



Cisco SG300 Setup Guide

When used with ELAN Video Over IP products



Contents

| | |
|-------------------------------------|-------|
| Introduction | 03 |
| Cisco Feature Requirements | 03 |
| Connecting To The Web GUI Interface | 04 |
| Activating Layer 3 Mode | 05 |
| Jumbo Frames | 06 |
| IGMP Snooping | 07-09 |
| Turning On/Off POE | 10 |
| Apply And Save Settings | 11 |
| Changing Your Computer IP Address | 12-14 |

Introduction

The ELAN Video Over IP solution requires a layer 3 Managed switch in order for HDMI distribution to be achieved reliably and with no loss in performance.

The following guide is a step-by-step instruction on how to connect and configure your Cisco SG300 Layer 3 Managed network switch.

Cisco feature requirements

The following features need to be enabled on the Cisco network switch:-

1. Layer 3 mode
2. Jumbo Frame
3. IGMP Snooping/Video Over IP
4. POE (if utilised)

Feature explanation:

- Video Over IP (one-to-many or many-to-many distribution) is group communication where information is addressed to a group of network devices simultaneously (ELAN Video Over IP products).
- Jumbo frames are Ethernet frames with more than 1500 bytes of payload. Conventionally, jumbo frames can carry up to 9000 bytes of payload and must be activated in order to send large packets of data for HDMI distribution.
- IGMP management & snooping is the process of listening to Internet Group Management Protocol (IGMP) network traffic. The feature allows a network switch to listen in on the IGMP conversation between hosts, routers & receivers (Video Over IP Transmitter, network switch and Video Over IP Receiver). By listening to this flow of traffic the switch maintains a map of which links need which IP Video Over IP streams. (which ELAN Video Over IP products are active and where the signal is being distributed to).

Connecting to the switch Web GUI Interface V2 Panel Description

To login into the Cisco network switch the factory default details are:

IP Address: 192.168.1.254
User: cisco
Password: cisco

In order to connect to the network switch your computer will need to be physically connected to the Cisco switch using a Ethernet network cable. The computer must also be in the same IP range as the Cisco switch default IP address. If you are unsure how to update your computer IP range follow the 'Changing your computer IP address' instructions at the rear of this guide.

- 1) Open your internet browser (Google Chrome, Mozilla, Internet Explorer etc)
- 2) Type the network switch default IP address into the web browser bar
- 3) Enter the default user name and password

Note: If the switch is not using the factory default settings you will need to know these login details or have to factory reset the unit. For details how to factory reset the network switch please refer to the networks switch user manual.

