MAGNUM - SDVN
Management and Control of
Evertz IP Switch Fabrics and Gateways
User Manual

EVERTZ MICROSYSTEMS LTD.
5292 John Lucas Drive,
Burlington, Ontario,
Canada,
L7L 5Z9

Phone:	+1 905-335-3700	Internet:	Sales:	sales@evertz.com
Sales Fax:	+1 905-335-3573		Tech Support:	service@evertz.com
Tech Support Phone:	+1 905-335-7570		Web Page:	http://www.evertz.com
Tech Support Fax:	+1 905-335-7571			

Version 0.1, November 2014

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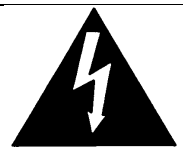
IMPORTANT SAFETY INSTRUCTIONS

	The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “Dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
	The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (Servicing) instructions in the literature accompanying the product.

- Read these instructions
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer’s instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING
TO REDUCE THE RISK OF FIRE OR ELECTRIC – SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE

WARNING
DO NOT EXPOSE THIS EQUIPMENT TO DRIPPING OR SPLASHING AND ENSURE THAT NO OBJECTS FILLED WITH LIQUIDS ARE PLACED ON THE EQUIPMENT

WARNING
TO COMPLETELY DISCONNECT THIS EQUIPMENT FROM THE AC MAINS, DISCONNECT THE POWER SUPPLY CORD PLUG FROM THE AC RECEPTACLE

WARNING
THE MAINS PLUG OF THE POWER SUPPLY CORD SHALL REMAIN READILY OPERABLE

INFORMATION TO USERS IN EUROPE

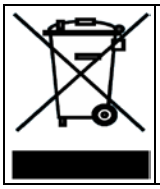
NOTE

CISPR 22 CLASS A DIGITAL DEVICE OR PERIPHERAL

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to the European Union EMC directive. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE

EN60065	Safety
EN55103-1: 1996	Emission
EN55103-2: 1996	Immunity



EN504192 2005
Waste electrical products should not be disposed of with household waste. Contact your Local Authority for recycling advice

INFORMATION TO USERS IN THE U.S.A.

NOTE

FCC CLASS A DIGITAL DEVICE OR PERIPHERAL

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

WARNING

Changes or Modifications not expressly approved by Evertz Microsystems Ltd. could void the user's authority to operate the equipment.

Use of unshielded plugs or cables may cause radiation interference. Properly shielded interface cables with the shield connected to the chassis ground of the device must be used.

TABLE OF CONTENTS

FIGURES

REVISION HISTORY

REVISION	DESCRIPTION	DATE
0.1	Preliminary Release	Nov 2014

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1. OVERVIEW

The MAGNUM control platform provides flexible and unified control of an entire broadcast environment through a variety of user operational and management surfaces. MAGNUM has an ecosystem of separately installable, licensable modules, each providing unique functionality in a unified system of control.

The MAGNUM modules are:

ROUTER	Baseband router control
MULTIVIEWER	Management and control of Evertz multiviewers
TALLY	Management and control of tally for production and master control
ISP	Automatic provisioning and pathing through pools of dynamic signal processing resources
KVM	Management and control of Evertz KVMx solution
NAMES	Name synchronization with third-party systems
SCHEDULE	Time based scheduling of routing events
CLIENTHOST	Panel hosting / configuration and 3rd Client interfacing
SCRIPTS	Script engine to augment and extend core MAGNUM capabilities to provided uniquely tailored functionality
SDVN	Management and control of Evertz IP switch fabrics and gateways

The management and configuration of the various MAGNUM modules is unified through a single, tailorable web interface, called VUE-WEB. VUE-WEB's tailored interface provides user specific dashboards which expose only the required applications and widgets required by that user, whether they are configuration, operational, monitoring or design elements.

MAGNUM's modules are designed to interact with each other through MAGNUM's inter-module control APIs, which enables support for resources to be distributed or consolidated through the use of virtualization or physical deployments. This allows MAGNUM to provide new functionality, e.g. adding servers with more CPU and memory resources in a scalable architecture.

1.1. MAGNUM-SDVN: ORCHESTRATION AND CONTROL

MAGNUM, the unified facility control system using the SDVN module, is the orchestration and control layer of Evertz SDVN solution. MAGNUM-SDVN manages the flows of video, audio, and data packets over a network that consists of Evertz 10/100GbE switching fabrics, EXE-VSR and 3080IPX, IP media gateways (e.g. 570IPG and 3000REM) and traditional SDI products (e.g. EQX and 7812 series).

MAGNUM, a software defined network controller, gives full control of switching and routing of flows to the operator. Unlike traditional networking equipment where the control and data plane reside on the routing switch which leads to complex networks and routes, MAGNUM is separate from the data plane.

MAGNUM looks at the network as a whole to determine the most optimize path to use and manages the flow across that path. From an operations perspective, controls to switch a source to a destination are the same one used in a traditional baseband environment.

2. GETTING STARTED

2.1. INSTALLING THE MAGNUM SOFTWARE

For information on the installation of MAGNUM Software on MAGNUM Hardware please refer to the MAGNUM Hardware User Manual.

2.2. MAGNUM SERVER CONFIGURATION SHELL

The MAGNUM Server Configuration Shell enables the user to set up the MAGNUM server parameters. By accessing the MAGNUM Server Configuration Shell a number of operations can be performed in order to properly set up your server. Access to the MAGNUM Server Configuration Shell is available when directly connected or KVM access to the Server or remotely through a SSH session

Tip: Changes that affect the operation of the MAGNUM or admin level actions will cause an authentication prompt to be displayed.

To login to the MAGNUM Server Configuration Shell, the user will have to enter the following information when prompted. These are the default credentials:

- Enter *admin* as the username and then press <*enter*>
- Enter *admin* as the password and then press <*enter*>

Figure 2-1 displays the main setup menu. Section 2.2.1 to 2.2.5 will guide you through the process of setting up your server and identifying the function of each configuration tool.

You will use the arrow keys, tab, and enter keys to navigate through the MAGNUM Server Configuration Shell.

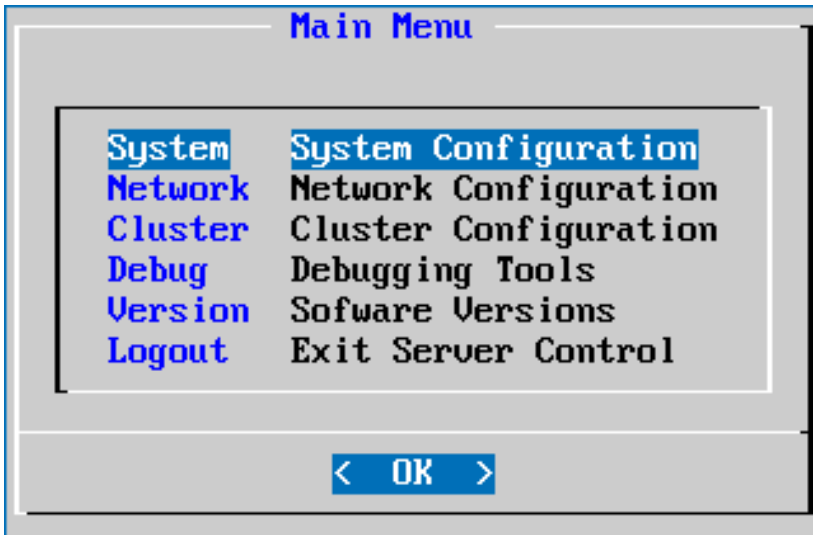


Figure 2-1: Main Server Control Menu

2.2.1. System Configuration

Selecting the **System Configuration** option will reveal the screen displayed in Figure 2-2. The main function of the system configuration menu is to complete the set up of the server configuration. The System Configuration Menu allows the user to verify or change system level configuration, such as Date/Time, Hostname, etc; or to perform system level operations such as changing the admin password, upgrading, rebooting, etc.

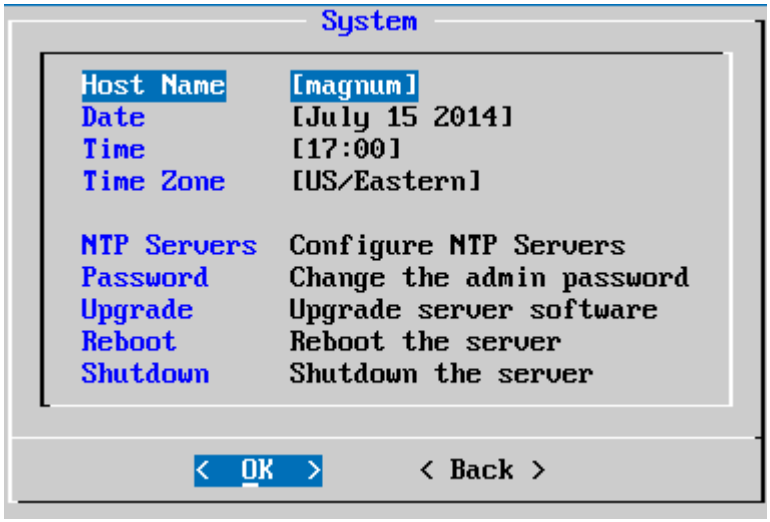


Figure 2-2: System Configuration Menu

2.2.1.1. Setting the Host Name

Selecting the **Hostname** option from the System Configuration menu will enable the user to set the host name for the server. The dialog box in Figure 2-3 will appear when this option is selected. The user will be prompted to enter the desired name for the host into the "*Host name:*" field. This name was set during initial installation but can be changed using this menu option. The host name must be unique within the system.

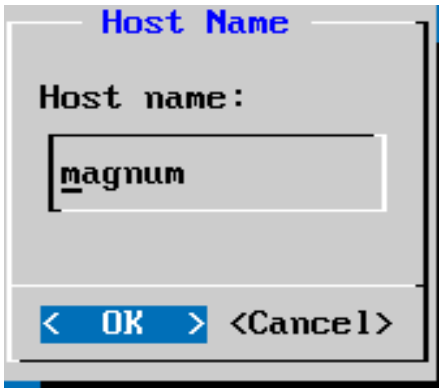


Figure 2-3: Change Host Name

2.2.1.2. Setting the Server Date

Selecting **Date** from the System Configuration menu will enable the user to set the date for which the server will reference. Select the current day, month and year from the calendar identified in Figure 2-4.

