PRIME Switcher
Audio Director User Guide

Version 1.0

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SINCE DAY ONE.

Chyron PRIME Switcher Audio Director User Guide • 1.0 • November 2024 • This document is distributed by Chyron in online (electronic) form only, and is not available for purchase in printed form.

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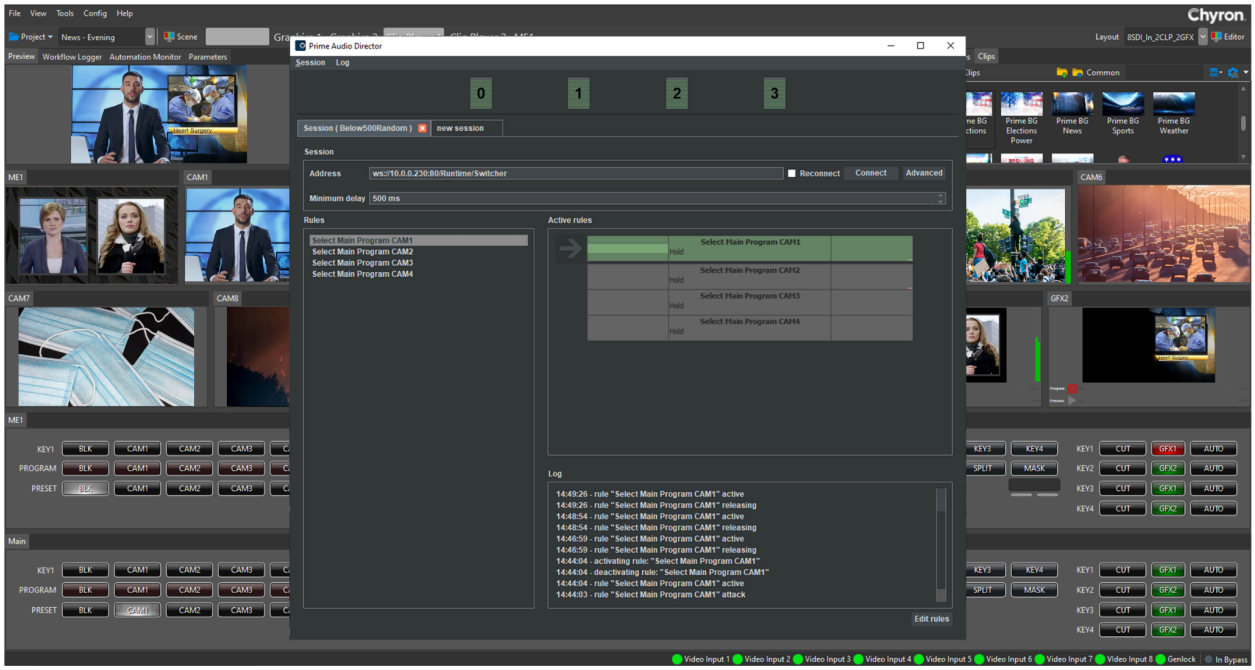
Chapter 1: Welcome to Audio Director!

Introduction

Audio Director, a separate application that is included with PRIME Switcher, provides PRIME Switcher with a powerful tool that brings a new level of automation to your production. Audio Director's smart switching triggers PRIME Switcher to automatically switch the program sources, graphics, and clips, while applying preset transitions. You can customize rules to control PRIME Switcher, based on the microphone levels, specified audio thresholds, time delays, and more.



For example, when an anchor conducts an interview, then Audio Director can trigger PRIME Switcher to automatically switch between the anchor and the interviewee, based on the audio level thresholds specified in the rules. If both are speaking, then Audio Director can instruct PRIME Switcher to switch to a wide shot if the interview is in person, or to a 2-box if the interview is remote. You can script custom behavior for precise control of the automation, and even introduce randomness for more of a live switcher feel.

About This User Guide

This User Guide provides instructions on how to configure Audio Director rule set. This rule set defines, together with the specified audio input level thresholds and other parameters, the API commands sent to PRIME Switcher to automatically switch the live show. The User Guide also contains a Troubleshooting chapter, as well as a Glossary.

See the PRIME Switcher User Guide for information on configuring/operating PRIME Switcher.

Installation Notes

You can download Audio Director from the link provided by Chyron, and then follow the installation instructions.

The license may be either a software license or a dongle. Contact Chyron Support for further details.

You can install Audio Director on a PRIME Switcher system or an external system. *See Audio Input for additional details*.

Chapter 2: Audio Overview and Concepts

Workflow Overview

Audio Director can monitor up to 64 audio inputs. By monitoring the inputs and checking the rules applied to these inputs, Audio Director automatically selects and sends commands to PRIME Switcher.

The following is an overview of the Audio Director workflow.

1. Ensure that PRIME Switcher and Audio Director are both open. *See the PRIME Switcher User Guide for information on configuring and operating PRIME Switcher.*
2. In PRIME Switcher, enable the **WebSocket** automation connection.
3. In Audio Director, click **Connect**, and then open or create a session.
4. Create a rule set.

Main Concepts

Audio Input

Audio Input Overview

An **Audio Input** is an incoming audio signal from **Source Audio** that is input to an internal or external, user-provided third-party audio card, using the Audio Stream Input/Output (ASIO) protocol. ASIO bypasses the normal audio path through various Windows operating system layers, so that Audio Director connects directly to the audio card, thereby reducing latency. The audio card should have an ASIO driver for compatibility with Audio Director.

The audio card accepts hard-wired audio via XLR connection, or in the case of an audio card such as the Dante card, network audio. Regardless of the type of card, if audio originates from mixed sources, e.g., microphone over XLR, embedded, network, etc., then the audio must be converted to the type of audio accepted by the audio card.

Audio Director monitors all enumerated (numbered) inputs and displays their levels at the top of the Audio Director interface. The strength of the **Audio Input** signal is measured in decibels (**dB**).

The **Audio Input Level** stores the last **Source Audio Level**. How the **Audio Input Level** changes when the **Source Audio Level** drops, is determined by the **Decay** specified for an **Audio Input**. *See Create/Edit Rules, and Set Audio Input Parameters for additional information on **Decay**.*

If you are unsure as to which input number is assigned to which microphone, then touch the mic and watch which input reacts.

NOTE: If an Audio Input Level does not display, then ensure that the audio source is connected to the audio card and operating properly.

NOTE: The microphones used as Source Audio for the Audio Director Audio Inputs can be the same microphones that feed the Audio Mixer that outputs audio for a show. The audio signal would be split between Audio Director and the Audio Mixer. It may be advantageous in a particular situation, however, to use separate sets of microphones to act as Audio Inputs for Audio Director and to input to the Audio Mixer, e.g., a different type of microphone may be better suited for Audio Director monitoring, or to accommodate room acoustics, sensitivity and/or directionality.

Audio Director Installation Options

Audio Director and the audio card can reside on a PRIME Switcher system or an external system. Regardless of the location of Audio Director and the audio card, the Audio Director **Audio Inputs** are not dedicated to a specific PRIME Switcher. The distribution of the Audio Inputs among multiple PRIME Switchers is completely flexible, and is set within the rules for a specific session. As such, you can install Audio Director:

- On a PRIME Switcher system that is the sole PRIME Switcher system controlled by Audio Director. The audio card that accepts the **Source Audio** can reside either internally in the system, or externally, connected to the system.
- On a PRIME Switcher system that is one of multiple systems controlled by Audio Director. The audio card that accepts the **Source Audio** can reside either internally in the PRIME Switcher system, or externally, connected to the PRIME Switcher system.
- On an external system that controls one or multiple PRIME Switcher systems. The audio card that accepts the **Source Audio** would reside either internally in the external system, or externally, and connected to the external system.

Audio Director can independently monitor each **Audio Input**, apply rules based on individual **Audio Input Levels**, and trigger **Activation/Deactivation Events** for any PRIME Switcher. For example, if Audio Director and the audio card are installed on PRIME Switcher A:

- Session “News” rules can use **Audio Inputs** 0 through 8 to control PRIME Switcher A.
- Session “Noticias” rules can use **Audio Inputs** 9 through 15 to control PRIME Switcher B.
- Session “Sports Wrap-up” rules can use **Audio Inputs** 16 through 23 to control PRIME Switcher C.

The sessions can operate simultaneously. Note that the **Audio Inputs** need not be contiguous for a specific PRIME Switcher, although it is a best practice to dedicate contiguous blocks of **Audio Inputs** to specific PRIME Switchers.

Session

A **session** represents a connection to a specific PRIME Switcher. For each show that you run on a PRIME Switcher, you can create a different session. You can also run multiple sessions simultaneously, with each session connecting to a different PRIME Switcher device.

In a session, you enter the configuration settings and a rule set. The configuration settings, derived from PRIME Switcher's configuration file, comprise host address, host port, and optionally, the username/password of the PRIME Switcher connection.

A session can contain one or more **rules**.

Rule

A **rule** defines how PRIME Switcher reacts to user-set audio levels and timing parameters. User-configured **Activation and Deactivation Events**, i.e., API commands, are assigned to rules and sent to PRIME Switcher.

Activation/Deactivation Events

Each rule can include one or more **Activation** and **Deactivation Events**, i.e., API commands, such as selection of a **Bank**/**Bus**, **Source**, or selection of an **Active Transition** that are sent to PRIME Switcher upon the activation or deactivation of the rule.

An **Activation** or **Deactivation Event** contains at least one set of **Audio Input** parameters that specify the conditions required to trigger the event..

- You can specify **Activation Event(s)** to set the **Main Bank Active Transition** to **Dissolve**, and to perform an **Auto Transition**. When the rule becomes **Activated**, then the switcher performs a **Dissolve**.
- In the same rule, you can specify **Deactivation Events** in a similar manner, so that when the rule becomes idle, then the switcher performs the **Deactivation** Event.

  A rule's **Deactivation Event(s)** can also trigger when another rule takes precedence, for example, when a rule with **Force** enabled becomes activated, or **Cycle Mode** activates a different rule.

NOTE: In most Audio Director use cases, it is advisable to set only Activation Events or Deactivation Events in rules for a specific session, to reduce or eliminate conflict between the Deactivation Event(s) of the currently activated rule and the Activation Event(s) of the next rule to be activated.

See Set Activation and Deactivation Events for additional information.

