iControl

Signal and facility monitoring

iControl Router

Quick Start Guide

M446-2800-104

3 March 2014

Miranda

A BELDEN BRAND

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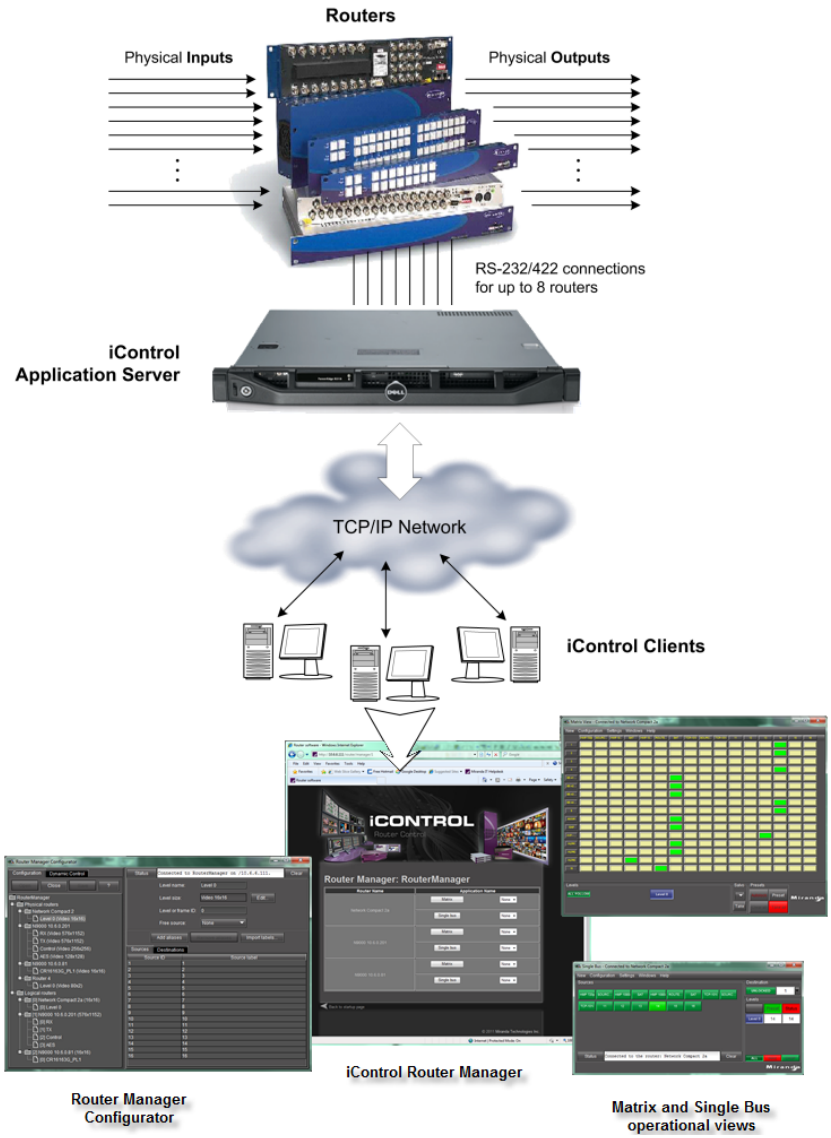
1 Setting Up iControl Router

The Miranda iControl Router Software (also referred to as iRouter, or iC Router Control) allows you to create a virtual routing environment where physical router resources can be arranged into one or more logical configurations that are optimized for operational needs. This document is intended to give you the information you need to establish a basic router configuration using iControl Router.

Summary

Overview

iControl Router (also referred to as iRouter, or iC Router Control) is one of the main modules built into iControl. Based on Miranda's standalone iRouter software, it is automatically installed with iControl.



Overview of iControl Router Router

Setting Up iControl Router

Task 1: Verify Physical Connections

The iControl Application Server and the routers to be controlled must be physically connected, either by serial cables or via an Ethernet switch. Before continuing with the iControl Router setup, make sure that all router cables are properly connected, and that the routers themselves are configured (e.g. DIP switch settings) if necessary. Similarly, check the serial and Ethernet connections on the iControl Application Server (refer to the *iControl Router User Guide* for more information).

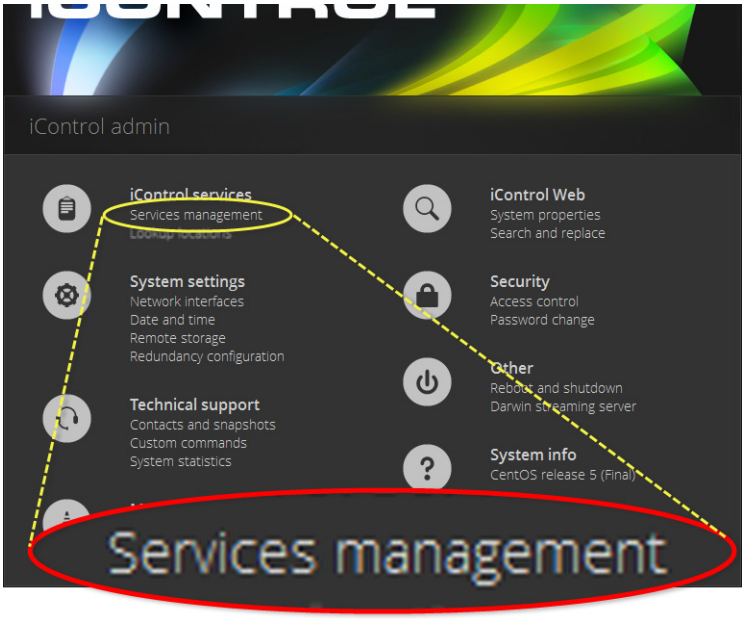
Task 2: Verify that the iControl Server is Running

REQUIREMENT

Before beginning this procedure, make sure you have logged on to the *iControl—admin* page (see page 559).

To ensure that the iControl Server is running

1. On the *iControl—admin* page, click **Services management**, under **iControl Router services**.

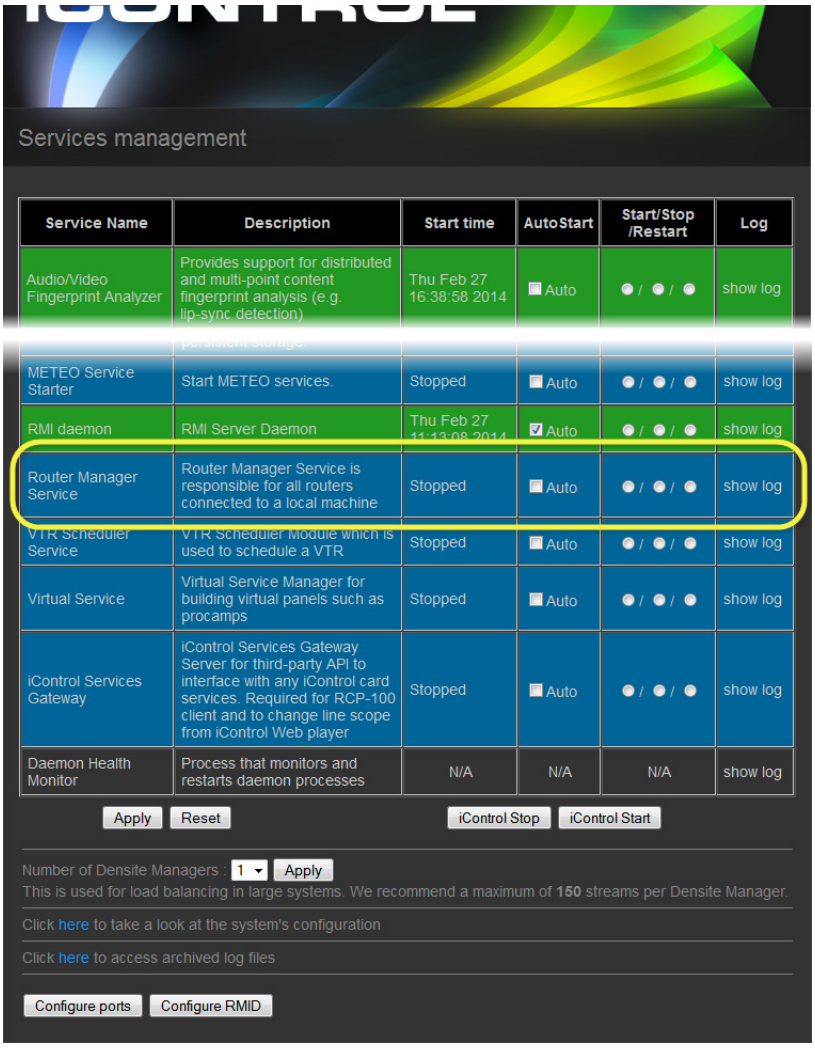


The *iControl—Services management* page appears.

All iControl services available on the current Application Server are listed in a table, one service per row. A row's background color indicates the service state:

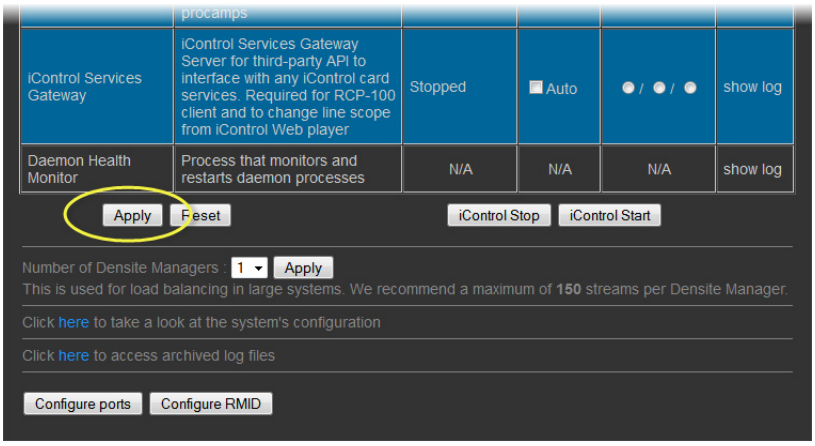
- Green indicates an active service
- Blue indicates an inactive service
- Red indicates a problem with the service.

The *iControl—Services management* page appears.



Router Manager Service row (circled) is green, indicating it is running

2. Check that the **Router Manager Service** has **AutoStart** selected, and that there is a start time. If not, select **AutoStart**, enter a start time, and then click **Apply**.



