

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.								
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

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)

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	

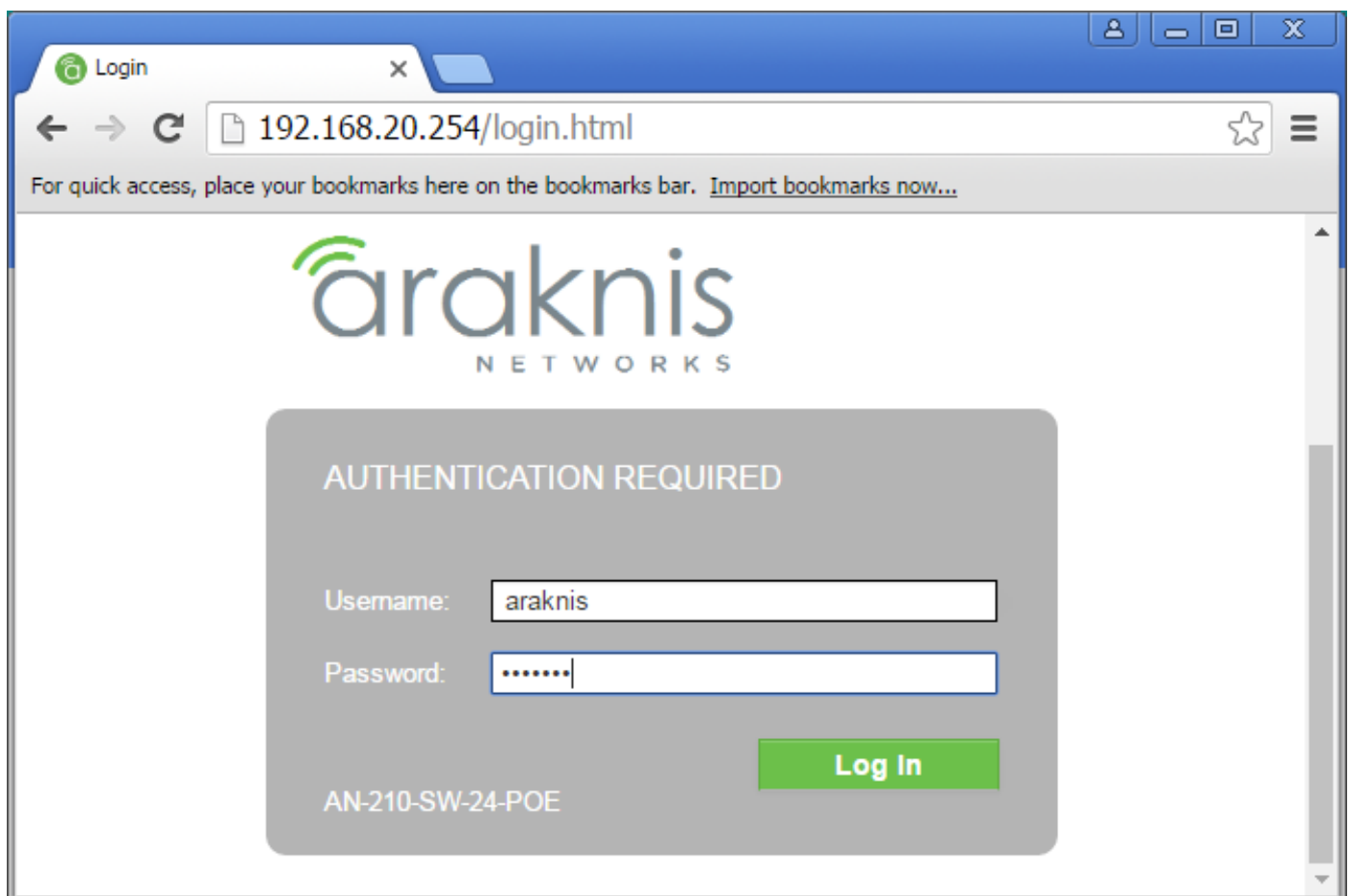
Brand	Model	Port Number	PoE	10G Fiber Stacking	Approved for KD-IP1080/120	Approved for KD- IP822/922	Approved for KD-IP1022
Cisco	SF500-48	48	NO	NO	YES	NO	NO
	SG300-28		NO	NO	YES	YES	
	Catalyst 3850 Series		YES	NO	YES	YES	
	Meraki MS225	24	YES		YES	YES	
D-Link	DGS-3630-52PC	52	YES	YES	YES	YES	YES
	DGS-3630-52TC	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	

Brand	Model	Port Number	PoE	10G Fiber Stacking	Approved for KD-IP1080/120	Approved for KD-IP822/922	Approved for KD-IP1022
Linksys	LGS352MPC	48	YES	YES	YES	YES	NO
	LGS328MPC	24	YES	YES	YES	YES	NO
	LGS310MPC	8	YES	NO	YES	YES	NO
	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	

Brand	Model	Port Number	PoE	10G Fiber Stacking	Approved for KD-IP1080/120	Approved for KD-IP822/922	Approved for KD-IP1022
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	
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 Networkx	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	

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**.



- 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.

The screenshot shows the web interface for the Araknis 210 24 Port PoE switch. The browser address bar shows the URL 192.168.1.251/#2. The page is titled "ADVANCED" and contains a search bar. The main content area is divided into several sections:

- IPv4 Settings:** Auto Configuration is set to **Static**. The IP Address is 192.168.1.251, Subnet Mask is 255.255.255.0, and Default Gateway is 192.168.1.1. DNS Server 1 and 2 are both 0.0.0.0.
- IPv6 Settings:** IPv6 State is set to **Auto Configuration**. The IPv6 Address is fe80::d66a:91ff:fe3b:75fb, and the Link Local Address is also fe80::d66a:91ff:fe3b:75fb.
- Date and Time Settings:** Manually Set Date and Time is selected. The date is 2001/1/03 and the time is 18:25 (24-Hour). There is a "Synchronize with PC" button. Automatically Get Date and Time is unselected. The NTP Server is time.nist.gov. The Time Zone is (GMT-05:00) Eastern Time (US and Canada). Enable Daylight Saving is unselected. The start and end dates for Daylight Saving are March 2nd, Sun 02:00 and November 1st, Sun 02:00.
- UPnP Configuration:** UPNP is set to **Enabled**.

At the bottom right, there are "Apply" and "Cancel" buttons.

- 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.
- Make sure the settings remain as above.
- 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**.

IGMP SNOOPING

Settings

Status	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
Version	<input type="radio"/> V2 <input checked="" type="radio"/> V3
Report Suppression	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
Unregistered Multicast Behavior	<input type="radio"/> Flood <input checked="" type="radio"/> Drop

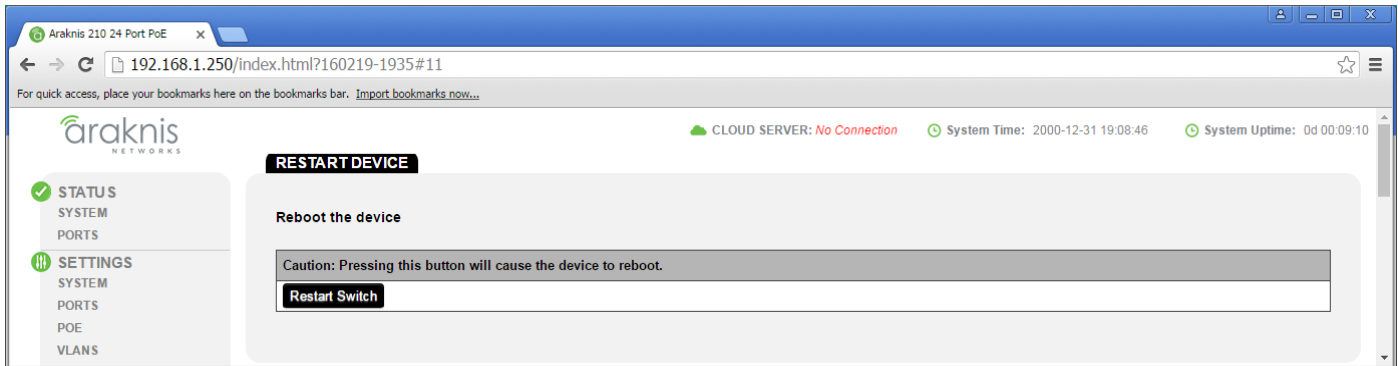
VLAN Settings

VLAN ID	IGMP Snooping Status	Fast Leave
1	Enabled	Enabled

Querier Settings

VLAN ID	Querier State	Querier Version	Querier Status	Querier IP	Robustness	Interval	Oper Interval	Max Response Interval	Oper Max Response Interval	Last Member Query Counter	Oper Last Member Query Counter	Last Member Query Interval	Oper Last Member Query Interval
1	Enabled	v3	Querier	192.168.1.251	2	125	125	10	10	2	2	1	1

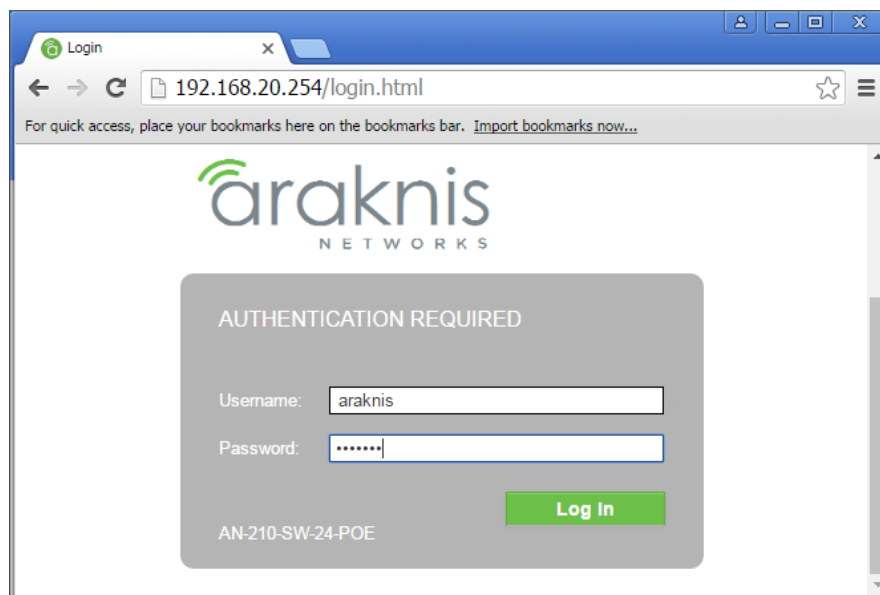
12. **IMPORTANT:** At this point all the displays should be displaying stable running video from the selected sources. If you do not have them displaying properly, than network switch is configured incorrectly.
13. Navigate to **Maintenance -> Restart Device** and click Restart Switch. After the reboot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

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.

The screenshot shows the configuration page for an Araknis 210 24 Port PoE switch. The browser address bar shows the URL 192.168.1.251/#2. The page is titled "ADVANCED" and contains a search bar. The main configuration area is divided into several sections:

IPv4		IPv6	
Auto Configuration	<input checked="" type="radio"/> Static <input type="radio"/> DHCP	IPv6 State	Auto Configuration
IPv4 Address	192.168.1.251	IPv6 Address	fe80::d66a:91ff:fe3b:75fb
Subnet Mask	255.255.255.0	Default Gateway	::
Default Gateway	192.168.1.1	Link Local Address	fe80::d66a:91ff:fe3b:75fb
DNS Server 1	0.0.0.0		
DNS Server 2	0.0.0.0		

Date and Time Settings

Manually Set Date and Time

Date: 2001 / 1 / 03

Time: 18 : 25 (24-Hour)

Synchronize with PC

Automatically Get Date and Time

NTP Server: time.nist.gov

Time Zone: (GMT-05:00) Eastern Time (US and Canada)

Enable Daylight Saving

Start: March / 2nd / Sun / 02 : 00

End: November / 1st / Sun / 02 : 00

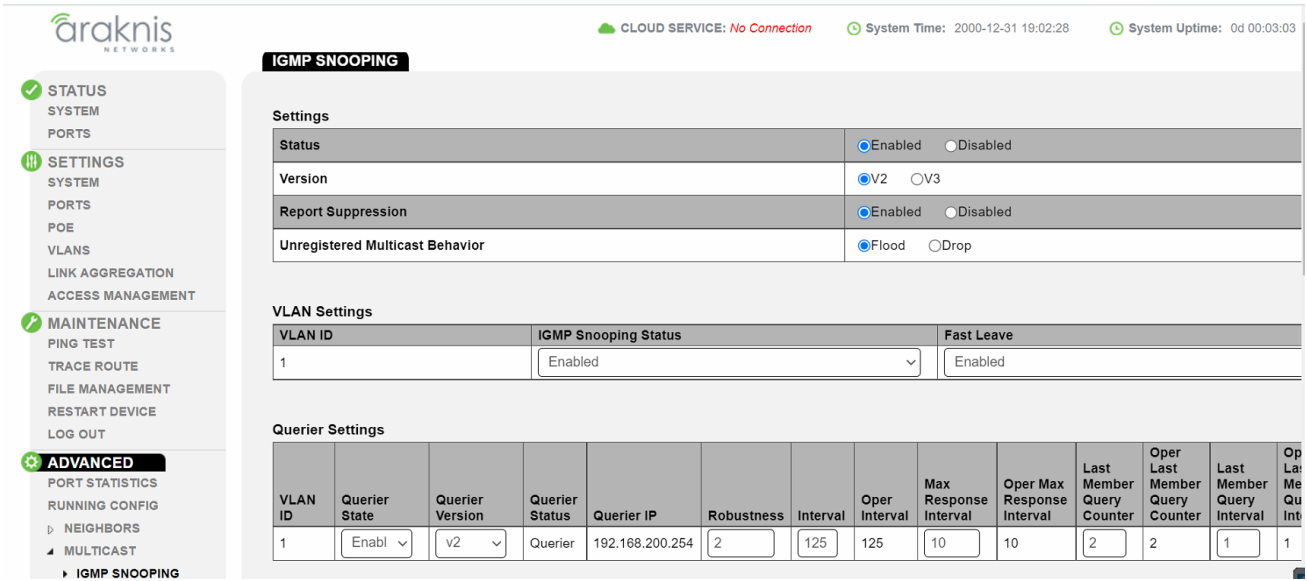
UPnP Configuration

UPnP: Enabled

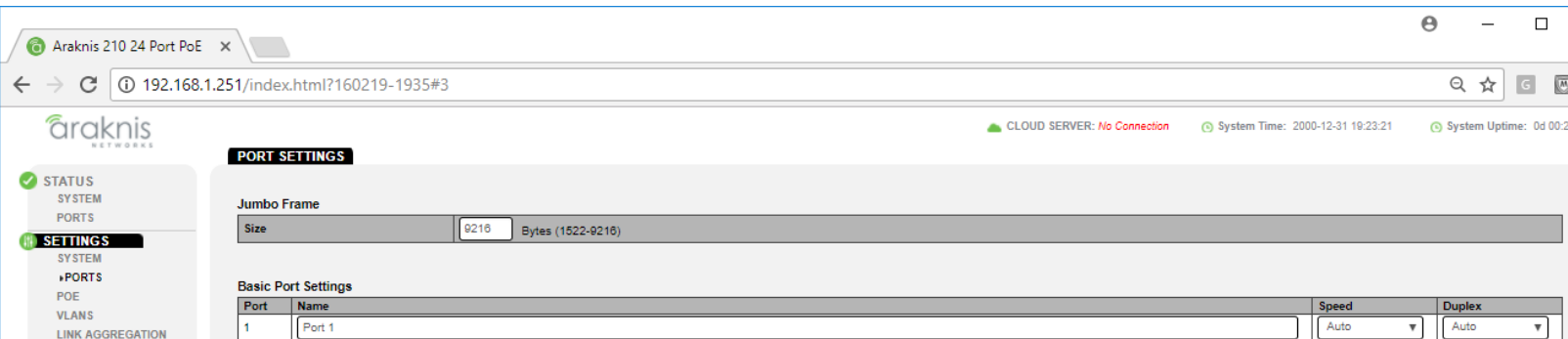
Buttons: Apply, Cancel

- 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.
- Make sure the settings remain as above.

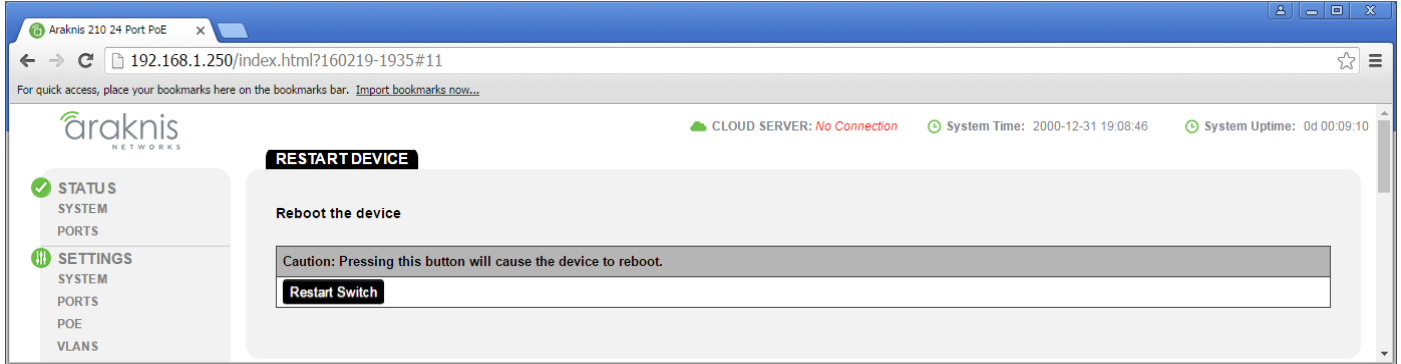
11. Navigate to **Advanced -> Multicast -> IGMP Snooping**. Under **Settings** select **Enable** for **Status**, **V2** for **Version**, **Enable** for **Report Suppression**, and **Flood** for **Unregistered Multicast Behavior**. Under **VLAN Settings / VLAN ID 1** select **Enable** for **IGMP Snooping 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.

Cisco Meraki series

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

Multicast settings

IGMP Snooping
IGMP snooping examines IGMP membership report messages to limit multicast traffic to the subset of interfaces on which interested hosts reside.

Switches/Stacks	IGMP snooping	Flood unknown multicast traffic
Default	Enabled <input type="button" value="v"/>	Disabled <input type="button" value="v"/>

[Set multicast settings for another switch or stack](#)

MTU configuration

MTU size
The Maximum Transmission Unit (MTU) is the maximum payload allowed in an ethernet frame.

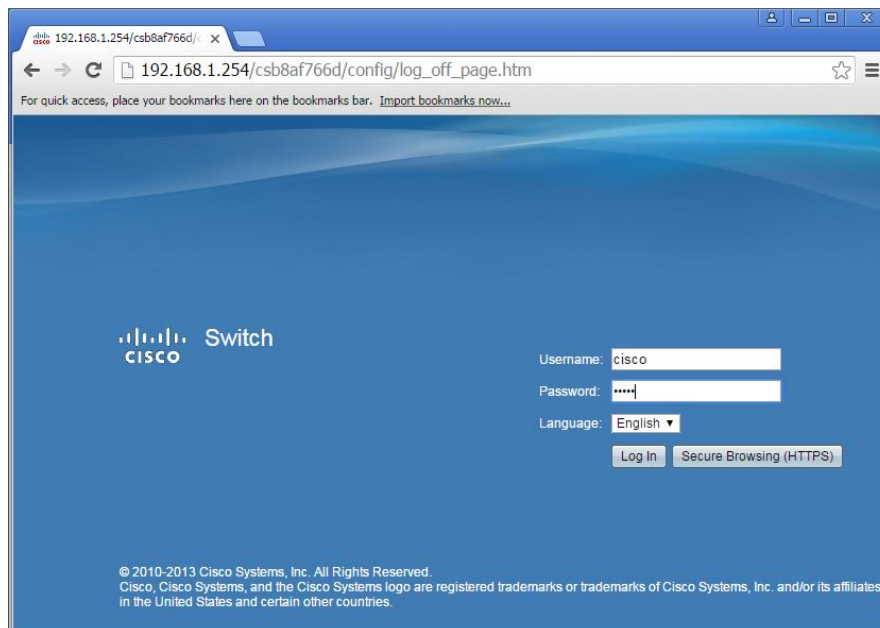
Switches	MTU Size
Default MTU Size	9578 <input type="button" value="v"/>

[Set the MTU size for another set of switches](#)

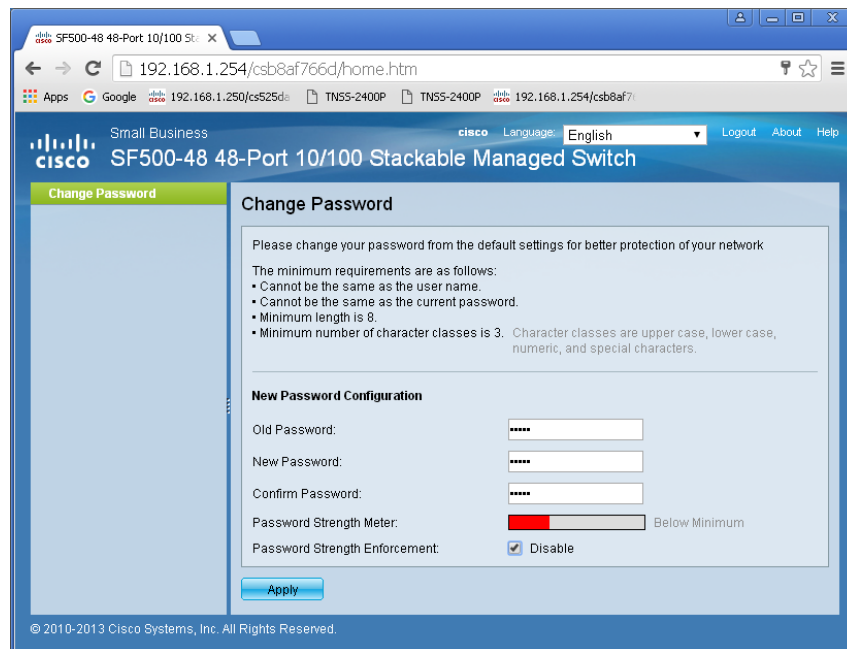
IGMP Setup Guide: Cisco SG and SF Series 4K Setup for SG Series 1080p Setup for SF Series

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

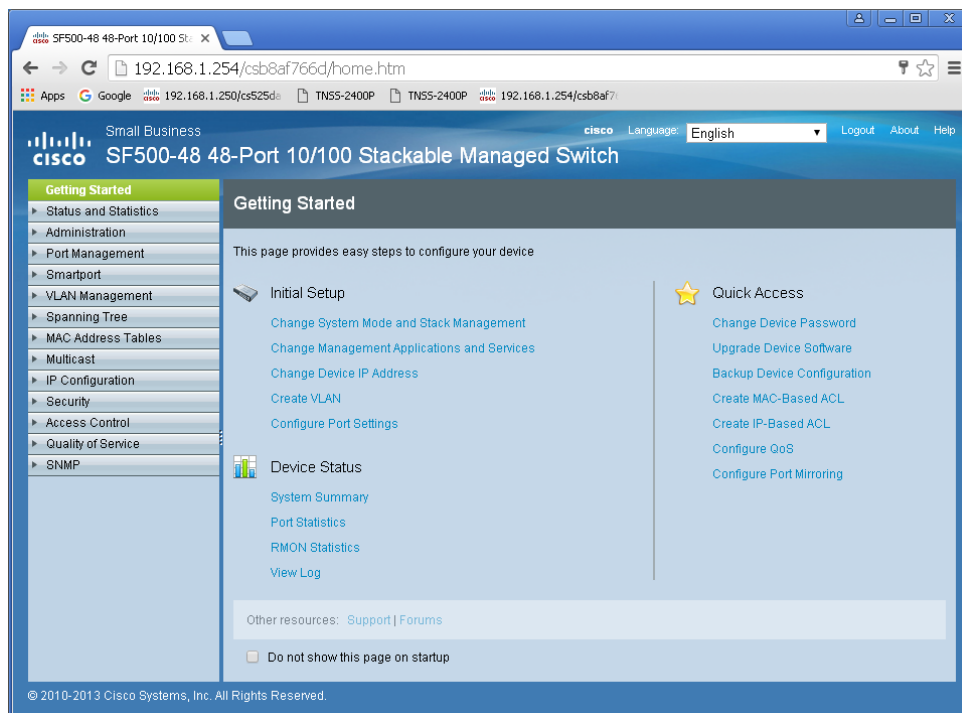
1. **IMPORTANT:** Disconnect all the DHCP devices like routers, servers from the Cisco network switch.
2. Locate a pinhole “RESET” button at the front panel left bottom corner of your Cisco network switch. Using a paper clip press and hold a reset button for more than 10 seconds and then release. Wait 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**.



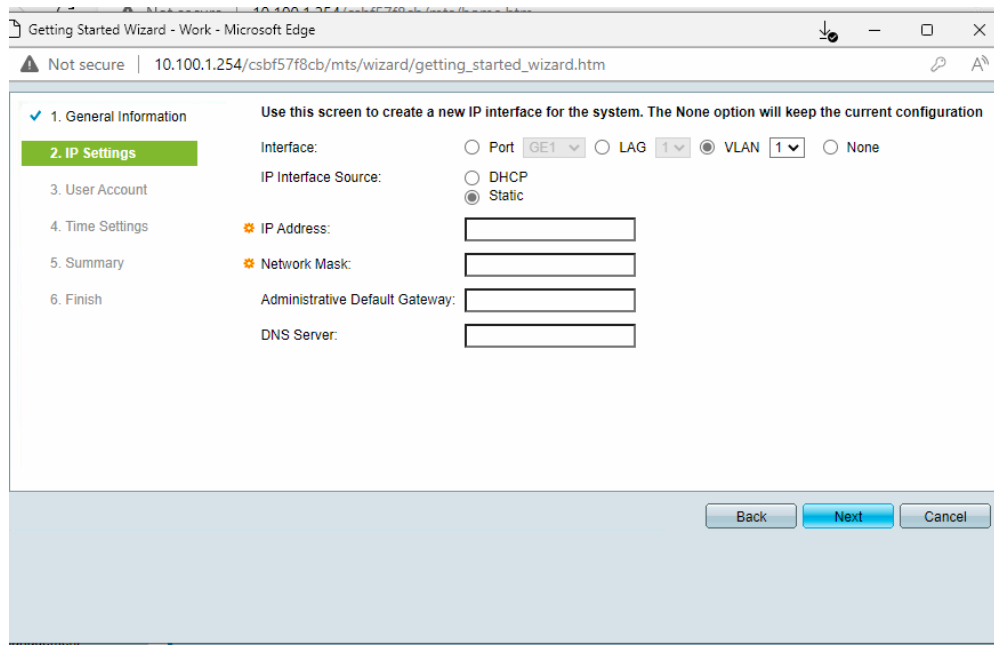
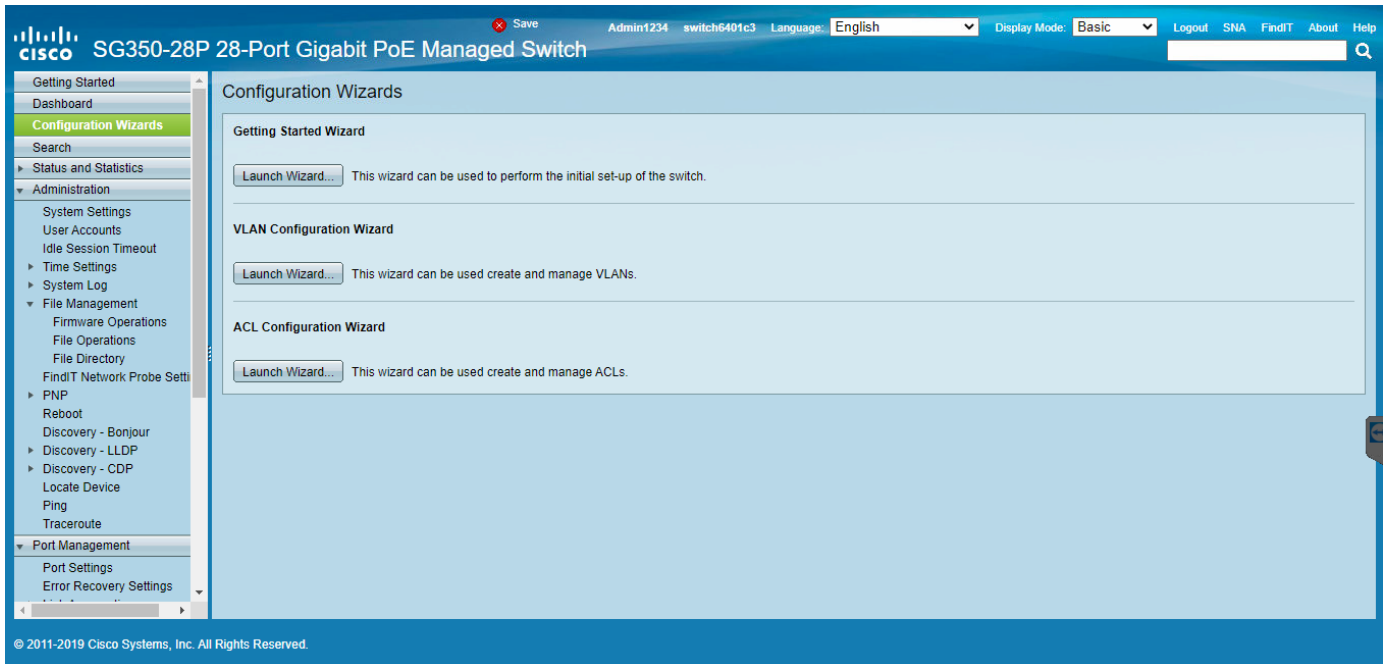
9. **Change Password** screen will appear. Enter old and then new password two times as at the picture below and click Apply.



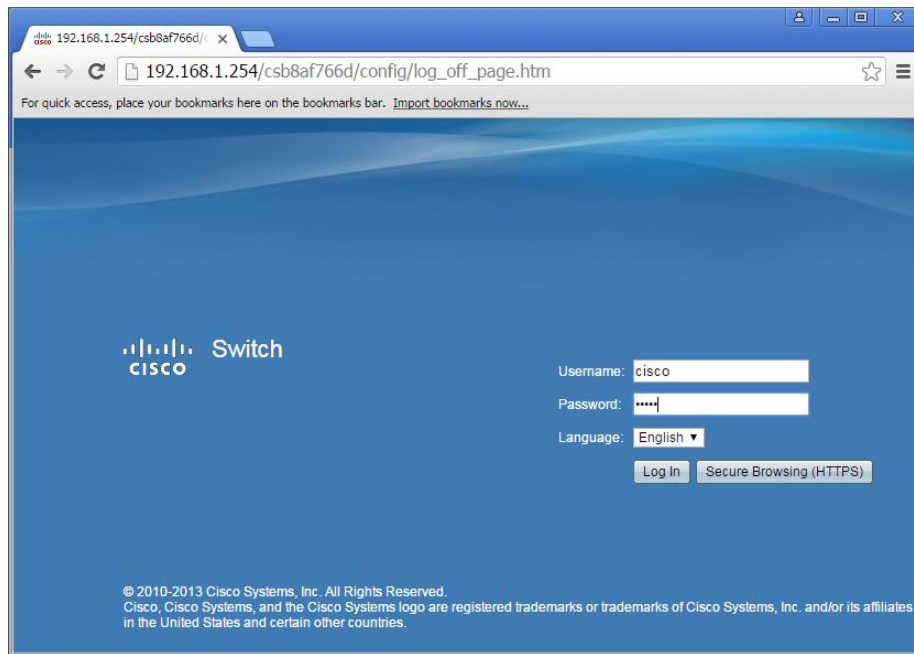
10. **Getting Started** screen will appear.



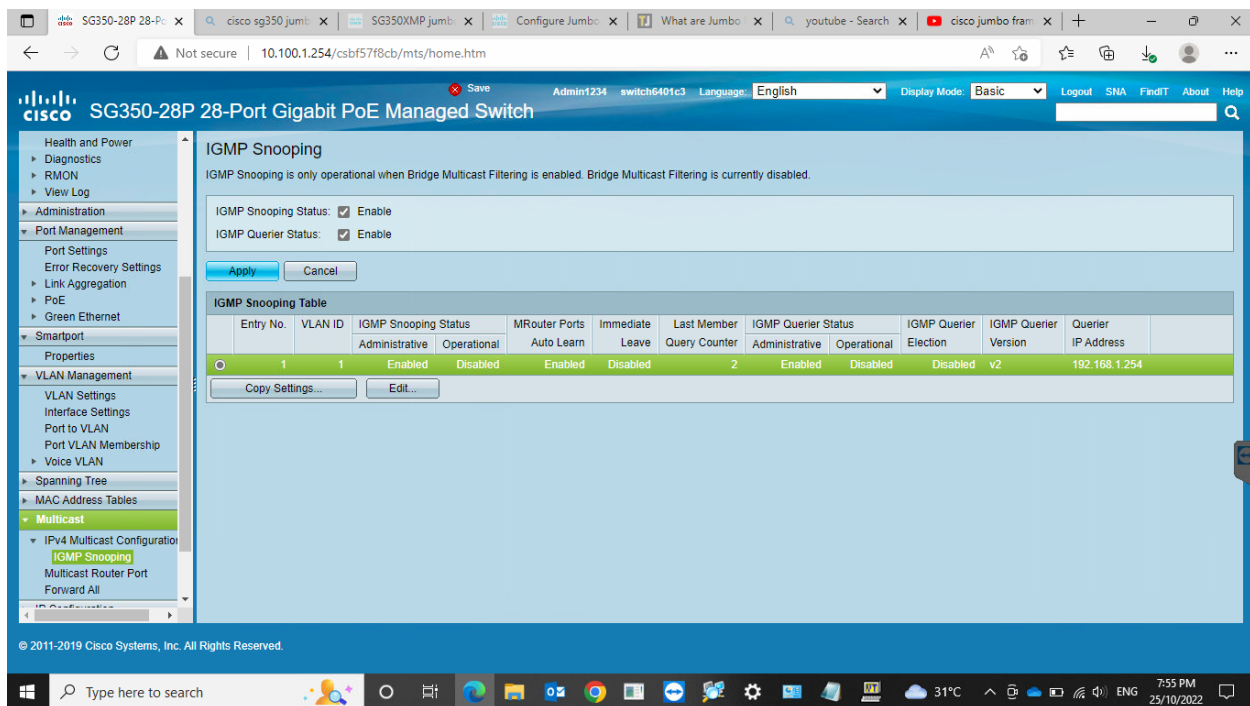
11. Navigate to **Configuration Wizards** to access the **Getting Started Wizard**, which will be used to set the desired IP address of the switch.