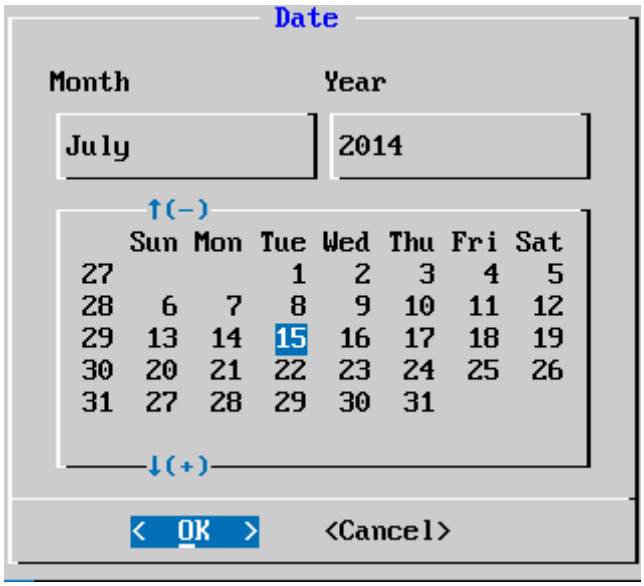


Figure 2-4: Change Date

2.2.1.3. Setting the Server Time

Selecting **Time** from the System Configuration menu will enable the user to set the current time for which the server will reference. Select the hour, minute and second identified in the **Change Time** dialog box as shown in Figure 2-5. Use the up and down arrow keys to set the values and tab to switch boxes.

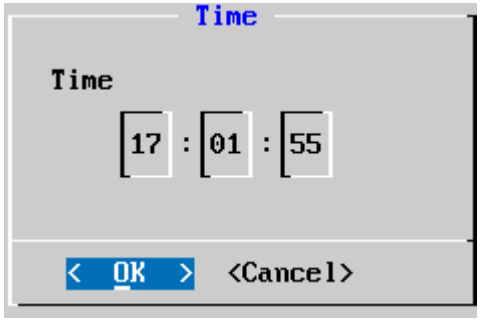


Figure 2-5: Change Time

2.2.1.4. Setting the Server Time Zone

Selecting **Time Zone** from the System Configuration menu will enable you to set the current time zone for the region you are in. Toggle through the list of countries and zones to select your region. Refer to Figure 2-6.

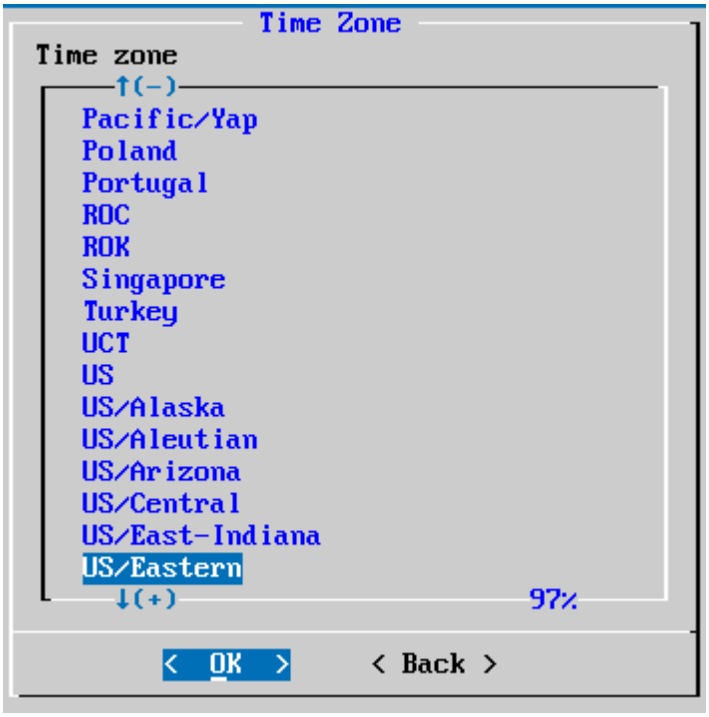


Figure 2-6: Change Time Zone

2.2.1.5. Setting the IP Address of the NTP Server

Selecting **NTP Server** from the System Configuration menu will enable you to set the IP address for the NTP Server. The dialog box in Figure 2-7 will appear when this option is selected. The user will be prompted to enter the IP address of the NTP Server into the empty field.

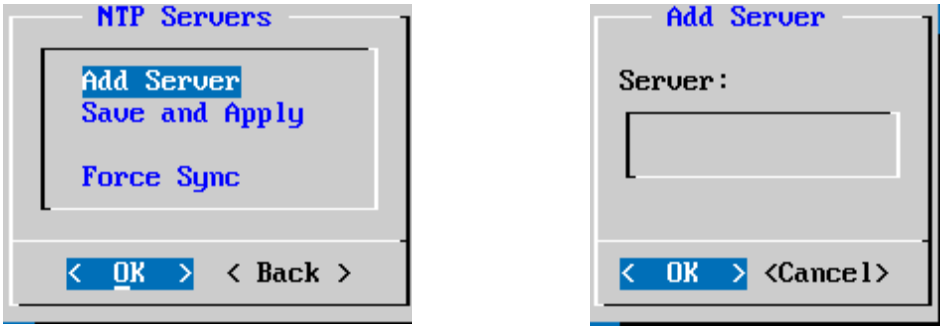


Figure 2-7: Change NTP Server

2.2.1.6. Changing the Server Password

Selecting the **Password** option from the System Configuration menu will enable you to change the *admin* password and set a new password for the "admin" account used to access the Server Configuration Shell. The dialog box in Figure 2-8 will appear when this option is selected. The user will be prompted to enter the current password into the "*enter password to change*" field.

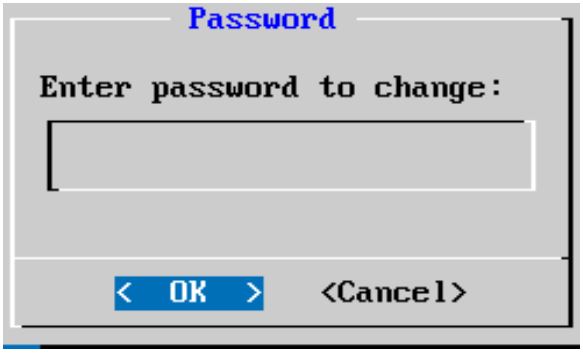


Figure 2-8: Change Password

Once the current password is entered, a new dialog box will appear as shown in Figure 2-9. This dialog box will prompt the user to enter the new password for the server. Type the new password into the empty field and select **OK** to set the password.

Figure 2-9: Enter New Password Dialog Box

2.2.1.7. Rebooting the Server

Selecting the **Reboot** option from the System Configuration menu will enable the user to reboot the server. The dialog box in Figure 2-10 will appear when this option is selected. Enter the current password into the "Enter password to reboot the server:" field and press **OK**. The server will reboot.

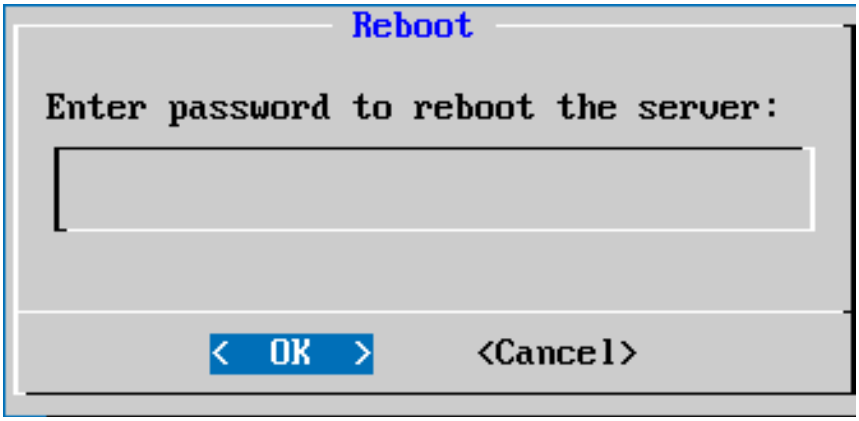


Figure 2-10: Enter Password to Reboot Server

2.2.1.8. Shutting Down the Server

Selecting the **Shutdown** option from the System Configuration menu will enable the user to shutdown the server. The dialog box in Figure 2-11 will appear when this option is selected. The user will be prompted to enter the current password into the "Enter password to shutdown the server" field. Once the password is entered, press the **OK** button.

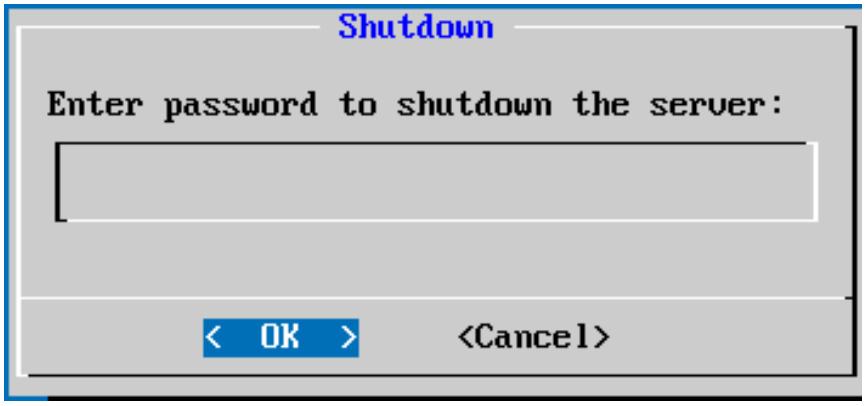


Figure 2-11: Enter Password to Shutdown Server

2.2.2. Networking Configuration

The **Networking Configuration** menu will enable the user to set the network information (IP, Netmask, Gateway, and Broadcast) for multiple network adapters.

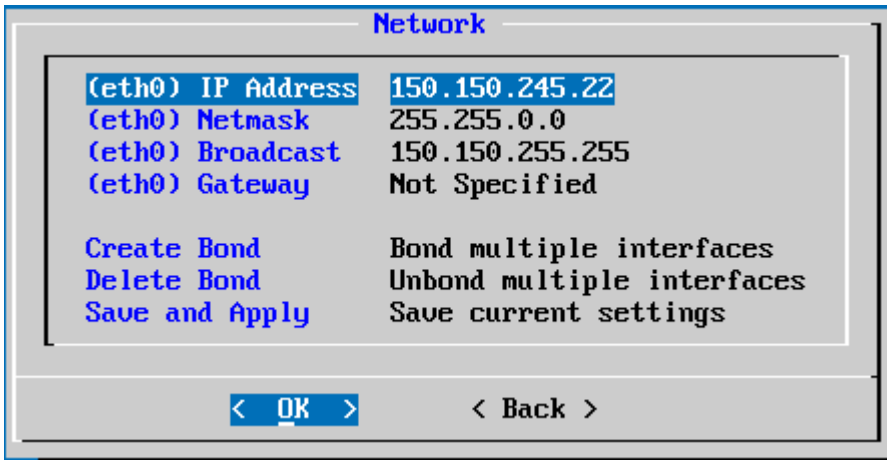


Figure 2-12: Network Configuration Menu

2.2.2.1. Assigning an IP Address for eth0

To assign an IP Address, select the **(eth0) IP Address** option from the Networking Configuration menu. The dialog box in Figure 2-13 will appear when this option is selected. The user will be prompted to enter the desired IP address into the "IP address for eth0" field and then select the **OK** button.

