Imagine COMMUNICATIONS™

Installation, Configuration, and Operation Manual

Platinum™ IP3

Controller

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Publication Information

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Contents

Preface 9
Manual Information 9
Purpose 9
Audience 9
Revision History 9
Writing Conventions 10
Obtaining Documents 11
Unpacking/Shipping Information 11
Unpacking a Product 11
Returning a Product 12
Safety 12
Standards 13
Waste from Electrical and Electronic Equipment (WEEE) Compliance 13
Overview 14
IP3 Controller Overview 14
Features 15
IP3 Controller Protocols 16
Using the Controller 16
Setting up the IP3 Controller System 16
IP3 Controller Dashboard 17
System and Network Requirements 17
IP3 Controller Web UI 17
PCs running Magellan CCS Navigator™ 17
IP3 Controller Setup 18
IP3 Controller Application Overview 18
Default Controller PC Credentials (Username/Password) 18
Pre-Requirements 18
IP3 Controller Ethernet Settings 18
Ethernet Connections 19
IP3 Controller Factory Default ENET IPs 21
ETH Notes 21

IP Addresses 22
Upgrade Instructions 22
IP3 Controller Services 22
Time Synchronization 22
IP3 Controller Utilities 23
Stop IP3 23
Start IP3 23
IP3 Backup 23
IP3 Status 23
IP3 Time Sync Status 24
IP3 Redundancy Management 24

IP3 Controller - Initial Steps 25
Launching the IP3 Controller Interface 25
Adding your IP3 Frame to the Routing System 26
Routing System Database 28
Routing in IP3 28
STEP 0 - Setting up Magellan CCS Navigator™ 31
STEP 1 - Delete the Default Sources and Destinations in DBEditor 33
STEP 2- Define Levels in DBEditor 34
STEP 3 - Define Device Types in DBEditor 35
STEP 4 - Define IP3 Sources/Destinations (IP3 Database Editor) 39

System Configuration 43
Configuration Dashboard 43
Hardware Foundry 43
Adding a Device 44
Modifying a Device 46
Removing a Device 46
System Expansion 46
Matrix Expansion 47
Manage IP3 Controller Settings 48
Router Settings 48
Redundancy Settings 49
Maintenance 50
User Foundry 50
User Accounts 50
Changing a Password 51
Firmware Foundry 51
Firmware Repository 52

IO Modules 53
Resource Modules 57
Upgrade Service Log 58

Navigation 59
IP3 Controller System Interface 59
IP3 System List View 59
Frames in the System 60
Frames/Modules 60
Frame Parameters 61
Modules in a Frame 61
Module Details 62
Module Faults 62
Module Parameters 64
Controllers in the System 64
IP3 System Faults View 65
Fault Time 66

Parametric Control 67
Parametric Control Overview 67
Frames and Modules in the Web Interface 67
Parameter/Status Menu Groups 68
Module 68
Inputs/Outputs 68
Advanced 68
Parameter Types 69
Read-Only (Status) Parameters 69
String Parameters 69
List Parameters 69
Range Parameters 70
Table Parameters 70

IP3 Database Editor 72
IP3 Database Editor Overview 72
Launching the IP3 Database Editor 72
Adding Sources/Destinations 73
Database Import and Export 79
Import/Export Information 79
Import Validation 79
4K Support 79

Device Type for 4K 80
Sources for 4K 82
Destinations for 4K 83

Frame Components and Parameters 84
Frame Components 84
Frame Parameters 84
Frame 85
PX-RES 85
Video Crosspoint 86
TDM Crosspoint 87
Sync 88
Power Supplies 89
Ethernet Ports 90
Serial Ports 91
Frame Faults 92

Resource Module (PX-RES) 94
PX-RES Overview 94
PX-RES Parameters and Upgrades 94
PX-RES Redundancy 94
Resource Card Synchronization 95
Active and Standby Determination 96
Alarms 96

Configuring IP3 Controller Redundancy 97
Steps to define a Secondary IP3 Controller 97
Enabling Redundancy 98
Disabling Redundancy 99
Redundancy Information 99
Data Sync Status 99
Heartbeat Status 100
Redundancy Status 100
Failover 100
Failover Trigger Conditions 101

Logging Server 102
Overview 102
Browser Settings 102
Logging Server Interface 104

Working with Logs 105
Examining Logs 105
Live Logs 106
Log History 106
Clearing Logs 107
Configuring the Logging Server 107
Changing Columns That Appear in the Logging Server 108
Changing (Filtering) the Content Displayed in the Examiner 108
Interpreting Messages in the Logging Server 109
Message Types 109
Import and Exporting Logs 110
Exporting Logs 110
Importing Logs 111
Using Summaries 111

Router Soft Panel Overview 113
Logging in 113
Dashboard 113
Sources and Destinations 115
Display Pane - Details 115
Display Pane - Filtering 116
Functions 117
Takes 117
Undoing a Take 118
Add to Batch 118
Breakaway 119
Lock 120
Protect 120
Clear (Lock/Protect) 121
Views 122
MultiBus View 122
Batch View 122
Salvo View 123
Macro View 124
Snapshot Scheduler 125
Snapshot Repository 128
Report 129

Module Specific Configurations 130
Platinum Frame Synchronizer and Mux Module (PX-HSR-OBG) 130

PX-HSR-OBG Overview 130
PX-HSR-OBG Variants 130
PX-HSR-OBG Configuration 131
Platinum SX Pro and Platinum SX Hybrid Multiviewers 132
Platinum Multiviewers Upgrade Procedure 133
Viewing Platinum Multiviewer Modules 133

Interfacing with a Third Party Router 135
Steps to Configuring a Third Party Router 135
Handling Duplicate Source/Destination Names 138

Interfacing with a Legacy Router 139
IP3 and non-IP3 on different levels 139
Create a Device Type 139
Add Sources/Destinations in IP3 Database Editor 141
Publish to DBEditor 141
IP3 and non-IP3 on the same level 143
Using Offsets 145

SNMP Overview 145
Controlling your IP3 Controller using a MIB Browser 145
IP3 Controller MIBs 145
Set the SNMP ID 146
Enable SNMP 146
Configure SNMP 147
Configure SNMP Trap 149
Parametric Control 149
Example 149
Switching 154
RoutingSources Table 154
RoutingDestination Table 155
Router Salvo Table 156
Functions 156

Preface

Manual Information

Purpose

This manual details the features, installation, operation, maintenance, and specifications for the IP3 Controller.

Audience

This manual is written for engineers, technicians, and operators responsible for installation, setup, maintenance, and/or operation of the IP3 Controller.

Revision History

Edition	Date	Comments
A	December 2012	Preliminary Version
B	January 2013	First Release
C	April 2013	Second Release corresponding to version 1.1 of the Controller firmware.
D	January 2014	Third Release corresponding to version 1.2 of the Controller firmware. The following are new features in this release: · Support for adding up to 6 frames to be controlled from a single Controller · Input Matrix Expansion. (See Matrix Expansion (on page 47)) · Support for 4K Video (See 4K Support (on page 79)) · Information on interfacing with a Legacy router (See Interfacing with a Legacy Router (on page 139))

Edition	Date	Comments
1.3.1	September 2014	Release corresponding to version 1.3.1 of the Controller firmware. The following is new in this release: · Support for Third Party Routers. See Interfacing with a Third Party Router (on page 135) · Edits to Interfacing with a Legacy Router (on page 139) · New Soft Panel application. See Soft Panel Application (see "Router Soft Panel Overview" on page 113). · Safe Power Off functionality for IP3 Controllers. See Maintenance (on page 50) · SNMP support. See SNMP Overview (on page 145) · Database Import/Export functionality in the IP3 Database Editor. See Database Import and Export (on page 79) · New interface and options when adding devices. See Adding a Device (on page 44) · Changes to Add/Insert dialog for sources/destinations in the IP3 Database Editor. See Add (on page 73). · Support for Platinum Multiviewers. See Platinum SX Pro and Platinum SX Hybrid Multiviewers (on page 132) · PX-RES Redundancy using ENET6. See PX-RES Redundancy (on page 94) · Changes to Redundancy. See IP3 Controller Redundancy (see "Configuring IP3 Controller Redundancy" on page 97) · Additions to valid characters in source/destination/level/frame names. See Valid Characters in Source, Destination, Level, and Frame Names (on page 28) · Tielines and Reserved Tielines. See Tielines (on page 30). · Firmware restrictions on Crosspoint Module upgrades. See Crosspoint (XPT) Modules (on page 55)
1.3.3	February 2015	· Version changes. No content edits.

Writing Conventions

This manual adheres to the following writing conventions.

Table 1: Writing Conventions

Term or Convention	Description
Bold	Indicates dialog box, property sheet, field, button, check box, list box, combo box, menu, submenu, window, list, and selection names
Italics	Indicates email addresses, names of books and publications, and first instances of new terms and specialized words that need emphasis
CAPS	Indicates a specific key on the keyboard, such as ENTER, TAB, CTRL, ALT, DELETE
`Code`	Indicates variables or command-line entries, such as a DOS entry or something you type into a field.
>	Indicates the direction of navigation through a hierarchy of menus and windows.
hyperlink	Indicates a jump to another location within the electronic document or elsewhere
Internet address	Indicates a jump to a Web site or URL
Note:	Indicates important information that helps to avoid and troubleshoot problems

Obtaining Documents

Product support documents can be viewed or downloaded from our website. Alternatively, contact your Customer Service representative to request a document.

Unpacking/Shipping Information

Unpacking a Product

This product was carefully inspected, tested, and calibrated before shipment to ensure years of stable and trouble-free service.

1. Check equipment for any visible damage that may have occurred during transit.
2. Confirm that you have received all items listed on the packing list.
3. Contact your dealer if any item on the packing list is missing.
4. Contact the carrier if any item is damaged.

5. Remove all packaging material from the product and its associated components before you install the unit.

Keep at least one set of original packaging, in the event that you need to return a product for servicing.

Returning a Product

In the unlikely event that your product fails to operate properly, please contact Customer Service to obtain a Return Authorization (RA) number, and then send the unit back for servicing.

Keep at least one set of original packaging in the event that a product needs to be returned for service. If the original package is not available, you can supply your own packaging as long as it meets the following criteria:

- The packaging must be able to withstand the product's weight.
- The product must be held rigid within the packaging.
- There must be at least 2 in. (5 cm) of space between the product and the container.
- The corners of the product must be protected.

Ship products back to us for servicing prepaid and, if possible, in the original packaging material. If the product is still within the warranty period, we will return the product prepaid after servicing.

Safety

This manual contains safety precautions and recommendations specific to the IP3 controller product. The IP3 controller is rack-mountable using rack rails provided with the unit, and it is strongly recommended to do so. See the specifications section for the electrical current load of the product, and connect the redundant power supplies to electrical circuits which are each capable of supplying the full load of the unit. The IP3 controller is forced-air cooled; to prevent marring during handling and transit there are clear plastic coatings which cover the metallic surfaces and obstruct some of the air ventilation holes. Be sure to remove all of these clear plastic coatings before putting the unit into service.

IMPORTANT! Only qualified personnel should perform service procedures.

Table 2: Safety Terms and Symbols in this Manual

⚠	**WARNING** **Statements identifying conditions or practices that may result in personal injury or loss of life. High voltage is present.**
⚠	**CAUTION** **Statements identifying conditions or practices that can result in damage to the equipment or other property.**

Standards

Refer to the **IP3 Safety and Standards Manual** for details.

Waste from Electrical and Electronic Equipment (WEEE) Compliance

The European Union (EU) Directive 2002/96/EC on Waste from Electrical and Electronic Equipment (WEEE) deals with the collection, treatment, recovery, and recycling of electrical and electronic waste products. The objective of the WEEE Directive is to assign the responsibility for the disposal of associated hazardous waste to either the producers or users of these products. As of August 13, 2005, the producers or users of these products were required to recycle electrical and electronic equipment at end of its useful life, and may not dispose of the equipment in landfills or by using other unapproved methods. (Some EU member states may have different deadlines.)

In accordance with this EU Directive, companies selling electric or electronic devices in the EU will affix labels indicating that such products must be properly recycled. (See our website for more information.) Contact your local sales representative for information on returning these products for recycling. Equipment that complies with the EU directive will be marked with a WEEE-compliant emblem.

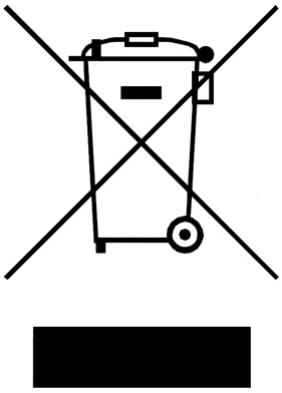


Figure 1: WEEE Compliance Emblem

Overview

IP3 Controller Overview

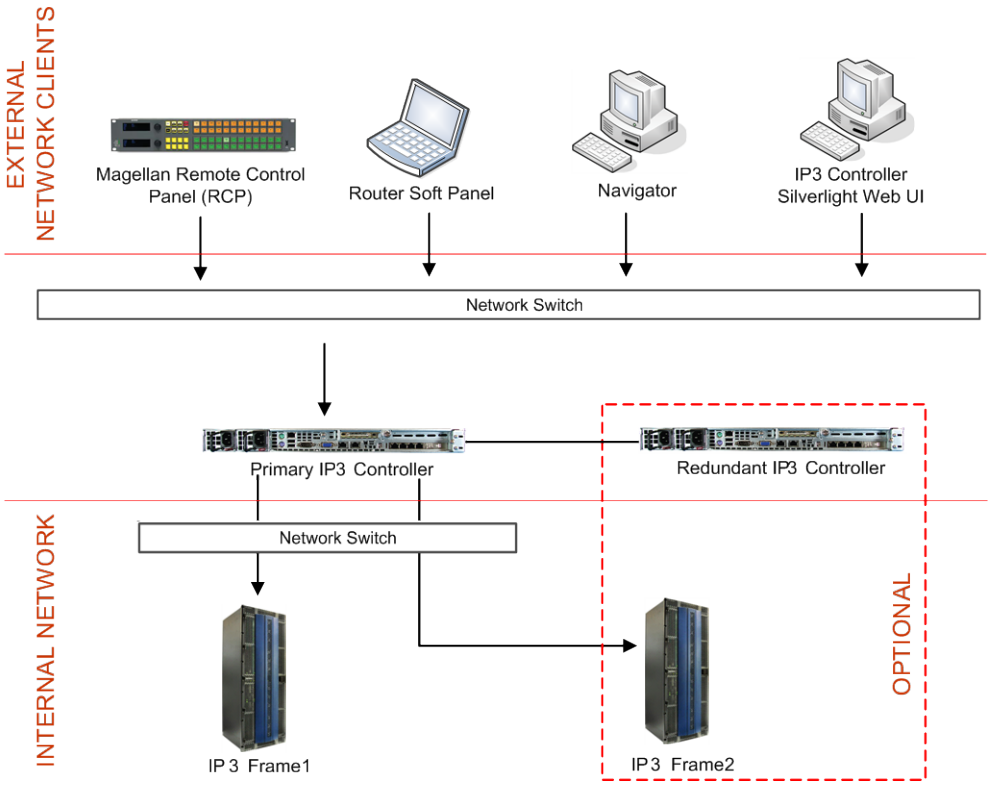


Figure 2: IP3 High Level Overview

The IP3 Controller is the routing protocol engine of the IP3 system and provides a centralized point-of-control for the configuration and operation of the IP3 Routing System. It provides a unified database and protocol engine for routing status and control clients, and provides protocol aggregation and support for configuration, status, and alarm management of the routing system. The IP3 Controller's flexible routing system execution allows for connecting sources and destinations at runtime. The high level of flexibility allows the control system to be aware of different audio channel configurations on different devices, route the signals based on the actual channel alignments as defined in the database, and perform break-away takes based on automation and human control.

The flexibility of the system puts the user in control of complex multichannel audio systems – allowing exact definition of relationships between video and audio, and assignment of attributes to organize the audio channels into sensible services.

The IP3 Controller includes a powerful but easy to use web-based tool for configuration and operation of your IP3 System. Packaged in a commercial 1RU computing server, the IP3 Controller connects to IP3 frames via Ethernet, and to Magellan control panels and other control sources via (separate) Ethernet. A high-level view of a typical system is shown below.

Features

The IP3 Controller provides or intermediates the following major functions of the routing system:

- Maintenance of the Routing Database (sources, destinations, tielines, etc)
- Logical Routing Protocol (LRC)
- XY Stream Protocol (XY-Net)
- Management, Configuration, and Status of the routing system
- Event Logging
- Firmware Version Management and Upgrade management
- Web-Browser based Management of the routing system
- Integration with Magellan CCS-Navigator
- Alarm Generation and Management
- Parametric Control of Processing functions in the routing system
- Signal Route determination and execution across multiple physical IP3 frames
- Tieline Management and Control, including tielines to/from 3rd-party routers
- Web based utility for router control via any computer or mobile device with HTML5 support

For systems where there is a mix of IP3 and other Imagine Communications routing or processing equipment, the IP3 Controller integrates tightly with the unified Command and Control System, CCS-Navigator.

The IP3 Controller acts as an LRC protocol server, and as an XY-NET protocol server, processing routing requests from these protocols into routes across the IP3 routing frames and other routing frames, and generating appropriate control protocol commands to each of those frames. Status from the various frames is aggregated back into full-route status and returned into all of the original protocols to all of the connected clients.

The IP3 Controller enables discover, control, and monitoring of IP3 frames which together form a complete non-blocking router. This is currently confined to two frames using the IP3 System Expansion (on page 46) technique. If a specific configuration requires more than one non-blocking router system (perhaps interconnected by tielines), then separate IP3 Controllers are required for each non-blocking routing complex within the system.

The IP3 Controller can be operated in a full 1:1 redundancy scenario for high availability applications. See Controller Redundancy (see "Configuring IP3 Controller Redundancy" on page 97).

Software upgrades to IP3 frames and their modules are done directly by the IP3 Controller. See Firmware Foundry (on page 51).

The user interface of the IP3 Controller is a browser-based application based on Microsoft Silverlight 5.0. It can run in any web browser which supports Microsoft Silverlight 5.0. See IP3 Controller Web UI (on page 17)

The IP3 Controller is typically integrated within an overall command and control environment which undertakes higher-level functionality such as alarm logging and system-level aggregation of faults. To support this kind of integration, the IP3 Controller aggregates all of the controls and alarms from the frames underneath it, and presents them through unified northbound protocols to upper-layer management systems such as CCS-Navigator and Magellan NMS.

IP3 Controller Protocols

- The IP3 Controller acts as a CCS-P proxy between northbound CCS-P Controllers and the various controllable elements in the Router Frames below.
- The Silverlight control clients communicate with the IP3 Controller using a combination of Microsoft. NET WCF, SOAP over TCP, and CCS-P protocols.
- The IP3 Controller acts as an LRC routing protocol server and translates LRC routing commands into lower-level routing commands across the various IP3 frames.
- The IP3 Controller acts as an XY-Net routing protocol server and translates XY-Net routing commands into lower-level routing commands across the various IP3 frames.
- Status of any routing operation is translated and returned back to all LRC and XY-Net clients.
- The IP3 Controller acts as a CCS-P server, exposing its own configuration items and also acting as a proxy for the configuration and status items of the frames and modules of the IP3 routing system it is managing.

Using the Controller

Table 3: IP3 Controller Functionality

Routing System Configuration	See Routing in IP3 (on page 28)
IP3 Controller Discovery	See Create a new Routing System (on page 31)
Adding Frames	See Hardware Foundry (on page 43)
Dashboard View with System Information and Status	See Navigation
Parametric Device Control for Modules	See Parametric Control (on page 67)
Frame specific Parameters	See Frame Parameters (on page 84)
System Configuration and Monitoring	See Configuring the System (see "System Configuration" on page 43)
Upgrades for Frames, Resource Cards, Modules	See Firmware Foundry (on page 51)
Upgrades for IP3 Controllers	See Upgrading Controller Firmware
Redundancy Support	See Controller Redundancy (see "Configuring IP3 Controller Redundancy" on page 97)
Access Rights	See User Foundry (on page 50)
Logging	See Logging Server (on page 102)

Setting up the IP3 Controller System

See Configuring the System (see "System Configuration" on page 43) for details on setting up the IP3 Controller system.

IP3 Controller Dashboard

The IP3 Controller dashboard provides:

- A Physical view of the defined Routing system
- A List View of Modules
- Visual Alarm Status

For more details, see Navigation (on page 59).

System and Network Requirements

The IP3 Controller is shipped on a commercial server-class computing platform. It is expected that the installation will include network connections of at least 100-Base-T (preferably 1000-Base-T) Ethernet between the IP3 Controllers and the IP3 Frames.

IP3 Controller Web UI

Customer-furnished computers can be used to connect to the Controller. The IP3 Controller Web UI is Silverlight based, so Browsers on those computers must meet the minimum requirements specified for support of Microsoft Silverlight 5.0 or higher.

Note: Ensure the appropriate Silverlight version is used based on the Operating System running on the PC, be it 32-bit (x86) or 64-bit (x64). The officially supported browser is Internet Explorer 10 or 11.

PCs running Magellan CCS Navigator™

Magellan CCS Navigator™ needs be installed on a separate PC running either Windows 7 Professional (both 32-bit and 64-bit operating systems are supported), Windows XP (SP 3), Windows 2003 Server (SP2).

IP3 Controller Setup

IP3 Controller Application Overview

The IP3 Controller runs on a server-class computing platform provided by Imagine Communications. The IP3 Controller services, and some related applications and libraries, come pre-installed on the unit and start at power-on automatically.

Generally, the IP3 Controller is accessed remotely using routing protocols and web service technologies; however, it is necessary during installation, diagnostic, and service operations to be able to access the console of the IP3 Controller, either through a KVM or through Remote Desktop techniques.

Default Controller PC Credentials (Username/Password)

The pre-installed **username** on the IP3 Controller machine is **harris**, and the pre-installed password for that username is **harrisadmin**. This login has full administrative rights on the local machine.

Pre-Requirements

It is assumed you have the following:

- A single (or 2) IP3 Controller intended for use either separately, or in a redundant configuration
- One or more IP3 frames that the IP3 Controller(s) will communicate with
- A separate client PC with Navigator (5.1 or higher) installed on it
- An external network switch connecting the IP3 Controller with the client PC
- An internal network switch connecting the IP3 Controller with the IP3 Frame
- A keyboard, mouse, and monitor that can be used to directly connect to an IP3 Controller box.
- Ensure that you plug in all 6 Ethernet cables before setting up IP addresses.

IP3 Controller Ethernet Settings

Each IP3 Controller has **six (6) Ethernet interfaces**, and requires use of at least two of them to perform correctly.

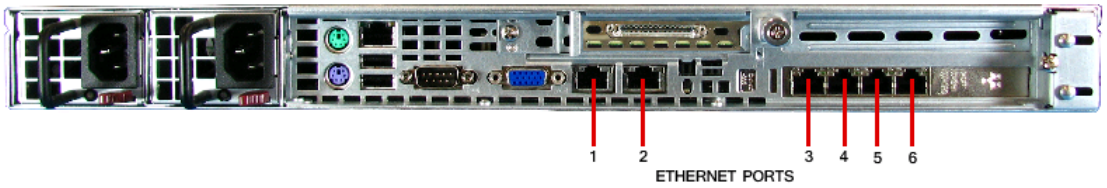


Figure 3: Ethernet Ports 1-6 on the IP3 Controller

The following figure shows the role of the six interfaces in a large-scale system.

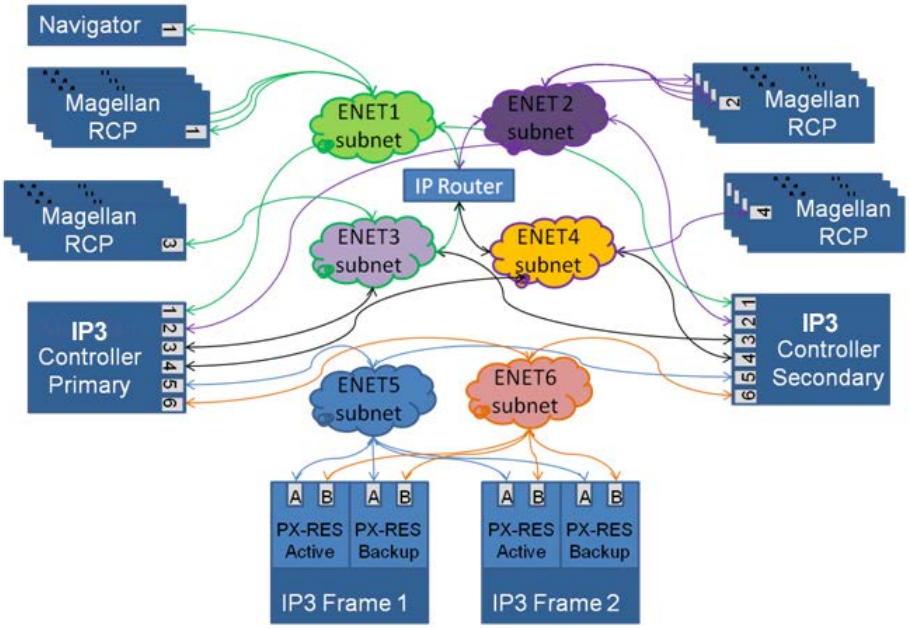


Figure 4: Ethernet Interfaces on the IP3 Controller

Note: ENETs 1-4 are for routing system client devices, like the Navigator PC, Magellan RCP. ENET5, 6 are used to connect to IP3 frames.

Ethernet Connections

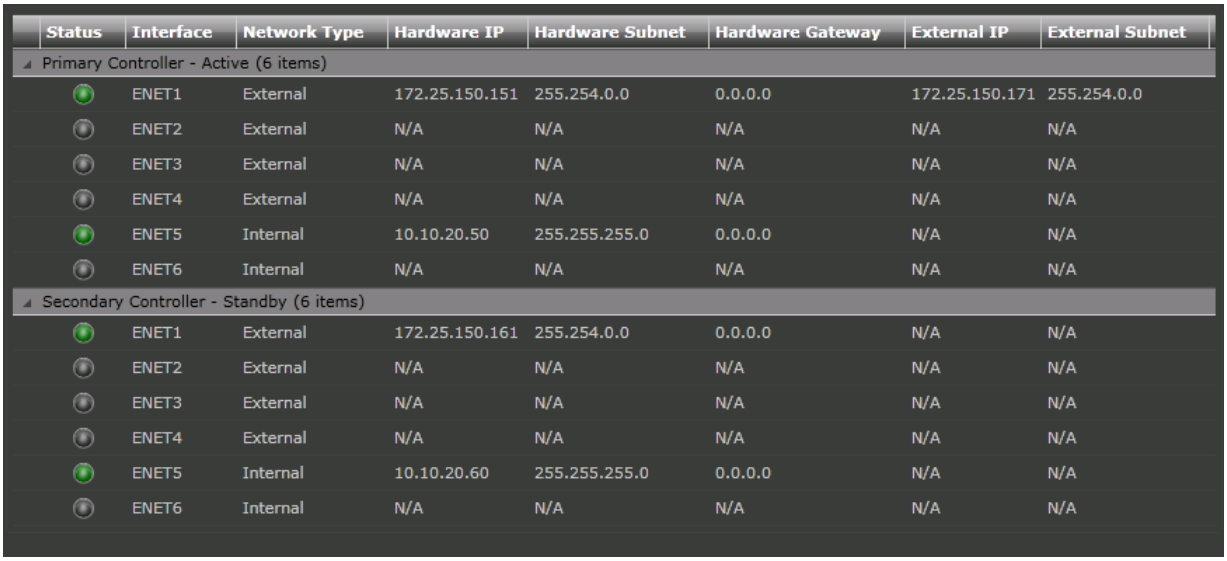
There are 6 Ethernet interfaces on the Controller that can be defined by going to **Configure System > Manage IP3 Controller Settings > Network & Redundancy > Network Settings**

- You can select the Ethernet connection ports that are used and only configure those
- The IP3 Controller only accepts connections on enabled Ethernet ports
- Disabled ports will not be used even when fully configured and wired
- By default, **ENET 5** (internal) and **ENET 1** (external) are enabled
- **ENET5** and **ENET1** connections (required for the system to be fully functional) are enabled by default and cannot be disabled from the UI
- **ENET6** (internal) and **ENETs 2/3/4** (external) are disabled by default can be enabled/disabled from the UI

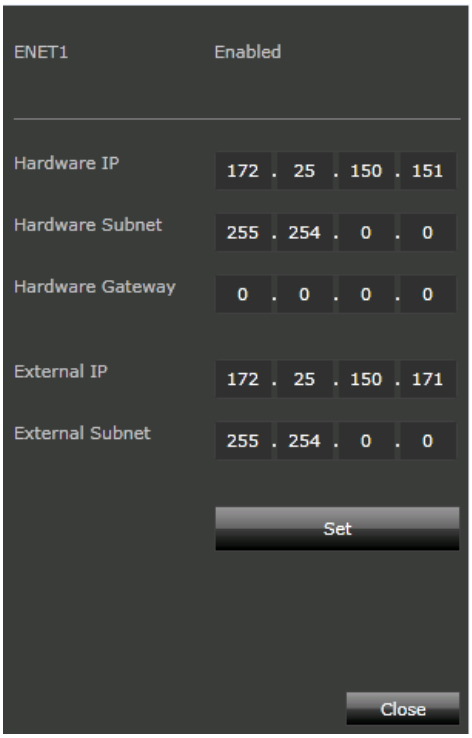
ENET	Type	Connection Status
ENET1	External	**Enabled. Cannot be disabled.**
ENET2	External	Can be enabled/disabled.
ENET3	External	Can be enabled/disabled
ENET4	External	Can be enabled/disabled.
ENET5	Internal	**Enabled. Cannot be disabled.**
ENET6	Internal	Can be enabled/disabled.

Each of the configurable ENETs (2/3/4/6) can be activated/deactivated by doing the following:

1. Select the relevant ENET in the the Network Settings dialog by clicking it



2. Use the Enable/Disable toggle option. Once an ENET has been enabled, you need to set the IP Address info.



IP3 Controller Factory Default ENET IPs

ENETs	Factory Default Hardware IPs	External IPs
ENET1	192.168.100.247	Not set
ENET5	192.168.100.249	Not applicable

ETH Notes

ENETs 1-4 are for routing system client devices such as the Navigator PC and Magellan RCP.
ENETs 5-6 are used to connect to IP3 frames.

ENETs 1-4 - External and Hardware IPs (External Network)

- The Hardware IP is the IP Address of the Controller box and it stays with the IP3 Controller
- The External IP is the IP Address that clients connect to, and is seamlessly transferred over to the Secondary IP3 Controller in case of failover
- Clients connecting to the IP3 System should always use the External IP address.
- For each ENET, the Hardware IP and External IP should have the same Network ID.

ENETs 5-6 - Hardware IPs (Internal Network)

- Internal network. Used for communication between the IP3 Controller(s) and Frame(s)

Subnets

- It is required you configure each of the ENETs (1-6) on different subnets

IP Addresses

For the Primary IP3 Controller, ensure that you set the **Hardware IP** address before the **External IP** Address. You cannot choose to provide only an **External IP** address without providing a **Hardware IP** address.

Clients connecting to the IP3 System should use the **External IP** address. Even though the Hardware IP address will work, it is best practice to use External IPs, because in case of failover, external IP addresses are seamlessly transferred over to the IP3 Controller that takes over. Whereas, if Hardware IPs are used, in case of failover, clients will still be attempting to connect to the unavailable IP.

Go to **Configure System > Manage IP3 Controller Settings > Network & Redundancy > Network Settings** to configure IP addresses.

Upgrade Instructions

See standalone document on upgrade instructions. Contact your Customer Support representative for more details.

IP3 Controller Services

Verify that the IP3 system services started up correctly.

The following Services that run on the IP3 Controller machine:

- **IP3 CCSP** (Parameter control for input and output modules)
- **IP3 Controller Manager** (Handles Controller Redundancy and Controller Network setup)
- **IP3 Router Control** (Routing Control)
- **IP3 System Manager** (Logical Database configuration, I/O module firmware upgrades)
- **IP3 Web Server** (Web Server)
- **IP3 PTP V2** (see Time Synchronization (on page 22))
- **IP3 Protocol Service** (SNMP and Grass Valley SMS7000 protocol)
- **IP3 Panel Manager** (Router Soft Panel)

Time Synchronization

Note: There are two possible IP3 Controller configurations: Single IP3 Controller and a redundant configuration consisting of a Primary and Secondary IP3 Controller.

The PTP V2 Service performs time synchronization between the Primary IP3 Controller, the Secondary IP3 Controller, and the PX-RES (IP3 Frame). This system level service automatically initiates on startup or restarting, and is deployed in the form of a Windows Service.

PTP V2 syncs time between the Primary and Secondary IP3 Controller as well as time between the Primary IP3 Controller and the PX-RES (IP3 Frame). It is bound to ENET 5/6.

The Master clock (master time reference) is either the Primary or Secondary IP3 Controller, but never the PX-RES; the PX-RES is always a Slave. The Slave IP3 Controller (Primary or Secondary) that is not the Master syncs with the master every second or so. If at any time it finds there is no response from the Master, that IP3 Controller then takes over as the Master. The Master Clock arbitrates through self-administration and cannot be set/fixed manually.

Note: The IP3 Time Sync Status (on page 24) shortcut provides time synchronization status and Controller states (client, server, unknown).

The Grandmaster clock is elected through a Best Master Clock (BMC) algorithm that uses network latency and other measurement statistics to determine which clock is most suitable as a master. If either Primary or Secondary controller is physically removed, or disconnected from the network, then the remaining one (that is still connected to the PX-RES) will automatically take over as a Master. If another controller is re-connected, then it may or may not be elected as Master through BMC arbitration.

IP3 Controller Utilities

When the IP3 Controller is installed, shortcuts to some utilities (located in C:\IpxController\Scripts) are created directly on the Desktop.

Stop IP3

Stops the IP3 Services

Start IP3

Starts the IP3 Services

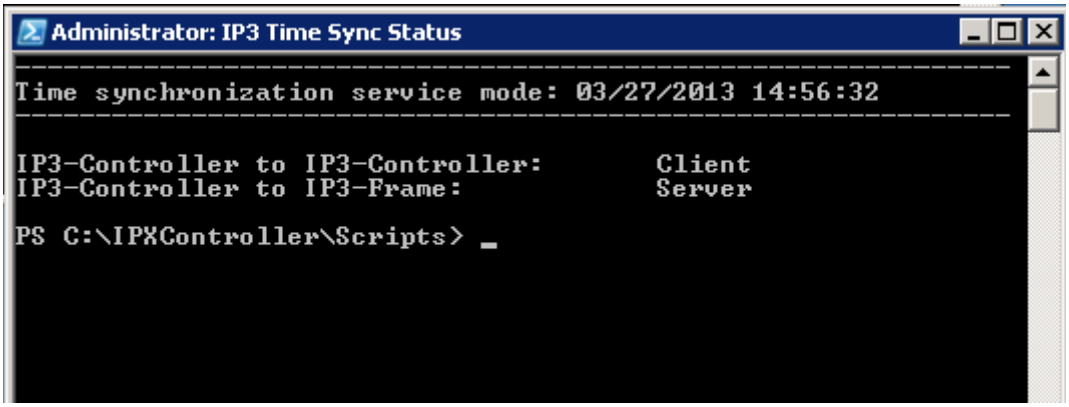
IP3 Backup

Backs up IP3 Data

IP3 Status

Provides status on all IP3 services, the Logging Server, and FileZilla and indicates if they are running. Also lists the currently active IP3 Controller (whether Primary or Secondary) and what operating mode it is in (Active or Standby).

IP3 Time Sync Status



IP3 Redundancy Management

Utility to handle redundancy

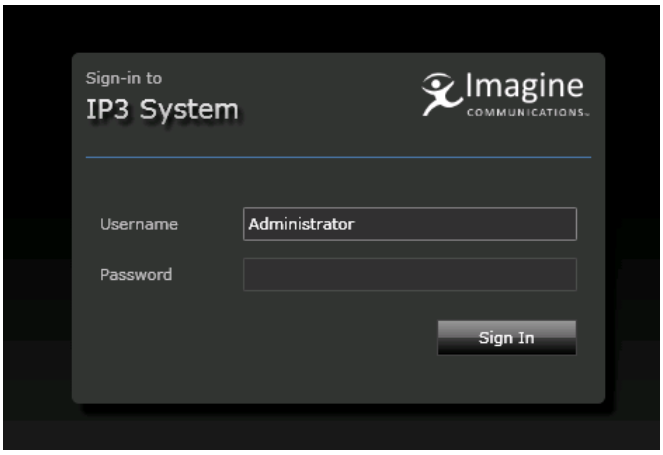
IP3 Controller - Initial Steps

Launching the IP3 Controller Interface

Note: Connect a keyboard and monitor (console) to the IP3 Controller before performing the operations below.

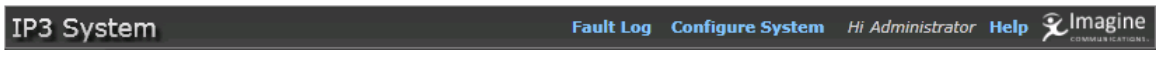
When starting out-of-the-box, connect directly to the IP3 Controller console. By default, there is no password for both *Administrator* and *Operator.* To log in as Operator, enter *Operator* as Username.

1. From the console of the IP3 Controller, launch a Web Browser and connect to the IP3 Controller at **127.0.0.1**

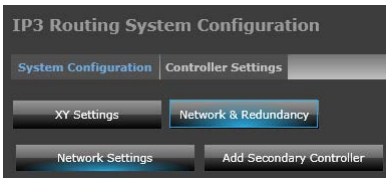


2. The first time you connect to the IP3 Controller, you will be prompted to **add Frames**. Click **No** for now.

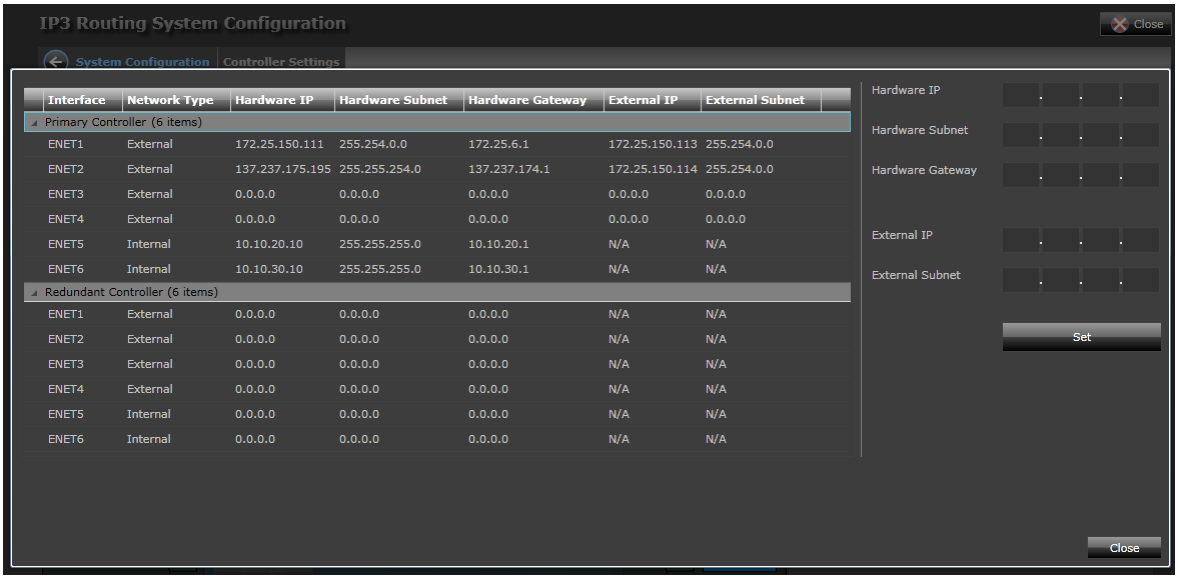
3. Click the **Configure System** Link in the toolbar at the top.



4. Go to **Manage IP3 Controller Settings**, click **Network & Redundancy**, then click **Network Settings**.



This dialog specifies the addresses and network parameters for each of the Ethernet ports. To edit, click on a port on the left and make edits in the section on the right. Click **Set** to confirm changes. Click **Close** when finished.



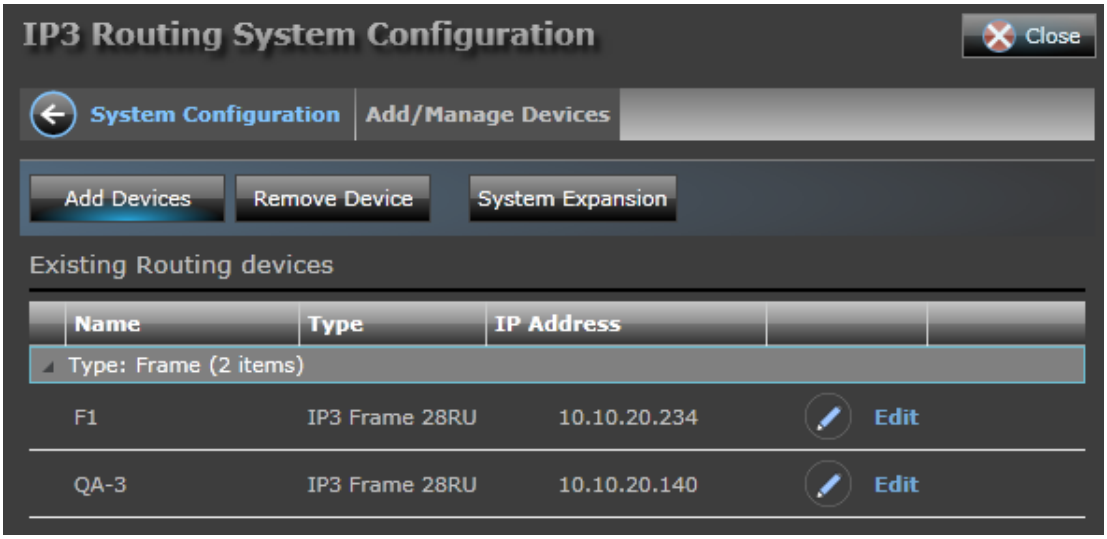
5. Click **System Configuration** in the toolbar at the top again to go back to the System Configuration root.

Adding your IP3 Frame to the Routing System

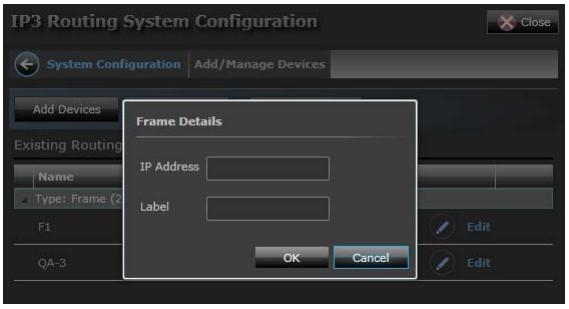
Note: You can add up to 6 frames to be controlled from a single IP3 Controller.

1. Set the IP addresses of the IP3 Frame's PX-RES controllers.
2. In the IP3 Controller, under the **Configure System** section, click the **Hardware Foundry** icon.

