Ultricore BCS

User Guide

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ROSS

Thank You for Choosing Ross

You've made a great choice. We expect you will be very happy with your purchase of Ross Technology.

Our mission is to:

1. Provide a Superior Customer Experience
   - offer the best product quality and support
2. Make Cool Practical Technology
   - develop great products that customers love

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.)*

Ultricore BCS · User Guide

- Ross Part Number: **2201DR-106-11**
- Release Date: February 14, 2024.
- Software Issue: **5.3.0**

The information contained in this Guide is subject to change without notice or obligation.

Copyright

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.

Notice

The material in this manual is furnished for informational use only. It is subject to change without notice and should not be construed as commitment by Ross Video Limited. Ross Video Limited assumes no responsibility or liability for errors or inaccuracies that may appear in this manual.

Safety Notices

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 device complies with Canadian ICES-003 and part 15 of the FCC Rules.

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

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

European Union

This equipment is in compliance with the essential requirements and other relevant provisions established under regulation (EC) No 765/2008 and Decision No 768/2008/EC referred to as the “New Legislative Framework”.

Warning — *This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.*

Australia/New Zealand

This equipment is in compliance with the provisions established under the Radiocommunications Act 1992 and Radiocommunications Labeling (Electromagnetic Compatibility) Notice 2008.

Korea

This equipment is in compliance with the provisions established under the Radio Waves Act.

Class A equipment (Broadcasting and communications service for business use).

This device is a business-use (Class A) EMC-compliant device. The seller and user are advised to be aware of this fact. This device is intended for use in areas outside home.

Type of Equipment	User’s Guide
A급 기기 (업무용 방송통신기자재)	이 기기는 업무용(A급) 전자파적합기기로서 판매자 또는 사용자는 이 점을 주의하시기 바라며, 가정외의 지역에서 사용하는 것을 목적으로 합니다.
Class A Equipment (Industrial Broadcasting & Communication Equipment)	This equipment is **Industrial (Class A) electromagnetic wave suitability equipment** and seller or user should take notice of it, and this equipment is to be used in the places except for home.

International

This equipment has been tested under the requirements of CISPR 22:2008 or CISPR 32:2015 and found to comply with the limits for a Class A Digital device.

Notice — *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.*

Warranty and Repair Policy

The Ultricore BCS system is 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 the Ultricore BCS, 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 installation, configuration, and use of the Ultricore BCS Central Controller in a routing system. The following chapters are included:

- "**Introduction**" summarizes the guide and provides important terms, and conventions.
- "**Before You Begin**" provides an overview for creating a routing system with Ultricore BCS, and general information to keep in mind before installing and configuring your Ultricore BCS panel.
- "**Hardware Overview**" provides a basic introduction to the Ultricore BCS front and rear panels.
- "**Physical Installation**" provides instructions for the basic physical installation of the Ultricore BCS panel.
- "**Basic Configuration**" provides instructions for adding the Ultricore BCS to the DashBoard Tree View, accessing the Ultricore BCS interfaces in DashBoard, and basic global settings in DashBoard.
- "**Software License Keys**" outlines the available software licensed features, and how to install a software key for a licensed feature.
- "**Ultricore-IP**" outlines how to configure receivers and senders to be used in video and audio streaming.
- "**Device Communication Setup**" provides instructions for using Ultricore BCS to establish connections with NK Series devices, Ross Ethernet devices, and third-party devices in your routing system.
- "**Database Configuration**" provides instructions for defining the elements of your routing system database such as matrices, levels, destinations, and sources.
- "**Tallies**" provides instructions on how to enable TSL UMD messages in the active database, and assign Tally IDs to your sources and destinations.
- "**Using Categories**" describes how to assign each destination, source, and level, to a specific category in the routing system database.
- "**Soft Panels in DashBoard**" provides instructions for creating virtual panels in Ultricore BCS.
- "**Using Salvos**" describes how to create and recall a salvo using the options in DashBoard.
- "**Setting up a Redundant System**" outlines how to configure two Ultricore BCS panels into a single standby redundant system.
- "**Tielines**" outlines how to define a distributed routing system using the Tieline Builder feature of the Ultricore BCS.
- "**Operation with Ross Devices**" provides general information for operating the Ultricore BCS in a routing system that also includes Ross NK Series devices.
- "**System Integration Examples**" provides generalized examples of integrating Ultricore BCS into existing routing systems.
- "**External Control**" lists the third-party protocol commands the Ultricore BCS supports.
- "**Monitoring**" describes the alarms and status indicators in the DashBoard interface for the Ultricore BCS. General information is also provided on the Ethernet port LEDs.
- "**DashBoard Interface Overview**" summarizes the functions, menus, and parameters of the Ultricore BCS tabs and windows in DashBoard.
- "**Panel Menu System Overview**" outlines the menus available using the hard panel.
- "**Technical Specifications**" provides the specifications for the Ultricore BCS.
- "**Software Licenses**" provides third-party software license information for your Ultricore BCS.
- "**Glossary**" provides a list of terms used throughout this guide.

Related Publications

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

- ***DashBoard User Manual***, Ross Part Number: 8351DR-004
- ***Ultricore BCS Quick Start Guide***, Ross Part Number: 2201DR-108
- ***Ultrix Installation Guide***, Ross Part Number: 2101DR-003
- ***Ultrix User Guide***, Ross Part Number: 2101DR-004
- ***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 **Edit** dialog, click **Insert Above**.

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 ***Ultrix User 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:

✶ Contact your IT department before connecting to your facility network to ensure that there are no conflicts. They will provide you with an appropriate value for the IP Address, Subnet Mask, and Gateway for your device.

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.

- **Technical Support**: (+1) 613-652-4886
- **After Hours Emergency**: (+1) 613-349-0006
- **E-mail**: techsupport@rossvideo.com
- **Website**: http://www.rossvideo.com

Before You Begin

Ultricore BCS is a fully featured connectivity control system that is designed to handle all the usual router requirements as well as harness the power of Ultrix. Ultricore BCS makes it quick and easy to configure a system and gives your staff an intuitive and powerful set of controls to make operations run smoothly.

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

General Overview

Ultricore BCS is the central system controller for Ross Video's routing systems. It allows the connection of Ethernet based routers and remote control panels, and third-party automation systems.

By collating the potentially complex aspects of a system's switching scheme, Ultricore BCS allows for minimal out-of-the-box configuration of routers. This not only makes it easier to initially setup a system, but it also makes it easier to change configuration as needed.

The DashBoard client software enables you to monitor and control your Ross routing system components, from a computer. DashBoard communicates with the Ross routing system through Ethernet TCP/IP connections.

IP Connectivity

Ultricore BCS provides simple, familiar configuration options paired with sophisticated discovery and registration to facilitate adding IP into systems.

- Optional software licenses.
- Scalable based on the number of streams required for control in the system.
- Use the same work-flows regardless of transport to enable easier integration in hybrid operations using the same logical configuration, and control surfaces.
- Ultricore IP

Typical System Equipment

Use Ultricore BCS in topologies where routers and remote control panels are distributed throughout a facility. In this scenario some of the routers and panel are physically located a great distance from the Ultricore BCS. You would use Ethernet connections to the Ultricore BCS.

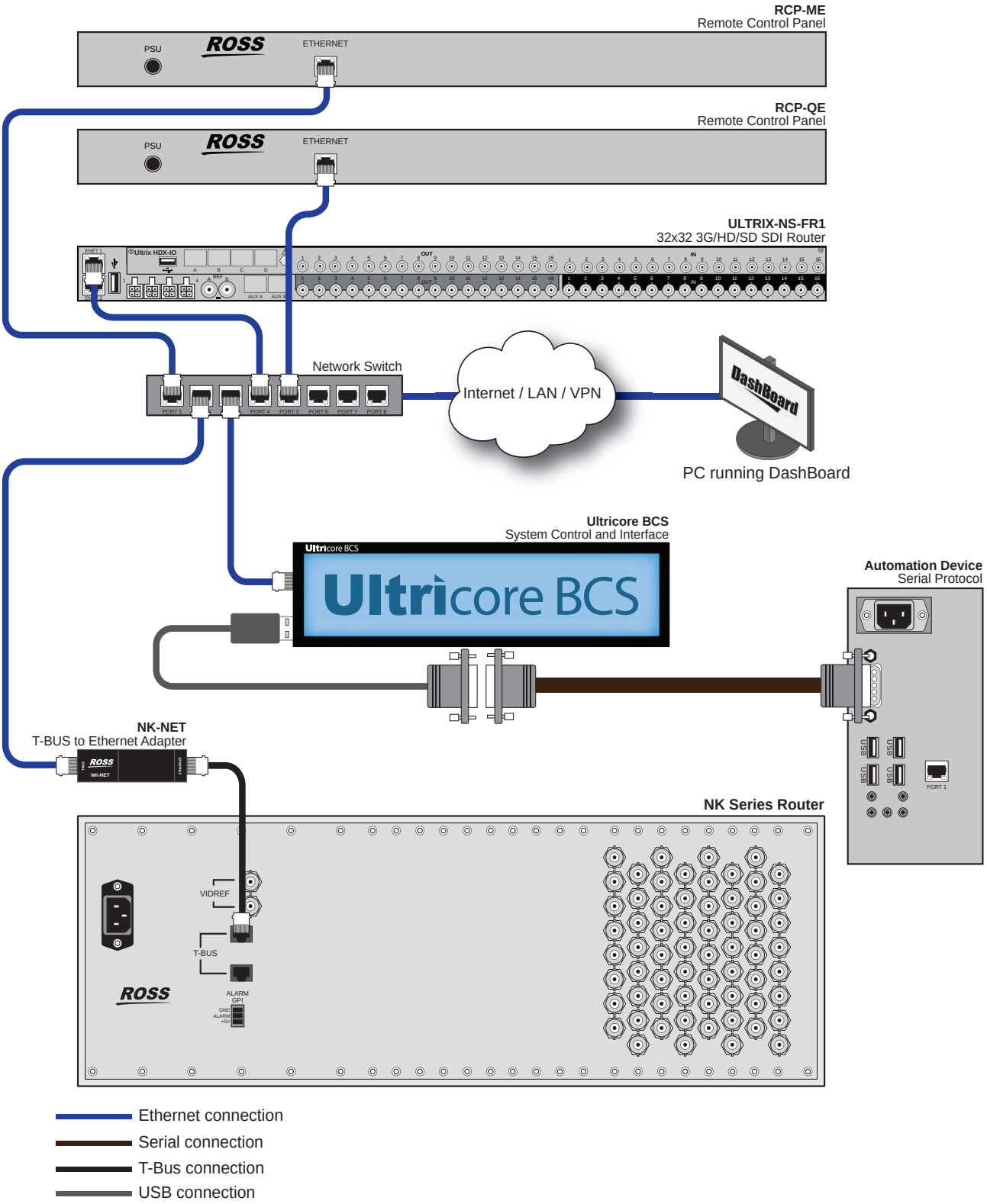


Figure 1 Example of a Possible Routing System with Ultricore BCS

Before You Begin

Before configuring and operating the Ultricore BCS, you must first:

1. Download and install the latest version of the DashBoard client software. The DashBoard software and user manual are available from our website.

✶ Contact your IT department before connecting to your facility network to ensure that there are no conflicts.

2. Connect your routers and panels to your facility network.
3. Launch DashBoard.
4. Ensure that your routers and remote control panels are available/visible in DashBoard.

✶ 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.

For More Information on...

- downloading and installing DashBoard, refer to the ***DashBoard User Manual***.
- planning and installing your routing system, refer to the user documentation that accompanied your devices.
- configuring the NK-NET, refer to the ***NK-NET User Guide***.
- configuring the NK-IPS, refer to the ***NK-IPS User Guide***.

Installation and Setup Overview

The generalized work flow of installing and configuring your Ultricore BCS is:

1. Implement your routing system plan by installing the devices and configuring their network settings.
2. Use Walkabout to establish communications between Ultricore BCS and DashBoard.
3. Ensure that DashBoard discovers the routing system and all its devices.
4. Configure individual device settings in DashBoard.
5. Define the routing system database using the options in the Ultricore BCS interfaces in DashBoard.
6. Set up control panels.

Implementing a System Plan

Once the topology of the system has been decided with respect to routers, panels, connecting devices (NK-NET, NK-IPS) etc. the components are connected and configured. Once all the Ross routing system components are configured for network communication, the required information is entered into the Ultricore BCS's databases through its DashBoard interfaces.

An example use topology would be a broadcast facility or studio where there are routers and panels distributed throughout a building or a campus with the Ultricore BCS collating the system's components.

✶ Ultricore BCS acts as a central system controller for up to 10 DashBoard clients and up to 50 hardware clients (routers and/or remote control panels).

Establish Communications

Ultricore BCS supports the Walkabout system for initial configuration of IP settings. Once you establish communications over Ethernet between the Ultricore BCS panel and DashBoard, you can

proceed to use the interfaces in DashBoard that enable Ultricore BCS to communicate with the other devices in your routing system.

For More Information on...

- establishing a network connection to Ultricore BCS, refer to "**Using Walkabout to Assign an IP Address to the Ultricore BCS Panel**".

Define the Routing System Database in Ultricore BCS

The Database interface in DashBoard for Ultricore BCS enables you to create system input and output lists, assign those signals to system sources and destinations, define multiple levels and matrices. You can create multiple databases, each one with unique parameters, that are saved to the Ultricore BCS panel memory. This provides the flexibility of recalling a database and edit parameters as needed. You may wish to use the following process when defining the database for your routing system.

✶ Ultricore BCS supports a maximum of 64 levels, with a maximum matrix of 4096 sources and 4096 destinations.

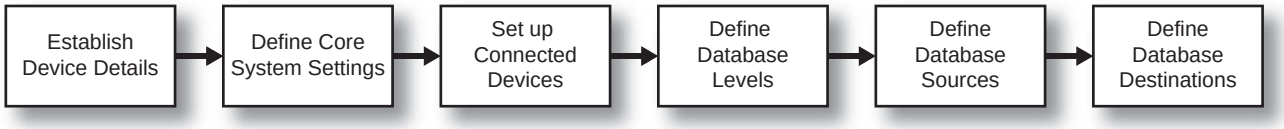


Figure 2 Process for Configuring an Ultricore BCS

✶ Ultricore BCS does not support Unicode characters.

For More Information on...

- defining a database, refer to "**Creating a New Database**".

Set up Virtual Control and Resource Management in Ultricore BCS

Once your router connections are defined, and a database is established, you can start building a map of several different physical devices that become one virtual device. When a switch request is made for a virtual device, all the physical devices that are mapped to the virtual device are switched.

Ultricore BCS enables you to map inputs and outputs from routers for control via any remote control panel. These parameters can be saved to a database, enabling you to change configurations easily and quickly, allowing devices to used in a number of different operating scenarios.

Configure the Soft Panels in Ultricore BCS

There are seven types of soft panels available in the Ultricore BCS interface:

- A Matrix panel displays the sources and destinations in a grid pattern, allowing you to quickly select a router, then select which crosspoints to switch from, and perform a Take transition between the crosspoints.
- A MultiBus panel arranges the sources and destinations in separate crosspoint buses, but provides similar controls as the Matrix panel.
- A Category Index panel provides an interface for classic category/index selection. The various categories and indexes are set via the Cat/Index category table within each database.
- A Group category panel provides a method of grouping dissimilarly named resources into functional selection groups. The group assignments are set via the Group categories table within each database.
- A Push Button panel provides a button-per-source style panel in a grid layout.

- An UltritouchPB panel provides a button-per-source grid of buttons scaled to support Ultritouch panels.
- An UltritouchMV panel provides specific Ultriscape MultiViewer controls scaled for display on Ultritouch panel.

✶ Ultricore-BCS does not display UltritouchMV soft panels. Refer to the ***Ultritouch+Ultrix User Guide*** for information on using these soft panels.

Operation

Once configured, the Ultricore BCS provides central controller functionality for the routing system, including:

- the storage and implementation of routing system configurations, which collect a series of routing matrices into a system and provide a logical database view of the whole system
- switching the physical crosspoints of the routers according to the system configuration
- the control and system database interface for devices that control and/or display routing status (e.g. remote control panels, switchers, master control, automation systems, multi-viewers, and tally systems)
- virtual routing, matrix partitioning, and mapping
- label support for protocols supporting labels
- system control through DashBoard
- connection and status logging
- single Ultricore BCS operation or dual redundant mode

Hardware Overview

This chapter presents information on the Ultricore BCS front and rear panels.

Front Panel Overview

The Ultricore BCS front panel is a touchscreen display that enables you to monitor Ultricore BCS communication status and routing system the panel is connected to. (**Figure 3**)

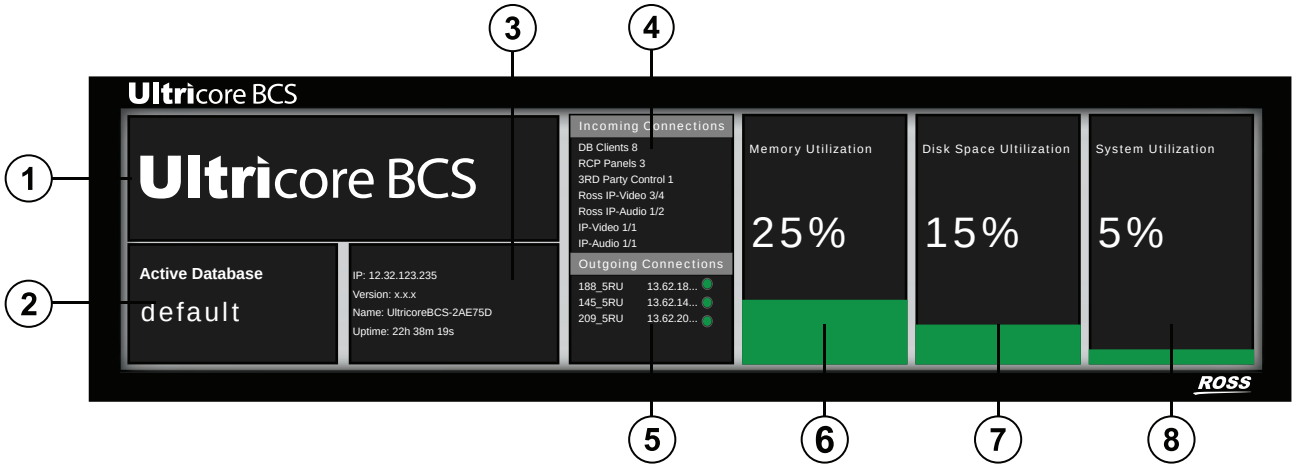


Figure 3 Ultricore BCS — Example of the Front Panel

✶ This information is also reported in the System Monitor interface in DashBoard. Refer to "**System Monitor Tab**" and "**Monitoring via the Front Panel**" for more information.

1. Product Name

Indicates the Ultricore BCS product name.

2. Active Database

Reports the database currently loaded on this Ultricore BCS.

3. Panel Status

Displays the following information:

› **IP** — the IP Address assigned to this Ultricore BCS.

› **Version** — the build version of the Ultricore BCS.

› **Name** — the unique identifier assigned to the Ultricore BCS.

› **Uptime** — the number of hours, minutes, and seconds since the last reboot of the Ultricore BCS.

4. Incoming Connections

Reports the connected external devices currently sending data to the Ultricore BCS:

› **DashBoard Clients** — the total number of DashBoard clients communicating with this Ultricore BCS.

› **RCP Panels** — the total number of remote control panels communicating with this Ultricore BCS.

› **3rd Party Control** — the total number of third-party automation control devices communicating with this Ultricore BCS.

- **Ross IP-Video** *x/y* — where *x* represents the current number of Ross Video IP Connectivity video devices (e.g. NEWT-IPX) communicating with this Ultricore BCS and *y* represents the total number of devices the Ultricore BCS is licensed to communicate with.
- **Ross IP-Audio** *x/y* — where *x* represents the current number of Ross Video IP Connectivity audio devices (e.g. IGGY-MADI) communicating with this Ultricore BCS and *y* represents the total number of devices the Ultricore BCS is licensed to communicate with.
- **IP-Video** *x/y* — where *x* represents the current number of third-party IP Connectivity video devices communicating with this Ultricore BCS and *y* represents the total number of third-party video devices the Ultricore BCS is licensed to communicate with.
- **IP-Audio** *x/y* — where *x* represents the current number of third-party IP Connectivity audio devices communicating with this Ultricore BCS and *y* represents the total number of third-party audio devices the Ultricore BCS is licensed to communicate with.

5. **Outgoing Connections**

   Reports the name and IP address of each external device that the Ultricore BCS is transmitting data to.

6. **Memory Utilization**

   Reports the percentage of system RAM currently in use and will vary depending on the size of your routing system.

7. **Disk Space Utilization**

   Reports the percentage of available storage space and will vary depending on the complexity of your routing system, the features enabled on the Ultricore BCS, and the stored database(s).

8. **System Utilization**

   Reports on the level of traffic and communications the Ultricore BCS is managing. For example, this value is low when the system is idle or during periods of low activity. An increase in activity, such as when a user changes configurations, the system is busy switching or processing lots of parameter changes, there was a burst of network traffic will impact the System Utilization value reported.

Rear Panel Overview

The Ultricore BCS rear panel provides connections for power supplies, communications, and network connections.

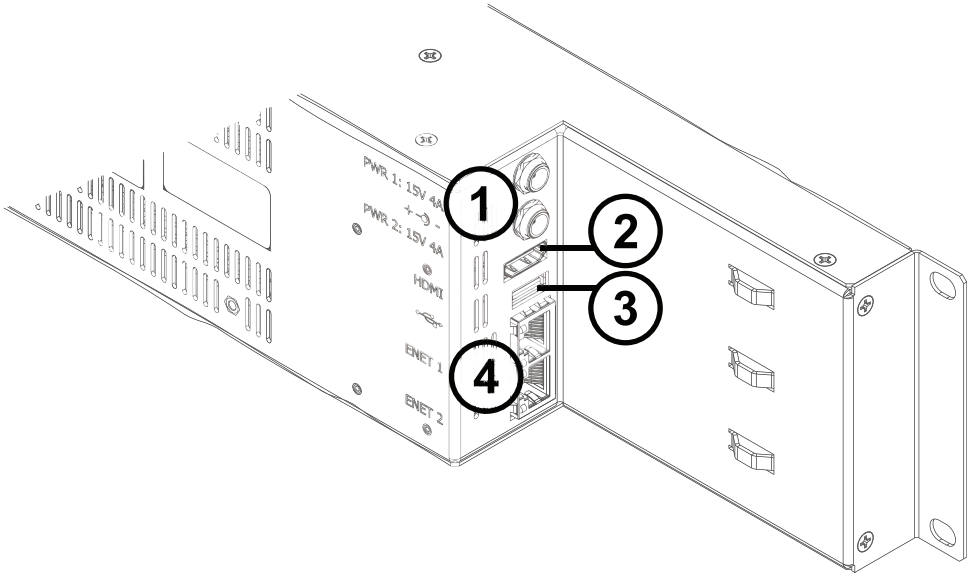


Figure 4 Ultricore BCS — Rear Panel, Side View

1. **PWR1 and PWR2 Connections**

   There are two power supply connectors located on the rear of each Ultricore BCS. Each connector requires a 15VDC connection to an external power supply. Refer to **Table 85** for power specifications.

   Notice — *The Ultricore BCS automatically powers on when power is applied.*

   The Ultricore BCS ships with one power supply. An option is available to order a second power supply.

2. **HDMI Port**

   This port is not implemented.

3. **USB Port**

   This port is used with supported dongles for serial communication. Refer to "**Supported USB-Serial Converters**" for a list of supported devices.

4. **ENET1 and ENET2 Ports**

   Each ENET port is an RJ45 connector 1GbE network interface.

   Notice — *The ENET ports do not provide, nor make use of, Power-over-Ethernet (PoE).*

   Use the to connect the Ultricore BCS to the local area network (LAN).

   Use the Ultricore BCS panels. Refer to "**Setting up a Redundant System**" for details.

Physical Installation

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

Before You Begin

These installation guidelines assume the following:

- The relevant Ross equipment is installed into a ventilated rack frame. The relative humidity in the environment of the equipment should be <70% (non-condensing). The ambient temperature of the air entering the front panel should not exceed 40°C (104°F), and should not fall below 0°C (32°F).
- The install location of the panel should be accessible, dry, and dust-free.
- The socket/outlet should be installed near the equipment and be easily accessible.
- Valid IP addresses are available for the equipment.

Static Discharge

Throughout this chapter, please heed the following cautionary note:

ESD Susceptibility — *Static discharge can cause serious damage to sensitive semiconductor devices. Avoid handling circuit boards in high static environments such as carpeted areas and when synthetic fiber clothing is worn. Always exercise proper grounding precautions when working on circuit boards and related equipment.*

Mounting Requirements

The Ultricore BCS panel is designed for installation into a standard 19" equipment rack. It has integrated rack ears, allowing it to be screwed in using standard screws and cage nuts.

The Ultricore BCS panel mounts in the rack frame by means of four rack screws fastened through the front mounting ears. This should normally be sufficient to carry the load, including the weight of accompanying cables.

Under some conditions, the ambient air temperature inside rack-mount cabinets can be greater than the ambient temperatures within a room. For safe long term reliability, adequate ventilation within a rack frame must also be maintained.

For More Information on...

- the technical specifications for the Ultricore BCS, refer to "**Technical Specifications**".

Connecting the Ultricore BCS to a Network

The **ENET 1** port is a standard 10/100/1000 RJ45 Ethernet connector and is used to exchange data and communicate with other devices in your router system.

✶ Contact your IT department before connecting to your facility network to ensure that there are no conflicts. They will provide you with an appropriate value for the IP Address, Subnet Mask, and Gateway for your device.

The Ultricore BCS is connected directly to your network so that it can interface with the devices in your routing system. After a physical connection is established, use the DashBoard client to configure the network settings for the Ultricore BCS.

✶ If difficulties or problems are experienced when connecting the Ultricore BCS to a network hub, or with assigning IP addresses, please contact your network administrator.

To establish a physical connection to the network

1. Connect one free end of the straight through CAT5/5e/6 cable to a free port of the network hub.
2. Connect the other end of the same cable to **ENET 1** on the Ultricore BCS rear panel.

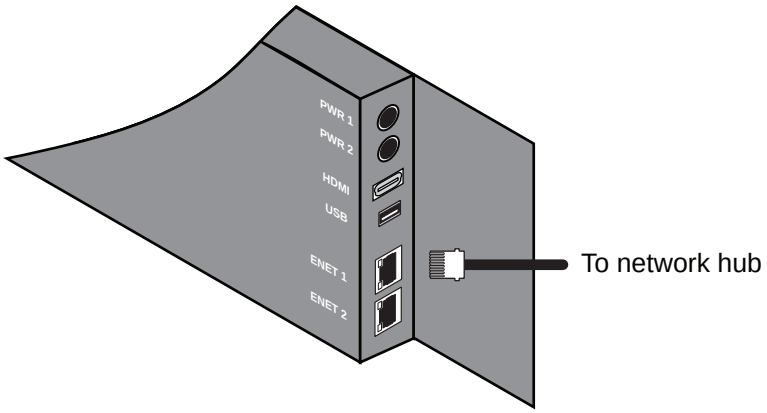


Figure 5 Ultricore BCS — Network Connection

Connecting to a Power Supply

The Ultricore BCS panel is powered by one +15V DC, 30W PSU, with an optional PSU available.

Each power cord should be connected to a separate power source for protection against failure of the A/C power circuit. In the event of one power supply failure, the panel load is seamlessly transferred to the other connected redundant power supply.

Warning Hazardous Voltages — *The safe operation of this product requires that a protective earth connection be provided. This protective earth is provided by the ground conductor in the equipment's supply cord. To reduce the risk of electrical shock to operator and service personnel, this ground connector must be connected to an earthed ground.*

Warning — *In some countries it may be necessary to supply the correct mains supply cord. Use only certified cords for the country of use.*

To connect the power cables to the Ultricore BCS panel

1. Connect the male end of the provided power cable into the socket marked **PWR1** on the Ultricore BCS rear panel.

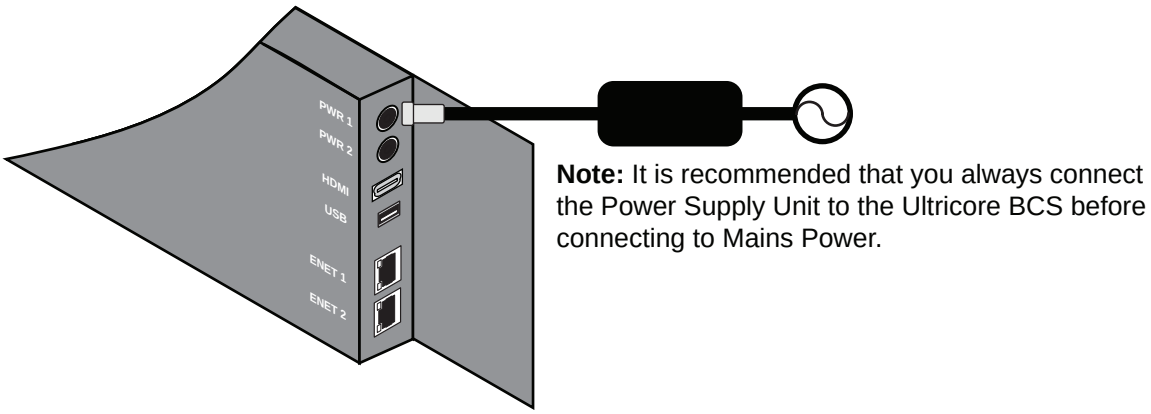


Figure 6 Ultricore BCS — Primary Power Connection

Notice — *The Ultricore BCS automatically powers on when power is applied.*

2. Connect the second power cable into the **PWR2** power supply socket if a second power supply is required.
3. Connect the supplied AC power cable into the power modules.
4. Connect the supplied power cable's three-prong male connector to an AC outlet.

Basic Configuration

The Ultricore BCS system controller with the DashBoard client software allows configuration and control of the Ultricore BCS and other routing system devices, enhancing the capability of any installed Ross products by providing access to the entire range of functions. Ultricore BCS provides a basic platform operation with SLP discovery and manual configuration of connection to DashBoard.

This chapter provides instructions on basic set up that includes launching DashBoard, using Walkabout to assign an IP address to the Ultricore BCS panel, adding the Ultricore BCS to the Tree View in DashBoard, and accessing the Ultricore BCS interfaces in DashBoard.

Launching DashBoard

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

For More Information on...

- the DashBoard client software and user documentation are available on our website.
- the Ultricore BCS interfaces in DashBoard, refer to "**DashBoard Interface Overview**".

To launch DashBoard

1. Ensure that you are running DashBoard software version 9.6.0 or higher.
2. Launch DashBoard by double-clicking its icon on your computer desktop.

Using Walkabout to Assign an IP Address to the Ultricore BCS Panel

Once the Ultricore BCS panel is physically installed and cabled to your facility network, you will need to assign it a static IP Address to enable DashBoard to locate it on your network. Establishing an IP Address enables DashBoard to communicate with the Ultricore BCS and update the Basic Tree View with the Ultricore BCS nodes.

To assign a static IP address to the Ultricore BCS panel

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** tab, to ensure the list in the **Walkabout** table is current.
4. In the **Walkabout** table, find the entry for the Ultricore BCS you want to configure.
5. Use the **Name** field to assign a unique identifier to the Ultricore BCS panel. This is the name displayed in the Tree View of DashBoard.

✶ After editing a cell in the **Walkabout** table, press **Enter** to confirm your edits. To verify your changes, wait up to 1 minute, then click **Refresh**.

6. Use the **Address** field to specify the IP Address supplied by your IT Department for this device.
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).

9. Click **Reboot** in the row of the **Walkabout** table for the Ultricore BCS to reboot the device.

Adding the Ultricore BCS to the Tree View in DashBoard

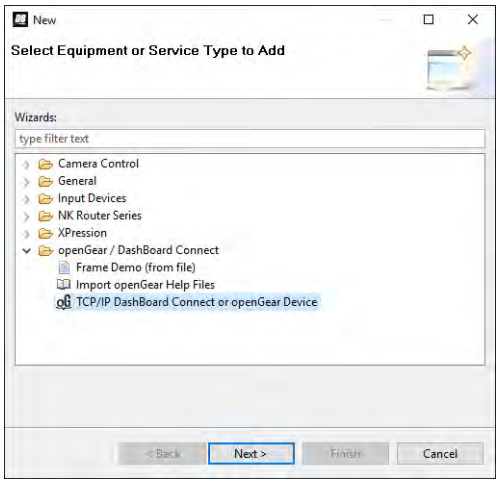
Once you have assigned the Ultricore BCS panel to a static IP Address via Walkabout, you can then manually add it to the Tree View in DashBoard. Manually adding the Ultricore BCS panel displays its node in the Tree View, granting you access to the interfaces described in "**DashBoard Interface Overview**".

To manually add the Ultricore BCS to the Tree View in DashBoard

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

   The **Add New Connections** 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. Enter the IP Address for the Ultricore BCS in the **IP Address** field assigned in "**To assign a static IP address to the Ultricore BCS panel**".
6. Click **Detect Frame Information**.

   The fields in the **TCP/IP DashBoard Connect/openGear Device** dialog are auto-populated with data retrieved from the Ultricore BCS panel.

7. Click **Finish**.

   The Ultricore BCS panel displays in the **Tree View**.

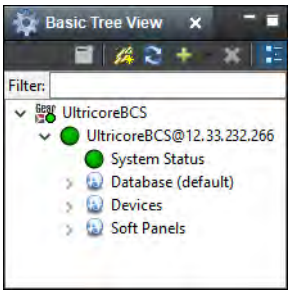
Accessing the Ultricore BCS Interfaces in DashBoard

The interfaces are accessed by expanding the Ultricore BCS node in the DashBoard Tree View.

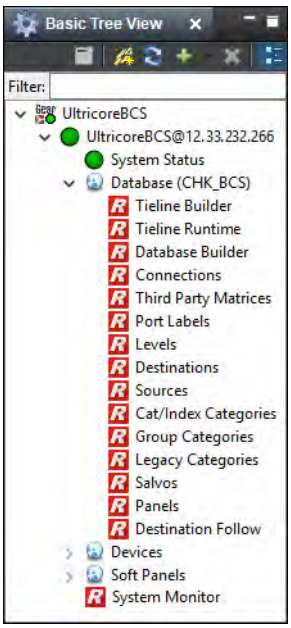
To access the Ultricore BCS interfaces in DashBoard

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

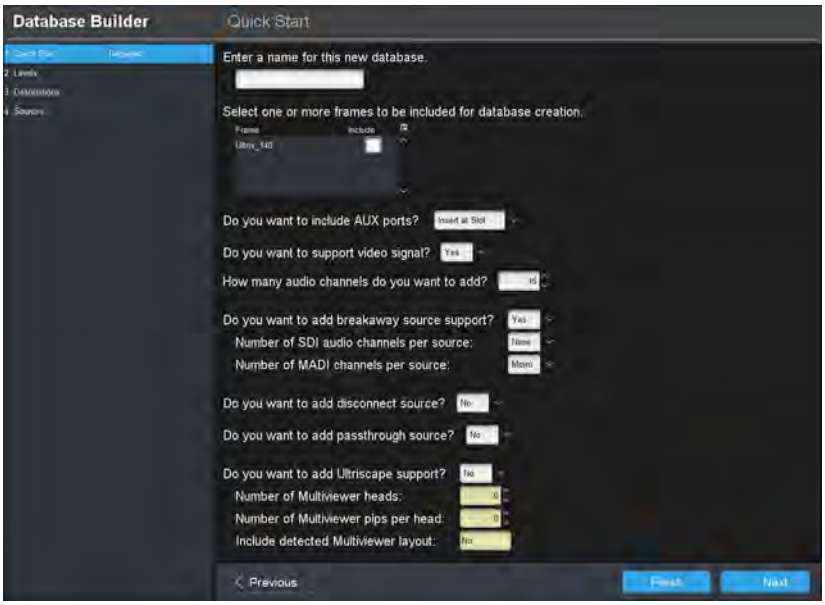
   Each sub-node is an Ultricore BCS interface.



4. Expand a sub-node to access the functions of the interface.



5. Double-click a node to display its tab in the right-side of the DashBoard window. For example, double-click the Database Builder node to display the interface for creating new databases.



✶ The selected interface may be blank or missing some data if the database is new and is not configured yet. Also, an outgoing connection must be established before remote devices will be listed on the Database Builder interface.

Reviewing the Network Settings for the Ultricore BCS Panel

Once you establish initial communications with the Ultricore BCS panel, and it displays in the DashBoard Tree View, you may wish to alter the network settings according to your facility network requirements.

To update the network settings for the Ultricore BCS panel

1. In the Tree View of DashBoard, double-click the **System Status** node.

   The **System Interfaces** display in the DashBoard window.
2. Select the **Network** tab.
3. Locate the **Settings** area of the tab.
4. Use the **Address** field to specify the new static IP Address for the Ultricore BCS panel.
5. Use the **Subnet Mask** field to specify the subnet mask for your network.
6. Use the **Gateway** field to specify the gateway for communications outside of the local area network (LAN).
7. Click Network Settings **Apply**.

Re-naming the Ultricore BCS

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

✶ Changing the Ultricore BCS 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. In the case of a system with an ULTRIX-1RU and ULTRIX-2RU, the worst case will be 3-4 minutes. In the case of a system with an ULTRIX-5RU, the worst case is 10 minutes. The Ultricore BCS name is typically assigned during initial commission and very rarely ever changed again.

To re-name the Ultricore BCS in DashBoard

1. In the Tree View of DashBoard, double-click the **System Status** node.

   The **System Interfaces** display in the DashBoard window.
2. Select the **Setup** tab.
3. Use the **Device Name** field to specify the new name for the Ultricore BCS.
4. Press **Enter** to apply the new name.

Configuring Access for DashBoard Clients

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

To enable access for a DashBoard client

1. In the Tree View of DashBoard, double-click the **System Status** node.

   The **System Interfaces** display 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 Ultricore BCS.
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 **System Status** node.

   The **System Interfaces** display 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.

Connecting to an ULTRIX-FR12

The Ultricore BCS acts as a primary controller for one or more ULTRIX-FR12. A connection is made from the controlling Ultricore BCS panel to each ULTRIX-FR12. The controlling Ultricore BCS (primary) contains the full database configuration for the entire operation of the routing system.

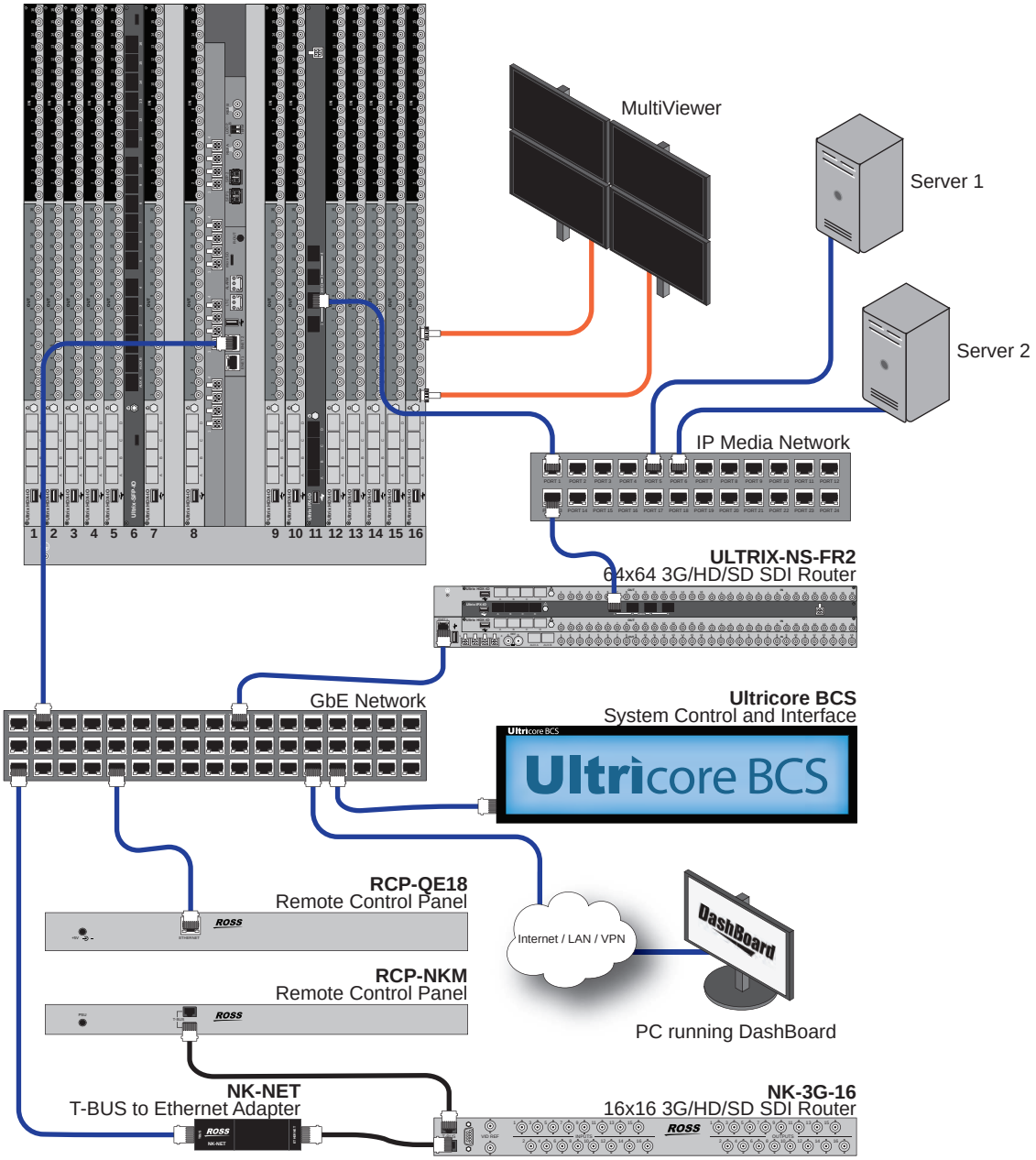


Figure 7 Example Workflow with an ULTRIX-FR12 and Ultricore BCS

All client devices, such as a remote control panel (RCP) or third-party controllers, must be configured for and communicate with the primary Ultricore BCS. Each ULTRIX-FR12 configured as a client device will only accept control commands via the Ultricore BCS. To configure an ULTRIX-FR12 as a client device, the Remote Controller Mode must be first enabled on the ULTRIX-FR12.

An Ultricore BCS with the Ultricore-IP license also enables the video senders/receiver endpoints to be reported as available ports to the routing database. The video senders/receivers are seen as part of a single video-IP matrix, and the audio senders/receivers are part of a single audio-IP matrix.

✶ When a video sender stream is active and the video format changes on the SDI input of that stream, the Ultricore BCS will automatically detect the update and then updates all the receivers subscribed to that sender. This allows the existing streams to adapt.

Setup Overview

1. Configure the Ultripower Manager feature to group the Ultripower units together to safely power on/off the ULTRIX-FR12. Refer to the ***ULTRIX-FR12 Installation Guide*** for details.
2. Set up any licensing requirements for the ULTRIX-FR12. Refer to the ***ULTRIX-FR12 User Guide***.
3. Set up any Ultriscape requirements for the ULTRIX-FR12. Refer to the ***Ultriscape User Guide***.
4. Enable Remote Controller Mode on the ULTRIX-FR12. Refer to the ***ULTRIX-FR12 User Guide***.
5. Create a database within the Ultricore BCS to accommodate the I/O of the ULTRIX-FR12. Refer to "**Creating a New Database**".
6. Create a connection point from the Ultricore BCS to the ULTRIX-FR12. Refer to "**Connecting to an Ultrix Router**".
7. Edit the Ultricore BCS database to map logical sources and destinations to ULTRIX-FR12 inputs/outputs. Refer to "**Defining the Destinations in a Database**" and "**Defining the Sources in a Database**".
8. Map the Ultriscape heads/PiPs. Refer to the ***Ultriscape User Guide*** for details.

Software License Keys

The Ultricore BCS includes software options that license functions and features. This chapter outlines the available software licensed features, and how to install a software key for a licensed feature.

Before You Begin

When installing a software license key on the Ultricore BCS:

- You must have the DashBoard client installed and communicating with the Ultricore BCS that you wish to install the key for.
- Ensure that you are using DashBoard version 9.6.0 or higher. This information is available by selecting **Help** > **About DashBoard** from the DashBoard main toolbar.

License Keys Overview

Table 1 provides a brief summary on the types of licensed features available for the Ultricore BCS.

Table 1 List of Ultricore BCS Licensed Features

License	Description
Ultricore-NVISION	Enables the use of the NVISION protocol on Ultricore BCS
Ultricore-SNMP	Enables basic SNMP monitoring on Ultricore BCS
Ultricore-BCS-CLIENT	Each seat adds support for 25 device connections (panels, routers, DashBoard clients) to a maximum of 100 connections
ULTRICORE-TLX	Enables the Tieline Builder feature for the Ultricore BCS
Ultricore-IP	You must install this license to enable the Ultricore-IP feature for the Ultricore BCS. Enables RDS and basic NMOS-IS-04 discovery support for the Ultricore-IP feature. Depending on your routing system, you will also need to install one of the following IP licenses.
Ultricore-IP+V	Each seat adds support for 16 video streams between Ross Video devices
Ultricore-IP+A	Each seat adds support for 384 audio streams between Ross Video devices
Ultricore-IP+V3RD	Each seat adds support for 16 video streams from third-party devices
Ultricore-IP+A3RD	Each seat adds support for 384 audio streams from third-party devices

Installing a License Key

Ross Video uses license keys to control user access to specific Ultricore BCS features. You can obtain a key for an Ultricore BCS licensed feature from Ross Video Technical Support.

To install an Ultricore BCS license key

1. Launch the DashBoard client.
2. Locate the Ultricore BCS node in the Tree View.

3. Expand the Ultricore BCS node to display a list of sub-nodes in the Tree View.
4. Expand the **Devices** node.
5. Expand the **Controllers + Matrices** node.
6. Double-click the node for your Ultricore BCS.

   The **Device Configuration** interface opens.
7. Click **Licenses**.
8. Make a note of the character string in the **Request Code** field for the feature you wish to enable.
9. Contact Ross Video Technical Support using the information found 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 the **Licenses** table.
   b. You will be given a License Key that must be entered in the applicable field in the **Licenses** table.
10. Enter the provided License Key in the applicable **License Key** field in the **Licenses** table.

✶ 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.

11. Click **Apply** in the row for the License Key you entered in step 10.
12. Verify that the **Count** field is updated to report each installed License Key.

Ultricore-IP

Ultricore-IP discovers, exposes, and controls multicast streams found on the IP network. The streams are added into the Ultrix router database as available ports. This chapter outlines how to configure receivers and senders to be used in video and audio streaming.

✶ Ensure that you have the required software licenses installed and are connected to a router with at least one Ultrix-IP-IO or ULTRIX-IPX-IO blade installed.

What are Receivers, Senders, and Streams?

The following terms may be used throughout this chapter:

Receiver

An element within a device that receives exactly one stream, which contains one flow from a network. If redundancy is enabled, then both sender and receiver can represent the two flows.

Sender

An element within a device which presents exactly one flow, packaged as a stream onto a network.

Stream

One flow, encapsulated within a transport protocol. Examples include SMPTE ST 2110-20 Video, or SMPTE ST 2110-30 Audio.

Functional Overview

Ultricore-IP is an optional software license that runs on the Ultricore BCS panel that uses the same routing work flow regardless of the transport protocol. The number of video and/or audio streams the Ultricore-IP recognizes depends on the software license(s) installed for the Ultricore BCS.

✶ The connection between Ultricore BCS and Ultricore-IP is via Registration and Discovery Service (RDS).

Once the required software licenses are installed, the RDS instance running on Ultricore BCS is activated and all devices that support NMOS IS-04 can register themselves with it. Once Ultricore-IP connects within the RDS, it can add the detected devices and resources to the router matrix much like SDI ports.

Setup Overview

The generalized work flow of configuring the Ultricore-IP feature is:

1. Download and install the latest version of the DashBoard client software.
2. Install the Ultricore-IP software license key to enable RDS and basic NMOS-IS-04 discovery.
3. Install any additional Ultricore-IP software license key(s) to enable support for video and/or audio streams as per your system requirements.
4. Configure the PTP settings for the router (with at least one ULTRIX-IPX-IO blade) that the Ultricore BCS will communicate with. Refer to the ***Ultrix User Guide*** for details.
5. Configure the IP senders for each device in the routing system.

6. Use the Ultricore-IP interface to discover each advertised network stream via the NMOS IS-04 protocol.
7. Verify that the NMOS detected ports are added to the list of available ports for the routing system.
8. Add the newly discovered NMOS ports to your database.

System Overview

The Ultricore-IP feature enables the video senders/receiver endpoints to be reported as available ports to the router database. The video senders/receivers can be seen as part of a single video-IP matrix, and the audio senders/receivers are part of a single audio-IP matrix. Or the streams belong to the same matrix with video and audio on different levels where each stream is reported as a single level despite how many channels it transports.

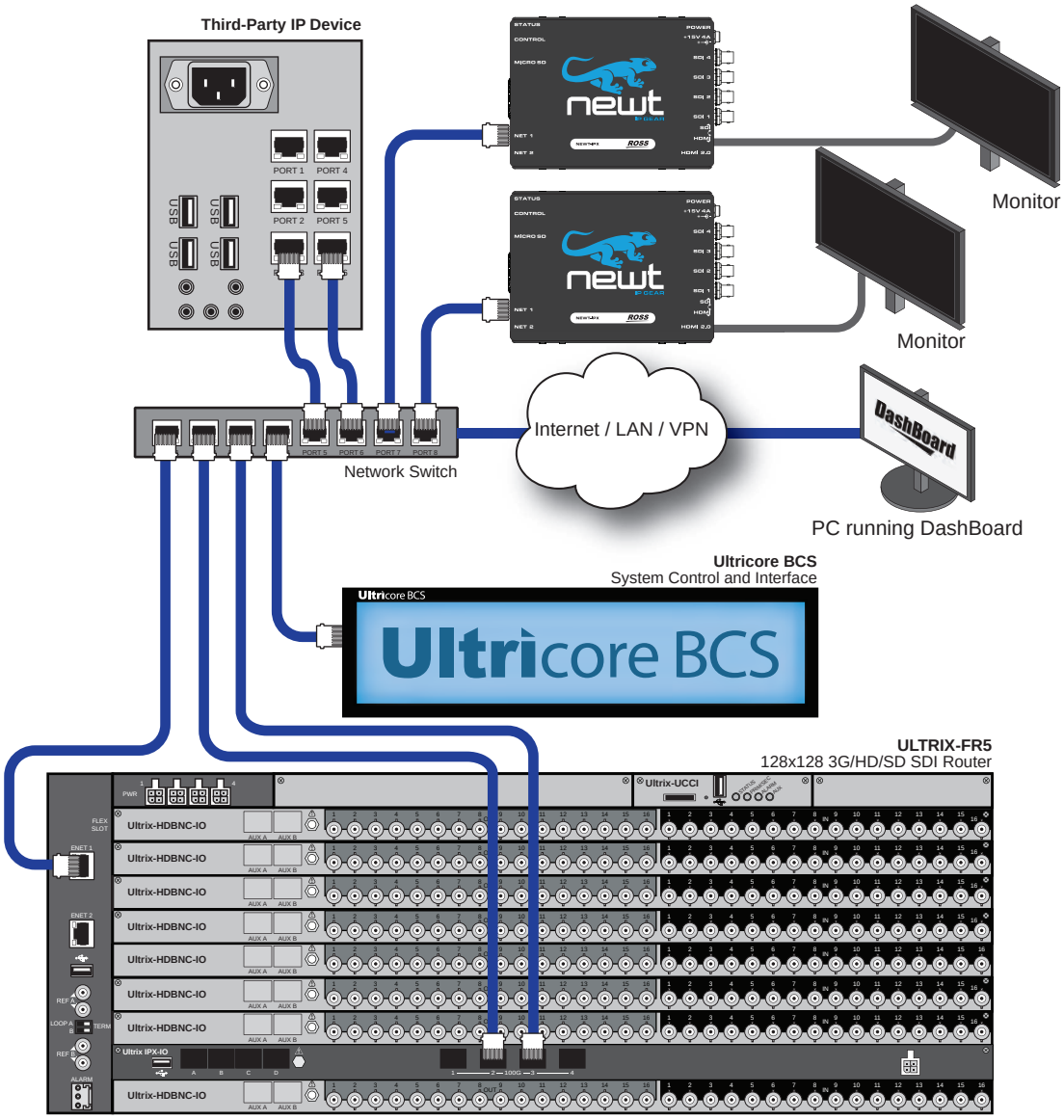


Figure 1 Example Setup with an Ultricore BCS

Install the Ultricore-IP Software Licenses

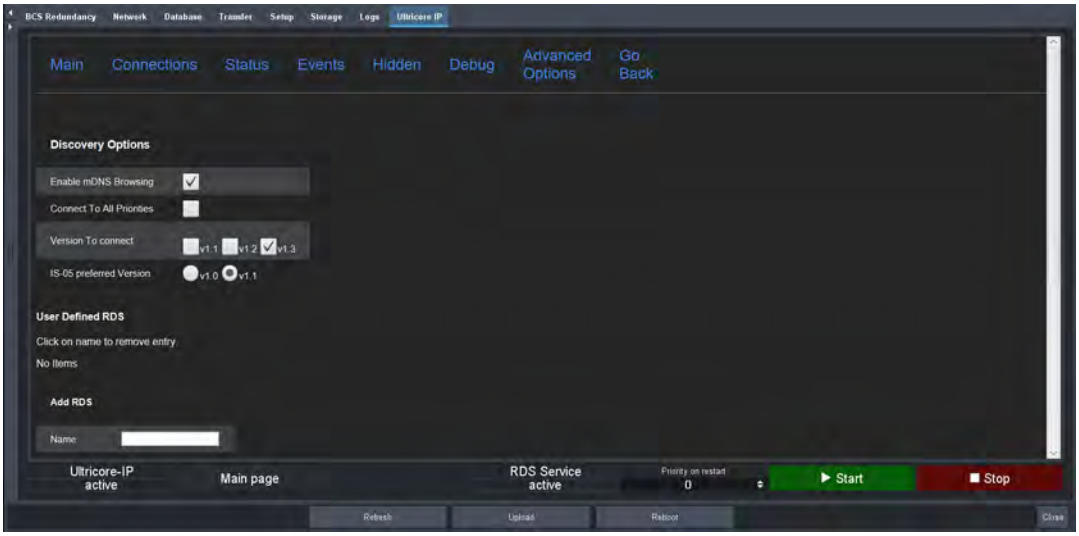
Refer to "**Installing a License Key**" for details on the available Ultricore-IP licenses and how to install them for your Ultricore BCS.

Use the Ultricore-IP Interface to Access the Network Streams

Once the Ultricore-IP license is installed, and a connection is made with an Ultrix with at least one ULTRIX-IPX-IO blade, the **System Status** > **Ultricore IP** tab displays in DashBoard. The Ultricore-IP automatically detects the RDS and advertised streams of NMOS devices in your network and reports them in the **Ultricore IP** tab.

To access the Ultricore-IP tab in DashBoard

1. Follow the procedure "**To access the Ultricore BCS interfaces in DashBoard**".
2. Double-click the **System Status** sub-node.
3. Select the **Ultricore-IP** tab.
4. Specify the NMOS IS-04 version that the Ultricore-IP will use to communicate with the Registration and Discovery Service (RDS) for your network as follows:
   a. Select **Advanced Options**.



   b. Use the **Version to Connect** options to select each NMOS version required.
   c. If required, use the **IS-05 Preferred Version** options to specify the NMOS IS-05 Connection service.
   d. Click **Apply** (you may need to scroll to the bottom of the tab to locate this button).

✶ If your network has more than one Ultricore BCS running or if a third-party RDS is present, ensure that there is only one instance of the RDS with the same priority on the network.

5. Use the fields in the **Ultricore-IP** tab to monitor the advertised IP streams available in your network. Refer to "**Ultricore-IP Tab**" for a description of the available options and fields.

To register the Ultricore BCS when using Registry Service Discovery (RDS)

1. Display the **Ultricore-IP** tab.
2. Locate the **Discovery** area of the tab.
3. To determine how the Ultricore BCS will register in an RDS system:

- Select the **Enable mDNS Browsing** box to configure the Ultricore BCS to use mDNS to automatically register in an RDS on the network with the lowest priority.
- Clear the **Enable mDNS Browsing** box to allow the user to set an RDS IP in the Registry Service Address field and forces the Ultricore BCS to register to this specific RDS.

4. Use the **Add RDS** options to specify an RDS to register.

Automatic Sender Session Description Protocol (SDP) Updates

By default, a receiver is automatically updated when the associated sender changes. The Ultricore BCS monitors all active connections on the system. When an active sender, that is associated with any receiver, is updated, the system will issue a connection update to all affected receivers. This update includes the latest information about the sender, including the updated SDP data.

Overview

This feature is helpful to avoid receivers to be configured with a stale version of a sender. If the parameters of a sender changes, an SDP update is trigged. This update is then forwarded to all receivers that Ultricore BCS detects as subscribed to the updated sender.

ULTRIX-IPX-IO Senders Adaptive Input

On ULTRIX-IPX-IO, the senders have a configuration option that allows the stream to update itself following its SDI input format detected (as long as it is a valid video format). You can choose to limit the video format changes on a bandwidth base or just allow one fixed video format. In the case where the sender can follow the video that is on its input, the SDP is updated on all interfaces/protocols where it is available (such as NMOS, Ember+, etc.)

This update of the sender is identified by the Ultricore BCS, which in turn forward it to all subscribed receivers.

For More Information on...

- the ULTRIX-IPX-IO blade, refer to the ***Ultrix Installation Guide.***
- configuring the ULTRIX-IPX-IO blade, refer to the ***Ultrix User Guide.***

Ultricore Profiles

A DashBoard client has the ability to detect devices on a subnet and can enable complete control of all settings on all devices. Ultricore Profiles are designed to enable administrators to assign and manage user permissions and determine the level of access for those users. For example, one user is only responsible for monitoring the video sources is given access only to control panels, while another user who manages the input and outputs of the routing matrix is also given access to manage the databases.

This chapter provides an introduction to the Ultricore Profiles for your routing matrix and includes general information on managing those profiles.

Overview

The Ultricore Profiles operate as a form of hierarchical database where user permissions are organized into a tree-like format. A profile determines which groups and pages that a user can access.

Any number of profiles may be created and can be used in the following ways:

- **Group/Role** — This profile type is not specific to any user or machine. Once created they can be referenced or used by any number of users or machines. For example, a Graphics Editor profile can be created and referenced by a team of graphics editors. When a new control panel is added to that profile, all graphics editors are updated with the new panel automatically.
- **User** — A user profile identifies a specific username and can either reference an existing role as above or copy an existing role then modify, add, or remove items to allow total customization as required. This allows a user that has a specific profile to have the same capabilities on any DashBoard system regardless of where they log in.
- **Location** — This profile is defined by a specific location (user station) and assigns a consistent function regardless of who is logged in that suits the operation in that location. In this way the DashBoard instance in front of, for example, the audio operator in a specific control room will only have the optimize functionality for that role. A location profile can also reference or copy and modify role profiles.

Profiles can also be created that identify a specific user at a specific user station to further optimize the user interface in different locations. If no profile exists for the combination of user and location, the system default profile is used.

When there are multiple possible profiles the one used is chosen as follows:

1. A **User** profile has the highest priority. This means that an administrator can log in anywhere and execute Administrator level functions or an operator can login anywhere and have an optimized UI for their function.
2. A **Location** profile is used for all users at a specific location unless the user logged in has a profile. This allows more or different functionality for users logged into a specific location even if they do not have a specific profile themselves.
3. The system default profile is used in all other scenarios.

Modes of Operation

The Ultricore Profiles feature consists of three sub-functions or modes of operation.

✶ The ULTRICORE-PRO license is required to upgrade from the basic, non-configurable profiles on an Ultrix chassis to full, customizable configurations. The ULTRICORE-PRO license is standard on the Ultricore-BCS.

Creation and Management of User Credentials

User profiles can reference the operating system username of the individual currently logged into the workstation.

Enabling User Credentials in the Setup tab of the status page engages the Ultricore User Credentials feature which allows an independent definition of usernames and passwords specifically for the Ultricore Profiles feature.

Creation and Management of User Profiles via the Default Role Profiles Only

User and Location profiles are created and function as above but only reference one of the three default profiles:

- **Engineer Admin** (default profile) can access all features;
- **Operator Admin** (default operator profile) has full database and configuration capability but not engineering configuration and admin functions; or
- **Operator** (default minimum profile) can access all soft panels for normal day to day operations.

Full Creation, Customization and Management of User Profiles

In addition to the above modes included with Ultricore-BCS is the ability to create and customize group and role profiles as well as create custom profiles on a user or location basis as appropriate. In addition, the order of items within these profiles can be set to fully optimize the operational environment for a specific user or group as needed.

Ultricore Profiles Interface

The options for configuring and managing the Ultricore Profiles are organized as individual panes within a single interface of a DashBoard window.

Accessing the Ultricore Profiles Interface

You display the Ultricore Profiles interface by selecting its node in the DashBoard Tree View for the Ultricore-BCS in your system. By default, all nodes are displayed and accessible by any user or DashBoard client machine.

To display the Ultricore Profiles interface

1. Launch DashBoard on your desktop.
2. Locate the Ultricore BCS in the Tree View of DashBoard.
3. Expand the **Ultricore BCS** node to display a list of sub-nodes in the Tree View.
4. Expand the **Database** sub-node.
5. Double-click the **Ultricore Profiles** sub-node.

   The Ultricore Profiles interface is organized into five distinct areas. Each area is briefly described in this section starting with the leftmost area of the DashBoard window.

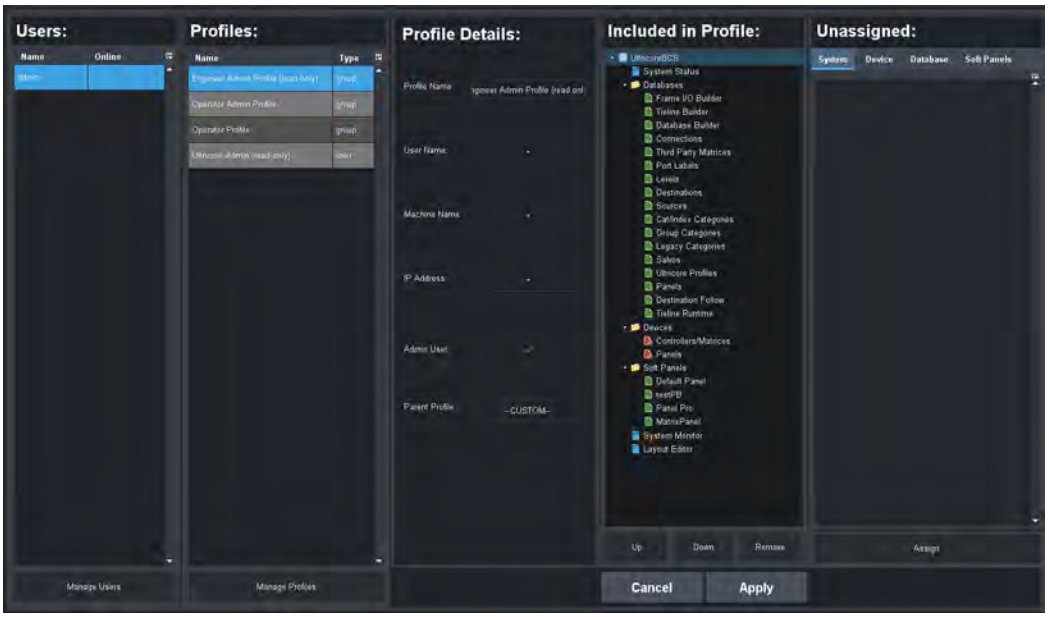


Figure 2 Example of the Ultricore Profiles Interface

Users

When the system is configured to use the default user login mechanism, a list of all currently configured usernames along with their current online status displays in this area.

Profiles

A list of all currently configured profiles. Selecting a profile (row) in this area automatically updates the items displayed in the Profile Details, Device Tree, and Options areas.

Profile Details

This area displays the details of the profile showing the conditions under which the tree in the following section will be applied.

Tree Nodes

A visual representation of the tree view that is defined in the Profile Details. Note that certain entries that are specific to licenses or other conditions may be visible but not in the actual tree view. Should conditions change that enable those entries, they will appear as shown in this display. A profile also maintains the position of items in groups allowing the most relevant items to be the easiest to reach.