3. Verify that the Router Manager Service is running (its row should be green). If it is not running, select **Restart**, and then click **Apply**.

Task 3: Verify that the Router Plug-in is Installed

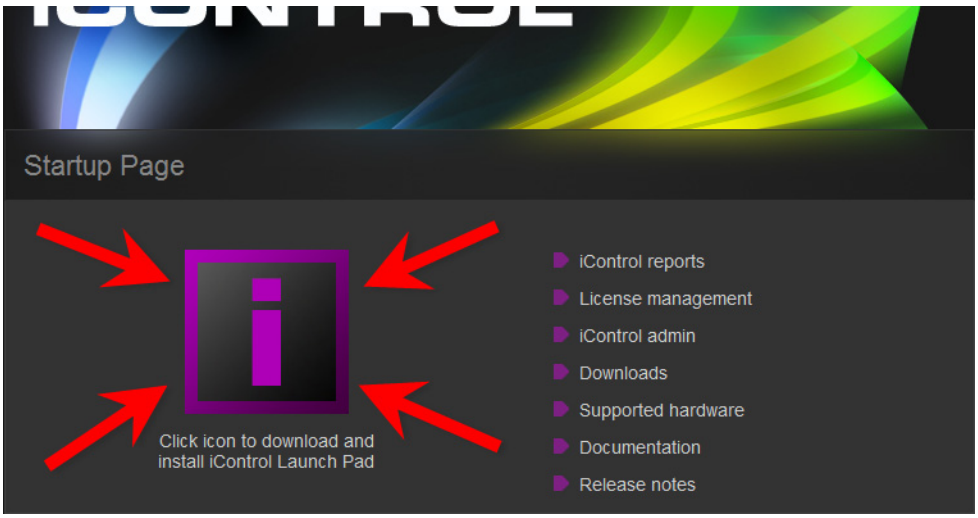
The iControl General Status Manager (GSM) must have its Router plug-in installed in the Alarm Browser in order for iControl to be able to monitor routers connected to the Application Server.

REQUIREMENT

Before beginning this procedure, make sure you have started **iControl Router Launch Pad** (see page 558).

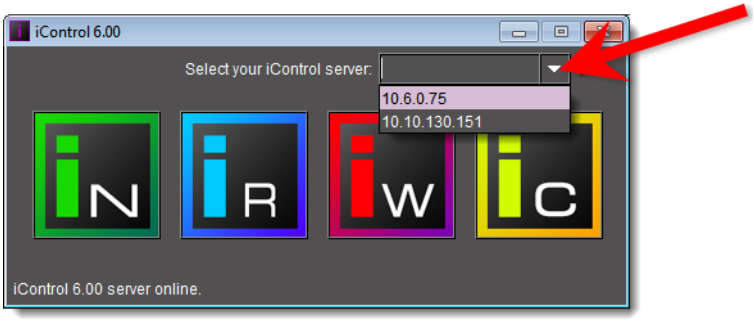
To verify that the router plug-in has been added

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

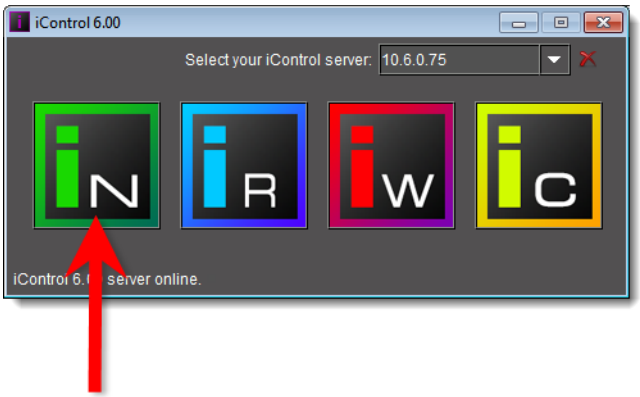


The *iControl Launch Pad* executable file is downloaded to your local file system.

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.

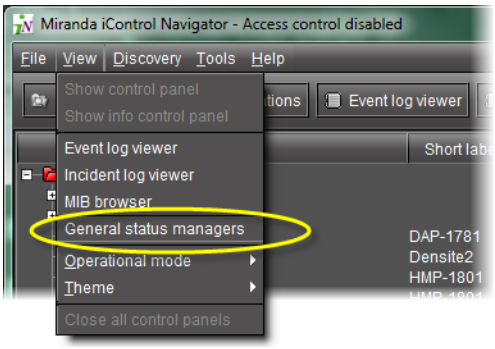


4. Click the **iC Navigator** icon.

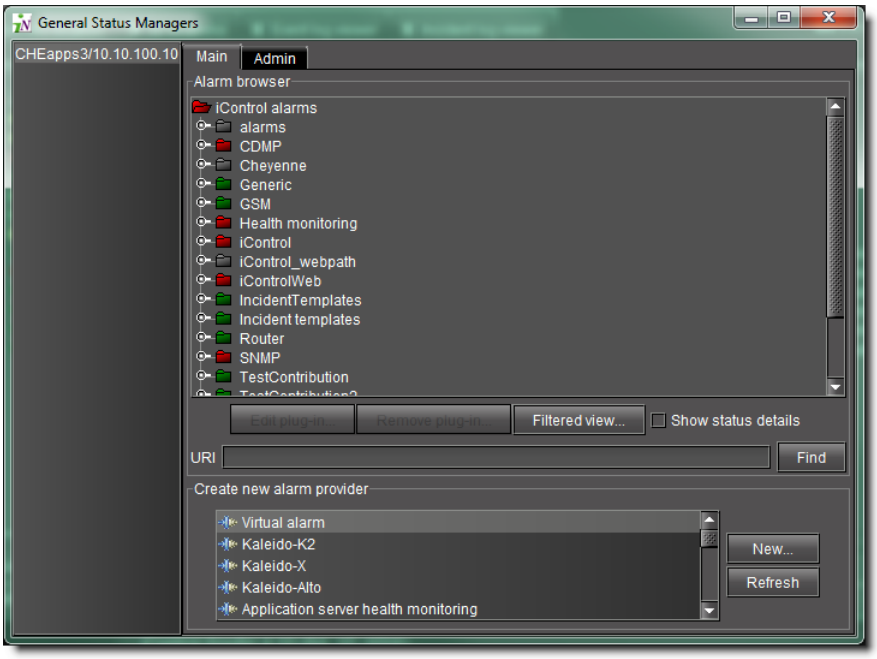


The iC Navigator splash screen appears followed by the main iC Navigator window.

5. On the **View** menu, click **General status managers**.



The **General Status Managers** window appears.



6. In the **Create new alarm provider** list, select **Router**.

> **Note:** If you do not see the router plug-in in the list of alarm providers, this means that it has already been installed.

7. Click **New**.

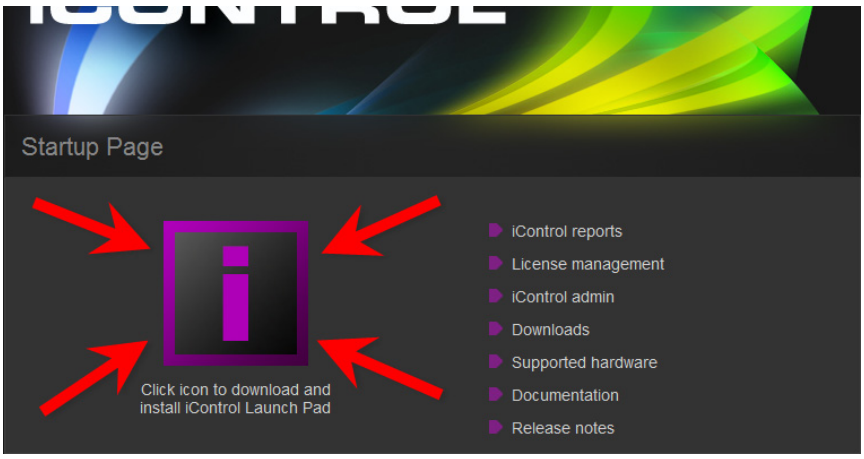
   After a few seconds, a message appears advising you that the plug-in has been installed.

   A folder called `Router` should appear in the **General Status Managers** window.

Task 4: Open Router Manager Configurator

To open Router Manager Configurator

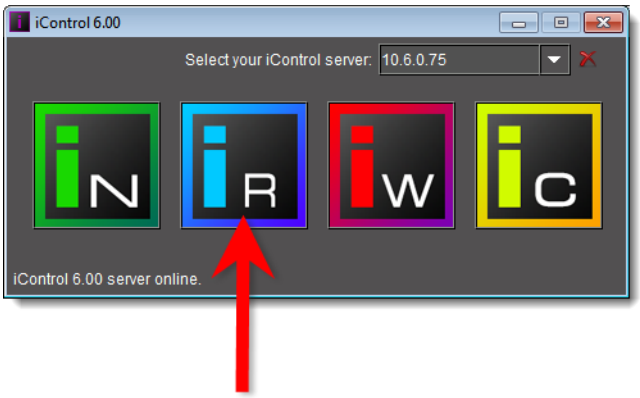
1. On the *iControl—Startup* page, click the massive **i** icon.



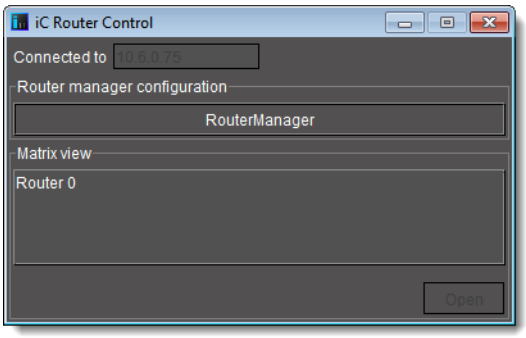
The *iControl Launch Pad* executable file is downloaded to your local file system.

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.

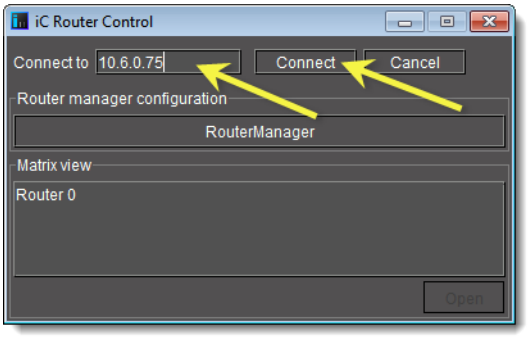
4. Click the **iC Router Control** icon.