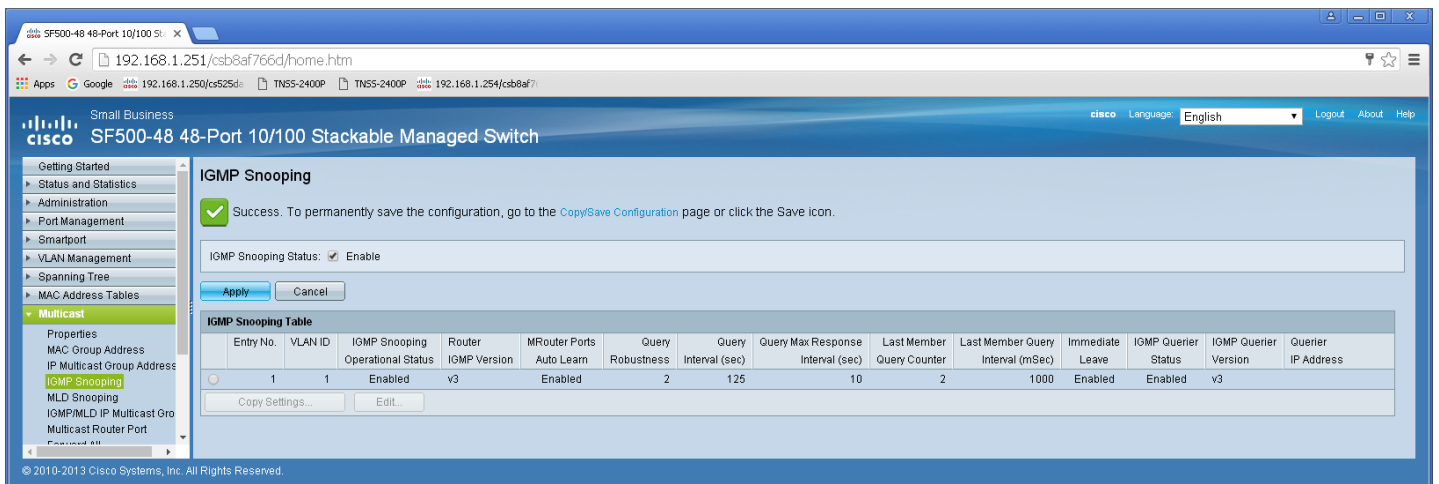
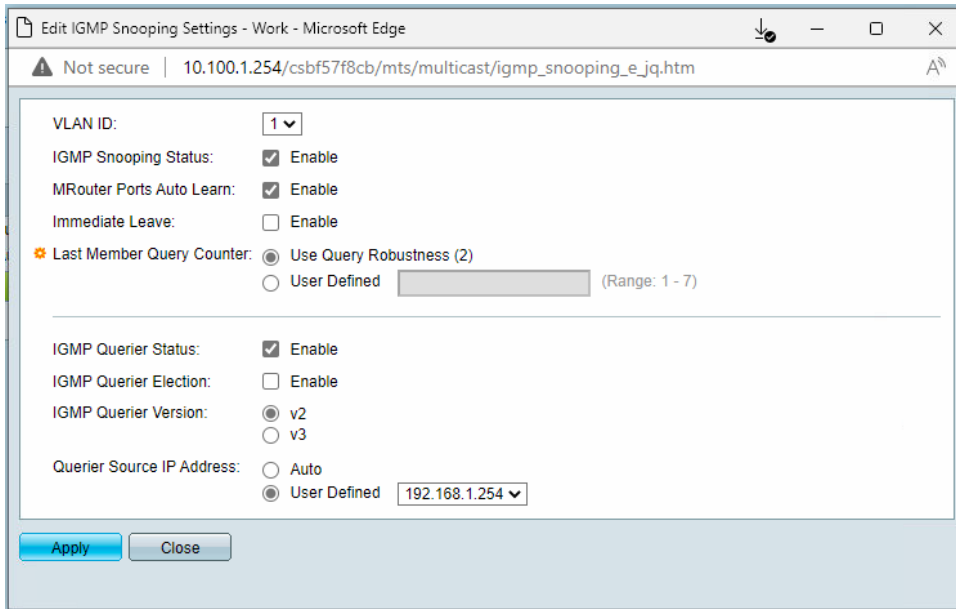
12. Log in again using new password and new IP address.



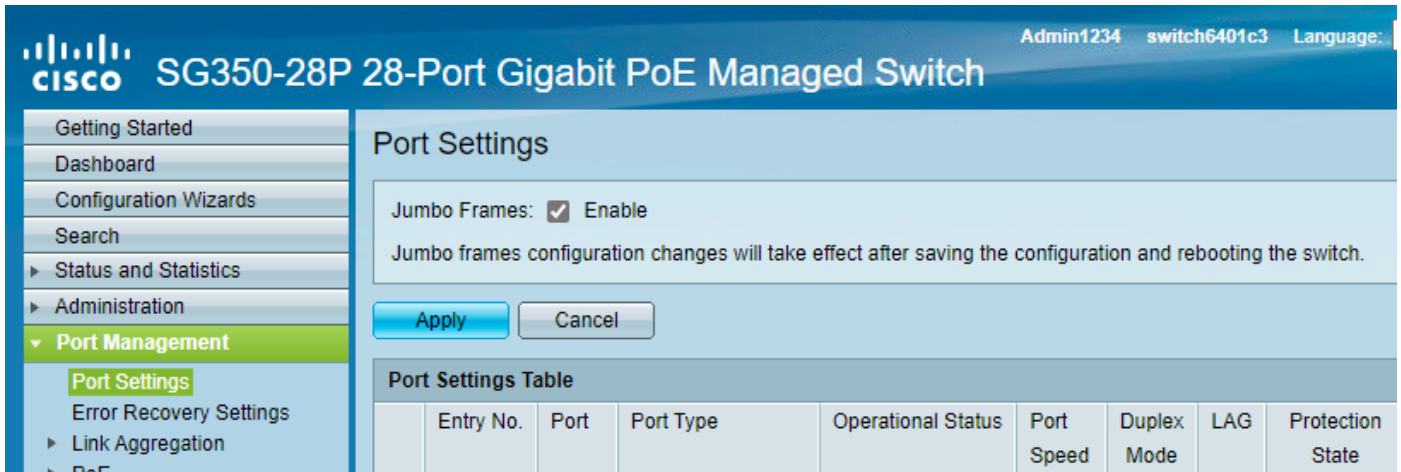
13. Navigate to **Multicast -> IGMP Snooping**. Check the **IGMP Snooping Status: Enable** box and click **Apply**.



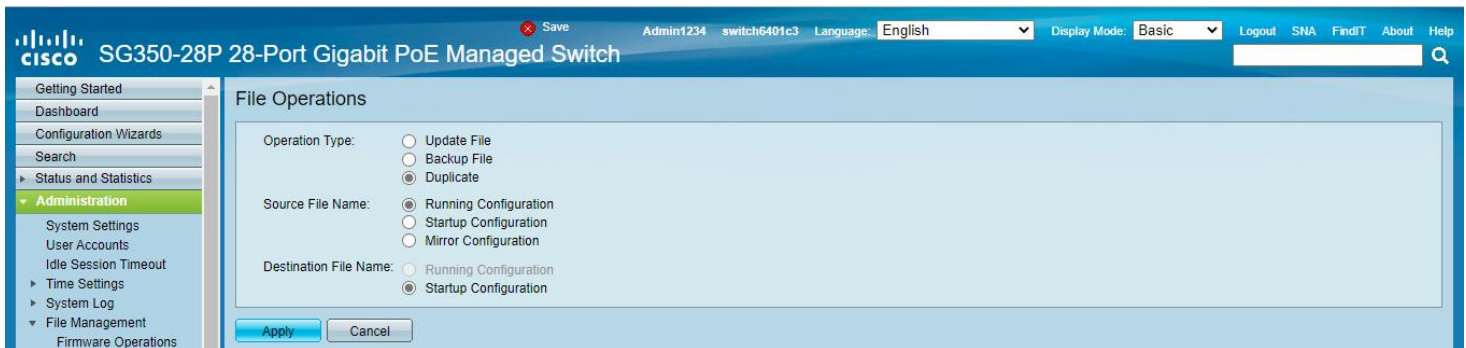
- Click on a radio button on the left and then click **Edit**. New window will appear. Select **"1"** for **VLAN ID**. Check **Enable** box under **IGMP Snooping Status**. Check **Enable** box under **Immediate Leave**. Check **Enable** box under **IGMP Querier Status**. Select **User Defined** next 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



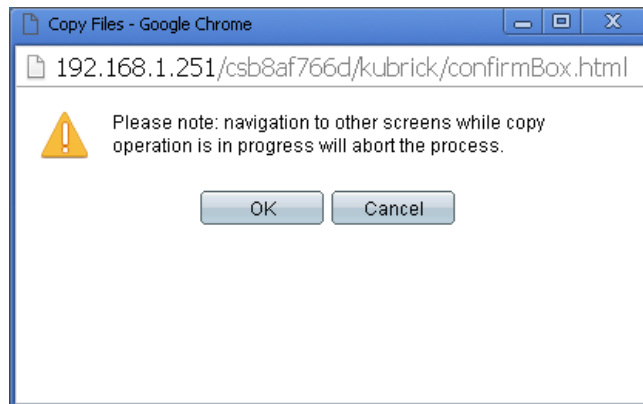
15. If using KD-IP922 system, enable jumbo frames in the Port Management section.



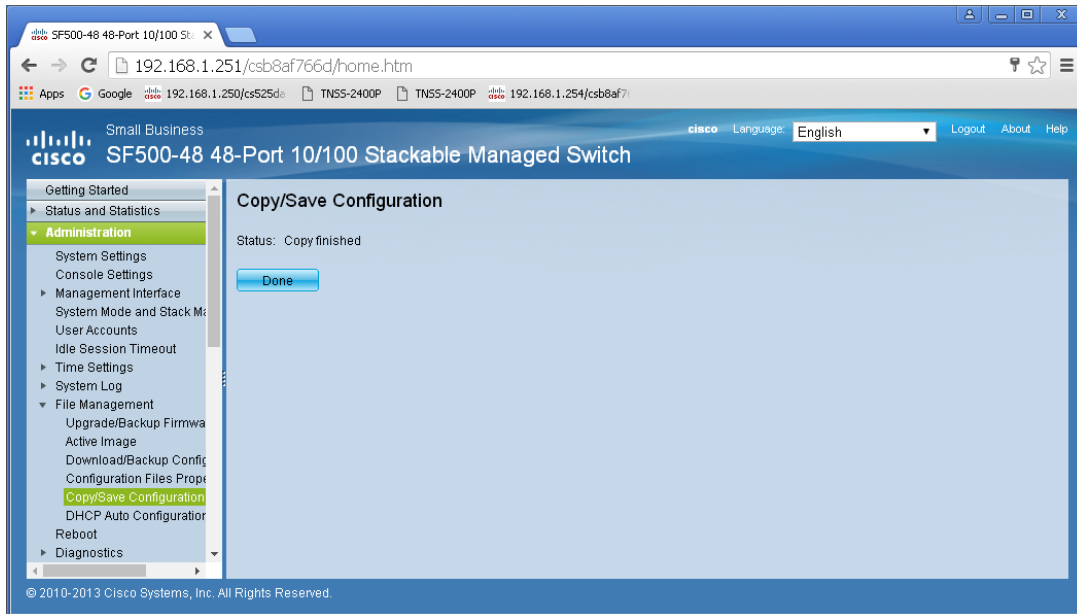
16. On the top of the page click on flashing “x Save”. For **Source File Name:** select **Running configuration**. For **Destination File Name:** select **Startup configuration**. Check the selections and make sure they are exactly as shown below. Click **Apply**.



17. Click **Apply** to confirm.

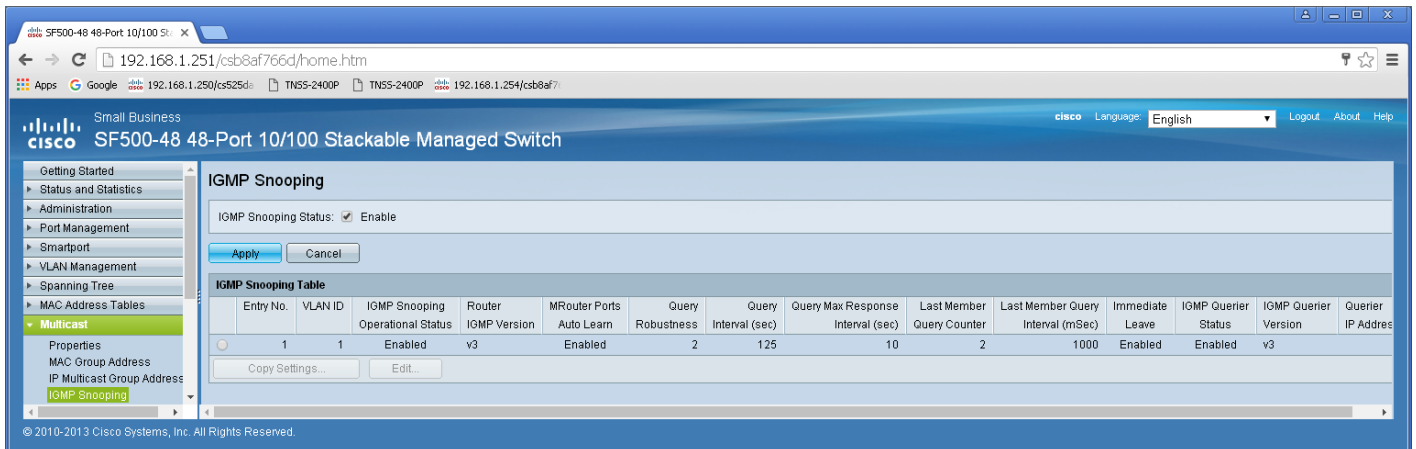


18. Click **Done**.



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.

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


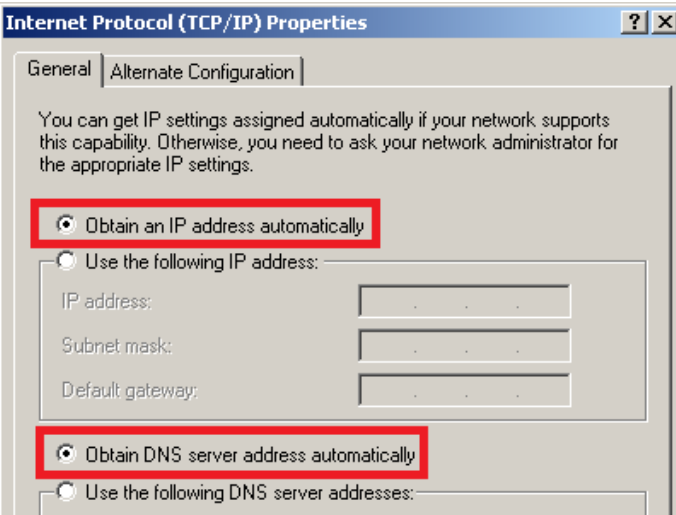
Cisco Catalyst 3850 series

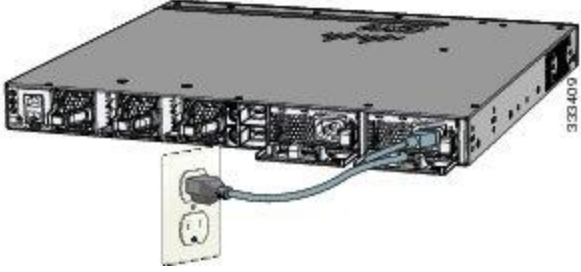


This guide describes how to use **Express Setup** to initially configure your Catalyst 3850 switch. We have modified original Express Setup guide from Cisco to help out you install it easily. For more installation and configuration information, see the Catalyst 3850 documentation on Cisco.com.

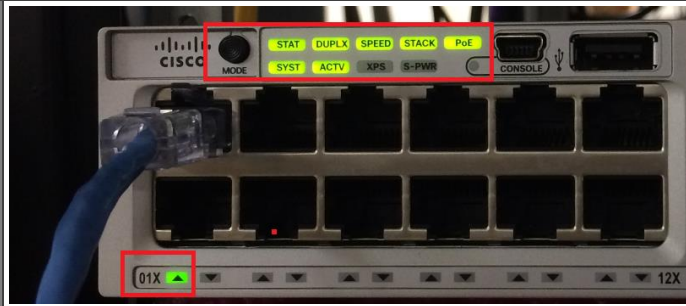
Running Express Setup & Configuration Setup for KD-IP822, KD-IP922, KD-IP1022

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.

<p>Step 1</p>	<p>Make sure that nothing is connected to the switch.</p>	
<p>Step 2</p>	<p>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.</p> <p>Note. Do not connect LAN cable from your PC or laptop to Cisco’s switch until Step 7.</p>	
<p>Step 3</p>	<p>Install the power supply modules. See the “Power Supply Installation” chapter in the <i>Catalyst 3850 Switch Hardware Installation Guide</i> for instructions. http://www.cisco.com/go/cat3850_hw</p>	

<p>Step 4</p>	<p>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</p>	
<p>Step 5</p>	<p>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.</p>	
<p>Step 6</p>	<p>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.</p>	
	<p>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.</p>	
<p>Step 7</p>	<p>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)</p>	



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.

```

C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\M60-USER>
C:\Documents and Settings\M60-USER>ipconfig

Windows IP Configuration

Ethernet adapter VMware Network Adapter VMnet8:

    Connection-specific DNS Suffix  . : 
    IP Address . . . . . : 192.168.180.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 

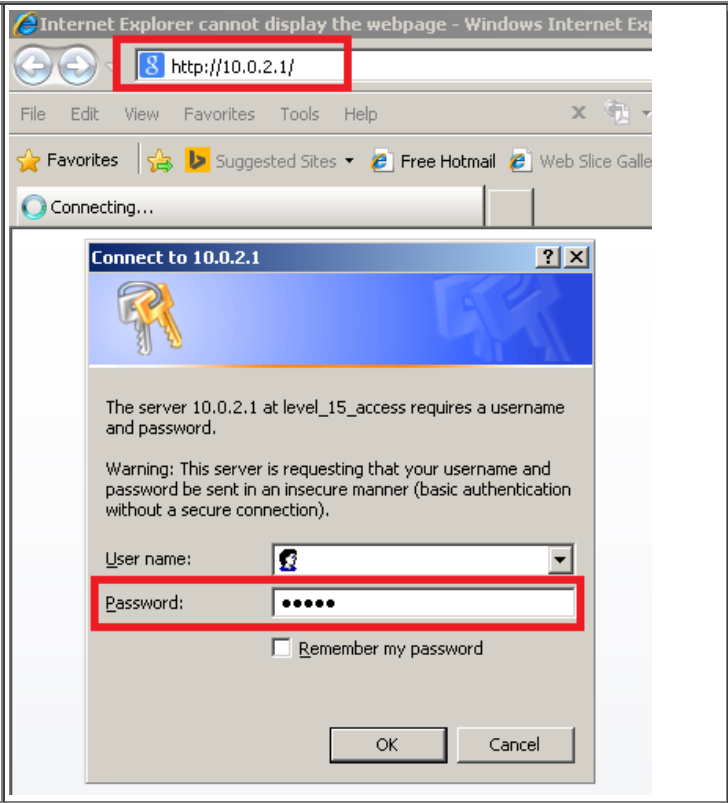
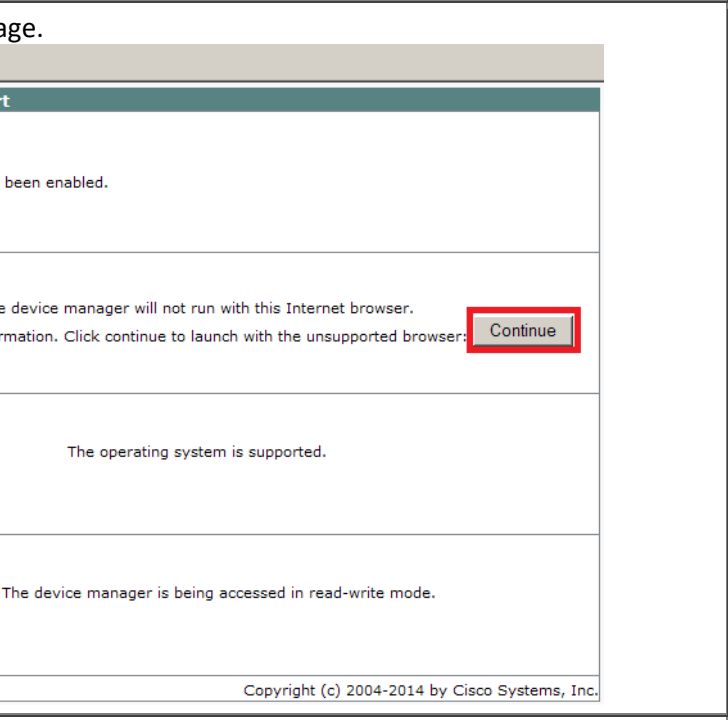
Ethernet adapter VMware Network Adapter VMnet1:

    Connection-specific DNS Suffix  . : 
    IP Address . . . . . : 192.168.119.1
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address . . . . . : 10.0.2.2
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.0.2.1

C:\Documents and Settings\M60-USER>
C:\Documents and Settings\M60-USER>
C:\Documents and Settings\M60-USER>
    
```

<p>Step 9</p>	<p>Start a browser session on the PC or laptop, and enter the IP address of your Default Gateway.</p> <p>Note: As I mentioned on Step8, your IP address of Default Gateway may differ with our IP address.</p> <p>When a pop-up dialog window “Connect to 10.0.2.1” appear, skip the User name and enter the default password, “cisco”</p> <p>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.</p>	 <p>The screenshot shows an Internet Explorer window with the address bar containing 'http://10.0.2.1/'. A dialog box titled 'Connect to 10.0.2.1' is open, displaying a warning about insecure authentication and a form with 'User name' and 'Password' fields. The 'Password' field is highlighted with a red box.</p>
<p>Step 10</p>	<p>Click “Continue” button on Startup Report page.</p>	 <p>The screenshot shows the 'Startup Report' page in a browser window. It contains a table with four rows: JavaScript (enabled), Internet Browser (warning), Operating System (supported), and Read Write Access (note). The 'Continue' button in the Internet Browser row is highlighted with a red box.</p>
<p>Step 11</p>	<p>Select the Basic Settings on the Express Setup window and change the network settings as you like, then go Step12.</p>	

Note. Please do not click "Submit" button in this step.

10.0.2.1 : Cisco Device Manager - Express Setup

Catalyst 3850 Series Express Setup

Refresh Print Help

Basic Settings | Advanced Settings

Network Settings

Management Interface (VLAN ID): 1

IP Address: 192 . 168 . 1 . 251 Subnet Mask: 255.255.255.0

Default Gateway: 192 . 168 . 1 . 1

Switch Password: Confirm Switch Password:

Optional Settings

Host Name: Switch

System Date (DD/MMM/YYYY): 11 / Oct / 2017 System Time (HH:MM): 12 : 29 PM

Time Zone: (GMT - 05:00) Eastern Time (US & canada)

Daylight Saving Time: Enable

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.

Basic Settings | **Advanced Settings**

Telnet Access: Enable Disable

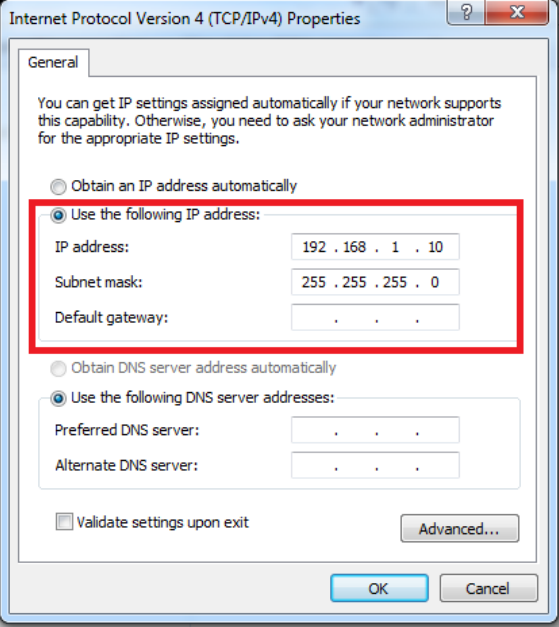
Telnet Password: Confirm Telnet Password:

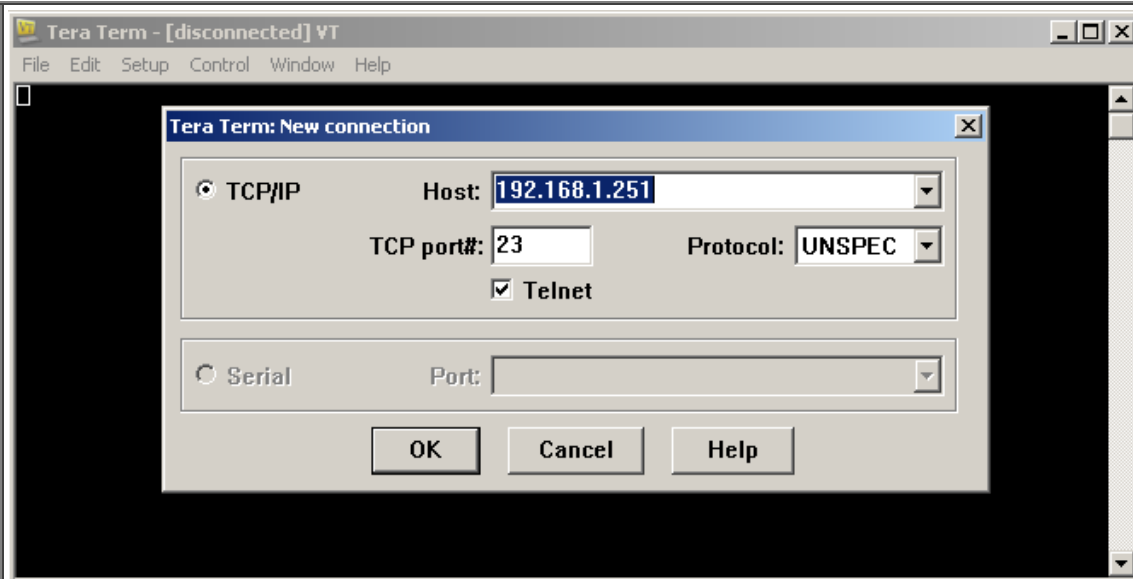
SNMP: Enable Disable

SNMP Read Community: SNMP Write Community:

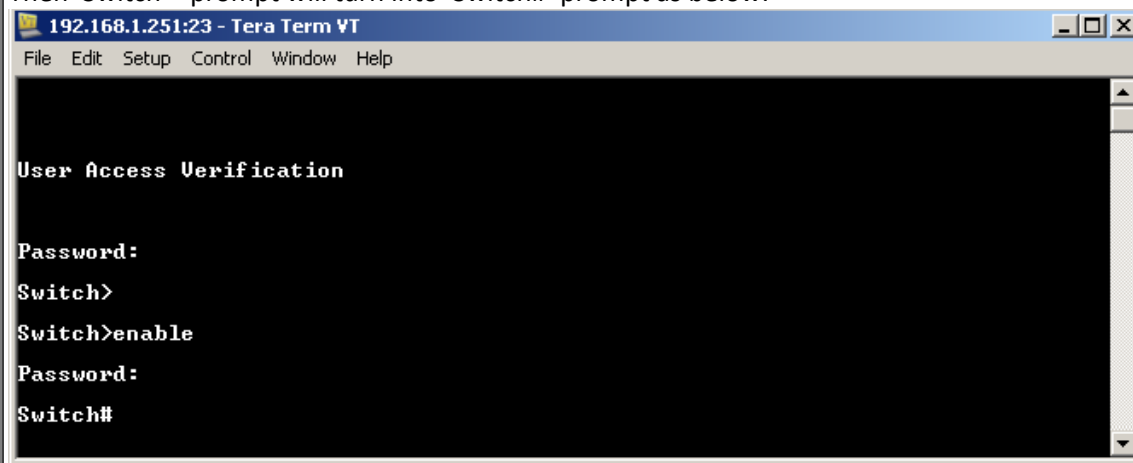
System Contact: System Location:

Submit Cancel

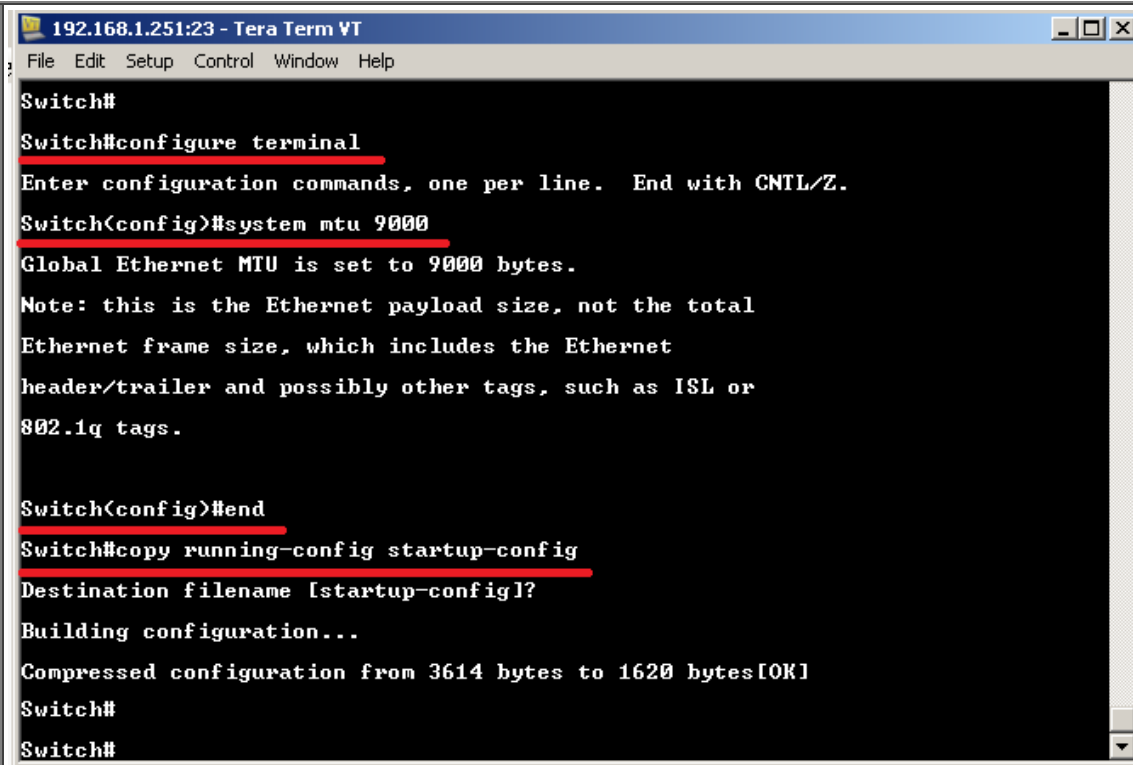
<p>Step 13</p>	<p>After you click Submit :</p> <ul style="list-style-type: none"> • The switch is configured and exits Express Setup mode. • The browser displays a warning message and tries to connect with the earlier switch IP address. Typically, connectivity between the PC or laptop and the switch is lost because the configured switch IP address is in a different subnet from the IP address on the PC or laptop. <p>Now, change IP address of your PC or laptop to static IP address in same subnet of the Switch.</p>	
<p>Step 14</p>	<p>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.</p> <p>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/</p> <p>Run Tera Term software, and press Alt + N keys to open new connection.</p> <p>14-1. Select “TCP/IP” on Tera Term:New Connection Window.</p> <p>14-2. Type the IP address of the Switch at the field of Host: Ex) 192.168.1.251</p> <p>14-3. Type 23 at the field of TCP Port# and select “Telnet”.</p> <p>14-4. Then click OK button.</p>	



- 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]?”

