MAGNUM
USER MANUAL

© Copyright 2012

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 1.2.2, September 2012

The material contained in this manual consists of information that is the property of Evertz Microsystems and is intended solely for the use of purchasers of the MAGNUM Server. Evertz Microsystems expressly prohibits the use of this manual for any purpose other than the operation of the Servers.

All rights reserved. No part of this publication may be reproduced without the express written permission of Evertz Microsystems Ltd. Copies of this guide can be ordered from your Evertz products dealer or from Evertz Microsystems

This page left intentionally blank

TABLE OF CONTENTS

1. OVERVIEW 1

1.1. MAGNUM SERVER SPECIFICATIONS 1

2. INSTALLING DEBIAN ETCH OS 2

3. INSTALLING THE MAGNUM SERVER 3

4. MAGNUM SERVER CONFIGURATION SHELL 4

4.1. SYSTEM CONFIGURATION 5

4.1.1. Setting the Host Name 5
4.1.2. Setting the Server Date 6
4.1.3. Setting the Server Time 6
4.1.4. Setting the Server Time Zone 7
4.1.5. Setting the IP Address of the NTP Server 7
4.1.6. Changing the Server Password 7
4.1.7. Syncing Time with NTP Server 8
4.1.8. Upgrading the Server 8
4.1.9. Restoring the Configuration 9
4.1.10. Backing Up Configuration 9
4.1.11. Rebooting the Server 10
4.1.12. Shutting Down the Server 10
4.1.13. Forcing a Failover 11

4.2. NETWORKING CONFIGURATION 11

4.2.1. Assigning an IP Address for eth1 11
4.2.2. Assigning a Subnet Mask for eth1 12
4.2.3. Assigning a Gateway Address for eth1 12
4.2.4. Assigning a Broadcast Address for eth1 13
4.2.5. Bonding Multiple Interfaces 13

4.3. CLUSTER CONFIGURATION 14

4.3.1. (host x) Host Name 15
4.3.2. (host x) IP Address 15
4.3.3. Preferred Host 16
4.3.4. Change Cluster IP Address 16
4.3.5. Monitored Interfaces 17
4.3.6. Interface Failure Timeout 18

4.4. SERVER DEBUGGING 19

4.4.1. Viewing the Cluster Status 19
4.4.2. Viewing the Ethernet Status 20
4.4.3. Observing Open Ports 20

4.5.1 TCPDUMP 21

4.4.4. Observing Network Traffic 22
4.4.5. Test if the Host is Reachable 22
4.4.6. Send Commands to Remote Machine 23
4.4.7. Watch a Log File 23

4.4.8. Export Logs 24
4.4.9. Export the Configuration 25
4.4.10. Viewing Server Process Details 25
4.4.11. Search for Running Processes 26
4.4.12. Control Server Process 27
4.4.13. Terminate Process 28
4.5. ABOUT THIS SERVER 29
4.6. LOGOUT 29
5. OPERATING THE MAGNUM SERVER 30
5.1. REQUIREMENTS FOR USING THE WEB CONFIG TOOL 30
5.2. GETTING STARTED: SETTING UP YOUR ROUTER SYSTEM 30
5.3. WIDGET SELECTOR MENU 31
5.3.1. Devices Widget 31
5.3.2. Satellites Widget 32
5.3.3. Panels Widget 32
5.3.4. Routes Widget 33
5.4. CONFIGURING THE SYSTEM 35
5.4.1. Defining the Servers 35
5.4.2. Defining the Routing Devices 38
5.4.3. Edit Device Layout 45
5.4.3.1. EQX Layout 45
5.4.3.2. Xenon Layout 50
5.4.3.3. EMR Layout 51
5.4.3.4. Adding Virtual Devices 60
5.4.4. Establishing Tielines 63
5.4.5. Global Source Availability 65
5.4.6. Defining Subscriptions 68
5.4.7. Setting Mirrored Destinations 69
5.4.8. Port Labels 71
5.4.9. Port Attributes 75
5.4.10. Port Properties 78
5.4.11. Virtual Ports 81
5.5. ASSIGNING NAMES 86
5.5.1. Sources Tab 86
5.5.2. Destinations Tab 90
5.5.3. Adding a Nameset 92
5.5.4. Categories Tab 93
5.6. CONFIGURING THE INTERFACES 94
5.6.1. Multi-Profile 94
5.6.1.1. Editing a Multi-Profile Interface 96
5.6.2. Single-Profile 102
5.6.2.1. Editing a Single Profile 103
5.6.2.2. Editing Multiple Interfaces Simultaneously 114
5.6.3. Symphony 117
5.6.4. Quartz 118
5.6.4.1. Level Map 119

5.6.5. Magnum Tab 120
5.6.5.1. Level Map 121
5.6.6. Profile Management 122
5.6.6.1. Editing a Single Profile 124
5.6.6.2. Simultaneously Editing Multiple Profiles 130

5.7. VIEWING REPORTS 132

5.7.1. Tieline Reports 133
5.7.2. Devices Report 134
5.7.3. Subscription Report 135
5.7.4. Panels Report 136

5.8. CONTROLS 136

5.8.1. Quick Routes 137
5.8.2. Advanced Routes 138
5.8.3. Salvos Builder 140
5.8.3.1. Building a Salvo 143
5.8.4. Multiviewer 146
5.8.4.1. Displays 146
5.8.4.2. Layouts 146

5.9. SERVER ADMINISTRATION 147

5.9.1. Creating User Accounts 147
5.9.2. Creating Group Accounts 149
5.9.3. Configuration Management 151
5.9.4. Setting the Preferences 153
5.9.5. License Management 154

5.10. HELP TAB 156

5.10.1. Viewing the Version Information 156
5.10.2. Retrieving Logs 157

Figures

Figure 4-1: Main Server Control Menu 4
Figure 4-2: System Configuration Menu 5
Figure 4-3: Change Host Name 5
Figure 4-4: Change Date 6
Figure 4-5: Change Time 6
Figure 4-6: Change Time Zone 7
Figure 4-7: Change NTP Server 7
Figure 4-8: Change Password 8
Figure 4-9: Enter New Password Dialog Box 8
Figure 4-10: Enter Password to Upgrade Server 8
Figure 4-11: Waiting for USB Device 9
Figure 4-12: Restore Configuration 9
Figure 4-13: Enter Password to Backup Configuration 9
Figure 4-14: Backing Up Configuration 10
Figure 4-15: Backup Configuration 10
Figure 4-16: Enter Password to Reboot Server 10
Figure 4-17: Enter Password to Shutdown Server 11
Figure 4-18: Network Configuration Menu 11
Figure 4-19: Enter New IP Address for eth1 12
Figure 4-20: Enter New Subnet Mask for eth1 12
Figure 4-21: Enter New Gateway Address for eth1 12
Figure 4-22: Enter New Broadcast Address for eth1 13
Figure 4-23: Creating a Bond 13
Figure 4-24: Bonded Network Ports 14
Figure 4-25: Cluster Configuration 14
Figure 4-26: Change Host Setting 15
Figure 4-27: Host IP Address 15
Figure 4-28: Select Preferred Host 16
Figure 4-29: Change Cluster IP Address 16
Figure 4-30: Monitored Interfaces 17
Figure 4-31: Select Interfaces to Monitor 17
Figure 4-32: Interface Failure Timeout 18
Figure 4-33: Specify Interface Failure Timeout 18
Figure 4-34: Server Debugging Main Screen 19
Figure 4-35: Cluster Status 19
Figure 4-36: Ethernet Interface Status 20
Figure 4-37: Observe Open Ports 20
Figure 4-38: TCPdump 21
Figure 4-39: Select Interface to Capture Traffic From 21
Figure 4-40: Observing Network Traffic 22
Figure 4-41: Ping Host Dialog Box 22
Figure 4-42: Telnet Dialog Box 23
Figure 4-43: Watch Logs Dialog Box 23
Figure 4-44: Viewing Logs Dialog Box 24
Figure 4-45: Enter Password to Export Logfiles 24
Figure 4-46: Enter Password to Export the Configuration 25
Figure 4-47: Enter Password to View Processes 25
Figure 4-48: Server Processes Page 26
Figure 4-49: Enter Password for Search Processes 26
Figure 4-50: Search Processes 27
Figure 4-51: Control Processes 27

Figure 4-52: Details of Process 28
Figure 4-53: Terminate Process 29
Figure 4-54: About… 29
Figure 5-1: Home Page 30
Figure 5-2: Widgets Selector Menu 31
Figure 5-3: Devices Widget 31
Figure 5-4: Satellites Widget 32
Figure 5-5: Panels Widget 33
Figure 5-6: Routes Widget 34
Figure 5-7: System Menu 35
Figure 5-8: Servers Page 35
Figure 5-9: Add Server 36
Figure 5-10: Upload Required Button 36
Figure 5-11: Changes Dialog Screen 37
Figure 5-12: Committing Changes Window 37
Figure 5-13: Device Page 38
Figure 5-14: Group By “Type” 39
Figure 5-15: Group By “Location” 40
Figure 5-16: Server: Devices Tab 41
Figure 5-17: Adding a Multiviewer Device 42
Figure 5-18: Device Filter 44
Figure 5-19: Edit Device Window – General Tab 44
Figure 5-20: Edit Device Window – Advanced Tab 45
Figure 5-21: EQX Layout – Slots Layout 46
Figure 5-22: Slots Filters 46
Figure 5-23: EQX – Source Order Tab 47
Figure 5-24: Source Order Filters 47
Figure 5-25: EQX – Destination Order Tab 48
Figure 5-26: Destination Filters 48
Figure 5-27: EQX – Tielines 49
Figure 5-28: Tielines Filters 49
Figure 5-29: XENON Layout 50
Figure 5-30: Tielines Tab 51
Figure 5-31: Add Device 52
Figure 5-32: EMR Layout 53
Figure 5-33: Add Existing Device 54
Figure 5-34: Slots Tab 55
Figure 5-35: Add Device 56
Figure 5-36: Select ADMX 57
Figure 5-37: Source Order Tab 58
Figure 5-38: Destination Order Tab 59
Figure 5-39: Tielines Tab 60
Figure 5-40: Virtual Device Management Tab 61
Figure 5-41: Destinations and Sources Added to Virtual Hardware 62
Figure 5-42: Change Name of Virtual Device 62
Figure 5-43: Server - Tielines Tab 63
Figure 5-44: Add Tieline Dialog Box 64
Figure 5-45: Tieline Filter 65
Figure 5-46: Global SRC Availability 66
Figure 5-47: Selecting Sources 66
Figure 5-48: Reverse Lookup Selection 67
Figure 5-49: Reverse Destination Availability Lookup Dialog Box 67

Figure 5-50: Subscriptions Page 68
Figure 5-51: Add Subscription Dialog Box 69
Figure 5-52: Mirror Destinations Window 69
Figure 5-53: Add Mirror Dialog Box 70
Figure 5-54: Mirror Group Filtering Toolbar 70
Figure 5-55: Add To Mirror Dialog Box 71
Figure 5-56: Destination Filtering Toolbar 71
Figure 5-57: Port Labels 72
Figure 5-58: Import/Export CSV Dialog Box 72
Figure 5-59: Opening Labels.csv Dialog Box 73
Figure 5-60: Add Label 73
Figure 5-61: Port Attributes Page 75
Figure 5-62: Import/Export CSV Dialog Box 76
Figure 5-63: Opening attributes.csv Dialog Box 76
Figure 5-64: Destination Filters 76
Figure 5-65: Port Attributes – Destinations 77
Figure 5-66: Port Properties 78
Figure 5-67: Spigot Properties Tab 79
Figure 5-68: Audio Setup Tab 79
Figure 5-69: Data Services Tab 80
Figure 5-70: Crop Setup Tab 80
Figure 5-71: Neilsen Monitoring Tab 80
Figure 5-72: I/O Settings 81
Figure 5-73: Virtual Sources 82
Figure 5-74: Import/Export CSV Dialog Box 83
Figure 5-75: Opening Virtual Ports.csv Dialog Box 83
Figure 5-76: Add Virtual Port 84
Figure 5-77: Add Level 84
Figure 5-78: Reverse Lookup 85
Figure 5-79: Names Sources Tab 86
Figure 5-80: Auto-Generate Names Dialog Box 87
Figure 5-81: Import/Export CSV for Name Sets 88
Figure 5-82: Name Sets Exported to CSV File 89
Figure 5-83: Names Destinations Tab 90
Figure 5-84: Auto-Generate Names - Destinations 91
Figure 5-85: Import/Export CSV for Name Sets 92
Figure 5-86: Add Name Set 92
Figure 5-87: Name Set Categories Tab 93
Figure 5-88: Add Category 93
Figure 5-89: Multi-Profile Tab 94
Figure 5-90: Add Multi-Profile Panel 95
Figure 5-91: Make Like Dialog Box 96
Figure 5-92: Interface Layout – Sources 98
Figure 5-93: Interface Layout – Destinations 98
Figure 5-94: Interface Layout - Search Labels 99
Figure 5-95: Interface Layout – Categories 100
Figure 5-96: Interface Layout - Settings 100
Figure 5-97: Single-Profile 102
Figure 5-98: Add Single-Profile Panel Dialog Box 103
Figure 5-99: Make Like Dialog Box 103
Figure 5-100: Single Profile Filter 103
Figure 5-101: Single Profile – Sources Tab 104

Figure 5-102: Right Click Menu for Interfaces 105
Figure 5-103: Re-order Availability – Drap & Drop Multiple Items 106
Figure 5-104: Key Settings 106
Figure 5-105: Panel Reset Selection 109
Figure 5-106: 'Panel Reset' Setting Window 110
Figure 5-107: Subpanel Defaults Window 110
Figure 5-108: Joystick Ports Window 111
Figure 5-109: Key Colors Window 112
Figure 5-110: Interface Layout Menu 113
Figure 5-111: Single Profile – Destination Tab 114
Figure 5-112: Multiple Panels Selected on a Single Profile 114
Figure 5-113: Multiple Panel Interface Layout 115
Figure 5-114: Availability – 'Uncommon' in Multi-Panel Selection 116
Figure 5-115: Panel List Dialog Box 116
Figure 5-116: Symphony Tab 117
Figure 5-117: Quartz Tab 118
Figure 5-118: Add Interface Dialog Box 119
Figure 5-119: Copy A Profile Dialog Box 119
Figure 5-120: Magnum Tab 120
Figure 5-121: Add Interface Dialog Box 121
Figure 5-122: Copy A Profile Dialog Box 121
Figure 5-123: Profile Management 122
Figure 5-124: Add Profile 123
Figure 5-125: Copy A Profile Dialog Box 123
Figure 5-126: Selecting a Profile to Edit 124
Figure 5-127: Edit Profile – Sources Tab 125
Figure 5-128: Edit Profile – Destinations Tab 126
Figure 5-129: Edit Profile – Search Labels Tab 127
Figure 5-130: Edit Profile - Categories Tab 128
Figure 5-131: Edit Profile - Settings 129
Figure 5-132: Selecting Multiple Profiles 131
Figure 5-133: Editing Multiple Profiles 132
Figure 5-134: Reports Drop Down Menu 132
Figure 5-135: Reports Tab 133
Figure 5-137: Subscription Reports Tab 135
Figure 5-138: Panels Reports Tab 136
Figure 5-139: Controls Menu 136
Figure 5-140: Selecting a Destination 137
Figure 5-141: Advanced Routes – Physical Tab 138
Figure 5-142: Route Tools Dialog Box 139
Figure 5-143: Advanced Routes Filter Toolbar 139
Figure 5-144: Advanced Routes – Virtual Tab 140
Figure 5-145: Salvos Builder 141
Figure 5-146: Salvo Menu and Folder 141
Figure 5-147: Salvo Filter Toolbar 143
Figure 5-148: Destination List Populated 143
Figure 5-149: Accessing the Src Alias Menu 143
Figure 5-150: Saving the Salvo 144
Figure 5-151: Enter New Salvo Name 144
Figure 5-152: Selected Salvo Contents 145
Figure 5-153: Add Destinations 145
Figure 5-154: Multiviewer Page 146

Figure 5-156: Add User Dialog Box 148
Figure 5-157: Group Options 148
Figure 5-158: Filter Toolbar 148
Figure 5-159: User Management Page – Group Tab 149
Figure 5-160: Add User Dialog Box 150
Figure 5-161: Read/Write Permissions Drop-down Menu 150
Figure 5-162: Filter Toolbar 150
Figure 5-163: Configuration Management 151
Figure 5-164: Filter Toolbar 152
Figure 5-165: Recall Snapshot Window 152
Figure 5-166: Opening config.zf Window 153
Figure 5-167: Preference Settings 153
Figure 5-168: License Management 155
Figure 5-169: Generating a Server ID 155
Figure 5-170: About Window 156
Figure 5-171: Retrieve Logs Window 157

Tables

Table 5-1: Multi-Profile Toolbar 95
Table 5-3: Button Description 109
Table 5-7: Magnum Toolbar 120
Table 5-8: Advanced Routes Toolbar Controls 139
Table 5-9: Salvo Menu Controls 141
Table 5-10: Salvo Toolbar Controls 142

REVISION HISTORY

REVISION	DESCRIPTION	DATE
1.0	First Release	August 2011
1.1	Updates throughout manual	Dec 2011
1.2	Updates made to “Salvos Builder” section	June 2012
1.2.1	Updated hardware specifications	August 2012
1.2.2	Updated MAGNUM Server specs in Overview section	Sept 2012

Information contained in this manual is believed to be accurate and reliable. However, Evertz assumes no responsibility for the use thereof nor for the rights of third parties, which may be affected in any way by the use thereof. Any representations in this document concerning performance of Evertz products are for informational use only and are not warranties of future performance, either expressed or implied. The only warranty offered by Evertz in relation to this product is the Evertz standard limited warranty, stated in the sales contract or order confirmation form.

Although every attempt has been made to accurately describe the features, installation and operation of this product in this manual, no warranty is granted nor liability assumed in relation to any errors or omissions unless specifically undertaken in the Evertz sales contract or order confirmation. Information contained in this manual is periodically updated and changes will be incorporated into subsequent editions. If you encounter an error, please notify Evertz Customer Service department. Evertz reserves the right, without notice or liability, to make changes in equipment design or specifications.

This page left intentionally blank

1. OVERVIEW

The MAGNUM Server has been designed to build on and continue to improve on the capabilities of EQX Server. The Servers provide enterprise level, highly available routing infrastructure, facilitating management a large campus, region or world wide routing infrastructure, and simplifies control for an operator or engineer with only local scope in mind while interfacing with the routing controller.

The MAGNUM server itself is a real-time service that can be run in a variety of operating system environments, but most favorably in the Debian build of the Linux OS. The MAGNUM Server is provided with MySQL, a very robust database built upon the foundation of SQL. The MAGNUM Server also includes an industry standard robust web server for hosting the Web Configuration tool.

Actual installation of the Linux OS is performed by Evertz personnel. Evertz personnel are available to assist in hardware recommendations or troubleshooting with the Linux OS. Linux is a very powerful OS, however it is typically very simple to bring online.

For more information go to: http://www.linuxhelp.net/ or http://groups.google.com/group/linux.debian.user/.

The actual process of installing the core MAGNUM server is simple. The files provided will be in type DEB or EFP, a package installer (a technique with various names such as RPM etc used by all Linux OS variations), on USB key or CD/DVD ROM. Simply insert the disk, follow the simple accompanying instructions and in a few minutes the MAGNUM sever will be running and ready to begin interfacing with the Router and the Web Config Tool. Details for deploying your own Debian build of Linux on an enterprise class device can be found on the Debian's website at http://www.debian.org/. Additional documentation on MySQL can be found at http://www.mysql.com/.

1.1. MAGNUM SERVER SPECIFICATIONS

- Quad-Core Intel® Xeon® processor X3220 (2.4GHz, 8MB L2 cache, 95 Watts, 1066MHz FSB) or similar performance
- Minimum 6GB Unbuffered Advanced ECC PC2-6400 DDR 2x2GB Memory or similar
- Integrated Serial ATA host controller
- RAID array controller
- RAID 5 drive set (Requires 4 matching drives)
- Each drive for the RAID array should be at least 100GB (or greater) SATA/SAS 7,200 rpm (or faster) Hard Drive
- Dual Port Gigabit NIC Adapter
- Serial port
- Optical Drive (Optional)
- An X86 (intel) platform, HP Server DL360 G5/G6/G7 series are required or MAGNUM-HW

2. INSTALLING DEBIAN ETCH OS

Prior to installation of the linux OS, the following information should be prepared:

- Server class hardware which meets the MAGNUM server specifications, ready to power up, connected to monitor and keyboard with a NULL modem serial cable between Primary and secondary (if secondary is in use).
- IP information (Address, Netmask, Gateway, etc.) for each machine plus one for the virtual system.
- A "name" for each machine (MAGNUMPRI/ MAGNUMSEC or something similar).

Tip: Although each MAGNUM server PC requires at least one IP in order to facilitate ease of use and reliability for router panel and 3rd party connection to the system, a "virtual" or system IP masks the individual hardware IP addresses. No matter which server is active it still holds the "virtual" IP.

Getting Started:

1. Power on the machine and insert the debian etch CD or bootable USB
2. The debian installation will begin automatically, when prompted press *enter* to continue booting.
3. When prompted for a language, select appropriately "English" as standard, and then continue.
4. Select the appropriate Country, and then continue.
5. From the keymap, select *American English* as standard, and then continue.
6. When prompted to choose a primary network interface, choose *eth0* and then continue.
7. Choose to configure the network and then continue.
    a. Enter settings as prompted for address, netmask, gateway, and nameserver.
    b. Enter MAGNUMPRI or something similar for the host name of the primary MAGNUM server. (MAGNUMSEC for redundant, etc)
8. When prompted to configure partitions choose "*guided setup*", select the disk and the option to put "*all files in one partition*".
9. When prompted choose to *"finish partition"* and "*write all changes to disk"*. At this point the machine will format the drives, which can take 5 to 30 minutes depending on hard drive configuration, etc.
10. When prompted select your timezone.
11. When prompted to setup users use the following settings:
    a. The password for the "root" user (equivalent to admin in linux systems) should be set to "*evertz"*.
    b. The user account username should be set to "*evertz"* and the password for user account should be set to "*evertz"*.
    c. Once this step is complete, please wait until prompted.
12. When prompted to configure a network mirror for the packet manager select "*no"* and wait for the "*could not connect*" message and then continue.

13. When prompted to participate in the package survey, select “NO”.

14. When prompted for software selection, choose only “*standard system*” (ensure **no other items** such as “*desktop environment*” are selected).

15. When prompted to choose the installation of the GRUB bootloader, select “*yes*” and then continue.

16. When prompted select *continue*, remove the CD and the machine will reboot.

17. Repeat this process for the redundant server, if present.

3. INSTALLING THE MAGNUM SERVER

1. Copy the two MAGNUM server files onto a USB stick. (There will be a large base file and a small update file).

2. Insert the USB stick into the linux server (Note the location where it is automatically installed. It will install to *sda(x)*, which will probably be *sda1*)

3. To mount the USB drive: Type *mkdir /mnt/usb* and then press <*enter*>. Doing this creates a directory in the */mnt* directory called *usb.* Then type *mount /dev/sdax /mnt/usb* (where the *x* value entered will be the same as the previous step)

4. Copy the two MAGNUM server files onto the machines: *cp /mnt/usb/*MAGNUM_ *…..efp* /tmp and press <*enter*>. Repeat this step for the other file.

5. Run the evertz-server-base-.x.x.x.efp file : sh /tmp/ *evertz-server-base-x.x.x.efp* and then press <*enter*>. This process may take several minutes.

6. Now run the second file: sh/tmp/ MAGNUM-server-x.x.x.efp and then press <*enter*>. When prompted choose *OK* to finish.

7. Once the installation of the update file is complete on the primary server shut it down by using “shutdown –h now” and press <*enter*>.

8. At this point return to the beginning of this section and follow the same procedure for the secondary server.

9. Once this step is reached for the secondary server and it is shutdown, power on the primary server first and then the secondary server. Refer to *Section 4: MAGNUM Server Control Configuration Shell* to complete server configuration.

4. MAGNUM SERVER CONFIGURATION SHELL

The server control tool enables the user to set up the MAGNUM server parameters. Launching the MAGNUM Server Configuration tool will reveal a number of operations that can be performed in order to properly set up your server.

Tip: Changes that affect the operation of the MAGNUM Server 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 by the debian server:

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

Figure 4-1 displays the main setup menu. Section 4.1 to 4.6 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.

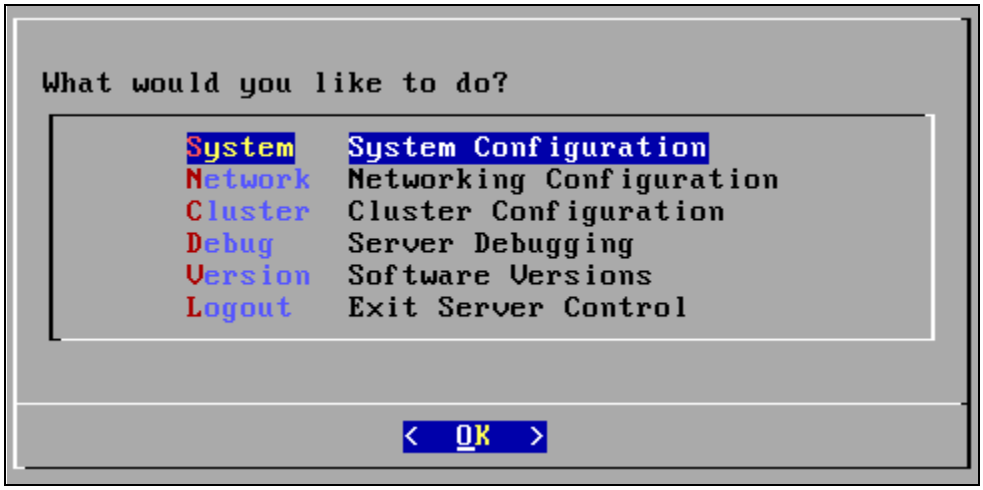


Figure 4-1: Main Server Control Menu

4.1. SYSTEM CONFIGURATION

Selecting the **System Configuration** option will reveal the screen displayed in Figure 4-2. 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.

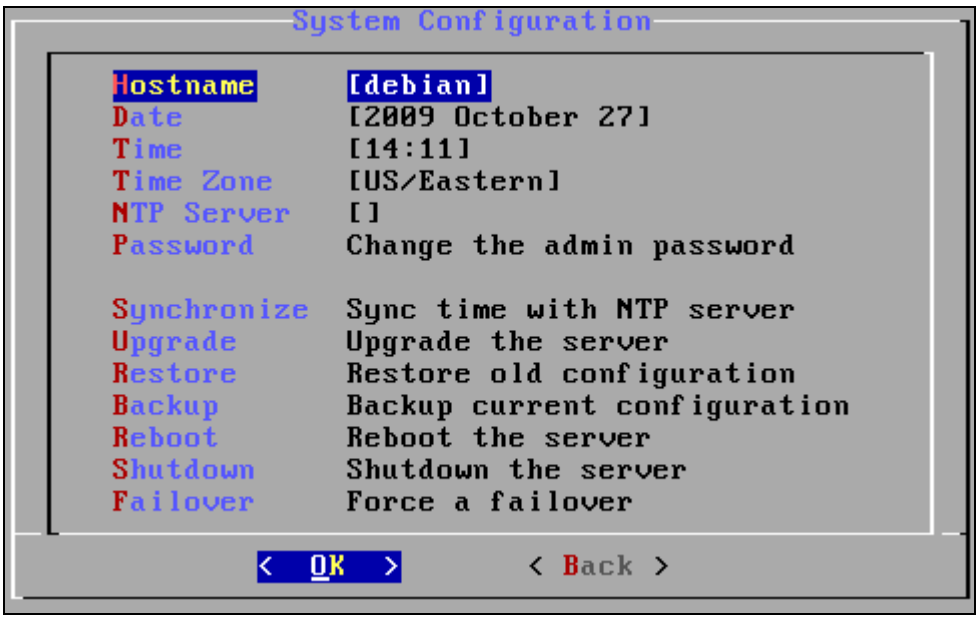


Figure 4-2: System Configuration Menu

4.1.1. 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 4-3 will appear when this option is selected. The user will be prompted to enter the desired name for the host into the "S*et current host name:*" field. This name was set during initial installation but can be changed using this menu option.

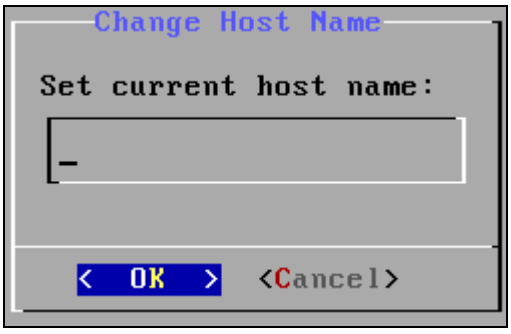


Figure 4-3: Change Host Name

4.1.2. 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 4-4.

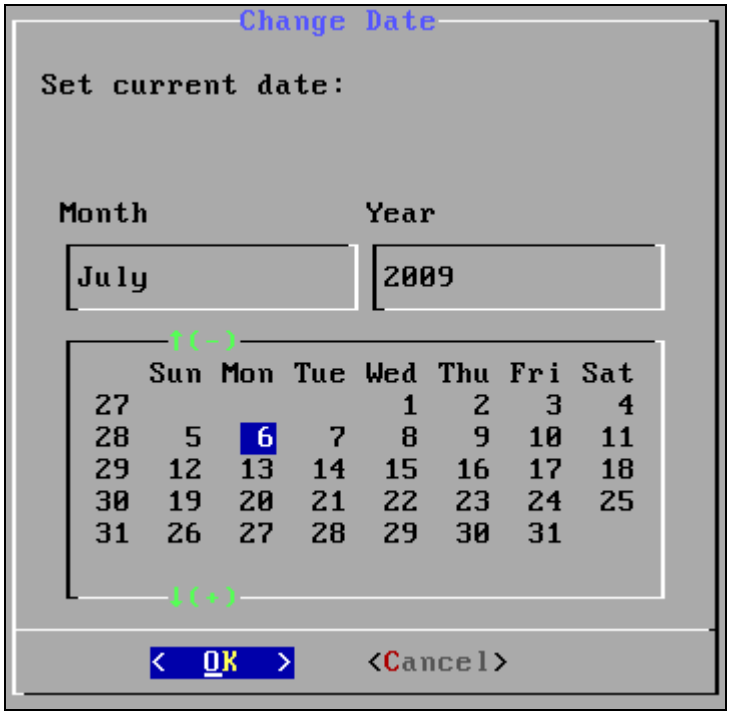


Figure 4-4: Change Date

4.1.3. Setting the Server Time

Selecting **Time** from the System Configuration menu will enable you 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 4-5. Use the up and down arrow keys to set the values and tab to switch boxes.

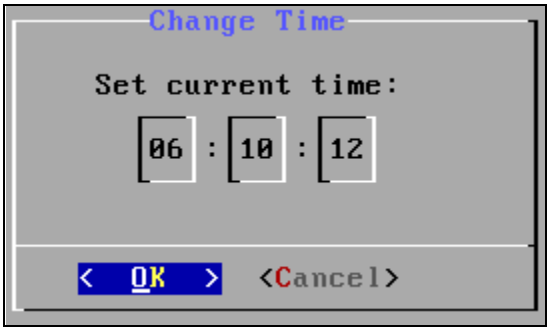


Figure 4-5: Change Time

4.1.4. 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 4-6.

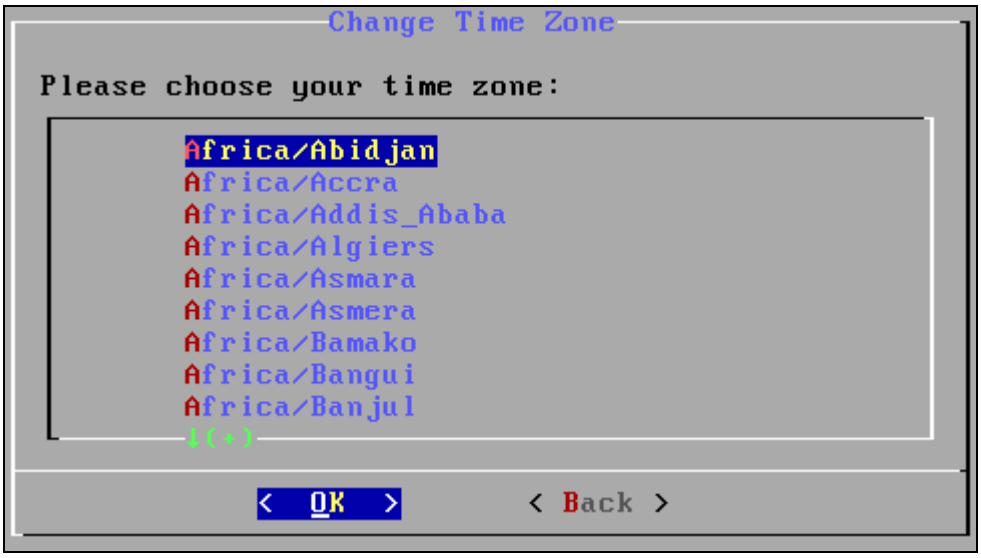


Figure 4-6: Change Time Zone

4.1.5. 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 4-7 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.

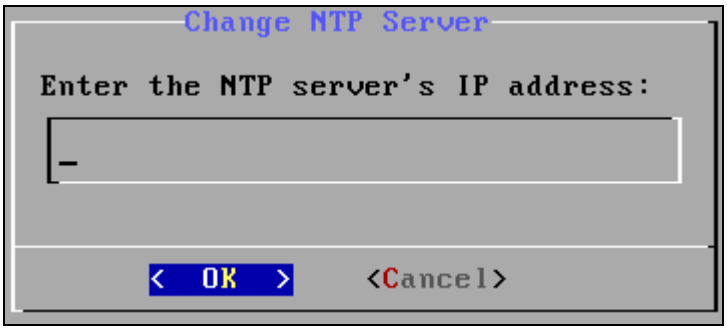


Figure 4-7: Change NTP Server

4.1.6. 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 4-8 will appear when this option is selected. The user will be prompted to enter the current password into the "*enter current password to change*" field.

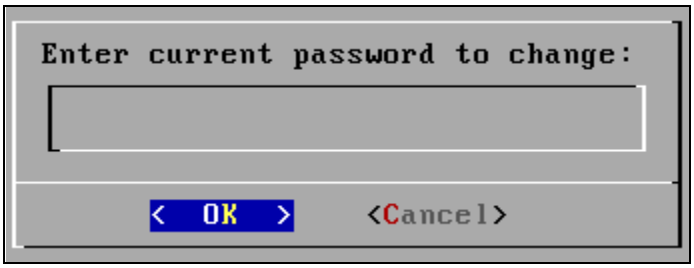


Figure 4-8: Change Password

Once the current password is entered, a new dialog box will appear as shown in Figure 4-9. This dialog box will prompt the user to enter the new password for the server. Type the new password into empty field and select **OK** to set the password.

Figure 4-9: Enter New Password Dialog Box

4.1.7. Syncing Time with NTP Server

Selecting the **Synchronize** option from the System Configuration menu will enable the user to force a sync with the NTP server.

4.1.8. Upgrading the Server

Selecting the **Upgrade** option from the System Configuration menu will enable you to upgrade the server. The dialog box in Figure 4-10 will appear when this option is selected. Enter the current "*admin"* password into the "Enter password to upgrade server:" field and press **OK**.

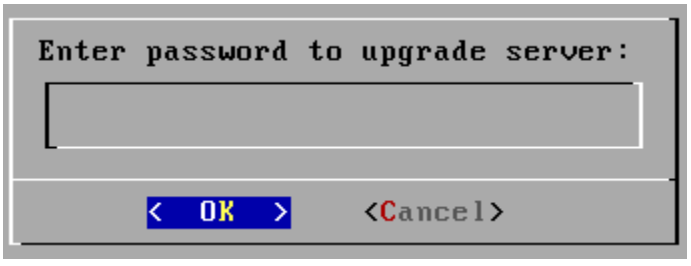


Figure 4-10: Enter Password to Upgrade Server

Once the correct password is entered, the user should connect the USB device containing the correct upgrade files. When the USB device is recognized, the dialog box in Figure 4-11 will disappear. If you do not wish to upgrade the server, select the **Cancel** button.

Figure 4-11: Waiting for USB Device

4.1.9. Restoring the Configuration

Selecting the **Restore** option from the System Configuration menu will enable the user to restore an old configuration. The dialog box in Figure 4-12 will appear when this option is selected. Choose the configuration that you wish to restore from the list provided and then select **OK**. This is a low level configuration restore, please refer to section 4.1.10 for normal configuration backup and restore operations.

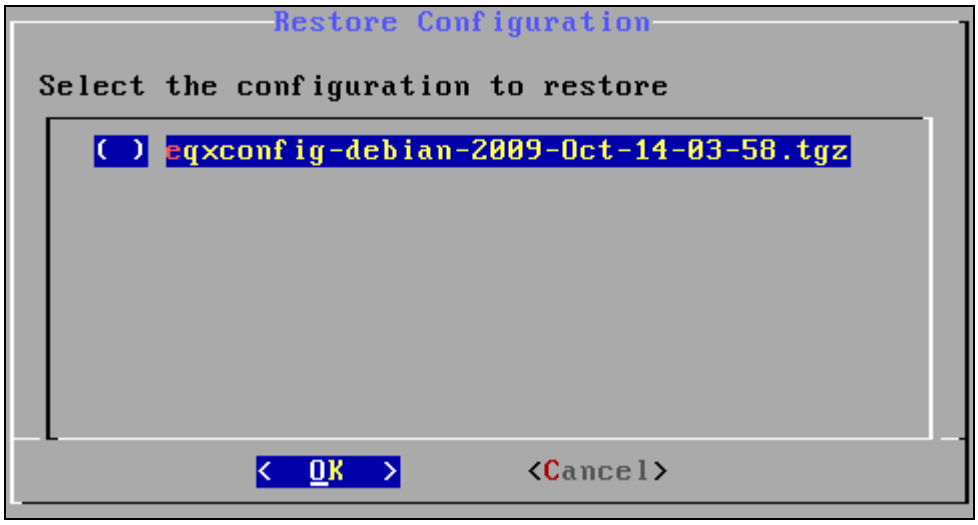


Figure 4-12: Restore Configuration

4.1.10. Backing Up Configuration

Selecting the **Backup** option from the System Configuration menu will enable you to backup the current configuration. The dialog box in Figure 4-13 will appear when this option is selected. Enter the current "*admin*" password into the "Enter password to backup configuration:" field and press **OK**.

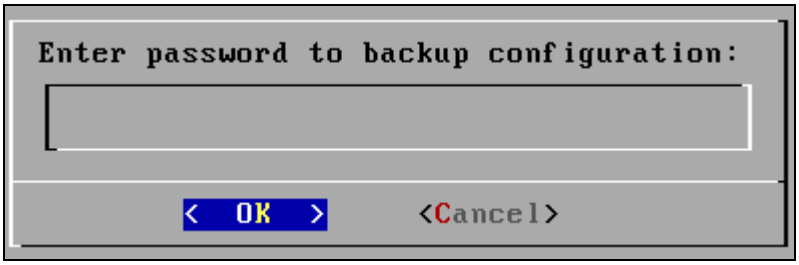


Figure 4-13: Enter Password to Backup Configuration

The current configuration will begin backing up and the following screen will be displayed:

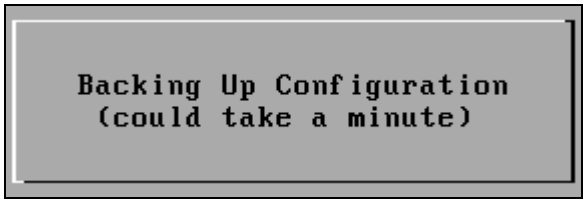


Figure 4-14: Backing Up Configuration

Once the configuration has been successfully backed up the following screen will appear informing the user that the configuration has been saved:

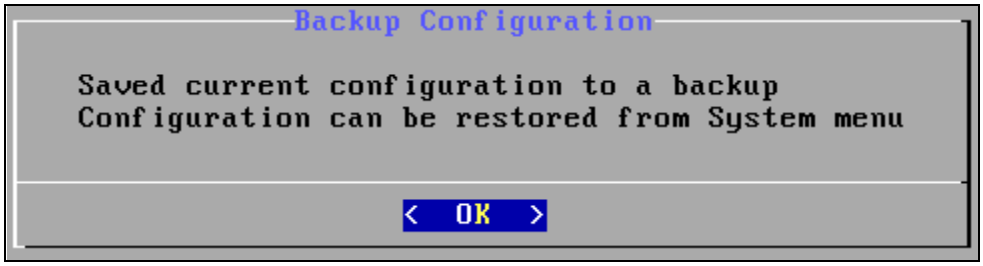


Figure 4-15: Backup Configuration

4.1.11. Rebooting the Server

Selecting the **Reboot** option from the System Configuration menu will enable you to reboot the server. The dialog box in Figure 4-16 will appear when this option is selected. Enter the current "*admin"* password into the "Enter password to reboot the server:" field and press **OK**. The server will reboot.

Figure 4-16: Enter Password to Reboot Server

4.1.12. Shutting Down the Server

Selecting the **Shutdown** option from the System Configuration menu will enable you to shutdown the server. The dialog box in Figure 4-17 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 4-17: Enter Password to Shutdown Server

4.1.13. Forcing a Failover

Selecting the **Failover** option from the System Configuration menu will enable the user to force a fail-over from the active server to the redundant server. Please note that a forced fail-over can only be done from the active server.

4.2. NETWORKING CONFIGURATION

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

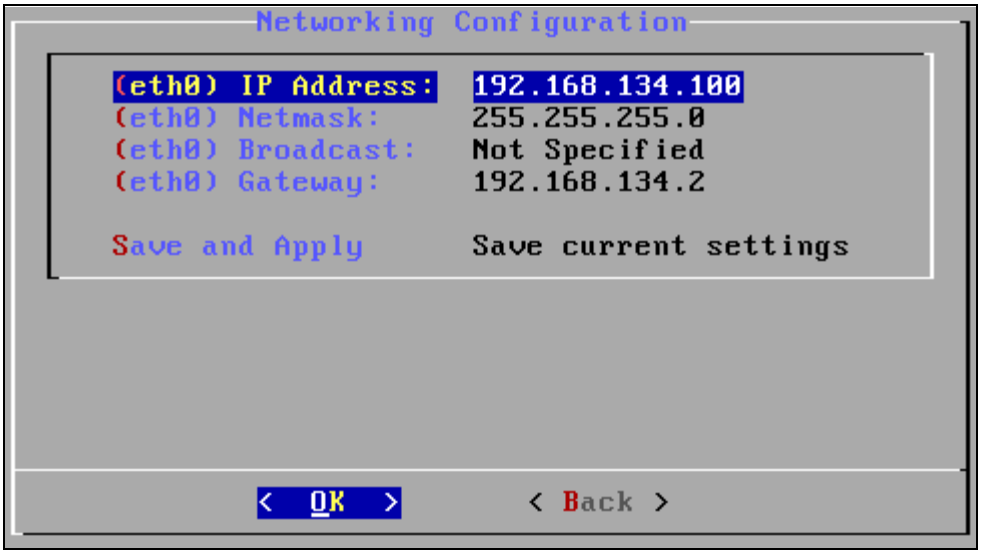


Figure 4-18: Network Configuration Menu

4.2.1. Assigning an IP Address for eth1

To assign an IP Address, select the **(eth1) IP Address** option from the Networking Configuration menu. The dialog box in Figure 4-19 will appear when this option is selected. The user will be prompted to enter the desired IP address into the “New IP address for eth1” 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. Please note that DHCP is NOT recommended at any time.

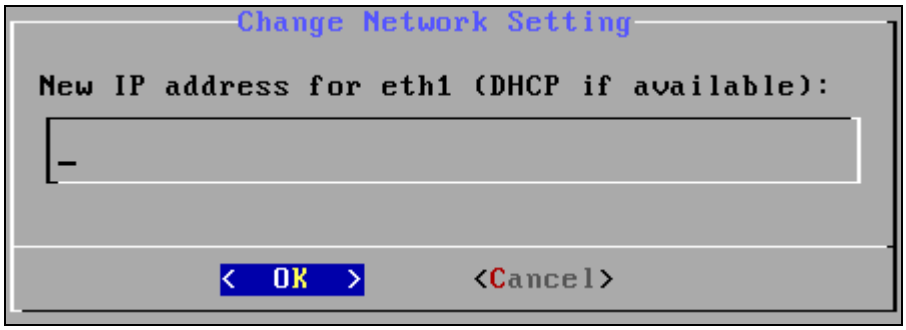


Figure 4-19: Enter New IP Address for eth1

4.2.2. Assigning a Subnet Mask for eth1

To assign a subnet mask for eth1, select the **(eth1) Netmask** option from the Networking Configuration menu. The dialog box in Figure 4-20 will appear when this option is selected. The user will be prompted to enter the desired subnet mask into the "New subnet mask for eth1" 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.

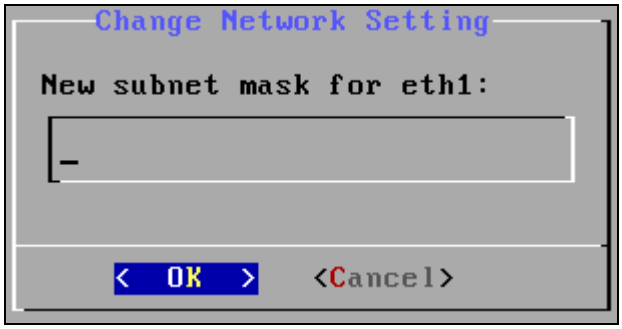


Figure 4-20: Enter New Subnet Mask for eth1

4.2.3. Assigning a Gateway Address for eth1

To assign a gateway for eth1, select the **(eth1) Gateway** option from the Networking Configuration menu. The dialog box in Figure 4-21 will appear when this option is selected. The user will be prompted to enter the desired gateway into the "New gateway address for eth1" 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.

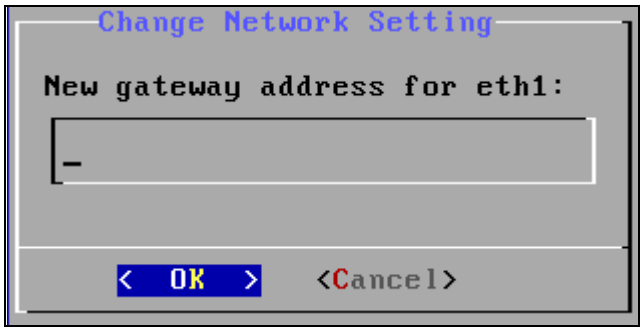


Figure 4-21: Enter New Gateway Address for eth1

4.2.4. Assigning a Broadcast Address for eth1

To assign a broadcast address for eth1, select the **(eth1) Broadcast** option from the Networking Configuration menu. The dialog box in Figure 4-22 will appear when this option is selected. The user will be prompted to enter the desired subnet mask into the "New broadcast address for eth1" 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.

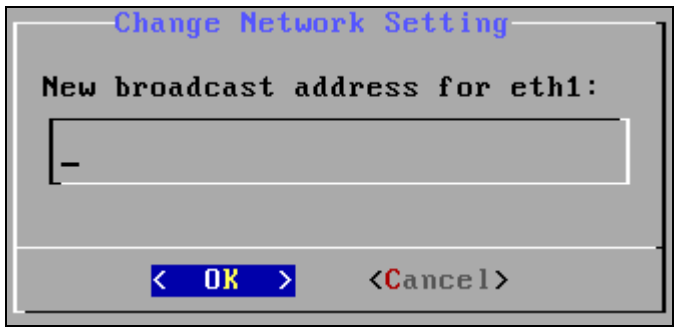


Figure 4-22: Enter New Broadcast Address for eth1

4.2.5. Bonding Multiple Interfaces

The **Create Bond** option enables the user to create an active/backup network configuration using two network ports on the MAGNUM Server. This feature allows the user to bond two adapters together to function as one. For example, if one of the adapters of the bond were to fail (link loss as result of cable failure, NIC failure, switch port failure, switch failure etc) the second adapter would automatically continue network connectivity. To create a bond, toggle to the **Create Bond** menu item as shown in Figure 4-23 and use this command to bond multiple interfaces.

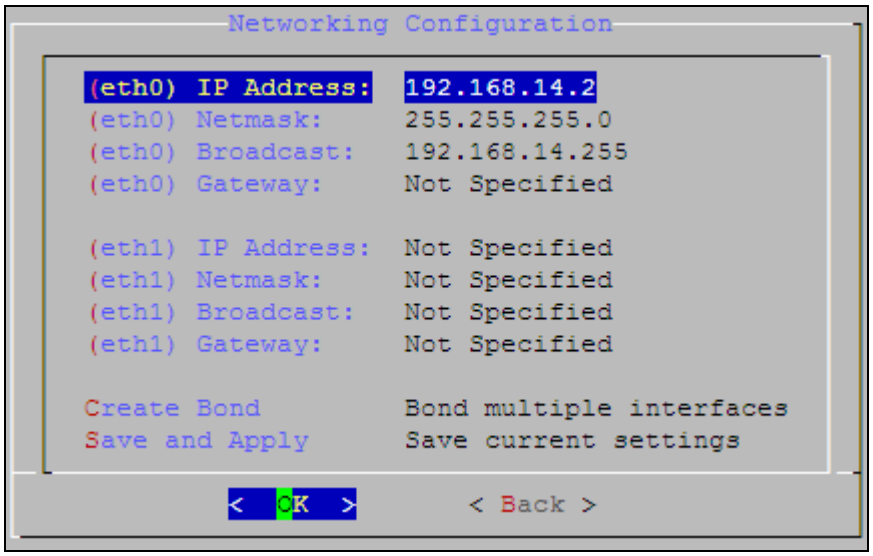


Figure 4-23: Creating a Bond

Once the network ports are bonded, the user can specify an IP address, Netmask, and Gateway for the bonded adapters. The network ports that are bonded together will be identified in the **Slaves** field. For example, *eth0* and *eth1* would be listed under the *Slaves* item as shown in Figure 4-24.

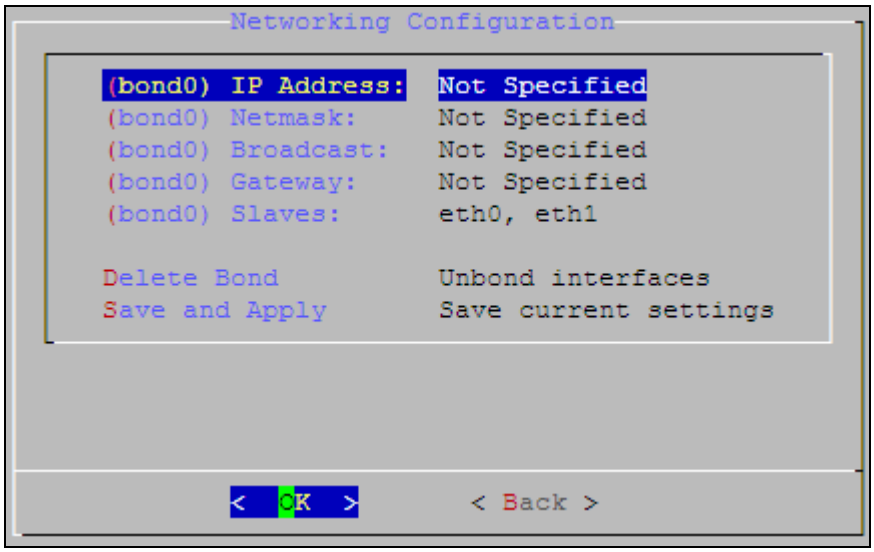


Figure 4-24: Bonded Network Ports

The bond between the interfaces can be removed by selecting the **Delete Bond** function.

4.3. CLUSTER CONFIGURATION

The **Cluster Configuration** menu will enable the user to set the cluster information for primary and redundant MAGNUM Servers. (Host names and IP addresses, preferred hosts, and cluster IP addresses).

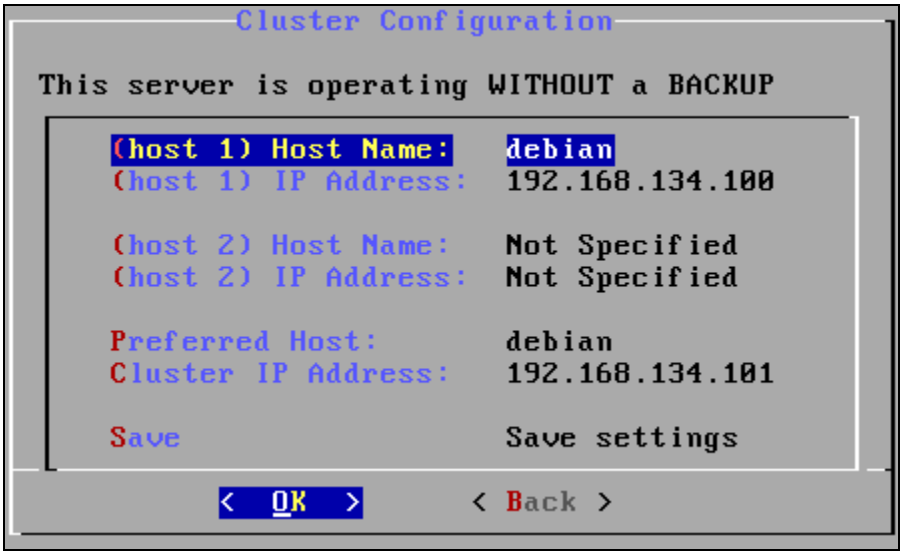


Figure 4-25: Cluster Configuration

4.3.1. (host x) Host Name

To assign a host name to the primary host (Host 1), select the **(host 1) Host Name** option from the Cluster Configuration menu. The dialog box in Figure 4-26 will appear when this option is selected. The user will be prompted to enter the primary host name into the "Enter host name" field and then select the **OK** button.

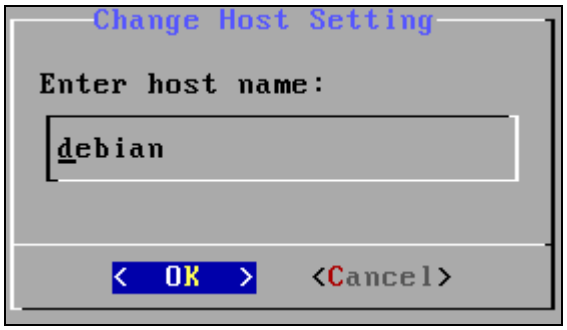


Figure 4-26: Change Host Setting

To assign a host name to the redundant server, select the **(host 2) Host Name** option and enter the desired redundant server name into the "Enter host name" field and then select the **OK** button.

4.3.2. (host x) IP Address

To assign a host IP address to the primary server, select the **(host 1) IP Address** option from the Cluster Configuration menu. The dialog box in Figure 4-27 will appear when this option is selected. The user will be prompted to enter the desired host IP address into the "Enter (*host name)*'s IP address" field and then select the **OK** button.

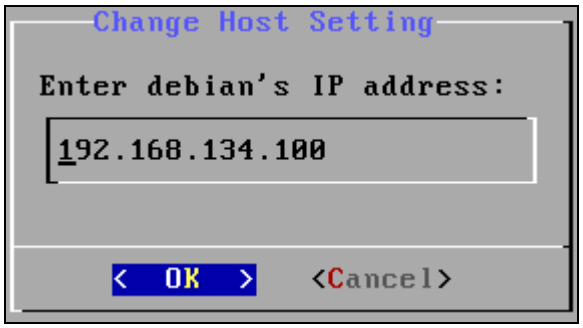


Figure 4-27: Host IP Address

If you wish to assign an IP address to the redundant server, select the **(host 2) IP Address** option and enter the desired redundant server name into the "Enter (*host name*)'s IP address" field and then select the **OK** button.

4.3.3. Preferred Host

The **Preferred Host** field will display the name of the primary server. If there is more than one server available, the user can select the server that they wish to assign as the preferred, primary server. To assign the preferred host, toggle to the **Preferred Host** option and select the **OK** button.

A **Preferred Host** dialog will appear (as shown in Figure 4-28) enabling the user to select a preferred host from the list of servers available. Toggle to the host in the list that you wish to make the primary server and then select the **OK** button. The selected server will be set as the primary server. A preferred host is the server that will be made active if both primary and secondary servers are brought online at the same time. This requires the cluster is configured correctly and communication links between both servers are functioning correctly.

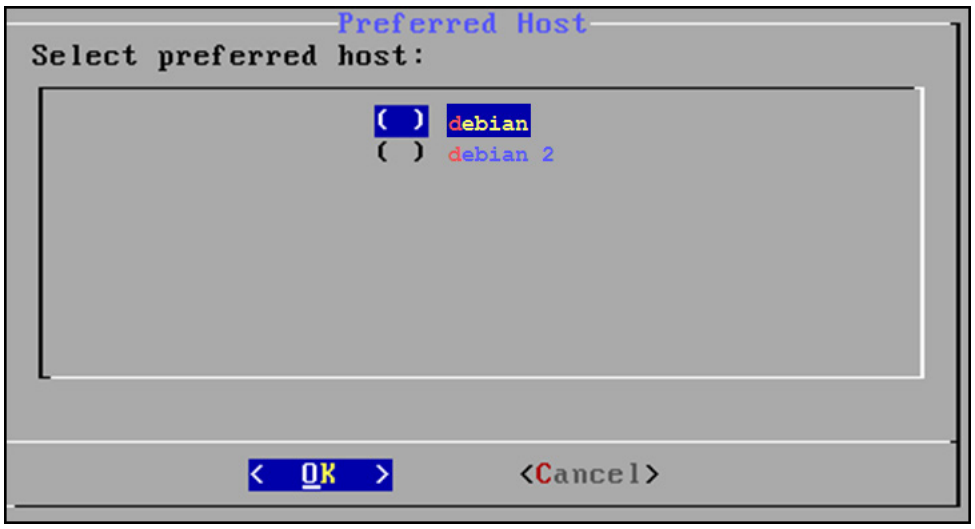


Figure 4-28: Select Preferred Host

4.3.4. Change Cluster IP Address

To change the cluster IP address, select the **Cluster IP Address** option from the Cluster Configuration menu. The dialog box in Figure 4-29 will appear when this option is selected. If the user wishes to change the cluster IP address, enter a new IP address into the "*Enter the Cluster IP address"* field and then select the **OK** button. The cluster IP address is the IP address assigned to the Active MAGNUM server so that all clients have a single address connected to them regardless of which MAGNUM Server is Active. This is the IP address you will use to access the WEB Configuration Tool, and which will be manually programmed into any advanced panels for MAGNUM-SERVER connectivity.

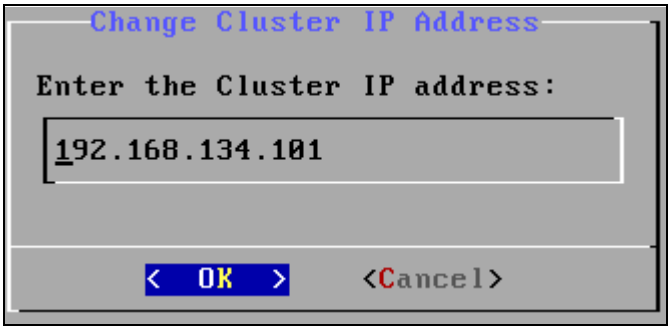


Figure 4-29: Change Cluster IP Address

4.3.5. Monitored Interfaces

The **Monitored Interfaces** field, as shown in Figure 4-30, displays the network interface that will be monitored for Loss of Network Link. When this option is enabled the active server will automatically force a cluster fail-over if it detects a network link loss on the monitored interface. To select a network interface, toggle to the **Monitored Interfaces** option and select the **OK** button.

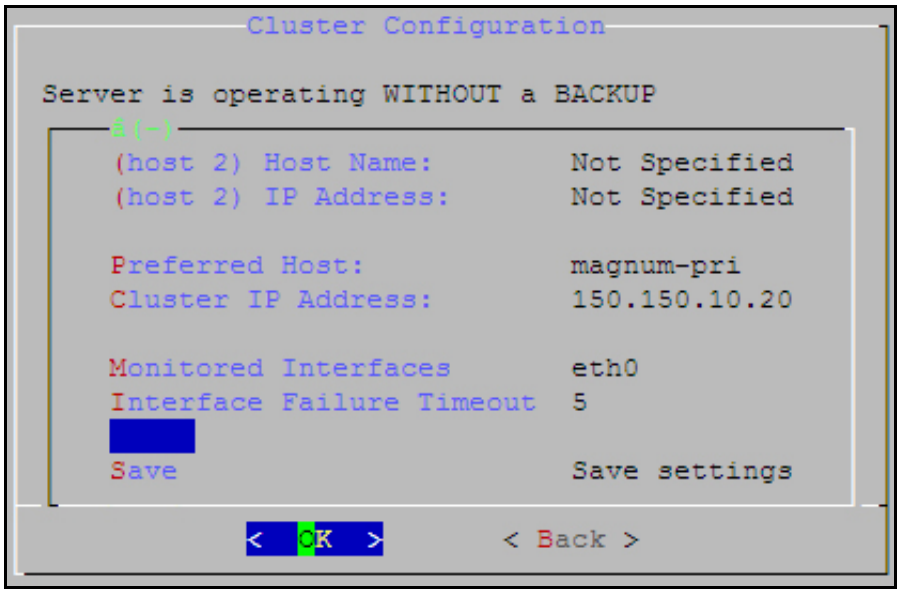


Figure 4-30: Monitored Interfaces

The **Monitored Interfaces** dialog will appear, as shown in Figure 4-31, enabling the user to select network interfaces to be monitored. Toggle to the network interface in the list that you wish to make as the monitored interface and select the **OK** button. The selected interface will now be monitored once the settings are saved and the system is rebooted.

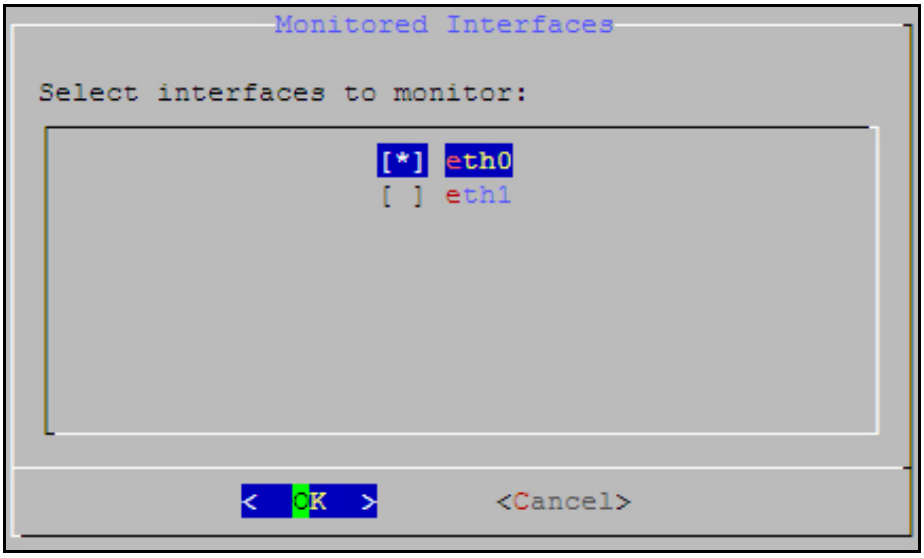


Figure 4-31: Select Interfaces to Monitor

4.3.6. Interface Failure Timeout

The **Interface Failure Timeout** field, as shown in Figure 4-32, will display the time in seconds before a network interface monitored for Loss of Network Link is in a loss state. When this option is enabled the active server will automatically force a cluster fail-over if it detects a network link loss for the amount of time defined for the monitored interface. To specify a time, toggle to the **Interface Failure Timeout** option and select the **OK** button.

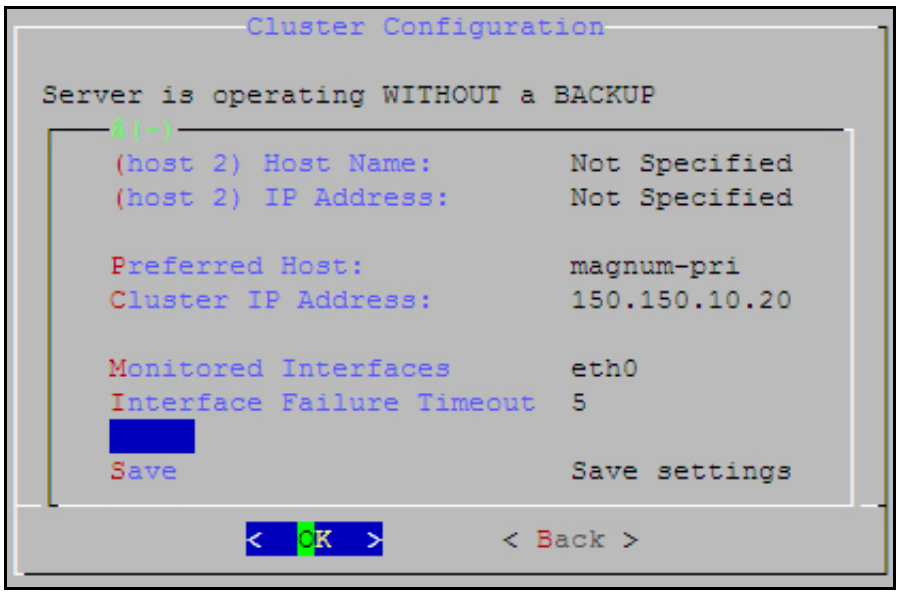


Figure 4-32: Interface Failure Timeout

The **Interface Failure Timeout** dialog will appear, as shown in Figure 4-33, enabling the user to enter a time in seconds before a cluster fail-over is triggered based on Loss of Network Link on the monitored network interfaces. Enter a value in seconds to define the amount of time a link must be lost for the monitored interface before causing a cluster fail-over and then select the **OK** button. The selected interface will now be monitored once the settings are saved and the system is rebooted.