The **iC Router Control Connection** window appears.

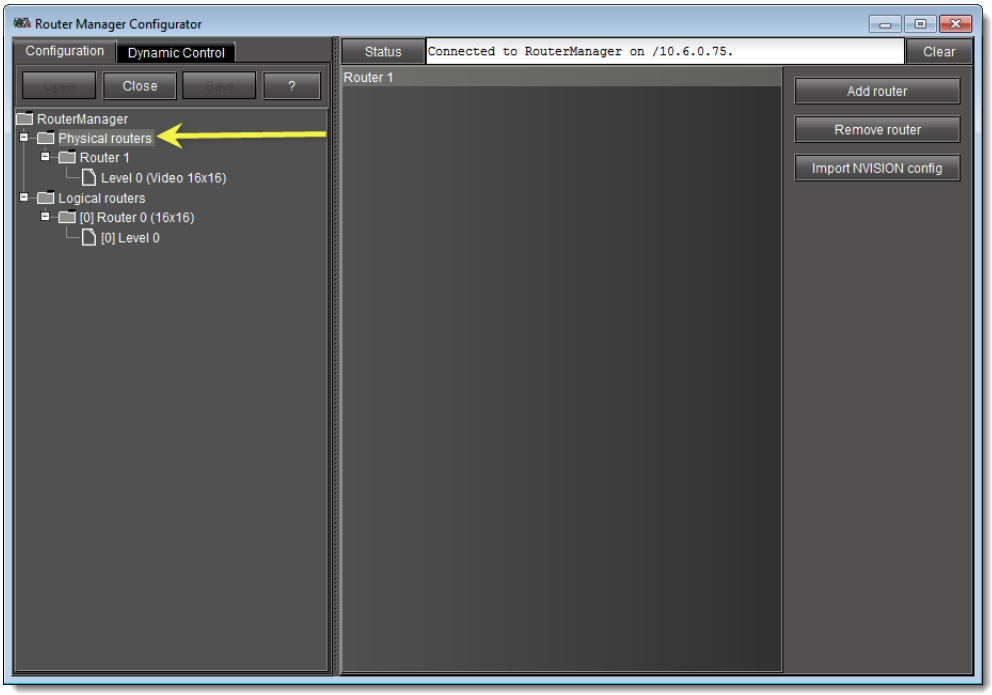


5. Perform the following tasks in the **iC Router Control Connection** window, as required:

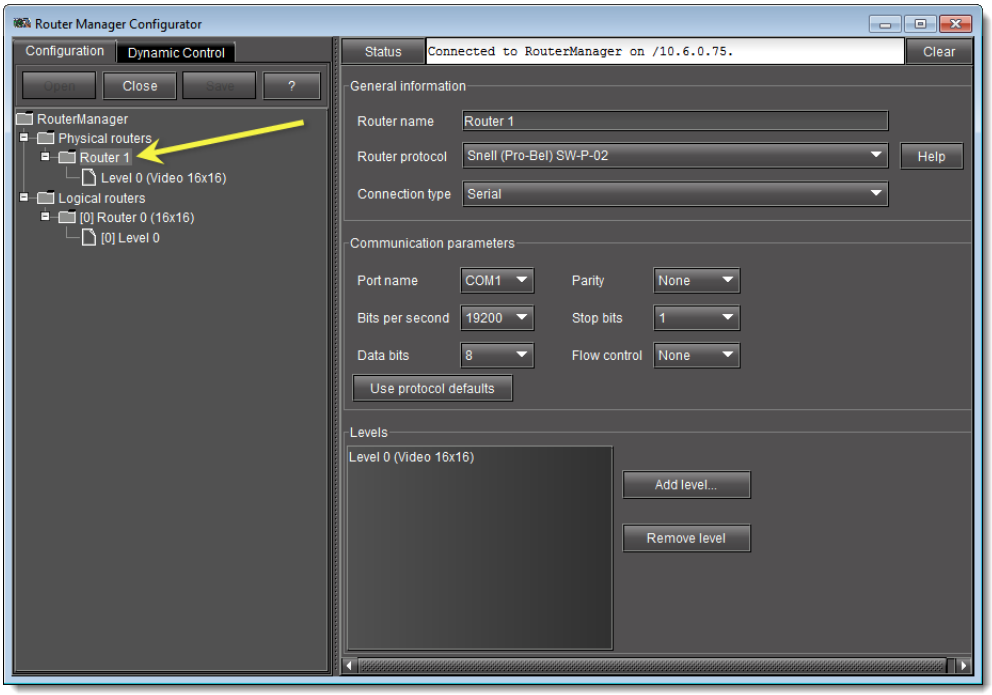
To do this...	...do this...
Connect to a different Router Manager's IP address (*other than the one currently displayed*)	1. Click within the **Connected to** box. 2. Delete the existing IP address. 3. Type the new Router Manager's IP address. 4. Click **Connect**. 
Open **Router Manager Configurator**	• 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.

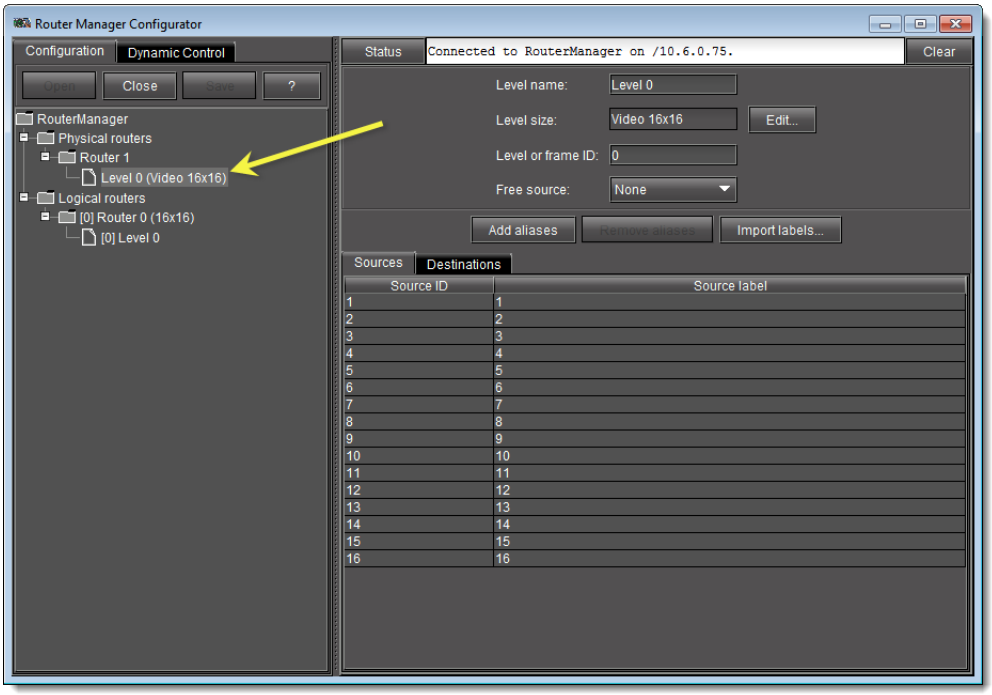
   For example, click **Physical Routers**to view a list of routers currently defined in iControl Router.



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



Click on a level to view its configuration details.



Task 5: Add or Import a Physical Router

You can choose either to add a physical router and configure it manually, or else import an NVISION router's configuration information directly from an NVISION router controller. Perform one of the following two options, as required:

- "Adding a Physical Router" on page 11, and then "Add Levels to a Physical Router" on page 14

  OR,

- "Importing an NVISION Physical Router Configuration" on page 17

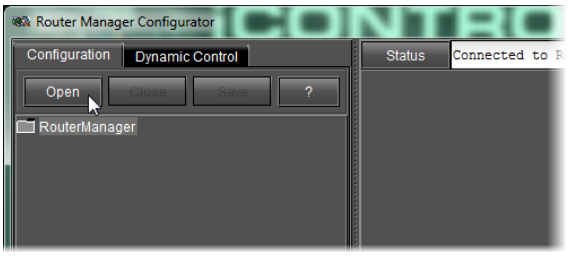
Adding a Physical Router

REQUIREMENT

Before beginning this procedure, make sure you have opened the Router Manager application (see page 7).

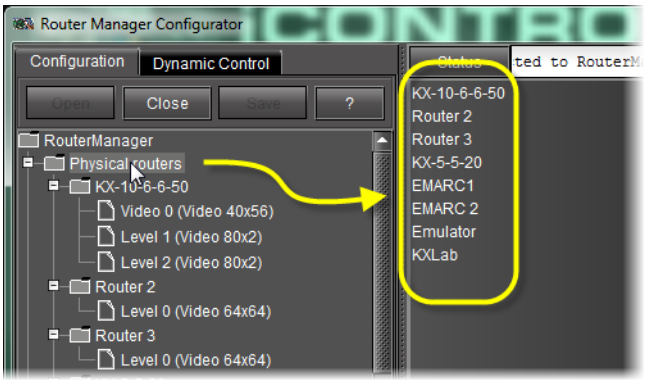
To add a physical router

1. Select the router manager folder, and then click **Open**.



2. Select the **Physical Routers** folder.

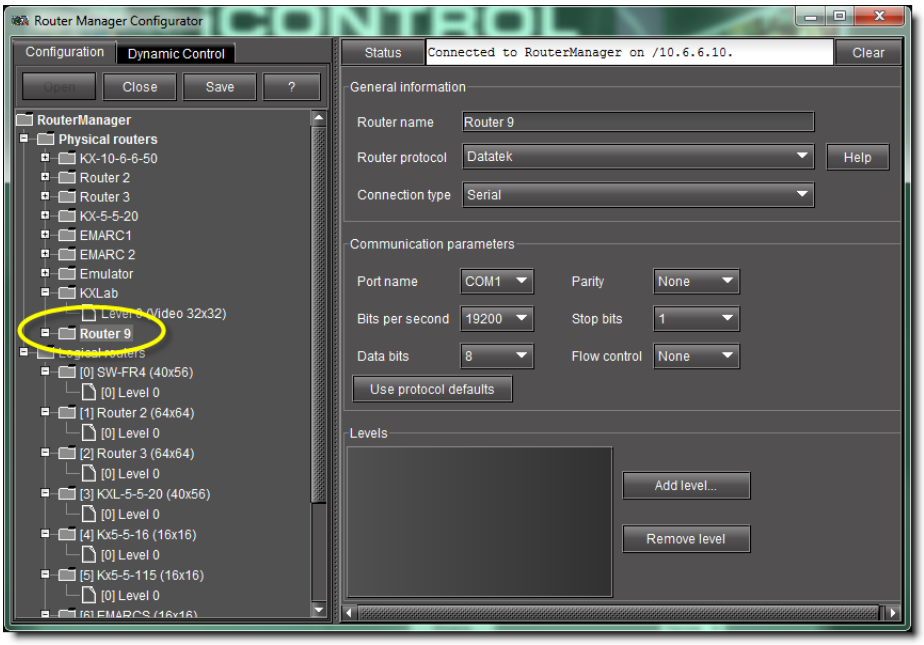
   The list of all physical routers added so far to your system appears in the right pane.



