

B-900-MOIP-4K-CTRL 900 SERIES 4K MOIP CONTROLLER

1. OVERVIEW

This guide will help you configure IGMP and multicast on an S3L-24P switch for use with SnapAV MoIP Video Switches. The first part of the document describes the key steps required while the end explains the different settings required in a multi-switch topology. The S3L-24P does not support switch “stacking” for configuration management so configuration is required on each switch individually.

As you plan your MoIP installation, be aware of the potential bandwidth utilization from the topology you have laid out. The SFP+ Uplinks on the S3L-24P support 10Gbps each, so be aware of the number of transmitter bandwidth utilization and where each video stream can potentially travel through the network.

If you wish to run the MoIP system on its own VLAN, follow these steps to create a VLAN with IP Interface on the S3L-24P. More detailed steps on creating and managing VLANs can be found in the companion document S3 Series Switches - Creating VLANs. If you intend to only use VLAN 1, skip to Step 2 and replace any mention of “VLAN 10” with VLAN 1 for your configuration.

If you have any questions about serial control after reading this document, please contact SnapAV Technical Support.

Contacting Technical Support

Phone: (866) 838-5052 (704) 909-5229

Email: TechSupport@SnapAV.com

2. BEFORE BEGINNING

Make sure the following items are close at hand for setup:

- B-900-MOIP 4K-CTRL
- Packedge S3L-24P Switch

3. FIRMWARE VERSION

The information in this document applies to switchers with firmware version 1.0.0 or higher. If your firmware is below 1.0.0, please update to the latest version.

4. CONFIGURING THE S3L-24P

1. Add the VLAN to be used.

The default login for the S3L-24P is at the IP address 192.168.1.205.

Username = pakedge

Password = pakedges

*****The VLAN MUST be created first before the interface can be modified. For this example, we will be using VLAN 10.*****

Navigate to **Configure > L2 Switching > 802.11Q VLAN**

In the **VLAN ID List** field, type "10", then click **Add**.

802.1Q VLAN

Port-based VLAN

MAC-based VLAN

Subnet VLAN

Protocol-based VLAN

Auto Voice VLAN

Private VLAN

802.1Q VLAN

VLAN ID List **Add** **Delete**

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

Total Entries: 1 **Change** **Delete** **Delete All**

<input type="checkbox"/>	VLAN ID	VLAN NAME	TAGGED MEMBER PORTS	UNTAGGED MEMBER PORTS	DYNAMIC MEMBER PORTS	VLAN TYPE
<input type="checkbox"/>	1	default	--	eth1/1-1/28	--	--

*****In the S3L-24P, it is required to create an IP interface for the VLAN where IGMP Snooping will be configured (MoIP VLAN).*****

Navigate to **Administration > Management > Network Interface > Network Property** page.

In the **Interface** field, type "vlan10", then click **Add**.

Network Property

IPv4

IPv6

DHCPv6 Client Interface

Network Property

Interface **Add**

Total Entries: 1 **Refresh** **Delete**

<input type="checkbox"/>	INTERFACE	IP ADDRESS	IPv6 ADDRESS	MAC ADDRESS	STATUS
<input type="checkbox"/>	vlan1	192.168.1.205/24	unassigned	90-a7-c1-80-2e-21	up

Next, click on **IPv4** on the left menu and type "vlan10" in the interface field.

Click the drop-down menu for **Primary IP Address** and select **Set**. Then select the **Static** radio button that appears.

In the **Primary IP/Mask Length** field that appears, assign an IP address for the switch to use on VLAN 10.

*****Use the following format for the IP address: ex. 192.168.10.1/24. The /24 at the end represents a 255.255.255.0 subnet mask.*****

Click **Apply**. You'll see the assigned IP populate in the list below.

Network Property

IPv4

Interface

ARP Timeout (0-65535 seconds)

Primary IP Address DHCP Static Primary IP Address/Mask Length

Total Entries: 2

INTERFACE	PRIMARY IP ADDRESS	STATIC	DHCP	MAC ADDRESS	ARP TIMEOUT (SECONDS)	IP MTU (BYTES)	STATUS	PROTOCOL
vlan1	192.168.1.205/24	running		90-a7-c1-80-2e-21	14400	1500	up	up
vlan10	unassigned			90-a7-c1-80-2e-22	14400	1500	down	down

2. Enable/Configure IGMP Snooping

Navigate to **Configure > Application > IGMP Snooping**.

In the **VLAN ID (1-4094)** field, type "10" to indicate the VLAN you are configuring for.

Set **IGMP Snooping Querier** to **Enabled**.

Set **Status** to **Enabled**.

Set **Immediate Leave** to **Enabled**.

Click **Apply** on the right-hand side.

Global Setting

Global Setting

IGMP Snooping Proxy Enabled Disabled

VLAN ID (1-4094) Status Enabled Disabled

IGMP Snooping Querier Enabled Disabled Report Suppression Enabled Disabled

Suppress time (0-300 sec) Immediate Leave Enabled Disabled

Total Entries: 0

VLAN ID	STATUS	IGMP SNOOPING QUERIER	REPORT SUPPRESSION	SUPPRESS TIME	IMMEDIATE LEAVE
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Verify: If you navigate to **Configure > Application > IGMP > IGMP Settings**

You'll see a list of IGMP entries at the bottom of the page.