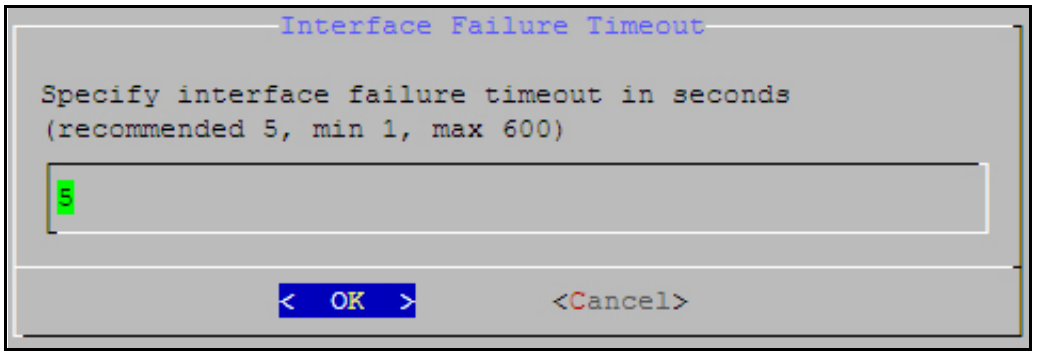


Figure 4-33: Specify Interface Failure Timeout

4.4. SERVER DEBUGGING

The **Server Debugging** menu enables the user to view the server debugging features.

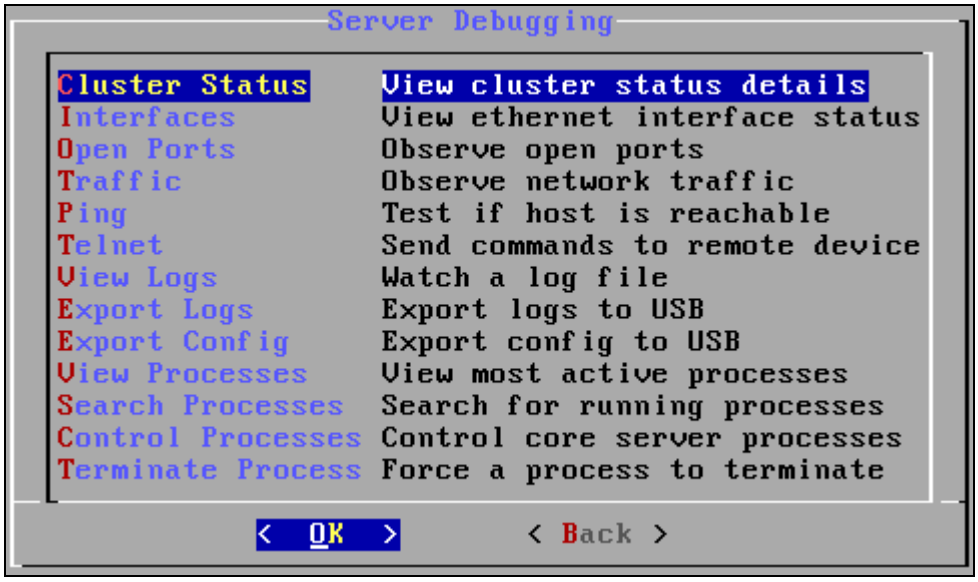


Figure 4-34: Server Debugging Main Screen

4.4.1. Viewing the Cluster Status

To view the cluster status, select the **Cluster Status** option from the Server Debugging menu. The **Cluster Status** window will display the details of all the elements in the cluster and whether or not the cluster is running properly, as shown in Figure 4-35. To return to the main **Server Debugging** screen toggle to the **Exit** option and press <enter>.

Figure 4-35: Cluster Status

4.4.2. Viewing the Ethernet Status

To view the status of the Ethernet connection, select the **Interface** option from the Server Debugging menu. The **Interface** window will display the details of the Ethernet interface status, as shown in Figure 4-36. To return to the main **Server Debugging** screen toggle to the **Exit** option and press <enter>.

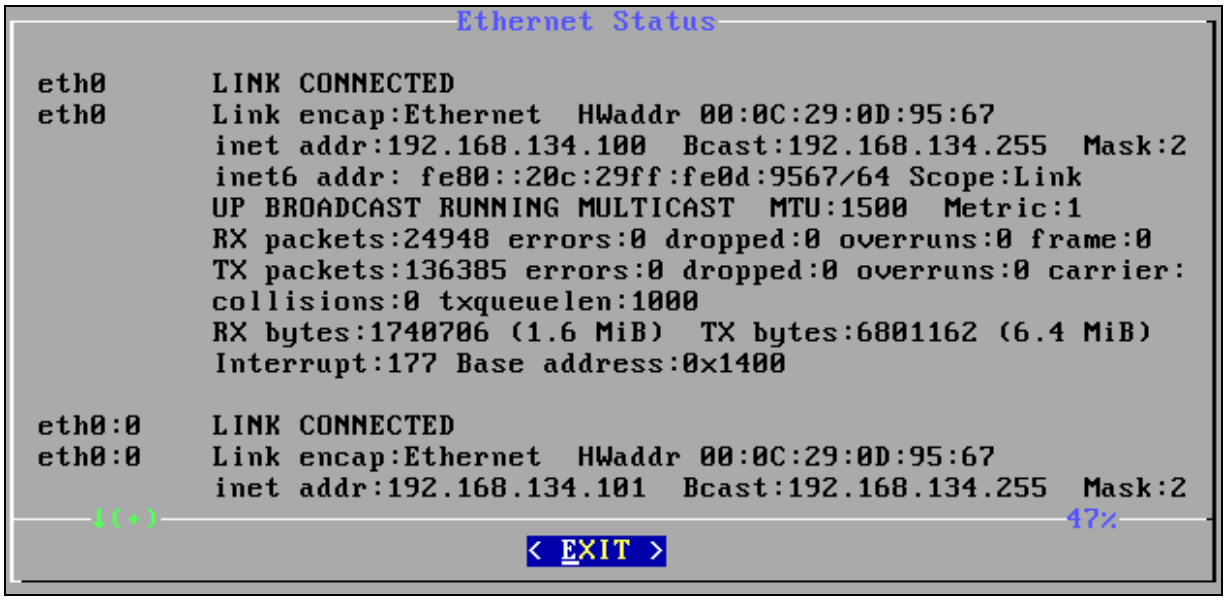


Figure 4-36: Ethernet Interface Status

4.4.3. Observing Open Ports

To observe the status of the open ports select the **Open Ports** menu item to display network connections, routing tables, and interface statistics, as shown in Figure 4-37. To return to the main **Server Debugging** screen toggle to the **Exit** option and press <enter>.

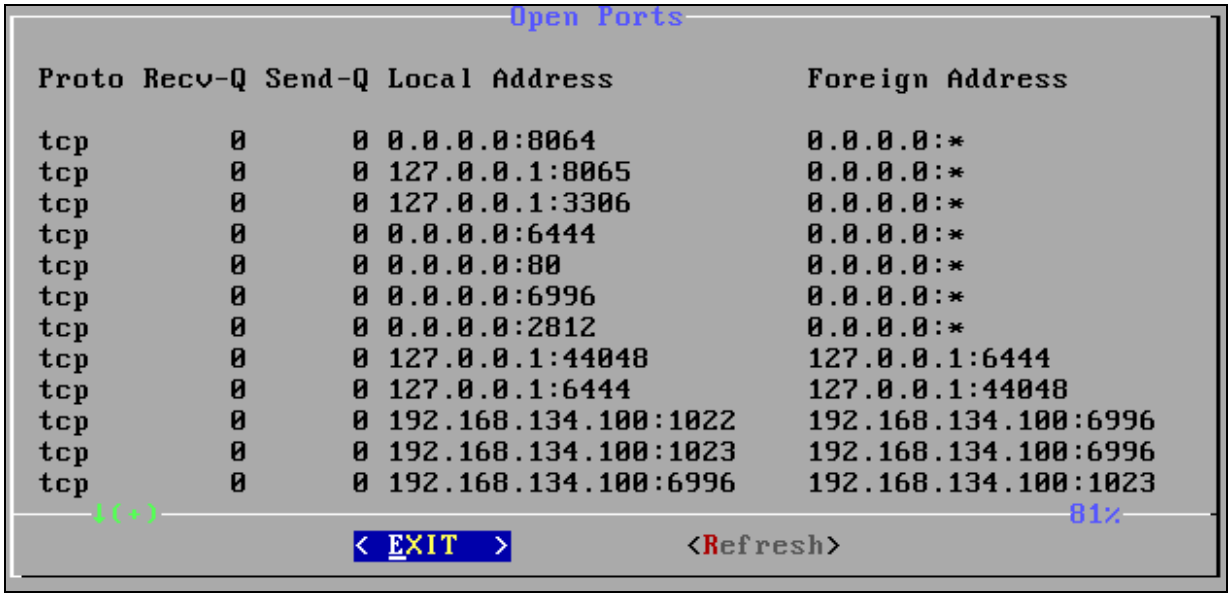


Figure 4-37: Observe Open Ports

4.5.1 TCPDUMP

Selecting the **TCPDUMP** menu item, as shown in Figure 4-38, enables the user to capture network traffic on a specific Ethernet interface to USB. To exit the **TCPDUMP** capture screen press the '**ctrl+c**' key on your keyboard to stop the capture and save it to USB.

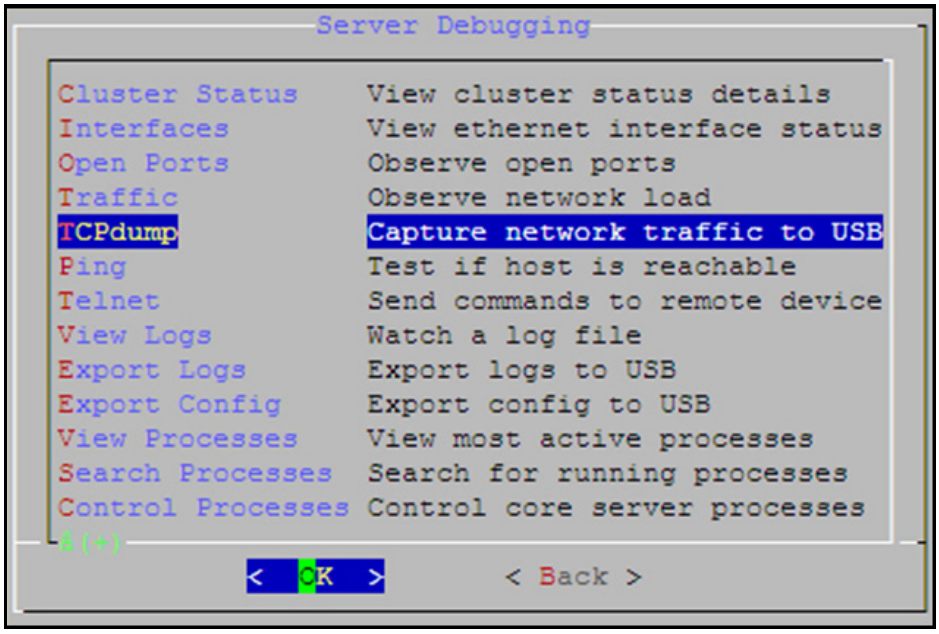


Figure 4-38: TCPdump

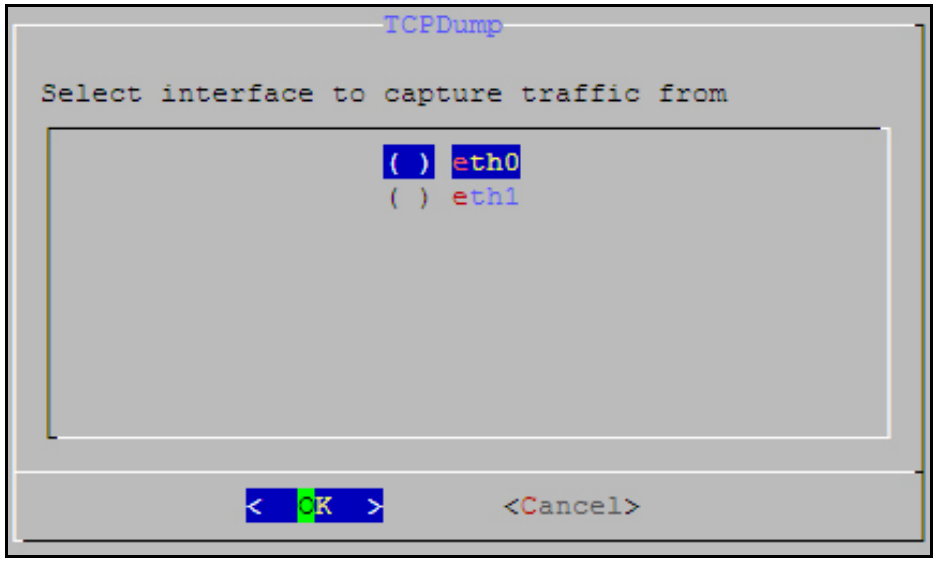


Figure 4-39: Select Interface to Capture Traffic From

4.4.4. Observing Network Traffic

Selecting the **Traffic** menu item enables the user to view the network traffic on a specific Ethernet interface, as shown in Figure 4-40. To exit the **Network Traffic** screen press the '**q**' key on your keyboard to quit the screen.

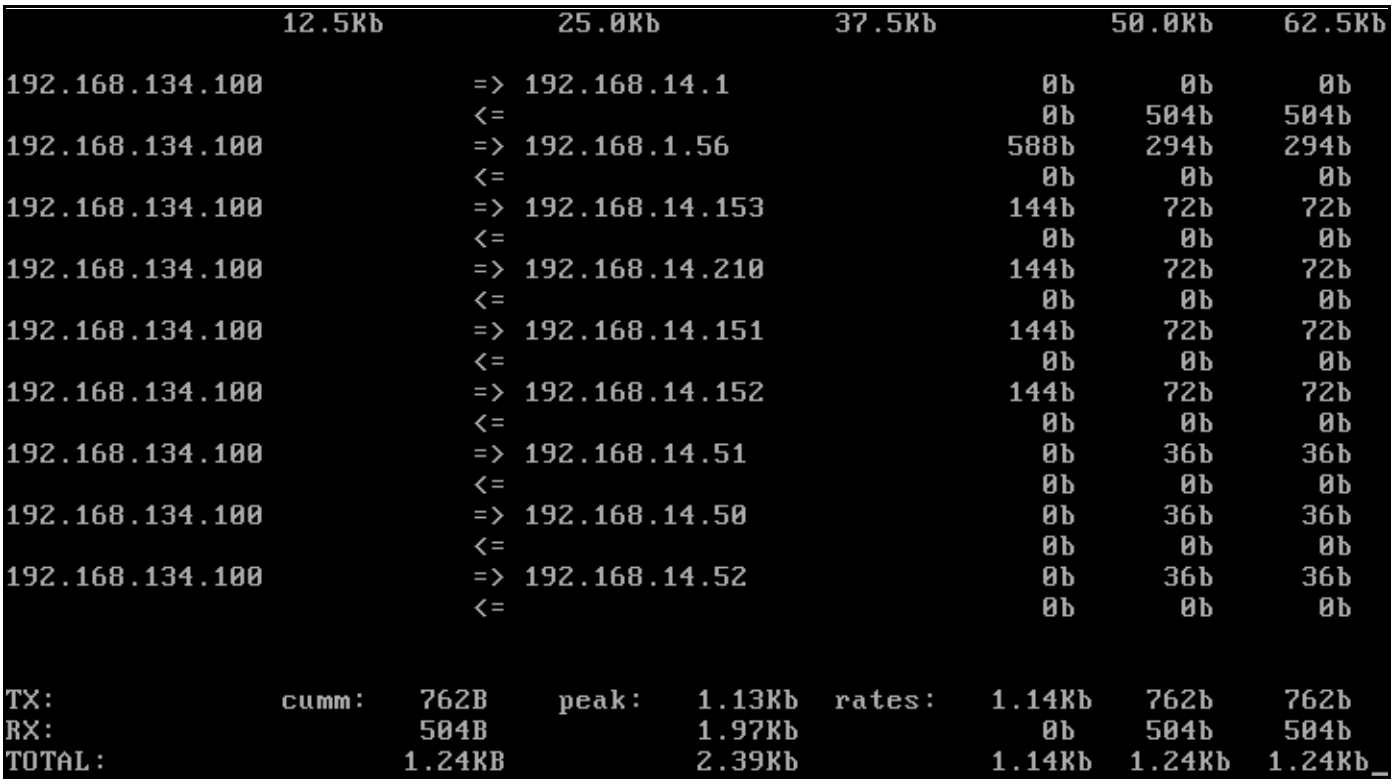


Figure 4-40: Observing Network Traffic

4.4.5. Test if the Host is Reachable

Select the **Ping** menu item to test if devices on the network are reachable. When the **Ping** option is selected the **Ping Host** field will appear as shown in Figure 4-41. Enter the host name or IP address into the "Enter host name or IP address" field.

Figure 4-41: Ping Host Dialog Box

4.4.6. Send Commands to Remote Machine

Select the **Telnet** menu item to test if devices on the network support a telnet connection. When the **Telnet** option is selected the **Telnet** field will appear as shown in Figure 4-42. Enter the host name or IP address into the "Enter host name or IP address" field.

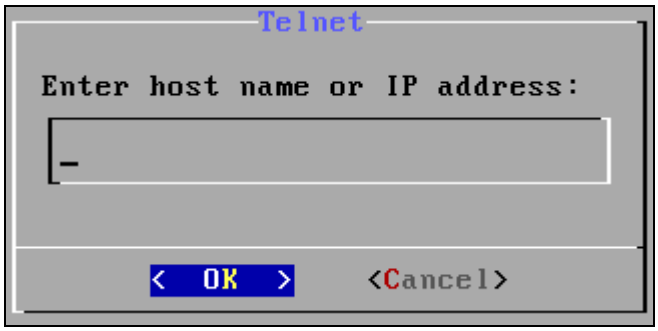


Figure 4-42: Telnet Dialog Box

4.4.7. Watch a Log File

Selecting the **View Logs** menu option will allow the user to view log files in real time. The **Watch Logfiles** dialog box will appear enabling the user to toggle through the log files, as shown in Figure 4-43. Toggle to the desired log file and select it by highlighting the file in the list and pressing the **OK** button.

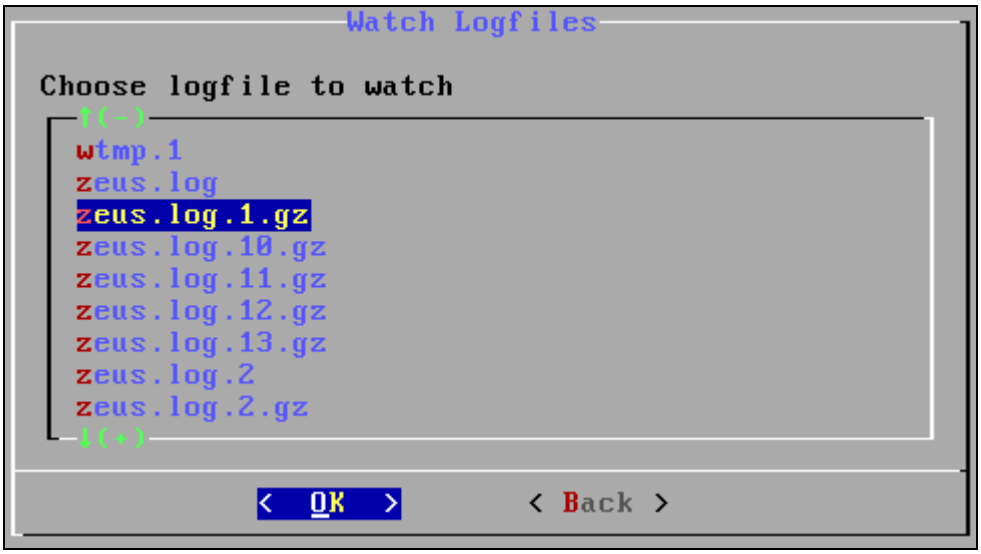


Figure 4-43: Watch Logs Dialog Box

Once the log file is selected, the corresponding information will be displayed as shown in Figure 4-44. To exit the **logfile** screen press the '**q'** key on your keyboard to quit the screen.

```
Oct 27 14:01:01 debian zeus: INFO:pantheos.zeus:Version 1.4.0rc53
Oct 27 14:01:01 debian zeus: INFO:license:System ID = 1718666178
Oct 27 14:01:01 debian zeus: INFO:license:License is not correct
Oct 27 14:01:01 debian zeus: ERROR:pantheos.zeus:License not valid for this syst
em! Going into standby..
Oct 27 14:01:01 debian zeus: INFO:pantheos.zeus:loading configuration from /opt/
eqx-server/config.d
Oct 27 14:01:01 debian zeus: DEBUG:pantheos.zeus:Tweak enabled: virtual_destinat
ion_availability -> all
Oct 27 14:01:01 debian zeus: DEBUG:pantheos.zeus:Tweak enabled: guess_virtual_so
urce_tally -> 1
Oct 27 14:01:01 debian zeus: WARNING:pantheos.zeus:Tweak 'salvo_delay_interval'
not recognized - it will have no effect.
Oct 27 14:01:01 debian zeus: INFO:pantheos.zeus:initializing internal structures
Oct 27 14:01:02 debian zeus: DEBUG:pantheos.leto.devices:Creating crosspoint dev
ice 'EQX'
Oct 27 14:01:02 debian zeus: DEBUG:pantheos.leto.devices:Creating destination mo
nitor device 'EQX.MON'
Oct 27 14:01:02 debian zeus: DEBUG:pantheos.leto.devices:Creating multipoint dev
ice 'ADMX'
Oct 27 14:01:02 debian zeus: DEBUG:pantheos.leto.devices:Creating avip device 'E
QX.AVIP.9'
Oct 27 14:01:02 debian zeus: DEBUG:pantheos.leto.devices:Creating avip device 'E
QX.AVIP.10'
[Shift-F] to follow / [Q] to quit_
```

Figure 4-44: Viewing Logs Dialog Box

4.4.8. Export Logs

Selecting the **Export Logs** menu option will allow the user to export logs to USB. When this option is selected, the user will be required to enter the password in order to export the log files. This is a Low level operation, Webconfig interface allows for an easy method of exporting logs from the active server. The following dialog box will prompt the user to enter a password:

Figure 4-45: Enter Password to Export Logfiles

Once a password is entered the user will be required to connect a USB device to which the log files will be exported to.

4.4.9. Export the Configuration

Selecting the **Export Config** menu option will allow the user to export the configuration to USB. When this option is selected, the user will be required to enter the password in order to export the configuration. This is a Low Level operation, Webconfig interface allows for an easy method of exporting the configuration from the active server. The following dialog box will prompt the user to enter a password:

Figure 4-46: Enter Password to Export the Configuration

Once a password is entered the user will be required to connect a USB device to which the log files will be exported to.

4.4.10. Viewing Server Process Details

Selecting the **View Processes** menu item enables the user to view the server process details. When this option is selected, the user will be prompted to enter a password.

Figure 4-47: Enter Password to View Processes

Once the password is entered, the processes information will be displayed as similarly shown in Figure 4-48. To exit the **Server Process** screen press the '**q**' key on your keyboard to quit the screen.

```
top - 11:39:17 up 21:38,  1 user,  load average: 0.00, 0.01, 0.00
Tasks:  51 total,   1 running,  50 sleeping,   0 stopped,   0 zombie
Cpu(s):  0.0%us,  0.7%sy,  0.0%ni, 99.3%id,  0.0%wa,  0.0%hi,  0.0%si,  0.0%st
Mem:    516864k total,   505800k used,    11064k free,   112604k buffers
Swap:   409616k total,        0k used,   409616k free,    81624k cached

  PID USER      PR  NI  VIRT  RES  SHR S %CPU %MEM    TIME+  COMMAND
 3812 admin     18   0  2228 1104  860 R  0.7  0.2   0:00.03 top
    1 root      15   0  1948  644  548 S  0.0  0.1   0:00.91 init
    2 root      RT   0     0    0    0 S  0.0  0.0   0:00.00 migration/0
    3 root      34  19     0    0    0 S  0.0  0.0   0:00.00 ksoftirqd/0
    4 root      10  -5     0    0    0 S  0.0  0.0   0:00.16 events/0
    5 root      10  -5     0    0    0 S  0.0  0.0   0:00.00 khelper
    6 root      10  -5     0    0    0 S  0.0  0.0   0:00.00 kthread
    9 root      10  -5     0    0    0 S  0.0  0.0   0:00.10 kblockd/0
   10 root      20  -5     0    0    0 S  0.0  0.0   0:00.00 kacpid
   66 root      10  -5     0    0    0 S  0.0  0.0   0:00.00 kseriod
  102 root      25   0     0    0    0 S  0.0  0.0   0:00.00 pdflush
  103 root      15   0     0    0    0 S  0.0  0.0   0:00.33 pdflush
  104 root      10  -5     0    0    0 S  0.0  0.0   0:00.08 kswapd0
  105 root      20  -5     0    0    0 S  0.0  0.0   0:00.00 aio/0
  636 root      11  -5     0    0    0 S  0.0  0.0   0:00.00 scsi_eh_0
  881 root      10  -5     0    0    0 S  0.0  0.0   0:01.96 kjournald
 1038 root      21  -4  2180  592  352 S  0.0  0.1   0:00.28 udevd
 1312 root      15  -5     0    0    0 S  0.0  0.0   0:00.00 kpsmoused
```

Figure 4-48: Server Processes Page

4.4.11. Search for Running Processes

Selecting the **Search Processes** menu item enables the user to search for the running processes. When this option is selected, the user will be prompted to enter a password in the **Search Processes** dialog box.

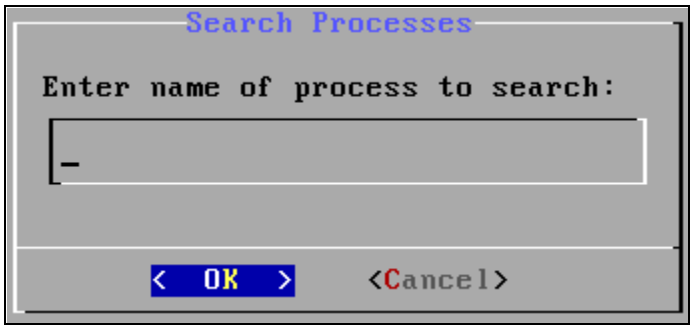


Figure 4-49: Enter Password for Search Processes

Once the password is entered, a list of processes will appear (as shown in Figure 4-50) enabling the user to view the running processes returned by the search. To return to the main **Server Debugging** screen toggle to the **Exit** option and press <enter>.

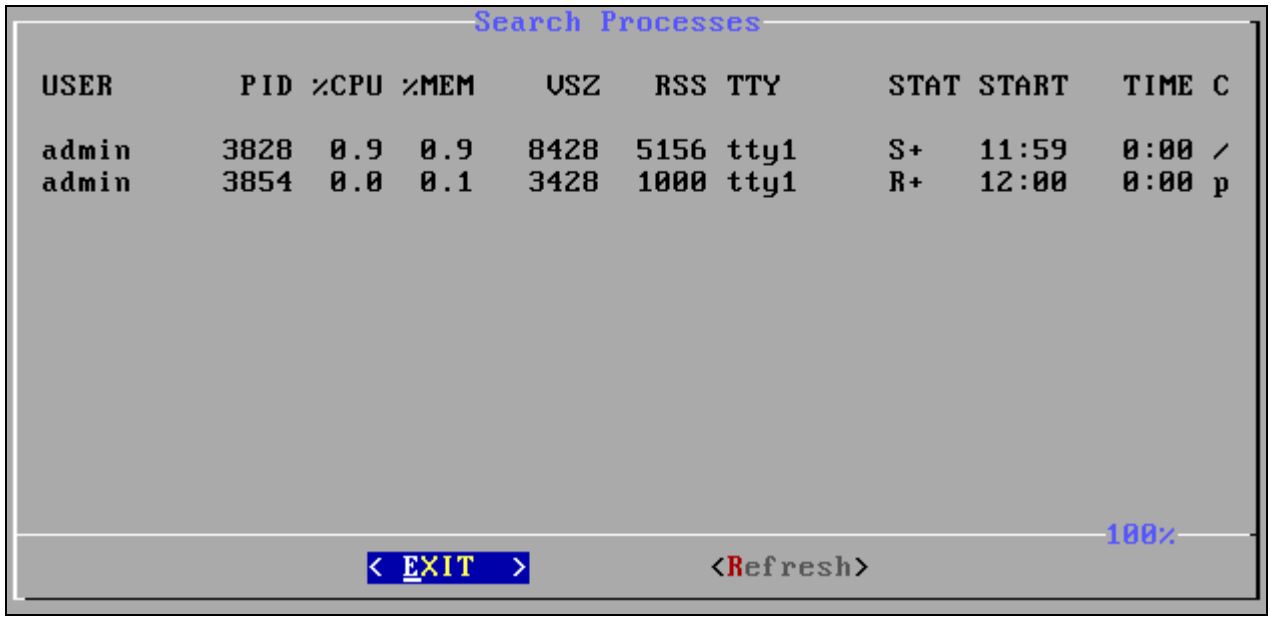


Figure 4-50: Search Processes

4.4.12. Control Server Process

Selecting the **Control Processes** menu item enables the user to control core server processes. The Control Process screen will appear as shown in Figure 4-51. The user can toggle through the various control processes to view the specific process details or stop the process from running.

This should only be used with the support of Evertz Technical personnel.

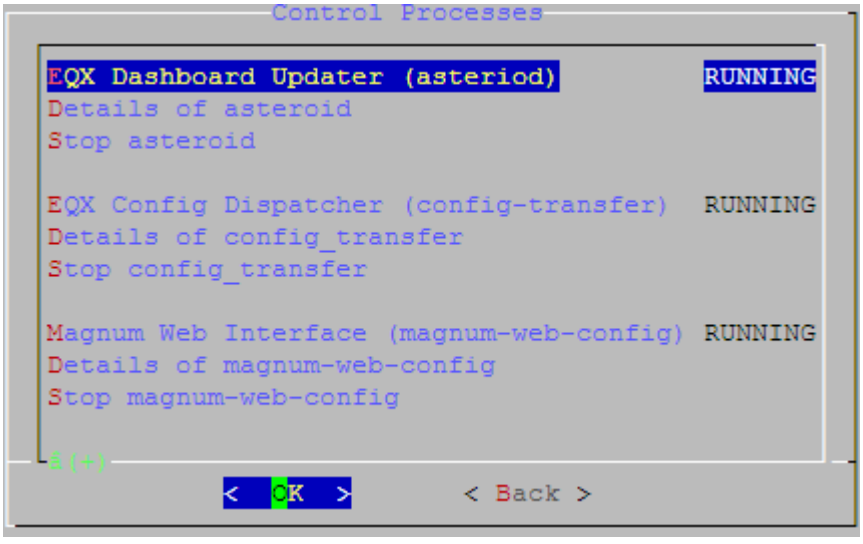


Figure 4-51: Control Processes

To view the process details, toggle to the *details* menu item for the desired process and select **OK**. A screen similar to the one in Figure 4-52 will appear allowing the user to view the process details. To return to the main **Server Debugging** screen toggle to the **Exit** option and press <enter>.

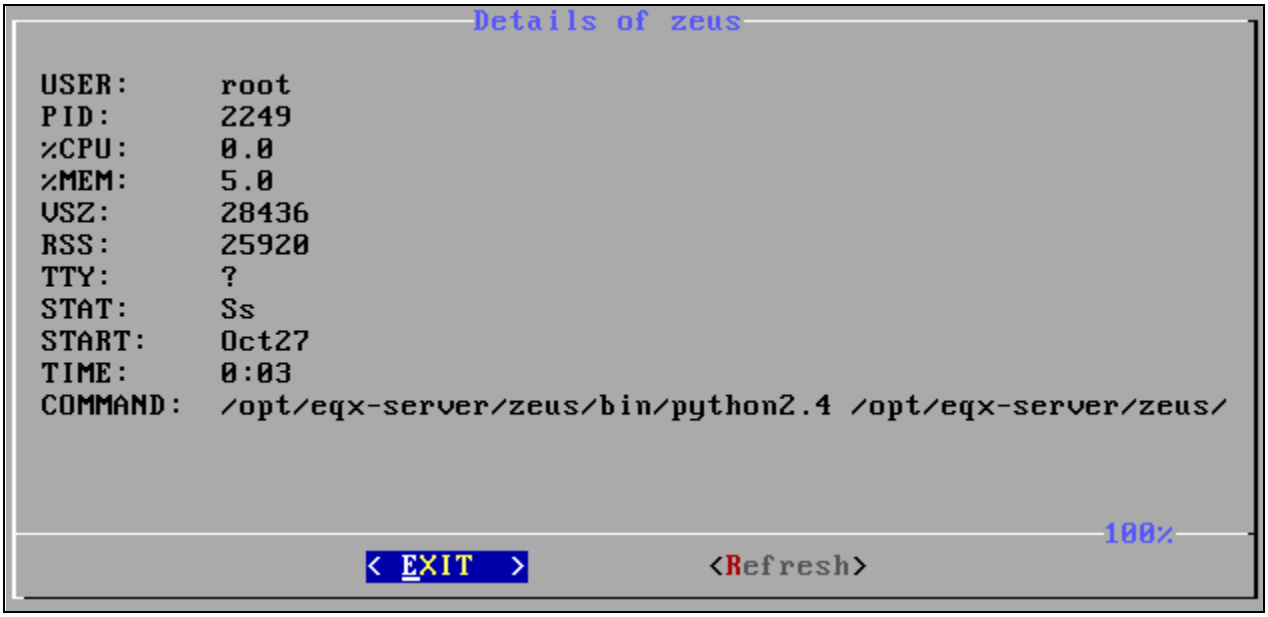


Figure 4-52: Details of Process

To stop a process, use the up and down arrows on your keyboard to toggle to the process that you wish to stop, and then select the **OK** button when you have selected the *stop* function for that process. For example, if you wish to stop the **Panel Uploader (panelcfg)** process, toggle to the ***Stop panelcfg*** item and select the **OK** button. The *Panel Uploader* process will be stopped.

4.4.13. Terminate Process

Selecting the **Terminate Process** menu item enables the user to force a process to terminate. Upon selecting this option a *Terminate Process* screen will appear as shown in Figure 4-53.

This should only be used with the support of Evertz Technical personnel.

To return to the main **Server Debugging** screen toggle to the **Exit** option and press <enter>.

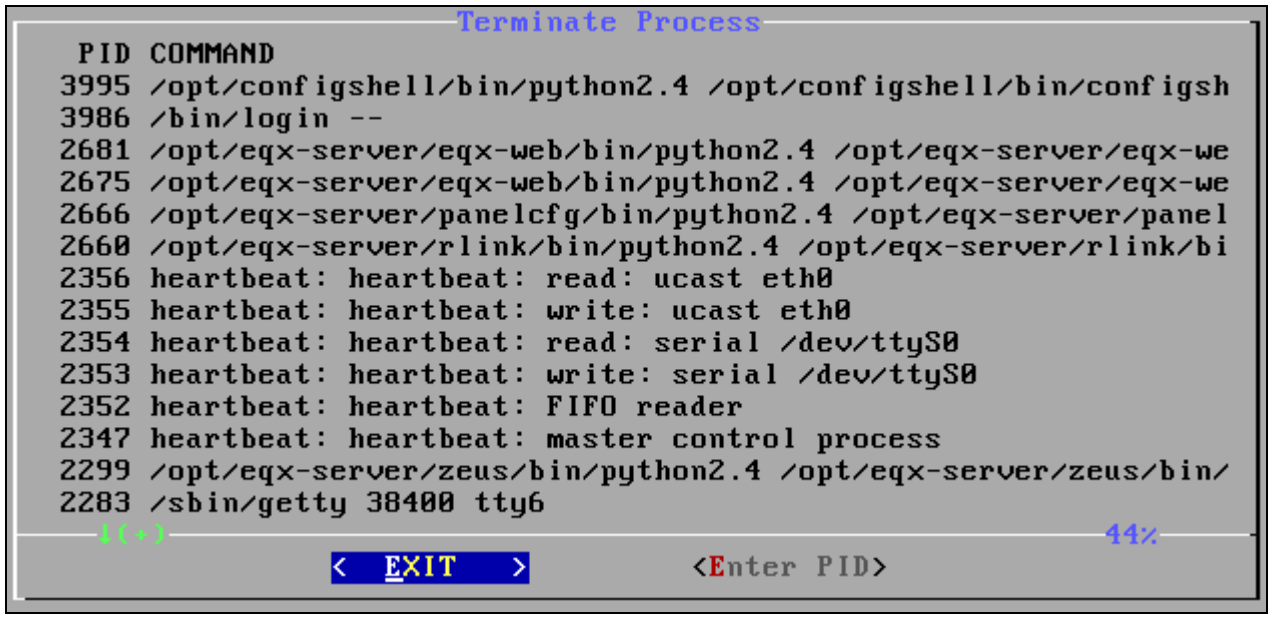


Figure 4-53: Terminate Process

4.5. ABOUT THIS SERVER

Selecting the **About** option from the main menu will display the current Server, Configshell and Kernel version.

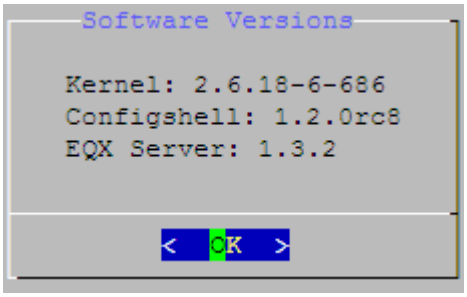


Figure 4-54: About…

4.6. LOGOUT

To safely logout of the MAGNUM Server Configuration tool, toggle to the **Logout** option and then select the **OK** button.

5. OPERATING THE MAGNUM SERVER

5.1. REQUIREMENTS FOR USING THE WEB CONFIG TOOL

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

2. Ensure the computer is attached to the same network as the MAGNUM Server.
   a. Since the MAGNUM Web Config Tool (WCT) uses standard HTML, XHTML, CSS, etc any web browser on any platform that complies with these formats can be used.
      i. Currently the most adopted browser that is completely compliant is Mozilla Foundations Firefox. We recommend that you use this browser, if available to you, for the best performance of the WCT. For a free download of the current Mozilla Firefox browser navigate to the following website:
         http://www.mozilla.com/en-US/firefox/

3. It is not required, but it is 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.

5.2. GETTING STARTED: SETTING UP YOUR ROUTER SYSTEM

1. Launch the firefox web browser and enter the numeric address chosen as the system IP address (also called the virtual or CLUSTER IP address which was entered into the Cluster configuration page during initial setup) into the address bar followed by "/magnum" or /eqx (for example: 192.168.1.4/magnum or 192.168.1.4/eqx) and then press the <enter> key; you should see the login page for the MAGNUM server web configuration tool.

2. Click the **Login** link button and enter the username and password. The default administrator username and password (as set during MAGNUM server install) is:
   USERNAME: admin
   PASSWORD: admin

3. Once the username and password is filled in, click the **Login** button. A Home screen / Dashboard will appear as shown in Figure 5-1.

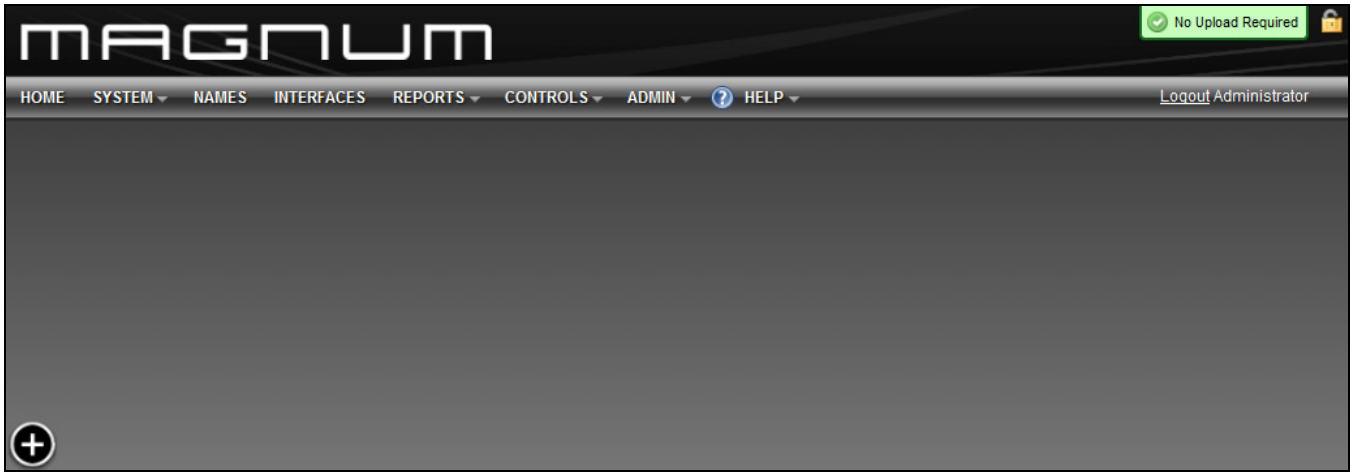


Figure 5-1: Home Page

5.3. WIDGET SELECTOR MENU

The user can access the Widget Selector menu by clicking on the button. A panel will appear at the bottom of the page as illustrated in Figure 5-2.

Figure 5-2: Widgets Selector Menu

The menu enables the user to select the following widgets for display: Devices, Satellites, Panels, and Routes. To close the Widget Selector menu, click on the button.

5.3.1. Devices Widget

Selecting the **Devices** icon will launch the **Devices** widget as illustrated in Figure 5-3. The **Devices** widget provides the user with a heads-up view of the current connection states of all devices managed by Magnum.

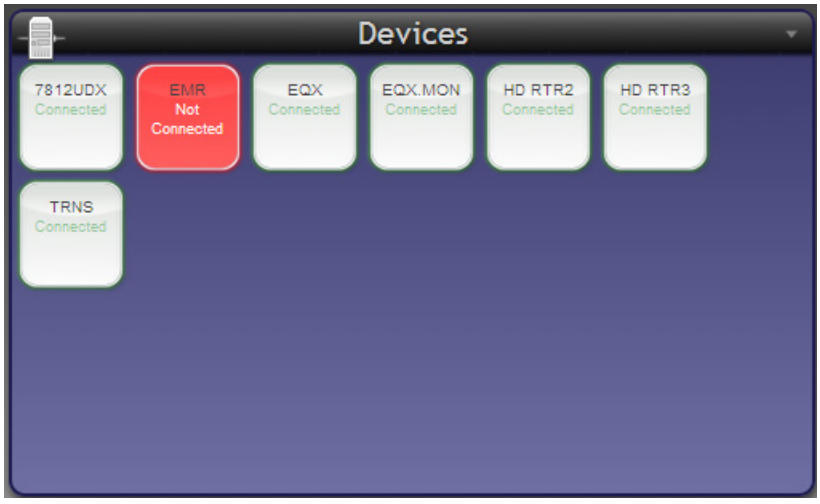


Figure 5-3: Devices Widget

The user can move the **Devices** widget anywhere on the page by clicking on the widget and then dragging it to the desired location. The user can also resize the widget by dragging the window's bottom right corner. To close the widget, click on the button in the top left corner.

Please Note: To move, resize, or close the Devices window, the Widget Selector menu must be open at the bottom of the screen.

5.3.2. Satellites Widget

Selecting the **Satellites** icon will launch the **Satellites** widget as illustrated in Figure 5-4. The **Satellites** widget provides the user with a heads-up view of the current connection state of any 3rd Party Router/Control System that Magnum may be interfacing with. The widget is also used to present the user with *Names* updates from the 3rd Party Router Control System that may be enabled by the Magnum Names module and 3rd Party Router/System that supports name transfer/updates.

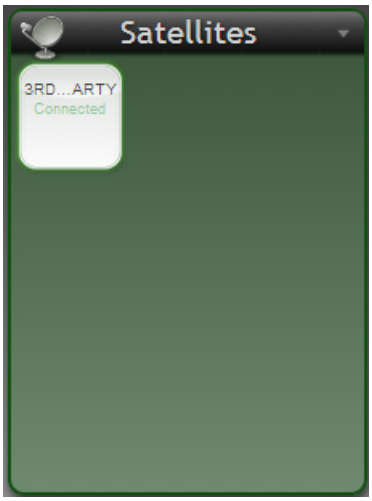


Figure 5-4: Satellites Widget

The user can move the **Satellites** widget anywhere on the page by clicking on the widget and then dragging it to the desired location. The user can also resize the widget by dragging the window's bottom right corner. To close the widget, click on the button in the top left corner.

Please Note: To move, resize, or close the Satellites window, the Widget Selector menu must be open at the bottom of the screen.

5.3.3. Panels Widget

Selecting the **Panels** icon will launch the **Panels** widget as illustrated in Figure 5-5. The **Panels** widget provides the user with a heads-up view of the current connection state of any connected panel managed by the Magnum Control System.

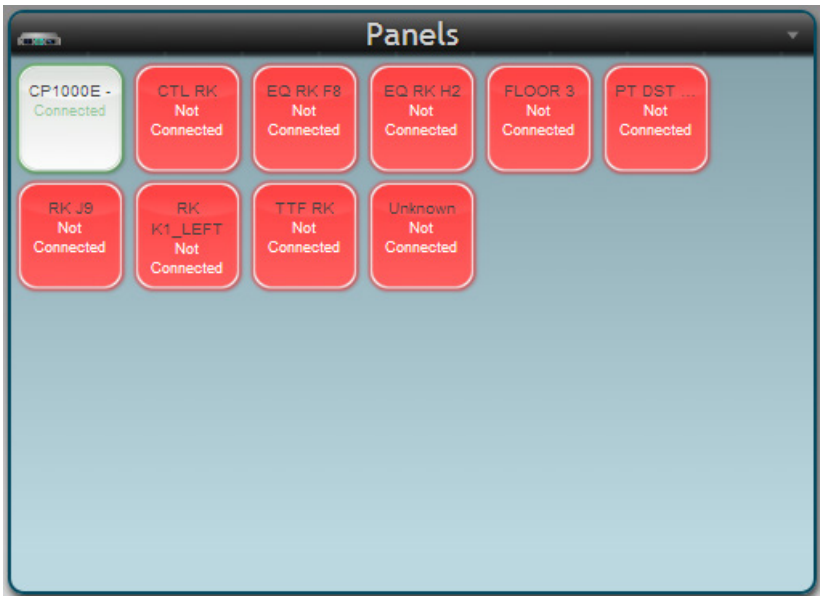


Figure 5-5: Panels Widget

The user can move the **Panels** widget anywhere on the page by clicking on the widget and then dragging it to the desired location. The user can also resize the widget by dragging the window's bottom right corner. To close the widget, click on the button in the top left corner.

Please Note: To move, resize, or close the Panels window, the Widget Selector menu must be open at the bottom of the screen.

5.3.4. Routes Widget

Selecting the **Routes** icon will launch the **Routes** widget as illustrated in Figure 5-6. The **Routes** widget provides the user with a heads-up view of the current routes that are being made on the Magnum Control System. The route information is presented using the Global Names as defined in the Magnum Control System *Names* page. The information displayed in the **Routes** widget is not persistent and will only display the routes made while the Magnum Dashboard page is viewed.

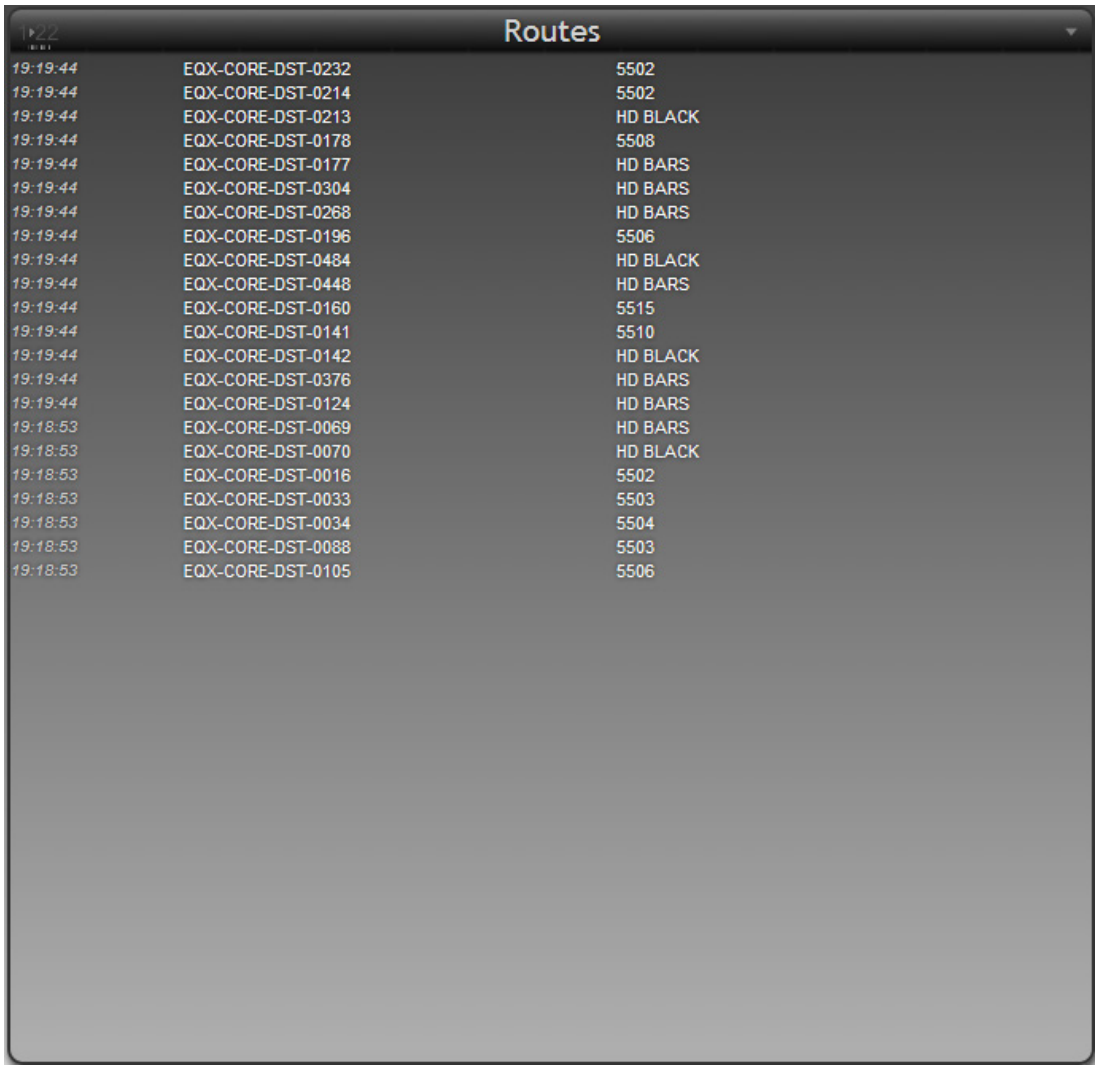


Figure 5-6: Routes Widget

The user can move the **Routes** widget anywhere on the page by clicking on the widget and then dragging it to the desired location. The user can also resize the widget by dragging the window's bottom right corner. To close the widget, click on the button in the top left corner.

Please Note: To move, resize, or close the Routes window, the Widget Selector menu must be open at the bottom of the screen.

5.4. CONFIGURING THE SYSTEM

5.4.1. Defining the Servers

The **Servers** tab will enable the user to view, add and delete servers. The existing servers will be listed in the *Name* column alongside the corresponding IP Address in the *IP Address* column. The *Active* column will identify whether a server is active or inactive. If a server is active a green check mark will appear in the *Active* column. The *Upload Required* column will identify if an upload is required depending on if changes have been made. The *Server License* field identifies the validity of a license. If the user has a valid license loaded, the *Server License* field will read “License Valid”; if a license is invalid or missing it will be indicated in this column. The *License Virtual Panels* column identifies the number of virtual panels that can connect to MAGNUM Server at one time.

To access the server screen:

1. Click on the **SYSTEM** drop down menu and select the **Servers** menu item.

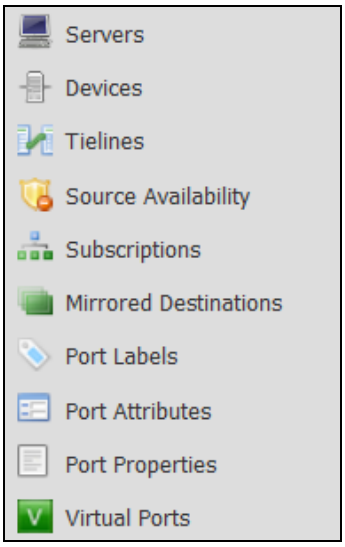


Figure 5-7: System Menu

2. The **Server** screen, as shown in Figure 5-8, enables the user to add, view and edit the properties of the servers.

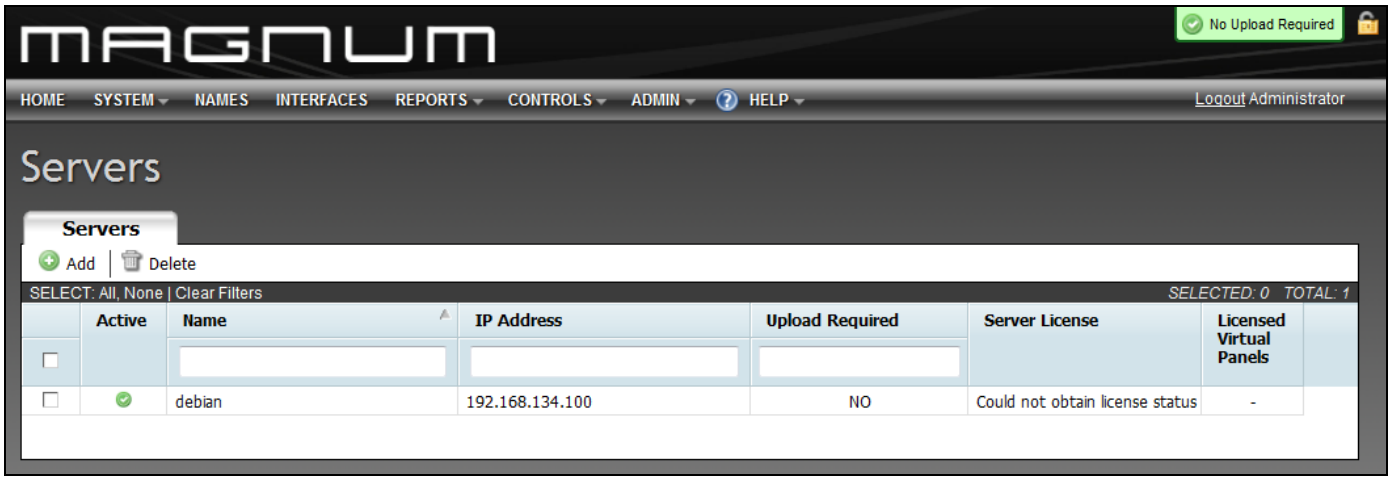


Figure 5-8: Servers Page

3. To add a new server, click on the **Add** button and an **Add Server** dialog box will appear, as shown in Figure 5-9.

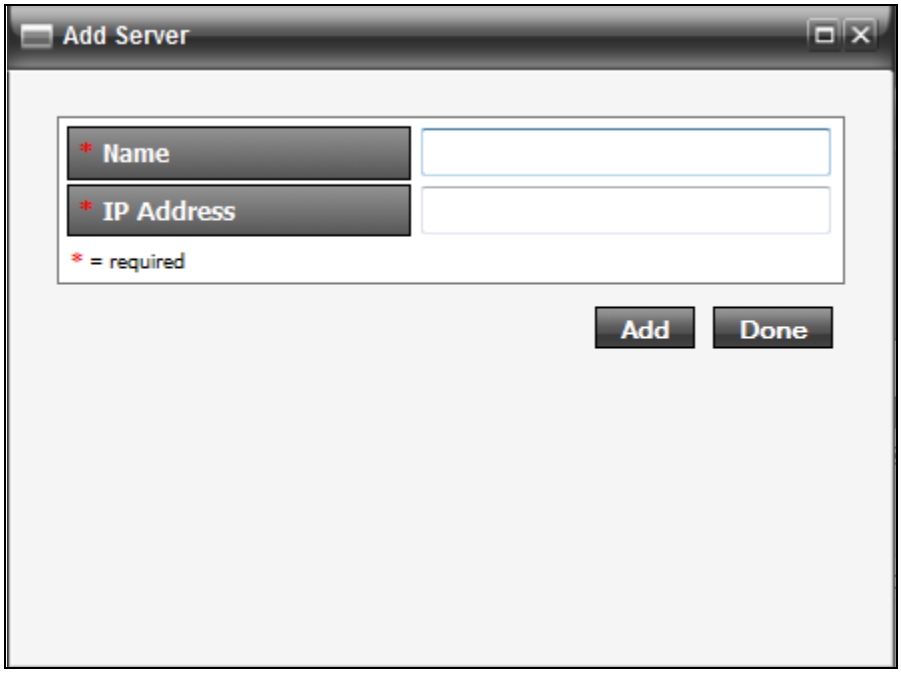


Figure 5-9: Add Server

4. To add a new server, enter a unique server name and IP address into the fields provided. Once the information is entered, select the **ADD** button to add the server to the Server List. If you have finished adding servers, click the **Done** button to exit and return to the main server page.

4. The user can apply changes to the system using the controls on the server screen.

5. If changes have been made that require uploading, **YES** will be displayed in the **Upload Required** field and the button at the top right of the page will be orange in colour and state "Upload Required". To upload the changes, select the **Commit Changes** button.

Figure 5-10: Upload Required Button

6. Should a major change be required, the changes will be listed in the **Changes** dialog screen that appears when clicking the **Upload Required** button. This area lists the major changes like deleting a router, changing the I/O size, renaming a device or servers, etc. Anytime a change to the system is made the change will be listed in the Change Set section. The **Change Details** column lists the individual details of the changes made to each object.

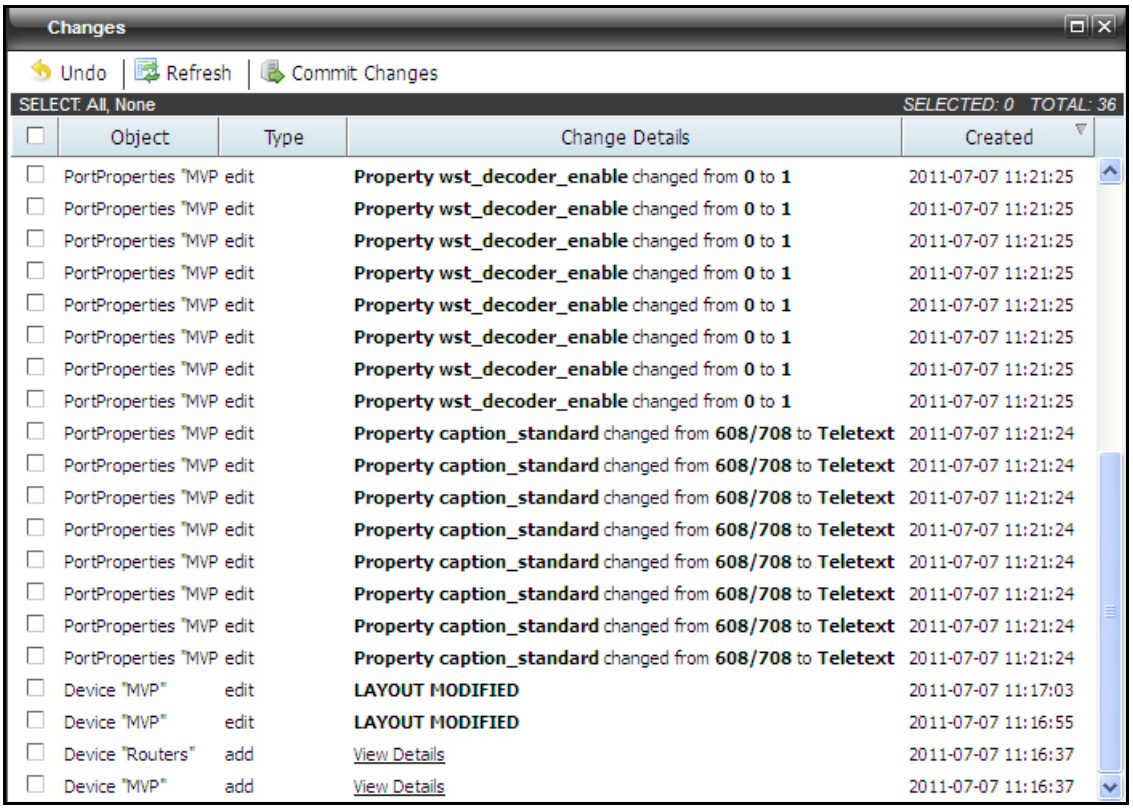


Figure 5-11: Changes Dialog Screen

7. To upload the changes to the server, select the **Commit Changes** button.

Figure 5-12: Committing Changes Window

5.4.2. Defining the Routing Devices

1. From the **SYSTEM** drop down menu, select the **Devices** option.

2. The *Devices* screen shown in Figure 5-13 will enable the user to Add, Delete, or Group devices. To group the devices displayed in the devices list, select the *Group By…* drop down menu.

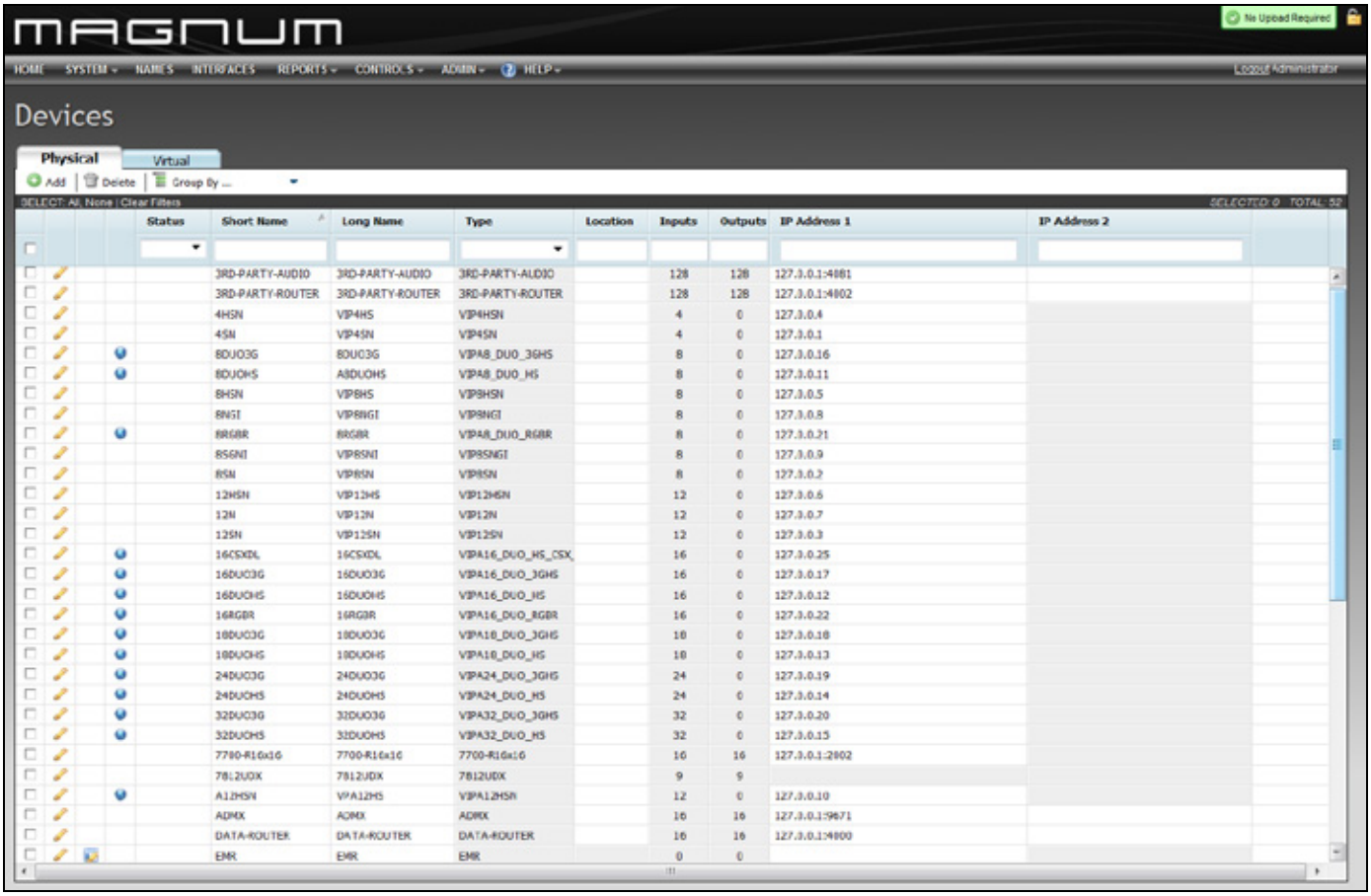


Figure 5-13: Device Page

3. The user has three "Group By…" options; *None, Type,* and *Location*.
   - ***None*** will display all of the devices present in no specific order.
   - Selecting the ***Type*** option from the drop down menu will separate the devices into categories based on the device type. Refer to Figure 5-14.
   - Selecting the ***Location*** option from the drop down menu will separate the devices into categories based on the device location. Refer to Figure 5-15.