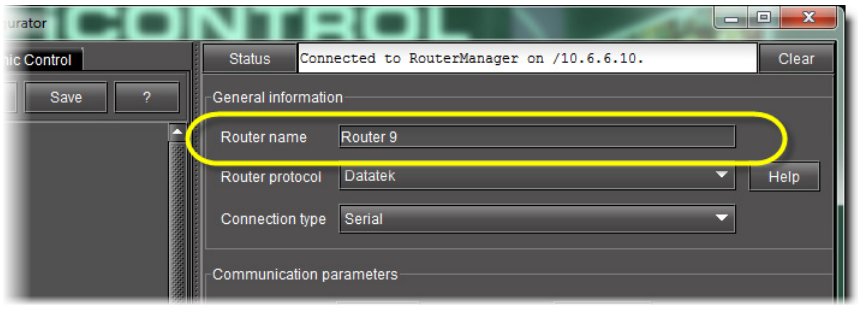
List of physical routers (circled)

3. Click **Add Router**.

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

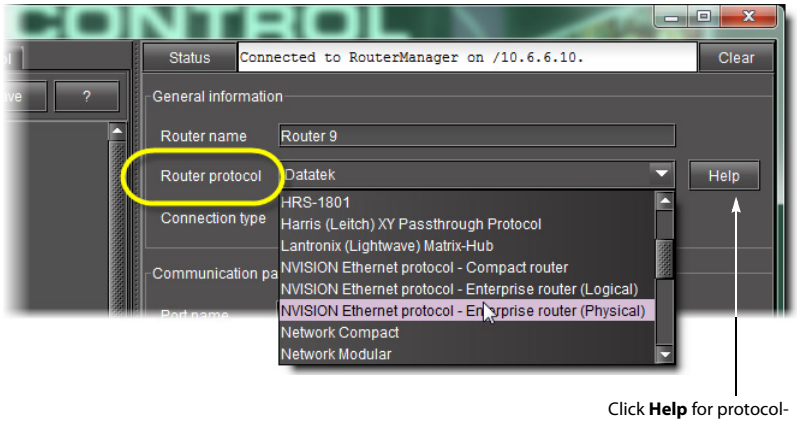


4. Type a name for the router in the **Router name** box.

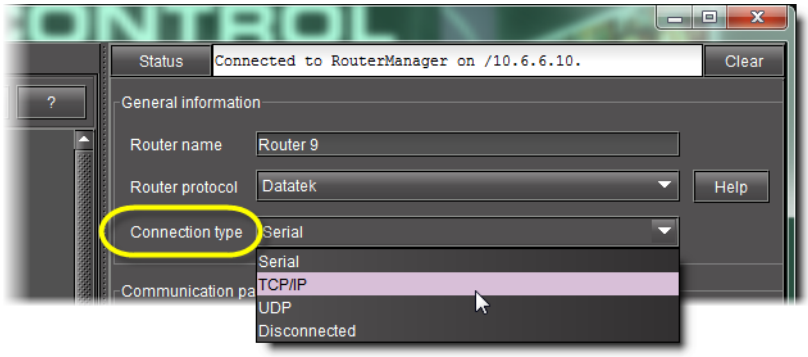


IMPORTANT: Do not use special characters in the router name.

5. Select the appropriate protocol from the **Router protocol** list.



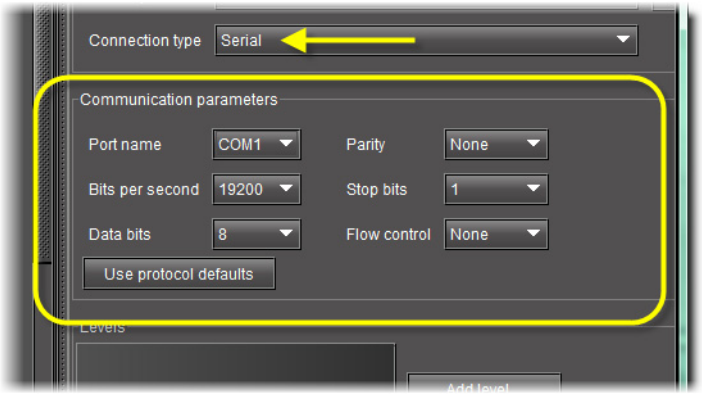
6. Click **Help** to review information about the selected protocol.
7. Select a connection type.



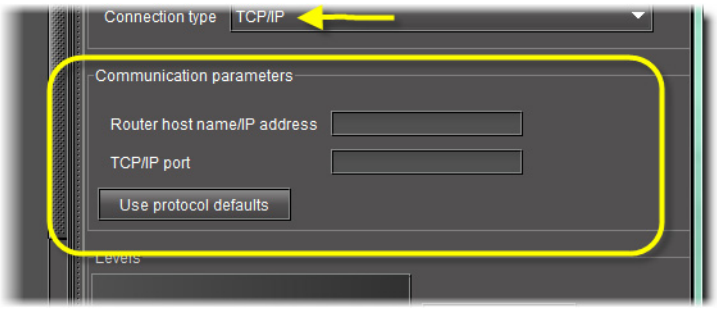
Note: The **Communication parameters** zone varies according to the selected connection type.

8. Configure communication parameters.

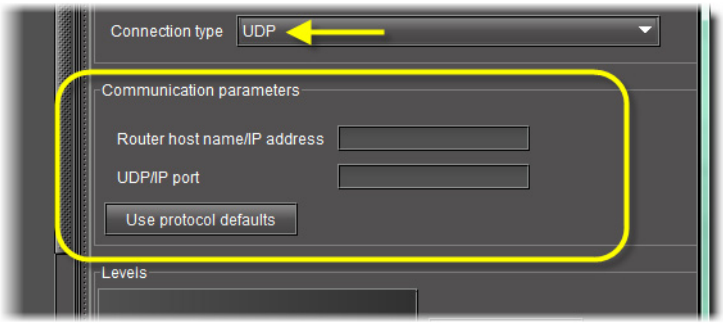
- Communications settings for a *Serial* connection:



- Communications settings for a TCP/IP connection:



- Communications settings for a UDP connection:



9. Specify all required information, or click **Use protocol defaults** to apply the selected protocol's default communication settings.
10. Click **Save**.

Add Levels to a Physical Router

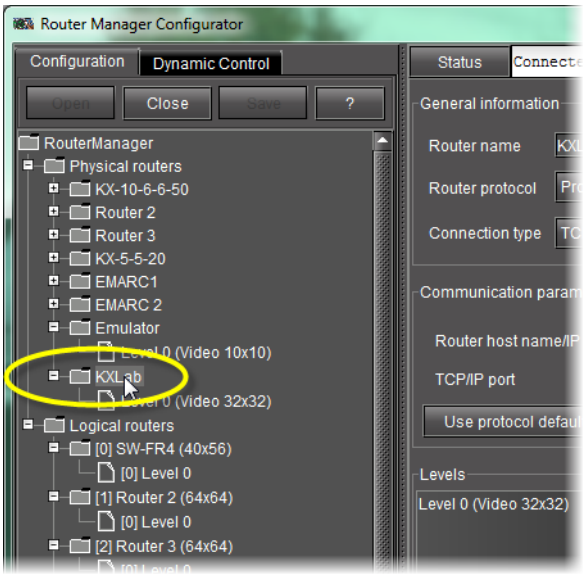
The physical levels from which the router is going to be built must be defined. Typical levels include video, audio 1, audio 2, etc. These levels each represent a physical device. Each level must be named, and its type and size specified.

REQUIREMENT

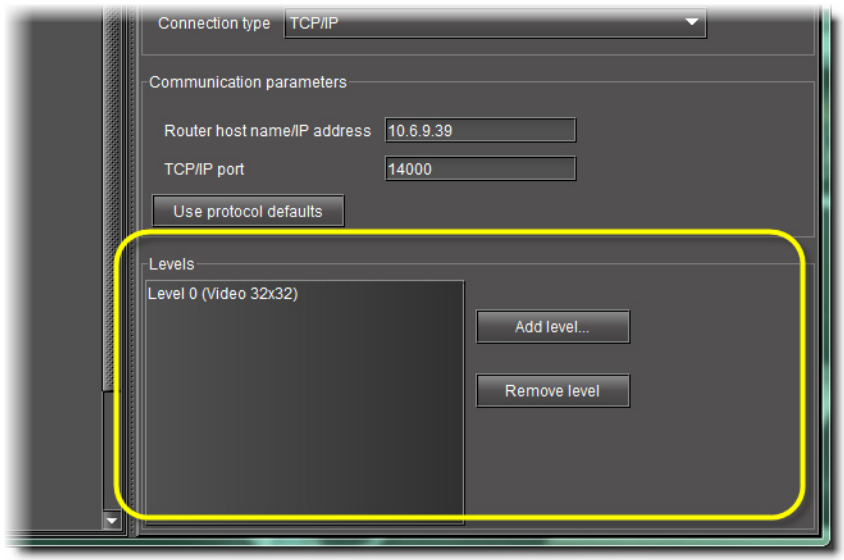
Before beginning this procedure, make sure you have opened Router Manager Configurator (see page 7).

To add a level to a physical router

1. In the left pane, select the physical router you wish to configure.

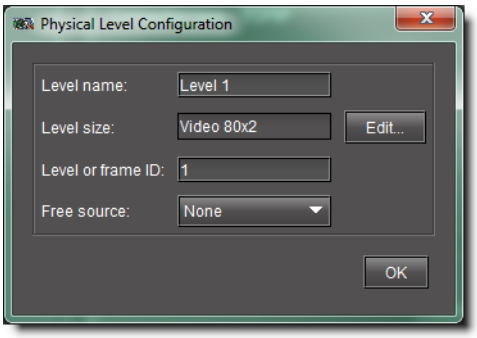


The list of existing levels appears in the **Levels** area, at the bottom of the right pane.

