NRG

NRG-FR1, NRG-FR1-LCP, NRG-FR2, and NRG-FR2-LCP
User Guide

www.rossvideo.com

ROSS

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Our mission is to:

1. Provide a Superior Customer Experience
   - offer the best product quality and support
2. Make Cool Practical Technology
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Ross has become well known for the Ross Video Code of Ethics. It guides our interactions and empowers our employees. I hope you enjoy reading it below.

If anything at all with your Ross experience does not live up to your expectations be sure to reach out to us at *solutions@rossvideo.com*.

David Ross
CEO, Ross Video
dross@rossvideo.com

Ross Video Code of Ethics

Any company is the sum total of the people that make things happen. At Ross, our employees are a special group. Our employees truly care about doing a great job and delivering a high quality customer experience every day. This code of ethics hangs on the wall of all Ross Video locations to guide our behavior:

1. We will always act in our customers' best interest.
2. We will do our best to understand our customers' requirements.
3. We will not ship crap.
4. We will be great to work with.
5. We will do something extra for our customers, as an apology, when something big goes wrong and it's our fault.
6. We will keep our promises.
7. We will treat the competition with respect.
8. We will cooperate with and help other friendly companies.
9. We will go above and beyond in times of crisis. *If there's no one to authorize the required action in times of company or customer crisis - do what you know in your heart is right. (You may rent helicopters if necessary.)*

NRG · User Guide

- Ross Part Number: **2200DR-404-01**
- Revision: 1
- Release Date: December 9, 2025.
- Software Issue: **7.1**

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Patents

Patent numbers US 7,034,886; US 7,508,455; US 7,602,446; US 7,802,802 B2; US 7,834,886; US 7,914,332; US 8,307,284; US 8,407,374 B2; US 8,499,019 B2; US 8,519,949 B2; US 8,743,292 B2; GB 2,419,119 B; GB 2,447,380 B; and other patents pending.

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Refer to the "**Important Regulatory and Safety Notices**" document that accompanied your product.

Statement of Compliance

This product has been determined to be compliant with the applicable standards, regulations, and directives for the countries where the product is marketed.

Compliance documentation, such as certification or Declaration of Compliance for the product is available upon request by contacting techsupport@rossvideo.com. Please include the product; model number identifiers and serial number and country that compliance information is needed in request.

EMC Notices

United States of America — FCC Part 15

This equipment has been tested and found to comply with the limits for a class A Digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Canada

This Class “A” digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe “A” est conforme a la norme NMB-003 du Canada.

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이 기기는 업무용 환경에서 사용할 목적으로 적합성 평가를 받은 기기로서 가정용 환경에서 사용하는 경 우 전파간섭의 우려가 있습니다.

This device has been evaluated for conformity for use in a business environment. When used in a home environment, there is a danger of interference.

Europe

This equipment is in compliance with the essential requirements and other relevant provisions of **CE Directive 93/68/EEC**.

International

This equipment has been tested to **CISPR 32:2015** along with amendments **AMD1:2019**, and found to comply with the limits for a Class A Digital device.

Important — *This is a Class A product. In domestic environments, this product may cause radio interference, in which case the user may have to take adequate measures.*

General Handling Guidelines

- Careful handling, using proper ESD precautions, must be observed.
- Power down the system before PCB removal.

A Word About Static Discharge

Throughout the many procedures in this manual, please observe all static discharge precautions.

Caution — *Avoid handling circuit boards in high static environments such as carpeted areas, and when synthetic fiber clothing is worn. Touch the frame to dissipate static charge before removing boards from the frame, and exercise proper grounding precautions when working on circuit boards. Exercise proper grounding precautions when working on circuit boards.*

Warranty and Repair Policy

The NRG systems are backed by a comprehensive one-year warranty on all components.

Notice — *Changes or modifications to this equipment not expressly approved by Ross Video Limited could void the user's authority to operate this equipment.*

If an item becomes defective within the warranty period Ross will repair or replace the defective item, as determined solely by Ross.

Warranty repairs will be conducted at Ross, with all shipping FOB Ross dock. If repairs are conducted at the customer site, reasonable out-of-pocket charges will apply. At the discretion of Ross, and on a temporary loan basis, plug in circuit boards or other replacement parts may be supplied free of charge while defective items undergo repair. Return packing, shipping, and special handling costs are the responsibility of the customer.

This warranty is void if products are subjected to misuse, neglect, accident, improper installation or application, or unauthorized modification.

In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profit). Implied warranties, including that of merchantability and fitness for a particular purpose, are expressly limited to the duration of this warranty.

This warranty is TRANSFERABLE to subsequent owners, subject to Ross' notification of change of ownership.

Environmental Information

The equipment may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed-out wheeled bin symbol invites you to use these systems.

If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration. You can also contact Ross Video for more information on the environmental performances of our products.

This appliance may contain a Coin type battery which should not be treated as household waste.

To ensure that the battery will be treated properly use the appropriate take-back systems in your area. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

Security and Privacy

If you would like more information on how Ross Video security and privacy practices have been applied to NRG, what you should know about maintaining security of this product, and how we can partner with you to ensure security throughout this product's life-cycle, contact techsupport@rossvideo.com.

Ross Video has implemented reasonable administrative, technical, and physical safeguards to help protect against security incidents and privacy breaches involving a Ross Video product provided those products are used in accordance with Ross Video instructions for use. However, as systems and threats evolve, no system can be protected against all vulnerabilities and we consider our customers the most important partner in maintaining security and privacy safeguards. If you have any concerns, we ask that you bring them to our attention, and we will investigate. Where appropriate, we will address the issue with product changes, technical bulletins and/or responsible disclosures to customers and regulators. Ross Video continuously strives to improve security and privacy throughout the product life-cycle using practices such as:

- Privacy and Security by Design
- Product and Supplier Risk Assessment
- Vulnerability and Patch Management
- Secure Coding Practices and Analysis
- Vulnerability Scanning
- Access Controls appropriate to Customer Data
- Incident Response
- Clear paths for two-way communication between customers and Ross Video

If you would like to report a potential product related privacy or security issue (incident, breach, or vulnerability), contact techsupport@rossvideo.com.

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Contents

Introduction

This guide covers the configuration and operation of the Ross Video NRG-FR1, NRG-FR1-LCP, NRG-FR2, and NRG-FR2-LCP routers. The following chapters are included:

- "**Introduction**" summarizes the guide and provides important terms, and conventions.
- "**Getting Started**" provides general information to keep in mind before configuring your NRG, instructions for configuring the NRG network settings, and assigning a name to the router.
- "**Using DashBoard**" outlines the NRG tree view in DashBoard, and how to navigate the nodes.
- "**Product Info Interfaces**" outlines the hardware information, network settings, access controls, how to create backups of your settings, and general management for the NRG.
- "**Role-Based Access Control**" outlines the use of Role-Based Access Control (RBAC) within the DashBoard software application for the NRG.
- "**System Interfaces**" outlines the interfaces that manage the available devices in your routing system that are auto-detected by the NRG.
- "**Enabling a Service**" outlines how to enable a communication protocol, and configure the additional settings on the NRG for a protocol. A summary of the supported commands is also provided.
- "**Timing and Reference Setup**" outlines how to configure the reference and time settings for the NRG.
- "**Configuring the SDI I/O Ports**" provides instructions on how to manage your hardware matrices.
- "**Database Interfaces**" summarizes the interfaces for creating and managing your routing system databases, and how to access the interfaces in DashBoard.
- "**Creating a New Database**" provides an overview of the Database Manager, and describes how to create a new database.
- "**Defining a Database**" outlines how to use the Database sub-nodes in DashBoard to further define a database for the NRG.
- "**Configuring the LCP Buttons**" outlines the default button assignments, how to customize the color and the brightness level for a button, and how to assign a function to a button on the NRG-FR1-LCP and NRG-FR2-LCP front panels.
- "**LCP Operation**" provides a general outline of how to use the front panel buttons on the NRG-FR1-LCP and NRG-FR2-LCP.
- "**Soft Panels in DashBoard**" outlines how to create, access, and use the soft panels for your NRG.
- "**NRG-MV Setup**" provides an overview of the NRG-MV feature including how to install a NRG-MV license key, display the NRG-MV interface in DashBoard, and add UMD text and Audio meters to the Multiviewer PiPs.
- "**Glossary**" provides a definitions of commonly used terms and conventions for this guide.

Related Publications

It is recommended to consult the following Ross documentation before installing and configuring your NRG:

- ***DashBoard User Guide***, Ross Part Number: 8351DR-004
- ***NRG Installation Guide***, Ross Part Number: 2200DR-403
- ***NRG-FR1 and NRG-FR1-LCP Quick Start Guide***, Ross Part Number: 2200DR-401
- ***NRG-FR2 and NRG-FR2-LCP Quick Start Guide***, Ross Part Number: 2200DR-402
- ***Walkabout Application Note***, Ross Part Number: 2201DR-003

Documentation Conventions

Special text formats are used in this guide to identify parts of the user interface, text that a user must enter, or a sequence of menus and sub-menus that must be followed to reach a particular command.

Interface Elements

Bold text is used to identify a user interface element such as a dialog box, menu item, or button. For example:

In the **Save As** dialog, click **OK**.

User Entered Text

Courier text is used to identify text that a user must enter. For example:

In the **Language** box, enter **`English`**.

Referenced Guides

Italic text is used to identify the titles of referenced guides, manuals, or documents. For example:

For more information, refer to the ***NRG Installation Guide***.

Menu Sequences

Menu arrows are used in procedures to identify a sequence of menu items that you must follow. For example, if a step reads "**File** > **Save As**," you would click the **File** menu and then click **Save As**.

Important Instructions

Star icons are used to identify important instructions or features. For example:

✶ An error message displays when an object overlaps a tile or when one tile overlaps another in the workspace.

Contacting Technical Support

At Ross Video, we take pride in the quality of our products, but if problems occur, help is as close as the nearest telephone.

Our 24-hour Hot Line service ensures you have access to technical expertise around the clock. After-sales service and technical support is provided directly by Ross Video personnel. During business hours (Eastern Time), technical support personnel are available by telephone. After hours and on weekends, a direct emergency technical support phone line is available. If the technical support person who is on call does not answer this line immediately, a voice message can be left and the call will be returned shortly. This team of highly trained staff is available to react to any problem and to do whatever is necessary to ensure customer satisfaction.

- **Toll Free Technical Support (North America)**: 1-844-652-0645
- **Toll Free Technical Support (International)**: +800 1005 0100
- **Technical Support**: (+1) 613-652-4886
- **After Hours Emergency**: (+1) 613-349-0006
- **E-mail**: techsupport@rossvideo.com
- **Website**: http://www.rossvideo.com

Getting Started

This chapter provides instructions for launching DashBoard, using the Walkabout application in DashBoard, adding the NRG router to the Tree View in DashBoard, re-naming the NRG via DashBoard, enabling access for a DashBoard client. An overview of how databases are used by the NRG is also provided.

If you have questions pertaining to the configuration or operation of the NRG, contact us at the numbers listed in "**Contacting Technical Support**". Our technical staff is always available for consultation, training, or service.

Before You Begin

Keep the following in mind:

- DashBoard is required to configure the NRG router.
- The NRG supports a maximum of 10 DashBoard clients with 10 other TCP/IP connections (remote control panels, third-party control systems, etc.).
- Ross Video recommends a Memory Allocation of at least 4GB in DashBoard to ensure reliable operation. Refer to the ***DashBoard User Guide*** for details on setting the Memory Allocation value.
- Your facility IT Department provided the required network settings to be assigned to the NRG.

Establish Communications

An effective routing system takes careful planning. Routing systems may consist of many devices either located within the same facility, or across multiple locations. Routing devices (routers) must connect and communicate with each other and any control system devices all on a high speed network.

Walkabout is a DashBoard system for network device discovery. NRG supports the Walkabout system for configuration of its IP settings. Once you establish communications over Ethernet between the NRG router and DashBoard, you can proceed to use the interfaces in DashBoard that enable the NRG to communicate with the other devices in your routing system.

Network Settings

The NRG network settings can be changed via the DashBoard > Walkabout interface. A complete network setting requires a static IP address, a network mask address, and a gateway address. These should be supplied by your IT Department for this device.

Launch DashBoard

DashBoard must run on a computer that has a physical wired ethernet connection. Wireless connections do not allow device discovery.

For More Information on…

- downloading and installing the DashBoard client software, refer to our website.

To launch DashBoard

1. Ensure that you are running DashBoard software version 9.15 or higher.
2. Launch DashBoard by double-clicking its icon on your computer desktop.

Using Walkabout to Assign the Initial IP Address to the NRG

Walkabout is a Ross router utility operating within DashBoard that enables you to configure the network settings for Ross routers, remote control panels, and other devices. Once a valid connection is established with Walkabout, the NRG can be added to DashBoard and be available for monitoring and configurations using the options in DashBoard.

NRG supports a basic configuration mode via the Walkabout system for initial configuration of IP settings. Use Walkabout to:

- specify device IP settings and names
- specify a name for your routing system

Once the NRG router is physically installed and cabled to your facility network, you will need to assign it an initial static IP address to enable DashBoard to locate it on your network. Establishing an initial IP address enables DashBoard to communicate with the router and update the Basic Tree View with the NRG nodes.

For More Information on...

- the features of Walkabout, refer to the document ***Configuring Devices Using Walkabout***.

To assign the initial static IP address to the NRG using Walkabout

1. Launch DashBoard.
2. From the DashBoard client main toolbar, select **File** > **Show Walkabout**.

   The DashBoard window displays the **Walkabout** table.
3. Click **Refresh**, located at the bottom of the Walkabout table, to ensure the entries are current.
4. In the **Walkabout** table, find the entry for the NRG router you want to configure.

   A factory default NRG will display the router marketing name in the **Name** field and an IP address of 192.168.20.141.

✶ Do not attempt to configure multiple NRG routers at the same time.

5. Use the **Name** field to assign a unique identifier to the NRG router.

   This will also be the name displayed in the Tree View of DashBoard.
6. To assign a new IP address:
   a. Double-click the **Address** field.
   b. Enter the IP address supplied by your IT Department for this device.
   c. Press **Enter** to save the new address.
7. Ensure the **Netmask** field is set to match your network requirements.
8. Use the **Gateway** field to specify the IP address for connection outside of the local area network (LAN).

✶ After you edit a cell in the **Walkabout** table, it is recommended to wait approximately 1 minute, then click **Refresh** to apply the new settings.

9. Click **Reboot** in the row of the **Walkabout** table for the NRG router.

   The router reboots and the new settings are applied.

If Walkabout Communication is Unavailable

If Walkabout communication is disabled, perform one of the following:

- Enable Walkabout via the NRG > System > Connections > Services tab; or
- Connect an USB drive to the NRG to set the IP address.

Both methods are described below.

To enable Walkabout communications on the NRG

1. Locate the **NRG** node in the Tree View of DashBoard.
2. Expand the **NRG** node to display a list of sub-nodes.
3. Expand the **System** sub-node.
4. Double-click the **Connections** sub-node.
5. Select the **Services** tab.

   The Services tab lists the available communications protocols and provides options for enabling/disabling each protocol for the router.
6. Select the **Enable Walkabout** box.
7. Click **Apply**.
8. Follow the procedure "**To assign the initial static IP address to the NRG using Walkabout**".

To use an USB drive to set the IP address of the NRG

1. Format a USB drive as FAT32.

✶ Ensure the USB drive does not already contain a network configuration file.

2. Plug the USB drive into the USB port on the back panel of the NRG.
3. Wait approximately 30 seconds.
4. Unplug the USB drive from the USB port on the back panel of the NRG.
5. Plug the USB drive into your local machine.
6. Verify that a file named <PRODUCT>.<SERIAL>.ip_setting_0.txt was created on the USB drive.
7. View the file to ensure it contains the current IP configuration of the NRG.

   In the following example, the user is verifying the configuration of an NRG-FR1 that is set to the default values.

```
[Match]
Name=bond0

[Network]
DHCP=0
Address=192.168.20.141/24
Gateway=192.168.20.1
```

✶ Contact Ross Technical Support for a default file if your USB drive file does not include the configuration information or if the file was not copied to your USB drive.

8. Copy the <PRODUCT>.<SERIAL>.ip_setting_0.txt to your local machine.
9. Edit the copied file by updating the DHCP, Address, and Gateway fields to the required values.
10. Rename the edited file to nrg.network
11. Copy the updated nrg.network file from your local machine to the USB drive.
12. Delete the old <PRODUCT>.<SERIAL>.ip_setting_0.txt from the USB drive.
13. Eject the USB drive from your local machine.
14. Plug the USB drive into the USB port on the on the back panel of the NRG.

15. Wait approximately 30 seconds.
16. Unplug the USB from the NRG.
17. Proceed to "**To manually add the NRG router to the Tree View in DashBoard**" using the values you specified in step 9.

Troubleshooting Tips

- If the NRG accepts the new IP changes, the file will be renamed from nrg.network to nrg.network.success.
- If the NRG does not accept the new changes, the file will be renamed to nrg.network.failure.
- If the NRG still does not report valid settings, restart the NRG router and contact Ross Technical Support.

Add the NRG Router to the Tree View in DashBoard

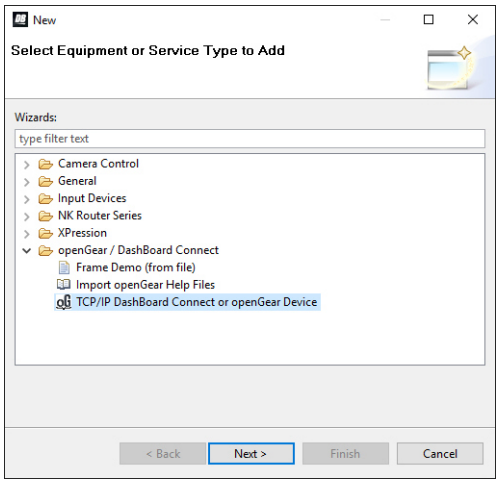
Once you assigned the NRG router a static IP address, you can then manually add it to the Tree View in DashBoard. Manually adding the NRG router displays its node in the Tree View, granting you access to the interfaces described in the "**Navigating the NRG Interfaces in DashBoard**".

To manually add the NRG router to the Tree View in DashBoard

1. In the **Basic Tree View** toolbar of DashBoard, click .

   The **Select Equipment or Service Type to Add** dialog opens.

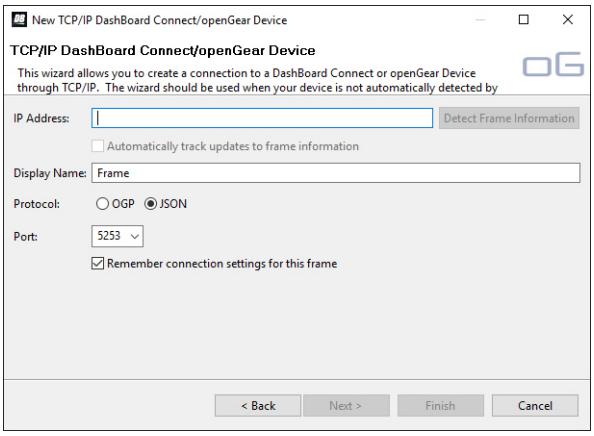
2. Expand the **openGear/DashBoard Connect** node.



3. Select **TCP/IP DashBoard Connect or openGear Device**.
4. Click **Next >**.

   The **TCP/IP DashBoard Connect/openGear Device** dialog opens.

5. Select the **JSON** radio button as the **Protocol**.



6. Enter the IP address for the router in the **IP Address** field that you assigned in "**To assign the initial static IP address to the NRG using Walkabout**".
7. Perform one of the following steps:
   - In the text fields provided, enter the display name for the NRG, and port of the panel you wish to add; or
   - Click **Detect Frame Information** to automatically retrieve the connection details.
8. Click **Finish**.

Updating the Network Settings for the NRG Router

✶ This section is not applicable if your router is already set to the correct IP address.

Once you establish initial communications with the NRG router, and it displays in the DashBoard Tree View, you may wish to review or change the IP address and other settings according to your facility network requirements.

✶ This procedure requires a reboot of the router.

To update the network settings for the NRG router

1. Locate the NRG in the Tree View of DashBoard.
2. Expand the **NRG** node to display a list of sub-nodes in the Tree View.
3. Double-click the **Product Info** node.
4. Select the **Network** tab.
5. Locate the **Settings** area.
6. Edit the fields as required.

✶ Do not assign the NRG to an IP address in the range of 192.168.12.0-192.168.12.255. These are reserved addresses.

7. Click **Apply**.
8. Click **Reboot**. This button is located at the bottom of the window.

✶ The NRG will need to be re-added to the Tree View in DashBoard using the new IP address. Refer to "**Add the NRG Router to the Tree View in DashBoard**".

Re-naming the NRG Router

If you installed multiple NRG routers in your system, each router must have a unique name assigned to it. This ensures that the router is easily identifiable in the Walkabout interface and uniquely identifies its inputs and outputs in the DashBoard database interfaces.

Throughout the DashBoard interface, actual sockets (inputs and outputs) of a router (or matrix) are referred to by hierarchical dotted notation: **Frame.slot.Port.Type.Channel** where **Frame** identifies the physical router chassis housing the matrix/matrices. By default, each NRG router ships with the name "NRG" automatically set. By re-naming each NRG router, you are providing a unique identifier for the sockets within the router system.

Re-naming the NRG Router via DashBoard

Each NRG router can be given a unique name that is used on internal menus and as the identifier in the tree views of DashBoard.

✶ Changing the router name *after* database configuration takes time to propagate through the system, and for DashBoard to reconnect, resuming stable system operation. Sufficient time must be allowed when making this change before attempting to use the system. This time will vary depending on features, matrix size, and configuration. The router name is typically assigned during initial commission and very rarely ever changed again.

✶ This procedure requires a reboot of the router.

To re-name the NRG router via DashBoard

1. In the Tree View of DashBoard, double-click the **Product Info** node.

   The **Product Info** interfaces display in the DashBoard window.

2. Select the **Setup** tab.
3. Use the **Device Name** field to specify the new name for the NRG router.

✶ The NRG router does not support Unicode characters.

4. Press **Enter** to apply the new name.
5. Click **Reboot**.

✶ It may take several seconds or more for the NRG node name to update in the Tree View of DashBoard.

Configuring Access for DashBoard Clients

You can specify which DashBoard clients on your network can access and connect to your NRG. By default, the **Permitted Clients** list is blank, allowing all DashBoard clients on your network to connect to your NRG.

For More Information on...

• the use of Role-Based Access Control within DashBoard, refer to "**Enabling RBAC for an NRG**".

To enable access for a DashBoard client

1. In the Tree View of DashBoard, double-click the **Product Info** node.

   The **Product Info** interface displays in the DashBoard window.

2. Select the **Network** tab.
3. Locate the **Permitted Clients** area of the **Network** tab.
4. Click **Add** in the Permitted Clients area of the **Network** tab.

The **Add Address** dialog opens.

5. Use the **IP Address** field to specify the IP address of the DashBoard client you wish to grant access to your NRG.
6. Click **Apply**.

   The **Add Address** dialog closes.

   The **Dashboards** list in the Permitted Clients area updates to display the specified IP address.
7. Repeat steps 4 to 6 for each DashBoard client you want to allow access.

✶ Ensure that the IP address for your DashBoard client machine is also added.

8. Click **Apply** in the **Permitted Clients** area to apply the change.

To disable access for a DashBoard client

1. In the Tree View of DashBoard, double-click the **Product Info** node.

   The **Product Info** interface displays in the DashBoard window.
2. Select the **Network** tab.
3. From the **Dashboards** list, select the IP address for the DashBoard client you want to disable access for.

✶ Do not delete the IP address for your DashBoard client machine.

4. Click **Delete** in the Permitted Clients area of the **Network** tab.
5. Click **Apply** in the Permitted Clients area to apply the change.

Establish Communication with Devices

Once the NRG displays in the Tree View of DashBoard, it can communicate with other DashBoard Connect devices.

When DashBoard is launched, devices such as openGear frames and Ross routers, are listed and made available in the Tree View. DashBoard uses the open SLP protocol to locate devices on the same network as the computer running the DashBoard client software. There are two methods for adding a device to the Tree View in DashBoard: using the auto-connect feature of DashBoard or manually adding a device by specifying the IP address of the device.

✶ Third-party device information is not automatically retrieved. These devices must be added manually.

Communications between NRG and the Devices in a Routing System

While DashBoard enables you to locate devices in your network, the NRG still needs to establish communications with the devices and define how they are connected (a connection point). Each external device must have a connection point defined in the NRG database. For those devices that are not directly connected to your network, such as Ross NK Series routers and remote control panels, you must manually add their connection information (port number) to the NRG database. Once this information is entered into the database, the device matrices, inputs, and outputs can be managed via the database.

For More Information on…

- enabling a communication protocol, and configuring the additional settings on the NRG for each protocol, refer to "**Enabling a Service**".
- adding a device (connection point) to be included and controlled via the NRG database, refer to "**Adding Connection Points**".

Enabling Remote Controller Mode

If the NRG will be in a routing system that is managed by an Ultricore BCS, the NRG must first have its Remote Controller Mode enabled. This allows the NRG to be controlled by the Ultricore BCS in the routing system. Once this mode is enabled, you cannot access the NRG databases. You will create and manage the databases for your routing system via the Ultricore BCS.

For More Information on...

- the Ultricore BCS, refer to the ***Ultricore BCS User Guide***.
- database management with an Ultricore BCS, refer to the ***Ultrix and Ultricore Database Guide***.

To enable the Remote Controller Mode on the NRG

1. In the Tree View of the NRG, double-click the **Product Info** node.

   The **Product Info** interface displays in the DashBoard window.
2. Select the **Setup** tab.
3. Locate the **Control Mode** area.
4. Select the **Remote Controller Mode** box.
5. Wait for the new setting to be applied.
6. Verify that the NRG tree no longer displays its Database nodes.
7. Create a connection point from the Ultricore BCS to the NRG as outlined in the ***Ultrix and Ultricore Database Guide***.

How a Database Determines the Routing System

The various database tables within an NRG determine if a signal/route can be made from input to output.

For a given level, if there is a physical port mapped, for the same physical device, in both the Source and Destination interfaces, and the controlling device has the level enabled, then a crosspoint switch can be issued and executed on the NRG.

Table 1 outlines a database with four levels. Level 1 has mapped valid Sources and Destinations, and the level is enabled on the controlling device.

Table 1 Example of a Multi-Level Database Setup

	Level 1	Level 2	Level 3	Level 4
Is a physical source assigned?	✓	x[a]	✓	✓
Is a physical destination assigned?	✓	✓	x[b]	x
Is the Level enabled on the Controller device?	✓	✓	✓	x
Can a switch be executed?	✓[c]	x[d]	x[d]	x[d]

a. An entry is not present in the corresponding Level column of the Source interface.
b. An entry is not present in the corresponding Level column of the Destinations interface.
c. A switch will be executed.
d. A switch will not be executed. Physical ports from the same logical matrix must be entered in the same control level before a connection can be made.

Using the Default Database

Upon initial bootup, the NRG automatically creates a default database as follows:

1. Creates one router level.
2. Defines the sources and destinations (one-to-all mapping) for all detected inputs and outputs.

✶ The I/O labels use the nomenclature of `NRG.slot1.Port[#].Type.Channel`. For example `NRG-FR1.slot1.out[4].SDI.ch1`.

3. Creates two soft panels that includes all levels, destinations, and sources of the default database.

Creating a New Database

You can choose to use the default database, or create a new database based on your routing requirements. Refer to "**Creating a New Database**" and "**Defining a Database**".

You can also choose to copy the default database to create a new version to edit as required. Refer to "**Copying a Database**".

Using DashBoard

The DashBoard client software enables you to monitor and control devices in your routing system from a computer. The NRG requires DashBoard for configuration and operation. The interfaces are accessed by expanding the main NRG node in the DashBoard Tree View and selecting the appropriate sub-node. This chapter outlines the NRG tree nodes in DashBoard, and how to navigate these nodes.

If you have questions pertaining to the operation of the NRG, contact us at the numbers listed in "**Contacting Technical Support**". Our technical staff is always available for consultation, training, or service.

For More Information on...

- the DashBoard client software, refer to the ***DashBoard User Guide***.
- accessing DashBoard, refer to "**Launch DashBoard**".
- specific NRG sub-nodes, refer to "**Product Info Interfaces**", "**System Interfaces**", and "**Database Interfaces**".

NRG in DashBoard

NRG groups the configuration, monitoring, and operating features in a Tree View in the DashBoard client window. Each node of the tree opens to reveal one or more sub-nodes, giving access to the features for your router.

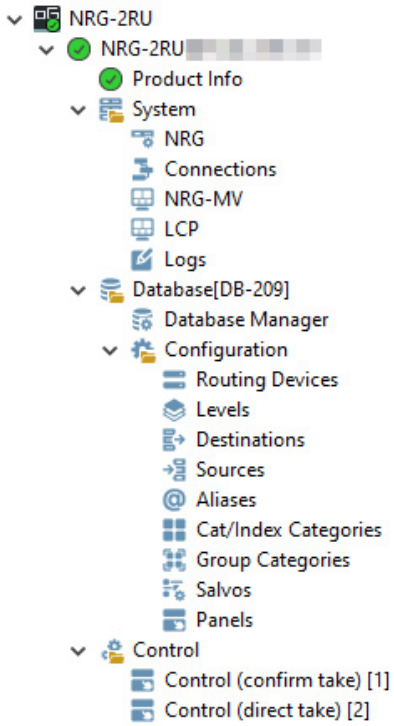


Figure 1 Example of the NRG Nodes in a DashBoard Window

NRG includes the following interfaces, as separate nodes, in the DashBoard Tree View.

Product Info

Double-click the Product Info node to display this interface in the right pane of the DashBoard window. The interface is organized into two areas: Status (read-only) tabs located on the left, and a

series of configuration options (tabs) located on the right. Refer to "**Product Info Interfaces**" for more information.

System

The System tree has five sub-nodes: NRG, Connections, NRG-MV, LCP, and Logs. Refer to "**System Interfaces**" for more information.

- NRG — enables you to monitor the hardware (temperature, fans, power, ethernet, storage, reference) and the I/O signals.
- Connections — enables you to specify the protocol(s) the NRG router will use to communicate with an external device. Refer to "**Enabling a Service**" for details.
- NRG-MV — enables you to manage your NRG-MV licenses, and configure the Multiviewer Head settings for your router. Refer to "**NRG-MV Setup**" for details.
- LCP — enables you to customize the button colors and functions on the NRG-FR1-LCP and NRG-FR2-LCP routers. This sub-node is only applicable to the NRG-FR1-LCP or NRG-FR2-LCP. Refer to "**Configuring the LCP Buttons**".
- Logs — displays read-only information that is used by Ross Technical Support for diagnostic and troubleshooting purposes.

Database

Expanding the Database node enables you to configure the databases, matrices, destinations, sources, groups, levels, soft panels, and salvos for the NRG routing system. Refer to "**Database Interfaces**", "**Creating a New Database**", and "**Defining a Database**".

Control

The Control sub-node provides access to the configured soft panels available on the NRG router. Refer to "**Soft Panels in DashBoard**" for more information.

Navigating the NRG Interfaces in DashBoard

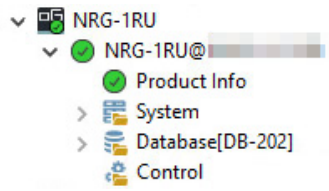
The interfaces are accessed by expanding the topmost NRG node in the DashBoard Tree View and selecting the appropriate sub-node. Several of the interfaces are organized in a table layout with a toolbar on the bottom, and a toolbar on the left side of the tab.

For More Information on...

- the Database interfaces for your router, refer to the ***Ultrix and Ultricore Database Guide***.

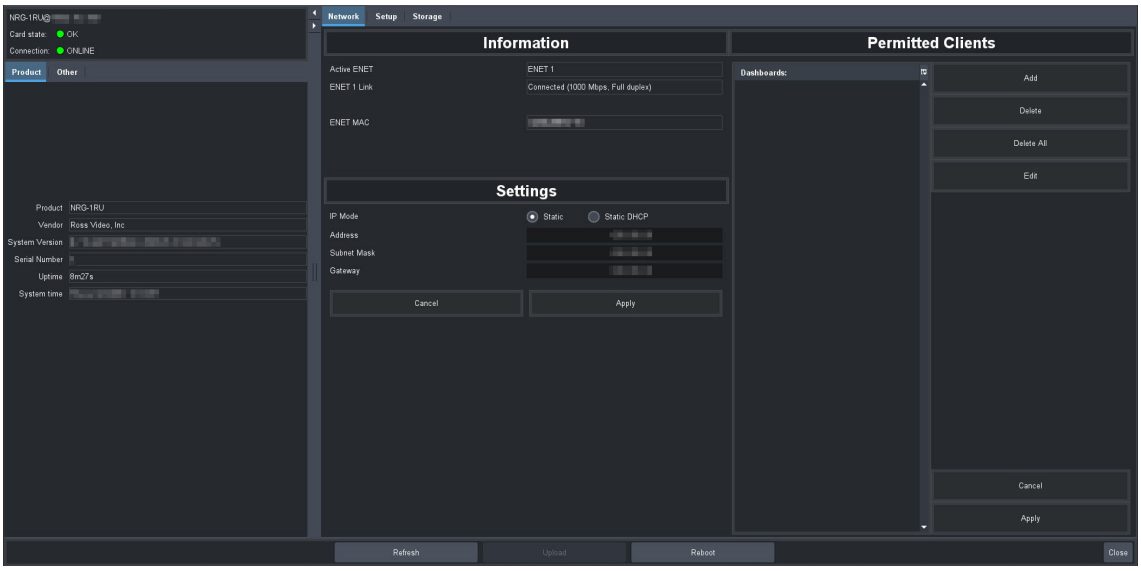
To access the NRG interfaces in DashBoard

1. Ensure that DashBoard is running. Refer to "**Launch DashBoard**"
2. Locate the NRG node in the Tree View of DashBoard
3. Expand the **NRG** sub-node.



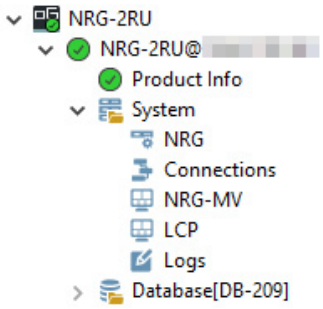
4. Double-click the **Product Info** sub-node to display that interface in the right pane of the DashBoard window.

The Product Info interface is two panes within the same DashBoard window: status (read-only) fields in the left pane, and a series of tabs with configurable menus and settings in the right pane. Refer to "**Product Info Interfaces**" for more information.



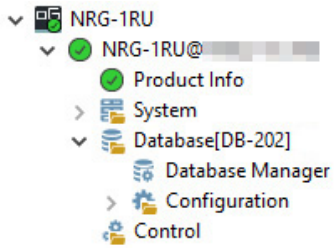
5. Expand the **System** sub-node.

   The System tree includes the following sub-nodes: NRG, Connections, NRG-MV, LCP, and Logs. Refer to "**System Interfaces**" for more information.



6. Expand the **Database** sub-node.

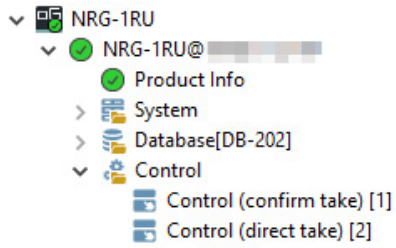
   The **Database Manager** and **Configuration** sub-nodes display. Double-click the Database Manager sub-node to create, activate/inactive, and delete databases on this router. You can also backup and restore databases using the Import/Export options in the Database Manager toolbar. Expand the Configuration sub-node to list the options available for configuring a database. Refer to "**Database Interfaces**" for more information.



7. Expand the **Control** sub-node.

   Each sub-node is a configured soft panel in your routing system. A soft panel is a DashBoard interface that represents a panel of buttons that is used to make crosspoint switches in your routing system. By default, there are two pre-configured soft panels that are available for

immediate use. But you may create more to suit your routing needs. Refer to “**Soft Panels in DashBoard**” for more information.



Product Info Interfaces

The Product Info interfaces provide hardware information, network settings, access controls, options for creating backups of your settings, and general management for your router. This chapter summarizes the Product Info interfaces.

Overview

The Product Info interface displays two panes within the same DashBoard window: status (read-only) fields in the left pane, and a series of tabs with configurable menus and settings in the right pane. (**Figure 2**)

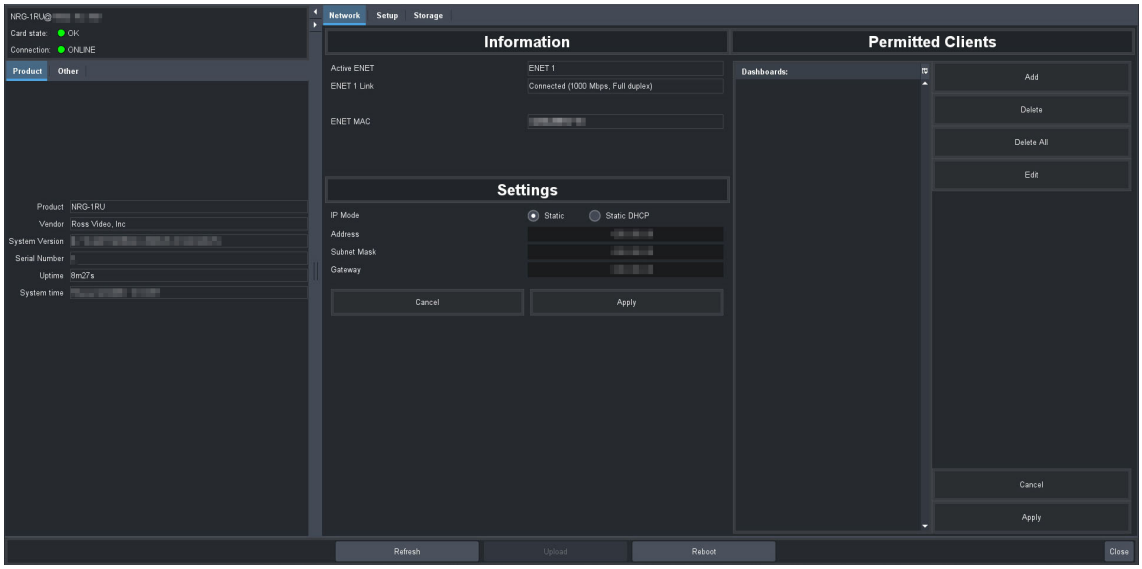


Figure 2 Example of the Product Info Interface for an NRG

The following sections briefly outline each tab displayed on the Product Info interface starting with the leftmost tab.

Product Tab

The Product tab provides read-only information about the general hardware and software status.

Table 2 summarizes the read-only information displayed in the Product tab.

Table 2 Product Info — Product Tab

Item	Parameters	Description
Product	<text>	Indicates the product name
Vendor	<text>	Indicates the supplier/manufacturer
System Version	#	Indicates the build version
Serial Number	#	Indicates the serial number

Table 2 Product Info — Product Tab (Continued)

Item	Parameters	Description
Uptime	#h #m #s	Indicates the number of hours since the last reboot
System time	DD mm dd yyyy hh:mm:ss	Indicates the current date based on the internal clock (if no connection to an NTP Server is available) where: • DD represents the calendar day • mm represents the month • dd represents the day • yyyy represents the year • hh:mm:ss represents the current local time

Other Tab

Table 3 summarizes the read-only information displayed in the Other tab.

Table 3 Product Info — Other Tab

Item	Parameters	Description
Frontend SW Rev	#	Read-only information used by Ross Technical Support.
Backend SW Rev	#	
Device FW Rev	#	

Network Tab

The Network tab provides network setup options and options to specify DashBoard client access.

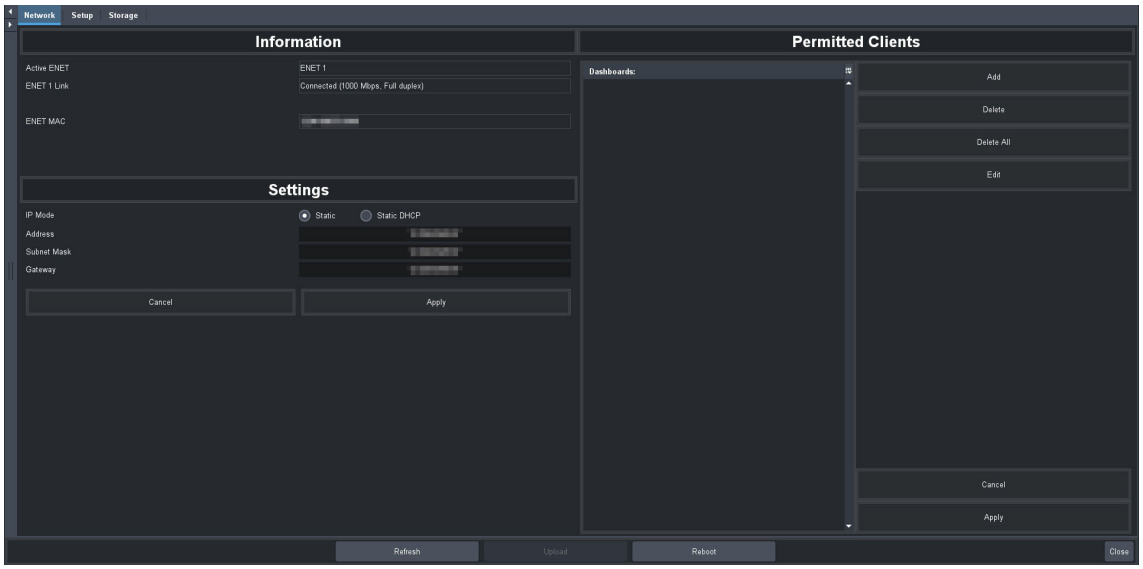


Figure 3 Example of the NRG Product Info > Network Tab

Table 4 summarizes the fields and menus displayed in the Network tab.

Table 4 Product Info — Network Tab

Item	Parameters	Description
Information (Read-only)		
Active ENET	ENET #	Indicates the ETH port on the NRG is the primary network connection
ENET 1 Link	Connected (x, y)	Indicates that a valid network link is configured on the ETH port of the NRG where: • x represents the connection speed (Mbps) • y represents the link type (e.g. full duplex)
	Not Connected	Ethernet communications for the NRG are invalid. The ethernet cable may be disconnected on the rear panel or the ethernet network may be down or experiencing problems.
ENET MAC	<number>	Indicates the MAC address for the NRG
Settings		
IP Mode	Static	The user manually specifies the network settings for the device
	Static DHCP	The DHCP service for your network assigns the network settings to the router. Once the settings are validated, they are static.
Address	###.###.###.###	Specifies the IP address for the device
Subnet Mask	###.###.###.###	Specifies the subnet mask for the device
Gateway	###.###.###.###	Specifies the gateway for communication outside of the local area network (LAN)
Cancel	Discards any unsaved changes made to the Address, Subnet Mask, and Gateway settings and reverts back to the current running values.	
Apply	Updates the Address, Subnet Mask, and Gateway settings	
Permitted Clients		
DashBoards:	#	Lists the IP address of each DashBoard client that is allowed to communicate with this device
Add	Enables you to add a new DashBoard client to the Permitted Clients list	
Delete	Deletes the selected DashBoard client from the Permitted Clients list	
Delete All	Clears all entries in the Permitted Clients list	
Edit	Enables you to modify the selected entry in the Permitted Clients list	
Cancel	Discards any unsaved changes made to the Permitted Clients list and reverts back to the current running values	
Apply	Updates the Permitted Clients list settings	

Setup Tab

The Setup tab provides global settings such as assigning a device name, enabling remote control mode on a router, and determining access to the NRG. (**Figure 4**)

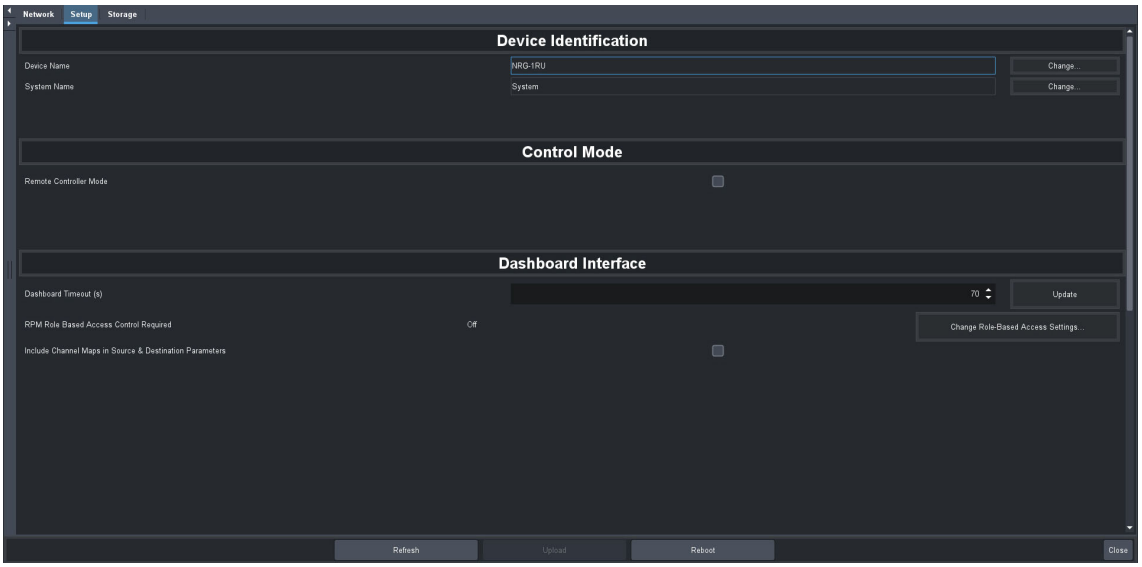


Figure 4 Example of the NRG Product Info > Setup Tab

Table 5 summarizes the options displayed in the Setup tab.

Table 5 Product Info — Setup Tab

Item	Parameters	Description
Device Identification		
Device Name	<name>	Provides a unique identifier for the router in the Tree View of DashBoard
System Name	<name>	Provides a unique identifier for the routing system
Control Mode		
Remote Controller Mode	Selected	Enables the primary device (usually an Ultricore BCS) in your routing system to control this NRG router. This also hides the Database nodes in the Tree View.
	Cleared	This router cannot be controlled and monitored by a primary device
DashBoard Interface		
DashBoard Timeout	30-300s	Sets the maximum number of seconds that DashBoard waits until it queries NRG. The default is 70 seconds.
Update	Applies the new value in the DashBoard Timeout menu	
RPM Role Based Access Control Required (read-only)	On	Any DashBoard without RPM will not be allowed to connect to the device unless the user enters a 'master password'
	Off	Disables RBAC support

Table 5 Product Info — Setup Tab (Continued)

Item	Parameters	Description
Change Role Based Access Settings		Displays the Change RBAC Settings dialog. Refer to "**Role-Based Access Control**" for details.
Include Channel Maps in Source & Destination Parameters	Selected	Allows a database to match the quantity of BNC I/O fitted in the router. Each input / output SDI port will be mapped to default labels of SRC xx and DST xx respectively. • I/O mapping occurs for Level 1 only (Video) • the Sources field is ignored • the Destination field is ignored • the Level field is applied
	Cleared	Disables this option

Storage Tab

Table 6 summarizes the read-only displayed in the Storage tab.

Table 6 Product Info — Storage Tab

Item	Parameters	Description
Internal	OK	There are no storage space issues detected
	WARNING	Less than 20% of the storage space is available
	CRITICAL	Less than 10% of the storage space is available

Role-Based Access Control

This chapter outlines the use of Role-Based Access Control (RBAC) within the DashBoard software application for the NRG.

Before You Begin

Ensure the following:

- The Ross Platform Manager and appropriate licenses are purchased to use RBAC features.
- The RPM Server is configured and added to DashBoard.
- The permissions for the devices in your routing system are defined via the Ross Platform Manager.

For More Information on...

- configuring the Ross Platform Manager and Server, refer to the ***DashBoard RPM User Guide***.
- the Ultricore Profiles feature, refer to the ***Ultrix and Ultricore Database Guide***.

Enabling RBAC for an NRG

The RBAC feature determines access to an individual NRG via a DashBoard instance (client). Once RBAC is enabled, any DashBoard without RPM will not be allowed to connect to the NRG unless the user enters a 'master password'.

- If a DashBoard instance has RPM and the account for the current user is configured to allow access to the NRG, the user will be able to continue using the NRG.
- If the user does not have access, the NRG will be disconnected from DashBoard until a user with access rights is signed-in.

To enable RBAC on an NRG

1. Launch DashBoard.
2. Locate the NRG node in the Tree View.
3. Expand the NRG node to display a list of sub-nodes.
4. Expand the NRG sub-node.
5. Double-click the **Product Info** sub-node.

   The Product Info interface displays.
6. Select the **Setup** tab.
7. Locate the **RPM Role Based Access Control Required** area.
8. Click **Role Based Access Settings**.

   The Change RBAC Settings dialog opens.
9. From the **RPM Role Based** options, select **On**.

✶ The **RPM Role Based** is set to **Off** by default.

10. Use the **Client Master Password** field to specify the text string a user can enter to gain access to this device when RPM is not present in DashBoard or if DashBoard is unable to connect to the RPM Server.

11. Click **Done**.
    - The Change RBAC Settings dialog closes.
    - On the Setup tab, the **RPM Role Based Access Control Required** field now reports **On**.

To verify that RBAC is enabled

1. Close the **Product Info** interface in DashBoard.
2. Locate the device node in the DashBoard Tree View.
3. Right-click the device node.
4. Select **Disconnect**.

   The device node displays a grayed out icon.
5. Right-click the device node.
6. Select **Connect**.

   The device node displays with a lock icon. Any user attempting to access this device will be prompted to enter the password specified in step 10 in the previous procedure.

Accessing a Device with RBAC Enabled

Once the NRG is accessed through DashBoard are configured to require connection to an authenticated DashBoard instance (client), connection requests from unauthenticated sources are declined. A Lock icon displays next to the NRG node in the Basic Tree View to indicate that RBAC is enabled for that device. If RBAC is enabled but your system is not using an RPM Manager or Server or the RPM Server is unavailable, you will need to enter a Client Master Password to gain access to the device. This section outlines how to use a Client Master Password to access a device when RBAC is enabled.

✶ If RPM is used, access to the device is based on the privileges of the current user signed into DashBoard.

For More Information on...

- managing access control in DashBoard, refer to the ***DashBoard RBAC User Guide***.

To access an NRG when RBAC is enabled

1. Locate the NRG node in the Tree View of DashBoard.

   Notice that the node displays an icon with a lock symbol.
2. Double-click the NRG node.

   The Password dialog opens.
3. Enter the password as defined in step 10 of "**To enable RBAC on an NRG**".
4. Click **Login**.