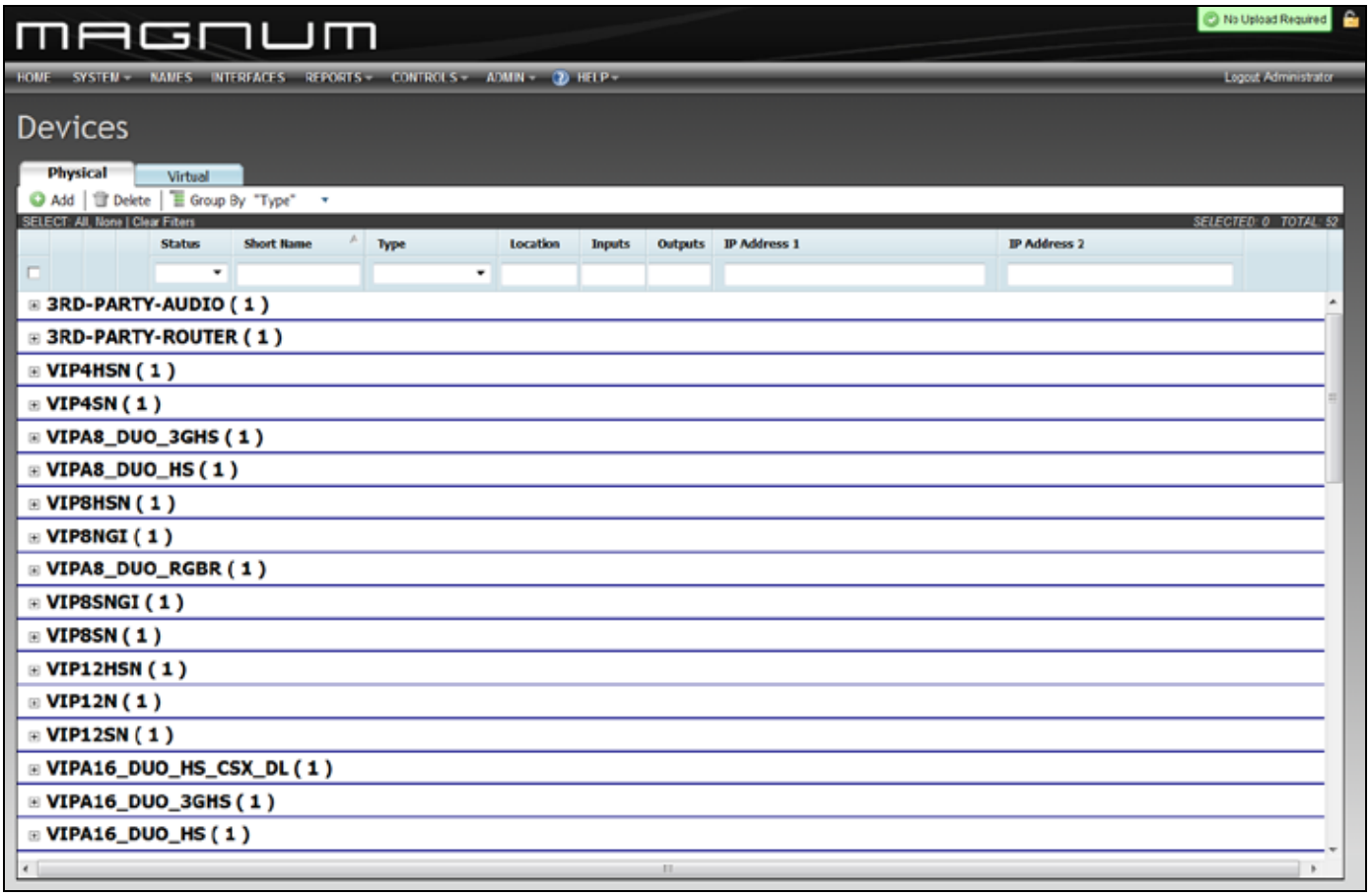


Figure 5-14: Group By "Type"

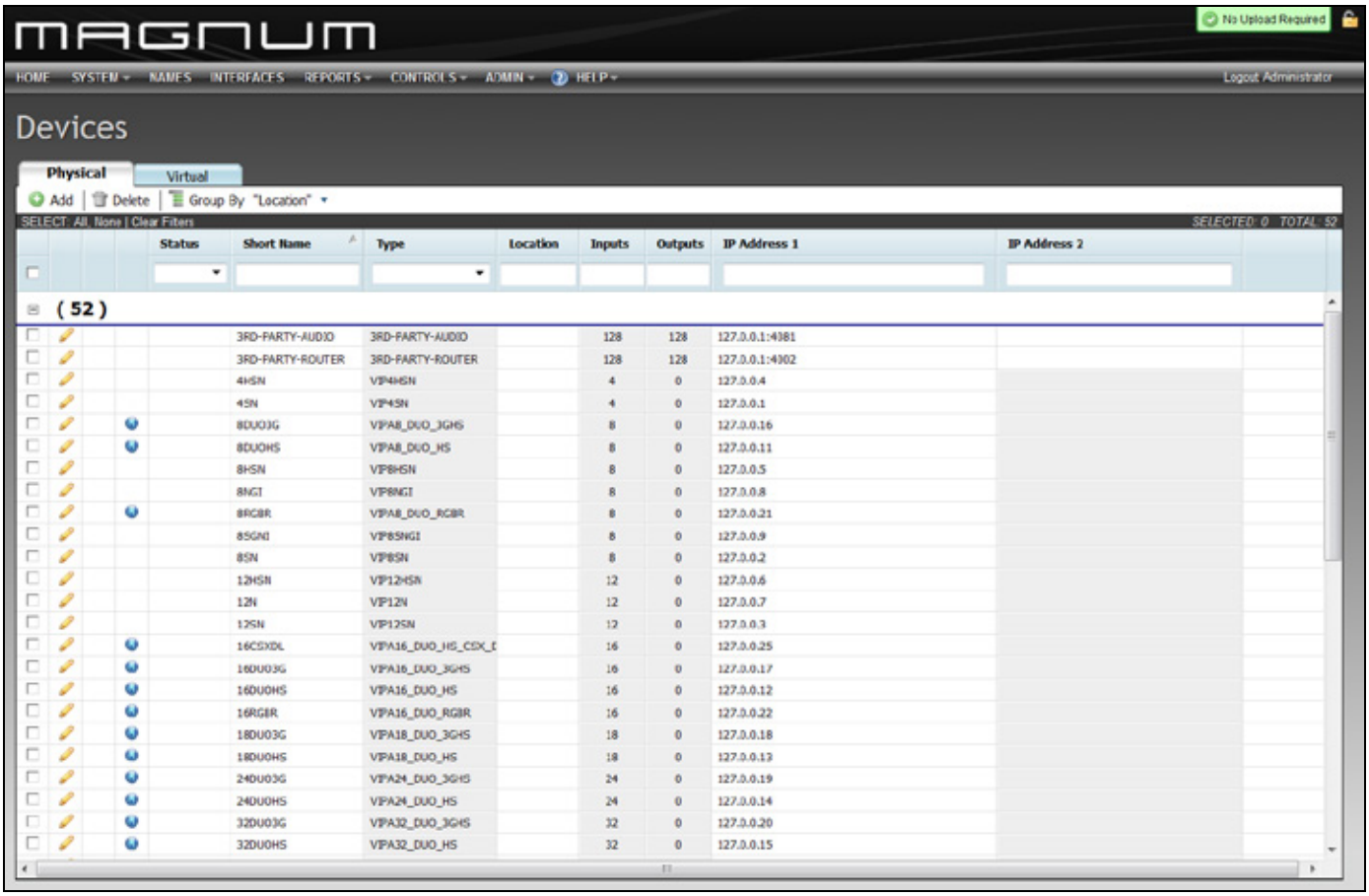


Figure 5-15: Group By “Location”

4. To add a new device, select the **Add** button. An *Add Device* screen will appear enabling the user to choose a device to add using the "Select a Device Type" drop down menu. Once the device type is selected, the corresponding device fields will appear which enable the user to enter the router parameters.

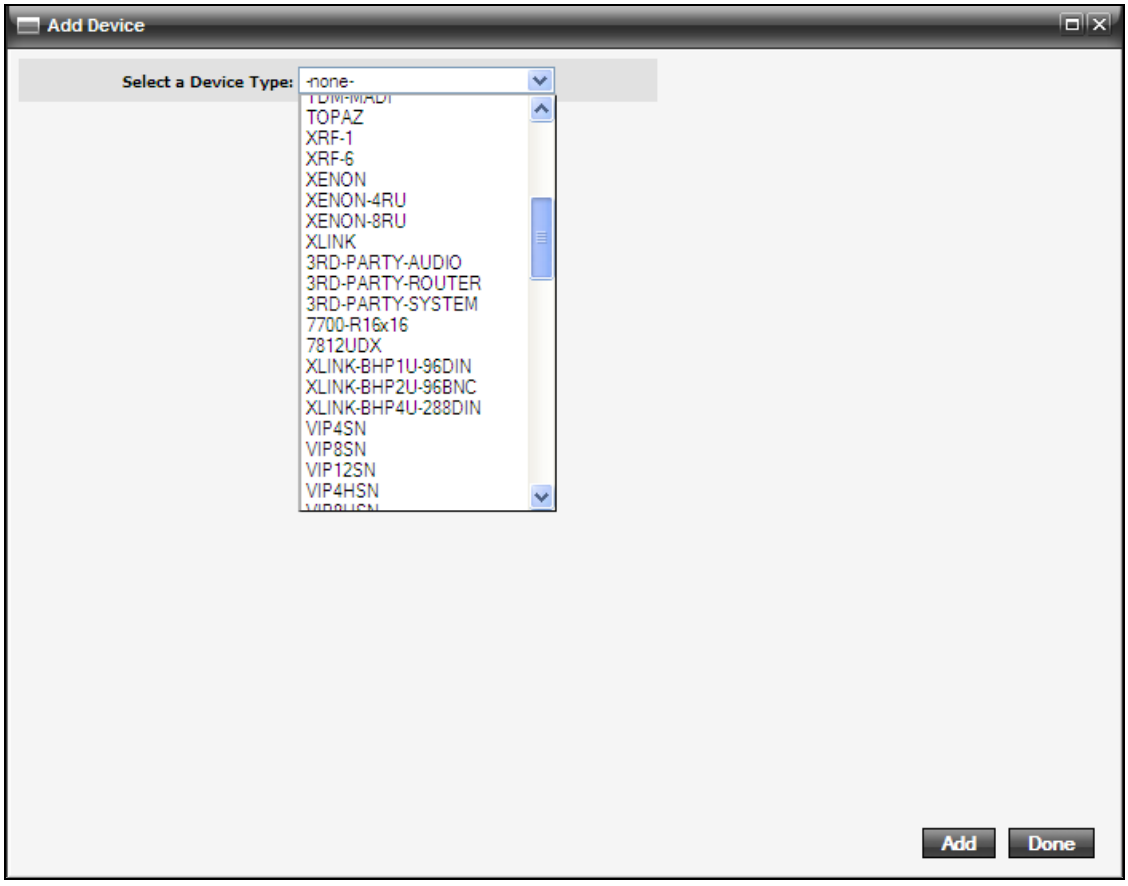


Figure 5-16: Server: Devices Tab

5. Adding a multiviewer device:

PARAMETER	DESCRIPTION
Device Type	The multiviewer type to be controlled.
Short Name	The name used to reference the multiviewer device
Long Name	A more descriptive title for the device.
Primary IP (address)	The network information of multiviewer that is required for the server to connect to it
Location	Information pertaining to the physical location (Los Angeles or ER-227) can be optionally entered here.

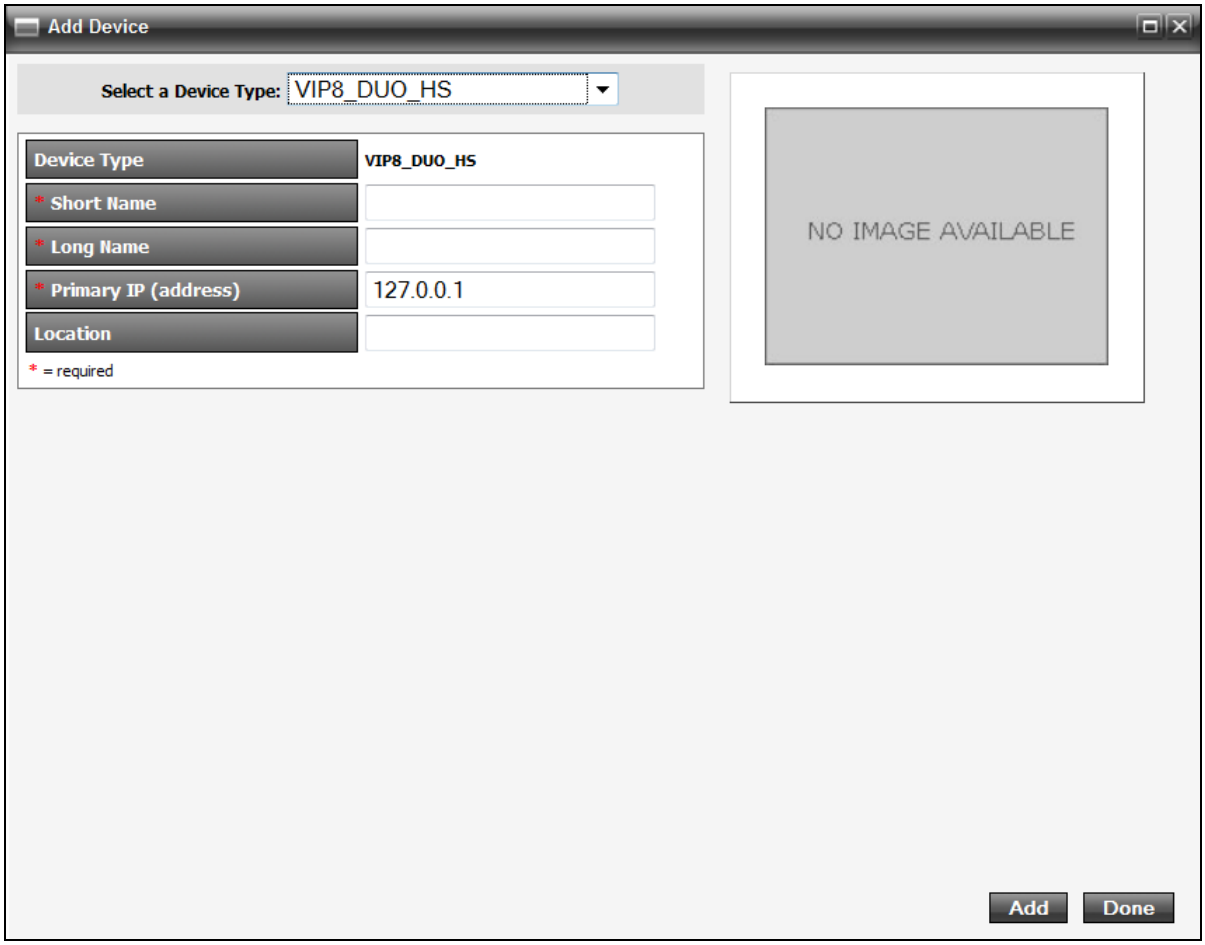
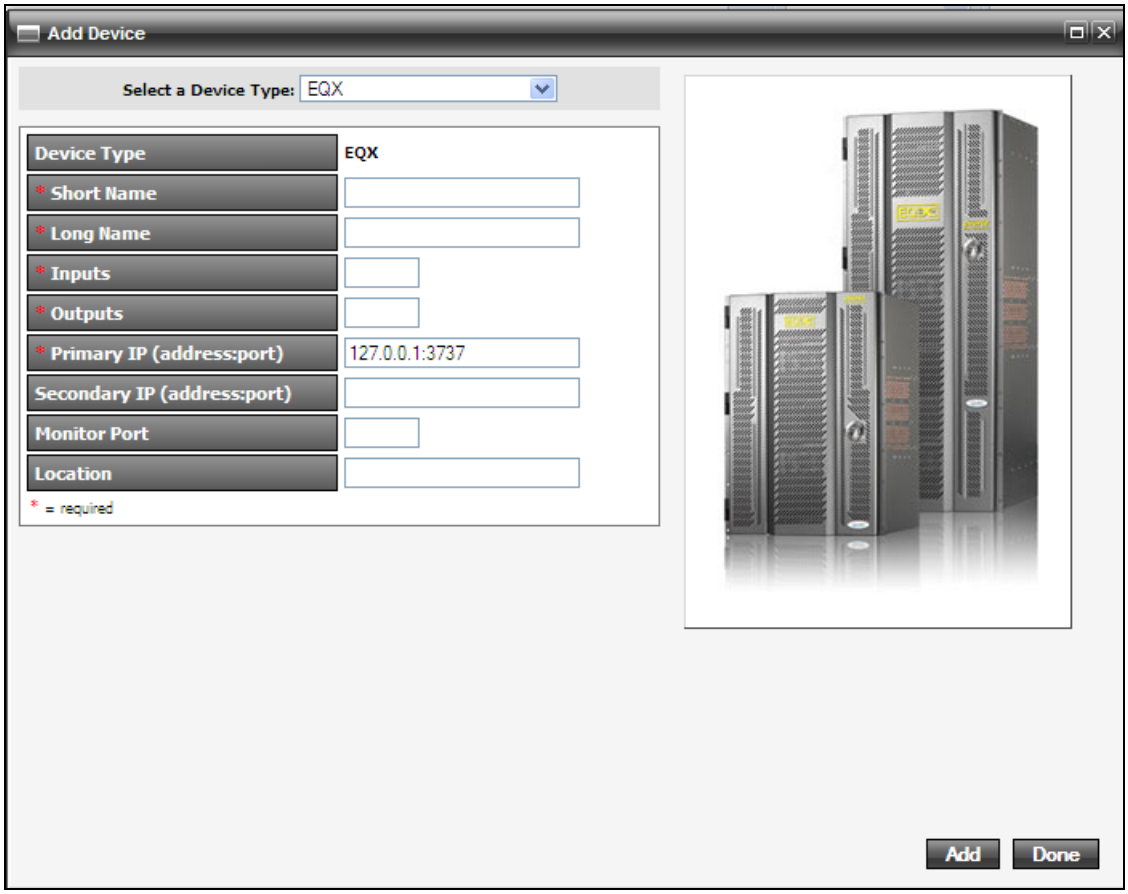


Figure 5-17: Adding a Multiviewer Device

6. Adding a router by entering information in the **Required** and **Optional** information fields. Below is a list of the parameters and a description of their function:

PARAMETER	DESCRIPTION
Device Type	The router type to be controlled.
Short Name	The name used to build default names for source destinations and tielines.
Long Name	A more descriptive title for the device.
Inputs	Define the number of the inputs available on the router to be controlled.
Outputs	Define the number of the outputs available on the router to be controlled.
Primary IP (address:port)	The network information of the primary FC is required for the router to be controlled.
Secondary IP (address:port)	The network information of the secondary FC is optional.
Monitor Port	The port entered will allow control of the EQX dedicated signal monitoring ports.
Location	Information pertaining to the physical location (Los Angeles or ER-227) can be optionally entered here.



7. Once complete, click the **Add** button. If you have added all the desired devices, select the **Done** button to finish adding products. In order for the addition of these devices to be applied to the server, the user must navigate to the **Server** page and upload the changes by pressing the "Commit Changes" button. Any changes or additions to the system will be listed in the Server Change Set tab. You may upload these changes now or move onto further configuration.

Tip: Remember your changes will not be lost, even if the web browser is closed. They will be stored in the web host portion of the MAGNUM server, but will not be applied to the system until you select the "Upload Required" icon and click the "Commit Changes" button.

8. 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.

9. To find a particular device(s), use the filter toolbar to search through the list of existing devices. Enter a property into one of the blank fields at the top. As you type, the list of devices will be narrowed down to display only the properties that match the data being entered.

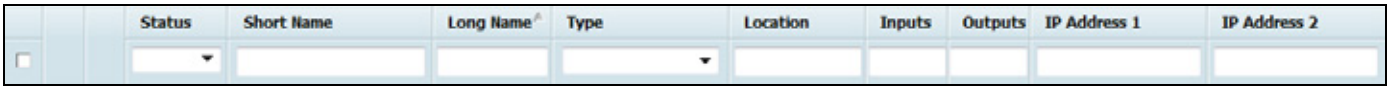


Figure 5-18: Device Filter

10. To edit a device, select the icon. An **Edit Device** window will open where the user can update the device's properties.

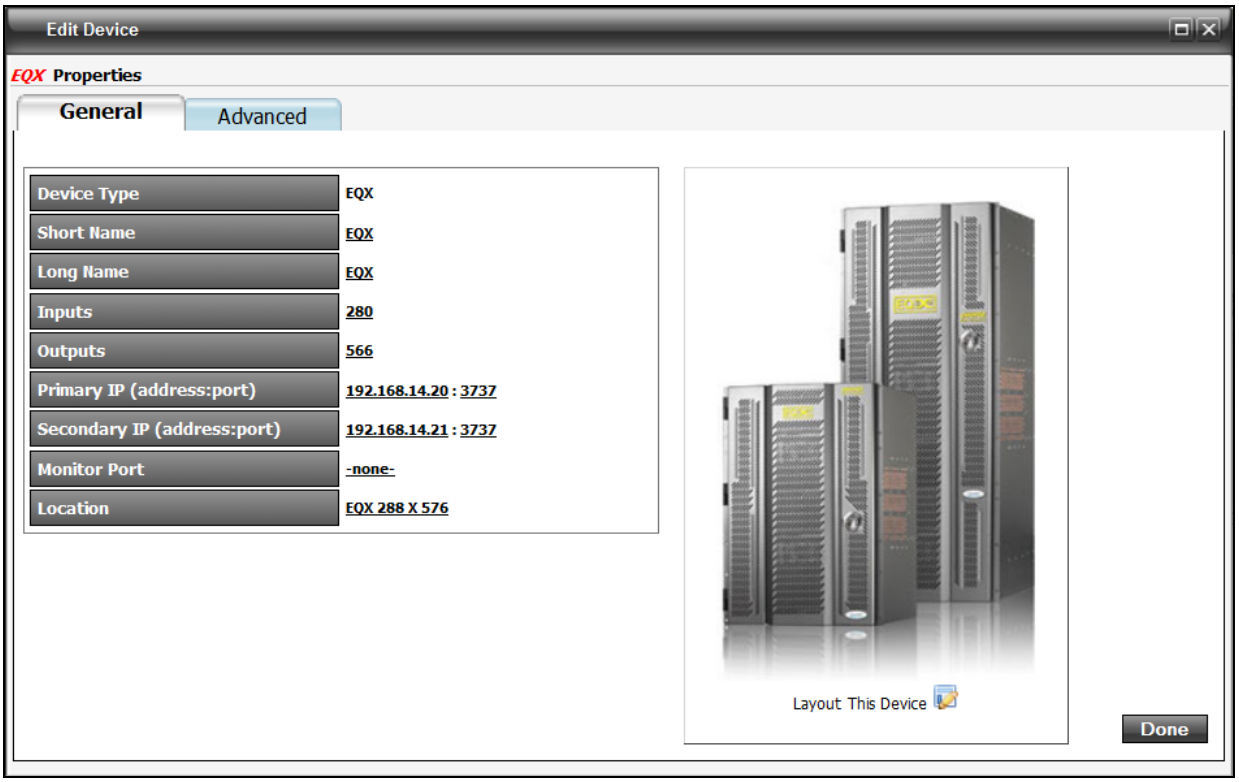


Figure 5-19: Edit Device Window – General Tab

11. If changes are required for device communication, the **Advanced** tab can be used to customize how Magnum communicates with a device. The **Advanced** tab should be used with the assistance of Evertz Server personnel.

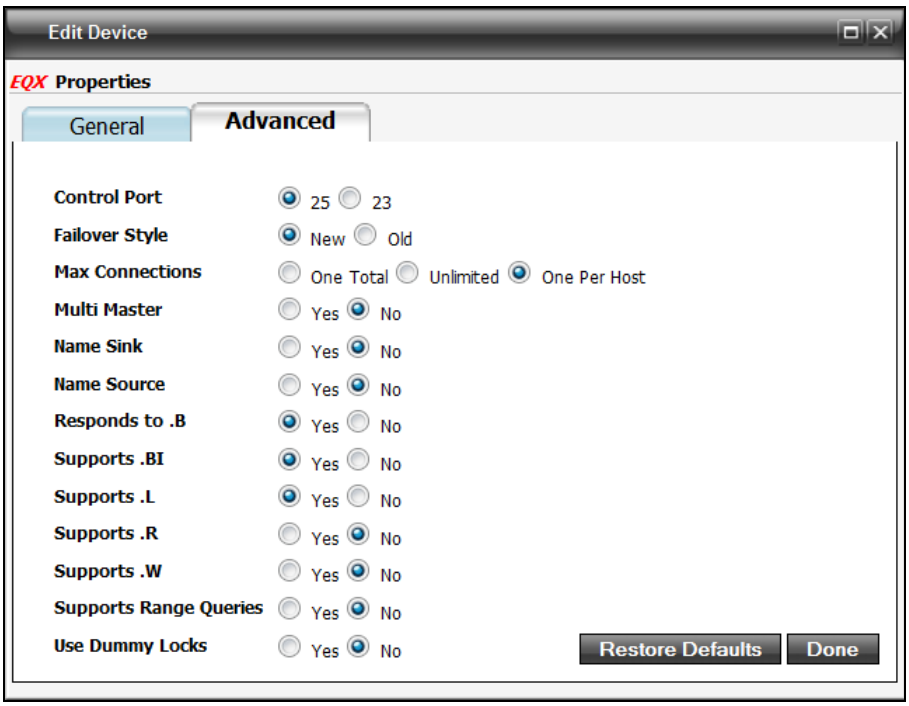


Figure 5-20: Edit Device Window – Advanced Tab

5.4.3. Edit Device Layout

The user can edit a device layout by selecting the icon. A new window will open where the user can update the device's layout. The device layout page is used to define special cards such as AVIPs and AVOPs or cross-points that can be used to provide XLINK outputs for multiviewer connections.

5.4.3.1. EQX Layout

Clicking in the the card type cell will allow the user to change or add new card types to a slot in the router. If a card type is already defined, the user can delete the card and hit the "Ctrl" key on the keyboard to see a list of available card types for that slot. The number of inputs and outputs may change based on the card type selected. When changing the card type ensure that the physical router layout matches what is defined EQX Layout page.

The card type cell for the router cross-points allows the user to define the cross-points that are used to provide XLINK outputs from the router. Clicking in the cell and hitting the "Ctrl" key on the keyboard will display a list of available cards for that slot.

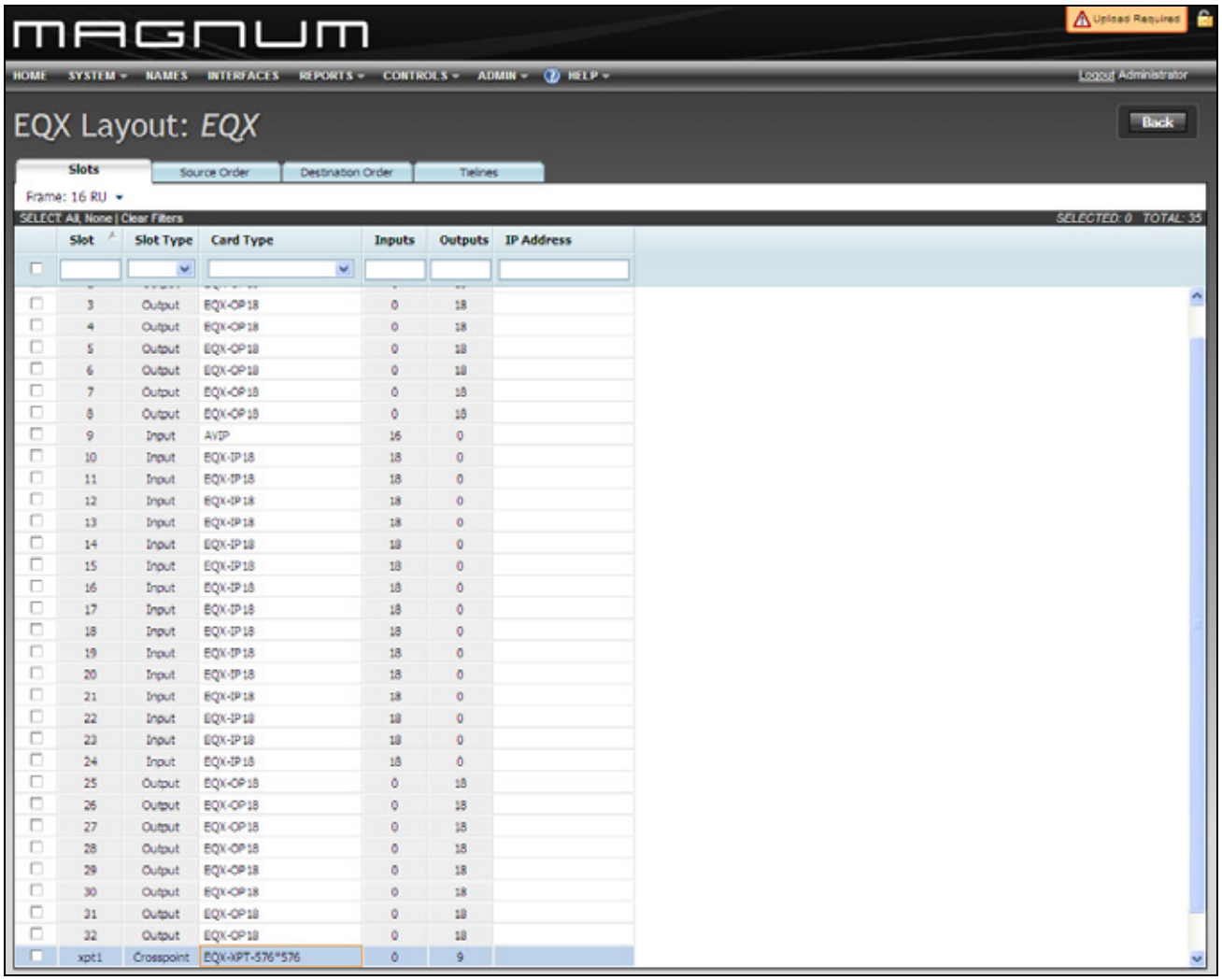


Figure 5-21: EQX Layout – Slots Layout

To search for a device layout, use the filter toolbar to sort through the list of layouts. Enter a property into one of the blank fields or use the drop down menu to narrow down your search. As you type or select an item, the list of devices will be narrowed down to display only the properties that match the data being entered.

Figure 5-22: Slots Filters

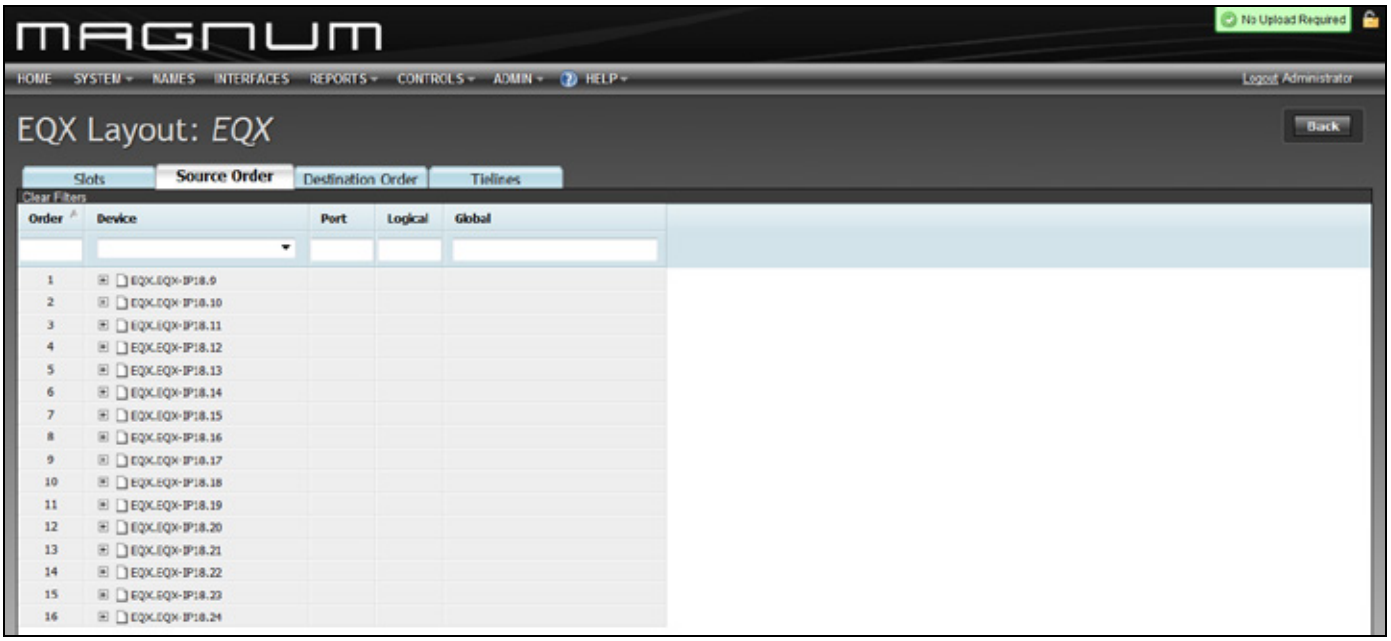


Figure 5-23: EQX – Source Order Tab

To search for a source device, use the filter toolbar to sort through the list of devices. Enter a property into one of the blank fields or use the drop down menu to narrow down your search. As you type or select an item, the list of devices will be narrowed down to display only the properties that match the data being entered.

Figure 5-24: Source Order Filters

The **Destination Order** tab allows the user to see the logical port order of destinations for the router as defined within Magnum.

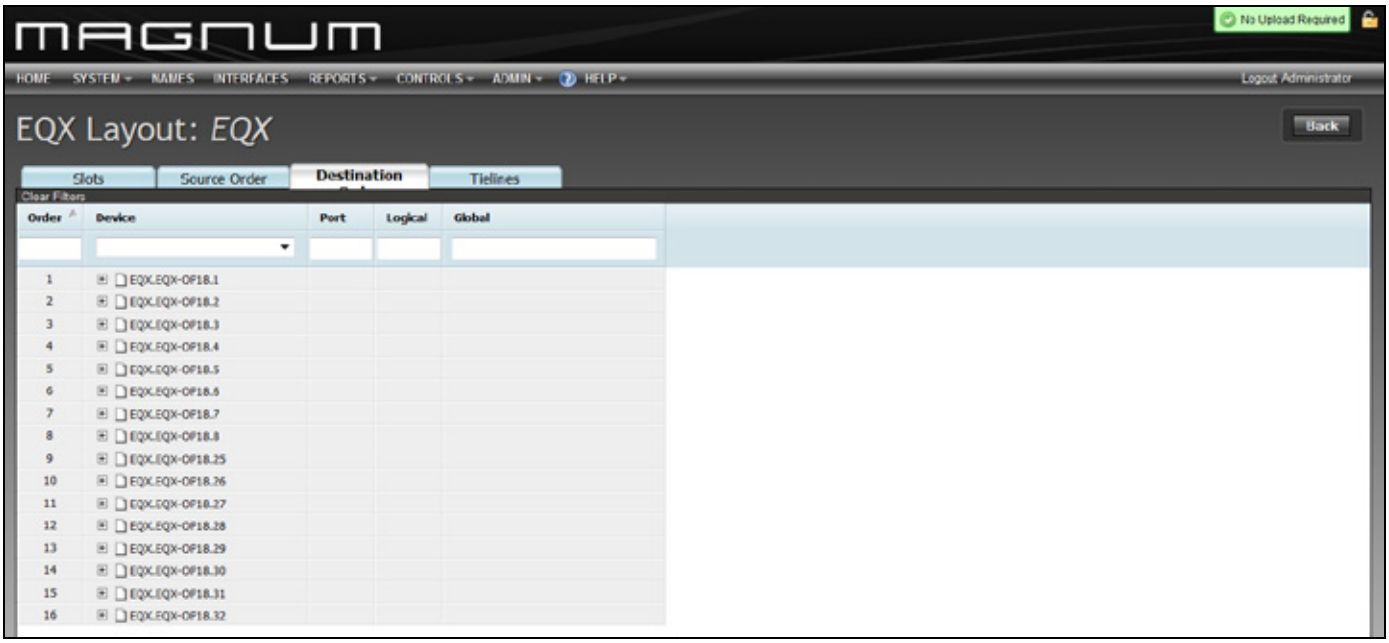


Figure 5-25: EQX – Destination Order Tab

To search for a device, use the filter toolbar to sort through the list of destination devices. Enter a property into one of the blank fields or use the drop down menu to narrow down your search. As you type or select an item, the list of devices will be narrowed down to display only the properties that match the data being entered.

Figure 5-26: Destination Filters

The **Tielines** tab allows the user to define the XLINK connections from the router cross-points to the VIPX or MVPX rear plates. For a split cable connection the user defines the connections using the Link to A and Link to B cells. Clicking in the cell and hitting the “Ctrl” key on the keyboard will display the list of devices available for tielining to the selected port. VIPX rear plates and Breakout panels are the common devices that will be tielined to the XLINK outputs of the cross-point devices.

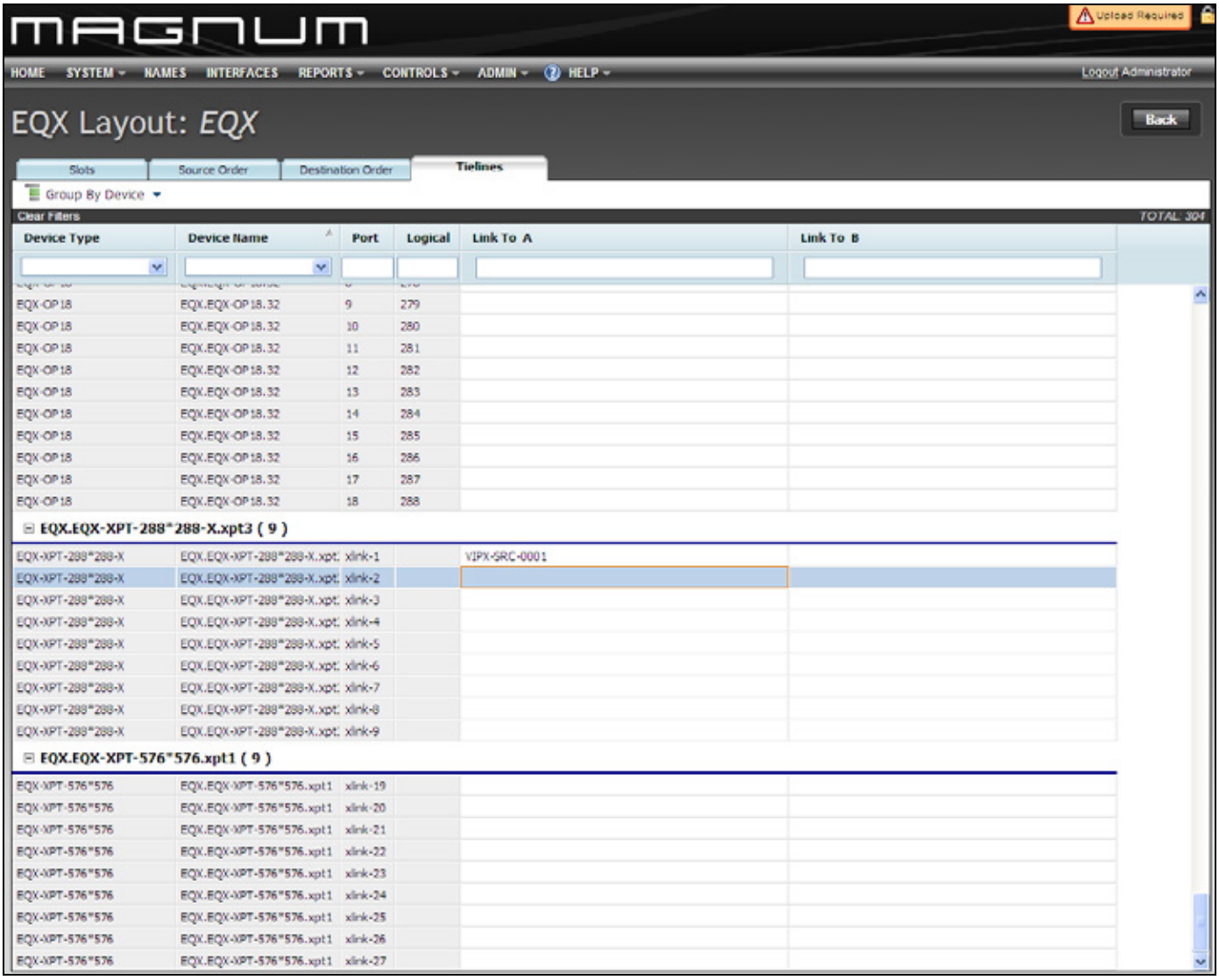


Figure 5-27: EQX – Tielines

To search for a device use the filter toolbar to sort through the list of devices. Enter a property into one of the blank fields or use the drop down menu to narrow down your search. As you type or select an item, the list of devices will be narrowed down to display only the properties that match the data being entered.

Figure 5-28: Tielines Filters

5.4.3.2. Xenon Layout

The user can edit a Xenon device layout by selecting the icon. A new window will open where the user can update the device's layout. The device layout page is used to define special cards such as XLINK outputs cards provide XLINK outputs for multiviewer connections.

Clicking in the "Type" cell will allow the user to change or add new card types to a slot in the router. If a card type is already defined, the user can delete the card and hit the "Ctrl" key on the keyboard to see a list of available card types for that slot. The number of inputs and outputs may change based on the card type selected. When changing the card type ensure that the physical router layout matches what is defined in Xenon Layout page.

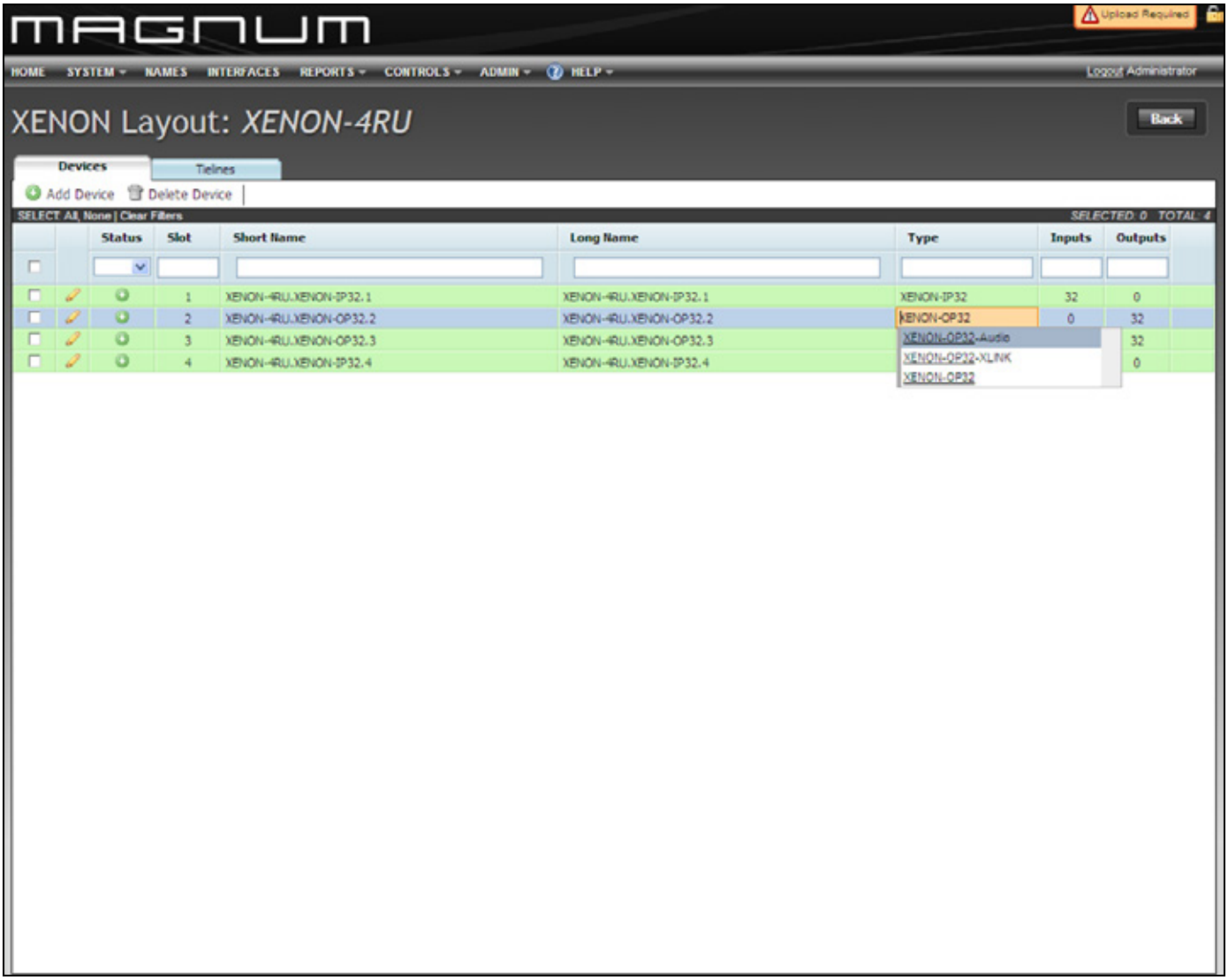


Figure 5-29: XENON Layout

The **Tielines** tab allows the user to define the XLINK connections from the XLINK output card to the VIPX or MVPX rear plates. For a split cable connection the user defines the connections using the Link to A and Link to B cells. Clicking in the cell and hitting the “Ctrl” key on the keyboard will display the list of devices available for tielining to the selected port. VIPX rear plates and Breakout panels are the common devices that will be tielined to the XLINK outputs.

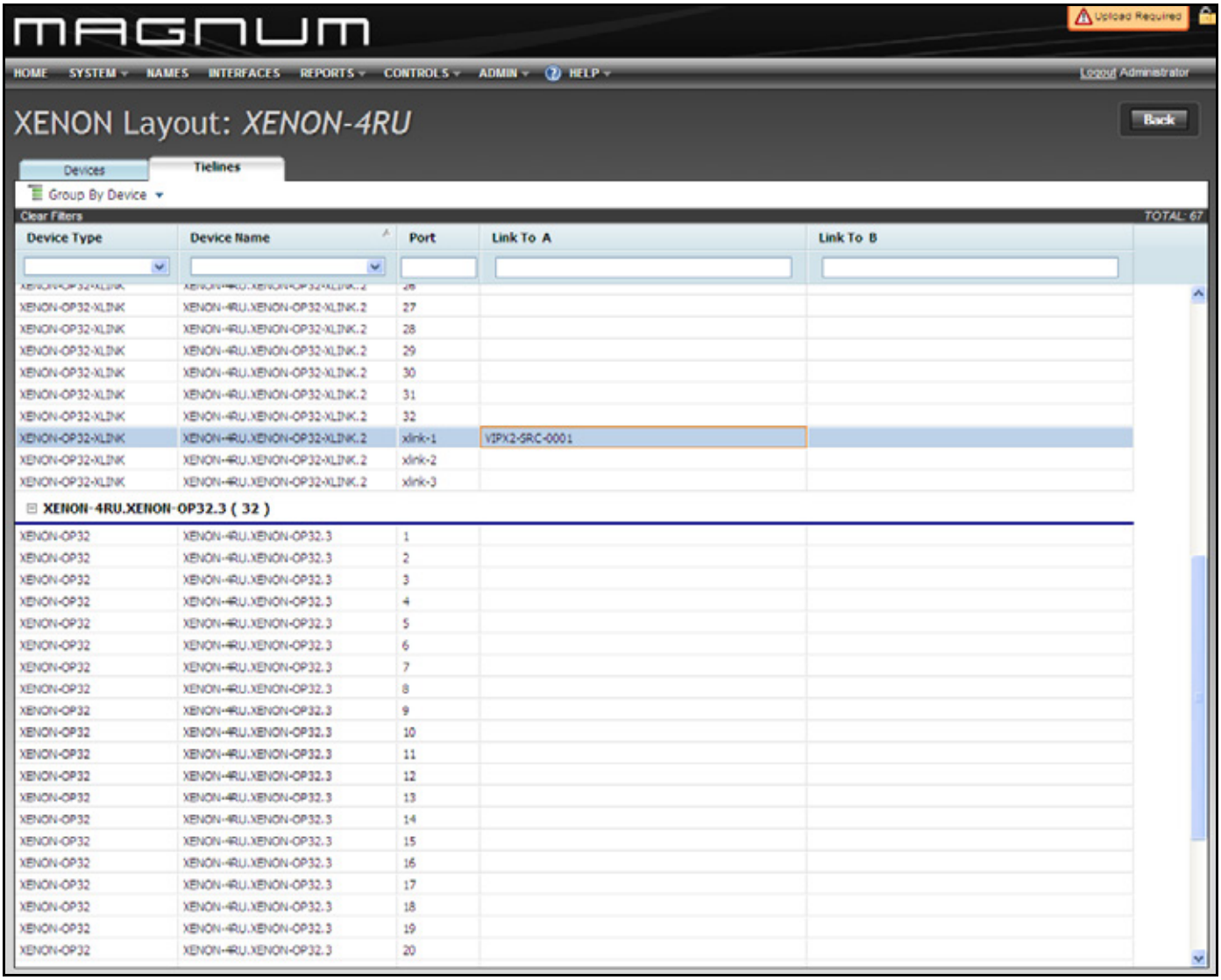


Figure 5-30: Tielines Tab

5.4.3.3. EMR Layout

The EQX Router, when paired with the Magnum Server and equipped with Audio-Video Input (AVIP) and Audio-Video Output (AVOP) cards can be used to De-embed audio to, and Embed audio from an EMR Audio Router.

In Magnum 1.3.0 and above there are changes to how the audio systems are defined in the server, and how the routing occurs from a user interface. The AVIP/AVOP audio system appears as part of a large flat audio router where the individual ports can be named, and the names are not inherited from the video level.

The EMR Device is then created using the Add Device dialog box on the Devices Page. The default Primary IP address of the EMR (127.0.0.1:6555) is used and should not be changed. All EMR Cards at one location are added to a single EMR Device, regardless of frame layout. In situations where there are multiple EMRs in Multiple Locations (Such as two mobile trucks where the B unit is not always connected to the A truck) a second EMR Device is added with another IP address (127.0.0.1:6556).

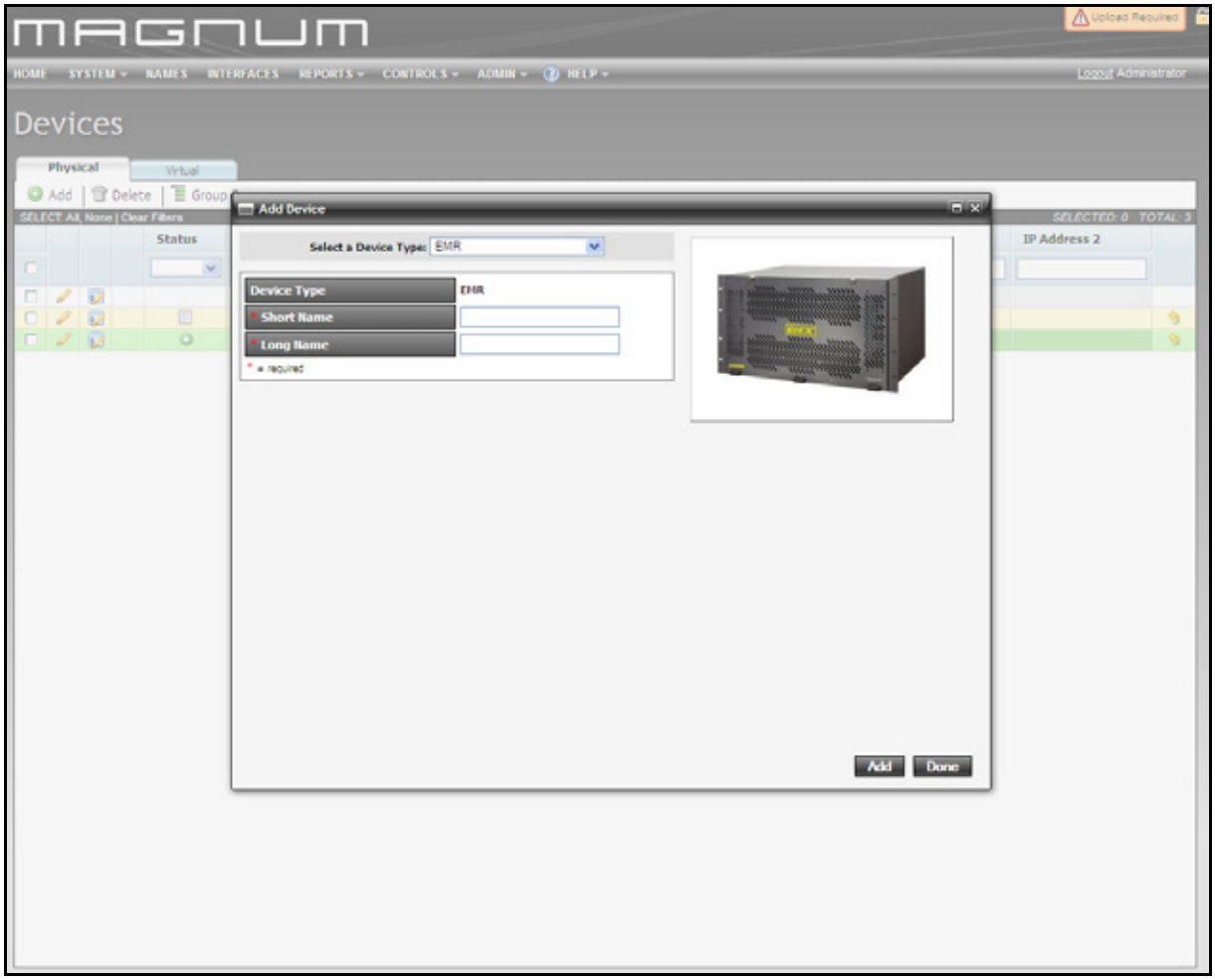


Figure 5-31: Add Device

PARAMETER	DESCRIPTION
Device Type	EMR
Short Name	The name used to build default names for source destinations and tielines.
Long Name	A more descriptive title for the device.

The user can edit the EMR device layout by selecting the icon. A new window will open where the user can update the device's layout. In the EMR Device, The AVIP and AVOP cards are added to the EMR by clicking on "Insert Existing Device", highlighting all the modules, and pressing Add. The AVIP and AVOP cards are first defined during the editing of the EQX layout.

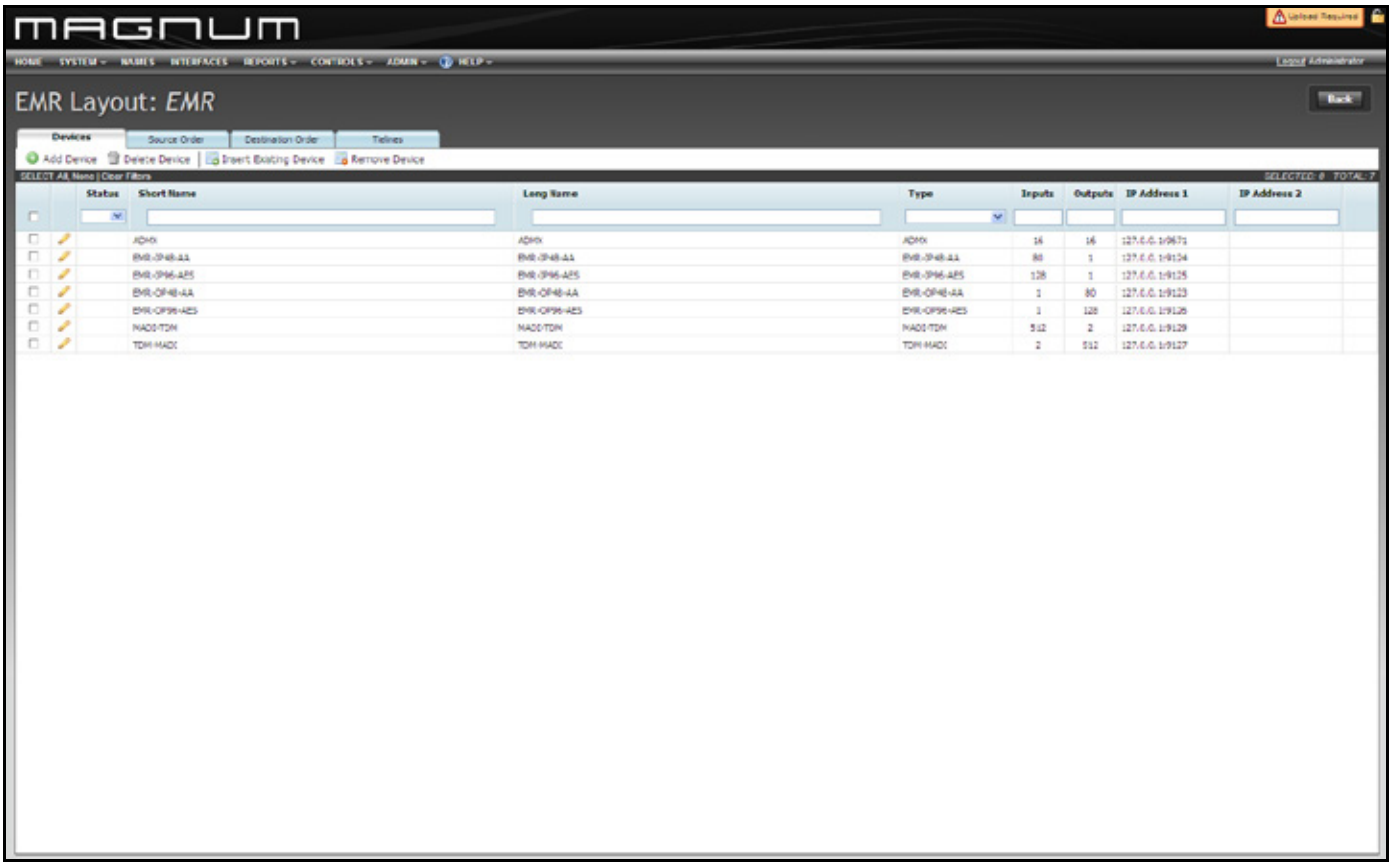


Figure 5-32: EMR Layout

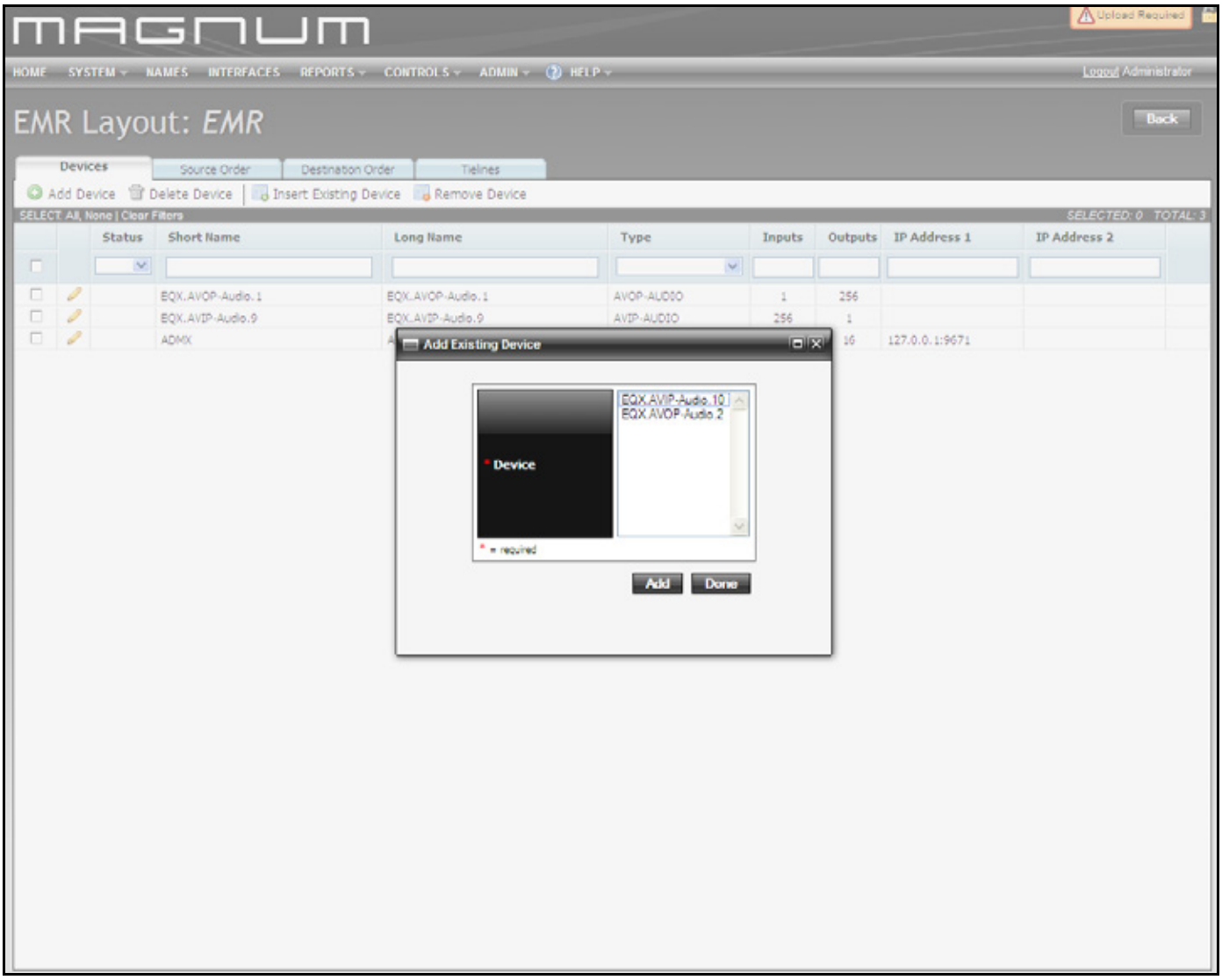


Figure 5-33: Add Existing Device

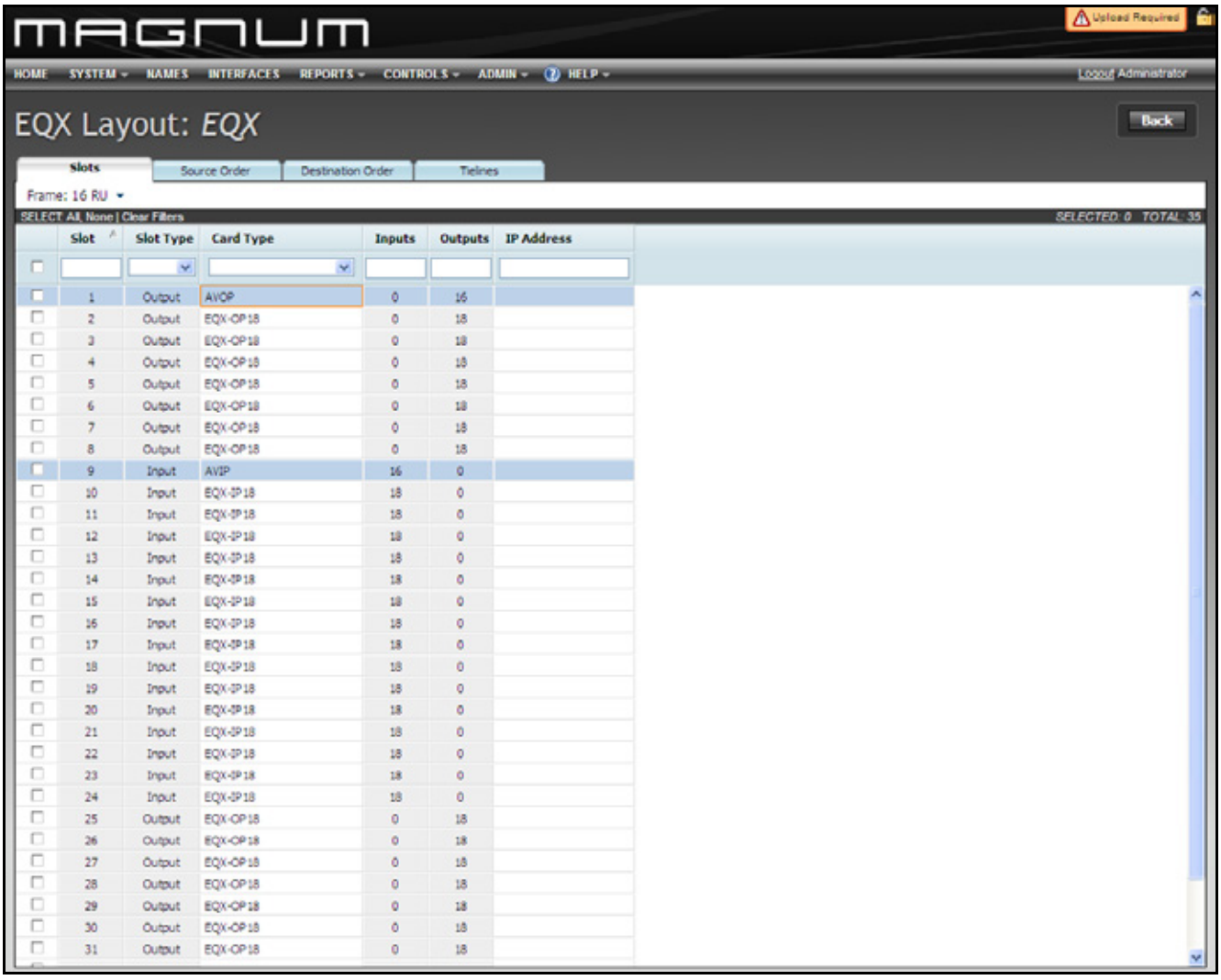


Figure 5-34: Slots Tab

Other EMR Devices (Input Modules, Output Modules, ADMXs) are then added to the EMR device using the Add Devices button in the EMR Layout Page. Available EMR devices appear in the drop down list when selecting the “Select a Device Type” box.

PARAMETER	DESCRIPTION
Device Type	The router type to be controlled.
Short Name	The name used to build default names for source destinations and tielines.
Long Name	A more descriptive title for the device.
Inputs	Define the number of the inputs available on the audio device to be interfaced with
Outputs	Define the number of the outputs available on the audio device to be interfaces with
Primary IP (address:port)	The network information of the audio device to be interfaced with
Secondary IP (address:port)	The network information of the redundant audio device to be interfaced with
Location	Information pertaining to the physical location (Los Angeles or ER-227) can be optionally entered here.