The tree nodes are organized in a hierarchy where the top level (blue icons) list system specific options, and secondary levels (yellow icons) list specific functions.

Group Tabs

This area displays all the available items that have not yet been assigned to the currently selected profile but are available to define.

Creating a Database of Users

If you wish to use the User Profile feature, the first step is to create a new user account. Once this account is created, all users will default to the **Operator Profile** (the default minimum profile) unless or until they have a profile created that allows them appropriate access for their role.

✶ When creating users and profiles, ensure that the system is not in use. Any currently active DashBoard instances will require users to login and features may be blocked.

You can create as many users as required by your system.

To create a new user account

1. Display the Ultricore Profiles interface as outlined in "**To display the Ultricore Profiles interface**".
2. Click **Manage Users**.

   The **Manage Users** dialog opens.

✶ Users can change their own password at the login screen, the **Update Password** button allows an Administrator to reset a forgotten password. A user name change requires the deletion of the current user and the creation of a new one with the new user name.

3. Click **Add**.
4. Use the **User Name** field to assign a unique identifier for the user account.
5. Use the **Password** field to define the password the user will need to enter when logging in with this account.
6. Repeat this procedure for every new user you wish to create.

Once all the user accounts are created, you can proceed to create profiles and assign users to these profiles.

Creating a Profile

✶ The User Profiles features offers a significant flexibility to optimize the tools in front of individual operators which, if inadvertently mis-configured could lead to administrators being locked out. As such, it is a good idea for the administrator to ensure that no users are actively working within the system prior to making significant changes to users and profile settings.

Four profiles are created automatically:

- **Engineer Admin Profile** — a group profile giving access to all features and functions as has been available prior to the Dashboard User Profiles feature. This profile is read-only by default.
- **Operator Admin Profile** — a group profile giving access to all non-engineering features and functions. This allows an operational Administrator the ability to configure and use all operational functions and databases of the systems.
- **Operator Profile** — a group profile giving access to only the soft control panels. This allows users that are registered but either have no defined profile on a system or only require basic operational access the ability to control pre-configured operational functions of the systems.
- **Ultricore Admin Profile** — a user profile which allows the "Administrator" user mentioned above to have full admin and engineering capabilities by using the Default Profile. This profile is read-only by default.

✶ All users default to the Default Tree Profile with no System Login required. In other words, until specifically enabled, the Ultricore Profiles feature is not engaged, and the systems will all behave as in previous versions. It should be noted that while the user profiles feature is not engaged, the default user profile can be modified should the tree for all users need to be modified.

To create a profile

1. In the **Profiles** area, click **Manage Profiles**.

   The **Manage Profiles** dialog opens.

2. Click **Add** to create the new profile.
3. Use the **Profile Name** field to assign a unique name for the profile.

   Since the profile could be either specific to a user, a workstation or a group of users, it is recommended to create a name that reflects its purpose. For example, John Doe (a specific user), Graphics Operator (a group of users), or PCR1-TD (a workstation).
4. Use the **Username** field to assign a specific user to the profile.

   An asterisk (*) indicates the profile applies to all users subject to the other profile detail entries.
5. Use the **Machine Name** field to specify the OS/DNS machine name for a workstation.

   This allows the identification of a specific workstation in an environment where DHCP means the IP address may change over time.
6. Use the **IP Address** field to specify the IP address for a workstation.

   This allows identification of a specific workstation in a statically addressed system.
7. Use the **Admin** box to enable/disable (selected/cleared) access to admin functions.

For example, upload, reboot, refresh and other tasks that are not normal operational functional requirements.

8. Use the **Parent Profile** to assign any of the currently configured profiles as a parent or reference profile for the profile being created or edited.
9. Use the **Use** and/or **Copy** options to determine if the parent profile tree configuration is used directly by the profile being created or edited or copied into this profile allowing customization of the tree for the specific needs of the user.

✶ If another profile tree is used rather than copied, changes to the tree need to be performed on the parent profile tree and will affect all users that "use" that parent profile and that the same change would need to be executed individually on all users that copied the parent profile tree.

10. Repeat this procedure for every new profile you wish to create.

Defining the Permissions for a Profile

Once a profile is created, the remaining two areas of the Ultricore Profiles interface allow display and/or modification of the tree structure that will be enabled for the user or users of the selected profile.

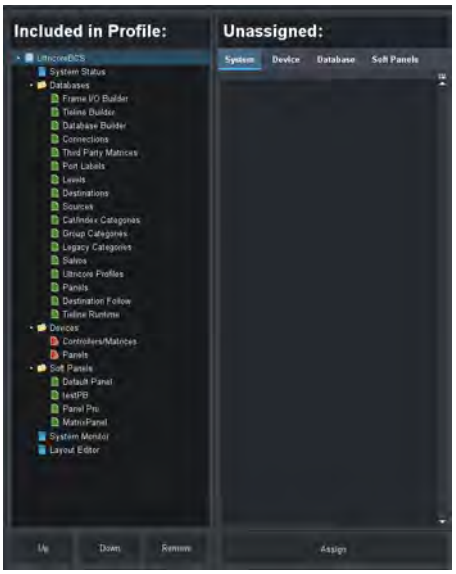


Figure 3 Example of the Tree Nodes and Tabs for a Selected Profile

Overview

This section provides a brief overview of each area and their options.

Tree Nodes

The tree (the leftmost area) displays all the assigned options and their desired order in the tree structure much like the tree view in DashBoard for an Ultricore BCS. The nodes in Ultricore Profiles tree view are determined by your system configuration and any licenses installed for your system. Buttons at the bottom of this area (**Up**, **Down**, **Remove**) allow entries to be moved up and down in the tree within the group to which the item belongs or removed if they are not required for the selected profile. When removed, the item is returned to the list of available items in the appropriate group tab.

Group Tabs

The group tabs (the rightmost area) contain all items available in the group in question that are not included in the selected profile's tree currently. If an item is not in the tree currently but required, the appropriate group tab is selected, the item required is selected and the Assign button is clicked moving it to the bottom of the appropriate group of the tree. The **Up** and **Down** buttons can then be used to order the tree items specific to the needs of the profile.

When any changes are made to the tree structure(s), the changes are captured locally but are not recorded in the database until the **Apply** button on the bottom row is clicked. Clicking **Apply** records all the pending changes in the system database. Clicking **Cancel** will discard any unsaved changes. There are no pending changes if the **Apply** and **Cancel** buttons are not highlighted.

Enabling the Ultricore Profiles Feature

Once you created the profiles and groups for your system, you can proceed to enable the Ultricore Profiles feature. Enabling the feature requires you to disable the current user credentials and settings and apply the profiles and groups you defined in previous sections.

✶ Before proceeding, ensure that you created a new Administrator profile that has full access to your system. This is a separate profile from the default Ultricore Admin profile (which is read-only).

✶ This procedure requires a reboot of the Ultricore BCS.

To enable the Ultricore Profiles feature

1. In the Tree View of DashBoard, double-click the **System Status** node.

   The **System Interfaces** display in the DashBoard window.
2. Select the **Setup** tab.
3. Locate the **Ultricore Profile Settings** area.

   You may need to scroll down the tab to view this area.
4. Clear the **User Credentials** box.

   A dialog opens to confirm the selection.
5. Select the **User Profiles** box.

   A dialog opens to confirm the selection.
6. Click **Reboot**.

Application of the Ultricore Profiles

Once the Ultricore Profiles function is enabled, all users from that point forward will initially receive a tree that only has a System Login entry. Once the user is created with either the default or a specific password by the Administrator, the user can login through a login page displayed in the DashBoard window.

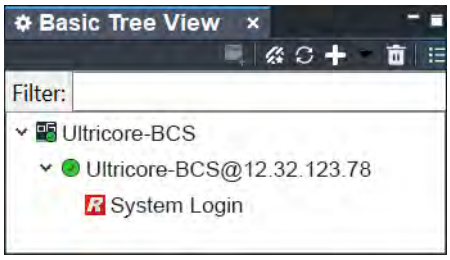


Figure 4 Example of the System Login Sub-node

To log in

1. In the **Basic Tree View**, locate the device you wish to access.
2. Expand the device nodes to display the System Login sub-node.
3. Double-click the **System Login** sub-node.

   The **System Login** page displays in the DashBoard window.
4. Enter the credentials for the profile assigned to you.
5. Click **Login**.
   - The login information is confirmed by the system, and the appropriate tree with all assigned pages and functions are immediately available for use in the DashBoard window.
   - The **Login** page updates to the **Logout** page.

✶ When you log out, the Basic Tree View returns to the System Login tree view.

To change the password

- Click **Change Pwd** on the **System Login** page.

✶ The old password is required for the user to change the password and the new password needs to be confirmed to ensure the new password is as the user expects. If the old password is forgotten or lost the admin can force an update to the user password through the Manage Users dialog in the Users area of the Ultricore Profiles interface.

User Data Import/Export

Due to the need to maintain different permutations of user data to system data, the Import/Export database functions now includes the ability to import databases with and without the user data (user accounts and profiles). In addition, the user files can be imported and exported independently to any chosen database. This allows for instance a different show configuration to be loaded while maintaining the same staff and location configuration or for a truck for instance, allows a new crew configuration to be loaded without changing system configurations.

✶ To import/export Ultricore Profiles, follow the same steps as outlined in "**Importing a Database**" and "**Exporting a Database**" but click **Ultricore Profiles** in steps 3.

Device Communication Setup

Ultricore BCS functions as a central controller for the Ross routing system. From Ultricore BCS, you can store and implement routing system configurations into a system while providing an overview of your entire routing system.

Ultricore BCS Communications Overview

A connection point is how the Ultricore BCS is connected to routing system components such as routers (matrices), and remote control panels. A connection point defines the interface and the protocol to be used for communications. Once defined, Ultricore BCS retrieves the information of any device on that connection point.

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

Ultricore BCS provides bi-directional protocol translation to facilitate the control of third party or legacy routers as part of a Ross routing system. You can also integrate control over a Ross routing system by a third-party automation system. **Table 2** lists the important communication ports for Ultricore BCS.

Table 2 Communications Ports

Device	Protocol	Port
NK Routers	TCP	5000
Ultrix Routers	TCP	15000
Walkabout Discovery	UDP	5555

Device Discovery in DashBoard

When DashBoard is launched, devices such as openGear frames and Ross NK 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. Both methods are described in more detail in the ***DashBoard User Manual***.

Communications between Ultricore BCS and the Devices in a Routing System

The Ultricore BCS Connections interface enables you to define connections to devices in your network. To enable Ultricore BCS to function as the 'master' of the routing system, you must establish communications with the devices it is connected to and define how they are connected. Each router must have a connection point defined. For those devices that are not directly connected to your network, such as Ross NK Series T-Bus devices, you must supply their interface connection information (NK-NET/NK-IPS) in the Connections interface. Once this information is entered into the interface, the Ultricore BCS can communicate directly with these devices.

Connecting to an Ultrix Router

Ultricore BCS acts as a master controller for one or more Ultrix routers as well and legacy Ross NK series devices. A connection is made from the controlling (primary) Ultricore BCS panel to the (client) Ultrix router(s). The controlling Ultricore BCS panel contains the full database configuration for the entire operation of the system.

For More Information on...

- configuring the Ultrix router, refer to the ***Ultrix User Guide***.

General Work Flow

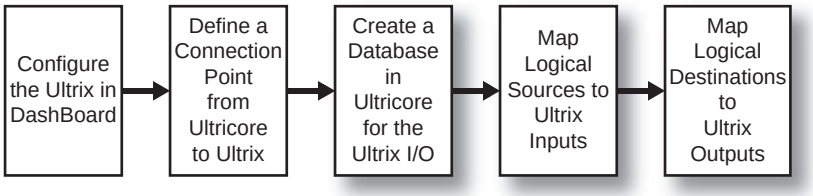


Figure 5 Ultrix Connection Work Flow

Setup Notes

Keep the following mind when establishing a connection point from an Ultricore BCS to an Ultrix router:

- Ensure unique device names for each Ultrix router. This allows identification of each individual router throughout the setup process. You can edit the name via the Ultrix front panel or DashBoard interface as outlined in the ***Ultrix User Guide***.
- Ensure that the Remote Controller Mode is enabled for each Ultrix router. Refer to the ***Ultrix User Guide*** for details.
- Ultrix hardware configuration (licensing, port configuration, etc.) is achieved via its own device node within the DashBoard tree.
- Ultriscape Multi-Viewers are configured via the Ultriscape node within the DashBoard tree of the Ultrix that physically hosts that Multi-Viewer.
- Routing commands are issued to the Ultricore BCS via remote control panels, external protocols or DashBoard soft panels[1]. Any client router will ignore routing commands not originating from the primary while in this connected mode.

Adding a Connection Point

Before defining a connection point between the Ultricore BCS and an Ultrix router, you must verify that the router is listed in the Walkabout utility.

Once a connection point is established between the Ultricore BCS and its client routers, the physical inputs and outputs the clients provide will display in the **Port Labels** tab of the primary Ultricore BCS database. These input and outputs ports are now ready for renaming (if required) and mapping to logical source and destinations.

To add an Ultrix connection point

1. Ensure each router is installed, configured, and listed in the Basic Tree View of your DashBoard client.
2. Ensure that the Remote Controller Mode is enabled for each router as follows:
   a. In the Tree View for each router, double-click the **System Status** node.
   b. Select the **Database** tab.
   c. Select the **Remote Controller Mode** check box.
3. Launch the Walkabout utility in DashBoard as follows:
   d. Select **Show Walkabout** to open the Walkabout utility in the DashBoard window.

1. Only the soft panels defined within the database of the Ultricore BCS may control the system.

e. Verify that the Ultrix router is listed in the table of the Walkabout utility. Make a note of its name and IP Address.

4. Display the **Connections** tab in DashBoard for Ultricore BCS as follows:
   a. Expand the **Database** node in the Tree View.
   b. Double-click the **Connections** node.

      The **Connections** tab opens that lists the current database connection points.
5. Click **Edit** > **Add**.

   The **Add Connections** dialog opens.
6. In the **Add Connections** dialog, perform the following:
   a. Use the **Protocol** menu to select **ultrix**.
   b. Use the **Type** menu to select **tcp**.
   c. Use the **Count** menu to specify the number of new connection entries (rows) to make in the **Outgoing Connections** table. For example, to connect to three Ultrix routers you would enter a value of 3.

   d. Click **Apply** to create the new device row(s) in the **Outgoing Connections** table.

      The **Add Connection** dialog closes.
7. In the **Name** column of the **Outgoing Connections** table, click the cell of the new **Ultrix** row to display the drop-down menu.
8. From the drop-down menu, select the Ultrix router you which to establish a connection to.
9. If the Ultrix router is not listed in the drop-down menu:
   a. Close the **Connections** tab.
   b. Launch Walkabout to detect the on-line devices in your system.
   c. Double-click the **Connections** node for the Ultricore BCS to display its **Connections** tab.
   d. Repeat steps 5 to 8.
10. In the **Enabled** column of the new row, select **Enable**.
11. Repeat steps 7 to 10 for each additional Ultrix router.
12. Click **Apply** at the bottom of the **Connections** tab to save the new settings.

Deleting a Connection Point

✶ Once a connection point is deleted from the Ultricore BCS database, the Ultricore BCS panel and the Ultrix router will need to be re-configured as per the new requirements. This will require you to update the database(s) on each device.

To delete a connection point between Ultricore BCS and an Ultrix router

1. Display the **Connections** tab for Ultricore BCS as follows:
   a. Expand the **Database** node in the Tree View.
   b. Double-click the **Connections** node.

      The **Connections** tab opens that lists the current database connection points.
2. In the **Outgoing Connections** table, select the Ultrix connection to be deleted.

   The row is now highlighted in the **Outgoing Connections** table.
3. Click **Edit** > **Delete**.
4. Power cycle the Ultrix router to re-establish its own internal database.
5. Re-configure Ultricore BCS and the Ultrix router as per the new requirements.

Connecting to Ross NK Series Devices

Ross NK routers and remote control panels are linked via the T-Bus Control System, a multi-drop RS-485 control system. These T-Bus devices can communicate over Ethernet via a Ross NK-IPS or NK-NET.

A connection point between the Ultricore BCS and an NK-IPS or NK-NET is defined using the auto-populated fields in the Connections tab of the Ultricore BCS interface. Once a connection point is established, the Ultricore BCS gains control over those Ross NK devices connected to the NK-IPS or NK-NET.

To establish a connection point between Ultricore BCS and an NK-IPS or NK-NET

1. Launch the Walkabout utility in DashBoard as follows:
   a. Expand the **NK Utilities** node in the Tree View.
   b. Double-click **Show Walkabout** to open the Walkabout utility in the DashBoard window.
   c. Verify that your the NK-NET or NK-IPS is listed in the table of the Walkabout utility. Make a note of its name and IP Address.

✶ If the device you want to connect to the Ultricore BCS is not detectable in Walkabout, you can still establish communications with it in Ultricore BCS using the **Connections > Settings** menu to manually enter/edit the device settings.

2. Display the **Connections** tab for Ultricore BCS as follows:
   a. Expand the **Database** node in the Tree View.
   b. Double-click the **Connections** node.

   The **Connections** tab opens that lists the current database connection points.
3. Click **Edit** > **Add**.

   The **Add Connections** dialog opens.
4. In the **Add Connections** dialog, perform the following:
   a. Use the **Protocol** menu to select **Ross NK**.
   b. Use the **Type** menu to select **tcp**.
   c. Use the **Count** menu to specify the number of new connection entries to make in the **Protocol Servers** table.
   d. Click **Apply** to create the new device row(s) in the **Protocol Servers** table and close the **Add Connections** dialog.

5. In the **Name** column, click the cell of the new row to display the drop-down menu.
6. From the drop-down menu, select the device you which to establish a connection to.

✶ Ross Video devices will auto-populate this menu.

7. In the **Enabled** column of the new row, select **Enable**.
8. Click the **[...]** button to verify or manually edit the connection settings for the device.
9. Click **Apply** at the bottom of the **Connections** tab to save your settings.

Once a connection point is established between Ultricore BCS and the Ross NK router, the router ports are automatically included in the Available Ports list of the Ultricore BCS database.

Connecting to Ross Remote Control Panels

Ultricore BCS can communicate with external remote control panels such as the Ross RCP-NK series, RCP-ME, and RCP-QE. Communication with Ethernet enabled panels is direct from the panel to Ultricore BCS. Refer to the panel user manual for specific configuration details.

RCP-NK Series Panels

Communication with RCP-NK series panels is via an established connection point with either an NK-IPS or NK-NET network bridge. Refer to the ***RCP-NK User Guide*** for details. Refer to "**Operation with Ross Devices**".

✶ RCP-NK series control panels do not automatically receive the active database labels. The database labels must be replicated on each RCP-NK series device.

RCP-ME and RCP-QE Panels

The connection from the remote control panel to Ultricore BCS is configured on the panel's DashBoard interface.

1. Display the **RCP Connection Editor** in DashBoard for your remote control panel. Refer to the user guide for your remote control panel for details.
2. Locate the **Servers to Connect to** table.
3. In the first row of the table, use the **IP address** column to specify the IP address of the Ultricore BCS that the remote control panel will communicate with.
4. Send the current configuration file to the remote control panel. Refer to the user guide for your remote control panel for details.

   The remote control panel will connect to the Ultricore BCS and receive a copy of the current database labels.

Connecting to Third-Party Devices

Ultricore BCS is capable of communicating with third-party devices via either a server connection (in-coming control), or a client connection (out-going control). Ultricore BCS runs several servers by default to provide connection end points for many industry standard control systems. Client connections for out-going control may be defined on an as-need basis.

✶ Before proceeding, ensure that your third-party device is installed and configure according to its documentation.

Overview

Ultricore BCS provides bi-directional translation of the following third-party protocols:

- GVG Native Serial and Ethernet protocols
- Probel SW-P-08 serial protocol

Connection to third-party devices may be categorized into two broad groups: controller and controllee.

- Controllers are devices that will control the Ultricore BCS and connect via what may be termed an incoming connection.
- Controllees are devices to be controlled by Ultricore BCS router and connect via what may be termed an outgoing connection.

For More Information on...

- the protocols and ports for configuring third-party communications on Ultricore BCS, refer to **Table 3** and **Table 4**.
- the commands that Ultricore BCS supports, refer to "**External Control**".

Incoming Ethernet Connections

The Ultricore BCS can communicate with third-party external devices via a TCP connection. By default, Ultricore BCS runs a server process for the following Ethernet protocols:

Table 3 Supported Protocols — Ethernet Connection

Protocol	Default Port
GVG Native Series 7000	TCP: 12345
NVISION NP00016	TCP: 5194
Probel SW-P-08	TCP: 8910
RossTalk	TCP: 7788
TSL UMD v3.1	TCP: 5727 UPD: 4490
TSL UMD v4.0	TCP:5728 UDP: 4491
TSL UMD v5.0	TCP: 5729 UDP: 4492

These Ethernet servers are always running. No further configuration is required — simply configure your client device to match the Ultricore BCS's TCP/IP address and port number.

Outgoing Ethernet Connections

This section outlines how to configure a client connection (out-going control) interface to the external system.

To set up an outgoing (client) connection over Ethernet between Ultricore BCS and a third-party device

1. Expand the **Database** node.
2. Double-click the **Connections** node located under the Database node.

   The **Connections** tab opens that lists the current database connection points.

3. Click **Edit** > **Add**.

   The **Add Connections** dialog opens.

4. In the **Add Connections** dialog, perform the following:

   a. Use the **Protocol** menu to select the Ethernet protocol the device uses to communicate with the Ultricore BCS. Refer to **Table 3** for a list of options.

   b. Use the **Type** menu to select **tcp** or **udp** as required by the external device.

   c. Use the **Count** menu to specify the number of new connection entries to make in the **Servers** table.

   d. Click **Apply** to create the new device row(s) in the **Protocol Servers** table.

5. In the **Name** field, type a unique identifier for the third-party device. This name is used to identify the specific device within the Ultricore BCS database.

6. Click the **[...]** button in the new row to display the **Communication** dialog.

7. Use the **Communication** dialog to further define the server to connect to:

   a. Use the **Address** field to specify the IP Address assigned to the third-party device.

   b. Use the **Port** field to specify the Port Number assigned to the third-party device that the Ultricore BCS will try to connect to.

   c. Use the **Wrapping** field to specify the TSL UMD v5.0 TCP wrapping is enabled or disabled.

✶ The list of options is dependent on the protocol selected. Refer to the external control for protocol details.

   d. Click **Apply** to save your settings and close the dialog.

8. Edit the **Details** field to your requirements.

9. In the **Enabled** column of the new row, select **Enable**.

   The **Connected** field in the **Outgoing Connections** table reports "`Connect`" when communication is established between the third-party device and Ultricore BCS.

10. Click **Apply** in the **Connections** tab to save the new settings.

Defining a Serial Connection

Ultricore BCS may communicate directly with third-party devices using a native serial protocol. A USB-to-Serial converter must be used to give the Ultricore BCS a serial communication port. Refer to **Table 4** for information on the supported protocols.

✶ Only USB-serial devices based on these chip-sets are supported: FTDI Chip, Belkin, Prolific PL 2303, and Silicon Labs CP210x.

Table 4 Supported Protocols — Serial Connections

Protocol	Settings				
	Type	Baud	Data Bits	Parity	Stop Bits
GVG Native Series 7000	RS232 or RS422	38400	8	None	1
Probel SW-P-08	RS232 or RS422	38400	8	None	1
TSL UMD v3.1	RS422 or RS485	38400	8	Even	1
TSL UMD v4.0	RS422 or RS485	38400	8	Even	1
TSL UMD v5.0	RS422 or RS485	38400	8	Even	1

✶ A serial connection point must be implemented on the **Connections** tab in the Ultricore BCS database before communications can start. The settings may be changed from the protocol defaults to suit your requirements.

To set up a serial connection between Ultricore BCS and a third-party device

1. Double-click the **Connections** node located under the **Database** node.

   The **Connections** tab opens.

2. Click **Edit** > **Add**.

   The **Add Connections** dialog opens.

3. In the **Add Connections** dialog, perform the following:

   a. Use the **Protocol** menu to select the protocol standard.

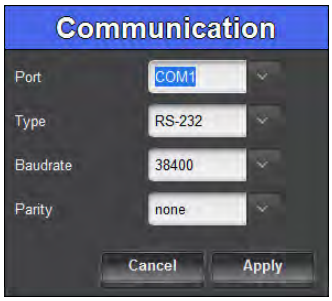
   b. Use the **Type** menu to select **Serial**.

   c. Use the **Count** menu to specify the number of new connection entries to make in the **Protocol Servers** table.

   d. Click **Apply** to create the new device row(s) in the **Protocol Servers** table.

4. In the **Name** field, type a unique identifier for the third-party device. This name is used to identify the device within the Ultricore BCS database.

5. Click the **[...]** button in the new row to display the **Communication** dialog.



6. Use the **Port** field to specify the Port Number assigned to the third-party device that Ultricore BCS will connect to.

7. From the **Type** menu in the **Communication** dialog, select **RS232** or **RS422**.

   The table in the **Communication** dialog updates to display the settings for serial communication.

8. Use the **Type** field to specify the serial transmission standard for the third-party device.

9. Use the **Baud Rate** field to specify the bit rate for the third-party device.

10. Use the **Parity** field to specify the parity.
11. Click **Apply** to save your settings and close the **Communication** dialog.
12. In the new row of the **Servers** table, select the **Enabled** box.
13. Click **Apply** to save your settings.

    The **Connected** field in the **Outgoing Connections** table reports "`Connect`" when the ability to communicate with the serial port is confirmed and enabled. The system does not poll or query the serial link to verify the validity of the setup.

Creating a Logical Matrix for an External Device

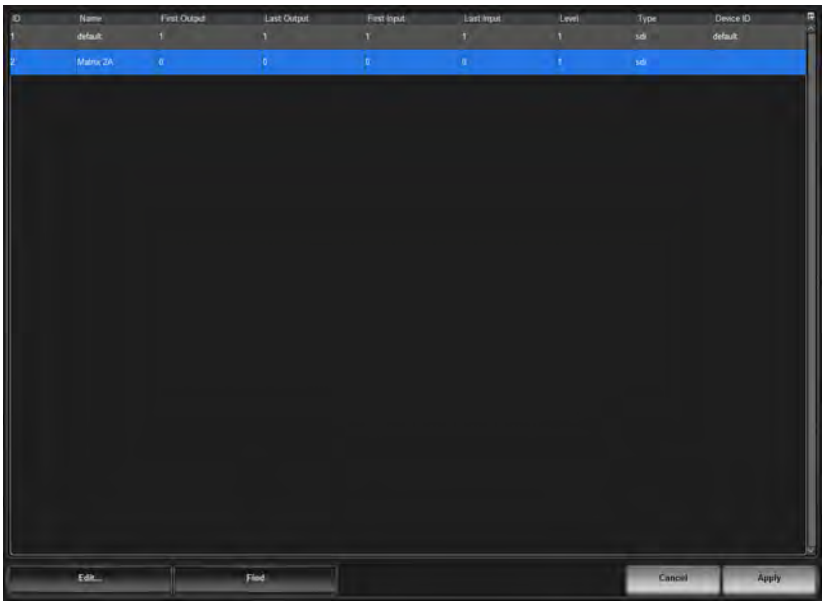
If the external device presents a matrix of crosspoint switches for routing, you can create logical matrices in an Ultricore BCS database using the device inputs and outputs. Creating a logical matrix from the external device enables Ultricore BCS to include the inputs and outputs for selection in the Sources and Destination tabs of the Ultricore BCS database.

✶ The input/output range and level you specify in the Ultricore BCS database must match the settings within the external matrix.

To create a logical matrix from an external device

1. Expand the **Database** node.
2. Double-click the **Third Party Matrices** node located under the **Database** node.

   The **Third Party Matrices** tab opens.
3. Click **Edit** > **Insert** to add a blank row to the **Third Party Matrices** table.



4. In the **Name** field, type a unique identifier for the third-party matrix. This name is used to identify the matrix within the Ultricore BCS database.
5. From the **Device ID** drop-down menu, select the device you want to define the logical matrix for. This is the name given to the device when you established a connection point with it on the Connections tab.

✶ The **Device ID** menu lists only the third-party devices that have a valid connection point with the Ultricore BCS router.

6. Define the matrix size as follows:

a. Use the **First Output** and **Last Output** fields to define the range of destinations from the device within the Ultricore BCS database.

b. Use the **First Input** and **Last Input** fields to define the range of sources from the device within the Ultricore BCS database.

✶ These created inputs and outputs will use the nomenclature **DeviceID.Slot.Port.Type.Channel** where **DeviceID** represents the Name assigned to the external device on the Connections tab.

7. Use the **Level** field to specify the number of levels for the device within the Ultricore BCS database.
8. Use the **Type** field to specify the signal type for the matrix.
9. Click **Apply** to save the new matrix to the database and add it to the list of available matrices in the **Port Labels** tab.

Database Configuration

A database in Ultricore BCS stores and implements a routing system configuration. Multiple databases can be configured using a different combination of devices, matrices, levels, sources, and destinations for the routings system. Procedures in this chapter assume that you have DashBoard launched and the Ultricore BCS displayed in the Tree View.

How a Database Determines the Routing System

The various tables within an Ultricore BCS router determine if a signal/route can be made from input to output.

For a given level, if there is a physical port mapped in both the Source and Destination tabs, and the controlling device has the level enabled, then a crosspoint switch can be issued and executed on the router(s). **Table 5** outlines a database with four levels. Level 1 has mapped valid Sources and Destinations, and the level is enabled on the controlling device.

Table 5 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 table.
b. An entry is not present in the corresponding Level column of the Destinations table.
c. A resulting switch will be executed.
d. A resulting 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.

Configuration Overview

The generalized work flow of configuring a database for the Ultricore BCS is:

1. Establish connection points to external devices. Refer to "**Device Communication Setup**" for details.
2. Verify available I/O ports to ensure correct system connections. This default port naming convention of **frame.slot.port.type** nomenclature is to be overwritten (if required) at this stage.
3. Create a database as outlined in the procedure "**Creating a New Database**".

✶ Ultricore BCS does not support Unicode characters.

4. Define a soft panel or establish a connection from a remote control panel (RCP).

Database File Management Overview

Each database consists of a collection of configuration files necessary for Ultricore BCS operation. The database resides within the Ultricore BCS storage system. Multiple databases may be saved and accessed at any time.

Use the **System Status** > **Database** tab to create, load, and delete databases. Use the **System Status** > **Transfer** tab to backup and restore databases.

For More Information on...

- the **System Status** tabs and menus, refer to "**System Status Interfaces**".

Database management consists of the following tasks:

Creating a New Database

A database manages the configuration file and settings for your Ultricore BCS. Ultricore BCS may use a number of database configurations depending on its role in the routing system. Refer to "**Creating a New Database**" below.

Loading an Existing Database

Use the **System Status** > **Database** tab to load a configured database to your Ultricore BCS. Refer to "**Loading a Database**".

Exporting a Database

Enables you to capture a database configuration in a *.uda file that is saved to a location on your network that you can specify. Refer to "**Exporting a Database**".

Importing a Database

Enables you to import a saved *.uda file and make it available in the **System Status** > **Database** tab. Refer to "**Importing a Database**" for details.

Deleting an Existing Database

You can choose to permanently delete any configured database on your Ultricore BCS. Refer to "**Deleting a Database**" for details.

Creating a New Database

When you define a database, the information you enter into the Levels, Sources, and Destinations fields will auto-populate the applicable fields in the other interfaces for that Ultricore BCS router. You can change the labels for the destinations and sources at any time using the options in the Destinations and Sources interfaces. There are two methods for creating a new database: using the Database Builder, or using the options in the System Status > Database tab. Both methods are described below.

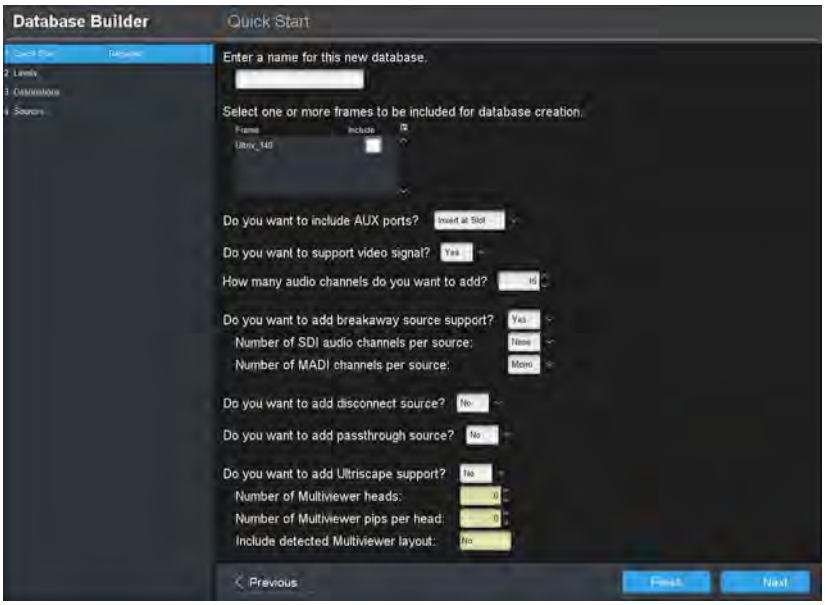
Using the Database Builder

Use the Database Builder to quickly create a starting point database. Once you define the basic parameters of the new database using the settings in the Quick Start interface, you can then define the levels, destinations, and sources for the new database. This makes it very easy to build basic configurations as well as get a system up and running quickly.

To create a new database using the Database Builder

1. Display the Database nodes as outlined in the procedure "**To access the Database interfaces in DashBoard**".
2. Double-click the **Database Builder** sub-node.

   The **Database Builder** interface opens in the DashBoard window with the Quick Start page automatically displayed.



3. Use the **Provide a Name** field to type a unique identifier for the database.
4. Select the box(es) from the provided list of detected routers the routers to make the database available to.
5. If you wish to leave the remaining settings at their default values and quickly setup a database, you can click **Finish** and the database will be generated based on selected routers in step 4.

✶ Click **Next**, located at the bottom of the DashBoard window, to display the next page of options in the Database Builder interface.

6. If any AUX Ports are populated with SFP modules, use the **Include AUX ports** menu to specify how to label the I/O in the database.

✶ The default is Insert at Slot, which labels the I/O in each slot as 1-18 with the AUX Ports as 17 and 18.

7. Use the **Support Video Signal** and **Number of Audio Channels** menus to define the Levels in the database.
8. Use the **Breakaway Source Support** menus to implement audio shuffling. The options for SDI and MADI channels are as follows:
   - None — there are no audio channels of this type.
   - Mono — audio channels are applied to all levels
   - Stereo — audio channels are assigned by pair (1-2, 3-4, 5-6 etc.)
   - Quad — audio channels are assigned in groups of four (1-4, 5-8, 9-12 etc.)
   - Oct — audio channels are assigned in groups of eight (1-8, 9-16, 17-24 etc.)

✶ You must have SFP modules installed that support MADI.

9. Use the **Disconnect Source** menu to set unused audio channels to disconnect.
10. Use the **Passthrough Source** menu to route the sources without changes/edits.
11. If you have an UltriScape license installed, use the last set of menus to define the heads, including the number of Picture in Picture (PIPs) that new layouts can include.

✶ You can still create and edit layouts in a database with settings that differ from these.

12. Click **Next** to review the levels, destinations, and sources tables before completing the database builder.

a. Use the **Levels** page to review or rename the level labels if required.

b. Use the **Destinations** page to review the destination label to physical port mapping. Renaming the labels is also possible from this page if required.

c. Use the **Sources** page to review the source label to physical port mapping. Renaming the labels is also possible from this page if required.

13. Click **Finish** to save the new settings.

✶ Click the **Rename** button on a page to define multiple elements. For example, clicking Rename on the Sources page enables you to define a prefix (e.g. SRC) and apply from a starting point (input 4).

14. Click **Finish** to create the new database and apply it to the routers selected in step 4.

Using the Database Tab

You can use the Database tab in the System Status interface when only configuring a database for a single device.

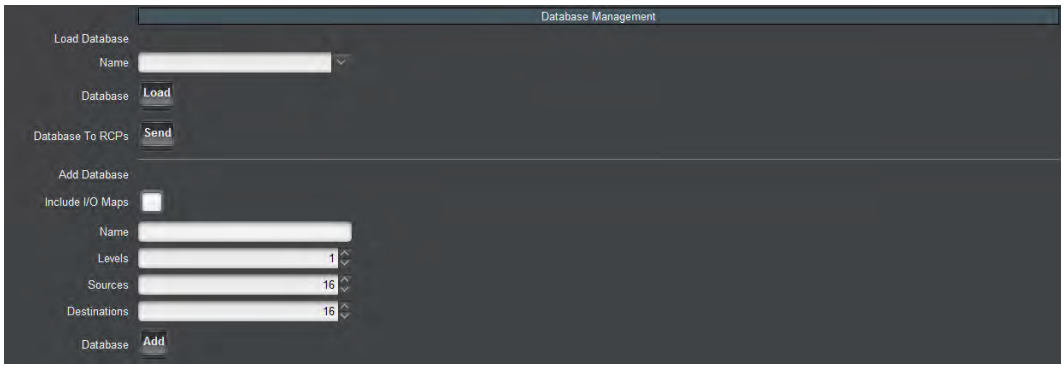
To create a new basic database

1. In the Tree View of DashBoard, double-click the **System Status** node.

   The **System Interfaces** display in the DashBoard window.

2. Select the **Database** tab.

3. Locate the **Add Database** options in the **Database Management** area of the tab.



4. In the Add Database **Name** field type a unique identifier for the database. When the database is currently loaded in the system (in use), the Database node displays the database name in the tree view under the Ultricore BCS node.

5. Use the **Levels** field to specify the total number of levels available in the database.

6. Use the **Sources** field to specify the total number of inputs available in the database.

7. Use the **Destination** field to specify the total number of outputs in the database.

8. Click Database **Add** to create the new database and save it to the Ultricore BCS file system.

9. Load the database to ensure it is active before proceeding to customize.

Loading a Database

Each active database includes a unique setup saved to the Ultricore BCS file system. You must recall a database before you can configure the matrices, levels, sources and destinations, and soft panels for a particular setup. This also enables you to quickly recall a saved (configured) routing setup just by recalling a different database.

To load a saved database

1. In the Tree View, double-click the **System Status** node.
2. Select the **Database** tab.
3. From the **Name** menu in the **Load Database** area, select the database you want to load.
4. Click **Load**.
5. Verify the following to ensure the database was loaded:
   - The **Name, Levels**, **Sources**, and **Destination** read-only fields in the **Current Database** area in the **Database** tab report the correct values.
   - The **Database** node in the Tree View for the Ultricore BCS now reports the correct Database name.

Defining the Levels in a Database

A level is a term used to describe a section or layer of the routing system (e.g. video level, audio level). Ultricore BCS uses level definitions for easy identification and control of various routing matrices or parts of the system. The levels defined in the Levels tab have a direct relationship with the Level columns found in other database tabs.

Before You Begin

Determining the amount of levels needed requires a little planning.

Ultricore BCS may operate with as little as a single level database to define control of an Ultrix SDI switching matrix. Ultrix also allows independent routing of SDI embedded audio channels as well as MADI channels. Using one single level of control will limit the independent selection of embedded audio and/or MADI streams.

Any Ross NK series routers or other third-party routers attached to the Ultricore BCS system will require their own control level/s.

✶ The quantity of levels determines how many independent input/output ports (including embedded / MADI channels) may be grouped together as one source or destination selection.

Examples

A single control level can be used when there is limited independent embedded audio/MADI channel switching.

ID	Name
1	SDI

✶ If AFV (audio-follow-video) is desired on a single level database, the Audio Bypass must be enabled for each input and output port or disable the Ultrimix function.

A single level setup with NK-A64 analog audio router attached would require the following levels:

ID	Name
1	SDI
2	AnAud L
3	An Aud R

A setup using SDI with 4 embedded audio levels. This can allow independent switching of 4 of the embedded SDI channels and grouping of 4 MADI channels.The following levels would be required:

ID	Name
1	SDI
2	A1
3	A2
4	A3
5	A4

To define a level in the database

1. Double-click the **Levels** node located under the **Database** node.

   The **Levels** tab opens.

2. Verify the **ID** field to specify the priority of the 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.

3. To re-name a level:
   a. In the **Name** column, type a unique identifier for the level. It is recommended to use words that describe the level such as 3G, Audio, etc.
   b. Click **Enter** to update the name.
4. To select a unique color that will represent the level in the soft panels:
   a. In the **Color** column, click the cell for the level you want to configure to display the **Color Select** dialog.
   b. Select the hue from the provided vertical color grid in the **Color Select** dialog.
   c. Use the **Saturation** options to specify the depth of the color.
   d. Use the **Lightness** options to specify the amount of white or black mixed with the selected hue.
   e. Confirm that the field beneath the color grid displays the correct color for the level.
   f. Apply your changes using one of the following options:
      - Click **Live** to preview the color scheme and apply it but not close the **Color Select** dialog; or
      - Click **OK** to apply the new color to the level and close the **Color Select** dialog.
5. To provide additional information about the level:
   a. In the **Description** column, type a brief summary of the level or provide additional information about the level use or purpose. This column is for identification purposes only and not required for operation.
   b. Click **Enter** to update the description.

✶ Inserting a level in a working database can have destructive effects. It is recommended to insert below the last row to minimize this effect.

6. Click **Apply** to save your changes.

To create additional levels

1. Select a row in the **Levels** tab.
2. Click **Edit**.

✶ You can also copy and paste an existing level by clicking **Copy** > **Paste** from the **Edit** dialog.

3. To add a single level, select **Add**.
4. To add multiple levels:
   a. Select **Add Series** to display the **Add Rows** dialog.
   b. In the **Prefix** field, type the phrase. For example, if you want to create levels as `AUDIO 1`, `AUDIO 2`, etc., you would type `AUDIO` into the **Prefix** field.
   c. In the **Start Value** field, type the first number to be used in the series.
   d. In the **End Value** field, type the last number to be used in the series.
   e. Click **Apply**.

To delete an entry from the Levels table

1. Select the row for the destination to delete in the **Levels** tab.
2. Click **Edit** > **Delete**.

✶ Ensure the ID numbers are correctly sequenced when deleting and inserting entries in the **Levels** table by selecting **Edit** > **Reset All IDs**.

Defining the Destinations in a Database

The Destinations tab allows the definition of names (labels) and physical sockets for your routing system outputs. When a database is initialized, default labels of `Dest #` are automatically filled in to the quantity specified by the database. These destination labels may be changed to suit your naming conventions.

The Destinations tab is organized into a table with each row representing a Destination and each column representing a Level.The table cells are the output sockets assigned to the Destination for that Level. Initially, the table cells are empty (e.g. the destination labels are not assigned to physical output sockets). These may be populated with the technique described in "**To associate a physical output with a destination**" or via the **Advanced Fill** tool.

The **Advanced Fill** tool is provided to create new destination labels that are automatically assigned to physical outputs depending on options set by the user. The audio routing features provided by Ultricore BCS can result in an extensive source and destination definition map requiring some time to manually enter. The **Advanced Fill** tool will speed the assignment of physical sockets greatly.

Various editing options are available from the editing menus, accessed via the **Edit** button located on the bottom toolbar of the tab. Refer to "**Additional Dialogs, Menus, and Toolbars in the Database Interfaces**" for details on these menus.

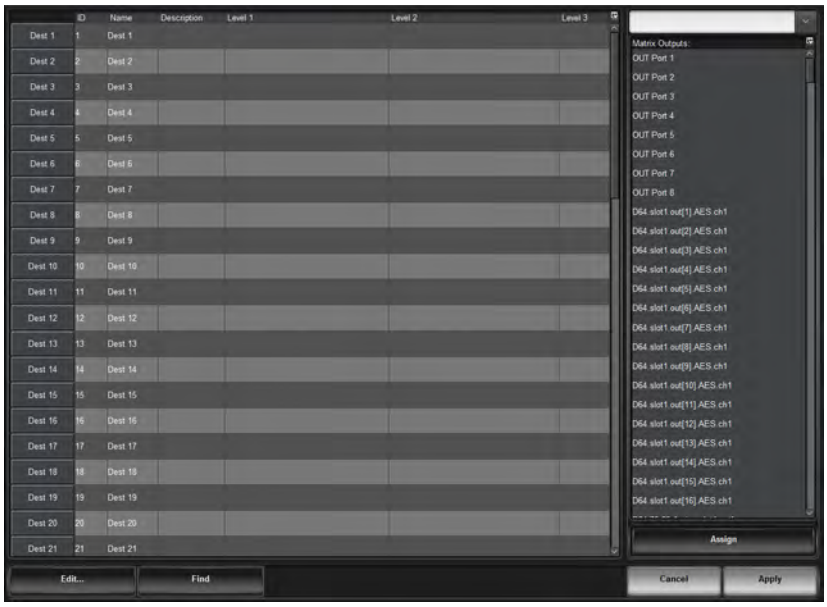
For More Information on...

- defining a database, refer to "**Creating a New Database**".
- the **Advanced Fill** tool, refer to "**Using the Advanced Fill Tool**".
- assigning Tally IDs to destinations, refer to "**Assigning the Tally IDs to the Destinations**".

To specify a label for a destinations

1. Double-click the **Destinations** node located under the **Database** node.

   The **Destinations** tab opens.



2. Select the cell in the **Name** column of the label to alter.
3. Type the required label.
4. Press **Enter** to apply the change.

✶ Take care to limit the amount of characters as these labels are displayed on Remote Control Panels (RCPs) which have a limited display area.

5. Repeat steps 2 to 4 for each destination you want to specify a virtual label for.
6. Click **Apply** at the bottom of the **Destinations** tab to save your changes.

To associate a physical output with a destination

1. Double-click the **Destinations** node located under the **Database** node.
2. If desired, type a new name for the destination in the **Name** cell as outlined in the procedure "**To specify a label for a destinations**".
3. In the **Destinations** tab, locate the column for the level you wish to include in the destination definition.
4. To associate a single output, perform one of the following:
   - Select the cell of the row in the table to display a list of available output sockets. By default, the sockets are listed in the format of **Frame.Slot.Port.Type.Channel** unless they were re-named in the **Port Labels** interface.
   - Choose an output from the available **Matrix Outputs** list and click **Assign**.

✶ Cell ranges may be horizontal as well as vertical. For example, a common operation would be to assign SDI embedded channels 1 to 16 to levels 2 to 17. The selected range would be horizontal across many levels but the selection would be vertical from the available outputs. The assignment operation will take the top most of the available outputs selection and assign it to the left most of the horizontal selection and so on through the selection range.

5. To associate a range of outputs:
   a. Select the first cell in the table column.
   b. Press and hold **Shift**.
   c. Select the last cell in the table column.
   d. Select a range in the available **Matrix Outputs** list with the same click + shift-click method.

e. Click **Assign**.

6. Click **Apply** at the bottom of the **Destinations** tab to apply the changes to the database.

To associate a series of outputs to the same level

1. In the table of the **Destinations** tab, select the first row in the series you want to define for the level.
2. Press and hold **Shift**.
3. Click the last row in the series to select a range of cells within a **Level** column.
4. Select a range of outputs as outlined in "**To associate a physical output with a destination**".
5. Click **Assign**.
6. Click **Apply** at the bottom of the **Destinations** tab to apply the changes to the database.

To delete an entry from the Destinations table

1. Select the row for the destination to delete in the **Destinations** tab.
2. Click **Edit** > **Delete**.

✶ Ensure the ID numbers are correctly sequenced when deleting and inserting entries in the **Destinations** table. To re-order the Destinations ID numbers in the database, click **Edit** > **Reset All IDs** in the **Destinations** tab.

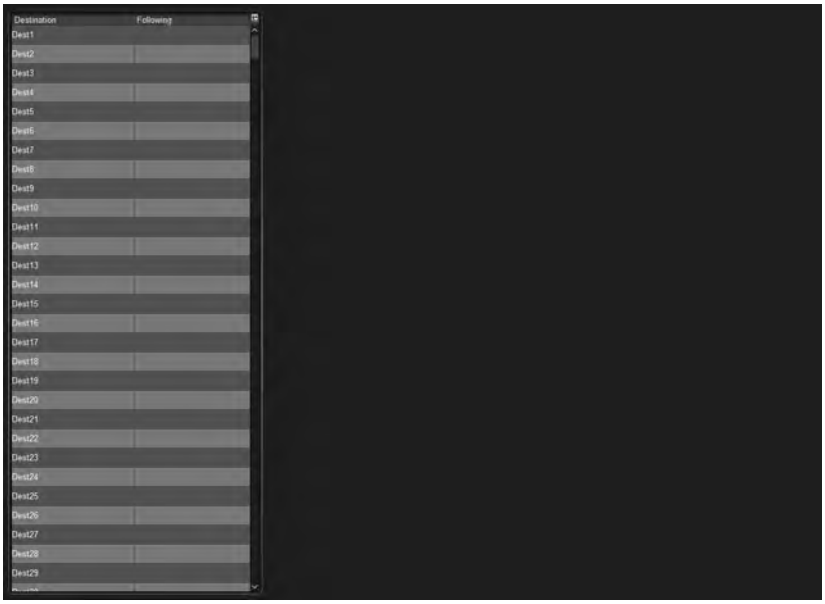
Configuring the Destination Follow Feature

The Destination Follow feature enables you to route a specific destination's source signal to another destination. For example, set **`Dest 1`** to follow **`Dest 6`** so when `Dest 6` is switched to a different source, **`Dest 1`** is also switched to that same source. You can set multiple destinations to follow another single destination, or each following their own unique destination.

To configure the Destination Follow feature

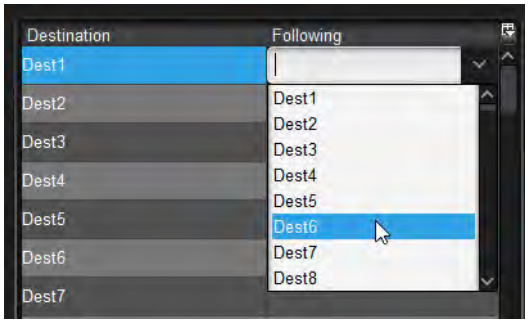
1. Double-click the **Destination Follow** node located under the **Database** node.

   The **Destination Follow** tab opens.



2. Locate the row for the destination to configure.
3. Use the **Following** menu to specify the output that the selected Destination will follow.

In the example below, the user is configuring `Dest1` to follow `Dest6`.



Defining the Sources in a Database

The Sources tab allows the definition of labels and physical sockets for your routing system inputs. When a database is initialized, default labels of `Src #` are automatically filled in to the quantity specified by the database. These source labels may be changed to suit your naming conventions.

The tab 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 sockets assigned to the source for that level.

Various editing options are available from the editing menus, accessed via the **Edit** button located on the bottom toolbar of the tab.

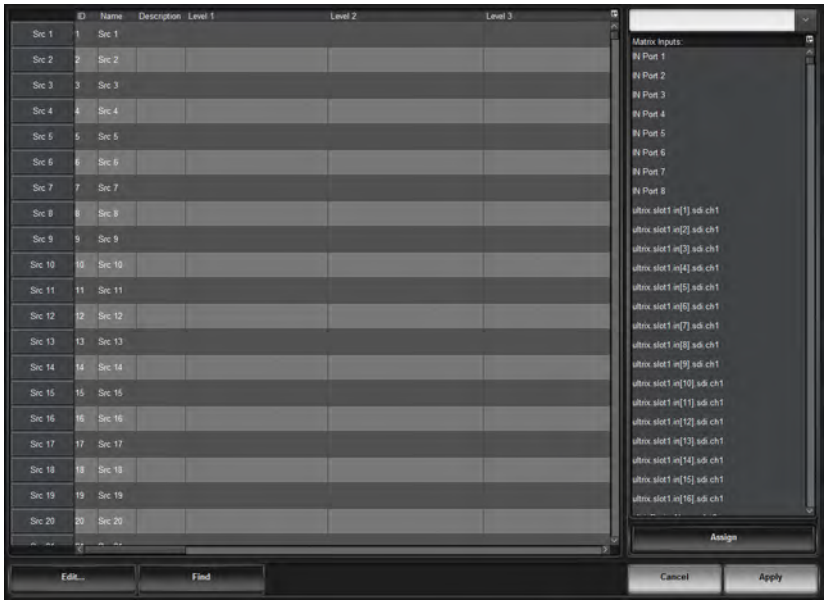
For More Information on...

- the **Advanced Fill** tool, refer to "**Using the Advanced Fill Tool**".
- assigning Tally IDs to sources, refer to "**Assigning the Tally IDs to the Sources**".
- the **Edit** button, refer to "**Additional Dialogs, Menus, and Toolbars in the Database Interfaces**".

To specify a label for a source

1. Double-click the **Sources** node located under the **Database** node.

   The **Sources** tab opens.



2. Select the cell in the **Name** column of the label to alter.

3. Type the required label.
4. Press **Enter** to apply the change.

✶ Take care to limit the amount of characters as these labels are displayed on Remote Control Panels (RCPs) which have a limited display area.

5. Repeat steps 2 to 4 for each destination you want to specify a virtual label for.
6. Click **Apply** at the bottom of the **Destinations** tab to save your changes.

To associate a physical input with a source

1. Double-click the **Sources** node located under the **Database** node.
2. If desired, type a new name for the source in the **Name** cell as outlined in the procedure "**To specify a label for a source**".
3. In the table of the **Sources** tab, locate the column for the level you wish to include in the source definition.
4. To associate a single input, perform one of the following:
   - Select the cell of the row in the table to display a list of available input sockets. By default, the sockets are listed in the default format of **Frame.Slot.Port.Type.Channel** unless they were re-named in the **Port Labels** interface.
   - Choose an input from the available **Matrix Inputs** list and click **Assign**.

✶ Cell ranges may be horizontal as well as vertical. For example, a common operation would be to assign SDI embedded channels 1 to 16 to levels 2 to 17. The selected range would be horizontal across many levels but the selection would be vertical from the available inputs. The assignment operation will take the top most of the available inputs selection and assign it to the left most of the horizontal selection an so on through the selection range.

5. To associate a range of inputs:
   a. Select the first cell in the table column.
   b. Press **Shift**.
   c. Select the last cell in the table column.
   d. Select a range in the available **Matrix Inputs** list.
   e. Click **Assign**.
6. Click **Apply** at the bottom of the **Sources** tab to apply the changes to the database.

To associate a series of inputs to the same level

1. In the table of the **Sources** tab, select the first row in the series you want to define for the level.
2. Press and hold **Shift**.
3. Click the last row in the series to select a range of cells within a **Level** column.
4. Select a range of inputs as outlined in step 5 of the procedure "**To associate a physical input with a source**".
5. Click **Assign**.
6. Click **Apply** at the bottom of the **Sources** tab to apply the changes to the database.

To delete an entry from the Sources table

1. Select the row for the destination to delete in the **Sources** tab.
2. Click **Edit** > **Delete**.

✶ Ensure the ID numbers are correctly sequenced when deleting and inserting entries in the **Sources** table. To re-order the Sources ID numbers in the database, click **Edit** > **Reset All IDs** in the **Sources** tab.

Using the Advanced Fill Tool

The Advanced Fill operation is typically a tool used to initially set up an Ultricore BCS database. Edits and customization may then be performed after the Advanced Fill tool has done the bulk of the work.

The following examples are shown on a new database with only database default settings loaded.

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

For More Information on...

- the settings and menus available in the Advanced Fill tool, refer to "**Advanced Fill Tool**".

Create Source Labels with Assignments for SDI Video Levels

The objective of this example is to insert new labels and assignments for inputs for all routers on SDI Levels only.

To create source labels with assignments for SDI video levels

1. Define the levels as outlined in "**Defining the Levels in a Database**".
2. Select an entry point in the **Sources** tab from where the new labels and assignments will begin.
   a. Double-click the **Sources** node located under the **Database** node.

      The **Sources** tab opens.

   b. Select the cell of the row for the entry point. The new entries will be inserted *below* this row.
   c. Click **Edit** > **Fill**.

      The **Breakaway Fill** dialog opens.

3. If required, select **Fill** > **Entire Device**.
4. In the **Name** field, type a label prefix. Enter a trailing space to ensure a space between the prefix and the numerical counter.
5. From the **AUX Port** menu, define the router AUX ports.
6. From the **Slot** menu, select the first slot in the router. (e.g. Ultrix.slot1)
7. From the **Port** menu, select the first IN port. (e.g. Ultrix.slot1.in[1])

8. From the **Starting Channel** menu, select the first channel of the selected port. (e.g. Ultrix.slot1.in[1].sdi.ch1)
9. In the **Levels** table of the dialog, select the fully qualified Input assignment name from the **I/O Assignment** column.
10. Click **Apply**.

    The dialog closes, and the **Source** tab updates with the newly created and insert labels with assignments.

✶ The Ultrix AUX ports are defined in the list. In this case, these would only be usable providing an SFP module that includes an SDI video input was installed into the relevant AUX port on the Ultrix rear panel.

	Name	Description	Level 1
Input 1	Input 1		Ultrix.slot1.in[1].sdi.ch1
Input 2	Input 2		Ultrix.slot1.in[2].sdi.ch1
Input 3	Input 3		Ultrix.slot1.in[3].sdi.ch1
Input 4	Input 4		Ultrix.slot1.in[4].sdi.ch1
Input 5	Input 5		Ultrix.slot1.in[5].sdi.ch1
Input 6	Input 6		Ultrix.slot1.in[6].sdi.ch1
Input 7	Input 7		Ultrix.slot1.in[7].sdi.ch1
Input 8	Input 8		Ultrix.slot1.in[8].sdi.ch1
Input 9	Input 9		Ultrix.slot1.in[9].sdi.ch1
Input 10	Input 10		Ultrix.slot1.in[10].sdi.ch1
Input 11	Input 11		Ultrix.slot1.in[11].sdi.ch1
Input 12	Input 12		Ultrix.slot1.in[12].sdi.ch1
Input 13	Input 13		Ultrix.slot1.in[13].sdi.ch1
Input 14	Input 14		Ultrix.slot1.in[14].sdi.ch1
Input 15	Input 15		Ultrix.slot1.in[15].sdi.ch1
Input 16	Input 16		Ultrix.slot1.in[16].sdi.ch1
Input 17	Input 17		Ultrix.slot1.AUXA-in[1].sdi.ch1
Input 18	Input 18		Ultrix.slot1.AUXB-in[1].sdi.ch1

Create Destination Labels with Assignments for SDI Video Levels

The objective of this example is to insert new labels and assignments for Ultricore BCS outputs for the SDI only level.

To create destination labels with assignments for SDI video levels

1. Define the levels as outlined in "**Defining the Levels in a Database**".
2. Select an entry point in the **Destinations** tab from where the new labels and assignments will begin.
   a. Double-click the **Destinations** node located under the **Database** node.

      The **Destinations** tab opens.

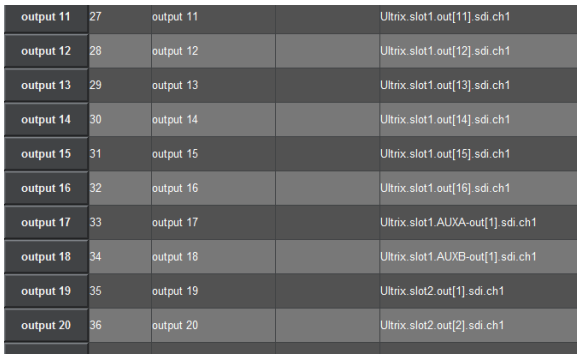
   b. Select the cell of the row for the entry point. The new entries will be inserted *below* this row.
   c. Click **Edit** > **Fill**.

      The **Fill** dialog opens.

3. If required, select **Fill** > **Entire Device**.
4. In the **Name** field, type a label prefix. Enter a trailing space to ensure a space between the prefix and the numerical counter.
5. From the **AUX Port** menu, define the router AUX ports.
6. From the **Slot** menu, select the first slot in the router. (e.g. Ultrix.slot1)
7. From the **Port** menu, select the first OUT port. (e.g. Ultrix.slot1.out[1])
8. From the **Starting Channel** menu, select the first channel of the selected port. (e.g. Ultrix.slot1.out[1].sdi.ch1)
9. In the **Levels** table of the dialog, select the fully qualified Output assignment name from the **I/O Assignment** column.
10. Click **Apply**.

    The dialog closes, and the **Source** tab updates with the newly created and insert labels with assignments.

✶ The AUX ports of the Ultrix router are defined in the list. These would only be usable providing an SFP module that includes an SDI video output was installed into the relevant AUX port on the router rear panel.



output 11	27	output 11		Ultrix.slot1.out[11].sdi.ch1
output 12	28	output 12		Ultrix.slot1.out[12].sdi.ch1
output 13	29	output 13		Ultrix.slot1.out[13].sdi.ch1
output 14	30	output 14		Ultrix.slot1.out[14].sdi.ch1
output 15	31	output 15		Ultrix.slot1.out[15].sdi.ch1
output 16	32	output 16		Ultrix.slot1.out[16].sdi.ch1
output 17	33	output 17		Ultrix.slot1.AUXA-out[1].sdi.ch1
output 18	34	output 18		Ultrix.slot1.AUXB-out[1].sdi.ch1
output 19	35	output 19		Ultrix.slot2.out[1].sdi.ch1
output 20	36	output 20		Ultrix.slot2.out[2].sdi.ch1

Create Source Labels with Assignments for SDI and Embedded Audio

The objective of this example is to create source labels and assignments for the SDI video and the first four embedded audio channels for an entire Ultricore BCS enabled slot. The remaining twelve audio channels are not used.

To create source labels with assignments for the SDI video and embedded audio levels

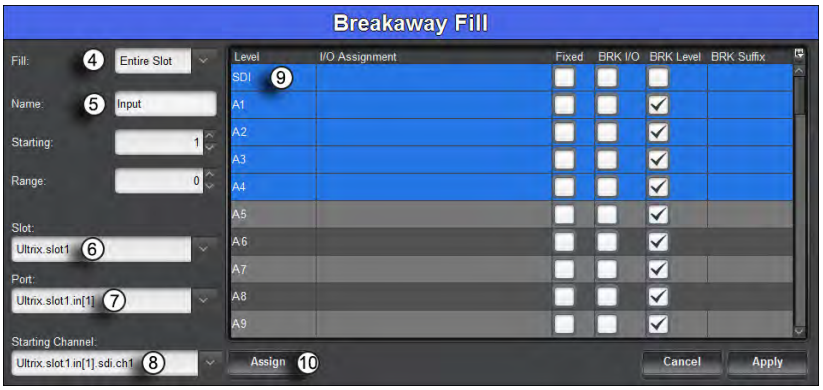
1. Ensure that you have the Ultrimix licensed feature enabled for the slot. Refer to the ***Ultrix User Guide*** for details.
2. Define one level for SDI Video and 16 levels for the embedded audio as outlined in the ***Ultrix User Guide***.
3. Select an entry point in the **Sources** tab from where the new labels and assignments will begin.
   a. Double-click the **Sources** node located under the **Database** node.

      The **Sources** tab opens.

   b. Select the cell of the row for the entry point. The new entries will be inserted *below* this row.

   c. Click **Edit** > **Fill**.

      The **Breakaway Fill** dialog opens.



4. If required, select **Fill** > **Entire Slot**.
5. In the **Name** field, type a label prefix. Enter a trailing space to ensure a space between the prefix and the numerical counter.
6. From the **AUX Port** menu, define the router AUX ports.
7. From the **Slot** menu, select the Ultrimix enabled slot in the router. (e.g. Ultrix.slot1)
8. From the **Port** menu, select the first port of the Ultrimix enabled slot. (e.g. Ultrix.slot1.out[1])
9. From the **Starting Channel** menu, select the first channel in the series.
10. In the **Levels** table of the dialog, select a range of **Level** rows by clicking the first row level name, then holding the **Shift** button, click the last row level name.

✶ Ensure to select the SDI Video level and the first four embedded audio levels.

11. Click **Assign** to automatically fill the **I/O Assignment** column for the selected levels.

    The **Breakaway Fill** dialog updates but does not close.