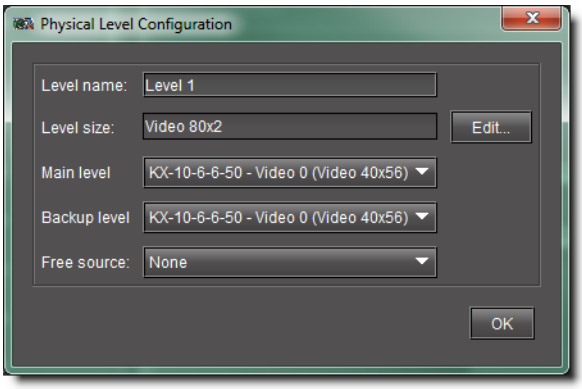


2. Click **Add level**.

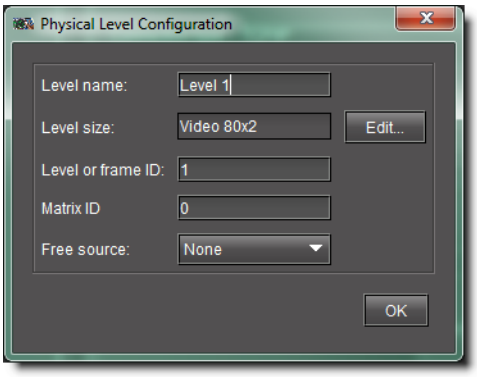
   The **Physical Level Configuration** window appears. Its content varies according to the selected router protocol.



Physical Level Configuration window (most router protocols)



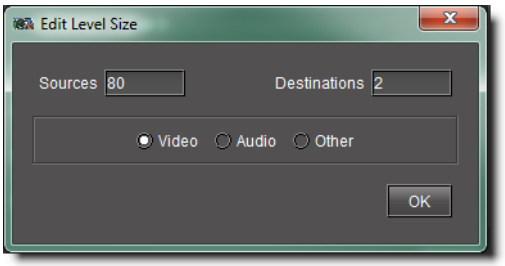
Physical Level Configuration window (Redundancy Control router protocol)



Physical Level Configuration window (Pro-Bel SW-P-08 router protocol)

3. In the **Level name** box, type a name for this level (e.g. `Audio`).
4. Click **Edit**.

   The **Edit Level Size** window appears.



5. In the **Edit Level Size** window, specify the number of sources and destinations associated with the physical level.

   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. Click **OK**.
7. In the case of a Pro-Bel SW-P-08 device, type the appropriate value in Matrix ID (click **Help** for more information).
8. In the case of a Redundancy Control device, select the appropriate main level and backup level from the lists (click **Help** for more information).
9. Click **OK** to close the **Physical Level Configuration** window.

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

Importing an NVISION Physical Router Configuration

IMPORTANT: Risk of Deleting Router Configuration Data

If, after adding aliases in iControl Router, 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.

IMPORTANT: In the case of the Router Manager application, imported NVISION router configuration data is not continuously synchronized with the router. Re-importing this configuration data at a later time will overwrite the locally stored NVISION data with the new data from the router. If some changes were applied locally, in iControl Router, after a previous import, they will be lost.

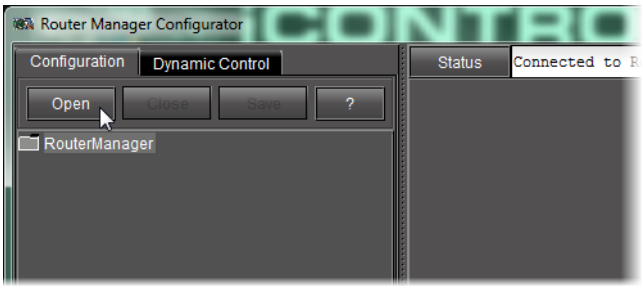
REQUIREMENTS

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

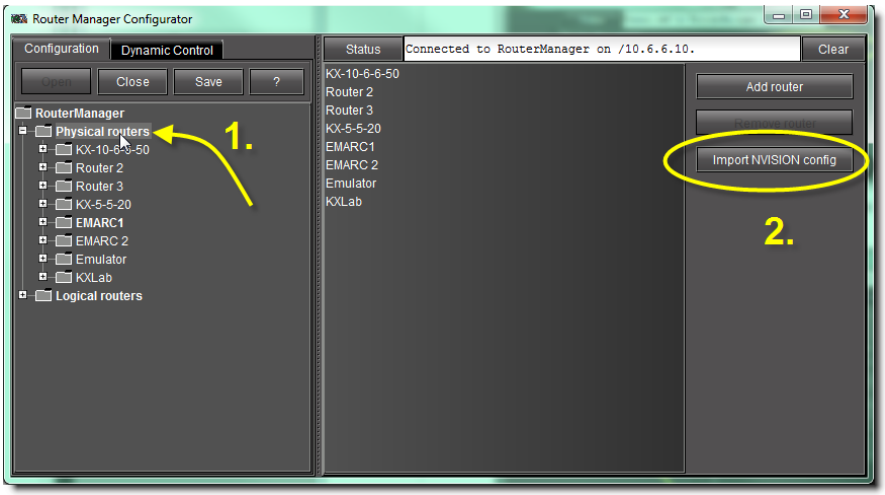
- You have available the host name or IP address of the NVISION router controller whose configuration you would like to import.
- You have opened Router Manager Configurator (see page 7).

To import an NVISION configuration

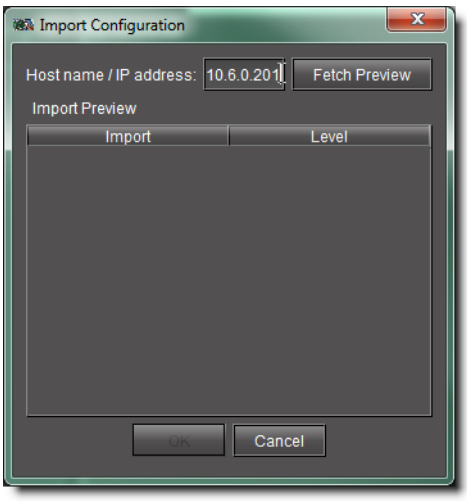
1. Select the router manager folder, and then click **Open**.



2. Select the **Physical Routers** folder.
   The list of all physical routers added so far to your system appears in the right pane.
3. Click **Import NVISION config**.

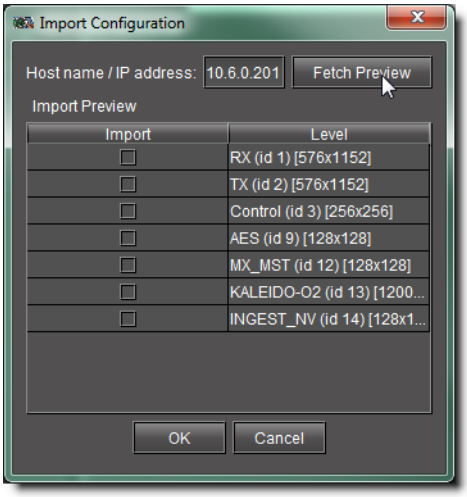


The **Import Configuration** window appears.

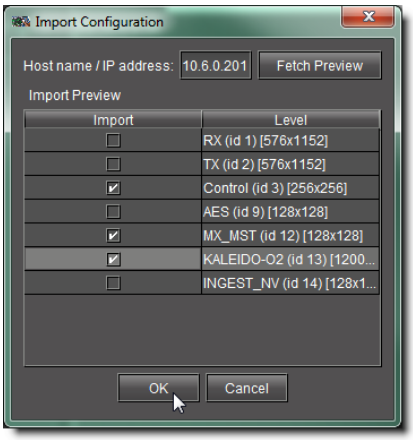


4. In the **Host name / IP address** box, type the host name or IP address of the NVISION router controller whose configuration you would like to import.
5. Click **Fetch preview**.

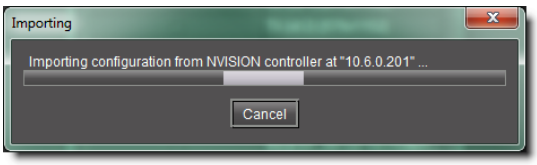
   The levels of the NVISION router appear listed in the **Import preview** area.



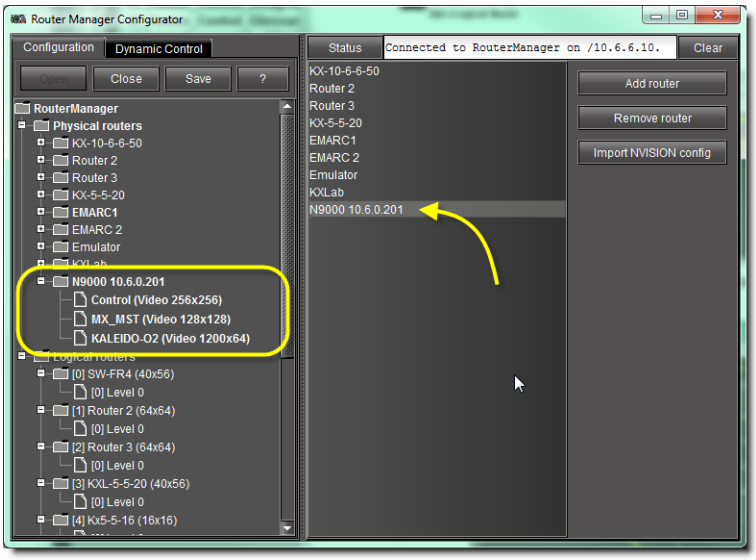
6. Select the levels you would like to import, and then click **OK**.



