



Operations Manager User Guide

Revision 1.1

11-29-2018

Safety

Please take care to follow the safety precautions below when installing and operating the OM2200:

- Do not remove the metal covers. There are no operator serviceable components inside. Opening or removing the cover may expose you to dangerous voltage which may cause fire or electric shock. Refer all service to Opengear qualified personnel.
- To avoid electric shock the power cord protective grounding conductor must be connected through to ground.
- Always pull on the plug, not the cable, when disconnecting the power cord from the socket.

Do not connect or disconnect the appliance during an electrical storm. Also use a surge suppressor or UPS to protect the equipment from transients.

FCC Warning Statement

This device complies with Part 15 of the FCC rules. Operation of this device is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference that may cause undesired operation.

Proper back-up systems and necessary safety devices should be utilized to protect against injury, death or property damage due to system failure. Such protection is the responsibility of the user.



This device is not approved for use as a life-support or medical system.

Any changes or modifications made to this device without the explicit approval or consent of Opengear will void Opengear of any liability or responsibility of injury or loss caused by any malfunction.

This equipment is for indoor use and all the communication wirings are limited to inside of the building.

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Opendgear may make improvements and/or changes in this manual or in the product(s) and/or the program(s) described in this manual at any time. This product could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes may be incorporated in new editions of the publication.

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About this User Guide

This manual covers the Operations Manager 2200 18.Q3.0. When using a minor release there may or may not be a specific version of the user guide for that release. The current OM2200 user guide can always be found [here](#).

1. Installation

This chapter describes how to install the appliance hardware and connect it to controlled devices.

1.1 Models

Models SKU	Description
OM2216	16 Serial Console Ports, 8 x USB 2.0, 2 x GbE/SFP Fiber, Dual AC
OM2216-L	16 Serial Console Ports, 8 x USB 2.0, 2 x GbE/SFP Fiber, Dual AC, Global Cellular LTE-A CAT12
OM2248	48 Serial Console Ports, 8 x USB 2.0, 2 x GbE/SFP Fiber, Dual AC
OM2248-10G	48 Serial Console Ports, 8 x USB 2.0, 1 x GbE/SFP, 1x 10GbE SFP+ Fiber, Dual AC
OM2248-L	48 Serial Console Ports, 8 x USB 2.0, 2 x GbE/SFP Fiber, Dual AC, Global Cellular LTE-A CAT12
OM2248-10G-L	48 Serial Console Ports, 8 x USB 2.0, 1 x GbE/SFP, 1x 10GbE SFP+ Fiber, Dual AC, Global Cellular LTE-A CAT12
OM2224-24E	24 Serial Console Ports, 24 Gigabit Ethernet Switch, 8 x USB 2.0, 2 x GbE/SFP Fiber, Dual AC
OM2224-24E-L	24 Serial Console Ports, 24 Gigabit Ethernet Switch, 8 x USB 2.0, 2 x GbE/SFP Fiber, Dual AC, Global Cellular LTE-A CAT12
OM2224-24E-10G-L	24 Serial Console Ports, 24 Gigabit Ethernet Switch, 8 x USB 2.0, 1x 10GbE SFP+ Fiber, Dual AC, Global Cellular LTE-A CAT12

1.2 What's Included

- OM2200
- 2 x Country Specific IEC AC Power Cord
- Quick Start Guide
- Rack mount kit
- 2 x CAT5 Patch Cable 6'
- 2 x LTE-A Cellular Antennas (Cellular Only)

1.3 Power Connection

OM2200 have dual universal AC power supplies with auto failover built in. These power supplies each accept AC input voltage between 100 and 240 VAC with a frequency of 50 or 60 Hz and the total power consumption per appliance is less than 30W.

Two IEC AC power sockets are located at the front of the metal case, and these IEC power inlets use conventional IEC AC power cords.

1.4 Network Connection

The network connections on the OM2200 are located on the serial port side of the unit. Connect the provided shielded CAT5 cable to the NET1 to a computer or into your network for initial configuration. By default NET1 and NET2 are enabled.

1.5 Serial Connection

The serial connections feature RS-232 with software selectable pin outs. Connect serial devices with the appropriate STP cables.

1.6 Cellular Connectivity

If -L model, attach the 4G cellular antennas to the unit before powering on. Insert the 2FF SIM card with the contact facing up.

1.7 Reset and Erase

The OM2200 reboots with all settings (*e.g.* the assigned network IP address) preserved.

To perform a soft reset, switch the power off and then on. A soft reset disconnects all users and ends any SSH sessions that had been established. All settings (*e.g.* the assigned network IP address) are preserved.

To erase the unit, push the **Erase** button on the port-side panel **twice** with a bent paper clip while the unit is powered on.

This resets the appliance to its factory default settings. Any modified configuration information is erased. You will be prompted to log in and must enter the default administration username and administration password (Username: **root** Password: **default**).

2. Initial System Configuration

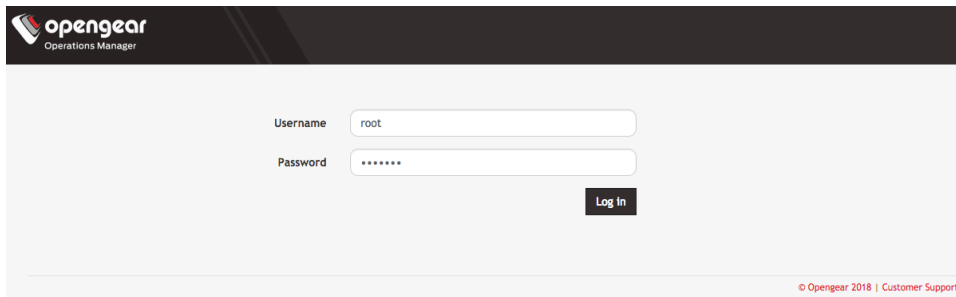
This chapter provides step-by-step instructions for the initial configuration of your OM2200. By default, all interfaces are enabled. The unit can be managed via WebGUI or by command line interface (CLI).

- Accessing the Management Console via Browser (WebGUI)
- Accessing the Management Console via CLI
- Changing the default Administrator password
- Setting the IP address appliance's primary LAN port

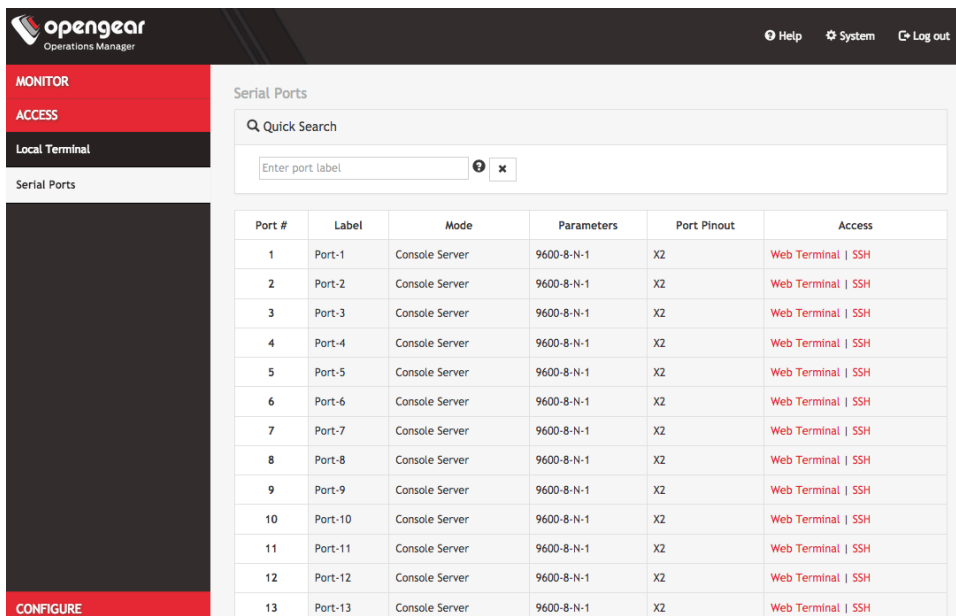
2.1 Default Settings

The OM2200 comes configured with a default IP Address of 192.168.0.1 Subnet Mask 255.255.255.0. Management Console offers a WebGUI via web browsers that support HTML5 such as Chrome and Firefox.

1. Type `https://192.168.0.1` in the address bar. HTTPS is enabled by default.



2. Enter The default username and password
Username: *root*
Password: *default*
3. After a successful login you will be presented with the **ACCESS > Serial Ports** page that shows you a list of serial devices and links to a **Web Terminal** or **SSH** connection for each.



Using the WebUI

The WebUI has three menu options on the upper right: **Help**, **System**, and **Log out**.

The **Help** menu contains a link to generate a Technical Support Report that can be used by Opengear Support for troubleshooting. It also contains a link to the latest OM2200 User Manual.

The **System** menu presents the **Current version**, **REST API version**, **Hostname**, **Serial Number**, and **Current user**.

2.2 Management Console Connection via CLI

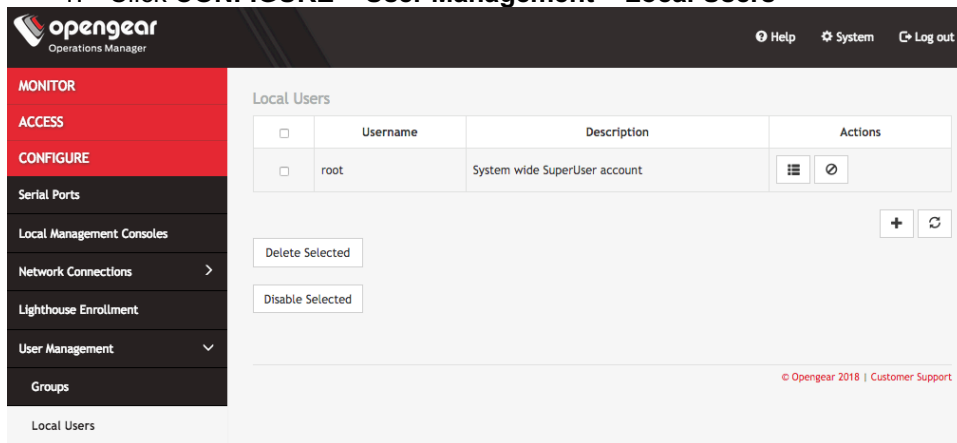
The Command Line Interface (CLI) is accessible using your preferred application to establish and SSH session.

1. Input the default IP Address of 192.168.0.1. SSH port 22 is enabled by default.
2. When prompted, enter the login and password in the CLI
Username: *root*
Password: *default*
3. After a successful login, you'll see a command line prompt

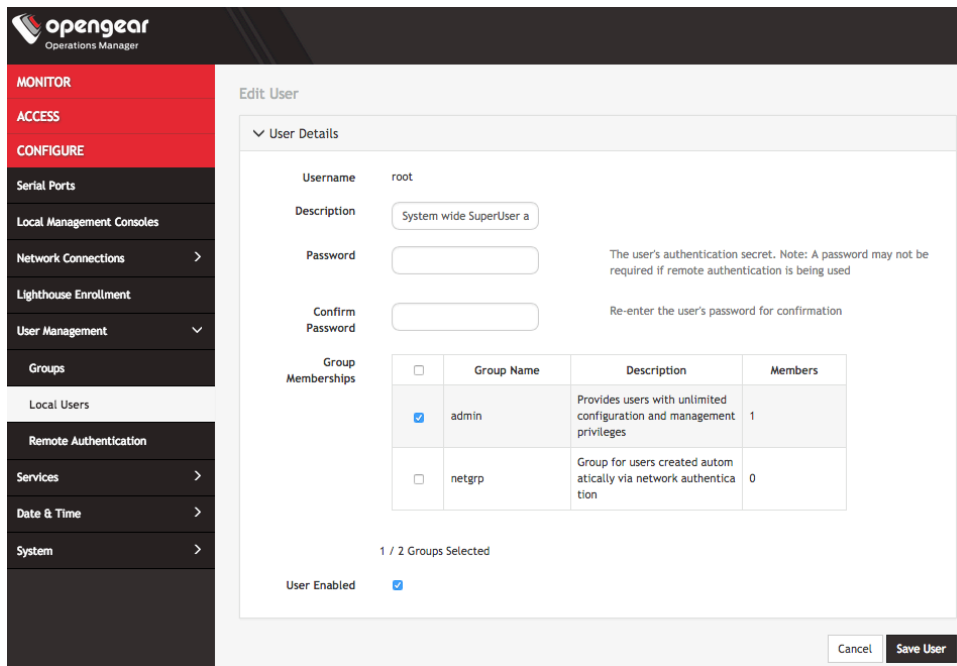
2.3 Changing the root password

For security reasons, only the root user can initially log into the appliance. Upon initial login the default password should be changed.

