ExtremeSwitching 200 Series: Initial Configuration and Setup

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Preface

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1 Operating System and Command Line Basics

Using the Command Modes
Configuring Multiple Ports at the Same Time
Saving Your Configuration

ExtremeSwitching 210 and 220 Series switches run the 200 Series Operating System. You can interact with the operating system through a web browser, using the web user interface, or through a CLI (command-line interface).

Note
200 Series Operating System commands are different from those used in ExtremeXOS, EOS, and ExtremeWare.

The topics in this section cover basic techniques to help you become comfortable using the 200 Series Operating System CLI to perform basic common and configuration tasks.

For detailed information about using the 200 Series Operating System, refer to the following publications:

- *ExtremeSwitching 200 Series: Administration Guide*
- *ExtremeSwitching 200 Series: Command Reference Guide*

Using the Command Modes

The CLI (command-line interface) groups commands into modes according to the command function. Each of the command modes supports specific 200 Series software commands. The commands in one mode are not available until you switch to that particular mode, with the exception of the User EXEC mode commands. You can execute the User EXEC mode commands in the Privileged EXEC mode.

The command prompt changes in each command mode to help you identify the current mode. Table 1 lists some of the most commonly used command-mode prompts. For information about other command modes, see *ExtremeSwitching 200 Series: Command Reference Guide*.

Table 1: Commonly Used CLI Command Modes

Command Mode	Prompt	Mode Description
User EXEC	Extreme *nnn*>	Contains a limited set of commands to view basic system information.
Privileged EXEC	Extreme *nnn*#	Allows you to issue any **EXEC** command, enter the VLAN mode, or enter the Global Configuration mode.

Table 1: Commonly Used CLI Command Modes (continued)

Command Mode	Prompt	Mode Description
Global Config	Extreme ***nnn*** (Config)#	Groups general setup commands and permits you to make modifications to the running configuration.
VLAN Config	Extreme ***nnn*** (Vlan)# or Extreme ***nnn*** (Vlan ***vlan_id***)#	Groups all the VLAN commands.
Interface Config	Extreme ***nnn*** (Interface ***unit/slot/port)***# Extreme ***nnn*** (Interface Loopback ***id***)# Extreme ***nnn*** (Interface Tunnel ***id***)# Extreme ***nnn*** (Interface ***unit/slot/port (startrange)-unit/slot/port(endrange)***#	Manages the operation of one or more interfaces and provides access to the router interface configuration commands. Use this mode to set up a physical port for a specific logical connection operation. You can also use this mode to manage the operation of a set of interfaces or a range of interfaces. For example: • `Extreme nnn (Interface 1/0/1,1/0/3) #` manages interfaces 1/0/1 and 1/0/3. • `Extreme nnn (Interface 1/0/1-1/0/4) #` manages the range of interfaces from 1/0/1 through 1/0/4.
	Extreme ***nnn*** (Interface vlan ***vlan-id***)#	Enters VLAN routing interface configuration mode for the specified VLAN ID.
Stack Global Config Mode	Extreme ***nnn*** (Config stack)#	Allows you to access the Stack Global Config Mode.

Table 2 describes how to access each of the common command modes. For information about accessing other command modes, see *ExtremeSwitching 200 Series: Command Reference Guide*.

Table 2: Accessing Common Command Modes

Command Mode	Access Method
User EXEC	This is the first level of access.
Privileged EXEC	From the User EXEC mode, enter `enable`.
Global Config	From the Privileged EXEC mode, enter `configure`.
VLAN Config	From the Privileged EXEC mode, enter `vlan database` or `vlan vlan_id`.

Table 2: Accessing Common Command Modes (continued)

Command Mode	Access Method
Interface Config	From the Global Config mode, enter: `interface` *`unit/slot/port`* or `interface loopback` *`id`* or `interface tunnel` *`id`* `interface` *`unit1/slot1/port1,unit2/slot2/port2,...`* (to manage more than one interface) `interface` *`unit1/slot1/port1-unit2/slot2/port2-`* (to manage a range of interfaces) `interface vlan` *`vlan-id`*
Stack Global Config Mode	From the Global Config mode, enter the `stack` command.