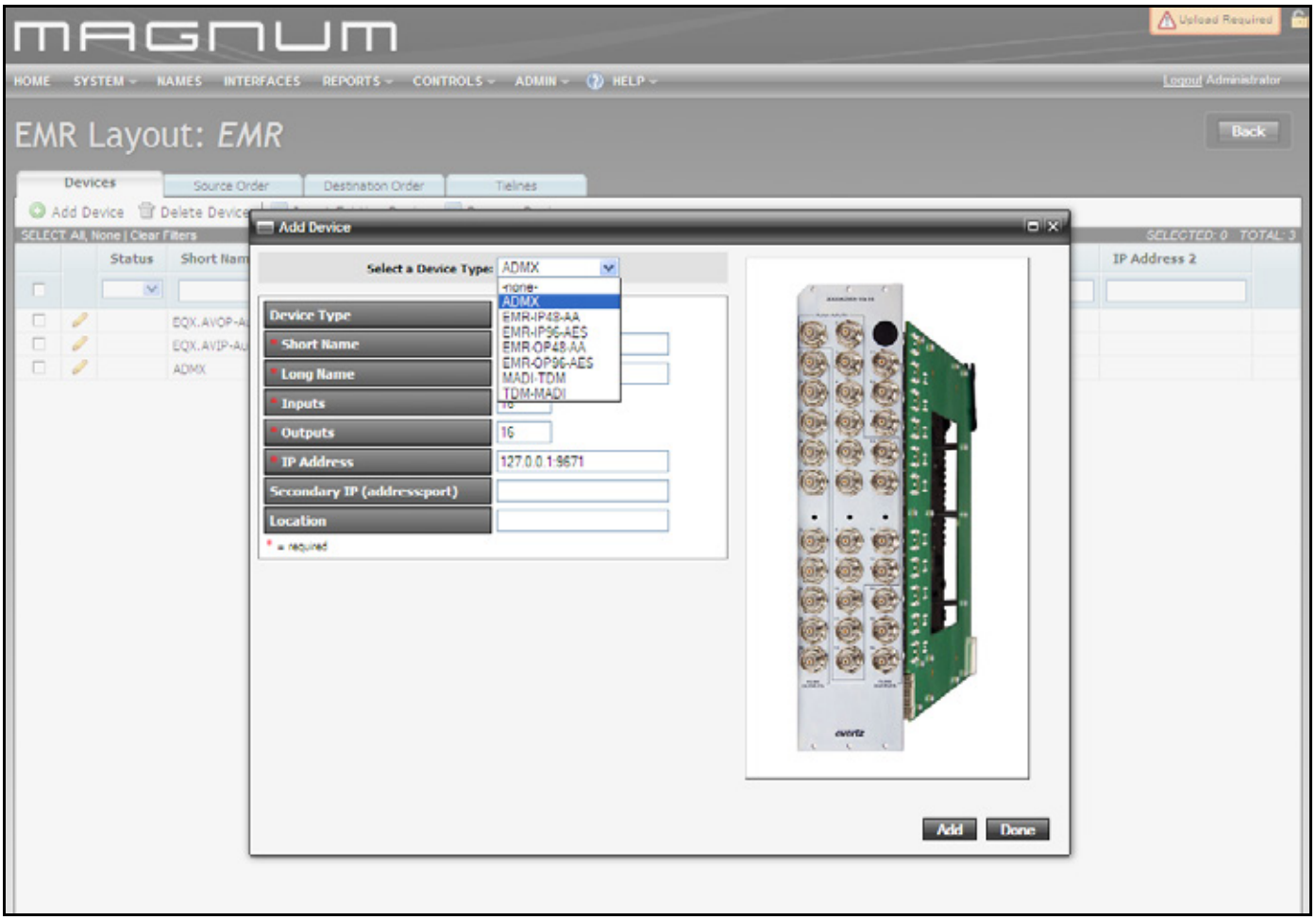


Figure 5-35: Add Device

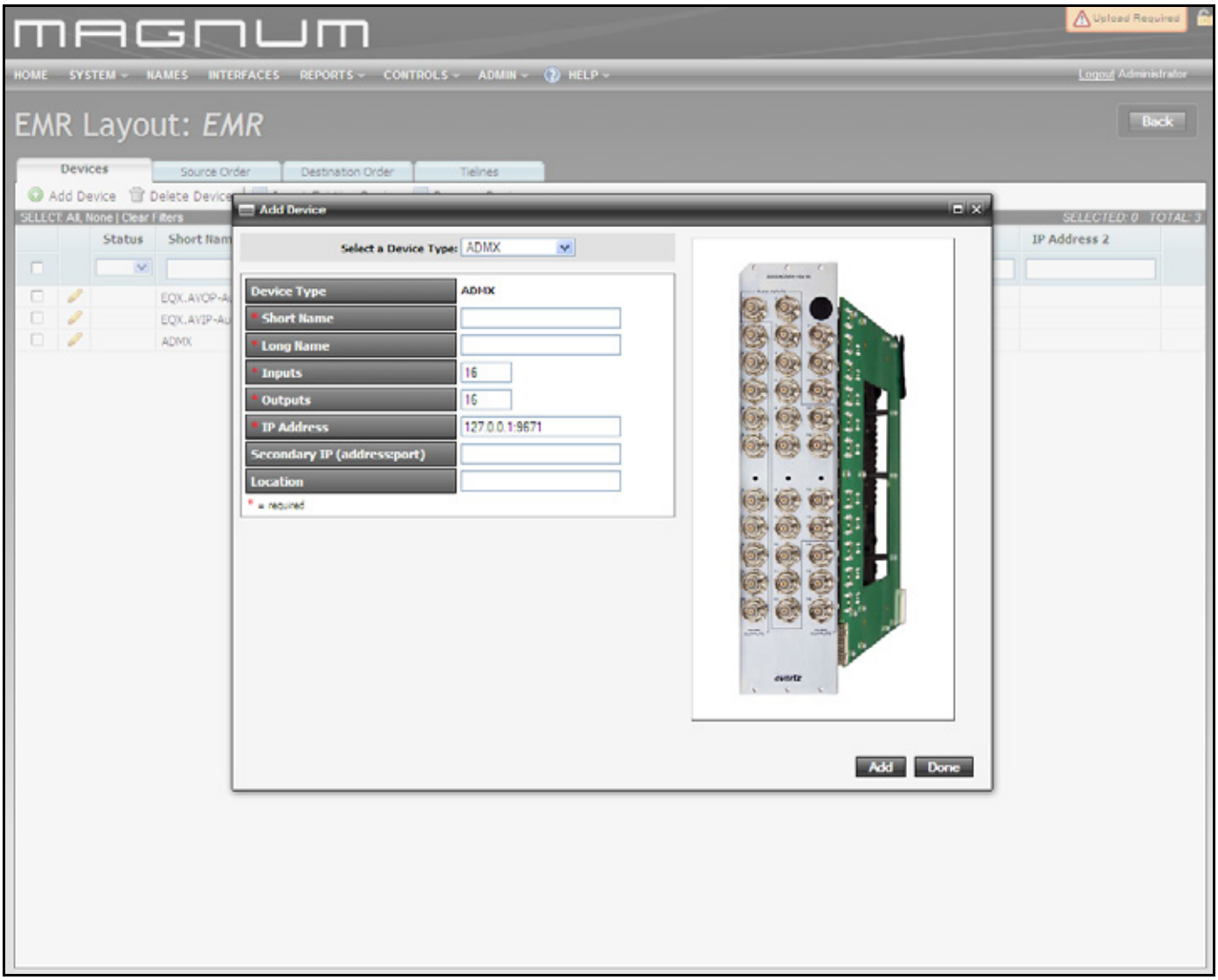


Figure 5-36: Select ADMX

The **Source Order** tab allows the user to see the logical port order of sources for the EMR device as defined within Magnum.

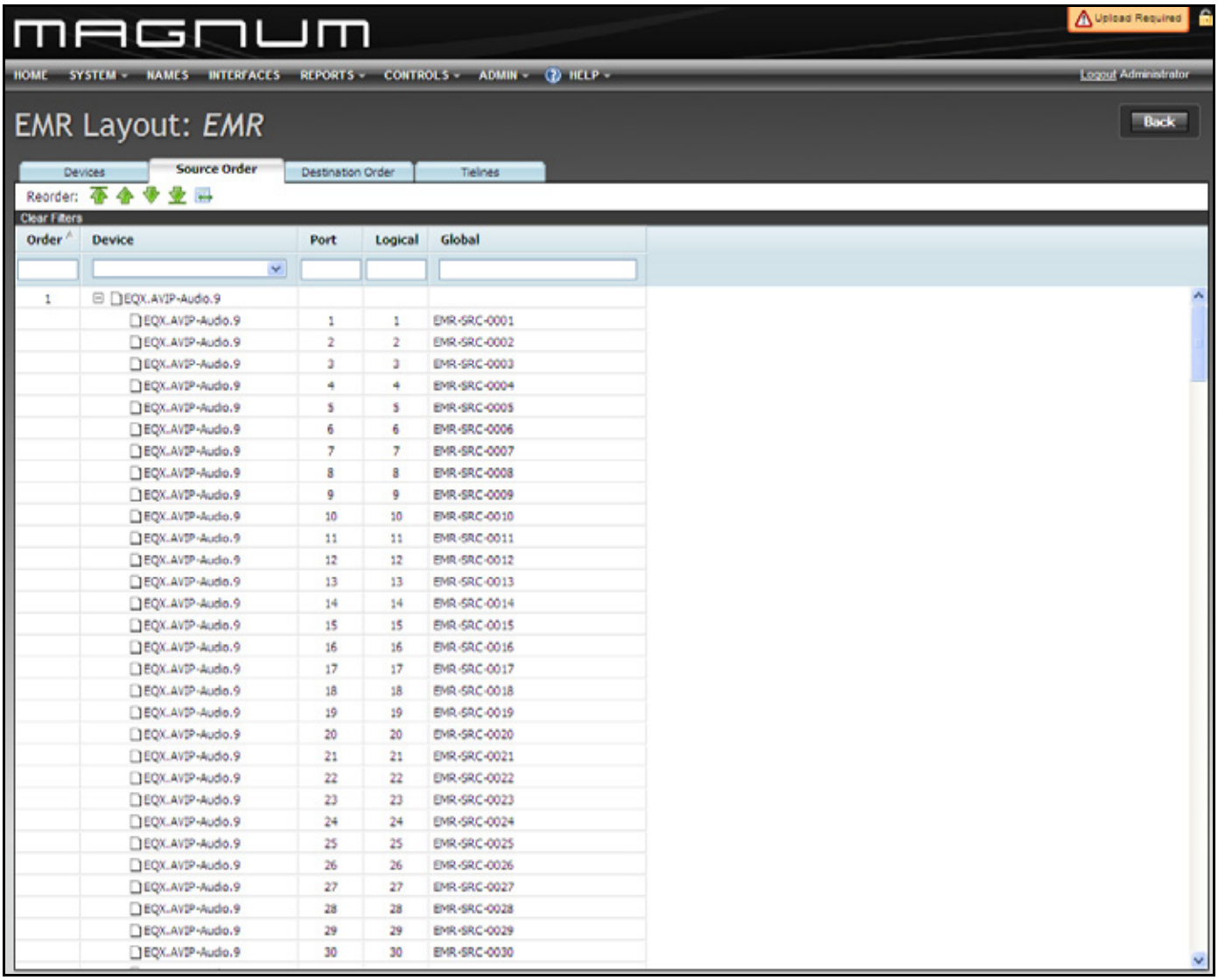


Figure 5-37: Source Order Tab

The **Destination Order** tab allows the user to see the logical port order of sources for the EMR device as defined within Magnum.

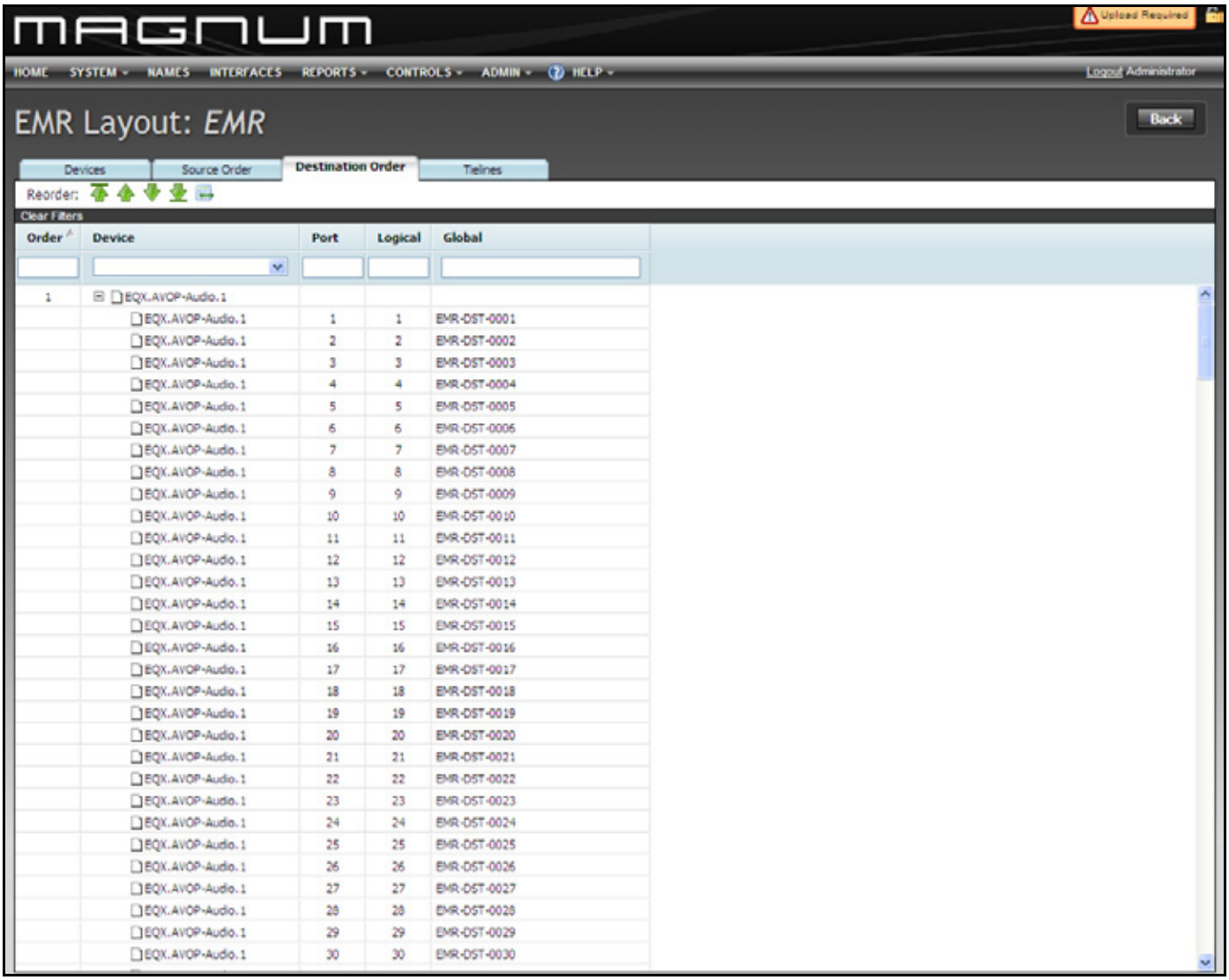


Figure 5-38: Destination Order Tab

Since the AVIP/AVOP system is part of the flat EMR audio router, routes from an AVIP's audio ports are actually EMR sources, and routes to an AVOPs audio ports are actually EMR Destinations. The correlation between the AVIP or AVOP and EMR is seen in the EMR Device Layout, under the Source or Destination tab. The AVIP in the EQX Router, Slot 9 (First Input card slot), audio starts at EMR-SRC-0001.

This means:

- The first audio pair (Since this is a Stereo system) of this AVIP input 1 is EMR-SRC-0001
- The last audio pair of this AVIP input 1 would be EMR-SRC-0008, since there are 8 stereo pairs per AVIP
- The first audio pair of this AVIP input 2 would be EMR-SRC-0009
- The last audio pair of this AVIP input 2 would be EMR-SRC-0016
- The same is true for the destination side using the AVOP

The **Tielines** tab is used to define the TDM connections between the audio cards and the ADMX (audio cross-point card.

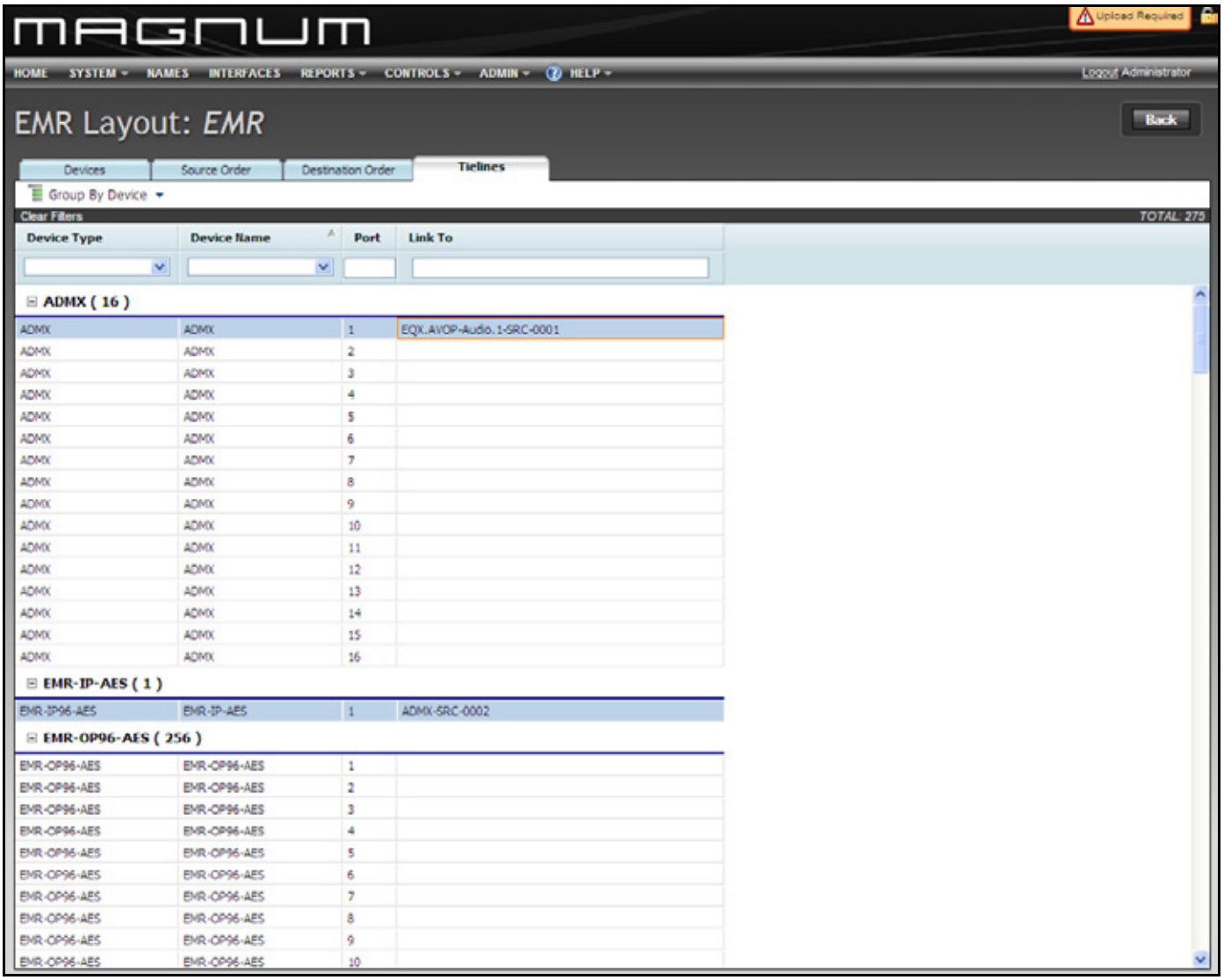


Figure 5-39: Tielines Tab

5.4.3.4. Adding Virtual Devices

To create a virtual device, navigate to the **SYSTEM** menu and select the **Devices** menu item. From the **Devices** page select the **Virtual** tab. The *Virtual Device Management* page will appear enabling the user to add virtual devices. A virtual device is a tool to subdivide a single router into what appears to the control system as multiple physical routers.

1. Select a router from the one's listed in the *Physical Router* drop down menu. All the destinations and sources for the corresponding router will be listed in the DSTs and SRCs fields.

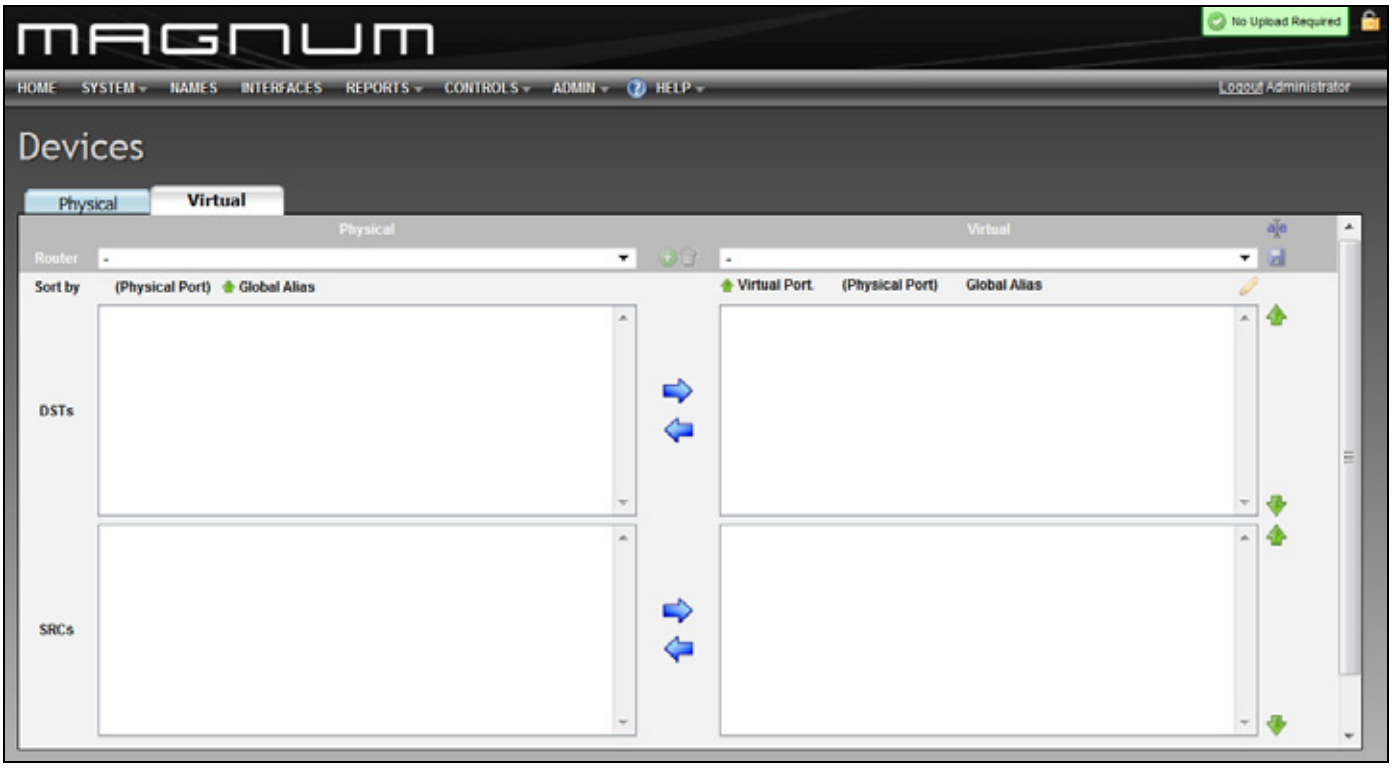


Figure 5-40: Virtual Device Management Tab

2. Use the button to add a new virtual device. To remove a virtual device select an item from the *Virtual Router* drop down list and hit the button.

3. Once a physical device is selected and a virtual device is created, use the right and left arrows to move the DSTs and SRCs to and from the Virtual device. Select one or multiple destinations (select one item and hold down Shift and click another item to select a series of multiple items) and then use the arrows to move the destinations and sources to and from the virtual device.

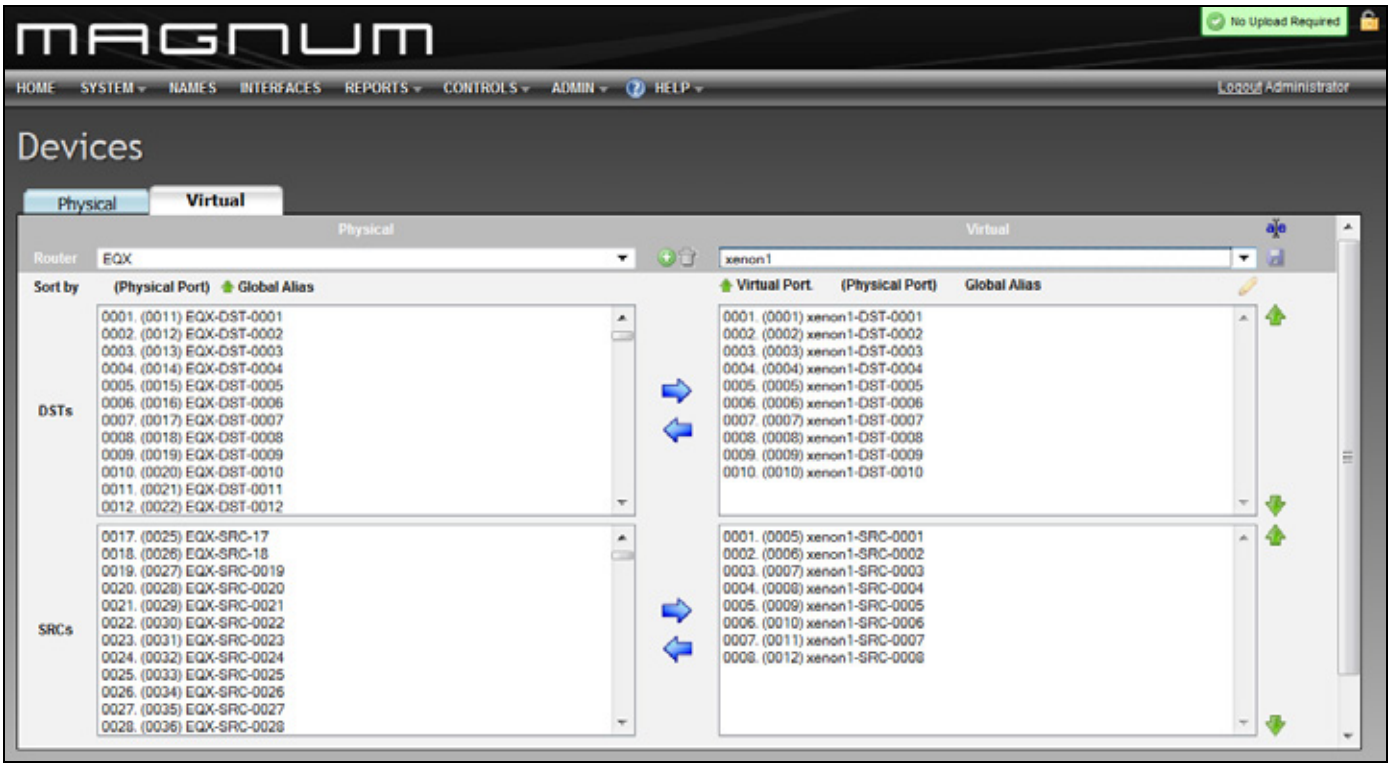


Figure 5-41: Destinations and Sources Added to Virtual Hardware

4. To re-arrange the order of a destination or source, select the item in the field, and use the green up and down arrows on the right hand side of the screen to re-arrange the item in the list.

5. To add and remove a destination or a source from one list to another, select the item in the field, and use the blue left and right arrows in the middle of the screen to add and remove items.

6. To edit the name of the *Virtual* device select the *rename this virtual device* icon . A dialog box will appear enabling the user to change the name of the virtual device, as shown in Figure 5-42.

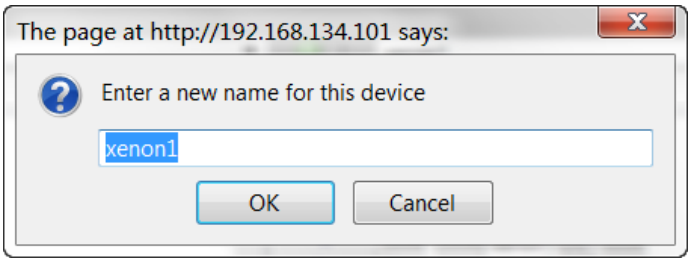


Figure 5-42: Change Name of Virtual Device

7. Before navigating away from the Virtual Devices page, select the *Save this Virtual Device* icon so that the Virtual Device configuration will be saved.

5.4.4. Establishing Tielines

There are two Tieline types that can be created in the MAGNUM server:

1. A **Normal** tieline is added to a pool that can be utilized by any device downstream depending on availability.

2. A **Reserved** tieline is used to create a tieline group for downstream destinations and is NOT part of a pool. Destinations that are part of this group will only use these tielines and do not share in the general pool of tielines.

STEPS:

1. Select the **Tielines** option from the **SYSTEM** drop down menu.

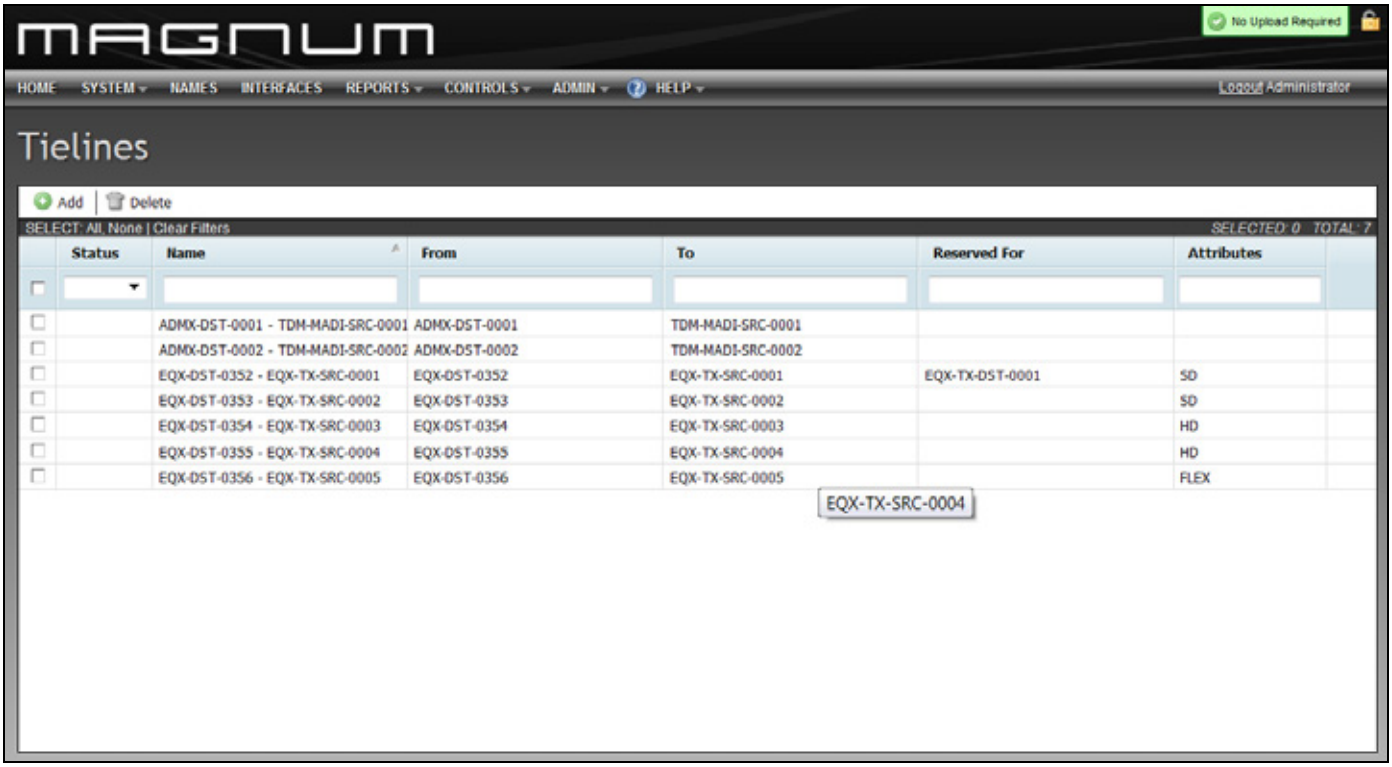


Figure 5-43: Server - Tielines Tab

2. To create a new tieline, select the **Add** Add button. A dialog box enabling the user to create a new tieline will appear, as shown in Figure 5-44.

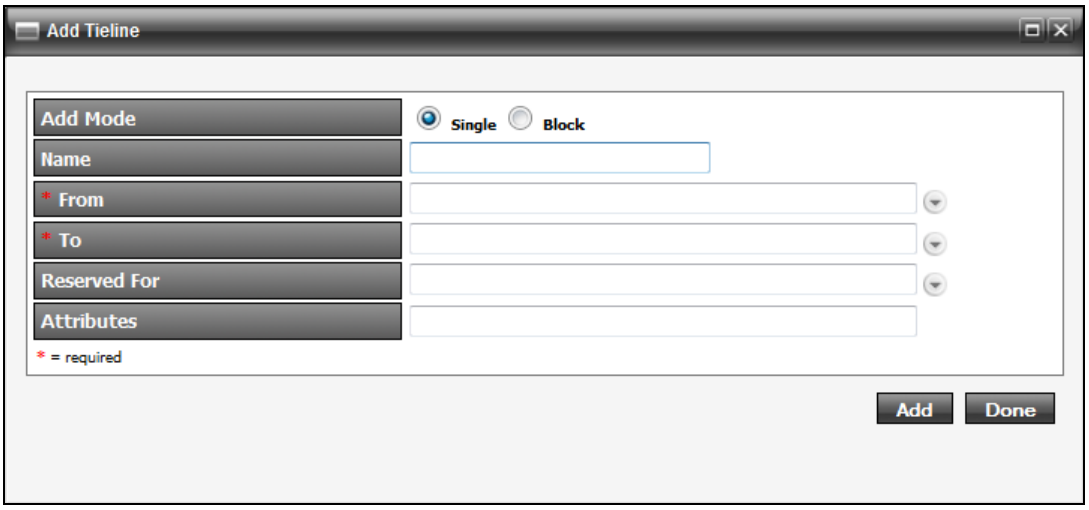


Figure 5-44: Add Tieline Dialog Box

3. The **Add Tieline** screen enables the user to choose the upstream (**From**) and downstream (**To**) of each tieline. It also enables the user to reserve the tieline for a given destination. It is not required but it is recommended that the user enter a Name into the **Name** field to easily identify the tieline. If a name is not defined, a name will be auto-generated on the creation of the tieline. A tieline without reservation is added to a pool and can be utilized by any device downstream depending on availability. A **Reserved** tieline is reserved for a SINGLE downstream destination and is NOT part of a tieline pool.

4. The **Attributes** field enables the user to assign tieline attributes. Attributes are generic labels that the end user can add to indicate capabilities that a particular tieline possesses. These attributes can then be specified while performing a route to limit the paths that the signal can take. Enter an attribute into this field (i.e. HD, SD, Flex, etc).

Please note that attributes are available only to the advanced control panels such as the CP-2200E/CP-2232E/CP-2116E.

5. After selecting the **From** and **To** for each tieline, click the **ADD** button to complete and save it. It will be added to the **Change Set**.

Tip: Tieline names are used throughout the system to identify paths between a source and destination that you are working with. You do NOT have to manually specify a tieline name, therefore for time efficiency an appropriate name is generated from the "From" router's short name and port, and the "To" router's short name and port. You are welcome to overwrite this name with any name that you wish but be sure to include details that distinctly identify the path from the name.

Once complete be sure to click on the "Upload Required" icon upload any changes.

6. To remove a tieline, place a check mark in the box beside the tieline or tielines you wish to remove and then select the **Delete** button Delete .

7. To sort or filter the tielines, enter a property into one of the blank fields at the top. As you type, the list of tielines will be narrowed down to display only the ones that match the property being entered.

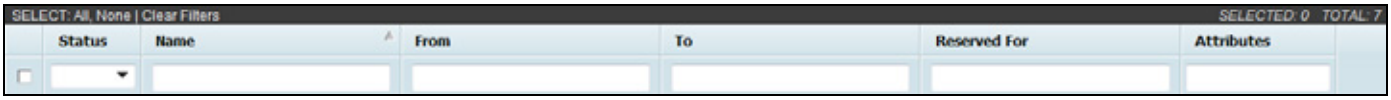


Figure 5-45: Tieline Filter

5.4.5. Global Source Availability

In a routing system it is beneficial to "permanently" limit the scope of some destinations. This enables the user to control from a high level which destinations have access to which sources. Imagine a facility where 2 channels are broadcast: (1) a music channel for teens and (2) a religious affiliate. The best way to avoid content from one spilling over to the other is to limit the destination of the one to only its appropriate designated sources. This prevents, without returning to this page, panels or automation systems from routing the incorrect source when routing through the control system. Once this setting is applied and if the sources are not available to the destinations, then the system filters the sources as if they do not exist for the chosen destination. By default the system is open and available on creation of a device, however if the device size is expanded in the future, the availability will need to be set for the new sources / destinations.
If tielines are used, availability will need to set in order to use upstream router sources on downstream router destinations via the tielines.

1. From the **SYSTEM** drop down menu, select the **Source Availability** menu option.

2. From the **Devices** drop down list, select the router that contains the destination(s) that you want to work with. The list will populate in the Destinations and Sources field.

3. Once populated, select one or more destinations by placing a check mark in the box beside the desired destination. A list of sources (both available and unavailable) will populate in the right hand **Sources** column.
    a. If you have selected multiple DSTs, any SRCs common to ALL DSTs will be in green. If the sources and/or destinations are white then this identifies that they are "unavailable".

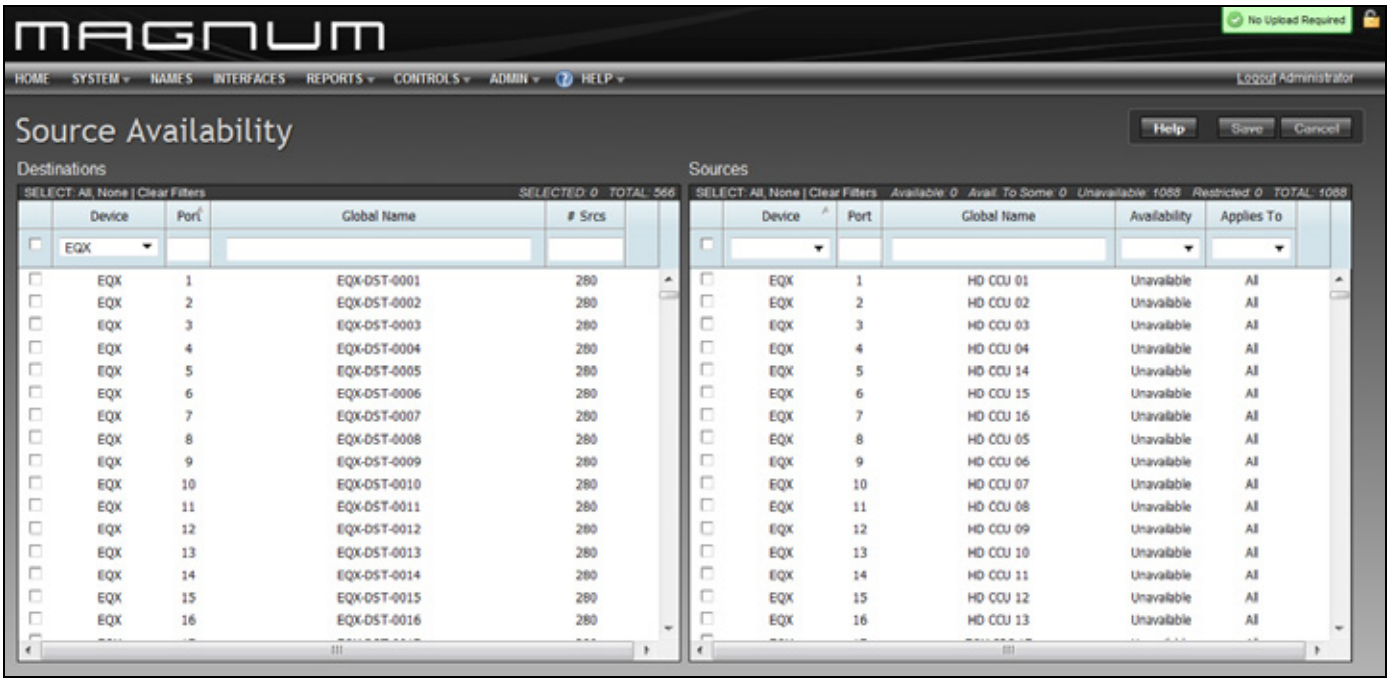


Figure 5-46: Global SRC Availability

4. To add a source to the selected destination, place a check mark beside the source that you wish to add (the source will be highlighted green when it is available). To remove a source from the selected destination, remove the check mark or leave the box blank beside the source that you do not want available (the source will be highlighted white when it is unavailable).

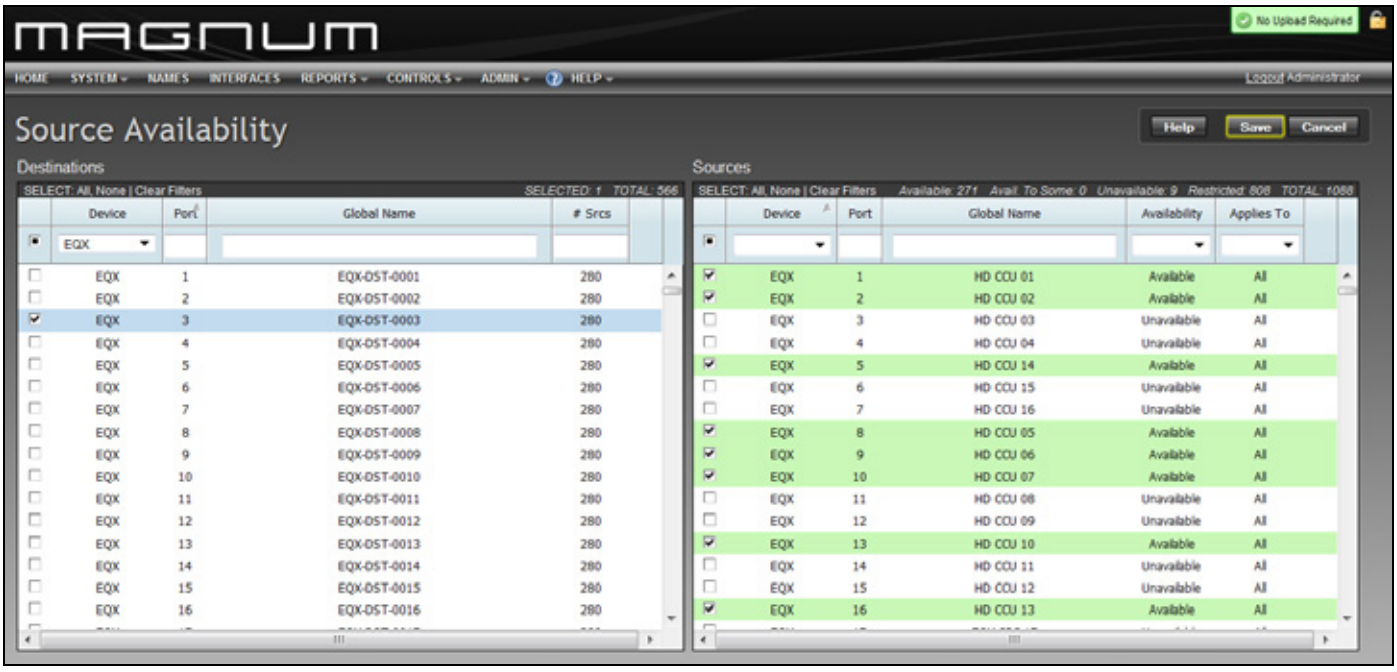


Figure 5-47: Selecting Sources

5. (Optional) To find a destination that is available for that source, right click on a source and perform a reverse destination availability lookup, as shown in Figure 5-48.

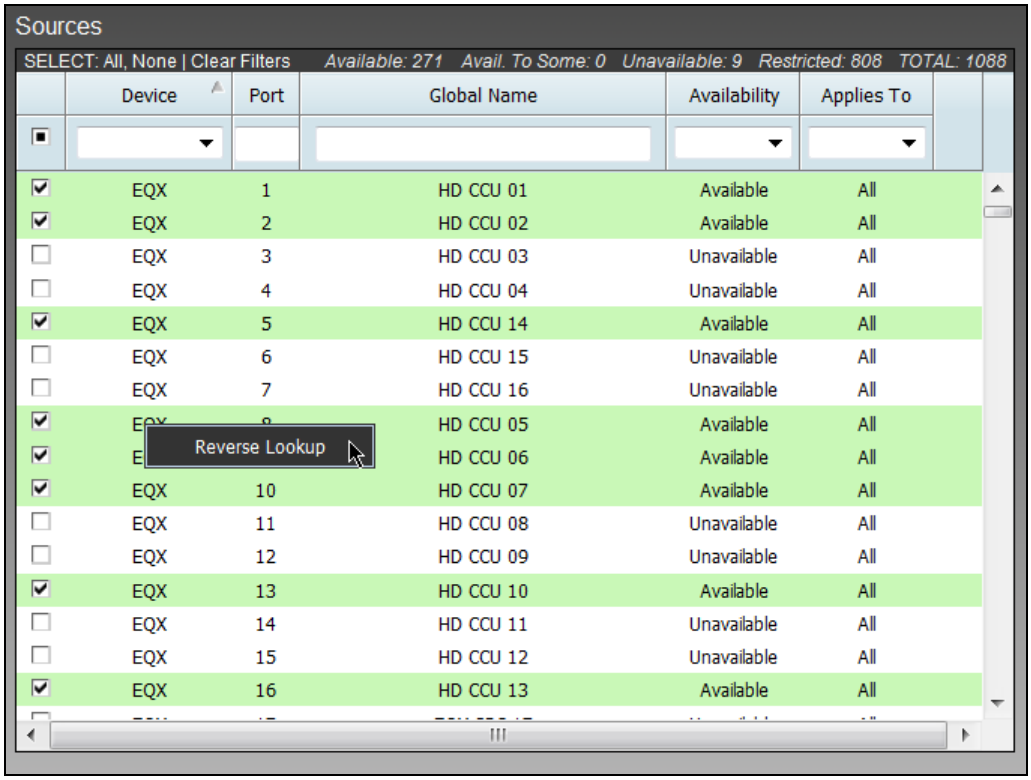


Figure 5-48: Reverse Lookup Selection

6. Selecting a reverse lookup option will open the *Destination Availability* dialog box as shown in Figure 5-49. The dialog box will display all the available destinations for the selected source.

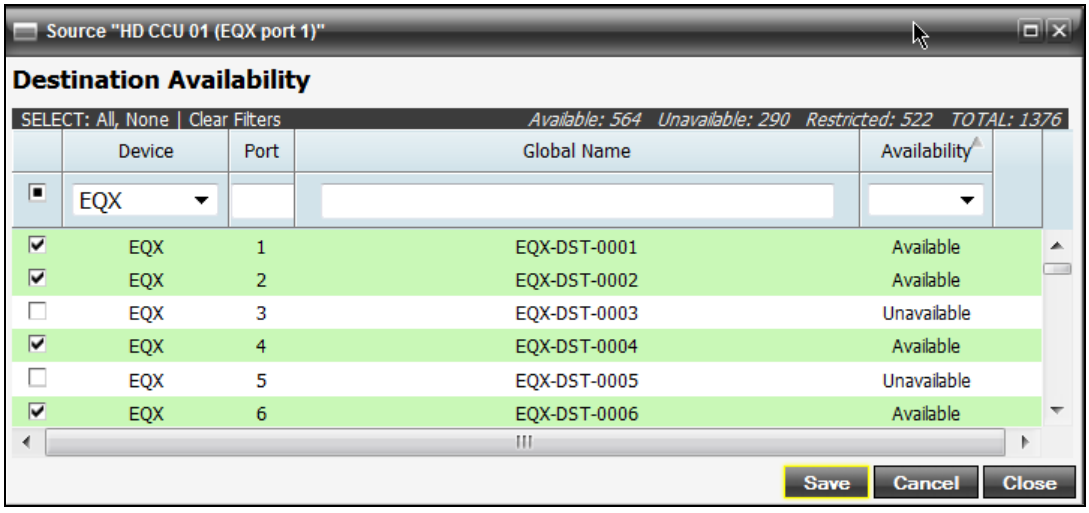


Figure 5-49: Reverse Destination Availability Lookup Dialog Box

7. Place a check mark in the box beside the destination that you wish to use. Once all the desired destinations are selected, press the **Save** button.

TIP: Sources from all routers that a given destination MAY have access to will appear in the list. (Meaning if tielines exist connecting the selected DST to an upstream router all SRCs on both the local and upstream router will appear in the SRCs lists).

Once complete be sure to click on the "Upload Required" icon to upload any changes.

5.4.6. Defining Subscriptions

A **Subscription** allows users to subscribe or un-subscribe to routes that are being made in the system. This is sometimes referred to as Mirroring on the fly or Virtual re-entry.

1. From the **SYSTEM** drop down menu, select the **Subscriptions** menu option. A subscription gives the user the ability to create a mirror on the fly or in other terms allow destinations/sources to subscribe to a specific route. A subscription is both a source and destination within the control system. The subscription screen will appear as shown in Figure 5-50.

Figure 5-50: Subscriptions Page

2. To add a subscription, select the **Add** button . An *Add Subscription* dialog box will appear enabling the user to create a subscription. Enter a name into the *Name* field of the dialog box and select **Add**. To create multiple subscriptions, continue to enter new names and then click the **Add** button to continue adding items. Once all the desired subscriptions have been added, select the **Done** button. (See Figure 5-51)

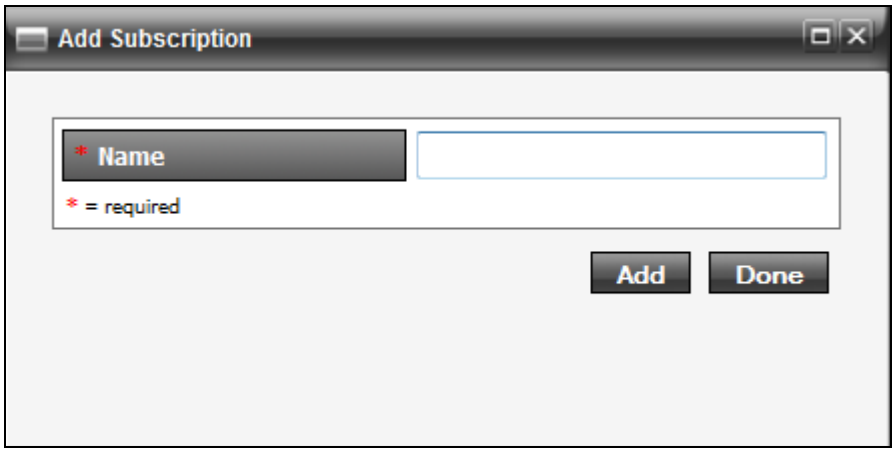


Figure 5-51: Add Subscription Dialog Box

3. The Subscriptions will be added to the main subscription list. To remove a subscription, place a checkmark in the box beside the item you wish to remove and select the **Delete** button.

Once complete be sure to click on the "Upload Required" icon to upload any changes.

5.4.7. Setting Mirrored Destinations

Mirrored Destinations allow the user to group destinations so that if a source is routed to one destination in the mirror, then all destinations in that mirror will also have the same source.

1. If you wish to mirror destinations, select the **Mirror Destinations** option from the main *System* drop down menu. A screen divided into two sections will appear, *Mirror Groups* and *Destinations*. The *Mirror Groups* window displays the available mirrored groups, and enables the user to add or remove mirrored groups.

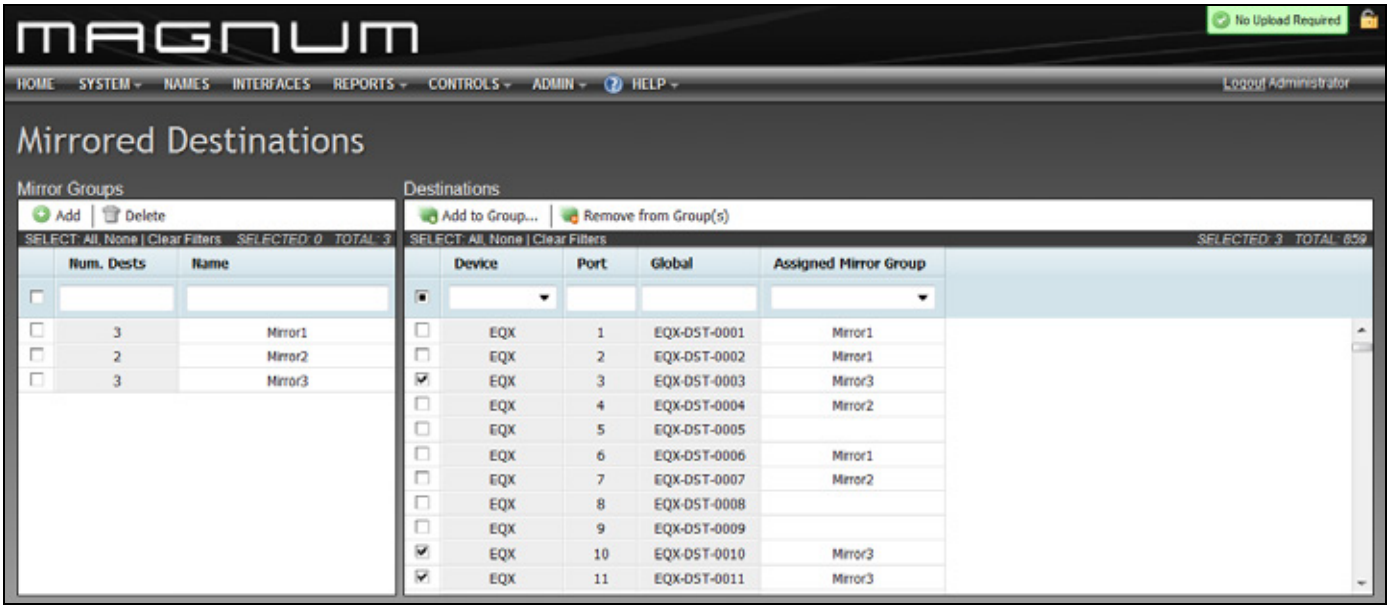


Figure 5-52: Mirror Destinations Window

2. To create a new mirror group, select the **Add** button

in the *Mirror Groups* window. An **Add Mirror** dialog box will appear enabling the user to create a new mirror, as shown in Figure 5-53. Enter a unique mirror name into the *Name* field and then select the **Add** button. Once you have finished adding all the desired mirror groups, select the **Done** button to apply changes to the mirror groups. To remove a mirror group, place a checkmark in the box beside the mirror that you wish to remove and then select the **Delete** button.

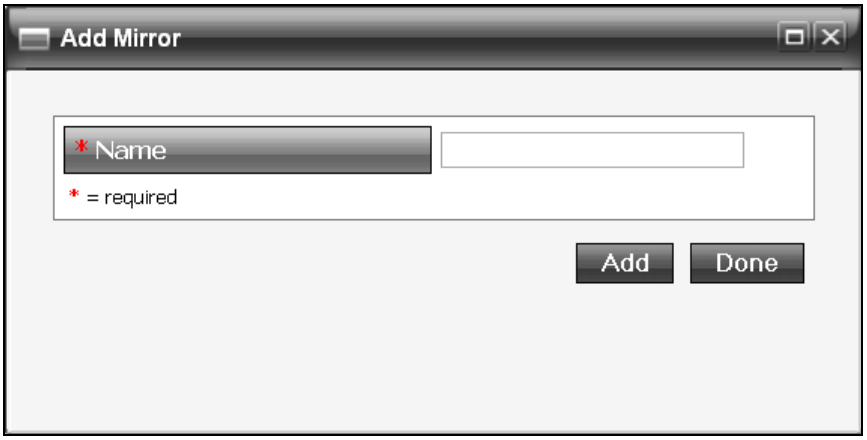


Figure 5-53: Add Mirror Dialog Box

3. To filter a mirror group name, enter a number into the *Num. Dests* field or enter a mirror name in the *Name* field. As you type, the list of mirror groups will be narrowed down to display only the ones that match the property being entered.

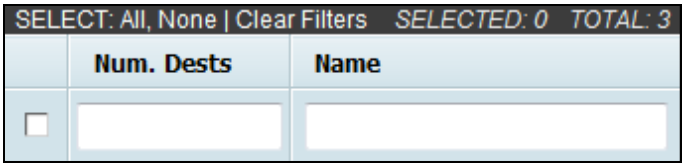


Figure 5-54: Mirror Group Filtering Toolbar

4. If you wish to set up the destinations, first select the device you wish to assign mirrored destinations to by navigating to the **Device** drop down menu and then selecting the desired device from the list in the destinations window.

5. The destinations will be populated under the *Destinations* window. To assign a destination to a mirror group, place a checkmark in the box beside the desired destination and then select the **Add to Group** button.

6. An **Add To Mirror Group…** dialog box will appear, as shown in Figure 5-55. If one or more Mirror groups already exist, they will be listed under the *Mirror* field dialog box. As you begin typing the mirror name into the *Mirror* field, the list will filter the existing mirror names based on what you have typed. If your desired mirror group is visible use the down arrows to toggle to the appropriate mirror name. Once you have assigned the selected destinations to the appropriate mirror groups, select the **done** button.

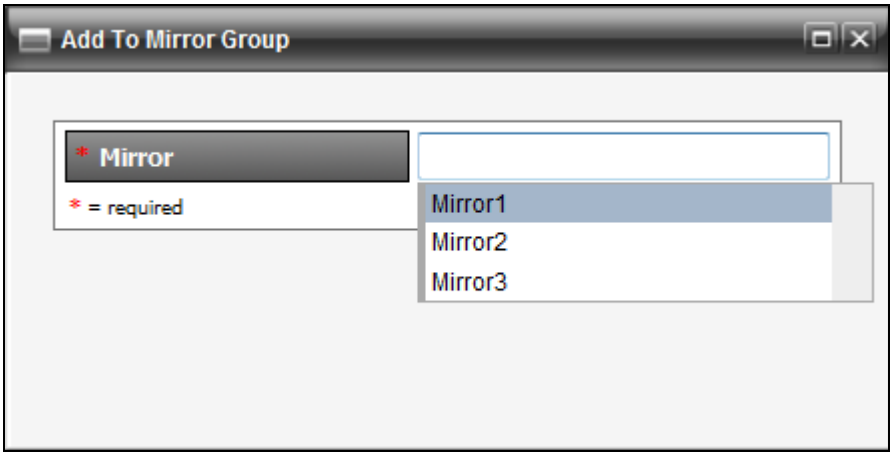


Figure 5-55: Add To Mirror Dialog Box

7. The *Mirror Name* will be listed in the ***Assigned Mirror Group*** column beside the corresponding destination. To remove a destination from a mirror group, place a check mark beside the destination and then select the ***Remove from Group(s)*** button.

8. To find a specific port, global destination or set of mirror groups, use the filter toolbar to sort through the parameters. Place the cursor in the field which you wish to search and type the desired parameter. The list will adjust to show only the destinations with the properties that you listed in the filtering column. (See Figure 5-56)

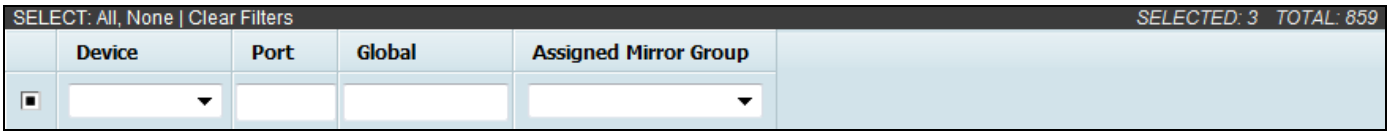


Figure 5-56: Destination Filtering Toolbar

5.4.8. Port Labels

Selecting the **Port Labels** menu item from the **SYSTEM** drop down menu allows the user to add source and destination labels to ports that can be used by the CP-2232E/CP-2116E's advanced filters. The advanced panels use Port labels to extend the advanced filters capabilities of the system. Port labels can be used to group sources or destinations under multiple labels for advanced filtering.

The user can label ports independent of the actual name. For example: EQX Source Port 1 can be called CAM1; however, the user can define Port Labels so that the CP-2232E/CP-2216E can find the source using custom labels such as BOB, HD, CAM. Numbers can be added to the port label as well using a period to distinguish the label, example CAM.1, CAM.2

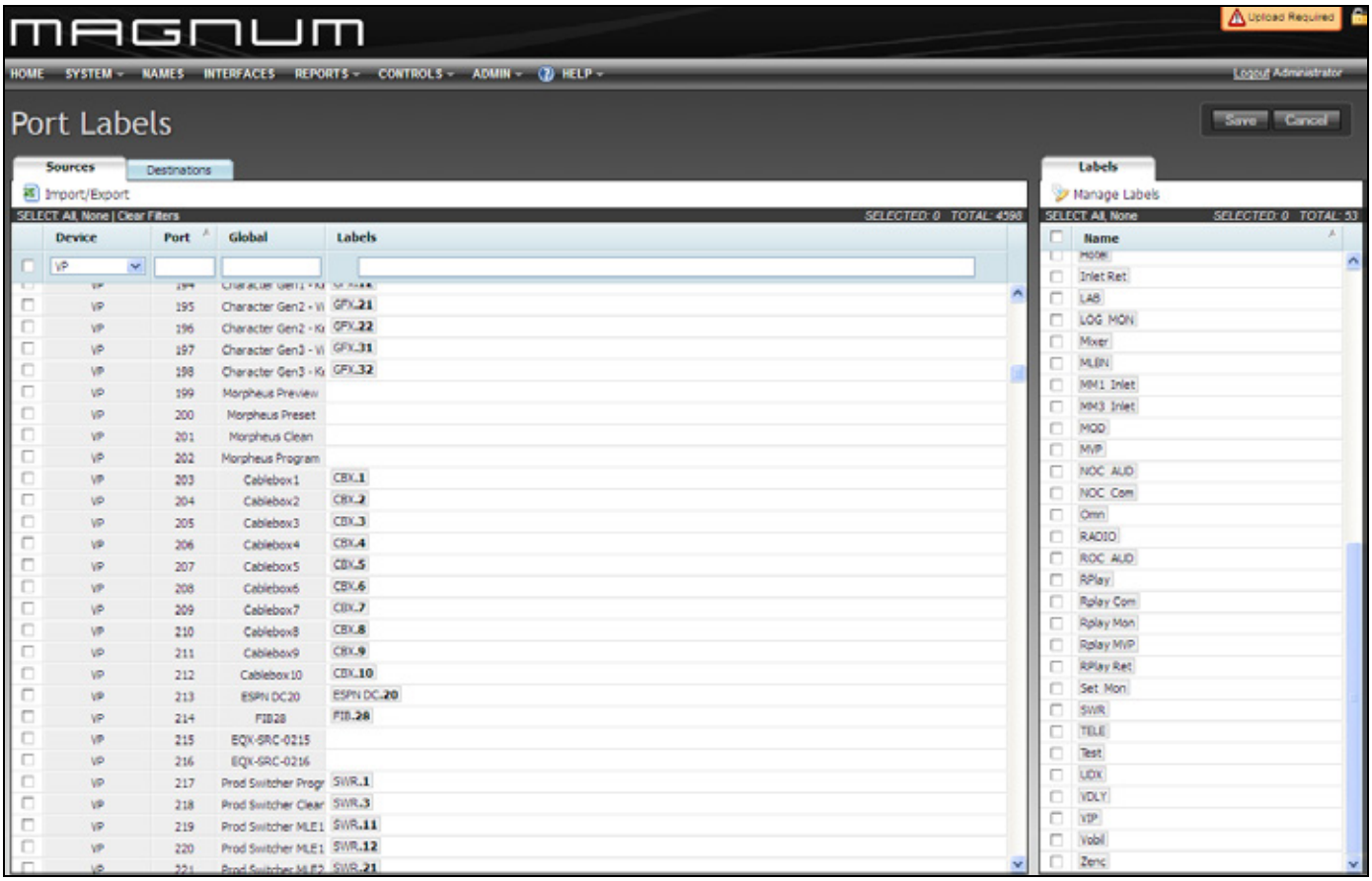


Figure 5-57: Port Labels

1. The user can import or export port labels using the **Import/Export** function. To import port labels, navigate to the port labels page and select the **Import/Export** button. When the **Import/Export CSV** dialog box appears, select the ***Browse*** button and navigate to the desired file. Select the **Open** button in the dialog box and then click the **Import** button once the file is listed in the file field.

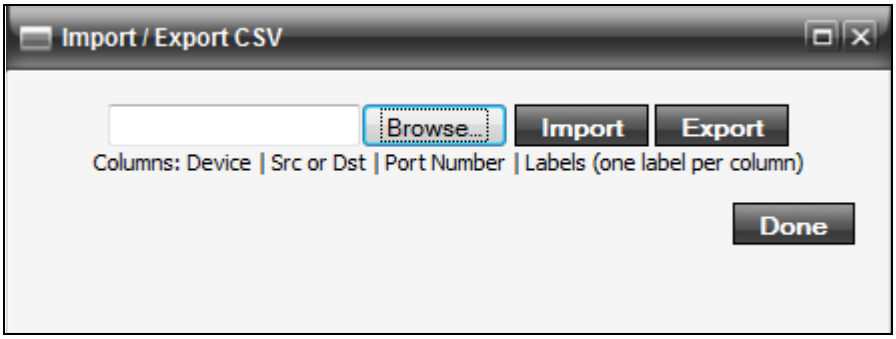


Figure 5-58: Import/Export CSV Dialog Box

2. To export a port label, select the **Export** button. The following dialog box will appear, as shown in Figure 5-59. **Microsoft Office Excel** is the default program that the .csv file will open in and export to. If you wish to open the .csv file in a program other than excel, use the *Open with* function to select a new program, otherwise select the **OK** and the .csv file will open and display the current content in an excel spreadsheet. Once all import and export functions are complete, select the **Done** button.

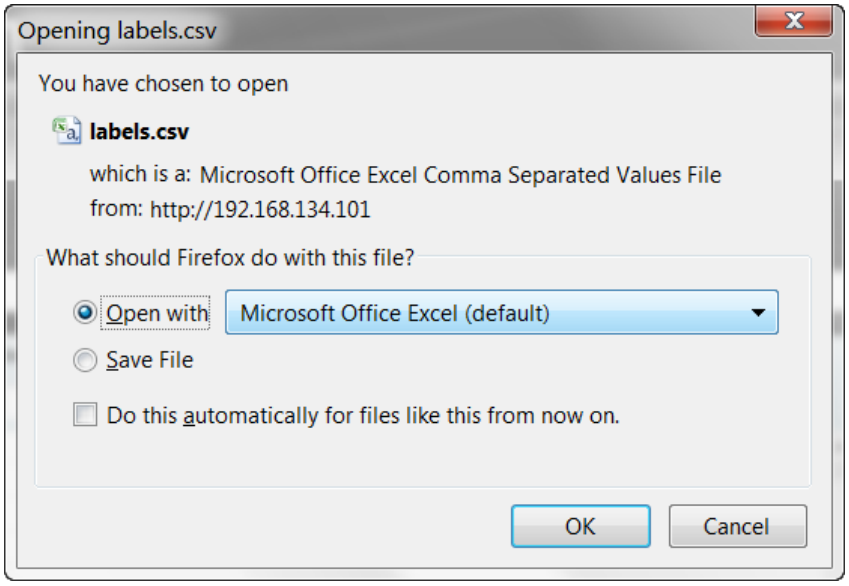


Figure 5-59: Opening Labels.csv Dialog Box

3. To add a label to the source tab, select the

button at the top of the **Label** tab and an **Add** and **Delete** button will appear. Select the **Add** button and an "Add Label" dialog box will appear enabling the user to create a label. Enter the desired name of the new label into the *Name* field and then select the **Add** button. Once all labels have been added, select the **Done** button to apply your changes. To add a label to the destination tab, follow the same procedure.

