Ultrix

Ultriscape User Guide

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

David Ross
CEO, Ross Video
dross@rossvideo.com

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1. We will always act in our customers' best interest.
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9. We will go above and beyond in times of crisis. *If there's no one to authorize the required action in times of company or customer crisis - do what you know in your heart is right. (You may rent helicopters if necessary.)*

Ultriscape · User Guide

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Patents

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

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

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- Vulnerability Scanning
- Access Controls appropriate to Customer Data
- Incident Response
- Clear paths for two-way communication between customers and Ross Video

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

Company Address

Ross Video Limited
8 John Street
Iroquois, Ontario
Canada, K0E 1K0

Ross Video Incorporated
P.O. Box 880
Ogdensburg, New York
USA 13669-0880

General Business Office: (+1) 613 • 652 • 4886
Fax: (+1) 613 • 652 • 4425

Technical Support: (+1) 613 • 652 • 4886
After Hours Emergency: (+1) 613 • 349 • 0006

E-mail (Technical Support): techsupport@rossvideo.com
E-mail (General Information): solutions@rossvideo.com
Website: http://www.rossvideo.com

Contents

Introduction

This guide covers the configuration and operation of the Ultriscape licensed feature for all Ultrix routers. The following chapters are included:

- "**Introduction**" summarizes the guide and provides important terms, and conventions.
- "**Getting Started**" provides an overview of the Ultriscape feature including how to install an Ultriscape license key, and displaying the interfaces in DashBoard.
- "**Configuring the Global Settings**" outlines the how to configure the parameters that are common between PiPs, tallies, and labels.
- "**Mapping an Ultriscape Head**" outlines how to identify and assign the Ultriscape Heads to destinations in the active database.
- "**Mapping the Ultriscape PiPs**" summarizes how to identify Ultriscape PiPs in a database, and map your PiPs to destinations.
- "**Creating a Layout**" describes how to create a new layout using one of the default templates or start with a blank layout then add your PiPs based on the selected PiP size settings.
- "**Adding Objects to a Layout**" outlines how to add specific object types to a single layout.
- "**Using PiP Templates in Layouts**" outlines how to apply a PiP template, and save a PiP as a new template.
- "**Managing the Layouts**" outlines general tasks such as how to save a layout, load a layout, exporting/importing layouts, and deleting layouts.
- "**Assigning a Layout to an Ultriscape Head**" summarizes how to assign a layout to an Ultriscape Head.
- "**Assigning Sources to PiPs**" summarizes how to assign router sources to PiPs in a layout.
- "**Audio Meter Modes Setup**" outlines how to set up and monitor audio meters for PiPs that are configured for Normal or Default Source modes.
- "**Clock Control**" outlines how to operate a countdown or stopwatch clock object in an Ultriscape layout, and the supported RossTalk commands for Ultriscape Clock state control.
- "**Monitoring Options**" outlines how to add an Alarms display object to a Multiviewer Layout, and specify what conditions to monitor.
- "**Ultriscape Menus Overview**" summarizes the functions, menus, and parameters of the Ultriscape tabs and windows in DashBoard.

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

Related Publications

It is recommended to consult the following Ross documentation before configuring Ultriscape:

- ***DashBoard User Manual***, Ross Part Number: 8351DR-004
- ***Ultricore BCS User Guide***, Ross Part Number: 2201DR-106
- ***Ultrix and Ultricore Database Guide***, Ross Part Number: 2201DR-109
- ***ULTRIX-FR1, ULTRIX-FR2, and ULTRIX-FR5 Installation Guide***, Ross Part Number: 2101DR-003
- ***ULTRIX-FR12 Installation Guide***, Ross Part Number: 2101DR-603
- ***ULTRIX-FR12 User Guide***, Ross Part Number: 2101DR-604
- ***ULTRIX-MODX-IO User Guide***, Ross Part Number: 2101DR-020
- ***Walkabout Application Note***, Ross Part Number: 2201DR-003

Documentation Conventions

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

Interface Elements

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

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

User Entered Text

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

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

Referenced Guides

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

For more information, refer to the ***ULTRIX-FR12 Installation Guide***.

Menu Sequences

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

Important Instructions

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

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

Contacting Technical Support

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Getting Started

This chapter provides an overview of the Ultriscape feature including how to install an Ultriscape license key, and displaying the interfaces in DashBoard.

Overview

Ultriscape provides:

- 3 Ultriscape Heads (Multiviewer outputs) per slot
- 1080i or 1080p configurable output standard
- Ultriscape Head layout switched by any router controlling device
- Flexible PiP sizing:
  - 3 system-wide configurable type (PiP A, B, and C[1])
  - 1 head-specific configurable type (PiP X)
- 21 layout templates
- Flexible Layout Editor to create up to 250 custom layouts
- PiPs may follow a router input, router output, or be switched as a destination
- Flexible audio metering per PiP
- Dynamic or static PiP labeling
- Option to add a Closed Caption display object to a PiP (requires the Ultriscape-CA license)
- TSL protocol controls border, indicator, and label tallies

Before You Begin

Keep the following in mind as you implement your Ultriscape Heads:

- You must have assigned a router OUT BNC to each Ultriscape Head that is licensed in each slot.
- Moving overlay elements on the DashBoard interfaces are in real time, and there is a rendering delay on the Ultriscape Head output making layout changes/updates non- real time. Refer to **Table 1** for approximate refresh times (once the layout is selected and applied).

Table 1 Ultriscape — Refresh Times

Element	Refresh Time
Label Change	0.5 seconds
Layout Change	1 second/layout
Audio Meters	All meters update every 10 frames

For More Information on…

- installing a license for an Ultriscape Head, refer to "**Installing an Ultriscape License Key**".
- cabling a blade for Ultriscape, refer to the ***Ultrix Installation Guide*** for your router.

1. Supported only on the ULTRIX-HDX-IO and ULTRIX-MODX-IO blades.

Workflow

The Ultriscape licensed feature allows you to view multiple video sources from a single output on an Ultrix router. Any video source on the router can be assigned to any PiP on an Ultriscape layout. Each layout is configured independently and can be applied to one or more outputs (Heads). Each router slot supports up to three Heads.

Once the router is listed in the Tree View of DashBoard, and the Ultriscape licensed feature is enabled for each head, the Ultriscape nodes are displayed in the tree of that router.

The Ultriscape setup includes the following tasks:

1. Install the Ultriscape license keys for your router.
2. Assign each Ultriscape Head to a physical output on the router.
3. Plan your layouts for each Ultriscape Head. This will determine the number of PiPs and outputs you will need to set up in the database.

✶ Ultriscape can have PiPs that are shared between all Head outputs (shared PiPs), or PiPs that are specific to a particular Head (local PiPs). The shared PiPs are particularly useful when the same source or destination is to be shown on one or more Ultriscape outputs.

4. Assign each PiP to a Destination in the database. Refer to the ***Ultrix and Ultricore Database Guide***.

Installing an Ultriscape License Key

The number of Ultriscape Heads for a router depends on the number of installed Ultriscape license keys. One Ultriscape license enables one Ultriscape Head on one router slot only. For example, if you wanted to enable three Ultriscape Heads on slot 1, you would install three Ultriscape licenses on slot 1.

✶ You must have at least one Ultriscape license installed for each slot that will provide an Ultriscape Head.

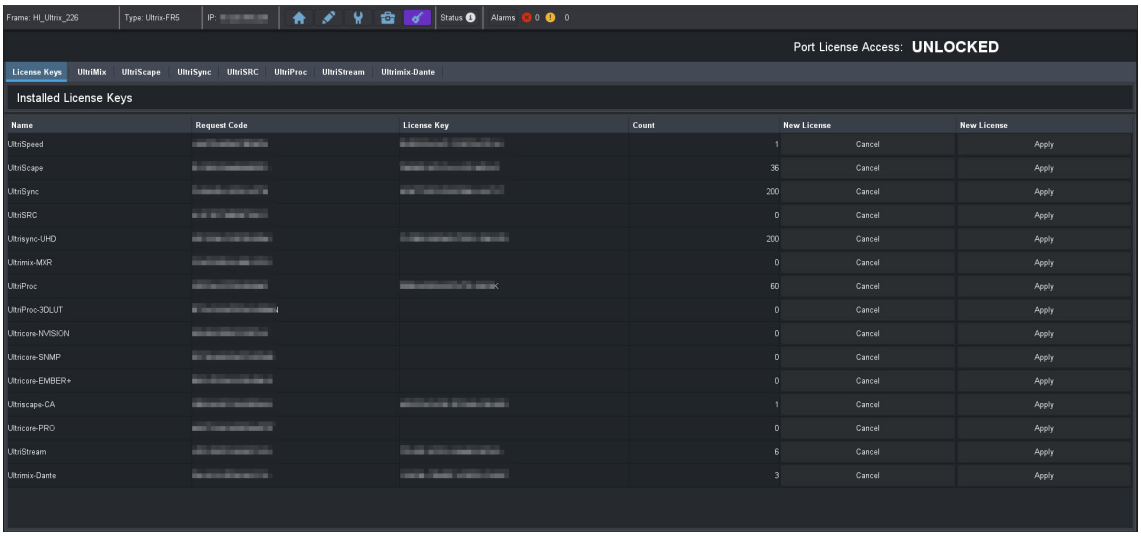
To install an Ultriscape license key

1. Launch the DashBoard client.
2. Locate the **Ultrix** node in the Tree View.
3. Expand the **Ultrix** node to display a list of sub-nodes in the Tree View.
4. Expand the **Devices** node.
5. Expand the **Controllers + Matrices** node.
6. Double-click the node for your Ultriscape router.

   The **Device Configuration** interface opens.

7. Select  .

   The **Licenses** page opens with **License Keys** sub-tab automatically selected.



8. Make a note of the character string in the **Request Code** field for the Ultriscape license.
9. Contact Ross Video Technical Support using the information in "**Contacting Technical Support**".
   a. When you speak to your Technical Support representative, tell them:
      - your name,
      - your facility name, and
      - the **Request Code** from step 8.
   b. You will be given a License Key for the licensed feature.
10. Enter the provided License Key in the applicable **License Key** field of the **Licenses** tab.

✶ You can also right-click on the row for the License Key you are installing, and copy the Request Code to or paste the License Key from the Microsoft® Windows® clipboard.

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

To activate an Ultriscape license for a specific slot/head

1. Install the license key as outlined in the procedure "**To install an Ultriscape license key**".
2. In the **Licenses** sub-tab, select the **Ultriscape** sub-tab.
   - Each row in the tab represents a slot and Ultriscape Head in the Ultriscape router (with slot 1 as the topmost slot in the router).
   - The Port column in the tab represents the output for the head.
   - The Format column represents the video format assigned to that head.
3. In the **Port** column, select the cell for the Ultriscape Head you want to enable.

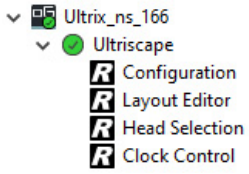
   A drop-down menu opens with a list of the available ports.
4. Select **Enable** to apply the Ultriscape license to that Ultriscape Head.

Accessing the Ultriscape Interfaces

The Ultriscape interfaces are accessed by expanding the Ultrix router node in the DashBoard Tree View, and then expanding the first Ultriscape node. The settings and options for the Ultriscape feature are represented as sub-nodes in the Ultriscape tree.

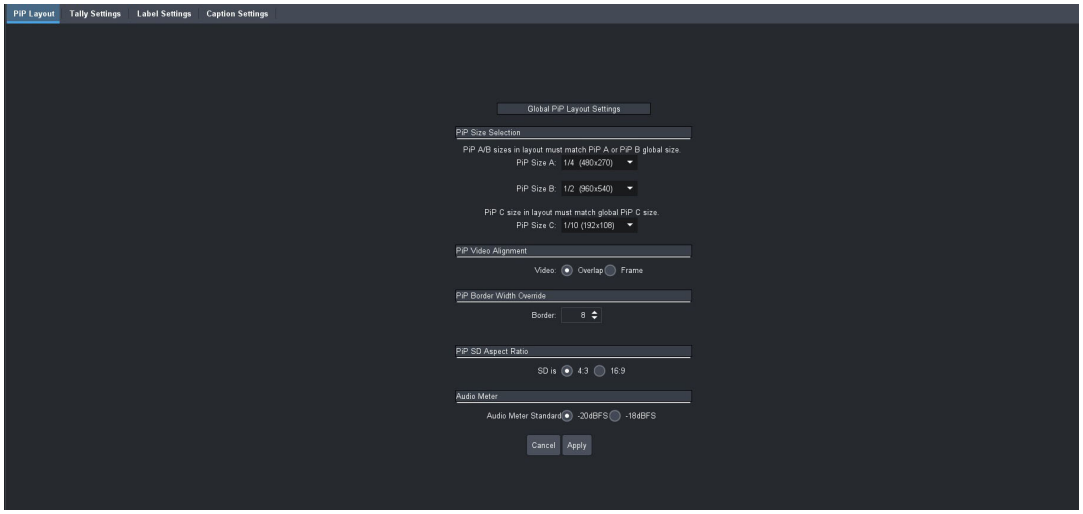
To access the Ultriscape interfaces in DashBoard

1. Launch the DashBoard client.
2. Locate the **Ultrix** node in the Tree View.
3. Expand the **Ultrix** node to display a list of sub-nodes in the Tree View.
4. Expand the **Ultriscape** node to display its sub-nodes.



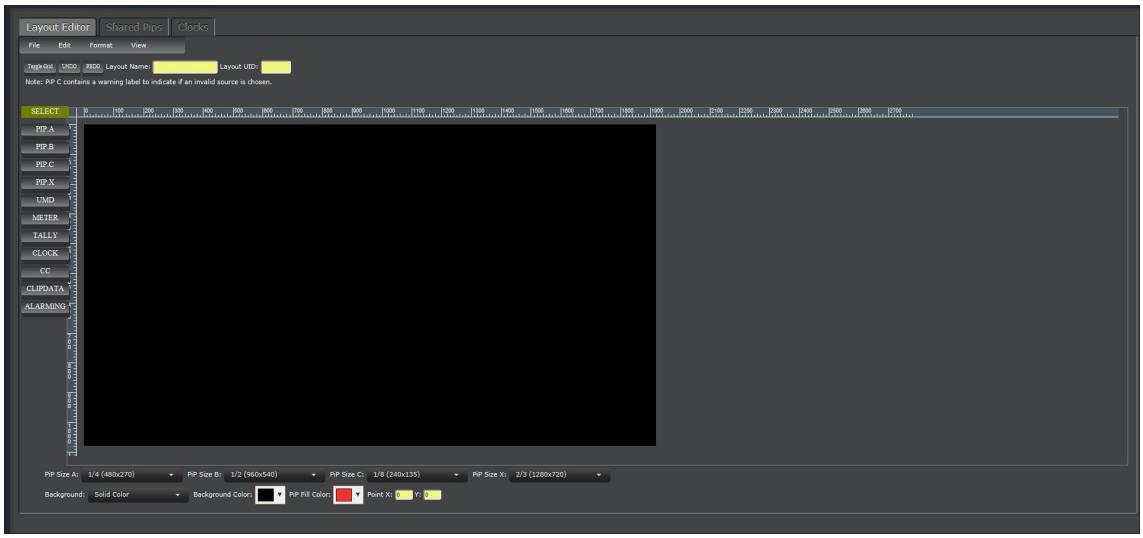
5. Double-click the **Configuration** sub-node to display its interface in the DashBoard window.

   The **Configuration** interface provides global layout editor settings that apply to all Ultriscape layouts and heads in the database.



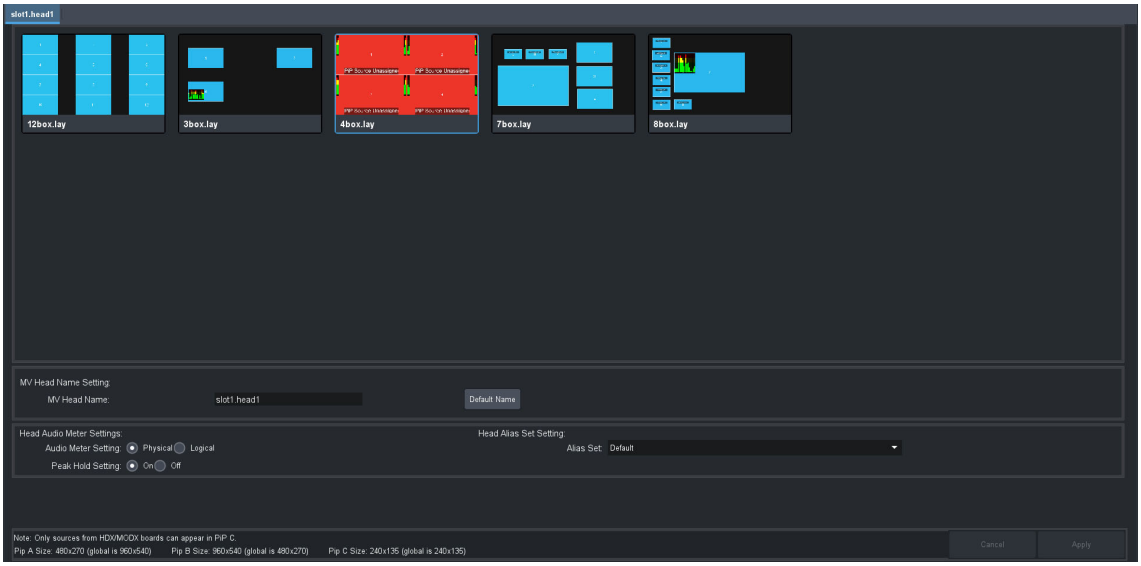
6. Double-click the **Layout Editor** sub-node to display its interface in the DashBoard window.

   The **Layout Editor** interface displays the workspace for customizing a Multiviewer layout.



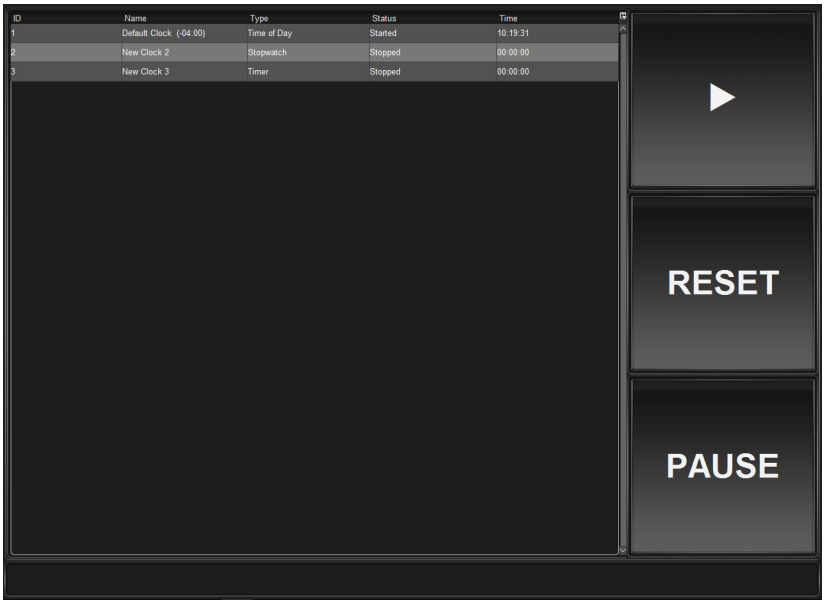
7. Double-click the **Head Selection** sub-node to display its interface in the DashBoard window.

   The **Head Selection** interface displays the options for selecting a layout for a Multiviewer Head, defining the audio meter settings, and applying an alias label set (optional). After selecting a layout, the bottom area reports the global PiP sizes the layout includes.



8. Double-click the **Clock Control** sub-node to display its interface in the DashBoard window.

   The **Clock Control** interface displays the options for controlling the defined clock objects in your layout(s). Refer to "**Clock Control**" for details.



Configuring the Global Settings

Ultriscape provides a central Configuration interface that allows you to set parameters that are common between PiPs, tallies, and labels. Global settings apply to all layouts with either Shared or Local PiPs. This chapter outlines the how to configure these Global settings.

✶ Layout configurable properties are stored on the router and are accessible from any DashBoard client on the same network.

For More Information on…

- the differences between Shared and Local PiPs, refer to "**PiP Types**".
- configuring the tally settings for Ultriscape, refer to the ***Ultrix User Guide*** for your router.
- the Closed Caption display settings, refer to "**Displaying Closed Caption Data**".

Configuring the Local and Global PiP Layout Settings

Ultriscape supports four concurrent PiP sizes (A, B, C, and X). Each PiP can be set to a specific dimension, allowing you to quickly set the size for the PiPs and build layouts using the PiPs.

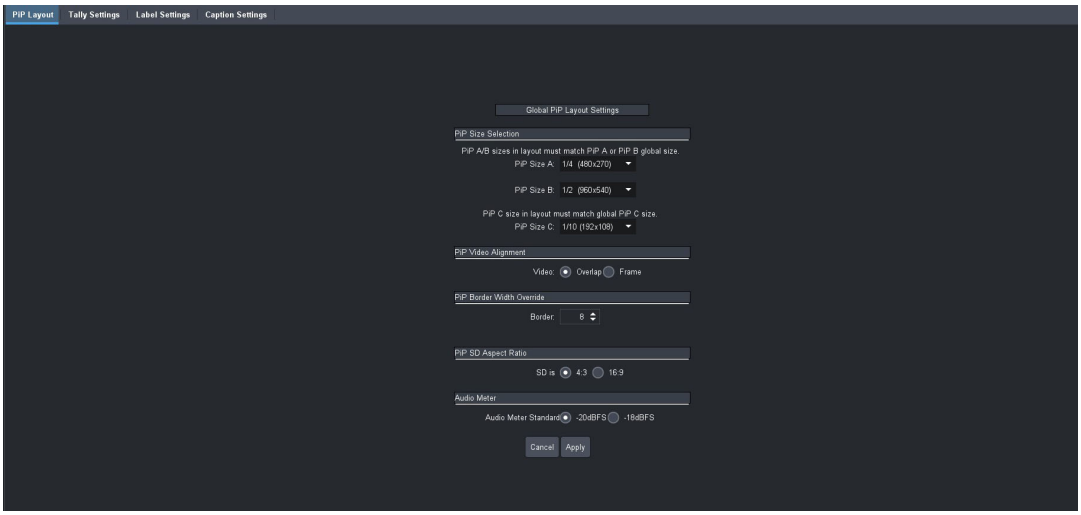
✶ PiP C is supported only on the ULTRIX-HDX-IO and ULTRIX-MODX-IO blades.

To set the Local PiP settings for all layouts

1. Double-click the **Configuration** node located under the **Ultriscape** node.

   The **Configuration** interface opens.

2. Select the **PiP Layout** tab.



3. Use the **PiP Size A** field to set the first of the common PiP sizes for the Ultriscape layout.
4. Use the **PiP Size B** field to set the second of the common PiP sizes for the Ultriscape layout.
5. Use the **PiP Size C** field to set the third of the common PiP sizes for the Ultriscape layout.
6. If applicable, use the **PiP SD Aspect Ratio** options to set the aspect ratio to match the expected SD-SDI signal format.
7. Use the **Audio Meter** options to set the audio meter green to yellow transition level.

✶ Applying changes to PiP sizes may prevent the currently selected layout from displaying correctly.

8. Click **Apply**.

Configuring the Global PiP Border Settings

You can specify the PiP border width and placement for all layouts.

To specify the border location for the PiPs

1. Double-click the **Configuration** node located under the **Ultriscape** node.

   The **Configuration** interface opens.

2. Select the **PiP Layout** tab.
3. Locate the **PiP Video Alignment** area in the **PiP Layout** tab.
4. Use the **Video** options to specify where the PiP borders are drawn. Choose from the following:
   - **Overlap** — The border displays as a layer over the video. The thicker the border width, the less of the video image displays within the PiP. This is the default. The Pip Border Width Override fields are now read-only.
   - **Frame** — The border surrounds the image within the PiP. The image is scaled to fit within the PiP. This will override individual PiP border settings. Continue to "**To set the global PiP border widths for all layouts**".
5. Click **Apply**.

To set the global PiP border widths for all layouts

1. Ensure the **Video** option is set to **Frame**.
2. Locate the **PiP Border Width** area in the **PiP Layout** tab.
3. Use the **Border** field to specify the border width in number of pixels.
4. Click **Apply**.

