

Verified Network Switches for use with Key Digital Enterprise AV – HD over IP Systems

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

Important Note:

Setup is 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.

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Supported Models:

Key Digital Enterprise AV product family consists of many different models. Not all models are compatible together
See Key Digital [Enterprise AV over IP Selection Guide](#) for more info

ENTERPRISE AV OVER IP		Key Digital's Enterprise AV™ over IP solutions create expandable AV over IP systems that can be scaled to fit any size installation or project.						KEY DIGITAL APP READY	
AUDIO/VIDEO/CONTROL SOLUTIONS		KD-IP1022ENC	KD-IP1022DEC	KD-IP922ENC	KD-IP922DEC	KD-IP822ENC	KD-IP822DEC	KD-IP1080Tx	KD-IP1080Rx
Encoder Tx / Decoder Rx	Encoder (ENC)	Decoder (DEC)	Encoder	Decoder	Encoder	Decoder	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 10x10	Up to 10x10	Up to 10x10	Up to 10x10	Up to 4 displays	Up to 4 displays	-	-	
Control	TCP/IP LAN, RS-232, 3 port Compass MC, IR 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-C8000 Control Interface	Via KD-C8000 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	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 Enterprise AV

Key Digital's Enterprise AV is an HDMI over IP system that utilizes multicasting technology to broadcast streams throughout the network.

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

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-IP922 systems require the following IP addresses to be reserved. They cannot be assigned to KD-IP922 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

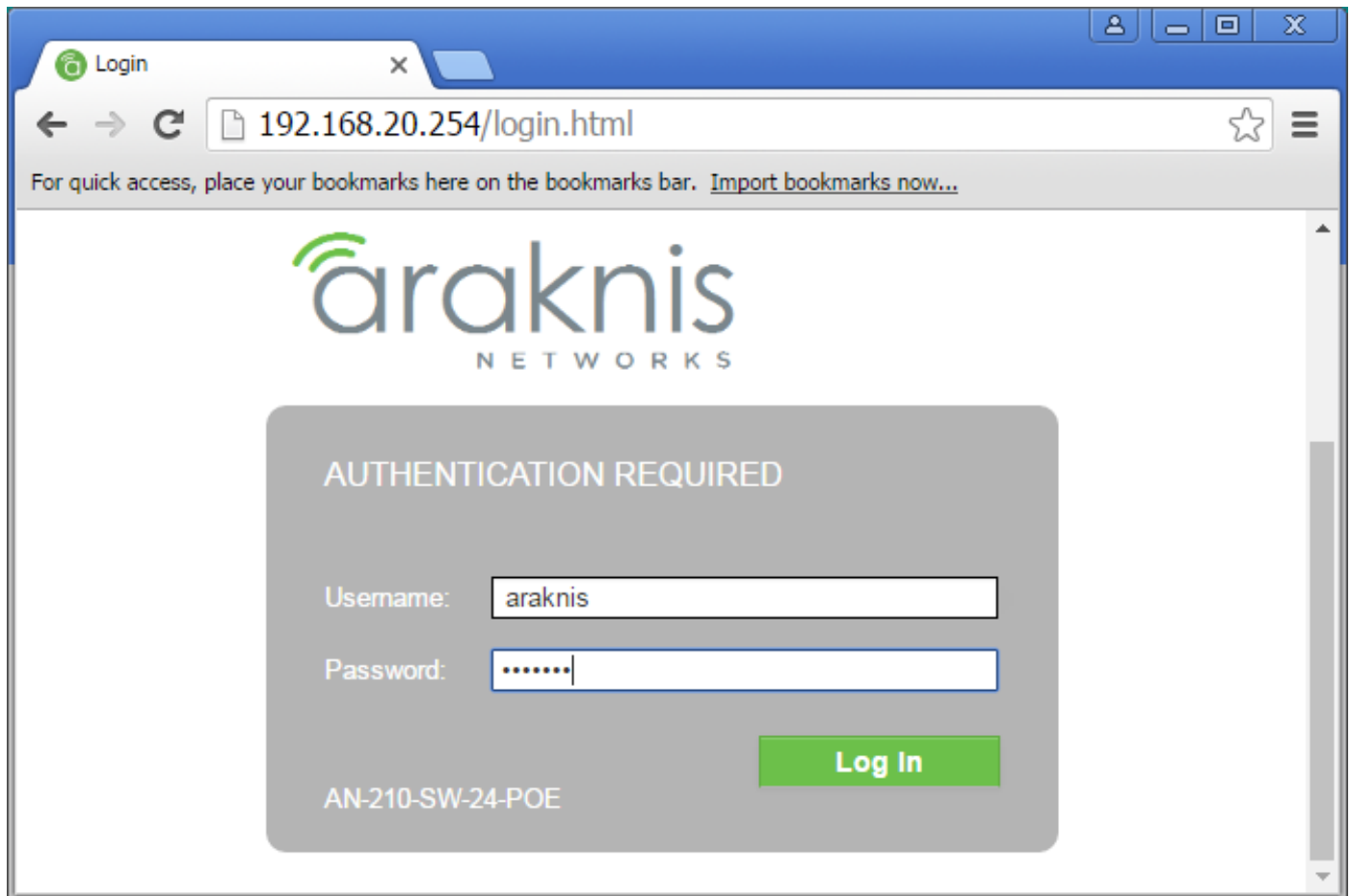
Brand	Model	Port Number	PoE	KD Lab Verified KD-IP1080/120	KD Lab Verified KD-IP922
Araknis	AN-210-SW-R-8-POE	8	YES		
	AN-210-SW-F-8-POE	8	YES		
	AN-210-SW-R-16-POE	16	YES		
	AN-210-SW-F-16-POE	16	YES		
	AN-210-SW-R-24-POE	24	YES		
	AN-210-SW-F-24-POE	24	YES	YES	YES
	AN-210-SW-F-48-POE	48	YES		
	AN-310-SW-R-8	8			
	AN-310-SW-F-8	8			
	AN-310-SW-R-16	16			
	AN-310-SW-F-16	16			
	AN-310-SW-R-24	24			
	AN-310-SW-F-24	24		YES	
	AN-310-SW-R-8-POE	8	YES		
	AN-310-SW-F-8-POE	8	YES		
	AN-310-SW-R-16-POE	16	YES		
	AN-310-SW-F-16-POE	16	YES		
	AN-310-SW-R-24-POE	24	YES		
	AN-310-SW-F-24-POE	24	YES		
	AN-310-SW-F-48-POE	48	YES		

Brand	Model	Port Number	PoE	KD Lab Verified KD-IP1080	KD Lab Verified KD-IP922
Cisco	SF500-48	48		YES	
	SG300-28				
	Catalyst 3850 Series		YES		YES
D-Link	DGS-3630-52PC	52	Yes		YES
	DGS-3630-52TC	52			
	DGS-3630-28PC	28	YES		
	DGS-3630-28SC	28			
	DGS-3630-28TC	28			
Engenius	EGS5212P	8	YES		
	EGS7228FP	24	YES		
	EGS7252FP	24	YES		
	EWS1200D-10T	10			
	EWS1200D-28T	24			
	EWS1200D-52T	48			
	EWS5912FP	8	YES		
	EWS7928P	24	YES		
	EWS7928FP	24	YES		
	EWS7952FP	48	YES	YES	

Brand	Model	Port Number	PoE	KD Lab Verified KD-IP1080	KD Lab Verified KD-IP922
Linksys	LGS552P	52	YES	YES	YES
	LGS528P	28	YES	YES	
	LGS326P	26	YES	YES	
	LGS318P	18	YES	YES	
	LGS326MP	26	YES	YES	YES
	LGS326P	26	YES		
	LGS326	26			
	LGS318P	18	YES		
	LGS318	18			
	LGS308MP	8	YES		
	LGS308P	8	YES		
	LGS308	8			
Luxul	AMS-4424P	24	YES		YES
Netgear	GS716T	16			
	GS724T	24			
	GS748T	48		YES	
	GS752TP	48	YES	YES	
	GS728TP	28	YES		
Pakedge	S3L-24P	24	YES	YES	YES
	SX-8EP	8			
	SX-8P	8	YES	YES	YES
	SX-24	24			
	SX-24P8	24	YES (8)		
	SX-24P16	24	YES (16)		
	SX-24P	24	YES (24)		
Titan Networkx	TNSS2400P	24	YES	YES	

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

1. Before Araknis network switch is configured Key Digital KD-IP120/KD-IP1080 HDMI switch set must be connected to all HDMI sources/displays/network switches, and configured using Key Digital KD-IP120 Key Digital Management Software latest version; refer to Key Digital KD-IP120/KD-IP1080 configuration manual.
2. Power-up all the system components. Using Key Digital KD-IP120 Key Digital Management Software, switch **All Outputs -> Through** at switching page.
3. **IMPORTANT:** Disconnect all the DHCP devices like routers, servers from the Araknis network switch.
4. 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).
5. **IMPORTANT:** At this point all the displays should be displaying distorted randomly flashing video images.
6. Connect your PC to the Araknis network switch directly using a network cable.
7. If you have not done yet, configure your PC's IP address to the same range as the switch (default **192.168.20.xxx**).
8. Enter the switch's IP address (default is **192.168.20.254**) in your browser and press ENTER.
9. Enter user name and password (default is "**araknis**" for both). Then click **Log In**.



10. 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.

Araknis 210 24 Port PoE

192.168.1.251/#2

Apps Google 192.168.1.250/cs525de TN55-2400P TN55-2400P 192.168.1.254/csb8af7 192.168.0.4

ADVANCED

Search

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

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.
- 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**.

The screenshot shows the web interface of an Araknis 210 24 Port PoE switch. The browser address bar shows the IP 192.168.1.251/#16. The interface has a sidebar menu on the left with sections: STATUS (SYSTEM, PORTS), SETTINGS (SYSTEM, PORTS, POE, VLANs, LINK AGGREGATION, ACCESS MANAGEMENT), MAINTENANCE (PING TEST, TRACE ROUTE, FILE MANAGEMENT, RESTART DEVICE, LOG OUT), and ADVANCED (PORT STATISTICS, NEIGHBORS, MULTICAST, IGMP SNOOPING, MLD SNOOPING, STP, VLANs, SECURITY, RMON, QOS, SHMP, LACP, LOG). The main content area is titled 'IGMP SNOOPING' and contains several configuration sections:

- 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
- 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	Enabl	v3	Non-Querier	---	2	125	125	10	10	2	2	1	1
- Group List:**

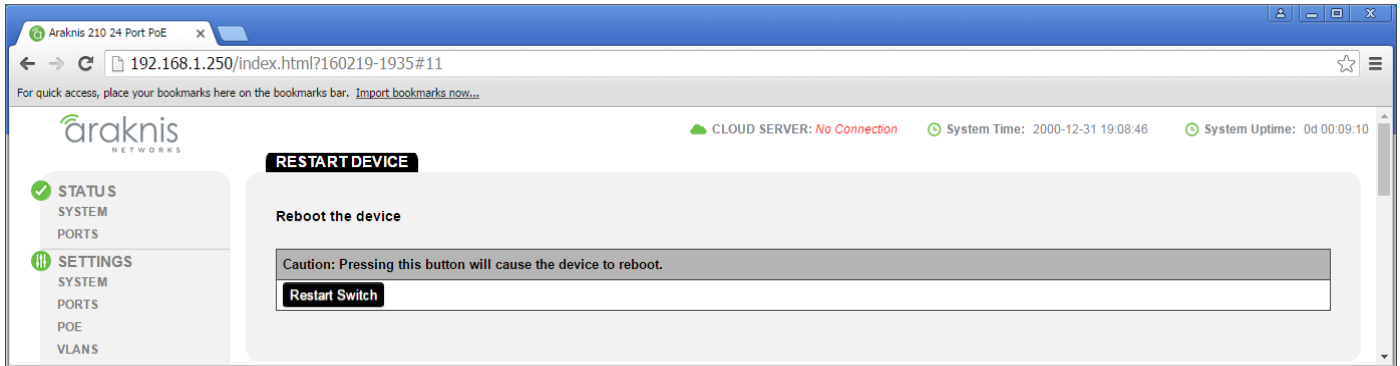
VLAN ID	Group IP Address	Member Ports
1	239.255.42.43	12
- Router Settings:**

VLAN ID	Router Ports Auto-Learned	Dynamic Port List	Static Port List	Forbidden Port List
1	Enabled			
- URC Settings:**

URC State	Member Ports	VLAN
Disabled	1	1

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

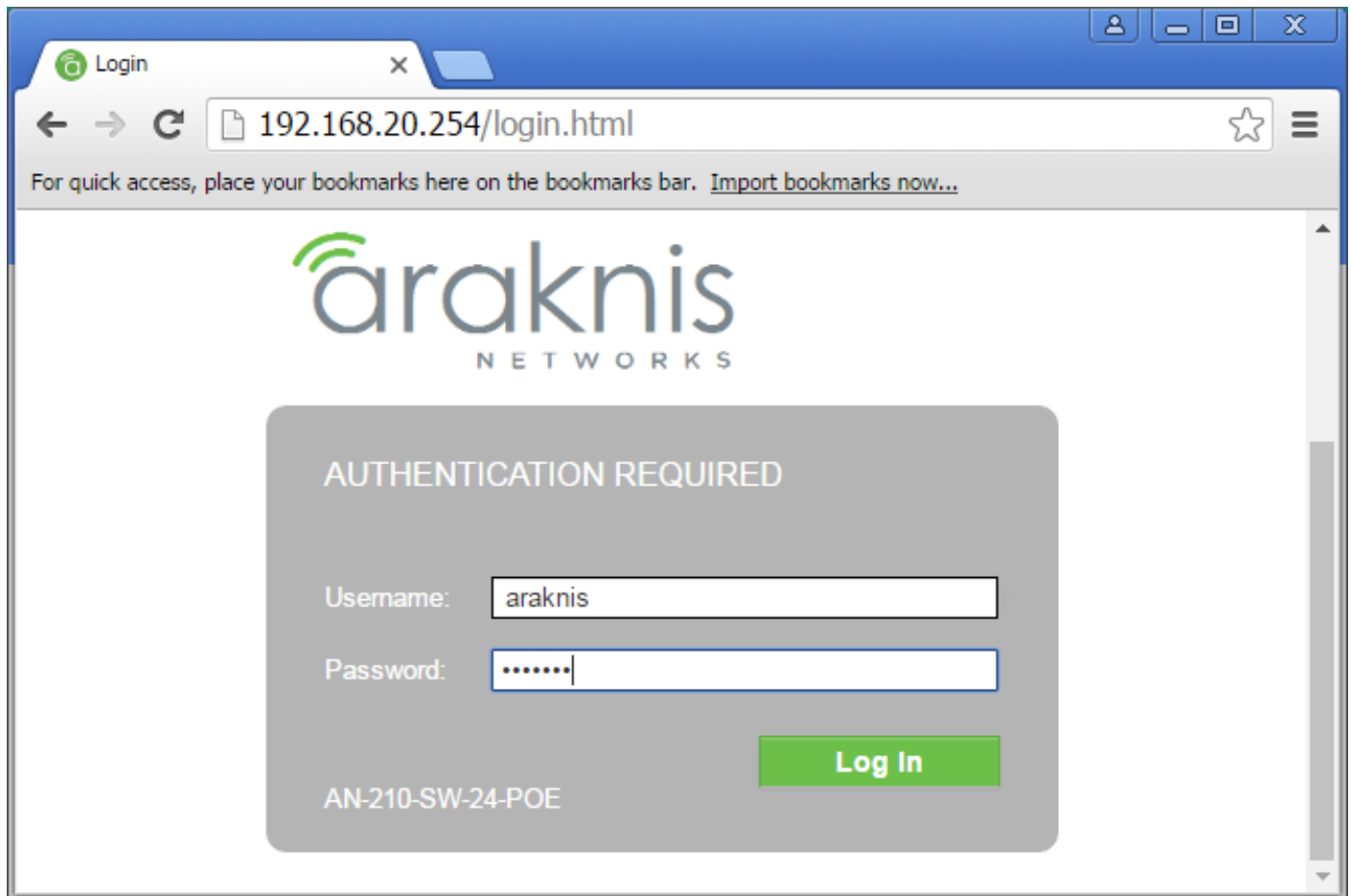
14. **IMPORTANT:** At this point all the displays should be displaying stable running video from the selected sources. If you do not have them displaying properly, than network switch is configured incorrectly.
15. Navigate to **Maintenance** -> **Restart Device** and click Restart Switch. After switch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



16. **IMPORTANT:** Now you can connect back you DHCP equipment (routers, servers and so on).
17. 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.
18. Log in to your Araknis network switch again and make sure that IGMP settings are intact.
19. Rescan your components with Key Digital KD-IP120 Key Digital Management Software and make sure HDMI video switch is functional.
20. At this point your Araknis network switch is set and ready to use.

IGMP Setup Guide: Araknis 4K Systems (KD-IP922)

1. Before Araknis network switch is configured Key Digital KD-IP120/KD-IP1080 HDMI switch set must be connected to all HDMI sources/displays/network switches, and configured using Key Digital KD-IP120 Key Digital Management Software latest version; refer to Key Digital KD-IP120/KD-IP1080 configuration manual.
2. Power-up all the system components. Using Key Digital KD-IP120 Key Digital Management Software, switch **All Outputs -> Through** at switching page.
3. **IMPORTANT:** Disconnect all the DHCP devices like routers, servers from the Araknis network switch.
4. 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).
5. **IMPORTANT:** At this point all the displays should be displaying distorted randomly flashing video images.
6. Connect your PC to the Araknis network switch directly using a network cable.
7. If you have not done yet, configure your PC's IP address to the same range as the switch (default **192.168.20.xxx**).
8. Enter the switch's IP address (default is **192.168.20.254**) in your browser and press ENTER.
9. Enter user name and password (default is "**araknis**" for both). Then click **Log In**.



10. 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.

Araknis 210 24 Port PoE

192.168.1.251/#2

Apps Google 192.168.1.250/cs525de TN55-2400P TN55-2400P 192.168.1.254/csb8af7 192.168.0.4

ADVANCED

Search

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

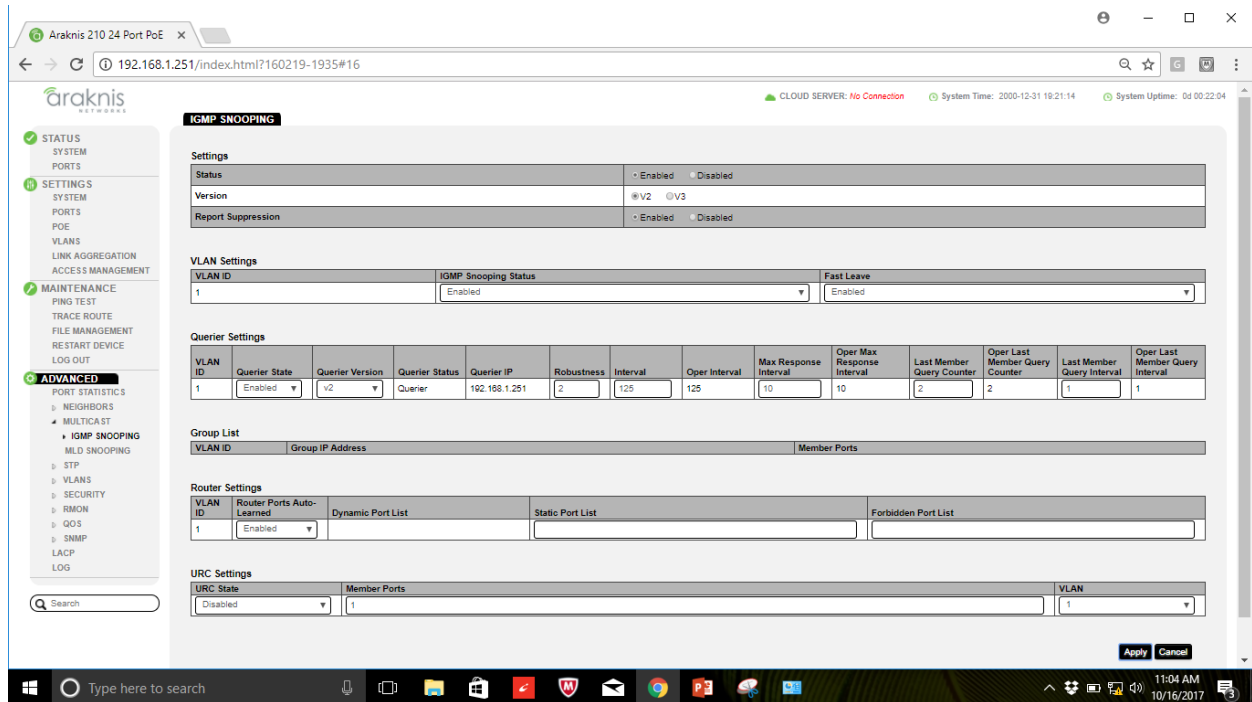
End: November 1st Sun 02 : 00

UPnP Configuration

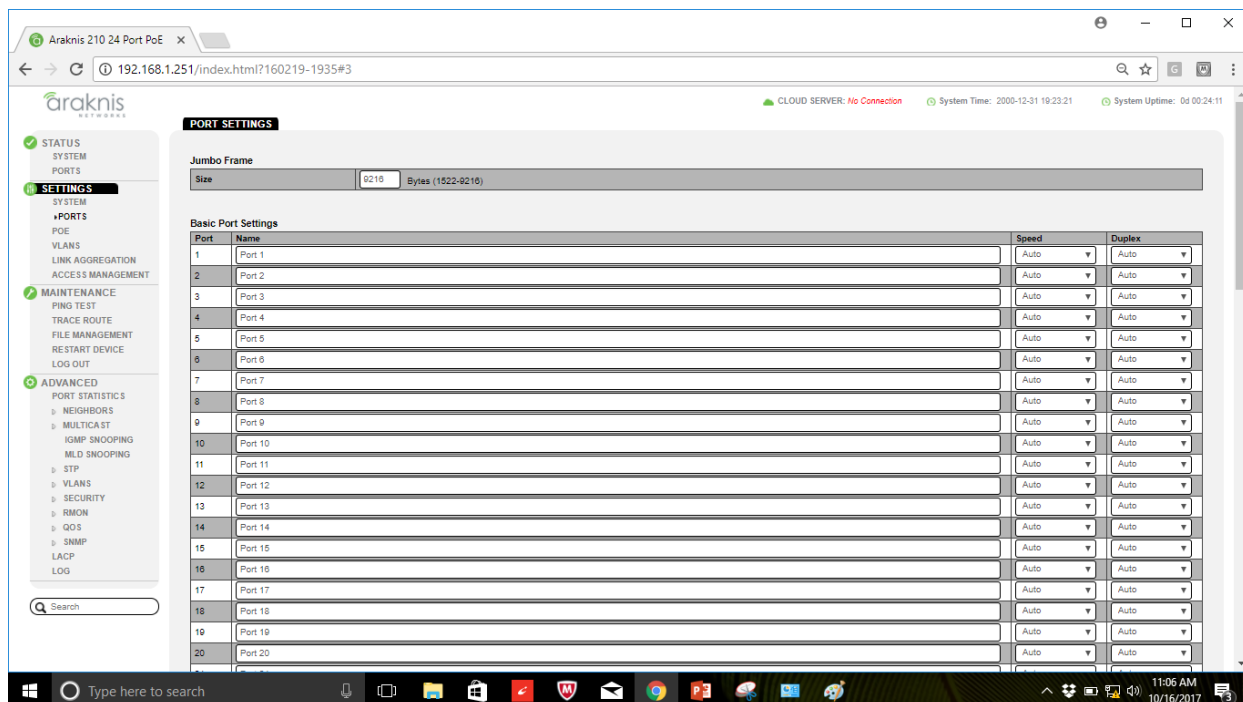
UPnP Enabled

Apply Cancel

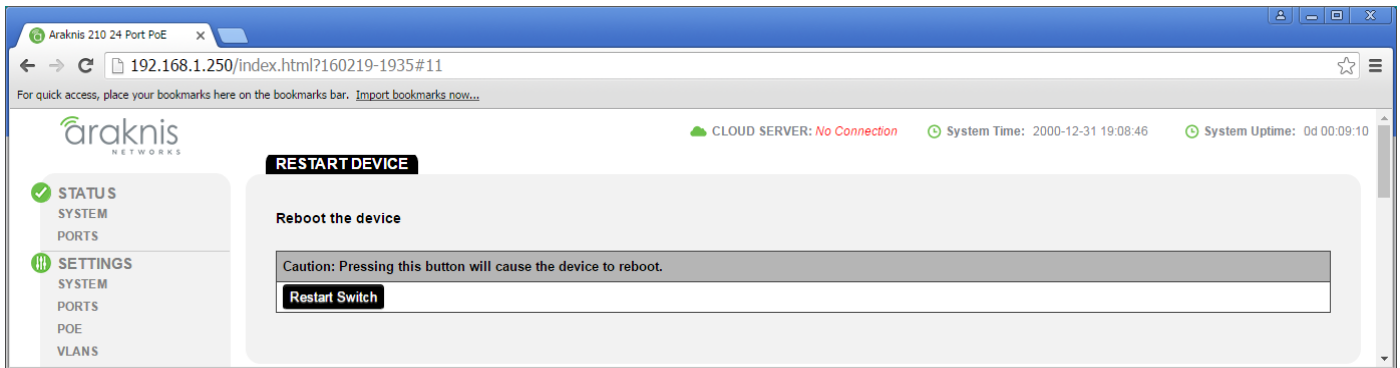
- Page will refresh. Configure your PC's IP address to the same range as the switch (default **192.168.1.xxx**). Enter the switch's IP address (default is **192.168.1.251**) in your browser and press ENTER.
- Make sure the settings remain as above.
- Navigate to **Advanced -> Multicast -> IGMP Snooping**. Under **Settings** select **Enable** for **Status**, **V2** 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**, **V2** for **Querier Version** and make sure all other setting are exactly as shown below. Click **Apply**.



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



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, then network switch is configured incorrectly.
16. 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.

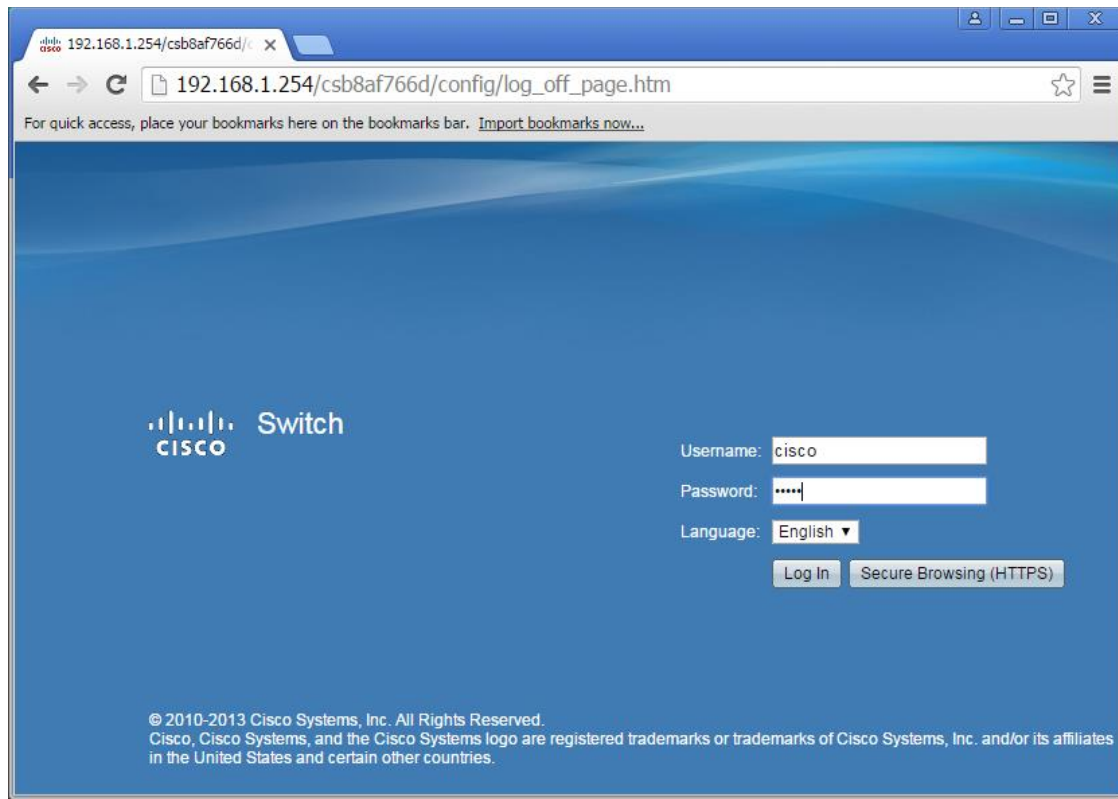


17. **IMPORTANT:** Now you can connect back you DHCP equipment (routers, servers and so on).
18. Power down Araknis network switch and power it up back again. Wait for the whole system to start and until you can see video on your displays.
19. Log in to your Araknis network switch again and make sure that IGMP settings are intact.
20. Rescan your components with Key Digital KD-IP120 Key Digital Management Software and make sure HDMI video switch is functional.
21. At this point your Araknis network switch is set and ready to use.

**IGMP Setup Guide: Cisco SF500-48, SG300
1080p Systems (KD-IP1080, KD-IP120)**

Note: Compatible with KD-IP1080, KD-IP120 Enterprise AV Systems Only

1. Before Cisco network switch is configured Key Digital KD-IP120/KD-IP1080 HDMI switch set must be connected to all HDMI sources/displays/network switches, and configured using Key Digital KD-IP120 Key Digital Management Software latest version.
2. Power-up all the system components. Using Key Digital KD-IP120 Key Digital Management Software, switch **All Outputs -> Through** at switching page.
3. **IMPORTANT:** Disconnect all the DHCP devices like routers, servers from the Cisco network switch.
4. 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).
5. **IMPORTANT:** Make sure the green "SYSTEM" LED next to the pinhole "RESET" button is flashing.
6. **IMPORTANT:** At this point all the displays should be displaying distorted randomly flashing video images.
7. Connect your PC to the Cisco network switch directly using a network cable.
8. If you have not done yet, configure your PC's IP address to the same range as the switch (default **192.168.1.xxx**).
9. 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**).
10. 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**.