To exit a mode and return to the previous mode, enter `exit`. To exit to Privileged EXEC mode, press **[Ctrl]+[Z]**.

Note
Pressing **[Ctrl]+[Z]** from Privileged EXEC mode exits to User EXEC mode. To exit User EXEC mode, enter `logout`.

Configuring Multiple Ports at the Same Time

In the 200 Series CLI (command-line interface), you can configure multiple ports using just one command. You do this by specifying either a list or a range of port numbers.

Specifying a List of Ports

To specify a list of ports, enter two or more interfaces in unit/slot/port format, separated by commas.

In the following example, the ports at 1/0/1 and 1/0/10 are added to LAG 1.

```
(Extreme 220) >enable
(Extreme 220) #configure
(Extreme 220) (Config) #interface 1/0/1,1/0/10
(Extreme 220) (Interface 1/0/1,1/0/10) #addport lag 1
```

Specifying a Range of Ports

To specify a range of ports, enter two interfaces in unit/slot/port format, separated by a hyphen (-).

In the following example, all ports between 1/0/1 and 1/0/10, inclusive, are added to LAG 2.

```
(Extreme 220) >enable
(Extreme 220) #configure
(Extreme 220) (Config) #interface 1/0/1-1/0/10
(Extreme 220) (Interface 1/0/1-1/0/10) #addport lag 2
```

Saving Your Configuration

To save your configuration changes so that your running configuration will persist through a reboot, use one of the following options.

- Using the command-line interface: After you have made changes to the switch configuration, issue the command `write memory`.

  Then respond to the confirmation prompt.
- Using the web interface: Do the following:
  a Click **System** > **Configuration Storage** > **Copy**.

    The Copy Configuration Files page opens.
  b In the **Source File** field, select **Running Config**.
  c In the **Destination File** field, select **Startup Config**.
  d Click **Submit**.

The currently running configuration will remain in effect when the switch is rebooted.

2 Configuring the Service (Network Management) Port

Configuring the Service Port Using the Command-Line Interface
Configuring the Service Port Using the Web Interface

The service port, or network management port, is a dedicated Ethernet port used for managing the 200 Series switch out-of-band.

By default, the 200 Series software expects the service port to have a DHCP address. There is no VLAN associated with the service port.

To configure the service port on a 200 Series switch, follow either of these procedures:

- Configuring the Service Port Using the Command-Line Interface on page 10
- Configuring the Service Port Using the Web Interface on page 10

Configuring the Service Port Using the Command-Line Interface

To configure the service port, or network management port, on a 200 Series switch using the command-line interface, follow these steps:

1 Log on to the switch.
2 Enter `enable` to access Privileged EXEC mode.
3 Enter the command `serviceport protocol none`.

The system prompts you for confirmation:

```
Changing protocol mode will reset ip configuration.
Are you sure you want to continue? (y/n)
```

4 Enter `y` in response to the prompt.
5 Define the service port by entering the command `serviceport ip` *`ipaddr netmask gateway`*.

Where:

- *`ipaddr`* is the IP address of the interface.
- *`netmask`* is the subnet mask for the interface.
- *`gateway`* is the default gateway for the interface.

The service port is ready for use.

Configuring the Service Port Using the Web Interface

To configure the service port, or network management port, on a 200 Series switch using the web interface, follow these steps:

1 Log on to the switch using your web browser.

2 Open the Service Port IPv4 Configuration page: **System** > **Connectivity** > **Service Port IPv4**.

3 Define values for the service port:

a In the **Service Port Configuration Protocol** field, click **None**.

b In the following fields, supply the appropriate values for the interface:

- IP Address
- Subnet Mask
- Default Gateway

c In the rest of the fields, accept the default values.

