grass valley
A BELDEN BRAND

iControl Router

Powerful router control over IP

User Guide

M407-9900-231

2019-02-07

www.grassvalley.com

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Title	iControl Router User Guide
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1 Introduction

Overview

The Grass Valley iControl Router Software allows you to create a virtual routing environment where actual physical router resources are deployed and controlled by software into a customized configuration optimized for your operational needs. Large routers can be operated as if they were multiple smaller routers. For example, a 64 × 64 router can be operated as if it were three separate smaller routers: for instance, a 64 × 15 router, a 12 × 5 router and a 32 × 44 router. Control and monitoring are handled by software, and are readily changed. Each operator benefits by seeing only the resources actually being used. This software can also be used as a bridge interface between a Kaleido or iControl Web system and a routing device. In this configuration, it will be used to update UMD text, and for router control functions initiated from the Kaleido or iControl Web user interface. The software includes the following features:

- bridge interface via TCP-IP for Kaleido and iControl Web software
- distributed architecture
- highly configurable
- unlimited router size[1]
- unlimited number of levels
- support for logical routers
- support for a mix of different frame types from different manufacturers

Communications with Routers

The host computer and the routing devices you wish to control must be interconnected by an Ethernet cable. Only devices that use an Ethernet connection for control are supported.

Install the appropriate connection, either by using dedicated cabling or through an existing network.

See also

For more information, see Routing Switchers Tips and Tricks, on page 73.

1. Exceptionally, the iControl Router driver for the SAM (Snell/Pro-Bel) SW-P-08 protocol does not support, by default, a matrix larger than 1024 × 1024. If your router matrix requirements exceed this upper limit using this protocol, contact Grass Valley technical support.

User Interfaces Available with iControl Router Software

Configuration Interface

The configuration interface, called *iControl Router Configurator,* is used for router setup and configuration. Use this application to define physical and logical routers.

Term	Description
Physical Router	A *physical router* represents the connection to your existing router (TCP). Configure one physical router for each device you wish to control from the iControl Router software.
Logical Router	A *logical router* represents an entire physical router, or a subset of a physical router. The operating interfaces handle logical routers. For instance, if you configured one 16 × 16 physical router, you can create two 8 × 8 logical routers with levels 0 and 1.

See also

For more information, see Configuration Interface, on page 37.

Operating Interface

The operating interfaces called *Matrix View* and *Single Bus* are client applications used to monitor and control the logical routers that you defined in iControl Router. They are available from the iControl Router Control Web page.

See also

For more information, see Operating Interface, on page 7.

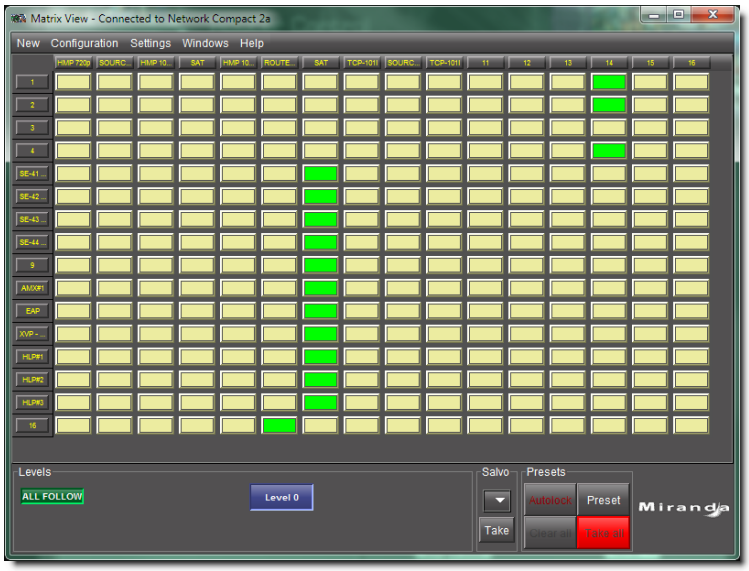
2 Operating Interface

Key Concepts

The operating interface consists of several components:

- **Matrix view** is designed to provide extended functionality and be a visual representation of the status for the whole logical router (see Matrix View, on page 7).
- **Single Bus** window is an interface designed to control one router destination (or group of destinations) at a time (see Single Bus Window, on page 10).
- **Router Status** window displays router status and labels of all destinations or groups of destinations (see Router Status Window, on page 13).
- **Exclusion Editor** allows you to exclude specified router inputs from appearing on specified outputs. For example, you may wish to inhibit a video recorder's output from being fed back to its input (see Exclusion Editor, on page 15).
- **Salvo Editor** allows you to create and edit a configuration of crosspoint closures (see Salvo Editor, on page 20).
- **Groups Editor** allows you to create and edit groupings of destinations (see Groups Editor, on page 24).

Matrix View



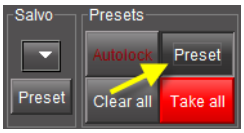
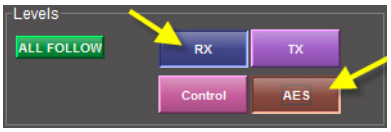
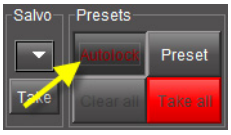
The **Matrix View** interface allows you to switch crosspoints during operation. Three areas at the bottom of the window enable crosspoint operation in different modes.

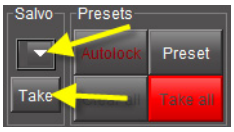
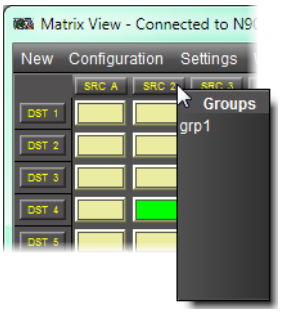
See also

For more information, see:

- Matrix View Common Tasks, on page 8
- Matrix Menus, on page 9
- Destination locks, on page 27
- Opening the Matrix View, on page 28

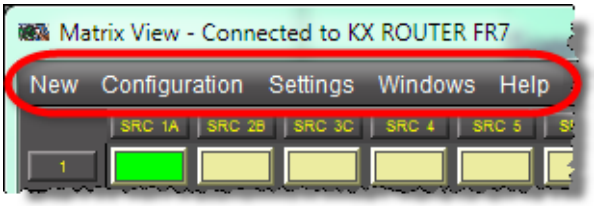
Matrix View Common Tasks

To do this...	...do this...
Set the system to store all changes made in Matrix view, but NOT implement those changes until **Take all** is clicked.	In the **Presets** area, select **Preset**. 
Set the system to implement all changes made in the Matrix view as soon as they are entered.	In the **Presets** area, clear **Preset**. 
Select one or more levels to be switched	In the **Levels** area, enable the button(s) corresponding to one or more levels, as required. 
Set the system to switch all levels	In the **Levels** area, enable **ALL FOLLOW**. 
Set the system to automatically lock changes once they are taken	In the **Presets** area, enable **Autolock**. 

To do this...	...do this...
Apply a salvo	In the **Salvo** area, select a salvo from the list, and then click **Take**. 
Choose a destination group	1 In the **Matrix** area, click on the column header box designating the source.  2 Select a group.

Matrix Menus

You may set some parameters of the Matrix View using the Matrix View menus located along the top of the **Matrix View** window.



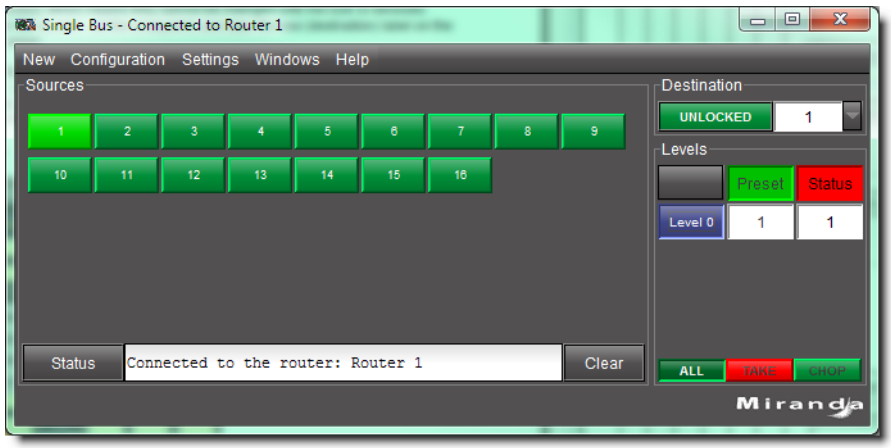
Matrix View menu items

Menu item		Action
New	Single Bus	Opens a new **Single bus** window with destination 1 selected.
	Matrix View	Opens a new **Matrix View** window.
	Status View	Opens a window showing the router status.
Configuration	Salvo Editor	Invokes the configuration mode **Salvo editor** window.
	Exclusion Editor	Invokes the configuration mode **Exclusion editor** window.
	Group Editor	Invokes the configuration mode **Group editor** window.

Matrix View menu items (*Continued*)

Menu item			Action
Settings	Status Bar	On	Displays status bar.
		Off	Hides status bar.
	Sound	On	Enables sound effects.
		Off	Disables sound effects.
	Header tip	On	Shows an enlarged version of the source and destination labels under the cursor tip, useful when the displayed labels are very small, e.g. when zoomed out on a large matrix
		Off	Disables the supplementary label display.
	Zoom	Zoom In	Makes matrix cells bigger. This is useful for big routers with many levels.
		Zoom Out	Shrinks matrix cells in order to show as much of the matrix as possible.
		Default Size	Resizes matrix cells to the default size.
		Fit horizontally	Tries to fit all of the sources into the window.
Windows			Contains a list of open windows. Selecting an entry will bring it to the front.
Close			Closes current window. If the window is the last one open – then exit.

Single Bus Window



The **Single Bus** window shows sources on the left as a set of buttons, and destinations on the right. Destinations appear in the list in the **Destination** area (either a single bus, or a

group with a defined name, or an *Anonymous* group created temporarily; the latter two from the **Destination/Group Selection** window).

See also

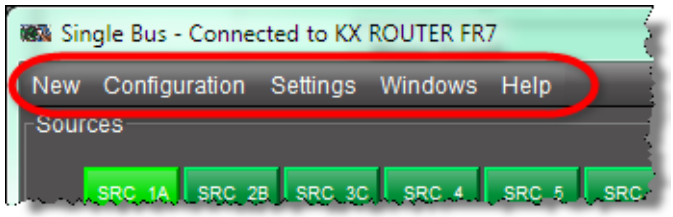
For more information, see:

- Single Bus Window Common Tasks, on page 11
- Single Bus Menus, on page 11
- Destination locks, on page 27
- Opening the Single Bus Window, on page 31

Single Bus Window Common Tasks

Single Bus Menus

You may set some parameters of the **Single Bus** window using the menus located along the top.



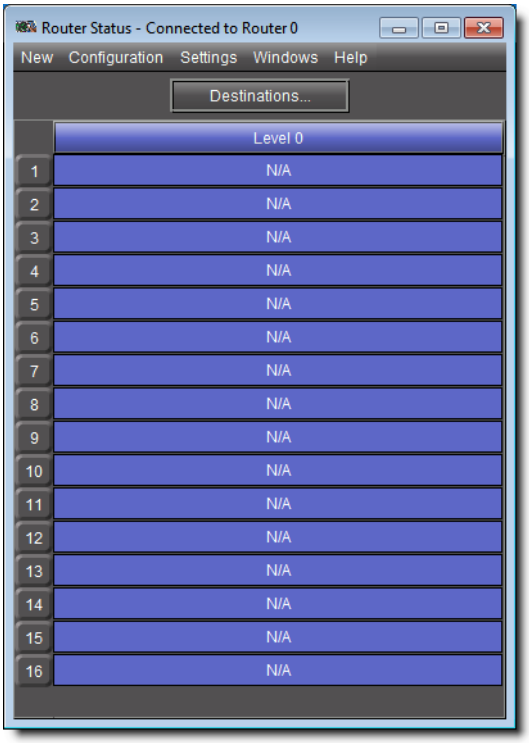
Single Bus menu items

Menu item		Action
New	Single Bus	Opens a new **Single bus** window with destination 1 selected.
	Matrix View	Opens a new **Matrix View** window.
	Status View	Opens a window showing the router status.
Configuration	Salvo Editor	Invokes the configuration mode **Salvo editor** window.
	Exclusion Editor	Invokes the configuration mode **Exclusion editor** window.
	Group Editor	Invokes the configuration mode **Group editor** window.

Single Bus menu items (*Continued*)

Menu item			Action
Settings	Status Bar	On	Displays status bar.
		Off	Hides status bar.
	Sound	On	Enables sound effects.
		Off	Disables sound effects.
	Autolock	On	Shows an enlarged version of the source and destination labels under the cursor tip, useful when the displayed labels are very small
		Off	Disables the supplementary label display.
	Preset	On	Enables presets. The new selection appears in the **Preset** area, and is set at the output when the **Take** button is clicked. The take is inhibited if any exclusions are violated, or if the selected destination is locked.
		Off	Disables presets. The **Preset** area is dimmed. All selected outputs switch immediately to the source selected on the button in the left panel.
	Chop interval	No auto chopping	Disables autochopping
		Set chop interval to **0.5s**	Changes chop interval to 0.5 seconds
		Set chop interval to **1s**	Changes chop interval to 1 second
		Set chop interval to **1.5s**	Changes chop interval to 1.5 seconds
		Set chop interval to **2s**	Changes chop interval to 2 seconds
		Set chop interval to **2.5s**	Changes chop interval to 2.5 seconds
		Set chop interval to **3s**	Changes chop interval to 3 seconds
		Set chop interval to **10s**	Changes chop interval to 10 seconds
		Set chop interval to **30s**	Changes chop interval to 30 seconds
Windows			Contains a list of open windows. Selecting an entry will bring it to the front.
Close			Closes current window. If the window is the last one open – then exit.

Router Status Window



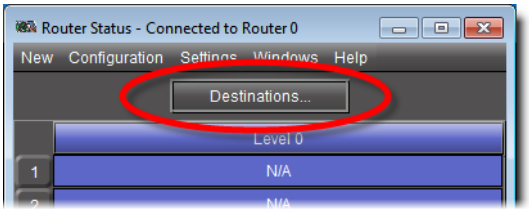
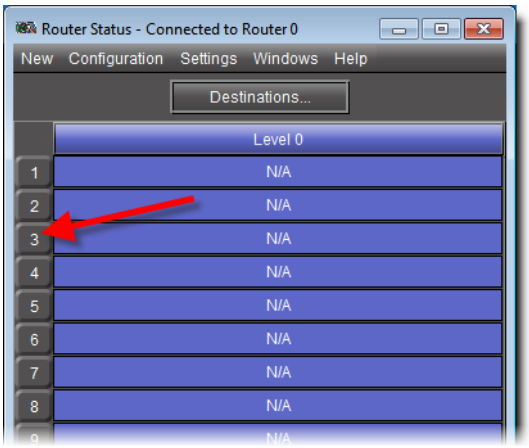
The **Router Status** window displays router status and labels of all destinations or groups of destinations.

See also

For more information, see:

- Router Status Window Common Tasks, on page 14
- Router Status Menus, on page 14
- Opening the Router Status Window, on page 33

Router Status Window Common Tasks

To do this...	...do this...
Display the **Destination/Group Selection** window	Click **Destinations**. 
Display the **Single Bus** window	Click the desired level. 

Router Status Menus

You may set some parameters of the **Single Bus** window using the menus located along the top.

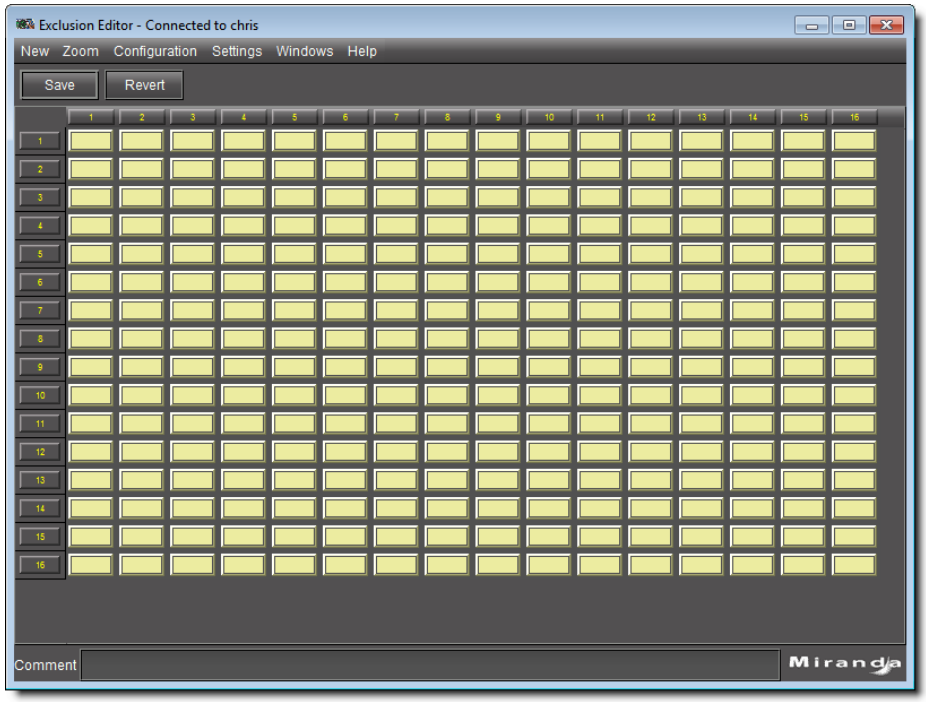
Router Status menu items

Menu item		Action
New	Single Bus	Opens a new **Single bus** window with destination 1 selected.
	Matrix View	Opens a new **Matrix View** window.
	Status View	Opens a window showing the router status.

Router Status menu items (*Continued*)

Menu item			Action
Configuration	Salvo Editor		Invokes the configuration mode **Salvo editor** window.
	Exclusion Editor		Invokes the configuration mode **Exclusion editor** window.
	Group Editor		Invokes the configuration mode **Group editor** window.
Settings	Status Bar	On	Displays status bar.
		Off	Hides status bar.
	Sound	On	Enables sound effects.
		Off	Disables sound effects.
Windows			Contains a list of open windows. Selecting an entry will bring it to the front.
Close			Closes current window. If the window is the last one open – then exit.

Exclusion Editor



Exclusion Editor allows you to forbid user-specified router inputs from appearing on user-specified router outputs. Sources extend along the horizontal axis and are labeled across

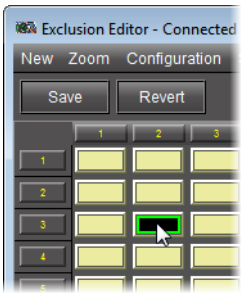
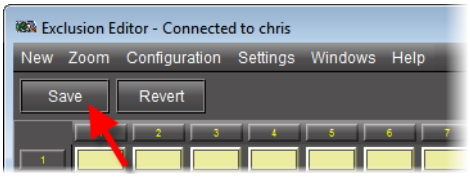
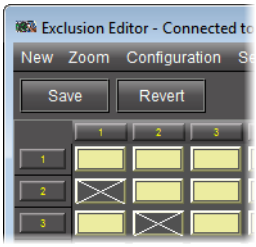
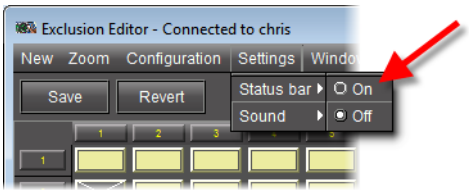
the top of the matrix. Destinations extend along the vertical axis and are labeled down the left side of the matrix.