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

The screenshot shows a web browser window with the address bar displaying `192.168.1.254/csb8af766d/home.htm`. The browser's address bar also shows tabs for `192.168.1.250/csb8af766d/home.htm`, `TN55-2400P`, and `192.168.1.254/csb8af766d/home.htm`. The page title is "Small Business SF500-48 48-Port 10/100 Stackable Managed Switch". The language is set to "English". There are links for "Logout", "About", and "Help".

The main content area is titled "Change Password". It contains the following text:

Please change your password from the default settings for better protection of your network

The minimum requirements are as follows:

- Cannot be the same as the user name.
- Cannot be the same as the current password.
- Minimum length is 8.
- Minimum number of character classes is 3. Character classes are upper case, lower case, numeric, and special characters.

The "New Password Configuration" section includes the following fields and controls:

Old Password:

New Password:

Confirm Password:

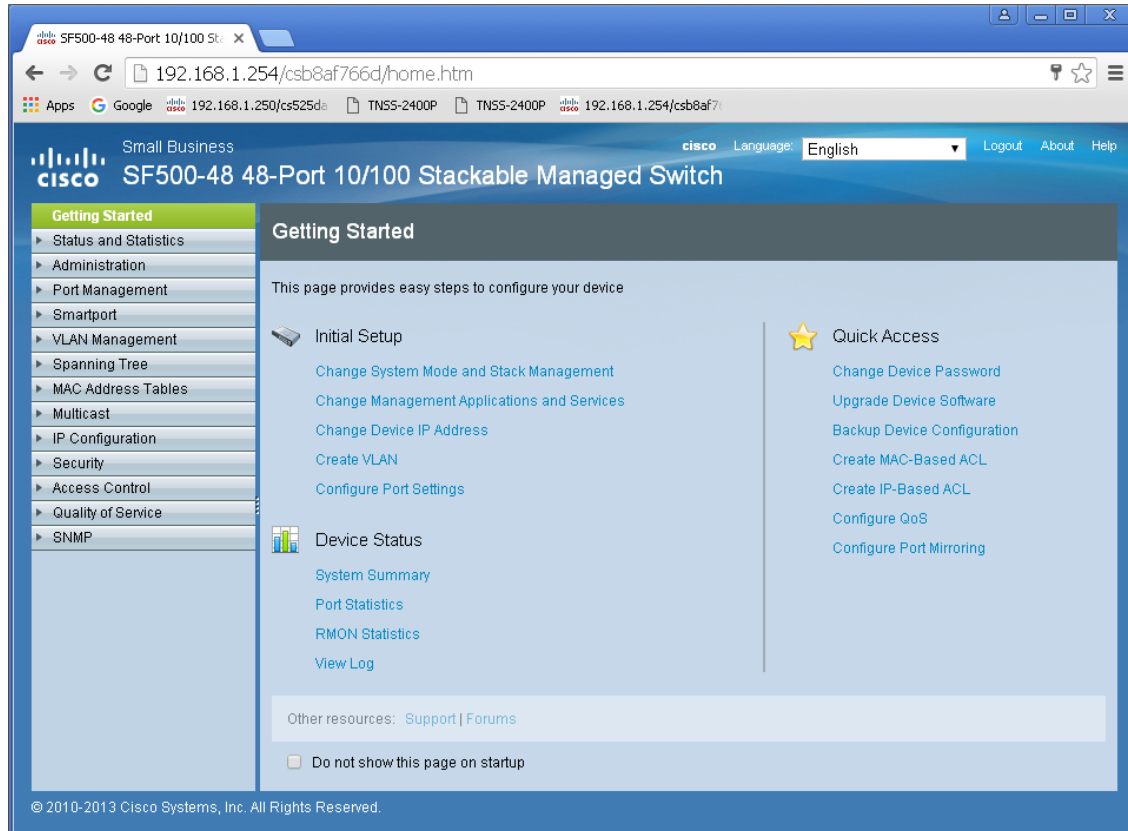
Password Strength Meter: Below Minimum

Password Strength Enforcement: ☒ Disable

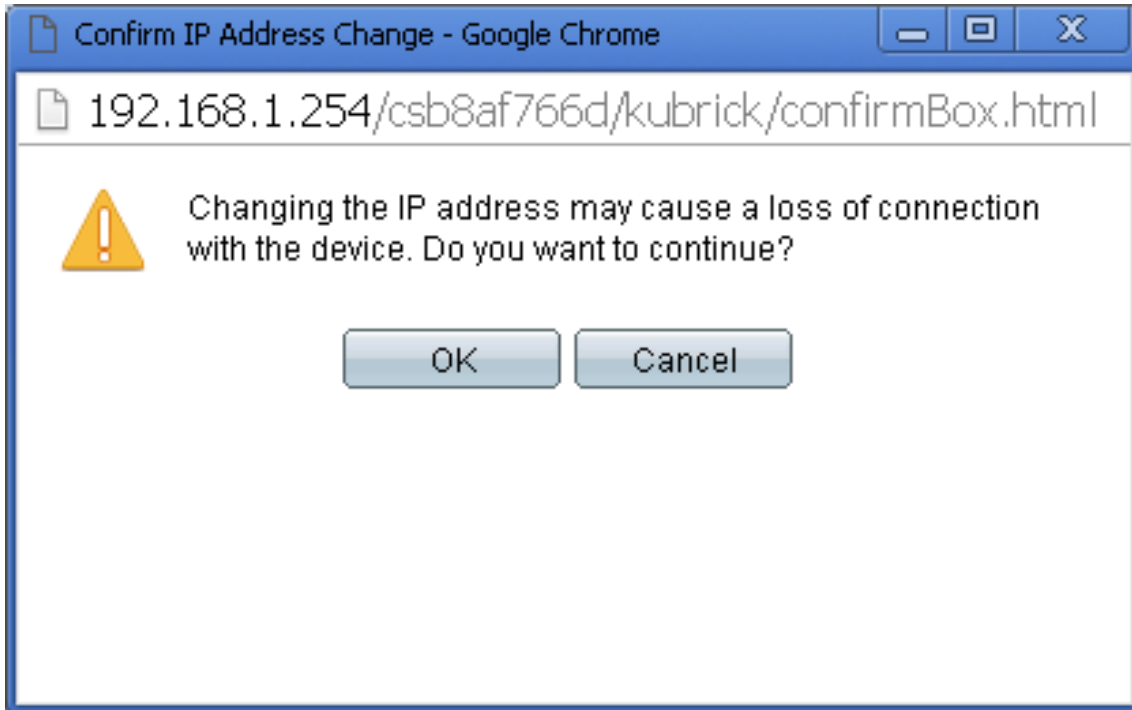
An "Apply" button is located at the bottom of the form.

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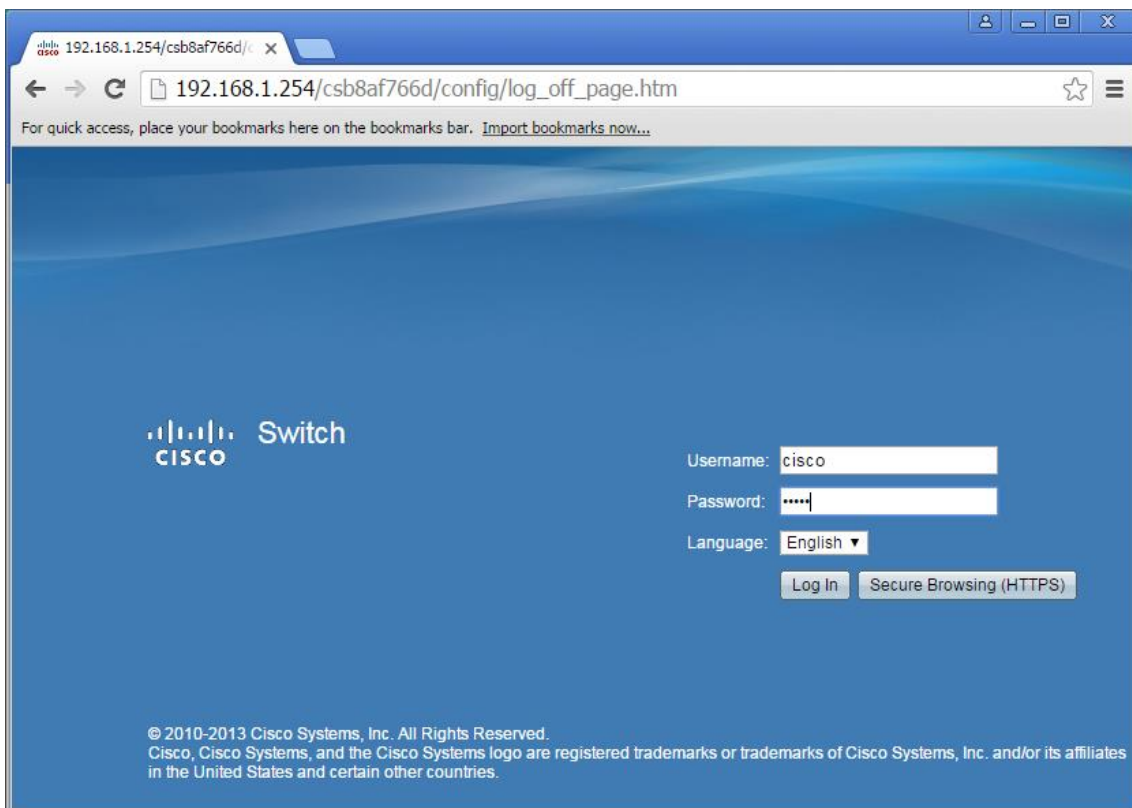
12. **Getting Started** screen will appear.



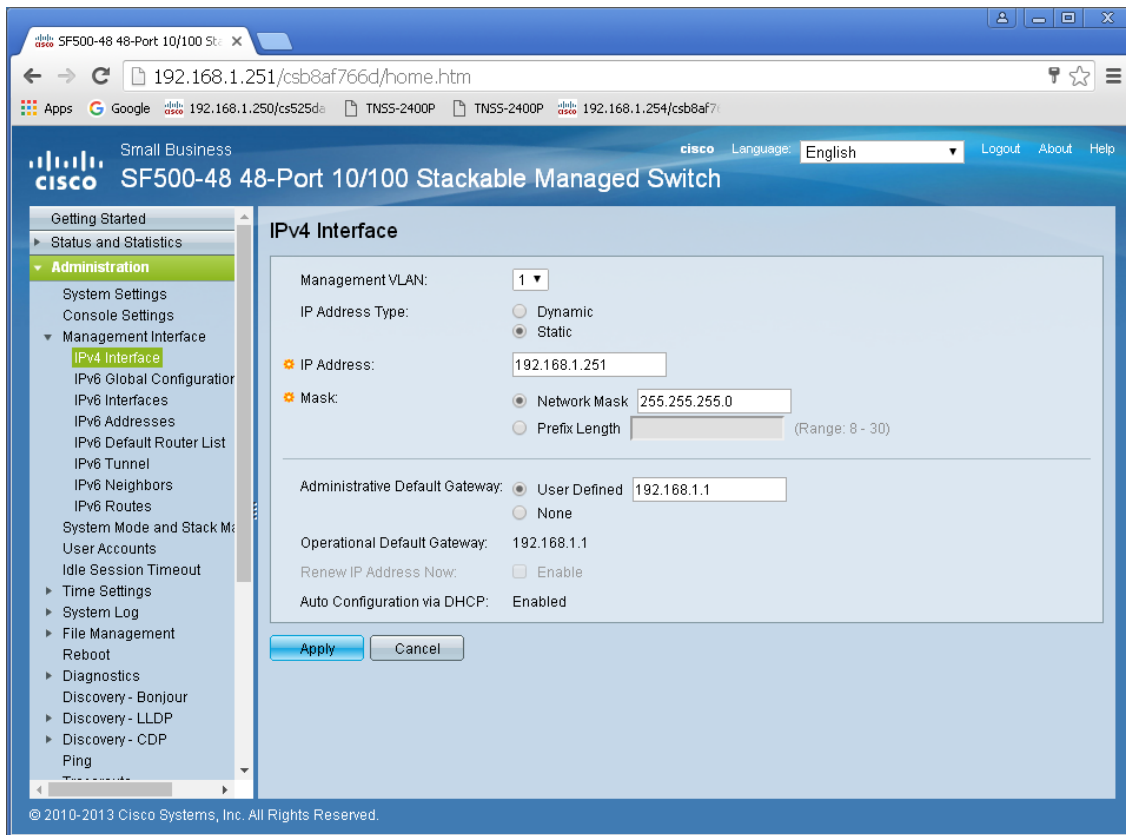
13. Navigate to **Administration -> Management Interface -> IPv4 Interface**. Select **"1"** under **Management VLAN**. Select **Static** for **IP Address Type**. Change an IP address to **192.168.1.251**. If you are using multiple network switches it is recommended to set first one to **192.168.1.251**, second to **192.168.1.252**, and so on. Leave **Network Mask** as **255.255.255.0**, set **Administrative Default Gateway** as **User Defined** and enter your router IP address (in this case: **192.168.1.1**), then click **Apply**.
14. Click **OK** to confirm.



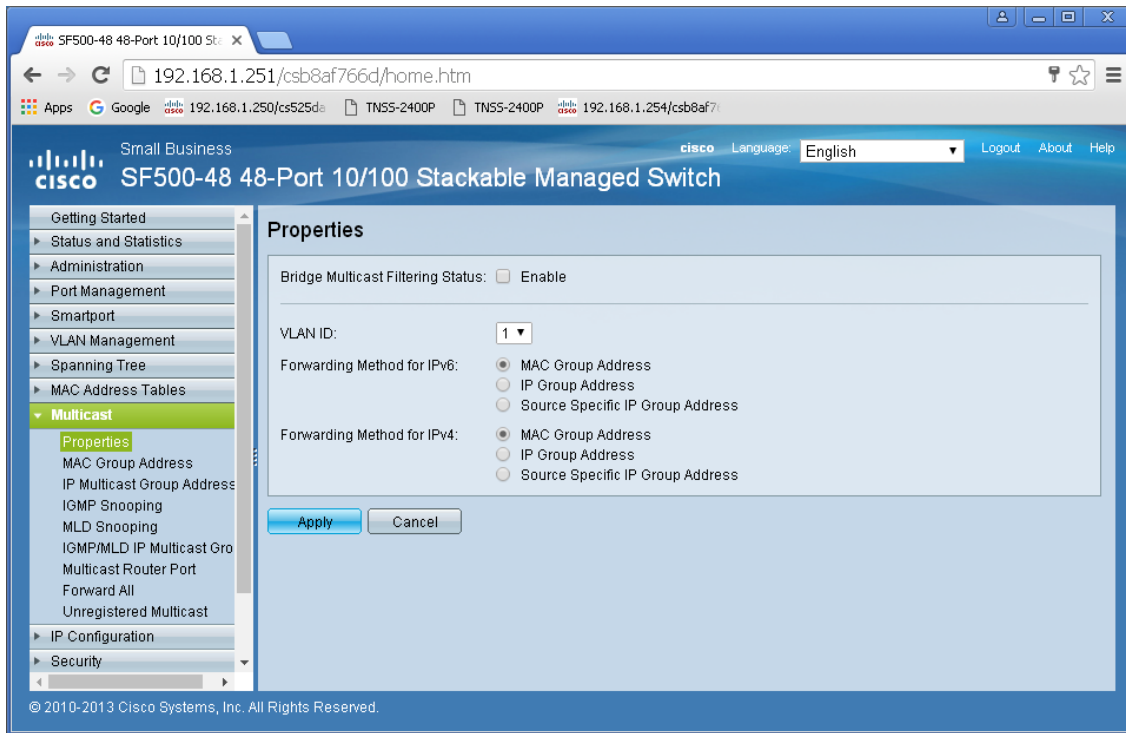
15. Log in again using new password and new IP address.



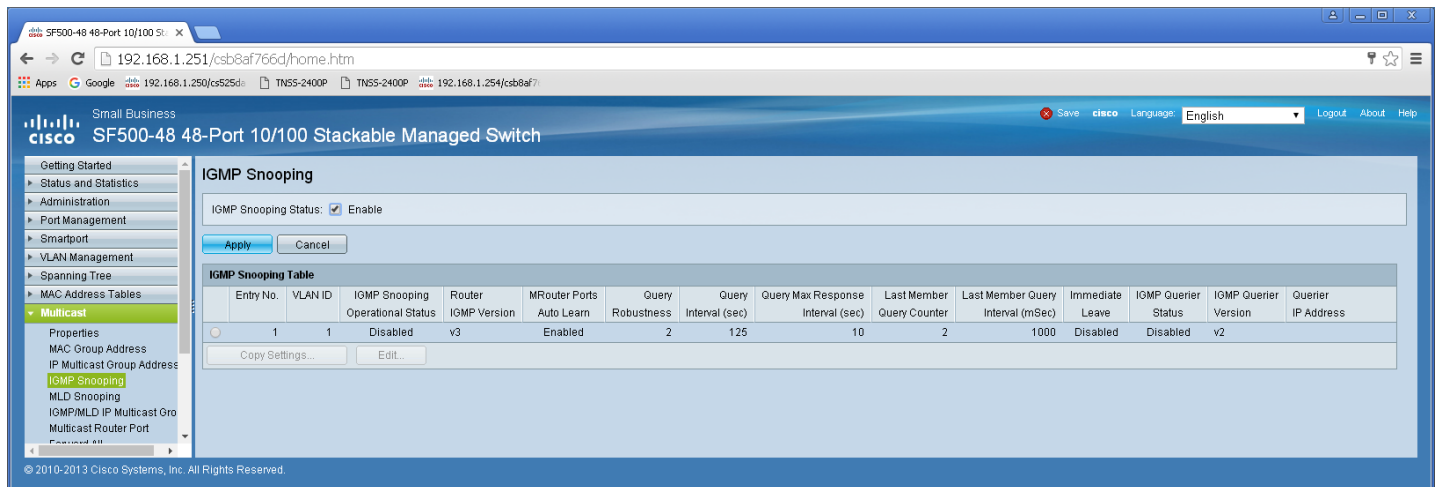
16. Confirm all the administration page settings as at the picture below.



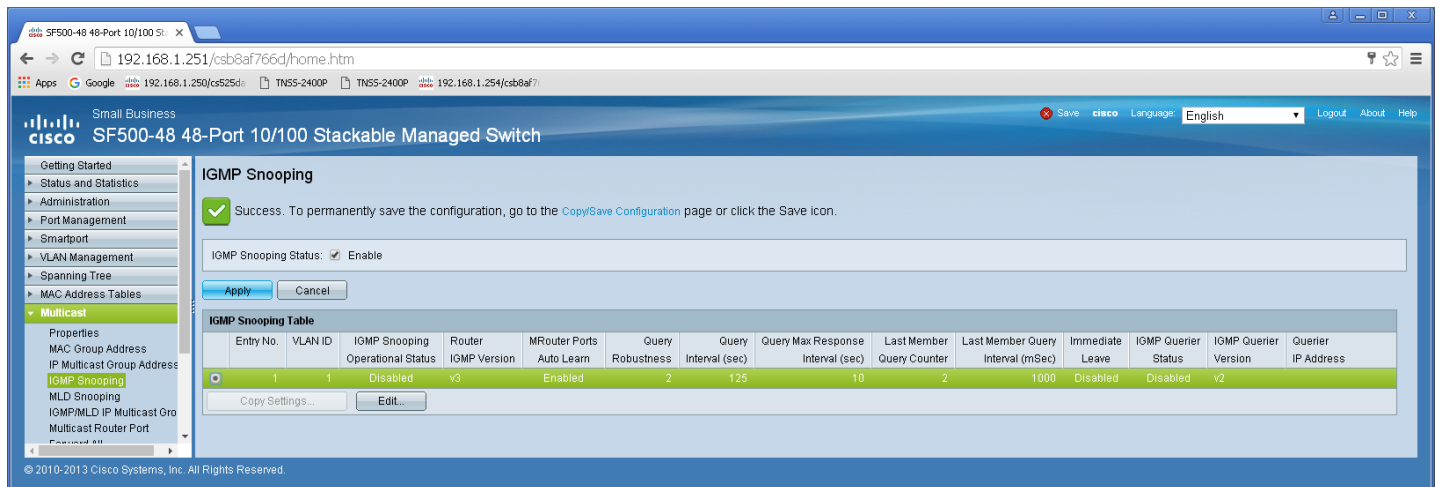
17. Navigate to **Multicast -> Properties**. Check **Enable** box next to the **Bridge Multicast Filtering Status** box. Make sure the other settings are exactly as shown below. Then click **Apply**.



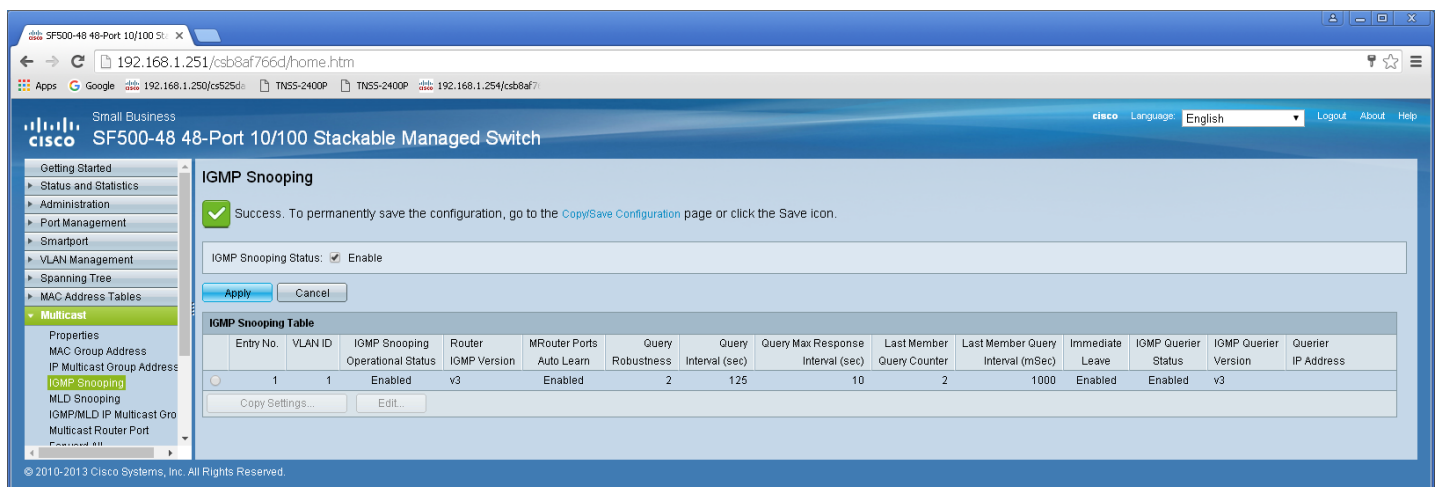
18. Navigate to **Multicast -> IGMP Snooping**. Check the **IGMP Snooping Status: Enable** box and click **Apply**.



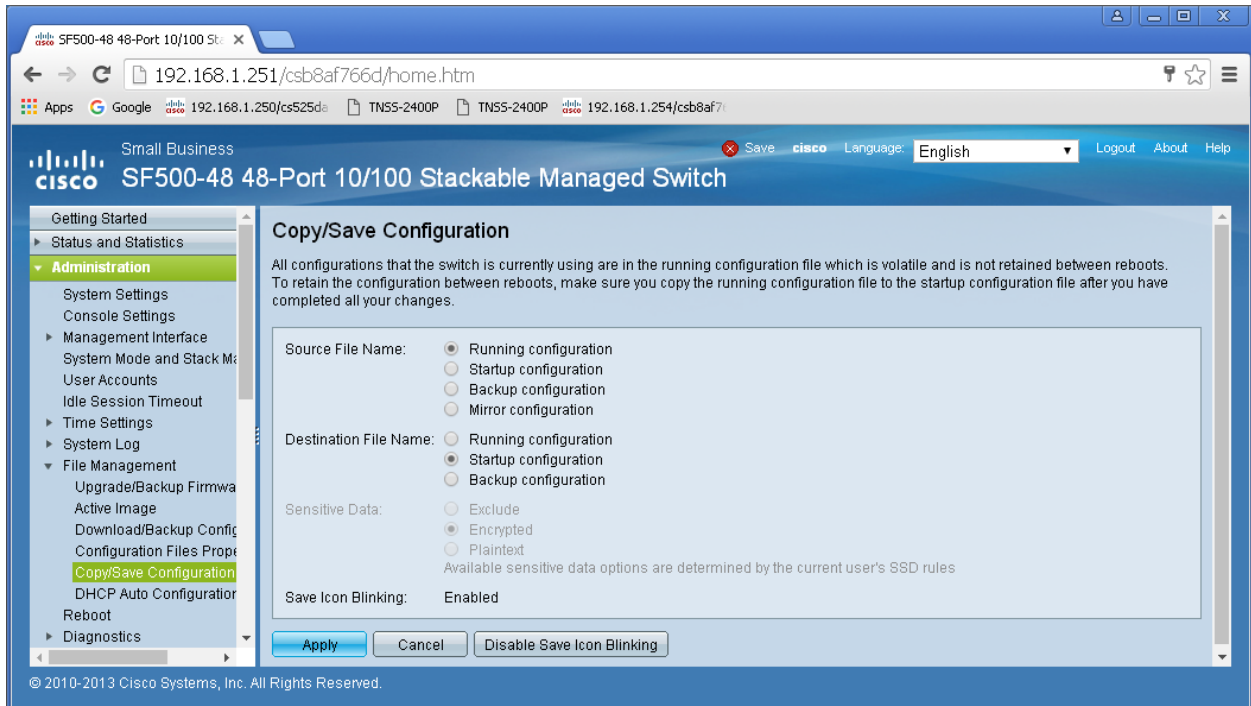
19. Click on a radio button on the left and then click **Edit**. New window will appear.



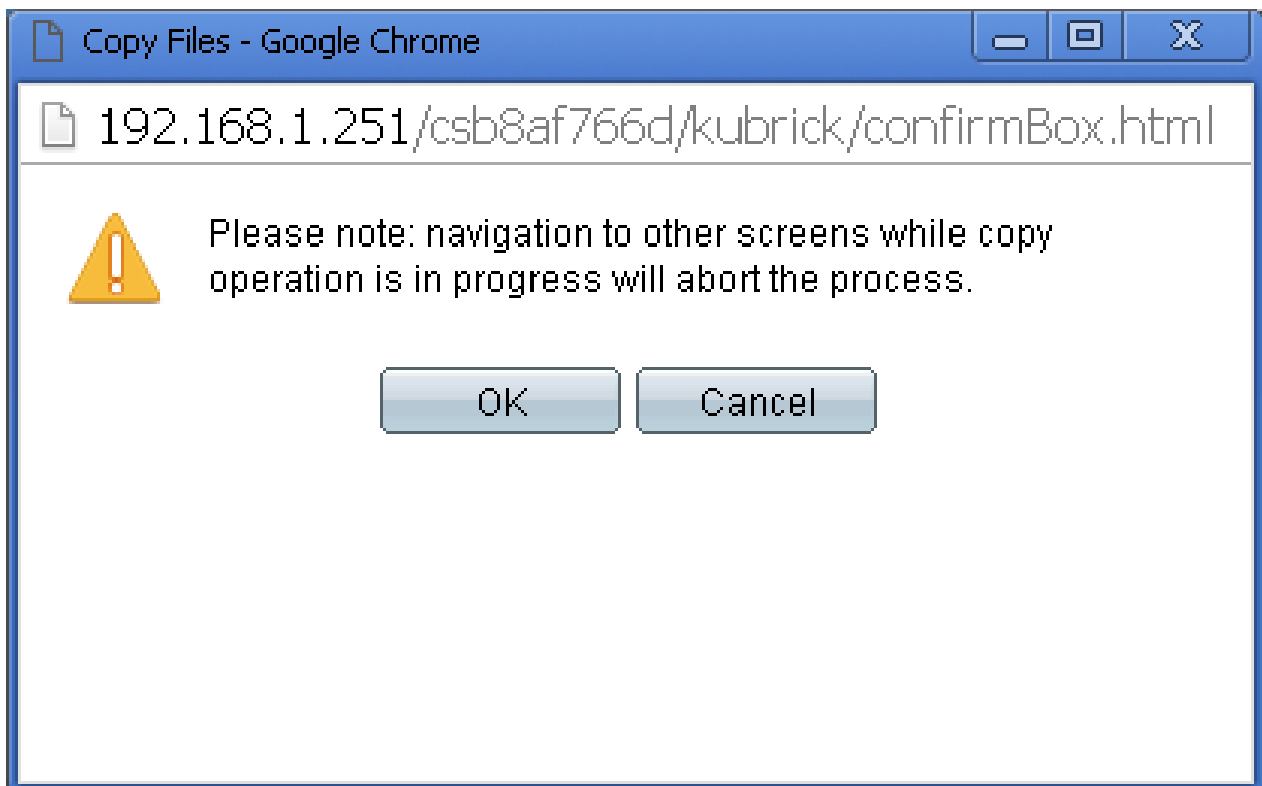
20. Click on a radio button on the left and then click **Edit**. New window will appear. Select **"1"** for **VLAN ID**. Check **Enable** box under **IGMP Snooping Status**. Check **Enable** box under **Immediate Leave**. Check **Enable** box under **IGMP Querier Status**. Select **User Defined** next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



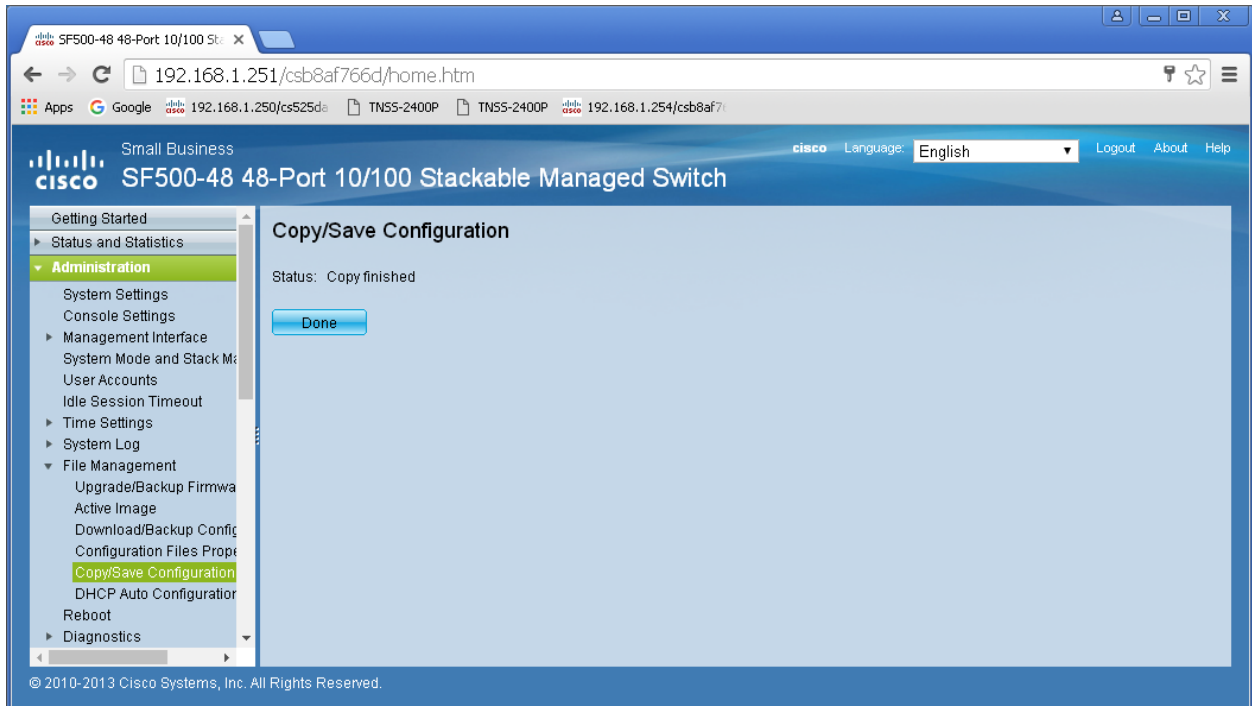
21. **IMPORTANT:** At this point all the displays should be displaying stable running video from the selected sources. If you do not have them displaying properly, than network switch is configured incorrectly.
22. On the top of the page click on flashing **"x Save"**. For **Source File Name**: select **Running configuration**. For **Destination File Name**: select **Startup configuration**. Check the selections and make sure they are exactly as shown below. Click **Apply**.