About the Default Settings

The default **Session**, **Rule**, and **Activation/Deactivation** settings provide a good starting point for setting up Audio Director. Once you have created a few rules and **Activation/Deactivation Events**, and gain an understanding as to how Audio Director works, then you can experiment with modifying settings.

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Chapter 3: Session Operations

Session Overview

A **session** represents a specific connection to PRIME Switcher. For each show that you run on a PRIME Switcher, you can create a different session. You can also run multiple sessions simultaneously, with each session connecting to a different PRIME Switcher device.

In this chapter, you will learn to/about:

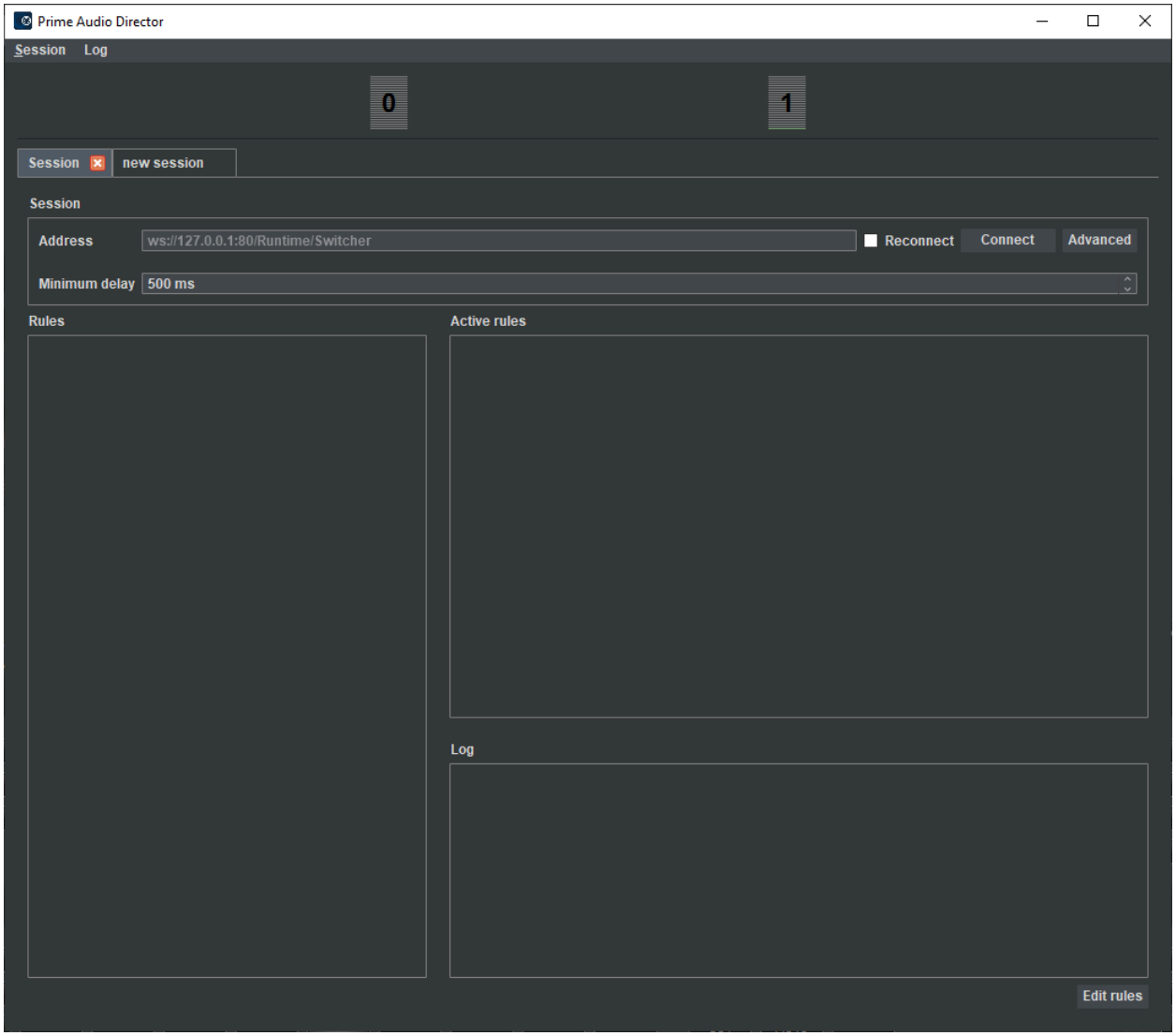
- Open and close Audio Director.
- Connection States
- Connect an Audio Director session to PRIME Switcher, connect multiple Audio Director sessions to multiple PRIME Switchers, set Audio Director to automatically reconnect if the connection is broken, and Disconnect an Audio Director session from PRIME Switcher.
- Open a previous session, create a new session, reload a session, and close a session.
- Active Rules Area.
- Save, Save As, and Save All sessions.Override Audio Director.

Open Audio Director

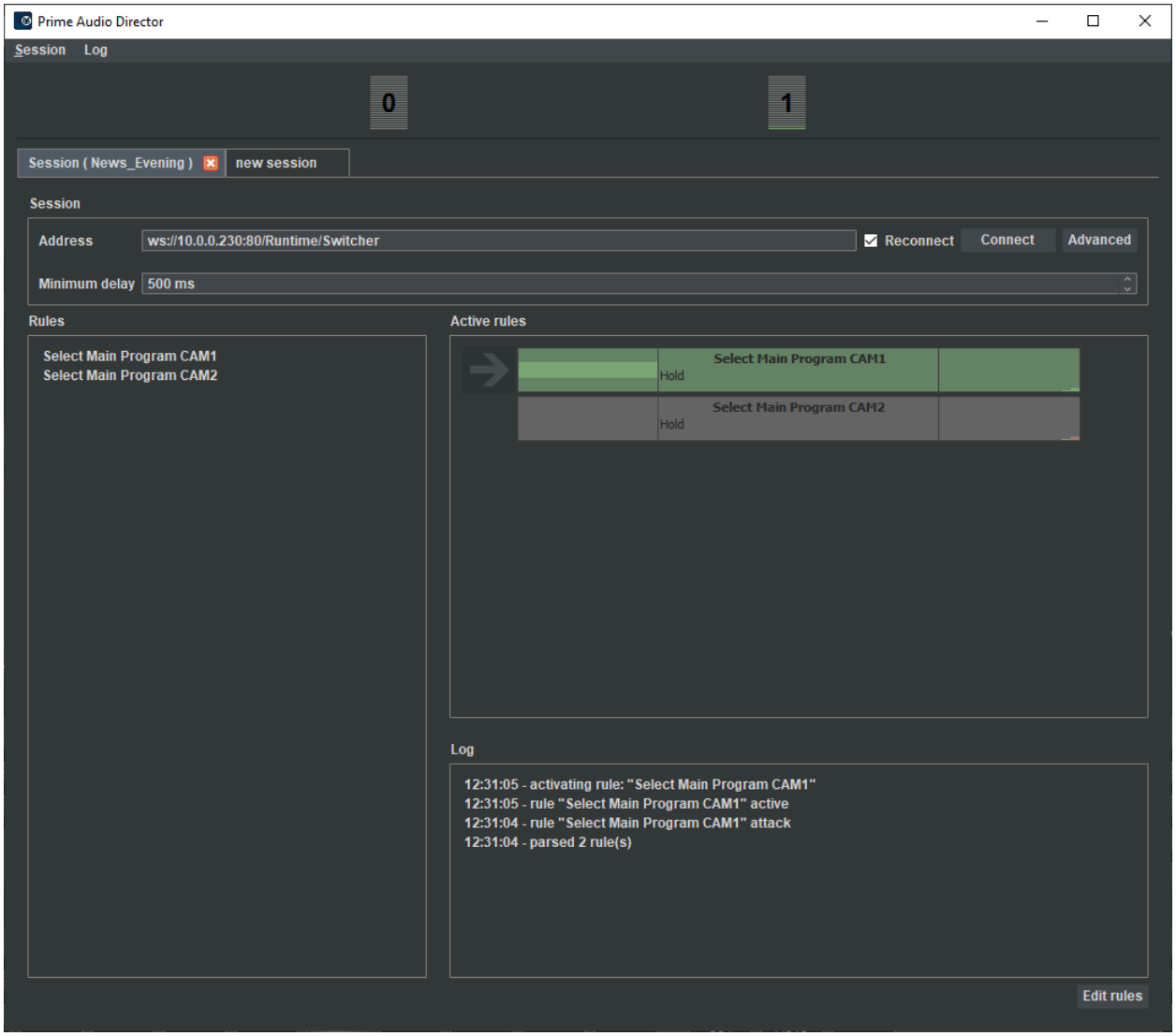
To open Audio Director:

- Double-click the **Audio Director** icon  on your desktop or taskbar, or the executable file in the **Audio Director** folder. Audio Director opens in **Session Mode**, displaying the session(s) that were last open when Audio Director was closed. The previous **Log** information is also displayed.

The following shows the default empty session open in Audio Director:



The following shows a session that has just been opened in Audio Director.



Connection States

There are three Audio Director-to-PRIME Switcher connection states:

- **Not Yet Connected.** This is the state of a session when it is first opened. The **Session** tab does not display a connection icon.

- **Connected:** The session is connected to a PRIME Switcher. The **Session** tab displays the **Connected** icon  .

- **Disconnected:** The session had been connected, but has been disconnected, either deliberately or not deliberately. The **Session** tab displays the **Disconnected** icon  .

Connect an Audio Director Session to PRIME Switcher

To connect the Audio Director session to PRIME Switcher:

1. Configure the following **Session** settings:

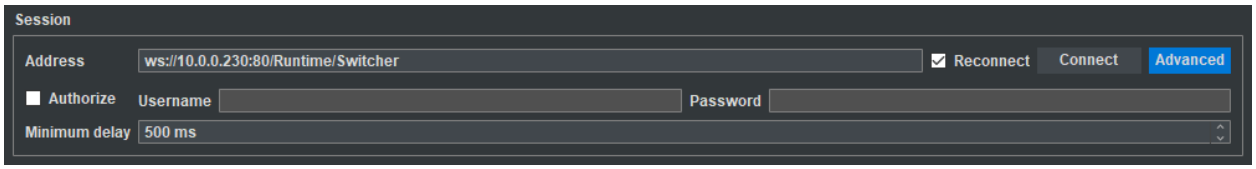
   - **Address:** The IP address of the system running PRIME Switcher, and the configured **WebSocket** connection **Port** number, with "**/Runtime/Switcher**" appended to the **Address**. The address format is as follows:

     ws://<address>:<port>/Runtime/Switcher

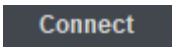
   - **Authorization:** The **Username/Password** for the **WebSocket** connection (optional). To view and set:

     a. Click the **Advanced** button.

     b. Click **Authorize**, and then enter **Username** and **Password**.

