Revision 5.20.2024

Verified Network Switch Guide

For use with Key Digital AV over IP Systems

IMPORTANT: Configure your network switch according to this guide **BEFORE** connecting your AV over IP units.

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Introduction

Thank you for purchasing a Key Digital AV over IP system.

Follow the instructions in this guide to enable the features for a reliable foundation for your AVoIP system.

Your AV over IP system MUST be integrated with one these verified network switches to function.

Network Switch setup may be different for 4K (KD-IP922, KD-IP822, KD-IP1022) and 1080p (KD-IP1080, KD-IP120) systems. There are separate setup instructions for each where applicable.

Key Digital AV over IP Supported Models:

- 4K Systems:
    - KD-IP922ENC, KD-IP922DEC
    - KD-IP822ENC, KD-IP822DEC
    - KD-IP1022ENC, KD-IP1022DEC
- 1080p Systems:
    - KD-IP1080Tx, KD-IP1080Rx
    - KD-IP120Tx, KD-IP120Rx, KD-IP120POETx, KD-IP120POERx

Key Digital's AV over IP product family consists of many different models. Not all models are compatible together. See Key Digital AV over IP Selection Guide for more info

Key Digital® AV over IP Solutions Selection Guide

Key Digital's **AV over IP Solutions** create expandable AV over IP systems that can be scaled to fit any size installation or project.

KEY DIGITAL® APP READY

	KD-IP1022ENC	KD-IP1022DEC	KD-IP922ENC	KD-IP922DEC	KD-IP822ENC	KD-IP822DEC	KD-IP1080Tx	KD-IP1080Rx
Encoder Tx / Decoder Rx	Encoder (ENC)	Decoder (DEC)	Encoder (ENC)	Decoder (DEC)	Encoder (ENC)	Decoder (DEC)	Encoder (Tx)	Decoder (Rx)
System Build* /Compatibility	KD-IP1022ENC/DEC Only. Independent Audio, Video, USB Switching		Mix & Match KD-IP922ENC/DEC with KD-IP822ENC/DEC				KD-IP1080Tx/Rx Only	
Video Resolution	4K (10G)	4K (10G)	4K (10G)	4K (10G)	4K (10G)	4K (10G)	1080p	1080p
Audio	External L/R In, Audio De-Embed, Pre-Amp	Independent Switch, Audio De-Embed, Pre-Amp	External L/R In, Audio De-Embed, Pre-Amp	Audio De-Embed, Pre-Amp	HDMI Pass-Thru	HDMI Audio	HDMI Audio	HDMI Audio
Video Wall	Up to 16x16	Up to 16x16	Up to 16x16	Up to 16x16	Up to 16x16	Up to 16x16	-	-
Control	TCP/IP, LAN, RS-232, 3 port Compass MC, IR RS Pass-Thru, Open API	TCP/IP, LAN, RS-232, 3 port Compass MC, IR RS Pass-Thru, Open API	TCP/IP, LAN, RS-232, 3 port Compass MC, IR RS Pass-Thru, Open API	TCP/IP, LAN, RS-232, 3 port Compass MC, IR RS Pass-Thru, Open API	TCP/IP, RS-232, 2 port Compass MC, IR RS Pass-Thru, Open API	TCP/IP, RS-232, 2 port Compass MC, IR RS Pass-Thru, Open API	Via KD-CX800 Control Interface	Via KD-CX800 Control Interface
USB / KVM	1x USB-B (Host) for KVM, Data	Independent Switch, 2x USB-A (Device), KVM, Data	1x USB-B (Host) for KVM, Data	2x USB-A (Device) for KVM, Data	-	-	-	-
PoE	≤ 9W - Redundant Power Connection	≤ 9W - Redundant Power Connection	≤ 9W - Redundant Power Connection	≤ 9W - Redundant Power Connection	≤ 9W - Redundant Power Connection. PS Sold Separately.	≤ 9W - Redundant Power Connection. PS Sold Separately.	≤ 6W - Redundant Power Connection	≤ 6W - Redundant Power Connection
Compression	Motion Jpeg 2000 4K ≈ 850Mbps 1080p ≈ 250Mbps 720p ≈ 125Mbps	Motion Jpeg 2000 4K ≈ 850Mbps 1080p ≈ 250Mbps 720p ≈ 125Mbps	Motion Jpeg 2000 4K ≈ 850Mbps 1080p ≈ 250Mbps 720p ≈ 125Mbps	Motion Jpeg 2000 4K ≈ 850Mbps 1080p ≈ 250Mbps 720p ≈ 125Mbps	Motion Jpeg 2000 4K ≈ 850Mbps 1080p ≈ 250Mbps 720p ≈ 125Mbps	Motion Jpeg 2000 4K ≈ 850Mbps 1080p ≈ 250Mbps 720p ≈ 125Mbps	H.264 1080p ≈ 15Mbps 720p ≈ 12Mbps	H.264 1080p ≈ 15Mbps 720p ≈ 12Mbps
Latency	≈ 40ms @4K	≈ 40ms @4K	≈ 40ms @4K	≈ 40ms @4K	≈ 40ms @4K	≈ 40ms @4K	≈ 400ms @1080p	≈ 400ms @1080p

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System Facts

4K Systems: KD-IP822, KD-IP922, KD-IP1022 models

- Video Compression Standard: Motion JPEG 2000
- Data Stream Bandwidth: < 900 Mbps

Stream Resolution	Bandwidth
4K @ 60Hz/30Hz	≤ 850 Mbps
1080p @ 60Hz	≤ 250 Mbps
1080i / 720p @ 60Hz	≤ 125 Mbps

- Latency: ≈ 40ms @4K. Less at lower resolutions.
- PoE Power Consumption: ≤ 9 Watts per unit
- Required network cabling: CAT6 UTP/STP, CAT6A, CAT7

1080p Systems: KD-IP1080, KD-IP120 models

- Video Compression Standard: H.264
- Data Stream Bandwidth: < 15 Mbps

Stream Resolution	Bandwidth
1080p @ 60Hz	≤ 15 Mbps
1080i / 720p @ 60Hz	≤ 12 Mbps
480p @ 60Hz	≤ 4 Mbps

- Latency: ≈ 400ms @1080p. Less at lower resolutions.
- PoE Power Consumption: ≤ 6 Watts per unit
- Required network cabling: CAT5e UTP/STP, CAT6 UTP/STP, CAT6A, CAT7

Network switch Requirements for KD AV over IP
Key Digital's AV over IP systems utilize multicasting technology to broadcast streams throughout the network.

AV over IP **requires a network switch with IGMP (Internet Group Management Protocol) support** to direct traffic of the broadcast streams, ensuring that only the desired decoders receive the stream from the selected encoder.

If the system **spans multiple network switches**, it is **required** for the switches to be connected via **10G fiber cabling** for the purpose of stacking. You must use two of the same series of network switch in these scenarios for best compatibility.

For 1080p systems (KD-IP1080, KDIP120 models) that plan to use the video preview feature of the Key Digital App, IGMP v3 must be enabled. For 1080p or 4K systems that will not use the video preview feature, IGMP v2 is enabled.

KD-IP822, 922, 1022 systems require the following IP addresses to be **reserved**. They cannot be assigned to KD-IP822, 922, or 1022 units:
192.168.1.1, 192.168.1.50, 192.168.1.90, 192.168.1.100, 192.168.1.150, 192.168.1.200

Feature	4K System (KD-IP822, KD-IP922, KD-IP1022 models)	1080p System (KD-IP1080, KD-IP120 models)
IGMP v2	X	X (for non-video preview systems)
IGMP v3		X (for video preview systems)
Bandwidth	1Gbps	100BaseT
8K Jumbo Frame	X	
PoE	Optional	Optional (excl KD-IP120PoE models)

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Verified Network Switches

Brand	Model	Port Number	PoE	10G Fiber Stacking	Approved for KD-IP1080/120	Approved for KD-IP822/922	Approved for KD-IP1022
Araknis	AN-210-SW-R-8-POE	8	YES	NO	YES	YES	
	AN-210-SW-F-8-POE	8	YES	NO	YES	YES	
	AN-210-SW-R-16-POE	16	YES	NO	YES	YES	
	AN-210-SW-F-16-POE	16	YES	NO	YES	YES	
	AN-210-SW-R-24-POE	24	YES	NO	YES	YES	
	AN-210-SW-F-24-POE	24	YES	NO	YES	YES	
	AN-210-SW-F-48-POE	48	YES	NO	YES	YES	
	AN-310-SW-R-8	8	NO	NO	YES	YES	
	AN-310-SW-F-8	8	NO	NO	YES	YES	
	AN-310-SW-R-16	16	NO	NO	YES	YES	
	AN-310-SW-F-16	16	NO	NO	YES	YES	
	AN-310-SW-R-24	24	NO	NO	YES	YES	
	AN-310-SW-F-24	24	NO	NO	YES	YES	
	AN-310-SW-R-8-POE	8	YES	NO	YES	YES	
	AN-310-SW-F-8-POE	8	YES	NO	YES	YES	
	AN-310-SW-R-16-POE	16	YES	NO	YES	YES	
	AN-310-SW-F-16-POE	16	YES	NO	YES	YES	
	AN-310-SW-R-24-POE	24	YES	NO	YES	YES	
	AN-310-SW-F-24-POE	24	YES	NO	YES	YES	
	AN-310-SW-F-48-POE	48	YES	NO	YES	YES	

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Brand	Model	Port Number	PoE	10G Fiber Stacking	Approved for KD-IP1080/120	Approved for KD- IP822/922	Approved for KD-IP1022
Cisco	SF500-48	48	NO	NO	YES	NO	NO
	SG300-28		NO	NO	YES	YES	
	Catalyst 3850 Series		YES	NO	YES	YES	
	Meraki MS225	24	YES		YES	YES	
D-Link	DGS-3630-52PC	52	YES	YES	YES	YES	YES
	DGS-3630-52TC	52		YES	YES	YES	YES
	DGS-3630-28PC	28	YES	YES	YES	YES	YES
	DGS-3630-28SC	28	NO	YES	YES	YES	YES
	DGS-3630-28TC	28	NO	YES	YES	YES	YES
	DGS-3130-54PS	54	YES	NO	YES	YES	
Edgecore Mellanox	Edgecore AS4610-54T	48	YES	YES		YES	YES
Engenius	EGS5212P	8	YES	NO	YES	NO	NO
	EGS7228FP	24	YES	NO	YES	NO	NO
	EGS7252FP	24	YES	NO	YES	NO	NO
	EWS1200D-10T	10	NO	NO	YES	NO	NO
	EWS1200D-28T	24	NO	NO	YES	NO	NO
	EWS1200D-52T	48	NO	NO	YES	NO	NO
	EWS5912FP	8	YES	NO	YES	NO	NO
	EWS7928P	24	YES	NO	YES	NO	NO
	EWS7928FP	24	YES	NO	YES	NO	NO
	EWS7952FP	48	YES	NO	YES	NO	NO

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Brand	Model	Port Number	PoE	10G Fiber Stacking	Approved for KD-IP1080/120	Approved for KD-IP822/922	Approved for KD-IP1022
Linksys	LGS552P	52	YES	YES	YES	YES	
	LGS528P	28	YES	YES	YES	YES	
	LGS326P	26	YES	NO	YES	YES	
	LGS318P	18	YES	NO	YES	YES	
	LGS326MP	26	YES	NO	YES	YES	
	LGS326P	26	YES	NO	YES	YES	
	LGS326	26	NO	NO	YES	YES	
	LGS318P	18	YES	NO	YES	YES	
	LGS318	18	NO	NO	YES	YES	
	LGS308MP	8	YES	NO	YES	YES	
	LGS308P	8	YES	NO	YES	YES	
	LGS308	8	NO	NO	YES	YES	
Luxul	AMS-4424P	24	YES	YES	YES	YES	
	SW-610-24P-R	24	YES	YES	YES	YES	
	SW-510-48P-F	48	YES	NO	YES	YES	
Netgear	GS716T	16	NO	NO	YES	YES	
	GS724T	24	NO	NO	YES	YES	
	GS748T	48	NO	NO	YES	YES	
	GS752TP	48	YES	NO	YES	YES	YES
	GS728TP	28	YES	NO	YES	YES	
	M4250-10G2XF-PoE	10	YES (8)	YES	YES	YES	YES
	M4250-26G4XF-PoE+	24	YES	YES	YES	YES	
	M4250-40G8XF-PoE+	40	YES	YES	YES	YES	

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Brand	Model	Port Number	PoE	10G Fiber Stacking	Approved for KD-IP1080/120	Approved for KD-IP822/922	Approved for KD-IP1022
Niveo	NGSME24TH-AV	24	YES	NO	YES	YES	
Pakedge	S3L-24P	24	YES		YES	NO	NO
	SX-8EP	8			YES	YES	
	SX-8P	8	YES		YES	YES	
	SX-24	24			YES	YES	
	SX-24P16	24	YES (16)		YES	YES	
	SX-24P	24	YES (24)		YES	YES	
Signamax	SC30020	24	YES	NO	YES	YES	
Titan Networx	TNSS2400P	24	YES		YES	NO	NO
TP-Link	TL-SG2428P	24	YES	NO		YES	YES
	TL-SG3210XHP-M2	8	YES	YES		YES	
	TL-SG3428XMP	24	YES	YES		YES	
	TL-SG3452XP	48	YES	YES	YES	YES	

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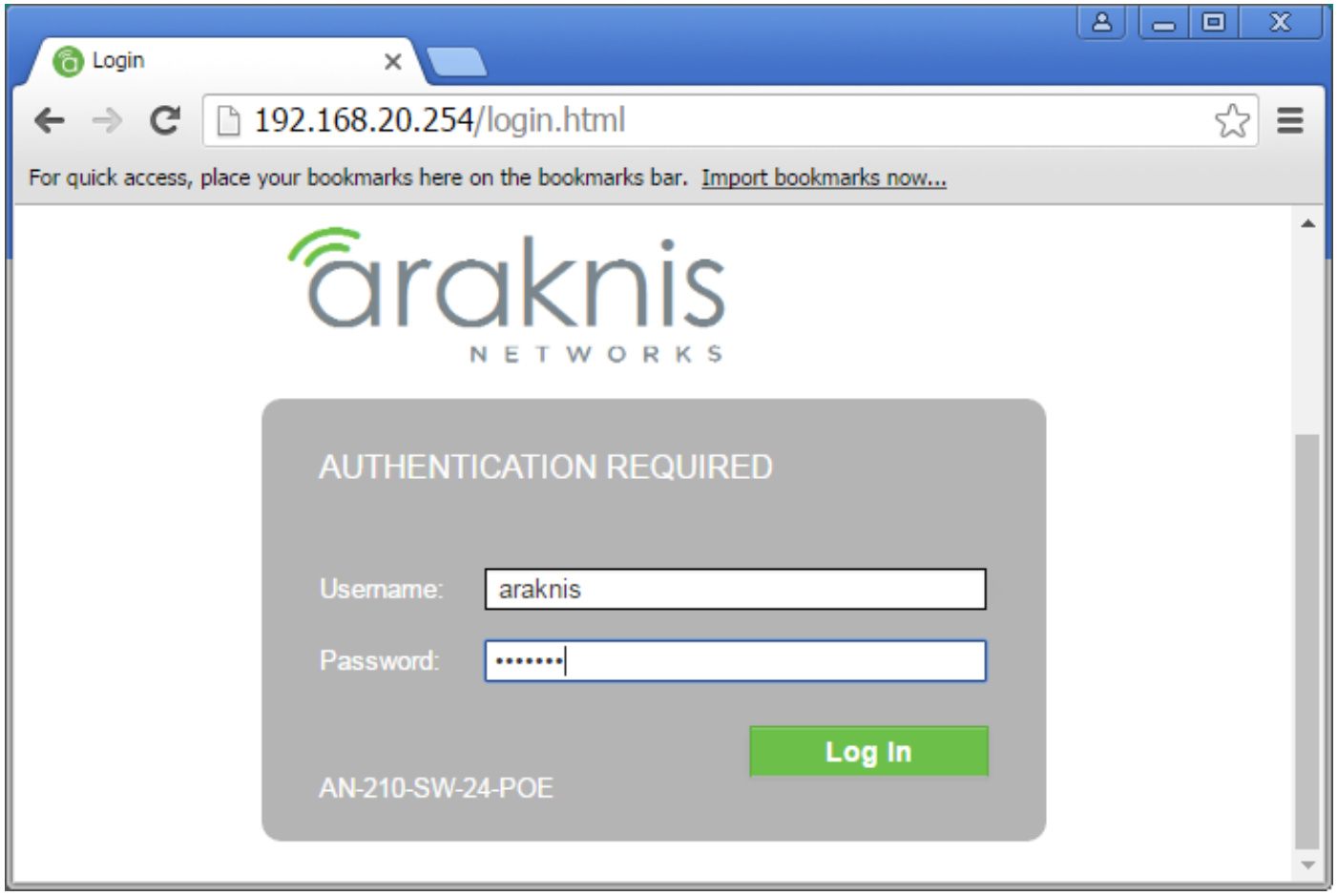
IGMP Setup Guide: Araknis
1080p Systems (KD-IP1080, KD-IP120)

1. **IMPORTANT**: Disconnect all the DHCP devices like routers, servers from the Araknis network switch.
2. Locate a pinhole "RESET" button at the front panel left bottom corner of your Araknis network switch. Using a paper clip press and hold a reset button for more than 10 seconds and then release. Wait while the device is restarted and ready to use (about 5min).
3. **IMPORTANT**: At this point all the displays should be displaying distorted randomly flashing video images.
4. Connect your PC to the Araknis network switch directly using a network cable.
5. If you have not done yet, configure your PC's IP address to the same range as the switch (default **192.168.20.xxx**).
6. Enter the switch's IP address (default is **192.168.20.254**) in your browser and press ENTER.
7. Enter username and password (default is "**araknis**" for both). Then click **Log In.**



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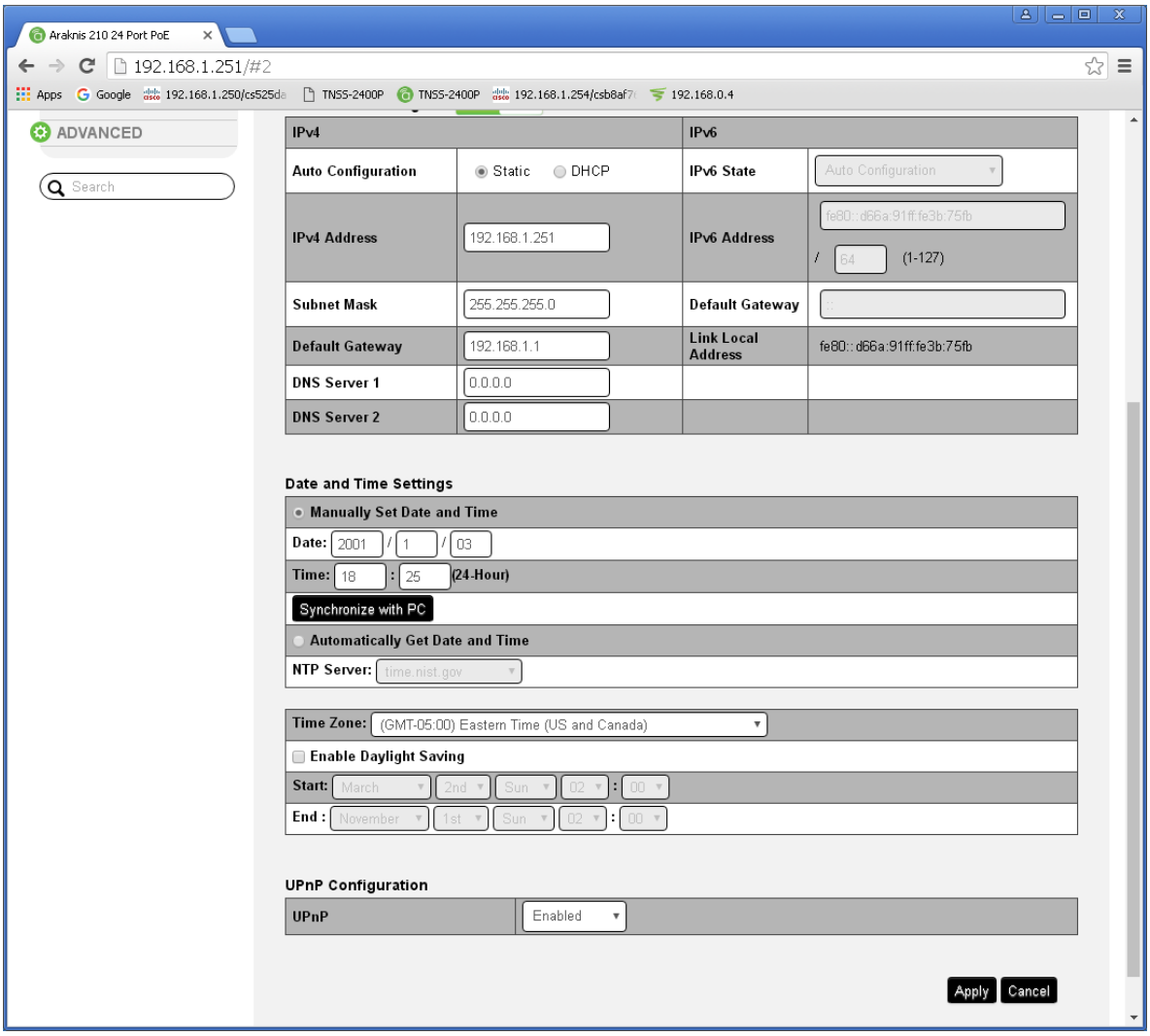
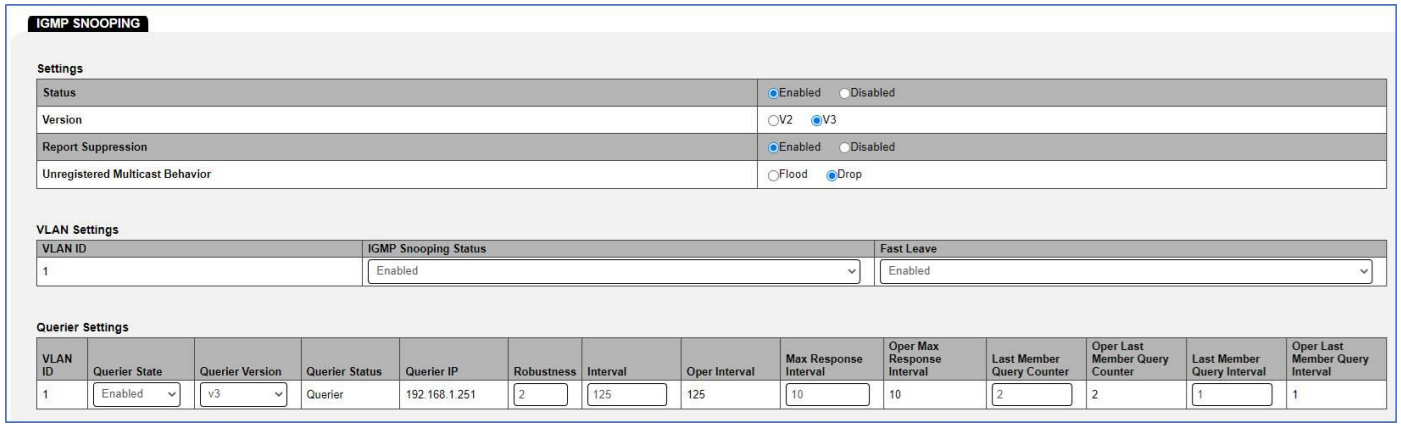
8. Navigate to **Settings** -> **System**. Under **IP Address Settings** elect **Static**. Change an IP address to **192.168.1.251**, **Subnet Mask** to **255.255.255.0**, **Default Gateway** to **192.168.1.1** (in this case), and at the bottom click **Apply**. If you are setting up multiple network switches it is recommended to set first one to **192.168.1.251**, second to **192.168.1.252**, and so on, and each switch must be set individually same way as described below.

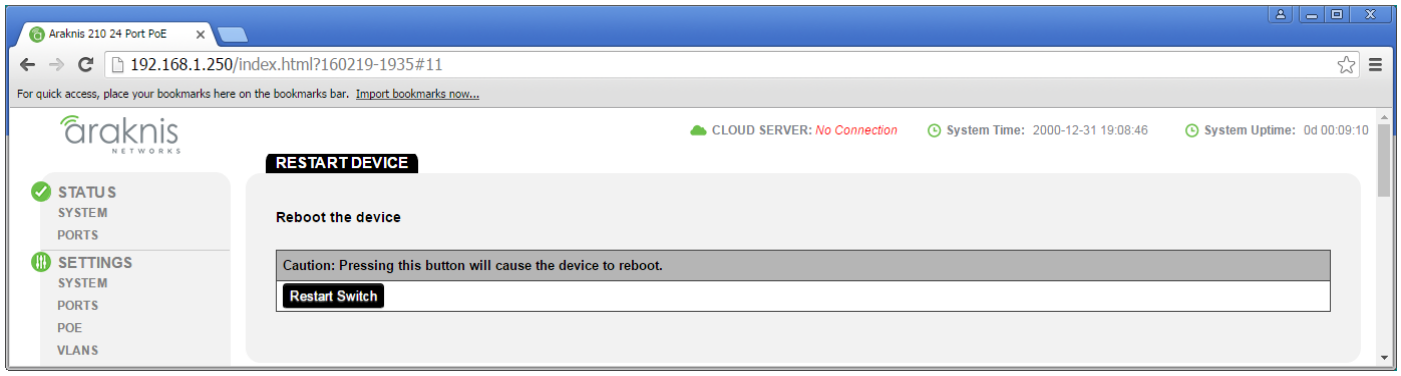


9. Page will refresh. Configure your PC's IP address to the same range as the switch (default **192.168.1.xxx**). Enter the switch's IP address (default is **192.168.1.251**) in your browser and press ENTER.
10. Make sure the settings remain as above.
11. Navigate to **Advanced** -> **Multicast** -> **IGMP Snooping**. Under **Settings** select **Enable** for **Status**, **V3** for **Version**, and **Enable** for **Report Suppression**. Under **VLAN Settings** / **VLAN ID 1** select **Enable** for **IGMP**

Snooping Status and **Enable** for **Fast Leave**. Under **Querier Settings** / **VLAN ID 1** select **Enable** for **Querier State, V3** for **Querier Version** and make sure all other setting are exactly as shown below. Click **Apply**.



12. **IMPORTANT**: At this point all the displays should be displaying stable running video from the selected sources. If you do not have them displaying properly, than network switch is configured incorrectly.
13. Navigate to **Maintenance** -> **Restart Device** and click Restart Switch. After the reboot is complete, check all settings again.



14. **IMPORTANT**: Now you can connect back you DHCP equipment (routers, servers and so on).
15. Power down Araknis network switch and power it up back again. Wait for the whole system to start and until you can see video on your displays.
16. Log in to your Araknis network switch again and make sure that IGMP settings are intact.
17. Rescan your components with Key Digital Management Software and make sure HDMI video switch is functional.
18. At this point your Araknis network switch is set and ready to use
19. Connect your encoders, decoders, allow approx 3 mins for bootup, and perform a network scan using KD Management Software.

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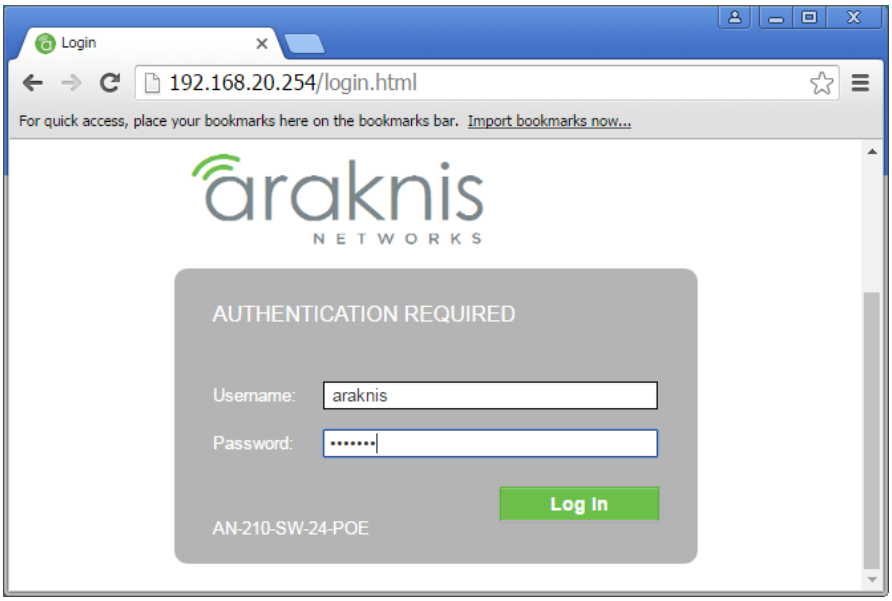
IGMP Setup Guide: Araknis
4K Systems (KD-IP822/922/1022)

1. **IMPORTANT**: Disconnect all the DHCP devices like routers, servers from the Araknis network switch.
2. Locate a pinhole "RESET" button at the front panel left bottom corner of your Araknis network switch. Using a paper clip press and hold a reset button for more than 10 seconds and then release. Wait while the device is restarted and ready to use (about 5min).
3. **IMPORTANT**: At this point all the displays should be displaying distorted randomly flashing video images.
4. Connect your PC to the Araknis network switch directly using a network cable.
5. If you have not done yet, configure your PC's IP address to the same range as the switch (default **192.168.20.xxx**).
6. Enter the switch's IP address (default is **192.168.20.254**) in your browser and press ENTER.
7. Enter user name and password (default is "**araknis**" for both). Then click **Log In.**



8. Navigate to **Settings** -> **System**. Under **IP Address Settings** elect **Static**. Change an IP address to **192.168.1.251**, **Subnet Mask** to **255.255.255.0**, **Default Gateway** to **192.168.1.1** (in this case), and at the bottom click **Apply**. If you are setting up multiple network switches it is recommended to set first one to **192.168.1.251**, second to **192.168.1.252**, and so on, and each switch must be set individually same way as described below.

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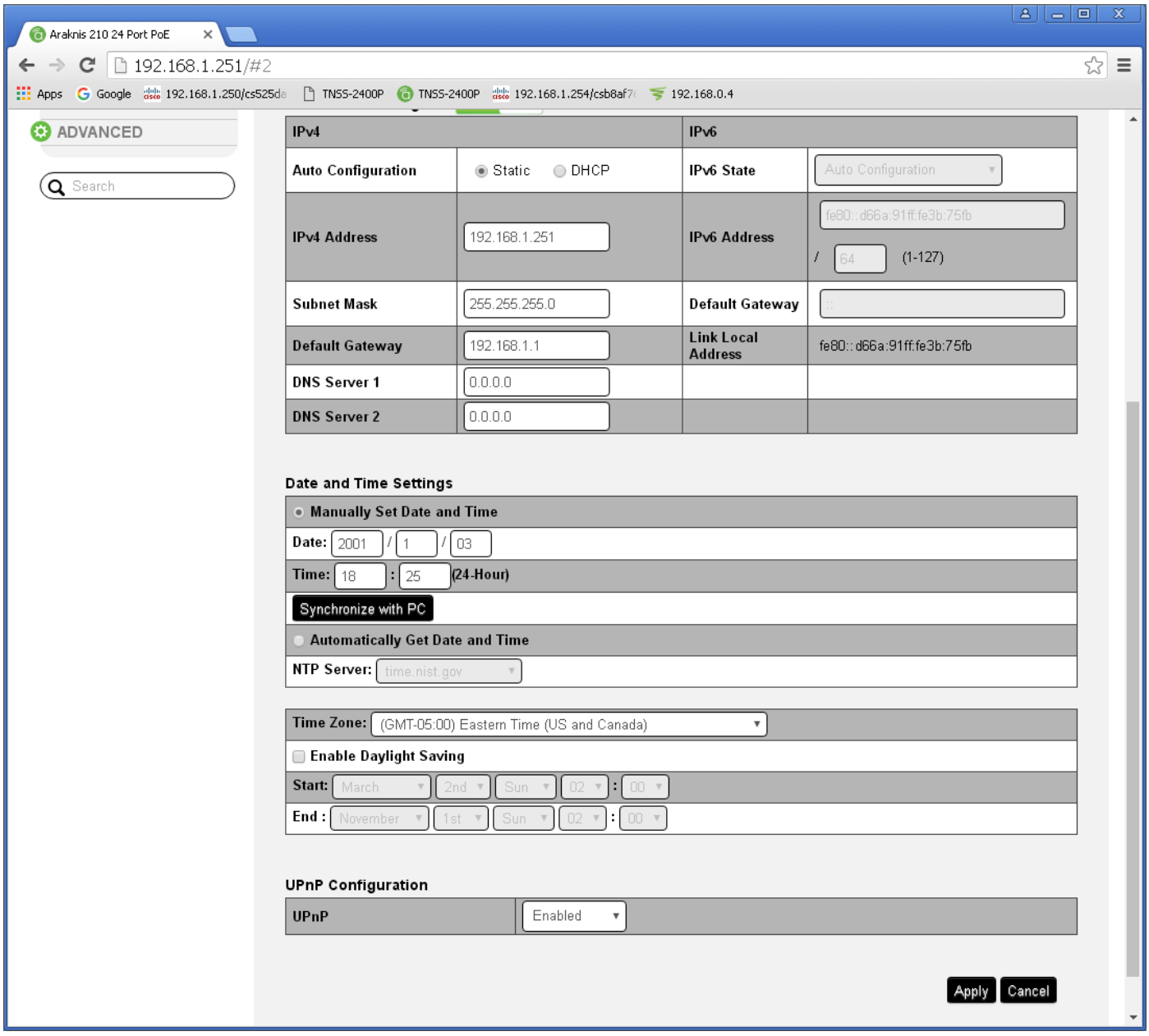
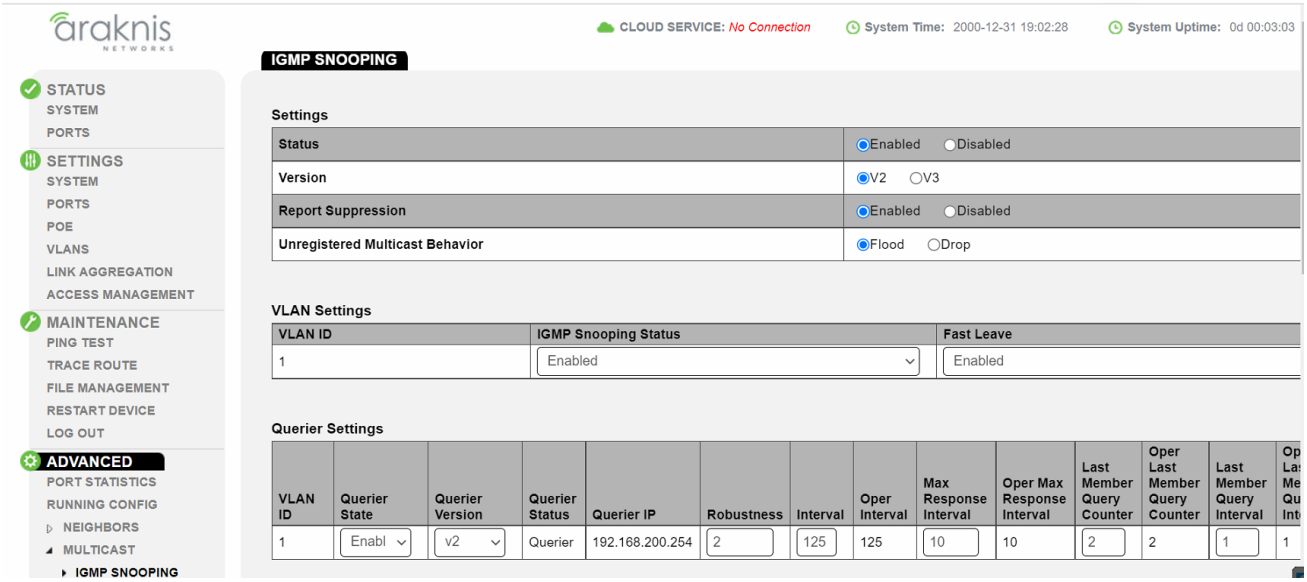
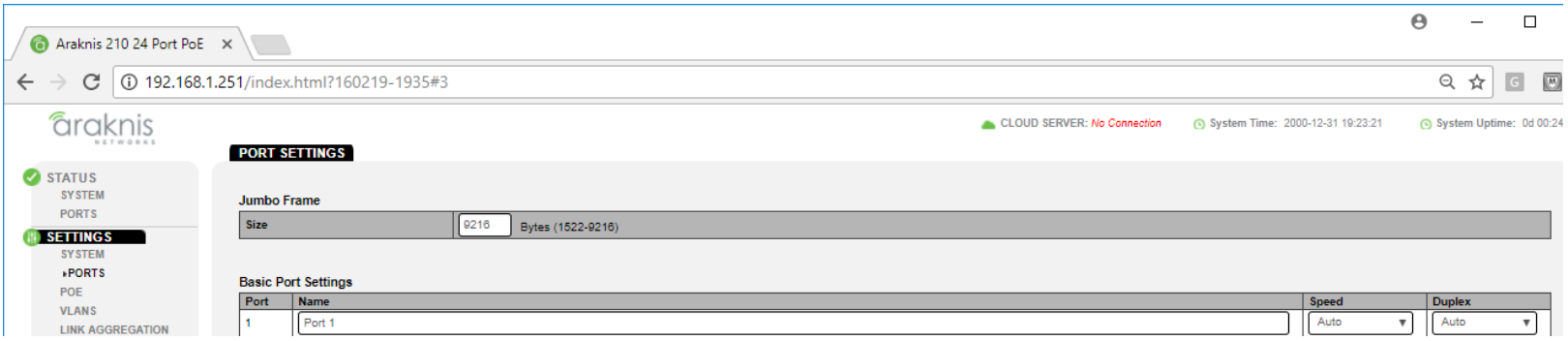


9. Page will refresh. Configure your PC's IP address to the same range as the switch (default **192.168.1.xxx**). Enter the switch's IP address (default is **192.168.1.251**) in your browser and press ENTER.
10. Make sure the settings remain as above.

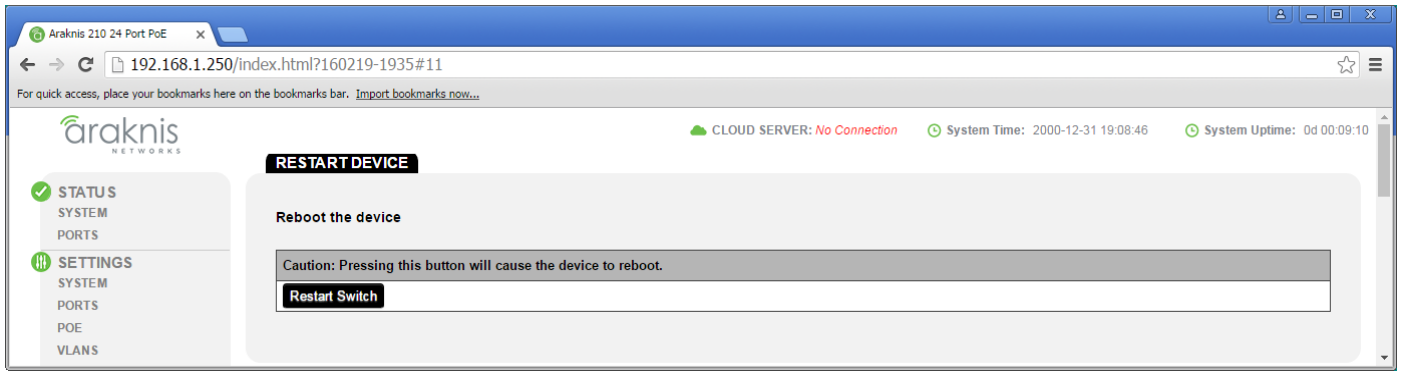
11. Navigate to **Advanced** -> **Multicast** -> **IGMP Snooping**. Under **Settings** select **Enable** for **Status**, **V2** for **Version**, **Enable** for **Report Suppression**, and **Flood** for **Unregistered Multicast Behavior**. Under **VLAN Settings** / **VLAN ID 1** select **Enable** for **IGMP Snooping Status** and **Enable** for **Fast Leave**. Under **Querier Settings** / **VLAN ID 1** select **Enable** for **Querier State, V2** for **Querier Version** and make sure all other setting are exactly as shown below. Click **Apply**.



12. Enter **Settings -> Ports** and set Jumbo Frame size to 9216 bytes, enabling the required 8K jumbo frame support feature.



13. **IMPORTANT**: At this point all the displays should be displaying stable running video from the selected sources. If you do not have them displaying properly, then network switch is configured incorrectly.
14. Navigate to **Maintenance** -> **Restart Device** and click Restart Switch. After switch is rebooted and back to normal log in again, check all the settings again.



15. **IMPORTANT**: Now you can connect back you DHCP equipment (routers, servers and so on).
16. Power down Araknis network switch and power it up back again. Wait for the whole system to start and until you can see video on your displays.
17. Log in to your Araknis network switch again and make sure that IGMP settings are intact.
18. Rescan your components with Key Digital Management Software and make sure HDMI video switch is functional.
19. At this point your Araknis network switch is set and ready to use.
20. Connect your encoders, decoders, allow approx 3 mins for bootup, and perform a network scan using KD Management Software.

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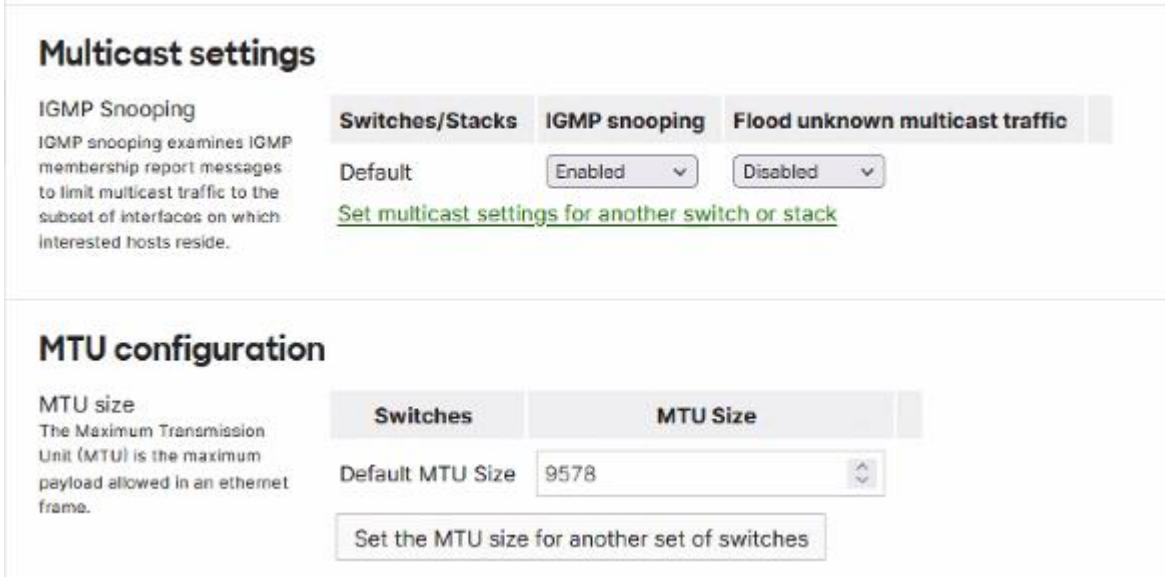
Cisco Meraki series

After gaining access to the Cisco Dashboard, navigate to the following and applied settings as depicted:



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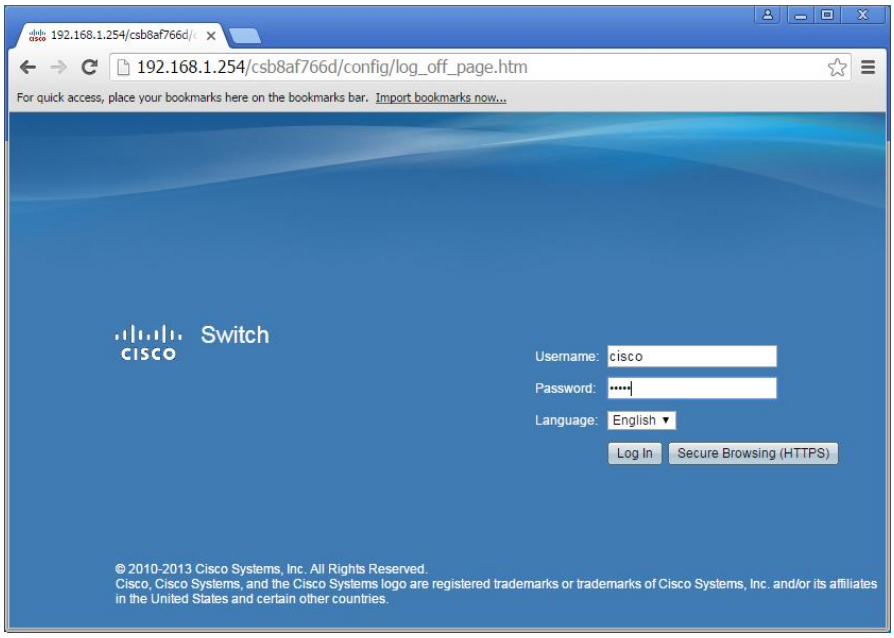
IGMP Setup Guide: Cisco SG and SF Series
4K Setup for SG Series
1080p Setup for SF Series

Note: SF Series is Compatible with KD-IP1080, KD-IP120 AV over IP Systems Only

1. **IMPORTANT**: Disconnect all the DHCP devices like routers, servers from the Cisco network switch.
2. Locate a pinhole "RESET" button at the front panel left bottom corner of your Cisco network switch. Using a paper clip press and hold a reset button for more than 10 seconds and then release. Wait while the device is restarted and ready to use (about 5min).
3. **IMPORTANT**: Make sure the green "SYSTEM"LED next to the pinhole "RESET" button is flashing.
4. **IMPORTANT**: At this point all the displays should be displaying distorted randomly flashing video images.
5. Connect your PC to the Cisco network switch directly using a network cable.
6. If you have not done yet, configure your PC's IP address to the same range as the switch (default **192.168.1.xxx**).
7. Enter the switch's IP address in your browser and press ENTER (check the user manual for a default IP address - it is usually **192.168.1.254**).
8. Enter user name and password (check the user manual for a default user name and password; it is usually "**cisco**" for both). Then click **Log In.**



9. **Change Password** screen will appear. Enter old and then new password two times as at the picture below and click Apply.

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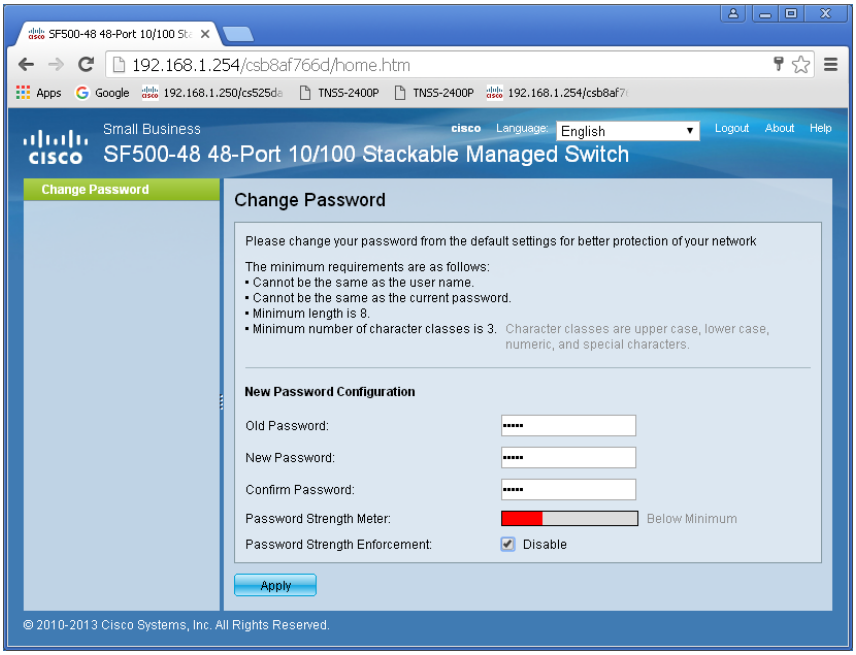
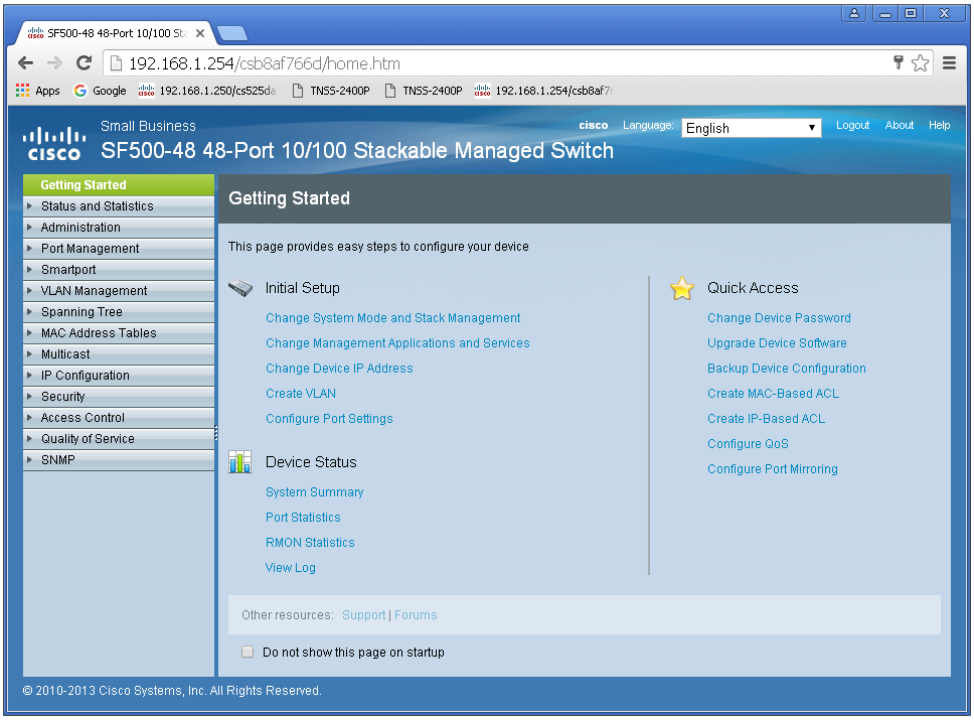


10. **Getting Started** screen will appear.



11. Navigate to **Configration Wizards** to access the **Gettting Started Wizard**, which will be used to set the desired IP address of the switch.