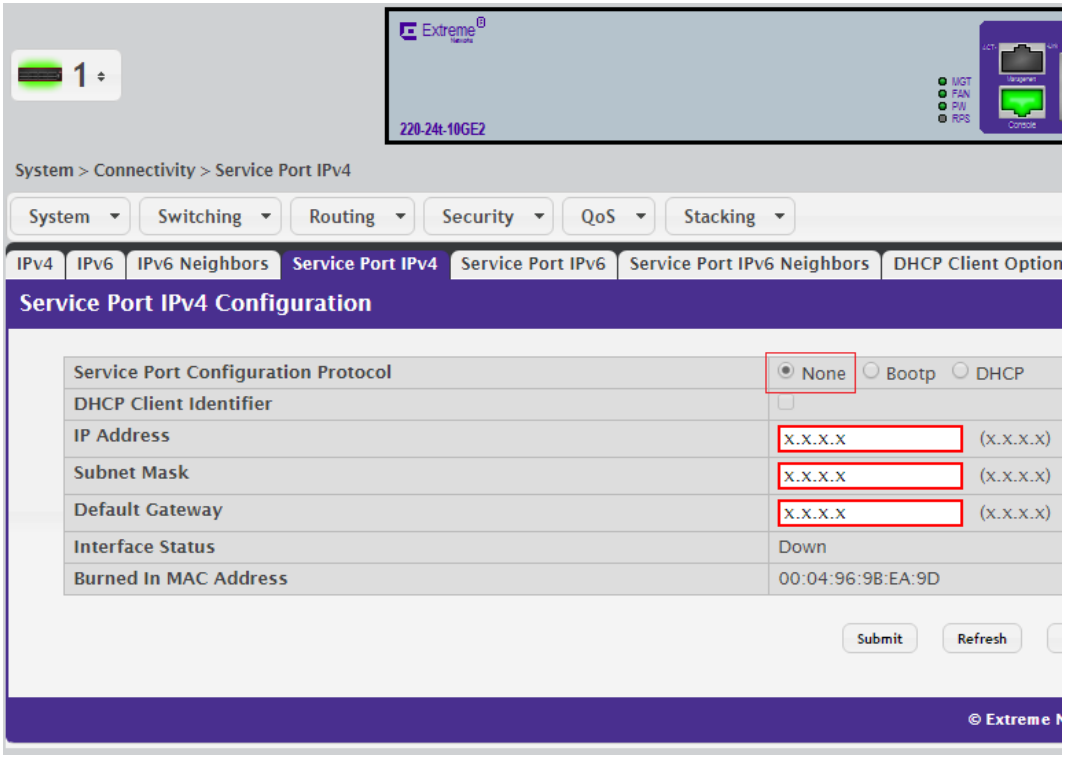

Figure 1: Fields for Configuring the Service Port

4 Click **Submit**.

The service port is ready for use.

3 Setting the Management IP Address

Setting the Management IP Address Using the Command-Line Interface
Setting the Management IP Address Using the Web Interface

The management interface is the logical interface that allows remote management of the switch using any of its front-panel ports.

To enable management of the switch over an IPv4 network by using a web browser, SNMP, Telnet, or SSH, you must first configure it with an IP address, subnet mask, and default gateway. The configuration parameters associated with the network interface do not affect the configuration of the front-panel ports through which traffic is switched or routed.

By default, the 200 Series software expects the management interface to have a DHCP address and to be associated with VLAN 1.

To configure the management IP address on a 200 Series switch, follow either of these procedures:

- Setting the Management IP Address Using the Command-Line Interface on page 12
- Setting the Management IP Address Using the Web Interface on page 13

Setting the Management IP Address Using the Command-Line Interface

To configure the management IP address on a 200 Series switch using the command-line interface, follow these steps:

1 Log on to the switch.

2 In Privileged EXEC mode, enter the command `network protocol none`.

The system prompts you for confirmation:

```
Changing protocol mode will reset ip configuration.
Are you sure you want to continue? (y/n)
```

3 Enter `y` in response to the prompt.

4 Define the IPv4 network connectivity by entering the command `network parms` ***`ipaddr netmask gateway`***.

Where:

- ***`ipaddr`*** is the IP address of the interface.
- ***`netmask`*** is the subnet mask for the interface.
- ***`gateway`*** is the default gateway for the interface.