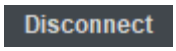


   - **Minimum Delay:** A global setting that sets the minimum length of time that must elapse before switching from one rule to another. **Minimum Delay** overrides **Cycle Mode** and **Force**.

2. Click the **Connect** button 

. When connected, the following occurs:

   - The **Log** indicates that Audio Director is connected to PRIME Switcher.
   - PRIME Switcher responds to commands sent from Audio Director.
   - The session tab highlights in gray, displays the red **Close Session** icon, and displays the connected icon:

   - The **Connect** button turns into a **Disconnect** button 

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- The **Sessions** settings gray out and you cannot modify them. To modify the **Sessions** settings, you must disconnect Audio Director from PRIME Switcher.

Connect Multiple Audio Director Sessions to PRIME Switchers

You can create/open multiple Audio Director sessions, and connect each to a different PRIME Switcher. Session settings and connection state are specific to that session, and do not affect other open sessions.

Set Audio Director to Automatically Reconnect the Session if Disconnected

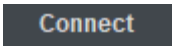
The Audio Director session can automatically reconnect to PRIME Switcher if the connection is broken while the session is open. To set:

- Enable (check) the **Reconnect** checkbox.

You can set each individual session to enable/disable **Reconnection**. The **Reconnection** setting is saved with the session settings.

For example:

- Four sessions A, B, C, and D, are open in Audio Director.
- **Reconnect** is enabled for sessions A, B and D.
- **Reconnect** is disabled for session C.
- If the connection is lost between Audio Director and the PRIME Switchers associated with sessions A, B and D, then Audio Director will automatically connect the sessions with their respective PRIME Switchers.
- If the connection is lost between Audio Director and the PRIME Switcher associated with session C, then Audio Director will not automatically reconnect to its PRIME Switcher. To connect, you must initiate the connection to PRIME Switcher, i.e., click the **Connect** button.

NOTE: Audio Director does not automatically connect to PRIME Switcher upon opening, even if Reconnect is enabled. Audio Director reconnects with PRIME Switcher only when the session is already open and there is a loss of connection. When you open Audio Director, you still must initiate the connection to PRIME Switcher, i.e., click the Connect button 

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Disconnect an Audio Director Session from PRIME Switcher

To disconnect the Audio Director session from PRIME Switcher:

- Click the **Disconnect** button Disconnect. The **Session** tab displays the **Disconnected** icon .

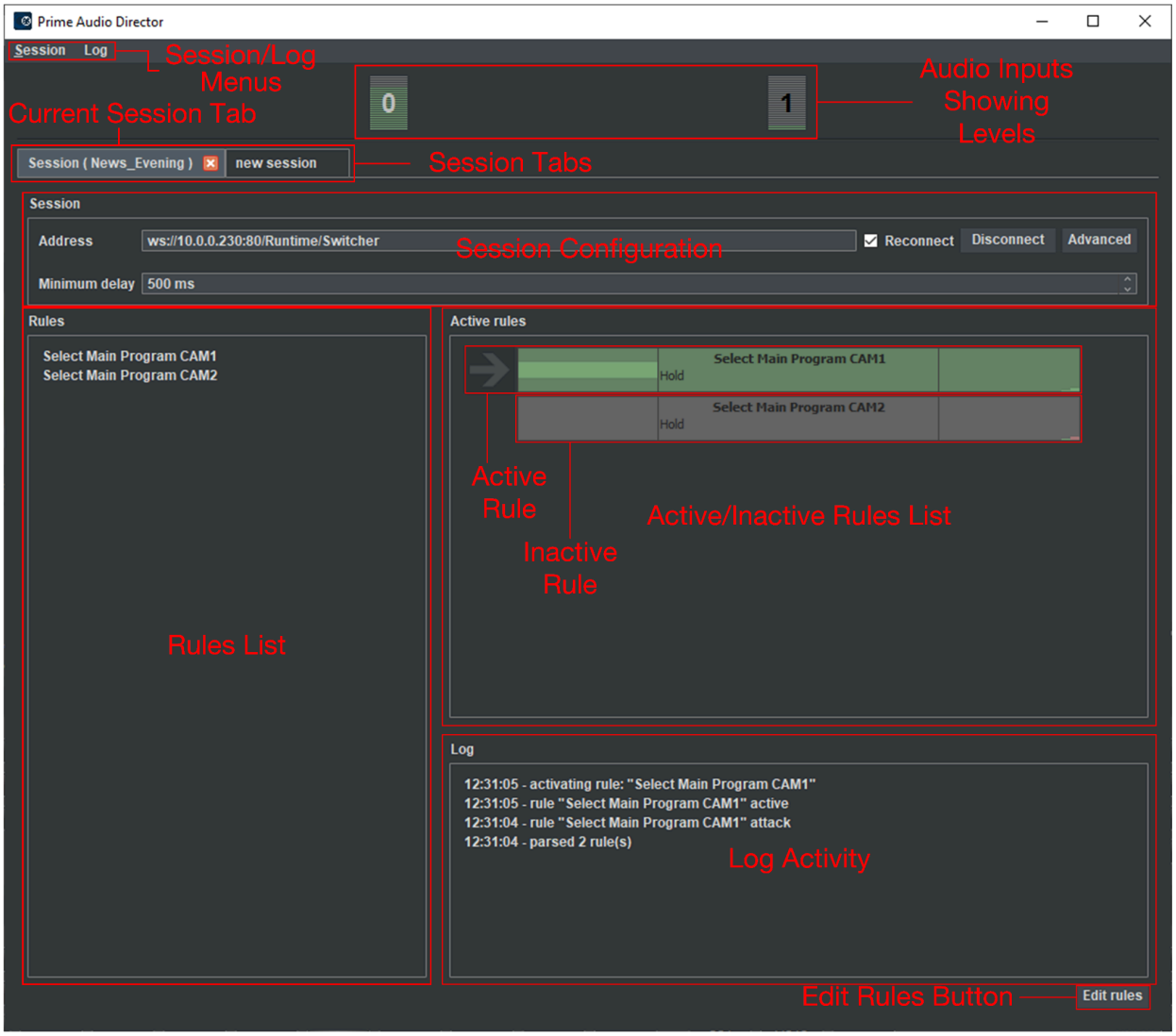
Note that when you manually disconnect an Audio Director session from PRIME Switcher, in order to reconnect, you must do so manually, i.e., click the **Connect** button Connect, regardless of whether **Reconnect** is enabled or disabled.

Open a Previous Session

To open a previous session:

1. Press **Ctrl+O**, or from the **Session** menu, select **Open**.
2. Browse to and then double-click the desired session file (***.audiodirector***). The session opens.
3. If not already connected to PRIME Switcher, then Click **Connect**.

The following figure shows an open, connected session:

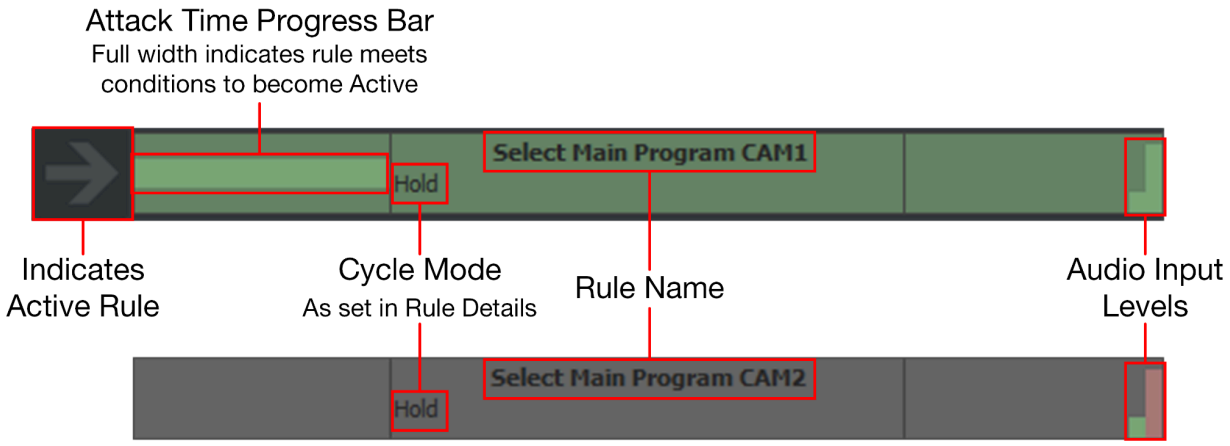


Note that when a session is open, but Audio Director is not connected to PRIME Switcher, the log still displays activity, even though the commands are not reaching PRIME Switcher. This is deliberate, and shows that the rules are operating.

Active Rules Area Closeup

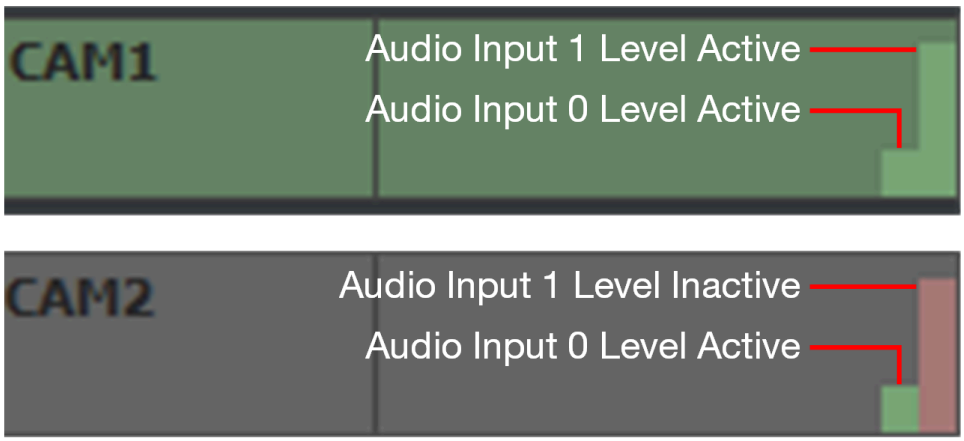
The **Active Rules Area** displays horizontal bars representing activated, active, and idle rules.

