

CONFIGURING SG300 SWITCH FOR DOLBY AND JBL DSI 2.0

This article only applies to Cisco SG300-series switches.

Update your switch to the latest firmware available from Cisco.

Configuring a Cisco SG300-series Switch

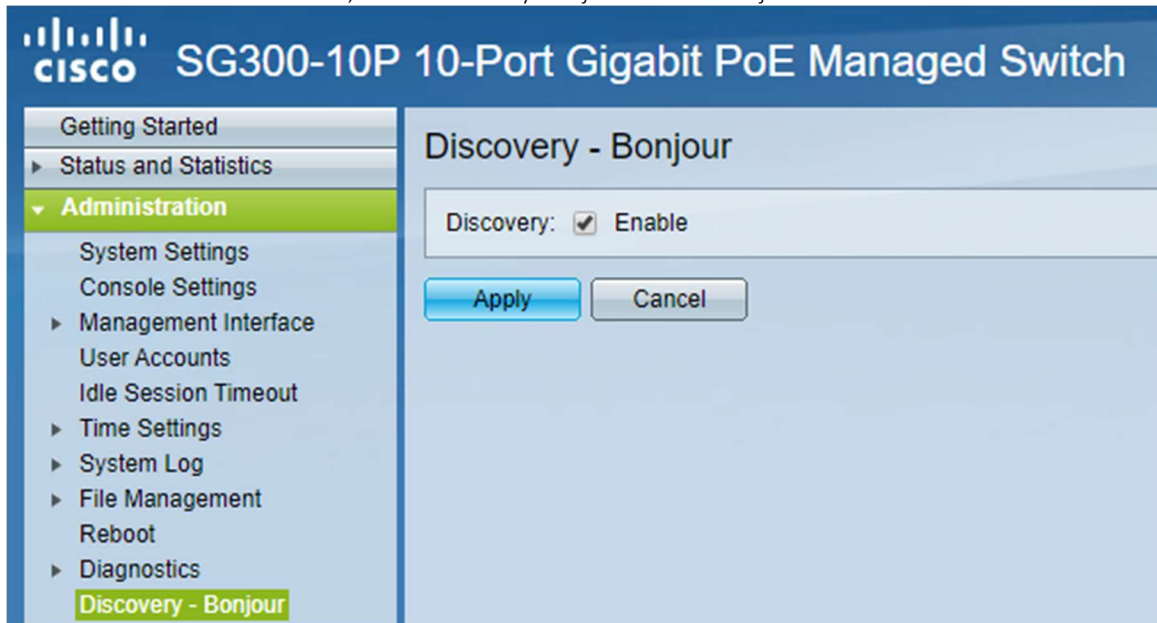
1. Under the Administration menu, select Management Interface > IPv4 Interface. Assign the switch an IP Address in your AES67 subnet, set the correct Subnet Mask, and set the gateway to 0.0.0.0 if this is an isolated network. Apply changes and reconnect to the switch if needed.

The screenshot displays the web management interface of a Cisco SG300-10P switch. The left sidebar shows the navigation menu with 'Administration' expanded and 'IPv4 Interface' selected. The main content area is titled 'IPv4 Interface' and contains the following configuration fields:

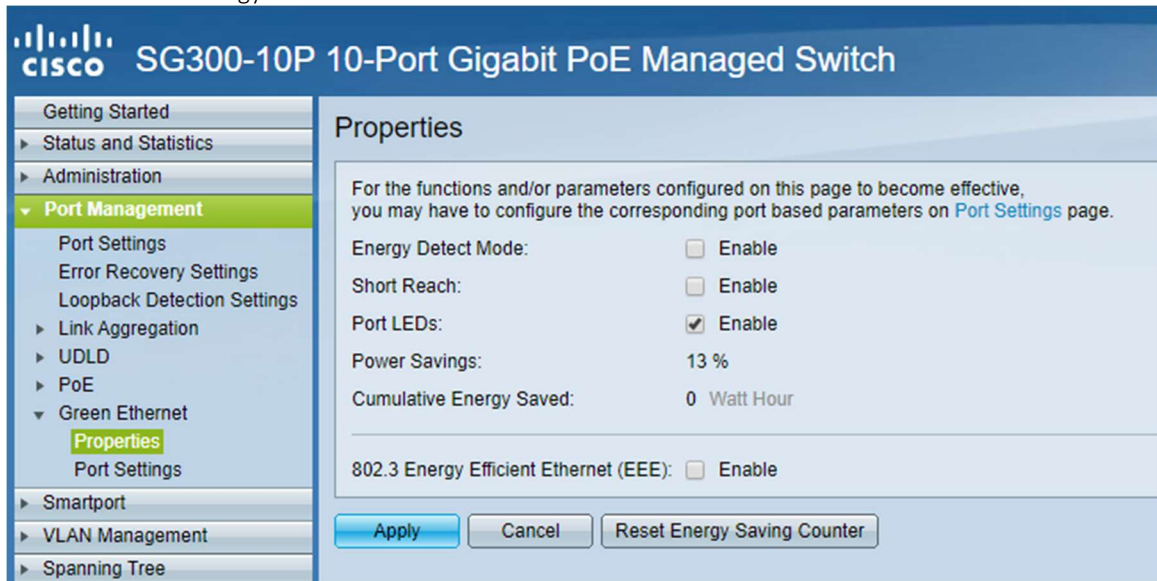
- Management VLAN:** A dropdown menu set to '1'.
- IP Address Type:** Radio buttons for 'Dynamic' and 'Static' (selected).
- IP Address:** A text field containing '172.18.44.31' with a lock icon.
- Mask:** Radio buttons for 'Network Mask' (selected) and 'Prefix Length'. The 'Network Mask' field contains '255.255.255.0'.
- Loopback Interface:** A checkbox for 'Enable' (unchecked).
- Loopback IP Address:** An empty text field.
- Loopback Mask:** Radio buttons for 'Network Mask' and 'Prefix Length' (both unchecked).
- Administrative Default Gateway:** Radio buttons for 'User Defined' (selected) and 'None'. The 'User Defined' field contains '172.18.44.1'.
- Operational Default Gateway:** A text field containing '172.18.44.1'.
- Renew IP Address Now:** A checkbox for 'Enable' (unchecked).
- Auto Configuration via DHCP:** A label 'Enabled'.

At the bottom of the configuration area are 'Apply' and 'Cancel' buttons.

2. Under the Administration menu, select Discovery-Bonjour. Ensure Bonjour is enabled.



3. Under the Port Management menu, select Green Ethernet > Properties. Ensure Energy Detect Mode and 802.3 Energy Efficient Ethernet is disabled.



4. Under the Multicast menu, select Properties. Enable Bridge Multicast Filtering. For each VLAN, select "IP Group Address" as the Forwarding Method.

Properties

Bridge Multicast Filtering Status: ☒ Enable

VLAN ID: 1 ▼

Forwarding Method for IPv6:
☐ MAC Group Address
☒ IP Group Address
☐ Source Specific IP Group Address

Forwarding Method for IPv4:
☐ MAC Group Address
☒ IP Group Address
☐ Source Specific IP Group Address

Apply Cancel

5. Under the Multicast menu, select IPv4 Multicast Configuration > IGMP Snooping menu and enable Snooping.

IGMP Snooping

IGMP Snooping Status: ☒ Enable

IGMP Querier Status: ☒ Enable

Apply Cancel IGMP Snooping IP Multicast Group

IGMP Snooping Table

Entry No.	VLAN ID	IGMP Snooping Operational Status	MRouter Ports Auto Learn	Immediate Leave	Last Member Query Counter	IGMP Querier Status	IGMP Querier Election	IGMP Querier Version	Querier IP Address
1	1	Enabled	Enabled	Disabled	2	Enabled	Enabled	v2	172.18.44.31
2	5	Disabled	Enabled	Disabled	2	Disabled	Enabled	v2	

Copy Settings... Edit...

6. Edit each VLAN in the IGMP Snooping Menu as follows:

- Enable Snooping Status & Querier Status.
- Set Query Interval to 30 seconds.
- Select IGMPv2 as the Querier version.