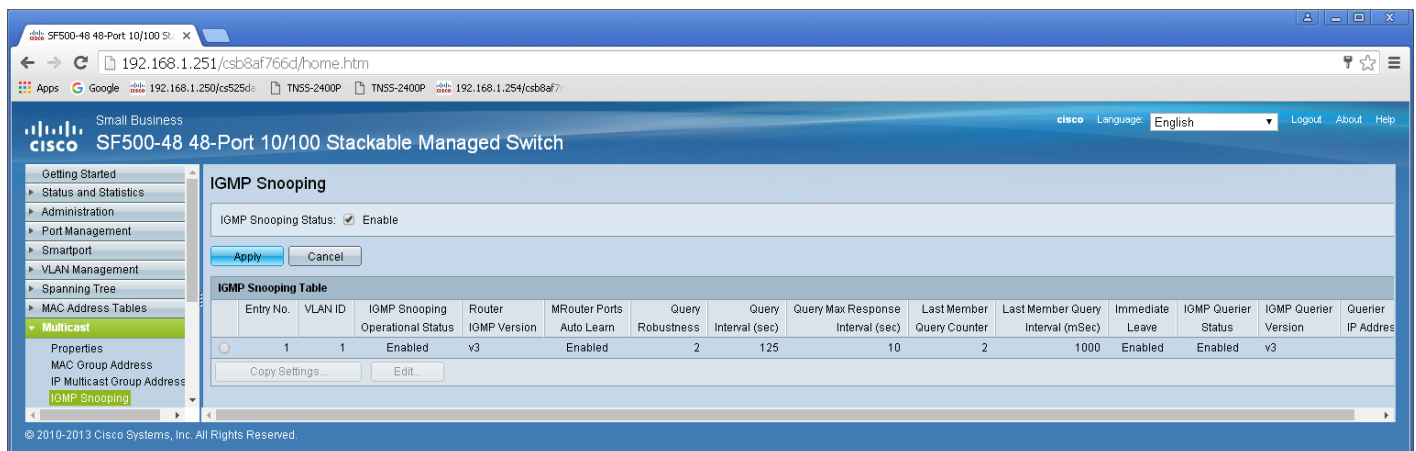
23. Click **Apply** to confirm.



24. Click **Done**.



25. **IMPORTANT:** Now you can connect back you DHCP equipment (routers, servers and so on).
26. Power down Cisco network switch and power it up back again. Wait for the whole system to start and until you can see video on your displays.
27. Log in to your Cisco network switch again and make sure that IGMP settings are intact:



28. Rescan your components with Key Digital KD-IP120 Key Digital Management Software and make sure HDMI video switch is functional.
29. At this point your Linksys network switch is set and ready to use.

IGMP Setup Guide: Cisco C3850 Series 4K Systems (KD-IP922)


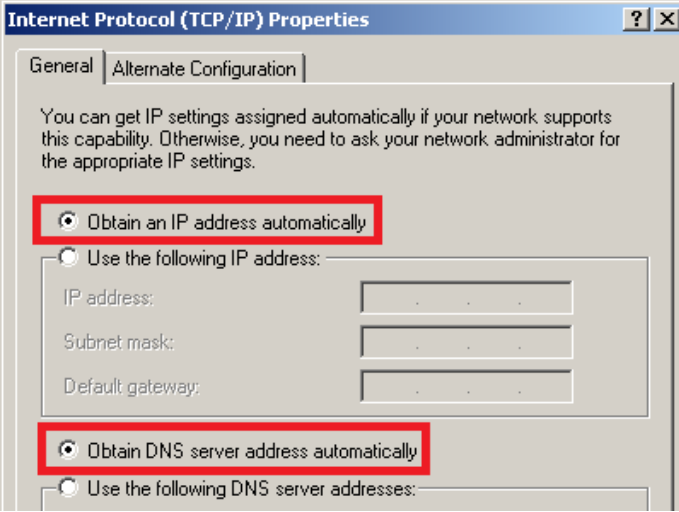
Cisco Catalyst 3850 series

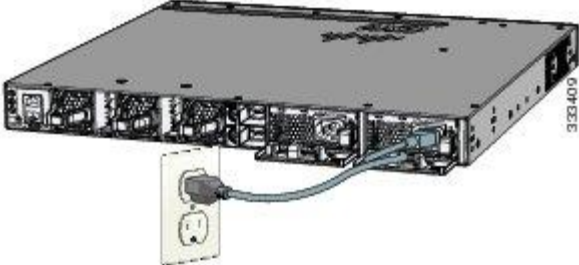

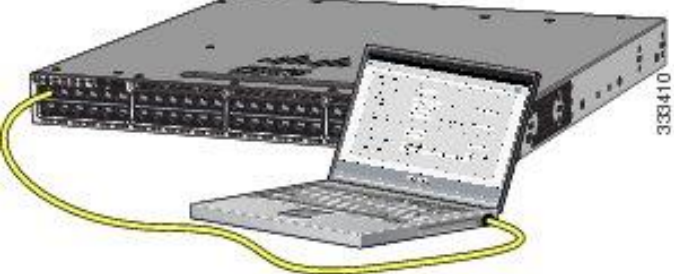
This guide describes how to use **Express Setup** to initially configure your Catalyst 3850 switch. We have modified original Express Setup guide from Cisco to help out you install it easily. For more installation and configuration information, see the Catalyst 3850 documentation on Cisco.com.

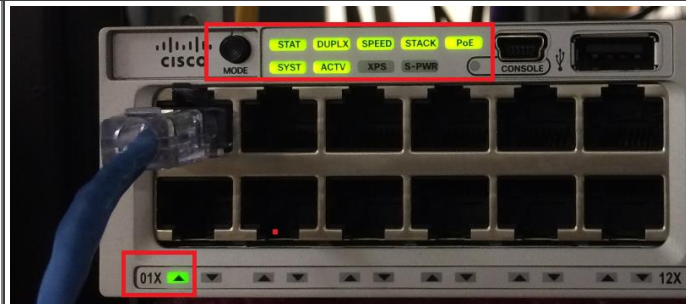
Running Express Setup & Configuration Setup for KD-IP922

Use Express Setup to enter the initial IP information. This action enables the switch to connect to local routers and the Internet. You can access the switch through the IP address for further configuration.

Note : Even you already finish Express Setup on your switch, please check every step one by one.

Step 1	Make sure that nothing is connected to the switch.	
Step 2	<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>	
Step 3	<p>Install the power supply modules. See the "Power Supply Installation" chapter in the <i>Catalyst 3850 Switch Hardware Installation Guide</i> for instructions.</p> <p>http://www.cisco.com/go/cat3850_hw</p>	

Step 4	<p>Power the switch.</p> <p>AC power switches: Plug the AC power cord into the switch power supply and into a grounded AC outlet.</p> <p>DC power switches: See the wiring instructions in Step3</p>	
Step 5	<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.</p> <p>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.</p> <p>Note Before going to the next step, wait until POST is complete.</p> <p>Troubleshooting:</p> <p>If the SYST LED does not turn solid green, or turns amber, the switch failed the POST. Contact your Cisco representative or reseller.</p>	
Step 6	<p>Press and hold the Mode button until all the LEDs next to the Mode button turn green.</p> <p>You might need to hold the button for more than 3 seconds.</p> <p>The switch is now in Express Setup mode.</p>	
	<p>Troubleshooting:</p> <p>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>	
Step 7	<p>Connect a Category 5e/6 Ethernet cable to first port on the front panel of Cisco Switch.</p> <p>Connect the other end of the cable to the Ethernet port on your PC or laptop.</p> <p>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.</p> <p>Troubleshooting:</p> <p>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</p> <p>(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 . . . . . : 

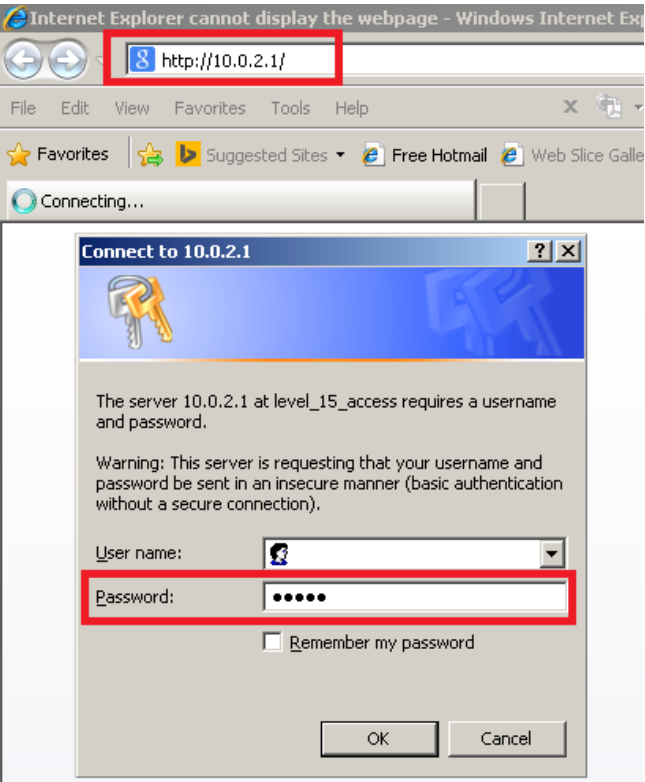
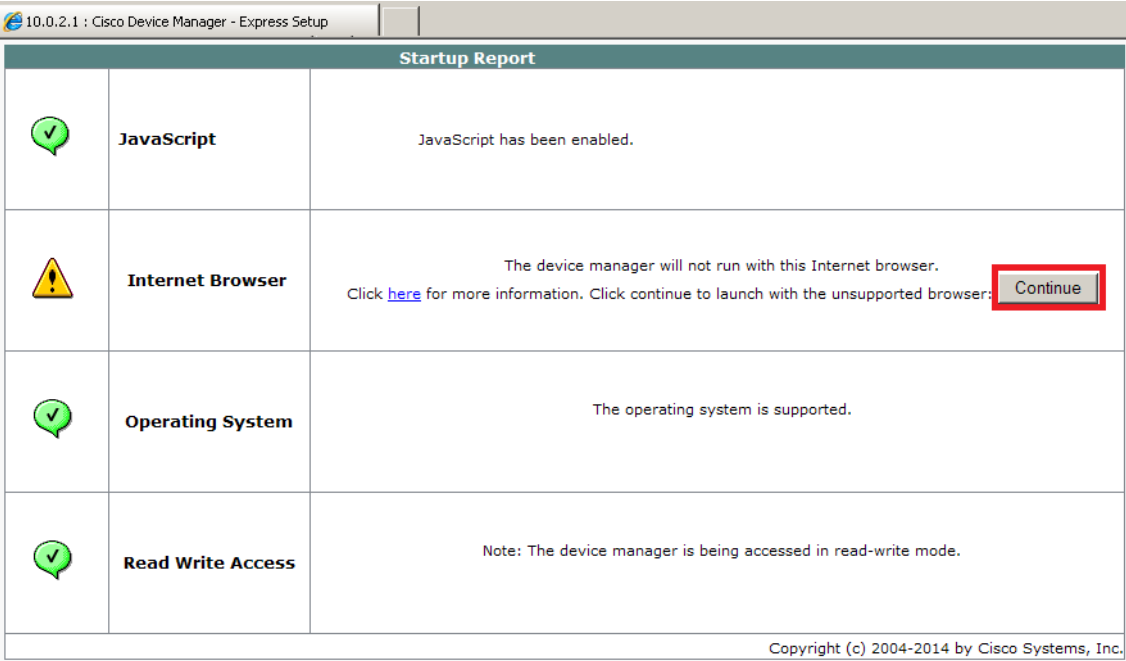
Ethernet adapter VMware Network Adapter VMnet1:

    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>Step 10</p>	<p>Click “Continue” button on Startup Report page.</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.

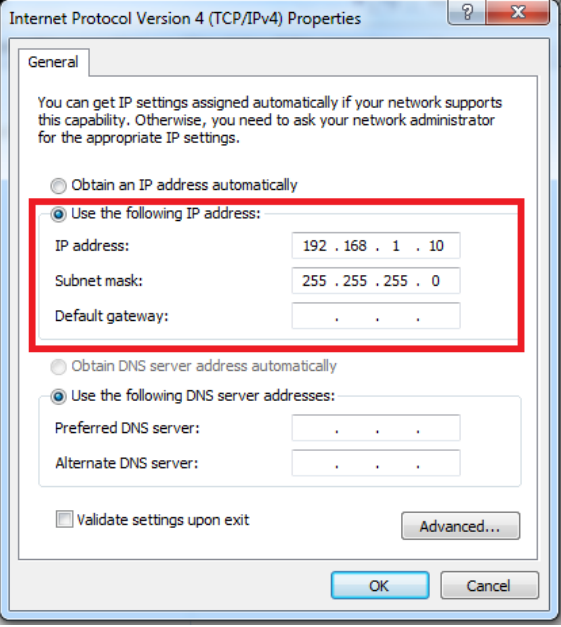
The screenshot shows the 'Catalyst 3850 Series Express Setup' window with the 'Basic Settings' tab selected. The 'Network Settings' section is highlighted with a red box, containing fields for 'Management Interface (VLAN ID)' (1), 'IP Address' (192.168.1.251), 'Default Gateway' (192.168.1.1), 'Switch Password' (*****), and 'Subnet Mask' (255.255.255.0). The 'Confirm Switch Password' field is also highlighted with a red box. The 'Optional Settings' section includes 'Host Name' (Switch), 'System Date' (11/Oct/2017), 'System Time' (12:29 PM), 'Time Zone' ((GMT - 05:00) Eastern Time (US & Canada)), and 'Daylight Saving Time' (checked).

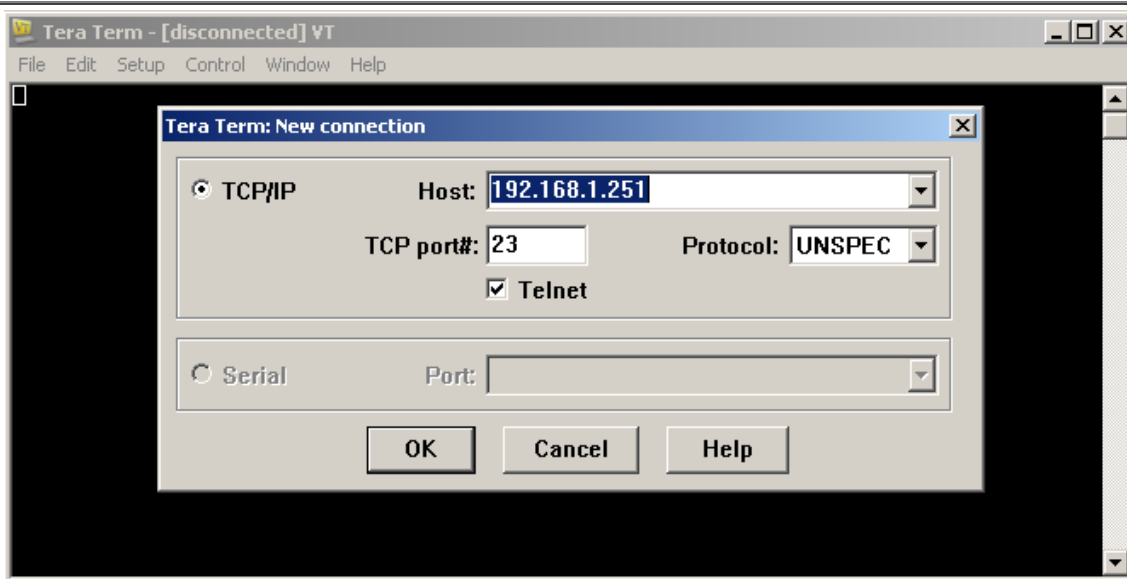
Step 12 Select the **Advanced Settings** tab on the Express Setup window

- 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.

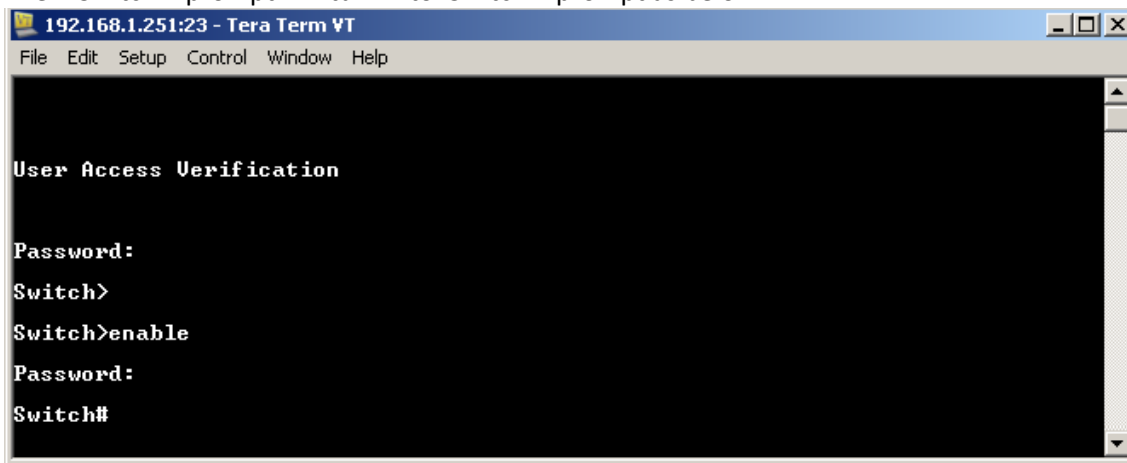
And click **Submit** to save your changes and to complete the initial setup.

The screenshot shows the 'Catalyst 3850 Series Express Setup' window with the 'Advanced Settings' tab selected. The 'Telnet Access' section is highlighted with a red box, showing 'Enable' selected and 'Disable' unselected. The 'Telnet Password' field (*****), 'Confirm Telnet Password' field (*****), and the 'Submit' button are also highlighted with red boxes. Other fields include 'SNMP' (Enable/Disable), 'SNMP Read Community', 'SNMP Write Community', 'System Contact', and 'System Location'.

<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]?”

```

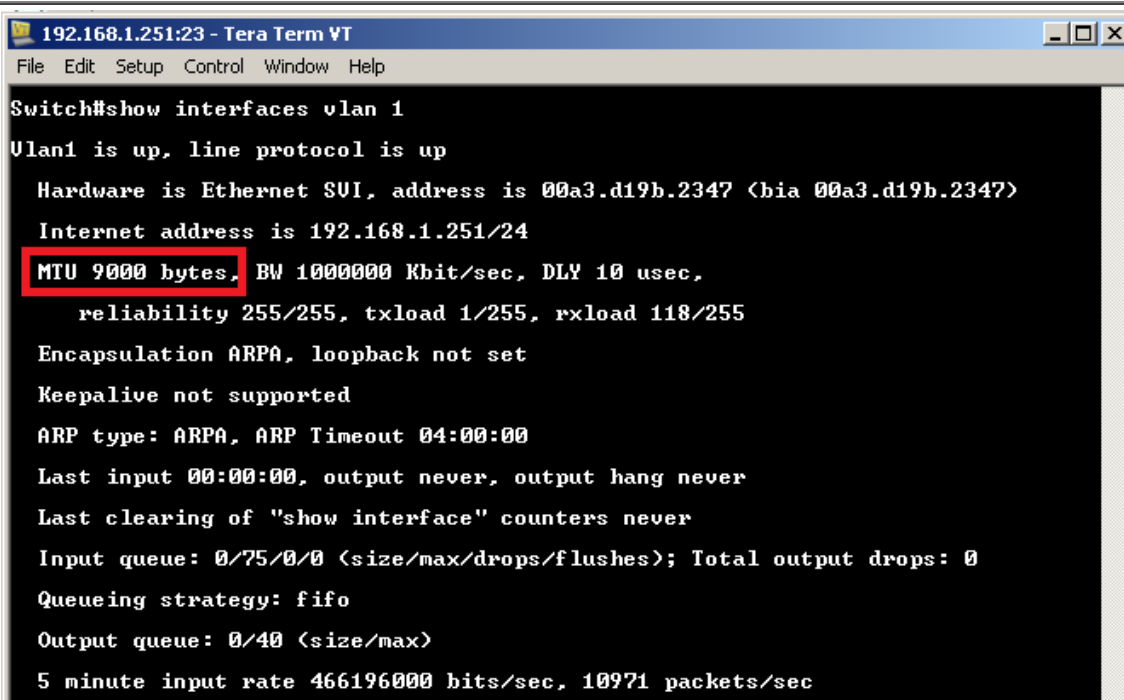
192.168.1.251:23 - Tera Term VT
File Edit Setup Control Window Help
Switch#
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#system mtu 9000
Global Ethernet MTU is set to 9000 bytes.
Note: this is the Ethernet payload size, not the total
Ethernet frame 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

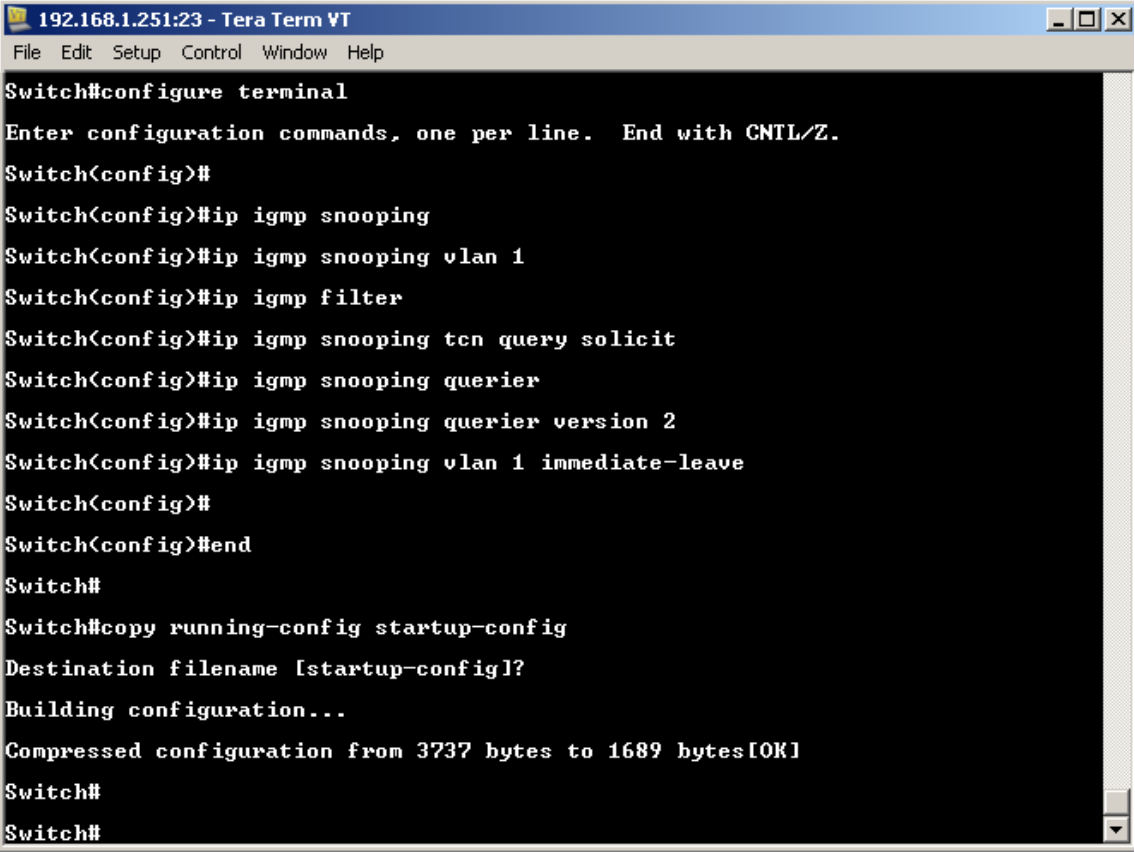
Switch#show interfaces vlan 1
Vlan1 is up, line protocol is up
  Hardware is Ethernet SVI, address is 00a3.d19b.2347 (bia 00a3.d19b.2347)
  Internet address is 192.168.1.251/24
  MTU 9000 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 118/255
  Encapsulation ARPA, 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.

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

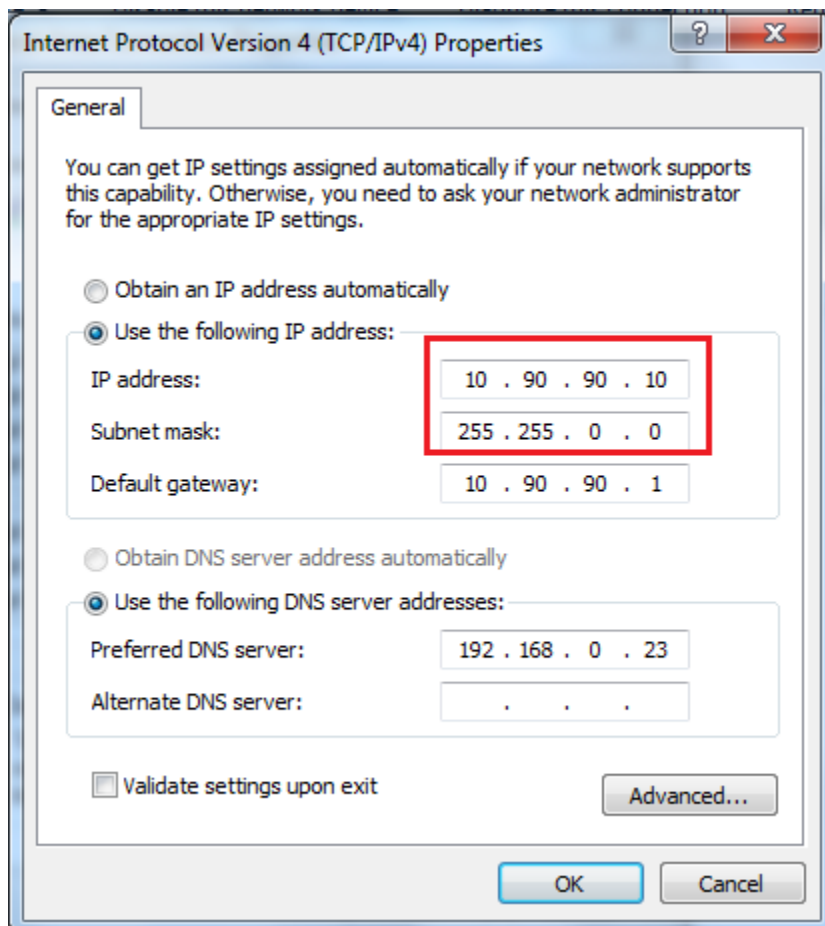
```
192.168.1.251:23 - Tera Term VT
File Edit Setup Control Window Help
Switch#
Switch#show ip igmp snooping detail
Global IGMP Snooping configuration:
-----
IGMP snooping                : Enabled
IGMPv3 snooping (minimal)    : Enabled
Report suppression           : Enabled
TCN solicit query            : Enabled
TCN flood query count        : 2
Robustness variable          : 2
Last member query count      : 2
Last member query interval   : 1000