- A rule highlighted in green indicates that the rule is active, i.e., all **Audio Input Levels** meet the requirements to be an activated rule. More than one rule can simultaneously be active, but only one rule can be activated at any time.
    - An arrow at the left of the rule indicates that the rule is activated.
    - When the **Attack Time** progress bar reaches full width, then the rule meets all of the conditions required for it to become activated.
- A rule highlighted in gray indicates that the rule is idle, i.e., one or more **Audio Input Levels** do not meet the requirements for the rule to be active/activated, or the rule is in the process of becoming active/activated, i.e. the **Audio Input Levels** are active, but the **Attack Time** has not yet elapsed.



The **Audio Input Level** color indicates whether it is active or inactive:

- Green indicates active **Audio Input Level** .
- Red indicates inactive **Audio Input Level**) .



The order in which the rules are displayed, from top to bottom is as follows:

- **Activated** rule
- **Active** rule(s).
- **Idle** rule(s)

Within the **Active** and **Idle** groups of rules, the most recently activated is at the top of its group, and the oldest activated at the bottom.

The exception is that a rule that is about to become, but is not yet, activated, may display at the top of the **Active Rules** list.

See Rule States and Rule Details for additional information.

Create a New Session

To create a new session:

1. Click the **new session** tab.
2. Configure the following **Session** settings:

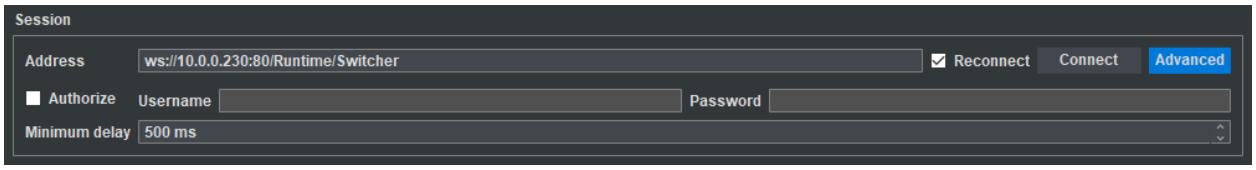
- **Address:** The IP address of the system running PRIME Switcher, and the configured **WebSocket** connection **Port** number, with "**/Runtime/Switcher**" appended to the **Address**. The address format is as follows:

  ws://<address>:<port>/Runtime/Switcher

- **Authorization:** The **Username/Password** for the **WebSocket** connection (optional). To view and set:

  a. Click the **Advanced** button.

  b. Click **Authorize**, and then enter **Username** and **Password**.



- **Minimum delay:** A global setting that sets the minimum length of time between switching rules. **Minimum Delay** overrides **Cycle Mode** and **Force**.

3. From the **Session** menu, select **Save as** and enter a name.
4. Click the **Connect** button to establish a connection with PRIME Switcher.

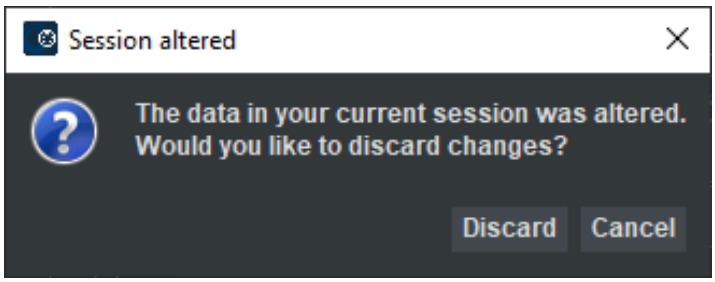
To set Audio Director to automatically reconnect to this session if the connection is broken:

- Enable (check) the **Reconnect** box.

Reload a Session

To discard changes to the current session:

1. Press **Ctrl+R**, or go to the **Session** menu, and then select **Reload**. The **Session altered** message appears:



2. Click **Discard** to discard session changes and reload the session, or **Cancel** to return to the session without discarding changes.

Save a Session

To save the edits to the currently displayed session:

- Press **Ctrl+S**, or go to the **Session** menu, and then select **Save**. If the session is new, then enter a name for the session.

Save a Session to a Different Name (Save As)

To save the currently displayed session under a different file name:

- Go to the **Session** menu, select **Save As**, and then enter a name for the session.

Save All Sessions

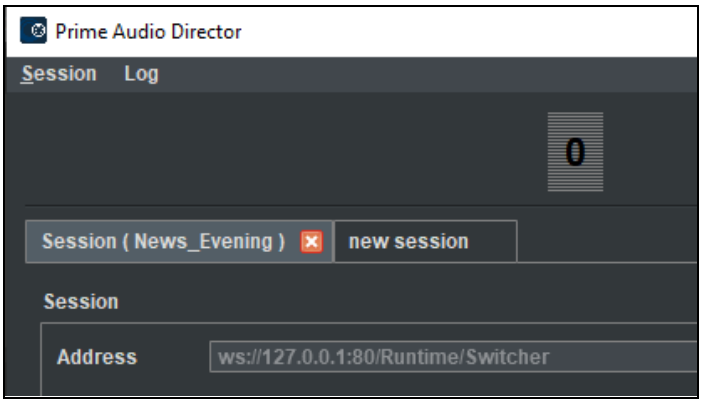
To save all sessions:

- Press **Ctrl+Shift+S** or go to the **Session** menu, and then select **Save All**.

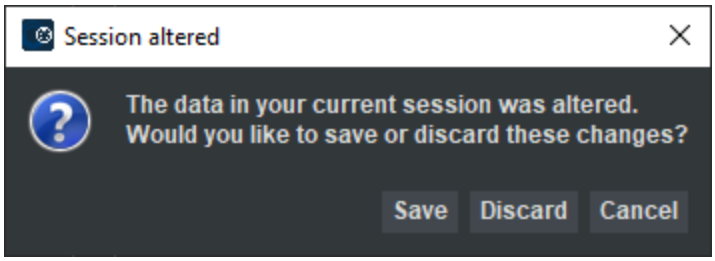
Close a Session

To close a session:

1. Click session's tab you would like to close, and the click the **Close** icon in the tab.



The **Session altered** message displays:



2. Click **Save** to save and close the session, or **Discard** to discard the session changes and close the session, or **Cancel** to return to the session.

Override Audio Director

You can override Audio Director at any time by manually operating PRIME Switcher; however, if a rule becomes active, then it will automatically trigger PRIME Switcher. If you need to manually control the switcher, then it is advisable to disconnect the session. To do so:

- Click the **Disconnect** button.

When you would like Audio Director to take over switching then reconnect to PRIME Switcher.

Close Audio Director

To close Audio Director:

- Press **Ctrl+Q**, or click the **Close** icon at the top right of the interface, or go to the **Session** menu and then select **Quit**.

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Chapter 4: Create/Edit Rules

Rules Overview

A **rule** defines how PRIME Switcher reacts to user-set audio levels and timing parameters. You configure the commands that specify the events that you assign to rules.

- A **session** can contain multiple rules.
- Each rule contains at least one **Activation** or **Deactivation Event**. A rule can contain multiple **Activation/Deactivation Events**.
- Each rule contains settings for at least one **Audio Input**. The settings specify a **Threshold** at which the **Audio Input** becomes active or inactive, specifies whether the conditions for activation are met at or above, or below the **Threshold**, and the length of the **Decay**. The rule's state can then trigger **Activation** or **Deactivation Events**.

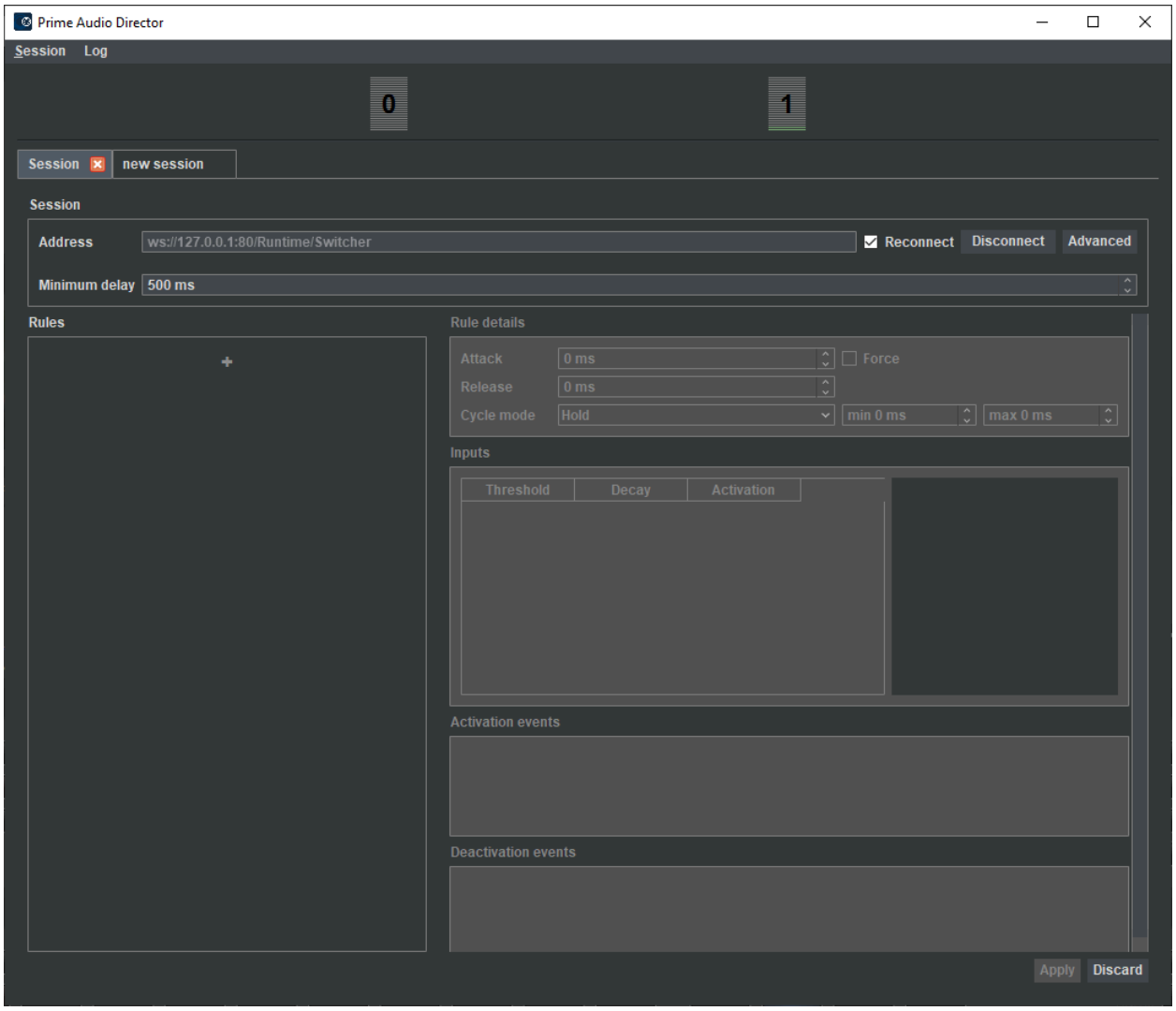
In this chapter, you will learn to/about:

- Edit Rules Mode.
- Add, Rename, Delete a rule.
- Import Rules.
- Rule States.
- Edit a Rule, including: Rule Details, set Activation and Deactivation Events, set Audio Input Parameters.
- Apply/Discard Rule Edits.