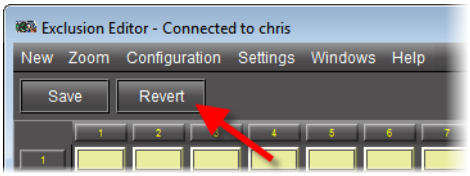
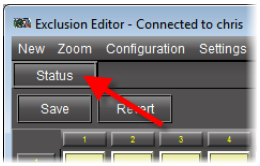
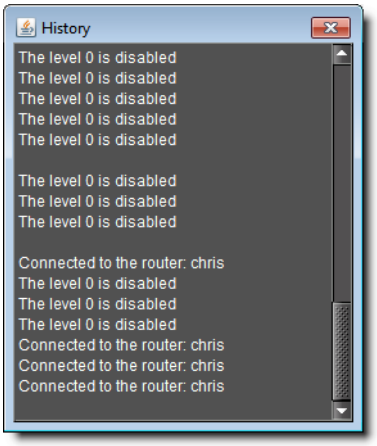
See also

For more information, see:

- Exclusion Editor Common Tasks, on page 17
- Exclusion Editor Menus, on page 19
- Opening Exclusion Editor, on page 35

Exclusion Editor Common Tasks

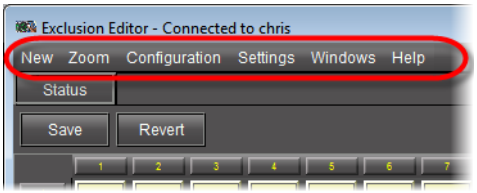
To do this...	...do this...
Configure an exclusion.	1 Click the box corresponding to the intersection of the source and destination whose match you would like to exclude.  *SYSTEM RESPONSE:* A green outline appears around the selected box. Do this for all desired exclusions. 2 Click **Save**.  *SYSTEM RESPONSE:* The selected boxes appear with a grey background and a white ×.[1] 
Display the **Status** bar.	On the **Settings** menu, point to **Status bar**, and then select **On**.  The **Status** bar appears. 

To do this...	...do this...
Revert back to the last saved exclusion settings.	Click **Revert**. 
Display the status history log.	Click **Status**.  The **History** window appears. 

1. If any exclusions are not allowed because of other choices made in the router definition, they will not appear on the matrix. Additionally, a note will appear (highlighted in red) in the Status box at the top of the pane. Click **Status** to see a list of all notes.

Exclusion Editor Menus

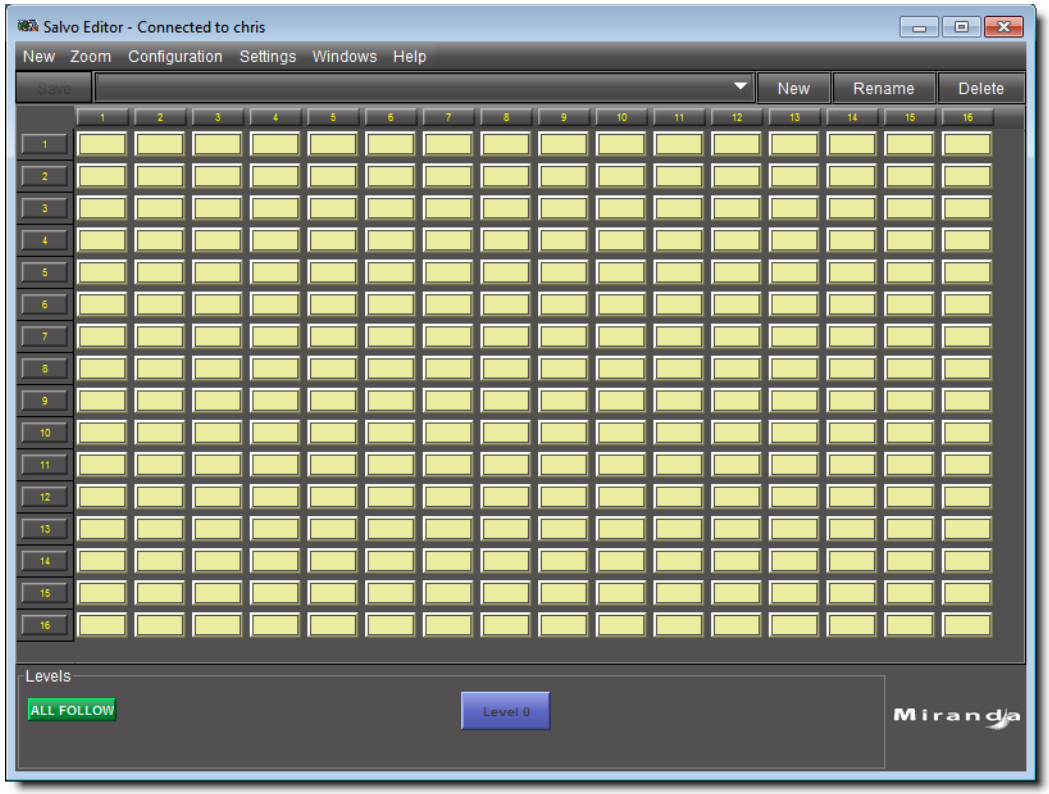
You may set some parameters of the **Exclusion Editor** using the menus located along the top.



Exclusion Editor menu items

Menu item			Action
New	Single Bus		Opens a new **Single bus** window with destination 1 selected.
	Matrix View		Opens a new **Matrix View** window.
	Status View		Opens a window showing the router status.
Zoom	Zoom in		Magnifies the view of the matrix by a set increment.
	Zoom out		Demagnifies the view of the matrix by a set increment.
	Default size		Reverts the magnification of the matrix to the default zoom setting.
	Fit horizontally		Magnifies or demagnifies the view of the matrix so that it fits horizontally within the **Exclusion Editor**'s window.
Configuration	Salvo Editor		Invokes the configuration mode **Salvo editor** window.
	Exclusion Editor		Invokes the configuration mode **Exclusion editor** window.
	Group Editor		Invokes the configuration mode **Group editor** window.
Settings	Status Bar	On	Displays status bar.
		Off	Hides status bar.
	Sound	On	Enables sound effects.
		Off	Disables sound effects.
Windows			Contains a list of open windows. Selecting an entry will bring it to the front.
Close			Closes current window. If the window is the last one open – then exit.

Salvo Editor



Salvo Editor allows you to create and name a configuration of crosspoint closures. Individual levels may be specified at each crosspoint or the entire group may be specified.

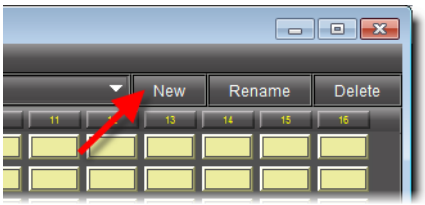
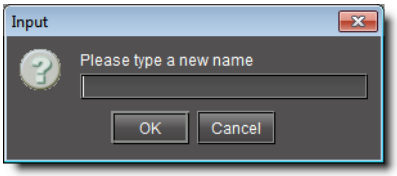
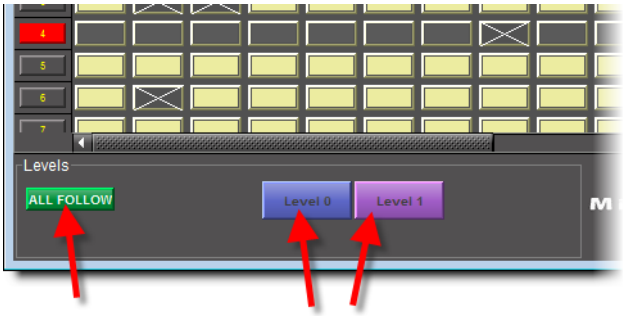
Note: Exclusions are shown on the matrix and cannot be overridden.

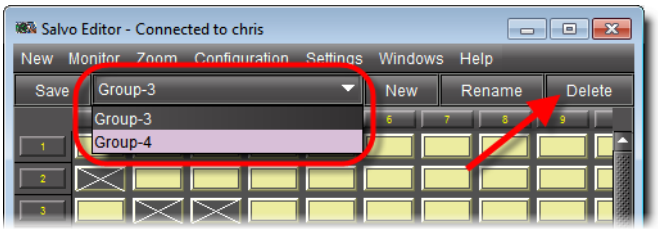
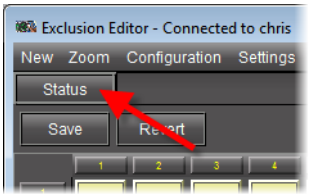
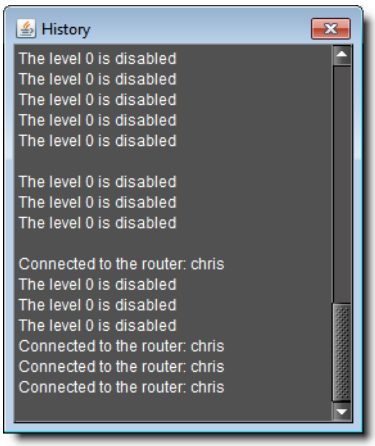
See also

For more information, see:

- Salvo Editor Common Tasks, on page 21
- Salvo Editor Menus, on page 23
- Opening Salvo Editor, on page 34

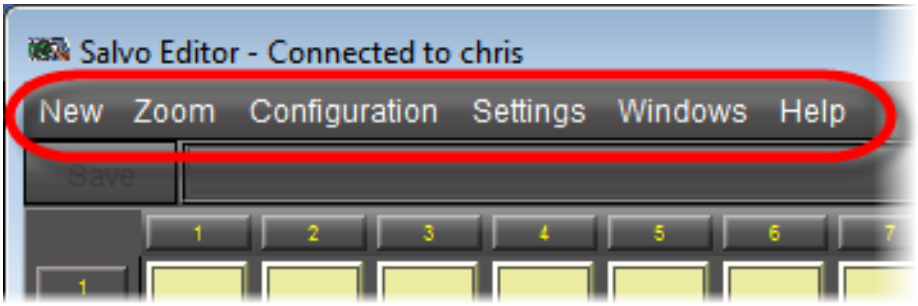
Salvo Editor Common Tasks

To do this...	...do this...
Create a salvo of crosspoint closures.	1 Click **New**.  *SYSTEM RESPONSE:* The **Input** window appears.  2 Type a name for this salvo and then click **OK**. 3 Select one or more levels at the bottom of the window, or else click **ALL FOLLOW**, to associate this salvo with the desired levels.  4 Click all crosspoints you would like to include in this salvo. 5 Click **Save**.

To do this...	...do this...
Delete a salvo.	Select the salvo you would like to delete from the list, and then click **Delete**. 
Display the status history log.	Click **Status**.  The **History** window appears. 

Salvo Editor Menus

You may set some parameters of the **Salvo Editor** using the menus located along the top.



Salvo Editor menu items

Menu item			Action
New	Single Bus		Opens a new **Single bus** window with destination 1 selected.
	Matrix View		Opens a new **Matrix View** window.
	Status View		Opens a window showing the router status.
Zoom	Zoom in		Magnifies the view of the matrix by a set increment.
	Zoom out		Demagnifies the view of the matrix by a set increment.
	Default size		Reverts the magnification of the matrix to the default zoom setting.
	Fit horizontally		Magnifies or demagnifies the view of the matrix so that it fits horizontally within the **Exclusion Editor**'s window.
Configuration	Salvo Editor		Invokes the configuration mode **Salvo editor** window.
	Exclusion Editor		Invokes the configuration mode **Exclusion editor** window.
	Group Editor		Invokes the configuration mode **Group editor** window.
Settings	Status Bar	On	Displays status bar.
		Off	Hides status bar.
	Sound	On	Enables sound effects.
		Off	Disables sound effects.
Windows			Contains a list of open windows. Selecting an entry will bring it to the front.
Close			Closes current window. If the window is the last one open – then exit.

Groups Editor

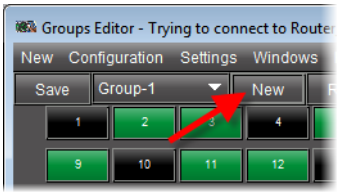
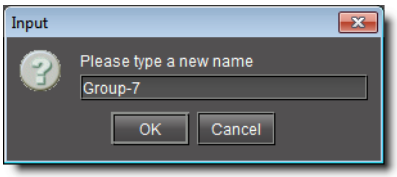
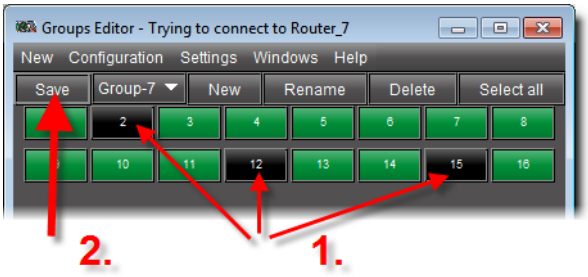
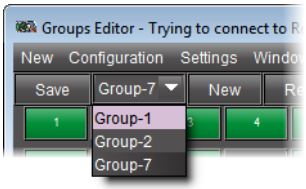
Groups Editor allows you to create and edit groupings of destinations.

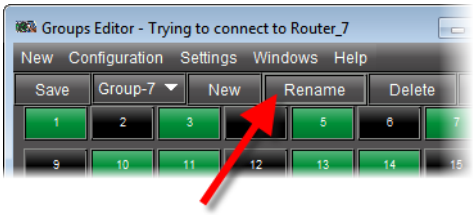
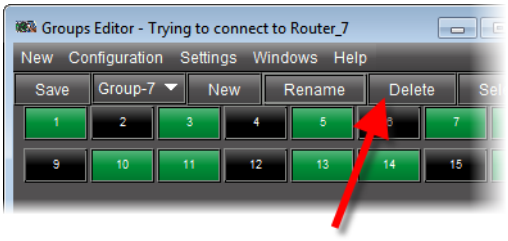
See also

For more information, see:

- Groups Editor Common Tasks, on page 25
- Groups Editor Menus, on page 26
- Opening Groups Editor, on page 35

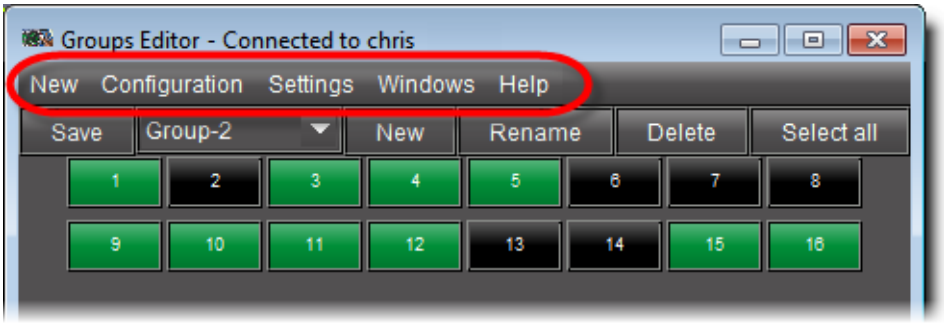
Groups Editor Common Tasks

To do this...	...do this...
Create a group.	1 Click **New**.  *SYSTEM RESPONSE:* An **Input** window appears. 2 Type a name for the new group, and then click **OK**.  3 In the matrix, select the destinations buttons you would like to include in this group, and then click **Save**. 
Edit a group.	1 Select the group you would like to edit in the group list.  2 Change the button selection for this group, and then click **Save**.

To do this...	...do this...
Rename a group.	1 Select the group whose name you would like to change in the group list. 2 Click **Rename**.  *System Response:* The **Input** window appears. 3 Type a new name for this group, and then click **OK**. 4 Click **Save**.
Delete a group.	1 Select the group you would like to delete from the group list. 2 Click **Delete**.  *System Response:* The group disappears from the group list.

Groups Editor Menus

You may set some parameters of the **Exclusion Editor** using the menus located along the top.



Groups Editor menu items

Menu item		Action
New	Single Bus	Opens a new **Single bus** window with destination 1 selected.
	Matrix View	Opens a new **Matrix View** window.
	Status View	Opens a window showing the router status.

Groups Editor menu items (*Continued*)

Menu item			Action
Configuration	Salvo Editor		Invokes the configuration mode **Salvo editor** window.
	Exclusion Editor		Invokes the configuration mode **Exclusion editor** window.
	Groups Editor		Invokes the configuration mode **Group editor** window.
Settings	Status Bar	On	Displays status bar.
		Off	Hides status bar.
	Sound	On	Enables sound effects.
		Off	Disables sound effects.
Windows			Contains a list of open windows. Selecting an entry will bring it to the front.
Close			Closes current window. If the window is the last one open – then exit.

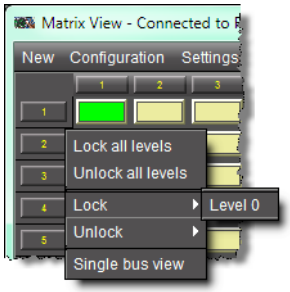
Destination locks

The settings in the **Matrix View** window may be locked, and when locked, they cannot be changed until the lock is removed. Locked selections appear red on the screen. The crosspoint, and also the row (destination) label on the left is red.

> **Note:** By default, iControl Router uses a *force release* policy, which allows releasing of any crosspoint locks, including locks applied from other applications or devices. It is possible to apply a *normal release* policy for devices that use the NVEP NV9000 – Device Takes (NP0017) protocol, by setting a system property (see page 78).

Locking can occur in two ways:

- Clicking on the row label box at the left of the screen opens a window which allows levels in that row to be locked. Options are: **Lock all levels**, **Unlock all levels**, **Lock** (with a subsidiary menu listing all currently unlocked levels in that row), and **Unlock** (with a subsidiary menu listing all currently locked levels in that row). The **Single Bus View** option is also found in this menu.



- If **Autolock** is selected in the **Preset** area, then any change which is taken, in either PRESET or TAKE mode, is automatically locked on all levels.

> **Note:** Locking occurs immediately; the TAKE/PRESET rules do not apply.

Detailed Directions

Opening the Matrix View

See also

For more information, see Matrix View, on page 7.

Opening a New Matrix View from iControl

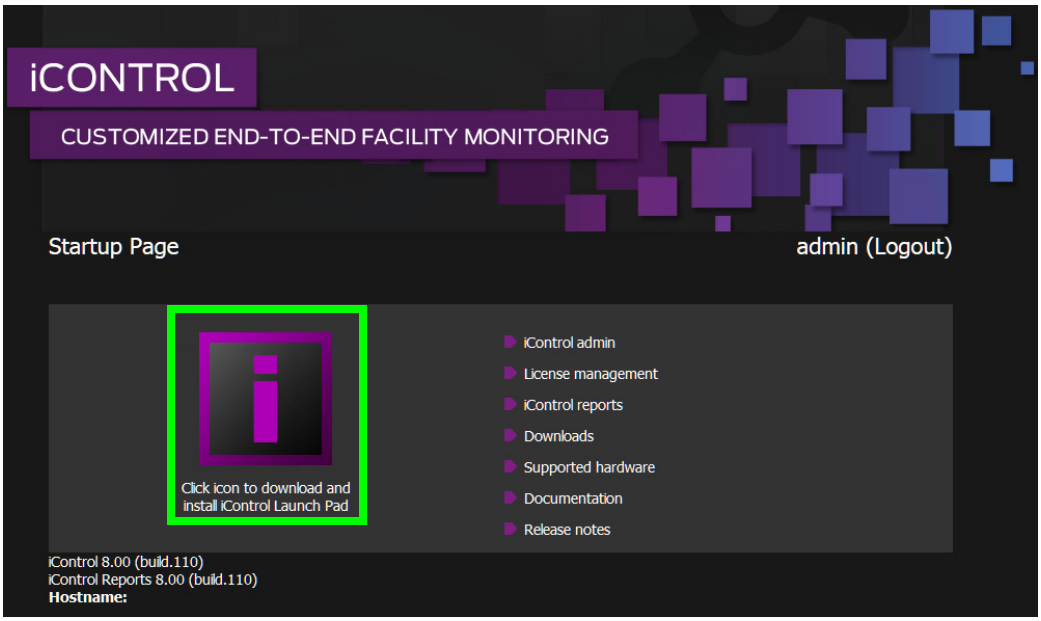
Perform this procedure if you would like to open a new **Matrix View** from iControl.