Vlan 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#
```

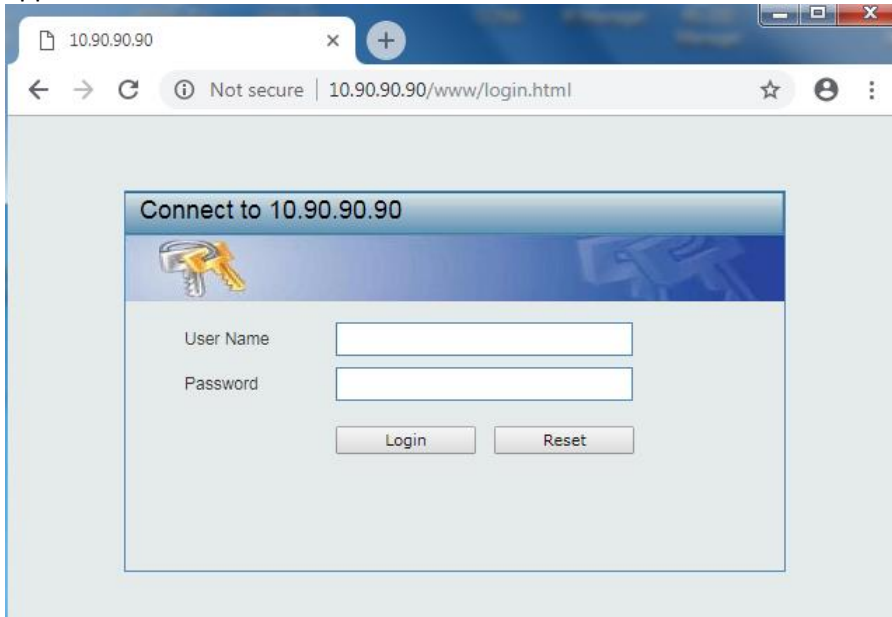
D-Link DGS-3630 Series Network Setup Guide

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



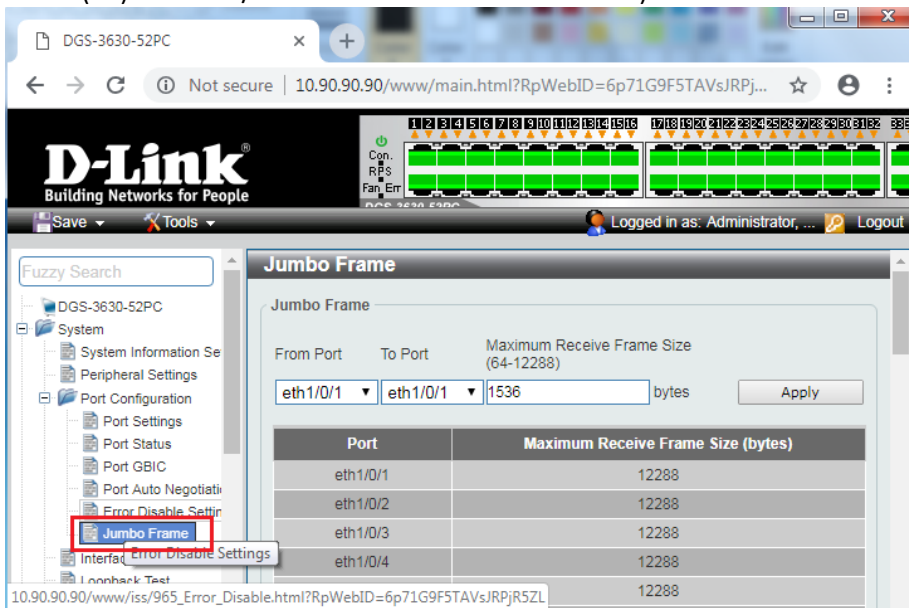
5. Open the Web browser and enter **10.90.90.90** (default IP address of D-Link DGS-3630-52PC). The login window appears as below.



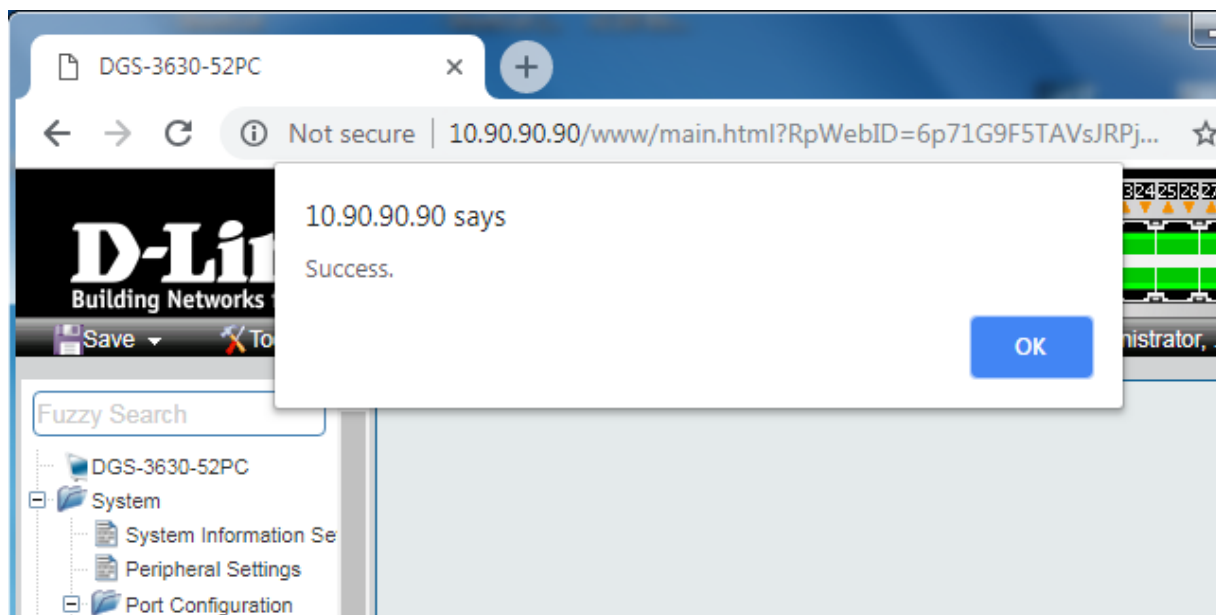
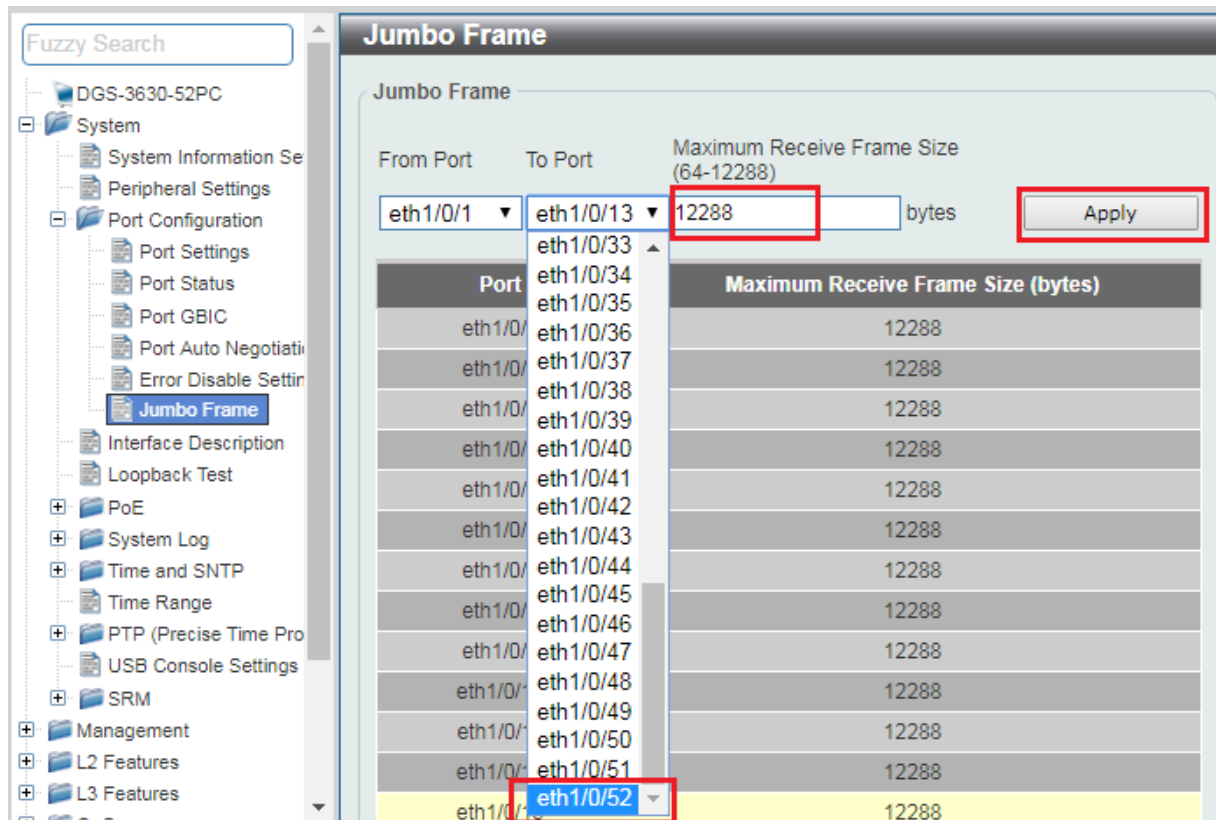
6. Leave the user name and password fields empty. They are NOT required. Click **“Login”** to login to the switch configuration window.

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.

Jumbo Frame

Jumbo Frame

From Port: eth1/0/1 To Port: eth1/0/52 Maximum Receive Frame Size (64-12288): 12288 bytes

Port	Maximum Receive Frame Size (bytes)
eth1/0/1	12288
eth1/0/2	12288
eth1/0/3	12288
eth1/0/4	12288
eth1/0/5	12288
eth1/0/6	12288
eth1/0/7	12288
eth1/0/8	12288

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.

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]

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.

IGMP Snooping Settings

Global Settings

Global State: ☒ Enabled ☐ Disabled [Apply]

VLAN Status Settings

VID (1-4094): 1 ☒ Enabled ☐ Disabled [Apply]

IGMP Snooping Table

VID (1-4094): [] [Find] [Show All]

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 < > 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:

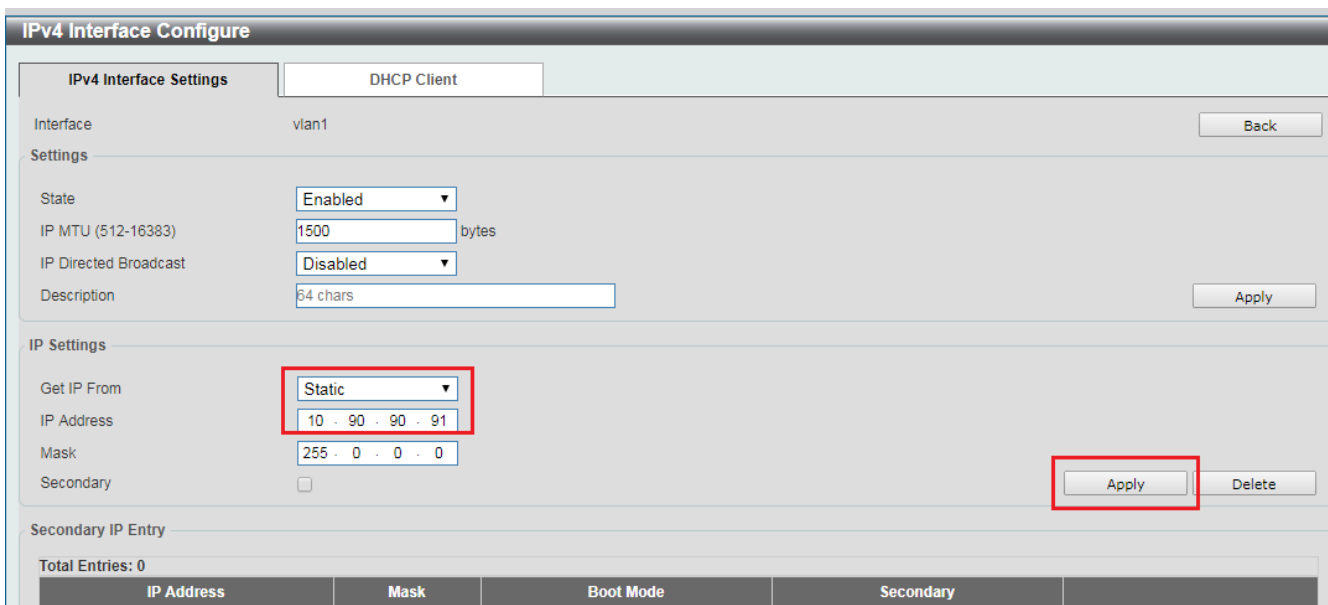
14. Find **L3 Features** -> **Interface** -> **IPv4 Interface**. Select “Edit” button.

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**.

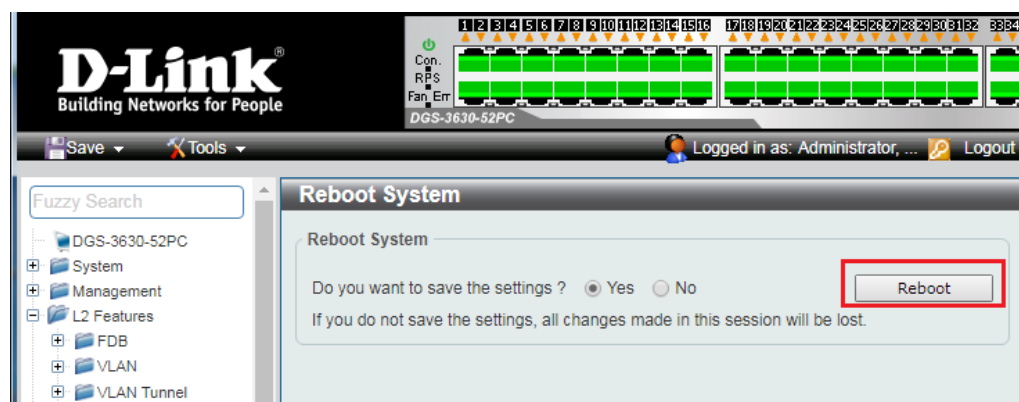
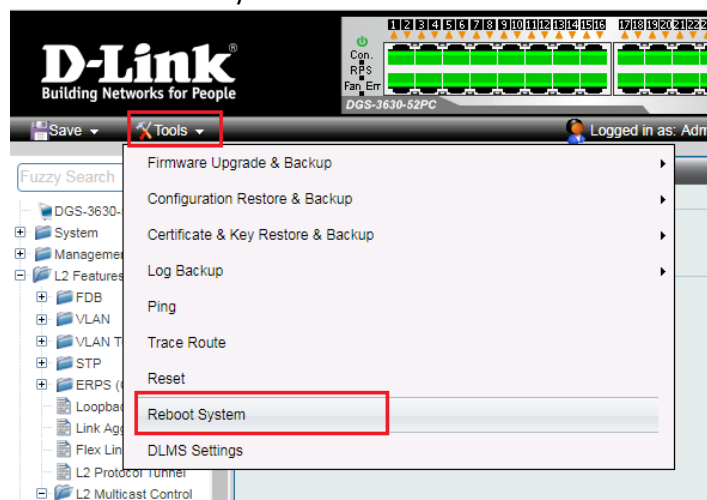
If you change an IP address, the page will be refreshed and you will need to log in again using new IP address, same user name and password. If you did not change IP address just continue to the next step. Make sure your screen looks exactly like pictured below.



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.

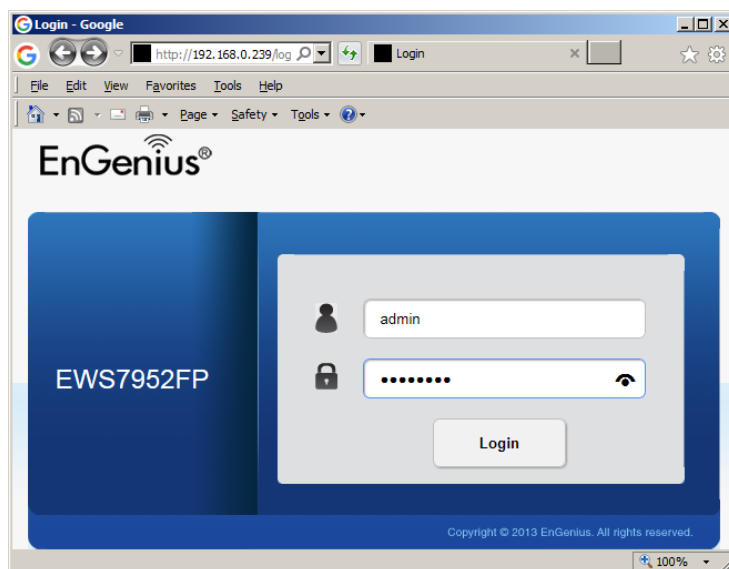


16. To reboot the switch, Find **Tool → Reboot System** in the menu on top of the window. Then click **“Reboot”** button in Reboot System window. The switch will be rebooted automatically.

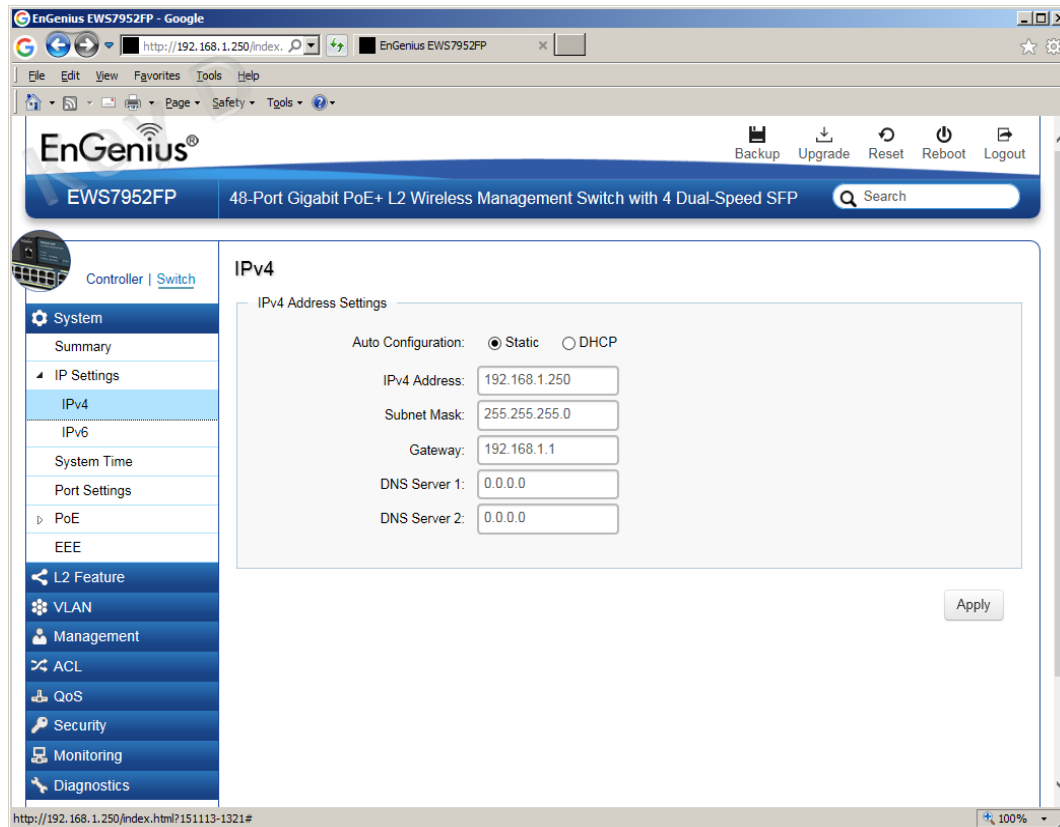


IGMP Setup Guide: Engenius 1080p Systems (KD-IP1080, KD-IP120)

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**.



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



7. Page will refresh. Configure your PC's IP address to the same range as the switch (default **192.168.1.xxx**). Enter the switch's IP address (default is **192.168.1.250**) in your browser and press ENTER. Log in again with the same user name /password.
8. On the left select **Switch**. Navigate to **L2 Feature -> IGMP Snooping -> Global Settings**. Under **Status** select **Enabled**, under **Version: V2** and under **Report Suppression: Enabled**. Click **Apply**.

The screenshot displays the web management interface for an EnGenius EWS7952FP switch. The browser window title is "EnGenius EWS7952FP - Google" and the address bar shows "http://192.168.1.250/index.". The interface includes a top navigation bar with the EnGenius logo, a model identifier "EWS7952FP", a description "48-Port Gigabit PoE+ L2 Wireless Management Switch with 4 Dual-Speed SFP", and a search bar. On the right side of the top bar are icons for Backup, Upgrade, Reset, Reboot, and Logout. A left sidebar contains a menu with categories like System, L2 Feature, VLAN, Management, ACL, QoS, Security, Monitoring, and Diagnostics. The "Global Settings" page is active, showing a "Settings" section with three configuration items: "Status" (radio buttons for Enabled and Disabled, with Enabled selected), "Version" (radio buttons for V2 and V3, with V2 selected), and "Report Suppression" (radio buttons for Enabled and Disabled, with Enabled selected). An "Apply" button is located at the bottom right of the settings area. The bottom status bar indicates a zoom level of 100%.

EnGenius®

EWS7952FP 48-Port Gigabit PoE+ L2 Wireless Management Switch with 4 Dual-Speed SFP

Backup Upgrade Reset Reboot Logout

Search

Controller | Switch

System

L2 Feature

Link Aggregation

Mirror Settings

STP

MAC Address Table

LLDP

IGMP Snooping

Global Settings

VLAN Settings

Querier Settings

Group List

Router Settings

MLD Snooping

Jumbo Frame

VLAN

Management

ACL

QoS

Security

Monitoring

Diagnostics

Global Settings

Settings

Status: ☒ Enabled ☐ Disabled

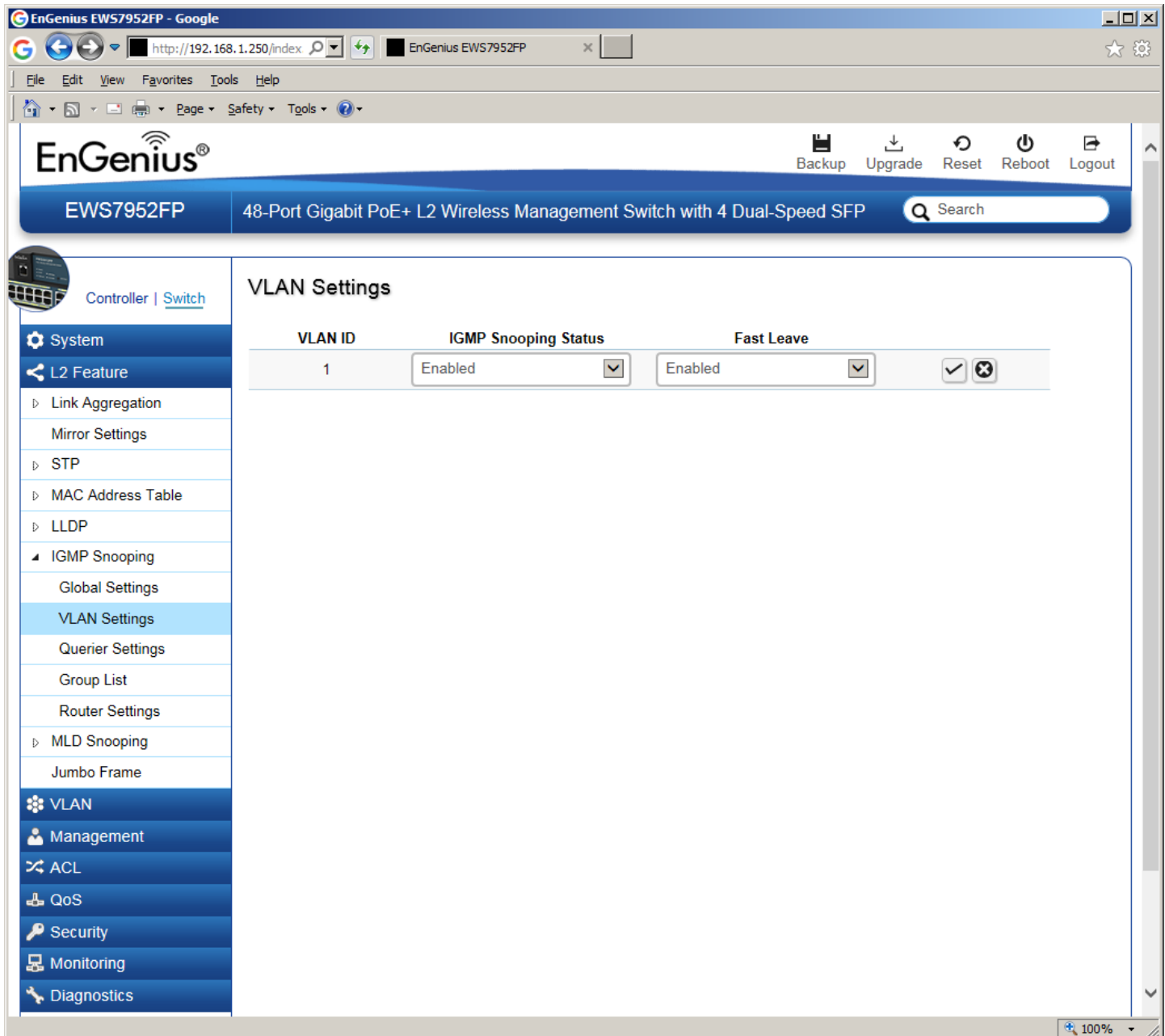
Version: ☒ V2 ☐ V3

Report Suppression: ☒ Enabled ☐ Disabled

Apply

100%

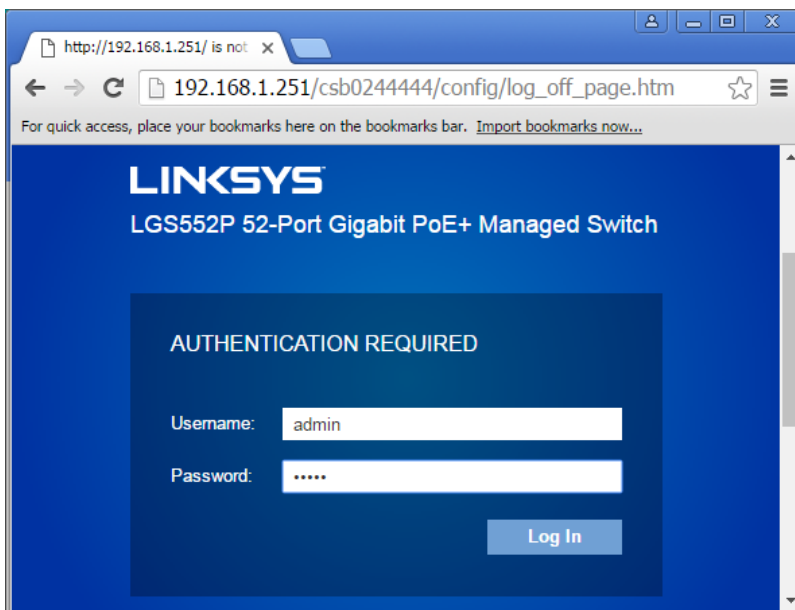
9. Navigate to **L2 Feature** -> **IGMP Snooping** -> **VLAN Settings**. Click on Edit button on the right in the **VLAN ID** 1 line. Under **IGMP Snooping Status** select **Enabled**, under **Fast Leave** select **Enabled**. Click check mark button to apply settings.



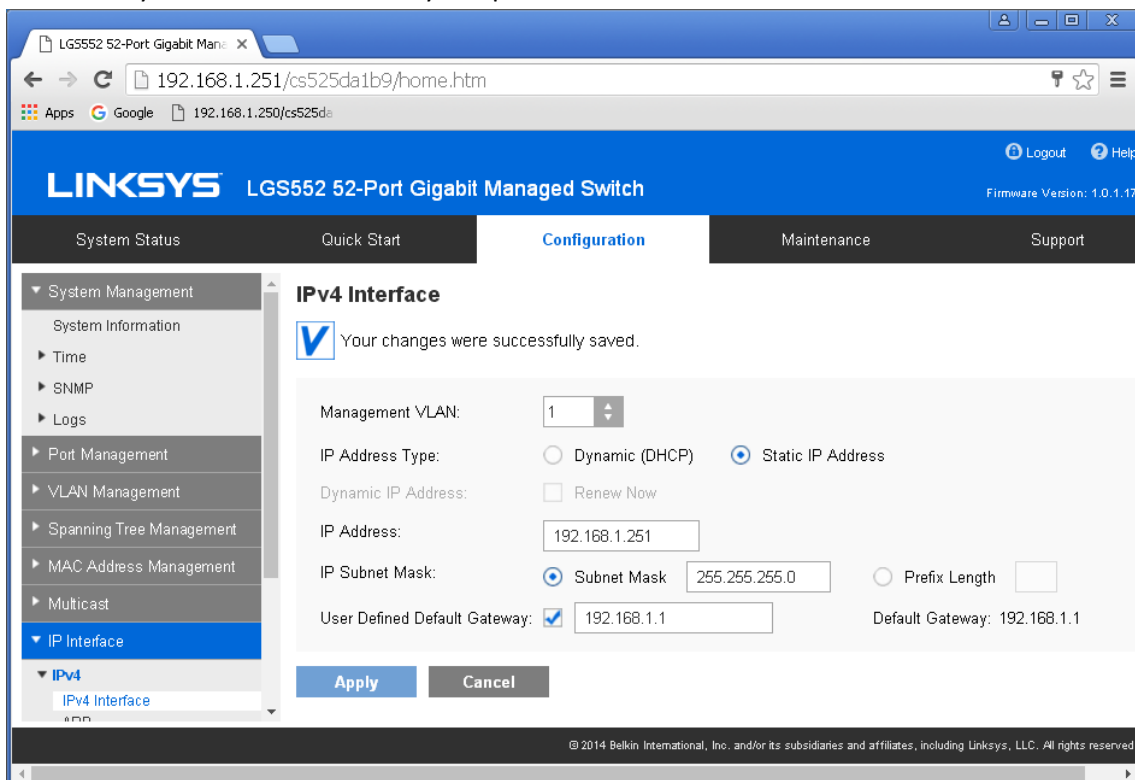
10. Now the switch should work properly with IP audio/video equipment.

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

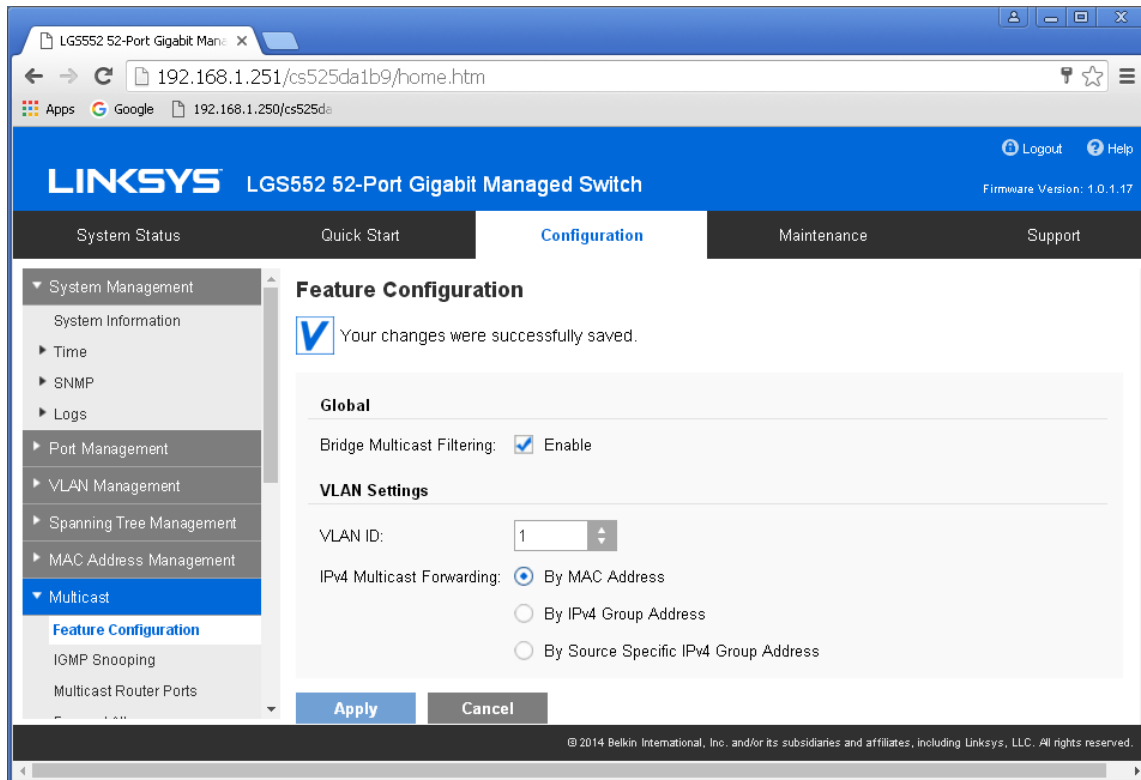
1. Before Linksys network switch is configured Key Digital KD-IP120/KD-IP1080 HDMI switch set must be connected to all HDMI sources/displays/network switches, and configured using Key Digital KD-IP120 Key Digital Management Software latest version.