1. Click **CONFIGURE > User Management > Local Users**



2. Click the **Edit User** icon under **Actions**.



3. Enter a new password in the Password field and enter it again in the **Confirm Password** field.
4. Click **Save User**.

2.4 Disabling a root user

NOTE: Before proceeding, make sure that another user exists that has the **Administrator** role or is in a group with the **Administrator** role. For information on creating, editing, and deleting users, see *Chapter 5.5.2 Local Users*.

To disable a root user:

1. Click **CONFIGURE > User management > Local Users**
2. Click the **Disable User** button in the **Actions** section next to the root user.
3. Click **Yes** in the **Confirmation** dialog.

To enable root user, log in with another user that has the **Administrator** role and click the **Enable User** button in the **Actions** section next to the root user.

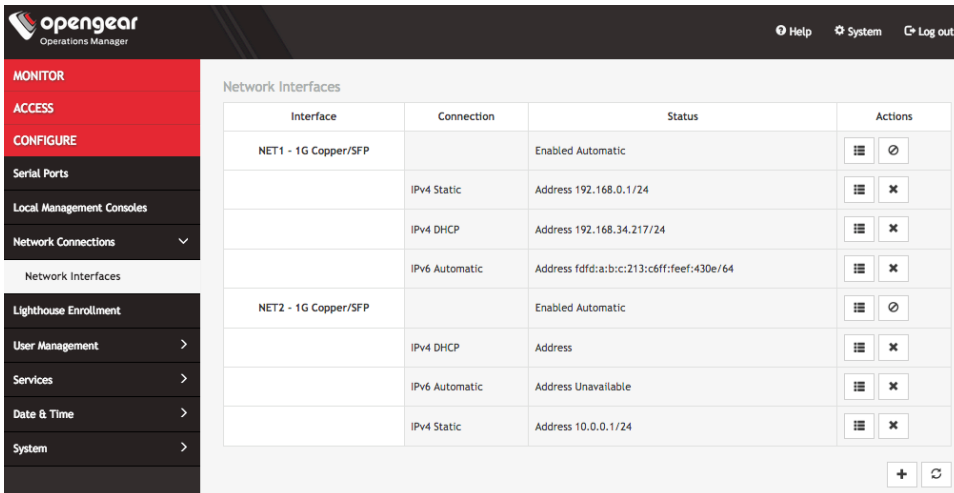
2.5 Changing Network Settings

The interface supports both IPv4 and IPv6 networks. The IP address of the unit can be setup for Static or DHCP. The following settings can be configured for network ports:

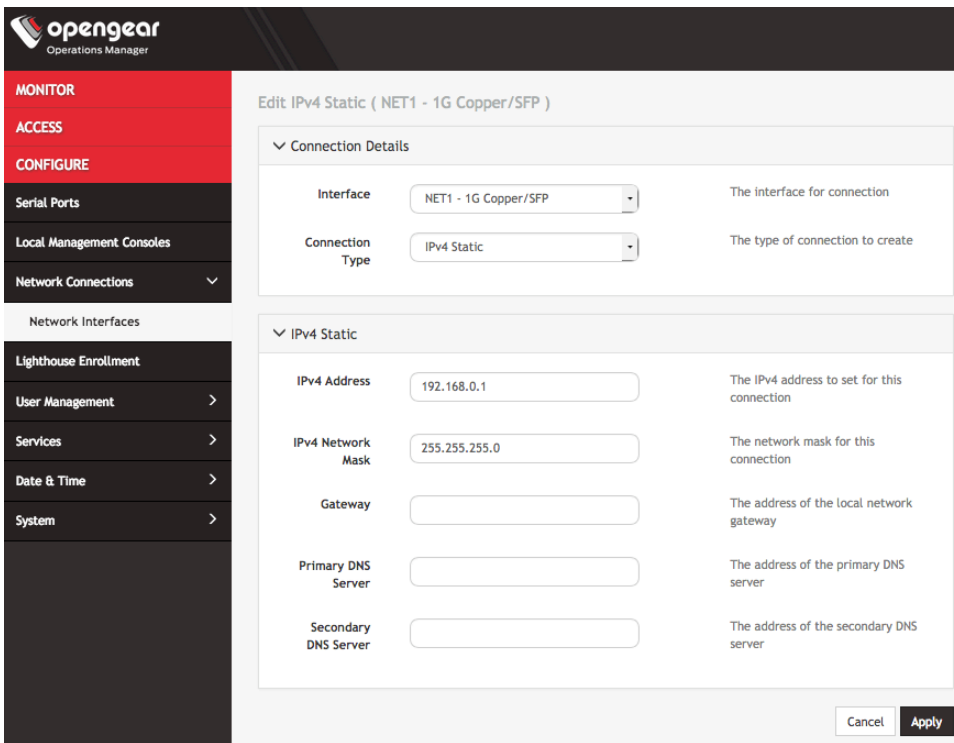
- IPv4, IPv6
- Static and/or DHCP
- Enabling or disabling network interfaces
- Ethernet Media types

To edit the default settings:

1. Click **CONFIGURE > Network Connections > Network Interfaces**



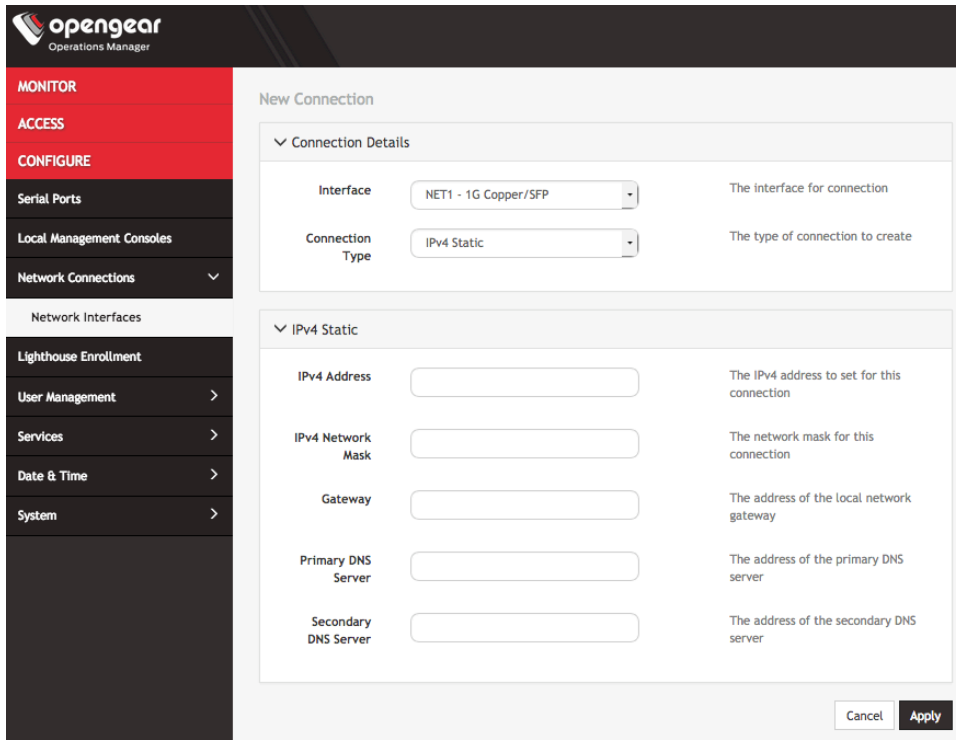
1. Click the **Edit Connection** button next to the **NET** connection you wish to modify.



2. Change the settings as needed and click **Apply**.

To add a new connection:

1. Click **CONFIGURE > Network Connections > Network Interfaces**



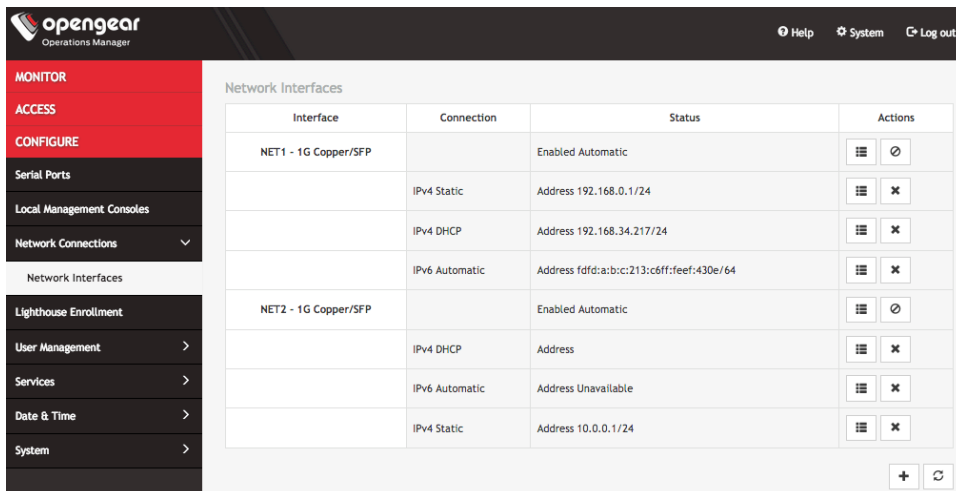
2. Select the **Interface** and **Connection Type** for your new connection.
3. The form on the bottom part of the page will change based on the **Connection Type** you choose. Enter the necessary information and click **Apply**.

To **Edit**, **Disable**, or **Delete** interfaces, use the **Actions** buttons on the **CONFIGURE > Network Connections > Network Interfaces** page.

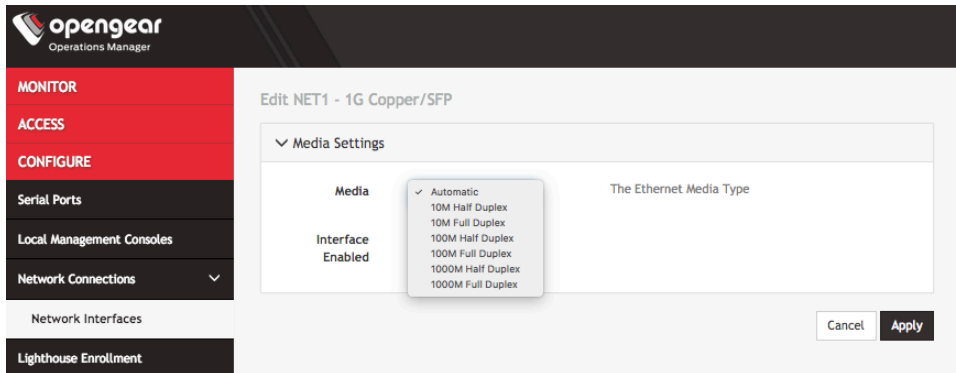
NOTE: If you experience packet loss or poor network performance with the default auto-negotiation setting, try changing the Ethernet Media settings on the OM2200 and the device it is connected to. In most cases, select 100 megabits, full duplex. Make sure both sides are set identically.