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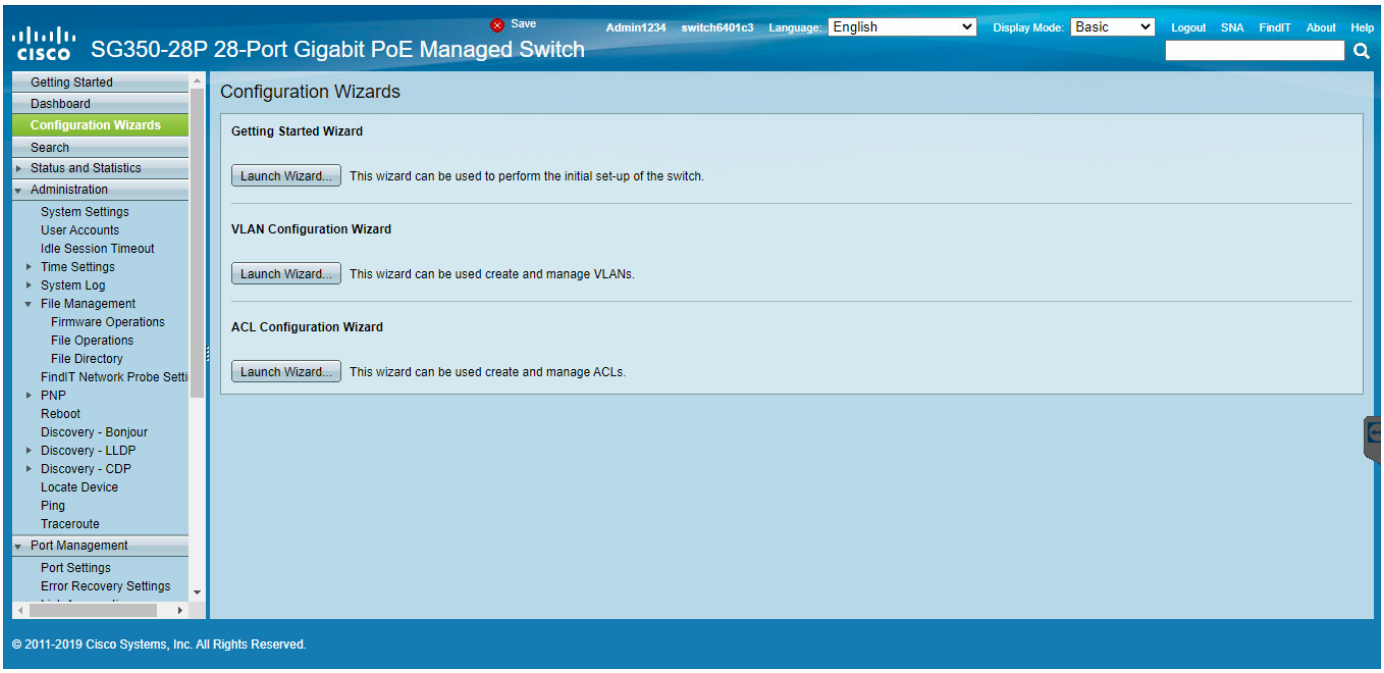
Save
Admin1234
switch6401c3
Language: English
Display Mode: Basic
Logout
SNA
FindIT
About
Help
SG350-28P 28-Port Gigabit PoE Managed Switch
Getting Started
Dashboard
Configuration Wizards
Search
Status and Statistics
Administration
System Settings
User Accounts
Idle Session Timeout
Time Settings
System Log
File Management
Firmware Operations
File Operations
File Directory
FindIT Network Probe Setti
PNP
Reboot
Discovery - Bonjour
Discovery - LLDP
Discovery - CDP
Locate Device
Ping
Traceroute
Port Management
Port Settings
Error Recovery Settings
Configuration Wizards
Getting Started Wizard
Launch Wizard...
This wizard can be used to perform the initial set-up of the switch.
VLAN Configuration Wizard
Launch Wizard...
This wizard can be used create and manage VLANs.
ACL Configuration Wizard
Launch Wizard...
This wizard can be used create and manage ACLs.
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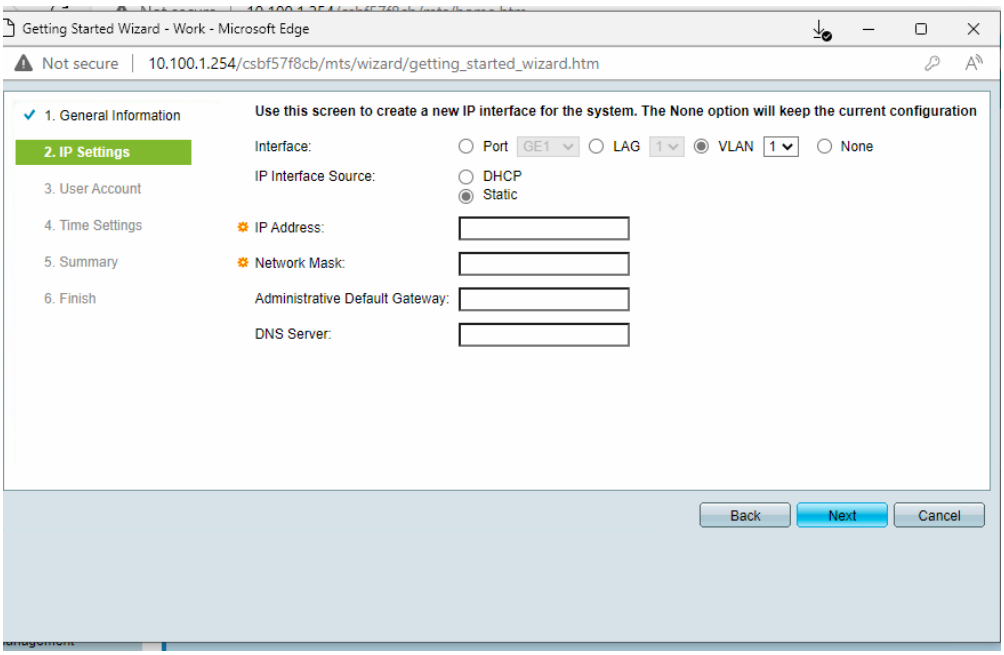
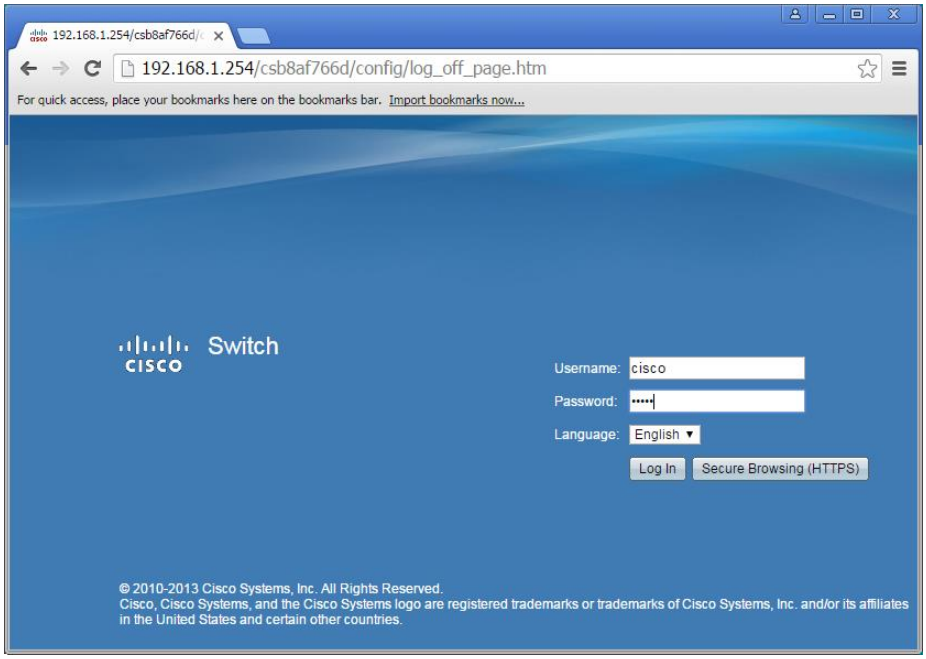
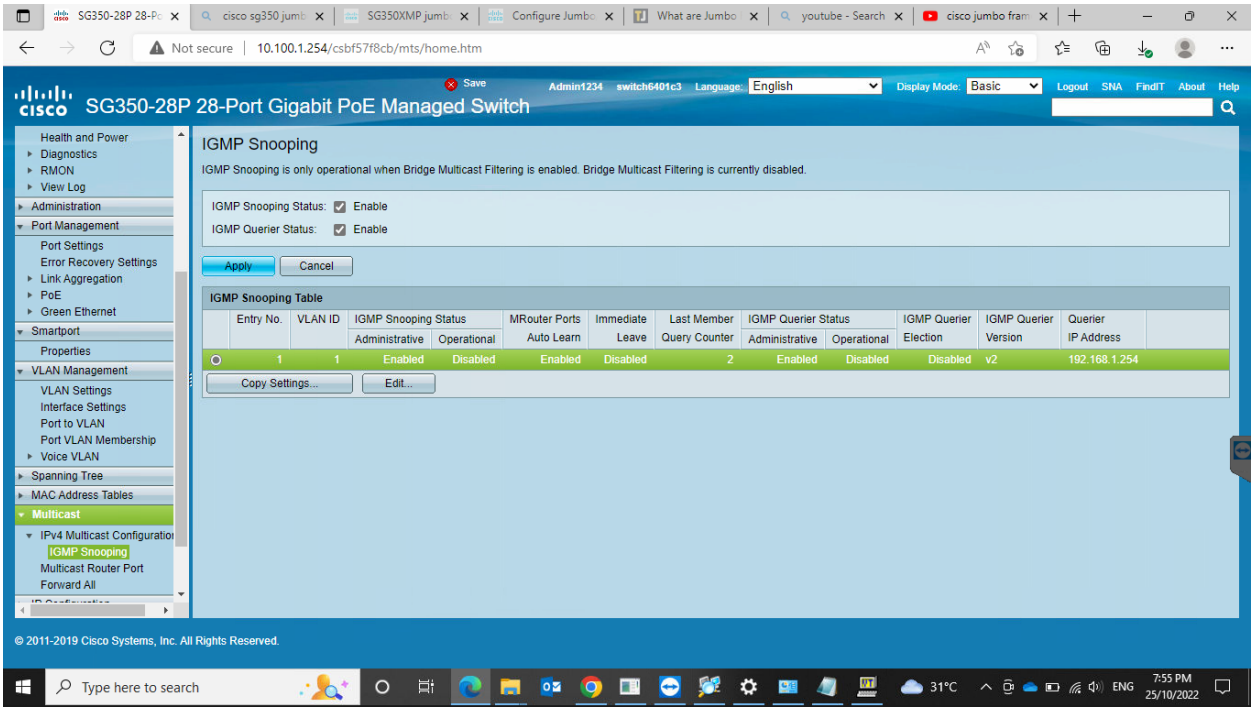

Getting Started Wizard - Work - Microsoft Edge
Not secure
10.100.1.254/csbf57f8cb/mts/wizard/getting_started_wizard.htm
1. General Information
2. IP Settings
3. User Account
4. Time Settings
5. Summary
6. Finish
Use this screen to create a new IP interface for the system. The None option will keep the current configuration
Interface:
Port
GE1
LAG
1
VLAN
1
None
IP Interface Source:
DHCP
Static
IP Address:
Network Mask:
Administrative Default Gateway:
DNS Server:
Back
Next
Cancel

Back to top

12. Log in again using new password and new IP address.



13. Navigate to **Multicast** -> **IGMP Snooping**. Check the **IGMP Snooping Status: Enable** box and click **Apply**.



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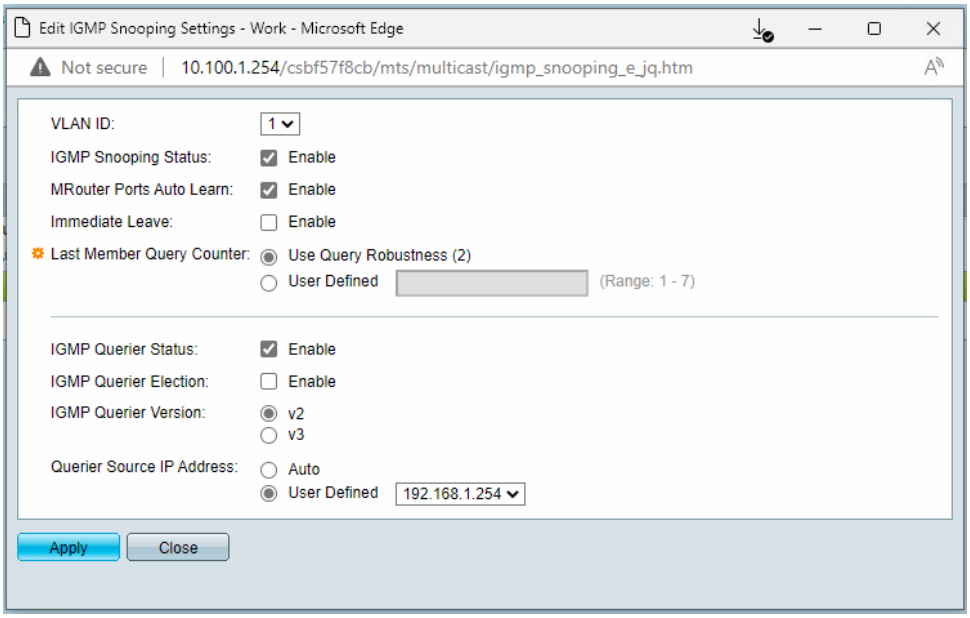
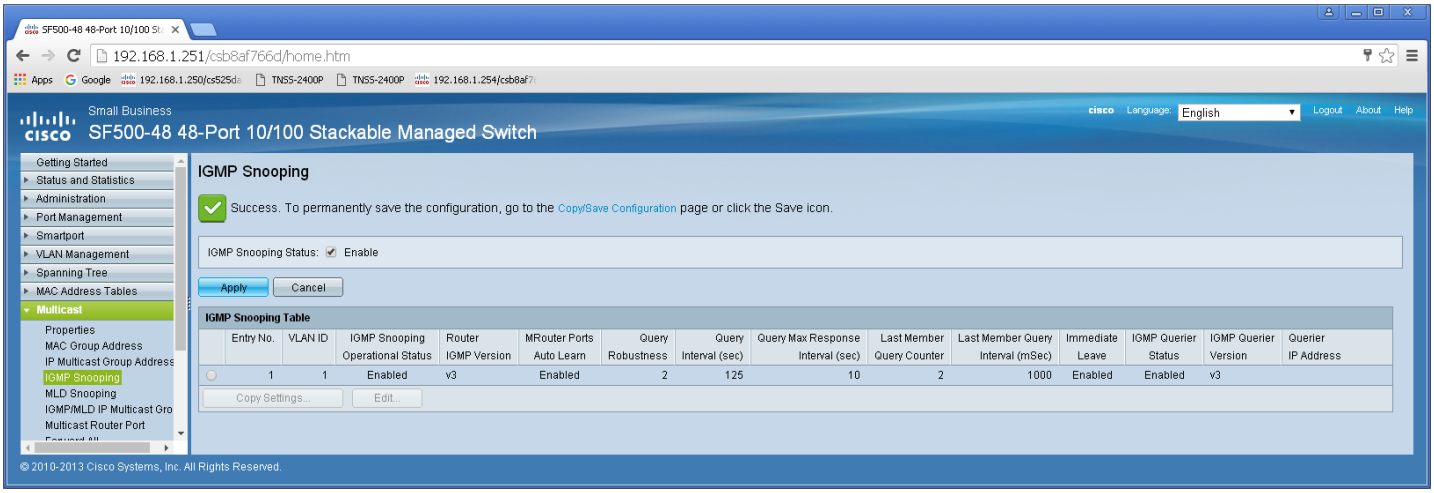
14. Click on a radio button on the left and then click **Edit**. New window will appear. Select "**1**" for **VLAN ID**. Check **Enable** box under **IGMP Snooping Status**. Check **Enable** box under **Immediate Leave**. Check **Enable** box under **IGMP Querier Status**. Select **User Defined** next to **Administrative Querier Source IP Address:** and select **192.168.1.1**. For **IGMP Querier Version:** select **IGMPV3** for IP1080 system. If using IP922 system, select **IGMPV2**. Then click **Apply** and **Close**. Make sure all the setting are exactly as shown





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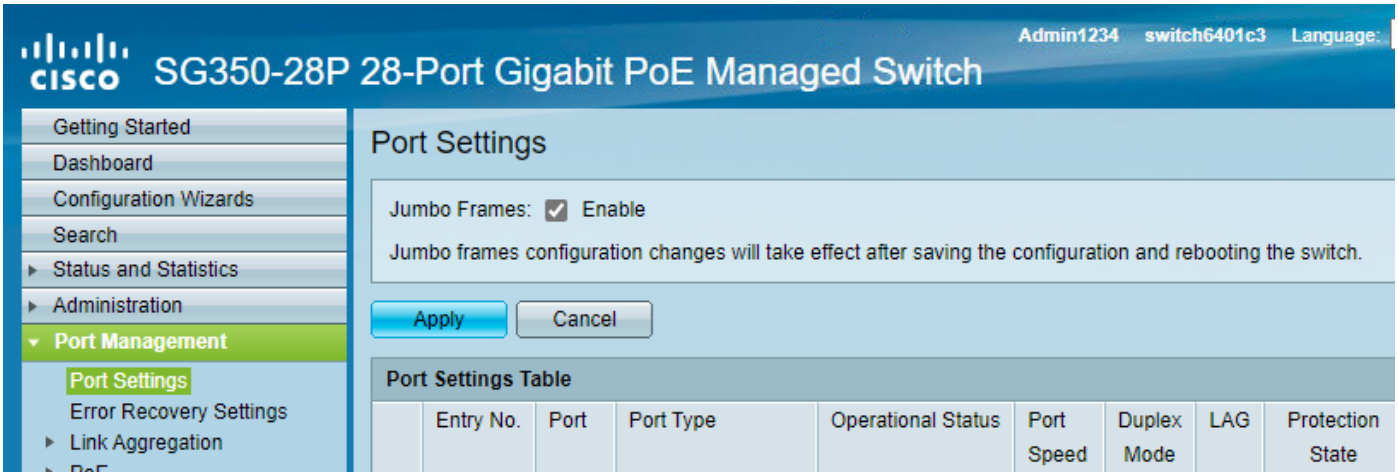
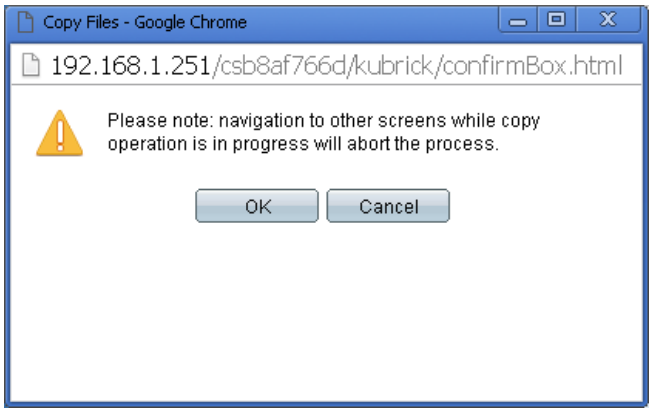
15. If using KD-IP922 system, enable jumbo frames in the Port Management section.



16. On the top of the page click on flashing "**x Save**". For **Source File Name**: select **Running configuration**. For **Destination File Name:** select **Startup configuration**. Check the selections and make sure they are exactly as shown below. Click **Apply**.

17. Click **Apply** to confirm.



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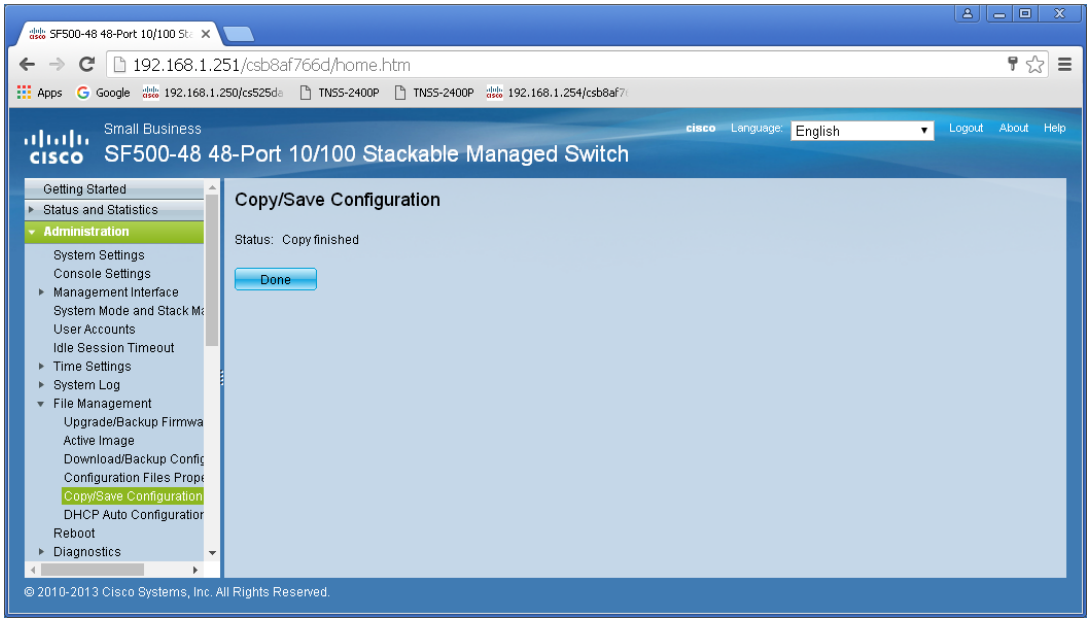
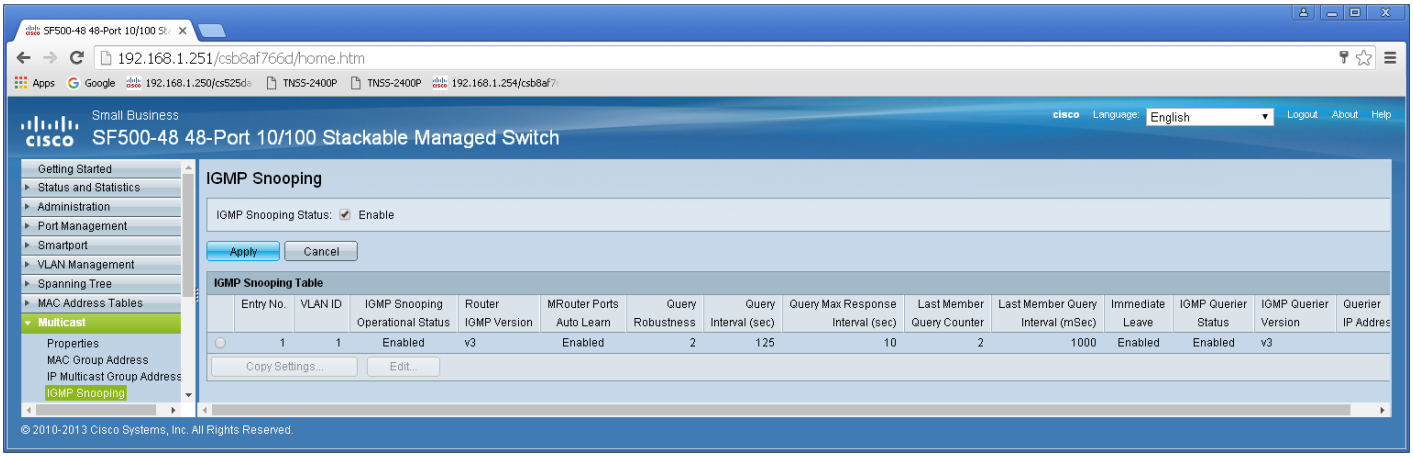
18. Click **Done**.



19. Power down Cisco network switch and power it up back again. Wait approx 5 minutes to reboot, and connection your Encoders, Decoders, and DHCP equipment (routers, servers and so on). After approx 2 minutes of bootup for the AV over IP equipment, you should see image on your displays

20. Log in to your Cisco network switch again and make sure that IGMP settings are intact:



21. Rescan your components with Key Digital Management Software and make sure HDMI video switch is functional.
22. At this point your Linksys network switch is set and ready to use.
23. Connect your encoders, decoders, allow approx 3 mins for bootup, and perform a network scan using KD Management Software.

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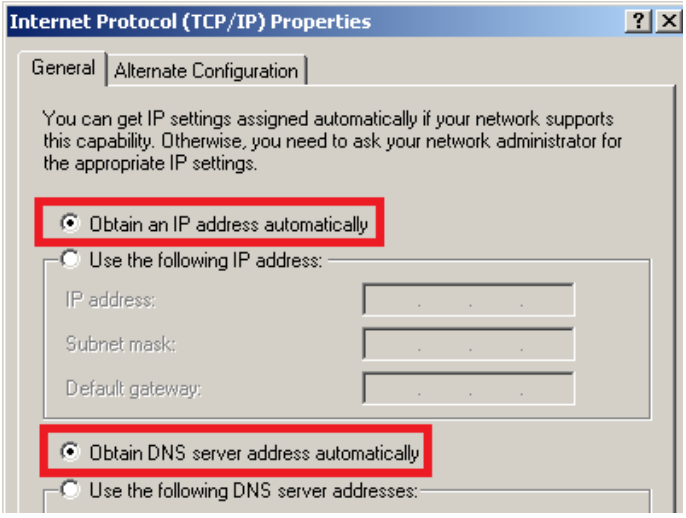
IGMP Setup Guide: Cisco C3850 Series
4K Systems (KD-IP822/922/1022)

Cisco Catalyst 3850 series

This guide describes how to use **Express Setup** to initially configure your Catalyst 3850 switch. We have modified original Express Setup guide from Cisco to help out you install it easily. For more installation and configuration information, see the Catalyst 3850 documentation on Cisco.com.

Running Express Setup & Configuration Setup for KD-IP822, KD-IP922, KD-IP1022

Use Express Setup to enter the initial IP information. This action enables the switch to connect to local routers and the Internet. You can access the switch through the IP address for further configuration.
Note : Even you already finish Express Setup on your switch, please check every step one by one.

Step 1	Make sure that nothing is connected to the switch.	
Step 2	During Express Setup, the switch acts as a DHCP server. If your PC or laptop has a static IP address, temporarily change your PC or laptop settings to DHCP. **Note**. Do not connect LAN cable from your PC or laptop to Cisco's switch until Step 7.	
Step 3	Install the power supply modules. See the "Power Supply Installation" chapter in the *Catalyst 3850 Switch Hardware Installation Guide* for instructions. http://www.cisco.com/go/cat3850_hw	

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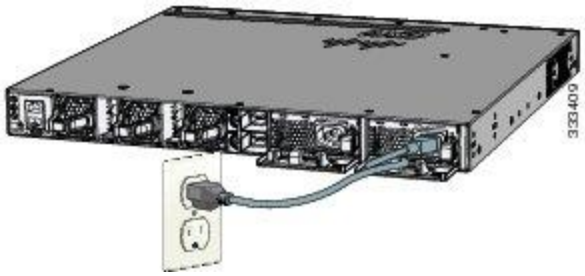
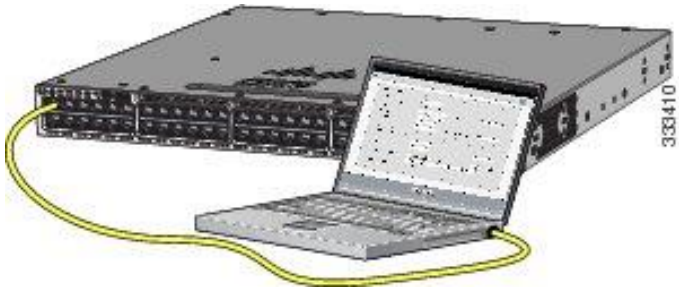
Step 4	Power the switch. AC power switches: Plug the AC power cord into the switch power supply and into a grounded AC outlet. DC power switches: See the wiring instructions in Step3	
Step 5	Observe the POST results. Approximately 30 seconds after the switch powers on, it begins the power-on self-test (POST), which can take up to 5 minutes to complete. During POST, the SYSTEM LED blinks green. When POST is complete, the SYSTEM LED turns solid green. The ACTV LED is green if the switch is acting as the active switch. **Note** Before going to the next step, wait until POST is complete. Troubleshooting: If the SYST LED does not turn solid green, or turns amber, the switch failed the POST. Contact your Cisco representative or reseller.	
Step 6	Press and hold the Mode button until all the LEDs next to the Mode button turn green. You might need to hold the button for more than 3 seconds. The switch is now in Express Setup mode.	
	Troubleshooting: If the LEDs next to the Mode button blink when you press the button, release it. Blinking LEDs mean that the switch is already configured and cannot go into Express Setup mode. For more information, see the "Resetting the Switch" section.	
Step 7	Connect a Category 5e/6 Ethernet cable to first port on the front panel of Cisco Switch. Connect the other end of the cable to the Ethernet port on your PC or laptop. Wait until the port LEDs on the switch and your PC or laptop or laptop are green or blinking green. Green LEDs indicate a successful connection. Troubleshooting: If the port LEDs do not turn green after about 30 seconds, make sure that: You are using an undamaged Category 5 or 6 Ethernet cable (Do not connect console ports)	

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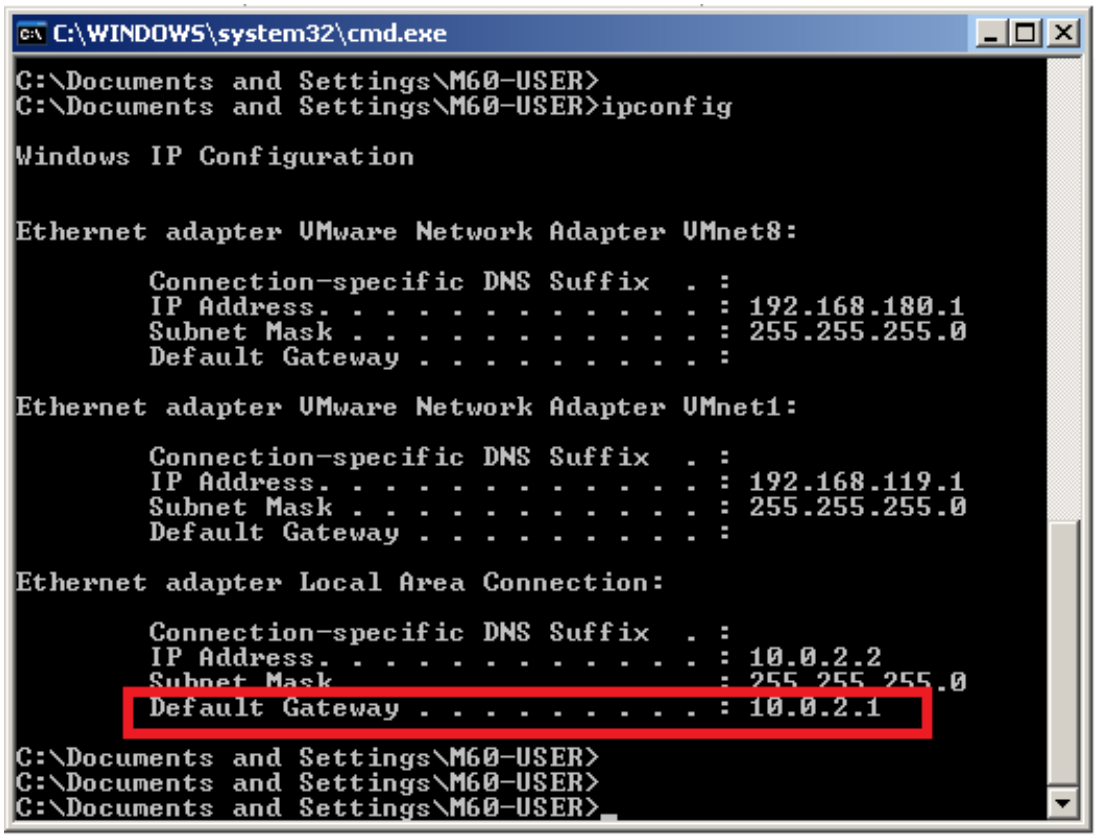
Step 8	Run command shell on your PC or laptop and enter “ipconfig” on the command line. You will get Windows IP configuration and find IP address of Default Gateway. **Note**. According to Express Setup from Cisco, it said “10.0.01” is default IP address. But it’s not correct for all Cisco Catalyst 3850 series. It looks default IP address will be varied depend on Cisco Switches. 	

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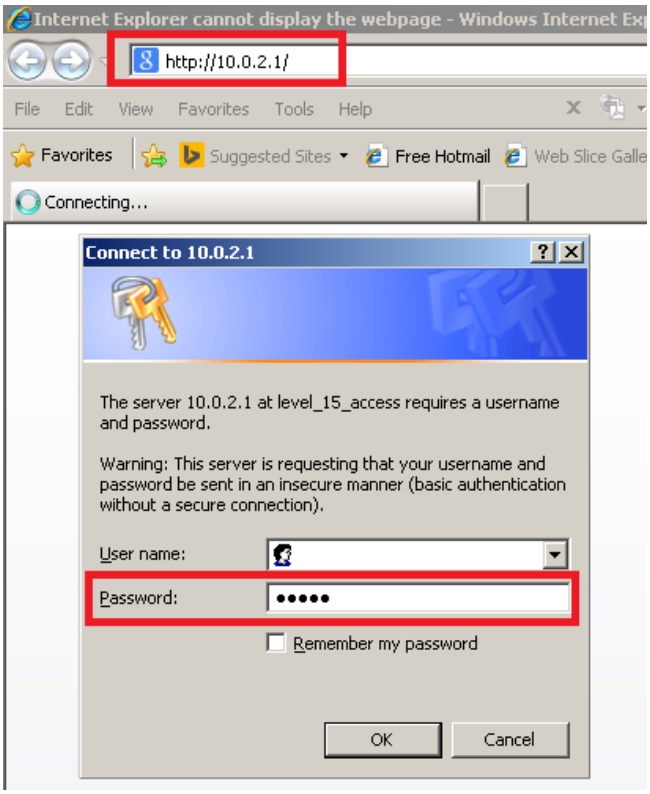
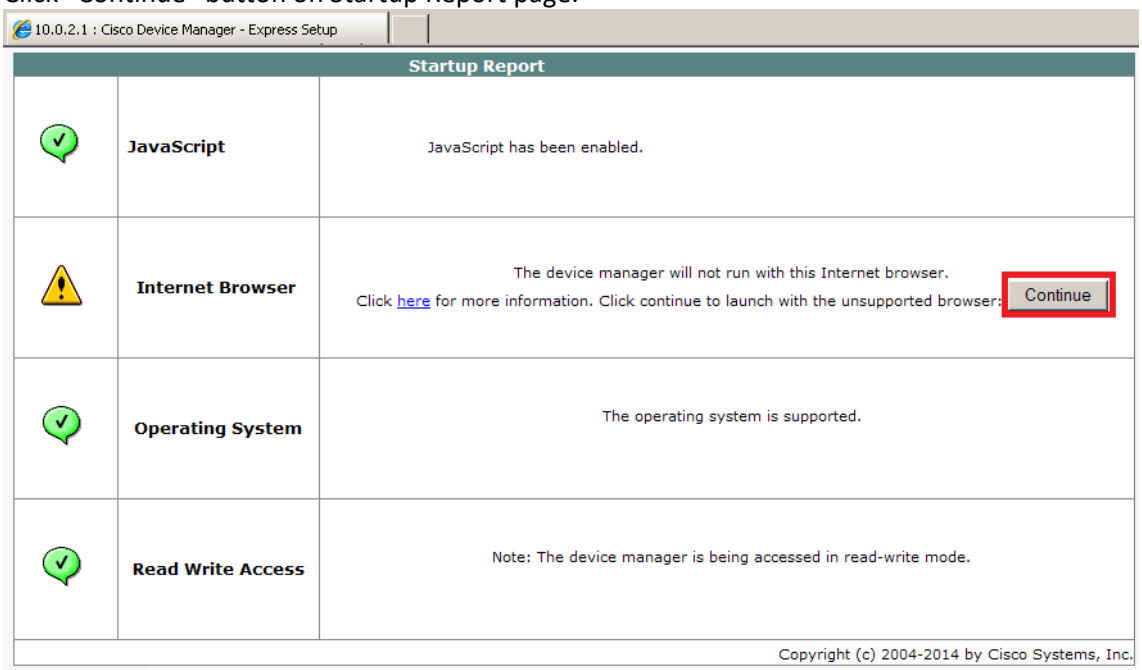
Step 9	Start a browser session on the PC or laptop, and enter the IP address of your Default Gateway. Note: As I mentioned on Step8, your IP address of Default Gateway may differ with our IP address. When a pop-up dialog window "Connect to 10.0.2.1" appear, skip the User name and enter the default password, "**cisco**" Troubleshooting: If the Express Setup window does not appear, make sure that any browser pop-up blockers or proxy settings are disabled and that any wireless client is disabled on your PC or laptop.
Step 10	Click "Continue" button on Startup Report page.
Step 11	Select the Basic Settings on the Express Setup window and change the network settings as you like, then go Step12.





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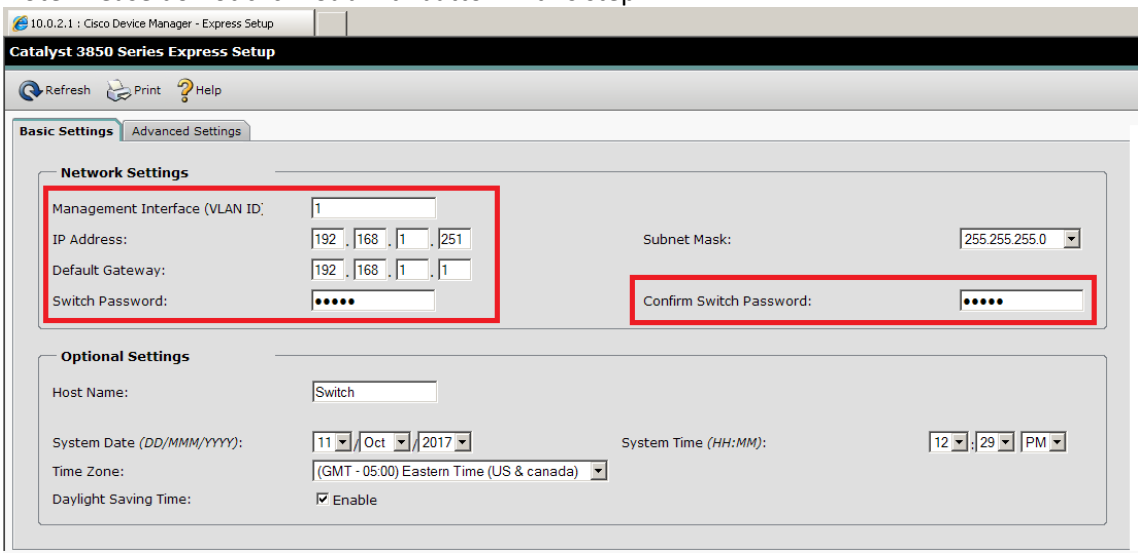
Note. Please do not click “Submit” button in this step.

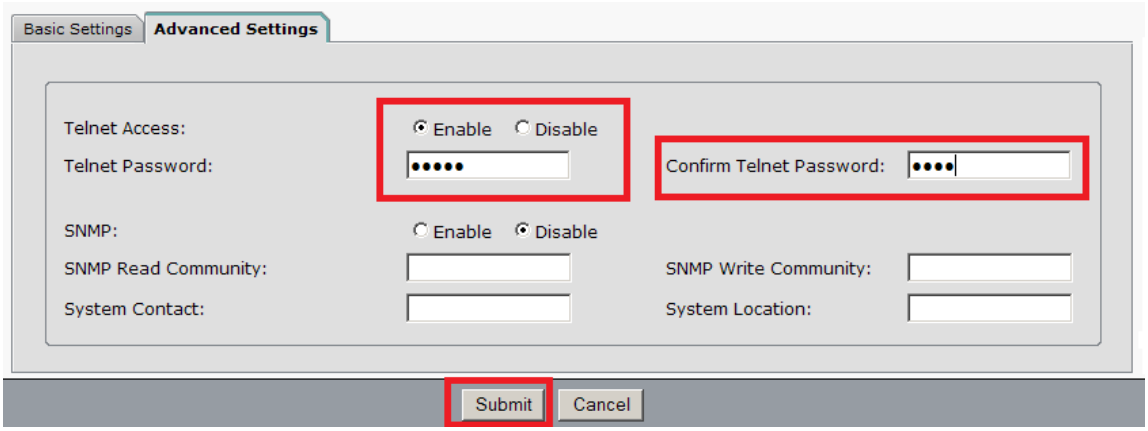


Step 12

Select the **Advanced Settings** tab on the Express Setup window

- In the Telnet Access field, click **Enable** to use Telnet to manage the switch by using the command-line interface (CLI). If you enable Telnet access, you must enter a Telnet password.
- In the Telnet Password field, enter a password. The Telnet password can be from 1 to 25 alphanumeric characters, is case sensitive, allows embedded spaces, but does not allow spaces at the beginning or end. In the Confirm Telnet Password field, reenter the Telnet password.

And click **Submit** to save your changes and to complete the initial setup.



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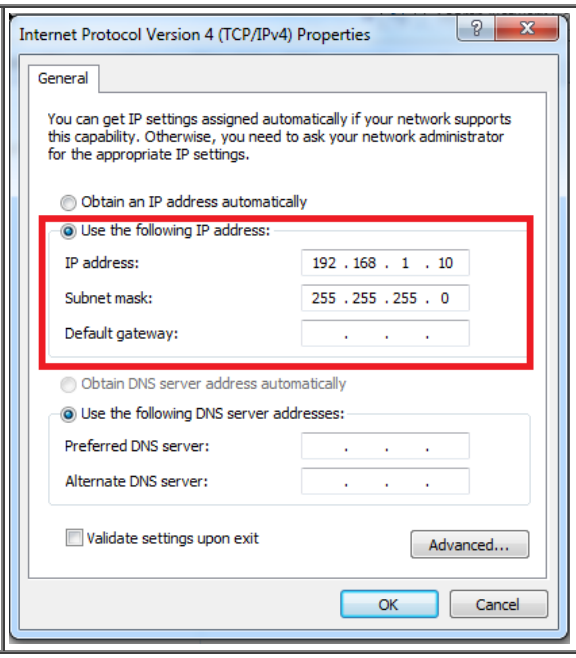
Step 13	After you click **Submit** : • The switch is configured and exits Express Setup mode. • The browser displays a warning message and tries to connect with the earlier switch IP address. Typically, connectivity between the PC or laptop and the switch is lost because the configured switch IP address is in a different subnet from the IP address on the PC or laptop. Now, change IP address of your PC or laptop to static IP address in same subnet of the Switch.	
Step 14	To configuring Multicast IGMP Snooping and Jumbo Frame setting at the switch for KD-IP922 devices, you have to connect to the Switch via Telnet. **Note**. To access Telnet, you can use PuTTY or Tera Term software. We recommend to use Tera Term software and you can download it as below link. https://osdn.net/projects/ttssh2/downloads/68252/teraterm-4.96.exe/ Run Tera Term software, and press Alt + N keys to open new connection. 14-1. Select “TCP/IP” on Tera Term:New Connection Window. 14-2. Type the IP address of the Switch at the field of Host: Ex) 192.168.1.251 14-3. Type 23 at the field of TCP Port# and select “Telnet”. 14-4. Then click OK button.	

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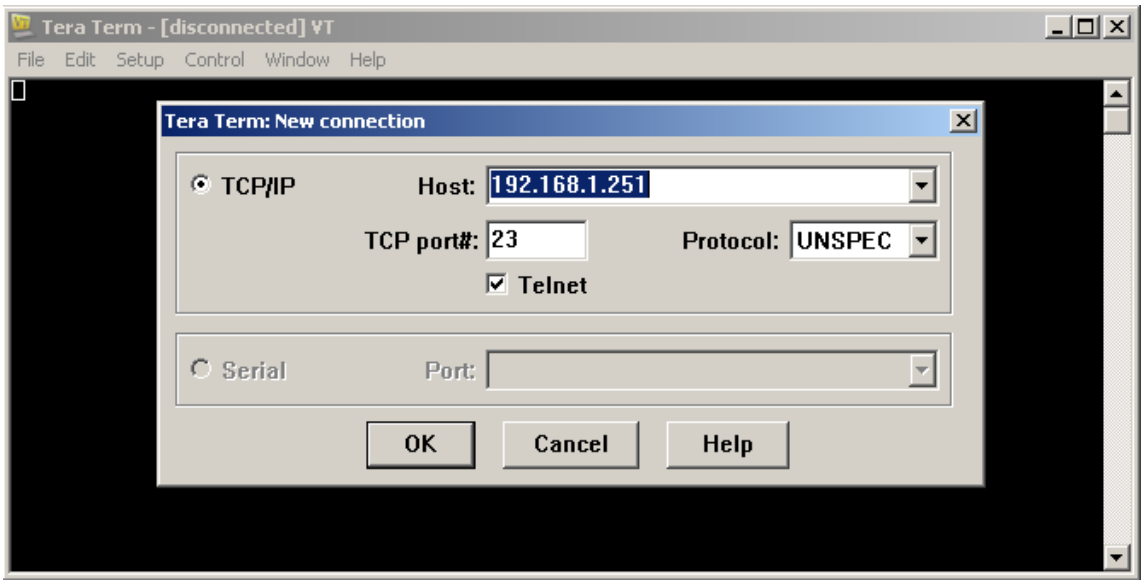
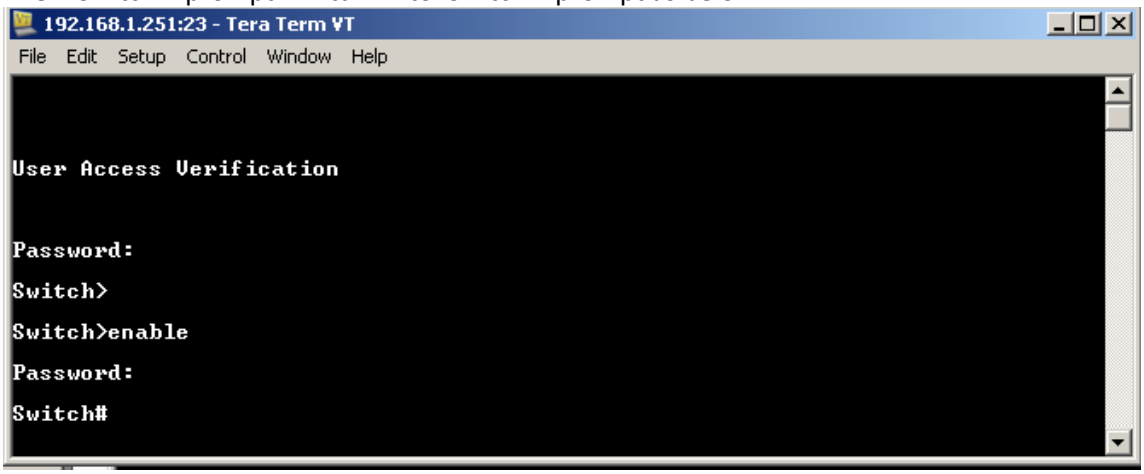


Step 15

When you connect to the switch via Telnet successfully, you have to log in to Telnet server of the switch.
15-1. Enter your Telnet password you assigned at Step12 if prompted.
15-2. Enter “enable” on Switch> prompt to enable privileged EXEC mode
15-3. Enter your Telnet password once again.
Then ‘Switch>’ prompt will turn into ‘Switch#’ prompt as below.



Step 16

To Enable Jumbo Frame for IP922.
Note: IP922 requires Jumbo Frame(8K) for video/audio transmission via 1G-BaseT with the Switch.

16-1. Enter “configure terminal” on Switch# prompt
16-2. Enter “system mtu 9000” on Switch(config)# prompt
16-3. Enter “end” on Switch(config)# prompt
16-4. Enter “copy running-config startup-config” on Switch# prompt
16-5. Press Enter key on the question of “Destination filename [startup-config]?”

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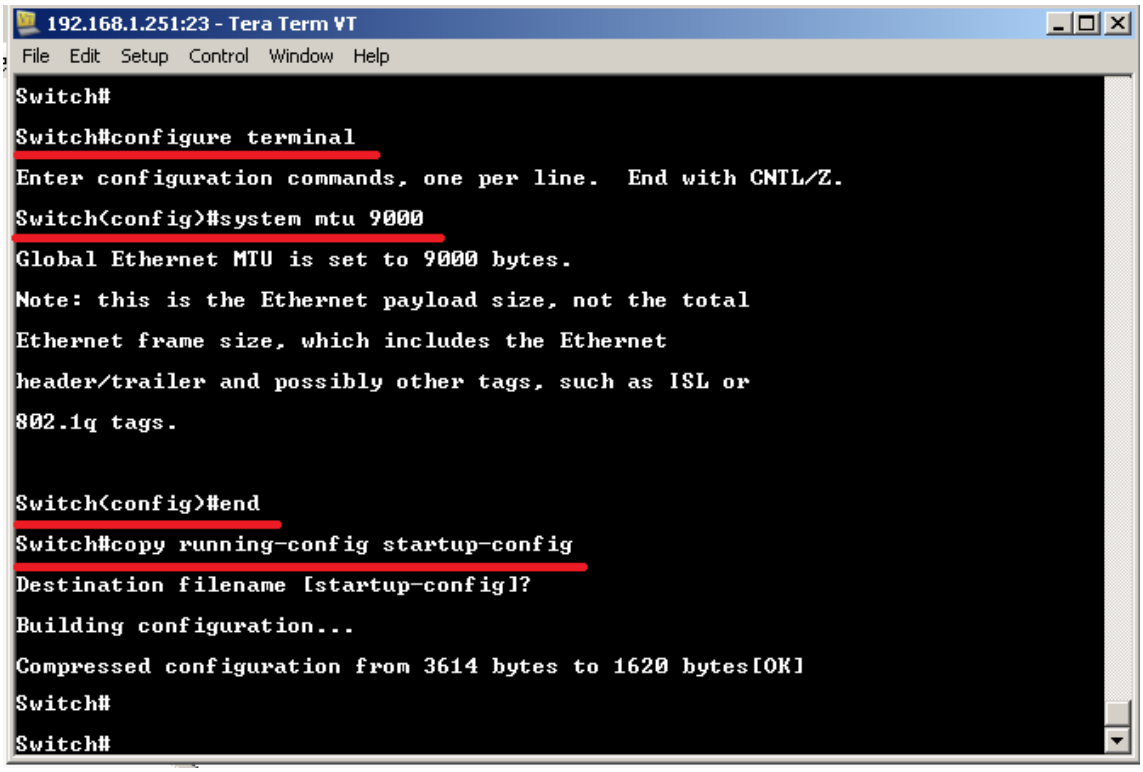
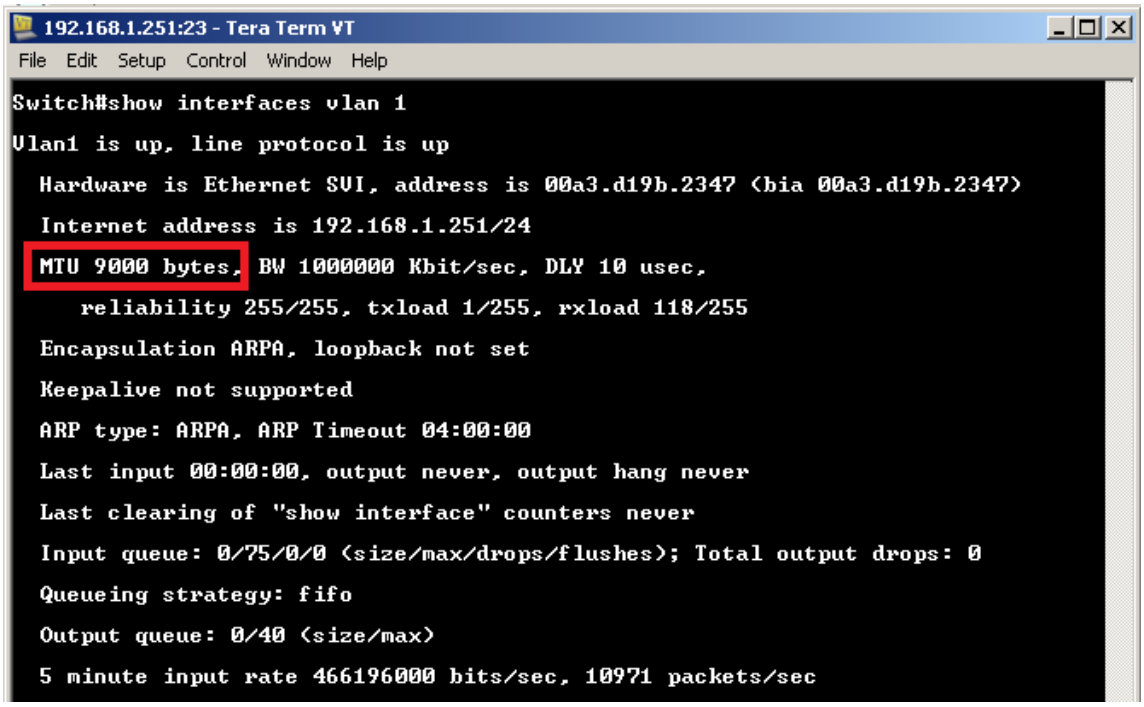


Step 17	To confirm Jumbo Frame setting on the switch. 17-1. Enter “show interfaces vlan 1” on Switch# prompt You can check MTU 9000 bytes in the status of Vlan1 interface

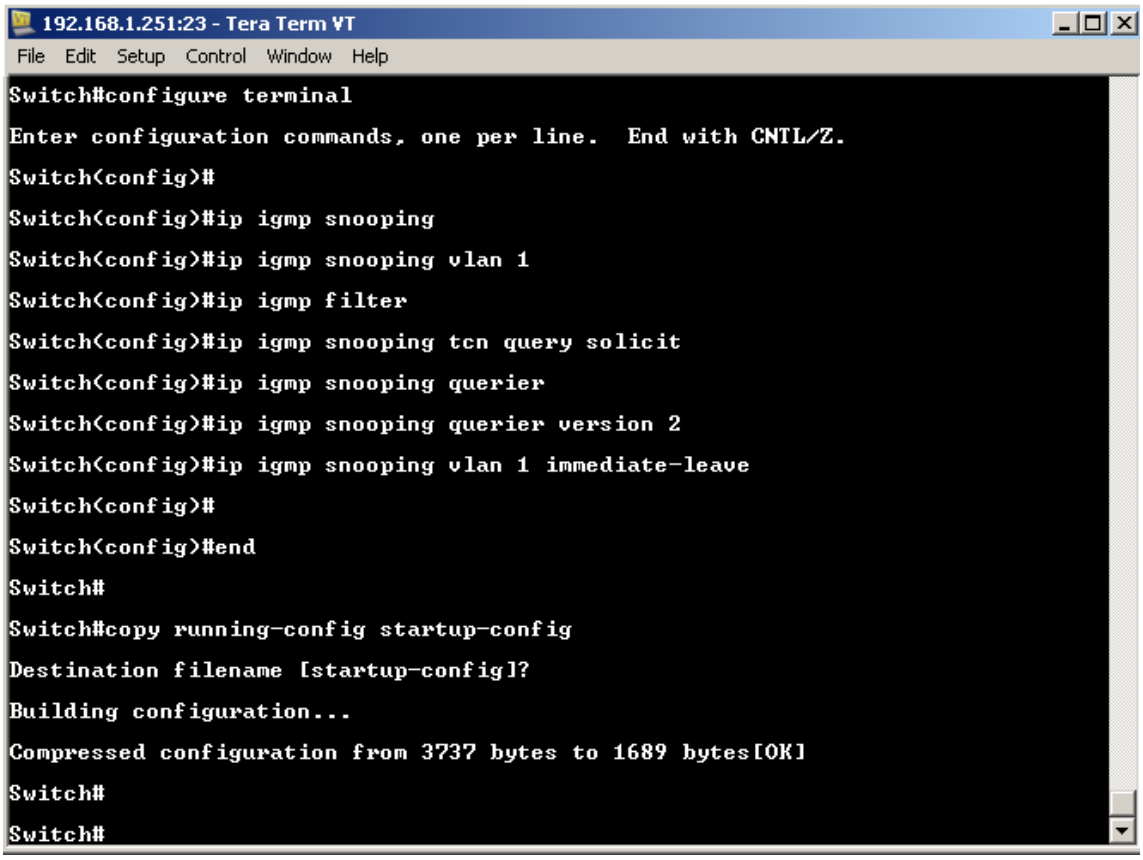


Step 18

To Enable Multicast IGMP Snooping for IP922.