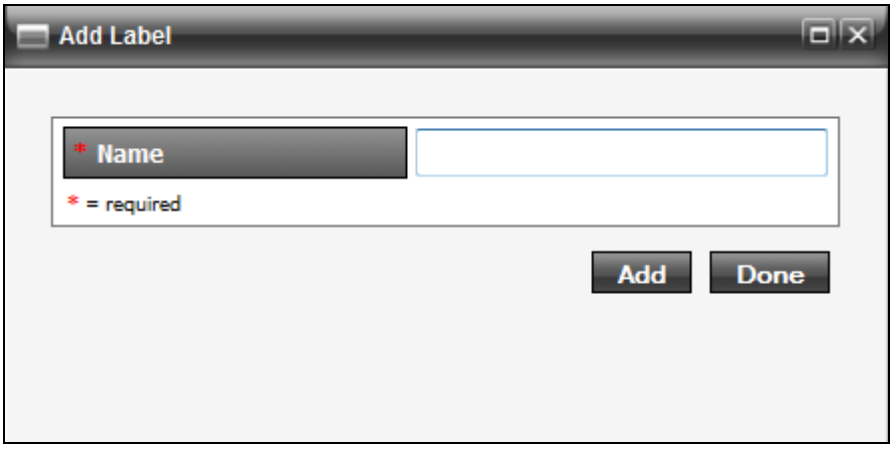
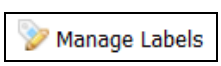


Figure 5-60: Add Label

4. To remove a source label or destination label, select the 

button at the top of the **Label** tab and an **Add** and **Delete** button will appear. Place a check mark beside the items that you wish to remove and select the **Delete** button.

5. The user can also copy and paste existing cells or rows. To copy a cell or row, right click on the cell that you wish to copy and select **Copy Cell** or **Copy Row** from the pop up menu that appears. Once the data is copied to the clipboard, navigate to the cell or row that you wish to paste the information onto, then right click on the cell and select the **Paste** option. You can also copy and paste using the keyboard controls: Copy (**Ctrl + C**) and Paste (**Ctrl + V**).

6. Labels are assigned to ports by typing in the cell or rows next to the port that the user wants to assign the custom Port Label to. Labels that do not exist in the Label section will automatically be added.

Please note that the keyboard copy (Ctrl + C) and paste (Ctrl + V) control can be used globally on almost any cell in the MAGNUM Server Interface.

Once complete be sure to click on the "Upload Required" icon to upload any changes.

7. To add or delete a destination label, add a level to the destination tab, or import/export destinations, the user must follow the same procedure outlined for creating a source label.

5.4.9. Port Attributes

Selecting the **Port Attributes** menu item from the **SYSTEM** drop down menu allows the user to config port attributes such as SD or HD, which can then be used by the control system to determine if a conversion device is required for that route. The conversion device is defined in the Devices page and the "tieline" ports (where it is connected to the router) is defined in the Tielines page. The conversion path would be used if a user selected a SD source (port attributed) to a HD destination (port attributed). The sytem currently has sample attributes defined, such as MATCH, SD4x3C, SD4x3L, SD16x9, HD720p, and HD1080i.

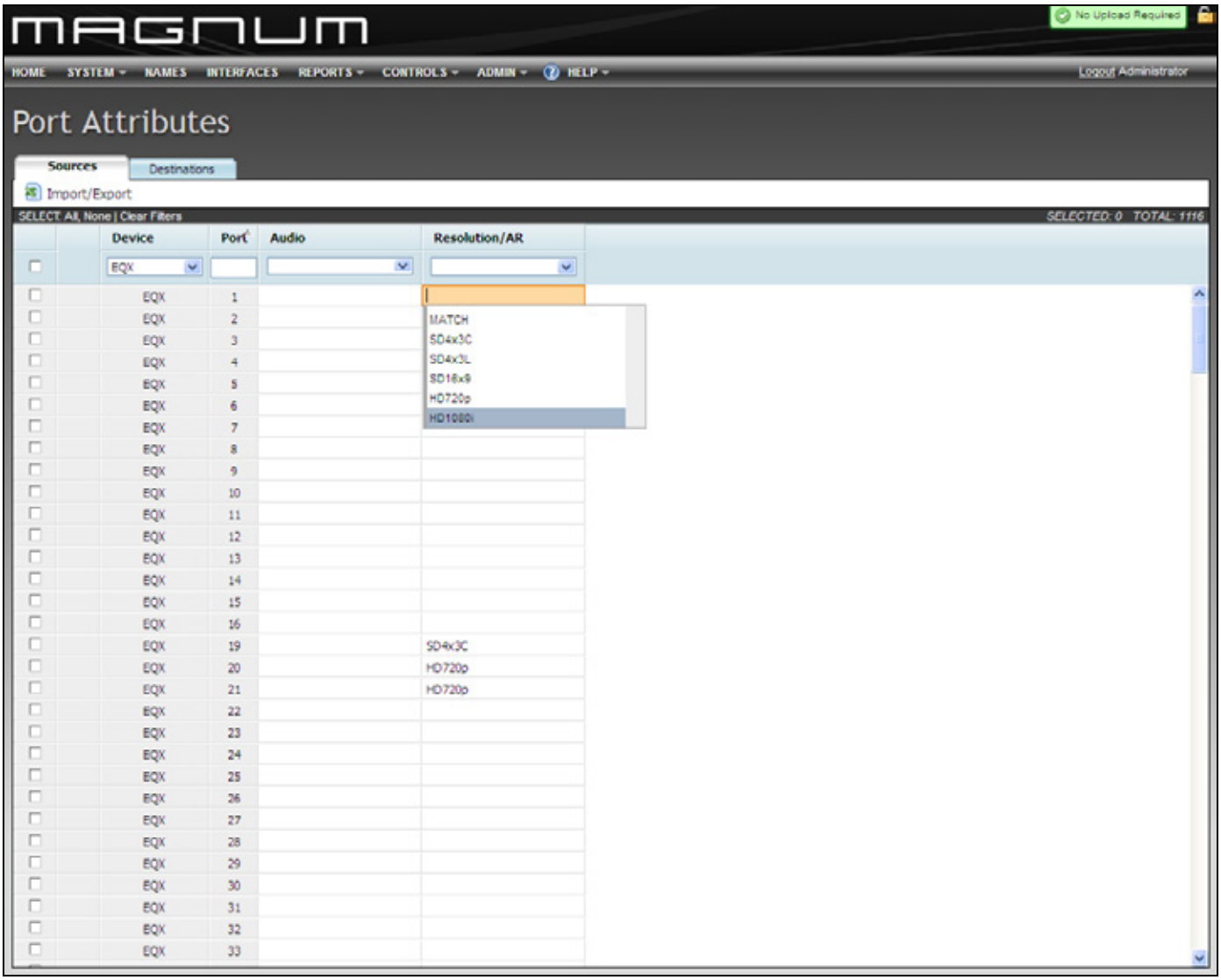


Figure 5-61: Port Attributes Page

1. The user can import or export the port attributes table using the **Import/Export** function. To import port attributes, navigate to the port attributes page and select the **Import/Export** button. When the **Import/Export CSV** dialog box appears, select the ***Browse*** button and navigate to the desired file. Select the **Open** button in the dialog box and then click the **Import** button once the file is listed in the file field.

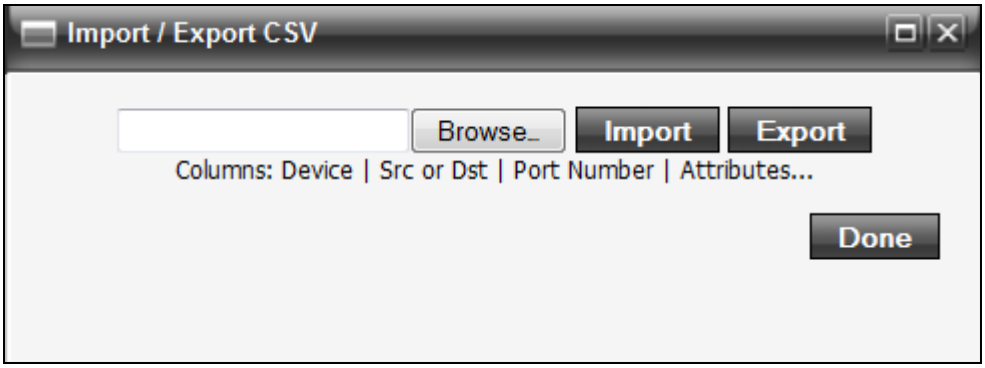


Figure 5-62: Import/Export CSV Dialog Box

2. To export a port attributes table, select the **Export** button. The following dialog box will appear, as shown in Figure 5-63. **Microsoft Office Excel** is the default program that the .csv file will open in and export to. If you wish to open the .csv file in a program other than excel, use the *Open with* function to select a new program, otherwise select the **OK** and the .csv file will open and display the current content in an excel spreadsheet. Once all import and export functions are complete, select the **Done** button.

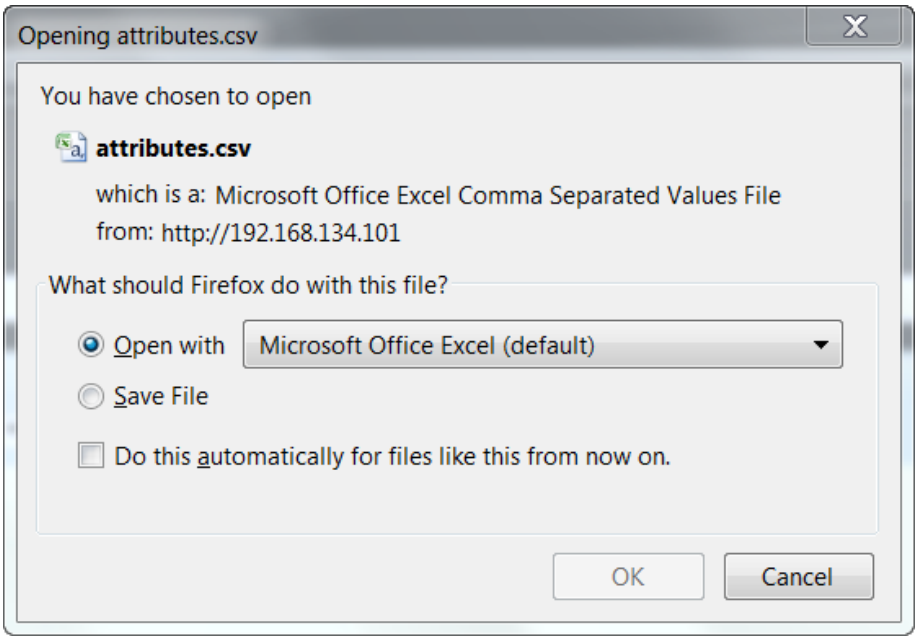


Figure 5-63: Opening attributes.csv Dialog Box

3. You can use the filter toolbar to sort through the parameters. Place the cursor in the field which you wish to search and type the desired parameter. The list will adjust to show only the port attributes with the properties that you listed in the filtering column.

Figure 5-64: Destination Filters

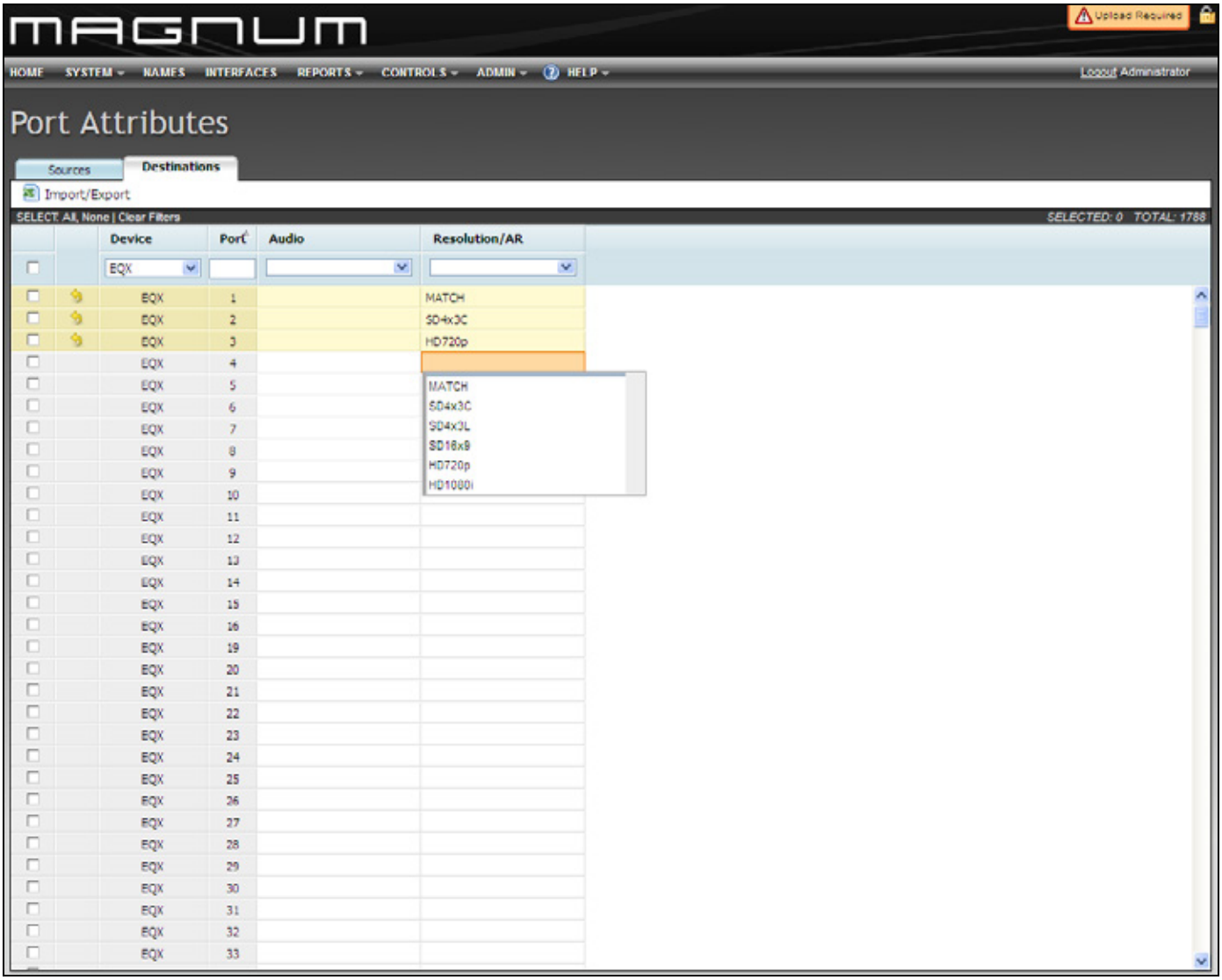


Figure 5-65: Port Attributes – Destinations

5.4.10. Port Properties

Selecting the **Port Properties** menu item from the **SYSTEM** drop down menu allows the user to configure port properties for multiviewer devices such as Protocol IDs, Audio channels and levels, Data Services, etc.

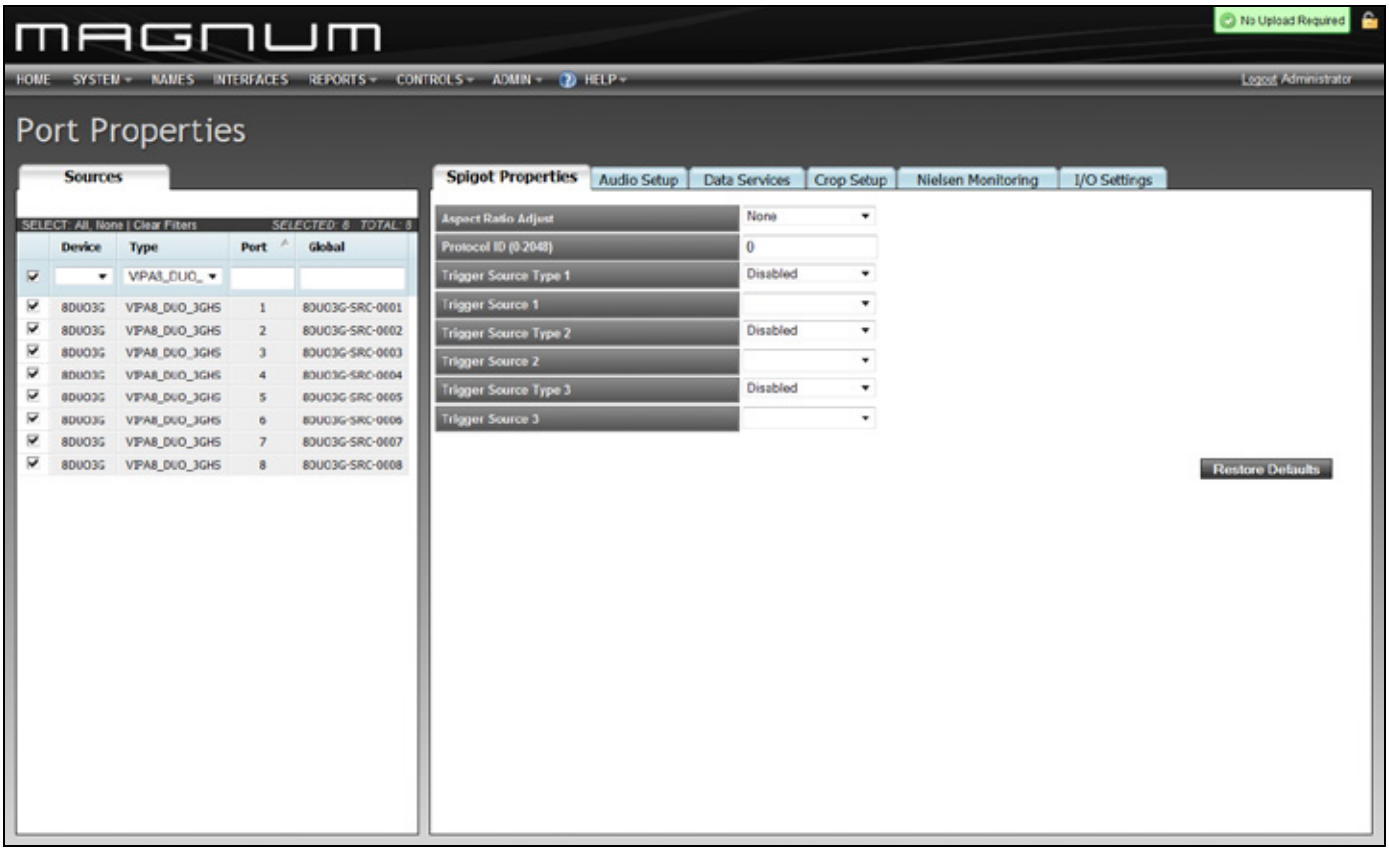


Figure 5-66: Port Properties

The **Spigot Properties** tab, as illustrated in Figure 5-67, enables the user to set Aspect Ratio, Protocol ID and Trigger Sources as well as enable/disable Trigger Source Types.

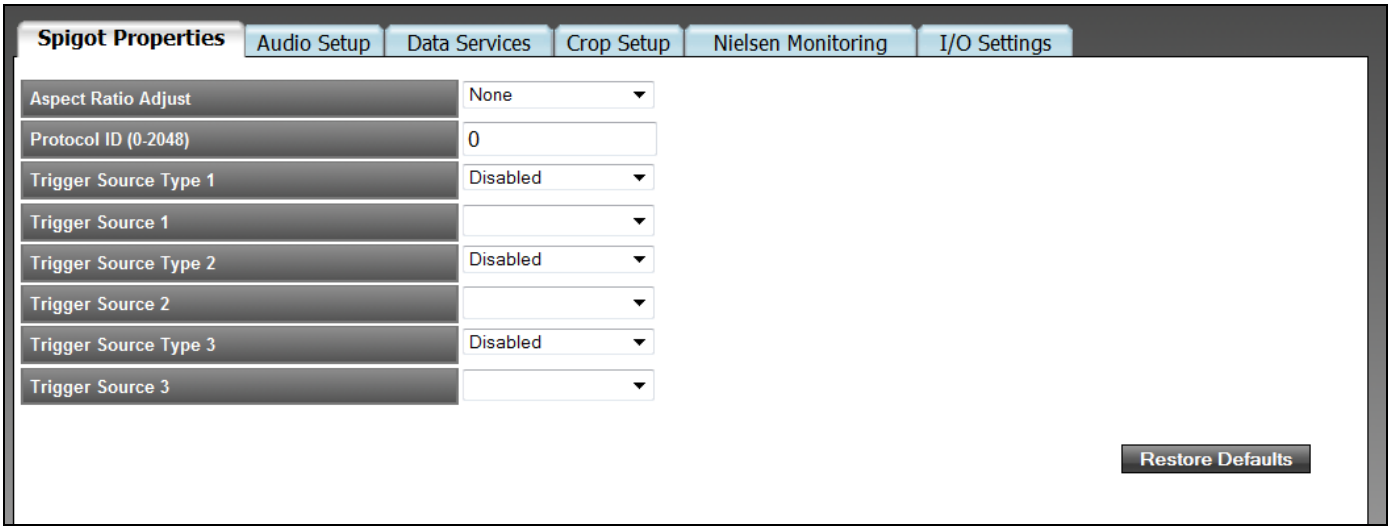


Figure 5-67: Spigot Properties Tab

The **Audio Setup** tab, as illustrated in Figure 5-68, enables the user to configure various audio parameters such as audio type, group, level bar and phase bar type, PPM type, error region, reference level.

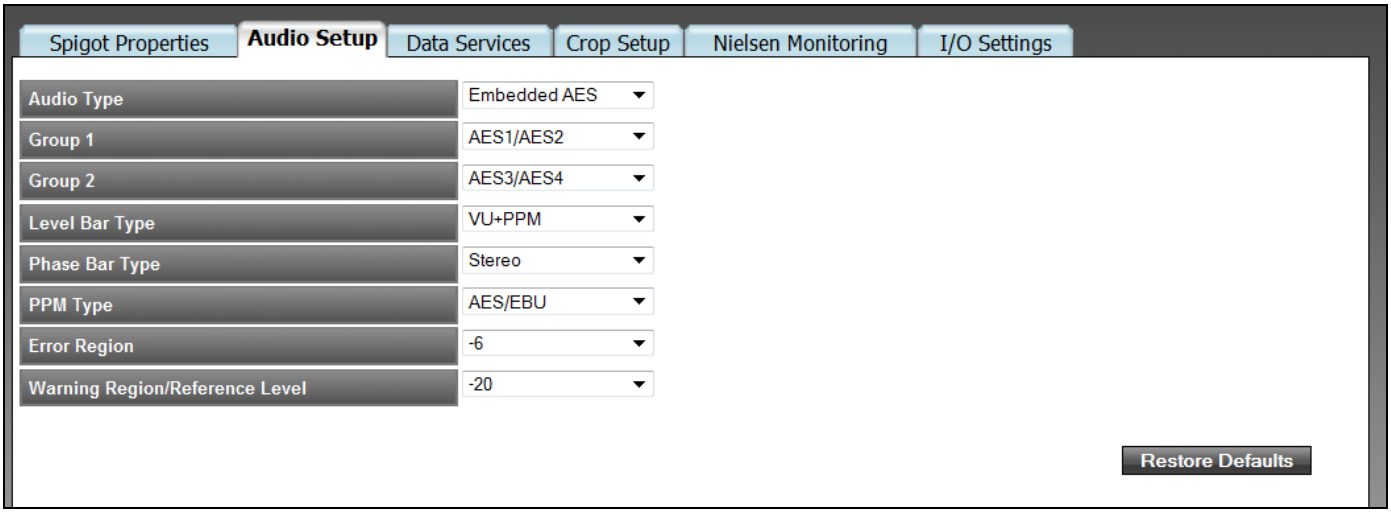


Figure 5-68: Audio Setup Tab

The **Data Services** tab, as illustrated in Figure 5-69, enables the user enable the CC Line and turn on/off WSS / Video Index Decode mode.

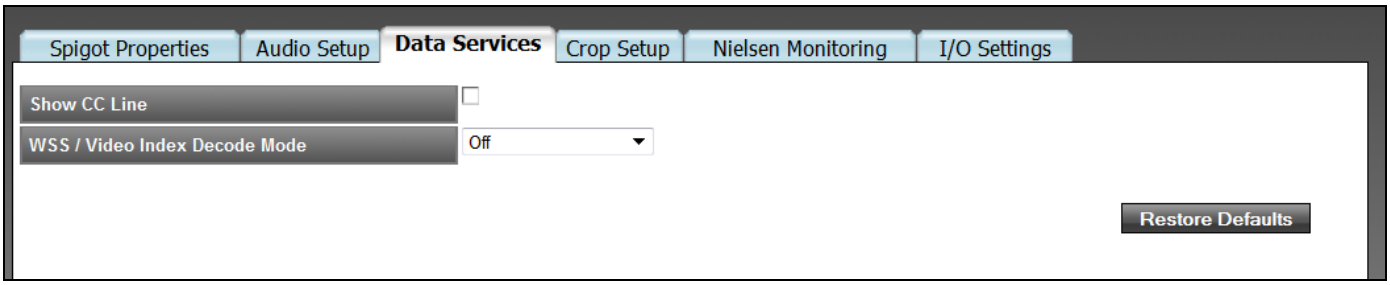


Figure 5-69: Data Services Tab

The **Crop Setup** tab, as illustrated in Figure 5-70, allows the user to set crop values.

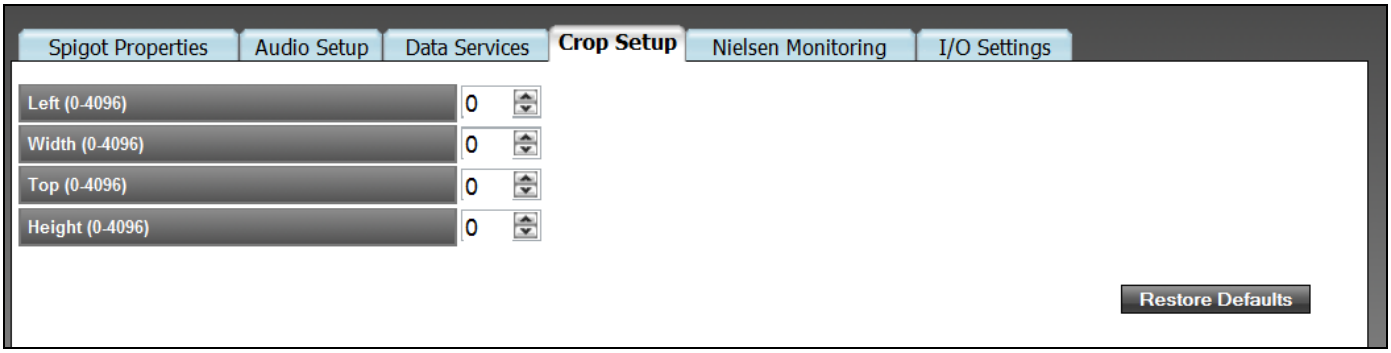


Figure 5-70: Crop Setup Tab

The **Nielsen Monitoring** tab, as illustrated in Figure 5-71, enables the user to enter a remote IP address, and select an audio channel and code type.

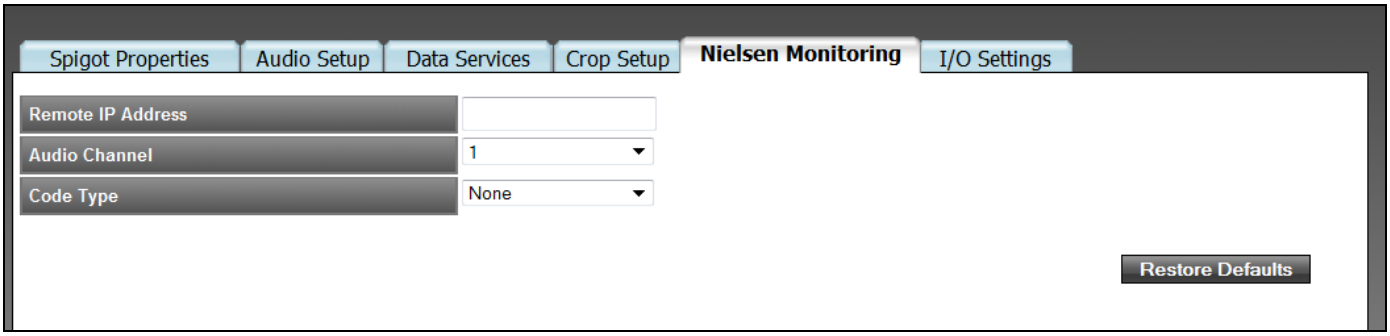


Figure 5-71: Neilsen Monitoring Tab

The **I/O Settings** tab, as illustrated in Figure 5-72, allows the user to enable the GLINK Input Cascade function as well as set the SDI Output Mode and Output Format.

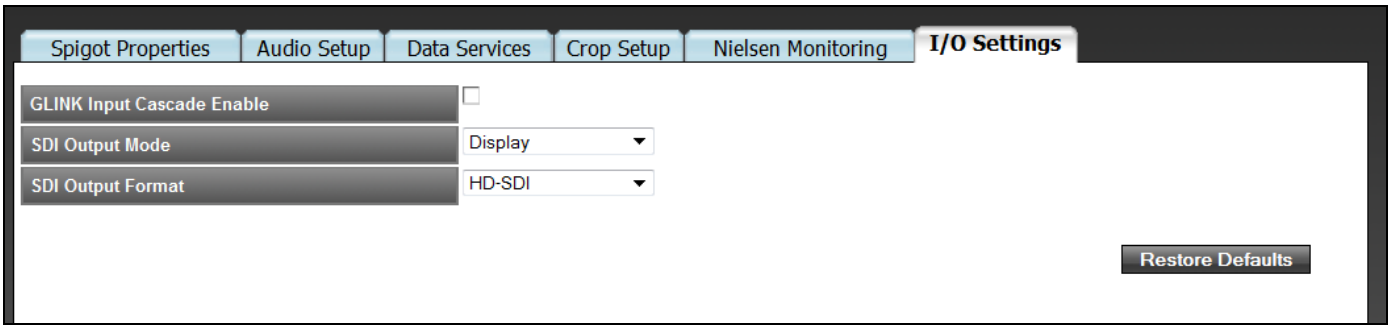


Figure 5-72: I/O Settings

5.4.11. Virtual Ports

Selecting the **Virtual Ports** menu item from the **SYSTEM** drop down menu allows the user to add virtual destinations and virtual sources. Virtual sources are a method of creating sources that span levels and frames. This facilitates level routing with virtual sources lining up routing to matching levels on virtual destinations. Breakaways are also performed within virtual sources and destinations on the panel by allowing you to choose new source assignments on the fly to route into particular levels of a virtual destination.

A virtual port is required to route both video and audio together when using the EMR. The Video Level of the Virtual port will contain the EQX Port, and the Audio levels (Level names starting with (A) will have the EMR Ports.

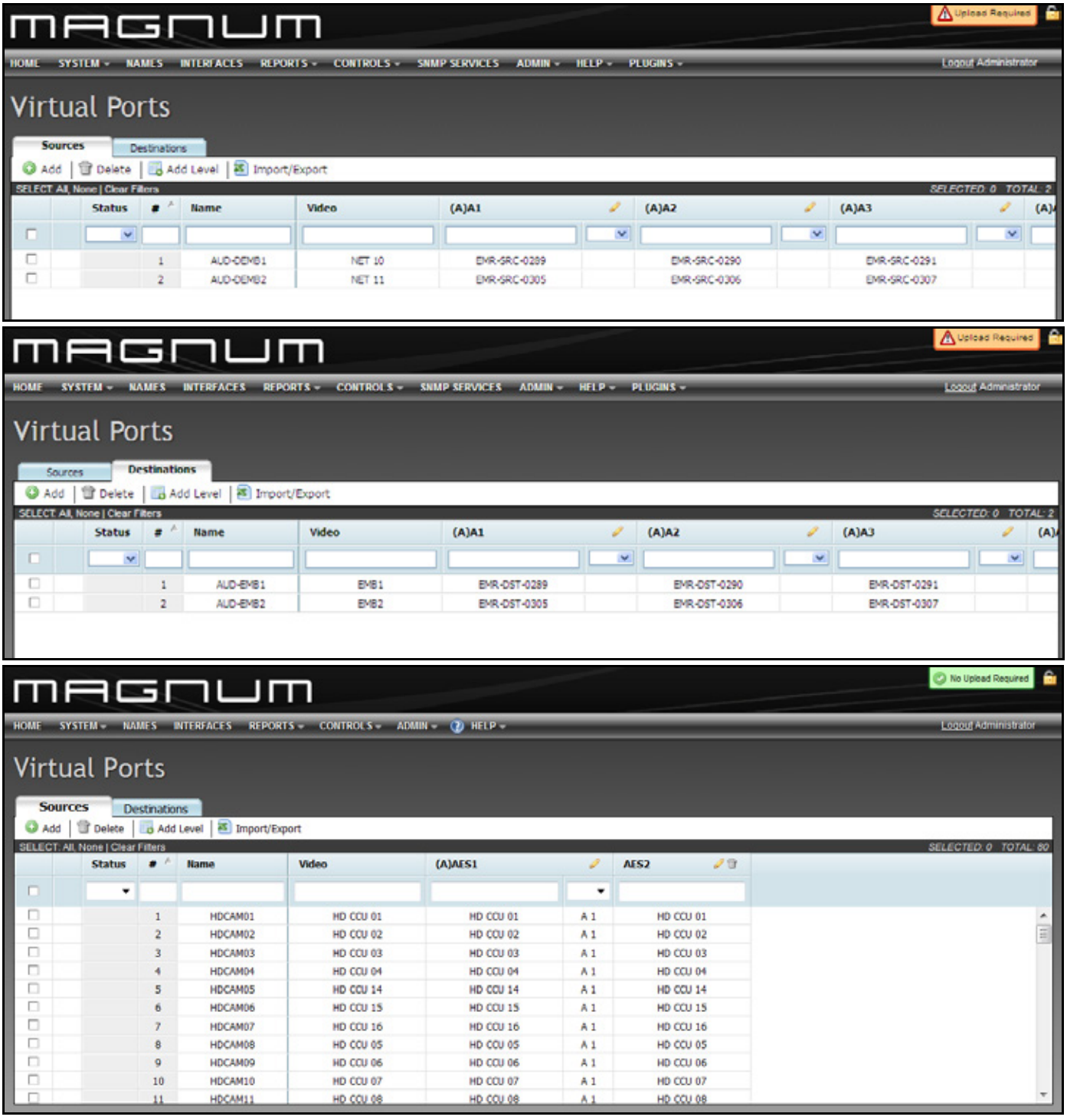


Figure 5-73: Virtual Sources

1. The user can import or export a virtual port using the **Import/Export** function. To import a virtual source, navigate to the virtual ports page and select the **Import/Export** button. When the **Import/Export CSV** dialog box appears, select the ***Browse*** button and navigate to the desired file. Select the **Open** button in the dialog box and then click the **Import** button once the file is listed in the file field.

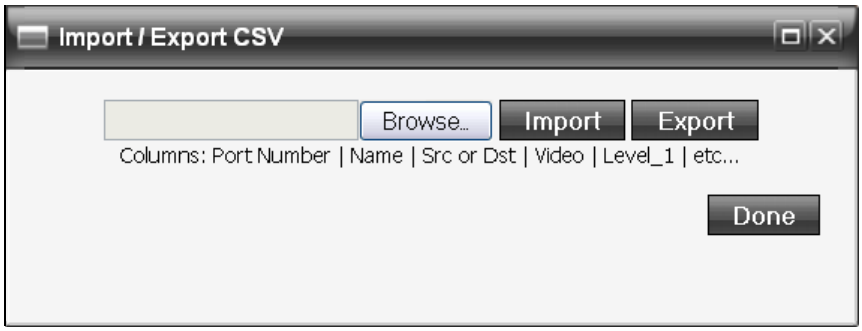


Figure 5-74: Import/Export CSV Dialog Box

2. To export a virtual port, select the **Export** button. The following dialog box will appear, as shown in Figure 5-75. **Microsoft Office Excel** is the default program that the .csv file will open in and export to. If you wish to open the .csv file in a program other than excel, use the *Open with* function to select a new program, otherwise select the **OK** and the .csv file will open and display the current content in an excel spreadsheet. Once all import and export functions are complete, select the **Done** button.

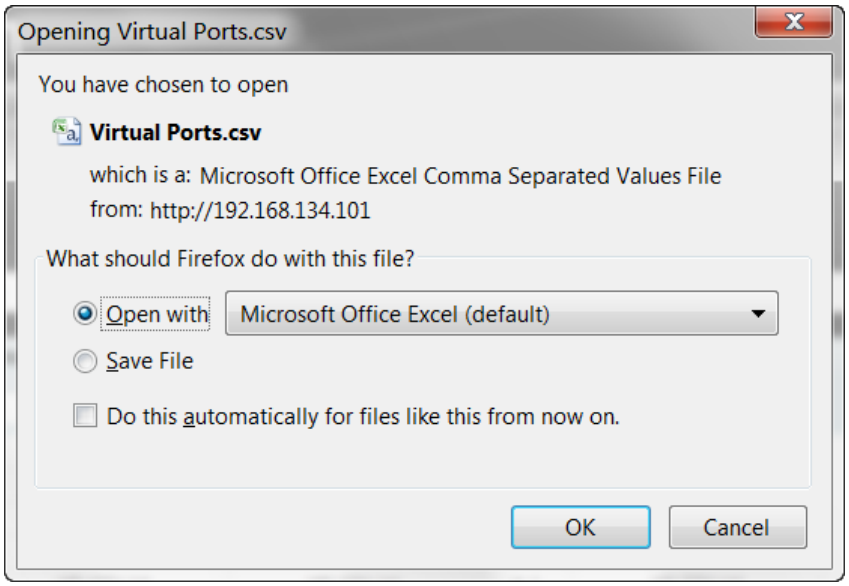


Figure 5-75: Opening Virtual Ports.csv Dialog Box

3. To add a virtual port to the source tab, select the **Add** button at the top of the **Sources** tab. An "Add Virtual Port" dialog box will appear enabling the user to create a virtual port. Enter the desired name of the new virtual port into the *Name* field and then select the **Add** button. Once all virtual ports have been added, select the **Done** button to apply your changes. To add a virtual port to the destination tab, follow the same procedure.

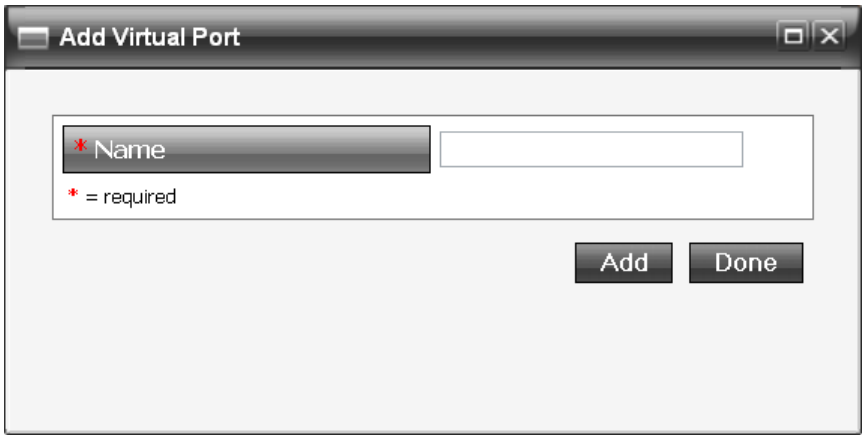


Figure 5-76: Add Virtual Port

4. To add a level to the source or destination, select the **Add Level** button. An **Add Level** dialog box will appear enabling the user to enter a unique level name into the *Name* field. Once all the desired levels have been entered select the **Done** button. Repeat this step each time the user wishes to add another virtual source or virtual destination.

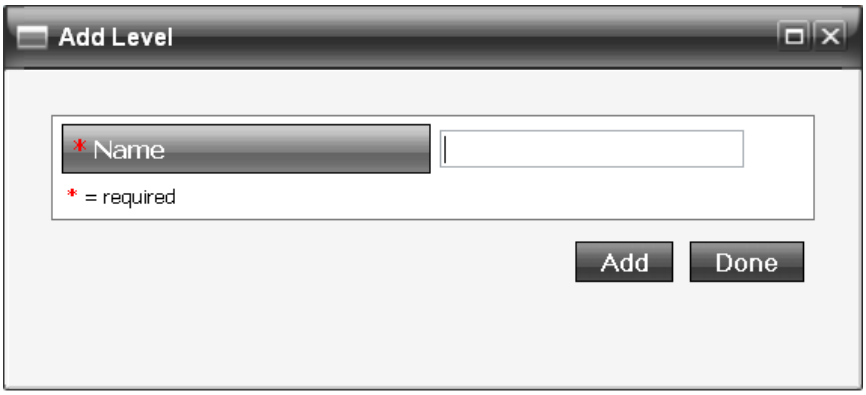


Figure 5-77: Add Level

5. To remove a virtual source or destination, place a check mark beside the items that you wish to remove and select the **Delete** button.

6. The user can also perform a reverse lookup on a source or destination by selecting the cell and holding down the **Shift** key. To perform a reverse lookup on an entire row hold down the **Ctrl+Alt** and **Shift** keys when you have selected the cell in the row that you wish to view. The reverse lookup cells are shown highlighted in blue in Figure 5-78.

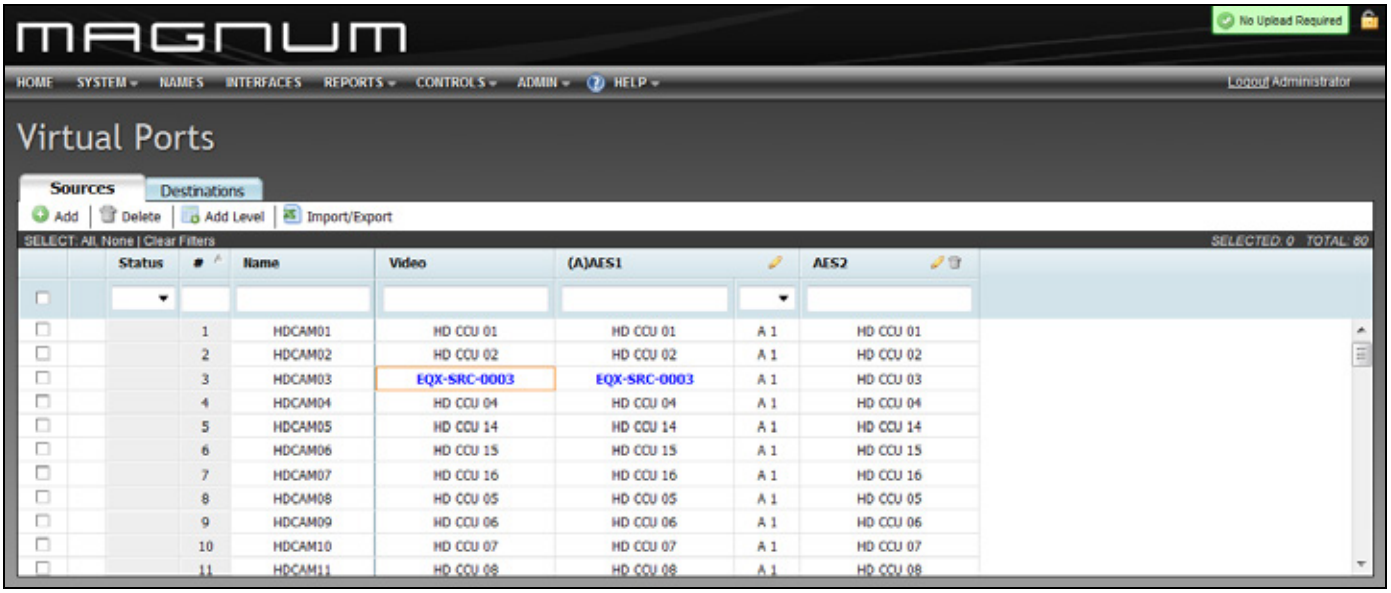


Figure 5-78: Reverse Lookup

7. The user can also copy and paste existing cells or rows. To copy a cell or row, right click on the cell that you wish to copy and select **Copy Cell** or **Copy Row** from the pop up menu that appears. Once the data is copied to the clipboard, navigate to the cell or row that you wish to paste the information onto, then right click on the cell and select the **Paste** option. You can also copy and paste using the keyboard controls: Copy (**Ctrl + C**) and Paste (**Ctrl + V**).

Please note that the keyboard copy (Ctrl + C) and paste (Ctrl + V) control can be used globally on almost any cell in the MAGNUM Server Interface.

Once complete be sure to click on the "Upload Required" icon to upload any changes.

8. To add or delete a destination, add a level to the destination tab, or import/export destinations, the user must follow the same procedure outlined for creating a virtual source.

Tip: Virtual destinations enable the user to build up destinations with multiple level assignments. In this way a destination that naturally spans frames and levels can be routed to with sources sorting into the correct levels automatically.

5.5. ASSIGNING NAMES

A **NameSet** allows the user to create multiple names for the same source or destination within the system. To assign names to organize the sources and destinations select the **Names** item from the main toolbar.

5.5.1. Sources Tab

To create a Nameset for the sources, navigate to the **Sources** tab.

1. Select a device from the **Device** drop down menu. The device list will populate in the sources tab.

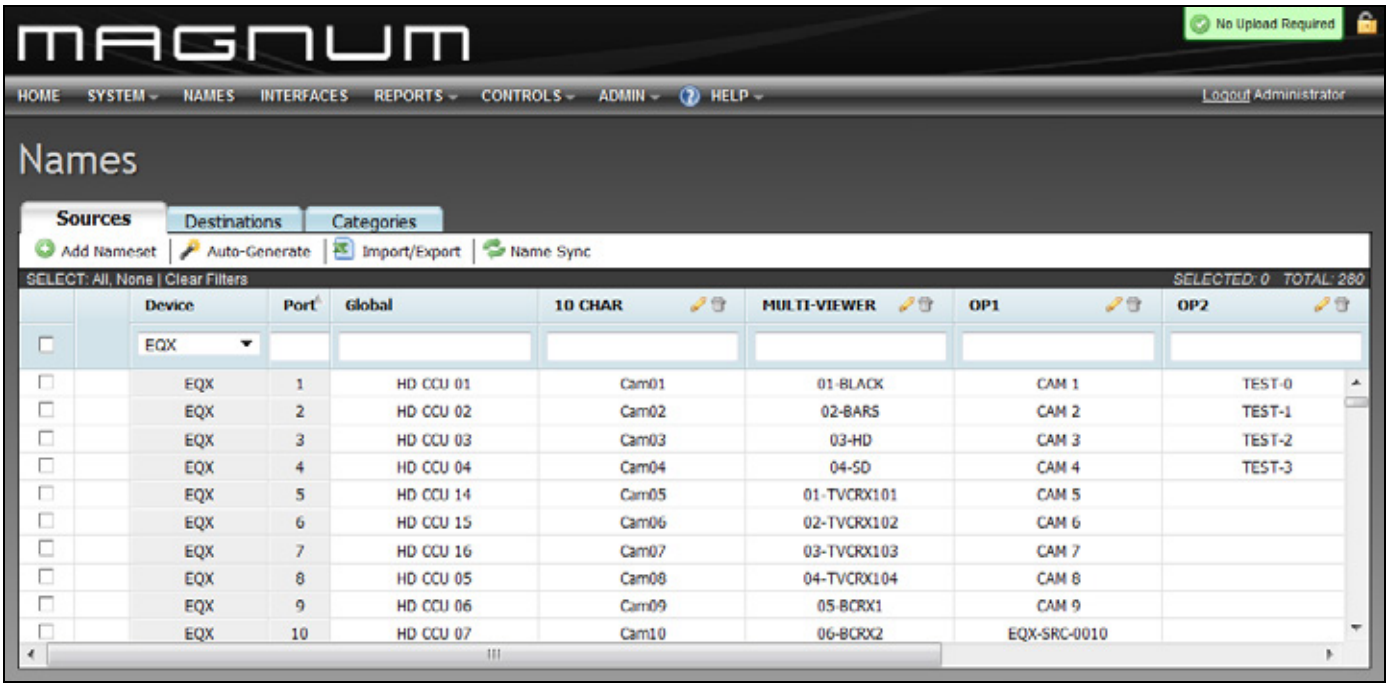


Figure 5-79: Names Sources Tab

2. To assign ports to a certain name set, select the desired ports by placing a check mark in the box or boxes beside the port name(s) and then select the **Auto-Generate** button.

    a. An **Auto-Generate Names** dialog box will appear enabling the user to generate names automatically based on the properties selected in this dialog box. From the **Selected Nameset** drop down menu select one of the nameset items for which you are auto-generating the list.

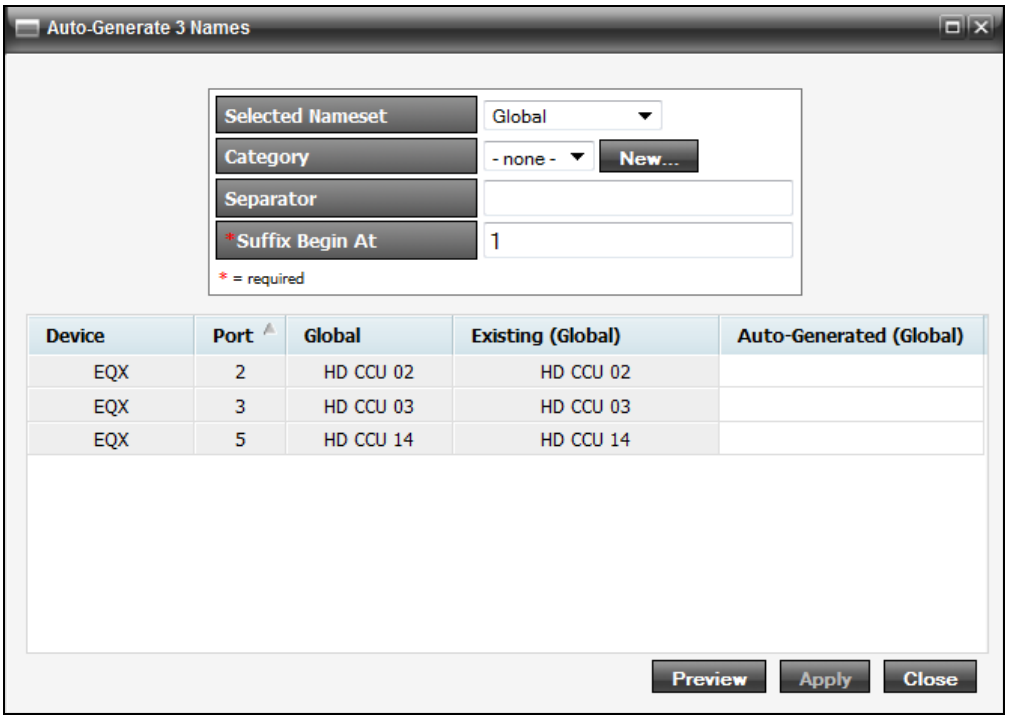


Figure 5-80: Auto-Generate Names Dialog Box

b. The user can assign a category which will be used in the naming process when the names are generated. Select a category from the drop down menu. If a category does not exist or if you would like to create a new category, select the **New…** button and enter a unique name into the *New Category Name* field. Users can also enter a name in the separator box instead of creating a Category. Example: CAM-

c. If you wish to separate the category and suffix using a specific character, you can optionally enter a character into the separator field (i.e. -, :, etc).

d. It is required that the user enter a beginning alpha-numeric suffix. The number or letter entered in the **Suffix Begin At** field will be the starting character for which the generated names will be counted up from (i.e. 1, 2, 3..etc). If adding 0s, the auto-generate will automatically pad all names. Example: 001 as the suffix will create 001 and 016.

e. Once all the fields are filled in, select the **Preview** button to view how the names will be displayed. The names will be generated based on your selections and will be displayed in the *Auto-Generated* field. If you are satisfied with your changes, select the **Apply** button and then **Close** to return to the original screen.

f. Your changes will be generated and displayed under the corresponding columns.

3. To import or export a CSV file, select the **Import/Export** button. To import a file, select the **Browse** button and then navigate to the appropriate CSV file. Once the file is selected, click on the **Import** button and the data will be imported to the name set list.

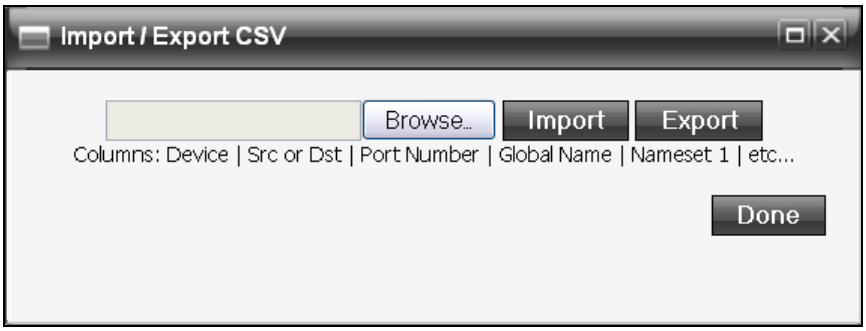


Figure 5-81: Import/Export CSV for Name Sets

4. To export a CSV file, select the **Export** button. The information displayed in the current name set list will be exported to an excel CSV file as shown in Figure 5-82.

Microsoft Excel - Name Sets.csv [Read-Only]

File Edit View Insert Format Tools Data Window Help

A1 Device Short Name

	A	B	C	D	E	F	G	H	I	J	K	L
1	Device Short Name	Src or Dst	Port Number	Global	10 CHAR	MULTIVIEWER	NS1	NS2	NS3	NS4	OP1	TD
2	EQX	SRC	1	TEST-1	TEST-1	TEST 1	FS1	REMOTE 1	SAT 1	CAM 1		
3	EQX	SRC	2	TEST-2	TEST-2	TEST 2	FS2	REMOTE 2	SAT 2	CAM 2		
4	EQX	SRC	3	NET 10	NET-10	NET 10	FS3	REMOTE 3	SAT 3	CAM 3		
5	EQX	SRC	4	NET 11	NET-11	paul	FS4	REMOTE 4	SAT 4	CAM 4		
6	EQX	SRC	5	SAT-11	SAT-11	WASHINGTON	FS5	REMOTE 5	SAT 5	CAM 5		
7	EQX	SRC	6	SAT-12A	SAT-12	NEW YORK	FS6	REMOTE 6	SAT 6	CAM 6		
8	EQX	SRC	7	BLACK	BLACK		FS7	REMOTE 7	SAT 7	CAM 7		
9	EQX	SRC	8	SRC EMR MON								
10	EQX	SRC	9	OUT EMR MON								
11	EQX	SRC	10	REM 3	REM-3							
12	EQX	SRC	11	REM 4	REM-4							
13	EQX	SRC	12	REM 5	REM-5							
14	EQX	SRC	13	REM 6	REM-6							
15	EQX	SRC	14	VSP 101								
16	EQX	SRC	15	VSP 102								
17	EQX	SRC	16	VSP 111								
18	EQX	SRC	19	VSP 112								
19	EQX	SRC	20	SVR 931								
20	EQX	SRC	21	SVR 932								
21	EQX	SRC	22	VT-11								
22	EQX	SRC	23	VT-12								
23	EQX	SRC	24	VT-13								
24	EQX	SRC	25	VT-14								
25	EQX	SRC	26	VT-15								
26	EQX	SRC	27	DUB 21								
27	EQX	SRC	28	DUB 41								
28	EQX	SRC	29	DUB 81								
29	EQX	SRC	30	PCRA 1								
30	EQX	SRC	31	PCRA 2								
31	EQX	SRC	32	PCRA 3								
32	EQX	SRC	33	PCRA 4								
33	EQX	SRC	34	PCRA 5								
34	EQX	SRC	37	EDIT 71								
35	EQX	SRC	38	EDIT 72								
36	EQX	SRC	39	EDIT 73								
37	EQX	SRC	40	EDIT 74								
38	EQX	SRC	41	GFX 511								
39	EQX	SRC	42	GFX 5119								
40	EQX	SRC	43	GFX 512								
41	EQX	SRC	44	CAM 1								
42	EQX	SRC	45	CAM 2								
43	EQX	SRC	46	CAM 3								
44	EQX	SRC	47	CAM 4								
45	EQX	SRC	48	CAM 5								
46	EQX	SRC	49	CAM 6								
47	EQX	SRC	50	CAM 7								
48	EQX	SRC	51	CAM 8								
49	EQX	SRC	52	PROMPT1								

Name Sets

Ready NUM

Figure 5-82: Name Sets Exported to CSV File

5. **Name Sync** button has been replaced by the Magnum module, Names. This module when installed and configured will publish names to the Satellite dashboard widget for viewing and accepting the name updates.

5.5.2. Destinations Tab

To create Names for the destinations, navigate to the **Destinations** tab.

1. Select a device from the **Device** drop down menu. The device list will populate in the destinations tab.

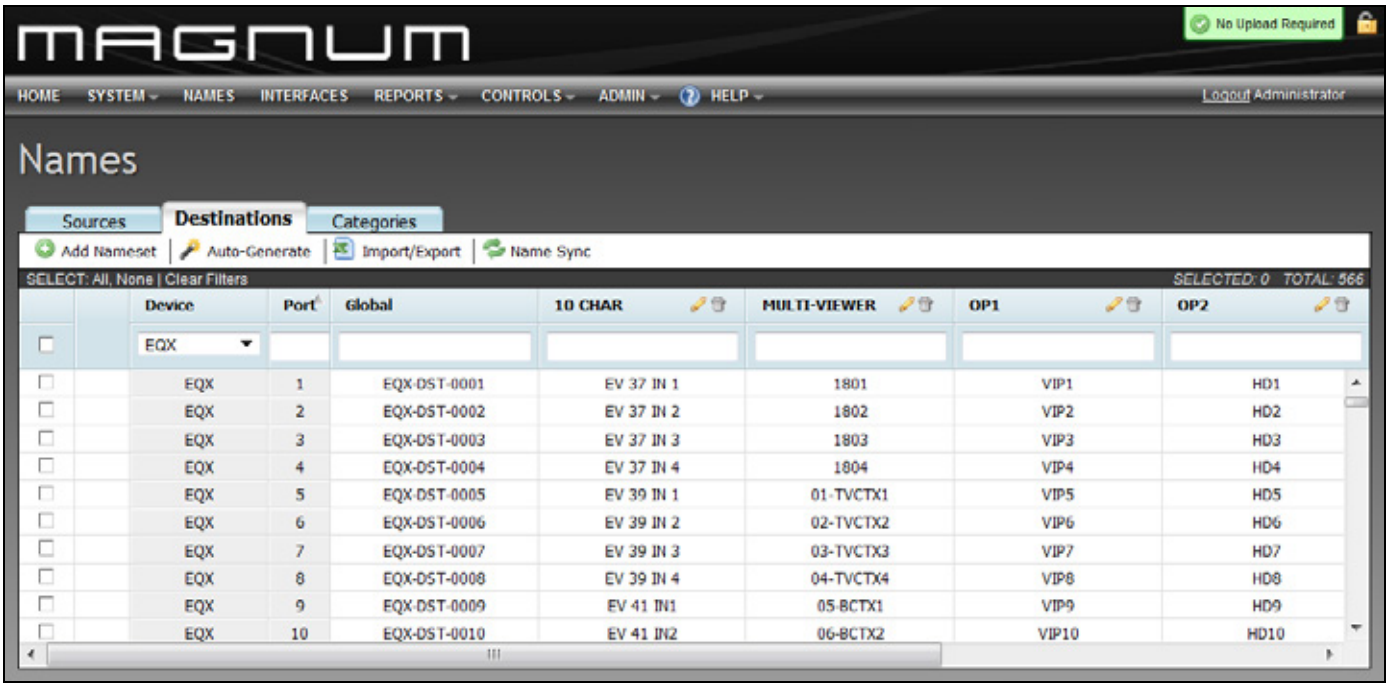


Figure 5-83: Names Destinations Tab

2. To assign ports to a certain name set, select the desired ports by placing a check mark in the box or boxes beside the port name(s) and then select the **Auto-Generate** button.

    a. An **Auto-Generate Names** dialog box will appear enabling the user to generate names automatically based on the properties selected in this dialog box. From the **Selected Nameset** drop down menu select one of the nameset items for which you are auto-generating the list.

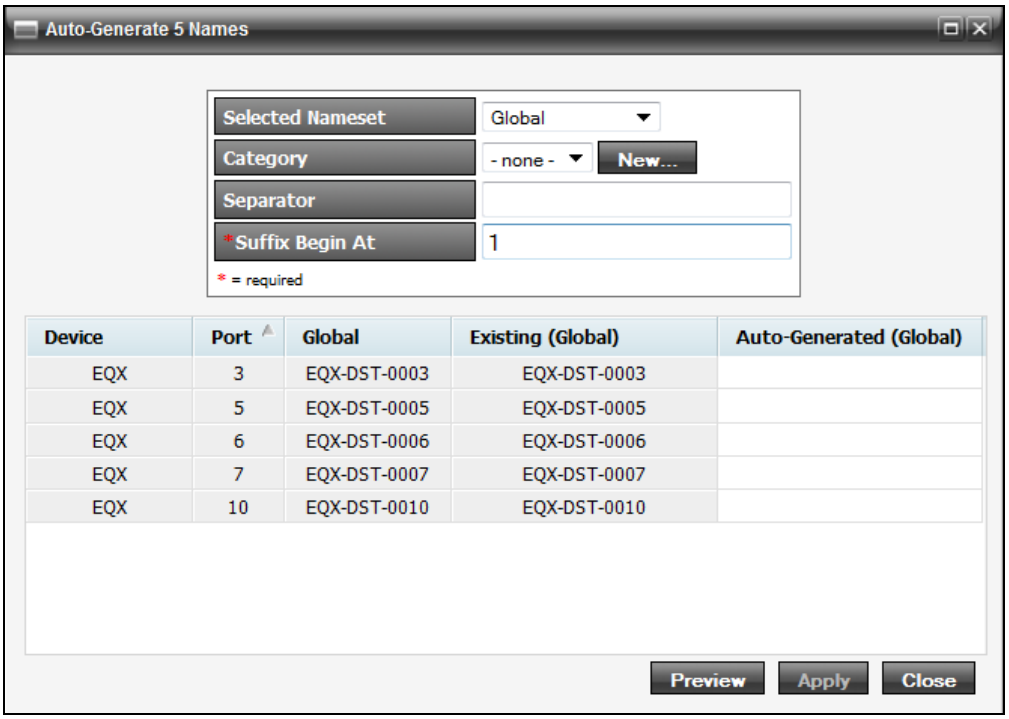


Figure 5-84: Auto-Generate Names - Destinations

b. The user can assign a category which will be used in the naming process when the names are generated. Select a category from the drop down menu. If a category does not exist or if you would like to create a new category, select the **New…** button and enter a unique name into the *New Category Name* field. Users can also enter a name in the separator box instead of creating a Category. Example: CAM-

c. If you wish to separate the category and suffix using a particular character, you can optionally enter a character into the separator field (i.e. -, :, etc).

d. It is required that the user enter a beginning alpha-numeric suffix. The number or letter entered in the **Suffix Begin At** field will be the starting character for which the generated names will be counted up from (i.e. 1, 2, 3, etc). If adding 0s, the auto-generate will automatically pad all names. Example: 001 as the suffix will create 001 and 016.

e. Once all the fields are filled in, select the **Preview** button to view how the names will be displayed. The names will be generated based on your selections and will be displayed in the *Auto-Generated* field. If you are satisfied with your changes, select the **Apply** button and then **Close** to return to the original screen.

f. Your changes will be generated and displayed under the corresponding columns.

3. To import or export a CSV file, select the **Import/Export** button. To import a file, select the **Browse** button and then navigate to the appropriate CSV file. Once the file is selected, click on the **Import** button and the data will be imported to the name set list.

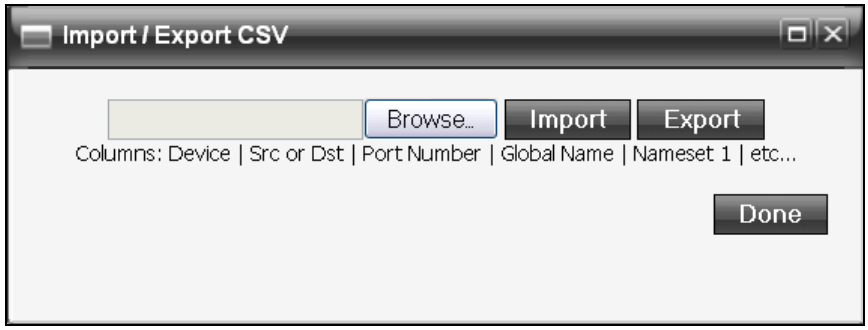


Figure 5-85: Import/Export CSV for Name Sets

4. To export a CSV file, select the **Export** button. The information displayed in the current name set list will be exported to an excel CSV file.

5. To retrieve names from the selected device, click on the **Name Sync** button. This will connect to the device and load the names from the device onto the name set page.

5.5.3. Adding a Nameset

The user can create a *nameset* when they want to re-alias sources and destinations. When a user creates a new nameset, the new nameset will be added alphanumerically to the list of columns in both the sources and destinations tab.

