0.0

Port1

0

Backup
☐

If selected and data sending failed on primary ip then backup ip will be used. If backup ip failed then again primary ip will be used. There will be 3 such tries

Send Interval in Minute

0

## 17.5 Event

The Event menu let you set-up action based on preset event.

Those events can be:

- » GPIO\_H
- » GPIO\_L
- » SIM\_CHANGE

Available actions are:

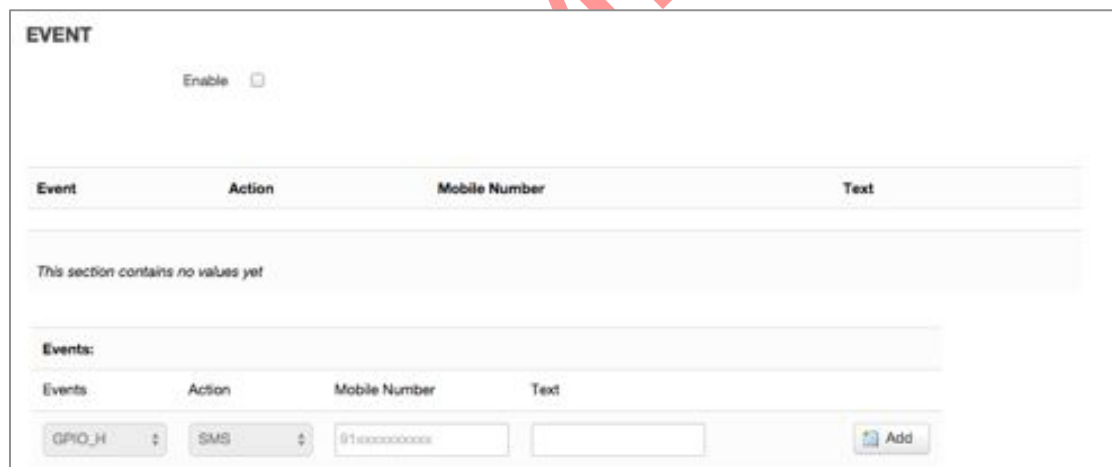
- » SMS
- » REBOOT

International number format is as follow: <countrycode><phonenumber>

On the text box enter a text (max.160 characters) that will be send to the corresponding mobile number when a change of event occurs.

Click add once your rules are set-up.

Click Save and Apply to save preset events.



The screenshot shows the 'EVENT' configuration page. At the top, there is an 'Enable' checkbox. Below it is a table with columns: Event, Action, Mobile Number, and Text. The table is currently empty, with a message 'This section contains no values yet'. Below the table, there is a section titled 'Events:' which contains a sub-table with the same columns. In this sub-table, 'GPIO\_H' is selected for the Event, 'SMS' for the Action, and a placeholder number '91800000000' is entered for the Mobile Number. The Text field is empty. An 'Add' button is located to the right of the sub-table.

# 18 Appendix

## 18.1 Default settings

The following tables list the default settings for the E200 Series router.

LAN (MANAGEMENT)	
Static IP Address:	192.168.1.1
Subnet Mask:	255.255.255.0
Default Gateway:	192.168.1.1
ADMIN MANAGER ACCOUNT	
Username:	admin
Password:	admin

## 18.2 Reset to factory default setting

Restoring factory defaults will reset the E200 Series router to its factory default configuration. You may encounter a situation where you need to restore the factory defaults on your E200 Series router such as:

- » You have lost your username and password and are unable to login to the web configuration page
- » You are asked to perform a factory reset by Maestro support staff.

There are two methods you can use to restore factory default settings on your E200, using the web-based user interface or using the reset button on the side of the router.

### 18.2.1 Using the web-based user interface

To restore your router to its factory default settings, please follow these steps:

Open a browser window and navigate to the IP address of the router (default address is <http://192.168.1.1>). Login to the router using **admin** as the User Name and **admin** as the password.

Click the **System** item from the top menu bar, then **Backup / Flash Firmware** and then under **Flash operations** select the **Actions** tabs.

Under the **Actions** tabs, click the **Perform reset** button. The router asks you to confirm that you wish to reset all changes. Click OK to continue. The router will erase the configuration partition and reboot.

### 18.2.2 Using the reset button on the side of the router

Use a pin to push the Reset button on the device for 10 seconds. The router will restore the factory default settings and reboot.

When you have reset your E200 Series router to its default settings you will be able to access the device's configuration web interface using <http://192.168.1.1> with username **admin** or **root** and password **admin**.