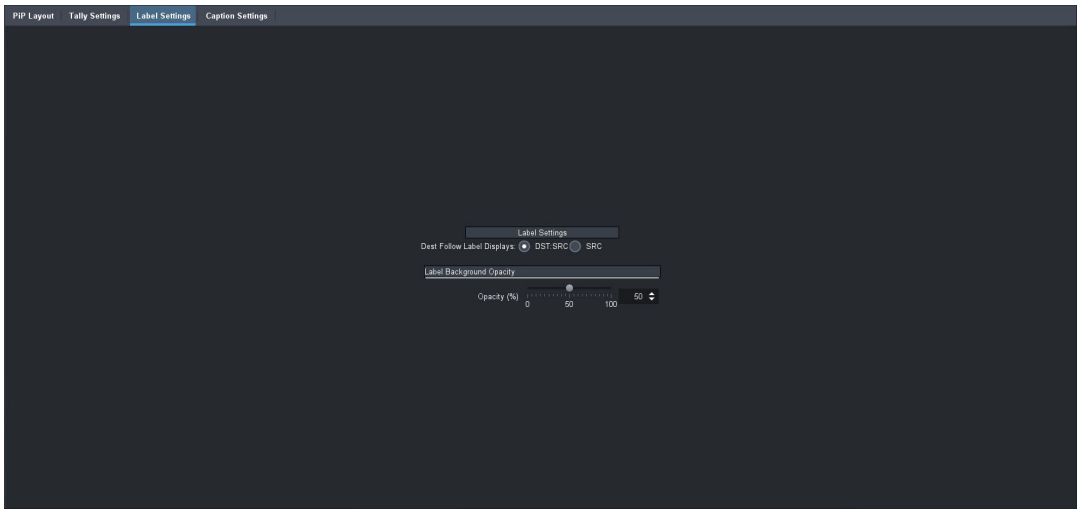
Configuring the Global Label Settings

You can also edit the global settings relating to the display of tally objects and the level of transparency for the label boxes overlaid on the PiPs.

✶ Ultriscape does not support Unicode characters.

To set the global label transparency setting for all layouts

1. Double-click the **Configuration** node located under the **Ultriscape** node.
2. Select the **Label Settings** tab.



3. If the Destination Follow feature is configured in your database, set the **Dest Follow Label Displays** setting to **DST:SRC**.
4. Use the **Opacity** slider to adjust the background transparency level of all label boxes in all PiPs of all Ultriscape Heads where:
   - 0 — The label background is completely opaque. Only the label text is visible.
   - 100 — The label background is completely transparent; the video in the PiP is visible through the label background.

Mapping an Ultriscape Head

Ultriscape Heads (Multiviewer outputs) can be mapped as logical destinations. To the router control system, they are a destination of the router and may be controlled as such from external controlling devices. This chapter outlines how to assign a licensed Ultriscape Head to a destination within the router database.

Identifying Ultriscape Heads in the Database

The Ultriscape Heads are identified much like a physical BNC using the standard nomenclature of `Frame.Slot.Port.Type.Channel`. Ultriscape Heads are identified as `frame.slot n.head[x].sdi.ch1` where `x` represent the Head ID within a given slot (there can be up to 3). In **Figure 1**, there are three Ultriscape Heads in slot 1 (HEAD 1-3), and three Ultriscape Heads in slot 2 (HEAD 4-6).

ID	Name	Description	VID
36	HEAD 1		Ultrix.slot1.head[1].sdi.ch1
37	HEAD 2		Ultrix.slot1.head[2].sdi.ch1
38	HEAD 3		Ultrix.slot1.head[3].sdi.ch1
39	HEAD 4		Ultrix.slot2.head[1].sdi.ch1
40	HEAD 5		Ultrix.slot2.head[2].sdi.ch1
41	HEAD 6		Ultrix.slot2.head[3].sdi.ch1

Figure 1 Example of Ultriscape Heads Mapped to Destinations in a Database

For More Information on...

- using the MV Head template to assign destinations in the database, refer to the ***Ultrix and Ultricore Database Guide***.

Assigning Ultriscape Head Destinations

Only certain physical outputs may be designated as Ultriscape outputs. For example, if you installed a second Ultriscape license for an ULTRIX-HDX-IO in slot 2, you must assign either AUX B or OUT 5 as the second Ultriscape Head output.

Table 2 lists the connections on the rear panel that are available for Ultriscape Heads based on the type of blade installed in the slot.

Table 2 Outputs Allocated for Ultriscape Heads

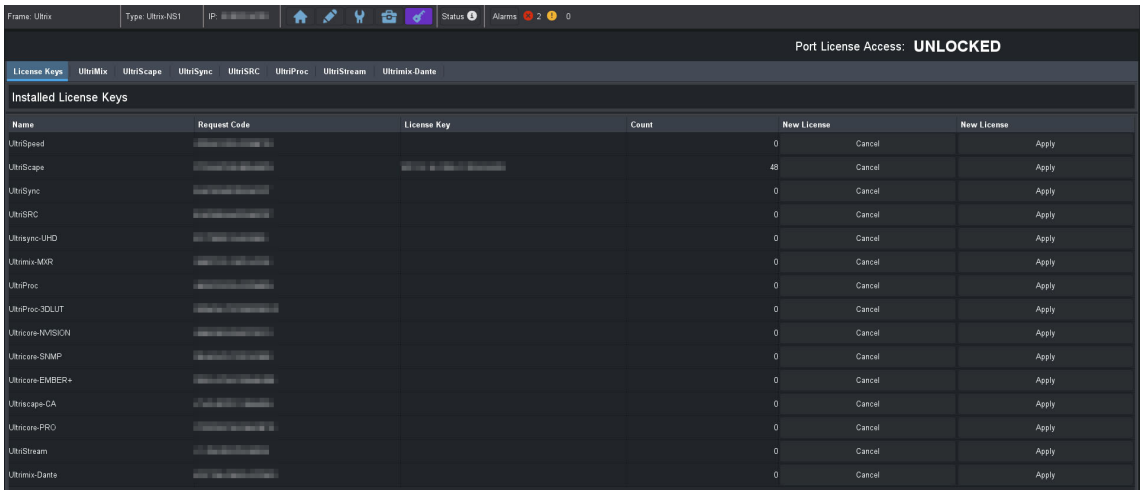
Blade Model	Ultriscape Head 1	Ultriscape Head 2	Ultriscape Head 3
ULTRIX-HDBNC-IO	AUX A or OUT 1	OUT 5 or OUT 7	OUT 11 or OUT 13
ULTRIX-HDX-IO	AUX A or OUT 1	AUX B or OUT 5	OUT 13
ULTRIX-IP-IO	AUX A or OUT 1	AUX B or OUT 9	--
ULTRIX-IPX-IO	AUX A or OUT 1	AUX B or OUT 5	OUT 13
ULTRIX-MODX-IO	AUX A or MOD1.out1	AUX B or MOD2.out1	MOD4.out1
ULTRIX-SFP-IO	AUX A or SFP 1	SFP 5 or SFP 7	SFP 11 or SFP 13

For More Information on...

- the cabling designations of your blade, refer to the ***Ultrix Installation Guide*** and/or ***ULTRIX-MODX-IO User Guide***.

To assign an Ultriscape Head to a router output

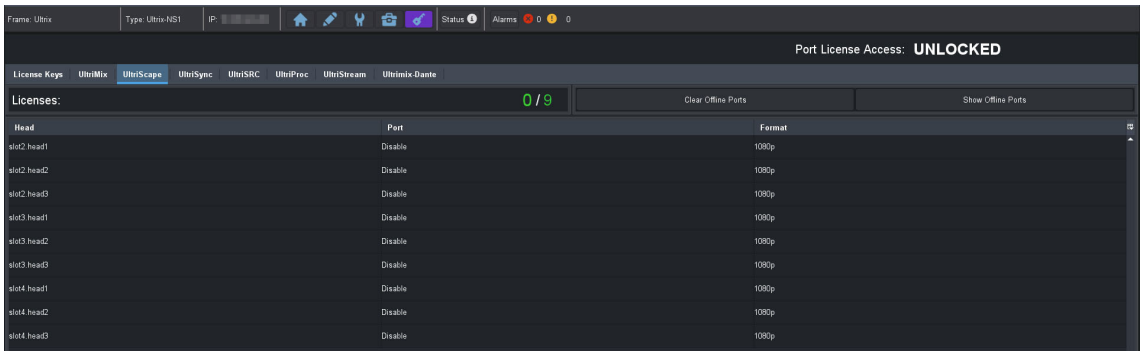
1. Locate the Ultrix router in the Tree View of DashBoard.
2. Expand the Ultrix node to display a list of sub-nodes in the Tree View.
3. Expand the **System** sub-node.
4. Expand the **Configuration** sub-node.
5. Double-click the **Ultrix** node.
   The **Device Configuration** interface opens.
6. Select  .
   The **License Keys** sub-tab is automatically selected.



7. Verify that the **License Keys** interface reports the correct number of licensed Ultriscape Heads for your router.

✶ The router rear panel map at the top of the **Frame View** interface will display a Monitor icon above each output port that has the Ultriscape enabled for it.

8. Select the **Ultriscape** sub-tab.



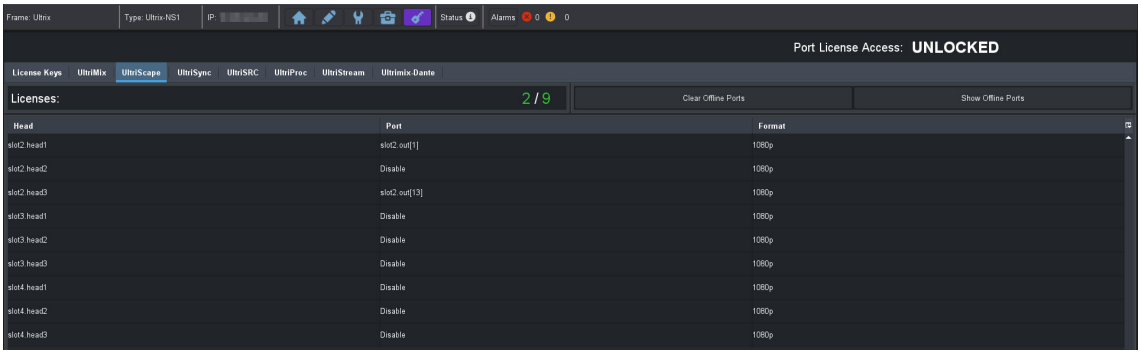
9. Locate the row for the Ultriscape Head you want to assign.
10. Use the **Port** field to select the physical OUT BNC on the router you want to assign to the Ultriscape Head. Choose from the following:
    - **Disable** — Select **Disable** if you do not wish to assign the physical OUT BNC as the Ultriscape Head output.
    - **slot#.[#]** — Specifies which physical OUT BNC on the router will be the Ultriscape Head output. Note that the options listed depend on the slot.
    - **slotx.AUX#-out[#] with loopback** — refer to "**Configuring a Loopback**" for details.
11. Use the **Format** field to specify the output video format for the Ultriscape Head. Choose from the following:

✶ This adds video processing for some interlace formats to ensure stability by introducing 1 frame of delay.

- 1080p (3Gbps SDI)
- 1080i (1.5Gbps SDI)
- 1080i-LC (1.5Gbps SDI)
- 2160p-UC (11.88Gbps SDI)

12. Repeat steps 9 to 11 for additional Ultriscape Heads.

    The **Ultriscape** sub-tab updates to report the selected Ultriscape Head is now licensed. In the following example, the user assigned two Ultriscape Heads: slot2.head1 and slot2.head3.



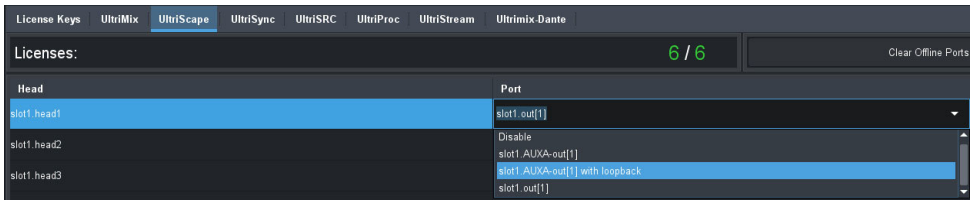
Configuring a Loopback

Any Ultriscape Head that has an AUX output can be configured for a loopback. This internally routes the AUX output to the AUX input, allowing the Ultriscape Head to be routed to other outputs without the use of a physical SFP in that AUX port. This option is supported on the ULTRIX-HDBNC-IO, ULTRIX-HDX-IO, ULTRIX-SFP-IO, ULTRIX-IP-IO, ULTRIX-IPX-IO, and ULTRIX-MODX-IO blades.

✶ Before proceeding, ensure the AUX port is configured and available in your database. Note that the AUX port will work with loopback regardless of its SFP mode (as set in the **SFP Configuration** interface). Refer to the ***Ultrix User Guide*** for your router to learn more about configuring the AUX ports.

To map an AUX port as a loopback of an Ultriscape Head

1. On the **License Keys** > **Ultriscape** sub-tab, locate the row for the Ultriscape Head.
2. Select the cell in the **Port** column.



3. Select the option **slotx.AUX#-out[#] with loopback**.
4. To confirm the setting:
   a. Display the Frame View page.
   b. Hover your mouse cursor over the AUX port until a tool-tip displays.

   You can now route this AUX input (via a soft panel) to any output on the router to view the Ultriscape Head on that output. Refer to the ***Ultrix and Ultricore Database Guide*** to learn more about using soft panels to route your inputs and outputs.

Mapping an Ultriscape Head to a Destination

The assignment of Ultriscape Heads enable the Ultriscape sub-nodes in the Device Tree for further Ultriscape configuration.

✶ You can also assign destinations by selecting and applying the MV Head template. Refer to the ***Ultrix and Ultricore Database Guide*** for details.

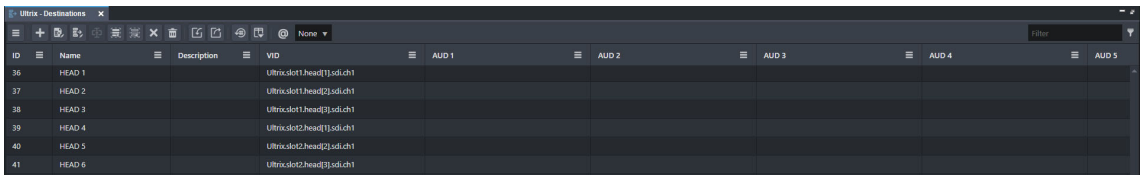
To map an Ultriscape Head to a destination in the database

1. Display the **Database** > **Configuration** > **Destinations** interface.

   The number of **Destinations** rows are determined by the active database.

✶ If required, you can add Destinations to the list to accommodate the assignment of Ultriscape Heads and PiPs.

2. If desired, type a new name for the destination in the **Name** cell as outlined in "**To specify a label for a destination**".
3. In the table of the **Destinations** tab, locate the column for the level.
4. Click a cell of the Destination row to display a list of available Destinations sockets.
5. Select the Ultriscape Head you want to assign.



Using a Template to Map the Ultriscape Heads

Templates can be used to quickly map the Ultriscape Heads in the active database. Each template provides a unique configuration. Selecting a template automatically maps all the Ultriscape Heads in the active database. Refer to the ***Ultrix and Ultricore Database Guide*** for details on using templates.

To map the Ultriscape Heads using a template

1. In the **Database** > **Configuration** > **Destinations** interface, click **Fill I/Os**.
2. Click **Templates**.

The Templates dialog opens.

3. Select **MV Head**.

Using UltriStream

✶ The UltriStream license requires router software version 5.2.0 or higher. An UltriStream license is supported on the ULTRIX-NS-FR1, ULTRIX-NS-FR2, ULTRIX-(NS)-FR5, and ULTRIX-FR12.

The UltriStream licensed feature provides the ability to encode one NDI stream of a configured Ultriscape Multiviewer Head per ULTRIX-HDX-IO or ULTRIX-MODX-IO blade.

The Ultriscape Multiviewer Head for the video source must be one from the same blade that is transmitting the NDI stream. For example, a licensed ULTRIX-MODX-IO blade in Slot 1 cannot send an NDI stream of a Multiviewer Head from a licensed ULTRIX-HDX-IO blade in Slot 2.

For More Information on…

- the UltriStream licensed feature, refer to the ***Ultrix User Guide*** for your router.

Mapping the Ultriscape PiPs

Ultriscape PiPs (Picture-in-Picture tiles) are required to be mapped in as logical destinations. To the router control system, they are a destination of the router and may be controlled as such from external controlling devices.

This chapter outlines how to assign the PiP of an Ultriscape Head to a destination within the router database.

For More Information on...

- using the MV PiP template to assign destinations in the database, refer to the ***Ultrix and Ultricore Database Guide***.
- defining your database, refer to the ***Ultrix and Ultricore Database Guide***.

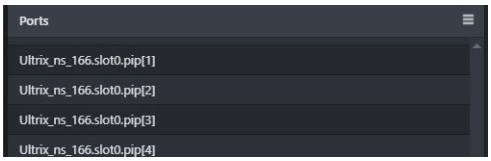
Identifying Ultriscape Destinations in the Database

The Ultriscape PiPs are identified much like a physical BNC using the standard nomenclature of `Frame.Slot.Port.Type.Channel`.

- Ultriscape Local PiPs are identified as `frame.slot n.headx-pip[y].sdi.ch1` where `x` represents the Ultriscape Head ID and `y` represents the individual PiP. For example:

ID	Name	Description	VID
42	PIP H1 1		Ultrix.slot1.head1-pip[1].sdi.ch1
43	PIP H1 2		Ultrix.slot1.head1-pip[2].sdi.ch1
44	PIP H1 3		Ultrix.slot1.head1-pip[3].sdi.ch1
45	PIP H1 4		Ultrix.slot1.head1-pip[4].sdi.ch1
46	PIP H1 5		Ultrix.slot1.head1-pip[5].sdi.ch1
47	PIP H1 6		Ultrix.slot1.head1-pip[6].sdi.ch1
48	PIP H1 7		Ultrix.slot1.head1-pip[7].sdi.ch1
49	PIP H1 8		Ultrix.slot1.head1-pip[8].sdi.ch1
50	PIP H1 9		Ultrix.slot1.head1-pip[9].sdi.ch1
51	PIP H1 10		Ultrix.slot1.head1-pip[10].sdi.ch1
52	PIP H1 11		Ultrix.slot1.head1-pip[11].sdi.ch1
53	PIP H1 12		Ultrix.slot1.head1-pip[12].sdi.ch1
54	PIP H1 13		Ultrix.slot1.head1-pip[13].sdi.ch1
55	PIP H1 14		Ultrix.slot1.head1-pip[14].sdi.ch1
56	PIP H1 15		Ultrix.slot1.head1-pip[15].sdi.ch1
57	PIP H1 16		Ultrix.slot1.head1-pip[16].sdi.ch1

- Ultriscape Shared PiPs are identified as `frame.slot0.pip[y].sdi.ch1` where `y` represents the individual PiP number. For example:



Assigning an Ultriscape Destination

The assignment of Ultriscape PiPs will enable the Ultriscape sub-nodes in the Device Tree for further Ultriscape configuration.

✶ You can also assign destinations by selecting and applying the MV PiP template. Refer to the ***Ultrix and Ultricore Database Guide*** for details.

To display the destinations in your database

1. Expand the **Database** node.
2. Expand the **Configuration** sub-node.
3. Double-click the **Destinations** node.

✶ If required, you can add Destinations to the list to accommodate the assignment of Ultriscape PiPs.

4. In the table of the **Destinations** tab, locate the column for the level.

To assign a single PiP to a destination

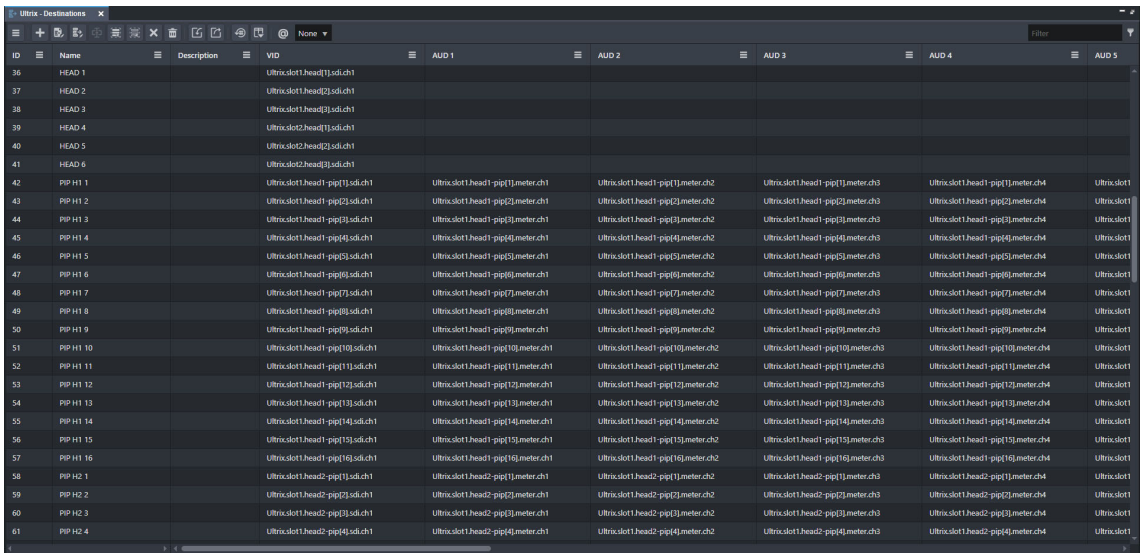
1. Select the cell for the Destination to assign to the PIP.
2. If desired, type a new name for the PiP destination in the **Name** cell.

✶ Ensure the new name clearly identifies the destination as a PiP. You may also want to include a reference to the Ultriscape Head.

3. Perform one of the following:
   - Click the cell of the row in the table to display a list of available Destinations sockets; or
   - Choose a PiP from the available list.

To associate a range of PiPs

1. In the **Database** > **Configuration** > **Destinations** interface, click **Edit**.
2. Select the first cell in the table column.
3. Press and hold **Shift**.
4. Select the last cell in the table column.
5. Select a range of PiPs in the available list with same click, shift-click method.
6. Click **Assign**.



Configuring Destination Follow

The Destination Follow feature enables you to route a specific destination's source signal to another destination. For example, set `S1H1 PIP1` to follow `DST1` so when `DST1` is switched to a different source, `S1H1 PIP1` is also switched to that same source. You can set multiple destinations to follow another single destination, or each following their own unique destination.

Controlling a destination that has a follow directly will overwrite the current status. Any subsequent changes to the followed destination will again update that destination. For example, if DST1 follows DST6 and a controller requests a new source to DST1, that source is routed to DST1. If a controller then requests a new source to DST6, DST1 will then also change status to the new source.

To configure the Destination Follow for Ultriscape

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

   The **Destination Follow** interface opens.

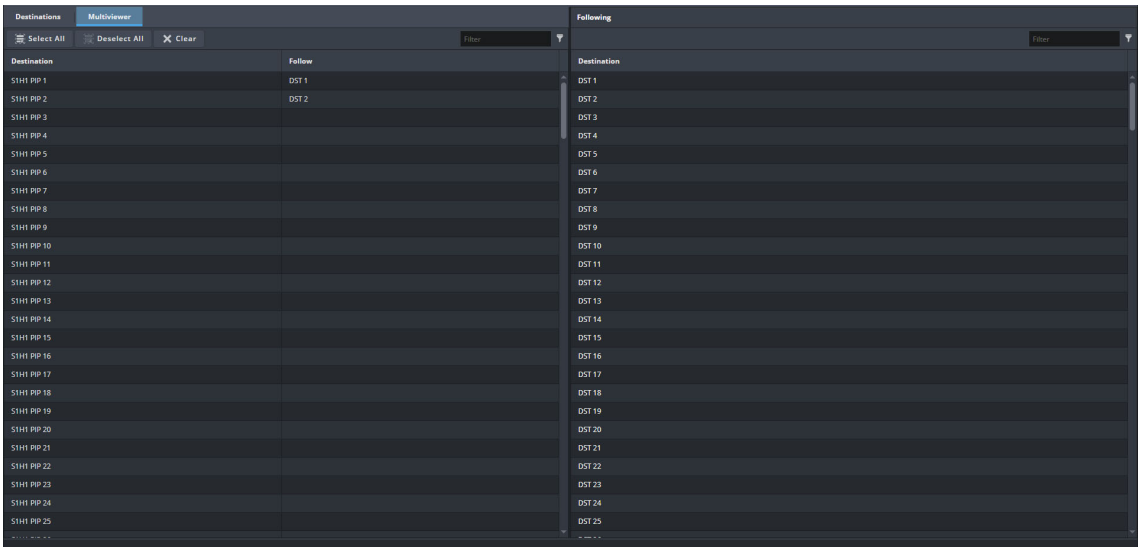
2. Select the **Multiviewer** tab.