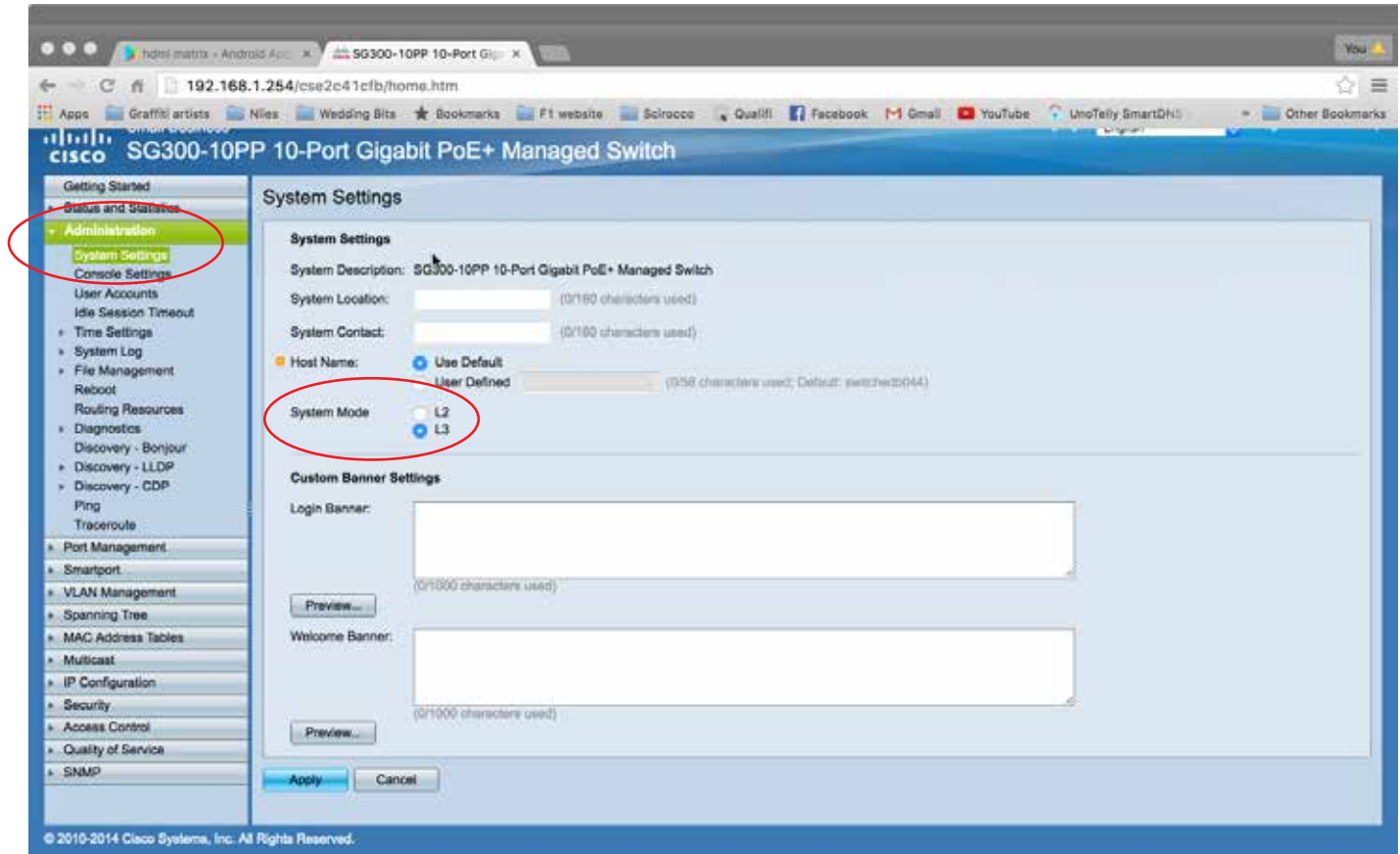
Activating Layer 3 mode

The first setting you MUST update is to turn the network switch to Layer 3 mode. This must be completed before all other setting changes are made as this will default the factory settings when Layer 3 is activated.

Under 'Administration' menu

Select 'System settings'

Tick 'L3' (Layer 3) checkbox adjacent to System mode



Click 'Apply' to update the setting. A warning message will appear to make sure that you mean to factory reset the switch. Click 'OK' to proceed.

Please note: The switch will reboot which will take 3-4 minutes. After this is complete you will have to re-enter new password details

Jumbo Frame

To enable Jumbo Frame,

Under 'Port Management' menu

Select 'Port settings'

Tick 'ENABLED' checkbox adjacent to Jumbo Frames

tick 'Jumbo Frame' checkbox under Port Settings

Small Business
cisco SG300-10PP 10-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 Name State | Port Speed | Duplex Mode | LAG | Protection State |
|-----------|------|-------------|--------------|--------------------|---------------------------|--------------------------|---------------|----------------|-----|---------------------|
| 1 | GE1 | | 1000M-Copper | Up | Enabled | | 100M | Full | | Unprotected |
| 2 | GE2 | | 1000M-Copper | Down | Enabled | | | | | Unprotected |
| 3 | GE3 | | 1000M-Copper | Down | Enabled | | | | | Unprotected |
| 4 | GE4 | | 1000M-Copper | Down | Enabled | | | | | Unprotected |
| 5 | GE5 | | 1000M-Copper | Down | Enabled | | | | | Unprotected |
| 6 | GE6 | | 1000M-Copper | Down | Enabled | | | | | Unprotected |
| 7 | GE7 | | 1000M-Copper | Down | Enabled | | | | | Unprotected |
| 8 | GE8 | | 1000M-Copper | Down | Enabled | | | | | Unprotected |
| 9 | GE9 | | 1000M-ComboC | Down | Enabled | | | | | Unprotected |
| 10 | GE10 | | 1000M-ComboC | Down | Enabled | | | | | Unprotected |

Copy Settings... Edit...

Click 'Apply' to update the setting

IGMP Snooping

To enable IGMP snooping, there are several steps required to enable this feature:-

- Bridge Video Over IP Filter Status
- IGMP Snooping Status
- IGMP Querier Status
- MRouter Ports Auto Learn
- Immediate Leave
- IGMP Querier Election