REQUIREMENT

Before beginning this procedure, make sure you have opened iControl.

To open a new Matrix View from iControl

1 On the *iControl Startup* page, click the **i** icon.

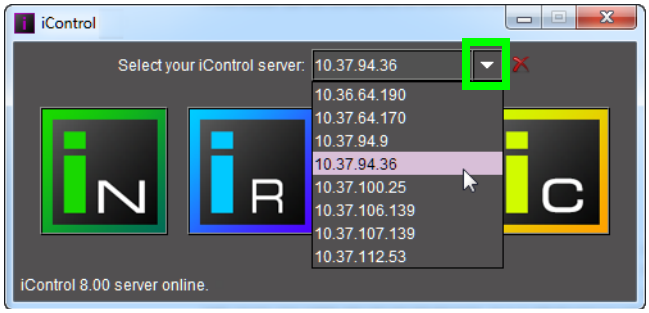


SYSTEM RESPONSE: The *iControl Launch Pad* executable file is downloaded to your local file system.

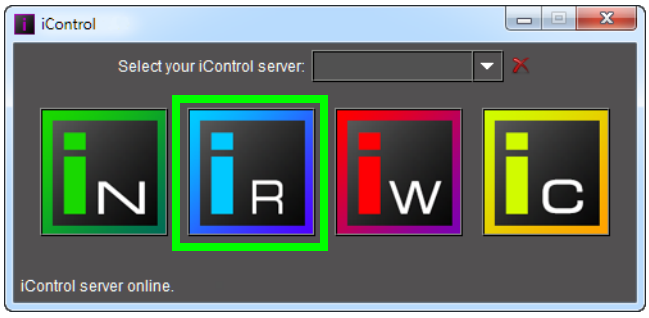
2 Double-click the executable file.

SYSTEM RESPONSE: **iControl Launch Pad** appears.

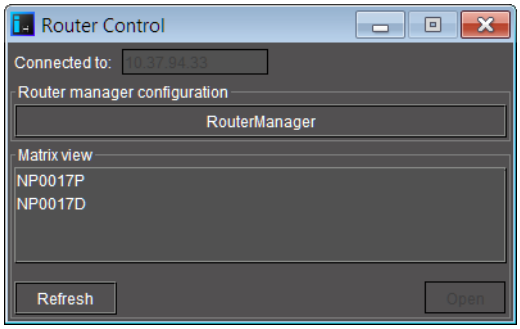
3 On **iControl Launch Pad**, either type in the IP address of your Application Server or select from the list of available IP addresses.



4 Click the **iC Router Control** icon.

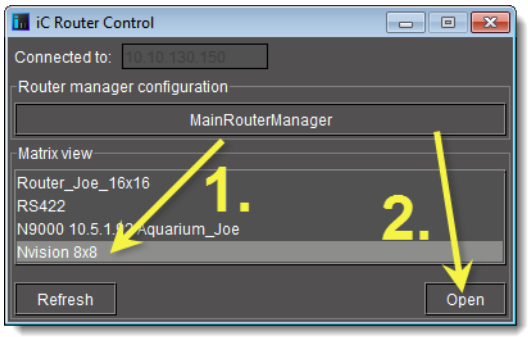


SYSTEM RESPONSE: The **iC Router Control** window appears.

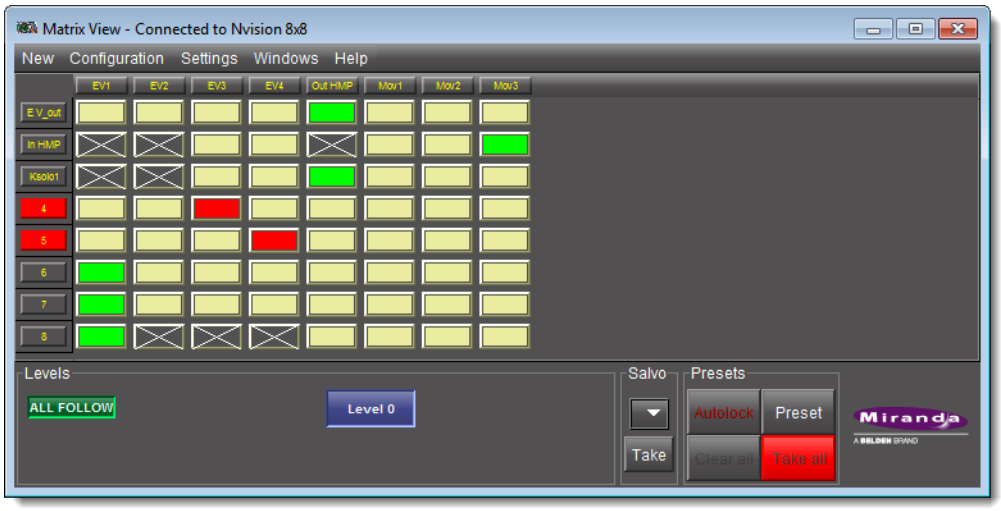


5 In the **iC Router Control** window, in the **Matrix view** area, select the router you wish to view.

6 Click **Open**.



SYSTEM RESPONSE: The **Matrix View** window for the selected router appears.



Opening a New Matrix View from Another Operational Window

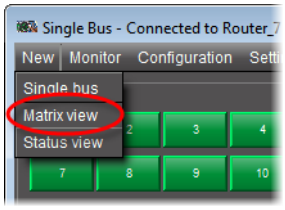
Perform this procedure to open a new **Matrix View** from a **Single Bus** window.

REQUIREMENT

Before beginning this procedure, make sure you have open either a **Single Bus** window or a **Router Status** window, associated with the desired router (see Opening the Matrix View, on page 28).

To open a new Matrix View

- In the **Single Bus** window, on the **New** menu, click **Matrix view**.



Toggling to a Matrix View from Another Operational Window

Perform this procedure to toggle to an existing **Matrix View** from another iControl Router window.

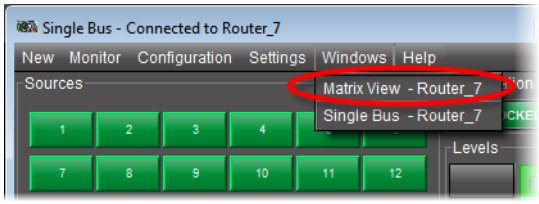
REQUIREMENTS

Make sure you meet the following conditions before beginning this procedure:

- You have a **Single Bus** window (associated with the appropriate router) open, and in focus.
- A **Matrix View** for the appropriate router is open.

To toggle focus to an existing Matrix View

- In a **Single Bus** window, on the **Window** menu, click the desired Matrix View selection.



Opening the Single Bus Window

See also

For more information about the **Single Bus** window, see Single Bus Window, on page 10.

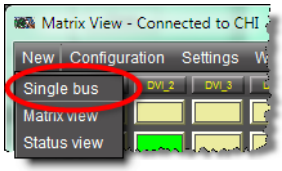
Opening the Single Bus Window

REQUIREMENT

Before beginning this procedure, make sure you have opened the **Matrix View** associated with the appropriate router (see Opening the Matrix View, on page 28).

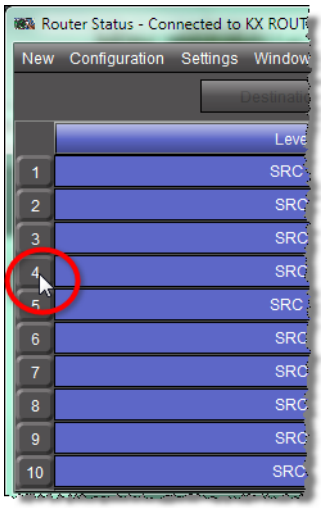
To open the Single Bus window

- In the **Matrix View**, on the **New** menu, click **Single bus**.



Alternatively, in the case where you are beginning from the **Router Status** window, you

may also click the router level corresponding to the appropriate source.



Note: Choosing this second option opens the **Single Bus** window with the source you selected in the **Router Status** window pre-selected.

Toggling to a Single Bus Window from Another Operational Window

Perform this procedure to toggle to an existing **Single Bus** window from another iControl Router window.

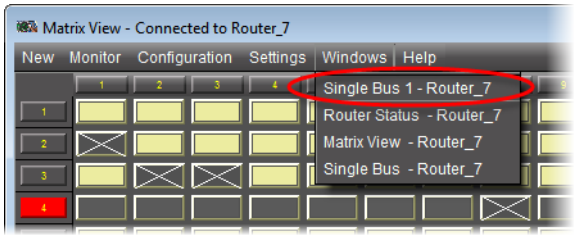
REQUIREMENTS

Make sure you meet the following conditions before beginning this procedure:

- You have either a **Matrix View** or a **Router Status** window (associated with the appropriate router) open and in focus.
- A **Single Bus** window for the appropriate router is open.

To toggle focus to an existing Single Bus window

- In either a **Matrix View** or a **Router Status** window, on the **Window** menu, click the desired Single Bus selection.



Opening the Router Status Window

See also

For more information about the **Router Status** window, see Router Status Window, on page 13.

Opening a New Router Status Window

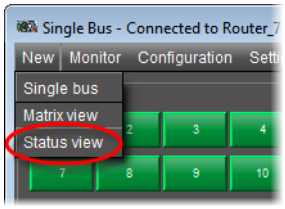
Perform this procedure to open a new **Router Status** window from either the **Single Bus** window or the **Matrix View**.

REQUIREMENT

Before beginning this procedure, make sure you have open either a **Single Bus** window or a **Matrix View**, associated with the desired router (see Opening the Matrix View, on page 28).

To open a new Router Status window

- In either the **Single Bus** window or the **Matrix View**, on the **New** menu, click **Status view**.



Toggling to a Router Status Window from Another Operational Window

Perform this procedure to toggle to an existing **Router Status** window from another iControl Router window.

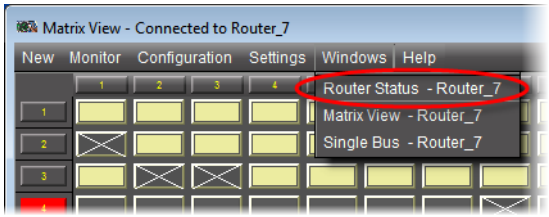
REQUIREMENTS

Make sure you meet the following conditions before beginning this procedure:

- You have either a **Matrix View** or a **Single Bus** window (associated with the appropriate router) open and in focus.
- A **Router Status** window for the appropriate router is open.

To toggle focus to an existing Router Status window

- In either a **Single Bus** window or a **Matrix View**, on the **Window** menu, click the desired Router Status selection.



Opening Salvo Editor

See also

For more information about **Salvo Editor**, see Salvo Editor, on page 20.

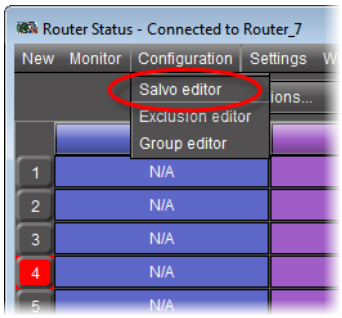
REQUIREMENT

you have open and in focus ONE of the following windows (associated with the appropriate router):

- **Router Status** window
- Matrix View
- **Single Bus** window

To open Salvo Editor

- In one of **Router Status**, **Matrix View**, or the **Single Bus** windows, on the **Configuration** menu, click **Salvo editor**.



Opening Exclusion Editor

See also

For more information about **Exclusion Editor**, see Exclusion Editor, on page 15.

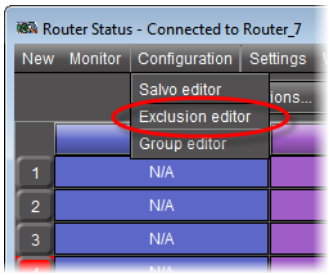
REQUIREMENT

you have open and in focus ONE of the following windows (associated with the appropriate router):

- **Router Status** window
- Matrix View
- **Single Bus** window

To open Exclusion Editor

- In one of **Router Status**, **Matrix View**, or the **Single Bus** windows, on the **Configuration** menu, click **Exclusion editor**.



Opening Groups Editor

See also

For more information about **Groups Editor**, see Groups Editor, on page 24.

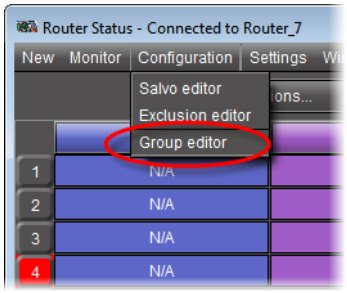
REQUIREMENT

you have open and in focus ONE of the following windows (associated with the appropriate router):

- **Router Status** window
- Matrix View
- **Single Bus** window

To open Groups Editor

- In one of **Router Status**, **Matrix View**, or **Single Bus** windows, on the **Configuration** menu, click **Group editor**.



3 Configuration Interface

Overview

The **Router Manager Configurator** interface has two panes. The left pane always displays a hierarchical list of folders which can be expanded to expose more detailed information.

The Router Manager folder is always at the top level in the list, and typically includes the **Physical routers** and the **Logical routers** subfolders. The subfolder structure is variable and is established during the system setup. There are two tabs at the top of the left pane: **Configuration** and **Dynamic Control**.

- Use the **Configuration** tab to set up and configure your system, after which the router service and clients must be restarted for changes to become effective.
- Use the **Dynamic Control** tab to perform any of a subset of live configuration changes, after which no restart is required.

In either tab, click a folder or a list item to select it; double-click a folder to open it. Both tabs also have a tool bar with buttons to open and close the *router manager* folder, at the top of the list (not the currently selected folder). The **Close** button is available when the router manager folder is open; conversely, the **Open** button is available when the router manager folder is closed. The **Configuration** tab also has a **Save** button which becomes available whenever you make some change to the system configuration.

The right pane displays data-entry zones and information areas associated with the current left-pane selection. When a logical router is selected in the left pane, the right pane has additional tabs.

Detailed Directions

The procedures outlined in the following sample workflow are tasks performed exclusively on the **Configuration** tab:

Sample workflow: Configuring routers

1	Open **Router Manager Configurator** (see Starting Router Manager Configurator, on page 38).
2	Define all of your physical routers. Do one of the following, as required: • see Adding Physical Routers, on page 42 • see Importing an NVISION Physical Router Configuration, on page 44
3	**[OPTIONAL]** Assign aliases to physical input and destination port (see Adding Aliases for your Physical Input Ports, on page 51).
4	**[OPTIONAL]** Remove any physical routers that you would like to remove (see Removing Physical Routers, on page 57).

Sample workflow: Configuring routers (*Continued*)

5	**[OPTIONAL]** Modify any pre-existing physical router configurations, if required (see Modifying Physical Router Configurations, on page 54).
6	Define levels for your physical router definitions (see Adding Physical Router Levels, on page 48).
7	**[OPTIONAL]** Modify or remove any pre-existing physical router level definitions, if required (see Modifying Physical Router Configurations, on page 54).
8	Define all of your logical routers (see Configuring Logical Routers, on page 59).
9	**[OPTIONAL]** Remove any logical routers that you would like to remove (see Configuring Logical Routers, on page 59).
10	Define levels for your logical routers (see Configuring Logical Routers, on page 59).
11	**[OPTIONAL]** Modify any pre-existing logical routers and their levels, if required (see Configuring Logical Routers, on page 59).
12	**[OPTIONAL]** Remove any logical router levels, if required (see Configuring Logical Routers, on page 59).

Configuring Routers

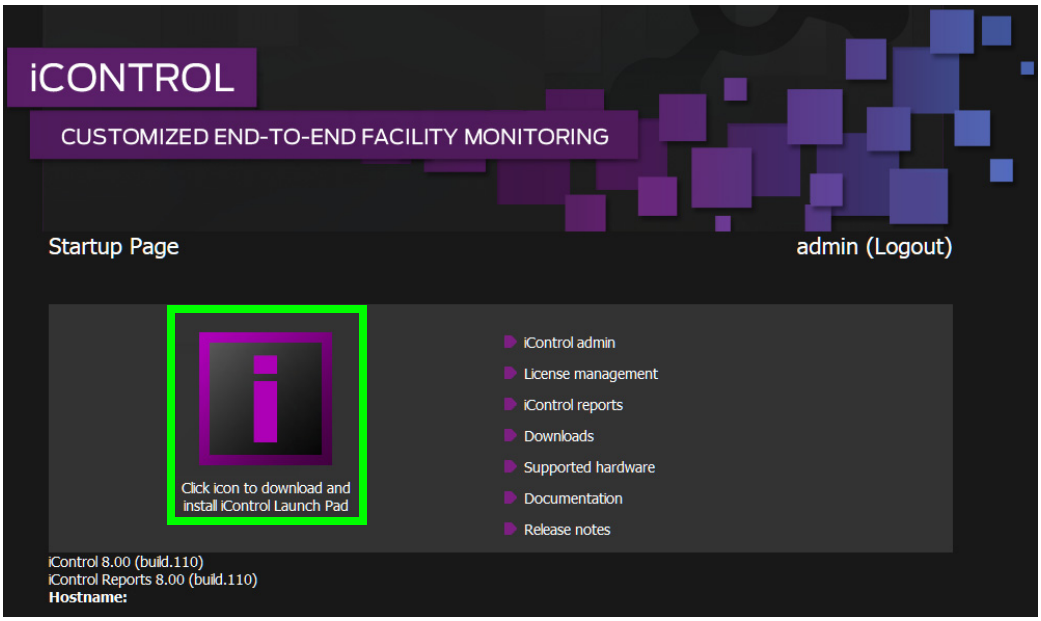
Starting Router Manager Configurator

REQUIREMENT

Before beginning this procedure, make sure you have started iControl.

To start Router Manager Configurator

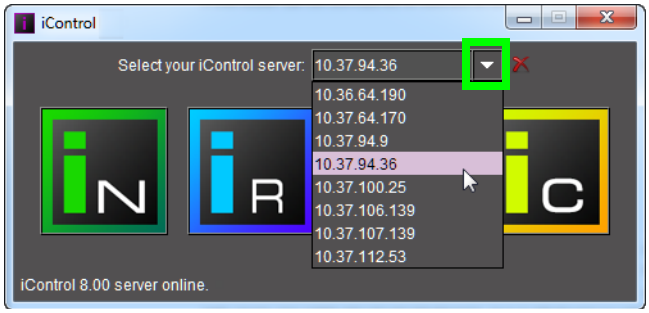
1 On the *iControl Startup* page, click the **i** icon.



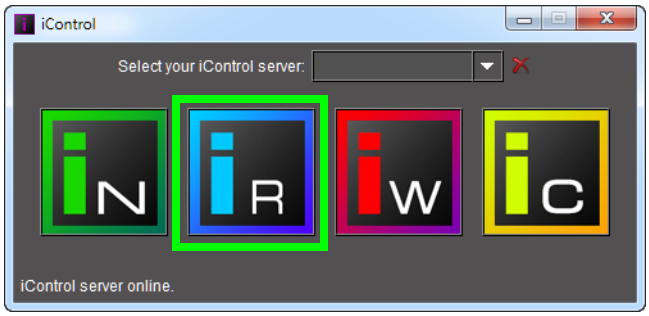
SYSTEM RESPONSE: The *iControl Launch Pad* executable file is downloaded to your local file system.