2. Power-up all the system components. Using Key Digital KD-IP120 Key Digital Management Software, switch **All Outputs -> Through** at switching page.
3. **IMPORTANT:** Disconnect all the DHCP devices like routers, servers from the Linksys network switch.
4. 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).
5. **IMPORTANT:** Make sure the blue “SYSTEM” LED next to the pinhole “RESET” button is flashing.
6. **IMPORTANT:** At this point all the displays should be displaying distorted randomly flashing video images.
7. Connect your PC to the Linksys network switch directly using a network cable.
8. If you have not done yet, configure your PC's IP address to the same range as the switch (default **192.168.1.xxx**).
9. 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**).
10. 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**.



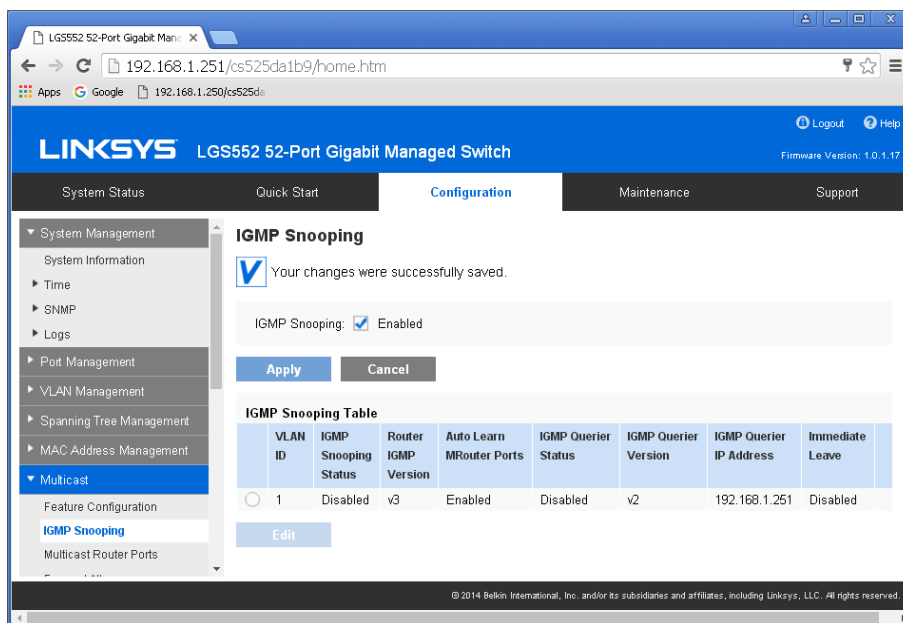
11. Navigate to **Configuration -> IP Interface -> IPv4-> IPv4 Interface**. Select **Static IP Address**. IP address can be changed by the administrator depending on the network configuration. If you are using multiple network switches it is recommended to set first one to **192.168.1.251**, second to **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.
12. Make sure your screen looks exactly like pictured below.



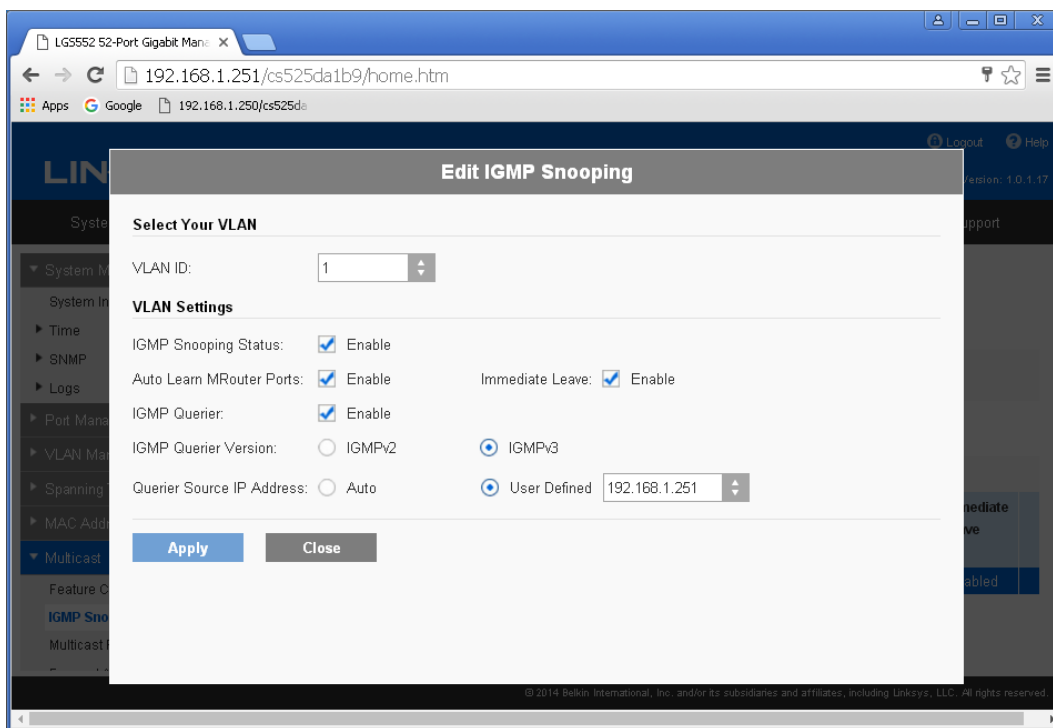
13. Navigate to **Multicast -> Feature Configuration**. Select **Enable** under **Bridge Multicasting Filtering** and click **Apply**.



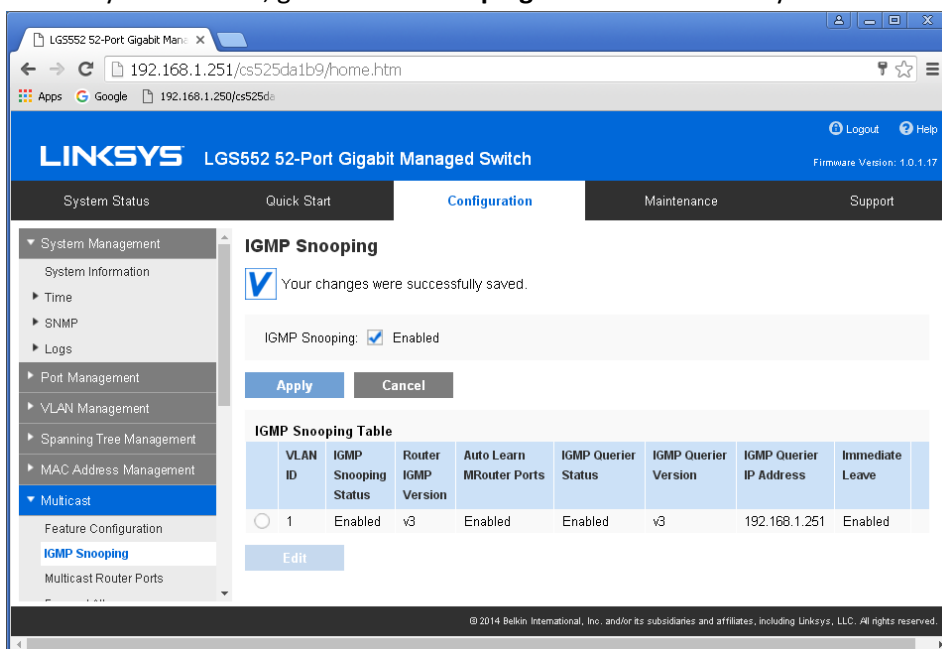
14. Navigate to **Multicast -> IGMP Snooping**. Select **Enable** under **IGMP Snooping**, click **Apply**.



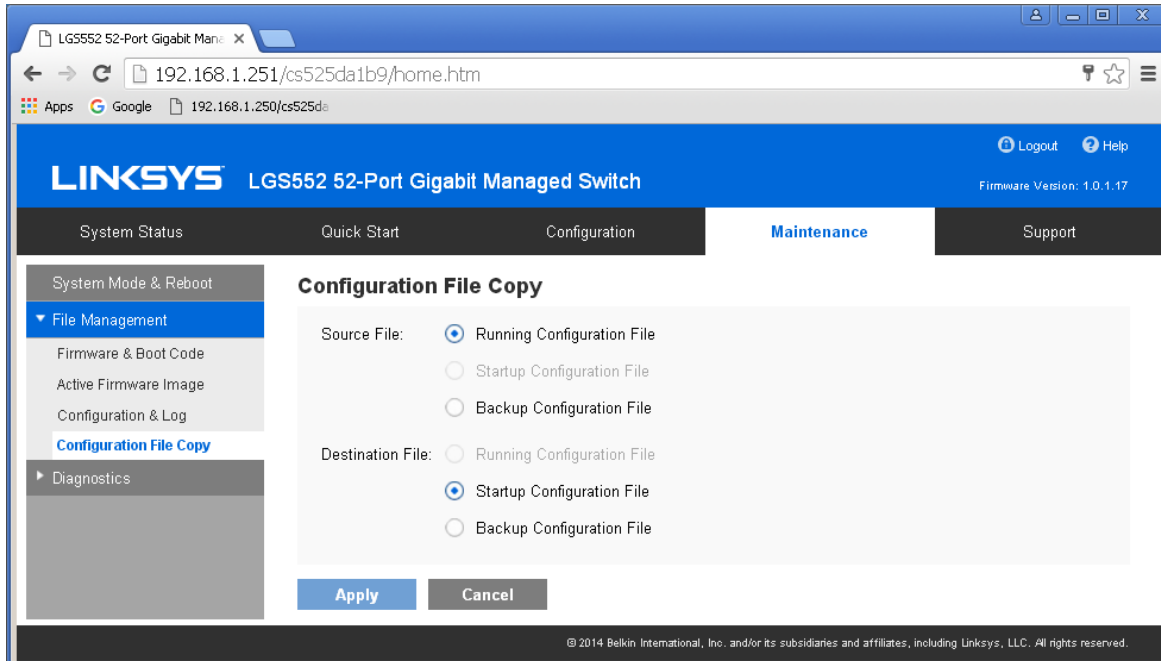
- Click on radio button and click **Edit**. **Edit IGMP Snooping** window will appear. Make sure **VLAN ID <1>** is selected. Enable all the settings as shown below. Select **IGMP v3** as **IGMP Querier Version**, Click **Apply** and then **Close**.



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

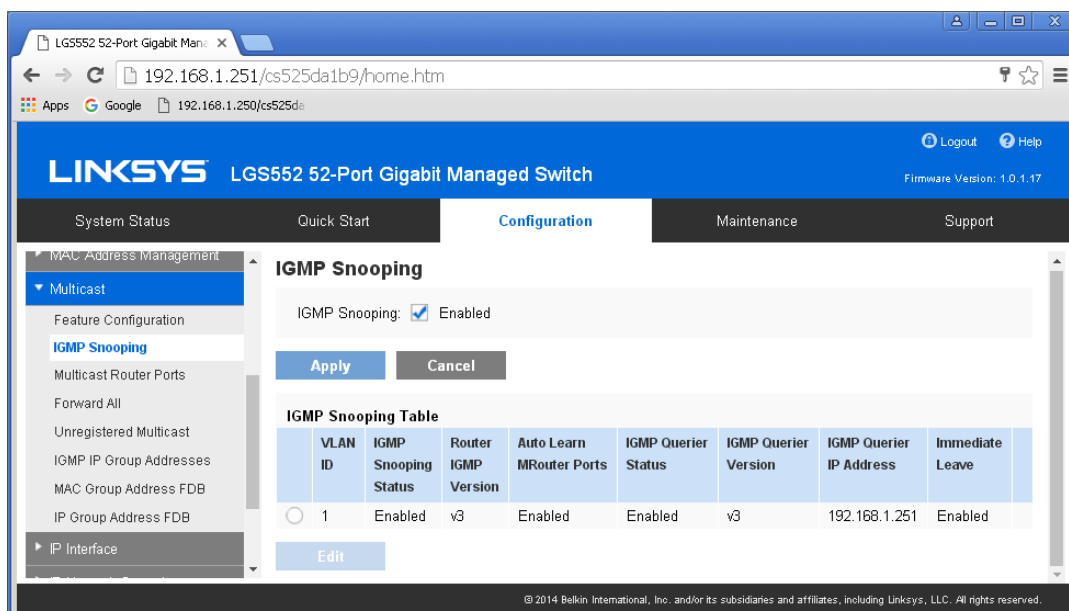
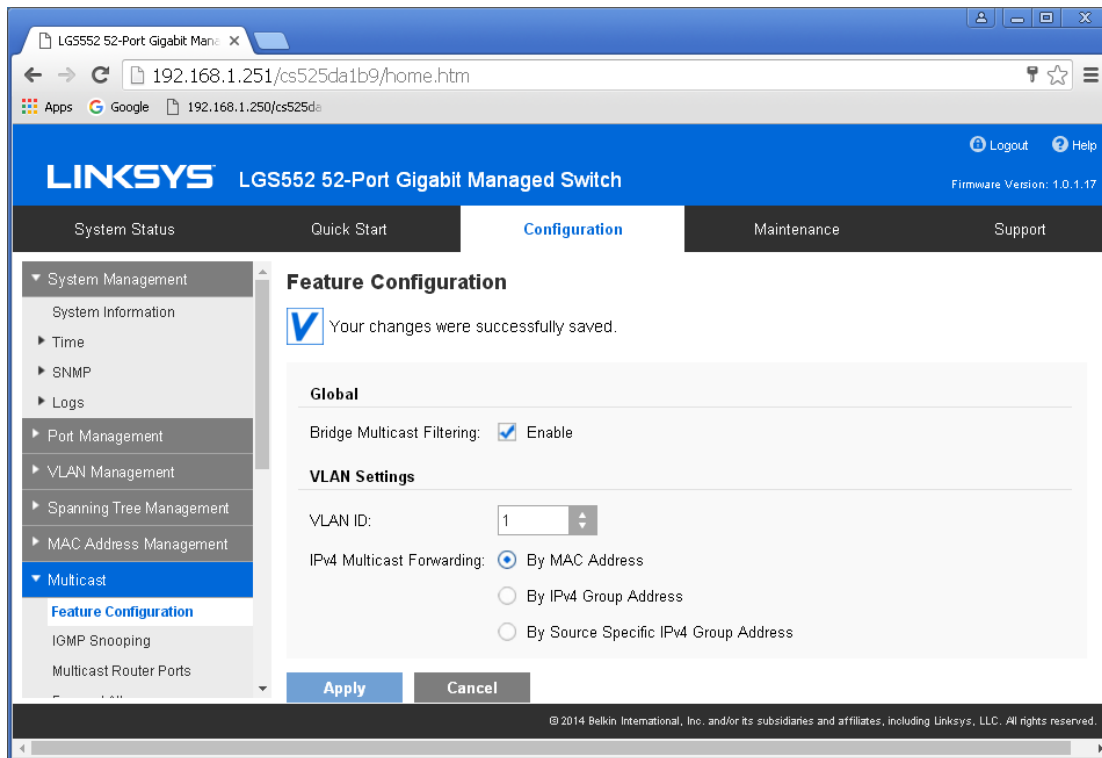


17. **IMPORTANT:** At this point all the displays should be displaying stable running video from the selected sources. If you do not have them displaying properly, than network switch is configured incorrectly.
18. Navigate to **Maintenance -> File Management -> Configuration File Copy**. Select radio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



19. **IMPORTANT:** Now you can connect back you DHCP equipment (routers, servers and so on).
20. 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.

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

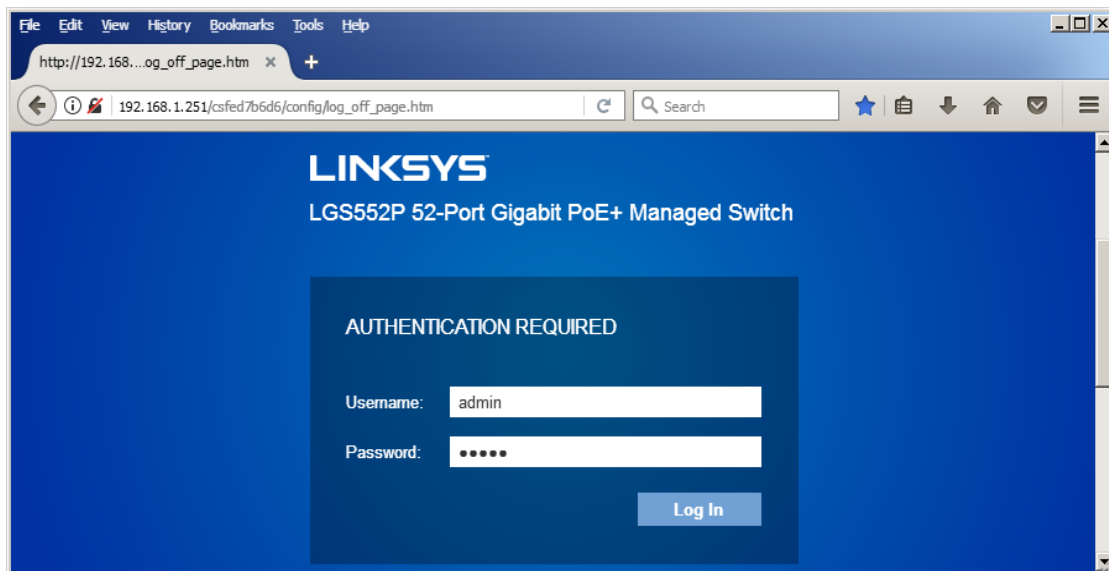


22. Rescan your components with Key Digital KD-IP120 Key Digital Management Software and make sure HDMI video switch is functional.

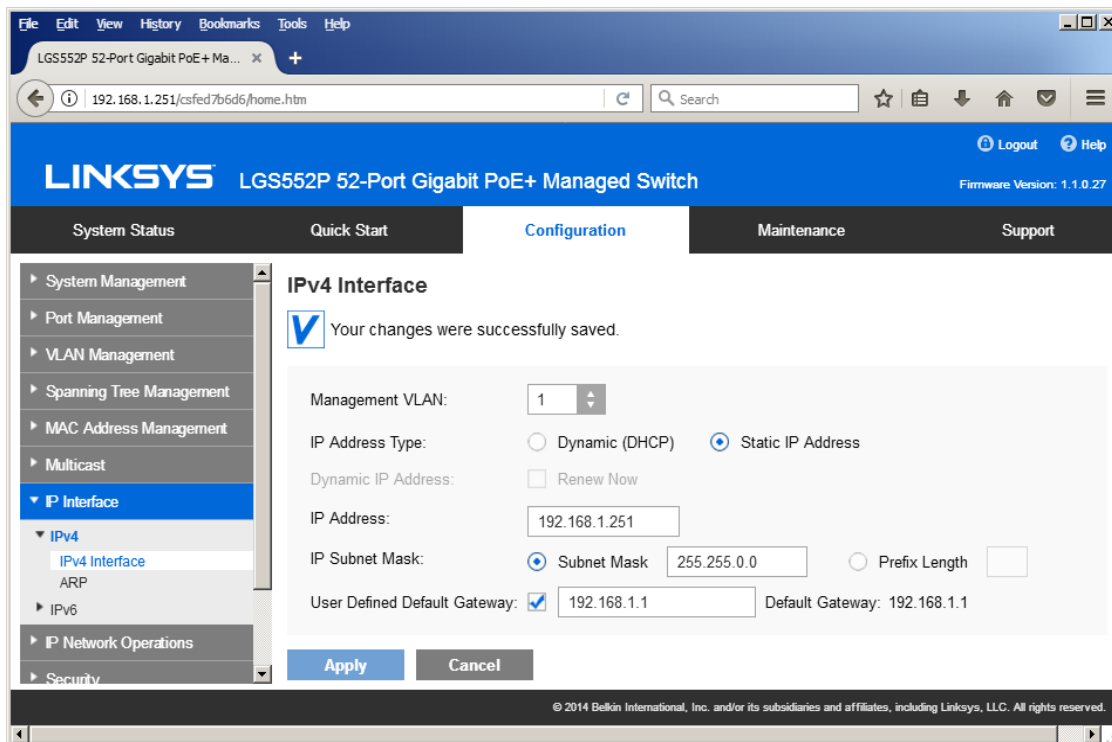
23. At this point your Linksys network switch is set and ready to use.

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

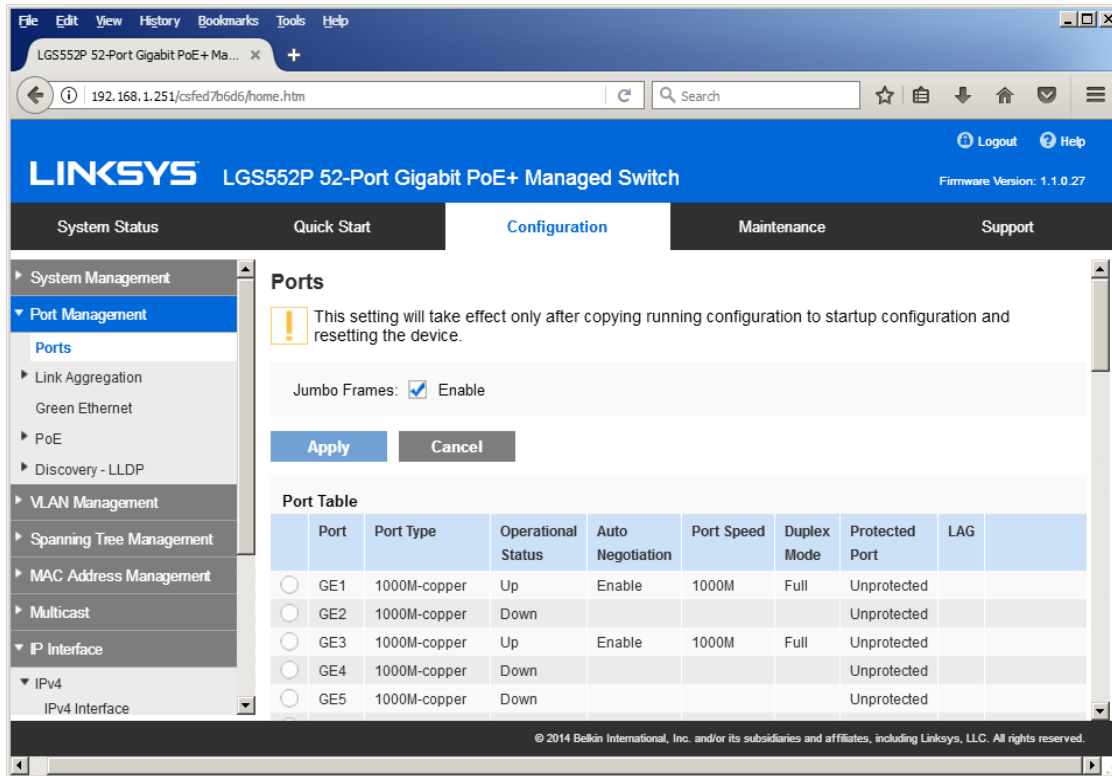
1. Before Linksys network switch is configured Key Digital KD-IP922 HDMI switch set must be connected to all HDMI sources/displays/network switches, and configured using Key Digital Management Software latest version.
2. Power-up all the system components. Using Key Digital Management Software, switch **All Outputs** -> **Through** at switching page.
3. **IMPORTANT:** Disconnect all the DHCP devices like routers, servers from the Linksys network switch.
4. 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).
5. **IMPORTANT:** Make sure the blue "SYSTEM" LED next to the pinhole "RESET" button is flashing.
6. **IMPORTANT:** At this point all the displays should be displaying or flashing Key Digital logo with information stamp.
7. Connect your PC to the Linksys network switch directly using a network cable.
8. If you have not done yet, configure your PC's IP address to the same range as the switch (default **192.168.1.xxx**).
9. 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**).
10. 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**.



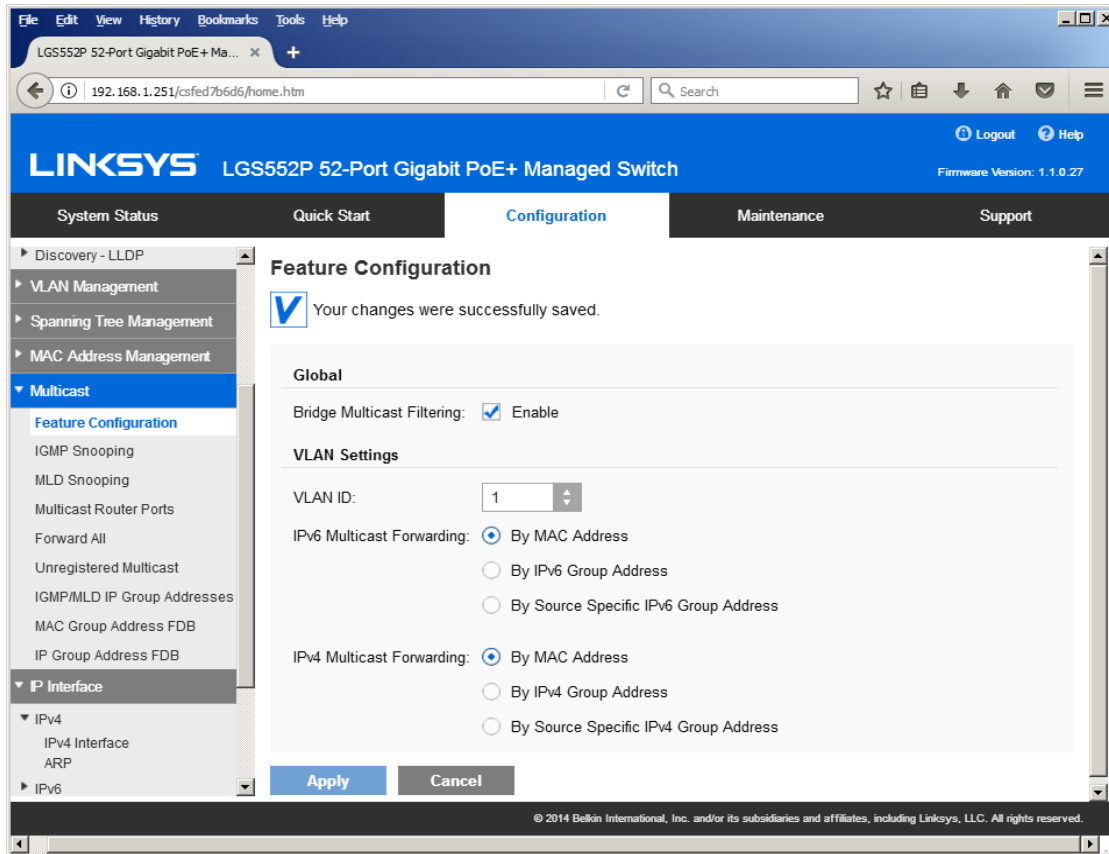
11. Navigate to **Configuration -> IP Interface -> IPv4-> IPv4 Interface**. Select **Static IP Address**. IP address can be changed by the administrator depending on the network configuration. If you are using multiple network switches it is recommended to set first one to **192.168.1.251**, second to **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. If you did not change IP address just continue to the next step.
12. Make sure your screen looks exactly like pictured below.



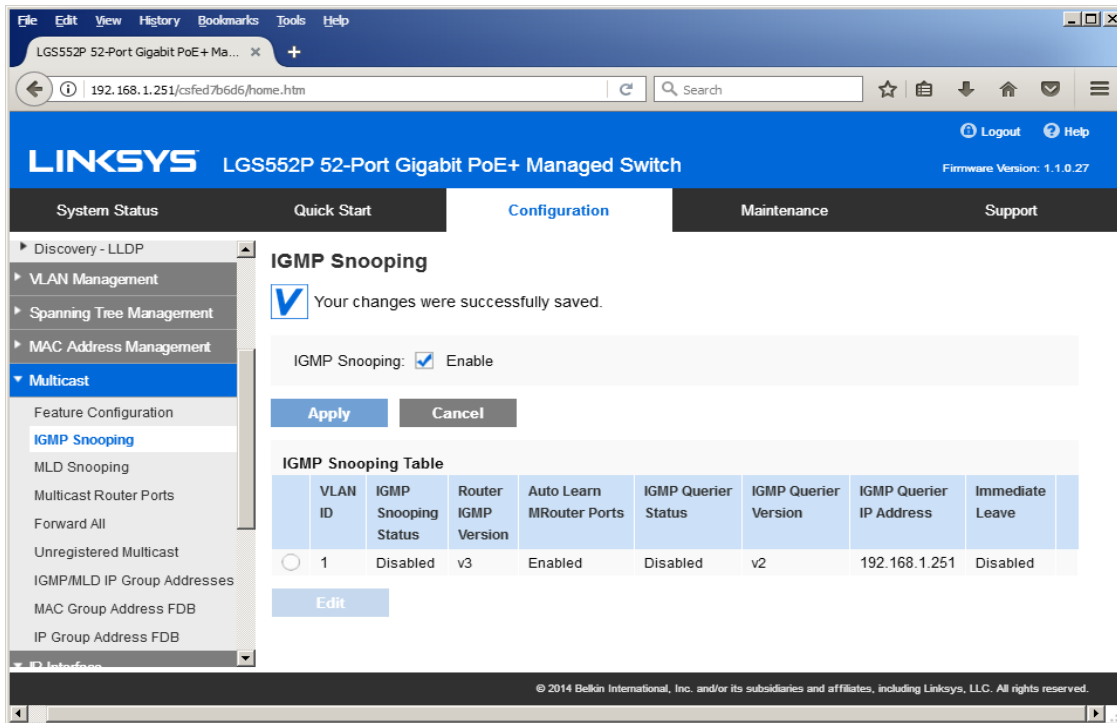
13. Navigate to **Port Management -> Ports**. Select **Enable** under **Jumbo Frames** and click **Apply**.



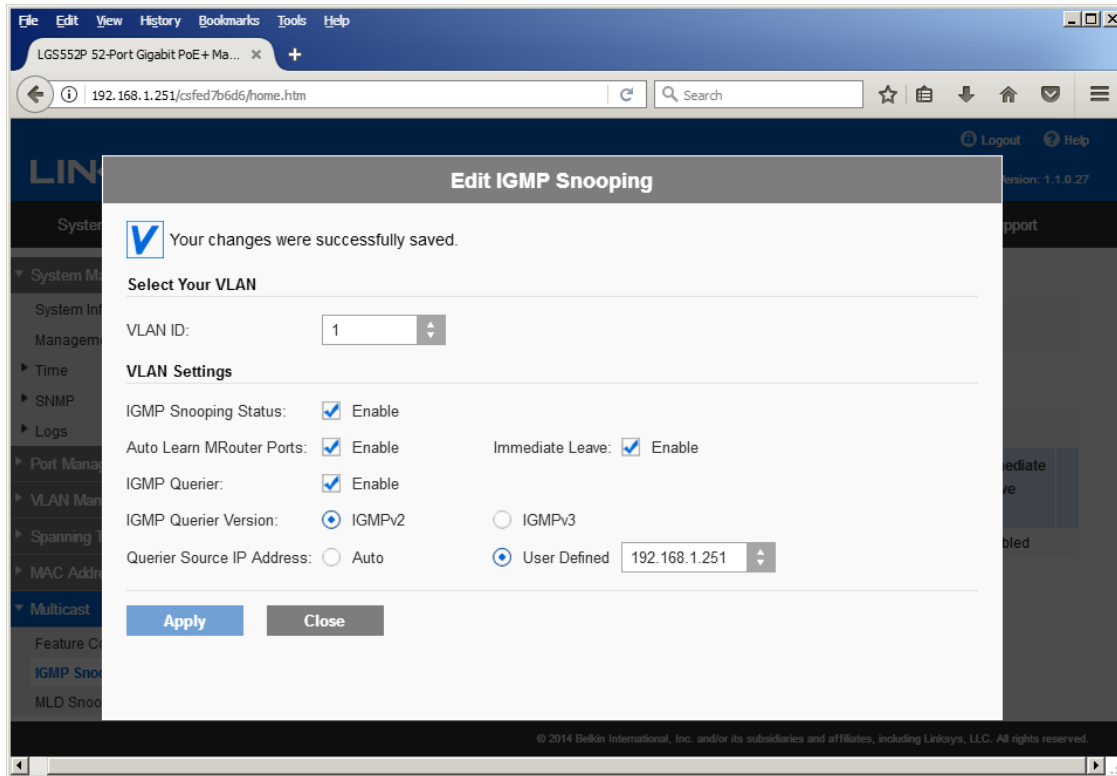
14. Navigate to **Multicast** -> **Future Configuration**. Select **Enable** under **Bridge Multicasting Filtering** and click **Apply**.



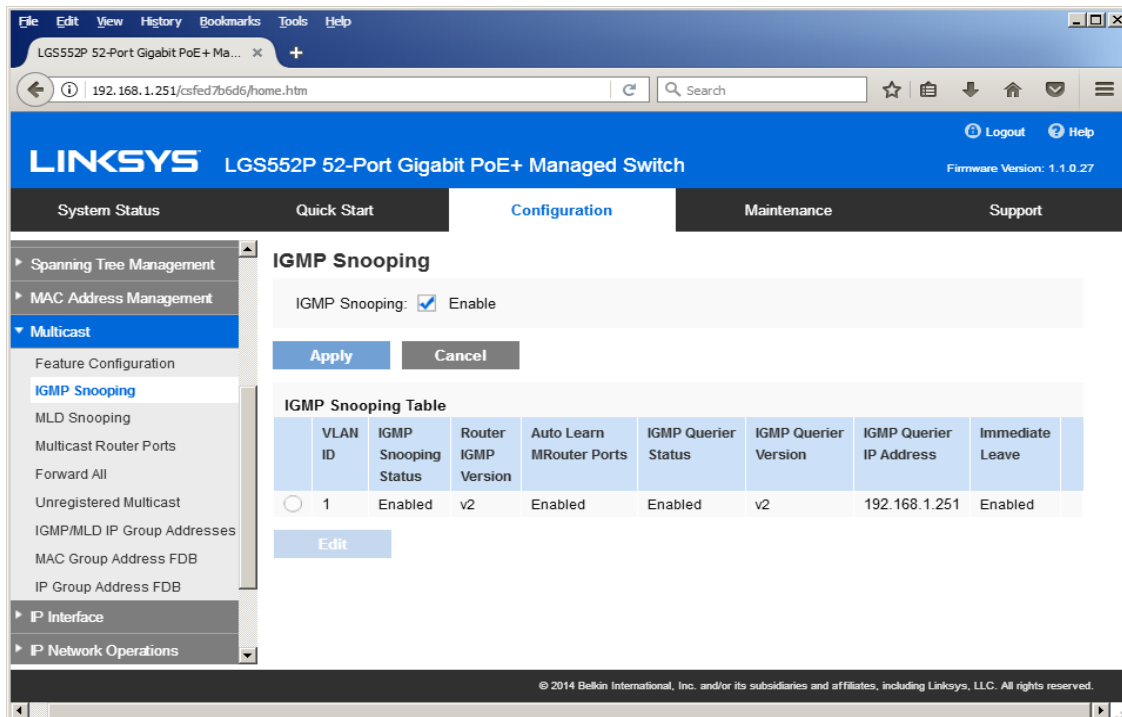
15. Navigate to **Multicast** -> **IGMP Snooping**. Select **Enable** under **IGMP Snooping**, click **Apply**.



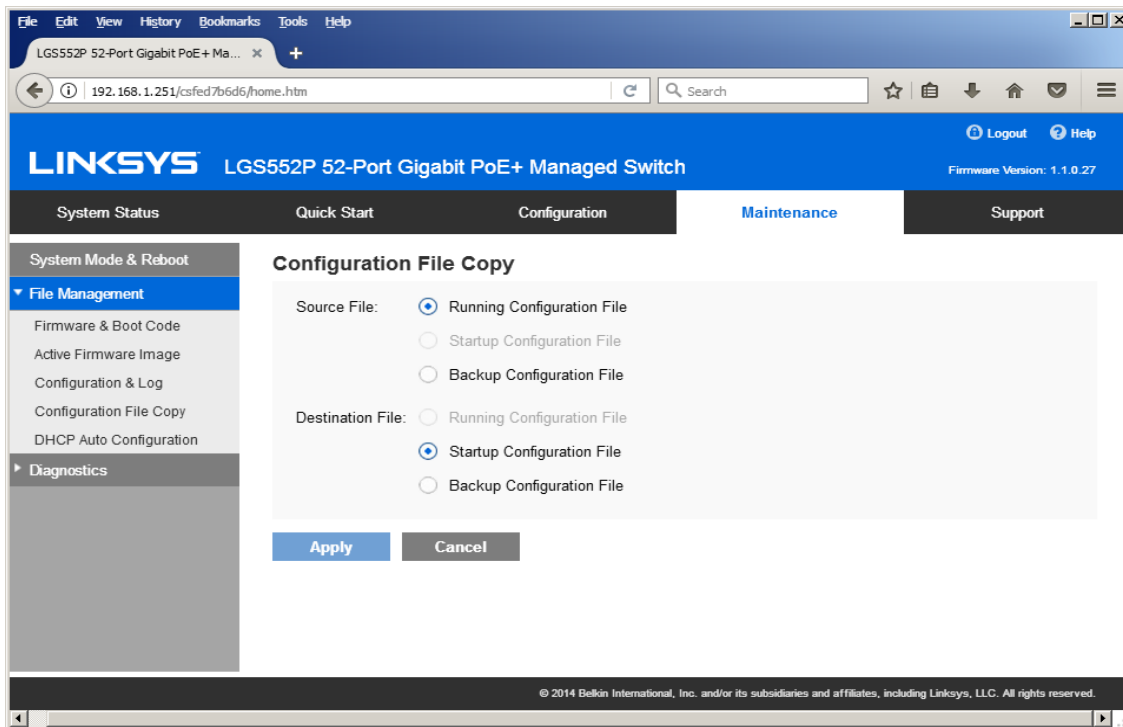