   All the PiPs in your database are listed in the left pane in the **Destination** column.

3. In the **Destinations** column, locate the row for the PiP to configure.

4. In the **Following** table, select the output that the selected Destination will follow.

   In the following example, the user assigned S1H1 PIP1 to follow DST1, and S1H1 PIP2 to follow DST2.



Using the Auto-Fill Function

You can also use the auto-fill function to populate the PiPs in the Destinations database.

When using the auto-fill function, we recommend naming PiPs for a particular Ultriscape Head a base name that will distinguish them from PiPs for other Ultriscape Heads. For example, using base names of S1H1P, S2H2P, and S3H3P for the first Ultriscape Head on Slot 1, the second Ultriscape Head on Slot 2, and the third head on Slot 3, respectively, would generate names for PiPs as follows:

```
S1H1P1, S1H1P2, S1H1P3, ...
S1H2P1, S1H2P2, S1H2P3, ...
S1H3P1, S1H3P2, S1H3P3, ...
```

In order to achieve these results, the auto-generation would have to be done as three separate operations.

To use the auto-fill function to assign PiPs to destinations

1. In the **Database** > **Configuration** > **Destinations** interface, click **Fill I/Os**.

2. If the database includes more than one device, use the **Devices** options to select which device to edit the destination labels.

3. Use the **Slots** options to select the router slot for the Ultriscape Head.

   It should be of the form `<frame name>.slot<n>.head-pip`, where `n` is the slot of interest on the designated router.

✶ Virtual ports are available via slot0.internal.

4. Use the **Ports** options to select the PiPs.

   It should be of the form `<frame name>.slot<n>.head<m>-pip[x]`, where `m` is the head whose PiPs are being assigned, and `x` is the PIP number. Normally `x` will be 1 (the first PiP on the Ultriscape Head).

5. Select the starting channel.

   This should be of the form `<frame name>.slot<n>.head-pip[x].sdi.ch1`.

6. Specify the levels on which the PiPs for the selected Ultriscape Head will be active.

7. Click **Fill Destinations**.

   The Fill I/O dialog closes.

8. Repeat the process for Ultriscape Heads whose PiPs will be assigned while ensuring the correct slot, port, and starting channel are selected.

Using a Template to Map the PiPs

Templates can be used to quickly map the PiPs in the active database. Each template provides a unique configuration. Selecting a template automatically maps the PiPs to destinations in the active database. Refer to the ***Ultrix and Ultricore Database Guide*** for details on using templates.

To map the destinations using the MV PIP template

1. In the **Database** > **Configuration** > **Destinations** interface, click **Fill I/Os**.

2. Click **Templates**.

   The Templates dialog opens.

3. Select **MV PIP**.

Creating a Layout

Ultriscape layouts are created and stored within Ultrix to be assigned to a live Ultriscape Head when needed. You create a new layout using one of the default templates or start with a blank layout then add your PiPs based on the selected PiP size settings. Both methods are outlined here.

✶ You can save up to a maximum of 250 layouts.

PiP Types

A layout is comprised of a series of tiles organized into a grid layout. Each tile in a layout represents a single Picture in Picture (PiP) element. Each tile displays a number that represents the PiP number. There are two types of PiPs: Local and Shared.

Local PiPs

Local PiPs are for use only on a per Ultriscape Head basis. Keep the following in mind:

- The PiP A and B settings are global, but may be edited on a specific layout. For example, the global size for PiP A is 1/4 and PiP B is 1/2; you can still create a layout where PiP A is 1/2 and PiP B is 1/4 on that layout only.
- The PiP C size in the layout must match the global size as selected in "**To set the Local PiP settings for all layouts**".
- You can only assign sources to a PiP C tile from an ULTRIX-HDX-IO or ULTRIX-MODX-IO blade. If you are attempting to switch a non-supported source to a PiP C tile, an error message displays in the PiP label of your Multiviewer.

Shared PiPs

Shared PiPs are PiPs that may be displayed on multiple Ultriscape Heads. Updating the source for shared PiPs updates all Multiviewer layouts that contain that Shared PiP definition. Shared PiPs (for use with any Ultriscape Head), require additional configuration. Refer to "**Using Shared PiPs**".

Creating a Layout using a Template

By default, the PiPs are organized with PiP1 in the top left corner of each layout. You can create a new layout using one of the default templates that come standard with Ultriscape.

To load a layout template

1. Double-click the **Layout Editor** node located under the **Ultriscape** node.

   The **Layout Editor** interface opens.

2. From the main toolbar, select **File** > **Load Layout Template from Ultricore**.

   The **Load Layout Template** dialog opens.

3. Select a template from the provided list.

4. Click **OK**.

   The Layout Templates dialog closes and the workspace displays the selected template layout.

Creating a Custom Layout

Before creating a custom layout, clear the workspace and then add your Local PiPs.

✶ PiP C is supported only on the ULTRIX-HDX-IO and ULTRIX-MODX-IO blades.

To create a custom layout

1. Double-click the **Layout Editor** node located under the **Ultriscape** node.

   The **Layout Editor** interface opens.

2. From the main toolbar, select **File** > **New Layout**.

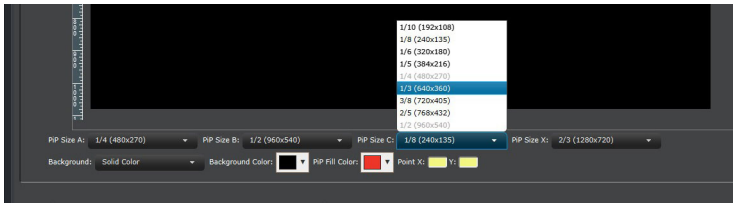
   The **Create Blank Layout** dialog opens.

3. Click **OK** to close the dialog and clear the workspace.

4. Set the required dimensions for PiP sizes A, B, C, and/or X using the applicable fields in the lower toolbar of the Layout Editor.

✶ You can create a layout with different PiP sizing to the currently configured. The new layout will not output from the Ultriscape Head if the PiP A, B, or C tiles do not match the values set in the Configuration > PiP Layout > PiP Size Selection. The PiP X tile size is defined by the layout it is in.

In the following example, the user is selecting a new size for PiP C.



To add a Local PiP to a layout

1. From the **Objects** toolbar, choose one of the following:

   - Click **PIP • A** to add a PiP A tile to the layout.
   - Click **PIP • B** to add a PiP B tile to the layout.
   - Click **PIP • C** to add a PiP C tile to the layout.
   - Click **PIP • X** to add a PiP X tile to the layout.

✶ You many only place one instance of a PiP X tile per layout.

2. If you wish, click **Toggle Grid** to display a grid background (and optionally snap to). The grid can help with the placement of the PiPs on your layout.

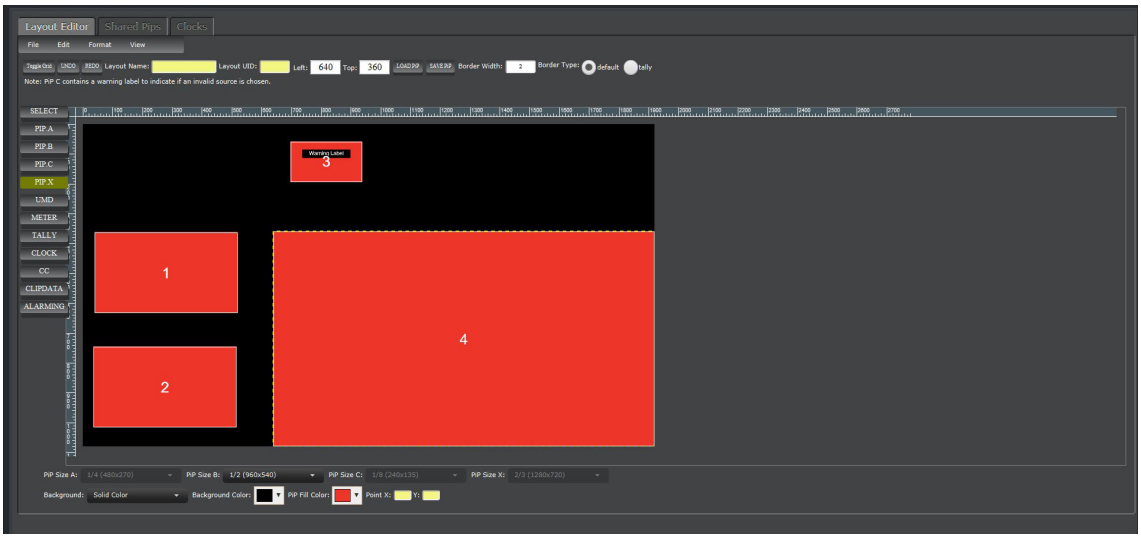
✶ You can change the grid dimensions by selecting **Format** > **Grid** from the main toolbar, specifying the horizontal (h) and vertical spacing (v), then clicking **OK**.

3. On the Layout Editor workspace, select the location for the Local PiP.

   The layout updates to display a new PiP.

   In the following example, one large PiP was positioned on the right margin and two medium PiPs were positioned near the left margin. A PiP C was positioned near the top of the workspace.

✶ PiP C is supported only on the ULTRIX-HDX-IO and ULTRIX-MODX-IO blades.



4. Reposition the PiP by selecting and dragging with your mouse.

✶ For more precise positioning of PiPs on the layout, select **Format** > **Grid** > **Snap To Grid**.

- For fine, accurate movements, the keyboard arrow keys move the PiP in 2 pixel increments.
- The top left of a PiP may be set by defining the left and top coordinates in the tool bar.
- When PiPs overlap, a red **Overlap** message displays on the top right of the Layout Editor interface. Overlapping PiPs and/or elements will not function. The layout cannot be saved until the overlap is corrected.

5. Repeat for each PiP you wish to add to the layout.

✶ You may place multiple instances of PiP A, B, and/or C tiles on a single layout. There can only be one instance of the PiP X tile on a single layout.

6. To save your layout to the system, select **File** > **Save to Ultricore**.

Using Shared PiPs

Shared PiPs are PiPs that may be displayed on multiple Ultriscape Heads. Updating the source for shared PiPs updates all Multiviewer layouts that contain that shared PiP definition.

For More Information on...

- the Shared PiP settings, refer to "**Shared PiPs Tab**".

To configure a Shared PiP

1. Double-click the **Layout Editor** node located under the **Ultriscape** node.

   The **Layout Editor** interface opens.

2. Select the **Shared Pips** tab.

   The **Shared Pips** tab is organized as a table where each row represents a specific Shared PiP.

3. To configure a new Shared PiP, right-click the last row in the table and select **Insert Row Below**.

4. Use the **Mode** field to determine how sources are assigned to the PiP when in a layout regardless of the Ultriscape Head. Choose from the following:
   - **Normal** — The PiP monitors the Source that the Destination the PiP is assigned to is currently switched to (e.g. a PiP acts like a regular router destination).
   - **Follow** — The source that the PiP displays is dependent on the source routed to the specified Destination.
   - **Source** — The PiP displays the specified Source in the database.
5. Use the **Source** field to specify the resource that the Shared PiP will monitor. This applies to all layouts with this Shared PiP in all Ultriscape Heads.

✶ The list of available resources depends on the database currently loaded.

6. If the **Mode** is set to **Normal**, use the **Audio Mode** field to configuring the audio meters for the Shared PiP in a layout regardless of the Ultriscape Head. Choose from the following:
   - **Logical** — the audio bars on the Shared PiP displays audio levels based on a source's logical definition. The bars index from left to right (meter port channel 1 represents the leftmost audio meter bar, and meter port channel 16 represents rightmost possible audio meter bar).
   - **Physical** — the audio bars on the Shared PiP represents the audio that is embedded in the SDI stream.
7. To configure the channel numbering for the audio meters in the Shared PiP:
   a. Select the **Audio Bars** cell for the Shared PiP.

      The **Audio Channels** dialog opens.

   b. If the **Audio Mode** is set to **Logical**, select the audio levels to map to the audio meters.

✶ To select multiple levels/channels, press **Ctrl** then click the levels/channels to include.

   c. If the **Audio Mode** is set to **Physical**, select the audio channels to map to the audio meters.

      The Audio Bars cell updates to display the selected items, separated by commas.

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

Adding a Shared PiP to a Layout

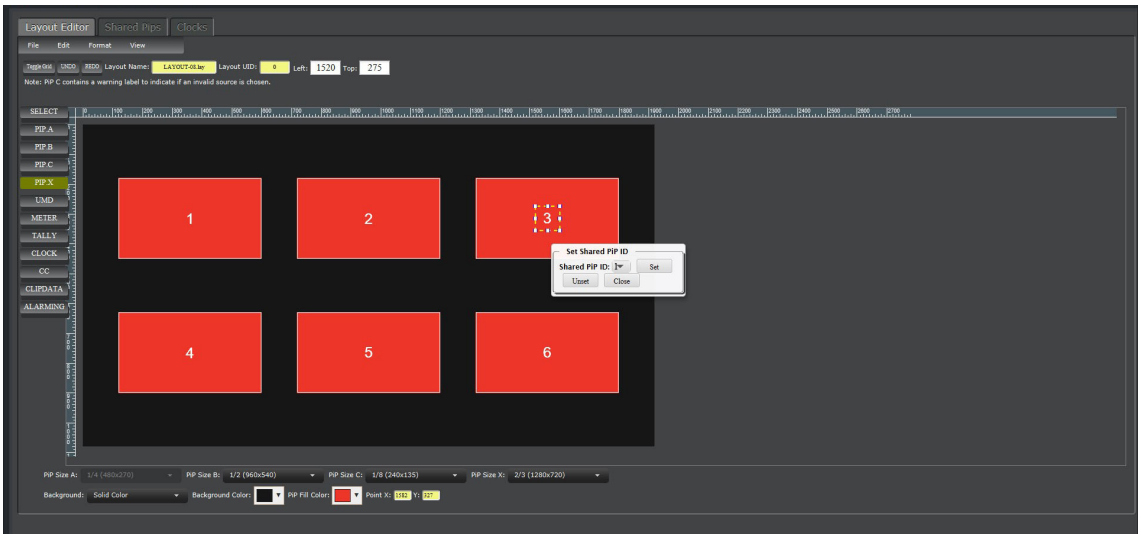
You can add a Shared PiP to any layout.

To add a Shared PiP to a layout

1. Create or load a layout in the Ultriscape Layout Editor.
2. Right-click the PiP Number on the PiP tile you wish to convert to a Shared PiP.

   The **Set Shared PiP ID** dialog opens.

   In the following example, PiP 3 was selected.



3. Use the **Shared PiP ID** menu to select the ID of the Shared PiP you want to add.
4. Click **Set**.

   The **Set Shared PiP** dialog closes. The layout displays the Shared PiP ID inside the selected PiP.
5. To save your layout to the system, select **File** > **Save to Ultricore**.

Changing the Layout Background

The Ultriscape Layout editor provides the option to insert a background color or background image. This will display in the space between PiPs.

To change the background color of a layout

1. Create a new layout as outlined in "**Creating a Layout**" or load an existing layout as outlined in "**To load a previously saved layout in Ultricore**".
2. From the bottom toolbar, set the **Background** menu to **Solid Color**.
3. Select the **Background Color** menu.
4. Select a color from the provided color grid in the dialog.
5. Click **Choose** to update the layout background.

To change the background image of a layout

1. Create a new layout as outlined in "**Creating a Layout**".
2. From the top toolbar, select **File** > **Upload Background Image**.

   The **Upload Background Image** dialog opens.
3. Click **Choose File**.

   The **Open** dialog opens.
4. Navigate to the image file you want to display, then click **Open**.

✶ Images must be 1920x1080 pixels or less.

   The **Open** dialog closes. The **Upload Background Image** dialog updates with the new image.
5. Click **OK** to confirm the file upload to Ultrix.
6. Use the **Background** menu, located in the bottom toolbar, to select the image file.

   The layout displays the selected image.

Editing the Border for a PiP

You can specify the border thickness for a single PiP or all the PiPs in a layout. **Figure 2** shows a layout of four PiPs where PiP1 and PiP4 have a border set to 16. If the border is for a tally, as seen in PiP 2, the border color is always dark blue. Refer to "**Adding a Tally Border to a PiP**" for details.

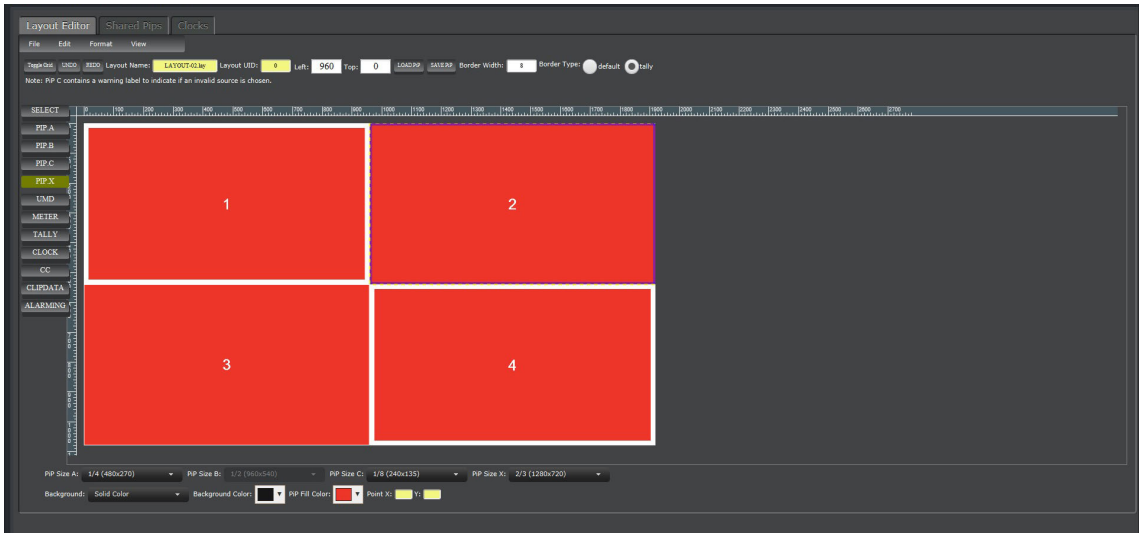
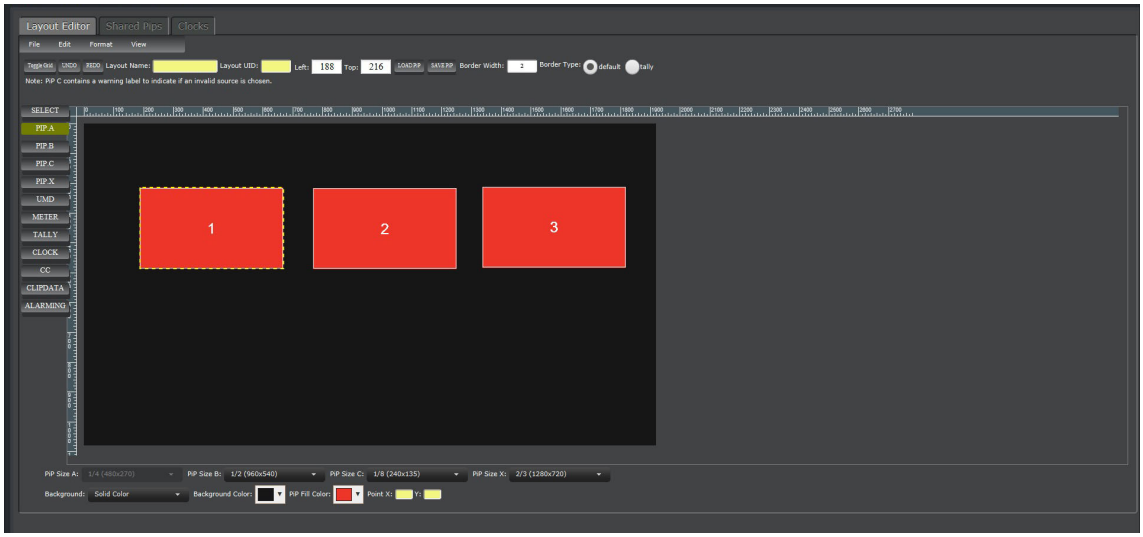


Figure 2 Example of Borders

To edit the border width for a PiP

1. Create a layout in the Ultriscape Layout Editor as outlined in "**Creating a Layout**".
2. From the **Objects** toolbar, click **SELECT**.
3. Select the PiP to edit the border width for.

   The PiP displays with a dotted yellow border and the **Border Width** field now displays under the Main toolbar. In the example below, PiP1 is selected.



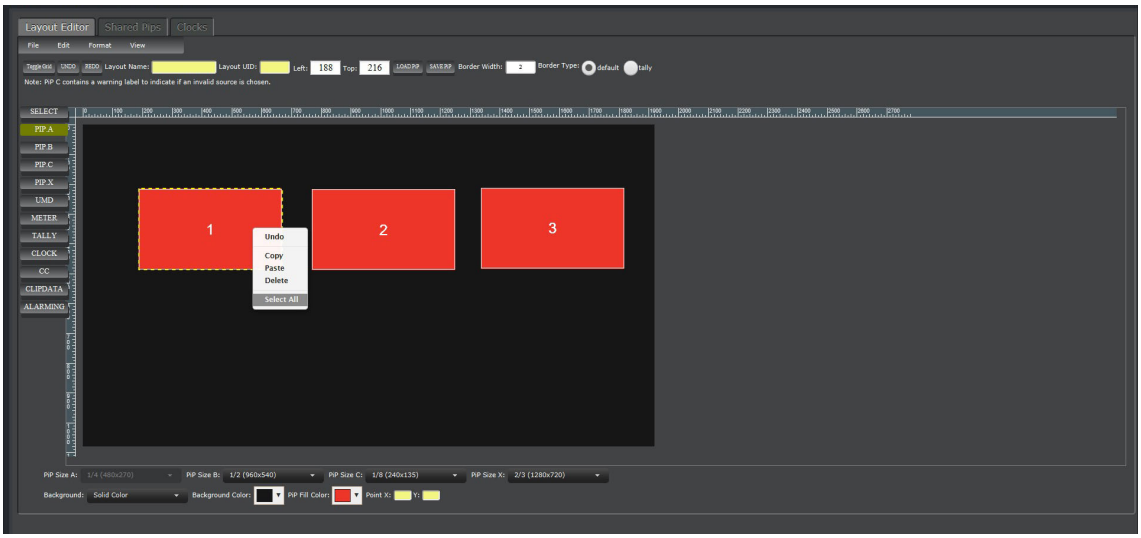
✶ To deselect a single PiP, press **Ctrl** then click the PiP on the layout.

4. From the top toolbar, use the **Border Width** field to specify the border width in number of pixels and lines.
5. Press **Enter** to apply the new width value.

To edit the border width for all PiPs in a layout

1. Create or load a layout in the Ultriscape Layout Editor.
2. Right-click any PiP in the layout.
3. Click **Select All**.

   The PiPs display with a dotted yellow border and the **Border Width** field now displays under the Main toolbar.



4. In the **Border Width** field, specify the border width in number of pixels and click **Enter**.

   The border width for each PiP in the layout updates to the new size.

Adding Objects to a Layout

Once a layout is created, you can add objects using Edit Mode. This chapter outlines how to add specific object types to a single layout.

What is a Layout Object?

An object is any element in a layout that is not a direct video source from the router. For example, a block of audio meters, or a text label. The following objects can be added to an Ultriscape layout.