Please note that DHCP is NOT recommended at any time. Repeat these steps for each network adapter that requires configuration.

Please note that the settings must be saved using the *Save and Apply* option from the Networking Configuration menu.

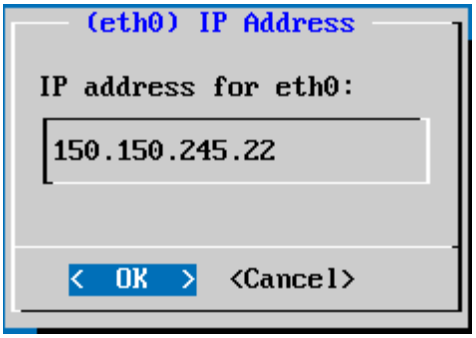


Figure 2-13: Enter IP Address for eth0

2.2.2.2. Assigning a Subnet Mask for eth0

To assign a subnet mask for eth0, select the **(eth0) Netmask** option from the Networking Configuration menu. The dialog box in Figure 2-14 will appear when this option is selected. The user will be prompted to enter the desired subnet mask into the "Netmask for eth0" field and then select the **OK** button.

Please note that the settings must be saved using the *Save and Apply* option from the Networking Configuration menu. Repeat these steps for each network adapter that requires configuration.

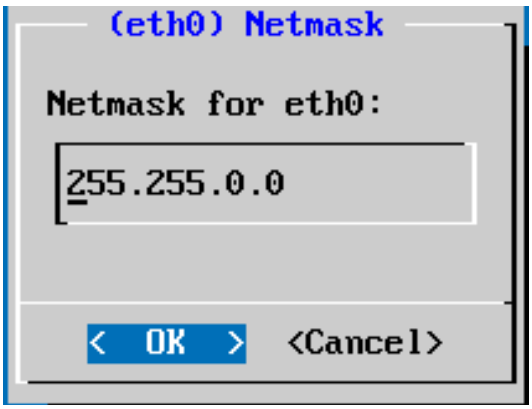


Figure 2-14: Enter Netmask for eth0

2.2.2.3. Assigning a Gateway Address for eth0

To assign a gateway for eth0, select the **(eth0) Gateway** option from the Networking Configuration menu. The dialog box in Figure 2-15 will appear when this option is selected. The user will be prompted to enter the desired gateway into the "Gateway address for eth0" field and then select the **OK** button.

Please note that the settings must be saved using the *Save and Apply* option from the Networking Configuration menu. Repeat these steps for each network adapter that requires configuration.

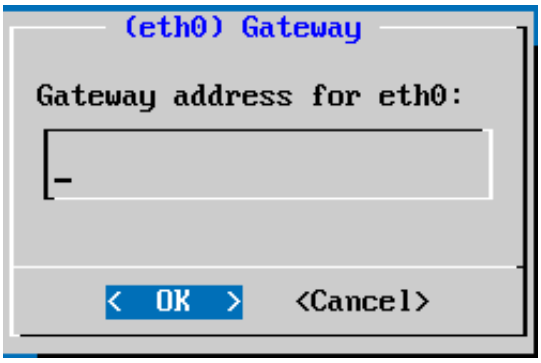


Figure 2-15: Enter Gateway Address for eth1

2.2.2.4. Assigning a Broadcast Address for eth0

To assign a broadcast address for eth0, select the **(eth0) Broadcast** option from the Networking Configuration menu. The dialog box in Figure 2-16 will appear when this option is selected. The user will be prompted to enter the desired subnet mask into the "Broadcast address for eth0" field and then select the **OK** button.

Please note that the settings must be saved using the *Save and Apply* option from the Networking Configuration menu. Repeat these steps for each network adapter that requires configuration.

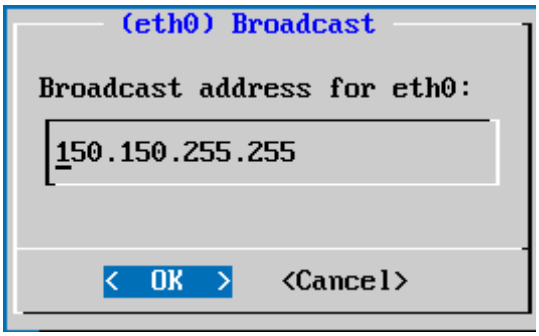


Figure 2-16: Enter Broadcast Address for eth0

2.2.3. Cluster Configuration

The **Cluster Configuration** menu will enable the user to define the cluster information for the MAGNUM system. These settings will need to match on each server within the cluster.

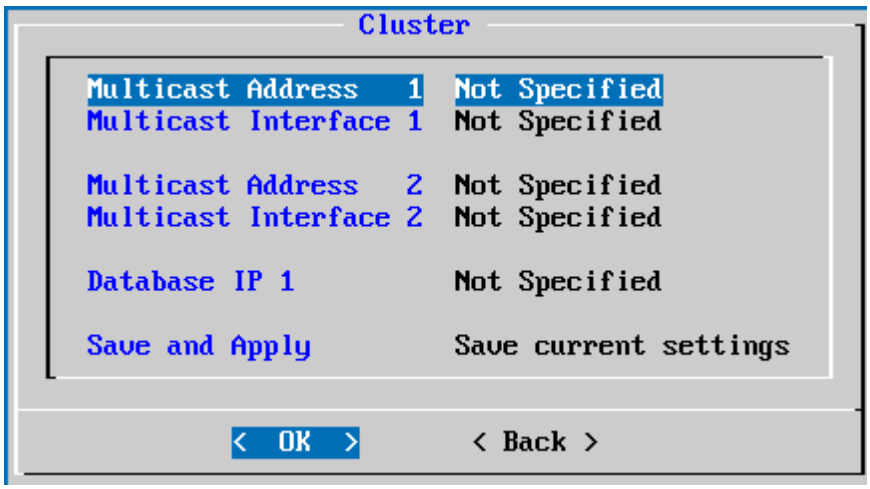


Figure 2-17: Cluster Configuration

2.2.4. (host x) IP Address

To assign the **Multicast Address 1** for the MAGNUM system select the option from the Cluster Configuration menu. The dialog box in Figure 2-18 will appear when this option is selected. The user will be prompted to enter the desired address into the "Multicast Address" field and then select the **OK** button.

Figure 2-18: Host IP Address

If you wish to assign an secondary multicast address to MAGNUM system, select the **Multicast Address 2** option and enter the desired "Multicast Address" field and then select the **OK** button.

2.2.5. Database IP Address

To assign the **Database Address** for the MAGNUM system select the option from the Cluster Configuration menu. The dialog box in Figure 2-19 will appear when this option is selected. The user will be prompted to enter the desired address into the "IP Address" field and then select the **OK** button.

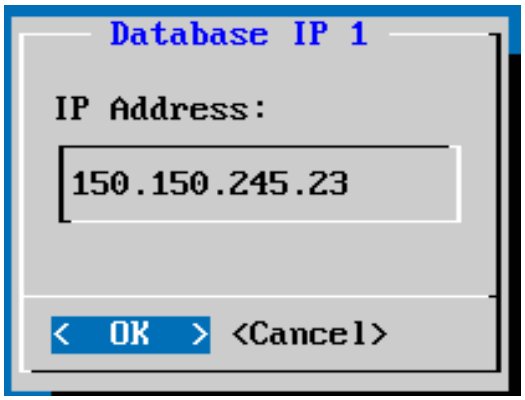


Figure 2-19: Database IP Address

3. OPERATING THE MAGNUM SERVER

3.1. REQUIREMENTS FOR ACCESSING THE MAGNUM SYSTEM

1. Ensure the MAGNUM Server is installed and operational, and the IP Addresses are set correctly.

2. Ensure the computer is attached to the same network as the MAGNUM Server.
   a. Since web interface uses standard HTML, XHTML, CSS, etc any web browser on any platform that complies with these formats can be used.

Currently the most adopted browsers that are completely compliant are Google Chrome and Safari. We recommend that you use one of these browsers for the best performance.

3. It is not required, but an asset to have a solid general understanding of routing systems. Knowing how your system is wired in terms of inputs, outputs, tielines to terminal equipment and other routers and names for resources makes moving through the process of configuring your router control system far easier.

3.2. GETTING STARTED: SETTING UP YOUR MAGNUM CONTROL SYSTEM

1. Launch the Google Chrome web browser and enter the numeric address chosen as the system IP address (also called the virtual or Database IP address which was entered into the Cluster configuration page during initial setup) into the address bar (for example: 192.168.1.4/) and then press the <enter> key; you should see the login page for VUE-WEB.

2. The management and configuration of the various MAGNUM modules is unified through a single, tailorable web interface, called VUE-WEB. VUE-WEB's tailored interface provides user specific dashboards which expose only the required applications and widgets required by that user, whether they are configuration, operational, monitoring or design elements.

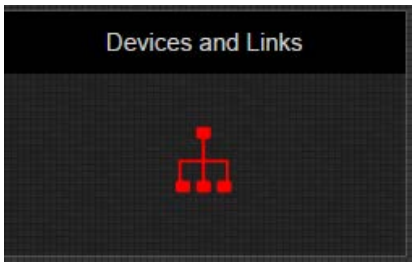
3. Click the **Login** button and enter the username and password. The default administrator username and password is:

   USERNAME: admin
   PASSWORD: admin

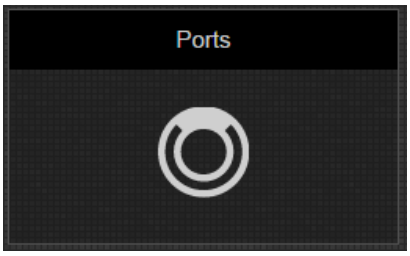
4. Once the username and password is filled in, click the **Login** button. A Home screen / Dashboard will appear as shown in Figure 3-1.