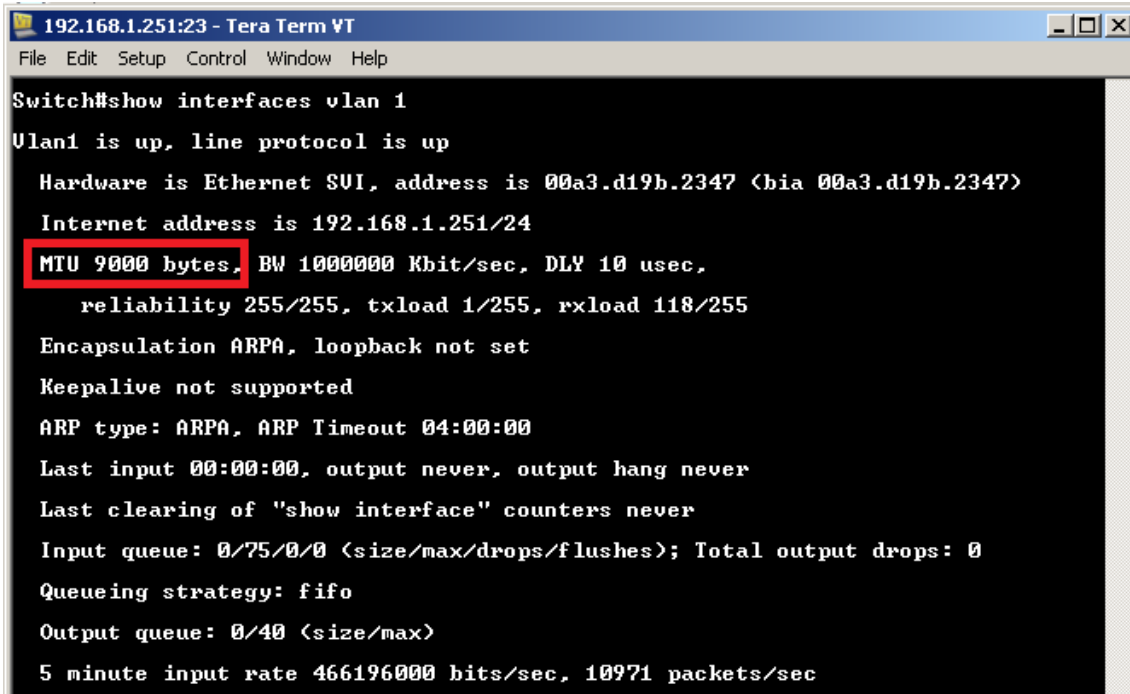


```
192.168.1.251:23 - Tera Term VT
File Edit Setup Control Window Help
Switch#
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#system ntu 9000
Global Ethernet MTU is set to 9000 bytes.
Note: this is the Ethernet payload size, not the total
Ethernet frame size, which includes the Ethernet
header/trailer and possibly other tags, such as ISL or
802.1q tags.

Switch(config)#end
Switch#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
Compressed configuration from 3614 bytes to 1620 bytes[OK]
Switch#
Switch#
```

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



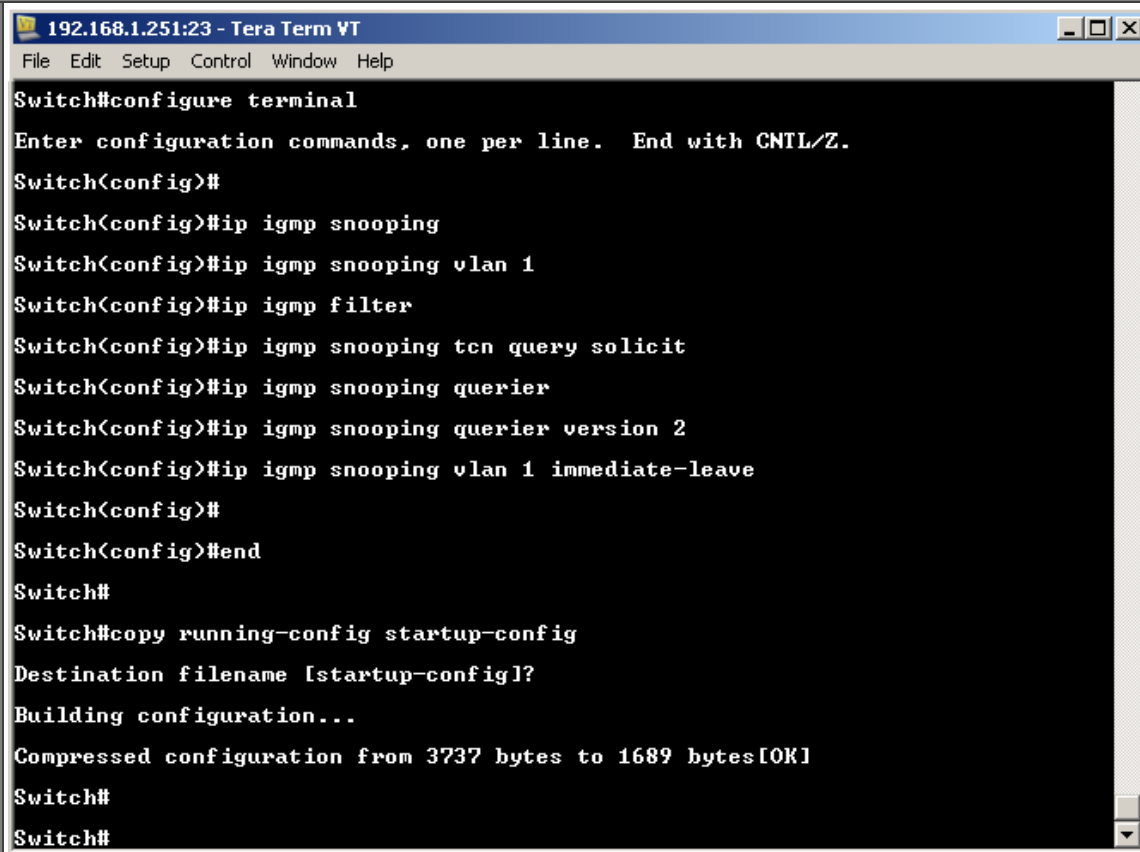
```
192.168.1.251:23 - Tera Term VT
File Edit Setup Control Window Help
Switch#show interfaces vlan 1
Vlan1 is up, line protocol is up
  Hardware is Ethernet SVI, address is 00a3.d19b.2347 (bia 00a3.d19b.2347)
  Internet address is 192.168.1.251/24
  MTU 9000 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 118/255
  Encapsulation ARPA, loopback not set
  Keepalive not supported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:00, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 466196000 bits/sec, 10971 packets/sec
```

Step
18

To Enable Multicast IGMP Snooping for IP922.

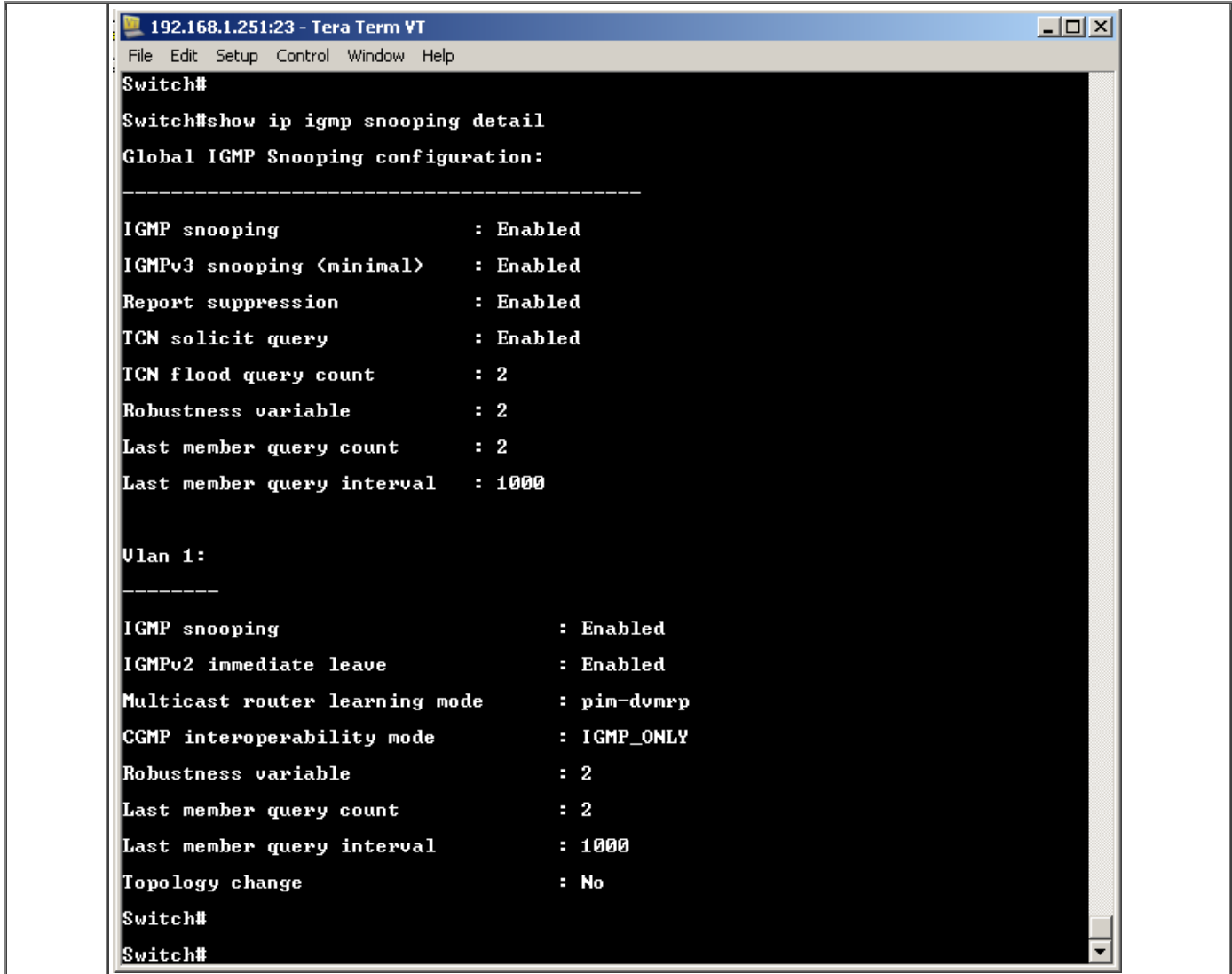
Note: IP922 requires Multicast IGMP Snooping for matrix switch configuration.

- 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 tcu 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.



```
192.168.1.251:23 - Tera Term VT
File Edit Setup Control Window Help
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
Switch(config)#ip igmp snooping
Switch(config)#ip igmp snooping vlan 1
Switch(config)#ip igmp filter
Switch(config)#ip igmp snooping tcn query solicit
Switch(config)#ip igmp snooping querier
Switch(config)#ip igmp snooping querier version 2
Switch(config)#ip igmp snooping vlan 1 immediate-leave
Switch(config)#
Switch(config)#end
Switch#
Switch#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
Compressed configuration from 3737 bytes to 1689 bytes[OK]
Switch#
Switch#
```

- 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.

A screenshot of a Tera Term VT terminal window. The window title is "192.168.1.251:23 - Tera Term VT". The terminal shows the following text:

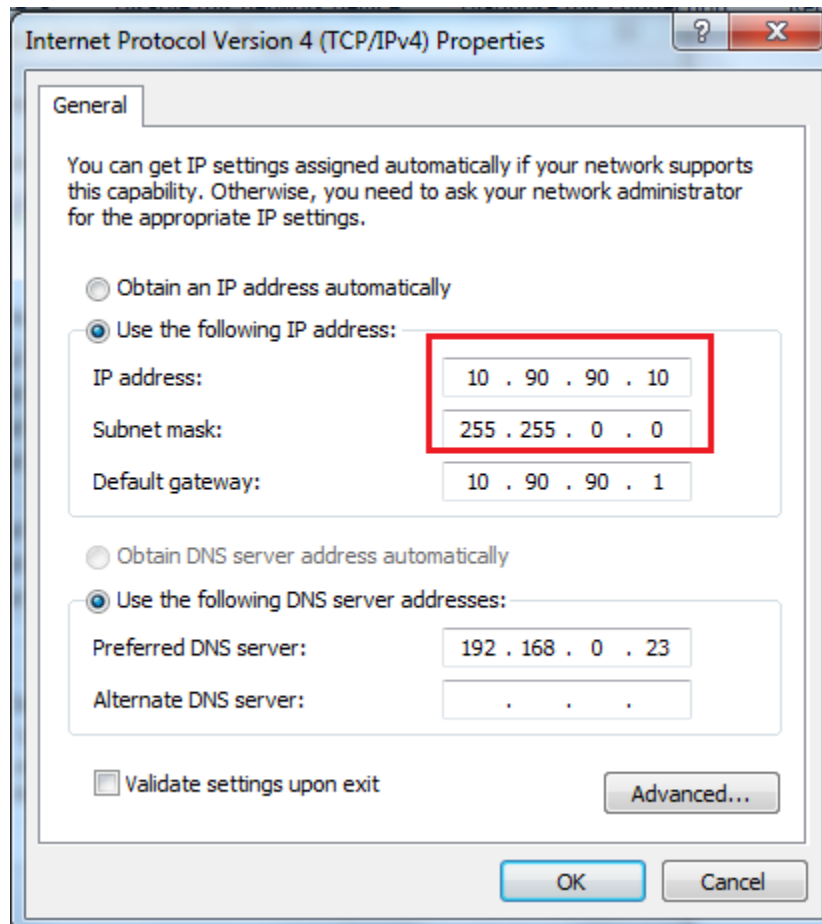
```
Switch#  
Switch#show ip igmp snooping detail  
Global IGMP Snooping configuration:  
-----  
IGMP snooping : Enabled  
IGMPv3 snooping (minimal) : Enabled  
Report suppression : Enabled  
TCN solicit query : Enabled  
TCN flood query count : 2  
Robustness variable : 2  
Last member query count : 2  
Last member query interval : 1000  
  
Ulan 1:  
-----  
IGMP snooping : Enabled  
IGMPv2 immediate leave : Enabled  
Multicast router learning mode : pim-dvmrp  
CGMP interoperability mode : IGMP_ONLY  
Robustness variable : 2  
Last member query count : 2  
Last member query interval : 1000  
Topology change : No  
Switch#  
Switch#
```

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

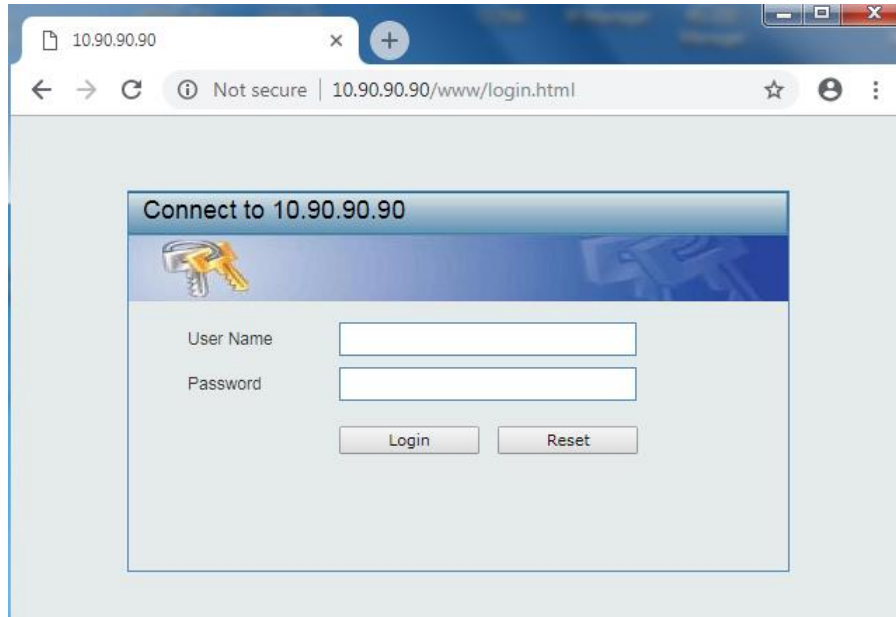
D-Link DGS-3630 Series Network Setup Guide

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



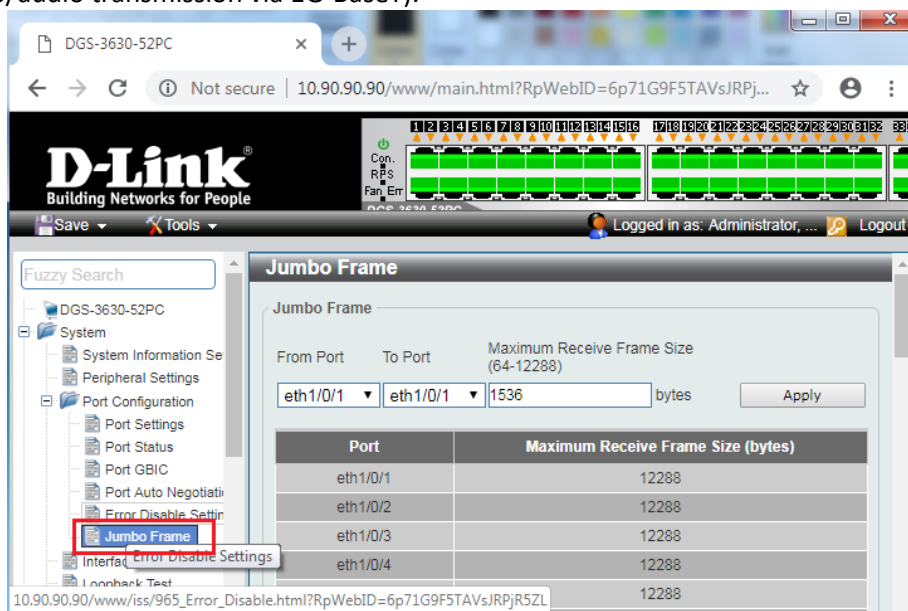
5. Open the Web browser and enter **10.90.90.90** (default IP address of D-Link DGS-3630-52PC). The login window appears as below.



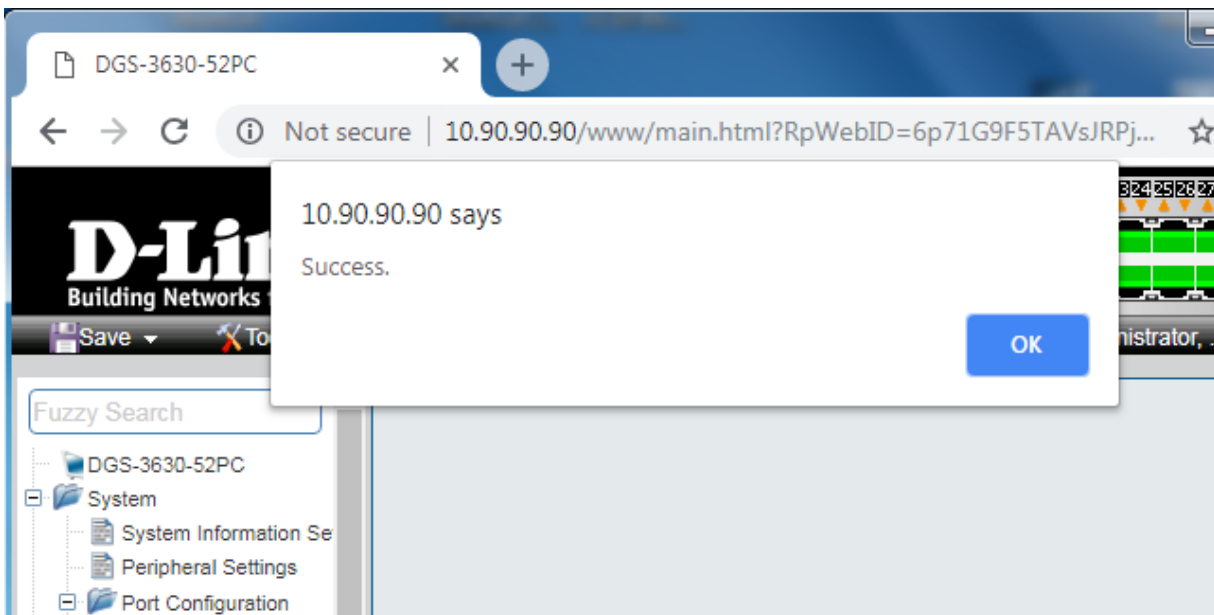
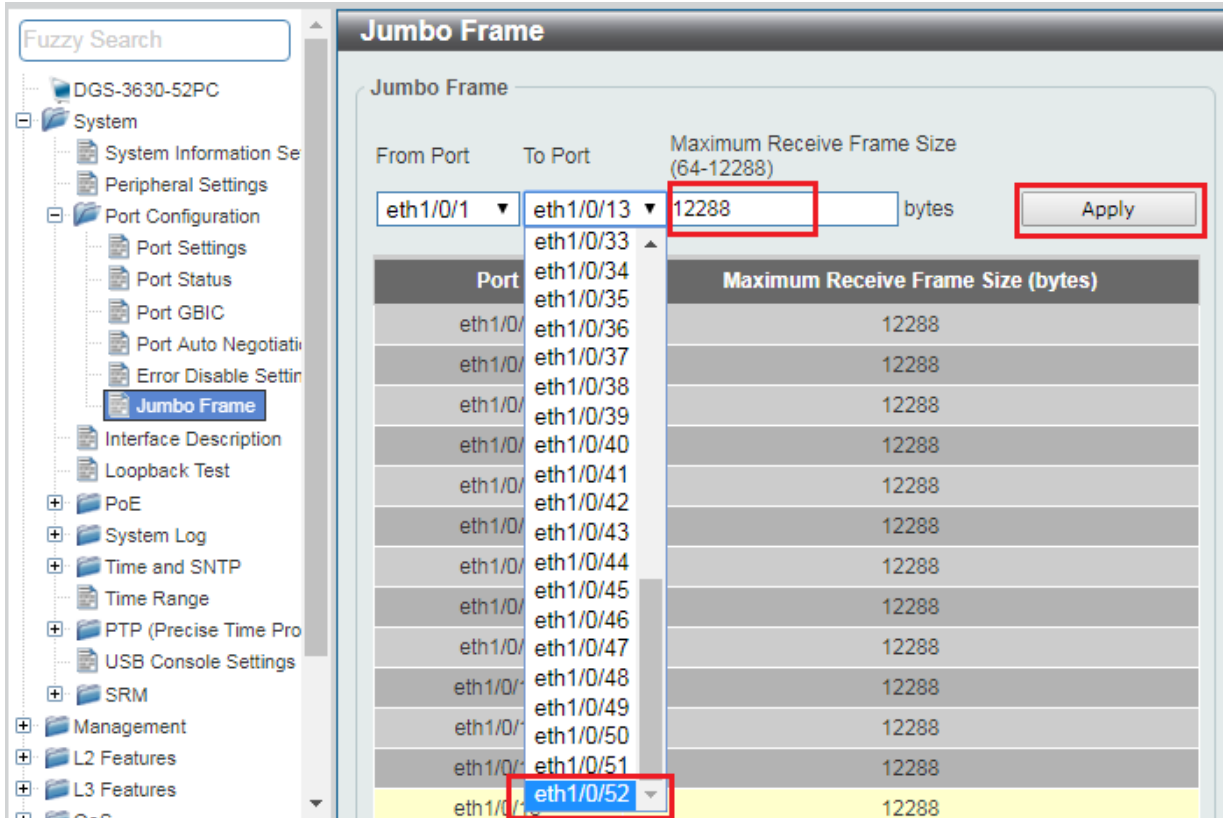
6. Leave the user name and password fields empty. They are NOT required. Click **“Login”** to login to the switch configuration window.

Enable Jumbo Frame:

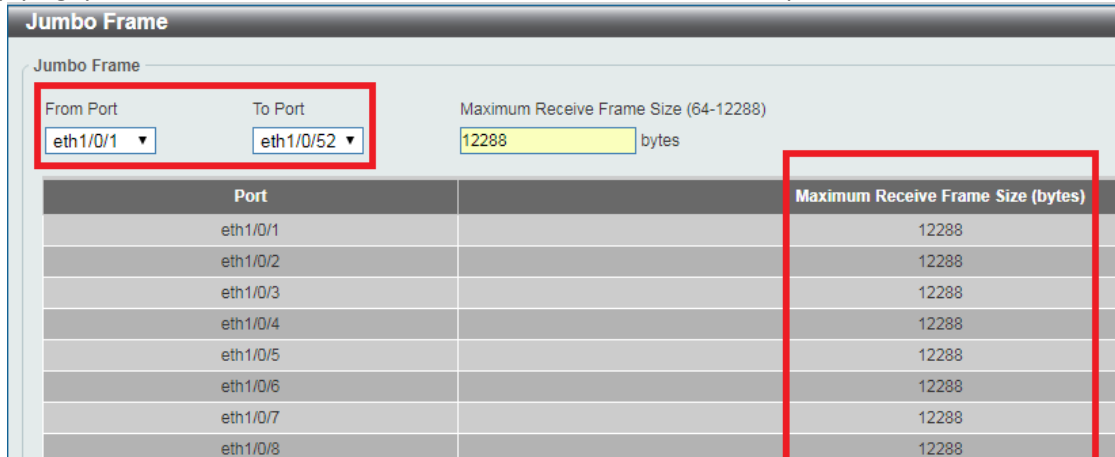
7. Find **System -> Port Configuration -> Jumbo Frame** in the menu on left side of the window. (IP922 requires Jumbo Frame(8K) for video/audio transmission via 1G-BaseT).



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.

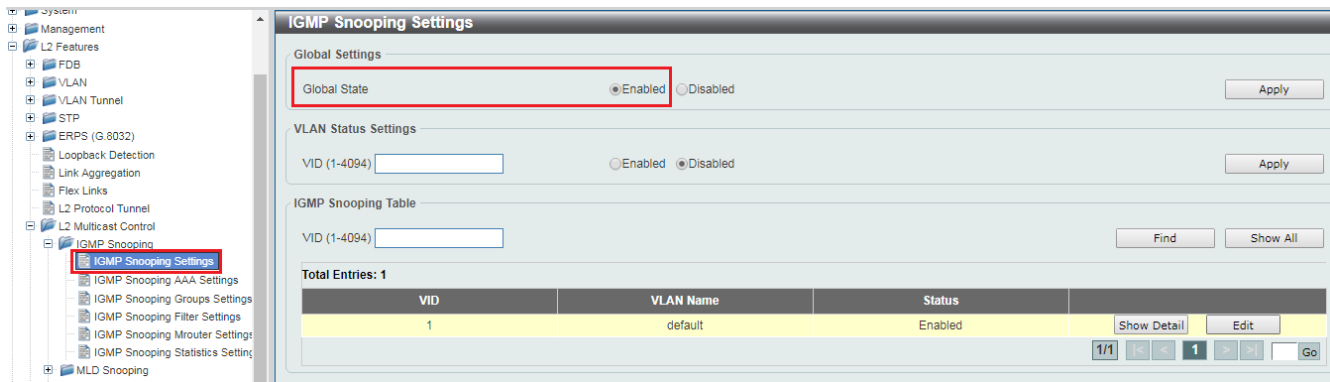


9. After applying, you should see Maximum Receive Frame Size **12288** for all ports as below.



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.



12. Click “Edit” button in IGMP Snooping Settings window.

IGMP Snooping Settings

Global Settings
 Global State Enabled Disabled Apply

VLAN Status Settings
 VID (1-4094) Enabled Disabled Apply

IGMP Snooping Table
 VID (1-4094) Find Show All

Total Entries: 1

VID	VLAN Name	Status	
1	default	Enabled	Show Detail Edit

1/1 Go

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**

IGMP Snooping VLAN Settings

IGMP Snooping VLAN Settings

VID (1-4094)

Status Enabled Disabled

Minimum Version ▼

Fast Leave Enabled Disabled

Report Suppression Enabled Disabled

Suppression Time (1-300)

Querier State Enabled Disabled

Query Version ▼

Query Interval (1-31744) sec

Max Response Time (1-25) sec

Robustness Value (1-7)

Last Member Query Interval (1-25) sec

Proxy Reporting Enabled Disabled
 Source Address

Rate Limit (1-1000) No Limit

Ignore Topology Change Enabled Disabled Apply

Network IP Settings:

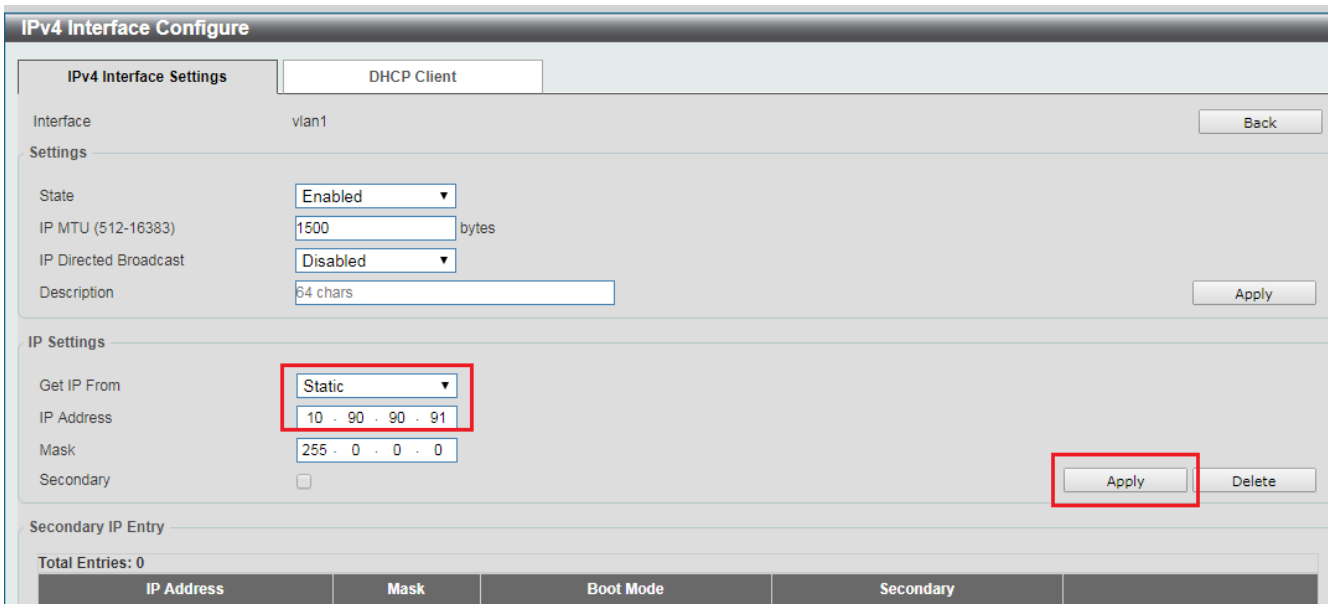
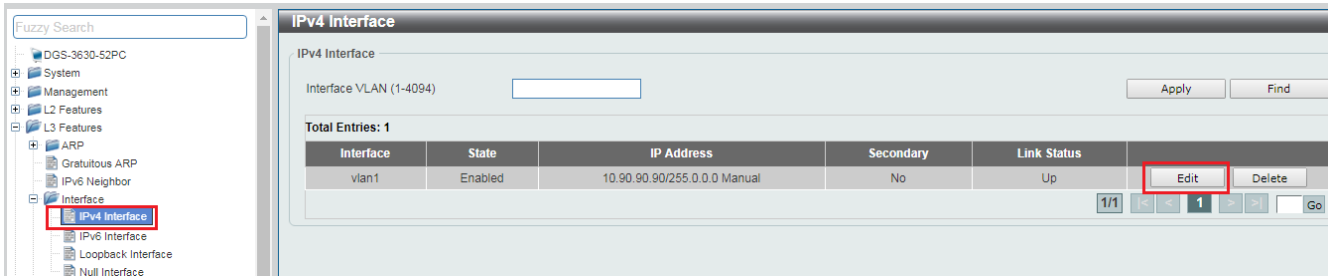
14. Find **L3 Features** -> **Interface** -> **IPv4 Interface**. Select “Edit” button.

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

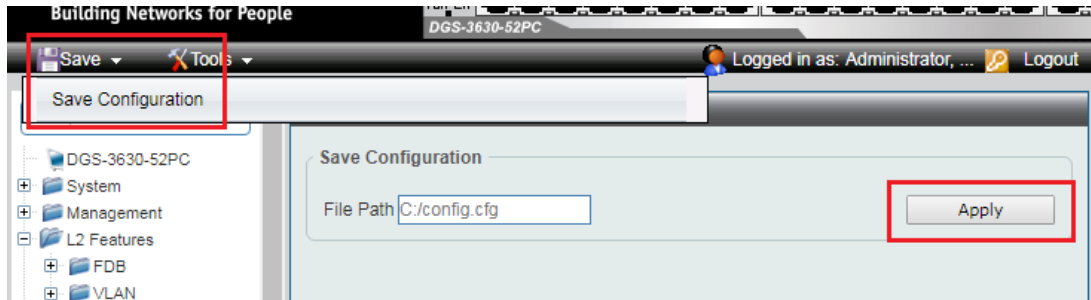
If you use a single network switch, you may not need to change network IP settings. But if you are stacking network switches (connecting multiple network switches through D-Link 10G fiber cables), it is recommended to set first on to 10.90.90.91, second to 10.90.90.92, and so on.

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

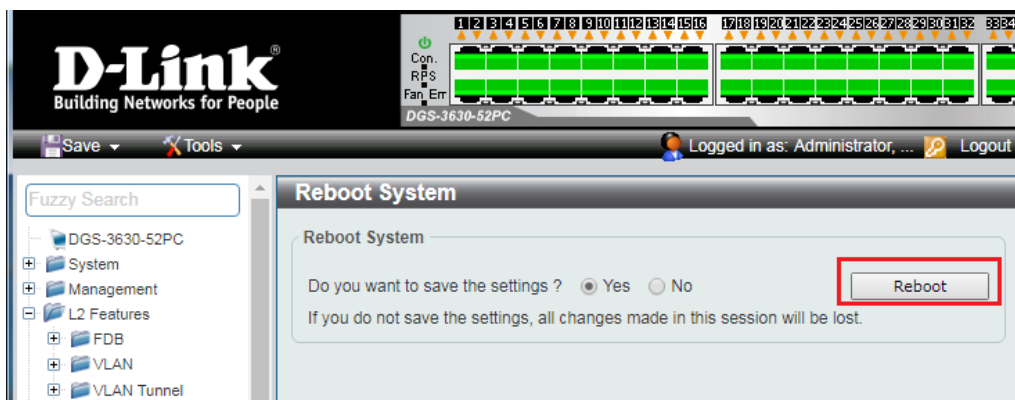
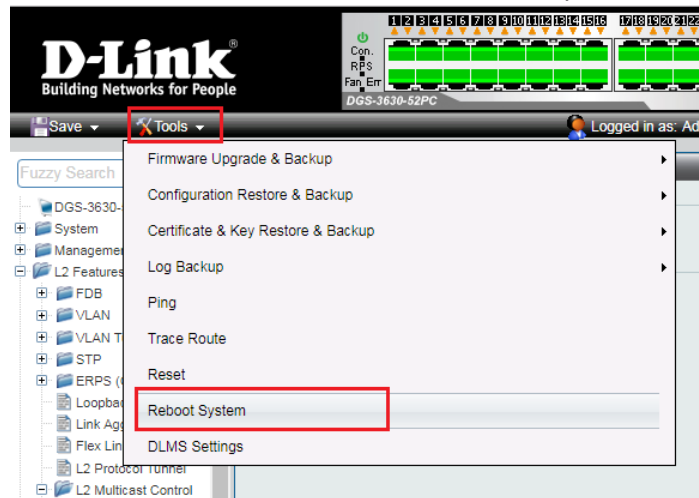
If you change an IP address, the page will be refreshed and you will need to log in again using new IP address, same user name and password. If you did not change IP address just continue to the next step. Make sure your screen looks exactly like pictured below.



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.