- Click on radio button and click **Edit**. **Edit IGMP Snooping** window will appear. Make sure **VLAN ID <1>** is selected. Enable all the settings as shown below. Select **IGMP v2** as **IGMP Querier Version**, Click **Apply** and then **Close**.



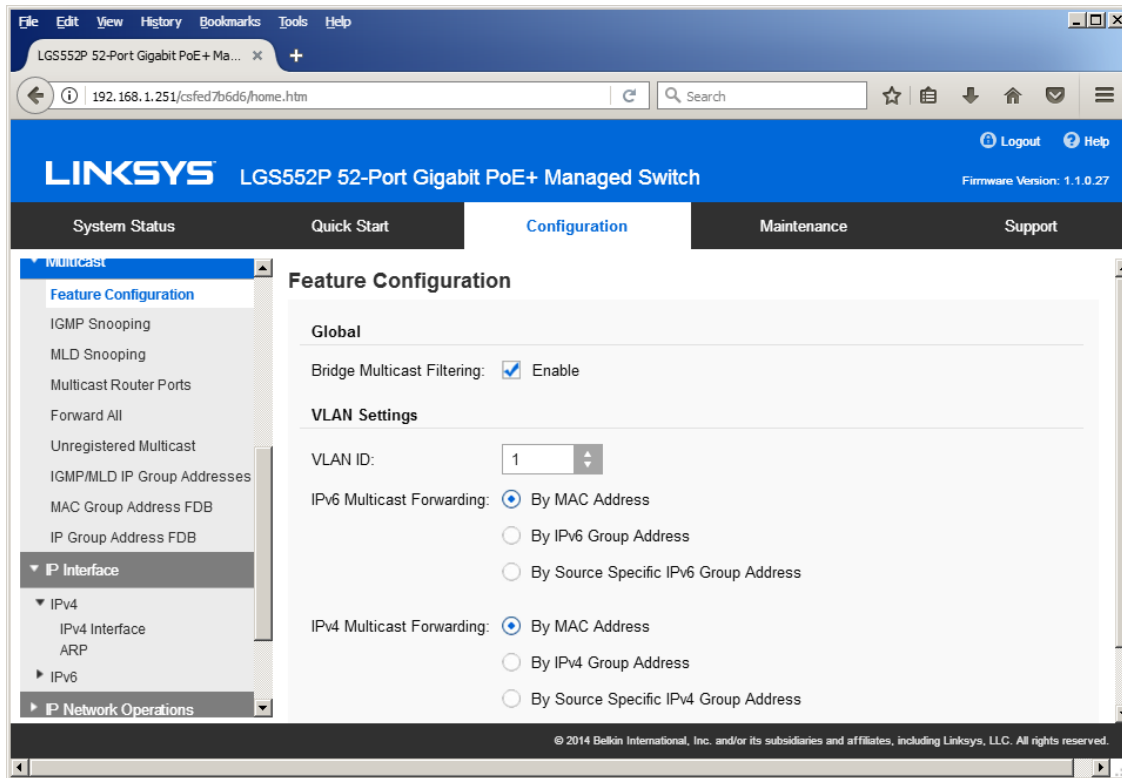
17. Refresh your browser, go to **IGMP Snooping** tab and make sure you have an image as below:



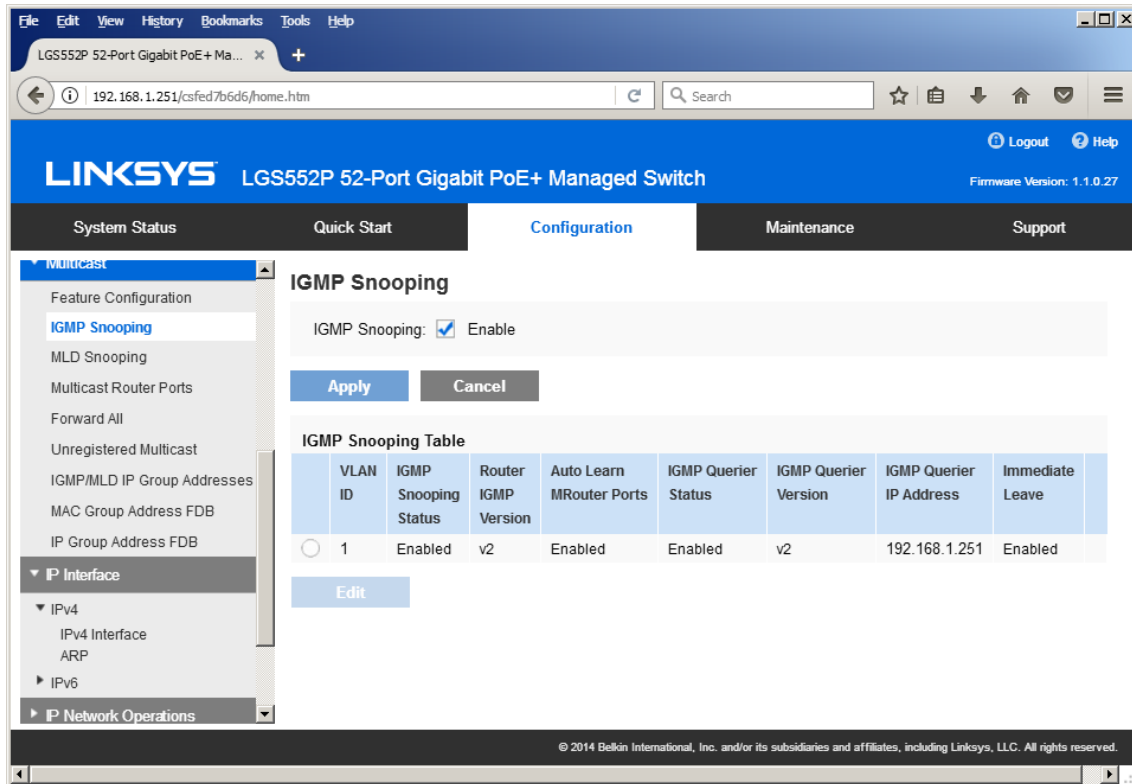
18. Navigate to **Maintenance -> File Management -> Configuration File Copy**. Select radio buttons as shown below, click **Apply**. This will save current configuration and will apply this configuration every time switch is powered up.



19. **IMPORTANT:** Now you can connect back you DHCP equipment (routers, servers and so on).
20. 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.
21. Log in to your Linksys network switch again and make sure that IGMP settings are intact:



22. **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.



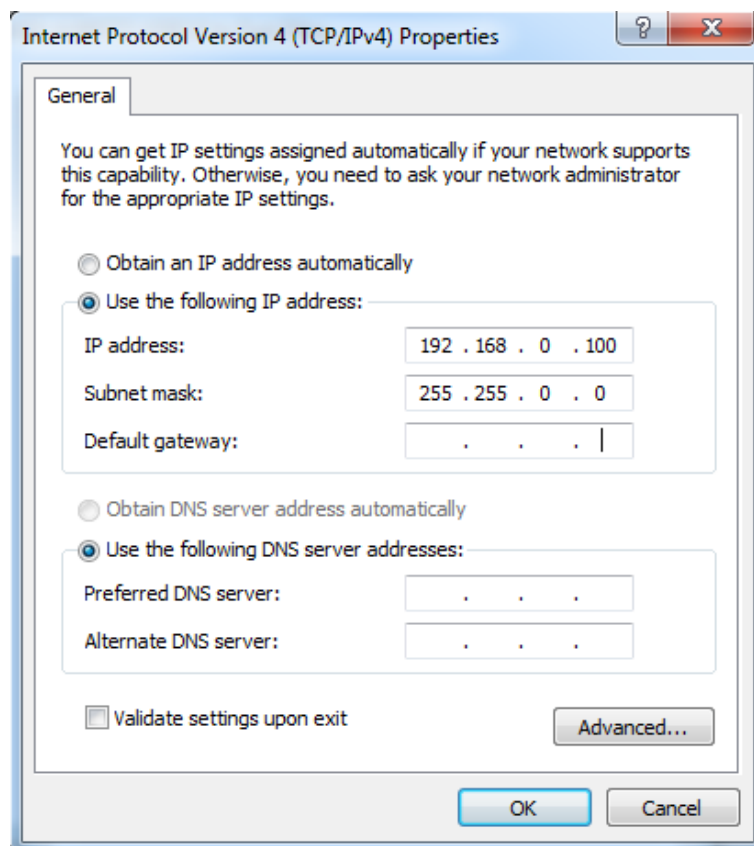
23. Rescan your components with Key Digital KD-IP922 Management Software and make sure HDMI video switch is functional.
24. At this point your Linksys network switch is set and ready to use.

Luxul AMS-4424P
Network Setup Guide for KD-IP922/KD-IP1080

Important Notes:

- Please use firmware v.4.0.8.1. Other firmware versions are not compatible.
- Verified for single switch use only. Stacking switches may cause compatibility issues.

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:

Authentication required

http://192.168.0.4
Your connection to this site is not private

Username

Password

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

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	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	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.

Switch 3
Refresh

- Configuration
 - Quick Setup
 - Green Ethernet
 - Ports
 - DHCP
 - Security
 - Aggregation
 - Loop Protection
 - IPMC Profile
 - MVR
 - IPMC
 - IGMP Snooping
 - Basic Configuration
 - VLAN Configuration
 - Port Filtering Profile
 - MLD Snooping
 - LLDP
 - MAC Table
 - Voice VLAN
 - QoS
 - Mirroring
 - UPnP
 - GVRP
 - Stack
 - sFlow
 - UDLD
 - Monitor
 - Quick Setup

IGMP Snooping Configuration

Stack Global Settings

Global Configuration	
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

MVR
IPMC
IGMP Snooping

- Basic Configuration
- VLAN Configuration
- Port Filtering Profile
- MLD Snooping

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.

Switch 3 Refresh

IGMP Snooping VLAN Configuration

Start from VLAN 1 with 20 entries per page.

Delete	VLAN ID	Snooping Enabled	Querier Election	Querier Address	Compatibility
--------	---------	------------------	------------------	-----------------	---------------

Add New IGMP VLAN

Save Reset

Step 11. 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.

Switch 3 Refresh

IGMP Snooping VLAN Configuration

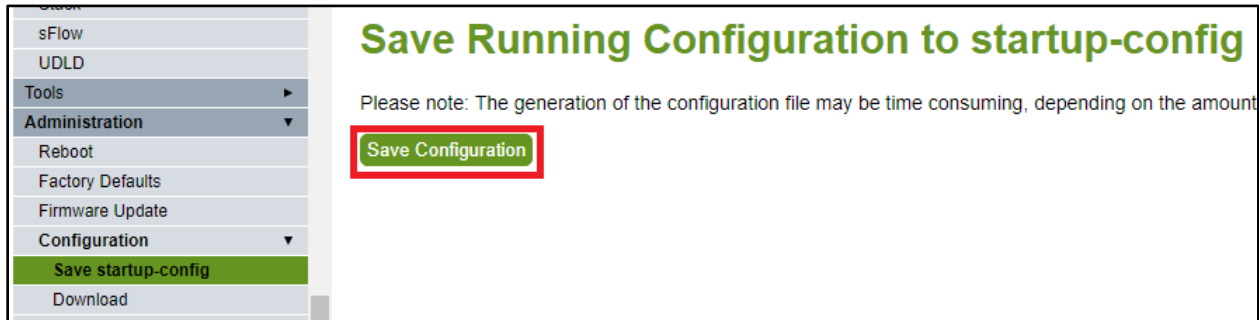
Start from VLAN 1 with 20 entries per page.

Delete	VLAN ID	Snooping Enabled	Querier Election	Querier Address	Compatibility
Cancel	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0.0.0.0	Forced IGMPv2

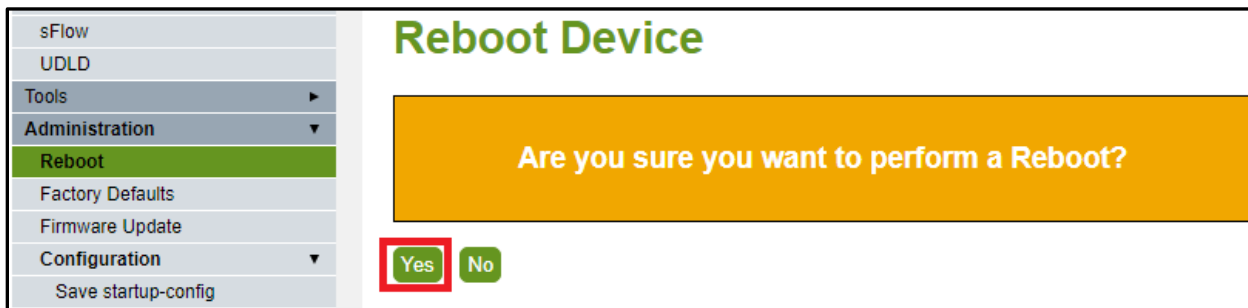
Add New IGMP VLAN

Save Reset

Step 12. 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.



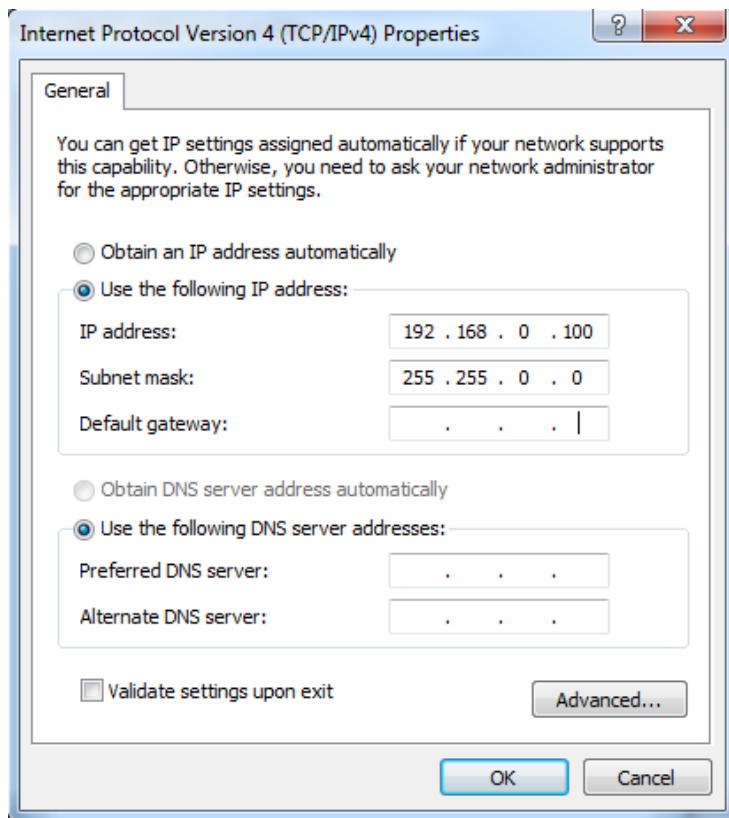
Step 13. To reboot the switch, Find Administration → Reboot in the menu on left side of the window. Then click “Yes” button in Reboot Device window. The switch will be rebooted automatically.



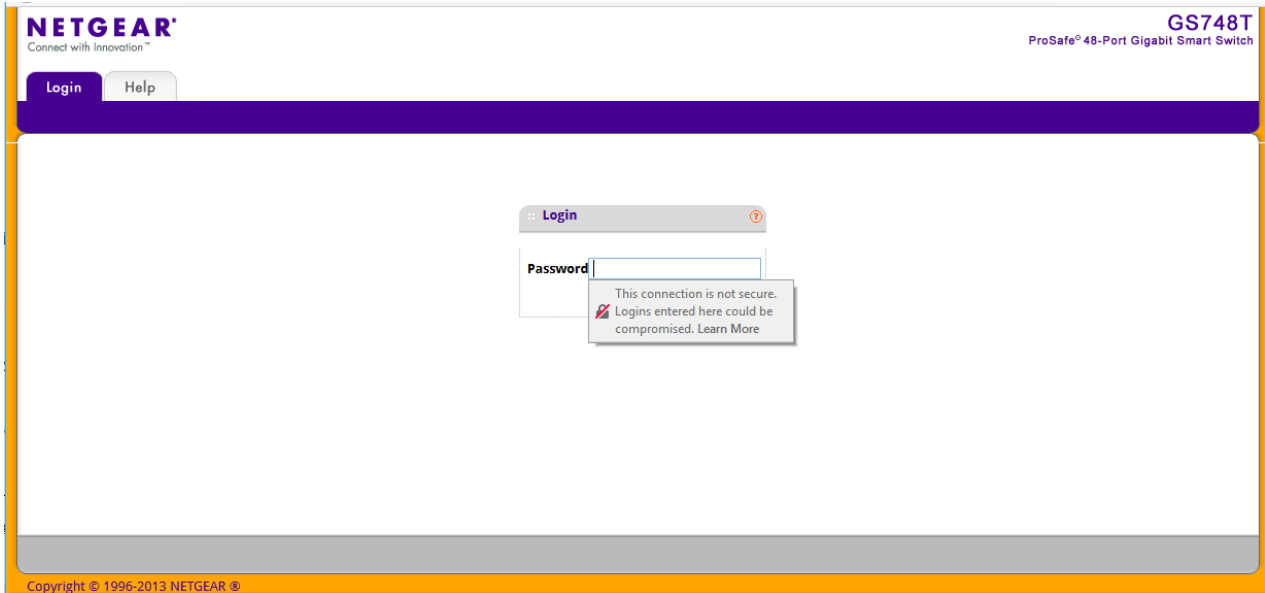
**Netgear GS Series
Network Setup Guide for KD-IP922, KD-IP1080**

Login to the switch with the following steps:

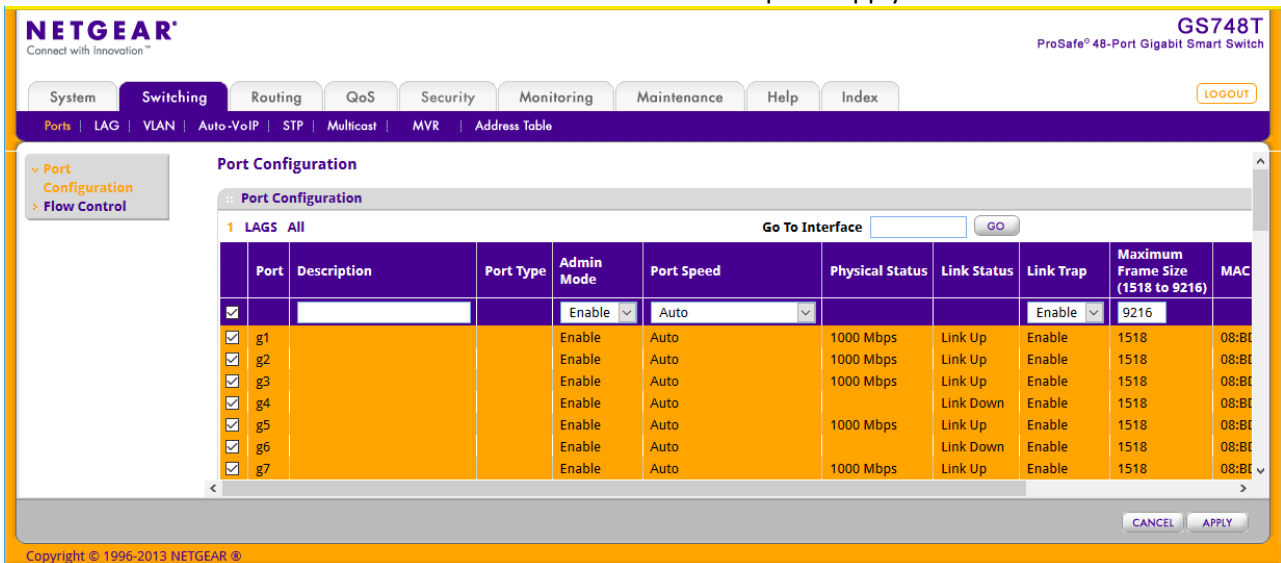
1. Plug an Ethernet cable into any of the ports of the switch
2. Plug the other end into the Ethernet port of your computer
3. Power on the Switch
4. Check to see that the IP address of the computer is within this network, 192.168.0.xxx ("xxx" ranges 1~254).
For example, 192.168.0.100



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



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



- 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
Connect with Innovation™

GS748T
ProSafe® 48-Port Gigabit Smart Switch

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

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

IGMP Snooping Configuration

MFDB
Auto-Video
IGMP Snooping
IGMP Snooping Configuration
IGMP Snooping Interface Configuration
IGMP Snooping Table
IGMP Snooping VLAN Configuration
Multicast Router Configuration
Multicast Router VLAN Configuration
IGMP Snooping Querier
MLD Snooping

IGMP Snooping Configuration

IGMP Snooping Status ☐ Disable ☒ Enable
 Validate IGMP IP header ☐ Disable ☒ Enable
 Block Unknown Multicast Address ☐ Disable ☒ Enable

IGMP Statistics

Multicast Control Frame Count 0
 Interfaces Enabled for IGMP Snooping

VLAN IDs Enabled for IGMP Snooping

CANCEL APPLY

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- 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
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GS748T
ProSafe® 48-Port Gigabit Smart Switch

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