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## 18.3 List of acronyms

Acronym	Expansion / Meaning
<b>2G</b>	2nd Generation
<b>3G</b>	3rd Generation
<b>ADSL</b>	Asymmetric digital subscriber line, ADSL is a type of DSL broadband communications technology used for connecting to the Internet
<b>AES</b>	Advanced Encryption Standard
<b>AP Client</b>	Access Point Client
<b>CSQ</b>	
<b>DHCP</b>	Dynamic Host Configuration Protocol (DHCP) is a standardized networking protocol used on Internet Protocol (IP) networks for dynamically distributing network configuration parameters, such as IP addresses for interfaces and services.
<b>DIN</b>	DIN connector is an electrical connector that was originally standardized by the Deutsches Institut für Normung (DIN)
<b>DMZ</b>	In computer security, a DMZ or Demilitarized Zone is a physical or logical sub network that contains and exposes an organization's external-facing services to a larger and un-trusted network, usually the Internet.
<b>DNS</b>	Domain Name System (DNS) is a hierarchical distributed naming system for computers, services, or any resource connected to the Internet or a private network
<b>DynDNS, DDNS</b>	Dynamic DNS (DDNS) is a method of automatically updating a name server in the Domain Name System (DNS), often in real time, with the active DNS configuration of its configured hostnames, addresses or other information.
<b>EDGE</b>	Enhanced Data rates for GSM Evolution (EDGE) is a digital mobile phone technology that allows improved data transmission rates as a backward-compatible extension of GSM.
<b>GPRS</b>	General packet radio service (GPRS) is a packet oriented mobile data service on the 2G and 3G cellular communication system's global system for mobile communications
<b>GSM</b>	Global system for mobile communications
<b>HT Physical mode</b>	High Throughput Physical Mode
<b>ICMP</b>	Internet Control Message Protocol (ICMP) is one of the main protocols of the Internet Protocol Suite. It is used by network devices, like routers, to send error messages
<b>IGMP</b>	Internet Group Management Protocol is a communications protocol used by hosts and adjacent routers on IP networks to establish multicast group memberships
<b>IP Sec</b>	Internet Protocol Security is a protocol suite for securing Internet Protocol (IP) communications by authenticating and encrypting each IP packet of a communication session
<b>ISP</b>	Internet service provider
<b>L2TP</b>	Layer 2 Tunneling Protocol is a tunneling protocol used to support virtual private networks
<b>LAN</b>	Local Area Network
<b>Acronym</b>	Expansion / Meaning
<b>LLTD</b>	Link Layer Topology Discovery is a proprietary Link Layer protocol for network topology discovery and quality of service diagnostics
<b>M2M</b>	Machine to machine
<b>MAC address</b>	Media access control address is a unique identifier assigned to network interfaces for communications on the physical network segment
<b>MTU</b>	Maximum transmission unit of a communications protocol of a layer is the size (in bytes) of the largest protocol data unit that the layer can pass onwards
<b>NAT</b>	Network address translation is a methodology of modifying network address information in Internet Protocol (IP) datagram packet headers while they are in transit across a traffic routing device for the purpose of remapping one IP address space into another.
<b>NTP</b>	Network Time Protocol is a networking protocol for clock synchronization between computer systems over packet-switched, variable-latency data networks
<b>PPPoE</b>	Point-to-Point Protocol over Ethernet
<b>PPTP</b>	Point-to-Point Tunneling Protocol
<b>PSK</b>	Pre-shared key
<b>QoS</b>	Quality of Service
<b>RF</b>	Radio Frequency
<b>Rx</b>	Reception
<b>SIM</b>	Subscriber identity module
<b>SMA</b>	SMA (Sub Miniature version A) connectors are semi-precision coaxial RF connectors
<b>SMS</b>	Short Message Service
<b>SPI</b>	Serial Peripheral Interface
<b>SSID</b>	Service set identification
<b>TCP</b>	Transmission Control Protocol
<b>TKIP</b>	Transmission Control Protocol
<b>Tx</b>	Transmission
<b>UDP</b>	User Datagram Protocol
<b>UPnP</b>	Universal Plug and Play
<b>VPN</b>	Virtual private network
<b>WAN</b>	Wide Area network

<b>WCDMA</b>	Wideband Code Division Multiple Access
<b>WDS</b>	Wireless distribution system
<b>WEP</b>	Wired Equivalent Privacy, is a wireless network security standard
<b>Wi-Fi</b>	Local area wireless technology that allows an electronic device to exchange data or connect to the internet using 2.4 GHz UHF and 5 GHz SHF radio waves
<b>WPA</b>	Wi-Fi Protected Access
<b>WPA2</b>	Wi-Fi Protected Access II

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## 18.4 Support

There are several resources available to you for support and troubleshooting of your Maestro product or for resolving configuration difficulties at Maestro's support website, <http://support.maestro-wireless.com/knowledgebase.php>.

Try these troubleshooting steps to eliminate your problem. After working through these steps and if your problem is not solved, please send a ticket to Maestro support team.

Fill out an Online Support Request via: <http://support.maestro-wireless.com/index.php?a=add>. You will need to create a user account if one is not already set up.

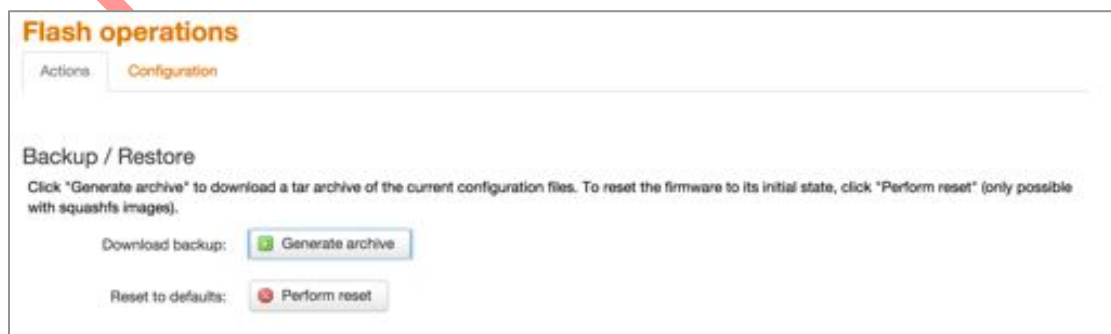
When submitting a support request, please include a copy of the **System Log** file from the unit's and the **configuration files**. This will greatly improve the quality of the initial response you receive. Without this file, it is often very difficult for the support team to provide accurate answers to your queries.

To create a copy of the system login on your router and go to **Status > System Log**.



Select the entire log, copy it and paste it on a new document file .

To generate an archive of your configuration go to **System > Backup / Flash Firmware**, under the Actions tabs click on **Generate archive**.



An archive file "backup-Maestro-201x-xx-xx.tar.gz will be downloaded on your default download folder, please attached the file while filling the support request online.

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