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,swp22,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
```

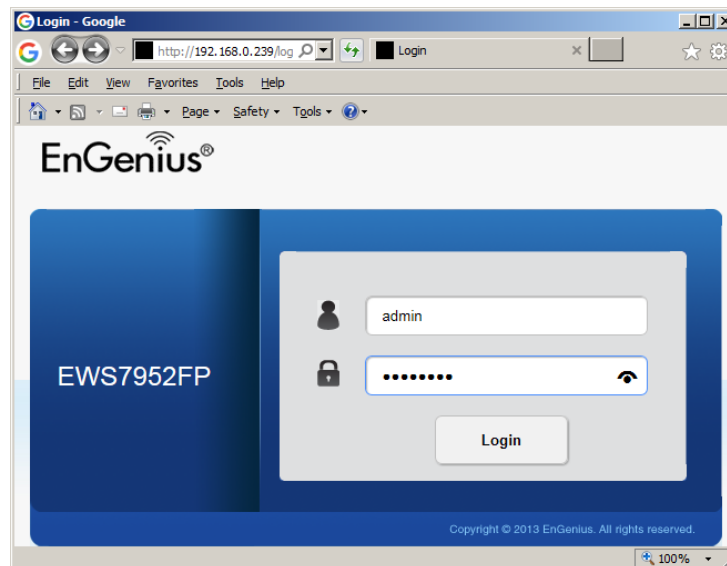
In addition, manually add the following line to the bridge configuration in “/etc/network/interfaces”