Note: IP922 requires Multicast IGMP Snooping for matrix switch configuration.

18-1. Enter “configure terminal” on Switch# prompt
18-2. Enter “ip igmp snooping” on Switch(config)# prompt
18-3. Enter “ip igmp snooping vlan 1” on Switch(config)# prompt
18-4. Enter “ip igmp filter” on Switch(config)# prompt
18-5. Enter “ip igmp snooping tcn query solicit” on Switch(config)# prompt
18-6. Enter “ip igmp snooping querier” on Switch(config)# prompt
18-7. Enter “ip igmp snooping querier version 2” on Switch(config)# prompt
18-8. Enter “ip igmp snooping vlan 1 immediate-leave” on Switch(config)# prompt
18-9. Enter “end” on Switch(config)# prompt
18-10. Enter “copy running-config startup-config” on Switch# prompt
18-11. Press Enter key on the question of “Destination filename [startup-config]?”
Now, we are all set.



Step 19	To confirm multicast IGMP Snooping setting on the switch. 19-1. Enter “show ip igmp snooping detail” on Switch# prompt You can check global IGMP Snooping configuration on the switch.

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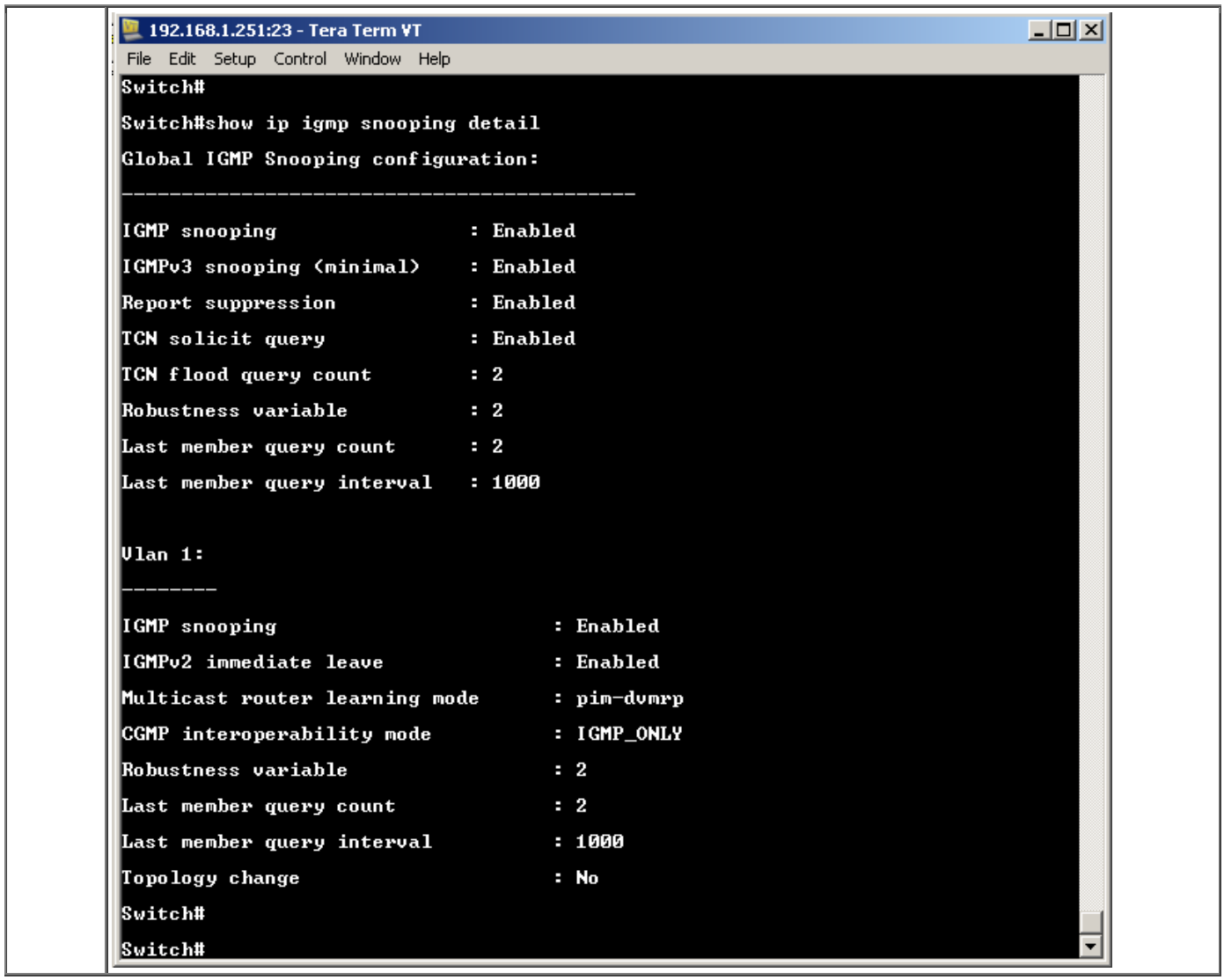


Connect your encoders, decoders, allow approx 3 mins for bootup, and perform a network scan using KD Management Software.

D-Link DGS-3630 Series
Network Setup Guide

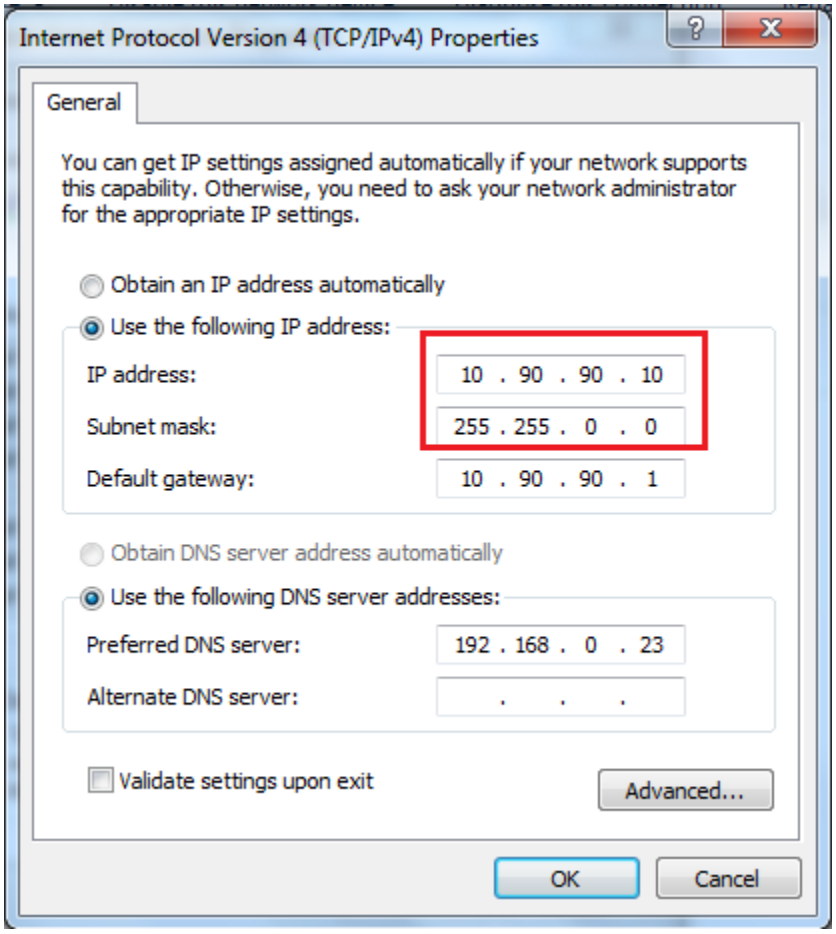
Login to the switch:

1. Plug an Ethernet cable into any of the ports of the switch

2. Plug the other end into the Ethernet port of your computer

3. Power on the switch

4. Check to see that the IP address of the computer is within this network
Subnet: 10.90.90.xxx ("xxx" ranges 1~254). For example, 10.90.90.10



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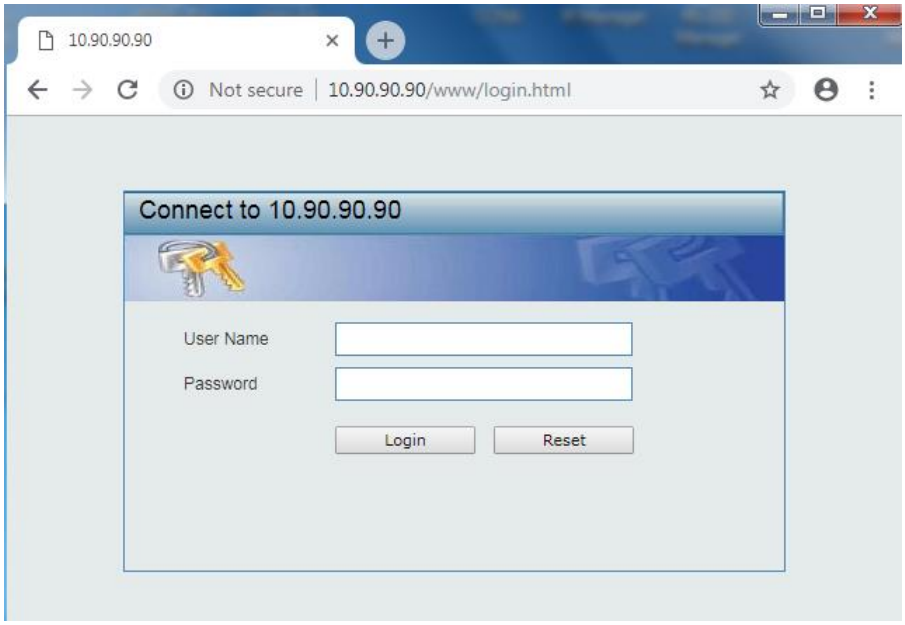
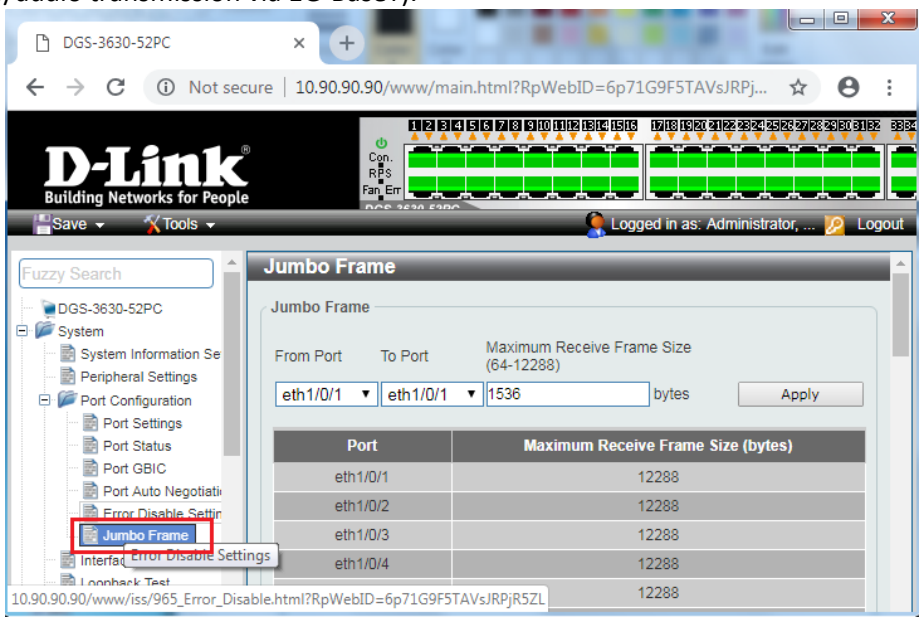
5. Open the Web browser and enter **10.90.90.90** (default IP address of D-Link DGS-3630-52PC). The login window appears as below.



6. Leave the user name and password fields empty. They are NOT required. Click "**Login**" to login to the switch configuration window.

Enable Jumbo Frame:

7. Find **System -> Port Configuration -> Jumbo Frame** in the menu on left side of the window. (IP922 requires Jumbo Frame(8K) for video/audio transmission via 1G-BaseT).



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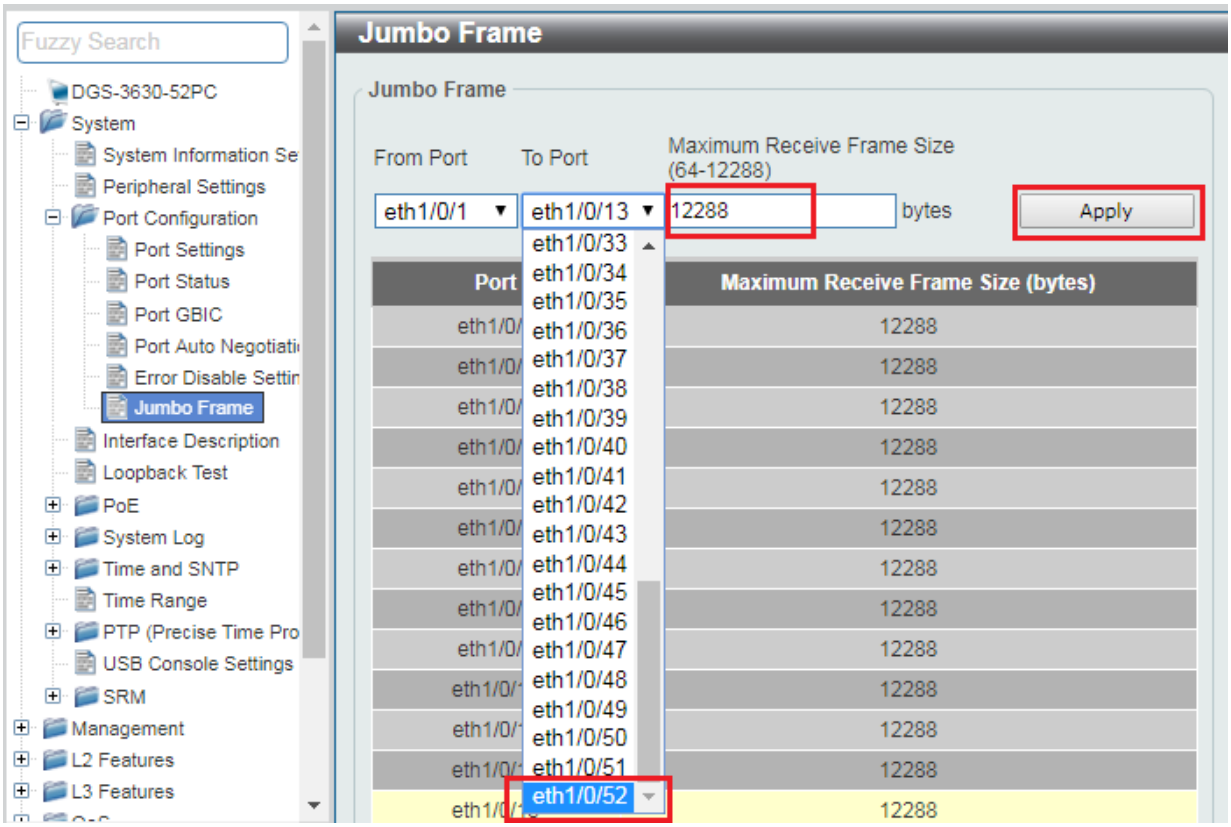
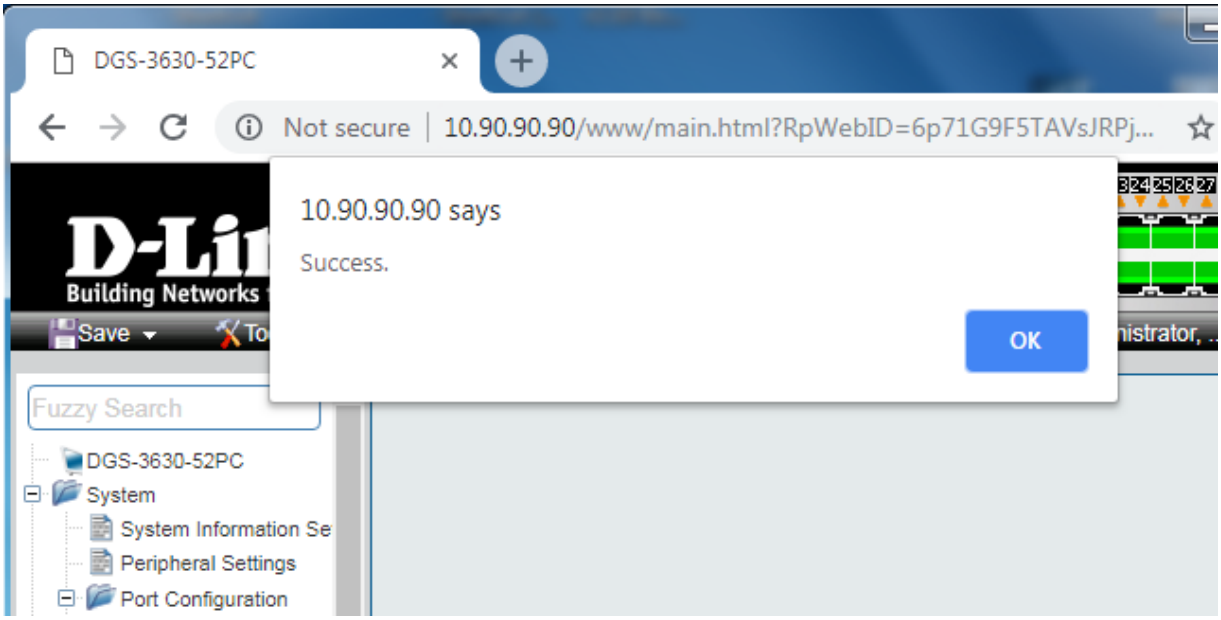
8. Select the last 52 port "**eth 1/0/52"** in the menu on To Port, then enter "**12288**" in Maximum Frame Size on the right side of the Jumbo Frame window as below. And then click "**Apply**" button.





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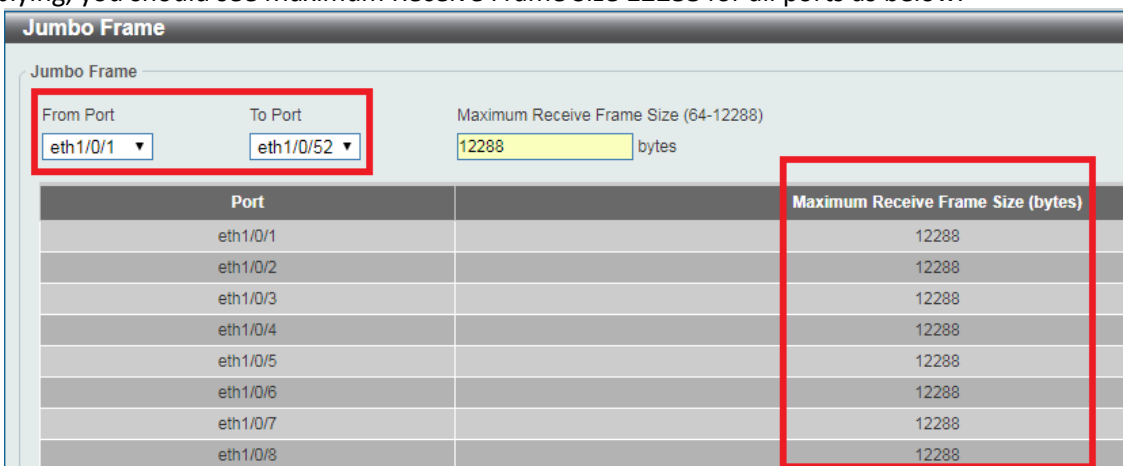
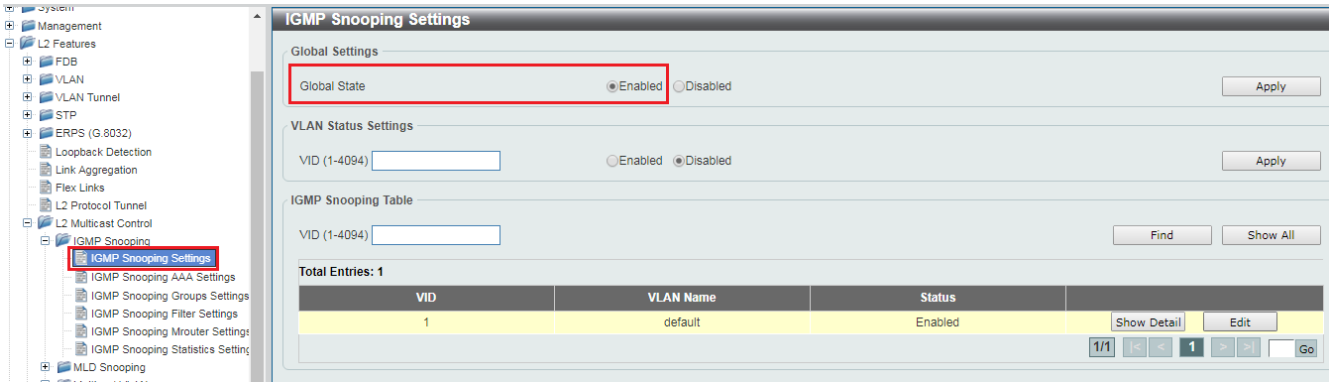
9. After applying, you should see Maximum Receive Frame Size **12288** for all ports as below.



Enable IGMP Snooping:

10. Find **L2 Features -> L2 Multicast Control -> IGMP Snooping -> IGMP Snooping Settings** in the menu on left side of the window. (KD-IP922 requires IGMP Snooping for multicasting video/audio transmission via 1G-BaseT). Check the **Global State Enabled** box of Global Settings in IGMP Snooping Settings window as below. Click "**Apply**" button on the right side of IGMP Snooping Settings window.



11. To add VLAN of the IGMP Snooping at the switch, **enter "1"** in VID of VLAN Status Settings. (VLAN must be added in IGMP Snooping). Then select "**Enabled**" and click "**Apply**" button.

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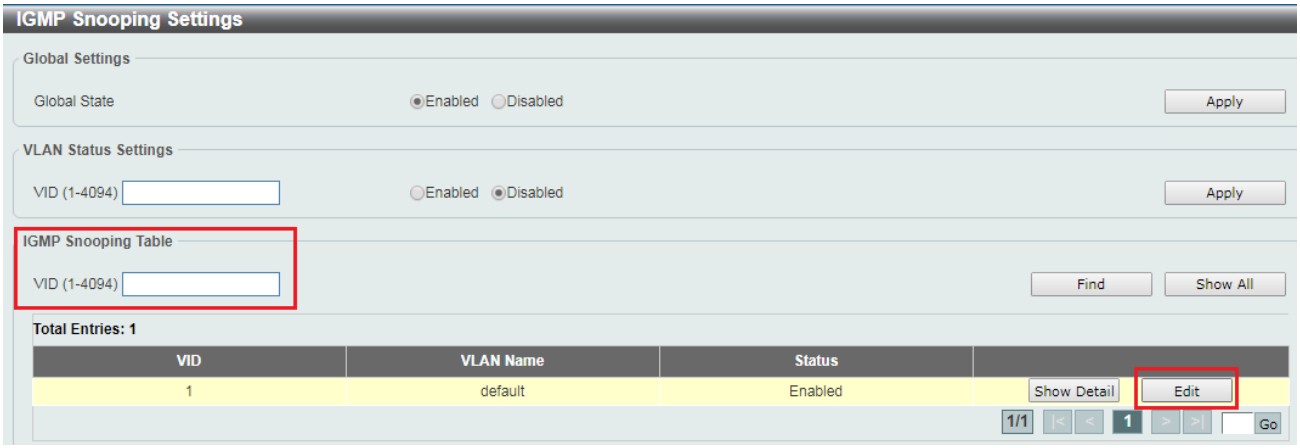
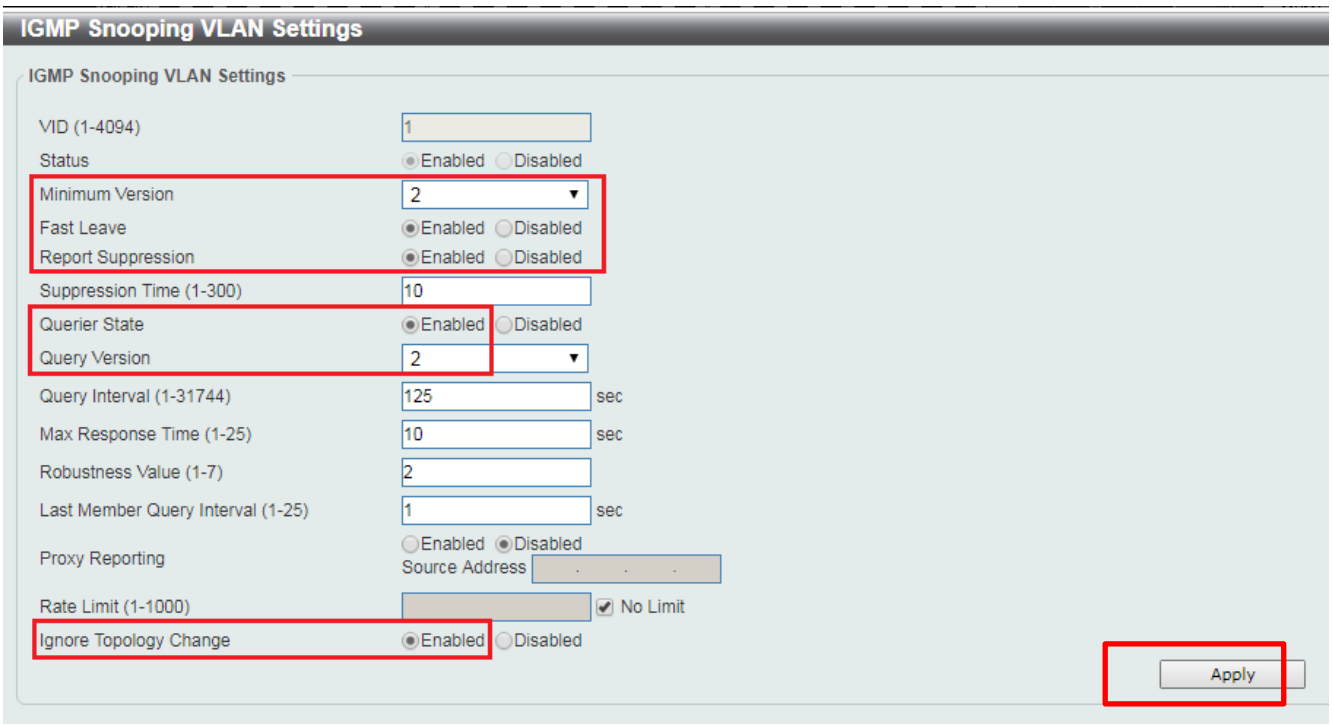
12. Click "**Edit**" button in IGMP Snooping Settings window.



13. In the IGMP Snooping VLAN Settings window, select below options as depicted below in red and then click "**Apply**" button:

- *Minimum Version**: 2***
- *Fast Leave: **Enabled***
- *Report Suppression**: Enabled***
- *Querier State: **Enabled***
- *Query Version: **2***
- *Ignore Topology Change: **Enabled***



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Network IP Settings:

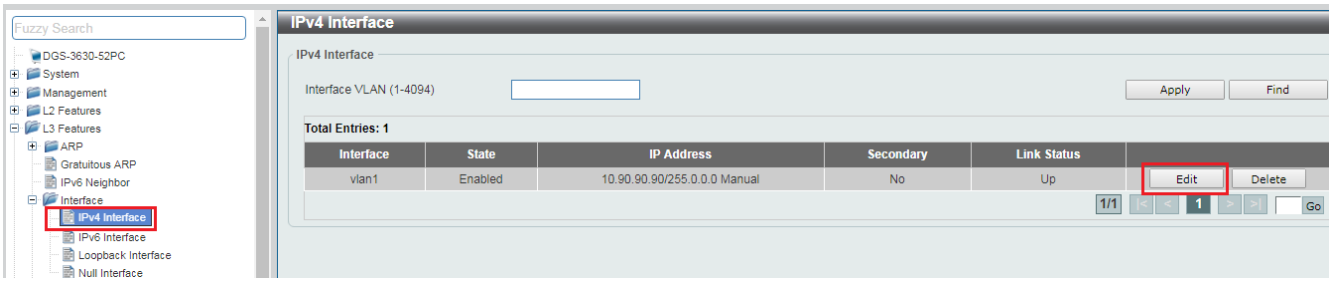
14. Find **L3 Features -> Interface -> IPv4 Interface.** Select "Edit" button.

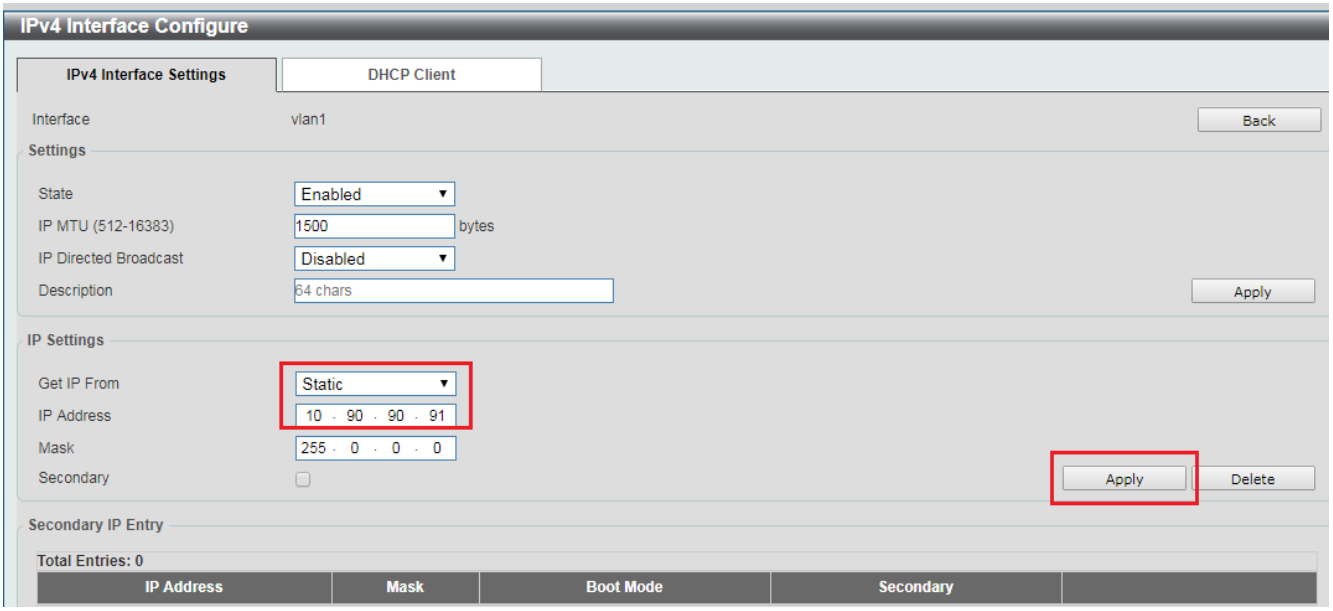
This D-Link switch series can be set to IP address range 10.x.x.x. ONLY.

If you use a single network switch, you may not need to change network IP settings. But if you are stacking network switches (connecting multiple network switches through D-Link 10G fiber cables), it is recommended to set first on to 10.90.90.91, second to 10.90.90.92, and so on.

Set Get IP From **"Static",** set **Subnet Mask to 255.0.0.0** and click **Apply**.

If you change an IP address, the page will be refreshed and you will need to log in again using new IP address, same user name and password. If you did not change IP address just continue to the next step. Make sure your screen looks exactly like pictured below.





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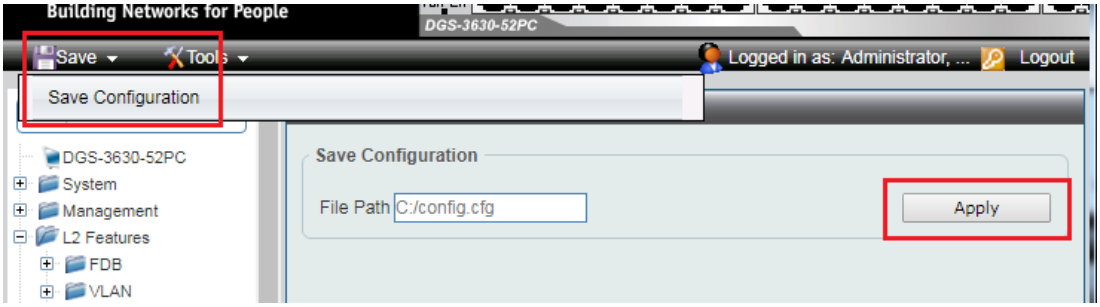
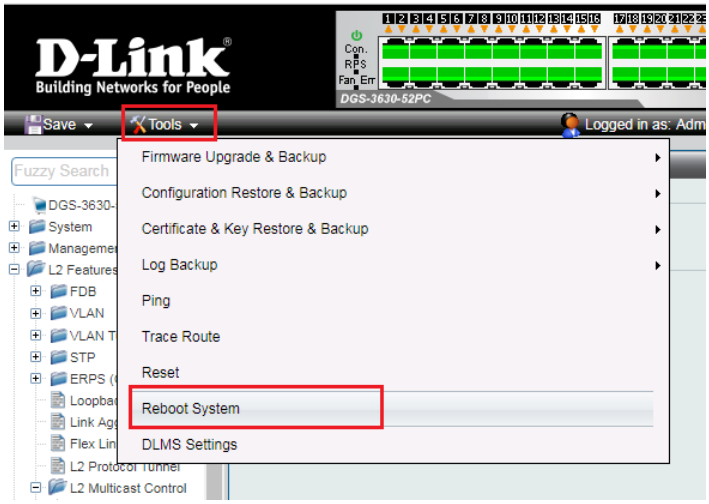
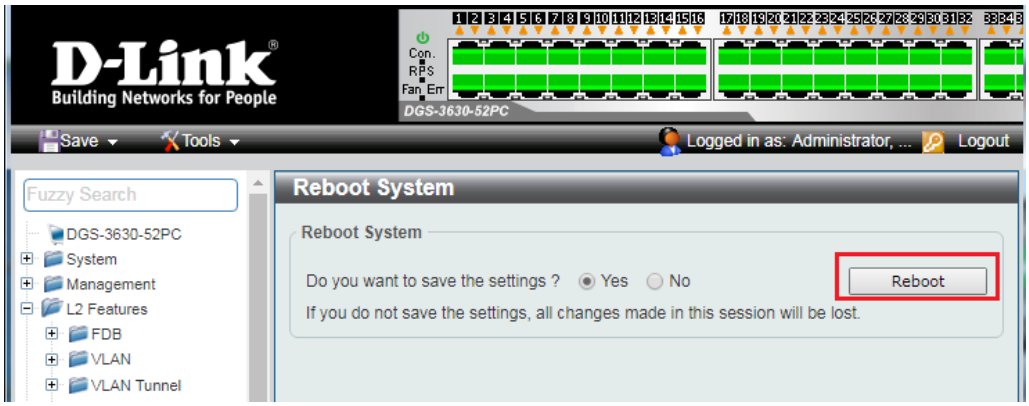
15. To save all Running Configurations to Startup-Configuration, Find **Save → Save Configuration** in the menu on top of the window. Then click "**Apply**" button in Save Running Configuration to startup-config window.



16. To reboot the switch, Find **Tool → Reboot System** in the menu on top of the window. Then click "**Reboot**" button in Reboot System window. The switch will be rebooted automatically.





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Edgecore AS4610-54T / Cumulus Linux version 3.7.15

For advanced users only – support is limited for this model!

Cumulus Linux was verified using version v3.7.15. The below commands creates VLAN 2 and configures a network bridge for IGMP snooping.

```
net del all
net add dns nameserver ipv4 10.105.104.1
net add time zone Etc/UTC
net add time ntp server 0.cumulusnetworks.pool.ntp.org iburst
net add time ntp server 1.cumulusnetworks.pool.ntp.org iburst
net add time ntp server 2.cumulusnetworks.pool.ntp.org iburst
net add time ntp server 3.cumulusnetworks.pool.ntp.org iburst
net add time ntp source eth0
net add snmp-server listening-address localhost
net add interface swp1-49 igmp
net add interface swp49 igmp query-max-response-time 10
net add routing defaults datacenter
net add routing service integrated-vtysh-config
net add routing log syslog informational
net add username cumulus nopassword
net add ptp global slave-only no
net add ptp global priority1 255
net add ptp global priority2 255
net add ptp global domain-number 0
net add ptp global logging-level 5
net add ptp global path-trace-enabled no
net add ptp global use-syslog yes
net add ptp global verbose no
net add ptp global summary-interval 0
net add ptp global time-stamping
net add bridge bridge mld-version 2
net add bridge bridge ports
swp1,swp2,swp3,swp4,swp5,swp6,swp7,swp8,swp9,swp10,swp11,swp12,swp13,swp14,swp15,swp16,swp17,swp18,swp19,swp20,swp21,s
wp22,swp23,swp24,swp25,swp26,swp27,swp28,swp29,swp30,swp31,swp32,swp33,swp34,swp35,swp36,swp37,swp38,swp39,swp40,swp41
,swp42,swp43,swp44,swp45,swp46,swp47,swp48,swp49
net add bridge bridge pvid 1
net add bridge bridge vids 2
net add bridge bridge vlan-aware
net add interface eth0 ip address 10.105.104.253/24
net add interface eth0 ip gateway 10.105.104.1
net add interface swp1-49 bridge pvid 2
net add interface swp1-49 bridge vids 2
net add interface swp1-49 mtu 9216
net add interface swp49 link speed 10000
net add dot1x radius accounting-port 1813
net add dot1x max-number-stations 4
net add dot1x radius authentication-port 1812
net add dot1x eap-reauth-period 0
net add dot1x mab-activation-delay 30
net commit
```

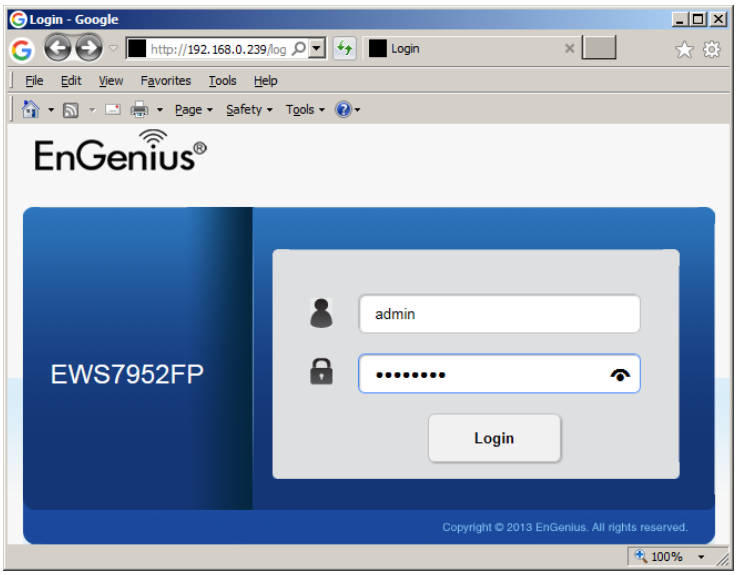
In addition, manually add the following line to the bridge configuration in “/etc/network/interfaces”

```
bridge-mclmi 30
```

Modify the commands as needed to best fit the network environment. This configuration enables port 49 for uplink to another switch to expand the system.

IGMP Setup Guide: Engenius
1080p Systems (KD-IP1080, KD-IP120)

1. It is recommended to reset the switch to factory defaults before configuring for multicast operation. Power up the device, wait for about 2 minutes, using a paper clip press and hold a reset button for more than 10 seconds and then release. After device is rebooted power down and then power up the device. Wait while the device is restarted and ready to use.
2. Connect your PC to the switch directly using a network cable.
3. Configure your PC's IP address to the same range as the switch (default **192.168.0.xxx**).
4. Enter the switch's IP address (default is **192.168.0.239**) in your browser and press ENTER.
5. Enter user name and password (default is "**admin**" and "**password**"). Then click **Log In.**



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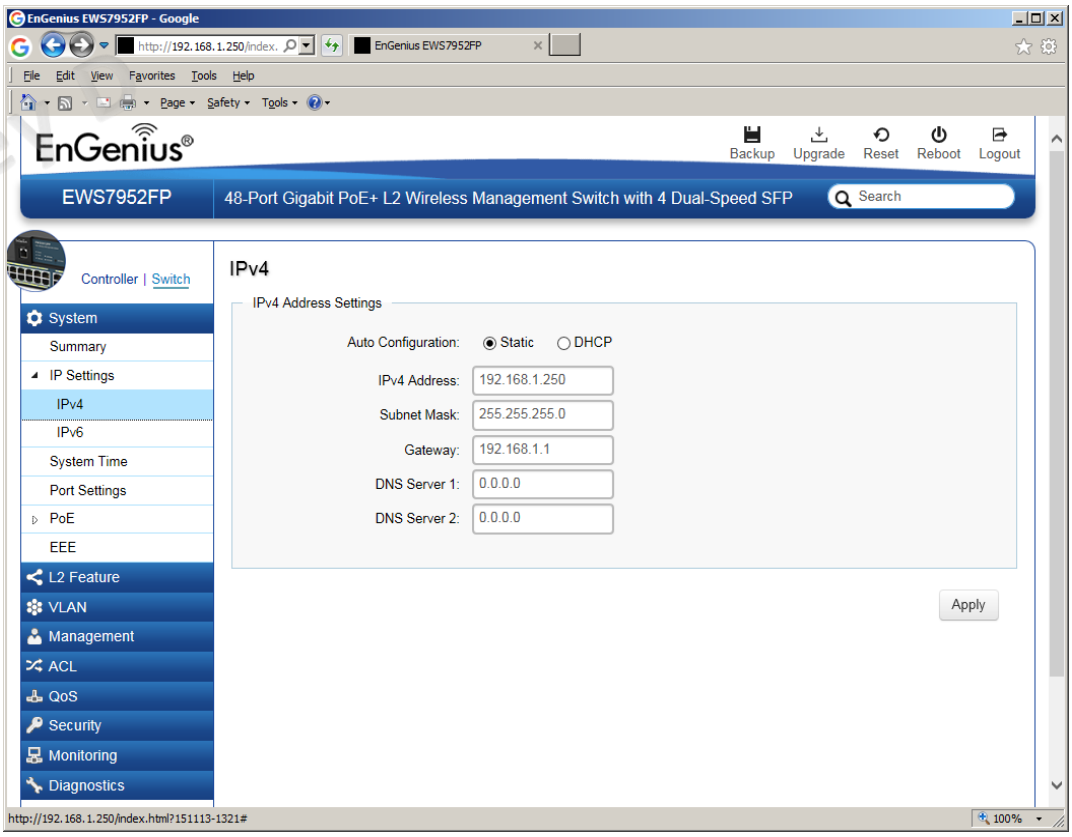
6. On the left select **Switch**. Navigate to **System** -> **IP Settings** -> **IPv4**. Under **Auto Configuration** select **Static**. Change an IP address to **192.168.1.250**, **Subnet Mask** to **255.255.255.0**, **Default Gateway** to **192.168.1.1** (in this case), and at the bottom click **Apply**.



7. Page will refresh. Configure your PC's IP address to the same range as the switch (default **192.168.1.xxx**). Enter the switch's IP address (default is **192.168.1.250**) in your browser and press ENTER. Log in again with the same user name /password.

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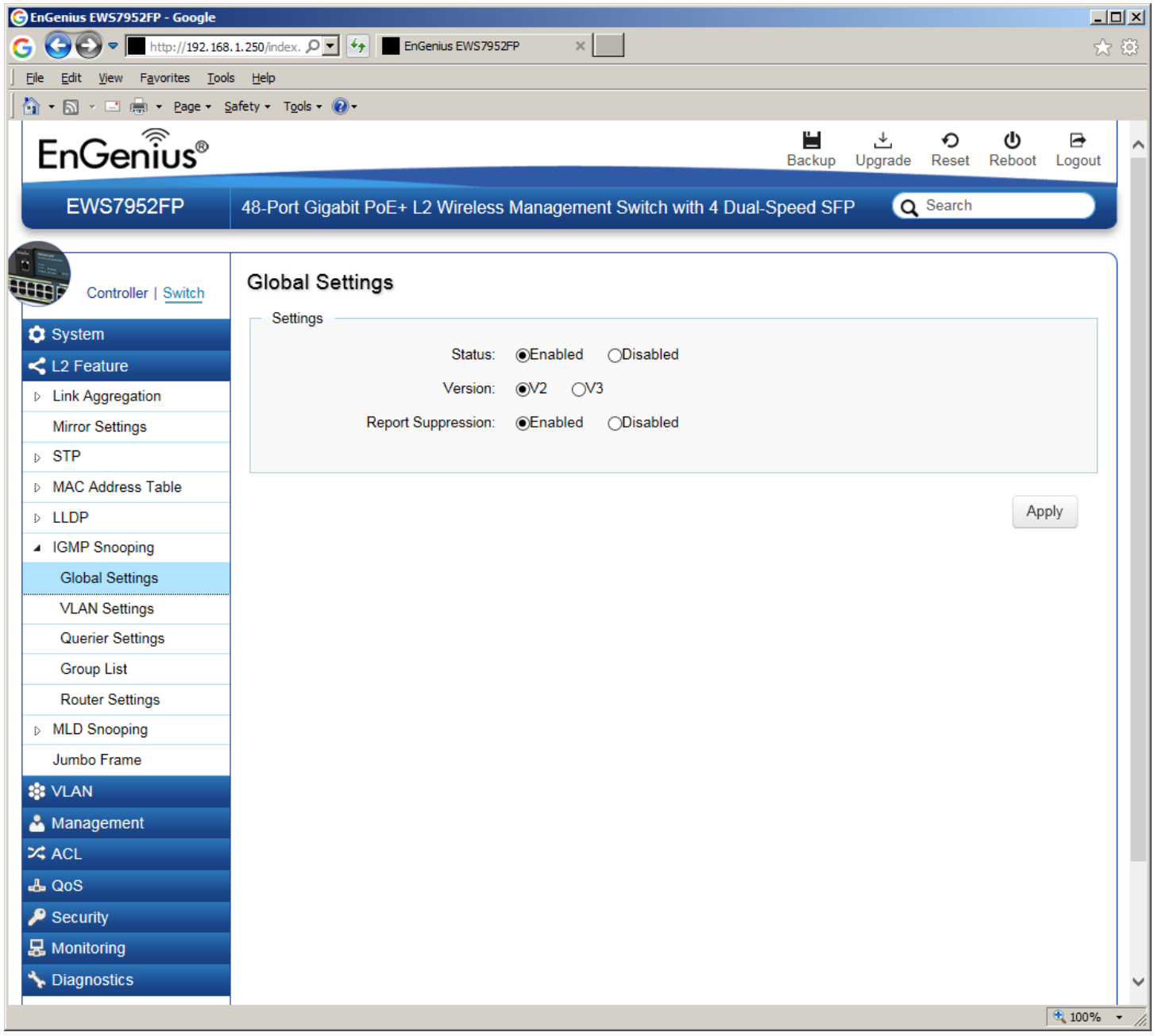
8. On the left select **Switch**. Navigate to **L2 Feature** -> **IGMP Snooping** -> **Global Settings**. Under **Status** select **Enabled**, under **Version**: **V2** and under **Report Suppression**: **Enabled.** Click **Apply**.



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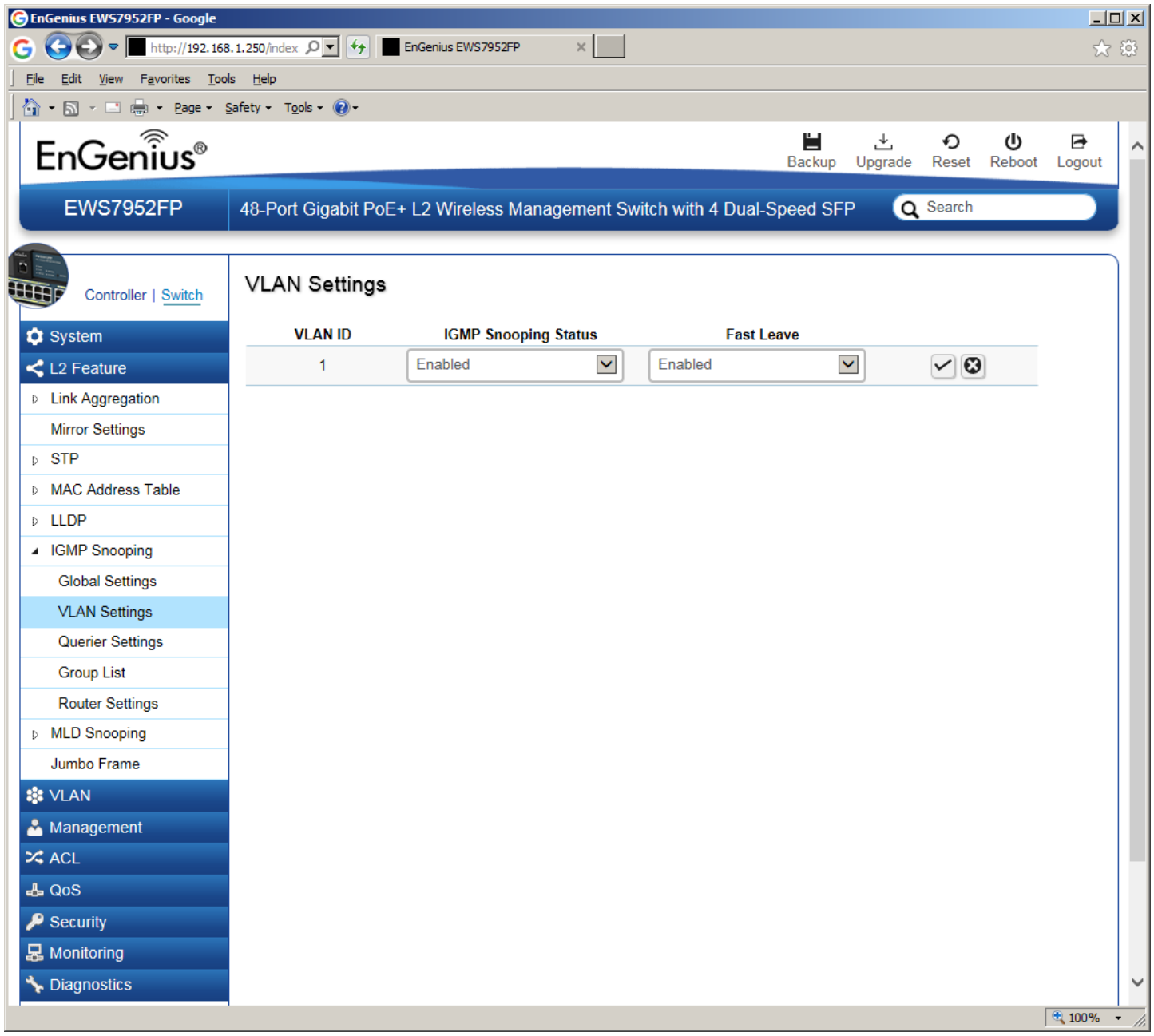
9. Navigate to **L2 Feature** -> **IGMP Snooping** -> **VLAN Settings**. Click on Edit button on the right in the **VLAN ID** 1 line. Under **IGMP Snooping Status** select **Enabled**, under **Fast Leave** select **Enabled**. Click check mark button to apply settings.



10. Now the switch should work properly with IP audio/video equipment.
11. Connect your encoders, decoders, allow approx 3 mins for bootup, and perform a network scan using KD Management Software.