Figure 3-1: Home Page

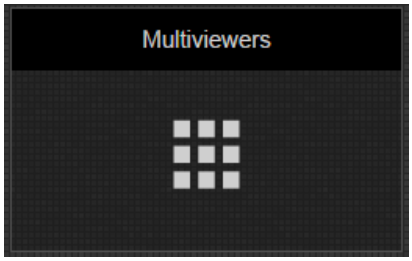
The VUE Search bar or Go Bar allows the user to search for items available in VUE and jump directly to that location when selected.



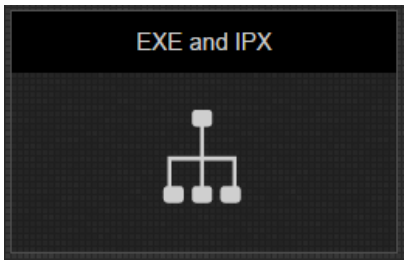
This opens the **Devices and Links** application directly from the dashboard. The **Devices and Links** app provides the user the ability to create and manage devices that MAGNUM will interface to and control. It also provides the user the ability to define how devices are connected together within system. The **Devices and Links** app also provides the user with a topology view which provides a visual representation of the devices and connections in relation to each other in the system. A third component of the Device and Links application is the real-time update of the connection state of the various devices under MAGNUM control



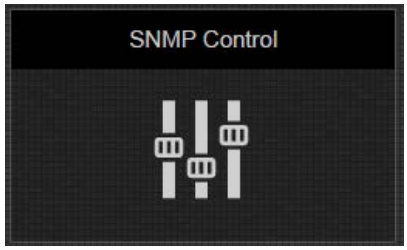
This opens the **Ports** application directly from the dashboard. The **Ports** app provides the user with the ability to name the source and destination ports within the system. It additionally provides engineering level routing through the system.



This opens the **Mutliviewers** application directly from the dashboard. The **Multiviewers** app manages the multiviewer displays. This application allows for configuration and management of the VIP10G mutliviewers connected to MAGNUM. Using this app, users are able to design, save and recall layouts.



This opens the **EXE and IPX** application directly from the dashboard. The **EXE and IPX** app is a low level information tool which presents to the user the configured active inputs and outputs of the Evertz switch fabric devices. It allows the user to see the sources, ports and destinations associated with each input and output on the EXE and IPX devices that MAGNUM is controlling.



This opens the **SNMP Control** application directly from the dashboard. The **SNMP Control** app provides the user with the ability to create configurations or status views for the hardware that MAGNUM is interfacing to.

This opens the **User Management** application directly from the dashboard. The **User Management** app provides the ability to add new users, delete users and change user settings.
Each user provides his own dashboard upon login.

This tool allows the user to enter edit mode on VUE. While in edit mode the user is able to add desired applications to the dashboard. They are also able to reorganize the dashboard to meet their desired layout and fit their needs.

3.3. APPLICATIONS SELECTOR MENU

The user can access the Applications Selector menu by clicking on the button. A panel will appear at the bottom of the page as illustrated in Figure 3-2.

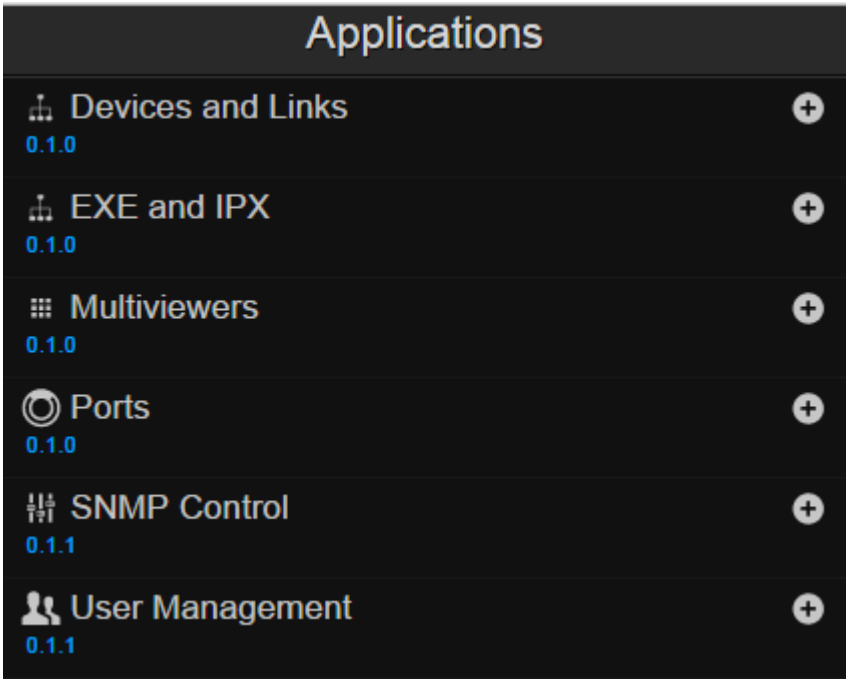


Figure 3-2: Applications Selector Menu

This menu enables the user to select the following widgets to add to the VUE dashboard: Devices and Links, EXE and IPX, Multiviewers, Ports and SNMP Control. To close the Applications Selector menu, click anywhere outside of the App menu.

4. CONFIGURING THE SYSTEM

4.1. DEFINING THE DEVICES

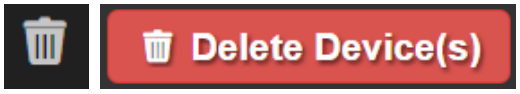
The **Devices and Links Application**, Devices Tab enables the user to view, add, delete and modify devices managed by MAGNUM. The created devices will be listed in the *Name* column alongside the corresponding IP Address in the *IP Address* column. The *Connection* column will identify whether the device connected or disconnected within the MAGNUM system.

To access the Devices screen:

1. Click on the **DEVICES AND LINKS** Application

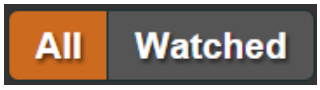
2. The **Devices** screen, as shown in Figure 4-1, enables the user to add, view and edit the properties of the devices.

Figure 4-1: Devices Page



This button allows the user to delete selected device(s).

This button allows the user to add a new device.



This button allows the user to filter the devices list to All or only those being watched.

These buttons allows the user to set the filter on a device as *watched* or not.

This button opens an additional options for the device such as the General Settings for a device and the web page if applicable.

3. To add a new device, click on the **Add Device** button and an **Add Device** dialog box will appear, as shown in Figure 4-2.

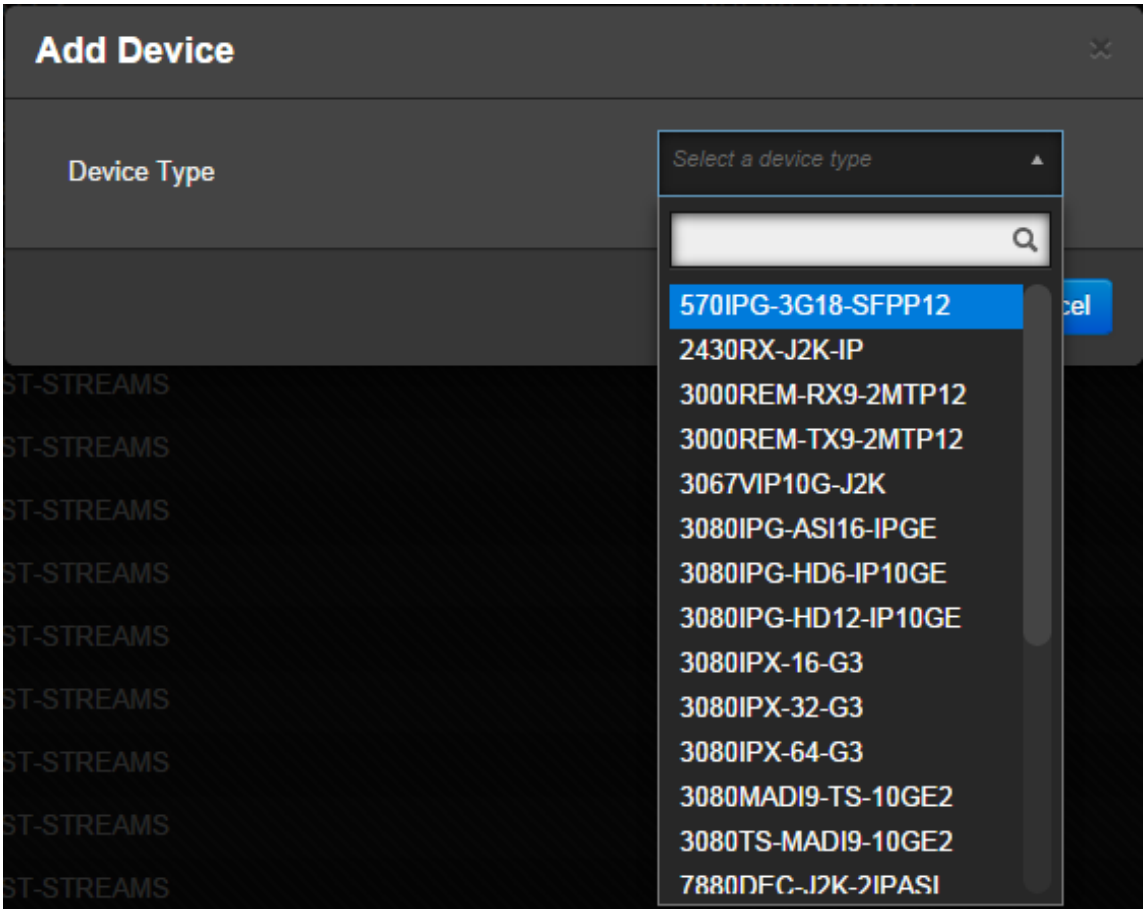


Figure 4-2: Add Device

4. To add a new device, select the device from the drop down menu this will cause additional information to appear as shown in Figure 4-3. Enter a unique name and IP address of the device into the fields provided. Once the information is entered, select the **ADD** button to add the device to the Device List. If you have finished adding devices, click the **CANCEL** button to exit and return to the main device page.