3. Click **Add Devices** to add your IP3 frame.



4. Enter the **IP Address** of the frame to add and provide a **Label** for the frame.

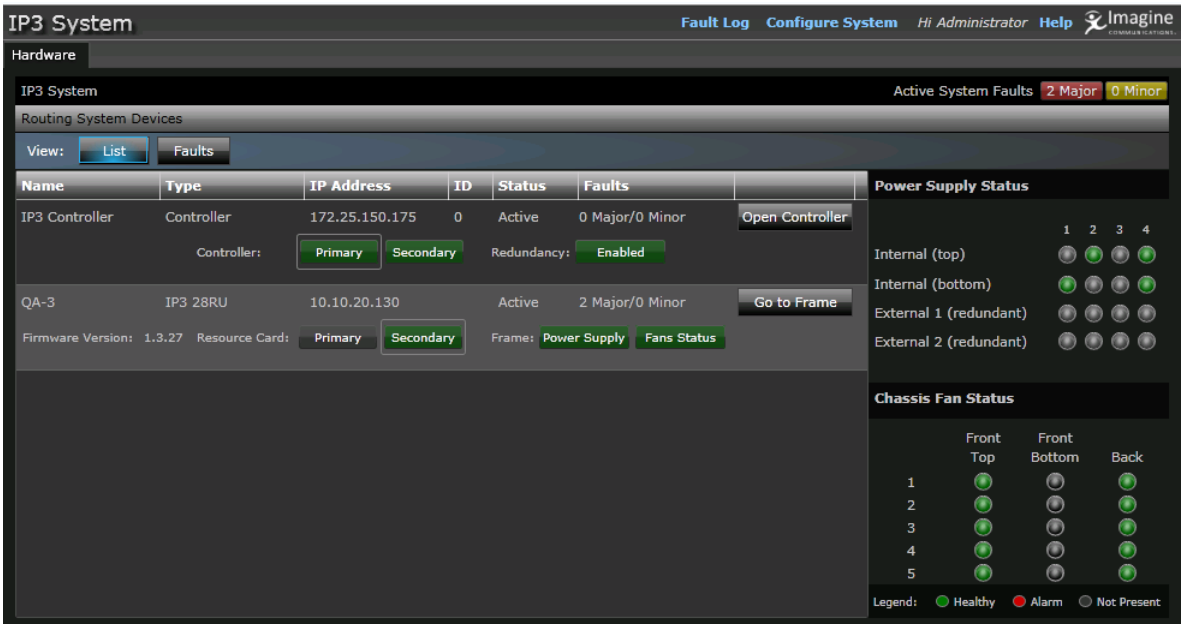


Note: The label that you choose in this step will become part of the routing system database, and part of the physical location properties of every signal that terminates at this routing frame. Choose carefully a name that is meaningful in your facility, which differentiates the frames within a multi-frame router in a way that will be unambiguous to the maintenance and operations staff. It is also visually helpful in the tools if the name is relatively short.

1. Once complete, you will see your frame and other details on the main page.

- It can take up to 90 seconds for the IP3 Controller to pull in all of the details of the frame and display them for the first time.
- Select the row containing the frame - if the power supply and fan indicators appear on the right in color, then you have successfully added the frame.

- Click **Go to Frame** to check that all of the modules appear as expected within the frame



Routing System Database

Routing in IP3

Routing in the IP3 router is not restricted to Levels and Partitions as with typical industry routers of the past. IP3 provides the flexibility to route across levels; components within a source and destination are described by their physical location properties, and matched up based on signal attributes that flow from the device type definitions. However, IP3 needs to interoperate with legacy systems that use the notion of Levels to accept routing requests and to describe what was routed (status).

The Names of Levels, and their grouping into Device Types, are tightly linked with attributes associated with the components of each source/destination in the Attribute-Based Routing Execution (ABRE) engine inside IP3. It is also tied into reporting of status back into legacy protocols (such as XY).

For best results and clarity in the database tools, Levels should be named appropriately; the organization of components within the signal types MUST be defined/described using the Device Types wizard to create device types for use in the IP3 database tools.

Valid Characters in Source, Destination, Level, and Frame Names

The following characters are allowed in source, destination, and frame names.

Table 4: Valid Characters in Source/Destination/Level/Frame Names

Character	Description
A-Z	Uppercase Alphabetic

Character	Description
a-z	Lowercase Alphabetic
0-9	Numeric
@ * - # ^ %	A few specific punctuation marks
/	Forward slash (but NOT "\" backslash)
( )	Regular parenthesis (but NOT {}, [], or <>)
" "	Blank Spaces ARE allowed in source and destination names, including leading and trailing blank spaces.

The following operations should be done on the PC provisioned as the Navigator Server.

- STEP 0 - Setting up CCS-Navigator and Discovering the IP3 Controller (see "STEP 0 - Setting up Magellan CCS Navigator™" on page 31)
- STEP 1 - Delete the Default Sources and Destinations in DBEditor (on page 33)
- STEP 2- Define Levels in DBEditor (on page 34)
- STEP 3 - Define Device Types in DBEditor (on page 35)
- STEP 4 - Define IP3 Sources/Destinations (IP3 Database Editor) (on page 39)

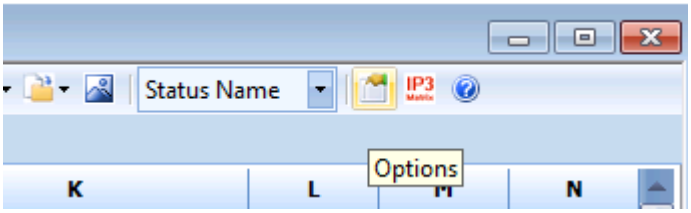
Invalid Characters in Source, Destination, Alias, Long Name, Description, Level, and Frame Names

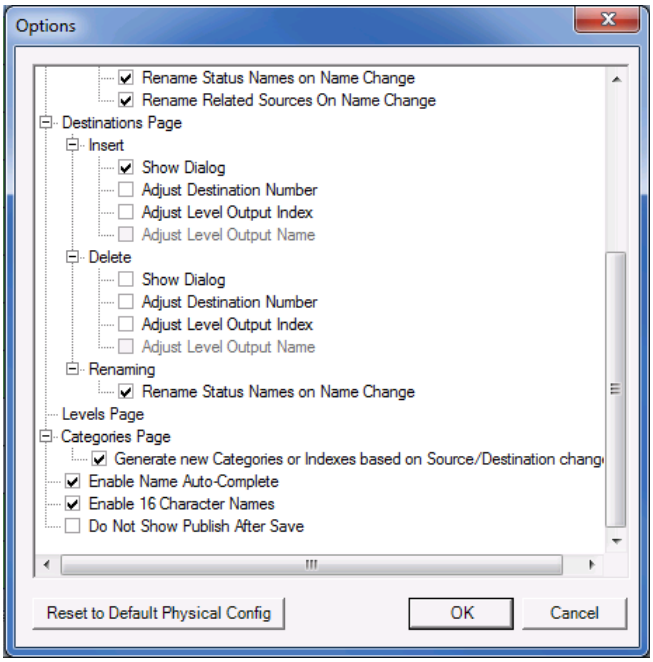
- [
-]
- \\
- ~
- &
- #
- $,
- ,
- {
- }
- ,,
- ;
- :
- |
- ?
- =
- +

Other Restrictions

- The **Frame Label** (IP3 Controller UI) can be a maximum of 50 characters
- The **Alias** (IP3 Database Editor) can be can be a maximum of 30 characters
- The **Description** (IP3 Database Editor) can be can be a maximum of 90 characters
- The **Long Name** (IP3 Database Editor) can be a maximum of 30 characters
- The **Name Prefix** (IP3 Database Editor) can be a maximum of 8 or 16 characters

The length of the Name Prefix is 8 characters but can be increased to 16 if you go Options in Navigator DB Editor and enable 16 character names.





Tielines

Tielines allow sources/destinations from one frame (the upstream connection) to be available to another frame or frames. Tielines help you expand the size of your system, make resources available to several users at the same time, or restrict remote user access to available sources.

See the **Magellan CCS Navigator™** user manual for information on using tielines and tieline monitoring.

In the *Tieline Monitoring* application (external to but installed with Magellan CCS Navigator), a new column *Reserved Destination* indicates the destination that the tieline is reserved for. You may edit this column by choosing the destination to be reserved. When an upstream source is requested by the

reserved destination, it will always use this tieline and no other destinations will utilize this tieline. It will remain clear until required.

Note: the Reserved Tieline feature is only support by IP3 Controller version 1.3 or higher.

In the the Magellan CCS Navigator™ user manual, follow the steps outlined for adding tielines to a routing system (See Managing Enhanced Tielines section). When creating a routing system and its corresponding logical database, keep in mind that the tieline routing system must contain at least one IP3 Controller to serve as the tieline controller.

Note: In a system configured with tielines, the IP3 Controller scans any connections that utilize tielines and reports the ultimate source for a destination. In a multiframe configuration, a source may be selected that is a tieline from a further upstream frame. The source displayed will be the source of the upstream tieline. Normally, tieline sources should not be made available to the configured control panels for routing, and this situation would not occur. However, since some panels can be configured with all sources and destinations for troubleshooting or other purposes it is worth noting this behavior.

STEP 0 - Setting up Magellan CCS Navigator™

The IP3 routing system introduces a new set of routing database tools based on Full Physical Flexibility (FPF) technology. In order to support compatibility and inter-operation with legacy routers, tielines, and control panels, the IP3 routing system database engine is designed to tightly coordinate with the CCS-Navigator database which supports all of these legacy system elements. For this reason, it is required to install Magellan CCS Navigator™ , and to associate the IP3 routing system with it.

Identify a computer which will be used for the routing system database work. It is possible to move this to a different computer in the future; however Magellan CCS Navigator™ Server typically runs on a single computer and keeps a master copy of the database on that computer. This computer must meet the minimum standards documented in the **Magellan CCS Navigator™** User Manual.

Install Magellan CCS Navigator™

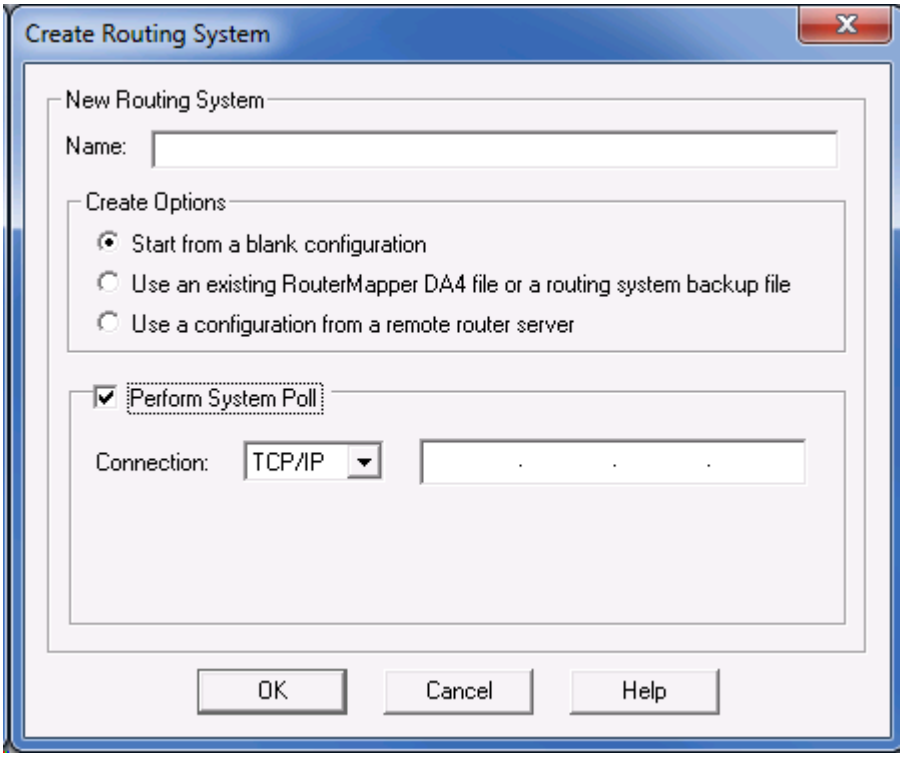
Magellan CCS Navigator™ 5.3 or later is required for IP3 IP3 Controller 1.3.3
Refer to the **Magellan CCS Navigator™ User Manual** for details.

Create a new Routing System

Start **Navigator**. Ensure you are in **Build** Mode.

1. Create a new routing system by right clicking the **Routers** folder in the left pane, and then selecting **Create > Routing System**

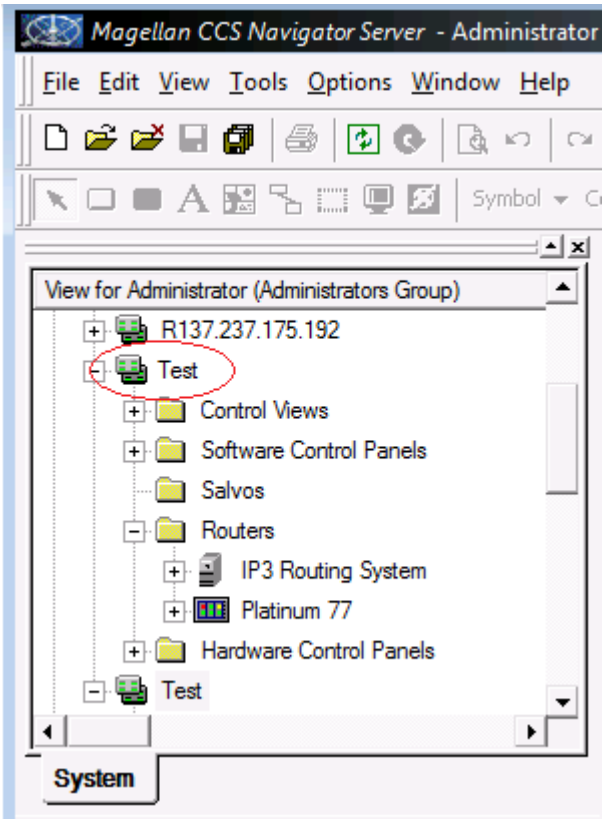
2. Provide a **Name** for the routing system, select the **Perform System Poll** check box, and enter the **IP Address** of the IP3 Controller



Note: Ensure that you provide the External IP of the IP3 Controller and not the Hardware IP.

3. Click **OK** to start Polling. You will get a message confirming that a routing configuration operation is in progress. Wait for it to complete.

4. Once complete, you will see the new routing system (with the name you provided) created, and the routers added to that Controller will be displayed under the **Routers** sub folder.



Next, create the IP3 Routing System Database.

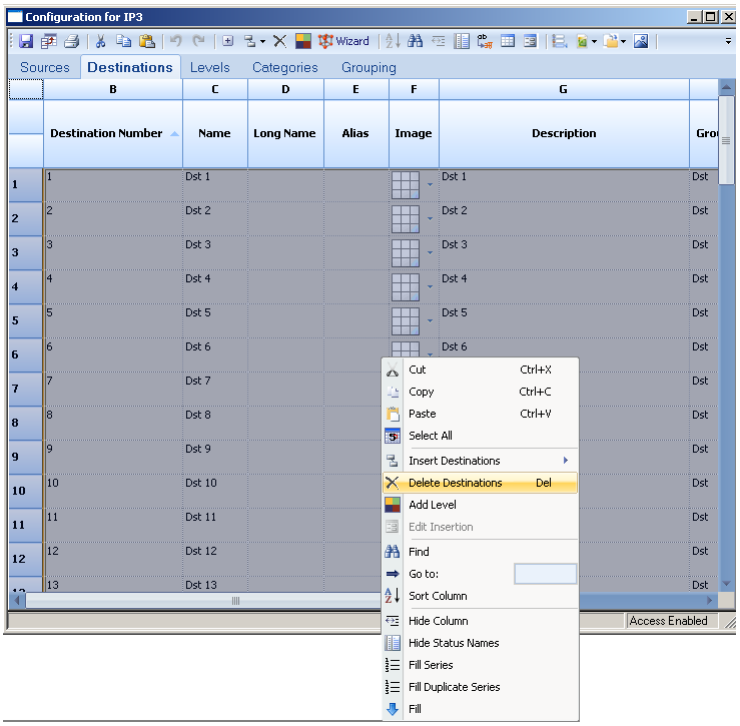
STEP 1 - Delete the Default Sources and Destinations in DBEditor

When CCS-Navigator creates a new routing system, it also pre-populates its routing system database with 64 sources and 64 destinations on one level (level 0). For legacy Platinum and Panacea routers, this is a good jump-start to creating the database for those routers; however in the case of IP3 standalone, all of the database entries will come from the IP3 database editor, and it is necessary to clean out these extraneous entries that Navigator created.

1. Launch Navigator **DBEditor** by double clicking the **System Name** (IP3) under **Control Views**.

2. Delete all **Sources** and **Destinations** by going to each of these tabs, clicking in the top left hand corner of each of the tabs to select all rows, and then right clicking in the middle to delete them.

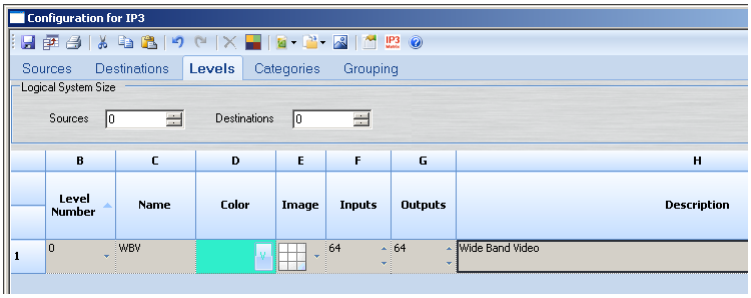
Note: Much like in Excel, you can click in the upper-left corner, which will select all of the rows and columns in the view, and then hit delete. Do this for all of the sources in the Sources tab and all of the destinations in the Destinations tab.



STEP 2- Define Levels in DBEditor

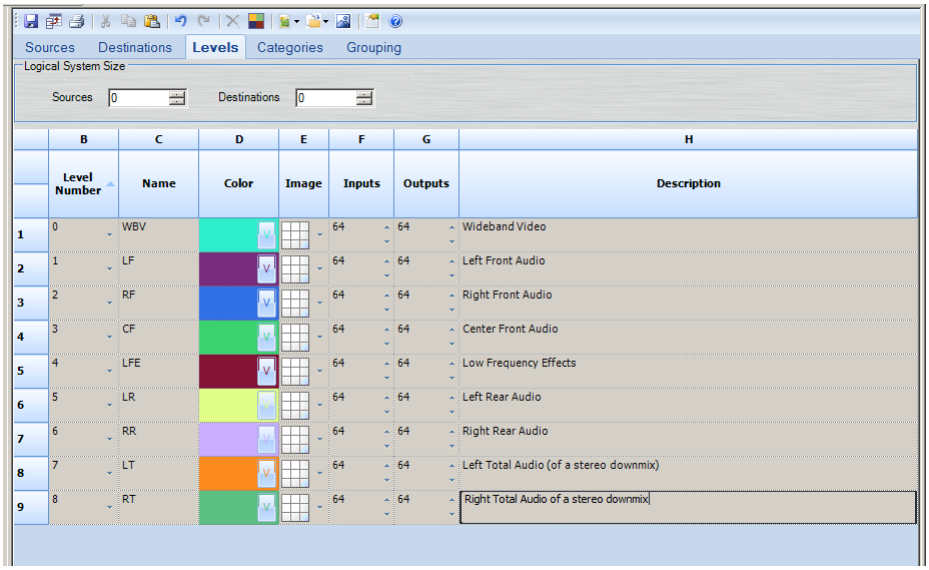
1. Click the **Levels** Tab.

2. Enter a proper **Name** and **Description**. For example, **WBV**, **Wideband Video**.



Note: Ensure that video is always on level 0.

3. Define as levels all of the signal types that you plan to switch separately and/or name in device type configurations that follow.



STEP 3 - Define Device Types in DBEditor

Note: Device types are an extremely important part of the signal definition used in the IP3 routing engine. Take time to consider and plan these device types as part of the system design.

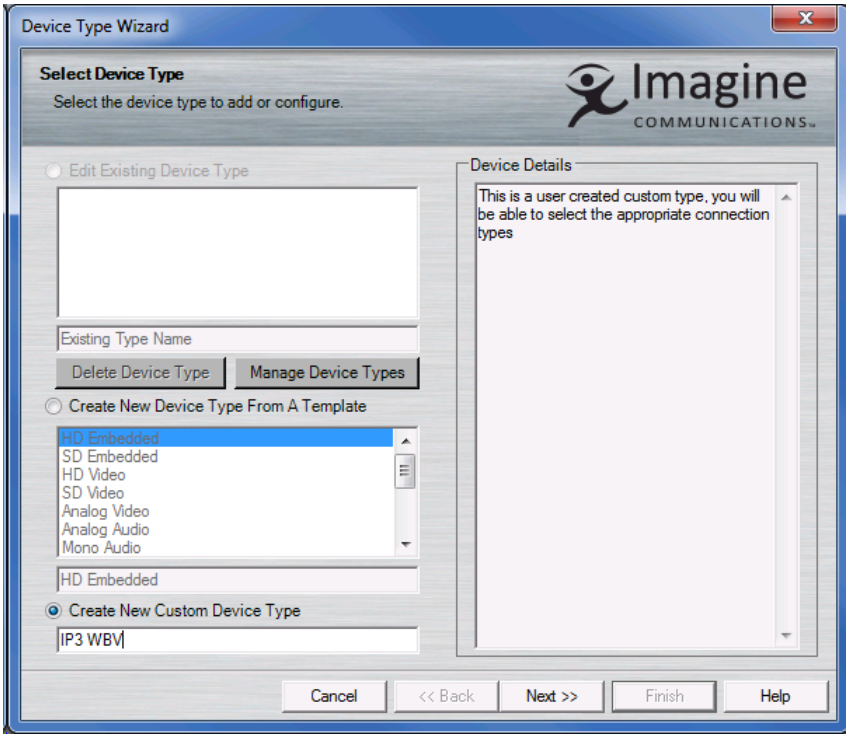
Why Device Types are Important

Device Types are used in routing systems to identify and organize all of the separately routable parts of a signal. For example, a VTR feed with SDI and two separate AES audio signals. Or an SDI with an embedded 5.1 mix arriving through an FSDX Input Module.

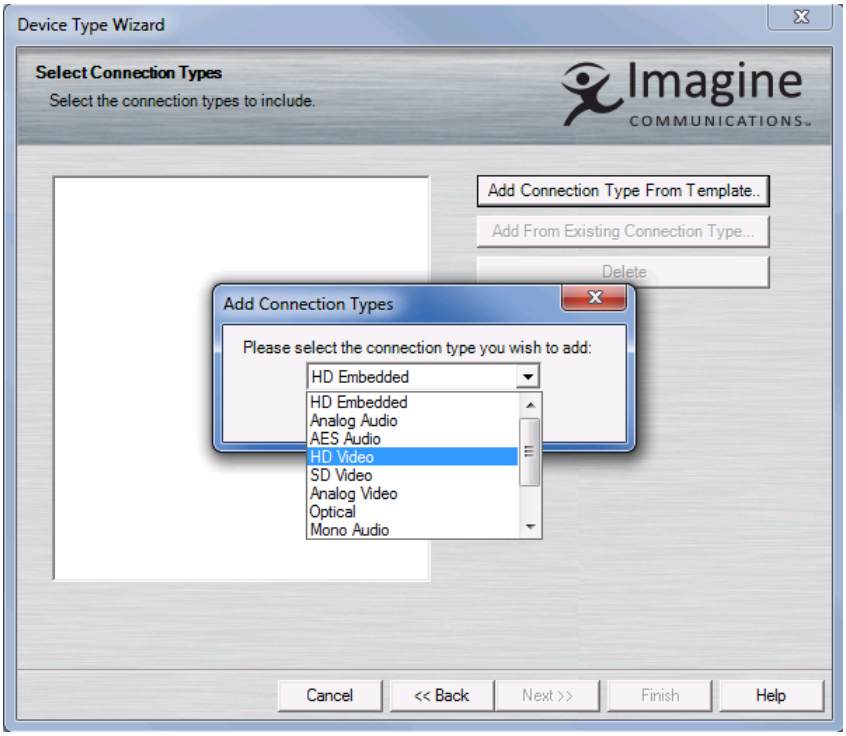
In past routers, it was required to make the distinction between the physical arrival pattern of these signal package -- embedded -vs- AES -- in defining the device types. In the IP3 with Full Physical Flexibility (FPF) technology, the Device Type serves mainly to identify the subcomponents that route together (regardless of how they physically appear in the router). Even in a router which routes only wideband video, it is required to define a device type for wideband video (as shown below). Even though device types are required in IP3, no device types are created by default.

Tip: Device Type definitions should correspond to the standard kinds of feeds (fed from devices) in your plant. Physical associations and how they map to specific physical inputs and outputs will be specified later to match the actual wiring. The wizard contains several templates. With IP3, because the actual physical associations of video/audio channels are very flexible, the template could say HD Embedded while the audio channels could be physically separate, or come from MADI, or even embedded on other video signals.

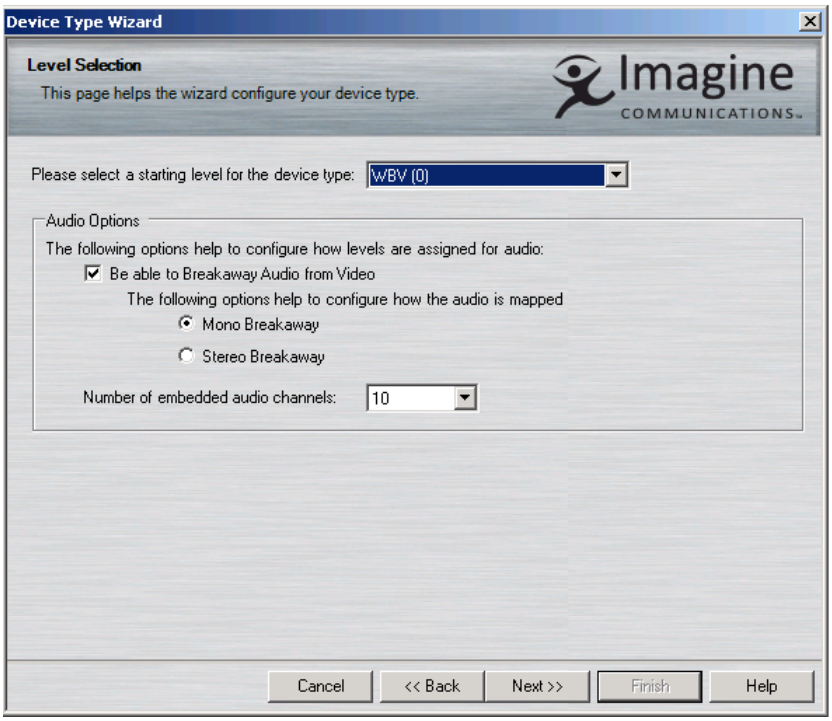
1. Click the **Wizard** button and set up the required device type(s) based on your modules.
2. Select **Create a New Custom Device Type**, provide a relevant name, for example **IP3 WBV**, and click **Next**.



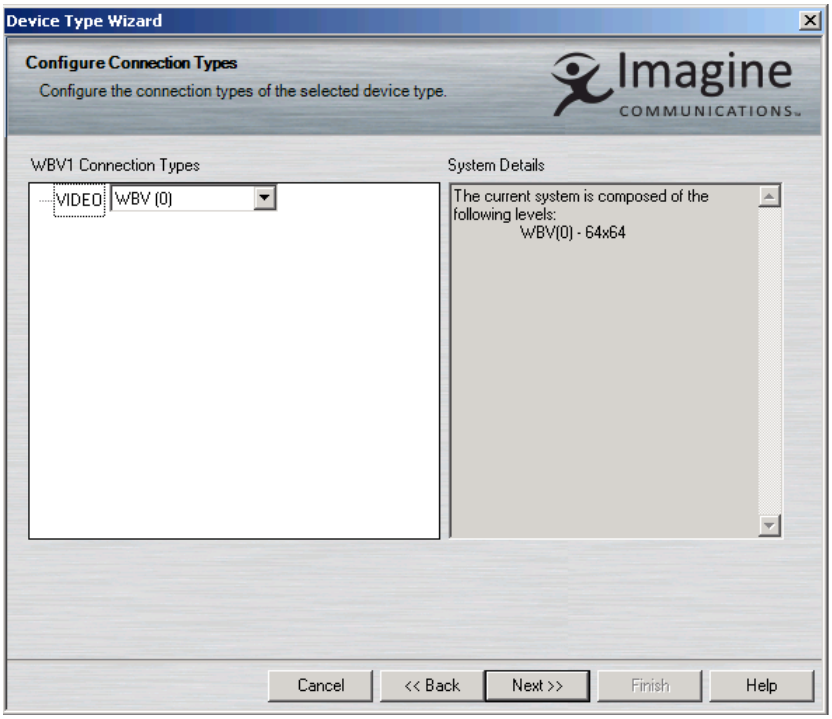
3. In the **Connection Types** dialog, select your connection type, for example **HD Video**, and click **Next**



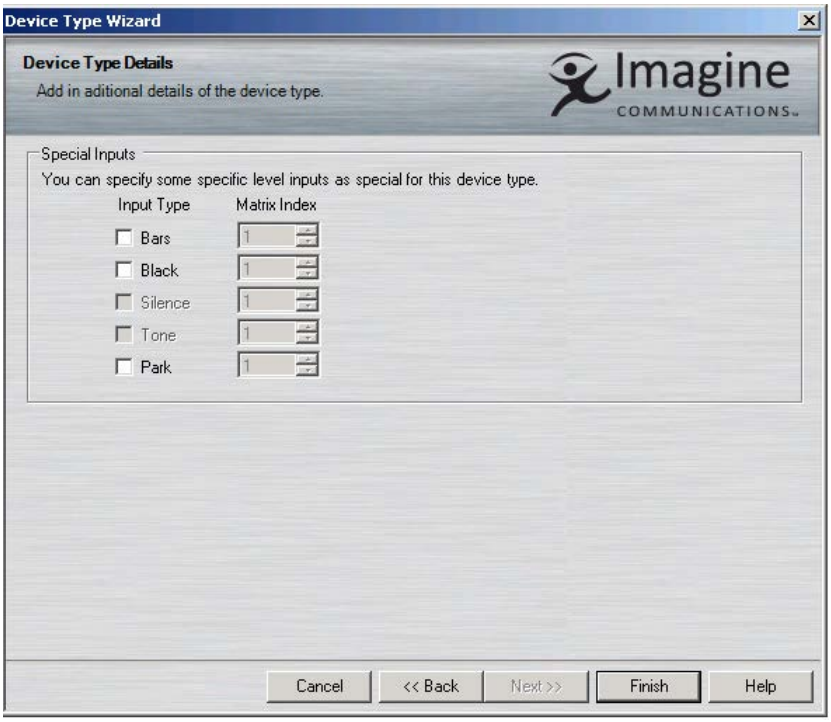
4. In the **Level Selection** dialog, ensure the starting level matches what you expect, and click **Next**



5. Click **Next** on the **Configure Connection Types** dialog after double-checking the mapping of the components to the levels.



6. Click **Finish** on the last dialog.



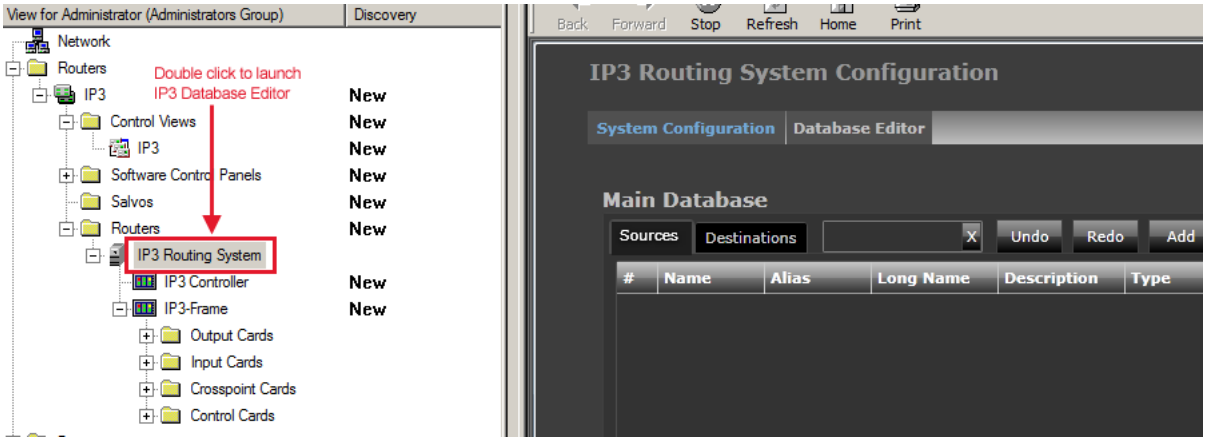
7. **Save** and **Publish**. Close DBEditor.

Tip: The Publish function facilitates easy distribution of logical information, and allows distribution of salvos and other database information in the names.txt file to all of the devices in the routing system. All existing device list components are preselected; however, you can uncheck any selection that you do not want to publish to.

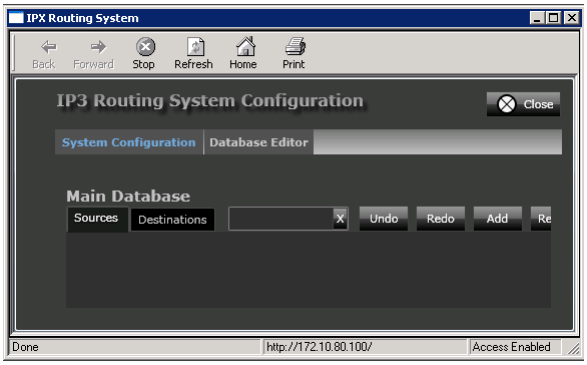
Clicking the Start Transfer button at the bottom left corner of the dialog box starts the file transfer process, during which, information messages are displayed in the Overall Status text box. After each device has the names.txt transferred to it, Navigator's Database Editor sends an X-Y command to the system to let the devices know to refresh their names.txt files. If some devices fail to transfer or the command fails to send, the Retry button is displayed. Clicking the Retry button enables Database Editor to repeat the process for the failed devices.

STEP 4 - Define IP3 Sources/Destinations (IP3 Database Editor)

1. Start the **IP3 Database Editor** by double clicking **IPX Routing System** under the **Routers** folder to launch the **IP3 Controller Database Editor interface** (within Navigator).



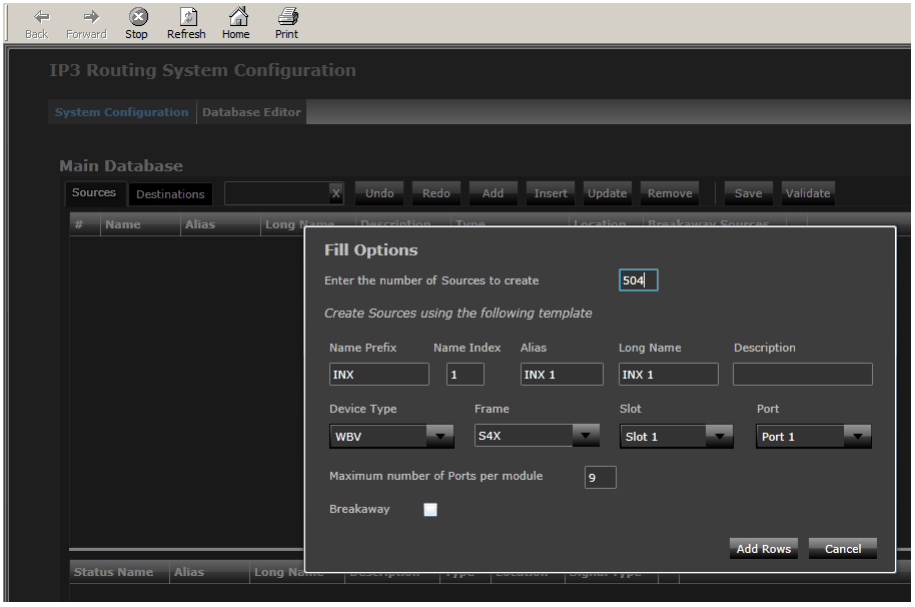
2. The **IP3 Database Editor** screen will be displayed.



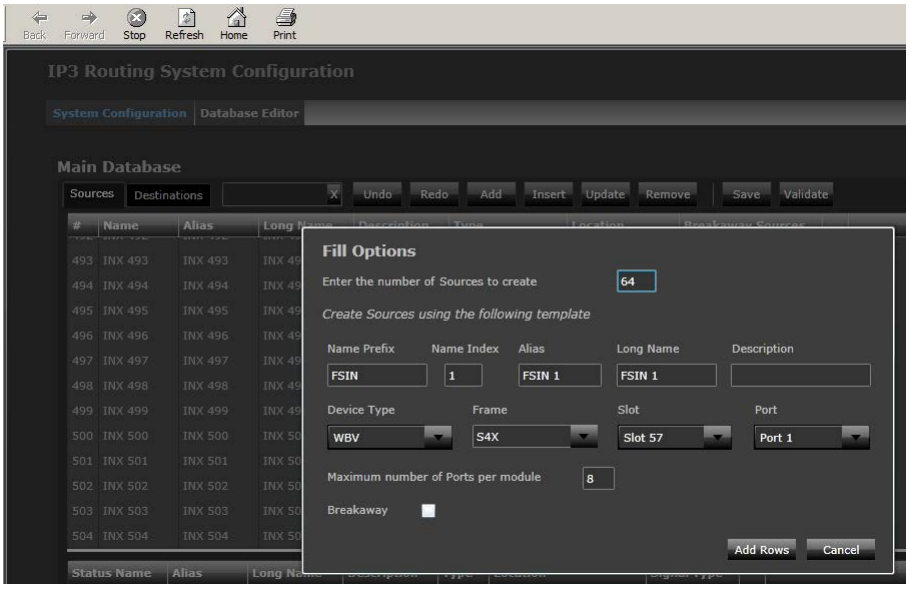
See Valid Characters in Source, Destination, Level, and Frame Names (on page 28).

3. In this example, we have **9 Input Modules** installed in the first **56** input slots, and want to create a simple "wiring checkout" database.
   - § Click the **Add** button in the **Sources** tab to start adding your sources.
   - § Add **504** Sources (56 slots, 9 per slot) prefixed by INX, starting at Slot 1, with **Device Type** as **WBV** (previously defined in Navigator).

§ Click **Add Rows**

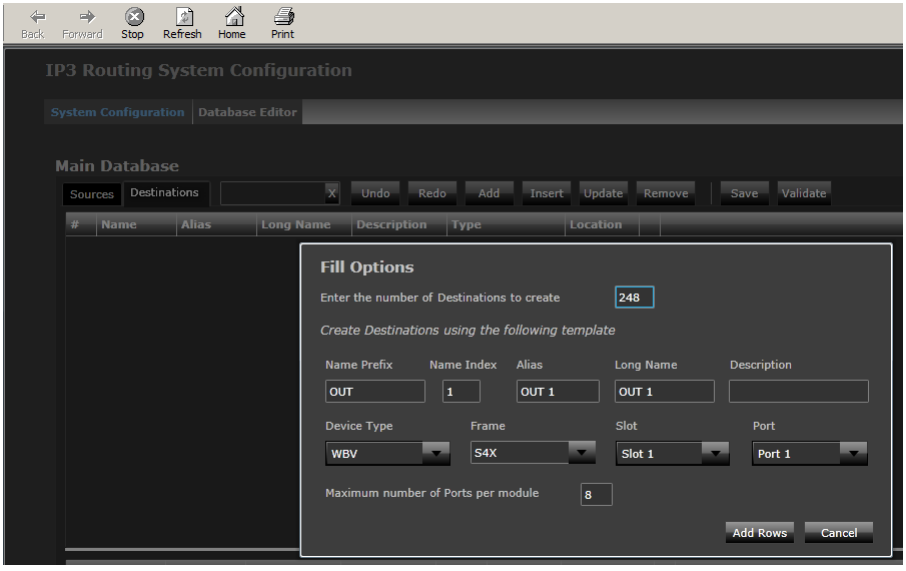


4. Click to add Inputs corresponding to other Input Modules you may have in your system.
   § In this example, we add 8 **Input Frame Sync Input Modules** in slots **57-64**.

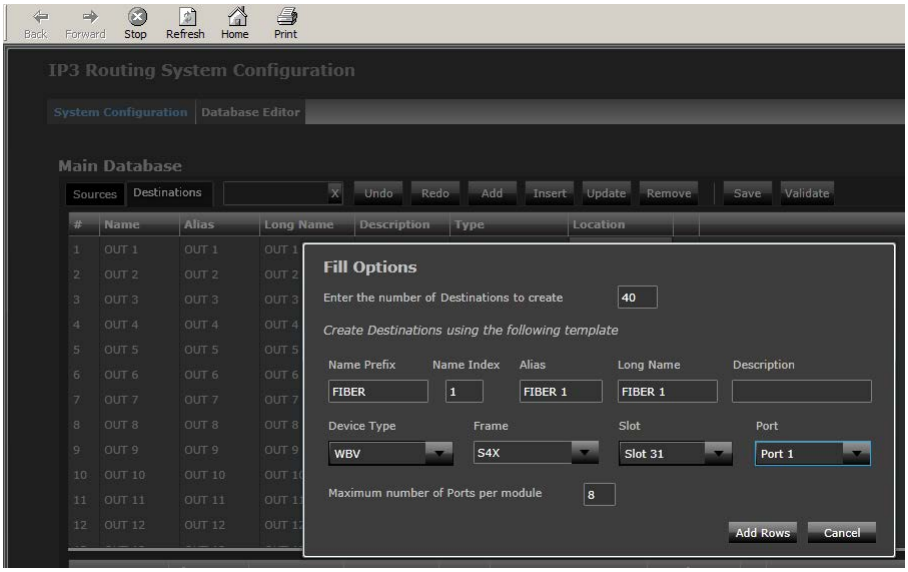


5. Next, go to the **Destinations** tab and click **Add** to start adding your Outputs (Destinations).

§ In this example, we have **31 System Expansion Output Modules** with 8 outputs per slot, so we add **248** outputs.

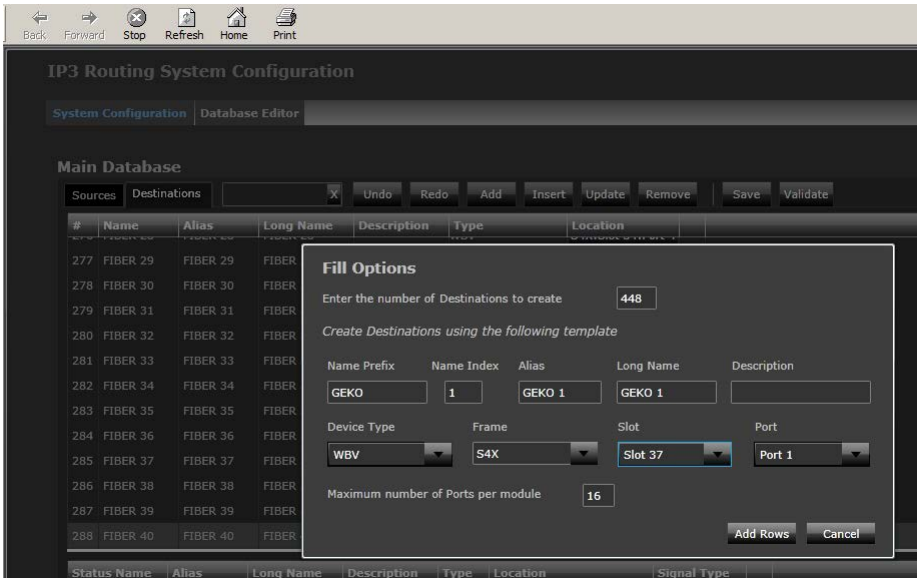


6. Add any other Output types that you require. For example, Fiber Outputs.
   § In this example, we add **40 Outputs** starting at slot **31**, to correspond to 5 Fiber Output Modules with 8 outputs each.



7. If you have a Multiviewer in the system, define the **Multiviewer Outputs**.

- In this example, we have **HVIEW-SXPRO multiviewers** in slots **37** through **64**, **16** outputs per slot, so a total of **448** Destinations.



8. This completes adding of **Sources** and **Destinations**. It is vital to click **Save** in order to commit these changes into the database.
9. Close the Navigator sub-window that the IP3 Editor is running in by clicking the **X** in the corner to close the sub-window.

   Note: Do not click the **Close** button within the Navigator window; ensure you click the X in the corner.

10. Re-Open **Navigator DBEditor** to **synchronize** and check that the synchronization has been successful.
11. Click **Publish** in the **DBEditor** window. This will create the files required by any legacy elements (including the Magellan control panels) and transfer those files out to those devices.

System Configuration

Configuration Dashboard

Click the **Configure System** link in the toolbar at the top to start configuring your IP3 Controller system.

Figure 5: IP3 Toolbar

The Configuration Dashboard is then displayed. You can do the following:

Hardware Foundry (on page 43)	**Add, Remove, or Modify Frames.**
Manage IP3 Controller Settings (on page 48)	Manage IP3 Controller Settings.
Firmware Foundry (on page 51)	Apply Firmware Upgrades to Devices and/or Manage Firmware Repository.
User Foundry (on page 50)	Manager User Accounts and Passwords.