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Linksys LGSxxxMPC setup guide for KD-IP922, KD-IP822, and KD-IP1080 systems
Must use firmware version: 1.00.01.03 | newer firmware will not work

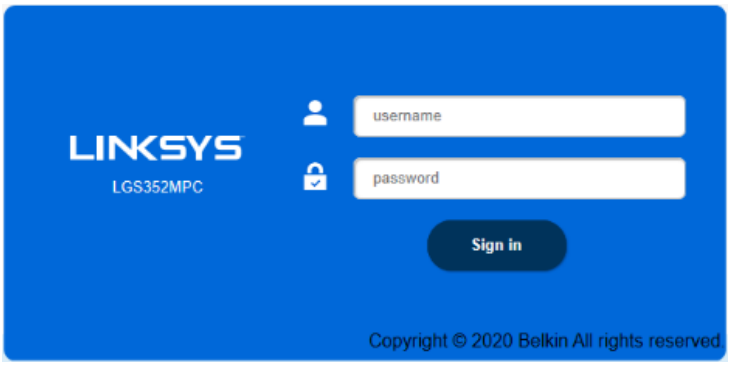
Steps related to stacking multiple switches are in red

1. Ensure that your PC is set to a static IP address that is within the subnet of the network switch (192.168.1.xyz)

2. Connect to the network switch via its default IP address – 192.168.1.251. The default login credentials are:

   Username: “admin”

   Password: “admin”



After connecting, change the password to gain access to the switch.

3. Set the IP address of the switch to the desired address. This setting is accessed via **System -> IP settings -> IPv4 Management**.

3a. If stacking multiple network switches, each will require a unique IP address.

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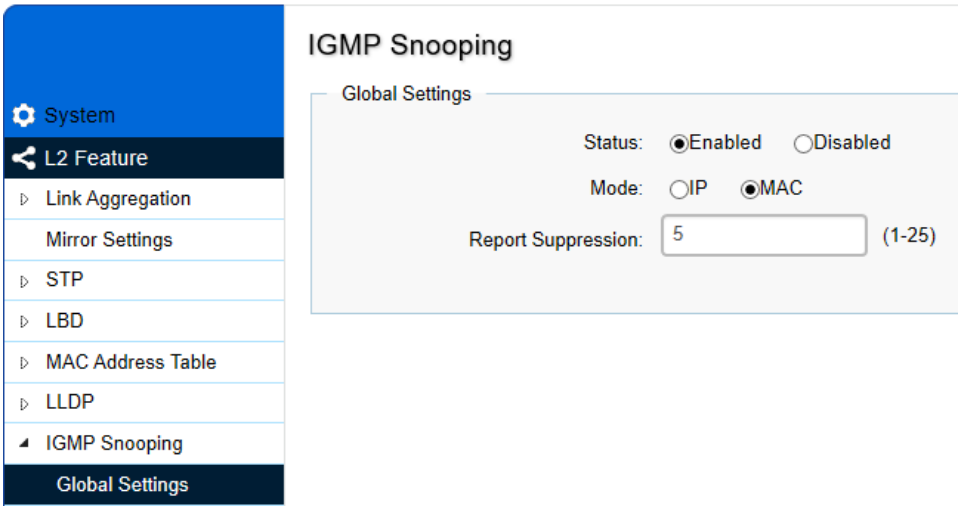
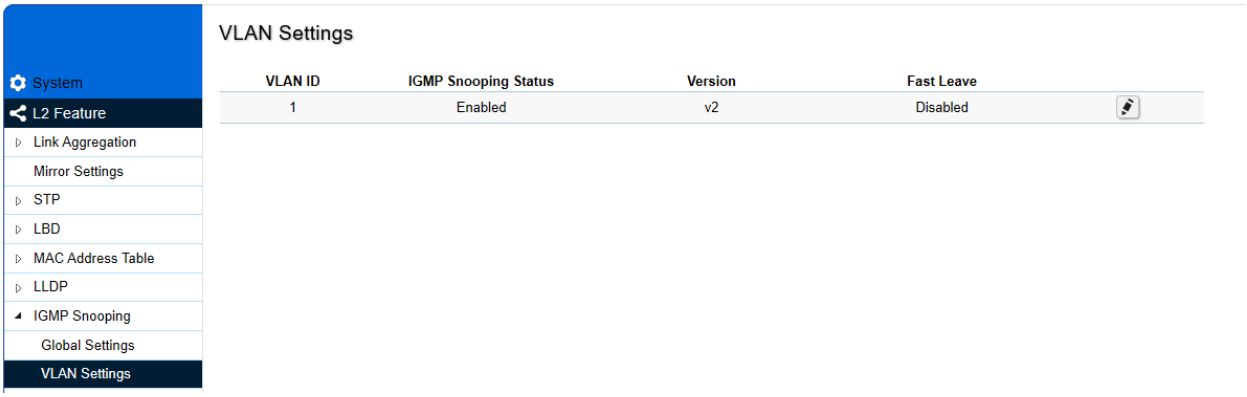
4. Enable IGMP snooping. This setting is accessed via **L2 feature -> IGMP Snooping -> Global settings**. Ensure all settings are in line with the image.



5. Enable IGMP snooping for your VLAN. This setting is accessed via **L2 feature -> IGMP Snooping -> VLAN settings**. Use IGMP version 2. VLAN 1 is used by default. Other VLANs are compatible as well.

5a. Ensure Fast Leave is disabled when stacking.



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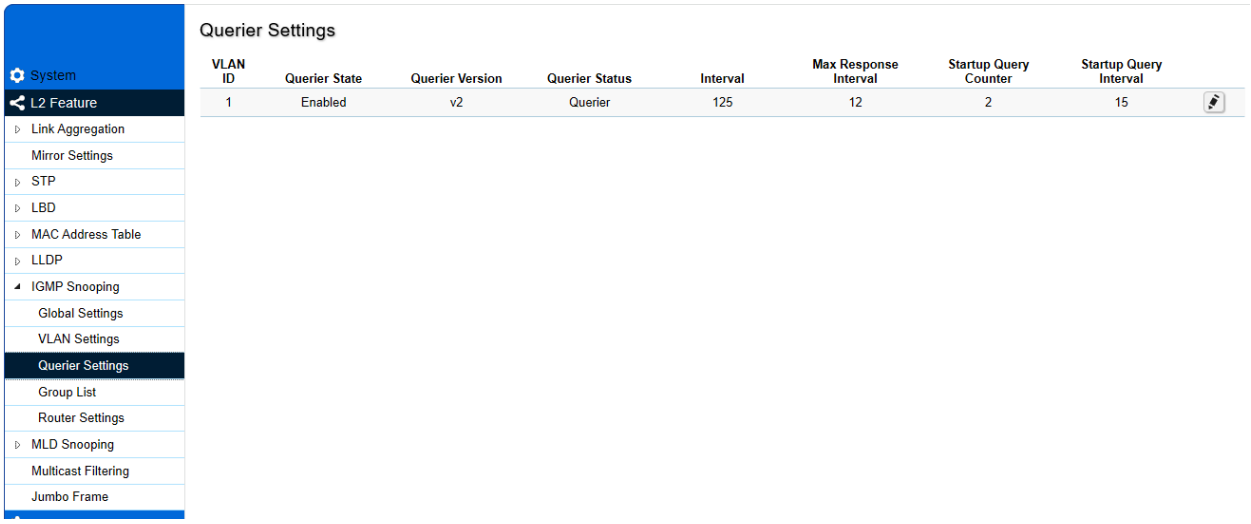
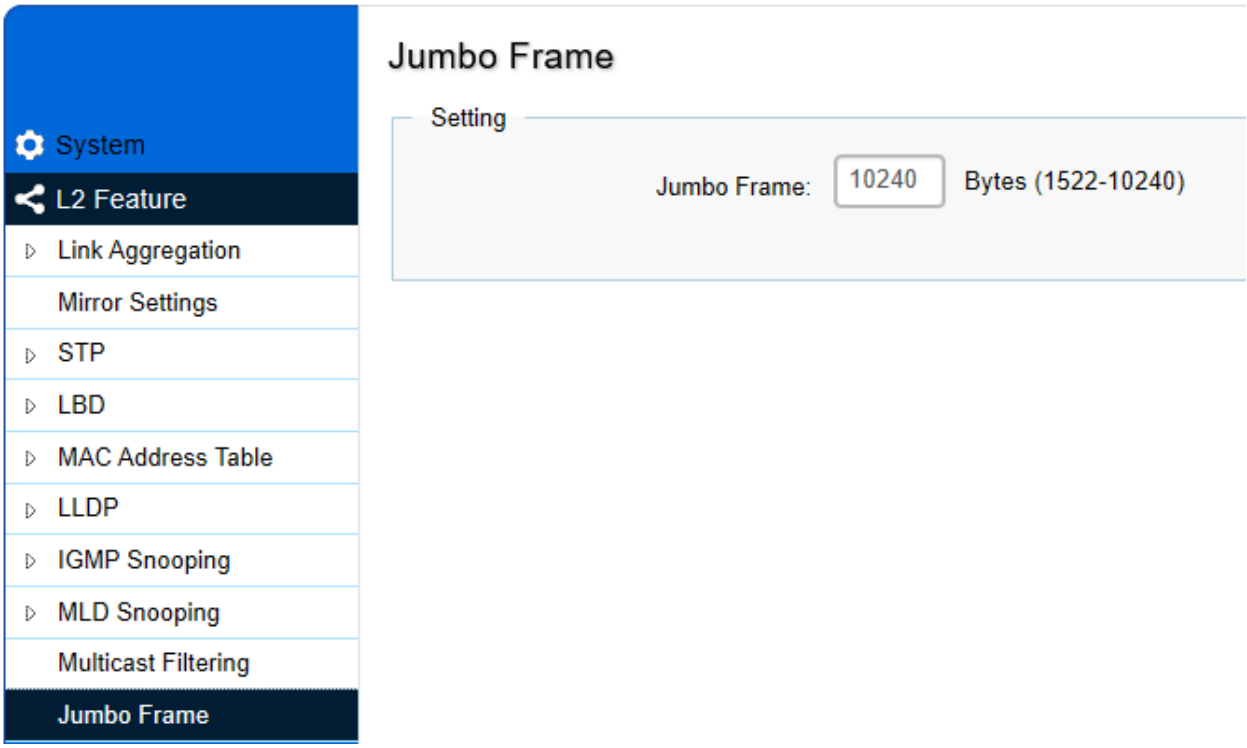
6. Enable the IGMP querier This setting is accessed via **L2 feature -> IGMP Snooping -> Querier settings.**

6a. Select one switch to be the IGMP querier. Enable the querier on this switch only and disable the IGMP querier on all other switches.



7. Set the frame size to its maximum value of 10240. **L2 feature -> Jumbo Frame**



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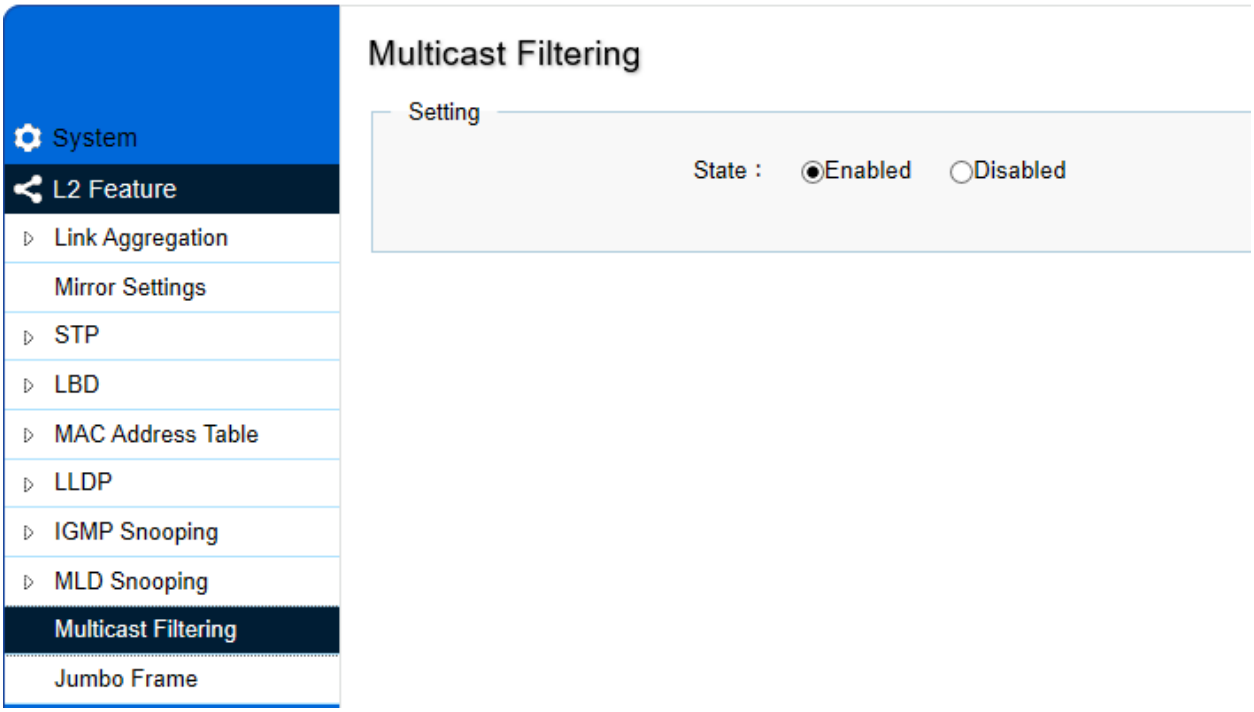
8. Enable Multicast Filtering. **L2 feature -> Multicast Filtering**

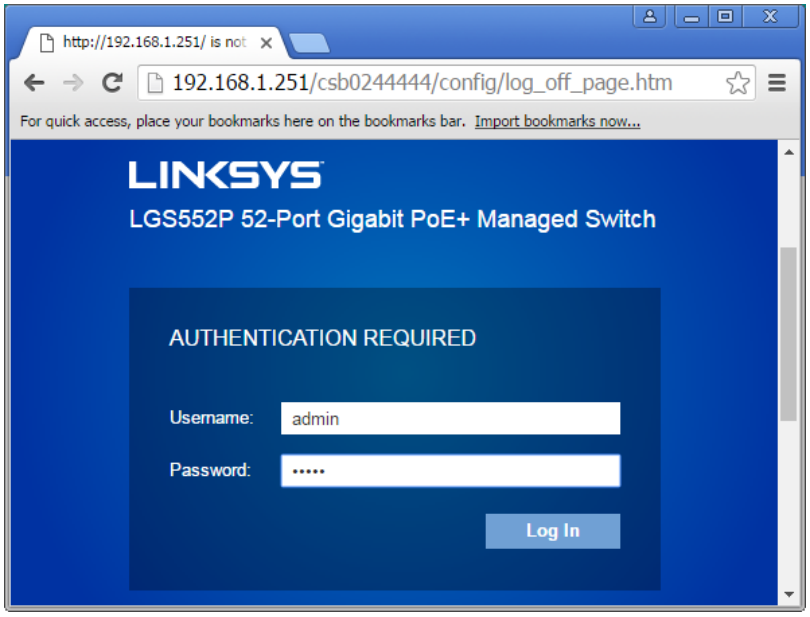


9. Verify all settings are applied after power cycling. The switch should now be ready to use.

10. Connect your encoders, decoders, allow approx 3 mins for bootup, and perform a network scan using KD Management Software.

IGMP Setup Guide: Linksys
1080p Systems (KD-IP1080, KD-IP120)

1. **IMPORTANT**: Disconnect all the DHCP devices like routers, servers from the Linksys network switch.
2. Locate a pinhole "RESET" button at the front panel left bottom corner of your Linksys network switch. Using a paper clip press and hold a reset button for more than 10 seconds and then release. Wait while the device is restarted and ready to use (about 5min).
3. **IMPORTANT**: Make sure the blue "SYSTEM"LED next to the pinhole "RESET" button is flashing.
4. **IMPORTANT**: At this point all the displays should be displaying distorted randomly flashing video images.
5. Connect your PC to the Linksys network switch directly using a network cable.
6. If you have not done yet, configure your PC's IP address to the same range as the switch (default **192.168.1.xxx**).
7. Enter the switch's IP address in your browser and press ENTER (check the user manual for a default IP address - it is usually **192.168.1.251**).
8. Enter user name and password (check the user manual for a default user name and password; it is usually "**admin**" for both). Then click **Log In.**



9. Navigate to **Configuration** -> **IP Interface** -> **IPv4**-> **IPv4 Interface**. Select **Static IP Address**. IP address can be changed by the administrator depending on the network configuration. If you are using multiple network switches it is recommended to set first one to **192.168.1.251**, second to **192.168.1.252**, and so on (we will leave the IP address unchanged). Set **Subnet Mask** to **255.255.255.0**, set **User Defined Default Gateway** to **192.168.1.1** (in this case), make sure that Management VLAN is set to"**1**" and click **Apply**. If you changed an

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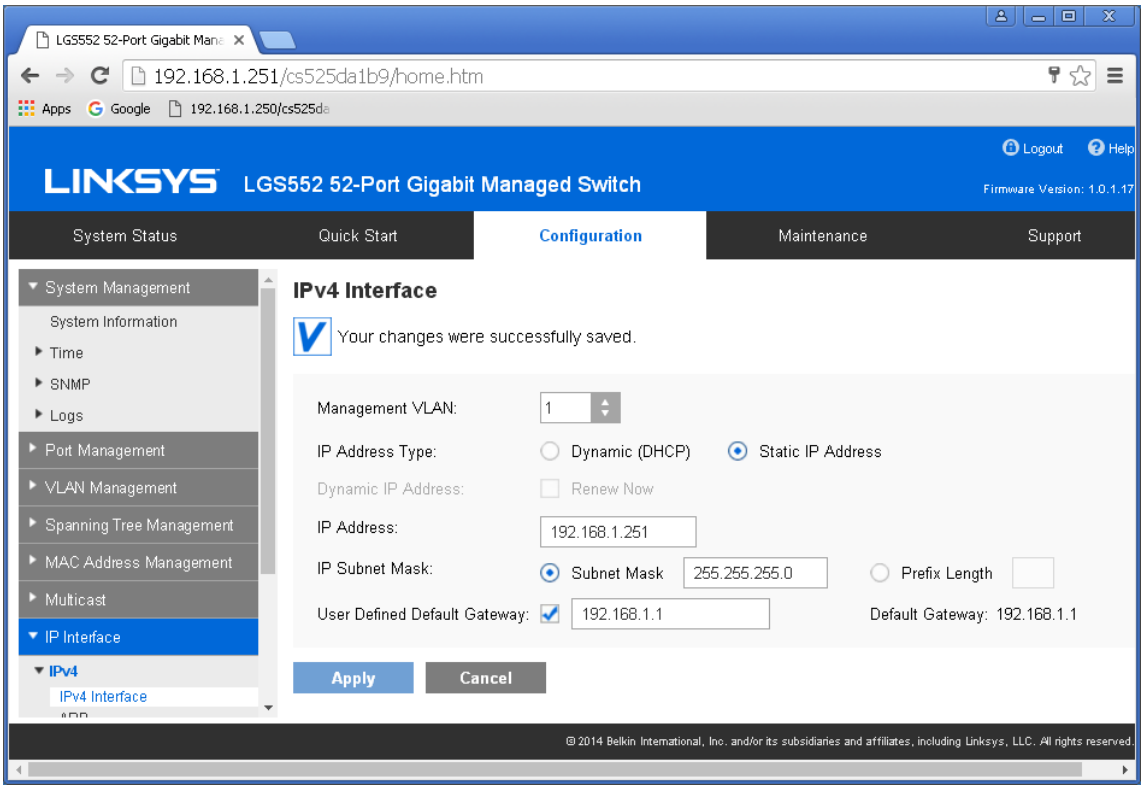
IP address page will refresh and you will need to log in again using new IP address, same user name and password. If you did not change IP address just continue to the next step.

10. Make sure your screen looks exactly like pictured below.



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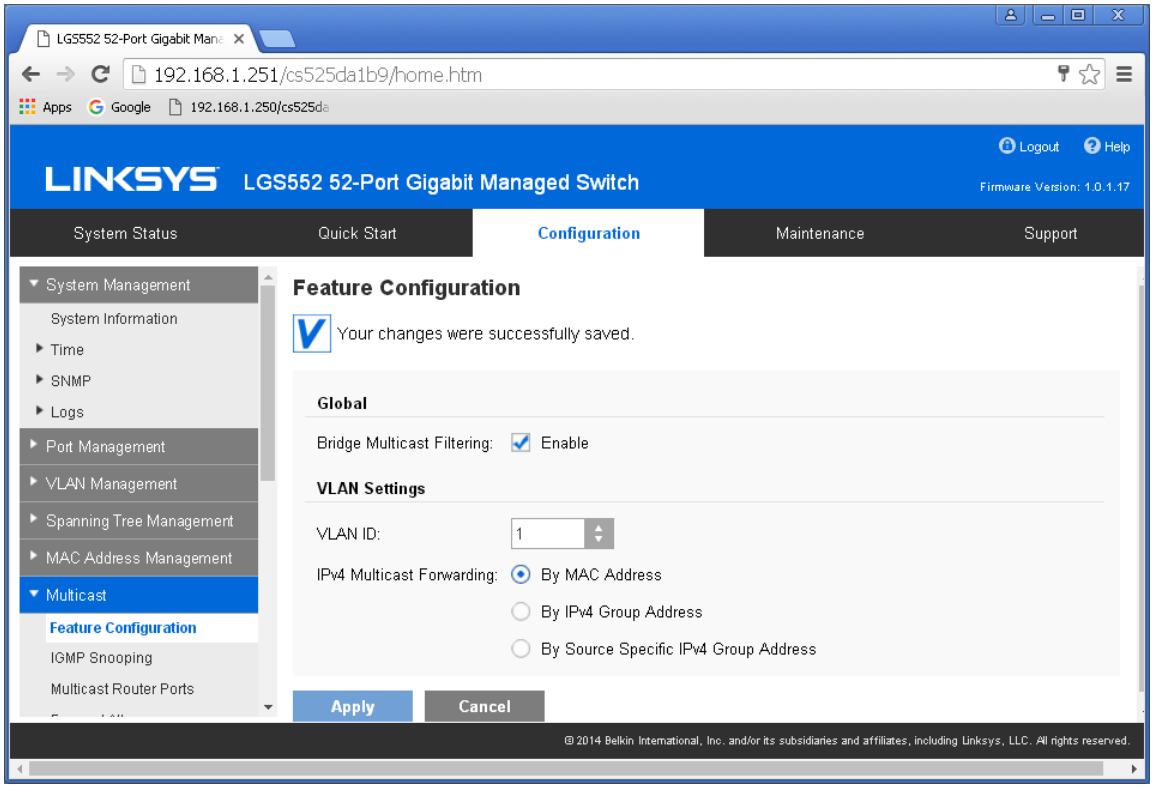
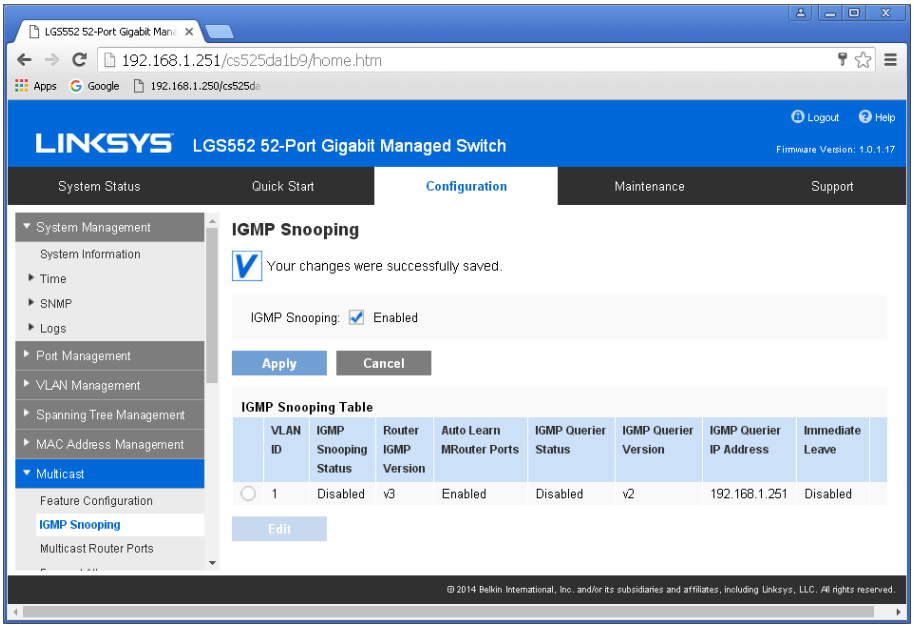
11. Navigate to **Multicast** -> **Future Configuration**. Select **Enable** under **Bridge Multicasting Filtering** and click **Apply**.



12. Navigate to **Multicast** -> **IGMP Snooping**. Select **Enable** under **IGMP Snooping**, click **Apply**.



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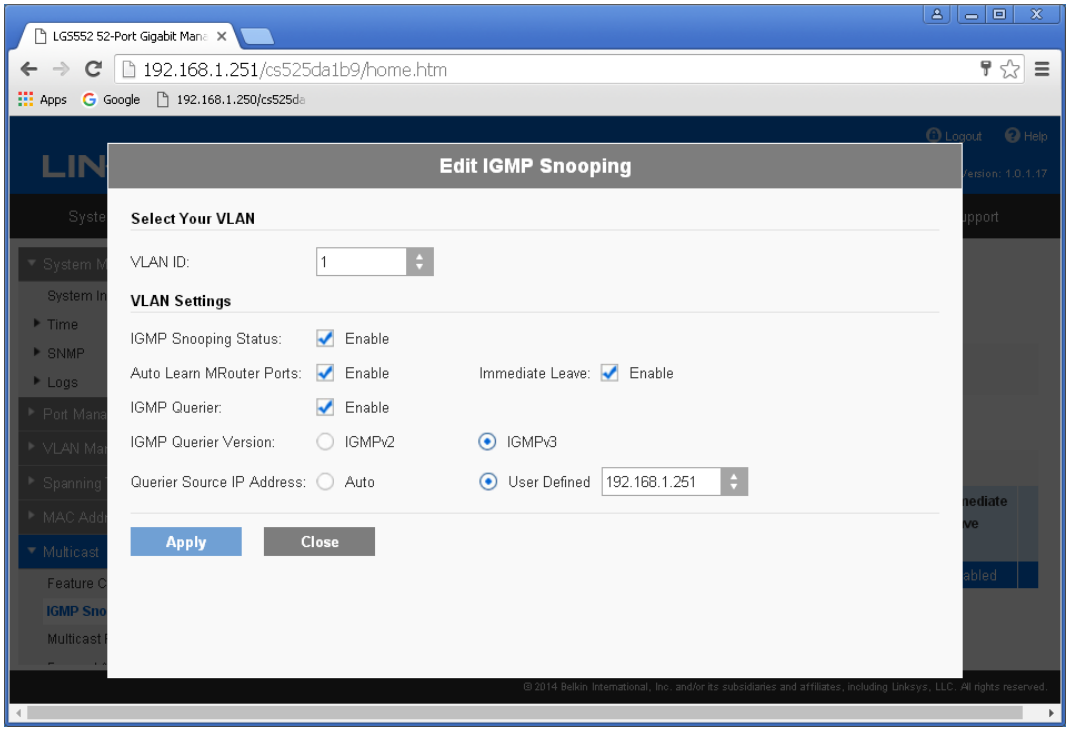
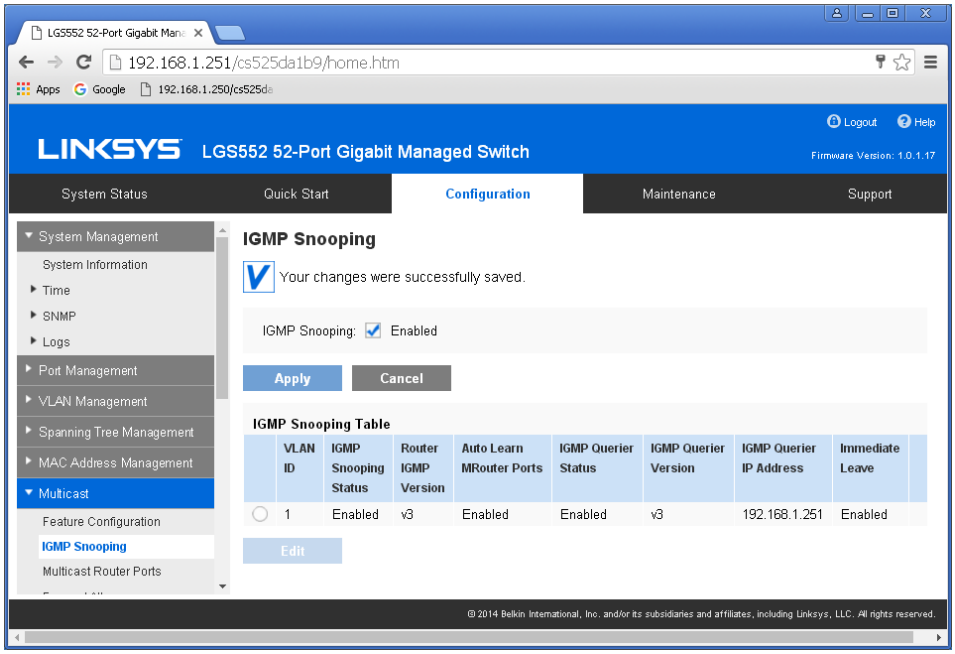
13. Click on radio button and click **Edit**. **Edit IGMP Snooping** window will appear. Make sure **VLAN ID <1>** is selected. Enable all the settings as shown below. Select **IGMP v3** as **IGMP Querier Version**, Click **Apply** and then **Close**.



14. Refresh your browser, go to **IGMP Snooping** tab and make sure you have an image as below:



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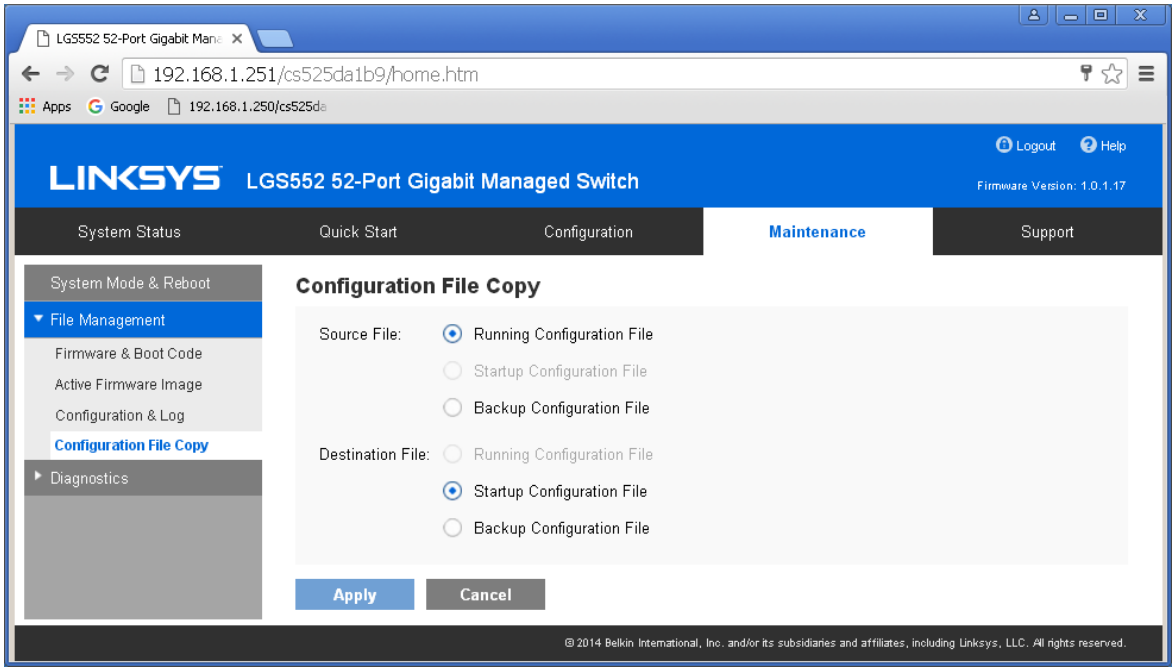
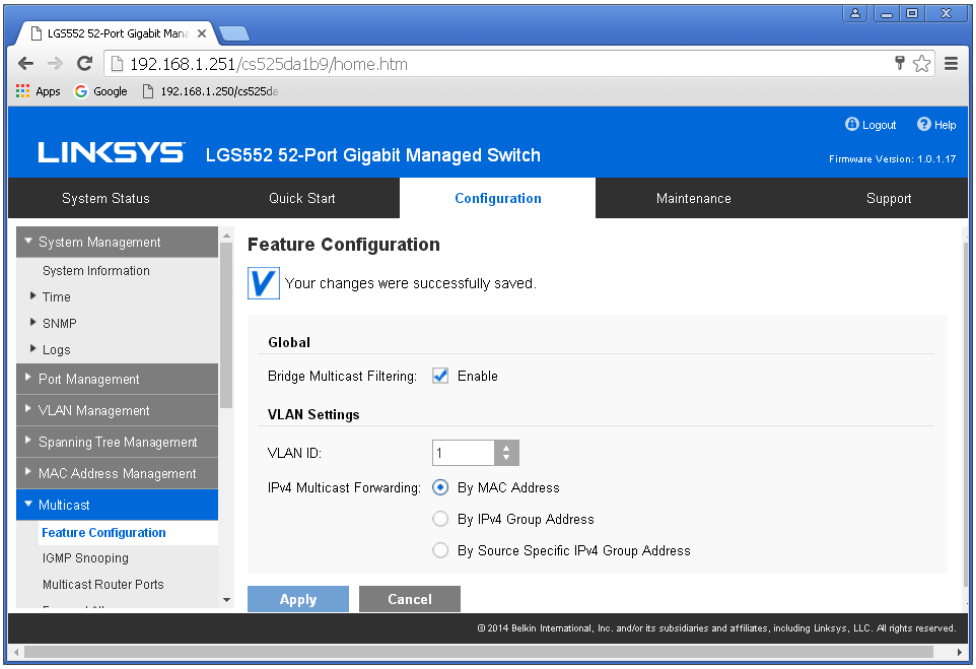
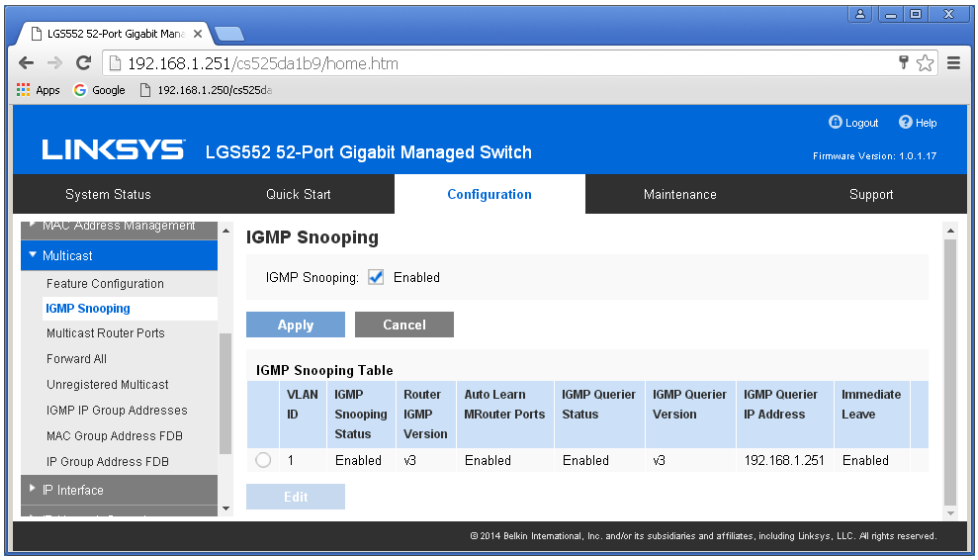
15. **IMPORTANT**: At this point all the displays should be displaying stable running video from the selected sources. If you do not have them displaying properly, than network switch is configured incorrectly.
16. Navigate to **Maintenance** -> **File Management** -> **Configuration File Copy**. Select radio buttons as shown below, click **Apply**. This will save current configuration and will apply this configuration every time switch is powered up.



17. **IMPORTANT**: Now you can connect back you DHCP equipment (routers, servers and so on).
18. Power down Linksys network switch and power it up back again. Wait for the whole system to start and until you can see video on your displays.

19. Log in to your Linksys network switch again and make sure that IGMP settings are intact:





20. Rescan your components with Key Digital Management Software and make sure HDMI video switch is functional.
21. At this point your Linksys network switch is set and ready to use.
22. Connect your encoders, decoders, allow approx 3 mins for bootup, and perform a network scan using KD Management Software.

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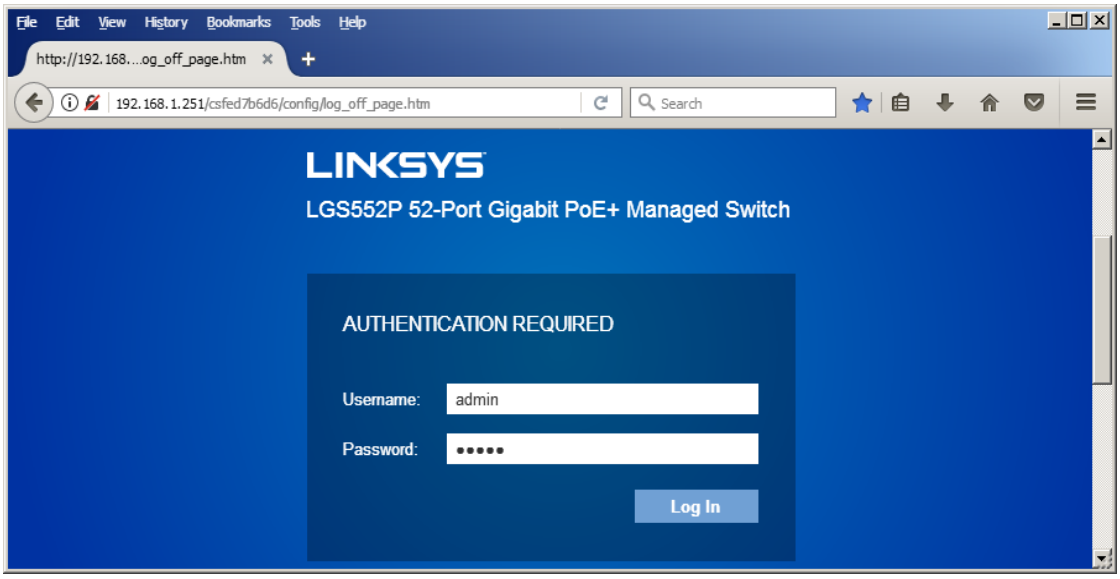
IGMP Setup Guide: Linksys
4K Systems (KD-IP822, KD-IP922, KD-IP1022)

1. **IMPORTANT**: Disconnect all the DHCP devices like routers, servers from the Linksys network switch.
2. Locate a pinhole "RESET" button at the front panel left bottom corner of your Linksys network switch. Using a paper clip press and hold a reset button for more than 10 seconds and then release. Wait while the device is restarted and ready to use (about 5min).
3. **IMPORTANT**: Make sure the blue "SYSTEM"LED next to the pinhole "RESET" button is flashing.
4. **IMPORTANT**: At this point all the displays should be displaying or flashing Key Digital logo with information stamp.
5. Connect your PC to the Linksys network switch directly using a network cable.
6. If you have not done yet, configure your PC's IP address to the same range as the switch (default **192.168.1.xxx**).
7. Enter the switch's IP address in your browser and press ENTER (check the user manual for a default IP address - it is usually **192.168.1.251**).
8. Enter user name and password (check the user manual for a default user name and password; it is usually "**admin**" for both). Then click **Log In.**



9. Navigate to **Configuration** -> **IP Interface** -> **IPv4**-> **IPv4 Interface**. Select **Static IP Address**. IP address can be changed by the administrator depending on the network configuration. If you are using multiple network switches it is recommended to set first one to **192.168.1.251**, second to **192.168.1.252**, and so on (we will leave the IP address unchanged). Set **Subnet Mask** to **255.255.0.0**, set **User Defined Default Gateway** to **192.168.1.1** (in this case), make sure that Management VLAN is set to"**1**" and click **Apply**. If you changed an

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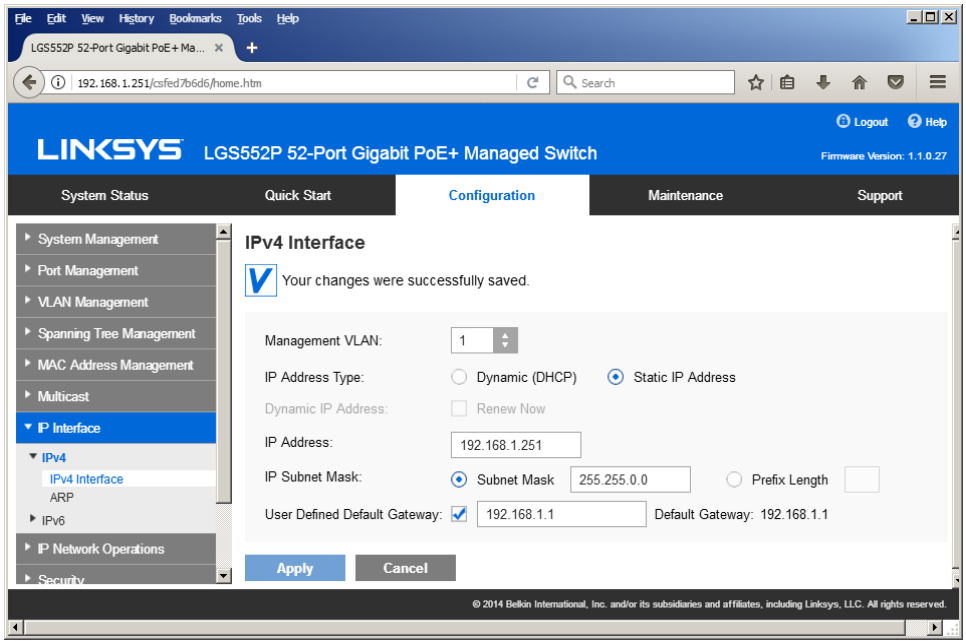
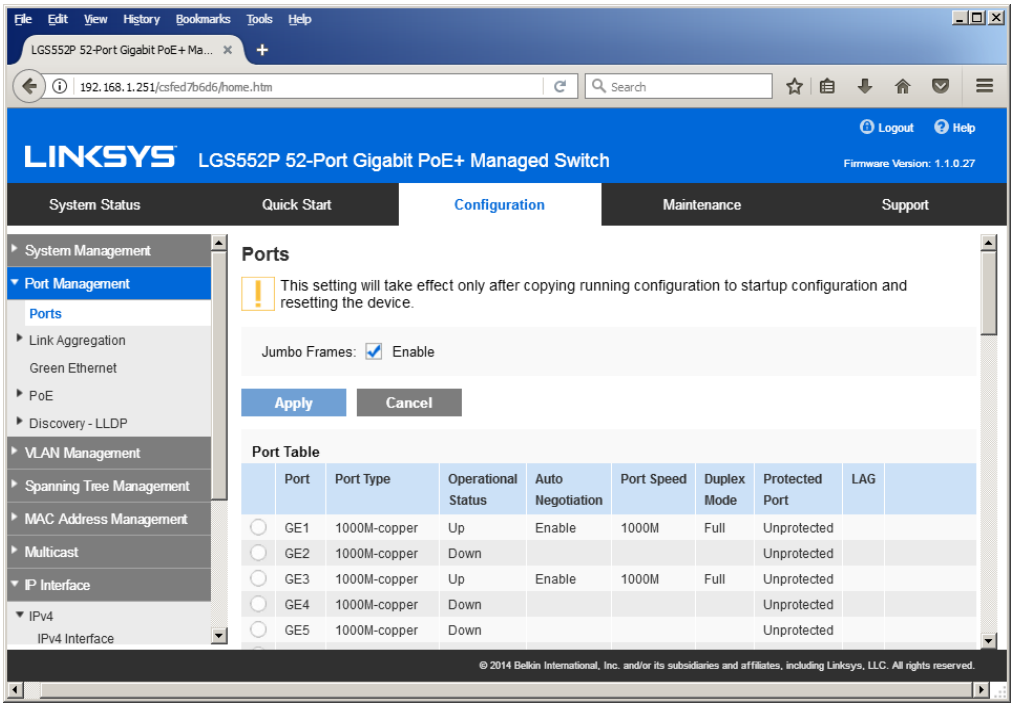
IP address page will refresh and you will need to log in again using new IP address, same user name and password.

10. Make sure your screen looks exactly like pictured below.



11. Navigate to **Port Management** -> **Ports**. Select **Enable** under **Jumbo Frames** and click **Apply**.



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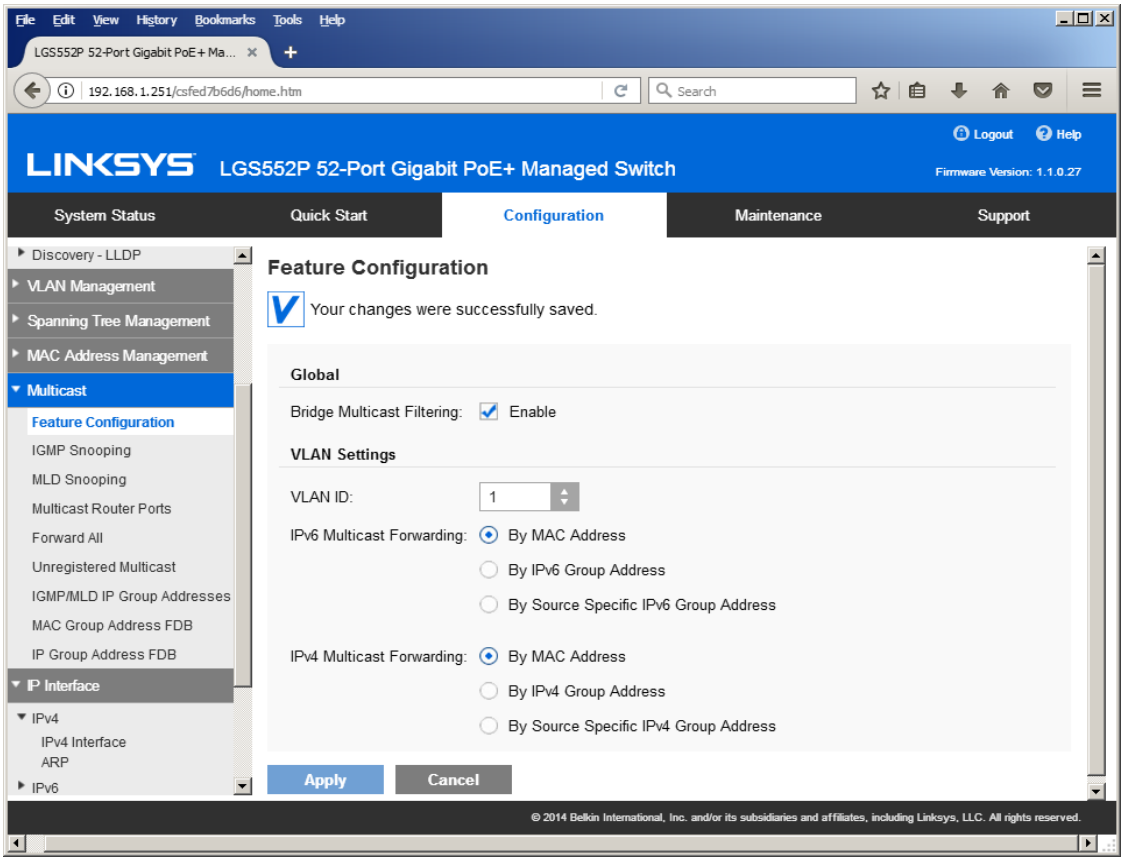
12. Navigate to **Multicast** -> **Future Configuration**. Select **Enable** under **Bridge Multicasting Filtering** and click **Apply**.



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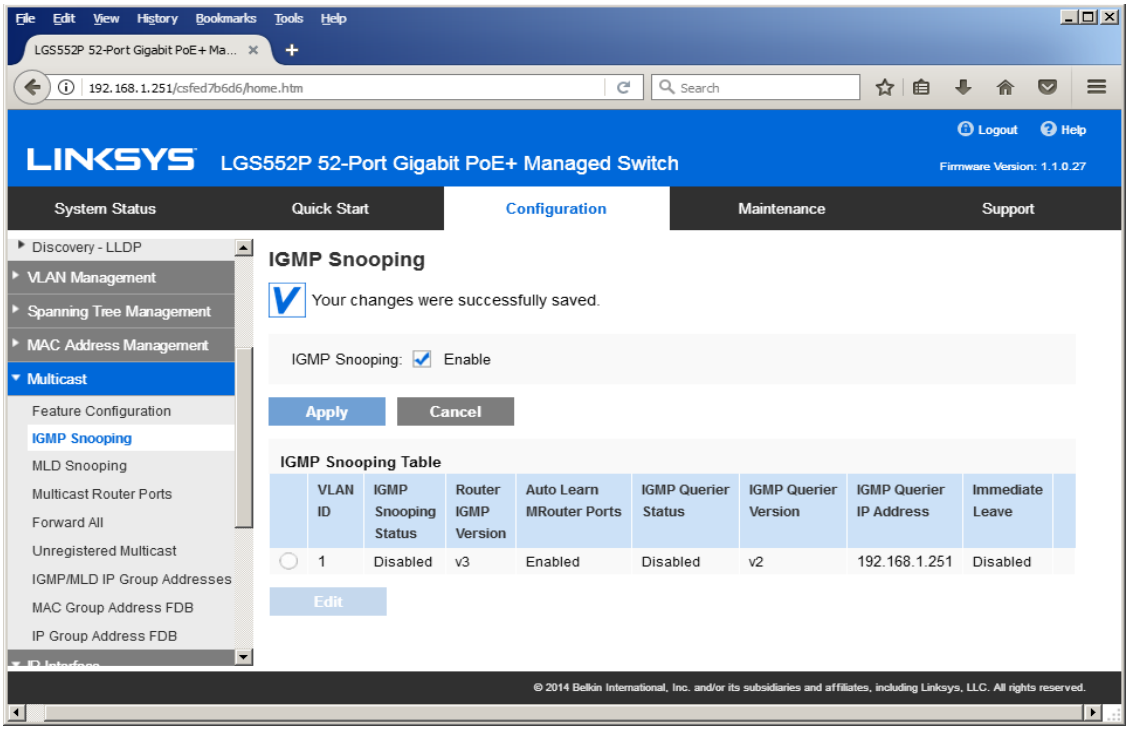
13. Navigate to **Multicast** -> **IGMP Snooping**. Select **Enable** under **IGMP Snooping**, click **Apply**.



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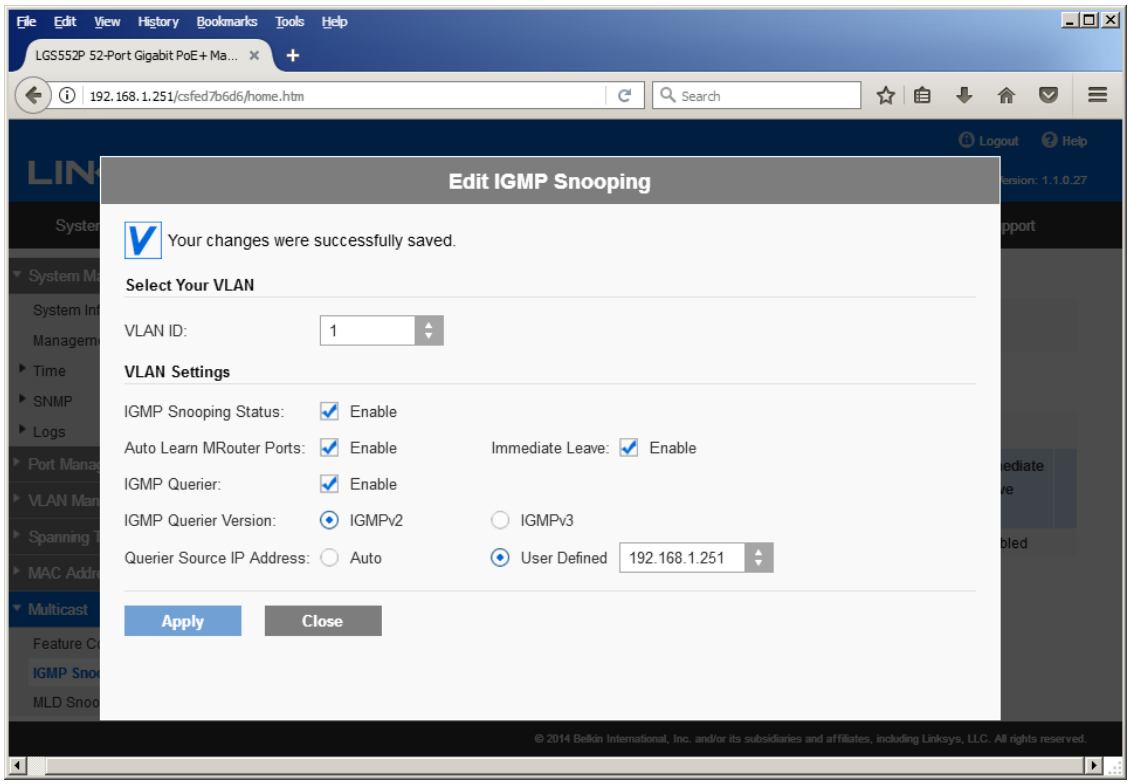
14. Click on radio button and click **Edit**. **Edit IGMP Snooping** window will appear. Make sure **VLAN ID <1>** is selected. Enable all the settings as shown below. Select **IGMP v2** as **IGMP Querier Version**, Click **Apply** and then **Close**.