- **UMD Labels** — This object is a text area. The Under Monitor Display (UMD) or label can display static text, database names, or text from a TSL tally manager device. Refer to "**Adding a UMD/Label**".
- **Audio Meters** — Each PiP can display up to 16 channel of audio meters. The audio meters can be positioned anywhere on the layout including outside of a PiP. Refer to "**Adding a Block of Audio Meters**" and "**Audio Meter Modes Setup**".
- **Tally Borders, Labels, and Lamps** — When tallies are enabled in a database, Ultrix will track the current tally status for all sources that have an associated Tally Display ID. When a PiP has a tally display object defined (such as a label, lamp, and/or border), the current source that is displayed on the PiP determines what is shown on the Ultriscape Head display (based on the associated tally ID for that source). Refer to the ***Ultrix User Guide*** for your router.
- **PiP Borders** — You can adjust the size of each PiP border. A global setting sets the border to overlay on top of the video, or resize the video to fit within the border confines.
- **Clocks** — You can add a clock that reports the time of day, counts down from a set point, or counts up from zero. Refer to "**Adding a Clock Object to a Layout**".
- **CC** — When the Ultriscape-CA license is enabled, you can add a Closed Caption display object to a PiP. Refer to "**Displaying Closed Caption Data**".
- **Clip Data** — When the Ultriscape-CA license is enabled, you can add a Clip metadata display object to a PiP. Refer to "**Configuring an Ultriscape Head to Display Metadata**".
- **Alarming** — When the Ultriscape-CA license is enabled, you can add an Alarms display object to a PiP. Refer to "**Monitoring Options**".

Managing the Objects in a Layout

You can add new objects to PiPs in a layout using the options in the Objects toolbar. Simply select a PiP in the layout, select the tool for the object type you want to add, and draw a box to place the object on the PiP. Each object provides a series of menus for configuring the look and feel of the object on a PiP. You can add multiple objects to a single PiP, but objects cannot span multiple PiPs.

Editing an Object

Any object in a layout can be re-sized, re-positioned, or deleted. The available configuration options for the object depends on its type.

Grouping Objects in a Layout

You can select multiple PiPs in a layout by pressing **Ctrl** and then clicking the PiPs you want to group together. This enables you to quickly select and edit the properties of specific PiPs.

Cut/Paste Objects

You can select an object on a PiP, copy it, and then paste it to another location within that same PiP, to a different PiP in the same layout, or to a PiP in a separate layout.

Adding a UMD/Label

Labels can provide source information. A PiP label (or Under Monitor Display) shows the database name for the currently displayed source (this will update when a different source is routed to the PiP). A PiP label may overlay the PiP image area, or be positioned outside the PiP if there free space available.

✶ When a PiP C is added to a layout, a Warning label is automatically assigned to the PiP. This label will report when a source is routed to that PiP that is not from an ULTRIX-HDX-IO or ULTRIX-MODX-IO blade. The Warning label cannot be deleted, but it can be moved to a different position on the layout.

When you place a label on a layout, the menus under the main toolbar update to include options for configuring your label. The top left corner of the label is defined by the **Top** and **Left** fields (in absolute pixels). The label height and width are defined by the corresponding fields. Additionally, labels may also be configured to show static text or tally text from a tally management system.

The label type options change depending if placed on a PiP, or placed in free space:

- on a PiP — choose between PiP Source or Static Text
- in free space — choose between Static Text or the Ultriscape Head identifier

To create a label using the database name as the content

1. Create or load a layout in the Ultriscape Layout Editor.
2. From the **Objects** toolbar, click **UMD**.
3. Select the PiP to add the label to.

   The PiP displays a new text area. It will automatically size to proportionally to the size of PiP the label was placed on. The Label Settings displays under the main toolbar.
4. Click and drag the label to a position outside of the PiP area if required.

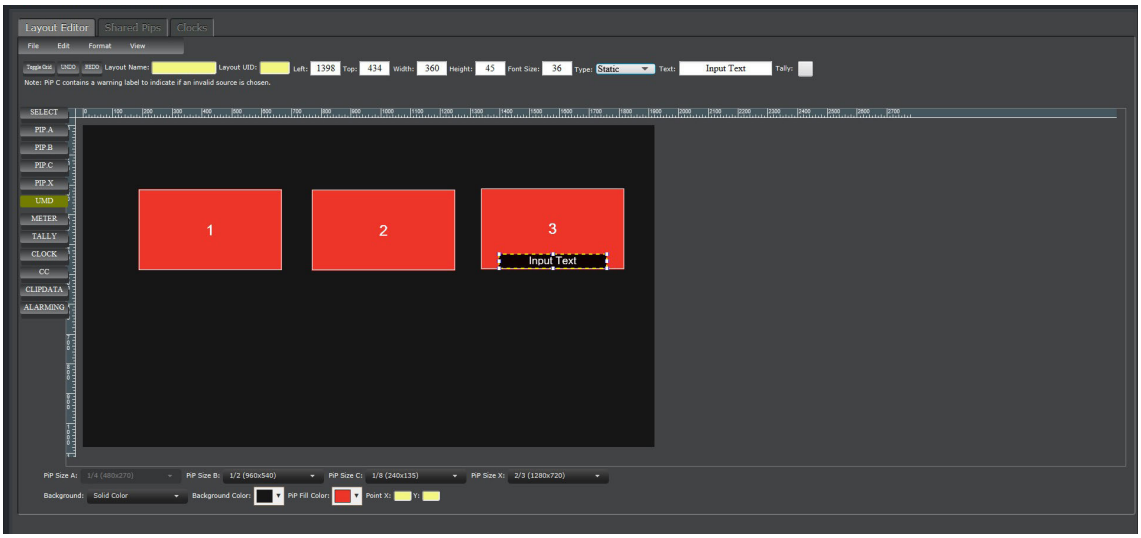
For More Information on...

- adding a tally label, refer to "**Adding a Tally Label to a PiP**".

To add static text to a label

1. From the **Objects** toolbar, click **SELECT**.
2. Select the label you wish to edit.
3. From the **Type** menu in the main toolbar, select **Static** to display the **Text:** field.

   The text box on the PiP automatically displays "`Input Text`".



4. In the **Text:** field, enter the content to display in the label for the PiP to a maximum of 121 characters. The text automatically re-sizes to fit inside the label.
5. Click **Enter**.

   The label on the PiP automatically updates with the new text.

To re-size a label

1. From the **Objects** toolbar, click **SELECT**.
2. Select the label box you wish to re-size.

   The box displays with a dotted yellow border with white nodes at the corners.
3. Perform one of the following:
   - Hover your cursor over the label box and expand its height using the provided tools; or
   - Use the height menu to specify the number of pixels for the box height.

   The text in the box automatically adjusts to the new box dimensions.

To re-position a label

1. From the **Objects** toolbar, click **SELECT**.
2. Select the label box you wish to move.

   The box displays with a dotted blue border with white nodes at the corners.
3. Perform one of the following:
   - Hover your cursor over the label box and drag it into the new position on the PiP; or
   - Use the top menu to specify the number of pixels to offset the box from the top of the PiP; or
   - Use the keyboard arrow keys to nudge selected objects around a PiP.

Adding a UMD Label to the Background

Layouts with blank areas, or sections where no PiP is positioned, can also display various labels. These labels are not associated with any PiP, and can display static text, the Multiviewer Head label, or text from a remote protocol.

For More Information on...

- the RossTalk commands your router supports, refer to its ***Ultrix User Guide***.

To add a UMD label to free space

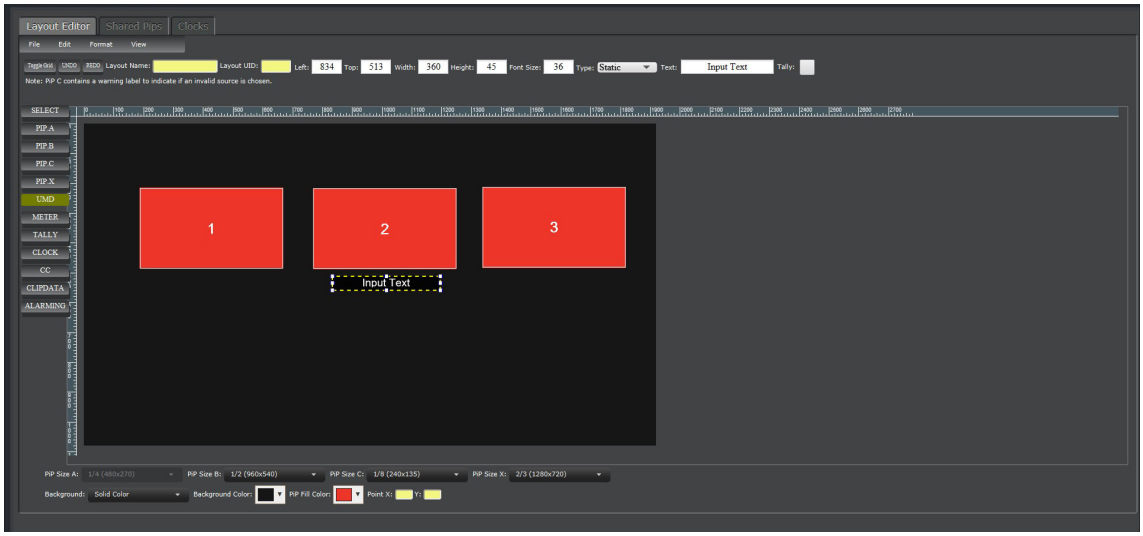
1. Create or load a layout in the Ultriscape Layout Editor. Ensure the layout includes a blank area to position the UMD label in.
2. From the **Objects** toolbar, click **UMD**.
3. Select a PiP to place a UMD label on that PiP.
4. Select and drag the PiP UMD label to a blank area.

   The text box on the layout automatically updates with "**`Unknown`**" and the **Type** menu displays.

To create a UMD label with static text

1. Create or load a layout in the Ultriscape Layout Editor.
2. Ensure the layout includes a blank area to position the UMD label in.
3. From the **Objects** toolbar, click **UMD**.
4. Click an area of the layout background.
5. From the **Type** menu, select **Static** to display the **text** field under the main toolbar.

   The text box updates to display "`Input Text`".



6. In the **Text:** field, enter the content to display in the label.
7. Click **Enter**.

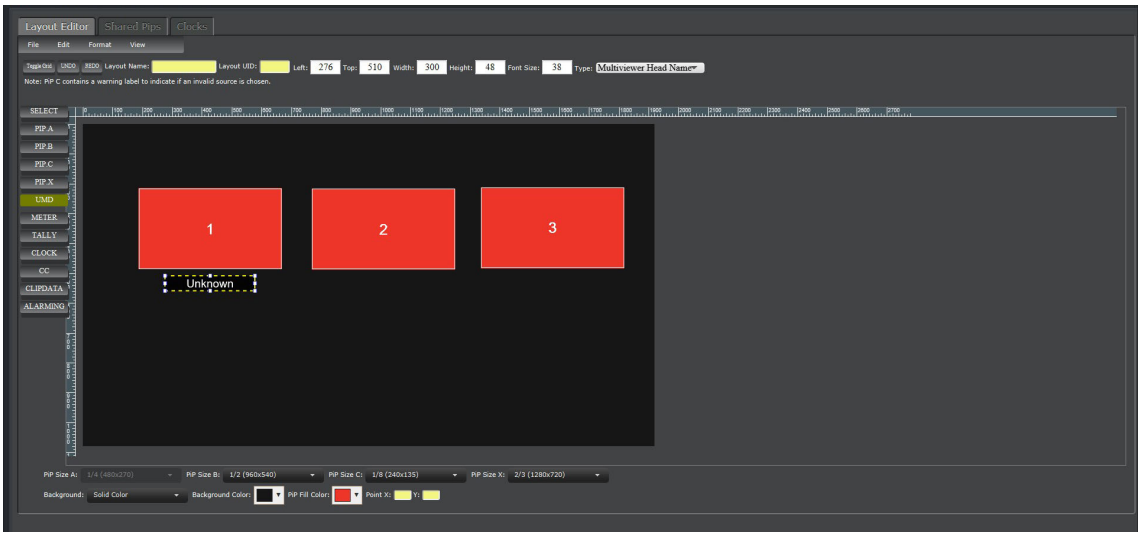
   The text box on the PiP automatically updates with the new text.

To create a UMD label that displays the identifier of the Ultriscape Head output

1. Create or load a layout in the Ultriscape Layout Editor.
2. Ensure the layout includes a blank area to position the UMD label in.
3. From the **Objects** toolbar, click **UMD**.
4. Click an area of the layout background.
5. Select **Multiviewer Head Name** from the **Type** menu.

   The text box on the PiP updates to display "`Unknown`".

✶ The label will automatically update when the layout is assigned to an Ultriscape Head. Refer to "**Assigning a Layout to an Ultriscape Head**".



Displaying a RossTalk Label

You can add a text label that is defined via the RossTalk communication protocol. A RossTalk label may be added to any Ultriscape layout. The RossTalk `TXTLABEL` command can control the text, the label background color, and the text color.

For More Information on...

- the RossTalk commands your router supports, refer to the ***Ultrix User Guide*** for your router.

To add a RossTalk label

1. Create or load a layout in the Ultriscape Layout Editor.
2. Ensure the layout includes a blank area to position the RossTalk label in.
3. From the **Objects** toolbar, click **UMD**.
4. Click an area of the layout background.
5. From the **Type** menu, select **Remote**.
6. Assign a numerical value to the text field.

   This number correlates to the `TXTLABEL ID` filed of the RossTalk command.
7. Control the label with the following RossTalk command:

   ```
   TXTLABEL ID:<id>; TEXT:<text>; BGCLR:<bgcolor>; TXTCLR:<textcolor>
   ```

Adding a Block of Audio Meters

For each PiP, you have the ability to display up to 16 channels of audio in a single block of audio meters. The meters can be positionable individually anywhere in the layout (even outside of the PIP). The meters display the peak level of the waveform no matter how brief its duration. The audio meters report the audio peak level measurements for your audio channels. Measurement units are in decibel full scale (dBFS) where 0dBFS is the maximum digital value. Each audio meter displays audio level information as illustrated in **Figure 3**.

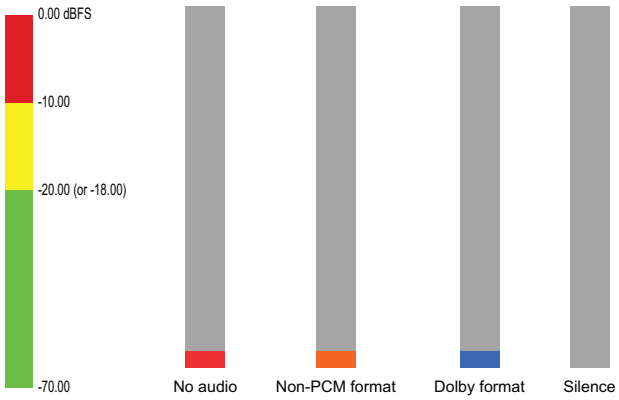


Figure 3 Illustrative Example of Audio Level Information

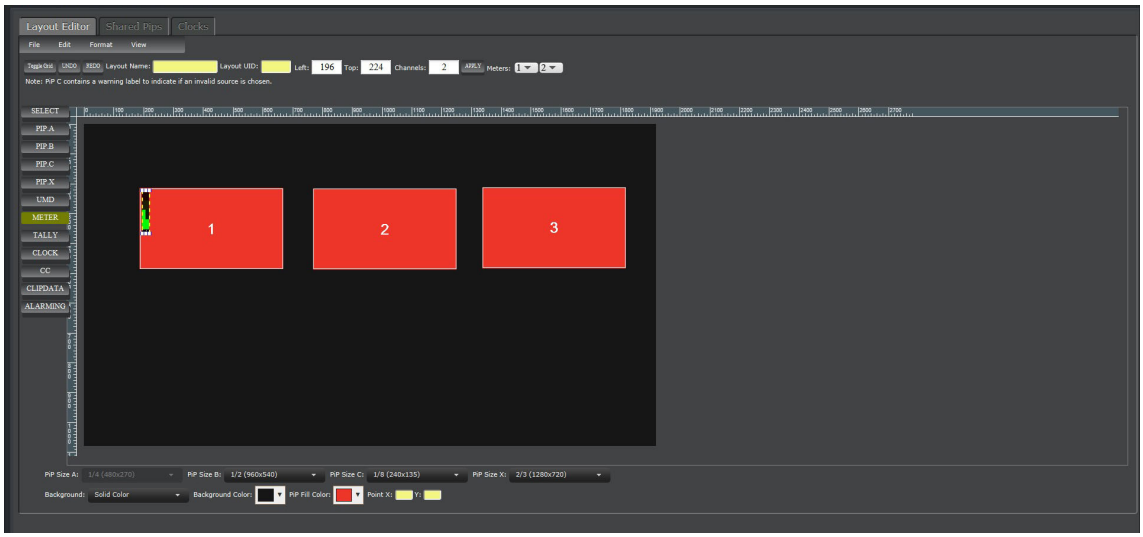
Audio meters may be configured in either **Physical** or **Logical** mode. Physical mode ensures the meter responds to audio that is associated with SDI currently feeding the PiP. Logical mode allows other audio sources to display.

To add an audio meter to a PiP

1. Create or load a layout in the Ultriscape Layout Editor.
2. From the **Objects** toolbar, click **METER**.
3. Use the mouse pointer to indicate where to create the box for the audio meter on a PiP of the layout.

   The box auto-populates with two static audio meters and the Audio Meter menus display under the main toolbar. An error message displays in the top right corner of the Layout Editor interface when a block of audio meters overlaps more than one PiP or another object in a layout.

✶ By default, the audio meters are aligned to the upper left corner of the selected PiP. Ensure that you click in a region that allows the meter to be positioned within the PiP to avoid the overlap.



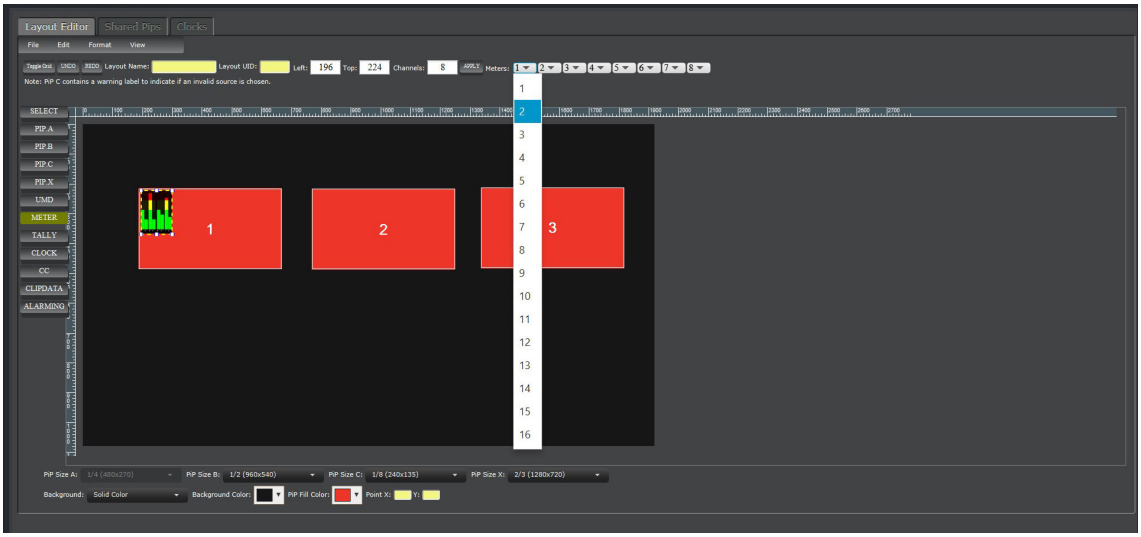
4. To place audio meters outside a PiP:
   a. Place the audio meters on a PiP.
   b. Click and drag the meters to the required location on the layout.
5. Use the **Number of Channels** field to specify how many channels to display.

To assign an audio channel to a meter

1. From the **Objects** toolbar, click **SELECT**.
2. Select the audio meters you want to configure.

   The Audio Meter menus display under the main toolbar. The selected meters display a dotted yellow border.
3. Assign the first meter to a channel using the **Meter Channels** menu.
4. Click **Assign Channels** to update the channel assignments.

   The channel assigned to the first meter determines the series of channels displayed in the meters. In the example below, a meter block of 8 channels was created in PiP 1.



To re-position a block of audio meters

1. From the **Objects** toolbar, click **SELECT**.
2. Select the block of audio meters you wish to re-position.

   The audio meters display with a dotted yellow border.
3. Perform one of the following:
   - Click and drag the audio meters to their new position on the layout; or
   - Use the keyboard arrow keys to nudge the audio meters on a PiP.

Assigning Logical Audio Meter Destinations

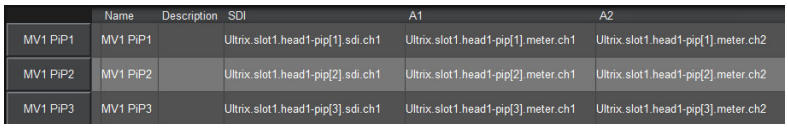
Audio meters may be set to Logical Mode to allow the display of audio levels of sources not associated with the video currently displayed on a PiP. The process is similar to defining a standard destination for the video level and any audio levels in the system.

Keep the following in mind when assigning logical audio meters:

- Local PiP metering is identified by `frame.slot n.head x.pip[y].meter.ch z` where `x` represents the Ultriscape Head number, `y` represents the PiP number, and `z` represents the audio channel number.
- Shared PiP metering is identified by the `frame.slot 0.pip[y].meter.ch z` where `y` represents the PiP number, and `z` represents the audio channel number.

To assign metering for logical operation

1. Assign a PiP to the video level.
2. Assign a PiP meter to the audio levels.



	Name	Description	SDI	A1	A2
MV1 PiP1	MV1 PiP1		Ultrix.slot1.head1-pip[1].sdi.ch1	Ultrix.slot1.head1-pip[1].meter.ch1	Ultrix.slot1.head1-pip[1].meter.ch2
MV1 PiP2	MV1 PiP2		Ultrix.slot1.head1-pip[2].sdi.ch1	Ultrix.slot1.head1-pip[2].meter.ch1	Ultrix.slot1.head1-pip[2].meter.ch2
MV1 PiP3	MV1 PiP3		Ultrix.slot1.head1-pip[3].sdi.ch1	Ultrix.slot1.head1-pip[3].meter.ch1	Ultrix.slot1.head1-pip[3].meter.ch2

3. Refer to "**Configuring the Audio Meter Logical Source Mode**".

Copying Objects in a Layout

Using hot-keys, you can quickly select, and copy individual or groups of objects from one PiP to another PiP, multiple PiPs, or to a PiP in another layout. When you select a PiP, all of its associated objects are also selected (as a group) and can be move or re-sized as a group. Clicking the PiP again, or any of the objects, will then select that object only.

To copy a single object in a PiP

1. Create or load a layout in the Ultriscape Layout Editor.
2. Configure the object of the PiP as required.
3. From the **Objects** toolbar, click **SELECT**.
4. Select the object in the PiP.

   The object displays a dotted yellow border.
5. Press **Ctrl + C** or right-click the object and select **Copy**.

To copy all objects in a single PiP

1. Create or load a layout in the Ultriscape Layout Editor.
2. Configure the objects of the PiP as required.
3. From the **Objects** toolbar, click **SELECT**.
4. Select the PiP with the objects you want to copy.

   The PiPs displays a dotted yellow border.
5. Press **Ctrl + C** or right-click the object and select **Copy**.

To copy a selection of objects in a single PiP

1. Create or load a layout in the Ultriscape Layout Editor.
2. Configure the objects in your layout as required.
3. From the **Objects** toolbar, click **SELECT**.
4. Select the first object you want to copy.

   The object displays a dotted yellow border.
5. Press and hold **Ctrl** as you select additional objects to copy.

   The additional selected objects now display a blue border.
6. Press **Ctrl + C**.

Pasting Objects in a Layout

Using hot-keys, you can quickly paste objects from one PiP to another PiP, multiple PiPs, or to a PiP in another layout. If you are pasting the contents of one PiP to another PiP of a different size, the objects are automatically re-sized to fit the new PiP. The position of the objects within the new PiP reflects the position in the original PiP.