```
bridge-mclmi 30
```

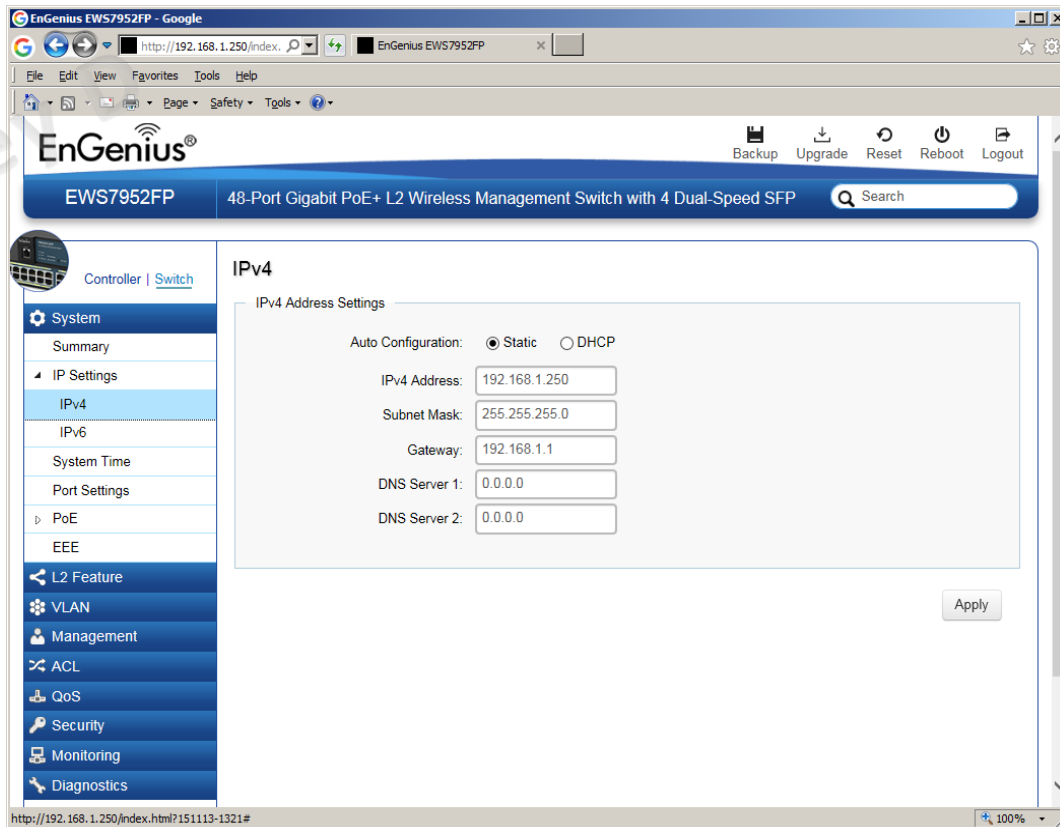
Modify the commands as needed to best fit the network environment. This configuration enables port 49 for uplink to another switch to expand the system.

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**.



- 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**.



- 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.

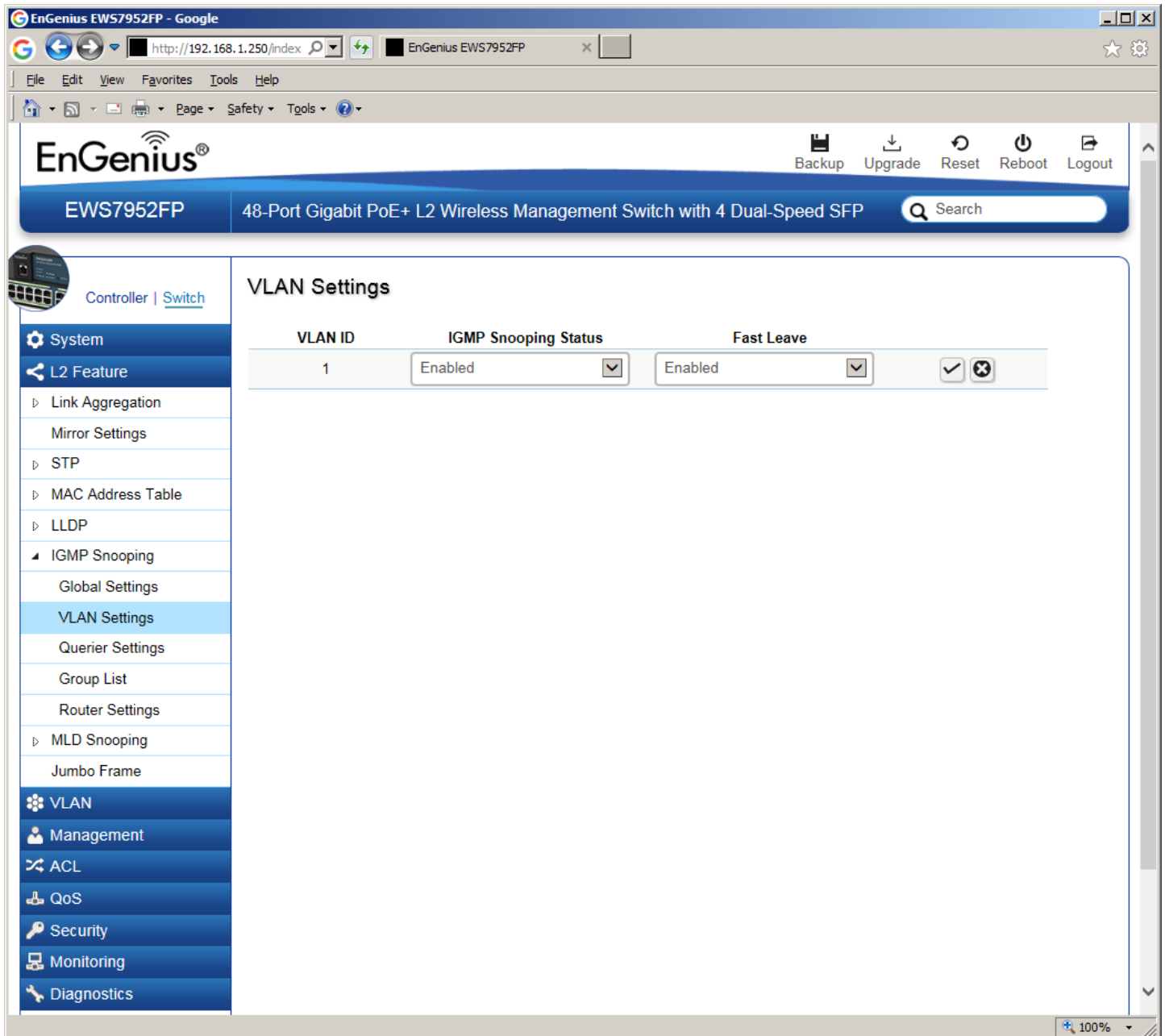
- On the left select **Switch**. Navigate to **L2 Feature** -> **IGMP Snooping** -> **Global Settings**. Under **Status** select **Enabled**, under **Version: V2** and under **Report Suppression: Enabled**. Click **Apply**.

The screenshot shows a web browser window displaying the EnGenius EWS7952FP management interface. The browser address bar shows the URL <http://192.168.1.250/index>. The page header includes the EnGenius logo, the model number EWS7952FP, and the description "48-Port Gigabit PoE+ L2 Wireless Management Switch with 4 Dual-Speed SFP". Navigation links for Backup, Upgrade, Reset, Reboot, and Logout are visible. The left sidebar contains a menu with categories like System, L2 Feature, VLAN, Management, ACL, QoS, Security, Monitoring, and Diagnostics. The "IGMP Snooping" section is expanded, and "Global Settings" is selected. The main content area shows the following settings:

- Status: Enabled Disabled
- Version: V2 V3
- Report Suppression: Enabled Disabled

An "Apply" button is located at the bottom right of the settings area. The browser window title is "EnGenius EWS7952FP - Google".

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.



The screenshot shows the EnGenius EWS7952FP web interface. The browser address bar shows the URL <http://192.168.1.250/index>. The page title is "EnGenius EWS7952FP" and the subtitle is "48-Port Gigabit PoE+ L2 Wireless Management Switch with 4 Dual-Speed SFP". The navigation menu on the left includes System, L2 Feature, VLAN, Management, ACL, QoS, Security, Monitoring, and Diagnostics. The L2 Feature menu is expanded, showing Link Aggregation, Mirror Settings, STP, MAC Address Table, LLDP, IGMP Snooping (selected), Querier Settings, Group List, Router Settings, MLD Snooping, and Jumbo Frame. The IGMP Snooping menu is also expanded, showing Global Settings, VLAN Settings (selected), Querier Settings, Group List, and Router Settings. The VLAN Settings page shows a table with the following columns: VLAN ID, IGMP Snooping Status, and Fast Leave. The table has one row for VLAN ID 1, with IGMP Snooping Status set to Enabled and Fast Leave set to Enabled. There are checkmark and X buttons to the right of the table row.

VLAN ID	IGMP Snooping Status	Fast Leave
1	Enabled	Enabled

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.

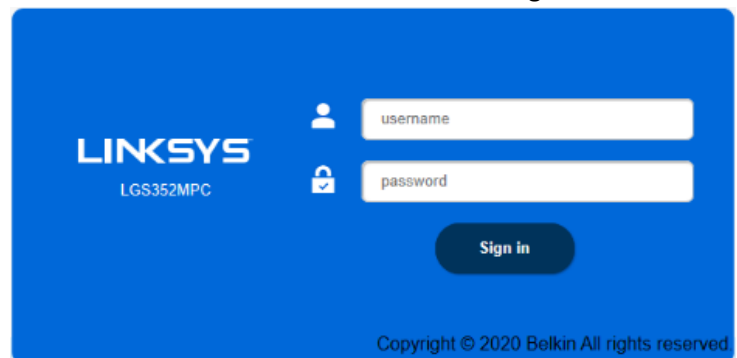
Linksys LGSxxxMPC setup guide for KD-IP922, KD-IP822, and KD-IP1080 systems

Recommended firmware version: 1.00.01.03***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.

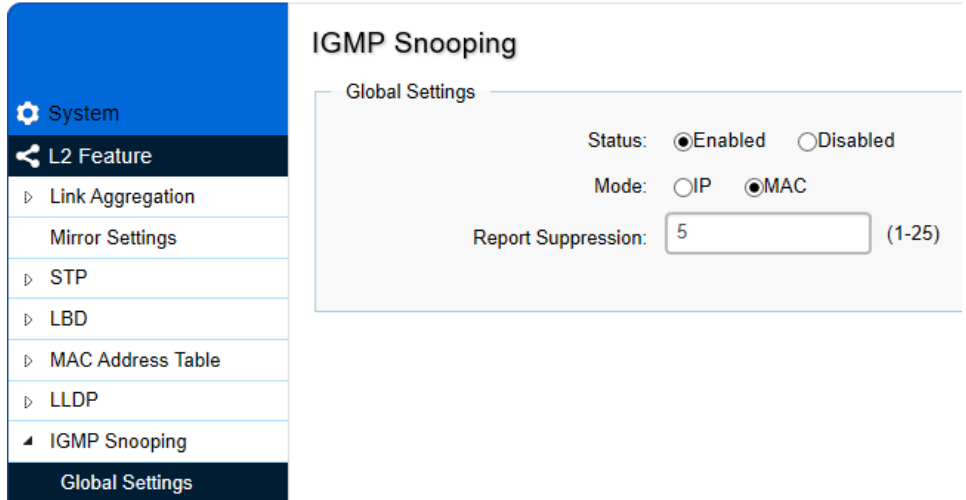
3. Set the IP address of the switch to the desired address. This setting is accessed via **System -> IP settings -> IPv4 Management**.

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

System	
IPv4 Management	
System	Summary
IP Settings	IPv4 Management

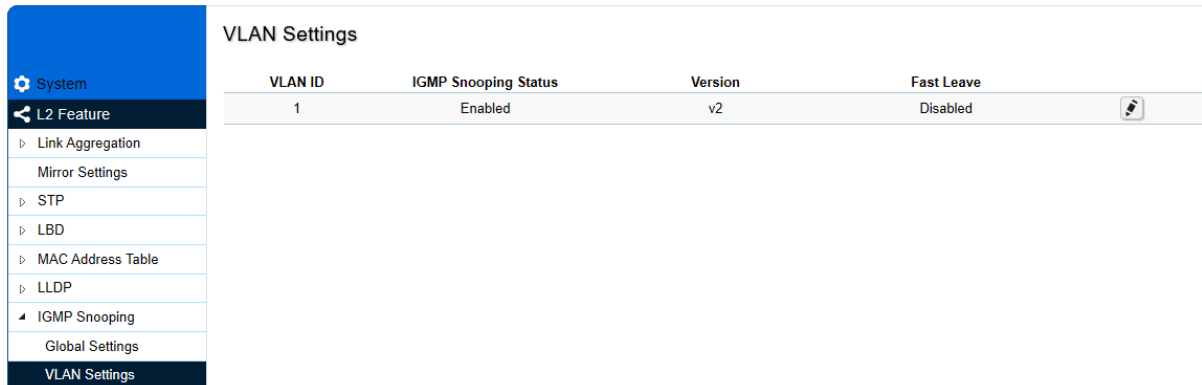
VLAN ID	Address	Subnet Mask	Configuration	
1	192.168.1.251	255.255.0.0	Static	<input checked="" type="checkbox"/> <input type="checkbox"/>

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.



VLAN ID	IGMP Snooping Status	Version	Fast Leave
1	Enabled	v2	Disabled

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.

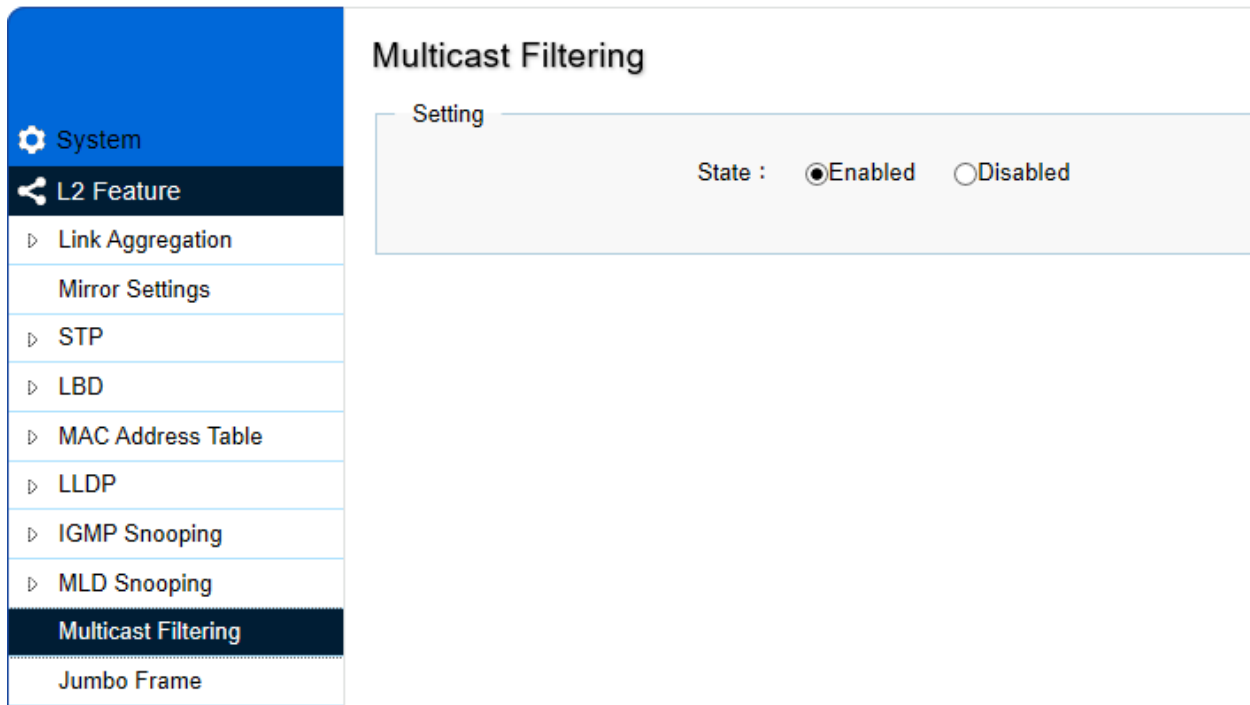
VLAN ID	Querier State	Querier Version	Querier Status	Interval	Max Response Interval	Startup Query Counter	Startup Query Interval
1	Enabled	v2	Querier	125	12	2	15

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

Setting

Jumbo Frame: Bytes (1522-10240)

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

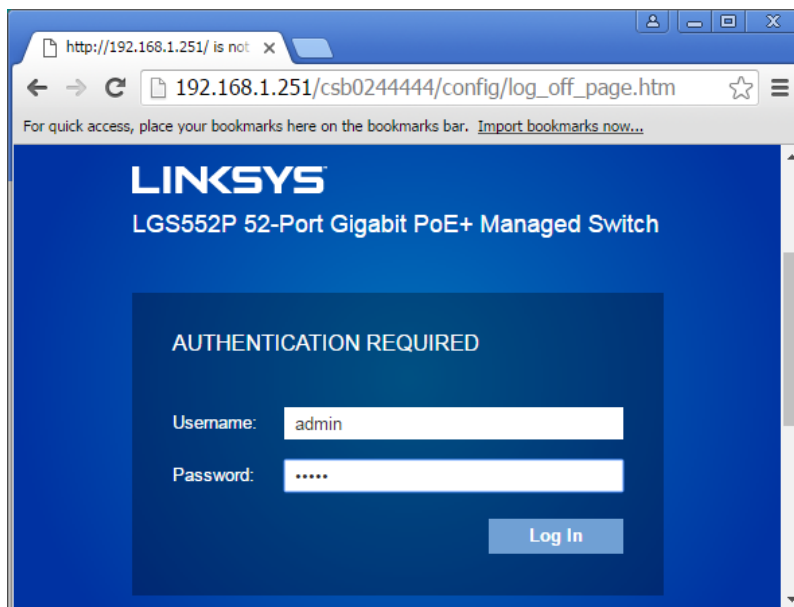


The screenshot shows a web-based configuration interface. On the left is a vertical navigation menu with a blue header. The menu items are: System (with a gear icon), L2 Feature (with a left-pointing arrow icon), Link Aggregation, Mirror Settings, STP, LBD, MAC Address Table, LLDP, IGMP Snooping, MLD Snooping, Multicast Filtering (highlighted in dark blue), and Jumbo Frame. The main content area is titled "Multicast Filtering" and contains a "Setting" section. Below the title, the text "State : Enabled Disabled" is displayed, indicating that Multicast Filtering is currently enabled.

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)

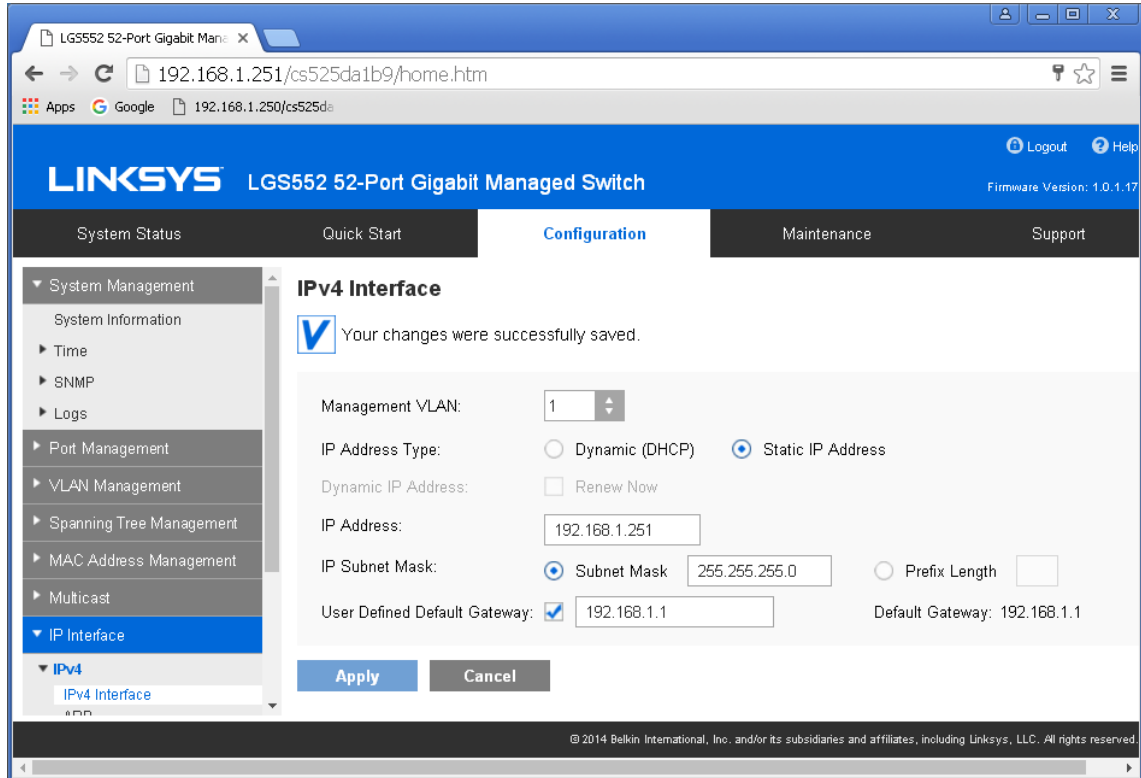
1. **IMPORTANT:** Disconnect all the DHCP devices like routers, servers from the Linksys network switch.
2. Locate a pinhole “RESET” button at the front panel left bottom corner of your Linksys network switch. Using a paper clip press and hold a reset button for more than 10 seconds and then release. 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**.



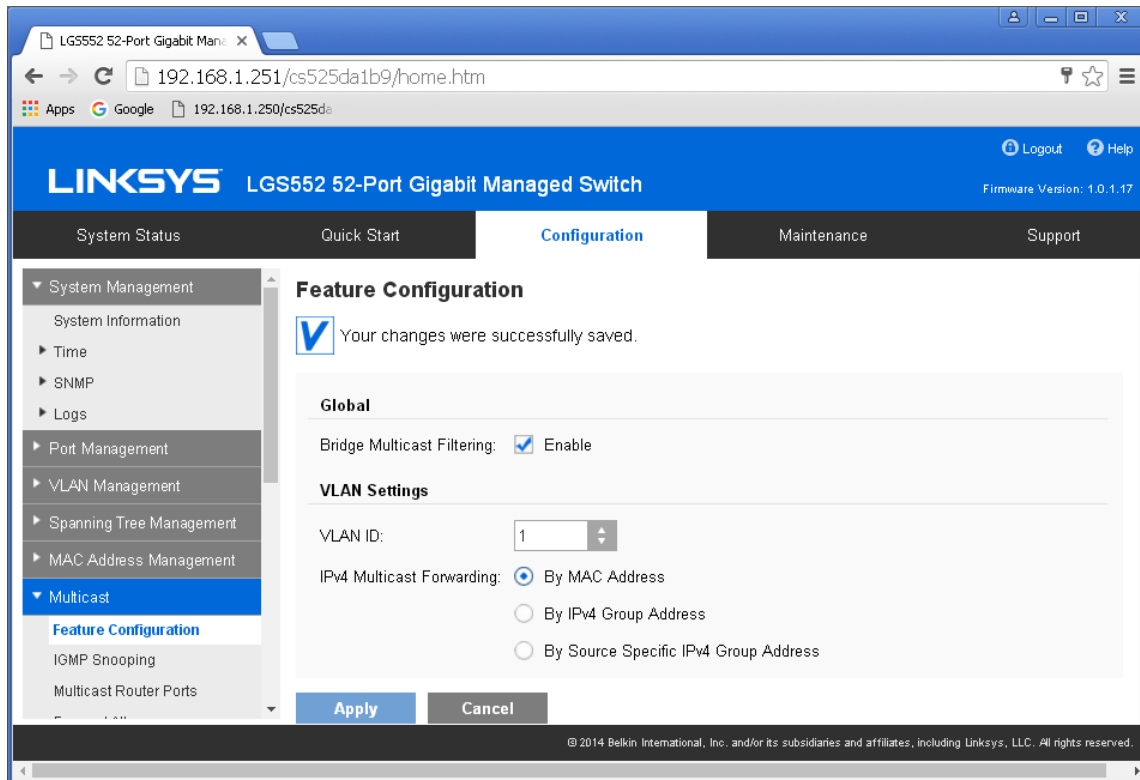
9. Navigate to **Configuration -> IP Interface -> IPv4-> IPv4 Interface**. Select **Static IP Address**. IP address can be changed by the administrator depending on the network configuration. If you are using multiple network switches it is recommended to set first one to **192.168.1.251**, second to **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

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.

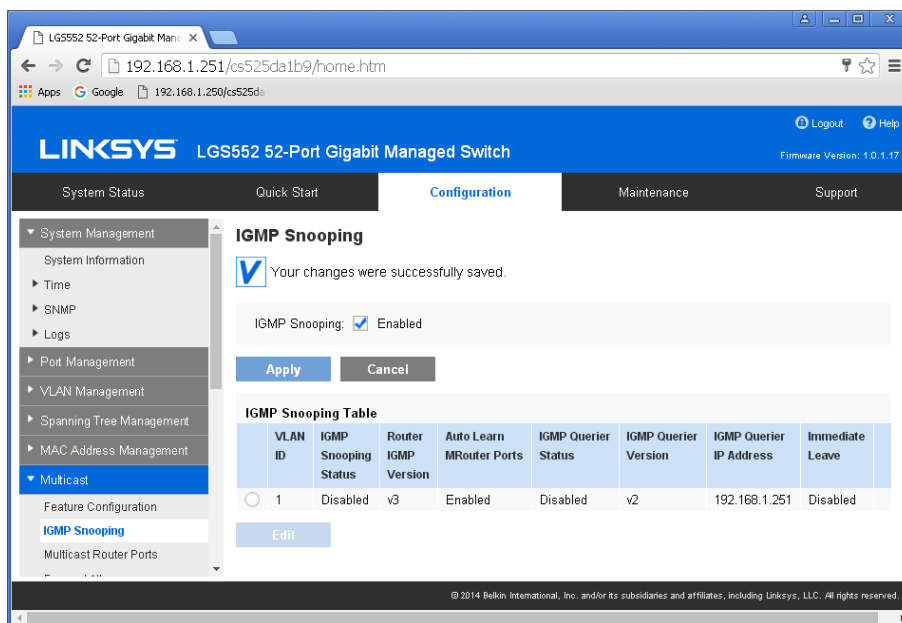
10. Make sure your screen looks exactly like pictured below.



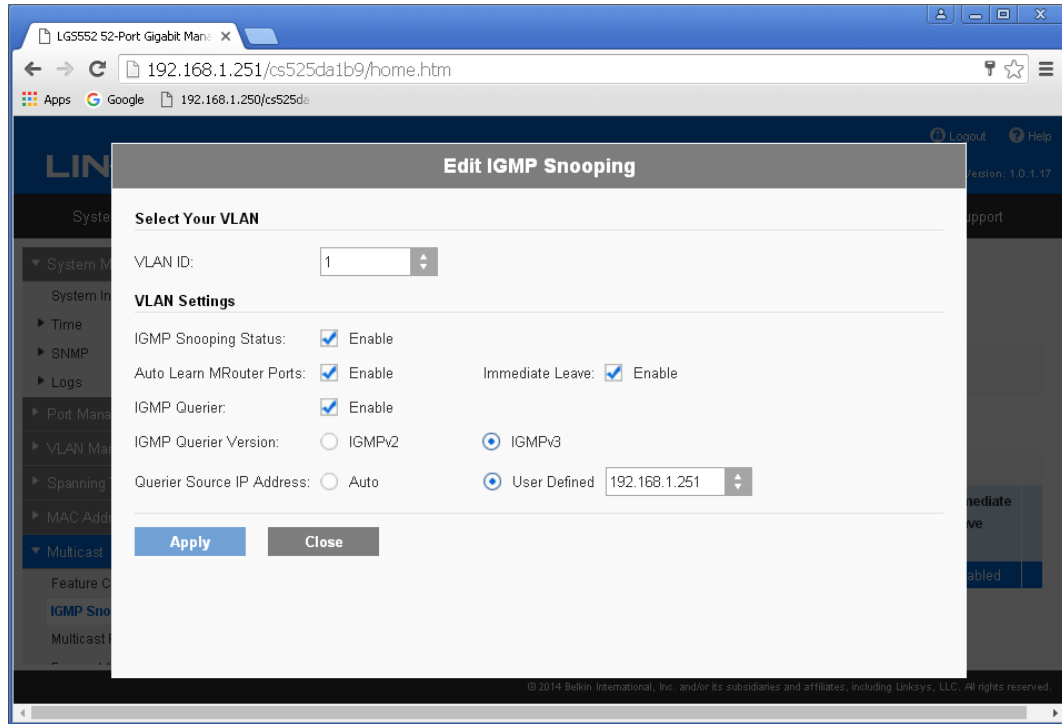
11. Navigate to **Multicast -> Future Configuration**. Select **Enable** under **Bridge Multicasting Filtering** and click **Apply**.



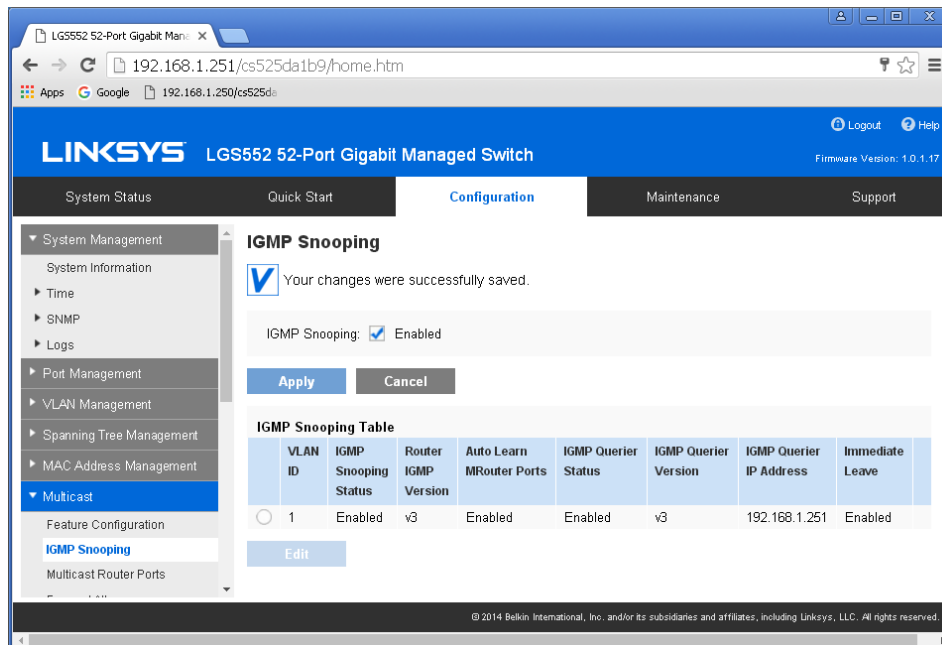
12. Navigate to **Multicast -> IGMP Snooping**. Select **Enable** under **IGMP Snooping**, click **Apply**.



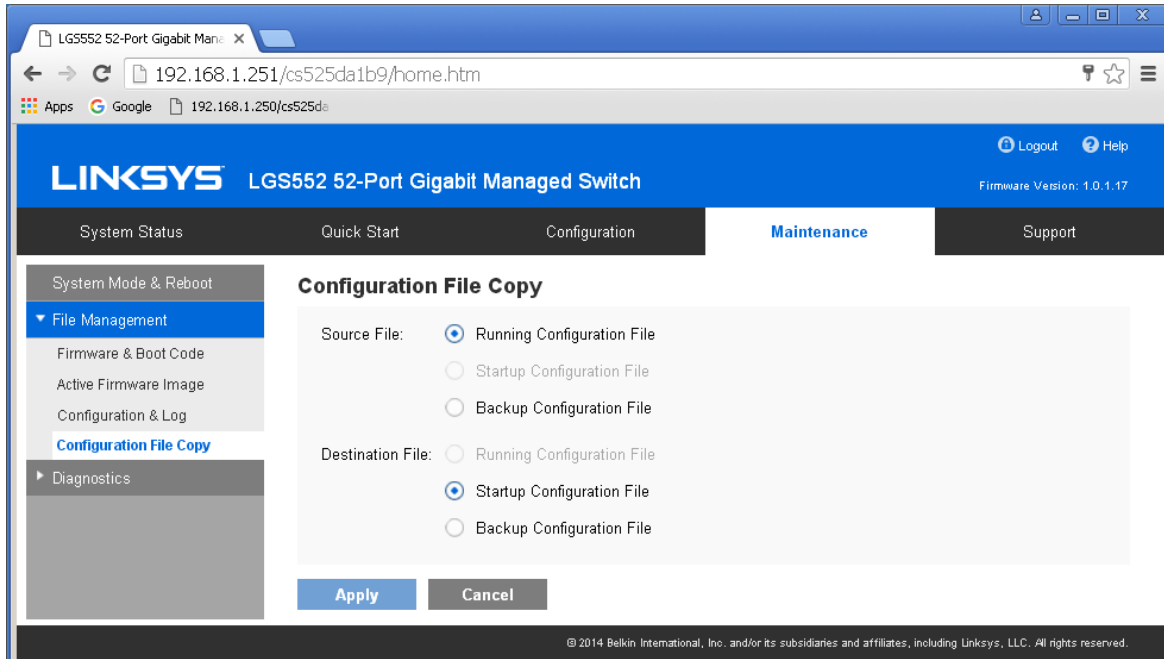
- Click on radio button and click **Edit**. **Edit IGMP Snooping** window will appear. Make sure **VLAN ID <1>** is selected. Enable all the settings as shown below. Select **IGMP v3** as **IGMP Querier Version**, Click **Apply** and then **Close**.



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

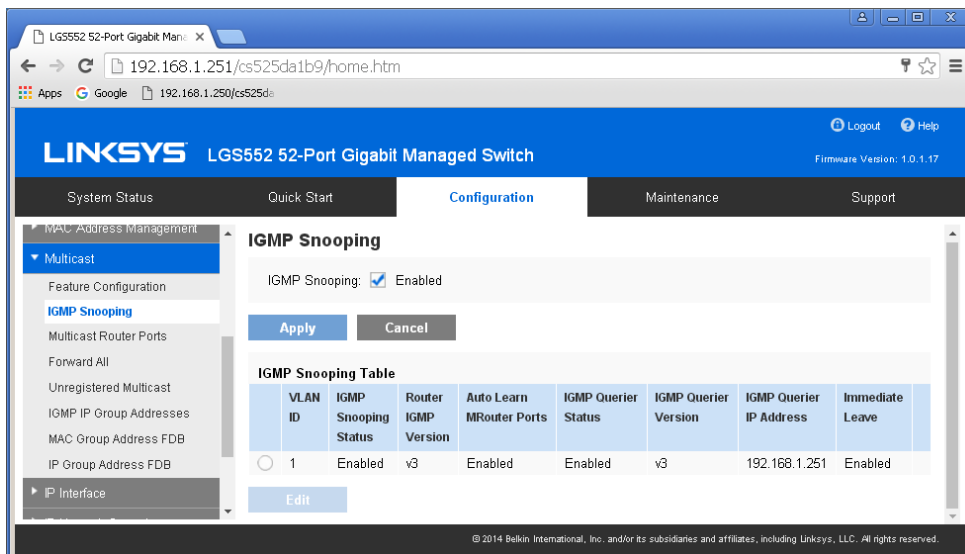
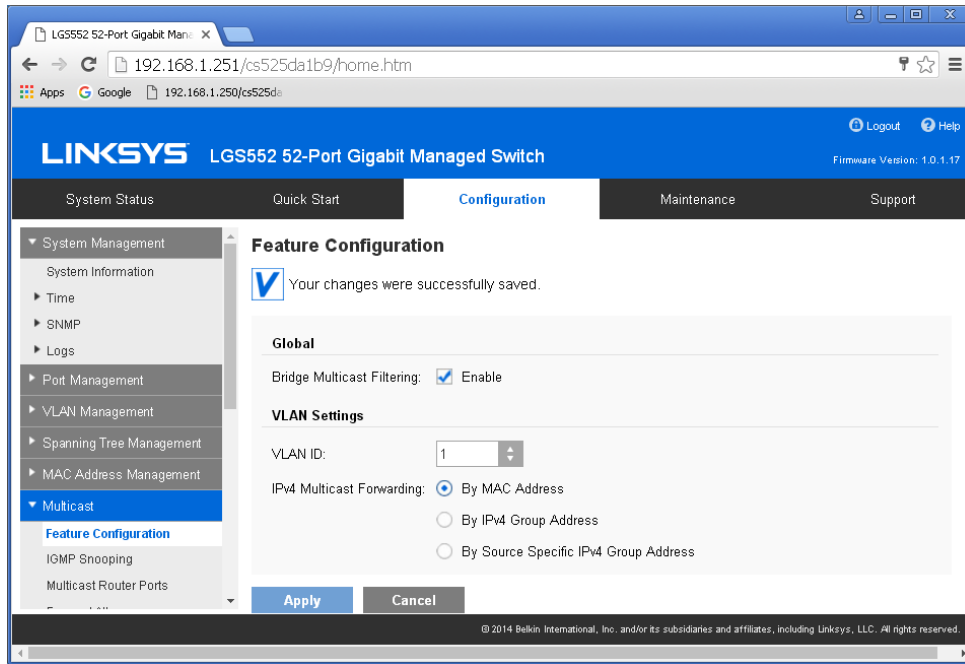


15. **IMPORTANT:** At this point all the displays should be displaying stable running video from the selected sources. If you do not have them displaying properly, than network switch is configured incorrectly.
16. Navigate to **Maintenance** -> **File Management** -> **Configuration File Copy**. Select 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:



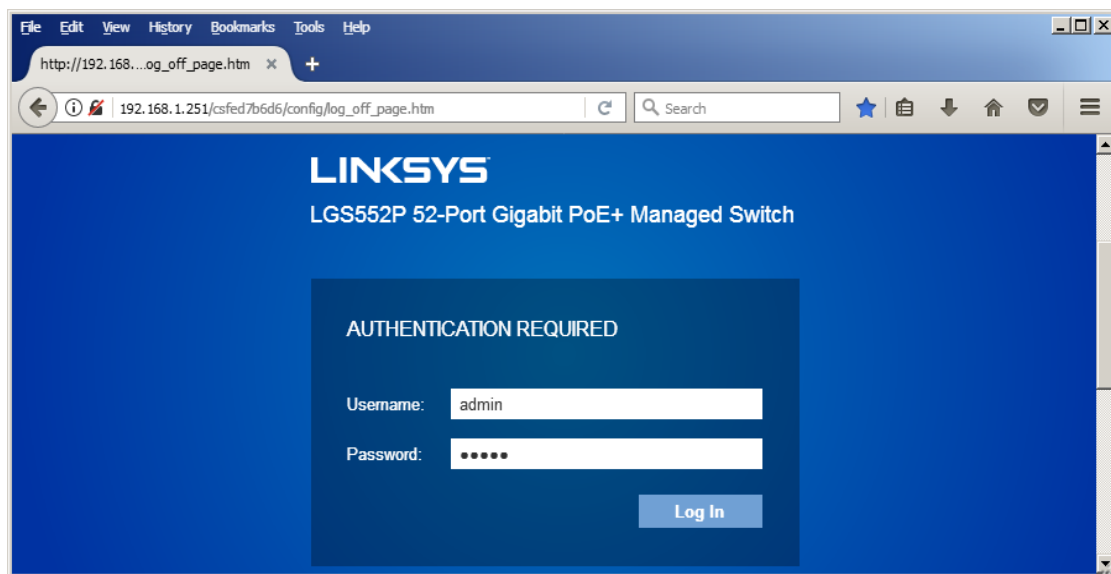
20. Rescan your components with Key Digital Management Software and make sure HDMI video switch is functional.

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.

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

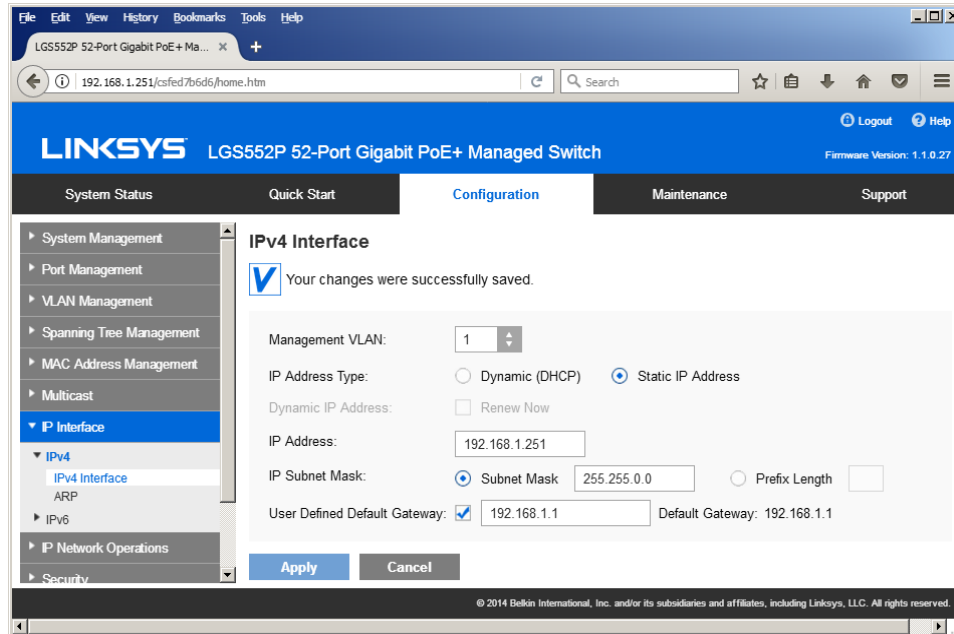
1. **IMPORTANT:** Disconnect all the DHCP devices like routers, servers from the Linksys network switch.
2. Locate a pinhole “RESET” button at the front panel left bottom corner of your Linksys network switch. Using a paper clip press and hold a reset button for more than 10 seconds and then release. 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**.



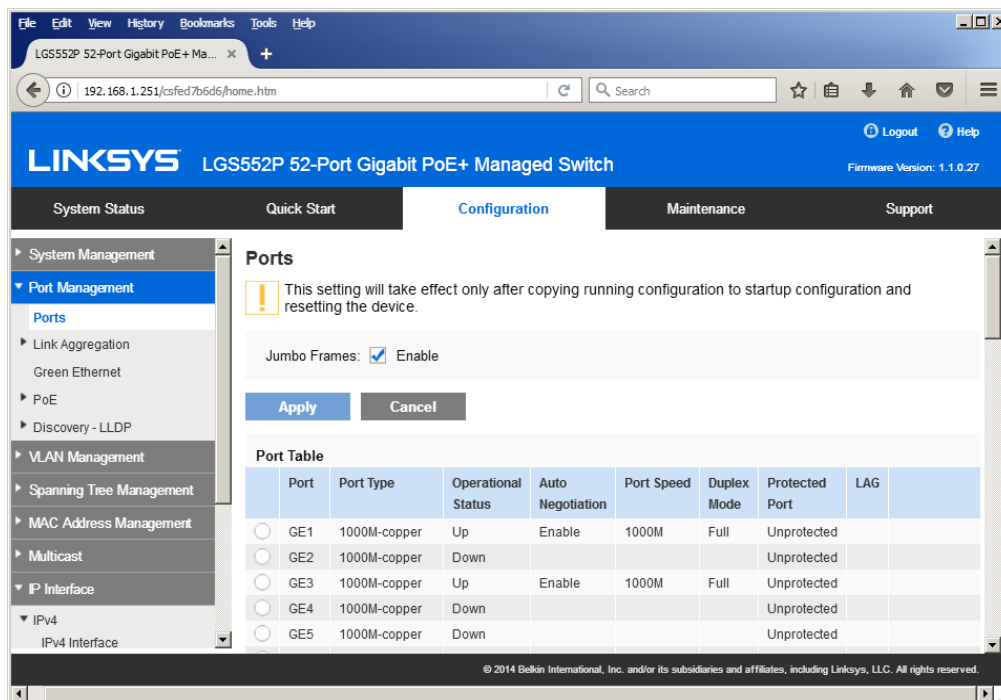
9. Navigate to **Configuration** -> **IP Interface** -> **IPv4**-> **IPv4 Interface**. Select **Static IP Address**. IP address can be changed by the administrator depending on the network configuration. If you are using multiple network switches it is recommended to set first one to **192.168.1.251**, 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

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

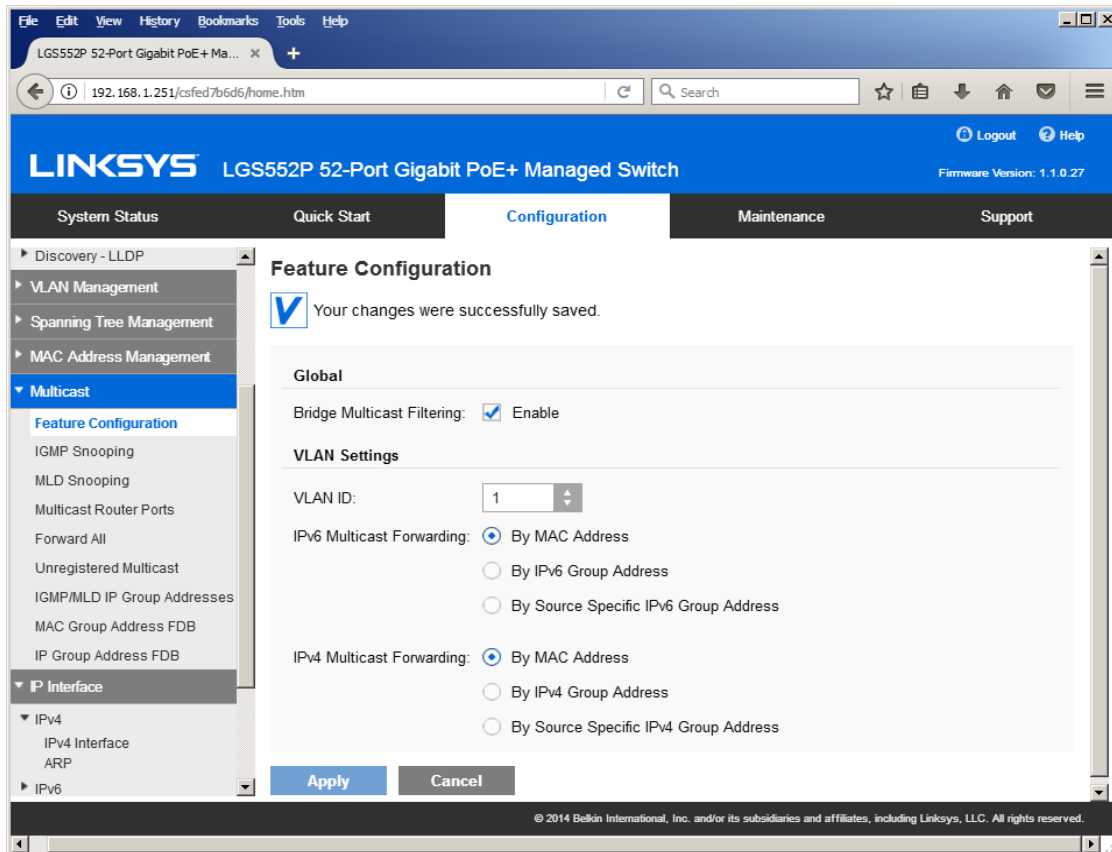
10. Make sure your screen looks exactly like pictured below.



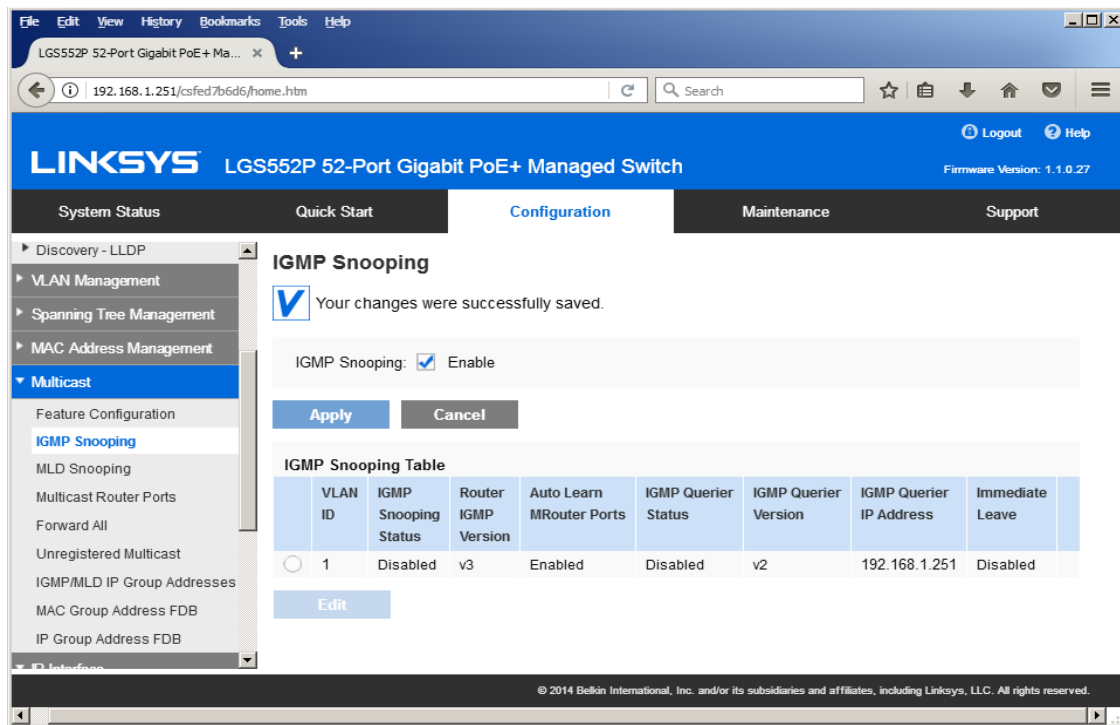
11. Navigate to **Port Management -> Ports**. Select **Enable** under **Jumbo Frames** and click **Apply**.



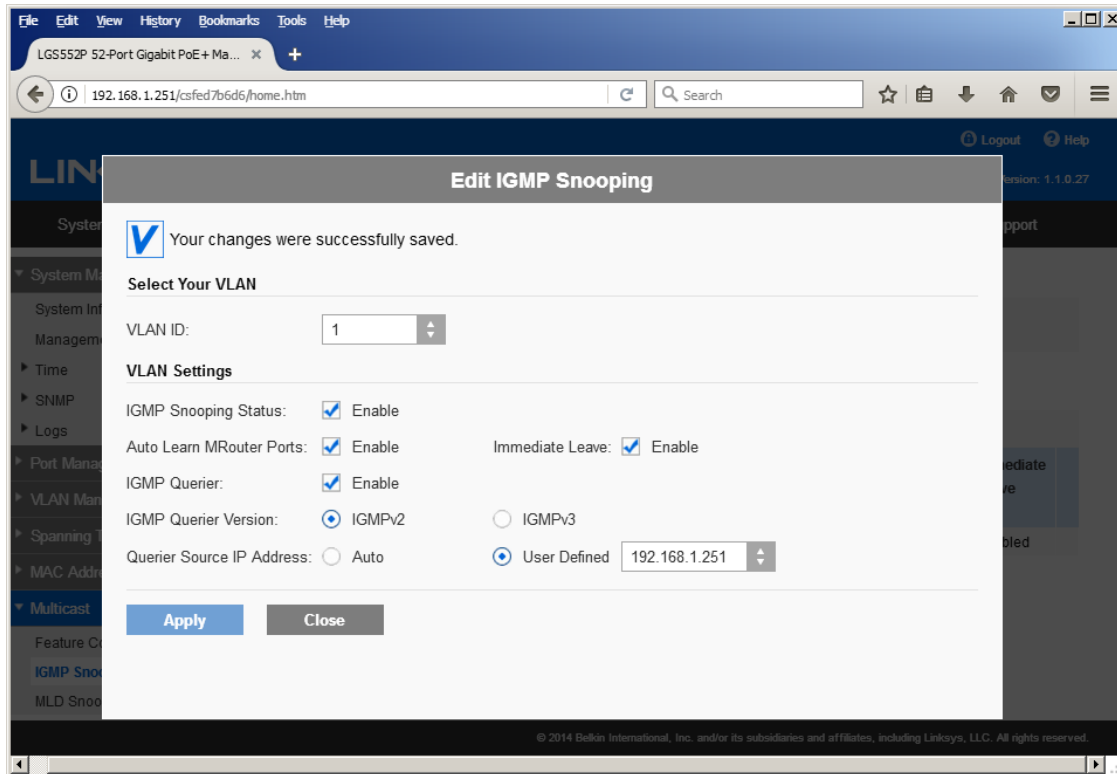
12. Navigate to **Multicast -> Future Configuration**. Select **Enable** under **Bridge Multicasting Filtering** and click **Apply**.



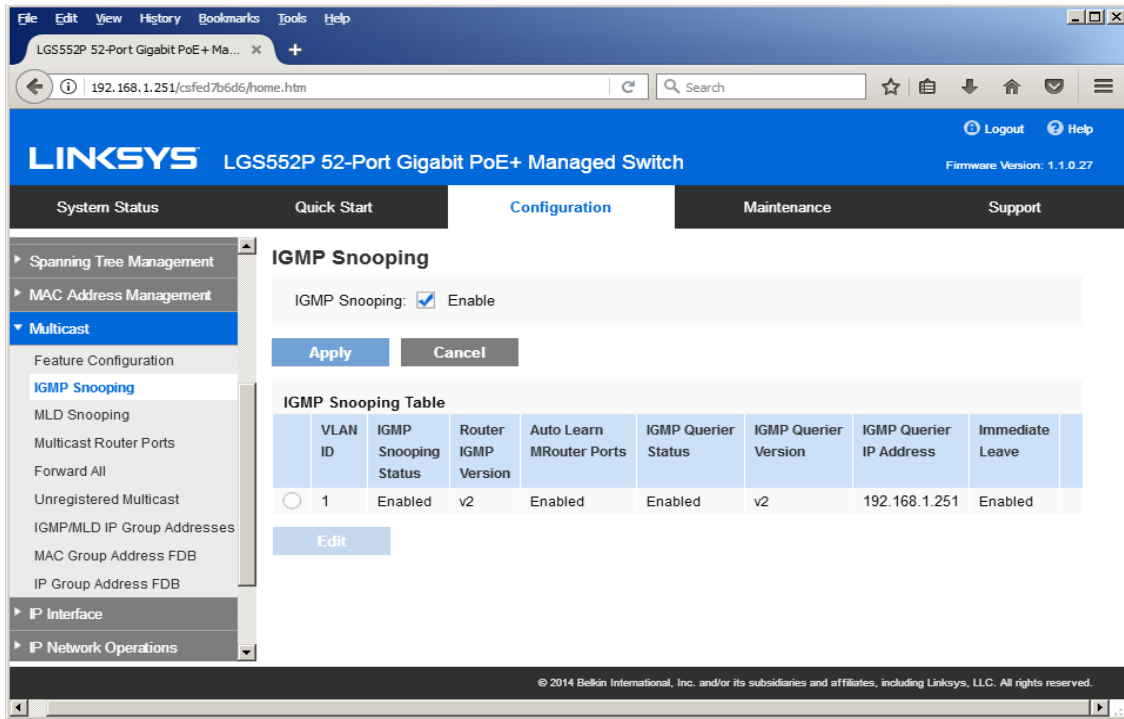
13. Navigate to **Multicast -> IGMP Snooping**. Select **Enable** under **IGMP Snooping**, click **Apply**.



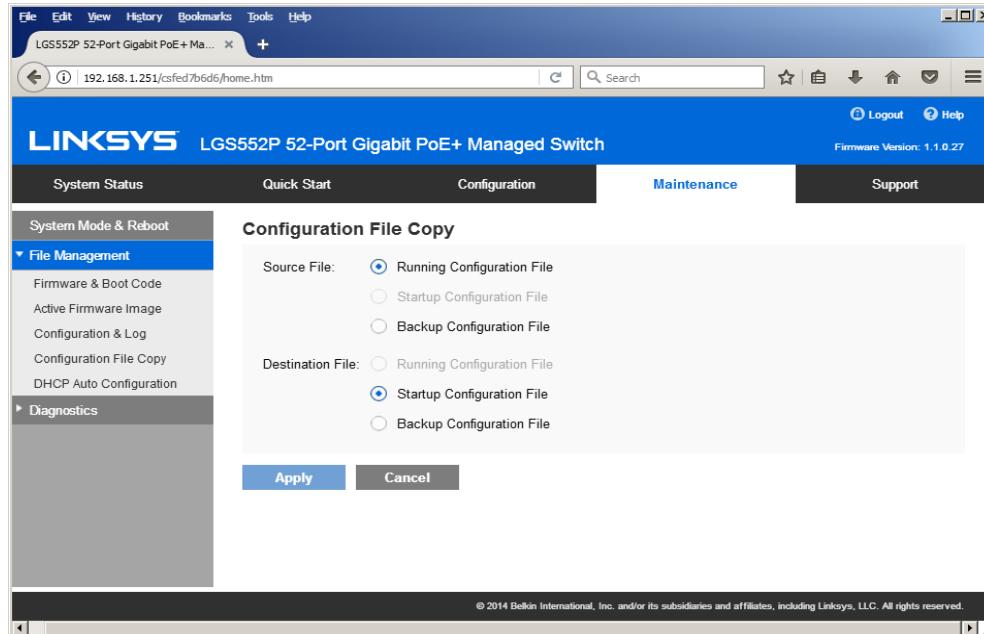
- Click on radio button and click **Edit**. **Edit IGMP Snooping** window will appear. Make sure **VLAN ID <1>** is selected. Enable all the settings as shown below. Select **IGMP v2** as **IGMP Querier Version**, Click **Apply** and then **Close**.



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

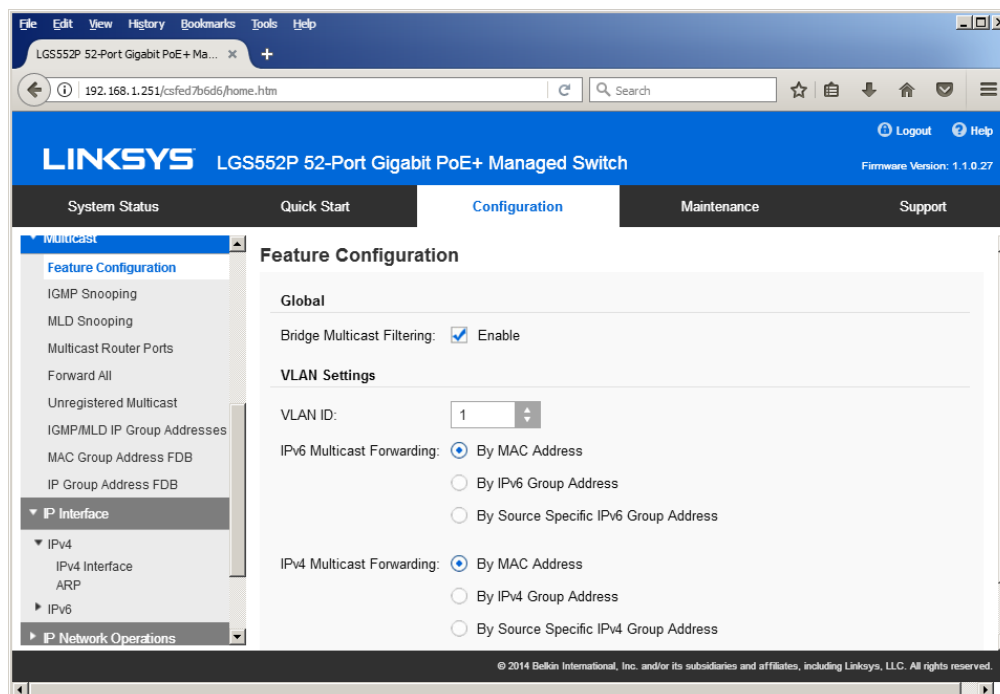


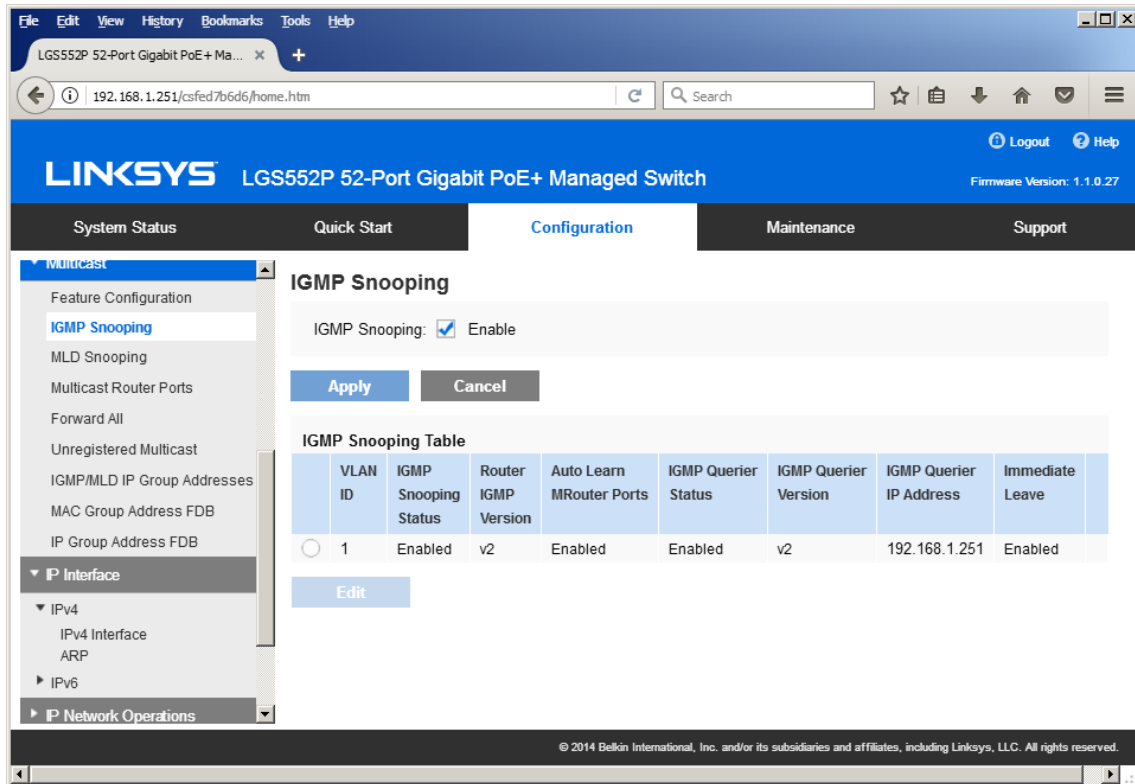
16. Navigate to **Maintenance** -> **File Management** -> **Configuration File Copy**. Select radio buttons as shown below, click **Apply**. This will save current configuration and will apply this configuration every time switch is powered up.



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:





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.

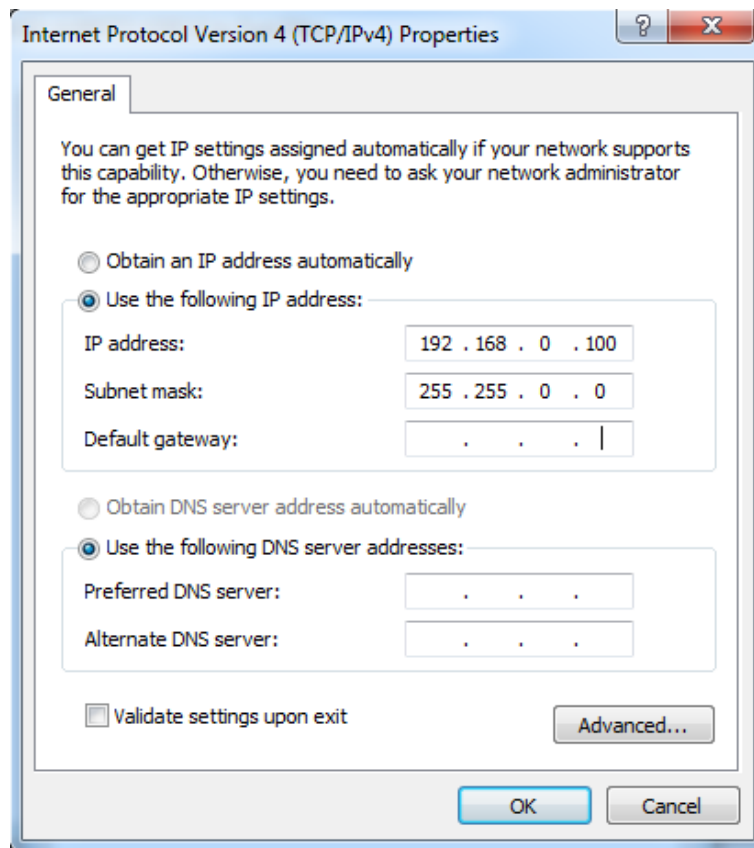
**Luxul AMS-4424P, SW-610-24P-R, SW-510-48P-F
Network Setup Guide for KD-IP822, KD-IP922, KD-IP1022, KD-IP1080**

Important Notes:

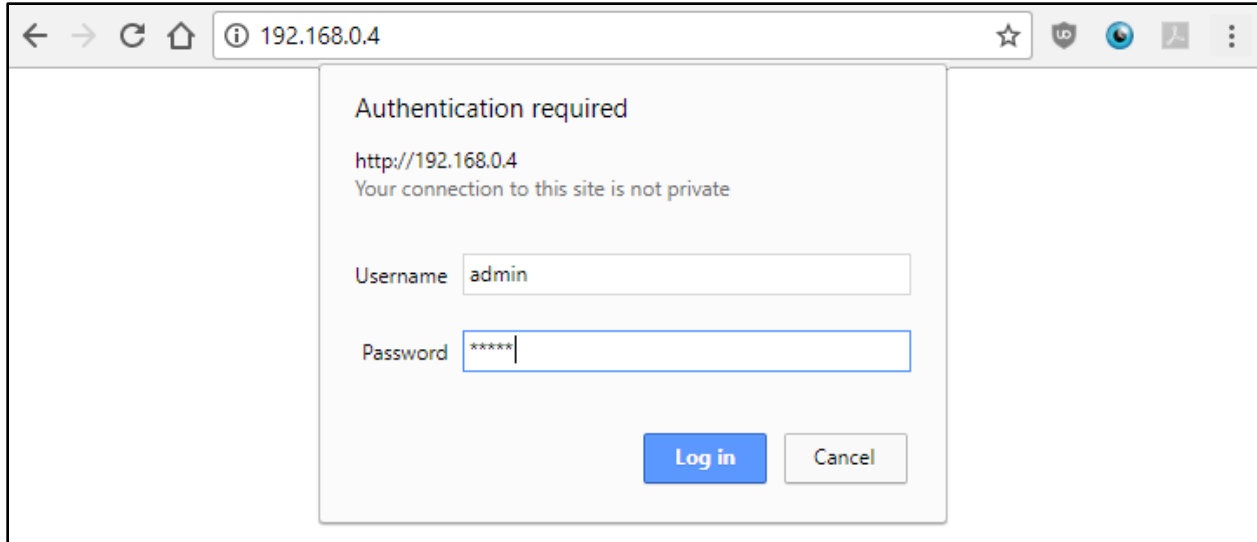
- When stacking – verify that both switches have POE enabled. In some cases, the secondary switch may disable POE upon stacking.

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:



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).

Switch 3 Refresh

Port Configuration for Switch 3

Port	Link	Speed		Adv Duplex		Adv speed			Flow Control			Maximum Frame Size	Excessive Collision Mode
		Current	Configured	Fdx	Hdx	10M	100M	1G	Enable	Curr Rx	Curr Tx		
*			<>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>			10056	<>
1	✓	1Gfdx	Auto	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10056	Discard
2	✓	1Gfdx	Auto	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10056	Discard
3	✓	1Gfdx	Auto	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10056	Discard
4	✓	1Gfdx	Auto	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10056	Discard
5	✓	1Gfdx	Auto	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10056	Discard
6	✓	1Gfdx	Auto	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10056	Discard
7	✓	1Gfdx	Auto	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10056	Discard
8	✓	1Gfdx	Auto	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10056	Discard
9	✓	1Gfdx	Auto	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10056	Discard

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

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

IGMP Snooping Configuration

Stack Global Settings

Global Configuration		Enabled