- Select Auto for Querier Source IP Address

VLAN ID:

IGMP Snooping Status: ☒ Enable

MRouter Ports Auto Learn: ☒ Enable

Immediate Leave: ☐ Enable

✱ Last Member Query Counter: ☐ Use Query Robustness (2) ☐ User Defined (Range: 1 - 7)

IGMP Querier Status: ☒ Enable

IGMP Querier Election: ☒ Enable

IGMP Querier Version: ☒ v2 ☐ v3

Querier Source IP Address: ☒ Auto ☐ User Defined

7. Under the Multicast menu, select IPv4 Multicast Configuration > IGMP VLAN Settings and configure each VLAN as follows.

CISCO SG300-10P 10-Port Gigabit PoE Managed Switch

Getting Started
 ▶ Status and Statistics
 ▶ Administration
 ▶ Port Management
 ▶ Smartport
 ▶ VLAN Management
 ▶ Spanning Tree
 ▶ MAC Address Tables
 ▼ **Multicast**
 Properties
 MAC Group Address
 IP Multicast Group Address
 ▼ IPv4 Multicast Configuration
 IGMP Snooping
 IGMP VLAN Settings

IGMP VLAN Settings

IGMP Settings Table

Entry No.	Interface Name	Router IGMP Version	Query Robustness	Query Interval (sec)	Query Max Response Interval (sec)	Last Member Query Interval (msec)
<input checked="" type="radio"/> 1	VLAN1	v2	2	30	10	1000
<input type="radio"/> 2	VLAN5	v3	2	125	10	1000


Interface Name:

✱ Query Robustness: (Range: 1 - 7, Default: 2)

✱ Query Interval: sec (Range: 30 - 18000, Default: 125)

✱ Query Max Response Interval: sec (Range: 5 - 20, Default: 10)

✱ Last Member Query Interval: mS (Range: 100 - 25500 in multiples of 100, Default: 1000)


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SG300-10P 10-Port Gigabit PoE Managed Switch

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 - Multicast**
 - Properties
 - MAC Group Address
 - IP Multicast Group Address
 - IPv4 Multicast Configuration
 - IGMP Snooping
 - IGMP VLAN Settings
 - IPv6 Multicast Configuration
 - IGMP/MLD Snooping IP Multicast
 - Multicast Router Port**
 - Forward All
 - Unregistered Multicast

Multicast Router Port

Filter: VLAN ID equals to AND IP Version equals to AND Interface Type equals to

Port	GE1	GE2	GE3	GE4	GE5	GE6	GE7	GE8	GE9	GE10
Static	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dynamic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Forbidden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
None	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

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Forward All

Filter: VLAN ID equals to AND Interface Type equals to

Port	GE1	GE2	GE3	GE4	GE5	GE6	GE7	GE8	GE9	GE10
Static	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Forbidden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
None	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

- Under the Multicast menu, select Unregistered Multicast and set all ports connected to equipment and your PC to Forward. Failure to do this may cause applications to not discover any devices.



SG300-10P 10-Port Gigabit PoE Managed Switch

- Getting Started
- ▶ Status and Statistics
- ▶ Administration
- ▶ Port Management
- ▶ Smartport
- ▶ VLAN Management
- ▶ Spanning Tree
- ▶ MAC Address Tables
- ▼ **Multicast**
 - Properties
 - MAC Group Address
 - IP Multicast Group Address
 - ▼ IPv4 Multicast Configuration
 - IGMP Snooping
 - IGMP VLAN Settings
 - ▶ IPv6 Multicast Configuration
 - IGMP/MLD Snooping IP Multic
 - Multicast Router Port
 - Forward All
 - Unregistered Multicast**

Unregistered Multicast

Filter: *Interface Type* equals to Port ▼ Go

Port	GE1	GE2	GE3	GE4	GE5	GE6	GE7	GE8	GE9	GE10
Forwarding	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
Filtering	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Apply
Cancel

11. Under the Quality of Service menu, select QoS Properties. Set mode to Basic.

The screenshot displays the web management interface of a Cisco SG300-10P switch. The left sidebar contains a navigation menu with the following items: 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 (highlighted), and SNMP. Under the Quality of Service menu, the 'General' section is expanded, showing 'QoS Properties' as the selected option. Other options in this section include Queue, CoS/802.1p to Queue, DSCP to Queue, Bandwidth, Egress Shaping Per Queue, VLAN Ingress Rate Limit, and TCP Congestion Avoidance. The 'QoS Basic Mode' section includes Global Settings, Interface Settings, QoS Advanced Mode, and QoS Statistics.