To change the Ethernet Media Type:

1. Click **CONFIGURE > Network Connections > Network Interfaces**



2. Click the **Edit Interface** button next to the **NET** connection you wish to modify.



3. Change the **Ethernet Media Type** setting as needed and click **Apply**.

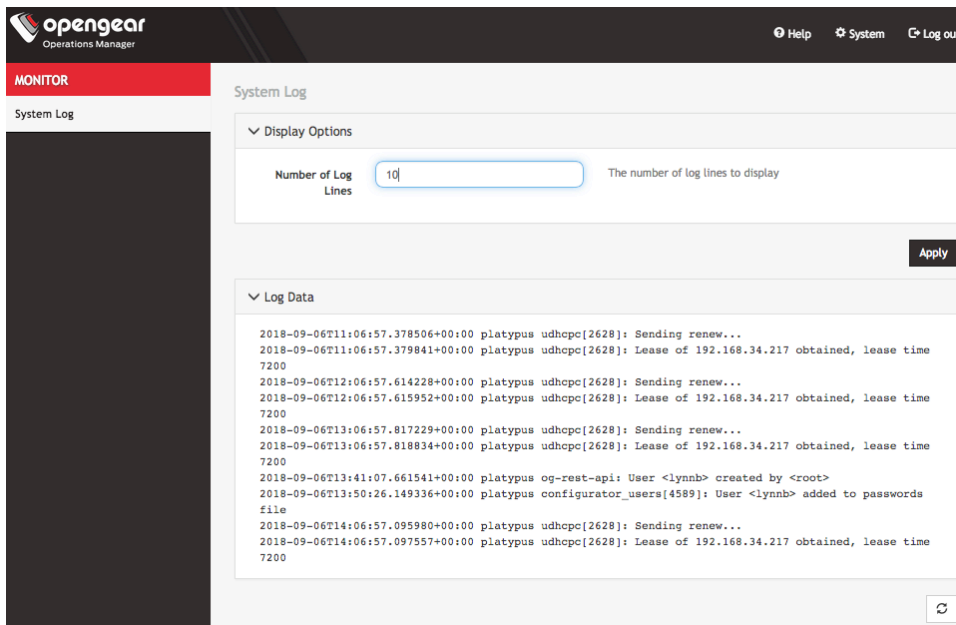
2.6 Configuring Serial Ports

For information on configuring serial ports, see *Chapter 5.1 Serial Ports*.

3. MONITOR Menu

The OM2200 maintains a log of system activity, access and communications events with the server and with attached serial, network and power devices.

To view the **System Log**, click **MONITOR > System Log**.



The **System Log** page lets you change the **Number of Log Lines** displayed on the screen. The newest items appear on the bottom of the list. Click the **Refresh** button on the bottom right to see the latest entries.

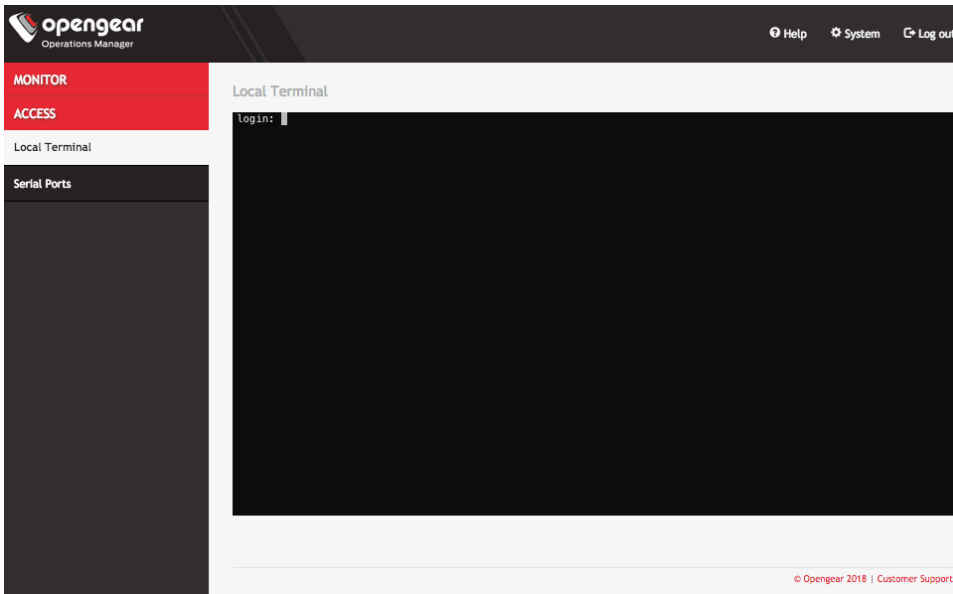
4. ACCESS Menu

The **ACCESS** menu lets you access the OM2200 via a built-in **Web Terminal**. It also provides **SSH** and **Web Terminal** access to specific ports.

4.1 Using the Local Terminal

The OM2200 includes a web-based terminal. To access this bash shell instance:

1. Select **ACCESS > Local Terminal**.



2. At the login prompt, enter a username and press **Return**.
3. At the password prompt, enter a password and press **Return**.
4. A bash shell prompt appears.

This shell supports most standard bash commands and also supports copy-and-paste to and from the terminal.

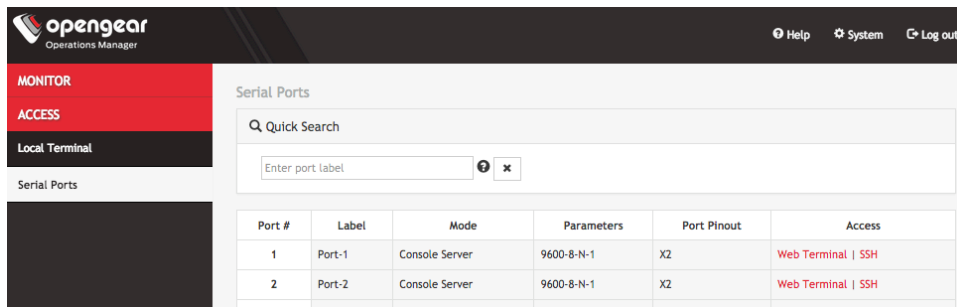
To close a terminal session, close the tab, or type **exit** in the **Web Terminal** window.

4.2 Accessing Serial Ports

The **ACCESS > Serial Ports** page allows you to quickly locate and access specific ports via Web Terminal or SSH.

4.2.1 Quick Search

To find a specific port by its **port label**, you can use the **Quick Search** form on the top of the **ACCESS > Serial Ports** page. Ports are given default numbered labels. You can set the **port label** for a given serial port under the **Common Settings** on its **Edit Serial Port** page.

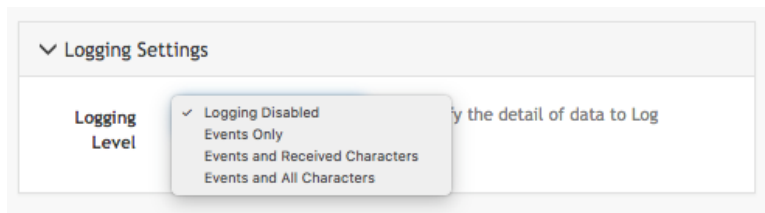


4.2.2 Accessing via Web Terminal or SSH

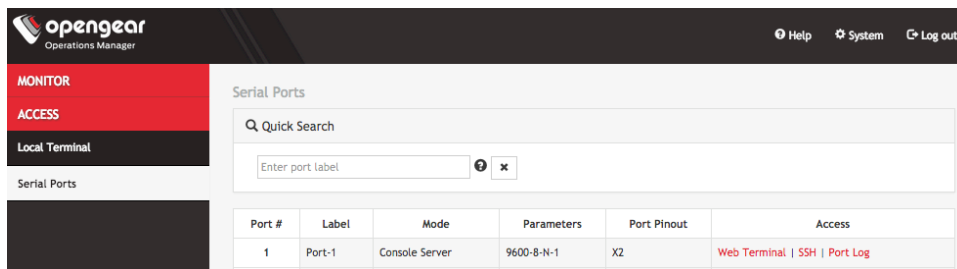
To access the console port via the **Web Terminal** or **SSH**:

1. Locate the particular port on the **ACCESS > Serial Ports** page.
 2. Click the **Web Terminal** or **SSH** link for the particular port.
- Choosing **Web Terminal** opens a new browser tab with the terminal.
 - Choosing **SSH** opens an application you have previously associated with SSH connections from your browser.

NOTE: Serial port logging is disabled by default. You can control the level of logging for each serial port by changing **Logging Settings** on its **Serial Ports > Edit** page.



The log will then appear via the **Port Log** link for that port on the **ACCESS > Serial Ports** page.



5. CONFIGURE Menu

This chapter provides step-by-step instructions for the menu items under the **CONFIGURE** menu. Configuration options include:

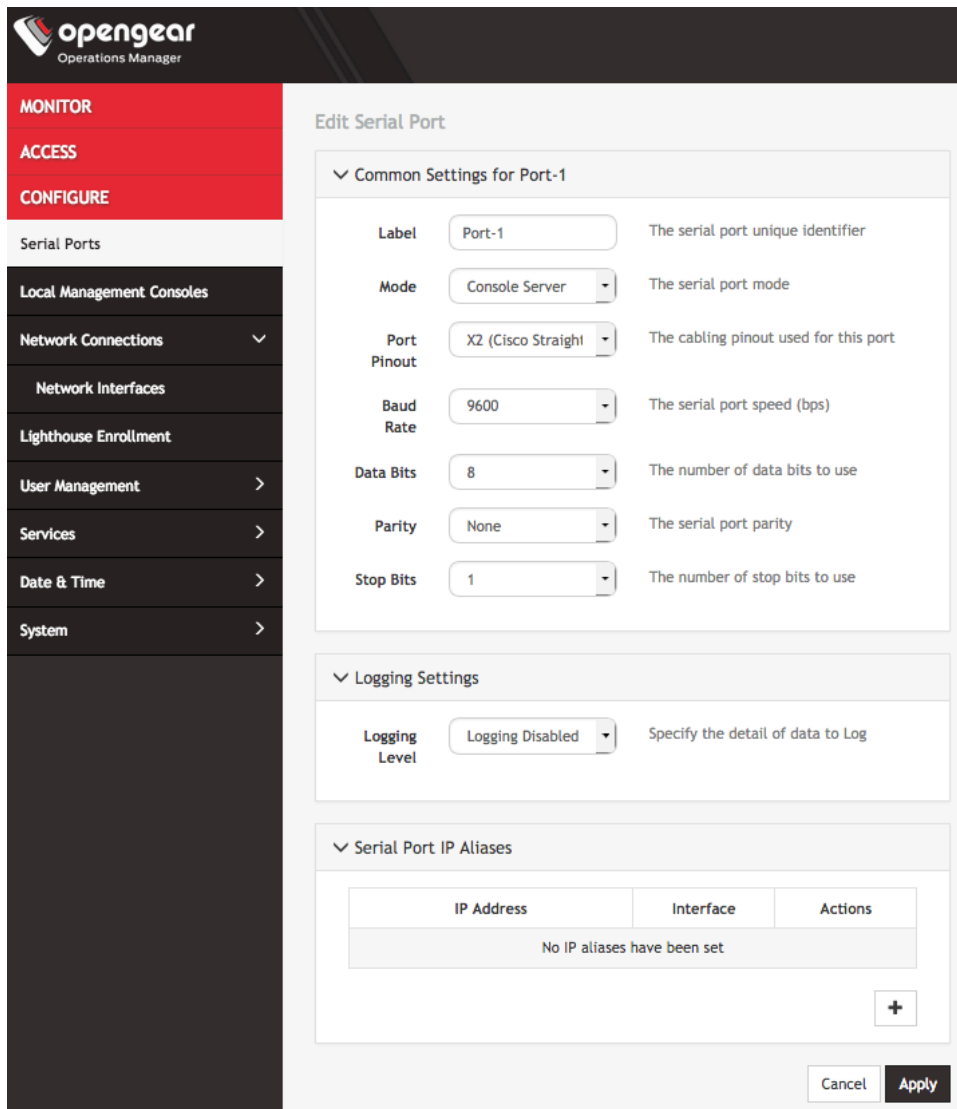
- Configuring serial ports
- Configuring the local management consoles
- Controlling interfaces and connections
- Enrolling the OM2200 to Lighthouse
- Managing users, groups, and remote authentication
- Setting up services
- Setting date and time
- Managing system settings

5.1 Serial Ports

Click **CONFIGURE > Serial Ports**. A list of serial ports appears.