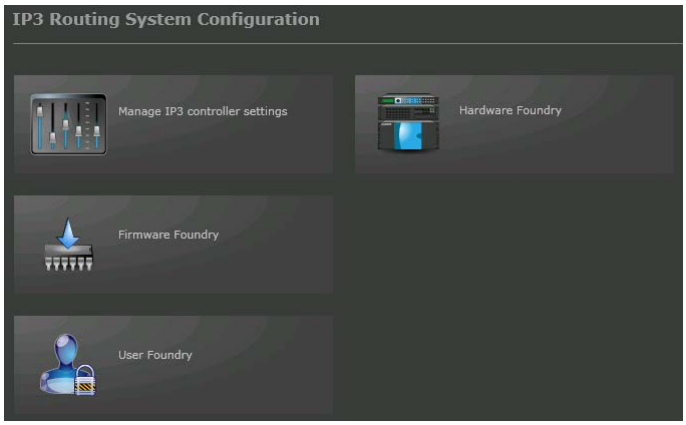


Figure 6: Configuration Dashboard

Hardware Foundry

Click the **Hardware Foundry** icon to define or modify your system hardware configuration.

Existing Router devices and Panels will be displayed with information on Frame **Name**, Frame **Type**, and **IP Address.**

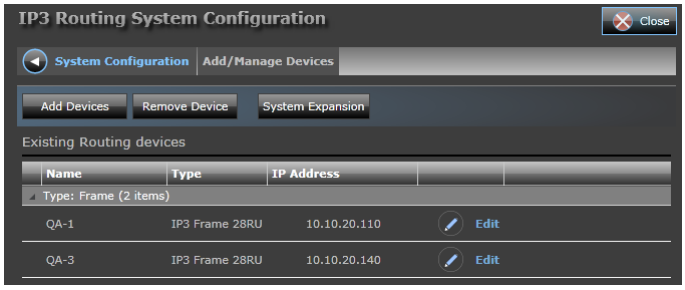


Figure 7: System Configuration - Frames and Panels

To return to the main System Configuration menu, click the System Configuration link or the back arrow icon next to it in the toolbar at the top.

See:

- Adding a Device (on page 44)
- Modifying a Device (on page 46)
- Removing a Device (on page 46)
- System Expansion (on page 46)

Adding a Device

Click the **Add Devices** button to add a new frame to the system. Provide the **IP Address** of the frame, enter a descriptive label, and click **OK**.

Note that the label provided here becomes part of the routing database, and is part of the physical location properties of every signal that terminates at this frame. Choose a label that is meaningful in your facility, unambiguous to the operations and maintenance staff, and yet relatively short in length.

Figure 8: System Configuration - Adding a Device

Note: Once you provide details of the frame to add, it can take up to 90 seconds for the IP3 Controller to evaluate the frame and build the parametric tree for every module in the frame.

Adding an Imagine Communications Router Device

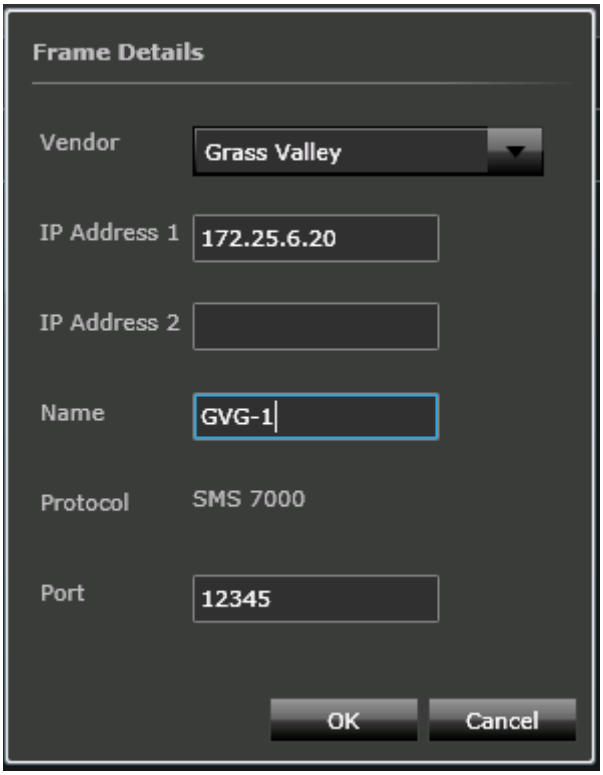
1. Ensure **Imagine Communications** is selected in the **Vendor** drop down (default)

2. Enter the **IP Address** of the router device and secondary IP address if available
3. Provide a **Name** for your device
4. The **Protocol** by default is **IP3 PRC**
5. Click **OK**

Adding a Third Party Router Device

1. Select **Grass Valley** in the **Vendor** drop down
2. Enter the main **IP Address** of the router device in **IP Address 1**
3. Enter a secondary **IP Address,** if available, in **IP Address 2**
4. Provide a **Name** for your device
5. The **Protocol** by default is **SMS 7000**
6. Enter the **Port** number or leave the default **12345**

7. Click **OK**



Modifying a Device

Once a router device has been added to the system, you can edit details in **Configure System > Hardware Foundry > Add/Manage Devices**. Click the **Edit** link against a Frame.

Removing a Device

To remove a device that has been added to the system, select a frame or panel in the list and click the **Remove Device** button to delete that component.

System Expansion

System Expansion allows for multiple frames in your system to be ganged together to form a larger routing system. To do this:

1. Click the **System Expansion** button to get to the Expansion dialog.
2. Select the first frame from the **Frame** drop-down list
3. Select the frame to connect it to from the second **Frame** drop-down list

4. Click the **Add Connection** button

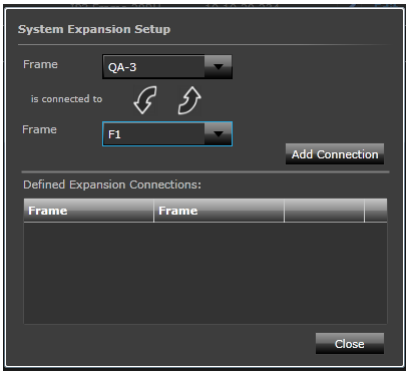


Figure 9: System Configuration - System Expansion

Once created, connections will be displayed in the **Defined Expansion Connections** section.

Matrix Expansion

Matrix Expansion Input Modules help distribute input signals across 2 or more frames, connected via DensiShield cables. By routing the inputs of one frame to another, you double the original number of outputs; if you route to 2 frames, you triple the number of outputs.

Matrix expansion is configured in the **IP3 Database Editor** at the **Source** level, using a **Device Type** with **2 Video Channels**. The Device Type itself should be defined though the **DB Editor** in **Navigator**. Follow the wizard to create a *Video* **Device Type** (for example, HD video), and then add another *Video* based **Connection Type** to it (for example, HD Video again).

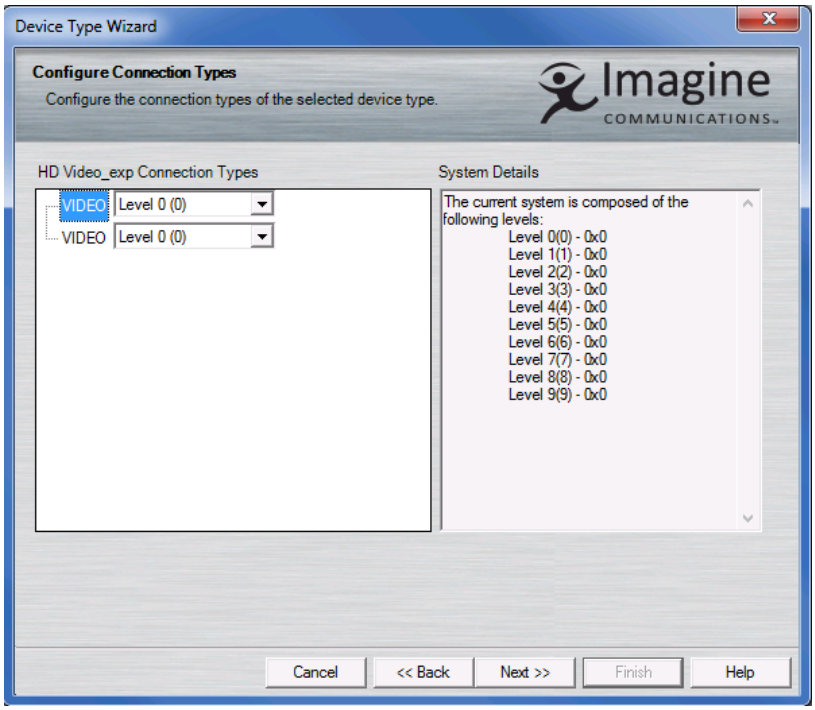
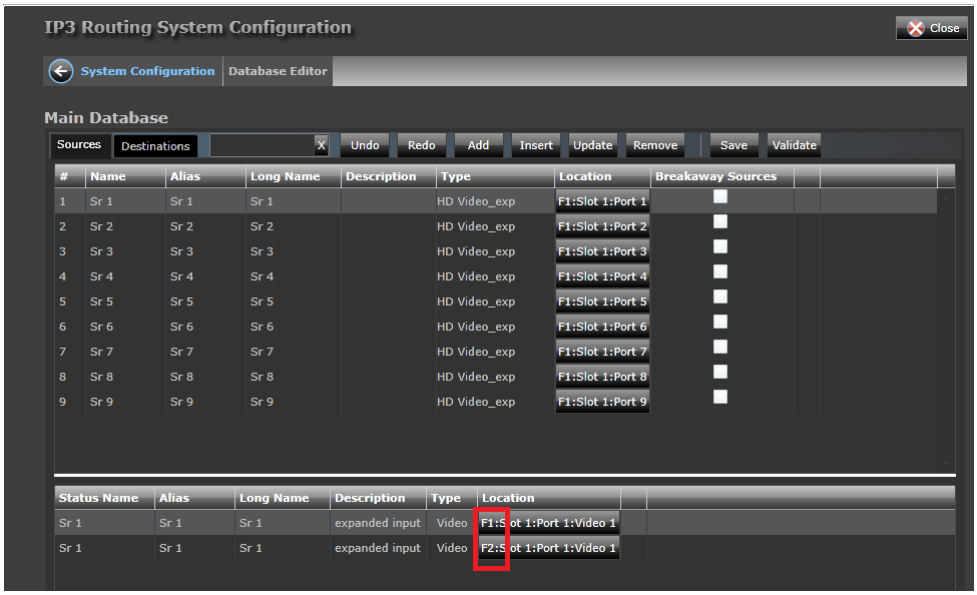


Figure 10: Example of Device Type with 2 Video channels

Map the input on the first frame to one video channel, and the map corresponding expanded input on the second frame to the second video channel.

For example, consider the case of two IP3 Frames, **F1** and **F2**. Both have cards in **Slot 1,** and the inputs of the card in **F1, Slot 1** can be expanded to **F2, Slot 1** (via DensiShield cable connecting the two).



Manage IP3 Controller Settings

Click the **Manage IP3 Controller Settings** icon to define or modify your system hardware configuration

Three tabs are displayed:

- Router Settings
- Network and Redundancy
- Maintenance

Router Settings

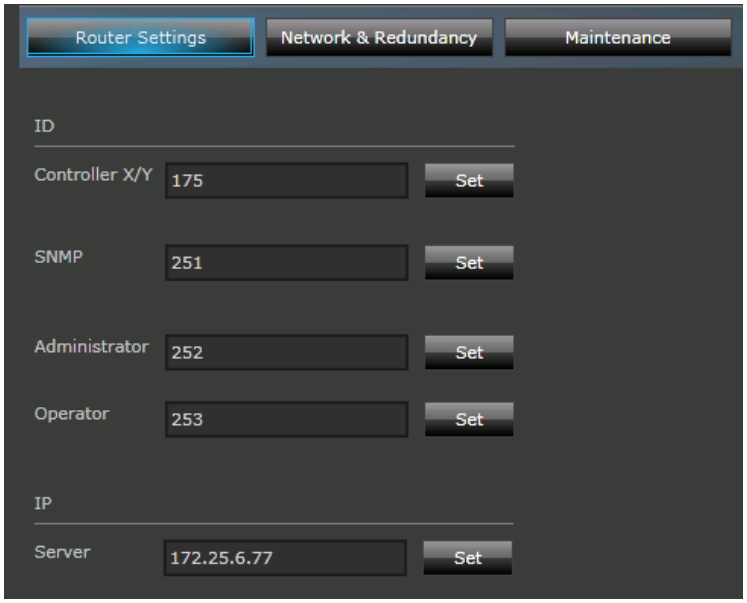
This is the dialog where the XY ID for the IP3 Controller is set. In the XY control protocol, every device including the router itself has a unique ID.

In systems with only one router, it is common (but not required) that the router have ID 0, and this is the default on the IP3 Controller.

In systems where there is more than one router (for example tieline systems with Platinum Routers), it may be desirable to set the IP3 XY ID to something other than zero.

In the XY control protocol, there is a tree structure of connections between devices such that XY messages get distributed from device to device. In many configurations, the IP3 Controller is the ROOT of that tree, and the other XY devices will point to the IP3 Controller as their server. In this case, setting this Server IP field to 0.0.0.0 indicates that the IP3 Controller should not connect to any higher server.

In some system configurations, it may be desirable to have the IP3 Controller make a client connection to another XY server; if that is the case, fill in the IP address of that remote server here. Be very careful to avoid creating loops of connectivity in the XY distribution - if you do this, messages can cycle endlessly and make the routing system unusable.



In the **Server** field, in case of Hybrid systems, enter the IP Address of the other Router, for example, Platinum. When you create a routing system in Navigator by *polling* the Controller IP, the device (for which you provided an IP here) will be included in your routing system.

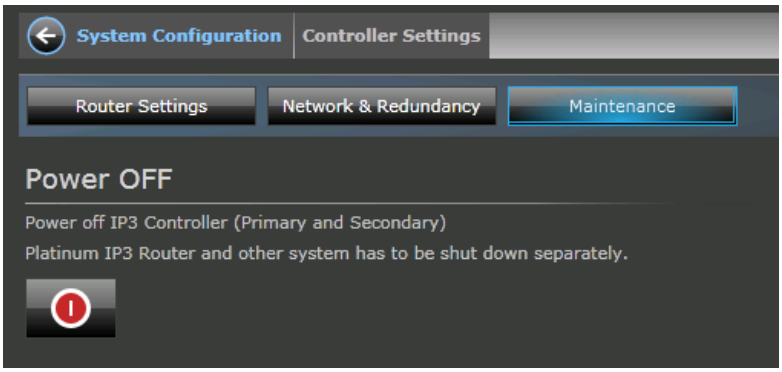
Note: Ensure you do not provide the IP Address of another IP3 Controller in the Server field.

Redundancy Settings

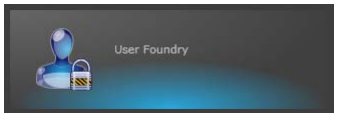
See Controller Redundancy (see "Configuring IP3 Controller Redundancy" on page 97).

Maintenance

The Maintenance tab provides an option to safely Power Off your Primary and Secondary IP3 Controllers.



User Foundry



Click the **User Foundry** icon to manage user accounts and passwords.

User Accounts

The IP3 Controller application ships with two access accounts:

Administrator Account

This account has full access rights. Some of the key Administrator privileges include:

- System Setup (Configuring Controller ID, IP, IP3 frames)
- Router Database Configuration
- Routing System Control and Monitoring
- Managing Operator and Administrator Passwords
- Software Upgrades

Operator Account

This account has the following privileges:

- Routing System Control and Monitoring
- Software Upgrades

Changing a Password

To change the existing password for either an **Administrator** or **Operator**:

1. Click the **User Foundry** link on the IP3 Routing System Configuration dashboard.
2. Then click **Change Password** against the **Administrator** or **Operator**.

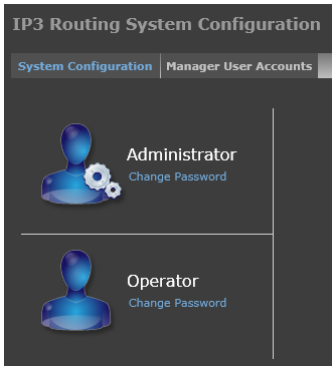


Figure 11: Change Password Selection Dialog

1. Enter the new password, then re-enter to confirm and click **Save**.

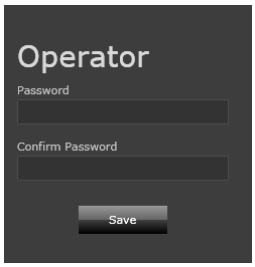


Figure 12: Password Change Dialog

Firmware Foundry

The **Firmware Foundry** enables you to manage and upgrade firmware on frame modules.

Note: The Firmware Foundry allows you to manage/upgrade firmware on frame modules only. You cannot upgrade IP3 Controller firmware from here. IP3 Controller firmware is upgraded via a Windows desktop procedure.

Click the **Firmware Foundry** link on the **IP3 Routing System Configuration** dashboard to apply a firmware upgrade on a module in a frame or manage the Firmware Repository (on page 52).

The Firmware Foundry allows batch upgrading of similar modules within a zone of the IP3 frame -- downloading the new firmware to like modules in parallel. In addition, firmware upgrade requests are queued by the Firmware Foundry and then sequenced to the hardware.

Multiple versions of firmware for the same module and for different modules can be stored. Firmware to be upgraded on a module must first be transferred to the firmware repository, since modules can only be upgraded with firmware that is available in the repository.

This section is divided into several areas:

- Firmware Repository (on page 52)
- IO Modules (on page 53)
- Resource Modules (on page 57)

Firmware Repository

The **Firmware Repository** tab is active by default. It lists all previous firmware versions for various modules. The following details are displayed per package:

- Type
- Version
- Filename
- Description
- Build Date
- Size

The **Add Package** and **Remove Package** buttons at the top allow for adding new firmware packages or selecting and deleting existing ones. You can also choose to group the listed firmware versions in the repository by **Type** (which lists by module type) or **None**, (a flat list will be displayed).

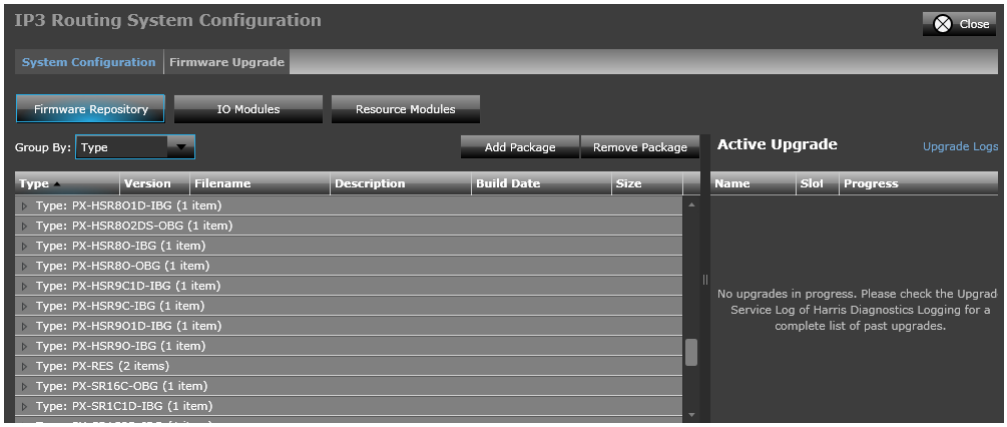


Figure 13: Firmware Repository

IO Modules

The **IO Modules** tab displays a list of individual Input, Output, and Crosspoint modules in the system. The following information is displayed per module:

- Name
- Slot
- Firmware
- Repository Firmware
- Category
- Frame
- Bookmark
- Progress

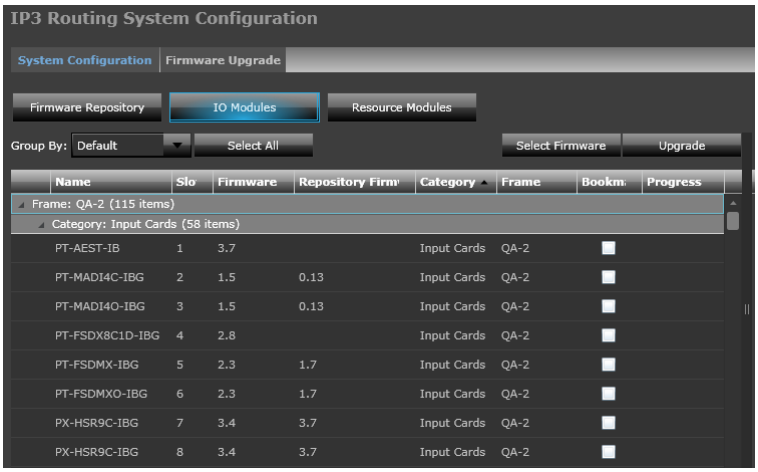


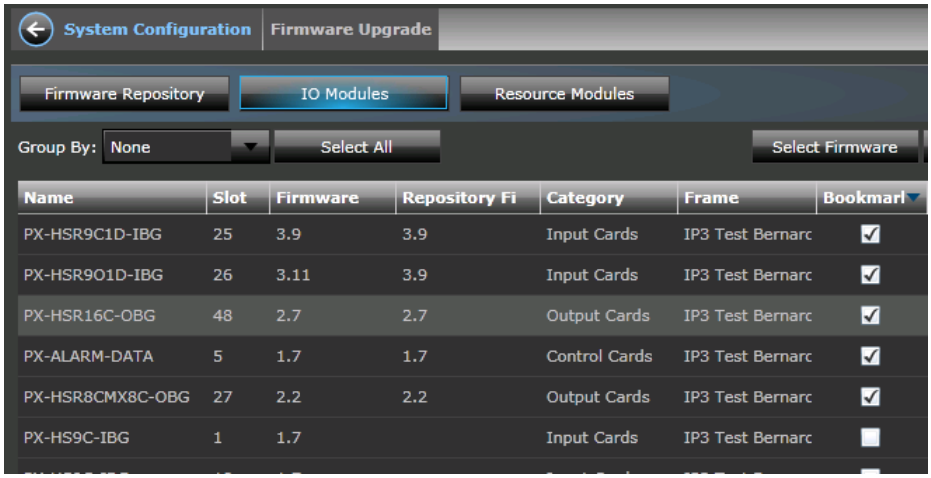
Figure 14: Firmware Foundry - IO Modules

The list of Modules can be grouped as follows:

- **Default -** Modules grouped alphabetically based on category (such as Control, Input, etc.).
- **Type -** Modules grouped based on type (for example, Alarm modules).
- **None -** Modules displayed in a flat list

Apart from the above groupings, if you want to group certain modules together for display, you can do so by selecting the **Bookmark** checkbox against modules. When you click the **Bookmark** column to sort, all modules that have been bookmarked will be displayed together at the top of the list (when grouped by None) or the top of the category (when grouped by Default).

Note: Bookmarking modules serves as a way to sort them, and the modules are not bookmarked for upgrades.



To upgrade the firmware on a module, select the module, then click the **Select Firmware** button, and then click **Upgrade**. Upgrade progress will be displayed in the Progress column and in the Active Upgrade (on page 54) section.

Active Upgrade

The **Active Upgrade** section is displayed to the right of the screen. It provides details on in progress upgrades including the **Name** of the upgrade, the **Slot** the module being upgraded is in, and the **Progress**.

While upgrading module firmware, the ability to do parametric control of module parameters is impaired for modules in the same **zone** of the router where the upgrade is going on. It is advisable to pick a time of limited router usage in order to do module upgrades.

WARNING

Be aware of how long an upgrade may take before starting, in order to plan an adequate maintenance interval with the operations staff. Simple Input and Output modules upgrade in a few minutes per zone. Upgrades to the Input Frame Sync module may take more than an hour.

While firmware upgrades of modules are being applied, parameter controls of modules in the same zone as the current upgrade will be impaired. Routing requests will still take effect and status will be returned as normal, but adjustments of the parametric controls of modules in the affected zone of the router will be impaired during firmware upgrade.

Clicking the Upgrade Service Log **(on page 58)** link takes you Magellan Diagnostic Logging.

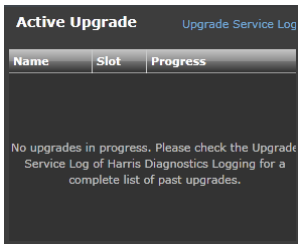


Figure 15: Active Upgrades

Crosspoint (XPT) Modules

Crosspoint Modules are displayed in the **Firmware Foundry** in the **IO Modules** tab under **Category: Crosspoint Cards**.

When upgrading Crosspoint Modules, there are certain restrictions with regard to compatibility between firmware versions. You cannot upgrade crosspoint modules running firmware versions 3.x to 4.x and vice versa. The following table displays information on firmware version compatibility.

Table 5: 3G XPT Modules

3G XPT Module Name	Type	Product ID	Versions	Filename
PM-40x32-3G5	**A**	**084**	**3.0**	**PM-40x32-3g5_3_0.zip**
	A	**084**	**3.1**	**PM-40x32-3g5_3_1.zip**
	B	084	4.0	PM-40x32-3g5_4_0.zip
	B	084	4.1	PM-40x32-3g5_4_1.zip
	B	084	4.2	PM-40x32-3g5_4_2.zip
PM-72x64-3G5	**A**	**085**	**3.0**	**PM-72x64-3g5_3_0.zip**
	A	**085**	**3.1**	**PM-72x64-3g5_3_1.zip**
	B	085	4.0	PM-72x64-3g5_4_0.zip
	B	085	4.1	PM-72x64-3g5_4_1.zip
	B	085	4.2	PM-72x64-3g5_4_2.zip
PM-64x64-3G9	**A**	**086**	**3.0**	**PM-64x64-3g9_3_0.zip**
	A	**086**	**3.1**	**PM-64x64-3g9_3_1.zip**
	B	086	4.0	PM-64x64-3g9_4_0.zip
	B	086	4.1	PM-64x64-3g9_4_1.zip
	B	086	4.2	PM-64x64-3g9_4_2.zip
PM-128x128-3G9	**A**	**087**	**3.0**	**PM-128x128-3g9_3_0.zip**
	A	**087**	**3.1**	**PM-128x128-3g9_3_1.zip**
	B	087	4.0	PM-128x128-3g9_4_0.zip
	B	087	4.1	PM-128x128-3g9_4_1.zip
	B	087	4.2	PM-128x128-3g9_4_2.zip
PT-128x256-3G15	**A**	**088**	**2.0**	**PT-128x256-3g15_2_0.zip**
	A	**088**	**3.0**	**PT-128x256-3g15_3_0.zip**
	A	**088**	**3.1**	**PT-128x256-3g15_3_1.zip**
	B	088	2.3	PT-128x256-3g15_2_3.zip
	B	088	4.0	PT-128x256-3g15_4_0.zip

	B	088	4.1	PT-128x256-3g15_4_1.zip
	B	088	4.2	PT-128x256-3g15_4_2.zip
PT-128x256-3G28	**A**	**089**	**2.0**	**PT-128x256-3g28_2_0.zip**
	A	**089**	**3.0**	**PT-128x256-3g28_3_0.zip**
	A	**089**	**3.1**	**PT-128x256-3g28_3_1.zip**
	B	089	2.3	PT-128x256-3g28_2_3.zip
	B	089	4.0	PT-128x256-3g28_4_0.zip
	B	089	4.1	PT-128x256-3g28_4_1.zip
	B	089	4.2	PT-128x256-3g28_4_2.zip

Table 6: 1.5G XPT Modules

1.5G XPT Module Name	Type	Product ID	Versions	Filename
PM-64x64-X9	A	032	2.0	PM-64x64-X9_2_0.zip
	A	032	3.0	PM-64x64-X9_3_0.zip
	A	032	3.1	PM-64x64-X9_3_1.zip
	A	032	3.2	PM-64x64-X9_3_2.zip
PM-128x128-X9	A	033	2.0	PM-128x128-X9_2_0.zip
	A	033	3.0	PM-128x128-X9_3_0.zip
	A	033	3.1	PM-128x128-X9_3_1.zip
	A	033	3.2	PM-128x128-X9_3_2.zip
PT-128x256-X15	A	021	2.0	PT-128x256-X15_2_0.zip
	A	021	3.0	PT-128x256-X15_3_0.zip
	A	021	3.1	PT-128x256-X15_3_1.zip
PT-XP	A	012	2.0	PT-XP_2_0.zip
	A	012	3.0	PT-XP_3_0.zip
	A	012	3.1	PT-XP_3_1.zip1

Resource Modules

The **Resource Modules** tab displays a list of Resource Modules (PX-RES) for upgrade.

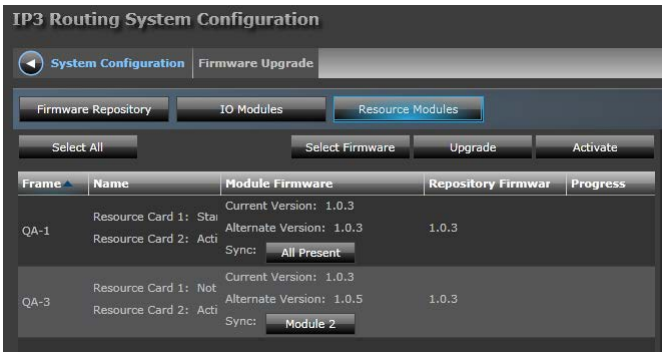


Figure 16: Firmware Upgrade on the RES Card

Resource Module upgrades are a two part process:

1. Transferring the firmware package from the IP3 Controller to the Resource Card and
2. Activation of the new firmware

Note: Upgrades to Resource modules occur in the background and are non-invasive to system operations. Firmware activation can take up to 15 minutes, and all of the services of the router will be interrupted during the Activation of new firmware on the Resource Module(s).

Primary and Secondary Resource Modules are always upgraded synchronously. The Secondary Resource Module cannot be upgraded explicitly.

You can store up to 2 firmware versions on Resource Module(s) - one active and one alternate. The alternate firmware is always upgraded onto the alternate partition. You have to switch to the alternate partition to Activate the alternate firmware.

Upgrading Firmware on a Module

To upgrade the firmware on a module:

1. Select the module, then click the **Select Firmware** button
2. Click **Upgrade**. Upgrade progress will be displayed in the **Progress** column and in the Active Upgrade (on page 54) section.

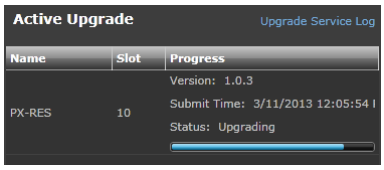


Figure 17: Information on Active Upgrades

1. Click **Activate** to make active once complete.

Upgrade Service Log

The **Upgrade Service Log** can be accessed in the Active Upgrade area to the right of the screen. Clicking the **Upgrade Service Log** link opens a new browser window that connects to **Magellan Diagnostic Logging** (which runs on *http://<Controller IP Address>:8002*), and provides information on past upgrades.

Select **UpgradeService** under **IP3_Controller** and then click the **History** button

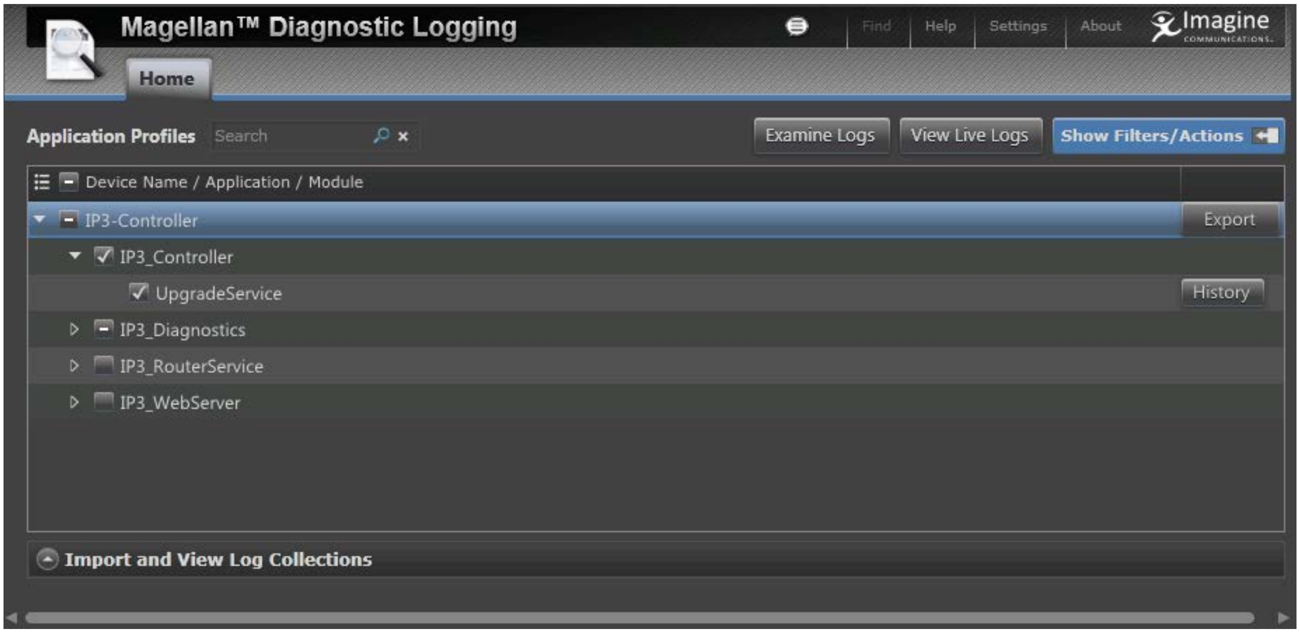


Figure 18: UpgradeService Log option

Then click the **Examine Logs** button.

Details on upgrade messages are then displayed. For example, messages indicating that firmware was updated for a specific module (along with the time). Or that new firmware for a specific module type was added to the firmware repository.

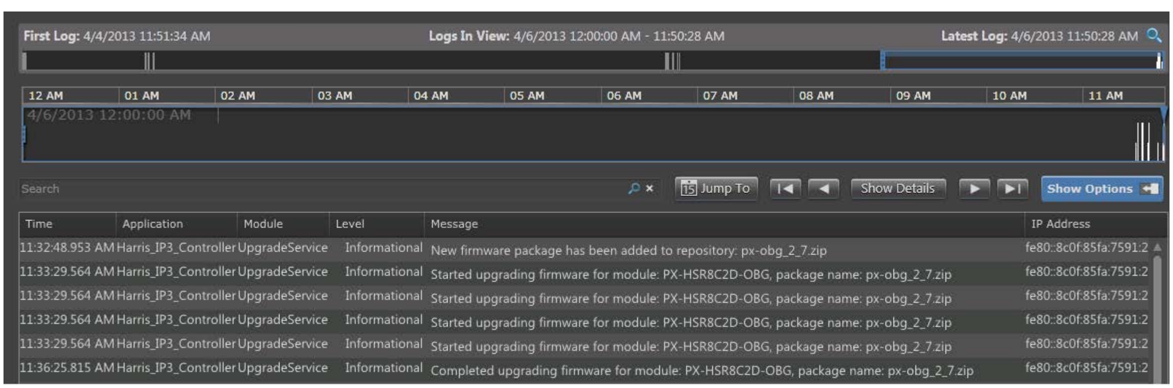


Figure 19: Upgrade information in the Examiner tab

Navigation

IP3 Controller System Interface

Once you log into the IP3 Controller system (by opening a web browser and entering the (external) IP Address of the IP3 Controller), the home page displays a dashboard from where you can configure, view, and monitor different elements of your system.

IP3 System List View

The List view is the default view of the system. A snapshot of all configured frames and IP3 Controller are displayed.

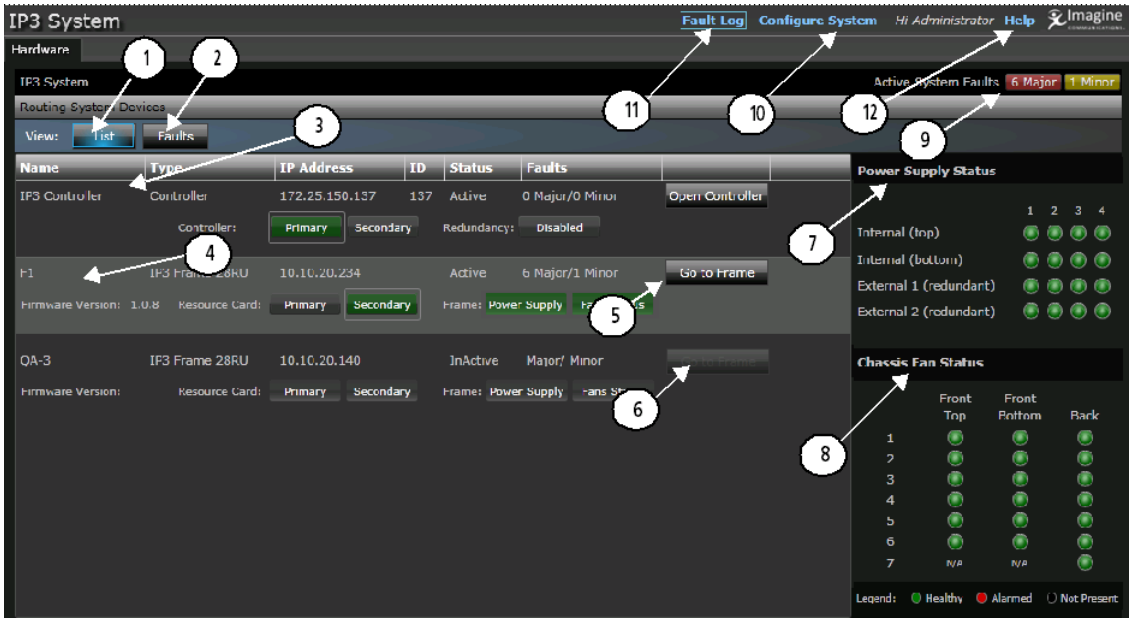


Figure 20: IP3 System Dashboard

Key	Label	Description
1	IP3 System List View (on page 59)	Physical view of the overall system (Default view)
2	IP3 System Faults View (on page 65)	An overview of components/modules with faults and links to open, disable, or acknowledge faults
3	Controllers in the System (on page 64)	A list of configured Controllers with snapshot information
4	Frames in the System (on page 60)	A list of configured Frames in the system along with IP addresses, firmware versions, resource card information, and fault information.

Key	Label	Description
5	Go to Frame links	Buttons that link to devices. Available for each added Frame.
6	Inactive Frames	Frames that have been added, but are not currently available, still show in the list as disabled.
7	Power Supply Status section See Power Supply and Chassis Fan Status	Power Supply Status by Zones 1-4 for top, bottom, and external (redundant) power supplies. Visible on clicking a frame.
8	Fan Status section See Power Supply and Chassis Fan Status	Fan supply status categorized by location (front top, front bottom, rear).
9	System Faults	Overview information listing total number of major/minor system faults.
10	Configure System	Links to configure the system and perform functions related to Hardware and Firmware Management, Controller Settings, and User Accounts. See Configuration Dashboard (on page 43).
11	Fault Log	Link to the Fault Log that opens in a new window. See Logging Server (on page 102).
12	Help	Link to the User Manual

Frames in the System

Frames/Modules

In the snapshot of Controllers/Frames displayed on the main navigation page, frame component status is indicated by the button color:

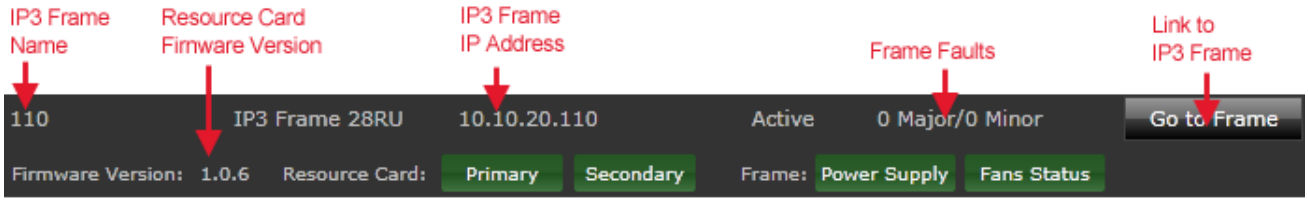


Table 7: Frames in the IP3 Controller System

Button	Color Description
Primary/Secondary	Green indicates active; Gray indicates inactive; Red indicates Alarmed
Power Supply	Green indicates active; Gray indicates inactive; Red indicates Alarmed
Fan Status	Green indicates active; Gray indicates inactive; Red indicates Alarmed

Select a Frame in the **Frame** section by clicking it; then click **Go to Frame** to have its details and components displayed. See Frame Components and Parameters (on page 84).

Frame Parameters

See Frame Components and Parameters (on page 84).

Modules in a Frame

Modules are displayed grouped by Category - **Input**, **Output**, **Crosspoint**, or **Control**

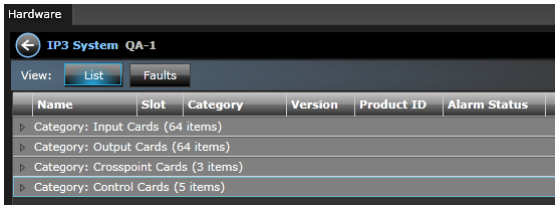


Figure 21: Modules Categories (collapsed) in the IP3 Controller Frame View

Note: Only modules that are physically present and responsive in the system are displayed; modules that become unavailable are automatically filtered out of the list. Modules that have been configured in the past but are not present or not currently responsive are also not displayed.

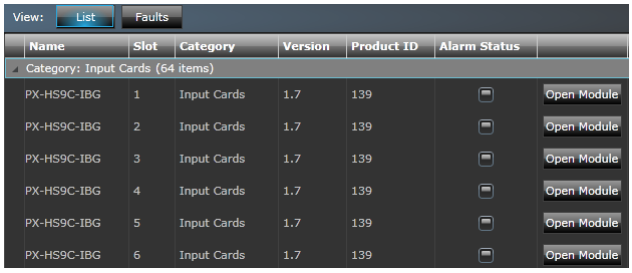


Figure 22: Expanded View of Modules

The following details are displayed per component:

- **Name**: The name of the card. For example, PX-HSR9C-IBG
- **Slot**: The slot the card resides in
- Category: The type of card - Input, Output, Crosspoint, Control
- **Version**: The firmware version running on the card
- **Product ID**: The ID for the module
- Alarm Status: Red (major), Yellow (minor), Blank (healthy)
- Open Module: Click to go to a specific card/module and view details.

Module Details

When you click the **Open Module** button against a module in the Frame View, Module details are displayed in a window superimposed over the previous frame window. The Module window displays ALL of the modules of the same type as the one that you selected. The following details are displayed:

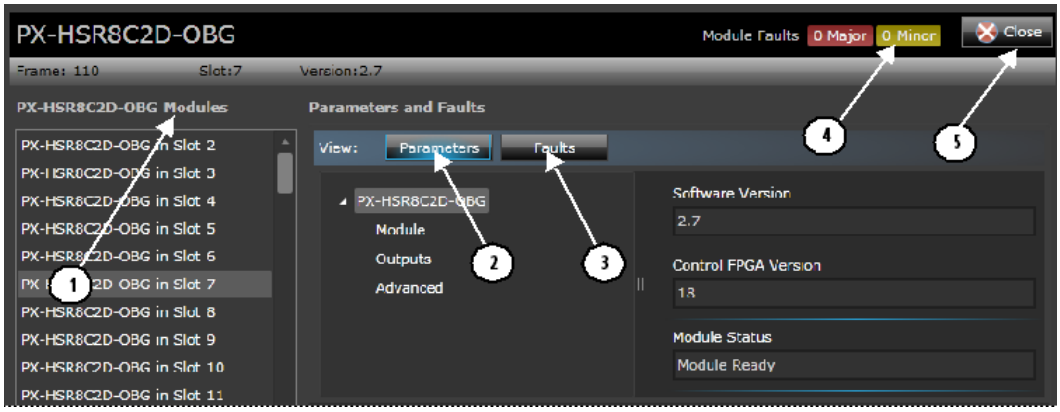


Figure 23: Module Details

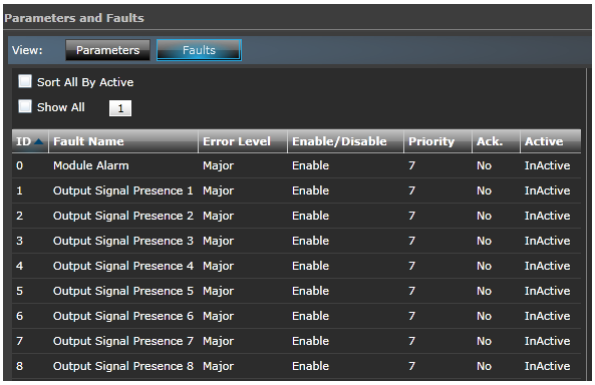
1	Modules List	The first column displays the name of the selected module (and the slot it is in), and lists other modules of the same type in the frame, if present. You can access details of other similar modules by clicking on them in the list. When you select a module in this list, information on the frame it belongs to, the slot, version, and serial number is dynamically updated in the header at the top, and parameters are displayed on the right.
2	Module Parameters	Displays parameter categories/menus and individual parameters for the selected module. Parameter options can be changed using the GUI. See Parametric Control (on page 67).
3	Module Faults	Displays any existing faults (and related details) for the selected module. See Module Faults (on page 62)
4	Faults Overview	The number of major and minor faults for the module are displayed at the top.
5	Close Button	You can close the Module window at any time by clicking the **Close** button at the top right hand corner of the screen.