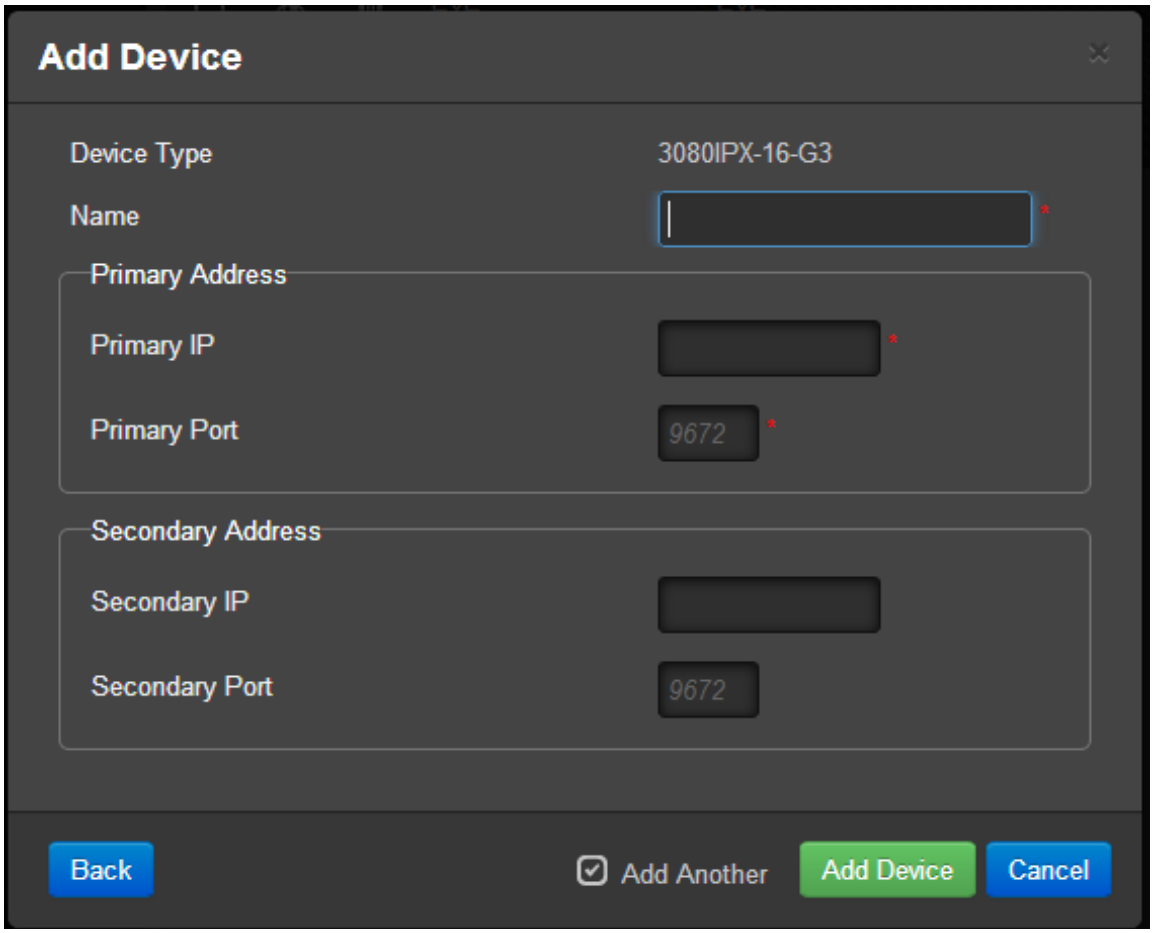


Figure 4-3: Add Device

Device Type: This field displays the device type that MAGNUM will be controlling

Name: This field allows the user to enter a specific name for the associated device.

Primary IP: This field allows the user to enter the primary IP address of the device.

Primary Port: This field allows the user enter the primary Port address of the device. Default is automatically filled in.

Secondary IP: This field allows the user to enter the secondary IP address of the device

Secondary Port: This field allows the user enter the Secondary Port address of the device. Default is automatically filled in.

Add Another: When this field is checked, the device will be added and the user will be automatically prompted to add a new device and repeat the process.

Back: This control allows the user to return to the previous window.

Cancel: This control allows the user to cancel the Add Device process without saving the current changes or device.

5. To remove a device, place a check mark in the box beside the device or devices that you wish to remove. Once the desired devices are selected press the **Delete** button.

6. To make changes to the devices settings, click the ••• at the end of the row and a smaller window with additional options becomes available. These options will open additional windows that link to additional selections related to the device.

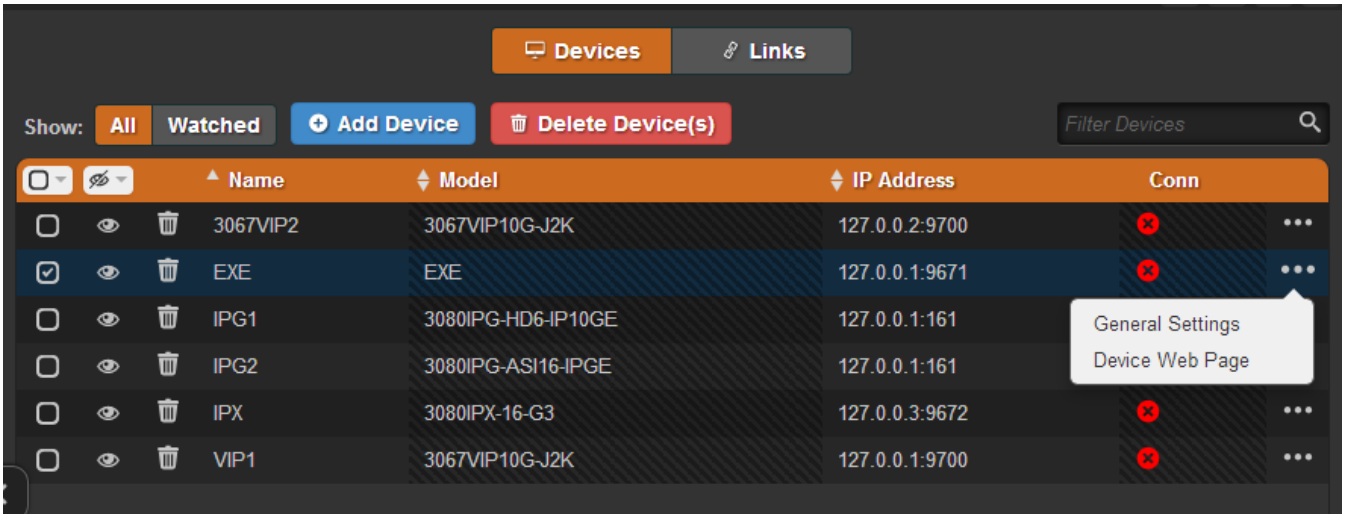


Figure 4-4: Additional Device Options

4.2. DEFINING THE LINKS

The **Links** tab enables the user to view, add, delete or modify device links. The link will be listed in the *Name* column alongside the corresponding *Start Port* of the link followed by the *End Port* column.

To access the Link screen:

1. Click on the **DEVICES AND LINKS** Application. Select the LINKs Tab

2. The **LINK** screen, as shown in Figure 4-5, enables the user to add, delete, modify or view the properties of the links connecting devices.

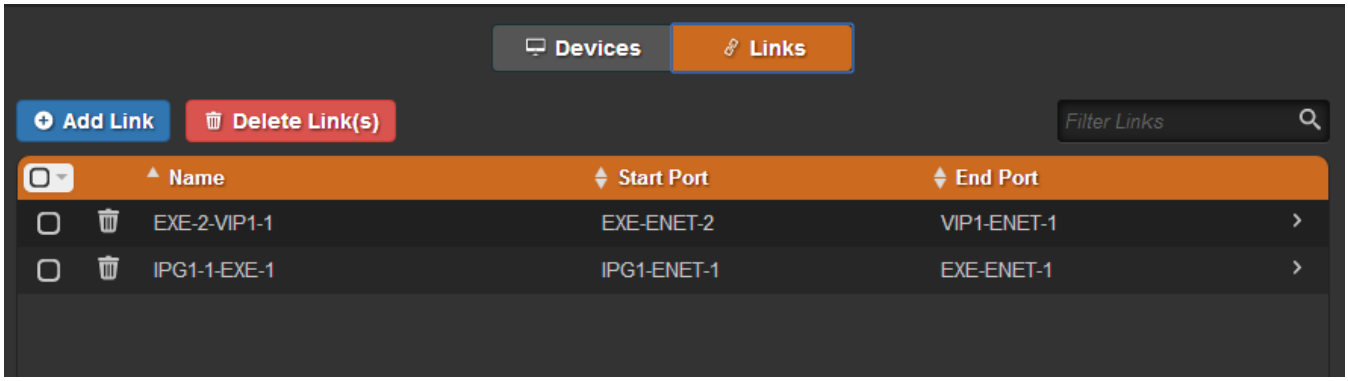
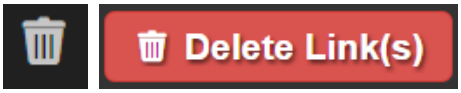
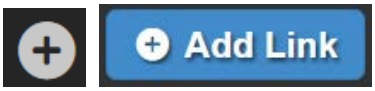


Figure 4-5: Links Page



This button allows the user to delete the selected link.



This button allows the user to create a new link between devices.

3. To add a new link, click on the **Add Link** button and an **Add Link** dialog box will appear, as shown in Figure 4-6.

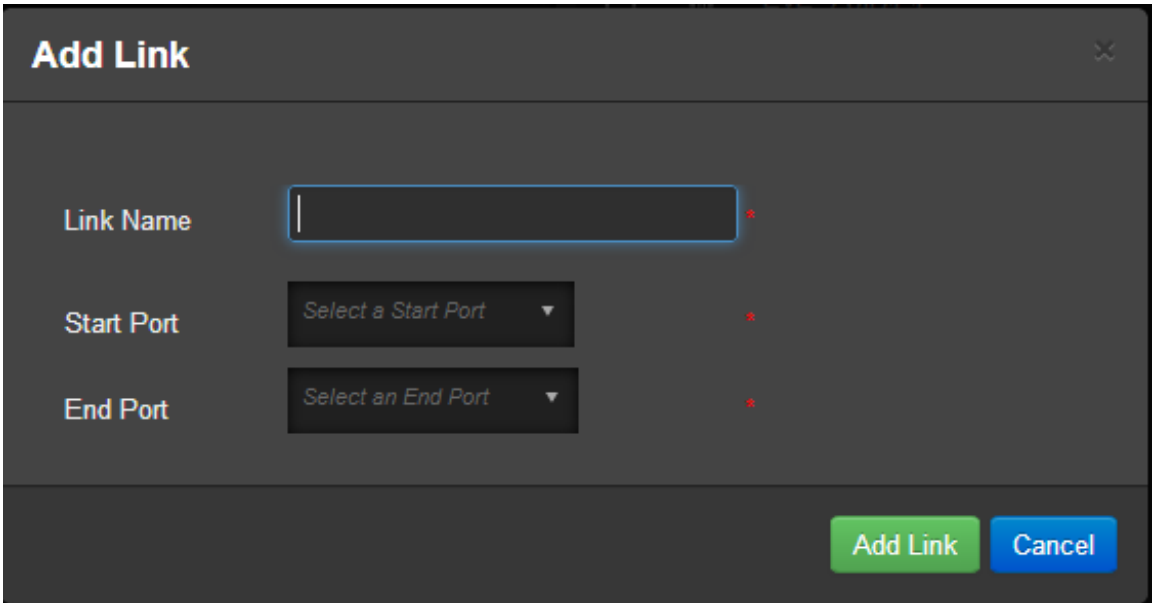


Figure 4-6: Add Link

Link Name: This field allows the user to specify a user-friendly Link Name.