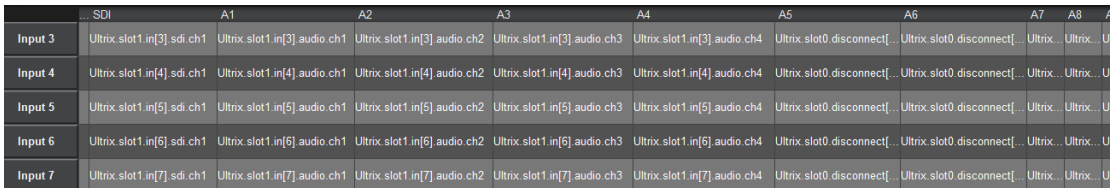
To set the unused audio channels to disconnect

1. From the **Slot** menu in the **Breakaway Fill** dialog, select **Ultrix.slot0**.
2. From the **Port** menu, select **Ultrix.slot0**.
3. From the **Starting Channel** menu, select **Ultrix.slot0.disconnect[1].audio.ch1**.
4. In the **Levels** table of the dialog, select the remaining twelve audio levels (e.g. A5-A16) from the **I/O Assignment** column.
5. Select **Ultrix.slot0.disconnect[1].audio.ch1** from the **I/O Assignment** cell for the first selected row (e.g. A5).

   The disconnect[1].audio will be applied to all the selected rows[1].

6. Click **Apply**.

   The dialog closes, and the **Source** tab updates with the newly created and insert labels with assignments.



1. Pass through may also be selected. Pass through has the effect of passing through any audio (silence or otherwise) on the channels A5 to A16. Disconnect effectively mutes those channels on the output stream.

Creating Source Labels with Assignments for SDI and Embedded Audio

The objective of this example is to create and insert a series of labels with assignments for SDI video and embedded audio. Also, audio breakaway sources will be required to implement audio shuffling.

To enable the ability to shuffle audio (that is to take an audio channel and route into another stream in a different position within that stream), we need to define that audio channel as a source and assign it across all required levels.

For example, we may wish to take channel 3 audio from an input SDI stream, and route (just that individual channel) to channel 2 of an output SDI stream. To facilitate this, the following definitions are needed;

Table 6 Example 1

	SDI Level	Level A1	Level A2	Level A3	Level A4
Source Name					
SDI 1 ch3	<blank>	In[1].audio.ch3	In[1].audio.ch3	In[1].audio.ch3	In[1].audio.ch3
Destination Name					
SDI out1	Out[1].sdi.ch1	Out[1].audio.ch1	Out[1].audio.ch2	Out[1].audio.ch3	Out[1].audio.ch4

✶ If only four audio levels are defined as shown in **Table 6**, and assuming no other level definitions, the user can only route 'SDI 1 ch3' to any of the corresponding levels in the destination, i.e. cannot route 'SDI 1 ch3' to a destination stream channel 8 as Out[1].audio.ch8 is not defined in any of the destination levels.

To enact the previous example, the user selects the destination channel by selecting the appropriate level button on the control panel (in this case, the A2 level) before actuating the crosspoint switch (destination button SDIout1, then, source button SDI 1 ch1). The **Advanced Fill** tool can automate the creation of these audio breakaway sources saving a great deal of setup time.

To create source labels with assignments for SDI and embedded audio, with audio breakaways

1. Define one level for SDI Video and 16 levels for the embedded audio as outlined in "**Defining the Levels in a Database**".
2. Select an entry point in the **Sources** tab from where the new labels and assignments will begin.
   a. Double-click the **Sources** node located under the **Database** node.

      The **Sources** tab opens.

   b. Select the cell of the row for the entry point. The new entries will be inserted *below* this row.
   c. Click **Edit** > **Fill**.

      The **Breakaway Fill** dialog opens.

3. From the **Fill** menu, select **Entire Slot**.
4. In the **Name** field, type a label prefix. Enter a trailing space to ensure a space between the prefix and the numerical counter.
5. From the **Slot** menu, select the Ultrimix enabled slot in the Ultrix router. (e.g. Ultrix.slot1)
6. From the **AUX Port** menu, define the router AUX ports.
7. From the **Port** menu, select the first port of the Ultrimix enabled slot. (e.g. Ultrix.slot1.out[1])
8. From the **Starting Channel** menu, select the first channel in the series.
9. In the **Levels** table of the dialog, assign physical ports to the levels.
10. Select the **BRK I/O** box for the Levels assignment to be broken out to a separate label/assignment definition.
11. Select the **BRK Level** box for each level to be included in that label/assignment definition.
12. Click **Apply**.

    The dialog closes, and the **Source** tab updates with the newly created and insert labels with assignments, and the audio breakaways definitions.

Input 1	Input 1	Ultrix.slot1.in[1].sdi.ch1	Ultrix.slot1.in[1].audio.ch1	Ultrix.slot1.in[1].audio.ch2	Ultrix.slot1.in[1].audio.ch3	Ultrix.slot1.in[1].audio.ch4
Input 2	Input 2	Ultrix.slot1.in[2].sdi.ch1	Ultrix.slot1.in[2].audio.ch1	Ultrix.slot1.in[2].audio.ch2	Ultrix.slot1.in[2].audio.ch3	Ultrix.slot1.in[2].audio.ch4
Input 3	Input 3	Ultrix.slot1.in[3].sdi.ch1	Ultrix.slot1.in[3].audio.ch1	Ultrix.slot1.in[3].audio.ch2	Ultrix.slot1.in[3].audio.ch3	Ultrix.slot1.in[3].audio.ch4
Input 4	Input 4	Ultrix.slot1.in[4].sdi.ch1	Ultrix.slot1.in[4].audio.ch1	Ultrix.slot1.in[4].audio.ch2	Ultrix.slot1.in[4].audio.ch3	Ultrix.slot1.in[4].audio.ch4
Input 5	Input 5	Ultrix.slot1.in[5].sdi.ch1	Ultrix.slot1.in[5].audio.ch1	Ultrix.slot1.in[5].audio.ch2	Ultrix.slot1.in[5].audio.ch3	Ultrix.slot1.in[5].audio.ch4
Input 6	Input 6	Ultrix.slot1.in[6].sdi.ch1	Ultrix.slot1.in[6].audio.ch1	Ultrix.slot1.in[6].audio.ch2	Ultrix.slot1.in[6].audio.ch3	Ultrix.slot1.in[6].audio.ch4
Input 7	Input 7	Ultrix.slot1.in[7].sdi.ch1	Ultrix.slot1.in[7].audio.ch1	Ultrix.slot1.in[7].audio.ch2	Ultrix.slot1.in[7].audio.ch3	Ultrix.slot1.in[7].audio.ch4

✶ Notice the **ch*x*** automatic suffix to the label. This may be overridden by placing text in the **BRK Suffix** cell of the **Breakaway Fill** dialog.

Input 16	Input 16	Ultrix.slot1.in[16].sdi.ch1	Ultrix.slot1.in[16].audio.ch1	Ultrix.slot1.in[16].audio.ch2	Ultrix.slot1.in[16].audio.ch3	Ultrix.slot1.in[16].audio.ch4
Input 17	Input 17	Ultrix.slot1.AUXA-in[1]....	Ultrix.slot1.AUXA-in[1].au...	Ultrix.slot1.AUXA-in[1].au...	Ultrix.slot1.AUXA-in[1].au...	Ultrix.slot1.AUXA-in[1].au...
Input 18	Input 18	Ultrix.slot1.AUXB-in[1]....	Ultrix.slot1.AUXB-in[1].au...	Ultrix.slot1.AUXB-in[1].au...	Ultrix.slot1.AUXB-in[1].au...	Ultrix.slot1.AUXB-in[1].au...
nput 1 CH1	Input 1 CH1		Ultrix.slot1.in[1].audio.ch1	Ultrix.slot1.in[1].audio.ch1	Ultrix.slot1.in[1].audio.ch1	Ultrix.slot1.in[1].audio.ch1
nput 1 CH2	Input 1 CH2		Ultrix.slot1.in[1].audio.ch2	Ultrix.slot1.in[1].audio.ch2	Ultrix.slot1.in[1].audio.ch2	Ultrix.slot1.in[1].audio.ch2
nput 1 CH3	Input 1 CH3		Ultrix.slot1.in[1].audio.ch3	Ultrix.slot1.in[1].audio.ch3	Ultrix.slot1.in[1].audio.ch3	Ultrix.slot1.in[1].audio.ch3
nput 1 CH4	Input 1 CH4		Ultrix.slot1.in[1].audio.ch4	Ultrix.slot1.in[1].audio.ch4	Ultrix.slot1.in[1].audio.ch4	Ultrix.slot1.in[1].audio.ch4

Creating Categories

You can assign each destination, source, and level to a specific category in the router database. Defining multiple categories enable you to filter the sources, destinations, and level and organize them into logical groups. Each database provides up to six categories that you can define.

For More Information on...

- managing the categories for your Ultricore BCS database, refer to "**Using Categories**".

Managing your Databases

A database can be archived by saving it as a *.uda file to a specified location. 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
- duplicating a database from one system to another
- restoring a known backup copy of a database to an Ultricore BCS

✶ This feature requires DashBoard v8.2 or higher.

Overview

The following information is captured when you archive a database:

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

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

Exporting a Database

You create an archive of a database (as a *.uda file) using the options in the **System Status** > **Transfer** tab.

To export a database to the archive

1. In the Tree View of DashBoard, double-click the **System Status** node.

   The **System Interfaces** display in the DashBoard window.
2. Select the **Transfer** tab.
3. Click **Ultricore Database**.
4. Locate the **Export** area on the tab.
5. Use the **Database** field to specify the database to export.
6. Click **Browse...** to specify the location to save the *.uda file to.

   The **Archive** read-only field updates with the selected path and database name.
7. Click **Apply**.

   The **Downloading Archive** dialog opens to report the status of the export.

Importing a Database

Once a database is imported from the archive to your system, you can select it from the list of databases to load in the **System Status** > **Database** tab.

✶ The database is not automatically loaded.You must follow the procedure "**Loading a Database**" to load the imported database.

To import a database to an Ultricore BCS

1. In the Tree View of DashBoard, double-click the **System Status** node.

   The **System Interfaces** display in the DashBoard window.
2. Select the **Transfer** tab.
3. Click **Ultricore Database**.
4. Locate the **Import** area on the tab.
5. Select the *.uda file you wish to import as follows:
   a. Click **Browse...**

      The **Open** dialog opens.
   b. Use the **Open** dialog to specify the *.uda file to import.
   c. Click **Open** to close the dialog and load the file.
6. Click **Apply**.

   The **Uploading Archive** dialog opens to report the status of the transfer.
7. Verify that the imported database is now available for selection in the **System Status** > **Database** tab.

Deleting a Database

✶ Ensure the database that you are about to delete is not currently loaded and in use by Ultricore BCS.

To delete a database

1. In the Tree View, double-click the **System Status** node.

   The **System** interface displays in the DashBoard window.
2. Select the **Database** tab.
3. From the **Delete Database Name** menu, select the database you want to delete.
4. Click Database **Delete**.

SmartCore

✶ SmartCore is considered a beta feature of software v5.1.0.

The SmartCore feature enables you to easily configure quick access custom Ultritouch panels for input/output signal control in your system. SmartCore can help you to:

- Simplify live production workflows by placing select audio and video signal control parameters right at an operator's fingertips.
- Quickly adjust the signal levels from any audio/video input or output device in a signal path (e.g incoming encoder from a satellite feed).
- Review input signal level adjustments in an UltriScape window before cutting to the next shot.
- Efficiently deploy operator workflows that safeguard live productions while providing optimal utility.

Overview

A typical television production system includes many devices, physical or virtual, connected into signal paths that allow operators to create and adjust those signals to deliver the look, feel and sound needed for their respective productions.

As these systems get larger, the user environment to manage and operate them also gets exponentially more complex to navigate through the correct controls on the correct device. More complex systems invariably need more console real estate for dedicated control surfaces and pressure builds to use flexible, routable control surfaces such as Ultritouch. However, these alone do nothing to simplify the assignment to the many devices that may be needed during normal operations.

SmartCore leverages the inherent efficiency of the Ultritouch touchscreen panels. Ultritouch can already display custom control panels, but they are complex to build and require the user to carefully select the appropriate device for the signal they wish to monitor or adjust. This manual custom configuration and association with devices needs to be set up well in advance with changes during a production being either potentially slow or error prone.

SmartCore dramatically reduces these risks by switching the functions of the panel quickly and efficiently to a targeted subset of controls and doing that in lock step with the signals being routed or monitored and hence the devices being used at that moment in the production.

Figure 6 Examples of a SmartCore Panel and Drawers

SmartCore in DashBoard

The custom soft panel system within DashBoard involves the creation of grid files for each complete soft panel. While very powerful, these tend to be built for a specific device. The implementation in SmartCore uses DashBoard custom widget functionality and adds the ability to embed widgets in any Ultritouch soft panel, dynamically switch those widgets, and assign them to any appropriate device on the fly.

To accomplish this, SmartCore maintains data in the following interfaces:

- **Product Catalog** — maintains product specific data common to all devices of that product type. For example, Ultrix and RAPTOR are two different products. The Product Catalog includes:
  - **Widgets** area — maintains all available widgets linked to products. Widgets are user-defined controls within a device's DashBoard window (e.g. numeric keypad,)
  - **Parameters** area — a generic widget (e.g. uapslider, uapnumslider) is used with a product, any openGear protocol (ogp) parameter can be linked to a control within that widget, the Parameters table tracks that association. This area is not yet fully implemented.
- **Device Manager** — manages all instances of products in the client system. This table links a device to its product type and its IP address and associated communications parameters. For example, an ULTRIX-FR12 is a device in the Ultrix product group, and an MC1-UHD in the RAPTOR product group.
- **Signal Paths Manager** — maintains the assignment of devices to the signal path (source/destination) they are wired into.

Accessing the SmartCore Interfaces

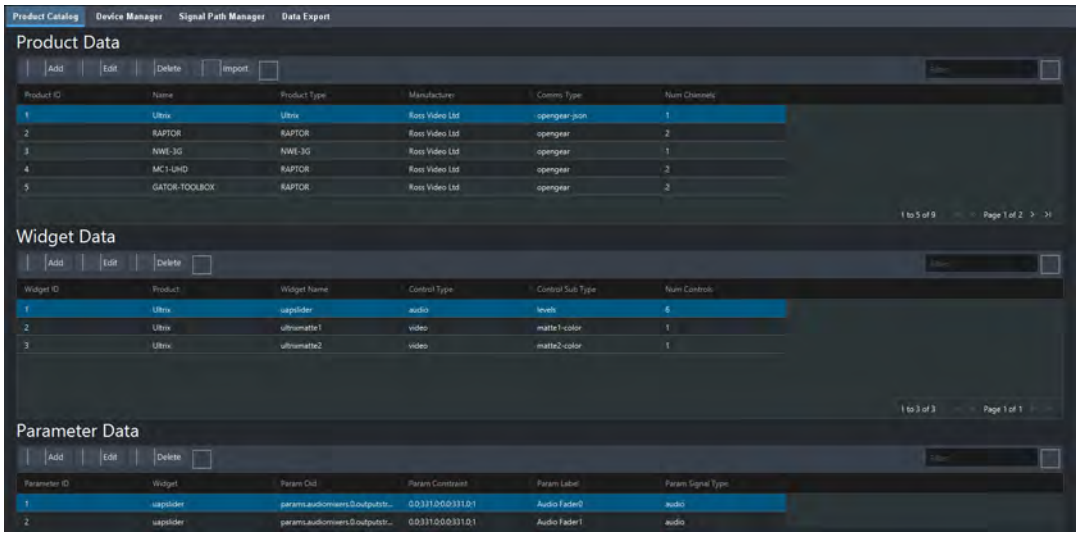
Each SmartCore interface is represented by a page in the main SmartCore window as selectable buttons. Configuration of these interfaces are only required at initial system build or subsequent system reconfiguration.

✶ SmartCore is configured separately from the Ultricore BCS routing database.

To access the SmartCore interfaces

1. Display the Database nodes as outlined in the procedure "**To access the Database interfaces in DashBoard**".
2. Double-click the **SmartCore** sub-node.

   The **SmartCore** interface opens in the DashBoard window with the Product Catalog page automatically selected.



The following sections briefly outline the areas and options on each page.

Product Catalog

This page enables you to add products (devices), define the communication protocol, and set the product name/type required for context for control.

- Product area — A product catalog can be imported as a spreadsheet (*.xlsx) to quickly get things started. Or you can define products by manually adding new entries to the Product area.
- Widget area — Control widgets (panels) are associated with products as part of the product catalog configuration. The system has initial support for generic widgets that then have individual parameters from products assigned to them (e.g. such as sliders for the Ultrix Audio control).

Device Manager

Devices in SmartCore are instances of product that make up your system and are auto-populated on the page. Each device to be controlled has an entry in the Device Data table. Each entry includes:

- a name for reference
- the IP address and port assigned the device uses for communication
- a specific OGP Device ID
- the slot number the card is located in (for openGear cards in a frame)

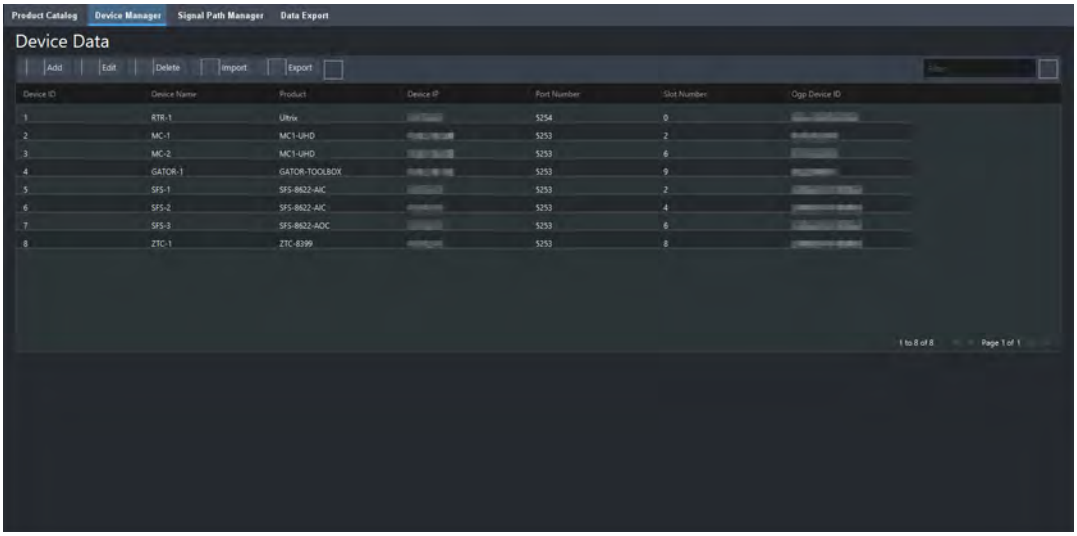


Figure 7 Example of the SmartCore > Device Manager in DashBoard

Signal Path Manager

In order to ensure that the control panel is controlling functions that relate to the signals being routed, devices are associated with the signal paths they are part of. This is configured in the Signal Path Manager.

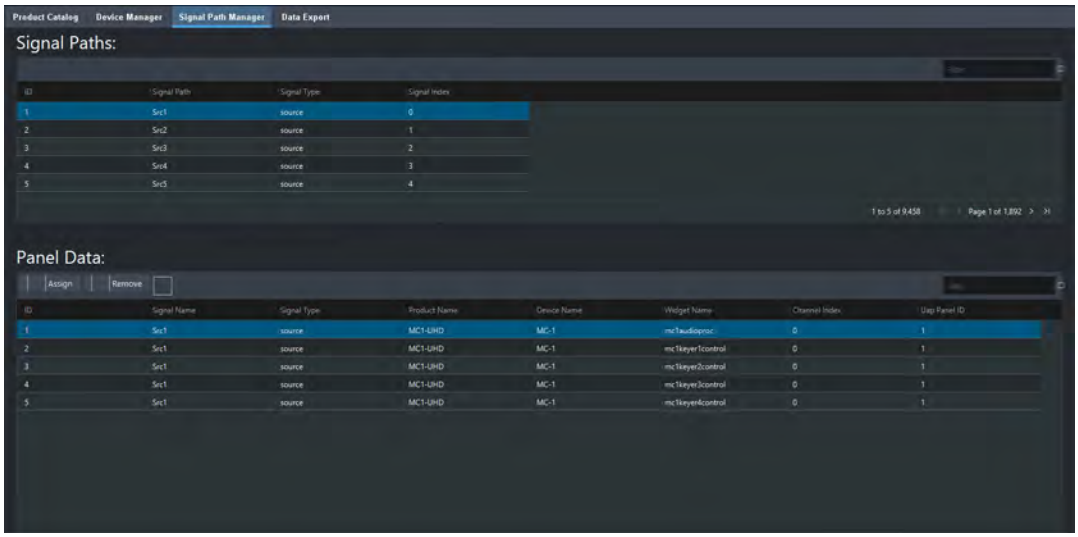


Figure 8 Example of the SmartCore > Signal Path Manager in DashBoard

The Signal Name is the name used when routing on the router panel. The Signal Type and Signal Index are there for information purposes only but may be useful especially when differentiating signals where the names may be similar or the same for a source and destination.

This information is ultimately defined by the facility system configuration (wiring) at your location. For example, a signal is wired into the input that is linked to SRC 2 and goes through a GATOR-TOOLBOX card labeled as GTB-1. Whenever a router panel selects SRC 2 or a destination that has SRC 2 routed to it, the available controls for GTB-1 are made available on the panel. Multiple devices can be in that path, the operator will get all controls for all devices in the SRC 2 path similarly devices wired in the output path associated with the DST selected on the same router panel are also available to the user.

Data Export Manager

Use the Data Export interface to create a backup of SmartCore data as well as system updates and configuration. You can choose the type of data to export by selecting its button from the top toolbar, and saving it as an *.xlsx file. This file can then be imported to the corresponding SmartCore interface via the **Import** button.

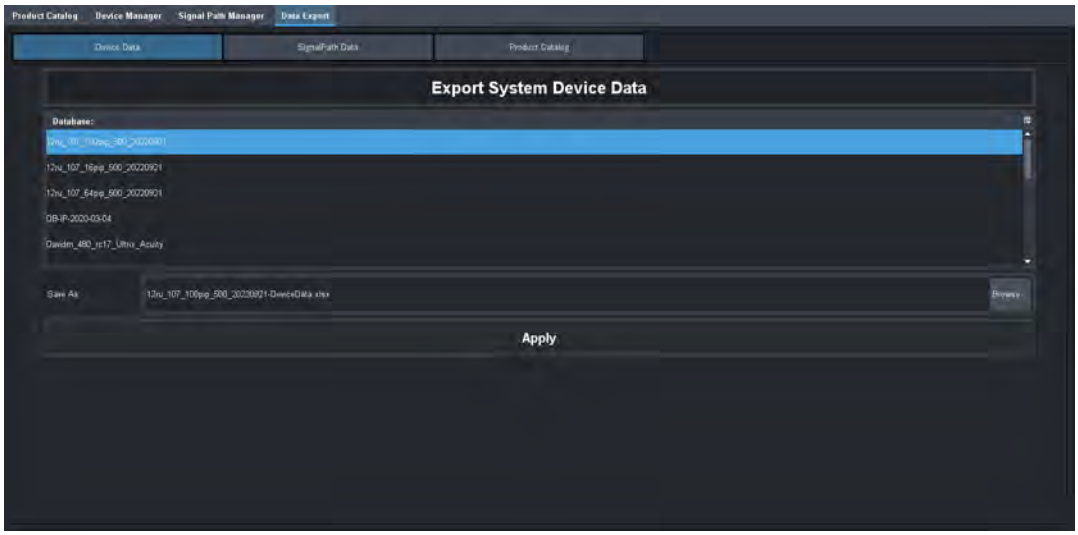


Figure 9 Example of the SmartCore > Data Export Manager in DashBoard

Defining the SmartCore Product Catalog

You begin by defining the Product Catalog for the SmartCore database. The Product Catalog can be defined by importing an existing catalog (an *.xlsx file) or by manually defining the product entries via the Add Product option on the Product Catalog page. This section outlines both methods.

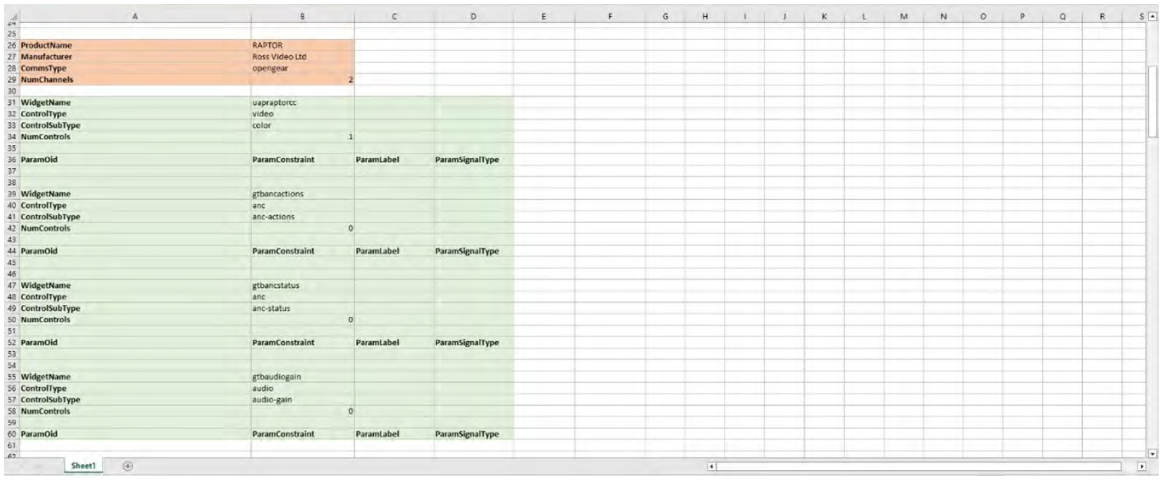
Creating a Product Catalog File

A Product Catalog file is a spreadsheet that captures the data used by the SmartCore database. This file must contain the following information for each product you want to define:

•

•

•



	A	B	C	D
26	ProductName	RAPTOR		
27	Manufacturer	Ross Video Ltd		
28	CommsType	openigear		
29	NumChannels	2		
30				
31	WidgetName	uapraptorcc		
32	ControlType	video		
33	ControlSubType	color		
34	NumControls	1		
35				
36	ParamOid	ParamConstraint	ParamLabel	ParamSignalType
37				
38				
39	WidgetName	gtbancactions		
40	ControlType	anc		
41	ControlSubType	anc-actions		
42	NumControls	0		
43				
44	ParamOid	ParamConstraint	ParamLabel	ParamSignalType
45				
46				
47	WidgetName	gtbancstatus		
48	ControlType	anc		
49	ControlSubType	anc-status		
50	NumControls	0		
51				
52	ParamOid	ParamConstraint	ParamLabel	ParamSignalType
53				
54				
55	WidgetName	gtbaudiogain		
56	ControlType	audio		
57	ControlSubtype	audio-gain		
58	NumControls	0		
59				
60	ParamOid	ParamConstraint	ParamLabel	ParamSignalType
61				

Figure 10 Product Catalog — Example of Spreadsheet Entry for a RAPTOR Product

For More Information on...

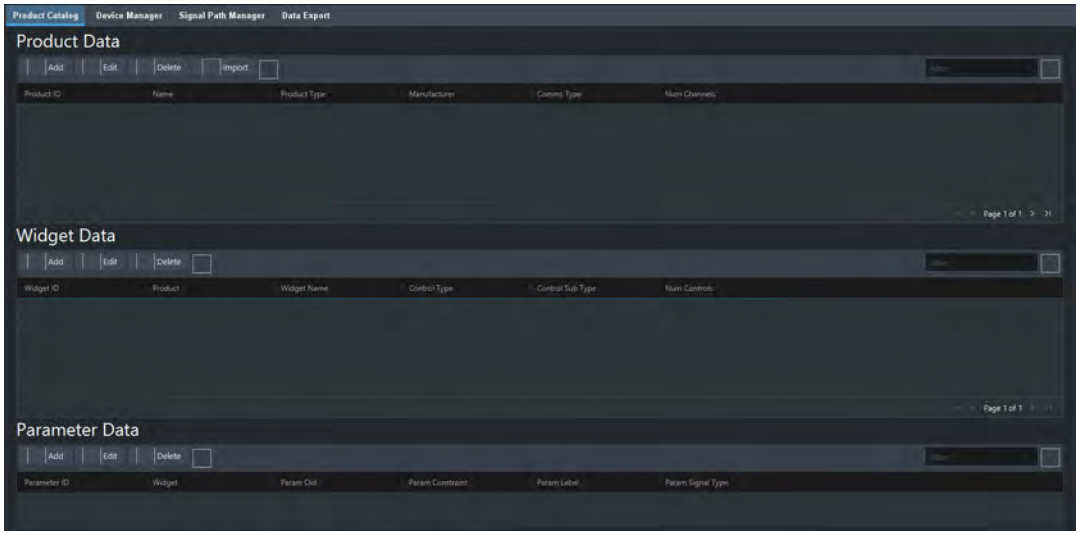
- exporting an existing Product Catalog to an *.xlsx file, refer to "**Exporting SmartCore Data**".

Importing a Product Catalog

Importing an *.xlsx file enables you to quickly define the Product Catalog for your Ultricore BCS by using an existing database.

To import a product catalog

1. Display the SmartCore interfaces as outlined in "**To access the SmartCore interfaces**".

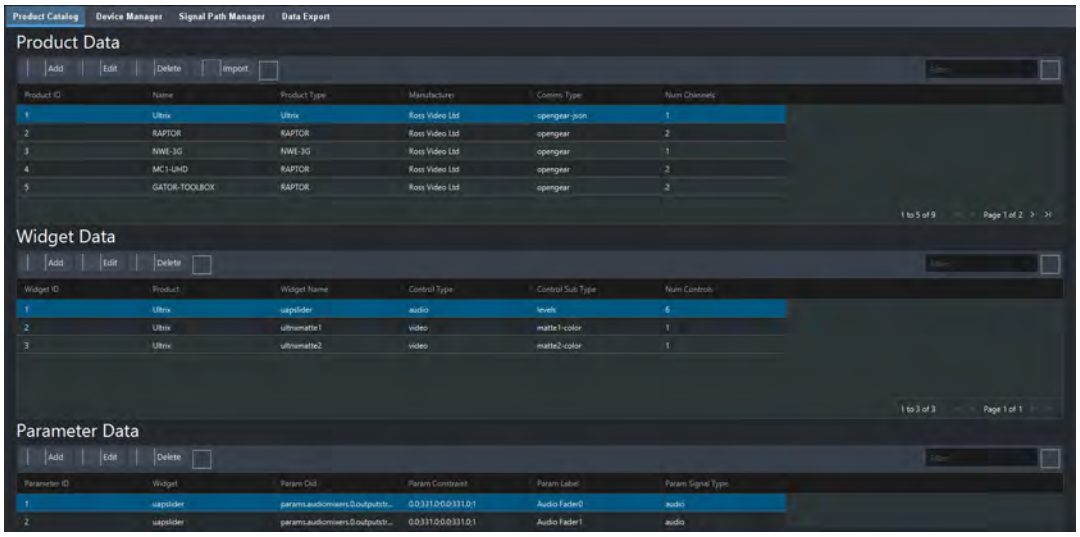


2. From the Product Data toolbar, click **Import**.

   The **Open** dialog opens on your desktop.

3. Navigate to the *.xlsx file you wish to import.
4. Click **Open**.

   The **Product Data** page updates to display the data imported from the selected file.



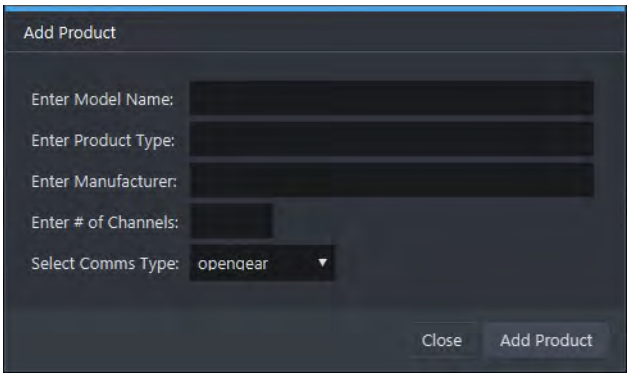
Manually Defining a Product Catalog in DashBoard

You can update the Product Catalog by defining a new product by suppling the name. Before proceeding, consider what devices that the new product will apply to and how to best describe them consistently. For example, openGear cards provide a variety of functions (e.g. Frame Syncs, Up/Down Converters, Master Control, Distribution Amplifiers, etc.). You can create a product type for the product line (openGear), or a function (e.g. Up/Down Converters), or the card model (e.g. UDC-8225A, UDC-8625A).

To add a new entry to the Product Catalog

1. From the Product Data toolbar, click **Add**.

   The **Add Product** dialog opens.



2. Use the **Model Name** to assign a unique identifier to this product.

   For example, if you have multiple MC1-UHD cards, you could assign "`MC1-#`" to each card where `#` represents the frame slot the card is located in. This identifier is also searchable via the Filter options in all SmartCore pages.

3. Use the **Product Type** field to classify the product.

   For example, enter "`Ultrix`" for all models Ultrix-FR1, Ultrix-FR2, Ultrix-FR5, and Ultrix-FR12 in your system.

4. Use the **Manufacturer** field to specify the vendor who manufactures the product.
5. Use the **Channels** field to specify the number channels the device will provide in the signal path.
6. User the **Comms Type** menu to specify the protocol the device uses to communicate within your routing system.
7. Click **Add Product**.

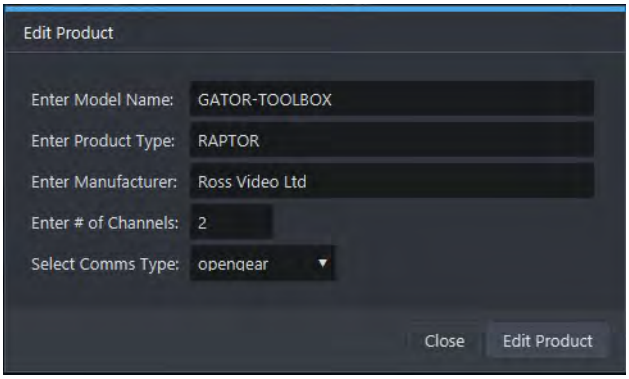
   The Product Catalog updates to display a row for the newly added product.

8. Repeat steps 2 to 7 for each new product.
9. Click **Close** to exit the **Add Product** dialog.

To edit a product entry

1. In the Product Data area, select the row for the product to edit.
2. From the Product Data toolbar, click **Edit**.

   The **Edit Product** dialog opens.



3. Update the required field(s).
4. Click **Edit Product** to apply your changes.
5. Click **Close** to exit the **Edit Product** dialog.

Managing the Widgets

Once the product data is defined, widgets are added in the Widget Data area. Those widgets already designed are supplied with the spreadsheet import so no configuration is required unless a new widget is needed after the import.

✶ In this section, the term “CustomPanel” refers to the interface a specific device (e.g. openGear card) displays within the DashBoard window. This term is not interchangeable with “soft panel” which refers to a panel that is created and used in the Ultrix system.

Creating a Grid File

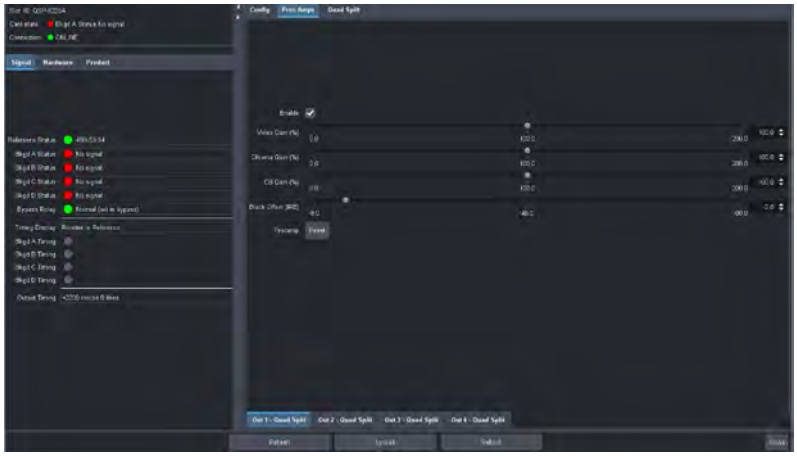
A CustomPanel is a user interface you create in the PanelBuilder feature of the DashBoard client software. CustomPanels are saved as *.grid files to a folder on your DashBoard client computer. Widgets are DashBoard panel elements stored within the *.grid file.

✶ This process is similar to creating a CustomPanel in the DashBoard system by cutting and pasting controls from one device control page into the grid file. Once pasted, all normal editing options are available as long as the resulting grid file is contained in an <abs> or <table> element.

To create a grid file

1. Display the device’s interface in the DashBoard window. Refer to the user guide for your device for details.

   In the example below, the QSP-8229A is displayed.



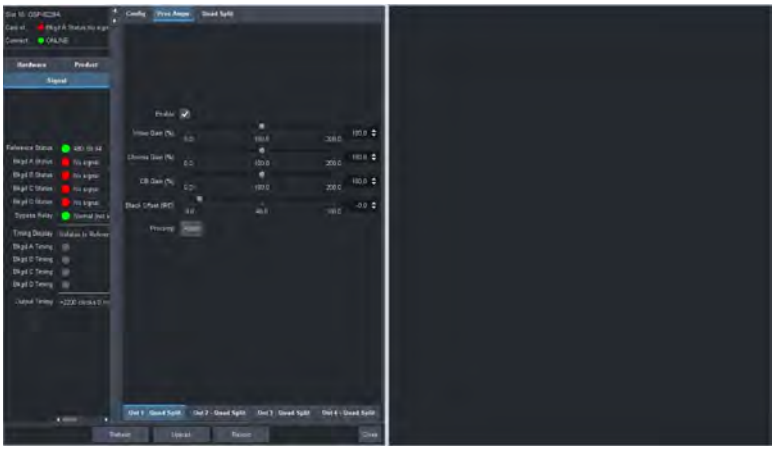
2. In DashBoard, select **File** > **New** > **New CustomPanel File**.

   The **Create new CustomPanel File** dialog box opens.
3. In the **File name** box, type a unique name for the new grid file.
4. Use the **Template** list to select **Blank Self-Contained Data Source Panel (XPression)**.

   This creates an empty panel which stores only the device data, timers, and/or local parameters data to the grid file.
5. If the folder in which you are saving the grid file is not already listed in the File Navigator tab and you want it to be, select the **Add to File Navigator** box.
6. Click **Finish**.

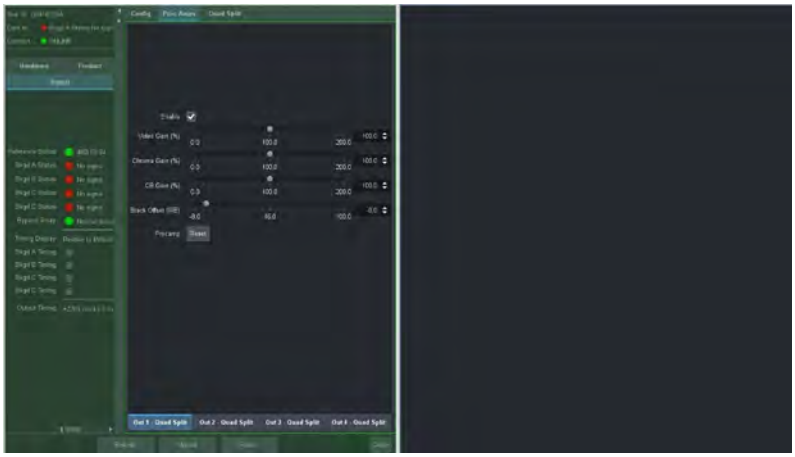
The new panel appears as a new tab in the DashBoard window.

7. Use your mouse pointer to grab the new panel tab and drag it to the right side of the screen until the split screen line displays. Then release the new panel tab.



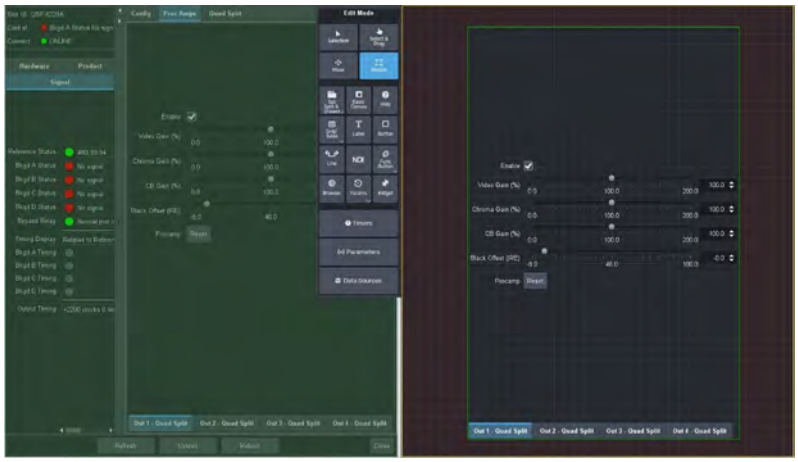
8. Select the QSP-8229A pane.
9. Click **PanelBuilder** from the DashBoard main toolbar.
10. Select the area in the device panel that you want to make the widget for.

    In the following example, the user selected an area on the Proc Amps > Out 1 tab.



11. Drag the selected block over to the grid file window and drop.

    This will set the grid file into PanelBuilder Edit mode.



In some cases a dialog opens to confirm if certain components should be included or linked to. You can include them for now and delete later if they are not relevant.

12. If the grid file needs editing, close the device page and proceed to edit using the PanelBuilder feature. Refer to the ***DashBoard User Guide*** for details on editing grid files.

✶ Resizing the element can help determine if the widget is going to be appropriate when displayed on the Ultritouch panel however this a useful guide not absolute.

13. Once editing is complete, save and close the grid file.
14. To convert and install the widget open the User Assigned Parameters database page on the BCS and go to the Product Catalog tab. Assuming the product is in the catalog, following the above instruction to add it if not, select the product the widget applies to. Click on the Import Grid button, navigate to and select the grid file created and click open.

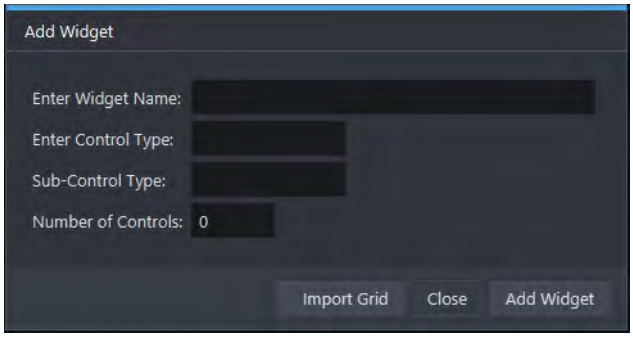
Adding a New Widget

Once created, the grid file is converted to a widget by clicking **Import Grid** button in the Panel Catalog > Add Widget dialog. This enables you to navigate to the location of the grid file, select and open it. The conversion to the widget, placement in BCS and update of all panels occurs immediately. The name of the grid file is the subsequent name of the widget that will be inserted in the name field of the dialog.

To add a new widget to the Product Catalog

1. Verify that the product for the widget is listed in the Product Catalog.
2. From the Widget Data toolbar, click **Add**.

   The **Add Widget** dialog opens.



3. Set the **Control Type** and **Sub-control Type** fields to meaningful text.

The text will be used to filter controls relative to a function i.e. enter `audio` for Control Type to only show audio controls to audio operators, this is not used at this time. Sub-control type is used to indicate the type of control, gain, timing, config, status.

✶ Grid files for conversion need to be cleanly contained in an <abs> or <table> tag to convert so care is needed, see creation notes below.

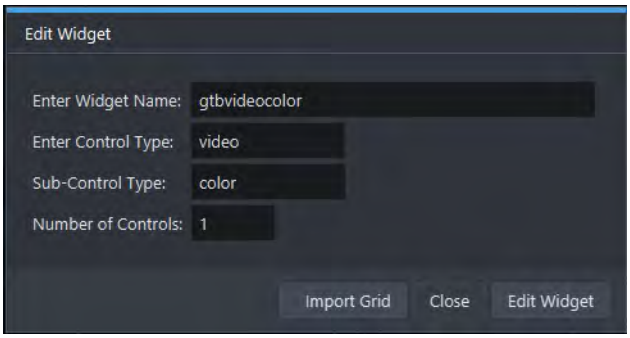
4. Click **Import Grid**.
5. Navigate to the grid file you created in the previous section.
6. Click **Open**.

   The widget is added to the product it applies to. All devices based on the product will immediately have the new widget associated with them.
7. Click **Close** to exit the **Add Widget** dialog.

To edit a widget

1. In the Widget Data area, select the row for the product to edit.
2. From the Widget Data toolbar, click **Edit**.

   The **Edit Widget** dialog opens.



3. Update the required field(s).
4. Click **Edit Widget** to apply your changes.
5. Click **Close** to exit the **Edit Widget** dialog.

Defining the Devices for SmartCore

The Device Manager page enables you to manage all instances (devices) of product types in the DashBoard client system. Each device is linked to its product type and enables you to specify its IP address and associated communications parameters.

✶ In the case of an opengear card, the IP address of the frame and the slot number in which the card resides.

You can choose to import an *.xls spreadsheet that includes entries for all the devices in your system, or you can manually add devices to the SmartCore database. This section outlines both methods.

Importing a Device Entry

To import a device entry

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

   The **Open** dialog opens on your desktop.

2. Navigate to the *.xlsx file you wish to import.
3. Click **Open**.

   The Device Manager page updates to display the data imported from the selected file.

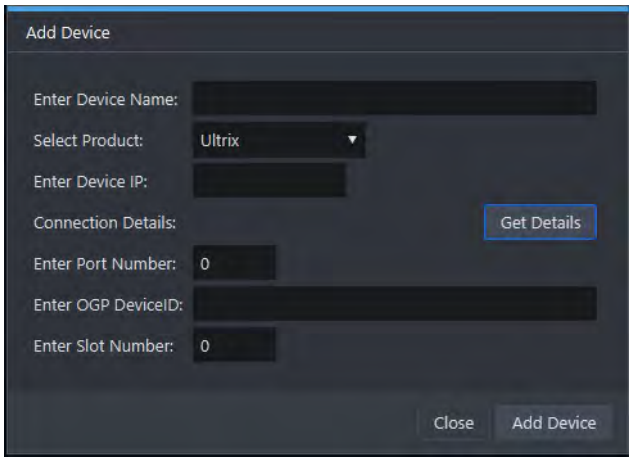
Manually Adding a Device Entry

Before proceeding, ensure that you have the IP Address, port number, and OGP DeviceID for each device. This information can be obtained by locating the device in the DashBoard Tree View and right-clicking its node and selecting **View Frame Information**.

To add a new device entry to the Device Manager

1. From the Device Manager toolbar, click **Add**.

   The **Add Device** dialog opens.



2. Use the Enter **Device Name** field to assign a unique identifier for the device within SmartCore. This does not impact the device name reported in the main Database system.

   The **Device Name** is to identify which device is being associated with a signal path and should be meaningful in the context of your system. All other data, IP address, Port number, OGP/node ID and slot number are specific to and required to properly communicate with the device in question.

3. Use the Select **Product** menu to assign the device to a product type as defined in the Product Catalog.

✶ The Product Catalog entries determine the list available in the Select Product menu.

4. Use the Enter **Device IP** field to specify the IP Address assigned to the specific device you want to add.

✶ If the device is an openGear card in a frame, you must enter the IP Address of the frame.

5. If the device is accessible to the Ultricore BCS, click **Get Details** to auto-fill the remaining fields.
6. Click **Add Device**.

   The Device Data table updates to display a row for the new device.

7. Repeat steps 2 to 6 for each device you want to add.

✶ After adding the details from the frame information, each card can be added by changing the Device Name, selecting the product from the Select Product menu, entering the slot number of the card, and clicking Add Device.

8. When all cards and frames are added, click **Close** to exit the **Add Device** dialog.

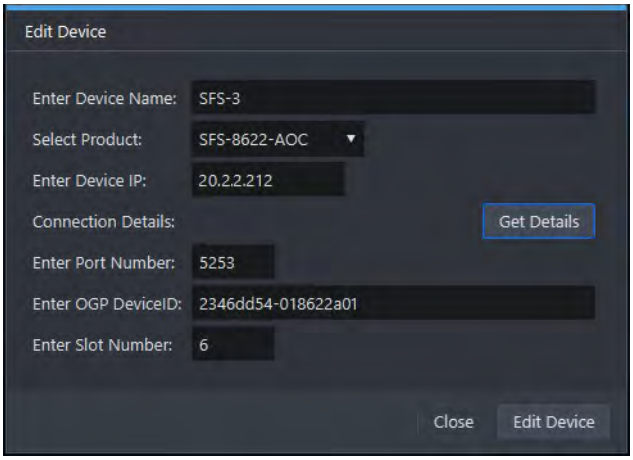
Editing a Device Entry

✶ Use the **Filter** field, located in the top right corner of the page, to display entries with the specified text (searches all fields in the page). For example, typing "`GATOR`" would display instances in the Device Name and Product fields of the Device Data table.

To edit a device entry

1. In the Device Data table, select the row for the device to edit.
2. From the Device Data toolbar, click **Edit**.

   The **Edit Device** dialog opens.



3. Edit the field(s) as required.
4. Click **Edit Device** to apply your changes.
5. Click **Close** to exit the **Edit Device** dialog.

Defining the Signal Path

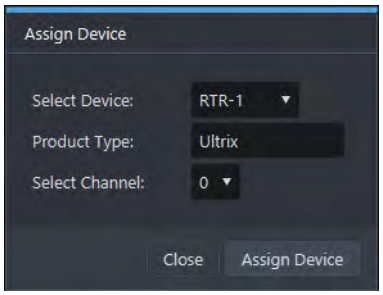
The Signal Path Manager is where devices configured in the previous section are associated with signal paths (logicals). This allows you to filter only those devices relevant to the current panel routing context as configured in the current database.

The Signal Path data is an association to ensure the correct device is controlled when a source or destination is selected. Since this is dynamically assigned (or removed), openGear cards that might be patched into a path even for a single production, can be easily added to the signal they are patched into for the duration of the production and removed immediately after. With this in mind, it may be advantageous to add all devices that might be used in this way to the Device Data table in advance, not just those hard wired into router I/O paths.

To assign a device to a signal path

1. From the Signal Paths area, select the logical you want to assign the device to.
2. From the Panel Data toolbar, click **Assign**.

   The **Assign Device** dialog opens.



3. Use the **Select Device** menu to specify the device.
4. Specify the **Product Type** that the device belongs to.
5. If the device has multiple processing paths through it that are independently addressable, select the appropriate channel in the **Select Channel** menu.

✶ The channel selection is a 0 based index derived from the number of channels set for the product in the Product Catalog interface.

6. Click **Assign Device**.
7. Click **Close** to exit the **Assign Device** dialog.

Exporting SmartCore Data

Use the Data Export interface to create a backup of SmartCore data as well as system updates and configuration. This data is captured in an *.xlsx file that can be imported to the corresponding SmartCore interface.

✶ A list of available files (databases) is provided in each page of the Data Export interface. It should be noted that this is just an association by name, SmartCore data and system data are not automatically created or restored together, i.e. they need to be managed separately at all times.

To export a database to an *.xlsx file

1. From the **Data Export** toolbar, select the data type you wish to export. Choose from the following:
   - Device Data
   - Signal Path Data
   - Product Catalog
2. To create a new file:
   a. In the **Save As** field, specify the name for the *.xlsx file.

      By default, the filename includes a suffix that helps to identify the data type. For example, *-DeviceData.xlsx would capture data from the Device Manager.

   b. Click **Browse**.
   c. Navigate to the location to save the file to.
   d. Click **Save**.
   e. Click **Apply**.
3. To replace a current file:
   a. Select a file from the **Database:** table.
   b. Click **Apply**.

Operating an Ultritouch Soft Panel with SmartCore

SmartCore enables a user to customize the window and drawer contents of an Ultritouch soft panel. This enables you to easily configure custom panels that associate channel control parameters to the devices in the signal. Panels can include or restrict controls for audio and/or video based on the source type or operator requirements, and can be re-used on multiple signal paths to reduce configuration effort.

Creating a Soft Panel

The process of creating an Ultritouch Push Button soft panel does not change. The SmartCore data is added to the drawer(s) during the soft panel configuration.

By default, an Ultritouch soft panel includes one drawer on the right. **Figure 11** displays the On-Air Controls of an MC1-UHD.

Figure 11 Example of a Soft Panel with the Right Drawer Configured with SmartCore

When creating the soft panel, adding the SmartCore data on the left side for instance will present the parameters on the left side. **Figure 12** shows the control options for SRC 2 which is linked to DST 1 on an Ultrix router.

Figure 12 Example of a Soft Panel with the Left Drawer Configured with SmartCore

You can also create separate drawers, each with different SmartCore data. **Figure 13** shows the left drawer with audio sliders, and the right drawer displays the On-Air Controls of an MC1-UHD.

Figure 13 Example of a Soft Panel with Two Drawers Configured with SmartCore

Tallies

The Ultricore BCS accepts TSL UMD tally messages, and passes tally status notifications to configured Ultriscape Heads.

Tally Types

Tally information may be associated with either routing system sources or destinations. Below is a summary of the implementations.

✶ Ultricore BCS does not support Unicode characters.

Source Association

Tally IDs associated with routing system sources may serve two purposes:

1. Trigger any Ultriscape Multi-Viewers to display tally status (this requires that the Ultrix router has at least one Ultriscape Head enabled and configured).
2. Enable the tally status to be mapped to other Tally IDs based on router crosspoint status (the destination must have a Tally ID associated and **Tally Redirect** enabled).

To associate Tally IDs to sources in the database:

- Use the **Sources** tab in the Database interface to associate the Tally IDs with logical sources in the Ultricore BCS database.
- Choose the UMD "Tally Level" using the **Tally Status Level** menu in the **Levels** tab.

Destination Association

A Tally ID may be associated with routing system destinations using the options in the Database > Destinations interface. Three modes of operation are available:

- **Normal** — The database name of the connected source is placed in the Display Data field of the destination Tally ID message (an outgoing connection is required; TSL v3.1 only). When the Tally ID is associated with an Ultriscape PiP (slotn.headx-pip[y] or slot0.pip[y]), any assertion on this Tally ID will directly control the PiP tally visual elements and override any Tally associated with the PiP video source.
- **Redirect** — The destination Tally ID follows the connected source Tally ID. For example, when a source is switched to a destination on the selected Tally Level, the Ultrix forwards the tally status of the source that is active on the destination, but the outbound TSL message has its display ID re-mapped to the display ID that is associated with the destination. An outgoing connection is required.
- **Routed** — The connected source Tally ID follows the destination Tally ID. Any configured Ultriscape PiPs showing this source will use destination Tally ID status to assert Tally Indicators or Tally Borders.

✶ Ensure the destination Tally IDs do not conflict with Tally IDs asserted by other devices.

Tally ID Format

Table 7 summarizes the format that the TSL protocol defines Display IDs that are associated with the tally displays.

Table 7 TSL Protocol — Tally ID Format

TSL Protocol Version	Tally ID Format	Range
3.1	<displayID>	0 - 127
4.0	<displayID>	0 - 127
5.0	<screenID>:<displayID>	0 - 65535 : 0 - 65535

Keep the following in mind when using tally display IDs:

- TSL v3.1 and 4.0 protocol messages will always map to screen 0.
- When using TSL v5.0, the screen ID is assumed to be 0 if no screen ID is entered.
- If the controller is configured for either v3.1 or 4.0 protocol, it is not necessary to enter a screen ID.
- If the controller is configured for v5.0, it is only necessary to specify the screen ID if the tally controller is configured to send messages to tally displays on 'screens' other than the one with the screen ID of 0.

Router Tally Output Operation

Ultricore BCS will track current Tally Status messages sent by a controller via Tally Display IDs associated with router sources. When a source (with a Tally ID) is routed to a destination (with a Tally ID), the router will emit Tally Status messages that reflect the current tally status of the Tally ID associated with the source, but that target the Display ID associated with the destination.

✶ An outgoing connection point must be defined for Ultricore BCS to send the new status out.

Example

Consider the following source and destination configurations:

Table 8 Example of Sources and Destinations Assigned to Tally IDs

Name	Tally ID	Tally Status
Sources		
Src 1	5	T1:on
Src 2	10	T1:off
Destinations		
Dest 1	33	T1:xxx

For the above configuration settings, the following states are possible:

Table 9 Example of Sources and Destinations Assigned to Tally IDs

Router Status	Tally Status
Src 1 > Dest 1	TallyID 33 T1 = TallyID 5 T1 (on) TallyID 33 Display Data = Src 1
Src 2 > Dest 1	TallyID 33 T1 = TallyID 10 T1 (off) TallyID 33 Display Data = Src 2

Tally Routed Mode

The **Tally Routed** mode associates a tally with a specific router destination. Ultricore BCS knows which input is routed to that output, and so can assert tally indicators wherever the input signal is displayed in an Ultriscape PiP. Refer to the ***Ultrix User Guide*** for details on this mode.

Getting Started

You must first perform the following in the active database:

1. If RS-232 or RS-422 communication is required, add a serial connection point for TSL protocol support.
2. Add an ethernet connection point for output TSL protocol support if not using serial as outlined in step 1.
3. Enable Tally ID support.
4. Assign the Tally IDs to the sources.
5. Assign the Tally IDs to the destinations.
6. Set the Tally mode to None.

Adding an Ethernet Connection Point

An Ethernet connection point must be added for outgoing TSL protocol support. Incoming Ethernet services are natively available. Refer to "**Outgoing Ethernet Connections**" for details on adding an Ethernet connection point to third-party devices.

Enabling Tally ID Support

To enable tally ID configuration in an active database, you must select the **Enable Tally** box on the **System Status** > **Database** tab, and then define the Status Level for tally operation.

Enabling Tally ID Support in the Active Database

Once support is enabled, the **Source** and **Destinations** tabs display a **Tally** column which is used to assign Tally IDs to sources and/or destinations in the active database.

To enable tally ID support in the active database

1. In the Tree View, double-click the **System Status** node.

   The **System** interface displays in the DashBoard window.
2. Select the **Database** tab.
3. Verify that the active database is the one you wish to enable tally ID support for.
4. Select the **Enable Tally** box located in the **Current Database** area.

   The **Source** and **Destinations** tabs automatically update to display the **Tally** column.

Defining the Status Level for Tally Operation

The Status Level specifies which level in the routing system is used to determine the current source switched to a given logical destination.

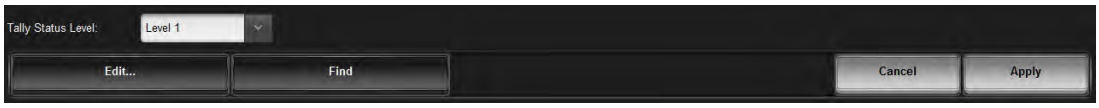
Generally this should be the main SDI Video level; which in most systems is the level to which the Ultriscape Head PiP and/or Router Video destinations are mapped in the system database.

To define the status level for tally operation

1. Double-click the **Levels** node located under the **Database** node.

   The **Levels** tab opens.

2. Use the **Tally Status Level** menu (located at the bottom of the **Levels** tab) to specify the Level in the active database that will determine the tally status.



Assigning the Tally IDs to the Sources

Assigning a Tally ID to an Ultricore BCS source enables configured Ultriscape displays to show tally information.

	Tally	SDI
Src 1	41	Ultrix.slot1.in[1].sdi.ch1

TallyID 41 is associated with Src 1 in the Ultricore BCS database. (TSL UMD v3.1 and v4.0)

	Tally	SDI
Src 1	5:41	Ultrix.slot1.in[1].sdi.ch1

Tally Screen 5, ID 41 is associated with Src 1 in the Ultricore BCS database. (TSL UMD v5.0)

Figure 14 Example of Sources with Assigned Tally IDs

✶ Before proceeding, ensure you verify which TSL protocol you are using. The protocol determines how you must enter the information into the **Tally** cells of the **Sources** tab. Refer to **Table 7** for details.

To assign a Tally ID to a source in the database

1. Double-click the **Sources** node located under the **Database** node.

   The **Sources** tab opens.

2. Verify that the **Tally** column displays in the **Sources** tab. If it does not, refer to "**Enabling Tally ID Support in the Active Database**".
3. Select the cell in the **Tally** column of the **Sources** tab to assign the Tally ID to.
4. Type the Tally ID you wish to assign to that source.
5. Press **Enter** to apply the change.
6. Repeat steps 3 to 5 for each source you wish to assign a Tally ID.
7. Click **Apply** at the bottom of the **Sources** tab to save your changes.

Assigning the Tally IDs to the Destinations

Assigning a Tally ID to an Ultricore BCS destination enables the pass-through of source tally status to a configured destination in the database.

✶ An outgoing connection point (either ethernet server or RS232/422 port) is required for the router to emit tally information. Refer to "**Connecting to Third-Party Devices**" for details.

	Tally	Tally Mode	VID
DST1	51	Redirect	Ux.slot1.out[1].sdi.ch1

Tally ID 51 follows the connected source associated tally. This requires an established outgoing connection point. (TSL UMD v3.1 and v4.0 TallyID format).

	Tally	Tally Mode	VID
DST1	5	Normal	Ux.slot1.out[1].sdi.ch1

Tally Screen 4, ID 11 follows the connected source associate tally. This requires an established outgoing connection point. (TSL UMD v5.0 TallyID format).

	Tally	Tally Mode	VID
DST1	8	Routed	Ux.slot1.out[1].sdi.ch1

The label of the source currently connected to DST 1 will be sent as TSL text on Tally ID 5. (TSL UMD v3.1 only).

	Tally	Tally Mode	VID
DST1	8	Routed	Ux.slot1.out[1].sdi.ch1

When Tally ID 8 is asserted, any PiPs showing the same source as routed to DST 1 also have their tally asserted (if defined on the PiP). For example, if DST 1 has source CAM 1 routed to it, and one or more UltriScape PiPs also had source CAM 1 displayed, the PiP would display tally data from Tally ID 8.

	Tally	Tally Mode	VID
MVpip 1	11	Normal	Ux.slot4.head1-pip[1].sdi.ch1

The label of the source currently connected to destination DST 1 will be output as text in a TSL 3.1 message with Tally ID 11. The UltriScape PiP displays the tally information from Tally ID 11 regardless of the displayed source video.

	Tally	Tally Mode	VID
MVpip 1		Normal	Ux.slot4.head1-pip[1].sdi.ch1

The UltriScape PiP displays tally information from the connected source associated Tally ID.

Figure 15 Example of Destinations with Assigned Tally IDs

✶ Before proceeding, ensure you verify which TSL protocol you are using. The protocol determines how you must enter the information into the **Tally** cells of the **Destinations** tab. Refer to **Table 7** for details.

To assign a Tally ID to a destination in the database

1. Double-click the **Destinations** node located under the **Database** node.

   The **Destinations** tab opens.
2. Verify that the **Tally** column displays in the **Destinations** tab. If it does not, refer to "**Enabling Tally ID Support in the Active Database**".
3. Select the cell in the **Tally** column of the **Destinations** tab to assign the Tally ID to.
4. Type the Tally ID you wish to assign to that destination.
5. Press **Enter** to apply the change.
6. Select the **Tally Redirect** box to enable the connected source Tally ID to be directed to this destination Tally ID.
7. Repeat steps 3 to 6 for each destination you wish to assign a Tally ID.
8. Click **Apply** at the bottom of the **Destinations** tab to save your changes.

Using Categories

Category navigation enables you to organize the sources, destinations, and/or levels in a router database to defined categories. There are three types of categories each with independent interfaces:

- **Group** — allows a user to organize database resources (sources, destinations, and levels) into folders and sub-folders with arbitrary group name. Resources may be assigned to multiple groups if required.
- **Cat/Index** — allows a user to piece together or build up the final resource name from category names and index identifiers.
- **Legacy** — allows compatibility with earlier RCP-QE models. Note that this is not available as a soft panel.

Group Categories Overview

✶ Group category mode is only available when using an Ultrix router or Ultricore running software version 2.0 or higher.

Group Category allows the user 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.