1. To add a new name set column to the list, select the **Add Nameset** button.

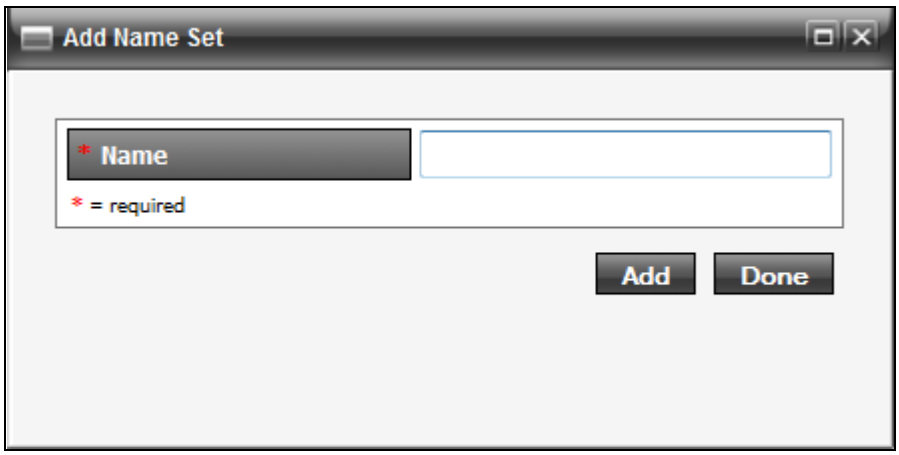


Figure 5-86: Add Name Set

2. When the dialog box appears, enter a unique name into the *Name* field and then press the **Add** button. Once you have added all of the desired names, select the **Done** button. The name will be added as a new column in alphabetical order.

5.5.4. Categories Tab

The **Categories** tab enables the user to create and view nameset categories. A category is a prefix; it allows the user to quickly locate sources or destinations by using prefix keys on the control panel (i.e. CP-2200E/CP2232E/CP2116E). Creating a category will help the user to easily identify what group the destination or source is associated with.

Figure 5-87: Name Set Categories Tab

1. To create a new Name Category select the **Add** button.

2. An **Add Category** dialog box will appear prompting the user to enter a category name into the **Name** field.

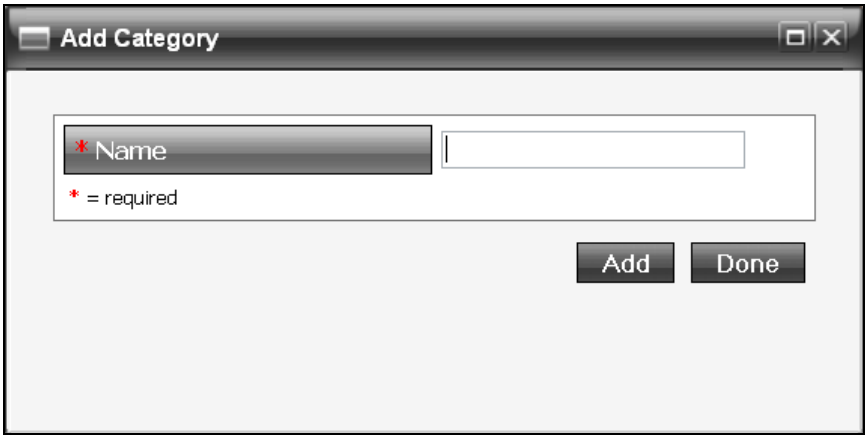


Figure 5-88: Add Category

3. Select the **Add** button after you have entered the name. This will add the name to the category list. If you wish to create more than one group, continue to add category names, and then once you are complete, select the **Done** button.

4. Once the name is added it will be listed in the Category list. To remove a category, place a check mark in the box beside the category you wish to remove and then select the **Delete** button.

5.6. CONFIGURING THE INTERFACES

The MAGNUM Server based router control system has many advanced features. One of the most powerful is the ability to generate Profiles for panels. These profiles are essentially a collection of sources and destinations along with a new set of aliases for those sources and destinations. You do NOT have to explicitly add tielines to a profile, nor do you have to design a panel layout for intelligent panels. The intelligent panels themselves find the best way to layout the various sources, destinations, prefixes, etc, that the user has decided to use. In the case of traditional panels a simple but powerful GUI is provided to determine the explicit actions that the panel can make, from defining menus to adding sources and destinations. Creating profiles is very similar to setting up the Router system itself. The steps are: create a profile, add destinations, sources and prefixes, and then alias anything as you see fit.

5.6.1. Multi-Profile

The **Multi-Profile** tab enables the user to view, add, edit and delete Multi-Profiles capable panels, such as the CP-2200E, CP2232E, CP2116E.

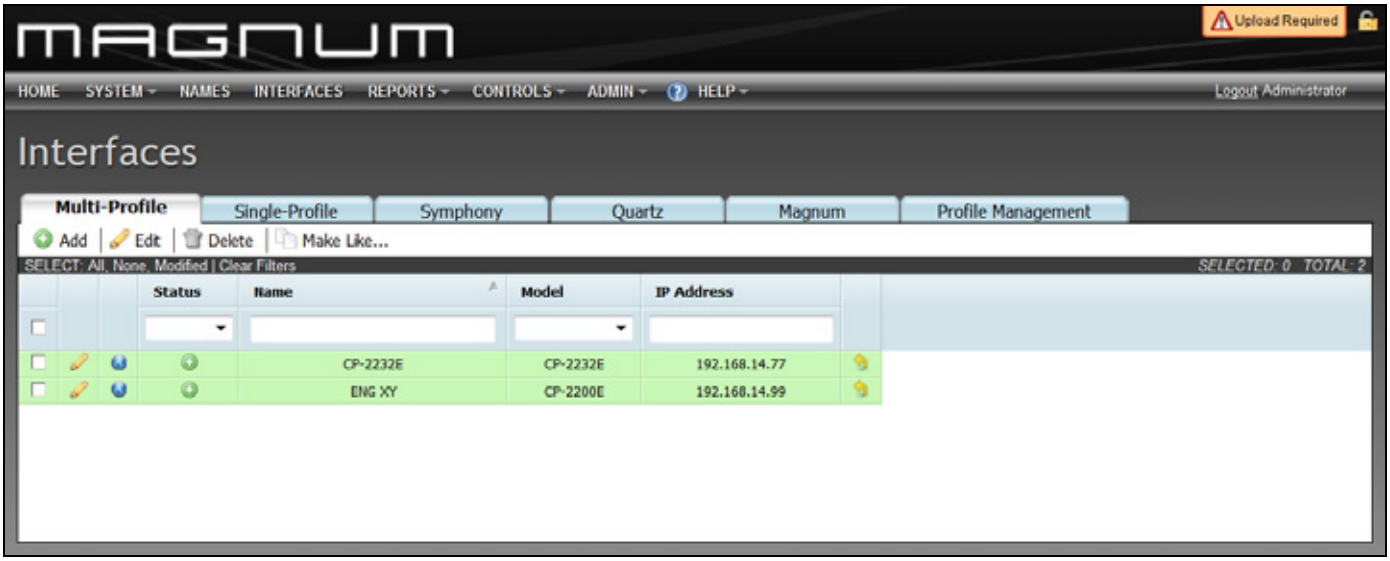


Figure 5-89: Multi-Profile Tab

The following table provides descriptions of the toolbar button functions for the Multi-Profile Tab:

Icon	Description
Add	**Add:** To add a multi-profile panel, select the Add button from the main toolbar. An ***Add Multi-Profile Panel*** dialog box will appear as shown in Figure 5-90.
Edit	**Edit:** To edit a panel(s) profile, place a check mark in the box beside the profile(s) that you wish to edit and then select the edit icon. This function is particularly useful if you are editing multiple panels at one time. Otherwise if you are just editing one panel, select the pencil icon beside the panel that you wish to edit.
Delete	**Delete:** To remove a panel profile, place a check mark in the box beside the profile that you wish to remove, and select the delete icon.
Make Like...	**Make Like:** The *Make Like* function enables the user to clone an existing panel of the same type. Place a check mark beside the panels(s) that you wish to change and then select the *Make Like* button. The *Make Like* dialog box will appear (as shown in Figure 5-91). From the clone drop down menu select a panel that you wish to clone and then press the **Apply** button.

Table 5-1: Multi-Profile Toolbar

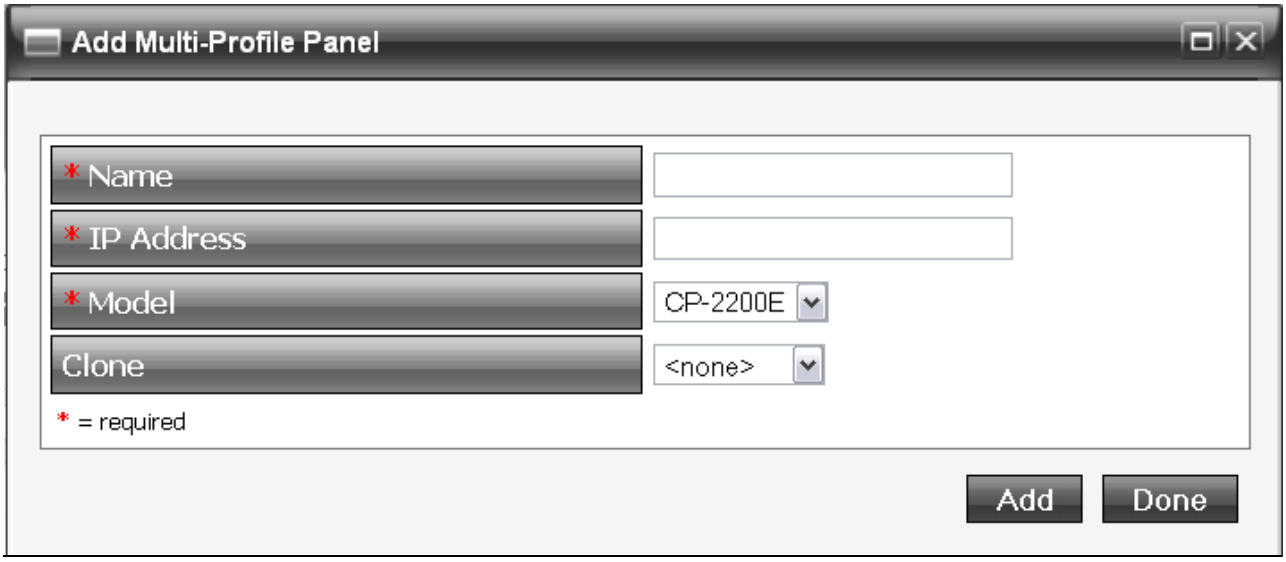


Figure 5-90: Add Multi-Profile Panel

The following items describe the *Add Multi-Profile Panel* dialog box functions:

- **Name:** Enter a unique name for the multi-profile that you wish to create.
- **IP Address:** Enter the IP address of the panel.
- **Model:** Select the model number from the model drop down list.
- **Clone:** If you wish to replicate an already existing Multi-Profile Panel, select one of the panels from the ***Clone*** drop down menu. This profile will be created based on the selected clone.

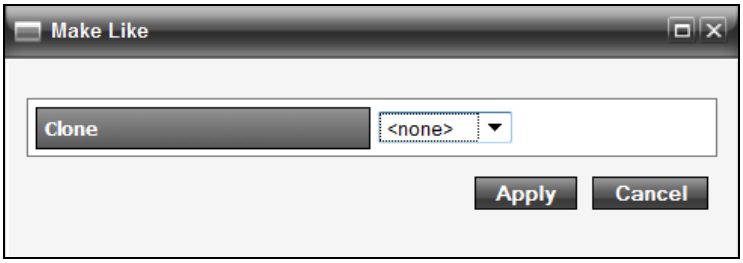


Figure 5-91: Make Like Dialog Box

5.6.1.1. Editing a Multi-Profile Interface

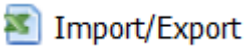
The following procedure will describe how to edit a multi-profile interface. The editing of the multi-profile interface is used to assign created profiles for access when this panel issued. If a multi-profile interface only has three of five profiles, only those three profiles will be presented to the user at the panel. Creation of profiles can be done within the Multi-profile interface or on the Profiles page.

1. Select the **Edit** icon beside the profile that you wish to edit. An **Interface Layout** screen will appear identifying the name of the multi-profile you selected, the control panel interface display, profiles available in the multi-profile, and the configuration tabs (*Sources*, *Destinations*, *Categories*, and *Settings*).

2. The **Sources** tab enables the user to view the status of the sources and set the sources to available or unavailable status.

3. The user can use the Nameset **Name** drop down menu to select and load another nameset for that profile.

4. The **Sources** tab provides two top level menu options which include; *Import/Export* and *Editing Mode*:

Menu Option	Description
	The user can import or export the source / destination availability for a select profile using the **Import/Export** function. 1. To import a file, select the **Import/Export** button. When the **Import/Export CSV** dialog box appears, select the ***Browse*** button and navigate to the desired file. Select the **Open** button in the dialog box and then click the **Import** button once the file is listed in the file field. 2. To export a profile_availability.csv, select the **Export** button. **Microsoft Office Excel** is the default program that the .csv file will open in and export to. If you wish to open the .csv file in a program other than excel, use the *Open with* function to select a new program, otherwise select the **OK** and the .csv file will open and display the current content in an excel spreadsheet. Once all import and export functions are complete, select the **Done** button.
	The **Editing Mode** drop down menu in the top left hand corner of the tab enables the user to change how the source availability is displayed. There are three availability options: i. **Availability:** Lists all the sources in alphanumeric order. ii. **Availability (Group):** Places the sources into alphanumeric device groups. iii. **Re-order:** Enables the user to physically drag and drop the sources into a specific order.

5. Selecting the option will hide the panel interface and expand the source tab to populate the entire length of the screen.

Figure 5-92: Interface Layout – Sources

6. Next, toggle to the **Destinations** tab as shown in Figure 5-93, and perform the same functions as described above for editing the sources tab.

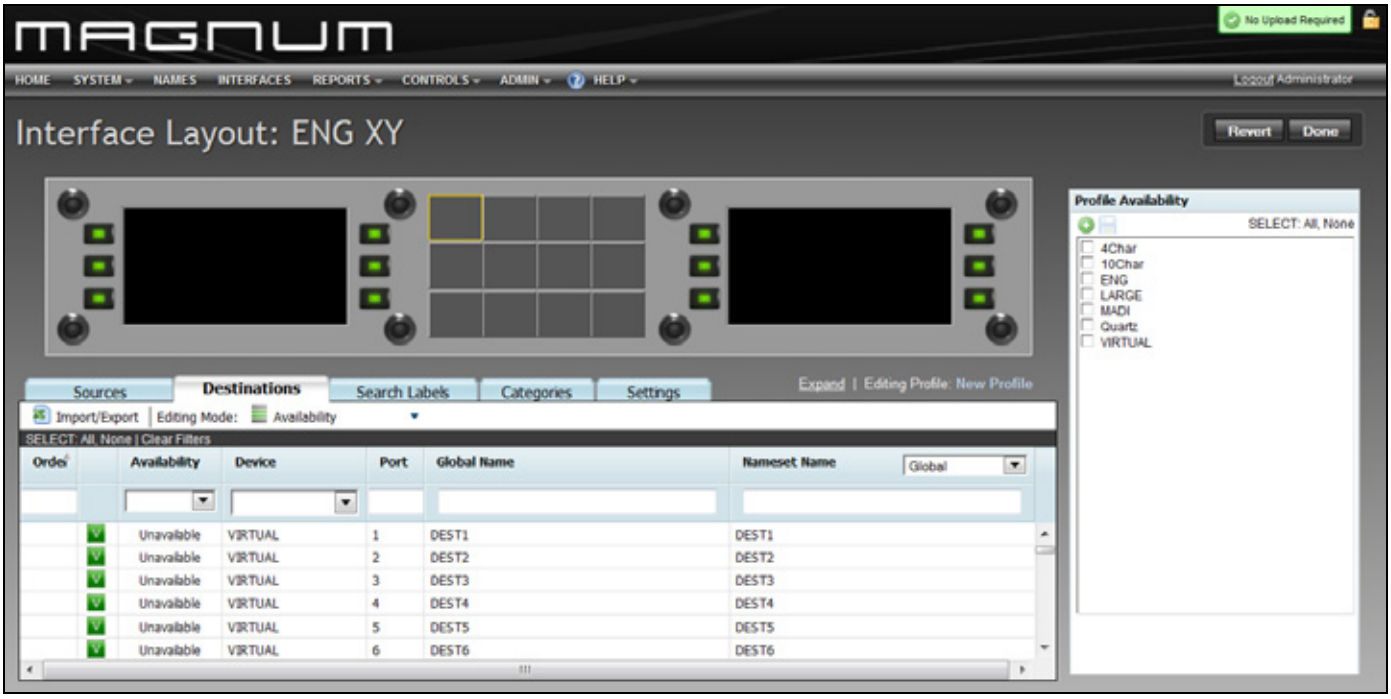


Figure 5-93: Interface Layout – Destinations

7. The Search Labels tab allows the user to add and remove Source and Destination labels available to the selected profile. The Labels available and the assignment to available ports are done on the Port Labels page. If Search Labels are used they override selections made in the Category Tab. The user can also add a new label or edit one of the existing labels associated with the selected profile. Select the **Search Labels** tab to edit the labels settings; the **Source Labels** will be listed on the left side of the screen and the **Destination Labels** will be listed on the right side of the screen. If a label is listed as *unavailable* (white), then single click on the label row to change it to *available* (green). If you wish to make an *available* label *unavailable*, single click on the desired row to change the status.

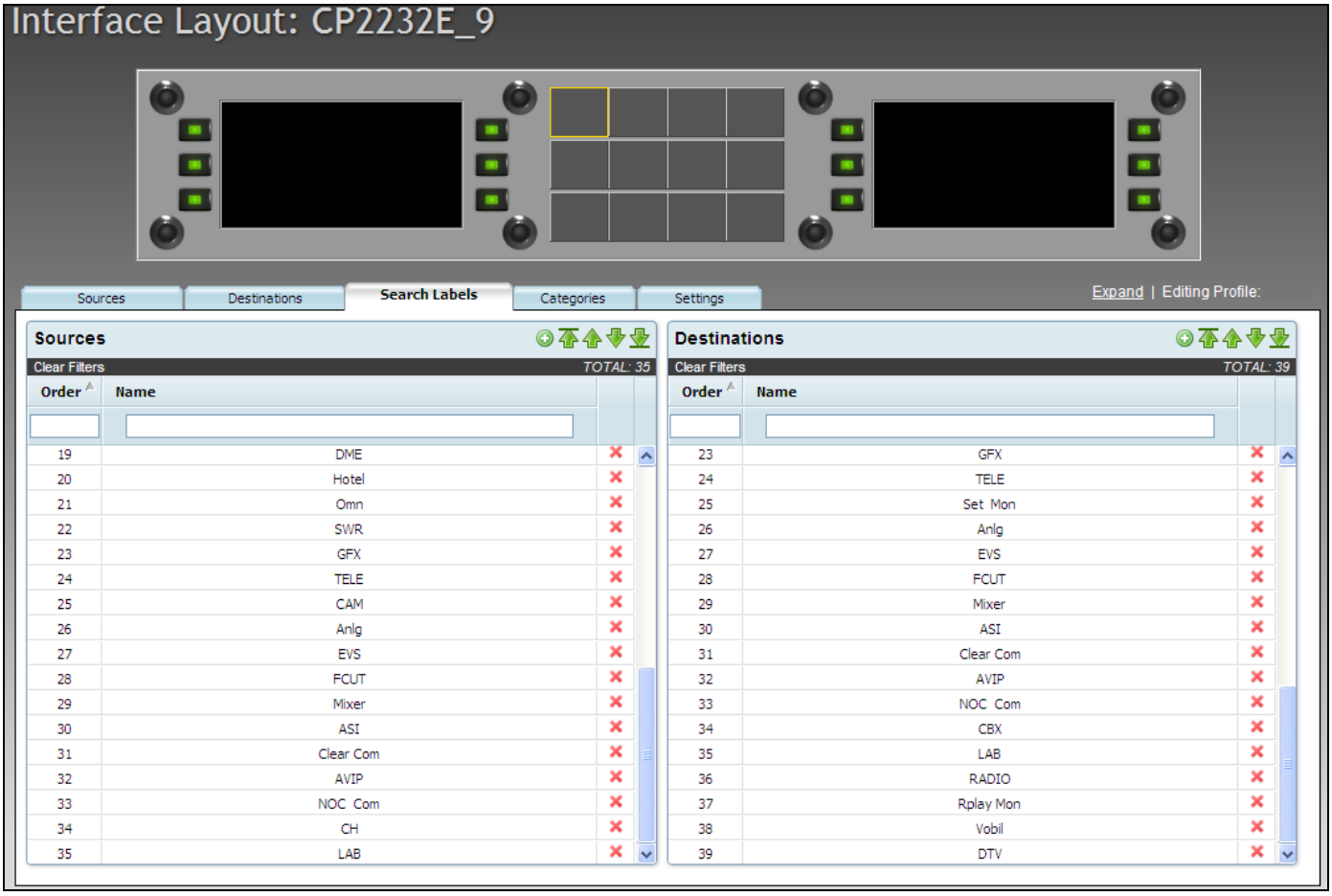


Figure 5-94: Interface Layout - Search Labels

8. The user can also add a new category or edit one of the existing categories associated with the selected profile. Select the **Category** tab to edit the category settings; the **Source Categories** will be listed on the left side of the screen and the **Destination Categories** will be listed on the right side of the screen. If a category is listed as *unavailable* (white), then single click on the category row to change it to *available* (green). If you wish to make an *available* category *unavailable*, single click on the desired row to change the status.

Figure 5-95: Interface Layout – Categories

9. To modify the profile settings, select the **Settings** tab. The profile settings for the selected profile will be displayed as shown in Figure 5-96.

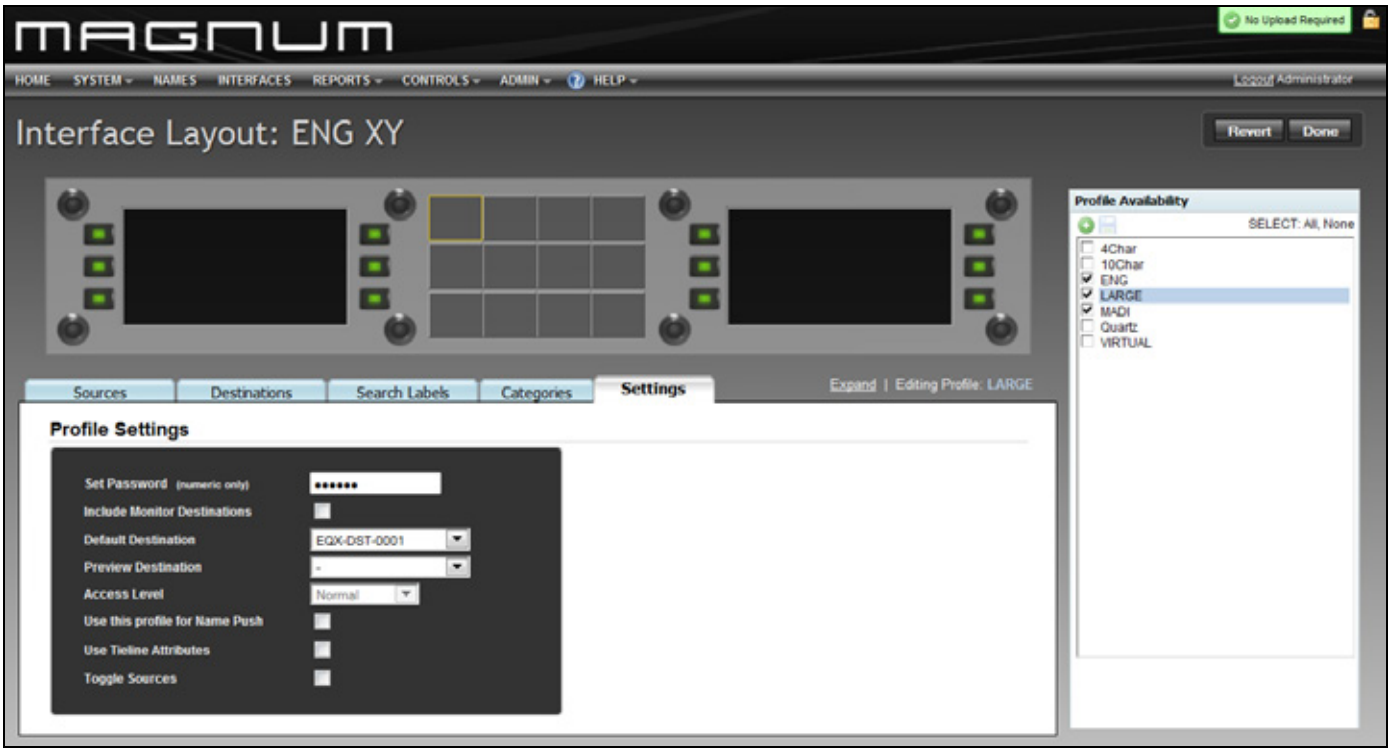


Figure 5-96: Interface Layout - Settings

10. Below is a list of the parameters that can be edited in the settings tab:

    a. **Set Password:** The *Set Password* field enables the user to assign a password to the selected profile. If a password already exists, it is not required that the user know the original password in order to overwrite it. Enter the desired password into this field. The password is numeric only.

    b. **Include Monitor Destinations:** If you wish to control the monitor destinations of the EQX router from the selected profile, place a check mark in the *Include monitor destinations* check box. This add the four EQX router monitor destinations automatically to the selected profile and will appear on any Advanced control panels that use this profile.

    c. **Default Destination:** To set a default destination, select a destination from the drop down menu. This destination will be automatically selected when the profile is loaded

    d. **Preview Destination:** To set a preview destination, select a destination from the drop down menu. When you preset a source (prior to pressing take) your source will be routed automatically to the Preview Destination you have selected.

    e. **Access Level:** To set an access level, select either Minimal, *Normal*, or *Administrator* from the drop down menu. The access level defines the level of control for locks and protects. Minimal (Unable to lock or protect), Normal (Able to lock and protect but not override owners), Administrator (Able to lock, protect, and override owners)

    f. **Use this profile for Name Push:** Placing a check mark in this box will force name updates from the MAGNUM server onto a device that supports local name updates.

    g. **Use Tieline Attributes:** Placing a check mark in this box will allow the panel to present the user with an attribute selection in order to use a specific tieline for a route.

    h. **Toggle Sources:** Placing a check mark in this box will allow the panel to present the user with all destinations within the profile with Toggle enabled by default.

11. If you are unhappy with the changes you have made to the multi-profile, you can revert back to the original profile settings by selecting the **Revert** button at the top right of the screen. After you have completed making your changes, select the **Done** button to finalized your updates.

5.6.2. Single-Profile

The **Single-Profile** tab enables the user to view, add, edit and delete Single-Profile interfaces.

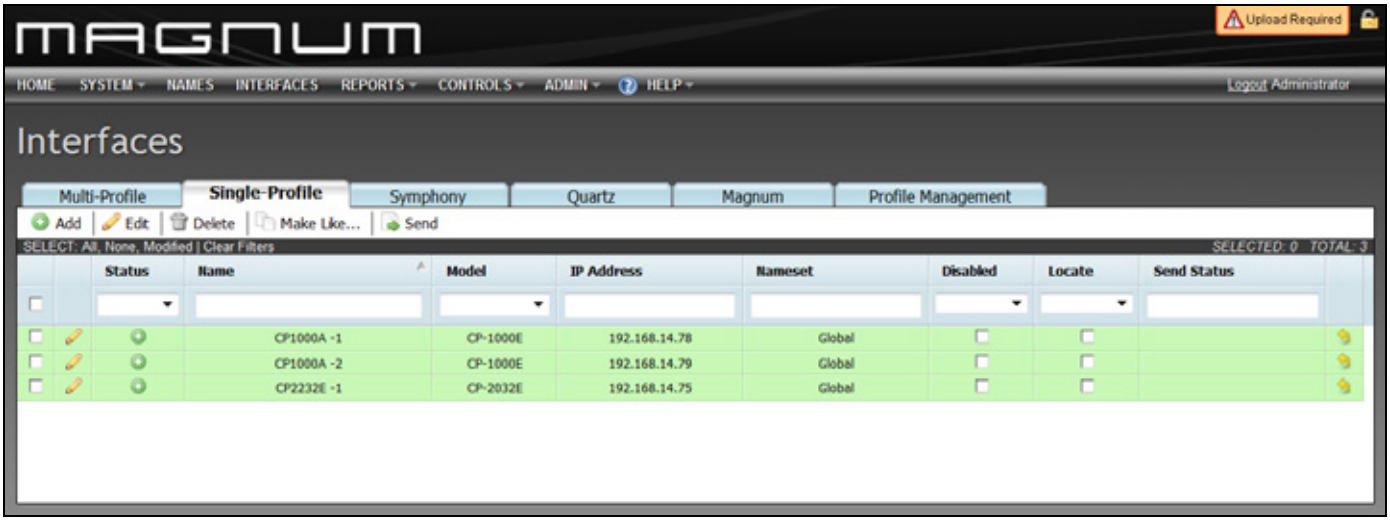


Figure 5-97: Single-Profile

The following table provides descriptions of the toolbar button functions for the Single-Profile Tab:

Icon	Description
Add	**Add:** To add a single-profile panel, select the **Add** button from the main toolbar. An ***Add Single-Profile Panel*** dialog box will appear as shown in Figure 5-98.
Edit	**Edit:** To edit a panel(s) profile, place a check mark in the box or boxes beside the profile that you wish to edit and then select the edit icon. This function is particularly useful if you are editing multiple panels at one time. Otherwise if you are just editing one panel, select the pencil icon beside the panel that you wish to edit.
	Delete: To remove a panel profile, place a check mark in the box beside the profile that you wish to remove, and select the delete icon.
Make Like...	**Make Like:** The *Make Like* function enables the user to clone an existing panel. Place a check mark beside the profile(s) that you wish to change and then select the *Make Like* button. The *Make Like* dialog box will appear (as shown in Figure 5-99). From the clone drop down menu select a panel that you wish to clone and then press the **Apply** button.
Send	**Send:** To apply the panel configuration to the physical panel(s), select the panel(s) that you wish to update and then press the *Send* button. The changes will be sent and applied to the selected panel

Table 5-2: Single Profile Toolbar

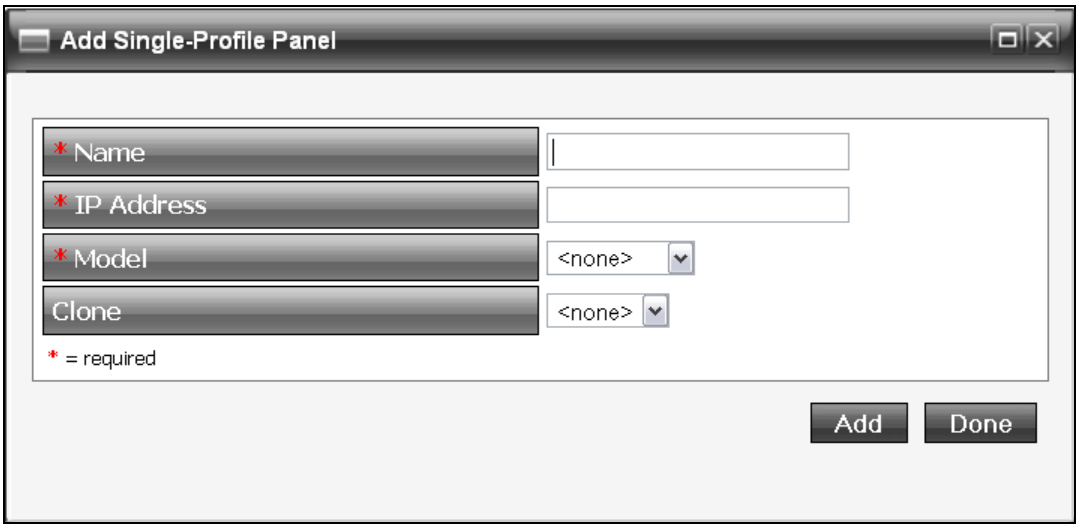


Figure 5-98: Add Single-Profile Panel Dialog Box

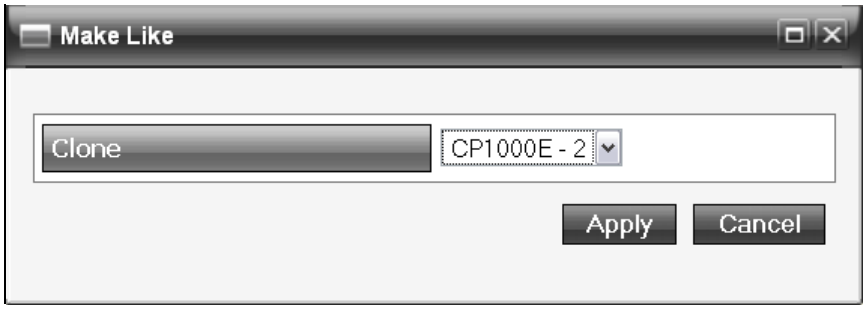


Figure 5-99: Make Like Dialog Box

To search for a particular panel, use the filter toolbar to sort through the list of panels. Enter a property into one of the blank fields or use the drop down menu to narrow down your search. As you type or select an item, the list of devices will be narrowed down to display only the properties that match the data being entered.

Figure 5-100: Single Profile Filter

The **Locate** function is used to find single profile simple panels (such as the CP-1000E or CP-2048E). When this function is turned on it will cause the panel to keep flashing in order for the user to find it.

5.6.2.1. Editing a Single Profile

To edit a single profile, navigate to the **Single Profile** Tab and follow the instructions listed below. Please note that the configuration controls for the sources and destinations tabs are the same, therefore for the sake of simplicity only the controls for the sources tab will be listed in detail below.

1. Select the **Edit** icon beside the profile that you wish to edit.

2. An **Interface Layout** screen will appear identifying the name of the single profile panel that you selected, as shown in Figure 5-101. The **Interface Layout** screen enables the user to assign sources and destinations to the control panel buttons. This screen also allows the user to configure the key settings, panel reset settings, sub-panel defaults, joystick ports and key colours, which will be later discussed in the manual.

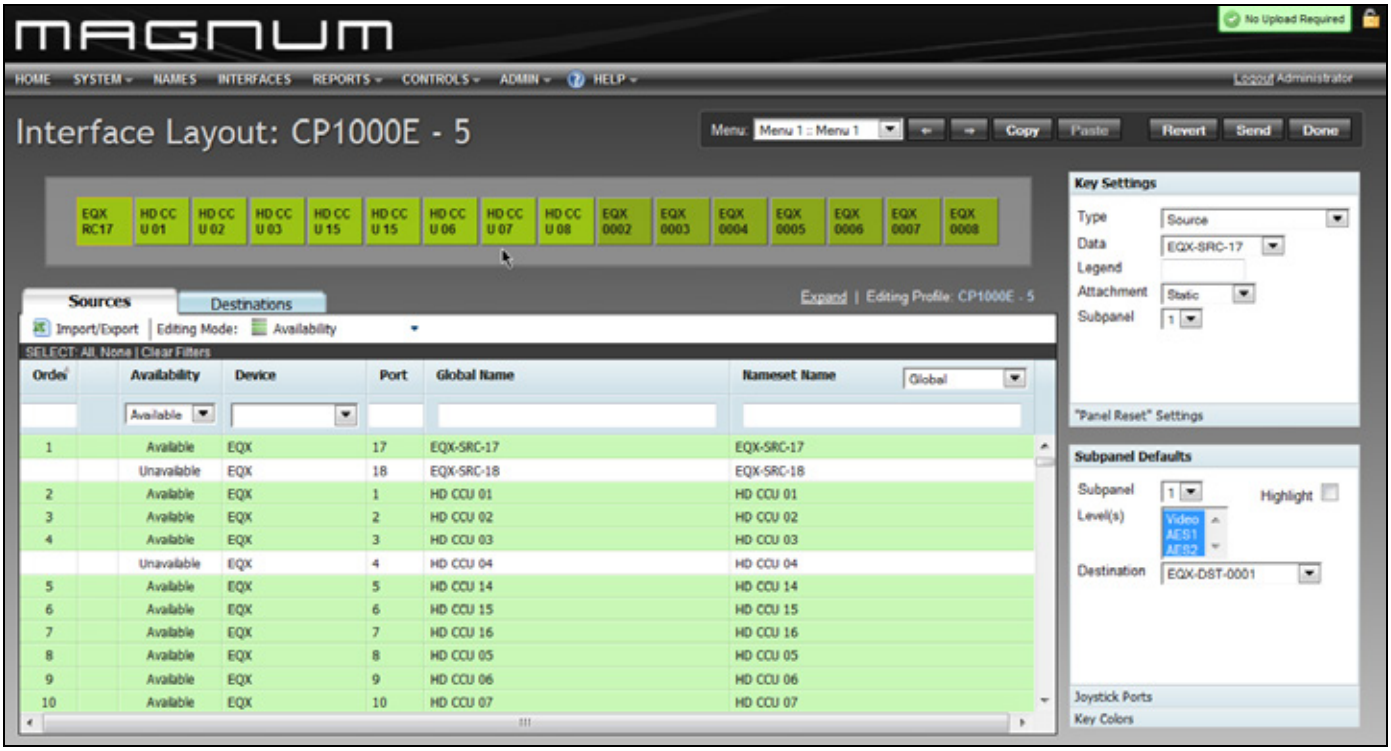


Figure 5-101: Single Profile – Sources Tab

3. The **Sources** tab provides a list of sources that are available and unavailable for the selected control panel. By single clicking on a source cell the user can perform three functions: Make a source available (green), make a source unavailable (white – *unavailable*) or create a placeholder/blank cell (white – *blank*). To see all available sources, set your availability filter to *Available*. To see all unavailable sources, set your availability filter to *Unavailable*. Finally, to view all sources (*available* and *unavailable*) clear the Availability drop down filter so that it is blank.

   A pop up menu will be revealed when the user right clicks on a cell. By right clicking on a source, the menu shown in Figure 5-102 will appear. The following provides a list of actions that can be applied using the right-click menu, these items include:

   - **Make Available:** Allows the user to make an unavailable source available to the control panel. Available sources can be assigned to a control panel key using the **Key Settings** function.

   - **Hide:** Selecting the *Hide* function will turn the selected source row grey and blank out the corresponding button on the control panel. The term *Blank* will be displayed in the device column and on the corresponding control panel key. The blank features functions as a placeholder, allowing the user to reserve that source for future use.

- **Make Unavailable:** Selecting this feature will make the source unavailable and remove it from the current display. If a source is made unavailable, it cannot be referenced to the control panel.

- **Insert Blank:** Selecting this option will insert a blank source row and control panel key. Inserting a blank row will act as a placeholder.

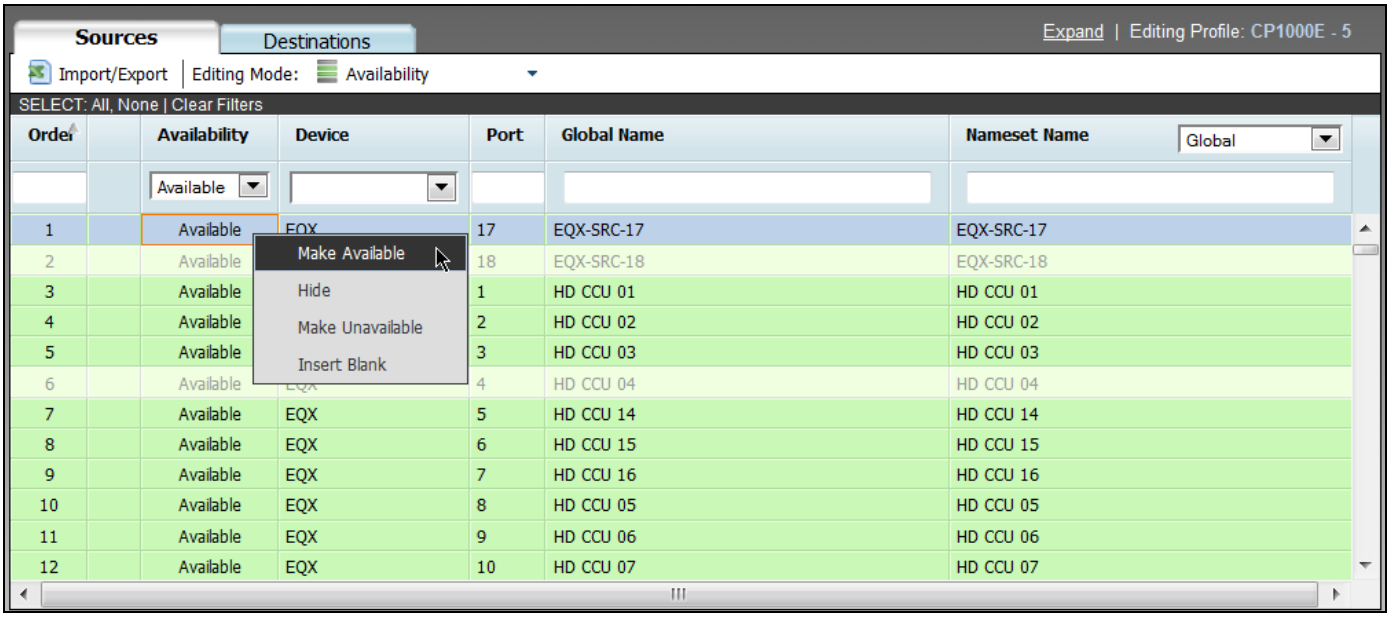


Figure 5-102: Right Click Menu for Interfaces

4. The **Sources** tab provides two top menu level options which include; *Editing Mode* and *Full Screen* mode.

Menu Option	Description
Availability	The **Editing Mode** drop down menu in the top left hand corner of the tab enables the user to change how the source availability is displayed. There are three availability options: **a) Availability:** Lists all the sources in alphanumeric order. **b) Availability (Group):** Places the sources into alphanumeric device groups. **c) Re-order:** Enables the user to physically drag and drop the sources into a specific order. The user can select multiple items by holding down the **shift** key and selecting a block of rows; they can select various random items by clicking the **Ctrl** key and selecting multiple cells. These items can then be dragged and dropped to a specific location in the column. See Figure 5-103.
Expand	Selecting the **Expand** option will hide the panel interface and expand the sources tab to populate the entire length of the screen.

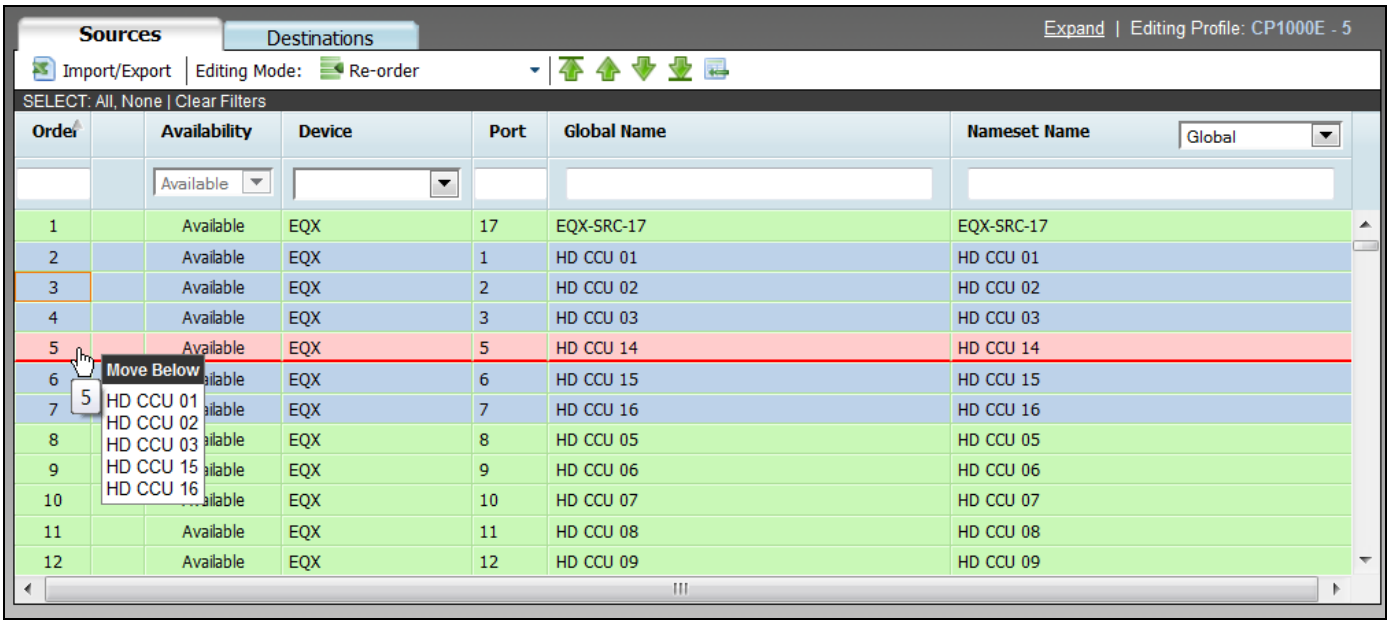


Figure 5-103: Re-order Availability – Drap & Drop Multiple Items

5. Using the **Key Settings** window (located on the right side of the screen and shown in Figure 5-104), the user can assign a specific source to a particular control panel key. Highlight a key on the control panel by selecting the panel button with your mouse; the selected key will be highlighted with a faint yellow box around the button.

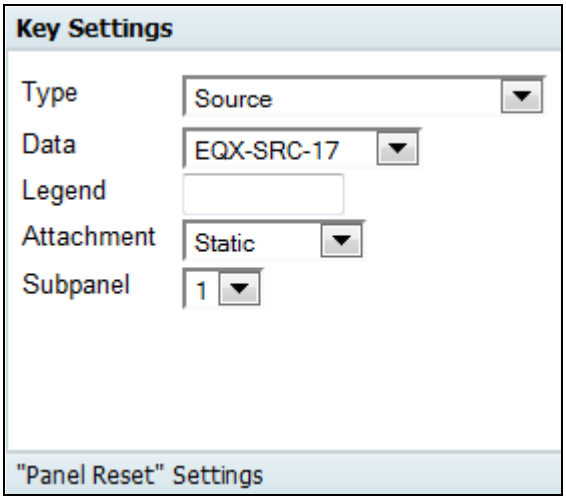


Figure 5-104: Key Settings

6. Once the desired button is selected, navigate to the **Key Settings** window and configure the following parameters:

Parameter	Description
Type	The **Type** drop down menu enables the user to select what type of button the selected key will be assigned to. There are numerous key options, therefore you must use the drop down menu to define the function of the key. See Table 5-3 for a list of the possible button assignments.
Data	The **Data** drop down menu enables the user to assign data to the selected button. Depending on your selection in the **Type** drop down menu, the **Data** drop down menu will adjust to accommodate the data related to the button type. For example, if the button **Type** is set to *Destination*, then the **Data** may be set to *MAGNUM-DST-0008*.
Legend	The **Legend** function enables the user to uniquely label the button. Type a name into the **Legend** field and the name will be displayed on the selected control panel button.
Attachment	The **Attachment** drop down menu enables the user to set an attachment status for the selected button. The attachment options are *Primary*, *Secondary*, and *Static*. This determines if the button will be affected by Primary menu or Secondary menu navigation. Static prevents any navigation affecting the button.
Subpanel	The **Subpanel** drop down menu enables the user to assign a sub-panel number to the selected button. This allows the user to sub divide the panel into different sections of control.

The following is a list of buttons that are used to configure the Control Panel.

Button	Description
Add String	This will clear the preset string and add the name field string defined for this key to it.
Add String/Character	This key will perform two different functions dependant on the content of the preset string. If the preset string is empty then it will add the name string defined for this key to it, otherwise it will append the single character defined for this key to the preset string providing there are less than 8 characters already in the string.
Append String	This will append a name field string to the current content of the preset string
Current Destination Display	Displays the name of the currently selected destination.
Current Dst Src Display	Displays the name of the currently routed source to the currently selected destination.
Current Source Display	Displays the currently routed source to a specific destination.
Delete Last Character	Deletes the last character in a string
Destination Mode	Toggles the preset window between source and destination mode
Destination Protect	Protects the destination from being routed from any other interface except the one that is protecting the destination.
Destination	Changes the currently selected destination.
Dst Scroll Up	Scrolls up and through the Destination List.
Dst Scroll Down	Scrolls down and through the Destination List.
Enable	Inhibits any source key from being taken to a destination unless this button is held down.
Last Menu	Displays and navigates to the previously displayed menu.
Level	Toggles the level *on/off* to affect possible breakaways on subsequent takes. Displays the level name.
Locks	Allows access to the locks functionality.
Next Destination	Changes the current destination to the next one defined in the name table.
Next Source Preset	This key increments the source that is routed to the pre-select. This key does not change any destination on the system but is used when a take or level take key is pressed. It will then take this pre-selection to the current destination.
Not Used	This key will not be used to control any function.
Panel Lock	Locks all functionality of the local panel.
Preset Clear	This key will clear the current preset string.
Prev. Source Preset	This key decrements the source that is routed to the pre-select. This key does not change any destination on the system but is used when a take or level take key is pressed. It will then take this pre-selection to the current destination.
Previous Destination	Changes the current destination to the previous one defined in the name table.

Primary Menu	Allows access to a primary menu.
Secondary Menu	Allows access to a secondary menu.
Setup	Allows access to the Setup menu.
Source	Takes this source to a currently selected source.
Source Chop	Allows the user to create a chop between two sources at a pre-determined rate.
Source Preset	This key changes the source that is routed to the pre-select. This key does not change any destination on the system but is used when a take or level take key is pressed. It will then take this pre-selection to the current destination.
Source Toggle	This key toggles between two sources.
Src Scroll Up	Scrolls up and through the Source List.
Src Scroll Down	Scrolls down and through the Source List.
Static Destination	Destinations that are not affected by re-ordering or scroll list navigation
Static Source	Sources that are not affected by re-ordering or scroll list navigation – CP2272E
Static Source Preset	Sources that are not affected by re-ordering or scroll list navigation – CP2272E. The Static Source Preset is used in conjunction with Take, the source is not routed unless the Take is used.
System Salvo	This key type allows one of the system salvos (defined by the salvo combo box) to be fired.
Take	This key takes the current preset source selection to the current destination on all the currently enabled levels. The button will display the currently routed source on the lowest enabled level, unless a legend is given to this key.
Take Clear	Clear selected source on Take.
Take Level Preset	Source take on a specific level.

Table 5-3: Button Description

7. To assign panel reset buttons, select the **'Panel Reset' Settings** button to expand the reset instructions and put the control panel interface into *Panel Reset* mode. Using your cursor, select two buttons that will be used to reset the physical panel. When the buttons are selected they will flash black, as shown in Figure 5-105. Once the configuration is sent to and loaded on the physical control panel, the user will be able to physically hold down these two keys in order to reset the panel.

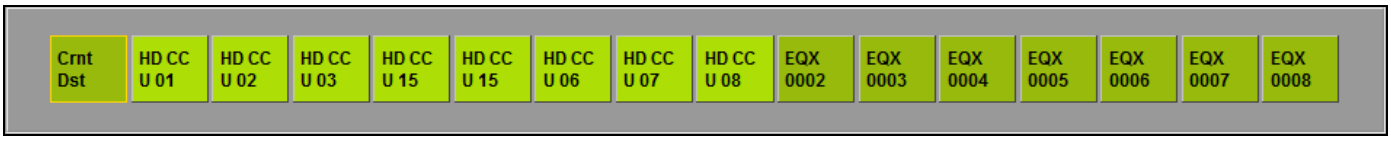


Figure 5-105: Panel Reset Selection

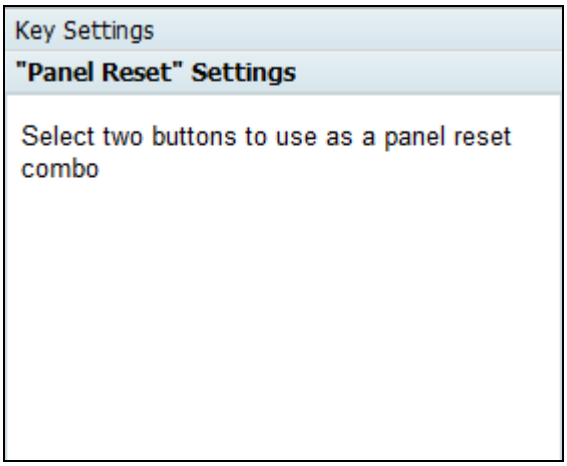


Figure 5-106: 'Panel Reset' Setting Window

8. To configure the sub-panel defaults, navigate to the **Subpanel Defaults** window and use the window to configure your settings.

Parameter	Description
Subpanel	Use the **Subpanel** drop down menu to select the sub-panel number.
Level(s)	Use the **Levels** menu to select the level that you wish to assign as the default.
Destination	Assign a default destination by selecting a destination from the **Destination** drop down menu.
Highlight	Place a check mark in the **Highlight** box if you wish to highlight the selected subpanel.

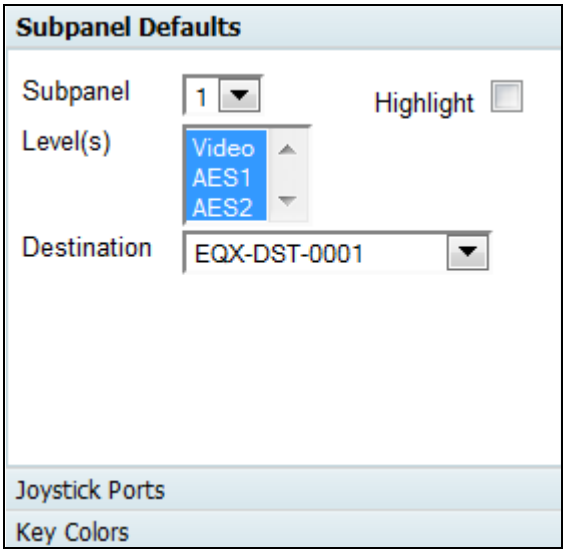


Figure 5-107: Subpanel Defaults Window

9. To configure the joystick ports, expand the **Joystick Ports** window and configure your settings using the parameters listed below:

Parameter	Description
Port	Use the **Port** drop down menu to select the port number.
Level(s)	Use the **Levels** menu to select the level that you wish to assign to the joystick.
Mode	Use the **Mode** drop down menu to select the joystick port mode. The mode options are: i. **Disabled:** Disables the joystick port. ii. **Momentary:** Switches to new source then back to previous iii. **Permanent:** Switches to new source and does not revert
Source	Use the **Source** drop down menu to assign a source to the joystick port.
Destination	Use the **Destination** drop down menu to assign a destination to the joystick port.

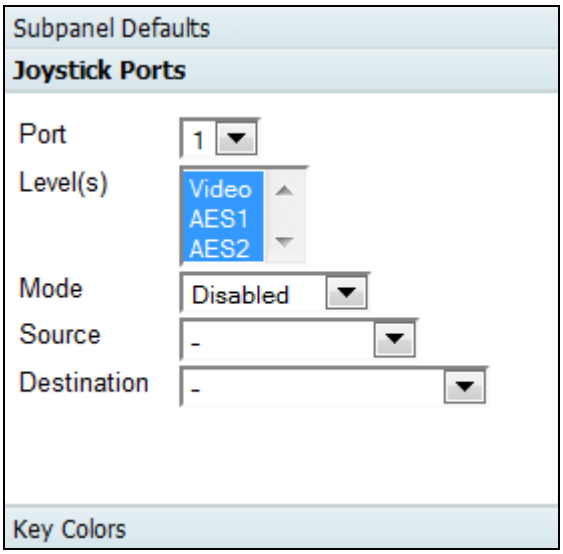


Figure 5-108: Joystick Ports Window

10. To configure the button key colors, expand the **Key Colors** window and configure your settings using the parameters listed below:

Parameter	Description
Source	This parameter enables the user to set the key colors for the source buttons. To set the *Off* color, highlight the Source *Off* key and then select a color from the palette. Follow the same procedure for the *On* button. Be sure to select different colors for the *On* and *Off* state so that they can be easily identified.
Preset	Use the color palette to set the *On/Off Preset* key colors.
Destination	Use the color palette to set the *On*/*Off Destination* key colors.
Level	Use the color palette to set the *On/Off Level* key colors. Use the drop down menu to set the colors for each level key.
Lock	Use the color palette to set the *On/Off Lock* key colors.
Display	Use the color palette to set the *Display* key colors.
Take	Use the color palette to set the *On/Off Take* key colors.
Level Take	Use the color palette to set the *On/Off Level Take* key colors.
Salvo	Use the color palette to set the *On/Off Salvo* key colors.
Other	Use the color palette to set the *On/Off Other* key colors.
Reset	Select the **Reset** button to set the button keys to their original designated color palette.
Set to Panel Defaults	Select the **Set to Panel Defaults** button to set the button keys to the panel's designated key colors.

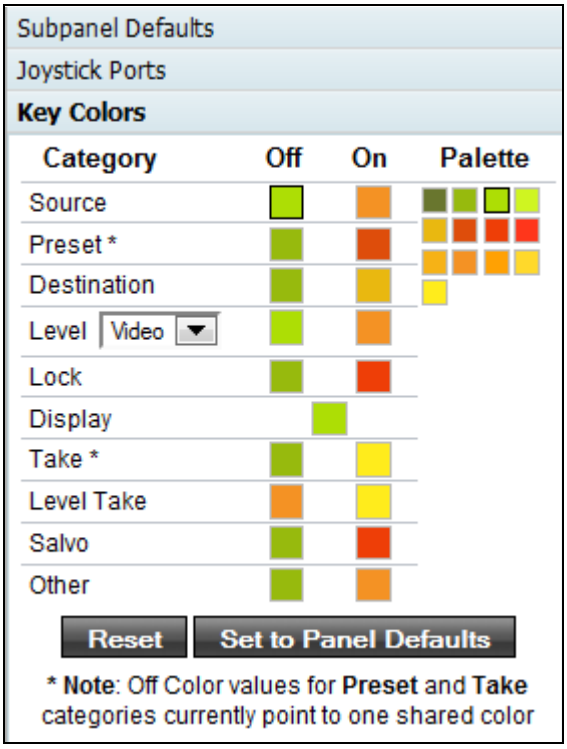


Figure 5-109: Key Colors Window

11. The control menu at the top of the screen enables the user to navigate the menu structure created for the Interface. Table 5-4 will describe the functions of the menu, as shown in Figure 5-110:

Figure 5-110: Interface Layout Menu

Control	Description
Menu:	Use the drop down menu to select a pre-existing interface from the list. Selecting one of these options will navigate to the selected menu.
⇐	Using the *Back* button will toggle back through the drop down menu.
⇒	Using the *Forward* button will toggle the user to the next menu layout listed in the drop down menu.
Copy	Select the *Copy* button if you wish to copy the contents of the currently selected menu.
Paste	Select the *Paste* button if you wish to paste the contents of the selected menu during the "copy" and paste into the layout.
Revert	The *Revert* button will load the original interface layout. Select the *Revert* button if you have made changes that you are not satisfied with and you would like to revert back to the original layout.
Send	To send the interface layout to the physical control panel, select the **Send** button and the control panel configuration will be sent and loaded onto your control panel.
Done	If you have finished configuring the interface layout, select the **Done** button to save the changes and return back to the *Interfaces* main screen.

Table 5-4: Menu Controls

12. If you wish to configure the destinations on the interface, select the **Destinations** tab from the *Interface Layout* screen, as shown in Figure 5-111 and follow the same procedures to edit destinations as outlined above for sources.

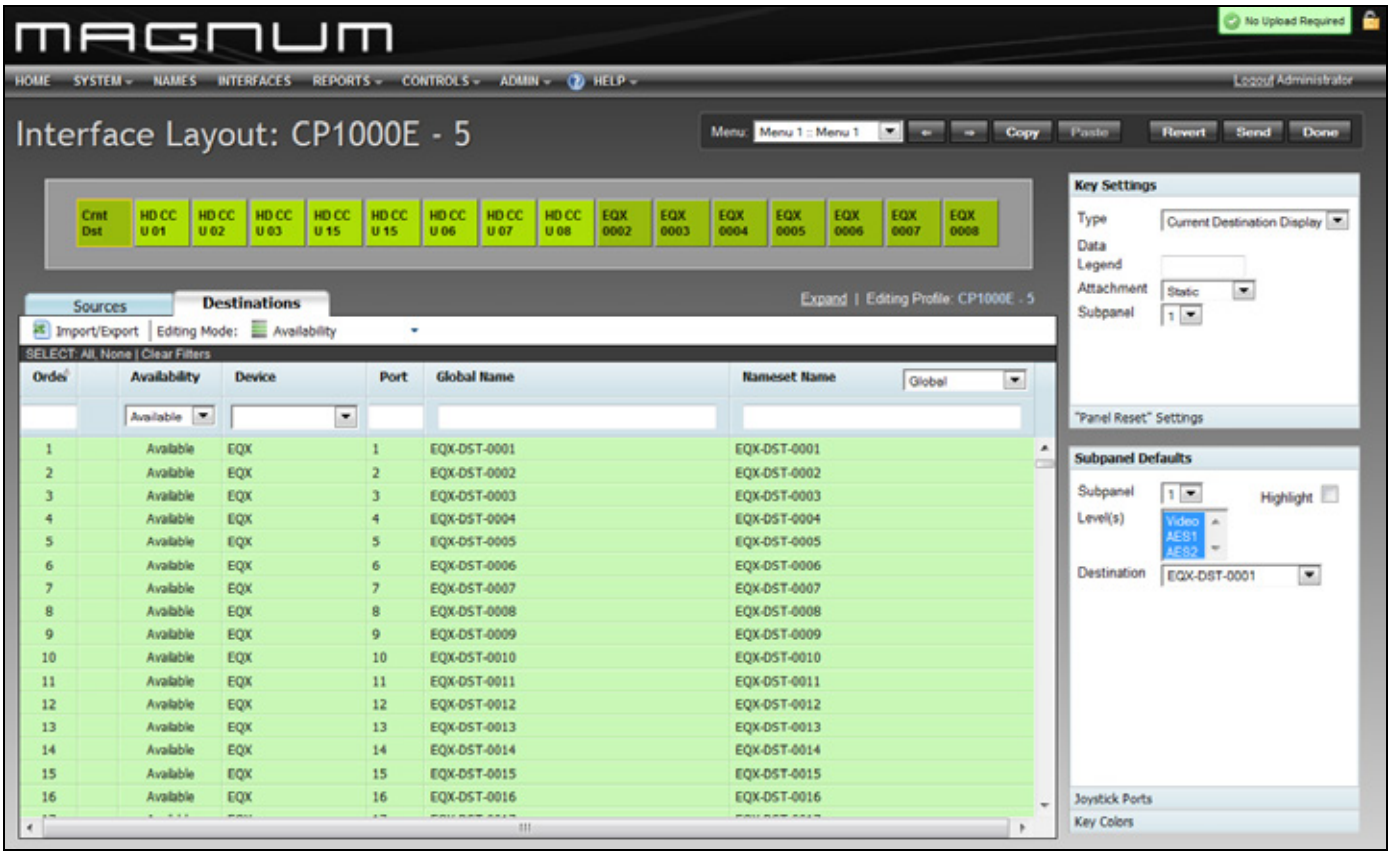


Figure 5-111: Single Profile – Destination Tab

5.6.2.2. Editing Multiple Interfaces Simultaneously

1. The user can edit multiple single-profile panels simultaneously by placing a check mark(s) in the SELECT column beside the panels that you wish to edit, as shown in Figure 5-112.

2. Once the desired panels have been selected, click on the **Edit** icon at the top menu bar.

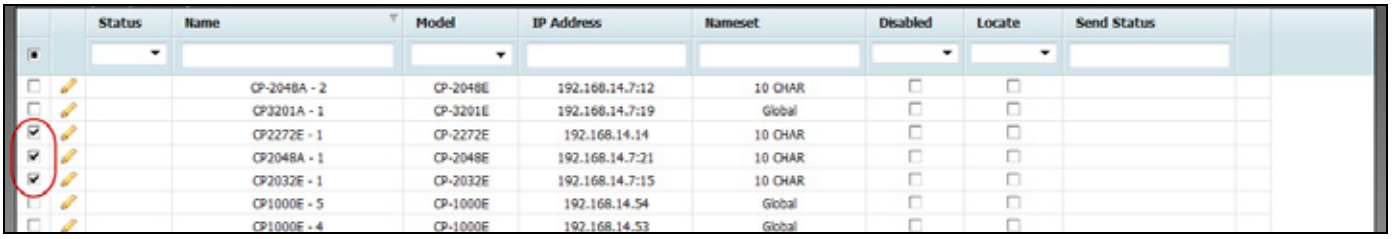


Figure 5-112: Multiple Panels Selected on a Single Profile

3. The **Interface Layout** screen will appear enabling the user to edit all of the selected panels at once. Edit the panels using the same instructions as listed in section 5.6.2.1.

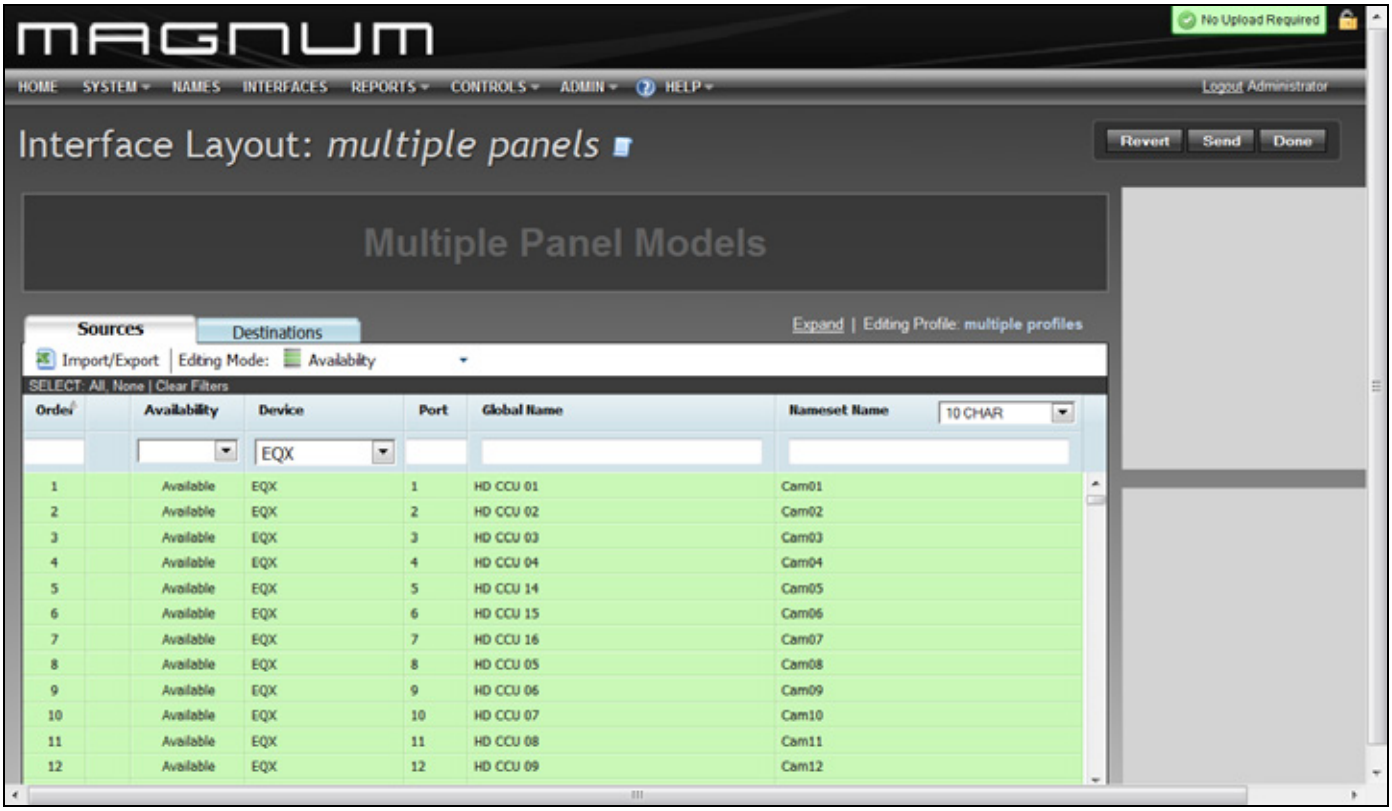


Figure 5-113: Multiple Panel Interface Layout

4. The user can sort and filter the devices using the **Availability** drop down menu highlighted in Figure 5-113. There are three menu options in the availability filter drop down menu: *Available*, *Unavailable*, and *Uncommon*. The function of these options are as follows:

   - **Available:** Displays all the common available sources/destinations.
   - **Unavailable:** Displays all the common unavailable sources/destinations.
   - **Uncommon:** Displays all the sources/destinations that are dissimilar. If a selected profile does not have the same availability then the source or destination that is uncommon to the other items in the profile will be displayed. For example, Figure 5-114 shows the uncommon items present in a multi-panel selection.