Port #	Label	Mode	Parameters	Port Pinout	Actions
1	Port-1	Console Server	9600-8-N-1	X2	
2	Port-2	Console Server	9600-8-N-1	X2	
3	Port-3	Console Server	9600-8-N-1	X2	
4	Port-4	Console Server	9600-8-N-1	X2	
5	Port-5	Console Server	9600-8-N-1	X2	
6	Port-6	Console Server	9600-8-N-1	X2	
7	Port-7	Console Server	9600-8-N-1	X2	
8	Port-8	Console Server	9600-8-N-1	X2	
9	Port-9	Console Server	9600-8-N-1	X2	

Click the **Edit Serial Port** button under **Actions** next to the Serial Port you wish to configure. The **Edit Serial Port** page opens.



The **Edit Serial Port** page lets you configure the serial port's:

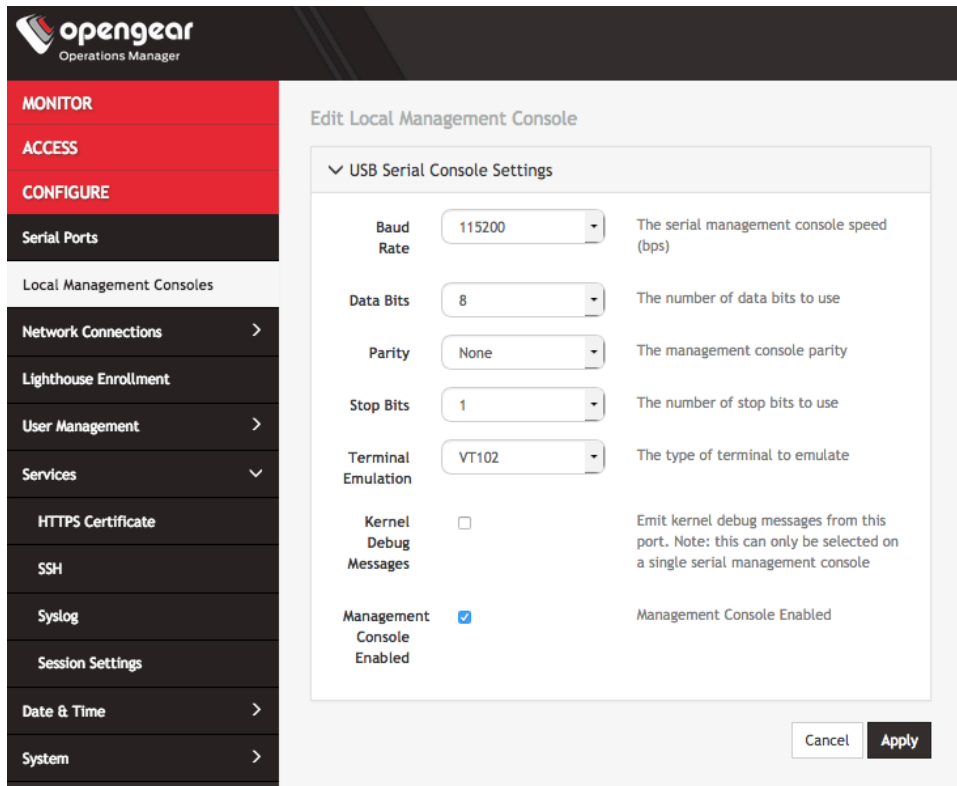
- **Label:** this can be used to locate this port using the **Quick Search** form on the **ACCESS > Serial Ports** page.
- **Mode:** Disabled or Console Server
- **Pin out:** X1 Cisco Rolled or X2 Cisco Straight
- **Baud Rate:** 50 to 230,400 bps
- **Data Bits:** 5, 6, 7, 8
- **Parity:** None, Odd, Even, Mark, Space
- **Stop Bits:** 1, 1.5, 2
- **Logging Levels**
- **Serial Port Aliases**

5.2 Local Management Consoles

You can edit settings or disable the local RJ45 serial console and the USB serial console.

To edit the settings of a local management console:

1. Click **CONFIGURE > Local Management Consoles**.
2. Click on the **Edit Management Console Port** button under **Actions** next to the console you wish to disable.



3. The **Edit Local Management Console** page lets you control:
 - Baud Rate
 - Data Bits
 - Parity
 - Stop Bits
 - Terminal Emulation
 - Enable or disable kernel debug messages
 - Enable or disable the selected management console

NOTE: Enabling kernel debug messages can only be applied to a single serial management console.

To disable a local management console, click **CONFIGURE > Local Management Consoles**. Click on the **Disable Management Console Port** button under **Actions** next to the console you wish to disable.

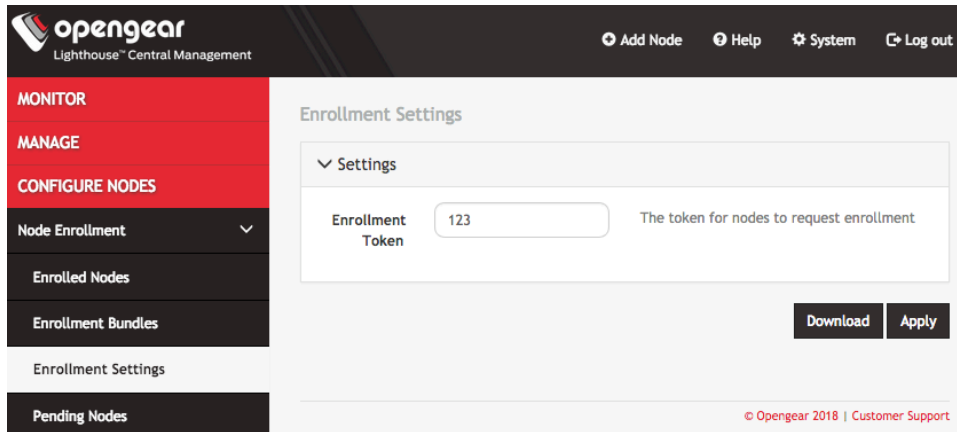
5.3 Interfaces and Connections

For instructions on adding, editing, or deleting network connections, see Chapter 2.8, *Changing the IP Address of the Primary LAN Port*.

5.4 Lighthouse Enrollment

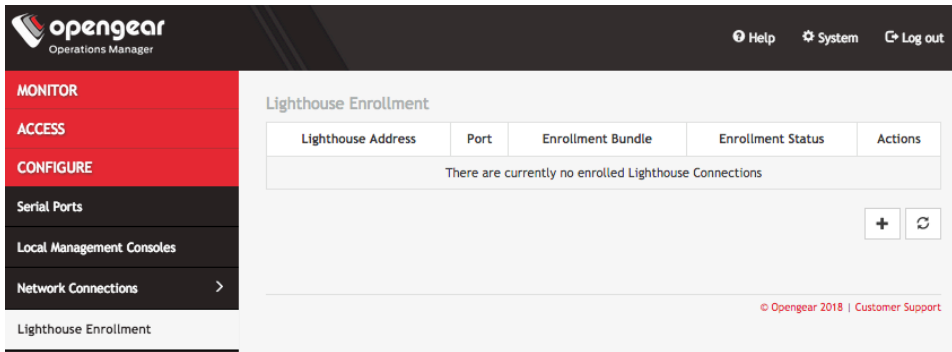
Opengear appliances can be enrolled into a Lighthouse instance, providing centralized access to console ports, NetOps Automation, and central configuration of Opengear devices.

To enroll your OM2200 to a Lighthouse instance, you must have Lighthouse installed and have an enrollment token set in Lighthouse. To set an enrollment token in Lighthouse, click on **CONFIGURE NODES > Node Enrollment > Enrollment Settings** page, and enter an **Enrollment Token**.

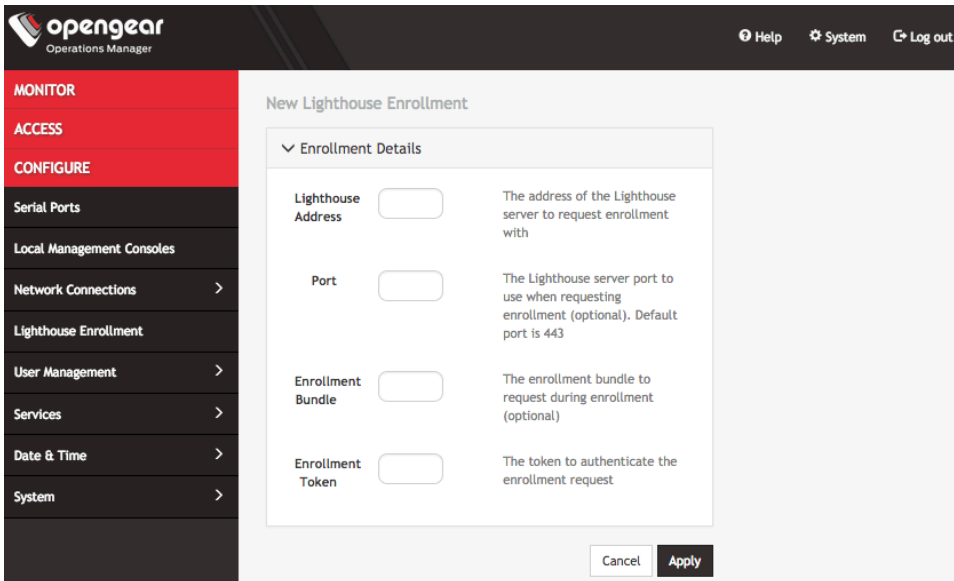


To enroll your OM2200 in this Lighthouse instance:

1. Click **CONFIGURE > Lighthouse Enrollment**.



2. Click on the **Add Lighthouse Enrollment** button on the bottom right. The **New Lighthouse Enrollment** page opens.



3. Enter the IP address or fully qualified domain name of the Lighthouse instance and the **Enrollment Token** you created in Lighthouse. Optionally enter a **Port** and an **Enrollment Bundle** (see the *Lighthouse User Guide* for more information).
4. Click **Apply**.

NOTE: Enrollment can also be done directly via Lighthouse using the **Add Node** function. See the *Lighthouse 5 User Guide* for more instructions on enrolling Opengear devices into Lighthouse.

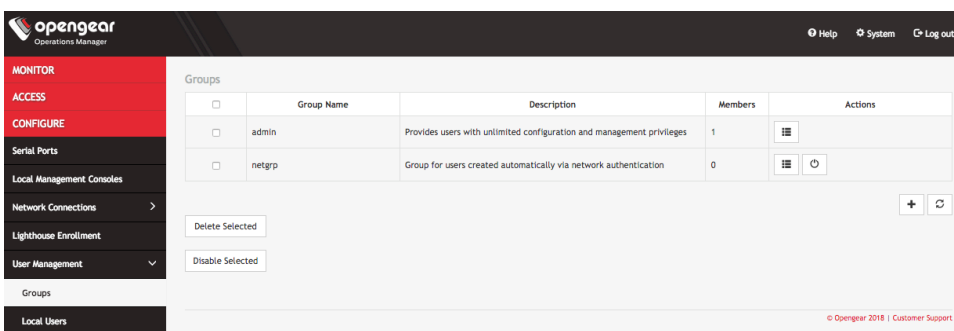
5.5 User Management

Under the **User Management** menu, you can create, edit, and delete groups and users, as well as assign users to groups. You can also set up remote user authentication.