2 Double-click the executable file.

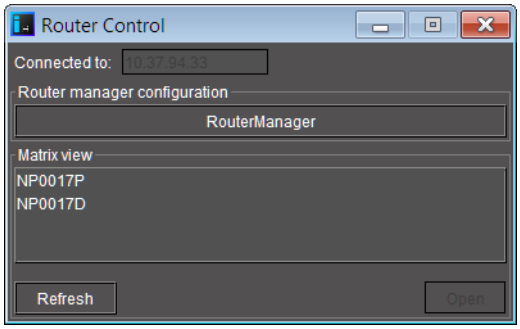
3 On **iControl Launch Pad**, either type in the IP address of your Application Server or select from the list of available IP addresses.



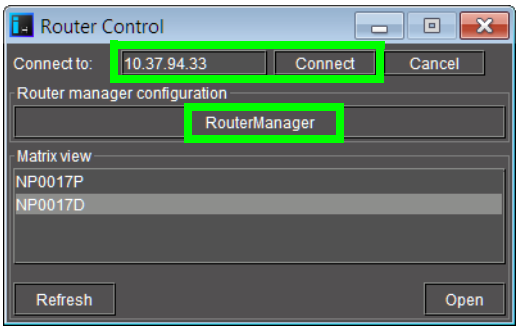
4 Click the **iC Router Control** icon.



SYSTEM RESPONSE: The **iC Router Control Connection** window appears.

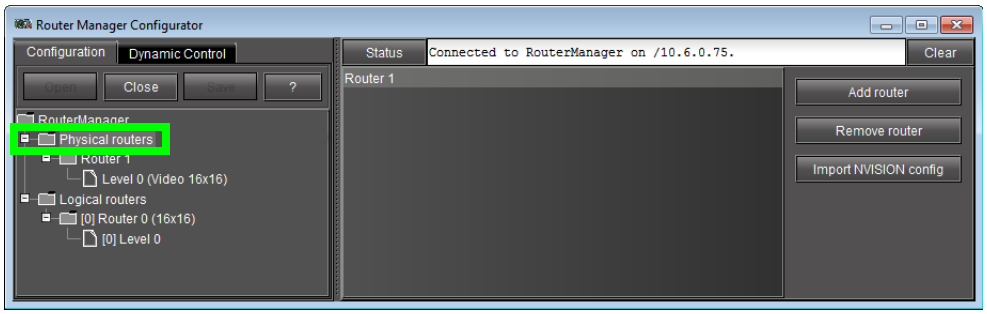


5 Perform the following tasks in the **iC Router Control Connection** window, as required:

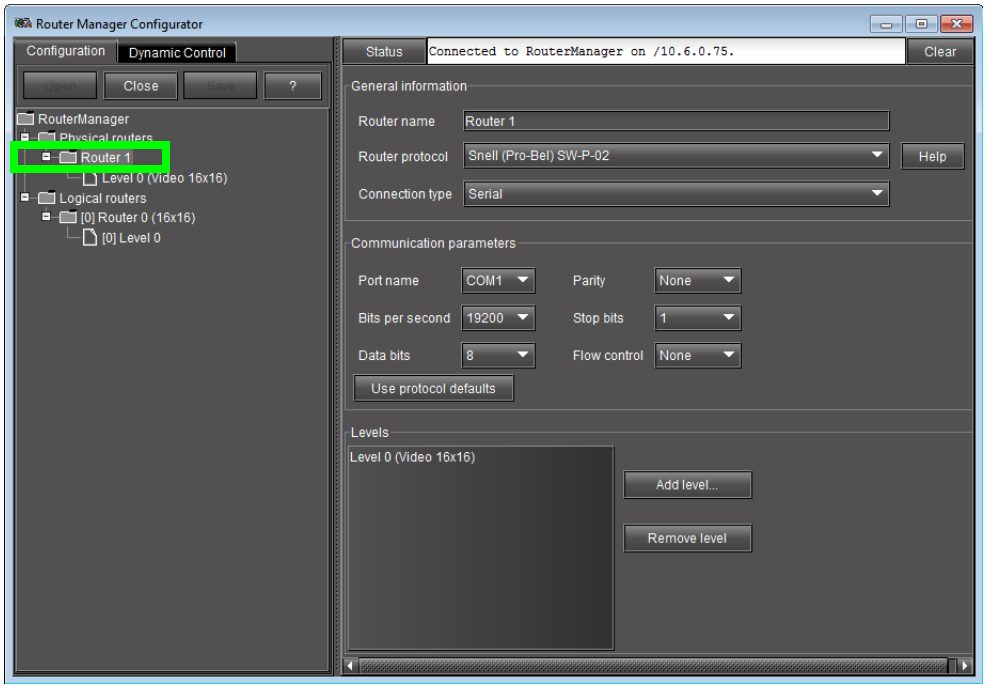
To do this...	...do this...
Connect to a different Router Manager's IP address (*other than the one currently displayed*)	1 Click within the **Connected to** box. 2 Delete the existing IP address. 3 Type the new Router Manager's IP address. 4 Click **Connect**. 
Open **Router Manager Configurator**	• Click **Router Manager**.
Start router control software.	1 Select the desired item under **Matrix view**. 2 Click **Open**.

6 In Router Manager **Configurator**, select a router component on the left to view related information and options on the right.

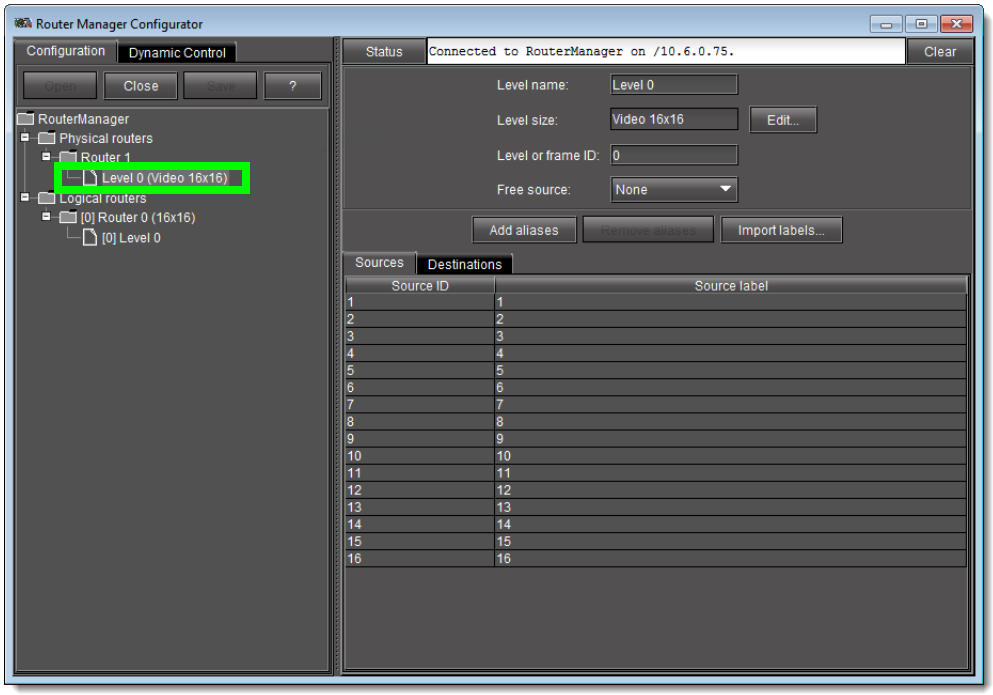
For example, click **Physical Routers** to view a list of routers currently defined in iControl.



Click the folder corresponding to a specific router to view its configuration details.



Click on a level to view its configuration details.



Adding Physical Routers

Note: Although it is possible to perform the following procedure as a stand-alone task (assuming all stated requirements are met), Grass Valley recommends you familiarize yourself with the sample workflow on page 37 in which this procedure is only one step within a sequence.

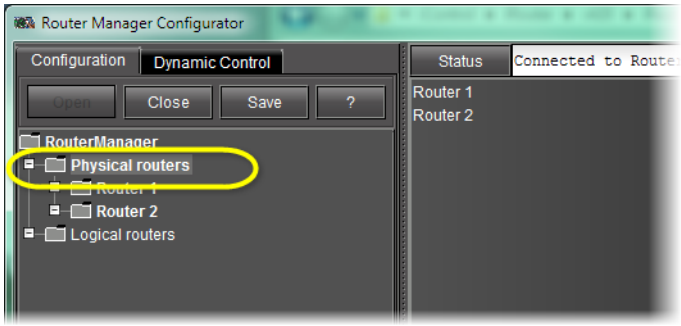
REQUIREMENT

Before beginning this procedure, make sure you have launched **Router Manager Configurator** (see Starting Router Manager Configurator, on page 38).

To add a physical router

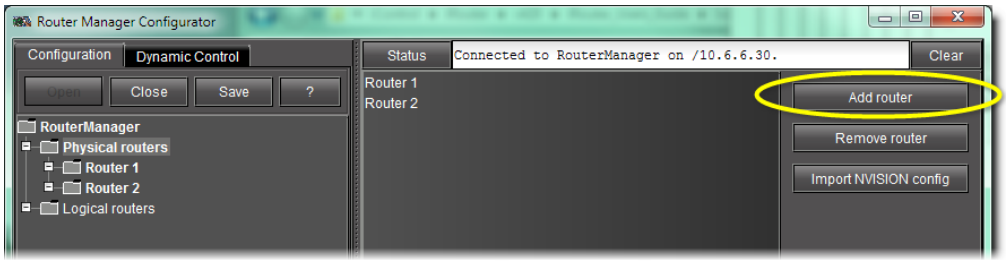
1 In **Router Manager Configurator**, on the **Configuration** tab, select the router manager folder (named *RouterManager* in the graphic, below), and then click **Open**.

2 Select the **Physical Routers** folder.

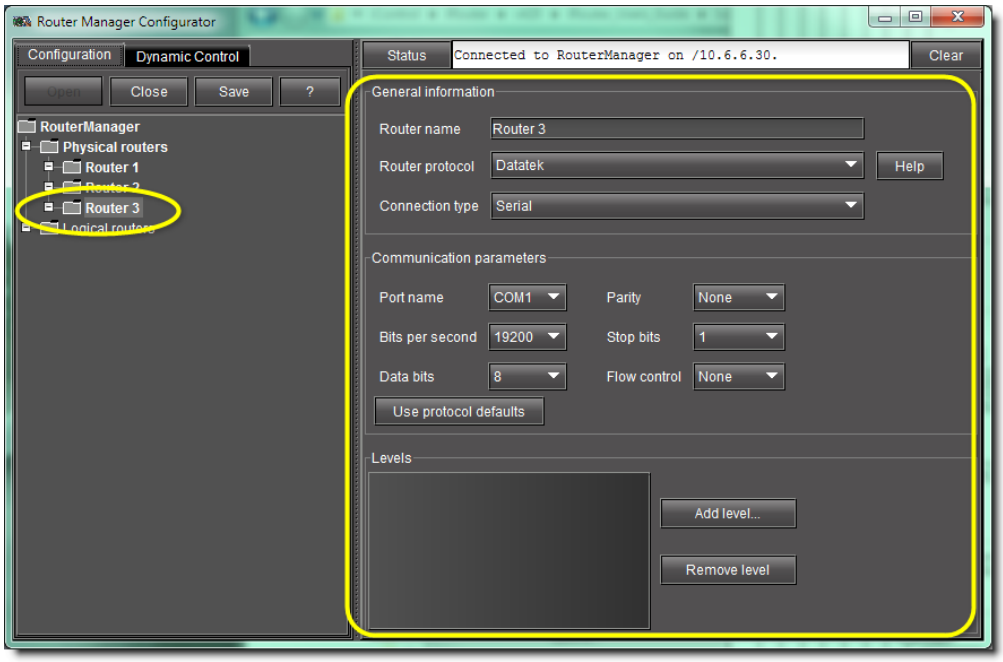


SYSTEM RESPONSE: A list of all physical routers added so far to your system appears in the right pane.

3 Click **Add Router**.



SYSTEM RESPONSE: A new **Router N** folder appears in the **Physical Routers** folder on the left, and detailed data-entry areas appear in the right pane.



4 In the **Router name** box, type a name for the router.

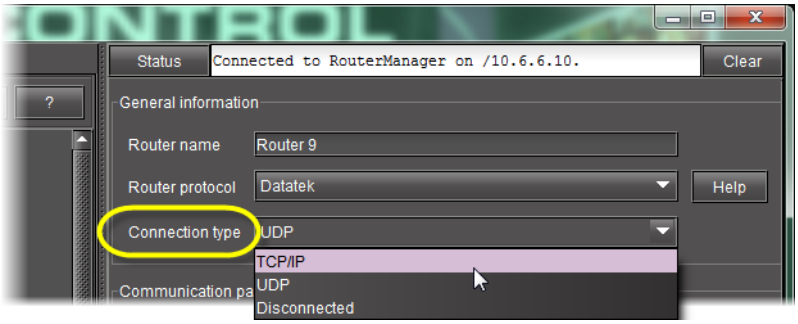
> **IMPORTANT:** Naming Restrictions
>
> Do not use special characters in the router name. Spaces are allowed.

5 In the **Router protocol** list, select a protocol.

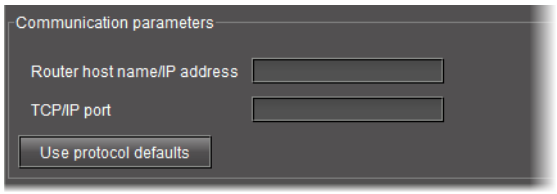
6 Click **Help** to review information about the selected protocol.

> **Note:** Presently, there are several protocols for which online help is unavailable.

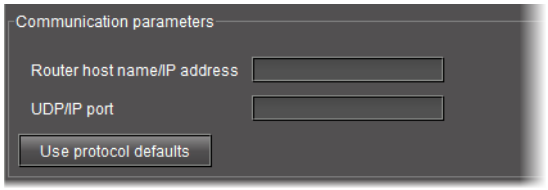
7 Under **Connection type**, select **TCP/IP** or **UDP**, as appropriate for the selected protocol.



SYSTEM RESPONSE: The **Communication parameters** zone varies according to the selected connection type, as follows:



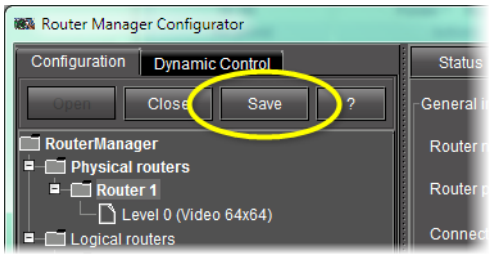
Communications settings for a TCP/IP connection



Communications settings for a UDP/IP connection

8 In the **Communications parameters** area, specify all required information, or click **Use protocol defaults** to apply the selected protocol's default communication settings.

9 Click **Save** at the top of the left pane.



Notes

- The collection of protocol-specific information, that you can read by clicking **Help** for each protocol, can also be found at the end of this manual (Routing Switchers Tips and Tricks, on page 73).

Importing an NVISION Physical Router Configuration

IMPORTANT: Risk of Deleting Router Configuration Data

If, after adding aliases, you are importing router configuration data in which there is a physical router with the same name as one of your own in iControl Router, the alias data you configured for that router will be overwritten.

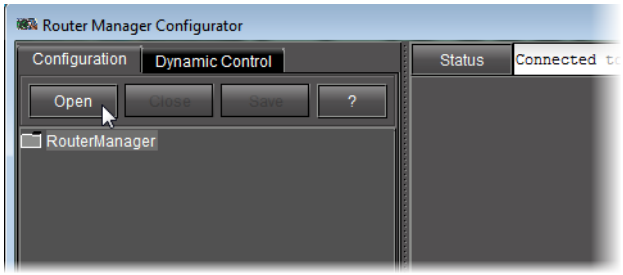
REQUIREMENTS

Make sure you meet the following conditions before beginning this procedure:

- You have available the host name or IP address of the NVISION router controller whose configuration you would like to import.
- You have opened Router Manager Configurator (see Starting Router Manager Configurator, on page 38).

To import an NVISION configuration

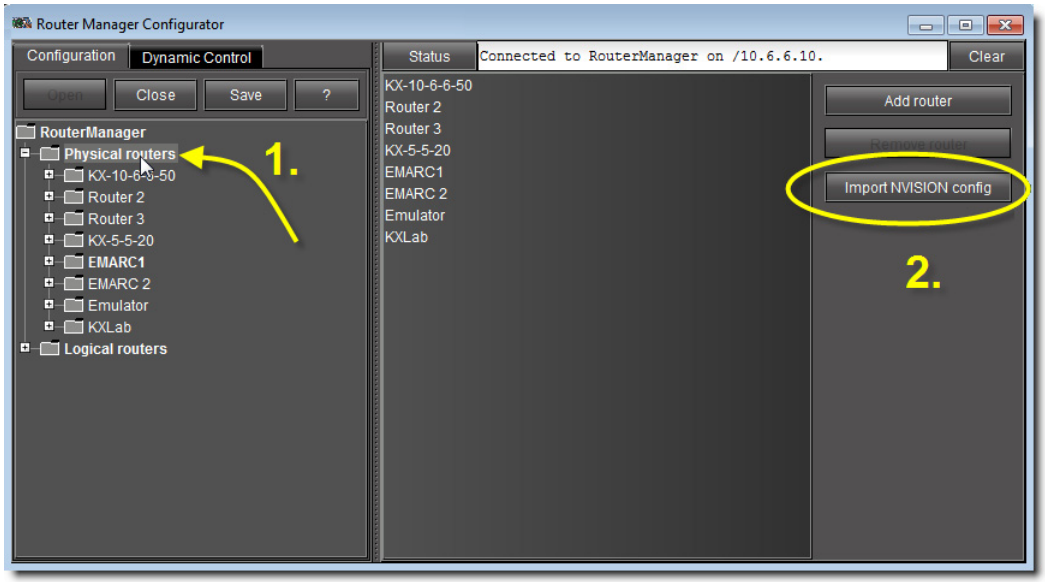
1 Select the **RouterManager** folder, and then click **Open**.



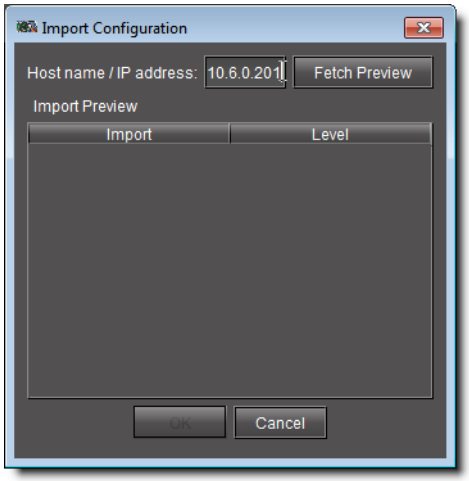
2 Select the **Physical routers** folder.

SYSTEM RESPONSE: The list of all physical routers added so far to your system appears in the right pane.

