BINARY MOIP SETUP GUIDE FOR THE PAKEDGE S3L-24P NETWORK SWITCH
INTRODUCTION

This guide helps you configure IGMP and multicast on a Pakedge S3L-24P switch for use with your Binary MoIP system. The first part of the document describes the steps required, while the second part 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.

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

CONFIGURING THE S3L-24P

Step 1: Add the Dedicated VLAN (optional)

• 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. You must create the dedicated VLAN first before the interface can be modified. For this example, we create and use VLAN 10. More details on creating and managing VLANs can be found in the companion document “S3 Series Switches - Creating VLANs” available at Control4.com.

• 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.

Log in to your switch. The default login for the S3L-24P is at the IP address 192.168.1.205, username pakedge password pakedges—though hopefully you changed this password at install.

Navigate to Configure > L2 Switching > 802.11Q VLAN

In the VLAN ID List field, type “10”, then click Add.

Now add all ports that you intend to use for media devices so they operate on VLAN 10.

Navigate to Configure > L2 Switching > VLAN > Port-Based VLAN
Next, for each port on VLAN 10, click the **Edit** link at the right end of each row.

In the edit dialog, set the **VLAN Mode** field to **Access**. In the **VLAN ID (1-4094)** field, enter **10**.

Click **Apply** on the right hand side to accept all changes.

Next, the S3L-24P requires you to create an IP interface for the VLAN where IGMP Snooping can be configured.

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

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

### Step 2: Configure Network Interfaces

Next, click on the **IPv4** tab on the left side 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 192.168.10.205/24 (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, as shown below.

Now, in the Interface column of the list, click the link for “vlan10” under the Interface column.

With current MoIP firmware (as of 09 Dec 19), the TX and RX units use self-assigned IP addresses. To interact with the S3L, the switch needs to see those IP addresses.

To enable, look for the **Secondary IP Address / Mask Length** field, enter “169.0.0.1/8”, then click **Add**.

After clicking Add, you see the screen below. If you are using multiple switches for your MoIP system, increment the IP value by one for each additional switch, 169.0.0.2/8, 169.0.0.3/8, etc.
Step 3: Enable and Configure IGMP Snooping

Navigate to Configure > Application > IGMP > IGMP Settings.

In the VLAN ID (1-4094) field, type “10” to indicate the VLAN you are configuring.

Set Status to Enabled.

Set Version to V2.

Click Apply on the right-hand side.

At the bottom of the page, in the list of IGMP entries, find the entry for VLAN 10.

Ensure the Version is set to V2.

Click the Detail link at the far right to ensure the IGMP State is enabled.

Navigate to Configure > Application > IGMP Snooping.

In the VLAN ID (1-4094) field, type “10” to configure the VLAN 10.

Enable IGMP Snooping Querier.

Enable Status.

Disable Report Suppression.

Enable Immediate Leave.

Click Apply at the right-hand side.
Step 4: Filter Unregistered Multicast

Navigate to Configure > L2 Switching > Multicast Filtering.
Set Filtering Mode to Filter Unregistered.
Set Interface to vlan10.
Click Add.

This prevents unregistered multicast traffic from being forwarded throughout the VLAN.

Note: If you add another device to the MoIP VLAN, multicast communication for this device may be disrupted (possibly including discovery protocols). This is because the settings help the MoIP system to operate at optimal levels. We recommend you leave all other devices off the MoIP VLAN.

Step 5: Enable Jumbo Frames

Navigate to Administration > Management > Port > Port Settings.
Make sure the Ports field is set to All.

Find the Maximum Receive Frame Size field.
Set this field to 9216, then click Apply.

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.
Step 6: Save!

You must save the configuration! If you do not save the configuration after applying these settings, the settings clear once the switch is powered down.

Navigate to Maintenance > Save.

Click the Save button, then click OK.

ARE THERE MULTIPLE SWITCHES IN THE NVX NETWORK?

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

With multiple S3/S3Ls that have NVX devices connected, configure each switch as above. However, you must make a minor (but important) change to the IGMP Snooping configuration depending on where the switch is in the topology.

On the Core Switch

Navigate to Configure > Application > IGMP Snooping.

Set IGMP Snooping Querier to Enabled.

Set Immediate Leave to Disabled.
On the Secondary Switches

Navigate to Configure > Application > IGMP Snooping.

Set IGMP Snooping Querier to Disabled.

Set Immediate Leave to Enabled.