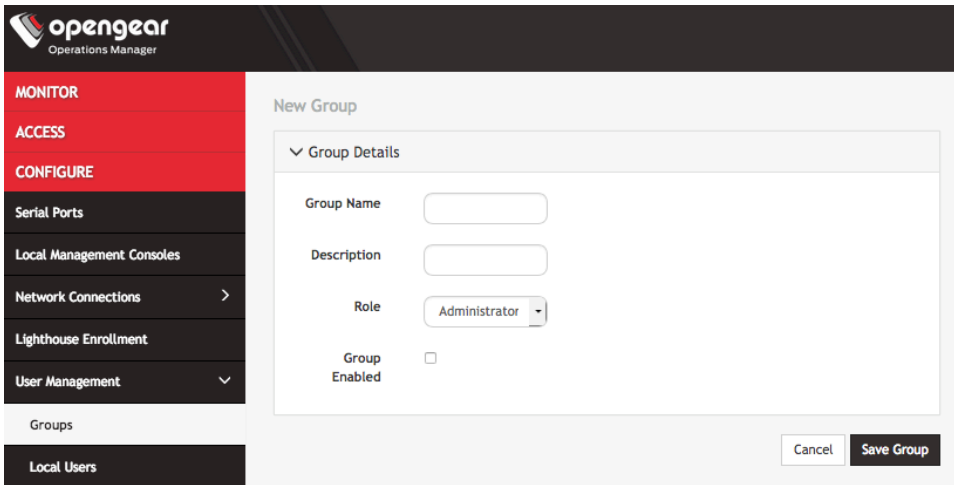
5.5.1 Groups

To create a new group:

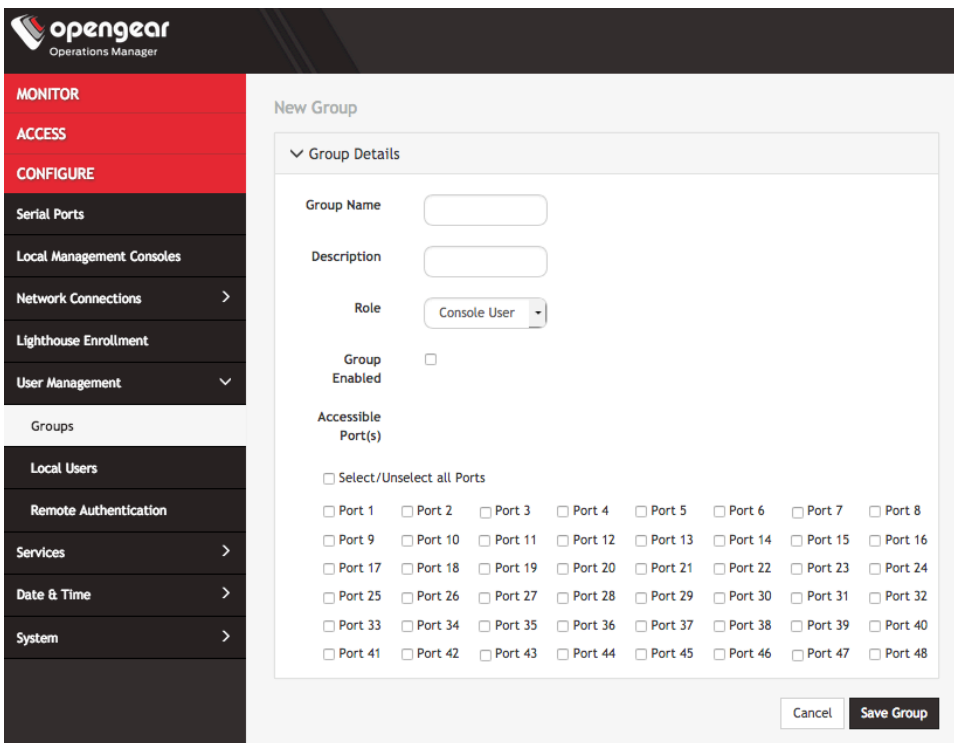
1. Select **CONFIGURE > User Management > Groups**.



2. Click the **Add Group** button. The **New Group** page opens.



3. Enter a **Group Name**, **Description**, and select a **Role** for the group.
4. Choosing the **Console User** role allows you to select specific ports this group will be able to access.



5. Click the **Group Enabled** checkbox to enable the group. After creation, groups can also be enabled or disabled from the **CONFIGURE > User Management > Groups** page.
6. Click **Save Group**.

NOTE: **Group Name** is case sensitive. It can contain numbers and some alphanumeric characters. When using remote authentication, characters from a user's remote groups that are not allowed are converted to underscores during authentication. Local groups can be created that take that into account, allowing the authentication to continue.

If the **Role** selected is **Administrator**, members of the group have access to all nodes.

To modify an existing group:

1. Select **CONFIGURE > User Management > Groups**.
2. Click **Edit** in the **Actions** section of the group to be modified and make desired changes.
3. Click **Save Group**.

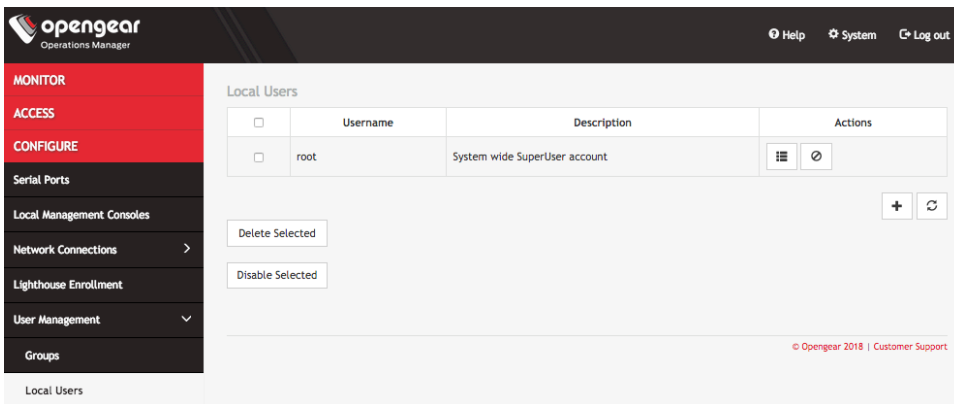
The **CONFIGURE > User Management > Groups** page also allows administrators to delete a group. Users who were members of the deleted group lose any access and administrative rights inherited from the group.

NOTE: The **netgrp** group is inherited as the primary group for all remote AAA users who are not defined locally. By default, **netgrp** has the **Administrator** role and is disabled. It must be enabled to take effect for remote AAA users.

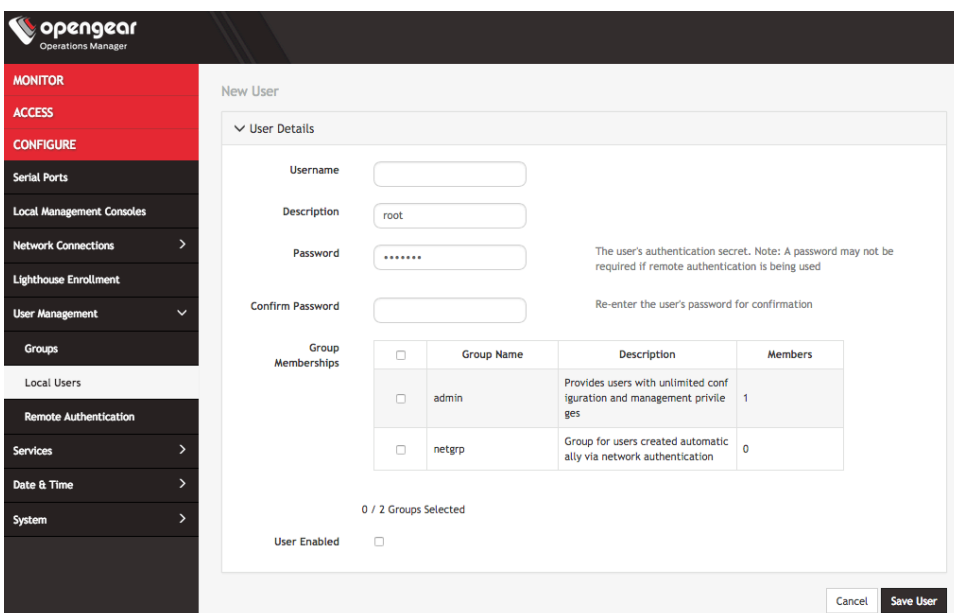
5.5.2 Local Users

To create a new user:

1. **CONFIGURE > User Management > Local Users**.



2. Click the **+** button. The **New User** dialog appears.



3. Enter a **Username**, **Description**, and **Password**.
4. Re-enter the **Password** in the **Confirm Password** field.
5. Select the **Enabled** checkbox.

6. Click **Apply**.

To create a new user without password which causes them to fail back to remote authentication:

1. Select **CONFIGURE > User Management > Remote Authentication**
2. Select a **Scheme**.
3. Enter **Settings** and click **Apply**.
4. Select **CONFIGURE > User management > Local Users**
5. Click the **+** button. The **New User** dialog loads.
6. Enter a **Username, Description**.
7. Select the **Remote Password Only** checkbox.
8. Select the **Enabled** checkbox.
9. Click **Apply**.

To modify an existing user:

1. Select **CONFIGURE > User management > Local Users**
2. Click the **Edit User** button in the **Actions** section next to the user to be modified and make desired changes.
3. Click **Save User**.

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Operations Manager

MONITOR
ACCESS
CONFIGURE

Serial Ports
Local Management Consoles
Network Connections
Lighthouse Enrollment
User Management
Groups
Local Users
Remote Authentication
Services
Date & Time
System

Edit User

▼ User Details

Username: lynnb
Description: sandyadmin
Password:
Confirm Password:
The user's authentication secret. Note: A password may not be required if remote authentication is being used
Re-enter the user's password for confirmation

<input type="checkbox"/>	Group Name	Description	Members
<input checked="" type="checkbox"/>	admin	Provides users with unlimited configuration and management privileges	2
<input checked="" type="checkbox"/>	netgrp	Group for users created automatically via network authentication	0

2 / 2 Groups Selected

User Enabled

Cancel Save User

The **Edit Users** dialog allows the user's **Description** to be changed, **Group Memberships** modified, and the user's **Password** to be reset. The username cannot be changed. To disable a user, uncheck the **Enabled** checkbox.

Disabled users cannot login to the OM2200 using either the Web-based interface or via shell-based logins.

To delete a user:

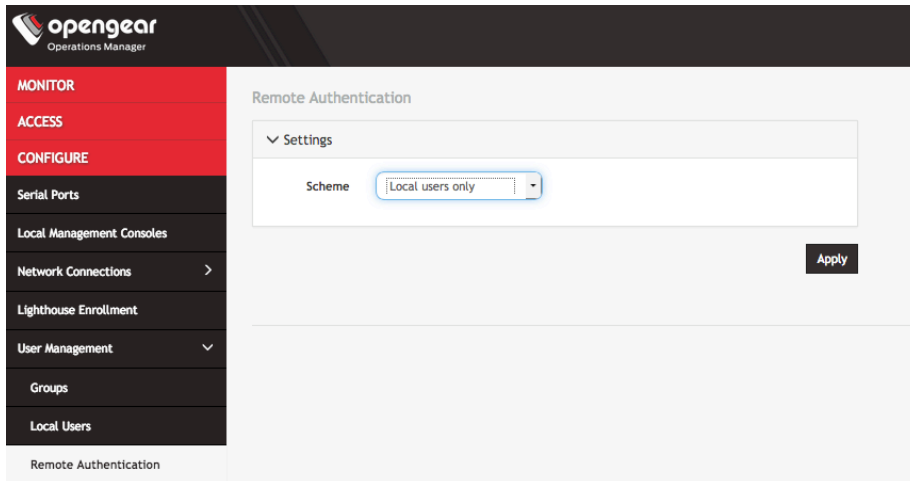
1. Select **CONFIGURE > User management > Local Users**
2. Click the **Delete User** button in the **Actions** section next to the user to be deleted.
3. Click **Yes** in the **Confirmation** dialog.