✶ An object is pasted where your cursor was last positioned within the selected PiP. For example, if you selected a PiP by clicking in its center, the object will be pasted to the center of the new PiP.

To paste an object to a PiP in the same layout

1. Copy the object using one of the methods in "**Copying Objects in a Layout**".
2. From the **Objects** toolbar, click **SELECT**.
3. Select the PiP to paste the object into.

   The PiP displays with a dotted yellow border.
4. Press **Ctrl + V**.

   A copy of the object is added to the selected PiP.

✶ If the PiP that the object is pasted into is a different size from the original PiP, an error message displays alerting you that the pasted object now straddles multiple PiPs.

To paste an object to multiple PiPs in the same layout

1. Copy the object using one of the methods in "**Copying Objects in a Layout**".
2. From the **Objects** toolbar, click **SELECT**.
3. Select the PiPs to paste the object into.

   The selected PiPs display with a dotted yellow border.
4. Press **Ctrl + V**.

   A copy of the object is added to all the selected PiPs.

To paste an object to a PiP of a different layout

1. Save the changes to the current layout if required as outlined in "**To save a layout to the local DashBoard client computer**".
2. Copy the object(s) using one of the methods in "**Copying Objects in a Layout**".
3. Load the layout you wish to paste the object(s) into as outlined in "**To load a layout template**".
4. From the **Objects** toolbar, click **SELECT**.
5. Select the PiP to paste the object(s) into.

   The PiP displays with a dotted yellow border.
6. Press **Ctrl + V**.

   A copy of the object(s) is added to the selected PiP.

✶ If the PiP that the object is pasted into is a different size from the original PiP, an error message displays alerting you that the pasted object now straddles multiple PiPs.

Displaying Closed Caption Data

Ultriscape supports the display of CEA-608, CEA-708, and OP-47 closed caption data.[1] Both SDI (SMPTE 291M) and IP streams (SMTPE 2110-40) are supported as sources of closed caption data. Up to 64 closed caption displays may be active (on configured and selected Ultriscape layouts) at any one time, with a maximum 16 closed captions per Ultriscape Head.

✶ Ultriscape closed caption displays are for confidence monitoring and may not adhere to accessibility standards.

Before You Begin

The Ultriscape-CA license must be installed on the Ultrix router. Refer to "**Software License Keys**" for details on enabling licensed features.

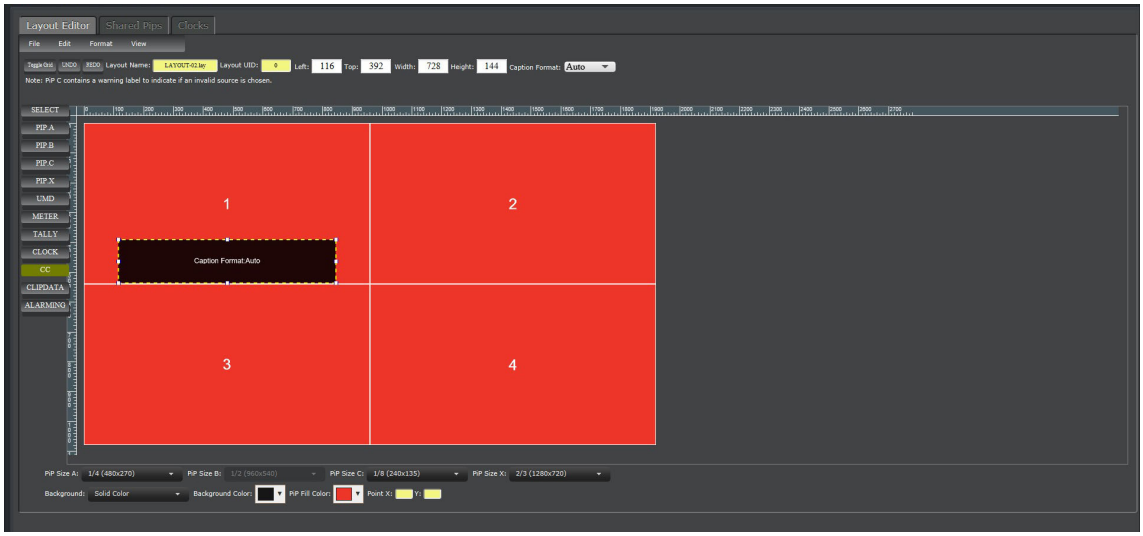
Configuring an Ultriscape Head to Display Closed Caption Data

Once the Ultriscape-CA license is enabled, a Closed Caption (CC) display object may be added to any single PiP of an Ultriscape layout[2]. A CC display object is a four line text display object. The different closed caption formats will dictate how the space is utilized. For each CC display object, you can adjust:

- the height of the object but the text will scale to always fit four text lines vertically.
- the width but the characters may be truncated if the line is longer than available space.

To add a Closed Caption display object to a layout

1. Create or load a layout in the Ultriscape Layout Editor.
2. From the **Objects** toolbar, click **CC**.
3. Select the PiP that will display the CC data.



4. Use the **Options** menu to specify the Closed Caption format. Choose from the following:
   - **Auto** — auto detects the format from data.
   - **CEA-608** — formats the data as defined by CEA-608/EIA-608.
   - **CEA-708** — formats the data as defined by CEA-708.
   - **OP-47** — formats the data as defined by OP-47.

1. Requires software version 4.6 or higher and the Ultriscape-CA license.
2. Caption options may not be visible/accessible if license is not enabled.

5. Click **Apply**.
6. Save the layout as outlined in "**Saving a Layout**".

To re-size a CC display object

1. From the **Objects** toolbar, click **SELECT**.
2. Select the CC display object you wish to re-size.

   The box displays with a dotted yellow border with white nodes at the corners.
3. Perform one of the following:
   - Hover your cursor over the box and expand its size using the provided tools; or
   - Use the CC menus to specify the number of pixels for the box layout.

Caption Settings Tab

Table 3 summarizes the options displayed in the Layout Editor Settings > Caption Settings tab.

Table 3 Layout Editor Settings — Caption Settings Tab

Item	Parameters	Description
Caption Settings		
Caption Logging Mode	Errors Only*	The Ultriscape Closed Caption system creates event logs which are not user accessible but may be required by Ross Technical Support. Do not set to All unless instructed by Ross Technical Support.
	All	
Captions in Use (read-only)	#	Indicates the quantity of captions currently displayed across the Ultriscape Multiviewer system

Configuring an Ultriscape Head to Display Metadata

Once the Ultriscape-CA license is enabled, the Clip Data display object can be added to any single PiP of a layout[1]. A Clip Data display object is a five-line field that is auto-populated with the following Evertz® DreamCatcher™ metadata found in the embedded ANC packets:

- Clip Name — the top line reports the name assigned to the clip assigned to the PiP.
- Clip ID — the second line reports the Clip identifier in the format of Page/Bank/Slot/Angle of the cued content. For example, a line that displays 1/2/3/4
- Playlist Name — the third line reports which playlist the cued content was sourced from.
- Playlist Status — the fourth line reports the overall playout speed as a percentage (%).
- Clip Time Remaining — the bottom line reports the runtime of the currently cued content in the format of HH:MM:SS.

To add a Clip Data display object to a layout

1. Create or load a layout in the Ultriscape Layout Editor.
2. From the **Objects** toolbar, click **CLIP DATA**.
3. Select the PiP that will display the closed caption metadata.
4. Click **Apply**.
5. Save the layout as outlined in "**Saving a Layout**".

1. Caption options may not be visible/accessible if license is not enabled.

To re-size a Clip Data display object

1. From the **Objects** toolbar, click **SELECT**.
2. Select the Clip Data display object you wish to re-size.

   The box displays with a dotted yellow border with white nodes at the corners.
3. Hover your cursor over the box and expand its size using the provided tools.

Using PiP Templates in Layouts

Once you have configured a PiP, you can save it as a PiP template to be applied to other PiPs in the same layout, or other active layouts.

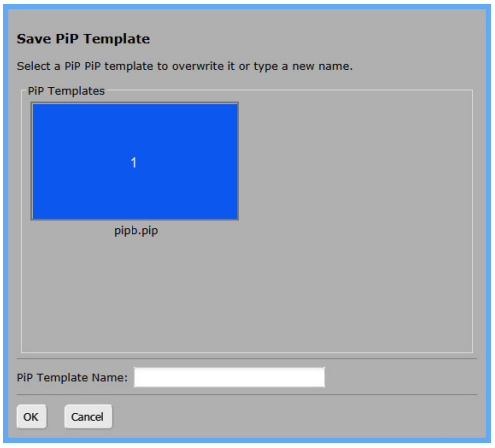
✶ A PiP template only captures the objects and their placement on the PiP and not the PiP Simulation Color.

To save a PiP as a new template

1. Create or load a layout in the Ultriscape Layout Editor.
2. Configure the objects of the PiP as required.
3. From the **Objects** toolbar, click **SELECT**.
4. Select the PiP.

   The PiP displays with a dotted yellow border.
5. From the main toolbar, click **SAVE PiP**.

   The **Save PiP Template** dialog opens.



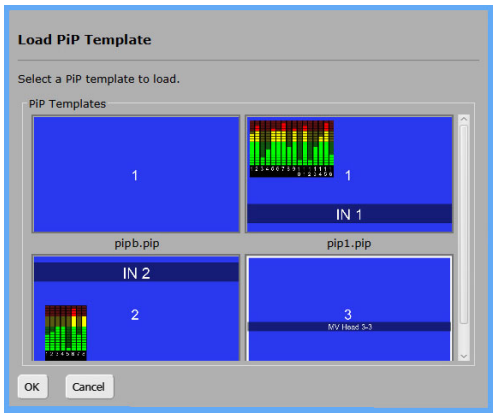
6. In the **PiP Template Name** field, type a unique identifier.
7. Click **OK** to save the current PiP settings as a new PiP template and close the dialog.

To apply a PiP template

1. Create or load a layout in the Ultriscape Layout Editor.
2. From the **Objects** toolbar, click **SELECT**.
3. Select the PiP to apply the template to.

   The PiP displays with a dotted yellow border.
4. From the main toolbar, click **LOAD PiP**.

   The **Load PiP Template** dialog opens.

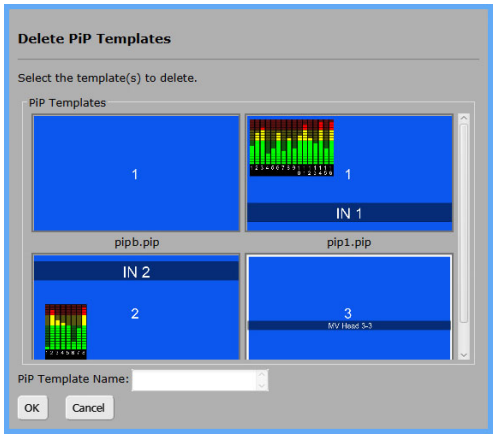


5. Select a template from the list.
6. Click **OK** to apply the template to the selected PiP and close the dialog.

To delete a PiP template

1. From the main toolbar, select **File** > **Delete PiP**.

   The **Delete PiP Templates** dialog opens.



2. Select a template from the list.
3. Click **OK** to apply the template to the selected PiP and close the dialog.

   Any PiPs that had the template applied are not affected, but the PiP template will no longer be made available for applying to future PiPs.

Managing the Layouts

This chapter outlines general tasks such as how to save a layout, load a layout, export/import a layout, and delete a layout.

Saving a Layout

Before a layout can be assigned to an Ultriscape Head, you must first publish the layout and make it available to the Multiviewer system. Once a layout is published, it is available for use by all Ultriscape Heads in your routing system and appears in the Activate Layout area of the Ultriscape Head interface.

To save a layout to the database

1. Create or load a layout in the Ultriscape Layout Editor.
2. Edit your PiPs as required.
3. Save your layout changes.
4. From the main toolbar, select **File** > **Save to Ultricore**.

   The **Save Layout** dialog opens.
5. To overwrite a previously published layout in the Ultricore system:
   a. Select a layout to overwrite from the provided list.
   b. Click **OK**.
6. To publish the layout as a new layout in the Ultricore system:
   a. Type a unique identifier for the layout in the **Layout Name** field.
   b. Click **OK**.

Saving a Layout as a Local Copy

When you save a layout, it saves a local copy to the computer running your DashBoard client. To make the layout available to the routing system, you must publish the layout as outlined in "**Saving a Layout**".

To save a layout to the local DashBoard client computer

1. Create or load a layout in the Ultriscape Layout Editor.
2. Edit your PiPs as required.
3. From the main toolbar, select **File** > **Save to Local**.

   The **Save to Local** dialog opens.
4. Type a unique identifier for the layout in the Layout Name field.
5. Click **OK** to save your changes.

   The **Save to Local** dialog closes.

Loading a Previously Saved Layout

Loading a saved layout automatically clears the Layout Editor workspace.

To load a previously saved local layout

1. From the main toolbar, select **File** > **Load from Local**.

   The **Open Layout** dialog opens.

2. Select a layout from the provided list.
3. Click **OK**.

   The Load Layout dialog closes and the Ultriscape Layout Editor workspace updates with the selected layout.

To load a previously saved layout in Ultricore

1. From the main toolbar, select **File** > **Load from Ultricore**.

   The **Load Layout** dialog opens.

2. Select a layout from the provided list.
3. Click **OK**.

   The Load Layout dialog closes and the Ultriscape Layout Editor workspace updates with the selected layout.

Archiving the Layouts

A layout can be archived by saving it as a *.lay file to a specified location. This enables you to import and export an archived layout.

✶ This feature requires DashBoard v8.2 or higher and Ultrix software version 2.0 or higher.

Exporting a Layout

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

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

To export an Ultriscape layout

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

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

2. Select the **Transfer** tab.
3. Select the **Ultriscape Layout** tab.
4. Locate the **Export Ultriscape Layout** area on the tab.
5. Use the **Layout** field to select the layout to export.
6. Click **Browse...** to specify the location to save the *.lay file to.

   The **Save As** read-only field updates with the selected path and layout name.

7. Click **Export**.

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

Importing a Layout

Once a layout is imported from the archive to your system, you can select it from the list of layouts to load in the **Ultriscape** > **Layout Editor** > **Load from Local** menu and the **Head Selection** > **Activate Layout** area.

To import an Ultriscape layout

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

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

      The **Open** dialog opens.
   b. Use the **Open** dialog to specify the *.lay file to import.
   c. Click **Open** to load the file.
6. Click **Import**.

   The **Uploading Archive** dialog opens to report the status of the transfer.
7. Verify that the imported layout is now available for selection in the following locations:
   a. **Ultriscape** > **Layout Editor** > **Load from Ultricore** menu
   b. **Ultriscape** > **Head Selection** > **Activate Layout** area

Deleting a Layout

✶ If the layout is not displayed in the **Delete Layout** dialog, it is currently in use by a Ultriscape Head.

To delete a layout from the Ultricore system

1. From the main toolbar, select **File** > **Delete Layout from Ultricore**.

   The **Delete Layout** dialog opens.
2. Select the layout from the provided list.
3. Click **OK** to delete the layout from the Ultricore system.

Clearing the Workspace

Changes to layouts and PiPs take effect if you save the new settings. You can clear the workspace and start over and any unsaved changes to the current layout will be discarded.

To clear the workspace

- From the main toolbar, select **Edit** > **Clear All**.

  The workspace area is now blank.

Assigning a Layout to an Ultriscape Head

This chapter summarizes how to assign a layout to an Ultriscape Head.

For More Information on...

- assigning a Head to a router output, refer to "**To assign an Ultriscape Head to a router output**".
- the UltriStream licensed feature, refer to the ***Ultrix User Guide*** for your router.

Before You Begin

Keep the following in mind when configuring an Ultriscape Head:

- The Ultriscape Layout Editor display matches the output Ultriscape Head to the pixel. The output can be 1080p or 1080i. Refer to "**To assign an Ultriscape Head to a router output**".
- The Ultriscape license is on a per head basis. When not licensed, the Ultriscape Layout Editor is available, but you cannot assign any layouts to an Ultriscape Head.
- Ancillary data is stripped, except for audio; SMPTE 352 and AFD packets are re-generated and output by the system.
- The output aspect ratio is always 16:9.
- If a PIP is set to follow a router destination, audio levels reflect any processing applied (gain, shuffle etc.).
- If a PIP is set to follow a source, it reports the source audio information without any processing.
- Ultrix does not support Unicode characters.

Head Selection Interface

The Head Selection interface is organized into a series of tabs, each representing an enabled Head. (**Figure 4**) Each Head Selection tab is divided into three areas: Activate Layouts (top area), MV Head Settings (middle area), and Read-only Fields (bottom area).

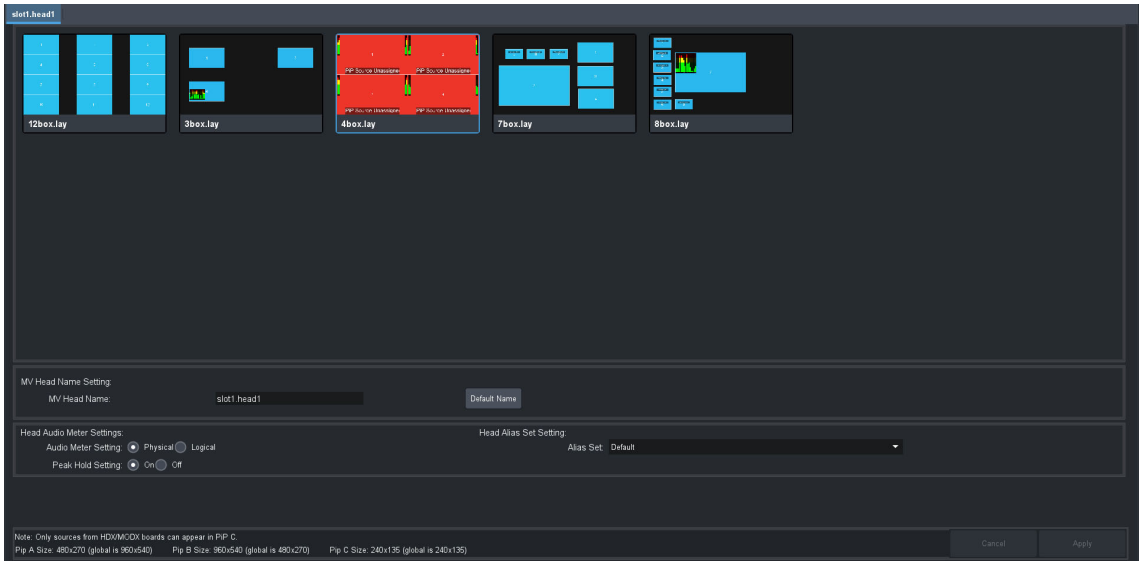


Figure 4 Example of the Head Selection Interface

Activate Layout Area

The Activate Layout area is the top half of the interface. This area provides a visual representation of each layout that is enabled in your routing system. Multiple routers can load a layout at the same time. Each PiP is numbered (1, 2, 3 etc.) to enable quick identification when assigning sources. The currently selected Layout for the Ultriscape Head output displays a blue border, and its name is displayed in the Layout Name field. In **Figure 4**, `4box.lay` is selected. A layout will appear gray to indicate the PiP sizes within the layout do not match the current settings. These layouts cannot be selected for Ultriscape output until the Configuration > PiP Layout > PiP Size Selection settings for Pip A and PiP B match those on the layout.

MV Head Settings Area

Use the option in this area to customize the MV Head and layout settings.

Read-only Fields

The bottom area of the tab provides read-only information about the PiPs (e.g. dimensions).

Assigning a Layout to an Ultriscape Head

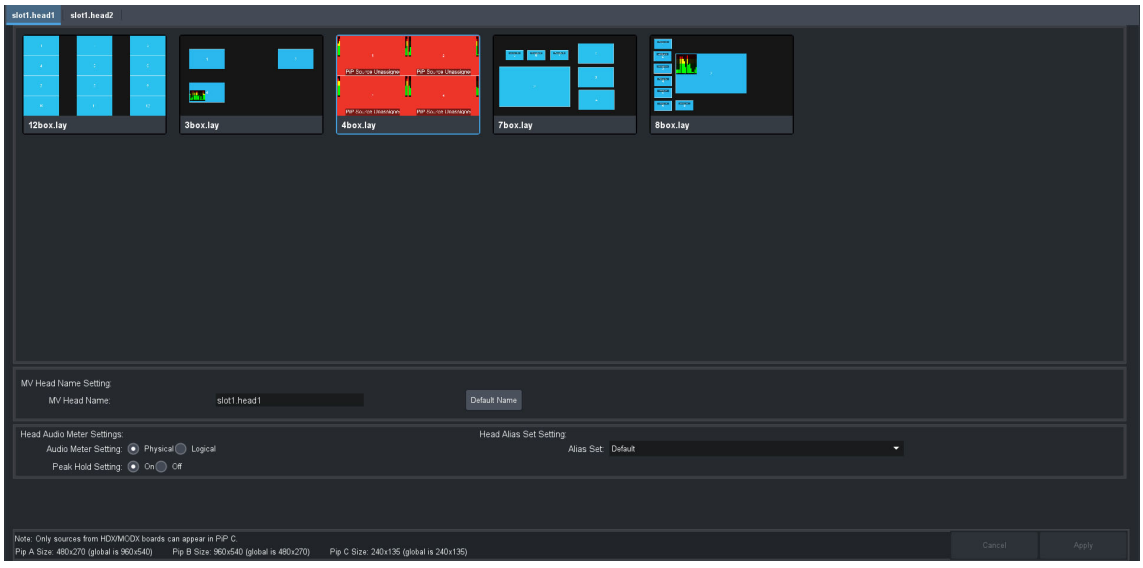
Each Ultriscape Head in your system can use the same layout, or different layouts depending on your needs.

To assign a layout to an Ultriscape Head

1. Double-click the Ultrix router in the Basic Tree View of DashBoard.
2. Expand the Ultriscape node.
3. Double-click the **Head Selection** node.

   The **Head Selection** tab displays in the right side of the DashBoard window. Each Ultriscape Head displays as a sub-tab in this window.
4. Select the tab for the Ultriscape Head you want to configure.
5. Select a layout from the **Activate Layout** area of the tab.

   The **Head Selection** tab updates to provide the editable options and read-only information for the selected layout. In the example below, **`4box.lay`** is selected for slot1.head1.



6. If required, edit the text reported in the **MV Head Name** field to assign a new name to the current Ultriscape Head, or reset the name to the default nomenclature (slot#.head#).
7. Use the **Audio Meter Settings** to specify whether the audio bars on PiPs represent the audio that is embedded in the SDI stream (Physical mode), or if audio bars on PiPs display audio levels based on a source's logical definition (Logical mode). Refer to "**Ultriscape Layout and Head Configuration**" for more information.
8. Set the **Peak Hold** to **On** to enable the audio meters to report the audio peak level measurements for your audio channels.
9. Use the **Head Alias Set Setting** to apply a specific database alias set to the PiPs in this Multiviewer Head or not (Default). Refer to the ***Ultrix and Ultricore Database Guide*** for details on creating alias sets.
10. Click **Apply** at the bottom of the **Head Selection** tab.

Assigning Sources to PiPs

This chapter summarizes how to assign router sources to PiPs in a layout.

For More Information on...

- assigning an Ultriscape Head to an output, refer to "**Assigning Ultriscape Head Destinations**".

PiP Layout Mapping Overview

This section provides examples to illustrate the PiP assignment in a layout where:

- **x** is the slot number counted from the top of the layout starting at 1.
- **n** is the Ultriscape Output Head number. The physical port this output appears on is defined by the **Port License** tab. Refer to the ***Ultrix User Guide*** for your router.