Module Faults

Module faults can be viewed by doing the following:

1. Go to a frame by clicking the **Go to Frame** button on the main navigation page
2. Click the **Open Module** button against a Module
3. Click the **Faults** button to open the module specific Faults tab

Module faults are displayed with the following details:



ID	Fault Name	Error Level	Enable/Disable	Priority	Ack.	Active
0	Module Alarm	Major	Enable	7	No	InActive
1	Output Signal Presence 1	Major	Enable	7	No	InActive
2	Output Signal Presence 2	Major	Enable	7	No	InActive
3	Output Signal Presence 3	Major	Enable	7	No	InActive
4	Output Signal Presence 4	Major	Enable	7	No	InActive
5	Output Signal Presence 5	Major	Enable	7	No	InActive
6	Output Signal Presence 6	Major	Enable	7	No	InActive
7	Output Signal Presence 7	Major	Enable	7	No	InActive
8	Output Signal Presence 8	Major	Enable	7	No	InActive

Figure 24: Module Faults

- **ID**: The Fault ID
- **Fault Name:** The Fault Name, for example, **Output Signal Presence**
- **Error Level:** Major or Minor
- Enable/Disable: Whether the fault is active or not
- Priority: The priority level of the fault (1-10)
- Ack: Whether the fault has been acknowledged
- **Active**: Whether the fault is active

Note: Changes to Alarm Acknowledgments are not saved if the Resource Module is rebooted. For example, if you go to the faults for a specific Module (by clicking the Open Module button against a Module in the list of Modules, and then going the Faults tab for that module) change a setting, and select Acknowledge, if the Resource Card (PX-RES) is rebooted, the Alarm Acknowledgment state is not saved.

Filtering Module Faults

Use the **Sort All by Active** or **Show All** options to filter the fault display.

Editing Module Fault Properties

Click on any of the faults to have editable details displayed to the right. You can choose to enable/disable the fault, change priority, trigger value, clear value, and acknowledge.

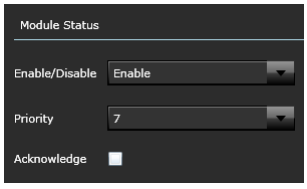


Figure 25: Fault Properties

Module Fault Descriptions

The following table lists possible module faults and descriptions:

Table 8: Module Faults

Data	Description
Signal Presence	Loss of Signal in an Input Module
Lock Detect	Loss of Signal in an Output Module
Failsafe Mode	Module is in Failsafe Mode
Power Failure	Module does not have proper power supply
Firmware Upgrade Required	Module firmware upgrade required
Back Module Missing	Cannot detect the back module
Incorrect Back Module	Mismatch with detected back module
Over Temperature Threshold	Module has a reached a critical temperature threshold
Unsupported Module	Module not supported with the current Resource Module (PX-RES) firmware. Perform Module upgrade.

Module Parameters

Refer to the *IP3 Frame and Modules Installation and Operation Manual* for individual modules supported in an IP3 Frame along with parameter details.

Controllers in the System

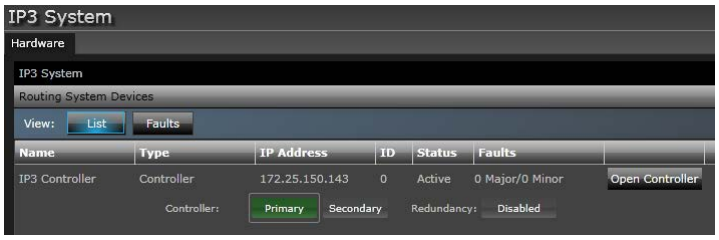


Figure 26: IP3 Controllers in the System

The following details are displayed for a Controller in the system:

- **Name**: The Controller Name, which shows as **IP3 Controller**
- **Type**: The Device Type, which shows as **Controller**
- IP Address: The Controller IP Address
- ID: The Controller ID
- Status: The status of the Controller
- Faults: The number of Major/Minor faults
- Primary/Secondary: A highlight around the Primary/Secondary buttons indicates whether the Primary or Secondary Controller is currently active

- Redundancy: Indicates if Redundancy has been enabled

Clicking the **Open Controller** link against a Controller in the system takes you to the IP3 Controller Settings page (**Configure System > Manage IP3 Controller Settings**), where you can define the Controller XY ID, the Server IP and Network and Redundancy Settings. See Manage IP3 Controller Settings (on page 48).

IP3 System Faults View

Faults View is a filtered view of only those modules in the system that currently have faults.

This is a high level view of all modules in the Frame that currently have faults, as opposed to the Module specific fault view that is displayed when you choose to see faults for a specific module (Module Faults (on page 62)).

You can opt to view alarms in the following ways:

	- **No Grouping**: A flat list of all active alarms (Major, minor, informational) - **Group by Device**: List of active alarms grouped by device (Module)

Grouping by **Device** creates groups per module listing all faults for that module. The header of the group indicates the module name, slot number, and the total number of major/minor faults for that module.

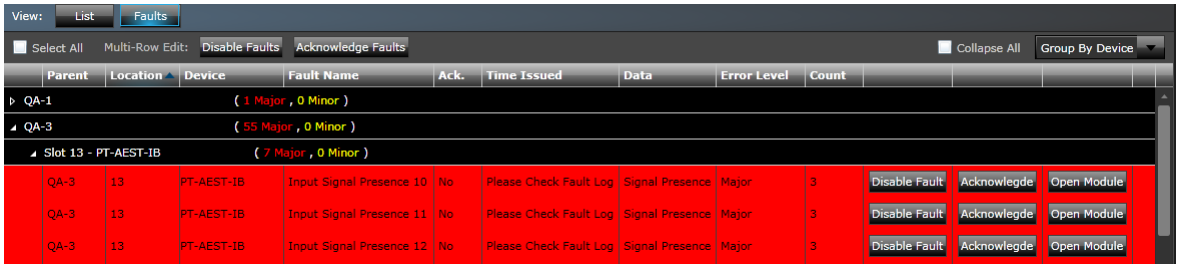


Figure 27: Faults Grouped by Device

Individual items are listed with details on:

- **Parent** - The Frame (name) that the Module is in
- **Device** - The name of the Module, for example, PX-HSR8C2D-OBG
- **Fault Name** - The type of Fault, for example, Input Signal Presence
- **Acknowledgment** - Whether the Fault has been acknowledged
- **Time Issued** - The Time the Fault occurred. See Fault Time (on page 66).
- **Data** - Information on the fault, for example, Lock Detect
- **Error Level** - Whether major, minor, etc.
- **Count** - The Fault count

There are also links to:

- Disable the Fault
- Acknowledge the Fault
- Open the Module

Faults can be selected by clicking on them individually, or clicking the **Select All** button at the top to select all faults.

You can group Disable/Acknowledge Faults by either selecting all, or multiple selecting using the CRTL or SHIFT key and then clicking **Disable Faults** or **Acknowledge Faults** beside *Multi-Row Edit* at the top.

Note: Once you disable a fault, to re-enable it, you will need to go to that Module's Faults view and enable the fault from there.

Fault Time

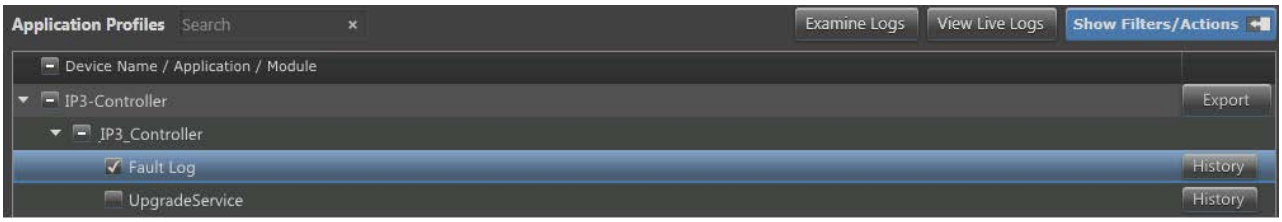
The time at which a fault occurred is not displayed in the Faults View but is available in the Fault Log of the Logging Server (on page 102). Use the link to the **Fault Log** in the toolbar at the top to go directly to it.

Note: The Fault time is shown for faults triggered when the UI is open.

To correlate a specific fault from the Faults View with the Logging Server:

1. First, look at the details of the specific Fault in the Faults View and note the slot number and IP address of the frame that contains the module with the fault.

2. Go to the Logging component - **http://<Controller IP>:8002**
3. Expand IP3 Controller, select **Fault Log**, and click the **History** button.



4. Click the **Examine Logs** button in the Examiner that is displayed.
5. In the list that is displayed, look for the Fault message.

To help co-relate with the specific fault you're looking for, look at the following details in the Message section of the Fault:

- **Parent<IP>** - The IP of the Frame that contains the module
- **Location** - The slot your module is in

- **Fault Name** - The fault name that was displayed

Parametric Control

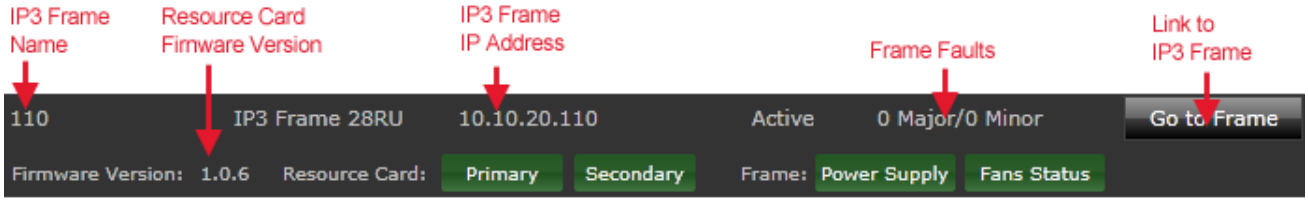
Parametric Control Overview

Through the web based UI, once you've set up your frames and modules, you can configure and control parameters for those modules.

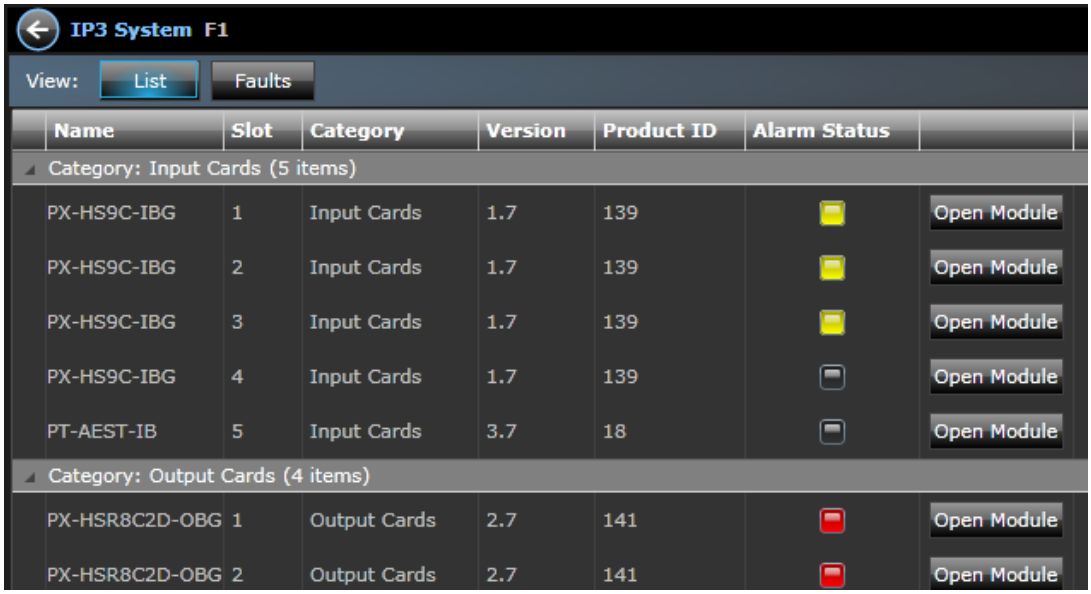
For a complete list of modules and parameters, refer to the **IP3 Controller Frame and Modules User Manual**.

Frames and Modules in the Web Interface

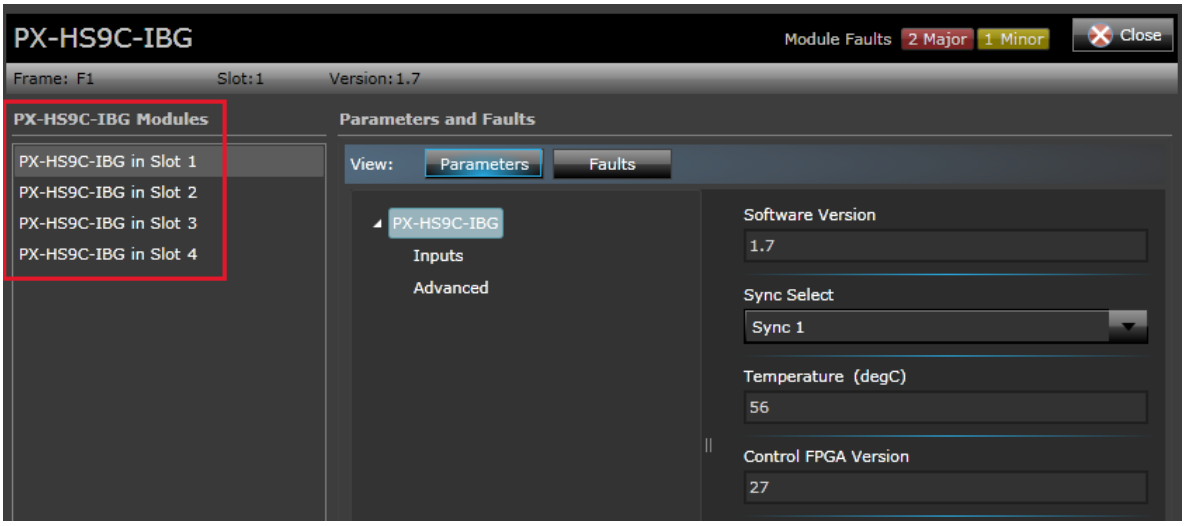
After a frame has been added to your system, you can see status and set editable parameters for both the frame and the modules in the frame. Click the **Go to Frame** button against the Frame for details.



A list of available modules and parameters are displayed, categorized by type.
Click the **Open Module** button to the right to see details of a module.



The module is then displayed along with all of its parameters. Some of the parameters are status only (read-only) and some are editable.



Note: The window that is displayed (superimposed) contains details for the module clicked on - however, if there are more than one of that type of module in the frame, all modules of that type will be displayed in the column on the left.

Parameter/Status Menu Groups

Within each Input or Output module, per-input/output parameters/statuses are further organized into three groups:

Module

Parameters that affect the module as a whole (such as Sync Select), or status that reflects the module as a whole (such as Software Version), are usually organized under this category.

Inputs/Outputs

Parameters and status that are indexed for each Input/Output on the module are organized under **Inputs** (for Input modules) or **Outputs** for Output modules (See Table Parameters (on page 70)).

Advanced

Settings which most users would never need to see or modify.

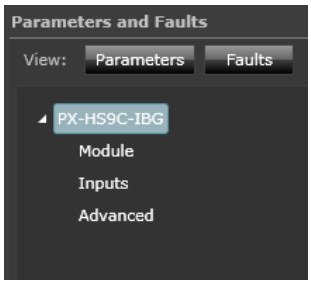


Figure 28: Input Parameter Groups

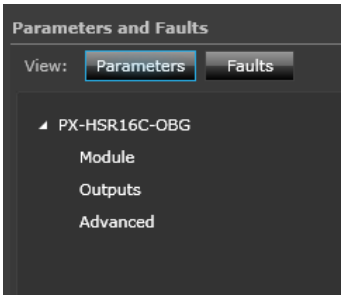


Figure 29: Output Parameter Groups

Parameter Types

Read-Only (Status) Parameters

Read-only or status parameters feedback the current state of a specific parameter.

Figure 30: Example of a Read-Only parameter

String Parameters

String parameters are items that can be renamed using text characters. String parameter changes do not take effect until the entire string has been modified. Use a keyboard, or copy and paste, to enter a value.

List Parameters

List parameters contain a series of possible values for a specific parameter. Enumeration and string-list parameter changes are always delayed. List parameters are identifiable by the arrow in the right corner of the button. When you roll the mouse over a list parameter, the button highlights, and when you click the arrow, available options are displayed. Select an item in the list to set the value for this parameter.

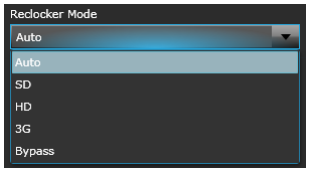


Figure 31: Example of a List Parameter

Range Parameters

A range parameter uses an incremented slider to choose a value from all available values. Numeric parameter values are represented by a sliding bar on the display screen. A progress bar indicates where the current value is within the entire range the parameter presents. The current value is shown at the right of the progress bar.

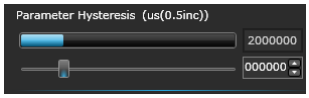


Figure 32: Example of a Range Parameter

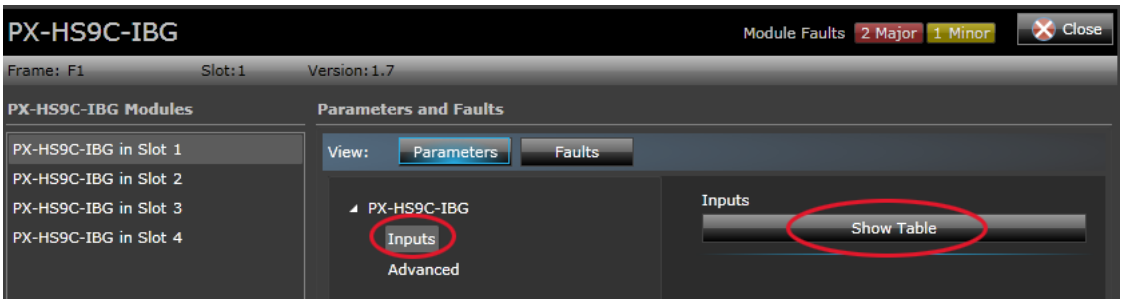
You can control the editable parameters by entering values, selecting options from drop down lists, or in some cases by dragging a slider to the appropriate value.

Table Parameters

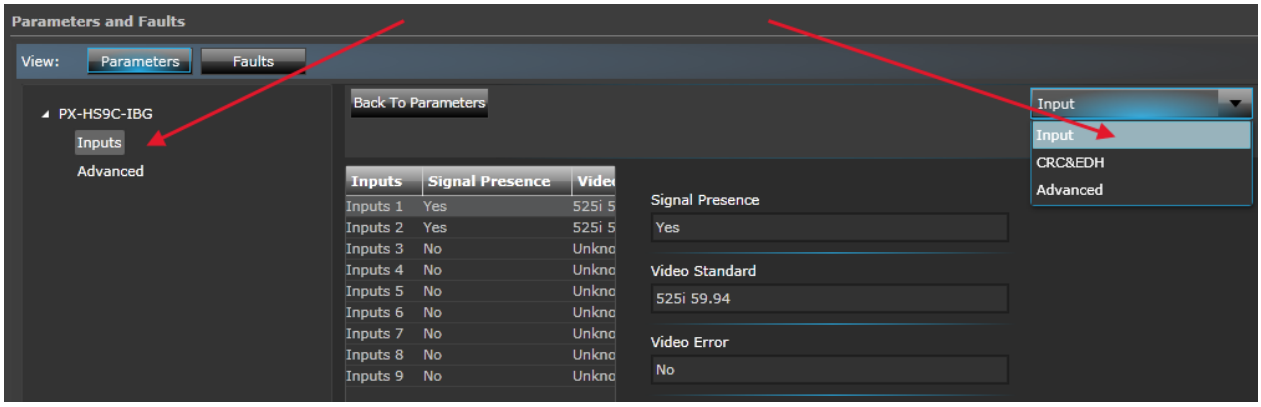
Table parameters provide an interface to view a large number of settings in a single screen, linking multiple instances of the same parameter or series of parameters.

Note: In cases where the same set of parameters apply for multiple channels (such as Inputs or Outputs), parameters are grouped under a single table, accessible through a **Show Table** Link listed against that option.

This screenshot shows parameters for the PX-HS9C-IBG Input Module, which has two menu groups: **Inputs** and **Advanced**. Parameters for the **Inputs** menu group are grouped under a table. Click the **Inputs** menu item and then click **Show Table** to view/expand options.



The screen is divided into three panes - with the module on the left, instances in the middle, and the parameter fields to the right. You can drag the divider between these panes to expand and contract the view. You will see multiple rows corresponding to multiple channels. In this case, 9 rows are displayed for each of the inputs in the PX-HS9C-IBG.



Menu options can be accessed from menu links on the left and menu options in the drop down list in the top right hand corner.

To change a table parameter:

1. Select a row (input) from the middle section (in this case, a channel). The Parameter pane updates to display the options and current settings for that row. By default, the parameter pane displays parameters for the first row in the table. The top right corner of the screen updates to indicate the row the parameters are for.
2. Select the parameter you want to change.

The individual parameter control types are the same as for regular parameters.

IP3 Database Editor

IP3 Database Editor Overview

The **IP3 Database Editor** is a new Database Matrix Definition System for **IP3 Controller only** or **IP3 Controller hybrid** systems. A hybrid system is a routing system composed of IP3 and other routers.

Unlike traditional routing systems that may have different audio/video components on different levels corresponding to physical matrices, with the IP3 Database Editor, restrictions caused by physical level and physical matrix definitions are removed, and every part of every signal is accessible by name and easily routable.

Device Type definitions are used to group the parts (or components) of a signal together into a Source or Destination that can be routed as a whole. These device types are created in CCS-Navigator and exported into the IP3 Database Editor.

Note: Ensure you have a device type definition (done via the DB Editor in Navigator) before you attempt to add sources/destinations in the IP3 Database Editor.

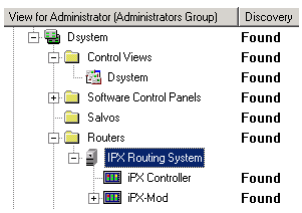
Launching the IP3 Database Editor

The IP3 Database Editor launches on the following conditions:

- The Navigator user must be an **Administrator**.
- Navigator must be running in **Build** Mode. The **IP3 Database Editor** is disabled/hidden in **Control** mode.
- The Controller node must be under the **Routers** folder in Navigator, not under **Discovery** or **Network**.
- Navigator's **DBEditor** cannot be open/running. This is to prevent simultaneous configuration changes that may result in unsynchronized data between Navigator and IP3 Controller.

To launch the IP3 Database Editor:

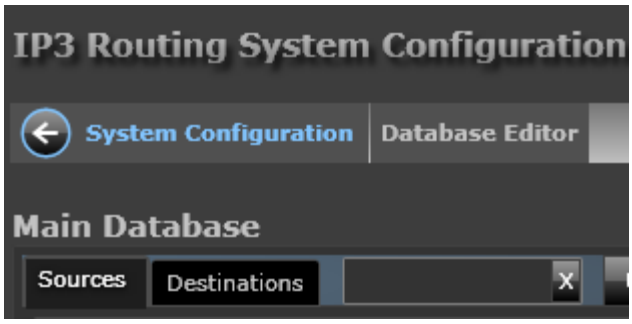
1. Start Navigator Server.
2. Double click **<IP3 System Name>** under the **Routers** folder to launch the IP3 Controller interface.



3. The Database Editor screen will be displayed.

The following functions can be performed here.

Adding Sources/Destinations



Click on the **Sources** or **Destinations** tab to define your sources/destinations. You can switch between these tabs at any time. The following functions can be performed here:

- Undo (on page 76)
- Redo (on page 76)
- Add (on page 73)
- Insert (on page 77)
- Update (on page 77)
- Remove (on page 78)
- Save (on page 78)
- Validate (on page 78)

Add

Click the **Add** button to add a new source or destination.

- Number: The *number* of Sources or Destinations to create. By default, a single Source/Destination will be created. If a greater number is entered here, for example 10, 10 sequential sources or destinations will be created, incrementally named (based on the Name Prefix) and with the same details.
- **Use Name Index**: Select this option to use Name Indices. Unchecking this grays out the *Name Index* field.
- **Name Prefix**: Enter a name for the Source or Destination. By default, *Src* or *Dest*. Limited to 8 characters.
- **Name Index**: Index of the Source/Destination.
- **Alias**: Alias for the Source/Destination.

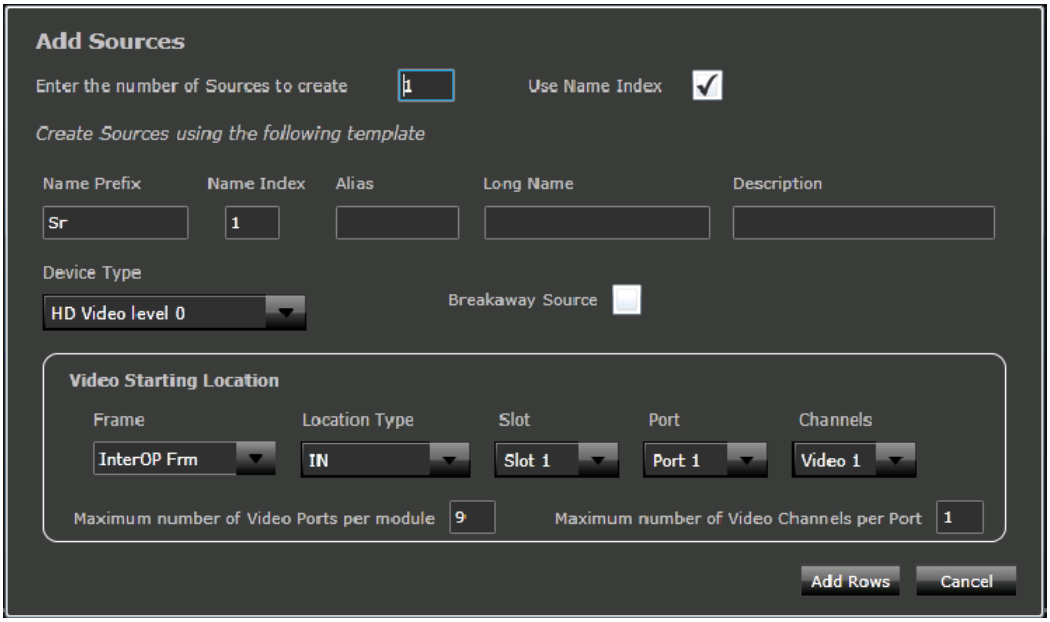
- **Long Name**: Long Name for the Source/Destination. Opt to provide a longer more descriptive name than the character limited *Name*.
- **Description**: Description of the Source/Destination.
- **Device Type**: Select the appropriate Device Type from the drop-down list. Previously defined device types are listed here.
- **Breakaway Source**: Select this check box to create a breakaway source or destination. This means the defined source/destination will be available on all levels, with the ability to route across levels.

The *Starting Location* section of this dialog depends on your Device Type.

- For a *Video* only device type, see Video Starting Location (on page 74)
- For an *Audio* only device type, see Audio Starting Location (on page 74)
- For a device type that has both *Video* and *Audio*, see Video and Audio Starting Location (on page 76)

Video Starting Location

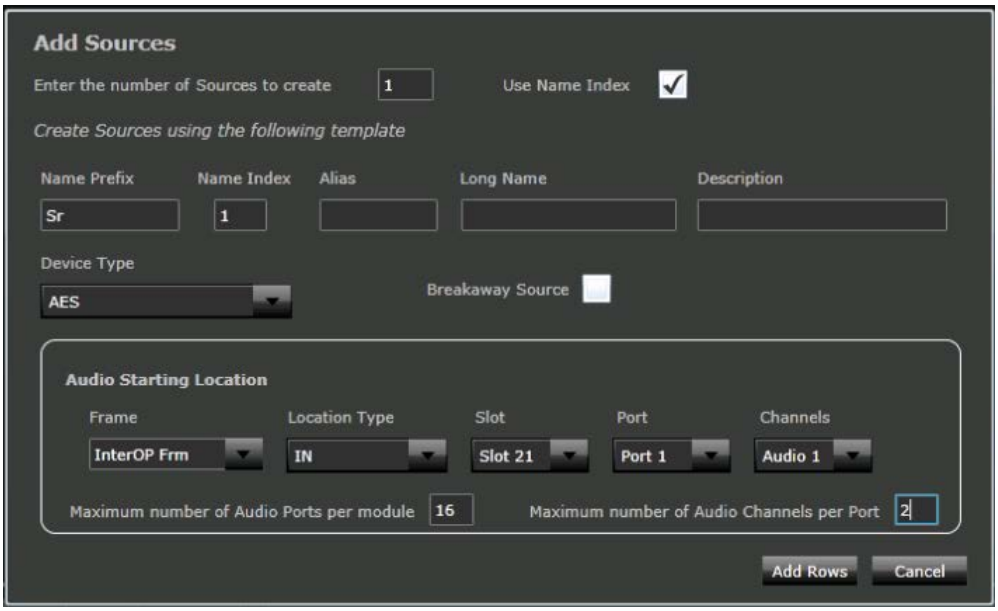
- **Frame**: The Frame that the Source is in.
- **Location Type**: Whether Input (IN), Output (OUT), or Extension (EXT)
- **Slot**: The Slot in the Frame that the Source is in.
- **Port**: The Port for the Slot. Ports 1 to 16 available for selection.
- **Channels**:
- **Maximum number of Video Ports per module**: This affects how the sources/destinations are spread across the modules. Note that some Input modules have 8 inputs and some have 9; likewise Output modules can have 8 or 16 outputs.
- **Maximum number of Video Channels per Port:**



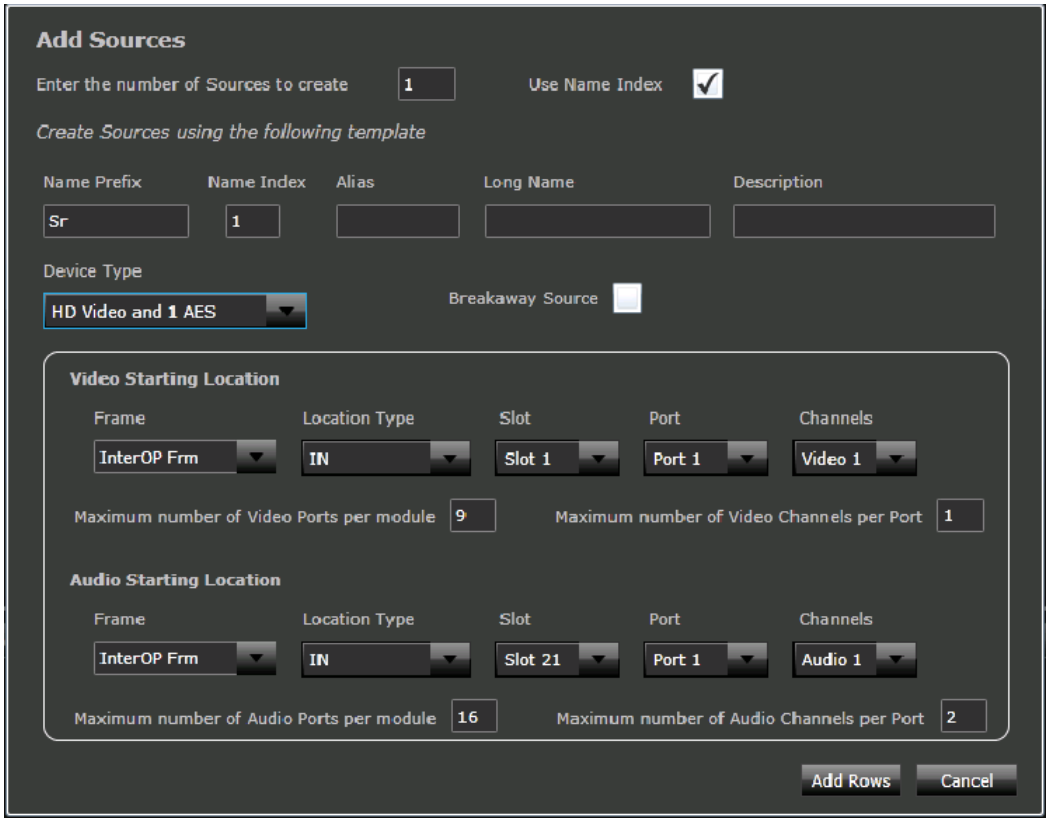
Audio Starting Location

- **Frame**: The Frame that the Source is in.
- **Location Type**: Whether Input (IN), Output (OUT), or Extension (EXT)

- **Slot**: The Slot in the Frame that the Source is in.
- **Port**: The Port for the Slot. Ports 1 to 16 available for selection.
- **Channels**:
- **Maximum number of Video Ports per module**: This affects how the sources/destinations are spread across the modules. Note that some Input modules have 8 inputs and some have 9; likewise Output modules can have 8 or 16 outputs.
- **Maximum number of Video Channels per Port:**



Video and Audio Starting Location



- **Add Rows**: Click to Add rows or effectively, sources or destinations with the defined settings.
- **Cancel**: Click Cancel to exit without making or saving any changes.

Note: When you "Add" a Source/Destination, it gets positioned at the bottom of the list, after any existing sources/destinations. Use the "Insert" option to insert into a specific spot, rather than at the end.

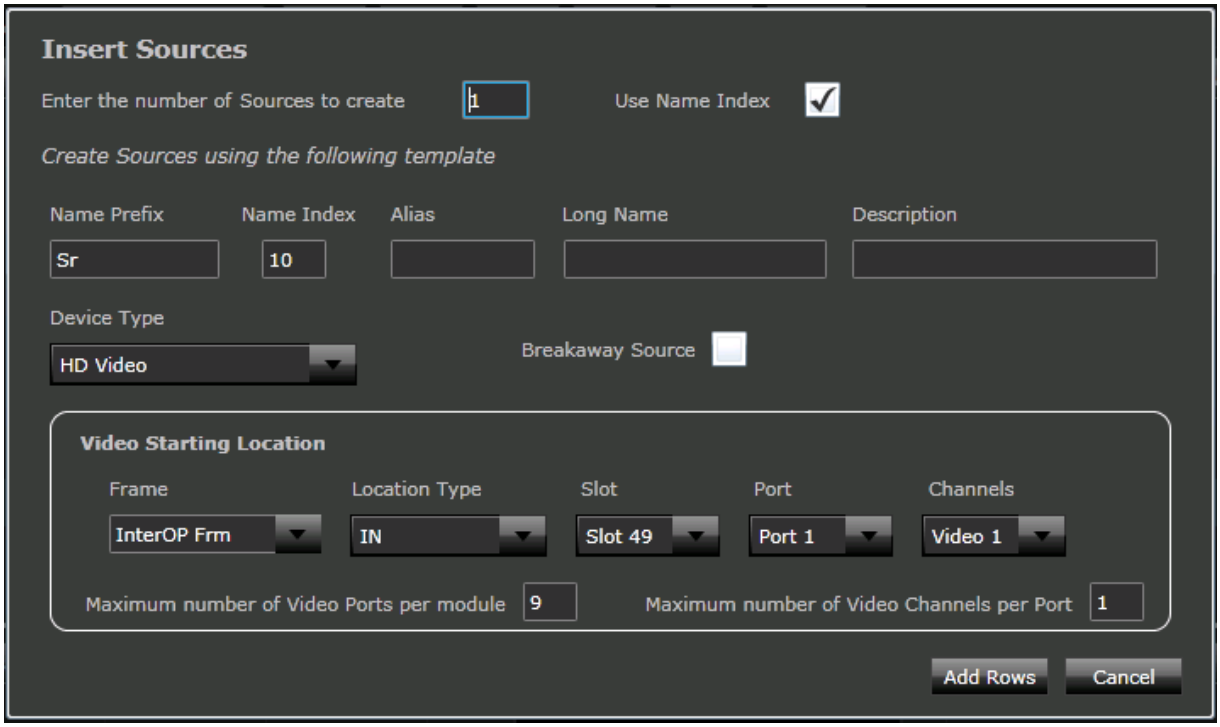
Undo

Click to **Undo** the last action.

Redo

Click to **Redo** the last action.

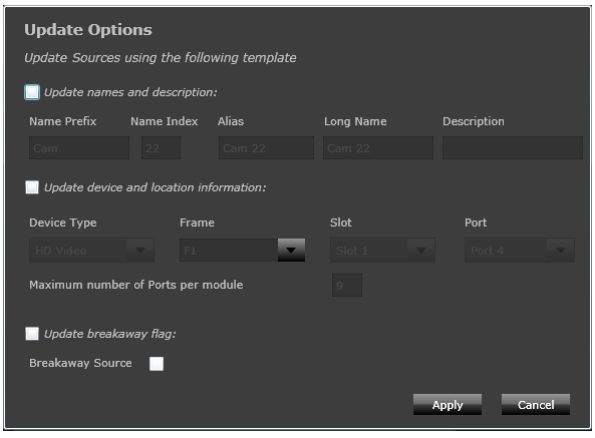
Insert



The **Insert** option is identical to **Add** - the only difference is with **Insert**, you can choose *where* to add sources/destinations.

For example, if you previously defined SRC1-SRC5, and you want to add a new source right after SRC1 (rather than after SRC5), use the Insert option to do so. If you use Add in this case, SRC6 will be placed after SRC5.

Update



Use the **Update** option to modify details for a previously created Source or Destination. Select the appropriate checkbox to modify that section.

Remove

Select one or more Sources/Destinations and click **Remove** to delete them.

Save

Click to **Save** changes.

Validate

Click to **Validate** sources/destinations added. If any of the sources/destinations do not validate properly, you will see an icon beside them that you can click on to see the validation details.

Refer to the Navigator help for additional steps in configuring your routing system such as:

- Integrating IP3 and non-IP3 sources and destinations into the Navigator DBEditor
- Adding Magellan remote control panels
- Configuring tielines between IP3 frames and other routers

Note: The **Disconnect** and **Park** functions (to free tielines) are supported for IP3, but changes need to be made in Navigator, and not through IP3 DBEditor.

You can use the **Park** function to free a tieline used by a destination without disconnecting it; if you are unsure of a good local source available for switching, switch the destination to park, which will route the designated park source to the output.

You can use the **Disconnect** function to disconnect the destination using the tieline, with the result that the tieline is freed and the output is disconnected.

Resync

The Resync Sources menu provides the following options:

- **Resync Source Numbers** resyncs source numbers only
- **Resync Source XY Indices** resyncs XY only

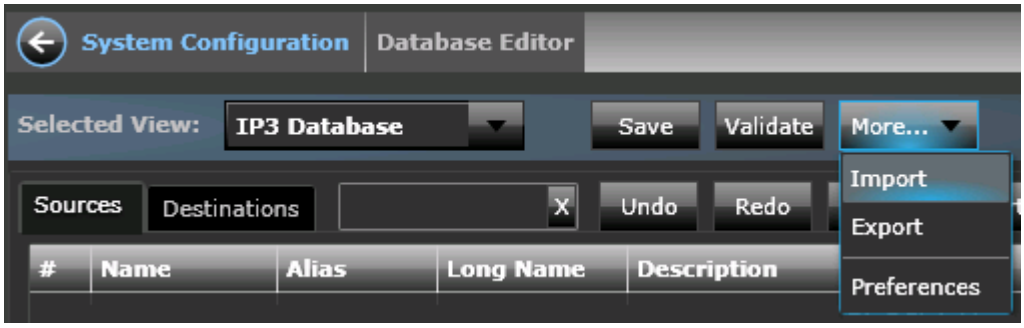
The Resync Destinations menu provides the following options:

- **Resync Destination Numbers** resyncs destination numbers only
- **Resync Destination XY Indices** resyncs XY only

Database Import and Export

An IP3 Controller logical database can be exported to/imported from a text file, allowing for the database to be reused on a different IP3 Controller.

The Database Foundry provides an option to import an IP3 Controller database from file or export the current Database to a text file.



The import/export mechanism uses a txt file format similar to Magellan CCS Navigator's Names.txt file. This file can be imported into the IP3 Database Editor, but not into Navigator.

Import/Export Information

Import/Export information includes:

- Source and Destination data
- Device Type definitions
- Frame name definitions
- Additional information required to restore the database to the exact same state

Import Validation

When importing a database (text file) into the IP3 Database Editor, device types contained in the exported database are validated against the ones in the current IP3 Database Editor.

- If there is a conflict in device type **Name** (even though the definition may be different in terms of channels, channel names, levels, etc.) in the existing database and the imported one, a message will be displayed to indicate the conflict. Import will not proceed until the conflicting names have been changed or removed.
- If there are no device type name conflicts, the database will be imported.

4K Support

IP3 Controller 1.2 supports 4K which can be configured via the **IP3 Database Editor**. The first thing to do is have a clear idea of where your sources are for the 4K signals.

For example, you may have 4 separate cards that will contribute to the 4 components of the 4k signal, as follows:

- Module 1, Slot 1, Port 1 > 4K1
- Module 2, Slot 2, Port 1 > 4K2
- Module 3, Slot 3, Port 1 > 4K3
- Module 4, Slot 4, Port 1 > 4K4

Or you may have a single module, 4 different ports that will comprise the signal, as follows:

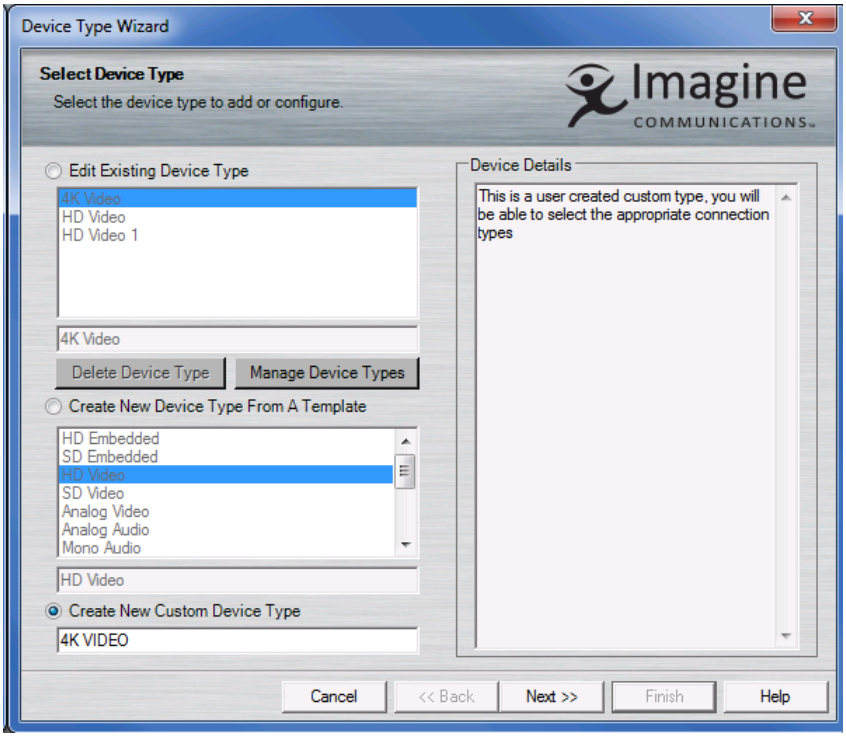
- Module 1, Slot 1, Port 1 > 4K1
- Module 1, Slot 1, Port 2 > 4K2
- Module 1, Slot 1, Port 3 > 4K3
- Module 1, Slot 1, Port 4 > 4K4

Make a note of the relevant slot numbers and port numbers.