5 Define the management VLAN by entering the command `network management_vlan` ***`vlan_id`***.

Where ***`vlan_id`*** is the VLAN identifier – a number between 1 and 4093.

The switch's management IP address is set.

Setting the Management IP Address Using the Web Interface

To configure the management IP address on a 200 Series switch using the web interface, follow these steps:

1 Log on to the switch using your web browser.
2 Open the **IPv4 Network Connectivity** page: **System** > **Connectivity** > **IPv4**.
3 Define IPv4 connectivity:
   a In the **Network Configuration Protocol** field, click **None**.
   b In the following fields, supply the appropriate values for the interface:
      - IP Address
      - Subnet Mask
      - Default Gateway
      - Management VLAN ID (the default value is 1)
   c In the rest of the fields, accept the default values.

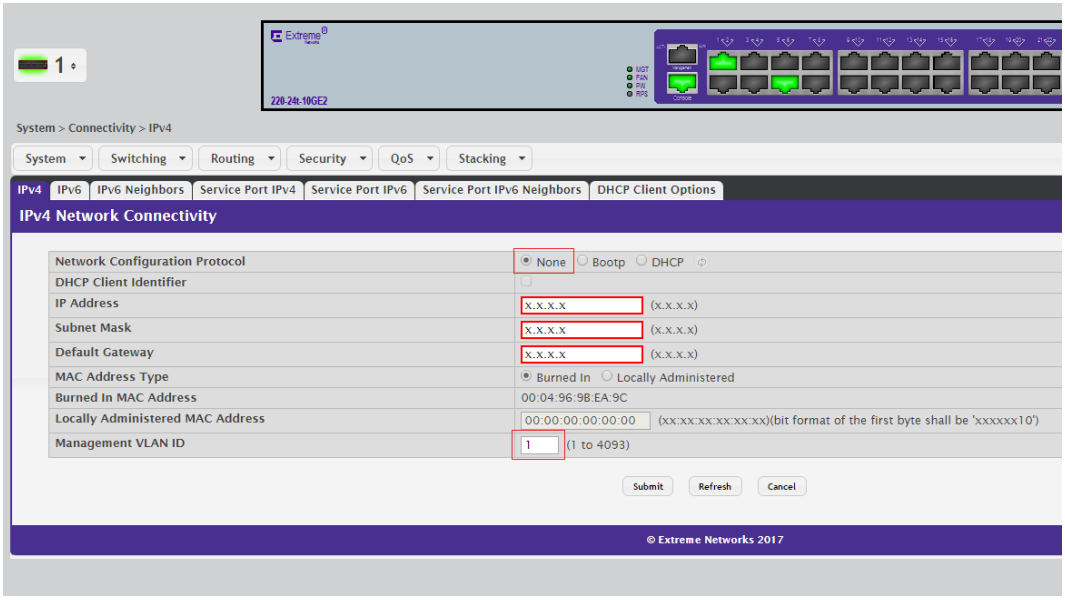

Figure 2: Fields for Setting the Management IP Address

4 Click **Submit**.

The switch's management IP address is set.

4 Configuring a Switch with an Untagged VLAN for Access Ports

Follow the steps below to configure a 200 Series switch with an untagged VLAN for access ports.

The same configuration can be used for either native or untagged VLANs, on either uplink or ISL ports.

Note that each port can have only one PVID (untagged VLAN) assigned at a time.