Example using the LAYOUT-01 Template

This template is a 2+8 layout with a total number of 10 PiPs available to map. (**Figure 5**)

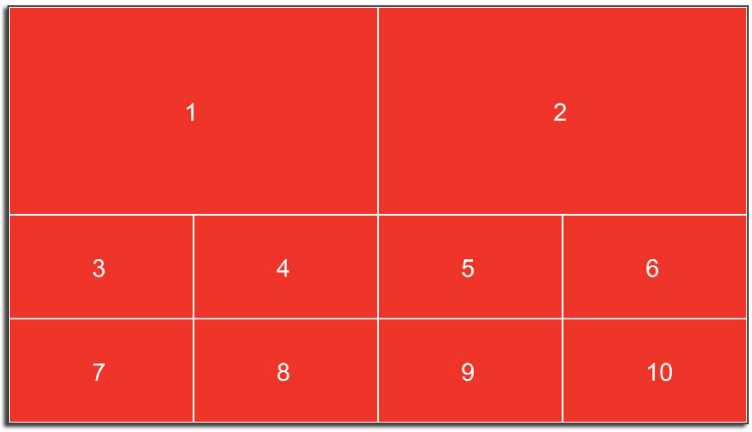


Figure 5 Example of the LAYOUT-01 Template

Table 4 outlines the destination assignment for each PiP in the LAYOUT-01 template.

Table 4 PiP Layout Mapping — LAYOUT-01 Template

PiP Number	Destination Assignment
1	Ultrix.slot**x**.head**n**-pip[1]
2	Ultrix.slot**x**.head**n**-pip[2]
3	Ultrix.slot**x**.head**n**-pip[3]
4	Ultrix.slot**x**.head**n**-pip[4]
5	Ultrix.slot**x**.head**n**-pip[5]
6	Ultrix.slot**x**.head**n**-pip[6]
7	Ultrix.slot**x**.head**n**-pip[7]
8	Ultrix.slot**x**.head**n**-pip[8]
9	Ultrix.slot**x**.head**n**-pip[9]
10	Ultrix.slot**x**.head**n**-pip[10]

Example using the LAYOUT-02 Template

This template is a 2x2 layout with a total number of 4 PiPs available to map. In **Figure 6**, the user altered the template to utilize shared PiPs.

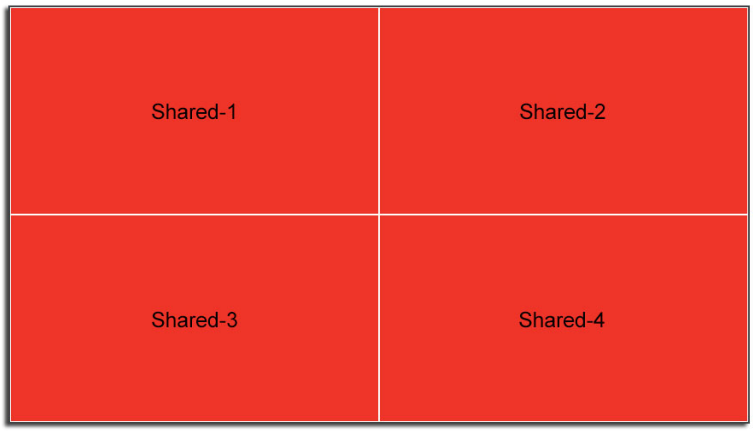


Figure 6 Example of the LAYOUT-02 Template

Table 5 outlines the destination assignment for each PiP in the LAYOUT-02 template.

Table 5 PiP Layout Mapping — LAYOUT-02 Template

PiP Number	Destination Assignment
1	Ultrix.slot**0**.head**n**-pip[1]
2	Ultrix.slot**0**.head**n**-pip[2]
3	Ultrix.slot**0**.head**n**-pip[3]
4	Ultrix.slot**0**.head**n**-pip[4]

Multiple Heads

If multiple heads are configured, destination assignments must be defined for all heads and PiPs.

Table 6 PiP Layout Mapping — Multiple Heads

Name	Destination Assignment
MV Head 1	Ultrix.slot**1**.head**1**.sdi.ch1
MV1 PiP1	Ultrix.slot**1**.head**1**-pip[1]
MV1 PiP 2	Ultrix.slot**1**.head**1**-pip[2]
...more MV1 PiP Assignments	
MV Head 2	Ultrix.slot**2**.head**1**.sdi.ch1
MV2 PiP1	Ultrix.slot**2**.head**1**-pip[1]
MV2 PiP 2	Ultrix.slot**2**.head**1**-pip[2]
...more MV2 PiP Assignments	

Assigning a Source to a PiP

A PiP is controlled by routing just like any destination. Each PiP can be a 'direct source' take operation or a 'destination follow' operation (where multiple outputs switch to the same input signal that a destination is switched to).

The Ultrix router directly routes to the PiP via a crosspoint selection on a soft panel. If the input signal includes embedded audio, the audio is included in the Ultriscape Head output.

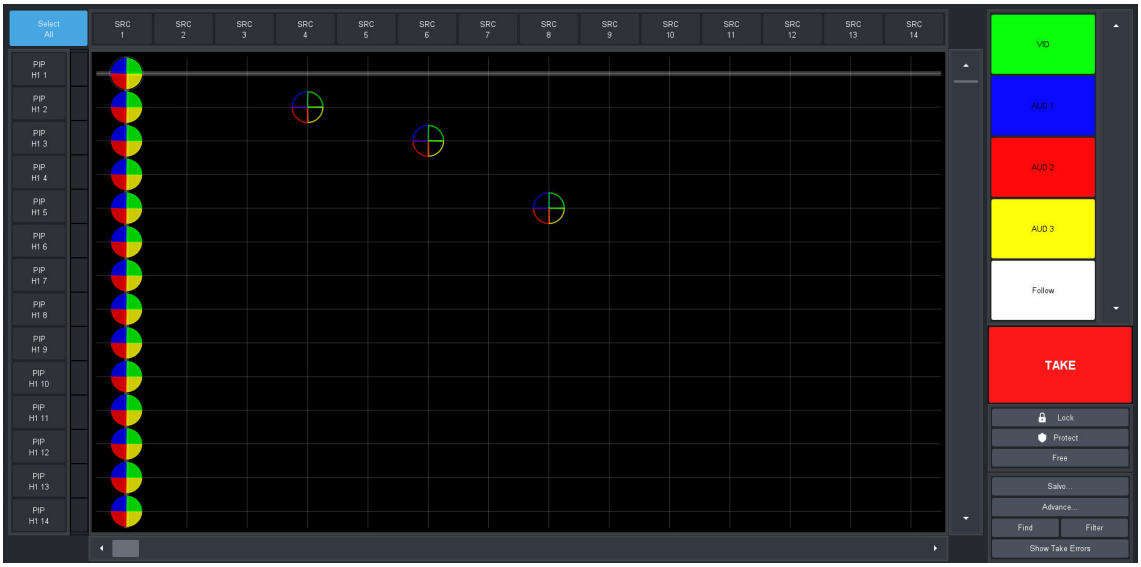
When routing sources to the PiPs of an Ultriscape Head, you can display sources:

- of different formats on the same head at one given time;
- with no assumed timing relationship on the same head at one given time.

To assign a source to a PiP using a soft panel

1. Ensure your database includes destinations assigned to the required Ultriscape Head(s), and destinations. Refer to "**To assign an Ultriscape Head to a router output**", and "**To display the destinations in your database**".
2. Assign a layout to the Ultriscape Head. Refer to "**To assign a layout to an Ultriscape Head**".
3. Create and load a soft panel that includes the Ultriscape Head(s) and PiP(s). Refer to the ***Ultrix and Ultricore Database Guide*** for details.
4. Select the crosspoint(s) as required.

   In the following example, the user assigned SRC 4 to PIP H1-2, SRC 6 to PIP H1-3, and SRC 8 to PIP H1-5.



   - A PiP displays the source for the **Destination** the PiP is assigned to (e.g. a PiP acts like a regular router destination). This is the default setting for all PiPs.
   - If the destination has Follow Dest enabled, the source that the PiP displays is dependent on the source routed to the specified Destination. For example, PIP H1-5 is set to Follow Dest 10. If the user switches Dest 10 to Src 3, PIP H1-5 displays Src 3. If Dest 10 then switches to Src 30, PIP H1-5 will then display Src 30.
5. Click **TAKE** to perform the crosspoint switch on the selected PiPs.

Audio Meter Modes Setup

This chapter outlines how to set up and monitor audio meters for PiPs that are configured for Normal or Default Source modes. There are two source modes when configuring audio meters:

- **Physical Source** mode — the audio bars on PiPs represent the audio that is embedded in the SDI stream. This is the default mode.
- **Logical Source** mode — the audio bars on PiPs display audio levels based on a source's logical definition. The bars index from left to right (meter port channel 1 represents the leftmost audio meter bar, and meter port channel 16 represents rightmost possible audio meter bar).

Overview

A PiP containing a defined audio meter object may be configured to represent the audio from a variety of sources as outlined in **Table 7**.

Table 7 Audio Meter Settings

PiP Mode	Audio Meter Mode	
	Physical	**Logical**
Source	Audio from the SDI source	Router audio channels
Normal	Audio from routed SDI source	Routed audio channels
Dest Follow	Audio from destination SDI	Audio from destination SDI

By default, Ultriscape Heads will be in Physical mode, which shows the levels for the audio embedded in the SDI stream currently displayed on the PiP.

To enable an Ultriscape Head to show display audio metering based on the logical source definition, select **Logical** from the **Head Audio Meter Settings** menu in the **Head Selection** interface.

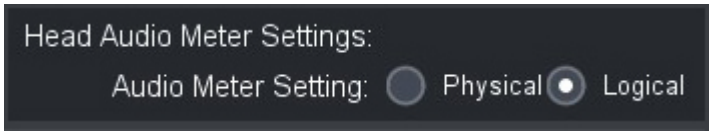


Figure 7 Head Audio Meter Settings Menu

Note that when activated, the Logical Mode setting:

- is global to the Ultriscape Head and it affects all PiPs defined on the Head that are not set to **Dest Follow**. The Logical mode is enabled regardless of which layout is applied to the Ultriscape Head.
- causes the affected PiPs to ignore the meter channels assignment made in the active layout's PiP definition (which are only used for Physical mode). The same number of meter bars defined in the PiP is still displayed.
- requires that PiP meter ports be assigned in the logical database to map the meter to audio channels; otherwise no audio levels will be displayed for PiPs that are set to **Normal** or **Source #**.

✶ Audio meters on PiPs set to **Dest Follow**, by definition, will always show what has been embedded into the output SDI stream, regardless of the Head Audio Meter Setting.

Configuring the Audio Meter Logical Source Mode

In order for the PiPs to display logical source audio levels, the audio meters' ports must be assigned to logical destinations associated with the Ultriscape PiPs.

Each available PiP SDI port in the system will now have associated with it 16 'meter' ports; one for each possible audio bar in a meter. These ports should be mapped to the audio levels within the database. By default, the bars index from left to right (meter port channel 1 represents the leftmost audio meter bar, and meter port channel 16 represents rightmost possible audio meter bar). You can choose a different map via your layout. It is not required to add meter port entries to the database for bars that will not be shown in a PiP.

Figure 8 provides an example with one level for the video source and two audio levels for the metering.

ID	Name	Description	VID	AUD 1	AUD 2
42	PIP H1 1		Ultrix.slot1.head1-pip[1].sdi.ch1	Ultrix.slot1.head1-pip[1].meter.ch1	Ultrix.slot1.head1-pip[1].meter.ch2
43	PIP H1 2		Ultrix.slot1.head1-pip[2].sdi.ch1	Ultrix.slot1.head1-pip[2].meter.ch1	Ultrix.slot1.head1-pip[2].meter.ch2
44	PIP H1 3		Ultrix.slot1.head1-pip[3].sdi.ch1	Ultrix.slot1.head1-pip[3].meter.ch1	Ultrix.slot1.head1-pip[3].meter.ch2
45	PIP H1 4		Ultrix.slot1.head1-pip[4].sdi.ch1	Ultrix.slot1.head1-pip[4].meter.ch1	Ultrix.slot1.head1-pip[4].meter.ch2
46	PIP H1 5		Ultrix.slot1.head1-pip[5].sdi.ch1	Ultrix.slot1.head1-pip[5].meter.ch1	Ultrix.slot1.head1-pip[5].meter.ch2
47	PIP H1 6		Ultrix.slot1.head1-pip[6].sdi.ch1	Ultrix.slot1.head1-pip[6].meter.ch1	Ultrix.slot1.head1-pip[6].meter.ch2
48	PIP H1 7		Ultrix.slot1.head1-pip[7].sdi.ch1	Ultrix.slot1.head1-pip[7].meter.ch1	Ultrix.slot1.head1-pip[7].meter.ch2
49	PIP H1 8		Ultrix.slot1.head1-pip[8].sdi.ch1	Ultrix.slot1.head1-pip[8].meter.ch1	Ultrix.slot1.head1-pip[8].meter.ch2
50	PIP H1 9		Ultrix.slot1.head1-pip[9].sdi.ch1	Ultrix.slot1.head1-pip[9].meter.ch1	Ultrix.slot1.head1-pip[9].meter.ch2
51	PIP H1 10		Ultrix.slot1.head1-pip[10].sdi.ch1	Ultrix.slot1.head1-pip[10].meter.ch1	Ultrix.slot1.head1-pip[10].meter.ch2
52	PIP H1 11		Ultrix.slot1.head1-pip[11].sdi.ch1	Ultrix.slot1.head1-pip[11].meter.ch1	Ultrix.slot1.head1-pip[11].meter.ch2
53	PIP H1 12		Ultrix.slot1.head1-pip[12].sdi.ch1	Ultrix.slot1.head1-pip[12].meter.ch1	Ultrix.slot1.head1-pip[12].meter.ch2
54	PIP H1 13		Ultrix.slot1.head1-pip[13].sdi.ch1	Ultrix.slot1.head1-pip[13].meter.ch1	Ultrix.slot1.head1-pip[13].meter.ch2
55	PIP H1 14		Ultrix.slot1.head1-pip[14].sdi.ch1	Ultrix.slot1.head1-pip[14].meter.ch1	Ultrix.slot1.head1-pip[14].meter.ch2
56	PIP H1 15		Ultrix.slot1.head1-pip[15].sdi.ch1	Ultrix.slot1.head1-pip[15].meter.ch1	Ultrix.slot1.head1-pip[15].meter.ch2
57	PIP H1 16		Ultrix.slot1.head1-pip[16].sdi.ch1	Ultrix.slot1.head1-pip[16].meter.ch1	Ultrix.slot1.head1-pip[16].meter.ch2
58	PIP H2 1		Ultrix.slot1.head2-pip[1].sdi.ch1	Ultrix.slot1.head2-pip[1].meter.ch1	Ultrix.slot1.head2-pip[1].meter.ch2
59	PIP H2 2		Ultrix.slot1.head2-pip[2].sdi.ch1	Ultrix.slot1.head2-pip[2].meter.ch1	Ultrix.slot1.head2-pip[2].meter.ch2
60	PIP H2 3		Ultrix.slot1.head2-pip[3].sdi.ch1	Ultrix.slot1.head2-pip[3].meter.ch1	Ultrix.slot1.head2-pip[3].meter.ch2
61	PIP H2 4		Ultrix.slot1.head2-pip[4].sdi.ch1	Ultrix.slot1.head2-pip[4].meter.ch1	Ultrix.slot1.head2-pip[4].meter.ch2
62	PIP H2 5		Ultrix.slot1.head2-pip[5].sdi.ch1	Ultrix.slot1.head2-pip[5].meter.ch1	Ultrix.slot1.head2-pip[5].meter.ch2
63	PIP H2 6		Ultrix.slot1.head2-pip[6].sdi.ch1	Ultrix.slot1.head2-pip[6].meter.ch1	Ultrix.slot1.head2-pip[6].meter.ch2
64	PIP H2 7		Ultrix.slot1.head2-pip[7].sdi.ch1	Ultrix.slot1.head2-pip[7].meter.ch1	Ultrix.slot1.head2-pip[7].meter.ch2
65	PIP H2 8		Ultrix.slot1.head2-pip[8].sdi.ch1	Ultrix.slot1.head2-pip[8].meter.ch1	Ultrix.slot1.head2-pip[8].meter.ch2
66	PIP H2 9		Ultrix.slot1.head2-pip[9].sdi.ch1	Ultrix.slot1.head2-pip[9].meter.ch1	Ultrix.slot1.head2-pip[9].meter.ch2
67	PIP H2 10		Ultrix.slot1.head2-pip[10].sdi.ch1	Ultrix.slot1.head2-pip[10].meter.ch1	Ultrix.slot1.head2-pip[10].meter.ch2

Figure 8 Example of Defining the Audio Meter Ports

There are two stages to configuring Audio Meter Logical Source mode support:

1. Ultriscape Layout and Head Configuration
2. Logical Database Configuration

Audio Meter Behaviors

Table 8 summarizes the behaviors for the Audio meters in Physical vs. Logical mode under various switching scenarios. Note for all “Logical” switching scenarios, the assumption is that the Ultriscape Layout/Head is configured for meters and that the appropriate meter ports have been assigned to the database as required.

Table 8 Expected Audio Meter Behavior

Audio Meter Source Mode	Source Port Definition	Input License	Result
Logical	No Logical Audio defined	No	Bars active (Physical shown)
Logical	No Logical Audio defined	Yes	No bar activity
Logical	Logical Audio defined	Yes	Bars Active (Logical shown)
Logical	Logical with pass-through port	Yes	Bars Active (Logical shown, Physical on pass-through)
Logical	Port set to 'Bypass'	Yes	Bars Active (Physical shown)
Physical	No Logical defined	No	Bars active (Physical shown)
Physical	No Logical defined	Yes	Bars active (Physical shown)
Physical	Logical Audio defined	Yes	Bars active (Physical shown)
Physical	Logical with pass-through port	Yes	Bars active (Physical shown)
Physical	Port set to 'Bypass'	Yes	Bars active (Physical shown)

Notes

- If the input port is from an UltriMix enabled slot, then the logical definition can be used to route the audio.
- To see the physical audio associated with an UltriMix input, there would need to be an additional source defined in the logical database that has the appropriate pass through (or audio ports) assigned (similar to defining "breakaway" audio sources) (or the user can set the Ultriscape Head to Physical mode).

Configuration Example

Consider the following scenario: a bilingual source is defined where the English audio appears on embedded channels 1 and 2, and the French audio appears on embedded channels 3 and 4 and a PiP destination is defined to have audio metering showing 2 channels.

Table 9 Example 1

	SDI Level	Level A1	Level A2
Source Name			
Src 1 EN	Slot1.in[1]	Slot1.in[1].ch1	Slot1.in[1].ch2
Src 1 FR	Slot1.in[1]	Slot1.in[1].ch3	Slot1.in[1].ch4
Destination Name			
PiP1	Head1-pip[1]	pip[1].meter.ch1	pip[1].meter.ch2

When the user routes source 'Src 1 EN' to the PiP, it will display the SDI from Slot1.in[1] port, and the embedded audio channels 1 and 2 will be mapped to the PiP meters 1 and 2.

When the user routes source 'Src 1 FR' to the PiP, it will display the SDI from Slot1.in[1] port, and the embedded audio channels 3 and 4 will be mapped to the PiP meters 1 and 2.

Ultriscape Layout and Head Configuration

When activated, the Logical Mode setting is global to the Head and affects all PiPs defined on that Head that are not in **Dest Follow** mode. The Logical Mode is enabled regardless of which layout is active on the Head.

To enable logical source mode on a PiP of an Ultriscape Head

1. Define an Ultriscape layout with PiPs that include audio meters as outlined in "**Adding a Block of Audio Meters**".
2. Activate the layout on the required Ultriscape Head as outlined in "**Assigning a Layout to an Ultriscape Head**".
3. Assign the sources for each PiP in the layout as outlined in "**Assigning a Source to a PiP**".
4. Make a note of which PiPs in the layout display the audio meter bar(s) you wish to configured. This information is required when assigning meter ports in the database.

✶ The audio meters on PiPs set to **Dest Follow** mode always represent what has been embedded into the output SDI stream, regardless of the Head's Audio Meter setting.

5. Select **Logical** from the **Head Audio Meter Settings** menu located at the bottom of the Head Selection tab.

✶ To disable the Logical Mode, select **Physical** from the Head Audio Meter Setting menu.

Logical Database Configuration

This section outlines the database configuration steps necessary to enable Logical Source Audio meter support on an Ultriscape PiP and Head.

To assign PiP audio meter ports to Multiviewer PiP Destinations

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

   The **Destinations** tab opens.

2. Assign the Ultriscape Head to a Destination in the database as outlined in "**Assigning Ultriscape Head Destinations**".
3. Assign a PiP audio meter port to level for that Head Destination as follows:

✶ The database level to which the meter bar's port is assigned determines the signal for which the bar will display audio meter data when switched. The bar will display the audio meter data from the audio port channel assigned to the corresponding level of a logical source when switched to the PIP destination.

   a. Select the first cell in the first **Level** column of the **Destination** row for the Head output.

      This will be the first meter bar in the PiP.

   b. Choose a PiP meter output from the available list.

      The meter outputs are labeled as `Ultrix.slot#head#-pip[#].meter.ch#`. For example, to assign the first bar for the second PiP of Head 3, you would select `Ultrix.slot#head3-pip[2].meter.ch1`.

   c. Click **Assign**.

4. Repeat step 3 for each audio meter bar you want to assign.

✶ It is not required to add meter port entries to the database for bars that will not be shown in a PiP.

Clock Control

This chapter outlines how to operate a clock object in an Ultriscape layout, and the supported RossTalk commands for Ultriscape clock state control.

For More Information on…

- the Clock Control interface, refer to "**Clock Control Interface**".

Adding a Clock Object to a Layout

When creating layouts with a clock object, you first must define the types of clock(s) available to add to a layout. The **Clocks** tab in the **Layout Editor** is used to define and list the available clocks.

✶ You can define a maximum of 20 system clock types in the Layout Editor > Clocks tab. An error message displays in the bottom left corner of the Clocks tab if you exceed the maximum.

Defining a Clock

A clock can perform one of the following functions:

- Time-of-day — this clock is a 24 hour display of system time. You can add an offset to display time zone relative to the system time. By default, one clock is defined as this type.
- Count down — the clock counts down from a set point. This may be controlled via RossTalk commands or the clock control panel.
- Stop watch — the clock counts up from a value of 00:00:00. This may be controlled via RossTalk commands or the Clock Control interface.

To define a clock

1. Double-click the **Layout Editor** node located under the **Ultriscape** node.

   The **Layout Editor** interface opens.

2. Select the **Clocks** tab.

   The **Clocks** tab is organized as a table where each row represents a specific clock that is available to add to your layouts.

3. Right-click the last row in the tab.
4. Select **Insert Row Below**.

   A new blank row displays in the tab. The text "`New Clock #`" displays in the **Name** cell of the new row.

5. To name the clock:
   a. Select the **Name** cell in the new row.
   b. Type a unique identifier in the **Name** cell.

      This text will be used to identify this clock object in the Layout Editor menus.

6. To assign a function to the clock:
   a. Right-click the **Type** cell in the new row.
   b. Select an option. Refer to **Table 20** for a list of options.
7. Use the **Offset** menu to specify an offset (hh:mm) relative to the system clock.

✶ This value is only applicable when **Type** is set to **timeofday**.

8. Use the **Time Value** menu to specify the timer start value (hh:mm:ss).

✶ This value is only applicable when **Type** is set to **countdown**.

9. Click **Apply**.

Adding a Clock to a Layout

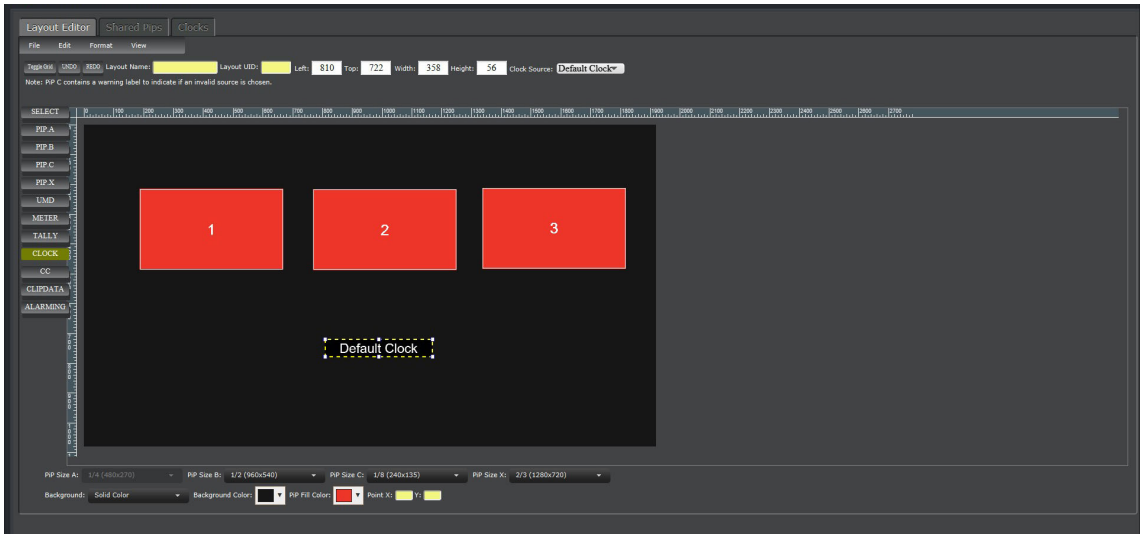
A clock may be placed on a PiP or the layout background.