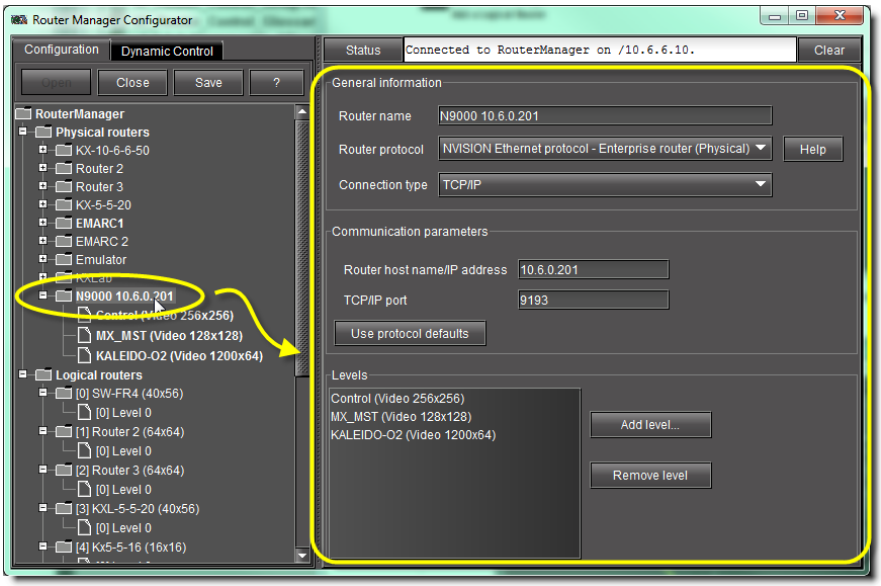
A progress window appears, allowing you to cancel the operation if required.



After the progress window disappears, the NVISION router controller's level configurations are listed among the physical routers in the left and right panes of **Router Manager Configurator**.



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



Task 6: Add 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 distinquished.

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 iControl Web, you may create alarm consumer plug-ins that are triggered by the alarms of aliases. For more information, see the *iControl User Guide*.

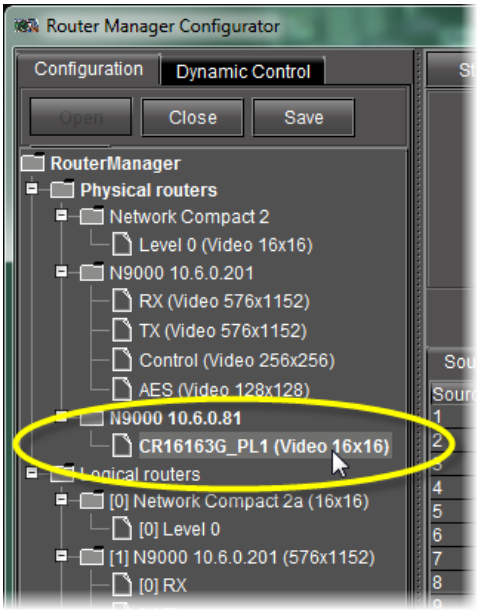
REQUIREMENTS

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

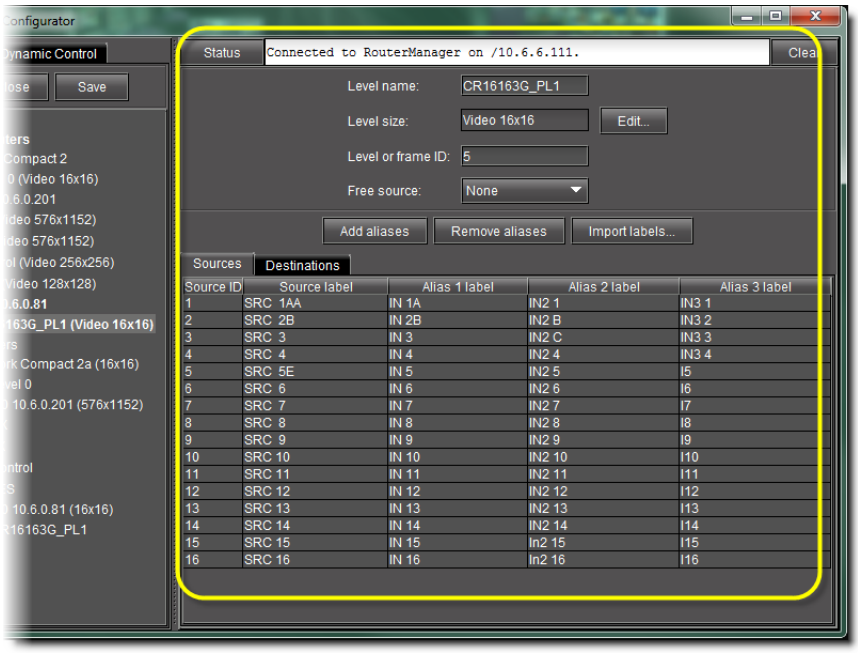
- You have opened Router Manager Configurator (see page 7).
- The physical router and level to which you would like to add an alias is visible in the navigation pane of the Router Manager Configurator.

To add an alias for an input or destination port

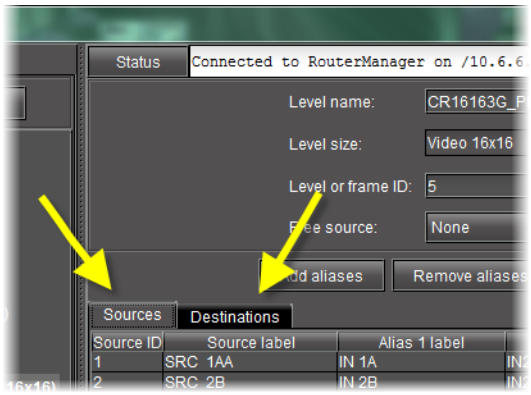
1. In Router Manager Configurator, in the navigation pane, click the level of the physical router to which you would like to add an alias.



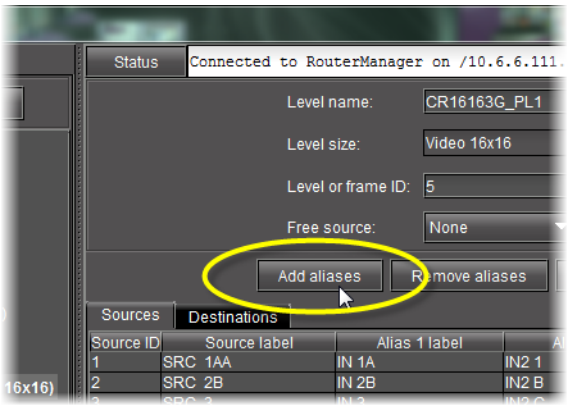
Information about the selected level appears in the right pane, including labels and aliases for sources and destinations.



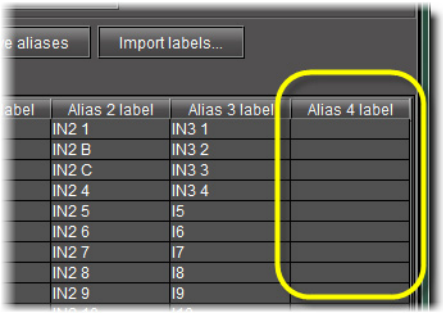
2. If you would like to add an alias for an input port, click the **Sources** tab. If you would like to add an alias for a destination port, click the **Destinations** tab.



3. Click **Add aliases**.



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



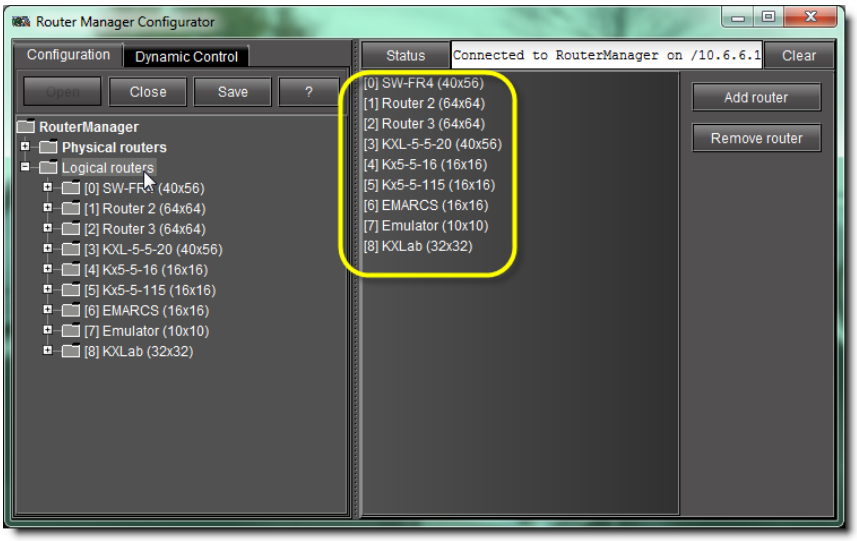
Task 7: Add a Logical Router

REQUIREMENT

Before beginning this procedure, make sure you have opened Router Manager Configurator (see page 7).

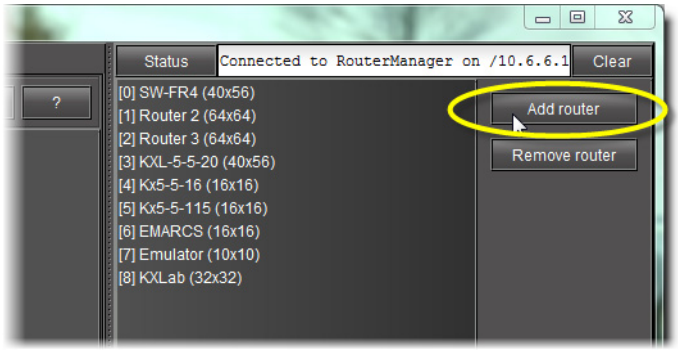
To add a logical router

1. In the left pane of Router Manager Configurator, select the **Logical Routers** folder.
   A list of logical routers appears in the right pane.

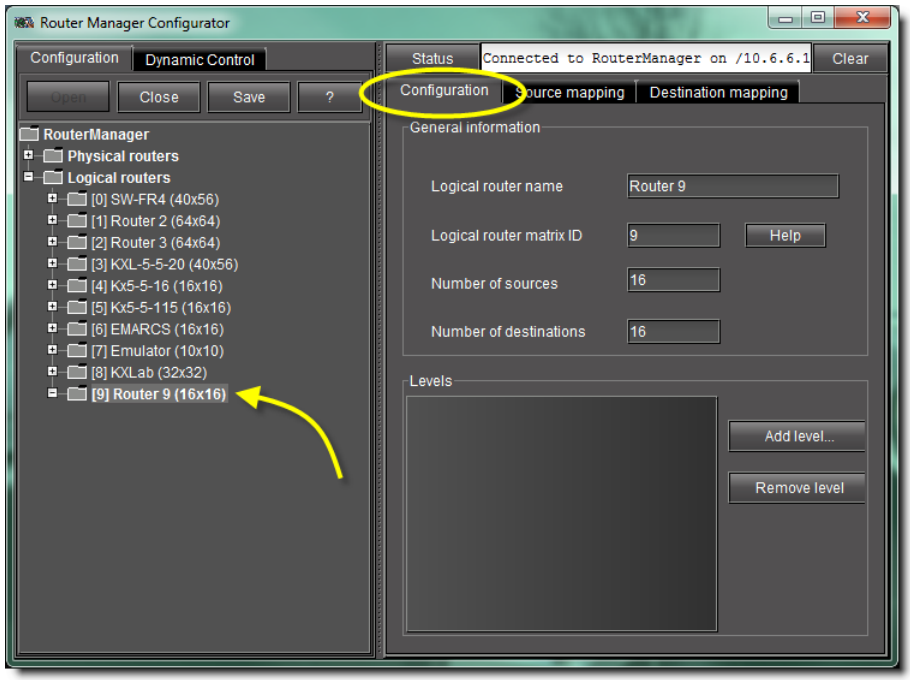


List of logical routers (empty if none are defined)

2. Click **Add Router**.



A **New Router** folder appears in the **Logical Routers** folder in the left pane. In the right pane, the **Configuration** tab appears.