3 Click **Import NVISION config**.



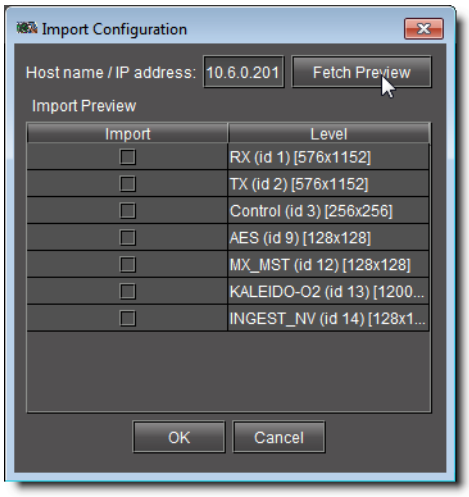
SYSTEM RESPONSE: The **Import Configuration** window appears.



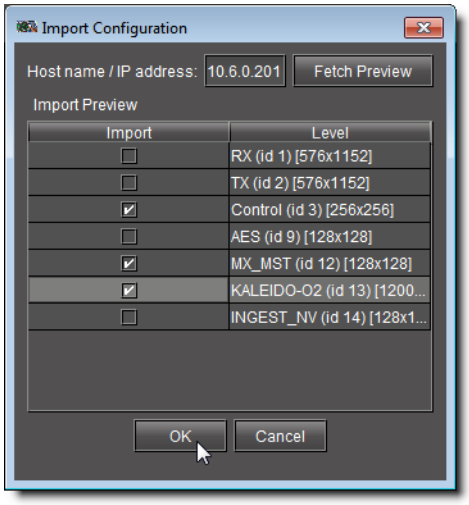
4 In the **Host name / IP address** box, type the host name or IP address of the NVISION router controller whose configuration you would like to import.

5 Click **Fetch preview**.

SYSTEM RESPONSE: The levels of the NVISION router appear listed in the **Import preview** area.



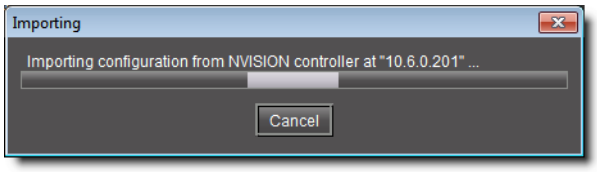
6 Select the levels you would like to import, and then click **OK**.



SYSTEM RESPONSE: A confirmation window appears.

> **IMPORTANT:** Risk of losing current router configuration data
>
> If you click **OK** in the confirmation window and then click **Save** in **Router Manager Configurator**, the imported NVISION data will permanently overwrite any existing configuration data.

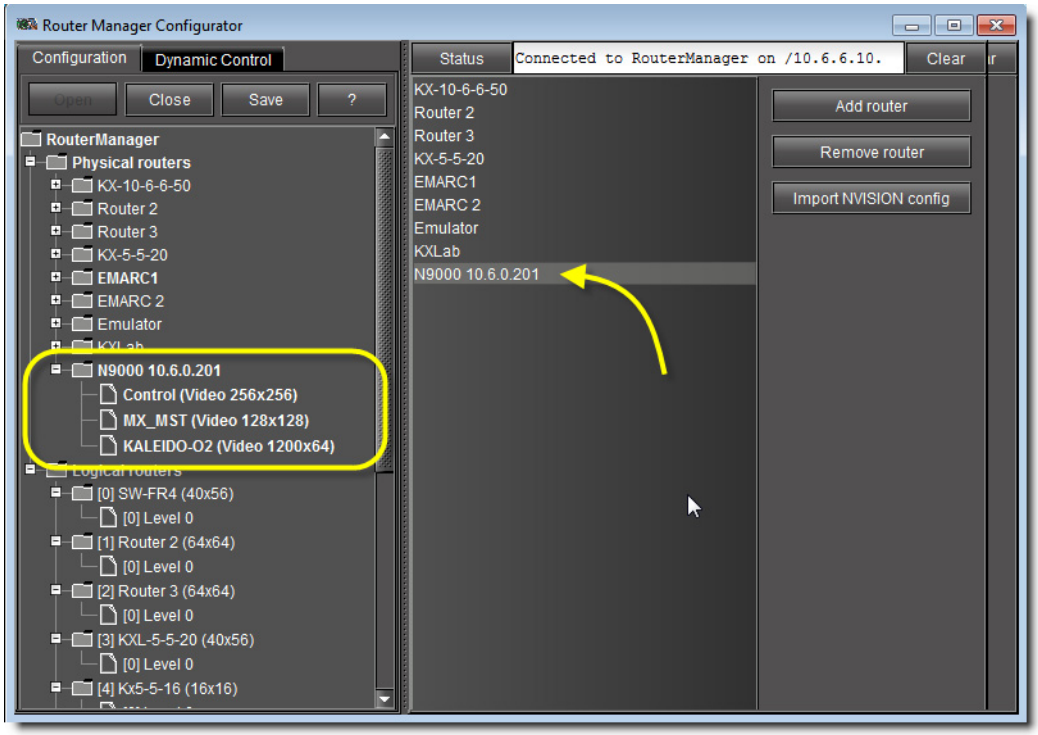
SYSTEM RESPONSE: A progress window appears, allowing you to cancel the operation if required.



7 After the confirmation window disappears, click **Save** to overwrite your configuration data with the newly imported data.

8 Refresh your browser.

SYSTEM RESPONSE: The NVISION router controller's level configurations are listed among the physical routers in the left and right panes of the **Router Manager Configurator**.



SYSTEM RESPONSE: Selecting the physical router in the left pane yields general information, communication parameters, and a list of levels imported from the router.

Adding Physical Router Levels

The physical levels from which the router is going to be built must be defined. Typical levels include video, audio 1, audio 2, etc. These levels each represent a physical device. Each level must be named, and its type and size specified.

IMPORTANT: Using Telecom and Data Routers

- Network series RS-422 Data routers have to be configured as an audio level. Select an appropriate audio frame type. For example, if you have an 8 × 8 RS-422 router, you should select **Network Audio 8 × 8 frame type**.
- Network series Telecom routers are configured to work as a video level so you can use an appropriate video frame. For example, if you have an 8 × 8 Telecom frame then you should select **Network Video 8 × 8 frame type**.

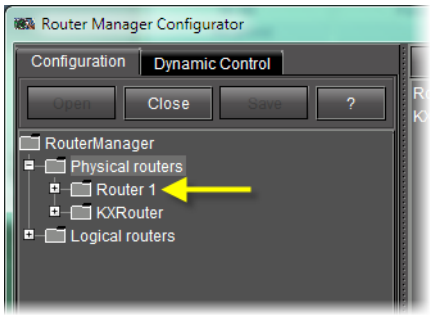
Note: Although it is possible to perform the following procedure as a stand-alone task (assuming all stated requirements are met), Grass Valley recommends you familiarize yourself with the sample workflow on page 37 in which this procedure is only one step within a sequence.

REQUIREMENT

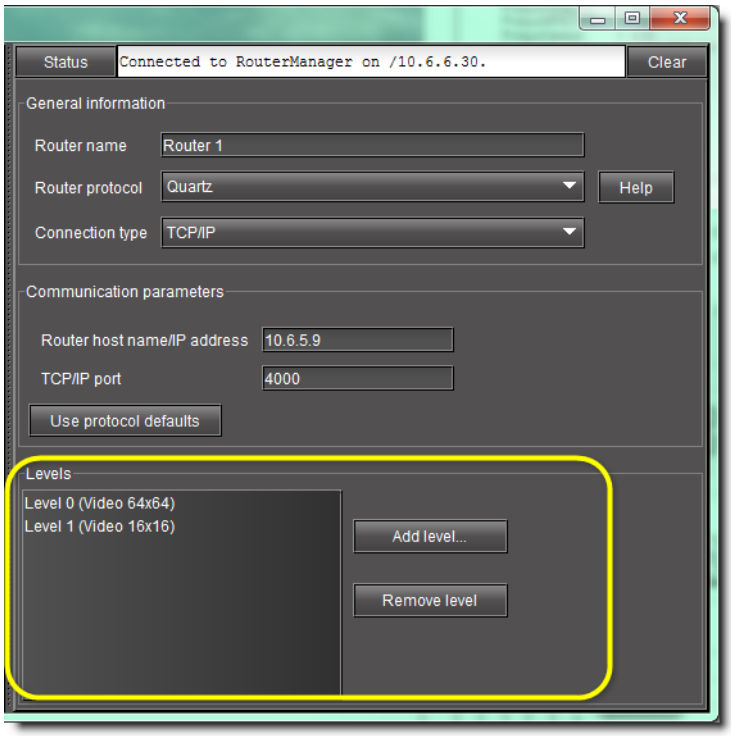
Before beginning this procedure, make sure you have launched **Router Manager Configurator** (see Starting Router Manager Configurator, on page 38).

To add a level to a physical router

1 In **Router Manager Configurator**, in the left pane, select the physical router you wish to configure.

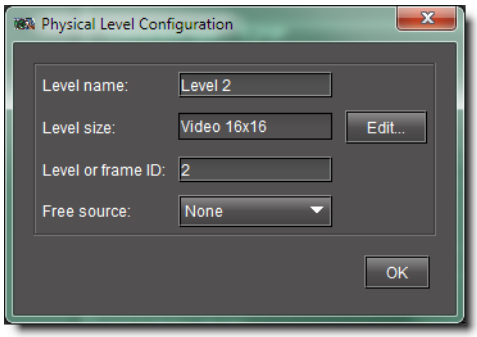


System Response: The list of existing levels appears under **Levels**.

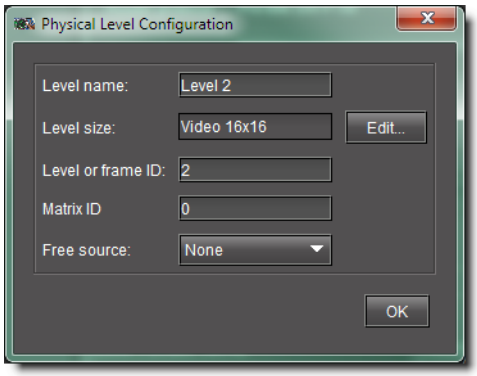


2 Click **Add level**.

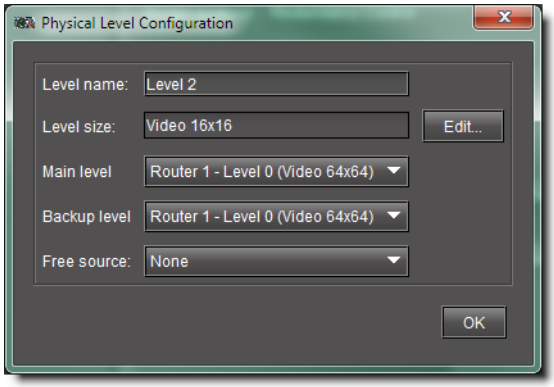
SYSTEM RESPONSE: The **Physical Level Configuration** window appears. Its content varies according to the selected router protocol:



Physical Level Configuration window (for most protocols)



Physical Level Configuration window—for a SAM (Snell/Pro-Bel) SW-P-08 device

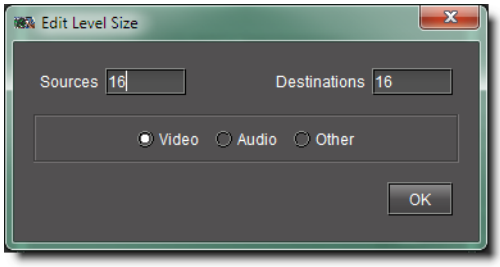


Physical Level Configuration window (for a Redundancy Control device)

3 In the **Level name** box, type a name for this level.

4 Click **Edit**.

SYSTEM RESPONSE: The **Edit Level Size** window appears.



5 Specify the number of sources and destinations associated with the physical level.

> **Note:** The three option buttons labeled **Video**, **Audio** and **Other** are used for Network Electronics routers only, for which levels must be classified as either *Video* or *Audio*. These settings are ignored by routers from other manufacturers.

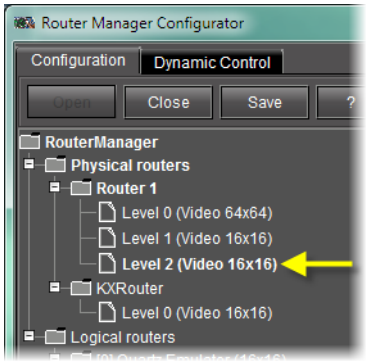
6 In the case of a *SAM (Snell/Pro-Bel) SW-P-08* device, type the appropriate value in the **Matrix ID** box (click **Help** for more information).

7 In the case of a *Redundancy Control* device, select the appropriate main level and backup level from the lists (click **Help** for more information).

8 Click **OK** to close the **Edit Level Size** window.

9 Click **OK** to close the **Physical Level Configuration** window.

SYSTEM RESPONSE: At this point, you have added a level to a physical router, which appears in the **Levels** list under the **Configurations** tab.



Newly added physical router level

Notes

- If you have several 16 × 2 frames configured to work together then you have to add only one frame and select an appropriate frame type on the **Edit Physical Level** window. For example, if you have three 16 × 2 video frames configured to make a 48 × 2 router then you should select a *Network Video 48 × 2* frame type.
- When the tab is opened, data boxes will appear in which the name, Frame Type, Frame ID and Physical Level ID can be entered, and two charts (tab-accessed) will appear below in which the Sources and Destinations can be identified and labeled.. These should conform to the actual physical connections made to the router being controlled.

The Frame ID in the physical level configuration is the frame address that is set by the DIP switches on the router frame. The Physical Level ID is the internal identifier of the frame and should be unique within each physical router. If it's not unique, then you will get an error message when you try to save the changes. The Matrix ID is an optional entry for a SAM (Snell/Pro-Bel) router.

The Physical Router definition is now complete.

Adding Aliases for your Physical Input Ports

Aliases are names assigned to input and destination ports. Aliases are useful when trying to remember specific ports on different routers or devices, or on different physical levels, that have identical port numbers. For example, input port 1 on Router 1 can be assigned the

alias *router1on1* and input port 1 on Router 2 can be assigned the alias *router2on1* so that each port can be easily distinguished.

IMPORTANT: Risk of Deleting Router Configuration Data

If, after adding aliases in iControl Router, you decide you would like to import router configuration data in which there is a physical router with the same name as one of your own in iControl Router, the alias data for that router will be over-written.

Notes

- If you would like to add aliases, you may either create your own or import them from an NVISION router configuration.
- In , you may create alarm consumer plug-ins that are triggered by the alarms of aliases.

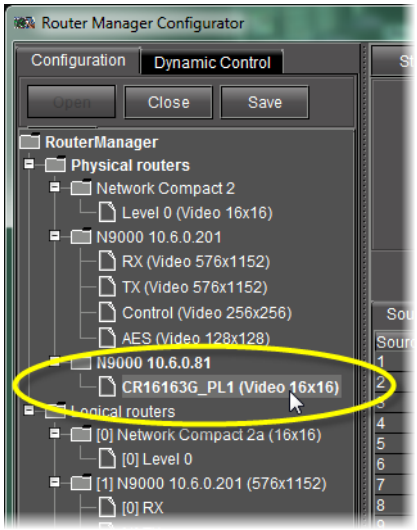
REQUIREMENTS

Make sure you meet the following conditions before beginning this procedure:

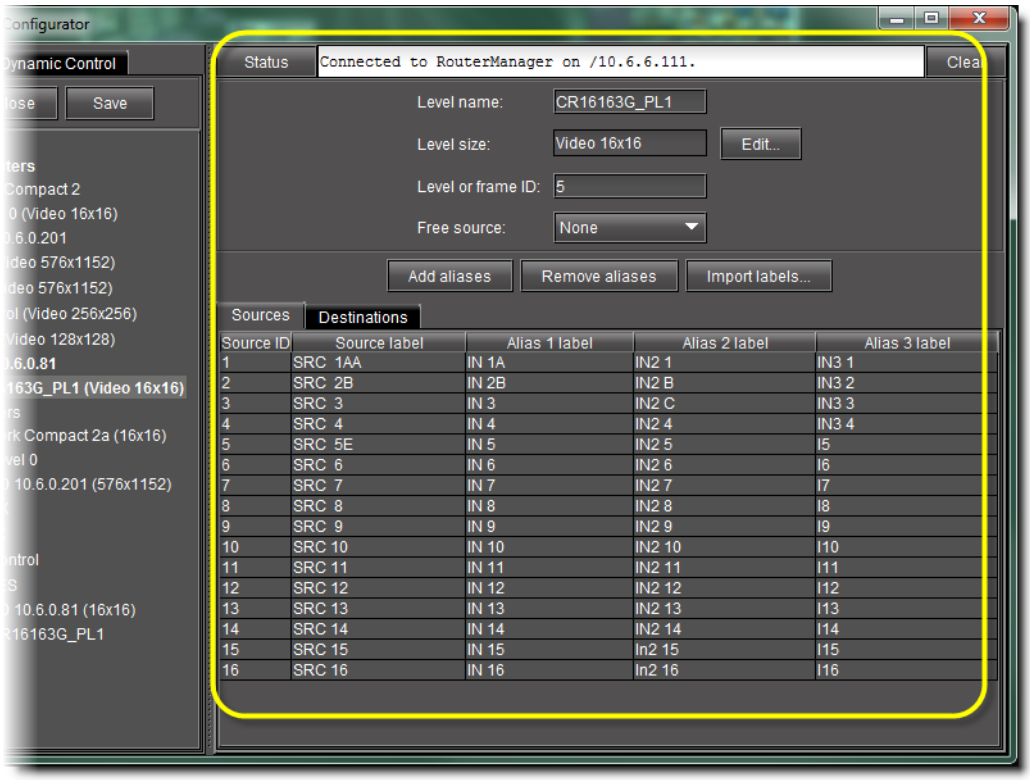
- You have opened **Router Manager Configurator** (see Starting Router Manager Configurator, on page 38).
- The physical router and level to which you would like to add an alias is visible in the navigation pane of the **Router Manager Configurator**.

To add an alias for an input or destination port

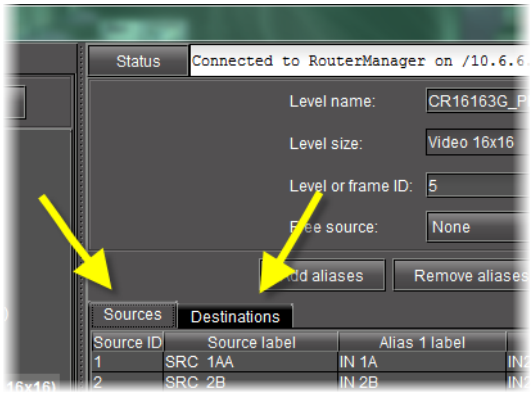
1 In **Router Manager Configurator**, in the navigation pane, click the level of the physical router to which you would like to add an alias.



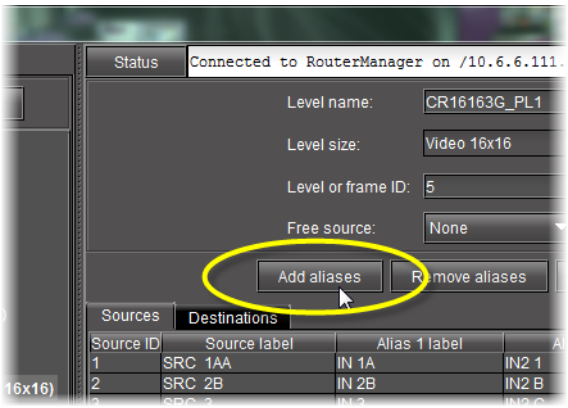
SYSTEM RESPONSE: Information about the selected level appears in the right pane, including labels and aliases for sources and destinations.