1 Log on to the switch.
2 Enter `enable` to access Privileged EXEC mode.
3 Create a VLAN in the VLAN database.

   For example:

```
(Extreme 220) #vlan database
(Extreme 220) (Vlan)#vlan 999
(Extreme 220) (Vlan)#exit
```

4 Enter Global Config mode and go into the port you want to configure.

   For example:

```
(Extreme 220) #configure
(Extreme 220) (Config) #interface 1/0/2
(Extreme 220) (Interface 1/0/2) #vlan pvid 999
(Extreme 220) (Interface 1/0/2) #vlan participation include 999
(Extreme 220) (Interface 1/0/2) #exit
(Extreme 220) (Config) #exit
(Extreme 220) #write memory confirm
```

Note

Optionally, you can also set VLANs to untagged using the switchport access mode option, which works in the same way as the previous example:

```
(Extreme 220) #config
(Extreme 220) (Config) #interface 1/0/2
(Extreme 220) (Interface 1/0/2) #switchport mode access
(Extreme 220) (Interface 1/0/2) #switchport access vlan 999
(Extreme 220) (Interface 1/0/2) #exit
(Extreme 220) (Config) #exit
```

5 Save your configuration.

   See Saving Your Configuration on page 9.

For information about VLAN tagging, see Configuring a Switch for VLAN Tagging and Trunking on page 15.

To configure a range or list of ports, see Configuring Multiple Ports at the Same Time on page 8.

5 Configuring a Switch for VLAN Tagging and Trunking

Follow the steps below to configure a 200 Series switch for VLAN tagging or trunking on uplink or downlink interfaces.

1 Log on to the switch.

2 Enter `enable` to access Privileged EXEC mode.

3 Create one or more VLANs in the VLAN database.

For example:

```
(Extreme 220) #vlan database
(Extreme 220) (Vlan)#vlan 10,20,30
(Extreme 220) (Vlan)#exit
```

4 Enter Global Config mode and enable trunk mode on the interface.

For example:

```
(Extreme 220) #configure
(Extreme 220) (Config) #interface 1/0/2
(Extreme 220) (Interface 1/0/2) #vlan tagging 10,20,30
(Extreme 220) (Interface 1/0/2) #vlan participation include 10,20,30
(Extreme 220) (Interface 1/0/2) #exit
(Extreme 220) (Config) #exit
```

Note

Optionally, you can also configure VLANs tagging by using the trunk mode option, which works in the same way as the previous example:

```
(Extreme 220) #config
(Extreme 220) (Config) #interface 1/0/2
(Extreme 220) (Interface 1/0/2) #switchport mode trunk
(Extreme 220) (Interface 1/0/2) #switchport trunk allowed vlan 10
(Extreme 220) (Interface 1/0/2) #switchport trunk allowed vlan add 20.30
(Extreme 220) (Interface 1/0/2) #exit
(Extreme 220) (Config) #exit
(Extreme 220) #write memory confirm
```

5 Save your configuration.

See Saving Your Configuration on page 9.

For information about configuring your switch with an untagged VLAN, see Configuring a Switch with an Untagged VLAN for Access Ports on page 14.

To configure a range or list of ports, see Configuring Multiple Ports at the Same Time on page 8.

To view all ports on a switch issue the command `show port all`.

6 Configuring SNMPv3

To configure SNMPv3 on a 200-Series switch, follow these steps.

1 Log on to the switch.

2 Enter **enable** to access Privileged EXEC mode.

3 Create an SNMPv3 access group.

For example:

```
(Extreme 220) (Config)#snmp-server group group-name v3 priv read Default write Default
notify Default
```

This command creates an SNMPv3 access group that can be accessed only when using both authentication and encryption (***priv*** operand).

The command specifies a default view, which includes the whole SNMP tree, for GET requests, SET requests, and traps (***read***, ***write***, and ***notify*** operands, respectively). You can configure your own views using the **snmp-server view** command.

4 Define an SNMPv3 user for accessing the system.

For example:

```
(Extreme 220) (Config)#snmp-server user user-name group-name auth-sha auth_pasword priv-
des priv_pasword
```

This command defines a user for the group you defined in step 3 on page 16. The user name you select must match a user name configured on the SNMP server.

In this example, a SHA-1 password is defined (***auth-sha*** operand); alternatively, you can use MD5 authentication (***auth-md5*** operand).

A DES password is also defined for encryption (***priv-des*** operand). AES encryption is not available.

The SNMPv3 group is ready for use.

7 Configuring LLDP

To configure LLDP (Link Layer Discovery Protocol) on a 200-Series switch, follow these steps.