Snooping Enabled	<input checked="" type="checkbox"/>	Enabled
Unregistered IPMCv4 Flooding Enabled	<input type="checkbox"/>	Make sure unchecked.
IGMP SSM Range	232.0.0.0 / 8	
Leave Proxy Enabled	<input type="checkbox"/>	
Proxy Enabled	<input type="checkbox"/>	

Port Related Configuration for Switch 3

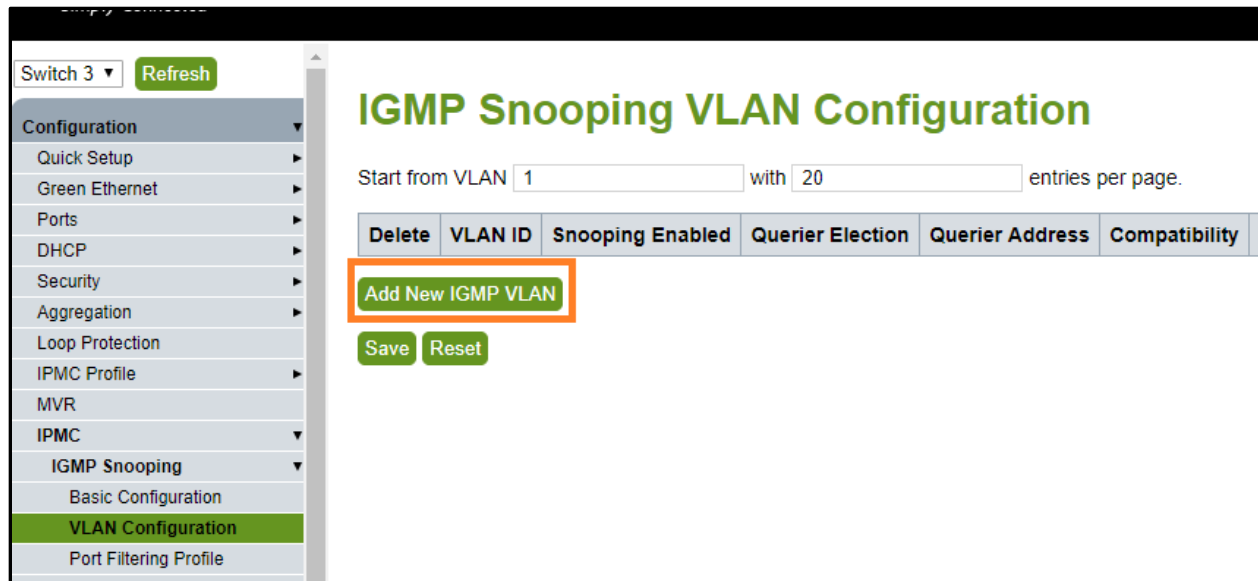
Port	Router Port	Fast Leave	Throttling
*	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<>
1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited
2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited
3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited
4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited
5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited
6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited

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

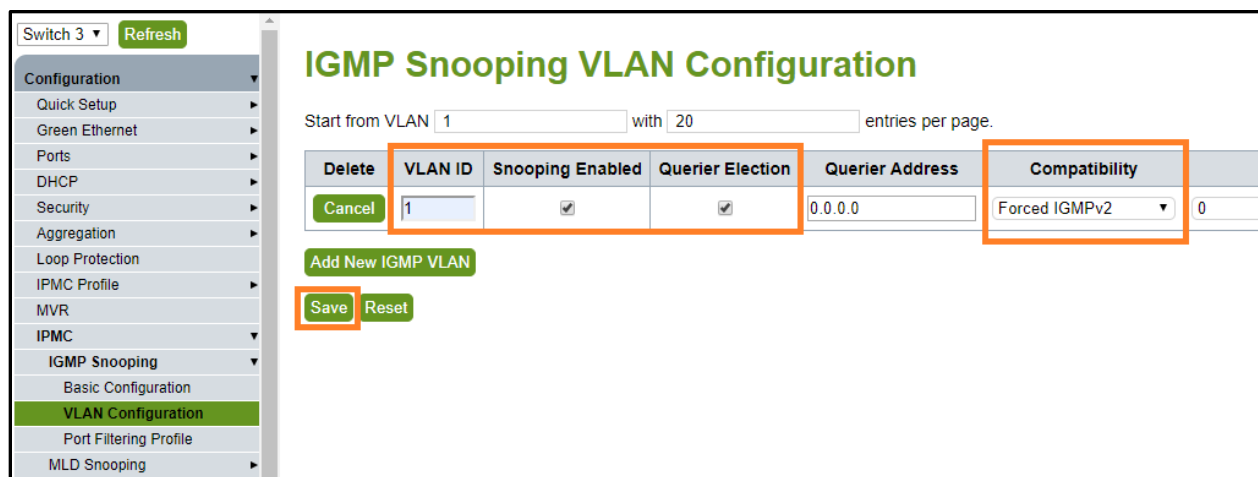
22	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited
23	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited
24	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited

Save **Reset**

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.



- 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.



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

Power Over Ethernet Configuration

Reserved Power determined by: Class Allocation LLDP-MED

Power Management Mode: Actual Consumption Reserved Power

Capacitor Detection: Disabled Enabled

Maximum Available PoE Power is 250W

PoE Port Configuration for Switch 1

Port	PoE Mode	Priority	Maximum Power [W]
*	<>	<>	15.4
1	PoE+	Low	15.4
2	PoE+	Low	15.4

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

Aggregation Group Configuration

Group ID	Port Members																												Group Configuration			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	Mode	Revertive	Max Bundle	
Normal	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>		<input checked="" type="checkbox"/>	28
1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Static	<input checked="" type="checkbox"/>	28	
2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Disabled	<input checked="" type="checkbox"/>	28	
3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Disabled	<input checked="" type="checkbox"/>	28	
4	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Disabled	<input checked="" type="checkbox"/>	28	
5	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Disabled	<input checked="" type="checkbox"/>	28	
6	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Disabled	<input checked="" type="checkbox"/>	28	

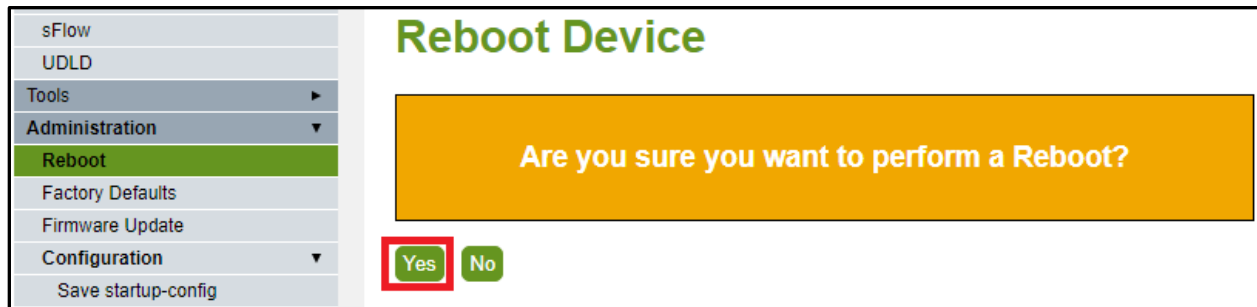
- To save all Running Configurations to Startup-Configuration, Find **Administration → Configuration → Save startup-config** in the menu on left side of the window. Then click **“Save Configuration”** button in Save Running Configuration to startup-config window.

Save Running Configuration to startup-config

Please note: The generation of the configuration file may be time consuming, depending on the amount

Save Configuration

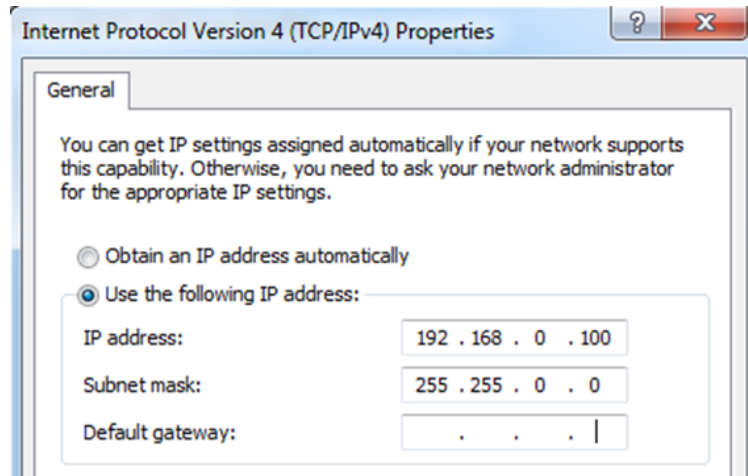
12. To reboot the switch, Find Administration → Reboot in the menu on left side of the window. Then click “Yes” button in Reboot Device window. The switch will be rebooted automatically.



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



- Configure
- Overview
- Network Profiles
- Link Aggregation
- Multicast
- Neighbor
- Power over Ethernet
- Port configuration
- Security
- Maintenance
- AVB License
- Diagnostics

NETWORK PROFILES
Configure | Network Profiles

M4250-40G8XF-PoE+ Show Leg


Auto-Trunk

PTP residency time stamping

Configured Profiles

Profile Name	Profile type	VLAN ID	IP Address	# of Assigned Ports
Default	Video	1	192.168.1.251	48

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

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.

Device Details

Product Name

M4250

Serial Number

6VK2295AA036A

Country/Region

N/A

Base MAC Address

94:18:65:6F:86:1C


AV UI Version

1.0.8.17


Boot Version

1.0.0.7

Management IP Address

192.168.1.251 

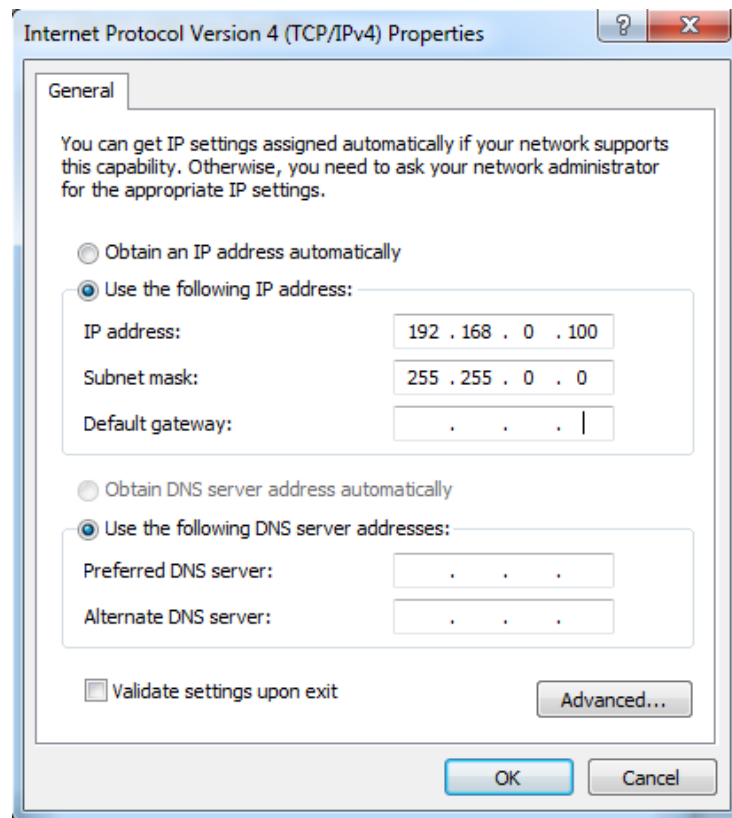
STP Network Redundancy

Neutral mode (default) 

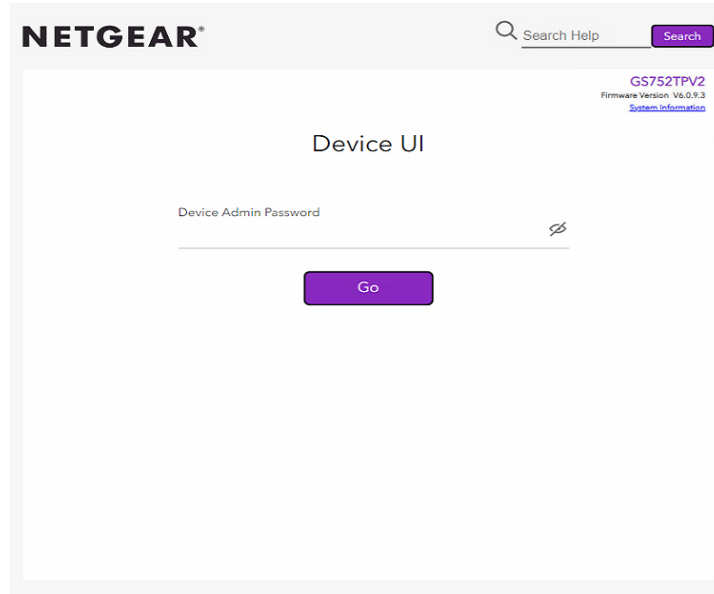
Netgear GS Series Network Setup Guide for KD-IP822, KD-IP922, KD-IP1022, KD-IP1080

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:



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 Configuration

1 LAG All Go To Interface [Go](#)

<input type="checkbox"/>	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
<input type="checkbox"/>	g1			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	1	1
<input type="checkbox"/>	g2			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	2	2
<input type="checkbox"/>	g3			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	3	3
<input type="checkbox"/>	g4			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	4	4
<input type="checkbox"/>	g5			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	5	5
<input type="checkbox"/>	g6			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	6	6
<input type="checkbox"/>	g7			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	7	7
<input type="checkbox"/>	g8			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	8	8
<input type="checkbox"/>	g9			Enable	Enable	Auto	Auto	100 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	9	9
<input type="checkbox"/>	g10			Enable	Enable	Auto	Auto	100 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	10	10
<input type="checkbox"/>	g11			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	11	11
<input type="checkbox"/>	g12			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	12	12
<input type="checkbox"/>	g13			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	13	13
<input type="checkbox"/>	g14			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	14	14
<input type="checkbox"/>	g15			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	15	15
<input type="checkbox"/>	g16			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	16	16
<input type="checkbox"/>	g17			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	17	17
<input type="checkbox"/>	g18			Enable	Enable	Auto	Auto	1000 Mbps Full Duplex	Link Up	Enable	9999	Disable	94:18:65:39:14:52	18	18
<input type="checkbox"/>	g19			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	19	19
<input type="checkbox"/>	g20			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	20	20
<input type="checkbox"/>	g21			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	21	21
<input type="checkbox"/>	g22			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	22	22
<input type="checkbox"/>	g23			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	23	23
<input type="checkbox"/>	g24			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	24	24
<input type="checkbox"/>	g25			Enable	Enable	Auto	Auto		Link Down	Enable	9999	Disable	94:18:65:39:14:52	25	25
<input type="checkbox"/>

- 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

NETGEAR
NETGEAR 48-Port Gigabit PoE+ Smart Managed Pro Switch with 4 SFP Ports (GS752TPv2)

System | **Switching** | Routing | QoS | Security | Monitoring | Maintenance | Help | Index

Ports | LAG | VLAN | Auto-VoIP | STP | **Multicast** | MVR | Address Table | L2 Loop Protection

Multicast | IGMP Snooping Configuration

- MFDB
- Auto-Video
- IGMP Snooping
 - **IGMP Snooping Configuration**
 - IGMP Snooping Status: Disable Enable
 - Validate IGMP IP header: Disable Enable
 - IGMP Snooping Interface Configuration
 - IGMP Snooping Table
 - IGMP Snooping VLAN Configuration
 - Multicast Router Configuration
 - Multicast Router VLAN Configuration
 - IGMP Snooping Querier
 - MLD Snooping

IGMP Statistics

Multicast Control Frame Count	29610
Interfaces Enabled for IGMP Snooping	g1 - g52

VLAN IDs Enabled for IGMP Snooping

1

VLAN IDs Enabled for IGMP Snooping Querier

1

- 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

NETGEAR
NETGEAR 48-Port Gigabit PoE+ Smart Managed Pro Switch with 4 SFP Ports (GS752TPv2)

System | **Switching** | Routing | QoS | Security | Monitoring | Maintenance | Help | Index

Ports | LAG | VLAN | Auto-VoIP | STP | **Multicast** | MVR | Address Table | L2 Loop Protection

Multicast | IGMP Snooping Interface Configuration

1 LAG All Go To Interface

<input type="checkbox"/>	Interface	Admin Mode	Host Timeout	Max Response Time	MRouter Timeout	Fast Leave Mode
<input type="checkbox"/>	g1	Enable	260	10	0	Enable
<input type="checkbox"/>	g2	Enable	260	10	0	Enable
<input type="checkbox"/>	g3	Enable	260	10	0	Enable
<input type="checkbox"/>	g4	Enable	260	10	0	Enable
<input type="checkbox"/>	g5	Enable	260	10	0	Enable
<input type="checkbox"/>	g6	Enable	260	10	0	Enable
<input type="checkbox"/>	g7	Enable	260	10	0	Enable
<input type="checkbox"/>	g8	Enable	260	10	0	Enable
<input type="checkbox"/>	g9	Enable	260	10	0	Enable
<input type="checkbox"/>	g10	Enable	260	10	0	Enable
<input type="checkbox"/>	g11	Enable	260	10	0	Enable
<input type="checkbox"/>	g12	Enable	260	10	0	Enable
<input type="checkbox"/>	g13	Enable	260	10	0	Enable
<input type="checkbox"/>	g14	Enable	260	10	0	Enable
<input type="checkbox"/>	g15	Enable	260	10	0	Enable

- 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)

NETGEAR
NETGEAR 48-Port Gigabit PoE+ Smart Managed Pro Switch with 4 SFP Ports (GS752TPv2)

System | **Switching** | Routing | QoS | Security | Monitoring | Maintenance | Help | Index

Ports | LAG | VLAN | Auto-VoIP | STP | **Multicast** | MVR | Address Table | L2 Loop Protection

Multicast | **IGMP Snooping VLAN Configuration**

<input type="checkbox"/>	VLAN ID	Admin Mode	Fast Leave Mode	Host Timeout	Maximum Response Time	MRouter Timeout	Report Suppression Mode	Query Mode	Query Interval (1 to 1800) secs
<input type="checkbox"/>	1	Disable	Disable	260	10	0	Disable	Disable	60
<input type="checkbox"/>	4088	Disable	Disable	260	10	0	Disable	Disable	60
<input type="checkbox"/>	4089	Disable	Disable	260	10	0	Disable	Disable	60

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

NETGEAR
NETGEAR 48-Port Gigabit PoE+ Smart Managed Pro Switch with 4 SFP Ports (GS752TPv2)

System | **Switching** | Routing | QoS | Security | Monitoring | Maintenance | Help | Index

Ports | LAG | VLAN | Auto-VoIP | STP | **Multicast** | MVR | Address Table | L2 Loop Protection

Multicast | **Querier Configuration**

Querier Admin Mode: Disable Enable

Snooping Querier Address:

IGMP Version: (1 to 2)

Query Interval (secs): (1 to 1800)

Querier Expiry Interval (secs): (60 to 300)

- 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.

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**

Internet Protocol Version 4 (TCP/IPv4) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

Obtain an IP address automatically

Use the following IP address:

IP address: 192 . 168 . 2 | . 254

Subnet mask: 255 . 255 . 255 . 0

Default gateway: 192 . 168 . 0 . 172

Obtain DNS server address automatically

Use the following DNS server addresses:

Preferred DNS server: 192 . 168 . 0 . 24