5.5.3 Remote Authentication

The OM2200 supports three AAA systems:

- LDAP (Active Directory and OpenLDAP)
- RADIUS
- TACACS+

To begin, select **CONFIGURE > User Management > Remote Authentication**.



To configure LDAP authentication:

1. Under **CONFIGURE > User Management > Remote Authentication**, select **LDAP** from the **Scheme** drop-down menu.

Remote Authentication

Settings

Scheme: LDAP

Remote authentication servers	Address	Port (defaults to 389)

LDAP base DN: [] The distinguished name of the search base. For example: dc=my-company,dc=com

LDAP bind DN: root The distinguished name to bind to the server with. The default is to bind anonymously.

Bind DN password: []

Confirm password: []

LDAP username attribute: [] The LDAP attribute that corresponds to the login name of the user (commonly "sAMAccountName" for Active Directory, and "uid" for OpenLDAP).

LDAP group membership attribute: [] The LDAP attribute that indicates group membership in a user record (commonly "memberOf" for Active Directory, and unused for OpenLDAP).

Ignore referrals: Disregard LDAP referrals to other servers

Apply

2. Add the **Address** and optionally the **Port** of the LDAP server to query.
3. Add the **Base DN** that corresponds to the LDAP system being queried.

For example, if a user's distinguished name is **cn=John Doe,dc=Users,dc=ACME,dc=com**, the **Base DN** is **dc=ACME,dc=com**

4. Add the **Bind DN**. This is the distinguished name of a user with privileges on the LDAP system to perform the lookups required for retrieving the username of the users, and a list of the groups they are members of.
5. Add the password for the binding user.
6. Add the **Username Attribute**. This depends on the underlying LDAP system. Use **sAMAccountName** for Active Directory systems, and **uid** for OpenLDAP based systems.
7. Add the **Group Membership Attribute**. This is only needed for Active Directory and is generally **memberOf**.
8. If desired, check **Ignore referrals** option. When checked, LDAP will not follow referrals to other remote authentication servers when logging users in. If multiple remote authentication servers exist on the network, checking this option may improve login times.

NOTE: Multiple servers can be added. The LDAP subsystem queries them in a round-robin fashion.

To configure RADIUS:

1. Under **CONFIGURE > User Management > Remote Authentication**, select **RADIUS** from the **Scheme** dropdown menu.

The screenshot shows the 'Remote Authentication' configuration page with the 'Scheme' dropdown set to 'RADIUS'. Under 'Remote authentication servers', there is one entry with an empty 'Address' field and a 'Port' field set to '1812'. Under 'Remote accounting servers', there is one entry with an empty 'Address' field and a 'Port' field set to 'root'. There are also fields for 'Server password' and 'Confirm server password', both containing six asterisks. An 'Apply' button is at the bottom right.

2. Add the **Address** and optionally the **Port** of the RADIUS authentication server to query.
3. Add the **Address** and optionally the **Port** of the RADIUS accounting server to send accounting information to.
4. Add and confirm the **Server password**, also known as the RADIUS Secret.

NOTE: Multiple servers can be added. The RADIUS subsystem queries them in a round-robin fashion.

To provide group membership, RADIUS needs to be configured to provide a list of group names via the Framed-Filter-Id attribute. The following configuration snippet shows how this can be configured for FreeRADIUS:

```
operator1 Auth-Type := System
    Framed-Filter-ID = ":group_name=west_coast_admin,east_coast_user:"
```

NOTE: The **Framed-Filter-ID** attribute must be delimited by the colon character.

To configure TACACS+:

1. Under **CONFIGURE > User Management > Remote Authentication**, select **TACACS+** from the **Scheme** drop-down menu.

The screenshot shows the 'Remote Authentication' configuration page with the 'Scheme' dropdown set to 'TACACS+'. Under 'Remote authentication servers', there is one entry with an empty 'Address' field and a 'Port' field set to '49'. There is a 'TACACS+ login method' dropdown set to 'PAP' with a tooltip: 'The method used to authenticate to the server. Defaults to PAP. To use DES encrypted passwords, select Login'. There are also fields for 'Server password' and 'Confirm server password', both containing six asterisks. A 'TACACS+ service' field is at the bottom with a tooltip: 'The service to authenticate with. This determines which set of attributes are returned by the server. Defaults to "raccess"'. An 'Apply' button is at the bottom right.

1. Add the **Address** and optionally the **Port** of the TACACS+ authentication server to query.
2. Select the **Login Method**. **PAP** is the default method. However, if the server uses DES-encrypted passwords, select **Login**.
3. Add and confirm the **Server password**, also known as the TACACS+ Secret.
4. Add the **Service**. This determines the set of attributes sent back by the TACACS+ server

NOTE: Multiple servers can be added. The TACACS+ subsystem queries them in a round-robin fashion.

To provide group membership, TACACS+ needs to be configured to provide a list of group names. This following configuration snippet shows how this can be configured for a tac_plus server:

```
user = operator1 {  
    service = raccess {  
        groupname = west_coast_admin, east_cost_user  
    }  
}
```

To do this with Cisco ACS, see [Setting up permissions with Cisco ACS 5 and TACACS+](#) on the Opendgear Help Desk.

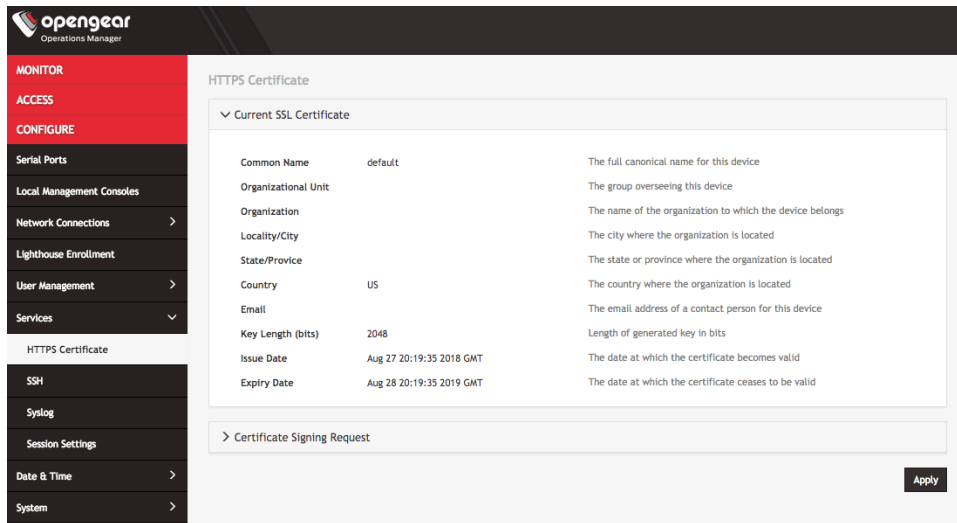
5.6 Services

The **CONFIGURE > Services** menu lets you manage services that work with the OM2200.

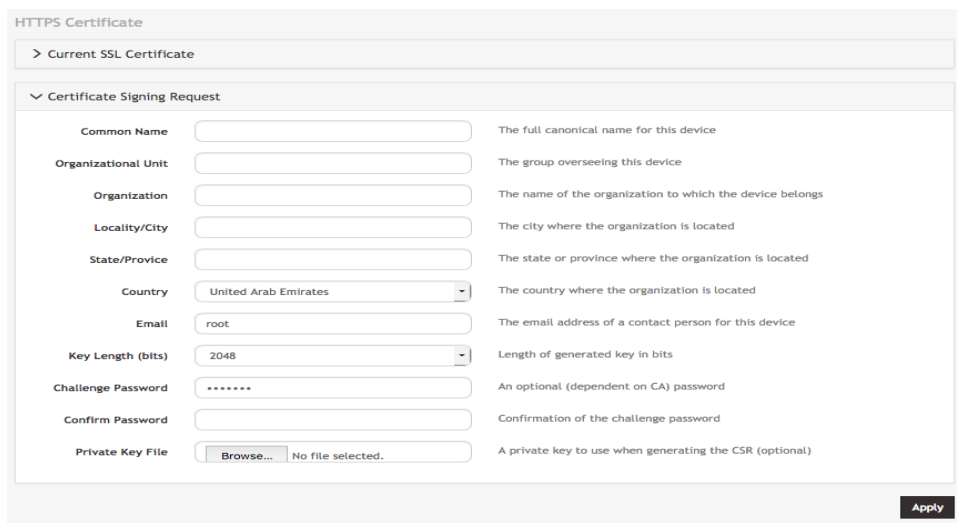
5.6.1 HTTPS Certificate

The OM2200 ships with a private SSL Certificate that encrypts communications between it and the browser.

To examine this certificate or generate a new Certificate Signing Request, select **CONFIGURE > Services > HTTPS Certificate**. The details of the **Current SSL Certificate** appear.

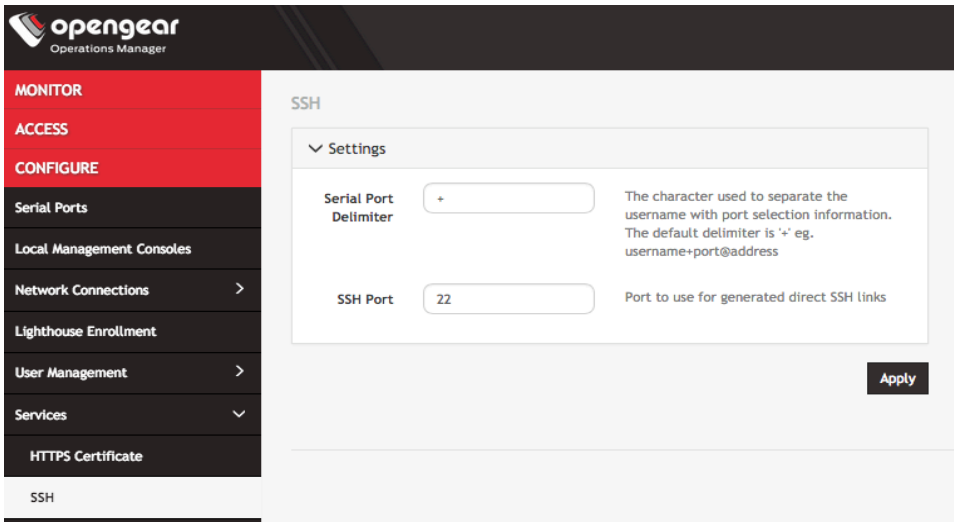


Below this listing is a **Certificate Signing Request** form, which can be used to generate a new SSL certificate.