Edit Rules Mode

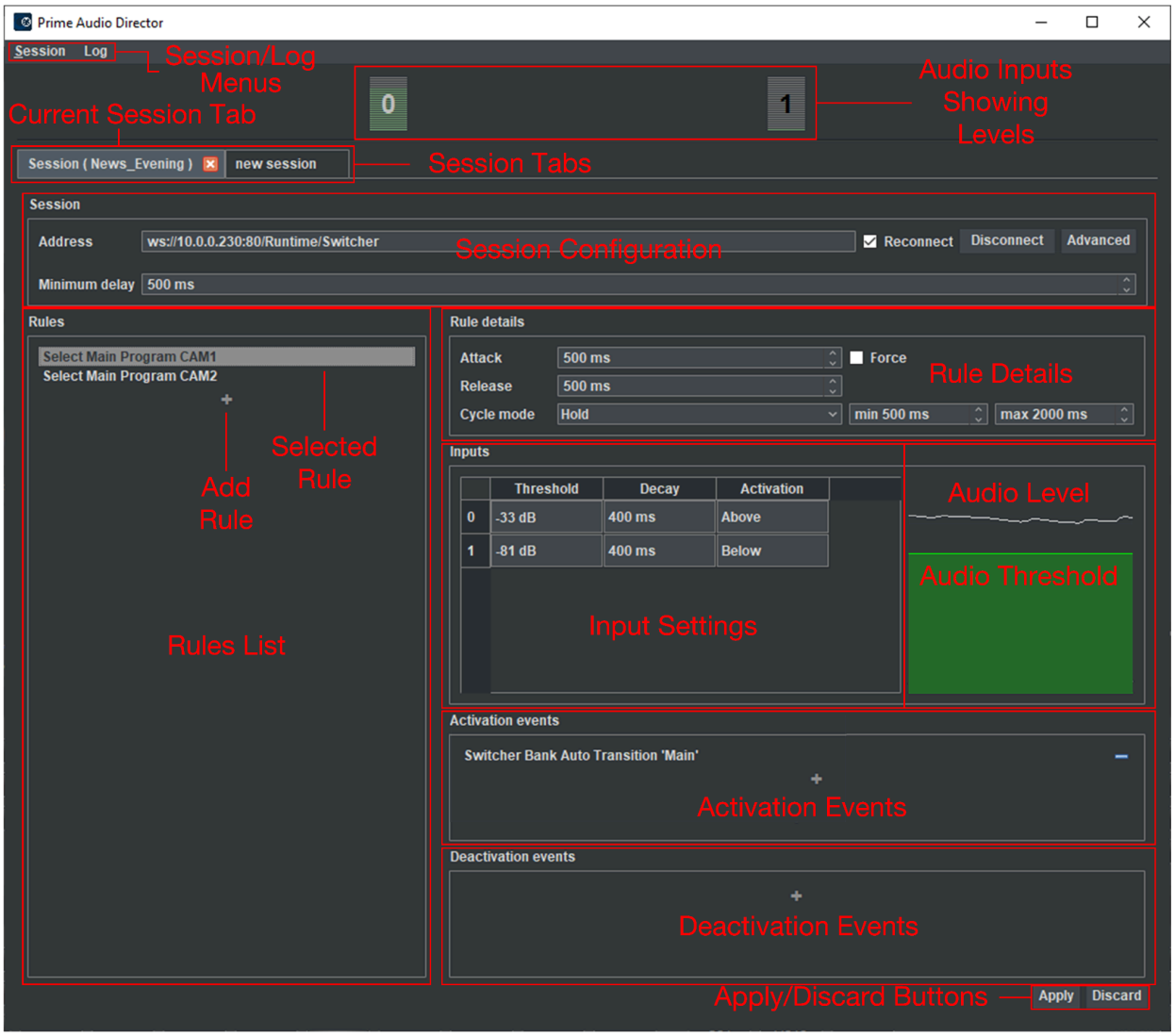
When in **Edit Rules Mode**, the following interface displays. Audio Director must be in **Edit Rules Mode** in order to add, rename, delete, or edit rules. To enter **Edit Rules Mode**:

- At the bottom right corner of the Audio Director interface, click the **Edit rules** button Edit rules. The following interface displays.



Rule Details, **Inputs**, **Activation Events**, and **Deactivation Events** are grayed out until a rule is added or an existing rule is selected.

When you add a new rule, or select an existing rule, the **Rule Details**, **Inputs**, **Activation Events**, and **Deactivation Events** become available for editing.



NOTE: If an Audio Input Level does not display, then ensure that the audio source is connected and operating properly.

You can add and edit rules regardless of whether or not Audio Director is connected to PRIME Switcher. If you have opened the session, and have not yet connected the session to PRIME Switcher, however, then you will not be able to access the combo boxes that allow you to select items such as **Bank**, **Bus**, **Source** and **Transition**. Instead, you must enter (type in) the settings.

- Once you connect the session to PRIME Switcher, then the combo boxes become available, even if you subsequently disconnect from PRIME Switcher.
- If you close the session and reopen it, then you will need to connect the session once again to access the combo boxes.

See Set Activation and Deactivation Events for details.

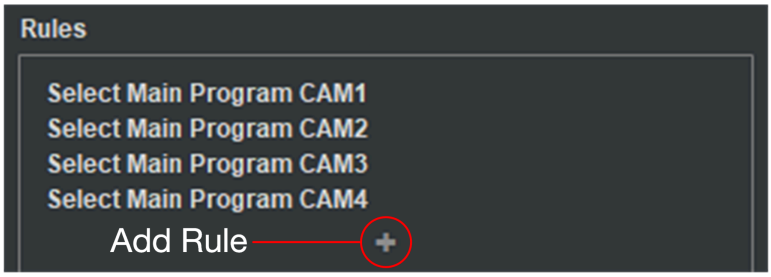
NOTE: If, when you access Rules Editing Mode, you do not see all of the rules editing areas, i.e., Rule Details, Inputs, Activation Events and Deactivation Events, and/or part of the right side of the window is missing, then drag the window's top, bottom, left or right borders to expose the missing areas. If there is not enough room to display all of the Events within the Activation Events or Deactivation Events areas, then scroll bars will appear that enable you to access all Events.