Example of a Group Category Setup

A user wants to arrange sources and destinations based on the types of sports the network broadcasts: baseball and football. The resources available are:

Sources	Destinations
HD1	SAT1
HD2	SAT2
HD3	SAT3
HD4	SAT4
HD5	SAT5

The resources need to be arranged into the following groups based on the sport type:

Baseball	Football
HD1	HD4

Baseball	Football
HD2	HD5
HD3	SAT4
SAT1	SAT5
SAT2	
SAT3	

The Group Category interface would be used to arrange the resources into group categories:

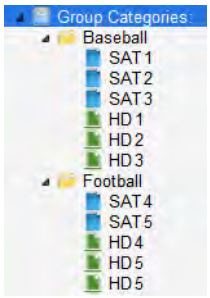


Figure 16 Example of Group Categories Arrangement Based on Sport Type

Once the group categories are defined, the user can perform switches, on a hard or soft panel, based on the group categories.

In the example below, the user uses RCP-QE18 to select the source labeled as **HD 3**.

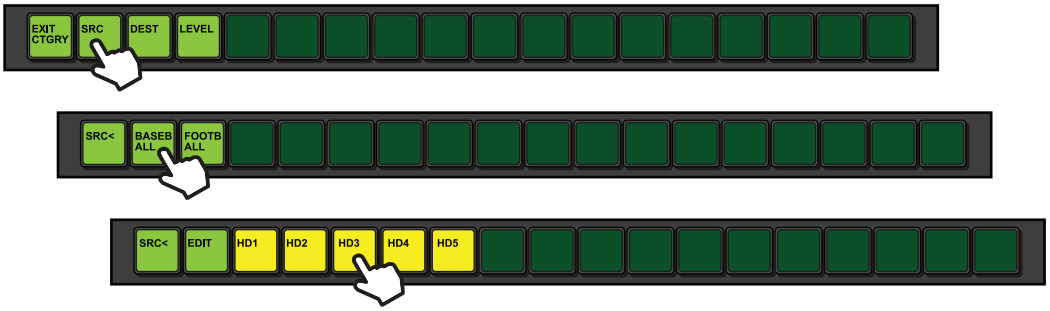


Figure 17 RCP-QE18 — Selecting HD 3 via Category Mode

In the example below, the user uses a soft panel to select the destination labeled as **SAT 1**.

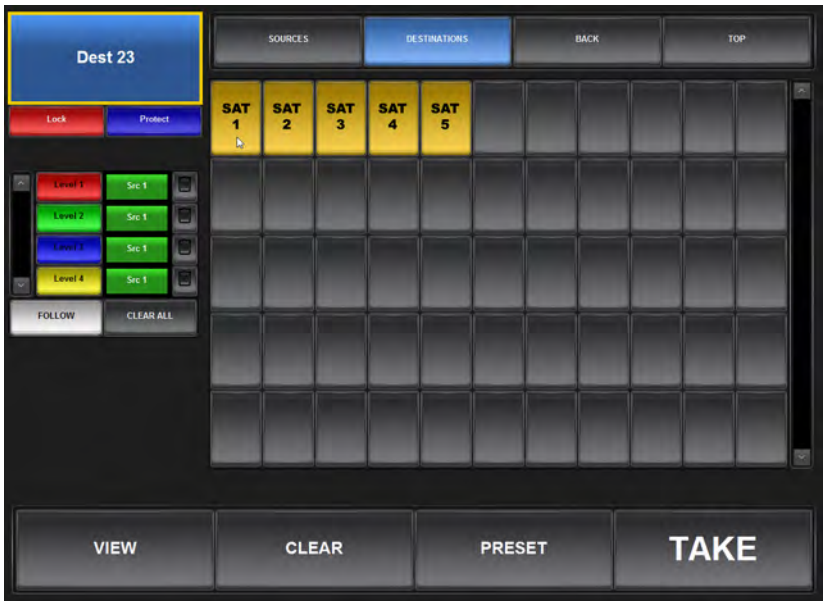


Figure 18 Ultricore BCS — Selecting SAT 1 via a Soft Panel

Configuring Group Categories

Group categories are arranged in a hierarchy and displayed in a tree view. This is similar to the file system on your PC where each group is represented as a folder or node, and the resources included in that group are nodes. Each type of resource is represented within the hierarchy as follows: sources are green, destinations are blue, and levels are red. (**Figure 19**)

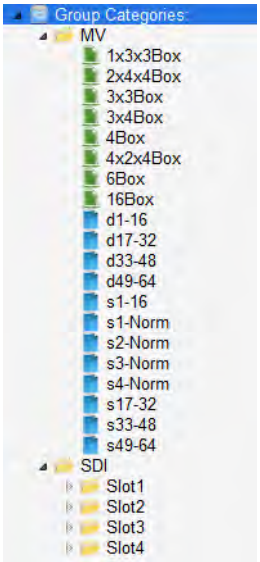


Figure 19 Example of Group Categories Tree View

Configuring group categories requires:

1. Creating group names
2. Assigning destinations, sources, and/or levels to groups
3. Configuring a soft panel or a hard panel for use

Creating Group Names

For each database, you can create multiple category groups and add sub-groups. For example, **Figure 19** shows two main groups (MV, and SDI) where the SDI group also has four sub-groups (Slot1, Slot2, Slot3, and Slot4). Once you create your groups, resources can be added.

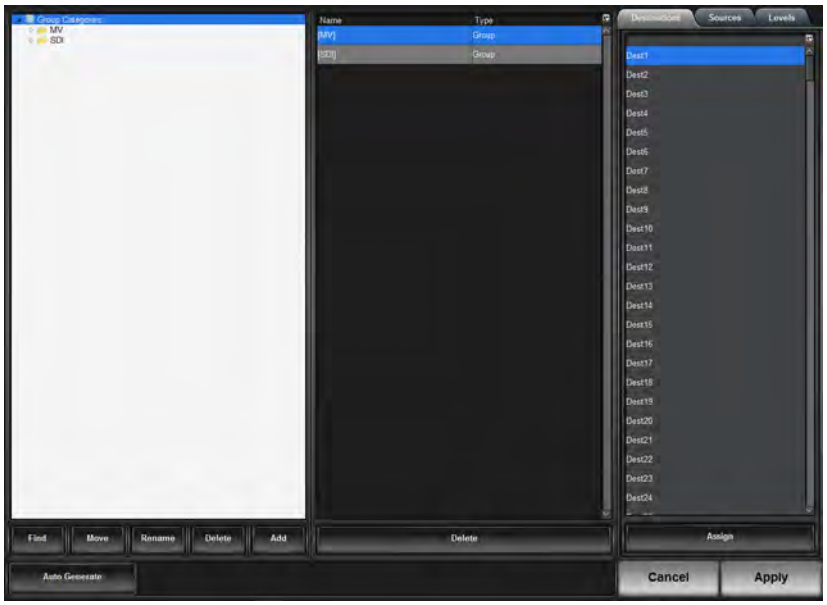
✶ Ultricore BCS does not support Unicode characters.

✶ By default, the groups are organized alphabetically in the tree view.

To create a category group

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

   The **Group Categories** tab opens.



2. Select the **Group Categories:** node.
3. Click **Add**.

   The **Add Group** dialog opens.
4. In the **Name** field, type a unique identifier for the new group.
5. Click **Apply**.

   The **Add Group** dialog closes and the new group is added as a child of the selected node.

   In the example below, a new sub-group "**Studio 1**" was created below the **SDI** group.

6. Click **Apply** in the bottom right corner to apply your changes.

To create a category sub-group

1. In the **Group Categories** tree, select the group icon that you wish to add a sub-group to.
2. Click **Add**.

   The **Add Group** dialog opens.
3. In the **Name** field, type a unique identifier for the new sub-group.

4. Click **Apply**.

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

   In the example below, a new sub-group "**Cameras**" was created within the **Studio 1** group.

5. Click **Apply** in the bottom right corner to apply your changes.

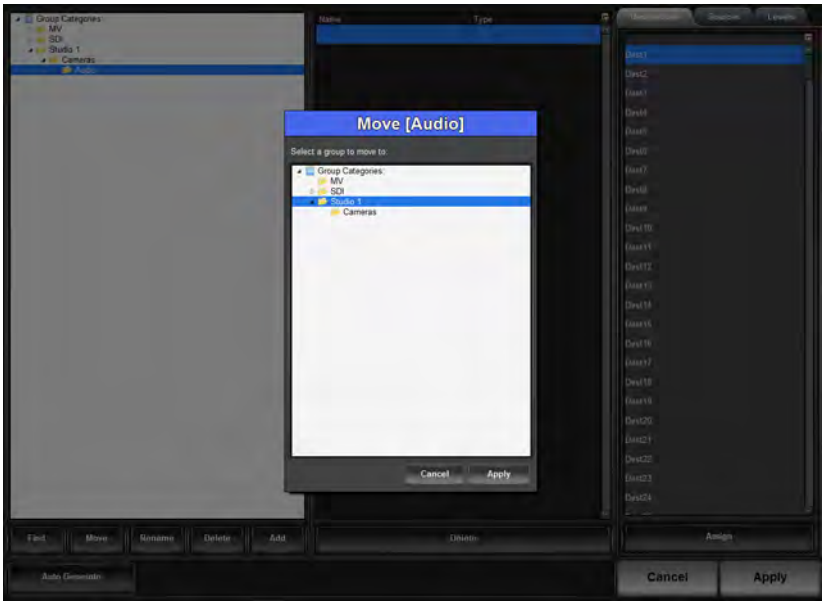
To move a group within the tree view

1. In the **Group Categories** tree, select the group you want to move.

   The **Move** dialog opens. Notice that the dialog header displays the name of the selected group to move.

2. Use the tree view in the dialog to select where to move the group to.

   In the example below the Audio sub-group was selected to move to the Studio 1 root.



3. Click **Apply**.

   The **Move** dialog closes and the group displays in the selected position of the tree view.

4. Click **Apply** in the bottom right corner to apply your changes.

Auto Generating the Groups

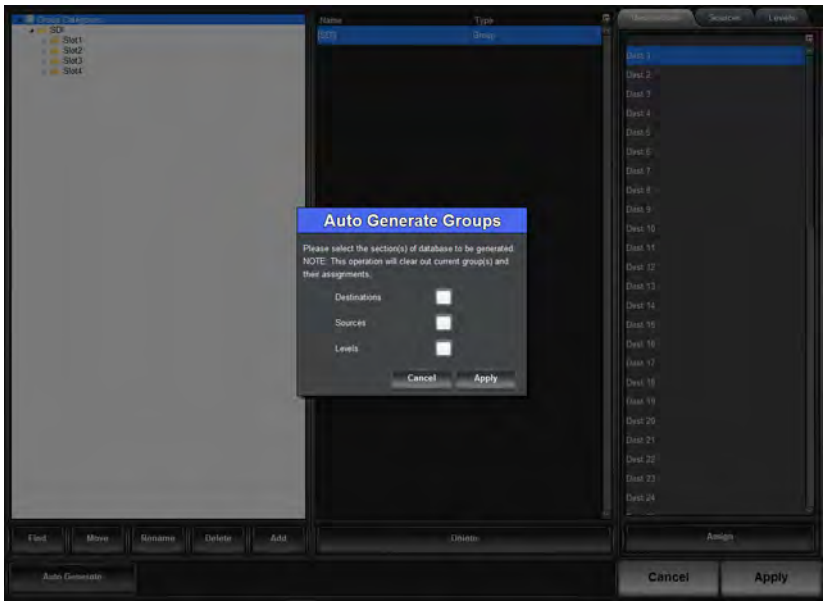
You can also choose to create a group based on the levels, sources, and destinations in your database or a combination. This requires the virtual labels for each resource to be consistent. For example, if all destinations are labeled as Dest x, a group will be created called "Dest" with each destination listed as a separate node.

✶ Auto generating a group will delete the groups currently listed in the Group Categories tree view.

To auto generate a group

1. Click **Auto Generate**.

   The **Auto Generate Groups** dialog opens.



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

   The **Auto Generate Groups** dialog closes and the **Group Categories** tree updates.
4. Click **Apply** in the bottom right corner to apply your changes.

Assigning Resources to a Group

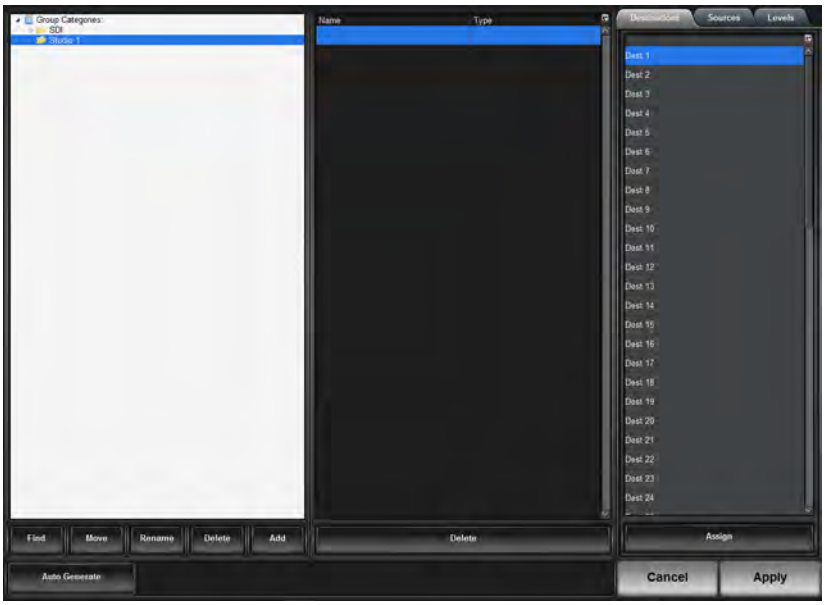
Once a group is configured, you can assign resources (destinations, sources, levels).

To assign a resource to a group

1. In the **Group Categories** tree, select the group you want to add a resource to.

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

   In the example below the area is blank because nothing is assigned to the selected group.



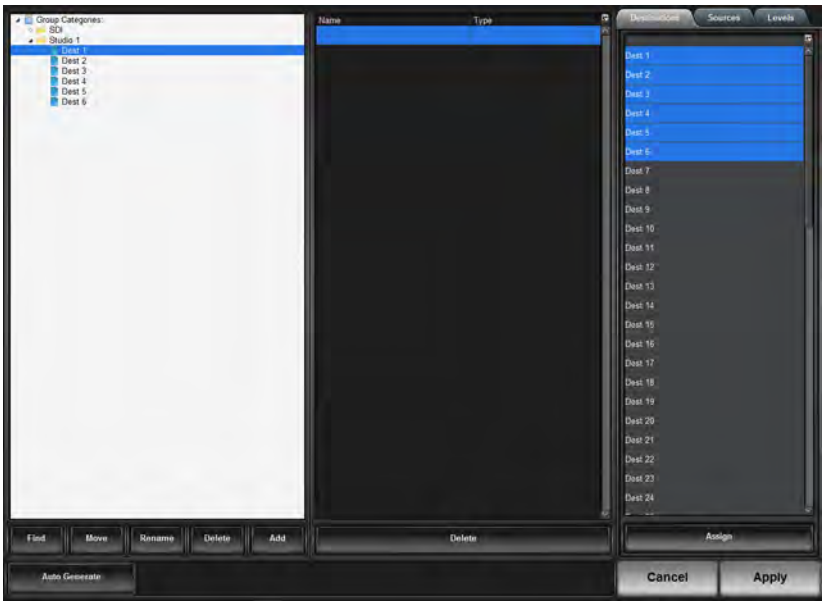
2. In the right pane, select the tab for the type of resource you wish to assign to the group.

   In the example above, the **Destinations** tab was selected.

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 **Assign**.

   The **Group Categories** 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.



6. Click **Apply** in the bottom right corner to apply your changes.

To move a resource to another group

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

   The **Move** dialog opens.
3. Select the new location for the resource.
4. Click **Apply**.

   The **Move** dialog closes.

   The **Group Categories** tree updates to display the resource in the new location. Notice that the resource is now removed from the original group.
5. Click **Apply** in the bottom right corner to apply your changes.

To delete a resource from a group

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

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

   The **Delete** dialog closes.

   The **Group Categories** tree updates to no longer display the resource in the group.
4. Click **Apply** in the bottom right corner to apply your changes.

To delete a series of resources from a group

1. In the **Group Categories** 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 **Yes**.

   The **Delete** dialog closes.

   The **Group Categories** tree updates to no longer display the resource in the group.
7. Click **Apply** in the bottom right corner to apply your changes.

Managing the Groups

✶ You cannot rename resources using the options in the Group Categories interface.

To rename a group

1. In the **Group Categories** tree, select the specific group you want to rename.
2. Click **Rename**.

   The **Rename Group** dialog opens.
3. Use the **Name** field to enter a unique identifier for the selected group.

4. Click **Apply**.

   The **Rename Group** dialog closes.

   The **Group Categories** tree updates to display the new name for the group.

5. Click **Apply** in the bottom right corner to apply your changes.

To delete a group

1. In the **Group Categories** tree, select the group you want to delete.
2. Click **Delete**.

   The **Delete** dialog opens.

3. Click **Yes**.

   The **Delete** dialog closes.

   The **Group Categories** tree updates to no longer display the group.

4. Click **Apply** in the bottom right corner to apply your changes.

Cat/Index Categories Overview

Cat/Index category mode (also referred to as Category Index mode), allows alpha-numeric extensions to labels to 'build up' the final label selection. For example, VTR 1 - 6 may be expressed as a VTR label with numerical extensions 1 through 6. Similarly, alpha extensions may be used, for example, VTR A - E for VTRs A through E.

Destination and source names are split into substrings - the first substring traditionally referred to as the **category**, and subsequent substrings the **indexes** (e.g. Category VTR 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.

Example of a Cat/Index Category Setup

The resources available are:

Sources / Destination Names				
CAM 1	SAT A1	CG RX 1	EDIT A	VTR1
CAM 2	SAT A2	CG RX 2	EDIT B	VTR2
CAM 3	SAT A3	CG TX 1	EDIT C	VTR3
CAM 4	SAT B1	CG TX 2	EDIT D	VTR4
CAM 5	SAT B2	CG TX A	EDIT E	VTR5

The possible categories and indexes would be:

Categories	Indexes		
CAM_[a]	1	5	D
SAT_	2	A	E
CG_	3	B	RX_
EDIT_	4	C	TX_
VTR			

a. The "_" characters represents a blank space. This indicates the category will filter resources with a space in the name (e.g. the CAM_ category will allow resources named CAM 1, CAM 2 but not CAM3).

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

In the example below, a RCP-QE18 is used to select the source labeled as **CAM 1**. Notice that only the sources are available for the second button selection. In this example, the user would need to select **TAKE** to make the switch.

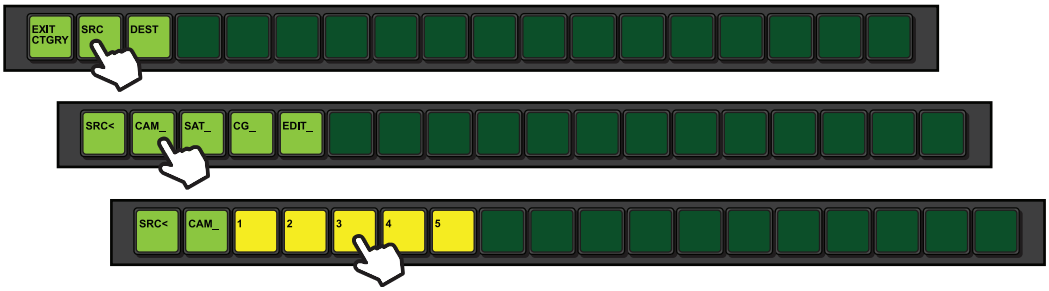


Figure 20 RCP-QE18 — Selecting CAM 1 via Category Mode

Configuring a Cat/Index Category Setup

Configuring Cat/Index categories requires:

1. Assigning categories
2. Assigning indexes
3. Configuring a soft panel or a hard panel for use

Assigning Categories

You can assign each destination to a specific category or multiple categories in a database. Using multiple categories enable you to filter the destinations, and organize them into logical groups. By default, categories are organized in alphabetical order.

To auto generate categories based on a database

1. Double-click the **Cat/Index Categories** node located under the **Database** node.

   The **Cat/Index Categories** tab opens.

2. Click **Generate**.

   The **Auto-Generate** dialog opens.

3. Click **Yes**.

   The **Auto-Generate** dialog closes.

   All previous categories are deleted from the **Categories** pane and new ones are listed based on the resource labels in your database.

4. Click **Apply**.

To manually create categories

1. In the **Cat/Index Categories** tab, click **Add**.

   The **Add Category** dialog opens.

2. Use the **Name** field to specify a unique identifier for the new category.

✶ The entry must match a resource name prefix.

   Some example entries would be:

   - "CG_" creates a category to categorize resources named **CG_xxxx** where **xxxx** is any index.
   - "CG" creates a category to categorize resources named **CGxxxx** where **xxxx** is any index.
   - "cg" will not categorize any resources as the category names are case sensitive.

3. Select the **Insert trailing space** box to represent a space character with the "_" symbol.

4. Click **Apply**.

   The **Add Category** dialog closes.

   The new category is listed in the **Categories** pane.

5. Click **Apply**.

Assigning Indexes

An index for a category enables you to filter resources. 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. You cannot create an index of "TX 1" and a sub-index of "TX_". You must choose one or the other.

As category names and indexes are entered, the affected Resources list in the interface will update to indicate which sources or destinations of a given category is accessible on a control panel. Select a category name in the categories list to see which source or destinations are in that category and filtered by the available Indexes list.

To manually create categories

1. Double-click the **Cat/Index Categories** node located under the **Database** node.

   The **Cat/Index Categories** tab opens

2. Click **Add** (located next to the **Categories** pane).

   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:

   - "**CG_**" creates a category to categorize resources named **CG_xxxx** where **xxxx** is any index.
   - "**CG**" creates a category to categorize resources named **CGxxxx** where **xxxx** is any index.
   - "**cg**" will not categorize any resources as the category names are case sensitive.

4. Select the **Insert trailing space** box to represent a space character with the "_" symbol.
5. Click **Apply**.

   The **Add Category** dialog closes.

   The new category is listed in the **Categories** pane.

6. Click **Apply**.

To create a category for a specific resource type

1. Double-click the **Cat/Index Categories** node located under the **Database** node.

   The **Cat/Index Categories** tab opens.

2. Click **Create** for the resource type you wish to filter.

   The **Create Category/Index** dialog opens.

3. Use the **Category Name** field to specify the characters for the new index filter.

✶ The entry must match a partial resource name.

4. Select the **Insert trailing space** box if you wish to include trailing spaces in the filter.
5. Click **Apply**.

   The **Create Category/Index** dialog closes.

6. Click **Apply**.

Assigning Index Filters

An index for a category enables you to filter resources. As category names and indexes are entered, the **Affected Resources** pane in the interface will update to indicate which sources or destinations of a given category is accessible on a control panel. Select a name in the **Categories** pane to see which source or destinations are in that category and filtered by the available **Indexes** pane.

To assign an index filter

1. Double-click the **Cat/Index Categories** node located under the **Database** node.

   The **Cat/Index Categories** tab opens.

2. Click **Add** (located next to the **Indexes** pane).

   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.

   The new index filter is listed in the **Indexes** pane.

5. Click **Apply**.

To assign an index filter for a specific resource type

1. Double-click the **Cat/Index Categories** node located under the **Database** node.

   The **Cat/Index Categories** tab opens.

2. Click **Create** for the resource type you wish to filter.

   The **Create Category/Index** dialog opens.

3. Use the **Index Name** field to specify a unique identifier for the new index filter.

✶ The entry must match a partial resource name.

4. Select the **Insert trailing space** box if you wish to include trailing spaces in the filter.
5. Click **Apply**.

   The **Create Category/Index** dialog closes.

6. Click **Apply**.

Legacy Categories Overview

Legacy Category mode allows some category functionality on older RCP-QE control panels (17 button). There is no soft panel for Legacy Category Mode. Legacy mode is similar in operation to Group category mode with some elements of the index functionality of the Cat/Index Category mode.

Legacy mode limitations;

- A destination or source cannot be in more than one category
- Only numerical indexes are supported

For More Information on...

- the legacy category mode, refer to the ***RCP-QE User Guide***.

Configuring Legacy Categories

Source and destination selection may be achieved in two ways: direct selection or numerical index entry. The setup of the Ultricore Category tables determines the operational functionality.

Category Direct Selection Mode

Figure 21 illustrates the Categories configured in the Ultricore database for direct selection mode.

Figure 21 Ultricore — Entries in the Categories Tab

Figure 22 illustrates direct destination entries and the resulting available destinations in the selected category.

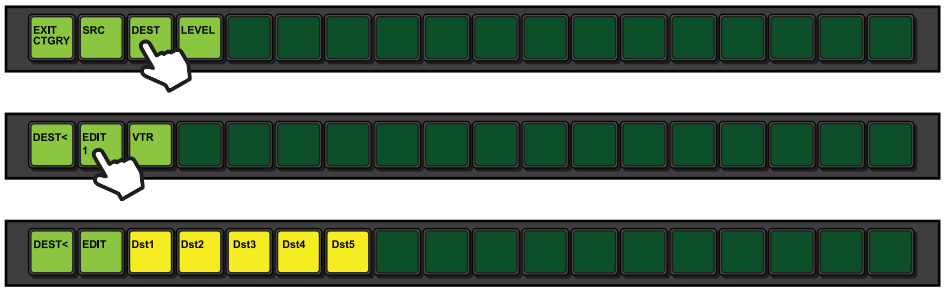


Figure 22 Ultricore BCS — Resulting Operation

To set up direct selection in categories

1. Display the **Categories** tab in DashBoard for the Ultricore as follows:
   a. Expand the **Database** node in the Tree View.
   b. Double-click the **Categories** node.
2. Click **Destination** or **Source** as required.
3. Type the text for a category name in column 'Category 1' for each row that is required to be in that category.
4. Copy the items in the name column to the Category 2 column.

✶ You can use keyboard shortcuts such as **Ctrl**+**C** (copy) and **Ctrl**+**V** (paste) and **Shift**+click to select a range for ease of data entry.

This will result in those rows being within the category you named in column Category 1.

Numerical Index Entry Mode

Figure 23 illustrates the Categories configured in the Ultricore database for numerical entry mode.

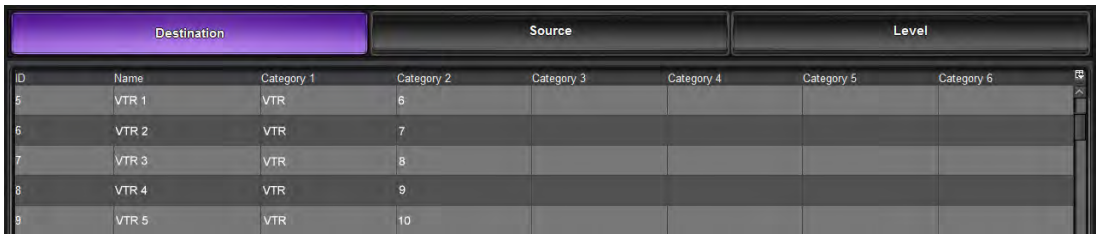


Figure 23 Ultricore — Entries in the Categories Tab

Because we have set the VTRs numbered 6 through 10 in **Figure 23**, the Ultricore BCS expects a two digit entry signified by the two underlines on the button next to the category name. As only numerals 1 or 0 are the only possible entries to make for the first digit, the Ultricore BCS has blanked the invalid entry keys. (**Figure 24**)

To select VTR 6, press **0** then the remaining available numbers will become available, then press **6** to finish the selection.

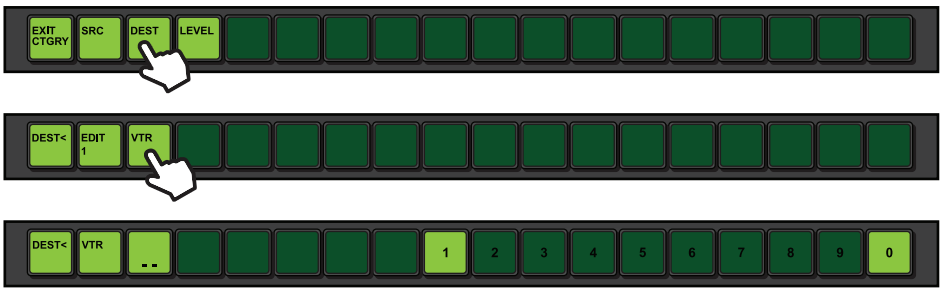


Figure 24 Ultricore BCS — Resulting Operation

To set up numerical index selection in categories

1. Display the **Categories** tab in DashBoard for the Ultricore as follows:
   a. Expand the **Database** node in the Tree View.
   b. Double-click the **Categories** node.
2. Click **Destination** or **Source** as required.
3. Enter a category name in the **Category 1** column for each row that is required to be in that category. For example, in **Figure 23** the user entered "`VTR`".
4. Enter a number in the **Category 2** column.

   This will result in those rows being within the category you named in the Category 1 column. These destinations are accessible via entering the numerical extension of the required destination. For example, in **Figure 23** the user entered "`6`" for row 5.

Creating a Soft Panel with Categories

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 as a basic for arranging the sources, destinations, and levels.

For More Information on...

- managing your Category panels, refer to "**Using Category Panels**".

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 so any instance of DashBoard connecting to a given Ultricore BCS 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 panel interface. Ultricore BCS provides the following types of soft panels for control;

- **Matrix** — the destinations and sources are organized into a grid layout.
- **MultiBus** — the destinations and sources are organized into separate a rows (buses) of buttons.
- **Cat/Index Category** — the resources are defined using a defined set of search criteria (indexes).
- **Group Category** — the destinations and sources are grouped by pre-defined categories.
- **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.
- **Push Button** — similar layout and features of the Ultritouch PB panel but sized for use on a computer monitor.
- **Audio Mixer** — Creates an audio mixer soft panel suitable for a desktop monitor where multiple rows of audio channel strips are possible. Refer to the ***Ultrix User Guide*** for details.
- **Audio Mixer 4RU** — Creates an audio mixer soft panel formatted for an Ultritouch-4 panel. Refer to the ***Ultrix User Guide*** for details.
- **Audio Mixer 2RU** — Creates an audio mixer soft panel formatted for an Ultritouch-2 panel. Refer to the ***Ultrix User Guide*** for details.

Before You Begin

Keep the following in mind when managing your soft panels in DashBoard:

- Soft panels require the setup of the database source/destinations/levels and port assignment to be complete.
- If the database changes (source/destination/level/salvo addition or deletion), you will need to edit the soft panel configuration to ensure the correct sources/destinations/levels/salvos are visible.
- Ultricore BCS does not support Unicode characters.

For More Information on...

- databases, refer to "**Database Configuration**".

Soft Panels Overview

A soft panel is created using the options in the Panels interface for your database. Soft panels are listed as sub-nodes under the Soft Panels node in the Tree View of DashBoard. Double-click a sub-node to display the corresponding soft panel in the DashBoard window. 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. In **Figure 25** there are seven soft panels in the tree view.

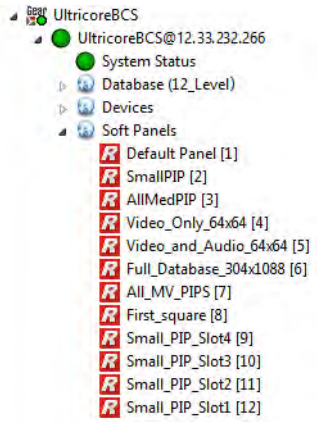


Figure 25 Example of a Soft Panels Tree View

A soft panel can be as simple or complex in its layout as you require. The Panels interface enables you to specify the number of destinations, sources, levels, and salvos displayed on your panel. You select a soft panel type and specify the elements of the soft panel including giving the panel a unique name.

For More Information on...

- Matrix panels, refer to "**Using Matrix Panels**".
- Multibus panels, refer to "**Using MultiBus Panels**".
- Category panels, refer to "**Using Category Panels**".
- Ultritouch PB panels, refer to the ***Ultritouch + Ultrix User Guide***.
- Push Button panels, refer to "**Using Push Button Panels**"

Enabling Machine Control

Typically, the ports on a data router (such as the NK-M series routers) are bi-directional where there is both a transmit (input to output) and reciprocal receive connection that is made for each port. For example, a switch from port 1 to port 2 involves a forward path (from port 1 input to port 2 output) and the reciprocal connection from (port 2 input to port 1 output).

In some cases however, there is a need to connect on the port's input to several ports' output (e.g. one device commanding many target devices) without making the reciprocal connection. This allows the commanding device to just broadcast commands and not receive from the many devices it communicates with.

When configuring a soft panel, you have the option to add a Machine Control button to the panel. When selected on the panel, this Machine Control button sends a Take request directed to an NK-M series data router to automatically make the reciprocal port switch. On a video router, the connection is all one way from an input port to an output port (e.g. such as from IN 1 to OUT 2).

Specifying the Routing Behavior for Locked Destinations

By default, Take operations are blocked by locked destinations. However, the user can configure the Routing Behavior mode on the router to allow unlocked destinations to switch on a Take operation.

To specify the routing behavior

1. Locate the Ultrix router in the Tree View of DashBoard.
2. Expand the **Ultrix** node to display a list of sub-nodes in the Tree View.
3. Double-click the **System Status** node.
4. Select the **Setup** tab.

5. Locate the **Routing Behavior** area.

✶ You may need to scroll down the Setup tab to locate this area.

6. Use the **Salvo/Multi- Crosspoint Take Completion** options to specify the routing behavior for locked or protected destinations. Choose from the following:
   - **Require All Crosspoints** — The Take operation will fail entirely if *any* destinations are locked or protected.
   - **Best Effort** — The Take operation will be performed for any valid routes and fail for locked or protected routes.

Creating a Soft Panel

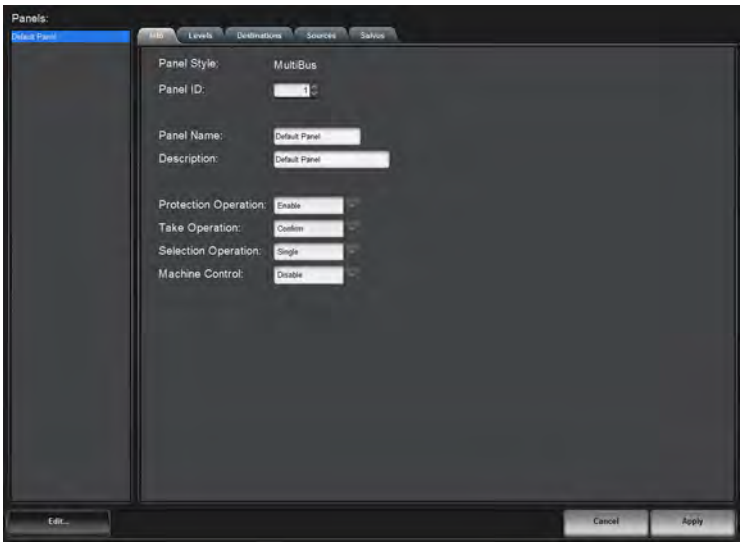
Soft panels are listed under the Soft Panels node in a hierarchy as determined by their Panel ID. When you create a new soft panel, you select from the three existing soft panel types: Matrix, MultiBus, and Categories. You then assign a Panel Name and ID to display in the tree view using the nomenclature "`Panel Name [#]`" where `[#]` is the Panel ID.

✶ A Default Panel is available that is a MultiBus style with 1 level, 4 destinations, and 4 sources.

To create a soft panel

1. Double-click the **Panels** node located under the **Database** node.

   The **Panels** tab opens.



2. Click **Edit** > **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 tree under the Soft Panels node.

4. Use the **Style** menu to specify the type of panel to create. Choose from the following:
   - **Matrix** — Creates a soft panel that organizes the destinations and sources in a grid layout.
   - **MultiBus** — Creates a soft panel where destinations and sources are organized into separate buses.
   - **Category** — Creates a soft panel where destinations and sources are arranged as determined by the **Category** tab. Refer to "**Using Categories**" for more information.
   - **Push Button** — Creates a soft panel that organizes the destinations and sources in a distinct vertical layout.

- **Ultritouch PB** — Creates a soft panel that is used on an Ultritouch hard panel. Refer to the ***Ultritouch User Guide*** for details.

5. Click **Apply** to save your settings and close the **Add Panel** dialog.

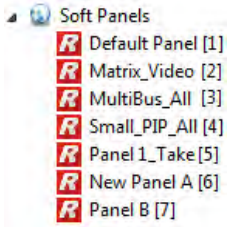
   The new panel name is added to the **Save Panels** list of the **Panels** tab and automatically selected in the tab for editing.

6. Select the **Info** tab.
7. Use the **Panel ID** menu to determine the position of the panel in the Soft Panels tree where a value of "1" is the highest priority (and listed at the top).

✶ Ensure that the new soft panel does not use the same **Panel ID** as a previously saved panel.

8. Use the **Description** field to provide a textual summary of the panel.
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. Refer to "**Using Matrix Panels**" or "**Using MultiBus Panels**" for a description of these buttons.
   - **Disables** — The **Lock**, **Protect**, and **Free** buttons do not display on the soft panel. These protection options are not available for the soft panel.
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 the **Take** button 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 made by the user on the soft panel.
11. If you selected MultiBus in step 4, use the **Selection Operation** menu to enable multiple crosspoint/level selections and display the **Multi Select** button. Choose from the following:
    - **Single** — Disables this feature. The **Multi Select** button does not display on the soft panel.
    - **Multi** — The **Multi Select** button displays on the soft panel.
12. Use the **Machine Control** menu to control whether a Take request directed to an Ross NK-M 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 the **Machine Control** button to enable the reciprocal port switch on the NK-M series router.
    - **Disable** — The soft panel does not display a **Machine Control** button. This is the default setting.
13. If you set the **Style** to **Push Button**, proceed to "**Configuring a Push Button Soft Panel**".
14. Click **Apply** to save your new soft panel.

    The new panel displays in the Soft Panels tree. In the example below, there are seven panels in the tree view. Note that the Priority ID is the value displayed in the [#] brackets.



15. Continue to the next sections to add levels, destinations, sources, and salvos to your soft panel as required.

Levels for the Soft Panel

You can specify the total number of levels available on the soft panel to the user. For example, if you set the Viewable levels to 6 but have assigned 8 levels to the panel, only the first six levels in the Assigned list are displayed.

To specify the levels for 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 **Levels** tab.
3. Use the **Viewable levels** field to specify the total number of levels for the soft panel.
4. To add a level to the soft panel:
   a. From the **Available** list, select the level(s) you wish to add to the soft panel.
   b. Click ▶.

   The **Assigned** list updates to include the selected level(s).

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 provided buttons beside the **Assigned** list to determine the order in which the levels are displayed on the soft panel.
8. Click **Apply** at the bottom of the Panels tab to save your settings.

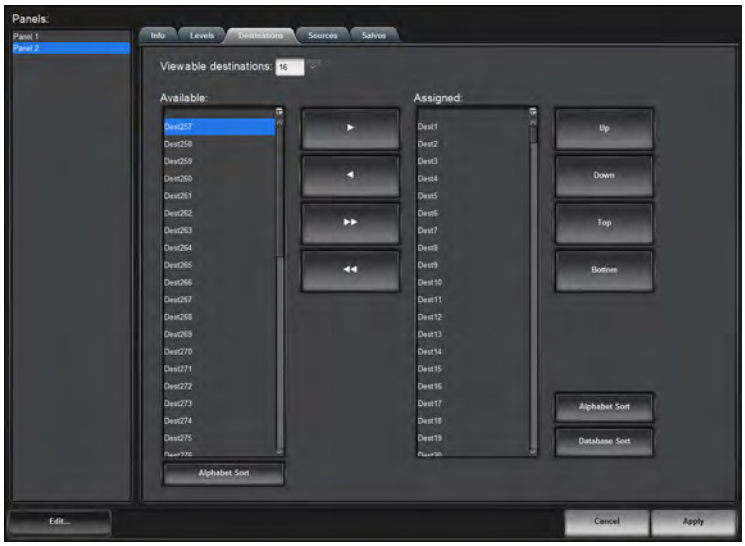
Destinations for the Soft Panel

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 panel. For example, the database may have 32 destinations but you only want to make the first 4 outputs selectable on the crosspoint row of your

soft panel. You would then set the Viewable destinations to 4. You can also specify the order in which the destination buttons are displayed on the soft panel.

To specify the destinations for 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 **Destinations** tab.



3. Use the **Viewable destinations** field to specify the total number of destinations for the soft panel.
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 provided buttons beside the **Assigned** list to determine the order in which the destinations are displayed on the soft panel.
8. Click **Apply** at the bottom of the Panels tab to save your settings.

Sources for the 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 64 sources but you only want to make the first 12 inputs selectable on the crosspoint row of your soft panel. You could set the Viewable sources to 12 or assign only those 12 inputs to the soft panel. You can also specify the order in which the source buttons are displayed on the soft panel.

To specify the sources for 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 **Sources** tab.
3. Use the **Viewable sources** field to specify the total number of sources for the soft panel.
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 ▶.

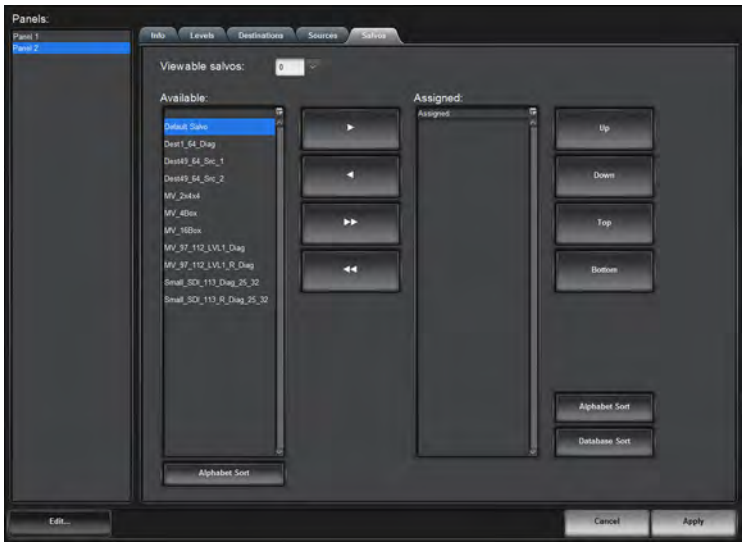
   The **Assigned** list updates to include the selected sources.
7. Use the provided buttons beside the **Assigned** list to determine the order in which the sources are displayed on the soft panel.
8. Click **Apply** at the bottom of the **Panels** tab to save your settings.

Salvos for the Soft Panel

Before you can add salvos to a soft panel, you must configure them as outlined in "**Creating Salvos**".

To specify the salvos available on 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 **Salvos** tab.



3. Use the **Viewable salvos** field to specify the total number of salvos for the soft panel.
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 provided buttons beside the **Assigned** list to determine the order in which the salvos are displayed on the soft panel.
8. Click **Apply** at the bottom of the Panels tab to save your settings.

Copying a Soft Panel

✶ Ensure the soft panel is currently not in use.

To copy a soft panel

1. Double-click the **Panels** node located under the **Database** node.

   The **Panels** tab opens.
2. From the **Panels** list in the left toolbar, select the soft panel to copy.
3. Click **Edit** > **Copy**.
4. Click **Edit** > **Paste**.

   The **Panels** tab updates to display the settings for the selected soft panel. New soft panels are automatically named "**`New Panel #`**" where **#** is an auto-generated value.

5. Select the **Info** tab.
6. Type a unique identifier in the **Panel Name** field. This will be used to identify the panel in the tree under the Soft Panels node.
7. Click **Apply** at the bottom of the Panels tab to save the new soft panel. This also helps to ensure that you do not mistakenly edit the original panel that you copied.

Editing a Soft Panel

Once you edit a soft panel, you must re-load the soft panel if it was in use prior to the edit.

✶ Ensure the soft panel is currently not in use.

To edit a soft panel

1. Double-click the **Panels** node located under the **Database** node.

   The **Panels** tab opens.
2. From the **Panels** list in the left toolbar, select the soft panel to edit.

   The **Panels** tab updates to display the settings for the selected soft panel.
3. Edit the settings for the panel using one of the following procedures:

✶ You cannot edit the **Panel Style** of a soft panel.

- "**To specify the levels for the soft panel**"
- "**To specify the destinations for the soft panel**"
- "**To specify the sources for the soft panel**"
- "**To specify the salvos available on the soft panel**"

4. Click **Apply** at the bottom of the **Panels** tab to save the new settings.
5. If a dialog opens to remind you that the affected soft panel is currently in use:
   a. Click **OK** to close the dialog.
   b. Perform the procedure "**To re-load a soft panel**".

To re-load a soft panel

1. Close the newly edited soft panel as follows:
   a. Locate the tab for the soft panel in the DashBoard client window.
   b. Click ✕ to close the tab.
2. In the **Basic Tree View**, expand the **Soft Panels** node for the Ultricore BCS.
3. Double-click the node for the newly edited soft panel.

   The tab for the selected soft panel opens.

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** tab opens.
2. Select the soft panel name from the **Panels** list in the left toolbar.
3. Click **Edit** > **Delete**.

4. Click **Apply** at the bottom of the **Panels** tab.

Using the Lock and Protect Features

Whether your soft panel includes the Lock and Protect features depends on the panel type. The Matrix and Category panels can include the **Lock**, **Protect**, and **Free** buttons. The MultiBus panels can include only the **Lock** button. Soft panels that have their **Protection Operation** set to **Enable** also display these buttons (depending on the panel type).

For More Information on...

- the **Protection Operation**, refer to **Table 60**.

Using a Lock

If your soft panel includes a **Lock** button, you have the option to protect source/level and destination/level pairs. When another control panel or DashBoard client attempts to switch that combination, the request will be denied.

To lock a source/level pair

1. Display the soft panel in the DashBoard window.
2. Select the source/level pairs from the soft panel interface.
3. Click **Lock**.

   The label on the button changes to **Unlock** and the button remains lit.

To lock a destination/level pair

1. Display the 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. A protect alarm message is displayed in the System Status tab when an output is protected.

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

- Click **Protect**.

  The button is lit. Selecting crosspoints will not take effect and the panel does not update when buttons are pressed.

To clear a protect

- Click **Protect**.

  The button is no longer lit and crosspoint switches can be initiated.

Using Matrix Panels

Matrix panels enable you to perform direct take transitions, and local salvo definitions using a grid of sources and destinations.

Panel Interface Overview

Each level is represented as a button in the color defined in the current database. Notice that the crosspoints are represented in the same color as the applicable level.

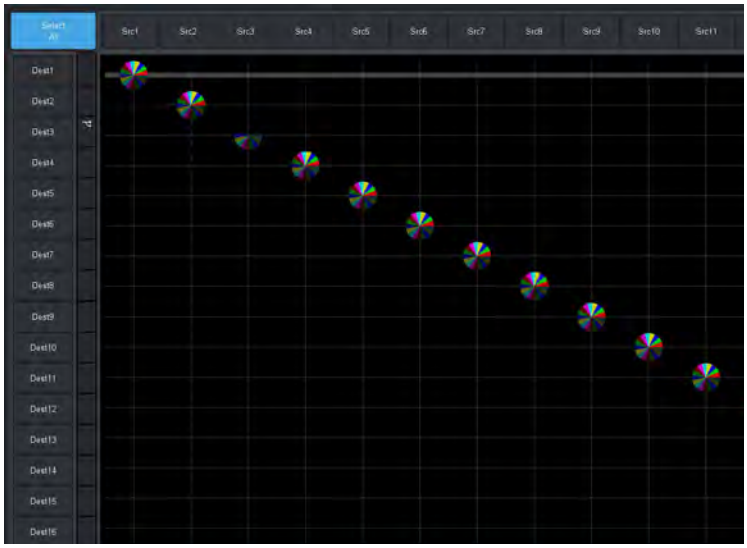


Figure 26 Example of a Matrix Panel

1. **Crosspoints**

   The number of Destinations and Sources available in the matrix is 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. In **Figure 26** crosspoints were selected using the **Advanced** > **Diagonal Presets** option.

2. **Levels Button**

   Click a level button to include the 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. **Figure 26** illustrates a Matrix panel with nine levels selected.

3. **Follow Button**

   Click this button to select all crosspoints in the matrix. Clicking **TAKE** after clicking **Follow** will then switch all crosspoints at the same time on all available levels.

4. **TAKE Button**

   Click this button to execute the switch between 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.

5. **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** and **Protect** buttons are not displayed.

6. **Protect Button**

   Click this button to prevent switching of the selected crosspoints except in the DashBoard client session the Protect was initiated in.

7. Free Button

Click this button to end a lock or protect on the selected crosspoints.

8. Salvo Button

Click this button to display the Salvo menu. Refer to "**Salvo Menus**" for information on the menu options.

9. Advanced Button

Click this button to display the Advanced menu. Refer to "**Advanced Menus**" for information on the menu options.

10. 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. Refer to "**Enabling Machine Control**" for details on this button.

Status Quick Navigation

In multi-level systems, the status of any given crosspoint can often be such that a matrix style soft panel cannot show all levels.

Figure 27 Example of Crosspoint Status in a Matrix Panel

In **Figure 27**, destination DST1 only shows status for the green level. It cannot show the red/blue levels status' as the relevant sources are outside the current view.

Right clicking the destination button/label will re-center the source buttons to the next level status. Subsequent right-clicking the destination button will cycle to the next level status indicator. (**Figure 28**)

Figure 28 Example of a Cycled Status Indicator

Find Dialog

The **Find** dialog helps you to quickly navigate to known source or destination names.

Figure 29 Example of the Find Dialog

To access the Find dialog

1. Within the matrix panel control area, click **Find**.

   The **Find** dialog opens.
2. From the **Find in List** menu, choose either **Source** or **Destination** as required.
3. Type the text to search for in the **Find what** field.

   In **Figure 27**, the user entered **`out`**.
4. If an exact string match is required, select the **Exact Match** box.
5. If text case matching is required, select the **Match Case** box.
6. Click **Next** to begin the search.

   The Matrix panel updates to the first match.
7. Click **Next** again to navigate to subsequent matches.
8. Click ▲ to navigate to previous matches.
9. Click **Close** to close the dialog.

   The Matrix panel view will remain with the last match in the middle of the matrix panel view.

Filter Dialog

Use the **Filter** dialog 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.

✶ The filter matches any consecutive characters and ignores the case. For example, typing **`at`** will match to **`CAT`**, **`hat`**, **`ATT`** etc.

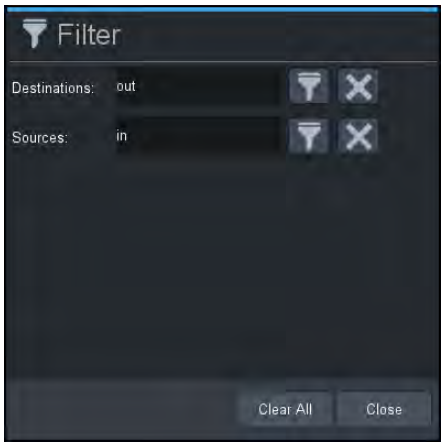


Figure 30 Example of the Filter Dialog

To use the Filter dialog

1. To filter the destinations:
   a. Enter the filtering text in the **Destination** field as required.
   b. Click to enable destination filtering.

      The Matrix panel view updates to display only those destinations matching the entered text.
2. To filter the sources:
   a. Enter the filtering text in the **Source** field as required.
   b. Click to enable source label filtering.

      The Matrix panel view updates showing only those destinations matching the entered text.
3. Click to clear the associated filter text field.
4. Click **Clear All** to clear both filter text fields.
5. Click **Close** to close the **Filter** dialog.

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 panel. This section provides instructions using the cross-hairs for crosspoint selections.

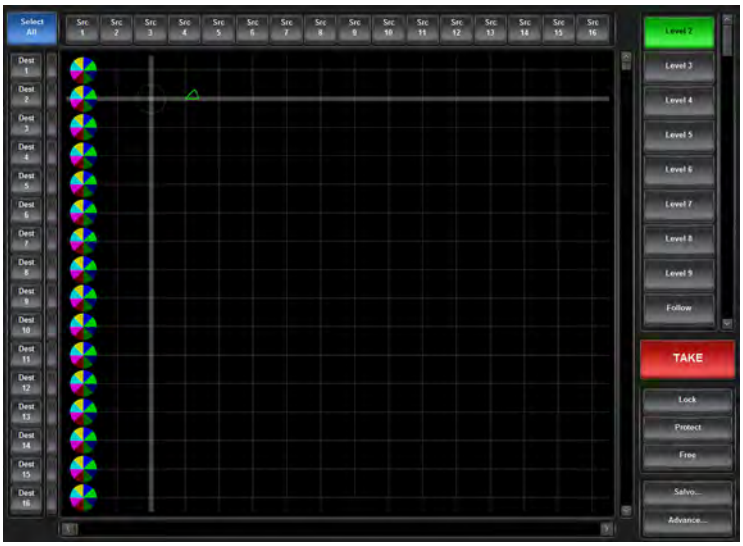
To make a crosspoint switch using a single level

1. In the **Basic Tree View**, expand the **Soft Panels** node for the Ultricore BCS.
2. Double-click the node for a matrix soft panel.

   The **Matrix Panel** tab opens.
3. Select a level from the left toolbar.

   The button is now lit.
4. Select the source and destination intersection inside the matrix.

   The selection is represented as an icon set in the color that matches the level. In the example below, **Level 2**, **Src 4** and **Dest 2** are selected. The **TAKE** button is now lit.



5. Click **Take**.

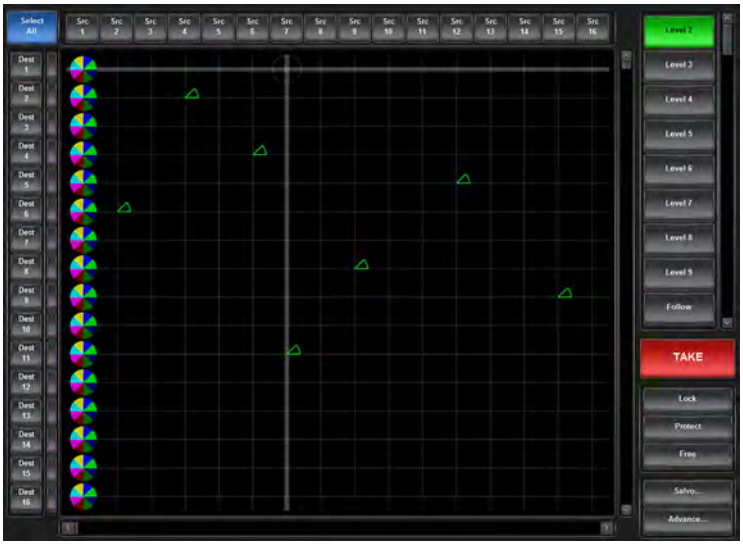
   The icon on the matrix is solid in the color that matches the level and the **TAKE** button is no longer lit.

To make a crosspoint switch between multiple sources and destinations on a single level

1. In the **Basic Tree View**, expand the **Soft Panels** node for the Ultricore BCS.
2. Double-click the node for a matrix soft panel.

   The **Matrix Panel** tab opens.
3. Select a level from the left toolbar.
4. Select the first source and destinations inside the matrix.
5. Select the additional crosspoints to switch.

   In the example below, **Level 2** is selected but seven crosspoint switches are also selected (each is represented with a green icon on the matrix).



6. Click **TAKE**.

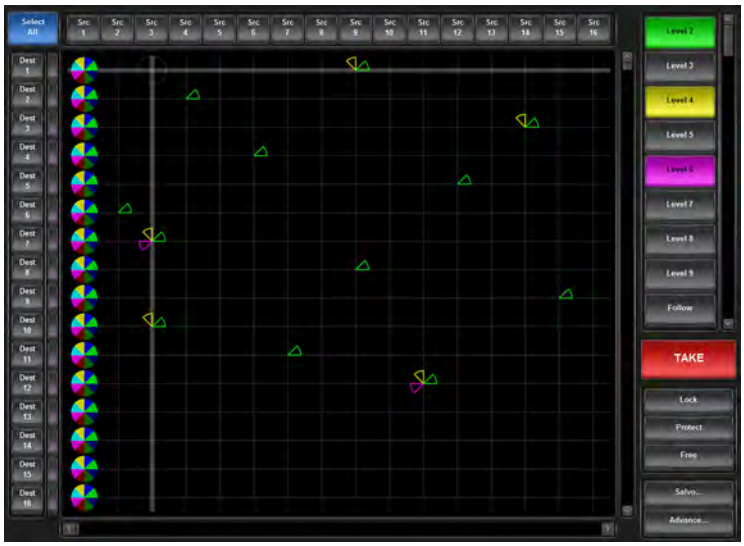
   The icons on the matrix is solid in the color that matches the level and the **TAKE** button is no longer lit.

To make a crosspoint switch on multiple levels

1. In the **Basic Tree View**, expand the **Soft Panels** node for the Ultricore BCS.
2. Double-click the node for a matrix soft panel.

   The **Matrix Panel** tab opens.
3. Select each level from the toolbar or select **Follow** to include all levels.
4. Select the first source and destination inside the matrix.
5. 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. In th example below, Levels 2, 4, and 6 are selected with multiple crosspoint selections on the matrix.



6. Click **Take**.

   The icons on the matrix are solid in the color that matches the level and the **TAKE** button is no longer lit.

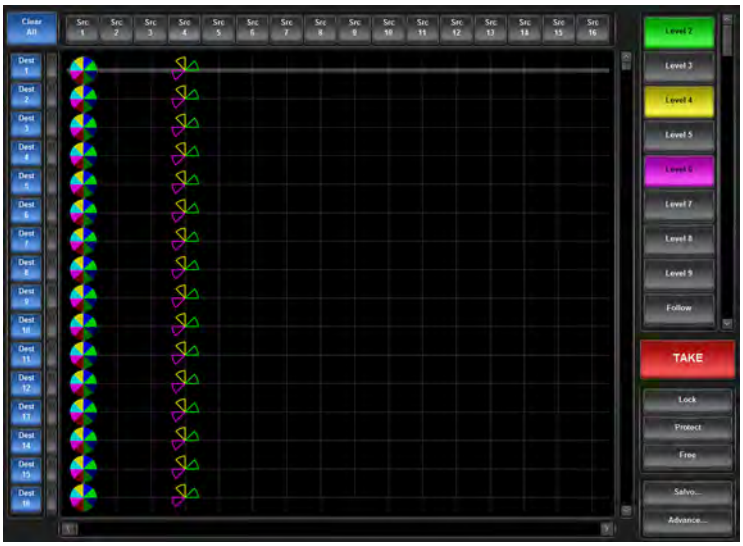
To perform a crosspoint switch on multiple destinations with a single source

1. In the **Basic Tree View**, expand the **Soft Panels** node for the Ultricore BCS.
2. Double-click the node for a matrix soft panel.

   The **Matrix Panel** tab opens.
3. Select each level from the toolbar or select **Follow** to include all levels.
4. 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**.
5. 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. The **TAKE** button is now lit. For example, Levels 2, 4 and 6 are selected and all destinations switch to **Src 4**.



6. Click **TAKE**.

   The icons on the matrix are solid in the color that matches the level and the **TAKE** button is no longer lit.

Using a Default Preset

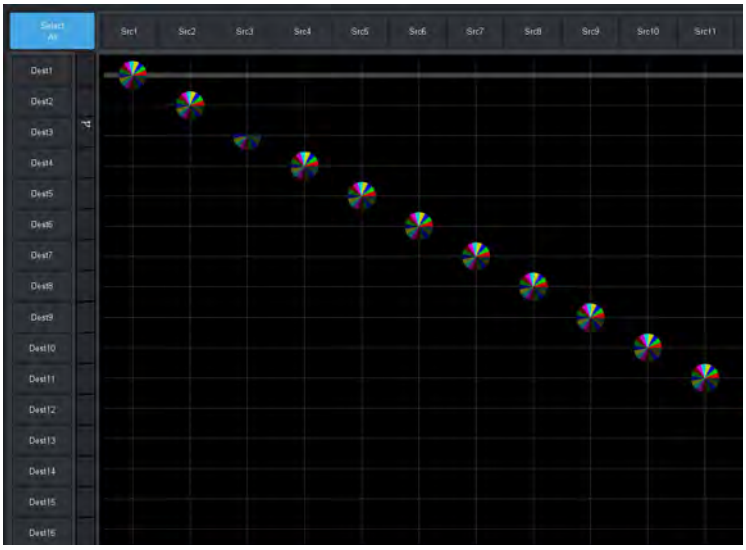
The **Advanced** menu provides two pre-configured presets: Diagonal and R-Diagonal.

Diagonal Presets

Crosspoint selection is organized into a diagonal line that starts with the top left corner of the matrix (e.g. **Src 1** and **Dest 1**), continues in single step intervals (e.g. **Src 2** and **Dest 2**, **Src 3** and **Dest 3** etc.) and ends with the bottom right corner of the matrix (e.g. **Src1 6** and **Dest 16**).

To use the Diagonal Preset

1. Select each level from the toolbar or select **Follow** to include all levels.
2. Click **Advanced** > **Diagonal Presets**.



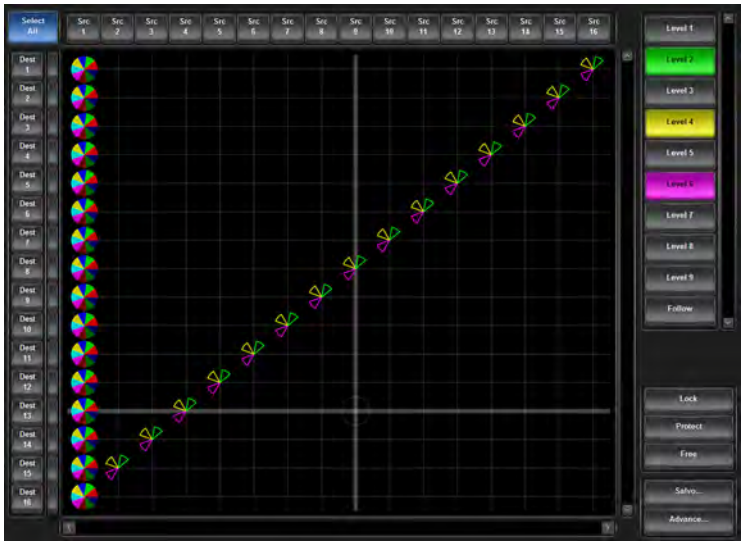
3. Click **TAKE**.

R-Diagonal Presets

Crosspoint selection is organized into a diagonal line that starts with the top right corner of the matrix (e.g. **Src 16** and **Dest 1**), continues in single step intervals (e.g. **Src 15** and **Dest 2, Src 14** and **Dest 3** etc.) and ends with the bottom left corner of the matrix (e.g. **Src 1** and **Dest 16**).

To use the R-Diagonal Preset

1. Select each level from the toolbar or select **Follow** to include all levels.
2. Click **Advanced** > **R-Diagonal Presets**.



3. Click **TAKE**.

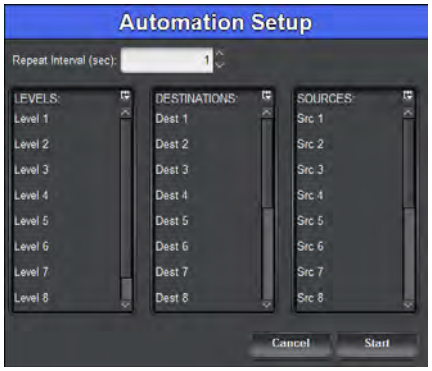
Creating an Automatic Switching Loop

The Automation feature enables you to set up a crosspoint and create a continuous switch loop using the specified crosspoints.

To set up an automated crosspoint selection loop

1. Click **Advanced** > **Setup Automation**.

   The **Automation Setup** menu opens.



2. Use the **Repeat Interval** field to specify the number seconds the crosspoint switch will continuously loop for.
3. Use the **Levels** menu to specify the levels the crosspoint will include.
4. Use the **Destinations** menu to select the outputs on the router.

5. Use the **Sources** menu to select the input signals to route to the output for the switch.
6. Click **Start**.

   The menu closes and the crosspoint switch begins. The loop continues for the length of time specified in step 2.

✶ To stop the loop, click **Advanced** > **Stop Automation**.

Clearing the Matrix Selections

You can choose to clear all the crosspoint selections, or only the selected Destinations.

To clear all crosspoint selections on the matrix

- Click **Advanced** > **Clear All Presets**.

To clear only the Destination selections on the matrix

- Click **Advanced** > **Clear Dest Presets**, or
- Click **Clear All**.

Using MultiBus Panels

The MultiBus panel provides breakaway control and status monitoring of several destinations simultaneously.

Panel Interface Overview

Use the MultiBus Panel to send a source to multiple destinations.