5.6.2 SSH

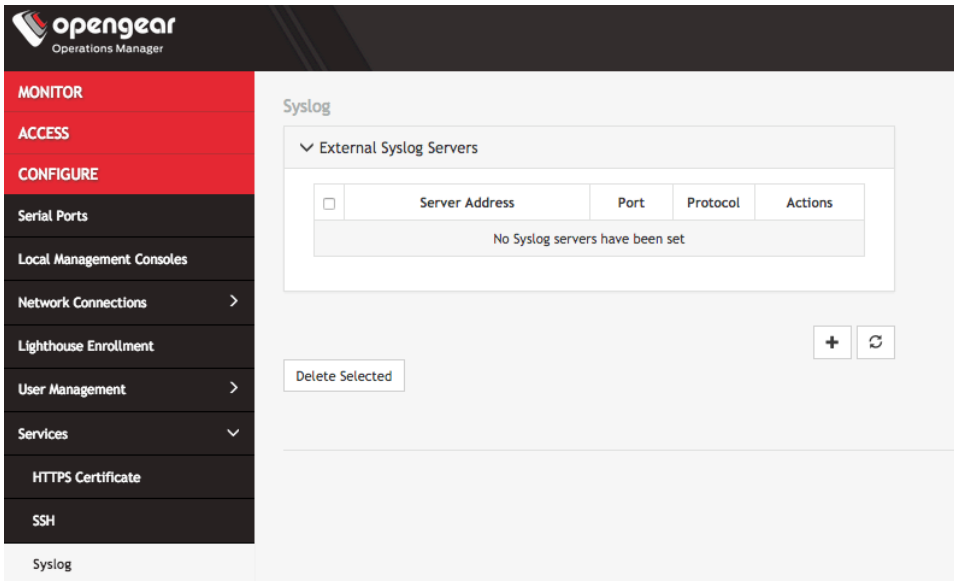
To modify the SSH Port used by the OM2200, click **CONFIGURE > Services > SSH**. This page also lets you set the delimiting character used to separate the username with port selection information. The default delimiter is a plus sign (+). For example, `username+port@address`.



5.6.3 Syslog

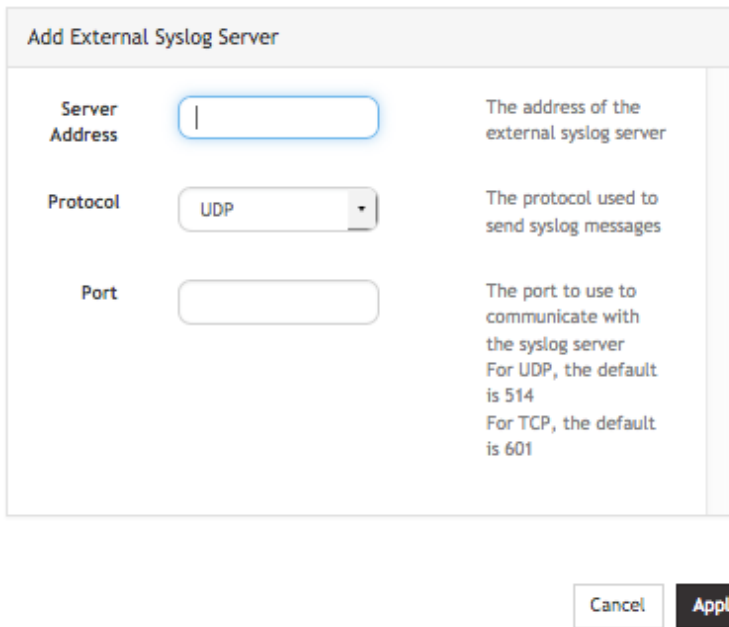
Administrative users can specify multiple external servers to export the syslog to via TCP or UDP.

Select **CONFIGURE > Services > Syslog**.



This page lists any previously added external syslog servers. **To add a new one,**

1. Click the **Add Server** button. The **Add External Syslog Server** dialog opens.



The dialog box is titled "Add External Syslog Server". It contains three input fields with corresponding descriptions:

- Server Address:** A text input field. Description: "The address of the external syslog server".
- Protocol:** A dropdown menu currently set to "UDP". Description: "The protocol used to send syslog messages".
- Port:** A text input field. Description: "The port to use to communicate with the syslog server. For UDP, the default is 514. For TCP, the default is 601".

At the bottom right of the dialog are two buttons: "Cancel" and "Apply".

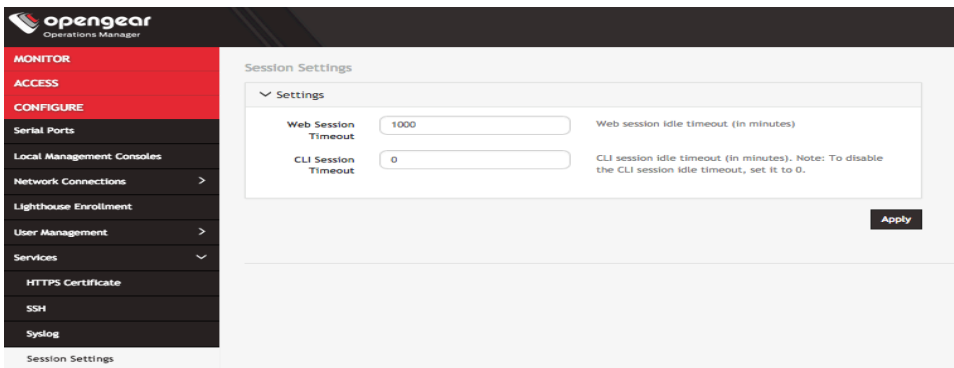
2. Enter the **Server Address**.
3. Enter the **Protocol**, either **UDP** or **TCP**.
4. Enter the correct **Port**. If no port is entered, UDP defaults to port 514 and TCP defaults to 601.
5. Click **Apply**.

To edit an existing syslog server, click the **Edit** button under **Actions**. Delete a server by clicking the **Delete** button.

5.6.4 Session Settings

To modify Web and CLI session settings select **SETTINGS > Services > Session Settings**.

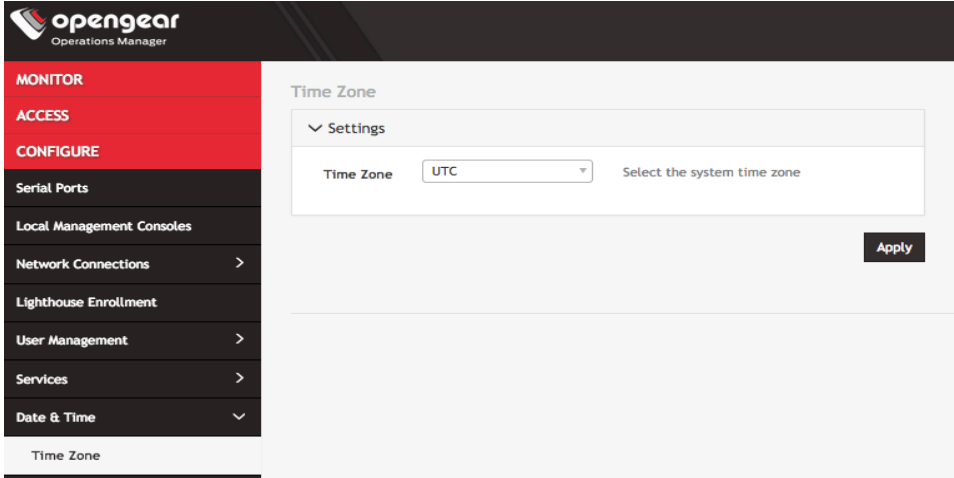
- **Web Session Timeout:** This value can be set from 1 to 1440 minutes.
- **CLI Session Timeout:** This value can be set from 1 to 1440 minutes or set it to 0 to disable the timeout. Changes take effect the next time a user logs in via the CLI.



5.7 Date & Time

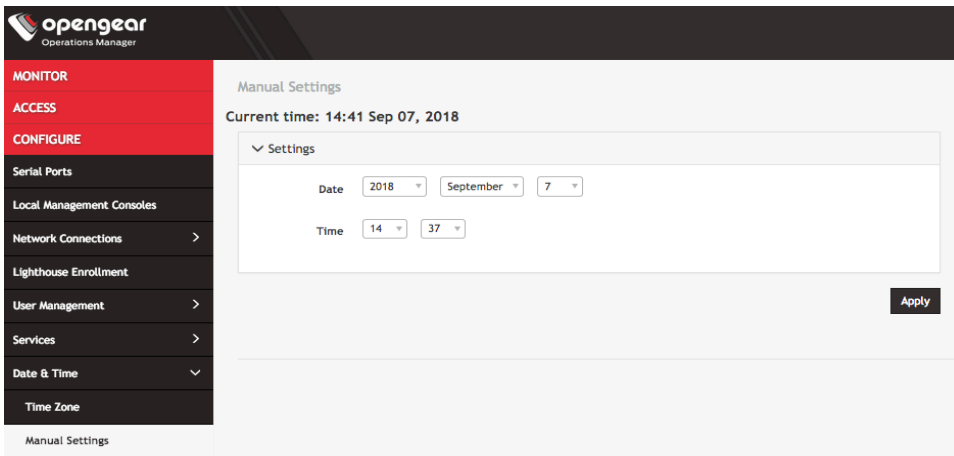
To set the time zone:

1. Click **CONFIGURE > Date & Time > Time Zone**.
2. Select the OM2200's time-zone from the **Time Zone** drop-down list.
3. Click **Apply**.



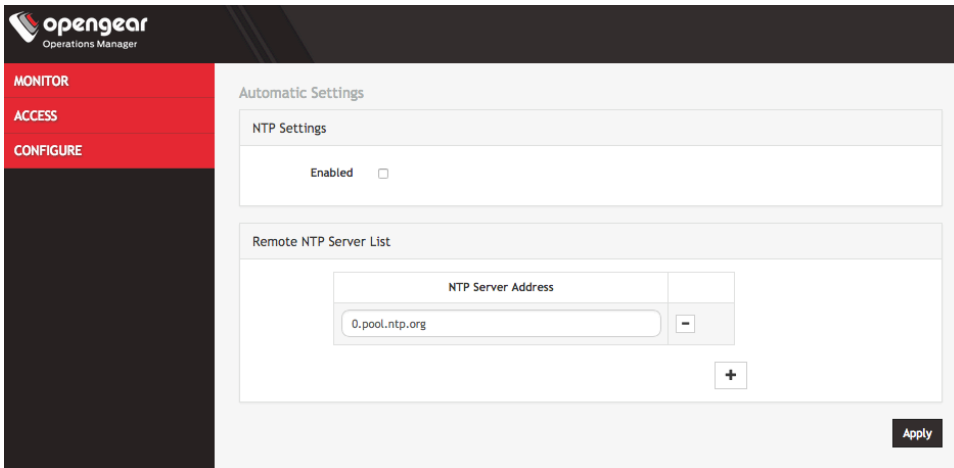
To set the correct time and date, either

1. Click **CONFIGURE > Date & Time > Manual Settings**.
2. Enter the current **Date** and **Time**.
3. Click **Apply**.



or

1. Click **CONFIGURE > Date & Time > Automatic Settings**.
2. Click the **Enabled** checkbox.
3. Enter a working NTP Server address in the **NTP Server Address** field.
4. Click **Apply**.

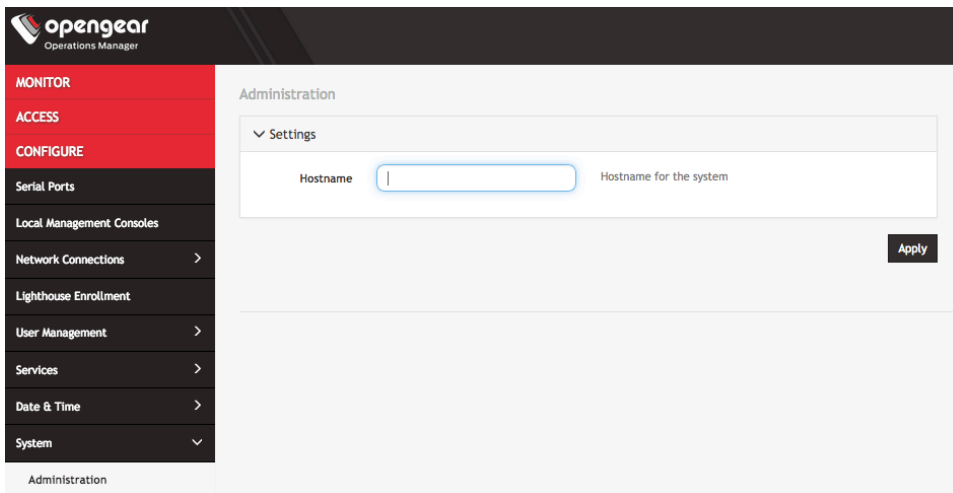


5.8 System

The **CONFIGURE > System** menu lets you change the OM2200's hostname, perform system upgrades, and reset the system.

