Configuring Cisco SG350 Series of Switches for Livewire+®

February 2018

Introduction

This document is not intended to be an all-inclusive or even a step-by-step manual on how to fully configure all aspects of this switch but is provided as a guide and makes some basic assumptions regarding the skill level of the person doing the programming. If you are not comfortable hooking up cables, assigning IP addresses, typing in a command line interfaces, configuring networks, etc, you should contact your IT department for assistance.

Follow the provided Cisco quick start information to gain access to your switch via a web browser. Basic configuration will not be covered in this document and the assumption is made that you have already set up and gained access via your web browser.

A couple of general comments about this series of switches. Unlike its big brother in the Catalyst line of Cisco switches, there were some portions of this configuration that caused audio to be briefly interrupted. For that reason, it is best to carefully plan for making any changes to this switch while it’s in use. During configuration and testing, interruptions of 30 seconds to a minute were observed, however, the switch ALWAYS recovered properly. It was tested for use with Axia Power Stations, QOR console, iQx Console, and xSwitches with other Axia gear and in all tests performed well with the exception of the noted outages. Given the relative cost savings between the Catalyst and the SG line, it will be up to each user to balance the risk vs. reward. It is the opinion of this writer that the SG350 is appropriate in a single switch system or in smaller systems of say, three or four studios.

Configuration

This switch has been tested and the configuration is based on the following;
Cisco model: SG350-28
Firmware Version: 2.4.0.91

Programming

USING THE CONFIGURATION WIZARDS

Using the “Getting Started Wizard” you will set the following information
- System Location, Contact, and Host Name (if desired)
- IP Address settings
- User Account
- Time Settings (if desired)
A note about IP Addresses.
In order for multicast to work properly, there needs to be an IGMP Querier (an Operator, of sorts) for multicast network traffic. By default, this will be the lowest IP address of all IGMP capable switches in your network. Considering that other Axia devices (Power Station, QOR, xSwitch) have capable network switches built in, it’s important to take the IP address that is used into consideration. Since we want this Cisco switch to become the IGMP Querier, its IP address needs to be LOWER than any Power Station, QOR or xSwitch or possibly other Cisco switches.

As an example, a network with;
Power Station at 192.168.2.50
QOR Console at 192.168.2.27
Axia xSwitch at 192.168.2.4

We would want this switch to be lower than the xSwitch that has the .4 address programmed on it. For this example, we will program our switch to have an address of 192.168.2.2.

To get started, click on the Configuration Wizards link in the left side menu and choose Launch Wizard under the Getting Started Wizard link.

You will be presented with a new window to begin the configuration. Click Next to begin. You will be presented with the following screen. Fill out any desired information and click Next.
On the next page, click the selector next to VLAN and pick ‘1’ from the drop-down list if not already selected. Select Static from the IP Interface Source. You must specify at least an IP address and Network mask. Default Gateway and DNS are optional and will vary depending on your situation. When finished click Next.

The next TWO screens, User Account and Time Settings are optional. You can use these to change the login information and time settings if SNTP is used. Keep in mind in order for SNTP to work properly, you may need to configure a gateway and DNS in the previous step.

Finally, you will get to the Summary page, where you will click Apply.
At this point your IP address will be changed and you will need to reconfigure your network settings on your computer and connect to the new IP address via your browser.

Once you are logged back in to your configuration web page, this is a good time to Save your configuration by clicking the save button which you should see flashing at the top of the configuration web page.

**CONFIGURE IGMP**

To configure IGMP, select Multicast from the left side menu. Expand IPv4 Multicast Configuration and choose IGMP Snooping. Adjust the settings as shown here and click Apply.
Next, select the bubble next to VLAN ID 1 (at this point there should only be one) and then click Edit.
On the next window make sure VLAN ID 1 is selected and adjust the settings as indicated in this next image and click Apply and then click Close to dismiss the configuration window.
For the next step, we need to change the Display mode to Advanced. This is done in the top, right corner of the browser window. From the dropdown list, pick Advanced. This mode will give you additional options in the left menu. Under the Multicast menu heading select Properties. Set the options on that page as shown here. Make sure that VLAN ID 1 is selected. Click Apply when finished.

Using the Display Mode, set your menu back to Basic.

CONFIGURING QoS

From the left side menu, select Quality of Service, expand QOS Basic Mode and select Global Settings. Select DSCP as the Trust Mode. Click Apply when finished.
Next, expand General and select DSCP to Queue. Set the options for each DSCP class as shown here. Note that Axia Livestereo and AES67 streams use DSCP 46 which we assign to the highest priority queue (8). Axia Standard Stereo streams use DSCP 46 which we assign to queue 7. For purposes of this configuration, other DSCP classes are assigned to lower priority queues.
CONFIGURING ACCESS PORTS

Access ports are used for connecting “end point” devices like Axia nodes, engines, computers, as well as any other devices that are not considered “switches” (see note in trunk port configuration section).

All ports on this switch are, by default configured as Access ports. So no changes should be required. This can be verified by navigating to the VLAN Management link on the left side menu and selecting Interface Settings. Observe the current settings in the table that is displayed.
CONFIGURING TRUNK PORTS

Trunk ports are used for connecting other switches or Axia devices with switches built in (like a PowerStation Main or QOR or xSwitch) as well as any other Cisco switches. Please note that when connecting to a PowerStation Main, only the GIG ports can be used and they must be properly configured for Trunk operation in the Ethernet Switch configuration of the Element Control Center. QOR based devices and xSwitch should only be connected to the GIG Ports and do not require any configuration.

In this example, we are going to be configuring ports 22 to 28 for use as Trunk ports.

From the VLAN Management menu, make sure that Interface Settings is selected. Click the selection bubble next to the first port that you want to configure as Trunk. In this example, port 22. Click the Edit button.
In the window that opens, select Trunk, as shown, and click Apply when done.

You can continue like this and set each port to Trunk individually. However, you can apply this setting to the remaining ports automatically. Make sure that your newly configured Trunk port (port 22) is
selected and then click Copy Settings. In the window that opens, type the ports that you want this configuration copied to. In our example, we have typed 23-28 which will copy port 22 to ports 23 thru 28. Once you have your port range defined, click Apply.

You will see that your settings have been copied to the additional ports.
CONFIGURING POWER MANAGEMENT SETTINGS

Select Port Management from the Left menu tree, Expand Green Ethernet and select Properties. Set your Green Ethernet settings as shown here.
SAVING AND BACKING UP YOUR CONFIGURATION

To save your configuration navigate to Administration in the left menu. Expand File Management and select File Operations. Chose the settings shown here and click Apply.

To back up your settings, choose File Operations again and change your settings as shown here and click apply. This will copy your configuration to a text file on your computer.