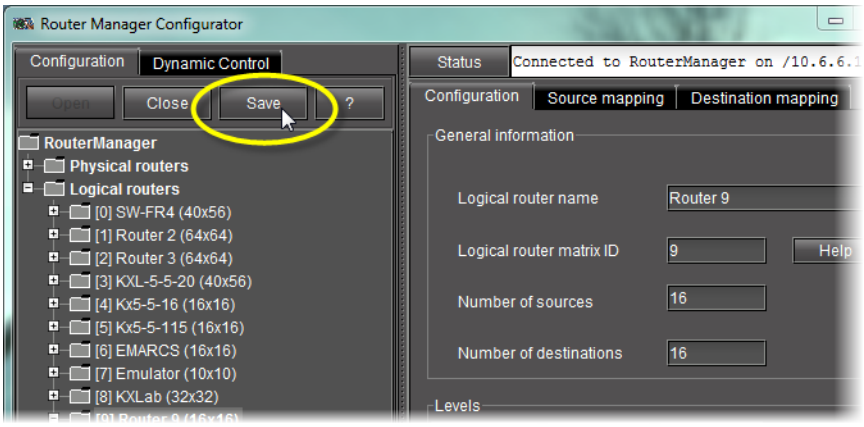


Logical Router Configuration tab

3. In the **General Information** area, complete all the fields:

Field	Action
the **Logical router name** box	type a name for the new logical router. Do not use special characters in the router name. The name of the logical router should be unique within the LAN.
the **Logical router matrix ID** box	type a matrix ID number. Identify which logical router the third-party application will monitor or control.
the **Number of sources** box	type the number of inputs, according to the desired logical router size, not exceeding the number of inputs of the physical router.
the **Number of destinations** box	type the number of outputs, according to the desired logical router size, not exceeding the number of outputs of the physical router.

4. Click **Save**.



5. Repeat to add more logical routers.

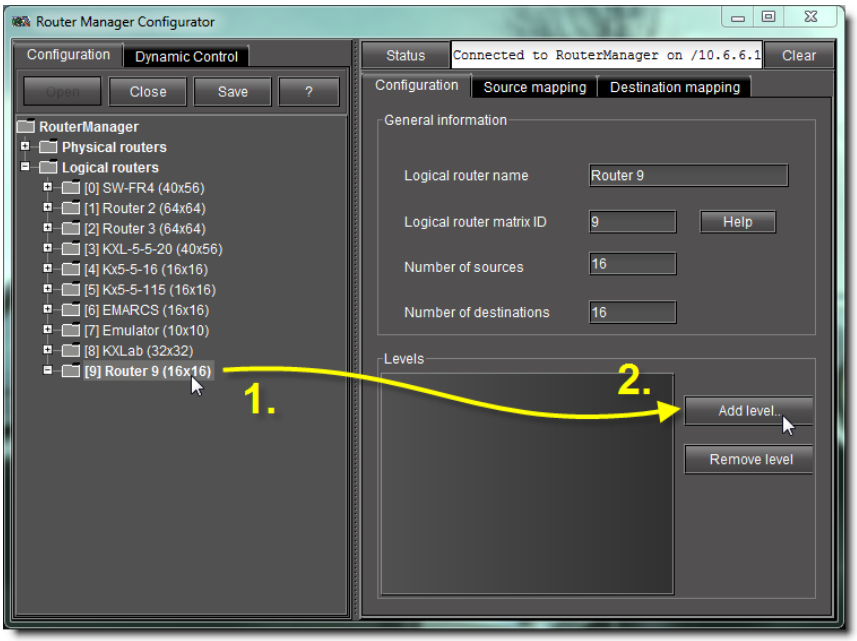
Task 8: Add Levels to a Logical Router

REQUIREMENT

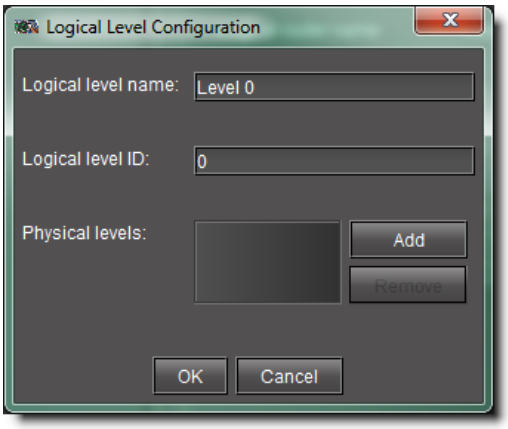
Before beginning this procedure, make sure you have opened Router Manager Configurator (see page 7).

To add levels to a logical router

1. In the left pane of the **Router Configurator**, select the newly added logical router.
2. In the **Configuration** tab, click **Add level**.



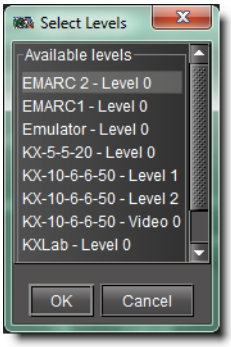
The **Logical Level Configuration** window appears.



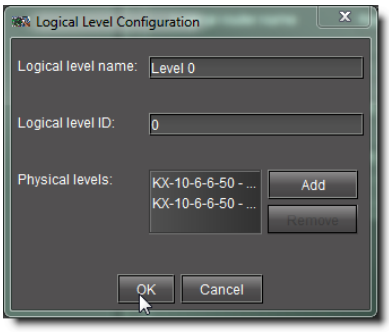
3. Complete the following fields:

Field	Action
the **Logical level name** box	Type a name for the logical level.
the **Logical level ID** box	Type an ID for the logical level. The logical level ID is the internal identifier of the logical level and should be unique within a logical router.

4. Next to the **Physical levels** box, click **Add**.
   The **Select Levels** window appears.



5. Select one or more of the displayed physical levels, and then click **OK**.
   The **Select Levels** window closes.
   In the **Logical Level Configuration** window, the levels you selected appear in the **Physical levels** box.



6. Click **OK**.
7. Repeat to add more levels.

   There can be a maximum of eight levels.

Task 9: Add a Mapping to a Logical Router

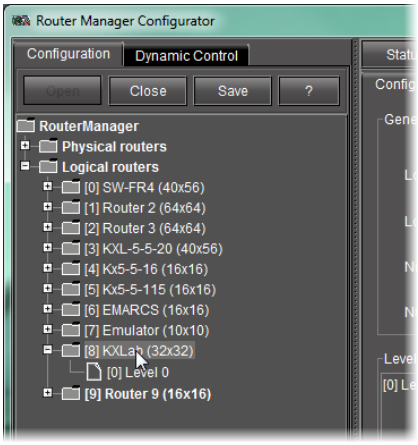
The final stage of the set-up process is the source and destination mapping. *Mapping* is the term used to refer to the creation of associations between physical and logical router levels. iControl's GSM Router plug-in uses Logical Source labels when interacting with the iControl Router system.

REQUIREMENT

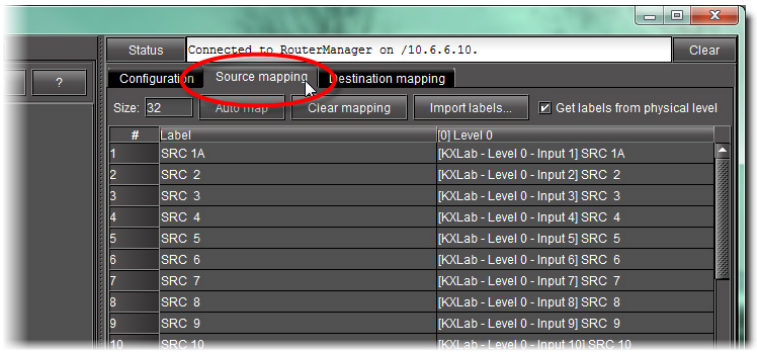
Before beginning this procedure, make sure you have opened Router Manager Configurator (see page 7).

To add a mapping (assign crosspoints) to a logical router

1. In the left pane, select the newly added logical router.



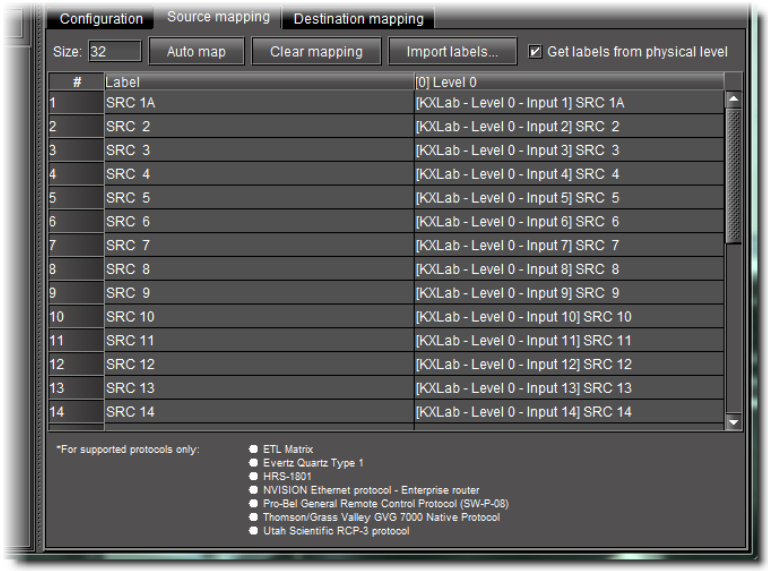
2. In the right pane, click on the **Source mappings** tab.



