



## **Configuring the Cisco WS-C2960S-24/48TS-L series of switches for Livewire™**

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### ***Introduction***

Please note that this document applies **only** to the Cisco Catalyst WS-C2960S-24/48TS-L series of switches. Do not use the commands in this document to attempt to program any other model of switches.

Ethernet switches intended for use in constructing Axia Livewire IP-Audio networks must be properly pre-configured to provide required multicast filtering and quality of service (QoS) features. This document explains the required steps to configure Cisco 2960S series switch. Specifically the WS-C2960S-24TS-L and the WS-C2960S-48TS-L. These commands may be applicable to other members of the Catalyst product line that support these same commands.

For initial configuration of the device, you can use PuTTY, which is a free program that allows you to connect to the switch either via a Telnet session, or through a serial port and console session. If this is the first time the switch has been configured, you will have to connect to the switch via a console cable and serial connection to enter into the Express Setup. During the initial setup, you will assign the switch an IP address, which will then allow you to connect to the switch via a Telnet session. PuTTY can be used on both x86 and x64 bit systems, and can be downloaded here... <http://www.putty.org/>

IGMP is a function that you will be setting up on this switch, and for the IGMP querier process to work properly the switch should be assigned the lowest IP address in your Livewire subnet.

Please refer to your Cisco switch manual for additional information about Express Setup and using the command line interface.

### ***Configuration***

As of the date of this writing this switch has been testing using version 12.2.58-SE2 of firmware for the above-mentioned switches. Use the “show ver” command after logging in to the switch to determine what version is installed on your switch. You should see something like “c2960-universalk9-mz.122-58.SE2.bin”

To be able to make any configuration changes on the switch, you must enter Privileged User level by executing the “enable” command: enable and entering the password that you used during the express setup.



In Cisco switches, ports are named according to their speed: “FastEthernet” or “GigabitEthernet”. When configuring your switch, you must use “Gi” or “GigabitEthernet” (e.g.: “gi0/1”). The last digit specifies actual port number on the switch. Note that th

### ***VLAN 1 interface configuration***

After logging in to your switch and entering the Privileged User level via the “enable” command, enter the following, substituting the proper IP and Netmask for your installation;

```
config t
interface Vlan1
ip address 192.168.XXX.YYY 255.255.255.0
no shutdown
end
```

### ***Global IGMP configuration***

\*\* Please note that when entering the “ip igmp snooping querier” command that you may receive an error message about certain functions not being enabled. This is okay, and you can disregard the message\*\*

Enter the following instructions:

```
config t
ip igmp snooping querier max-response-time 25
ip igmp snooping vlan 1 immediate-leave
ip igmp snooping querier
ip igmp snooping querier timer expiry 205
end
```

### ***Global QoS configuration***

Enter the following instructions:

```
config t
mls qos srr-queue output cos-map queue 1 threshold 1 6 7
mls qos srr-queue output cos-map queue 3 threshold 1 5
mls qos
end
```



### ***Configuring GigabitEthernet ports connecting to Axia Devices***

These ports are used for connecting everything EXCEPT other switches. Do not use these ports for connecting other switches or Axia devices with other switches built in, like PowerStation Main or QOR. \*\* Note, a PowerStation AUX is considered an access device and may be plugged in to these ports.

Enter the following instructions:

```
config t
interface gi1/0/x
switchport mode access
switchport nonegotiate
switchport block multicast
switchport voice vlan dot1p
srr-queue bandwidth share 30 20 25 25
srr-queue bandwidth shape 0 0 0 0
priority-queue out
spanning-tree portfast
mls qos trust cos
no ip igmp snooping tcn flood
end
```

- \* Where "x" is the port # to configure
  - \* Use the RANGE command for multiple port configurations.
- Syntax: interface range gi1/0/x - yy

### ***Configuring ports connecting to other CISCO Catalyst switches or Axia devices with built in switches.***

These ports are used for connecting to other switches or Axia devices with other switches built in, like a PowerStation Main or QOR. Please note that when connecting to a PowerStation Main only the GIG ports should be used and they need to be properly configured for Trunk operation of the Ethernet Switch configuration in the Element Control Center. QOR based devices should only be connected to the GIG Ports.

Enter the following instructions:

```
config t
interface Gi1/0/x
switchport mode trunk
switchport block multicast
srr-queue bandwidth share 30 20 25 25
srr-queue bandwidth shape 0 0 0 0
priority-queue out
mls qos trust cos
no ip igmp snooping tcn flood
end
```

- \* Where "x" is the port # to configure
  - \* Use the RANGE command for multiple port configurations.
- Syntax: interface range gi1/0/x - yy



***Check your configuration***

To check your switch's complete configuration, enter:

`show running-config`

***Save your configuration***

Do not forget to save your new configuration. Enter the following instructions:

`copy running-config startup-config`

***For more assistance:***

If you have more questions about switch setup, contact Axia Support at [support@telosalliance](mailto:support@telosalliance), or at 216-622-0247.