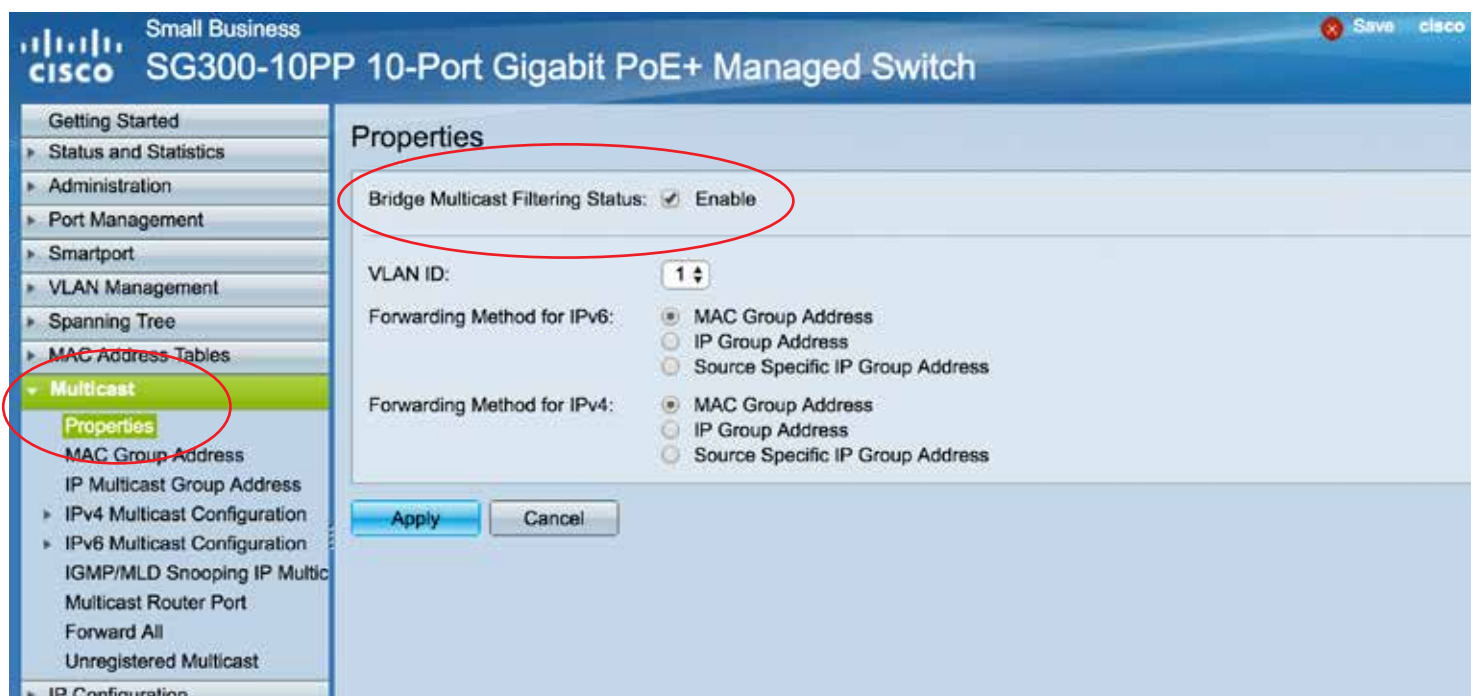
The following pages explain how to update the above settings.

IGMP Snooping - Bridge Video Over IP Filter Status

Under 'Video Over IP' menu

Select 'Properties'

Tick 'Enabled' checkbox adjacent to 'Bridge Video Over IP Filter Status'



Confirm other settings match those as shown in the above image

Click 'APPLY' to update the setting

IGMP Snooping - IGMP Snooping Status

Under 'Video Over IP' menu

Select 'IPv4 Video Over IP Configuration'

Select 'IGMP Snooping'

Tick 'Enabled' checkbox adjacent to IGMP Snooping Status

Tick 'Enabled' checkbox adjacent to IGMP Query Status



Confirm other settings match those as shown in the above image

Click 'APPLY' to update the setting

IGMP Snooping - IGMP Query Status, Mrouter ports auto learn, Immediate leave & IGMP querier election