   The Password dialog closes and the NRG node displays a green icon and its tree nodes are accessible.

✶ Entering an incorrect password denies access and the device icon is lit red.

System Interfaces

The System interfaces enable you to monitor the hardware, signal status, and the routing system devices that are communicating with the NRG. From the System tree you can also configure the NRG Multiviewer licensed feature (NRG-MV), and configure the NRG-FR1-LCP or NRG-FR2-LCP front panel buttons. This chapter summarizes each System interface.

Overview

By default, the NRG > System tree has five sub-nodes: NRG, Connections, NRG-MV, LCP, and Logs. Double-click a sub-node to displays its interface in the right pane of the DashBoard window.

✶ The LCP sub-node is only applicable to the NRG-FR1-LCP or NRG-FR2-LCP. Refer to "**Configuring the LCP Buttons**".

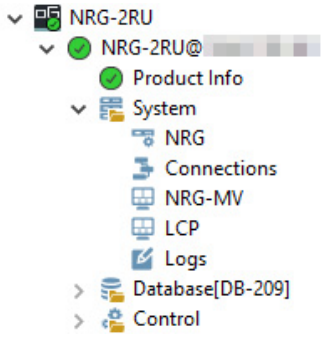


Figure 5 Expanded NRG > System Nodes in the Tree View

NRG Interface

The NRG interface provides an overview of the NRG hardware and connections. (**Figure 6** and **Figure 7**) From this interface you can monitor the hardware (internal temperature, fan operation, and PSU connections), the input signals (Sources), and the output signals (Destinations).

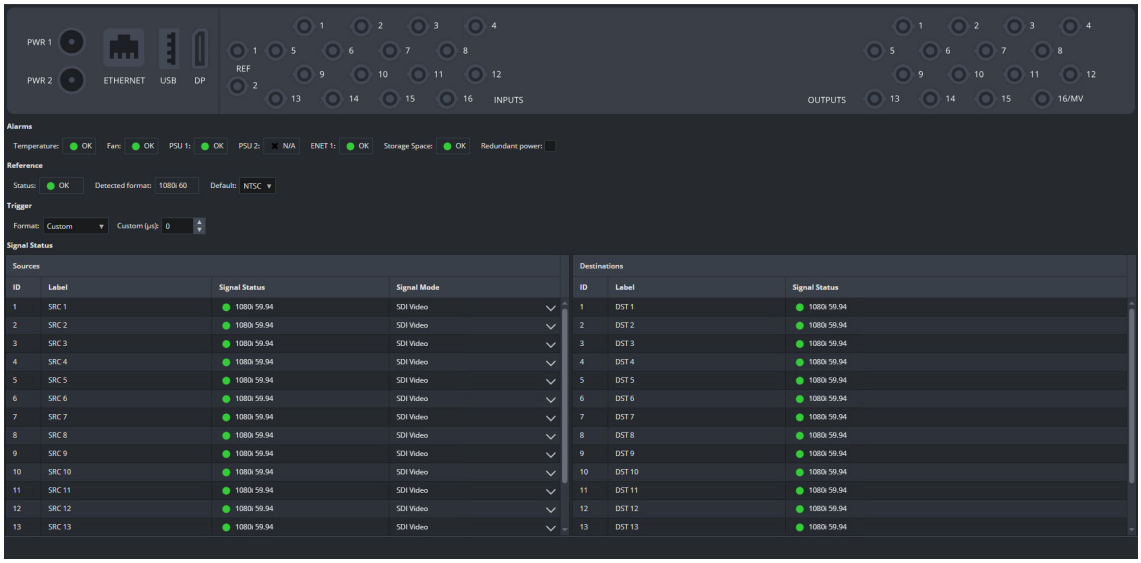


Figure 6 Example of an NRG-FR1 Interface

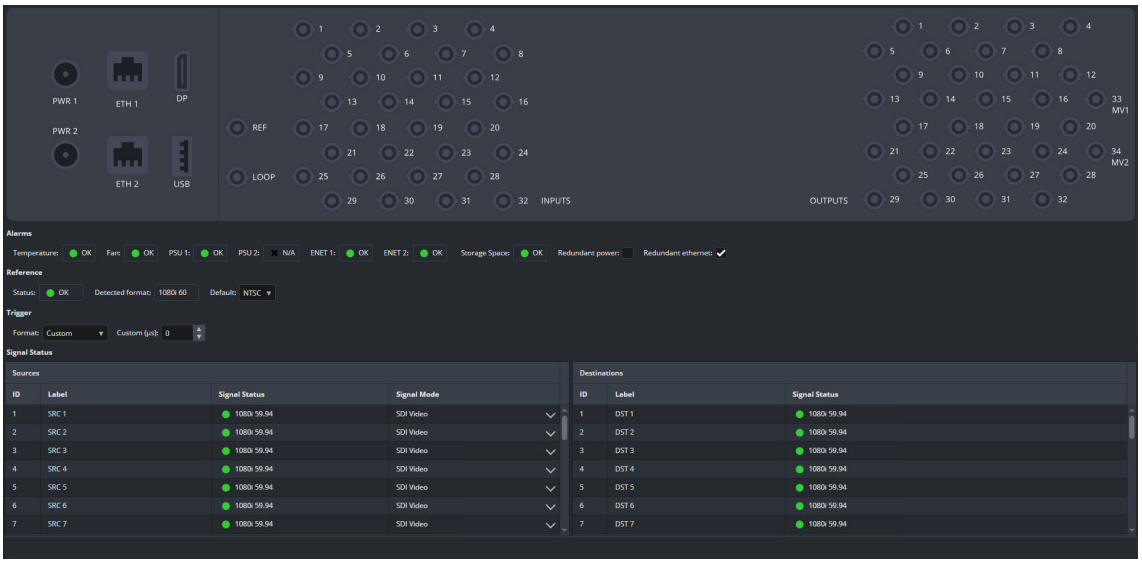


Figure 7 Example of an NRG-FR2 Interface

Table 7 summarizes the fields displayed in the NRG interface.

Table 7 System — NRG

Item	Parameters	Description
Alarms		
Temperature (read-only)	OK (Green)	Indicates that the chassis core components temperature is within the normal range
	Warning (Yellow)	Indicates that at least one chassis core component temperature is between 90°C and 100°C (194°F and 212°F)
	Failed (Red)	Indicates that at least one chassis core component temperature is above 100°C (212°F)
Fan (read-only)	OK (Green)	Normal operation; no hardware errors are associated with the chassis fan
	Failed (Red)	Indicates that the fan is not functioning correctly. Contact Ross Technical Support.
PSU 1 (read-only)	OK (Green)	• Indicates that PSU 1 is detected and connected to a valid power source • Normal operation with no hardware errors
	Failed (Red)	Indicates a valid connection to PSU 1 is not detected
PSU 2 (read-only)	N/A	Indicates the status of PSU 2 is not applicable (e.g. (e.g. the Redundant power box is not selected)
	OK (Green)	• When in redundant power mode, this indicates that PSU 2 is detected and connected to a valid power source • Normal operation with no hardware errors
	Failed (Red)	When in redundant power mode, this indicates a valid connection is not detected

Table 7 System — NRG (Continued)

Item	Parameters	Description
ENET 1 (read-only)	OK (Green)	Indicates that a valid network link is configured on the ENET 1 port
	Failed (Red)	Ethernet communications on the ENET 1 port are invalid. The Ethernet cable may be disconnected on the NRG back panel or the network may be down or experiencing problems
ENET 2 (read-only) (NRG-FR2 and NRG-FR2-LCP only)	N/A	Indicates the status of the ENET 2 port is not applicable (e.g. the Redundant ethernet box is not selected)
	OK (Green)	When in redundant ethernet mode, this indicates that a valid network link is configured on the ENET 2 port
	Failed (Red)	When in redundant ethernet mode, this indicates ethernet communications on the ENET 2 port are invalid. The Ethernet cable may be disconnected on the NRG back panel or the network may be down or experiencing problems.
Storage Space (read-only)	OK (Green)	There are no storage space issues detected
	Warning (Yellow)	Less than 20% of the storage space is available
	Critical (Red)	Less than 10% of the storage space is available
Redundant power	Selected	Monitors the additional power supply (PSU 2) connected to the NRG back panel. In the event of a power loss on one PSU, the router will automatically switch to the second PSU port.
	Cleared	Additional power supply (PSU 2) is not monitored
Redundant ethernet (NRG-FR2 and NRG-FR2-LCP only)	Selected	Monitors the redundant ethernet link, ENET 2, connected to NRG back panel. In the event communication is lost on a link, the router will automatically switch to the second Ethernet port.
	Cleared	The redundant ethernet link (ENET 2) is not monitored
Reference		
Status (read-only)	OK (Green)	Reports the status on the input reference signal connected to the REF port on the NRG back panel
	No Sync (Yellow)	
Detected format (read-only)	<text>	Reports the video format detected on the input reference signal connected to the REF port on the NRG back panel
Default	NTSC	If you did not connect a reference source signal to the **REF** port on the NRG rear panel, use this menu to specify the default reference format for the NRG router. If you connect a valid reference source to the **REF** port, it will take precedence over the Default setting
	PAL	

Table 7 System — NRG (Continued)

Item	Parameters	Description
Trigger		
Format	Custom	Enables you to specify a custom switching time
	<format>	Select a format to specify the switch timing that will be used by the NRG when switching inputs/outputs
Custom (µs)	#	Specifies the time (number of microseconds) from the start of the custom switching line to the actual switching event
Signal Status > Sources		
ID (read-only)	#	Auto-numbered field. This is not used within the routing system itself, however, third-party protocols that do not support labels will reference this field in their communications.
Label	<text>	Assigns a unique identifier (label) for the source in the routing system. This label is used by control interfaces/devices
Signal Status (read-only)	<format>	Indicates the video format detected is supported[a] and the signal is valid on the specified socket
	Indeterminate	Indicates the video format is detected but is not supported on the specified socket. The signal is not processed/passed.
	No Signal	Indicates that the video format cannot be detected on the specified socket
Signal Mode	SDI Video	Identifies the input signal as SDI video (default)
	MADI	Identifies the input signal as MADI (audio) only. The video data is ignored.
	DVB-ASI	Identifies the input signal as carrying MPEG-TS data up to 270Mbps.
Signal Status > Destinations		
ID (read-only)	#	Auto-numbered field. This is not used within the routing system itself, however, third-party protocols that do not support labels will reference this field in their communications.
Label	<text>	Assigns a unique identifier to the destination in the routing system. This label is used by control interfaces/devices.
Signal Status (read-only)	<format>	Indicates the video format detected is supported[b] and the signal is valid on the specified socket
	Indeterminate	Indicates the video format is detected but is not supported on the specified socket. The signal is not processed/passed.
	No Signal	Indicates that the video format cannot be detected on the specified socket

a. Refer to the ***NRG Installation Guide*** for a list of supported formats.
b. Refer to the ***NRG Installation Guide*** for a list of supported formats.

Connections Interface

Double-click the **Connections** sub-node to display a series of tabs in the right pane of the DashBoard window. (**Figure 8**)

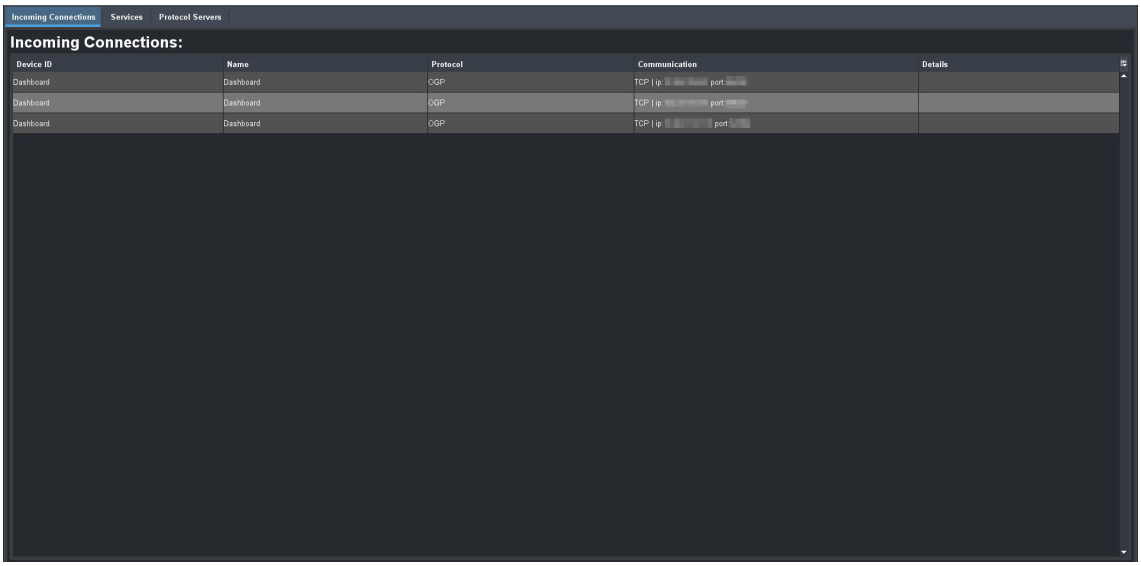


Figure 8 Example of the NRG > Connections > Incoming Connections Tab

The Connections interface lists and configures the connection points in your routing system. The interface is organized into three tabs: Incoming Connections, Services, and Protocol Servers. The following sections outline each tab.

Incoming Connections Tab

The Incoming Connections table lists the connection details of remote client devices under the supervision of the active database currently communicating with the router. (**Figure 8**)

Table 8 summarizes the fields displayed in the Incoming Connections tab.

Table 8 Connections — Incoming Connections

Item	Parameters	Description
Device ID	<name>	Specifies the external device for the connection point
Name	<name>	Assigns a unique identifier for the device in the routing system. This name is also used when matrices are defined in the system.
Protocol	GVG Native	The device uses the third-party GVG protocol to communicate
	OGP	This device uses the openGear protocol to communicate
	Probel SW-P-08	The device communicates via the Probel SW-P-08 protocol
	Ross NK	The device uses the Ross NK protocol to communicate (T-Bus or TCP only)
	RossTalk	The devices communicates via the RossTalk protocol

Table 8 Connections — Incoming Connections (Continued)

Item	Parameters	Description
Communication	tcp	The device is communicating over a network connection. Note that the DashBoard client computer, the router, and the external device must be on the same network.
	ip: #	Specifies the IP address of the device on the network
	ip: localhost	Specifies that the device is the router you are currently configuring
	port:#####	Specifies the ethernet port the devices is associated with on the network
Details	<text>	Provides a short textual description of the device

Services Tab

The Services tab provides options for enabling/disabling a communication protocol for the router. (**Figure 9**)

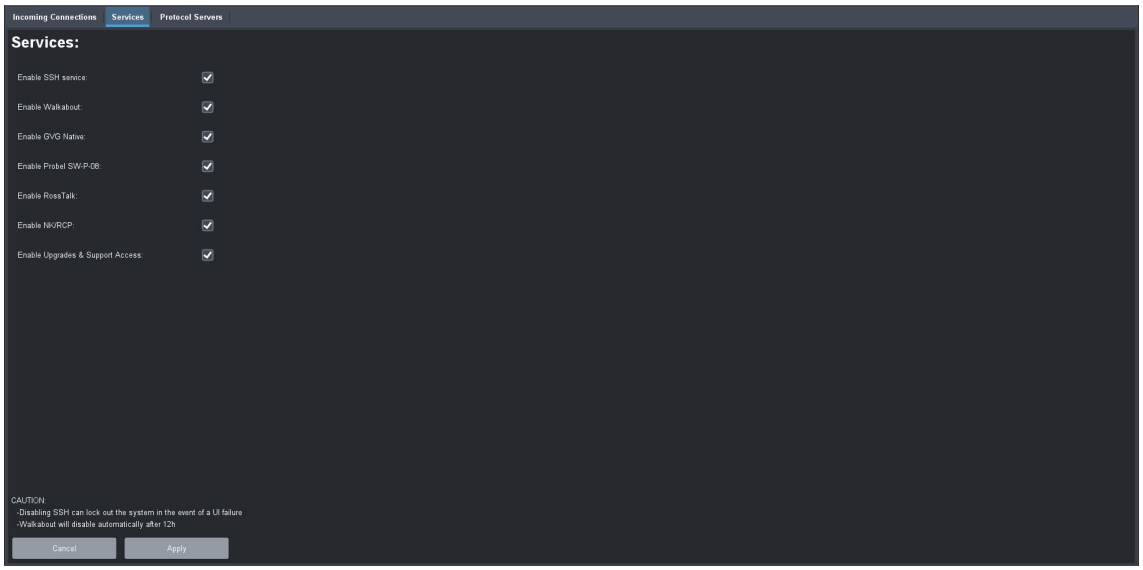


Figure 9 Example of the Connections > Services Tab

Table 9 summarizes the options displayed on the **Services** tab.

Table 9 Connections — Services

Item	Description
SSH service	Enables the ability to log onto the NRG via an SSH server. Secure Shell (SSH) Login is a client-server protocol used by system administrators to securely log onto remote systems and execute commands over an unsecured network. SSH may also be used by Technical Support for advanced troubleshooting.
Walkabout	Enables the NRG to communicate with devices in the Walkabout system

Table 9 Connections — Services (Continued)

Item	Description
GVG Native	Enables the NRG to communicate via the GVG Series 7000 Native protocol and is available over an ethernet connection.
Probel SW-P-08	Enables the NRG to communicate via the Probel SW-P-08 protocol. This protocol is available over an ethernet connection.
RossTalk	Communications via the RossTalk protocol (a plain text based protocol that allows control of Ross Video equipment)
NK/RCP	Enable this option if there are Ross NK series routers and/or remote control panels (RCP) in your routing system. The Ross NK series devices must be connected to the ethernet network by virtue of an Ross NK-IPS or NK-NET devices to enable communication with the NRG.
Enable Upgrades & Support Access	Remote access and upgrades are disabled by default (the Upload button is disabled in the DashBoard interfaces). Remote upgrades may optionally be enabled through DashBoard via this option. ✶On boot-up or power cycle, this option will default back to disable (box is unselected). You must select the box again if you wish to enable web access and firmware upgrades after a boot-up or power cycle.

Protocol Servers Tab

The Protocol Servers tab lists the currently active servers running in the routing system. (**Figure 10**) This tab is auto-populated based on the external devices on the same network as your NRG and the protocols (services) that you enabled on the **Services** tab.

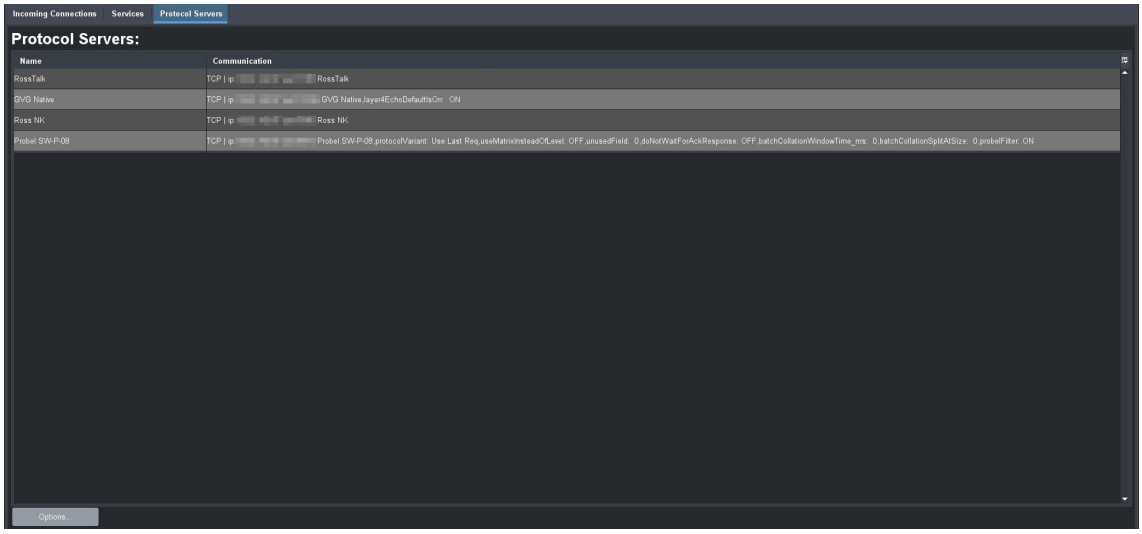


Figure 10 Example of the Connections > Protocol Servers Tab

Table 10 summarizes the fields displayed in the **Protocol Servers** tab.

Table 10 Connections — Protocol Servers

Item	Description
Name	Indicates the unique identifier for the server in the routing system. This name is also used when matrices are defined in the system.
Communication	Indicates the communication protocol, IP address, Port Number, and configuration details of the active device
Options	Displays additional settings for each supported protocol.

Server Options Dialog

Click **Options** (located in the bottom left corner of the Protocol Servers interface) to display the **Server Options** dialog. The dialog provides additional settings for each the communication protocols that the NRG uses for connecting to external devices. Refer to the user documentation for your external device to learn more about what settings are required.

Table 11 summarizes the fields displayed in the **Server Options** dialog.

Table 11 Connections — Protocol Servers > Server Options

Item	Parameters	Description
GVG Native		
L4 Echo	No	The Ethernet Layer 4 acknowledge is disabled. This is the default.
	Yes	The Ethernet Layer 4 acknowledge is enabled
Sequence More to Come Character	#	Enables the user to assign a number to the `seq_flag` field in a packet that will indicate more messages to come. The default value is 9. A value of 0 (zero) indicates the last or only packet.
Send Trailing HT	Yes	Includes the trailing `<HT>` character (Horizontal Tab (0x09)) in the packet
	No	The trailing `<HT>` character is not included in the packet
Send nbr_sources Leading Zero	Yes	Always forces the `nbr_sources` field to be 2 ASCII characters (e.g. 1 becomes 01). This supports fragmentation of large message streams.
	No	Allows the `nbr_sources` field to be a single ASCII character
Repeated Packet Holdoff (ms)	#	NRG detects repeated identical packets, and will skip processing if the packets are repeated within the specified delay. The default is 0.
Probel SW-P-08		
Protocol Variant	Use Last Req	The NRG will respond using protocol variant (extended/non-extended) as per the received request format. This is the default.
	Non-Extended	NRG will always reply using non-extended formatting
	Extended	NRG will respond with extended formatting

Table 11 Connections — Protocol Servers > Server Options (Continued)

Item	Parameters	Description
Matrix Mode	No	NRG will use information from the LEVEL section of the protocol to control NRG levels
	Yes	NRG will use information from the MATRIX_ID section of the protocol to control NRG levels
Do not wait for ACK	No	NRG will wait for message acknowledgments between connect responses. This is the default.
	Yes	NRG will not wait for message acknowledgments between connect responses
Batch Collate Time (ms)[a]	#	Wait up to 100 milliseconds for multiple commands received before processing. The default is 0 (which disables this feature).
Batch Collate Split Size (# of commands)	#	Wait up to 100 received commands before processing. The default is 0 (which disables this feature).
Unused Field	#	Send number (0-15) in either Level or Matrix field - which ever is not used as per Matrix Mode setting. The default is 0.
Probel Filter	Yes	Probel SW-P-08 crosspoint tally responses are provided when there are no status changes resulting from the crosspoint connect message
	No	Removes the Probel Crosspoint Switch filter
Repeated Packet Holdoff (ms)	#	NRG detects repeated identical packets, and will skip processing if the packets are repeated within the specified delay. The default is 0.
Follow Level Enabled	Yes	Enables a user to configure a specific level to act as a “Follow” level. When a “Connect Crosspoint” message with this level is received, Ultrix/Ultricore will issue a Take command for all database levels.
	No	Disables this feature
Follow Level	#	Specifies the routing level for Probel that signals a follow/all-level Take

a. When the Batch Collate Split Size and Batch Collate Time are both active, the option that occurs first will release the batch, and the Batch Collate Split Size and the Collate Time values are reset.

NRG-MV Interface

The NRG-MV interface enables you to manage the NRG-MV license(s) for your NRG. Once an NRG-MV license is enabled on the NRG, you can configure the settings for the Multiviewer Head(s). (**Figure 11**) Refer to “**NRG-MV Setup**” for more information on this licensed feature.

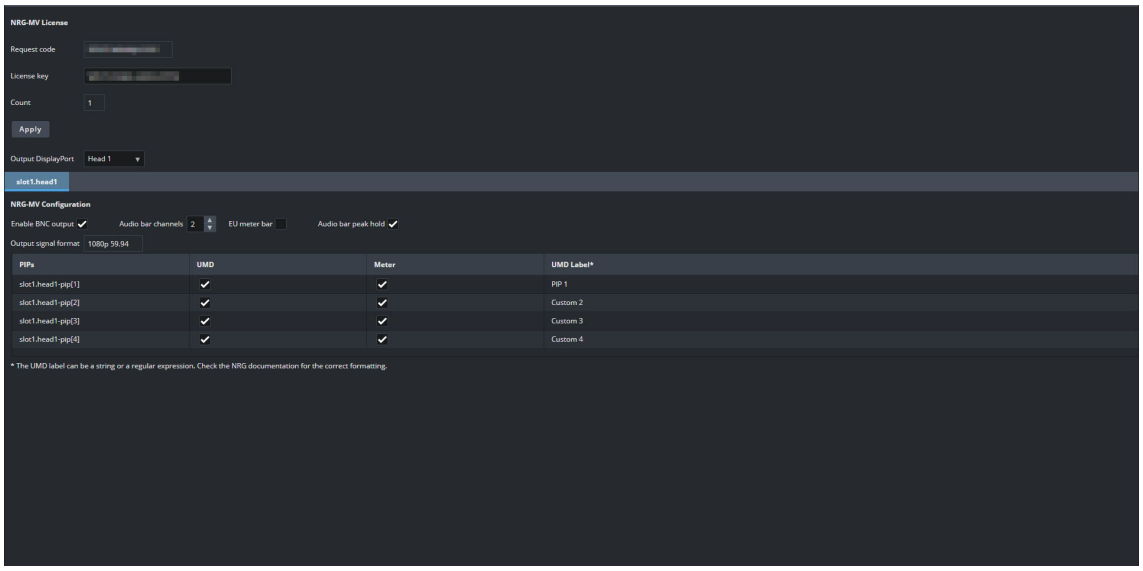


Figure 11 Example of the NRG-MV Interface with One Multiviewer Head

Table 12 summarizes the fields and settings displayed in the NRG-MV interface.

Table 12 System — NRG-MV

Item	Parameters	Description
NRG-MV License		
Request code	#	This character string is used to obtain an NRG-MV license key
License key	#	The license key that was provided for this router
Count	#	Indicates the number of available licenses on this router
Apply		Click this button to apply the changes to the NRG-MV license(s) settings
Output DisplayPort	Passthrough	The DisplayPort (DP) port on the NRG back panel is not assigned to a Multiviewer Head. This assigns 1080p monitoring passthrough to the DP port output. Refer to the ***NRG Installation Guide*** for more information on the DP port.
	Head 1	Assigns Multiviewer Head 1 as the output for the DP port on the router
	Head2	Assigns Multiviewer Head 2 as the output for the DP port on the router. This is only applicable when using an NRG-FR2 or NRG-FR2-LCP with two NRG-MV licenses enabled.
slot#.head#		

Table 12 System — NRG-MV (Continued)

Item	Parameters	Description
Enable BNC output	Selected	The NRG-MV Head output is allocated to the following BNC: • NRG-FR1, NRG-FR1-LCP: OUT 16 • NRG-FR2, NRG-FR2-LCP: OUT 33 (Head 1), OUT 34 (Head 2). Note that each Head requires one NRG-MV license.
	Cleared	The NRG-MV Head is no longer the output on the OUT 16, OUT 33, or OUT 34 BNCs
Audio bar channels	#	Specifies the number of channels in a single block of audio meters. The maximum is 16.
EU meter bar	Selected	The audio level status is reported in real-time as a series of vertical bars that comply with European Union (EU) standards
	Cleared	Disables the EU scale
Audio bar peak hold	Selected	The audio meters report the audio peak level measurements for your audio channels. Measurement units are in decibel full scale (dBFS) where 0dBFS is the maximum digital value.
	Cleared	The audio meters do not report the audio peak level
Output signal format (read-only)	#	Reports the output video format for the specified NRG-MV Head. ✶This field reports the video format of the output on the designated NRG-MV Head BNC. If the BNC output is enabled, the video format is tied to the reference. If disabled (regular SDI output), the format will reflect what is being routed through that BNC.
PiPs (read-only)	slot1.head***x***-pip[***y***]	Identifies the NRG-MV PiP in your database where: • ***x*** represents the head • ***y*** represents the PiP in the head layout
UMD	Selected	Enables you to add a new label box to the specified PiP
	Cleared	Disables this feature
Meter	Selected	The specified PiP displays (up to 16 channels of audio) in a single block of audio meters as defined by the Audio bar channels, EU meter bar, and audio bar peak hold settings
	Cleared	Disables this feature
UMD label	<text>	• Defines the content of the UMD label box for the specified PiP. The label can include a maximum of 24 characters. • The label can be a string or simple text. • Supports Unicode characters

LCP Interface

✶ While the LCP interface displays for all NRG models, it is applicable only to the NRG-FR1-LCP and NRG-FR2-LCP.

The tabs on the LCP interface enable you to customize the buttons the front panel of the router. The interface is organized into four sections: the top toolbar reports if the current configuration is the factory default or a customized layout. Under the toolbar is an image that represents the front panel buttons (which are selectable from the interface). A series of tabs displays under the router image, select a tab to access the settings, and options to customize the buttons. The bottom toolbar includes buttons for discarding or saving any recently edited settings. (**Figure 12**, **Figure 13**)

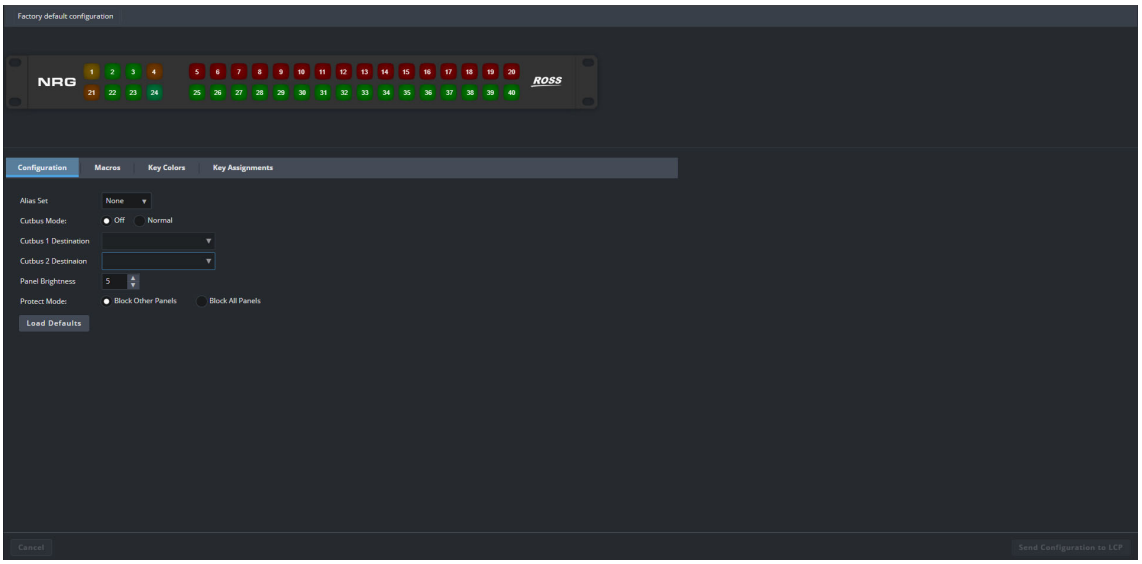


Figure 12 Example of the LCP > Configuration Tab for an NRG-FR1 or NRG-FR1-LCP

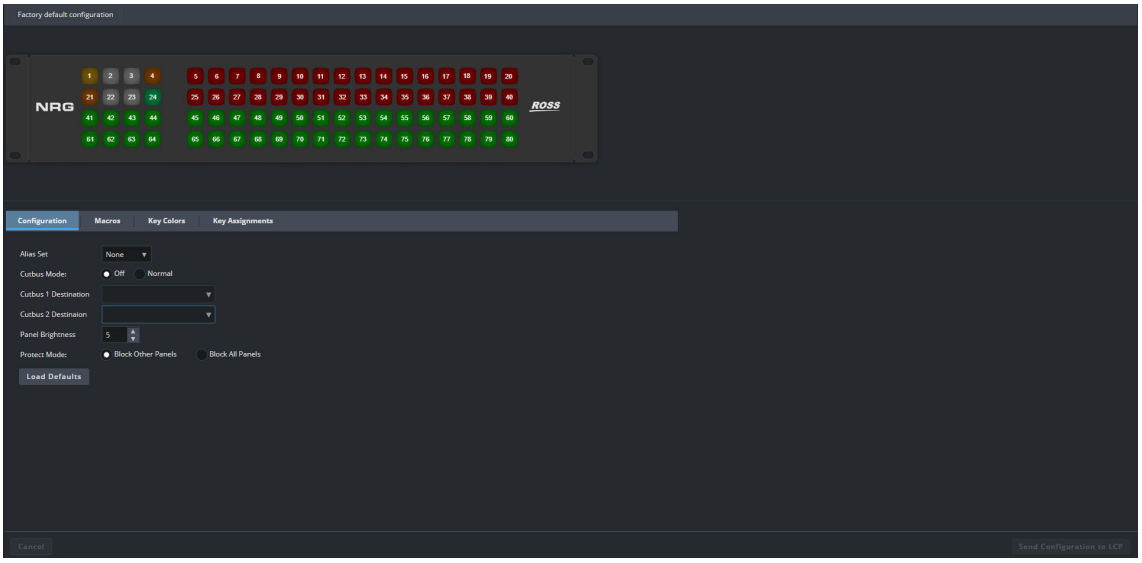


Figure 13 Example of the LCP > Configuration Tab for an NRG-FR2 or NRG-FR2-LCP

The following sections summarize the tabs on the LCP interface.

✶ Each LCP tab includes the **Cancel** (bottom left corner) and **Send Configuration to LCP** (bottom right corner) buttons. After editing the settings of a tab, ensure to click **Send Configuration to LCP** to apply your changes.

Configuration Tab

The Configuration tab provides menus and fields that determine the display and operation of the front panel buttons.

Table 13 summarizes the fields and settings displayed in the Configuration tab.

Table 13 LCP — Configuration

Item	Parameters	Description
Alias Set	Default	No alias set is assigned to the router
	<name>	Assigns this label set to the NRG. This is useful when your system includes a mix of RCP and NRG and you wish to ensure the same labels are applied to all devices.
Cutbus Mode	Off	Disables this feature
	Normal	Creates a default switching panel that only affects assigned outputs on the router. Refer to "**Normal Cutbus Mode**".
Cutbus 1 Destination	#	When operating in Normal mode, the Cutbus Dest 1 equals Cutbus Dest 2
Cutbus 2 Destination	#	When operating in Normal mode, the Cutbus Dest1 does not equal Cutbus Dest 2
Panel Brightness	#	Sets the LED brightness for the front panel buttons. The value range is from 0 (off) to 10 (maximum brightness). The default value is 5.
Protect Mode	Block Other Panels	The PROTECT button functions as a **Protect**. The protected destination and level(s) cannot be switched to another source by other remote control panels. The protected destination and level(s) can be switched to another source on the local remote control panel.
	Block All Panels	The PROTECT button functions as a **Lock**. The locked destination and level(s) *cannot* be switched to another source by the local remote control panel or other remote control panels.
Load Defaults	All editable parameters in the LCP interfaces are reset to the factory default values	

Macros Tab

The Macros tab enables you to record a sequence of events (e.g. switches) to a macro. You can then assign the macro to a button on the front panel. The options are organized into a table where each macro is grouped into a series of rows with each row assigned to a task. A column represents a setting for a specific event within that macro. You begin by creating a new event and assigning it a task (e.g. switch, protect, etc.). The available settings in the subsequent columns depend on what task is assigned to that event.

For example, **Figure 14** shows Macro 1 includes 3 events, while Macro 2 includes 2 events.

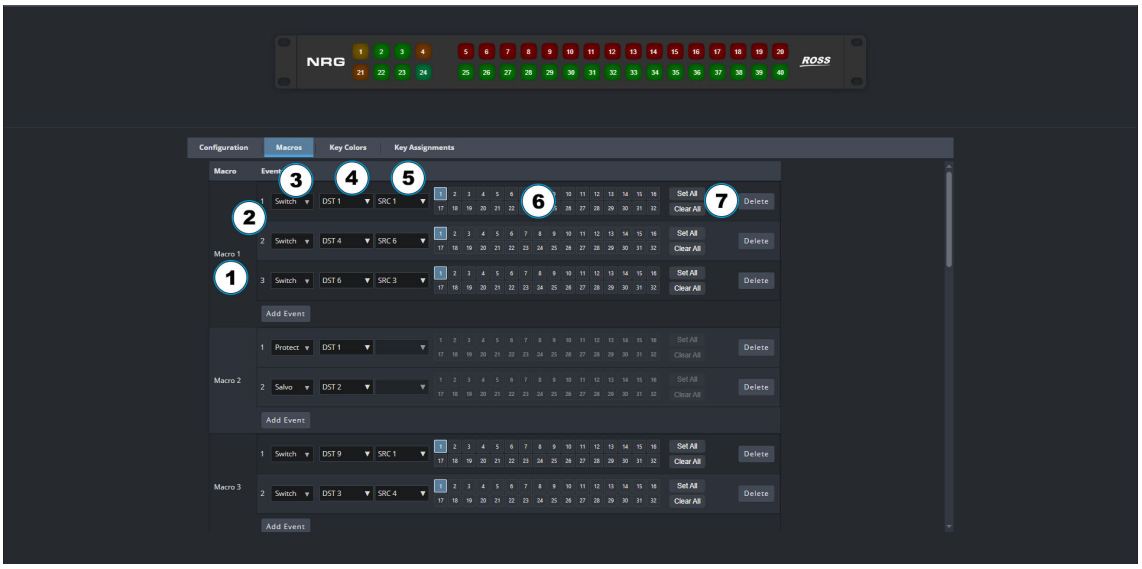


Figure 14 Example of the LCP > Macros Tab for an NRG-FR1 or NRG-FR1-LCP

1) Macro #	3) Task	5) Task Option 2	7) Buttons
2) Event #	4) Task Option 1	6) Selection	

Table 14 summarizes the fields and settings displayed in the Macros tab.

Table 14 LCP — Macros

Item	Parameters	Description
Macro	#	Auto-assigned number to the selected macro
Event	#	Identifies the event within this macro
Task	Switch	A crosspoint switch is performed by this event
	Macro	Another macro is launched by this event
	Protect	Creates a protect condition on the destination of the selected crosspoint
	Salvo	A salvo is performed by this event
Task > Switch		
Destination	#	Allocates the specified destination to this event. Available only when Task is set to Switch or Protect.
Source	#	Allocates the specified source to this event. Available when the Task is set to Switch.
Selection	#	Assigns the router level for the event. Available when the Task is set to Switch or Protect.
Task > Macro		
Macro	#	Allocates the specified macro to this event. Available only when Task is set to Macro.
Task > Protect		
Destination	#	Allocates the specified destination to this event. Available only when Task is set to Switch or Protect.

Table 14 LCP — Macros (Continued)

Item	Parameters	Description
Protect Condition	Enable	The Protect condition is applied by a Protect event. Available when the Task is set to Protect.
	Disable	
Selection	#	Assigns the router level for the event. Available when the Task is set to Switch or Protect.
Task > Salvo		
Salvo	#	Allocates the specified salvo to this event. Available only when Task is set to Salvo.
Buttons		
Set All	Selects all router levels (The NRG supports a maximum of 4 levels)	
Clear All	Clears all selected levels	
Delete	Removes the event from the macro	
Add Event	Displays a new row within the selected macro to add a new event	

Key Colors Tab

The Key Colors tab enables you to assign a color to each button function. When the function is assigned to a button on the front panel, the button is lit the corresponding color.

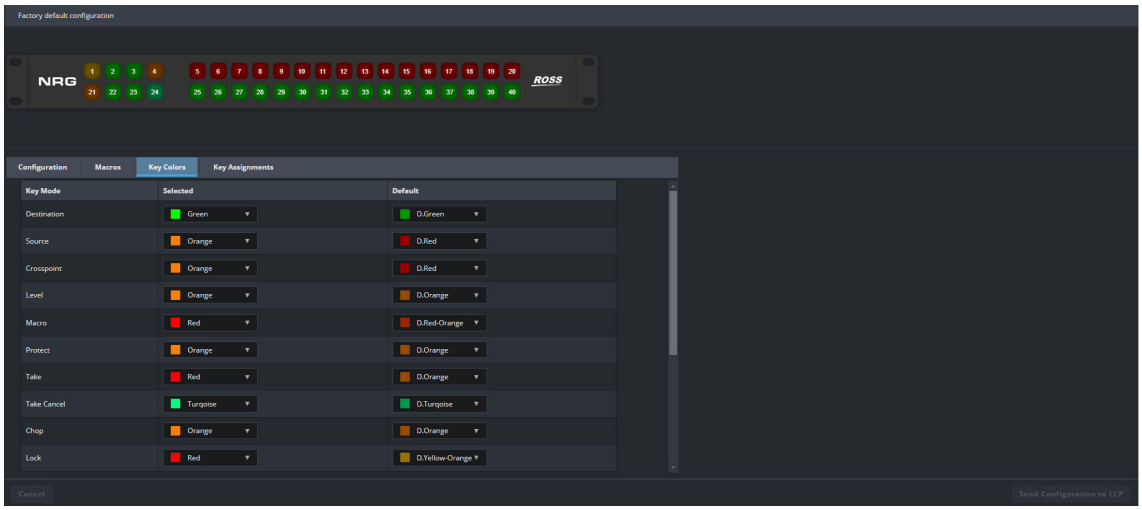


Figure 15 Example of the LCP > Key Colors Tab for an NRG-FR1 or NRG-FR1-LCP

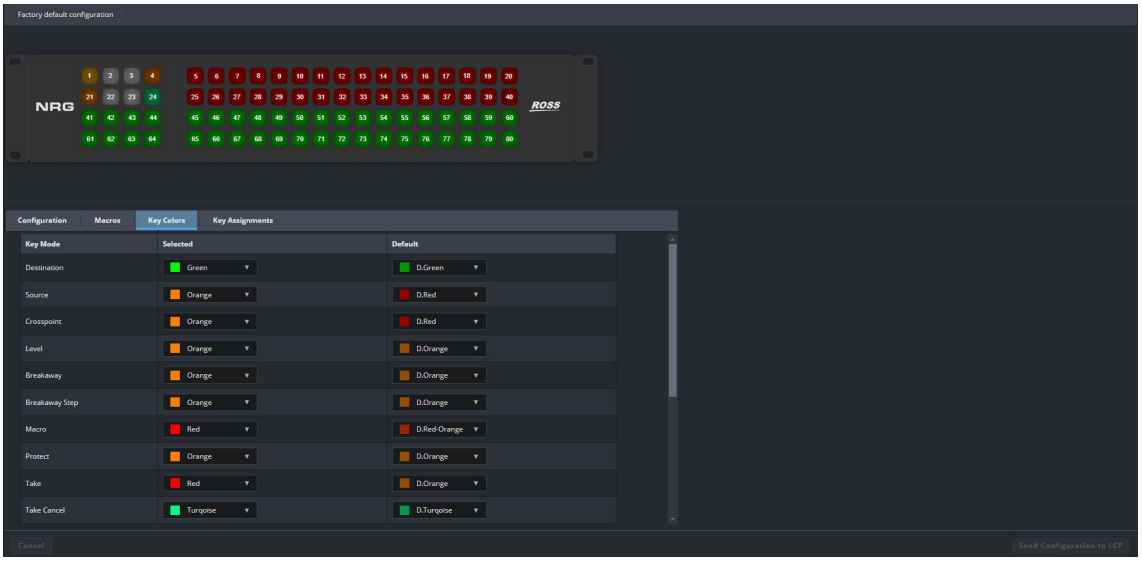


Figure 16 Example of the LCP > Key Colors Tab for an NRG-FR2 or NRG-FR2-LCP

Table 15 summarizes the fields and settings displayed in the Key Colors tab.

Table 15 LCP — Key Colors

Item	Parameters	Description
Key Mode	<mode>	Specifies the function to assign a color to
Selected	<color>	Assigns the specified color for when the button is selected on the front panel
	Off	When the button is selected, it does not display a color
Default	<color>	Assigns the specified color to the button when it is not selected
	Off	The button does not display a color

Key Assignments Tab

The Key Assignments tab is used to assign functions to the buttons of the NRG-FR1-LCP or NRG-FR2-LCP.

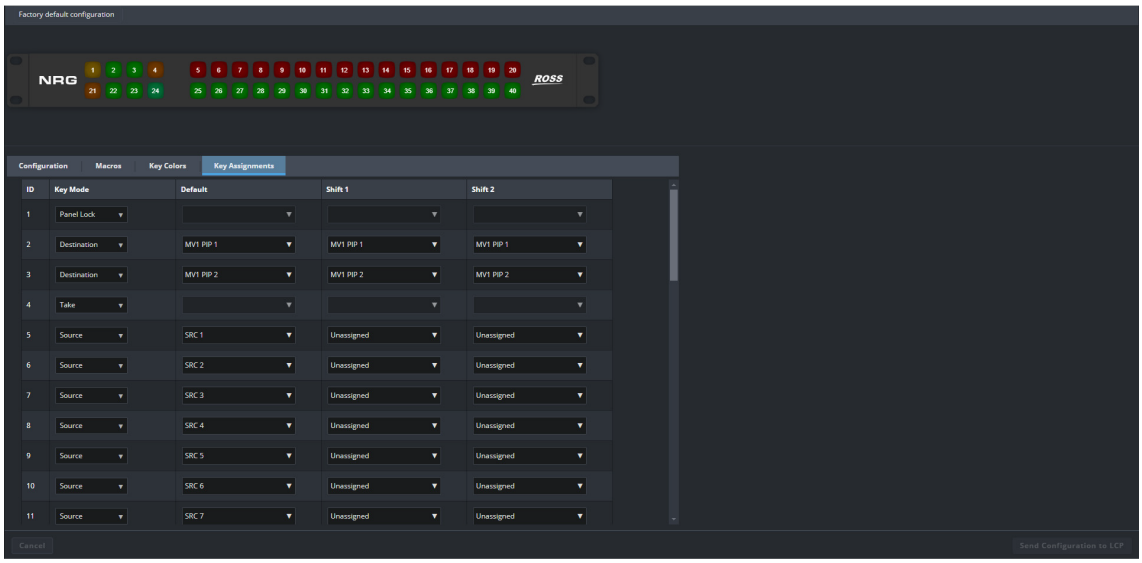


Figure 17 Example of the LCP > Key Assignments Tab for the NRG-FR1 or NRG-FR1-LCP

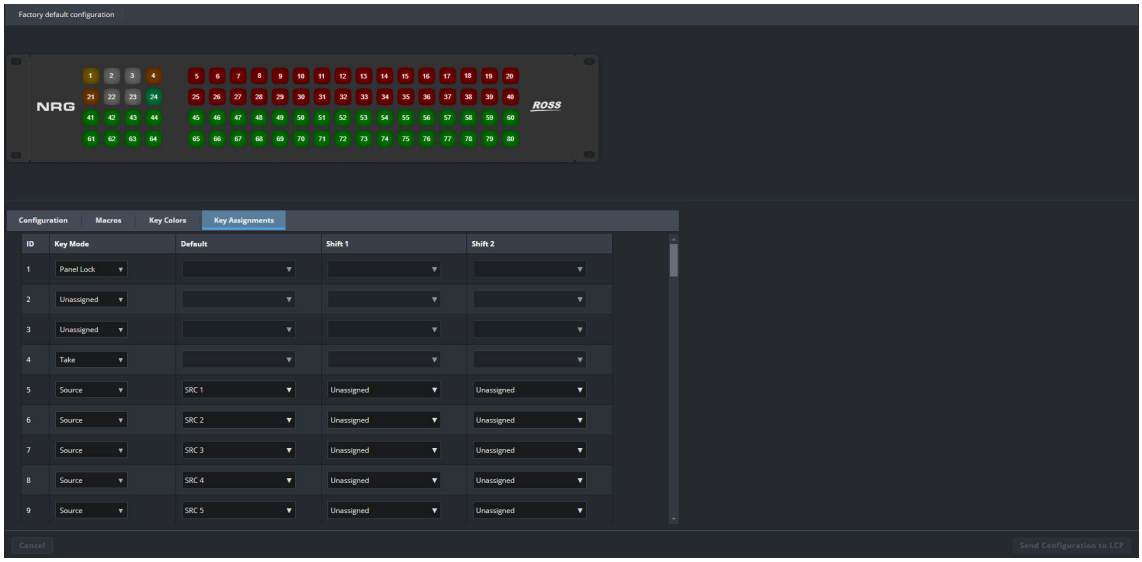


Figure 18 Example of the LCP > Key Assignments Tab for the NRG-FR2 or NRG-FR2-LCP

Table 16 summarizes the fields and settings displayed in the Key Assignments tab.

Table 16 LCP — Key Assignments

Item	Parameters	Description
ID	#	Identifies the physical button on the front panel. Notice that selecting the row for an ID also lights the corresponding button on the panel map above the Key Assignment tab
Key Mode	<name>	Assigns a function to the selected button. The selected function determines the settings in the columns to the right of the Key Mode column.
Key Mode > Destination		
Default	DST #	Assigns a specific output signal to the button when no Shift button is selected first

Table 16 LCP — Key Assignments (Continued)

Item	Parameters	Description
Shift 1	DST #	Assigns the output signal to the button when the Shift 1 button is selected first
Shift 2	DST #	Assigns the output signal to the button when the Shift 2 button is selected first
Key Mode > Source		
Default	SRC #	Assigns a specific input signal to the button when no Shift button is selected first
Shift 1	SRC #	Assigns the input signal to the button when the Shift 1 button is selected first
Shift 2	SRC #	Assigns the input signal to the button when the Shift 2 button is selected first
Key Mode > Crosspoint		
Destination	DST #	Selects the physical output that connects to the item of destination equipment to which you want to switch
Source	SRC #	Selects the physical input that connects to the item of source equipment that provides the required signal
Mask	#	Selects the breakaway level that you want to use for the switch
Key Mode > Shift		
DST Shift 1	Assigns the output signal to the button when the Shift 1 button is selected first	
DST Shift 2	Assigns the output signal to the button when the Shift 2 button is selected first	
SRC Shift 1	Assigns the input signal to the button when the Shift 1 button is selected first	
SRC Shift 2	Assigns the input signal to the button when the Shift 2 button is selected first	
Key Mode > Macro		
Macro	#	Assigns the specified macro to this button. The macro is executed when this button is selected, and a TAKE is issued. Macros are defined using the Macros tab.
Key Mode > Salvo		
Salvo	#	Assigns the specified salvo to this button. The salvo is executed when this button is selected, and a TAKE is issued. Salvos are defined within the database configurations.
Key Mode > Level		
Level	#	Assigns the specified router level to this button
Key Mode > Take		
A switch is performed when this button is selected		

Table 16 LCP — Key Assignments (Continued)

Item	Parameters	Description
Key Mode > Take Cancel		
Selecting this button cancels the action the NRG is performing.		
Key Mode > Protect		
Selecting this button places a block on the current destination, preventing it from being controlled (selecting other sources) by any other control devices		
Key Mode > Panel Lock		
Selecting this button places a lock on local control panel, preventing the NRG from being controlled by any button presses until the Panel Lock is released.		
Key Mode > Chop		
Enables you to toggle two different sources to the same destination.		
Key Mode > Unassigned		
The button does not have a function assigned to it.		