Start Port: This field allows the user to specify the start port of the link.

End Port: This field allows the user to specify the end port of the link.

4. To add a new link, enter a unique name and define the start and end ports from the drop down menus. Once the information is entered, select the **ADD** button to add the link to the Link List. If you have finished adding links, click the **Cancel** button to exit and return to the main links page.

5. The user can apply changes to the system using the controls on the links screen.

6. To remove a link, place a check mark in the box beside the link or links that you wish to remove. Once the desired links are selected press the **Delete** button.

4.3. ENCAPSULATION

At the bottom left hand corner of the **Devices and LINKS** window the user will find this icon  , selecting this icon provide the user the ability to assign Encapsulation IP Addresses to devices ports

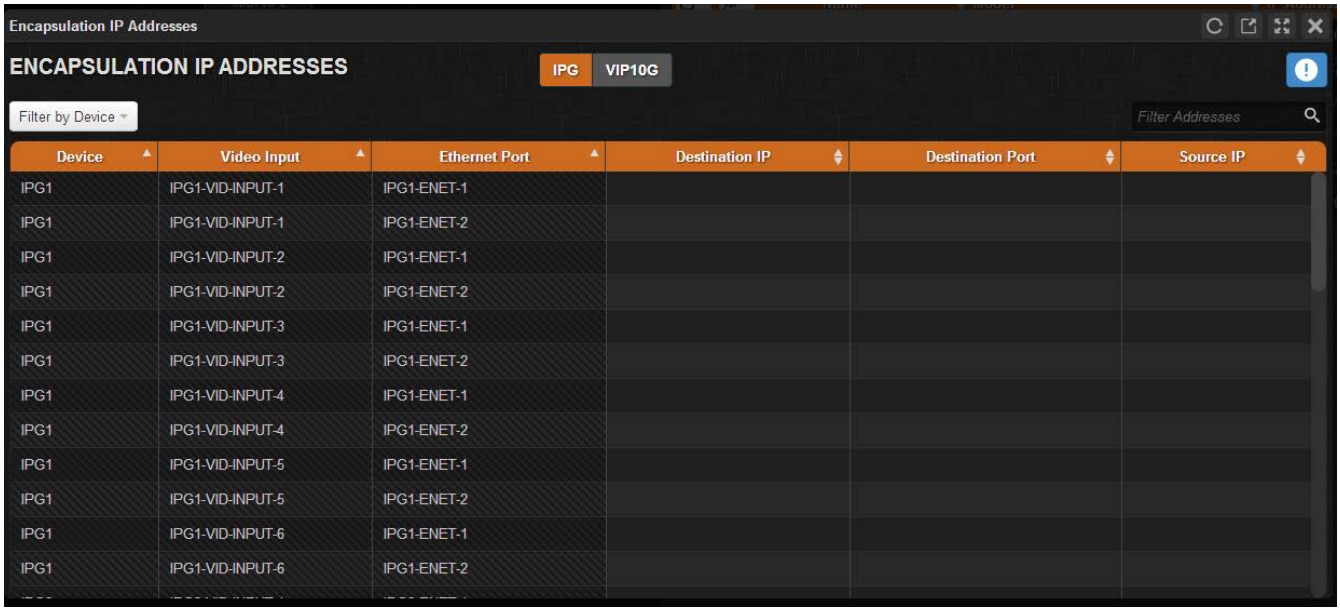


Figure 4-7: Encapsulation IP Addresses

This button allows the user to view all the Encapsulation IP Addresses associated with a specific device type, such as IPG, VIP, REM, etc.

This drop down menu allows the user to filter the list of encapsulation IP addresses by device name.

This column lists each device which has an Encapsulation IP Address in alpha-numeric order.

This column lists each video input port for the devices, it can be used to sort the list alpha-numerically by Video Input.

This column lists each Ethernet port for the devices, it can be used to sort the list alpha-numerically by Ethernet port.

This column lists each Destination IP address for each port on the devices, it can be used to sort the list numerically by Destination IP.

This column lists each Destination port number for each of the devices, it can be used to sort the list numerically by Destination port number.

This column lists each Source IP address for each port on the devices, it can be used to sort the list numerically by Source IP.

This field allows the user to search device(s) by the encapsulation IP address.

4.4. PORTS

The **Ports** app allows for the naming of ports as well as aliasing through namesets. This app also allows for Engineering level routing through the system.

In the **Sources** tab the user can see the available ports on each device as well as the type of port. Additionally, Name Sets can be created to re-alis the associated port.

Figure 4-8: Ports Sources

In the **Destinations** tab the user can see the available ports on each device as well as the type of port. Additionally, Name Sets can be created to re-alis the associated port.

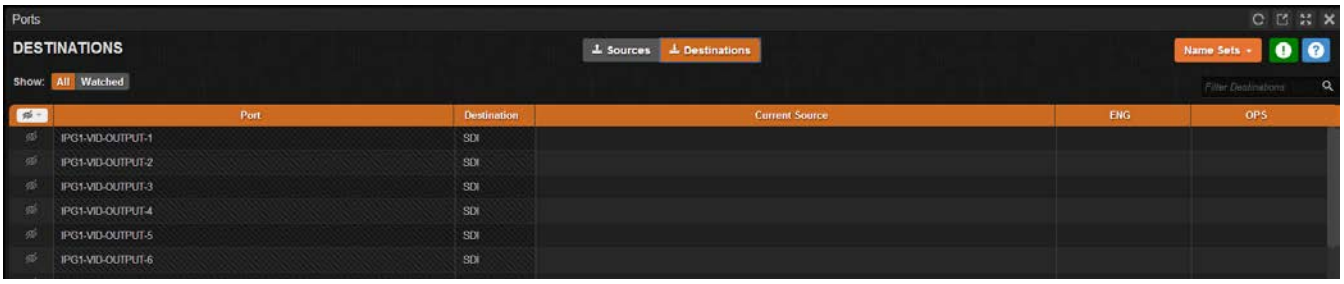


Figure 4-9: Ports Destinations

Under the **Name Sets** drop down menu the user can filter the created Name Sets so that they only see the information that is relevant for their use.

5. ADDITIONAL APPS

5.1. GENERAL

There are multiple icons located on all application windows that the user will need to know to maximize their experience. These icons and their functions are listed here:

This icon allows the user to refresh the current window.

This icon allows the user to open the current window in a new tab.

This icon allows the user to expand/minimize the current window.

This icon allows the user to close the current window.

This icon opens a notification window to inform the user of any changes.

This icon opens a drop down menu where the user can either select **Help** or **About**, where **about** will give information about software version.

5.2. EXE AND IPX

The **EXE and IPX** app is a low level tool which presents to the user the configured active inputs and outputs of the Evertz switch fabric devices.

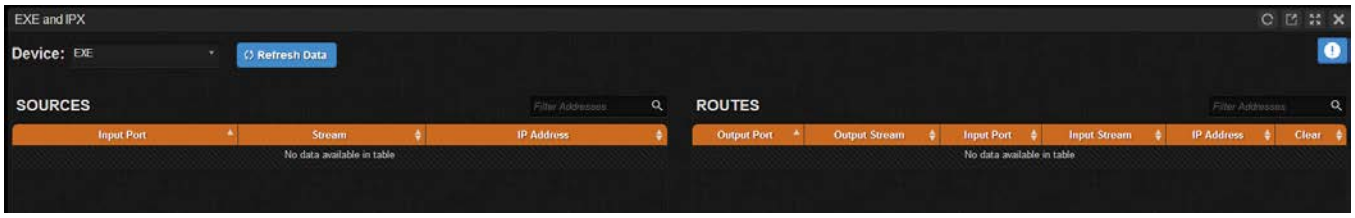
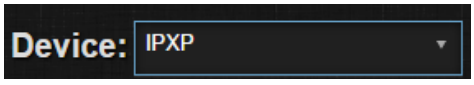


Figure 5-1: Additional Apps - EQX and IPX

To search for a device, use the filter toolbar to select a device from the list of devices. As a user types or select an item, the list of devices will be narrowed down to display only the properties that match the data being entered.

This button allows the user to refresh the data that is presented in the Application.



This field allows the user to select a specific device.

This field allows the user to filter displayed data in the table by multicast address.

5.3. MULTIVIEWERS

The **Multiviewers** app manages the multiviewer displays. This application allows for configuration and layout design of the VIP10G mutliviewers controlled by MAGNUM. Using this application, users can set the multiviewer properties such as resolution, refresh rate and orientation, as well as design, save and recall layouts.