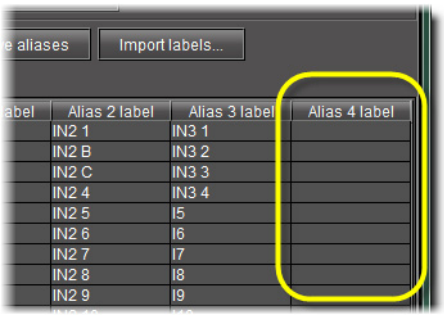
2 If you would like to add an alias for an input port, click the **Sources** tab. If you would like to add an alias for a destination port, click the **Destinations** tab.



3 Click **Add aliases**.



SYSTEM RESPONSE: An empty alias column appears to the far-right side of the label area.



Modifying Physical Router Configurations

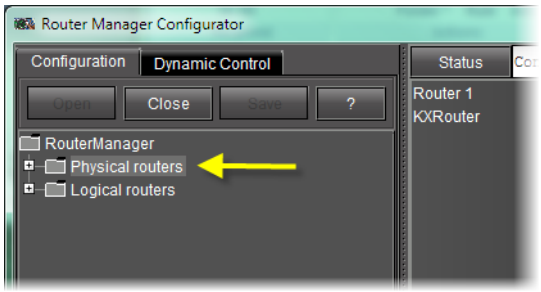
Note: Although it is possible to perform the following procedure as a stand-alone task (assuming all stated requirements are met), Grass Valley recommends you familiarize yourself with the sample workflow on page 37 in which this procedure is only one step within a sequence.

REQUIREMENT

Before beginning this procedure, make sure you have launched **Router Manager Configurator** (see Starting Router Manager Configurator, on page 38).

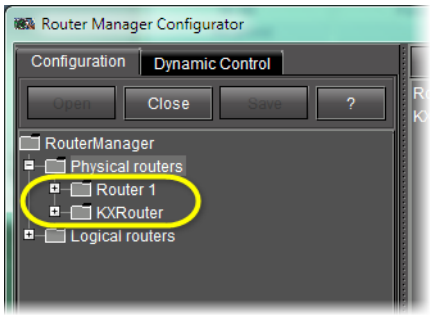
To modify a physical router's configuration

1 In **Router Manager Configurator**, in the router manager folder, double-click the **Physical Routers** sub-folder.



Router Manager Configurator (Physical routers folder indicated)

SYSTEM RESPONSE: A series of folders appears, one for each physical router.

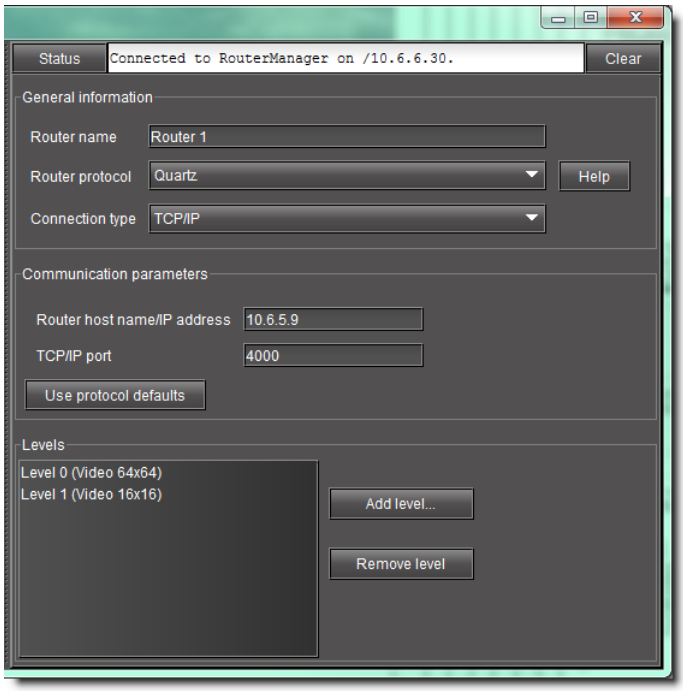


Expanded Physical routers folder (physical routers circled)

2 If you would like to modify router settings (as opposed to router *level* settings), perform the following sub-steps:

   a Select the appropriate physical router in the left pane.

SYSTEM RESPONSE: The right pane is populated with the current settings for the selected physical router.



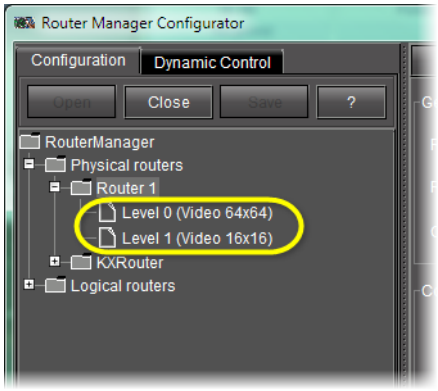
Right pane of Router Manager Configurator (physical router settings)

b Modify the physical router settings as required.

3 If you would like to modify the settings of a particular level belonging to a physical router, perform the following sub-steps:

a In the left pane, double-click the appropriate physical router.

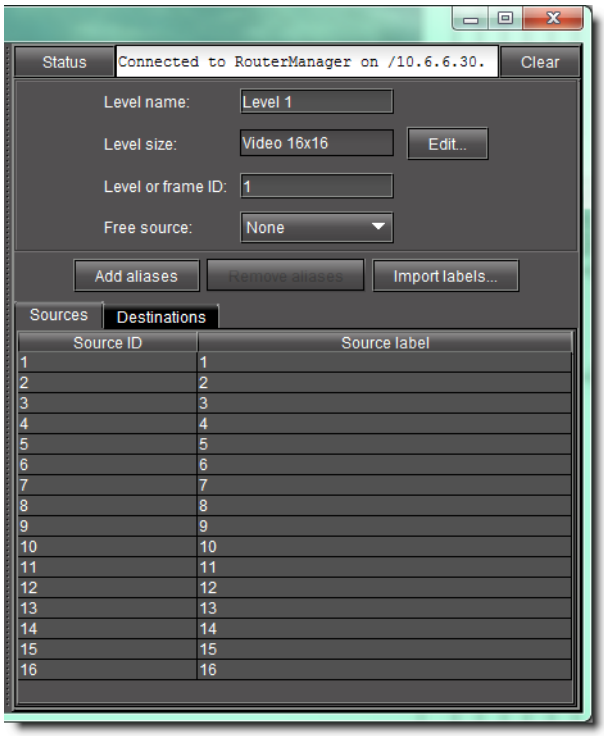
SYSTEM RESPONSE: The levels within the router become visible.



Expanded router folder (levels circled)

b Select the level whose settings you would like to modify.

SYSTEM RESPONSE: The right pane is populated with the current settings for the selected level.



Right pane of Router Manager Configurator (physical router level settings)

c Modify the level settings as required.

4 Click **Save**.

Removing Physical Routers

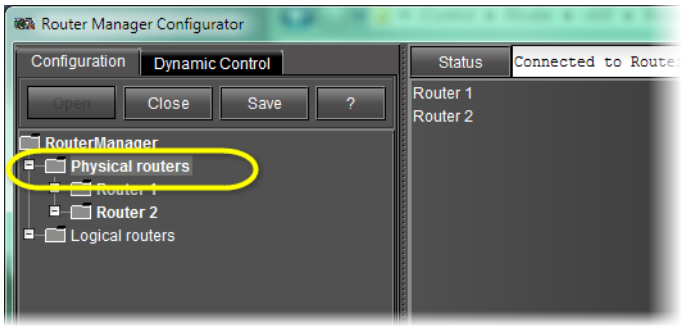
Note: Although it is possible to perform the following procedure as a stand-alone task (assuming all stated requirements are met), Grass Valley recommends you familiarize yourself with the sample workflow on page 37 in which this procedure is only one step within a sequence.

REQUIREMENT

Before beginning this procedure, make sure you have launched **Router Manager Configurator** (see Starting Router Manager Configurator, on page 38).

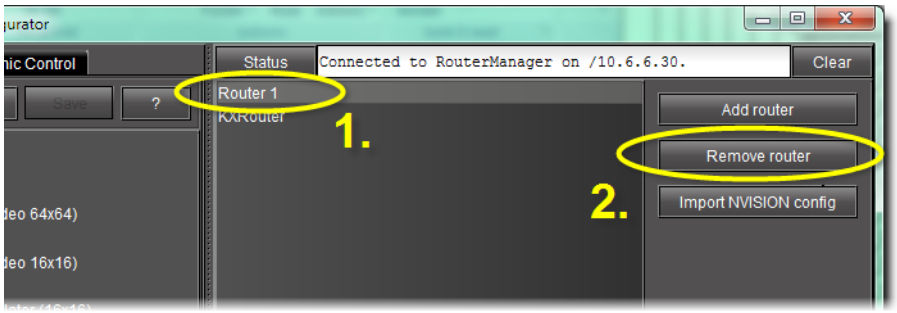
To remove a physical router

1 In the **RouterManager** folder, select the **Physical routers** sub-folder.



SYSTEM RESPONSE: The list of physical routers appears in the right pane.

2 Select the router you wish to remove from the list, and then click **Remove Router**.



3 Click **Save**.

Configuring Logical Routers

A *Logical Router* is a virtual router whose functionality is determined by the software. Logical routers have a name, sources and destinations. See the following table for common tasks associated with logical routers.

Note: Although it is possible to perform any of the following as stand-alone tasks, Grass Valley recommends you familiarize yourself with the sample workflow on page 37 in which these tasks comprise only one step within a sequence.

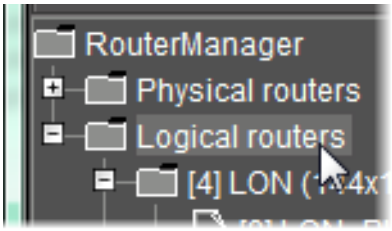
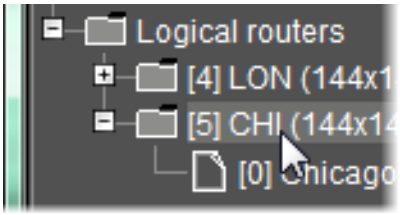
IMPORTANT: Once you have configured the logical router, it is important not to change its name. Doing so will disable any settings that refer to the existing router name, including:

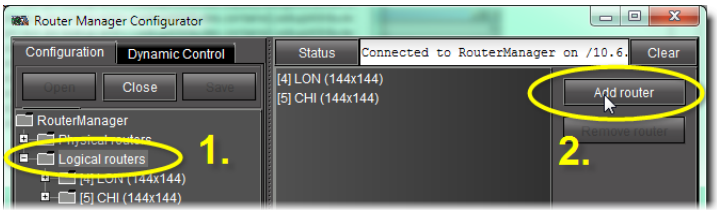
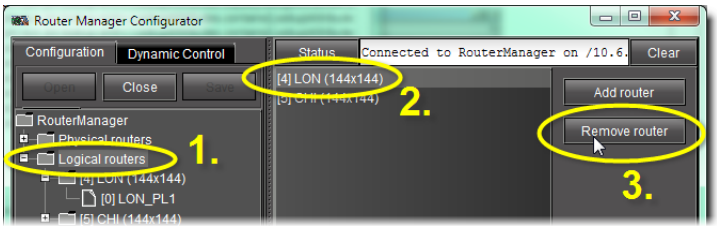
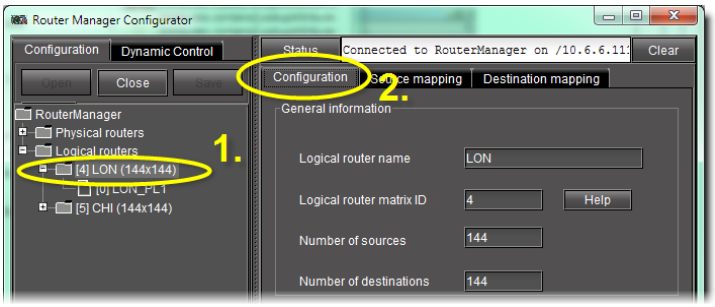
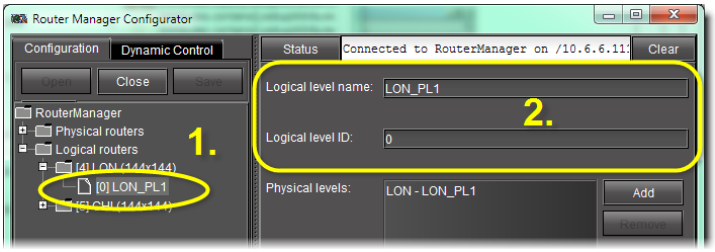
- logical source assignments for source or destination label
- external router connection configurations
- monitors and background actions associated with the logical router
- automatic crosspoint changes on video monitors (router source property)

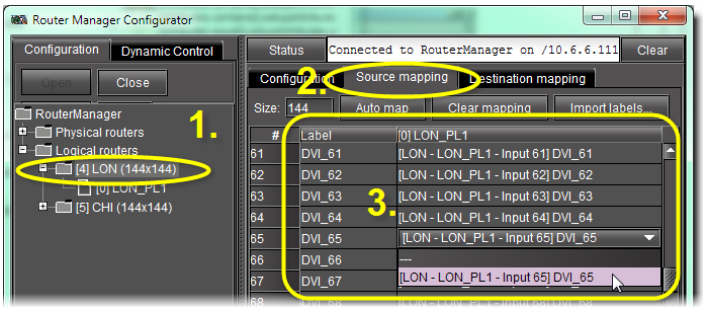
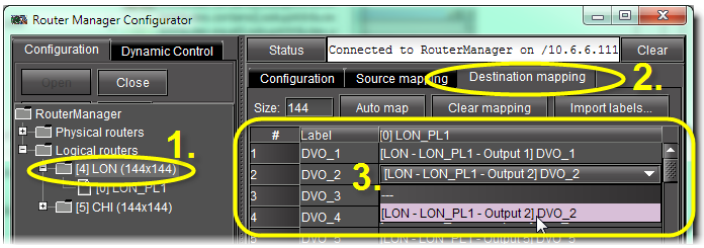
Note: If you change the name back to the original, everything should work as before.

REQUIREMENT

Before beginning this procedure, make sure you have launched **Router Manager Configurator** (see Starting Router Manager Configurator, on page 38).

To do this...	...do this...
Display all currently defined logical routers	Select the **Logical routers** folder in the left pane. 
Display general information about a logical router	1 Expand the **Logical routers** folder in the left pane. 2 Select the appropriate logical router.[1] 

To do this...	...do this...
Define a new logical router	1 Select the **Logical routers** folder in the left pane. 2 Click **Add router** in the right pane. 
Delete a logical router	1 Select the **Logical routers** folder in the left pane. 2 Select the logical router you wish to remove in the right pane. 3 Click **Remove router** in the right pane. 
Modify the general settings of a logical router	1 Select the appropriate logical router in the left pane. 2 Modify its general settings under the **Configuration** tab in the right pane.[2] 
Modify the settings of one of a logical router's levels	1 Expand the appropriate logical router folder in the left pane. 2 Select the appropriate level, and then modify the settings in the right pane.[3] 

To do this...	...do this...
Map physical sources to logical levels	1 Select the folder of the appropriate logical router in the left pane. 2 Click on the **Sources mapping** tab in the right pane. 3 Type and select the desired labels[4] and physical sources, as required.[5] 
Map physical destinations to logical levels	1 Select the folder of the appropriate logical router in the left pane. 2 Click on the **Destination mapping** tab. 3 Type the desired label. 4 Select the desired physical destinations. 

1. The list of levels is blank when a new router is selected.
2. The name of the logical router should be unique within the LAN.
3. The logical level ID is the internal identifier of the logical level and should be unique within a logical router. If it's not unique, then you will get an error message when you try to save changes.
4. You may alternately choose to import labels.
5. You may alternately choose to use the Auto Map feature to automatically generate mapping based on the information available. The results of automapping may be manually overridden, if necessary.

Configuring Routers Dynamically

It is essential that the router configuration procedures (those performed on the **Configuration** tab) are completed prior to putting the virtual router into service. However, another process is available which permits some configuration changes while the router is in service. This process is called *Dynamic Configuration*.

> **Note:** If changes are made to the configuration on the **Configuration** tab, the service must be restarted before dynamic control can be used.

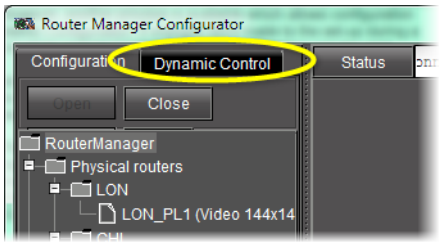
Starting a Dynamic Configuration Session

REQUIREMENT

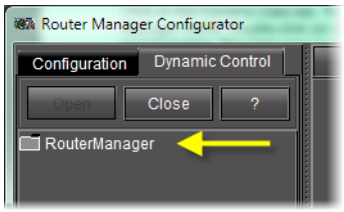
Before beginning this procedure, make sure you have launched **Router Manager Configurator** (see Starting Router Manager Configurator, on page 38).

To start a Dynamic Control router configuration session

1 In **Router Manager Configurator**, click on the **Dynamic Control** tab in the left pane.

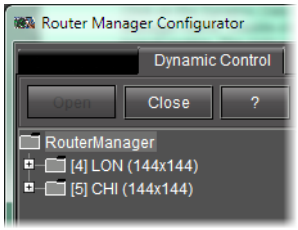


System Response: The closed root folder name appears in the left pane.



2 Double-click the router manager folder.

System Response: The root folder for the router manager expands to show closed folders for each of the named logical routers.



3 Double-click one of the logical router folders.

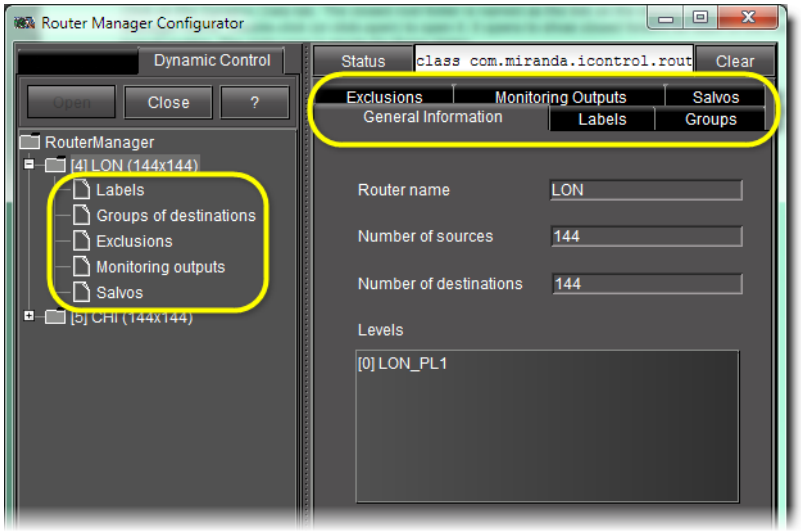
System Response: The folder expands to show the following branches:

- Labels
- Groups of destinations
- Exclusions
- Monitoring outputs
- Salvos

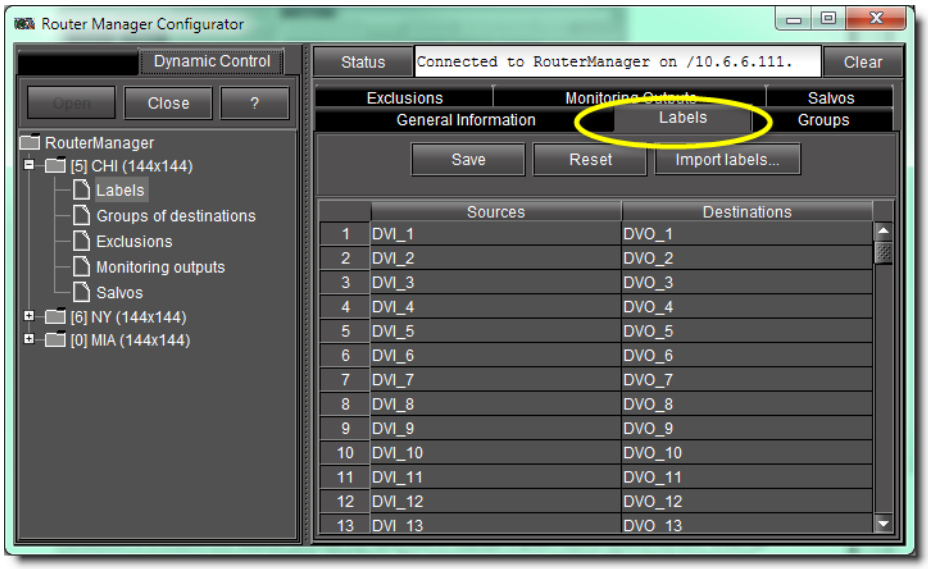
System Response: The right pane shows a **General Information** tab, which reports router name, number of sources and destinations, and defined levels, as well as five other tabs which open windows allowing configuration of the operating controls and system functionality. These tabs repeat the names of the branches, as follows:

- Labels (see Labels Tab, on page 64)
- Groups (see Groups Tab, on page 64)
- Exclusions (see Exclusions Tab, on page 66)
- Monitoring Outputs (see Monitoring Outputs Tab, on page 68)
- Salvos (see Salvos Tab, on page 70)

Note: The branch name *Groups of Destinations* is shortened to **Groups** in the tab.