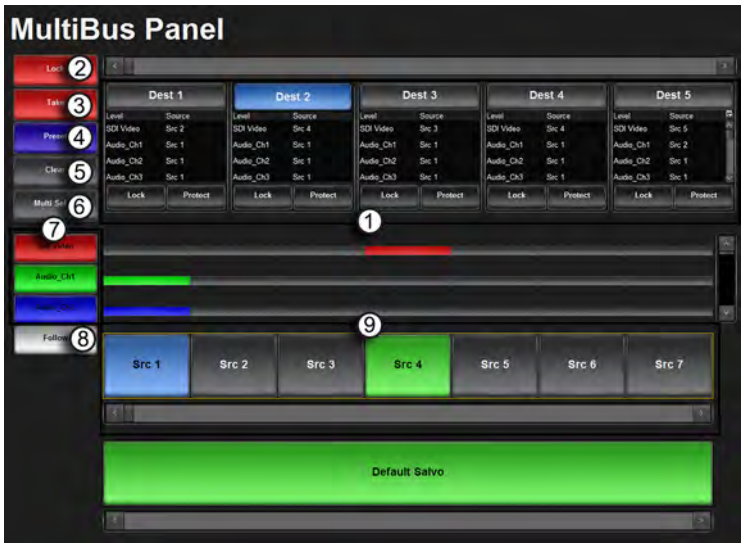


Figure 31 Example of a MultiBus Panel

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, **Dest 2** is selected in **Figure 31**.

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 31** illustrates a MultiBus panel with three levels selected.

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 a configured input for the selected router. Selecting a button includes the source in the next crosspoint switch. The label for the button is defined by its entry in the Sources tab of the Database. A source selected to be included in the next crosspoint switch will have a lit button. For example, in **Figure 31** the **Src 1** is selected for the next transition while the **Src 4** is the current source in use.

10. **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. Refer to "**Enabling Machine Control**" for details on this button.

Crosspoint Switches via a MultiBus Panel

The layout of a MultiBus panel is similar to a production switcher layout where the destinations are organized into a horizontal row of buttons near the top of the panel and the sources are on the row near the bottom.

To make a crosspoint switch on a single level using a MultiBus Panel

1. In the **Basic Tree View**, expand the **Soft Panels** node for the Ultricore BCS.
2. Double-click the node for a MultiBus Panel.

   The **MultiBus Panel** tab opens.
3. From the left toolbar, select the button for the level you want to perform the crosspoint switch.
4. Select a **Src** button from the Source bus located at the bottom of the interface.

   The button is now lit.
5. Select the **Dest** button(s) from the Destination bus located at the top of the interface.
6. Select a **Dest** button from the Destination bus located at the top of the interface.

   The **Dest**, **Preset**, and **Take** buttons are now lit.

   In the example below, **Level 2** is selected and **Dest 4** will switch with **Src 6**. The **Src 1** button is lit green to indicate that Source 1 was used in the last crosspoint switch.

7. Click **Take**.

To make a crosspoint switch using multiple levels

1. In the **Basic Tree View**, expand the **Soft Panels** node for the Ultricore BCS.
2. Double-click the node for a MultiBus Panel.

   The **MultiBus Panel** tab opens.
3. 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.
4. Select a **Src** button from the Source bus located at the bottom of the interface.

   The button is now lit.
5. Select the **Dest** buttons for the outputs to include in the crosspoint switch.

   The **Dest**, **Preset**, and **Take** buttons are now lit. In the example below, **Follow** is selected and **Dest 5** will switch with **Src 4** on all levels.

6. Click **TAKE**.

Using the Multi Select Function

A MultiBus panel displays a **Multi Select** button on the vertical toolbar of the panel.

To use the Multi Select

1. In the **Basic Tree View**, expand the **Soft Panels** node for the Ultricore BCS.
2. Double-click the node for a MultiBus Panel.

   The **MultiBus Panel** tab opens.
3. Select the level(s) from the left toolbar.
4. Click **Multi Select**.

   The **Multi Select** button is now lit.
5. Select the **Dest** buttons from the Destination bus located near the top of the interface.

   The **Dest** buttons are now lit.
6. Select a **Src** button from the Source bus located near the bottom of the interface.

   The **Src**, **Preset**, and **TAKE** buttons are now lit. In the example below, **Levels 2** and **3** are selected, and **Dest 2**, **3**, and **5** will switch with **Src 6**.

7. Click **TAKE**.

Using Category Panels

Category panels organize sources, destinations and levels based on the settings in the Category tab. There are two types of category panels: group and classic. This section outlines both types.

For More Information on...

- legacy categories, refer to the ***RCP-QE User Guide***.

Panel Interface Overview

The soft panel interface for each category type is similar in layout and available buttons.

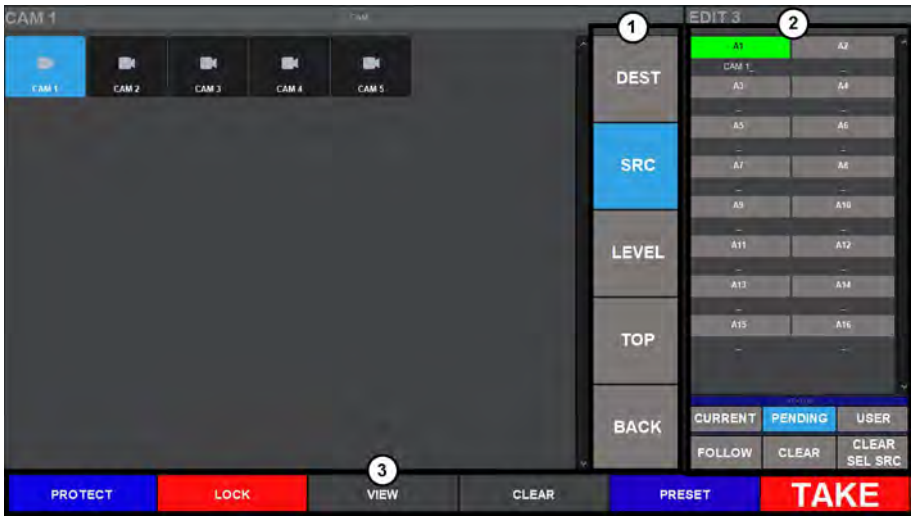


Figure 32 Example of a Group Category Soft Panel for an Ultricore BCS Router

1. Group Window

This area of the soft panel interface may include the following buttons:

› **SOURCES**, **DESTINATIONS** Buttons — Clicking one of these buttons updates the button matrix to display the sources or destinations available as per the selected category. The button labels update to display the source or destination labels.

› **BACK** Button — Click this button to return the navigation to the previous category selection (back one level).

› **RESET** Button — Click this button to clear all selections on the interface. This button is only available on the Classic Category soft panels.

› **SELECT** Button — This button is only available on the Classic Category soft panels.

› **TOP** Button — This button is only available on the Group Category 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:

› Individual 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** button — This button updates the level display area to show the current status for all displayed levels.
- **FOLLOW** Button — 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.
- **PENDING** button — 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). The user may clear individual source selections by selecting the levels to be cleared, then pressing **CLEAR SRC SEL** button.
- **CLEAR** Button — Click this button to clear all selections on the interface.
- **USER** button — 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.

Figure 33 Status Protected — Destination

Figure 34 Status Protected — User

3. TAKE Control Area

The bottom toolbar of the soft panel interface includes the following buttons:

- **PROTECT** Button — 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** Button — 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** Button — 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** Button — Click this button to clear the current TAKE queue.
- **PRESET** Button — This button is used 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.
- **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.

Crosspoint Switches via a 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** tab. Instead of having access to all sources, destinations, and levels at one time, a Category soft panel provides access based on the categories and the tags you have created.

To make a crosspoint switch using a Group Category Panel

1. In the **Basic Tree View**, expand the **Soft Panels** node for the Ultricore BCS.
2. Double-click the node for the Category Panel.

   The **Category Panel** tab opens.
3. 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.
4. 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 **DEST** button from the available category destinations located in the main group window.

      The status title bar (if enabled) reports the currently selected destination. In the example below, the user has selected Level **A1** and destination **EDIT 3** from the **EDIT** group.

5. To select a source:
   a. Click **SRC** from the category navigation tools.
   b. Select a **SRC** 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.

6. Click **TAKE**.

Using Push Button Panels

✶ This soft panel type is not suitable for use on an Ultritouch hard panel. To control the Ultricore BCS via an Ultritouch, you must create and load an Ultritouch PB soft panel as outlined in the ***Ultritouch + Ultricore BCS User Guide***.

Panel Interface Overview

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 > Home View interface.

Figure 35 is an example of a Push Button soft panel set to portrait.

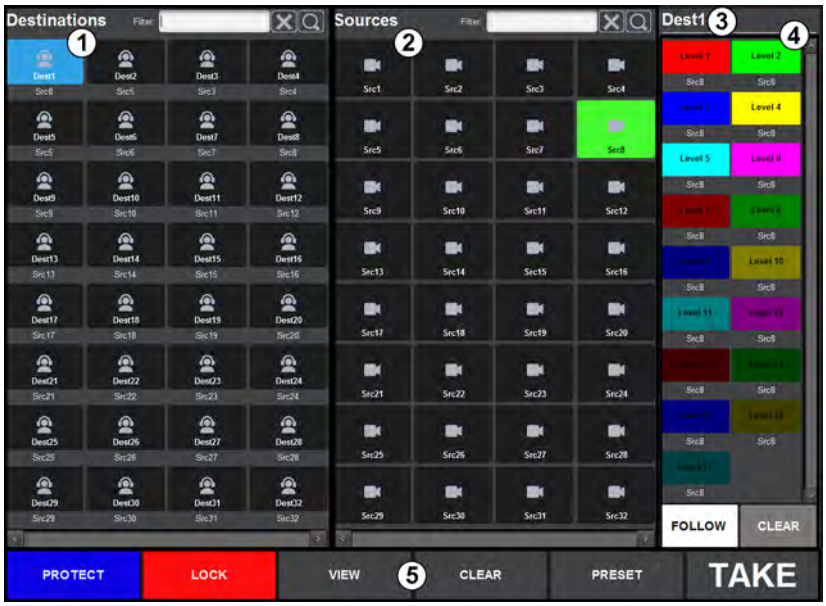


Figure 35 Example of the Default Push Button Soft Panel — Portrait

Figure 36 is an example of a Push Button soft panel set to landscape.

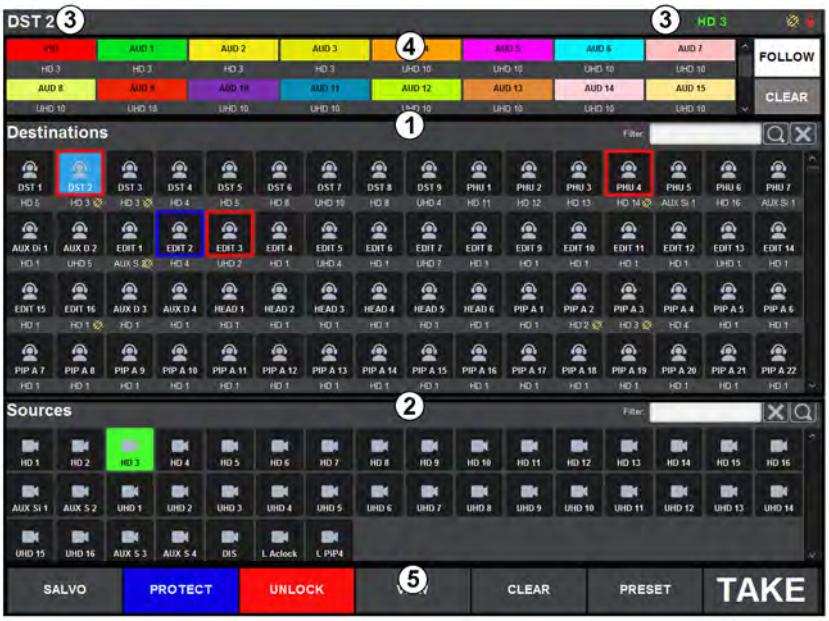


Figure 36 Example of the Default Push Button Soft Panel — Landscape

1. **Destinations Area**

   The **Destinations** area displays the available destinations for router control. Select a **Destination** button to arm that destination for subsequent panel operations. Beneath each destination button is displayed the current source for that destination.

   This area also includes the **Filter** field. A filter is available to match destination names against the entered text:

   - Enter text in the **Filter** field.
   - Click (or press **Enter**). The destinations area updates to display only those destinations starting with the filter text.
   - To clear the active filter, click .

2. **Sources Area**

   The Sources area displays the available sources for router control. Select a **Source** button to control the crosspoint for the currently selected destination.

   This area also includes a **Filter** field. A filter is available to match source names against the entered text:

   - Enter text in the field provided
   - Click (or press **Enter**). The sources area updates to display only those sources starting with the filter text.
   - To clear the active filter, click .

3. **Current Destination**

   The currently selected destination label is displayed here. All subsequent panel operations operate on this destination until a new destination is selected.

   › — the current status is not the same for all levels (ie a breakaway switch has occurred).

   › — 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.

4. Levels Area

The Levels area displays the available router levels as individual buttons. The current source for a given router level is displayed each level button. Select a **Level** button to include this level in the next source selection operation. Select the button again to toggle the level selection setting.

› **FOLLOW** Button — toggles the selection for all displayed levels.

› **CLEAR** Button — toggles the currently active level buttons.

5. Operation Area

This area provides buttons for soft panel and router control.

› **PROTECT** Button — protect the current destination. The following occurs:

- The destination button displays a blue border.
- The **Current 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.

✶ Only the panel that initiated the protect may change the protect status.

› **LOCK** Button — locks the current destination. The following occurs:

- The destination button displays a red border.
- The current destination display area displays  . When a destination is locked, no panel may change the destination status.
- The **LOCK** button is now labeled as **UNLOCK**.

✶ Only the panel that initiated the lock may change the lock status.

› **VIEW** Button — displays the current crosspoint switch requests currently in the preset list. Individual crosspoints may be removed via the list view.

› **CLEAR** Button — clear the preset list of all crosspoint selections.

› **PRESET** Button — adds the current destination/source/level selection to a preset list. A crosspoint is added to the list for every level selected. This enables the user to add more switches and execute them all with a single take operation. The preset function is only available when the **Take Mode** is set to **Confirm**.

› **SALVO** Button — reveals a list of predefined salvos. A salvo may be executed from the dialog. The salvo button is visible only when the panel configuration has one or more salvos assigned.

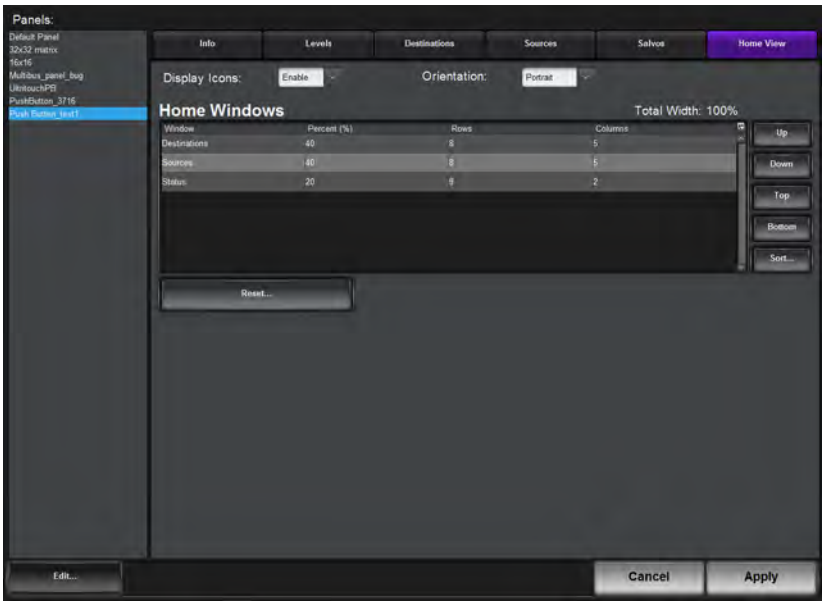
› **TAKE** Button — is lit when the current destination/source selection is ready to be requested of the router. The Take operation is a configurable option and will only be activated if the soft panel **Take Mode** is set to **Confirm**.

Configuring a Push Button Soft Panel

The Push Button soft panel provides additional configuration options in addition to those outlined in "**Creating a Soft Panel**".

To configure a Push Button soft panel

1. Create a new soft panel as outlined in "**To create a soft panel**".
2. Select the **Home View** tab.



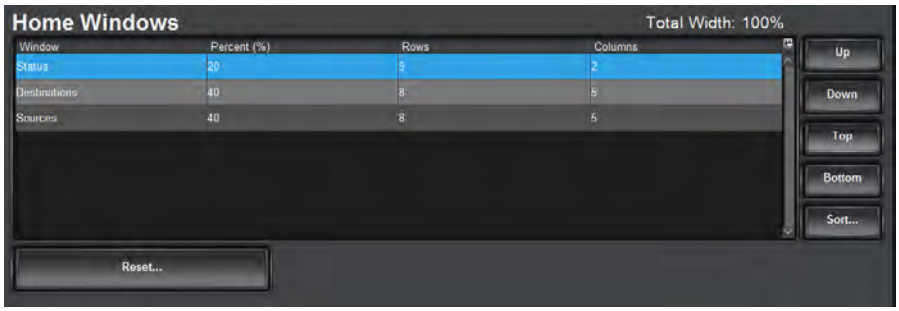
3. Use the **Display Icons** menu to specify whether buttons will display the default icons based on window type (**Enable**) or will only display the label text as determined by the database (**Disable**).
4. Use the **Orientation** menu to specify the layout on the monitor. Choose from the following:
   - **Portrait** — orients the soft panel in a horizontal layout, where the soft panel is taller than it is wide.
   - **Landscape** — orients the soft panel in a vertical layout, where the soft panel is wider than it is tall.
5. Specify the order that the windows will display in the completed soft panel layout as follows:

✶ By default, the windows are organized in the following order (left to right): Destinations, Sources, and Status.

   a. In the **Home Windows** table, select the row for the window you want to move to a different position on the soft panel layout.

   b. Use the buttons in the toolbar to move the row to the desired position.

      In the example below, the user moved the **Status** window to the top of the table so it will display on the far left of the soft panel.



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

7. Click **Apply** to save your changes.

Crosspoint Switches via a Push Button Panel

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** tab. You can also use the Filter fields in the Destinations and Sources area of the panel to provides access based on the search criteria entered into each Filter field.

To make a crosspoint switch on a single level using the Push Button Panel

1. In the **Basic Tree View**, expand the **Soft Panels** node for the Ultricore BCS.
2. Double-click the node for the Push Button Panel.

   The **Push Button Panel** tab opens.
3. Select the **Level** you want to perform the crosspoint switch.
4. Select a **DEST** button from the Destinations window.

   The Status field reports the selected **DEST** button. In the example below, the user selected **Level 6** and **Dest 54**.

5. Select a **SRC** 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.

6. Click **TAKE**.

To make a crosspoint switch on multiple levels using the Push Button Panel

1. In the **Basic Tree View**, expand the **Soft Panels** node for the Ultricore BCS.
2. Double-click the node for a Push Button Panel.

   The **Push Button Panel** tab opens.
3. Select each level from the Levels window or click **Follow** to include all levels.

   The Level buttons are lit in the toolbar.
4. Select a **DEST** button from the Destination window.

   The Status area updates to display report the selected **DEST** button. In the example below, the user selected **Levels 2**, **6**, **8** and **11**, then **Dest 40**.

5. Select a **SRC** button from the Source window.

The Status area updates to display only the selected **SRC** button. In the example below, **Src 6** is selected.

✶ If your soft panel was created with the **Take Operation** set to Confirm, the **TAKE** button is lit. Otherwise the crosspoint switch automatically occurs.

6. Click **TAKE**.

Using Salvos

Salvos are a selected series of crosspoints to switch in the matrix that can be saved and later recalled for use.

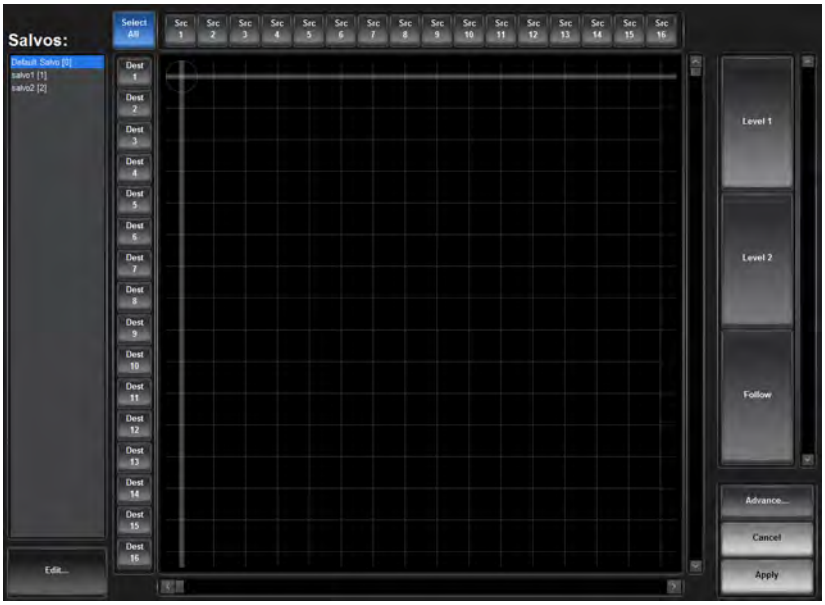
Creating Salvos

The Salvos tab enables you to create, delete, re-name, and manage your salvos in an interface that is off-line. The Salvo tab layout is similar to the Matrix Panel layout where crosspoints are arranged in a grid layout with sources in columns and the destinations in rows.

To create a salvo

1. In the **Basic Tree View**, expand the **Database** node for the Ultricore BCS.
2. Double-click the **Salvos** node.

   The **Salvos** tab opens.

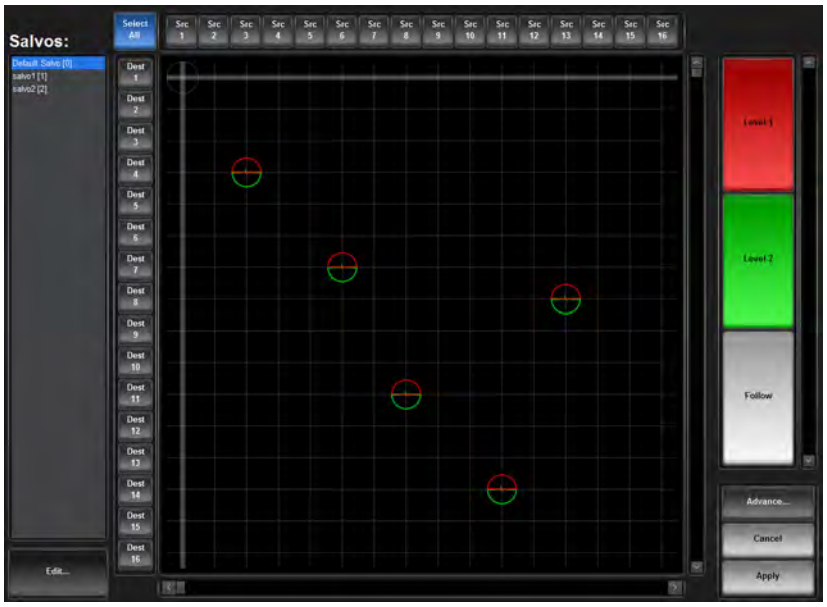


3. Create a new salvo in the database as follows:
   a. Click **Edit** > **Add**.

      The **Add Salvo** dialog opens.
   b. Type a unique identifier in the **Name** field for the new salvo.
   c. Click **Apply**.

      The **Add Salvo** dialog closes and the **Salvos** list updates with the new salvo selected.
4. Select the **Level**(s) button for the level(s) to include in the salvo.

   The **Level**(s) buttons are lit.
5. To create a single crosspoint switch, use the cross-hairs to select the source/destination combination on the grid.

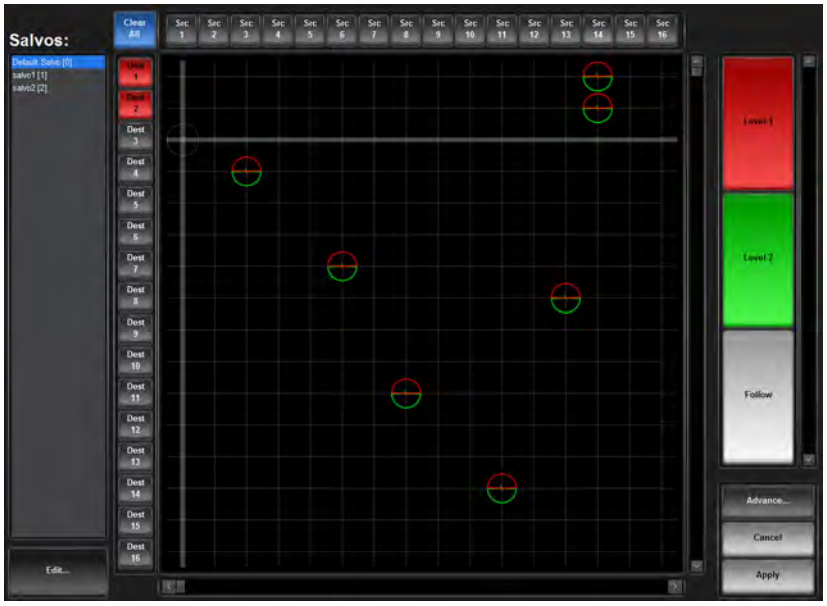


6. To assign multiple destinations to the same source.

   a. Click the button(s) in the **Destination** toolbar for each destination to include in the switch; or click **Select All** to include all the available Destinations.

   b. Click 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. In the case below, there are seven crosspoint switches selected that will affect two levels.



7. Select the **Follow** button to enable the levels to automatically follow the switches.

✶ Click **Advanced** > **Clear Dest Presets** to cancel the destination selections or click **Advanced** > **Clear All Presets** to clear the workspace.

8. Click **Apply**.

   The salvo settings are updated.

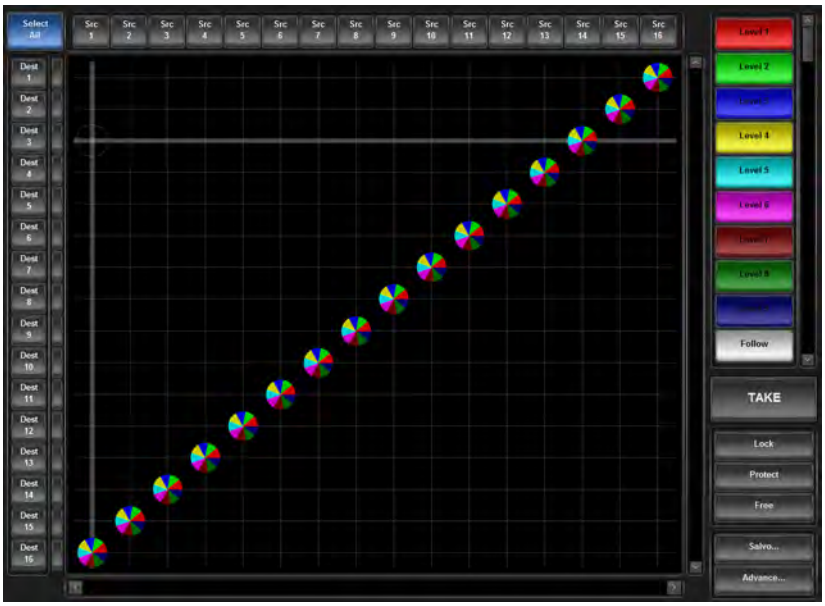
Saving the Current Crosspoint Status as a New Salvo

The Advanced menu in the Salvos tab provides the option to capture the current state of the crosspoint selections and save them as a salvo.

To create a salvo based on the current destination status

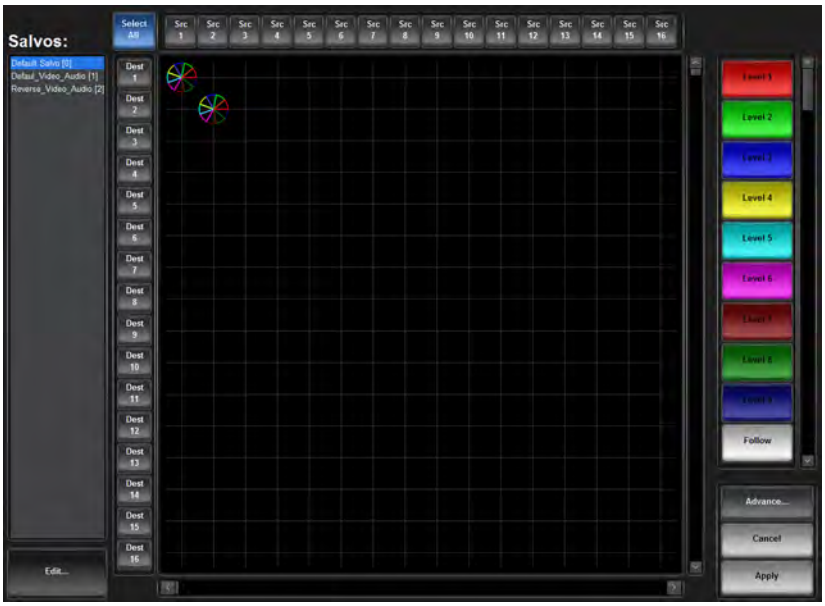
✶ This procedure captures the status of all destinations.

1. Verify the current crosspoint state using one of the soft panels in your database. Refer to "**Soft Panels in DashBoard**".



2. In the **Basic Tree View**, expand the **Database** node for the Ultricore BCS router.
3. Double-click the **Salvos** node.

   The **Salvos** tab opens.



4. Create a new salvo in the database as follows:

a. Click **Edit** > **Add**.

The **Add Salvo** dialog opens.

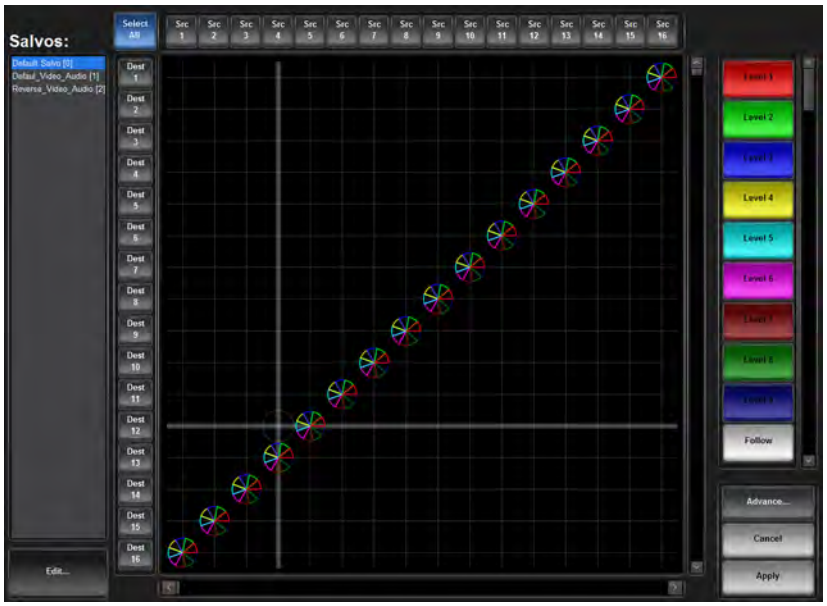
b. Type a unique identifier in the **Name** field for the new salvo.

c. Click **Apply**.

The **Add Salvo** dialog closes and the **Salvos** list updates with the new salvo selected.

5. Click **Advanced** > **Capture System Status**.

The matrix in the **Salvos** tab updates to reflect the current crosspoint state as verified in step 1.



6. Click **Apply**.

To create a salvo based on selected destinations

✶ This procedure captures the status of selected destinations.

1. Verify the current destination crosspoint states using one of the soft panels in your database. Refer to "**Soft Panels in DashBoard**".
2. In the **Basic Tree View**, expand the **Database** node for the Ultricore BCS router.
3. Double-click the **Salvos** node.

   The **Salvos** tab opens.
4. Create a new salvo in the database as follows:

   a. Click **Edit** > **Add**.

   The **Add Salvo** dialog opens.

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

   c. Click **Apply**.

   The **Add Salvo** dialog closes and the **Salvos** list updates with the new salvo selected.
5. Click **Advanced** > **Capture Dest Status**.

   The matrix in the **Salvos** tab updates to reflect the current Destination states as verified in step 1.
6. Select the **Level**(s) button for the level(s) to include in the salvo.

The **Level**(s) buttons are lit.

7. Select the source(s) to use in the crosspoint switch.
8. Click **Apply** to update the salvo settings.

Copying and Pasting a Salvo

You can create a copy of a saved salvo and edit its settings or add crosspoint selections separately from the original salvo.

To copy and paste a salvo

1. In the **Basic Tree View**, expand the **Database** node for the Ultricore BCS router.
2. Double-click the **Salvos** node.

   The **Salvos** tab opens.
3. Select the salvo to copy from the **Salvos** list.
4. Click **Edit** > **Copy**.
5. Click **Edit** > **Paste**.

   A new salvo displays at the bottom of the **Salvos** list in the **Salvos** tab. By default, the salvo is named Salvo # where # is an automatically assigned value.
6. Give the new salvo a unique identifier as outlined in the procedure "**To re-name a salvo**".
7. Edit the settings of the new salvo as outlined in the procedure "**To edit a salvo**".

Editing a Salvo

Once a salvo is created in the database, you can edit its crosspoint selections,

To edit a salvo

1. In the **Basic Tree View**, expand the **Database** node for the Ultricore BCS router.
2. Double-click the **Salvos** node.

   The **Salvos** tab opens.
3. Select the salvo from the **Salvos** list.

   The grid updates to display the crosspoint selections currently saved for the salvo.
4. Perform steps 4 to 7 as outlined in the procedure "**To create a salvo**".
5. Click **Apply** to save your changes.

To re-name a salvo

1. In the **Basic Tree View**, expand the **Database** node for the Ultricore BCS router.
2. Double-click the **Salvos** node.

   The **Salvos** tab opens.
3. Select the salvo from the **Salvos** list.

   The grid updates to display the crosspoint selections saved for the salvo.
4. Click **Edit** > **Rename**.

   The **Rename Salvo** dialog opens.
5. Type a new name for the salvo in the **Name** field.
6. Click **Apply**.

The **Rename Salvo** dialog closes and the salvo displays with the new name in the **Salvos** list.

Deleting a Salvo

Deleting a salvo removes it from the database. The corresponding button on any soft panels for the deleted salvo are also no longer displayed.

To delete a salvo from the database

1. In the **Basic Tree View**, expand the **Database** node for the Ultricore BCS router.
2. Double-click the **Salvos** node.

   The **Salvos** tab opens.
3. From the **Salvos** list, select the salvo to delete.
4. Click **Edit** > **Delete**.
5. Click **Apply** to close the dialog.

   The salvo no longer displays in the Salvos list to the left of the workspace. If the salvo was assigned to a button in a soft panel, the button is automatically deleted from the panel.

Recalling a Salvo

Once you have saved a salvo, you can recall it for use on a soft panel in DashBoard.

✶ You cannot recall salvos from a Category soft panel.

For More Information on...

- adding salvos to customized soft panels, refer to "**Creating a Soft Panel**".

To recall a salvo from a Matrix panel

1. In the **Basic Tree View**, expand the **Soft Panels** node for the Ultricore BCS router.
2. Double-click the node for a **Matrix Panel**.

   The **Matrix Panel** tab opens.
3. Click **Salvo**.
4. Click **Recall**.

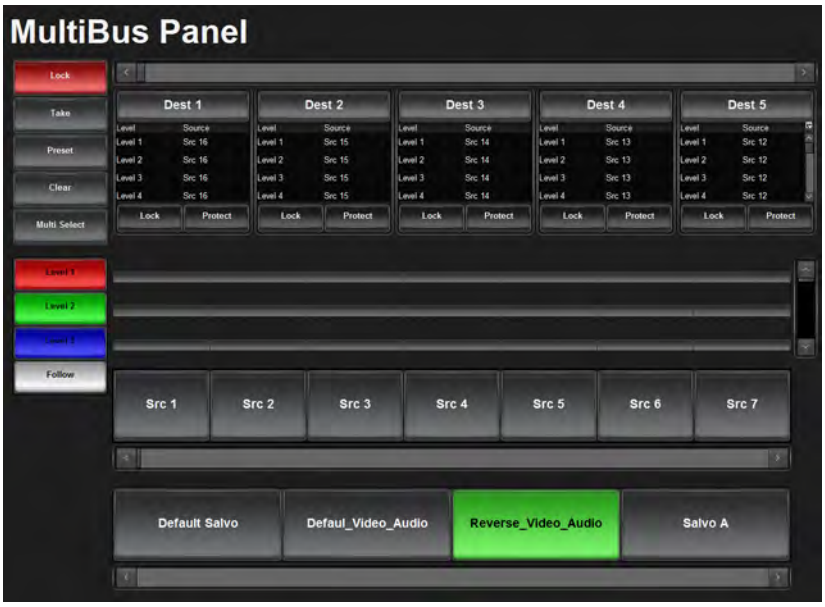
   The **Execute Salvo** dialog opens. Notice that the **Active** column reports whether the salvo is currently in use (ON) or not (OFF).

5. Select the salvo to recall.
6. Click **Apply** to close the dialog.
7. Click **Take** to apply the salvo.

To recall a salvo from a MultiBus panel

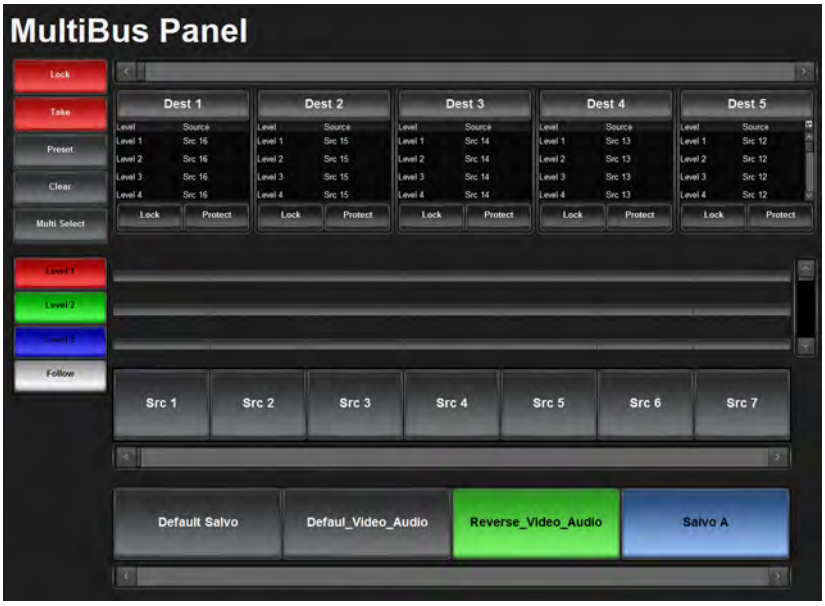
1. In the **Basic Tree View**, expand the **Soft Panels** node for the Ultricore BCS router.
2. Double-click a **MultiBus Panel** node.

   The **MultiBus Panel** tab opens. The salvo buttons are located at the bottom of the soft panel interface. If a salvo button is lit green, it is currently in use.



3. Click the button for the salvo you wish to recall.

   The salvo button and **Take** buttons are now lit on the soft panel.



4. Click **Take** to apply the salvo.

   The crosspoint switch is made, and the salvo button is no longer lit.

Tielines

This chapter outlines how to define a distributed routing system using the Tieline Builder feature of the Ultricore BCS.

✶ This feature requires that the Ultricore BCS and Ultrix routers run software version 4.2.0 or higher and an ULTRICORE-TLX license is enabled.

What are Tielines?

A tieline is a method of connecting two routers together so that they may share sources and destinations. How many inputs and outputs that can be shared depends on how many tielines have been provisioned, if the tielines are in use, or if a user has permissions to use them. **Figure 37** represents a two-way tieline connection between routers where one (or more) outputs of Ultrix 1 are connected to the inputs of Ultrix 2, and one (or more) outputs of Ultrix 2 is connected to the inputs of Ultrix 1.

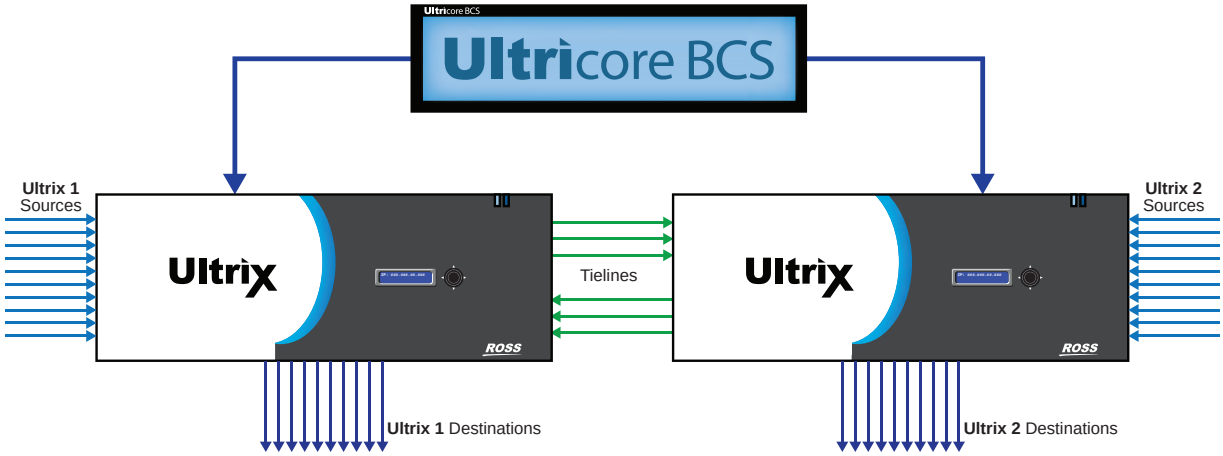


Figure 37 Example of a Distributed Routing System Work Flow with Tielines

Figure 38 illustrates a work flow where Ultrix 2 needs a source that is only present on Ultrix 1. The Ultricore BCS routes the requested source to a destination that is configured as a tieline, and on Ultrix 2, it will route the tieline source to the user selected Destination.

✶ Tielines do not have to be bi-directional as represented in **Figure 37** and **Figure 38**.

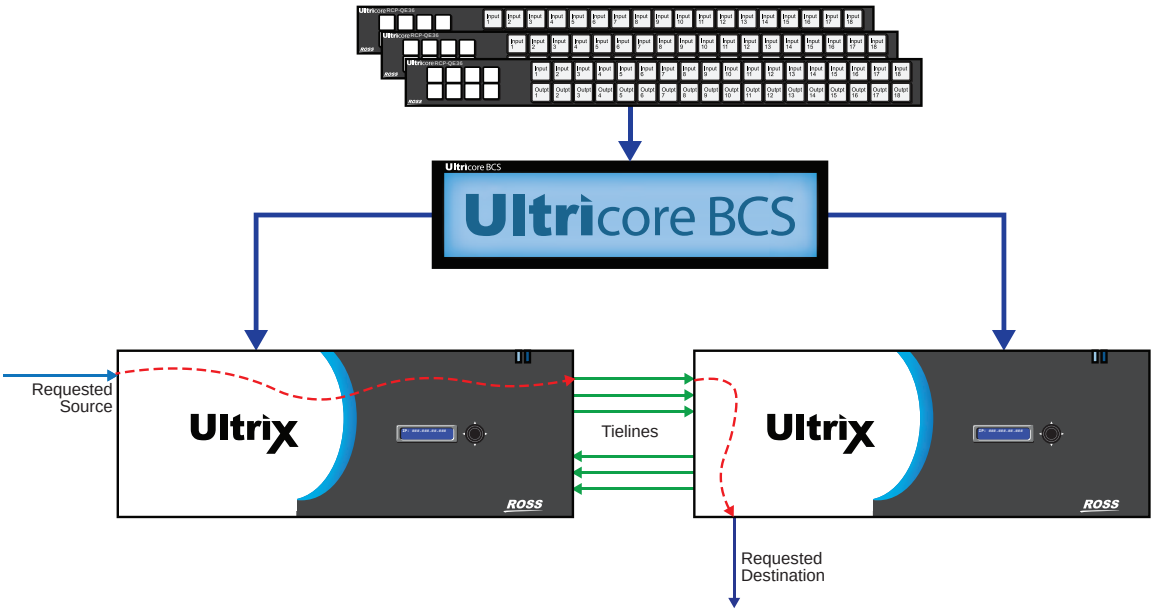


Figure 38 Example of Tielines in a Work Flow

In **Figure 38** the following occurred:

1. An RCP-QE36 panel, with access rights, made a request for a source on Ultrix 1 to be connected to a destination on Ultrix 2.
2. The Ultricore BCS determined the 'path' knowing it has to use a tieline.
3. The Ultricore BCS had a free tieline and enabled:
   a. The Ultrix 1 requested source to switch to the tieline.
   b. The Ultrix 2 tieline input to switch to the requested destination.

Setup Work Flow

Figure 38 summarizes the steps required to set up and configure tielines for the Ultricore BCS.

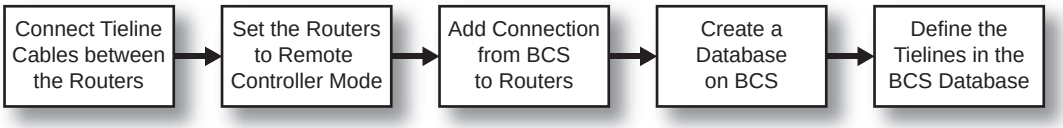
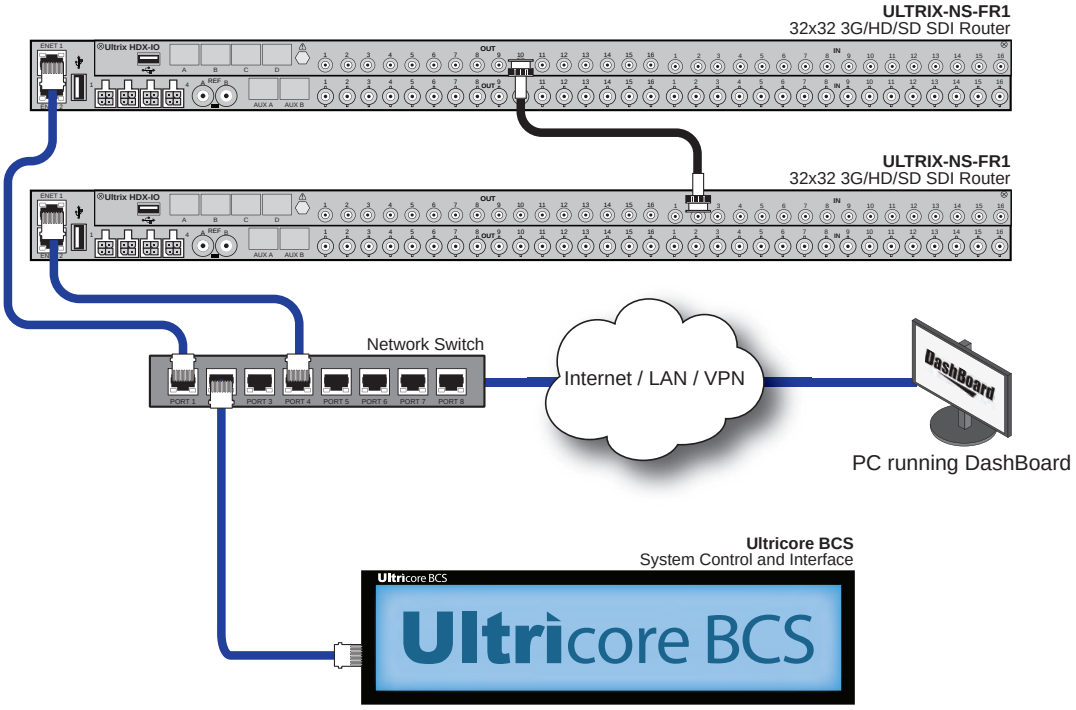


Figure 39 Requires Steps for Tieline Setup

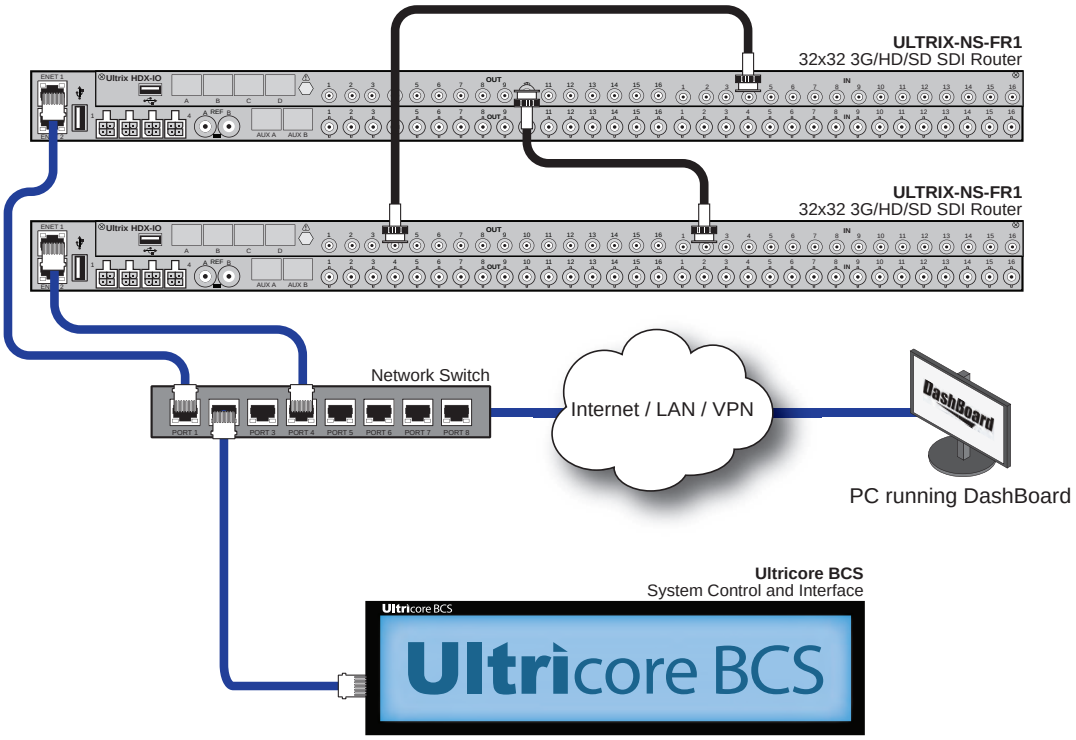
Physical Setup

This section outlines the physical setup needed before configuring tielines on the Ultricore BCS.

1. Connect the signal cable(s) from the output(s) on Ultrix 1 to the input(s) of Ultrix 2.



2. If bi-directional tieline management is required, connect the signal cable(s) from the output(s) of Ultrix 2 to the input(s) of Ultrix 1.



3. Take note of the physical address of the connectors used for the tieline signal cables as this information will be required when configuring the tielines in DashBoard.

Add the Routers to Ultricore BCS Control

This section assumes that each router is configured in DashBoard.

✶ Two or more physical routers are required for tieline setup. Tielines within the same router are not supported.

1. Ensure each router has a unique Device Name assigned to it. This makes it easy to identify the router in the Ultricore BCS database. To assign a name to a router:
   a. Display the **System Status** interface in DashBoard for the router.
   b. Select the **Setup** tab.
   c. Use the **Device Name** field to assign a unique identifier to the router.
2. Set each Ultrix router to Remote Controller mode as follows:
   a. Display the **System Status** interface in DashBoard for the router.
   b. Select the **Database** tab.
   c. Select the **Remote Controller Mode** box.
3. Reboot each Ultrix device by clicking the **Reboot** button on the **System Status** interface.
4. Create a connection point between the Ultricore BCS and each router as outlined in "**Connecting to an Ultrix Router**".

To add Ultrix to the Ultricore BCS

1. Display the Database nodes as outlined in "**To access the Database interfaces in DashBoard**".
2. Double-click the **Connections** sub-node.

   The **Connections** tab displays.
3. Select **Edit** > **Add**.

   The **Add Connection** dialog opens.
4. Specify the type of connection as follows:
   a. Set the **Protocol** to **Ultrix**.
   b. Set **Type** to **tcp**.
   c. Set **Count** to **1** (for one Ultrix connection).
   d. Click **Apply**.

      The **Add Connection** dialog closes.
5. Locate the new entry in the **Outgoing Connections** table for the connection defined in step 4.
6. If required, enter a unique identifier for the new connection in the **Name** and **DeviceID** columns.
7. Click the **[...]** button in the new row to display the **Communication** dialog.
8. In the **Address** field, type the IP Address for the Ultrix you want to connect to.
9. Set the **Port** to **15000**.
10. Click **Apply** to close the **Communication** dialog.
11. In the **Control** column for the row, select **enabled**.
12. Click **Apply** at the bottom of the **Connections** tab.

    The Ultrix resources are now available for database creation.

Create a Database for the Ultricore BCS

Tieline definition starts with the database. Tielines may only be configured to work with outputs of a router that are not defined as regular destinations. To enable a physical output to be used as a tieline, any reference to that physical port must be removed from the Destination table of the database. This deletion of an output from the list of logical destinations serves to prevent a mis-configured system from directly controlling a tieline by directly routing to it.

✶ An output port must be either a regular destination or a tieline. It cannot be both.

To create a database to utilize the resources presented by the connected routers

1. Create a database for the Ultricore BCS as outlined in "**Using the Database Builder**".
2. Edit the database to identify tieline sources, destinations, and free sources as outlined below.

To delete a logical destination definition

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

   The **Destinations** tab opens.
3. Locate the Destination row that includes the physical port name of the output port to be used as a tieline.

✶ By default, the Ultrix routers use the nomenclature of **framename.slotnumber.out[socket].type** to reference a physical output socket.

4. Select any cell within the row.
5. Click **Edit**.

   The **Edit** dialog opens.
6. Click **Delete**.
7. Repeat this for each output that is to be used for a tieline.

✶ Any audio channels associated with the main SDI output socket reference must be removed from the destination table also.

Define a Free Source for each Router

Tieline control requires the definition of a router input as a "parked" or "free source" on each router within the tieline enabled system. This free source supplies a dedicated source for destinations that were previously fed via a tieline, but the tieline has now been freed or was re-assigned. This section outlines how to define a local parked source on a router.

✶ Each router within the tieline system requires a Free Source definition. If a Free Source is not defined, a destination will remain connected to the tieline, even after being released.

To define a free source on a router

1. Make note of a physical IN port on the Ultrix router that provides a known and valid signal.

   This would typically be a test signal, station logo or similar. Ultrix routers also have the ability to define a 'disconnected' source. This signal is used when the tieline is "parked" or not in use.
2. Navigate the database source definition page and edit (or create if not already defined) the source name as outlined in the ***Ultrix User Guide***.
3. Assign a name to this new source following the convention of **`FreeSource-<RouterName>`** where **`<RouterName>`** is the name of the Ultrix router. For example, if the router name is Ultrix23, then the Free Source label will be **`FreeSource-Ultrix23`**.

✶ An Ultrix router device name may be read from the Ultrix > System Settings > Setup tab.

4. Ensure to assign and add the physical router port from step 1 to this new source in the Ultrix database.

Using the Ultricore BCS Tieline Builder

Once you have defined the connection points and database for your routing system, you can define the routers and available I/O ports for use in tielines. For each tieline you must define where the tieline starts (by selecting an output from a device) and where it will end (by selecting an input from another device).

The Ultricore BCS provides two interfaces for creating and managing tielines:

- **Tieline Builder** — creates tielines based on the routers and ports available to the Ultricore BCS within the current database and routing system.
- **Tieline Runtime** — reports the sources and destinations for each defined tieline, enables the user to manage and monitor the switch requests using the define tielines.

To define a tieline on the Ultricore BCS

1. Display the Database nodes as outlined in "**To access the Database interfaces in DashBoard**".
2. Double-click the **Tieline Builder** sub-node.

   The **Tieline Builder** interface opens in the DashBoard window.
3. To define the start point for a tieline:
   a. Locate the **From Device** table in the interface.
   b. Use the **From Device** menu to specify the router that will provide the start point for the Ultricore BCS tieline. In **Figure 38**, this would be Ultrix 1.

      The **Output Ports** area updates to display a list of available output ports on the selected router.

✶ The **From Device Output** ports that display `(Used for <dst name>)` cannot be used for tieline start points.

4. From the **Output Ports** area, select the port that will be the Ultricore BCS tieline start point.

✶ The port was noted during the "**Physical Setup**".

5. To define the end point for a tieline:

a. Locate the **To Device** table in the interface.

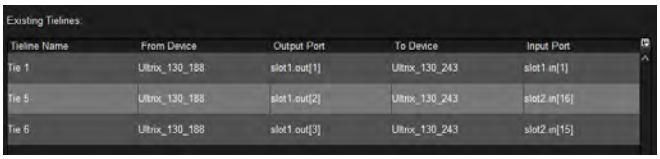
b. Use the **To Device** menu to specify the router that will be the end point for the Ultricore BCS tieline. In **Figure 38**, this would be Ultrix 2.

   The **Input Ports** area updates to display a list of available input ports on the selected router.

6. From the **Input Ports** area, select the port that will be the endpoint for the Ultricore BCS tieline. This is the physical input where the tieline cable was connected during "**Physical Setup**".

7. Click **Add Tieline**.

   The **Existing Tielines** table updates to include the new tieline.



   A created tieline automatically takes the default name `Tie x` where `x` is a numerical identifier.

✶ A tieline can be renamed. Highlight the tie line row to be renamed, and click the **Rename** button at the bottom of the **Tieline Builder** interface.

8. Repeat steps 3 to 7 for each tieline that the Ultricore BCS will manage in your routing system.

9. Click **Apply** to commit these changes to the Ultricore BCS database.

Using the Tieline Runtime

Once your tielines are defined, you will need to verify the routing system sources and destinations that the Ultricore BCS will use to determine the best path for the tieline between its start and end points.

Viewing the Tieline Details

The Tieline Runtime interface enables you to view the sources and destinations available for each existing tieline,

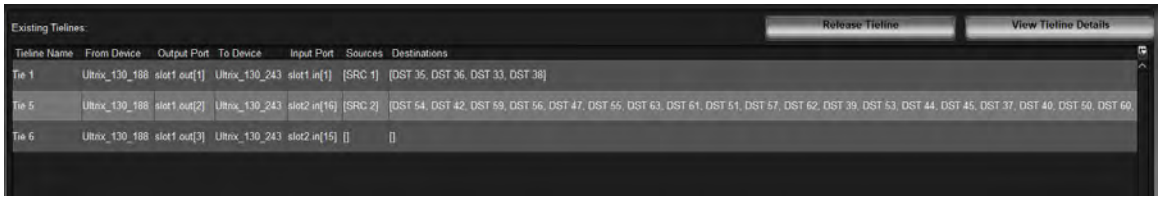
To view the tieline details

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

2. Double-click the **Tieline Runtime** sub-node.

The **Tieline Runtime** interface opens in the DashBoard window.

3. In the **Existing Tielines** table, select the row for the tieline you wish to verify.



4. Click **View Tieline Details**.

Parking a Tieline using a Free Source

When a tieline resource is no longer required, it should be parked or released. This ensures subsequent uses of the tieline do not inadvertently route a new signal to the previous tie-line destination selection.

An entire tieline route may be released (Release Tieline function) or specific destinations using that tieline may be released (Release Destination function).

To park an entire tieline

✶ This will park all destinations currently using the selected tieline.

1. Display the Database nodes as outlined in "**To access the Database interfaces in DashBoard**".
2. Double-click the **Tieline Builder** sub-node.

   The **Tieline Builder** interface opens in the DashBoard window.
3. Select the tieline to park from the **Existing Tielines** table.
4. Click **Release Tieline**.

To park a specific destination

1. Display the Database nodes as outlined in "**To access the Database interfaces in DashBoard**".
2. Double-click the **Tieline Builder** sub-node.

   The **Tieline Builder** interface opens in the DashBoard window.
3. Select the destination path from destinations using Tielines table.
4. Click **Release Destination**.

Operation with Ross Devices

The Ultricore BCS Central Controller connects to Ross NK series routers and Remote Control Panels (RCPs). Ross NK series routers and RCP devices may connect to the Ultricore BCS via an NK-IPS/NK-NET over Ethernet.

✶ It is recommended for optimum performance to minimize device connections to the NK-NET.

For More Information on...

- defining connection points between Ultricore BCS and external devices, refer to "**Device Communication Setup**".

Connection Diagram

Figure 40 provides an example of a routing system with an Ultricore BCS, an NK-IPS, and several Ross NK devices. Communication between the NK-IPS and the Ross NK devices is over T-Bus, while the Ultricore BCS communicates with the NK-IPS via Ethernet.

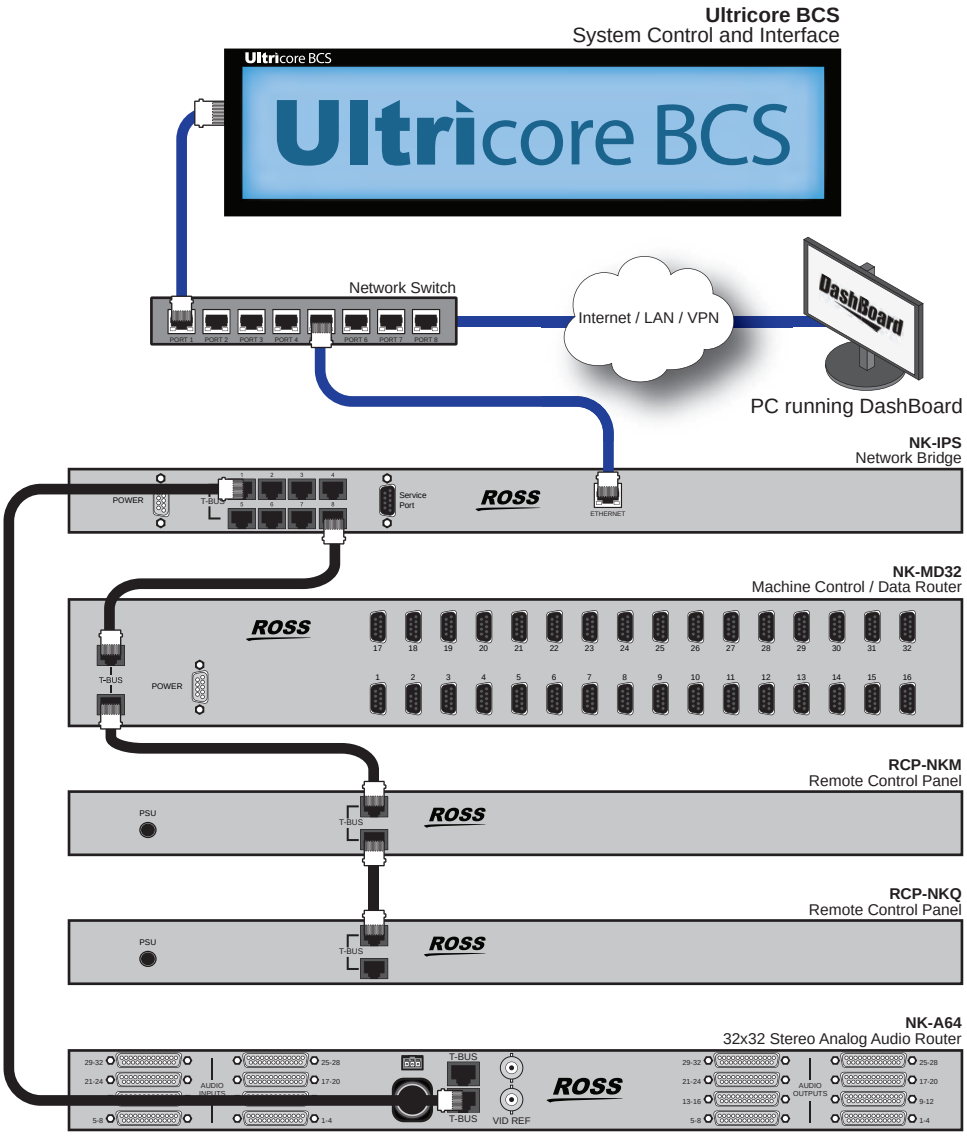


Figure 40 Connection Example with an NK-IPS

RCP-NK Series Remote Control Panels

When adding the Ultricore BCS router to an existing system with one or more RCP-NK devices, each remote control must:

- have the **Virtual routing** enabled on their **Configuration** page
- have the **Comms Retry Delay Factor** set to 80ms or greater
- ensure that the level numbers correspond to the Ultricore BCS Level ID number

Be aware that the RCP-NK devices do not:

- support Ultricore BCS salvos
- automatically get source and destination labels from the Ultricore BCS. They must be entered manually or via a global labels file.