Logs

There are four logs that can be viewed from the Logs tab: Controller Communications Log, System Log, DashBoard Communications Log, and Audit Log. The read-only information displayed in the logs is used by Ross Technical Support for diagnostic and troubleshooting purposes. If required, click **Manage Log Requests** (located in the top right corner) to display a dialog that enables you to download/generate logs when troubleshooting with Technical Support.

Enabling a Service

The NRG routers support a set of third-party protocols (services) that enable the router to communicate with devices in your routing system. Before creating a connection point to an external device, you must first enable the required protocol(s) on the NRG router, and configure any settings required for communication using that protocol. This chapter outlines how to enable a communication protocol, and configure the additional settings on the NRG for each protocol (if required). A summary of the supported commands is also provided.

If you have questions about the operation of your Ross devices, contact us at the numbers listed in "**Contacting Technical Support**". Our technical staff is always available for consultation, training, or service.

Enabling a Communication Service

Use the options in the System > Connections > Services interface to enable or disable each required service. This allows your router to communicate with an external device that uses that enabled third-party protocol.

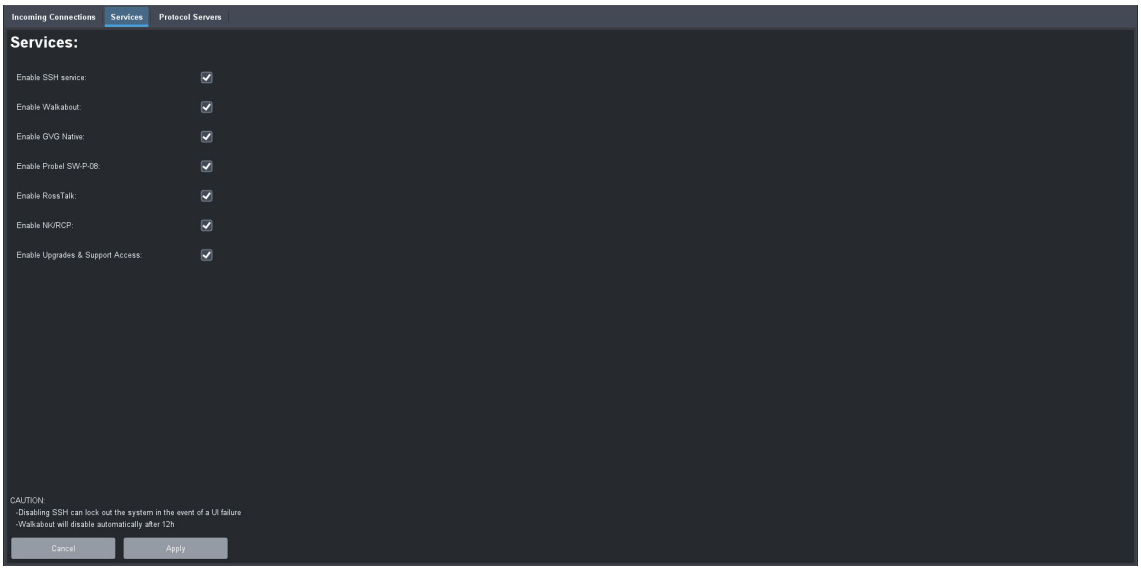
✶ Serial communication is not available at this time.

To enable a service

1. Locate the **NRG** node in the Tree View of DashBoard.
2. Expand the **NRG** node to display a list of sub-nodes.
3. Expand the **System** sub-node.
4. Double-click the **Connections** node.

   The Connections interface opens in the DashBoard window with the Incoming Connections tab automatically selected.
5. Select the **Services** tab.

   The Services tab lists the available communications protocols and provides options for enabling/disabling each protocol for the router.



6. Enable or disable a service by selecting or clearing the associated box. Choose from the following:
   - SSH service — Enables the ability to log onto the NRG router via an SSH server. Secure Shell (SSH) Login is a client-server protocol used by system administrators to securely log onto remote systems and execute commands over an unsecured network. SSH may also be used by Ross Technical Support for advanced troubleshooting.
   - Walkabout — Enables the NRG router to communicate with Ross Video devices in the Walkabout system.
   - GVG Native — Enables the NRG router to communicate via the GVG Series 7000 Native protocol and is available over an ethernet connection.
   - Probel SW-P-08 — Enables the NRG router to communicate via the Probel SW-P-08 protocol. This protocol is available over an ethernet connection.
   - RossTalk — Enables the NRG router to communicate via the RossTalk protocol (a plain text based protocol that allows control of Ross Video equipment).
   - NK/RCP — Enable this option if there are Ross NK series devices or signal types the NRG router itself does not handle. The Ross NK series devices must be connected to the ethernet network by virtue of an Ross NK-IPS or NK-NET devices to enable communication with the NRG router.
   - Upgrades & Support Access — Enables remote software upgrades for the router. Refer to **Table 9** for details.
7. Click **Apply**.

Configuring the Service Settings

The Protocol Servers tab lists the currently active servers running in the routing system. This tab is auto-populated based on the external devices on the same network as your router and using the protocols enabled in the Services tab. Some services require you to configure additional settings on the router. This section briefly summarizes those additional settings.

To configure the service settings

1. Locate the NRG node in the Tree View of DashBoard
2. Expand the NRG node to display a list of sub-nodes.
3. Expand the **System** sub-node.

   The Connections interface opens in the DashBoard window.
4. Select the **Protocol Services** tab.
5. Click **Options** (located in the bottom toolbar).

   The **Server Options** dialog opens.
6. Locate the options for the third-party protocol you wish to configure for communications.

   Refer to the following sections for a summary of the settings based on the protocol.
   - "**GVG Series 7000 Native Protocol Commands**"
   - "**Probel SW-P-08 Protocol Commands**"
   - "**RossTalk Commands**"
7. Click **Apply**.

   The **Server Options** dialog closes and the new settings are applied.

Third-Party Protocols

The NRG control system is able to control third-party matrix devices. You must define an interface for the system before accessing the third-party matrix devices. The NRG connection point must be compatible with the settings of the external device you are trying to control.

✶ The NRG does not support serial communications at this time.

Before proceeding, ensure that you have the following connection specifics:

- Communication protocol
- Communication type (TCP/IP)

Ethernet Communication

The ethernet interfaces to these protocols are automatically started with NRG and no further configuration is necessary. However, you must configure your external control systems to match the settings outlined in **Table 17**. The **Protocol Options** are outlined with the respective protocol details in the following sections.

The NRG router can communicate with third-party external devices via a TCP/IP connection. By default, NRG provides a server process for the following ethernet protocols:

Table 17 Supported Protocols — Ethernet Connection

Protocol	Default Port
GVG Native Series 7000	TCP: 12345
Probel SW-P-08	TCP: 8910
RossTalk	TCP: 7788

Server Options and Supported Commands

Some protocols require additional settings be configured on the router. The following sections outline these required settings based for each protocol.

GVG Series 7000 Native Protocol Commands

The router supports the GVG Series 7000 Native protocol and is available over an ethernet connection. Refer to **Table 18** for connection details.

Table 18 Default GVG Native Connection Types

	Setting
Ethernet	
Port (incoming)	12345
Port (outgoing)	12345[a]

a. For outgoing connections, port 12345 is the default value but is user configurable.

Table 19 summarizes the Server Options for the GVG Series 7000 Native protocol.

Table 19 Server Options — GVG Series 7000 Native

Option	Setting	Notes
L4 Echo	Yes	Send command acknowledgments on protocol layer 4
	No	Do not send acknowledgments. This is the default.

To send GVG Native commands to the router

1. Create a network connection to the router on TCP/IP **Port 12345**.
2. A valid connection is reported in the NRG > Connections > Incoming Connections interface.
3. Refer to **Table 20** for a list of supported GVG Native Protocol commands.

Table 20 GVG Native Protocol Commands

Message Command	Description	Notes
BK[,parameter]		
BK,D	Force next QD command to return status of all destinations	Clears the flags associated with the D,no_parameter command. After BK,D is sent, the next QD,no_parameter command will result in destination statuses or all destinations being returned.
BK,E	Request status of level 4 echo setting	
BK,E,ON	Set level 4 echo to on	An err=00 response will be returned for successful commands that do not generate their own response (e.g. Take commands). This is a per session setting.
BK,E,OFF	Set level 4 echo to off (default)	No response will be given for commands that do not generate their own response.
PR,dest_name,level_bitmap	Protects a specific destination from having its source changed	ER error-code response is currently not supported.
QC[,dest_name]	Query Combined Destination status by name	
QD[,dest_name]	Query Destination status by name	No information is returned for unmatched destination levels
Qd[,dest_name]	Query Destination status by name	Sets response src_name to NO_XPT for unmatched destination levels
QI,destIndex,lvlIndex	Query Destination status by index[a]	
Qi,destIndex,lvlIndex	Query Destination status by index[a]	The srcIndex returned will be 0xfffe if an error condition applies to the crosspoint being reported.
QJ[,destIndex]	Query Destination status by index[a]	No information is returned for unmatched destination levels
Qj	Query Destination status by index[a]	Sets response srcIndex to 0xFFFe for unmatched destination levels
QN,parameter		
QN,S	Query source names/labels	As defined inactive database
QN,D	Query destination names/labels	As defined inactive database
QN,L	Query level names/labels	As defined inactive database
QN,IS	Query names via source index[a]	
QN,ID	Query names via destination index[a]	
QT	Query date and time[a]	
TA,dest_name,nbr_sources,src_name_entry1[,...src_name_entryn]	Takes sources (on specified levels) to specified destination, by name rather than index	Src_name_entryn = src_name,level_bitmap

Table 20 GVG Native Protocol Commands (Continued)

Message		Notes
Command	**Description**	
TD,dest_name,src_name_entry	Takes same source to all or specified levels	Src_name_entryn = src_name[,levelbitmap] No levelbitmap=all destination levels
TI,destIndex,srcIndex[,levelIndex]	Request take by index with level index[a]	
TJ,destIndex,nbr_sources,srcIndex,level_bitmap[,...,srcIndex,level_bitmap]	Takes sources (on specified levels) to specified destinations by index rather than name; allows breakaways	
TS,salvo_name	Request Take Salvo	TS,salvo_name
UP,dest_name,level_bitmap	Removes Protect from specified destination	ER, error-code response is currently not supported.

a. Zero-based hex logical index numbering.

For More Information on...

- these commands, refer to the GVG protocol documentation.

Probel SW-P-08 Protocol Commands

The router supports the Probel SW-P-08 protocol and is available over an ethernet connection. **Table 21** provides the default values for this protocol.

Table 21 Default Probel SW-P-08 Connection Types

	Setting
Ethernet	
Port (incoming)	8910
Port (outgoing)	8910[a]

a. For outgoing connections, port 8910 is the default value but is user configurable.

Table 22 summarizes the settings in the **Server Options** dialog for the Probel SW-P-08 protocol.

Table 22 Server Options — Probel SW-P-08

Option	Setting	Notes
Protocol Variant	Non-extended	Use non-extended commands only
	Extended	Use extended commands only
	Use Last Request	Use command set as per last received command format (e.g. if received a non-extended command, reply in a non-extended format). This is the default.
Matrix Mode	Yes	Swap matrix and level fields
	No	Do not swap matrix and level fields. This is the default.
Do not wait for ACK	Yes	NRG will not wait for message acknowledgments between connect responses
	No	NRG will wait for message acknowledgments between connect responses. This is the default.
Batch Collate Time[a]	# milliseconds	Wait up to 100 milliseconds for multiple commands received before processing. The default is 0 (which disables this feature).

Table 22 Server Options — Probel SW-P-08 (Continued)

Option	Setting	Notes
Batch Collate Split Size	# received commands	Wait up to 100 received commands before processing. The default is 0 (which disables this feature).
Unused Field	#	Send number (0-15) in either Level or Matrix field - which ever is not used as per Matrix Mode setting. The default is 0.
Repeated Packet Holdoff (ms)	#	NRG detects repeated identical packets, and will skip processing if the packets are repeated within the specified delay. The default is 0.
Follow Level Enabled	Yes	Enables a user to configure a specific level to act as a "Follow" level. When a "Connect Crosspoint" message with this level is received, NRG will issue a Take command for all database levels.
	No	Disables this feature
Follow Level	#	Specifies the routing level for Probel that signals a follow/all-level take. Note that the NRG supports a maximum of 4 levels.

a. When both Batch Collate Split Size and Batch Collate Time are both active, the option that occurs first will release the batch, and the Batch Collate Split Size and the Collate Time values are reset.

Table 23 lists the supported Probel SW-P-08 protocol commands.

Table 23 Probel SW-P-08 Native Protocol Commands

Request Message		Response Message		Notes
Cmd ID	Description	Cmd ID	Description	
01	Crosspoint Interrogate	03	Crosspoint Tally	Get single crosspoint status
02	Crosspoint Connect	04	Crosspoint connected	Take single crosspoint
10	Protect Interrogate	11	Protect Tally	Get destination protect status
12	Protect Connect	13	Protect connected	Set destination protect
14	Protect Disconnect	15	Protect dis-connected	Turn off destination protect
17	Protect Device Name Request	18	Protect Device Name Response	Get name of device that hold protect
19	Protect Tally Dump Request	20	Protect Tally Dump	Get all protect status
21	Crosspoint Tally Dump Request	22, 23	Crosspoint Tally Dump	Get all crosspoint status Cmd22: Byte max dest 191 Cmd23: Word max. dest. 65535
97	Implementation Request	98	Implementation Status	Get list of commands supported
100	All Source Names Request	106	Source Name Response	Get all source names (8 char. max.)
101	Single Source Name Request	106	Source Name Response	Get single source names (8 char. max.)
102	All Destination Association Name Request	107	Destination Association Name Response	Get destination names (8 char. max.)
103	Single Destination Association Names Request	107	Destination Association Name Response	Get single destination name (8 char. max.)
104	All UMD Labels Request	108	UMD Label Response	Only one set of labels is currently supported. UMD Labels replicate source labels. (16 char. max.)

Table 23 Probel SW-P-08 Native Protocol Commands (Continued)

Request Message		Response Message		Notes
Cmd ID	Description	Cmd ID	Description	
105	Single UMD Labels Request	108	UMD Label Response	Get single source label (16 char. max.)
120	Crosspoint Connect On Go Group Salvo	122	Crosspoint Connect On Go Group Salvo Acknowledge	Add crosspoint to preset group
121	Crosspoint Go Group Salvo	123	Crosspoint Go Done Group Salvo Acknowledge	Switch/clear preset group
124	Crosspoint Salvo Group Interrogate	125	Crosspoint Group Salvo Tally	Preset group status
EXTENDED				
129	Extended Crosspoint Interrogate	131	Extended Crosspoint Tally	Get crosspoint status
130	Extended Crosspoint Connect	132	Extended Crosspoint Connected	Take single crosspoint
138	Extended Protect Interrogate	139	Extended Protect Tally	Get destination protect status
140	Extended Protect Connect	141	Extended Protect Connected	Protect a destination
142	Extended Protect Disconnect	143	Extended Protect Disconnected	Turn off protect for a destination
147	Extended Protect Tally Dump	148	Extended Protect Tally Dump Message	Get all protect status for given level
149	Extended Crosspoint Tally Dump	151	Extended Crosspoint Tally Dump Word Message	Get destination status for given level
228	Extended All Source Names	234	Extended Source Name Response	Get source names (8 char max.)
229	Extended Single Source Name	234	Extended Source Name Response	Get single source name (8 char max.)
230	Extended All Destination Association Names	235	Extended Destination Association Names Response	Get all destination names (8 char. max.)
231	Extended Single Destination Association Name	235	Extended Destination Association Names Response	Get single destination name (8 char. max.)
232	Extended Single UMD Label Request	236	Extended UMD Labels Response	Get all source labels (16 char. max.)
233	Extended Single UMD Label Request	236	Extended UMD Labels Response	Get single source label (16 char. max.)
248	Extended Crosspoint Connect On Go Group Salvo	250	Extended Crosspoint Connect On Go Group Salvo Acknowledge	Preset group acknowledge
124	Crosspoint Group Salvo Interrogate	253	Extended Crosspoint Group Salvo Tally	Preset group status

RossTalk Commands

The RossTalk protocol is a plain text based protocol that allows control of Ross Video equipment.

✶ Each command should be terminated by a carriage return and a line feed (CR/LF).

To send RossTalk commands to the router

1. Create a network connection to the router on **Port 7788**.
2. At the prompt, enter the commands you wish to send. Refer to **Table 24** for a list of supported commands.

Table 24 RossTalk Protocol Commands

Message		Notes
Command	**Description**	
GPI ##	Execute the salvo number corresponding to the numerical ## extension of the command	For example, GPI 04 triggers the salvo <salvo_name>[4] as listed in the NRG database
TIMER ##:RUN	Request Timer ID to start/resume	
TIMER ##:STOP	Request Timer ID to stop	
TIMER ##:PAUSE	Request Timer ID to pause	
TIMER ##:END	Request Timer ID to end	
TIMER id:SET:hh:mm:ss.s	Request to set Timer value	
TXTLABEL ID:<id>; TEXT:<text>; BGCLR:<bgcolor>; TXTCLR:<textcolor>	Where: • <id> is a unique "rosstalk id" associated with an RossTalk display object. This field is compulsory. • <text> is the text to be displayed. This field is optional. • <bgcolor> is the background color of the text label. Specified in comma separated RGB format using 2 byte hex values (e.g. RR,GG,BB). This field is optional. • <textcolor> is the text color of the text label. Specified in comma separated RGB format using 2 byte hex values (e.g. RR,GG,BB). This field is optional.	There is a 20 character maximum. Messages with only the id field will be ignored. The following is an example of a message: TXTLABEL ID:25; TEXT:CAM1; BGCLR:0x00,0x00,0x00; TXTCLR:0xFF,0xFF,0xFF Note that <bgcolor> and <textcolor> are specified as R,G,B triplet. For example: • 255,255,255 or 0xff,0xff,0xff is white • 0,0,0 or 0x0,0x0,0x0 is black • 255,0,0 or 0xff,0x0,0x0 is red
XPT D:<dest> S:<source> I:<user_id> [L:<levels>]	Crosspoint command for a router TAKE where: • <dest> is the logical destination ID from the active database (1-based) • <source> is the logical source ID from the active database (1-based) • <user_id> is the numeric user/panel ID that will be used to request the switch • <levels> is an optional parameter specifying comma-separated list of 1-based level IDs to switch (for breakaway, e.g. L:1,2,4). If no levels are specified, a follow switch (all valid levels) is requested. • <levels> supports ranges specified by two numbers separated by dash (e.g. L:1-4)	Range start value must be less than the end value Single levels and ranges can be mixed in the list (e.g. L:1,2) There are no spaces between numbers or ranges Invalid numbers or improperly specified ranges will be ignored An argument is separated from its value using a single colon (:) Command arguments are separated single spaces The arguments may be specified in any order, (e.g. these are equivalent: XPT D:1 S:4 I:2 and XPT S:4 I:2 D:1) Examples: • ID 7 requesting to switch Dest 2 to Source 1 on Levels 1,2, and 4 • XPT I:7 D:2 S:1 L:1,2,4

Timing and Reference Setup

This chapter outlines how to configure the reference and time source for your NRG router.

For More Information on...

- cabling the reference source for your NRG router, refer to the ***NRG Installation Guide***.
- the NRG-MV licensed feature, refer to "**NRG-MV Setup**".

Before You Begin

Keep the following in mind:

- The NRG router requires an external time source in order to accurately report the time-of-day.
- The NRG only supports NTP Server as a time source at this time.
- If a reference source is not connected to the REF port, the NRG-MV outputs 1080p 59.94Hz (NTSC) or 1080p 50Hz (PAL) by default. Refer to "**NRG-MV Setup**" for more details.
- An external reference source must first be connected in order to support the NRG-MV output at 1080p 60Hz.

Specifying a Default Reference Format

If you did not connect a reference source signal to the **REF** port on the NRG rear panel, you can still configure a Default Reference format using the options in the System > NRG interface. Note that this Default Reference setting only applies to start-up with no reference source connected.

Keep the following in mind:

- If you connect a valid reference source to the **REF** port, it will take precedence over the Reference > Default setting.
- If the connected reference source becomes unavailable, the NRG router will use the last known good reference format until a re-boot or power cycle occurs (at which time the Default Reference setting will be applied).
- If the NRG router does not have a valid reference signal connected to it, an NRG-MV Multiviewer Head still needs a reference to output correctly. Specifying the Default Reference Format provides an internal reference signal of either NTSC or PAL rates to allow the NRG-MV Head to still output with no system reference signal connected.

To specify the default reference format for the NRG router

1. Expand the **NRG** node to display a list of sub-nodes in the Tree View.
2. Expand the **System** sub-node.
3. Double-click the **NRG** node.
4. Locate the **Reference** area at the top of the **NRG** interface.
5. Use the **Default** menu to specify the reference format for the NRG router.

Configuring a Reference Trigger for the NRG Router

If a reference signal is connected to the NRG router, you can configure a reference trigger with a custom switching point.

To configure the reference trigger for the router

1. Expand the **NRG** node to display a list of sub-nodes in the Tree View.
2. Expand the **System** sub-node.
3. Double-click the **NRG** node.
4. Locate the **Triggers** area.

✶ The **Reference** > **Detected format** field indicates the format of the reference signal connected to the connected REF port on the router.

5. Use the **Format** field to select the switch timing that will be used by the router when switching inputs/outputs.
6. If you selected **Custom** in step 5, use the **Custom (µs)** field to specify the time (number of microseconds) from the start of the custom switching line to the actual switching event. The maximum value is 65,535µs.

Configuring the SDI I/O Ports

This chapter provides a general overview of the available options for configuring the SDI I/O.

Before You Begin

Keep the following in mind when routing SDI signals:

- The NRG does not process SMPTE 352 packets. As a result, some of the supported SDI formats listed in the ***NRG Installation Guide*** will have multiple reported signal statuses in DashBoard. For example, 1080i 60/1080PsF 30 is reported when either 1080i 60Hz or 1080PsF 30Hz are detected.
- Dual-link and Quad-link signals can be routed through the NRG, but the NRG does not support gearboxing. DashBoard will report the detected format status for the individual links.

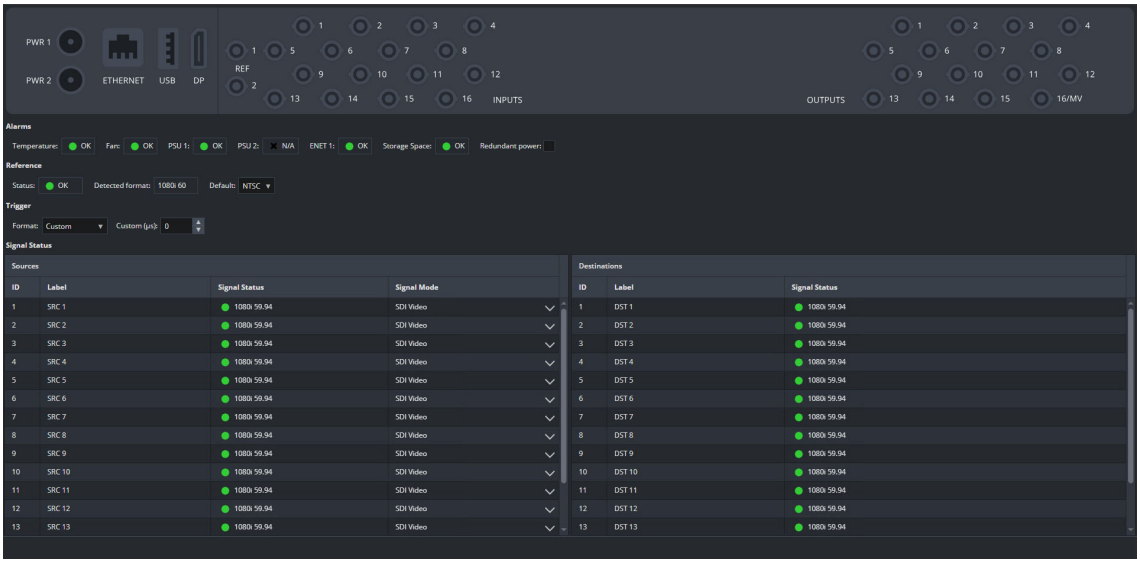
Setting the Signal Mode for a Source

The NRG is capable of switching video signals[1] from 270Mbps to 12Gbps. This format flexibility permits SD, HD, 3G, 6G, and UHD video signals to be used seamlessly in the same system.

To specify the signal mode for a source

1. Expand the **NRG** node to display a list of sub-nodes in the Tree View.
2. Expand the **System** sub-node.
3. Double-click the **NRG** node.

   The NRG interface displays. The following example shows the NRG-FR1 interface.



4. Locate the **Sources** table (located in the bottom left pane).
5. Locate the row for the input you wish to configure.
6. Select the cell in the **Signal Mode** column.
7. Choose one of the following:
   - SDI Video — Identifies the input signal as SDI video. This is the default.

1. The NRG routers support SMPTE standards 259M, 292M, 296M, 372M, 424M, 425M (level A/B), 2081M, and 2082M.

- MADI — Identifies the input signal as MADI (audio) only. The video data is ignored.
- DVB-ASI — Identifies the input signal as carrying MPEG-TS data up to 270Mbps.

Database Interfaces

The NRG groups the database configuration options in a tree view in the DashBoard window. This chapter provides an overview of the Database interfaces, how to access the NRG Database tree, and provides an overview of each interface.

Database Tree View Overview

The NRG groups the database configuration options in a tree view in the DashBoard window. Expanding the top **Database** node enables you to access the interfaces to configure the connection points, matrices, destinations, sources, group, levels, soft panels, and salvos for the active database. Double-clicking a sub-node opens the corresponding interface in the rightmost pane of DashBoard.

Each sub-node offers specific database configuration options. This enables you to configure your routing system. Note that the currently active database name is displayed in parentheses beside the Database node in the tree view. For example, **Figure 19** shows a router with the `DB-202` database activated. Unicode names are supported so that names may be defined in other languages or writing systems.

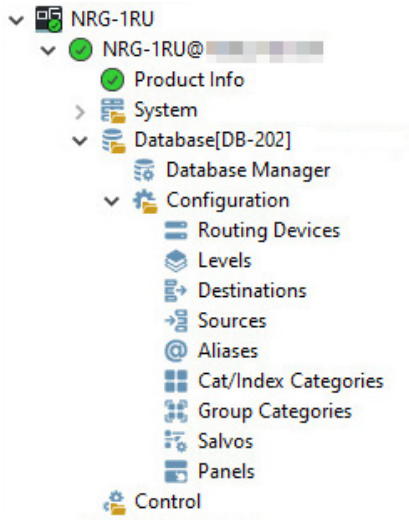


Figure 19 Expanded Database Nodes in the Tree View

Before You Begin

Throughout the Database interfaces, actual sockets (inputs and outputs) of a device (or matrix) are referred to by hierarchical dotted notation: `Frame.slot1.port[#].Type.Channel` where:

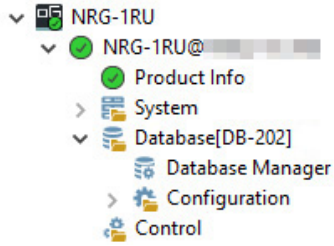
- `Frame` identifies the physical device housing the matrix/matrices (e.g. NRG-FR1)
- `port[#]` identifies the physical input or output socket (where `in[#]` represents an input, and `out[#]` represents an output).
- `Type` identifies the generic signal type (e.g. SDI).
- `Channel` identifies the audio channel within an SDI stream.

Accessing the Database Interfaces

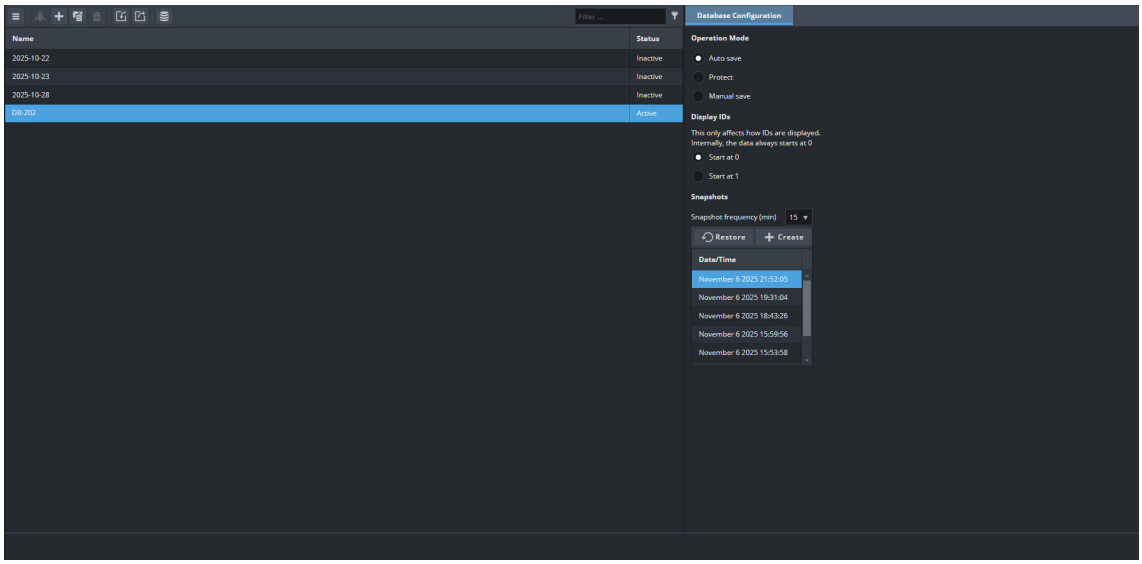
The interfaces are accessed by expanding the Database node in the DashBoard Tree View and selecting the appropriate sub-node for the database feature you wish to edit.

To access the Database interfaces

1. Locate the **NRG** node in the Tree View.
2. Expand the **NRG** node to display a list of sub-nodes.
3. Expand the **Database** sub-node to list the options available for creating, and defining your databases.



4. Double-click the **Database Manager** sub-node to display the options for managing the database(s) in your routing system.

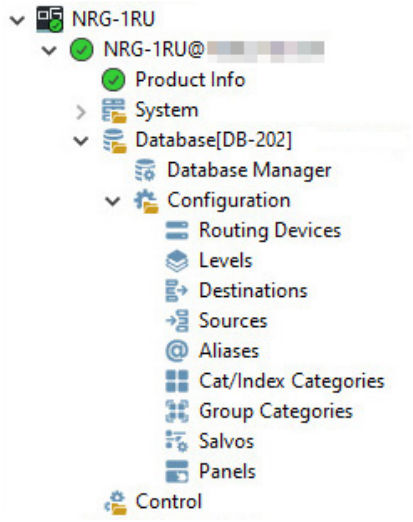


   Use the **Database Manager** interface to:

   - create a database. Refer to “**Creating a New Database**”.
   - activate a database. Refer to “**Activating a Database**”
   - backup and restore databases using the Import/Export options in the toolbar. Refer to “**Importing a Database**” or “**Exporting a Database**”

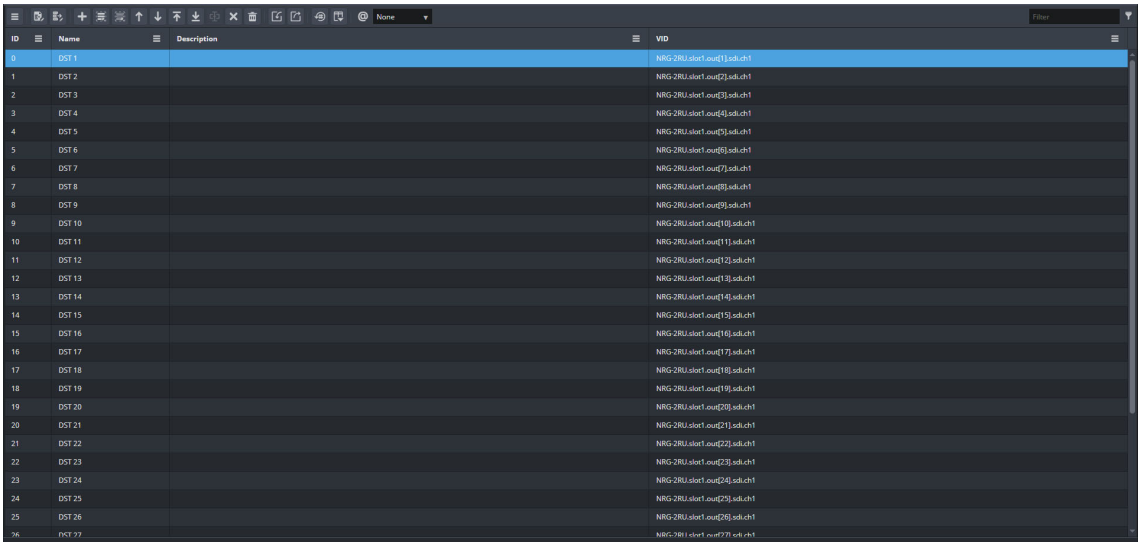
5. Expand the **Configuration** sub-node to provide a list of sub-nodes.

   Each Configuration sub-node represents a specific database component that can be further defined by the user.



6. Double-click a sub-node in the **Configuration** tree to display its interface in the DashBoard window.

   For example, double-click the **Destinations** sub-node to display the options for mapping the outputs in your routing system. Refer to "**Defining a Database**".



7. Expand the **Control** sub-node to access the configured soft panels in your routing system. Refer to "**Soft Panels in DashBoard**" for more information.

This following sections summarize the menus, fields, and options available in each Database sub-node starting with the first sub-node in the tree.

Database Manager Interface

The Database Manager helps you to create, edit, and manage your databases via a single interface. The Database Manager interface is organized into three distinct areas: a toolbar at the top, a table in the left pane, and a series of tabs in the right pane. (**Figure 20**) Note that the Database Configuration tab is only displayed for the active database.

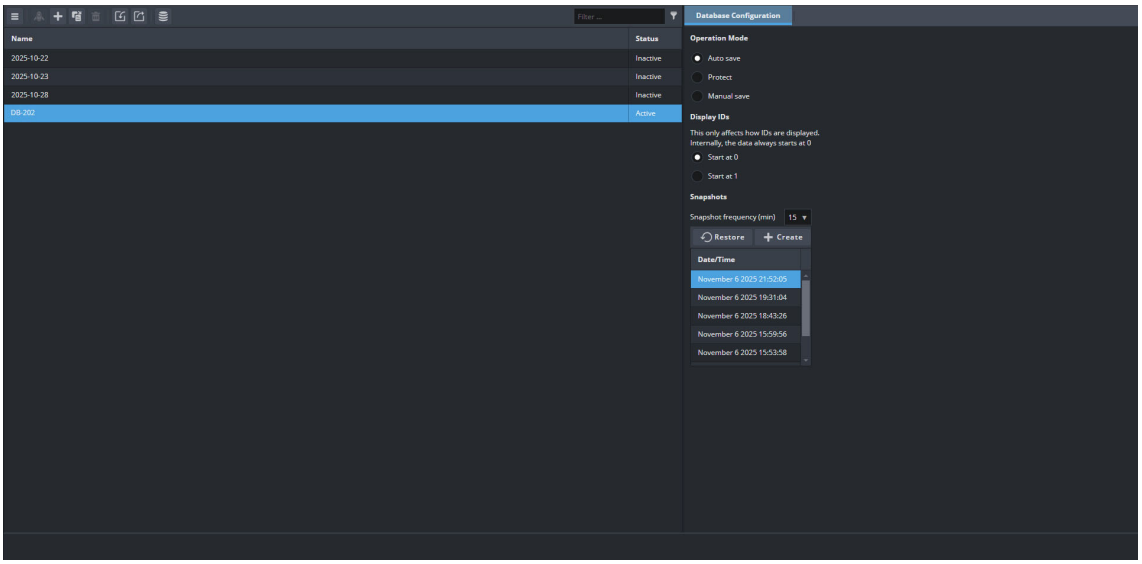


Figure 20 Example of a Database Manager Interface

Table 25 summarizes the buttons displayed in the Database Manager toolbar.

Table 25 Database Manager — Toolbar

Button	Label	Description
	Navigate Menus	Displays a drop-down list of the available buttons and their labels
	Activate	Toggles the status of the selected inactive database to activate. This allows you to load another database to the routing system, and enables editing of the database settings and contents.
	Add	Enables you to create a new (blank) database. The list of available databases updates to include the new entry at the bottom of the table.
	Duplicate	Creates a copy of the selected database
	Delete	Enables you to delete the selected database.
	Import	Enables you to import a database file and include it in the Database Manger list of available databases
	Export	Enables you to export the selected database as a file that is then saved to a location on your DashBoard client computer
	Legacy DB	Enables you to import a database (*.uda) that was created and saved in a previous software version.
	Filter	This enables a user to filter the interface entries to only databases that match the entered text.

Table 26 summarizes the columns displayed in the table located in the left pane of the Database Manager.

Table 26 Database Manager — Database Table

Item	Parameters	Description
Name	<text>	The unique identifier for the device in the routing system. This name is also used when matrices are defined in the NRG system.
Status	Active	Indicates that the specified database is currently in use by this NRG
	Inactive	Indicates that the specified database is not currently loaded to this NRG

Database Configuration Tab

The right pane of the Database Manager displays the Database Configuration tab. (**Figure 21**) The options on this tab enable you to configure how often the database is saved, and view snapshots of previously saved databases.

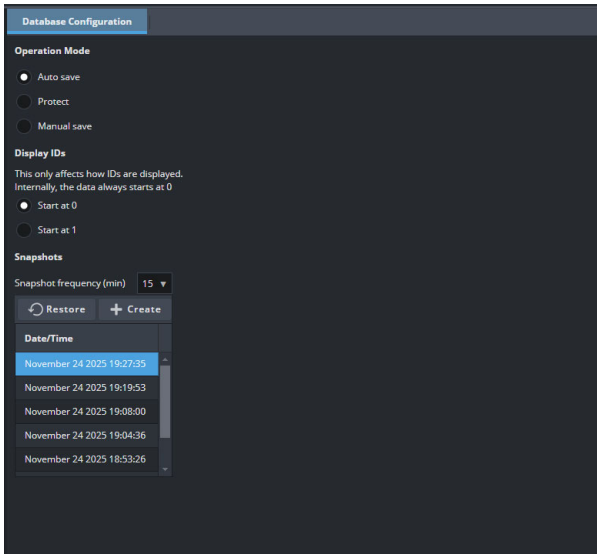


Figure 21 Example of an Active Database Configuration Tab

Table 27 summarizes the menus and options displayed in the **Database Configuration** tab.

Table 27 Database Manager — Database Configuration

Item	Parameters	Description
Operation Mode		
Auto save	• Changes made to any database interface are automatically saved. • This is the default setting when a database is set to Active.	

Table 27 Database Manager — Database Configuration (Continued)

Item	Parameters	Description
Protect	• All fields, except Aliases and labels, of the database are read-only and cannot be edited. • A blue border displays around each interface. • A shield icon displays in the Status column for the database in the Database Manager table • A shield icon displays in the bottom left corner of each interface to remind the user that the database is read-only.	
Manual save	• The database is editable but changes are not automatically saved. • An orange border displays around each interface. • The Cancel and Save buttons display in the bottom right corner of each database interface. • After making changes on any interface, the user must then click Save to save any changes. • Clicking Save on one interface applies any unsaved changes made to any interface.	
Display IDs		
Start at 0	Auto-generated ID numbering starts at 0. This is the default.	
Start at 1	Auto-generated ID numbering starts at 1	
Snapshots		
Snapshot frequency (min)	#	Determines how often the active database settings are auto saved. The default is 15 minutes.
Restore	Returns the database to the settings during the selected snapshot	
Create	Immediately creates a snapshot of the currently active database	
Date/Time	Lists the saved snapshots by MM DD YY	

Configuration Interfaces

The Database > Configuration node expands to display a tree of sub-nodes that enable you to further define the current database. Each sub-node provides access to a specific interface of the database. (**Figure 22**)

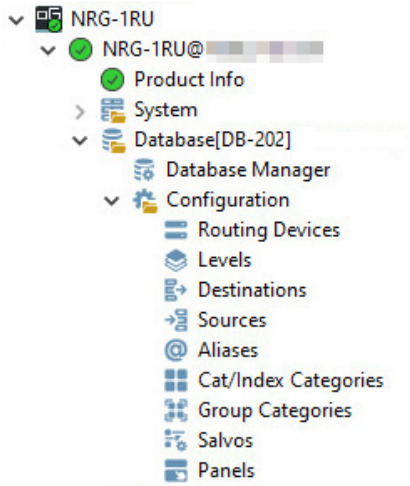


Figure 22 Database > Configuration Sub-nodes

This section outlines each sub-node in order of appearance in the Configuration tree.

✶ An orange border displays around an interface when the current database has the Operation Mode set to Manual save. A blue border indicates that the current database is read-only and cannot be edited (the Operation Mode set to Protect). If the Operation Mode is set to Auto save, any unsaved changes made to the current database are automatically applied.

Routing Devices

The Routing Devices interface reports a list of devices detected in the routing system and their communication status with the primary device. (**Figure 23**)

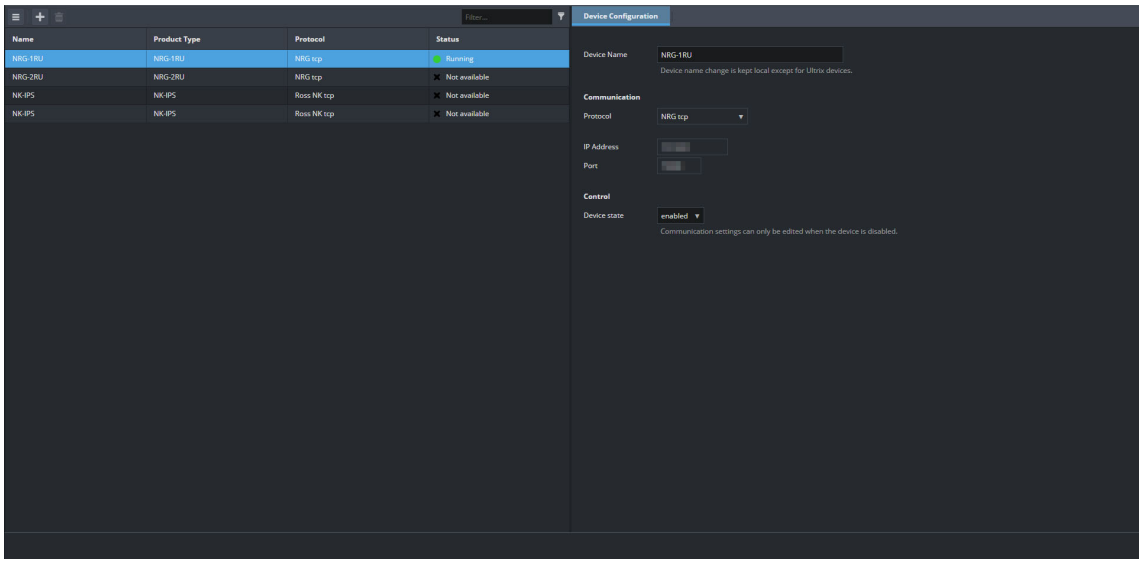


Figure 23 Example of a Routing Devices Interface

Table 28 summarizes the buttons displayed in the toolbar located at the top of the Routing Devices interface.

Table 28 Routing Devices — Toolbar

Button	Label	Description
	Navigate Menus	Displays a drop-down list of the available buttons and their labels
	Add	Enables you to create a connection point to another device in the routing system
	Delete	Removes the selected device and its matrices from the active database
	Filter	Reduces the number of database entries visible on the Routing Devices interface. This enables a user to filter the interface entries to only devices that match entered text.

Table 29 summarizes the read-only fields displayed in the left pane of the Routing Devices interface. Each row of this table represents a device in your routing system.

Table 29 Routing Devices — Left Pane

Item	Parameters	Description
Name	<name>	The unique identifier for the connected matrix to be used by the database
Product Type	<name>	Indicates the type of device connected
Protocol	<name>	Indicates the communication protocol required by this device
Status (read-only)	Running	No communication errors are detected
	Disconnected	This device is no longer communicating with the routing system
	Initializing	Attempting to connect to this device. It is recommended to wait approximately 60 seconds to establish a connection.
	IO mismatch	The number of available I/O on the device does not match the values specified in the active database
	Not available	The device was added/edited while the database is operating in Manual save mode but is now disconnected from the NRG. Click Save, located at the bottom right corner, and verify if a connection is now made to the device.
	Unknown State	A legacy database was imported and the protocol cannot be determined (this is usually for the NK devices). You will have to specify the protocol for the device.
		Updates the database with the selected device matrix. If the device is reporting an IO Mismatch, click this button to refresh the database and verify if it clears the error.

Device Communication Tab

Table 30 summarizes the tabs and menus displayed in the Device Communication tab, located in the right pane, of the Routing Devices interface. Select a device on the left pane to display its communication settings in the Device Communication tab.

Table 30 Routing Devices — Device Communication Tab

Item	Parameters	Description
Device name	<name>	Provides a unique identifier for the device in the database. This name is also used when matrices are defined in the routing system.
Communication		

Table 30 Routing Devices — Device Communication Tab (Continued)

Item	Parameters	Description
Protocol	Ultrix TCP	The device uses the Ross Ultrix protocol to communicate (TCP)
	GVG Native	The device uses the third-party GVG protocol to communicate (TCP)
	NRG TCP	The device uses the Ross NRG protocol to communicate (TCP)
	Probel SW-P-08	The device communicates via the Probel SW-P-08 protocol (TCP)
	Ross NK	The device uses the Ross NK protocol to communicate (TCP)
	RossTalk TCP	The device uses the Ross Talk protocol to communicate (TCP only)
IP Address	#	Indicates the IP address assigned to the device within the network
Port	#	Indicates the ethernet port the devices is associated with on the network
Control		
Device state	enabled	Direct communication is established between the NRG and this client device
	disabled	Communication between the NRG and this client device is unavailable

Levels

The options in the Levels interface are organized into a table where each row represents a level and the columns provide the options for configuring that level. From this interface you assign a unique name to each level, a color that represents the level to make it easier to identify the level in a soft panel, and add a description of the level to aid identification. The levels defined in the Levels interface have a direct relationship with the Level entries in other database configuration tabs.

✶ One level is automatically created in the default database.

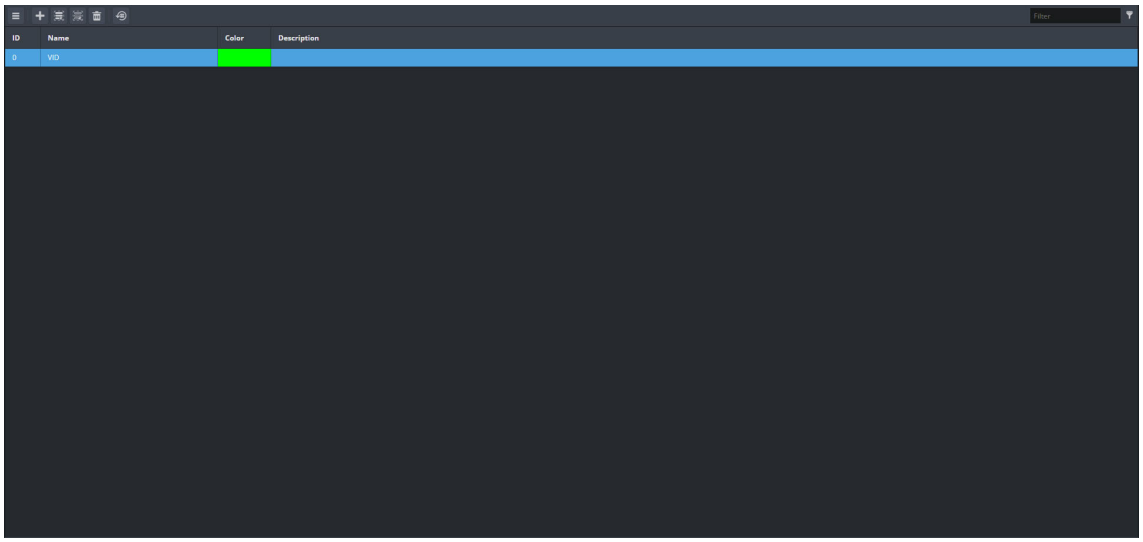


Figure 24 Example of the Database > Configuration > Levels Interface

For More Information on...

- levels for a database, refer to "**Defining the Levels**".

Destinations

The Destinations interface enables the assignment of logical labels (used by remote control panels and soft panels) to physical outputs of the attached matrices or routers. The Destination interface is organized into a table with each row representing a Destination and each column representing a Level. (**Figure 25**) The table cells are physical outputs assigned to the Destination for that level. Initially, the destination label `DST #` is assigned to the physical output socket. A toolbar at the top includes options for managing the table entries.

For More Information on...

- destinations for a database, refer to "**Mapping the Destinations**".

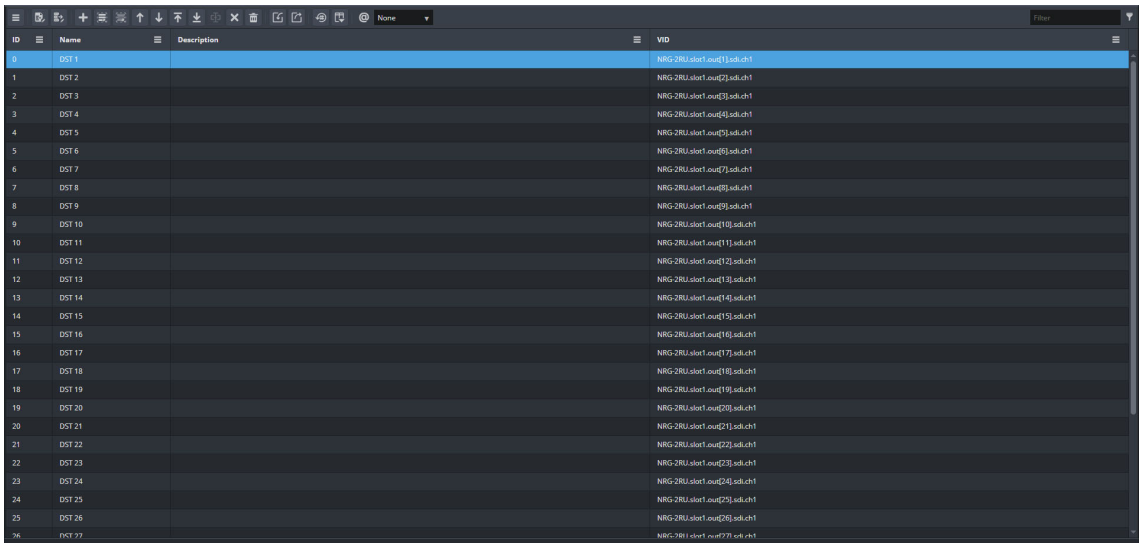


Figure 25 Example of the Database > Configuration > Destinations Interface

Table 31 summarizes the buttons displayed in the toolbar of the Destinations interface.