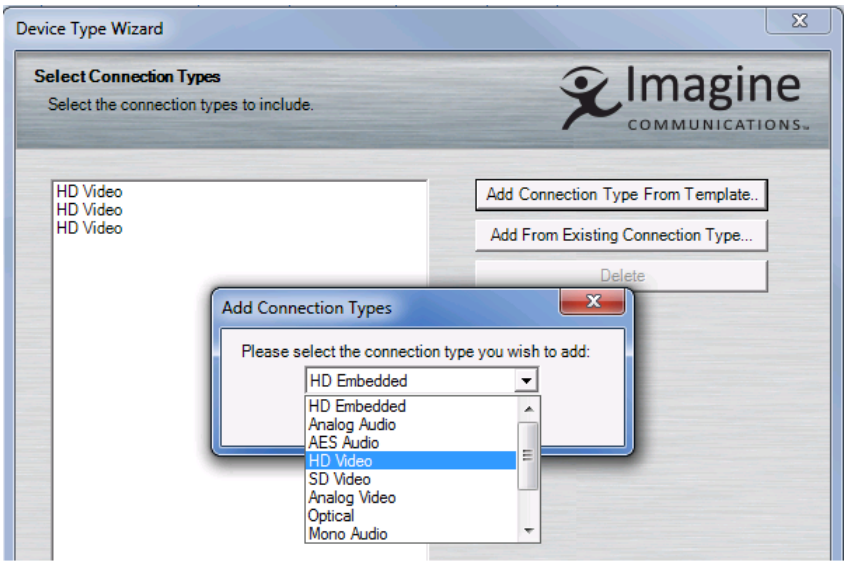
Device Type for 4K

Ensure you have or create a **Device Type** with 4 Video channels. Follow these steps:

1. In **Navigator**, run the **DB Editor**.
2. Use the Wizard to create an **HD Video** device type, and give it a name to distinguish it, like **4KVideo.** Click **Next.**



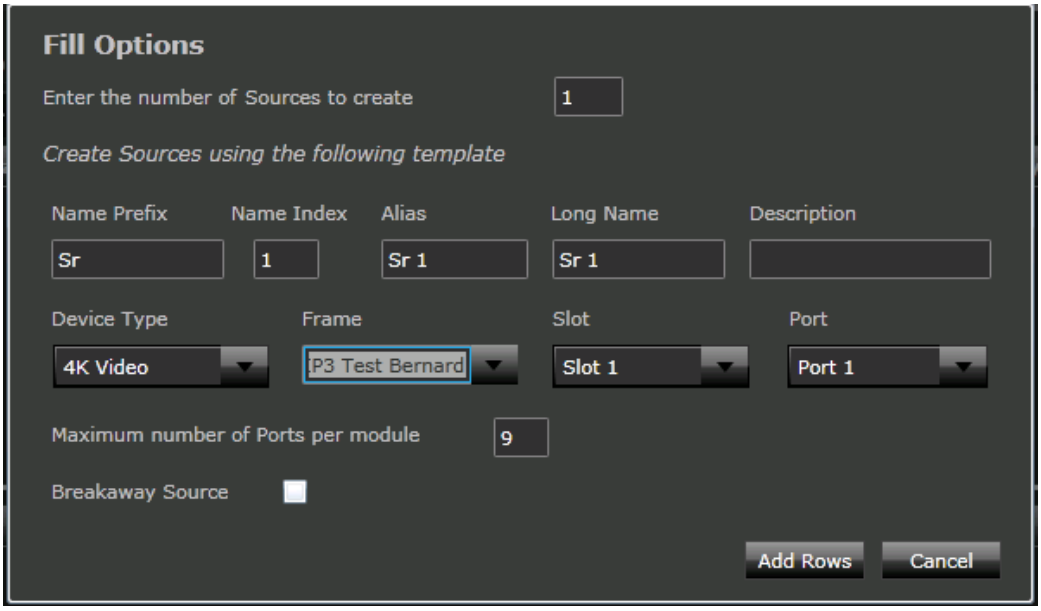
3. In the **Select Connection Types** dialog, click **Add Connection from Template**, and add 4 **HD Video** connections



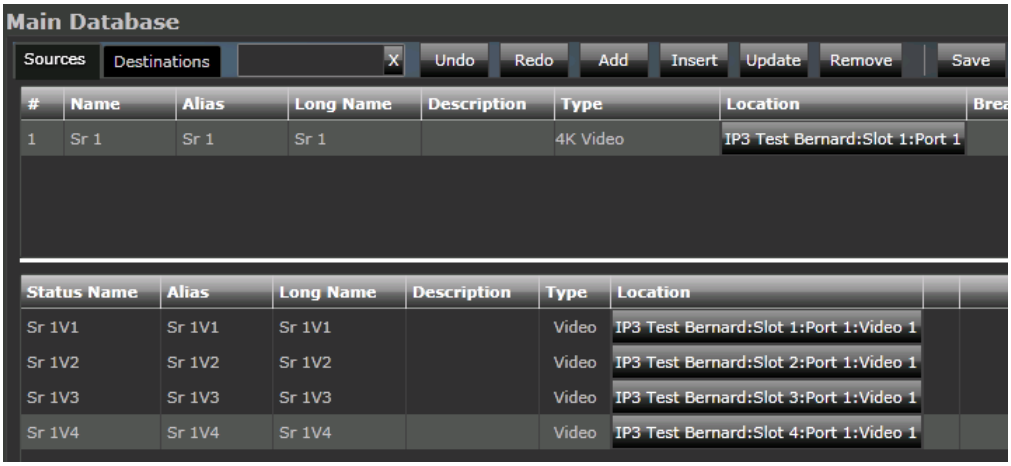
4. In the **Level Selection Dialog**, select the starting level and click **Next**
5. In the **Configure Connection Types** dialog, select the appropriate levels for the video channels. Normally, 4K video will be configured all on the same level as breakaways would not be needed. However, if breakaways are required, then select different levels for each HD Video component. Click **Next**.
6. Click **Finish**.

Sources for 4K

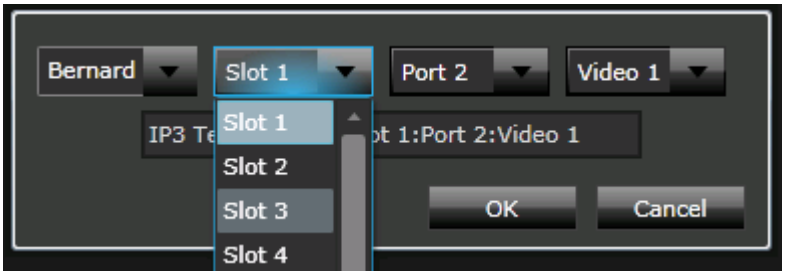
1. In **Navigator**, close the **DB Editor**
2. Run the **IP3 Database Editor**
3. Click the **Add** button to add a source
4. Ensure you use the correct **Device Type** with the 4 video channel definition. Select the correct **Slot** and **Port** and click **Add Rows**.



5. Click the newly created source, you will see the 4 channels in the lower pane.



6. Double click an entry to change the **Slot** and **Port**, as required



Ensure the final definition physically matches the slots and ports for your 4K channel sources.

Destinations for 4K

Configure destinations the same way as the sources. See Sources for 4K (on page 82).

Frame Components and Parameters

Frame Components

When you click the **Go to Frame** option for a specific frame on the main navigation page, it displays a complete snapshot of that frame including:

- Modules in a Frame (on page 61)
- Module Faults (on page 62)
- Frame Parameters (on page 84)
- Frame Faults (on page 92)
- Power Supply and Chassis Fan Status

Frame Parameters

Frame specific components and their parameters can be viewed by clicking the **Open Frame** link.

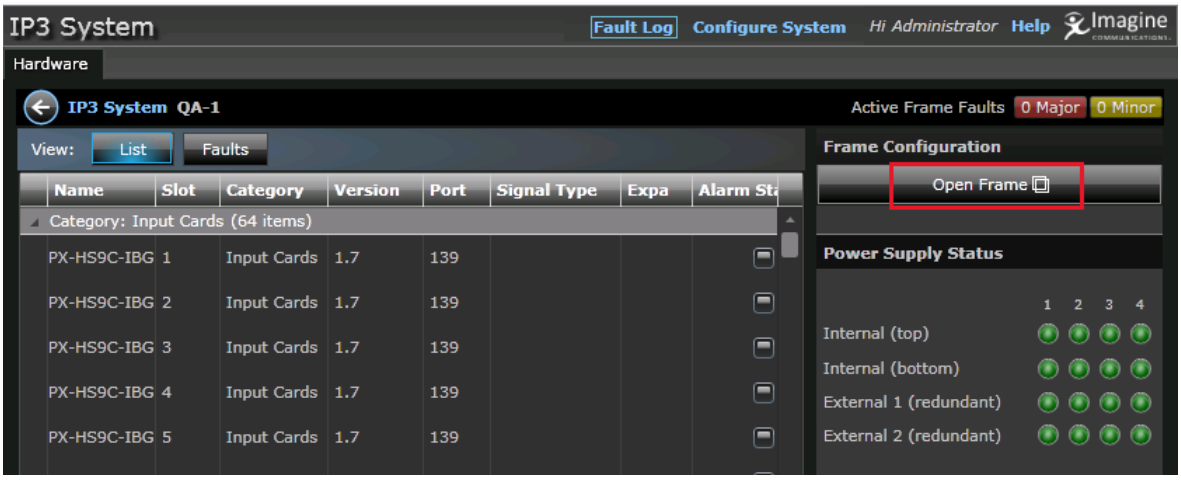
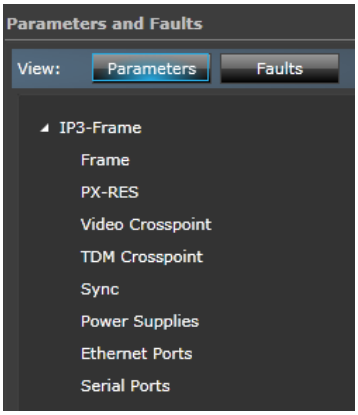


Figure 33: Open Frame option to access Frame parameters

The following parameters provide a control interface to the IP3 frame. These parameters are divided into different menu groups, all listed below the main Frame:

	· Frame Parameters (on page 84) · PX-RES (on page 85) · Video Crosspoint (on page 86) · TDM Crosspoint (on page 87) · Sync (on page 88) · Power Supplies (on page 89) · Ethernet Ports (on page 90) · Serial Ports (on page 91)

Frame

The **Frame** section provides the following parameters:

Table 9: Frame parameters

Parameter	Type	Description/Options
Frame Type	RO	28 RU
Frame ID	RO	A unique 6-byte frame identifier
Ambient Temperature	RO	The Frame temperature in degrees centigrade

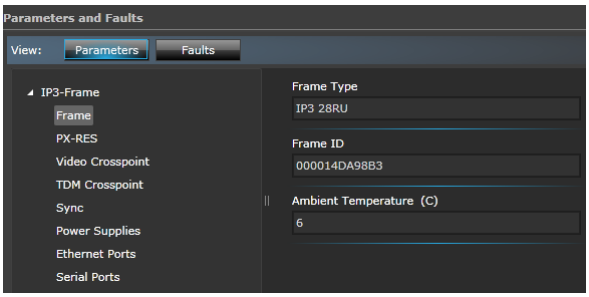


Figure 34: Frame Parameters

PX-RES

The **PX-RES** section provides the following parameters:

Table 10: PX-RES parameters

Parameter	Type	Description/Options
PX-RES 1 Serial #	RO	· <String> · Not Present
PX-RES 2 Serial #	RO	· <String> · Not Present

Parameter	Type	Description/Options
PX-RES 1	RO	· Active · Standby · Not Present · Failed
PX-RES 2	RO	· Active · Standby · Not Present · Failed
Select Active PX-RES	RW	· PX-RES1 · PX-RES2
PX-RES Firmware Version	RO	A string showing the current firmware version of the active PX-RES
PX-RES Alternate Version	RO	A string showing the firmware version on the alternate bank of the active PX-RES
Activate Alternate Version	RW	· Yes · No

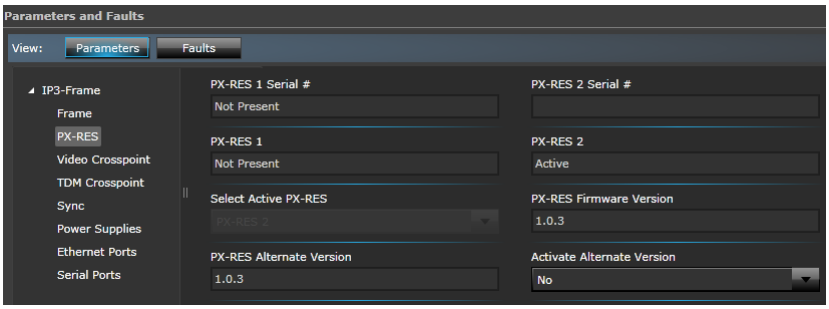


Figure 35: PX-RES Parameters

Video Crosspoint

The **Video Crosspoint** section provides the following parameters:

Table 11: Video Crosspoint parameters

Parameter	Type	Description/Options
Video Crosspoint 1	RO	· Active · Standby · Not Present · Failed
Video Crosspoint 2	RO	· Active · Standby

Parameter	Type	Description/Options
		· Not Present · Failed
Select Active Video Crosspoint	RW	· Module1 · Module2

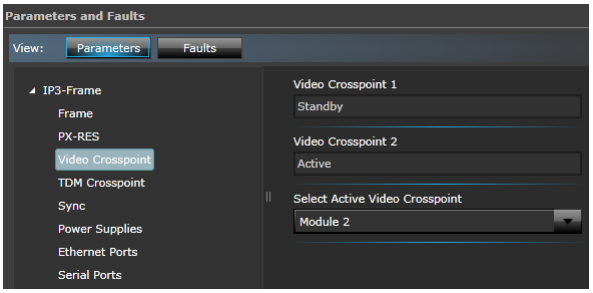


Figure 36: Video Crosspoint Parameters

TDM Crosspoint

The **TDM Crosspoint** section provides the following parameters:

Table 12: TDM Crosspoint parameters

Parameter	Type	Description/Options
TDM Crosspoint 1	RO	· Active · Standby · Not Present · Failed
TDM Crosspoint 2	RO	· Active · Standby · Not Present · Failed
Active TDM Crosspoint	RW	· Module1 · Module2

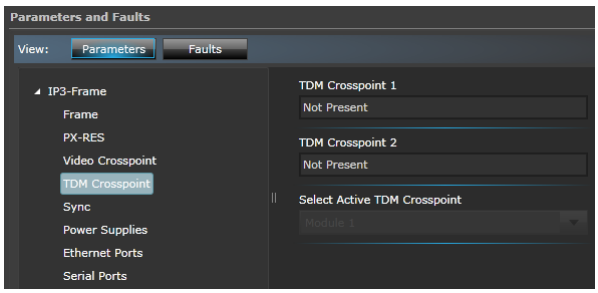


Figure 37: TDM Crosspoint Parameters

Sync

The **Sync** section provides the following parameters:

Table 13: Sync Parameters

Parameter	Type	Description/Options
Sync Enable *(Table Parameter)*	RW	· Yes · No
Sync Mode *(Table Parameter)*	RW	Auto, Standard, Advanced
Sync Reference (available only when Sync Mode (Table Parameter) is set to Auto, Standard, Advanced) *(Table Parameter)*	RW	· None · Analog 525/60 · Analog 525/59.94 · Analog 625/50 · 1920x1080/60I · 1920x1080/59.94I · 1920x1080/50I · 1920x1080/30P · 1920x1080/29.97P · 1920x1080/25P · 1920x1080/24P · 1920x1080/24PsF · 1920x1080/23.97P · 1920x1080/23.97PsF · 1280x720/60P · 1280x720/59.94P · 1280x720/50P · Unknown · AES Unknown · AES Reserved · AES 192KHz · AES 96KHz, · AES 88KHz · AES 48KHz · AES 44KHz · AES 32KHz · TDM Sync Pulse · 1920x1080/60P · 1920x1080/59.94P · 1920x1080/50P

Parameter	Type	Description/Options
Sync Pulse Delay (available only when Sync Mode (Table Parameter) is set to Auto, Standard, Advanced) (Table Parameter)	RW	0 to 65535
Detected Sync *(Table Parameter)*	RO	Displays the current detected reference standard.
Sync Module 1	RO	Active, Standby, Not Present
Sync Module 2	RO	Active, Standby, Not Present
Select Active Sync Module	RW	Module1 Module2

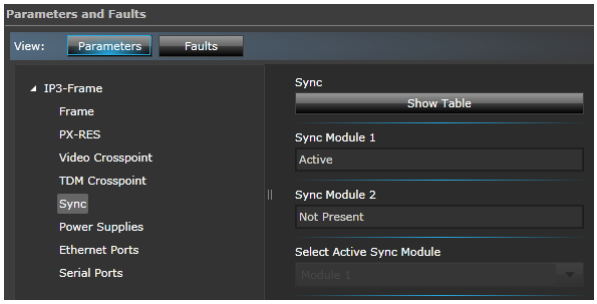


Figure 38: Sync Parameters

Sync Notes

- There are 4 available sync references that can each be turned on or off by **Sync Enable** parameters.
- The **Sync Mode** parameter (set to **Auto** by default) allows for configuration of switching point settings. In **Auto** mode, the output switches relative to the detected sync reference assigned to the module.
- If **Sync Mode** is set to **Standard**, the **Sync Reference** parameter can be used to specify the sync standard to use as the reference signal. The output switches relative to the specified reference.
- If **Sync Mode** is set to **Advanced**, the **Sync Pulse Dela** parameter can be used to specify where the output switching point is relative to the reference signal. The delay is in units of microseconds.
- By default, **Sync Enable** is set to **On**. When a firmware upgrade is performed in this mode, the new firmware is programmed into the alternate banks of both the active and the standby PX-RES.
- If **Sync Enable** is set to **Off**, only the alternate bank of the active PX-RES is written

Power Supplies

The **Power Supplies** section provides the following parameters:

Table 14: Power Supplies parameters

Parameter	Type	Description/Options
Top Shelf 5V Power	RO	· Present · Failed
Bottom Shelf 5V Power	RO	· Present · Failed
Zone 1 24V Power	RO	· Present · Failed
Zone 2 24V Power	RO	· Present · Failed
Zone 3 24V Power	RO	· Present · Failed
Zone 4 24V Power	RO	· Present · Failed

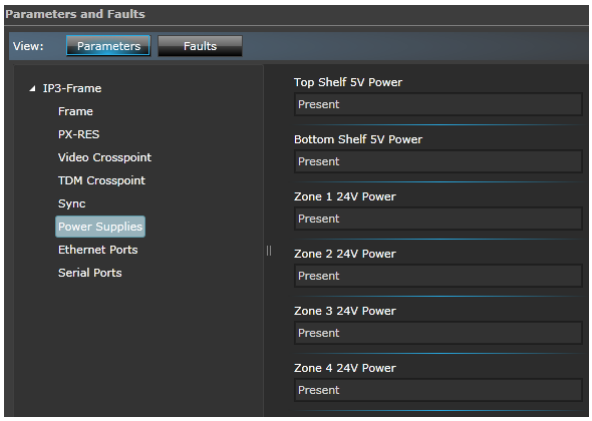


Figure 39: Power Supplies Parameters

Ethernet Ports

The **Ethernet Ports** section provides the following parameters:

Table 15: Ethernet Ports Parameters

Parameter	Type	Description/Options
MAC Address 1	RO	MAC Address of the 1st Ethernet Port on the active PX-RES · Port 1 if PX-RES on the top slot is active · Port 3 if PX-RES on the bottom slot is active
IP Address 1	RW	IP address string for the back panel Ethernet connectors 1 and 3
IP Mask 1	RW	IP mask string for the back panel Ethernet

Parameter	Type	Description/Options
		connectors 1 and 3
Gateway Address 1	RW	Gateway Address string
Save Ethernet 1	RW	· No · Yes
MAC Address 2	RO	MAC Address of the 2nd Ethernet Port on the active PX-RES · Port 2 if PX-RES on the top slot is active · Port 4 if PX-RES on the bottom slot is active
IP Address 2	RW	IP address string for the back panel Ethernet connectors 2 and 4
IP Mask 2	RW	IP mask string for the back panel Ethernet connectors 2 and 4
Gateway Address 2	RW	Gateway Address string
Save Ethernet 2	RW	· No · Yes

Serial Ports

The **Serial Ports** section provides the following parameters:

Table 16: Serial Ports parameters

Parameter	Type	Description/Options
Port (1-2) Mode	RW	· RS 232 · RS 422
Port (1-2) Baud Rate	RW	· 300 · 600 · 1200 · 2400 · 4800 · 9600 · 14400 · 19200 · 38400 · 57600 · 115200
Port (1-2) Stop Bit	RW	· 1 · 2

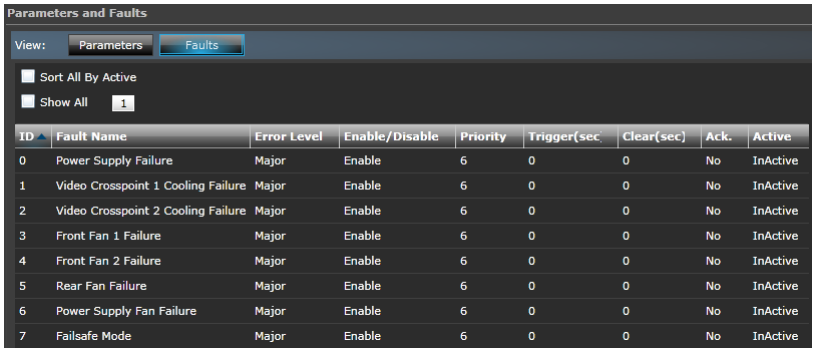
Parameter	Type	Description/Options
Port (1-2) Parity	RW	· None · Odd · Even
Save Serial (1-2)	RW	· No · Yes

Frame Faults

To see Frame specific faults:

1. On the main navigation page, click the **Go to Frame** button against a frame
2. Click the **Open Frame** button under Frame Configuration on the right
3. In the Frame view that is displayed, click the **Faults** button

   For information on the cause of the fault, look at the **Fault Name** column.



The following table lists possible Frame faults and descriptions.

Table 17: Frame Faults

Fault Name	Description
Power Supply Failure	One of the power supplies has failed
Video Crosspoint 1 Cooling Failure	Video Crosspoint 1 has reached a critical temperature threshold
Video Crosspoint 2 Cooling Failure	Video Crosspoint 2 has reached a critical temperature threshold
Front Fan 1 Failure	At least one of the fans in the fan module 1 has failed
Front Fan 2 Failure	At least one of the fans in the fan module 2 has failed

Fault Name	Description
Rear Fan Failure	At least one of the rear fans has failed
Power Supply Fan Failure	At least one of the power supply fans has failed
Failsafe Mode	The PX-RES is in failsafe mode (this is a warning, not an alarm)

Resource Module (PX-RES)

PX-RES Overview

The **PX-RES** Resource card serves as the central control point for the Platinum IP3 frame and all modules that reside in the frame. The PX-RES is a control module with software and hardware components that control communications between the different processing modules (input, output, crosspoint) in an Platinum IP3 Controller frame. It also enables communication with external devices (configuration, control, monitoring, and routing).

The PX-RES module also provides the sync processing necessary to determine the switch timing for the frame. The control system reports the presence and type of sync signal detected on each of the four inputs. The PX-RES module distributes the synchronization signals to all the crosspoint, streaming, and output monitoring modules in the frame. It also automatically generates and distributes an internal synchronization signal when no external sync input is present.

PX-RES Parameters and Upgrades

The PX-RES provides access to frame and module parameters via the CCS protocol, and routes video and audio signals within a deterministic time frame.

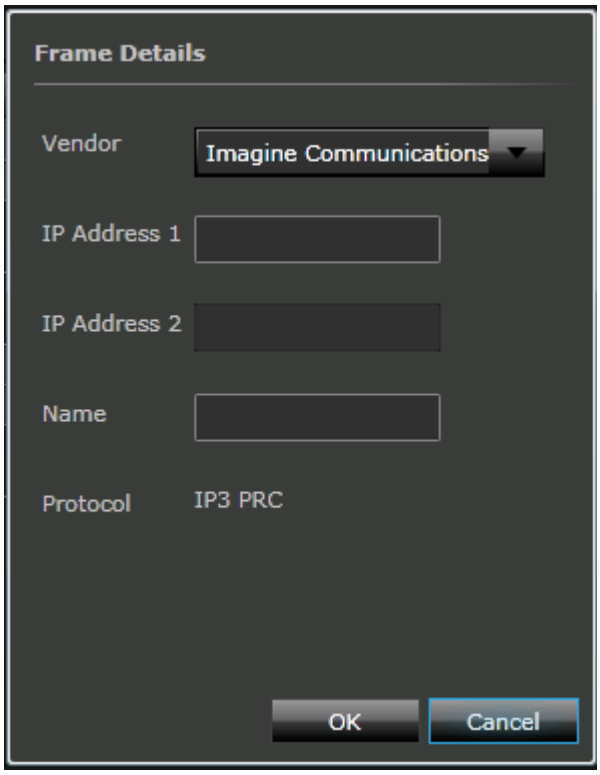
It also provides a consistent mechanism to upgrade module firmware. See Upgrade information for Resource Modules (on page 57).

PX-RES Redundancy

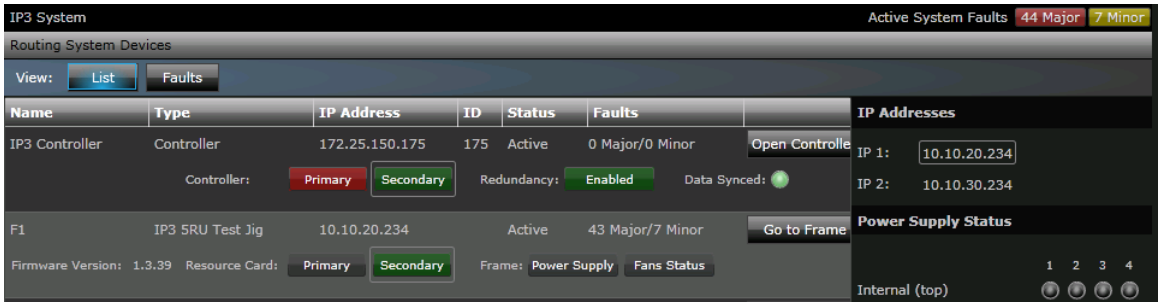
The PX-RES Resource module and optional redundant resource module are located in the middle of the frame and are visible when the front panel door is opened.

Each Platinum IP3 frame can have up to two PX-RES modules operating redundantly. If one module detects failure of the other, it switches over control and continues router operation. **ENET5** is the primary PX-RES Ethernet port. IP3 Controller version 1.3 onwards uses the redundant PX-RES Ethernet port (ENET6) to connect to IP3 Frames. The redundant ENET6 port will be used if the connection to the primary port ENET5 fails.

Both IP addresses of a frame are required in the hardware configuration to allow the IP3 Controller to connect to a frame using either **ENET5** or **ENET6**. When **ENET 6** is enabled, the addition of one or more frames to the IP3 Controller system enables the additional IP. Both IPs (if available) will be displayed in the Hardware Foundry UI. .



The IP3 System dashboard displays the frame IP being used by the IP3 Controller to connect to the IP3 frame. When the frame is selected in the dashboard, both IPs are displayed in the property pane on the right side of the dashboard. The IP being used by the IP3 Controller to connect to the frame is highlighted.



Resource Card Synchronization

In normal operating mode, all parameter and route changes are synchronized from the active/master PX-RES to the standby PX-RES.

When upgrading PX-RES firmware, images are also synchronized. If the alternate firmware image is activated on the active PX-RES, the alternate image on the standby PX-RES also becomes active.

Active and Standby Determination

- Active and Standby states are non-volatile.
- An active PX-RES remains active after a power cycle.
- The standby PX-RES only becomes active if the active PX-RES is removed or in case of manual failover.
- If two PX-RES modules are inserted into a frame and powered up at the same time, the PX-RES in the top slot will have higher priority.

Alarms

All alarms are off by default, except for critical temperature alarms. Individual alarms can be turned on or off. The following error conditions can trigger an alarm:

- Loss of input or output signal
- Power supply failure
- Fan failure or missing front fan modules
- Video crosspoint reaching critical temperature
- PX-RES synchronization failure

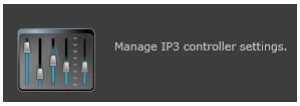
Configuring IP3 Controller Redundancy

Steps to define a Secondary IP3 Controller

Note: Before adding a Secondary IP3 Controller, it is recommended you go to the Secondary IP3 Controller itself, launch a web browser and connect to 127.0.0.1, and define the required Ethernet Interfaces (see Ethernet Connections (on page 19)) as was done with the Primary IP3 Controller. Ethernet Interfaces can be set by going to **Configure System > Manage IP3 Controller Settings** > **Network & Redundancy** > **Network Settings.**

1. In the Controller GUI, click the **Configure System** link in the toolbar at the top.

2. In the IP3 Routing System Configuration that is displayed, click the **Manage IP3 Controller Settings** icon.



3. Click the **Network & Redundancy** button.
4. Click the **Add Redundant Controller** button.

5. Enter the **IP Address** of the Secondary IP3 Controller and click **Apply**.

6. Ensure you have the required Ethernet Interfaces defined on both Controllers (see Ethernet Connections (on page 19)). This includes details on the Primary and Secondary IP, Subnet, Gateway for each ENET port.

Note: All communication between the Primary and Secondary Controller is via Ethernet port 5 (ENET5) and Ethernet Port 6 (if enabled), as these ports are used for Internal communication. All communication with with external devices is via ENET1-ENET4.

Enabling Redundancy

Once your Secondary IP3 Controller has been set up, click the **Enable Redundancy** button to make redundancy active.

The current Redundancy setup can be viewed at any time by going to **System Configuration** > **Manage IP3 Controller Settings** > **Network and Redundancy**.

The diagram displayed will show currently configured details of the Primary IP3 Controller and the Secondary (if applicable).

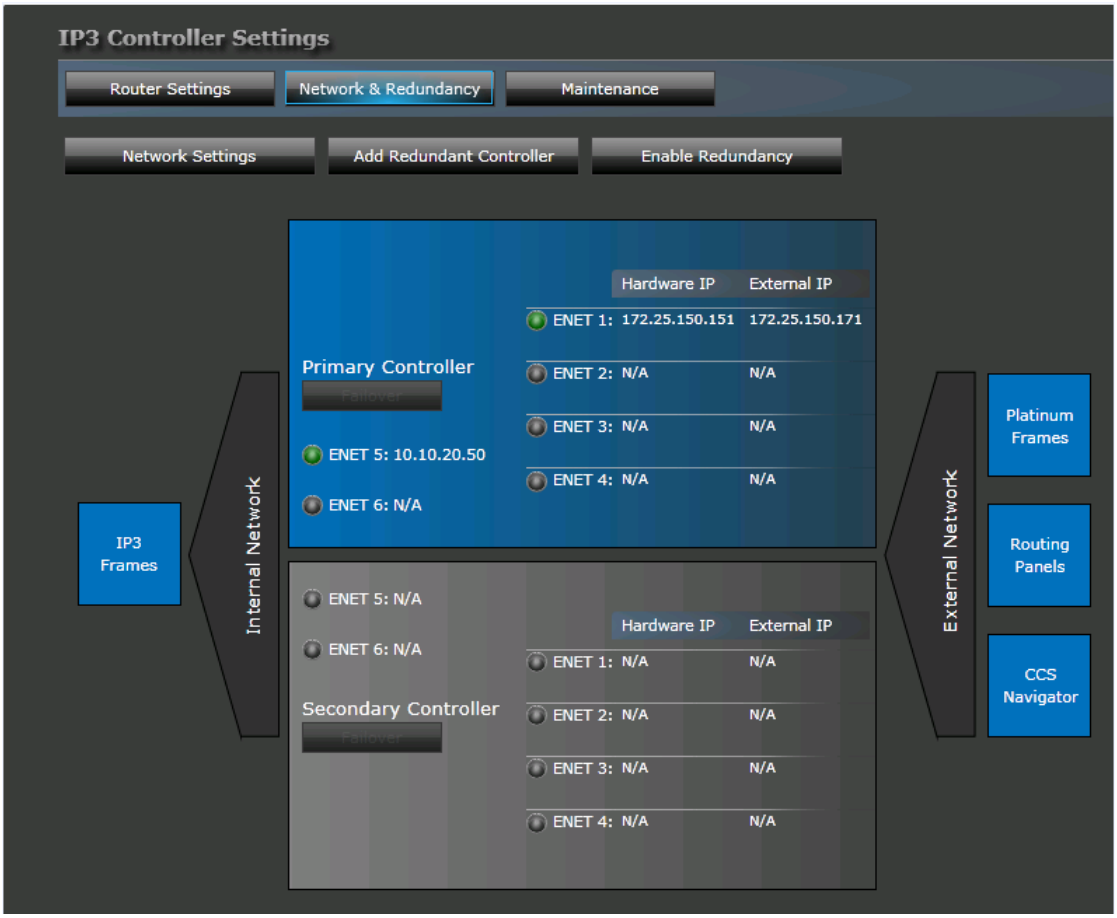


Figure 40: Redundancy Setup

Disabling Redundancy

Once configured, Redundancy can be disabled by click the **Disable Redundancy** button.

Redundancy Information

The current Redundancy setup can be viewed at any time by going to **System Configuration** > **Manage IP3 Controller Settings** > **Network and Redundancy**.

The diagram displayed will show currently configured details of the Primary IP3 Controller and the Secondary (if applicable).

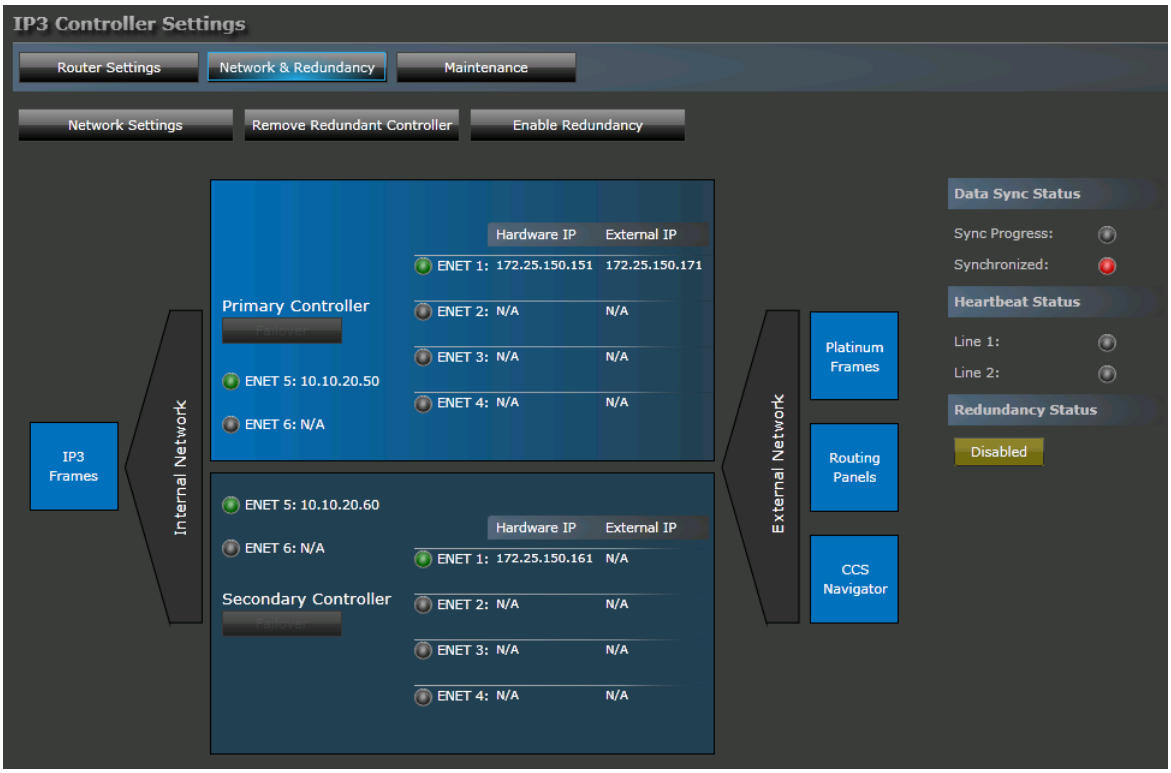
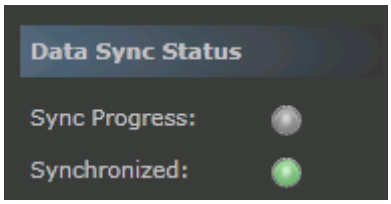


Figure 41: Redundancy Setup

Data Sync Status



Data Sync status is displayed on the **System Configuration** > **Manage IP3 Controller Settings** > **Network and Redundancy** page as well as on the right side of the Controller homepage.

The **Sync Progress** and **Synchronized** LEDs indicate data synchronization status.

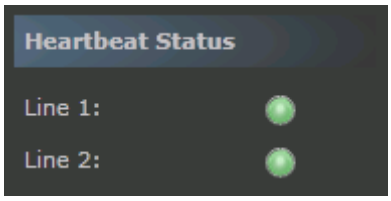
The **Sync Progress** LED is **gray** if:

- There is no secondary IP3 Controller present
- Redundancy is disabled
- No Data Synchronization in progress

The **Synchronized** LED is **green** if:

- Data Synchronization is complete
- Data Synchronization in progress

Heartbeat Status



Heartbeat status is displayed on the **System Configuration** > **Manage IP3 Controller Settings** > **Network and Redundancy** page as well as on the right side of the Controller homepage.

The LED is **gray** if:

- A secondary IP3 Controller has not been defined
- Redundancy has not been enabled
- Data sync is in progress and has not completed

The LED is **green** if:

- Data sync is complete

The LED is **red** if:

- Data sync is failed or encountered an error

Redundancy Status

Redundancy status is displayed on the **System Configuration** > **Manage IP3 Controller Settings** > **Network and Redundancy** page. It shows as either **Enabled** or **Disabled**.

Failover

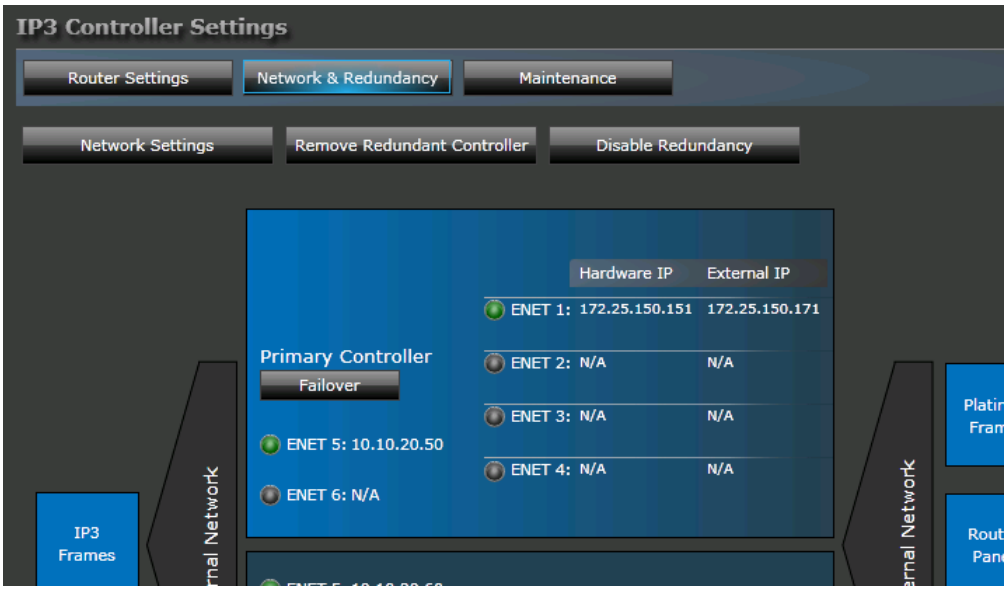
Redundancy of the IP3 Controller is configured in a 1:1 Primary/Secondary configuration.

From IP3 Controller version 1.3 onwards, switching functions both ways:
Primary to Secondary and Secondary back to Primary.

In other words, in a redundant setup (**Active** and **Standby** controller), the Active Controller is backed up by the Backup Controller. If the Active Controller goes down, the Backup takes over, and when the (previously) Active Controller becomes available again, it backs up the currently active one.

Switching, however, is non-reverting - if control is passed to the Secondary IP3 Controller, and if you want to make the original Primary active again once it becomes available, human intervention is required in order to push control back to the primary unit. See Switching back to Primary IP3 Controller.

You can force failover at any time by going to **Configure System > Manage IP3 Controller Settings > Network and Redundancy** and clicking the **Failover** button in the Primary Controller section.



Note: For the following settings:
IP3 Controller X/Y ID
Administrator ID
Operator ID
X/Y Server
If a IP3 Controller failover is initiated too soon after a change to these settings, the data synchronization mechanism may not have enough time to sync these changes over to the other IP3 Controller, but regardless, the **Data Sync Status** LEDs may indicate that the IP3 Controllers are Synchronized.

Failover Trigger Conditions

- Active IP3 Controller powered off
- Windows reboot of the Active IP3 Controller
- Active IP3 Controller ENET1-4 connection lost
- Active IP3 Controller ENET5 and 6 connection lost

Logging Server

Overview

The Magellan Logging Server provides logging information on IP3 Controller and Routing functions. The Logging Server is pre-installed on the Controller and can be accessed on port 8002 on the same IP address as the Controller.

To launch the Logging Server:
In the URL field of your browser, type **http://<Controller IP Address>:8002/**

The following is explained here:

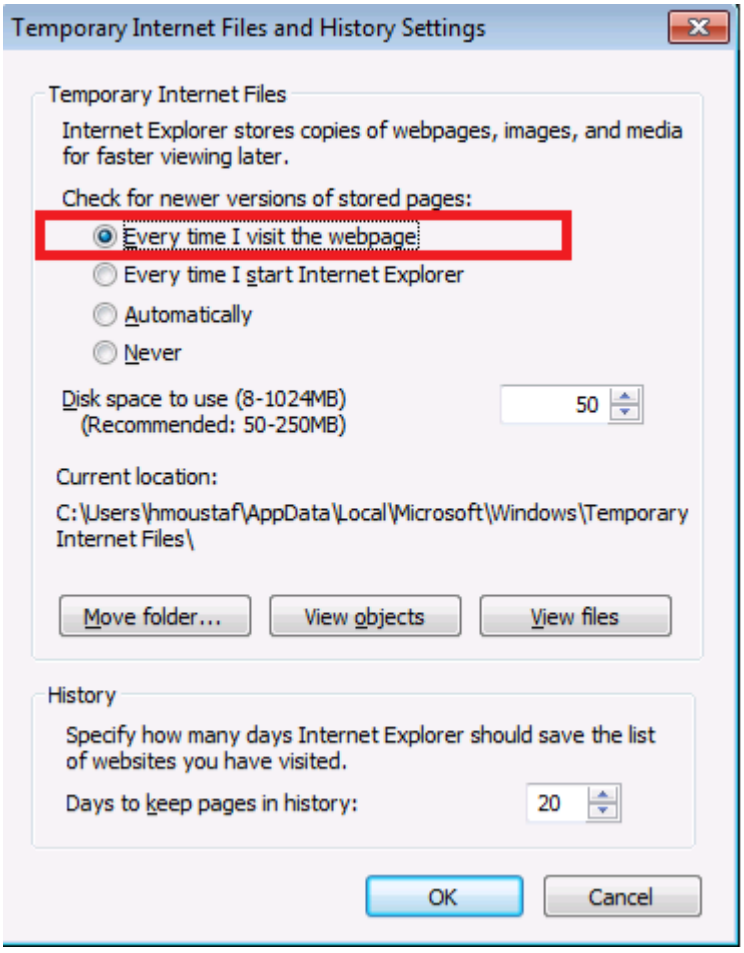
- Logging Server Interface (on page 104)
- Examining Logs (on page 105)
- Live Logs (on page 106)
- Log History (on page 106)
- Clearing Logs (on page 107)
- Configuring the Logging Server (on page 107)
- Exporting Logs (on page 110)
- Importing Logs (on page 111)
- Using Summaries (on page 111)

Browser Settings

If using Internet Explorer, turn off caching to prevent any issues with content being displayed in popup windows

1. Go to Tools > Internet Options
2. In the General tab, click the Settings button in the Browsing History section
3. In the Temporary Internet Files and History Settings dialog, select Every time I visit the webpage under check for newer versions of stored pages.