Add, Rename, Delete a Rule

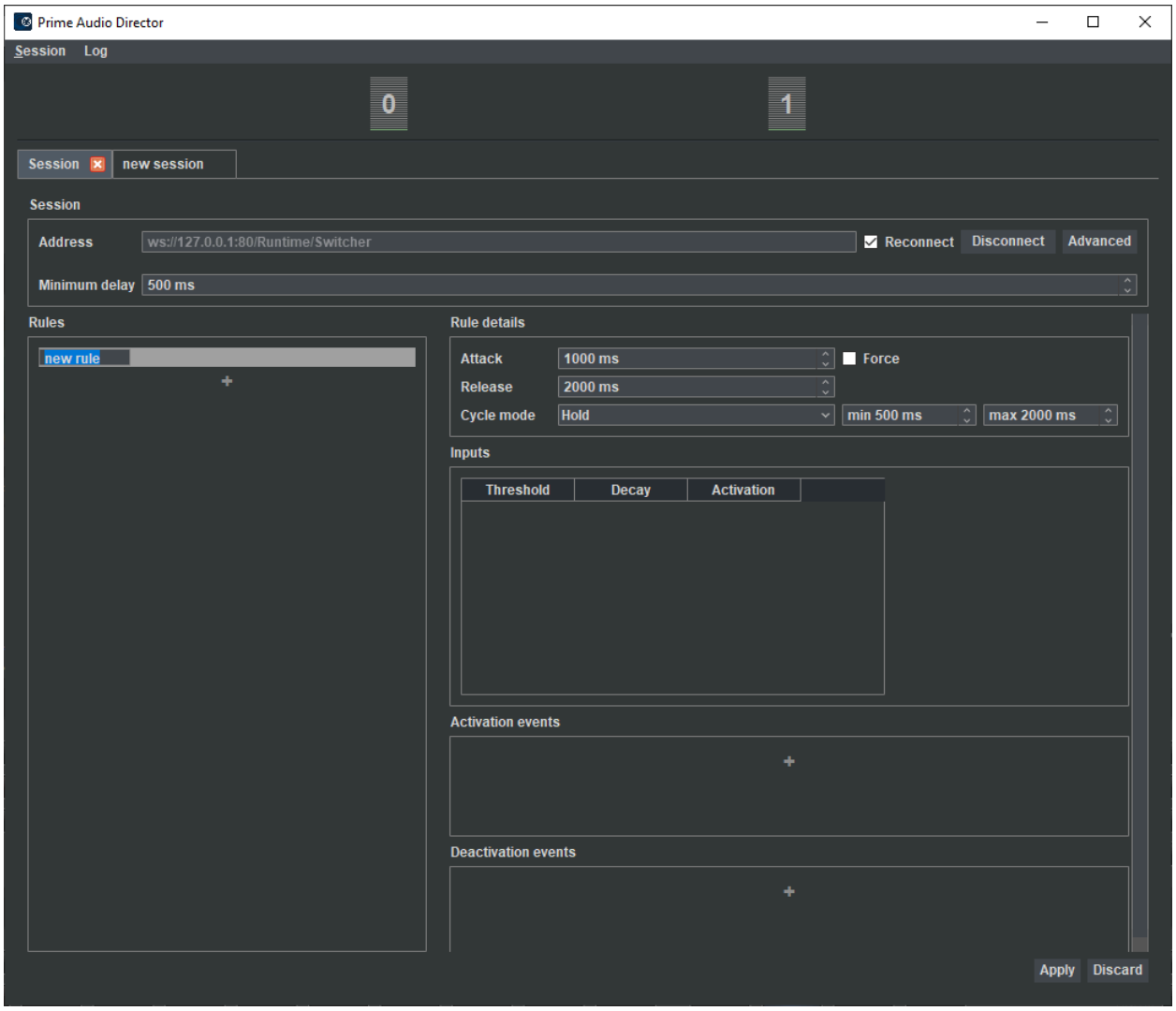
Add a Rule

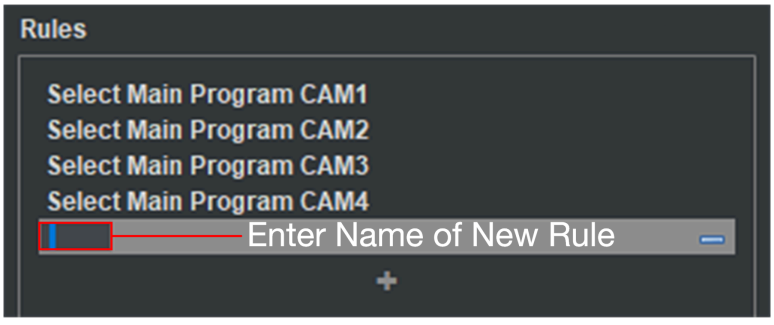
To add a rule:

1. If not already in **Edit Rules Mode**, then at the bottom right corner of the Audio Director interface, click the **Edit Rules** button Edit rules. Audio Director displays **Rules Mode**.
2. In the **Rules** panel, click "**+**" (the **Add Rule** icon) or double-click anywhere else in the **Rules** list.



3. A new rule appears. Double-click the new rule and enter a descriptive name.





4. Press **Enter** or click elsewhere in the list.

Rename a Rule

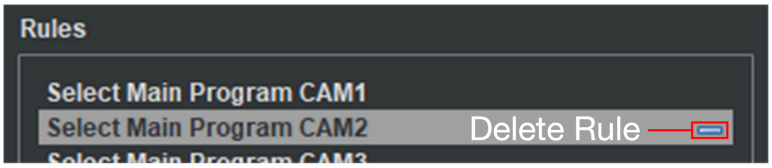
To rename a rule:

- Double-click the rule, enter a new name, and then press **Enter** or click elsewhere in the list.

Delete a Rule

To remove a rule:

1. If not already in **Edit Rules Mode**, then at the bottom right corner of the Audio Director interface, click the **Edit rules** button Edit rules.
2. Click the minus sign at the right of the rule that you would like to delete.



The list no longer displays the rule.

Import Rules

To import rules from another session:

1. Go to the **Session** menu and then select **Import rules**.
2. Locate and then double-click the desired session.

Rule States

Rule State Overview

A rule changes from state to state, depending upon the Audio Input Levels, Attack or Release Time, and other rule parameters.

The general order of rule states is as follows:

- **Idle:** Rule does not send **Activation Events** or **Deactivation Events** to PRIME Switcher. One or more **Audio Input Levels** are inactive.
- **Attack - Idle, in Attack State: Audio Input Levels** are active, but the **Attack Time** has not yet elapsed.

- **Active:** Audio Levels are all active. **Attack Time** has elapsed, but another rule is currently activated and has precedence.
- **Activated:** Rule sends its specified **Activation Event(s)** to PRIME Switcher.
- **Release:** Rule is activated, but one or more **Audio Input Levels** have become inactive, and the **Release Time** has not yet elapsed. Once the **Release Time** elapses, then the rule sends the specified **Deactivation Event(s)** to PRIME Switcher, and the rule becomes **Idle**.

  Note that **Release Time** is not the only condition that can trigger **Deactivation Events**. A rule's **Deactivation Events** can also trigger when another rule takes precedence, for example, when a rule with **Force** enabled becomes activated, or **Cycle Mode** activates a different rule.
- **Deactivated**: Rule is no longer activated, but may be either active or idle. A rule that is deactivated, but still active, may have been overridden by another rule that has **Force** enabled, or has been made inactive due to **Cycle Mode** activating a different rule. Upon deactivation, the rule sends its **Deactivation Event(s**) to PRIME Switcher.

The states are described in detail in the following sections.

Idle

An **Idle** rule does not send **Activation** or **Deactivation Events** to PRIME Switcher. When a rule is **Idle**, and not in **Attack** state, one or more of the **Audio Input Levels** are inactive. A rule in the **Idle** state displays in gray. Active **Audio Input Level(s)** display in green; inactive **Audio Inputs Levels** display in red.

NOTE: If an Audio Input Level does not display, then ensure that the audio source is connected and operating properly.

Attack

Attack is a transitory state in which the rule is **Idle**, all audio inputs are active, but the **Attack Time** has not yet elapsed.

The **Attack** state acts as a buffer against rapid changes between **Audio Input Level** active and inactive states, by requiring that a user-set length of time pass before changing the rule state to active or activated, therefore preventing unnecessary switching between sources.

When all inputs become active, then the rule is considered valid, and the **Attack Timer** starts.

- If the specified **Attack Time** elapses, and all of the **Audio Input Levels** are still active, then:
    - The rule becomes **active** or **activated**.
    - Audio Director sends the rule's **Activation Event(s)** to PRIME Switcher.
- If the specified **Attack Time** elapses, and one or more of the **Audio Input Levels** are no longer active, then the rule remains idle, and is considered invalid, until conditions are met to restart the **Attack Timer**.

A rule in the **Attack** state displays in gray in the **Active Rules** list. The **Attack Time** progress bar is partially filled. The **Audio Level(s)** display in green. The following figure shows:

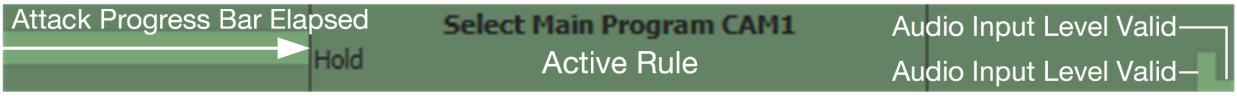
- The **Activated** rule in **Release** state.
    - One of the **Audio Inputs** is inactive, and displays as red.
    - The **Release** progress bar has not yet reached its specified duration.
- The **Idle** rule in **Attack** state.
    - All **Audio Input** levels are active.
    - The **Attack** progress bar has not yet reached its specified duration.

The **Audio Input** levels are reflected in the **Audio Monitors**:

Active

A rule becomes **Active** at the point at which the **Attack Time** elapses, i.e., all **Audio Inputs Levels** must be at or **Above**, or **Below** (depending on the **Activation** settings) their **Thresholds**, based on the session's **Minimum delay** in ***ms***.

A rule in the **Active** state displays in green in the **Active Rules** list. The **Attack Time** progress bar is completely filled. The **Audio Level** at the right displays green.



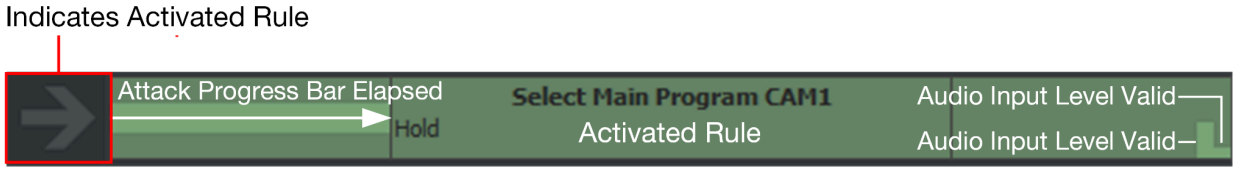
NOTE: A rule can change state directly from Idle to Activated, if no other rule takes precedence.

Activated

A rule becomes **Activated** when it meets all requirements to become **Active**, and there is no other rule that takes precedence at that time (e.g., due to **Force** or **Cycle Mode**). Upon becoming **Activated**, the rule sends its **Activation Event(s)** to PRIME Switcher. **Only one rule can be in Activated state at any time.**

A rule can change state directly from **Idle** to **Activated**, if no other rule takes precedence.

A rule in **Activated** state displays in green in the **Active Rules** list, and an arrow displays at the left of the rule. The **Audio Level(s)** at the right displays green.



At the point when the rule becomes idle, Audio Director sends the rule's **Deactivation Events** to PRIME Switcher.

Release

Transitory state in which one or more **Audio Inputs** are no longer active, and the rule's **Release Timer** has not completely elapsed.

The **Release** state acts as a buffer against rapid changes between **Audio Input Level** active and inactive states, by requiring that a user-set length of time pass before changing the rule state to idle, therefore preventing unnecessary switching between sources.

When one or more inputs become inactive, then the rule is considered invalid, and the **Release Timer** starts.

- If the specified **Release Time** elapses, and one or more of the **Audio Input Levels** are still inactive:
    - Then the rule becomes **Idle**.
    - Audio Director sends the rule's **Deactivation Event(s)** to PRIME Switcher.
- If the specified **Release Time** elapses, and all of the **Audio Input Levels** are active, then the rule is considered valid, and remains **activated**, until conditions are met to restart the **Release Timer**.

A rule in **Release** state displays in green in the **Active Rules** list, and the arrow continues to display at the left of the rule.

- The **Activated** rule in **Release** state.
    - One of the **Audio Inputs** is inactive, and displays as red.
    - The **Release** progress bar has not yet reached its specified duration.
- The **Idle** rule in **Attack** state.
    - All **Audio Input** levels are active.
    - The **Attack** progress bar has not yet reached its specified duration.

Deactivated

Rule is no longer **activated**, but may be either **active** or **idle**.