Labels Tab



*The following tasks can be performed on the **Labels** tab:*

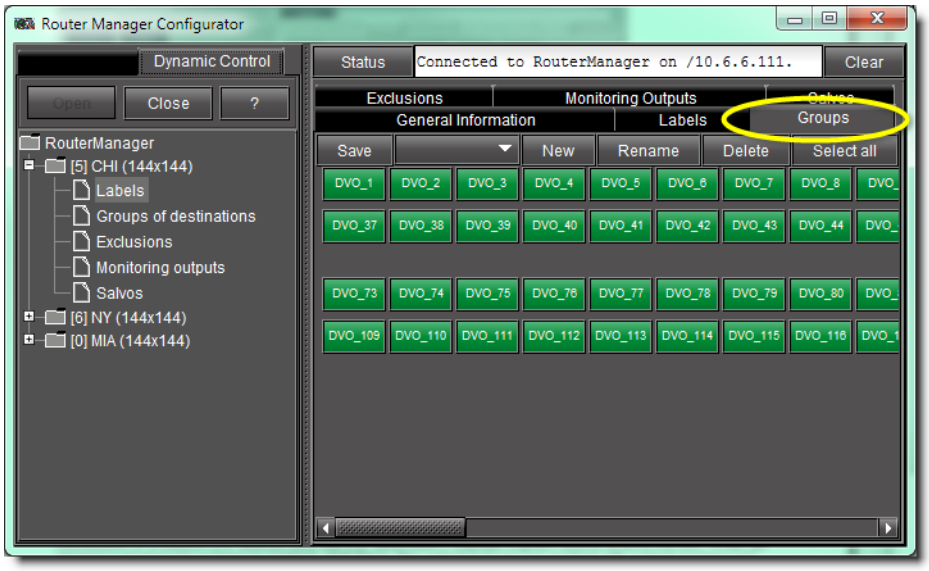
REQUIREMENT

Before beginning this procedure, make sure you have launched **Router Manager Configurator** (see Starting Router Manager Configurator, on page 38).

To do this...	...do this...
Import labels.	1 Click **Import labels**. 2 In the Browse window, navigate to the desired `*.csv` file.
Save labels.	Click **Save**.
Reset	Click **Reset**.

Groups Tab

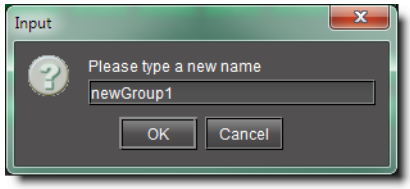
This tab shows a button for each output on the logical router, labelled with its number or name if assigned.



*The following tasks can be performed on the **Groups** tab:*

REQUIREMENT

Before beginning this procedure, make sure you have launched **Router Manager Configurator** (see Starting Router Manager Configurator, on page 38).

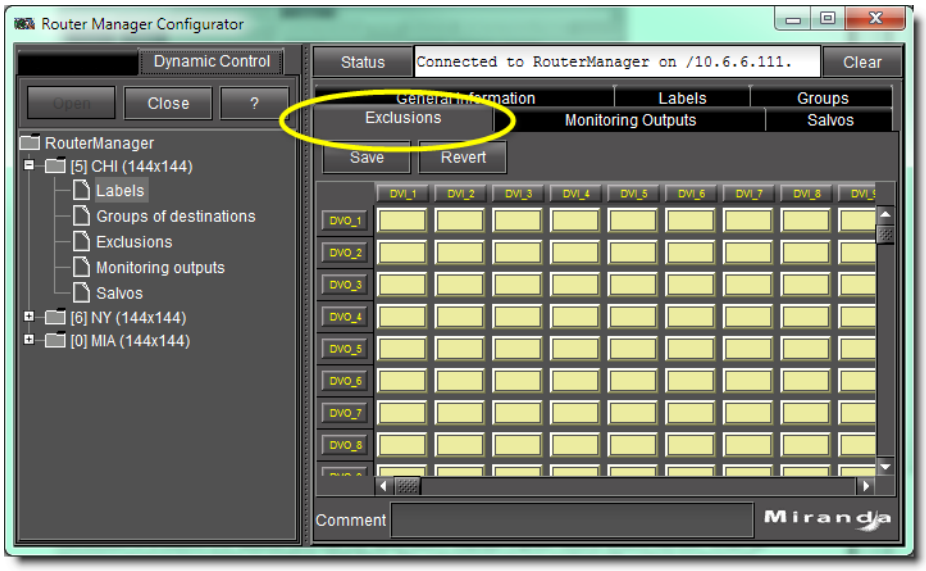
To do this...	...do this...
Create a group.	1 Click **New**. 2 Type the name of the new group in the box. 3 Click **OK**.  *SYSTEM RESPONSE:* The new name appears in the list at the top of the menu. 4 Click the destination buttons you would like to include in this group. 5 Click **Save**. *SYSTEM RESPONSE:* The group is stored under that name.
Change the button selection.	1 Select the name in the list. 2 Adjust the button selection. 3 Click **Save**.

To do this...	...do this...
Change the group name.	1 Click **Rename**. 2 Type the new name in the box. 3 Click **OK**.
Delete a group.	Select the group you would like to delete in the list, and then click **Delete**.

Exclusions Tab

This tab allows you to exclude certain router inputs from appearing on certain outputs. For example, one might inhibit a video recorder's output from being fed back to its input.

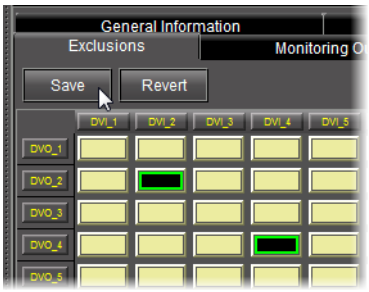
A matrix shows sources across the top, and destinations down the left side.



*The following tasks can be performed on the **Exclusions** tab:*

REQUIREMENT

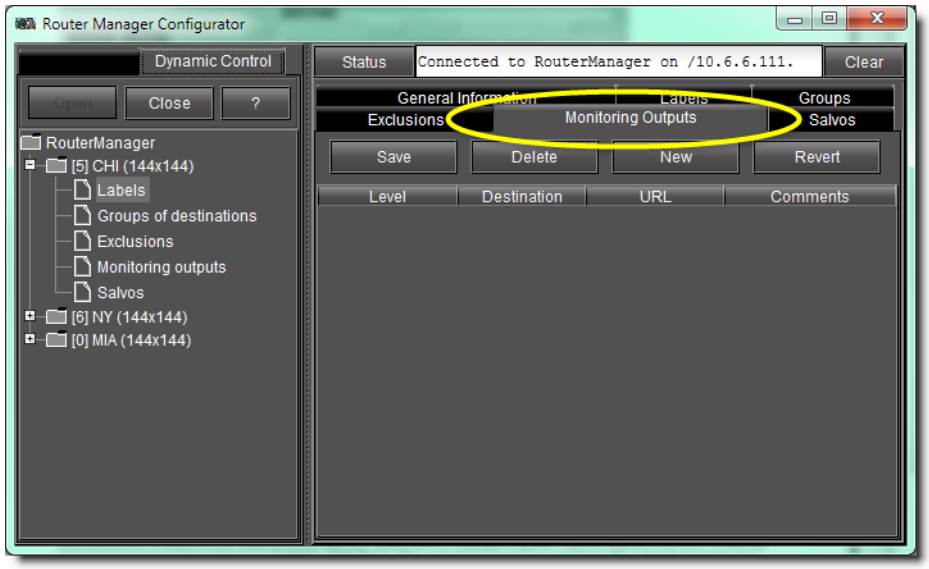
Before beginning this procedure, make sure you have launched **Router Manager Configurator** (see Starting Router Manager Configurator, on page 38).

To do this...	...do this...
Configure exclusions.	1 In the matrix on the right pane, click the box at the intersection of the appropriate column and row (source and destination, respectively) for each exclusion you would like to configure. *SYSTEM RESPONSE:* The selected boxes are marked with a black background and a white X. 2 Click **Save**.[1] 
Undo changes and revert to the original status (before saving).	On the right pane, click **Revert**.
Change an existing exclusion.	In the matrix on the right pane, double-click the box corresponding to the exclusion you would like to remove.

1. If any exclusions are not allowed because of other choices made in the router definition, they will not appear on the matrix. A note will appear (highlighted in red) in the Status box at the top of the pane.

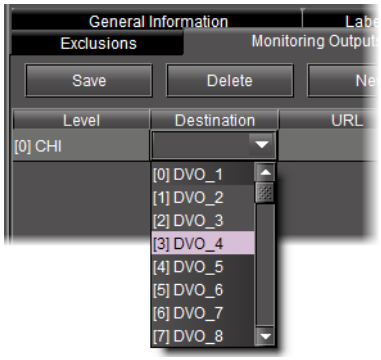
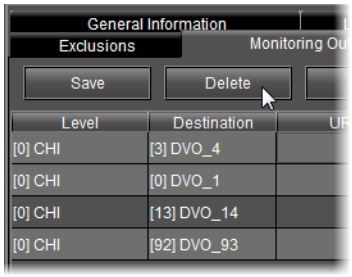
Monitoring Outputs Tab

This window allows you to discriminately specify outputs as monitoring outputs.



The following tasks can be performed on the **Monitoring Outputs** tab:

> **REQUIREMENT**
>
> Before beginning this procedure, make sure you have launched **Router Manager Configurator** (see Starting Router Manager Configurator, on page 38).

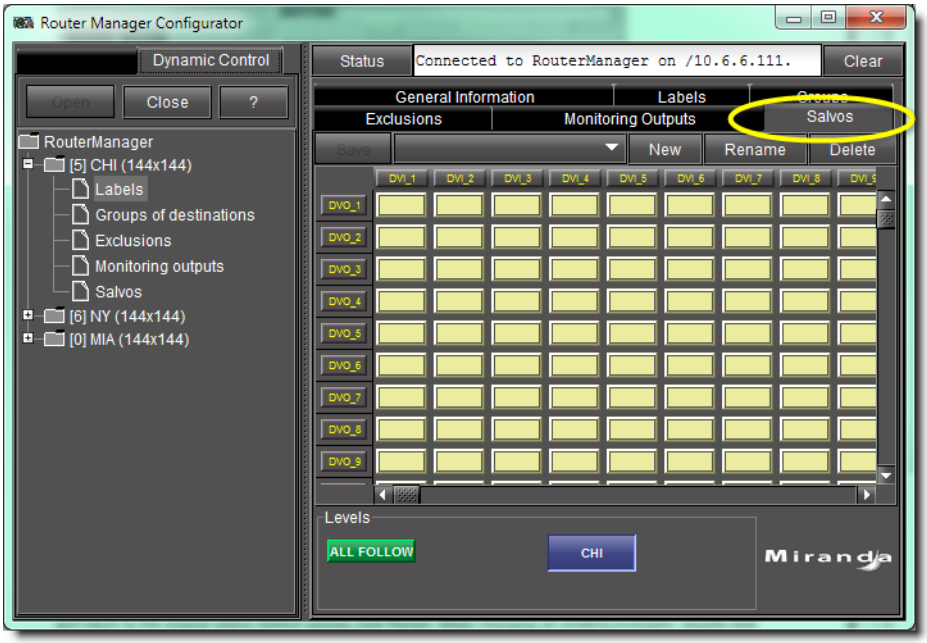
To do this...	...do this...
Create a new entry by specifying a particular output as a monitoring output.	1 Click **New**. 2 In the new row, select the appropriate level and destination from the lists. 3 In the new row, click the cell in the **URL** and **Comments** columns, and type the appropriate address[1] and comments[2], respectively. 4 Click **Save**. 
Delete an entry.	1 Select the row corresponding to the entry you would like to delete.[3] 2 Click **Delete**. 3 Click **Save**. 
Return the list of entries to its original state (before you began making changes).	Click **Revert**.

1. For example, for an ATI card installed in the server host computer, the address is `rtp://hostname:3200/video`.
2. This is the note that appears in the pull-down box on the opening menu.
3. Alternatively, you may use the **Ctrl** key to discriminately select and delete several entries at once.

Salvos Tab

This tab permits you to create and name a configuration of crosspoint closures. Individual levels may be specified at each crosspoint, or else the entire group may be specified (all follow). These are essentially presets, and can be invoked from the operating window.

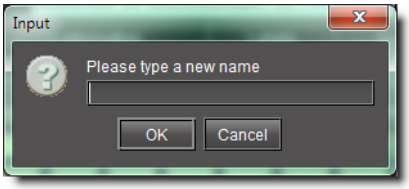
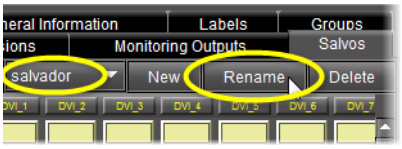
Note: Exclusions are shown on the matrix, and these cannot be overridden.



The following tasks can be performed on the **Salvos** tab:

REQUIREMENT

Before beginning this procedure, make sure you have launched **Router Manager Configurator** (see Starting Router Manager Configurator, on page 38).

To do this...	...do this...
Create a new salvo.	1 Click **New**.  2 In the **Input** window, type the name of the new salvo.  3 Click **OK**. 4 Click **Save**.
Rename a salvo.	1 Select the salvo you would like to rename from the list. 2 Click **Rename**.  3 In the **Input** window, type the new name for this salvo. 4 Click **OK**. 5 Click **Save**.
Remove a salvo from the list.	1 Select the salvo you would like to remove from the list. 2 Click **Delete**. 3 In the confirmation window, click **OK**.

4 Routing Switchers Tips and Tricks

General

The current version of Grass Valley's Router Control Software supports TCP/IP and UDP/IP communications connections.

Nevion

Network Modular Protocol (Control Protocol for VikinX Modular Routers)

Select this driver if you wish to use a router controller such as your VikinX Modular router's SysCon card or an external ETH-CON device.

The Network Modular protocol is an Ethernet ASCII protocol, and uses port 4381.

To confirm the router controller is properly configured

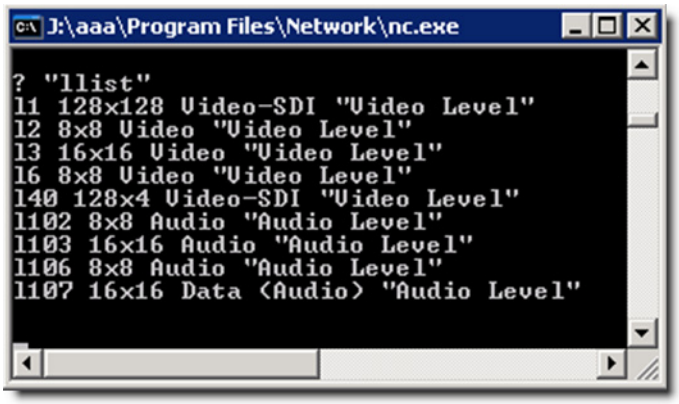
1 Connect to the controller using telnet.

2 In a telnet session, type:

```
llist
```

3 Hit **Enter** twice.

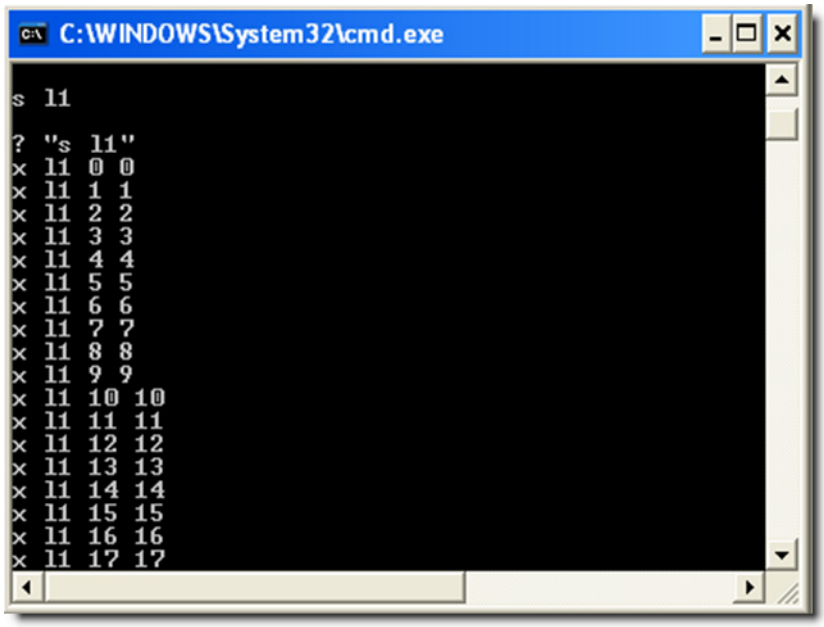
SYSTEM RESPONSE: The response will be something like this:



4 To get the status of all the crosspoints on a level, type `s l<level>`, and then press **Enter** twice.

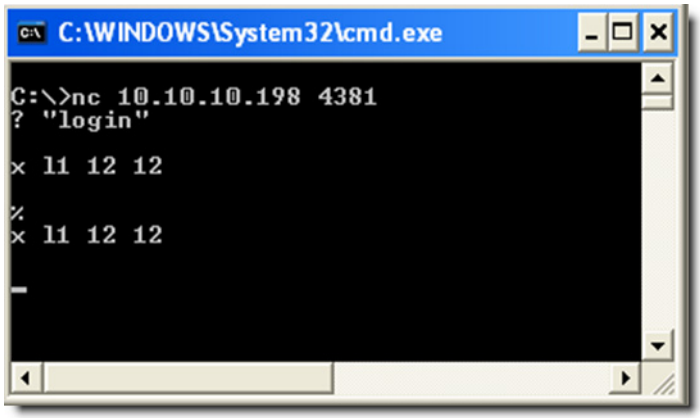
SYSTEM RESPONSE: The response will have the following form:

```
x l<level> <src> <dest>
```



5 You can also switch crosspoints, by typing `x l<level> <src> <dest>`, and then pressing **Enter** twice.

SYSTEM RESPONSE: You will get a confirmation like this:

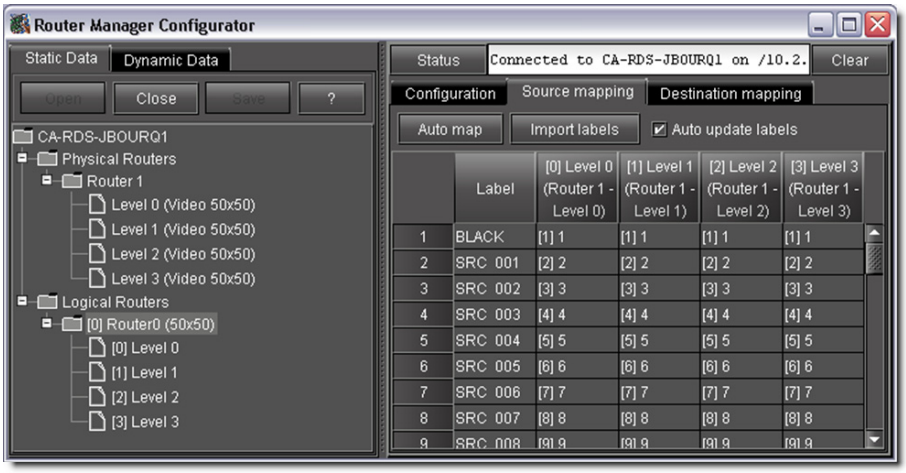


Utah Scientific RCP-3 (SC-4 Controller Ethernet Only)

The RCP-3 protocol is supported by the following controller: UTAH-200, SC-4. The driver only works with SC-4 controllers using an Ethernet connection.