1 Log on to the switch.

2 Enter `enable` to access Privileged EXEC mode.

3 Enter `interface` *`unit/slot/port`* to access Interface Config mode – for example, `interface 1/0/1`.

4 Using a series of `lldp transmit-tlv` commands, define the type length values (TLVs) that will be transmitted in the LLDP data units (LLDPDUs) from an interface or range of interfaces.

For example:

```
(Extreme 220)(Interface 1/0/1) #lldp transmit-tlv port-desc
(Extreme 220)(Interface 1/0/1) #lldp transmit-tlv sys-name
(Extreme 220)(Interface 1/0/1) #lldp transmit-tlv sys-desc
(Extreme 220)(Interface 1/0/1) #lldp transmit-tlv sys-cap
```

In this example, the following TLVs will be included in each LLDPDU:

- *`port-desc`*: port description
- *`sys-name`*: system name
- *`sys-desc`*: system description
- *`sys-cap`*: system capabilities

5 Issue the command `lldp transmit-mgmt` so that local system management address information will be included in the LLDPDUs.

6 Issue the command `lldp portid-subtype interface-name` so that local system management address information will be included in the LLDPDUs.

This command causes the switch to send the local port ID (for example, `1/0/1`) in the LLDPDU, rather than sending the switch's MAC address. (The command default, `lldp portid-subtype mac-address`, is typically not what you want.)

7 Issue the command `show voice vlan interface all` to verify that output is displayed in the correct format.

8 Configuring PoE

The following steps will help you optimize the Power over Ethernet (PoE) configuration for supporting wireless devices, such as access points (APs).

Your 200 Series switch supports the following standards:

- Dot3af (low power) and legacy support
- Dot3at (high power) applications
- Flexible Power Management:
  - Power reservation
  - Power prioritization
  - Power limiting

Using your switch's PoE features, you can:

- Provide power to requesting devices attached directly to the switch.
- Disable some or all PoE ports from delivering power.
- Manage the amount of power that can be delivered on a PoE port.
- View the electrical measurements and power delivery status of the PoE ports.
- Restore PoE ports to normal state when they are in a fault state.

To optimize the PoE configuration, follow these steps:

1 To begin, find the switch's power budget.

In the navigation menu, click **System** > **PoE** > **Configuration**.

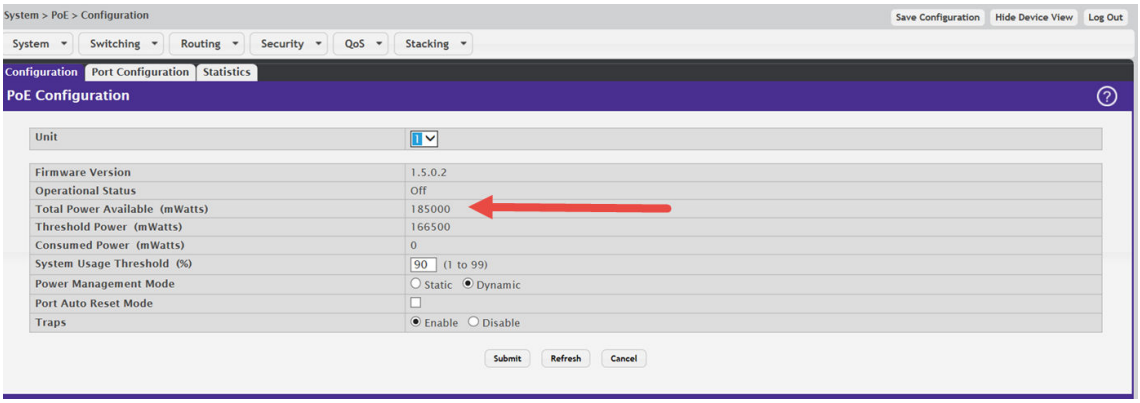

Figure 3: PoE Configuration Display

In this example, the total power budget – marked by the arrow – is 185000 mw.