The source mapping table is displayed. The number of rows matches the logical router size that was specified when the logical router was created. The physical devices which serve each level are shown across the top, and the matrix shows which physical input is assigned to each logical input.

The logical source ID appears in the first column (**#**), showing a list of sources for the virtual router. The second column (**Label**) contains the router labels to be used for the mapping. The third column (**Video**) contains the Physical Source ID that will be mapped to each logical source.

An auto-map function is available, which will generate a suggested mapping based on the information available. The results can be manually adjusted if necessary.



Source mapping tab (notice automatic labels are pre-defined on the left side)

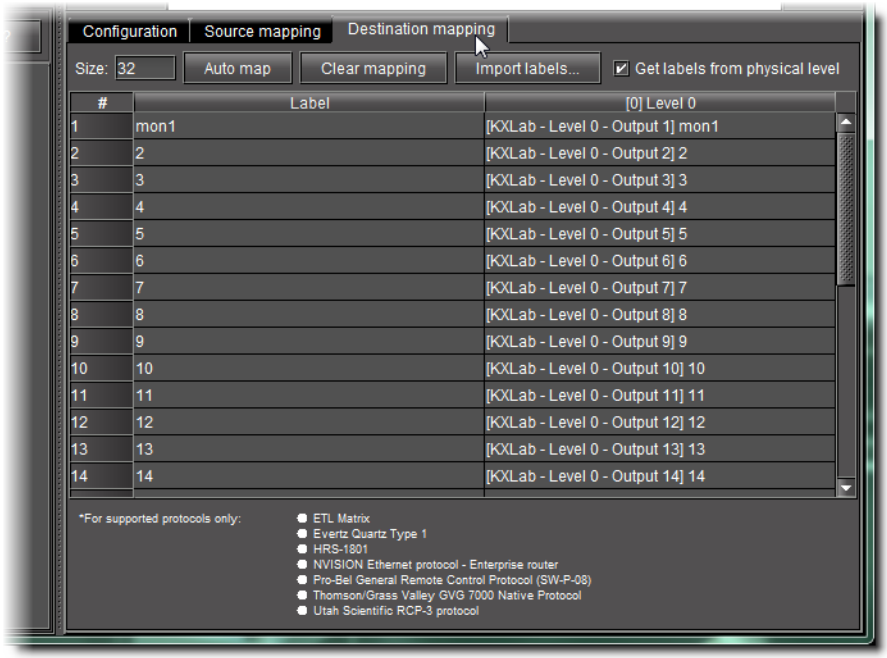
3. There are three ways to complete the source mapping:
   - Click **Auto map** to automatically complete the **Physical Source ID** columns.
   - Complete the table manually.
   - If the Logical Source labels are located in a CSV file, click **Import labels** to import the label information.

4. In the right pane, click the **Destination mapping** tab.

   The destination mapping table is displayed. The number of rows matches the logical router size that was specified when the logical router was created. The physical devices which serve each level are shown across the top, and the matrix shows which physical output is assigned to each logical output.

   The Logical Destination ID appears in the first column (**#**). The second column (**Label**) contains the router labels to be used for the mapping. The third column (**Video**) contains the Physical Destination ID that will be mapped to each logical destination.

   As with source mapping, an auto-map function is available, which will generate a suggested mapping based on the information available. The results can be manually adjusted if necessary.



Destination Mappings tab

5. There are three ways to complete the destination mapping:
   - Click **Auto map** to automatically complete the **Physical Destination ID** columns.
   - Complete the table manually.
   - If the logical destination labels are located in a CSV file, click **Import labels** to import the label information.
6. Click **Save**.

Task 10: View the Newly Configured Router

There are two views available to monitor and control logical routers. These operating interfaces are called *Matrix View* and *Single Bus View*.

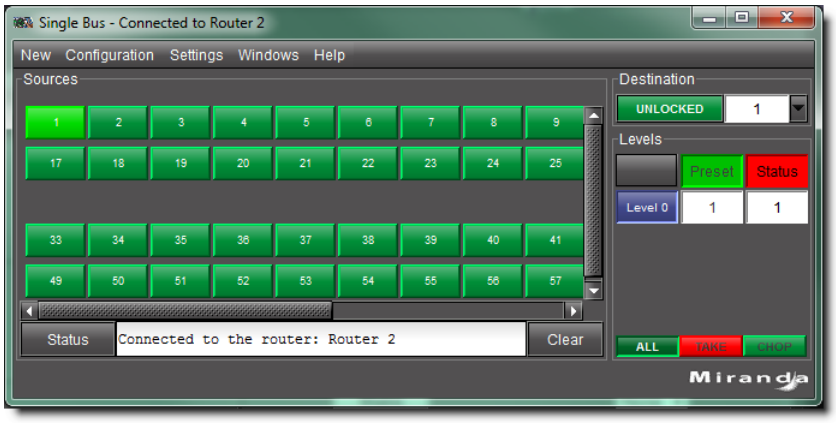
To view and operate the newly created logical router

1. Return to the iControl Router Control page in iC Webmin (you can minimize or close the **Router Manager Configurator** window).

   The router you just configured should appear in the column under **Router Name**.

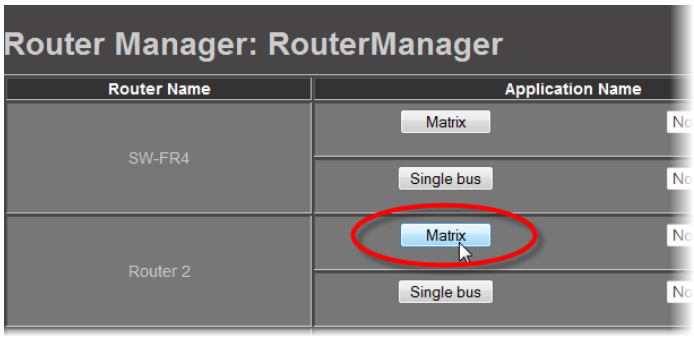
2. Perform one of the following:
   - Click **Single bus**.

   The **Single Bus** window appears.

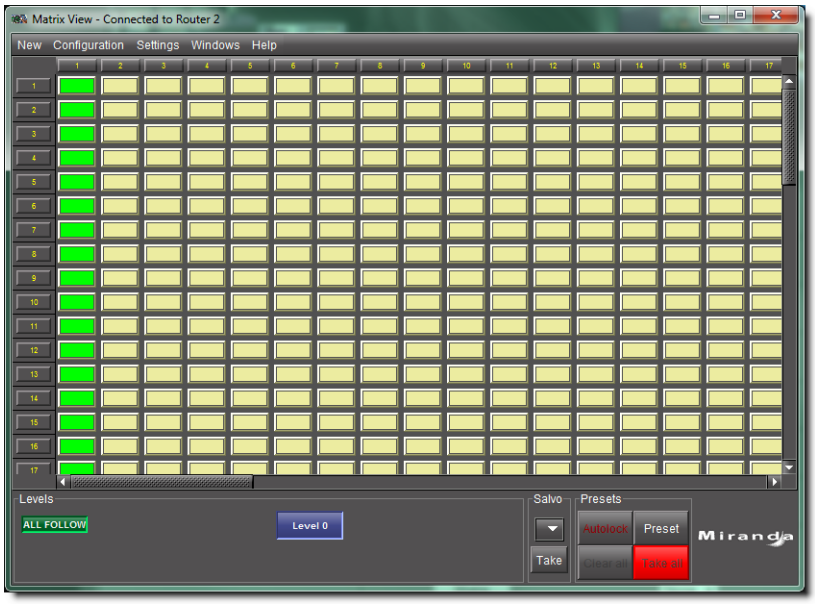


This view enables control of one or more router destinations at the same time. It allows isolates control of one output at a time. Sources appear on the left as a set of buttons, and the destination is on the right.

- Click **Matrix**.



The **Matrix View** window appears.



This view is a visual representation of the status for the entire logical router. It displays the complete router status, and allows the configuration of crosspoints to be changed during operation. Three panes at the bottom of the window enable crosspoint operation, in different modes.

Further Reading

To learn more about the configuration and operation of routers, please refer to the *iControl User Guide*, available by clicking the **Documentation** link on the iControl Startup page.

Glossary

Term	Definition
iControl Router Manager	iControl Router Manager is software that allows large routers to be operated as if they were multiple smaller routers. For example, a 64 × 64 router can be operated as if it were a 64 × 15, router, a 12 × 5 router and a 32 × 44 router. Multiple routers can be linked together to create larger configurations. Control and monitoring are handled by software, and are readily changed. The operator benefits by seeing only the resources actually being used. iControl Router Manager is distributed and highly configurable, enables unlimited router size and unlimited levels, supports logical routers, and mixes and matches different frame types and manufacturers.
Label	Router labels provide a unique name by which to identify different segments of a router. There are four types of router labels: physical source labels, physical destination labels, logical source labels, and logical destination labels. Only the logical source labels display on iControl Web pages and as Under Monitor Displays (UMD). The latter names specific logical router input.
Level	There can be up to eight independently assigned and controlled router levels (audio and video).
Logical Router	Logical router refers to the intangible router that is not physically part of the iControl system but virtually exists as part of the iControl system. The logical router is used in the iControl system to logically represent a complete physical router or a segment (subset) of a physical router. More than one logical router can be mapped for a single physical router. The sizes do not need to match, although the logical router must be less than or equal to the size of the associated physical router.
Matrix View	This is the view that appears when Matrix is selected from the monitor view page. This view is a visual representation of the status for the entire logical router. It displays complete router status. This view allows the configuration of crosspoints to be changed during operation extended functionality. There are three windows at the bottom of the matrix view — Levels, Salvo, and Presets — that enable crosspoint operation in different modes.
Monitor View	This is the view that appears immediately after launching iControl Router Manager — a video monitor and a source selector. This view enables the user to monitor any router destination and to see exactly what is being sent to a specific destination.
Operating Interface	Router Control Operating interfaces are used for in-service monitoring and control. There are three distinct views in the Router operating interface: monitor, matrix and single bus.
Physical Router	Physical router refers to the tangible router that is physically part of the iControl system.
Salvo	A salvo is a default definition for assigning router crosspoints. Individual levels can be specified at each crosspoint or the entire group can be specified. This is important when returning to original mappings. Router Control permits unlimited salvos assignments.
Single Bus View	This is the view that appears when Single bus is selected from the monitor view page. This view enables control of one or more router destinations at the same time. It allows isolated control of one output at a time.

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