



## Cisco Ethernet Switch Quick Setup Guide

### For MuxLab AV over IP Devices



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## 1. Introduction

This document covers the basic setup requirements for a Cisco Ethernet Switch. The setup examples and screen shots shown are for the Cisco model SG300-10P, but these instructions are similar and applicable to other Cisco Ethernet Switch models.

## 2. MuxLab Ethernet Switch Setup Requirements

All MuxLab AV over IP Transmitters and Receivers require IGMP support to be enabled on the Ethernet Switch, and a select number of MuxLab units also require Jumbo Frames to be enabled.

Also note that all models below work on a 1G Ethernet Switch, except for the 500760, which requires a 10G Ethernet Switch.

The below table specifies the IGMP and Jumbo Frames requirement per MuxLab AV over IP Transmitter / Receiver model.

<b>AV over IP Model</b>	<b>Ethernet Switch BW Required</b>	<b>IGMP Required</b>	<b>Jumbo Frame Required</b>
500752	<b>1G</b>	<b>X</b>	
500753	<b>1G</b>	<b>X</b>	
500754	<b>1G</b>	<b>X</b>	
500755	<b>1G</b>	<b>X</b>	
500755-AMP	<b>1G</b>	<b>X</b>	
500756	<b>1G</b>	<b>X</b>	
500757	<b>1G</b>	<b>X</b>	
500758	<b>1G</b>	<b>X</b>	<b>X</b>
500759	<b>1G</b>	<b>X</b>	<b>X</b>
500760	<b>10G</b>	<b>X</b>	
500762	<b>1G</b>	<b>X</b>	
500770	<b>1G</b>	<b>X</b>	<b>X</b>
500771	<b>1G</b>	<b>X</b>	<b>X</b>

## 3. Ethernet Switch Setup

### 3.1. Enabling IGMP

Follow the steps below to enable the IGMP feature on the Ethernet Switch. For further details on navigating through the Ethernet Switch web server menus, please refer to the Ethernet Switch manual.

Step 1: Access the Ethernet Switch web server

- Locate the Ethernet Switch default IP address
- Make sure your computer is on the same subnet as the Ethernet Switch (your network administration can assist you with this, if required)
- Enter the Ethernet Switch IP address into a browser

Step 2: IGMP Snooping Configuration

- Navigate to the menu:  
[Multicast → Properties]
- Set the configuration as shown below, and then click [Apply]

The screenshot displays the Cisco Small Business SG300-10P 10-Port Gigabit PoE Managed Switch web interface. The top navigation bar includes the Cisco logo, the product name, and a language dropdown set to 'English'. A left-hand menu lists various configuration categories, with 'Multicast' selected and its sub-menu 'Properties' highlighted. The main content area, titled 'Properties', shows the 'Bridge Multicast Filtering Status' set to 'Enable'. Below this, the 'VLAN ID' is set to '1'. Two sections, 'Forwarding Method for IPv6' and 'Forwarding Method for IPv4', each have three radio button options: 'MAC Group Address' (selected), 'IP Group Address', and 'Source Specific IP Group Address'. At the bottom of the configuration area are 'Apply' and 'Cancel' buttons. The footer of the page contains the copyright notice: '© 2010-2013 Cisco Systems, Inc. All Rights Reserved.'

- Navigate to the menu:  
[Multicast → IGMP Snooping]
- (a) Enable the “IGMP Snooping Status” as shown below, and then click [Apply]

The screenshot displays the configuration page for IGMP Snooping on a Cisco SG300-10P switch. The interface includes a navigation menu on the left, a main configuration area, and a table of IGMP Snooping entries.

**IGMP Snooping Configuration:**

- IGMP Snooping Status:  Enable
- Buttons: Apply, Cancel

**IGMP Snooping Table:**

Entry No.	VLAN ID	IGMP Snooping Operational Status	Router IGMP Version	MRouter Ports Auto Learn	Query Robustness	Query Interval (sec)	Query Max Response Interval (sec)	Last Member Query Count
1	1	Enabled	v3	Enabled	2	125	10	

Buttons below the table: Copy Settings..., Edit...