A rule that is deactivated, but still active, may have been overridden by another rule that has **Force** enabled, or has been made inactive due to **Cycle Mode** activating a different rule.

When a rule becomes inactive, then it sends its **Deactivation Event(s)** to PRIME Switcher.

Edit a Rule

Select a Rule to Edit

To select a rule for editing:

1. If not already in **Edit Rules Mode**, then at the bottom right corner of the Audio Director interface, click the **Edit rules** button 

.
2. In the **Rules** list, click the rule that you would like to edit. The rules edit settings display. The settings are as follows:
    - **Rule Details**
        - **Attack Time**
        - **Force**
        - **Release Time**
        - **Cycle Mode**
    - **Audio Input Parameters**
        - **Threshold**
        - **Decay**
        - **Activation**
    - **Activation Events**
    - **Deactivation Events**

Each is described in the following sections.

Rule Details

Overview

Rule Details specify the **Attack**, **Force**, **Release Time** and **Cycle Mode**, **Min** and **Max**.

Attack Time

Attack Time defines the length of time that it takes for the rule to become **active**. This means that ALL **Audio Input Levels** and their respective settings must be active, i.e., all **Audio Input Levels** must be **Above** or **Below** (depending on the **Activation** settings) their specified **Thresholds**. Note that the **Minimum delay** is a global setting for the session, and is not rule-specific.

The **Attack Timer** acts as a buffer against rapid changes between **Audio Input Level** active and inactive states, preventing unnecessary switches between cameras.

The **Attack Timer** starts when all **Audio Input Levels** meet the **Threshold**.

- If all **Audio Input Levels** remain active at the point when the **Attack Time** elapses, then the rule becomes active or activated. If the rule becomes activated, then Audio Director sends the rule's **Activation Event(s)** to PRIME Switcher.
- If, however, one or more of the **Audio Input Levels** become active before the specified **Attack Time** elapses, then the rule remains idle, and the **Attack Timer** resets.

In addition, if the **Attack Time** has elapsed, and **Audio Input Levels** are still active, but the **Minimum Delay** has not yet elapsed, then the rule becomes activated once the **Minimum Delay** has elapsed.

Force

Force specifies that when this rule becomes **active**, it takes precedence over any other rule that is already **activated**.

- When **Force** is enabled on a rule, the rule immediately becomes the activated rule when the rule meets the requirements to become active.
- A **Force**-enabled rule that meets the requirements to become active, overrides all other rules, even if one or more of those rules meet the requirements to become activated.

- Once a **Force**-enabled rule no longer meets the requirements to remain activated, then it becomes idle.

A typical use case is to enable **Force** on the presenter's mic, to specify that when the presenter is speaking, the rule that commands the PRIME Switcher to switch the presenter's camera to **Program** when the presenter is speaking takes priority over any other activated rule.

NOTE: Do not enable Force and set Cycle Mode to either Random or List in the same rule. For example, if Rule A is activated due to having Force enabled, but its Cycle Mode activates Rule B, then Rule A's Force setting quickly reactivates Rule A. The result is that PRIME Switcher performs the Activation Event(s) for Rule B, and then immediately performs the Activation Event(s) for Rule A, as Force takes precedence. Visually, it may appear that there is a switcher glitch. If Rule A cuts to Cam1 and Rule B cuts to CAM2, then PRIME Switcher would quickly cut from CAM1 to CAM2 and back to CAM1. If Force is enabled, then set Cycle Mode to Hold.

Release Time

Release defines the length of time that it takes for the rule to become idle when one or more **Audio Input Levels** become inactive.

The **Release Timer** starts when one or more **Audio Input Levels** no longer meet the **Threshold**.

- If one or more **Audio Input Levels** remain inactive at the point when the **Release Time** elapses, then the rule becomes idle, and Audio Director sends the rule's **Deactivation Event(s)** to PRIME Switcher.
- If, however, all **Audio Input Levels** return to an active state before the specified **Release Time** elapses, then the rule remains activated, and the **Release Timer** resets.

The **Release Timer** acts as a buffer against rapid changes between **Audio Input Level** active and inactive states, preventing unnecessary switches between cameras.

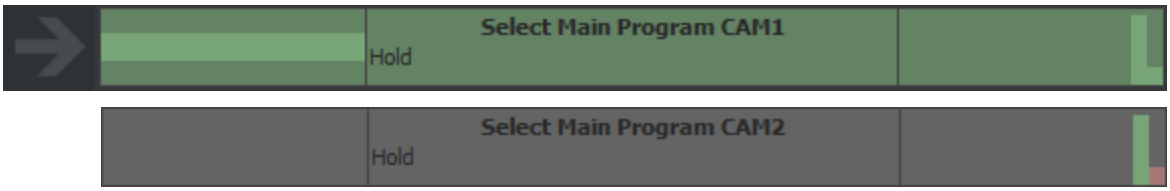
Cycle Mode

To provide more of a “live” feel to a show, Audio Director can introduce randomness to rule activation. For example, the rule that switches PRIME Switcher Program to a talk show host camera is probably the most frequently activated rule. Audio Director’s **Cycle Mode** can ensure variation in rule activation, so that the switching appears more natural.

The **Cycle Modes** are as follows:

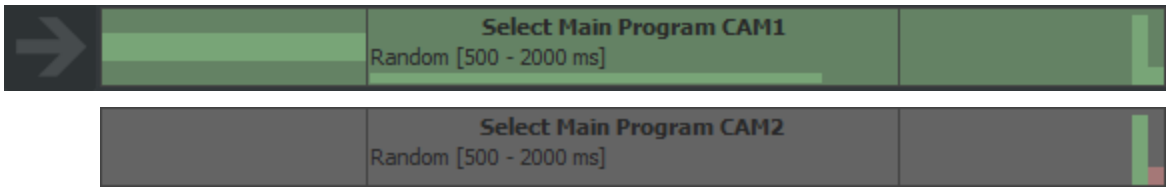
- **Hold:** No other rule is activated based on **Cycle Mode** parameters, i.e., **Cycle Mode** is disabled for this rule.

  The following shows the appearance of **Activated** and **Idle** rules with **Cycle Mode** set to **Hold**.



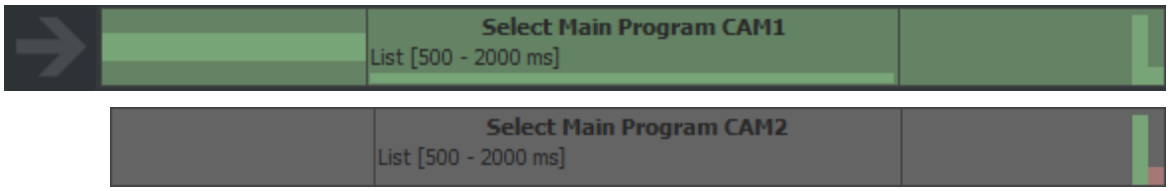
- **Random:** Audio Director randomly selects the next rule to be activated from the list of currently active rules in the **Active Rules** list.

  The following shows the appearance of **Activated** and **Idle** rules with **Cycle Mode** set to **Random**. In the **Activated** rule, the progress bar shows that the **Cycle Time** has not elapsed.



- **List:** Audio Director selects the next rule to be activated from the top of the list of currently active rules in the **Active Rules** list.

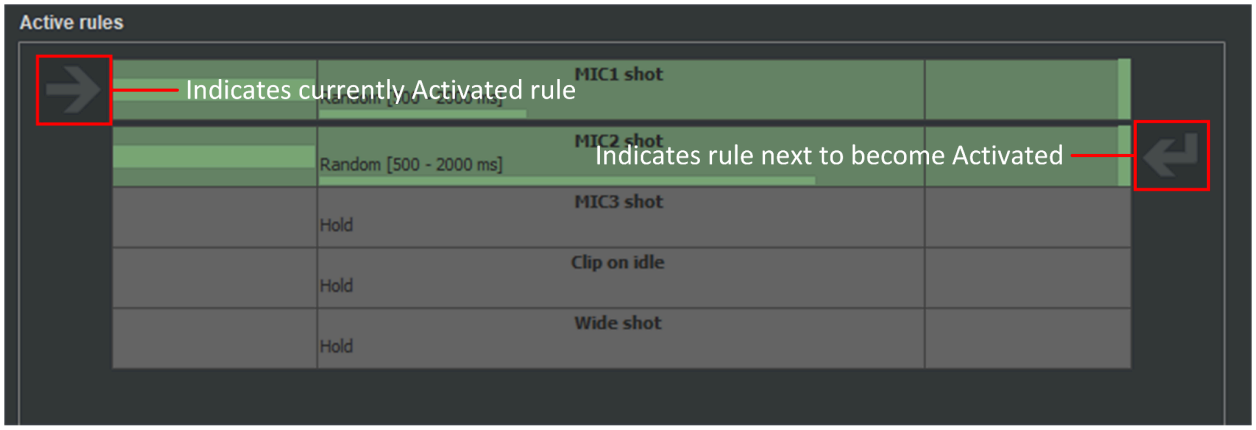
  The following shows the appearance of **Activated** and **Idle** rules with **Cycle Mode** set to **List**. In the **Activated** rule, the progress bar shows that the **Cycle Time** has elapsed.



When **Cycle Mode** is set to **Random** or **List**, you can define **min(imum)** and **max(imum)** times to define a time frame in which Audio Director automatically activates the rule that it has selected. Once the selected rule is activated, then the **Cycle Time** starts again, with a new timeout within the time frame.

The currently activated rule remains at the top of the **Active Rules** list until it becomes idle or is otherwise overridden by **Force** or **Cycle Mode**.

The rule to which the activated rule is cycles displays a separate indicator at the right of the **Active Rules** list. The following shows the currently activated rule and the next rule to become activated.



NOTE: Do not enable Force and set Cycle Mode to either Random or List in the same rule. For example, if Rule A is activated due to having Force enabled, but its Cycle Mode activates Rule B, then Rule A's Force setting quickly reactivates Rule A. The result is that PRIME Switcher performs the Activation Event(s) for Rule B, and then immediately performs the Activation Event(s) for Rule A, as Force takes precedence. Visually, it may appear that there is a switcher glitch. If Rule A cuts to Cam1 and Rule B cuts to CAM2, then PRIME Switcher would quickly cut from CAM1 to CAM2 and back to CAM1. If Cycle Mode is set to Random or List, then disable Force.