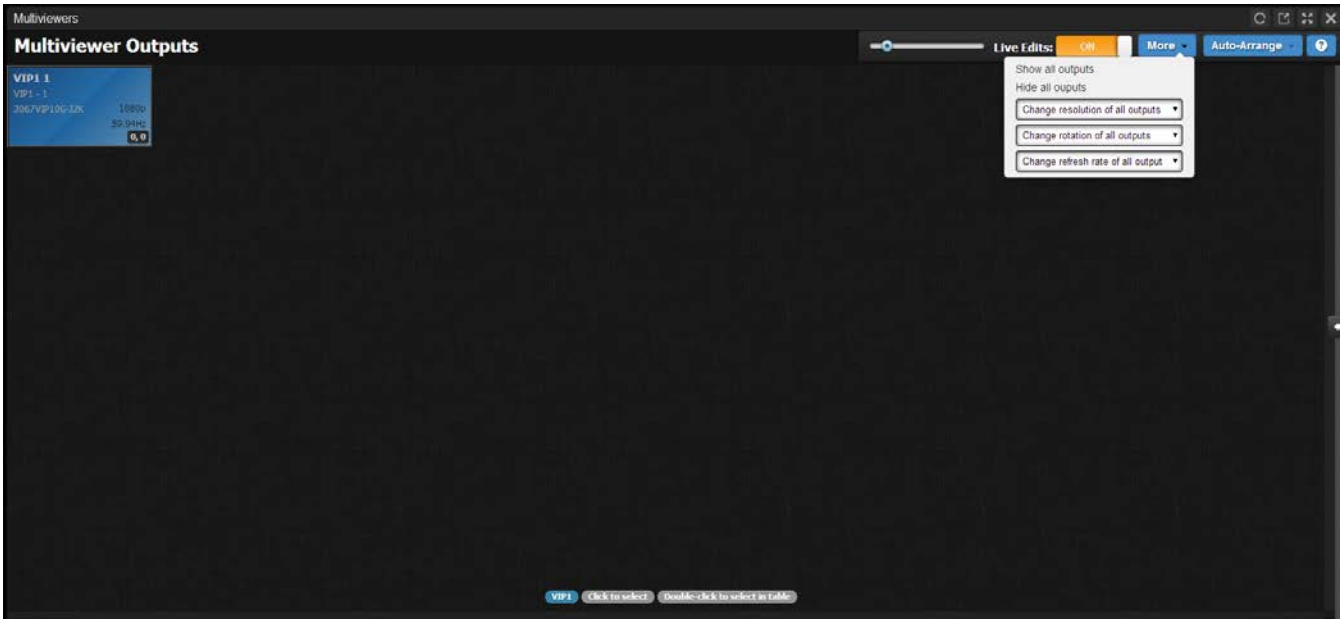
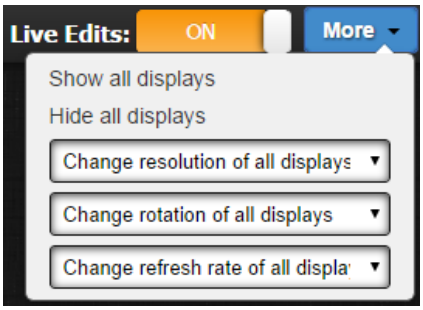


Figure 5-2: Additional Apps - Multiviewer Outputs

This allows the user to zoom in or out of the mutliviewer application.

This allows the user to enable or disable changes on the mutliviewer configuration.

This allows the user to auto-arrange the Multivewer displays in rows.



This allows the user to change the resolution, rotation and refresh rate of the displays when Live Edits is **ON**.

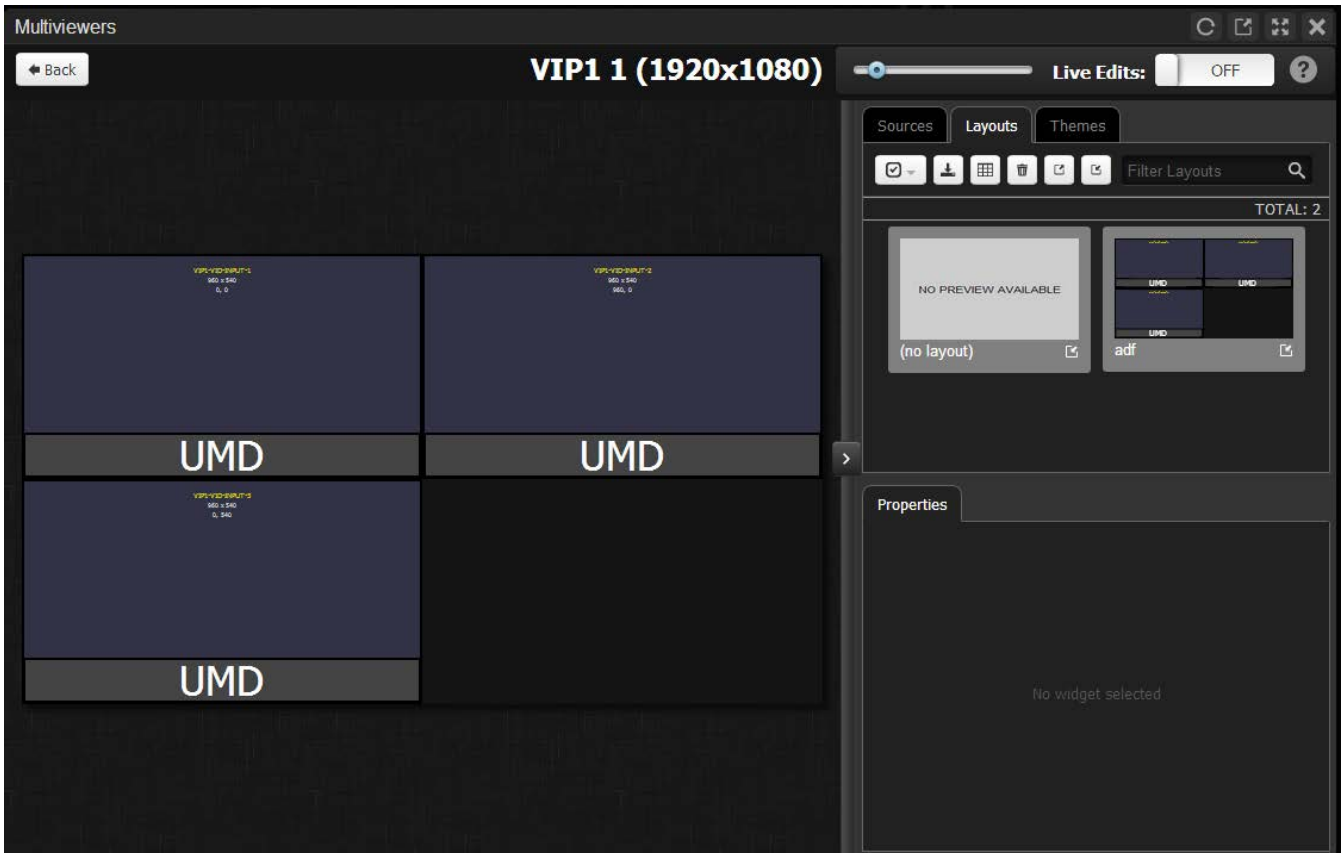


Figure 5-3: Additional Apps - Multiviewer Outputs

When a multiviewer display is selected, the user will be able to see the current layout on the selected multiviewer display and or begin editing/creating a new layout. To edit / create the multiviewer layout the Select Live Edits to be On, when set to ON this will expose a tool bar across the bottom of the Multiviewers window. This tool bar allows the user to add design elements / widgets to the multiviewer display.

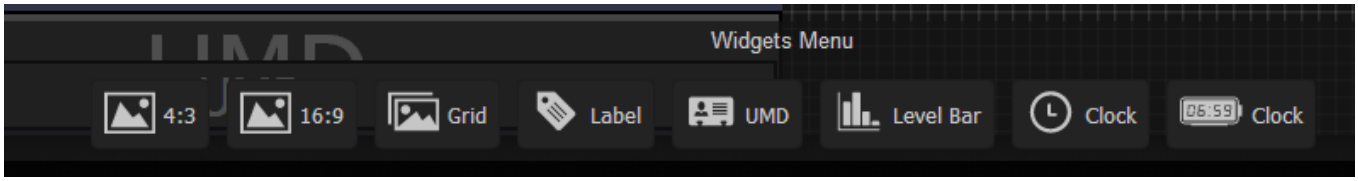
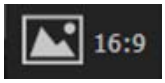
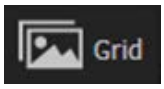


Figure 5-4: Additional Apps - Widgets Menu

Add 4:3 Video Window widget to the multiviewer canvas.



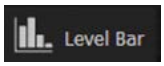
Add 16:9 Video Window widget to the multiviewer canvas.



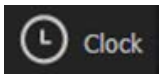
Create multiple Video Window widgets in a grid alignment on the multiviewer canvas.

This allows the user to add a label to a Video Window widget on the multiviewer canvas.

This allows the user to add a UMD widget to the canvas.



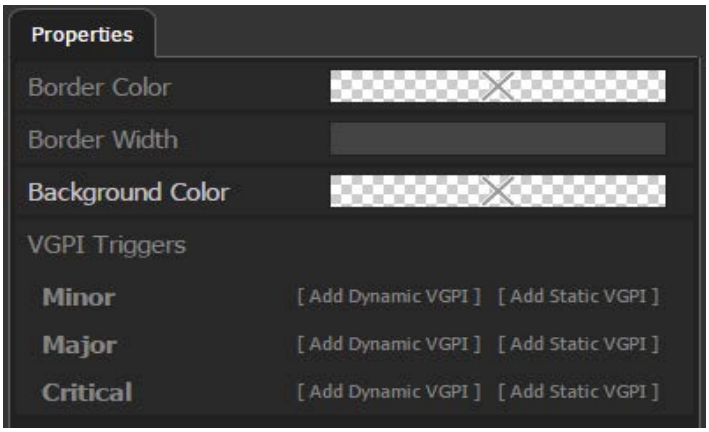
Create and assign a level bar to an existing Video Window widget.



Add a clock widget to the multiviewer canvas.

Add a digital clock to the multiviewer canvas.

Selecting the desired widget, with Live Edits On, will allow access to the *Properties* tab. In this tab are controls to allow the user to set various properties of the widgets such as Border and Background Color, Border Width as well as VGPI Triggers. Each widget will have its own set of properties.

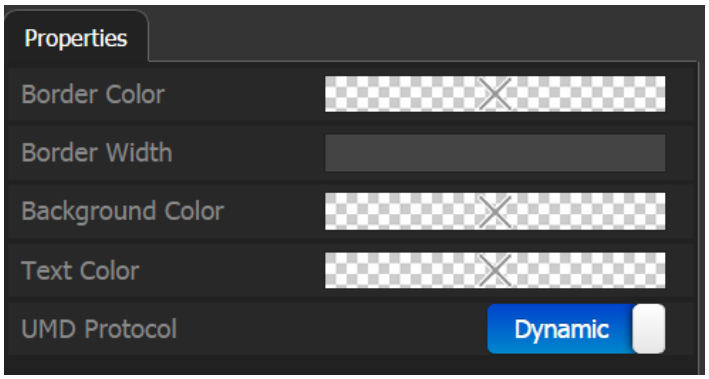


This *Properties* tab is associated with both the 4:3 window and the 16:9 window. Allowing the user to set the following parameters for the Video widget that has been selected:

Border Color
Border Width
Background Color
VGPI Triggers

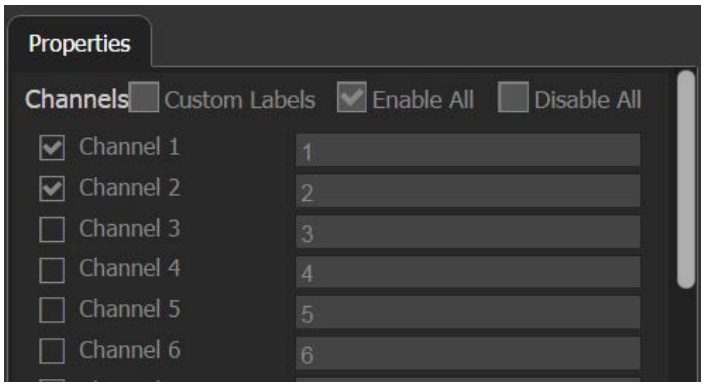
This *Properties* tab is associated with the Label, allowing the user set the following parameters for the Label widget that has been selected:

Border Color
Border Width
Background Color
Text Color
Label Text

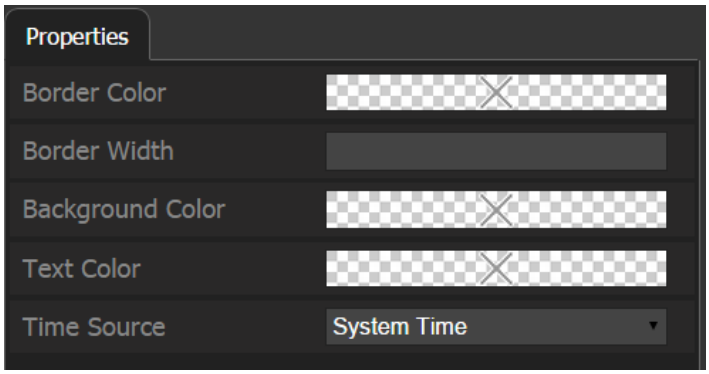


This *Properties* tab is associated with the UMD widget. It allows the user to set the following parameters for the UMD widget that has been selected:

Border Color
Border Width
Background Color
Text Color
UMD Protocol Mode

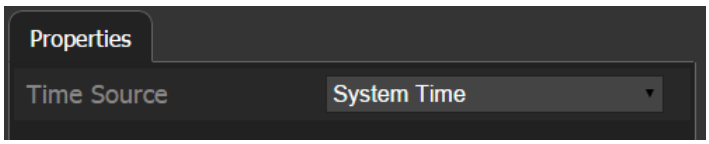


This *Properties* tab is associated with the Level Bar widget. It allows the user configure the number of audio channels the selected Level Bar widget will display and the mapping of those channels.



This *Properties* tab is associated with the Digital Clock. It allows the user to set the parameters for the Digital Clock widget selected:

Border Color
Border Width
Background Color
Text Color
Time Source



This *Properties* tab is associated with the Analog Clock. It allows the user to set the parameters for the Analog Clock widget selected.

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The *Sources* tab displays each of the available Video Sources. These can be added to each widget to be displayed. The *Filter Sources* field allows the user to search for the desired source.

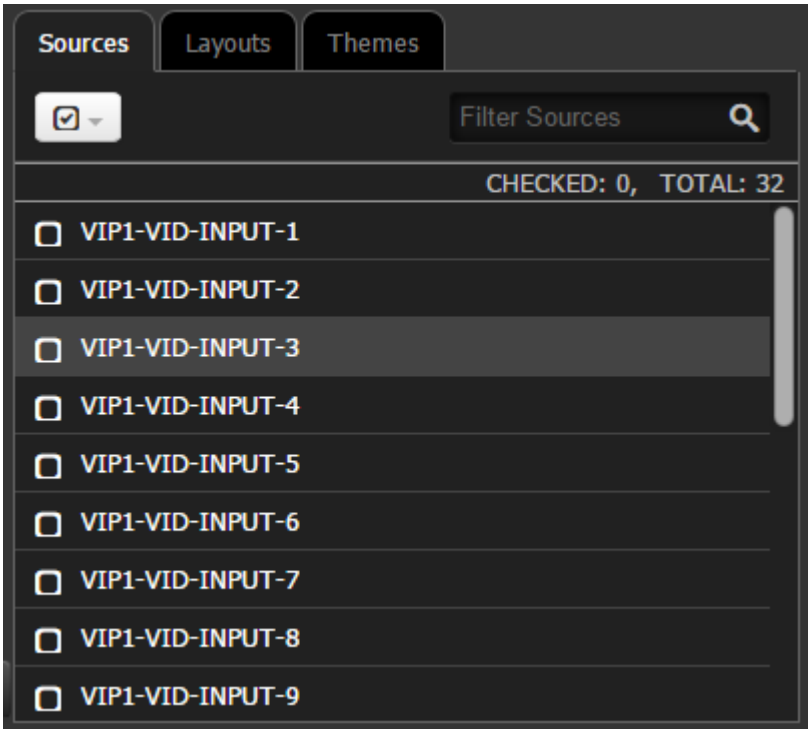


Figure 5-5: Additional Apps – Sources Tab

The *Layouts* tab displays the available layouts to be previewed for each Multiviewer. The user can drag and drop the desired layout to the canvas to view it. The *Filter Layouts* field allows the user to search for the desired layout to add or view.

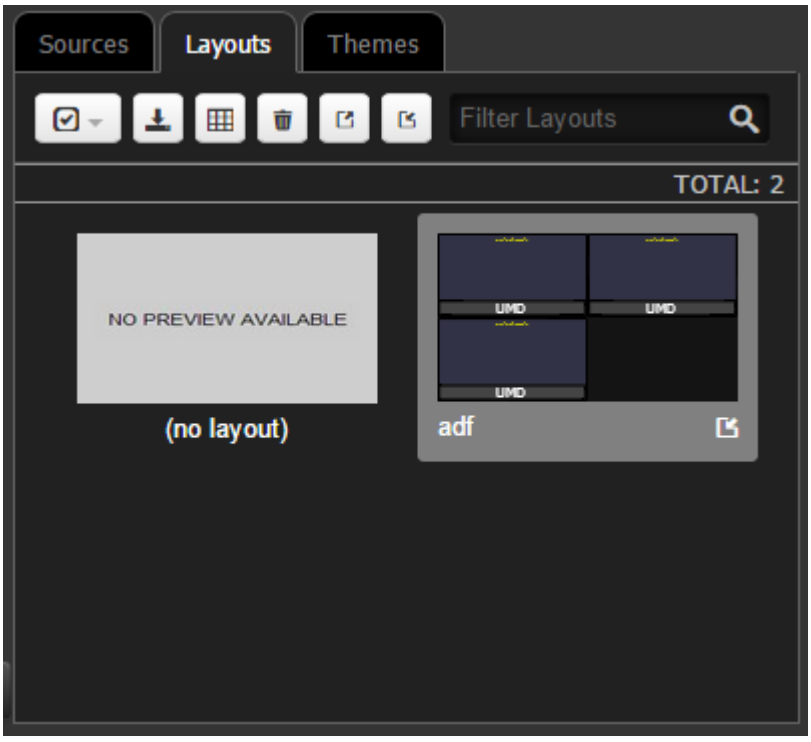
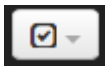


Figure 5-6: Additional Apps – Layouts Tab



This tool allows the user select all of the layouts or none of the layouts from a drop down menu.

This button allows the user to save the canvas layout they have created.

This button allows the user to toggle between the thumbnail mode and the list mode on the canvas.

This button allows the user to delete the select layout(s).

This button allows the user to export the selected layout(s).

This button allows the user to import the selected layout(s) from their saved location.

The *Themes* tab allows the user to select the desired theme to load to the widget. The user can drag and drop the theme from the tab to the desired widget to be added. The *Filter Themes* field allows the user to search for the desired theme to add or view.

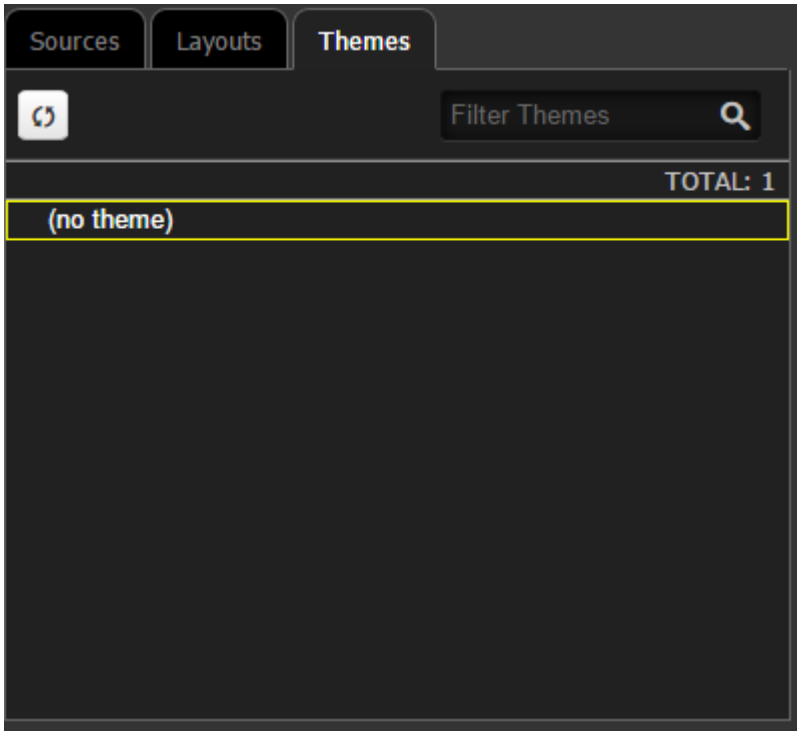


Figure 5-7: Additional Apps – Themes Tab

This button allows the user to refresh the Themes and load any newly added ones.

5.4. SNMP CONTROL

The **SNMP Control** app allows the user the ability to set the configuration and monitoring functions of SNMP enabled devices.

Figure 5-8: Additional Apps - SNMP Control

The following icons are specific to the SNMP Control window and will allow the user to maximize their use of SNMP Control Application for their system.

This icon allows the user to enter edit mode for the SNMP Control window.

This icon allows the user to set the polling interval for the SNMP Controls.

This icon allows the user to open a list of all the available SNMP Controls.

This icon allows the user to open the panel. This panel displays all of the devices which are SNMP enabled and by selecting any one of these the user can add parameters to be monitored in the SNMP Control window.

These icons allow the user to either import or export a desired layout.

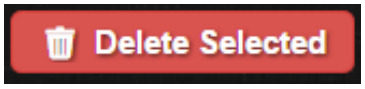
These icons allow the user to either import or export a snapshot of the saved values on the dashboard.

5.5. USER MANAGEMENT

The **User Management** app allows the user with the ability to add new users, delete users and change user settings.

Figure 5-9: Additional Apps - User Management

This button allows the user to add a new user to MAGNUM.



This button allows the user to delete selected user account from MAGNUM.

This button allows the user to change the password assigned to the selected account.

This allows the user to search for and filter the Users list.

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