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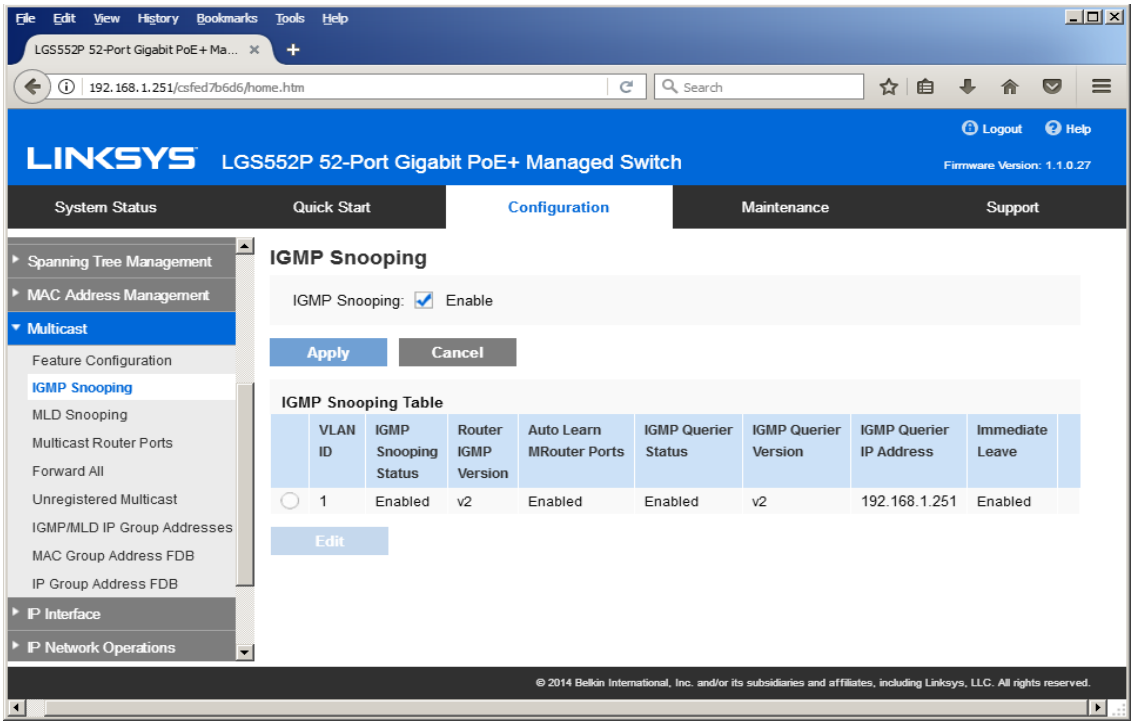
15. Refresh your browser, go to **IGMP Snooping** tab and make sure you have an image as below:



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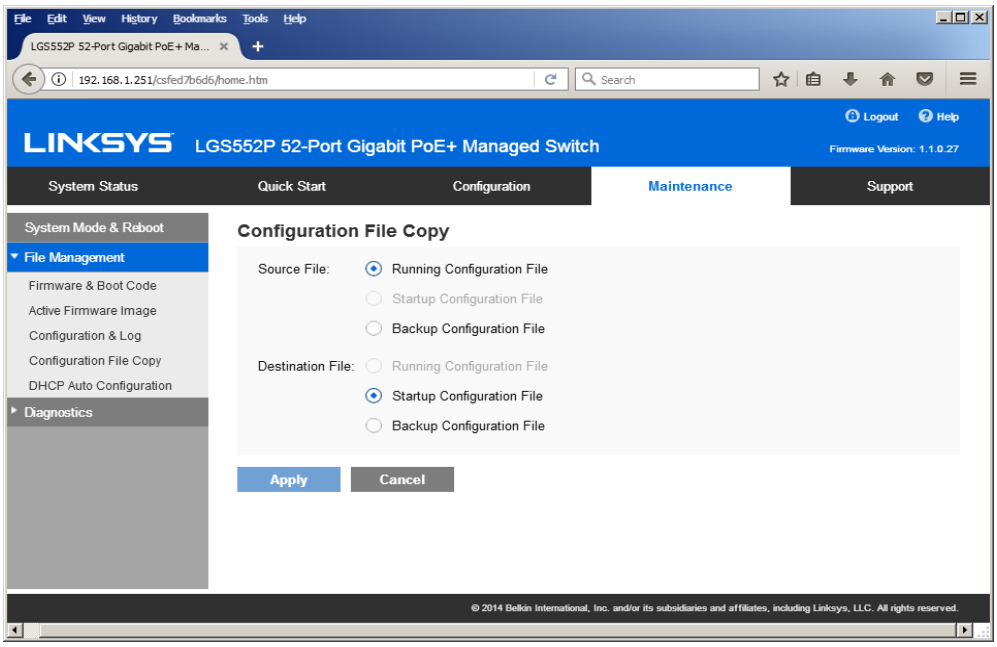
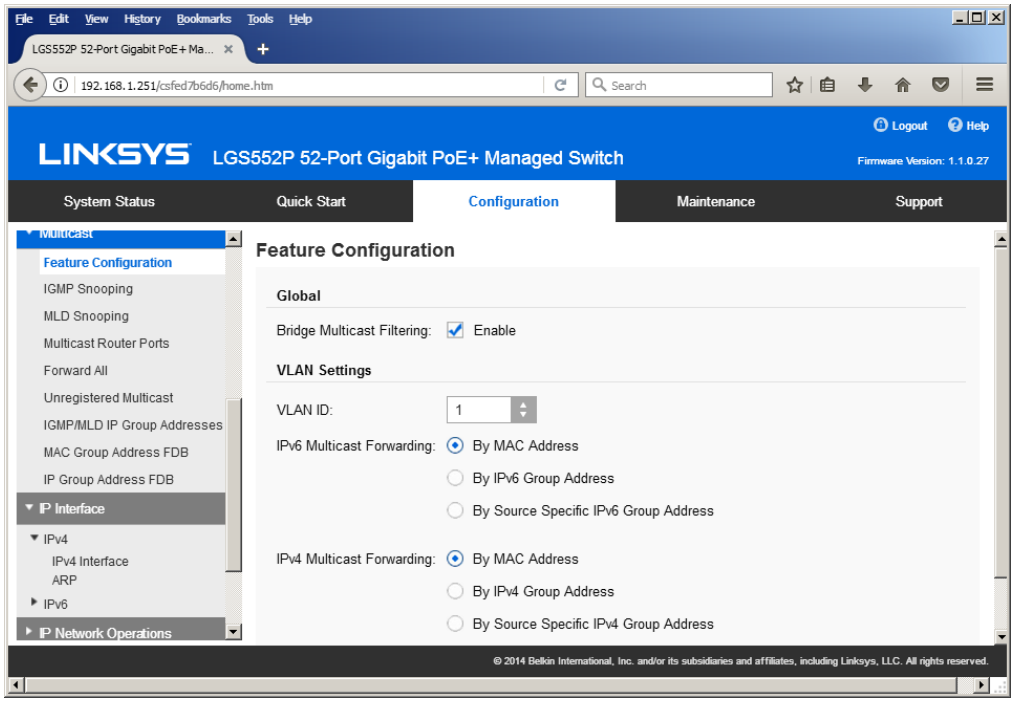
16. Navigate to **Maintenance** -> **File Management** -> **Configuration File Copy**. Select radio buttons as shown below, click **Apply**. This will save current configuration and will apply this configuration every time switch is powered up.



17. Power down Linksys network switch and power it up back again.

18. Log in to your Linksys network switch again and make sure that IGMP settings are intact:



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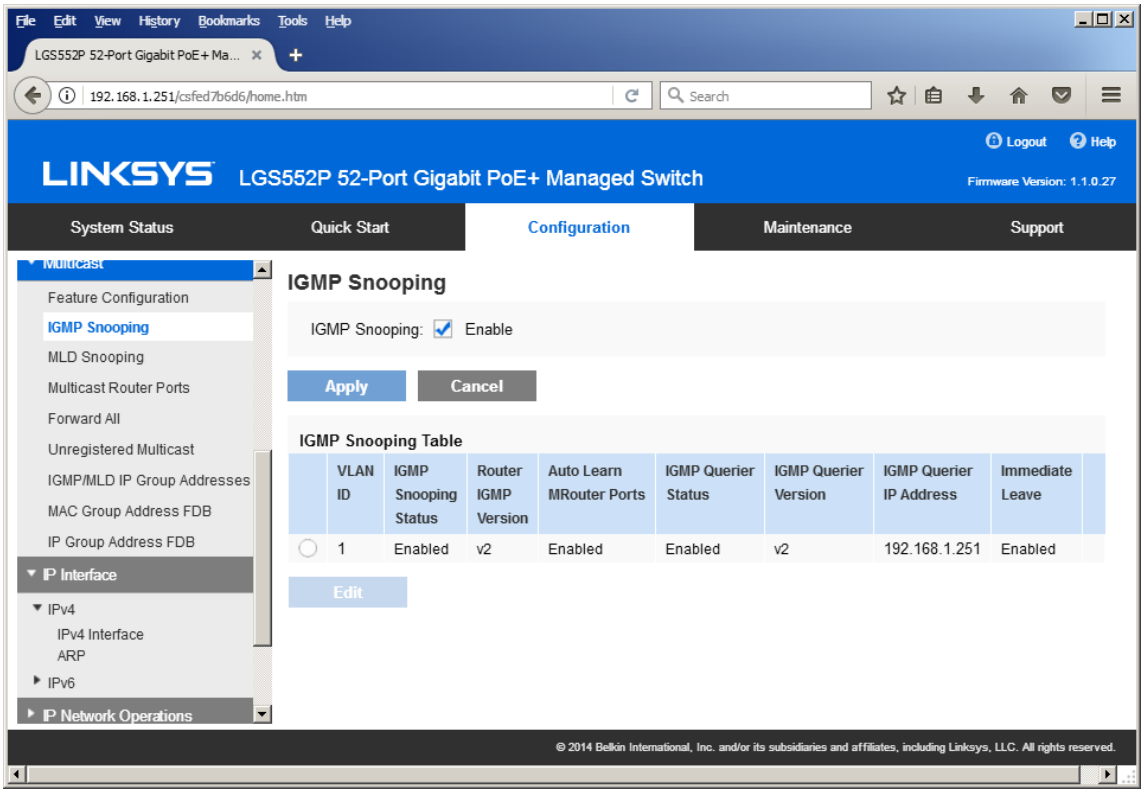


19. At this point your Linksys network switch is set and ready to use.

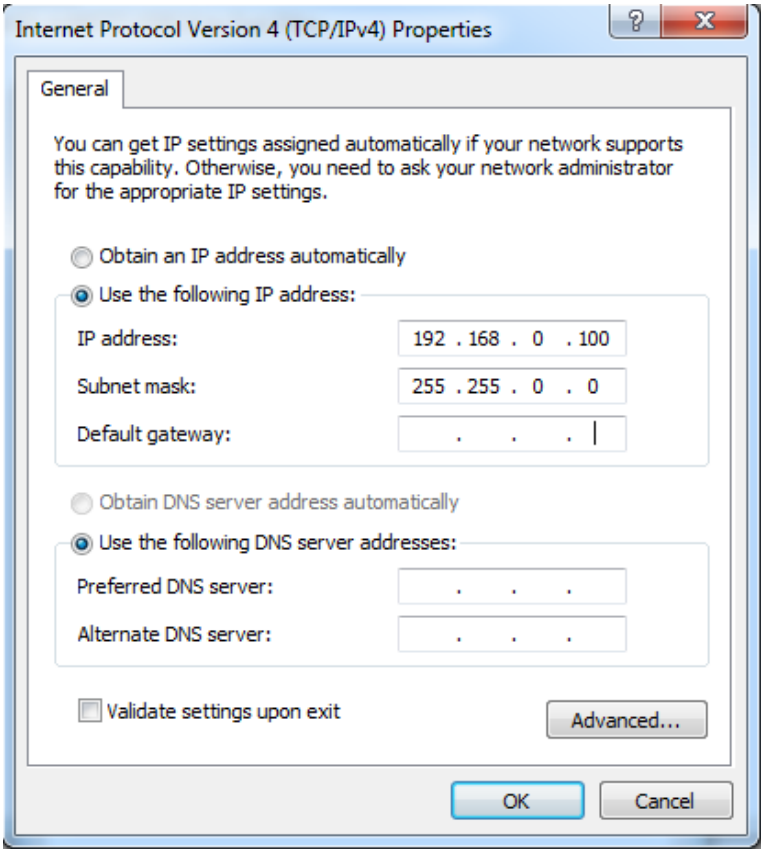
20. Connect your encoders, decoders, allow approx 3 mins for bootup, and perform a network scan using KD Management Software.

Luxul AMS-4424P, SW-610-24P-R, SW-510-48P-F
Network Setup Guide for KD-IP822, KD-IP922, KD-IP1022, KD-IP1080

Important Notes:

- When stacking – verify that both switches have POE enabled. In some cases, the secondary switch may disable POE upon stacking.

1. Login to the switch:
   a. Plug an Ethernet cable into any of the ports of the switch
   b. Plug the other end into the Ethernet port of your computer
   c. Power on the Switch
   d. Check to see that the IP address of the computer is within this network Subnet : **192.168.0.xxx** ("xxx" ranges 1~254). For example, 192.168.0.100



2. Open the Web browser, and enter **192.168.0.4 (default IP address** of Luxul AMS-4424P). The login window appears as below:

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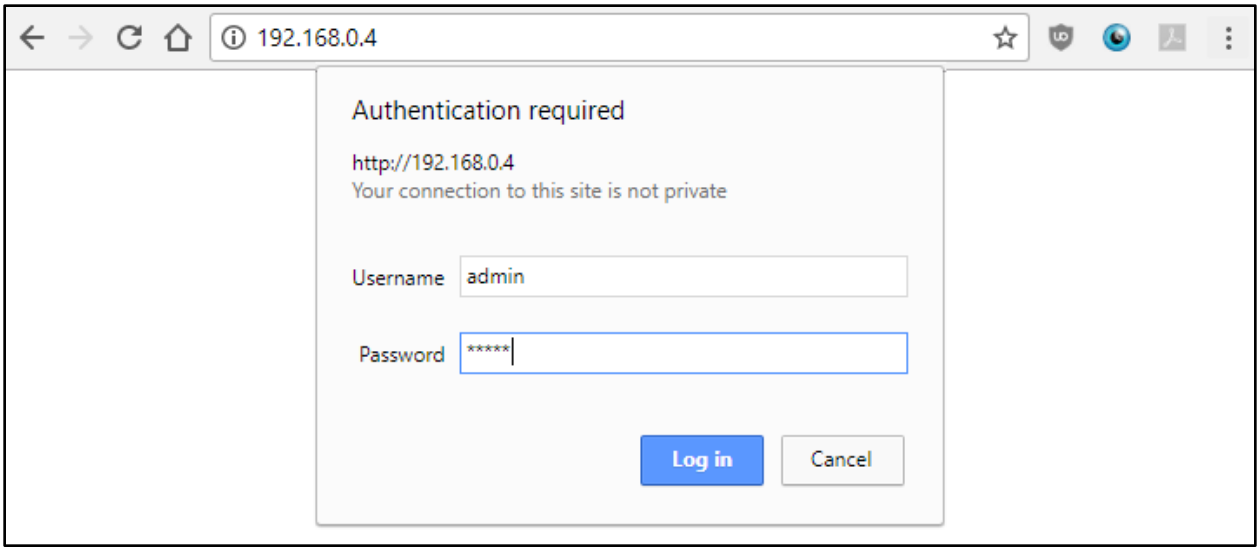
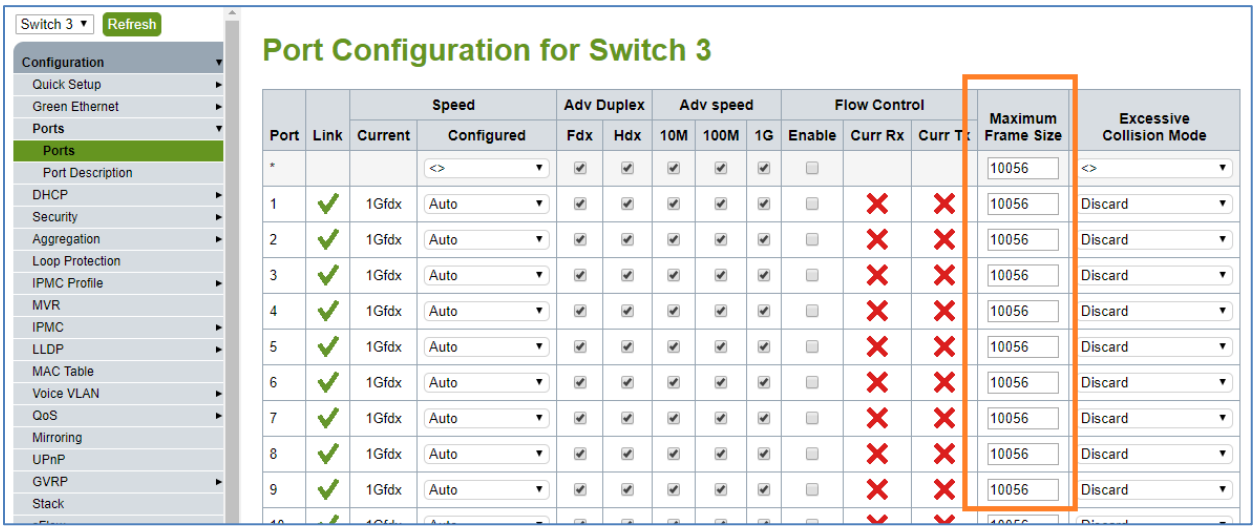


3. Enter the user name and password. (default user name and password are both set as **"admin"),** then click "OK" to login to the switch configuration window.

4. Ensure all ports have Maximum Frame Size of 10056 entered as below. To check it, find Configuration → Ports → Ports in the menu on left side of the window. (KD-IP922 requires Jumbo Frame(8K) for video/audio transmission via 1G-BaseT).



5. To enable **IGMP Snooping** of the switch, Find Configuration → IPMC → IGMP Snooping → Basic Configuration in the menu on left side of the window. (KD-IP922 requires IGMP Snooping for multicasting video/audio transmission via 1G-BaseT), then **check the box of Snooping Enabled** of Global Configuration in

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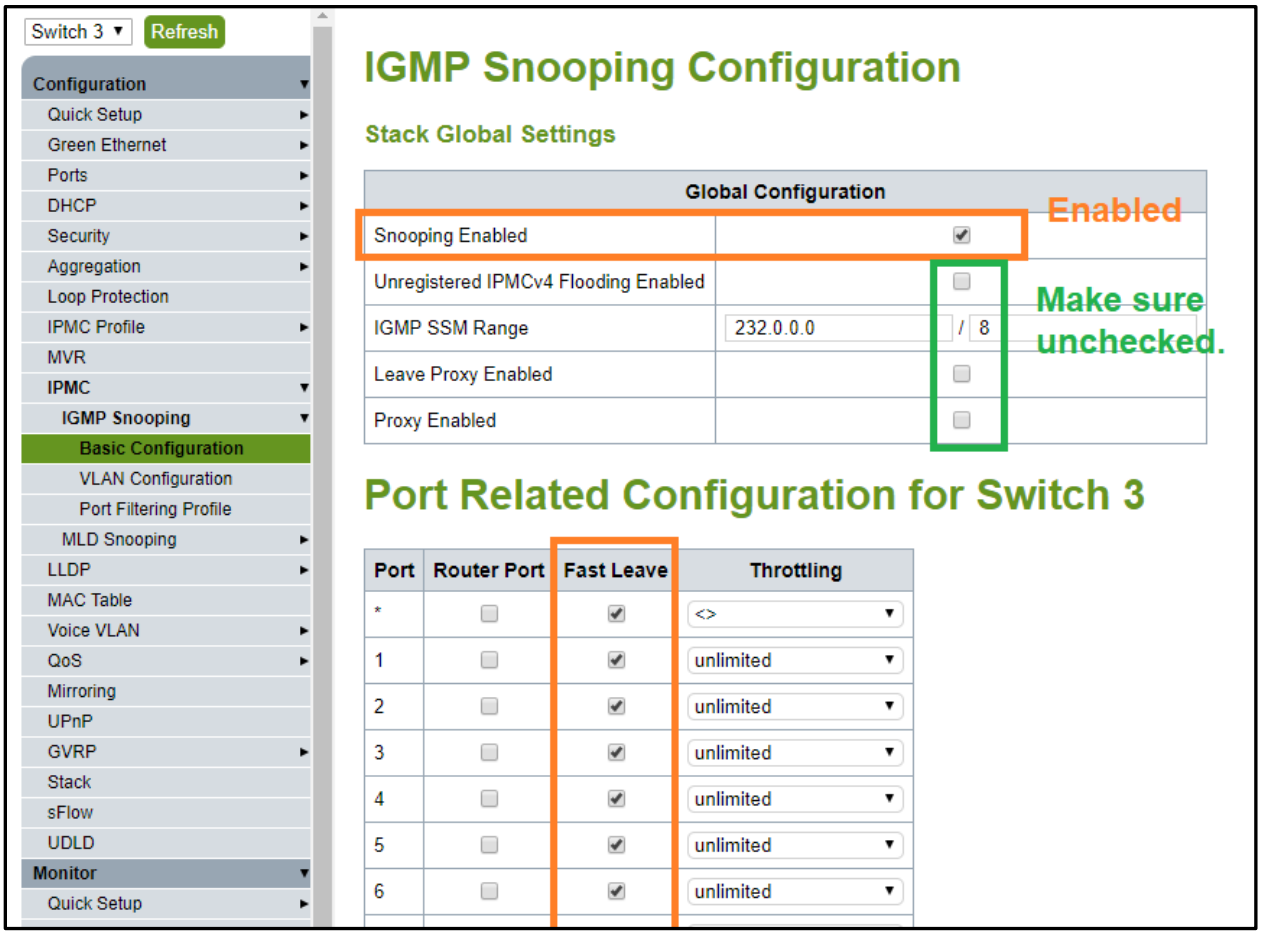
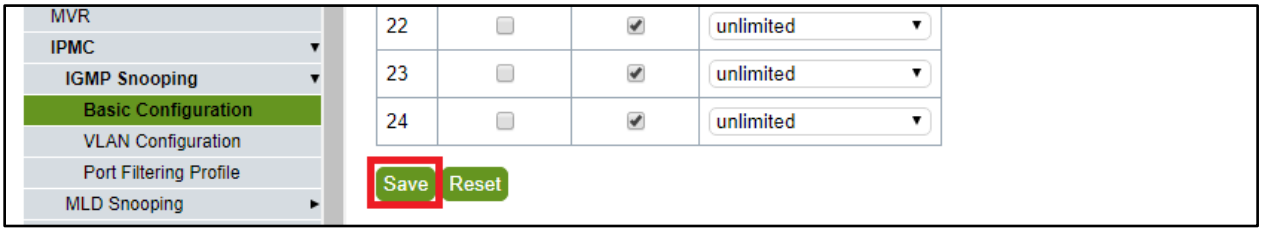
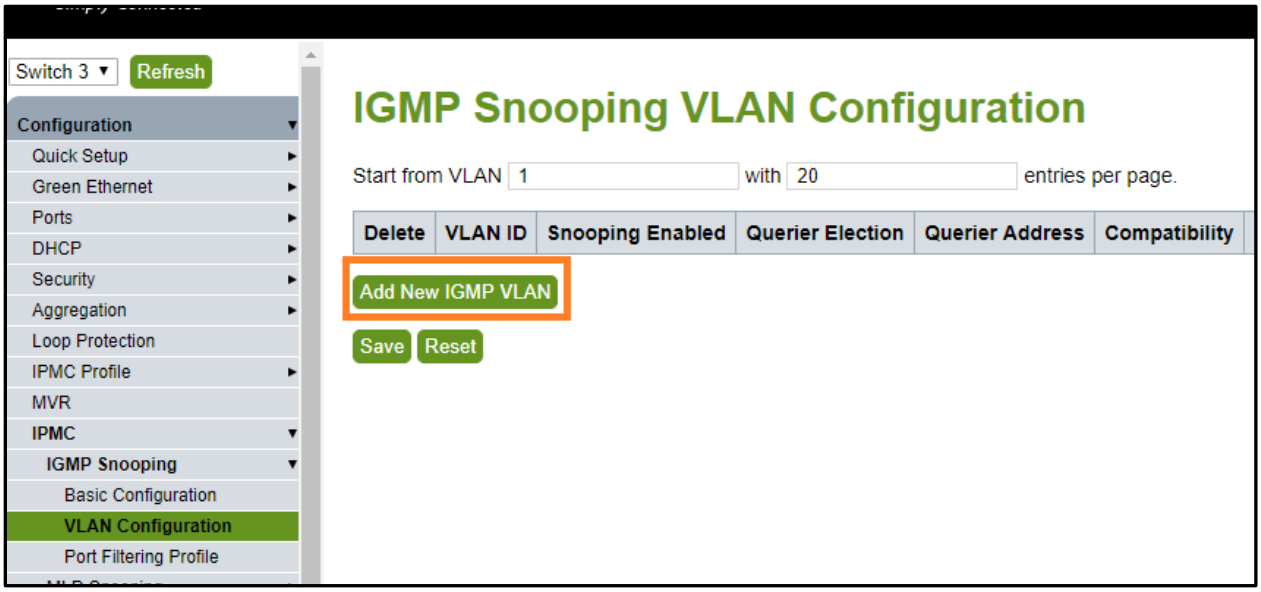
IGMP Snooping Configuration window. And **check the Fast Leave box for all Ports** related Configuration in the same window as below.



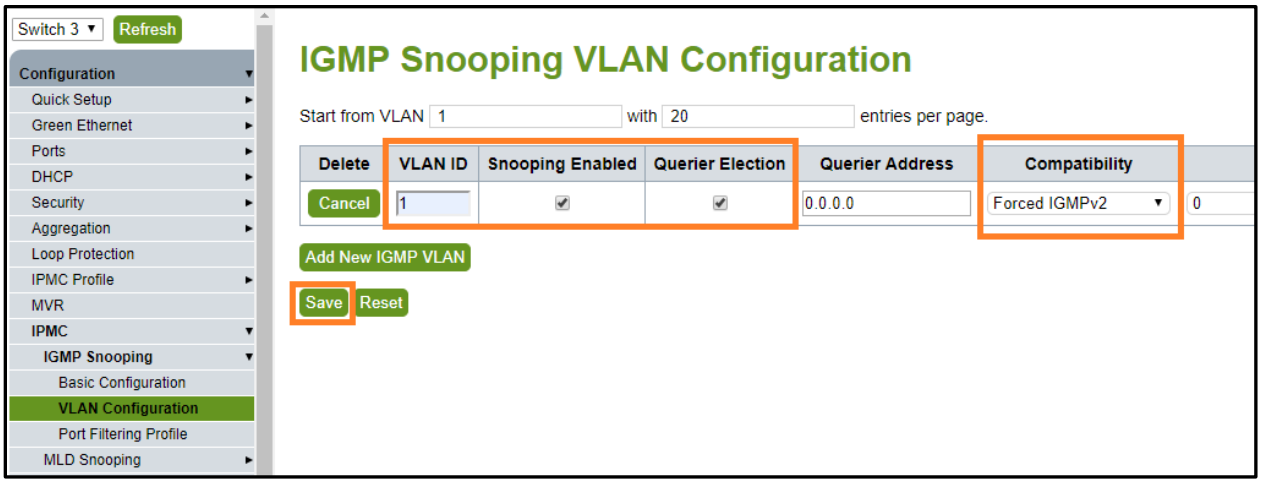
6. Click **"Save"** button on the bottom of IGMP Snooping Configuration window



7. To add VLAN of the IGMP Snooping at the switch, Find Configuration → IPMC → IGMP Snooping → VLAN Configuration in the menu on left side of the window. (VLAN must be added in IGMP Snooping), then click **"Add New IGMP VLAN"** if there is not any specified VLAN in IGMP Snooping VLAN Configuration window.



8. Then **enter "1" in VLAN ID, check the box of Snooping Enabled and Querier Election** in new VLAN. And **select "Forced IGMPv2** in the list box of Compatibility in IGMP Snooping VLAN Configuration window. Then click **"Save"** button on the bottom of IGMP Snooping VLAN Configuration window.



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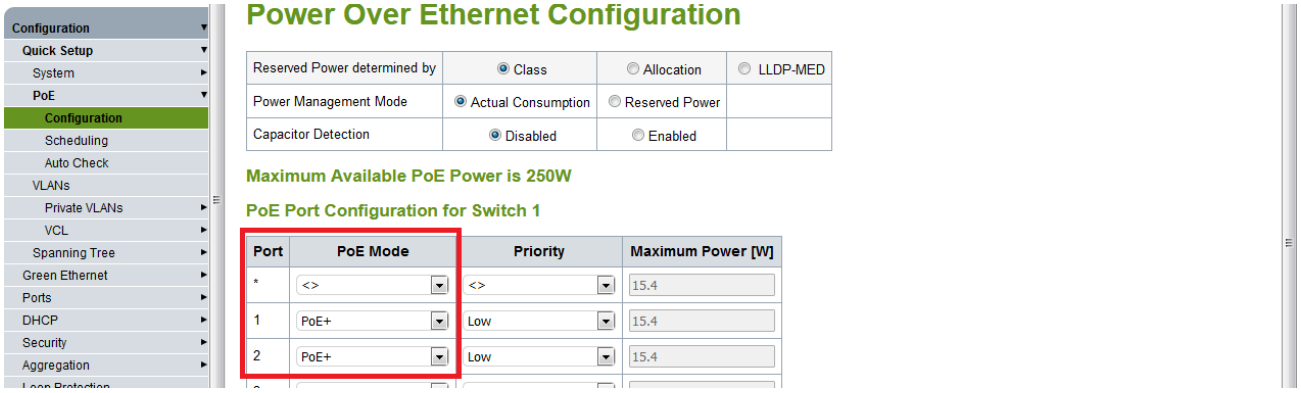
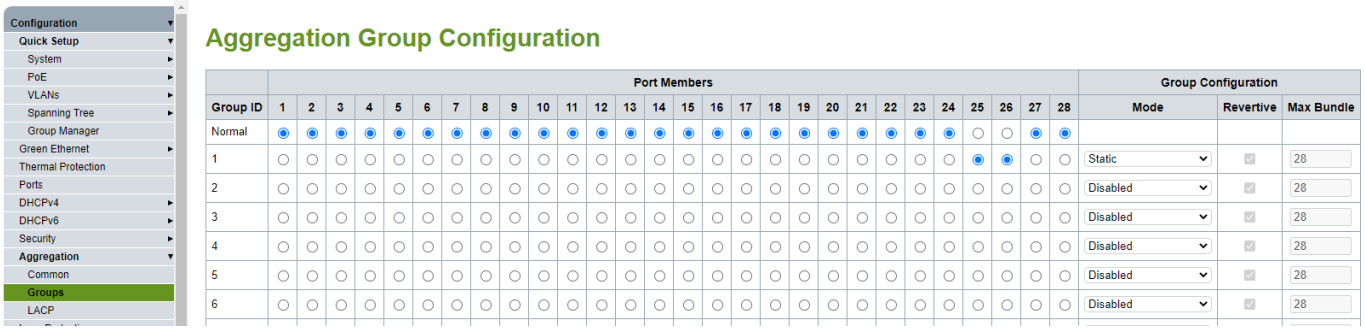
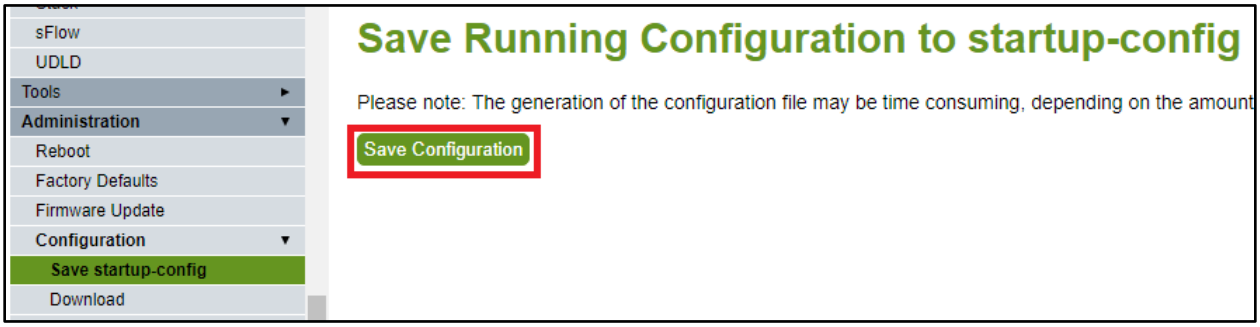
9. (optional). If using stacked Switches, verify that POE+ is enabled. This setting can be accessed from **Configuration→ Quick Setup → POE→ Configuration**



10. (optional) if aggregating 10G connections, navigate to **Configuration→Aggregation → Groups** Use static mode for aggregated 10G connections.



11. To save all Running Configurations to Startup-Configuration, Find **Administration → Configuration → Save startup-config** in the menu on left side of the window. Then click "**Save Configuration**" button in Save Running Configuration to startup-config window.



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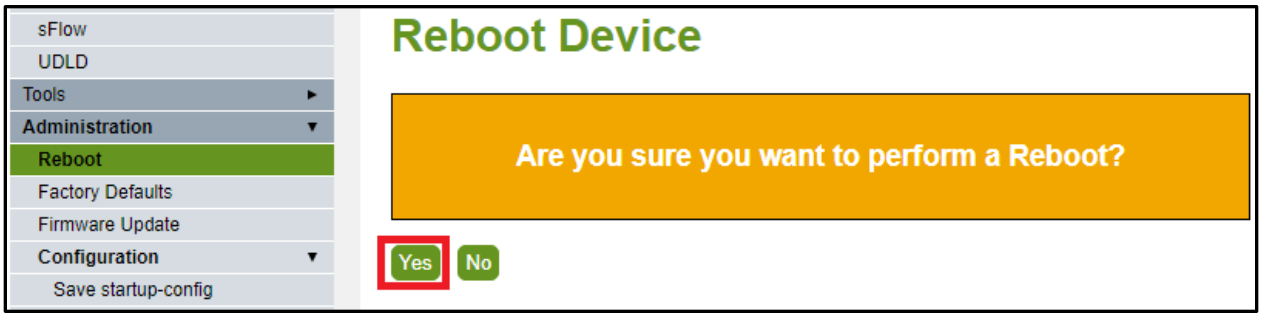
12. To reboot the switch, Find Administration → Reboot in the menu on left side of the window. Then click "Yes" button in Reboot Device window. The switch will be rebooted automatically.



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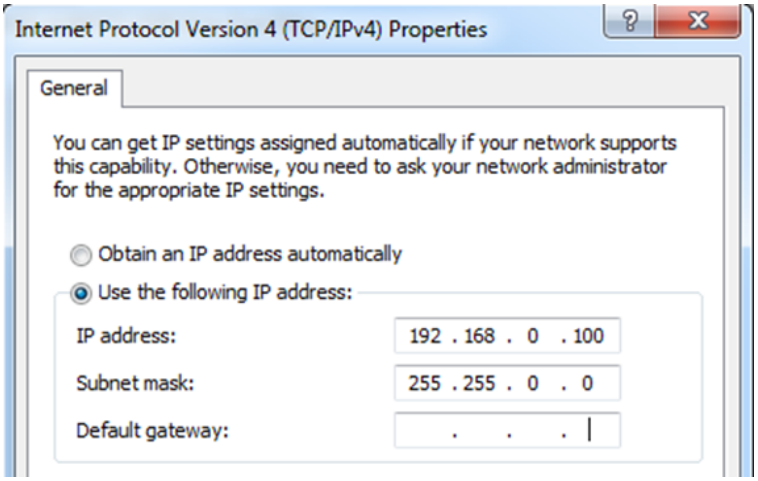
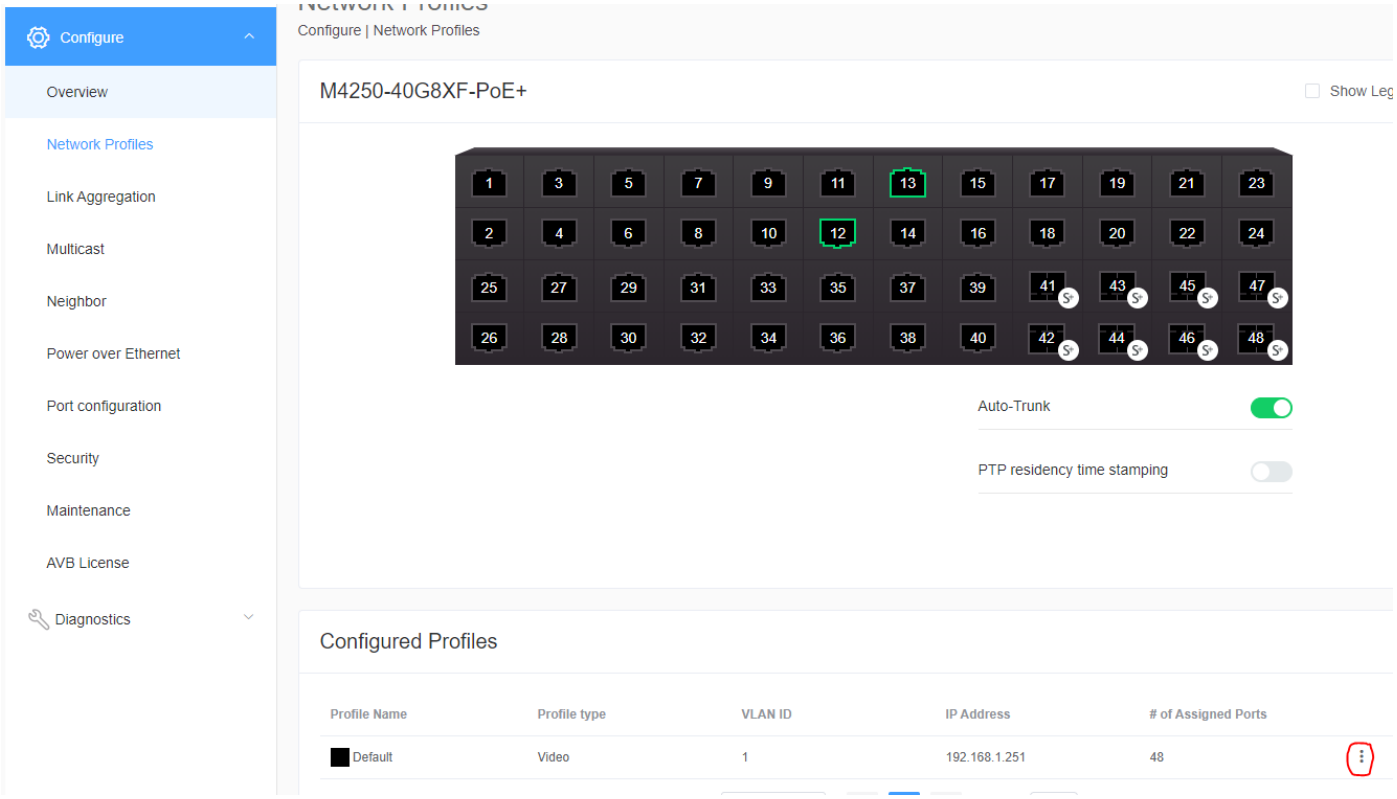
Netgear AV line: MS250-10G2XF-POE+, M4250-26G4XF-PoE+, M4250-40G8XF-PoE+

This series is compatible with IP1080, IP822, IP922, and IP1022 with no additional configuration required. However, it is recommended to change the default profile to the **"video"** profile (default is **"data"**) type for enhanced system performance.
If not connected to a DHCP server, the switch can be accessed via its IP address: 169.254.100.100
Alternatively, the OOB port can be accessed via 192.168.0.239





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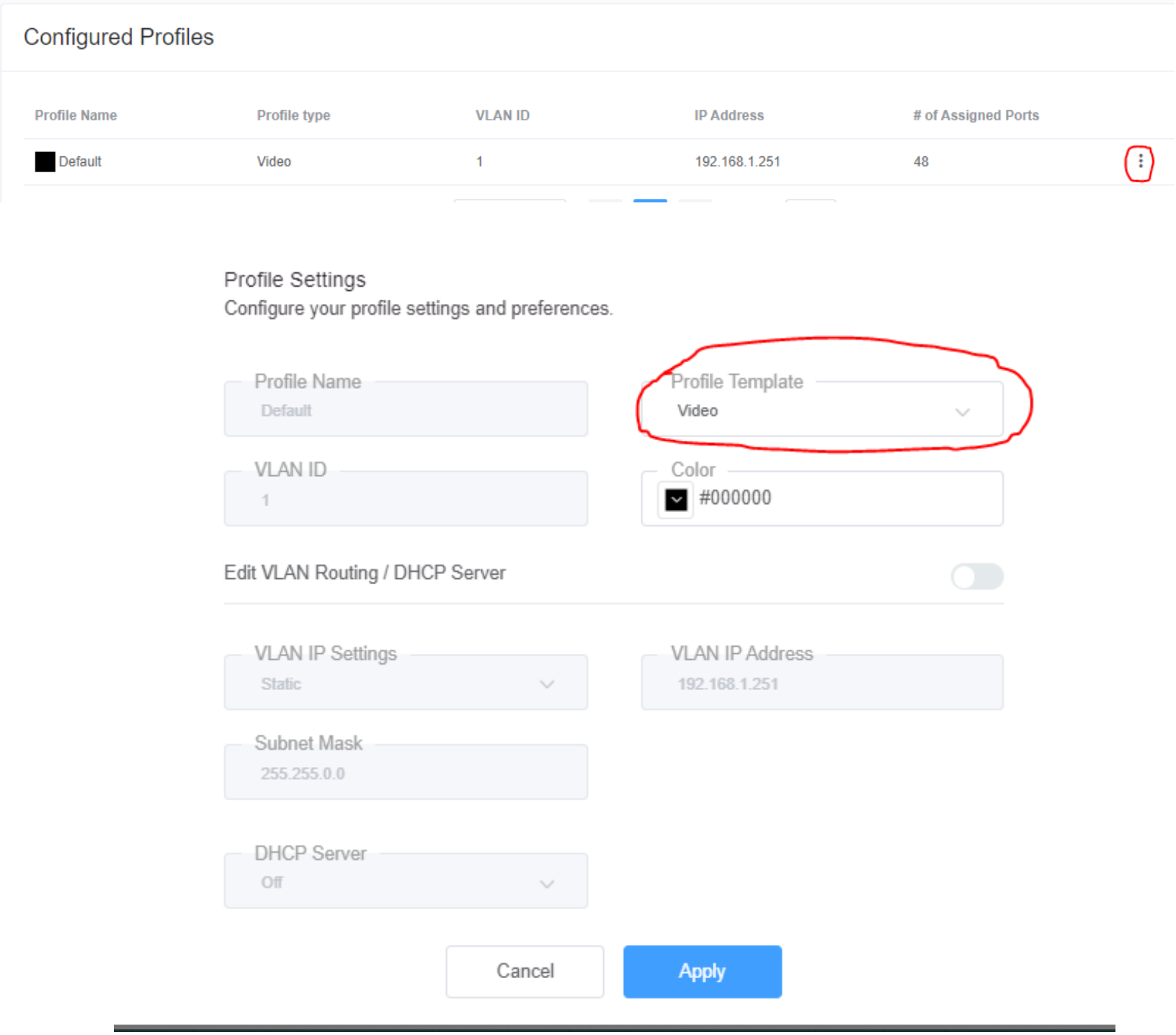
Configured Profiles
Profile Name
Profile type
VLAN ID
IP Address
# of Assigned Ports
Default
Video
1
192.168.1.251
48
Profile Settings
Configure your profile settings and preferences.
Profile Name
Default
Profile Template
Video
VLAN ID
1
Color
#000000
Edit VLAN Routing / DHCP Server
VLAN IP Settings
Static
VLAN IP Address
192.168.1.251
Subnet Mask
255.255.0.0
DHCP Server
Off
Cancel
Apply

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For ease of maintenance, it is recommended to adjust the management IP address of the switch to a static IP address that shares the same subnet as the system.

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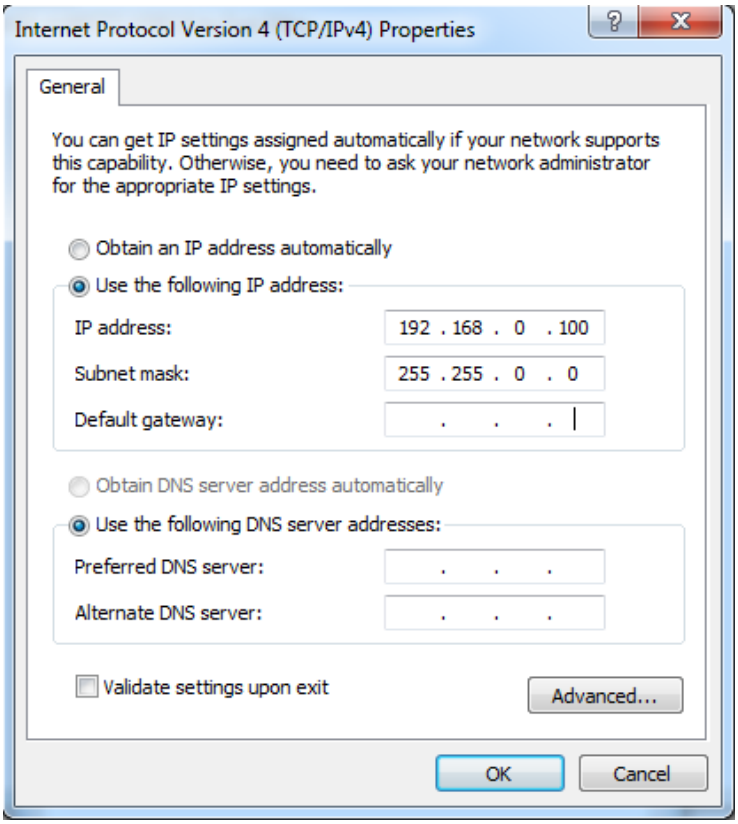
Netgear GS Series
Network Setup Guide for KD-IP822, KD-IP922, KD-IP1022, KD-IP1080

Login to the switch with the following steps:

1. Plug an Ethernet cable into any of the ports of the switch
2. Plug the other end into the Ethernet port of your computer
3. Power on the Switch
4. Check to see that the IP address of the computer is within this network, 192.168.0.xxx ("xxx" ranges 1~254). For example, 192.168.0.100



5. Open the Web browser, and enter 192.168.0.239 (default IP address of Netgear GS). The login window appears as below:

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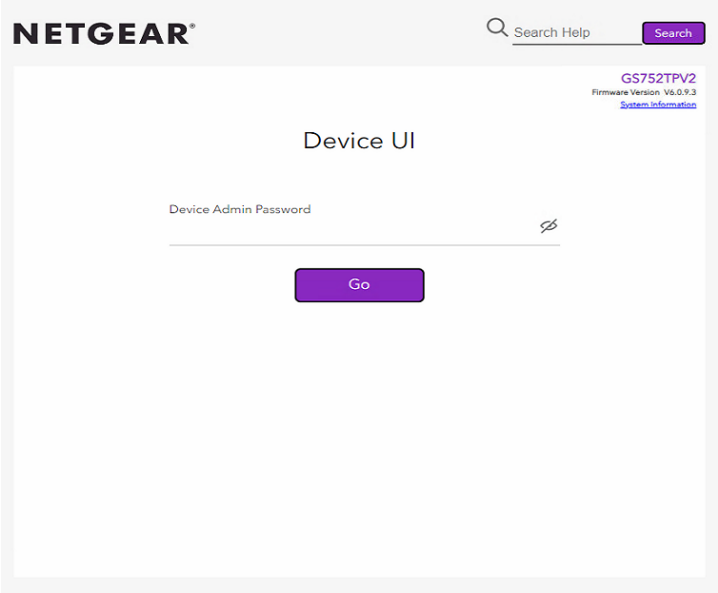
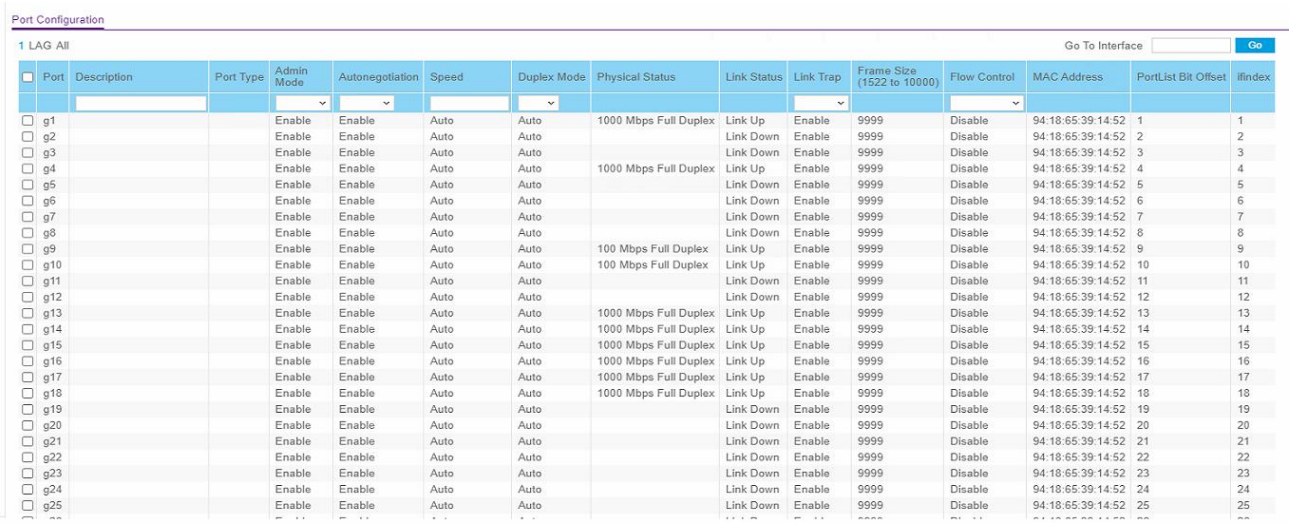


6. Enter the password (default password is “password”). And then click ‘OK” to login to the switch configuration window

7. To enable Jumbo Frame of the switch, go to Switching -> Ports -> Port Configuration. (IP922 requires Jumbo Frame(8K) for video/audio transmission via 1G-BaseT). Select the empty checkbox that is above the checkbox beside g1 Port in the table to select all the ports. All selected ports highlight to yellow color. Then enter “9216” in Maximum Frame Size field as shown below and press Apply button



Port	Description	Port Type	Admin Mode	Autonegotiation	Speed	Duplex Mode	Physical Status	Link Status	Link Trap	Frame Size (1522 to 10000)	Flow Control	MAC Address	PortList Bit Offset	ifindex
g1			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	1	1
g2			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	2	2
g3			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	3	3
g4			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	4	4
g5			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	5	5
g6			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	6	6
g7			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	7	7
g8			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	8	8
g9			Enable	Enable	Auto	Auto	100 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	9	9
g10			Enable	Enable	Auto	Auto	100 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	10	10
g11			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	11	11
g12			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	12	12
g13			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	13	13
g14			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	14	14
g15			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	15	15
g16			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	16	16
g17			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	17	17
g18			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	18	18
g19			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	19	19
g20			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	20	20
g21			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	21	21
g22			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	22	22
g23			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	23	23
g24			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	24	24
g25			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	25	25