Alternate DNS server: . . .

Validate settings upon exit

Advanced...

OK Cancel

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”**.

Sign in

http://192.168.2.1

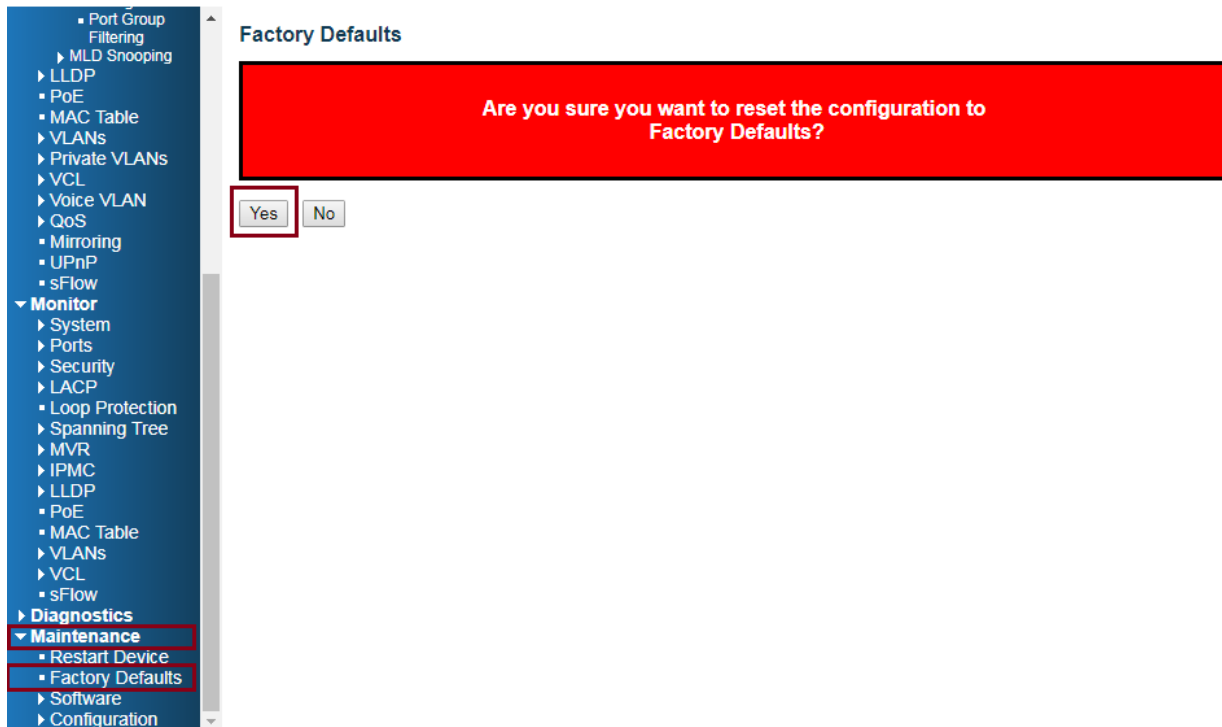
Your connection to this site is not private

Username admin

Password

Sign in Cancel

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.



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.

IP Configuration

	Configured	Current
DHCP Client	<input type="checkbox"/>	Renew
IP Address	192.168.1.251	192.168.2.1
IP Mask	255.255.255.0	255.255.255.0
IP Router	192.168.1.1	0.0.0.0
VLAN ID	1	1
DNS Server	0.0.0.0	0.0.0.0

IP DNS Proxy Configuration

DNS Proxy

Save Reset

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**

Port Configuration

Port	Link	Speed		Flow Control			Maximum Frame Size	Excessive Collision Mode	Power Control
		Current	Configured	Current Rx	Current Tx	Configured			
*			<>				9600	<>	<>
1	1Gfdx	Auto	Auto	X	X		9600	Discard	Disabled
2	1Gfdx	Auto	Auto	X	X		9600	Discard	Disabled
3	1Gfdx	Auto	Auto	X	X		9600	Discard	Disabled
4	1Gfdx	Auto	Auto	X	X		9600	Discard	Disabled
5	1Gfdx	Auto	Auto	X	X		9600	Discard	Disabled

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**

IGMP Snooping Configuration

Global Configuration	
Snooping Enabled	<input checked="" type="checkbox"/>
Unregistered IPMCv4 Flooding Enabled	<input type="checkbox"/>
IGMP SSM Range	232.0.0.0 / 8
Leave Proxy Enabled	<input type="checkbox"/>
Proxy Enabled	<input type="checkbox"/>

Port	Router Port	Fast Leave	Throttling
*	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<>
1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited
2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited
3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited
4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited
5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited
6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited
7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	unlimited

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**

IGMP Snooping VLAN Configuration

Start from VLAN 1 with 20 entries per page.

Delete	VLAN ID	Snooping Enabled	IGMP Querier	Compatibility	RV	QI (sec)	QRI (0.1 sec)	LLQI (0.1 sec)	URI (sec)
<input type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Forced IGMPv2	2	125	100	10	1

Add New IGMP VLAN

Save Reset

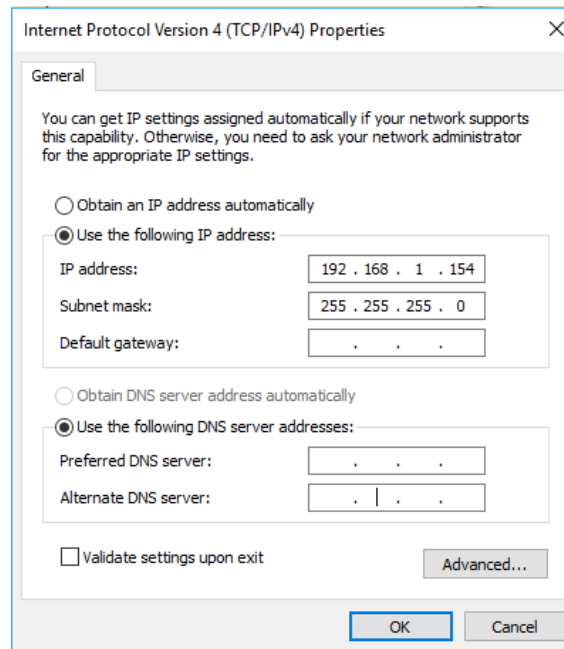
8. Reboot the network switch and verify that the settings are correct. The switch is now ready for the KD-IP922 system.

a. There is no need to save the running configuration of this network switch. The settings will persist on system reboot.

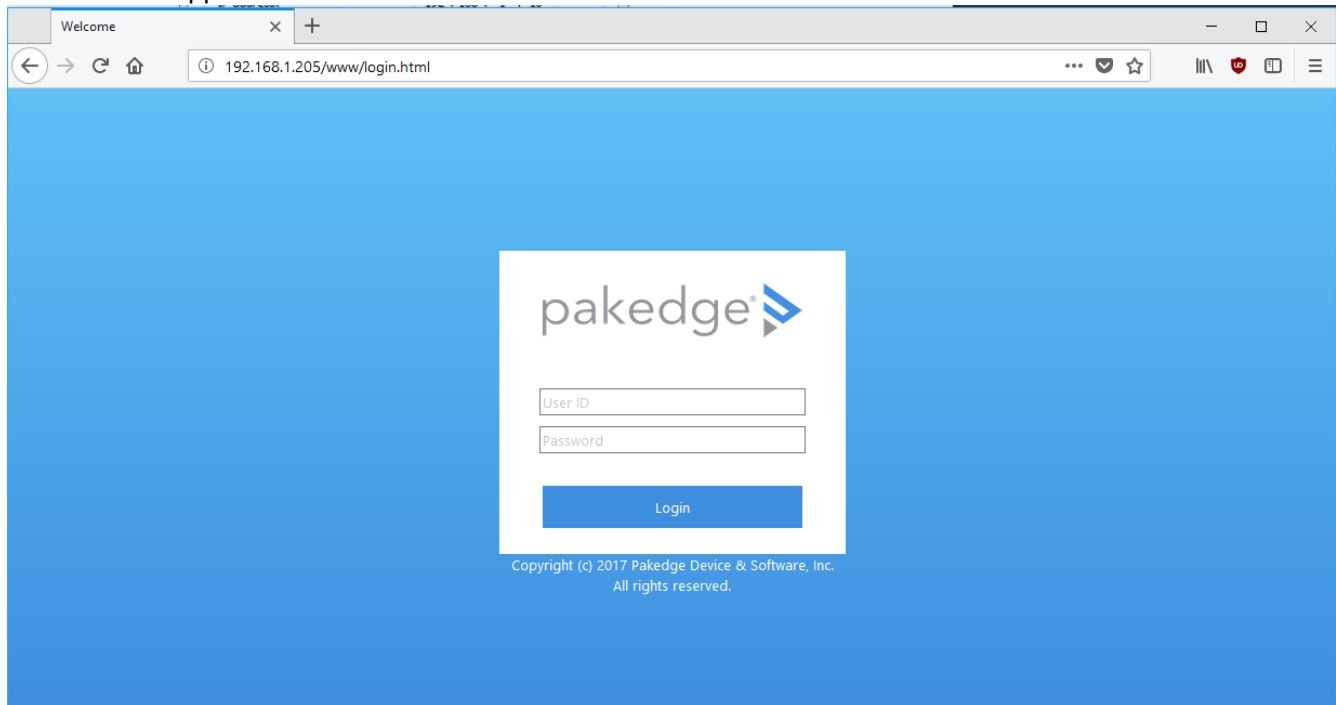
Pakedge S3L Network Setup Guide for KD-IP822, KD-IP922, KD-IP1022, KD-IP1080

Login to the switch with the following steps:

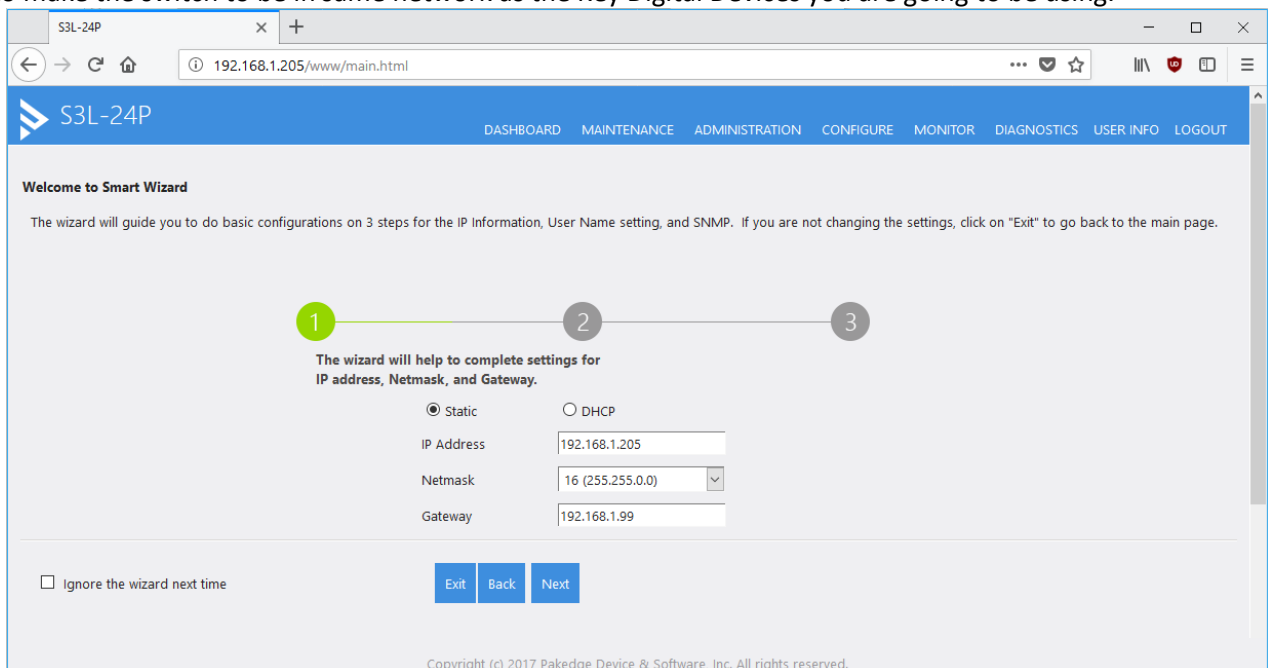
1. Plug an Ethernet cable into any of the ports of the switch
2. Plug the other end into the Ethernet port of your computer
3. Power on the Switch
4. Check to see that the IP address of the computer is within this network, 192.168.1.xxx (“xxx” ranges 1~254).
For example, 192.168.1.154



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



- 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.



- 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.

The screenshot shows the S3L-24P web interface. The breadcrumb navigation is Administration > Management > Port > PORT SETTINGS. The 'Port Settings' section includes a 'Port' dropdown menu set to 'All', 'State' (Enabled), 'Auto-negotiation' (Enabled), 'Flow Control' (Disabled), 'Speed' (10M, 100M, 1000M), and 'Duplex' (Half, Full). The 'Maximum Receive Frame Size' is set to 9216 bytes. Below this is a table of port configurations.

PORT	STATE	SPEED	DUPLEX	FLOW CONTROL	MAXIMUM RECEIVE FRAME SIZE	DESCRIPTION
eth1/1	Enabled	AUTO	AUTO	None	9216	
eth1/2	Enabled	AUTO	AUTO	None	9216	
eth1/3	Enabled	AUTO	AUTO	None	9216	
eth1/4	Enabled	AUTO	AUTO	None	9216	
eth1/5	Enabled	AUTO	AUTO	None	9216	
eth1/6	Enabled	AUTO	AUTO	None	9216	
eth1/7	Enabled	AUTO	AUTO	None	9216	
eth1/8	Enabled	AUTO	AUTO	None	9216	

- 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.

The screenshot displays the configuration page for IGMP Snooping on an S3L-24P switch. The breadcrumb trail is CONFIGURE > Application > IGMP Snooping > GLOBAL SETTING. The left sidebar contains menu items: Global Setting, Static Group Settings, Group Information, Mrouter, and Mrouter Information. The main content area is titled 'Global Setting' and includes the following configuration options:

- IGMP Snooping Proxy:** Enabled (radio button selected)
- VLAN ID (1-4094):** 1
- IGMP Snooping Querier:** Enabled (radio button selected)
- Status:** Enabled (radio button selected)
- Report Suppression:** Enabled (radio button selected)
- Suppress time (0-300 sec):** 10
- Immediate Leave:** Enabled (radio button selected)

Below the configuration options, there is a 'Total Entries: 0' indicator and a 'Delete' button. A table with the following columns is shown below:

<input type="checkbox"/>	VLAN ID	STATUS	IGMP SNOOPING QUERIER	REPORT SUPPRESSION	SUPPRESS TIME	IMMEDIATE LEAVE
Total Entries: 0						

- 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.

The screenshot shows the S3L-24P web interface. The breadcrumb trail is: CONFIGURE > Application > IGMP > IGMP SETTINGS. The configuration fields are as follows:

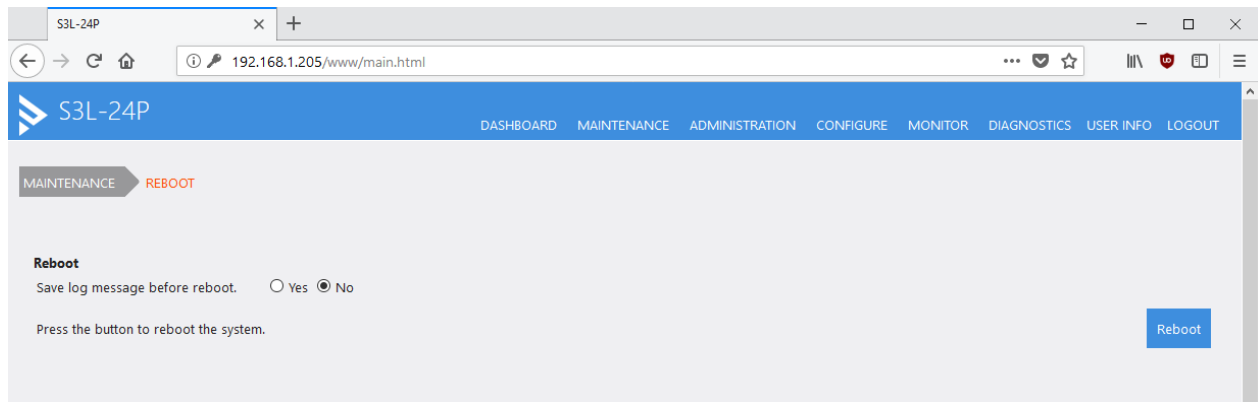
- VLAN ID (1-4094): 1
- Status: Enabled Disabled
- Access Group: Enabled Disabled
- Last Member Query Interval (1000-25000 msec): 1000
- Query Interval (1-31744 sec): 125
- Query Max Response Time (1-25 sec): 10
- Robustness Variable (1-7): 2
- Version: v1 v2 v3

Below the configuration fields, there is a table with the following data:

INTERFACE	ACCESS GROUP	VERSION	QUERY INTERVAL(SEC)	QUERY MAX RESPONSE TIME	LAST MEMBER QUERY INTERVAL	ROBUSTNESS VARIABLE	
VLAN1		V2	125	10	1000	2	Detail

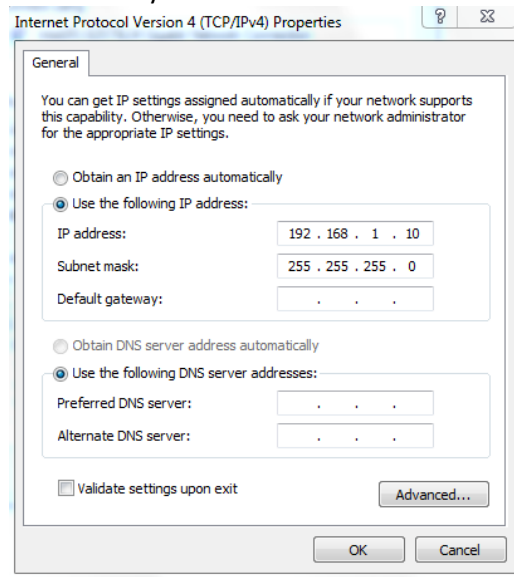
The screenshot shows the S3L-24P web interface at the MAINTENANCE > SAVE page. The message reads: "Press the button to save the system settings to NV-RAM." There is a "Save" button at the bottom right.

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.



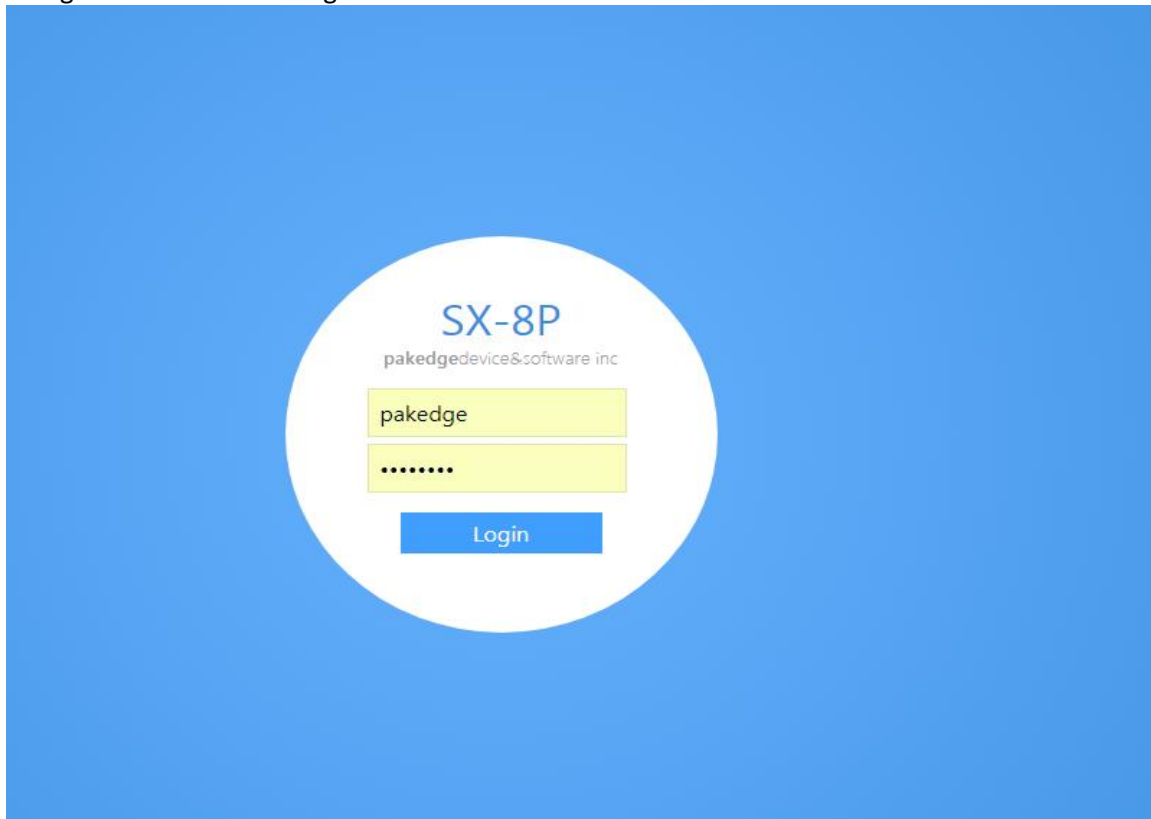
Pakedge SX Series IGMP Setup Guide for KD-IP822, KD-IP922, KD-IP1022, KD-IP1080

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 Gateway and DNS can be left blank

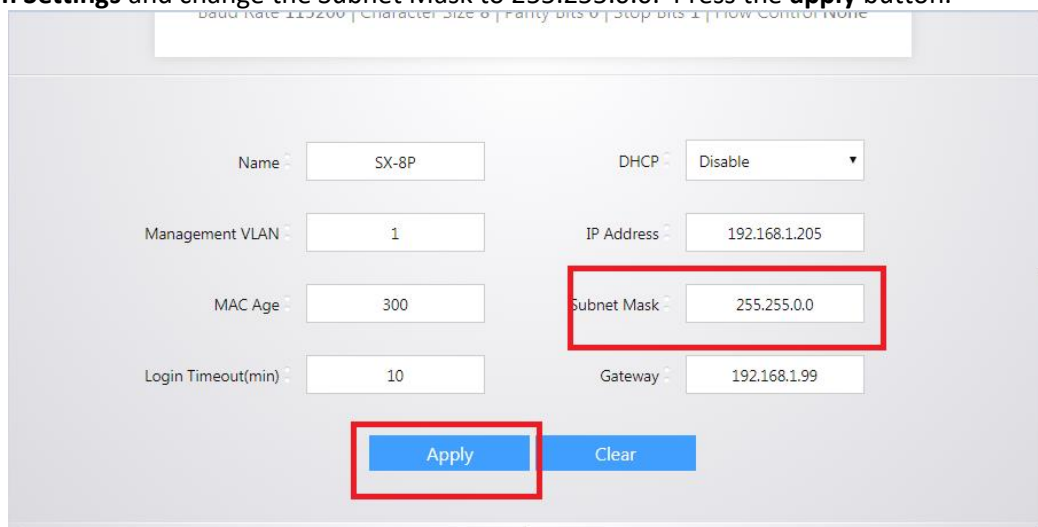


2. Open a web browser, and enter **192.168.1.205** (default IP address of Pakedge) to enter the login window

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.



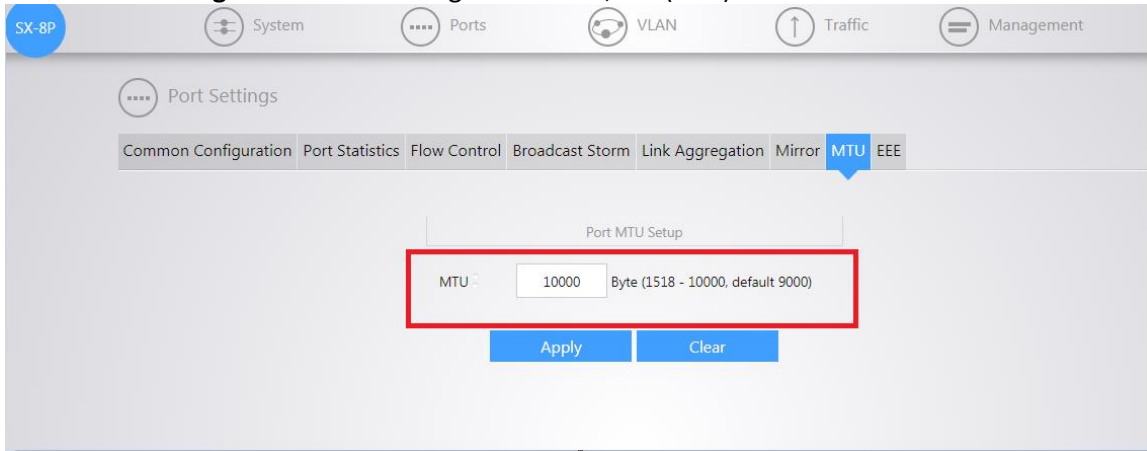
4. Go to **System Settings** and change the Subnet Mask to 255.255.0.0. Press the **apply** button.



Name	SX-8P	DHCP	Disable
Management VLAN	1	IP Address	192.168.1.205
MAC Age	300	Subnet Mask	255.255.0.0
Login Timeout(min)	10	Gateway	192.168.1.99

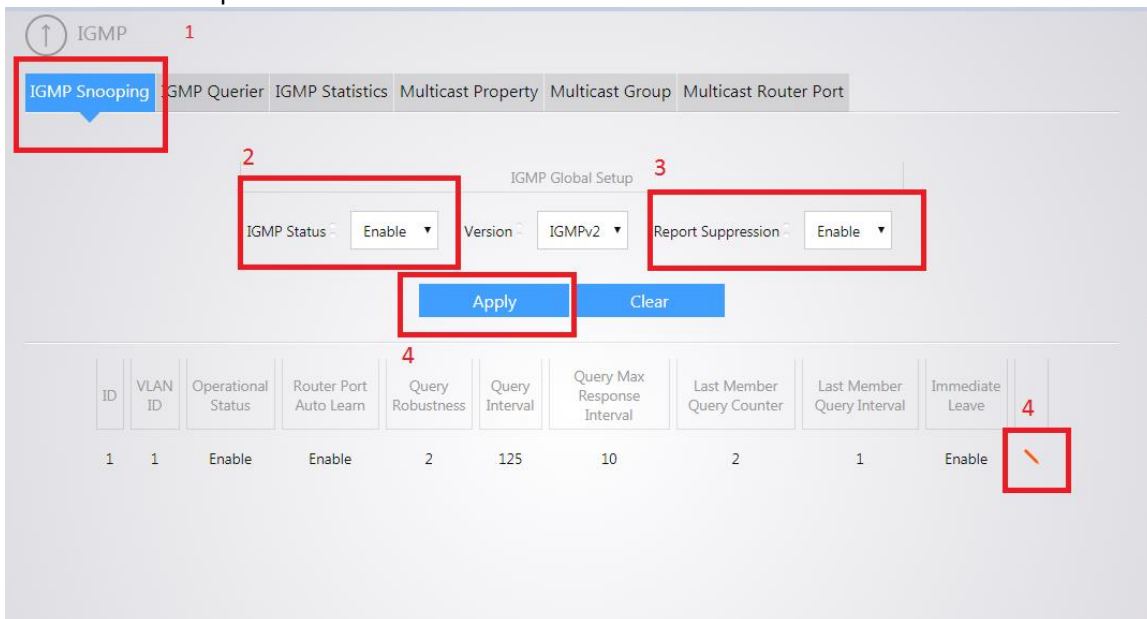
Apply Clear

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



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

7. Press the button with red pencil icon



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

IGMP Status: Enable | Version: IGMPv2 | Report Suppression: Enable

Apply | Clear

IGMP VLAN Setup

VLAN ID: 1 | State: Enable

Router Port Auto Learn: Enable | Immediate leave: Enable

Query Robustness: 2 | Query Interval: 125

Query Max Response Interval: 10

Last Member Query Counter: 2 | Last Member Query Interval: 1

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

IGMP

IGMP Snooping | **IGMP Querier** | IGMP Statistics | Multicast Property | Multicast Group | Multicast Router Port

ID	VLAN ID	Status	Operational Status	Version	Querier Address
1	1	Enable	Enable	IGMPv2	192.168.1.205

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

IGMP

IGMP Snooping | **IGMP Querier** | IGMP Statistics | Multicast Property | Multicast Group | Multicast Router Port

Edit Querier Setup

VLAN ID: 1 | State: Enable | Version: IGMPv2

Apply | Clear | Back

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

IGMP

IGMP Snooping IGMP Querier IGMP Statistics **Multicast Property** Multicast Group Multicast Router Port

Unknown Multicast Action : Drop ▼

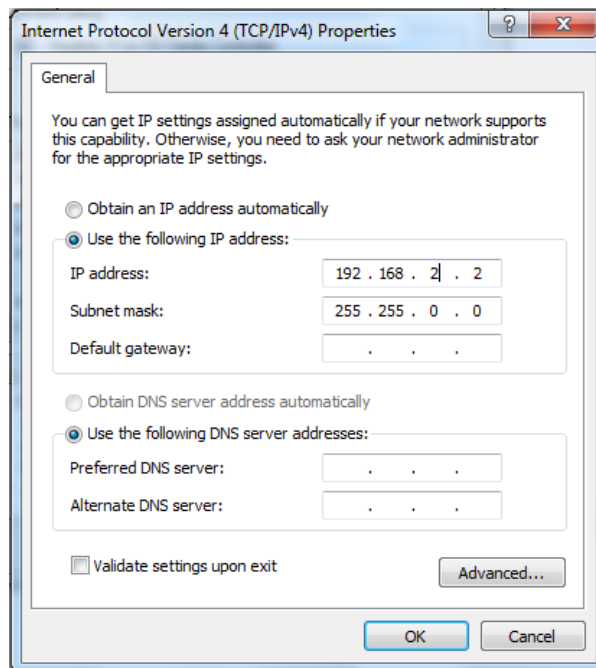
Multicast Forward Method

IPv4 : DMAC-VID ▼

Apply Clear

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

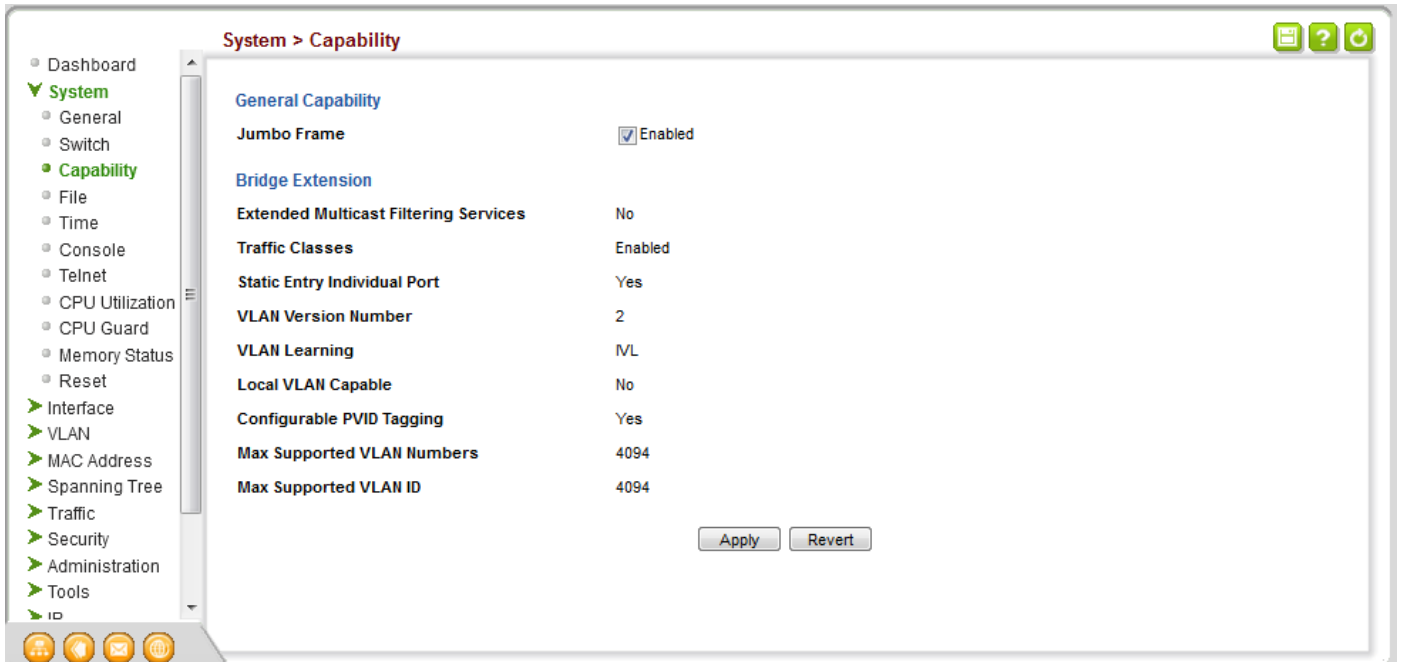
1. Connect your PC directly to the network switch. Your PC will need to be set to a static IP address that is within the subnet of the default IP address of the switch. This series of switches typically use 192.168.2.1 as their default IP address



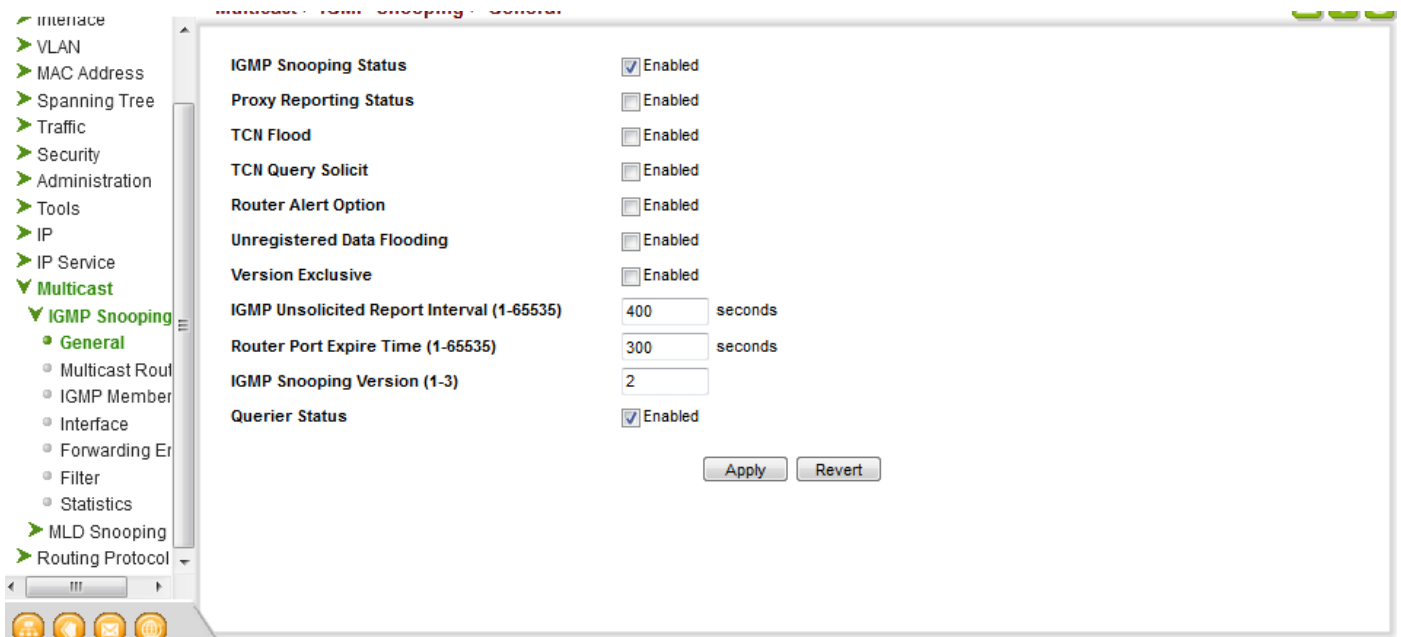
2. Log into the switch via web browser using the IP address. There will be a prompt to enter credentials. By default, both username and password are set to "admin"



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.



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

multicast / IGMP Snooping / Interface

Action: **Show VLAN Information**

IGMP Snooping VLAN List Total: 1

VLAN	IGMP Snooping Status	Immediate Leave Status	Query Interval	Query Response Interval	Last Member Query Interval	Last Member Query Count	Proxy (Query) Address	Proxy Reporting	Multicast Router Discovery	General Query Suppression	Version Exclusive	Interface Version
1	Enabled	Disabled	125	100	10	2	0.0.0.0	Using global status (Disabled)	Disabled	Disabled	Using global status (Disabled)	Using global version (2)

Action: **Configure VLAN**

VLAN 1

IGMP Snooping Status Enabled

Version Exclusive Using Global Status

Immediate Leave Status Enabled By-Group

Multicast Router Discovery Enabled

General Query Suppression Enabled

Proxy Reporting Using Global Status

Interface Version Using Global Version

Query Interval (2-31744) 125 seconds

Query Response Interval (10-31740) 100 (1/10 seconds, multiple of 10)

Last Member Query Interval (1-31744) 10 (1/10 seconds, multiple of 10)

Last Member Query Count (1-255) 2

Proxy (Query) Address 0.0.0.0

Apply Revert

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.

IP > General > Routing Interface

Action: **Show Address**

VLAN: 1

IP Address Mode: User Specified

Routing Interface IP List Total: 1

	IP Address Type	IP Address	Subnet Mask
<input type="checkbox"/>	Primary	192.168.1.251	255.255.0.0

Delete Revert

Action: **Add Address**

VLAN: 1

IP Address Mode: User Specified

IP Address Type: Primary

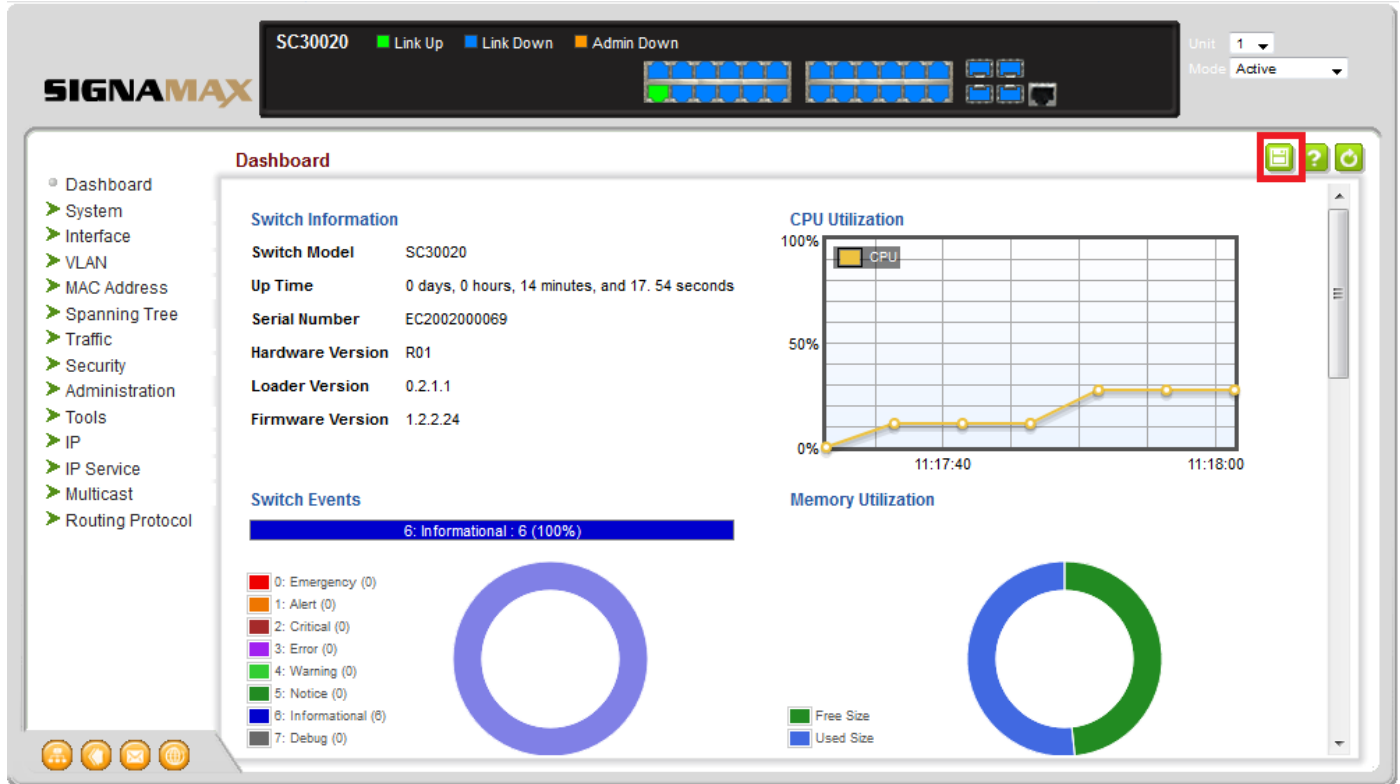
IP Address: 192.168.1.251

Subnet Mask: 255.255.0.0

Restart DHCP [Click this button to resend DHCP client request.](#)

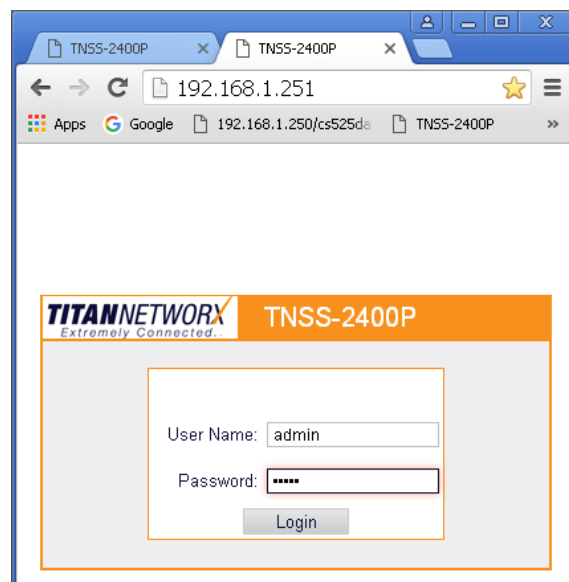
Apply Revert

- 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



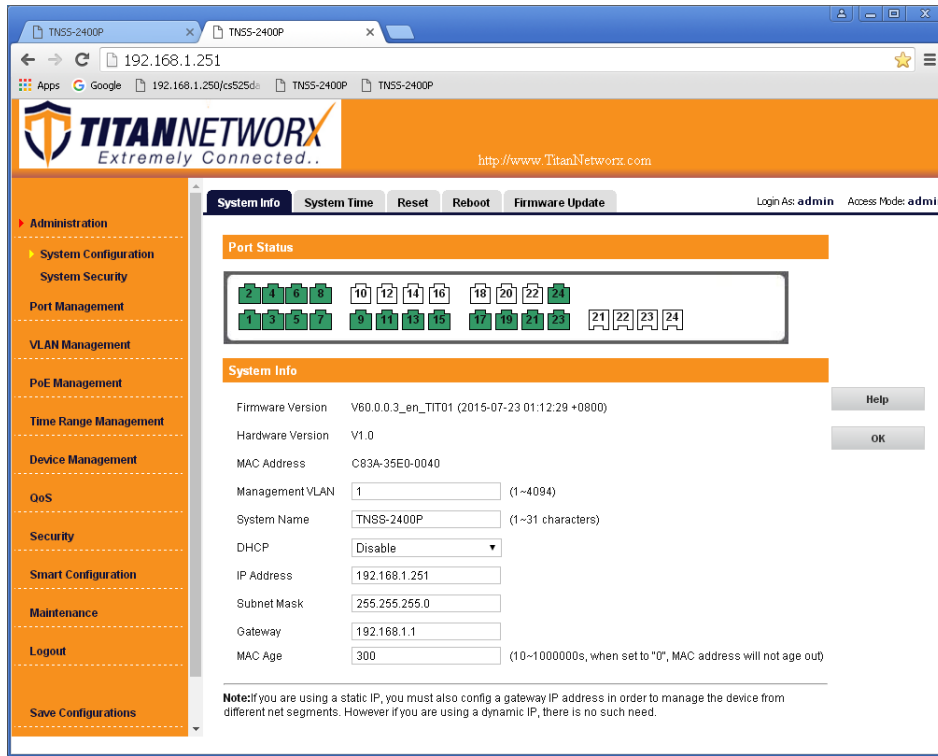
IGMP Setup Guide: Titan Networkx 1080p Systems (KD-IP1080, KD-IP120)