Under 'Video Over IP' menu

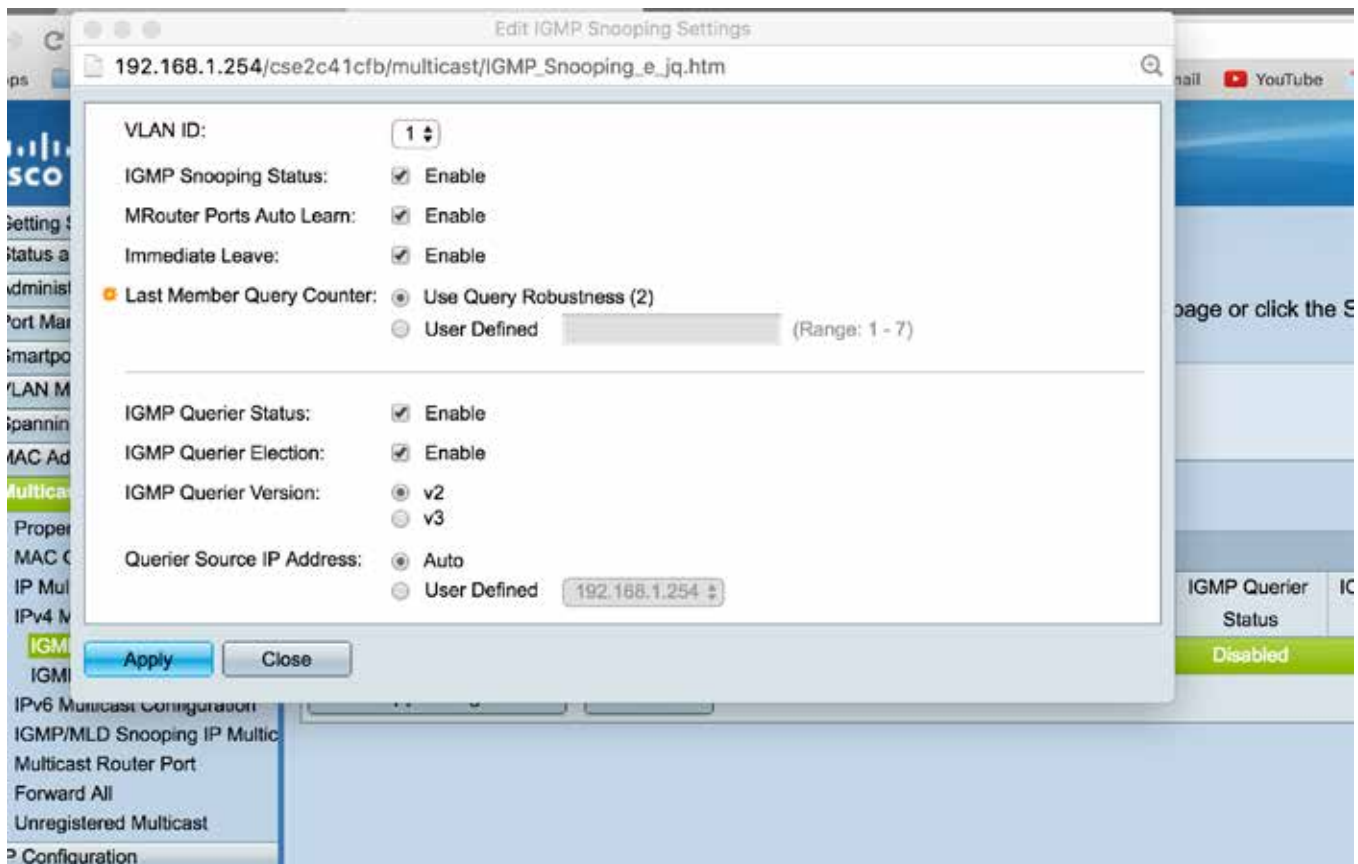
Select 'IPv4 Video Over IP Configuration'

Select 'IGMP Snooping'

Select Line 1 in the IGMP Snooping table and click the 'EDIT' button



the following pop-up window will appear



Tick 'Enabled' checkbox adjacent to IGMP Snooping Status

Tick 'Enabled' checkbox adjacent to Mrouter ports auto learn

Tick 'Enabled' checkbox adjacent to immediate leave

Tick 'Enabled' checkbox adjacent to IGMP querier status

Tick 'Enabled' checkbox adjacent to IGMP querier election

Confirm other settings match those as shown in the above image

Click 'APPLY' to update the setting

Turning On/Off POE

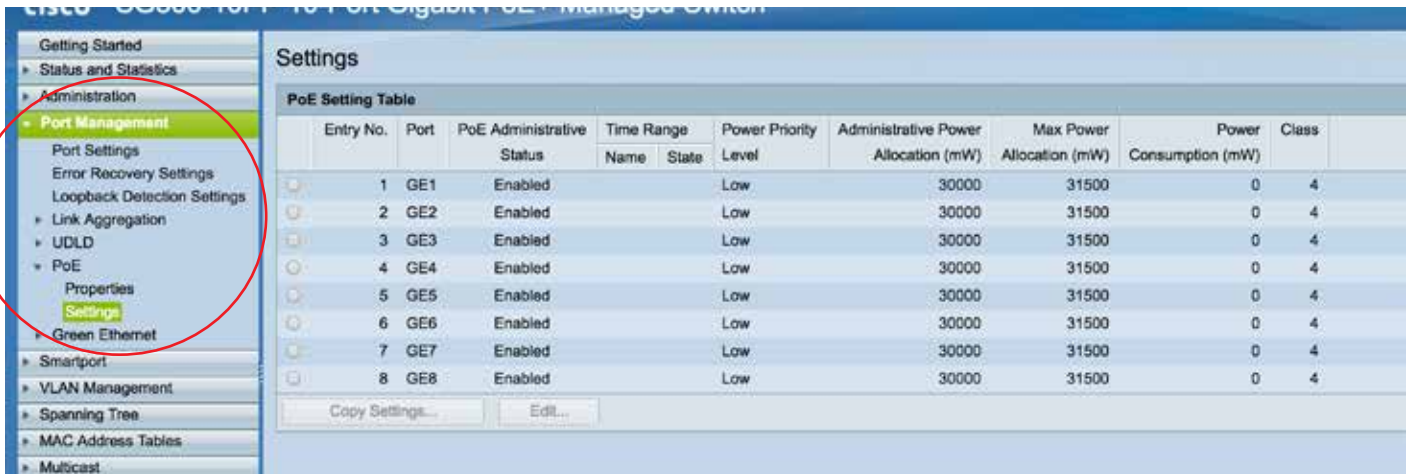
Not all Cisco SG300 switches support POE. Those network switches that do support POE come with this as factory default to 'ON'. If you are unsure of the port setting please follow the below instructions.

