



# Configuring Cisco Catalyst 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 3750 and 3560 switches specifically. This document was crafted after the release of the Cisco software versions 12.2 (25) SEA and higher for the 3560 and 3750 series switches. 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 HyperTerminal with a serial port connection to the switch using the console cable. Typical default serial port settings are 9600baud / 8 bit / no parity / no flow control.

Please refer to your Cisco switch manual for additional information about 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
```

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.


You can copy and paste the following configuration code fragments to your switch according to your software version and Ethernet port use.

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

### **For Advanced IP Services software:**

Enter your IP address and network mask.

Enter your IP address and network mask




```
config t
interface Vlan1
ip address 192.168.XXX.YYY 255.255.255.0
ip pim dense-mode
ip igmp query-max-response-time 25
ip igmp querier-timeout 205
ip mroute-cache distributed
no shutdown
end
```

### **For Standard IP Services software:**

Enter your IP address and network mask.

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***

### **For Advanced IP Services software:**

Enter the following instructions:

```
config t
ip routing
ip igmp snooping vlan 1 mrouter learn cgmp
ip multicast-routing distributed
end
```

### **For Standard IP Services software:**

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
```

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

Enter the following instructions:

```
config t
interface fa0/x
  switchport mode access
  switchport nonegotiate
  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
end
```

- \* Where "x" is the port # to configure
- \* Use the RANGE command for multiple port configurations.  
Syntax: interface range fa0/x - yy
- \* Gigabit port configuration use syntax: gi0/x

## **Configuring ports connecting to other CISCO Catalyst switches**

Enter the following instructions:

```
config t
interface gi0/x
  switchport trunk encapsulation dot1q
  switchport mode trunk
  srr-queue bandwidth share 30 20 25 25
  srr-queue bandwidth shape 0 0 0 0
  priority-queue out
  mls qos trust cos
end
```

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



## **Configuring ports connecting to Allied Telesyn switches**

Enter the following instructions:

```
config t
interface gi0/x
  switchport trunk encapsulation dot1q
  switchport trunk native vlan 2
  switchport mode trunk
  switchport nonegotiate
  srr-queue bandwidth share 30 20 25 25
  srr-queue bandwidth shape 0 0 0 0
  priority-queue out
  mls qos trust dscp
end
```

- \* Where "x" is the port # to configure
- \* On a stackable switch use this syntax:  
fa1/0/x or gi1/0/x

## **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@axiaaudio.com](mailto:support@axiaaudio.com).