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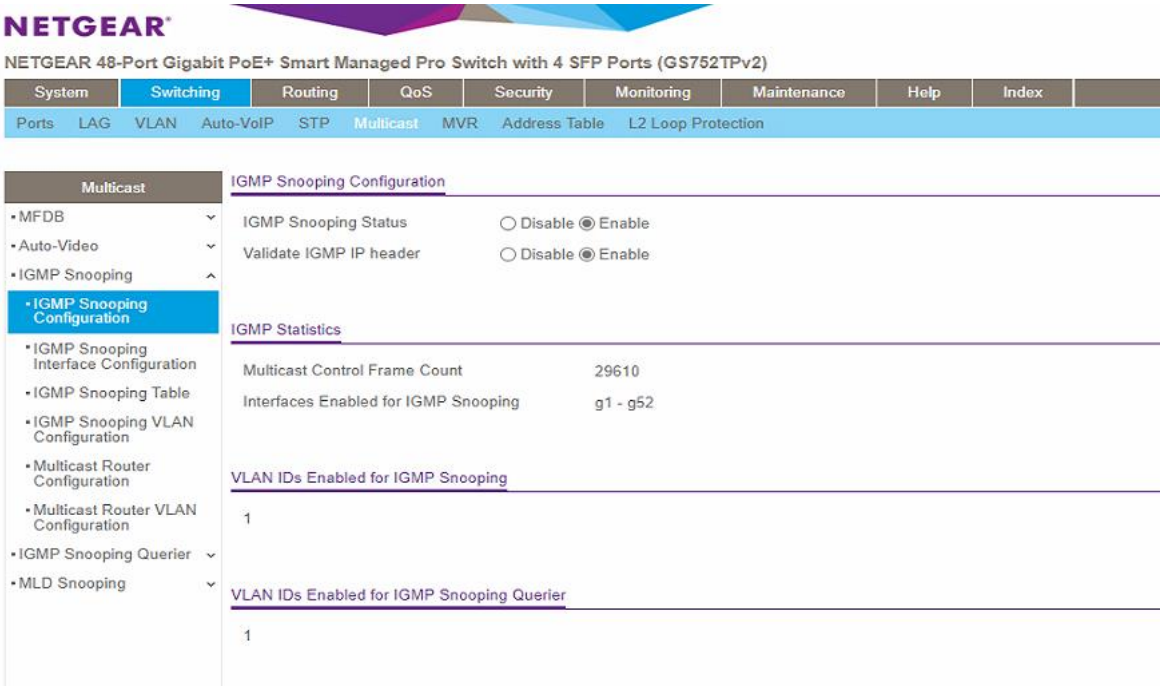
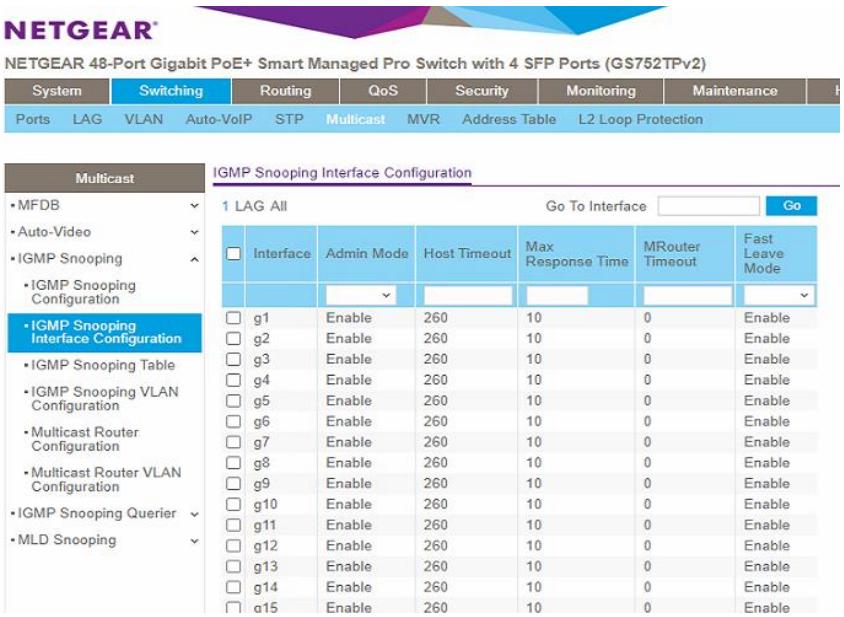
8. To enable IGMP Snooping of the switch, go to Switching -> Multicast -> IGMP Snooping -> IGMP Snooping Configuration. (IP922 requires IGMP Snooping for multicasting video/audio transmission via 1G-BaseT), Enable IGMP settings as shown below and press Apply button



9. Go to Switching -> Multicast -> IGMP Snooping -> IGMP Snooping Interface Configuration. Select the empty checkbox that is above the checkbox beside g1 Port in the table to select all the ports. All selected ports highlight to yellow color. Enable Admin Mode and Fast Leave Admin Mode as shown below and press Apply button



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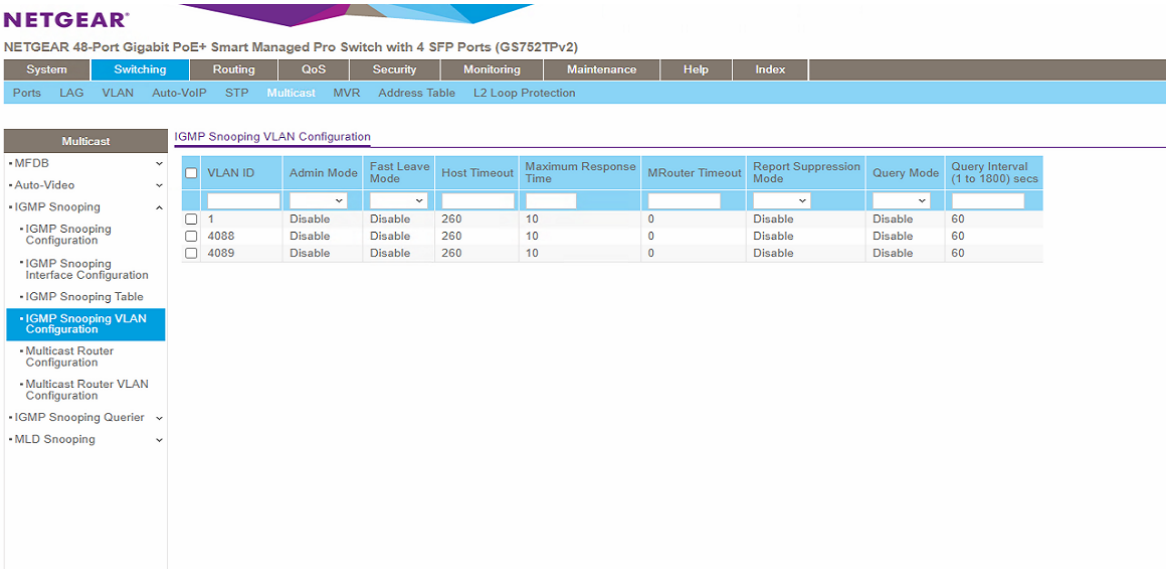
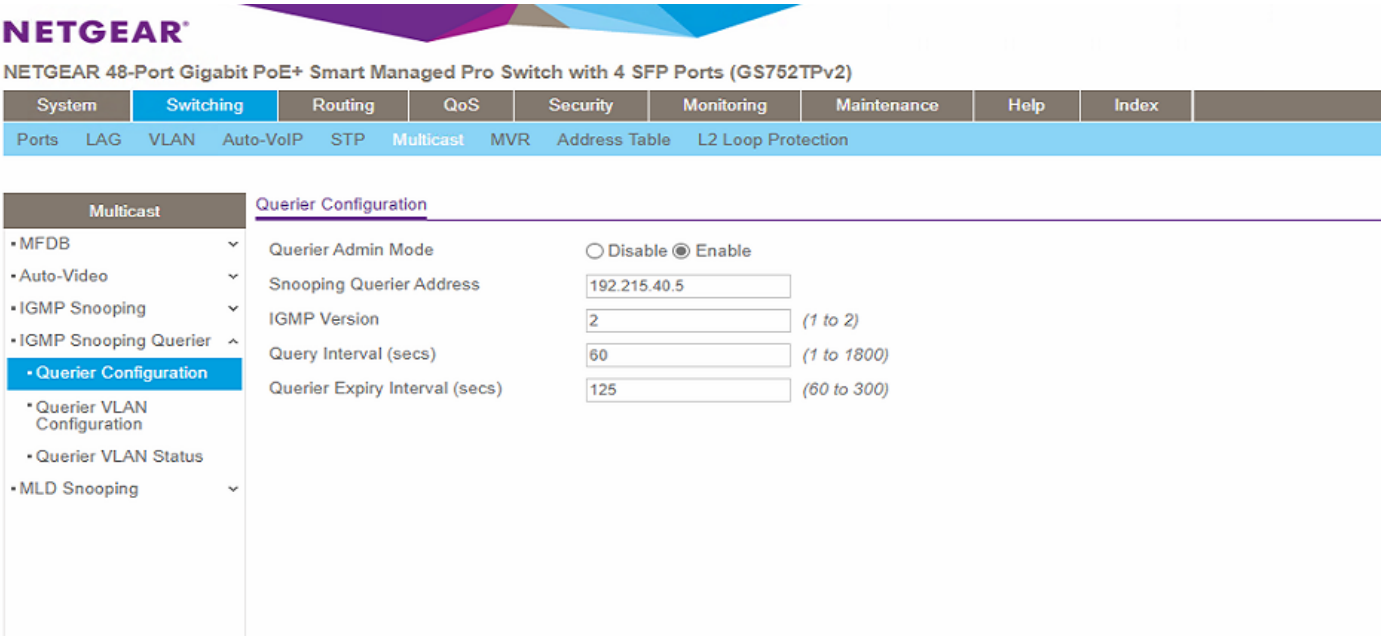
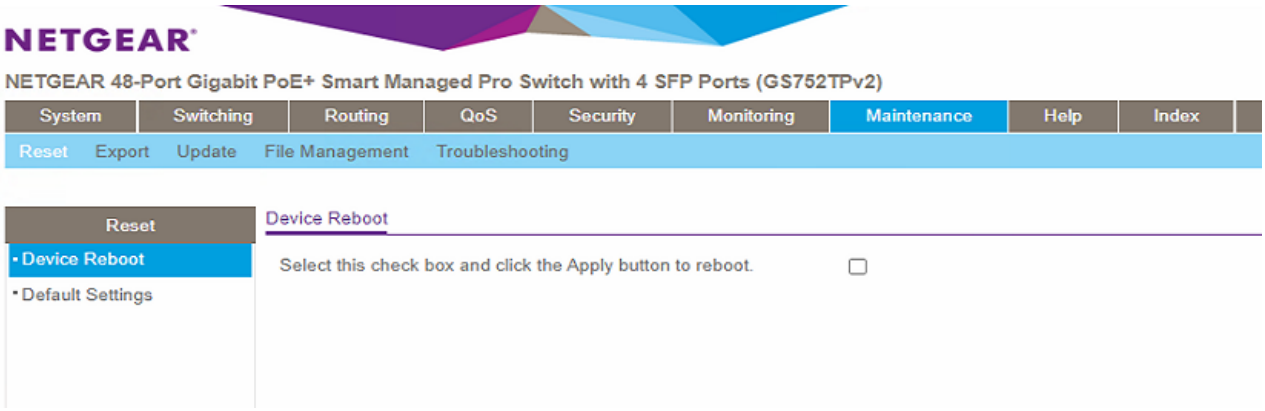
10. Go to Switching -> Multicast -> IGMP Snooping -> IGMP Snooping VLAN Configuration. Add VLAN ID=1, Fast Leave Admin Mode=Enable and Query Mode=Enable as shown below and press Add button. (Note: the empty fields are populated automatically to default values)



11. Go to Switching -> Multicast > IGMP Snooping Querier -> Querier Configuration. Enable Querier Admin Mode as shown below and press Apply button



12. Finally, go to Maintenance -> Device Reboot. Enable checkbox for device reboot as shown below and press Apply button. It takes approximately 2 minutes to power cycle the switch and an additional 2 min for IP922 to start showing video.


NETGEAR
NETGEAR 48-Port Gigabit PoE+ Smart Managed Pro Switch with 4 SFP Ports (GS752TPv2)
System
Switching
Routing
QoS
Security
Monitoring
Maintenance
Help
Index
Reset
Export
Update
File Management
Troubleshooting
Reset
Device Reboot
Default Settings
Device Reboot
Select this check box and click the Apply button to reboot.

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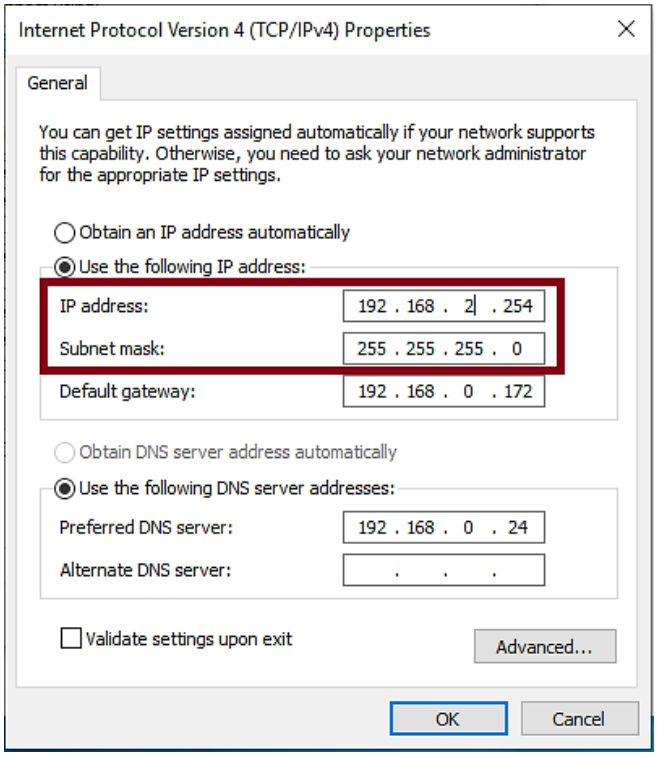
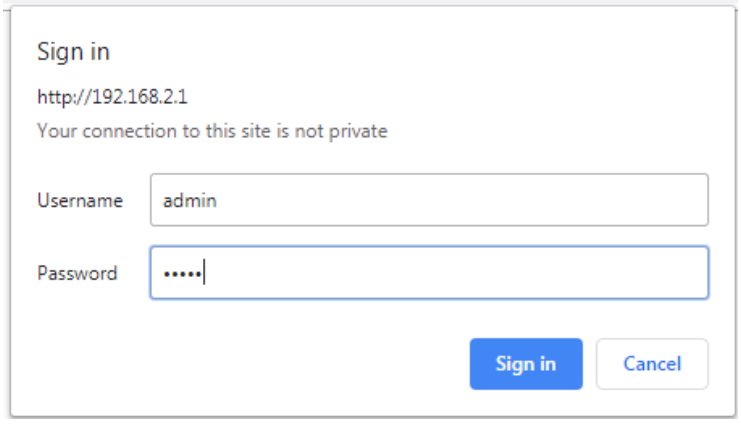
Niveo NGSME24TH-AV
Network Setup Guide for KD-IP822, KD-IP922, KD-IP1022, KD-IP1080

1. Set up the computer to connect to the switch. The best method is to set a static IP address for the computer's ethernet adapter and directly wire into the switch. The Default IP address of this switch is **192.168.2.1**



2. Once wired in, connect to the network switch via web browser. When prompted, log in with the default credentials.
    a. The username and password are both "**admin**".



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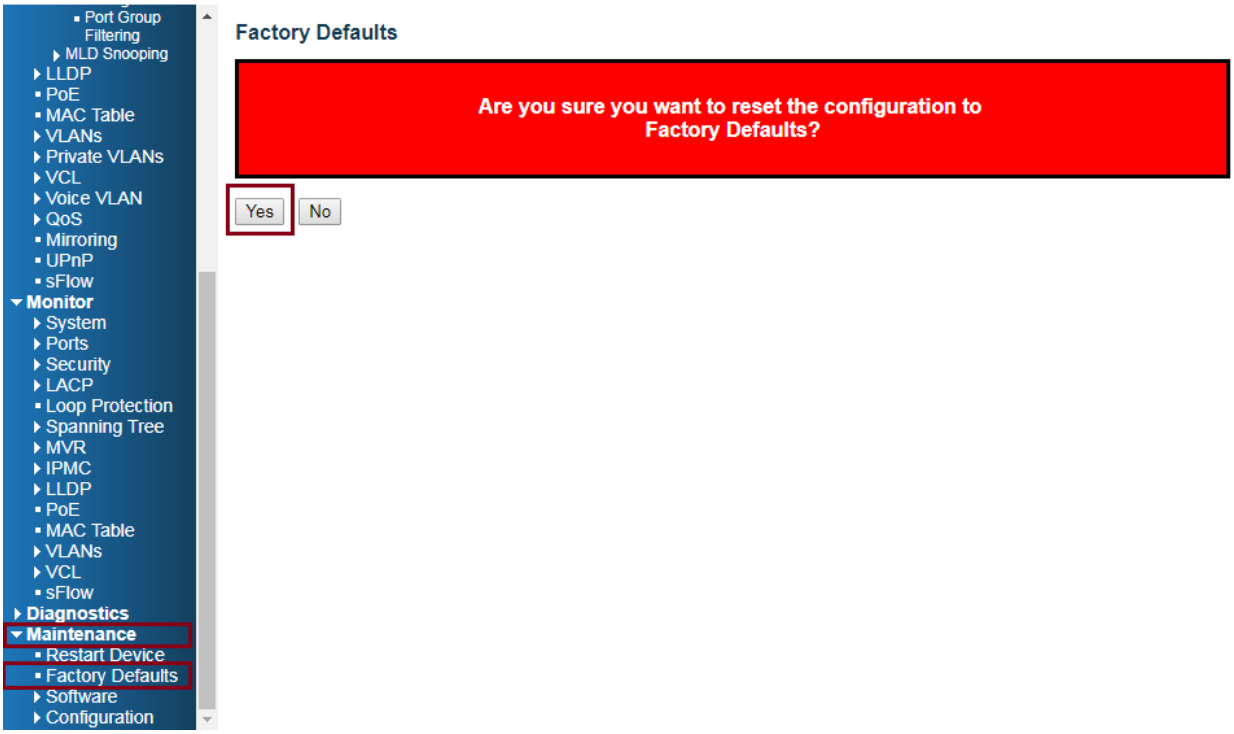
3. After connecting to the switch, it is recommended to reset it to factory defaults.
    a. The path for this is **Maintenance** -> **Factory Defaults**.
    b. Note that resetting the switch to Factory Defaults does not change the IP settings of the switch.



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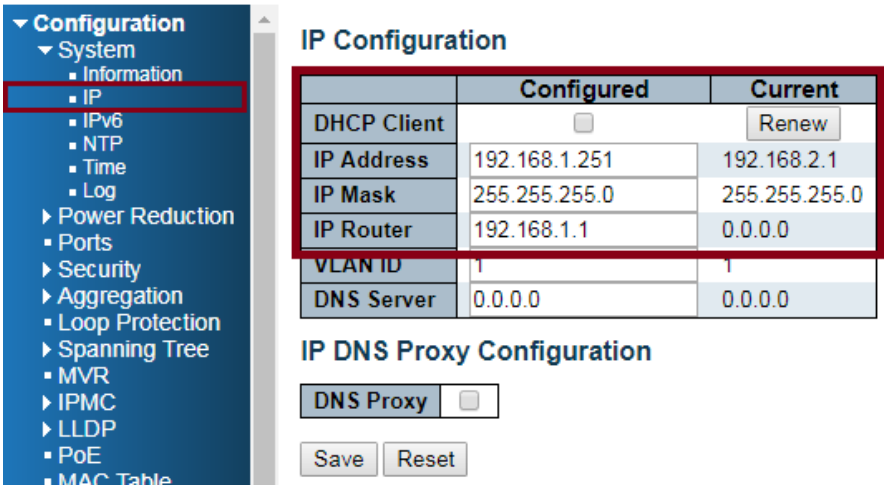
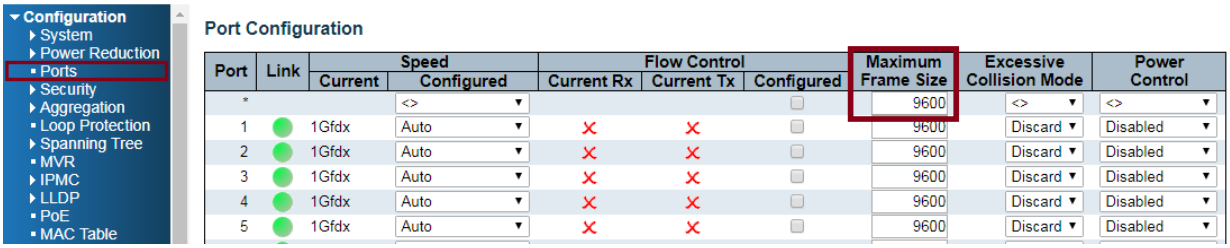
4. After setting factory defaults, adjust the switch to use the desired subnet. In our case we use the IP address **192.168.1.251** – as this fits the default subnet of the KD-IP922 system. Ensure the DHCP client is disabled as well. Set the Router IR address to that of the router in the network.
    a. The path is: **Configuration** -> **System** -> **IP**

    b. After making the adjustment, the switch will automatically move to the new IP address. The computer may lose connection to the switch at this time. Adjusting the static IP to be in the new subnet will allow for connection to be reestablished on the new IP address.



5. By default, Jumbo frames are enabled on this network switch. Verify that the maximum frame size is 9600 (the maximum value)
    a. The path is: **Configuration** -> **Ports**



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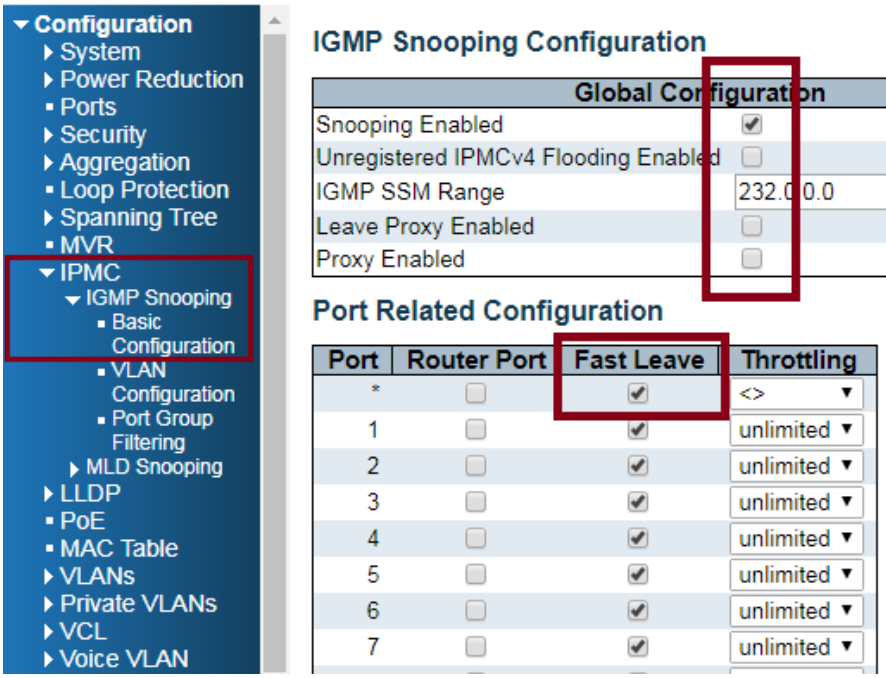
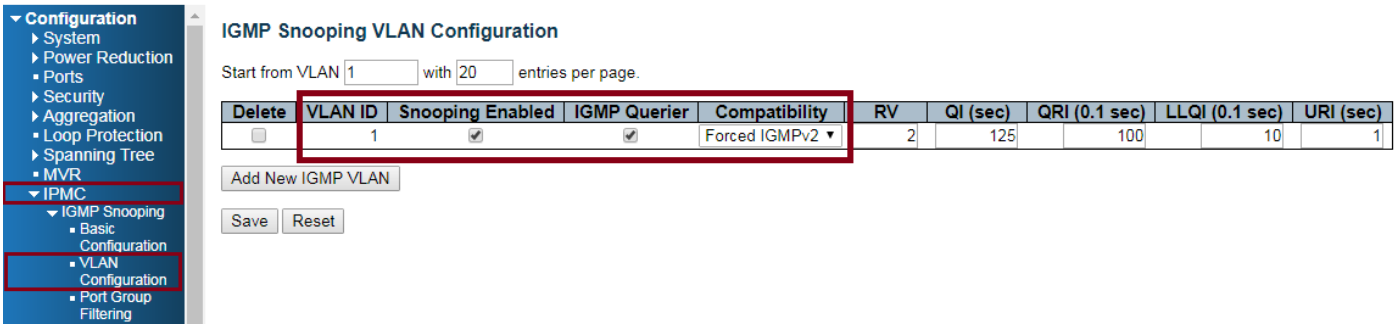
6. Enable IGMP Snooping. Check “Snooping Enabled” and verify that “Fast Leave” is also enabled. Uncheck “Unregister IPMCv4 Flooding enabled”
    a. The path is: **Configuration** -> **IPMC** -> **IGMP** -> **Basic Configuration**



7. Create an IGMP VLAN. The ID should be set to 1. Force IGMPV2 compatibility for this VLAN. Ensure the configuration is as below:
    a. The path is: **Configuration** -> **IPMC** -> **IGMP** -> **VLAN Configuration**



8. Reboot the network switch and verify that the settings are correct. The switch is now ready for the KD-IP922 system.
    a. There is no need to save the running configuration of this network switch. The settings will persist on system reboot.

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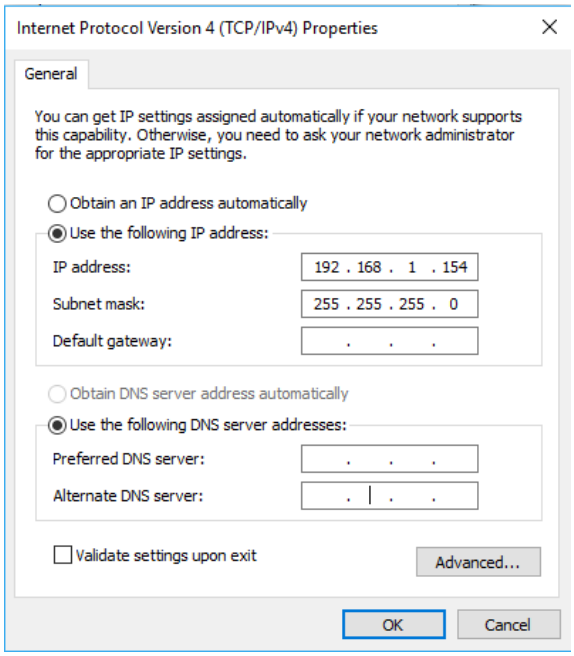
Pakedge S3L
Network Setup Guide for KD-IP822, KD-IP922, KD-IP1022, KD-IP1080

Login to the switch with the following steps:

1. Plug an Ethernet cable into any of the ports of the switch
2. Plug the other end into the Ethernet port of your computer
3. Power on the Switch
4. Check to see that the IP address of the computer is within this network, 192.168.1.xxx ("xxx" ranges 1~254). For example, 192.168.1.154



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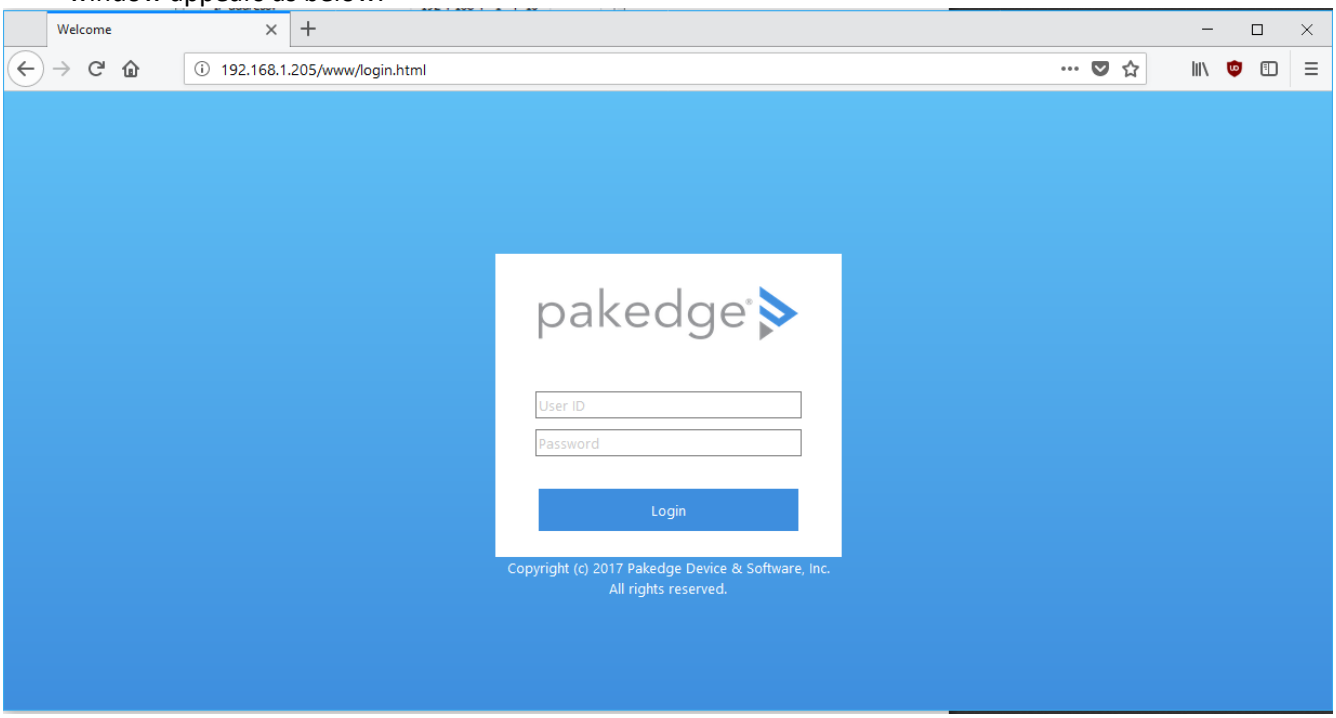
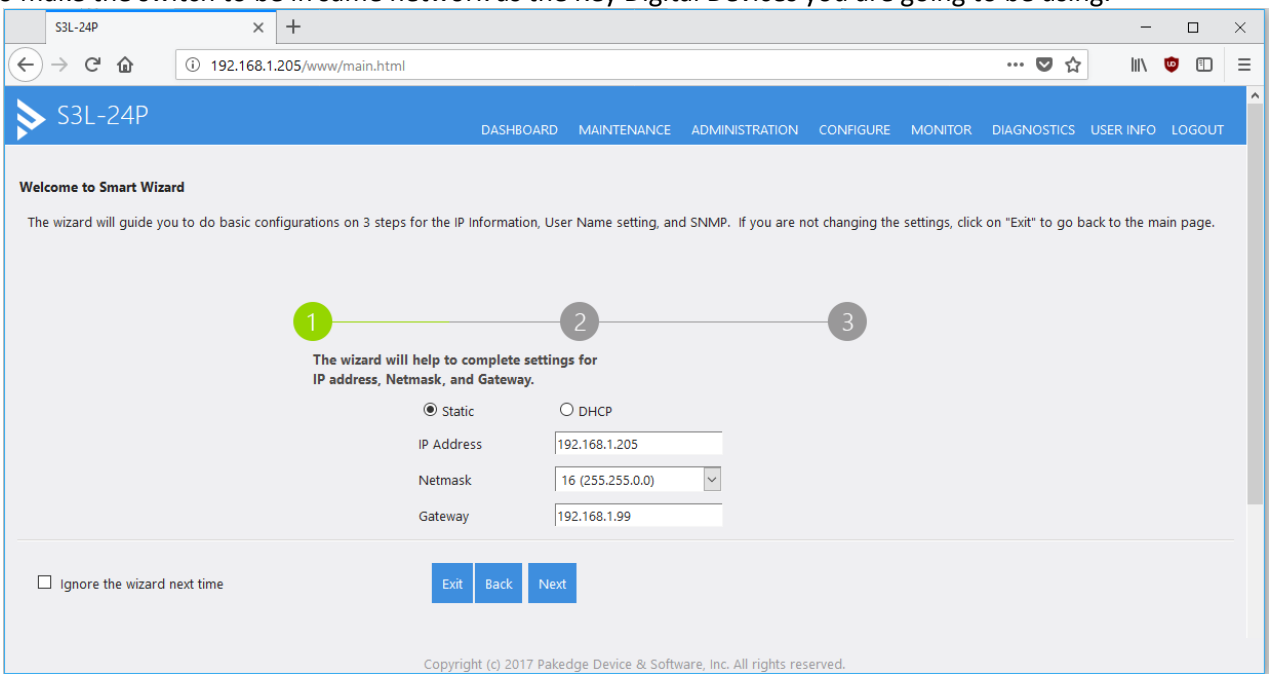
5. Open the Web browser, and enter 192.168.1.205 (default IP address of Pakedge S3L). Then the login window appears as below.



6. Enter the User ID (default user id is “pakedge”) and password (default password is “pakedges”). And then click ‘OK” to login to the switch configuration window. Make sure to set appropriate IP address and netmask to make the switch to be in same network as the Key Digital Devices you are going to be using.



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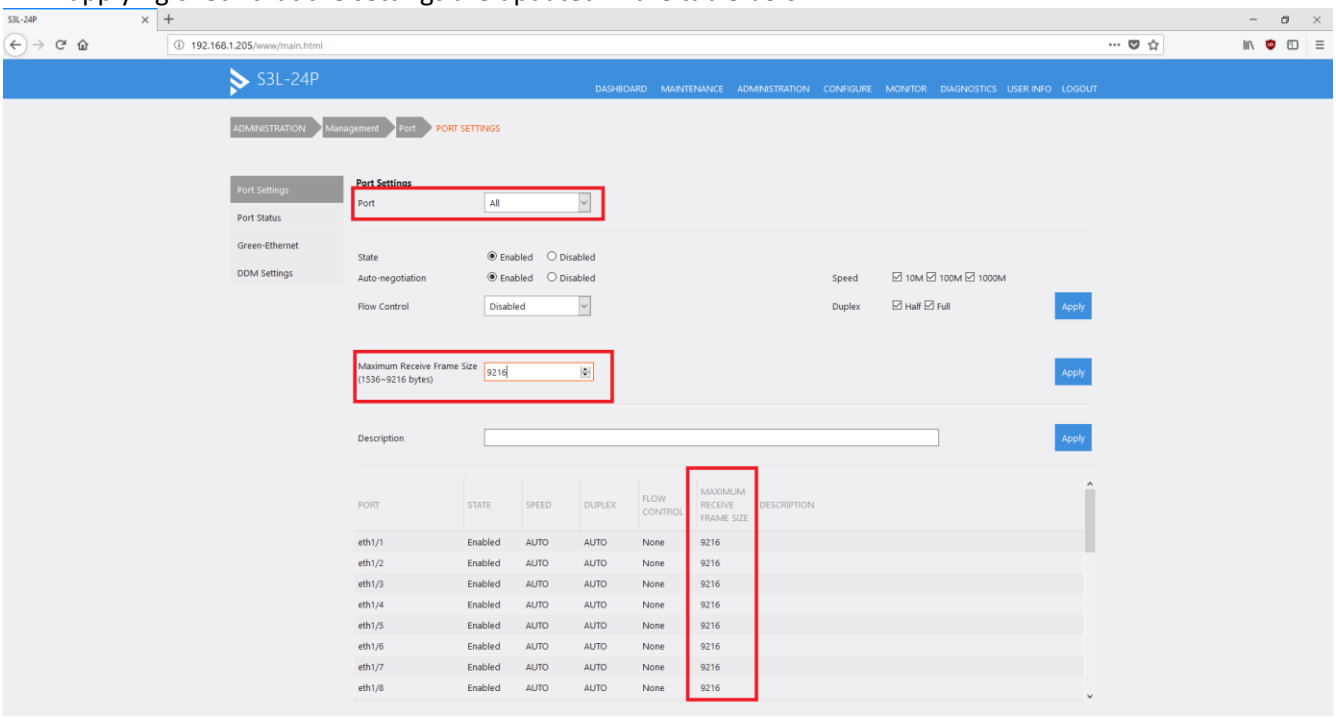
7. To enable Jumbo Frame of the switch, go to Administration -> Management -> Port. (IP922 requires Jumbo Frame(8K) for video/audio transmission via 1G-BaseT). Make sure under Port Settings, Port field is set to All. Then enter “9216” in Maximum Receive Frame Size field as shown below and press Apply button. After applying check that the settings are updated in the table below.



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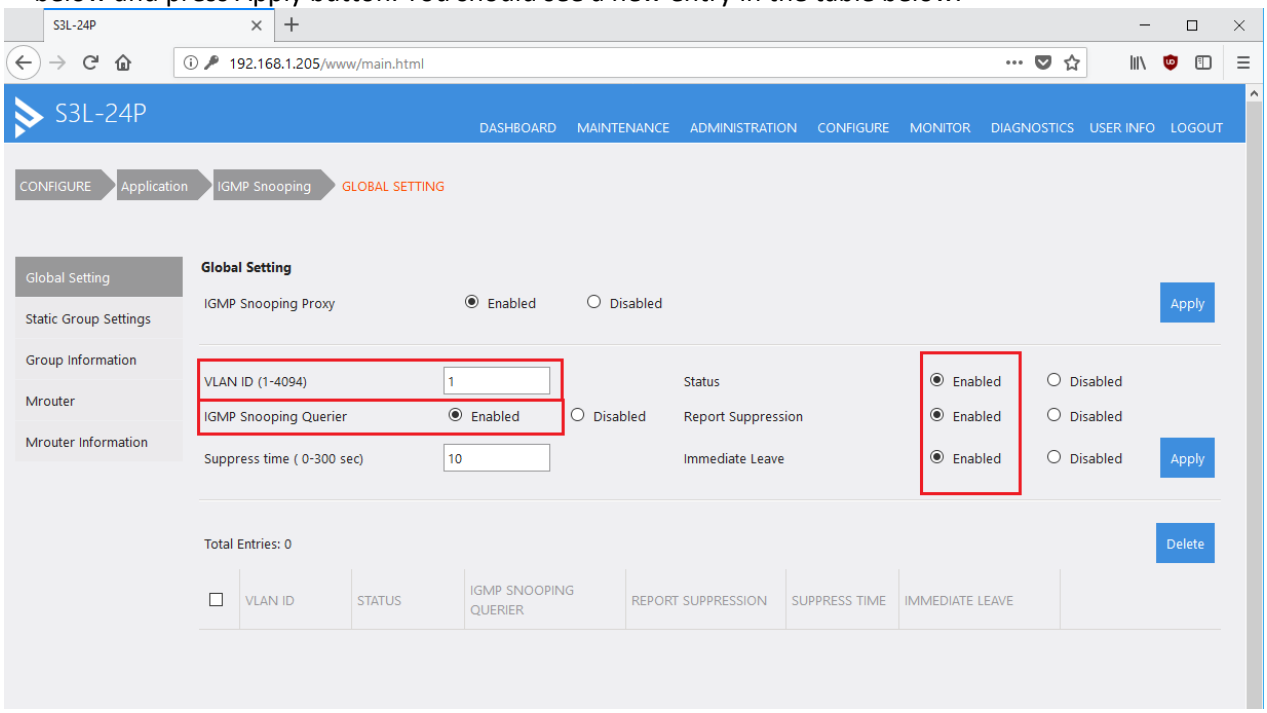
8. To enable IGMP Snooping of the switch, go to Configure -> Application -> IGMP Snooping. (IP922 requires IGMP Snooping for multicasting video/audio transmission via 1G-BaseT), Enable IGMP settings as shown below and press Apply button. You should see a new entry in the table below.



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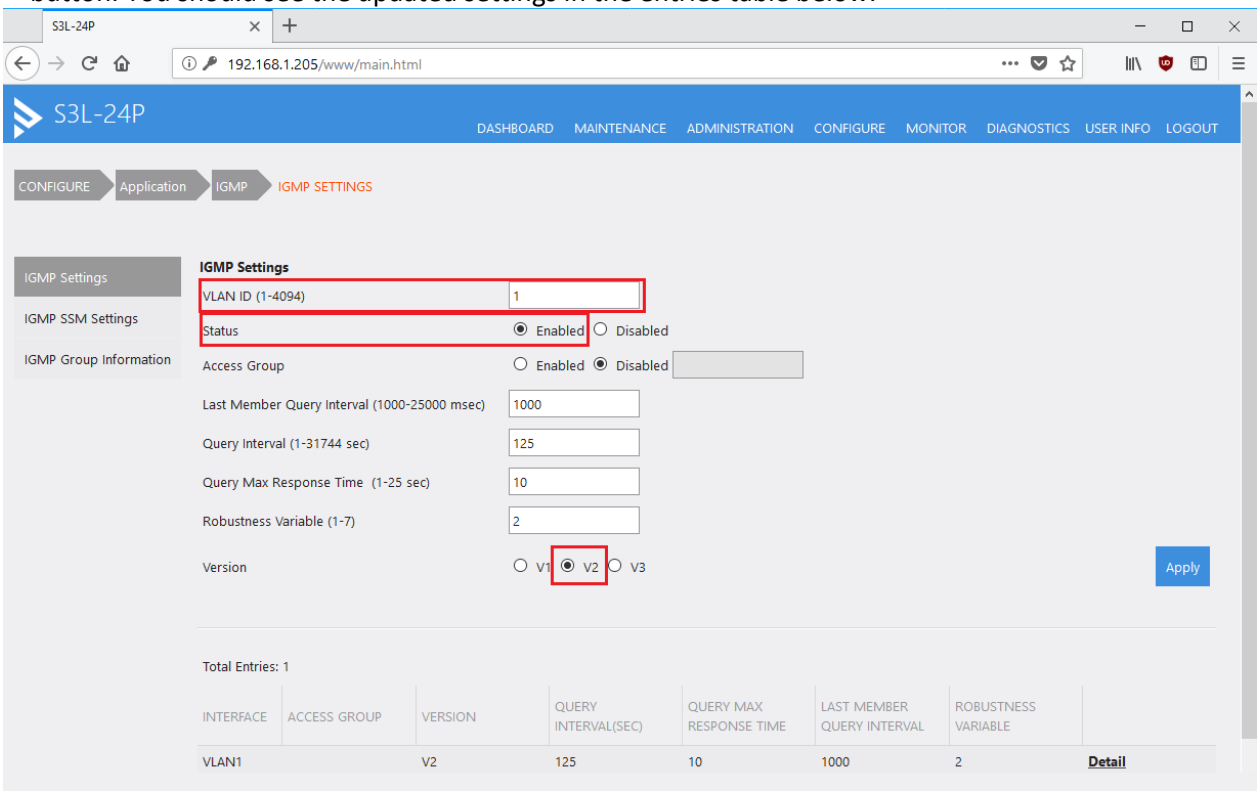
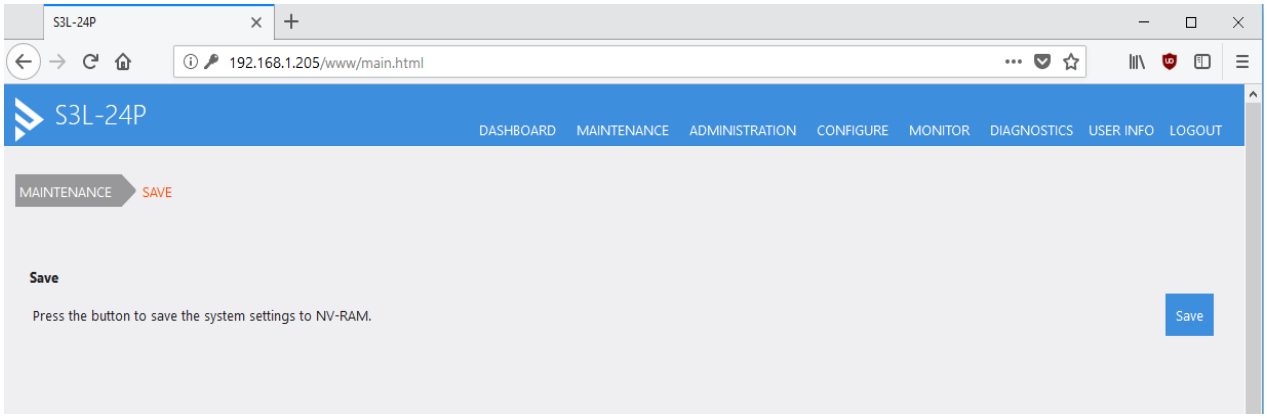
9. Go to Configure -> Application -> IGMP. Enter the settings as shown in the picture below and press Apply button. You should see the updated settings in the entries table below.





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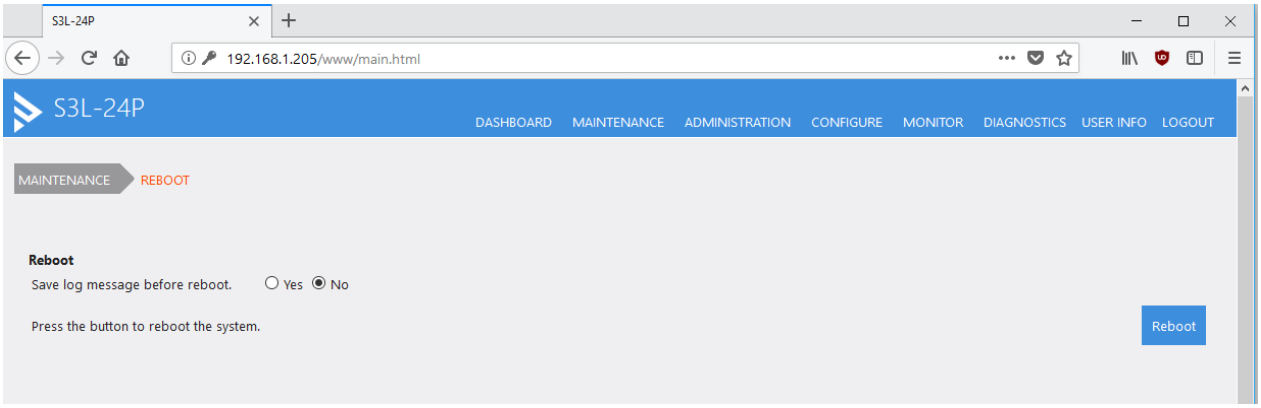
10. Go to Maintenance -> Save. Click on Save button.

11. Go to Maintenance -> Reboot. Click on Reboot button. It takes approximately 30 seconds for the switch to reboot and an additional 30 sec for IP922 to start showing video.



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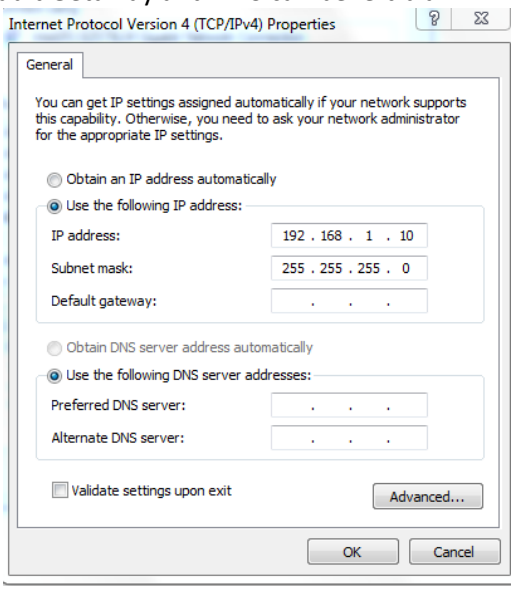
Pakedge SX Series
IGMP Setup Guide for KD-IP822, KD-IP922, KD-IP1022, KD-IP1080

1. Connect to the network switch
    a. Plug an Ethernet cable into any of the ports of the switch
    b. Plug the other end into the Ethernet port of your computer
    c. Power on the Switch
    d. Configure the PC with static IP address of 192.168.1.10 and the subnet mask of 255.255.255.0 to be within range of Pakedge's default settings (IP address 192.168.1.205 subnet mask 255.255.255.0). Default Getaway and DNS can be left blank



2. Open a web browser, and enter **192.168.1.205** (default IP address of Pakedge) to enter the login window

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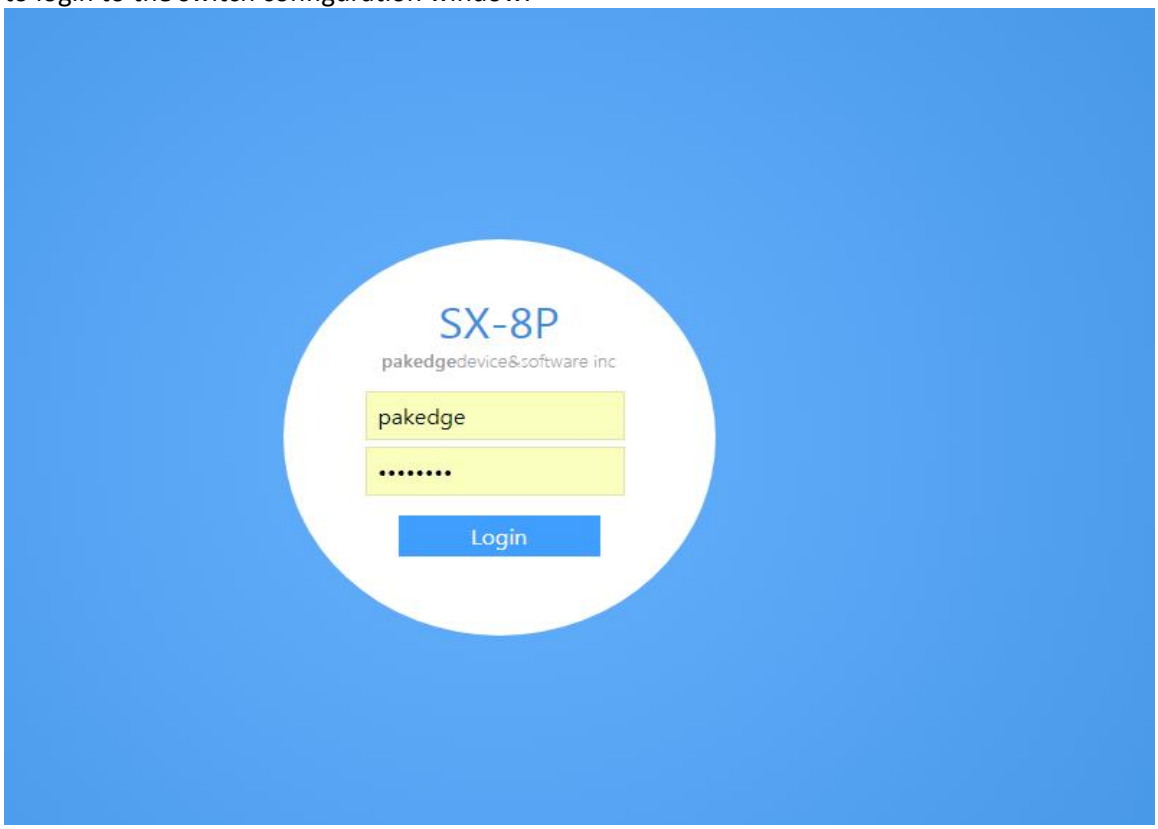
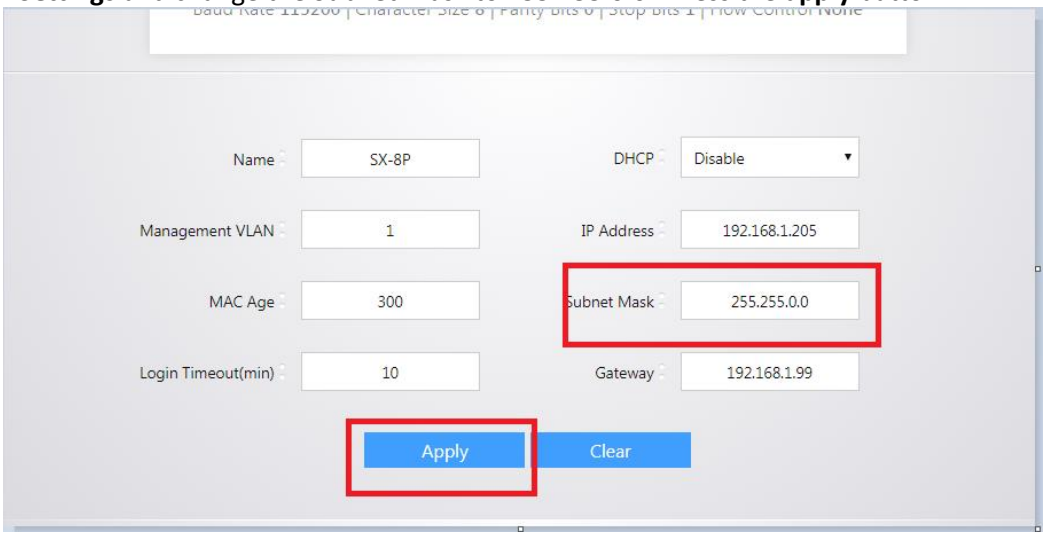
3. Enter the user name and password (default user name is **pakedge** and password is **pakedges**) and then click **Login** to login to the switch configuration window.