Under 'Port management' menu

Select 'POE'

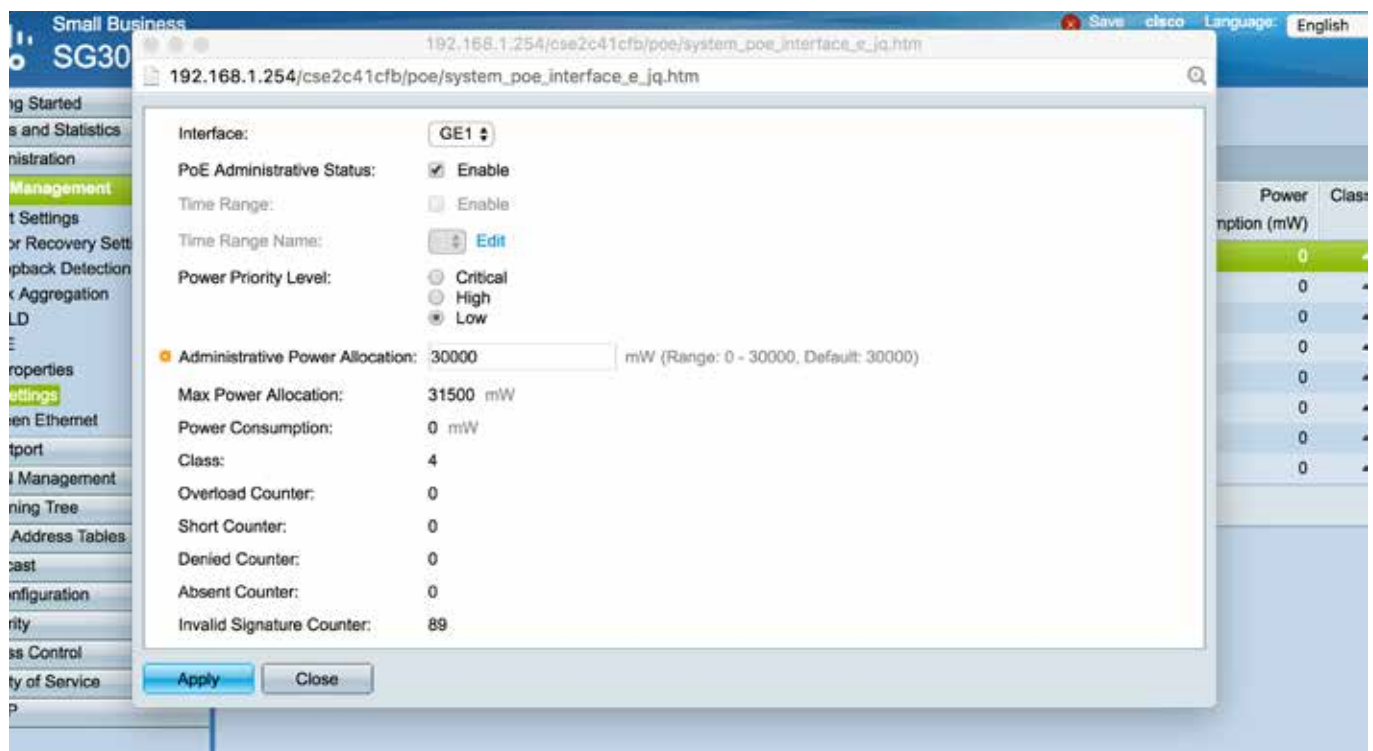
Select 'settings'

The following table shows the settings for each RJ45 LAN port on the network switch. POE administrative Status should be set to 'Enabled' meaning the POE feature is active. Default settings are for POE to be active (Enabled) so changes should not be required. If status is 'Disabled' please follow below instructions.



| Entry No. | Port | PoE Administrative Status | Time Range Name | Time Range State | Power Priority Level | Administrative Power Allocation (mW) | Max Power Allocation (mW) | Power Consumption (mW) | Class |
|-----------|------|---------------------------|-----------------|------------------|----------------------|--------------------------------------|---------------------------|------------------------|-------|
| 1 | GE1 | Enabled | | | Low | 30000 | 31500 | 0 | 4 |
| 2 | GE2 | Enabled | | | Low | 30000 | 31500 | 0 | 4 |
| 3 | GE3 | Enabled | | | Low | 30000 | 31500 | 0 | 4 |
| 4 | GE4 | Enabled | | | Low | 30000 | 31500 | 0 | 4 |
| 5 | GE5 | Enabled | | | Low | 30000 | 31500 | 0 | 4 |
| 6 | GE6 | Enabled | | | Low | 30000 | 31500 | 0 | 4 |
| 7 | GE7 | Enabled | | | Low | 30000 | 31500 | 0 | 4 |
| 8 | GE8 | Enabled | | | Low | 30000 | 31500 | 0 | 4 |