The main content area is titled 'QoS Properties'. It features a 'QoS Mode' section with three radio buttons: 'Disable', 'Basic' (which is selected), and 'Advanced'. Below this are 'Apply' and 'Cancel' buttons. The 'Interface CoS Configuration Table' section includes a filter 'Interface Type equals to' with a dropdown menu set to 'Port' and a 'Go' button. The table lists 10 entries, each with a checkbox, an 'Entry No.', an 'Interface' name, and a 'Default CoS' value.

<input type="checkbox"/>	Entry No.	Interface	Default CoS
<input type="checkbox"/>	1	GE1	0
<input type="checkbox"/>	2	GE2	0
<input type="checkbox"/>	3	GE3	0
<input type="checkbox"/>	4	GE4	0
<input type="checkbox"/>	5	GE5	0
<input type="checkbox"/>	6	GE6	0
<input type="checkbox"/>	7	GE7	0
<input type="checkbox"/>	8	GE8	0
<input type="checkbox"/>	9	GE9	0
<input type="checkbox"/>	10	GE10	0

At the bottom of the table are three buttons: 'Copy Settings...', 'Edit...', and 'Restore Defaults'.

12. Under the Quality of Service menu, select QoS Basic Mode > Global Settings. Set Trust Mode to DSCP.

The screenshot shows the web interface of a Cisco SG300-10P switch. The left sidebar contains a navigation menu with the following items: 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 (expanded), General (expanded), QoS Basic Mode (expanded), QoS Advanced Mode, QoS Statistics, and SNMP. Under the Quality of Service menu, the 'Global Settings' option is highlighted. The main content area is titled 'Global Settings' and contains the following configuration options: Trust Mode (radio buttons for CoS/802.1p, DSCP (selected), and CoS/802.1p-DSCP), and Override Ingress DSCP (checkbox for Enable, which is unchecked). At the bottom of the main content area, there are three buttons: 'DSCP Override Table', 'Apply', and 'Cancel'.

13. Under the Quality of Service menu, select DSCP to Queue. Set Trust Mode to DSCP. Configure the table to look like the screenshot below with DSCP46 set to Queue 4, DSCP 56 set to Queue 3, DSCP8 set to Queue 2,

and all other DSCP values set to Queue 1.

SG300-20 20-Port Gigabit Managed Switch

- 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**
 - General
 - QoS Properties
 - Queue
 - CoS/802.1p to Queue
 - DSCP to Queue**
 - Bandwidth
 - Egress Shaping Per Queue
 - VLAN Ingress Rate Limit
 - TCP Congestion Avoidance
- QoS Basic Mode
- QoS Advanced Mode
- QoS Statistics
- SNMP

DSCP to Queue

DSCP to Queue Table		Ingress DSCP		Output Queue		Ingress DSCP		Output Queue		Ingress DSCP		Output Queue	
0 (BE)	1	16 (CS2)	2	32 (CS4)	3	48 (CS6)	3						
1	1	17	2	33	3	49	3						
2	1	18 (AF21)	2	34 (AF41)	3	50	3						
3	1	19	2	35	3	51	3						
4	1	20 (AF22)	2	36 (AF42)	3	52	3						
5	1	21	2	37	3	53	3						
6	1	22 (AF23)	2	38 (AF43)	3	54	3						
7	1	23	2	39	3	55	3						
8 (CS1)	2	24 (CS3)	3	40 (CS5)	3	56 (CS7)	3						
9	1	25	3	41	4	57	3						
10 (AF11)	1	26 (AF31)	3	42	4	58	3						
11	1	27	3	43	4	59	3						
12 (AF12)	1	28 (AF32)	3	44	4	60	3						
13	1	29	3	45	4	61	3						
14 (AF13)	1	30 (AF33)	3	46 (EF)	4	62	3						
15	1	31	3	47	4	63	3						

Queue 1 has the lowest priority, queue 4 has the highest priority.

14. The switch is now configured. Save the settings and create a backup.