Ross NK Series Routers

Introducing an Ultricore BCS to an existing Ross NK system requires specific configuration to enable the Ultricore BCS to manage the devices in the routing system. All Ross NK routers are automatically discovered[1] and appear in the available matrix list ready for label assignment.

Ross NK Series routers can utilize two methods of connection to the Ultricore BCS: Direct T-Bus connection and Ethernet connection via an NK-IPS or NK-NET.

Keep the following in mind:

- The NK-IPS requires version 2.23 or greater to communicate with an Ultricore BCS.
- The SCP/A is not supported.
- The SCP/K2 is not supported.
- NK-A64 control level is not supported.
- Ross NK router partitioning not supported. The logical mapping of the Ultricore BCS control system is far more capable and should be implemented there if required

Table 10 outlines the nomenclature that Ultricore BCS automatically uses for Ross NK devices.

Table 10 Default Ultricore BCS Naming for Ross NK Devices

Ross NK Device	Matrix Name	Port Name
NK-3Gxxx	deviceName.SDI	deviceName.slot1.in/out[socket number].SDI.ch1
NK-Axxx	deviceName.An Aud L	deviceName.slot1.in/out[socket number].An Aud L.ch1
	deviceName.An Aud R	deviceName.slot1.in/out[socket number].An Aud R.ch1
NK-Dxxx	deviceName.AES	deviceName.slot1.in/out[socket number].AES.ch1
NK-Mxx	deciceName.Machine Control	deviceName.slot1.in/out[socket number].Machine Control.ch1
NK-MDxxx	deviceName.SDI	deviceName.slot1.in/out[socket number].SDI.ch1
NK-Vxxx	deviceName.An Vid	deviceName.slot1.in/out[socket number].An Vid.ch1

1. Once an Ethernet connection point has been established for Ethernet connections.

Using Ross Analog Audio Devices (NK-A16, NK-A32, NK-A64)

The Ross NK Analog Audio devices (NK-A16, NK-A32, NK-A64) will present as two matrices: Left and Right respectively.

Adding Ross NK Series Routers to the Ultricore BCS

Add a Ross NK series device to the Ultricore BCS requires the following steps:

1. Define a connection point between Ultricore BCS and each NK-IPS or NK-NET. Refer to "**Connecting to Ross NK Series Devices**" for details.
2. Review the port label matrices for the Ultricore BCS database by selecting **Ultricore BCS** > **Database** > **Port Labels**.
3. Assign outputs to the logical destinations in the database as outlined in "**To associate a physical output with a destination**".
4. Assign inputs to the logical sources in the database as outlined in "**To associate a physical input with a source**".

Integrating Ross RCP-ME/RCP-QE Panels with Ultricore BCS

RCP-QE and RCP-ME Ethernet series remote control panels connect to Ultricore BCS via the facility network. The panels offer some extra features not available to RCP-NK series control panels;

- automatic source and destination labeling
- automatic level and salvo labeling
- the ability to trigger system wide salvos
- Category index source/destination selection method

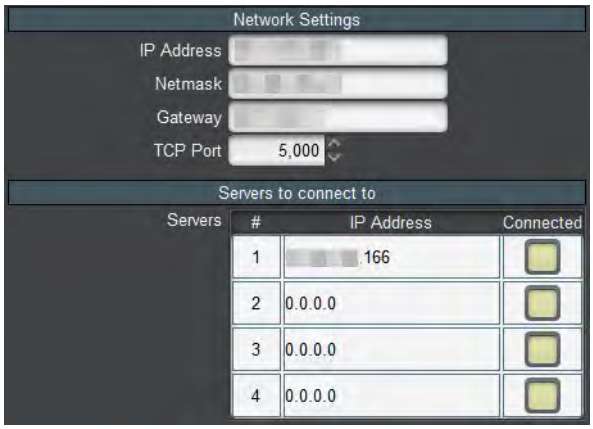
Adding a Ross RCP-ME or RCP-QE Panel to the Ultricore BCS

The **Connection Editor** interface for an RCP-ME or RCP-QE enables you to configure the connection point from the panel to Ultricore BCS. You will need DashBoard installed and running to access the Connection Editor interface.

To add an RCP-ME or RCP-QE

1. Connect the RCP to facility network and configure the network settings as outlined in the user guide for your remote control panel.
2. Open the **Connection Editor** in DashBoard for your panel as follows:
   a. In the Basic Tree View of DashBoard, expand the tree view for the remote control panel.
   b. Double-click the **Connection** icon within the device tree.

      The **Connection Editor** opens.
3. Locate the **Servers to connect to** area.



4. In a row of the provided table:
   a. Type the **IP Address** of the Ultricore BCS you want to establish a connection to.
   b. Press **Enter** to confirm the new value.

✶ Ultricore BCS may operate in a dual redundant controller mode. When operating in this mode, the IP address of the secondary Ultricore BCS is entered in the second row of the **Servers to Connect to** table. This enables the RCP to fail over to the secondary Ultricore BCS unit if the primary goes off-line.

5. Upon a successful connection and a refresh of the current DashBoard view (click the **Refresh** button), a check mark displays next to the successful connection. In the above example, an IP Address is entered for Server 1.
6. Verify in the **Connections** area that a connection is establish.
7. Configure the Remote Control Panel layout as outlined in the user guide for your panel.

Machine-Control (RS-422) Logical Mapping

Connecting an NK-M series router to Ultricore BCS requires some special consideration.

Machine control routing requires two crosspoints for a point to point connection due to the bi-directional nature of the signal. Each physical socket contains a transmit/receive pair. This can be thought of as a source-destination combination and is known as a port.

It is necessary to configure the input and output of the machine control port on the same row ID on the logical mapping tables.

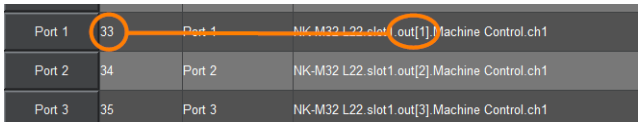


Figure 41 Destination Mapping

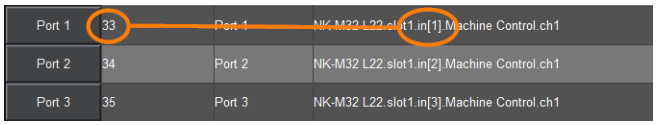


Figure 42 Source Mapping

It does not matter where the machine control is mapped (either row 3 or 300), but the input and outputs physical ports must be mapped to the same row ID.

Conditions for Machine Control

Three conditions must be met before machine control can be switched.

1. The NK machine control router is attached and configured within Ultricore BCS (level, destination. and source maps).
2. Selected breakaway or level must include the machine control level.
3. Machine control reciprocal must be enabled on the controller.

Operation with an Ultrix Router

Keep the following in mind when operating an Ultrix router within the Ultricore BCS routing system:

- The Ultrix hardware is configured on the Ultrix router in DashBoard. Device specific functions such as hardware setup, installed license keys, and Ultriscape setup remain in the DashBoard node of the Ultrix router.
- The Ultriscape (Multiviewer) licensed feature is configured on the Ultrix router in DashBoard.
- All crosspoint changes (including salvos) must originate from the master Ultricore BCS database.
- All routing commands are sent to and executed by the master Ultricore BCS. This includes any third-party communications (GVG, Probel, TSL, etc.). The Ultrix router will ignore any routing commands not originating from the master Ultricore BCS database while in this connected mode.
- If more than one Ultrix router is to be controlled from the Ultricore BCS, ensure that you assign unique device names for the Ultrix routers via the front panel. This will help to quickly identify the routers within the Ultricore BCS system. Refer to "**Connecting to an Ultrix Router**" for details.
- Each Ultrix router must be configured for remote control mode.
- All Remote Control Panels (RCP) must be configured to connect with the master Ultricore BCS.

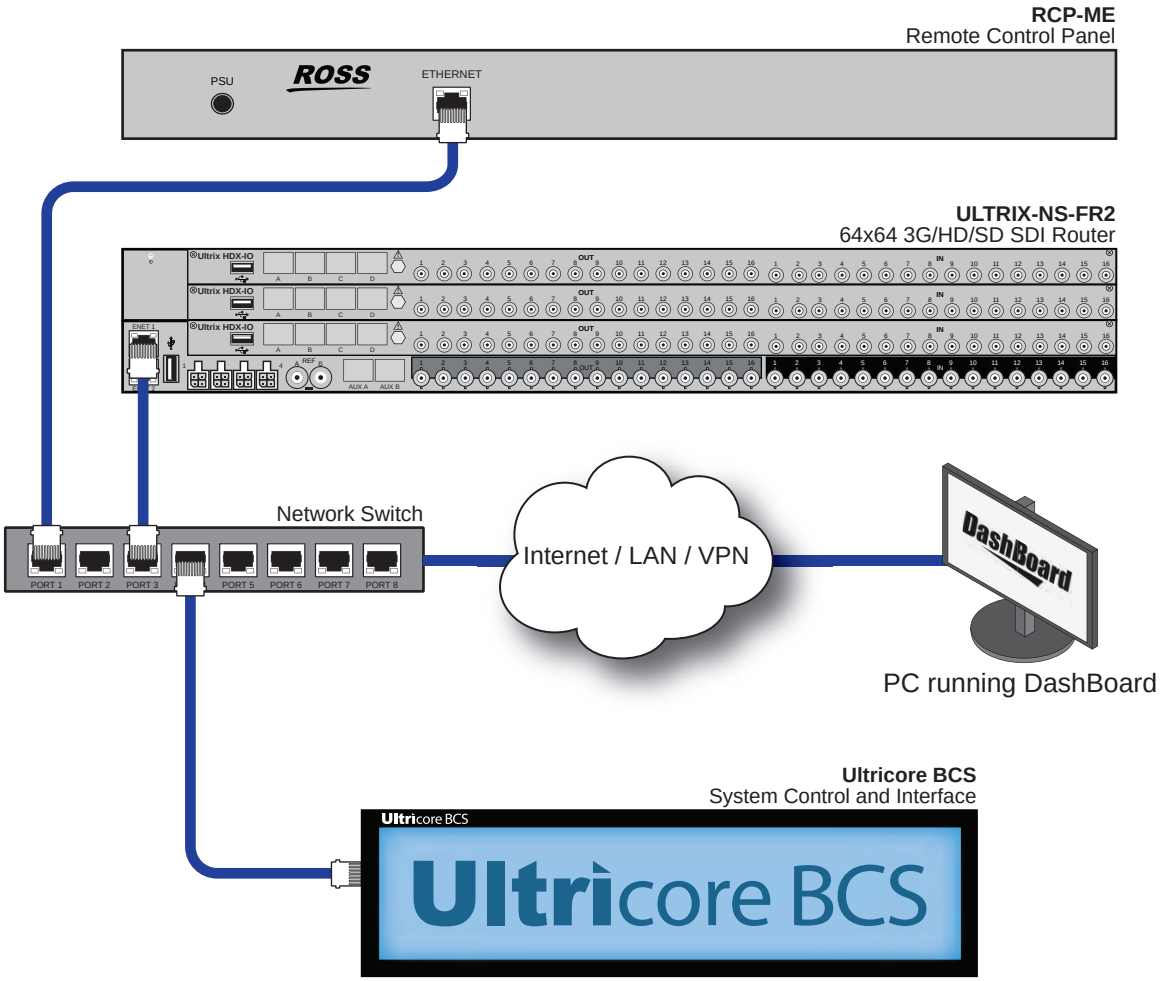


Figure 43 Example Setup Using an Ultricore BCS and an Ultrix

Setting up a Redundant System

This chapter outlines how to configure two Ultricore BCS panels into a single standby redundant system.

General Overview

The Ultricore BCS includes an option to set up a standby (backup) redundant system with two identical Ultricore BCS panels. The second panel backs up the first panel when it detects that the first panel fails. This enables reliable switching.

When configured in redundant mode, the two panels share the same IP address.

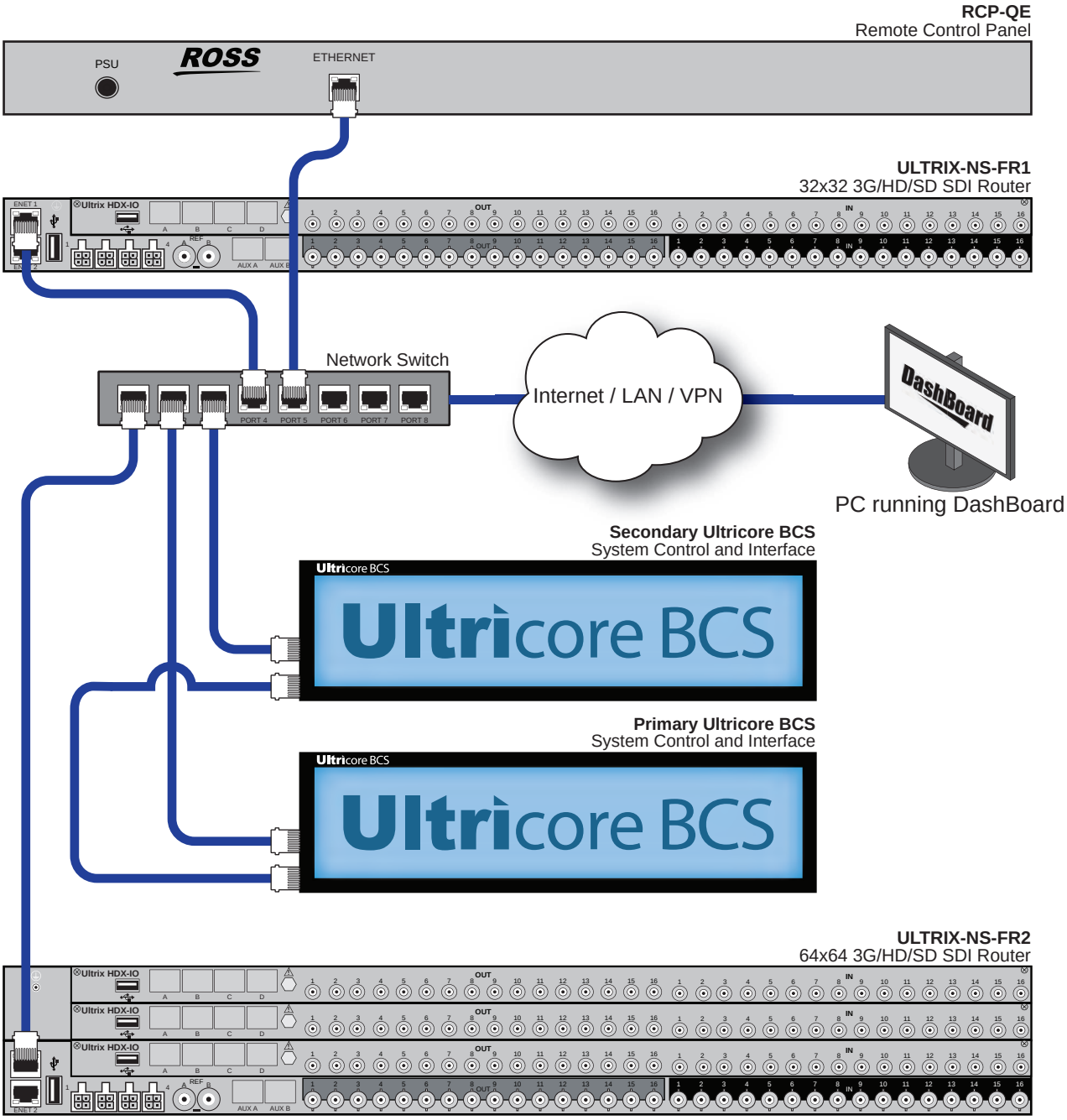


Figure 44 Example of Two Ultricore BCS Panels in a Redundant System

Before You Begin

Ensure you have the following before setting up your Ultricore BCS redundant system:

- two Ultricore BCS panels each configured with a unique IP address on the same network subnet, and both panels accessible via DashBoard
- a unique IP address is required for the units to share when in redundancy mode. This IP address must be on the same network subnet as the Ultricore BCS panels.

Cabling Requirements

The first Ultricore BCS must be physically cabled to the second Ultricore BCS via the **ENET2** ports on each unit. This section briefly outlines the required cabling method.

To connect the first Ultricore BCS to the second Ultricore BCS

1. Plug one end of an RJ45 1GbE network cable into the **ENET2** port of the first Ultricore BCS.
2. Plug the other end of the same cable to the **ENET2** port of the second Ultricore BCS.

✶ The two Ultricore BCS panels must be directly connected via their **ENET2** ports. Do not use a network switch or router between the two panels.

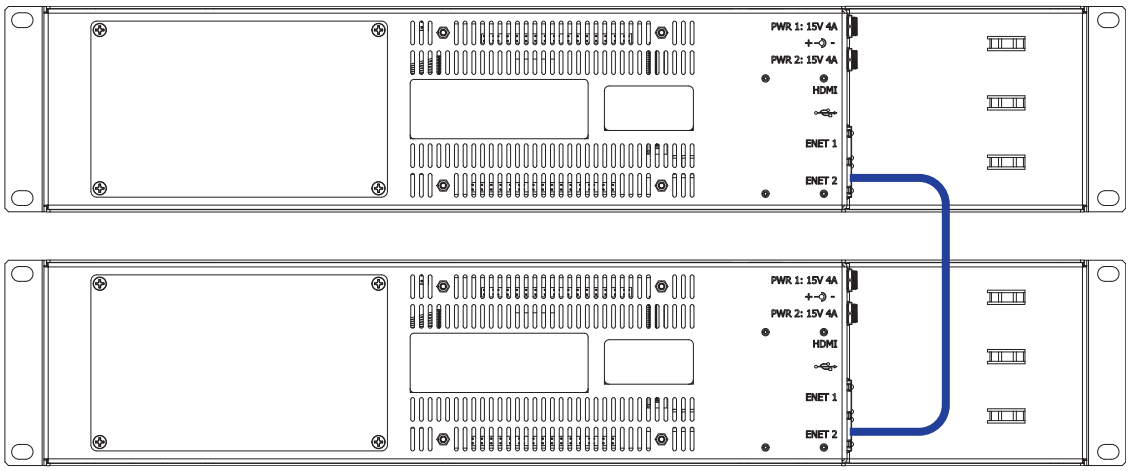


Figure 45 Cabling — Connecting Two Ultricore BCS Panels for Redundancy

Notes about Connecting

✶ Do not disconnect the tether (ethernet connection between the Ultricore BCS panels) once a redundancy connection is established. Redundancy will be lost and both will try to assume the master/primary role resulting in unpredictable behavior.

If the tether is disconnected:

1. Power down the secondary Ultricore BCS panel.
2. Reconnect the tether.
3. Wait 1 minute.
4. Power on the secondary Ultricore BCS panel.

✶ Do NOT reconnect the tether if both Ultricore BCS panels remain active.

Enabling Redundancy

When BCS Redundancy is enabled via DashBoard, the two Ultricore BCS panels will share a virtual (third) IP address. While in redundancy mode, DashBoard will connect to both panels using the shared IP address but only show one panel (the primary unit) in the Tree View of DashBoard.

There are two methods of creating a redundant system:

- Configuring a new redundancy system using two newly installed Ultricore BCS panels.
- Replacing an Ultricore BCS panel in a redundancy system already configured and running.

Both methods are outlined in this section.

Configuring a New Ultricore BCS Redundant System

Configuring a new Ultricore BCS redundant system requires you to:

1. Create a new redundant pair in DashBoard using the options in the System Status > BCS Redundancy tab.
2. Remove each Ultricore BCS node from the Tree View and power cycle each panel.
3. Add the Ultricore BCS redundant pair to the DashBoard Tree View.
4. Verify the Ultricore BCS pair connection is valid.

To create a new Ultricore BCS redundant pair

1. Locate the node for the first Ultricore BCS in the Tree View of DashBoard.
2. Expand the first Ultricore BCS node.
3. Double-click the **System Status** node.

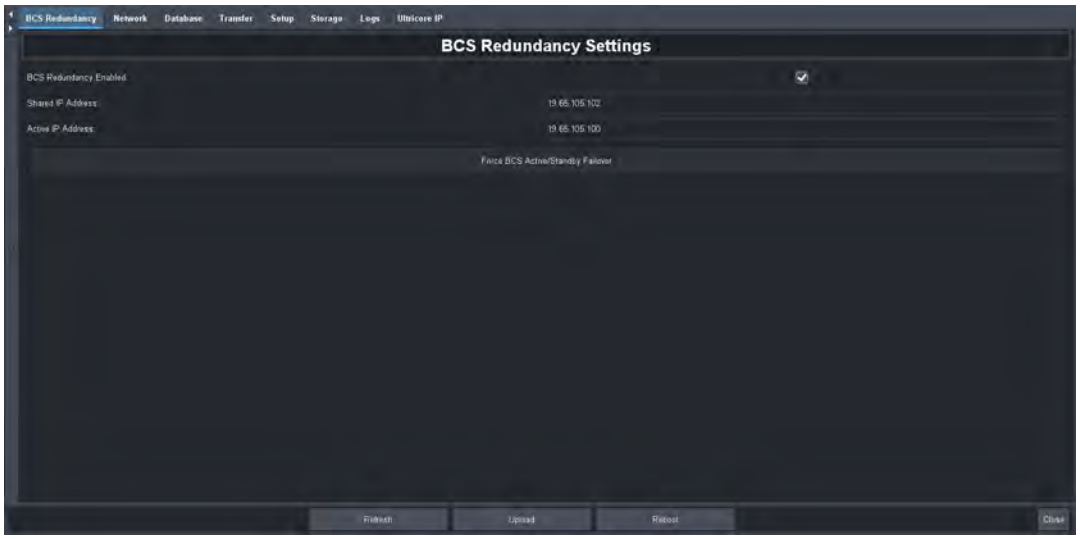
   The **System Interfaces** display in the DashBoard window.
4. Select the **BCS Redundancy** tab.
5. Select the **BCS Redundancy Enabled** box.

   The **Enable BCS Redundancy** dialog opens.
6. Use the **Create or Join Existing Pair** menu to specify **Create New Redundant Pair**.

   The options in the **Enable BCS Redundancy** dialog update.
7. Use the **Secondary BCS IP Address** field to specify the IP address of the second Ultricore BCS panel.
8. Use the **Shared IP Address** field to specify the unique IP address that the two Ultricore BCS panels will share.
9. Click **Apply**.

   The **Enable BCS Redundancy** dialog closes.

   The fields in the **BCS Redundancy tab** update with the new values.



To remove the Ultricore BCS nodes from the Tree View

1. Locate the Basic Tree View pane in the DashBoard window.
2. Remove the first Ultricore BCS node as follows:
   a. Right-click the node for the first Ultricore BCS.
   b. Select **Remove**.

      The **Confirm tree item removal** dialog opens.
   c. Click **OK**.

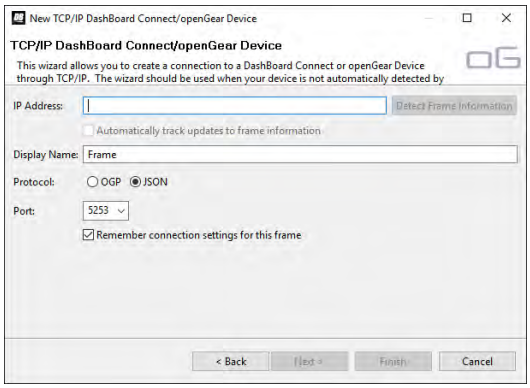
      The **Confirm tree item removal** dialog closes and the first **Ultricore BCS** node is deleted from the Tree View.
3. Repeat step 2 for the second Ultricore BCS.
4. Power cycle each Ultricore BCS panel.

To add the Ultricore BCS Redundancy System to the DashBoard Tree View

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

   The **Add New Connections** 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. Use the **IP Address** field to specify the **Shared IP Address** for the Ultricore BCS Redundancy System.

✶ The shared IP Address is the same value you entered in step 8 of the previous procedure.

6. Use the **Display Name** field to specify a unique name for the Ultricore BCS Redundancy System.
7. Set the **Protocol** to **JSON**.
8. Set the **Port** to **5354**.
9. Click **Finish**.

   The Ultricore BCS Redundancy System node displays in the **Tree View**.

To verify the Ultricore BCS Redundancy System is valid using DashBoard

1. Locate the node for the Ultricore BCS Redundancy System in the Tree View of DashBoard.
2. Expand the Ultricore BCS Redundancy System node.
3. Double-click the **System Status** node under the Ultricore BCS Redundancy System node.

   The **System Interfaces** display in the DashBoard window.
4. Select the **BCS Redundancy** tab.
5. Review the information reported in the read-only fields of the tab.

Replacing an Ultricore BCS Panel in an Existing Redundancy System

Use the procedures in this section should you need to replace an Ultricore BCS panel in a configured redundancy system.

✶ The replacement Ultricore BCS panel must be configured with its own IP Address and directly connected to the functioning panel as described in "**Before You Begin**".

To replace an Ultricore BCS in an existing redundancy system

1. Disable the Redundancy Mode on the currently active master panel as described in "**Disabling the Ultricore BCS Redundancy Mode**".
2. Create a new redundant pair as described in "**Configuring a New Ultricore BCS Redundant System**".

To verify the Ultricore BCS Redundancy System is valid

1. Locate the node for the Ultricore BCS Redundancy System in the Tree View of DashBoard.
2. Expand the Ultricore BCS Redundancy System node.
3. In the Tree View of DashBoard, double-click the **System Status** node.

   The **System Interfaces** display in the DashBoard window.
4. Select the **BCS Redundancy** tab.
5. Review the information reported in the read-only fields of the tab.

Monitoring the Ultricore BCS Redundancy System

An alarm may be set to trigger when Ultricore BCS redundancy fails.

To enable Standby BCS alarm

1. Locate the node for the Ultricore BCS Redundancy System in the Tree View of DashBoard.
2. Expand the Ultricore BCS Redundancy System node.
3. In the Tree View of DashBoard:

a. Select the **Devices** sub-node.

b. Select **Controllers/Matrices** > **UltricoreBCS**.

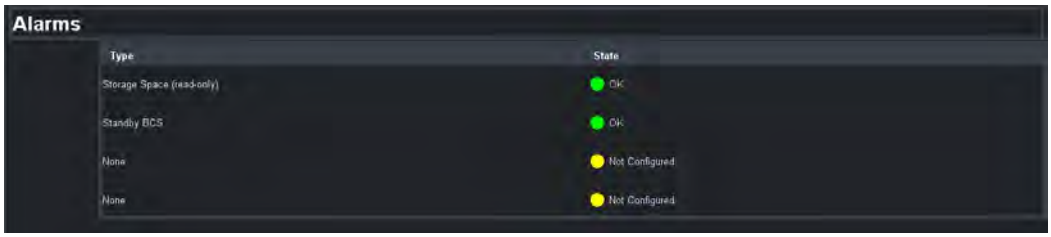
4. Click **Alarms**.

   The Alarms table displays.

5. In the **Type** column of the Alarms table, select a row marked **None**.

   A drop-down menu opens.

6. Select **Standby BCS**.



Forcing a Failover Switch

You can force a switch from one Ultricore BCS panel to the second in a redundancy system via DashBoard.

✶ Failover occurs immediately for remote control panels (RCPs) and third-party controls. All instances of DashBoard may take up to a minute for control to be restored.

To disable redundancy mode on the first Ultricore BCS panels

1. Locate the node for the Ultricore BCS Redundancy System in the Tree View of DashBoard.
2. Expand the Ultricore BCS Redundancy System node.
3. In the Tree View of DashBoard, double-click the **System Status** node.

   The **System Interfaces** display in the DashBoard window.

4. Select the **BCS Redundancy** tab.
5. Click **Force BCS Active/Standby Failover**.
6. Verify that the switch occurred by checking the values in the **Shared IP Address** and **Active IP Address** fields in the **BCS Redundancy** tab,

Disabling the Ultricore BCS Redundancy Mode

Disabling the redundancy mode between two Ultricore BCS panels requires you to:

1. Disable the redundancy mode in DashBoard.
2. Reset the IP address on each Ultricore BCS panel.
3. Manually add each Ultricore BCS panel to the Tree View in DashBoard.

To disable redundancy mode

1. Locate the node for the Ultricore BCS Redundancy System in the Tree View of DashBoard.
2. Expand the Ultricore BCS Redundancy System node.
3. In the Tree View of DashBoard, double-click the **System Status** node.

   The **System Interfaces** display in the DashBoard window.

4. Select the **BCS Redundancy** tab.
5. Clear the **BCS Redundancy Enabled** box.

To manually add the first Ultricore BCS to the Tree View in DashBoard

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

   The **Add New Connections** 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. Enter the IP Address for the first Ultricore BCS in the **IP Address** field.
6. Click **Detect Frame Information**.
7. Click **Finish**.

   The first Ultricore BCS now displays in the **Tree View**.

To manually add the second Ultricore BCS to the Tree View in DashBoard:

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

   The **Add New Connections** 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. Enter the IP Address for the second Ultricore BCS in the **IP Address** field.
6. Click **Detect Frame Information**.
7. Click **Finish**.

   The second Ultricore BCS now displays in the **Tree View**.

System Integration Examples

There are many aspects of Ultricore BCS that you can configure to suit the needs of your organization. The properties that you are able to configure depends on your user permissions. Note that the information provided is for illustration purposes only, and the requirements for your facility may differ from what is presented.

Adding Ultricore BCS to Legacy Systems

In this example, you have legacy NK routers without remote control panels but you want to add the Ultricore BCS as a system controller.

You can use Ultricore BCS and a series of NK-NETs to provide Ethernet connectivity for T-Bus based legacy systems.

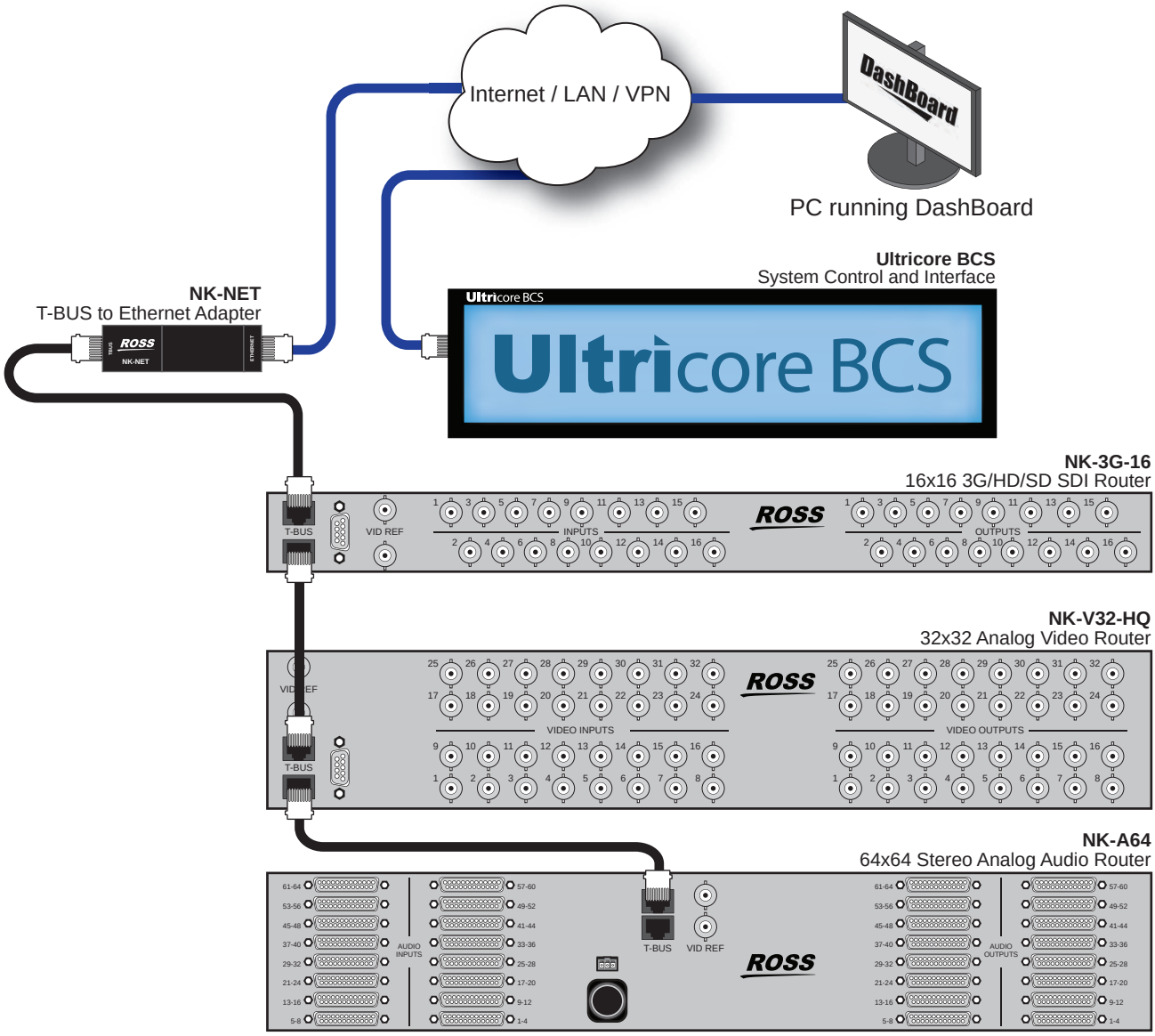


Figure 46 Adding Ethernet Communications via an Ultricore BCS

Integrating Third Party Routers with an Existing System

Ultricore BCS integrates supported third-party routers using GVG protocol translation. In this configuration, the Ultricore BCS or the Ross router is the system master.

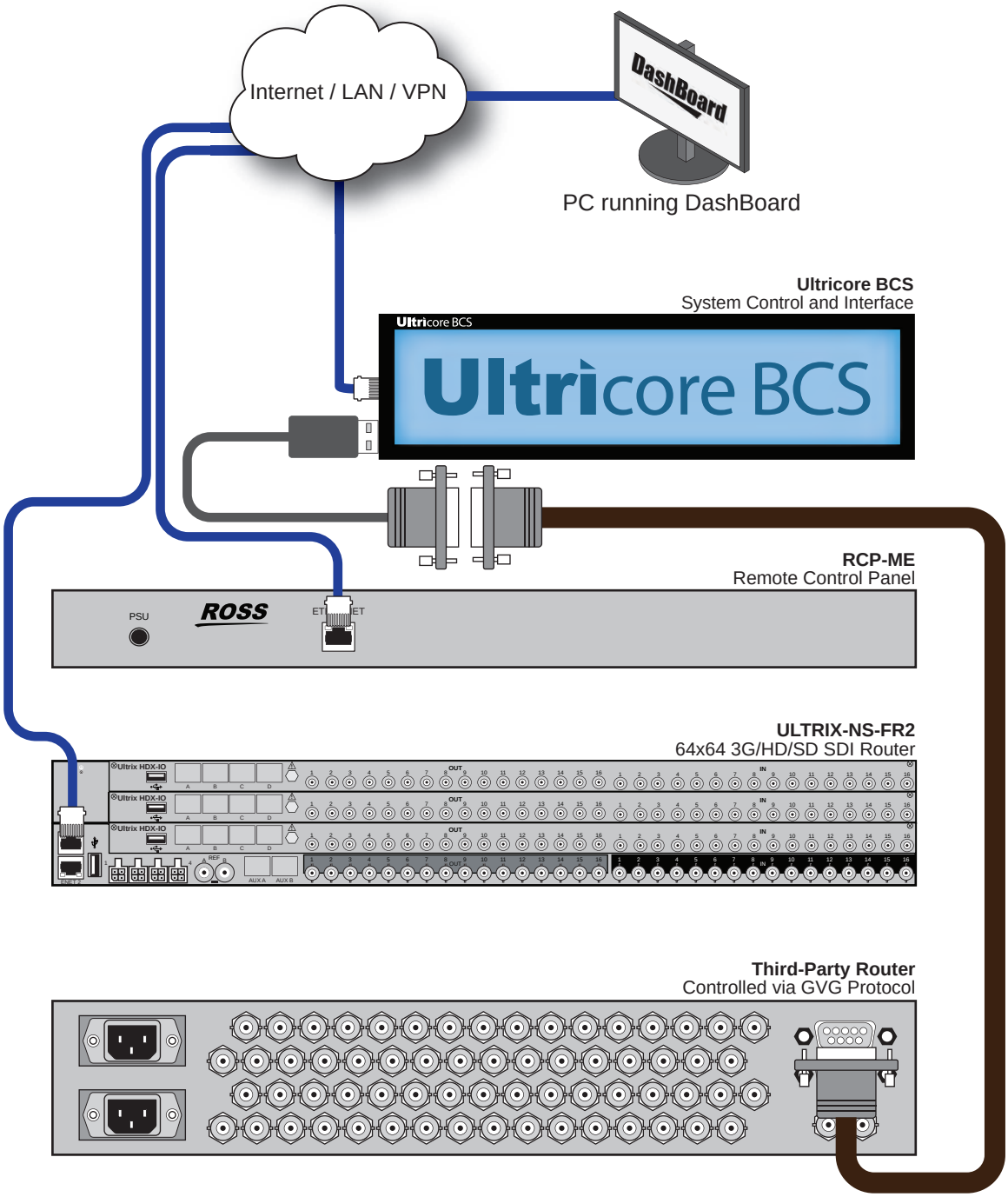


Figure 47 Integrating Third-Party Routers with an Ultricore BCS

Adding Third Party Control to Existing Systems

If you have an existing Ross routing system, you can add an external controller, such as an automation device, that is compatible with a supported third-party protocol. In this example, the Ultricore BCS acts as the system controller and provides a protocol translation for the external third-party control device.

To add the third-party controller to your router system, connect the external controller to Ultricore BCS and configure Ultricore BCS to translate between the third-party controller and the rest of your Ross routing system.

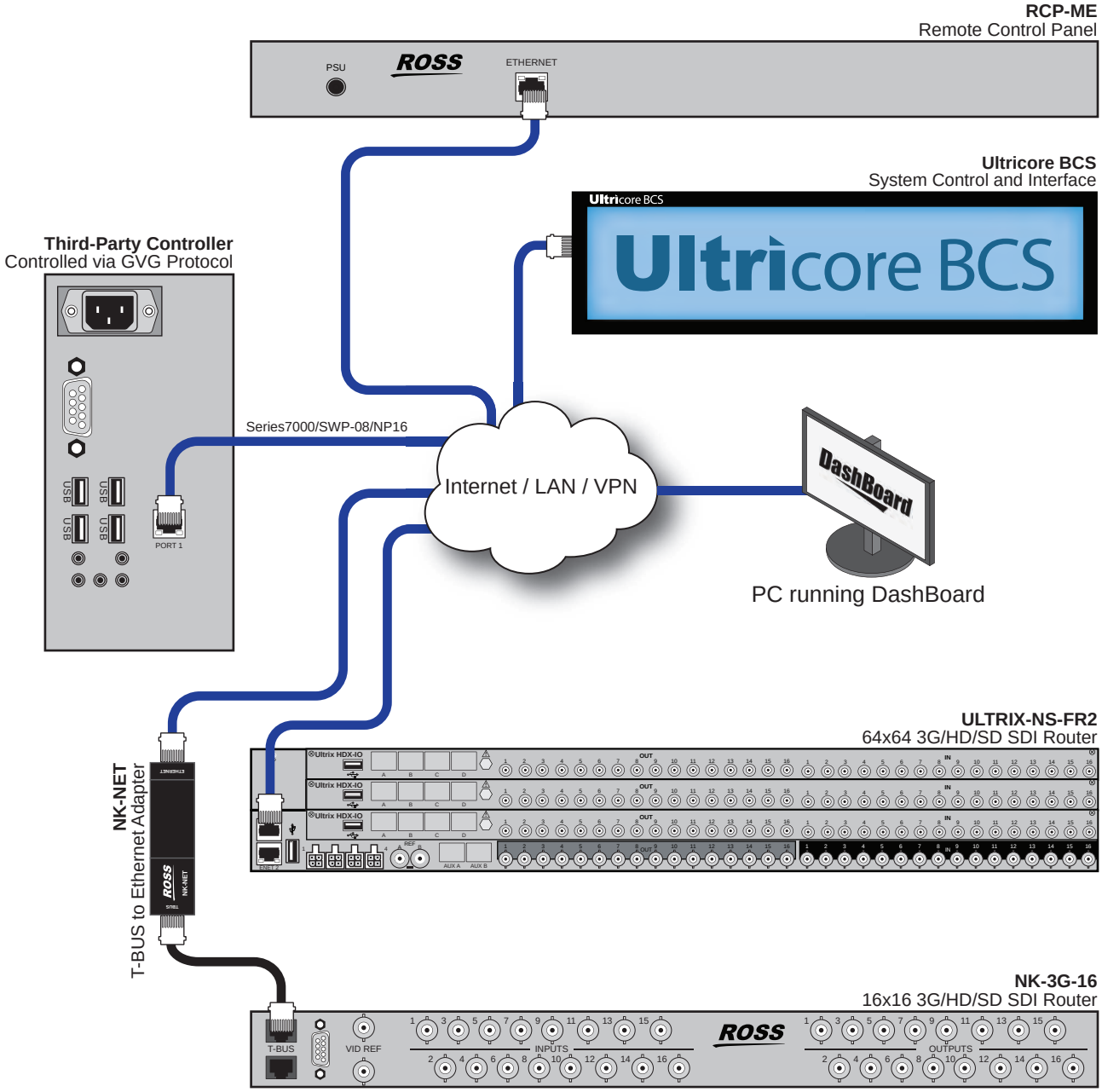


Figure 48 Adding Third-Party Control with an Ultricore BCS

External Control

This chapter lists the third-party protocol commands the Ultricore BCS supports.

Ultricore BCS Control with Third-Party Systems

Ultricore BCS may be controlled by third-party control or automation systems via the GVG Native Series 7000 or Probel SW-P-08 protocols.

The Ethernet interfaces to these protocols are automatically started with Ultricore BCS and no further configuration is necessary. However, you must configure your external control systems to match the settings outlined in **Table 3**.

For More Information on...

- defining an Ethernet connection between Ultricore BCS and an external device, refer to "**Incoming Ethernet Connections**".

Third-Party Matrix Control with Ultricore BCS

The Ultricore BCS control system is able to control third-party matrix devices. Two popular routing protocols are available to enhance compatibility: GVG Series 7000 and Probel SW-P-08.

To configure third-party matrix control

1. Create an outgoing connection point from the Ultricore BCS to the third-party matrix device.
2. Define the external matrix.
3. Mapping the external matrix inputs and outputs.
4. Define the Ultricore BCS operating level.
5. Assign external matrix to the Ultricore BCS source and destination levels.

The following sub-sections outline each step required to configure third-party matrix control.

Create an Outgoing Connection Point

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

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

- Communication protocol (GVG Native Series 7000 or Probel SW-P-08)
- Communication type (TCP/IP or serial[1])

Refer to "**Connecting to Third-Party Devices**" details.

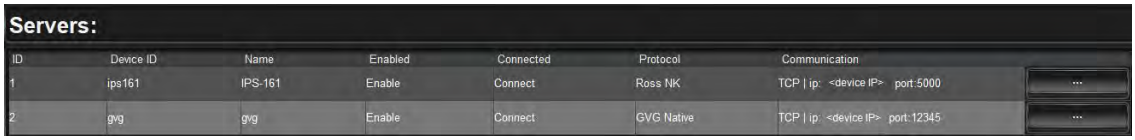


Figure 49 Example of an Outgoing Connection

1. Only available natively on the Ultricore BCS Central Controller. Serial connections from Ultrix requires an external USB-serial converter.

Defining the External Matrix

The system does not automatically know the details of any connected third-party matrix. The user must manually define the size and operating level within the Ultricore BCS database.

For example, **Figure 50** defines a 16x16 router connected via the out-going connection DeviceID called 'gvg'. The router is configured to respond to commands on level 5 (protocol level 5, not Ultricore level 5).

ID	Name	First Output	Last Output	First Input	Last Input	Level	Type	Device ID
1	gvg router	1	16	1	16	5	sdi	gvg

Figure 50 Example of a Third-party Matrix

Creating a Logical Matrix for an External Device

Once you establish a valid connection point between the Ultricore BCS router and an external device, you can create logical matrices in an Ultricore BCS database using the device inputs and outputs. Creating a logical matrix from the external device enables Ultricore BCS to include the inputs and outputs for selection in the Sources and Destination tabs of the Ultricore BCS database.

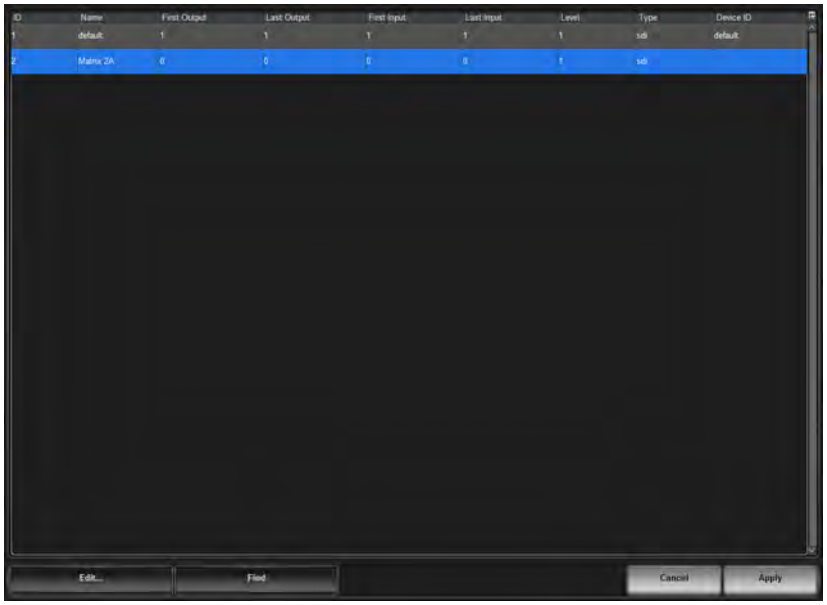
✶ The input/output range and level you specify in the Ultricore BCS database must match the settings within the external matrix.

To create a logical matrix from an external device

1. Expand the **Database** node.
2. Double-click the **Third Party Matrices** node located under the **Database** node.

   The **Third Party Matrices** tab opens.
3. Click **Edit** > **Insert** to display the **Insert Matrix** dialog.
4. In the **Name** field, type a unique identifier for the third-party matrix. This name is used to identify the matrix within the Ultricore BCS database.
5. Click **Apply** to close the **Insert Matrix** dialog and add a blank row to the **Third Party Matrices** table.

   In the example below, a new matrix named "**`Matrix 2A`**" was added.



6. From the **Device ID** drop-down menu, select the device you want to define the logical matrix for. This is the name given to the device when you established a connection point with it on the Connections tab.

✶ The **Device ID** menu lists only the third-party devices that have a valid connection point with the Ultricore BCS router.

7. Define the matrix size as follows:
   a. Use the **First Output** and **Last Output** fields to define the range of destinations from the device within the Ultricore BCS database.
   b. Use the **First Input** and **Last Input** fields to define the range of sources from the device within the Ultricore BCS database.

✶ These created inputs and outputs will use the nomenclature **DeviceID.Slot.Port.Type.Channel** where **DeviceID** represents the Name assigned to the external device on the Connections tab.

8. Use the **Level** field to specify the number of levels for the device within the Ultricore BCS database.
9. Use the **Type** field to specify the signal type for the matrix.
10. Click **Apply** to save the new matrix to the database and add it to the list of available matrices in the **Port Labels** tab.

Mapping the External Matrix Inputs and Outputs

Once the connection point and matrix are defined in the Ultricore BCS database, you can map the external matrix inputs and outputs in the same manner as we do with Ross device matrices. However, you will instead select an external matrix output from the **Outputs** list (or an external matrix input from the **Inputs** list) in the database interfaces. The available inputs and outputs will display in the format of **DeviceID.slot#.in[x].Type.ch#** or **DeviceID.slot#.out[x].Type.ch#**.

✶ It may be necessary to create a new level in the Ultricore BCS database for the assignment of inputs and outputs to logical labels. Refer to "**Defining the Levels in a Database**" for details.

For More Information on...

- assigning destinations, refer to "**Defining the Destinations in a Database**".
- assigning sources, refer to "**Defining the Sources in a Database**".

Using Index Numbers

Some protocols refer to source and destinations with a numerical index number. This number is listed in the ID column of the **Source** and **Destination** tabs of the Ultricore BCS database.

For example, the GVG protocol reference to destination '00h' correlates to Ultricore BCS destination ID 1 in the case shown below for the Dest 1 entry in the table.

Figure 51 Example of ID Numbers Listed in a Destinations Tab

GVG Series 7000 Native Protocol Commands

Ultricore BCS supports the GVG Series 7000 Native protocol and is available over an RS-422 or RS-232 serial connection, as well as Ethernet connection.

Table 11 Default GVG Native Connection Types

	Setting
Serial	
Connection Type	RS422 or RS232
Baud	38400
Data Bits	8
Parity	None
Stop Bits	1
Ethernet	
Port	12345[a]

a. Port 12345 is the default value but is user configurable.

Table 12 summarizes the settings in the **Protocol Options** dialog for the GVG Series 7000 Native protocol.

Table 12 Protocol Options — GVG Series 7000 Native

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

Table 13 lists the GVG Native Protocol commands the Ultricore BCS supports.

Table 13 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 (eg. 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	

Table 13 GVG Native Protocol Commands

Message Command	Description	Notes
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	
QN,D	Query destination names/labels	
QN,L	Query level names/labels	
QN,IS	Query names via source index[a]	
QN,ID	Query names via destination index[a]	
QN,V	Query salvo name	
QT	Query date and time	
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
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	
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.

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 Ultricore BCS

1. Create a network connection to the Ultricore BCS router on **Port 7788**.
2. At the prompt, enter the commands you wish to send. Refer to **Table 14** for a list of supported commands.

Table 14 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 Ultricore BCS 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	
TXTLABEL ID:<id>; TEXT:<text>; BGCLR:<bgcolor>; TXTCLR:<textcolor>	Where: • <id> is a unique "rosstalk id" associated with an Ultriscape 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 (eg 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 (eg 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:00,00,00; TXTCLR:FF,FF,FF 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:1-16)	Range start value must be less than the end value Single levels and ranges can be mixed in the list (eg. L:1,3,4-8,12-17) 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 1,3,5 and 12-16 • XPT I:7 D:2 S:1 L:1,3,5,12-16

Probel SW-P-08 Protocol Commands

Ultricore BCS supports the Probel SW-P-08 protocol and is available over an RS-422 or RS-232 serial connection, as well as ethernet connection. **Table 15** provides the default values for this protocol.

Table 15 Default Probel SW-P-08 Connection Types

	Setting
Serial	
Connection Type	RS422 or RS232
Baud	38400
Data Bits	8
Parity	None
Stop Bits	1
Ethernet	
Port	8910[a]

a. Port 8910 is the default value but is user configurable.

✶ When Ultricore BCS is the controller, Probel SW-P-08 System 1 is implemented. When Ultricore BCS is not the controller, Probel SW-P-08 System 3 is implemented (where equipment functions exist).

Table 16 summarizes the settings in the **Protocol Options** dialog for the Probel SW-P-08 protocol.

Table 16 Protocol Options — Probel SW-P-08 protocol

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.
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.

Table 17 lists the Probel SW-P-08 Serial Protocol commands the Ultricore BCS supports.

Table 17 Probel SW-P-08 Native Protocol Commands

Request Message		Response Message		
Cmd ID	Description	Cmd ID	Description	Notes
01	Crosspoint Interrogate	03	Crosspoint Tally	Get single crosspoint status
02	Crosspoint Connect	04	Crosspoint connected	Take single crosspoint

Table 17 Probel SW-P-08 Native Protocol Commands

Cmd ID	Request Message Description	Cmd ID	Response Message Description	Notes
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.)
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.)

Table 17 Probel SW-P-08 Native Protocol Commands

Cmd ID	Request Message Description	Cmd ID	Response Message Description	Notes
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

Communication Options in DashBoard

When setting the protocol to SWP-08 protocol in DashBoard, the following menu options are available: **Protocol Variant** and **Use Matrix Instead**.

Figure 52 Communication Dialog — SWP-08 Options

Protocol Variant

This menu option selects standard messaging or extended messaging. Extended messaging allows for matrix sizes greater than 1024. Choose from the following:

- **Use Last Req**. — Ultricore BCS will respond in the same message format (either standard or extended) as the request format
- **Non Extended** — Ultricore BCS will respond using the standard message format.
- **Extended** — Ultricore BCS will respond using the extended message format.

Use Matrix Instead

This menu option allows external devices to refer to Ultricore BCS database levels as a matrix number rather than a level number. Ultricore BCS will map the database levels 1 to 1 in the matrix numbering scheme of the protocol.

NVISION Commands

Ultricore BCS supports the NVISION NP16 Ethernet protocol.

✶ Ensure that the Ultrix router has the Ultricore-NVISION license installed. Refer to the ***Ultrix User Guide*** for details.

Table 16 summarizes the settings in the **Protocol Options** dialog for the NVISION protocol.

Table 18 Protocol Options — NVISION protocol

Option	Setting	Notes
Offset	0	The Ultricore BCS level matches the NVISION level
	1	The Ultricore BCS level is the NVISION level plus 1

NVISION NP16 Ethernet Protocol

Ultricore BCS supports the NVISION NP16 Ethernet protocol. **Table 19** outlines the default values for the Ultricore BCS when using NP16.

Table 19 Default Connection Types — NVISION NP16

	Setting
TCP Port	5194

NP16 Commands

The NP16 protocol defines the message format: Protocol ID | Sequence Number | byte count | Command

Each field consists of a 32bit number where:

- Protocol ID — 0x0000000C (Router Control Protocol)
- Sequence number — controller generated and added to Ultricore BCS response message
- byte count — total number of bytes in message including header (<8176)
- Command — refer to **Table 20**

✶ The protocol is zero based, meaning that destination 0 in the protocol relates to destination ID#1 in Ultrix. This is true for sources, destinations, and level values.

Refer to **Table 20** for a list of supported NP16 commands.

Table 20 NP16 Protocol Commands

Message		Notes
Command	**Description**	
0x0000 0050	Performs a TAKE	
0x0000 0051	Set Output LPR	Sets or releases a lock or protect on a destination
0x0000 0052	Get Status of Outputs	Retrieves the crosspoint status
0x0000 0059	Router Partition Information	
0x0000 005E	Crosspoint Tally	Retrieves the crosspoint status
0x0000 0070	Machine Control Take	Format 1 only

NVISION NP0010 Serial Protocol

Ultricore BCS supports a limited sub-set of the NVISION serial NP0010 protocol.

Table 21 outlines the default values for the Ultricore BCS for an NP0010 serial connection.

Table 21 Default Connection Types — NVISION NP0010

	Setting
Connection Type	RS232, RS422
Baud	9600, 19200, 38400, 56700, 115200
Data Bits	8
Parity	No
Stop Bits	1

Refer to **Table 22** for a list of supported NP0010 commands.

Table 22 NP0010 Protocol Commands

Message		Notes
Command	**Description**	
0x50	Take	Non-timestamped version only
0x51	Destination status	Get destination status
0x55	Lock destination	Assert a destination lock
0x56	Protect destination	Assert a destination protect
0x58	Release destination lock/protect	Releases the destination lock and protect
0x66	Destination LPR state	Get destination locked/protect/released status

TSL UMD Protocol v3.1 Commands

Table 23 outlines the default values for the Ultricore BCS when using TSL UMD v3.1.

Table 23 Default Connection Types — TSL UMD v3.1

	Setting
Serial	
Connection Type	RS422
Baud	38400
Data Bits	8
Parity	Even
Stop Bits	1
Ethernet	
TCP Port	5727
UDP Port	4490

Protocol Implementation

Ultricore BCS implements the protocol with the following structure: DisplayID | Control | DisplayData.

Table 24 lists the TSL UMD Protocol v3.1 commands the Ultricore BCS supports.

Table 24 TSL UMD Protocol v3.1 Commands

Protocol Breakdown	Description	Ultriscape System Use
Display Address	0 - 126 display identification enumeration	DisplayID associated with source or destination
Control Byte		
Bit 0	Tally 1 status (1=on, 0=off)	Tally 1 (Red)[a]
Bit 1	Tally 2 status	Tally 2 (Green)
Bit 2	Tally 3 status	Not used
Bit 3	Tally 4 status	Not used
Bits 4-5	Brightness value	Not used
Bit 6	Reserved	Not used
Bit 7	0	Not used
Display Data	16 ASCII display characters (20h-3Eh)	UMD Display Text

a. Green/Red may be swapped by configuring the Global Tally Settings in the Ultriscape Head interface for an Ultrix router. Refer to the ***Ultrix User Guide*** for details on these settings.

TSL UMD Protocol v4.0 Commands

Table 25 outlines the default values for the Ultricore BCS when using TSL UMD v4.0.

Table 25 Default Connection Types — TSL UMD v4.0

	Setting
Serial	
Connection Type	RS422
Baud	38400
Data Bits	8
Parity	Even
Stop Bits	1
Ethernet	
TCP Port	5728
UDP Port	4491

Protocol Implementation

Ultricore BCS implements the protocol with the following structure: Header | Control | DisplayData | VBC | XData.

Table 26 lists the TSL UMD Protocol v4.0 commands the Ultricore BCS supports.

Table 26 TSL UMD Protocol v4.0 Commands

Protocol Breakdown	Description	Ultriscape System Use
Header	0x80 + 0 - 126 display address	DisplayID associated with source or destination

Table 26 TSL UMD Protocol v4.0 Commands

Protocol Breakdown	Description	Ultriscape System Use
Control Byte		
Bit 0	Tally 1 status (1=on, 0=off)	Not used
Bit 1	Tally 2 status	Not used
Bit 2	Tally 3 status	Not used
Bit 3	Tally 4 status	Not used
Bit 4-5	Brightness value	Not used
Bit 6	0=display data, 1=command data	Display data only (0)
Bit 7	0	Not used
Display Data	16 ASCII display characters (20h - 7Eh)	UMD display text
VBC		
Bits 3-0	Byte count of XData	
Bits 6-4	Minor protocol version (v4.0=0)	
Bit 7	0	
XData1		
Bits 0-1	Right Hand tally value[a]	Not implemented
Bits 2-3	Text display value[a]	Sets PiP label (UMD) text background color
Bits 4-5	Left hand tally value[a]	Displayed in either border or text background; can be either or both
Bit 6	Reserved	
Bit 7	0	
XData2		
Bits 0-1	Right Hand tally value	Not implemented
Bits 2-3	Text display value	Not implemented
Bits 4-5	Left hand tally value	Not implemented

a. Where 0=off, 1=Red, 2=Green, 3=Amber

TSL UMD Protocol v5.0 Commands

Table 27 outlines the default values for the Ultricore BCS when using TSL UMD v5.0.

Table 27 Default Connection Types — TSL UMD v5.0

	Setting
Serial	
Connection Type	RS422
Baud	38400
Data Bits	8
Parity	Even
Stop Bits	1
Ethernet	
TCP Port	5729
UDP Port	4492

Protocol Implementation

Ultricore BCS implements the protocol with the following structure: PBC | Ver. | Flags | Screen | DMSG (Index, Control, Length, Text).

Table 28 summarizes the settings in the **Protocol Options** dialog for the TSL UMD v5.0 protocol.

Table 28 Protocol Options — TSL UMD v5.0 protocol

Option	Setting	Notes
Wrapping	Yes	Wrap commands for TCP mode
	No	Do not wrap commands (UPD mode). This is the default.
PBC in Count Value	Yes	Include the Packet Byte Count field when calculating the byte count value
	No	Do not include the Packet Byte Count field in the byte count value. This is the default.

Table 29 lists the TSL UMD Protocol v5.0 commands the Ultricore BCS supports.

Table 29 TSL UMD Protocol v5.0 Commands

Protocol Breakdown		Description	Ultriscape System Use
PBC		Total byte count of packet	
Ver.		Minor version number (0=v5.00)	
Flags			
Bit 0		0=ASCII strings, 1=UTF-16LE	
Bit 1		0=display data, 1=screen control	Display data only (0)
Bits 2-7		Reserved (0)	Not used
Screen		16bit Screen ID	ScreenID associated with source or destination
DMSG			
Index		16bit Display Address	DisplayID associated with source or destination
Control		Minor protocol version (v5.0=0)	
	Bits 0-1	Right hand tally value[a]	Sets right-hand tally indicator color (Ultriscape configuration dependent)
	Bits 2-3	Text display value[a]	Sets text background and border color
	Bits 4-5	Left hand tally value[a]	Sets left-hand tally indicator color
	Bits 6-7	Brightness value (0-3)	Not implemented
	Bits 8-14	Reserved (0)	
	Bit 15	0=display data, 1=command data	Display data only (0)
Length		Byte count of text	
Text		Text as defined by Flag 0 setting	UMD display text

a. Where 0=Off, 1=Red, 2=Green, 3=Amber

Communication Options in DashBoard

When setting the protocol to TSL UMD v5.0 protocol in DashBoard, there is the option of enabling a wrapping where:

- Packet start is delimited by the sequence DLE/STX.
- Any occurrence of the DLE character in the packet is byte stuffed to DLE/DLE.
- DLE is defined as 0xFE
- STX is defined as 0x02

Figure 53 Communication Dialog — TSL UMD v5.0 Options

Enabling SNMP Support

Ultricore BCSs running software version 3v4 or higher provide optional support for remote monitoring and control of your router using SNMP (Simple Network Management Protocol). This protocol is compatible with many third-party monitoring and control tools.

✶ The MIB file provides SNMP traps for the configurable alarms on Ultricore BCS as well as on the power supplies and fans.

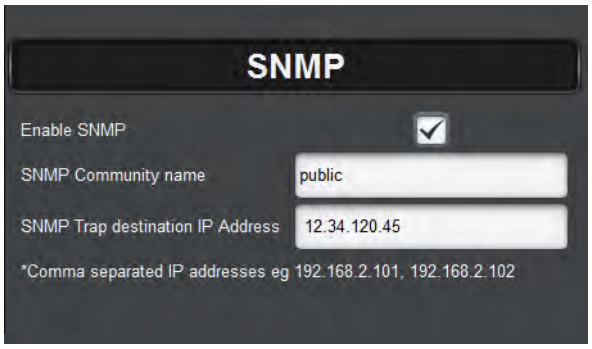
Enabling SNMP Support

The SNMP monitoring and control feature for your Ultricore BCS is a software option that you enable in the System Status > Network tab.

To enable SNMP support on the Ultricore BCS

1. Verify that the SNMP license key is installed for the router. Refer to "**Installing a License Key**" for details.
2. In the Tree View of DashBoard, double-click the **System Status** node under the Ultricore BCS node.

   The **System Interfaces** display in the DashBoard window.
3. Select the **Network** tab.
4. Locate the **SNMP** area of the tab.



5. Select the **Enable SNMP** box.
6. Ensure that the Alarms you want to monitor via SNMP are also enabled on the Ultricore BCS router.
   - "**Monitoring the Hardware**"
   - "**Monitoring the Communications**"
   - "**Monitoring the Signals**"

Configuring the SNMP Agent using DashBoard

The SNMP Agent on the Ultricore BCS uses SNMP version 2 to allow queries of the configured system alarms, and state changes to configured alarms will be sent out as SNMP traps to the specified Trap Destination IP Address(es).

✶ Whenever the options in the SNMP area are edited, the SNMP Agent is restarted. It can take up to 10 seconds for all monitored states to be updated. This latency only applies once on startup.

To configure the SNMP Agent using DashBoard

1. In the Tree View of DashBoard, double-click the **System Status** node under the Ultricore BCS node.

   The **System Interfaces** display in the DashBoard window.
2. Select the **Network** tab.
3. Locate the **SNMP** area of the tab.
4. Use the **SNMP Community Name** field to specify the SNMP password for GET requests. For example, `public`.
5. Use the **SNMP Trap Destination IP Address** field to specify the target address to which traps should be sent.

   An example of a valid target is provided in the **SNMP** area.

✶ A maximum number of six strings are displayed in the **SNMP Trap Destination IP Address** field at one time. If at the maximum number, you must select a string from the field and delete it before adding a new target entry.