4. Click OK.


Temporary Internet Files and History Settings
Temporary Internet Files
Internet Explorer stores copies of webpages, images, and media for faster viewing later.
Check for newer versions of stored pages:
Every time I visit the webpage
Every time I start Internet Explorer
Automatically
Never
Disk space to use (8-1024MB)
(Recommended: 50-250MB)
50
Current location:
C:\Users\hmoustaf\AppData\Local\Microsoft\Windows\Temporary Internet Files\
Move folder...
View objects
View files
History
Specify how many days Internet Explorer should save the list of websites you have visited.
Days to keep pages in history:
20
OK
Cancel

Logging Server Interface

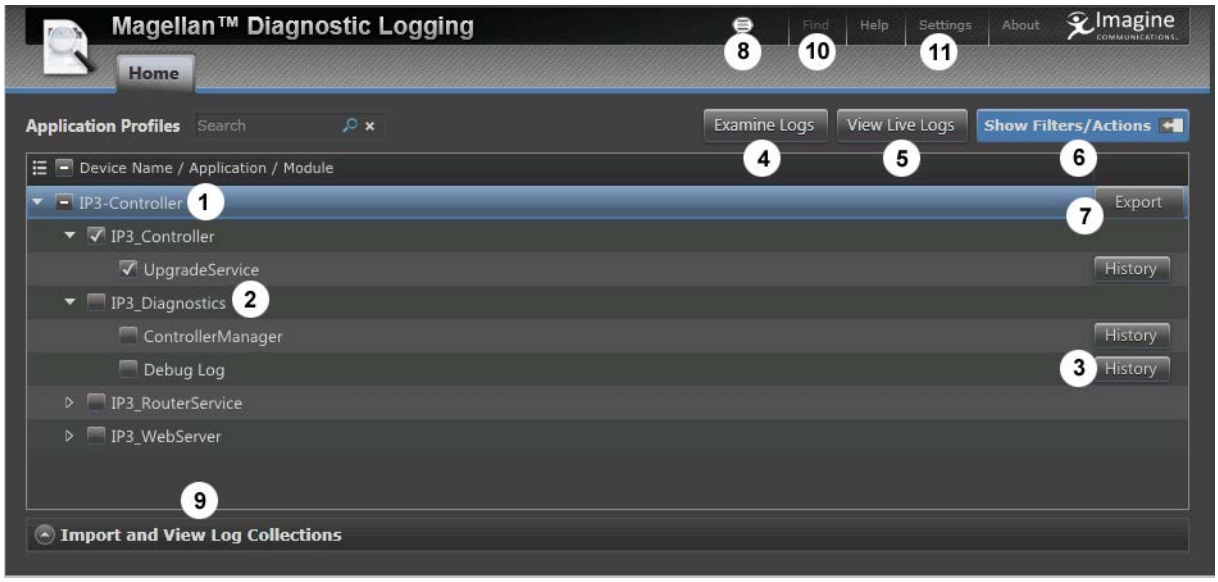


Figure 42: Logging Server Home tab

Table 18: Logging Server Interface Options

	Item	Description
1	Home Tab	The Logging Server Home Tab.
2	Router/Controller Elements	The available elements to view logs for
3	History	Select an element and click the **History** button to view History for the selected element
4	Examine Logs	Select an element and click the **Examine Logs** button to review logs for the selected element
5	View Live Logs	Select an element and click the **View Live Logs** button to view real time logs for the selected element
6	Filters and Actions	Click to filter display and content preferences for logs
7	Export	Select an element and click the **Export** button to export log information. Logs can be exported by day, week, or all.
8	Summary	Click the **Summary** icon to display a Summary toolbar at the top of the page that contains shortcut links to Exports, Imports, and Collections. See Using Summaries (on page 111).

	Item	Description
9	Import and View Log Collections	Click to view/access **Log collections** based on name/date/comments - these can then be **examined** or **exported**. You can also **import** logs.
10	Settings	Click to view/define **System-wide settings**, **Log Viewer Settings**, and **Logging Server Settings**.
11	Find	Searches for the entered text on the page

Working with Logs

Examining Logs

On the **Home** tab, select devices (if no devices are selected, it's the same as if all of them are) and click **Examine Logs** to view logs in detail.

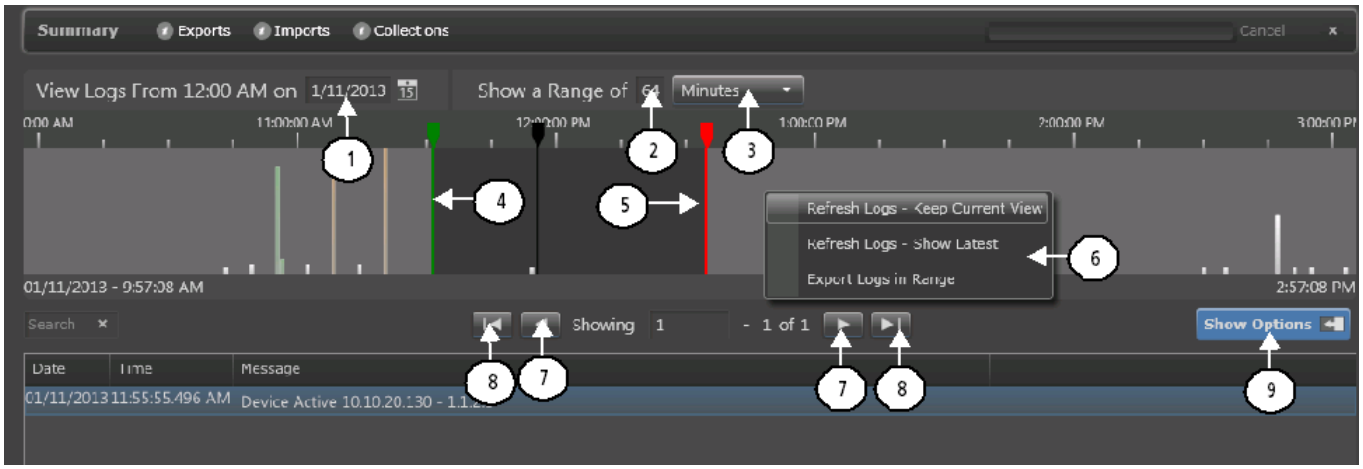


Figure 43: Examiner Tab

Table 19: Examiner Tab

	Item	Description
1	Log Date	Date to view logs from. Type in a date or click the calendar icon and go to a date.
2	Units in View	Number of defined units for the log (hours, minutes, etc)
3	Display Units	Units to view log information in (Days, Hours, Minutes, Seconds, Milliseconds)
4	Log Start Range	The Start Point of the Log Range. Click and drag to define.
5	Log End Range	The End Point of the Log Range

	Item	Description
6	Log Range Options	Right click to view options for the selected log range. You can choose to refresh logs or export the selected range.
7	Next Page	Click to go to the next or previous page.
8	Last Page	Click to go to the last or first page.
9	Options	Click to view/define Log Options and to filter logs.

The top portion of the **Examiner** tab shows a timeline. A **green** marker indicates the beginning of the viewing area, and a **red** marker indicates the end. To View a specific time, click the timeline with the mouse. The log examiner updates to show logs surrounding that time. A black line appears in the timeline, indicating the current time in the Examiner.

Above the timeline, you can adjust the content that is displayed by changing the date and duration. To view a different part of the log, drag the green and red sliders. Below the timeline, messages are displayed in a static format. You can sort the log entries by clicking on column headers.

Live Logs

To view a live (real time) log, place a check beside the device on the Home page, and then click **View Live Logs**.

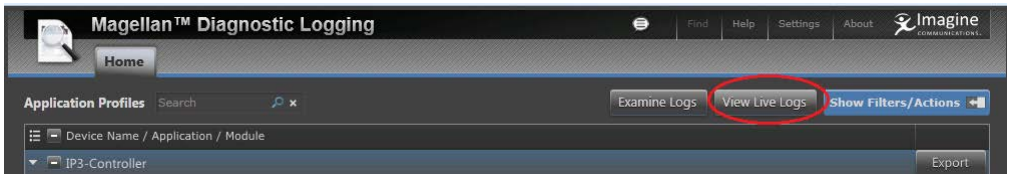


Figure 44: Live Logs

If no logs are selected or all logs are selected, click **View Live Logs** and the log that opens will contain entries for all connected devices.

If no device has activity when you select View Live Logs, the viewer tab is empty. The viewer updates dynamically as events occur.

Log History

Click the **History** button against a module to view Module Log History.

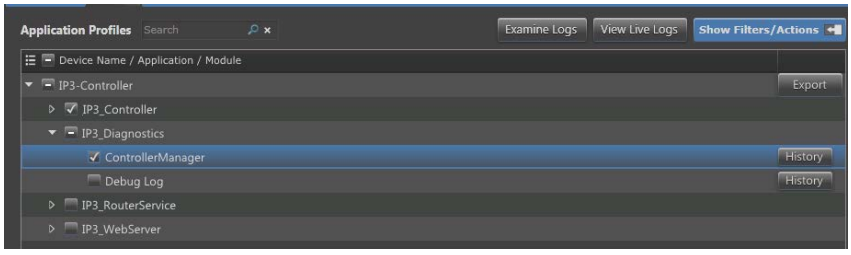


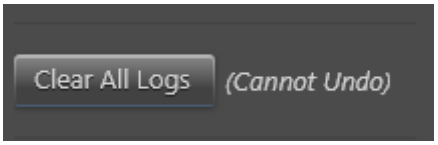
Figure 45: Logging Server History Tab

Clearing Logs

When you clear logs from the logging server, all devices are also removed. Be sure to save logs that you need prior to clearing.

1. If the **Filters** palette is not open at the right side of the screen, click **Show Filters/Actions**.

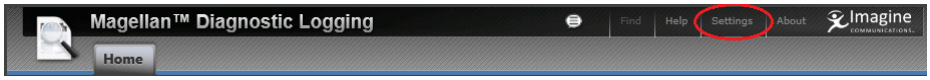
Click **Clear All Logs** and then click **OK**. All logs and all information in the logs are removed.



When a device has activity, it will reappear on the **Home** page of the logging server.

Configuring the Logging Server

Click **Settings** in the top right corner of the screen to open the **Settings** pane.



Settings are divided into three sections: **System Wide Settings**, **Log Viewer Settings**, and **Log Server Settings**.

For the most part, don't change port numbers and other settings except on the advice of Customer Service.

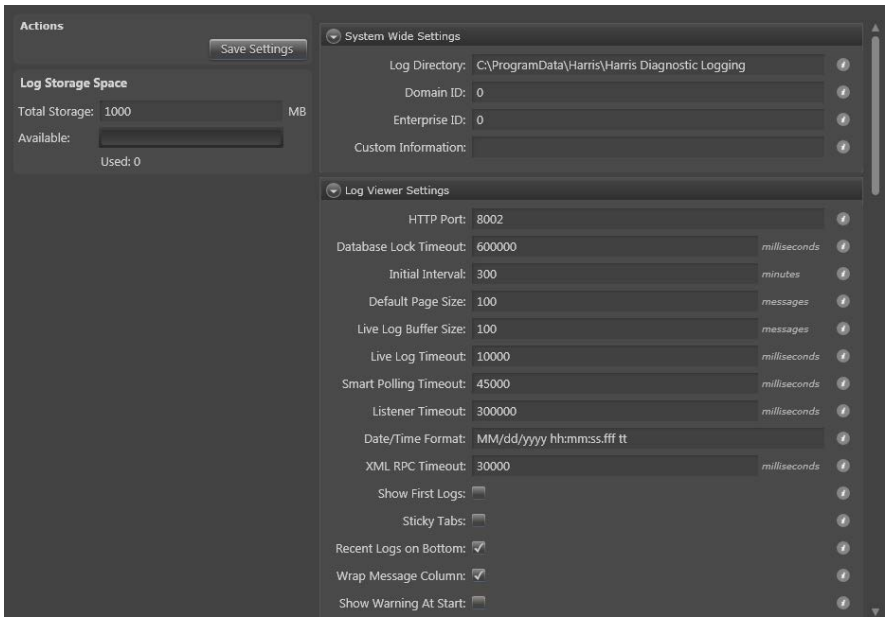
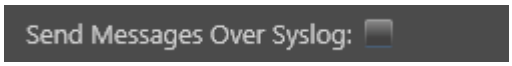


Figure 46: Log Server Settings

When you make any changes to the Logging Server's settings, click Save to commit the changes.

If your logging server is not receiving any messages, despite having devices configured, check the **Send Messages over SysLog option under** Logging Server Settings. If this item is not checked, no messages will be received.



Changing Columns That Appear in the Logging Server

1. On the Settings panel, scroll down to **Column Preferences**.

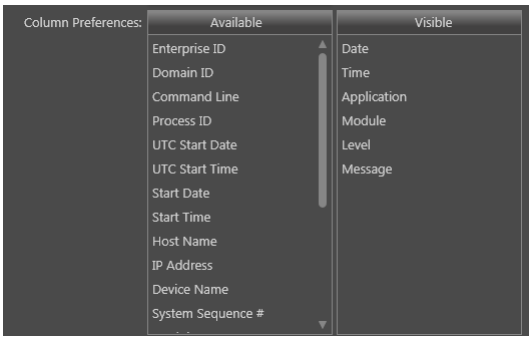


Figure 47: Column References Selector in the Logging Server

The items in the **Available** list on the left are not currently used in the Log display. Items in the **Visible** list on the right are column headers in the Log display.

To move items from one column to the other, click on the item and hold the mouse down while dragging from one column to the other. When you see a shadow of the item in the column you're dragging to, release the mouse button. The item appears at the point in the list where you dropped it.

You can change column order by dragging items within a column.

Note: You can also drag column headers on the table interfaces themselves.

Click **Save** to commit the changes.

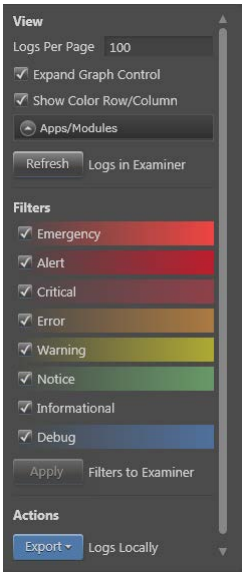
Changes to columns are universal and apply to all examiner pages.

Changing (Filtering) the Content Displayed in the Examiner

In addition to sorting a log file by the display columns, you can choose to view only certain types of logs. Follow these steps:

1. Click **Show Options**.

The **View Options** palette appears at the right side of the screen.



2. At the top of the palette, select how many logs to view, and how they will be displayed.
3. Place checks beside types of information you would like to see in the **Examiner**.
   You can only filter out information.
4. Click **Apply**. The table refreshes to display the selected information.

Interpreting Messages in the Logging Server

Information such as **Date**, **Time**, **Level**, etc., in the logging server is defined by the logging server itself; see the Logging Server's documentation for more information on those items.

The **Message** field in the logging server is specific to the particular device. A single device action, such as a Take, can trigger numerous messages in the log, as the repercussions of that action are executed.

The message field of a typical log entry is separated by commas, and contains the following information:

- The source of the change, for example: Operation, meaning an operator performed an action)
- The device where the action took place, for example RCP: IP address, meaning a specific remote control panel triggered an action
- The item that was triggered
- The action that happened as a result of the triggered item

Message Types

- **Error:** This level is reserved for problems that directly affect output, such as loss of signal and loss of reference. High-priority CCSP alarms with a level of **Critical** generate this message when asserted.
- **Warning**: This level notifies about potential problems. Medium-priority CCSP alarms with a level of **Warning** generate this message when asserted.
- **Notice**: These messages apply to all alarm de-assertions and RCP connection messages.

- **Informational**: This level indicates routine device operation.
- **Debug**: This level is disabled by default and only intended for use in specific trouble-shooting guided by tech support.

Informational messages will be generated for all operational changes from control sources enabled in the logging server setup. Control by RCP will list the IP of the device to identify which one performed the operation. Other sources have a sole source available - all Automation message are assumed to come from the same source, but EAS is considered another source. All messages control from the parametric system are identified as CCSP.

Import and Exporting Logs

Exporting Logs

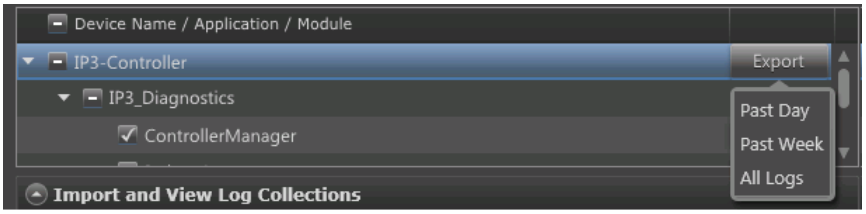
When you export a log, it is saved as a zip file that contains an XML file.

Do one of the following:

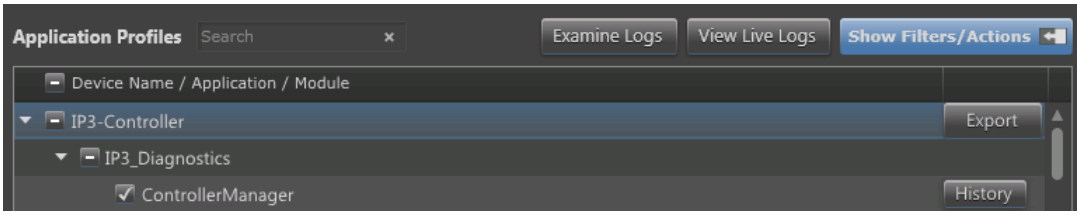
Logging Server Home Page

From the Logging Server's **Home** page, do either of the following:

At the right end of the header line, click **Export**, and then choose **Past Day**, **Past Week**, or **All Logs**.



- Place checks beside items in the Devices and Application Profiles list, and then click **Show Filters/Actions**, and click **Export** under **Actions**. Choose **Past Day**, **Past Week**, or **All Logs**.



All selected logs (any log with a check beside it) are exported.

Examiner Tab

From the Examiner, click **Show** options, and then, under **Actions**, click **Export**. Choose **Logs in View**, **Past Day**, **Past Week**, or **All Logs**.

History Tab

From the **History** tab, place a check beside the logs you want to export, and then click **Export**.

When the log is collated and ready to be saved locally, a dialog may appear, asking what to do with the file.

1. Click **Save** to save the file to the local computer. You can choose a different location for the file. If this dialog does not appear, but a progress bar appears instead, the file is being transferred to the local computer.

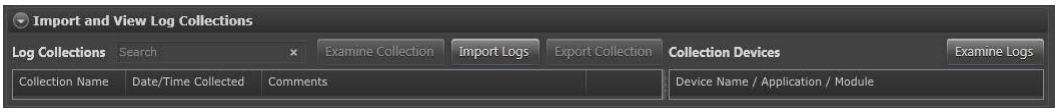
2. When the export has finished, a message appears on the top left corner of the Logging Server interface.

Importing Logs

The Logging Server can import logs that it or another Logging Server has saved. To import a log, follow these steps:

1. Click **Import and View Log Collections** at the bottom of the **Home** page. This enables you to see past log collections or to import logs.

   The lower section of the screen expands to display details.



2. Click **Import Logs** and then browse to a .zip file and click **Open**.

   A progress bar appears, and when the import is finished, an **Import Complete** message appears in the top right corner of the screen.
3. Click an item in the **Log Collections** column on the left.

   The **Collection Devices** column updates to display all devices contained in that collection.
4. Place a check beside each device log you would like to load in the Examiner, and then click **Examine Logs**.
5. The logs open in the **Examiner**.

Using Summaries

If you have recently imported or exported a log, the **Summary** bar appears below the button bar at the top of your Logging Server screen. If the Summary bar is not open, click **Summary** to open it. Click the X at the end of the toolbar to close it.

Figure 48: Summary Toolbar

The Summary bar has three options: **Exports**, **Imports**, and **Collections**.

Click one of these options to open the **Summary Details** dialog box.
The three options correspond to three tabs on the **Summary Details** dialog box.
Each tab details recent activity for that area of the interface.

Router Soft Panel Overview

The Router Soft Panel is a new web based utility for controlling Platinum IP3 routers via any computer or mobile device with HTML5 support. The Router Soft Panel essentially runs on a IP3 Controller, and is specific to routing control for that IP3 Controller.

Logging in

The Router Soft Panel interface can be accessed using **http://<IP3 ControllerIP Address>/panel/**

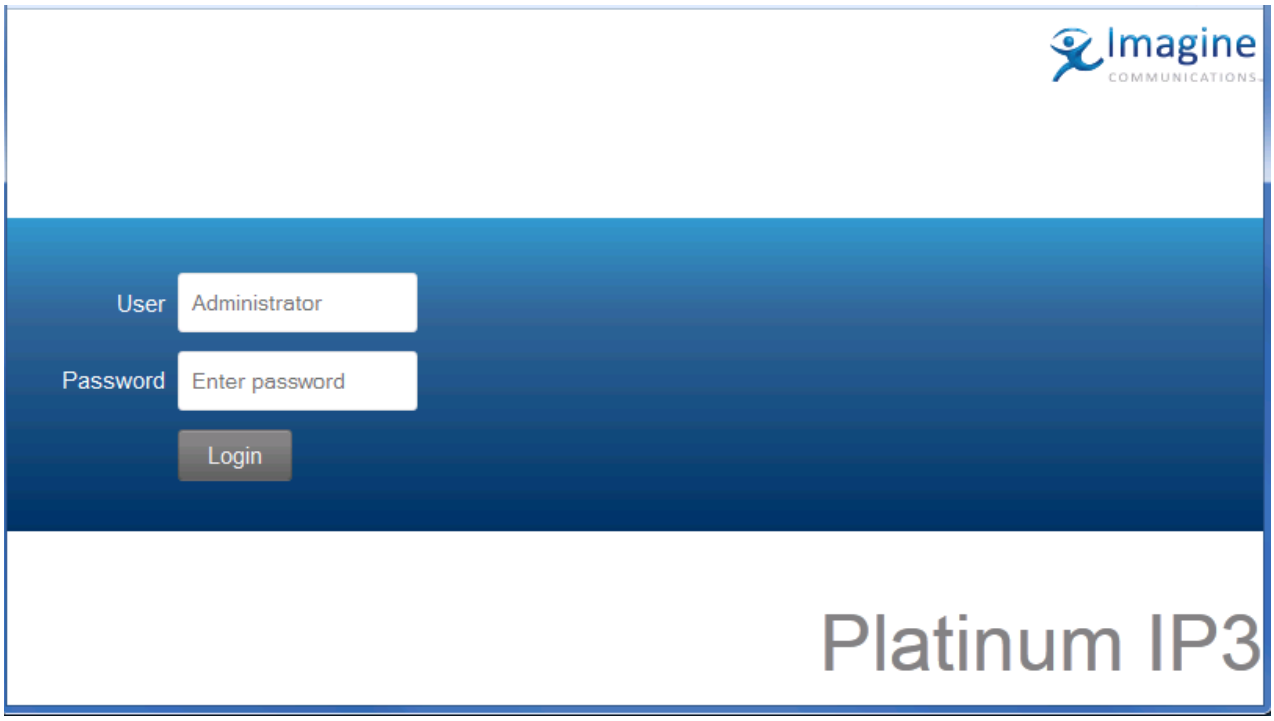


Figure 49: Router Soft Panel Login Screen

Note: The users for the Router Soft Panel application correspond to the user accounts (Administrator and Operator) on the IP3 Controller.

Dashboard

Once you log in, a dashboard is displayed with the following:

- **Views** and **Function buttons** on the top
- **Sources** and **Destinations** on the left
- A **Display pane** on the right that can be toggled to:

- Display status of selected sources and destinations (See Display Pane - Details (on page 115))
- Filter Sources and Destinations (See Display Pane - Filtering (on page 116))

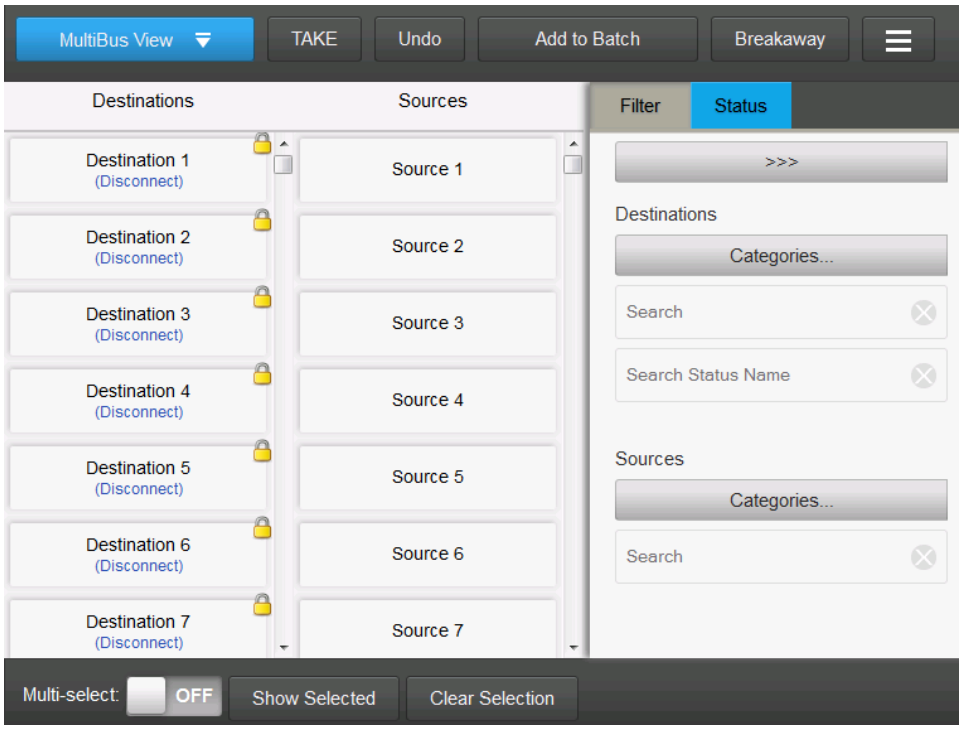


Figure 50: Router Soft Panel Dashboard View

Sources and Destinations

In the default **MultiBus View**, **Sources** and **Destinations** defined in the IP3 Controller are displayed on the left of the dashboard.

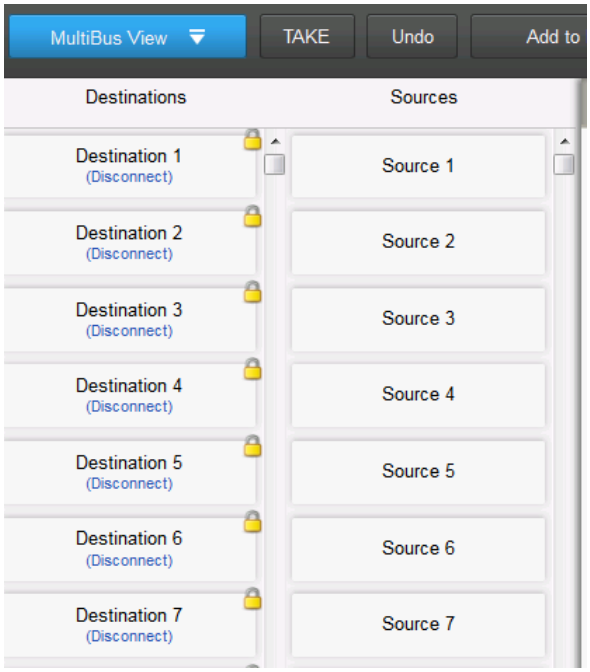


Figure 51: Sources and Destinations in MultiBus View

Display Pane - Details

You can click on a **Source** or **Destination** to have its details displayed in the pane on the right.

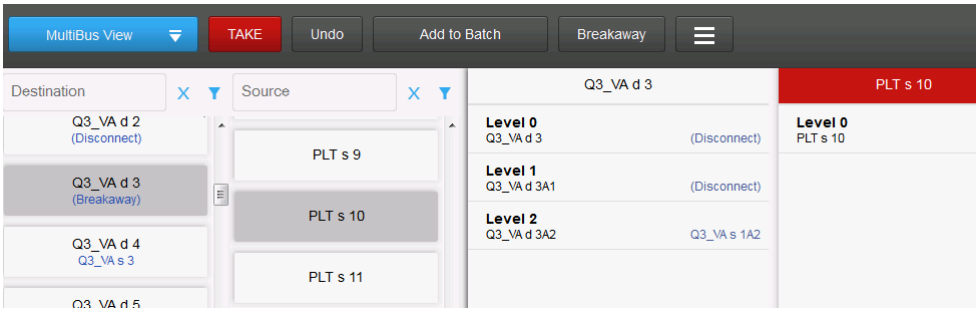


Figure 52: Source/Destination Details

Note: If you multi select Destinations (to enable, turn on Multi-select option at the bottom), details for the last selected destination will be shown on the right.

Display Pane - Filtering

Click the Filter icon to the right of **Destination** or **Source** (in the header) for a filtering interface.

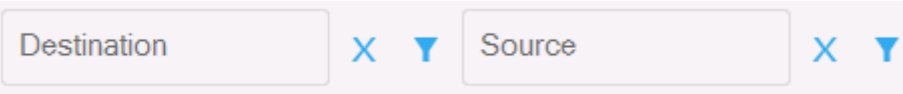


Figure 53: Filter Icon

You can filter sources/destinations by **Category**, **Group**, or **Status**.

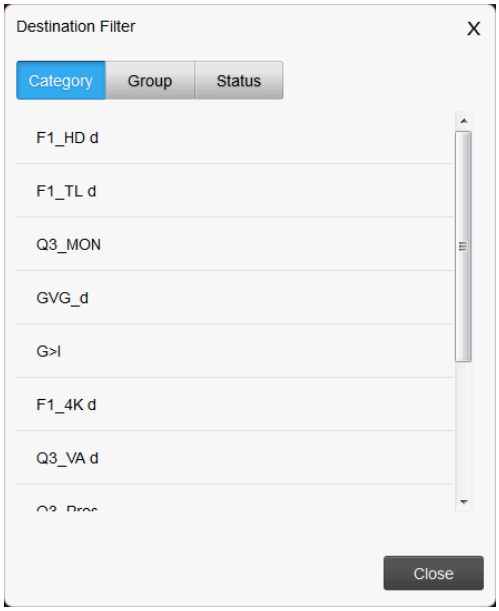
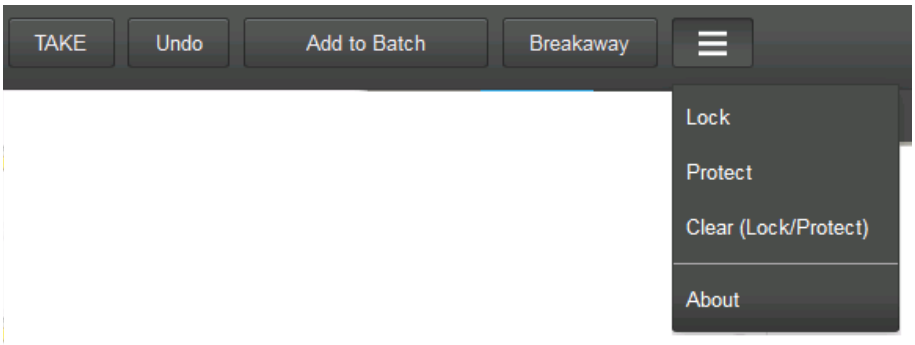


Figure 54: Filter Destination by Category

You can also type directly in the Source/Destination textboxes to filter by your input.

Functions

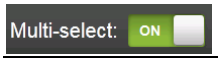
The top of the dashboard displays several buttons to perform functions on Sources and Destinations.



You can perform the following functions:

- Takes
- Undoing Takes
- Adding to a Batch
- Breakaways
- Lock
- Protect
- Clear (Lock and Protect)

Note: Turn on the Multi-select option at the bottom if you want to select multiple destinations.



Takes

You can do a **TAKE** by selecting a sources and destination(s).

Note: The **TAKE** button at the top is enabled (Red) when you select at least one source and one or more destinations.

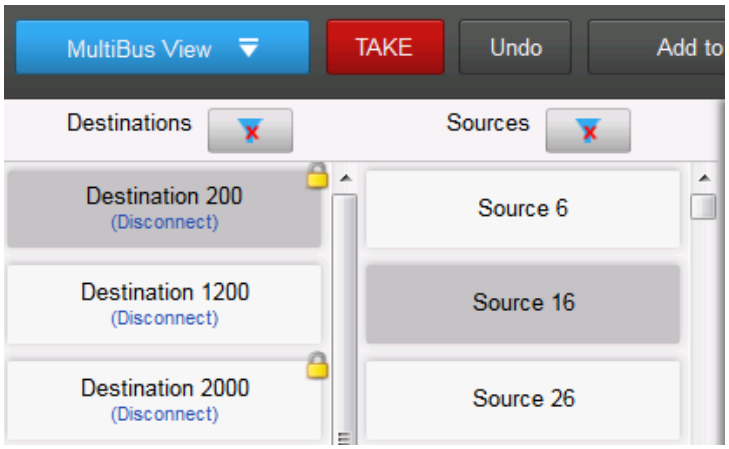


Figure 55: Performing a Take

Undoing a Take

Once a **TAKE** has been performed, the **Undo** button is enabled and you can choose to Undo the last **TAKE**.

Note that only the last **TAKE** can be undone, not any takes prior to that.

When you click **Undo**, a message will be displayed asking for confirmation of the requested **Undo** function for the last **TAKE**.

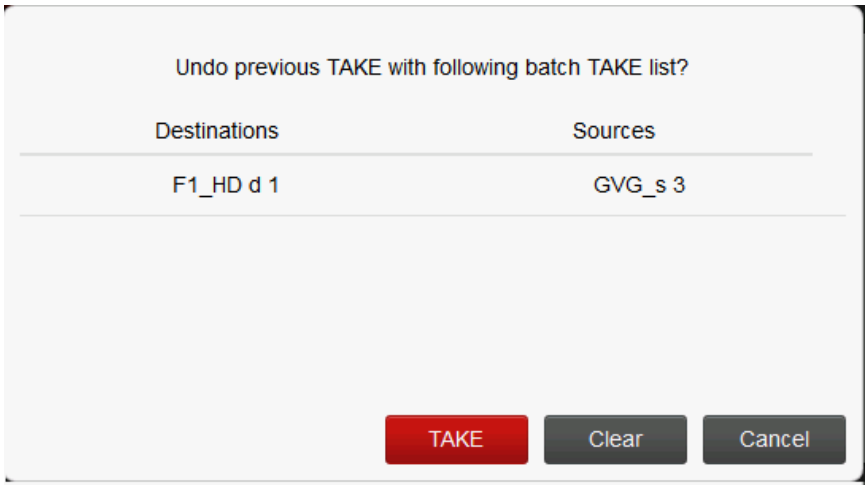


Figure 56: Undoing a Take

Add to Batch

You can select a **Source** and one or more **Destinations** and add it to a Batch.

Note: The **Add to Batch** button at the top is enabled when you have at least one source and one destination selected.

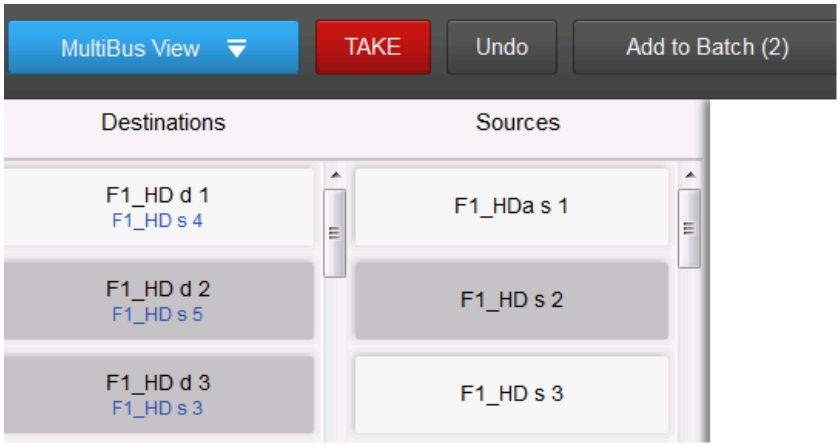


Figure 57: Add to Batch

The Add to Batch button reflect the number of batches currently stored.

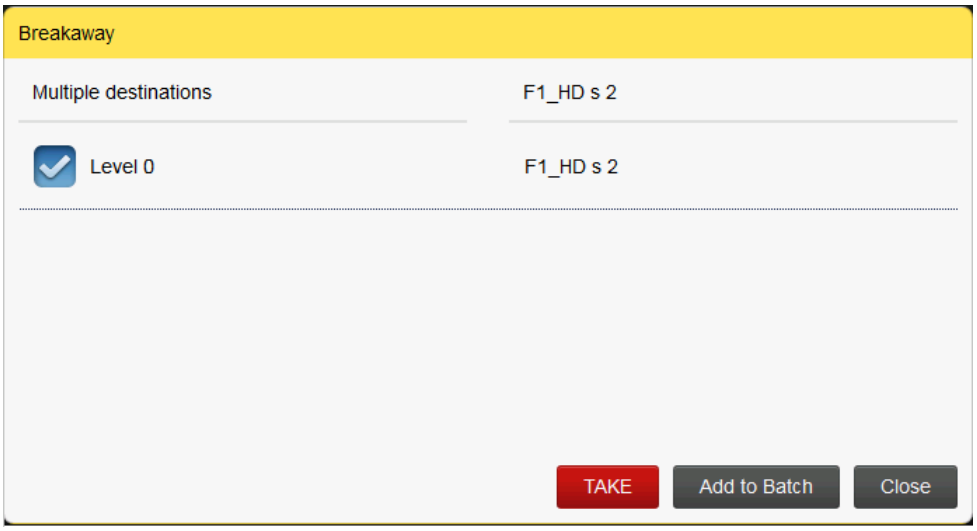
Switch to the Batch View (on page 122) to see the contents of batches.

Breakaway

To perform a breakaway, select a Source and a Destination and click the Breakaway button at the top.

A confirmation dialog displays the following details:

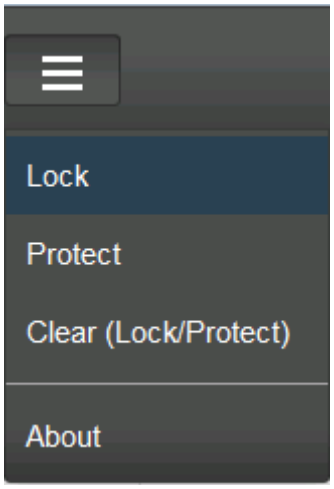
- **Destination**
  Selected Destination(s) will be displayed. Select the Level.
- **Take**
  The **TAKE** button is then enabled and you can click TAKE to send the Breakaway command to the Router.



Lock

The Lock function prevents all users from changing the destination.

You can lock one or more destinations by selecting (use multi-select to select multiple) the destinations , clicking the last function button at the top and clicking **Lock**.



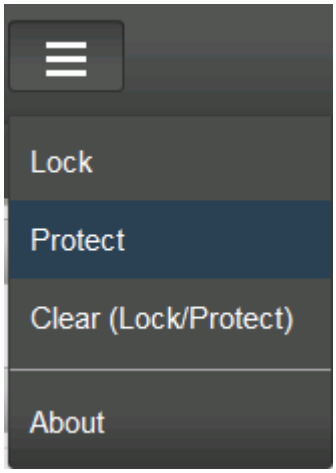
Locked Destinations will display a special icon to denote their locked status.

The user that initiated the Lock can clear it using the **Clear Lock/Protect** function. See Clear (Lock/Protect) (on page 121).

Protect

The Protect function prevents users (except the user who initiated the Protect) from changing the destination.

You can protect one or more destinations by selecting (use multi-select to select multiple) the destinations , clicking the last function button at the top and clicking **Protect**.



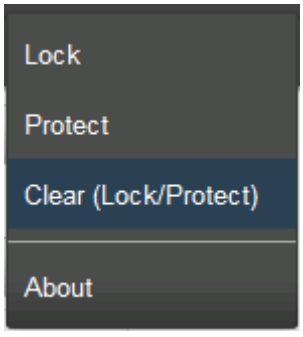
Protected Destinations will display a special icon to denote their protected status.

The user that initiated the Protect can clear protected Destinations using the **Clear Lock/Protect** function. See Clear (Lock/Protect) (on page 121).

Clear (Lock/Protect)

The **Clear** function can be used to clear locked or protected Destinations. Administrator users can override the locks set by other operators.

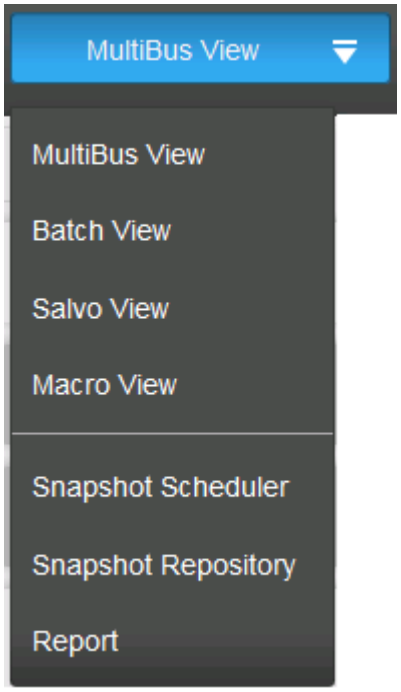
To clear locks or protects, select the locked/protected destinations and then select the **Clear** option from the last function button at the top.



Views

The Router Soft Panel interface is divided into several views.

- MultiBus (default)
- Batch
- Salvo
- Macro



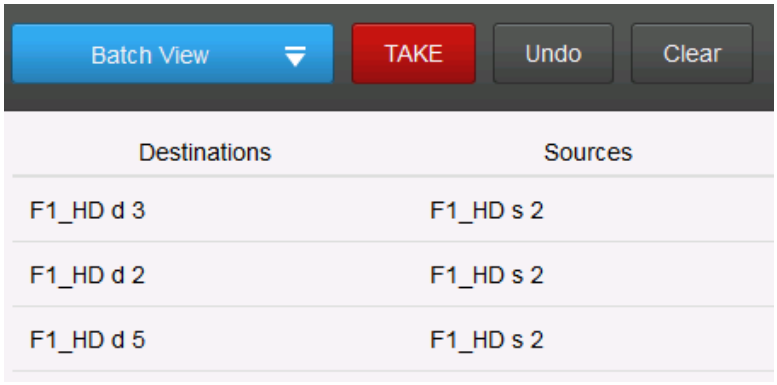
MultiBus View

MultiBus View is the default view for the dashboard. It displays all the Sources and Destinations and various function buttons. See Sources and Destinations (on page 115).

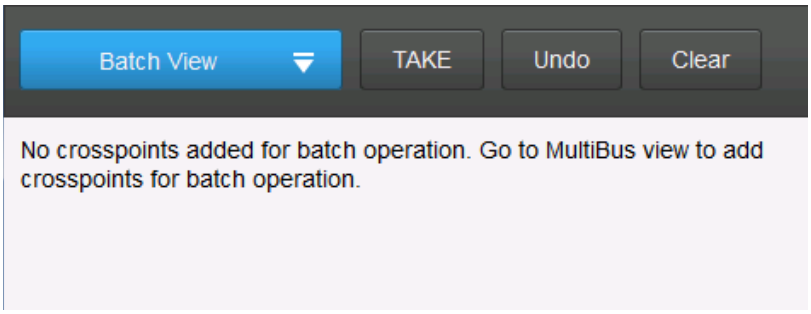
Batch View

The Batch View is populated by the Add to Batch function. See Add to Batch (on page 118).

If you have added **Sources** and **Destinations** to a batch (from the default MultiBus View), they will be displayed here. Click the **TAKE** button to execute.