Table 31 Destinations — Toolbar

Button	Label	Description
	Navigate Menus	Displays a drop-down list of the available buttons and their labels
	Fill I/Os	Displays a pane that enables you to insert destination labels with assignments for the entire device (including the AUX ports) or for a custom range
	Edit	Enables the reassignment of the physical ports to the selected destination
	Add	Enables you to add a single or range of new logical labels. These are added at the end of the current definitions
	Select all	Selects all entries on the Destinations interface
	Deselect all	Entries are no longer selected on the Destinations interface
	Move Up	Moves the selected item higher in the table/list.
	Move Down	Moves the selected item lower in the table/list.
	Move to Top	Moves the selected item to the top of the table/list.
	Move to Bottom	Moves the selected item to the bottom of the table/list.
	Rename	Displays a dialog that enables the renaming of a selected destination
	Clear	Clears the physical port mapping
	Delete	Removes the selected destination from the active database
	Import	Enables you to import an *.xlsx file that automatically maps the Destinations as defined by the spreadsheet entries
	Export	Enables you to save the current Destination mapping as an *.xlsx file on your DashBoard client computer
	Reset IDs	Replaces the current ID assignments to the default values (starting with 0 for the first entry)
	View Columns	Displays a dialog that enables you to specify the Levels columns to show/hide on the Destinations interface. Note that the ID and Name columns are fixed (cannot be hidden).
	Alias	Applies the custom labels as defined in the Aliases interface

Table 32 summarizes the table columns displayed in the main area of the Destinations interface (from left to right).

Table 32 Destinations Interface

Item	Parameters	Description
ID (read-only)	#	An auto-numbered field that is not used within the NRG system itself, however, third-party protocols that do not support labels will reference this field in their communications
Name	<text>	Assigns a unique identifier (label) for the destination in the routing system. This label is used by control interfaces/devices.
Description	<text>	Provides additional information or user entered notes about the output
Level	#	Specifies the physical output port associated with the destination and assigns it to the specified level. Unless you have given the port a different label via the Channel Alias interface, the port is labeled as: `Frame.Slot.Port.Type.Channel`.

Sources

The Sources interface is organized into a table where each row associates a name of the source with one or more physical matrix input sockets. This enables the assignment of labels (used by remote control panels and soft panels) to inputs of the attached matrices or routers. A toolbar at the top includes options for managing the table entries.

For More Information on...

- sources for a database, refer to "**Mapping the Sources**".

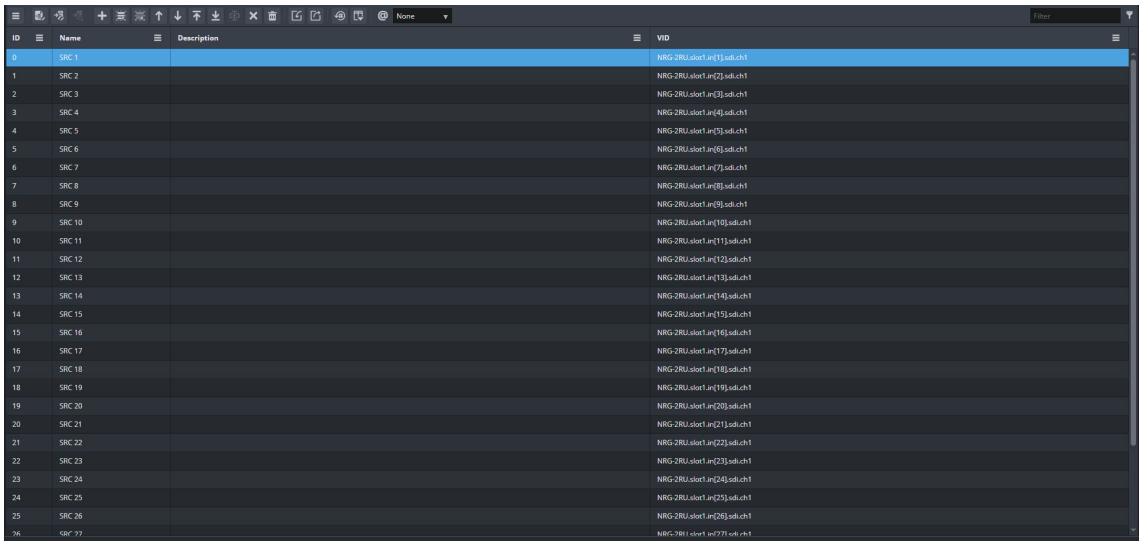


Figure 26 Example of the Database > Configuration > Sources Interface

Table 33 summarizes the buttons displayed in the toolbar of the Sources interface.

Table 33 Sources — Toolbar

Button	Label	Description
	Navigate Menus	Displays a drop-down list of the available buttons and their labels
	Fill I/Os	Displays a pane that enables you to insert source labels with assignments for the entire device (including the AUX ports) or for a custom range
	Edit	Enables the reassignment of the physical ports to the selected source
	Add	Enables you to add a single or range of new logical labels. These are added at the end of the current definitions.
	Select all	Selects all entries on the Sources interface
	Deselect all	Cancels the previous selections
	Move Up	Moves the selected item higher in the table/list.
	Move Down	Moves the selected item lower in the table/list.
	Move to Top	Moves the selected item to the top of the table/list.
	Move to Bottom	Moves the selected item to the bottom of the table/list.
	Rename	Displays a dialog that enables the renaming of a selected source
	Clear	Clears the physical port mapping
	Delete	Removes the selected source from the active database
	Import	Enables you to import an *.xlsx file that automatically maps the Sources as defined by the spreadsheet entries
	Export	Enables you to save the current Source mapping as an *.xlsx file on your DashBoard client computer
	Reset IDs	Replaces the current ID assignments to the default values (starting with 0 for the first entry)
	View Columns	Displays a dialog that enables you to specify the Levels columns to show/hide on the Sources interface. Note that the ID and Name columns are fixed (cannot be hidden).
	Alias	Applies the custom labels as defined in the Aliases interface

Table 34 summarizes the table columns displayed in the main area of the Sources interface (from left to right on the interface).

Table 34 Sources Interface

Item	Parameters	Description
ID	#	Auto-numbered field (read-only). This is not used within the routing system itself, however, third-party protocols that do not support labels will reference this field in their communications.
Name	<name>	Assigns a unique identifier (label) for the source in the routing system. This label is used by control interfaces/devices.
Description	Provides additional information or user entered notes about the input	
Level #	Specifies the physical input port associated with the source and assigns it to the specified level. Unless you have given the port a different label via the Channel Aliases interface, the port is labeled as: `Frame.Slot.Port.Type.Channel`.	

Aliases

The Alias interface provides a method for defining a set of virtual labels (alias) for one or more source or destination. An alias can be useful for defining label sets for use with devices that have limited screen real estate such as Remote Control Panels (RCPs).

The default labels for the routing system are the labels as defined in the Source and Destination interfaces. An alias set is a group of labels that can be defined and then used with display limited devices. For example, a label `Remote Camera` will not display correctly on an RCP. An alias for this label may be `RCAM`. This will display correctly on character limited displays.

An alias set may only define a few aliases for the router. When using this set, the defined aliases are used but where no alias is defined for a given source or destination, then the label as defined within the source or destination interface is used.

✶ This re-naming is not necessary for router operation, but it may make your assignment of source and destination labels easier to identify when using your internal cable naming conventions.

For More Information on...

- aliases for a database, refer to "**Using an Alias Set**".

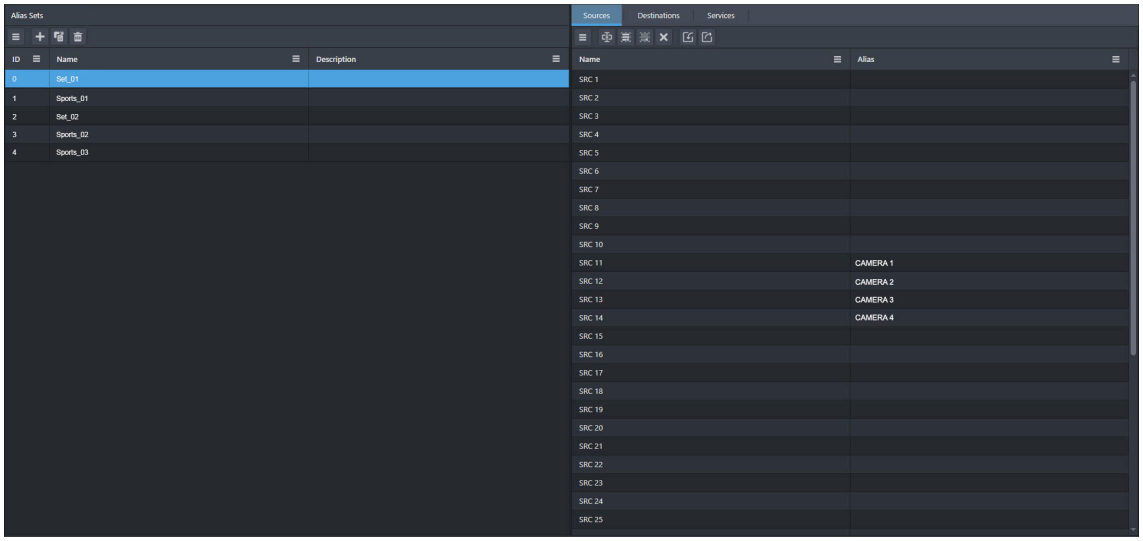


Figure 27 Example of the Database > Configuration > Alias Interface

Table 35 summarizes the buttons displayed in the leftmost toolbar located at the top of the Alias interface.

Table 35 Aliases — Toolbar

Button	Label	Description
	Navigate Menus	Displays a drop-down list of the available buttons and their labels
	Add	Creates a new alias set
	Duplicate	Creates a copy of the alias set
	Delete	Removes the selected alias set from the active database

Table 36 summarizes the table columns displayed in the main area of the Aliases interface (from left to right on the interface).

Table 36 Aliases — Main Area

Item	Parameters	Description
ID	#	Auto-numbered field (read-only). This is not used within the routing system itself, however, third-party protocols that do not support labels will reference this field in their communications.
Name	<name>	Provides a list of configured alias sets. Select a row to display the alias set details on the rightmost pane.
Description	Provides additional information about the alias set	

Table 37 summarizes the buttons displayed in the rightmost toolbar located at the top of the Sources, and Destinations tabs in the Aliases interface.

Table 37 Alias > Sources or Destination — Toolbar

Button	Label	Description
	Navigate Menus	Displays a drop-down list of the available buttons and their labels
	Select all	Selects all entries on the tab
	Deselect all	Cancels the previous selections
	Rename	Assigns a new identifier to the selected row(s) for this alias
	Clear	Removes any recent changes
	Import	Enables you to import a Microsoft® Excel® spreadsheet that lists the ports and the new identifiers for a specific alias set
	Export	Enables you to save the specified alias to a Microsoft Excel spreadsheet file on your DashBoard client computer

Table 38 summarizes the columns displayed in the Sources and Destinations tabs of the Aliases interface.

Table 38 Aliases — Sources or Destinations Tabs

Item	Description
Name	Indicates the label as defined by the Sources or Destinations interface
Alias	Provides a text entry for the label alias. Double-click the entry to edit, or click **Rename**. For example, re-name a port from `NRG.slot1.in[7].SDI.ch1` to `SDI IN 7`.

Table 39 summarizes the options displayed in the Services tab of the Aliases interface.

Table 39 Aliases — Services Tabs

Item	Description
Apply	Applies the selected alias set to the external device matrix. Services are defined in "**Enabling a Service**".
Clear	The alias set is no longer applied to the external device matrix. This button is disabled if no alias sets are currently applied to the external device matrix.
Service alias set	Reports the alias set currently applied and the number of services (devices) it is applied to.

Cat/Index Categories

Category Index mode (or Cat/Index mode) enables you to organize the resources (sources, destinations, and/or levels) in a routing database to defined categories. This allows you to piece together or build up the final resource name from category names and index identifiers. Once you have defined your categories, you can create a custom soft panel using the category settings to arrange the sources, destinations, and levels.

The Cat/Index Categories interface organizes the lists of resources based on what is currently assigned to a category/index, and what resources are still available (unassigned). This information is also reported in the bottom toolbar of the Cat/Index Categories interface.

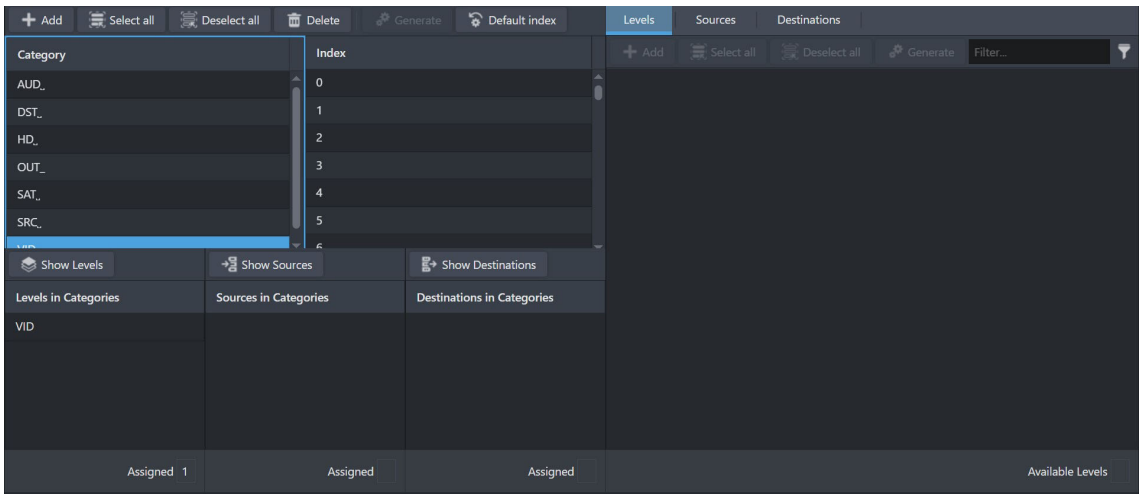


Figure 28 Example of the Database > Configuration > Cat/Index Interface

Table 40 summarizes the buttons displayed on the top toolbar.

✶ The toolbar button function depends on the Category table selection or Index table selection.

Table 40 Cat/Index Categories — Toolbar

Button	Label	Description
	Navigate Menus	Displays a drop-down list of the available buttons and their labels
	Add	Creates a new entry in the selected Category or Index table. For example, a new entry would be added to the Category table in **Figure 28**.
	Select all	Selects all entries in the current table
	Deselect all	Cancels the previous selections in the current table
	Delete	Deletes the selected entry from the current table (Category or Index). Automatically unassigned any resources.
	Generate	Automatically generates Category and Index entries based on the active database entries. Categories are automatically defined by searching for space characters within the database logical source and destination names.
	Default index	Generates the default indexes (0-9 and A-F)

Table 41 summarizes the options displayed in the Assigned Resources area (bottom left pane) of the Cat/Index Categories interface.

Table 41 Cat/Index Categories — Assigned Resources Area

Item	Parameters	Description
	Navigate Menus	Displays a drop-down list of the available buttons and their labels
Show Levels		Updates the Levels in Categories list
Levels in Categories		Lists the current levels that are accessible via the defined Category/Index combinations
Assigned	#	Reports the number of levels assigned to the selected Category/Index combination
Show Sources		Updates the Sources in Categories list
Sources in Categories		Lists the current sources that are accessible via the defined Category/Index combinations
Assigned	#	Reports the number of sources assigned to the selected Category/Index combination
Show Destinations		Updates the Destinations in Categories list
Destinations in Categories		Lists the current destinations that are accessible via the defined Category/Index combinations
Assigned	#	Reports the number of destinations assigned to the selected Category/Index combination

The right pane of the Cat/Index Categories interface displays a tab for each resource type. Select a tab to display the resources in the current database that are not assigned to a category/index.

Table 42 summarizes the options displayed in each tab.

Table 42 Cat/Index Categories — Unassigned Resources Area

Button	Label	Description
	Add	Enables you to assign the selected resource(s) to the a new Cat/Index filter for destinations
	Select all	Selects all resources in the current tab
	Deselect all	Cancels the previous selections on the current tab
	Generate	Automatically generates category tags based on the destinations in your database

Group Categories

The Categories interface enables you to categorize resources (levels, sources, and destinations) via a hierarchal system of tags. You can use categories to filter resources into manageable groups for a Category soft panel.

The Group Categories interface is organized into two panes: the Group Categories tree (left pane), and the available resources tabs (right pane). The tree organizes all the created groups and sub-groups, and/or resources in a top-down hierarchy. (**Figure 29**) Note that the nodes are sorted by type and then by alphabetical order.

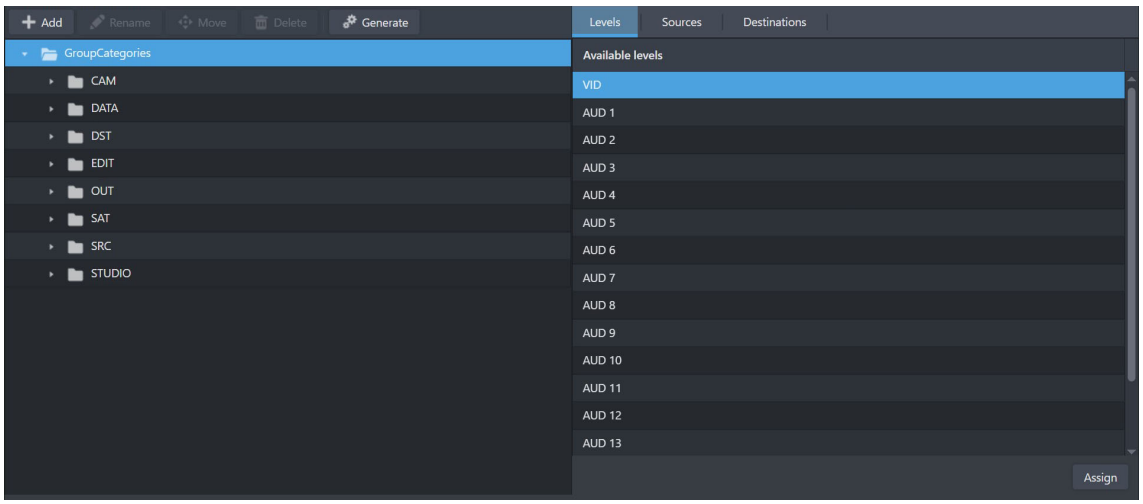


Figure 29 Example of Entries in a Group Categories Interface

Table 43 summarizes the toolbar buttons displayed in the left pane of the Group Categories interface.

Table 43 Group Categories Interface — Toolbar Buttons

Button	Label	Description
	Navigate Menus	Displays a drop-down list of the available buttons and their labels
	Add	Enables you to manually add a new group (node) to the Group Categories tree

Table 43 Group Categories Interface — Toolbar Buttons (Continued)

Button	Label	Description
	Edit	Enables you to edit the name assigned to a group
	Move	Displays the Move dialog that enables you to move a selected group and its contents to another group or to a new node in the tree
	Delete	Deletes the selected group(s) and all sub-groups
	Generate	Auto-generates the group categories based on the resource names from the current database

Table 44 summarizes the options displayed in the right pane of the Group Categories interface. This panel displays a tab for each resource type, listing the available levels, sources, or destinations that can be assigned to the group categories.

Table 44 Group Categories Interface — Right Panel

Item	Description
Levels	Displays the unassigned levels
Sources	Displays the unassigned sources
Destinations	Displays the unassigned destinations
Assign	Select the resource(s) to add it to the group selected in the Group Categories tree

Salvos

Salvos are a selected series of crosspoints to switch in the matrix that can be saved and later recalled for crosspoint transitions. The Salvos interface enables you to create, delete, re-name, and manage your salvos in an interface that is off-line. The Salvo interface layout arranges the crosspoints in a grid layout with sources in columns and the destinations in rows. The toolbar on the far right-side displays a button for each level available in the database with each button set in the color specified for that level.

For More Information on...

- salvos, refer to "**Creating Salvos**".

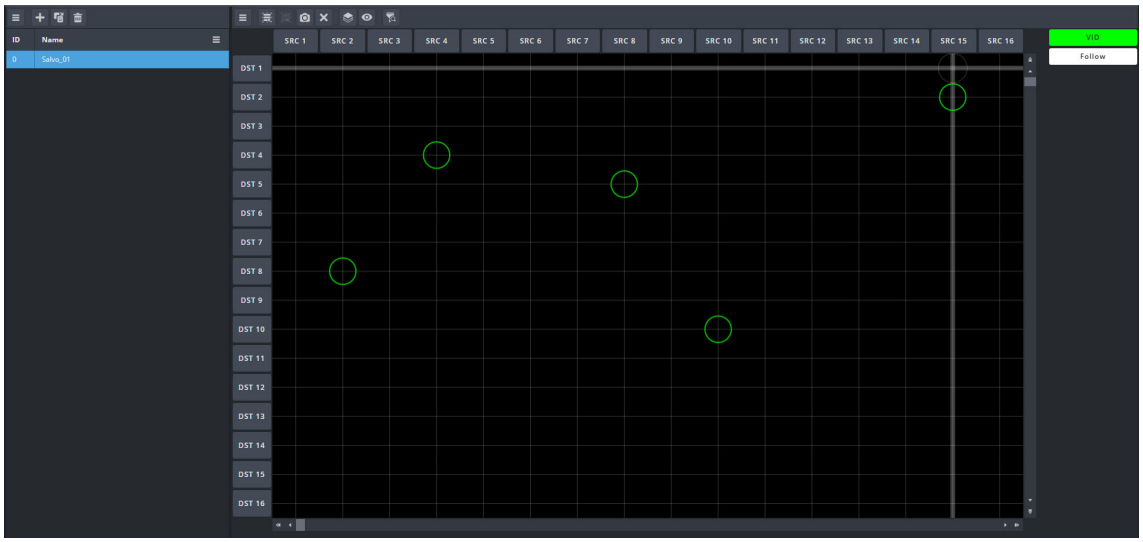


Figure 30 Example of the Database > Configuration > Salvos Interface

Table 45 summarizes the buttons displayed in the toolbar located at the top of the Salvos interface.

Table 45 Salvos — Toolbar

Button	Label	Description
	Navigate Menus	Displays a drop-down list of the available buttons and their labels
	Add	Enables you to create a new salvo for the active database
	Duplicate	Creates a copy of the currently selected salvo
	Delete	Deletes the selected salvo
	Select all	Selects all available destinations on the Salvos workspace.
	Deselect all	Clears the Destinations column of selections
	Capture	Captures the current state of the routing system as a new salvo using one of the following methods: Capture system status — uses the current routing state of the routing system. Capture destination status — uses the current status of the selected destinations in this database. Capture port status — uses the current status of the physical ports in the database.
	Clear	Clears the preset crosspoint selections for the current salvo. If destinations are selected, the option to only clear the selection is presented.
	Levels	Select to filter the displayed levels
	Toggle	Toggles the workspace between a grid view (default) and a table view. Note that editing is not available in table view.

Table 45 Salvos — Toolbar (Continued)

Button	Label	Description
	Find & Filter	Displays the Find dialog which enables you to: enter search criteria to locate specific Sources or Destinations in the current workspace. filter the workspace entries to only display sources and/or destinations that match entered text

Table 46 summarizes the table columns displayed in the left pane of the Salvos interface.

Table 46 Columns of the Salvos Interface — Left Pane

Column	Description
ID	The auto-assigned identifier for a salvo
Name	Provides a list of configured salvos for the currently loaded database. Double-click an item in the list to update the grid in the Salvos interface.

Table 47 summarizes the options displayed in the right pane of the Salvos interface.

Table 47 Columns of the Salvos Interface — Right Pane

Button	Description
Level #	The display of levels is controlled via the Levels button on the top toolbar. Select one or more level buttons to include it in the next preset selection.
Follow	Click to include all the Levels in the next preset selection.

Panels

The Panels interface includes a series of sub-tabs that enable you to customize the soft panels (control panels within the DashBoard environment). You can choose to assign the resources (levels, sources, destinations, and salvos) from a database to the panel buttons. The soft panels display as sub-nodes in the Database > Control > Panels tree using the configured name. When you save a soft panel to the database, a node for the panel automatically displays in the Panels tree. The soft panels display in the tree according to their assigned Panel ID (where an ID of 1 is the highest, and ID of 2 is the second highest etc.).

The Panels interface is organized into two distinct areas from left to right: the Panels table and the Settings, Data, and Layout tabs. (**Figure 31**)

✶ Two default push button soft panels are automatically created in the default database: Control (confirm take) and Control (direct take).

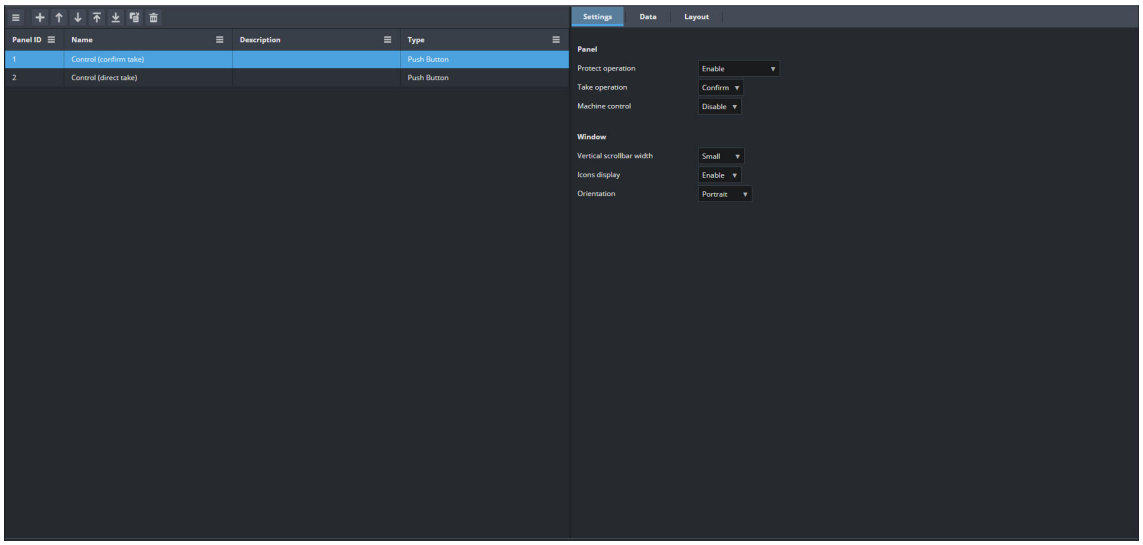


Figure 31 Example of the Database > Configuration > Panels Interface

Panels Table

The Panels area is located in the left pane, and displays a table with a toolbar at the top. The table lists the soft panels saved in the current database. The toolbar includes buttons that enable you to quickly add, copy, or delete selected soft panel(s) from the table.

Table 48 summarizes the fields and menus displayed in the toolbar of the Panels area.

Table 48 Panels Area — Toolbar

Button	Label	Description
	Navigate Menus	Displays a drop-down list of the available buttons and their labels.
	Add	Displays the Add Panel dialog. This dialog enables you to create a new soft panel entry.
	Up	Moves the selected panel higher in the table/list.
	Down	Moves the selected panel lower in the table/list.
	Top	Moves the selected panel to the top of the table/list.
	Bottom	Moves the selected panel to the bottom of the table/list.
	Duplicate	Creates a copy of the currently selected soft panel.
	Delete	Deletes the currently selected soft panel(s).

Table 49 summarizes the table columns displayed in the Panels area.

Table 49 Panels Area — Table

Item	Parameters	Description
Panel ID	#	Auto-assigns an ID number to the soft panel. This value determines the panel node placement in the hierarchy of the Soft Panel tree. This number can be over-written.
Name	<name>	Provides a unique identifier for the soft panel. This name also displays in the Databases > Control > Panels interface.
Description	#	Provides a textual summary of the soft panel or additional information about the panel.
Type (read-only)	<text>	Specifies the panel type that was assigned to the soft panel when it was created.

Settings Tab

The Settings tab is the first tab displayed on the right side of the interface. Use the options in the Settings tab to determine how the panel will perform tasks such as Take transitions, what data to include, or whether to include window/drawer elements (if applicable).

✶ Not all options are available for all panel types.

Table 50 summarizes the fields and menus displayed in the Settings tab.

Table 50 Panels > Settings Tab

Item	Parameters	Description
Panel		
Protection operation	Enable	Displays the Lock and Protect buttons on the soft panel interface
	Disable	The Lock and Protect buttons do not display on the soft panel interface
Take operation	Confirm	Displays the TAKE button on the soft panel interface. The user must click TAKE to confirm a switch before a crosspoint route will occur.
	Direct	A TAKE button is not displayed on the soft panel interface. Any source button selection is acted upon immediately.
Machine control	Enable	Displays a Machine Control toggle button on the soft panel interface. When enabled (the button is lit blue), any source selection on the panel will also send a command to Ross NK-M series data routers to automatically make the reciprocal port switch.
	Disable	Does not display a Machine Control button on the panel

Table 50 Panels > Settings Tab (Continued)

Item	Parameters	Description
Selection operation	Single	The Multi Select button does not display on the MultiBus soft panel
	Multi	Displays the Multi Select button on the soft panel. Use this button to quickly select multiple destinations for a crosspoint switch. This button is only applicable for MultiBus panels.
Nongroup resources	Hide	Resources that are not assigned to a specific group are not displayed on the Group Category soft panel
	Show	All resources are displayed on the Group Category soft panel
Window		
Vertical scroll bar width	Determines the width of the vertical scroll bar	
Horizontal scroll bar height	Determines the height of the horizontal scroll bar	
Icons display	Enable	The Destination and Source buttons will display the default icons based on the window type
	Disable	The Destination and Source buttons do not display icons; only the labels are displayed
Orientation	Portrait	Specifies a vertical layout where the soft panel is taller than it is wide. The windows are organized into columns (vertical panes) on the soft panel.
	Landscape	Specifies a horizontal layout where the soft panel is wider than it is tall. The windows are organized into rows (horizontal panes) on the soft panel.
Drawer width	Specifies the width of the drawer handle size on the soft panel	
Take button size	Specifies the dimension of the TAKE button on the soft panel. This is available only for the Ultritouch PB panels.	
Viewable Data		
Levels	#	Specifies the maximum number of levels available, as selectable buttons, on the soft panel
Sources	#	Specifies the maximum number of sources available, as selectable buttons, on the soft panel
Destinations	#	Specifies the maximum number of destinations available, as selectable buttons, on the soft panel
Salvos	#	Specifies the maximum number of salvos available, as selectable buttons, on the soft panel

Data Tabs

Selecting the Data tab updates the interface with sub-tabs to assign the resources (levels, sources, destinations, salvos, and alias sets) for the selected soft panel.

Use the options in the sub-tabs to specify the available resources for the panel, and organize them in a hierarchy.

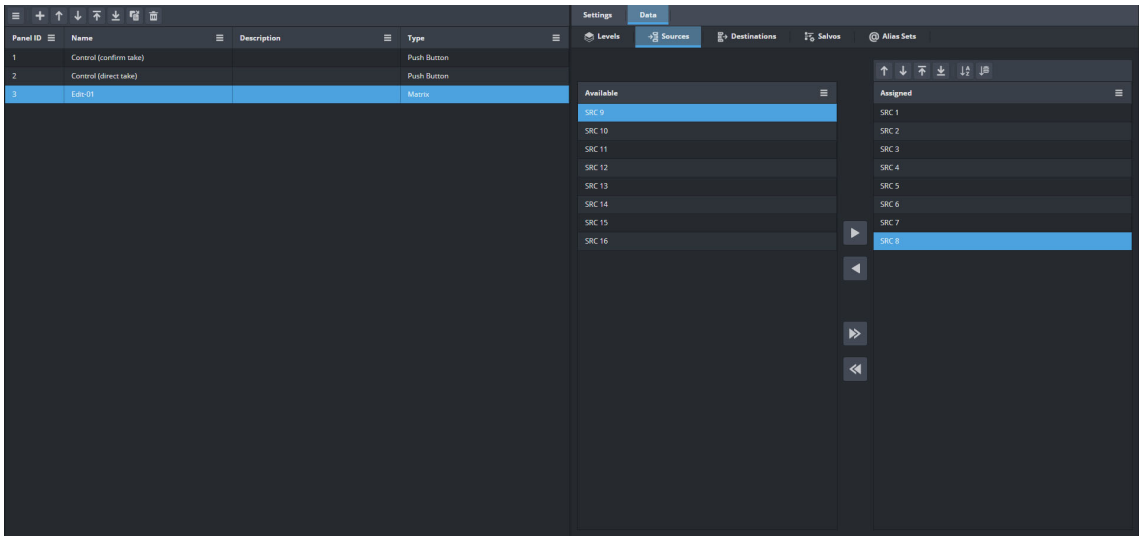


Figure 32 Example of the Panels > Data > Sources

Table 51 summarizes the fields and menus displayed in each sub-tab.

Table 51 Data Sub-tabs

Item	Description
Levels	
Available	Lists all the levels that are available in the database but are not assigned to the soft panel
Assigned	Specifies which levels will be available on the soft panel
Sources	
Available	Lists all the sources that are available in the database but are not assigned to the soft panel
Assigned	Specifies which sources will be available in the soft panel
Destinations	
Available	Lists all the destinations that are available in the database but are not assigned to the soft panel
Assigned	Specifies which destinations will be available in the soft panel
Salvos	
Available	Lists all the salvos that are available in the database but are not assigned to the soft panel
Assigned	Specifies which salvos will be available in the soft panel.
Alias Sets	
Available	Lists all the alias sets that are available in the database but are not assigned to the soft panel
Assigned	Specifies which alias sets will be available in the soft panel. Note that the first alias set assigned will be the first set the user sees in the soft panel.

Layout Tab

The Layout tab enables you to customize the contents and display settings of the windows and drawers of a soft panel. (**Figure 33**) The available settings depend on the panel type you are editing.

The Layout tab may be organized into the following areas:

- Home Windows — these options determine the contents and layout of the main (Home) window of a soft panel.
- Drawer Windows — these options determine the contents and layout of the navigation drawers on the left and right sides of the soft panel.

✶ The Layout tab is not available for the Matrix panel type.

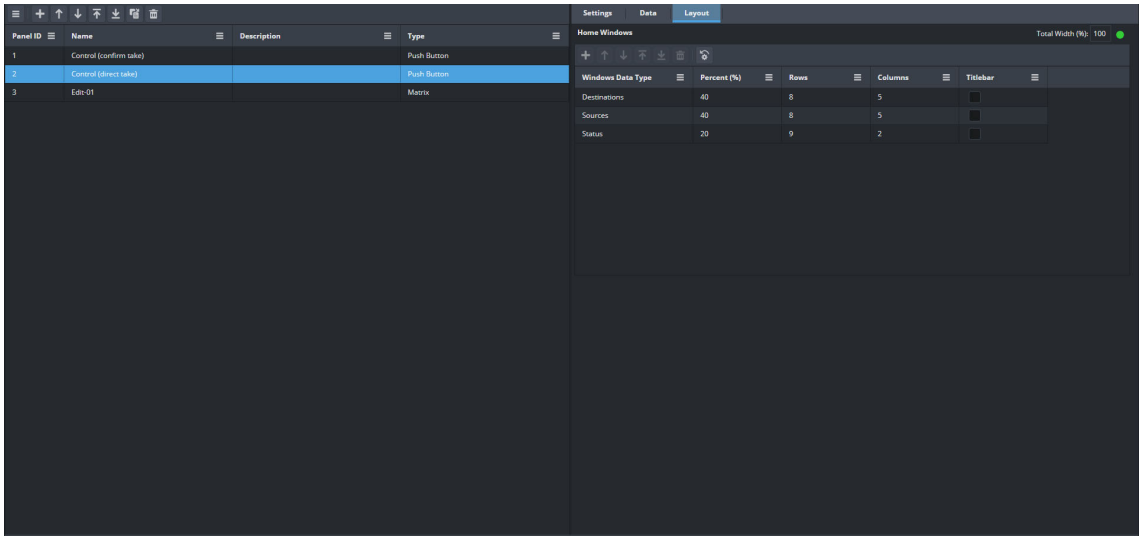


Figure 33 Example of the Panels > Layout Tab

Table 52 summarizes the options displayed in the Layout tab.

Table 52 Layout Tab

Item	Parameters	Description
Home Windows		
Total Width (%) (read-only)	#	Reports the percentage of allocated space used by the Home Window components on the panel
Add		Enables you to add a new window to the soft panel layout
Delete		Removes the window from the soft panel layout
Default		Loads the default window layout and widths
Windows data (read-only)	<text>	Specifies the resource or window type that is included on the panel
Percent	#	Specifies the width of the window in a percentage of the overall soft panel size
Rows	#	Specifies the number of button rows in the window
Columns	#	Specifies the number of button columns in the window

Table 52 Layout Tab (Continued)

Item	Parameters	Description
Title bar	Selected	A header displays above each data type window to identify it on the panel. For example “Destinations” or “Sources”.
	Cleared	The data type windows are not identified by a header
Drawer Windows		
Add		Enables you to add a new data type to a drawer of the panel
Delete		Removes the data type from the drawer of the panel
Default		Loads the default drawer layout and widths
Position		Specifies the drawer (left or right) on the soft panel
Windows data (read-only)	<text>	Specifies the resource or data that is included in the drawer of the panel
Percent	#	Specifies the width of the window in a percentage of the overall drawer size
Rows	#	Specifies the number of button rows in the drawer window
Columns	#	Specifies the number of button columns in the drawer window
Title bar	Selected	A header displays above each data type in the drawer to identify it on the panel
	Cleared	The data type is not identified by a header in the drawer

Buttons

Table 53 summarizes the buttons displayed in all Panel sub-tabs.

Table 53 Button on the Panels Interface

Button	Description
	Moves the selected items in the Available list to the Assigned list.
	Moves the selected item(s) from the Assigned list back to the Available list. These items will not be available on the panel.
	Moves all the available items to the Assigned list.
	Moves all the items from the Assigned list back to the Available list. These items will not be available on the panel.
	Moves the selected item in the Assigned list up one position. This changes the order of the displayed items on the soft panel.

Table 53 Button on the Panels Interface (Continued)

Button	Description
	Moves the selected item in the Assigned list down one position. This changes the order of the displayed items on the soft panel.
	Moves the selected item in the Assigned list to the top of the list. This changes the order of the displayed items on the soft panel.
	Moves the selected item in the Assigned list to the bottom of the list. This changes the order of the displayed items on the soft panel.
	Organizes the list in descending alphabetical order. This changes the order of the displayed items on the soft panel.
	Returns the list order to match the database list.

Creating a New Database

On initial power up, the NRG provides a default database that maps the sources and destinations to a single level. If your routing requirements differ from the default database, you can create and define a new database as required.

This chapter provides an overview of the Database Manager, and describes how to create a new database. The information in this chapter is applicable when the NRG is *not* a client device in a routing system that is controlled by an Ultricore BCS.

✶ If the NRG has its Product Info > Setup > Remote Controller Mode enabled and is connected to an Ultricore BCS, you create and manage your databases via the Ultricore BCS. Refer to the ***Ultrix and Ultricore Database Guide*** for details on database management with an Ultricore BCS.

For More Information on…

- adding resources to the database, refer to "**Defining a Database**".

Database Configuration Overview

✶ A default database is created upon initial start-up of the NRG.

The generalized work flow of creating a new database is:

1. Create a new entry in the Database Manager table. Refer to "**Creating a New Database**".

   You can create as many databases as required, but only one database can be active at a time.
2. Activate the new database. Refer to "**Activating a Database**".
3. Further define the new database by:
   a. Establishing connection points to external devices (clients) as outlined in "**Adding Connection Points**". To enable an NRG to function as the 'primary' of the routing system, you must establish communications with the 'client' devices. This step is only required if external routing systems are connected to the NRG. Refer to "**Defining an External Matrix**".
   b. Adding routing levels as outlined in "**Defining the Levels**".
   c. Assigning the physical output ports as outlined in"**Mapping the Destinations**".
   d. Assigning the physical input ports as outlined in "**Mapping the Sources**".
   e. If required, define virtual labels to apply to your destinations and sources. Refer to "**Using an Alias Set**".
   f. Create a salvo to capture a series of crosspoints to switch in the matrix that can be saved and later recalled for crosspoint transitions. Refer to "**Creating Salvos**".
   g. If required, define a new soft panel as outlined in "**Creating a Soft Panel**".

Database Manager Overview

The Database Manager interface enables you to quickly create system input and output lists, assign those signals to system sources and destinations, and include multiple levels and matrices.

Use the Database Manager interface to:

- Create a New Database — You can create a number of database configurations depending on your routing system and its devices. Refer to "**Creating a New Database**"

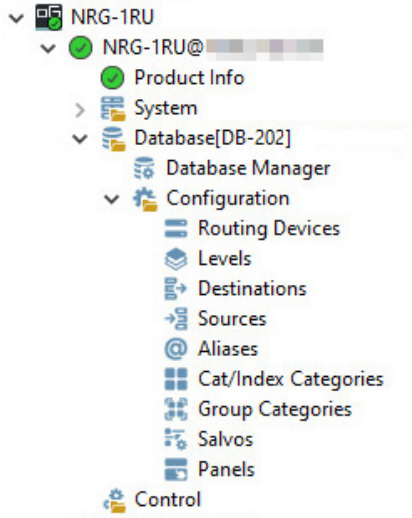
- Delete a Database — You can choose to permanently delete any configured database. Refer to "**Deleting a Database**".
- Activate/Deactivate a Database — Select a database from a list of imported files to activate and apply its settings to your routing system. Note that only one database can be active at a time. Refer to "**Activating a Database**".
- Create a Template — Use the Duplicate feature to create a copy of a current database to use as a template for new databases. Refer to "**Copying a Database**".
- Import a Database — Enables you to import a saved database file and make it available in the Database Manager interface. Refer to "**Importing a Database**".
- Export a Database — Enables you to capture the active database configuration as a file that is saved to the Downloads folder on your DashBoard client computer. Refer to "**Exporting a Database**".
- Restore a Database — Enables you to quickly restore the active database to an earlier version. Refer to "**Restoring a Database**".

Accessing the Database Manager

The Database Manager interface enables you to quickly define a database by auto-populating the applicable fields in the other database interfaces.

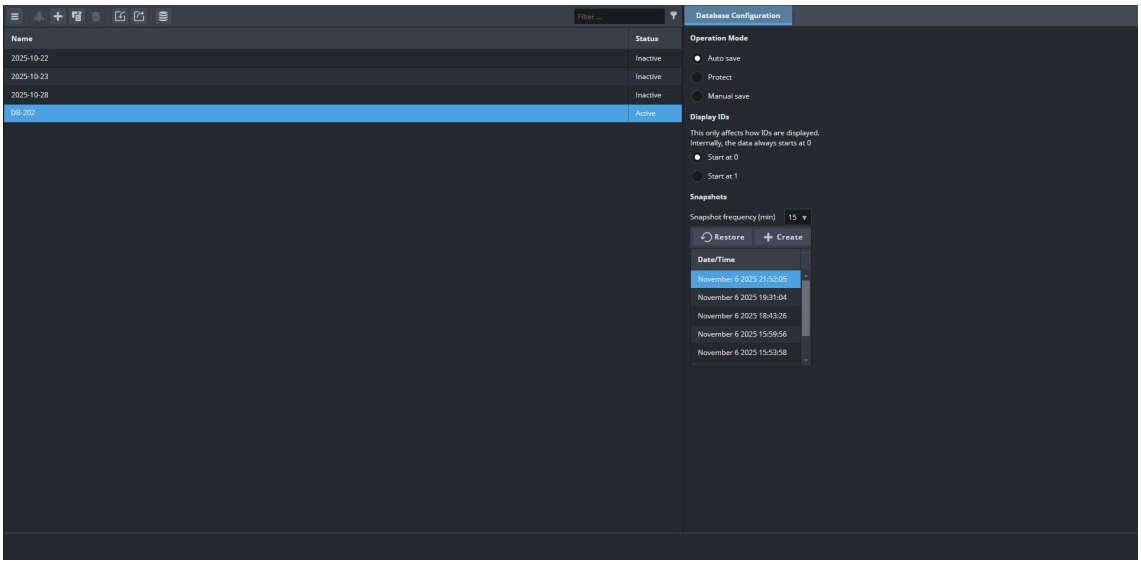
To access the Database Manager

1. Display the Databases nodes as outlined in "**To access the Database interfaces**".



2. Double-click the **Database Manager** sub-node.

   The **Database Manager** interface opens.



Creating a New Database

This section outlines how to create a new (blank or empty) database for a routing system. Once a new database is created, you can activate it and further define the database resources (levels, destinations, sources, salvos, etc.).

To create a new database

1. From the Database Manager interface, click **Add**.

   The **Add** dialog opens.

2. Use the **Name** field to type a unique identifier for the database.
3. Use the **Default Configuration** box to determine how to build the new database. Choose from the following:
   - Select the box — the new database created with the default number of sources, destinations, a single level, and the two default soft panels. Note that once this database is activated, you can still edit its resources as required.
   - Do not select the box — the new database is empty. You will need to populate the database using the Database sub-nodes (e.g. Levels, Sources, Destinations, Salvos, etc.).
4. Click **Add database**.

   The Add dialog closes and a new row displays in the Database Manager table with the name entered in step 2. Note that the status of the new database is `Inactive`.

5. Ensure the new database is active. Refer to "**To activate a database**".
6. Select the **Database Configuration** tab.
7. Use the **Operation Mode** options to determine if the database is editable and how changes are applied. Choose from the following:
   - Auto save — Changes made to any database interface are automatically saved and applied. This is the default setting when a database is toggled to Active.
   - Protect — All fields, except Aliases and labels, of the database are read-only and cannot be edited. A blue border displays around each interface. A blue Protected icon displays in the bottom left corner of every interface to remind the user that the database settings are now read-only.

- Manual save — The database is editable. An orange border displays around each interface. The Cancel and Save buttons display in the bottom right corner of each interface. After editing any interface, the user must then click Save to apply any changes. Clicking Save on one interface applies changes made to any interface in the database. This mode is recommended if you are editing numerous database settings and want to ensure the changes are applied after each edit.

✶ When using large databases, it is highly recommended to select Auto save. If you select Manual save, there may be a delay between saving the database and seeing the results of your edits.

✶ Note that setting the Operation Mode from Manual save to Auto save will automatically apply any unsaved changes.

✶ The Operation Mode set for an activated database is not retained. The Operation Mode will always revert to Auto save upon reactivation of the original database. For example, if you activate Database02 and set the Operation Mode to Manual save mode, then activate Database03, and then re-activate Database02, the Operation Mode in Database02 is reverted to Auto save.

8. Use the **Display IDs** options to determine how auto-ID numbers are assigned within the database. Choose from the following:
   - Starts at 0 — Entries in the database interfaces start at 0. The top row of each interface (e.g. Levels, Destinations, Sources, etc.) is assigned to 0, with subsequent rows numbered 1, 2, 3, etc.
   - Starts at 1 — Entries in the database interfaces start at 1. The top row of each interface (e.g. Levels, Destinations, Sources, etc.) is assigned to 1, with subsequent rows numbered 2, 3, 4, etc.
9. Use the **Snapshots** options to specify how often the database is auto saved or to create a snapshot version immediately (by selecting the Create option). The default is 15 minutes.

Activating a Database

Each active database includes a unique setup. You must activate a database before you can configure the resources, and soft panels. This also enables you to quickly apply a different setup just by activating a different database.

✶ When one database is active, all other databases are automatically set to inactive.

To activate a database

1. From the Database Manager table, select the row for the database you wish to activate.
2. Click **Activate** from the top toolbar.

✶ The **Operation Mode** is set to **Auto** save when a database is activated.

3. Verify the following to ensure the database was activated:
   - The **Status** field for the selected database reports `active`.
   - The **Status** fields for all other databases report `inactive`.
   - The **Database** node in the Tree View reports the active Database name.
4. If required, use the **Operation Mode** options to determine if the database is editable and how changes are applied. Choose from the following:

✶ Setting the **Operation Mode** from **Manual save** to **Auto save** will automatically apply any unsaved changes.

- Auto save — Changes made to any database interface are automatically saved and applied. This is the default setting when a database is toggled to Active.
- Protect — All fields, except Aliases and labels, of the database are read-only and cannot be edited. A blue border displays around each interface. A blue Protected icon displays in the bottom left corner of every interface to remind the user that the database settings are now read-only.
- Manual save — The database is editable. An orange border displays around each interface. The Cancel and Save buttons display in the bottom right corner of each interface. After editing any interface, the user must then click Save to apply any changes. Clicking Save on one interface applies changes made to any interface in the database. This mode is recommended if you are editing numerous database settings and want to ensure the changes are applied after each edit.

Managing the Databases

A database can be archived by saving it as an *.udb file to the Download folder on your computer. This enables you to import and export an archived database which is useful for:

- creating a safe, off-frame copy of a default database configuration
- importing a copy of a reference database that can be tailored to a specific application
- restoring a known backup copy of a database to your routing system

Overview

The following information is captured when you archive a database:

- Definitions of levels, destinations, and sources
- Salvos
- Category assignments
- Soft panels
- Alias sets
- Current crosspoint status

✶ The following information is not captured: hardware specifics, and license settings.

Copying a Database

Use the Duplicate feature to quickly create a copy of a selected database to use as a template for new databases.

To create a database template

1. From the Database Manager table, select the row for the database you wish to copy.
2. Click **Duplicate** from the top toolbar.

   The Duplicate dialog opens.
3. Use the **Name** field to assign a unique identifier to the template.
4. Click **Duplicate database**.
5. Click **Apply**.

   The Duplicate dialog closes. The Database Manager table displays a new row for the template.

✶ The database is not automatically activated. You must follow the procedure "**To activate a database**" to activate the new database before editing it.