6. Press **[Enter]** to apply the changes.

Ember+ Registration and Discovery

This section provides information on the setup and operation for the Ultricore BCS to communicate with a third-party control system via the Ember+ media distribution protocol.

Establishing a Connection

To establish a connection between the Ember+ client and the Ultricore BCS

1. Configure your network streams.
2. Configure your router database.
3. Install the Ultricore-EMBER+ license on the Ultricore BCS. This enables the Ultricore BCS to start an Ember+ server and listen to incoming connections.
4. Add the Ultricore BCS in the Ember+ control system interface using the IP Address assigned to the Ultricore BCS.
5. In the Ember+ controls system, set the TCP port to 9000 for the Ultricore BCS.

Specifying the Operation Mode

Ultricore BCS can be controlled via Ember+ in two modes: Virtual Mode (table mapped IO) or Physical Mode (direct socket control).

To specify the Ember+ operation mode on the Ultricore BCS

1. Display the **Connections** tab for Ultrix as follows:
   a. Expand the **Database** node in the Tree View.
   b. Double-click the **Connections** node.
2. Click **Options** in the **Protocol Servers** area.

   The **Server Options** dialog opens.
3. Use the **Ember Plus** menu to specify the operation mode required by your Ember+ control system. Choose from the following:
   - **Virtual Mode** — each level is represented by a Matrix and the Labels will be the one defined in the Destinations and Sources tabs.
   - **Physical Mode** — the whole router is represented as a single Matrix and the physical socket labels are used. The external control system using Ember+ commands bypasses the virtual IO mapping and directly controls the Ultrix physical socket connections. Therefore the Ultrix should not be switched by any other devices.
4. Click **Apply** to close the dialog.
5. Click **Apply** at the bottom of the **Connections** tab to apply the new setting.

Supported Commands

We support the `Get Directory` and `Connect` commands. The router is represented using the Ember+ Matrix object including Labels. This allows the Ember+ control system to see the number of levels, number of sources and destinations and their labels, the per destination status, and issue switch commands.

✶ If you make changes to the router database (such as Levels, Destinations and Sources) after establishing communications, you may need to refresh/reload/reconnect the connection.

Monitoring

The status of the Ultricore BCS may be monitored via its fields in the DashBoard client software or the LEDs located on the front panel of the chassis.

Enabling Logging for the Ultricore BCS

The Ultricore BCS records events in non-volatile memory. Each event includes a timestamp, and information about the event. The following events and conditions are recorded in the logs:

- Configuration changes that affect the routing path.
- Input state changes such as video presence, audio presence, video formats. In the case of audio inputs, the log entry also includes the associated audio cluster.
- Power-on or reboot cycles.
- Error conditions reported by DashBoard.

✶ You can also monitor the overall routing system status via

To enable the Ultricore BCS to log events

1. In the Tree View of DashBoard, double-click the **System Status** node.

   The **System Interfaces** display in the DashBoard window.
2. Select the **Setup** tab.
3. Select the **Logging** box.

Monitoring the Network Status

The Ethernet ports on the Ultricore BCS rear panel are used to connect to an Ethernet network for communications.

To verify the Ethernet redundancy status via the System Status interface

1. In the Tree View of DashBoard, double-click the **System Status** node.

   The **System Interfaces** display in the DashBoard window.
2. Select the **Network** tab.
3. Refer to **Table 33** for a summary of the possible messages displayed in the **Network** tab.

Using the System Logs in DashBoard

An entry in each log includes a timestamp, a code number, and a description. Messages are written to the log when significant changes occur in the operation of the Ultricore BCS. These could include: changes to video, reference, audio or time inputs; power-on or reboot cycles; configuration changes that can have an effect on the routing path; alarm conditions.

To access the system logs in DashBoard

1. Double-click the **System Status** node.
2. Select the **Logs** tab.
3. To view the communication log for the Ultricore BCS only, select the **System Log** option.
4. To view the log for communications between the Ultricore BCS and other devices, select the **Controller Communications Log** option.

5. To view the log for executed tasks in DashBoard for the Ultricore BCS, select the **DashBoard Communications Log** option.
6. Click **Refresh** to update the entries for the currently selected log.

Saving the Current Settings for the Ultricore BCS

You can save the Ultricore BCS settings to a configuration file that can be used by Ross Technical Support for troubleshooting. Use this procedure only under the guidance of Ross Technical Support.

To save your setup a new file

1. In the Tree View of DashBoard, right-click the node for the Ultricore BCS that you want to save the settings for.
2. Select **Save Configuration to File**.

   The **Save Configuration to File** dialog opens.
3. Navigate to the folder on your DashBoard computer in which you want to save the configuration file.

✶ The default location is Desktop\My Documents.

4. Click **Save**.

Monitoring the Devices in a Routing System

Devices with an established and valid communication point with Ultricore BCS are reported in the System Monitor interface in DashBoard and the front panel display. The Ultricore BCS enables you to check the overall health of your routing system, allowing you to notice when a steady increase of values in the Memory, Disk Space, and/or System

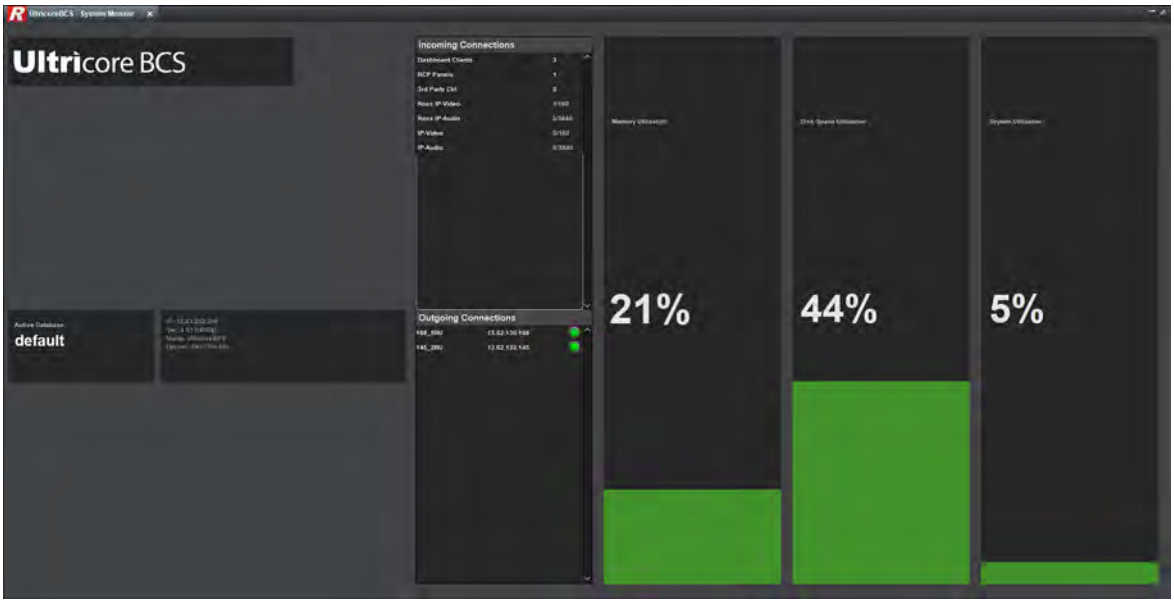
Monitoring via DashBoard

Ultricore BCS aggregates all the devices in a system under the System Monitor interface to provide system wide monitoring capabilities.

To monitor the external devices communicating with an Ultricore BCS via DashBoard

1. Double-click the **System Monitor** node located under the **Database** node.

   The **System Monitor** tab opens.
2. Locate the **Incoming Connections** and **Outgoing Connections** areas.



3. Notice that each row in the Incoming and Outgoing Connections area reports a count of the number of devices currently communicating with the Ultricore BCS in the form of x /y where x represents the number of connected devices and y represents the maximum number of connections allowed (licenses installed).
4. Use the **Memory**, **Disk Space**, and **System Utilization** fields to monitor traffic and communication between the devices in your routing system. The status bars in each field report when values are rising (yellow) to critical (red).

Monitoring via the Front Panel

The Ultricore BCS front panel reports the same information as the System Monitoring tab in DashBoard.

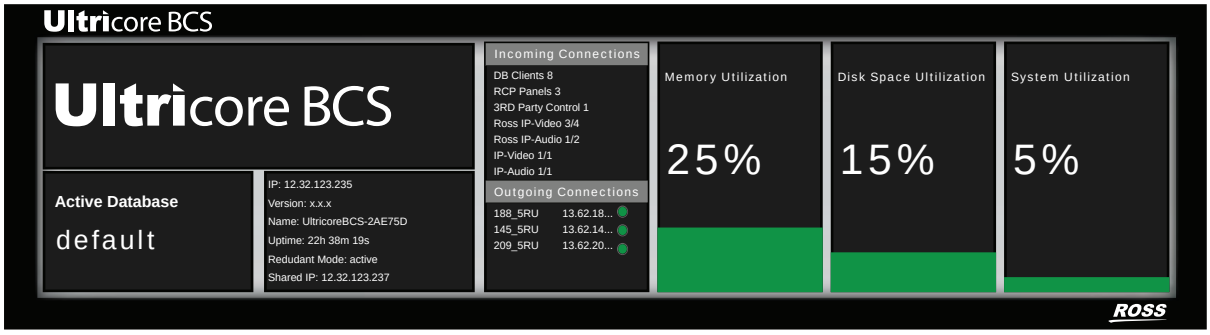


Figure 54 Ultricore BCS — Example of the Front Panel Display

For More Information on...

- the front panel display, refer to "**Front Panel Overview**".

Troubleshooting

Use the **Memory**, **Disk Space**, and **System Utilization** fields of either the hard panel or the DashBoard interface to observe the routing system for a period of time when troubleshooting. While some variation in values is expected (Memory and System), the values should return to acceptable levels after a while. If the values steadily increase or remain at peak levels for extended periods, consider the following:

- Investigate the traffic in your network.
- Remove outdated or obsolete copies of system databases.
- If the value in the Memory field is high, you may wish to minimize size of the active system database by removing extra blank entries.

✶ Contact Ross Technical Support with a copy of the system logs if you need assistance.

Monitoring the Ethernet LEDs on the Rear Panel

Each RJ45 connector on the Ultricore BCS rear panel include two LEDs that report the Ethernet communication activity and speed. Refer to **Figure 55** for LED locations on the Ultricore BCS rear panel.

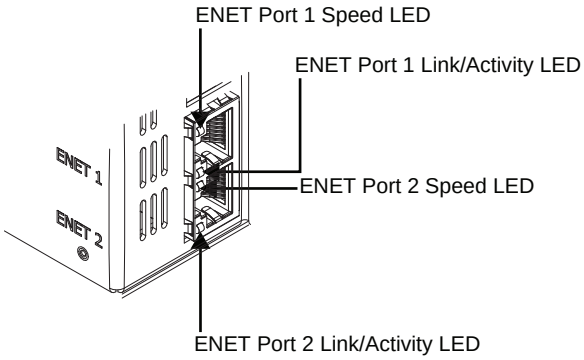


Figure 55 ENET Ports on Rear Panel — LEDs

Table 30 provides basic LED descriptions.

Table 30 ENET Port LEDs

LED	Status	Description
ENET # - Link/Activity	Green	When lit green, this LED indicates a valid link is established on the specified ENET port.
	Flashing	When flashing green, this LED indicates communication activity is occurring on the specified ENET port.
	Off	When unlit, this LED indicates an invalid link is detected on the specified ENET port. Verify the cable connection on the rear module port and your network connections.
ENET # - Port Speed	Green	When lit green, this LED indicates the ENET Port communication speed is at 1Gbps.
	Yellow	When lit orange, this LED indicates the ENET Port communication speed is at 100Mbps.
	Off	When unlit, this LED indicates the ENET Port communication speed is at 10Mbps.

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

Upgrading the Software

Ultricore BCS is upgraded through the DashBoard client. To obtain the most recent upgrade package, contact Ross Technical Support.

✶ Ensure that you are running DashBoard software version 8.0.0 or higher and that the computer running the DashBoard client is located on the same network as the Ultricore BCS panel.

To upgrade the Ultricore BCS software

1. Contact Ross Technical Support for the latest software version file.
2. Ensure the Ultricore BCS has a valid ethernet connection.
3. Launch DashBoard by double-clicking its ion on your computer desktop.
4. Locate the Ultricore BCS in the Tree View of DashBoard.
5. Expand the node for the Ultricore BCS to display a list of sub-nodes in the Tree View.
6. Double-click the **System Status** node.

   The **System Status** tabs display in the DashBoard window.
7. Click **Upload**, located near the bottom of the tab.

   The **Select File to Upload** dialog opens.
8. Navigate to the *.bin file you want to upload.
9. Click **Open**.
10. Click **Finish** to start the upgrade.
11. Monitor the upgrade.

    An **Upload Status** dialog enables you to monitor the upgrade process.

✶ Avoid clicking **Reboot** until the Ultricore BCS has successfully completed the file upload process and the **OK** button, located in the bottom right corner of the dialog, is enabled.

12. Click **OK** to reboot the Ultricore BCS.

    The **Reboot Confirm** dialog opens, indicating the Ultricore BCS will reboot.
13. Click **Yes** to continue the upgrade process.

✶ Ultricore BCS is temporarily taken off-line during the reboot process. The process is complete once the status indicators for the Ultricore BCS return to their previous status.

DashBoard Interface Overview

The DashBoard client software enables you to monitor, configure, and operate your Ultricore BCS Central Controller. Using the interfaces provided via the DashBoard client software, you can:

- Configure the network connection for your Ultricore BCS
- Configure the connections to Ross NK Series routers via NK-NET or NK-IPS devices
- Configure the connections to Ross Ethernet routers and remote control panels
- Specify which attached routing devices or matrices to use
- Configure system levels and assign level names
- Assign physical router inputs and outputs to logical sources and destinations
- Configure source and destination labels
- Perform crosspoint preset/takes
- Monitor the status of multiple levels
- Create and use salvos

Ultricore BCS in DashBoard

Ultricore BCS groups the configuration, monitoring, and operating options as buttons in a toolbar in the DashBoard window. Each button gives access to the configuration options for your system.

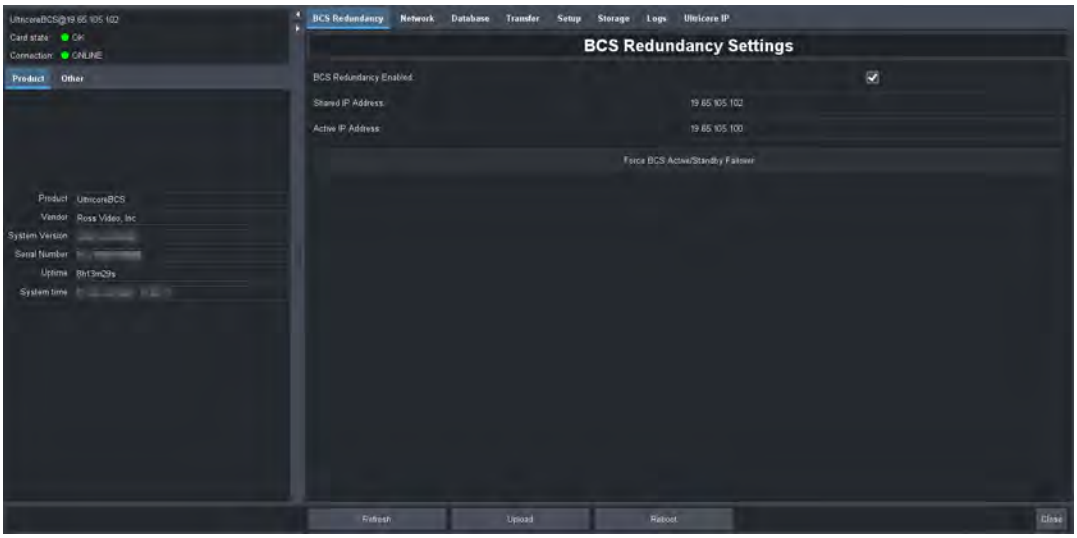


Figure 56 Example of the Ultricore BCS Interface in a DashBoard Window

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

System Status

Double-clicking the System Status node displays two types of tabs within the same DashBoard window: Status (read-only) tabs located on the left, and a series of Configuration tabs located on the right. This interface is similar to an openGear® card tab system.

Database

Expanding the Database node enables you to configure the connection points, matrices, destinations, sources, groups, levels, soft panels, and salvos for the system. The settings are saved locally on the Ultricore BCS.

Devices

The sub-nodes under Devices provide a list of external devices in the routing system currently communicating with the Ultricore BCS.

Soft Panels

The Soft Panels tree provides access to the Matrix, MultiBus, and Category soft panels for the Ultricore BCS. From these panels you can perform crosspoint switches, and manage salvos via a DashBoard interface.

Terminology

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/device housing the matrix/matrices.
- **Slot** identifies which slot of the matrix is located.
- **Port** identifies the physical input or output socket.
- **Type** identifies the generic signal type (e.g. SDI, audio).
- **Channel** identifies the audio channel within a stream.

These designators may be assigned more user friendly names if required by editing the **Port Labels** interface.

System Status Interfaces

The System Status interface provides hardware information, IP Address settings, and general database management for your Ultricore BCS. The interface is organized into two distinct areas in the DashBoard window: Status tabs (located on the left), and Configuration tabs (located on the right).

Status Tabs

The Status tabs display read-only information about the Ultricore BCS hardware and software.

Product Tab

Table 31 summarizes the read-only information displayed in the Product tab.

Table 31 Product Tab

Item	Parameters	Description
Product		Indicates the Ultricore BCS product name
Vendor		Indicates the supplier/manufacturer of the device
System Version		Indicates the build version of the Ultricore BCS panel

Table 31 Product Tab

Item	Parameters	Description
Serial Number		Indicates the serial number of the Ultricore BCS panel
Uptime	#h #m #s	Indicates the number of hours since the last reboot of the Ultricore BCS panel
System Time	DD mm dd yyyy hh:mm:ss	Indicates the current date based on the Ultricore BCS internal clock 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 32 summarizes the read-only information displayed in the Other tab.

Table 32 Other Tab

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

Configuration Tabs

The Configuration tabs of the DashBoard window provide network setup options for the Ultricore BCS panel and managing the Ultricore BCS databases.

BCS Redundancy

The BCS Redundancy tab enables you to establish a failover system between two physical Ultricore BCS panels. Refer to "**Setting up a Redundant System**" for details on using this tab.

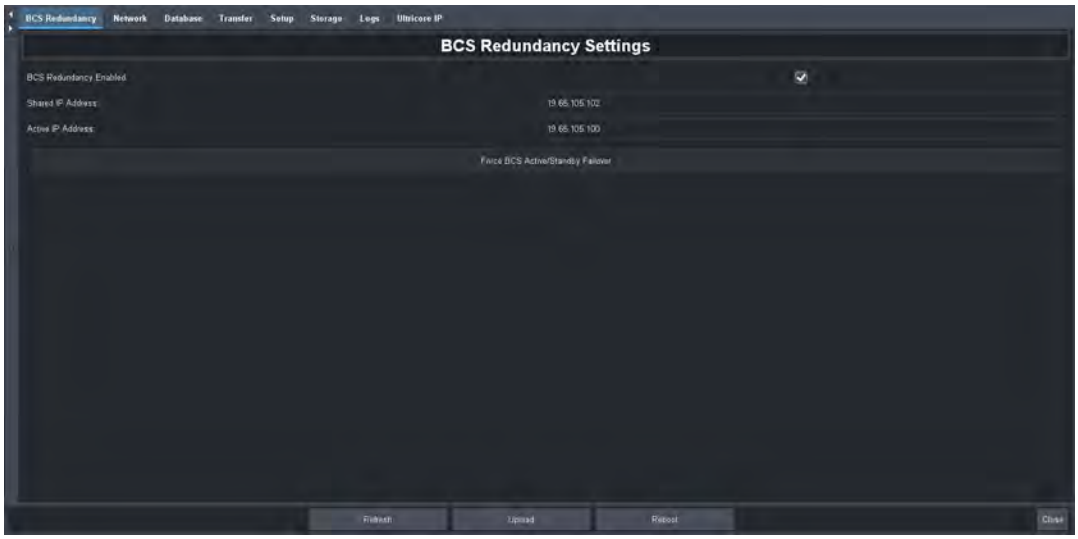


Figure 57 Example of the BCS Redundancy Tab

Network Tab

Table 33 summarizes the fields and menus displayed in the Network tab. The options in the Network tab are organized into two sections: Settings (editable fields), and Ethernet Redundancy (read-only fields).

Table 33 Network Tab

Item	Parameters	Description
Information		
Active ENET	ENET #	Indicates which Ethernet port on the rear panel is the primary Ultricore BCS network connection
ENET # LINK	Connected (x, y)	Indicates that a valid network link is configured on the specified Ethernet port of the Ultricore BCS rear panel where: • x represents the speed in number of Mbps • y represents the link type (e.g. full duplex)
	Not Connected	Ethernet communications for the Ultricore BCS are invalid. The Ethernet cable may be disconnected on the rear panel or the Ethernet network may be down or experiencing problems.
ENET MAC (read-only)	#	Indicates the MAC Address for the Ultricore BCS
Settings		
Address	#	Specifies the IP address for the Ultricore BCS panel
Subnet Mask	#	Specifies the subnet mask for the Ultricore BCS panel
Gateway	#	Specifies the gateway for communication outside of the local area network (LAN)
Apply	Updates the Address, Subnet Mask, and Gateway settings	

Table 33 Network Tab

Item	Parameters	Description
Cancel	Ignores any unsaved changes made to the Address, Subnet Mask, and Gateway settings and reverts back to the current running values.	
Services		
SSH	Selected	Enables system administrators to securely log onto remote systems and execute commands over an unsecured network via the Secure Shell (SSH) Login client-server protocol
	Cleared	Disables this service
FTP	Selected	Enables devices to transfer of files over a network connection
	Cleared	Disables this service
Walkabout	Selected	The Walkabout configuration software can be used to configure the basic network communications settings for the Ultricore BCS
	Cleared	Disables this service
Change	Click this button to edit the services	
SNMP		
Enable SNMP	Selected	Enables the SNMP Agent on the Ultricore BCS
	Cleared	Disables the SNMP Agent on the Ultricore BCS
SNMP Community Name	#	Specifies the SNMP Agent identifier for communications
SNMP Trap Destination IP Address	#	Specifies the target address the Ultricore BCS sends SNMP traps to
Permitted Clients		
DashBoards:	#	Lists the IP Address of each DashBoard client that is allowed to communicate with this Ultricore BCS
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	Ignores any unsaved changes made to the Permitted Clients list and reverts back to the current running values.	
Apply	Updates the Permitted Clients list settings	

Database Tab

Table 34 summarizes the fields and menus displayed in the Database tab. The options in the Database tab are organized into two sections: Current Database, and Database Management.

Table 34 Database Tab

Item	Parameters	Description
Current Database[a]		
Remote Controller Mode	Selected	This Ultricore BCS will be controlled by a remote (primary) Ultricore BCS router. You must reboot this Ultricore BCS before the change can take effect.
	Cleared	This Ultricore BCS is a standalone or is the primary system controller for the routing system.
Name	<name>	Indicates the database currently loaded in Ultricore BCS
Levels		Indicates the number of levels the database is configured for
Sources		Indicates the number of inputs the database is configured for
Destinations		Indicates the number of outputs the database is configured for
Enable Tally	Selected	Select this box to enable Ultricore BCS to read tally identifiers from the input signals. This information is passed through to any assigned outputs. Selecting this box also updates the Sources and Destinations tabs with a new column “Tally” that is used to assign Tally IDs to sources and/or destinations.
	Cleared	Tally information from the input signals is not read into the database.
I/O Ports	Refresh	Updates the Matrix Inputs and Outputs lists in the Sources and Destinations tabs respectively
Crosspoint Status	Refresh	Updates the Status field located directly below this button
Status (read-only)	Loaded	The active database was successfully loaded.
	Error[b]	One of the following has occurred: • the selected database is no longer available • an attempt was made to delete a non-existent database • an attempt was made to save a database with an existing name
Database Management - Load Database		
Name	<name>	Selects the database to load for the Ultricore BCS

Table 34 Database Tab

Item	Parameters	Description
Database	Load	Loads the specified database to the Ultricore BCS
Database to RCPs	Send	Forces the currently loaded database settings to the connected Remote Control Panels (RCPs)
Database Management - Add Database		
Name	<name>	Provides a unique identifier for the new database (up to 32 characters)
Levels	#	Specifies the total number of levels the database will make available
Sources	#	Specifies the total number of sources the database will make available
Destinations	#	Specifies the number of levels the database will make available
Database	Add	Uses the settings in the Database Management fields to create a new database
Database Management - Delete Database		
Name	<name>	Selects the database to delete
Database	Delete	Deletes the currently selected database

a. The Levels, Sources, and Destinations fields indicate the initial values when the database was created. Levels, Sources, and Destinations can be removed from or added to the database on their respective configuration tabs. Doing so will not alter the fields in the Database tab.
b. This message displays for a maximum of 10 seconds only.

Transfer Tab

The Transfer tab is organized into 5 sub-tabs: Ultricore Database, Ultricore Credentials, Ultricore Profiles, Ultriscape Layout, and Ultrix Frame Settings. **Table 35** summarizes the options displayed in each Transfer sub-tab.

Table 35 Transfer Sub-tabs

Item	Parameters	Description
Export		
Database:	<database name>	Selects the database to be exported
Save As:	*.uda	Automatically updates with the name of the database archive
Browse...	Enables you to save or re-name the database to a specific location. The default location is	
Apply	Click to begin exporting the file to specified location	
Import		
Archive File:	*.uda	Indicates the last file that was imported
Browse...	Enables you to specify the database to import	

Table 35 Transfer Sub-tabs

Item	Parameters	Description
Retrieve Database As:	<database name>	Indicates the file currently selected for importing
Apply	Click to begin the import	

Setup Tab

Table 36 summarizes the options displayed in the Setup tab.

Table 36 Setup Tab

Item	Parameters	Description
Device Identification		
Device Name	<name>	Provides a unique identifier for the Ultricore BCS in the Tree View
System Name	<name>	Provides a unique identifier for the routing system
Log Settings		
Logging	Selected	Enables the Ultricore BCS to update the entries in the System Logs interface
	Cleared	Disables this feature
Output Debug Messages	Selected	Only use this feature under the guidance of Ross Technical Support.
	Cleared	
DashBoard Interface		
DashBoard Timeout	10-300s	Sets the maximum number of seconds that DashBoard waits until it queries the Ultricore BCS. The default is 70 seconds.
Update	Applies the new value in the DashBoard Timeout menu.	
Status		
mm/dd/yy ERROR: Duplicate device name [abc] for ID [#]		Reports when multiple devices, with the same name, are communicating with the Ultricore BCS where: • **mm/dd/yy** represents the date of the error • **[abc]** represents the device name • **[#]** represents the ID number assigned to the device
Clear	Clears the Status field entry	

Logs Tab

This tab includes the System Log, Controller Communications Log, and DashBoard Communications Log. The read-only information displayed in the logs is used by Ross Technical Support for diagnostic purposes.

Ultricore-IP Tab

The Ultricore-IP tab only displays when the Ultricore BCS is installed with the Ultricore-IP software license. This tab is organized into three areas: a top toolbar, a middle interface, and a bottom

toolbar. The information that displays in the middle interface is determined by what is selected in the top toolbar.

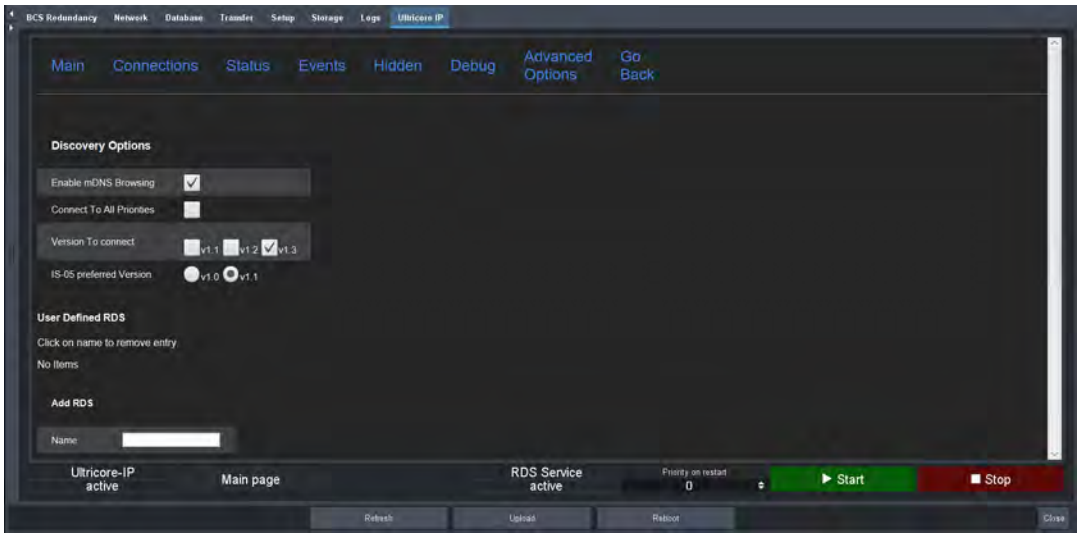


Figure 58 Example of the Ultricore-IP > Advanced Options

Table 37 summarizes the read-only fields displayed in the top and middle areas of the Ultricore-IP tab. The items displayed in the middle area change depending on what item is selected in the top toolbar.

Table 37 Ultricore-IP Tab — Top and Middle Areas

Item	Parameters	Description
Main		
Create Connection with this Device	A unique identifier for the device within the NMOS communication system	
Name	The Node ID assigned to the device for NMOS communication	
Description	A brief description for identifying the device	
IP	The IP Address of the IS-04 API reported by the device	
Audio Senders	The total number of advertised audio sender streams from this device	
Video Senders	The total number of advertised video sender streams from this device	
Receivers	The total number of receiver streams available from this device	
Xcup	The number of active NMOS connections on this device	
Status	A summary of the alarms detected on the device. The most severe alarm is noted and the total number of alarms is also reported.	
Events	A list of relevant actions that Ultricore-IP is aware of such as new devices found, if a device/stream was created, or a stream was updated.	
Hide	The device is no longer displayed in the interface.	
Connections		

Table 37 Ultricore-IP Tab — Top and Middle Areas

Item	Parameters	Description
Connection Usage	A summary of how many audio and video connections (a connection on this case is when a sender is joined to a receiver). There are two types: Ross connections (such as Ultrix-IP, NEWT-IPX, and IGGY-MADI) and third-party devices. This information reflects the options in the License tab for the Ultricore BCS.	
Connections	A list of all connections that are created on the system which includes: • what device this connection belongs to • the ID of the receiver and sender • any alarms that might be present on that connection • option to destroy any connection	
Status		
Device ID	The ID assigned to the device for NMOS communications	
Device IP	The IP address the device is located at	
Domain	The PTP domain used by the device	
Gmid	The PTP Grandmaster ID	
Ofm	PTP offset from the Grandmaster. When Slave mode is enabled, this should be different than 0. Ultricore-IP indicates the current value, an average, the minimum, and the maximum values for the field.	
Ethernet	The number of Ethernet interfaces and their Adminstrative status	
Streams	The total number of advertised streams detected at the devices	
Alarms	The total number of alarm messages found on the device	
Events		
Time	Timestamp of when the event was originated	
Type	Brief description of the event	
Device ID	The NMOS ID assigned to the specific device	
Session	The NMOS ID for the sender or receiver that the event was originated	
Description	A summary of the activity with the specific device at the indicated timestamp	
Hidden		
Lists the devices that were hidden using the option in the Main interface		
Debug		
NMOS RDS		
This area lists all the Registration and Discovery Service (RDS) currently found on the same network as the Ultricore BCS.		
Name	The reported identifier of the detected RDS	

Table 37 Ultricore-IP Tab — Top and Middle Areas

Item	Parameters	Description
PRi	The RDS priority (selected from a range of 0 to 99 where 0 is the highest priority). Note that when there is more than one RDS with the same priority, problems may arise on the network because devices and controllers cannot differentiate RDS with the same priority and they might connect to different ones, generating situations where the controllers do not see the devices.	
IP	The IP Address of the detected RDS	
Port	The UDP port of the detected RDS	
Secure	An indication if the RDS is using HyperText Transfer Protocol (HTTPS) and Web Services Security (wss) for its Application Programming Interface (API)	
Versions Supported	Indicates the NMOS version the RDS can support for communications	
Statistics		
This area reports the resources found on the RDS it is connected to and how many of those devices the Ultricore BCS was able to parse as valid. If the device type or the resource type is not valid or not recognized by the Ultricore BCS, the Total Valid Found field will report smaller numbers than the line reporting the numbers found on the RDS.		
Open Web Sockets		
Ultricore-IP connects to the RDS using web sockets. This area lists the detected open connections. For example, if you select **Advanced Options** and set the NMOS IS-04 version to v1.2 and v1.3, this field reports the entries for each version connected.		
Advanced Options		
NMOS IS-04 version	Specifies the version of NMOS the Ultricore BCS will use to communicate with devices	

Table 38 summarizes the fields, buttons, and menus displayed in the bottom toolbar of the Ultricore-IP tab.

Table 38 Ultricore-IP Tab — Bottom Toolbar

Item	Parameters	Description
Ultricore-IP		
Status (read-only)	active	• Ultricore-IP is running • If an RDS is present on the network, Ultricore-IP will connect to it and show the content found for the selection NMOS versions it is configured to
	inactive	Ultricore-IP does not detect an RDS running on the network
Start	Communication is established between Ultricore BCS and devices in the NMOS system of your network. The menus and fields in the Ultricore-IP tab will be automatically updated.	

Table 38 Ultricore-IP Tab — Bottom Toolbar

Item	Parameters	Description
Stop	Stops communication between Ultricore BCS and devices in the NMOS system. The menus and fields in the Ultricore-IP tab are no longer updated.	
Restart	Disconnects and re-connects communication between Ultricore BCS and the devices in the NMOS system.	
RDS Service		
Status (read-only)	active	The RDS instance for this Ultricore BCS is running and waiting for devices to register
	inactive	The RDS instance for this Ultricore BCS is disabled and not available for use
Start	Communication is established between Ultricore BCS and RDS in your network. The menus and fields in the Ultricore-IP tab will be automatically updated.	
Stop	Stops communication between Ultricore BCS and RDS in your network. The menus and fields in the Ultricore-IP tab are no longer updated.	
Restart	Disconnects and re-connects communication between Ultricore BCS and the RDS in your network.	

Database Interfaces

The Database interfaces enable you to configure devices in your routing system and configure control aspects for Ultricore BCS. Note that the currently active database name is displayed in parentheses in the tree view. For example, **Figure 59**, the `CHK_BCS` database is currently loaded. Unicode names are also supported so that names may be defined in other languages or writing systems.

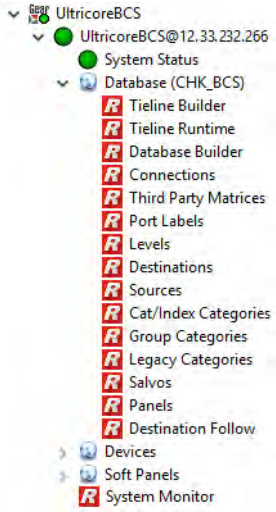


Figure 59 Expanded Database Node in the Tree View

Most of the interfaces are organized into a table format with a row of buttons at the bottom of the interface. You can select individual cells, columns, or rows of entries to define. (**Figure 60** and **Figure 61**)

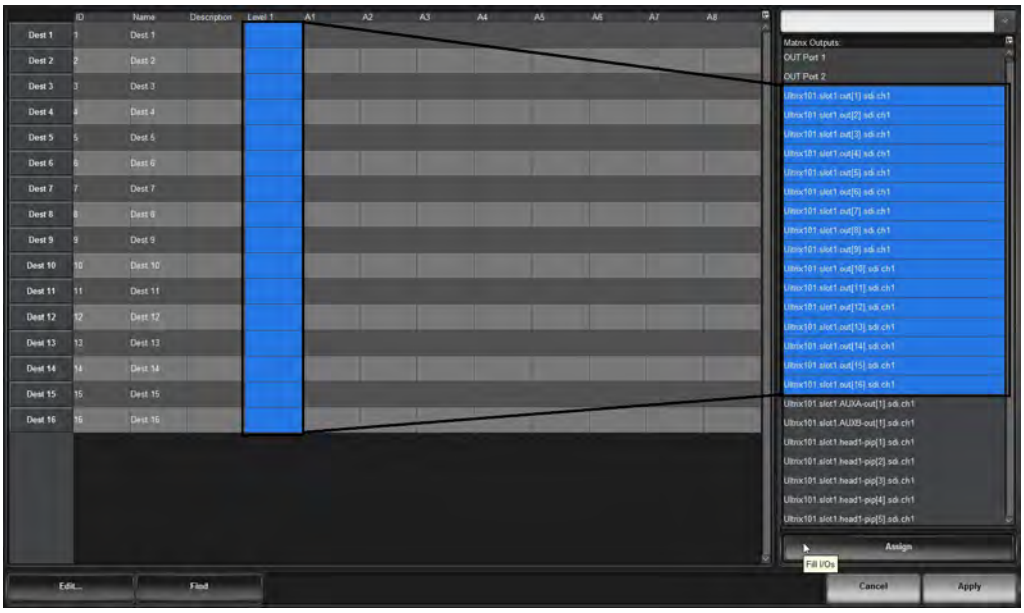


Figure 60 Example of Filling a Column of Entries

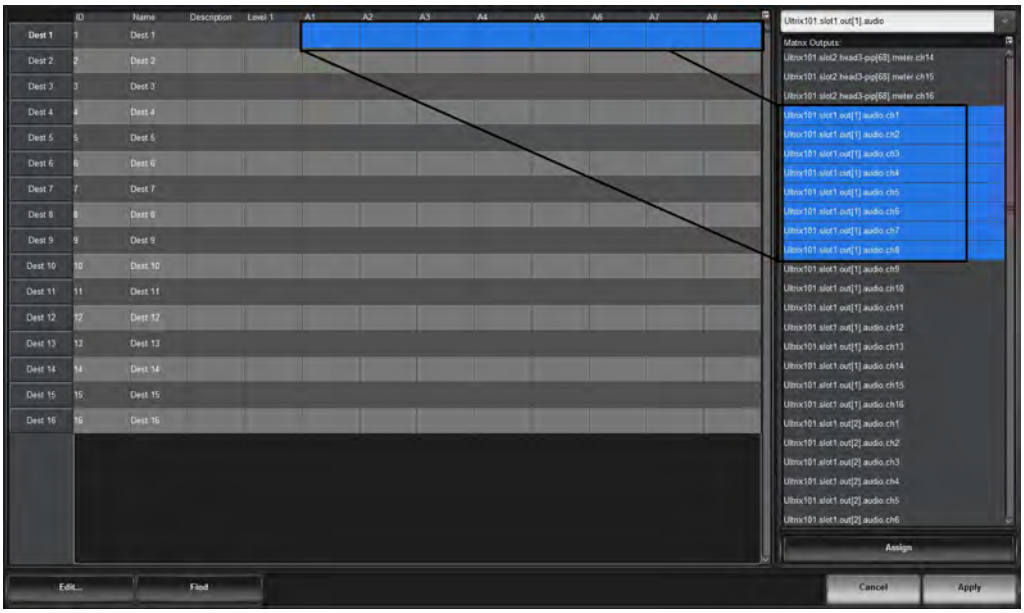


Figure 61 Example of Filling a Row of Entries

A summary of each interface is provided in the following sub-sections.

Tieline Builder Tab

The **Tieline Builder** creates tielines based on the routers and ports available to the Ultricore BCS within the current database and routing system.

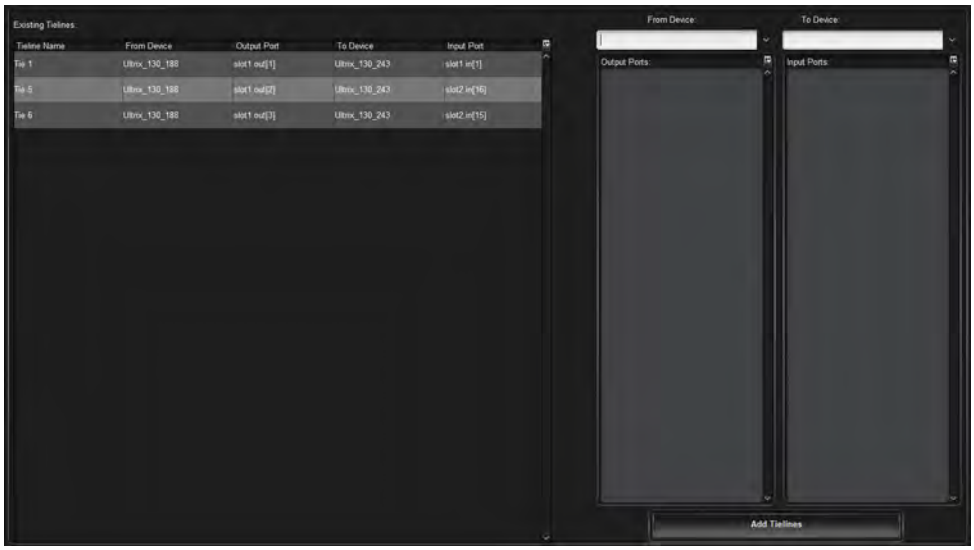


Figure 62 Example of the Tieline Builder Tab

Table 39 summarizes the options displayed in the Tieline Builder tab.

Table 39 Tieline Builder Tab

Item	Description
Existing Tielines	
Tieline Name	Indicates the unique identifier assigned to the tieline
From Device	Indicates the router that the tieline will use as the source (start point)
Output Port	Indicates the physical port that the tieline will use to switch the signal
To Device	Indicates the router that the tieline will use as the destination (end point)
Input Port	Indicates the physical port that the tieline will use to pass the signal through during the switch
Rename	Applies a new identifier to the tieline
Remove	Removes the tieline from the list and deletes it from the router system
From Device:	Use this menu to display a list of available routers that the user can assign as the start point for a new tieline
Output Ports:	Indicates the physical ports on the selected device that are available as sources for the tieline
To Device:	Use this menu to display a list of available routers that the user can assign as the end point for a new tieline
Input Ports:	Indicates the physical ports on the selected device that are available as destinations for the tieline
Add Tieline	Adds the tieline defined using the From Device and To Device tables. The Existing Tielines table updates to include the new tieline as a row entry.

Tieline Runtime Tab

The **Tieline Runtime** reports the sources and destinations for each defined tieline, enables the user to manage and monitor the switch requests using the define tielines.

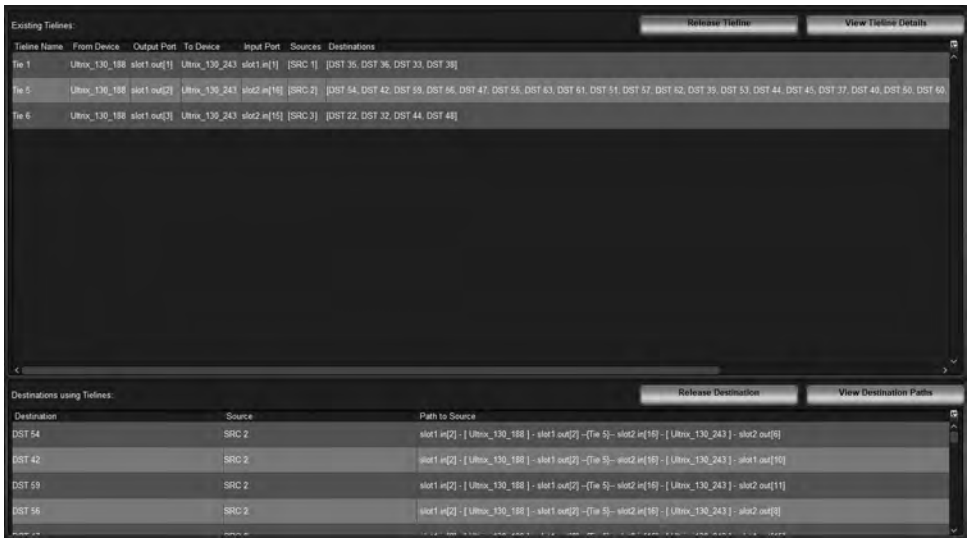


Figure 63 Example of the Tieline Runtime Tab

Table 40 summarizes the options displayed in the Tieline Runtime tab.

Table 40 Tieline Runtime Tab

Item	Description
Existing Tielines	
Tieline Name	Indicates the unique identifier assigned to the tieline
From Device	Indicates the router that the tieline will use as the source (start point)
Output Port	Indicates the physical port that the tieline will use to switch the signal
To Device	Indicates the router that the tieline will use as the destination (end point)
Input Port	Indicates the physical port that the tieline will use to pass the signal through during the switch
Sources	Reports the available signals on the From Device via the selected Output Port
Destinations	Reports the available signals on the To From Device via the selected Input Port
Release Tieline	Disables the selected tieline. It is no longer available for switching signals in the routing system
View Tieline Details	Provides more information on the selected tieline
Destinations Using Tielines	
Destination	Specifies a specific destination in use by the tieline
Source	Specifies a specific source in use by the tieline
Path to Source	Indicates how the signal is passed through the routing system via the selected tieline

Table 40 Tieline Runtime Tab

Item	Description
Release Destination	Removes the selected destination as an option for the tieline. This destination can no longer be used for a switch via the tieline.
View Destination Paths	Reports the route that the Ultricore BCS has chosen to pass the selected source to the end point (destination) as defined by the selected devices, ports, and signals.
Show Take Errors	Indicates whether any error conditions are present during the switch the tieline

Database Builder

The Database Builder interface helps you to quickly create a database by grouping basic controls on four pages: Quick Start, Levels, Destinations, and Sources. The same controls are available as sub-nodes of the Database interface.

Quick Start

The Quick Start options display by default when the Database Builder displays in DashBoard. From this page you can define the database properties including: type of signals (video, audio) the number of Ultricore BCS routers that the database includes, the audio elements of the database, and basic UltriScape parameters.

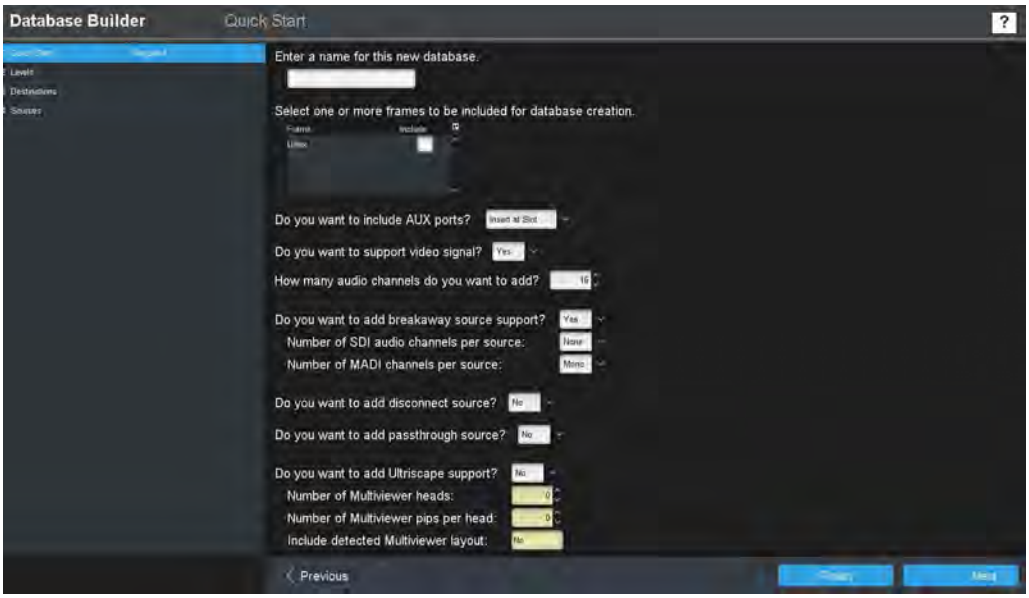


Figure 64 Example of the Database Builder — Quick Start Page

Table 42 summarizes the fields displayed in the options in the Quick Start page.

Table 41 Database Builder — Quick Start

Item	Parameters	Description
Database name	<name>	Assigns a unique identifier for the device in the routing system. This name is also used when matrices are defined in the Ultricore BCS system.
Frame select table		Displays a list of detected routers in your network. Select a box to apply the database to the specified router.

Table 41 Database Builder — Quick Start

Item	Parameters	Description
Include AUX ports	None	Do not create entries for AUX ports in the database
	Insert at slot	Create AUX port entries as they are physically located within the Ultricore BCS chassis (e.g. ports 17 and 18).
	At the end	Create AUX ports after BNC entries
Video support	Yes	Creates a database that includes video and audio signals
	No	Creates an audio-only database
Audio channels	#	Specifies the quantity of audio channels (levels) required
Breakaway source support	Yes	Create sources for audio breakaways/shuffles
	No	Audio breakaways are not included in this database
SDI audio per channel		Creates audio breakaway sources using the selected audio channel grouping size
MADI channels per source		Creates MADI sources using the selected audio channel grouping size
Disconnect source?	Yes	Creates a source that will disconnect (mute) SDI and audio channels
	No	This option is not included in the database
Passthrough source?	Yes	Configures a source that may be routed to destinations so that embedded audio from connected SDI source is passed through without changes
	No	This option is not included in the database
Ultriscape support?	Yes	Enables Ultriscape heads and PiPs to be included in the database
	No	Ultriscape heads and PiPs are not included in the database
Number of Multiviewer heads	#	Specifies the number of Ultriscape heads the database will support
Number of Multiviewer pips per head	#	Specifies the maximum number of PiPs available per layout
Include detected Multiviewer layout		Creates sources for detected Ultriscape layouts to enable layout changing from control panels

Levels

Once you defined the options on the Quick Start interface, you can proceed to preview and customize the levels, destinations, and sources this database will include. Clicking **Next** on the Quick Start page displays the **Levels** page. (**Figure 65**)

The options in the Levels page are organized into a table where each row represents a level and the columns provide the options for configuring that level. From this page 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.

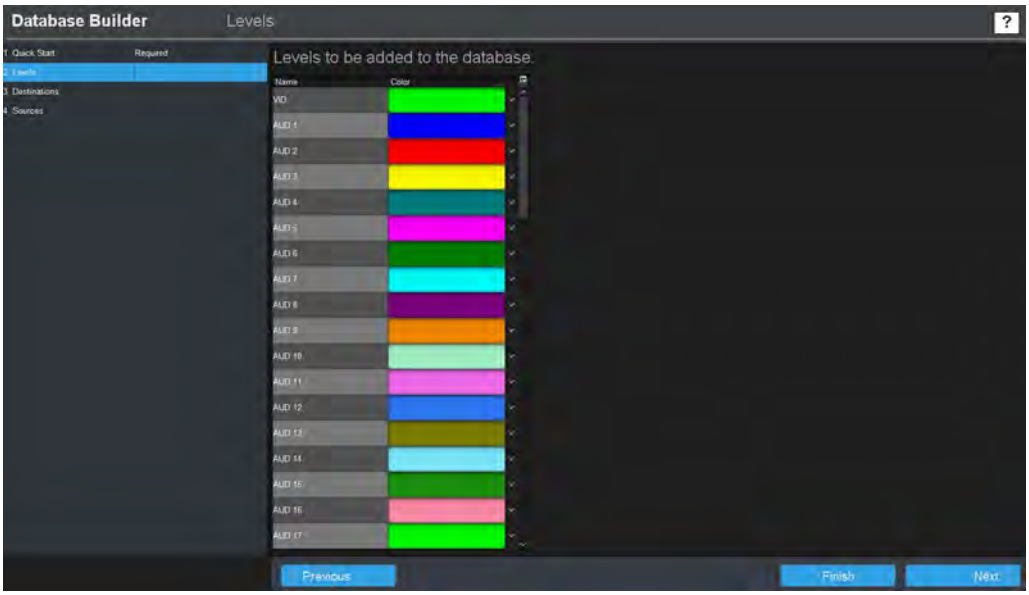


Figure 65 Example of the Database Builder — Levels Page

Destinations

Clicking **Next** on the Levels page displays the **Destinations** page. (**Figure 66**)

The Destinations page enables the assignment of logical labels (used by remote control panels and soft panels) to physical outputs of the attached matrices or routers. The options in the Destination page are organized into a table where each row associates a name of the destination with one or more logical matrix output sockets.

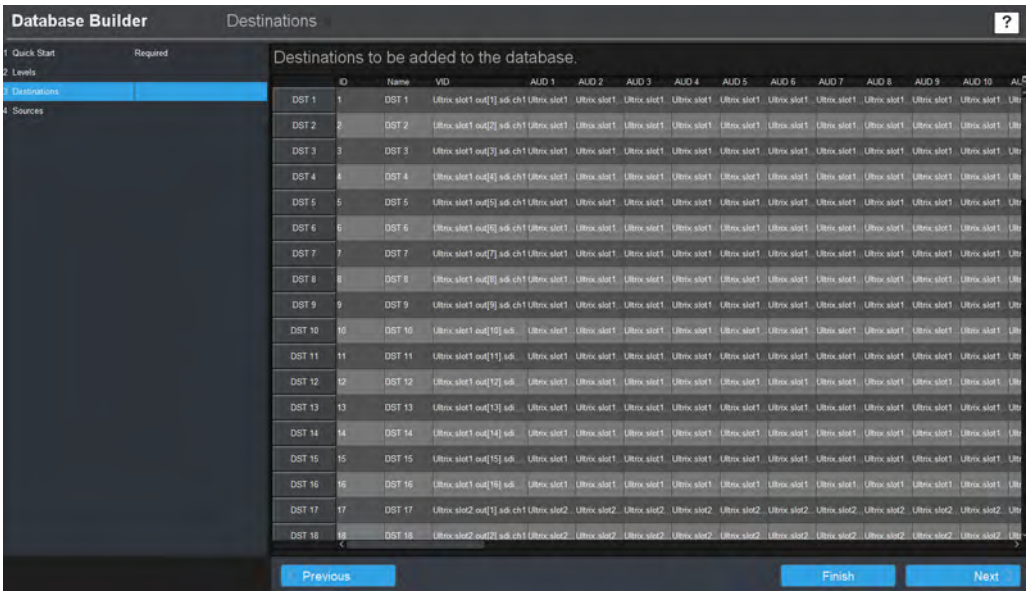


Figure 66 Example of the Database Builder — Destinations Page

Sources

Clicking **Next** on the Destinations page displays the **Sources** page. (**Figure 67**)

The Sources page enables the assignment of labels (used by remote control panels and soft panels) to inputs of the attached matrices or routers. The options in the Sources page are organized into a table where each row associates a name of the source with one or more logical matrix input sockets.

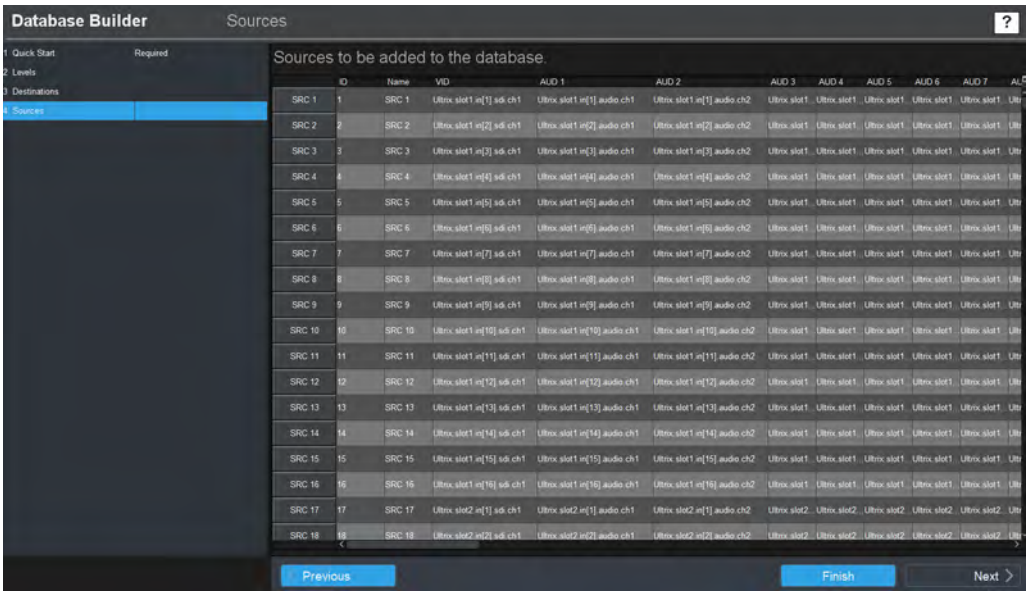


Figure 67 Example of the Database Builder — Sources Page

Connections Tab

Ross Video devices are automatically discovered and available for connection in this tab. Third-party devices that are not discoverable via their protocol must be manually added. This tab is divided into two tables: Clients and Servers.

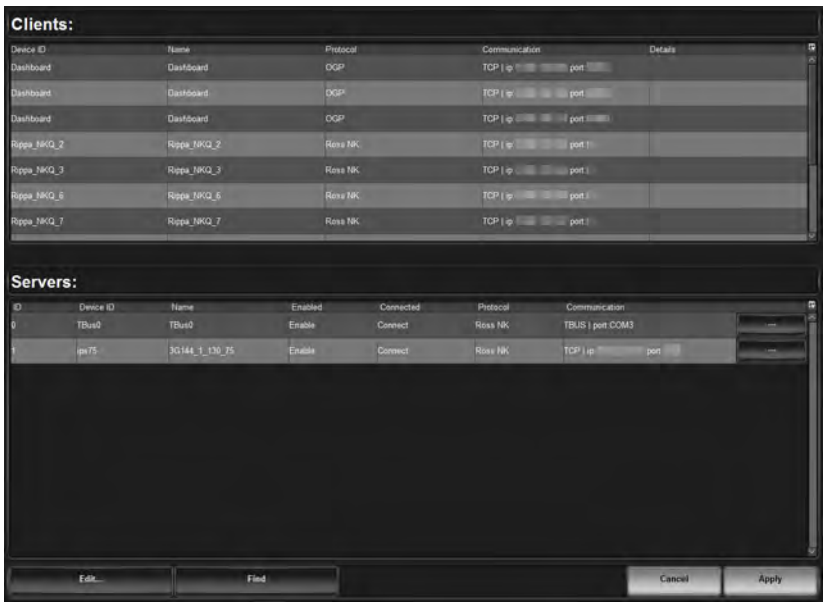


Figure 68 Example of Entries in a Connections Tab

Clients Table

The Clients table lists the connection details of remote client devices (e.g. external devices connecting to this Ultricore BCS) currently communicating with the Ultricore BCS.

Table 42 summarizes the read-only fields displayed in the Clients table in the Connections tab.

Table 42 Connections Tab — Clients

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 Ultricore BCS system.
Protocol (read-only)	GVG Native	The device uses the third-party GVG protocol to communicate. Refer to "**GVG Series 7000 Native Protocol Commands**".
	NVISION	This device communicates via the third-party NVISION protocol. Refer to "**NVISION Commands**".
	OGP	This device uses the openGear Protocol to communicate with Ultricore BCS.
	Probel SW-P-08	The device uses the third-party protocol known as Probel SW-P-08.
Protocol (read-only)	Ross NK	The device uses the Ross NK protocol to communicate. Refer to "**Ross NK Series Routers**".
	TSL UMD v3.1	The device uses TSL UMD protocol version 3.1
	TSL UMD v4.0	The device uses TSL UMD protocol version 4.0
	TSL UMD v5.0	The device uses TSL UMD protocol version 5.0
	Ultrix	The device uses the Ross Ultrix protocol to communicate (TCP only).
Communication	type: t-bus	The device is physically connected to a T-BUS port on the Ultricore BCS rear panel. Communication is via the Ross T-BUS protocol.
	type: tcp	The device is communicating over a network connection. Note that the DashBoard client computer, the Ultricore BCS, and the external device must be on the same network.
	type: serial	The device is physically connected to a COM port on the Ultricore BCS rear panel. The device is communicating with the Ultricore BCS via a serial protocol.
	ip: ###.###.###.###	Specifies the IP Address of the device on the network
	ip: localhost	Indicates that the device is the one you are currently configuring

Table 42 Connections Tab — Clients

Item	Parameters	Description
Communication	port:###.###.###.###	Specifies the ethernet port the device is associated with on the network.
	...	This button opens a dialog allowing further connection point setting adjustments such as specifying an IP address, IP port, etc.
Details		Provides additional information on the device such as device type, and firmware version

Servers Table

The Servers table lists the connection details of external devices that Ultricore BCS has established a connection point to (e.g. devices that are controlled by this Ultricore BCS). Entries in the Servers table are managed by the user as outlined in "**Device Communication Setup**".

Table 43 Connections Tab — Servers

Item	Parameters	Description
ID	#	Auto-numbered field (read-only).
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 Ultricore BCS system.
Enabled	Enable	Direct communication is established between Ultricore BCS and the device.
	Disable	Communication between Ultricore BCS and the device is unavailable.
Connected (read-only)	Connect	A valid connection is established between the device and the Ultricore BCS on your network. This box is automatically selected when communication is established.
	Disconnect	The connection is invalid or absent between the device and the Ultricore BCS on your network.
Protocol (read-only)	GVG Native	The device uses the third-party GVG protocol to communicate. Refer to "**GVG Series 7000 Native Protocol Commands**".
	NVISION	This device communicates via the third-party NVISION protocol. Refer to "**GVG Series 7000 Native Protocol Commands**".
	Probel SW-P-08	The device uses the third-party protocol known as Probel SW-P-08.

Table 43 Connections Tab — Servers

Item	Parameters	Description
Protocol (read-only)	Ross NK	The device uses the Ross NK protocol to communicate. Refer to "**Connecting to Ross NK Series Devices**".
	TSL UMD v3.1	The device uses TSL UMD protocol version 3.1
	TSL UMD v4.0	The device uses TSL UMD protocol version 4.0
	TSL UMD v5.0	The device uses TSL UMD protocol version 5.0
	Ultrix	The device uses the Ross Ultrix protocol to communicate (TCP only).
Communication	type: t-bus	The device is physically connected to a T-BUS port on the Ultricore BCS rear panel. Communication is via the Ross T-BUS protocol.
	type: tcp	The device is communicating over a network connection. Note that the DashBoard client computer, the Ultricore BCS, and the external device must be on the same network.
	type: serial	The device is physically connected to a COM port on the Ultricore BCS rear panel. The device is communicating with the Ultricore BCS via a serial protocol.
	ip: ###.###.###.###	Specifies the IP Address of the device on the network
	ip: localhost	Indicates that the device is the one you are currently configuring
	port:###.###.###.###	Specifies the ethernet port the device is associated with on the network.
	...	This button opens a dialog allowing further connection point setting adjustments such as specifying an IP address, IP port, etc.

Third Party Matrices Tab

The Third Party Matrices tab configures/lists third party matrix devices. Once defined, the matrices are ready for mapping to source and destination labels.

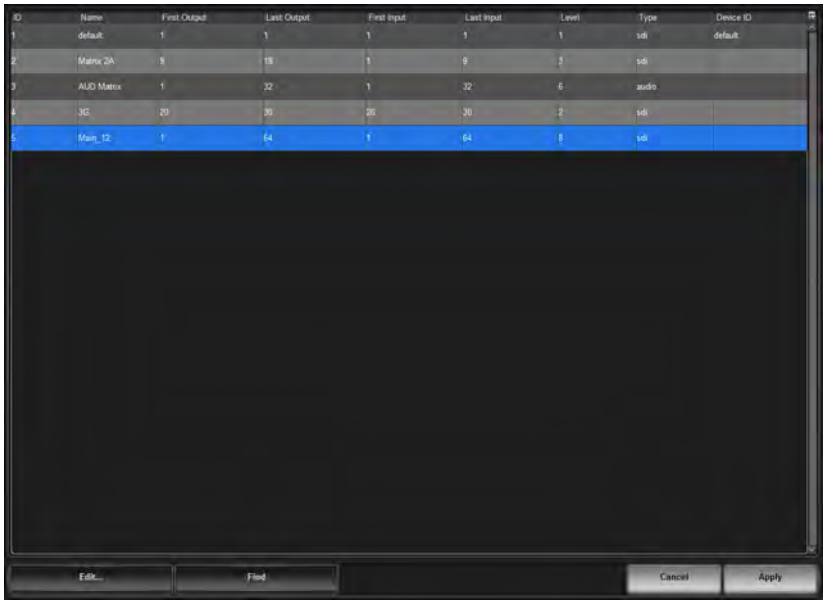


Figure 69 Example of Entries in a Third Party Matrices Tab

Figure 69 shows a third party matrix called **`gvg router`** configured to use the connection DeviceID of “gvg”. It is configured to provide 16 inputs and 16 outputs and responds to switch commands on level 5.