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- (b) Select the radio button as shown below, and click *[Edit]*

The screenshot shows the configuration page for IGMP Snooping on a Cisco SG300-10P switch. The page title is "Small Business SG300-10P 10-Port Gigabit PoE Managed Switch". The left sidebar contains a navigation menu with categories like "Getting Started", "Status and Statistics", "Administration", "Port Management", "Smartport", "VLAN Management", "Spanning Tree", "MAC Address Tables", "Multicast", "IP Configuration", "Security", "Access Control", "Quality of Service", and "SNMP". The "Multicast" category is expanded, showing sub-items like "Properties", "MAC Group Address", "IP Multicast Group Address", "IGMP Snooping" (highlighted), "MLD Snooping", "IGMP/MLD IP Multicast Group", "Multicast Router Port", "Forward All", and "Unregistered Multicast".

The main content area is titled "IGMP Snooping" and shows the "IGMP Snooping Status" set to "Enable". Below this are "Apply" and "Cancel" buttons. The "IGMP Snooping Table" is displayed with the following data:

Entry No.	VLAN ID	IGMP Snooping Operational Status	Router IGMP Version	MRouter Ports Auto Learn	Query Robustness	Query Interval (sec)	Query Max Response Interval (sec)	Last Memb Query Count
1	1	Enabled	v3	Enabled	2	125	10	

Below the table are "Copy Settings..." and "Edit..." buttons. The footer of the page reads "© 2010-2013 Cisco Systems, Inc. All Rights Reserved."

- (c) Set the configuration as shown below, and then click *[Apply]*

VLAN ID:	<input type="text" value="1"/>		
IGMP Snooping Status:	<input checked="" type="checkbox"/> Enable	Operational IGMP Snooping Status:	Enable
MRouter Ports Auto Learn:	<input checked="" type="checkbox"/> Enable		
Query Robustness:	<input type="text" value="2"/> (Range: 1 - 7, Default: 2)	Operational Query Robustness:	2
Query Interval:	<input type="text" value="125"/> sec (Range: 30 - 18000, Default: 125)	Operational Query Interval:	125
Query Max Response Interval:	<input type="text" value="10"/> sec (Range: 5 - 20, Default: 10)	Operational Query Max Response Interval:	10
Last Member Query Counter:	<input checked="" type="radio"/> Use Default <input type="radio"/> User Defined <input type="text" value=""/> (Range: 1 - 7, Default: 2 (Query Robustness))	Operational Last Member Query Counter:	2
Last Member Query Interval:	<input type="text" value="1000"/> mS (Range: 100 - 25500, Default: 1000)	Operational Last Member Query Interval:	1000
Immediate leave:	<input checked="" type="checkbox"/> Enable		
IGMP Querier Status:	<input type="checkbox"/> Enable		
Administrative Querier Source IP Address:	<input type="radio"/> Auto <input checked="" type="radio"/> User Defined <input type="text" value="168.168.1.1"/>	Operational Querier Source IP Address:	168.168.1.1
IGMP Querier Version:	<input checked="" type="radio"/> IGMPV2 <input type="radio"/> IGMPV3		
<input type="button" value="Apply"/> <input type="button" value="Close"/>			

### Step 3: Save the above configuration changes

- Navigate to the menu:  
*[Administration → File Management → Copy/Save Configuration]*
- Click on *[Apply]* as shown below

Small Business  
SG300-10P 10-Port Gigabit PoE Managed Switch

Save cisco Language: English Logout About Help

Getting Started  
Status and Statistics  
Administration  
System Settings  
Console Settings  
Management Interface  
User Accounts  
Idle Session Timeout  
Time Settings  
System Log  
File Management  
Upgrade/Backup Firmware/Language  
Active Image  
Download/Backup Configuration/Log  
Configuration Files Properties  
Copy/Save Configuration  
DHCP Auto Configuration  
Reboot  
Diagnostics  
Discovery - Bonjour  
Discovery - LLDP  
Discovery - CDP  
Ping  
Traceroute  
Port Management  
Smartport  
VLAN Management  
Spanning Tree  
MAC Address Tables  
Multicast  
IP Configuration  
Security  
Access Control

### Copy/Save Configuration

All configurations that the switch is currently using are in the running configuration file which is volatile and is not retained between reboots. To retain the configuration between reboots, make sure you copy the running configuration file to the startup configuration file after you have completed all your changes.