4. Go to **System Settings** and change the Subnet Mask to 255.255.0.0. Press the **apply** button.



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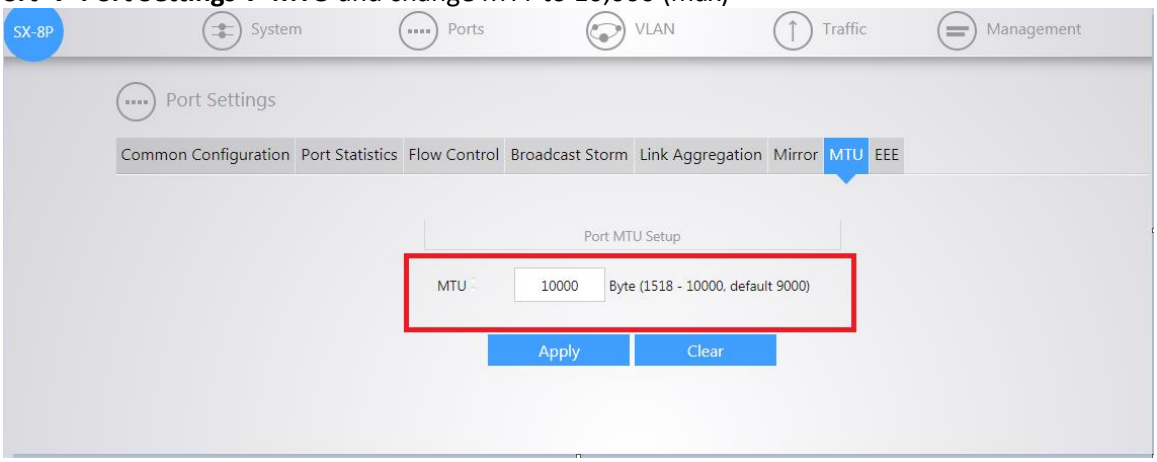
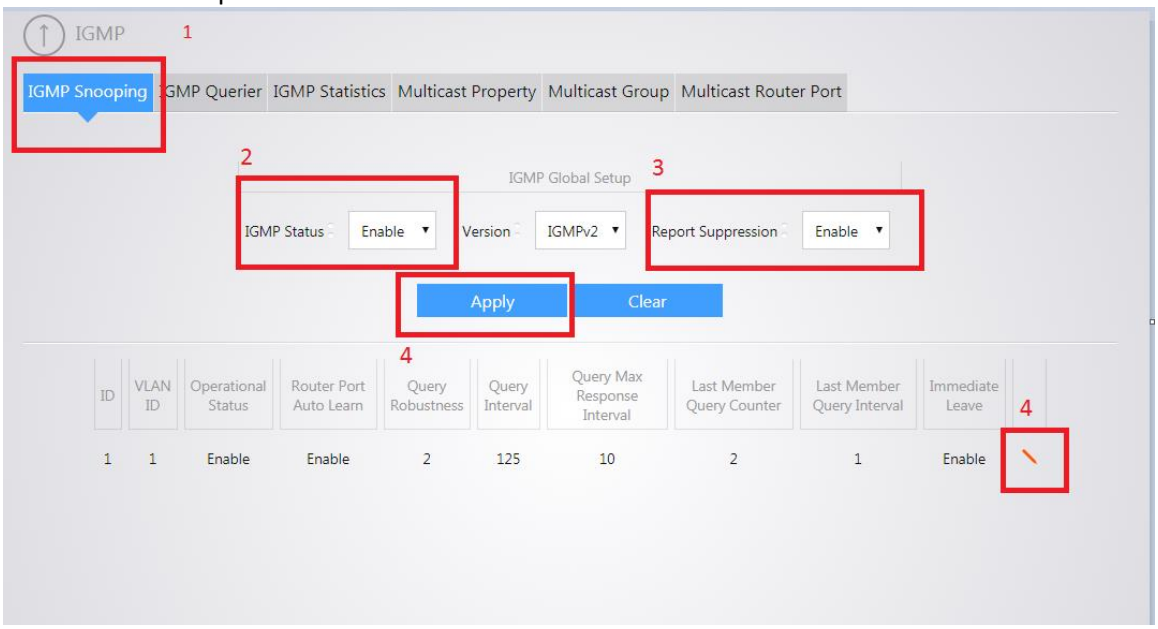
5. Go to **Port → Port Settings→ MTU** and change MTY to 10,000 (max)



6. Go to **TRAFIC→ IGMP → IGMP Snooping** and Enable **IGMP Status,** and **Report Suppression**. Press the **Apply** button.

7. Press the button with red pencil icon 



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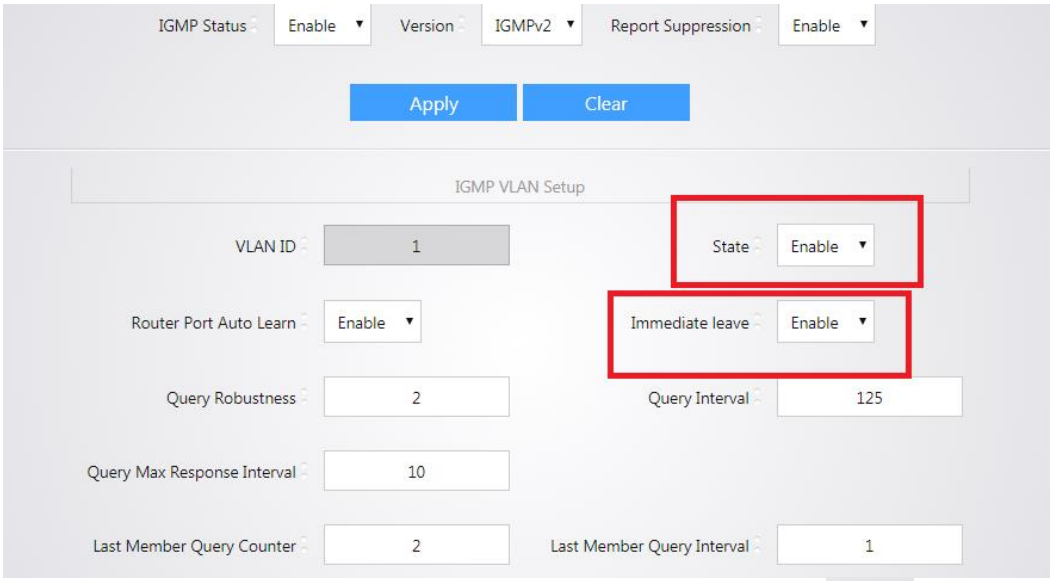
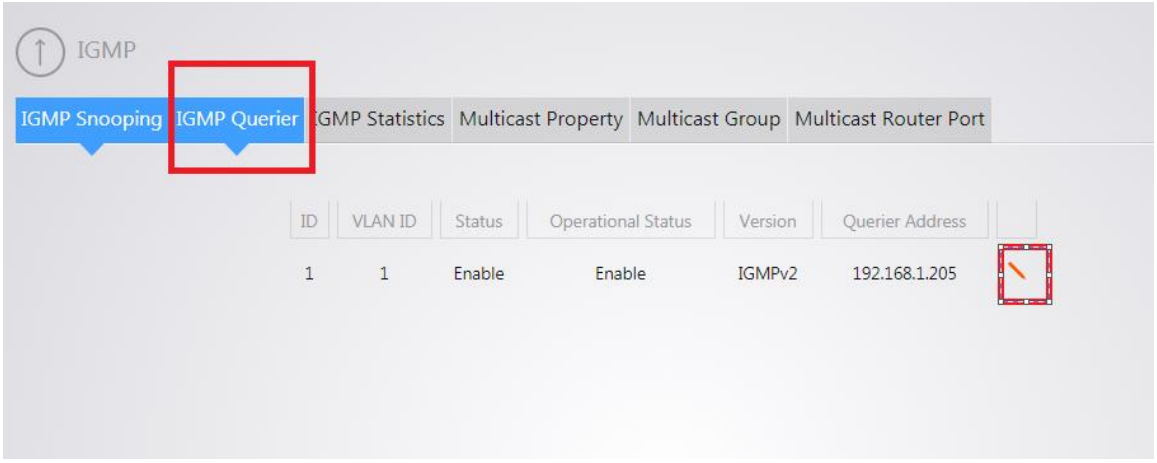
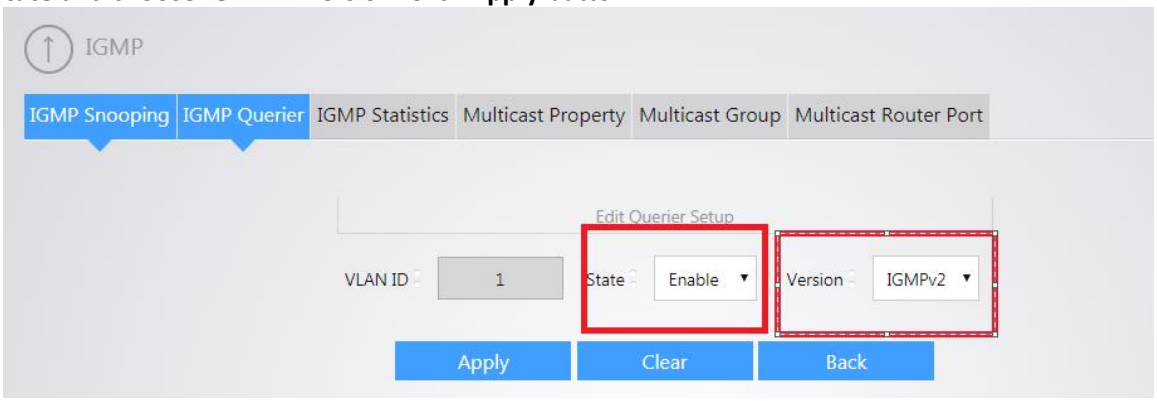
8. Enable **State** and **Immediate Leave**



9. Go to **TRAFIC → IPMC →IGMP Querier** and press the button with red pencil icon



10. Enable **State** and choose **IGMPv2** version. Click **Apply** button



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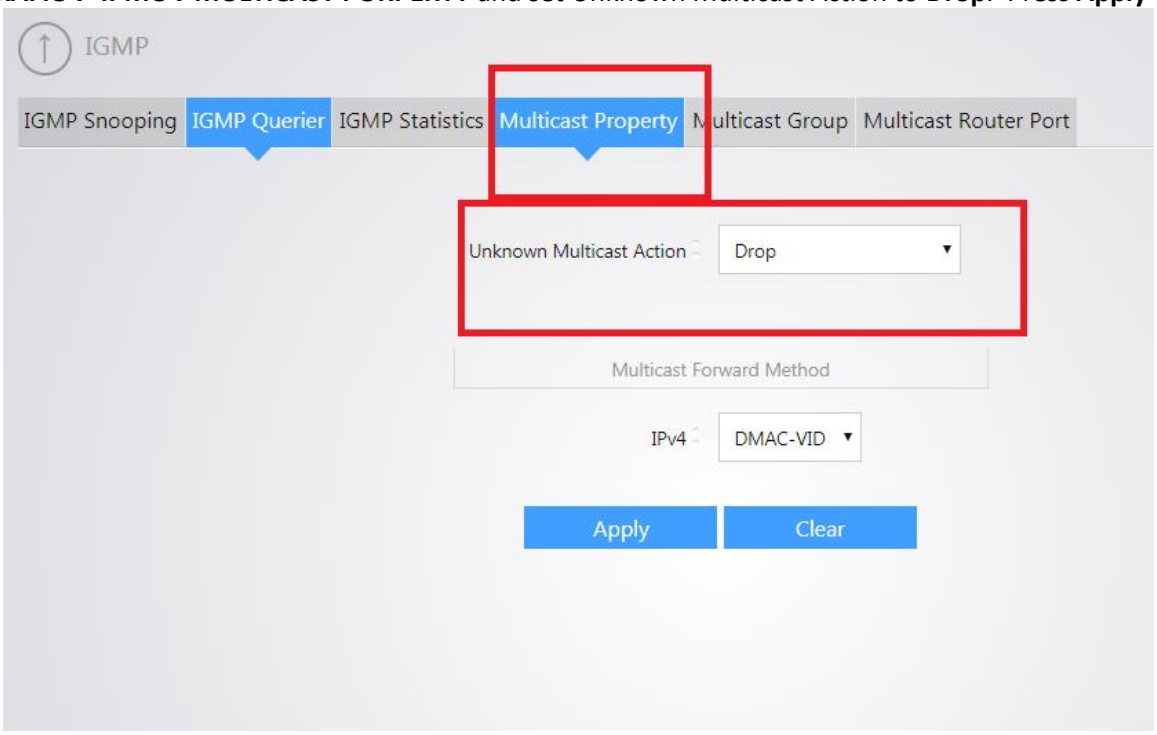
10. Go to **TRAFIC→ IPMC→MULTICAST PORPERTY** and set Unknown Multicast Action to **Drop**. Press **Apply**



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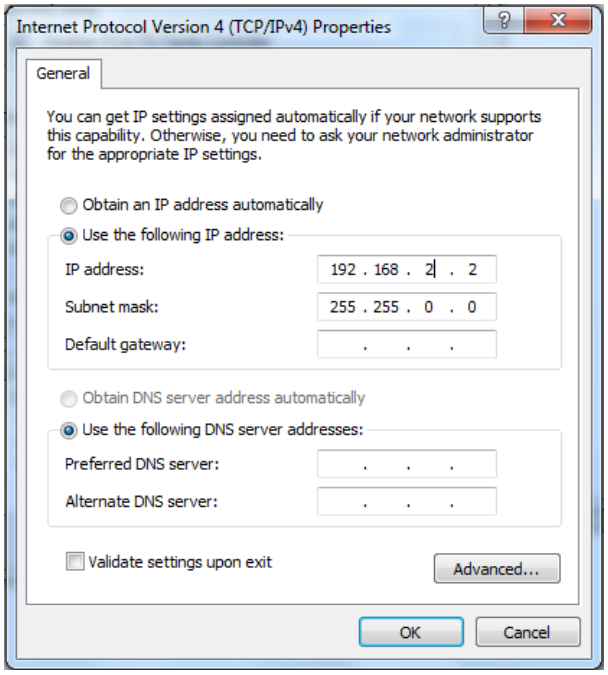
Signamax SC30020
Network Setup Guide for KD-IP822, KD-IP922, KD-IP1022, KD-IP1080

1. Connect your PC directly to the network switch. Your PC will need to be set to a static IP address that is within the subnet of the default IP address of the switch. This series of switches typically use 192.168.2.1 as their default IP address



2. Log into the switch via web browser using the IP address. There will be a prompt to enter credentials. By default, both username and password are set to “admin”

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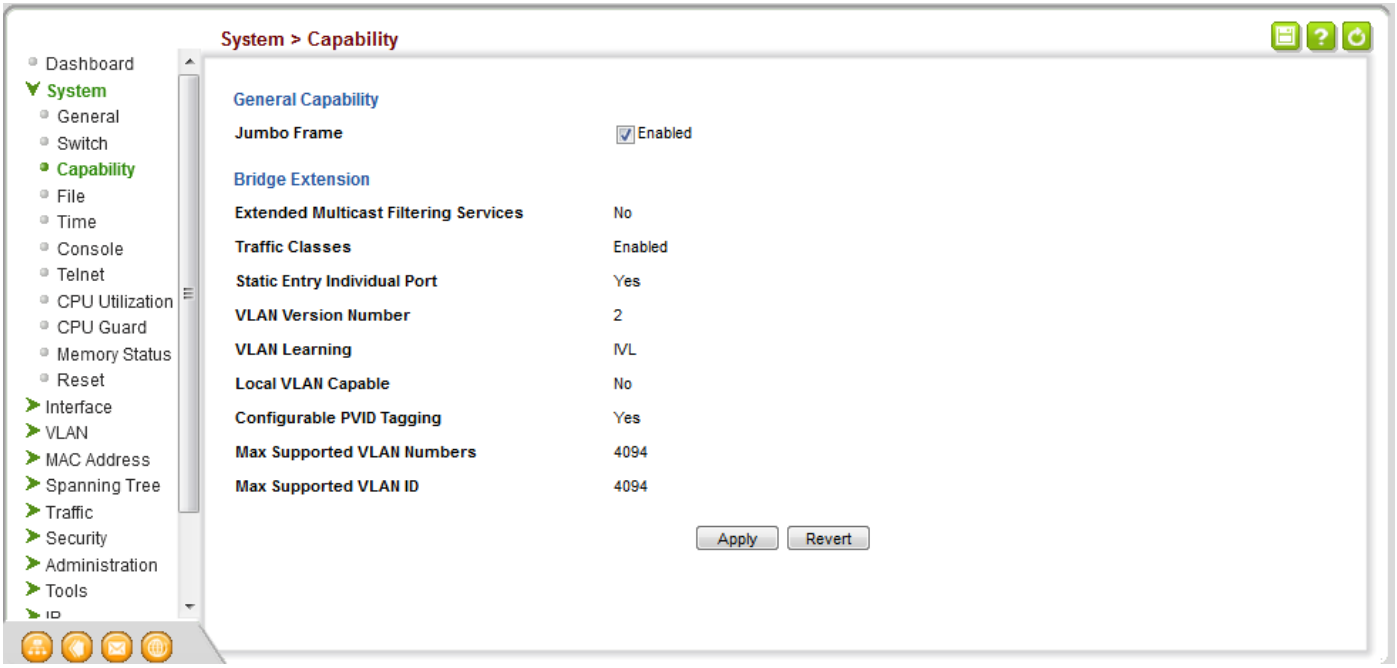
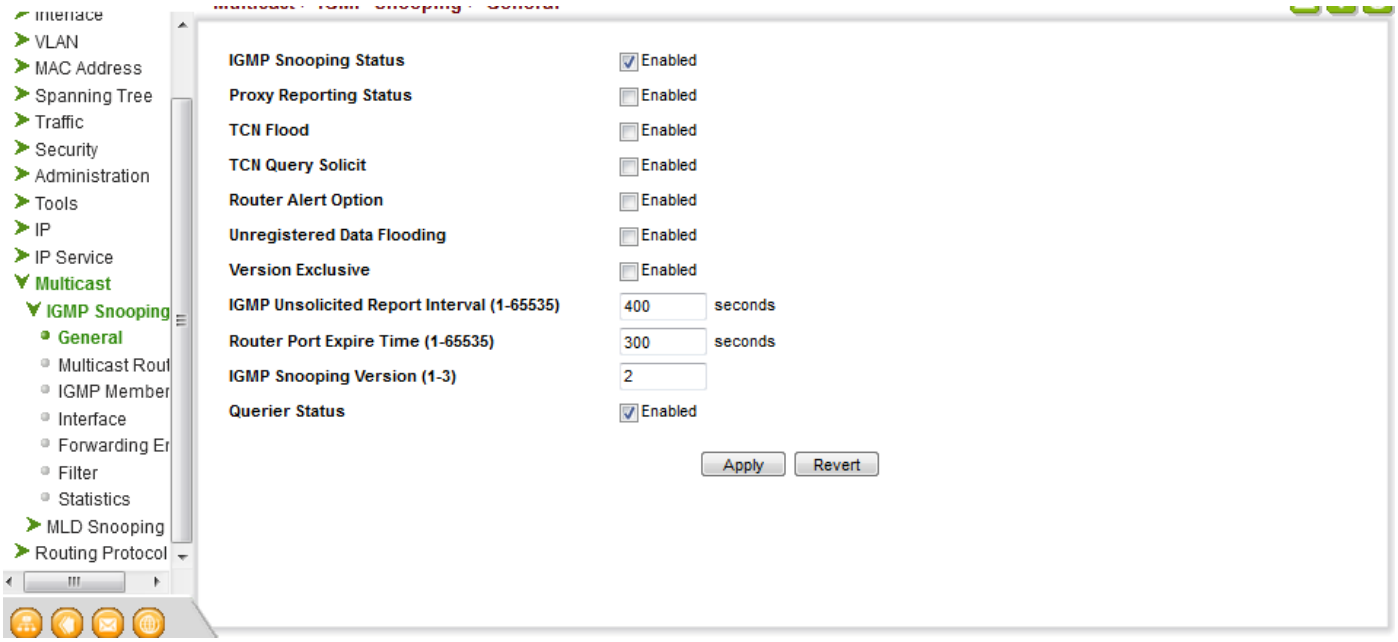
3. Navigate to System -> Capability, and enable Jumbo Frames as depicted in the below image



4. Navigate to Multicast -> IGMP Snooping -> General to access basic IGMP settings. On this page, enable IGMP snooping and Querier, as depicted in the below image.



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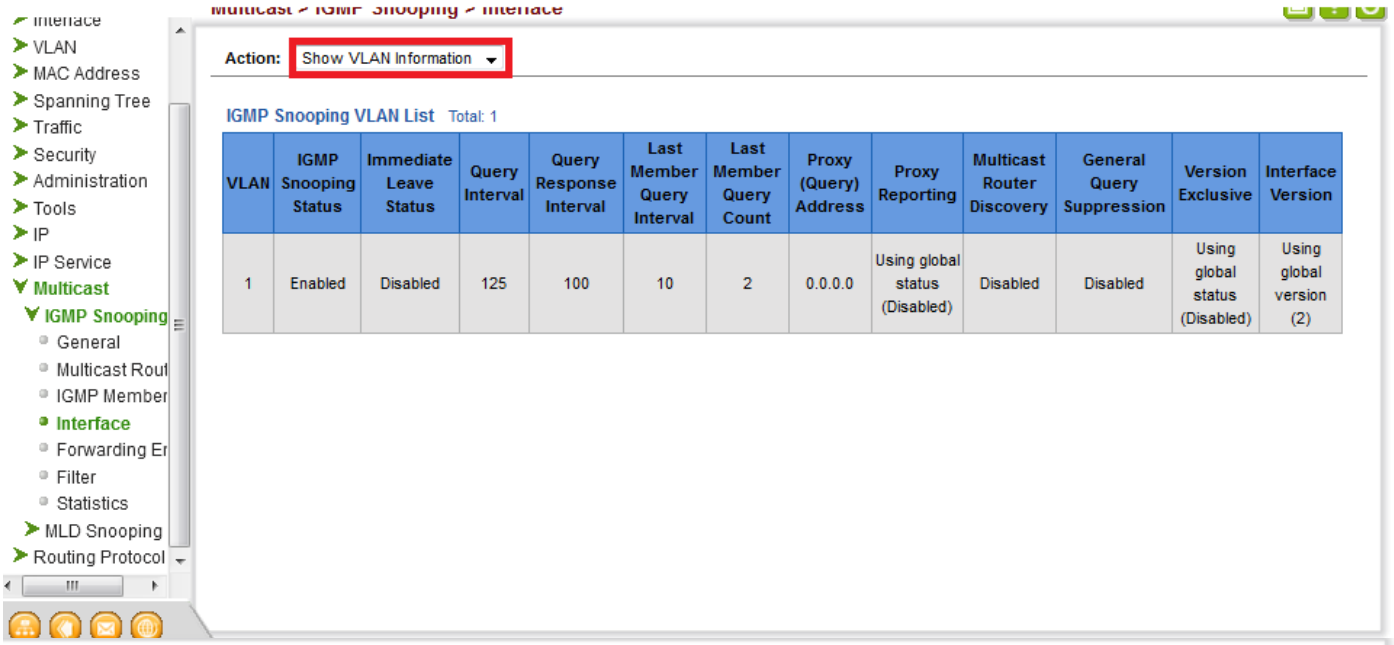
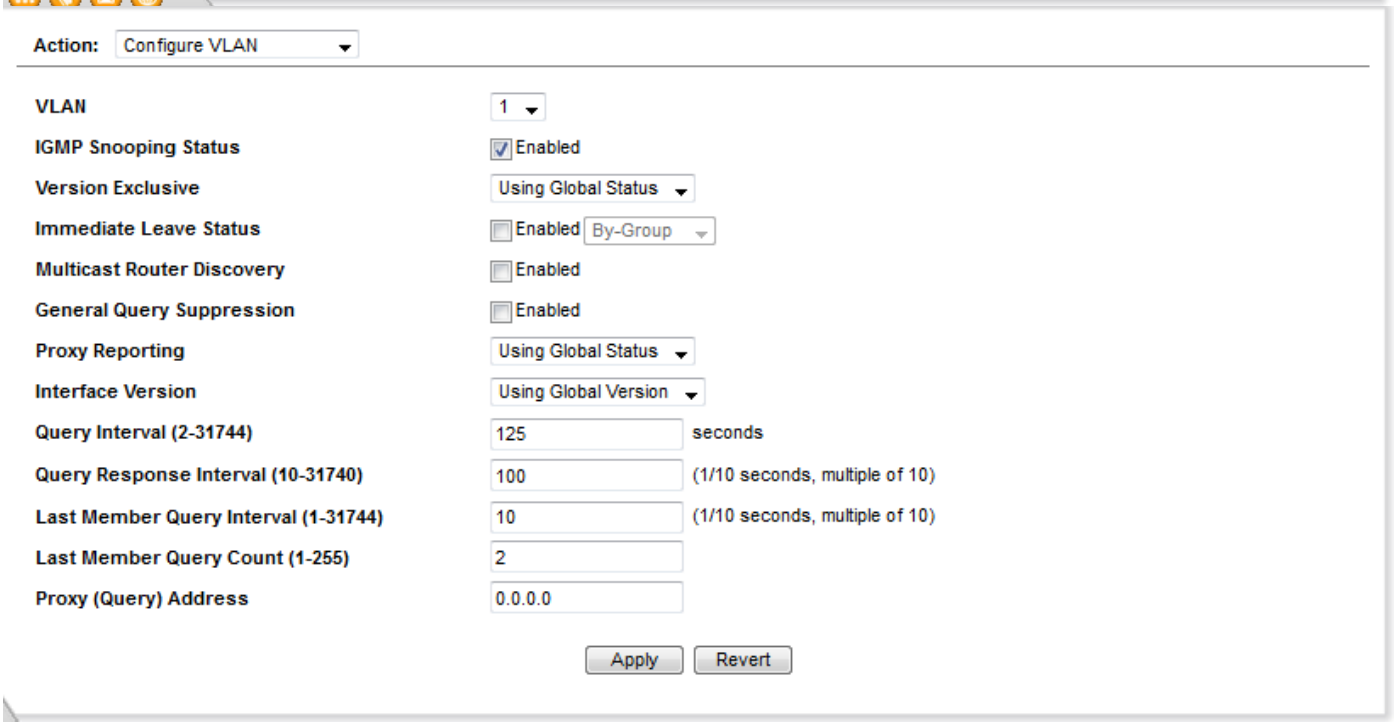
5. Navigate to Multicast -> IGMP Snooping -> Interface. From this page, use the dropdown to select "Configure VLAN". Set VLAN 1 up as depicted below.





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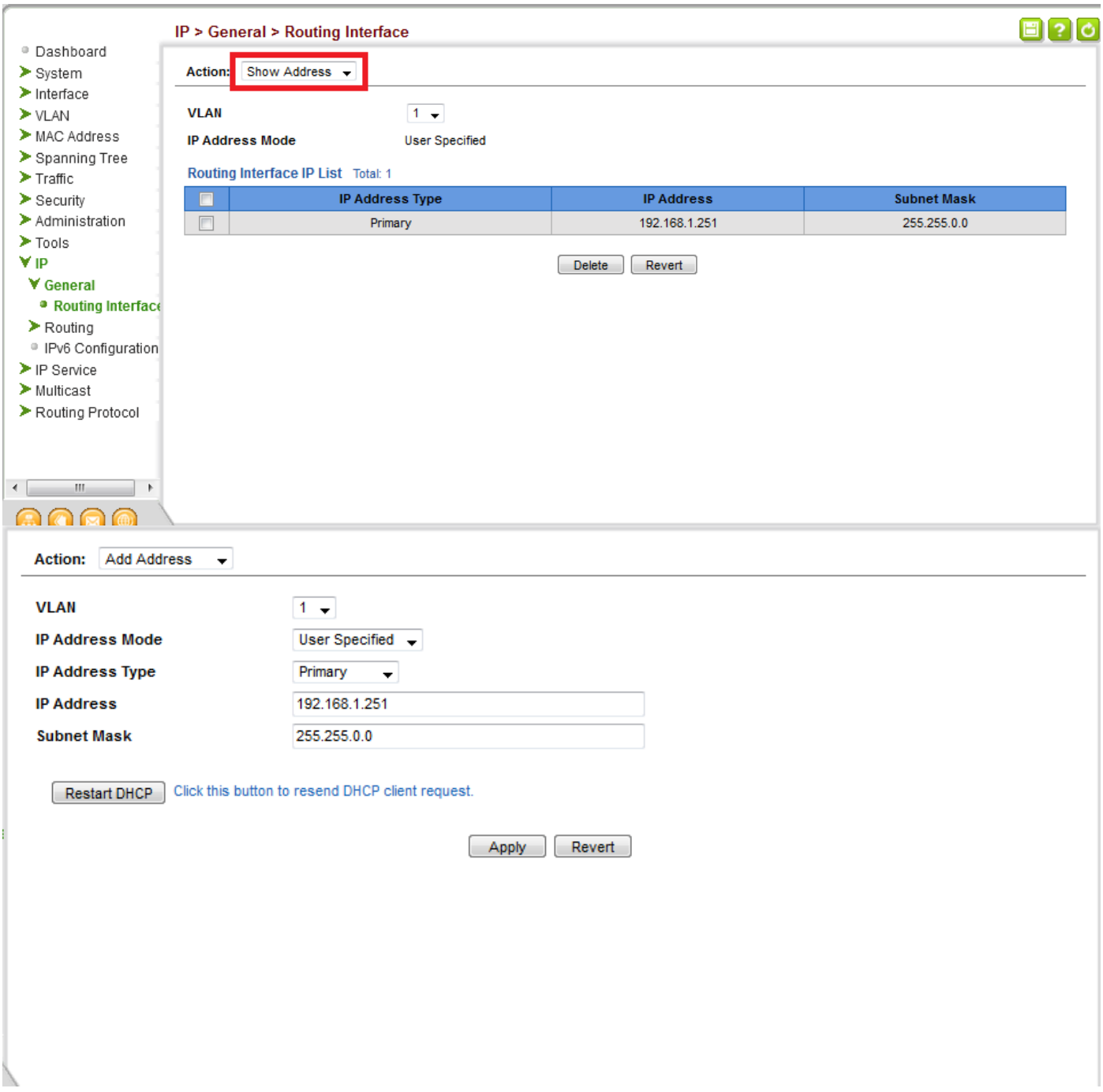
6. Navigate to IP -> General -> Routing Interface. From this page, use the dropdown to select “Add address”. Add a new static, primary IP address for VLAN 1 from this screen. For best performance, use an IP in the same subnet as your system.



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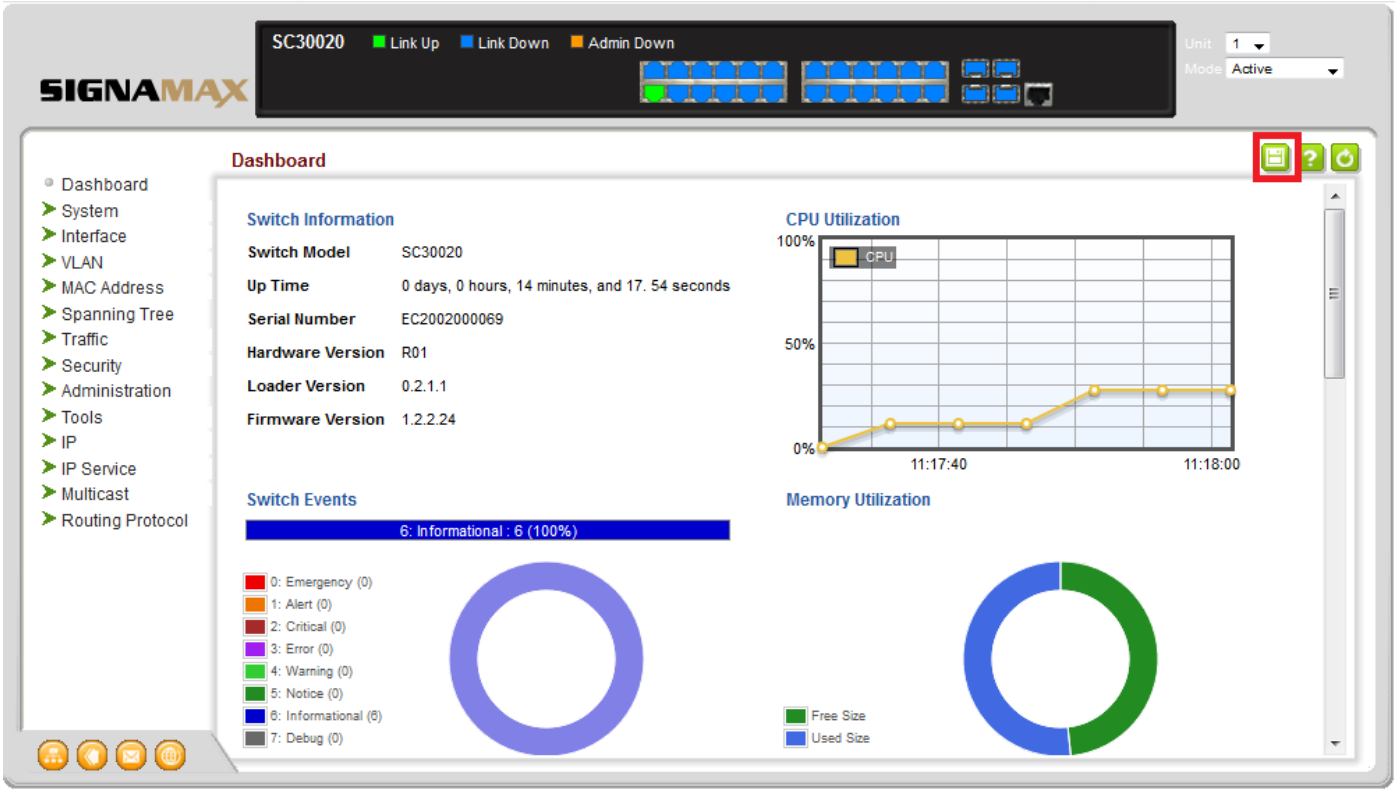
7. To save all settings, click on the floppy disk button on the top right corner of the control panel, then reboot. After rebooting, the switch will be ready to manage an IP system



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IGMP Setup Guide: Titan Networx
1080p Systems (KD-IP1080, KD-IP120)

1. **IMPORTANT**: Disconnect all the DHCP devices like routers, servers from the Linksys network switch.
2. Locate a pinhole "RESET" button at the front panel left bottom corner of your Titan Networx network switch. Using a paper clip press and hold a reset button for more than 10 seconds and then release. Wait while the device is restarted and ready to use (about 5min).
3. **IMPORTANT**: At this point all the displays should be displaying distorted randomly flashing video images.
4. Connect your PC to the Titan Networx network switch directly using a network cable.
5. If you have not done yet, configure your PC's IP address to the same range as the switch (default **192.168.1.xxx**).
6. Enter the switch's IP address in your browser and press ENTER (check the user manual for a default IP address – usually, it is: **192.168.1.30**).
7. Enter user name and password (check the user manual for a default user name and password; it is usually "**admin**" for both). Then click **Log In.**

8. Navigate to **Administration** -> **System Configuration**. Select **IP Address** box. IP address can be changed by the administrator depending on the network configuration. If you are using multiple network switches it is recommended to set first one to **192.168.1.251**, second to **192.168.1.252**, and so on (we will change an IP address to **192.168.1.251**). Set **Subnet Mask** to **255.255.255.0**, set **Gateway** to **192.168.1.1** (in this case), make sure that Management VLAN is set to"**1**", DHCP is set to "**Disable**" and click **OK**. Page will refresh with the new IP address. If it is timed out than log in again using the new IP address.

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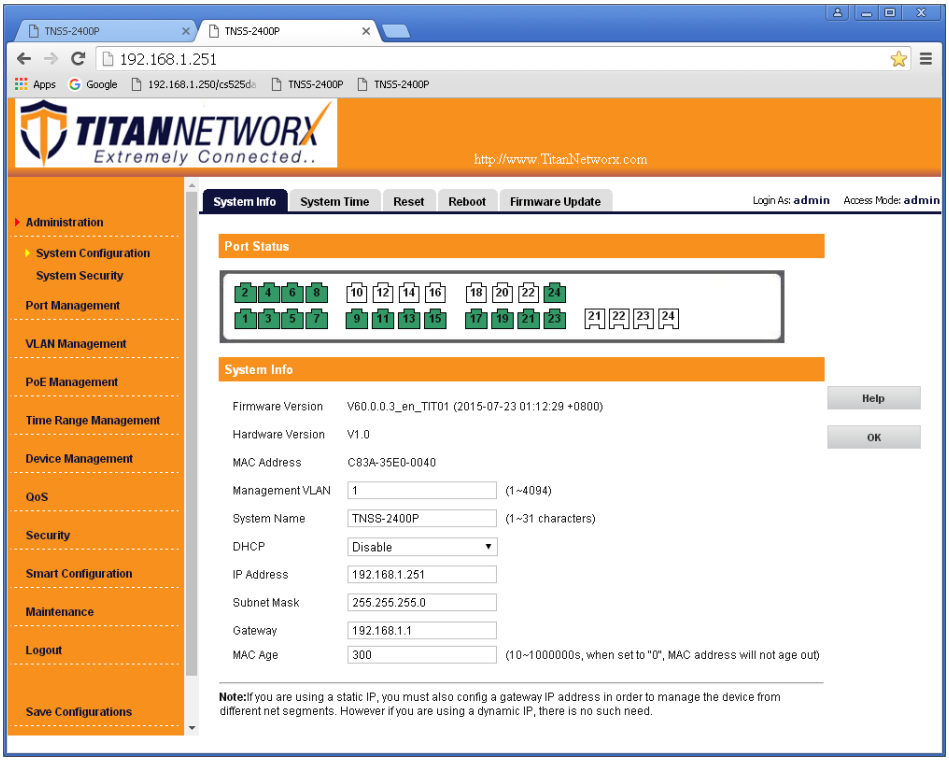
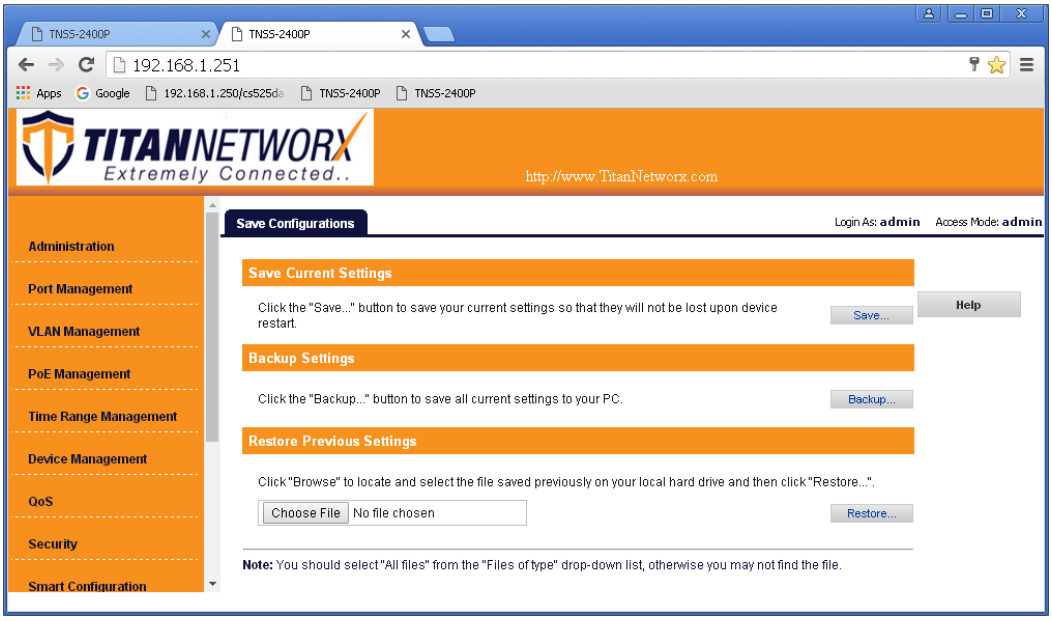
9. Make sure your screen looks exactly like pictured below.



10. **Click Save Configurations** on the left bottom corner. New screen will appear. Click **Save** under **Save Current Settings**, then **OK** and **OK** again.



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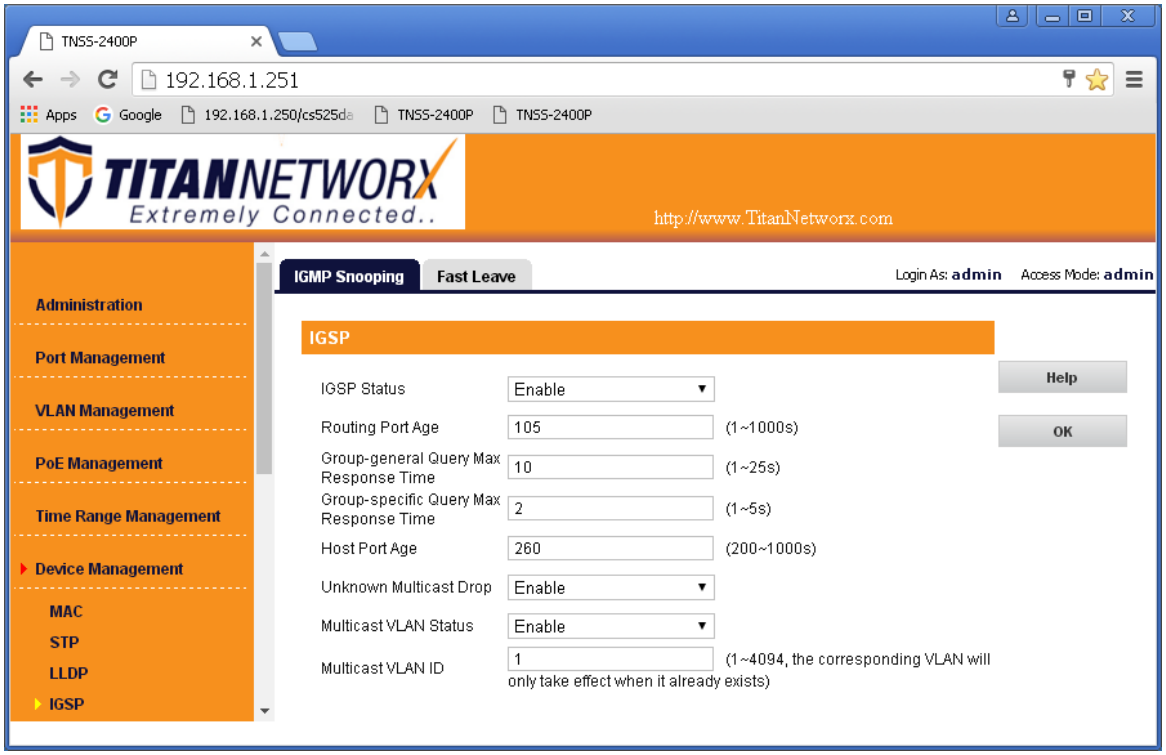
11. Navigate to **Device Management**-> **IGSP,** Select **IGMP Snooping** tab. Set **IGSP Status** to **Enable**, set **Unknown Multicast Drop** to **Enable**, set **Multicast VLAN Status** to **Enable**, set **Multicast VLAN ID** to **"1"**, and leave all other settings as indicated below. Click **OK**, and **OK** again.



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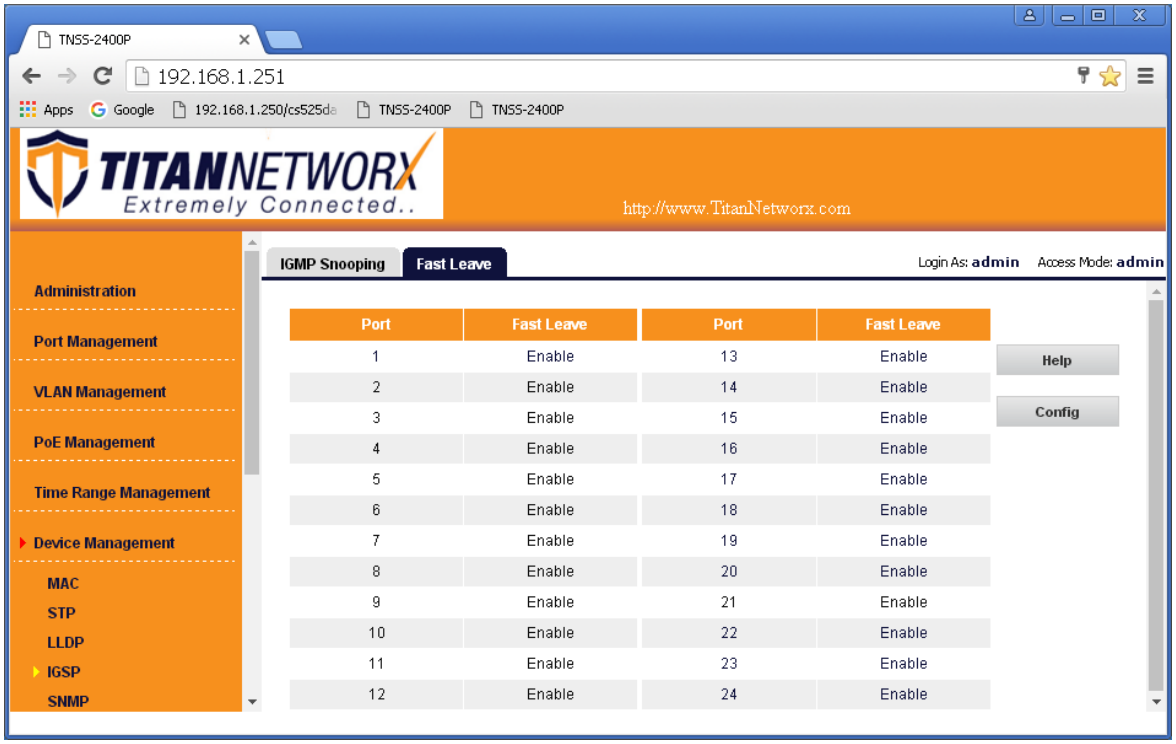
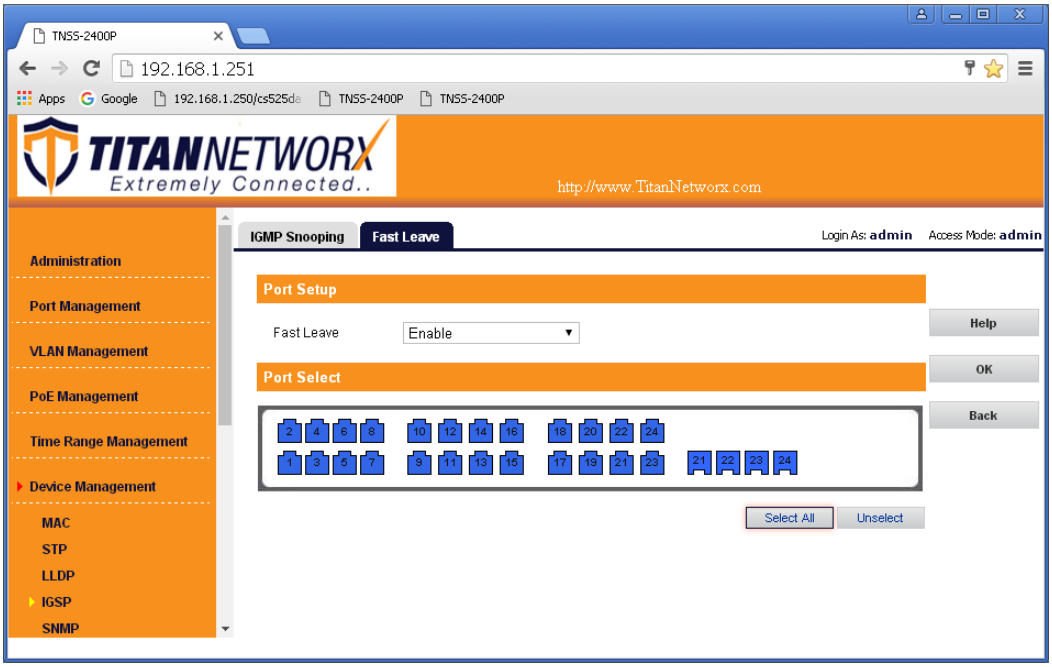
12. Select **Fast Leave** tab. Click **Config** button.



13. Set **Fast Leave** to **Enable**, click **Select All.** Click **OK**, and **OK** again.



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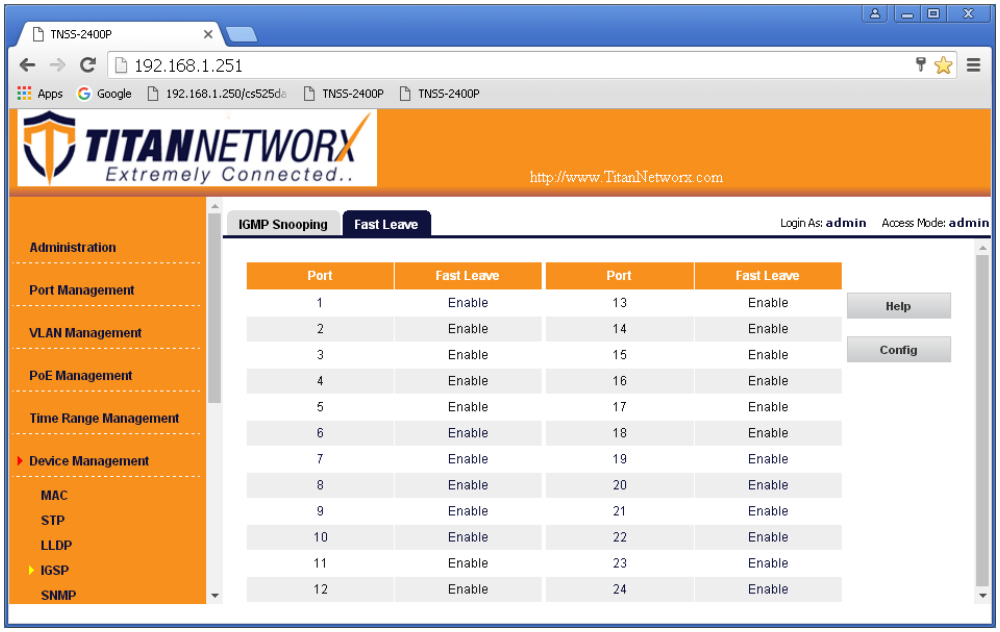
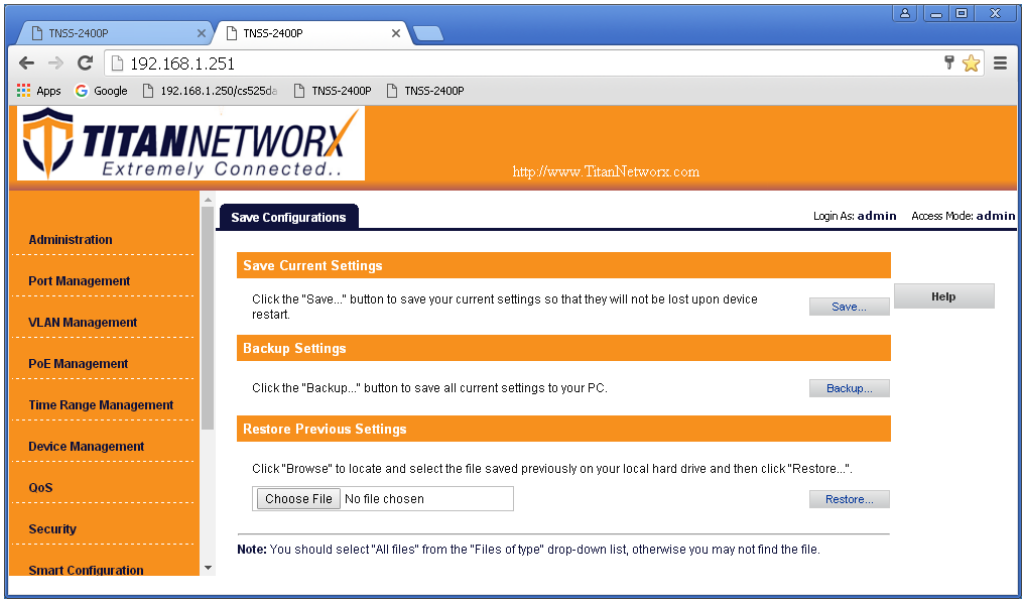
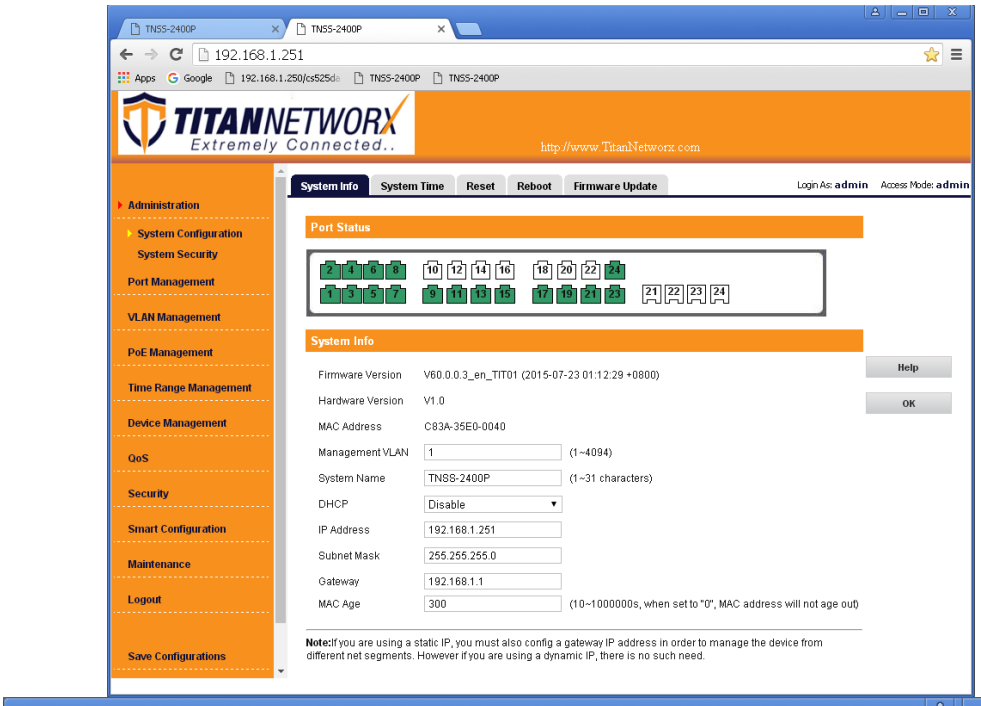
14. Make sure all the ports are set to **Enable**.