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 Networkx 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 Networkx 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**.

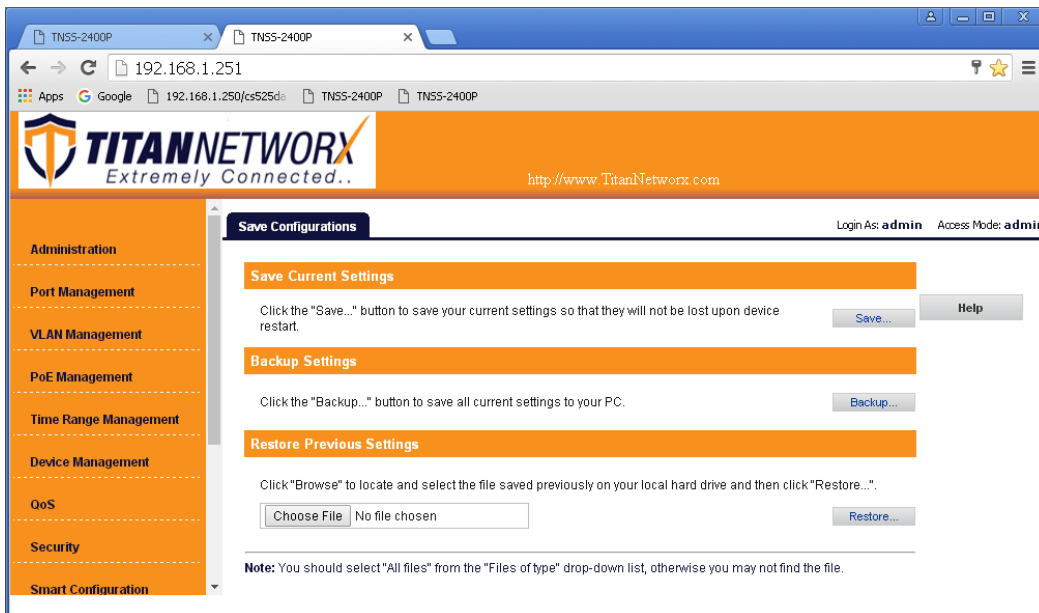


8. Navigate to **Administration -> System Configuration**. Select **IP Address** box. IP address can be changed by the administrator depending on the network configuration. If you are using multiple network switches it is recommended to set first one to **192.168.1.251**, second to **192.168.1.252**, 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.

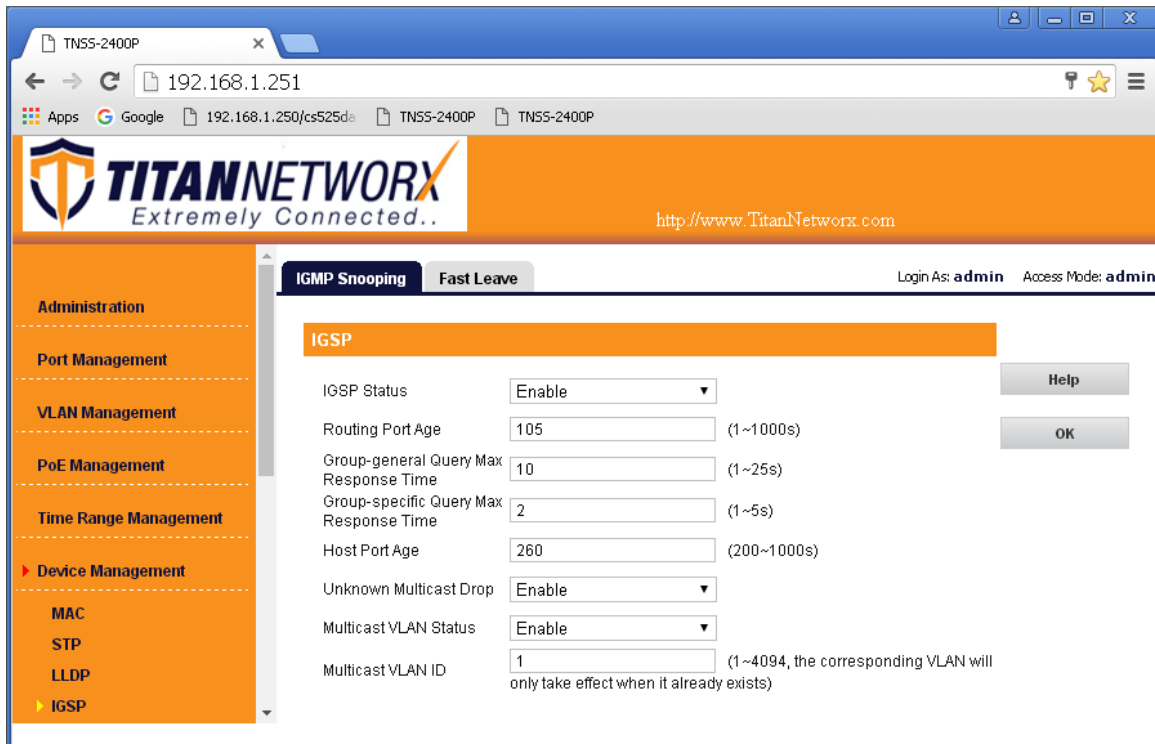
9. Make sure your screen looks exactly like pictured below.



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



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.

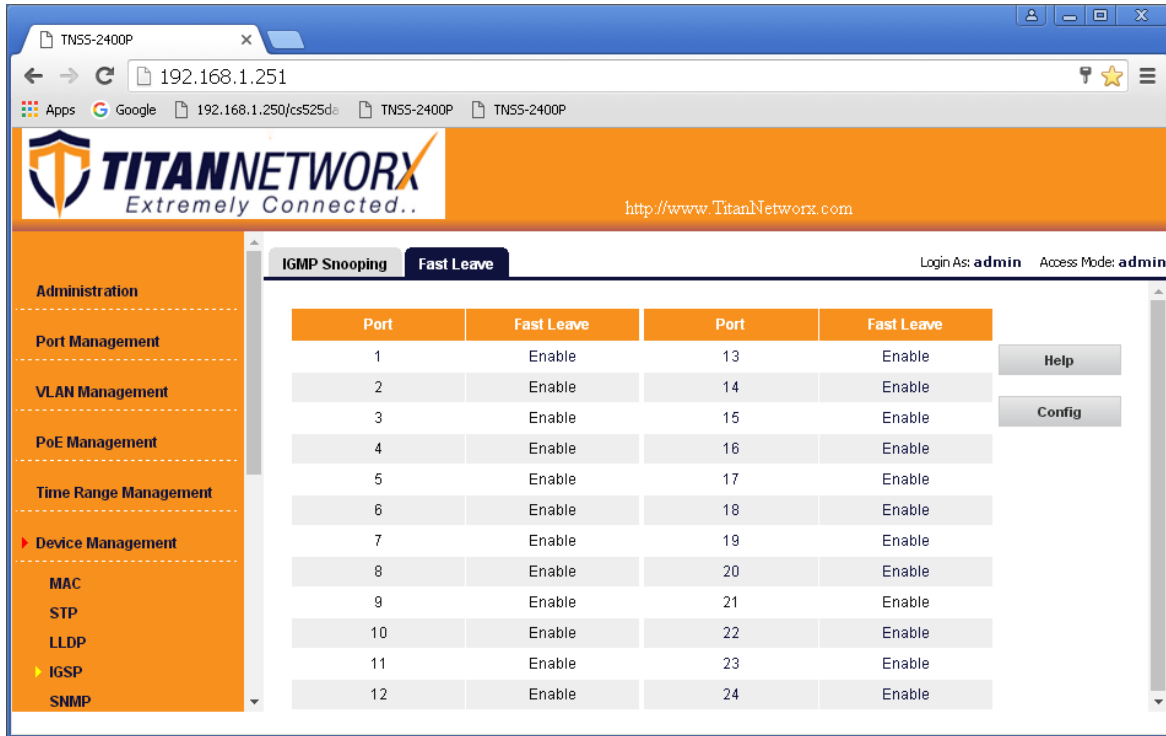


The screenshot shows a web browser window with the URL 192.168.1.251. The page title is "TNS5-2400P". The browser's address bar shows "192.168.1.251". The page features the TitanNetworkX logo and the text "Extremely Connected..". The URL "http://www.TitanNetworkx.com" is displayed in the top right corner. The page is titled "IGMP Snooping" and "Fast Leave". The user is logged in as "admin" with "Access Mode: admin". The "IGSP" tab is selected. The configuration settings are as follows:

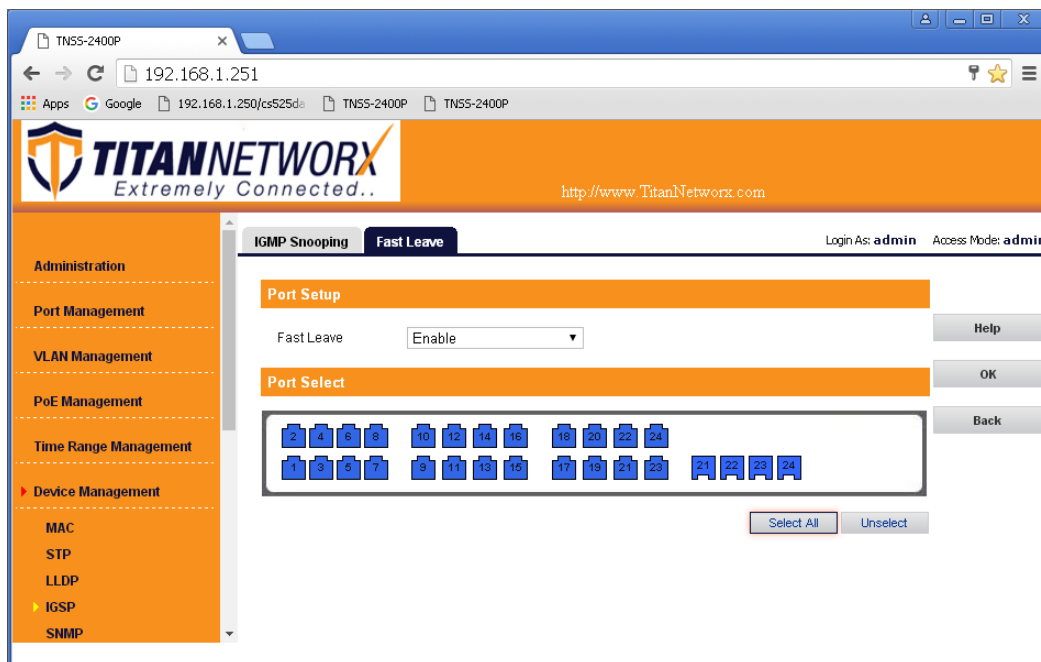
Setting	Value	Range/Notes
IGSP Status	Enable	
Routing Port Age	105	(1~1000s)
Group-general Query Max Response Time	10	(1~25s)
Group-specific Query Max Response Time	2	(1~5s)
Host Port Age	260	(200~1000s)
Unknown Multicast Drop	Enable	
Multicast VLAN Status	Enable	
Multicast VLAN ID	1	(1~4094, the corresponding VLAN will only take effect when it already exists)

Buttons for "Help" and "OK" are visible on the right side of the configuration area.

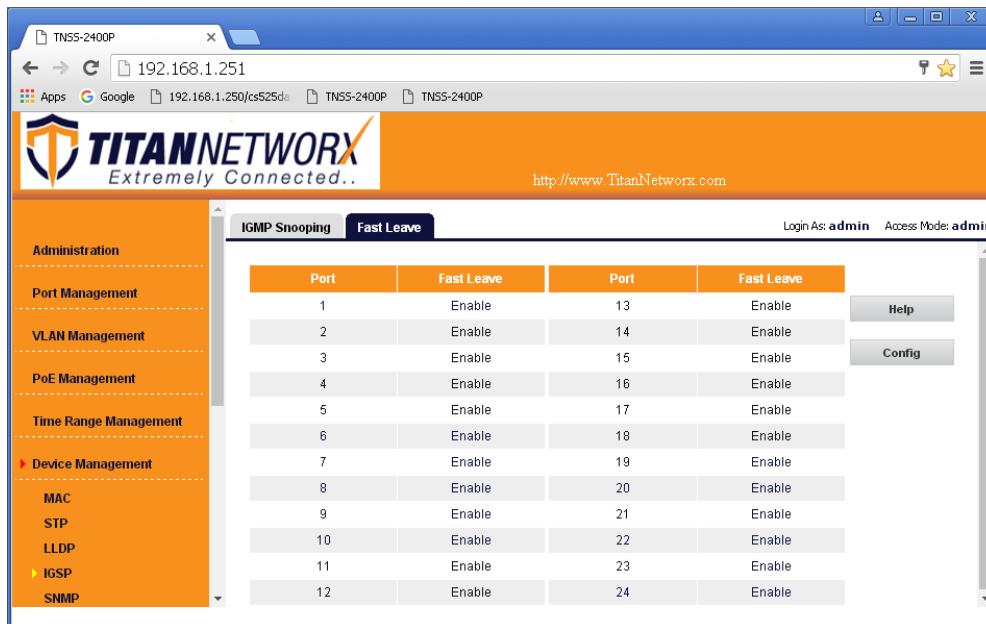
12. Select **Fast Leave** tab. Click **Config** button.



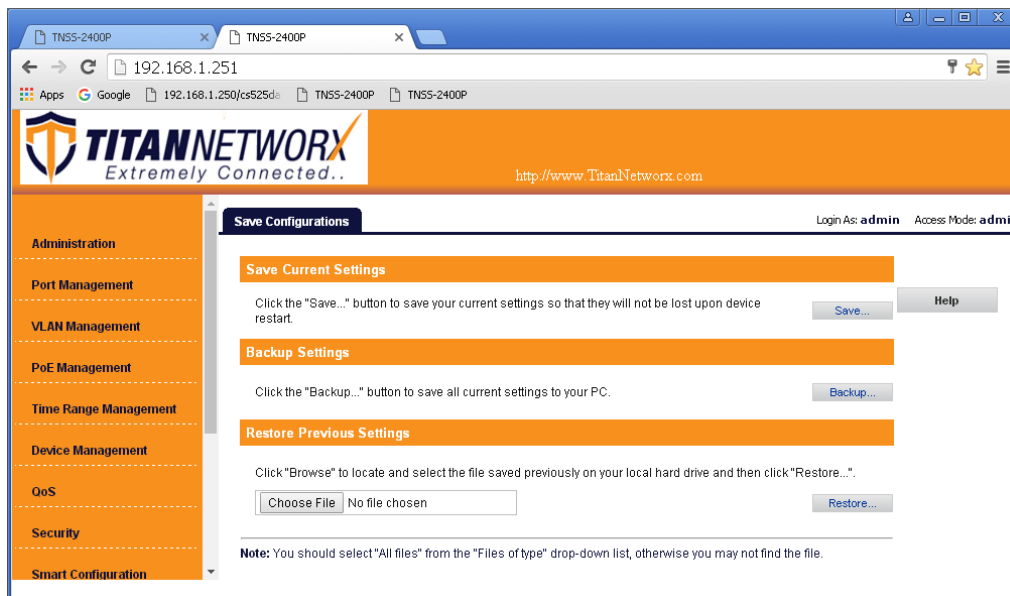
13. Set **Fast Leave** to **Enable**, click **Select All**. Click **OK**, and **OK** again.



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 Networkx network switch and power it up back again. Wait for the switch to reboot.

17. Log in to your Titan Networkx network switch again and make sure that IGMP settings are intact:

TITANNETWORX
Extremely Connected..

http://www.TitanNetwork.com

System Info System Time Reset Reboot Firmware Update Login As: admin Access Mode: admin

Port Status

System Info

Firmware Version V60.0.0.3_en_TIT01 (2015-07-23 01:12:29 +0800) Help

Hardware Version V1.0 OK

MAC Address C83A-35E0-0040

Management VLAN 1 (1~4094)

System Name TNS5-2400P (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.

TITANNETWORX
Extremely Connected..

http://www.TitanNetwork.com

IGMP Snooping Fast Leave Login As: admin Access Mode: admin

IGMP

IGMP Status Enable Help

Routing Port Age 105 (1~1000s) OK

Group-general Query Max Response Time 10 (1~25s)

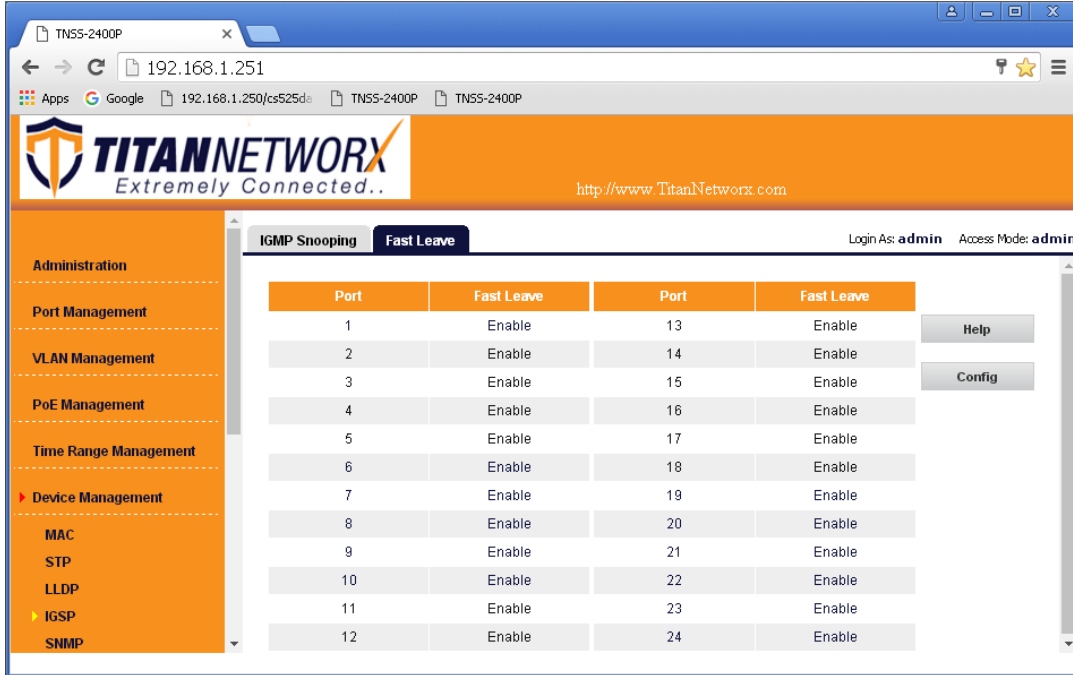
Group-specific Query Max Response Time 2 (1~5s)

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)



The screenshot shows the TitanNetworkX web interface for a TN55-2400P switch. The browser address bar shows the IP address 192.168.1.251. The page title is "Fast Leave" under the "IGMP Snooping" section. The user is logged in as "admin" with "Access Mode: admin". The main content area displays a table of 24 ports, all with "Fast Leave" set to "Enable".

Port	Fast Leave	Port	Fast Leave
1	Enable	13	Enable
2	Enable	14	Enable
3	Enable	15	Enable
4	Enable	16	Enable
5	Enable	17	Enable
6	Enable	18	Enable
7	Enable	19	Enable
8	Enable	20	Enable
9	Enable	21	Enable
10	Enable	22	Enable
11	Enable	23	Enable
12	Enable	24	Enable

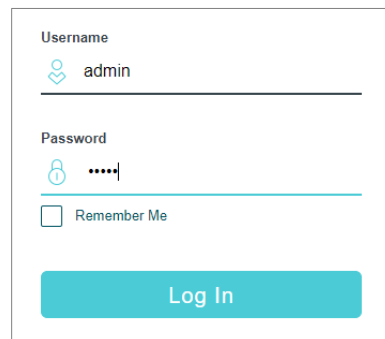
18. At this point your Titan Networkx network switch is set and ready to use.

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.

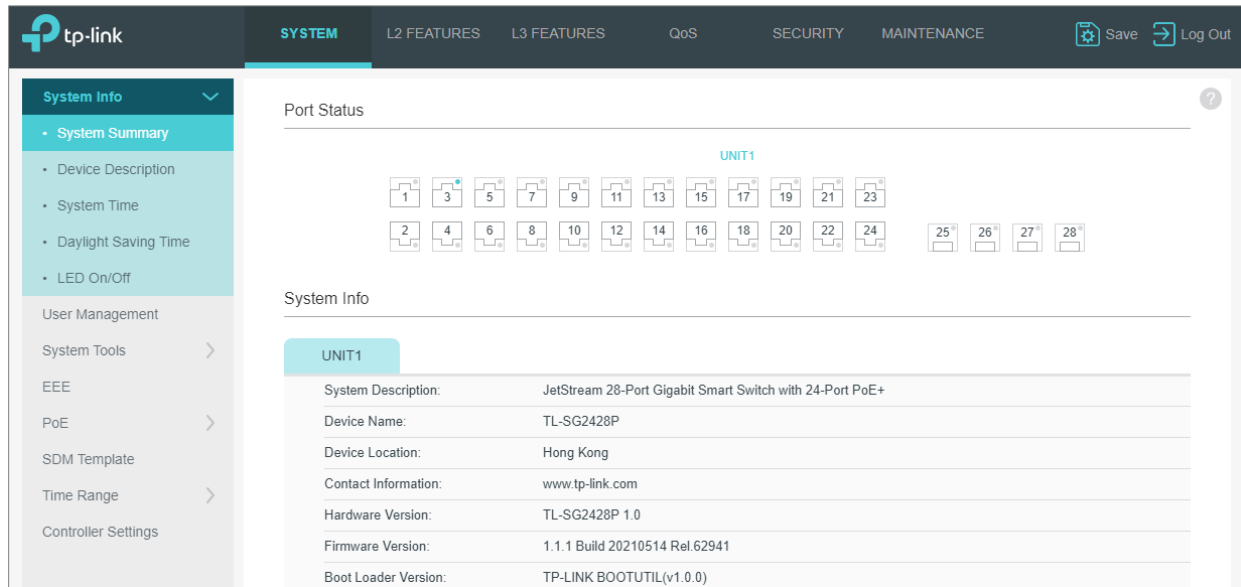


Username
admin

Password
.....

Remember Me

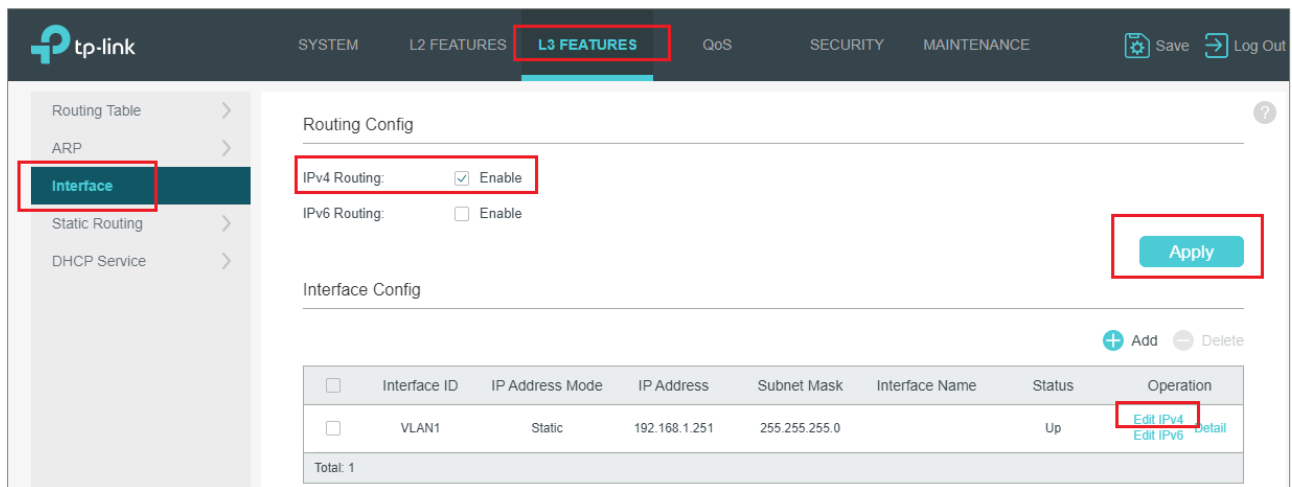
Log In



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)

network before login).

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Modify IPv4 Interface

Interface ID: VLAN1

Admin Status: Enable

Interface Name: (Optional. 1-16 characters)

IP Address Mode: None Static DHCP BOOTP

IP Address: (Format: 192.168.0.1)

Subnet Mask: (Format: 255.255.255.0)

Apply

10. Confirm the updated IP address table.

Go to **L3 FEATURES** -> **IPv4 Routing Table**.

Routing Table

- IPv4 Routing Table
- IPv6 Routing Table
- ARP >
- Interface >
- Static Routing >
- DHCP Service >

IPv4 Routing Table

↻ Refresh

Protocol	Destination Network	Next Hop	Distance	Metric	Interface Name
Connected	192.168.1.0/24	192.168.1.251	0	1	VLAN1
Total: 1					

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11. Enable Jumbo Frames.

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

The screenshot shows the TP-Link web interface. The top navigation bar includes SYSTEM, **L2 FEATURES**, L3 FEATURES, QoS, SECURITY, and MAINTENANCE. The left sidebar shows Switching > **Port**. The main content area is titled 'Port Config' and has three tabs: Port Config, Port Isolation, and Loopback Detection. Under 'Port Config', the 'Jumbo' field is set to '9216 bytes (1518-9216)'. An 'Apply' button is visible. Below this is a table with two tabs: 'UNIT1' and 'LAGS'. The table lists 10 ports with their configurations.

	Port	Type	Description	Status	Speed	Duplex	Flow Control	LAG
<input type="checkbox"/>	1/0/1	Copper		Enabled	Auto	Auto	Disabled	--
<input type="checkbox"/>	1/0/2	Copper		Enabled	Auto	Auto	Disabled	--
<input type="checkbox"/>	1/0/3	Copper		Enabled	Auto	Auto	Disabled	--
<input type="checkbox"/>	1/0/4	Copper		Enabled	Auto	Auto	Disabled	--
<input type="checkbox"/>	1/0/5	Copper		Enabled	Auto	Auto	Disabled	--
<input type="checkbox"/>	1/0/6	Copper		Enabled	Auto	Auto	Disabled	--
<input type="checkbox"/>	1/0/7	Copper		Enabled	Auto	Auto	Disabled	--
<input type="checkbox"/>	1/0/8	Copper		Enabled	Auto	Auto	Disabled	--
<input type="checkbox"/>	1/0/9	Copper		Enabled	Auto	Auto	Disabled	--
<input type="checkbox"/>	1/0/10	Copper		Enabled	Auto	Auto	Disabled	--
Total: 28								

Notes:
If the port is a member port of an LAG, it will follow the port configuration of the LAG and not its own.

12. IGMP setup.

Go to **L2 FEATURES** -> **Multicast** -> **MLD Snooping**.

Select "Enable" under MLD Snooping. Click Apply.

The screenshot shows the TP-Link web interface with the 'L2 FEATURES' tab selected. The 'Multicast' menu is expanded, and 'MLD Snooping' is highlighted. The 'Global Config' tab is active, showing the 'MLD Snooping' section where the 'Enable' checkbox is checked. The 'Unknown Multicast Groups' section has 'Discard' selected. An 'Apply' button is visible. Below is the 'MLD VLAN Config' table:

VLAN ID	MLD Snooping Status	Fast Leave	Report Suppression	MLD Snooping Querier	Dynamic Router Ports	Static Router Ports	Forbidden Router Ports	Operation
1	Disabled	Disabled	Disabled	Disabled				Edit Refresh

Total: 1
Showing 1-1 of 1 records Items per page: 100

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.

The screenshot shows the TP-Link web interface with the 'L2 FEATURES' tab selected. The 'Multicast' menu is expanded, and 'IGMP Snooping' is highlighted. The 'Global Config' tab is active, showing the 'IGMP Snooping' section where the 'Enable' checkbox is checked. The 'IGMP Version' is set to 'v2', and 'Unknown Multicast Groups' is set to 'Discard'. An 'Apply' button is visible.

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

Global Config
Port Config
Static Group Config

Global Config

IGMP Snooping: Enable

IGMP Version: v1 v2 v3

Unknown Multicast Groups: Forward Discard

Header Validation: Enable

Apply

IGMP VLAN Config

VLAN ID	IGMP Snooping Status	Fast Leave	Report Suppression	IGMP Snooping Querier	Dynamic Router Ports	Static Router Ports	Forbidden Router Ports	Operation
1	Enabled	Enabled	Enabled	Enabled				<div style="display: flex; justify-content: flex-end; gap: 5px;"> ✎ 🔗 </div>
Total: 1								

After applying above settings, click this!

Showing 1-1 of 1 records Items per page: 100

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).
- Have all switches share the same general query source IP

Configure IGMP Snooping for VLAN

VLAN ID: 1

IGMP Snooping Status:	<input checked="" type="checkbox"/>	Enable
Fast Leave:	<input checked="" type="checkbox"/>	Enable
Report Suppression:	<input checked="" type="checkbox"/>	Enable

Member Port Aging Time: seconds (60-600)

Router Port Aging Time: seconds (60-600)

Leave Time: seconds (1-30)

IGMP Snooping Querier:	<input checked="" type="checkbox"/>	Enable
------------------------	-------------------------------------	--------

Query Interval: seconds (10-300)

Maximum Response Time: seconds (1-25)

Last Member Query Interval: seconds (1-5)

Last Member Query Count: (1-5)

General Query Source IP:	<input type="text" value="192.168.1.251"/>	(Optional Format: 192.168.0.1)
--------------------------	--	--------------------------------

Static Router Ports

UNIT1 LAGS

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

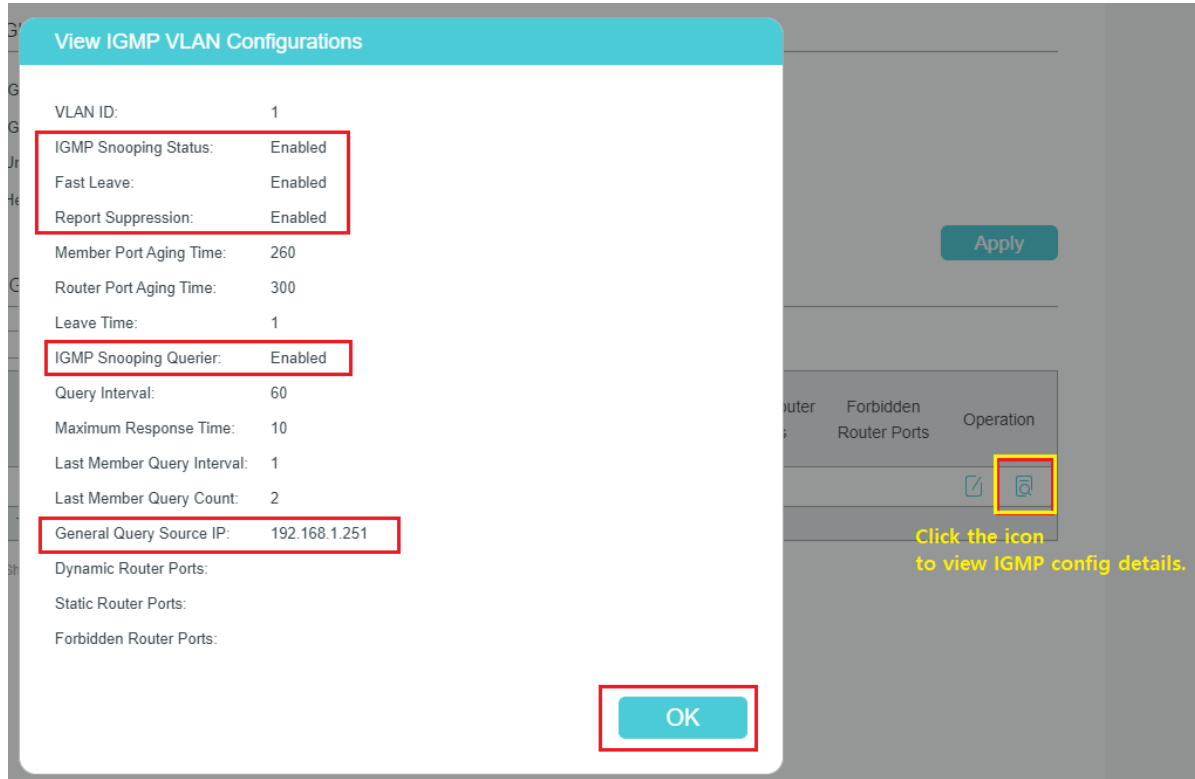
17. Enable Fast Leave on all ports.

Go to **L2 FEATURES -> Multicast -> IGMP Snooping -> Port Config.**

UNIT1	LAGS	Port	IGMP Snooping	Fast Leave	LAG
<input type="checkbox"/>		1/0/1	Enabled	Enabled	---
<input type="checkbox"/>		1/0/2	Enabled	Enabled	---
<input type="checkbox"/>		1/0/3	Enabled	Enabled	---
<input type="checkbox"/>		1/0/4	Enabled	Enabled	---
<input type="checkbox"/>		1/0/5	Enabled	Enabled	---
<input type="checkbox"/>		1/0/6	Enabled	Enabled	---
<input type="checkbox"/>		1/0/7	Enabled	Enabled	---
<input type="checkbox"/>		1/0/8	Enabled	Enabled	---
<input type="checkbox"/>		1/0/9	Enabled	Enabled	---
<input type="checkbox"/>		1/0/10	Enabled	Enabled	---

18. View IGMP VLAN Configurations.

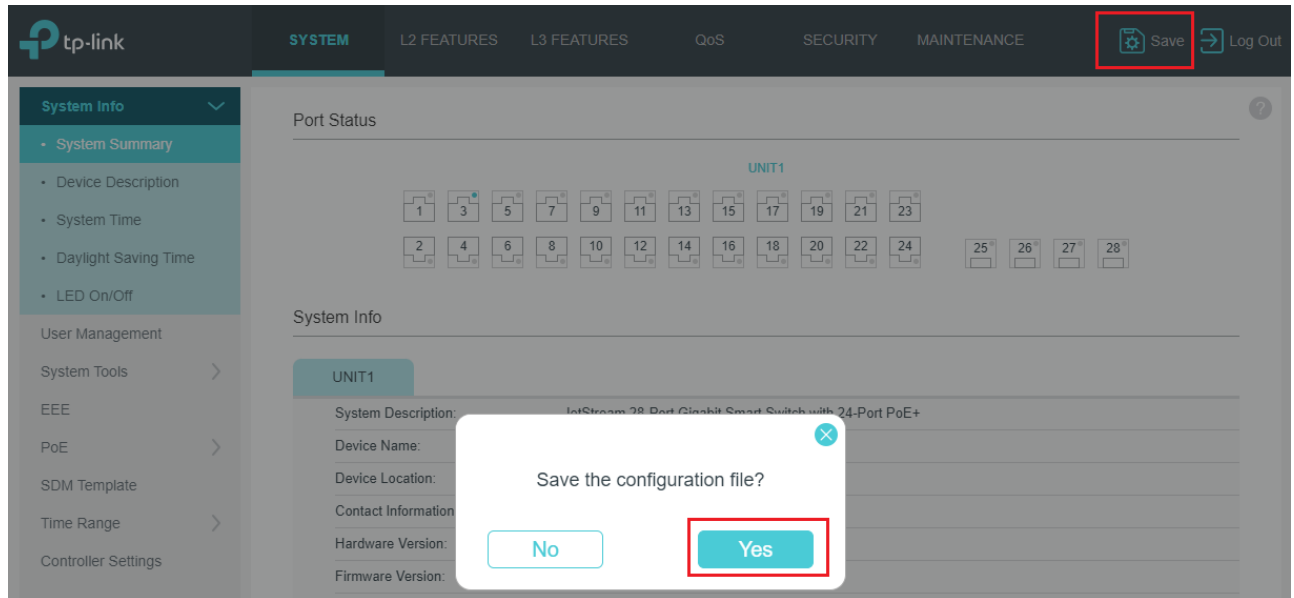
Go to **L2 FEATURES** -> **Multicast** -> **IGMP Snooping** -> **Global Config**. Click icon (yellow box in image).



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.



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.

tp-link SYSTEM **L2 FEATURES** L3 FEATURES QoS SECURITY MAINTENANCE Save Log Out

Switching

- Port
- DDM
- LAG**
- MAC Address

LAG Table Static LAG LACP Config

LAG Config

Group ID: LAG1

Description: Static LAG

Port: 1/0/25-26 (Format: 1/0/1, input or choose below)

UNIT1

Selected Unselected Not Available

Apply

tp-link SYSTEM **L2 FEATURES** L3 FEATURES QoS SECURITY MAINTENANCE Save Log Out

Switching

- Port
- DDM
- LAG**
- MAC Address

LAG Table Static LAG LACP Config

Global Config

Hash Algorithm: SRC MAC+DST MAC

Apply

LAG Table

Delete

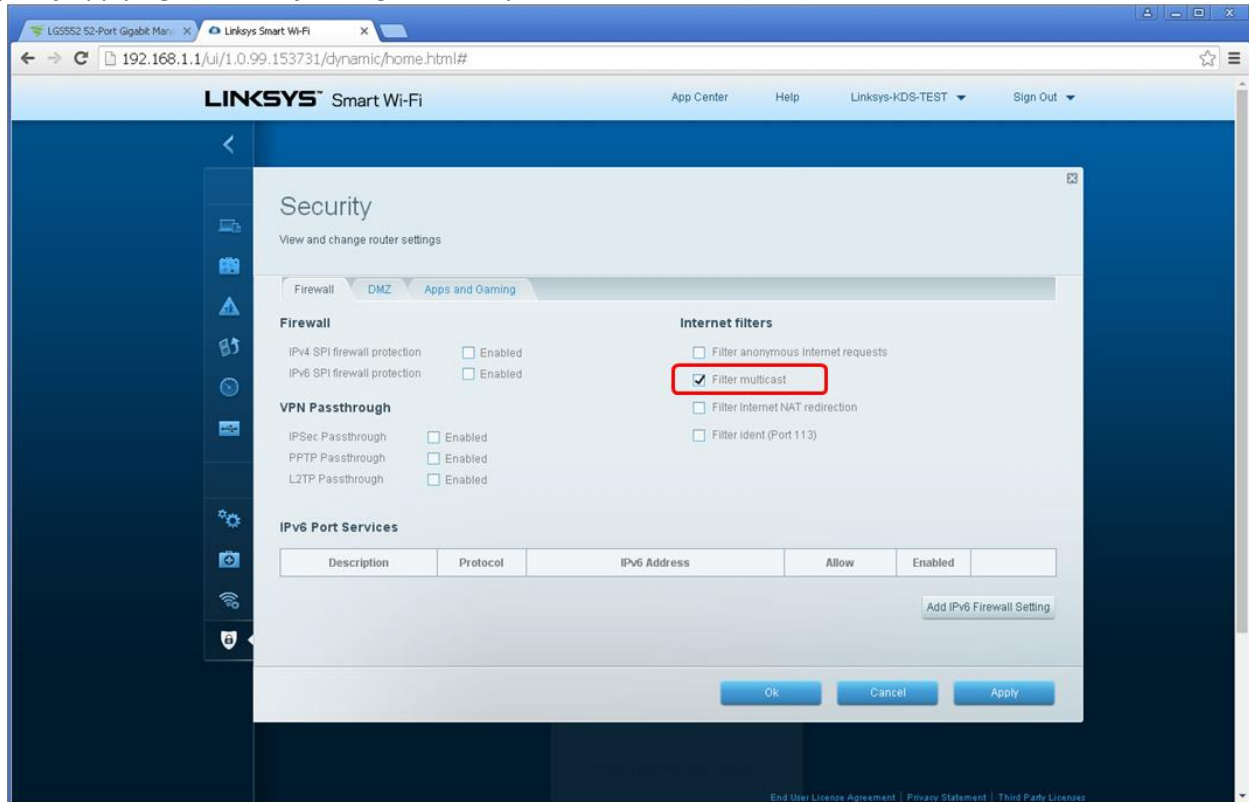
<input type="checkbox"/>	Group ID	Description	Members	Operation
<input type="checkbox"/>	1	Static LAG	1/0/25-26	
Total: 1				

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