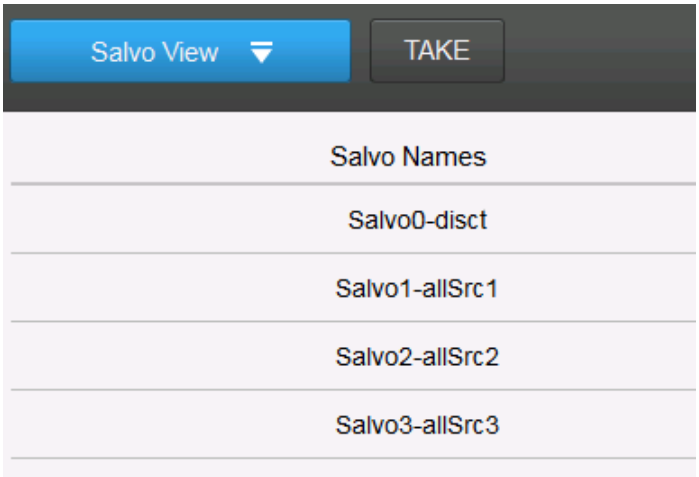
If nothing has been added to a batch, the View will be empty.



Salvo View

If you have any Salvos defined, they will be displayed here.

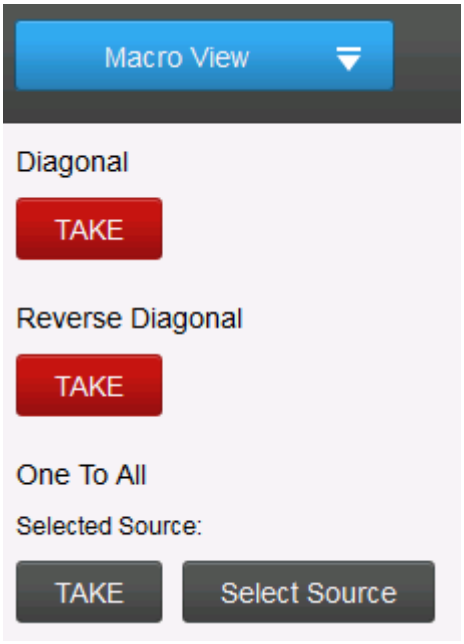
If there are no Salvos, this view will be empty.



Macro View

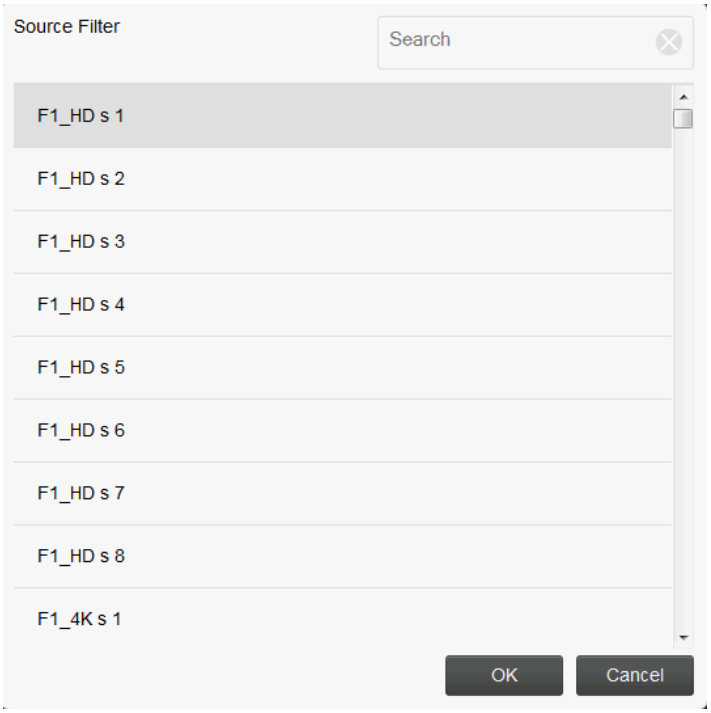
In the Macro View, you can choose to perform:

- A Diagonal Take
- A Reverse Diagonal Take
- A One To All Take



- For a **Diagonal** or **Reverse Diagonal** Take, click the **TAKE** button to execute.
- For a **One to All Take:**
  1. Click the **Select Source** button

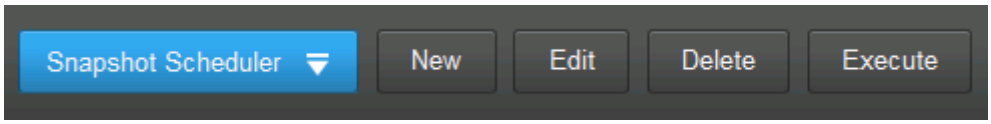
2. Select a Source from the list that is displayed or filter using criteria and click **OK**.



3. Click the TAKE button under **One To All which** will now be enabled Red.

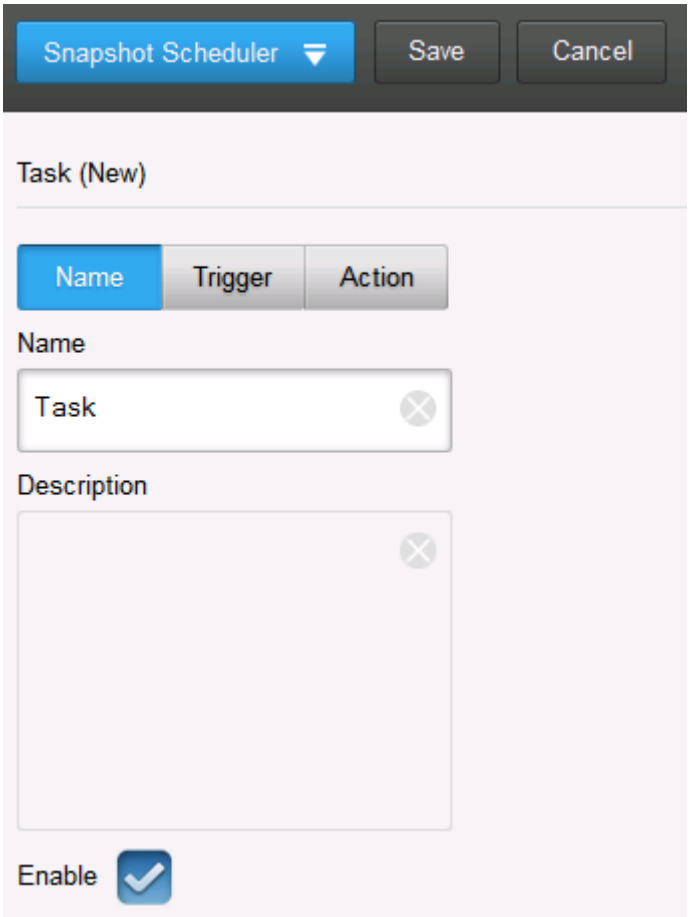
Snapshot Scheduler

The Schedule View lists defined schedules, and provides an interface to create/edit/delete/execute schedules



Creating a New Schedule Task

Enter a **Name** and **Description** for the Task. Select the Enable checkbox to **Activate** the task.

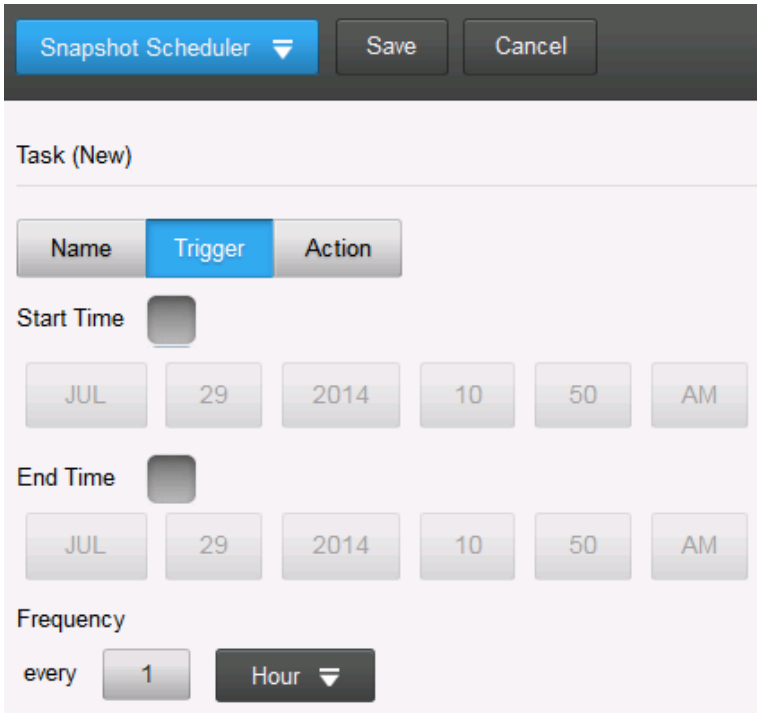


Schedule Trigger

Enter the **Trigger** action for the created task.

- **Start Time**: Enter the start date and time for the task
- **End Time**: Enter the end date and time for the task
- **Frequency**: Can be defined in hours or days

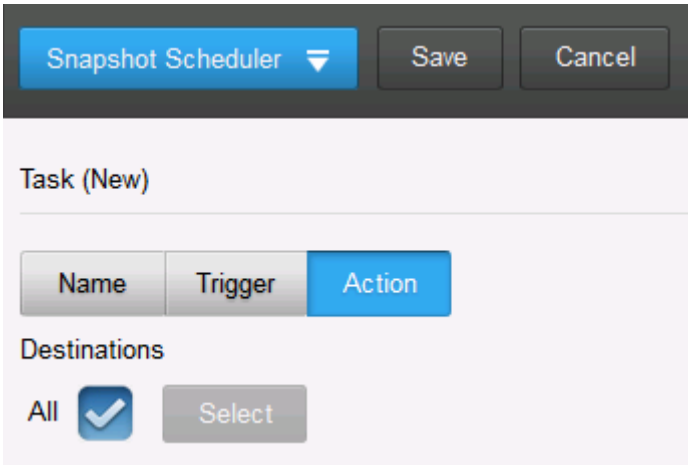
Based on this criteria, the schedule will run during the window defined by the start and end date/time, at the defined frequencies.



Action

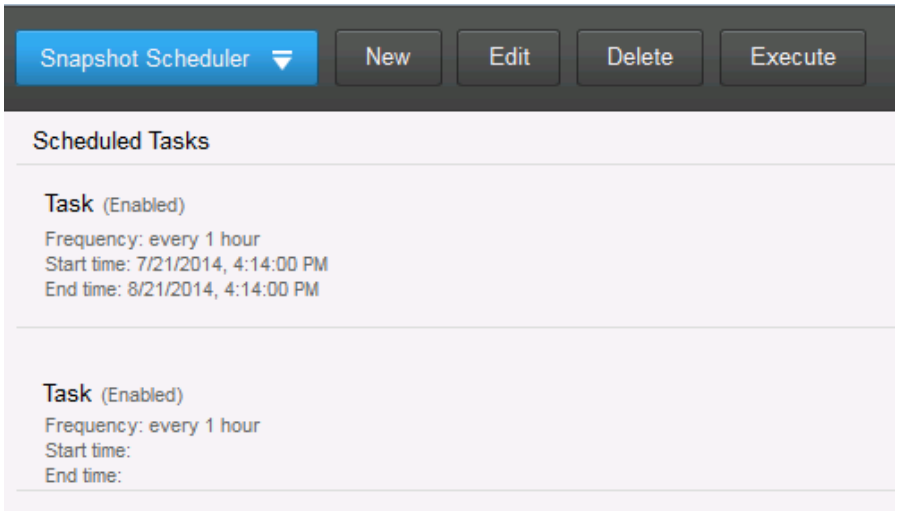
Define whether the task will run on ALL destination or selected ones.

- For **ALL** destinations, leave the **All** checkbox selected
- For **specific** destinations, clear the All checkbox and click the SELECT button. Filter to select the desired destinations or Ctrl+select multiple destinations.



Editing/Deleting Tasks

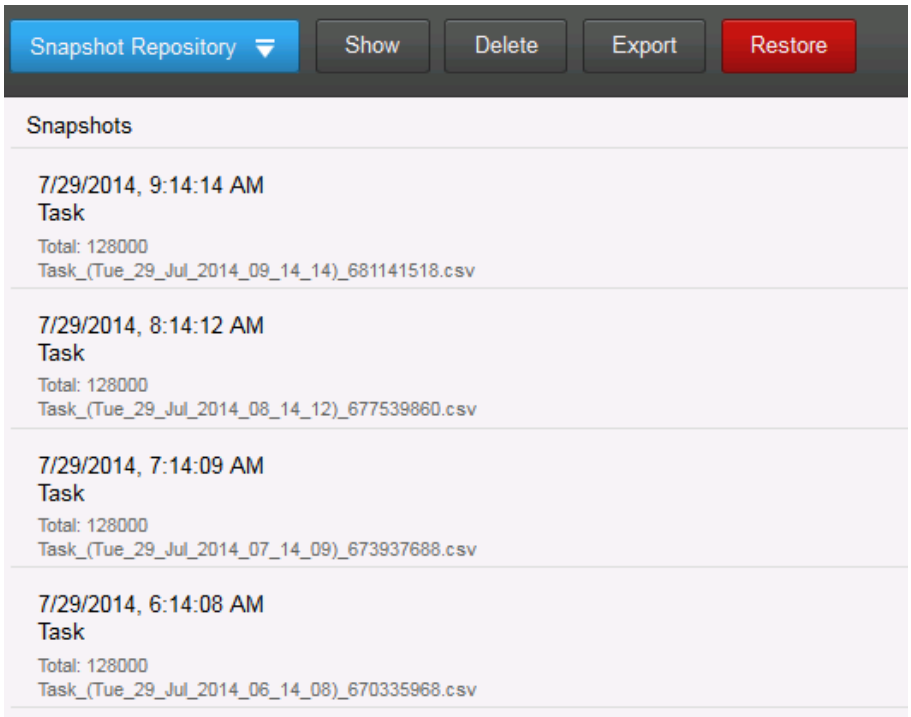
Once defined, tasks will be displayed in the Snapshot Scheduler view.



- To edit a task, select it in the Schedule View, and click **Edit**
- To delete a task, select it and click **Delete**

Snapshot Repository

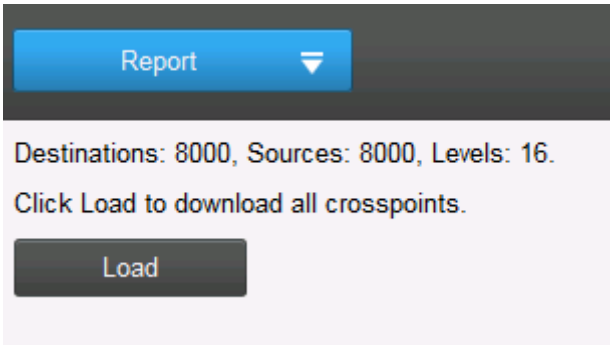
The Snapshot Repository contains snapshots of the system taken per the configurations in the Snapshot Scheduler.



Snapshots are saved in .CSV format, and you can open it in an application like Microsoft Excel or even Notepad.

You can select a snapshot and and click the **Show** button to view it, the **Delete** button to erase it, or the **Export** button to save it locally.

Report



A Report can be generated for current crosspoint status and it can also be exported to .CSV.

Module Specific Configurations

Platinum Frame Synchronizer and Mux Module (PX-HSR-OBG)

PX-HSR-OBG Overview

The PX-HSR-OBG is a Frame Synchronizer, Mux and Clean & Quiet Switch Output Board that adds unprecedented Video and Audio processing power to output boards in the IP3 Frame. The PX-HSR Output Frame Sync card has 8 processed outputs and 8 unprocessed outputs.

Each module presents 8 physical ports with each port containing a processed signal (video 1 plus audio) and an unprocessed one (Video 2). The unprocessed outputs are available on the same 8 physical ports as the processed ones, but the actual video channel is Video2. The Card has to be configured via the IP3 Database Editor.

PX-HSR-OBG Variants

The PX-HSR Output Frame Sync card is available in 4 different variants.

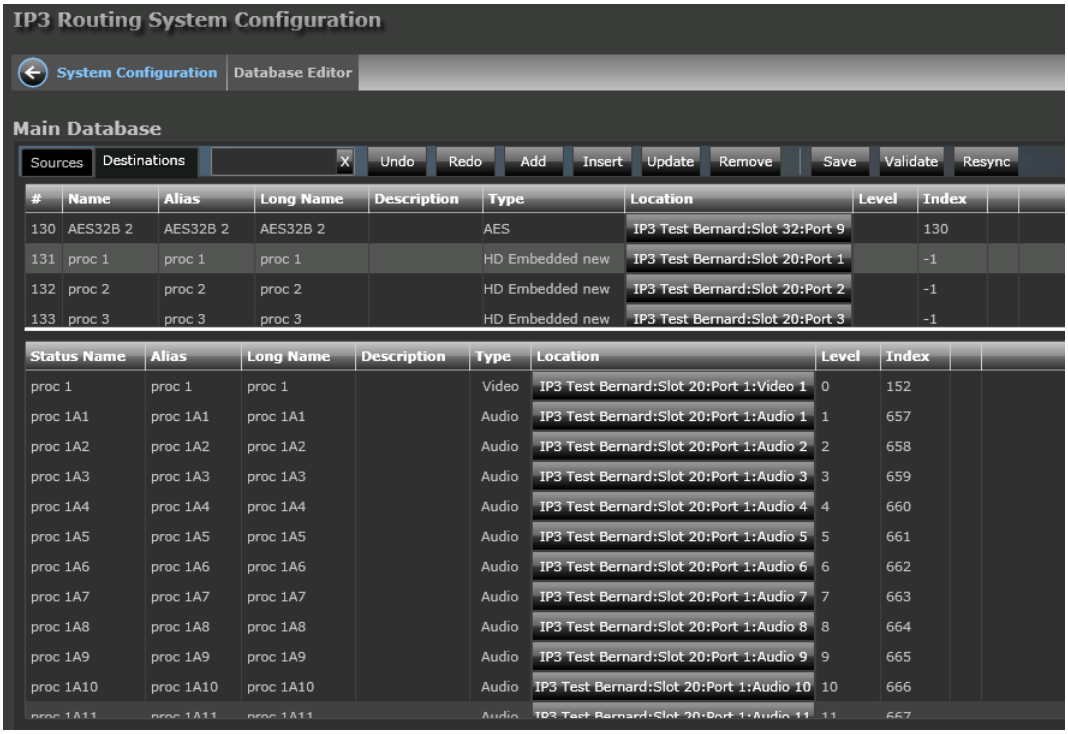
Module	Description	Outputs
PX-HSR8CMX8C-OBG	SD/HD/3G Mux Output Module w/ 16 HD BNC back panel	**16 HD BNC Outputs** 8 processed, 8 unprocessed
PX-HSR8OMX8O-OBG	SD/HD/3G Mux Output Module w/ 16 Fiber/8 SFP back panel	**16 Optical Outputs** 8 processed, 8 unprocessed
PX-HSRMX8C2D-OBG	SD/HD/3G Mux Output Module w/ 8 HD BNC + 2 DensiShield back panel	**8 HD BNC Outputs,** all processed. **1 Densishield Output** for Router Matrix expansion, unprocessed **1 Densishield Input** for Router Matrix expansion
PX-HSRMX8O2D-OBG	SD/HD/3G Mux Output Module w/ 8 Fiber/4 SFP + 2 DensiShield back panel	**8 Optical Outputs**, all processed. **1 Densishield Output** for Router Matrix expansion, unprocessed **1 Densishield Input** for Router Matrix expansion

PX-HSR-OBG Configuration

Follow these steps to configure your IP3 Controller Output Frame Sync card.

1. Launch **Navigator**. Discover your IP3 device and create a Routing System.
2. Run the **DB Editor.**
3. Create 2 Device Types: **HD Embedded** and **HD Video**
4. Follow the Wizard to create the **HD Embedded** Device type
   - When creating the **HD Embedded** Device type, in the **Level Selection** dialog box, set the Number of embedded audio channels to 16 (default is 10).
5. Follow the Wizard to create the **HD Video** device type.
6. Open the **IP3 Database Editor** from Navigator. Go to the **Destinations** tab.
7. Click the **Add** button to add the 8 processed outputs
   - Use the **HD Embedded** device type add logical destinations for the 8 processed outputs
   - Enter **8** for the number of **Destinations to create**
   - Ensure the **Slot number** corresponds to the Slot that contains your HSR module
   - Change the **Name prefix** to clearly identify these as Processed outputs, for example, **ProcX**
   - Ensure the **Index** is set to **1**

   This adds 8 Outputs (Ports 1-8) with 1 video (Video 1) and 16 Audio (Audio 1-15) channels. Check that the entries have been correctly created in the upper and lower panes.



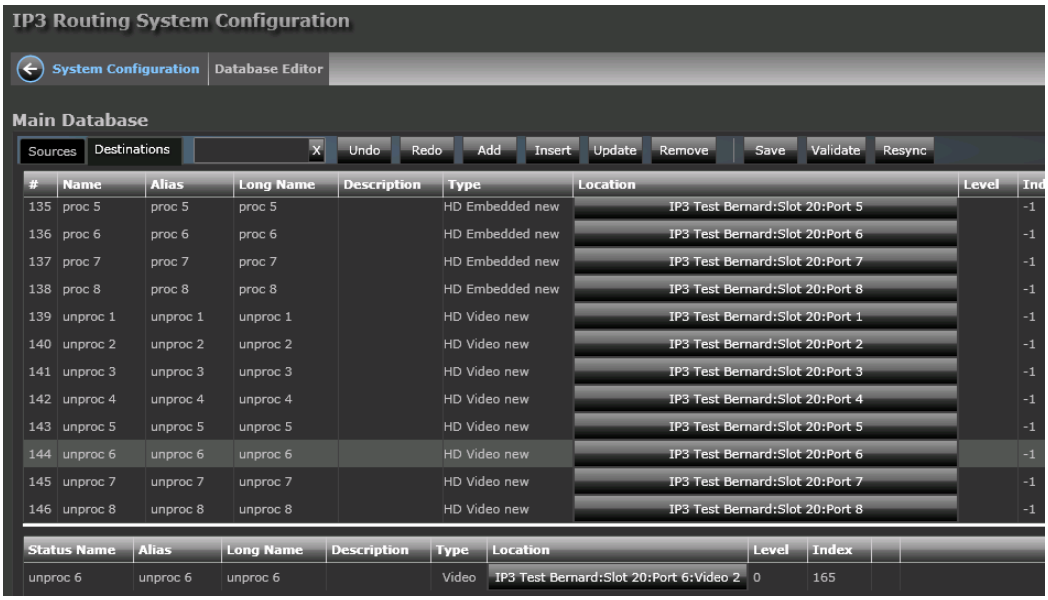
8. Click the **Add** button again to add the 8 unprocessed outputs.

Note: Unprocessed outputs are available on the same 8 physical ports as the processed ones, but the actual video channel is Video 2. After inserting unprocessed destinations, the location for each video channel needs to be manually changed to use Video 2 channel instead of Video 1. So create

just 1 destination defined as Video 2, and then add the remaining 7, which inherit the Video 2 definition.

- Use the **HD Video** device type to add a logical destination
- Enter **1** for the **number of Destinations to create**
- Ensure the **Slot number** corresponds to the Slot that contains your HSR module
- Change the **Name prefix** to clearly identify these as Unprocessed outputs, for example, **UnprocX**
- Select **Port 1** in the Port drop down
- Ensure the **Index** is set to **1**

9. Once created, double click this in the lower pane and change from **Video 1** to **Video 2**
10. Click the **Add** button again to add **7** more sources; ensure you start at **Port 2.**
11. This completes the definition for the 8 processed and 8 unprocessed outputs.
12. Check that the unprocessed output entries have been properly created



13. **Validate** and **Save**.
14. Open the **DB Editor** and **Publish**.

Platinum SX Pro and Platinum SX Hybrid Multiviewers

Platinum SX Pro multiviewer is an output module in a Platinum or Platinum IP3 router frame. It occupies from 1 to 4 slots. Depending on the size of the frame, a single frame can house up to 64 Platinum SX Pro multiviewer modules.

Platinum SX Hybrid multiviewer is an output module in a Platinum or IP3 router frame.

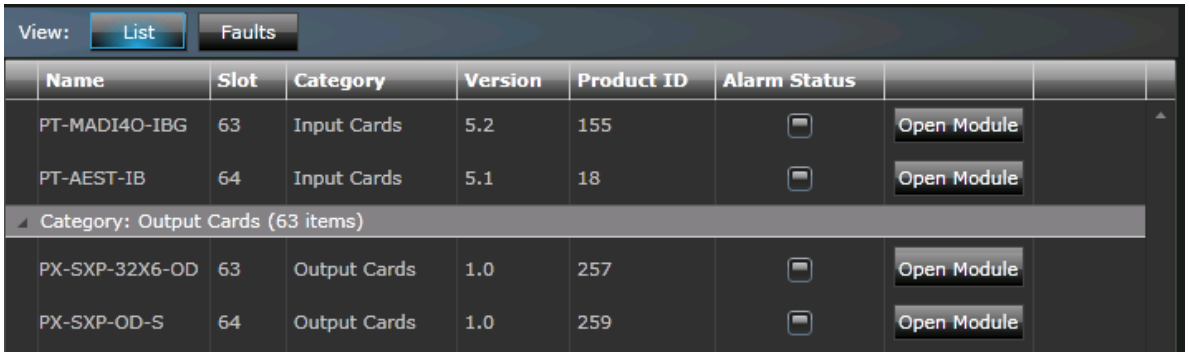
Platinum Multiviewers Upgrade Procedure

Follow this procedure to upgrade firmware on Platinum SX Pro or Platinum SX Hybrid modules that are installed in your IP3 frame:

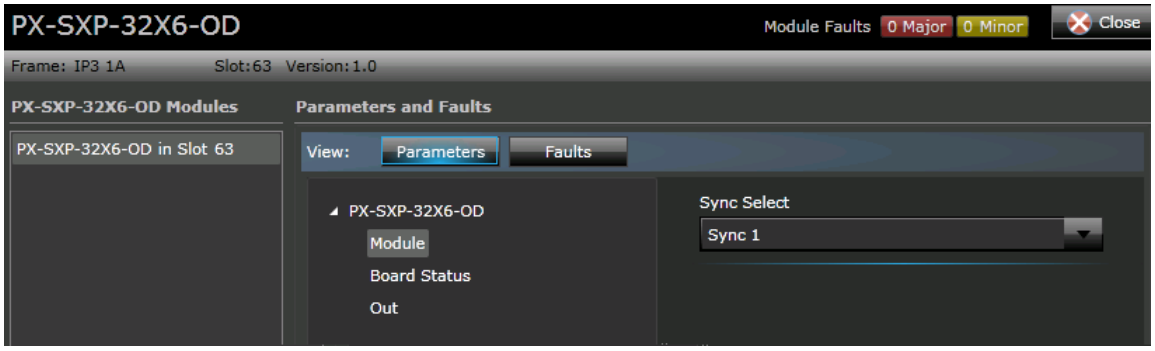
1. Download the appropriate PIPE file and save it to the PC that you are accessing the IP3 system from
   - PIPE file for for Platinum SX Pro:
   - PIPE file for Platinum SX Hybrid:
2. Connect to the the IP3 system by typing the IP address of the IP3 Controller in the URL field of your browser
3. Click **Configure System** and select **Firmware Foundry**
4. In the F**irmware Repository** tab, click **Add package**.
5. Locate the saved PIPE zip package and click **Open**. (Repeat for all three PIPE zip packages)
6. Go to the **IO Modules** tab and then select an HView-SXPRO and/or PX-SXP module in the Output card category
7. Highlight the module and click the **Select Firmware** button
8. Select the upgrade zip file
9. Click the **Upgrade** button and follow the instructions that appear on the screen

Viewing Platinum Multiviewer Modules

Platinum Multiviewer modules in the frame are displayed under the **Output Cards** category in the list of modules in the frame.



Select a multiviewer module and then click the **Open Module** button to see **Parameters** and **Faults**.



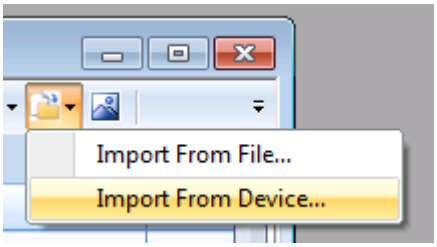
Interfacing with a Third Party Router

Your IP3 Controller is mainly intended for control of your IP3 router. Limited support for third party routers is also provided. IP3 Controller version 1.3 supports the addition of a Grass Valley router into your routing system. With some minimal GUI configuration, you can control sources and destinations across one or more Imagine Communications routers and others that support the Grass Valley SMS7000 protocol. Utilizing tie lines, sources and destinations can be shared across these routers.

Note: You can also include legacy Imagine Communications routers in your system for control (see Interfacing with a Legacy Router (on page 139)).

Steps to Configuring a Third Party Router

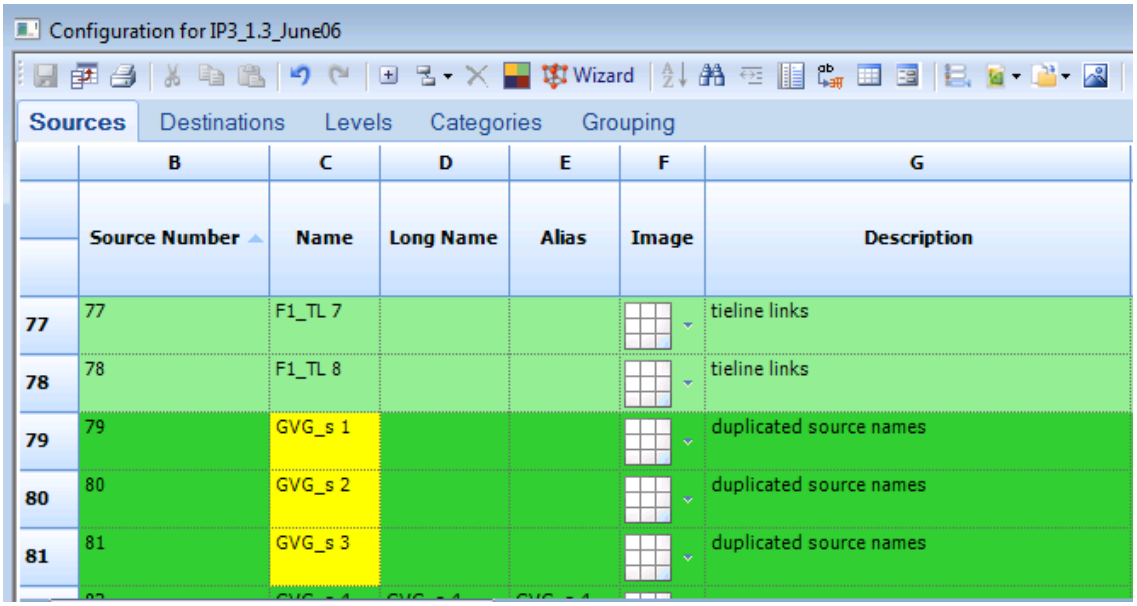
1. In the IP3 Controller UI, add the third party (Grass Valley) router as a routing device (in addition to your IP3 Router frame(s). See Adding a Third Party Router Device (on page 45).
2. In **Navigator**, if you do not have an existing configuration, discover the IP3 Controller that contains your IP3 routing devices and third party router
3. In **Navigator,** run the **DBEditor**
   a. If you do not see sources and destinations, import them from the IP3 Controller device by doing the following:
      i. Click the **Import Database Names** icon (in the toolbar at the top)
      ii. Then select the **Import from Device** option



      iii. Provide the IP Address of the router to import from

Note: If you have an existing database, you may not need to import from device.

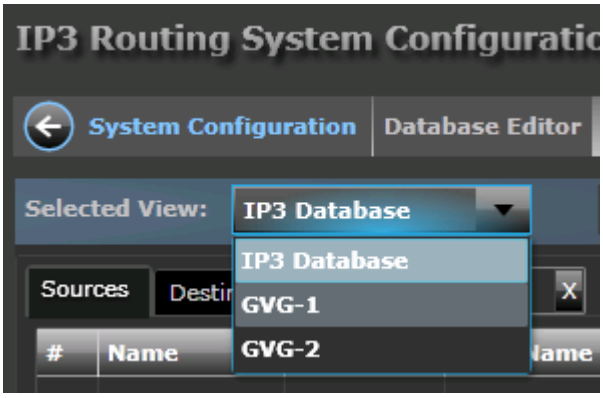
b. Sources and Destinations from the current router configuration will be displayed in the **Sources** and **Destinations** tab



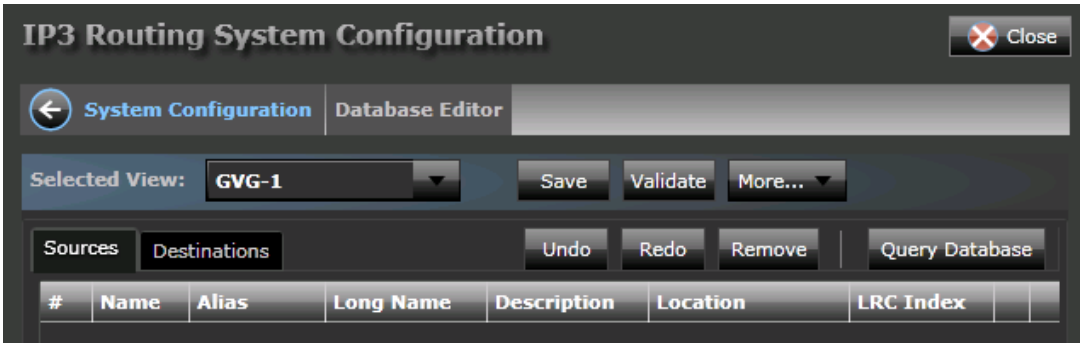
c. **Save** and **Close**

4. In **Navigator,** run the **IP3 Database Editor**

a. In the Database Editor displayed, select the name of of your third party router in the **Selected View** drop down list at the top .



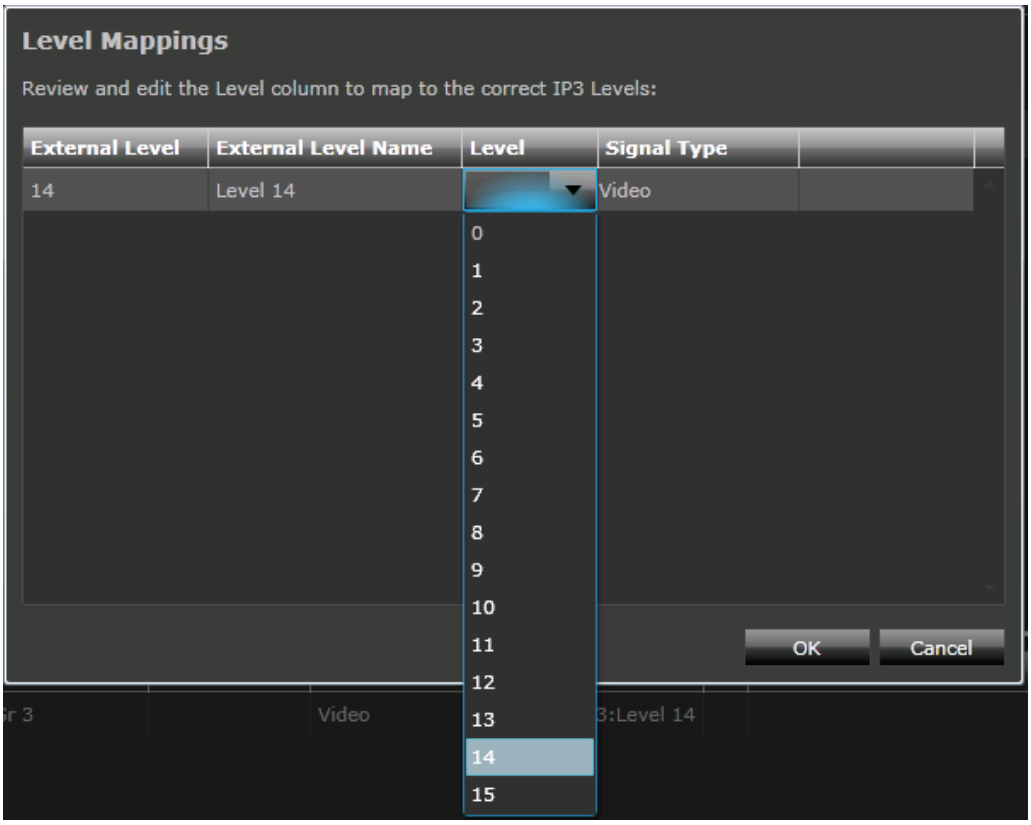
b. Click the **Query Database** button. This retrieves sources and destinations from the database



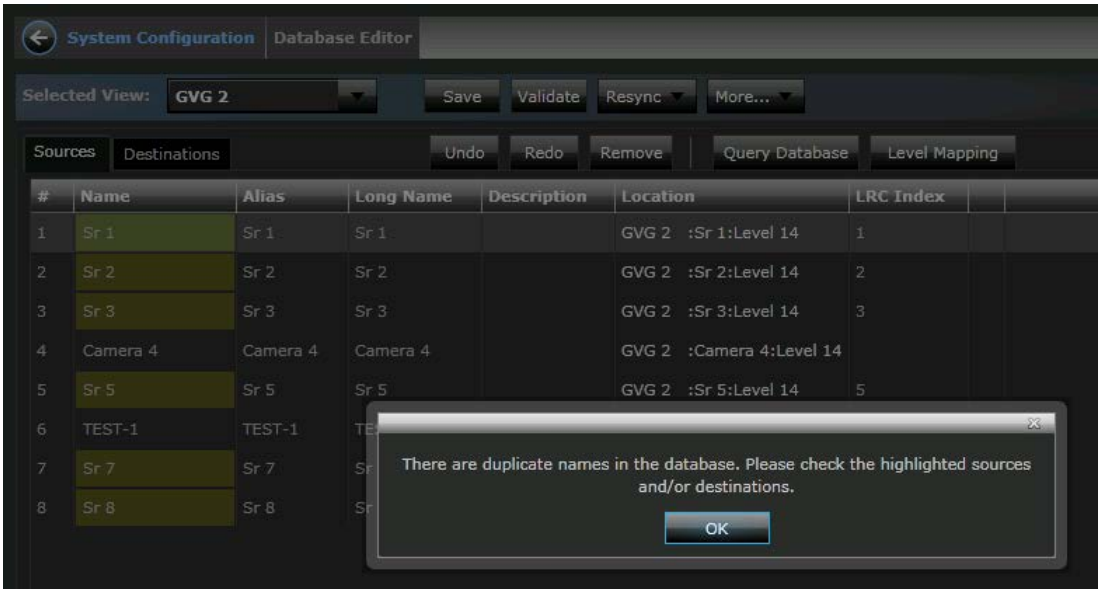
c. A Level Mappings dialog will be displayed. This dialog allows you to map the levels for your 3rd party router to work within your IP3 Controller system. It does not change the levels or

configuration of the native Grass Valley control system. Click in the Level column to assign the remapped levels as necessary.

Note: The IP3 router database handles Video at level 0 and Audio at levels 1and above.When configuring your third party router, it is essential to take note of this and configure levels accordingly.

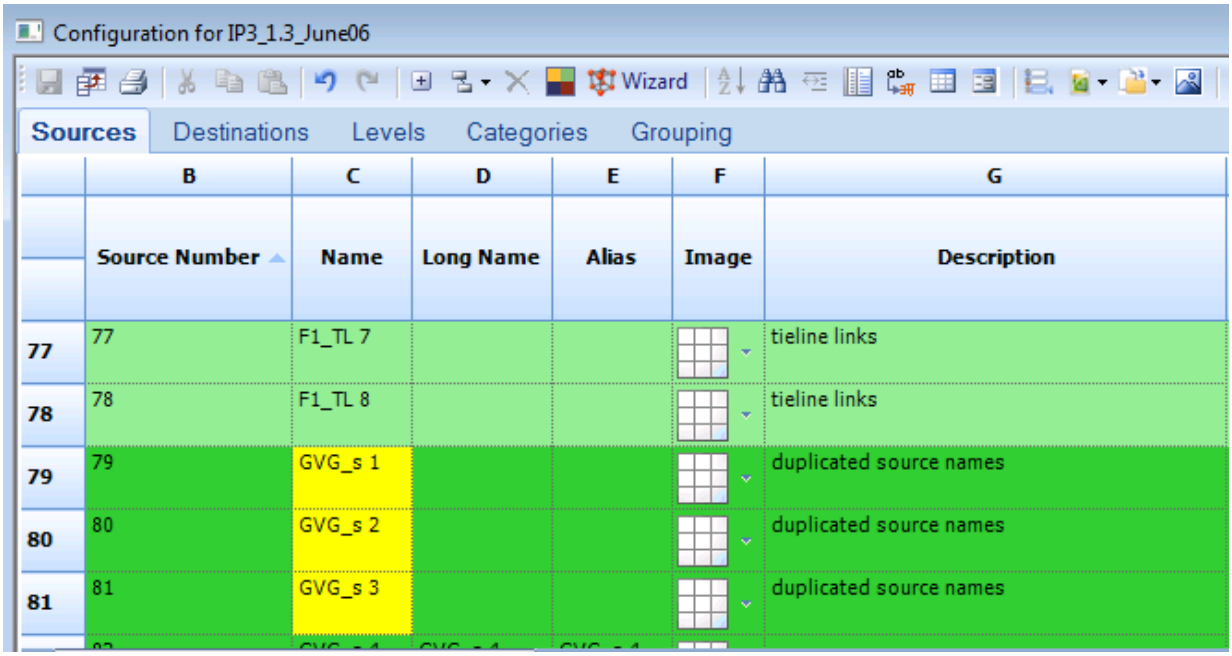


d. Duplicate source/destination names (if any) will be highlighted. Click **OK**.



5. Re-open **DBEditor** to synchronize

Note the difference in the shade of green for GVG versus IP3 Sources. This allows you to differentiate the two types. Any duplicate Source/Destination names will be flagged in yellow in the DBEditor



Note: Any changes to the Grass Valley Router Source/Destination names will have to be done on the Grass Valley router. Then re-import sources/destinations into the DBEditor.

6. Click **Publish** in the **DBEditor** window to transfer to the IP3 Controller and other devices

Handling Duplicate Source/Destination Names

Duplicates are allowed in the system. When you have a third party router and an IP3 router in your system, duplicates are resolved by using the local (to the router) reference. This is useful for tie-line configurations where a source may be present on both the local and other routers. It forces the local source to be used without utilizing a tie line resource.

Interfacing with a Legacy Router

This section covers the required configuration if you intend for your IP3 router to interface with a legacy router (for example, Platinum, Panacea, Integrator, etc).

From a configuration standpoint, there are different ways in which you can accomplish integration with a legacy router.

- You can have sources/destinations from IP3 and non-IP3 be on separate levels (Note that in this case, you cannot have tielines in the system).
- You can have sources/destinations from IP3 and non-IP3 share the same levels and route together.
- You can add the legacy router sources/destinations into an existing IP3 database.
- You can use the Offset functionality in Navigator and offset the indices.

IP3 and non-IP3 on different levels

This example explains how we add in an additional Level for the Legacy Router matrix. So you have your IP3 sources/destinations on a certain level or levels, and then create an additional level for the Legacy Router. Note that this works for only one additional level, meaning only one legacy router can be configured to interface with the IP3 router at this time.

As an example, create an **HD Video** device type, and configure **HD Video** on **Level 0**. So in this case, Level 0 is for the IP3 and later we will create another level (say Level 1) for the Legacy router.

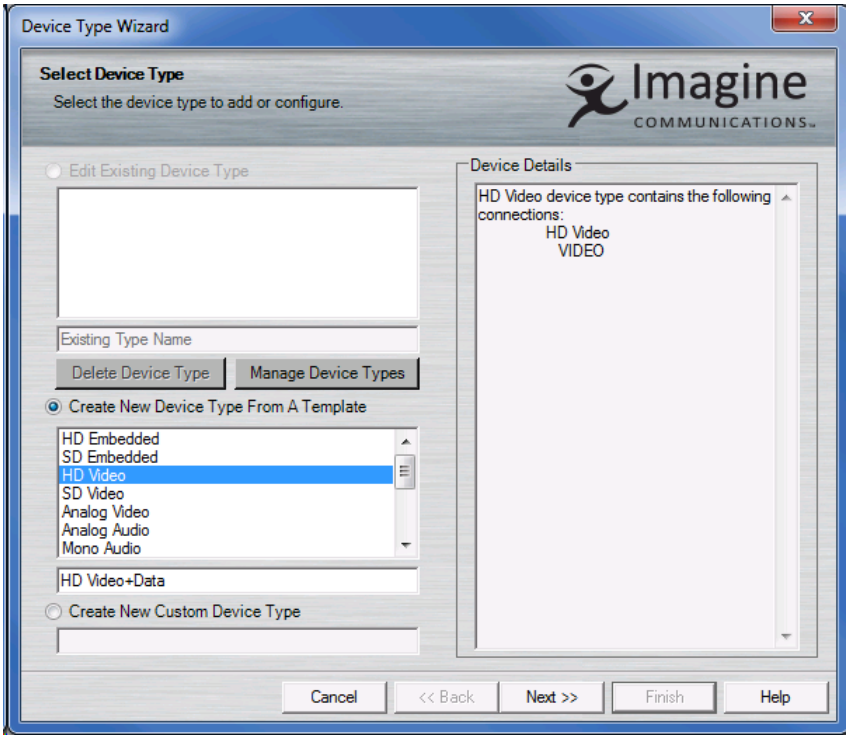
Note: Level 0 and Level 1 is just an example. You can choose any 2 levels, as appropriate to your routing system.