Note

You can view the same information in the command-line interface, using the `show poe` command. There, the output is displayed as follows:

```
Total Power Available: WATTS I.E. 185 W
```

2 When you know the power budget, determine the power requirements for the devices you want to add.

For example:

- AF Power = 12.95 W
- AT Power = 25.5 W

If the total wattage required exceeds what is available, some of the devices will require power from external sources – for example, from the RPS-500p Redundant Power Supply.

3 Click the Port Configuration tab.

4 Select only the ports connected to devices that will require PoE, as shown in this example.

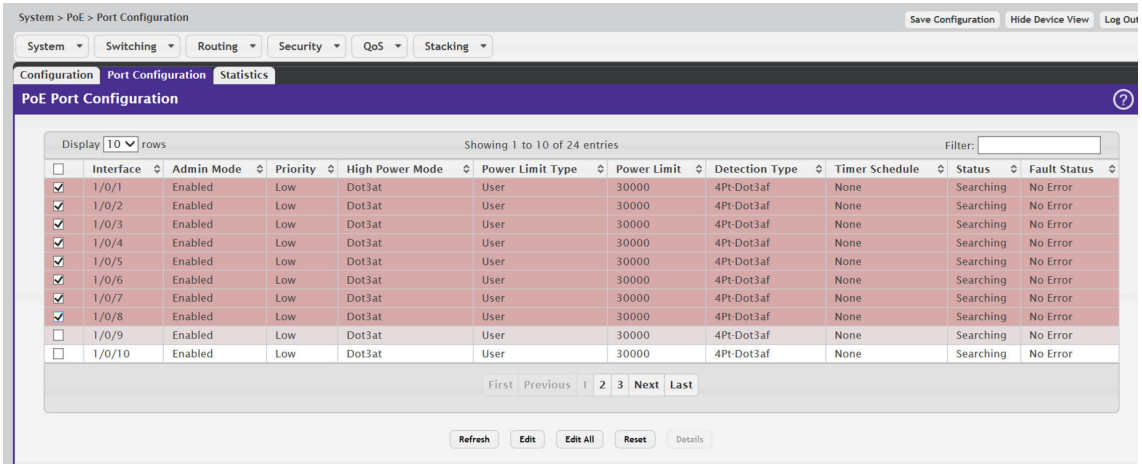

Figure 4: PoE Port Configuration Display

5 Click **Edit**.

6 In the Edit PoE Port Configuration window, set the priority to **High** for the wireless devices.

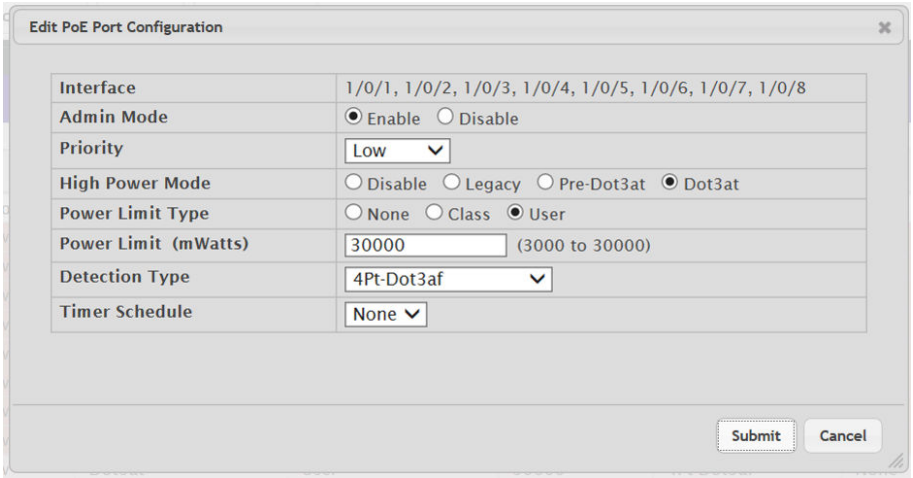

Figure 5: Edit PoE Port Configuration Window

7 Click **Submit** to save your configuration.

8 To reboot a wireless device, disable PoE to the port. Wait about 10 seconds, then re-enable PoE.