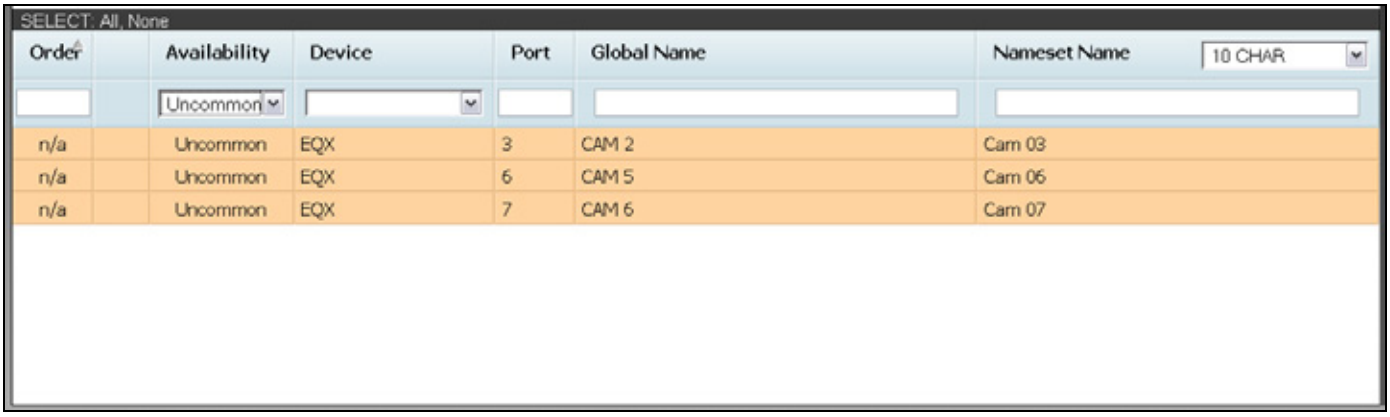


Figure 5-114: Availability – 'Uncommon' in Multi-Panel Selection

5. To review the panels that you have selected, select the **paper scroll** icon at the top of the screen beside the '*multiple panels'* text. Selecting this icon will display a **Panel List** dialog box (as shown in Figure 5-115) that lists all of the panels in the selected group.

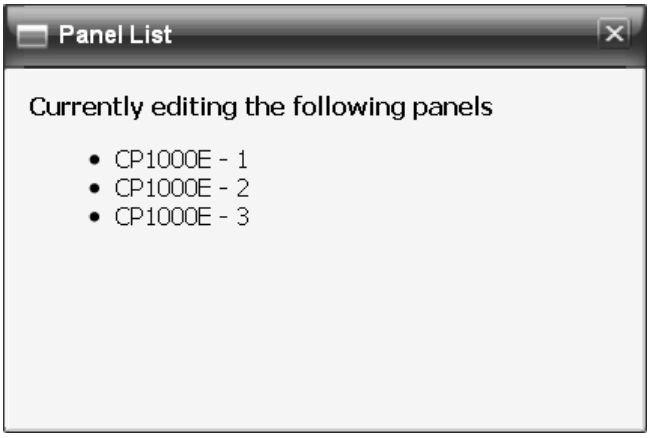


Figure 5-115: Panel List Dialog Box

5.6.3. Symphony

The **Symphony** section enables the user to setup the Symphony protocol for 3rd party access.

The user can select a previously created profile and assign it to the Symphony interface from the Profile Availability selection box. The sources and destinations contained within the profile will be made available to the 3rd party system for control using the Symphony protocol.

Once the profile is selected, it will be applied to the Symphony and the message "*Successfully changed the Profile*" will be displayed.

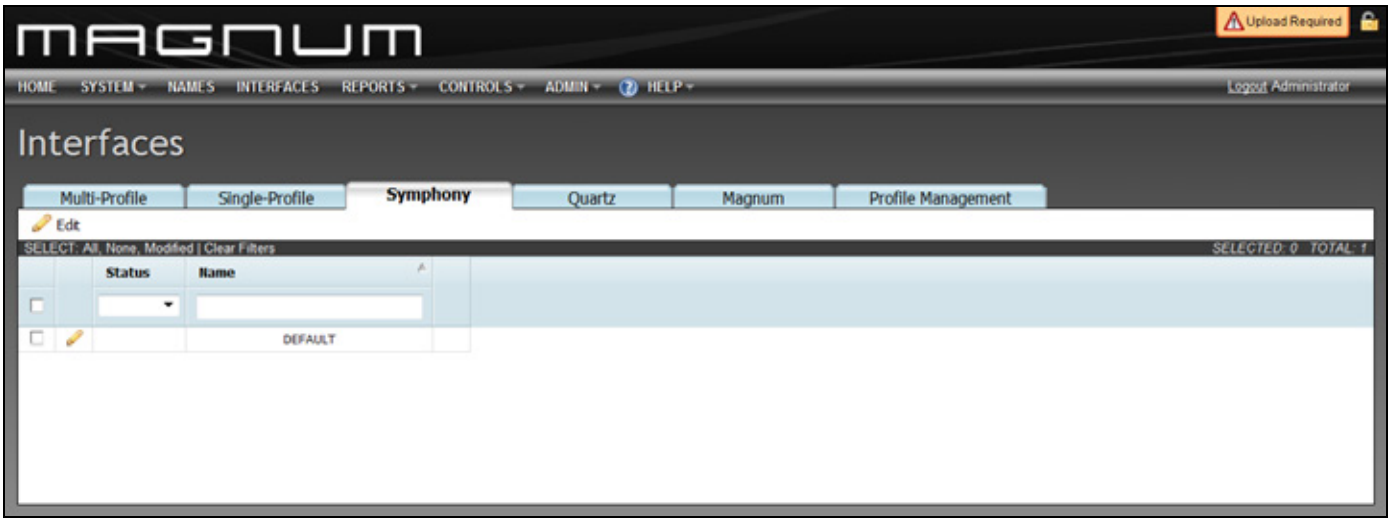


Figure 5-116: Symphony Tab

The *Symphony* tab has one main control button, as described below:

Icon	Description
Edit	**Edit:** To edit a symphony profile, place a check mark in the box beside the profile that you wish to edit and then select the edit icon.

Table 5-5: Symphony Toolbar

5.6.4. Quartz

Selecting the **Quartz** menu item from the **INTERFACES** menu enables the user to configure a Quartz interface to the MAGNUM Server that acts like a Quartz device. Quartz is an integer based protocol, the integers are derived from the order column within the configured Quartz interface.

The MVP Profile interface is automatically created and maintained by MAGNUM when multiviewer devices are present in the system. Editing of the MVP Profile should only be done with the assistance of Evertz Service personnel.

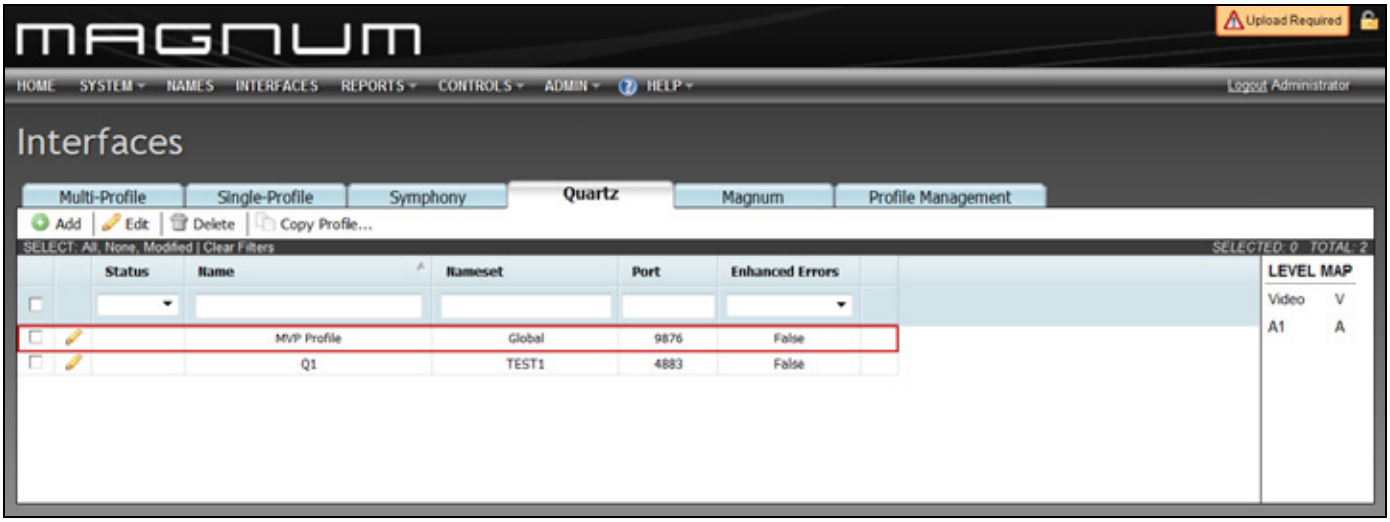


Figure 5-117: Quartz Tab

Icon	Description
Add	**Add:** To add a Quartz interface, select the **Add** button from the main toolbar. An ***Add Interface*** dialog box will appear as shown in Figure 5-118.
Edit	**Edit:** To edit an interface, place a check mark in the box beside the interface that you wish to edit and then select the edit icon. This function is particularly useful if you are editing multiple interfaces at one time. Otherwise if you are just editing one interface, select the pencil icon beside the profile that you wish to edit.
	Delete: To remove interface, place a check mark in the box beside the interface that you wish to remove, and select the **Delete** icon.
Copy Profile...	**Copy Profile:** The *Copy Profile* function enables the user to clone an existing profile to be used for the Quartz interface. Place a check mark beside the profile(s) that you wish to change and then select the *Copy Profile* button. The *Copy A Profile* dialog box will appear (as shown in Figure 5-119). From the clone drop down menu select a profile that you wish to clone and then press the **Apply** button.

Table 5-6: Quartz Toolbar

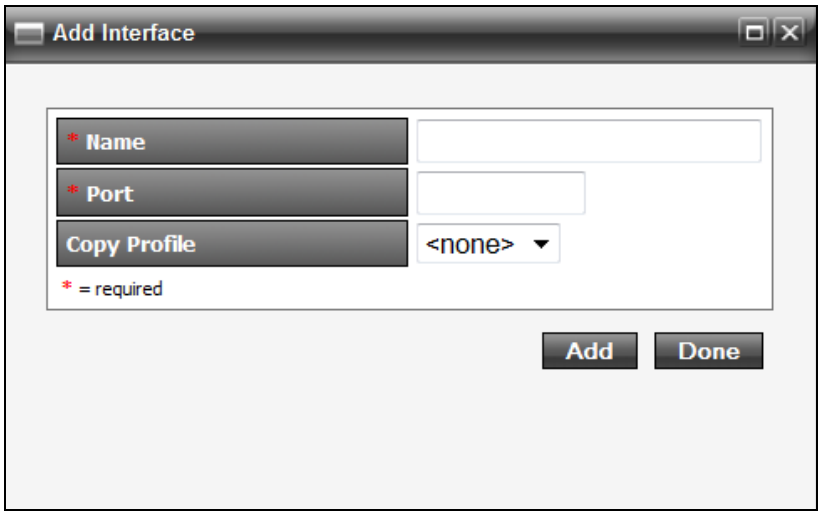


Figure 5-118: Add Interface Dialog Box

To create a new quartz interface, follow the instructions listed below:

1. The user can add a quartz interface by entering a unique identifier name into the *Name* field.
2. In the *Port* field, enter the port that will be used for the Quartz interface.
3. Select a profile from the *Copy Profile* drop down menu.
4. Once all the appropriate information is entered, select the **Add** button to add the Quartz interface to the list on the main Quartz tab.
5. When you have finished adding interfaces, select the **Done** button to return to the main Quartz interface screen.

Figure 5-119: Copy A Profile Dialog Box

5.6.4.1. Level Map

The Level Map is the Quartz Protocol Level equivalent to the levels that are defined within the Virtual Ports Page. These levels would be used when Virtual Ports are included within a Quartz Interface and the user would like to route using the available levels of such ports.

LEVEL MAP	
Video	V
A1	A

5.6.5. Magnum Tab

Selecting the **Magnum** menu item from the **INTERFACES** menu enables the user to configure a Magnum Protocol interface into to the MAGNUM Server. This is a JSON RPC protocol interface.

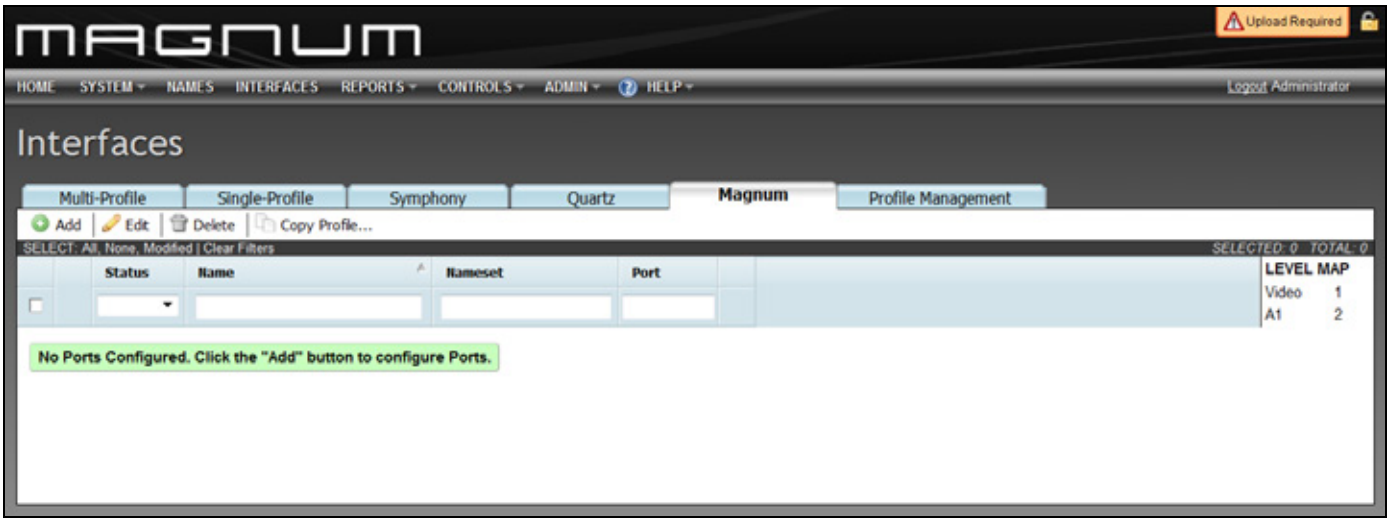


Figure 5-120: Magnum Tab

Icon	Description
Add	**Add:** To add a Magnum interface, select the **Add** button from the main toolbar. An ***Add Interface*** dialog box will appear as shown in Figure 5-118.
Edit	**Edit:** To edit an interface, place a check mark in the box beside the interface that you wish to edit and then select the edit icon. This function is particularly useful if you are editing multiple interfaces at one time. Otherwise if you are just editing one interface, select the pencil icon beside the profile that you wish to edit.
	Delete: To remove interface, place a check mark in the box beside the interface that you wish to remove, and select the **Delete** icon.
Copy Profile...	**Copy Profile:** The *Copy Profile* function enables the user to clone an existing profile to be used for the Quartz interface. Place a check mark beside the profile(s) that you wish to change and then select the *Copy Profile* button. The *Copy A Profile* dialog box will appear (as shown in Figure 5-119). From the clone drop down menu select a profile that you wish to clone and then press the **Apply** button.

Table 5-7: Magnum Toolbar

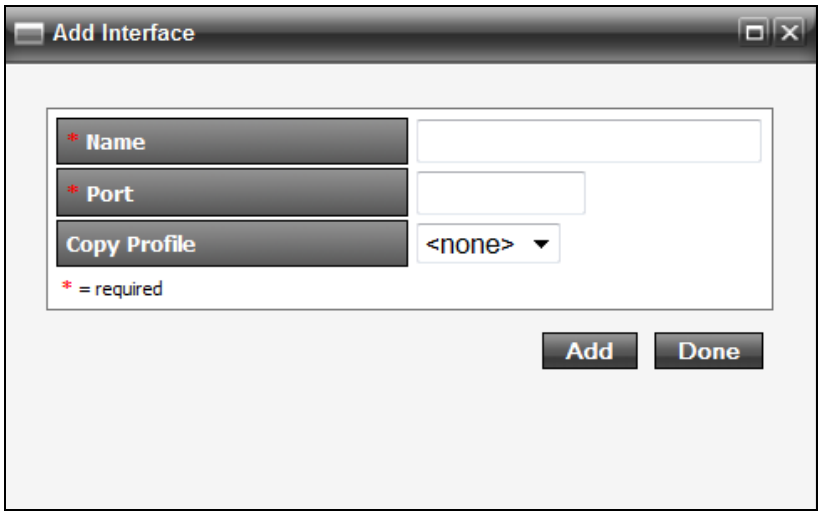


Figure 5-121: Add Interface Dialog Box

To create a new quartz interface, follow the instructions listed below:

6. The user can add a Magnum interface by entering a unique identifier name into the *Name* field.
7. In the *Port* field, enter the port that will be used for the Magnum interface.
8. Select a profile from the *Copy Profile* drop down menu.
9. Once all the appropriate information is entered, select the **Add** button to add the Magnum interface to the list on the main Magnum tab.
10. When you have finished adding interfaces, select the **Done** button to return to the main Magnum interface screen.

Figure 5-122: Copy A Profile Dialog Box

5.6.5.1. Level Map

The Level Map is the MAGNUM Protocol Level equivalent to the levels that are defined within the Virtual Ports Page. These levels would be used when Virtual Ports are included within the MAGNUM Interface and the user would like to route using the available levels of such ports.

LEVEL MAP	
Video	1
A1	2
A2	3
A3	4
A4	5

5.6.6. Profile Management

The **Profile Management** section enables the user to create, edit or remove profiles. A profile is a list of sources, destinations and a nameset which can be applied to panels, protocol interfaces etc.

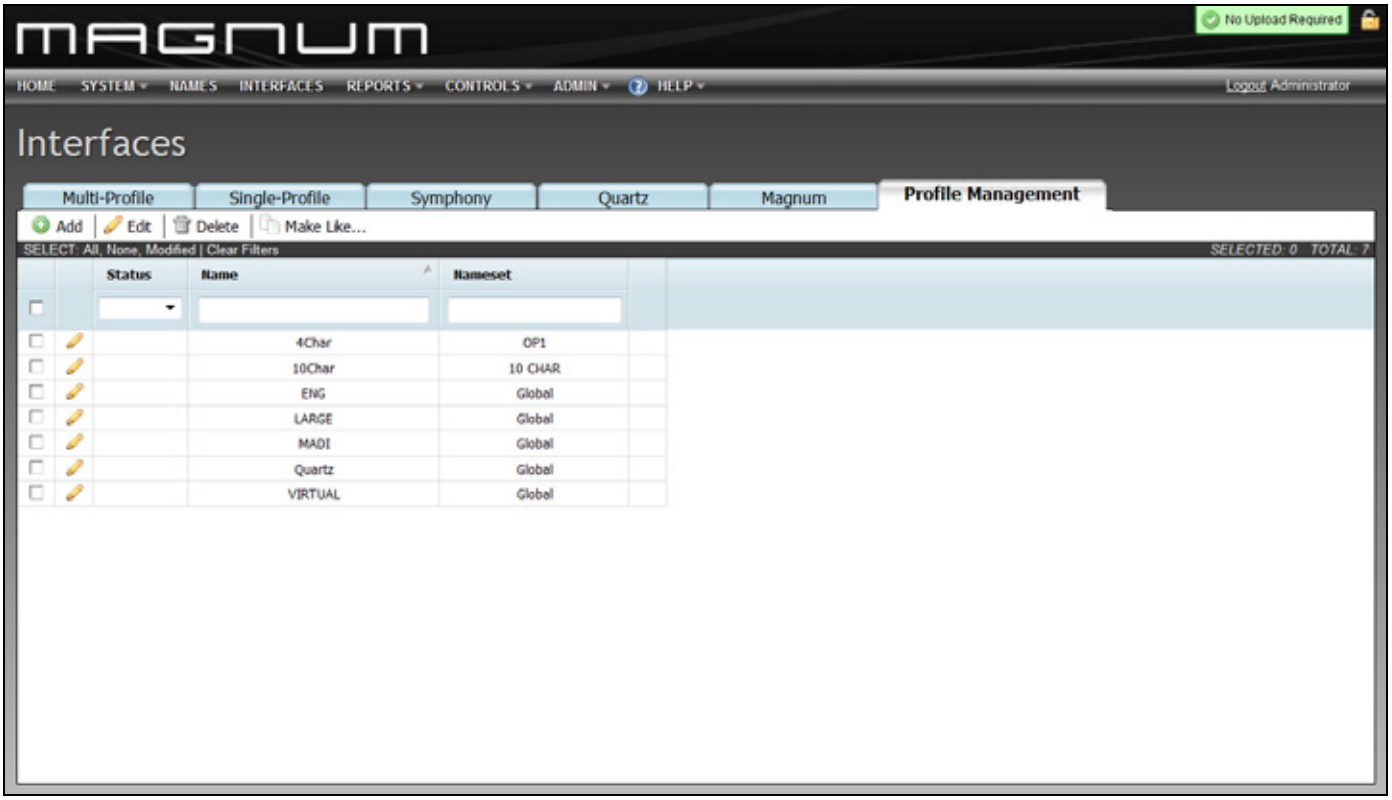


Figure 5-123: Profile Management

Icon	Description
Add	**Add:** To add a profile, select the **Add** button from the main toolbar. An ***Add Profile*** dialog box will appear as shown in Figure 5-124.
Edit	**Edit:** To edit profile(s), place a check mark in the box beside the profile(s) that you wish to edit and then select the edit icon. This function is particularly useful if you are editing multiple profiles at one time. Otherwise if you are just editing one profile, select the pencil icon beside the profile that you wish to edit.
	Delete: To remove a profile, place a check mark in the box beside the profile that you wish to remove, and select the delete icon.
Make Like...	**Make Like:** The *Make Like* function enables the user to clone an existing profile. Place a check mark beside the profile(s) that you wish to change and then select the *Make Like* button. The *Copy A Profile* dialog box will appear (as shown in Figure 5-125). From the clone drop down menu select a panel that you wish to clone and then press the **Apply** button.

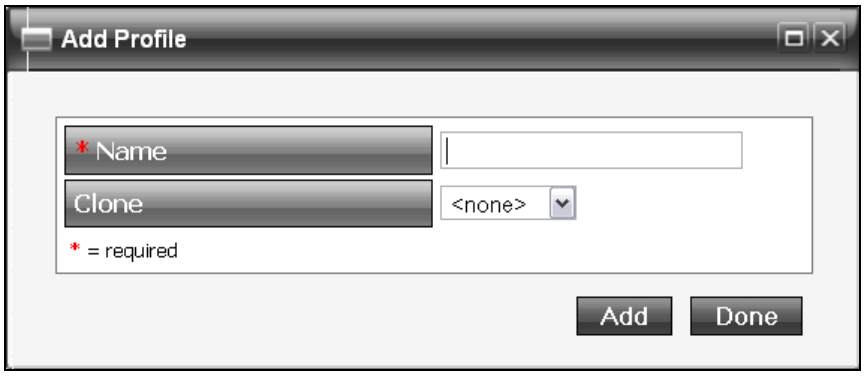


Figure 5-124: Add Profile

Figure 5-125: Copy A Profile Dialog Box

5.6.6.1. Editing a Single Profile

The following section will describe how to edit a single profile.

1. To edit a profile, select the edit icon beside the corresponding profile that you wish to edit, as shown in Figure 5-126.

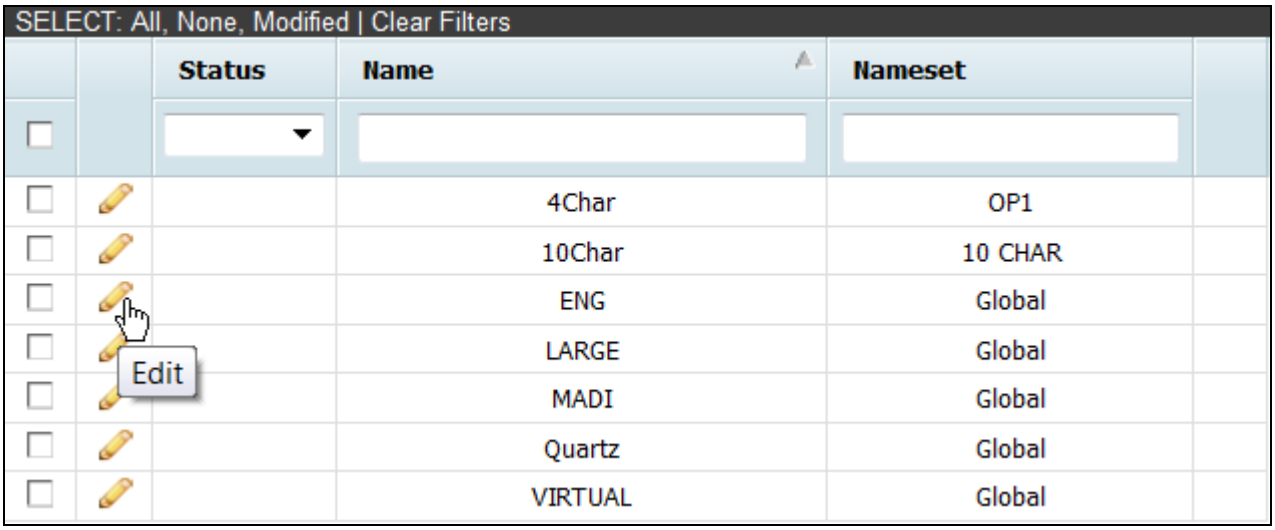


Figure 5-126: Selecting a Profile to Edit

2. Once the single profile is selected, the **Edit Profile** screen will appear enabling the user to configure four different sections: Sources, Destinations, Categories, and Settings.

3. The **Sources** tab enables the user to view and change sources to be available or unavailable.

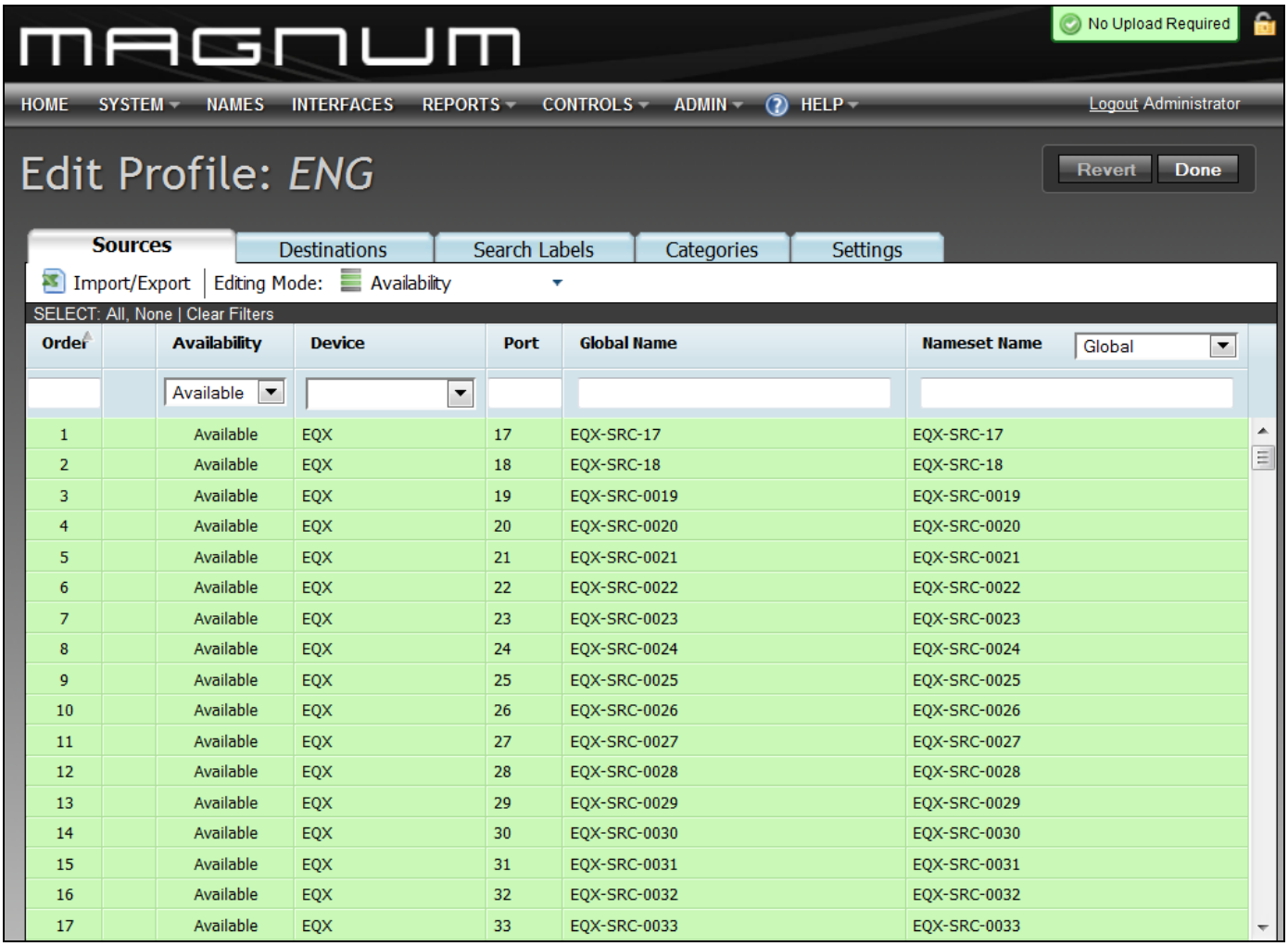


Figure 5-127: Edit Profile – Sources Tab

4. The user can use the **Nameset Name** drop down menu to select and load another Nameset. Once the Nameset is loaded the user can to edit the sources to be available or unavailable.

5. Next, toggle to the **Destinations** tab, and perform the same functions as described above for editing the sources tab.

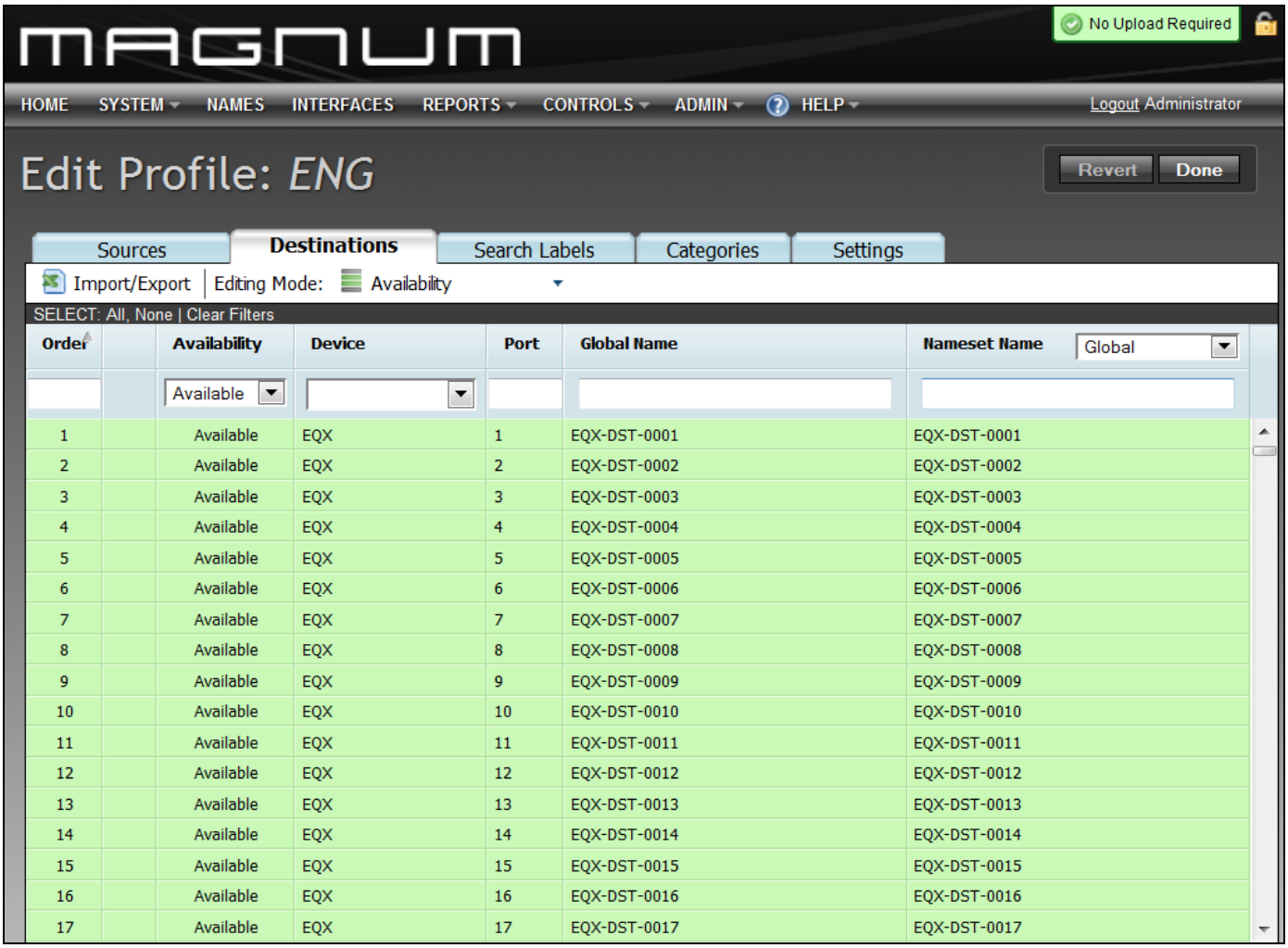


Figure 5-128: Edit Profile – Destinations Tab

6. The Search Labels tab allows the user to add and remove Source and Destination labels available to the selected profile. The Labels available and the assignment to available ports are done on the Port Labels page. If Search Labels are used they override selections made in the Category Tab. The user can also add a new labels or edit one of the existing labels associated with the selected profile. Select the **Search Labels** tab to edit the labels settings; the **Source Labels** will be listed on the left side of the screen and the **Destination Labels** will be listed on the right side of the screen. If a label is listed as *unavailable* (white), then single click on the label row to change it to *available* (green). If you wish to make an *available* label *unavailable*, single click on the desired row to change the status.

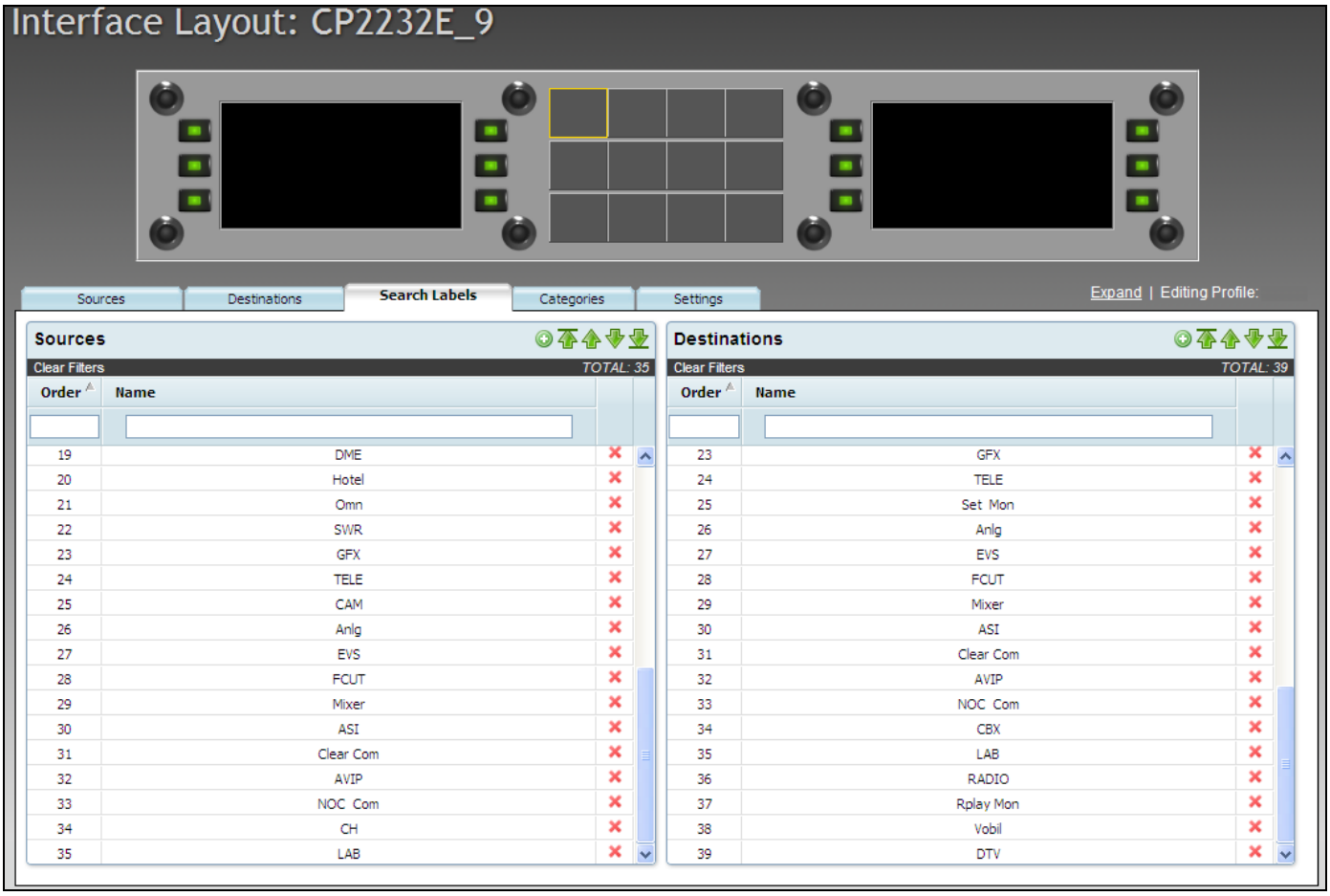


Figure 5-129: Edit Profile – Search Labels Tab

7. The user can also add a new category or edit one of the current categories associated with the selected profile. Select the **Category** tab to edit the category settings; the **Source Categories** will be listed on the left side of the screen and the **Destination Categories** will be listed on the right side of the screen. If a category is listed as *unavailable* (white), then single click on the category row to change it to *available* (green). If you wish to make an *available* category *unavailable*, single click on the desired row to change the status.

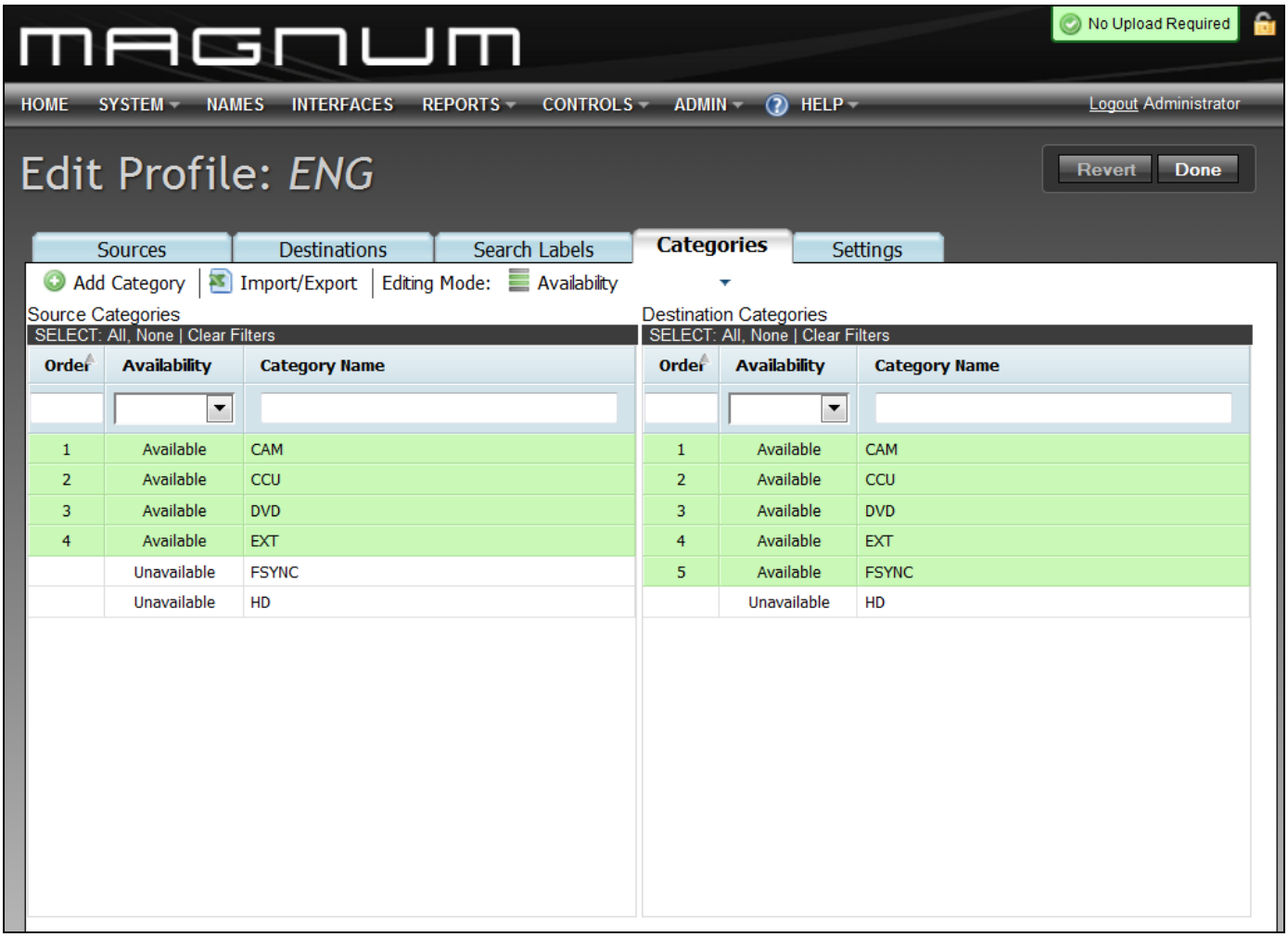


Figure 5-130: Edit Profile - Categories Tab

8. To modify the profile settings, select the **Settings** tab. The profile settings for the selected profile will be displayed as shown in Figure 5-131.

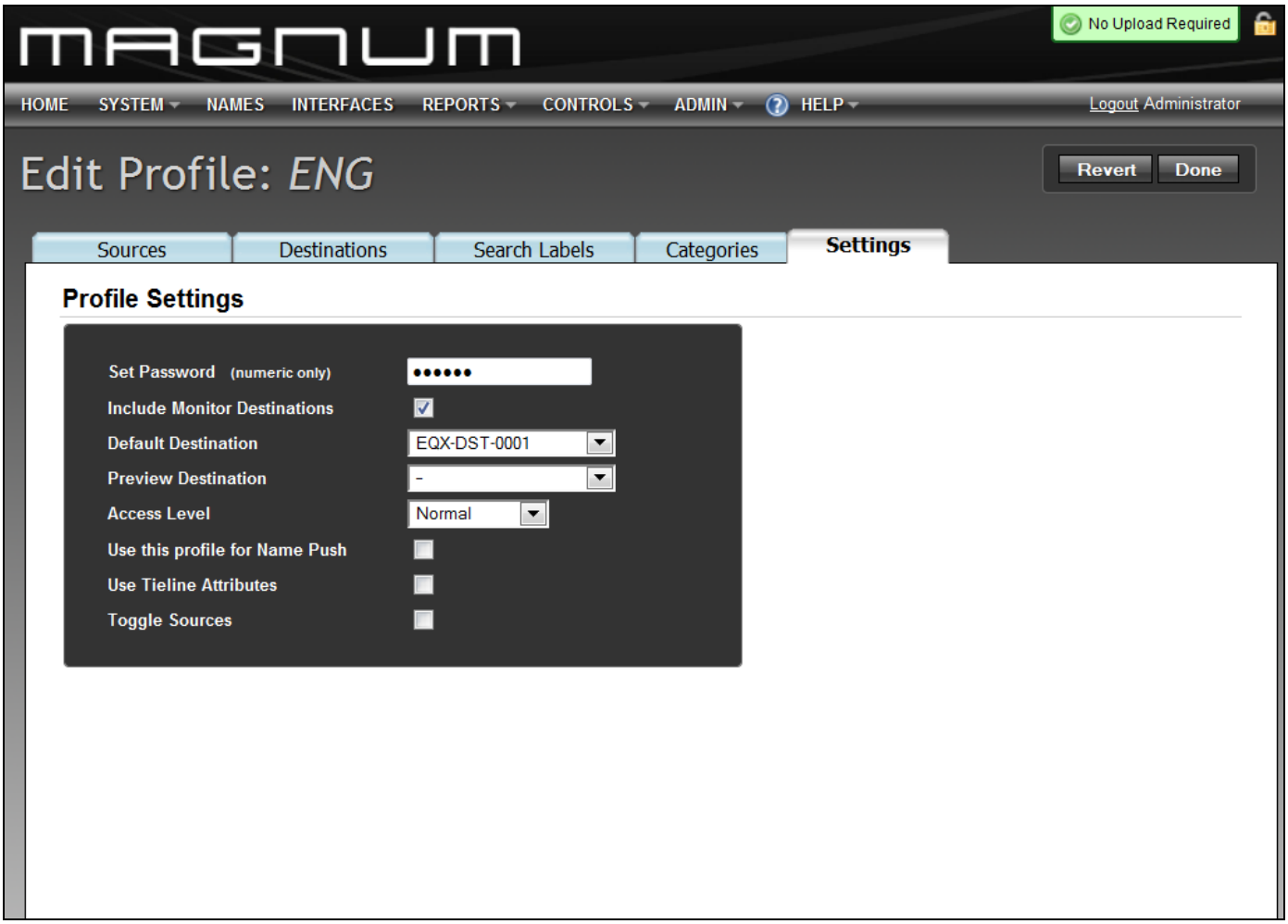


Figure 5-131: Edit Profile - Settings

9. Below is a list of the parameters that can be edited in the settings tab:

    a. **Set Password:** The *Set Password* field enables the user to assign a password to the selected profile. If a password already exists, it is not required to know the original password in order to overwrite it. Enter the desired password into this field. Password is numeric only.

    b. **Include Monitor Destinations:** If you wish to control EQX monitor destinations for this profile, place a check mark in the *Include monitor destinations* check box, otherwise leave this box blank if you do not wish to control EQX monitor destinations.

    c. **Default Destination:** To set a default destination, select a destination from the drop down menu. This destination will be set as your default destination and will be automatically selected when the profile is loaded

    d. **Preview Destination:** To set a preview destination, select a destination from the drop down menu. This destination will be set as your preview destination.

e. **Access Level:** To set an access level, select either Minimal, *Normal* or *Administrator* from the drop down menu. The access level defines the level of control for locks and protects. Minimal (Unable to lock or protect), Normal (Able to lock and protect but not override owners), Administrator (Able to lock, protect, and override owners)

g. **Use this Profile for Name Push:** Place a check mark in this box, to force the name updates from the MAGNUM server onto a device that supports local name updates.

h. **Use Tieline Attributes:** Place a check mark in this box, to allow the panel to present the user with an attribute selection in order to use a specific tieline for a route.

i. **Toggle Sources:** Placing a check mark in this box will allow the panel to present the user with all destinations within the profile with Toggle enabled by default

10. If you are unhappy with the changes you have made to the profile, you can revert back to the original profile settings by selecting the **Revert** button in the top right of the screen. After you have completed making your changes, select the **Done** button to finalize your updates.

5.6.6.2. Simultaneously Editing Multiple Profiles

The following section describes how to edit multiple profiles at the same time.

1. To simultaneously edit multiple profiles, place a check mark in the box beside the corresponding profiles that you wish to edit (the selected profiles are highlighted yellow in Figure 5-132).

2. Once all of the desired profiles have been selected, click the **Edit** button in the *Profile Management* main toolbar.

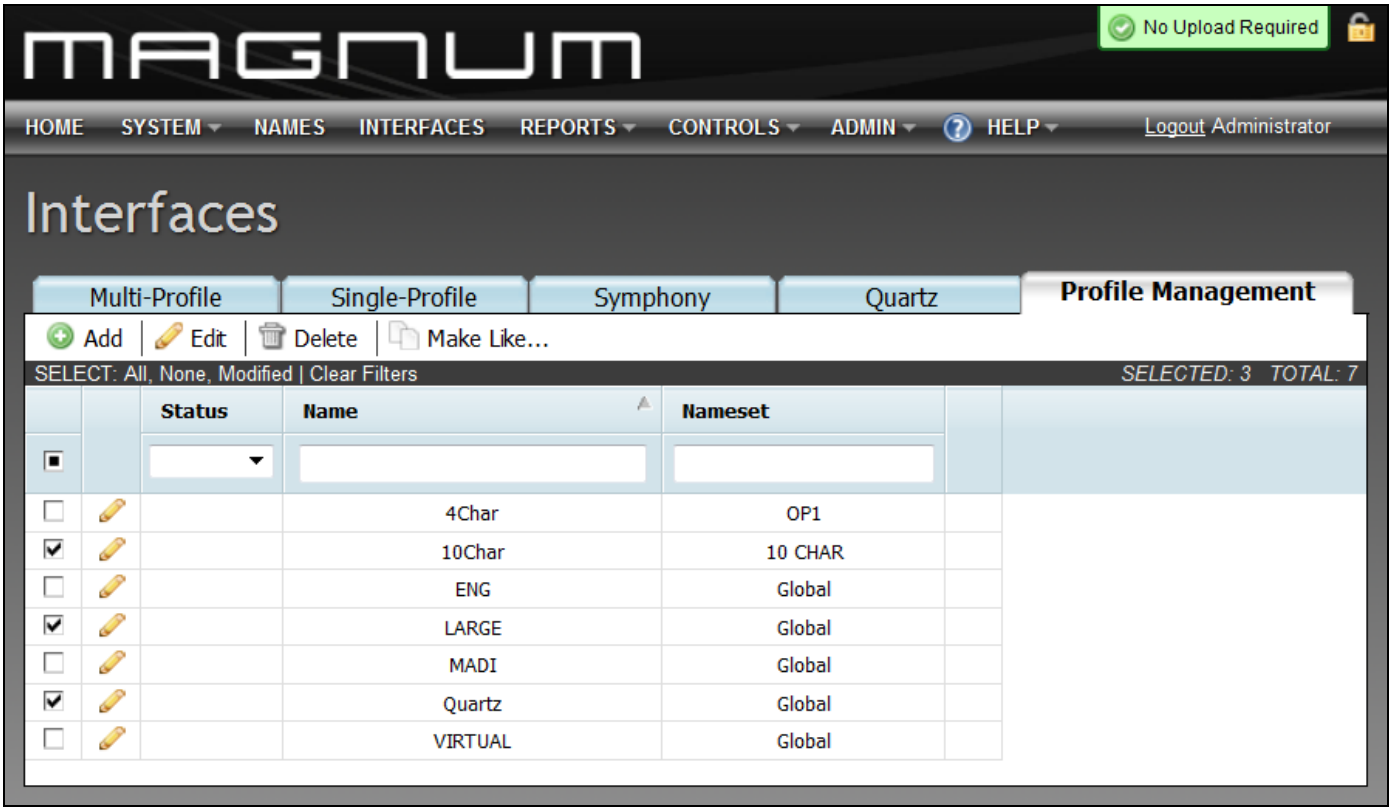


Figure 5-132: Selecting Multiple Profiles

3. The **Edit Profile: *multiple profiles*** page will appear and the user will be presented with a list of Sources and Destinations. The user can change the availability of the Sources and Destinations by single clicking the desired row.

4. The **Editing Mode** drop down menu in the top left hand corner of the tab enables the user to change how the availability is displayed in the sources columns. There are three availability options:
    i. **Availability:** Lists all the sources in alphanumeric order.
    ii. **Availability (Group):** Places the sources into alphanumeric device groups.
    iii. **Re-order:** Enables the user to physically drag and drop the sources into a specific order.

Please note that making changes to any source and/or destination will merge the profiles of the panels currently being edited.

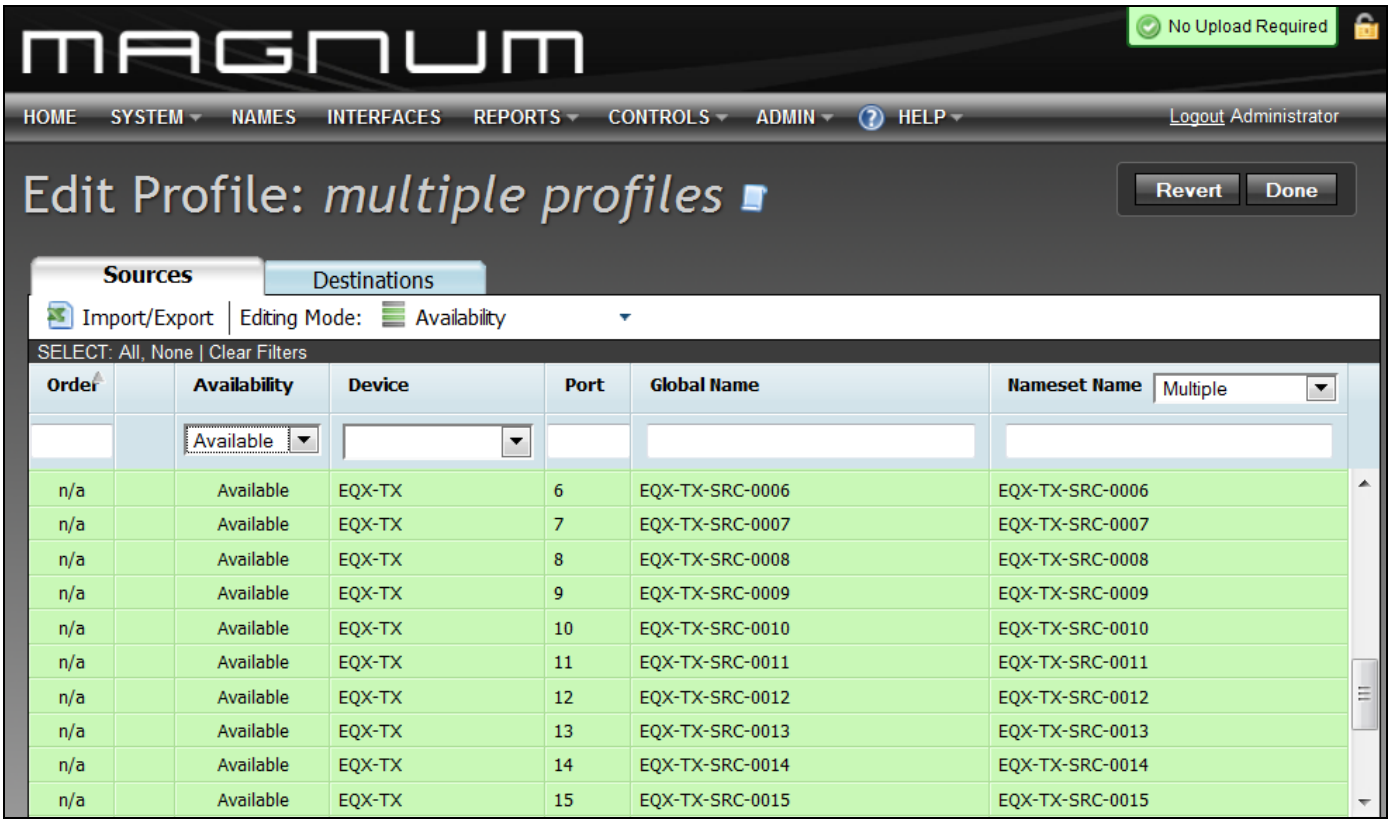


Figure 5-133: Editing Multiple Profiles

5. If you are unhappy with the changes you have made to the profile, you can revert back to the original profile settings by selecting the **Revert** button at the top right of the screen. After you have completed making your changes, select the **Done** button to finalize your updates.

5.7. VIEWING REPORTS

The reporting pages allow the user to view specific information concerning the state of the Devices, Panels, Tielines, and Subscriptions.

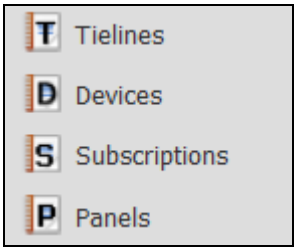


Figure 5-134: Reports Drop Down Menu

5.7.1. Tieline Reports

Using the **Reports** drop down menu, navigate to the **Tielines** menu item. There is a report for tieline usage which, amongst other things; displays a tieline, what source is on it and who is currently using it. Selecting the **Tielines** sub-tab from the **REPORTS** section will display the current tieline information. The time the information was received is displayed below the owner field. If changes were made but are not displayed, press the **REFRESH** button to retrieve the latest information. A tieline is only in use when the Users field contains destinations.

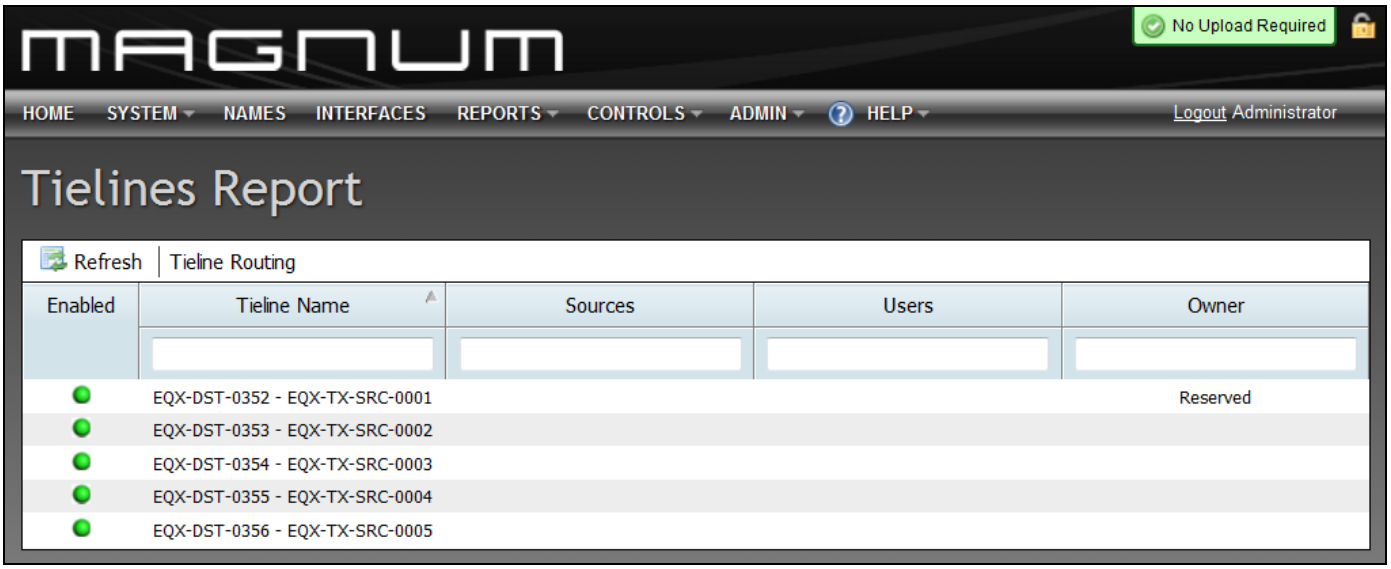


Figure 5-135: Reports Tab

Please note that clicking on the green icon under the *Enabled* column will disable the corresponding tieline and prevent any routing using that tieline.

5.7.2. Devices Report

Selecting the **Devices** menu item from the **REPORTS** drop down menu will display the current device information. The report for the Devices will display the device name, related components and the status of the device (whether it is connected or not). If changes were made but are not displayed, press the **REFRESH** button to retrieve the latest information.

Figure 5-136: Devices Reports Tab

Please note that clicking on the green icon under the *Enabled* column will disable the corresponding device and prevent any routing on the device.

5.7.3. Subscription Report

Selecting the **Subscriptions** menu item from the **REPORTS** drop down menu will display the current device information. The report for the subscriptions will display the subscription name, level, subscribed destination(s) and the subscribed source. If changes were made but are not displayed, press the **REFRESH** button to retrieve the latest information.

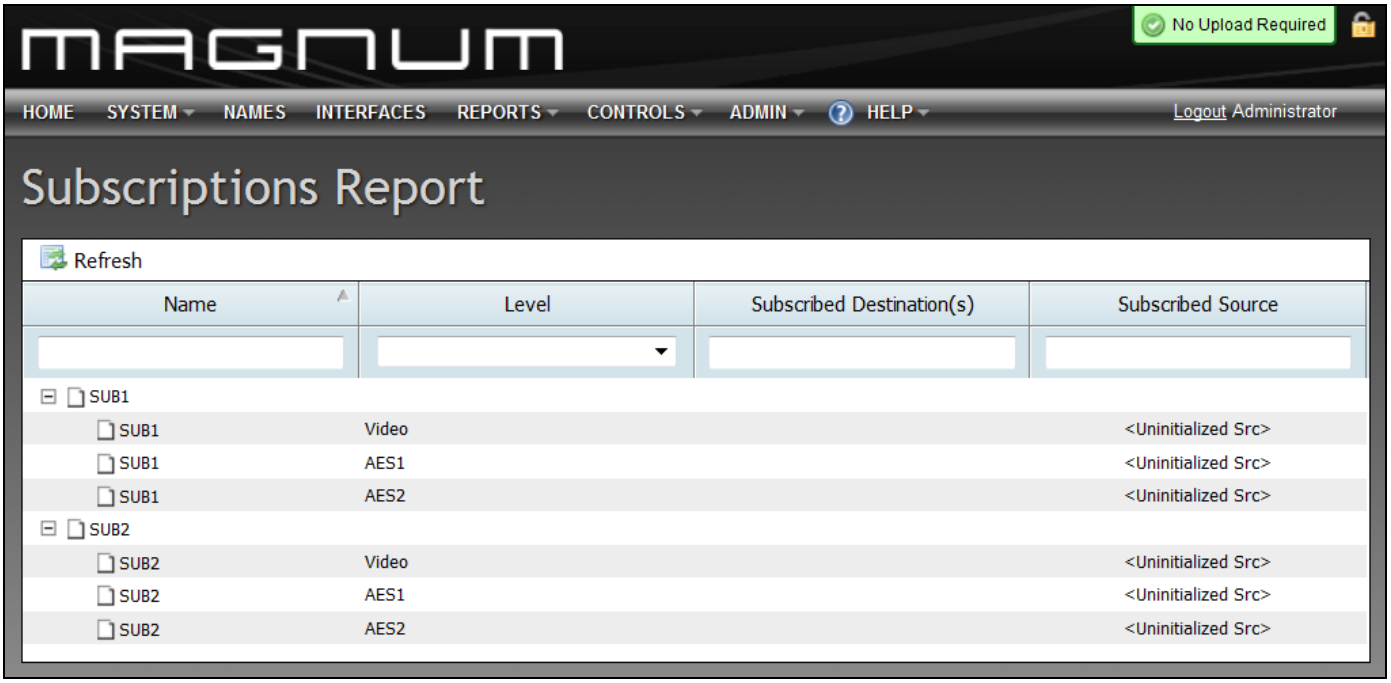
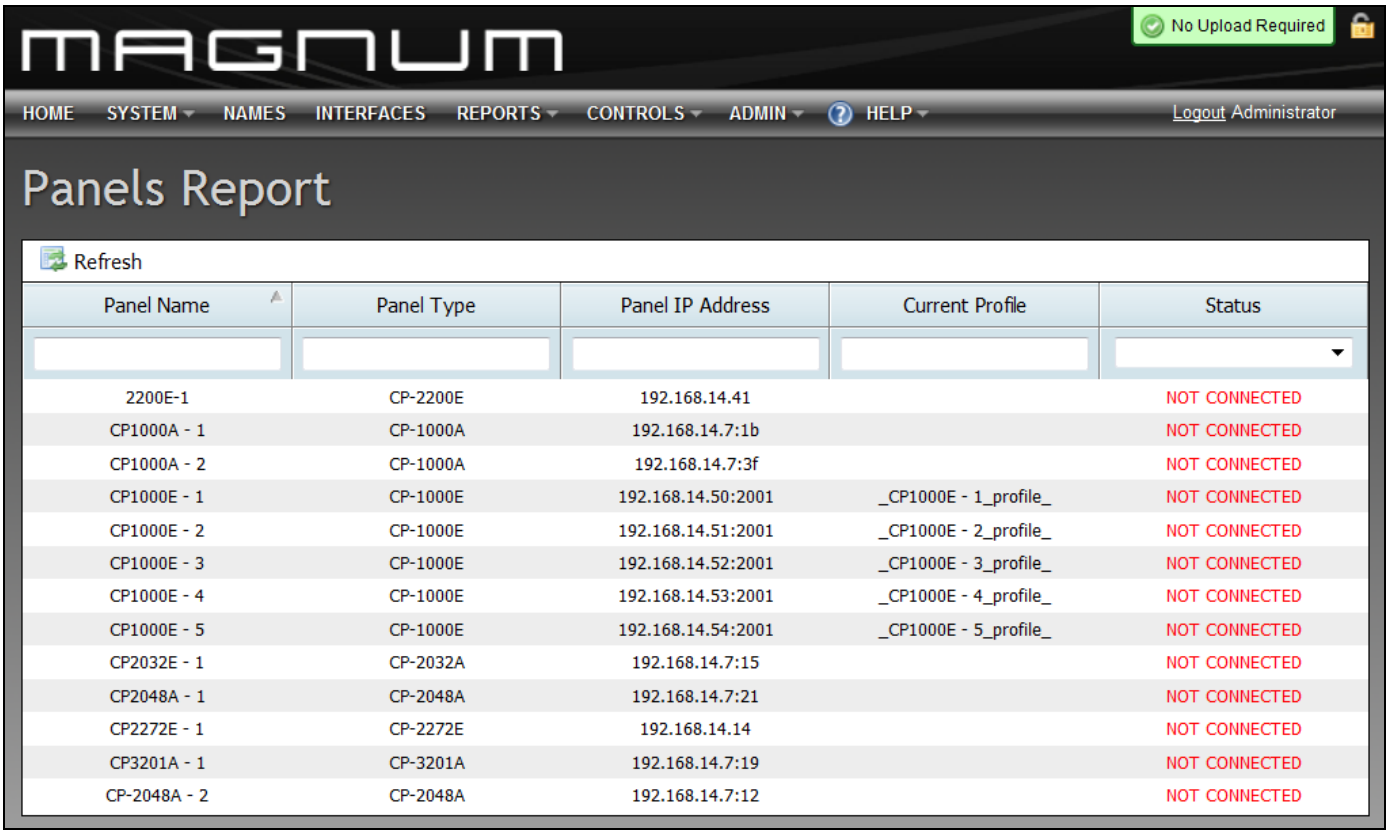


Figure 5-137: Subscription Reports Tab

5.7.4. Panels Report

Selecting the **Panels** menu item from the **REPORTS** drop down menu will display the current panel information. The report generated for the *Panels* section displays the panel name, the panel IP address, the current profile and the panel status (whether it is connected or not). If changes were made but are not displayed, press the **REFRESH** button to retrieve the latest information.