To update the port settings click 'EDIT' which will open the following window:



Interface: GE1

PoE Administrative Status: ☒ Enable

Time Range: ☐ Enable

Time Range Name: [Edit](#)

Power Priority Level: ☐ Critical ☐ High ☒ Low

Administrative Power Allocation: 30000 mW (Range: 0 - 30000, Default: 30000)

Max Power Allocation: 31500 mW

Power Consumption: 0 mW

Class: 4

Overload Counter: 0

Short Counter: 0

Denied Counter: 0

Absent Counter: 0

Invalid Signature Counter: 89

[Apply](#) [Close](#)

Tick 'Enabled' checkbox for each interface (switch LAN connection) you wish POE to be active.

Click 'APPLY' to update the setting

Apply and Save settings

All settings that have been previously updated will not be finalised until the configuration is saved and the switch is rebooted. To save the configuration:

Under 'Administration menu

Select 'File Management'

Select 'Copy/Save Configuration'



Click 'APPLY' to save the settings

Then you must reboot the switch for settings to be applied

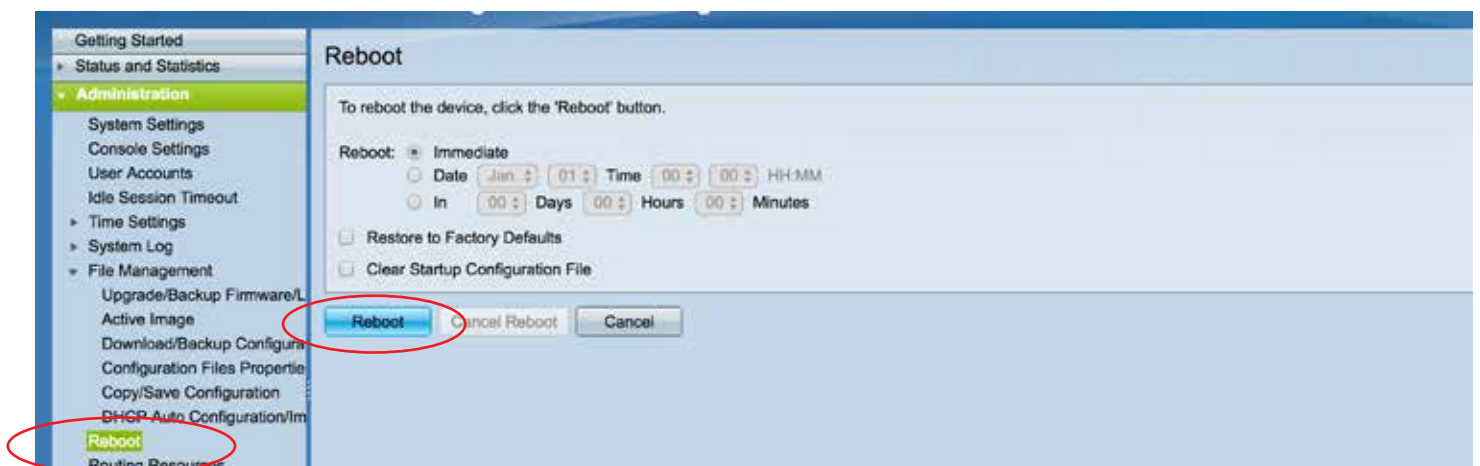
To reboot the switch:

Under 'Administration menu

Select 'File Management'

Select 'Reboot'

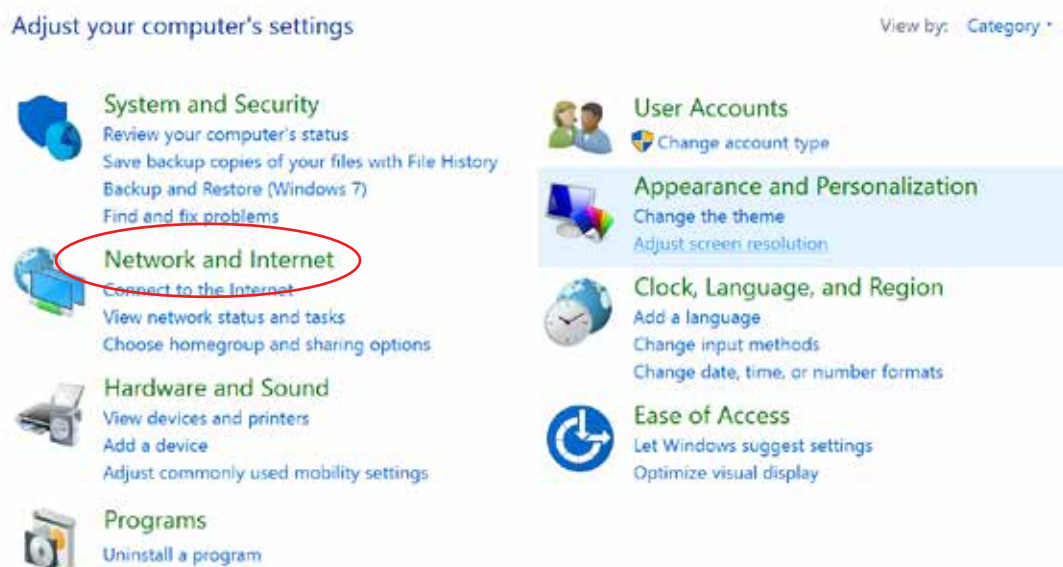
Click 'Reboot'