Exporting a Database

You create an archive of a database (as a *.udb file) using the Export option in the **Database Manager**. This enables you to create a duplicate or template of a database and edit it settings without impacting the original file.

✶ The database does not need to be active.

To export a database to the archive

1. From the Database Manager table, select the row for the database you wish to export.
2. Click **Export** from the top toolbar.

   The Export dialog opens.
3. Use the **Save as** field to specify the filename for the exported file.
4. Click **Export database** to specify the location to save the new *.udb file to.
5. Click **Apply**.

   The Export dialog closes.

Importing a Database

Once a database is imported from the archive to your system, you can select it from the list of databases in the Database Manager.

✶ The database is not automatically activated. You must follow the procedure "**To activate a database**" to activate the imported database.

To import a database to the Database Manager

1. From the Database Manager toolbar, click **Import**.

   The Import dialog opens.
2. Click **Choose File**.
3. Select the *.udb file you wish to import as follows.
4. Click **Open**.

   The **Select file** field in the Import dialog reports the selected filename.
5. Use the **Database name** field to assign an identifier to the file. This name will display as a new row in the Database Manager.
6. Click **Apply**.
7. Verify that the imported database displays in the Database Manager.

Deleting a Database

✶ Ensure the database that you are about to delete is not currently active.

To delete a database

1. From the Database Manager table, select the row for the database you wish to delete.
2. Click **Delete** from the top toolbar.

   The Delete database dialog opens.
3. Click **Apply**.

Restoring a Database

The Database Manager automatically saves a backup (snapshot) every 15 minutes when a change is made to the active database. This enables you to quickly restore the active database to an earlier version. Use this function if an unwanted change was made to the database, to troubleshoot an issue with the database, or to verify an earlier state.

To restore the active database to a snapshot version

1. From the Database Manager toolbar, select the active database to restore.
2. In the **Database Configuration** tab, select the required backup from the Snapshots list.

   The Snapshots list displays the available snapshots based on the date and time with the latest snapshot at the top.
3. Click **Restore**.
4. Follow the on-screen instructions.

Defining a Database

This chapter outlines how to use the Database sub-nodes in DashBoard to further define a database for the NRG.

Overview

Each database consists of a collection of configuration files necessary for routing operation. In systems with multiple devices, the database resides within the primary NRG storage system. Multiple databases may be saved and accessed at any time, but only one database can be active at a time.

The following information is captured in a database:

- Definitions of levels, sources, and destinations
- Salvos
- Category assignments
- Soft panels
- User assigned port labels (alias sets)
- Current crosspoint status

✶ The following information is not captured in a database: hardware specifics, and license settings.

Once a new database is created, you then define the devices included in the new database. Next you define the resources (levels, destinations, sources, salvos, and soft panels) for the new database.

Before You Begin

Keep the following in mind:

- The NRG supports a maximum of 800 logical destinations with up to 4 levels each.
- Ensure that each external device in your routing system is installed and configure according to its documentation.
- Serial control of an external device is not implemented at this time.
- Connection to external devices may be categorized into two groups: controller and controllee.
  - › *Controllers* are devices that will connect via what may be termed an *incoming* connection.
  - › *Controllees* are devices to be controlled by the NRG and connect via what may be termed an *outgoing* connection.
- Routing commands are issued to the primary NRG via remote control panels, external protocols, or DashBoard soft panels.
  - › Only the soft panels defined within the active database of the primary NRG may control the routing system.
  - › Any controllee (client) device will ignore routing commands not originating from the primary NRG while in the connected mode.

Adding Connection Points

A single NRG can communicate with multiple client devices such as other NRG routers, Ross remote control panels, Ross NK devices, and automation devices running third-party protocols. This section outlines how to add a new connection point based on the type of client device you want to connect to.

The options in the Routing Devices interface enable you to specify the devices in your routing system. Once all the client devices are added to the Routing Devices interface, you will need to configure a connection point to each device. The steps required to define a connection point depend on the protocol (TCP, etc.) that the client device uses. Creating a connection point from a specific NRG router (which will function as the primary) to each client device enables the NRG to access the matrix of that client, and issue routing commands to these devices.

Before You Begin

Keep the following in mind when establishing a connection point from a primary NRG to client devices:

- Assign a unique name to each client device. This allows identification of each device throughout the setup process.
- Client device configuration (licensing, port configuration, etc.) is achieved via the client's nodes within the DashBoard tree.
- Client NRG-MV Multiviewers are configured via the NRG-MV node within the DashBoard tree of the client router that physically hosts that Multiviewer.
- Some communication protocols refer to source and destinations with a numerical index number. This number is listed in the ID column of the **Source** and **Destination** interfaces of the database.

Adding a Ross Device

This section briefly summarizes the steps required to manually add a new client device to the Routing Devices interface of the NRG. This will enable the NRG to communicate with devices using this protocol.

To add a client device

1. Display the Database nodes as outlined in "**To access the Database interfaces**".
2. Double-click the **Routing Devices** node located under the **Database** node.
3. From the **Routing Devices** interface, click **Add**.

   The Add Device dialog opens with the Ross tab automatically selected.
4. If the client device is another **NRG** router:
   a. Use the **Protocol** menu to select **NRG-tcp**.
   b. Use the **IP** field to specify the IP address assigned to the client NRG in your network.
   c. Use the **Name** field to type a unique identifier for the NRG.
5. If your device is a **Ross NK** product:

✶ The Ross NK series devices must be connected to the ethernet network by virtue of an Ross NK-IPS or NK-NET devices to enable the routing system to communicate with them.

   a. Select the **Ross NK** tab.
   b. Use the **Protocol** menu to specify the type of Ross NK protocol the device requires.
   c. Use the **IP** field to specify the IP address assigned to the NK-IPS or NK-NET that is connected to the device you wish to add.
   d. Click **Get device list** to update the entries in the Add Devices dialog.
   e. Select the **Add** box for each NK device you wish to add.
6. If your device uses a third-party protocol, refer to "**Defining an External Matrix**".
7. Click **Apply**.

The Add Device dialog closes.

The Routing Devices table updates to include a new row for the client device.

Defining a Connection Point to a Client Device

Once a connection point is established between the primary NRG and its clients, the physical inputs and outputs the clients provide will display in the active database. These input and outputs ports are now ready for renaming (if required) and mapping to logical source and destinations in the database.

✶ A connection point is created using the *primary* NRG interface. Do not attempt to create a connection from a client to the primary NRG.

✶ NRG-MV PiP and head destination mapping is required in the primary NRG database for each NRG-MV Head in use. The procedure is the same as the NRG-MV configuration for a stand-alone NRG router.

To enable the connection point between the primary NRG and a client device

1. In the **Routing Devices** interface of the primary device, select the row for the client device you wish to create a connection point to.

   The interface displays the Communication, and Info tabs for the selected client device.
2. Select the **Device Configuration** tab.
3. Set the **Device State** field to **disabled**.
4. Use the **Protocol** menu to specify the type of communication protocol the client device requires.
5. Use the **Device name** field to edit the identifier assigned to the device within the database.
6. Use the **IP Address** field to edit the IP address assigned to the client device.
7. Use the **Port** field to specify the Port Number assigned to the client device.
8. Verify that the other fields are correct.
9. Set the **Device State** field to **enabled**.

✶ The changes are automatically applied once the Device Status is set to enabled.

Defining an External Matrix

The NRG provides support for many industry standard third-party protocols for interfacing to external devices such as control systems, and external routing matrices. Once a connection is made to the external device via the third-party protocol, you will need to define the matrix from that device.

The database system does not automatically know the details of any connected third-party matrix (e.g. number of inputs, outputs, levels, etc.). This means that you must manually define the size and operating level for each external device within the active database. This section outlines how to add the details of the external matrix provided by your client device(s) to the database.

Connection via Ethernet

Incoming ethernet connections are defined within the control system by default and need no further configuration. **Table 54** lists the available protocols and ports. The NRG can communicate with third-party external devices via a TCP connection. By default, NRG runs a server process for the following ethernet protocols:

Table 54 Supported Protocols — Ethernet Connection

Protocol	Default Port
GVG Native Series 7000	TCP: 12345
Probel SW-P-08	TCP: 8910
RossTalk	TCP: 7788

The available Protocol Server options depends on the type of protocol. **Table 55** briefly summarizes the options for each protocol type.

Table 55 Protocol Server Options

Protocol Option	Notes
GVG Native Series 7000	
L4 Echo	• No — the Ethernet Layer 4 acknowledge is disabled. This is the default. • Yes — the Ethernet Layer 4 acknowledge is enabled.
Probel SW-P-08	
Protocol Variant	• Use Last Req — NRG will respond using protocol variant (extended/non-extended) as per the received request format. This is the default. • Non-Extended — NRG will always replay using non-extended formatting. • Extended — NRG will respond with extended formatting.
Matrix Mode	• No — NRG will use information from the LEVEL section of the protocol to control NRG levels. • Yes — NRG will use information from the MATRIX_ID section of the protocol to control NRG levels.

To set up an outgoing ethernet connection to a client device

1. In the **Routing Devices** interface of the primary NRG, select the row for the client device you wish to create a connection point to.

   The interface displays the Communication, Matrix, and Info tabs for the selected client device.
2. Click **Add**.

   The **Add device** dialog opens.
3. Select the **Third Party** tab.
4. Use the **Protocol** menu to select the third-party communication protocol the device uses.
5. Use the **IP** field to specify the IP address assigned to the client third-party device in your network.
6. In the **Name** field, type a unique identifier for the client device. This name is used to identify the specific device within the database.
7. Click **Apply**.

   The **Add device** dialog closes and a new row displays in the Routing Devices table.
8. In the Routing Devices table, select the row for the new device.
9. Select the **Device Configuration** tab.

10. Set the **Device State** field to **disabled**.
11. Use the **Port** field to specify the Port Number assigned to the client device that the primary device will try to connect to.
12. Set the **Device State** field to **enabled**.

Defining the Levels

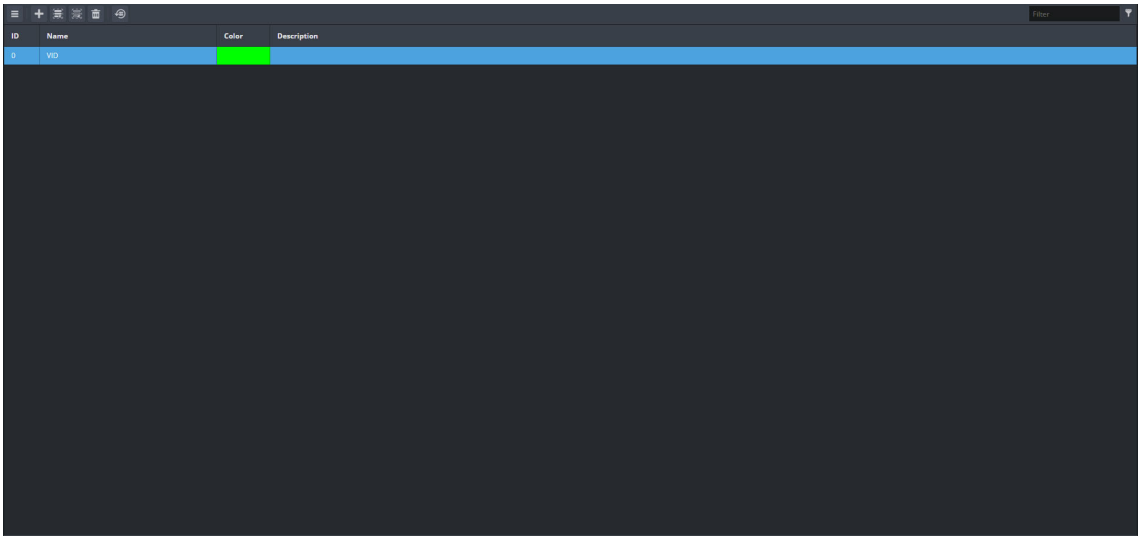
A level is a term used to describe a section or layer of the routing system (e.g. video level, audio level). The NRG uses level definitions for easy identification and control of various routing matrices or parts of the system. The levels defined in the Database > Levels interface have a direct relationship with the Level entries in other database configuration interfaces.

- The quantity of levels determines how many independent IN/OUT ports may be grouped together as one source or destination selection.
- The NRG supports a maximum of 800 logical destinations with up to 4 levels each.

To define a level in the database

1. Display the Database nodes as outlined in "**To access the Database interfaces**".
2. Double-click the **Levels** node located under the **Database** node.

   The **Levels** interface opens.



3. Verify the **ID** field to specify the priority of each level.

- The **ID** field is a row number automatically defined by the routing system. This ID value corresponds to level numbers when used in remote control panel (RCP) configurations and third-party communications.

4. To re-name a level, type a unique identifier in its cell of the **Name** column.

   It is recommended to use words that describe the level such as VIDEO, AUDIO, etc.
5. To select a unique color that will represent the level in the soft panels:
   a. In the **Color** column, double-click the cell for the level you want to configure.
   b. Select the hue from the provided vertical color grid in the **Color Select** dialog.
   c. Confirm that the field beneath the color grid displays the correct color for the level.
   d. Double-click the cell again to close the **Color Select** dialog.

6. Use the **Description** column to enter a brief summary of the level or provide additional information about the level use or purpose.

✶ The **Description** column is for identification purposes only and not required for operation.

To create additional levels

1. Select a row in the **Levels** interface.

✶ It is recommended to insert below the last row in the table.

2. Click **Add**.

   The **Add Levels** dialog opens.

3. Use the **Levels** options to specify the type of level to add.
4. Use the **Level count** to specify the number of new levels to add.
5. In the **Name (prefix)** field, type the label for the level(s).

   For example, type **VIDEO** into this field to create levels named **VIDEO** 1, **VIDEO** 2, etc.

6. In the **Start count** field, type the first number to be used in the series.
7. Use the **Color** option to assign a specific display color for the levels.
8. If required, use the **Description** field to enter text that helps to identify the levels.
9. Verify the **Levels to add** field reports the correct number of levels you wish to add.
10. Click **Apply**.

    The **Add Levels** dialog closes.

    The Levels table updates to display the new levels.

To delete an entry from the Levels table

1. Select the row for each level to delete.
2. Click **Delete**.

To reassign the IDs of the Levels table

- Click **Reset IDs**.

  The ID assigned to all the Levels are updated where the first row (Level) is assigned ID 0, with consecutive rows assigned 1, 2, 3, etc.

Mapping the Destinations

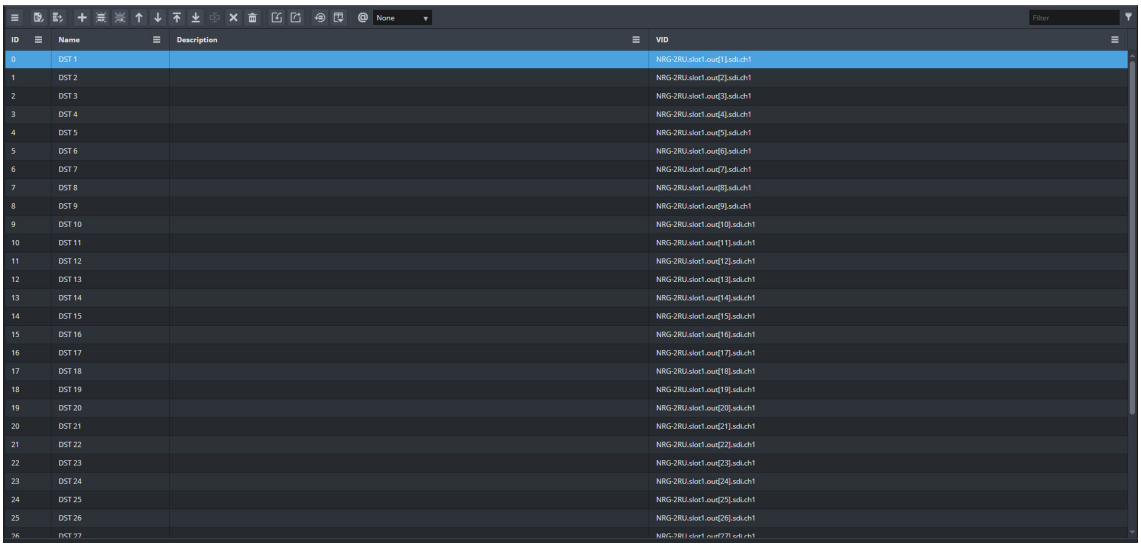
This section outlines how to add destinations to an active database using the Add function in the Database > Destinations interface.

✶ The NRG supports a maximum of 800 logical destinations with up to 4 levels each.

To add destinations to the active database

1. Display the Database nodes as outlined in "**To access the Database interfaces**".
2. Double-click the **Destinations** node located under the **Database** node.

   The **Destinations** interface opens with the table auto-populated as defined if the Default Configuration box was selected when creating this database. If the box was not selected, the **Destinations** interface opens with an empty table.



3. Click **Add**.

   The Add Destinations dialog opens.

4. Use the **Name (prefix)** field to specify the label for the new destination entries.
5. Use the **Count** field to specify the number of destinations in the new series.
6. If the **Count** value is greater than 1, use the **Start count** field to specify the first destination in the new series.
7. Verify the value reported in the **Destinations to add** field is correct.
8. Click **Apply**.

   The new destination(s) are automatically added as rows to the bottom of the Destinations tab. Once you have created new entries in the Destinations table, you can map each entry to an output for each level.

✶ If you are defining the destinations in a database for use with NRG-MV, it is recommended to first define the destinations, then re-name the NRG-MV Head(s) and PiPs to clearly identify them in the database. Otherwise there may be duplicate channel assignments in the database.

To map a single destination

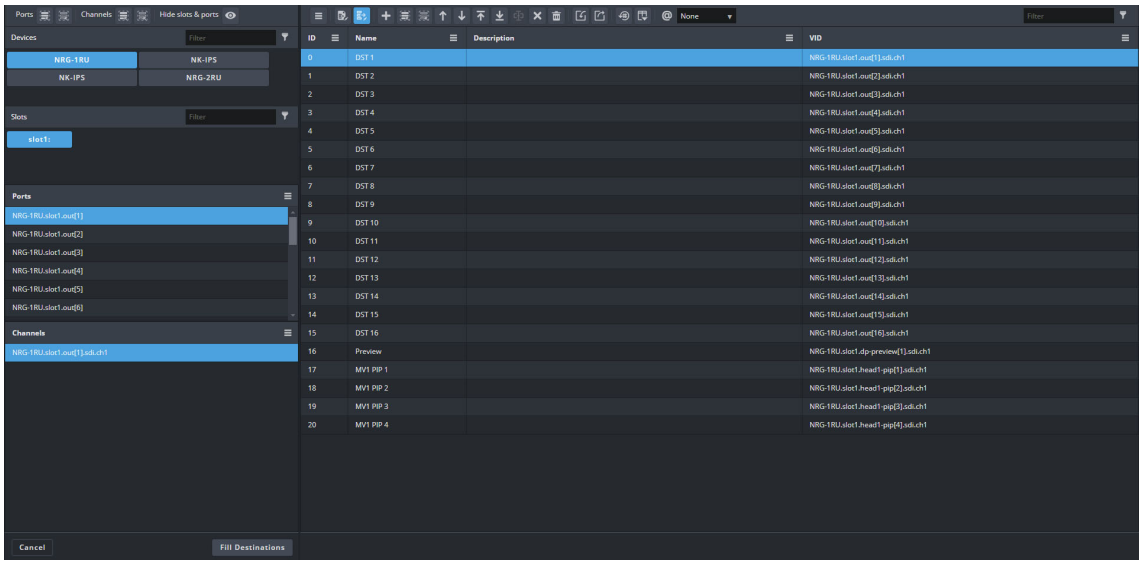
1. Locate the destination to map in the **Destinations** table.
2. If desired, type a new name for the destination in the **Name** cell.
3. Select the row for the destination to map.

✶ Use the auto-fill feature to quickly edit a destination, by locating the cell in the **Destinations** tab, type the text, and click the cell to display a pull-down menu of matching destinations to choose from.

✶ You can map multiple destinations by selecting the first cell in the table column, press and hold **Shift**, then selecting the last cell in the table column.

4. Click **Edit**.

   The Edit dialog opens to the left of the **Destinations** table.



5. From the **Devices** area, select the client device.
6. From the **Slots** area, select the blade to map.

   The Ports area auto-populates with the outputs available in the active database.
7. From the **Ports** area, select the output to assign to the destination.

✶ You can map multiple ports by selecting the first cell in the table column, press and hold **Shift**, then selecting the last cell in the table column.

The Channels area auto-populates with the video and audio channels available in the active database.

8. From the **Channels** area, select a row for each level to map.

✶ You can map multiple channels by selecting the first cell in the table column, press and hold **Shift**, then selecting the last cell in the table column.

9. Click **Fill Destinations**.

   The Destinations table updates with the selected destination mapped.
10. Click **Edit** to close the dialog.

To delete a destination from the database

1. In the **Destinations** table, select the destination(s) to delete.
2. Click **Delete**.

✶ You can delete the mapping assignment(s) but keep the destination entry in the database by selecting the destination row and clicking **Clear**.

Mapping the Sources

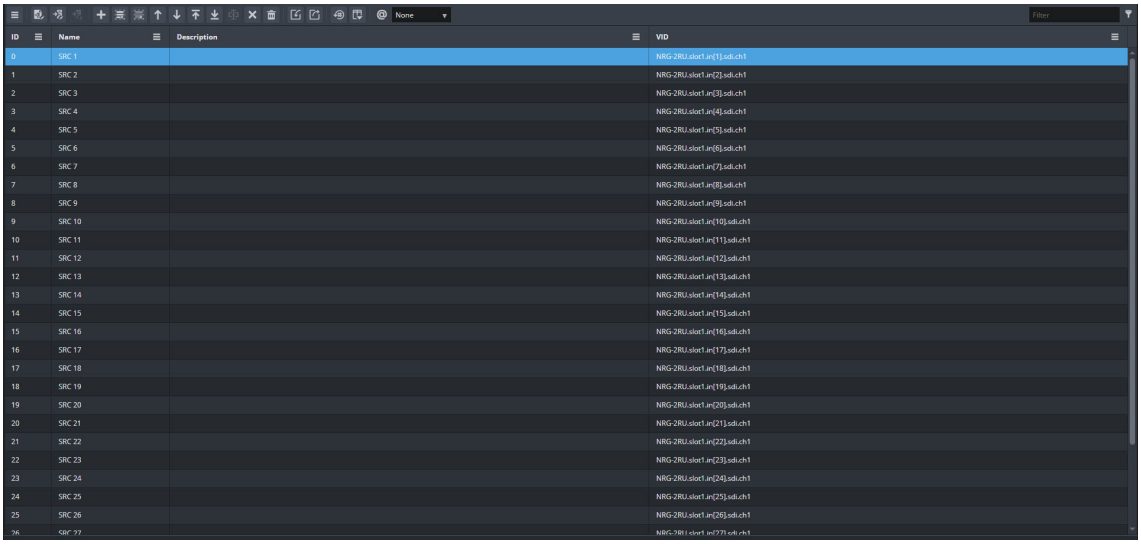
The Sources interface allows the mapping of physical and virtual input ports to your routing system inputs. This interface is organized into a table with each row representing a Source and each column representing a Level. At the top of the column is the name of the Level. The table cells are the input ports assigned to the source for that level.

✶ A database supports a maximum of 4096 sources.

To add sources to the active database

1. Display the Database nodes as outlined in "**To access the Database interfaces**".
2. Double-click the **Sources** node located under the **Database** node.

   The **Sources** interface opens with the table auto-populated as defined if the Default Configuration box was selected when creating this database. If the box was not selected, the **Sources** interface opens with an empty table.



3. Click **Add**.

   The Add Sources dialog opens.
4. Use the **Name (prefix)** field to specify the label for the new source(s).
5. Use the **Count** field to specify the number of sources in the new series.
6. If the **Count** value is greater than 1, use the **Start count** field to specify the first source in the new series.
7. Verify the value reported in the **Sources to add** field is correct.
8. Click **Apply**.

To map an input to a source

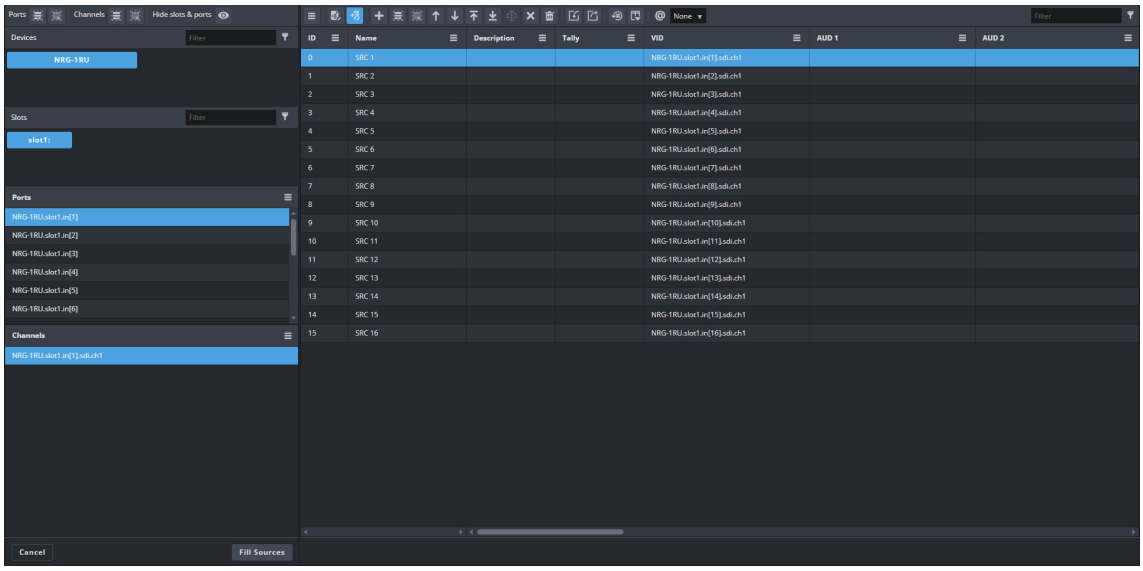
1. Locate the source to map in the **Sources** table.
2. If desired, type a new name for the source in the **Name** cell.
3. Select the row for the source to map.

✶ You can map multiple sources by selecting the first cell in the table column, press and hold **Shift**, then selecting the last cell in the table column.

✶ Use the auto-fill feature to quickly edit a source, by locating the cell in the **Sources** table, type the text and click the cell to display a pull-down menu of matching sources to choose from.

4. Click **Edit**.

   The Edit dialog opens to the left of the **Sources** table.



5. From the **Devices** area, select the client device.
6. From the **Slots** area, select the blade to map.

   The Ports area auto-populates with the inputs available in the active database.
7. From the **Ports** area, select the input to assign to the source.

✶ You can map multiple ports by selecting the first cell in the table column, press and hold **Shift**, then selecting the last cell in the table column.

The Channels area auto-populates with the video and audio channels available in the active database.

8. From the **Channels** area, select a row for each level to map.

✶ You can map multiple channels by selecting the first cell in the table column, press and hold **Shift**, then selecting the last cell in the table column.

9. Click **Fill Sources**.

   The Sources table updates with the selected source mapped.
10. Click **Edit** to close the dialog.

To delete a source from the database

1. In the **Sources** table, select the source(s) to delete.
2. Click **Delete**.

✶ You can delete the mapping assignment(s) but keep the source entry in the database by selecting the source row and clicking **Clear**.

Using an Alias Set

By default, a matrix (or router) port is identified via the labels set in the Destinations and Sources interfaces. An alias set enables you to customize virtual labels and apply to the ports if required. For example, you may wish to create an alias set that reflects the actual name/label text that the physical cable would be assigned.

✶ This re-naming is not necessary for router operation, but it may make your assignment of source and destination labels easier to identify when using your internal cable naming conventions.

An alias set can include labels for sources, and/or destinations. You can choose to rename all labels, specific labels, a mix of labels, or whatever suits your requirements. By default, there are no pre-defined alias sets in an active database.

Creating a New Alias Set

Take care when determining label text. While a long name may be descriptive for the Source and Destination interfaces, many control devices have limited screen space and labels may be truncated.

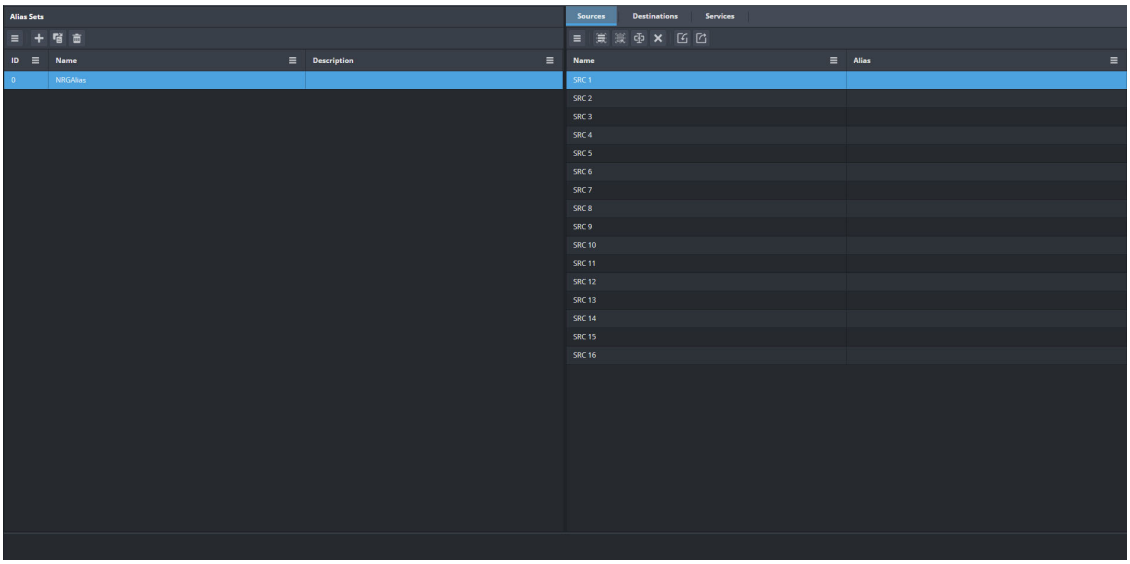
✶ Unicode characters are not supported.

To create a new alias set

1. Display the Database nodes as outlined in "**To access the Database interfaces**".
2. Double-click the **Aliases** node located under the **Database** node.

   The **Alias** interface opens.

✶ The Alias interface is blank when no alias sets are defined yet.



3. Click **Add**.

   The Add dialog opens.
4. Use the **Name** field to assign a unique identifier to the alias set.

   This name is displayed in the Alias set menu of other interfaces.
5. If required, enter additional information in the **Description** field.
6. Click **Apply**.

   The Add dialog closes and the Alias page updates to include the new entry.

   The **Sources** and **Destinations** tabs now display a list of available matrices in the active database. Each tab indicates the port that is included in the active database using the labels assigned in the corresponding Database > Configuration interfaces.

To define the source aliases

1. Select the alias set you wish to define.
2. Select the **Sources** tab.
3. To define a single source label, select the row for the specific port label to edit.

4. To define multiple source labels:
   a. Select the first row.
   b. Press and hold **Shift**.
   c. Select the last row.
5. To define all source labels, click **Select All**.
6. Click **Rename**.

   The Rename dialog opens.
7. Use the **Name (prefix)** field to type a label prefix.

✶ Enter a trailing space to ensure a space between the prefix and the numerical counter.

8. Use the **Start count** field to specify the first number to be used in the series.
9. Use the **New Names Preview** field to verify the new label text.
10. Click **Apply**.

    The Rename dialog closes and the Alias column updates to display the new virtual labels for this alias set.

To define the destination aliases

1. Select the alias set you wish to define.
2. Select the **Destinations** tab.
3. To define a single destination label, select the row for the port label to edit.
4. To define multiple destination labels:
   a. Select the first row.
   b. Press and hold **Shift**.
   c. Select the last row.
5. To define all destination labels, click **Select All**.
6. Click **Rename**.

   The Rename dialog opens.
7. Use the **Name (prefix)** field to type a label prefix.

✶ Enter a trailing space to ensure a space between the prefix and the numerical counter.

8. Use the **Start count** field to specify the first number to be used in the series.
9. Use the **New names preview** field to verify the new label text.
10. Click **Apply**.

    The Rename dialog closes and the Alias column updates to display the new virtual labels for this alias set.

To define the alias set for an external device matrix

1. Configure the device as outlined in "**Enabling a Communication Service**" and "**Configuring the Service Settings**".
2. From the **Alias** table, select the row for the alias set you wish to apply.
3. Select the **Services** tab.
4. Click **Apply selected**.

The **Service alias set** field updates to report the selected alias set, the number of services the set was applied to. The Clear button is now enabled in the toolbar.

Using Cat/Index Categories

This section outlines how to organize your resources (sources, destinations) using the Cat/Index Mode feature.

Cat/Index mode allows alpha-numeric extensions to labels to “build up” the final label selection. For example, CAM 1 - 6 may be expressed as a CAM label with numerical extensions 1 through 6. Similarly, alpha extensions may be used, for example, CAM A - E for Cameras A through E.

Destination and source names are split into substrings - the first substring is referred to as the *category*, and subsequent substrings as the *indexes* (e.g. Category CAM index 1 through 6). As source/destination names become more complex, an index may not be the final part of the selection name. For example, consider the source names CG TX 1 and CG TX 2; Cat/Index category mode may be configured so that a user selects CG, then TX, then either 1 or 2. This may be extrapolated to cover a large range of sources and destinations.

Configuring Cat/Index categories requires:

1. Creating the categories.
2. Creating the index filters.
3. Assigning the resources.

Once the Cat/Index categories are defined, you can perform switches on a hard or soft panel, based on the categories.

Creating the Categories

You can assign each resource to a specific category or multiple categories in a database. Using multiple categories enable you to filter the resources, and organize them into logical groups. By default, categories are organized in alphabetical order. There are two methods for creating categories: auto-generate and manual.

- Auto generate — All previous categories will be deleted from the **Category** table and new ones are created based on the resource labels in your database.
- Manual — Choose to create a new category that is not based on the resource labels in your database. This is helpful when you want to customize the labels for the control panel with specific resources

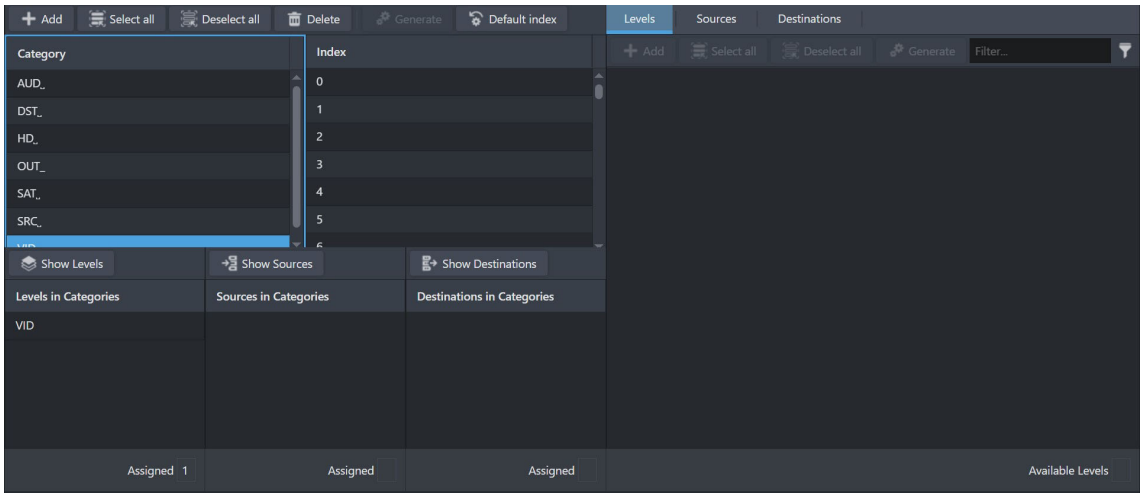
To auto generate categories based on a database

1. Click **Generate** on the **Cat/Index Categories** interface.

   The **Auto-Generate** dialog opens.

2. Click **Apply**.

   The **Auto-Generate** dialog closes. The Category and Index tables are now populated based on the database labels.



To manually create a new category

1. Select a row in the Category table.
2. Click **Add** on the **Cat/Index Categories** interface.

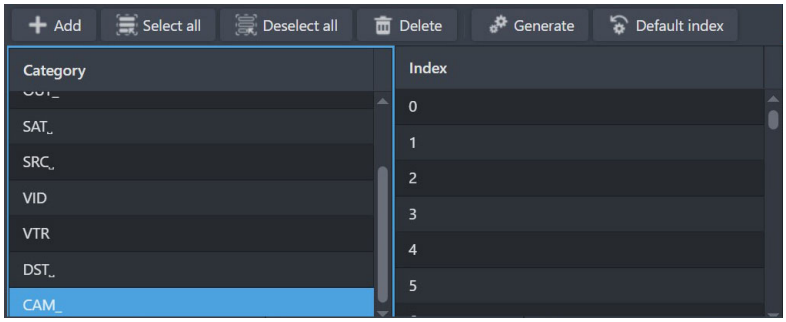
   The **Add Category** dialog opens.
3. Use the **Name** field to specify a unique identifier for the new category.

   The entry must match a resource name prefix. For example:

   - "`CAM_`" creates a category to categorize resources named `CAM_xx` where `xx` is any index.
   - "`CAM`" creates a category to categorize resources named `CAMxx` where `xx` is any index.
   - "`cam`" will not categorize any resources as the category names are case sensitive.
4. Click **Apply**.

   The **Add Category** dialog closes and the new category displays at the bottom of the **Category** table.

   In the following example, the user created a new category "`CAM_`".



To create a new category based on the resources

1. From the right panel, select the tab for the resource type you wish to assign.

✶ If the tab is blank, all the resources of that type are assigned.

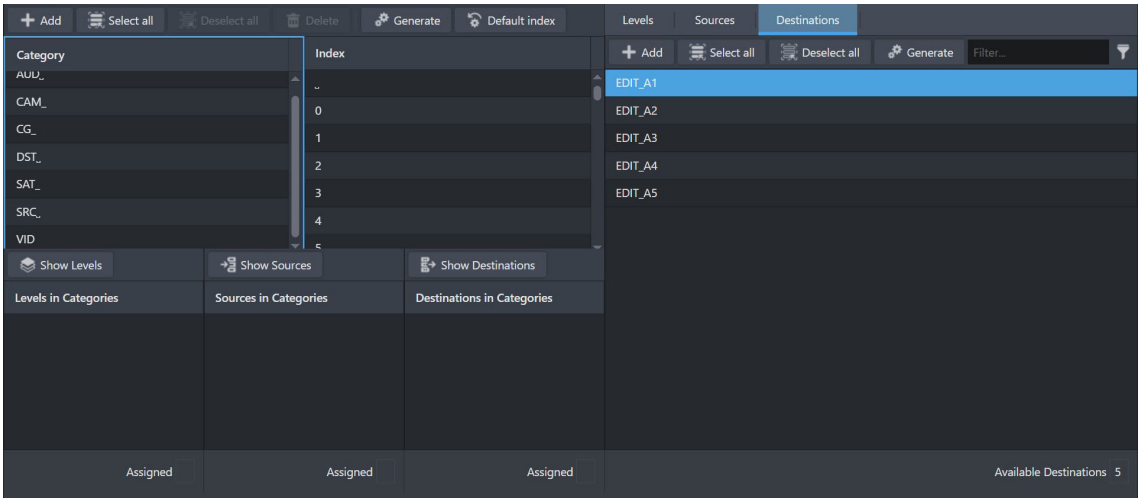
2. To manually add a new category:

   a. Select a resource.

   b. Click **Add**.

      The Add Category/Index dialog displays with the Category auto-populated based on the selected resource.

In the following example, the user is reviewing the list of available Destinations.



c. Edit the fields as required.

d. Click **Apply**.

3. To auto-generate a new category, click **Generate** from the resource tab toolbar.
   - The Category table displays the a new row for the generated category.
   - The selected resource tab is now blank.

Creating the Index Filters

An index for a category enables you to filter the resources. As category names and indexes are entered, the bottom half of the **Category** table updates to indicate which resources of a given category is accessible on a control panel. There are two methods for creating the index filters: auto-generation, and manual.

✶ Unicode characters are not supported.

- Auto-Generate — use the Auto Generate tool to create categories and index filters based on the resource labels of the database. Or, use the Default Index tool to replace the only the entries in the Index table with filters based on the resource labels of the database.
- Manual — create an index filter that is not based on the resource labels of the database. This allows you to customize the filters used when creating a soft panel, or when using a control panel.

To assign an index filter

1. Select a row in the **Index** table.
2. Click **Add** on the **Cat/Index Categories** interface.

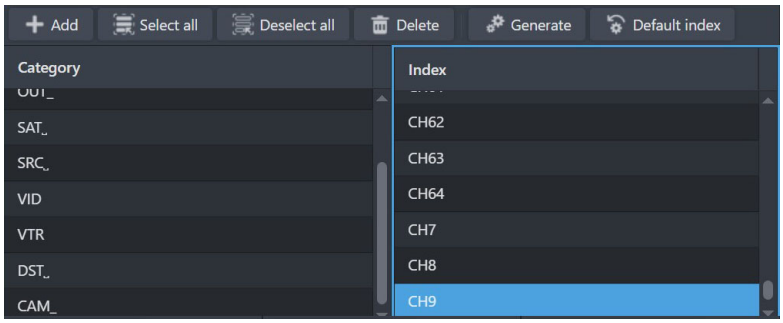
   The **Add Index** dialog opens.
3. Use the **Name** field to specify a new index filter.

   The entry must match a partial resource name. For example:
   - "`TX_`" creates a sub-index of TX, meaning further entry is required on the control panel. This will filter resources named `<category name>`**`TX_xxxx`** where **`xxxx`** is any index.
   - "`TX 1`" creates an 'end-point' index, meaning TX 1 is the last substring and no further entry is required on a control panel. This will filter resources named `<category name>`TX 1.
   - Note that you would not create an index of "TX 1" and a sub-index of "TX_". You must choose one or the other.

4. Click **Apply**.

   The **Add Index** dialog closes and the new index filter is listed in the **Index** table.

   In the following example, the user created index "CH9".



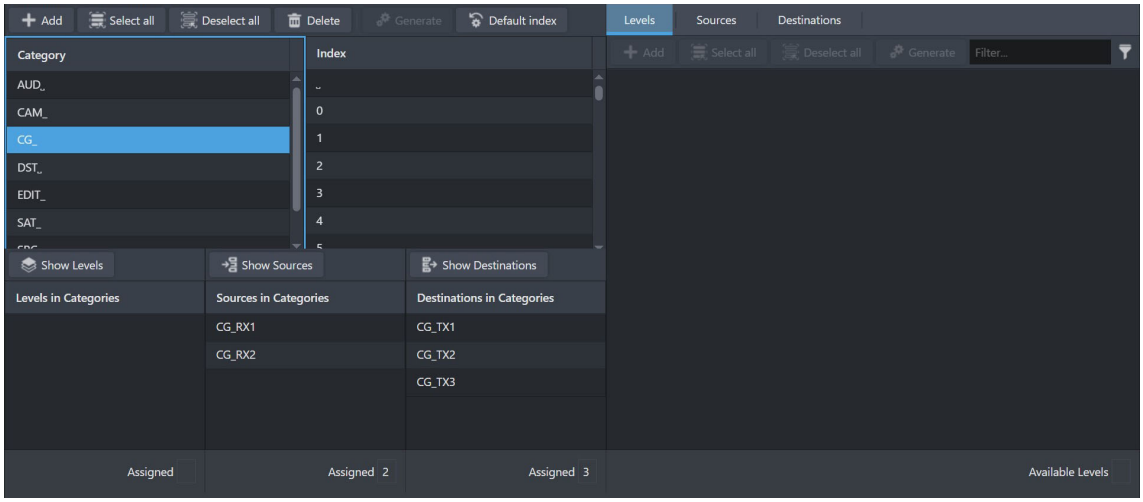
Managing the Resources

This section outlines how to review the Levels, Sources, and Destinations currently assigned to a selected category.

To verify the assigned resources

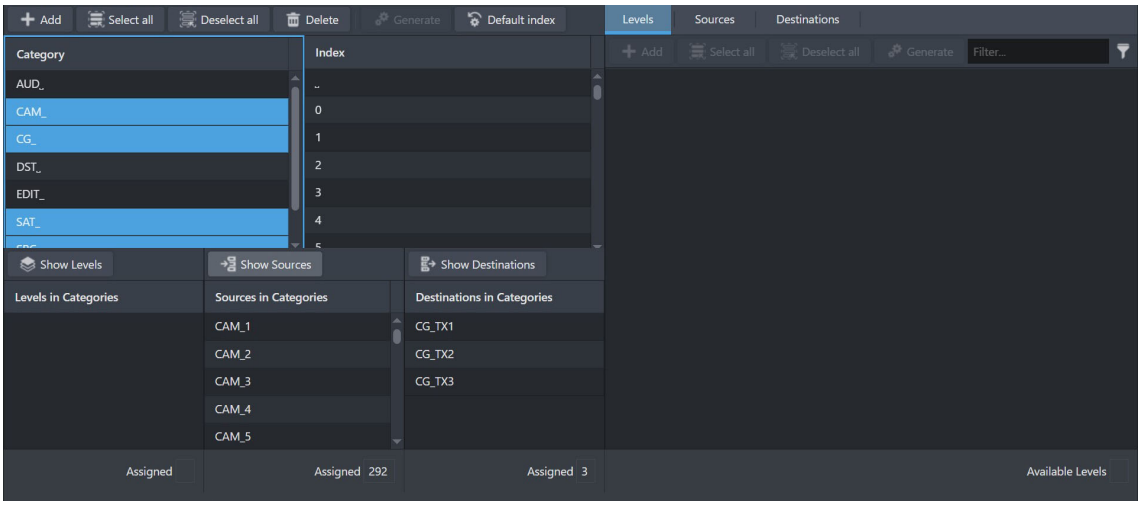
1. Locate the lower half of the Cat/Index Categories interface.
2. Select a row in the Category table to display the assigned resources for that specific category.

   In the following example, the user is reviewing the resources for the CG_ category.



3. Click a **Show** button to display the resources in the table and highlights each category and index the resources are assigned to.

   In the following example, the user selected **Show Sources**.



Using Group Categories

Group Categories allow you to organize database resources (sources, destinations, and levels) into folders and sub-folders with arbitrary group names. The group name is not required to match the resource names (it is similar to setting up file folders). This group categorization is useful when you need to group resources based on their operational regions, events, personnel credentials etc. Once you have defined your categories and tags for each level of a database, you can create a custom soft panel using the category settings to arrange the sources, destinations, and levels.

This section outlines how to organize the database resources into folders and sub-folders using the Group Categories feature. This is done in preparation for creating your custom soft panels using the category settings. Once the group categories are defined, you can perform switches, on a hard or soft panel, based on the group categories.

Group categories are arranged in a hierarchy and displayed in a tree view. Each group is represented as a folder or node, and the resources included in that group are sub-nodes. **Figure 34** shows two main groups (Baseball and Football) where the Football group also has three sub-groups (Local, National, and State).

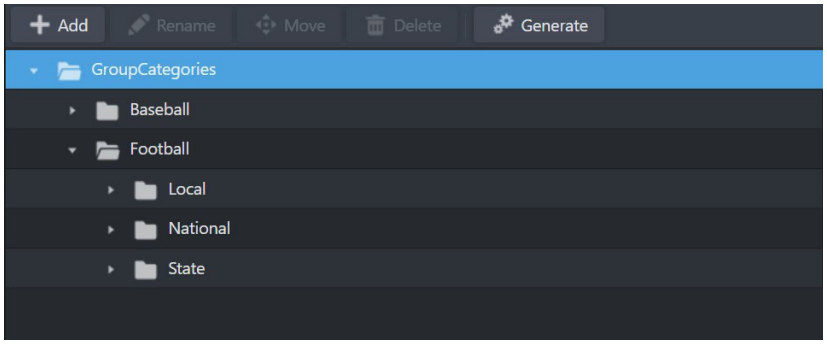


Figure 34 Example of the Group Categories Tree View

Configuring group categories requires:

1. Creating groups
2. Assigning the resources (destinations, sources, and/or levels) to groups

Auto Generating a Group

You can choose to create the groups based on the levels, sources, and destinations in your database or a combination. This requires the virtual labels for each resource to be consistent. For

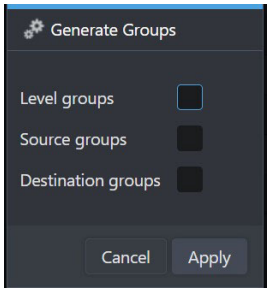
example, if all destinations are labeled as `DST #`, a group will be created called `DST` with each destination (resource) listed as a separate node.

✶ Auto generating a group will delete the groups currently listed in the GroupCategories tree.

To auto generate a group

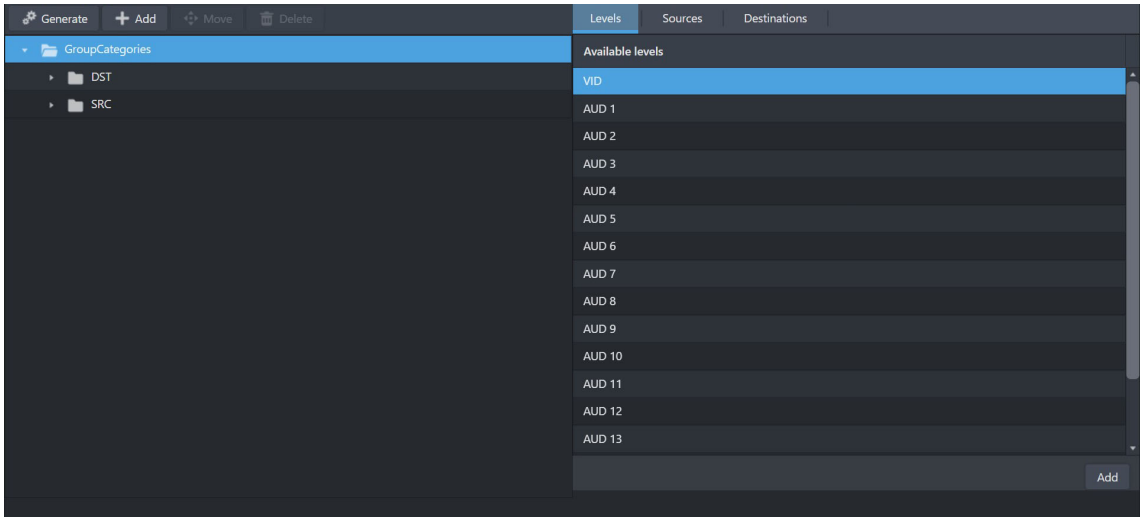
1. Click **Generate** on the **Group Categories** interface.

   The Generate Groups dialog opens.