To set the hostname for the OM2200:

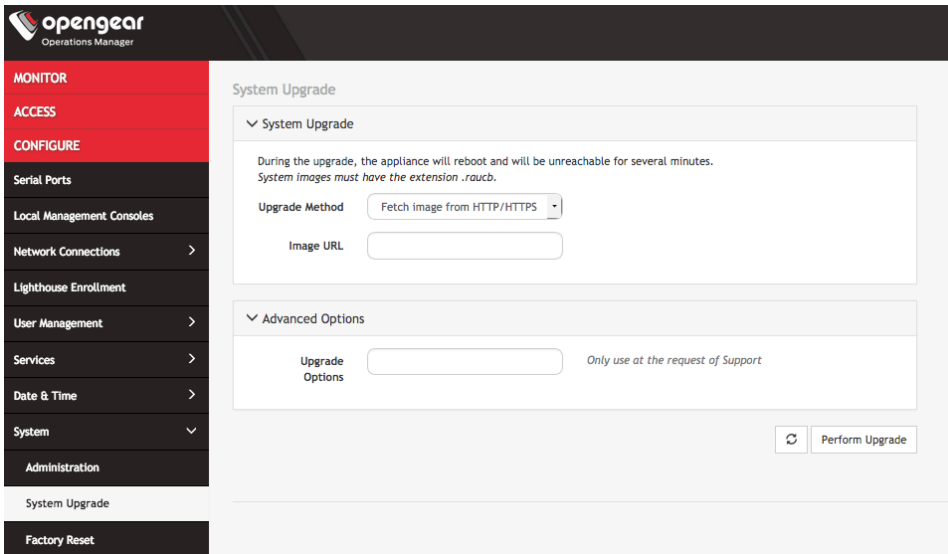
1. Click **CONFIGURE > System > Administration**.
2. Edit the **Hostname** field.



3. Click **Apply**.

To perform a system upgrade:

1. Select **CONFIGURE > System > System Upgrade**.
2. Select the **Upgrade Method**, either **Fetch image from HTTP/HTTPS Server** or **Upload Image**.



If upgrading via **Fetch image from HTTP/HTTPS Server**:

1. Enter the URL for the system image in the **Image URL** text-entry field.
2. Click **Perform Upgrade**.

Or if upgrading via **Upload Image**:

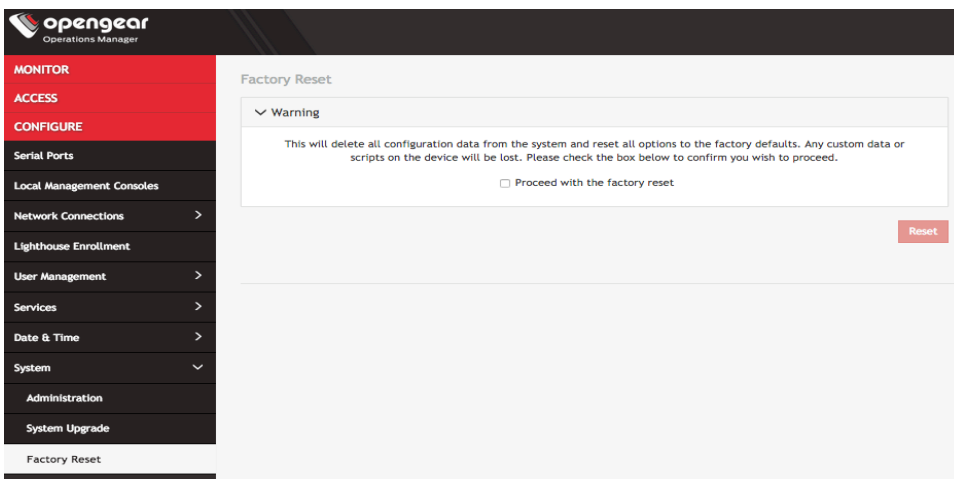
1. Click the **Choose file** button.
2. Navigate to the directory containing the file.
3. Select the file and press **Return**.
4. Click **Perform Upgrade**.

NOTE: The **Advanced Options** section should only be used if a system upgrade is being performed as part of an Opengear Support call.

Once the upgrade has started, the **System Upgrade** page displays feedback as to the state of the process.

To return the OM2200 to its factory settings:

1. Select **CONFIGURE > System > Factory Reset**.



2. Select the **Proceed with the factory reset** checkbox.
3. Click **Reset**.

6. Advanced Options

The OM2200 supports a number of command line interface (CLI) options and REST API.

6.1 Communicating with the Cellular Modem

Interfacing with the cellular modem is currently only available via CLI.

Usage:

mmcli [OPTION?] - Control and monitor the ModemManager

Options:

-h, --help	Show help options
--help-all	Show all help options
--help-manager	Show manager options
--help-common	Show common options
--help-modem	Show modem options
--help-3gpp	Show 3GPP related options
--help-cdma	Show CDMA related options
--help-simple	Show Simple options
--help-location	Show Location options
--help-messaging	Show Messaging options
--help-voice	Show Voice options
--help-time	Show Time options
--help-firmware	Show Firmware options
--help-signal	Show Signal options
--help-oma	Show OMA options
--help-sim	Show SIM options
--help-bearer	Show bearer options
--help-sms	Show SMS options
--help-call	Show call options

Application Options:

-v, --verbose	Run action with verbose logs
-V, --version	Print version
-a, --async	Use asynchronous methods
--timeout=[SECONDS]	Timeout for the operation

6.2 ogconfig-cli

ogconfig-cli allows users to inspect and modify the configuration tree from the command line. It is transactional in nature, allowing users to ensure their configuration is correct before pushing it to the configuration server.

As the root user, start the tool with:

```
ogconfig-cli
```

6.2.1 Commands to try from within the ogconfig-cli tool

- help

- `get .`
- `print . 2`
- `print users[0].username`
- `find users enabled false`

6.2.2 Config searches using `ogconfig-cli`

Simple config searches can be performed from inside `ogconfig-cli` with the `find` command.

NOTE: The element being searched must be a list, otherwise the command returns an error.

The syntax is:

```
find <path of list to search> <element to search for> <value to search for>
```

For example, to find enabled users use:

```
ogcfg > find users enabled true
```

6.2.3 Changing a configuration from within `ogconfig-cli`

From inside `ogconfig-cli`:

```
ogcfg> set system.hostname "opengear-om2200-new"  
ogcfg> push  
ogcfg> quit
```

To see that the change has taken effect:

```
$ cat /etc/hostname
```

A configuration change doesn't take effect until it is pushed to the configuration server. For example, from inside `ogconfig-cli`:

```
ogcfg> set system.hostname "opengear- om2200-new-again"  
ogcfg> print system.hostname  
ogcfg> quit
```

To verify that the change did not yet take effect:

```
$ cat /etc/hostname
```

6.3 Docker

Docker is a tool designed to make it easier to create, deploy, and run applications by distributing them in *containers*. Developers can use containers to package up an application with all of the parts it needs, like libraries and dependencies, and then ship it out as one package. Docker is running by default on the OM2200. You can access commands by typing `docker` in the Local Terminal or SSH:

Usage: `docker COMMAND`

A self-sufficient runtime for containers

Options:

```

--config string      Location of client config files (default "/home/root/.docker")
-D, --debug          Enable debug mode
--help              Print usage
-H, --host list      Daemon socket(s) to connect to
-l, --log-level string Set the logging level ("debug"|"info"|"warn"|"error"|"fatal")
(default "info")
--tls                Use TLS; implied by --tlsverify
--tlscacert string   Trust certs signed only by this CA (default
"/home/lynnb/.docker/ca.pem")
--tlscert string     Path to TLS certificate file (default
"/home/lynnb/.docker/cert.pem")
--tlskey string      Path to TLS key file (default "/home/lynnb/.docker/key.pem")
--tlsverify          Use TLS and verify the remote
-v, --version        Print version information and quit

```

Management Commands:

```

checkpoint    Manage checkpoints
config        Manage Docker configs
container     Manage containers
image         Manage images
network       Manage networks
node          Manage Swarm nodes
plugin        Manage plugins
secret        Manage Docker secrets
service       Manage services
stack         Manage Docker stacks
swarm         Manage Swarm
system        Manage Docker
volume        Manage volumes

```

Commands:

```

attach        Attach local standard input,output,and error streams to running container
build         Build an image from a Dockerfile
commit        Create a new image from a container's changes
cp            Copy files/folders between a container and the local filesystem
create        Create a new container
deploy        Deploy a new stack or update an existing stack
diff          Inspect changes to files or directories on a container's filesystem
events        Get real time events from the server
exec          Run a command in a running container
export        Export a container's filesystem as a tar archive
history        Show the history of an image
images        List images
import        Import the contents from a tarball to create a filesystem image
info          Display system-wide information
inspect       Return low-level information on Docker objects
kill          Kill one or more running containers
load          Load an image from a tar archive or STDIN
login         Log in to a Docker registry
logout        Log out from a Docker registry
logs          Fetch the logs of a container
pause         Pause all processes within one or more containers
port          List port mappings or a specific mapping for the container
ps            List containers
pull          Pull an image or a repository from a registry
push          Push an image or a repository to a registry
rename        Rename a container

```

restart	Restart one or more containers
rm	Remove one or more containers
rmi	Remove one or more images
run	Run a command in a new container
save	Save one or more images to a tar archive (streamed to STDOUT by default)
search	Search the Docker Hub for images
start	Start one or more stopped containers
stats	Display a live stream of container(s) resource usage statistics
stop	Stop one or more running containers
tag	Create a tag TARGET_IMAGE that refers to SOURCE_IMAGE
top	Display the running processes of a container
unpause	Unpause all processes within one or more containers
update	Update configuration of one or more containers
version	Show the Docker version information
wait	Block until one or more containers stop, then print their exit codes

Run 'docker COMMAND --help' for more information on a command.

6.4 cron

Cron service can be used for scheduled cron jobs runs. Daemon can be managed via the /etc/init.d/crond interface, and cron tables managed via crontab. Crontab supports:

Usage:

```
crontab [options] file
crontab [options]
crontab -n [hostname]
```

Options:

```
-u <user>   define user
-e          edit user's crontab
-l          list user's crontab
-r          delete user's crontab
-i          prompt before deleting
-n <host>   set host in cluster to run users' crontabs
-c          get host in cluster to run users' crontabs
-x <mask>   enable debugging
```

To perform start/stop/restart on crond service:

```
/etc/init.d/crond start
```

Cron doesn't need to be restarted when crontab file is modified, it examines the modification time on all crontabs and reload those which have changed.

To verify the current crond status:

```
/etc/init.d/crond status
```

To check current cron jobs running with the following command to list all crontabs:

```
crontab -l
```

To edit or create a custom crontab file:

```
crontab -e
```

This opens a personal `crontab` configuration file. Each line can be defined as one command to run. The following format is used:

```
minute hour day-of-month month day-of-week command
```

For example, append the following entry to run a script every day at 3am:

```
0 3 * * * /etc/config/backup.sh
```

Save and close the file.

7. End-user license agreements

7.1 Opengear end-user license agreement

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