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IGMP Snooping Table
IGMP Snooping VLAN Configuration
Multicast Router Configuration
Multicast Router VLAN Configuration
IGMP Snooping Querier
MLD Snooping

IGMP Snooping Interface Configuration

1 LAGS All Go To Interface GO

	Interface	Admin Mode	Host Timeout	Max Response Time	MRouter Timeout	Fast Leave Admin Mode
<input checked="" type="checkbox"/>		Enable				Enable
<input checked="" type="checkbox"/>	g1	Disable	260	10	0	Disable
<input checked="" type="checkbox"/>	g2	Disable	260	10	0	Disable
<input checked="" type="checkbox"/>	g3	Disable	260	10	0	Disable
<input checked="" type="checkbox"/>	g4	Disable	260	10	0	Disable
<input checked="" type="checkbox"/>	g5	Disable	260	10	0	Disable
<input checked="" type="checkbox"/>	g6	Disable	260	10	0	Disable
<input checked="" type="checkbox"/>	g7	Disable	260	10	0	Disable
<input checked="" type="checkbox"/>	g8	Disable	260	10	0	Disable

CANCEL APPLY

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- 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)

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GS748T
ProSafe® 48-Port Gigabit Smart Switch

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

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

MFDB
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Multicast Router Configuration
Multicast Router VLAN Configuration
IGMP Snooping Querier
MLD Snooping

IGMP Snooping VLAN Configuration

VLAN ID	Fast Leave Admin Mode	Host Timeout	Maximum Response Time	MRouter Timeout	Query Mode	Query Interval (1 to 1800 secs)
1	Enable				Enable	

ADD DELETE CANCEL APPLY

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

NETGEAR GS748Tv5

192.168.0.239/base/cheetah_login.html

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GS748T
ProSafe® 48-Port Gigabit Smart Switch

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

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

MFDB
Auto-Video
IGMP Snooping
IGMP Snooping Querier
Querier Configuration
Querier VLAN Configuration
Querier VLAN Status
MLD Snooping

Querier Configuration

Querier Admin Mode: ☐ Disable ☒ Enable

Snooping Querier Address: 192.168.0.239

IGMP Version: 2 (1 to 2)

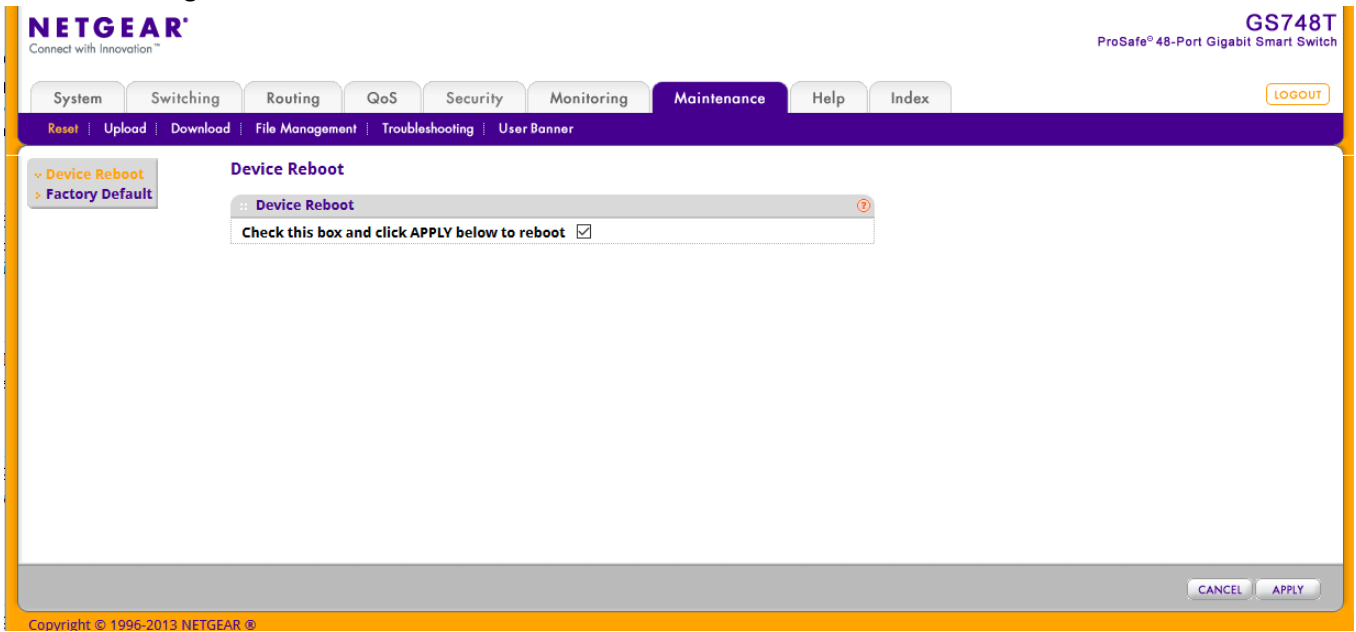
Query Interval(secs): 60 (1 to 1800)

Querier Expiry Interval(secs): 125 (60 to 300)

REFRESH CANCEL APPLY

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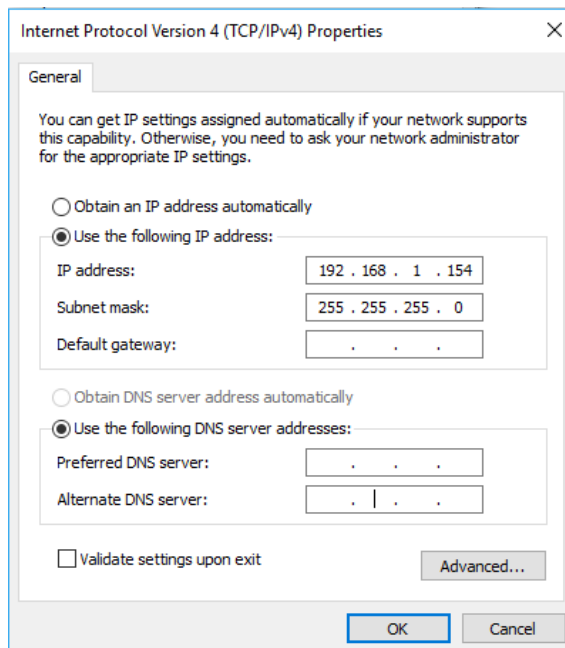
12. Finally, go to Maintenance -> Device Reboot. Enable checkbox for device reboot as shown below and press Apply button. It takes approximately 2 minutes to power cycle the switch and an additional 2 min for IP922 to start showing video.



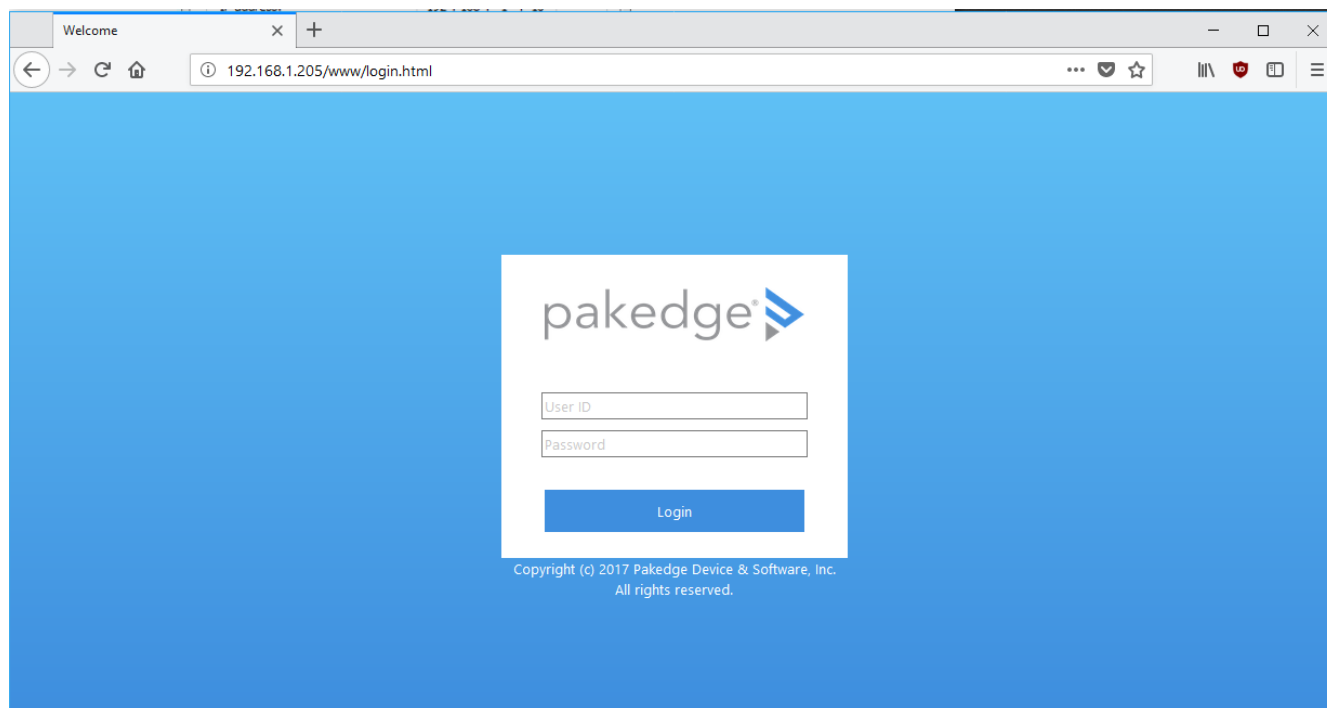
Pakedge S3L Network Setup Guide for KD-IP922, KD-IP1080

Login to the switch with the following steps:

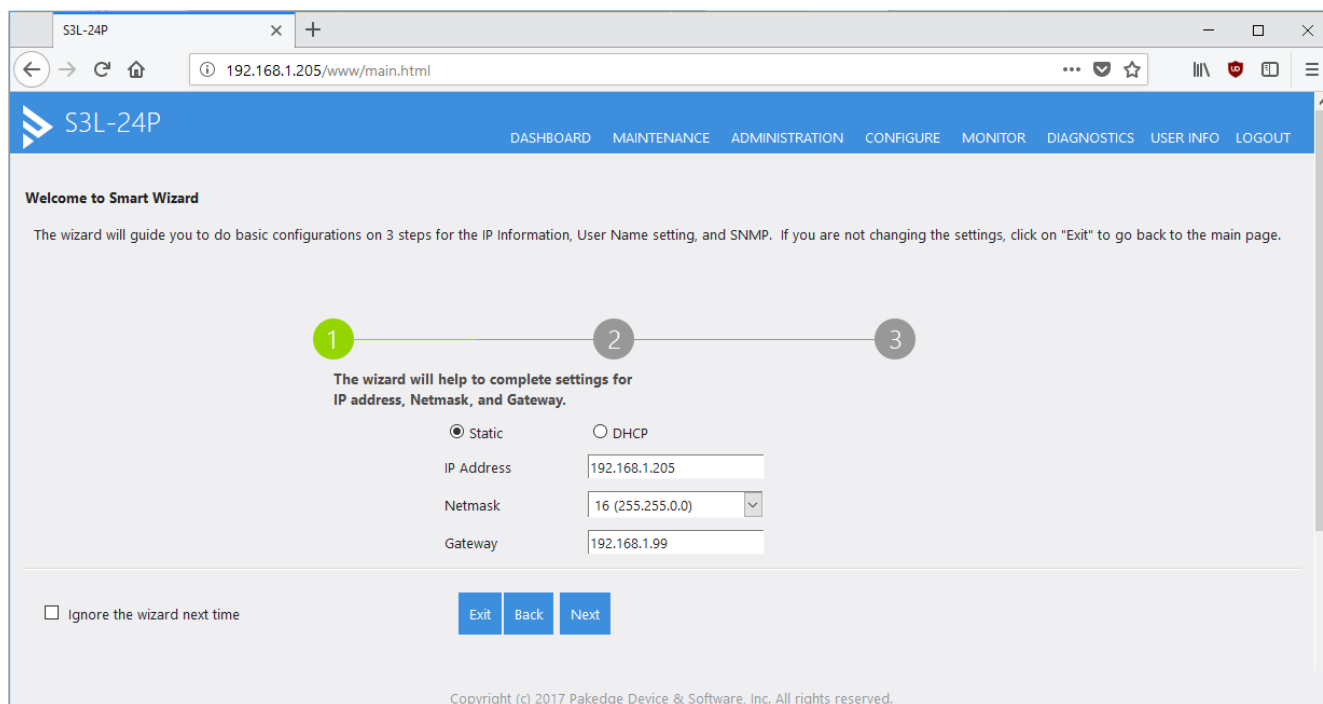
1. Plug an Ethernet cable into any of the ports of the switch
2. Plug the other end into the Ethernet port of your computer
3. Power on the Switch
4. Check to see that the IP address of the computer is within this network, 192.168.1.xxx ("xxx" ranges 1~254).
For example, 192.168.1.154



5. 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.



7. To enable Jumbo Frame of the switch, go to Administration -> Management ->

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

Port Settings

Port: **All**

Port Status: ☒ Enabled ☐ Disabled

Green-Ethernet: ☒ Enabled ☐ Disabled

DDM Settings: ☐ Disabled

Speed: ☒ 10M ☒ 100M ☒ 1000M

Duplex: ☒ Half ☒ Full

Maximum Receive Frame Size (1536~9216 bytes): **9216**

Description:

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	

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

Global Setting

IGMP Snooping Proxy: ☒ Enabled ☐ Disabled

VLAN ID (1-4094): **1**

IGMP Snooping Querier: ☒ Enabled ☐ Disabled

Report Suppression: ☒ Enabled ☐ Disabled

Suppress time (0-300 sec): **10**

Immediate Leave: ☒ Enabled ☐ Disabled

Total Entries: 0

VLAN ID	STATUS	IGMP SNOOPING QUERIER	REPORT SUPPRESSION	SUPPRESS TIME	IMMEDIATE LEAVE
Total Entries: 0					

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

IGMP Settings

VLAN ID (1-4094)

Status ☒ Enabled ☐ Disabled

Access Group ☐ Enabled ☒ Disabled

Last Member Query Interval (1000-25000 msec)

Query Interval (1-31744 sec)

Query Max Response Time (1-25 sec)

Robustness Variable (1-7)

Version ☐ V1 ☒ V2 ☐ V3

[Apply](#)

Total Entries: 1

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

MAINTENANCE [SAVE](#)

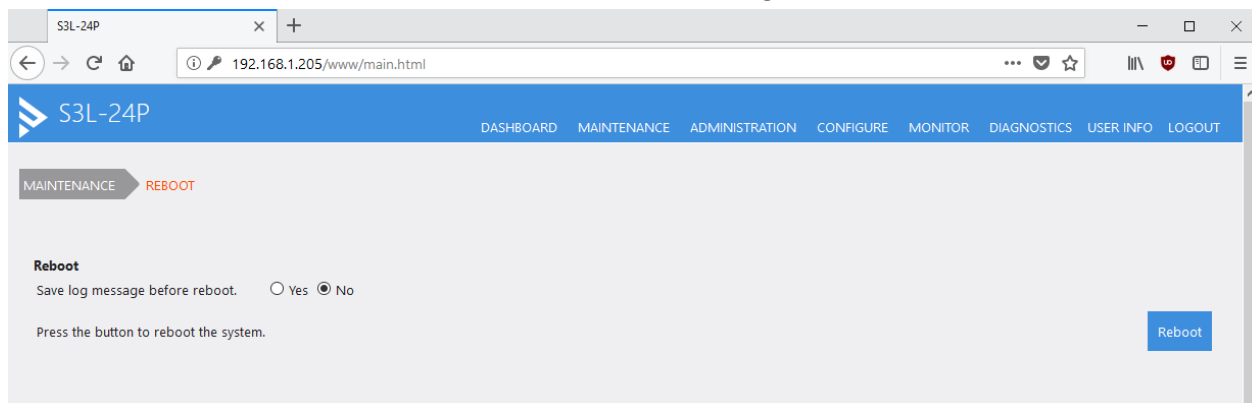
Save

Press the button to save the system settings to NV-RAM.

[Save](#)

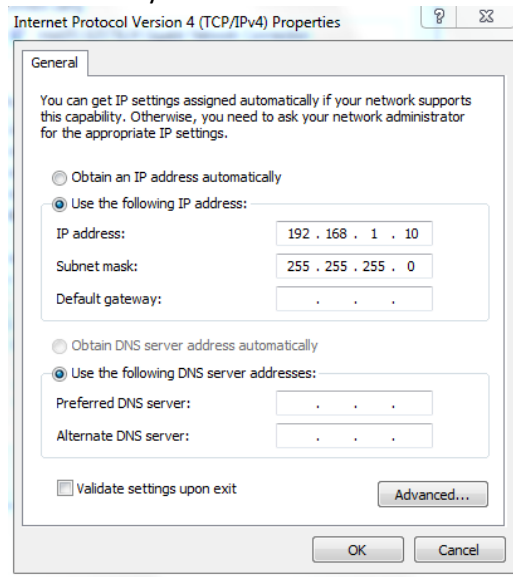
10. Go to Maintenance -> Save. Click on Save button.

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.

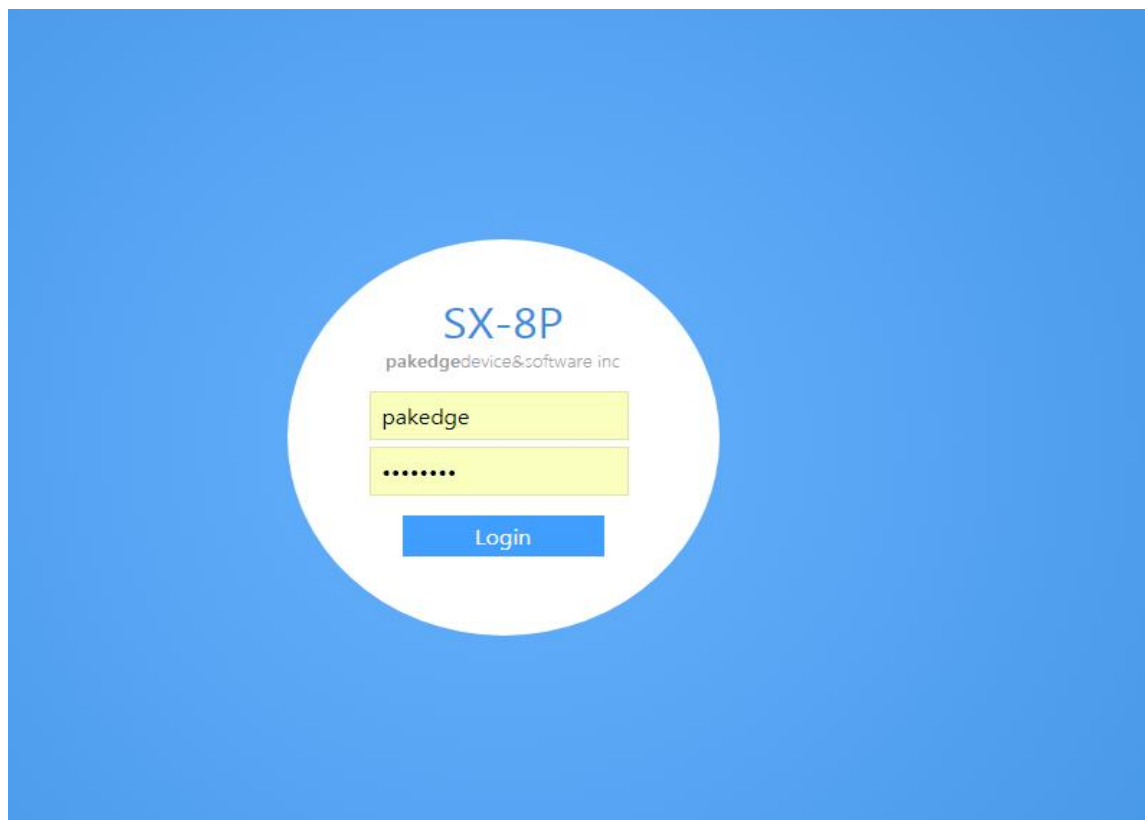


Pakedge SX Series
IGMP Setup Guide for KD-IP922, KD-IP1080

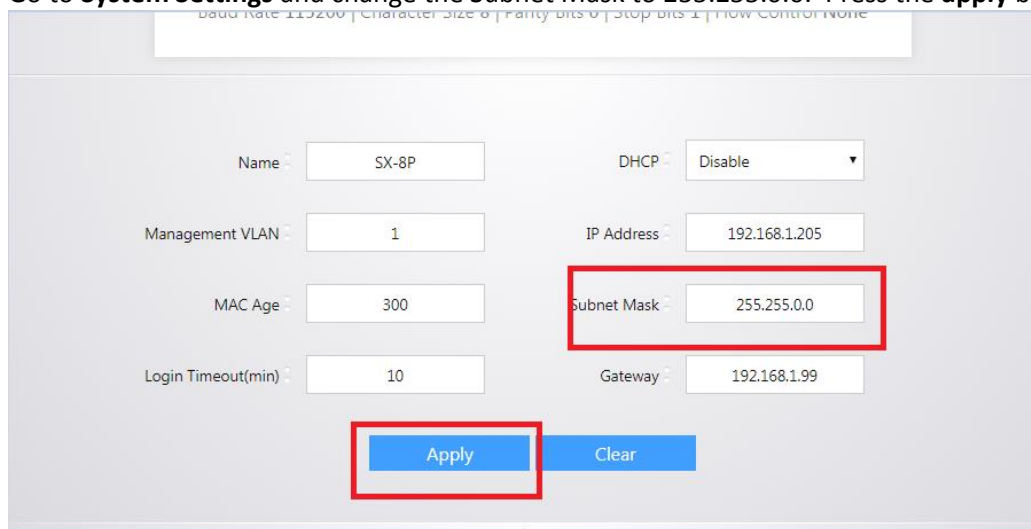
1. Connect to the network switch
 - a. Plug an Ethernet cable into any of the ports of the switch
 - b. Plug the other end into the Ethernet port of your computer
 - c. Power on the Switch
 - d. Configure the PC with static IP address of 192.168.1.10 and the subnet mask of 255.255.255.0 to be within 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.