2. Select the box to include the resources in the group.
3. Click **Apply**.

   The Generate Groups dialog closes and the **GroupCategories** interface displays the new groups. In the following example, two groups were auto-generated: `DST` and `SRC`.



Manually Adding a New Group

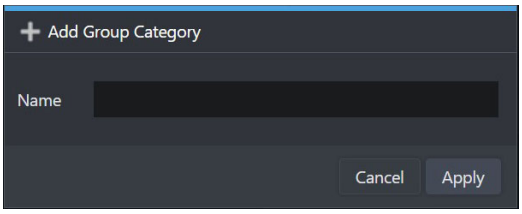
You can add a new group or sub-group using the methods described below.

To manually add a new category group

1. Double-click the **Group Categories** node located under the **Database** node.

   The **Group Categories** interface opens.
2. Select the **GroupCategories** node.
3. Click **Add**.

   The **Add Group Category** dialog opens.

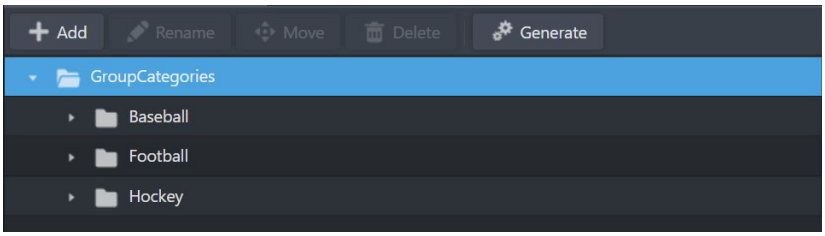


4. In the **Name** field, type a unique identifier for the new group.

✶ Unicode characters are not supported.

5. Click **Apply**.

   The **Add Group** dialog closes and the new group `Hockey` displays in the GroupCategories tree.



To create a category sub-group

1. Expand the **GroupCategories** node.
2. Select the node to add the new sub-group to.
3. Click **Add**.

   The **Add Group** dialog opens.

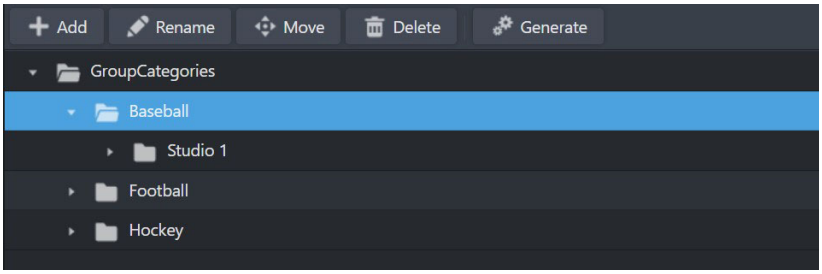
4. In the **Name** field, type a unique identifier for the new sub-group.

✶ Unicode characters are not supported.

5. Click **Apply**.

   The **Add Group** dialog closes and the new sub-group is added to the GroupCategories tree view.

   In the example below, a new sub-group `Studio 1` was created in the `Baseball` group.



Assigning the Resources to a Group

Once a group is created you can assign the required resources (destinations, sources, levels). Resources may be assigned to multiple groups if required.

✶ Auto generating the groups will also assign all available resources for that group. For example, if you selected to generate a group of Sources, the sources in the active database are automatically assigned to that group.

To assign a resource to a group

1. In the GroupCategories tree, select the group you want to add a resource to.
2. In the right pane, select the tab for the type of resource you wish to assign to the group.

   The right panel of the Cat/Index Categories interface displays a tab for each available resource type in the database. Select a tab to view a list of those resources that are not assigned. If a tab is blank, all the resources of that type are currently assigned to a category.
3. To assign a single resource, select the resource from the tab.
4. To select a series of resources:

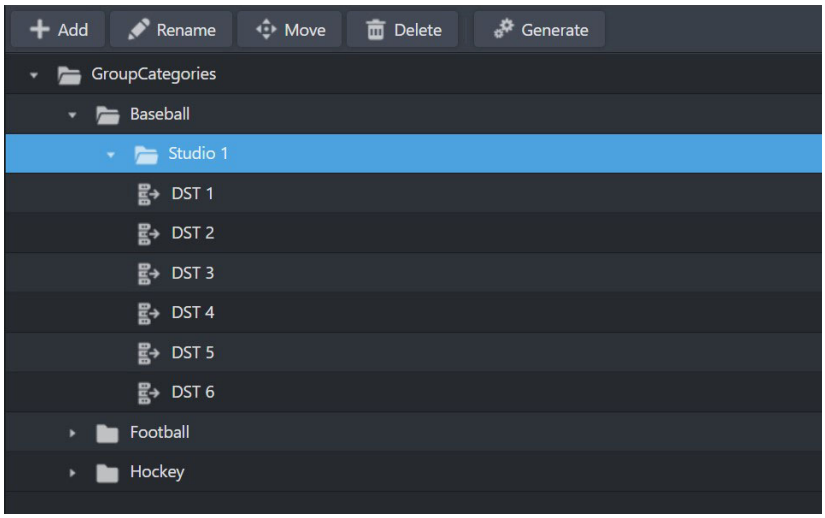
   a. In the selected tab, select the first resource in the series you want to assign.

   b. Press and hold **Shift**.

   c. Click the last row in the series.
5. Click **Add**.

   The GroupCategories tree updates to display the selected resources in the group.

   In the example below, `Dest 1` to `Dest 6` were assigned to the `Studio 1` group.

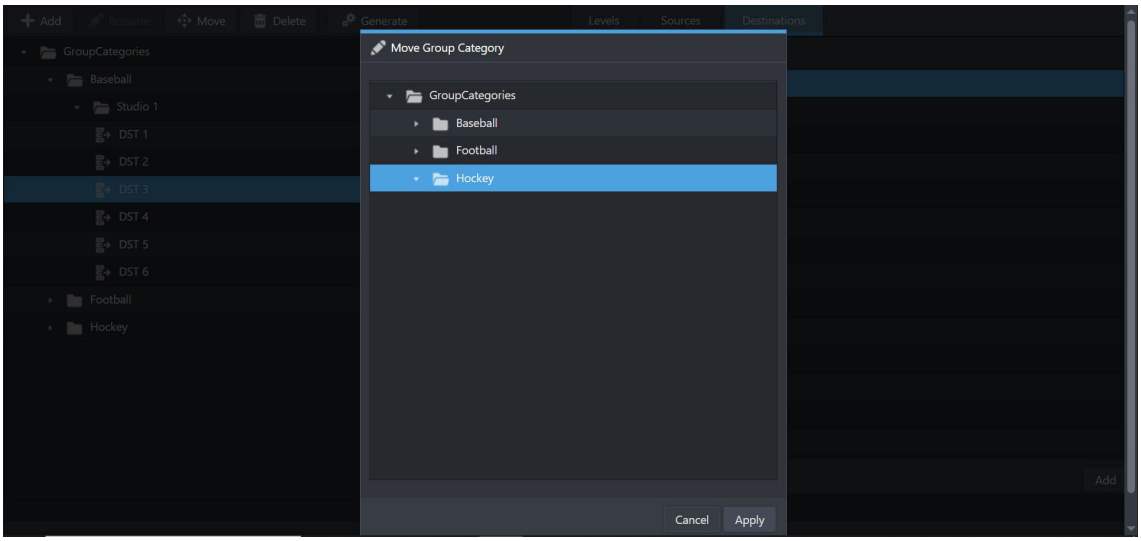


To move a resource to another group

1. In the GroupCategories tree, select the resource you want to move.
2. Click **Move**.

   The **Move Group Category** dialog opens.
3. Select the new location for the resource.

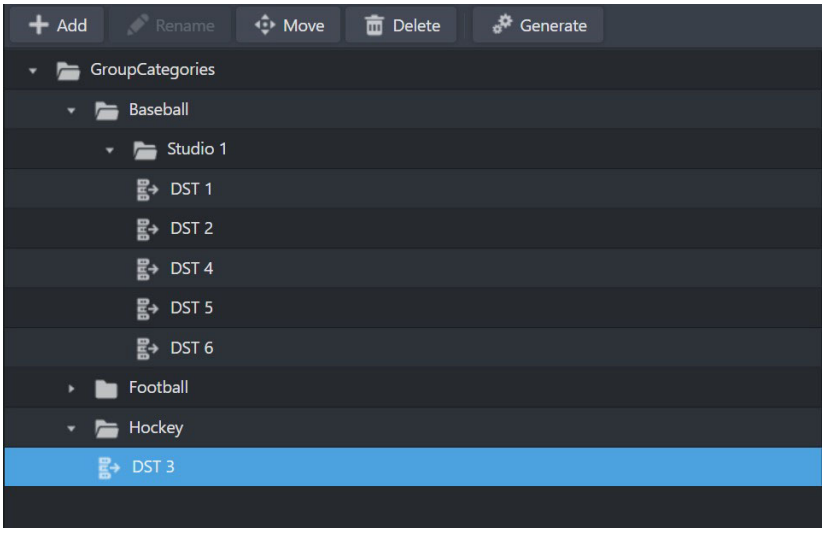
   In the example below, `DST 3` will move from the `Baseball` group to the `Hockey` group.



4. Click **Apply**.

   The **Move Group Category** dialog closes.

   The GroupCategories tree updates to display the resource in the new location. Notice that the resource is now removed from the original group.



To delete a resource from a group

1. In the GroupCategories tree, select the specific resource you want to delete from the group.
2. Click **Delete**.

   The **Delete** dialog opens.
3. Click **Apply**.

   The **Delete** dialog closes.

   The GroupCategories tree updates to no longer display the resource in the group.

To delete a series of resources from a group

1. In the GroupCategories tree, select the specific group you want to edit.

   The middle pane of the Group Categories interface updates to list the sub-groups or resources assigned to it.

2. In the middle pane, select the first resource in the series you want to delete.
3. Press and hold **Shift**.
4. Click the last row in the series.
5. Click **Delete**.

   The **Delete** dialog opens.
6. Click **Apply**.

   The **Delete** dialog closes.

   The GroupCategories tree updates to no longer display the resources in the group.

To move a group within the tree view

1. In the GroupCategories tree, select the group you want to move.
2. Click **Move**.

   The **Move Group Category** dialog opens.
3. Use the tree view in the dialog to select where to move the group to.
4. Click **Apply**.

   The **Move Group Category** dialog closes.

   The GroupCategories tree updates to display the group in the new location.

Creating Salvos

Salvos are a selected series of crosspoints to switch in the matrix that can be saved and later recalled for crosspoint transitions. The Salvo interface arranges the crosspoints in a grid layout with sources in columns and the destinations in rows. The available levels are displayed in a toolbar to the right of the grid.

For More Information on...

- using a front panel buttons for a salvo, refer to "**Assigning a Salvo Button**".

To create a salvo

1. Display the Database nodes as outlined in "**To access the Database interfaces**".
2. Double-click the **Salvos** node located under the **Database** node.

   The **Salvos** interface opens.

   The following example shows the **Salvos** interface when no salvos are created in the active database.

3. Create a new salvo in the database as follows:
   a. Click **Add**.

      The Add Salvo dialog opens.

   b. Type a unique identifier in the **Name** field for the new salvo.

   c. Click **Add salvo**.

      The Add Salvo dialog closes and the **Salvos** list updates with the new salvo selected. Notice that the salvo is flagged as empty.

✶ You can also click to capture the current status of the routers.

4. Select the **Level** button for each router level to include in the salvo.

   Each selected **Level** buttons is now lit.

5. To create a single crosspoint switch, use the cross-hairs to select the source/destination combination on the grid.

✶ A yellow warning icon displays when a salvo is empty (does not include any crosspoint switches).

6. To assign multiple destinations to the same source:
   a. Select the button(s) in the **Destination** toolbar for each destination to include in the switch; or click **Select all dest** to include all the available Destinations.

   b. Select the button in the **Source** toolbar for the source to use for the switch.

      The grid updates to indicate the new selections. Notice that each level is represented by a corresponding slice of the crosspoint indicator.

7. Select **Follow** (located under the Level buttons) to enable the levels to automatically follow the switches.

✶ Click **Clear presets** to clear the workspace.

Configuring the LCP Buttons

The NRG-FR1-LCP and NRG-FR2-LCP provide special tasks (functions) that can be assigned to any button on the front panel. These Local Control Panel (LCP) buttons are programmable back-lit buttons that also can be customized (brightness, and color). This chapter outlines the default button assignments, and the functions that can be assigned to a button.

✶ This chapter only applies to the NRG-FR1-LCP and NRG-FR2-LCP.

For More Information on...

- using the front panel buttons, refer to "**LCP Operation**".

Overview

The Local Control Panel (LCP) buttons are organized into two distinct groups: the leftmost group include the function buttons, and the rightmost group include the source and destination buttons.

The number of function buttons depends on the router type. The NRG-FR1-LCP (**Figure 35**) provides 8 function, 16 source, and 16 destination buttons. The NRG-FR2-LCP (**Figure 36**) provides 16 function, 32 source, and 32 destination buttons. By default, each button is configured from the factory. You can choose to keep the default assignments, or reassign to other functions as required.

✶ An NRG-MV license is required to populate the PIP function buttons. Refer to "**NRG-MV Setup**" for details on this licensed feature.

✶ The physical buttons do not display a text label. **Figure 35** and **Figure 36** show the default function assignments as a reference only.

NRG-FR1-LCP

The NRG-FR1-LCP is factory configured with the button assignments as depicted in **Figure 35**.

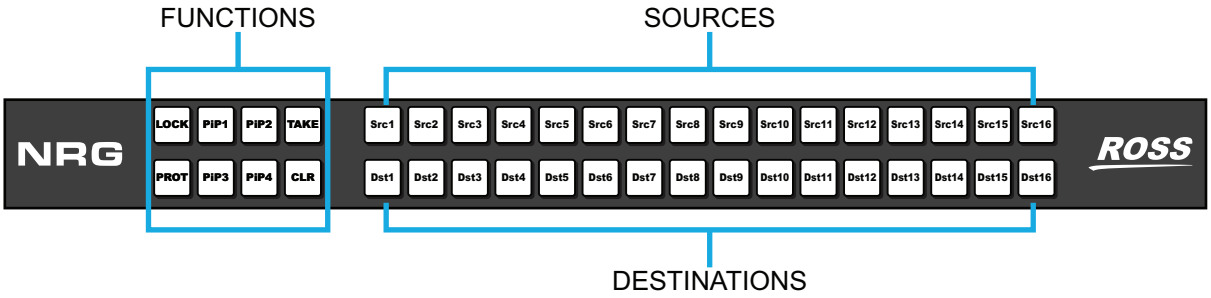


Figure 35 NRG-FR1-LCP Front Panel — Default Button Configuration

NRG-FR2-LCP

The NRG-FR2-LCP is factory configured with the button assignments as depicted in **Figure 36**.

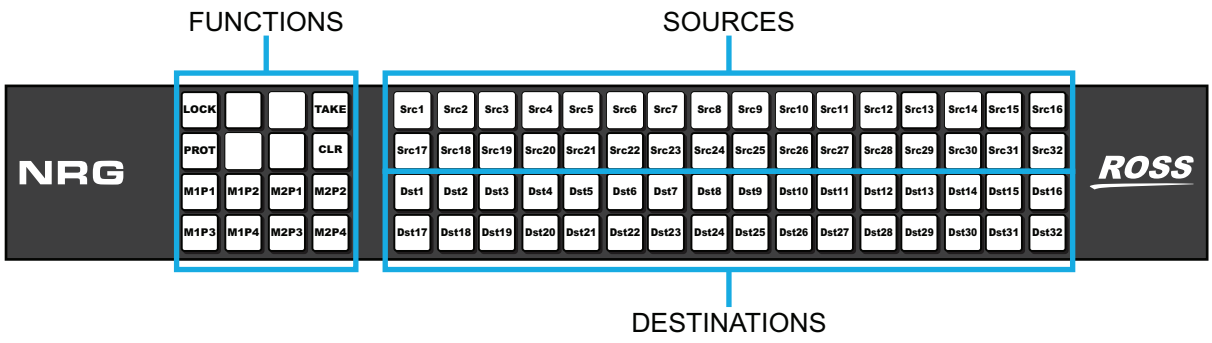


Figure 36 NRG-FR2-LCP Front Panel — Default Button Configuration

Default Button Function Assignments

Table 56 lists the functions assigned to buttons in the factory default configuration of the NRG-FR1-LCP and NRG-FR2-LCP. The default configuration is set to allow the routers to be used straight out of the box.

Table 56 Default Button Functions

Function	NRG-FR1-LCP	NRG-FR2-LCP
Panel Lock (LOCK)	✓	✓
Protect (PROT)	✓	✓
Take (TAKE)	✓	✓
Clear (CLR)	✓	✓
Unassigned	4,0[a]	12, 8[a], 4[b]
Destination (Dst)	16, 20[a]	32, 36[a], 40[b]
Source (Src)	16	32

a. Requires one NRG-MV license.
b. Requires two NRG-MV licenses.

✶ The default configuration can be recalled by selecting NRG > System > LCP > Configuration > Load Defaults.

Displaying the LCP Interface in DashBoard

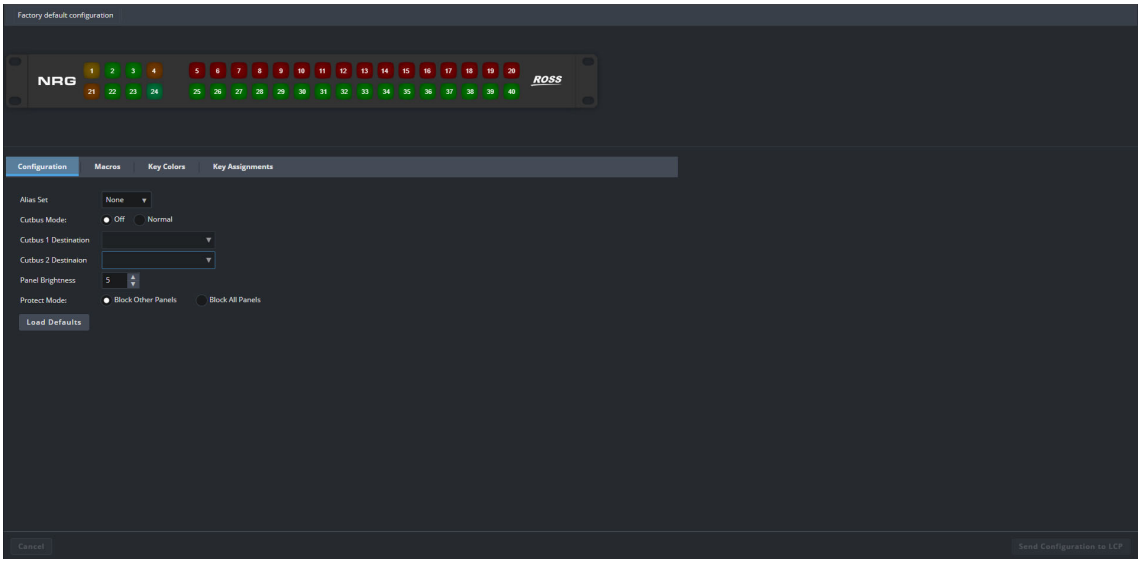
The options for customizing your LCP buttons and assigning functions are available via the **LCP** interface in DashBoard. This section outlines how to display the **LCP** interface in DashBoard. For an overview of the menus and settings in the LCP interface, refer to "**LCP Interface**".

To display the LCP interface

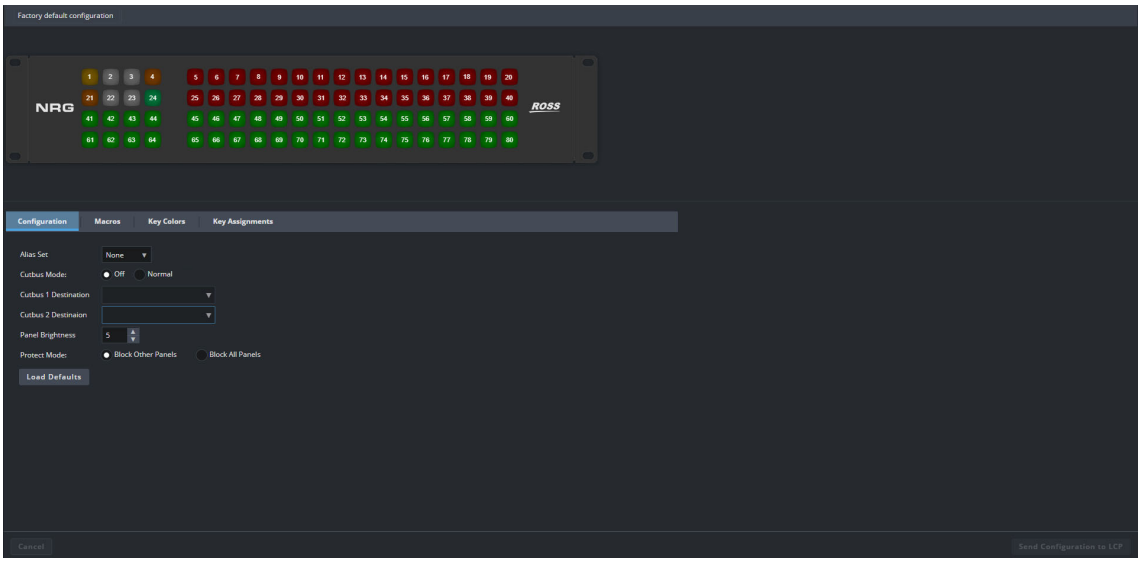
1. Locate the **NRG** node in the Tree View of DashBoard
2. Expand the **NRG** sub-node.
3. Expand the **System** sub-node.
4. Double-click the **LCP** sub-node.

   The **LCP** interface displays in the DashBoard window with the **Configuration** tab automatically selected. Notice that the interface provides a graphic representing the physical LCP buttons of the router (top), with a series of tabs underneath. Select a button to configure its settings. Select a tab to display the options.

The following example shows the **LCP** interface for an NRG-FR1-LCP.



The following example shows the **LCP** interface for an NRG-FR2-LCP.



Setting the Button Brightness

The button brightness can be set through DashBoard. This setting is applied to all buttons on the NRG front panel.

To specify the button brightness

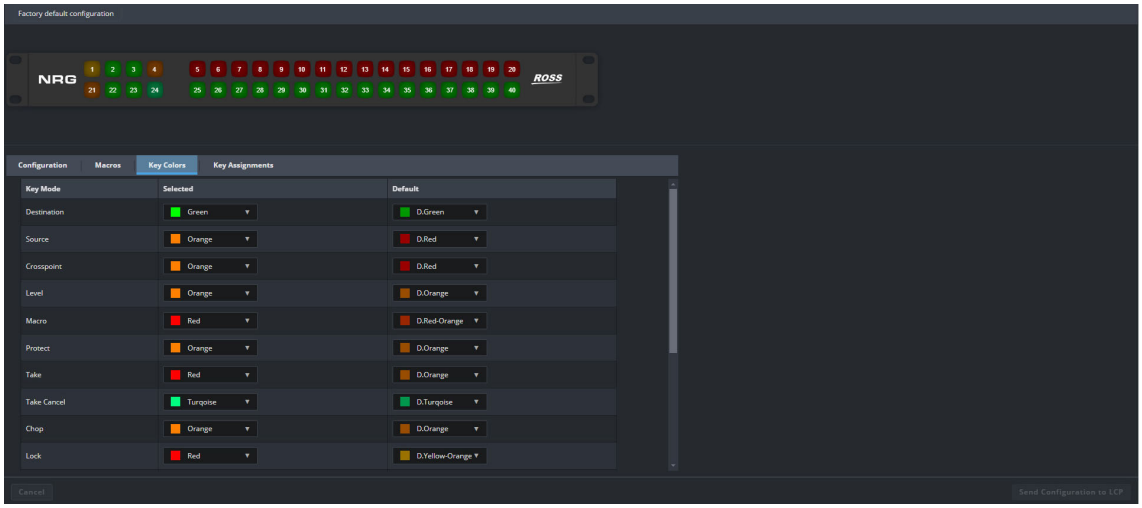
1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Use the **Panel Brightness** field to set the LED brightness for the front panel buttons when the button is 'on'; that is when it has been pressed, is already active, or when indicating an error by several quick flashes. The value range is from 0 (off) to 10 (maximum brightness). The default value is 5.
3. Click **Send Configuration to LCP**.

Setting the Button Color

The Key Color tab lists the available functions, their default colors, and the currently assigned color. Assigning a color to a function sets all buttons assigned to that function to the same color.

To set the color of a button

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Key Colors** tab.



3. Locate the row for the function you wish to configure. You may need to scroll down the tab to locate the function.
4. Click the cell in the **Selected** column.
5. Select a color from the menu.
6. Click the cell in the **Default** column.
7. Select a color from the menu.
8. Click **Send Configuration to LCP**.

Assigning Functions to Buttons

Use the **LCP** > **Key Assignments** tab to assign functions to the buttons of the NRG-FR1-LCP or NRG-FR2-LCP. Any function can be assigned to any button. Each button can be assigned a function, with up to 3 parameters (Default, Shift1, Shift2). This function will be called when that button is pressed. **Table 57** lists the available functions.

Table 57 Available Functions

Key Name	Description
Chop	A single button that starts a slow or fast toggle between the two most recently selected sources for a given destination. Refer to "**Assigning a Chop Button**".
Crosspoint	Switches the input, output and level/breakaway associated with this button. Refer to "**Assigning a Crosspoint Button**".

Table 57 Available Functions (Continued)

Key Name	Description
Destination (Dst)	Changes the destination that the panel is controlling. • If the Dst button is not active, another Dst is selected. • If the Dst button is active, the relative destination is selected. Refer to "**Assigning Destination and Source Buttons**".
Level	Toggles this level number from the current level pattern.
Macro	Records events that can be replayed later. Refer to "**Assigning a Macro Button**".
Panel Lock	Locks the panel from all switches or function button operation. Refer to "**Assigning a Protect Button**".
Protect	Attempts to protect the currently selected output/level pair. Refer to "**Assigning a Protect Button**".
Salvo	Switches multiple configured crosspoints. Refer to "**Assigning a Salvo Button**".
Shift	Changes the source or destination page of the panel buttons. There are four types of shifts that only apply to sources and destinations, all shift values that are not assigned are ignored. Refer to "**Assigning a Shift Button**".
Source (Src)	Switches the input using the current destination and level pattern. • If the Src button is not active, the default value is switched. • If the Src button is active, the relative source is switched. Refer to "**Assigning Destination and Source Buttons**".
TAKE	The TAKE button confirms input button events. The user sets up a switch, and presses the TAKE button to confirm. Refer to "**Assigning a TAKE Button**".
Take Clear	The CLEAR button cancels input key events.
Unassigned	The button is not assigned any function.

Assigning a Function

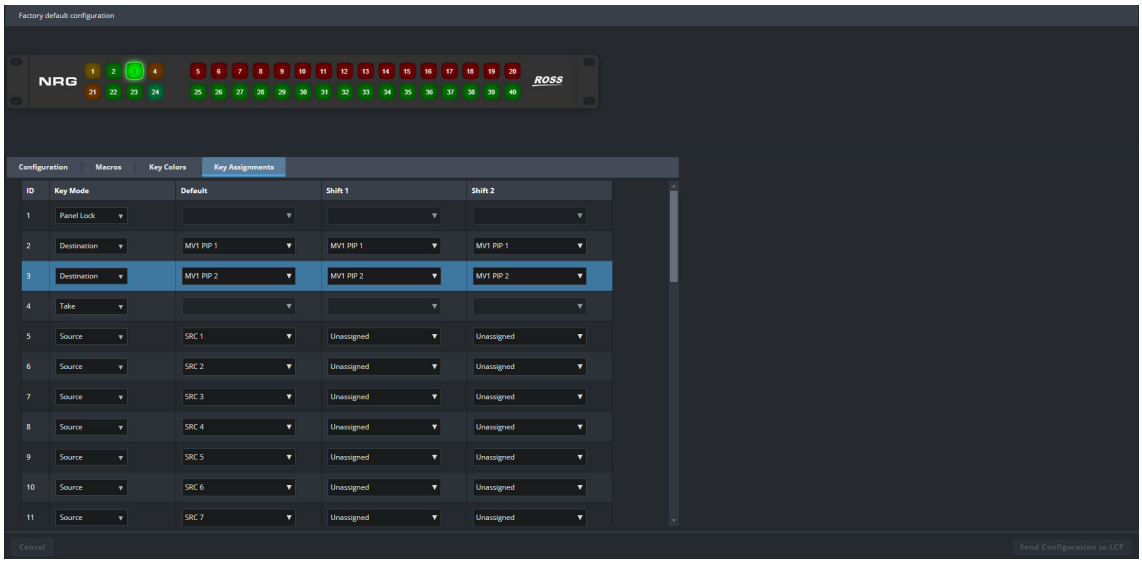
This section provides a general overview of how to assign a function to a front panel button. Details on specific functions are available in subsequent sections.

To assign a function to a front panel button

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Key Assignments** tab.
3. On the simulated NRG panel at the top of the interface, select the button that you want to assign.

   The Key Assignments table updates to highlight the row for the selected button.

   In the following example, the user selected button **3**.



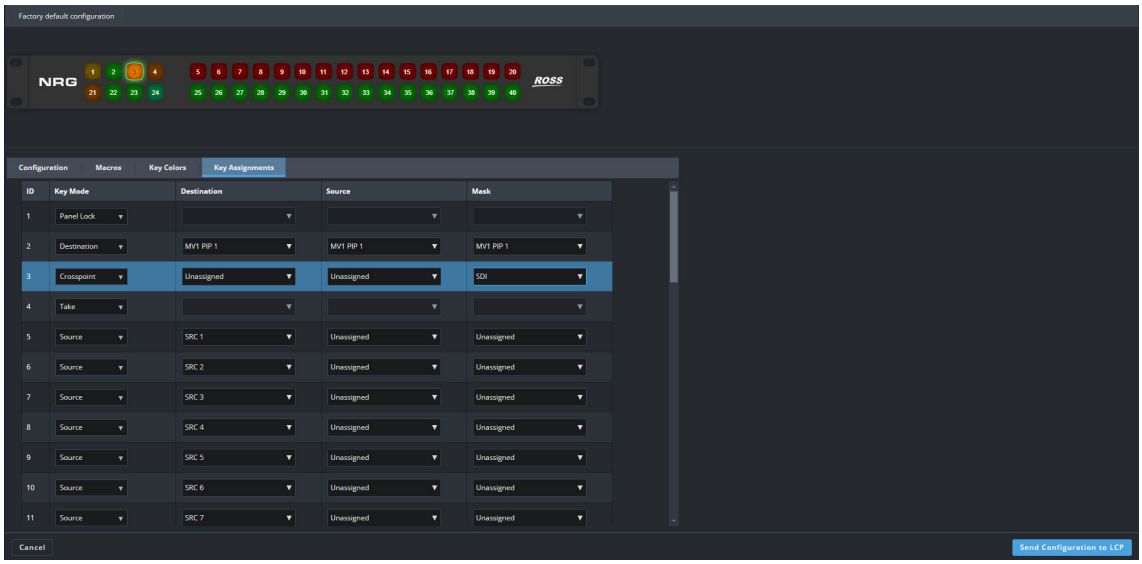
4. Click the **Key Mode** cell in the highlighted row.

   A list of available functions displays. Refer to **Table 57** for a list of functions.

5. Select a function from the **Key Mode** menu.

   The headers in the next three columns update depending on the selected function. The selected button also changes to the color assigned to that specific function (as defined in the Key Colors tab).

   In the following example, the user assigned the **Crosspoint** function to button **3**. The next three columns are now labeled as Destination, Source, and Mask. The button is lit orange.



6. Click **Send Configuration to LCP**.

Assigning a Crosspoint Button

When you make a switch, you need to select the destination, and then the source. When using a multi-level system, you may need to select the level(s) you are switching using a breakaway or level button prior to selecting the destination. This requires multiple button presses. To reduce this effort and the potential for error, common switch sequences may be set up in a crosspoint.

✶ You should record relevant information for the crosspoint and include this in the label for the button.

To assign a crosspoint to a button

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Key Assignments** tab.
3. On the simulated NRG panel at the top of the interface, click the button that you want to assign a crosspoint to.
4. From the **Key Mode** list, select **Crosspoint**.
5. From the **Destination** list, select the physical output that connects to the item of destination equipment to which you want to switch.
6. From the **Source** list, select the physical input that connects to the item of source equipment that provides the required signal.
7. From the **Mask** list, select the breakaway level that you want to use for the switch.
8. Click **Send Configuration to LCP**.

Assigning a Chop Button

If you want to toggle two different sources to the same destination, assign a **CHOP** button to the NRG. For example, the destination may be the monitor that you are viewing, and the sources may be feeds from two different camera locations.

To assign a chop button

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Key Assignments** tab.
3. On the simulated NRG panel at the top of the interface, click the button that you want to assign a chop to.
4. From the **Key Mode** list, select **Chop**.
5. Set the **Toggle Rate** (slow or fast).
6. Click **Send Configuration to LCP**.

Assigning Destination and Source Buttons

Destination and source buttons map the physical connections in the database to the front panel.

✶ The number of inputs and outputs are defined by the active database. Changes to the database will overwrite any manual changes made on the front panel. Refer to "**Mapping the Destinations**" and "**Mapping the Sources**".

Assigning a Destination to a Button

By default, the bottom row of the NRG-FR1-LCP (1-16) and the two bottom rows of the NRG-FR2-LCP (1-32) are assigned as destinations.

To assign a destination to a button

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Key Assignments** tab.
3. On the simulated NRG panel at the top of the interface, click the button that you want to assign a Dst function.

4. From the **Key Mode** list, select **Destination**.
5. Use the **Default** list to select the physical output that connects to the item of destination equipment.

✶ You can use the **State** options to assign three physical outputs to the same button: **Default**, **Shift 1**, and **Shift 2**. When **Shift** buttons are assigned to the NRG, the physical output assigned to that button on that shift page is used for the switch. Refer to "**Assigning a Shift Button**".

✶ If you have virtual routing enabled in the NRG, the output that you enter represents the virtual destination as set up in the Ultricore BCS control system. Refer to the ***Ultrix and Ultricore Database Guide***.

6. Click **Send Configuration to LCP**.

Assigning a Source to a Button

By default, the top row of the NRG-FR1-LCP (1-16) and the top two rows (1-32) of the NRG-FR2-LCP are assigned as sources.

To assign a source to a button

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Key Assignments** tab.
3. On the simulated NRG panel at the top of the interface, click the button that you want to assign a Src function.
4. From the **Key Mode** list, select **Source**.
5. Use the **Default** list to select the physical input that connects to the item of source equipment.

✶ You can use the **State** options to assign three physical inputs to the same button: **Default**, **Shift 1**, and **Shift 2**. When **Shift** buttons are assigned to the NRG, the physical input assigned to that button on that shift page is used for the switch. Refer to "**Assigning a Shift Button**".

✶ If you have virtual routing enabled in the NRG, the input that you enter represents the virtual source as set up in the Ultricore BCS control system.

6. Click **Send Configuration to LCP**.

Assigning a Level Button

Assigning a level to a button enables you to switch to a specific level in the database by pressing the physical button on the front panel.

To assign a level to a button

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Key Assignments** tab.
3. On the simulated NRG panel at the top of the interface, click the button that you want to assign a Level function.
4. From the **Key Mode** list, select Level
5. Use the **Default** list to select the level from the router database.
6. Click **Send Configuration to LCP**.

Assigning a Macro Button

A macro is a sequence of events (e.g. switches) that are assigned to a single button. This section provides instructions for creating and editing macros, and assigning a macro to a button.

For More Information on...

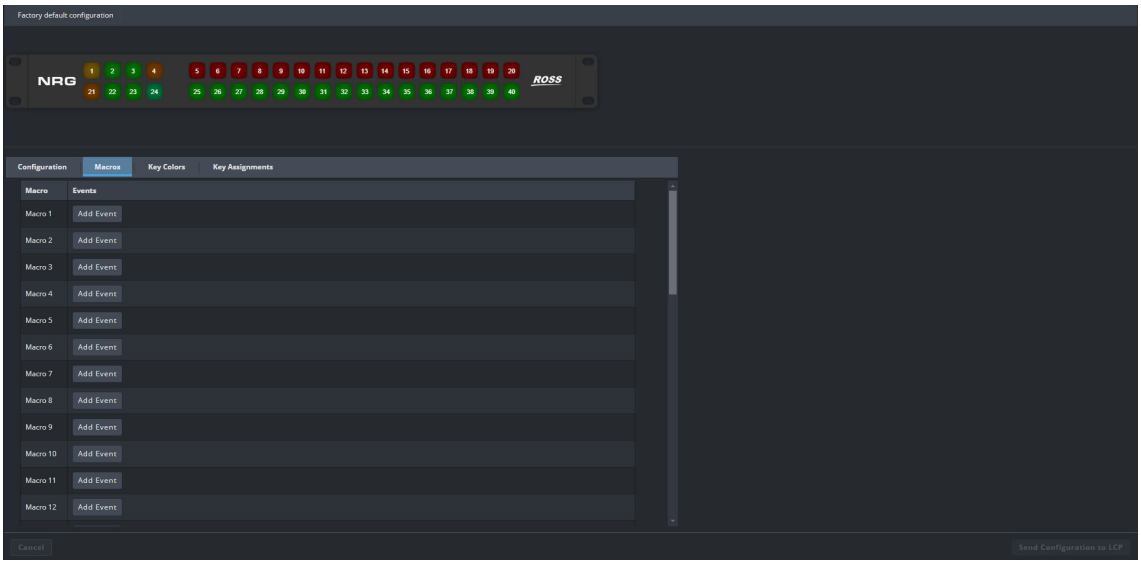
- macros, refer to "**Using Macros**".

Configuring a Macro in DashBoard

Macros can be configured in DashBoard using the options on the **LCP** > **Macros** tab. You can configure up to 40 macros on a single NRG.

To configure a macro using DashBoard

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Macro** tab.

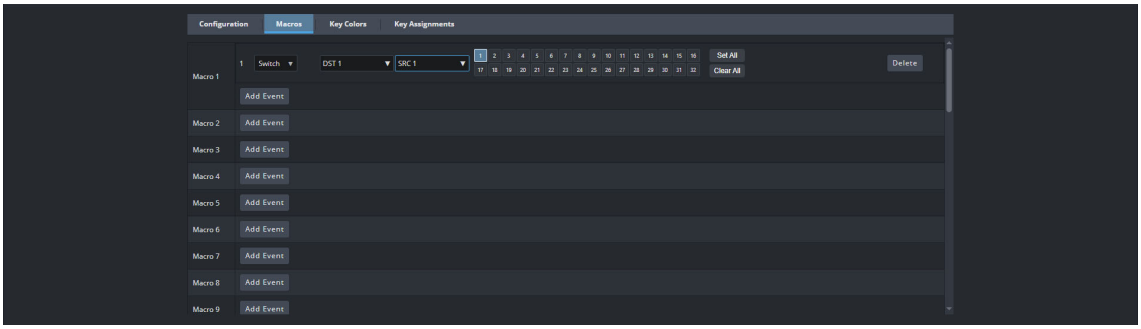


3. Locate the row for the macro you wish to configure.

✶ Each event in a macro is a row within that Macro area.

4. Click **Add Event**.

   In the following example, the user is defining Event 1 of Macro 1.



5. From the first menu, select the task to perform for the event. Choose from the following:
   - **Switch** — performs a standard crosspoint switch.
   - **Macro** — performs a macro within the executed macro. The Output column is the macro number and the other columns have no effect.

- **Protect** — creates a protect condition on the destination of the selected crosspoint. The Dst column is the Output number, the Protect column is the protect status (select Enable to add a TAKE protect for this destination, or Disable to release the protect on this output).
- **Salvo** — performs a salvo within this macro. The Output column is the salvo ID and the other columns have no effect. Refer to "**Creating Salvos**".

The column labels and settings change depending on the event/task selected. Refer to "**Macros Tab**" for information on the available options. For example, iIf you selected **Switch**:

a. From the **Destination** list, select the destination for the event.

b. From the **Source** list, select the source for the event.

c. From the **Selects** area, select the level(s) affected by the macro. A selected level is indicated by a blue square. Note that an NRG controlled system supports a maximum of 4 levels.

✶ Each function can occur on any available level, independent of any other function within the same macro event.

6. Repeat steps 4 to for any remaining events of the macro.
7. Click **Send Configuration to LCP**.

To assign a macro to a button

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Key Assignments** tab.
3. On the simulated NRG panel at the top of the interface, click the button that you want to assign to the macro.
4. From the **Key Mode** list, select **Macro**.
5. From the **Macro** list, select the macro number that you want to assign to this button.
6. Click **Send Configuration to LCP**.

Assigning a Protect Button

A **Protect** button (**PROT**) can be configured in one of two different modes of operation (only one mode can be configured at a time):

- **Protect** mode — places a block on the current destination, preventing it from being controlled (selecting other sources) by any other control device (e.g. soft panels, third-party control devices, remote control panels). The NRG that instigates the Protect will be the only control device that may control the protected destination.
- **Lock** mode — places a block on the current destination, preventing it from being controlled (selecting other sources) by ALL remote control devices (e.g. soft panels, third-party control devices, remote control panels).

✶ A **PROT** button can be pressed and held to engage **Lock** for that NRG. Refer to "**Assigning a Panel Lock Button**".

Assigning a Protect Button

To prevent switching of critical crosspoints by others, assign a protect button for use on the NRG. The protect function ensures that the selected destination can only receive the selected source across the selected levels. Once protected, the selected levels on a destination cannot be switched by other remote control panels (or by the current control panel if **Block All Panels** is selected). The source is not protected and can be freely routed to other destinations if required. You can protect any number of destinations.

To configure the Protect button

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Key Assignments** tab.
3. On the simulated NRG panel at the top of the interface, click the button that you want to assign to a Protect or Destination Lock function.
4. From the **Key Mode** list, select **Protect**.
5. Click **Send Configuration to LCP**.
6. Select the **Configuration** tab.
7. Use the **Protect mode** menu to determine the mode of protection that you want to use for the button. Choose from the following:
   - **Block Other Panels** — The button functions as a **Protect**. The protected destination and level(s) cannot be switched to another source by other remote control panels. The protected destination and level(s) can be switched to another source on the current control panel.
   - **Block All Panels** — The button functions as a **Lock**. The protected destination and level(s) *cannot* be switched to another source by the current control panel or other remote control panels.
8. Click **Send Configuration to LCP**.

Assigning a Panel Lock Button

A Panel Lock (**LOCK**) button can be used to place a lock on all buttons of the front panel, it will not respond to button presses when enabled. By default, this button is disabled (unlocked).

To assign a Panel Lock button

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Key Assignments** tab.
3. On the simulated NRG panel at the top of the interface, click the button that you want to assign to a Panel Lock function.
4. From the **Key Mode** list, select **Panel Lock**.
5. Click **Send Configuration to LCP**.

Assigning a Salvo Button

A salvo is a predefined list of switch events. Salvos are stored within the router database. Salvo names are defined in the database. This section provides instructions for assigning a salvo to a button.

For More Information on...

- salvos in the database, refer to "**Creating Salvos**".

To assign a salvo to a front panel button

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Key Assignments** tab.
3. On the simulated NRG panel at the top of the interface, click the button that you want to assign to the salvo.
4. From the **Key Mode** list, select **Salvo**.
5. Use the **Salvo** list to select the salvo to assign.

6. Click **Send Configuration to LCP**.

Assigning a Shift Button

A **Shift** button enables you to access another page of source or destination locations. This is useful for switching larger routing systems when you do not have enough buttons for each source or destination. A **Shift** button is applicable to a source or a destination button.

To assign a Shift button

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Key Assignments** tab.
3. On the simulated NRG panel at the top of the interface, click the button that you want to assign to a Shift function.
4. From the **Key Mode** list, select one of the following:
   - **DST Shift #** — The selected button is now a **Shift** for the Destinations. You can assign up to two **SHIFT** buttons for the Destinations. Refer to "**Assigning a Destination to a Button**" to learn more about assigning destinations to additional pages.
   - **SRC Shift #** — The selected button is now a **Shift** for the Sources. You can assign up to two **SHIFT** buttons for the Sources. Refer to "**Assigning a Source to a Button**" to learn more about assigning sources to additional pages.
5. Click **Send Configuration to LCP**.

Assigning a TAKE Button

A **TAKE** button confirms input button events. By default, a **TAKE** button is configured on the front panel. All switches are activated by pressing the **TAKE** button instead of a source/crosspoint/macro /salvo button.

✶ If a **TAKE** button is not assigned, events are immediately executed without confirmation.

To assign a TAKE button

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Key Assignments** tab.
3. On the simulated NRG panel at the top of the interface, click the button that you want to assign to a TAKE function.
4. From the **Key Mode** list, select **TAKE**.
5. Click **Send Configuration to LCP**.

Assigning a TAKE CLEAR Button

The TAKE CLEAR (**CLR**) button cancels input button events.

To assign a TAKE CLEAR button

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Key Assignments** tab.
3. On the simulated NRG panel at the top of the interface, click the button that you want to assign to a TAKE CLEAR function.
4. From the **Key Mode** list, select **CLEAR**.
5. Click **Send Configuration to LCP**.

Clearing a Button Function

A button labeled as Unassigned in the **LCP** interface indicates that the button does not have a function assigned to it and therefore does nothing when pressed. Select it to clear a button of any function assignment. If a button is not used for any function it should be unassigned.

To clear a function from a button

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".
2. Select the **Key Assignments** tab.
3. On the simulated NRG panel at the top of the interface, click the button that you wish to no longer use for a specific function.
4. From the **Key Mode** list, select **UNASSIGN**.
5. Click **Send Configuration to LCP**.

LCP Operation

This chapter provides a general outline of how to use the front panel buttons on the NRG-FR1-LCP and NRG-FR2-LCP.

Before You Begin

Keep the following in mind:

- Unless otherwise stated, the default panel configuration is used.
- The images in this chapter are used to illustrate the behavior of the button and not the default color assigned to the function/button.
- While an NRG-FR1-LCP may be used as an example, the operation is the same for the NRG-FR2-LCP.

Selecting a Destination

Selecting a destination (**Dst**) button changes the virtual destination the NRG controls or switches the next time a Source (**Src**) button is pressed. When a **Dst** button is pressed, the button and its source status button (if a preset exists) will be illuminated.

✶ If there are no destination buttons assigned to a custom LCP, it operates according to the Cutbus mode setting (if configured). Refer to "**Cutbus Mode**" for details.

Figure 37 shows that the user selected **Dst4** which has a preset of **Src2** on an NRG-FR1-LCP. Notice that **Src2** is illuminated (as the status preset).

Figure 37 Example of Selecting a Destination on the NRG-FR1-LCP Front Panel

Figure 38 shows that the user selected **Dst4** which has a preset of **Src2** on an NRG-FR2-LCP. Notice that **Src2** is illuminated (as the status preset).

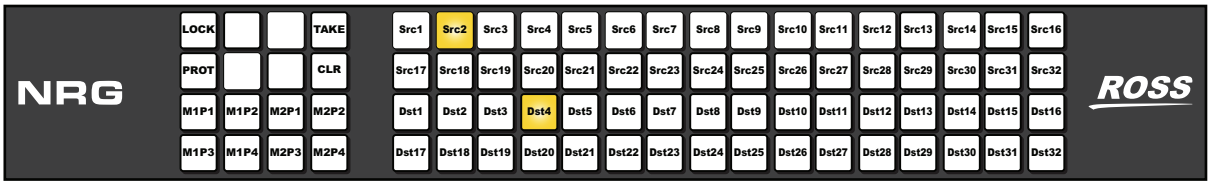


Figure 38 Example of Selecting a Destination on the NRG-FR2-LCP Front Panel

Selecting a Source

Source switching is performed by pressing a preset **Src** button. Selecting a **Src** (when a **TAKE** button is not assigned) results in the NRG requesting the selected source to be switched by the router to the current destination.

If the switch request was successful, the preset **Src** button is illuminated. If the switch was not successful or generated errors, the button will flash several times quickly to indicate that an error has occurred. If a **TAKE** button is assigned, the **TAKE** button will be illuminated and the preset **Src** button will flash (this indicates that **TAKE** is armed). To perform the switch, press the **TAKE** button or press the **CLR** button to cancel.

Figure 39 shows that the current destination **Dst4** which as the preset **Src8** and **TAKE**. The user selected **Src6** arming the **TAKE**.

Figure 39 Example of Selecting a Source and TAKE on an NRG-FR1-LCP

Figure 40 shows the results after a successful **TAKE** is issued.

Figure 40 Example of After Selecting a Source and TAKE on an NRG-FR1-LCP

Using a Shift Button

Shift buttons allow the different pages or sets available to preset **Src** and **Dst** buttons to be accessed. Up to three different sets of **Src** and/or **Dst** buttons may be accessed from the panel. The **SRC Shift** buttons change the current set of **Src** buttons available on the panel and the **DST Shift** buttons change the current set of **Dst** buttons available. All other buttons are not affected by **SHIFT** buttons.

✶ **Shift** buttons are not available on the default configuration. Refer to "**Assigning a Shift Button**" for details on configuring a Shift button.

When no **SHIFT** buttons are selected, the buttons are on the first or default page/set. By pressing a specific **SRC Shift** or **DST Shift** button, the panel immediately changes its relevant sources or destinations to the specified set. A **Shift** button is active when illuminated. Pressing a **Shift** button again, toggles it to the default button set. As the sets change if a **Src** or **Dst** button matches the currently controlled destination or the source status that button will be illuminated.

Using a Crosspoint Button

CROSSPOINT buttons perform a preset crosspoint switch in a single button press, and the button will illuminate to indicate the state of that crosspoint. When a crosspoint switch is performed the panel's current destination, and source changes to those specified in the **CROSSPOINT** button assignment.

If a **CROSSPOINT** button's preset destination and source status matches that destination's source status in the router on all levels the button will be illuminated. If a **TAKE** button is assigned, the **TAKE** button is illuminated and the preset **CROSSPOINT** button flashes (this indicates that **TAKE** is armed).

✶ A **CROSSPOINT** button is not available on the factory default configuration. Refer to "**Assigning a Crosspoint Button**" for details on configuring this button.

Selecting a Level

A **LEVEL** button selects the router level to execute switches on. In the factory default mode, there are no level buttons assigned to the LCP since there is only one level in the default database. If a single level exists, it is asserted. Up to 4 levels can be configured in the active database.

Using Macros

Macros can be used to initiate multiple switches in one quick button press. Several **MACRO** buttons can be assigned to one panel and then different macros recorded to each button. When users are required to regularly switch between two or more static switch assignments, macros can be used to switch these in one easy button press.

A macro is an event playback feature similar to a salvo. A salvo will only trigger a series of switches, whereas a macro will record a series of events for express playback at a later time. When the macro is played back, it will activate a sequence of switches to configure the router. Macros can be extremely valuable in minimizing repetitive button presses by configuring multiple switch events (source, destination and crosspoint) to one button.