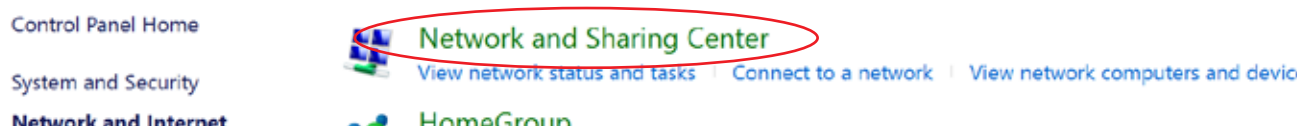
Note: The switch will take several minutes to reboot but will then be ready to use with the ELAN Video Over IP HDMI products

Changing your computer IP address to communicate with the Cisco network switch

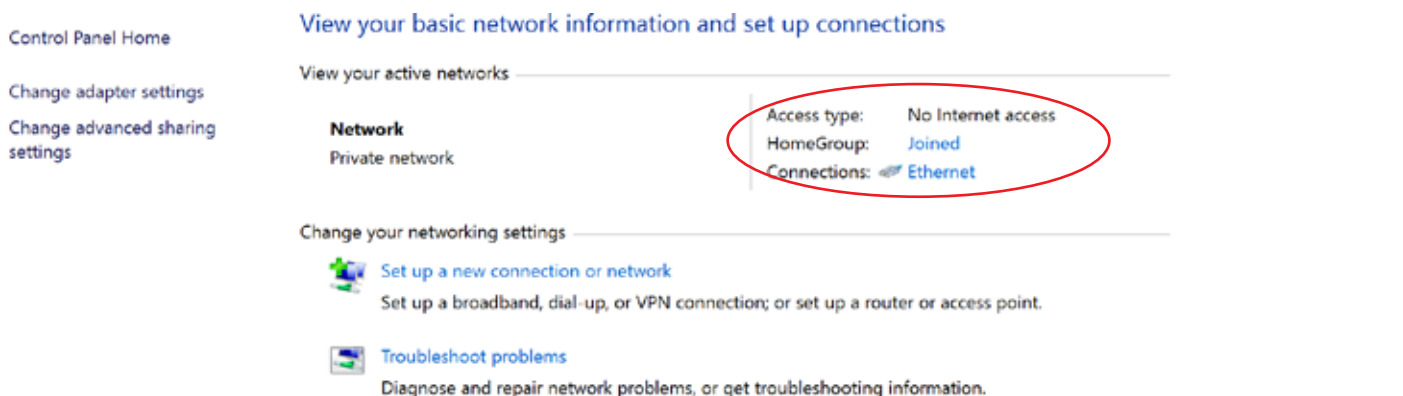
- 1) Connect your computer to your network switch using Ethernet cable
- 2) In the Windows toolbar navigate to 'CONTROL PANEL'
- 3) Select 'NETWORK AND INTERNET'



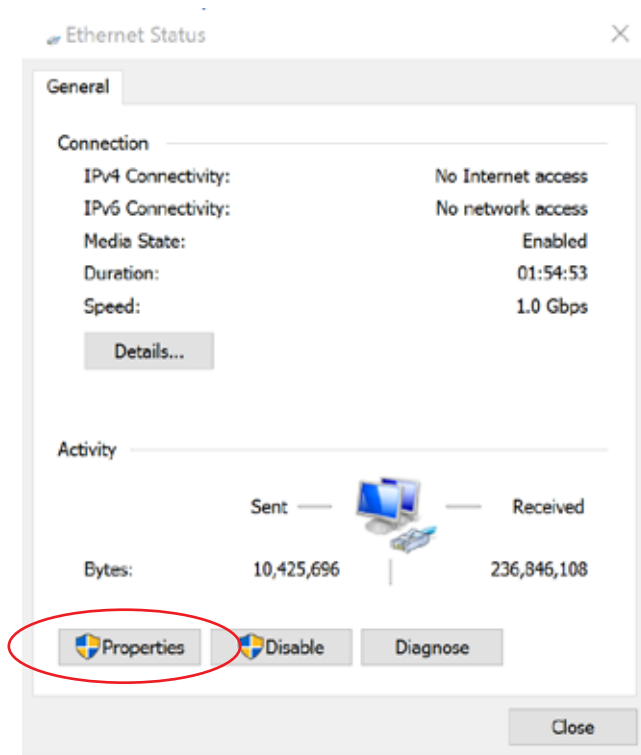
- 5) Select 'NETWORK AND SHARING CENTER'