Panel Name	Panel Type	Panel IP Address	Current Profile	Status
2200E-1	CP-2200E	192.168.14.41		NOT CONNECTED
CP1000A - 1	CP-1000A	192.168.14.7:1b		NOT CONNECTED
CP1000A - 2	CP-1000A	192.168.14.7:3f		NOT CONNECTED
CP1000E - 1	CP-1000E	192.168.14.50:2001	_CP1000E - 1_profile_	NOT CONNECTED
CP1000E - 2	CP-1000E	192.168.14.51:2001	_CP1000E - 2_profile_	NOT CONNECTED
CP1000E - 3	CP-1000E	192.168.14.52:2001	_CP1000E - 3_profile_	NOT CONNECTED
CP1000E - 4	CP-1000E	192.168.14.53:2001	_CP1000E - 4_profile_	NOT CONNECTED
CP1000E - 5	CP-1000E	192.168.14.54:2001	_CP1000E - 5_profile_	NOT CONNECTED
CP2032E - 1	CP-2032A	192.168.14.7:15		NOT CONNECTED
CP2048A - 1	CP-2048A	192.168.14.7:21		NOT CONNECTED
CP2272E - 1	CP-2272E	192.168.14.14		NOT CONNECTED
CP3201A - 1	CP-3201A	192.168.14.7:19		NOT CONNECTED
CP-2048A - 2	CP-2048A	192.168.14.7:12		NOT CONNECTED

Figure 5-138: Panels Reports Tab

5.8. CONTROLS

The user can use the Quick Route or Advanced Route pages to route the destination and sources using the MAGNUM Web Configuration Tool.

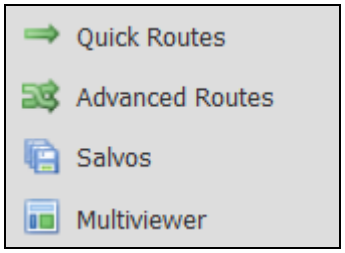


Figure 5-139: Controls Menu

5.8.1. Quick Routes

To access quick routes, select the **Quick Routes** option from the **CONTROLS** menu. The *Quick Single Route* page will appear enabling the user to select a profile, destination, source and level.

1. From the **Profile** drop down menu select one of the profiles from the list to filter and use names and available sources/destinations that are contained within that profile.

2. Begin typing a destination into the **DST** field and as the destination is recognized, a list of possible destinations will be revealed. If you know the exact name of the destination enter it in the field, otherwise select from the list that appears. You may enter the physical port name or the nameset name.

Figure 5-140: Selecting a Destination

3. To select a Source, begin typing the source name into the **SRC** field and as the source is recognized, a list of possible sources will be revealed. If you know the exact name of the source, enter it in the field, otherwise select from the list that appears. Again, you may enter the physical port name or the nameset name.

4. From the **Levels** list select a level or multiple levels that you wish to send the information to.

5. Use the **FIND** button to interrogate a destination for the currently routed source.

6. Use the **TAKE** button to route the currently populated source to the selected destination.

7. From the **Salvo** list, select a salvo and then select the **Fire** button to cause the select salvo to be executed on the system

5.8.2. Advanced Routes

The Advanced routes page displays the status of all cross-points for the entire system at a current point in time. Upon selecting the **Advanced Routes** menu option from the **CONTROLS** drop down menu, the advanced routes screen will appear as shown in Figure 5-141.

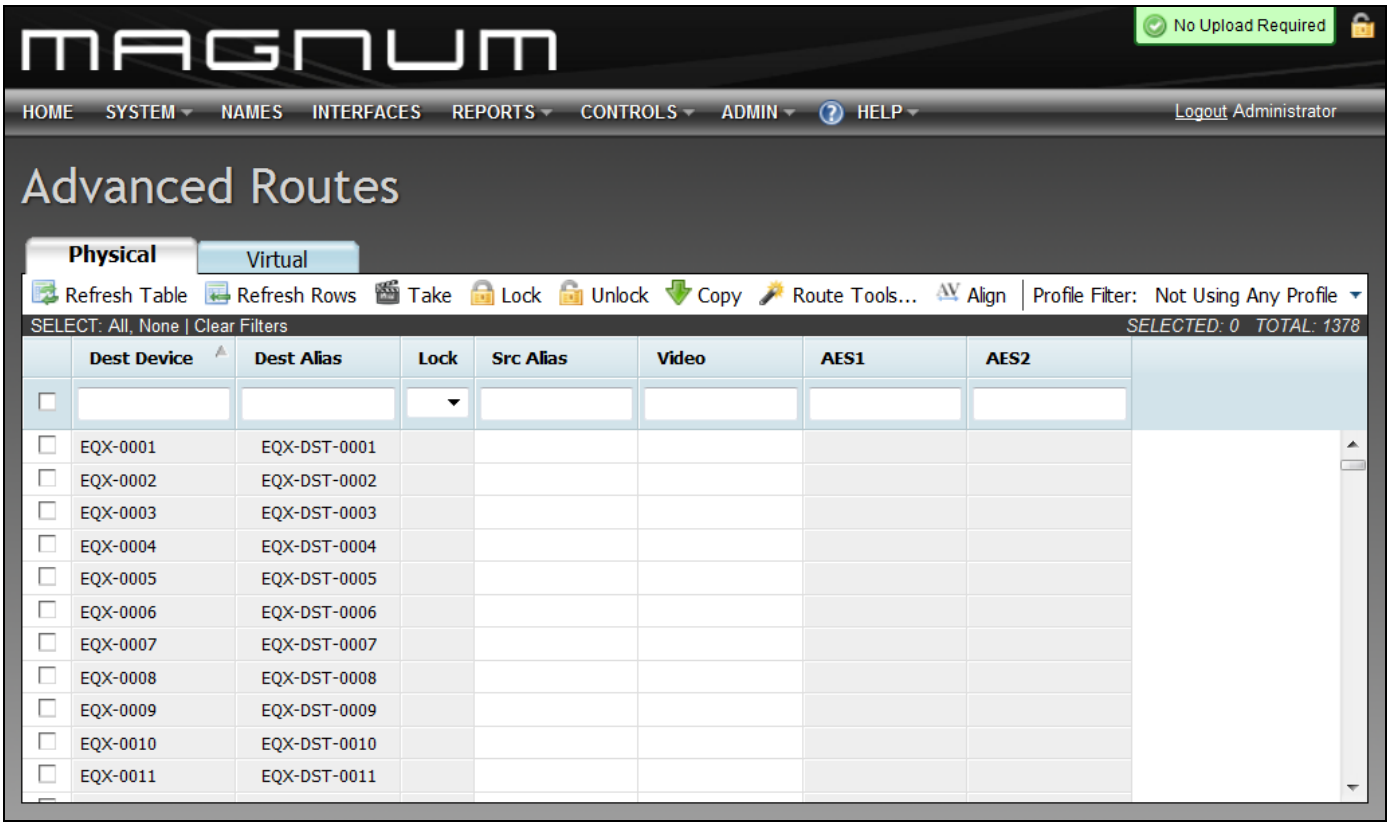


Figure 5-141: Advanced Routes – Physical Tab

1. The **Physical** tab enables the user to configure the destinations for the selected route.

Icon	Description
Refresh Table	**Fill Table:** Selecting this button enables the user to refresh the current routes for the entire table with the latest destination information extracted from the system.
Refresh Rows	**Fill Rows:** Selecting this button enables the user to refresh routes for the selected rows.
Take	**TAKE:** Selecting this button will route the currently populated source to the selected destination.
Lock	**LOCK:** The lock button enables the user to lock the destination so that it can not be changed or manipulated.
Unlock	**UNLOCK:** Selecting the unlock button will unlock a previously locked destination.

Copy	**Copy:** Selecting this button will copy the selected cell value onto the next line.
Route Tools...	**Route Tools:** Place a check mark beside the destinations that you wish to route on and then select the **Route Tools** button. A dialog box will appear as illustrated in Figure 5-142. The tool will allow the user to select a source to be routed to all selected destinations or select a start and end source to be incrementally assigned to the selected destinations for routing.
Align	**Align:** Selecting this button will expand all of the columns to fit the data.
Profile Filter: Not Using Any Profile	**Profile Filter:** The profile menu enables the user to select a control panel profile from the items listed in the profile.

Table 5-8: Advanced Routes Toolbar Controls

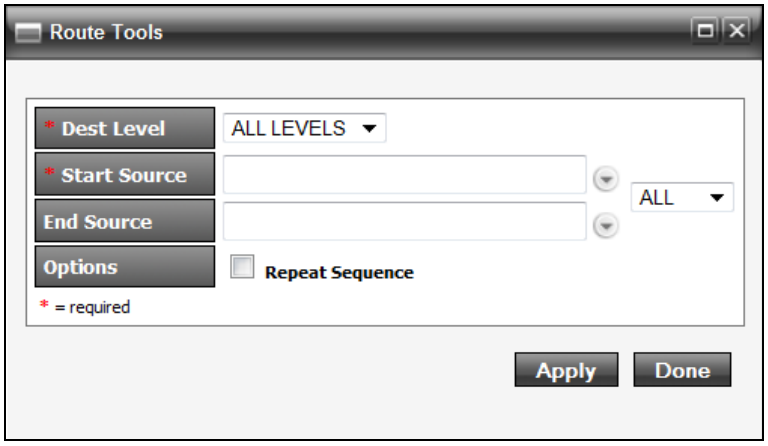


Figure 5-142: Route Tools Dialog Box

2. To search for a particular route, use the filter toolbar to search through the list of existing devices. Enter a property into one of the blank fields at the top. As you type, the list of devices will be narrowed down to display only the properties that match the data being entered.

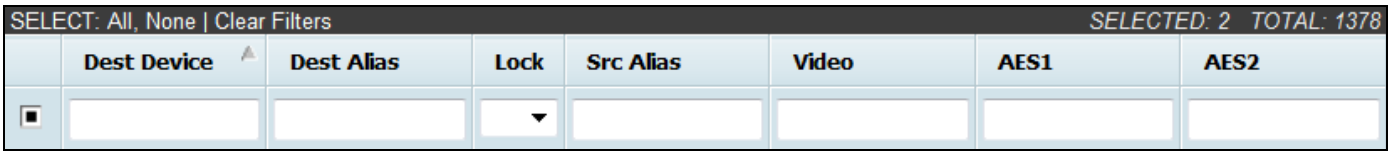


Figure 5-143: Advanced Routes Filter Toolbar

3. Table 5-8 applies to both physical and virtual route tabs. Please use the table above to identify the functions of the buttons on the virtual tab. The virtual routes can be edited in the same way as the physical routes.

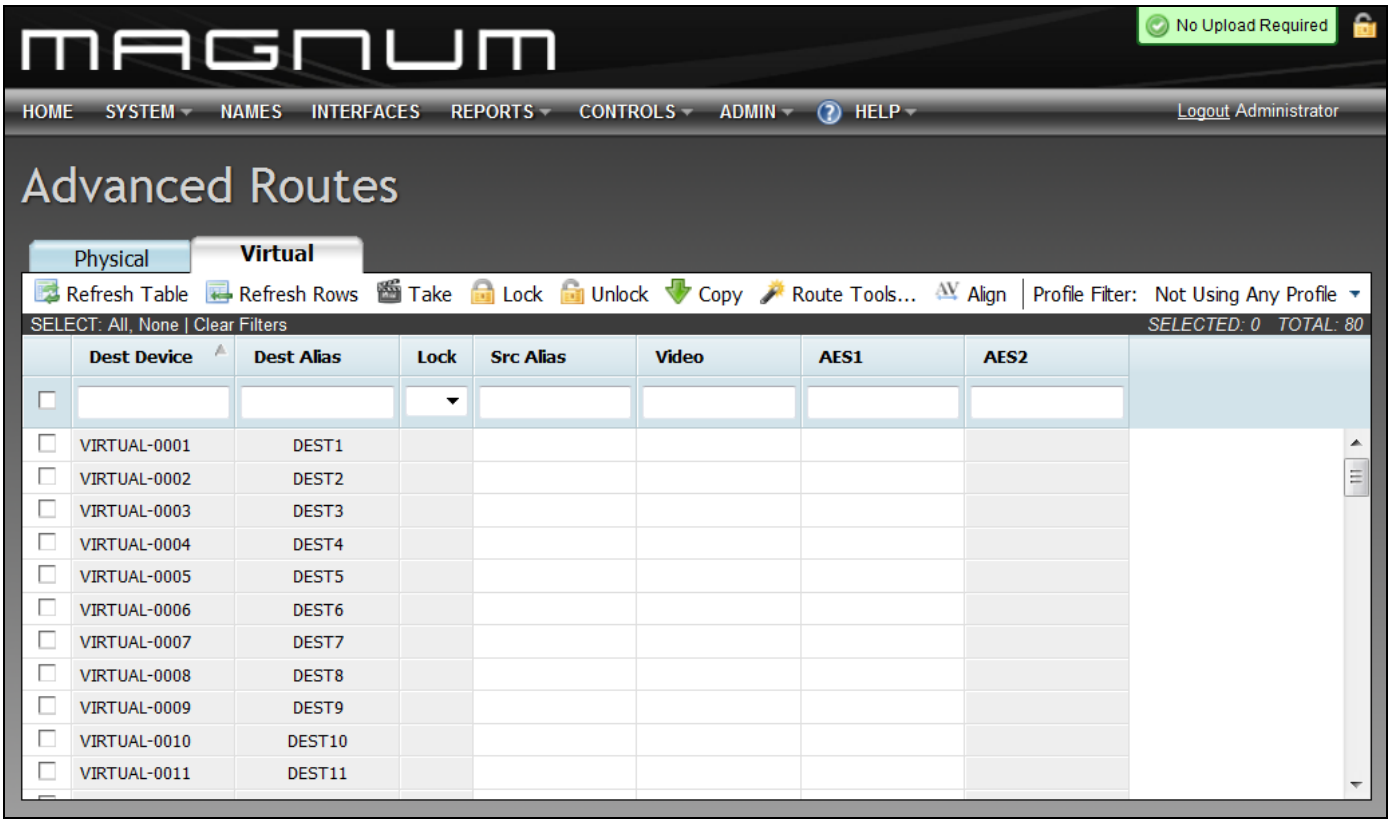


Figure 5-144: Advanced Routes – Virtual Tab

5.8.3. Salvos Builder

To access the Salvos Builder, navigate to the **CONTROL** menu and select the **Salvos Builder** from the drop down menu.

1. Select a salvo from the salvo folder on the left hand side of the screen. Depending on the salvo selected, the physical destination information for that salvo will be displayed under the **Physical** tab on the right.

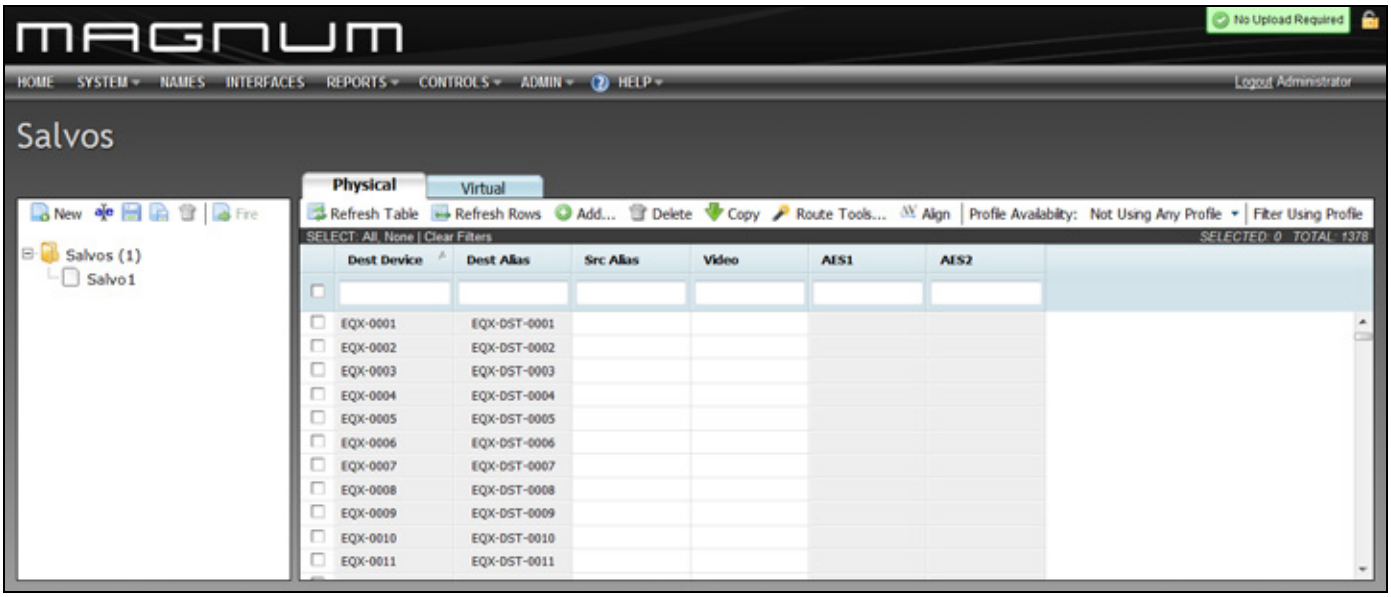


Figure 5-145: Salvos Builder

2. The left Salvo menu enables the user to manage the salvos:

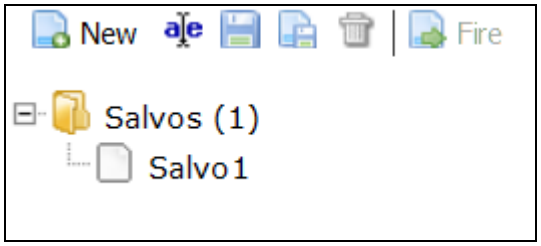


Figure 5-146: Salvo Menu and Folder

Icon	Description
New	**New Salvo:** Selecting this icon will enable the user to add a new salvo to the list.
	Rename: Selecting this icon will enable the user to rename the highlighted salvo.
	Save: If changes have been made, then this icon will be illuminated (not greyed out). Selecting this icon will enable the user to save the changes made to the highlighted salvo.
	Save As: Selecting this icon will enable the user to save the highlighted salvo as a different filename.
	Delete: To remove a salvo from the salvo folder, highlight the salvo in the list and select the delete icon.
Fire	**Fire Salvo:** Executes the selected salvo on the MAGNUM Server.

Table 5-9: Salvo Menu Controls

3. The **Physical** tab on the left side of the screen enables the user to configure the destinations for the selected salvo.

Icon	Description
Refresh Table	**Fill Table:** Selecting this button enables the user to refresh the current routes for the entire table with the latest destination information extracted from the selected salvo.
Refresh Rows	**Fill Rows:** Selecting this button enables the user to refresh routes for the selected rows.
Add...	**Add…:** Selecting this button will enable the user to add another destination to the selected salvo. An **Add Destinations** dialog box will appear, as shown in Figure 5-153, which enables the user to add single or multiple destinations.
Delete	**Delete:** Selecting this button will enable the user to delete the selected destination from the salvo. Place a check mark beside the destination which you wish to delete and then press the **Delete** button.
Copy	**Copy:** Selecting this button will copy the selected cell value onto the next line.
Route Tools...	**Route Tools:** Place a check mark beside the destinations that you wish to route on and then select the **Route Tools** button. A dialog box will appear as illustrated in Figure 5-142.
Align	**Align:** Selecting this button will expand all of the columns to fit the data.
Profile Availability: Not Using Any Profile	**Profile Availabilty:** The profile drop down menu enables the user to select a control panel profile from the items listed in the profile. Profile enforces salvo availability for the advanced panels such as the CP2200E / CP2232E / CP2116E.
Filter Using Profile	**Filter Using Profile:** Selecting this button will allow the user to filter the port list information displayed in the Physical or Virtual tab using the NameSet and ports assigned to profile.

Table 5-10: Salvo Toolbar Controls

4. Use the device filter fields (as shown in Figure 5-147) to sort through the destinations and narrow your search to a particular destination.

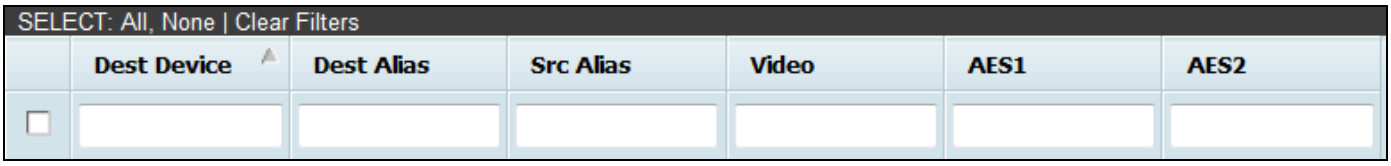


Figure 5-147: Salvo Filter Toolbar

5.8.3.1. Building a Salvo

1. To build a salvo, select a profile from the profile drop down menu, and the Nameset and salvo availability for that profile will be displayed on the main screen, as shown in Figure 5-148.

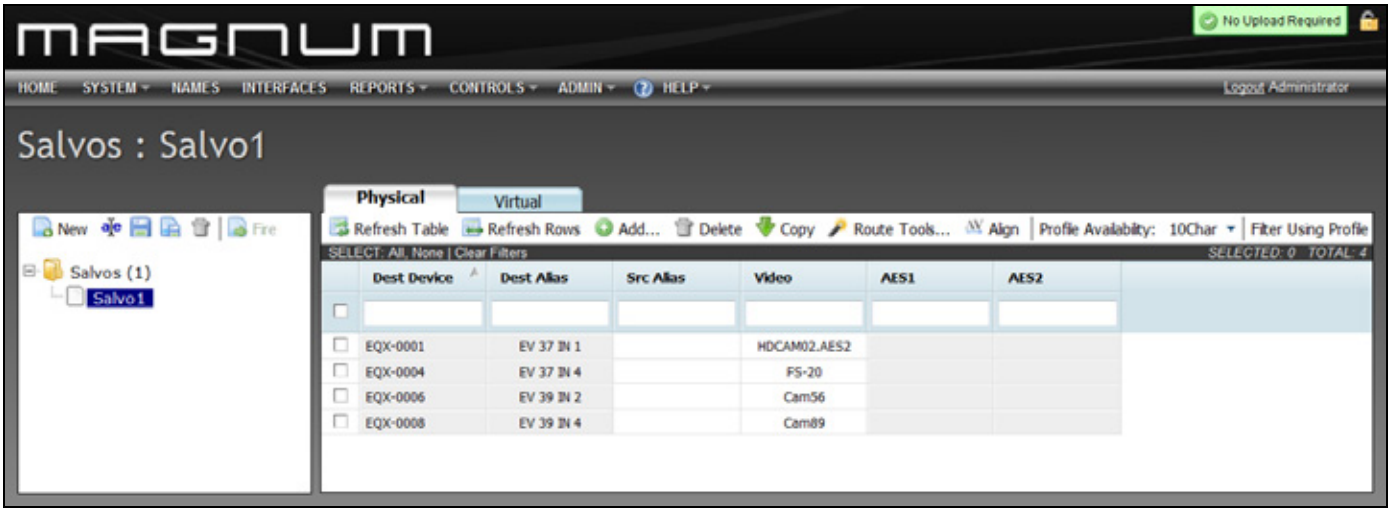


Figure 5-148: Destination List Populated

2. Place a check mark beside the destinations that you wish to add to the new salvo. Begin typing a source alias into the **Src Alias** field beside the check marked destination. A menu will appear enabling the user to select a source from the source list, as shown in Figure 5-149.

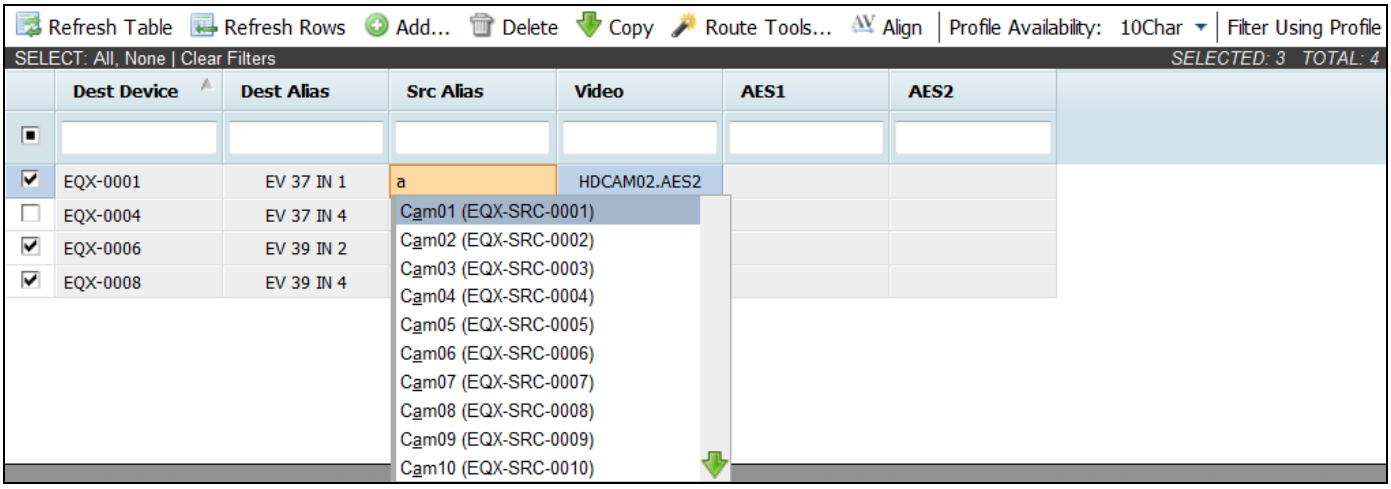


Figure 5-149: Accessing the Src Alias Menu

3. Use the up and down arrows to toggle to the desired source and then select the source. Once you have selected the source, the **Video** column will populate with the video information for the selected source.

4. Continue to build the salvo contents by adding sources to the destinations you selected. Once all the desired destinations have been selected, navigate to the left window and select the **Save** or **Save As** button, identified in Figure 5-150.

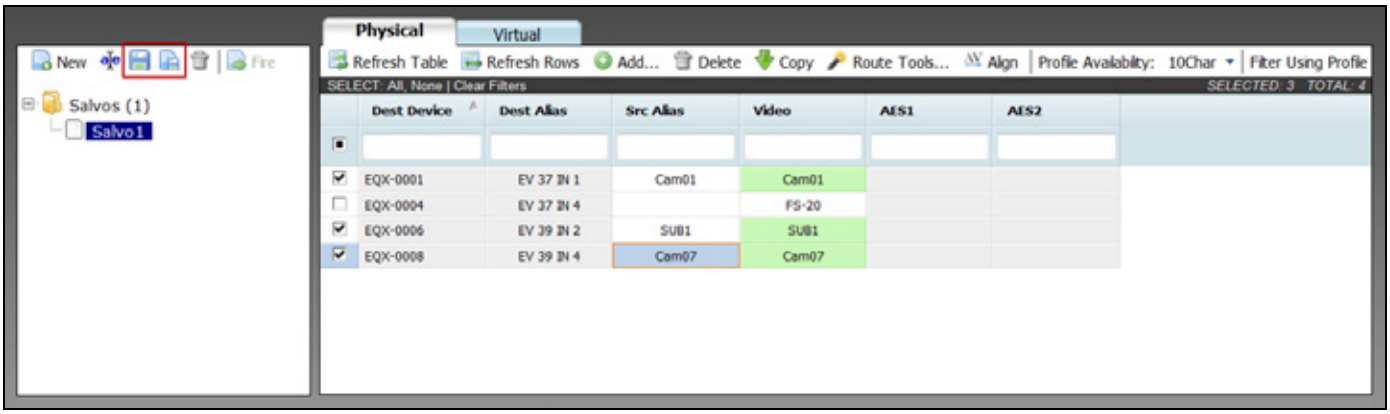


Figure 5-150: Saving the Salvo

5. A dialog box will appear prompting the user to enter a new salvo name, as shown in Figure 5-151. Enter a unique name into the dialog box and then select **OK**.

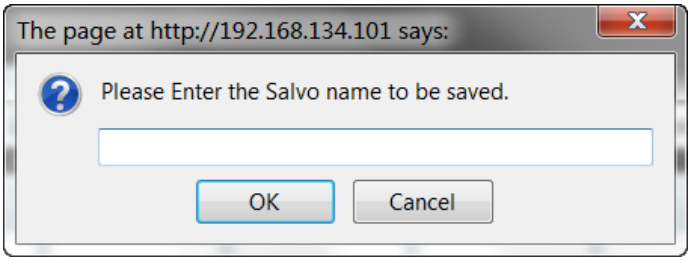


Figure 5-151: Enter New Salvo Name

6. The new salvo will be created and all the selected destinations will be contained within the salvo. The main screen will display the newly created salvo and the destinations currently associated with it.

Please note that when a salvo is created the user must click on the "Upload Required" icon to upload the changes. The salvo will not be recognized unless an upload to the server is performed.

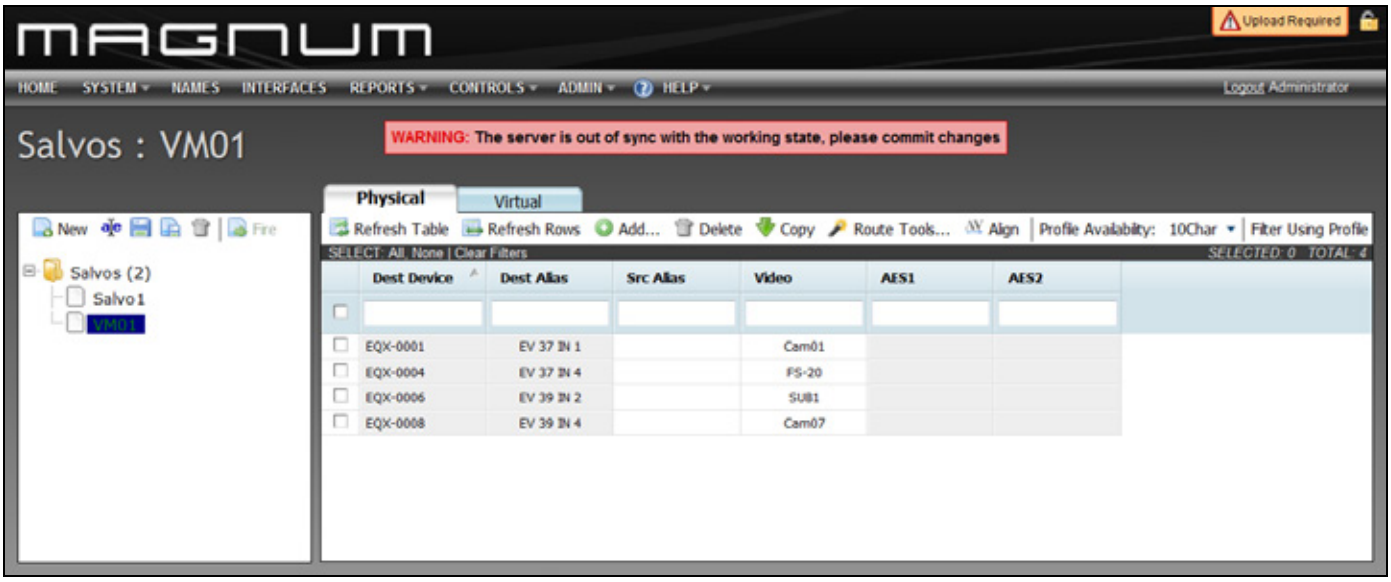


Figure 5-152: Selected Salvo Contents

7. Pressing the **New** button will clear the salvo from the screen and return the user back to the selected profile's list of destinations so that new salvos can be created. Any available salvos will be listed in the left window and can be viewed by selecting the salvo name.

8. To add destinations to an existing salvo, select the salvo from the salvo menu on the left side of the page. Click the **Add** button on the tool bar to see a list of available destinations to add to the salvo. Click the box beside each destination that you want to add to the existing salvo and then click the **Add** button. Select the **Save** button to save the destination to the existing salvo.

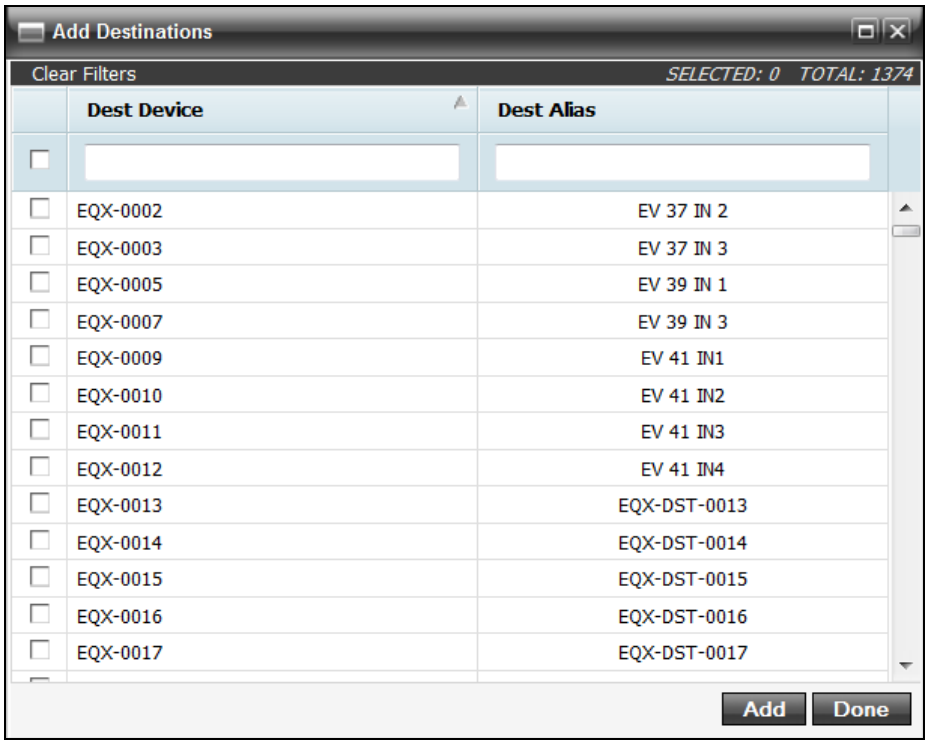


Figure 5-153: Add Destinations

5.8.4. Multiviewer

To access the **Multiviewer** page, navigate to the **CONTROL** menu and select **Multiviewer** from the drop down menu. The Multiviewer page will open as illustrated in Figure 5-154. This page allows the user to view the layouts are maybe present on multiviewer outputs. The Multiviewer control page will display layouts that have been created and saved in the Maestro Design Tool as “Scripts”.

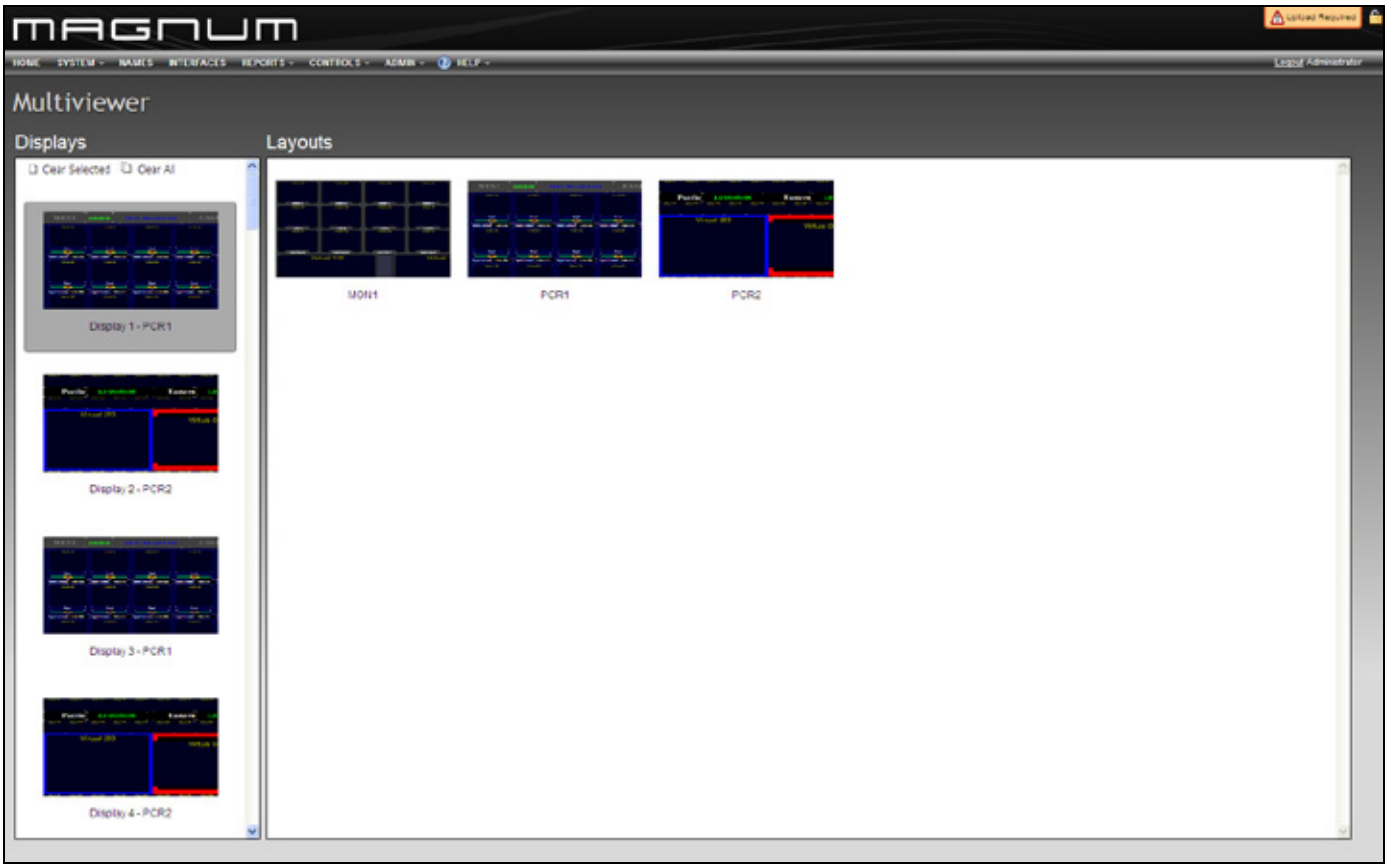


Figure 5-154: Multiviewer Page

5.8.4.1. Displays

The Displays section shows the available Multiviwer display outputs and the layouts that are currently loaded on them. The Displays section will only be able to show layouts that have been saved as “Scripts” and recalled using the layout recall functions that leverage the created scripts.

Clear Selected and Clear All controls allow the user to clear the multiviewer selected or all multiviewer output displays.

5.8.4.2. Layouts

The Layouts section shows the available Multiviewer layouts that were created and saved using the Maestro Design Tool “Save as Scripts” function. A user can select one or multiple multiviewer displays and recall a layout on them by then selecting the layout in the Layouts section.

5.9. SERVER ADMINISTRATION

5.9.1. Creating User Accounts

A core routing system is extremely powerful. With great power comes great responsibility, and as a result managing who has access to view or change important information is key.

When using multiple users in Magnum system, users can lock pages so that other cannot make changes at the same time to the same properties. The “Lock” icon in the top right corner of the Magnum Web interface allows users to lock page. If another user is on same page the lock icon will flash and a user notification will appear.

Selecting the **User Management** menu item from the **ADMIN** drop down menu enables the administrator to create new accounts for users.

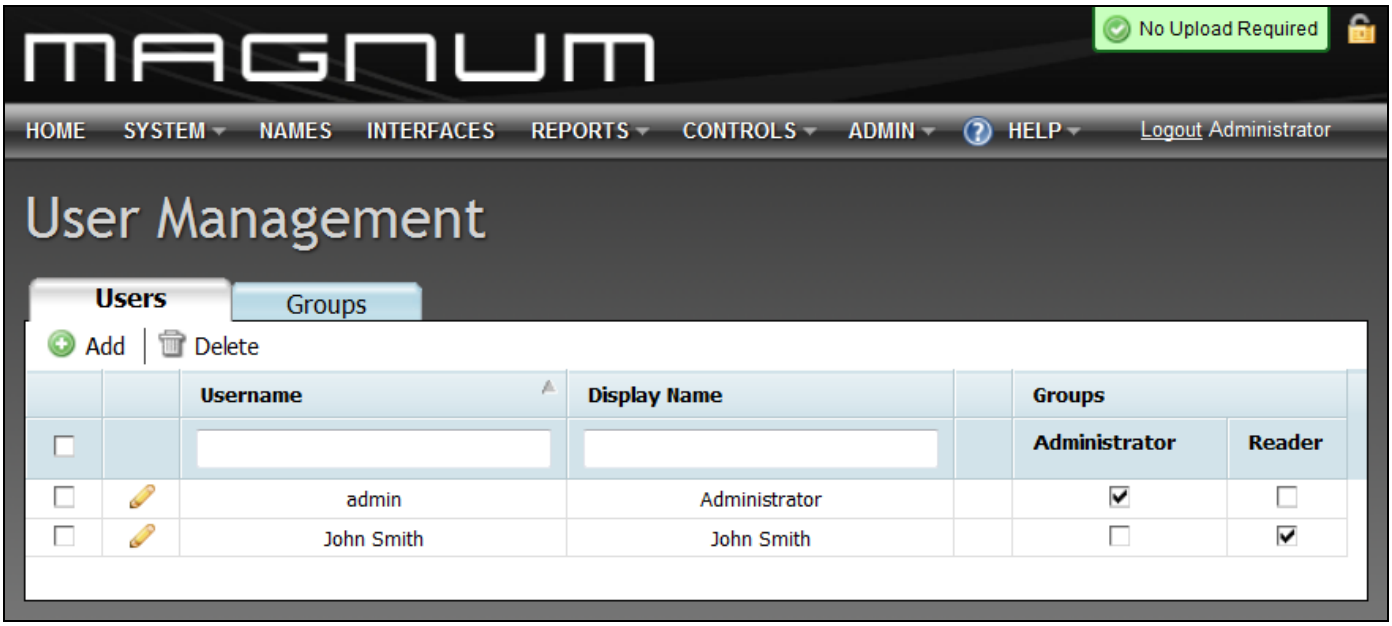


Figure 5-155: User Management Page – Users Tab

1. To add a user, select the **Add** button from the *Users* tab. An **Add User** dialog box will appear enabling the user to create a new user profile. The following information will have to be entered into the appropriate fields:

   - **Username:** Enter the desired username into this field. This will be the name that is entered into the login field when the user is logging into the MAGNUM Server.

   - **Display Name:** This name will be shown as your screen username when you are logged into the MAGNUM server. It will be displayed in the top right hand corner beside the logout button.

   - **Password:** Create a password that will be used to log into the MAGNUM Server.

   - **Confirm Password:** Enter the password again into the **Confirm Password** field. The **Confirm Password** field verifies that the value entered in the *password* field is the same as the value entered in the **Confirm Password** field.

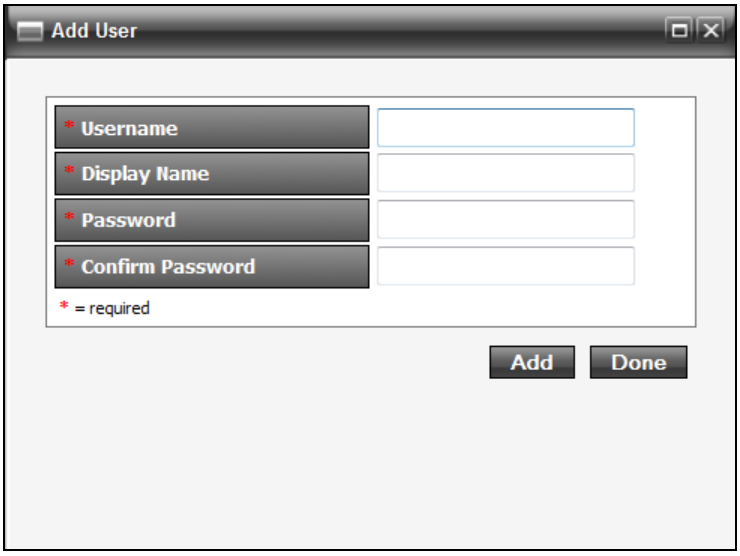


Figure 5-156: Add User Dialog Box

2. Once all the fields are filled in, select the **Add** button. If you have added all the desired users, select the **Done** button to save the changes and return back to the main *User Management* screen. The users that you have added will be listed in the *Users* table.

3. To remove a user, place a check mark in the box beside the user that you wish to remove and then press the **Delete** button.

4. To assign the user to a group, use the Groups option on the filter toolbar as illustrated in Figure 5-157. The group options are *Reader* and *Administrator*. Adding a user in the Administrator group will give them full permissions. If a user is added as a Reader, the user will have limited permissions.

5. If you would like to find a particular name in an expansive list of users, use the filter toolbar to narrow down your search. Type the username or display name into the appropriate search fields.

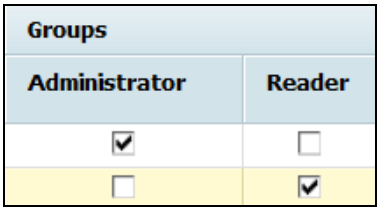


Figure 5-157: Group Options

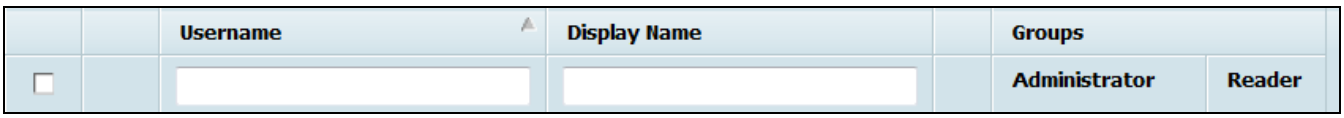


Figure 5-158: Filter Toolbar

Once complete be sure to click on the "Upload Required" icon to upload any changes.

5.9.2. Creating Group Accounts

Selecting the **User Management** menu item from the **ADMIN** drop down menu enables the administrator to create new accounts for groups.

Figure 5-159: User Management Page – Group Tab

6. To add a group, select the **Add** button from the *Groups* tab. An **Add Group** dialog box will appear enabling the user to create a new group profile. The following information will have to be entered into the appropriate fields:

   - **Name:** Enter the desired username into this field. This will be the name that is entered into the login field when the group is logging into the MAGNUM Server.

   - **Display Name:** This name will be shown as your group username when you are logged into the MAGNUM server. It will be displayed in the top right hand corner beside the logout button.

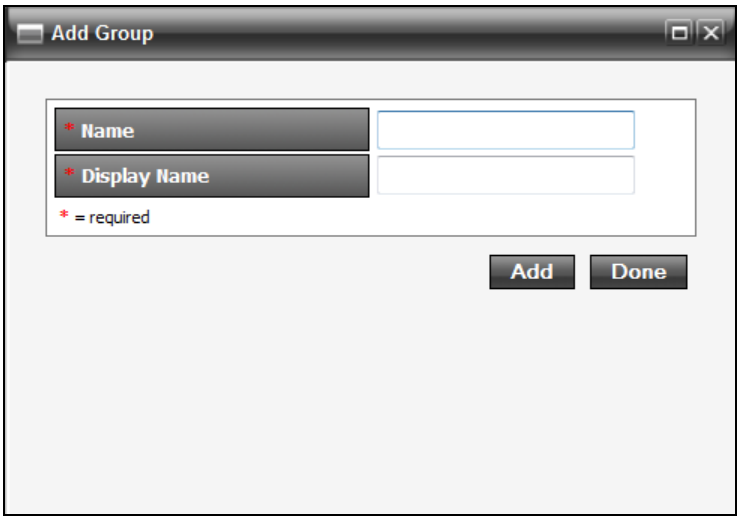


Figure 5-160: Add User Dialog Box

7. Once all the fields are filled in, select the **Add** button. If you have added all the desired groups, select the **Done** button to save the changes and return back to the main *User Management* screen. The groups that you have added will be listed in the *Groups* table.

8. To remove a group, place a check mark in the box beside the group that you wish to remove and then press the **Delete** button.

9. To change read/write permissions for a group, select the desired control option (i.e. Servers) in the Groups table and then press the 'Enter' key. A drop-down menu will appear as illustrated in Figure 5-161. Here, the user can select from the following permissions: None, Read, and Write.

10. If you would like to find a particular name in an expansive list of groups use the filter toolbar to narrow down your search. Type the username or display name into the appropriate search fields, or sort by read/write access by selecting the read/write options from each control's (i.e. Servers) drop down menu.

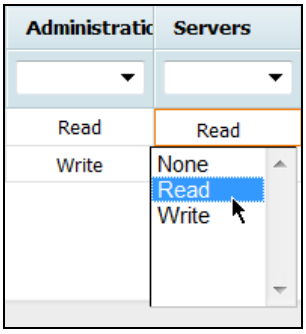


Figure 5-161: Read/Write Permissions Drop-down Menu

Figure 5-162: Filter Toolbar

Once complete be sure to click on the "Upload Required" icon to upload any changes.

5.9.3. Configuration Management

The **Configuration Management** section enables the user to download the configuration. The configuration Management page will keep the 100 most recent snapshots.

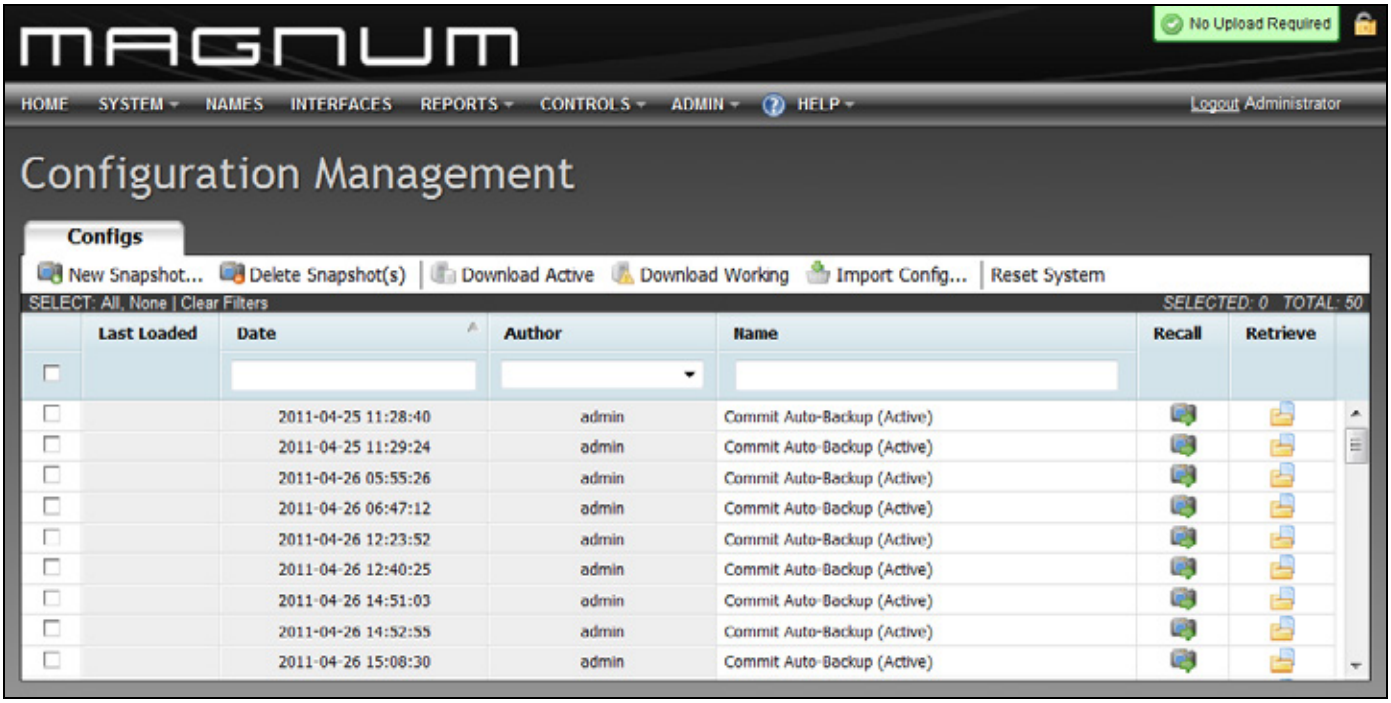


Figure 5-163: Configuration Management

1. The following table provides descriptions of the toolbar button functions for the Configs Tab:

Icon	Description
New Snapshot...	Select the **New Snapshot** button to create a snapshot of the system configuration.
Delete Snapshot(s)	Select the **Delete** button to remove a snapshot from the list. Place a check mark beside the snapshot you wish to delete and then press the **Delete Snapshot(s)** button.
Download Active	Select the **Download Active** button to download a copy of the active configuration from the server.
Download Working	Select the **Download Working** button to download a copy of the configuration that the user is currently working on.
Import Config...	Select the **Import** button to import a working copy of the configuration.
Reset System	Select the **Reset System** button if you wish to reset the working state of the system and start from scratch.

Table 5-11: Configuration Management Toolbar Controls

Please Note: Using the reset button will completely delete all router control system information including deleting all routers, panels, names, tielines, all configuration information. Do not use this button unless it is your intent to completely delete your entire system and start from absolutely no configuration.

2. Use the device filter fields (as shown in Figure 5-164) to sort through the configurations and narrow your search to a particular configuration.

Figure 5-164: Filter Toolbar

3. Use the icon to recall a snapshot. When this button is selected, a warning message will appear as illustrated in Figure 5-165 in order to confirm the snapshot recall.

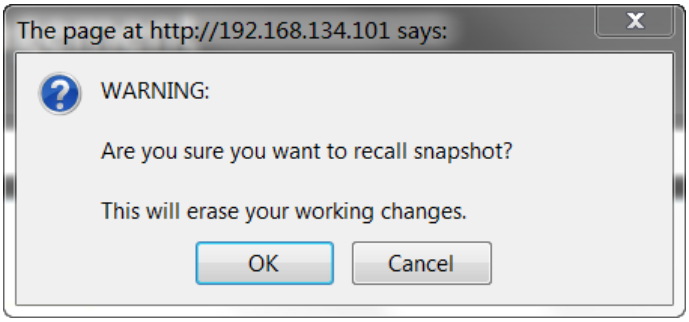


Figure 5-165: Recall Snapshot Window

4. The button is used to save a configuration snapshot to a file. When this button is selected, an *Opening config.zf* window will appear as illustrated in Figure 5-166. Here, the user can chose to open or save the snapshot.

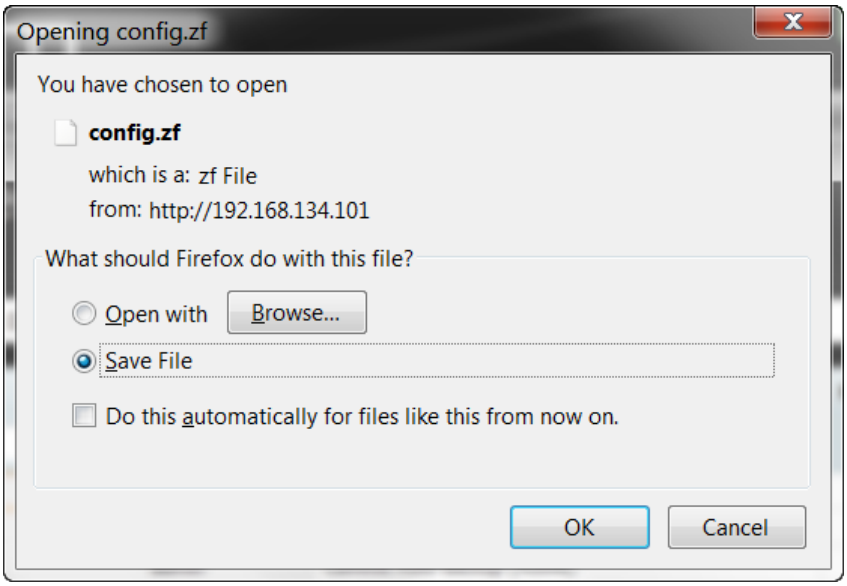


Figure 5-166: Opening config.zf Window

5.9.4. Setting the Preferences

The *Preference* settings screen enables the user to change the colour scheme and branding options of the MAGNUM Server interface.

Figure 5-167: Preference Settings

1. To change the colour scheme of the interface, select the desired skin from the *Skin* options. The colour of the interface will instantly change to reflect the skin you selected.

2. If you wish to brand your MAGNUM Server interface with an image or logo, you can upload an image file (ie. .jpeg or .png of your company logo). Click on the **Browse…** button and navigate to the image you wish to upload.

3. Once you have located your image, select **Open** to load the file.

4. When the filename is listed on the main screen in the **Browse** field, select the **Import** button. Your image will be displayed across the top banner of the interface.

NOTE: All images should be less than 300x50 pixels.

NOTE: If you wish to **DELETE** the image that you have uploaded, select the **Delete Current Image** button that appears only when an image is loaded.

5. If you wish to assign a name to the server, type a name into the *Set Server Name* field and click on the **Set Server Name** button.

NOTE: To clear the server name, remove the name from the text field and select the **Set Server Name** button. The server name will be removed.

6. If you wish to assign an SNMP trap address to the server, type an address into the *Set SNMP Trap Addresses* field and click on the **Set SNMP Trap Addresses** button.

7. If the banner position has shifted due to the addition or subtraction of logos and text, select the **Reset Banner Position** to send the banner to its original center justified location.

5.9.5. License Management

In order for the user to obtain an authorized license for the MAGNUM Server an ID number must be generated. To obtain a license, navigate to the main toolbar and from the **ADMIN** drop down menu select the **License Management** button.

Figure 5-168: License Management

1. Your server name(s) and IP address will be listed in the *License Management* window. Select the **Get ID** button to generate a Server ID number.

2. A generated number will appear in the **Server ID** column, as shown highlighted in Figure 5-169.

3. Once the Server ID has been regenerated, the user must submit the ID number to Evertz Service in order to acquire an authorized license.

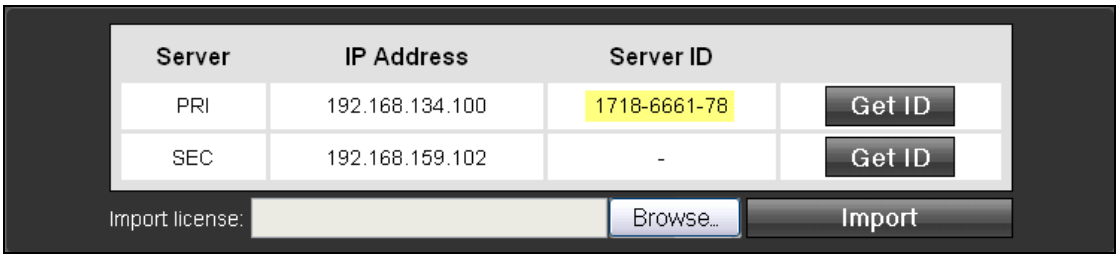


Figure 5-169: Generating a Server ID

4. Once the license is obtained by the user, the user must import the license. Click on the **Browse** button and then navigate to the appropriate file.

5. Once the appropriate file is selected, click the **Open** button.

6. The filename will be listed in the *Import license* field.

7. Finally, select the **Import** button to import the selected file and load the user license.

8. In order for changes to take effect the user must restart the server from the configuration GUI in the first part of this manual. ALL SERVERS must be restarted.

5.10. HELP TAB

The **Help** menu displays the current version of the MAGNUM server and retrieve logs.

5.10.1. Viewing the Version Information

To view the version information, select the **About** item from the **Help** drop down menu. The *About* screen will display the software version, as shown in Figure 5-170.

Figure 5-170: About Window

5.10.2. Retrieving Logs

To download the server logs, select the **Retrieve Logs** menu item from the **HELP** drop down menu. By selecting the **Download** button the user can download a zip file containing all of the server logs.

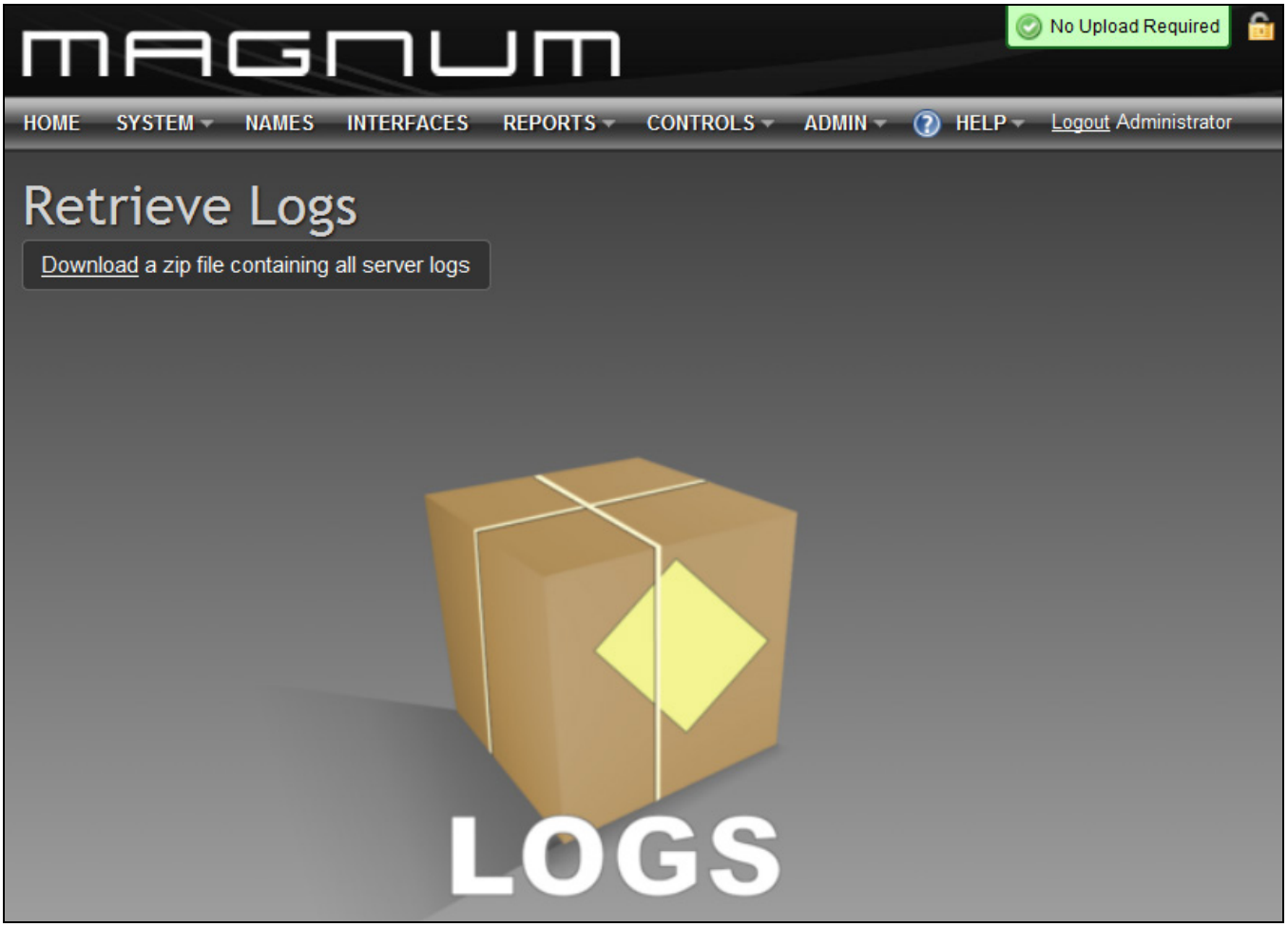


Figure 5-171: Retrieve Logs Window

This page left intentionally blank