Find the entry for VLAN 10.

Ensure the **Version** column for this entry is set to **V2**.

3. Filter Unregistered Multicast

Navigate to **Configure > L2 Switching > Multicast Filtering**.

Set **Filtering Mode** to **Filter Unregistered**.

Set **Interface** to **vlan10**.

Click **Add**.

FILTERING MODE	INTERFACE LIST
Forward All	--
Forward Unregistered	vlan1, vlan10
Filter Unregistered	--

This will prevent unregistered multicast traffic from being forwarded throughout the MoIP VLAN.

Note: If you add any other devices on to the MoIP VLAN, multicast communication for these devices may be disrupted due to the settings applied to allow the MoIP system to operate at optimal levels. It is recommended to leave all other devices off the MoIP VLAN. (ex. Discovery protocols commonly use multicast for communication.)

4. Enable Jump Frames

Navigate to **Administration > Management > Port > Port Settings**.

Make sure the **Ports** field is set to **All**.

Port Settings

Port

Find the **Maximum Receive Frame Size** field.

Set this field to **9216**, then click **Apply**.

Maximum Receive Frame Size (1536~9216 bytes)

Verify the settings have been applied to all ports by scrolling to the bottom of the page. You'll see a list of ports with a **Maximum Receive Frame Size** column for each.

PORT	STATE	SPEED	DUPLEX	FLOW CONTROL	MAXIMUM RECEIVE FRAME SIZE
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

5. Save!

*****IMPORTANT*****

The configuration **MUST** be saved. If you do not save the configuration after applying these settings, the settings will clear once the switch is powered down.

Navigate to **Maintenance > Save**.

Save

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

Save

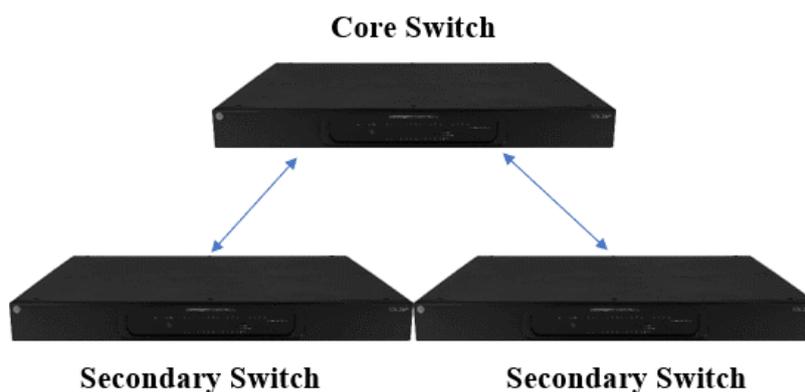
Your MoIP configuration on the S3L-24P is complete.

5. FAQ

Are there multiple switches in the MoIP network topology?

If you have multiple S3Ls with MoIP devices connected, you will follow **ALL** of steps as explained above to configure each switch. However, a minor (**but important**) change to the IGMP Snooping configuration is required depending on where the switch is in the topology.

The recommended switch topology is to have a Core switch, with Secondary switches connected below it.



When you have this type of topology, the following changes must be made:

Navigate to **Configure > Application > IGMP Snooping**.

Core Switch

Set **IGMP Snooping Querier** to **Enabled**.

Set **Immediate Leave** to **Disabled**.

Global Setting	Global Setting	IGMP Snooping Proxy <input checked="" type="radio"/> Enabled <input type="radio"/> Disabled		Apply
Static Group Settings				
Group Information	VLAN ID (1-4094)	<input type="text" value="10"/>	Status	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
Mrouter	IGMP Snooping Querier	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled	Report Suppression	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
Mrouter Information	Suppress time (0-300 sec)	<input type="text" value="10"/>	Immediate Leave	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
				Apply

Secondary Switches

Set **IGMP Snooping Querier** to **Disabled**.

Set **Immediate Leave** to **Enabled**.

Global Setting	Global Setting	IGMP Snooping Proxy <input checked="" type="radio"/> Enabled <input type="radio"/> Disabled		Apply
Static Group Settings				
Group Information	VLAN ID (1-4094)	<input type="text" value="10"/>	Status	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
Mrouter	IGMP Snooping Querier	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled	Report Suppression	<input type="radio"/> Enabled <input checked="" type="radio"/> Disabled
Mrouter Information	Suppress time (0-300 sec)	<input type="text" value="10"/>	Immediate Leave	<input checked="" type="radio"/> Enabled <input type="radio"/> Disabled
				Apply

11. CONTACT TECH SUPPORT

Need Help? Contact Tech Support!

If you need further clarification, please call tech support at **800.838.5052**, or email **support@snapav.com**. For other information, instructional videos, support documentation, or ideas, visit our website and view your item's product page at **www.snapav.com**.

Phone: (866) 838-5052

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