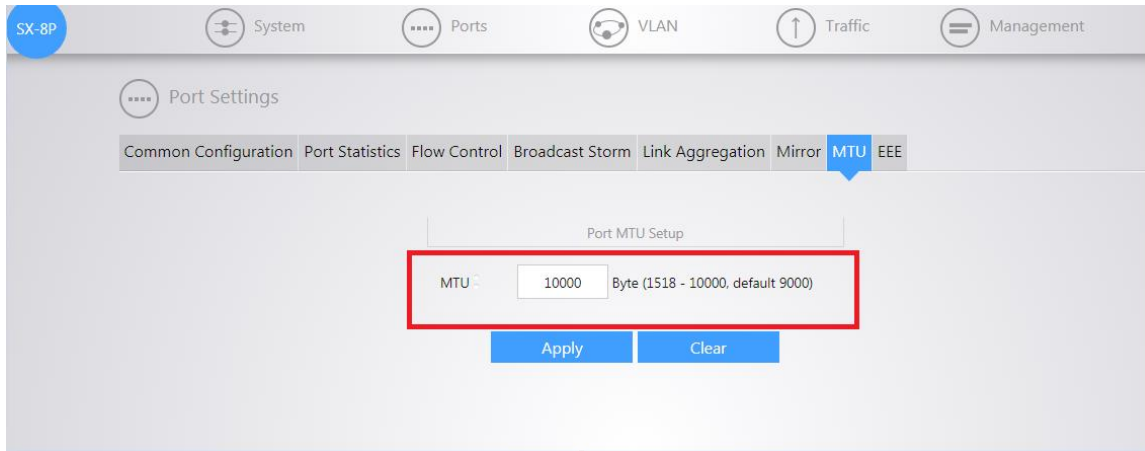


4. Go to **System Settings** and change the Subnet Mask to 255.255.0.0. Press the **apply** button.

The image displays the "System Settings" configuration page. It contains several fields for network and system parameters. The "Subnet Mask" field, which currently shows "255.255.0.0", is highlighted with a red rectangle. Below the form, the "Apply" button is also highlighted with a red rectangle. Other visible fields include "Name" (SX-8P), "DHCP" (Disable), "Management VLAN" (1), "IP Address" (192.168.1.205), "MAC Age" (300), "Login Timeout(min)" (10), and "Gateway" (192.168.1.99).

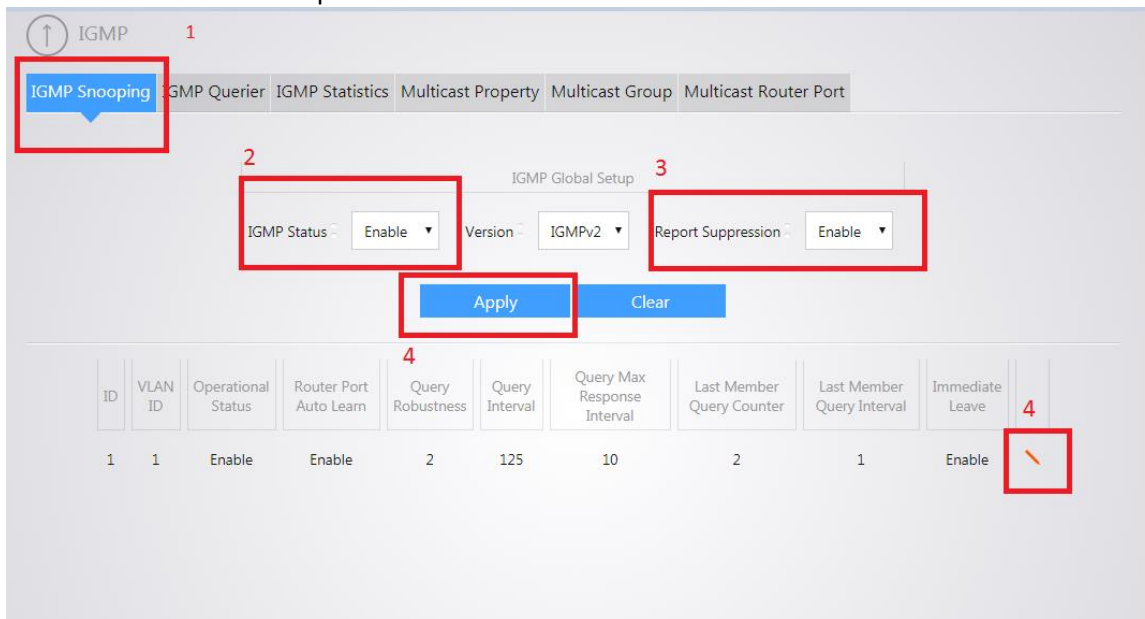
Name	SX-8P	DHCP	Disable
Management VLAN	1	IP Address	192.168.1.205
MAC Age	300	Subnet Mask	255.255.0.0
Login Timeout(min)	10	Gateway	192.168.1.99

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 **TRAFFIC** → **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 ▼

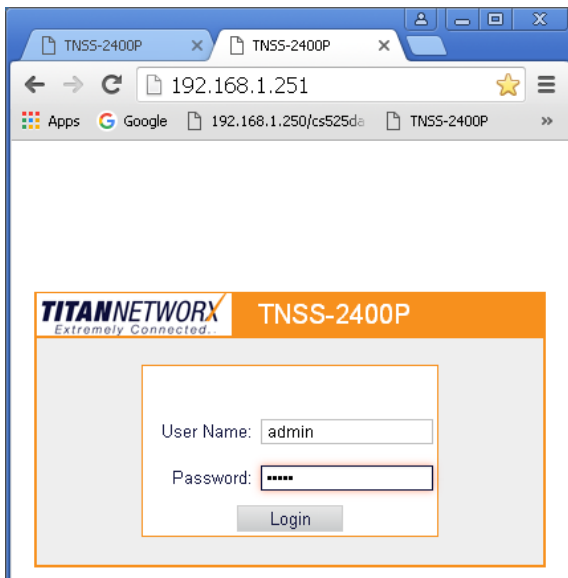
Multicast Forward Method

IPv4 : DMAC-VID ▼

Apply Clear

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

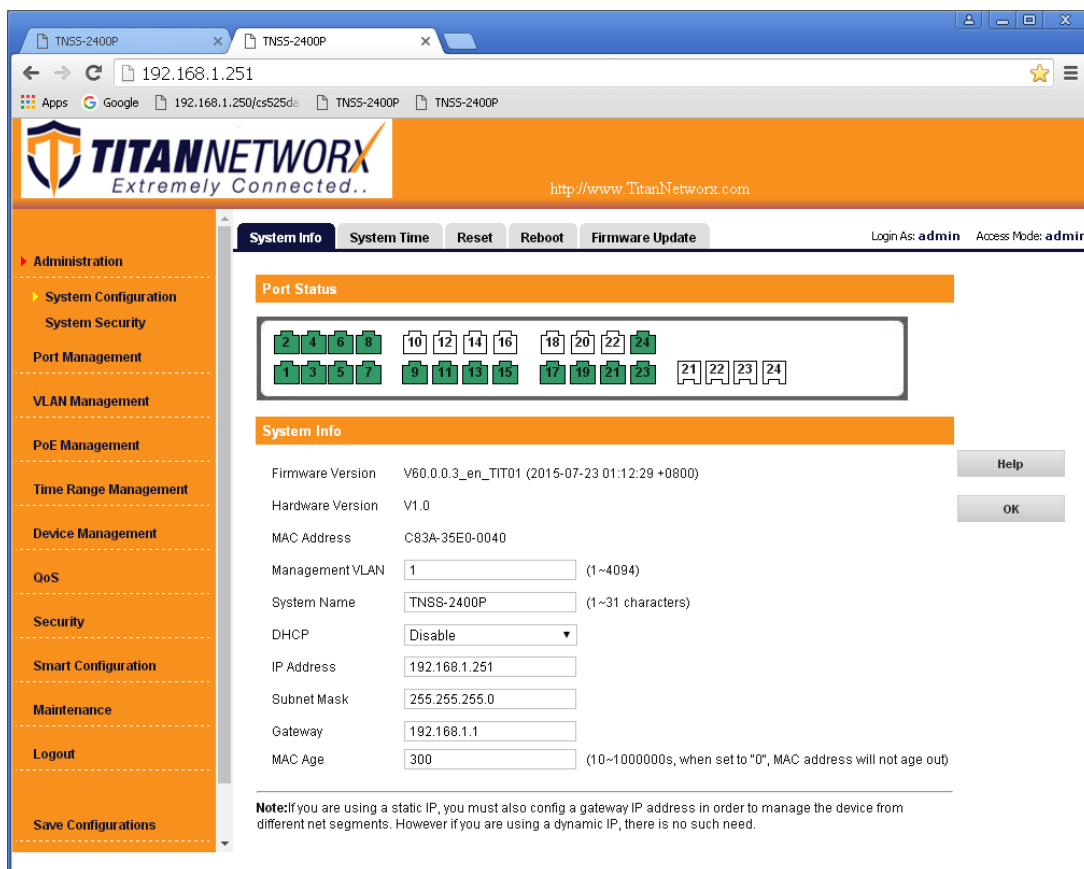
1. Before Titan Networkx network switch is configured Key Digital KD-IP120/KD-IP1080 HDMI switch set must be connected to all HDMI sources/displays/network switches, and configured using Key Digital KD-IP120 Key Digital Management Software latest version.
2. Power-up all the system components. Using Key Digital KD-IP120 Key Digital Management Software, switch **All Outputs -> Through** at switching page.
3. **IMPORTANT:** Disconnect all the DHCP devices like routers, servers from the Linksys network switch.
4. 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).
5. **IMPORTANT:** At this point all the displays should be displaying distorted randomly flashing video images.
6. Connect your PC to the Titan Networkx network switch directly using a network cable.
7. If you have not done yet, configure your PC's IP address to the same range as the switch (default **192.168.1.xxx**).
8. 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**).
9. 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**.



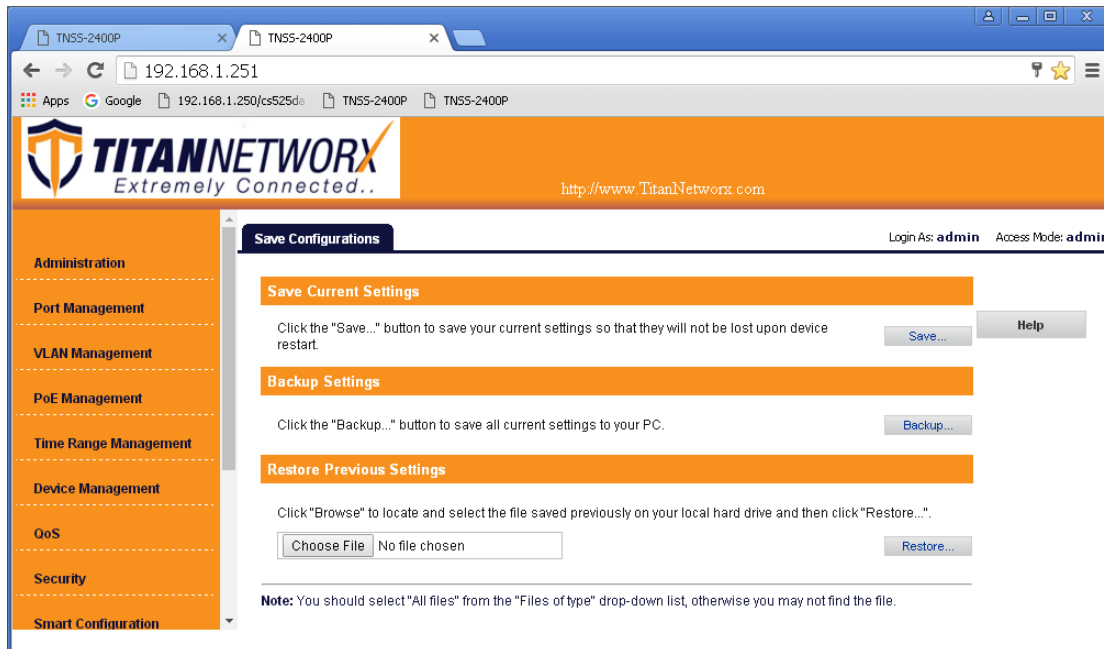
10. Navigate to **Administration -> System Configuration**. Select **IP Address** box. IP address can be changed by the administrator depending on the network configuration. If you are using multiple network switches it is recommended to set first one to **192.168.1.251**, second to **192.168.1.252**,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

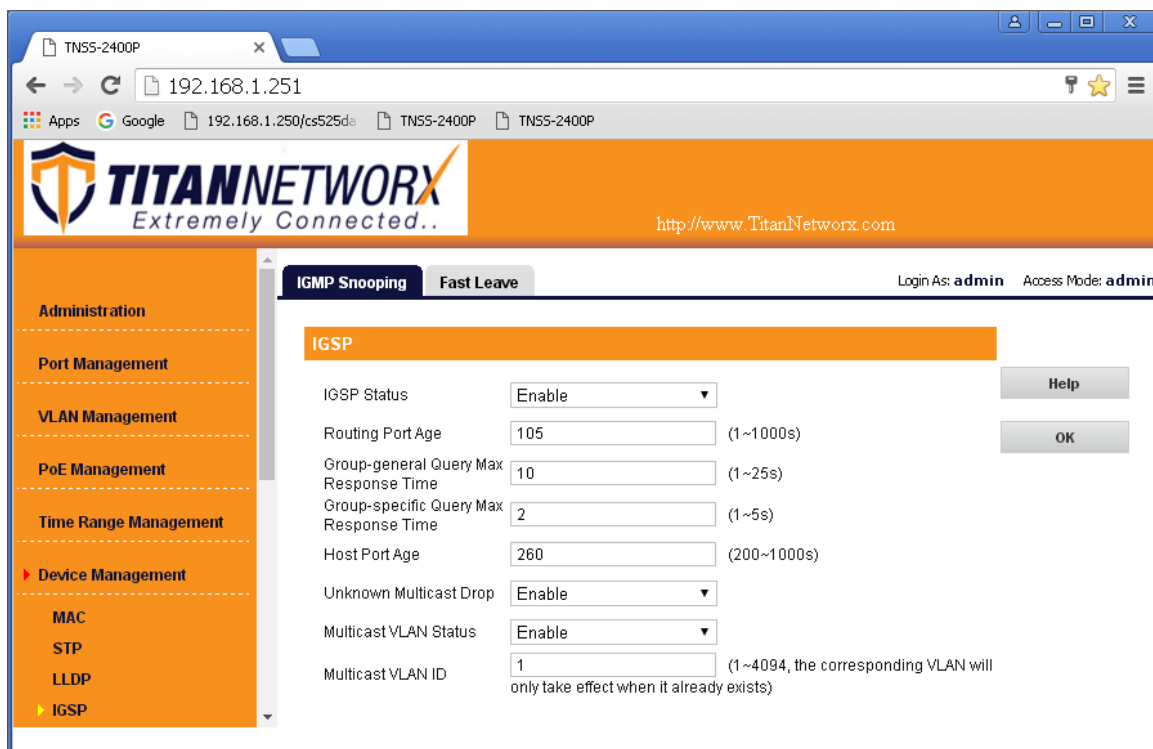
11. Make sure your screen looks exactly like pictured below.



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



13. 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.

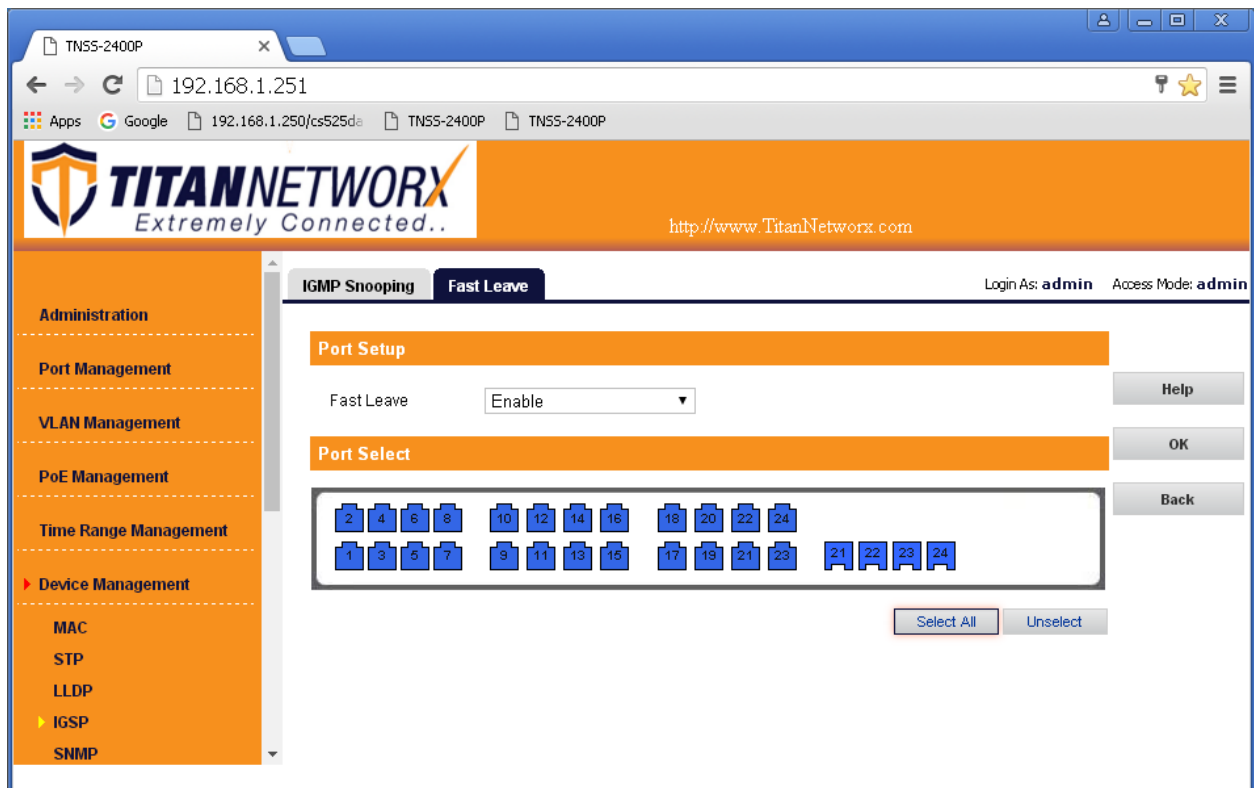


14. Select **Fast Leave** tab. Click **Config** button.

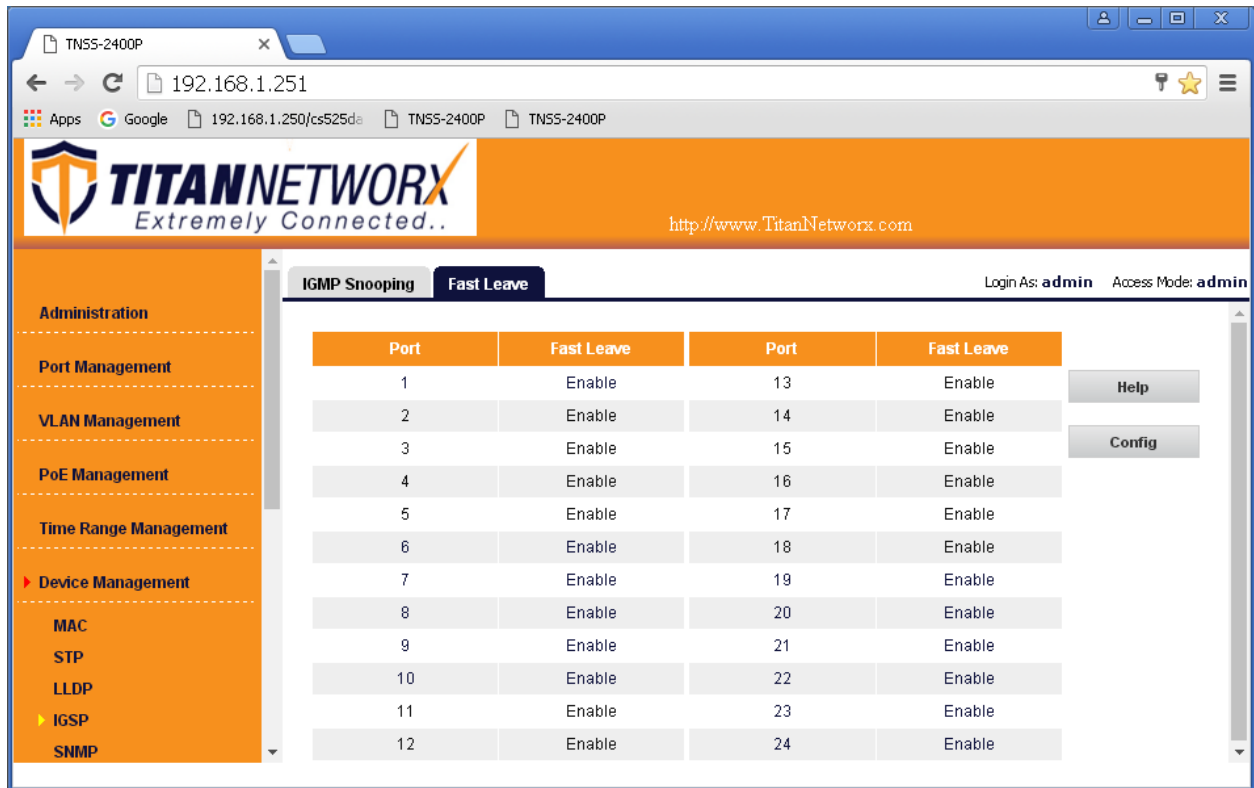
The screenshot shows the TitanNetwork web interface in a browser window. The address bar displays 192.168.1.251. The page header includes the TitanNetwork logo and the URL http://www.TitanNetworkx.com. The left sidebar contains a navigation menu with categories: Administration, Port Management, VLAN Management, PoE Management, Time Range Management, and Device Management. Under Device Management, the following options are listed: MAC, STP, LLDP, IGSP (highlighted with a yellow arrow), and SNMP. The main content area has two tabs: IGMP Snooping and Fast Leave (selected). Below the tabs is a table with columns Port and Fast Leave. The table contains 24 rows, each with a port number (1-24) and the value 'Enable'. To the right of the table are two buttons: 'Help' and 'Config' (highlighted with a yellow arrow). The top right corner of the interface shows 'Login As: admin' and 'Access Mode: admin'.

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

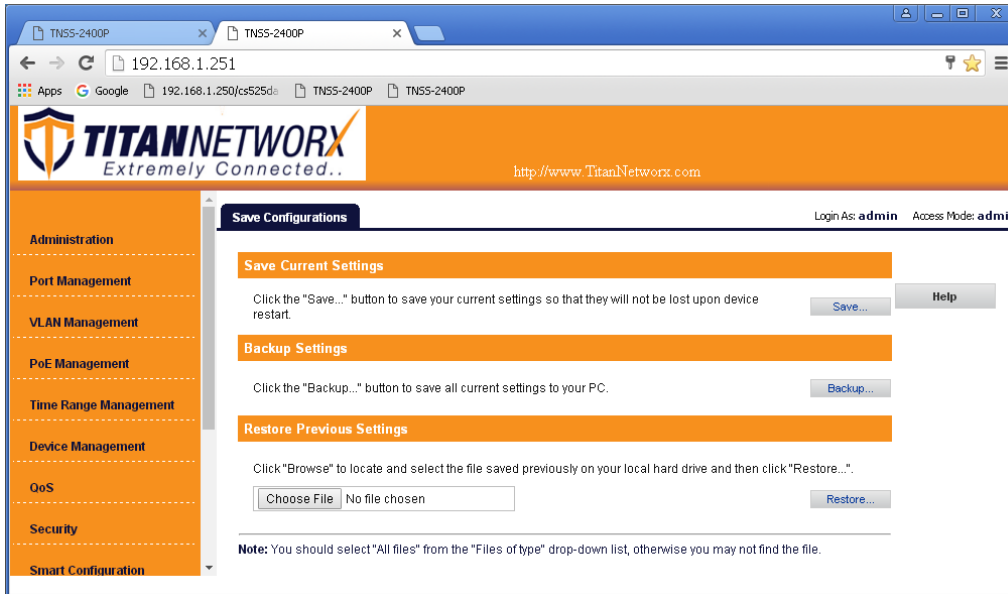
15. Set **Fast Leave** to **Enable**, click **Select All**. Click **OK**, and **OK** again.



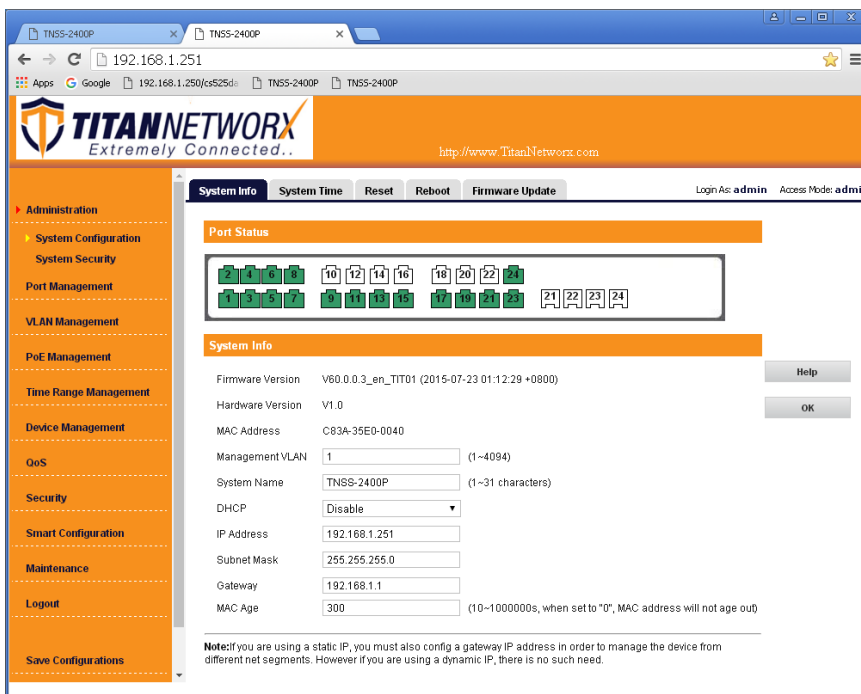
16. Make sure all the ports are set to **Enable**.

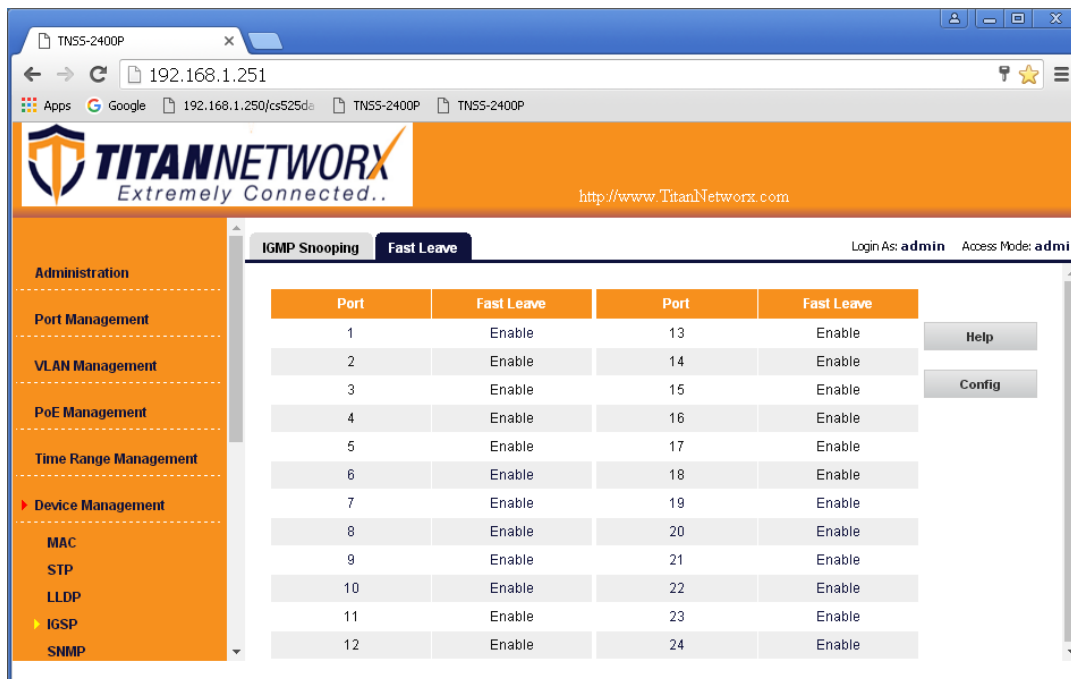
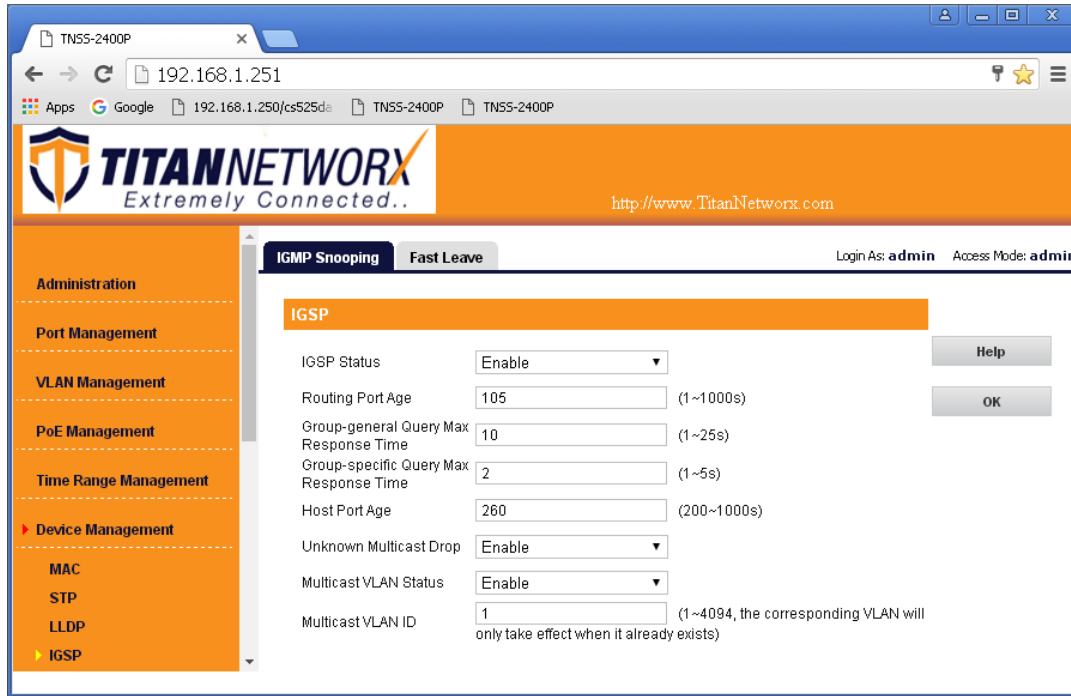


17. **IMPORTANT:** At this point all the displays should be displaying stable running video from the selected sources. If you do not have them displaying properly, than network switch is configured incorrectly.
18. Click **Save Configurations** on the left bottom corner. New screen will appear. Click **Save** under **Save Current Settings**, than **OK** and **OK** again.



19. **IMPORTANT:** Now you can connect back you DHCP equipment (routers, servers and so on).
20. Power down Titan Networkx network switch and power it up back again. Wait for the whole system to start and until you can see video on your displays.
21. Log in to your Titan Networkx network switch again and make sure that IGMP settings are intact:



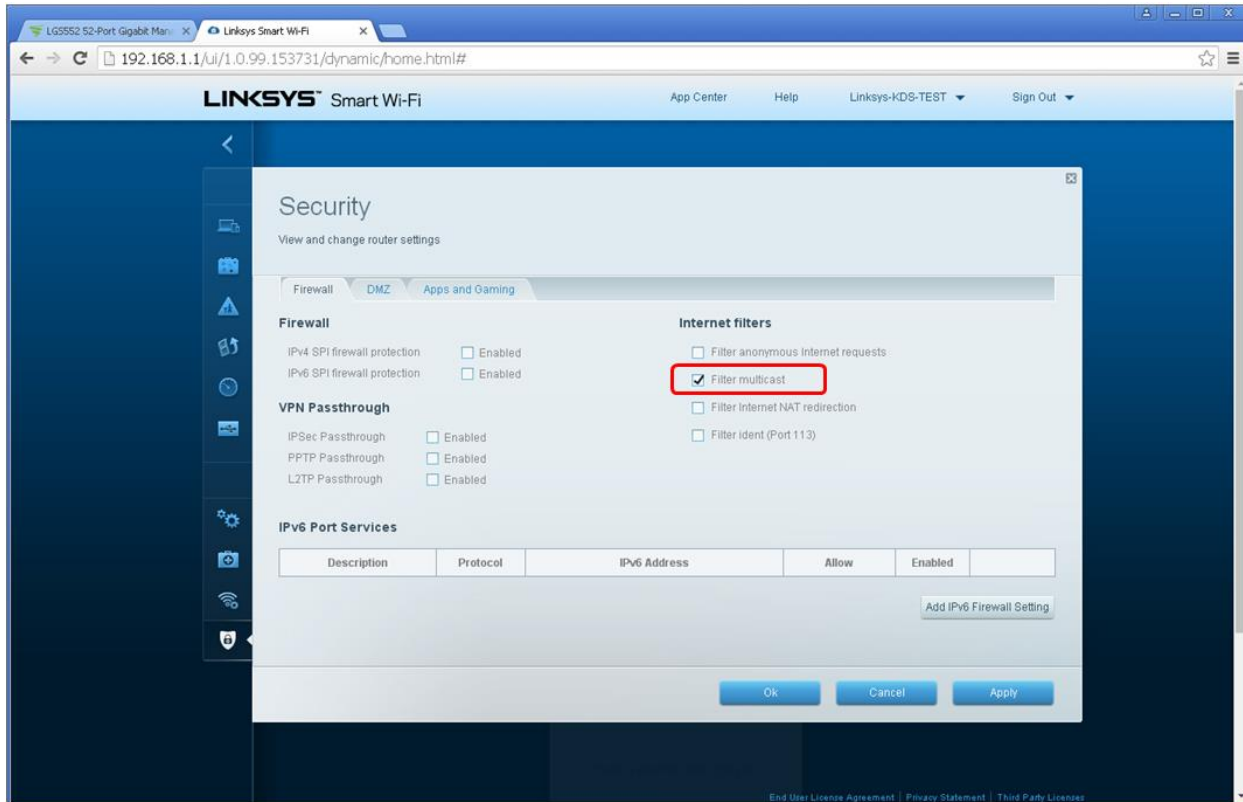


22. Rescan your components with Key Digital KD-IP120 Key Digital Management Software and make sure HDMI video switch is functional.
23. At this point your Titan Networkx network switch is set and ready to use.

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 Enterprise AV units 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