A macro event comprises a source, destination, crosspoint, macro, or protect button press. When appending one macro to another, this is counted as one (1) event.

For More Information on...

- creating macros using DashBoard, refer to "**Assigning a Macro Button**".

Overview

A **MACRO** button can store a maximum of 84 events and users can assign up to 40 **MACRO** buttons on the NRG panel. It is recommended that users with only a single, unlinked router only assign two or three **MACRO** buttons. Users who have several linked routers may find it convenient to have one NRG set aside solely for the purpose of macros and assign as many **MACRO** buttons as is required.

✶ Pressing a **SHIFT** button when recording a macro does not count as an event, as the macro recorder simply recognizes that the button that is actually pressed is the relevant source or destination.

Defining Macros from the Front Panel

To define a macro, you first need to start Macro Recording mode via the front panel.

1. Hold down the **MACRO** button for about three seconds.

   The **MACRO** button will flash quickly to indicate that the panel is initiating Macro Recording mode.

2. Release the **MACRO** button.

   The **MACRO** button will flash slowly to indicate that the panel is in Macro Recording mode.

3. Enter the events you wish to record, as you would if you were to activate a switch.

   Button presses will be acknowledged by a quick flash on the button you have entered into the macro.

4. When you have finished entering switch events, press the **MACRO** button.

   The **MACRO** button will stop flashing to indicate the panel has exited Macro Recording mode.

Appending Macros

Appending macros is a feature that allows the addition of more events (or another macro) to an already existing macro using the front panel.

To append a macro, you first need to enter Macro Recording mode, and then enter Macro Recording mode again to append the macro.

1. Hold down the **MACRO** button for about three seconds.

   The **MACRO** button will flash quickly to indicate that the panel has initiated Macro Recording mode.

2. Release the **MACRO** button.

   The **MACRO** button will flash slowly to indicate that the panel is in Macro Recording mode.

3. Hold down the **MACRO** button again (this will play back the macro internally so that it may be appended).

   The **MACRO** button will flash quickly.

4. Release the **MACRO** button.

   The **MACRO** button will again flash slowly to indicate that the panel is in Macro Recording mode.

5. Enter the events you wish to record as you would if you were to activate a switch.

   Button presses will be acknowledged by a quick flash on the button you have entered into the macro.

6. When you have finished entering switch events, press the **MACRO** button.

   The **MACRO** button will stop flashing to indicate the panel has exited Macro Recording mode.

✶ When appending macros or adding one macro to another, if you use a single input or output in more than one macro, it will override the previous status of that button.

Adding one Macro to another Macro

Adding one macro to another can be useful when you have more than one macro that shares the same output status (the same source to destination switch assignments) but where one macro also has output status that the other macro has not assigned.

As the macro function is only an event recorder, other macros are stored as one single event, not the sum of the events in that macro. Similarly, if a macro that has already been added to another macro is changed, the appended macro when played back will reflect that change.

Figure 41 Example of Adding one Macro to Another Macro

In the example above, the Macros are as follows:

- **MCR1** = Src 1 to Dst 1, 2 and 3, and also sends Src 2 to Dst 7, 8, and 9.
- **MCR2** = Src 1 to Dst 4, 5, 6 and 7, and also sends Src 2 to Dst 8 and 9.

In this example, because Dst 7 is used twice, the last status added will be the one used when the macro is played back. The final status of **MCR1** when it is played back will be as such will be:

- Src 1 to Dst 1, 2, 3, 4, 5, 6, and 7.
- Src 2 to Dst 8 and 9.

To cancel recording or appending a Macro, press the **MACRO** button after entering Macro Recording mode.

✶ Macros can not be canceled after entering events in Macro Recording mode. If a mistake has been made, you will have to exit Macro Recording mode and enter it again to re-enter events you wish to be played back.

Using a Macro

Ensure you recorded a macro and assigned it to a physical button on the front panel.

To use a macro

1. Create a macro.
2. Press the required **MACRO** button on the NRG front panel.
3. If a **TAKE** button is assigned, press **TAKE**.

Using a Salvo

Salvos are a selected series of crosspoints to switch in the routing matrix that can be saved and later recalled for crosspoint transitions.

To select a salvo via the front panel

1. Create a salvo as outlined in "**Creating Salvos**".
2. Press the assigned **Salvo** button on the front panel.
3. If a **TAKE** button is assigned, press **TAKE**.

Using the Protect Button

The **PROT** button is used to lock the current destination from use by other sources, as well as from other linked panels. The **PROT** button is especially useful in instances where a destination must be held after a switch has been made.

✶ A **PROT** button is available on the factory default configuration.

The operating mode of the **PROT** button is determined by the configured mode in DashBoard. Refer to "**Assigning a Protect Button**".

Using the Panel Lock

A panel may be locked to prevent unwanted button presses (particularly accidental switches).

The Protect (**PROT**) function and the Panel Lock (**LOCK**) function are interchangeable. If both function buttons are configured on one panel, a panel lock can be activated from one button, and deactivated from the other.

To activate the panel lock from the front panel

1. Hold down the **PROT** button for about three seconds.

   The **PROT** button will flash quickly to indicate that the panel lock has been activated.

2. Release the **PROT** button.

   The **PROT** button will flash slowly to indicate that the panel is locked.

Using the TAKE Button

A **TAKE** button is used to activate the selected switch. When a **TAKE** button is assigned, the selected source/crosspoint/macro button and the **TAKE** button flash to indicate that the NRG is waiting for **TAKE** to be pressed.

✶ A **TAKE** is also required macro/salvo/crosspoint button selections and Cutbus mode.

✶ A **TAKE** button is available on the factory default configuration.

1. Press the required **Dst** button.
2. Press the required **Src** button.

   The **Src** button on the panel flashes and the **TAKE** button illuminates.
3. To activate the switch, press the **TAKE** button.

   The entered crosspoint change will be completed immediately after the **TAKE** button has been pressed. This enables you to preset a crosspoint change before the switch is required. The pending switch can be aborted by pressing any button other than the **TAKE** button.

Using the TAKE CLEAR Button

Use the **CLR** button to cancel input button events.

✶ A **CLR** button is available on the factory default configuration.

Using the CHOP Button

The **CHOP** button enables the user to alternate between two sources.

✶ When **CHOP** is enabled, all other buttons are disabled.

1. Pressing **CHOP** will alternate the two previously selected sources for a given destination.
2. Pressing **CHOP** once will start a slow chop.
3. Pressing **CHOP** again will increase the speed of the chop to a fast chop and pressing again will discontinue the chop mode.

Cutbus Mode

Cutbus is a configuration that creates a default switching panel that only affects assigned outputs on a particular router. The NRG has two modes of cutbus operation: normal, or off. This section provides instructions on how to create a default switching panel that only affects assigned outputs on a particular router.

Keep the following in mind:

- All destinations/crosspoints must be removed from the panel.
- If a **TAKE** is assigned, and **TAKE** must be issues for switch to occur.

Normal Cutbus Mode

Cutbus is a configuration that creates a default switching panel that only affects assigned outputs on the router. The front panel operates in either Single Cutbus mode or Dual Cutbus mode.

- Single Cutbus Mode — on the Configuration tab in DashBoard, Cutbus Dest 1 equals Cutbus Dest 2.

- Dual Cutbus Mode — on the Configuration tab in DashBoard, Cutbus Dest1 does not equal Cutbus Dest 2.

To set up normal Cutbus operation

1. Display the **LCP** interface as outlined in "**To display the LCP interface**".

   The **Configuration** tab is automatically selected.
2. Ensure that there are no destinations or crosspoints assigned to any buttons on the NRG.
3. From the **CutBus Mode** options, select **Normal**.
4. From the **Cutbus Dest 1** box, enter or select the destination output for the top row of buttons.
5. From the **Cutbus Dest 2** box, enter or select the destination output for the bottom row of buttons to use dual cutbus mode. Set the destination to the same destination as Cutbus Dest 1 if you want to use single cutbus mode.
6. Click **Send Configuration to LCP**.

Linked LCP Operation

When multiple NRG routers are linked together, button behavior remains as above (with single panel system), although the following details must be noted when linking routers:

- Pressing **CHOP** will alternate between two sources, including cases when the sources are on different physical routers.
- Pressing **TAKE** will activate a take, including cases when the **Src** button is on a different router to the **TAKE** button.
- If any linked router has a **TAKE** button, the linked device enters TAKE mode when a **Src** or **CROSSPOINT** button is pressed.
- Locking one physical router will also lock all linked routers.
- Entering Macro Recording mode causes all linked routers to be in Macro Recording mode, switch events and protects can be added from different physical routers.
- Macros cannot be appended or added across routers.
- **SHIFT** buttons control source and destination for the whole linked router.
- **Dst** buttons control the destination for the whole router.
- **LEVEL** buttons control the level mask for the whole router.
- If an NRG router is added to an operating linked router, the newly linked router changes its states in regards to **TAKE**, **PANEL LOCK**, and Cut-bus mode accordingly.
- If a linked NRG is added to an operating linked device that is in **TAKE**, **CHOP**, **PANEL LOCK**, or Macro Recording mode, it starts in that mode.

Soft Panels in DashBoard

A soft panel is a software implementation of a physical remote control panel (RCP). The soft panel configurations are part of a database. Any instance of DashBoard connecting to the NRG has the defined soft panels available. You can customize a soft panel by defining the sources, destinations, levels, and/or salvos that will be available on the soft panel interface.

This chapter outlines how to create, display, and use the soft panels for your NRG router.

Before You Begin

Keep the following in mind when managing your soft panels in DashBoard:

- Soft panels require the setup of the database resources (sources, destinations, levels, salvos, aliases, and port assignment) to be complete.
- If the database changes, you will need to verify each soft panel configuration to ensure the correct resources are still visible.
- The NRG does not support Unicode characters in database entries and soft panel fields.
- Two default push button soft panels are automatically created in the default database: Control (confirm take) and Control (direct take).

Default Soft Panels Overview

By default, two Push Button soft panels are available in the default database: Control (confirm take) and Control (direct take). Each default soft panel is organized into a landscape format with five distinct areas.

For More Information on...

- using the default soft panels, refer to "**Crosspoint Switches via a Default Soft Panel**".

Figure 42 is an example of the Control (confirm take) Push Button soft panel.

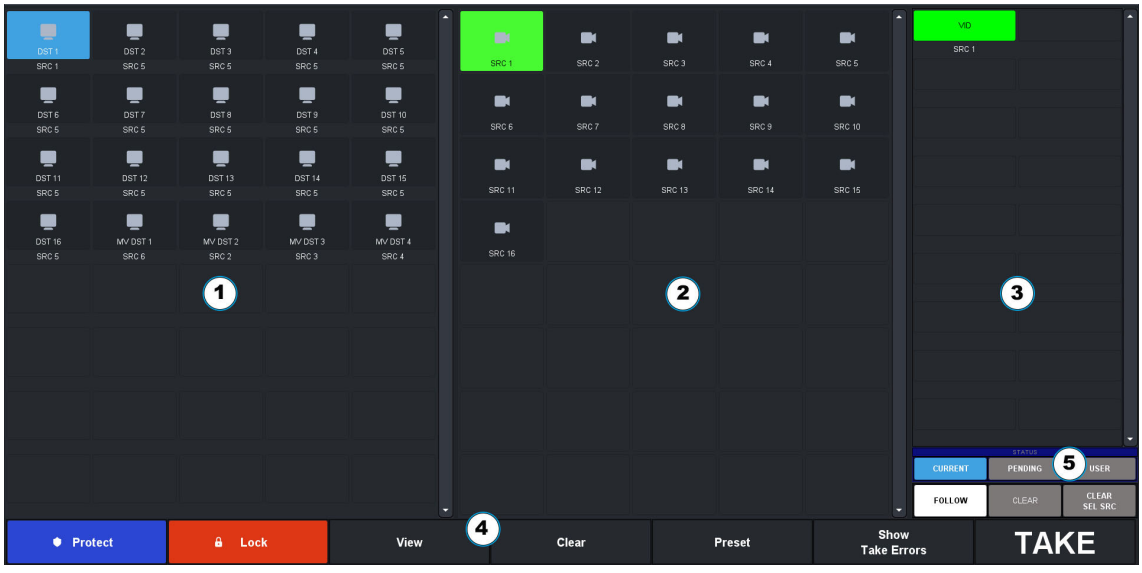


Figure 42 Example of the Default Control (confirm take) Soft Panel

Figure 43 is an example of the Control (direct take) Push Button soft panel.

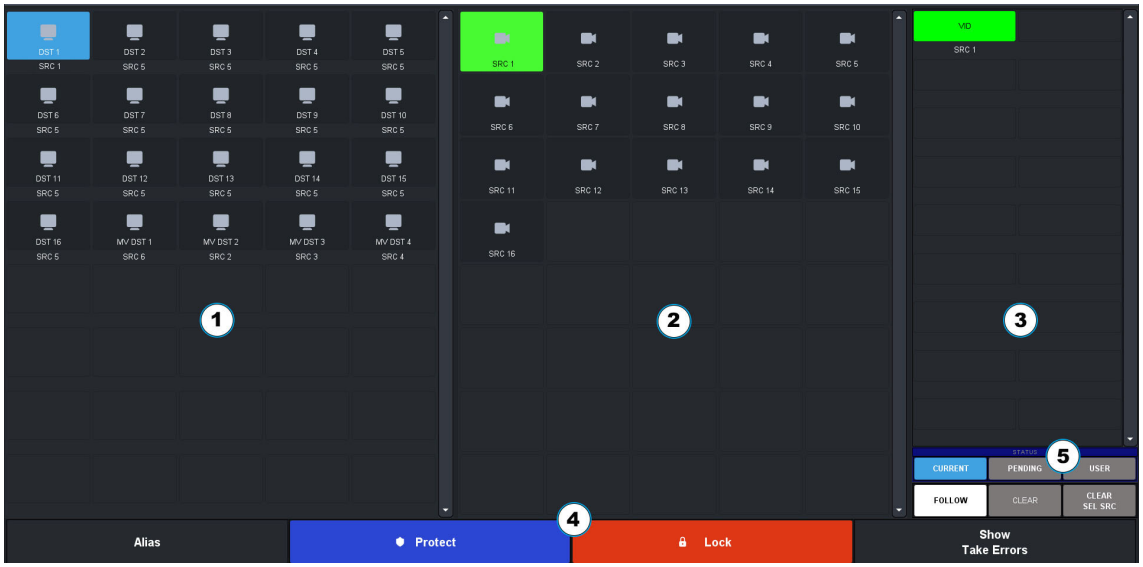


Figure 43 Example of the Default Control (direct take) Soft Panel

1) Destinations Area	2) Sources Area	3) Levels Area	4) Operation Area	5) Additional Toolbar

1. Destinations Area

The **Destinations** area displays the available destinations for router control. Select a button to arm that destination for subsequent panel operations. Beneath each destination button is displayed the current source for that destination.

›  — the current destination is locked. No switches can be made on this destination.

›  — the current destination is protected. Only the panel that initiated the protect may switch this destination.

2. Sources Area

The **Sources** area displays the available sources for router control. Select a button to control the crosspoint for the currently selected destination.

3. Levels Area

Each router level is represented as a button in the color defined in the active database. Select a button to include that level in the next crosspoint switch. A lit button indicates that the corresponding level will be included in the next transition.

4. Operation Area

The bottom toolbar of each soft panel provides buttons for soft panel and router control:

› **Alias** — click this button to apply a virtual label set to the soft panel source and destination buttons. Refer to "**Using an Alias Set**" for details on creating virtual labels in your database.

› **Protect** — when selected, it prevents switching of the selected destination except by the panel that initiated the protect. If you are using a soft panel with the **Protection Operation** set to **Disable**, the **Protect** button is not displayed.

› **Lock** — click this button to prevent switching of the selected destination by an control device. Only the panel that initiated the lock may change the lock status. If you are using a soft panel with the **Protection Operation** set to **Disable**, the **Lock** button is not displayed.

› **View** — displays the current crosspoint switch requests currently in the preset list. Individual crosspoints may be removed via the list view.

- **Clear** — clear the list of all crosspoint selections (clears the current TAKE queue).
- **Preset** — adds the current destination/source/level selection to a preset list. This enables the user to add more switches and execute them all with a single take operation. The preset function is only available for the Control (confirm take) soft panel. Use this button to queue up multiple TAKE commands. Select a destination/source combination, then click Preset. Select another destination/source combination then click Preset. A following TAKE command will execute all the Preset switches. To view the switch commands queued by the Preset, click View.
- **Show Take Errors** — displays a summary of the error conditions that were detected each time a switch command was executed. Click Close to the exit the dialog.
- **TAKE** — is lit when the current destination/source selection is ready to be requested of the router. This button is only available for the Control (confirm take) soft panel.

5. Additional Toolbar

The following additional buttons are available:

- **Current** — the status of the last crosspoint switch.
- **Pending** — the status of the upcoming crosspoint switch.
- **User** — This button shows current lock/protect status of each levels (and the soft panel name that is currently owned it). Since the soft panel does not recognize the names of remote control panels (RCP) to retrieve their name, a “owner #” name is used.
- **Follow** — Click this button to select all levels in the panel. Clicking **TAKE** after pressing **Follow** will then switch all crosspoints at the same time on all available levels. Note that on Matrix panels, the Follow button is located under the Levels buttons.
- **Clear** — discards all selections on the panel interface.
- **Clear SEL Src** — clears individual source selections by selecting the levels to be cleared.

Types of Soft Panels

This section briefly outlines the types of soft panels you can choose to create in your active database.

Matrix Panels

Matrix panels enable you to perform direct and confirm take transitions, and salvo definitions using a grid of sources and destinations. Each level is represented as a button in the color defined in the active database. Notice that the crosspoints are represented in the same color as the applicable level.

The number of Destinations and Sources and their labels in the matrix are specified using the **Destinations** and **Sources** interfaces. Click within the matrix or click the Destination and Source buttons to select the crosspoints for switching the selected levels.

Figure 44 Example of a Matrix Soft Panel

1) Destinations Area	2) Sources Area	3) Levels Area	4) Operation Area

1. Destinations Area

The **Destinations** area displays the available destinations for router control. Select a button to arm that destination for subsequent panel operations.

2. Sources Area

The **Sources** area displays the available sources for router control. Select a button to control the crosspoint for the currently selected destination.

3. Levels Area

Click a level button to include that level in the next crosspoint switch. A lit button indicates that the corresponding level will be included in the next transition. The color and name of the button are specified using the **Levels** interface.

4. Operation Area

This area can include the following buttons:

- **TAKE** — Click this button to execute the switch between crosspoints. If you are using a soft panel with its Take operation set to Direct, a TAKE button is not displayed because the transitions will occur automatically after a crosspoint switch is selected.
- **Lock** — Click this button to prevent switching of the selected crosspoints. When creating the soft panel, if the Protection operation was set to Disable, the Lock and Protect buttons are not displayed.
- **Protect** — Click this button to prevent switching of the selected crosspoints except in the DashBoard client session the Protect was initiated in.
- **Free** — Click this button to end a lock or protect on the selected crosspoints.
- **Salvo** — Click this button to display the Salvo menu. Refer to "**Creating Salvos**".
- **Advanced** — Click this button to display the Advanced menu. The following options are available:
  - Clear All Presets — Removes all selections currently made on the soft panel and returns the panel to its default destination and source selections.
  - Clear Dest Presets — Removes only the selections made on the Destinations bus.

- Diagonal Presets — The destination and source crosspoint selections are automatically made starting at the top left corner and progressively moving down the grid in a 1:1 pattern. For example, Src1 and Dest1, Src2 and Dest2, Src3 and Dest3 etc.
- R-Diagonal Presets — The destination and source crosspoint selections are automatically made starting at the top right corner and progressively moving down the grid in a 1:1 pattern. For example, Src10 and Dest1, Src9 and Dest2, Src8 and Dest3 etc.
- Setup Automation — Automatically loops the crosspoint switches for the specified length of time.
- Stop Automation — Stops the automatic loop of crosspoint switches that was initiated using the Setup Automation option.

- **Machine Control** (not shown) — If you are using a soft panel with the Machine control set to Enabled, the MACHINE CONTROL button is displayed.
- **Find** — Click this button to quickly navigate to known source or destination names.
- **Filter** — Click this button to reduce the number of source and/or destinations visible in a matrix panel. This enable a user to filter a matrix panel view to only source/destinations that match entered text.
- **Show Take Errors** — Click this button to display a summary of the number of failed TAKE transitions.

MultiBus Panels

A MultiBus Panel provides breakaway control and status monitoring of several destinations simultaneously.

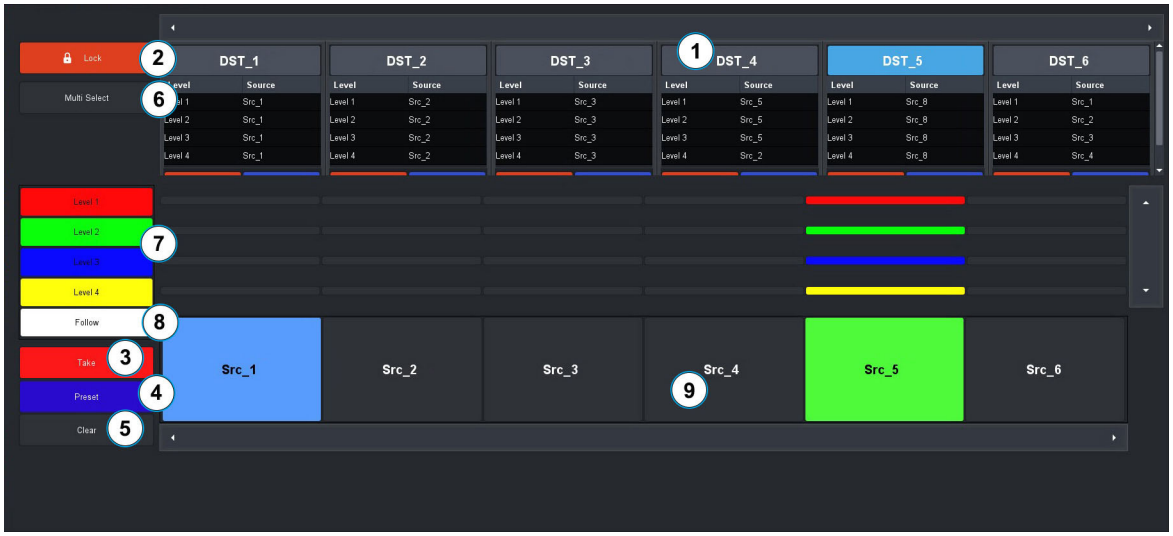


Figure 45 Example of a MultiBus Panel

1) Destination Bus	4) Preset Button	7) Level Button(s)
2) Lock Button	5) Clear Button	8) Follow Button
3) Take Button	6) Multi Select Button	9) Source Bus

1. Destination Bus

Each button in this crosspoint row represents a configured output for the selected router. Selecting a button includes the destination in the next crosspoint switch. The number of destinations and label for each button is defined by its entry in the Destinations interface. A destination selected to be included in the next crosspoint switch will have a lit button. For example, **DST_5** is selected in **Figure 45**.

2. Lock Button

Click this button to prevent switching of the selected crosspoints. If you are using a soft panel with the **Protection Operation** set to **Disable**, the **Lock** button is not displayed.

3. Take Button

Click this button to execute the switch between the selected crosspoints. If you are using a soft panel with the **Take operation** set to **Direct**, a **TAKE** button is not displayed because the transitions will occur automatically after a crosspoint switch is selected.

4. Preset Button

When this button is lit, a new crosspoint switch is set up on the soft panel. At least one source, once destination, and one level are selected on the interface (the **Dest** and **Src** buttons are lit blue to indicate their inclusion in the next switch).

✶ When this button is not lit, the crosspoint switch setup is still valid but is no longer indicated on the soft panel.

If you are using a soft panel with the **Take Operation** set to **Confirm**, the crosspoint switch will take effect the next time the **TAKE** button is selected. If you are using a soft panel with the **Take Operation** set to **Direct**, a **TAKE** button is not displayed because the transitions occurred automatically (hot-punch operation).

5. Clear Button

Clicking this button clears the selections made for the next crosspoint switch in the soft panel interface.

6. Multi Select Button

Clicking this button enables you to perform a switch on multiple crosspoint combinations. If you are using a soft panel with the **Selection Operation** set to **Single**, a **Multi Select** button is not displayed.

7. Level Button(s)

Click a level button to include the level in a crosspoint that you are configuring in the matrix. A lit button indicates that the corresponding level will be included in the next transition. The color and name of the button are specified using the **Levels** interface. **Figure 45** illustrates a MultiBus panel with four levels (the maximum number of levels that the NRG supports).

8. Follow Button

Click this button to select all levels in the matrix. If you are using a soft panel with the **Take operation** set to **Confirm**, pressing **TAKE** after pressing **Follow** will then switch all crosspoints at the same time on all available levels.

9. Source Bus

Each button in this crosspoint row represents an input in the routing system. Selecting a button includes the source in the next crosspoint switch. The label for the button is defined by its entry in the Sources interface of the Database. A source selected to be included in the next crosspoint switch will have a lit button. For example, in **Figure 45** the **Src_1** is selected for the next transition while the **Src_4** is the current source in use.

Salvo Buttons (not shown)

This area displays a button for each salvo available to this soft panel. Selecting a button will execute the related salvo.

Machine Control Button (not shown)

If you are using a soft panel with the **Machine control** set to **Enabled**, the **MACHINE CONTROL** button is displayed.

Group and Cat/Index Panels

Category panels organize sources, destinations and levels based on the settings in the Group Category and Cat/Index interfaces. The soft panel interface for each category type (Group, Cat/Index) is similar in layout and available buttons. (**Figure 46**, **Figure 47**)

✶ The Group and Cat/Index categories must be first configured in the database. Refer to "**Using Group Categories**" and/or "**Using Cat/Index Categories**" for details.

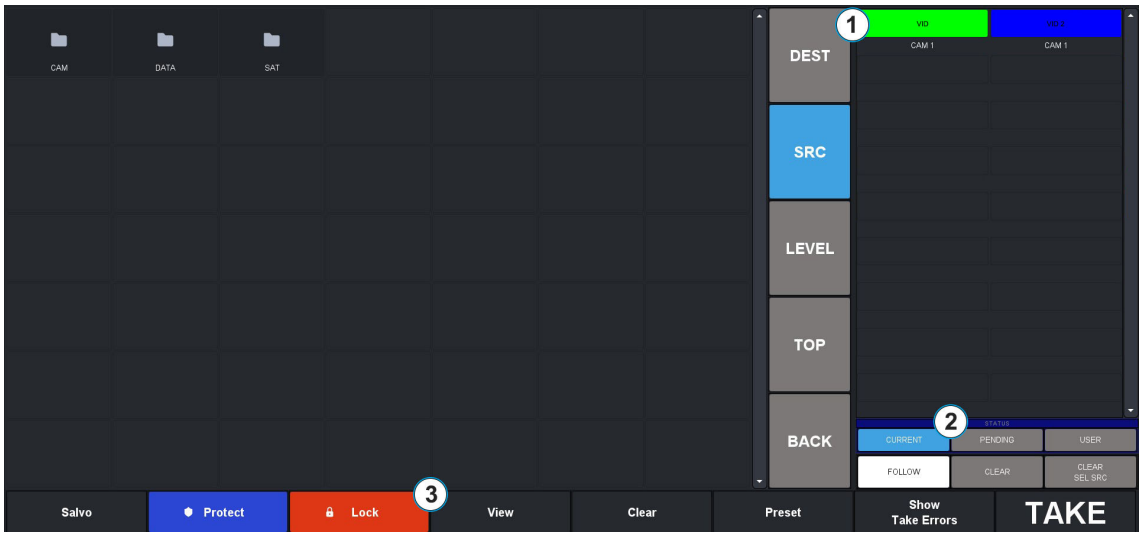


Figure 46 Example of a Group Category Soft Panel

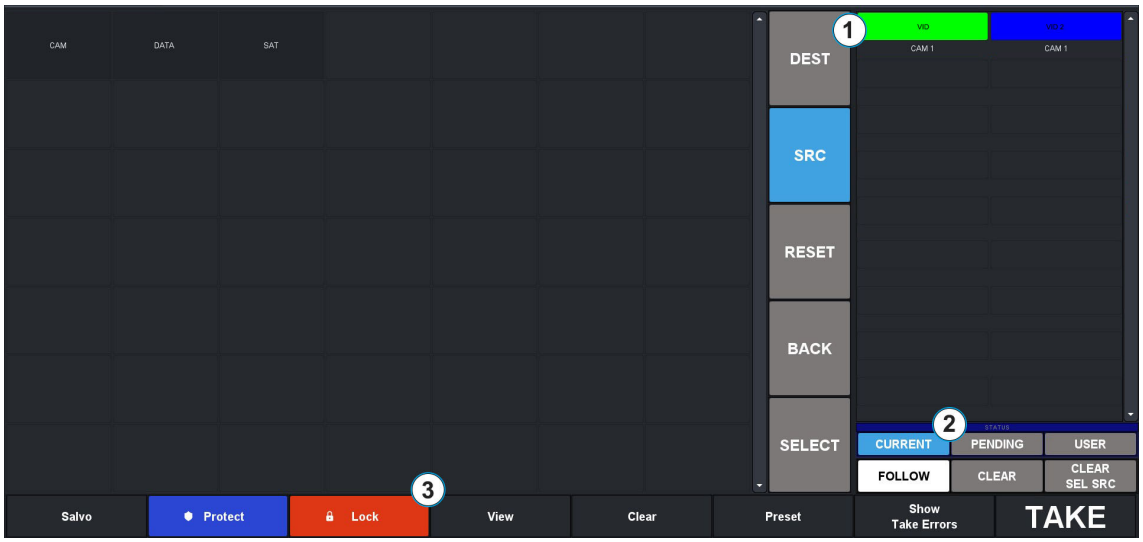


Figure 47 Example of a Cat/Index Soft Panel

1) Group Window	2) Status Window	3) Control Area

1. Group Window

This area of the soft panel interface may include the following buttons:

› **DESTINATIONS**, **SOURCES**, **LEVELS** — Clicking one of these buttons updates the crosspoint area to display the selected resource (destinations, sources or levels) available as per the selected category. The button labels update to display the assigned labels. Note that the NRG supports a maximum of 4 levels.

› **TOP** — Click this button to return the crosspoint area to display the selected resources. This button is only available on the Group Category soft panels.

› **BACK** — Click this button to return the navigation to the previous category selection (back one level).

› **RESET** — Click this button to clear all selections on the interface. This button is only available on the Cat/Index soft panels.

› **SELECT** — This button is only available on the Cat/Index soft panels.

✶ When using a Group Category soft panel and the **Info** > **Non-group Resources** setting is set to **Hide**, only the resources assigned to a group are displayed on the soft panel.

2. Status Window

The bottom right corner of each soft panel includes a status window. For each level in the list of available levels, a corresponding status indicator display will indicate the current source for the currently selected destination.

The following buttons are located on the right-side of the soft panel interface:

› **Level** buttons — Click a level button to include the level in a crosspoint that you are configuring in the matrix. A lit button indicates that the corresponding level will be included in the next transition. The color and name of the button are specified using the **Levels** interface.

› **CURRENT** — This button updates the level display area to show the current status for all displayed levels.

› **PENDING** — This button updates the level display area to show status for the currently pending operation (if selected source has not been switched yet. e.g. before TAKE is pressed).

› **USER** — This button shows current lock/protect status of each levels (and the soft panel name that is currently owned it). Since the soft panel does not recognize the names of remote control panels (RCP) to retrieve their name, a “owner #” name is used.

› **FOLLOW** — Click this button to select all levels in the matrix. Clicking **TAKE** after clicking **FOLLOW** will then switch all crosspoints at the same time on all available levels.

› **CLEAR** — Click this button to clear all selections on the interface.

› **CLEAR SEL SRC** — Click this button to clear individual source selections by selecting the levels to be cleared.

3. Control Area

The bottom toolbar of the soft panel interface can include the following buttons:

› **Protect** — Click this button to prevent switching of the selected destination except by the panel that initiated the protect. If you are using a soft panel with the **Protection Operation** set to **Disable**, the **Protect** button is not displayed.

› **Lock** — Click this button to prevent switching of the selected destination by an control device. If you are using a soft panel with the **Protection Operation** set to **Disable**, the **Lock** button is not displayed.

› **View** — Click this button to display the VIEW dialog. This dialog lists the current TAKE commands in the queue. Individual items may be removed from the queue via the options in the View dialog.

› **Clear** — Click this button to clear the current TAKE queue.

› **Preset** — Use this button to queue up multiple TAKE commands. Select a destination/source combination, then click Preset. Select another destination/source combination then click Preset. A following TAKE command will execute all the Preset switches. To view the switch commands queued by the Preset, click View.

› **Salvo** — Click this button to display a list of available salvos in the active database.

› **Show TAKE Errors** — Click this button to display a summary of the error conditions that were detected each time a switch command was executed. Click Close to the exit the dialog.

› **TAKE** Button — Click this button to execute the switch between the selected crosspoints. If you are using a soft panel with the **Take Operation** set to **Direct**, a **TAKE** button is not displayed because the transitions will occur automatically after a crosspoint switch is selected.

Group PB Panels

In a Group PB soft panel, the destinations and sources are determined by the Group Categories interface but organized into a vertical layout that is similar to the Ultritouch PB panel.

Figure 48 Example of a Group PB Soft Panel

1) Destinations Area	2) Sources Area	3) Control Area

1. Destinations Area

The **Destinations** area displays the available destinations for router control. Select a button to arm that destination for subsequent panel operations.

2. Sources Area

The **Sources** area displays the available sources for router control. Select a button to control the crosspoint for the currently selected destination.

3. Control Area

The bottom toolbar of the soft panel interface can include the following buttons:

› **Lock** — Click this button to prevent switching of the selected destination by an control device. If you are using a soft panel with the **Protection Operation** set to **Disable**, the **Lock** button is not displayed.

› **Protect** — Click this button to prevent switching of the selected destination except by the panel that initiated the protect. If you are using a soft panel with the **Protection Operation** set to **Disable**, the **Protect** button is not displayed.

Creating a New Soft Panel

A soft panel can be as simple or complex in its layout as you require. You select a panel type, assign a unique name, and configure the settings of the soft panel (such as adding a Lock and/or Protect button, the maximum number of resources to display, etc.). Then you specify which destinations, sources, levels, and salvos to display on your panel.

When you create a new soft panel, you select from the existing soft panel types which determines the options to add to the panel. You then assign a Panel Name and ID to display in the tree view using the nomenclature "`Name [#]`" where `[#]` is the Panel ID.

To create a soft panel

1. Double-click the **Panels** node located under the **Database** node.

   The **Panels** interface opens.

2. Click **Add**.

   The **Add Panel** dialog opens.

3. Type a unique identifier in the **Name** field.

   This will be used to identify the panel in the Control > Panels tree.

4. If required, use the **Description** field to provide a textual summary of the panel.

5. Use the **ID** field to determine the position of the panel in the Control > Panels tree where a value of 1 is the highest priority and listed as the first tree node. Refer to **Figure 49**.

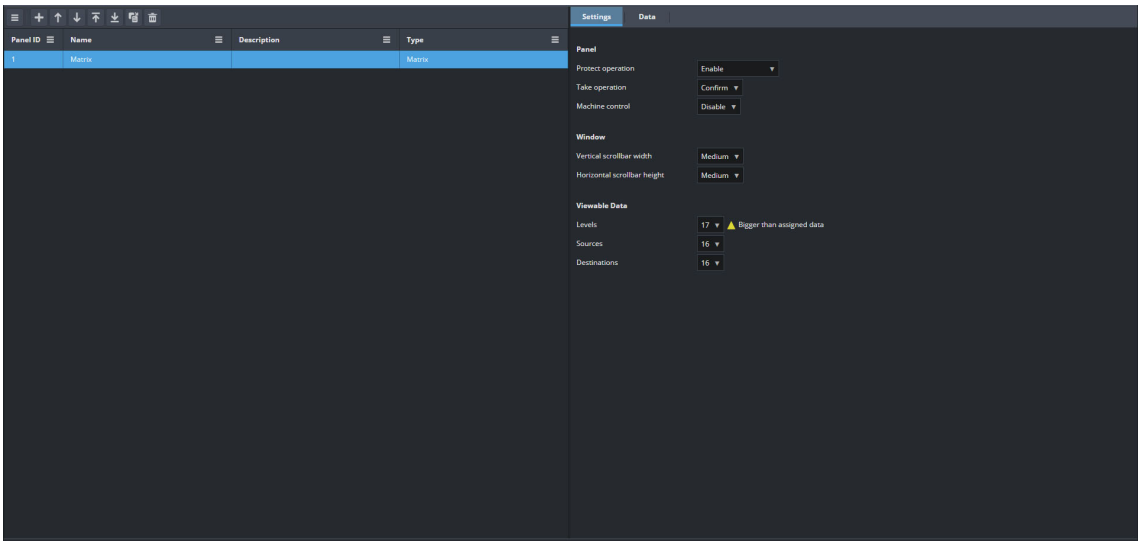
✶ Ensure that the new soft panel does not use the same Panel ID as a previously saved soft panel.

6. Use the **Style** menu to specify the type of panel to create. Choose from the following:
   - **Matrix** — organizes the destinations and sources in a grid layout. Refer to "**Matrix Panels**" for layout details.
   - **MultiBus** — organizes the destinations and sources into separate rows (buses) of buttons. Refer to "**MultiBus Panels**" for layout details.
   - **Group Category** — the hierarchy of the destinations and sources are determined by the values in the Group Categories interface. Refer to "**Using Group Categories**" and "**Group and Cat/Index Panels**" for details.
   - **Push Button** — organizes the destinations and sources in a distinct vertical layout. Refer to "**Crosspoint Switches via a Default Soft Panel**" for details.
   - **Cat/Index Category** — the hierarchy of the destinations and sources are determined by the values in the Cat/Index interface. Refer to "**Using Cat/Index Categories**" and "**Group and Cat/Index Panels**" for details.
   - **Ultritouch PB** — the resources are organized into a customized layout that is pre-sized for an Ultritouch hard panel. Refer to the ***Ultritouch User Guide*** for details.
   - **Ultritouch 4RU Split** — a customized layout that is pre-sized for an Ultritouch-4RU. Refer to the ***Ultritouch User Guide***.
   - **Group PB** — the destinations and sources are determined by the Group Categories interface but organized into a vertical layout that is similar to the Ultritouch PB panel. Refer to "**To configure a Group PB panel**" and "**Group PB Panels**".

7. Click **Apply**.

   The **Add Panel** dialog closes.

   The new panel name is added to the left pane **Panels** tab and automatically selected in the tab for editing. In the example below, the user created a new soft panel named "`Matrix`" with a Panel ID of `1`.



8. Select the **Settings** tab.
9. Use the **Protection operation** menu to provides options for preventing crosspoint switches. Choose from the following:
   - Enable — The Lock, Protect, and Free buttons display on the soft panel.
   - Disable — The Lock, Protect, and Free buttons do not display on the soft panel. These protection options will not display on the soft panel.
   - Enable w/ Override — Use this soft panel to override any locked/protected destination on or from another panel. When a source or destination is locked by an unknown panel, use this mode to force a clear of the protect/lock status.
10. Use the **Take operation** menu to configure the **TAKE** button for the soft panel. Choose from the following:
    - Confirm — Displays a TAKE button on the soft panel. You must select TAKE to perform a crosspoint switch.
    - Direct — The soft panel does not display a TAKE button. A crosspoint switch occurs automatically after each destination/source selection is made by the user via the soft panel.
11. Use the **Machine control** menu to control whether a TAKE request directed to an Ross NK series data router automatically makes a reciprocal port switch. Choose from the following:
    - Enable — Displays a Machine Control button on the soft panel. You must select Machine Control to enable the reciprocal port switches on a Ross NK series router.
    - Disable — The soft panel does not display a Machine Control button.
12. Use the **Viewable Data** options to specify the maximum number of resources to display on the soft panel. The options are determined by the resources assigned on the **Data** tab.
    - Levels — Sets the maximum number of levels visible at one time. Refer to "**Adding Levels to a Soft Panel**".
    - Sources — Sets the maximum number of sources visible at one time. Refer to "**Adding Sources to a Soft Panel**".
    - Destinations — Sets the maximum number of destinations visible at one time. Refer to "**Adding Destinations to a Soft Panel**".
    - Salvos — Sets the maximum number of salvos visible at one time. Refer to "**Adding Salvos to a Soft Panel**".

Adding Levels to a Soft Panel

You can specify the levels, their hierarchy on the soft panel, and how many are viewable at once on the soft panel. For example, if you configure the Settings > Viewable Data > Levels to 2 but have assigned 4 levels to the panel, the first two levels will be visible by default. You would then use the options on the Data > Levels tab to select the levels and determine their hierarchy on the soft panel.

To specify the levels for the soft panel

1. From the **Panels** table, select the soft panel to edit.
2. Select the **Data** tab from the right pane.
3. Select the **Levels** tab.
4. To add a level to the soft panel:
   a. From the **Available** list, select the level you wish to add to the soft panel.
   b. Click ▶.

   The **Assigned** list updates to include the selected level.
5. To assign all the available levels in the database to the soft panel, click ⏩.
6. To assign multiple levels to the soft panel:
   a. From the **Available** list, select the first level you wish to add to the soft panel.
   b. Press **Shift**.
   c. From the **Available** list, select the other level(s) you wish to add to the soft panel.
   d. Click ▶.

   The **Assigned** list updates to include the selected levels.
7. Use the  buttons above the **Assigned** list to determine the hierarchy in which the levels are displayed on the soft panel.

Adding Sources to a Soft Panel

You can create a soft panel with a specified number of sources and determine the order in which they are displayed in the crosspoint row of the panel. For example, the router may have 16 sources but you only want to make 8 selectable on the crosspoint row of your soft panel. You can also specify the order in which the sources are displayed on the soft panel.

To specify the sources for the soft panel

1. From the **Panels** table, select the soft panel to edit.
2. Select the **Data** tab from the right pane.
3. Select the **Sources** tab.
4. To add a source to the soft panel:
   a. From the **Available** list, select the source(s) you wish to add to the soft panel.
   b. Click ▶.

   The **Assigned** list updates to include the selected source(s).
5. To assign all the available sources in the database to the soft panel, click ⏩.
6. To assign multiple sources to the soft panel:

a. From the **Available** list, select the first source you wish to add to the soft panel.

b. Press **Shift**.

c. From the **Available** list, select the other source(s) you wish to add to the soft panel.

d. Click ▶.

The **Assigned** list updates to include the selected sources.

7. Use the ↑ ↓ ⤒ ⤓ A↓Z Z↓A buttons to determine the order in which the sources are displayed on the soft panel.

Adding Destinations to a Soft Panel

You can create a soft panel with a specified number of destinations and determine the order in which they are displayed in the crosspoint row of the soft panel. Updating the Settings > Viewable Data > Destinations field configures how many destinations options are visible at once. For example, the database may have 32 destinations but you only want to make 4 outputs selectable on the crosspoint row of your soft panel. You would then set the Destinations field to 4 and then specify the order in which the four destinations are displayed on the soft panel.

To specify the destinations for the soft panel

1. From the **Panels** table, select the soft panel to edit.
2. Select the **Data** tab from the right pane.
3. Select the **Destinations** tab.
4. To add a destination to the soft panel:

   a. From the **Available** list, select the destination(s) you wish to add to the soft panel.

   b. Click ▶.

   The **Assigned** list updates to include the selected destination(s).

5. To assign all the available destinations in the database to the soft panel, click ▶▶.
6. To assign multiple destinations to the soft panel:

   a. From the **Available** list, select the first destination you wish to add to the soft panel.

   b. Press **Shift**.

   c. From the **Available** list, select the other destination(s) you wish to add to the soft panel.

   d. Click ▶.

   The **Assigned** list updates to include the selected destinations.

7. Use the ↑ ↓ ⤒ ⤓ A↓Z Z↓A buttons to determine the hierarchy in which the destinations are displayed on the soft panel.

Adding Salvos to a Soft Panel

Salvos are a selected series of crosspoints to switch in the matrix that can be saved and later recalled for crosspoint transitions. Before you can add salvos to a soft panel, you must configure them as outlined in "**Creating Salvos**".

To specify the salvos available on a soft panel

1. From the **Panels** table, select the soft panel to edit.
2. Select the **Data** tab from the right pane.
3. Select the **Salvos** tab.
4. To add a salvo to the soft panel:
   a. From the **Available** list, select the salvo you wish to add to the soft panel.
   b. Click ▶.

   The **Assigned** list updates to include the selected source(s).
5. To assign all the available salvos in the database to the soft panel, click ⏩.
6. To assign multiple salvos to the soft panel:
   a. From the **Available** list, select the first salvo you wish to add to the soft panel.
   b. Press **Shift**.
   c. From the **Available** list, select the other salvo(s) you wish to add to the soft panel.
   d. Click ▶.

   The **Assigned** list updates to include the selected salvos.
7. Use the  buttons to determine the order in which the salvos are displayed on the soft panel.

Adding an Alias Set to a Soft Panel

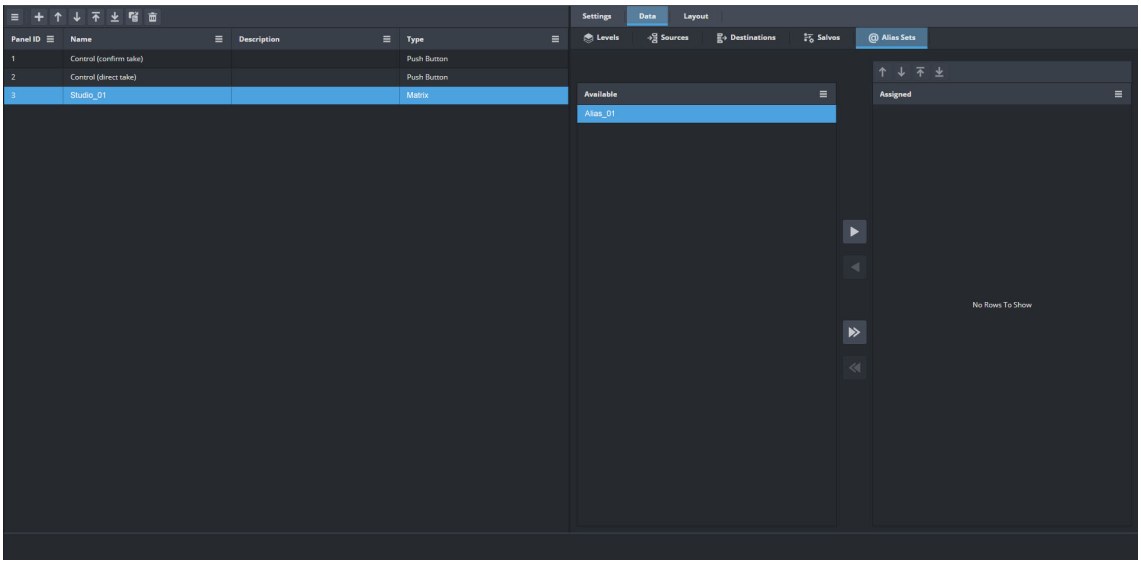
By default, a matrix (or router) port is identified via the `Frame.Slot.Port.Type.Channel` nomenclature. An alias set enables you to customize virtual labels and apply to the ports if required. This re-naming is not necessary for router operation, but it may make your assignment of source and destination labels easier to identify.

For More Information on...

- configuring an alias set, refer to "**Using an Alias Set**".

To apply an alias set to a soft panel

1. From the **Panels** table, select the soft panel to edit.
2. Select the **Data** tab from the right pane.
3. Select the **Alias Sets** tab.



4. To apply a alias set to the soft panel:
   a. From the **Available** list, select the alias set you wish to add to the soft panel.
   b. Click ▶.

   The **Assigned** list updates to include the selected set.
5. To apply all the available sets in the database to the soft panel, click ⏩.
6. To apply multiple aliases to the soft panel:
   a. From the **Available** list, select the first set you wish to apply to the soft panel.
   b. Press **Shift**.
   c. From the **Available** list, select the other set(s) you wish to apply to the soft panel.
   d. Click ▶.

   The **Assigned** list updates to include the selected sets.
7. Use the ↑ ↓ ⤒ ⤓ A↓Z buttons to determine the order in which the sets are applied on the soft panel.

Customizing the Soft Panel Layout

Some soft panel types also provide options for defining the Home and Drawer windows that display on the final panel. You can chose to use the default settings, or customize the width and number of rows/columns in each window independently.

✶ This section provides a summary of the layout options and settings. Some options may not be available for all panel types.

To customize the layout of a soft panel

1. Double-click the soft panel name from the **Panels** list in the left toolbar of the **Panels** tab.
2. Select the **Settings** tab.
3. To re-size the scroll bars on your soft panel:

a. Use the **Vertical Scrollbar Width** field to determine the size of the bar that enables the user to scroll along the vertical axis of the soft panel.

b. Use the **Horizontal Scrollbar Height** field to determine the size of the bar that enables the user to scroll along the horizontal axis of the soft panel.

4. Use the **Icons display** menu to specify whether buttons will display the default icons based on window type (**Enable**) or will only display the label text as determined by the database (**Disable**).
5. Use the **Orientation** menu to specify the layout on the monitor. Choose from the following:
   - Portrait — a horizontal layout; the panel is taller than it is wide.
   - Landscape — a vertical layout; the soft panel is wider than it is tall.
6. Use the **Drawer Width** menu to specify the width of the drawer handle size.
7. Use the **Take button size** menu to determine the size of the TAKE button on your soft panel.
8. If you set **Style** to **Matrix** or **MultiBus**, use the **Viewable Data** fields to restricted how many options you can view at a time:
   - Levels — sets the number of viewable levels of the soft panel.
   - Sources — sets the number of viewable sources on the soft panel.
   - Destinations — sets the number of viewable destinations on the soft panel.
   - Salvos — sets the number of viewable salvos on the soft panel.
9. If you set the **Style** to **Group Category**, use the **Nongroup Resources** options to determine if resources that are not assigned to a specific group are displayed. Choose from the following:
   - Hide — The unassigned resources are not displayed on the soft panel.
   - Show — All resources are displayed on the soft panel.
10. If you set the **Style** to **Push Button**, **Ultritouch PB**, **Ultritouch 4RU Split**, or **Group PB**, proceed to "**To configure a Group PB panel**".

To configure a Group PB panel

1. Create a new Group PB soft panel as outlined in the procedures "**To create a soft panel**" and "**To customize the layout of a soft panel**".

   The **Settings** tab is automatically selected.
2. Use the **Icons Display** menu to specify whether buttons will display the default icons based on window type (**Enable**) or will only display the label text as determined by the database (**Disable**).
3. Select the **Layout** tab.
4. In the **Home Windows** table, specify the order that the windows will display in the completed soft panel layout as described in "**To customize the Home Window of a soft panel**".