Source File Name:  Running configuration  
 Startup configuration  
 Backup configuration  
 Mirror configuration

Destination File Name:  Running configuration  
 Startup configuration  
 Backup configuration

Sensitive Data:  Exclude  
 Encrypted  
 Flattest  
Available sensitive data options are determined by the current user's SSD rules

Save Icon Blinking: Enabled

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### 3.2. Enabling Jumbo Frames

Follow the steps below to enable the Jumbo Frames feature on the Ethernet Switch. For further details on navigating through the Ethernet Switch web server menus, please refer to the Ethernet Switch manual.

#### Step 1: Enable Jumbo Frames

- Navigate to the menu:  
     *[Port Management > Port Settings]*
- Check the “Jumbo Frame” checkbox as shown below, then click *[Save]*

Small Business  
 cisco SG300-28P 28-Port Gigabit PoE Managed Switch

Getting Started  
 Status and Statistics  
 Administration  
 Port Management  
 Port Settings  
 Error Recovery Settings  
 Loopback Detection Settings  
 Link Aggregation  
 UDLD  
 PoE  
 Green Ethernet  
 Smartport  
 VLAN Management  
 Spanning Tree  
 MAC Address Tables  
 Multicast  
 IP Configuration  
 Security  
 Access Control  
 Quality of Service  
 SNMP

**Port Settings**

Jumbo Frames:  Enable

Jumbo frames configuration changes will take effect after saving the configuration and rebooting the switch.

Apply Cancel

**Port Setting Table**

Entry No.	Port	Description	Port Type	Operational Status	Link Status	SNMP Traps	Time Range	Port Speed	Duplex Mode	LAG	Protection State
<input type="radio"/>	1	GE1	1000M-Copper	Down	Enabled						Unprotected
<input type="radio"/>	2	GE2	1000M-Copper	Up	Enabled		1000M	Full			Unprotected
<input type="radio"/>	3	GE3	1000M-Copper	Down	Enabled						Unprotected
<input type="radio"/>	4	GE4	1000M-Copper	Up	Enabled		100M	Full			Unprotected
<input type="radio"/>	5	GE5	1000M-Copper	Down	Enabled						Unprotected
<input type="radio"/>	6	GE6	1000M-Copper	Down	Enabled						Unprotected
<input type="radio"/>	7	GE7	1000M-Copper	Up	Enabled		1000M	Full			Unprotected
<input type="radio"/>	8	GE8	1000M-Copper	Down	Enabled						Unprotected
<input type="radio"/>	9	GE9	1000M-Copper	Up	Enabled		100M	Full			Unprotected
<input type="radio"/>	10	GE10	1000M-Copper	Down	Enabled						Unprotected
<input type="radio"/>	11	GE11	1000M-Copper	Up	Enabled		100M	Full			Unprotected
<input type="radio"/>	12	GE12	1000M-Copper	Up	Enabled		100M	Full			Unprotected
<input type="radio"/>	13	GE13	1000M-Copper	Down	Enabled						Unprotected

#### Step # 2: Save the above configuration changes

- Navigate to the menu:  
     *[Administration > File Management > Copy/Save Configuration]*
- Click on *[Apply]*



## 4. Preparing for System Installation

The Ethernet Switch is now properly configured to support MuxLab AV over IP devices with respect to IGMP and Jumbo Frames.

Note that MuxLab AV over IP Transmitters and Receivers are set by default with DHCP enabled, and the MuxLab 500811 ProDigital Network Controller has DHCP disabled by default and is set to a Static IP address of 192.168.168.50. It is recommended that you operate your system with the Transmitters and Receivers with DHCP enable and the 500811 Network Controller with DHCP disabled.

If however you intend to disable the DHCP on the Transmitters and Receivers, then please take note that the default Static IP address for the Transmitters is 192.168.168.55, and for the Receivers is 192.168.168.56.

Note that in order for the entire system to operate correctly, the Ethernet Switch, MuxLab Transmitters and Receivers, and the MuxLab ProDigital Network Controller must all be on the same subnet. Devices with DHCP enabled will adjust automatically to the correct subnet, while devices with DHCP disabled, may need to be set by the user to the correct subnet, if not already set correctly. Your network administrator can assist with this configuration if you are not familiar with how to accomplish this task.

If you are having issues which require further assistance, please contact the respective device manufacturer for the device in question. For MuxLab device related questions, please contact MuxLab Customer Technical Support at 877-689-5228 (toll-free in North America) or (+1) 514-905-0588 (International).



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