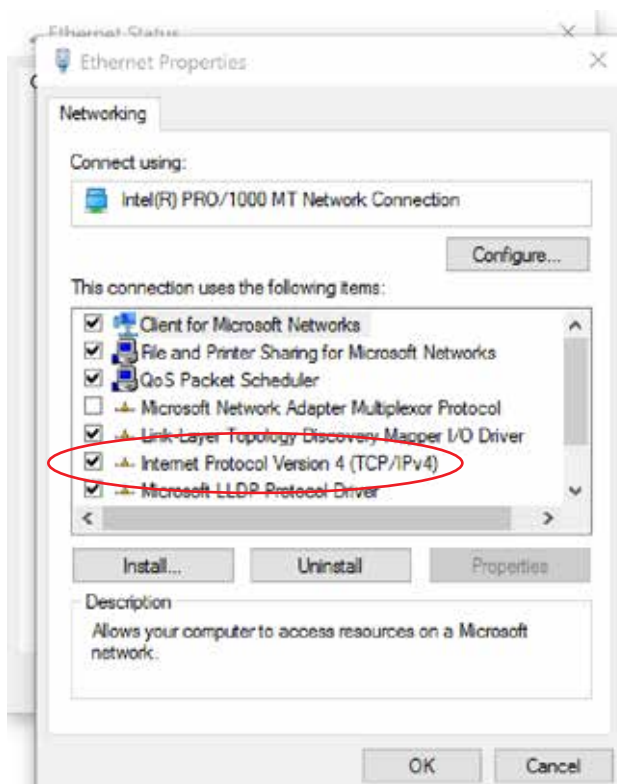
- 6) Under 'View your Active Networks' you can see connection types available.
The example below shows both LAN (local area connection) and Wireless.
Select 'Local Area Connection' as this is the method of communication you are using with the switch.



7) In the next window select 'PROPERTIES'

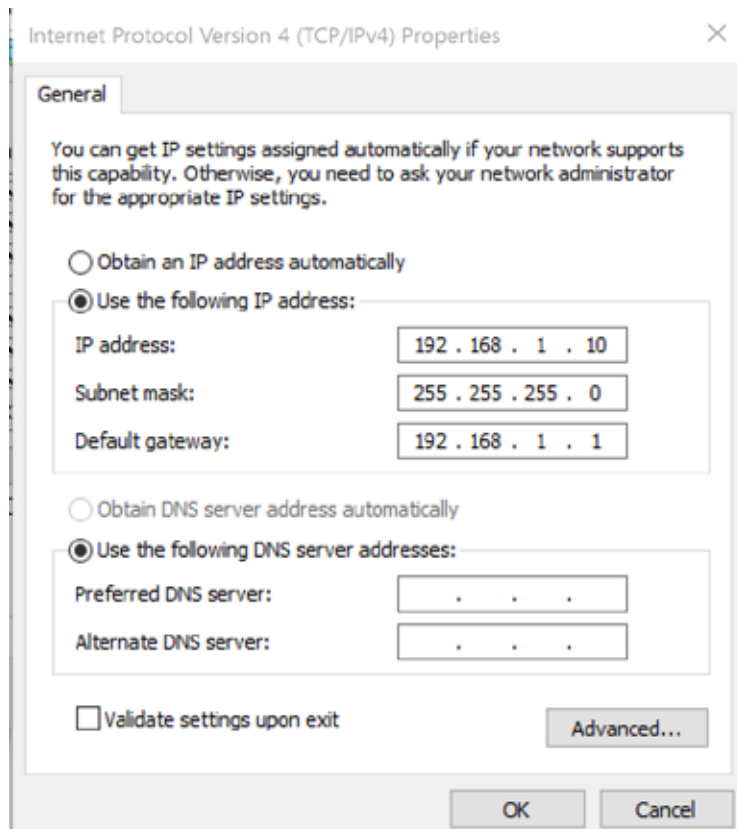


- 8) A. In the 'NETWORKING' window highlight/select 'INTERNET PROTOCOL VERSION 4 (TCP/IPv4)
B. Select 'PROPERTIES'



9) A. Under the 'General' tab select 'USE THE FOLLOWING IP ADDRESS'

B. Enter the following FIXED IP network details



10) Click 'OK' and exit the network setup

11) Enter the default Cisco IP address in your web browser and check that you can connect to the unit.



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