✶ You can add up to 16 clock objects per Ultriscape head. For example, on an ULTRX-FR12 with 48 licensed Ultriscape heads, there can be up to 768 clock objects (16 clocks per head x 48 heads). An error message displays in the top right corner of the Layout Editor if you exceed the maximum.

To add a clock to a PiP

1. Create or load a layout in the Ultriscape Layout Editor.
2. From the **Objects** toolbar, click **CLOCK**.
3. Use the mouse pointer to indicate where to create the box for the clock on a PiP of the layout.

   The box auto-populates with the text "`Default Clock`".



4. From the **Objects** toolbar, click **SELECT**.
5. Select the clock box you created in step 3.

   The Clock menus display under the main toolbar.
6. Use the **Clock Source** menu to specify the clock to use in the clock selected box.

   The box auto-populates with the clock function you selected.

✶ There may be only four clocks in a horizontal line across the layout. The bounding box (dotted outline) of small clocks increases to indicate this.

Using a Clock Object

The procedure for operating a clock in Ultriscape is the same for either countdown or stopwatch types. There is no control option for time-of-day clocks.

To use a clock

1. Configure your clock type(s) as outlined in "**To define a clock**".
2. Add a clock to an Ultriscape layout as outlined in "**Adding a Clock Object to a Layout**".

3. Assign the layout to an Ultriscape Head as outlined in "**Assigning a Layout to an Ultriscape Head**".
4. Double-click the **Clock Control** sud-node in the Ultriscape tree.

   The **Clock Control** tab opens.
5. Select the row for the Clock ID for the stopwatch you wish to use.
6. Use the buttons in the right toolbar to control the clock. Choose from the following:
   - **PLAY** — starts the stopwatch or countdown timer.
   - **RESET** — stops the stopwatch or countdown timer and resets it 00:00:00.
   - **PAUSE** — temporarily stops the stopwatch or countdown timer without resetting to start point. Click this button again to re-start the clock.

Using RossTalk with Ultriscape Clock Objects

Table 10 outlines the supported RossTalk commands for Ultriscape Clock state control and reporting messages where:

- **id** represents the unique "global clock id" associated with a clock time source. Note that more than one clock display element may point to the same time source clock ID.
- **state** represents the current or requested state for the clock / time source. Valid state values are:
  - run — the clock (or timer/stopwatch) is running. The time-of-day clocks always reports 'run'.
  - stop — the clock is in a stopped state and reflects the default time for its type (e.g. timer: full timer value, stopwatch: 0:0:0.0). This is only valid for stopwatch/timer type.
  - pause — the clock is paused and displays the current time value. When returned to 'run' it will resume counting from the current time value. This is only valid for stopwatch/timer type.
  - end — a timer has counted fully down and reached 0 time remaining. This is only valid for timer type notifications/responses.
  - set — assigns the timer value to "value".

Table 10 Ultriscape Clocks — Supported RossTalk Commands

Received Message	
Command	**Description**
TIMER id:RUN	Request Timer ID to start/resume
TIMER id:STOP	Request Timer ID to stop
TIMER id:PAUSE	Request Timer ID to pause
TIMER id:END	Request Timer ID to end
TIMER id:SET:hh:mm:ss.s	Request to set Timer value

Monitoring Options

A Multiviewer layout can include Alarms display objects. When an alarm condition is triggered, as defined in the Alarming Configuration interface, the Ultriscape output displays an error message until the condition is no longer detected. This chapter outlines how to add an Alarms display object to a Multiviewer Layout, and specify what conditions to monitor.

Overview

The steps to add an Alarms display object on a Multiviewer layout are as follows:

1. Ensure an Ultriscape-CA license is enabled on the router. Refer to "**Software License Keys**".
2. Create a Multiviewer layout using the Layout Editor. Refer to "**Creating a Layout**".
3. Add an Alarms display object to the PiP(s). Refer to "**Adding an Alarm Display Object to a Layout**".
4. Assign the layout to an Ultriscape Head. Refer to "**Assigning a Layout to an Ultriscape Head**"
5. Specify the alarm messages to report on the layout. Refer to "**Selecting an Alarm Condition to Monitor**".

This chapter outlines how to add an Alarms display object to a Multiviewer Layout (step 3), and specify what conditions to monitor (step 5).

Adding an Alarm Display Object to a Layout

Adding an Alarm display object is much like adding a layout object as outlined in "**Adding Objects to a Layout**".

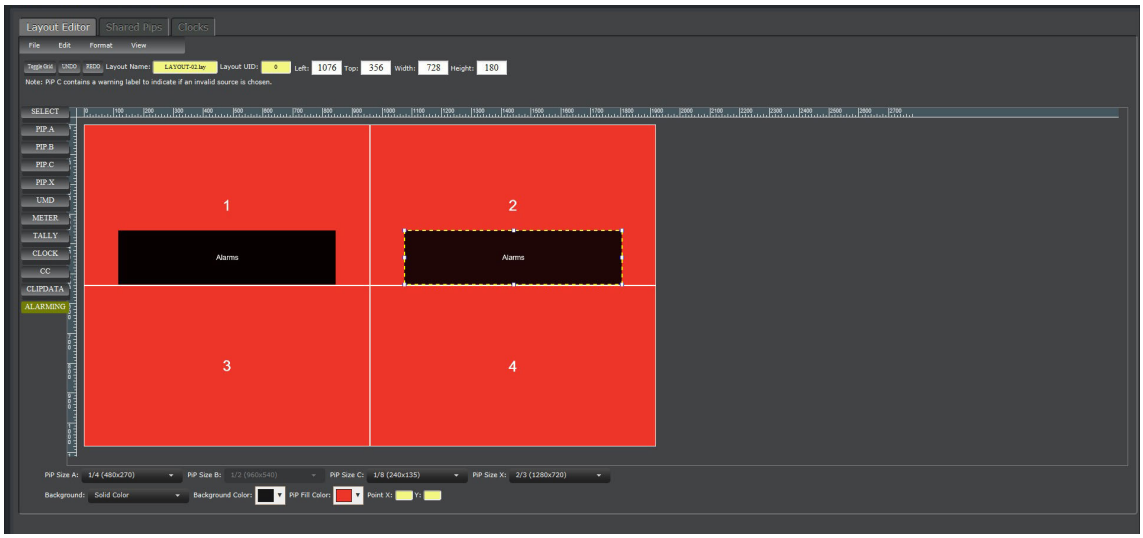
✶ Alarm display objects doe not have a limitation on where they are located other than they cannot overlap with another alarm object, or UMD/Label object. This enables you to position an Alarm display object outside a PiP to avoid blocking the video image.

To add an Alarm display object to a layout

1. Create or load a layout in the Ultriscape Layout Editor.
2. From the **Objects** toolbar, click **Alarming**.
3. Select the PiP that will display the Alarms display object.

   The Alarms object on the PiP automatically displays "`Alarms`".

   In the example below, the user added an Alarms object to PiP 1 and PiP 2.



4. If required, re-position the Alarms display object on the PiP.
5. Save the layout as outlined in "**Saving a Layout**".

Selecting an Alarm Condition to Monitor

Once the Alarm display objects are added to the PiP(s), and the layout is assigned to an Ultriscape Head, proceed to configure what messages the layout will report. The content of the Alarm display object is configured using the options in the Alarming Configuration interface.

To access the Alarming Configuration interface

1. Launch the DashBoard client.
2. Locate the **Ultrix** node in the Tree View.
3. Expand the **Ultrix** node to display a list of sub-nodes in the Tree View.
4. Double-click the **Alarming Configuration** sub-node.

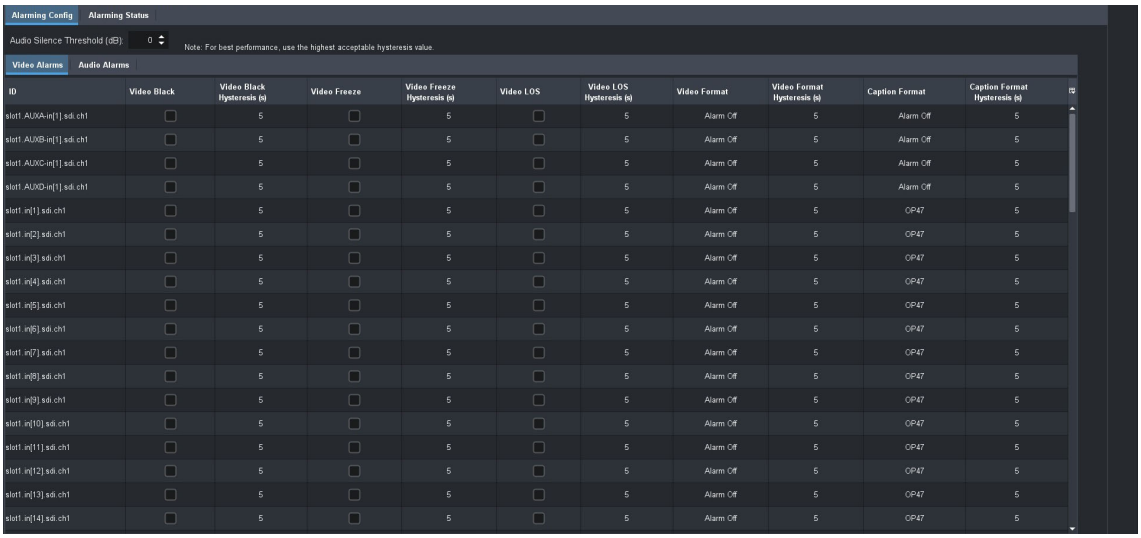
   The Alarming Configuration interface opens in the DashBoard window.

Video Monitoring

The Video Alarms tab arranges the options in a table where each row represents a specific router port and the columns are the monitoring options. Each port can be configured for monitoring as required.

To enable video monitoring

1. Display the **Alarming Configuration** interface as outlined in "**To access the Alarming Configuration interface**".
2. Select the **Alarming Config** tab.
3. Select the **Video Alarms** sub-tab.



4. Locate the row for the first port you wish to monitor.
5. To trigger an alarm when the video signal is set to black:
   a. Select the **Video Black** box.
   b. Use the **Video Black Hysteresis** to specify the number of seconds the video is set to black before an error is reported.
6. To trigger an alarm when there is an extended amount of time with no active picture changes:

✶ If there is a loss of signal that produces a frozen image, and the Video LOS alarm is enabled for the port, a Video LOS message takes precedence.

   a. Select the **Video Freezes** box.
   b. Use the **Video Freezes Hysteresis** (ms) to specify the number of milliseconds the signal is set to a single frame of video before an error is reported.
7. To trigger an alarm when a valid SDI signal is no longer detected:
   a. Select the **Video LOS** box.
   b. Use the **Video LOS Hysteresis** (ms) to specify the number of milliseconds a valid SDI signal is absent before an error is reported.
8. To trigger an alarm when the input video format does not match the user's selected format:

✶ The video format is reported on the PiP to help the diagnose the problem.

   a. Select the **Video Format** box.
   b. Use the **Video Format Hysteresis** (ms) to specify the number of milliseconds the signal is incompatible before an error is reported.
9. To trigger an alarm for monitoring the closed caption data of a signal:

✶ The closed caption format is reported on the PiP to help the diagnose the problem.

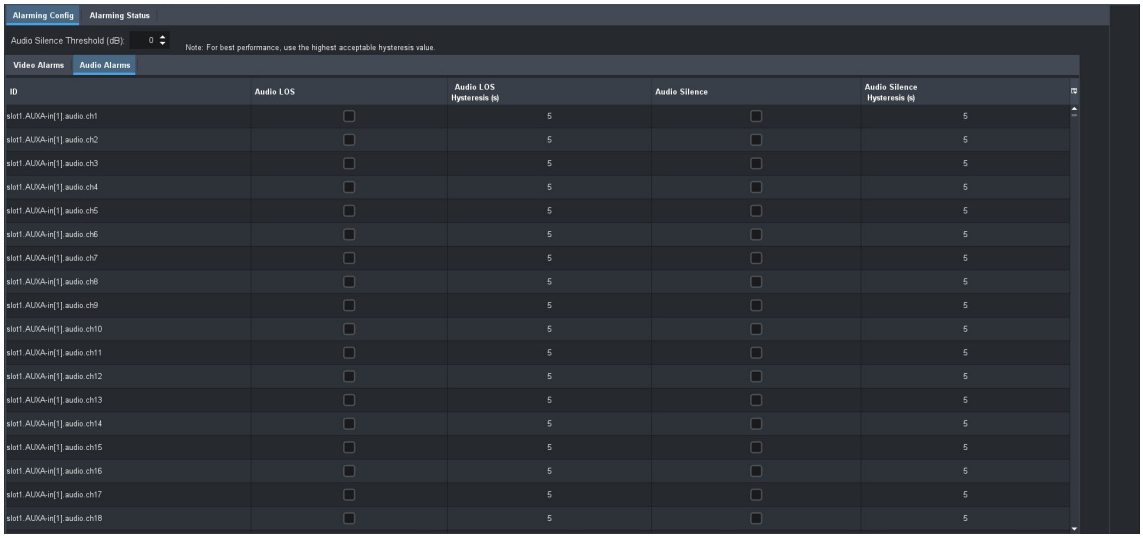
   a. Select the **Caption Format** box.
   b. Use the **Caption Format Hysteresis** (ms) to specify the number of milliseconds the closed captioning data is lost before an error is reported.

Audio Monitoring

The Audio Alarms tab arranges the options in a table where each row represents a specific audio channel and the columns are the monitoring options. Each audio channel can be configured for monitoring as required.

To enable audio monitoring

1. Display the **Alarming Configuration** interface as outlined in "**To access the Alarming Configuration interface**".
2. Select the **Alarming Config** tab.
3. Select the **Audio Alarms** sub-tab.



4. Locate the row for the first audio channel you wish to monitor.
5. Use the **Audio Silence Threshold** (ms) field to specify the maximum number of milliseconds any audio channels are silent before an alarm is triggered.
6. To trigger an alarm when there is invalid audio signal:
   a. Select the **Audio LOS** box.
   b. Use the **Audio LOS Hysteresis** (ms) to specify the number of milliseconds a valid audio signal is absent before an error is reported.
7. To trigger an alarm when the audio signal is muted or silent for a specific channel:
   a. Select the **Audio Silence** box.
   b. Use the **Audio Silence Hysteresis** (ms) to specify the number of milliseconds the audio signal is muted/silent before an error is reported.

Monitoring via an Ultriscape Output

To be used for alarming, a PiP must include an Alarms display object; and is assigned to a source that has at least one alarm trigger enabled.

When an alarm is trigged, an error message displays on the output to indicate the status. Once the error status is cleared (such as when the Video LOS alarm is enabled, the signal is lost but then the signal is restored), the error message no longer displays. **Figure 9** shows that Src 1 is reporting two errors: a loss of video and a loss of audio.

Figure 9 Example of a PiP Reporting Two Alarm Messages via an Ultriscape Output

Monitoring via the Alarming Status Tab in DashBoard

The Alarming Status tab provides a summary of the alarms currently trigged. (**Figure 10**) Select an Ultriscape Head from the MV Head list to filter the Messages area.

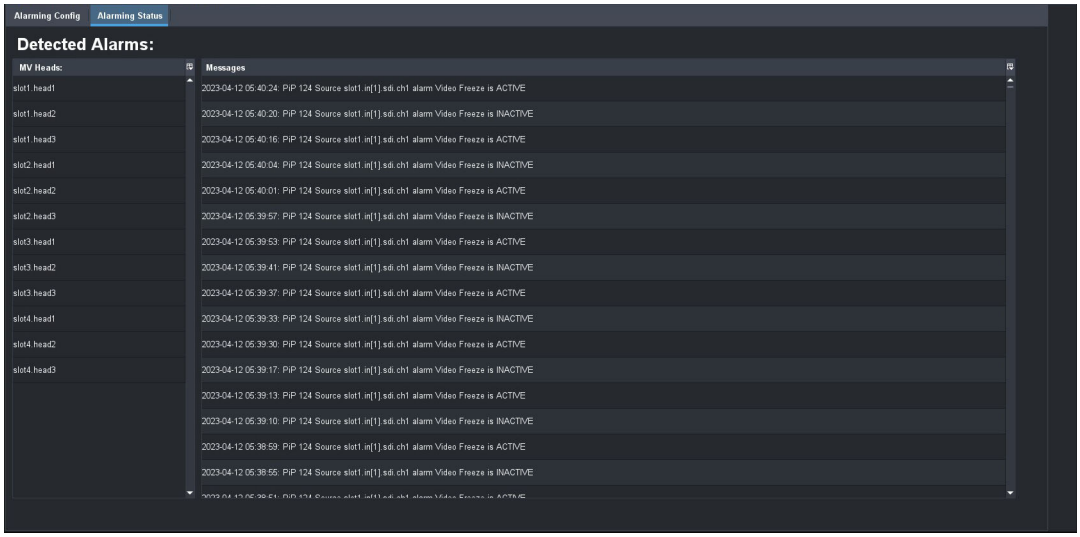


Figure 10 Example of Messages Reported in the Alarming Status Tab

Ultriscape Menus Overview

This chapter summarizes the nodes, tabs, menus, and parameters for the Ultriscape feature in DashBoard.

For More Information on...

- the DashBoard client software, refer to the ***DashBoard User Manual***.
- navigating the interfaces in DashBoard, refer to "**Accessing the Ultriscape Interfaces**".

Ultriscape in DashBoard

The Ultriscape licensed feature provides the following nodes in the DashBoard tree view: Configuration, Layout Editor, and Head Selection. (**Figure 11**) Double-click a node to displays its interface in the DashBoard window.

The Ultriscape tree provides access to the global configuration options, the Ultriscape Layout Editor, and the Head Selection interfaces. Use the Ultriscape Layout Editor to manage the layouts and the Head Selection to assign sources to the Ultriscape Head outputs.

Figure 11 Ultriscape Nodes

Terminology

Throughout the DashBoard interface, actual sockets (inputs and outputs) of a router (or matrix) are referred to by hierarchical dotted notation: **Frame.Slot.Port.Type.Channel** where:

- **Frame** identifies the physical router chassis housing the matrix/matrices.
- **Slot** identifies which slot in the matrix the socket is located in.
- **Port** identifies the physical input or output socket.
- **Type** identifies the generic signal type (e.g. SDI, audio).
- **Channel** identifies the audio channel within an SDI stream.

These designators may be assigned more user friendly names if required by editing the **Port Labels** interface.

Licenses > Ultriscape Tab

The **Device Configuration** > **Licenses** > **Ultriscape** interface reports on the number of Ultriscape licenses installed, and the number of Ultriscape Heads enabled on the Ultrix router. (**Figure 12**) From this tab, you can assign an Ultriscape Head to a physical OUT socket on the router.

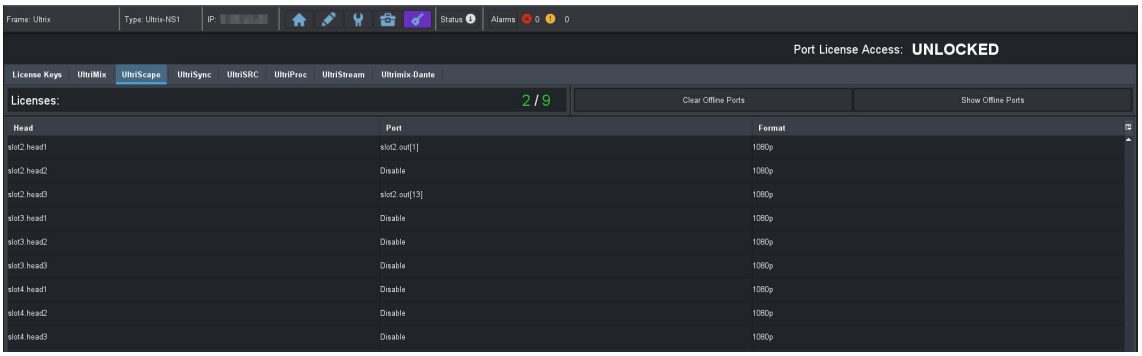


Figure 12 Example of the Device Configuration > Licenses > Ultriscape Tab

✶ At least one Ultriscape license must be installed for a slot before you can assign an Ultriscape Head to a router output in that slot.

The Ultriscape tab is organized into three columns:

- **Head** — read-only fields that report the physical address name of an Ultriscape output.
- **Port** — used to enable/assign an Ultriscape Head.
- **Format** — used to select the an Ultriscape output format.

Configuration Interface

The Configuration interface is the first node listed in the Ultriscape tree. This interface provides global layout editor settings that apply to all Ultriscape layouts and heads in the current database. (**Figure 13**) From this interface you can specify the Global PiP settings, tally colors, and tally label behavior.

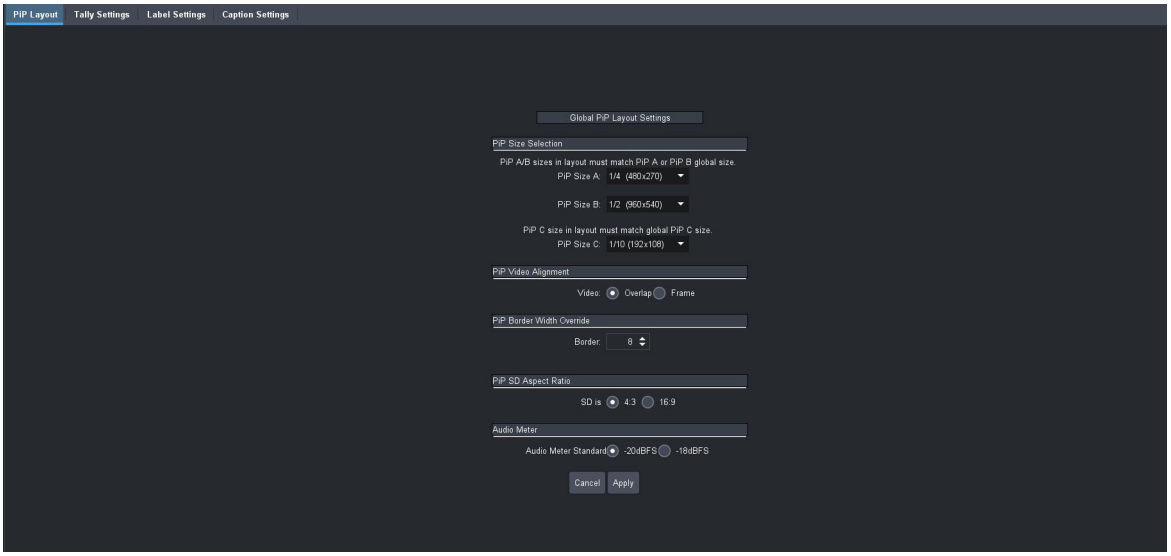


Figure 13 Example of the Configuration Interface

PiP Layout Tab

Table 11 summarizes the options displayed in the Layout Editor Settings > PiP Layout tab.