Presuming you have your IP3 matrix set up, follow these steps:

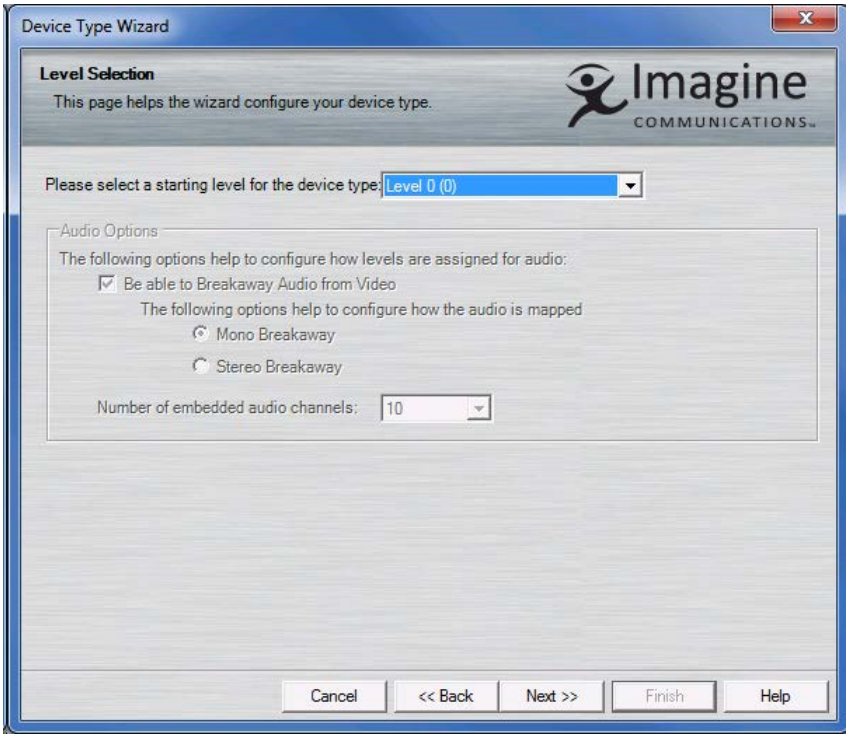
Create a Device Type

1. Launch **Navigator** and open the **DBEditor**

2. Use the Wizard to create a device type, for example, **HD Video**.



3. Click Next in In the **Connection Types** dialog.
4. In the **Level Selection** dialog box, select **Level 0** as the starting level and Click **Next.**

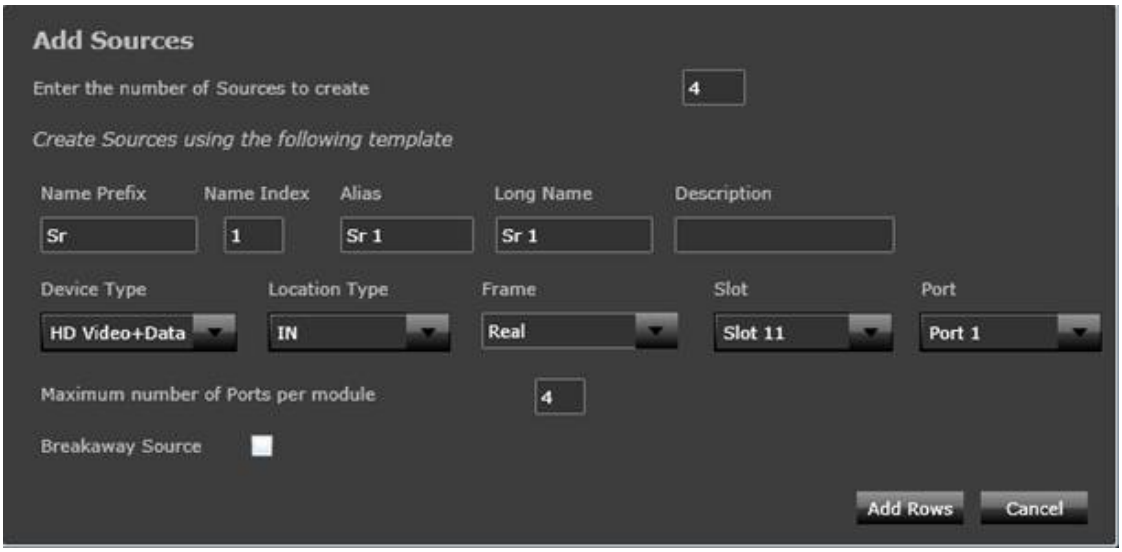


5. In the **Configure Connection Types** dialog, click Next.

6. In the **Device Type Details** dialog, click **Finish**.
7. Save the **DBEditor** database and close it.

Add Sources/Destinations in IP3 Database Editor

1. Open the **IP3 Database Editor**
2. Click the **Add** button to add your **Sources**.
   - Select the device type (**HD Video**) as created earlier.
   - Ensure the **Slot** corresponds to the Slot that contains your IP3 card.

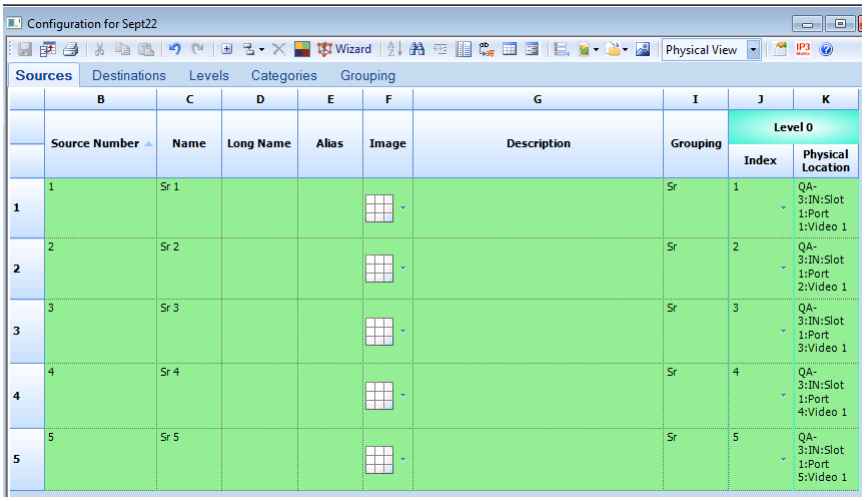


   Once complete, you will see a video and an audio matrix in the selected Slot.
3. Repeat these steps to add your **Destinations**.
4. **Save** the database.

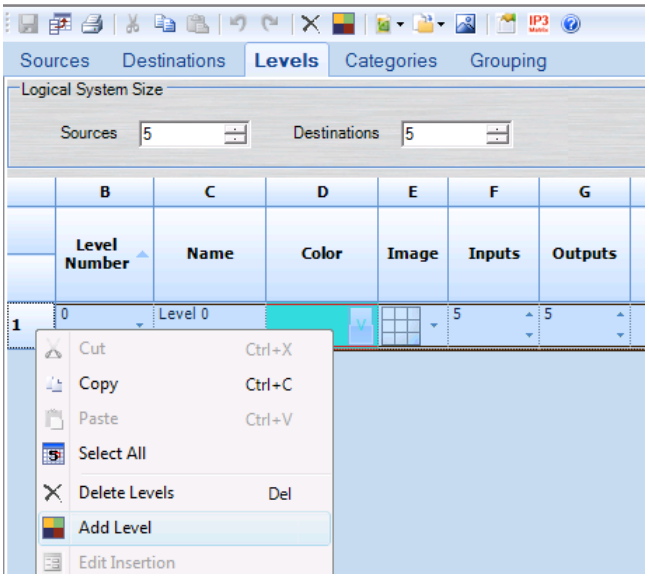
Publish to DBEditor

1. Open **DB Editor** in **Navigator.** Go to the Physical View

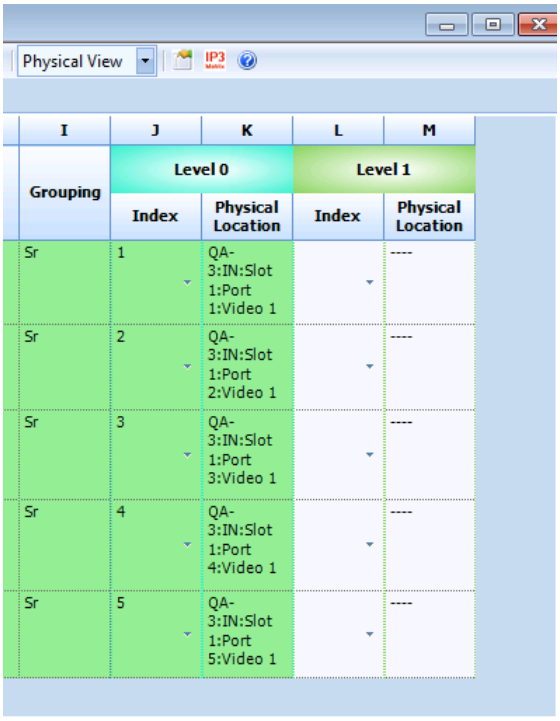
2. You should see something similar to the following with your IP3 sources under level 0



3. Now add in another level for your legacy router, by going into the Levels tab in DBEditor and selecting Add Level.



4. Go back to the Sources tab and you will see the new level that you added



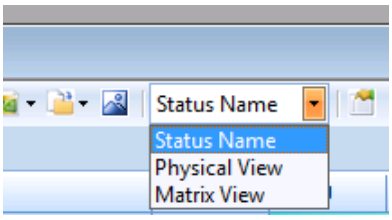
5. Configure your legacy router, define your matrix and then assign indices in Level 1

   See the Magellan CCS Navigator documentation for details on defining the matrix for your legacy router.

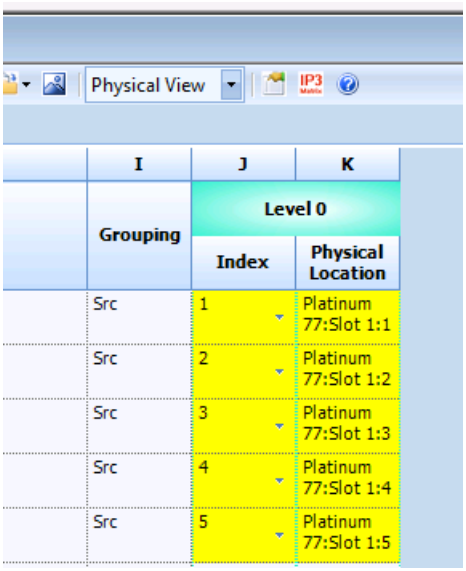
6. **Save** and **Publish** the DBEditor database to the router/control panels.

IP3 and non-IP3 on the same level

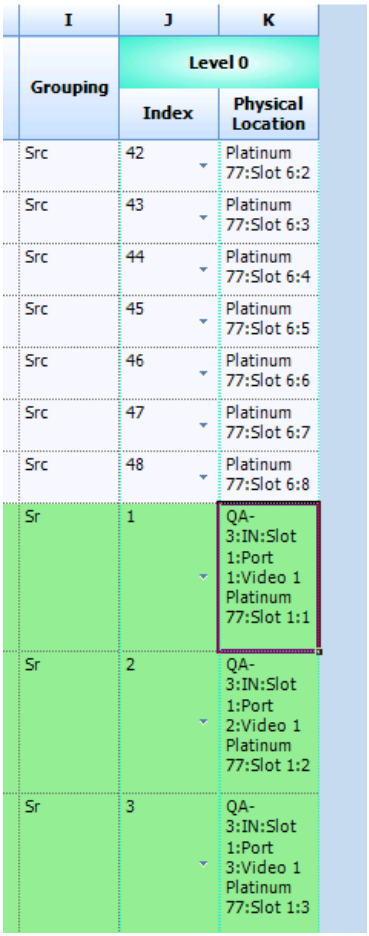
1. Create at least one device type in the **DB Editor**.
2. Add in your IP3 sources and destinations via the **IP3 Database Editor**.
3. Go back to the **DB Editor**. Switch to the Physical View



4. Physically delete the Platinum specific sources (highlighted in yellow)



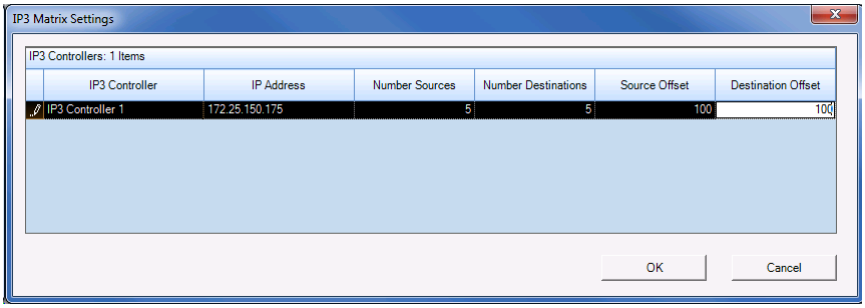
5. At the bottom, you will see the sources that have both IP3 and non-IP3.



6. Switch to the Destinations tab and repeat.
7. Save.

Using Offsets

You can also use the **Offset** functionality in Navigator, and offset your IP3 router. Note that the offset needs to be higher than the maximum index in your Legacy database. For example, if the sources go to 1095, go to 1096 so there is no overlap.



SNMP Overview

The IP3 Controller 1.3 supports SNMP via an SNMP agent that runs on the Controller. Using this, any SNMP enabled client can perform switching, parametric control, and receive traps.

Controlling your IP3 Controller using a MIB Browser

You can use any SNMP browser, for example, NuDesign Visual MIBrowser from NuDesign Technologies.

Note that Magellan CCS Navigator and the MIB browser cannot run on the PC at the same time to receive traps, since they use the same SNMP port.

In the MIB browser, you don't need to configure anything on the client side; config is done on the IP3 Controller server side.

IP3 Controller MIBs

For SNMP support on the IP3 Controller, there are some generic MIBs that you must have, and some module specific MIBs.

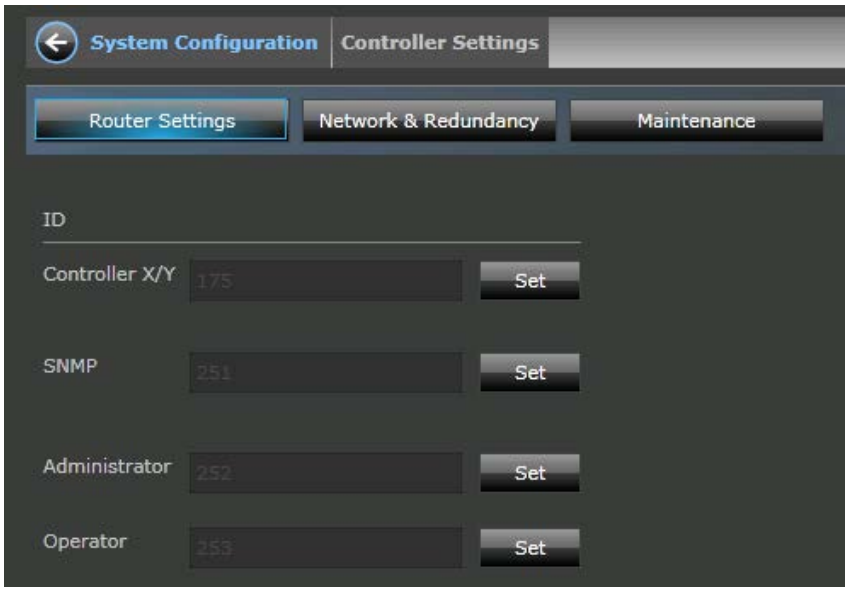
The generic MIBs are:

- infrastructurenetwork29286.mib
- IP3_Controller.mib
- routing.mib

Download and load module specific MIBs depending on the modules you have in your frame.

Set the SNMP ID

The SNMP ID is set from the IP3 Controller web UI configuration (**Configure System > Manage IP3 Controller Settings > Router Settings**)

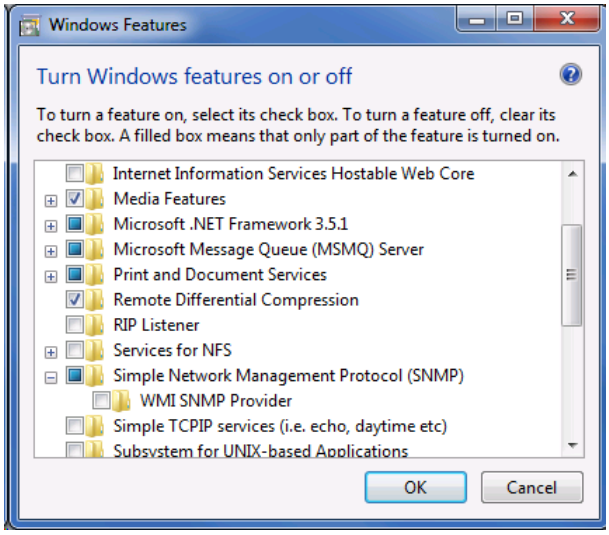


Enable SNMP

Note: Do not install the Windows SNMP agent on the IP3 Controller

1. Open the **Control Panel** > **Programs and Features**
2. Click **Turn Windows features on or off**
3. Select **Simple Network Management Protocol (SNMP)**

The **WMI SNMP Provider** sub option is not required

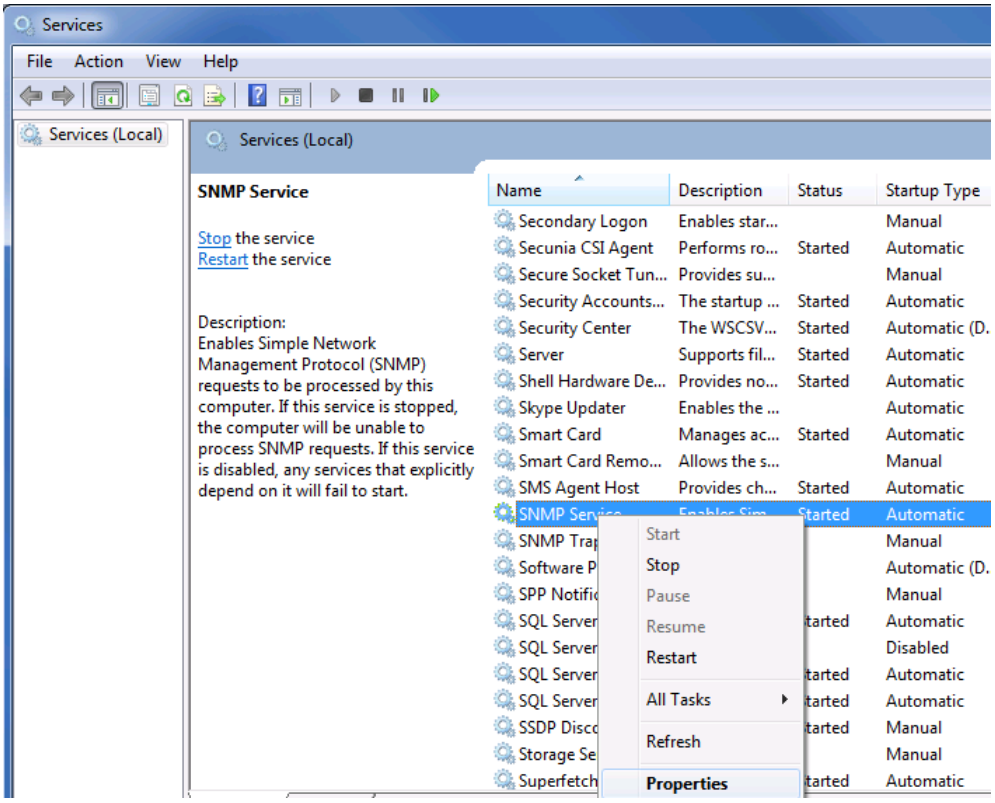


Configure SNMP

Follow these instructions to set up the SNMP service on IP3 Controller.

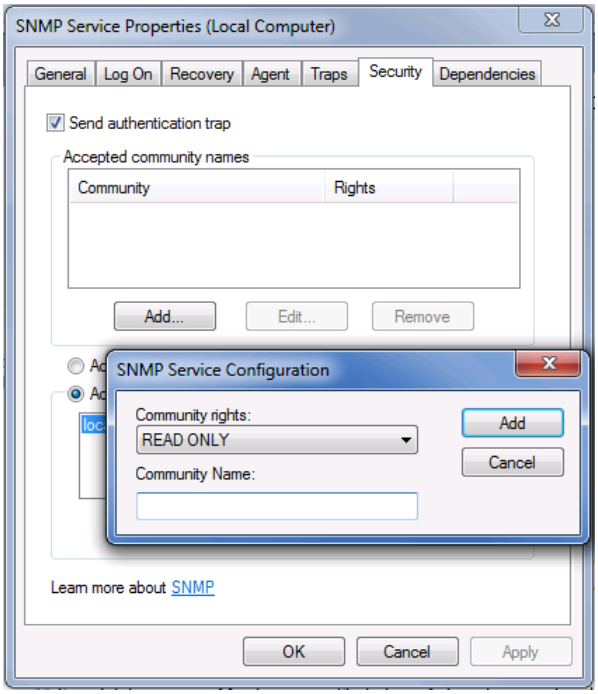
1. Open a command prompt
2. Type **services.msc** to bring up the Computer Management Services window

3. From the **Services** list, right-click **SNMP Service** and select **Properties**



Note: Ensure the SNMP Startup mode is set to Automatic.

4. Select the **Security** tab
5. Click the **Add** button and enter **Community Name**



6. Click **Add** again and then **Apply** to save changes

Configure SNMP Trap

1. In the **Security** tab, type in the **Community Name**, for example, *public.*
2. Click the **Add to list** button.
3. Click the **Add** button and enter **Traps destination** address which is the IP address of the SNMP Manager system.
4. Click the **Add** button.
5. Click **Apply** to save changes and then click **OK** to close the SNMP Service Properties dialog.
6. In the Computer Management Services window, in the status, ensure the SNMP Service is started.

Parametric Control

All CCSP parameters are available for monitoring and control.

- Read/Write parameters support SNMP **set** and **get**
- Read only parameters support SNMP **set**

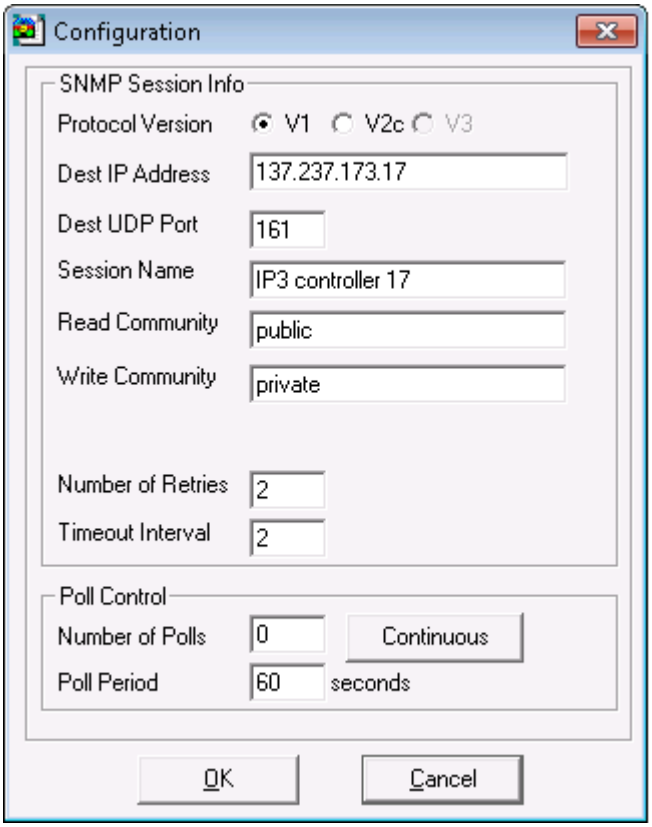
Example

The following is an example on how to change a parameter value on your IP3 Controller via SNMP.

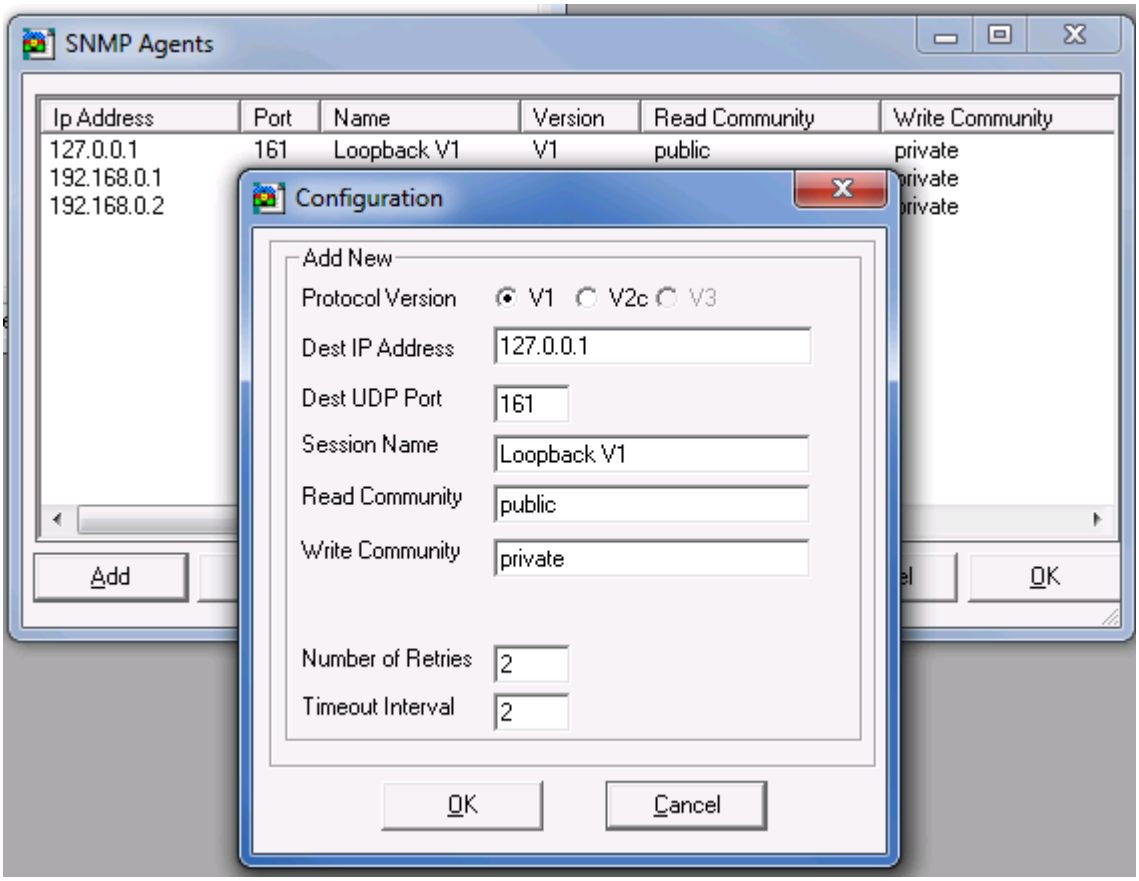
Note: Some of the screen shots in this example are specific to the NuDesign Visual MIBrowser. This is just representative; you can use any MIB browser.

1. Open up the MIB Browser
2. Load the three generic MIBs for the IP3 Controller - **infrastructurenetwork29286.mib**, **IP3_Controller.mib**, and **routing.mib**
3. Load your module specific MIBs

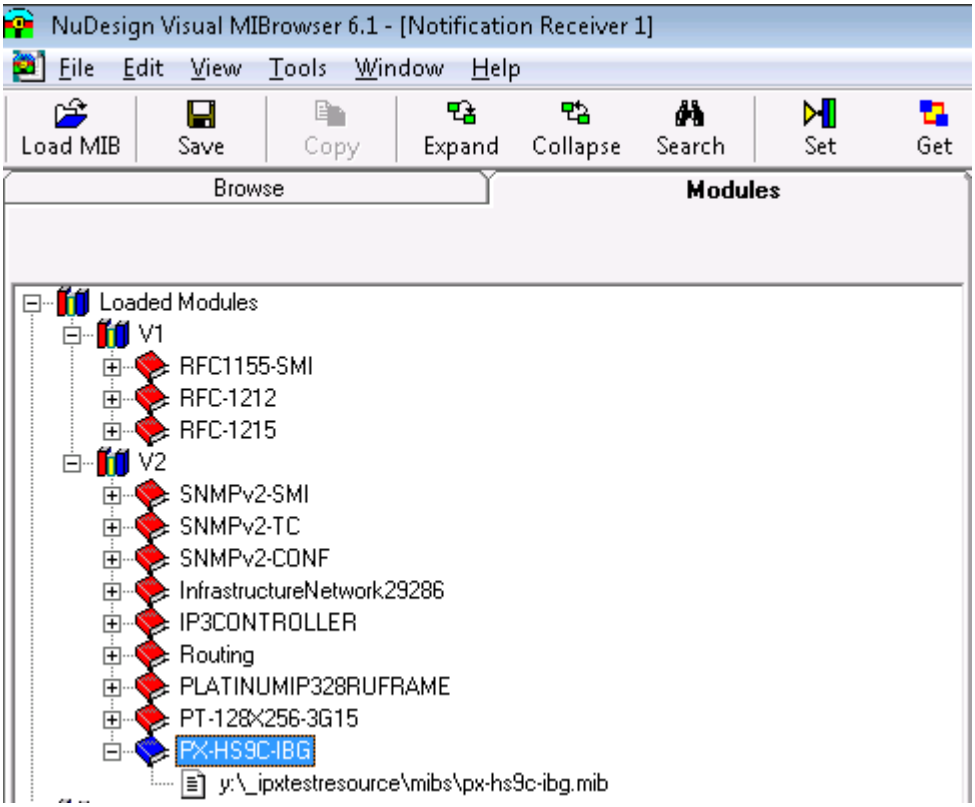
4. Configure the IP3 Controller. The information you provide here should be similar to what you set on the Server side. For example, the Read Community and Write Community names must match.



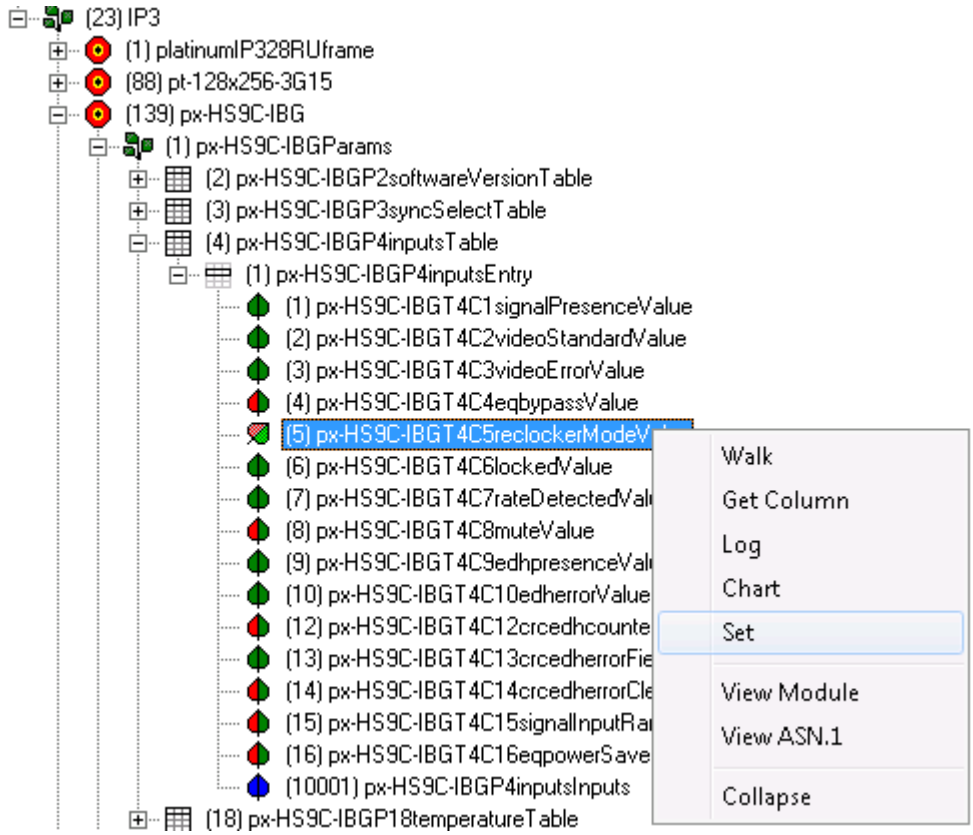
5. Configure the SNMP agent



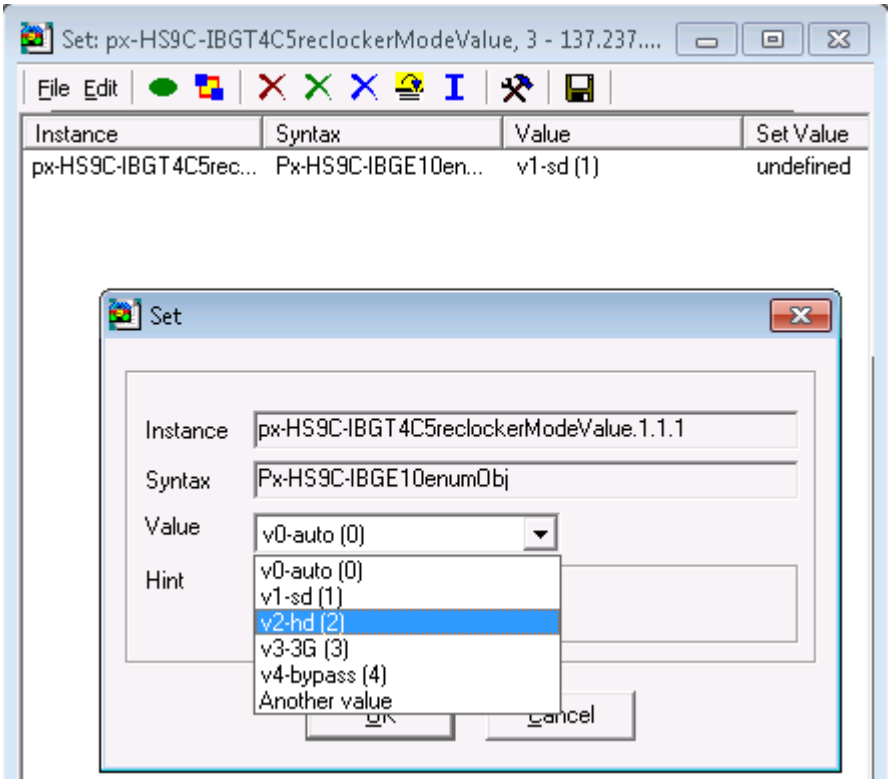
6. Now browse to the module you want to control



7. Go to the specific parameter and Set



8. Select the Object index. Then set the Value



9. Execute.

   The parameter change will then be made and visible in the IP3 Controller UI.

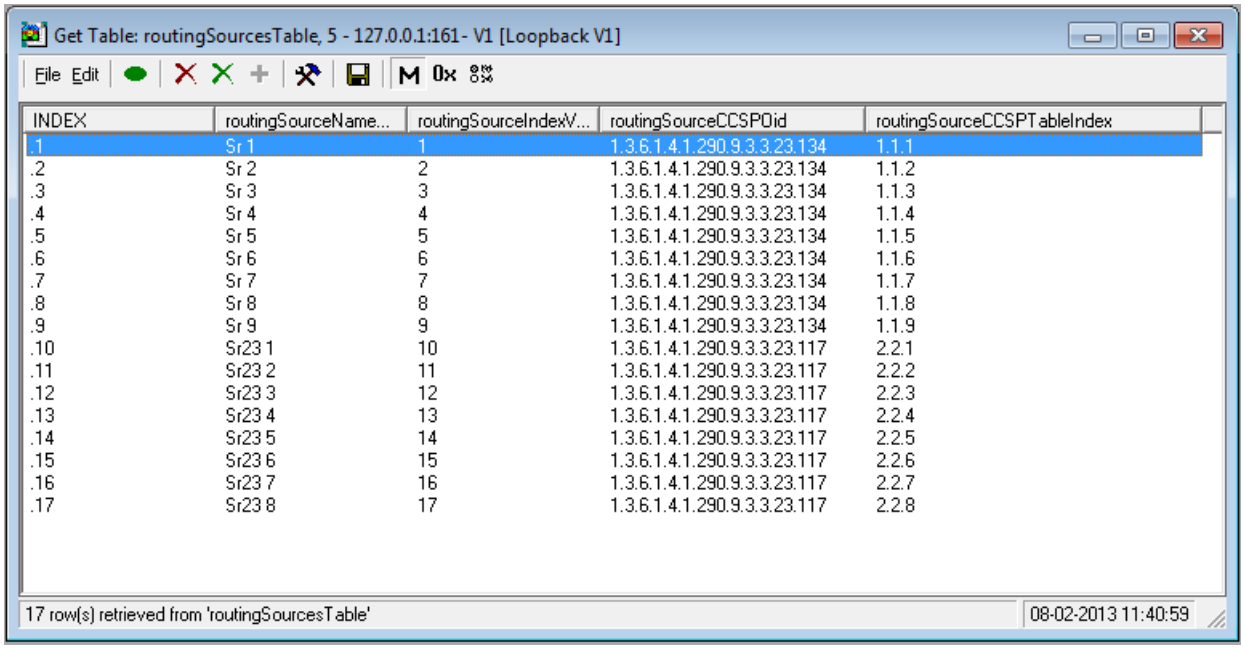
Switching

The following is supported/provided:

- Support for global salvo execution
- Table of all configured Sources in the database
- Table of all configured Destinations in the database
- Source/Destination tables provide SNMP link to CCSP device for parametric control
- Destination control:
  - Take/Disconnect Crosspoints
  - Lock/Protect/Unlock Destinations
  - Crosspoint Status via SNMP notifications
  - Current lock/source status

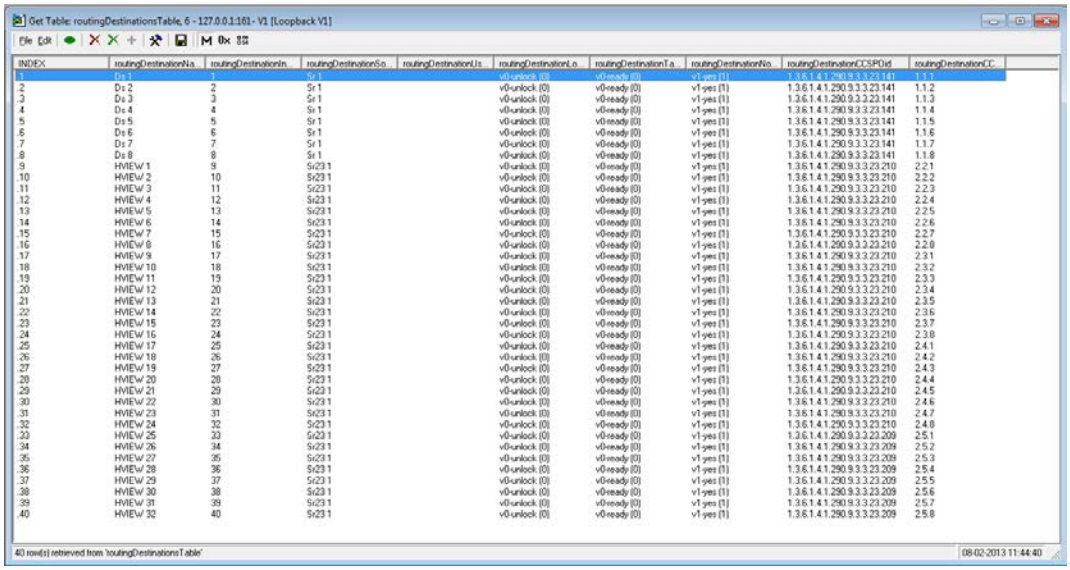
RoutingSources Table

Column Header	Description
INDEX	SNMP instance (row) for Source
routingSourceNameValue	Source Name
routingSourceIndexValue	Routing Index for the Destination
routingSourceCCSPOid	Provides the SNMP OID of the CCSP parametric control of the input module
routingSourceCCSPTableIndex	Provides the SNMP Table Index for input parametric control



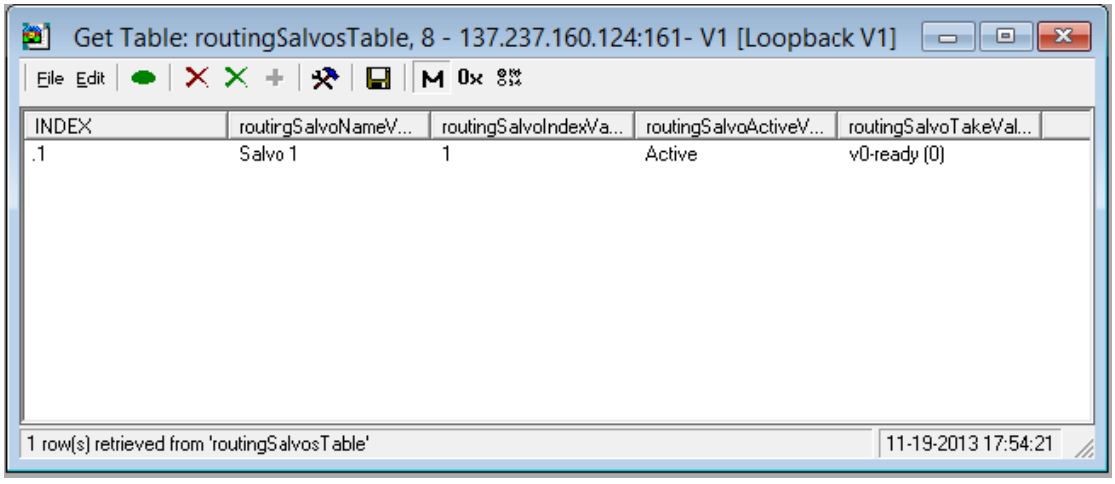
RoutingDestination Table

Column Header	Description
INDEX	SNMP instance (row) for Destination
routingDestinationNameValue	Destination Name
routingDestinationIndexValue	Routing index for the destination
routingDestinationSourceValue	Current source routed to the destination/field used to specify source for router take
routingDestinationUserValue	Current user that has the destination locked/or protected
routingDestinationLockValue	Field to set the lock/protect/unlock of a destination
routingDestinationTakeValue	Field to set take/disconnect of a destination
routingDestinationNotify	Field to enable/disable SNMP notifications for crosspoint status
routingDestinationCCSPOid	Provides the SNMP OID of the CCSP parametric control of the output module
routingDestinationCCSPTableIndex	Provides the SNMP Table Index for the parametric control of the output



Router Salvo Table

Column Header	Description
INDEX	SNMP instances for the salvo
routingSalvoNameValue	Name of the salvo
routerSalvoIndexValue	Index of the salvo
routingSalvoTakeValue	Field to take/lock/protect/unlock salvo



Functions

- **Crosspoint TAKEs**
  - Set the source name in the **routingDestinationSourceValue** for destination instance in the router destination table
  - Set Take value in the **routingDestinationTakeValue** for the same destination instance in the router destination table

- **Crosspoint Disconnect**
  - Set Disconnect value in the **routingDestinationTakeValue** for destination instance in the router destination table
- **Destination Lock/Protect**
  - Set Unlock/Lock/Protect/Unlock in the **routingDestinationLockValue** for destination instance in the router destination table
- **Salvo Execution**
  - Set Take/Lock/Protect/Unlock value in the **routerSalvoTakeValue** for salvo instance in routing salvo table