Table 44 summarizes the options displayed in the Third Party Matrices tab.

Table 44 Third Party Matrices Tab

Item	Parameters	Description
ID	#	Auto-numbered field (read-only).
Name	<name>	Assigns a unique identifier for the imported third party matrix to be used by the Ultricore BCS database.
First Output	#	Specifies the first destination for the device within the Ultricore BCS database
Last Output	#	Specifies the last destination for the device within the Ultricore BCS database
First Input	#	Specifies the first source for the device within the Ultricore BCS database
Last Input	#	Specifies the last source for the device within the Ultricore BCS database
Level	#	Specifies the control level the device will respond to (e.g. matches the level configuration of the device). This is not the Ultricore BCS level value.
Type		Specifies the signal type of inputs and outputs this device provides within the Ultricore BCS database
Device ID		Specifies the DeviceID connection to use as entered on the Database > Connections tab

Port Labels Tab

The Port Labels tab lists the matrices discovered by the connection points on the Connections tab and imported via the Third Party Matrices tab. A matrix (or router) socket is identified via the **Frame.Slot.Port.Type.Channel** nomenclature. Custom labels may be applied to the ports if required. These may be also known as actual labels in other terminology (the name the cable would be assigned). This re-naming is not necessary for operation, but it may make your assignment of source and destination labels easier when using your internal cable naming conventions.

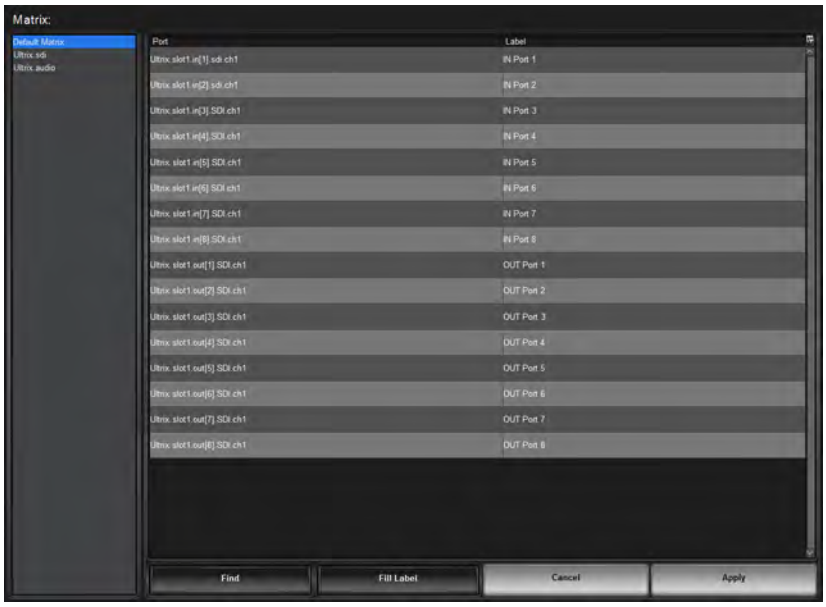


Figure 70 Example of Entries in a Port Labels Tab

Table 42 summarizes the options displayed in the main area of the Port Labels tab (from left to right on the interface).

Table 45 Port Labels Tab

Item	Description
Matrix:	Provides a list of configured matrices for the currently loaded database. Double-click an item in the list to update the table in the Port Labels tab. By default, each router is represented by a read-only matrix in this list. This read-only matrix lists all the SDI signals available to the Ultricore BCS via that router. If you have multiple routers, each router is represented with a separate read-only matrix with the device name in the matrix name (e.g. **`NK-3G16.SDI [read-only]`**, or **`NK-3G144.SDI [read-only]`**).
Port	Indicates the physical socket on the external device that is included in the currently selected logical matrix using the nomenclature **Frame.Slot.Port.Type.Channel**.
Label	Provides a text label that identifies the physical port in other interfaces of the database. This virtual label is used instead of the **Frame.Slot.Port.Type.Channel** format. For example, you might re-name port **`NK-S34.slot1.in[1].SDI.ch1`** to **`NK-234 SDI IN 1-1`**.

Bottom Toolbar

Refer to **Table 70** for a summary of the buttons displayed in the Bottom toolbar of the Database interfaces.

Levels Tab

A level is a specific grouping of signal input and output ports, that may be controlled separately from other groups (a breakaway). Typically a level is associated with input/output ports that are used with sets of similar or related signals, such as SDI Video, AES Audio, Analog Video, Analog Audio, Timecode, or Machine control, and often include routing matrices that are dedicated to controlling that specific type of signal.

The options in the Levels tab are organized into a table where each row represents a level and the columns provide the options for configuring that level. From this tab you can assign a unique name to each level, a color that represents the level, and a textual description of the level to make it easier to identify the level in the soft panels.

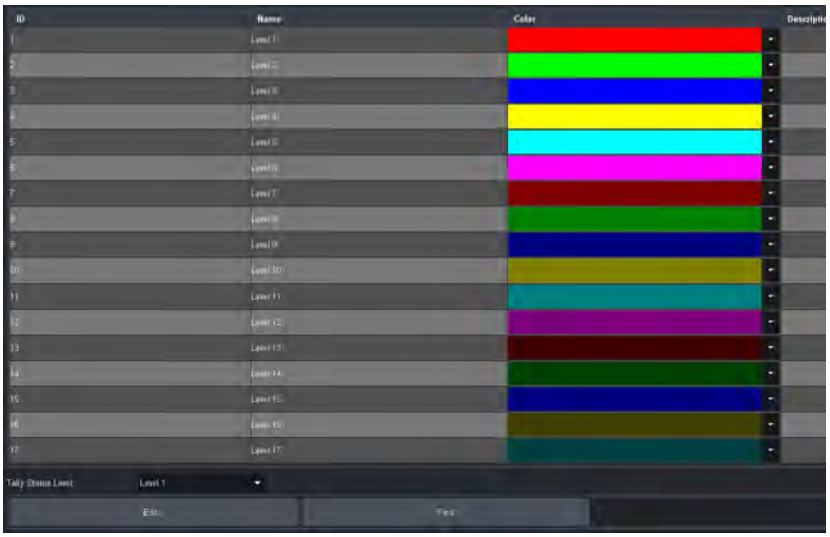


Figure 71 Example of Entries in a Levels Tab

Destinations Tab

The Destination tab enables the assignment of labels (used by control panels) to outputs of the attached matrices or routers. The options in the Destination tab are organized into a table where each row associates the name of the destination with one or more logical matrix output sockets.

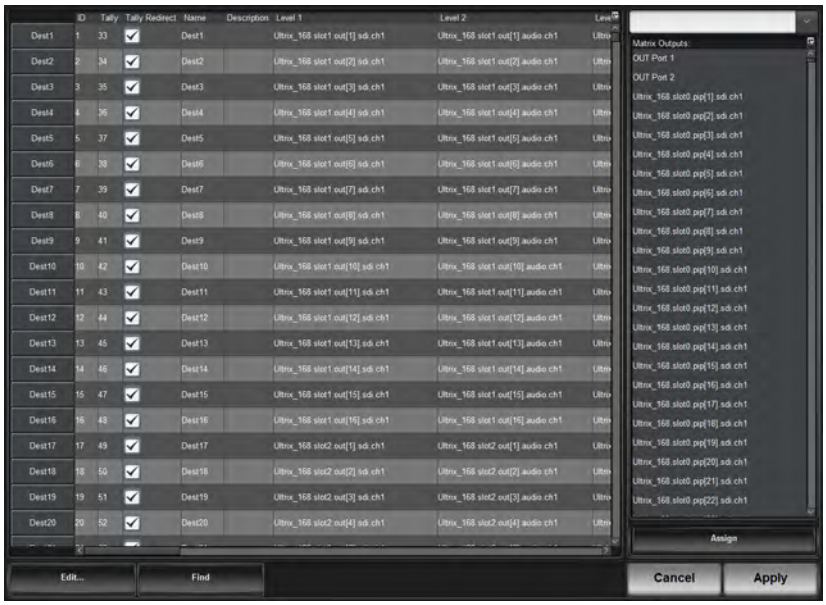


Figure 72 Example of Entries in a Destinations Tab

Table 46 summarizes the options displayed in the Destinations tab.

Table 46 Destinations Tab

Item	Parameters		Description
ID	#		Auto-numbered field (read-only).
Tally	TSL v3.1	<displayID>	Displays the TSL protocol Tally ID entry. The Enable Tally box is selected in the Database tab.
	TSL 4.0	<displayID>	
	TSL v5.0	<screenID>:<displayID>	
Tally Redirect	Enables/disables the re-direction of connected source Tally ID to destination Tally ID as set by the Tally field		
Name	<name>		Assigns a unique identifier for the destination in the routing system. This name is also used when matrices are defined in the Ultricore BCS system.
Description	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 Port Labels tab, the port is labeled as **Frame.Slot.Port.Type.Channel**.		
Matrix Outputs	#		Lists all the physical output ports available that can be assigned as a destination in the routing system
Assign	Click this button to add the selected physical output port(s) to the list of Destinations for the database		

For More Information on...

- the buttons located on the bottom toolbar for the Destinations tab, refer to **Table 70**.

Sources Tab

The Sources tab enables the assignment of labels (used by remote control panels and soft panels) to physical input sources to specific sources based on the routers connected to the Ultricore BCS (and listed in the Database interface). The rows in the table are dependent on the database that is currently loaded. The Sources tab is organized into a table where each row associates a name of the source with one or more logical matrix input sockets.

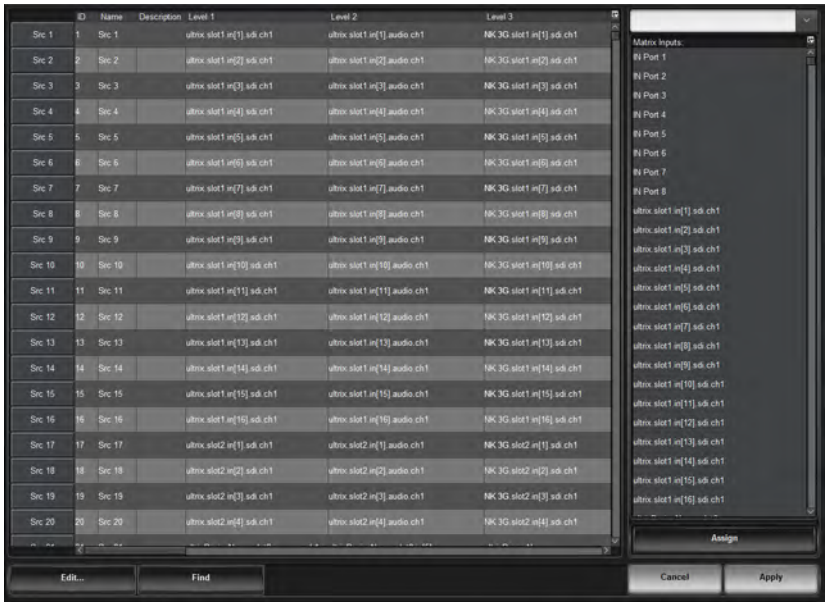


Figure 73 Example of Entries in a Sources Tab

Table 47 summarizes the options displayed in the Sources tab.

Table 47 Sources Tab

Item	Parameters	Description
ID	#	Auto-numbered field (read-only).
Tally	<displayID> or <screenID>:<displaydID>	Displays the TSL protocol tally ID entry. The Enable Tally box is selected in the Database tab.
Name	<name>	Assigns a unique identifier for the source in the routing system. This name is also used when matrices are defined in the Ultricore BCS system.
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 Port Labels tab, the port is labeled as **Frame.Slot.Port.Type.Channel**.

Table 47 Sources Tab

Item	Parameters	Description
Matrix Inputs	#	Lists all the physical input ports available that can be assigned as a source in the routing system
Assign	Click this button to add the selected physical input port to the Source label in the database	

Cat/Index Categories Tab

The Cat/Index Categories tab enables you to categorize sources, destinations, and levels via a hierarchal system of tags. You can use categories to filter sources, destinations or levels into manageable groups for a Category soft panel. Refer to "**Using Category Panels**" for details.

Figure 74 Example of Entries in a Cat/Index Categories Tab

Categories Area

Table 48 summarizes the options displayed in the Categories area of the Cat/Index Categories tab.

Table 48 Cat/Index Categories — Categories Area

Item	Parameters	Description
Categories:	Lists the category tags defined for this database	
Add	Adds a category tag	
Delete	Deletes the selected tag	
Delete All	Deletes all tags listed in the Categories: pane	
Generate	Automatically generates category tags based on the entires in your database	

Affected Resources Area

Table 49 summarizes the options displayed in the Affected Resources area of the Cat/Index Categories tab.

Table 49 Cat/Index Categories — Affected Resources Area

Item	Parameters	Description
Destinations:	<text>	Lists the destinations that are tagged
	Find	Performs a search for destinations in the database to add to the category
Sources:	<text>	Lists the sources that are tagged
	Find	Performs a search for sources in the database to add to the category
Levels:	<text>	Lists the levels that are tagged
	Find	Performs a search for level in the database to add to the category

Indexes Area

Table 50 summarizes the options displayed in the Indexes area of the Cat/Index Categories tab.

Table 50 Cat/Index Categories — Indexes Area

Item	Parameters	Description
Indexes:	Creates search terms to define category tags	
Add	Adds a new entry to the Indexes list	
Delete	Deletes the selected entry from the Indexes list	
Delete All	Deletes all entries from the Indexes list	
Default	Creates indexes 0-9 and A-F	

Inaccessible Resources Area

Table 51 summarizes the options displayed in the Inaccessible Resources area of the Cat/Index Categories tab.

Table 51 Cat/Index Categories — Inaccessible Resources Area

Item	Parameters	Description
Destinations:	<text>	Lists the destinations in the current database that are not included in any Cat/Index categories
	Generate	Automatically generates category tags based on the destinations in your database
	Create	Enables you to create a new Cat/Index filter for Destinations
Sources:	<text>	Lists the sources in the current database that are not included in any Cat/Index categories
	Generate	Automatically generates category tags based on the sources in your database
	Create	Enables you to create a new Cat/Index filter for Sources

Table 51 Cat/Index Categories — Inaccessible Resources Area

Item	Parameters	Description
Levels:	<text>	Lists the levels in the current database that are not included in any classic categories
	Generate	Automatically generates category tags based on the levels in your database
	Create	Enables you to create a new Cat/Index filter for Sources

Group Categories Tab

The Categories tab enables you to categorize sources, destinations, and levels via a hierarchal system of tags. You can use categories to filter sources, destinations or levels into manageable groups for a Category soft panel. Refer to "**Group Categories Overview**" for details.

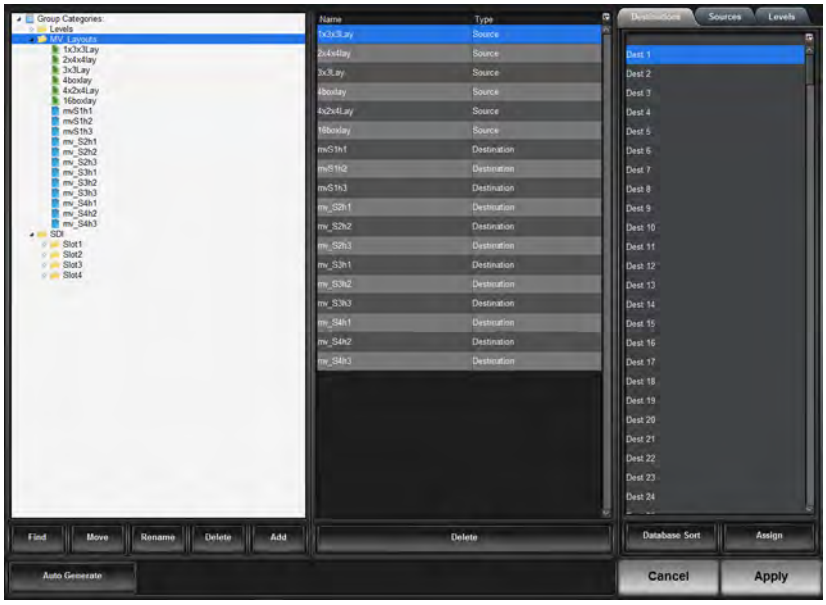


Figure 75 Example of Entries in a Group Categories Tab

The Group Categories tab is organized into three panels and a bottom toolbar.

Table 52 summarizes the options displayed in the left panel of the Group Categories tab. This panel displays all the created groups and sub-groups, and/or resources in a top-down hierarchy. Note that the nodes are sorted by type and then by alphabetical order.

Table 52 Group Categories Tab — Left Panel

Item	Description
Group Categories:	Displays the groups as folders arranged in a tree view
Find	Displays the Find dialog that enables you to search for a category or resource name
Move	Displays the Move dialog that enables you to move a selected group and its contents to another group
Rename	Renames a selected group; the resource type will be not re-named
Delete	Deletes a selected group and all of its contents
Add	Adds a new group to the selected group

Table 53 summarizes the options displayed in the middle panel of the Group Categories tab. This panel shows the assigned contents (groups and/or resources) of the currently selected item from the tree view (in the left panel).

Table 53 Group Categories Tab — Middle Panel

Item	Description
Name	Indicates the name of a resource
Type	Indicates the type of resource
Delete	Deletes the selected resource(s) from the currently selected group

Table 54 summarizes the options displayed in the right panel of the Group Categories tab. This panel displays the available destinations, sources, and levels that can be arranged into group categories.

Table 54 Group Categories Tab — Right Panel

Item	Description
Destinations	Displays the unassigned destinations in alphabetical order
Sources	Displays the unassigned sources in alphabetical order
Levels	Displays the unassigned levels in alphabetical order
Assign	Select the resource(s) and click Assign to assign it to the group selected in the left table

Table 55 summarizes the bottom toolbar.

Table 55 Group Categories Tab — Bottom Toolbar

Item	Description
Auto Generate	Click to auto-generate group categories based on the resource names from the current database
Cancel	Ignores all unsaved changes and reverts the tab back to the last saved entries
Apply	Applies all change made in the Group Categories tab

Legacy Categories Tab

The Legacy Categories tab enables you to categorize sources, destinations, and levels via a hierarchal system of tags. You can use legacy categories to filter sources, destinations, or levels into manageable groups for legacy RCP-QE panels. Refer to the ***RCP-QE User Guide*** for details.

Table 56 summarizes the options displayed in the top toolbar.

Table 56 Legacy Categories Tab — Top Toolbar

Item	Description
Destinations	Lists the destination category/index assignments
Sources	Lists the source category/index assignments
Levels	Lists the level category/index assignments

Table 57 summarizes the options displayed when the Edit button is selected from the bottom toolbar.

Table 57 Legacy Categories Tab — Bottom Toolbar

Item	Description
Copy	Copies the selected cells in the tab
Paste	Pastes the previously copied items to the current cell selection
Clear	Clears the data from the selected cells
Clear All	Clears all category/index assignments
Fill	Auto fills a range of cells
Auto Generate	Auto fills the cells based on spaces in the source/destination names

Salvos Tab

A salvo is a set of pre-defined switch events. The Salvos tab provides a list of the global salvos available in the currently selected database. From this tab you can create salvos, rename, and delete salvos.

The workspace in the Salvos tab displays a grid pattern with sources at the top and the destinations along the left side. A list of currently available (saved) salvos displays on the far left-side of the tab. 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 the level. The toolbar in the bottom right corner of the interface displays three buttons: Advanced, Cancel, and Apply.

Figure 76 Example of a Salvos Tab

Table 58 summarizes the options displayed in the Salvos tab.

Table 58 Buttons on the Salvos Interface

Button	Description
Salvos:	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 tab.
Edit...	Displays the Edit dialog for the soft panel. Refer to "**Edit Dialogs**".

Table 58 Buttons on the Salvos Interface

Button	Description
Select All	Click this button to select all the Destinations in the matrix of the Salvos tab. This will include all the destinations in the matrix in the salvo configuration. • All the Destination buttons are lit red in the matrix. • The button now displays the **Clear All** label. Click the button again to remove all the Destinations from the salvo configuration.
Level #	A button is assigned to each level available in the currently loaded database. The color and label of the button is specified in the Levels tab.
Advanced	Displays the Advanced options outlined in **Table 59**.
Cancel	Discards any recent changes made in the Salvos tab, and clears the matrix. Note that the Destinations are still selected (buttons are lit red) if you clicked **Select All**.
Apply	Applies changes made in the Salvos tab and updates the salvo settings.

Advanced Menus

Clicking the **Advanced** button in the Salvos tab displays the options outlined in **Table 59**.

Table 59 Advanced Menu Items

Button	Description
Clear All Presets	Clears the workspace in the Salvos tab and resets all settings to the default values.
Clear Dest Presets	Clears all selections made in the Destinations column of the workspace.
Capture System Status	Captures the current routing state of the Ultricore BCS system.
Capture Dest Status	Updates the workspace to reflect only the status of the destinations of the Ultricore BCS system.

Panels Tab

The Panels tab includes a series of sub-tabs that enable you to customize soft panels (control panels within the DashBoard environment). You can choose to assign the levels, sources, and destinations from an Ultricore BCS database to the soft panel buttons.

The soft panels display as sub-nodes in the Soft Panels tree using the name specified in the **Info** tab. When you save a soft panel to the database, a node for the panel automatically displays under the Soft Panels node in the Tree View. The soft panels display in the tree according to their assigned Panel ID number (where an ID of 1 is the highest, and ID of 2 is the second highest etc.).

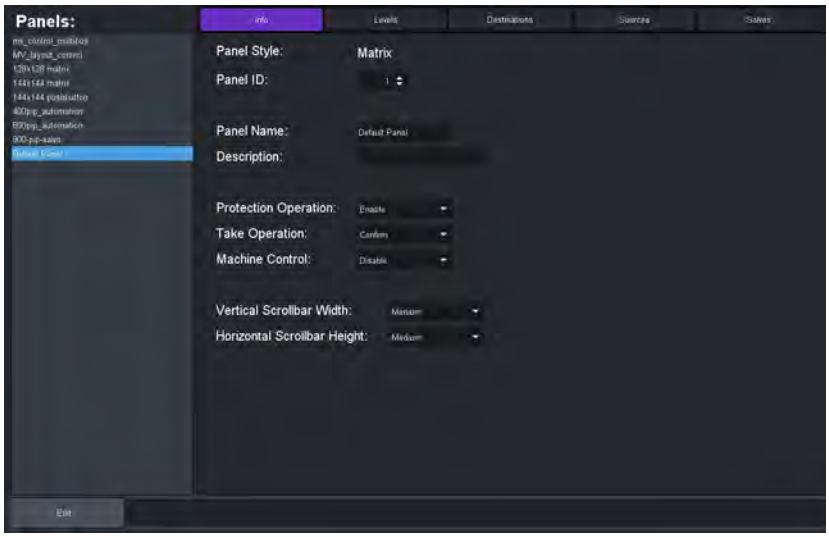


Figure 77 Example of Entries in a Panels Tab

Panels Menu

The Panels menu displays on the left side of the interface. This menu provides a list of soft panels saved in the current database. Selecting a soft panel from the list updates the tab entires in the Panels tab with the settings for that soft panel.

Info Tab

Use the options in the Info tab to assign a panel a unique identifier, select the panel style template to use, and how the panel will perform tasks such as Take transitions. This is the default tab that the interface opens on. **Table 60** summarizes the fields and menus displayed in the Info tab.

Table 60 Info Tab

Item	Parameters	Description
Panel Style (read-only)	<name>	Specifies the panel type that was assigned to the soft panel when it was created
Panel ID	<integer>	Specifies the auto-assigned number assigned to the soft panel
Panel Name	<name>	Provides a unique identifier for the soft panel. This name also displays as a sub-node in the Soft Panels tree
Description	#	Provides a textual summary of the soft panel or additional information about the panel
Protection Operation	Lock	Displays only the Lock button in the panel interface
	Protect	Displays only the Protect button in the panel interface
	Both	Displays the Lock and Protect buttons in the panel interface

Table 60 Info Tab

Item	Parameters	Description
Take Operation	Confirm	A TAKE button displays on the soft panel. You must click this button before the transition occurs
	Direct	A Take transition occurs automatically when a Level, Destination, and Source are selected on the soft panel.
Selection Operation	Single	The Multi Select button does not display on the 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 and Category panels.
Machine Control	Enable	Displays a Machine Control button on the panel. When selected on the panel, this Machine Control button sends a Take request directed to a Ross NK-M series data router to automatically make the reciprocal port switch. On a video router, the connection is all one way from an input port to an output port (e.g. such as from IN 1 to OUT 2).
	Disable	Does not display a Machine Control button on the panel.
Nongroup Resources[a]	Hide	Resources that are not assigned to a specific group are not displayed on the soft panel.
	Show	All resources are displayed on the soft panel.

a. This menu is only available when the Panel Style is set to Group Category.

Levels Tab

Use the options in the Levels tab to specify the number of levels for the panel, and organize them in a hierarchy for the panel. **Table 61** summarizes the fields and menus displayed in the Levels tab.

Table 61 Levels Tab

Item	Parameters	Description
Viewable Levels	<integer>	Specifies the maximum number of levels, as selectable buttons, that can display on the panel interface
Available	<integer>	List all the levels in the current database
Assigned	<integer>	Specifies which levels will be available in the soft panel

Destinations Tab

Use the options in the Destinations tab to specify which router outputs will be available in Destination bus of the soft panel. **Table 62** summarizes the fields and menus displayed in the Destinations tab.

Table 62 Destinations Tab

Item	Parameters	Description
Viewable Destinations	<integer>	Specifies the maximum number of destinations, as selectable buttons, on the panel. This field is not displayed when the Panel Style is set to Group Category or Cat/Index Category.
Available	<integer>	Lists all the destinations in the current database
Assigned	<integer>	Specifies which destinations will be available in the soft panel

Sources Tab

Use the options in the Sources tab to specify which router inputs will be available in Source bus of the soft panel, and their hierarchy. **Table 63** summarizes the fields and menus displayed in the Sources tab.

Table 63 Sources Tab

Item	Parameters	Description
Viewable Sources	<integer>	Specifies the maximum number of sources, as selectable buttons, on the panel. This field is not displayed when the Panel Style is set to Group Category or Cat/Index Category.
Available	<integer>	Lists all the sources in the current database
Assigned	<integer>	Specifies which sources will be available in the soft panel

Salvos Tab

Use the options in the Salvos tab to specify the total number of salvos displayed in the soft panel and their hierarchy. **Table 64** summarizes the fields and menus displayed in the Salvos tab.

Table 64 Salvos Tab

Item	Parameters	Description
Viewable salvos	#	Specifies the maximum number of salvos that will be listed on the Recall Salvos dialog for the panel. This field is not displayed when the Panel Style is set to Matrix.
Available	#	Lists all the salvos in the current database
Assigned	#	Specifies which salvos will be available in the soft panel

Favorites Tab

✶ The Favorites tab only displays when the Panel Style is set to Ultritouch PB.

Table 65 summarizes the fields and menus displayed in the Favorites tab.

Table 65 Favorites Tab

Item	Parameters	Description
Name	<name>	Provides a unique identifier for the type of Favorite for this soft panel.
Type	Crosspoint	Creates a Favorites button on the soft panel that recalls a specific crosspoints switch
	Group	Creates a Favorites button on the soft panel that loads a specific Group Category in the database
	Salvo	Creates a Favorites button on the soft panel that recalls a specific salvo in the database
	Sources	Creates a Favorites button on the soft panel that selects a specific source in the database
	Destinations	Creates a Favorites button on the soft panel that selects a specific destination in the database
Field 1		Specifies the first item for the Favorite. For example, if the type is set to Crosspoint, Field 1 reports the destination.
Field 2		Specifies the second item for the Favorite. For example, if the type is set to Crosspoint, Field 2 reports the source.
Up	Moves the selected row higher in the table	
Down	Moves the selected row lower in the table	
Top		Moves the selected row to the top of the table
Bottom		Moves the selected row to the bottom of the table
Sort		Sorts by window type

Home View Tab

✶ The Home View tab only displays when the Panel Style is set to Ultritouch PB or Push Button.

Table 66 summarizes the options displayed in the Home View tab.

Table 66 Home View Tab

Item	Parameters	Description
Display Icons	Enable	The Destination and Source buttons on the soft panel display icons
	Disabled	The Destination and Source buttons do not display icons; only the labels are displayed on each button.
Orientation	Portrait	The windows are organized into columns (vertical panes) on the soft panel
	Landscape	windows are organized into rows (horizontal panes) on the soft panel
Home Windows		

Table 66 Home View Tab

Item	Parameters	Description
Window (read-only)	<text>	Specifies the window type
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
Reset	Loads the default window layout and widths	
Up	Moves the selected row higher in the table	
Down	Moves the selected row lower in the table	
Top	Moves the selected row to the top of the table	
Bottom	Moves the selected row to the bottom of the table	
Sort	Sorts by window type	

Buttons

Table 67 summarizes the buttons displayed in all Panel sub-tabs.

Table 67 Button on the Panels Interface

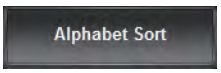
Button	Description
	In the Available area, clicking this button toggles the sorting order between alphabetical or database-index (based on the current order listed in the Levels, Destinations, or Sources tabs)
	Moves the selected items in the Available list to the Assigned list.
	Moves the selected item(s) from the Assigned list back to the Available list. These items will not be available in the soft panel window.
	Moves all the available labels to the Assigned list
	Removes all the items from the Assigned list back to the Available list. These items will not be available in the soft panel window.
Up	Moves the selected item in the Assigned list up one position. This changes the order of the displayed items on the soft panel.
Down	Moves the selected item in the Assigned list down one position. This changes the order of the displayed items on the soft panel.
Top	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.
Bottom	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.
	In the Assigned area, clicking this button arranges the items into alphanumerical order.

Table 67 Button on the Panels Interface

Button	Description
Database Sort	In the Assigned area, clicking this button arranges the items in the Assigned list according to the order established in the Levels, Destinations, or Sources tabs.
Edit...	Displays the Edit dialog for the soft panel
Cancel	Discards any recent changes made in the soft panel, and reverts to the previously saved settings.
Apply	Applies changes made in the soft panel and updates the Ultricore BCS database

System Monitor Tab

Table 68 summarizes the options displayed in the System Monitor tab.

Table 68 System Monitor Tab

Item	Parameters	Description
Active Database	<text>	Indicates the database currently loaded in Ultricore BCS
IP	#.#.#.#	Indicates the IP Address assigned to this Ultricore BCS
Ver	#	Indicates the build version of the Ultricore BCS panel
Name	<text>	Indicates the unique identifier assigned to the Ultricore BCS
Uptime	#h #m #s	Indicates the number of hours, minutes, and seconds since the last reboot of the Ultricore BCS panel
Redundant Mode	active	Two Ultricore BCS panels are configured in a redundant system where they share the same IP address. Refer to "**Setting up a Redundant System**".
	inactive	The current Ultricore BCS panel is not setup in a redundant system
Shared IP	#	When operating in a redundant system, this field indicates the IP address that the primary and secondary Ultricore BCS panels are currently using.
Incoming Connections		
DashBoard Clients	#	Indicates the total number of DashBoard clients communicating with this Ultricore BCS
RCP Panels	#	Indicates the total number of remote control panels communicating with this Ultricore BCS
3rd Party Control	#	Indicates the total number of third-party automation control devices communicating with this Ultricore BCS
Ross IP-Video	# / #	Indicates the total number of Ross Video IP Connectivity (video) devices communicating with this Ultricore BCS

Table 68 System Monitor Tab

Item	Parameters	Description
Ross IP-Audio	# / #	Indicates the total number of Ross Video IP Connectivity (audio) devices communicating with this Ultricore BCS
IP-Video	# / #	Indicates the total number of third-party IP Connectivity (video) devices communicating with this Ultricore BCS
IP-Audio	# / #	Indicates the total number of third-party IP Connectivity (audio) devices communicating with this Ultricore BCS
Outgoing Connections		
<device name> #.#.#.#	Displays the unique identifier and the assigned IP address of external devices (such as Ultrix routers) that the Ultricore BCS is sending information to. The status indicator reports if the external device is reporting an error condition (red) or not (green).	
Memory Utilization		
#	Percentage of system RAM currently in use	
Disk Space Utilization		
#	Percentage of available storage space	
System Utilization		
#	Measure of the communication traffic that the Ultricore BCS is managing	

Destination Follow Tab

Table 69 summarizes the options displayed in the Destination Follow tab.

Table 69 Destination Follow Tab

Item	Parameters	Description
Destination	#	Specifies the Destination you want to configure
Following	#	Specifies the router output that the specified Destination will follow

Additional Dialogs, Menus, and Toolbars in the Database Interfaces

Each tab displays a toolbar located at the bottom that provides buttons that display additional editing dialogs (e.g. insert, cut, paste, search). Also, right-clicking a row in any tab also displays a menu of editing dialogs. This section briefly outlines those additional editing dialogs.

Bottom Toolbar

The bottom toolbar of each tab in the Database includes buttons for applying changes made to settings in the interface, or adding elements to the table in the interface. **Table 70** summarizes the buttons displayed in the Bottom toolbar. Note that not all buttons display in all tabs.

Table 70 Bottom Toolbar Items

Button	Description
Edit	Displays the Edit dialog for the tab. Refer to **Table 71** for details.
Find	Displays the Find dialog that enables the entering of criteria for searching of the tab contents.
Fill Label	Applies a custom label to the selected port
Reset Label	Reverts the label content to the previously saved text
Delete	Removes the selected port from the list for the matrix
Add	Adds the selected port from the list for the matrix
Cancel	Discards any recent changes made in the tab, and reverts to the previously saved table settings.
Apply	Applies changes made in the tab and updates the Ultricore BCS database

Edit Dialogs

Table 71 summarizes the buttons displayed in the **Edit** dialogs. Note that not all options display in all tabs.

Table 71 Edit Dialogs Items

Button	Description
Add	In interfaces with lists on the left toolbar (e.g. Panels, Port Labels, Salvos), selecting a list item and then clicking Add creates a copy of the selected item. The name to the newly created item includes the name from the copied item with the prefix “New”.
Auto Generate	Automatically fills the cells in the table with a default value. For example, clicking this button in the Destinations tab automatically fills all the cells with the text “Dest”.
Clear	Removes the data from the selected cell.
Clear All	Removes the text or entry in all cells of the interface.
Copy	Copies the selected cell data to the clipboard. In some interfaces, such as in the Salvo tab, the salvo settings are copied in entirety.
Cut	Copies the cell data to the clipboard and then delete it from the table.
Delete[a]	When working in an interface with a table layout, clicking this button removes the currently active row from the table. When working in an interface with lists on the left toolbar, clicking this button removes the selected item from the list. You will still need to click Apply to completely remove the item from the database.

Table 71 Edit Dialogs Items

Button	Description
Fill	A range of name cells may be filled with consecutive numerical data. For example, VTR1 to VTR4 may be entered quickly by defining a prefix (in this case VTR) and a suffix that will numerically increment. Selecting Fill from the Insert toolbar, a dialog displays prompting you to enter a prefix (alphanumeric) and the start/end numerical values. This method adds rows to the destination table inserting below the active row.
Fill & Replace	Enables you to overwrite a range of cells in the table. Rows beneath the currently active row are overwritten with data from the Fill & Replace dialog.
Insert Above	Inserts a new row above the currently active row in the table. Any existing data is moved down the table by one row.
Insert Below	Inserts a new row below the currently active row in the table. Any existing data is moved up one row.
Insert Series	Inserts a sequential range of labels below the currently selected row.
Paste	Pastes the copied cell data from the clipboard. In some interfaces, such as in the Salvo tab, the copied salvo settings are pasted in entirety.
Paste Below	Pastes the copied cell data, from the clipboard, to currently selected cell.
Rename	When working in an interface with lists on the left toolbar, clicking this button enables you to provide a different name/label to the selected item.
Reset All IDs	Resets the source/destination ID numbers based on their current row number. It is recommended to verify the interfaces that referenced IDs (such as Soft Panels, Salvos, etc.)

a. Ensure the ID numbers are correctly sequenced when deleting and inserting entries in the tabs. Refer to the Reset All IDs row in this table.

Find Dialogs

Table 72 summarizes the buttons displayed in the **Find** dialogs.

Table 72 Find Dialogs Items

Item	Description
Column	A pull-down menu that lists the columns available in the current interface. Select the column to perform the search within.
Find What:	Specifies the characters, or text, to search the table contents.
Direction	Begins the search by searching below the currently selected row (Down), or above the selected row (Up).
Match whole word only	Select the check box to search only for the characters in the Find What: field as they are typed in the field. For example, typing "`put`" will search for instances of the word "put" and not "input" or "output".
Cancel	Cancels the search criteria and closes the Find menu.
Find	Performs a search through the table contents based on the specified criteria.

Advanced Fill Tool

The **Advanced Fill** tool is provided to create new destination and source labels that are automatically assigned to physical outputs and inputs depending on options set by the user. The audio routing features provided by the routers in your system can result in an extensive source and destination definition map requiring some time to manually enter. The **Advanced Fill** tool will speed the assignment of physical sockets greatly.

For More Information on...

- using the tool to set up your database, refer to "**Using the Advanced Fill Tool**".

Breakaway Fill Dialog

The **Breakaway Fill** dialog is the **Advanced Fill** tool for the **Sources** tab. This dialog is displayed when you click **Edit** > **Fill**.

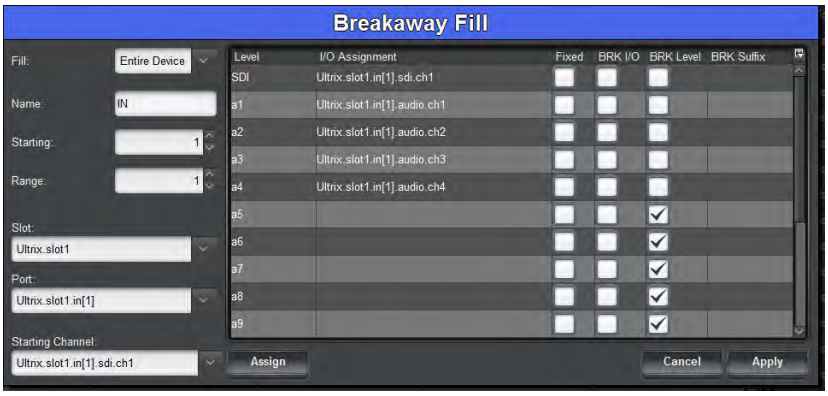


Figure 78 Example of a Breakaway Fill Dialog

Table 73 summarizes the options displayed in the **Breakaway Fill** dialog.

Table 73 Breakaway Fill Dialog

Item	Parameters	Description
Fill	Custom	Insert labels with assignments for a custom range defined by the Range setting
	Entire Slot	Insert labels with assignments for a single router slot (including the AUX ports on the Ultrix router)
	Entire Device	Insert labels with assignments for the entire router (including the AUX ports on the Ultrix router)
Name	<text>	The prefix for the label creation. For example, typing **VTR** results in labels **VTR1**, **VTR2**, etc. Take care when determining label names. While a long name may be nice and descriptive for the Source tab, many control devices have limited screen space and labels may be truncated.
Starting	#	The starting numerical extension for the label creation. For example, typing **3** results in labels **Name3**, **Name4**, etc.
Range	#	The quantity of labels for custom fill range
Slot	#	The Ultrix slot number to start the label assignment from[a]
Port	#	The Ultrix port to start the label assignment from[a]

Table 73 Breakaway Fill Dialog

Item	Parameters	Description
Starting Channel	#	The Ultrix channel to start the label assignment from[a]
Level	#	This column lists the levels defined as per user entries in the system Levels setup table
I/O Assignment	#	This column lists the starting assignment for the given Level row
Fixed		Select the box to fix the I/O assignment selection even though it may be out of natural order compared to other I/O assignments. For example, **`Ultricore BCS.slot1.in[1].audio.ch1`** **`Ultricore BCS.slot2.in[1].audio.ch1`**.
BRK I/O		Select the box to insert a label with this I/O assignment on all BRK Level selections. For example, `IN 1 ch1` | `slot1.in[1].audio.ch1` | `slot1.in[1].audio.ch1` | `slot1.in[1].audio.ch1`.
BRK Level		Select the box to include this level when creating a breakaway label. For example, `IN 1 ch1`.
BRK Suffix	<text>	By default, breakaway label naming uses the ch**x** part of the Ultricore BCS name. A user defined suffix may be entered here.
Assign	Click this button to automatically fill the I/O Assignment column based on the **Slot**, **Port**, **Starting Channel** settings to the selected row(s).	
Apply	Click this button to insert labels with assignments based on dialog settings into the source assignment table below the current selected row.	
Cancel	Click this button to cancel the settings and close the dialog. No changes to the Source table will be made.	

a. The Breakaway Fill dialog uses the default naming convention of FrameName.slot n.in/out[p].type.chx.

Destinations Fill Dialog

The **Destinations Fill** dialog is the **Advanced Fill** tool for the **Destinations** tab. This dialog is displayed when you click **Edit** > **Fill**.

Figure 79 Example of a Destinations Fill Dialog

Table 74 summarizes the options displayed in the **Destinations Fill** dialog.

Table 74 Destinations Fill Dialog

Item	Parameters	Description
Fill	Custom	Insert labels with assignments for a custom range defined by the Range setting
	Entire Slot	Insert labels with assignments for a single router slot
	Entire Device	Insert labels with assignments for the entire router/device
Name	<text>	The prefix for the label creation. For example, typing `VTR` results in labels `VTR 1`, `VTR 2`, etc. Take care when determining label names. While a long name may be nice and descriptive for the Destination tab, many control devices have limited screen space and labels may be truncated.
Starting	#	The starting numerical extension for the label creation. For example, typing `3` results in labels `Name3`, `Name4`, etc.
Range	#	Specifies the quantity of labels for custom fill range
Slot	#	The Ultricore BCS slot number to start the label assignment from[a]
Port	#	The Ultricore BCS port to start the label assignment from[a]
Starting Channel	#	The Ultricore BCS channel to start the label assignment from[a]
Level	#	This column defines the levels as per user entries in the system levels setup table
I/O Assignment	#	Starting assignment for the given level row
Assign	Click this button to automatically fill the I/O Assignment column based on the **Slot**, **Port**, and **Starting Channel** settings to the selected row/s	

Table 74 Destinations Fill Dialog

Item	Parameters	Description
Apply		Click this button to insert labels with assignments based on dialog settings into the source assignment table below the current selected row.
Cancel		Click this button to cancel the settings and close the dialog. No changes to the Destination table will be made.

a. The Fill Destination dialog uses the default naming convention of FrameName.slot n.in/out[p].type.chx.

Devices Interface

The Devices node summarizes the hardware components of the routing system. The nodes represent a hierarchy of the routing system communicating with the Ultricore BCS.

For More Information on...

- how Ultricore BCS communicates with Ross devices, refer to "**Operation with Ross Devices**".
- general control of external devices via third-party protocols, refer to "**External Control**".

Controllers and Matrices

The **Controllers and Matrices** node allows access to hardware settings and device options including any licensing configuration. Double-clicking the node for a device opens the interface for that particular device.

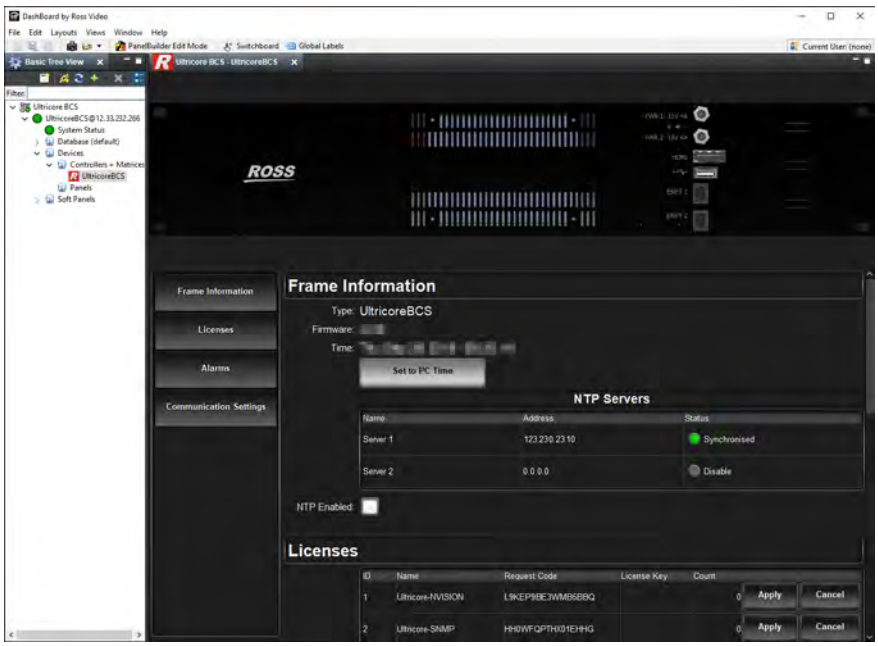


Figure 80 Example of an Expanded Controllers and Matrices Node

Soft Panels Interfaces

The Soft Panels interface represents the routing system crosspoint control in the virtual space of the Ultricore BCS. Each available soft panel in the database displays as a sub-node under the Soft Panels main node in a tree layout. The soft panels display in a hierarchy based on their Panel ID. Double-click a soft panel node to display its interface in the DashBoard window. There are three types of soft panels: Matrix, MultiBus, and Category.

✶ You must configure your connections, sources, destinations, and levels, before you can create a soft panel and perform crosspoint switches.

For More Information on...

- creating a database for your routing system, refer to "**Creating a New Database**".
- the interface for creating soft panels, refer to "**Soft Panels Interfaces**".
- using soft panels, refer to "**Soft Panels in DashBoard**".
- creating and using salvos, refer to "**Using Salvos**".

Matrix Panel

The Matrix Panel provides a visual representation of multi-level crosspoints, in a grid layout, and offers a convenient and easy way to select and switch crosspoints. The columns of the grid represent the configured Sources and are labeled with the labels specified in the Input Name cells of the Sources tab. The rows of the grid represent the configured Destinations and display the labels specified in the Destination tab.

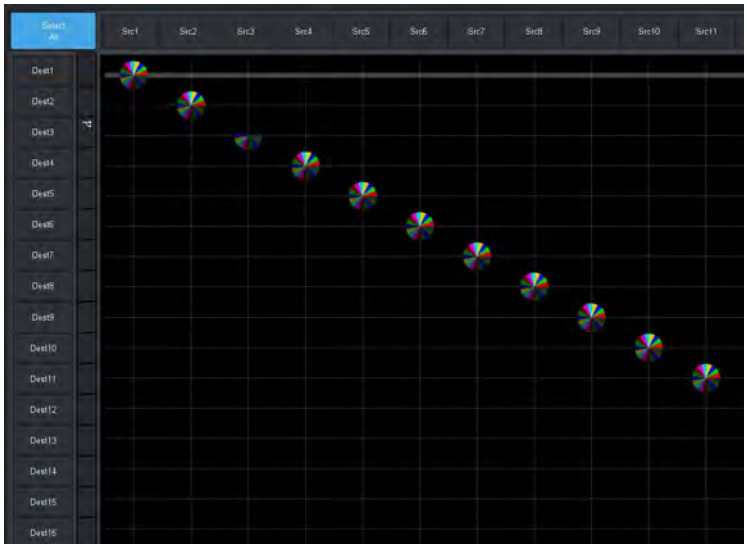


Figure 81 Example of a Matrix Panel

Right-side Toolbar

Table 75 summarizes the buttons displayed in the toolbar on the right-side of the interface.

Table 75 Matrix Panel Toolbar Items

Button	Description
Level #	Each configured level in the currently active database is represented with a button. When selected, the button is lit with the color assigned to the level. Crosspoint selections on the matrix are also lit this color when the level is included in the next switch.
Follow	Automatically selects all the Level buttons listed on the Matrix panel (buttons are now lit). All levels are now included in next crosspoint selection.
TAKE	Performs a Take transition to the next crosspoint selection.
Lock	Locks the Matrix panel from all switches or function button operation.
Protect	Protects the currently selected source/destination level pair from use by other sources, as well as from other linked panels.

Table 75 Matrix Panel Toolbar Items

Button	Description
Free	Removes the Lock and Protect from the next crosspoint switch.
Salvo	Displays the options for managing the salvos for your soft panel. Refer to "**Salvo Menus**" for details.
Advanced	Displays the options for managing crosspoint switches on your soft panel. Refer to "**Advanced Menus**" for details.

Salvo Menus

Table 76 summarizes the options displayed in the **Salvo** menu.

Table 76 Matrix Panel — Salvo Menus

Button	Description
Recall	Recalls and applies the last saved salvo settings.
Edit	Enables you to load a salvo, update its settings, and then save your changes.
Save	Saves the current crosspoint selection as a local salvo.
Capture Current Status	Automatically creates a salvo based on the currently selected destination and source positions.
Capture Dest Status	Automatically creates a salvo based on the currently selected destination positions.

Advanced Menus

Table 77 summarizes the options displayed in the **Advanced** menu.

Table 77 Matrix Panel — Advanced Menus

Button	Description
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. No destination buttons are selected.
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.

MultiBus Panel

The MultiBus Panel provides breakaway control and status monitoring of several destinations simultaneously. The MultiBus Panel interface is organized into two buses with a central status row of indicators for the levels. The toolbar on the far left of the interface provides options for locking and protecting crosspoints, setting up the transition, and selecting the levels. The bottom row of the interface is populated with buttons for the salvos defined in the database.

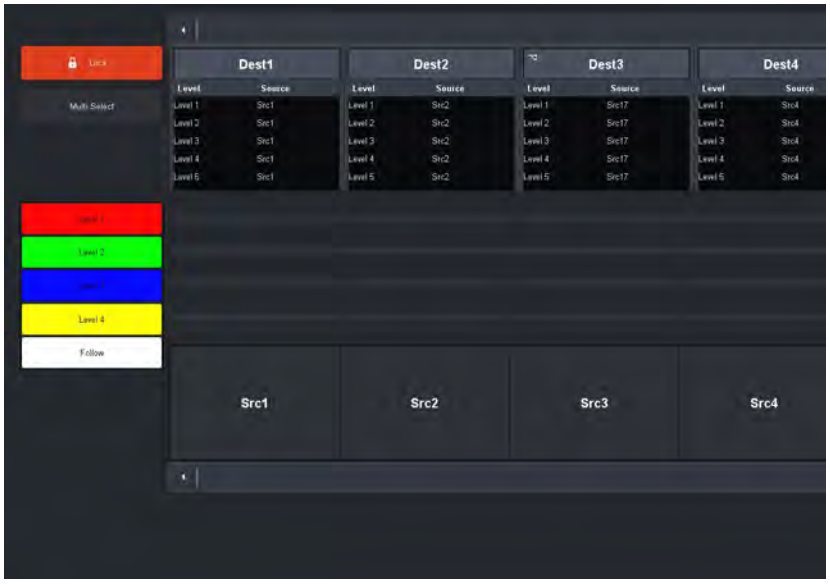


Figure 82 Example of a MultiBus Panel

Left Toolbar

Table 78 summarizes the fields and information displayed in the left toolbar of the **MultiBus Panel**.

Table 78 MultiBus Panel — Left Toolbar Items

Button	Description
Lock	Locks the MultiBus panel from all switches or function button operation.
Take	Performs a Take transition to the next crosspoint selection.
Preset	Enables you to configure a crosspoint switch that will not take effect until the Take button is selected.
Clear	Clears the selections in the crosspoint buses. No buttons are lit and the fields in the Destination buses are blank.
Multi Select	Enables you to assign a single source to multiple destinations for a multi-switch configuration.
Level #	Each configured level in the currently active database is represented with a button. When selected, the button is lit with the color assigned to the level. Crosspoint selections on the matrix are also lit this color when the level is included in the next switch.
Follow	Automatically selects all the Level buttons listed on the Matrix panel (buttons are now lit). All levels are now included in next crosspoint selection.

Destinations Bus

Each Destination is represented as a distinct box on the top bus of the MultiBus Panel. **Figure 83** provides an example of a Destination bus. The Destination bus only displays the destinations specified when the soft panel was configured.

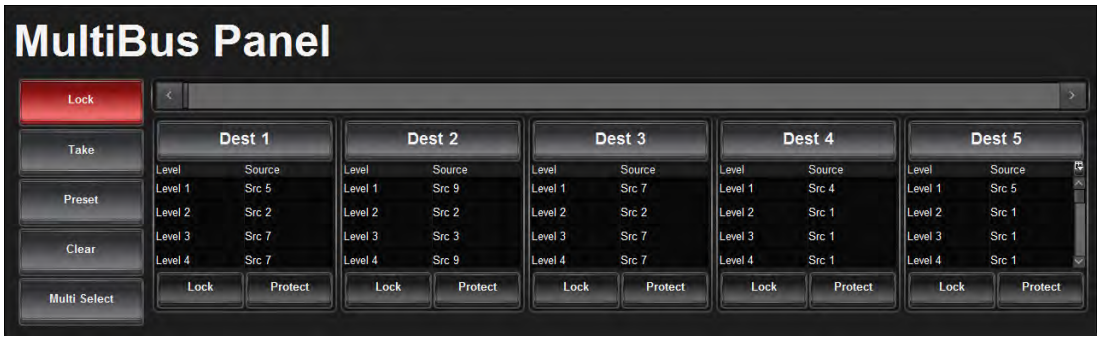


Figure 83 Example of a Destination Bus on the MultiBus Panel

Table 79 summarizes the buttons displayed for each Destination in the **MultiBus Panel**.

Table 79 MultiBus Panel — Destination Items

Button	Description
Name	The Destination name/label is reported at the top of each area and displays as a selectable button. This enables for quick identification on the bus when selecting crosspoint switches. The Destinations available on the bus is dependent on the database currently loaded on the router and how many destinations were specified when the soft panel was configured.
Level #	This field reports the level(s) that the destination was associated with on the last crosspoint switch.
Source #	This field reports the source(s) currently selected on the Source bus located near the bottom of the MultiBus Panel interface.
Lock	Locks the Destination from all switches or function button operation.
Protect	Protects the currently selected Destination from use by other sources, as well as from other linked panels.

Sources Bus

Each Source is represented as a distinct button on the bottom bus of the **MultiBus Panel**. **Figure 84** provides an example of a Source bus. The Source bus only displays the sources, and in the hierarchy, specified when the soft panel was configured.

Figure 84 Example of a Source Bus on the MultiBus Panel

Category Panel

There are two types of Category Panels: Classic and Group. Each Category Panel organizes the sources and destinations according to the definitions set in the applicable Category interface for the database. The top toolbar is used in conjunction with the central button matrix for selecting sources

and destinations. The left side of the interface provides access to level selection, and reports on the breakaway status with fields for each level. Some functions are category type specific. Refer to "**Using Category Panels**" for details.

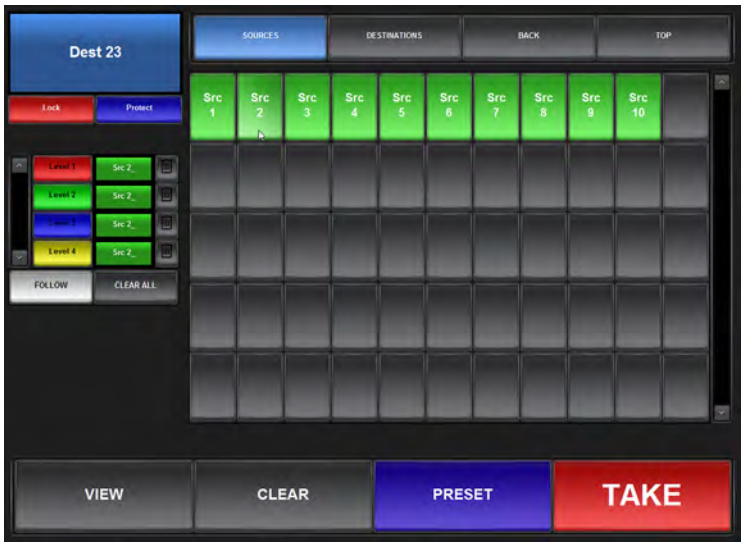


Figure 85 Example of a Category Soft Panel for an Ultricore BCS

Ultritouch PB Panels

You can control an Ultrix router via Ultritouch by loading a saved soft panel using the Ultritouch hard panel interface. Loading a soft panel to Ultritouch requires a similar method as loading a soft panel in the Ultrix and/or Ultricore menu system. You select the device in the Ultritouch > All Connections interface, navigate to the specific soft panel you wish to load, and select it from the provided list.

Figure 86 Example of an Ultritouch Soft Panel

For More Information on...

- the creating and using Ultritouch soft panels, refer to the ***Ultritouch + Ultricore BCS User Guide***.

Push Button Panels

The Push Button Panel interface is organized into four distinct areas. The top area displays the Destinations, the middle row includes the Source buttons, and each area includes an independent method for filtering the buttons. A toolbar displays on the right to provide access to the level buttons, and includes a status field. The bottom toolbar provides options for locking and protecting crosspoints, setting up the transition, selecting salvos, and other functions.

Figure 87 Example of a (Landscape) Push Button Soft Panel

For More Information on...

- the creating and using Push Button soft panels, refer to "**Using Push Button Panels**".

Using Walkabout in DashBoard

Walkabout is a Ross router utility operating within DashBoard, as of DashBoard version 6.2, that enables you to configure the network settings for NK devices. Once a valid connection is established with Walkabout, the device is listed in the Tree View of DashBoard and available for monitoring and configuration via DashBoard.

Ultricore BCS supports a basic configuration mode via the Walkabout system for initial configuration of IP settings:

- specify device IP settings and names
- specify a name for your routing system
- specify the system role (e.g. primary, backup, device)
- select a system to join from a list of valid system names assigned to controllers
- set communications server from a list of valid communication server devices (or IP)

For More Information on...

- the features of Walkabout, refer to the Ross Video document ***Configuring Devices Using Walkabout***.
- using Walkabout and Ultricore BCS, refer to "**Using Walkabout to Assign an IP Address to the Ultricore BCS Panel**".

Panel Menu System Overview

There are two methods for monitoring: via a DashBoard client computer or using the Ultricore BCS hard panel. This chapter outlines the status field displayed on the hard panel.

Ultricore BCS System Monitoring Window

The System Monitoring window of the Ultricore BCS hard panel is organized into groups of read-only fields. Use this window to verify the network settings for the panel, monitor communications with devices in your routing system, and troubleshoot system status.

✶ This window reflects the same information as reported on the System Monitor tab in DashBoard. To access this interface on a DashBoard client computer, double-click the Ultricore BCS Device sub-node in the Tree View and select Database > System Monitor.

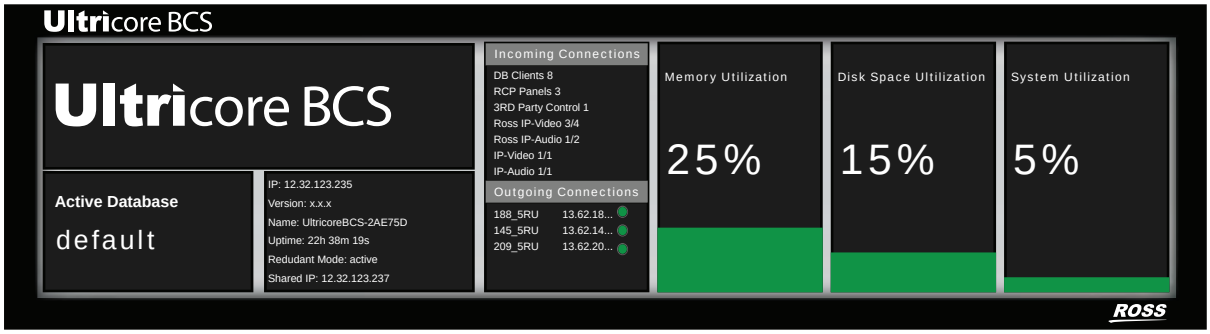


Figure 88 Example of the Ultricore BCS Panel System Monitoring Window

Table 80 summarizes the options displayed in the System Monitoring window.

Table 80 System Monitoring Window

Item	Parameters	Description
Active Database	<text>	Indicates the database currently loaded in Ultricore BCS
IP	#.#.#.#	Indicates the IP Address assigned to this Ultricore BCS
Ver	#	Indicates the build version of the Ultricore BCS panel
Name	<text>	Indicates the unique identifier assigned to the Ultricore BCS
Uptime	#h #m #s	Indicates the number of hours, minutes, and seconds since the last reboot of the Ultricore BCS panel
Redundant Mode	active	Two Ultricore BCS panels are configured in a redundant system where they share the same IP address. Refer to "**Setting up a Redundant System**" for details.
	inactive	The current Ultricore BCS panel is not setup in a redundant system

Table 80 System Monitoring Window

Item	Parameters	Description
Shared IP	#	When operating in a redundant system, this field indicates the IP address that the primary and secondary Ultricore BCS panels are currently using.
Incoming Connections		
DashBoard Clients	#	Indicates the total number of DashBoard clients communicating with this Ultricore BCS
RCP Panels	#	Indicates the total number of remote control panels communicating with this Ultricore BCS
3rd Party Control	#	Indicates the total number of third-party automation control devices communicating with this Ultricore BCS
Ross IP-Video	# / #	Indicates the total number of Ross Video IP Connectivity (video) devices communicating with this Ultricore BCS
Ross IP-Audio	# / #	Indicates the total number of Ross Video IP Connectivity (audio) devices communicating with this Ultricore BCS
IP-Video	# / #	Indicates the total number of third-party IP Connectivity (video) devices communicating with this Ultricore BCS
IP-Audio	# / #	Indicates the total number of third-party IP Connectivity (audio) devices communicating with this Ultricore BCS
Outgoing Connections		
<device name> #.#.#.#	Displays the unique identifier and the assigned IP address of external devices (such as Ultrix routers) that the Ultricore BCS is sending information to. The status indicator reports if the external device is reporting an error condition (red) or not (green).	
Memory Utilization		
#	Percentage of system RAM currently in use	
Disk Space Utilization		
#	Percentage of available storage space	
System Utilization		
#	Measure of the communication traffic that the Ultricore BCS is managing	

Technical Specifications

This chapter provides technical information for Ultricore BCS.

✶ Specifications are subject to change without notice.

Physical Dimensions

Table 81 Technical Specifications — Physical Dimensions

Item	Specification
Width	19” (48cm)
Depth	2.5” (6cm)
Height	3.5” (9cm)
Weight (approx.)	5.25lb (2.40kg)

Ethernet Port Connectors

Each Ultricore BCS comes standard with two ENET ports on the rear panel to interface with a local network, and Ross devices that use an Ethernet protocol for communications.

✶ The ENET 2 port is not implemented.

Table 82 Technical Specifications — Ethernet Ports

Item	Specifications
Number of Ports	2
Connector Type	8-pin, RJ45 1GbE network interface

USB Port

Table 83 Technical Specifications — USB Ports

Item	Specifications
Number of Ports	1
Connector Type	USB2.0 socket

Supported USB-Serial Converters

The following USB-Serial chip-sets are supported:

- FTDI
- Silicon Labs CP210x
- Prolific PL2303
- Belkin

Environmental

Table 84 Technical Specifications — Environmental

Item	Specifications
Maximum Ambient Temperature Range	0°C to 40°C (32°F to 104°F)
Humidity, non-condensing	< 95%

Power

Table 85 Technical Specifications — Power Supply Ratings

Item	Specifications
Number of Ports	2
Power	15VDC @ 4A
Input	100-240Vac, 50/60Hz
Input Current	1.4A

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zlib

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The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files ftp://ds.internic.net/rfc/rfc1950.txt (zlib format), rfc1951.txt (deflate format) and rfc1952.txt (gzip format).

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 Ultricore BCS 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 signal output from the routing system.

Hard Panel — the physical Ultricore BCS panel that provides a touchscreen interface to the menu system.

IP Address — a setting that defines the Internet protocol address of a device within a network.

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.

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).

Remote Control Panel (RCP) — a physical hardware panel of buttons that is used to control the routing system.

Salvo — a system wide sequence of matrix control operations and crosspoint actions.

Soft Panel — a DashBoard software interface that represents a panel of buttons that is used to control the routing system.

Source — a signal input to the routing system.

Virtual Label — a name for a group of routing system inputs or outputs.

Virtual Routing — the action of switching a group of otherwise unrelated signals via a common label (name).