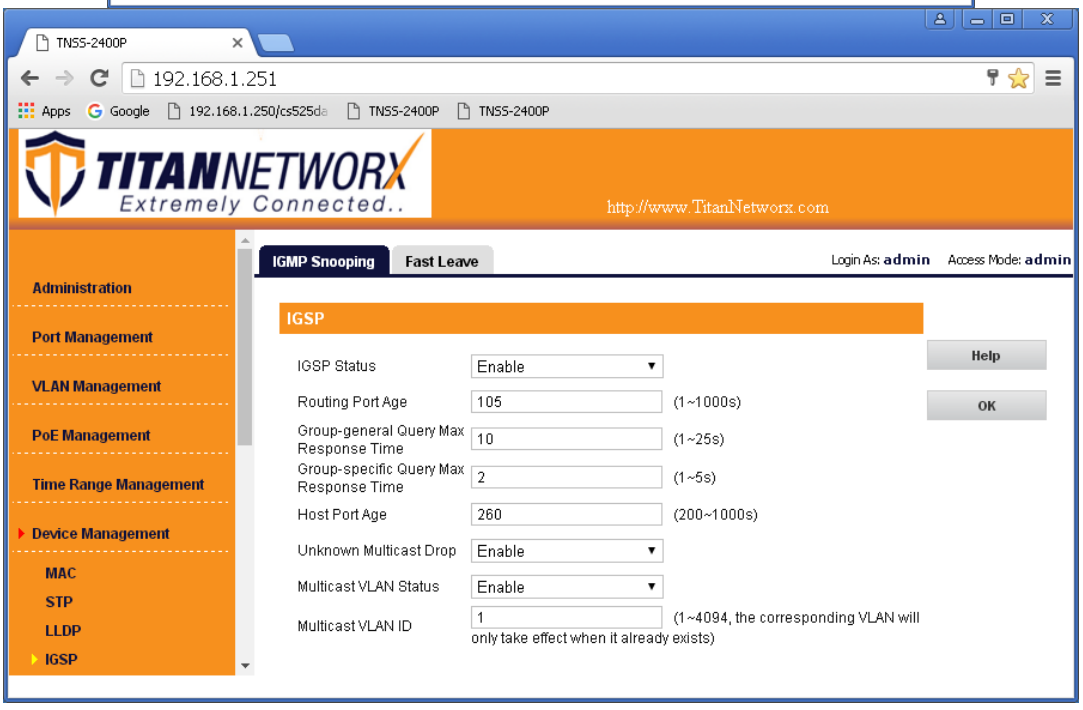


15. **Click Save Configurations** on the left bottom corner. New screen will appear. Click **Save** under **Save Current Settings**, than **OK** and **OK** again.



16. Power down Titan Networx network switch and power it up back again. Wait for the switch to reboot.
17. Log in to your Titan Networx network switch again and make sure that IGMP settings are intact:


TNSS-2400P
192.168.1.251
Apps
Google
TITANNETWORX
Extremely Connected..
http://www.TitanNetworx.com
System Info
System Time
Reset
Reboot
Firmware Update
Login As: admin
Access Mode: admin
Administration
System Configuration
System Security
Port Management
VLAN Management
PoE Management
Time Range Management
Device Management
QoS
Security
Smart Configuration
Maintenance
Logout
Save Configurations
Port Status
System Info
Firmware Version V60.0.0.3_en_TIT01 (2015-07-23 01:12:29 +0800)
Hardware Version V1.0
MAC Address C83A-35E0-0040
Management VLAN 1 (1~4094)
System Name TNSS-2400P (1~31 characters)
DHCP Disable
IP Address 192.168.1.251
Subnet Mask 255.255.255.0
Gateway 192.168.1.1
MAC Age 300 (10~1000000s, when set to "0", MAC address will not age out)
Note:If you are using a static IP, you must also config a gateway IP address in order to manage the device from different net segments. However if you are using a dynamic IP, there is no such need.
Help
OK


TNSS-2400P
192.168.1.251
Apps
Google
TITANNETWORX
Extremely Connected..
http://www.TitanNetworx.com
IGMP Snooping
Fast Leave
Login As: admin
Access Mode: admin
Administration
Port Management
VLAN Management
PoE Management
Time Range Management
Device Management
MAC
STP
LLDP
IGSP
IGSP
IGSP Status Enable
Routing Port Age 105 (1~1000s)
Group-general Query Max Response Time 10 (1~25s)
Group-specific Query Max Response Time 2 (1~5s)
Host Port Age 260 (200~1000s)
Unknown Multicast Drop Enable
Multicast VLAN Status Enable
Multicast VLAN ID 1 (1~4094, the corresponding VLAN will only take effect when it already exists)
Help
OK

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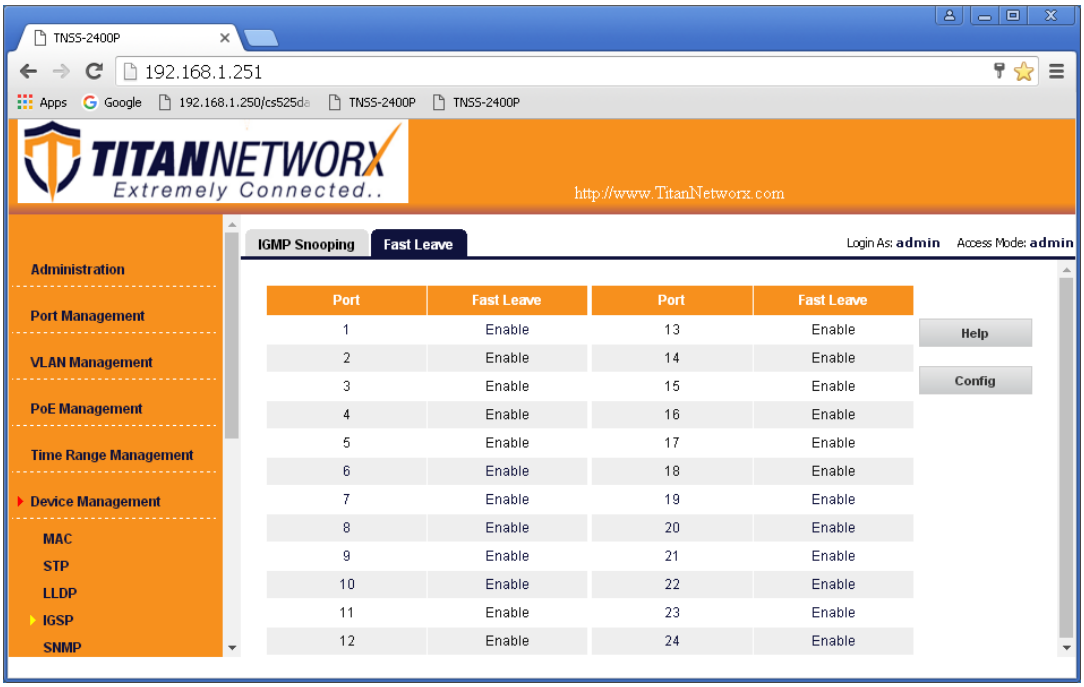


18. At this point your Titan Networx network switch is set and ready to use.

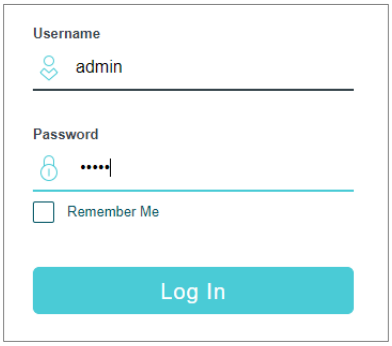
19. Connect your encoders, decoders, allow approx 3 mins for bootup, and perform a network scan using KD Management Software.

IGMP Setup Guide: TP-Link TL-SG2428P (Single use only available, not stackable)
TP-Link TL-SG3210XHP-M2 (stackable)
TP-Link TL-SG3428XMP (stackable)
4K Systems (KD-IP822, KD-IP922, KD-IP1022)

Steps related to stacking multiple switches are in red

1. Power-up the TP-Link network switch.
2. **IMPORTANT**: Disconnect all the DHCP devices like routers or servers from the TP-Link network switch.
3. (If you want **factory reset** of the switch) Locate a pinhole "RESET" button at the front center panel of your TP-Link network switch. Using a paper clip press and hold a reset button for more than 5 seconds and then release. The factory reset process generally takes 5 minutes to complete

4. Connect your PC to the TP-Link network switch directly using a network cable.
5. If you have not done yet, configure your PC's IP address to the same range as the switch. (default subnet of the switch - **192.168.0.xxx**).
6. Enter the switch's IP address in your browser and press ENTER (default IP address - **192.168.0.1**).
7. Enter username and password (default "**admin**" for both). Then click **Log In.** If this is the first time logging in, there will be a prompt to create a new password.



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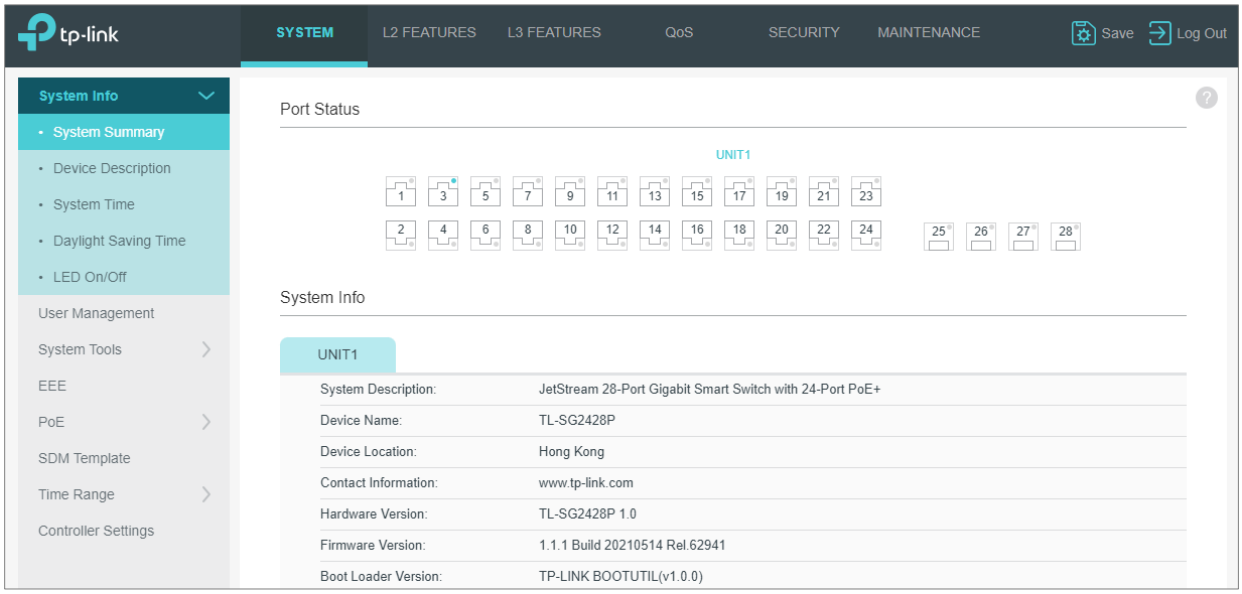
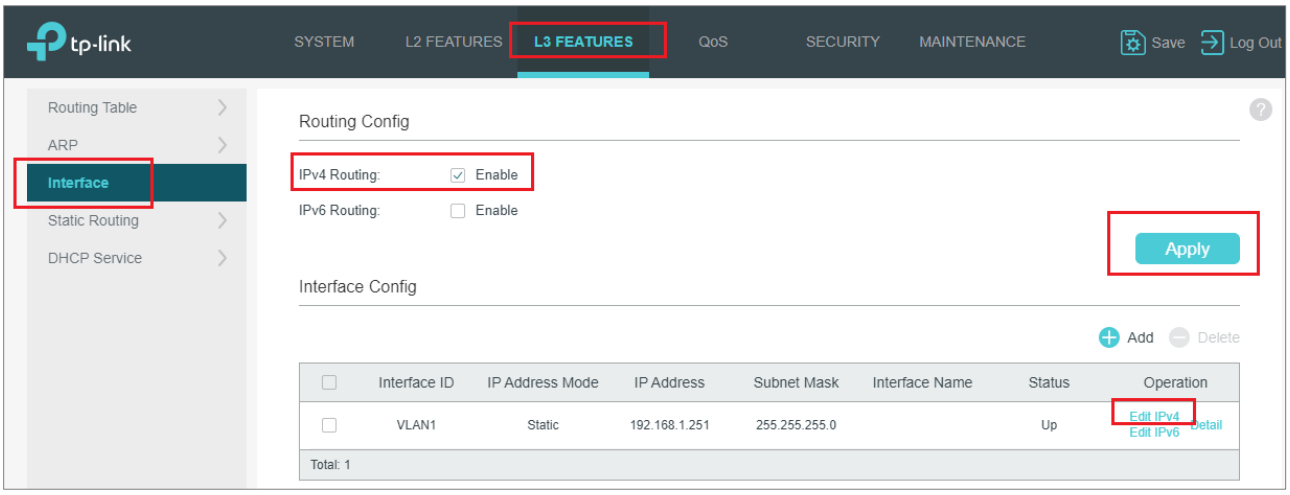


8. Set the static IP address of the network switch.

Go to **L3 FEATURES** -> **Interface**. Ensure IPv4 Routing is enabled. If not, apply the IPv4 routing.

Click “Edit IPv4” to set the desired IP address of the network switch.



9. Select “Static” and enter the desired IP address and subnet mask. Click Apply.

IP address can be changed by the administrator depending on the network configuration.

We recommend using an address that is within the subnet of the AVoIP system for ease of maintenance

After applying, you will need to log in again using new IP address. (Ensure the PC and switch are the same

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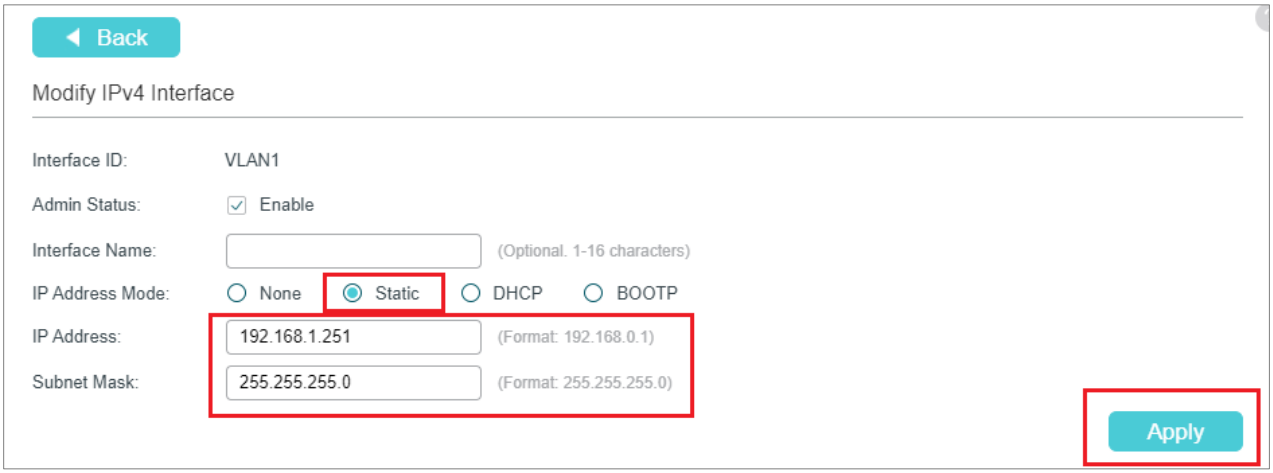
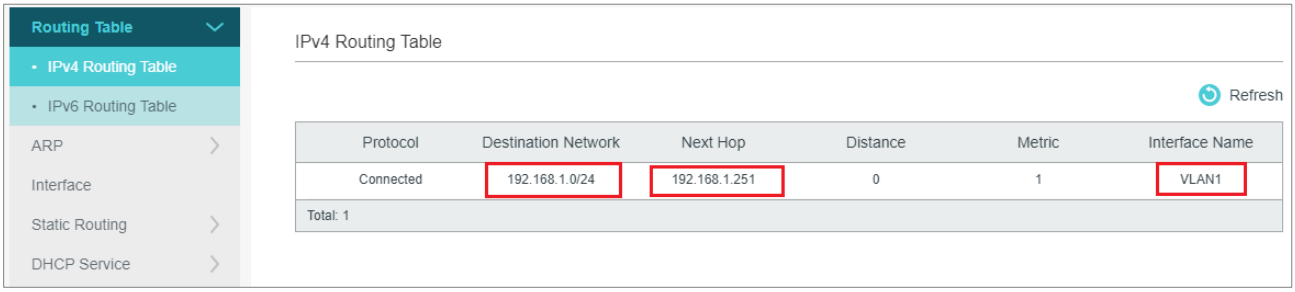
network before login).



10. Confirm the updated IP address table.
    Go to **L3 FEATURES** -> **IPv4 Routing Table.**



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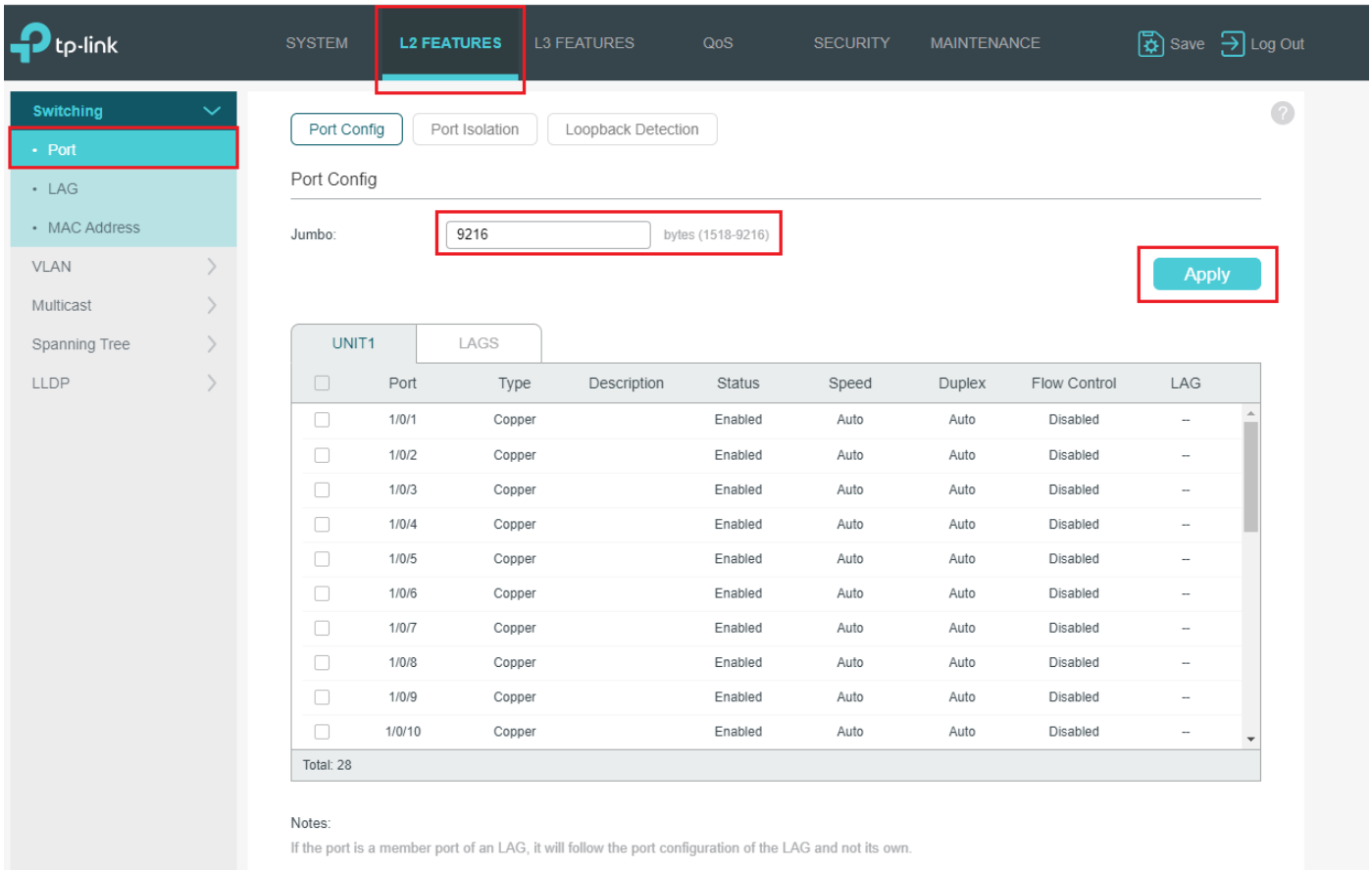
11. Enable Jumbo Frames.

    Go to **L2 Features** -> **Port** and set frame size to 9216



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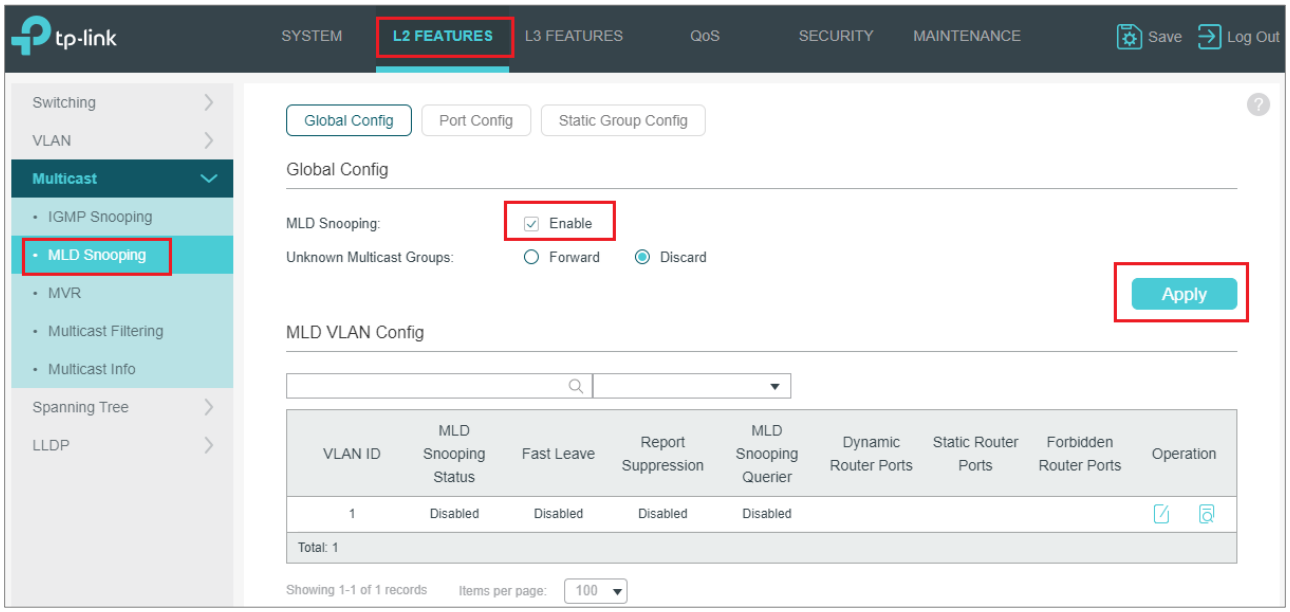
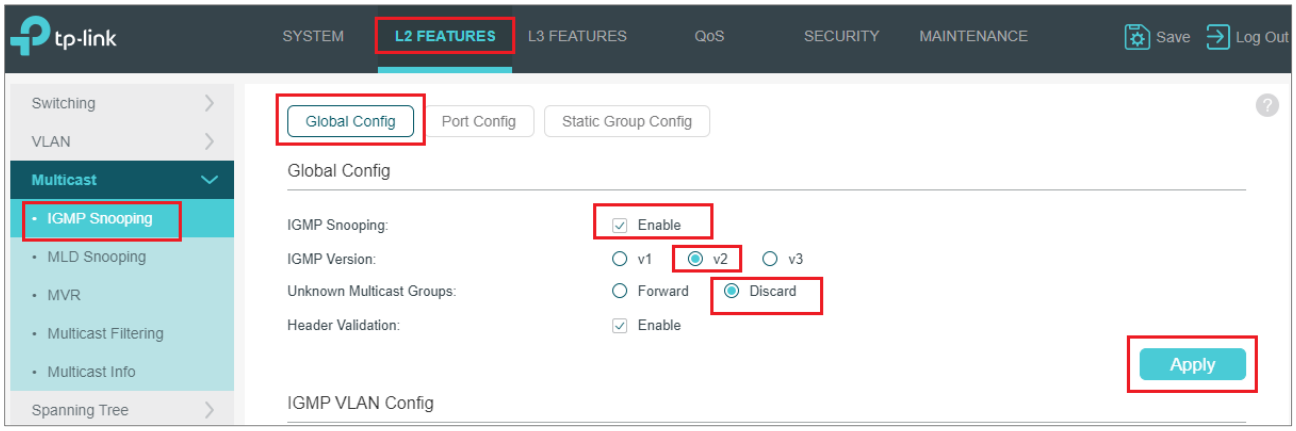
12. IGMP setup.
    Go to **L2 FEATURES** -> **Multicast -> MLD Snooping.**
    Select “Enable” under MLD Snooping. Click Apply.



13. Go to **L2 FEATURES** -> **Multicast -> IGMP Snooping -> Global Config.**
    Select **Enable** under IGMP Snooping. Select **v2** version and **Discard** for Unknown Multicast Groups.
    And click Apply.



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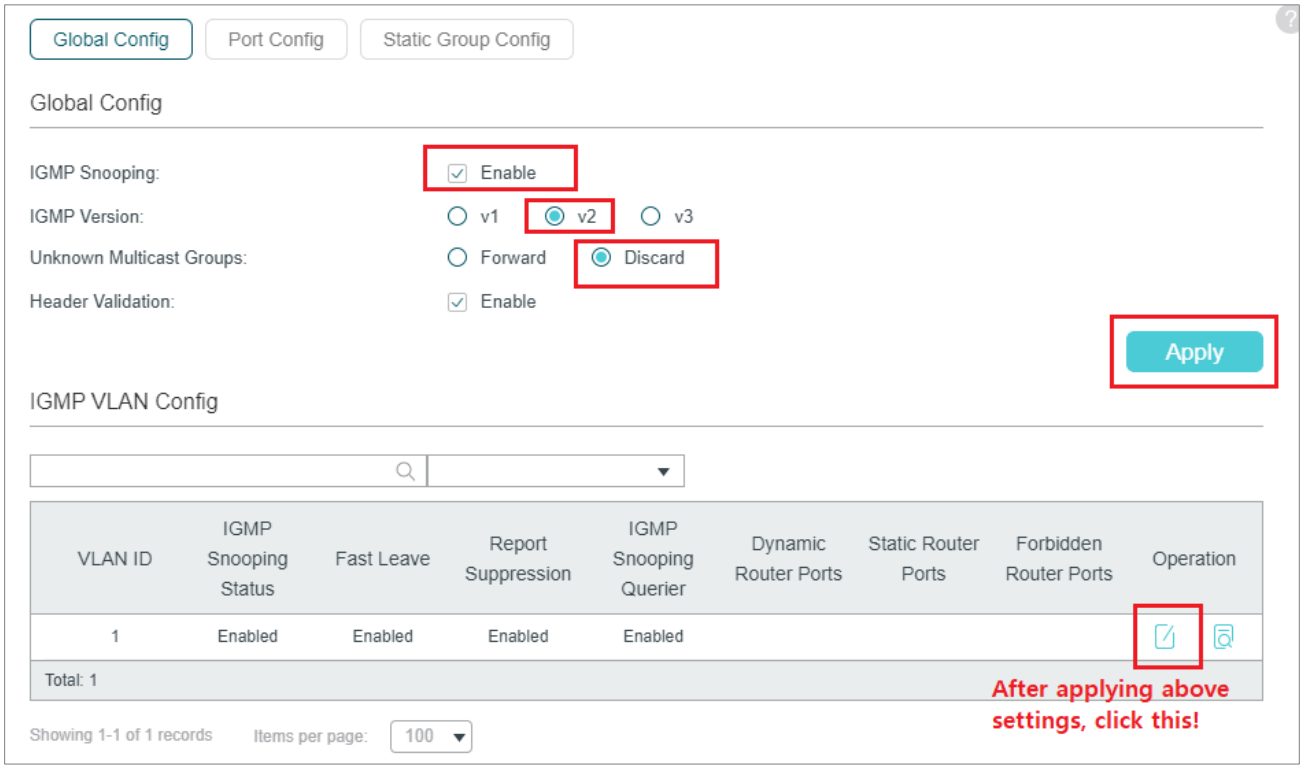
14. After applying the settings from the step 13, **click the icon** under IGMP VLAN Config table.



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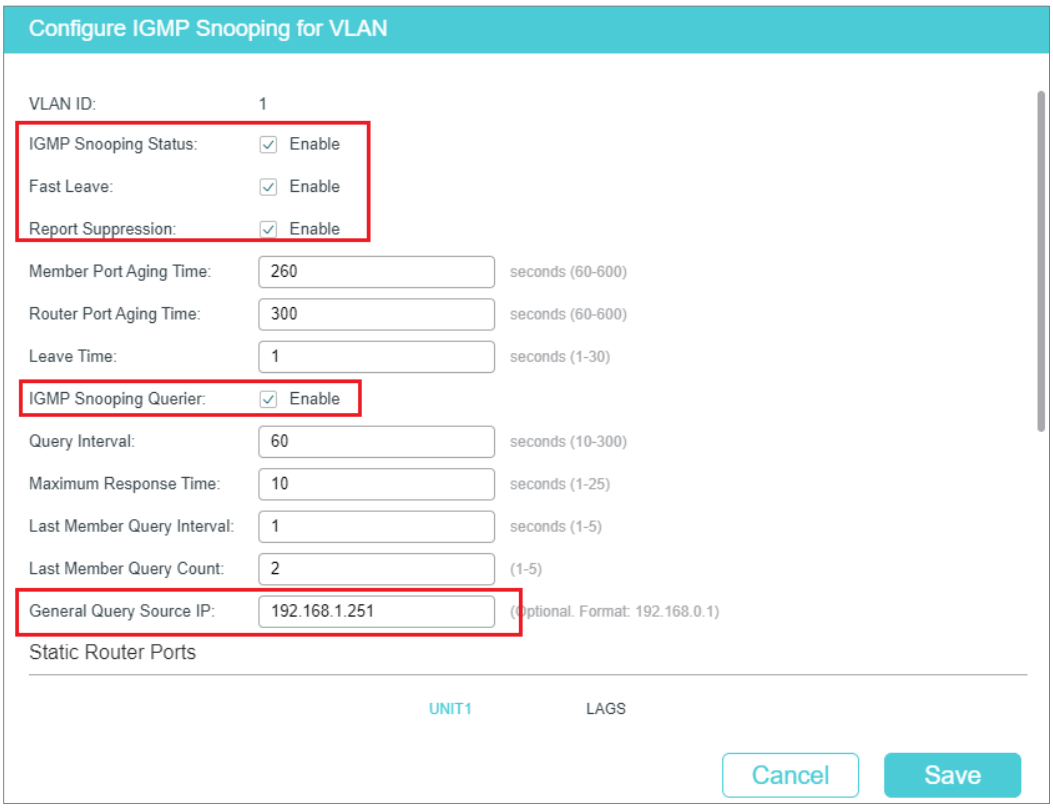
15. IGMP Snooping window will appear. Make sure below settings (red boxes) enabled.
    Change “General Query Source IP” to the current network switch’s IP address. (192.168.1.251 in this case).
    a. Have all switches share the same general query source IP



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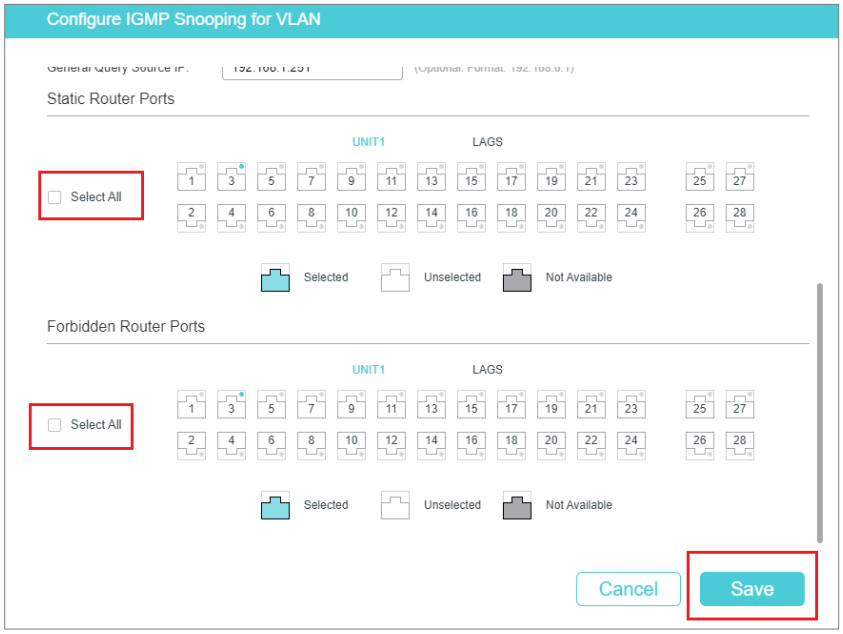
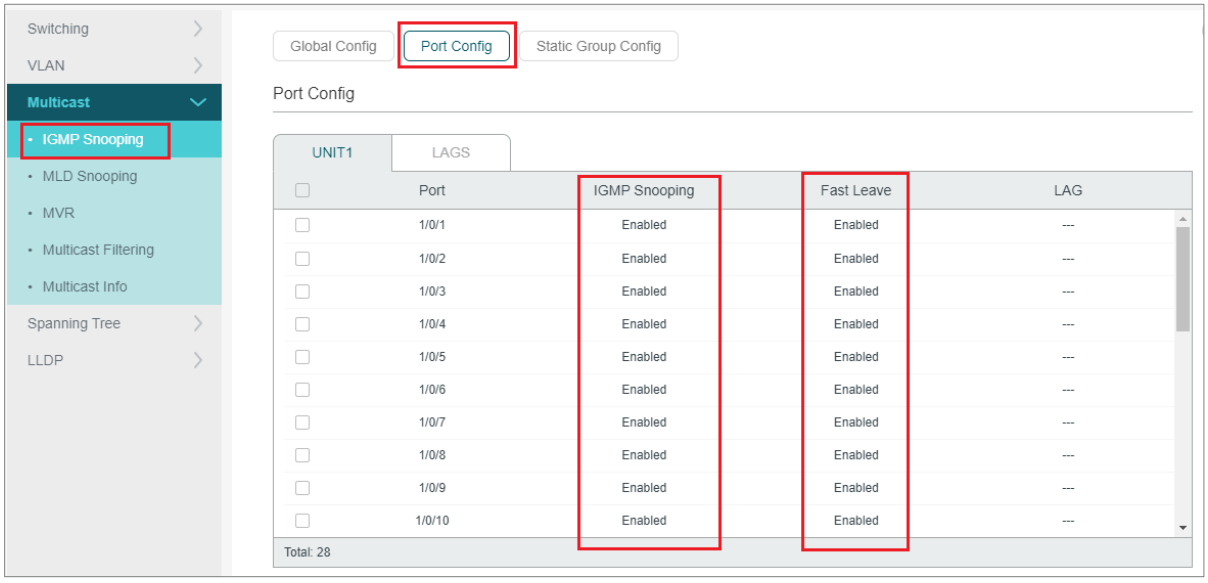
16. Scroll down the window and leave all the ports unchecked. Click Save.
    a. In some cases, the specific port connected to any Wi-Fi routers or a core network may need to be forbidden at this page. If applicable, check those ports **ONLY** and leave others unchecked



17. Enable Fast Leave on all ports.
    Go to **L2 FEATURES** -> **Multicast -> IGMP Snooping -> Port Config.**



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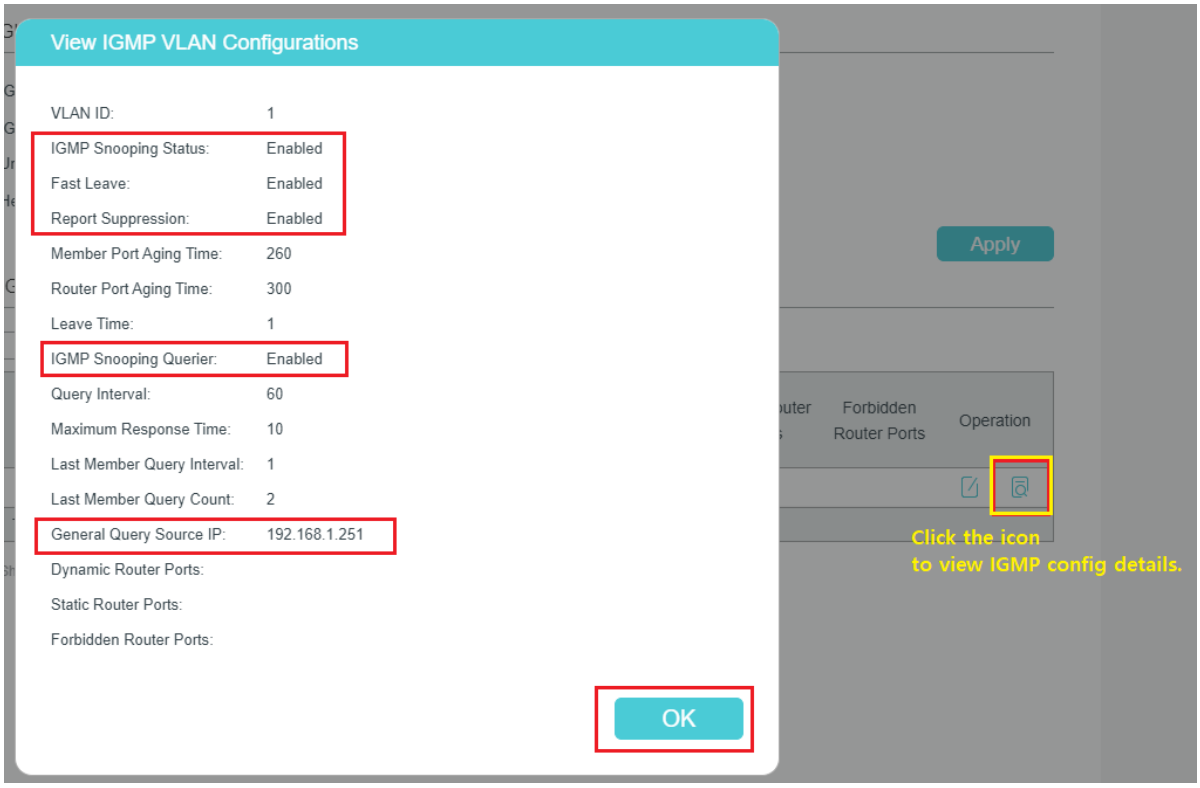
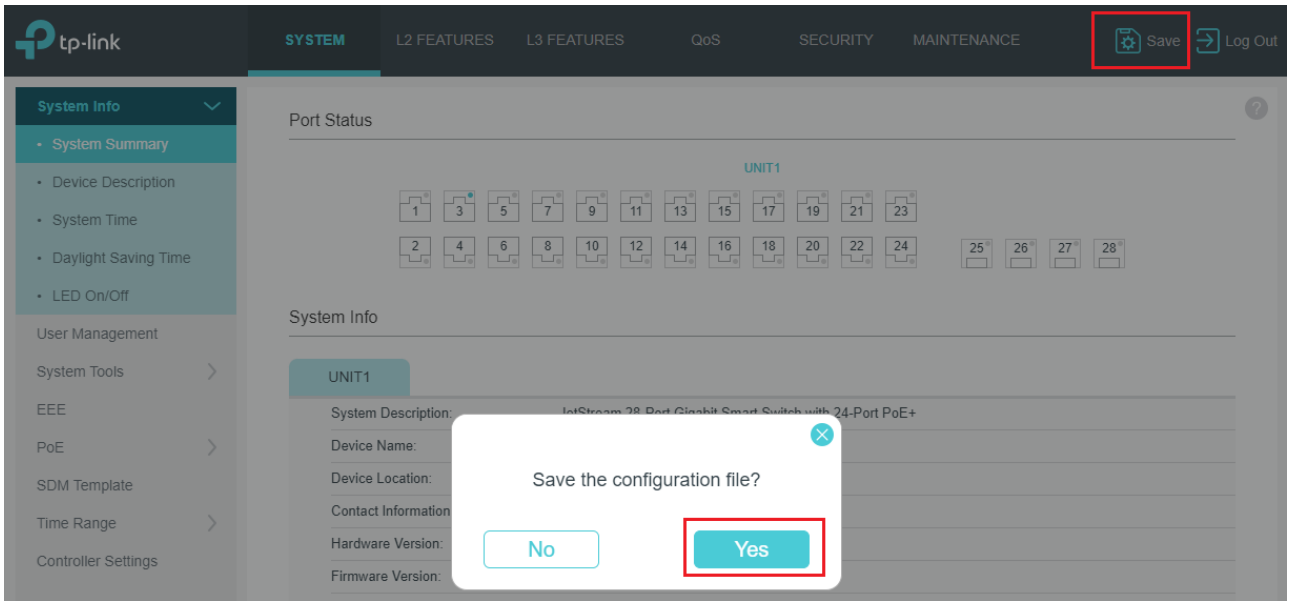
18. View IGMP VLAN Configurations.
    Go to **L2 FEATURES** -> **Multicast -> IGMP Snooping -> Global Config.** Click icon (yellow box in image).



19. Save the current configuration.
    Click “Save” button on top right corner. Click Yes.
    This will save current configuration and will apply this configuration every time switch is powered up.



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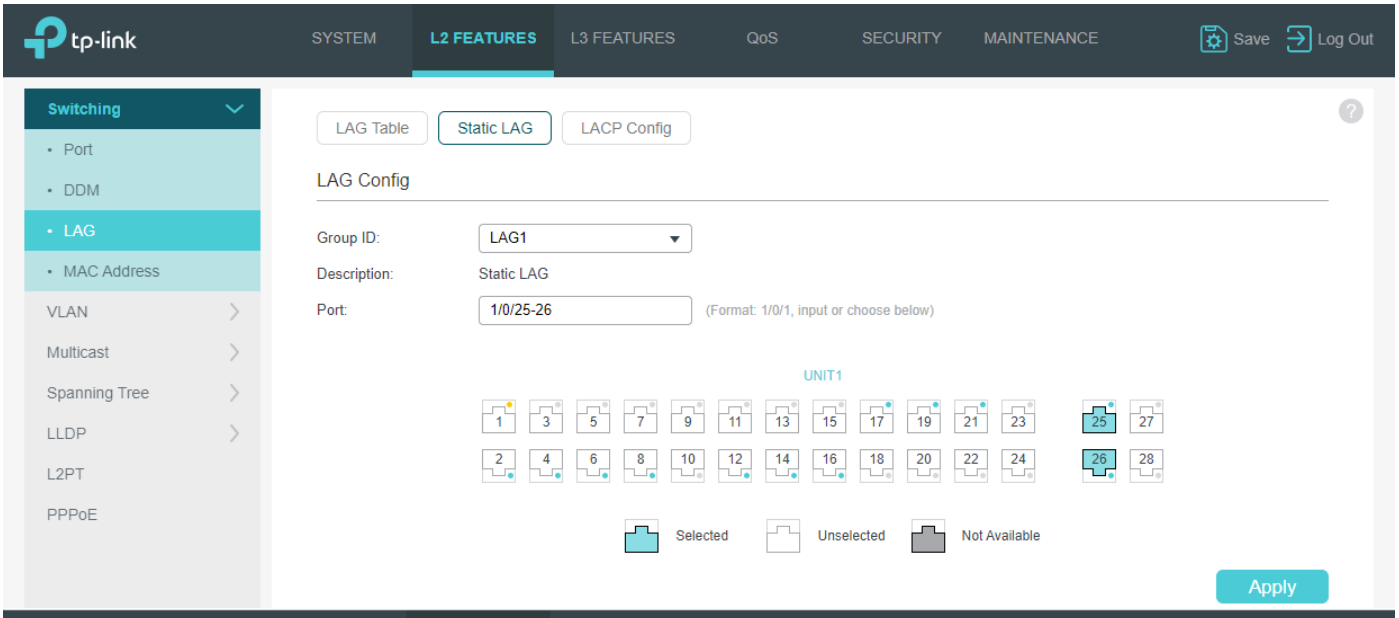
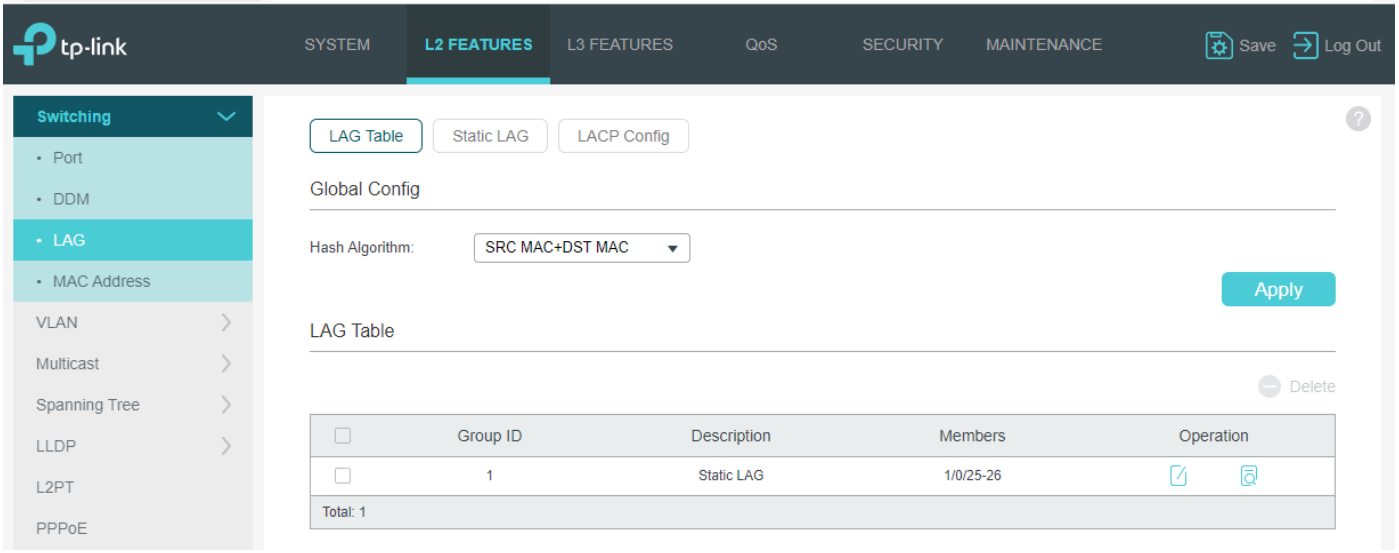
20. If aggregating 10G fiber connections, navigate to **L2 Features -> LAG -> Static LAG**. Assign all relevant ports to the LAG and confirm. Use the LAG table to confirm the proper settings have been applied.





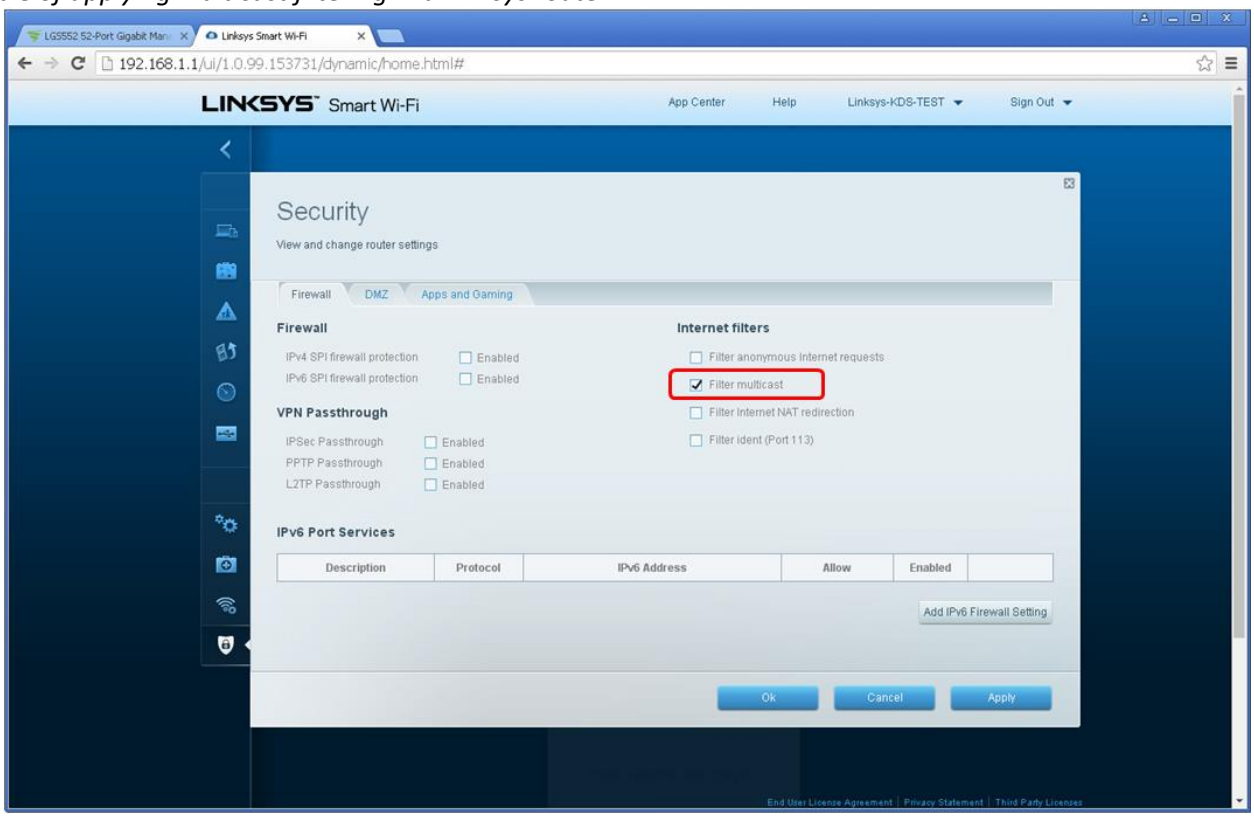
21. To double-check the updated configuration, reboot the network switch and confirm the configuration. After rebooting the switch, log in to your TP-Link network switch again and make sure that IGMP settings are intact.

22. Connect your encoders, decoders, allow approx 3 mins for bootup, and perform a network scan using KD Management Software.

WiFi Router Setup

It is required to set your WiFi router to **filter multicast (aka filter broadcast)** to ensure that your router is not overwhelmed by the data broadcast from AV over IPunits on the network.

Example of applying multicast filtering in a Linksys router:



*The following requirements must be met in order to support the live streaming feature of the Key Digital app (1080p systems, KD-IP1080/KD-IP120 only):

- Verified model = Cisco/Linksys EA6700 router
- Network switch must support IGMP v3 and configured to enable IGMP v3.
- Wifi Router
  - Must be configured so that multicast filtering is enabled. See above example
  - Must support 50Mbps bandwidth per iOS that will be streaming video
    - It is recommended that only 1 iOS be in the Live Stream page at a time
- iOS Device
  - Best performance is with iPad4, iPad Air, iPad Mini. More powerful processing will always benefit.
  - Should have Static IP with Router IP corresponding to master network switch