Table 11 Layout Editor Settings — PiP Layout Tab

Item	Parameters	Description
PiP Size Selection		
PiP Size A	#	Specifies the default dimensions of the PiP Size A template for all layouts created with the current database. The default is 1/4 (480x270).
PiP Size B	#	Specifies the default dimensions of the PiP Size B template for all layouts created with the current database. The default is 1/2 (960x540).
PiP Size C	#	Specifies the default dimensions of the PiP Size C template for all layouts created with the current database. The default is 1/8 (240x135).
PiP Video Alignment		
Video	Overlap	The PiP border overlaps the video image. The PiP Border Width Override fields are set to read-only.
	Frame	The PiP border frames the video image. The video image is modified to fit inside the PiP but not overlap the border.
PiP Border Width Override		
Border	#	Sets the border width (in number of pixels) for all layouts created with the current database
PiP SD Aspect Ratio		
SD is	4:3	270Mbit SD SDI is 4x3 format
	16:9	270Mbit SD SDI is of 16x9 format
Audio Meter		
Auto Meter Standard	-20dBFS	Audio meter green to yellow transition equates to audio level of -20dBFS
	-18dBFS	Audio meter green to yellow transition equates to audio level of -18dBFS
Cancel		Click this button to cancel the settings. No changes to the PiP Layout tab will be made.
Apply		Click this button to apply the new tab settings.

Tally Settings Tab

Table 12 summarizes the options displayed in the Layout Editor Settings > Tally Settings tab.

Table 12 Layout Editor Settings — Tally Settings Tab

Item	Parameters	Description
Tally Lamp Color		
Tally #[a]	Red	When the tally is active (on), the tally object is set to red in the Ultriscape layout. By default, Tally 0 is set to Red.
	Green	When the tally is active (on), the tally object is set to green in the Ultriscape layout. By default, Tally 1 is set to Green.
Tally Label Text Settings		
Source Mode	overwrite	When a PiP is assigned to Src # in the Head Selection interface, and the Label Type is set to Tally, the label text is determined by the tally label.
	append	When a PiP is assigned to Src # and the Label Type is set to Tally, the label text is `src : tally` where: • `src` — represents the source label defined in the Ultrix database. • `tally` — represents the text defined by the tally label.
Follow Dest Mode	overwrite	When a PiP is assigned to Follow Dest # in the Head Selection interface, and the Label Type is set to Tally, the label text is determined by the tally label.
	append	When a PiP is assigned to Follow Dest # and the Label Type is set to Tally, the label text is `dest : tally` where: • `dest` — represents the destination label defined in the Ultrix database. • `tally` — represents the text defined by the tally label.
Tally Behavior Settings		
When both tallies are on:	Red tally only	Only the red tally indicator is lit. The green is off.
	Both tallies lit	Both the red and green tally indicators are lit.

a. The function of Tally 0 and Tally 1 is determined by the TSL UMD protocol version as outlined in the ***Ultrix User Guide***.

Label Settings Tab

Table 13 summarizes the options displayed in the Layout Editor Settings > Label Settings tab.

Table 13 Layout Editor Settings — Label Settings Tab

Item	Parameters	Description
Label Settings		
Dest Follow Label Displays	DST:SRC	Select this option if the Destination Follow feature is enabled in the routing database. The label text reports as Destination : Source.
	SRC	The label text reports the Source name only
Label Background Opacity (%)	0 to 100	Adjusts the background transparency level of all label boxes in all PiPs of all Ultriscape Heads where: • 0 — The label background is completely opaque. Only the label text is visible. • 100 — The label background is completely transparent; the video in the PiP is visible through the label background.

Caption Settings Tab

Table 14 summarizes the options displayed in the Layout Editor Settings > Caption Settings tab.

Table 14 Layout Editor Settings — Caption Settings Tab

Item	Parameters	Description
Caption ANC Logging		
Caption Logging Mode	Errors Only*	The Ultriscape Closed Caption system creates event logs which are not user accessible but may be required by Ross Technical Support. ✶Do not set to All unless instructed by Ross Technical Support.
	All	
CEA-608 Settings		
Extended character automatic backspace	Selected	Enables support for the limited set of CEA-608 extended characters (including backspaces). Select this option if your external devices require extended ASCII characters.
	Cleared	Disables this feature

Layout Editor Interface

The Layout Editor interface is the second node displayed in the Ultriscape tree. The Ultriscape Layout Editor provides a central workspace with menus and options organized into toolbars that enable you to customize a layout. The interface also includes three tabs at the top: Layout Editor, Shared PiPs, and Clocks.

Layout Editor Tab

The Layout Editor tab includes a toolbar at the top of the interface, the workspace in the middle, rulers along the top and left side of the workspace, and a toolbar for selecting and adding objects to the layout. (**Figure 14**) From the Ultriscape Layout Editor interface you can edit, load and save layouts, add objects to a layout, and modify the tiles within a layout.

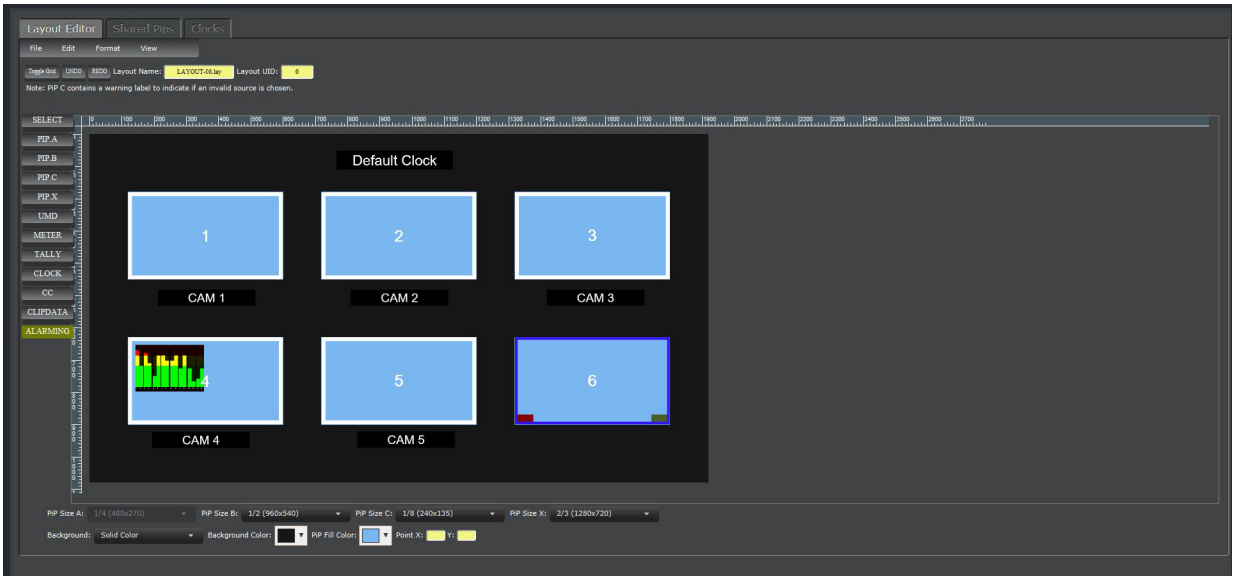


Figure 14 Example of the Layout Editor with a Loaded Layout

Main Toolbar

The Main toolbar is located under the Layout Editor tab. (**Figure 15**) The options are organized into two areas: a row of menus at the top, and a row of buttons and fields at the bottom. The buttons and fields will change depending on what is selected in the workspace.

Figure 15 Layout Editor — Main Toolbar when a PiP is Selected

Table 15 outlines the menus and buttons available from the Main toolbar.

Table 15 Main Toolbar Menus and Buttons

Name	Description
File	Provides options for loading templates, publishing layouts to the Ultriscape Head interface, opening a previously saved layout, managing PiP templates, and saving the changes to the currently loaded layout.
Edit	Provides options, such as copy, paste, delete, and select all, for managing the objects in the currently loaded layout.
Format	Provides global options for distributing the PiPs within a layout.
View	Provides options for changing how the loaded layout is currently displayed in the Ultriscape Layout Editor. The default is 100%.

Table 15 Main Toolbar Menus and Buttons (Continued)

Name	Description
Toggle Grid	Click to toggle to display or hide the workspace grid. The grid is hidden by default. To change the dimensions of the grid, select **Format** > **Grid** and use the **Configure Grid** dialog to specify the grid spacing (in number of pixels). You must also select the **User Spacing** check box to apply the new dimension.
UNDO	Reverses the last change made to the layout.
REDO	Repeats the last change made to the layout.
Layout Name	Displays the filename of the layout currently loaded in the Ultriscape Layout Editor workspace.
Layout UID	Displays the unique identifier of the layout currently loaded in the Ultriscape Layout Editor workspace. This is an auto-generated number.
LOAD PiP	This button only displays when you select a PiP on the loaded layout. Enables you to load and apply a previously saved PiP template.
SAVE PiP	This button only displays when you select a PiP on the loaded layout. Use it to save the current PiP as a template to be recalled and applied to other PiPs.
Border Width	This field only displays when you select a PiP on the loaded layout. Use this field to specify the border width in number of pixels and lines.
Border Type	This field only displays when you select a PiP on the loaded layout. Use this field to define the border applied to the selected PiP.

Ultriscape Layout Editor Keyboard Shortcuts

Table 16 outlines the keyboard shortcuts for the Ultriscape Layout Editor.

Table 16 Keyboard Shortcuts

Task	Keyboard Shortcut
File Menu	
New Layout	Alt+N
Load from Local	Ctrl+Shift+O
Save to Local	Ctrl+Shift+L
Delete from Local	Ctrl+Shift+D
Load from Ultricore	Alt+O
Save to Ultricore	Alt+S
Delete from Ultricore	Alt+D
Load Layout Template from Ultricore	Alt+T
Load PiP from Ultricore	Shift+O
Save PiP to Ultricore	Shift+S
Delete PiP from Ultricore	Ctrl+D
Upload Background Image	Ctrl+Shift+U

Table 16 Keyboard Shortcuts (Continued)

Task	Keyboard Shortcut
Edit Menu	
Undo	Ctrl+Z
Redo	Ctrl+Shift+Z
Copy	Ctrl+C
Paste	Ctrl+V
Clear All	Ctrl+Shift+C
Delete	Del
Select All	Ctrl+A
Refresh	F5
View Menu	
Zoom 100%	Ctrl+0
Zoom 50%	Ctrl+5
Zoom 25%	Ctrl+2

Objects Toolbar

The Objects toolbar is located on the left side of the interface and provides tools for adding and editing the objects in a loaded layout. Objects are elements that you can place, re-size, and re-position as required within the layout.

Table 17 outlines the menus available from the Objects toolbar. Refer to "**Managing the Objects in a Layout**" for more details.

Table 17 Objects Toolbar Icons

Name	Description
SELECT	This pointer tool enables you to select objects and PiPs in the loaded layout. When selecting a PiP, the overlay settings are displayed in the Main toolbar. Select more than one PiP to make global overlay changes to the layout.
PIP A	Enables you to add a new pre-defined PiP A to the layout. Specify the settings for PiP A in the Layout Editor > Configuration tab.
PIP B	Enables you to add a new pre-defined PiP B to the layout. Specify the settings for PiP B in the Layout Editor > Configuration tab.
PIP C	Enables you to add a new pre-defined PiP C to the layout. Specify the settings for PiP C in the Layout Editor > Configuration tab. A Warning label is automatically added to the PiP (label cannot be deleted, but can be re-positioned). Supported only on the ULTRIX-HDX-IO and ULTRIX-MODX-IO blades.
PIP X	Enables you to add a new pre-defined PiP X to the layout. Specify the settings using the PiP Size X menu located in the Bottom toolbar.
UMD	Enables you to add a new label box on the loaded layout.
METER	Enables you to add a new set of audio meters on the loaded layout.
TALLY	Enables you to add tally lamps to the selected PiP. Refer to the Ultrix User Guide for details.

Table 17 Objects Toolbar Icons (Continued)

Name	Description
CLOCK	Enables you to add a clock to the layout. Specify the settings for the clock in the Layout Editor > Clocks tab.
CC	Enables you to add a Closed Caption display object to a PiP. Refer to "**Displaying Closed Caption Data**".
CLIPDATA	When the Ultriscape-CA license is enabled, you can add a Clip metadata display object to a PiP. Refer to "**Configuring an Ultriscape Head to Display Metadata**".
ALARMING	Enables you to add an alarms display object to the layout. Refer to "**Adding an Alarm Display Object to a Layout**"

Bottom Toolbar

The Bottom toolbar of the interface enables you to customize the overall look of the currently loaded layout.(**Figure 16**)

Figure 16 Layout Editor — Bottom Toolbar Example

Table 18 outlines the menus available from the Bottom toolbar.

Table 18 Bottom Toolbar Menus

Name	Description
PiP Size A	Specifies the dimensions for Local PiP A. This applies to the current layout using PiP A created/edited during this session.
PiP Size B	Specifies the dimensions for Local PiP B. This applies to the current layout using PiP B created/edited during this session.
PiP Size C	Specifies the dimensions for Local PiP C. This applies to the current layout using PiP C created/edited during this session. Supported only on the ULTRIX-HDX-IO and ULTRIX-MODX-IO blades.
PiP Size X	Specifies the dimensions for Local PiP X. This applies to the current layout using the PiP X applied during this session. Note that each layout can only include a maximum of one PiP X tile.
Background	Specifies the background the entire layout (solid color or a loaded still image). The default is Solid Color.
Background Color	Specifies the layout background color when Background is set to Solid Color. The default is black.
PiP Fill	Specifies the background of the PiPs in the layout. Choose from a Solid Color or 75% Color Bars.
PiP Fill Color	If you set the PiP Simulation to Solid Color, this menu enables you to specify the color for the PiP backgrounds in the Layout Editor and Ultriscape Head interfaces
Point X	Indicates the horizontal position of your cursor on the Layout Editor workspace
Point Y	Indicates the vertical position of your cursor on the Layout Editor workspace

Shared PiPs Tab

The Shared PiPs tab lists the configured PiPs to be shared by various layouts in this database. (**Figure 17**) From this tab you can assign the operation mode, the video source, the audio mode, and specify the audio bar numbering scheme.

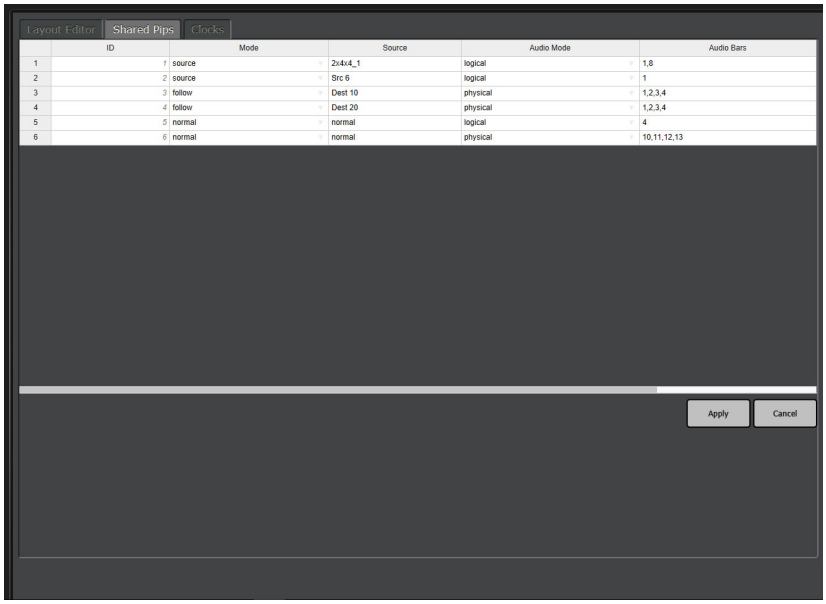


Figure 17 Example of the Shared PiPs Tab

Table 19 summarizes the options displayed in the Layout Editor Settings > Shared PiPs tab.

Table 19 Layout Editor — Shared PiPs Tab

Item	Parameters	Description
ID (read-only)	#	The unique identifier for the Shared PiP
Mode	Normal	The PiP does not monitor a specific resource; the Source is automatically set to Normal
	Follow	The PiP monitors a specific destination (as specified in the Source column of this tab)
	Source	The PiP monitors a specific source (as specified in the Source column of this tab)
Source	#	Specifies the resource the PiP will monitor when Mode is set to Follow or Source
Audio Mode	Logical	The PiP audio signals use the source/destination logical mapping.
	Physical	The PiP audio signals map to the physical IN connection on the rear panel. Use the Audio Bars field to specify which channels to included in the PiP Ultriscape Head output
Audio Bars	#	Specifies up to 16 audio channel(s) the PiP will monitor; separate each channel with a comma (e.g. 1,2,3,4)

Clocks Tab

Table 20 summarizes the options displayed in the Layout Editor Settings > Clocks tab.

Table 20 Layout Editor — Clocks Tab

Item	Parameters	Description
ID (read-only)	#	The numerical identifier for the clock
Name	<text>	Assigns a unique identifier for the clock
Type	timeofday	The clock reports the time of day as determined by the NTP Server it is using
	stopwatch	The clock functions as a free running timer that counts up from 00:00. The count will reset after a maximum of 23:59:59.
	countdown	The clock counts down from a value specified by the user
TZ Offset	+/-HH:MM	Specifies an offset to the reported time zone value
Time Value	HH:MM:SS	Specifies the value the clock counts down from (when Type is set to countdown)

Head Selection Interface

The Head Selection interface is displayed by selecting the third node listed in the Ultriscape tree. The interface displays a tab for each Ultriscape Head. (**Figure 18**) From the Head Selection interface you can recall a layout and assign it to an Ultriscape Head, assign matrix sources to each PiP of a layout (any router source can be assigned to a head), assign a layout to an Ultriscape Head, and display it in the head output.

✶ You must have at least one Ultriscape license key enabled to use the Head Selection interface.

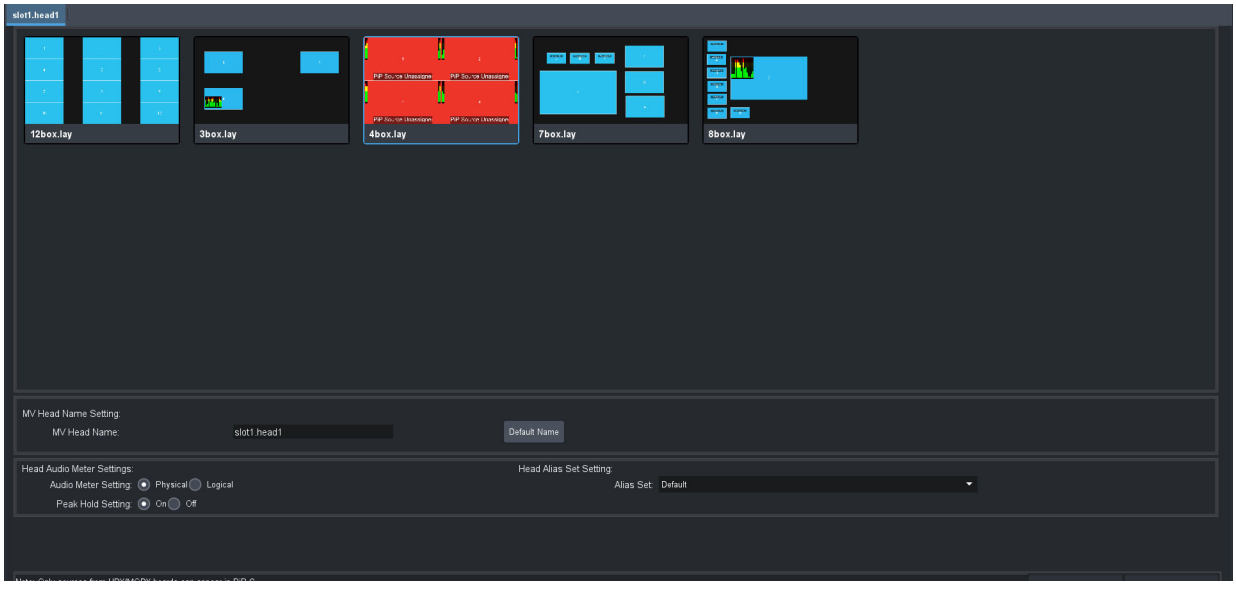


Figure 18 Example of the Head Selection Interface

For More Information on...

- the Head Selection interface, refer to "**Assigning a Layout to an Ultriscape Head**".

Clock Control Interface

The Clock Control interface is displayed by selecting the fourth node listed in the Ultriscape tree. The interface is organized into two distinct areas: a table that lists the configured clocks in the database and a toolbar with function buttons. (**Figure 19**)

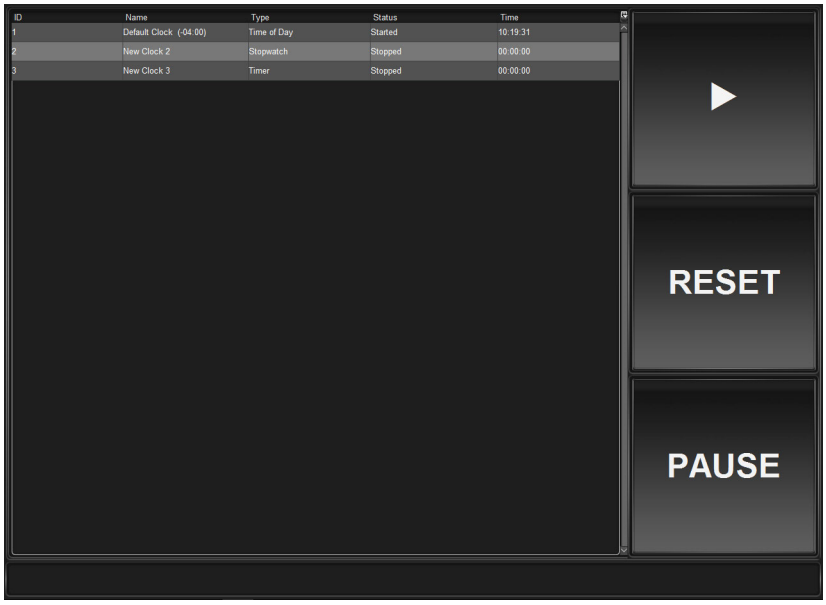


Figure 19 Example of the Clock Control Interface

Configured Clocks Area

The table lists, in numeric order based on the ID automatically assigned to each clock, the clocks that are configured for the current database.

Clock Buttons

Some buttons are only available on count down timers and stopwatch clock elements.

Alarming Configuration

Use the options in the **Alarming Configuration** interface to specify what messages the layout will report.

Alarming Config

The options are organized into two sub-tabs: Video and Audio.

Video Alarms

Table 21 summarizes the options displayed in the Alarming Config > Video Alarms sub-tab. Each row in the sub-tab represents a specific input port.

Table 21 Alarming Config — Video Alarms Tab

Item	Parameters	Description
Video Black	Selected	Triggers an alarm when the video signal is set to black
	Cleared	An alarm is not reported for this condition

Table 21 Alarming Config — Video Alarms Tab (Continued)

Item	Parameters	Description
Video Black Hysteresis	#	Specifies the number of seconds the video is set to black before an error is reported
Video Freeze	Selected	Triggers an alarm when there is an extended amount of time with no active picture changes
	Cleared	An alarm is not reported for this condition
Video Freeze Hysteresis (ms)	#	Specifies the number of milliseconds the signal is set to a single frame of video before an error is reported
Video LOS	Selected	Triggers an alarm when a valid SDI signal is no longer detected
	Cleared	An alarm is not reported for this condition
Video LOS Hysteresis (ms)	#	Specifies the number of milliseconds a valid SDI signal is absent before an error is reported
Video Format	Selected	Triggers an alarm when the input video format does not match the user's selected format
	Cleared	An alarm is not reported for this condition
Video Format Hysteresis (ms)	#	Specifies the number of milliseconds the signal is incompatible before an error is reported
Caption Format (read-only)	#	Reports the closed caption data of a signal
Caption Format Hysteresis (ms)	#	Specifies the number of milliseconds the closed captioning data is lost before an error is reported

Audio Alarms

Table 22 summarizes the options displayed in the Alarming Config > Audio Alarms sub-tab.

Table 22 Alarming Config — Audio Alarms Tab

Item	Parameters	Description
Audio Silence Threshold (ms)	#	Specifies the maximum number of milliseconds any audio channels are silent before an alarm is triggered
Audio LOS	Selected	Triggers an alarm when there is invalid audio signal
	Cleared	An alarm is not reported for this condition
Audio LOS Hysteresis (ms)	#	Specifies the number of milliseconds a valid audio signal is absent before an error is reported
Audio Silence	Selected	Triggers an alarm when the audio signal is muted or silent for a specific channel
	Cleared	An alarm is not reported for this condition
Audio Silence Hysteresis (ms)	#	Specifies the number of milliseconds the audio signal is muted/silent before an error is reported