



Configuring Cisco Catalyst 35xx/27xx Switches for Livewire™

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Introduction

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 2960 switch specifically. 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 the command line interface.

Configuration

To determine if your switch has Advanced IP Services or Basic IP Services (look for IPBASE string) software, use the “show ver” command.

show ver

To be able to make any configuration changes on the switch, you must enter Privileged User level by executing the “enable” command:

enable

Global Configurations

VLAN 1 interface configuration

Enter your IP address and network mask

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

Global IGMP configuration

Enter the following instructions:

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

Global QoS configuration

Enter the following instructions:

```
config t  
  
mls qos srr-queue input buffers 50 50  
  
mls qos srr-queue input cos-map queue 1 threshold 1 5  
  
mls qos srr-queue input cos-map queue 2 threshold 1 6 7  
  
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
```

Port Configurations

In Cisco switches, ports are named according to their speed: “FastEthernet” or “Gigabit”. When configuring your switch, you must use “Fa” or “Gi” accordingly (e.g.: “**fa0/1**” or “**gi0/1**”). Switches that can be stacked together (the 3750 has this capability) have the ports identified by 3 digits (e.g. “**gi1/0/1**”) where the first digit identifies the stack member number. On non-stackable switches (like 3560), only 2 digits are used (e.g. “**fa0/1**”). The last digit specifies actual port number on the switch.

- Where “x” is the port # to configure
 - **interface fa0/x**
- Use the **RANGE** command for multiple port configurations.
 - **interface range fa0/x - yy**
- Gigabit port configuration use syntax: **gi0/x**
- On a stackable switch use this syntax:
 - **fa1/0/x** or **gi1/0/x**

ACCESS port configuration

Enter the following instructions:

```
config t

interface fa0/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
```



TRUNK port configuration

Enter the following instructions:

```
config t
interface gi0/x
switchport trunk encapsulation dot1q
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
```

Verification

To check your switch's complete configuration, enter:

```
show running-config
```

Saving the configuration to flash

Do not forget to save your new configuration so it will load when the switch reboots. Enter the following instructions:

```
copy running-config startup-config
```

Assistance

If you have more questions about switch setup, contact Telos Support at support@telosalliance.com, or call 216-622-0247.