✶ By default, the windows are organized in the following order (left to right): Destinations, Sources, and Operation.

5. In the **Drawer Windows** table, specify the order of the windows that display on the soft panel. Refer to "**To define the drawer elements of the soft panel**" for details.

✶ To configure an Output Monitor window for a Group PB soft panel, refer to the ***Ultritouch User Guide***.

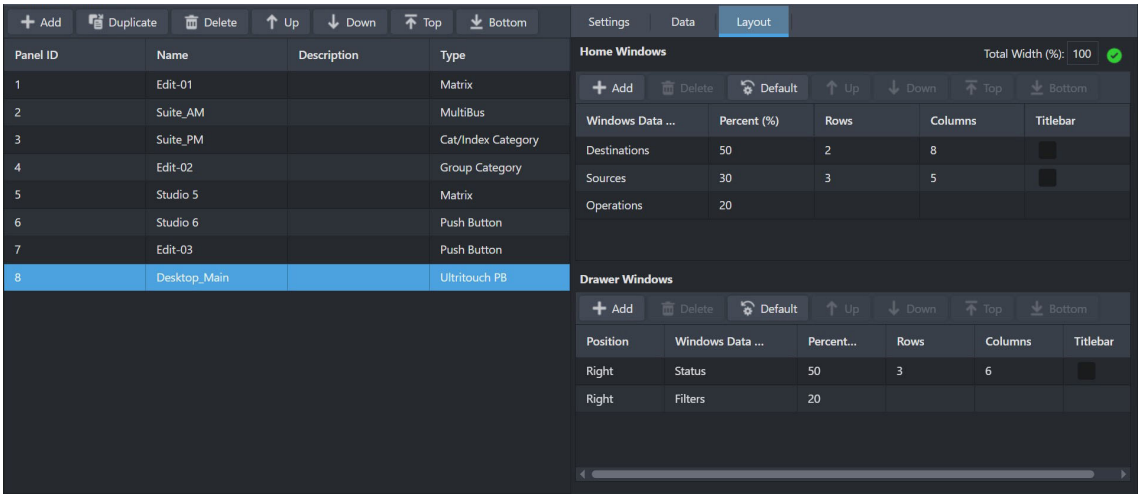
Customizing the Home Window

The order of the rows in the Layout > Home Windows table determine the order of the windows that display on the soft panel. For example, if the first row is assigned to Destinations, the first window next to the main toolbar of the soft panel will display the Destinations buttons.

To customize the Home Window of a soft panel

1. Double-click the soft panel name from the **Panels** list in the left toolbar of the **Panels** tab.
2. Select the **Layout** tab.

   In the following example, the user is configuring an Ultritouch Push Button soft panel.



3. Locate the **Home Windows** area of the tab.
4. To add a data type to the Home window of the soft panel:
   a. Select a row in the **Home Windows** table.
   b. Use the **Up**, **Down**, **Top**, **Bottom**, **Sort** buttons (located in the toolbar to the right of the table) to move a highlighted row to the desired position.
   c. Click **Add**.

      The **Add Window** dialog opens.

   d. Use the **Window** menu to specify the first window to include in the soft panel.

✶ You cannot have multiples of the same window in either Home windows or Drawer windows.

   e. Click **Apply**.

      The **Add Window** dialog closes and the Home Windows table updates to display the selection.

5. Repeat step 4 for each data type you want to include on the Home window.
6. Adjust a window size as follows:
   - Use the **Percent** field to specify the size of the window as a percentage of the total soft panel area.
   - Use the **Rows** field to specify the number of button rows the window will display.
   - Use the **Columns** field to specify the number of button columns the window will display.

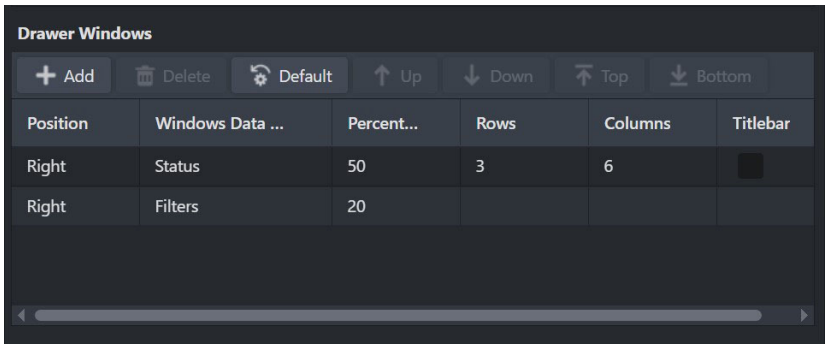
Defining the Drawers on a Soft Panel

Soft panels can also include fly-out menus (drawers) that operate like horizontal drop-down menus. You can specify what menus, functions, and settings each drawer includes. The order of the rows in the Drawer Windows determine the order the drawer elements display on the soft panel. For example, if the first row is assigned to Status, when the drawer opens the first listed element will be Status.

✶ Not all Home Window options are available as drawer options.

To define the drawer elements of the soft panel

1. Double-click the soft panel name from the **Panels** list in the left toolbar of the **Panels** tab.
2. Select the **Layout** tab.
3. Locate the **Drawer Windows** area of the tab.



4. Select a row in the **Drawer Windows** table.
5. Click .

   The **Add Drawer** dialog opens.
6. Use the **Type** menu to specify the location of the drawer, in relation to the main window.

   For example, if you select **Type** > **Left** and **Style** > **Salvos**, the drawer element will display on the left side of the main window.
7. Click **Apply**.

   The **Add Window** dialog closes and the **Drawer Windows** table updates to include the selection.
8. Repeat steps 5 to 7 for each drawer option you want to include in the soft panel.
9. To customize a drawer size:
   a. Use the **Width** field to specify the percentage of the allocated drawer space.
   b. Use the **Rows** field to specify the number of rows in the drawer will display.
   c. Use the **Columns** field to specify the total number of columns in the drawer will display.
10. Repeat step 9 for each drawer of the soft panel you wish to re-size.

Managing the Soft Panels

This section outlines how to copy an existing soft panel, edit an existing soft panel, and delete a soft panel from the database.

Copying a Soft Panel

Once a soft panel is configured, you can copy it and use it as a template for creating additional soft panels.

✶ Ensure the soft panel is currently not in use.

To copy a soft panel

1. Select the soft panel name from the **Panels** table.
2. Click **Duplicate**.

   The Duplicate dialog opens.
3. Click **Duplicate panel**.

   The Duplicate dialog closes and the **Panels** interface updates to display the copied panel.

   A copy of a soft panel is automatically named "`x(copy)`" where `x` is the name of the original panel.
4. Type a unique identifier in the **Panel Name** field.

   This name is used to identify the panel in the Control > Panels tree (see **Figure 49**).

Editing a Soft Panel

You can edit any soft panel that is not currently in use.

✶ You cannot edit the **Panel Style** of an existing soft panel.

To edit a soft panel

1. Double-click the **Panels** node located under the **Database** node.

   The **Panels** interface opens.
2. From the **Panels** list in the left toolbar, select the soft panel to edit.

   The **Panels** interface updates to display the settings for the selected soft panel. The **Settings** tab, in the right pane, is automatically selected.
3. If required, use the  buttons to determine the position of the panel in the Panels list. This also determines the priority of the panels in the Control > Panels tree (see **Figure 49**).
4. Edit the resources for the panel using one of the following procedures:
   - "**To specify the levels for the soft panel**"
   - "**To specify the sources for the soft panel**"
   - "**To specify the destinations for the soft panel**"
   - "**To specify the salvos available on a soft panel**"
   - "**To apply an alias set to a soft panel**"

Deleting a Soft Panel from the Database

✶ Ensure the soft panel is currently not in use.

To delete a soft panel from the database

1. Double-click the **Panels** node located under the **Database** node.

   The **Panels** interface opens.
2. Select the soft panel row from the **Panels** list.

3. Click **Delete**.

   The Delete dialog opens.

4. Click **Apply**.

   The Delete dialog closes.

   The selected panel is removed from the **Panels** list and the Control > Panels tree.

Displaying a Soft Panel in DashBoard

Once created, the soft panel is listed as a sub-node in the NRG > Control tree. The hierarchy of the nodes in the tree is determined by their Panel ID which is assigned when the soft panel is created in the database. Double-click a sub-node to display the corresponding soft panel in the DashBoard window. In **Figure 49** there are five soft panels in the tree view including the default panels (the top two sub-nodes).

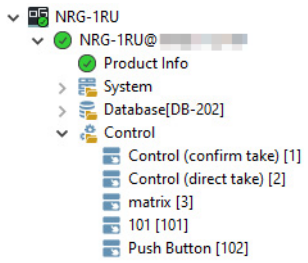


Figure 49 Example of Soft Panel Nodes

The steps for displaying a soft panel interface in DashBoard is the same for every type of panel.

To display a soft panel in the DashBoard window

1. Expand the main **NRG** node.
2. Expand the **Control** sub-node.

   The Control tree displays with each sub-node representing an available soft panel.

3. Double-click the node for the desired soft panel.

   The selected soft panel opens in the DashBoard window.

Crosspoint Switches via a Default Soft Panel

This section outlines how to use the default soft panels to perform a crosspoint switch.

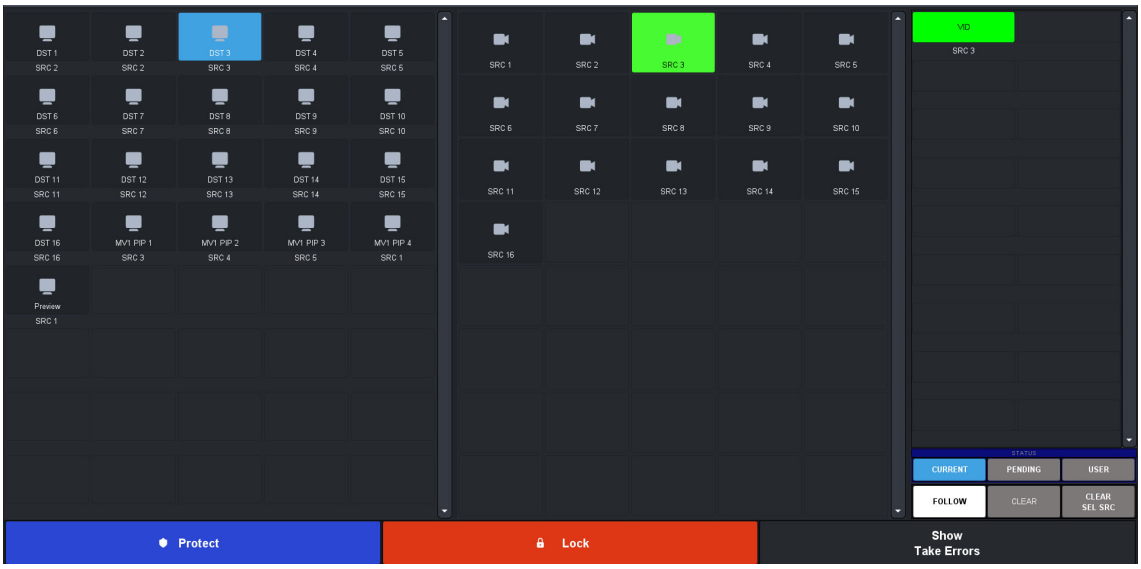
To make a crosspoint switch using one of the default soft panels

1. Display a soft panel as outlined in "**Displaying a Soft Panel in DashBoard**".
2. Select a button from the **Destinations** area.

   The Status field reports the selected button.

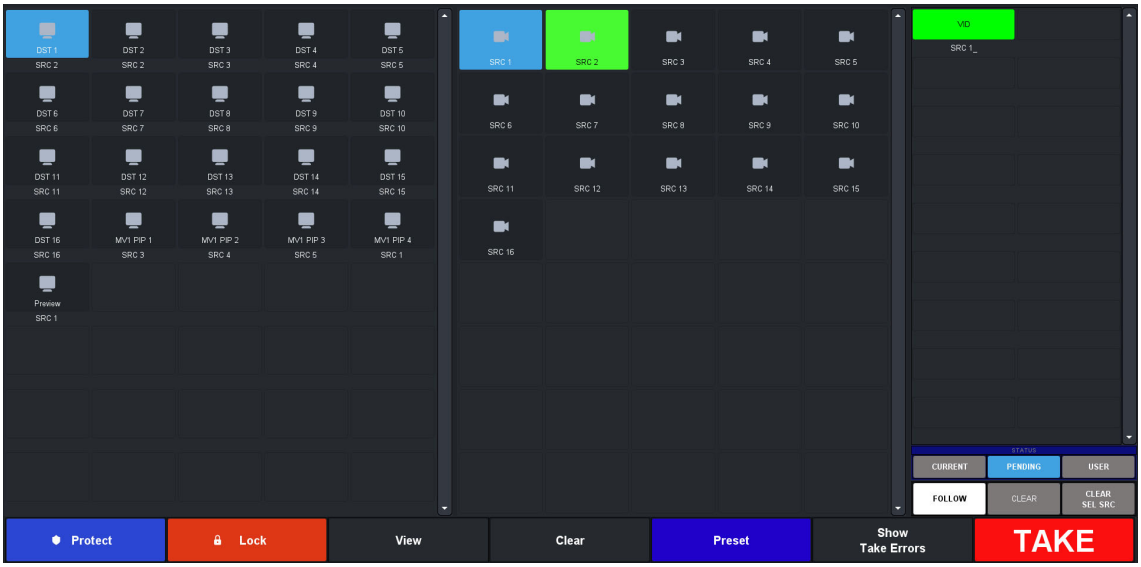
3. If you are using the **Control (direct take)** soft panel, select a button from the **Sources** area.

   The crosspoint switch automatically occurs. In the following example, the user selected to switch **DST 3** to **SRC 3**.



4. If you are using the **Control (confirm take)** soft panel:
   a. Select a button from the **Sources** area. The button is now lit blue.
   b. Verify that the **TAKE** button is lit.

      In the following example, the user selected to switch DST 1 from SRC 2 to SRC 1. The **TAKE** button is now lit.



   c. Click **TAKE** to perform the crosspoint switch.

   After the switch, the SRC 2 button will no longer be lit and the SRC 1 button will be lit green.

Crosspoint Switches via a Push Button Soft Panel

★ This section is applicable for push button soft panels created by the user and not one of the default soft panels.

The Push Button soft panel is organized into three distinct windows. The order and width of each window can be customized using the options in the Panels > Settings interface.

The buttons and options in a Push Button soft panel are dependent on the current database, and how the soft panel was defined in the **Panels** interface. You can also use the Filter fields in the Destinations and Sources area of the panel to provide access based on the search criteria entered into each Filter field.

To make a crosspoint switch on a single level using a Push Button Panel

1. Display the Push Button soft panel in the DashBoard window as outlined in "**To display a soft panel in the DashBoard window**".
2. Select the **Level** you want to perform the crosspoint switch.
3. Select a button from the **Destinations** window.

   The Status field reports the selected button.
4. Select a button from the **Sources** window.

✶ If your soft panel was created with the **Take Operation** set to Confirm, the **TAKE** button is lit. Otherwise the crosspoint switch automatically occurs.

5. Click **TAKE**.

To make a crosspoint switch on multiple levels using a Push Button Panel

1. Display the Push Button soft panel in the DashBoard window as outlined in "**To display a soft panel in the DashBoard window**".
2. Select each level from the Levels window or click **FOLLOW** to include all levels.

   The Level buttons are lit in the right most toolbar.
3. Select a button from the **Destinations** window.

   The Status area updates to display report the selected destination.
4. Select a button from the **Sources** window.

   The Status area updates to display only the selected source.

✶ If your soft panel was created with the **Take Operation** set to Confirm, the **TAKE** button is lit. Otherwise the crosspoint switch automatically occurs.

5. Click **TAKE**.

Crosspoint Switches via a Matrix Panel

Crosspoint selections can be made using the cross-hairs or clicking the required Destination and Source buttons on the matrix soft panel. This section provides instructions using the cross-hairs for crosspoint selections.

To make a crosspoint switch using a single level

1. Display the matrix soft panel in the DashBoard window as outlined in "**To display a soft panel in the DashBoard window**".
2. Select a level from the toolbar.

   The button is now lit.
3. Select the source and destination intersection inside the matrix.

   The selection is represented as an icon set in the color that matches the level. The **TAKE** button is now lit.

✶ If the soft panel has its **Take operation** set to **Direct**, the **TAKE** button does not display and the switch occurs automatically.

4. Click **TAKE**.

The icon on the matrix is solid in the color that matches the level and the **TAKE** button is no longer lit.

To make a crosspoint switch between multiple sources and destinations on a single level

1. Display the matrix soft panel in the DashBoard window as outlined in "**To display a soft panel in the DashBoard window**".
2. Select a level from the toolbar.
3. Select the first source and destinations inside the matrix.
4. Select the additional crosspoints to switch.

✶ If the soft panel has its **Take operation** set to **Direct**, the **TAKE** button does not display and the switch occurs automatically.

5. Click **TAKE**.

   The icons on the matrix are solid in the color that matches the level and the **TAKE** button is no longer lit.

To make a crosspoint switch using multiple levels

1. Display the matrix soft panel in the DashBoard window as outlined in "**To display a soft panel in the DashBoard window**".
2. Select each level from the toolbar or click **Follow** to include all levels.
3. Select the first source and destination inside the matrix.
4. Select the additional crosspoints to switch.

   When multiple levels are selected, the circle on the crosspoint is divided into colored sections with each section representing a level.

✶ If the soft panel has its **Take operation** set to **Direct**, the **TAKE** button does not display and the switch occurs automatically.

5. Click **TAKE**.

   The icons on the matrix are solid in the color that matches the level and the **TAKE** button is no longer lit.

To perform a crosspoint switch on multiple destinations with a single source

1. Display the matrix soft panel in the DashBoard window as outlined in "**To display a soft panel in the DashBoard window**".
2. Select each level from the toolbar or select **Follow** to include all levels.
3. Click **Select All** located at the top left corner of the interface.

   All the **Dest** buttons on the Matrix panel are now lit and selected.The **Select All** button is labeled **Clear All**.

4. From the top toolbar, select the **Src** button to switch.

   The matrix updates to indicate the crosspoint switches that will occur on the next transition to the same source and the **TAKE** button is now lit.

✶ If the soft panel has its **Take operation** set to **Direct**, the **TAKE** button does not display and the switch occurs automatically.

5. Click **TAKE**.

   The icons on the matrix are solid in the color that matches the level and the **TAKE** button is no longer lit.

Crosspoint Switches via a MultiBus Panel

The layout of a MultiBus panel is similar to a production switcher layout where the destinations are arranged into a row of buttons near the top of the panel and the sources are arranged on a row near the bottom.

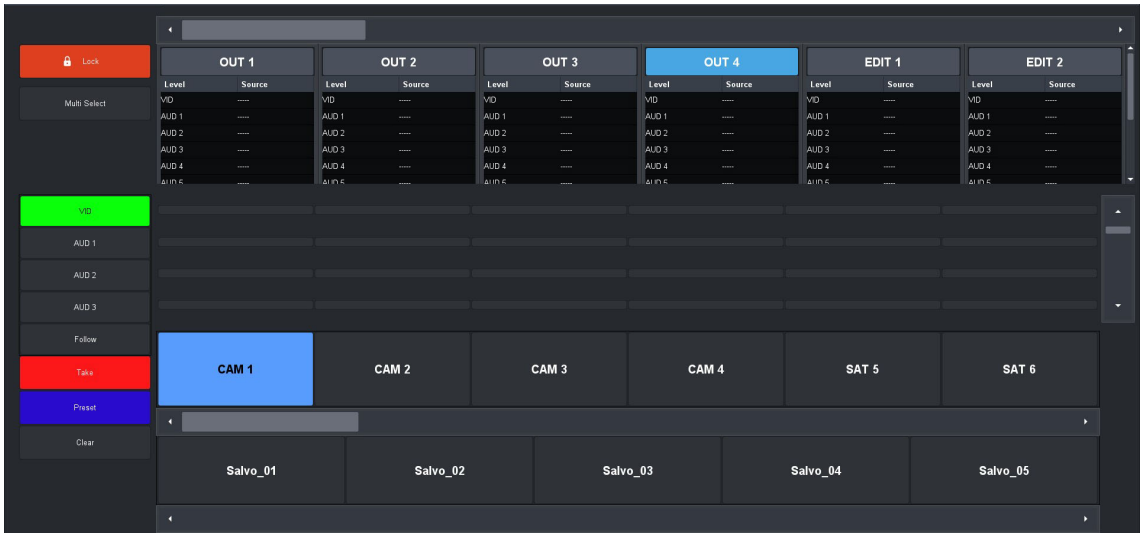
To make a crosspoint switch on a single level using a MultiBus panel

1. Display the MultiBus soft panel in the DashBoard window as outlined in "**To display a soft panel in the DashBoard window**".
2. From the left toolbar, select the button for the level you want to perform the crosspoint switch.
3. Select a button from the Source bus (located at the bottom of the interface).

   The button is now lit.
4. Select a button from the Destination bus (located at the top of the interface).

   The **Dest**, and **Preset** buttons are now lit.

   In the example below, the first level is selected (**VID**) and **OUT 4** will switch with **CAM 1**.



✶ If the soft panel has its **Take operation** set to **Direct**, the **Take** button does not display and the switch occurs automatically.

5. Click **Take**.

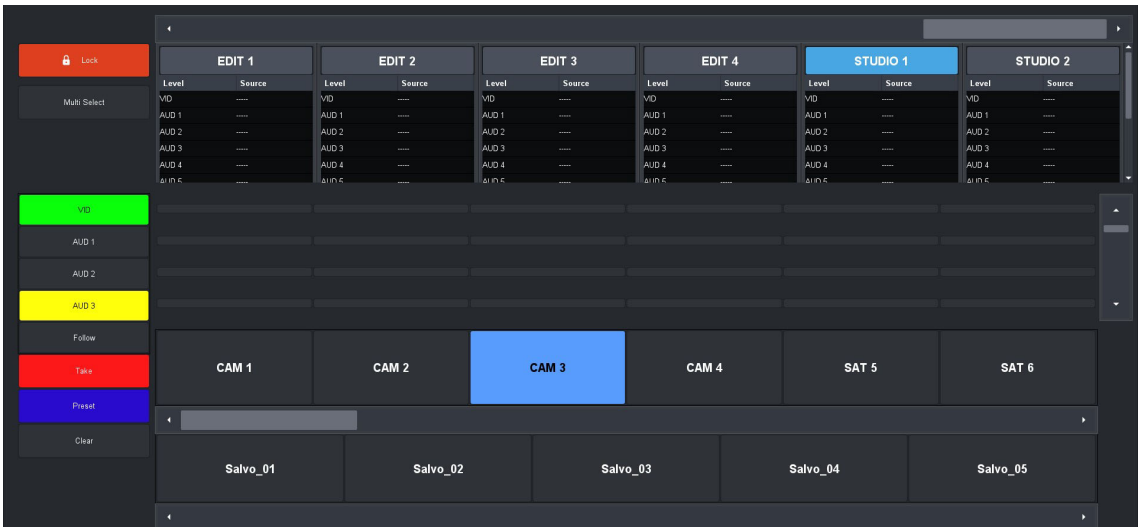
To make a crosspoint switch using multiple levels

1. Display the MultiBus soft panel in the DashBoard window as outlined in "**To display a soft panel in the DashBoard window**".
2. Select each level from the toolbar or select **Follow** to include all levels.

   When multiple levels are selected, the center row of the panel reports the level status using a horizontal bar to represent the level.
3. On the Destination bus, select the button for the outputs to include in the crosspoint switch.
4. On the Source bus, select the button for the input.

   The Destination, Source, **Preset**, and **Take** buttons are now lit.

   In the following example, **STUDIO 1** will switch with **CAM 3** on **Levels VID** and **AUD 3**.



✶ If the soft panel has its **Take operation** set to **Direct**, the **Take** button does not display and the switch occurs automatically.

5. Click **Take**.

Using the Multi Select Function

Use the **Multi Select** button when you want to group multiple destinations to use a single source during the next crosspoint switch.

To use the Multi Select function

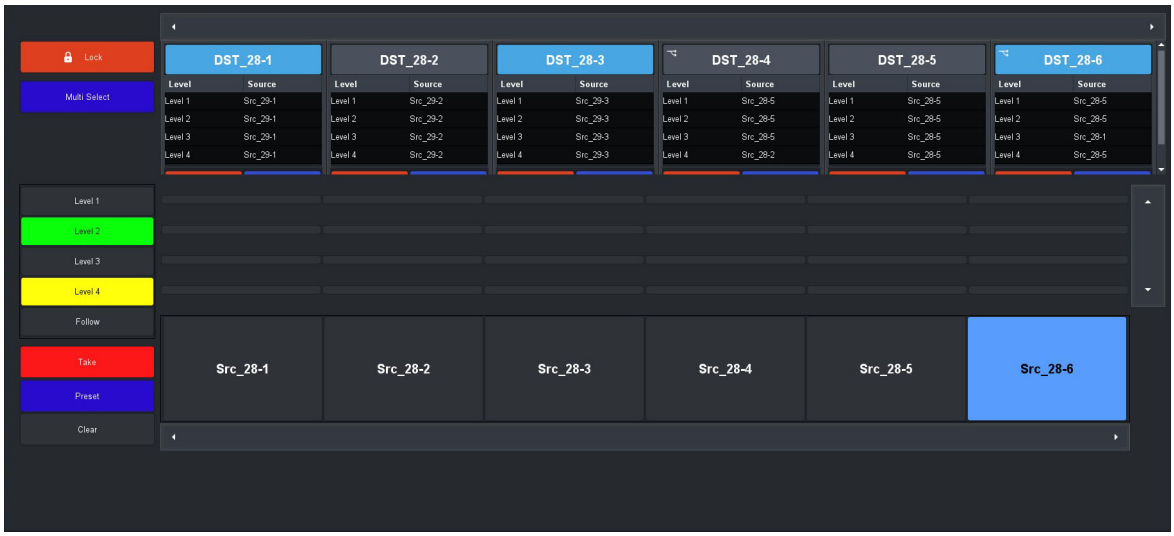
1. Display the MultiBus soft panel in the DashBoard window as outlined in "**To display a soft panel in the DashBoard window**".
2. Select the level(s) from the left toolbar.
3. Click **Multi Select**.

   The **Multi Select** button is now lit.
4. Select the buttons from the Destination bus located near the top of the interface.

   The Destination buttons are now lit.
5. Select a button from the Source bus located near the bottom of the interface.

   The Source, **Preset**, and **Take** buttons are now lit.

   In the example below, **Levels 2** and **4** are selected, and **DST_28-1**, **DST_28-3**, and **DST_28-6** will switch with **Src_28-6**.



✶ If the soft panel has its **Take operation** set to **Direct**, the **TAKE** button does not display and the switch occurs automatically.

6. Click **TAKE**.

Crosspoint Switches via a Group or Category Panel

The buttons and options in a Category soft panel are dependent on the categories defined for the current database, and how the soft panel was defined in the **Panels** interface. Instead of displaying all sources, destinations, and levels at one time, a Category soft panel provides access based on the categories and the indexes you created.

To make a crosspoint switch using a Group Category Panel

1. Display the Group Category soft panel in the DashBoard window as outlined in "**To display a soft panel in the DashBoard window**".
2. From the status window, highlight the level(s) you wish to include in the crosspoint switch.
   - Selected levels highlight in the level defined color.
   - Non-selected levels are indicated by a gray button with white text.
3. To select a destination:
   a. Click **DEST** from the category navigation tools.
   b. Navigate to the desired group using the displayed groups in the main group window.

✶ Only groups containing destination assignments will be displayed unless the **Non-group Resources** option for this soft panel is set to **Show**.

   c. Select a button from the available category destinations located in the main group window.

4. To select a source:
   a. Click **SRC** from the category navigation tools.
   b. Select a button from the Source bus located in the middle of the interface.

✶ If your Category soft panel was created with the **Take Operation** set to Confirm, the **TAKE** button is lit. Otherwise the crosspoint switch automatically occurs.

5. Click **TAKE**.

Using the Lock and Protect Features

Whether your soft panel includes the Lock and Protect features is determined by the **Settings** > **Protection Operation** option. To display these buttons, ensure the **Protection Operation** is set to **Enable**.

✶ If the soft panel **Protection operation** is set to **Enable w/ Override** and a source or destination is locked by an unknown panel, you can force a clear of the protect/lock status.

Using a Lock

The **Lock** button provides the option to protect destination/level pairs. When another control panel or DashBoard client attempts to switch that combination, the request will be denied.

To lock a destination/level pair

1. Display the soft panel in the DashBoard window as outlined in "**To display a soft panel in the DashBoard window**".
2. Select the destination/level pairs from the soft panel interface.
3. Click **Lock**.

   The label on the button changes to **Unlock** and the button remains lit.

To clear a lock

- Click the **Unlock** button.

  The label on the button changes to **Lock** and the button remains lit.

Using a Protect

A soft panel can be locked by clicking the **Protect** button. The button is lit until pressed again.

This feature protects the currently selected destination/level pair from use by other sources, as well as from other linked panels. The **Protect** button is especially useful in instances where a destination must be held after a switch has been made.

To apply a protect

1. Display the soft panel in the DashBoard window as outlined in "**To display a soft panel in the DashBoard window**".
2. Click **Protect**.

   The button is lit. Selecting crosspoints will not take effect and the panel does not update when buttons are pressed.

   - The destination button displays a blue border.
   - The **Destination** area displays  .
   - When a destination is protected, only the panel that initiated the protect can change the destination status.
   - The **Protect** button is now labeled as **Unprotect**.
   - Toggle the button to disable the protect.

To clear a protect

1. Display the soft panel in the DashBoard window as outlined in "**To display a soft panel in the DashBoard window**".
2. Click **Protect**.

   The button is no longer lit and crosspoint switches can be initiated.

NRG-MV Setup

The NRG-MV licensed feature allows you to view multiple video sources from a single output on an NRG router. Any video source on the router can be assigned to any PiP on an NRG-MV layout. This chapter provides an overview of the NRG-MV feature including how to install a NRG-MV license key, display the interfaces in DashBoard, and manage the PiP allocation for your Multiviewer setup.

Overview

The NRG-MV licensed feature provides:

- One NRG-MV Head for the NRG-FR1 and NRG-FR1-LCP
- Up to two NRG-MV Heads for the NRG-FR2 and NRG-FR2-LCP (a license is required for each head)
- Each NRG-MV Head uses a 2x2 layout with each PiP providing:
  - › UMD option (enable/disable)
  - › Audio metering (enable/disable)
  - › Static PiP labeling (Unicode)
- Each NRG-MV Head supports 1080p 50/59.94/60Hz with rate synced with the reference signal available via the router chassis REF port[1]
- Ability to enable/disable NRG-MV Head video on the designated BNC output port (SDI format)
- Ability to display up to 16 audio channels with EU meter bar and audio bar peak hold options
- Ability to output the NRG-MV Head from the DisplayPort (DP)[2] on the router chassis simultaneously with the designated BNC (SDI) output
- PiPs can be switched as a destination

Setup Workflow

Configuring the NRG-MV includes the following tasks:

1. Enable the NRG-MV licensed feature.
2. Configure the PiPs.
3. Assign a Source to a PiP.

Before You Begin

Keep the following in mind as you implement your NRG-MV Head(s):

- If a reference is not connected to the NRG, the DP port outputs 1080p 59.94Hz (NTSC) or 1080p 50Hz (PAL) by default.To connect the DP port to a 1080p 60Hz monitor, an external reference must be first connected to the NRG. Refer to the ***NRG Installation Guide*** for cabling information.
- If you intend to output the NRG-MV Head on the designated BNC output, you will need to select the **Enable BNC output** box for that Head. Refer to "**Enabling the NRG-MV Head Output**".

1. If no reference signal is connected to the REF port, the format is dependent on the default reference of 1080p 50Hz (PAL) or 1080p 59.94Hz (NTSC).
2. Ensure the display monitor supports the routed video format.

Installing a NRG-MV License Key

The maximum number of NRG-MV Heads for a router depends on the number of installed NRG-MV license keys and the router model (**Table 58**).

✶ One NRG-MV license enables one NRG-MV Head.

Table 58 NRG-MV Heads per Router

Router	Maximum Number of Heads
NRG-FR1	1
NRG-FR1-LCP	1
NRG-FR2	2
NRG-FR2-LCP	2

To install a NRG-MV license key

1. Launch the DashBoard client.
2. Locate and expand the **NRG** node in the Tree View.
3. Locate and expand the **System** node to display a list of sub-nodes in the Tree View.
4. Double-click the **NRG-MV** node.

   The **NRG-MV** interface opens.

5. Make a note of the character string in the **Request Code** field for the NRG-MV license.
6. Contact Ross Video Technical Support using the information in "**Contacting Technical Support**".
   a. When you speak to your Technical Support representative, tell them:
      - your name,
      - your facility name, and
      - the **Request Code** from step 5.

   b. You will be given a License Key.
7. Enter the provided License Key in the applicable **License key** field of the **NRG-MV** interface.

✶ You can also right-click on the row for the License Key you are installing, and copy the Request Code to or paste the License Key from the Microsoft® Windows® clipboard.

8. Click **Apply**.
9. Verify that the **Count** field is updated to report each installed License Key.

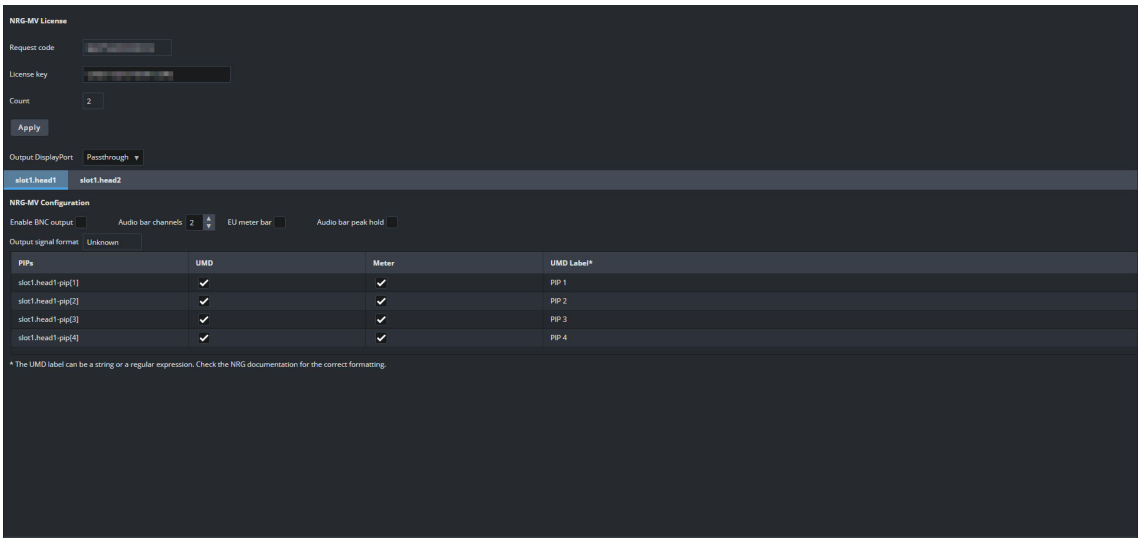
Displaying the NRG-MV Interface

You can access the NRG-MV settings for the Multiviewer Head once an NRG-MV license is enabled on the NRG.

To display the NRG-MV interface

1. Launch the DashBoard client.
2. Locate and expand the **NRG** node in the Tree View.
3. Locate and expand the **System** node to display a list of sub-nodes in the Tree View.
4. Double-click the **NRG-MV** node.

   The **NRG-MV** interface opens. The following example shows an NRG-FR2-LCP with two Multiviewer Heads enabled.



✶ The **NRG-MV** settings are hidden when no license is enabled on the router. Refer to "**Installing a NRG-MV License Key**" for details on enabling a license before accessing the settings.

Enabling the NRG-MV Head Output

The NRG-MV Head can be simultaneously sent to the DisplayPort (DP) output and to a specific BNC if the **Enable BNC output** mode is enabled. A NRG-MV Head is identified using the nomenclature of `NRG.head[x]` where `x` represent the Head ID. A NRG-MV PiP is identified using the nomenclature of `NRG.slot1.head[x]-pip[y]` where `x` represents the Head ID and `y` represents the PiP tile in the layout.

Enabling the NRG-MV Head Output on a BNC

To the router control system, the NRG-MV Head is a destination of the router and may be controlled as such from external controlling devices. A NRG-MV Head is automatically allocated to a specific output on the router. When not required by NRG-MV, the BNC remains available for regular SDI output routing.

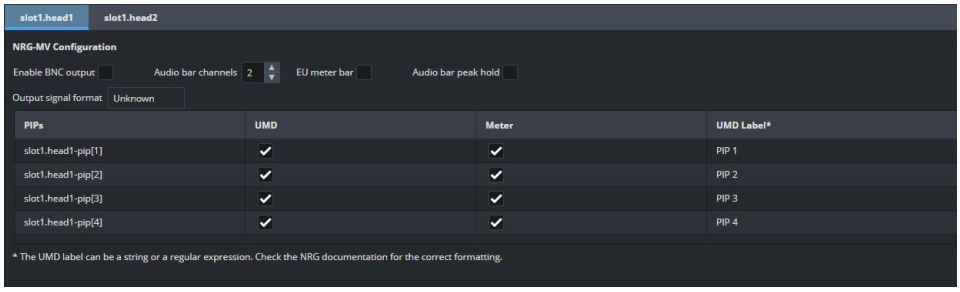
This section outlines how to enable an NRG-MV Head output on a BNC. Refer to **Table 59** for a list of the output BNCs that are allocated for Multiviewer Heads.

Table 59 Allocated BNC Output for Multiviewer Heads

Model	Multiviewer Head 1	Multiviewer Head 2
NRG-FR1	OUT 16/MV	--
NRG-FR1-LCP	OUT 16/MV	--
NRG-FR2	OUT 33 MV	OUT 34 MV
NRG-FR2-LCP	OUT 33 MV	OUT 34 MV

To enable an NRG-MV Head output for a BNC

1. Display the NRG-MV interface as outlined in "**To display the NRG-MV interface**".
2. If you are using an NRG-FR2 or NRG-FR2-LCP and have enabled two NRG-MV licenses, select the tab for the required NRG-MV Head.
3. Locate the **NRG-MV Configuration** area.



4. Select the **Enable BNC output** box.

✶ If you wish to use the BNC(s) for SDI routing, ensure the **Enable BNC output** box is not selected.

Enabling the NRG-MV Output on the DP Port

The NRG-MV can output the NRG-MV Head via the **DP** port on the back panel when connected to a downstream DisplayPort device. The DP default mode is to passthrough for 1080p monitoring.

To output the NRG-MV Head on the DP Port

1. Display the NRG-MV interface as outlined in "**To display the NRG-MV interface**".
2. If you are using an NRG-FR2 or NRG-FR2-LCP and have enabled two NRG-MV licenses, select the tab for the required NRG-MV Head.
3. Use the **Output DisplayPort** menu to select one of the following:
   - **Passthrough** — the **DP** port is used to output a 1080p signal for monitoring purposes.
   - **Head #** — the **DP** port outputs the selected NRG-MV Head.

NRG-MV Head Layout

A NRG-MV Head displays a 2x2 layout. (**Figure 50**)

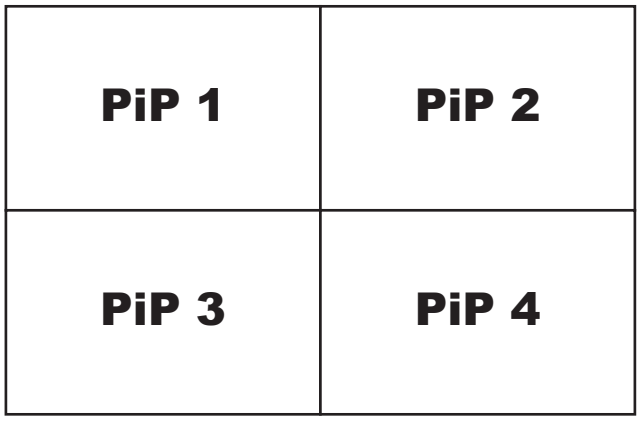


Figure 50 Example of a NRG-MV Head Layout

Table 60 outlines the NRG-FR1 and NRG-FR1-LCP destination assignment for each PiP.

Table 60 PiP Layout Mapping — NRG-FR1, NRG-FR1-LCP

PiP Number	Destination Assignment
1	NRG.slot1.head1-pip[1]
2	NRG.slot1.head1-pip[2]
3	NRG.slot1.head1-pip[3]
4	NRG.slot1.head1-pip[4]

Table 61 outlines the NRG-FR2 and NRG-FR2-LCP destination assignment for each Head and PiP.

Table 61 PiP Layout Mapping — NRG-FR2, NRG-FR2-LCP

	Destination Assignment	
PiP Number	NRG-MV Head 1	NRG-MV Head 2
1	NRG.slot1.head1-pip[1]	NRG.slot1.head2-pip[1]
2	NRG.slot1.head1-pip[2]	NRG.slot1.head2-pip[2]
3	NRG.slot1.head1-pip[3]	NRG.slot1.head2-pip[3]
4	NRG.slot1.head1-pip[4]	NRG.slot1.head2-pip[4]

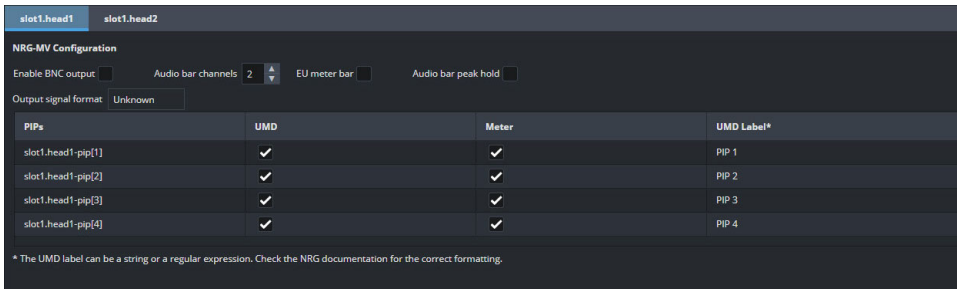
Adding Objects to the NRG-MV Head Output

An object is an element in a layout that is not a direct video source from the router. The following objects can be added to any PiP of an NRG-MV Head:

- **UMD** — This object is a static text box and reports the user defined name from the UMD Label column in the NRG-MV Configuration area.The label is centered and fixed to the bottom of a PiP.
- **Meter** — Each PiP can display up to 16 channel of audio meters. The audio meters are fixed to the top left corner of a PiP.

To add a UMD label to a PiP

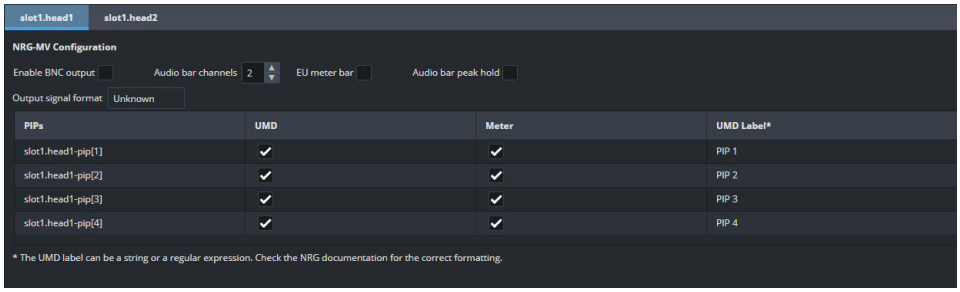
1. Display the NRG-MV interface as outlined in "**To display the NRG-MV interface**".
2. Select the tab for the required NRG-MV Head.
3. Locate the **NRG-MV Configuration** area.



4. Locate the row for the PiP you wish to configure.
5. Select the **UMD** box.
6. Use the **UMD Label** field to enter the content to display in the label for the PiP to a maximum of 24 characters. The text automatically re-sizes to fit inside the label.

To add the audio meters to a PiP

1. Display the NRG-MV interface as outlined in "**To display the NRG-MV interface**".
2. Select the tab for the required NRG-MV Head.
3. Locate the **NRG-MV Configuration** area.



4. Use the **Audio bar channels** field to specify the number of channels in a single block of audio meters.
5. Select the **EU meter bar** box to enable the audio level status is reported in real-time as a series of vertical bars that comply with European Union (EU) standards.
6. Select the **Audio bar peak hold** box to enable the audio meters to report the audio peak level measurements for your audio channels. Measurement units are in decibel full scale (dBFS) where 0dBFS is the maximum digital value.
7. Locate the row for the PiP you wish to configure.
8. Select the **Meter** box.

Assigning a PiP to a Destination in the Database

NRG-MV PiPs (Picture-in-Picture tiles) are required to be mapped in as logical destinations. To the router control system, they are a destination of the router and may be controlled as such from external controlling devices.

This section outlines how to assign the PiP of an NRG-MV Head to a destination within the router database.

✶ The default database will automatically configure the logical destinations for PiPs.

To assign a single PiP to a destination

1. Expand the **Database** node.
2. Expand the **Configuration** sub-node.
3. Double-click the **Destinations** node.

✶ If required, you can add Destinations to the list to accommodate the assignment of NRG-MV PiPs.

4. In the table of the **Destinations** tab, locate the column for the level.
5. Select the cell for the Destination to assign to the PIP.
6. If desired, type a new name for the PiP destination in the **Name** cell.

✶ Ensure the new name clearly identifies the destination as a PiP. You may also want to include a reference to the NRG-MV Head.

7. Perform one of the following:
   - Click the cell of the row in the table to display a list of available Destinations sockets; or
   - Choose a PiP from the available list.

Using a Soft Panel to Route to a PiP

A PiP is controlled by routing just like any destination. The NRG router directly routes to the PiP via a crosspoint selection on a soft panel. If the input signal includes embedded audio, the audio is included in the NRG-MV Head output.

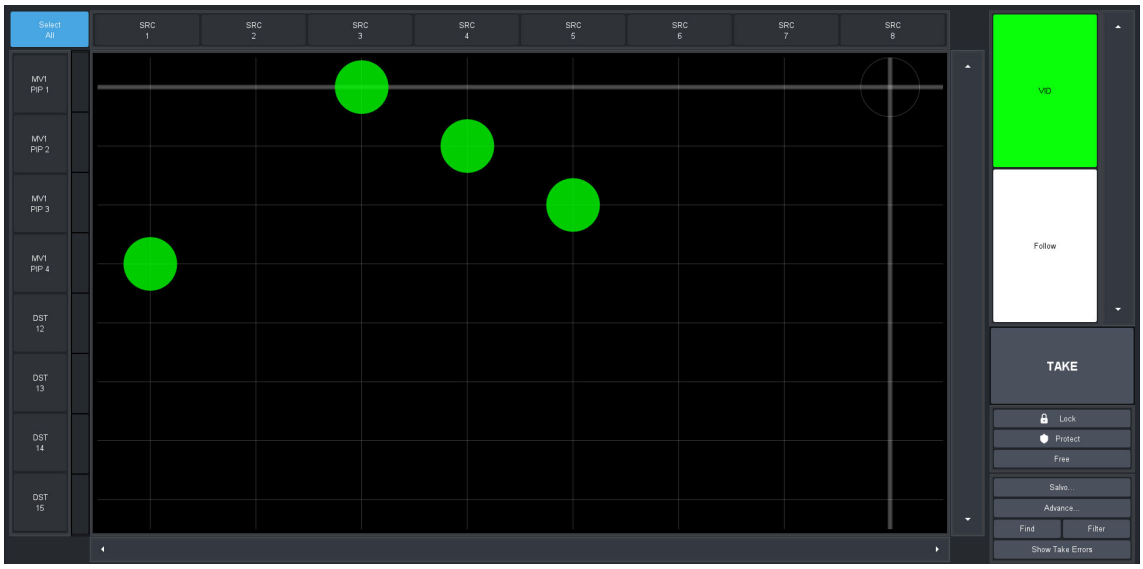
When routing sources to the PiPs of an NRG-MV Head, you can display sources:

- of different formats on the same head at one given time;
- with no assumed timing relationship on the same head at one given time.

To assign a source to a PiP using a soft panel

1. Ensure your database includes destinations assigned to the required NRG-MV Head(s), and destinations. Refer to "**Assigning a PiP to a Destination in the Database**".
2. Create a soft panel that includes the PiP(s) for each license (Head).. Refer to "**Adding Destinations to a Soft Panel**".
3. Load a soft panel that includes the PiP(s) for each license (Head).
4. Select the crosspoint(s) as required.

   In the following example, the user assigned SRC 1 to MV1 PIP 4, SRC 3 to MV1 PIP 1, SRC 4 to MV1 PIP 2, and SRC 5 to MV1 PIP 3.



✶ A PiP displays the source for the **Destination** the PiP is assigned to (e.g. a PiP acts like a regular router destination).

5. Click **TAKE** to perform the crosspoint switch on the selected PiPs.

Glossary

The following terms are used throughout this guide:

Breakaway — an act of performing a switch on only some of the signals grouped together under one label.

Connection Point — setting to define a communication connection between an NRG and a device in the routing system.

Crosspoint — a switch within a matrix. For example, the connection of signal IN 1 to OUT 1 requires one crosspoint.

Destination — a label applied to a router output (or group of outputs).

Device — a physical, virtual, or software application that may include multiple sources, destinations, senders, or receivers.

Hard Panel — a physical hardware panel of buttons that is used to control the routing system.

IP Address — a setting that defines the Internet protocol address of a device within a network.

Key — a physical button on the front panel of an NRG-FR1-LCP and/or NRG-FR2-LCP.

Label — text that is used by control displays to identify a signal as an input or output.

Level — refers to a section of a routing system. For example, a video router would be one level and an audio router would be a second level.

Local Control Panel (LCP) — refers to the physical buttons located on the front panel of the NRG-FR1-LCP and NRG-FR2-LCP.

Logical (virtual) Label — a name for a group of routing system inputs or outputs.

Logical (virtual) Routing — the action of switching a group of otherwise unrelated signals via a common label (name).

Macro — a recorded sequence of Remote Control Panel operations (local to the panel).

Map — a table that defines the allocation of names (labels) to router input and output sockets.

Matrix — the part of the routing system that performs the actual signal switching tasks.

Receiver — an element within a device that receives exactly one stream, which contains one flow from a network.

Remote Control Panel (RCP) — a physical hardware panel of buttons that is used to control the routing system.

Resource — a source or destination of a router configuration; an external device providing some conversion functionality for use within the routing control system.

Sender — an element within a device which presents exactly one flow, packaged as a stream onto a network.

Soft Panel — a DashBoard interface that represents a panel of buttons that is used to control the routing system.

Source — a label applied to a router input (or group of inputs).

T-Bus — the Ross Video proprietary routing communication method via a defined physical interface.