When configuring the physical setting of the SC-4 in the Router Manager Configurator (see Configuring Routers, on page 38), you must use the IP address of the System Controller with Port 5001.

The driver supports automatic labels and this means it will fetch them from the SC-4 controller when it starts. To get them displayed in iControl and iRouter applications, you must set the *Auto update labels* feature to *ON* in the configuration of the associated logical router in the Router Manager Configurator.



Thomson / Grass Valley GVG Series 7000 Native Protocol

For GVG Series 7000 routing switchers we're supporting Native protocol on Ethernet ports through our *Sony HKSPC (GVGNP Emulator)* driver, which works with an Ethernet connection.

For Ethernet, the port to connect to is 12345. It is necessary either to install an additional network card or to configure additional IP address for existing card. The default IP address for the GVG router is `192.0.2.2` and for the app server it is `192.0.2.1`. GVG recommends that you add the following two lines to your hosts file:

```
192.0.2.1 pc
192.0.2.2 sms7000
```

Control Panel Server/RCL Server must have the IP address of Grass Valley's Application Server. Flags and Parameters should have Protocol Type set to `NP`. There is also a `Debug Rx` and `Debug Tx` that can be temporarily activated to view communication between Grass Valley and Encore.

Similar to Philips, the software assumes that there are no gaps in sources or destinations order. The first source index should be 0, as well as first destination index.

Troubleshooting

To troubleshoot the Ethernet connection, try pinging the router first and if you succeed then try connecting to the router via telnet. To end the telnet session, type `logout`.

SAM (Snell/Pro-Bel)

SW-P-02 (General Switcher Communication Protocol)

This driver uses the general switcher communication protocol (SW-P-02) to communicate with any SAM (Snell/Pro-Bel) switcher supporting that protocol (e.g. Halo, Sirius, etc.).

> **Note:** This driver can also be used with a router controller such as a VikinX Modular router's SysCon card or an external ETH-CON device provided you have purchased the appropriate license (P-88) from Nevion (Network Electronics) for your controller.

This protocol is only supported over IP. The default port is 2000, but it may be configured to another port. If the switcher does not have an Ethernet port, you can use the Pro-Bel Babel Fish box:

Troubleshooting

If you want to troubleshoot the SW-P-02 over IP connection, use the following Pro-Bel tools:

- `HU-Babelfish Internal Protocol Conversion V03.pdf`
- `IPConfigurationTool V4.00.zip`
- `swp02_test.zip`

NVISION

NVEP Router (NP0016)

The NVISION Ethernet protocol for routers (NP0016) uses port 5194 to communicate. In Router Manager or XEdit, in addition to the router's host name or IP address, you must

select the appropriate connection type, and physical level or frame ID, depending on your actual device.

Device	Connection type	Level or Frame ID
NVISION compact router	UDP	Must match the value of the Frame ID rotary switch
NVISION enterprise router	TCP/IP	Must match the desired level
GV Node router	TCP/IP	1
Kaleido multiviewer	TCP/IP, or UDP	1

Supported protocol features

Labels from router	No
Native locks	Yes
Update mechanism	Poll (64 outputs every 0.5 s)

How to modify the IP address on a compact router

1 Start the `CrConfigurator.jar` application.

2 Go to the **CR Series Network Setup** | **CR Series Ethernet Settings** panel.

> **Note:** Automatically discovered CR panels will appear in CR Series Ethernet Settings section.

3 Edit the IP address and click **Apply Updates**.

NVEP NV9000 (NP0017)

The NV9000 system controller uses TCP/IP port 9193 to communicate with external devices. Specify the NV9000 controller's host name or IP address when you configure the physical router in XEdit or in Router Manager.

To configure the NVISION controller, you must match the iControl Router frame ID with the unique ID of the router defined in the NVISION configuration. Also, the iControl router logical levels should match the levels defined in tßhe NV9000 configuration.

NVEP NV9000 - Deprecated (NP0017)

This implementation—formerly known as *NVISION Ethernet Protocol - Enterprise Router (Logical)*—of the NVISION Ethernet protocol for the NV9000 controller is deprecated. Grass Valley recommends using the NVEP NV9000 - Port Takes (NP0017) protocol instead. For more information, contact Grass Valley Technical Support (Contact Us, on page 54).

NVEP NV9000 - Device Takes (NP0017)

This implementation of the NVISION Ethernet protocol for the NV9000 series controllers uses the Device IDs defined in the NV9000 system controller configuration to take crosspoints, obtain crosspoint statuses, and fetch labels. It is meant for very specific

scenarios involving physical router interconnects with tie lines, or with hybrid router configurations. For more information, contact Grass Valley Technical Support (Contact Us, on page 54).

After you have created the physical router and levels, with the appropriate dimensions, and saved this configuration, the physical levels will be updated automatically for you.

Supported protocol features

Labels from router	Yes
Native locks	No

NVEP NV9000 - Port Takes (NP0017)

This implementation of the NVISION Ethernet protocol for the NV9000 series controllers uses port numbers to take crosspoints, obtain crosspoint statuses, and fetch labels.

Supported protocol features

Labels from router	Yes
Aliases from router	Yes, for NV9000 version 6.0.6 and later
Native locks	Yes
Update mechanism	Asynchronous notification

NV9000 Supported Router Protocols

The NV9000 router controller supports the following router protocols:

- Utah RCP-1
- Jupiter ESbus
- GVG Horizon TCI
- SAM (Snell/Pro-Bel) SW-P-02
- SAM (Snell/Pro-Bel) SW-P-08
- PESA
- Jupiter ES-Switch
- Encore Router
- Sierra Video
- Stagetec Nexus

Troubleshooting

If you cannot connect to an NV9000 controller, try the following command:

```
telnet IP_ADDRESS_OF_THE_CONTROLLER 9193
```

If you get a `connect failed` message, it means that the NV9000 is not properly configured for remote control.

How To...

How to prevent iControl user from unlocking destinations previously locked from a

control panel that uses the NVEP NV9000 – Device Takes (NP0017) protocol

By default, iControl Router emulates a panel configured to allow *forced release*. It is possible to apply a *normal release* policy for devices that use the NVEP NV9000 – Device Takes (NP0017) protocol, by setting a system property.

1. Navigate your iControl Application Server file system, to `/usr/local/iControl/bin/conf/`, and open `java_router.properties`.
2. Set the `np0017.LPR.normal.release` property to *true*.
3. Set the `np0017.logical.userID` property to the appropriate *NV9000 user ID*.

Once you have enabled the *normal release* policy, iControl Router will identify itself, to the NV9000 controller, as the user you specified, and will only be allowed to release locks that were applied from panels associated with this user. Refer to the *NV9000-SE Utilities User's Guide* (available from the Documentation Library section of Grass Valley's website), for more information.

How to start SE Utilities

- Connect to NV9000 either directly or via Remote Desktop.

  User name: `EnvyAdmin`

  Password: `software`.
- On your desktop, double-click on the NV9000-SE Utilities icon.

How to create a physical router in SE Utilities to control a KX Router logical router

1. Open SE Utilities (see How to start SE Utilities, on page 79).
2. On the **Configuration** menu, point to **Router** and click **Add Router**.
3. Set the router name.
4. Set **Router Host** to NVCONFIG (default value).
5. Set protocol to NV Ethernet.
6. Set **Primary Control Point** to the KX IP address (for example, `10.6.6.50`).
7. Leave **Secondary Control Point** blank.
8. Click **Add** to add Physical Level.
9. Set digit under # to match Physical level of KX router in XEdit (normally this would be 0).
10. Set **Input Start**, **Input End**, **Output Start**, **Output End** to match dimension of KX router. **Input Start** must be set to 1, **Output start** must be set to 1.
11. Click **Save**.
12. Go to **System Management** and select NV9000 node in left pane.
13. Click **Write Configuration to NV9000** to send config to NV9000.
14. Click **Restart Controller 1**.
15. Wait until the NV9000 has finished rebooting.

    SYSTEM RESPONSE: You should see all accessible routers visible in Left pane.
16. Select KX router in left pane.

    SYSTEM RESPONSE: You should see cross point status in central pane. You can also test switching KX router crosspoints by using Take area.

How to switch a crosspoint from SE Utilities

1 Go to **System Management** and under **Routers**, click on the router you want to control
2 If you can communicate with that router, in Connections panel, you will see the current crosspoint for each output
3 To change a crosspoint, select appropriate input and output inside Take section and click **Take**.

SE Utilities Configuration Hints

To determine the physical Level or frame ID value to set in Router Manager Configurator (or XEdit): from NV9000 SE Utilities, go to **View** | **Virtual Levels** and select the appropriate ID. In order word, level or frame id = column id in table Virtual levels in SE Utilities

The size is variable, and it can change each time you read mnemonics from the system. You would need to query the database to obtain the number of sources or destinations in advance of reading them all using 0x3022.

In order to set the right level size, save your config, open putty to your app server, enable debug for `com.miranda.icontrol.routers.nv9000virtual.NV9000Virtual` to debug in log4j and restart the iControl Router service. Then open log file `router.log` and use the `grep` command for string source size and destination size.

> **Note:** To determine the physical Level matching this virtual level, go to Views -> Level Set Details, in NV9000 SE Utilities.

How to determine the physical level ID and matrix size you need to set up in Router Manager to control a router configured in SE Utilities

1 Start SE Utilities (see How to start SE Utilities, on page 79).
2 Go to **Views** | **PhysLevels** and check value under **ID column** for matching router.
3 Check Input End and Output End fields to determine matrix size.

> **Note:** Make sure **Input Start** and **Output Start** are set to `1`

How to determine the virtual level ID and matrix size you need to set up in Router Manager to control a router configured in SE Utilities

1 Start SE Utilities (see How to start SE Utilities, on page 79).
2 Go to **Level Sets** -> **Virtual Levels** and **Check ID** column.

How to find the NV9000 controller version

1 Log on to NV9000 using Remote Desktop.
Default username: `EnvyAdmin`
Default password: `software`
2 Using Windows Explorer, navigate to `c:/nvision/envy/bin`.
3 Right-click the Explorer dialog column header and make the **Product Version** column visible.

How to set up virtual router from SE Utilities (or to change protocol used by

NV9000 to control external router)

Note: This is useful, when not having actual router connected.

1 Start SE Utilities, and go to **Views** | **Router control** (see How to start SE Utilities, on page 79).
2 Set router protocol to **Virtual router** (or to different protocol).
3 Export config on NV9000.

How to export NV9000 backup database

1 Start SE Utilities (see How to start SE Utilities, on page 79).
2 On the **File** menu, click **Export to Zip Archive**.
3 Browse, select and click **Save**.

How to create a backup of NV9000 database

1 Start SE Utilities (see How to start SE Utilities, on page 79).
2 Go to **System Management** and select **Read configuration from**.

SYSTEM RESPONSE: You will be asked to open a configuration to receive data.

3 Select **New** and enter a name for the backup, and then click **OK**.

SYSTEM RESPONSE: The name of your backup should appear in the SE Utilities menu bar.

How to import an NV9000 backup database

1 Start SE Utilities (see How to start SE Utilities, on page 79).
2 On the **File** menu, click **Import From Zip Archive**.
3 Browse, select, and then click **Open**.
4 Select a name for the imported config and click **OK**.
5 Go to **System Management** and click **Write configuration to** to load configuration on controller.
6 Click **Restart controller 1** (or **Stop controller 1** followed by **Start controller 1**).

How to export a configuration from SE Utilities to NV9000

1 Start SE Utilities (see How to start SE Utilities, on page 79).
2 On the **System Management** menu, click **Local Control System**.
3 Click **Write configuration to LOCAL CONTROL SYSTEM**.

How to change source labels from SE Utilities

The purpose is to modify the source labels from the SE Utilities application so Router Manager is dynamically updated with this information.

1 Start SE Utilities (see How to start SE Utilities, on page 79).
2 On the **Configuration** menu, click **Devices**.
3 Click on the device name you want to change and then click **Edit Selected Devices**.
4 Edit the name as desired, and then click **Save**.

5 Go to **System Management** and click on root node (in tree).
6 Click **Dynamic Update Apply changes to**.

> **Note:** The NV9000 does not accept timeout values smaller than 500 ms.

How to increase a timeout for NVEthernetProtocol

When the NV9000 is using nvethernet (np0016 over TCP/IP) to control a router, it is polling the router every 300 ms and it expects a response from the router within 500 ms. If the NV9000 doesn't receive the response within 500 ms, SE Utilities will show the router as being offline.

To set the timeout value to a larger custom value

1 In SE Utilities, select **Views** | **Tables** | **Control Points** (see How to start SE Utilities, on page 79).
2 By default, you should see a Parameter entry similar to: `E,10.0.9.39,T500`, where `500` represents the timeout in milliseconds and `10.0.9.39` is the IP address of the router to control.
3 Edit the value and click **Save**.
4 Go to **System management**, select the root node, and then click **Write configuration to**.
5 Click **Restart controller** to apply your changes.

> **Note:** The NV9000 does not accept timeout values smaller than 500 ms.

How to downgrade a database on a controller

Downgrading NV9000 sometimes involves downgrading the database schema.

How to determine the controller version

To determine the NV9000 controller version, click on the **System management** tab, then mouse over your controller icon to reveal a tooltip. The software version is the last item of the list.

Where to find the SE Utilities log file

The system log file is under *system management*.

How to set up NVISION routers

In order to configure a NVISION router, big router with a controller card, you have to run uniconfig software.

How to configure NV9000 routers with tie lines

Configuring an NV9000 router with tie lines involves two applications: NV9000 SE Utilities, and Router Manager Configurator (see Configuring Routers, on page 38).

To configure an NV9000 router with tie lines

1 Open SE Utilities (see How to start SE Utilities, on page 79).
2 On the **File** menu, click **New**, and then type your configuration name (for example ROUTERS_TIELINES)
3 Add new routers by clicking **Routers** on the left panel, and then clicking **Add router** on the right panel.
4 Type your router name for example ROUTER1 and select the proper protocol (for example *NV compact router ethernet* for compact router).
5 Click **Add** to add a physical level.
6 Do the following sub-steps for all routers:
   a Set values for *input start*, *input end, output start*, *output end* (for example 1, 32, 1, 32)
   b On the **Level sets** menu, click **add levelset**, and then type a level name (for example ROUTER1).
   c Select a virtual level (for example VIDEO) and select the physical level.

   Note: It is important to have the same virtual level for all routers, since those routers will be bound together with tie lines

7 Do the following sub-steps for all routers:
   a On the **Devices** menu, click **Add device**.
   b Set a mnemonic name and choose the proper level set (for example DEV 1 and level set ROUTER1).
   c Set the proper input/output port (for example 1, 1).

   Note: To go more quickly, you may also choose to add devices in **Tasks** | **Add multiple devices**.

   d Select the proper prefix (DEV), set the proper number of devices (32) and select the proper level set (ROUTER1).
   e On the **Finish** menu, click **Finish**.
8 If you do not have free output and input ports, navigate to **Configuration** | **Device**, and then delete a device that will be used as a tie line (for example DEV 31, 32 and OUT 1, 2).
9 On the **Configuration** menu, click **Tielines**.
10 Add tie line, set tie-line name (for example tieline1).
11 Select upstream router (for example ROUTER1_PL1).
12 Select downstream router (for example ROUTER2_PL1).
13 Drag your mouse from an upstream port to a downstream port.
14 On the upstream panel (left side) and downstream panel (right side) make sure you check the check box where you see VIDEO level.
15 Click **Save**.
16 Open Router Manager Configurator. See Configuring Routers, on page 38.
17 Add a physical router.
18 Select NV9000 virtual with the IP address of your controller.
19 Click **Save**.

How to edit aliases (name sets)

1 Open SE Utilities (see How to start SE Utilities, on page 79).
2 Go to **System Management**.
3 Click NV9000 (root node).
4 Right-click and then select **Edit name sets**.

How to turn on Tieline Manager

To turn on the tie-line manager, install the tie-line license, and restart the software.

How to display a debug window when launching SE Utilities

Hold down the **CTRL** key when you launch SE Utilities to also open a console window. The console window will show debug messages from the application, to help determine what might be failing.

How to install SE Utilities on a PC

Double-click the `SEUtilitiesVx.x.xInstaller.exe` file.

How to upgrade NV9000/NV915 software

Copy the `NVSETUP` directory on NV9000/NV915, and then open `NV9000Setup.exe`.

Sony

The Sony protocol is not directly supported. However, a specific Sony card can be used to emulate the GVG Series 7000 Native Protocol. The card is named HKSPC and it only supports Ethernet connection. Please use the *Sony HKSPC (GVGNP Emulator)* driver with the HKSPC card and not our *GVG 7000 Native Protocol* driver.

Quintech

Quick Info

You must use Ethernet communications. Choose the Ethernet option and you will be prompted to set the Ethernet address and port. The default port is 9100. It should not need changed unless port 9100 is not allowed on your network. If a new port will be specified, make sure that it matches the port setting of the matrix controller. The default port value of the matrix controller is also 9100.

Detailed Info

System Access

A Quintech matrix switching system is controlled by a standard Universal Control Module (UCM). This is typically a separate 1 RU (1.75") module, but it may be built into a matrix module. The UCM accepts control commands from external sources that tell it how to

switch the matrix or configure various system options. A standard UCM has five control ports that will accept commands:

Local: Front panel keypad and LCD.

QEC Port: Ethernet. The exact Ethernet port is user-defined with the default Ethernet port set at `9100`.

Telnet: Telnet console window. This provides an ASCII interface with a cursor for keyboard entry of commands.

The system is highly flexible. The access control feature can be configured to be on/off for each of the five possible control ports on an individual UCM. This also holds true for a system with a main UCM and multiple remote UCMs. The control port access control must be set separately for the main unit and each of the remotes.

Grass Valley Technical Support

For technical assistance, contact our international support center, at 1-800-547-8949 (US and Canada) or +1-530-478-4148.

To obtain a local phone number for the support center nearest you, consult the Contact Us section of Grass Valley's website (www.grassvalley.com).

An online form for e-mail contact is also available from the website.

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