Minimum Delay, Attack Time, Release Time, Force and Cycle Mode Hierarchy

The specified **Minimum Delay** takes precedence over the **Attack Time**, **Release Time**, **Force**, and **Cycle Mode**. For example:

- If an **Attack Time** for **Rule B** or **Release Time** for **Rule A** has elapsed, but the **Minimum Delay** has not, then **Audio Director** waits until the **Minimum Delay** has passed prior to activating **Rule B**.
- If **Force** is enabled for **Rule A**, and the **Audio Inputs** for **Rule A** become active, but the **Minimum Delay** has not elapsed, then **Audio Director** waits until the **Minimum Delay** has passed prior to activating **Rule A**.

Force takes precedence over **Attack Time**, **Release Time**, and **Cycle Mode**. Note, however if a rule has **Force** enabled, and has **Cycle Mode** set to **Random** or **List**, then if **Cycle Mode** activates a different rule, then the rule that has **Force** enabled will immediately become activated again, resulting in what may appear to be a switcher glitch. As such, do not enable **Force** and **Set Cycle** mode to **Random** or **List** in the same rule.

- If you enable **Force**, then set **Cycle Mode** to **Hold**.
- If you set **Cycle Mode** to either **Random** or **List**, then disable **Force**.

Set Activation and Deactivation Events

Activation/Deactivation Event Overview

Events are the API commands that Audio Director sends to PRIME Switcher. There are two types of **Events**:

- **Activation Events:** When a rule becomes activated, then Audio Director sends the rule's **Activation Events** (API commands) to PRIME Switcher.
- **Deactivation Events:** When a rule becomes idle or changes from activated to active (e.g., another rule takes precedence due to **Force** or **Cycle Mode**), then Audio Director sends the rule's **Deactivation Events** (API commands) to PRIME Switcher.

You can add and edit rules regardless of whether or not Audio Director is connected to PRIME Switcher. If editing while disconnected, however, the combo boxes that allow you to select items such as **Bank**, **Bus**, **Source** and **Transition** are not available, and you must enter (type in) the information.

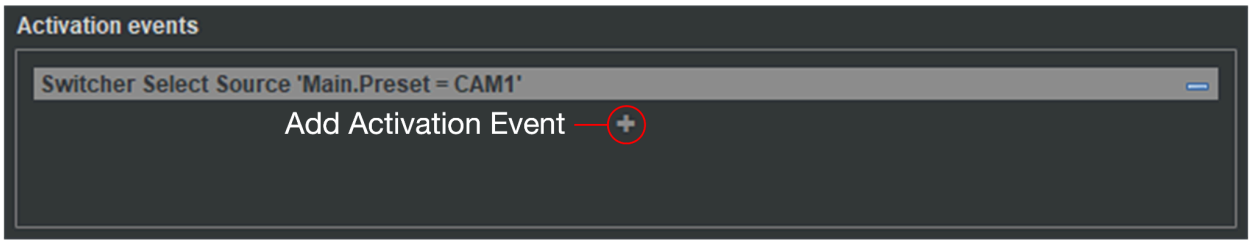
After you add one or more **Activation** or **Deactivation Events**, then set the **Audio Input** parameters for **Audio Input**.

NOTE: A rule need not have both Activation Events and Deactivation Events. In fact, it is best to plan rules so that they all send either Activation or Deactivation Events, so that a rule's Deactivation Events do not conflict with the Activation Events of the subsequent rule. Generally, it is best to set Activation Events.

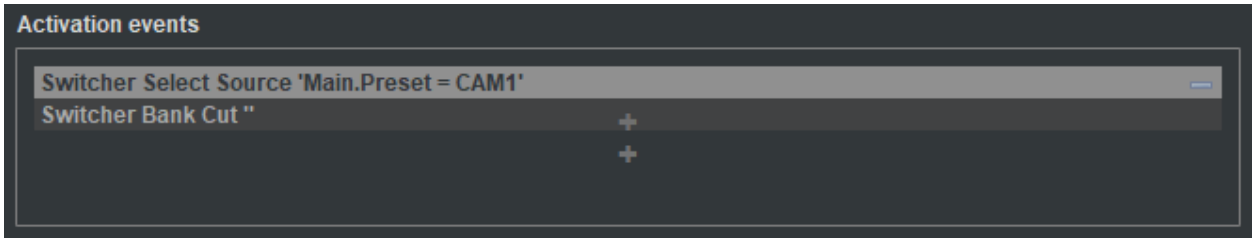
Add an Activation or Deactivation Event

To add an **Activation** or **Deactivation Event**:

1. In the **Activation Events** or **Deactivation Events** panel, click "**+**" (the **Add** icon) or double-click anywhere else in the **Activation Events** or **Deactivation Events** panel.



A new event appears. By default, it is **Switcher Bank Cut**:



2. You can select from the following built-in commands, plus you can enter custom commands.

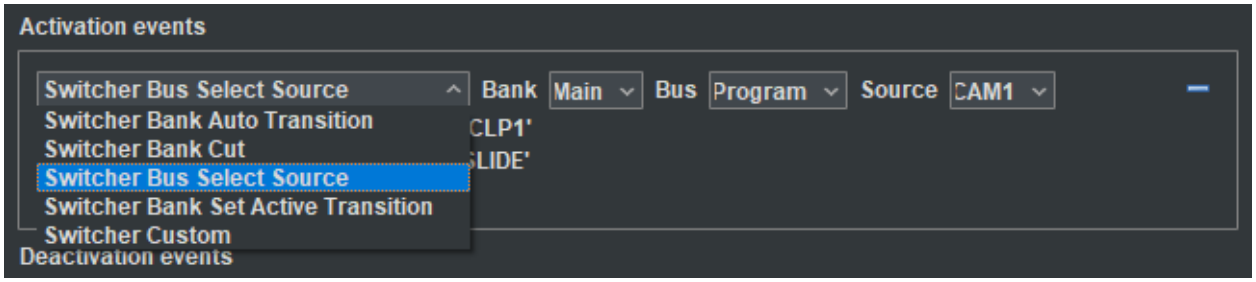
    - If Audio Director is connected PRIME Switcher, or was connected to PRIME Switcher during this session, but then disconnected, then:

        a. Select a command from the **Command** drop-down list.

        b. Select the parameters from the combo box(es) specific to the command.

        c. Press **Enter**.

        In the following, the **Command** dropdown list is expanded to show the available commands.



    - If Audio Director has not yet been connected to PRIME Switcher during this session, then:

        a. Select a command from the **Command** drop-down list.

        b. Type the name of each parameter into its combo box. For example, to set the **Main Bank Preset Source** to **CAM1**:

            - Type "**Main**" in the **Bank** combo box.
            - Type "**Preset**" in the **Bus** combo box.
            - Type "**CAM1**" in the **Source** combo box.

        c. Press **Enter** or click another event in the list.

The commands and their parameters are as follows:

- **Switcher Bank Auto Transition:** Triggers a transition using the **Auto Transition** set in PRIME Switcher.

  Parameter:

  - **Bank:** Select the PRIME Switcher **Bank** that will perform the **Auto** transition.
    - **Main**
    - **ME1** (if configured on PRIME Switcher)

  Example: In the **Main Bank**, perform the transition set as the **Auto Transition**.

- **Switcher Bank Cut:** Triggers a **Cut** transition.

  Parameter:

  - **Bank:** Select the PRIME Switcher **Bank** that will perform the **Cut** transition.
    - **Main**
    - **ME1** (if configured on PRIME Switcher)

- **Switcher Bus Select Source:** Selects a PRIME Switcher source based on the specified **Bank**, **Bus** and **Source**.

  Parameters:

  - **Bank:** Select the PRIME Switcher **Bank** from which the **Source** is selected.
    - **Main**
    - **ME1** (if configured on PRIME Switcher)
  - **Bus:** Select the PRIME Switcher **Bus** from which the **Source** is selected.
    - **Preset**
    - **Program**
    - **Key1**
    - **Key2**
    - **Key3**
    - **Key4**

- **Source:** Select the **Source**.
  - Black **(BLK)**
  - Any configured **Video Inputs**, typically **CAM1**, **CAM2**, etc.
  - Any configured **Clips** (**CLP1**, **CLP2**)
  - Any configured **Graphics** (**GFX1**, **GFX2**)
  - **Mix Effects**, if configured (**ME1**)

Example: In the **Main Bank Program Bus**, select **CAM3**.

- **Switcher Bank Set Active Transition:** Specifies the **Transition Type** that PRIME Switcher performs when **Switcher Bank Auto Transition** is triggered.
  - **Bank:** Select the PRIME Switcher **Bank** from which the **Source** is selected.
    - **Main**
    - **ME1** (if configured on PRIME Switcher)
  - **Transition:** Select the **Transition Type**.
    - **DISS:** Dissolve
    - **WIPE:** Wipe
    - Any other custom transitions.

Example: In the **ME1 Bank**, set the **Active Transition** to **Dissolve**.

- **Switcher Custom:** Send a custom command to PRIME Switcher.
  - **Request:** Enter script.

    Example: Mute first **Audio Fader** in the **Main Audio Bus**.

    ```
    { "Type": "set", "Method": "AudioBuses(0).IsMuted", "Params": [ true ] }
    ```

For an overview of available commands please refer to the *PRIME WebSocket Automation Interface Reference Guide*.

Example of a Rule's Typical Activation Event:

1. Set **Main Bank Preset Bus Source** to **CAM1**.
2. Perform **Main Bank Cut Transition**.

NOTE: When planning Activation and Deactivation Events, it is best practice to program the transitions in either the Activation Events or the Deactivation Events - not in both; otherwise, a double transition will be performed. For example:

- **If a Wipe is a Deactivation Event for a rule, and a Wipe is an Activation Event for the subsequent rule, then PRIME Switcher will perform a Wipe, and then immediately another Wipe.**
- **If a Wipe is a Deactivation Event for a rule, and a Dissolve is an Activation Event for the subsequent rule, then PRIME Switcher will perform a Wipe, and then immediately a Dissolve.**

Delete an Activation/Deactivation Event

To delete an **Activation/Deactivation Event**:

- Click the minus sign at the right of the **Activation** or **Deactivation Event** that you would like to delete.

The list no longer displays the event.

Set Audio Input Parameters

Add an Audio Input to a Rule

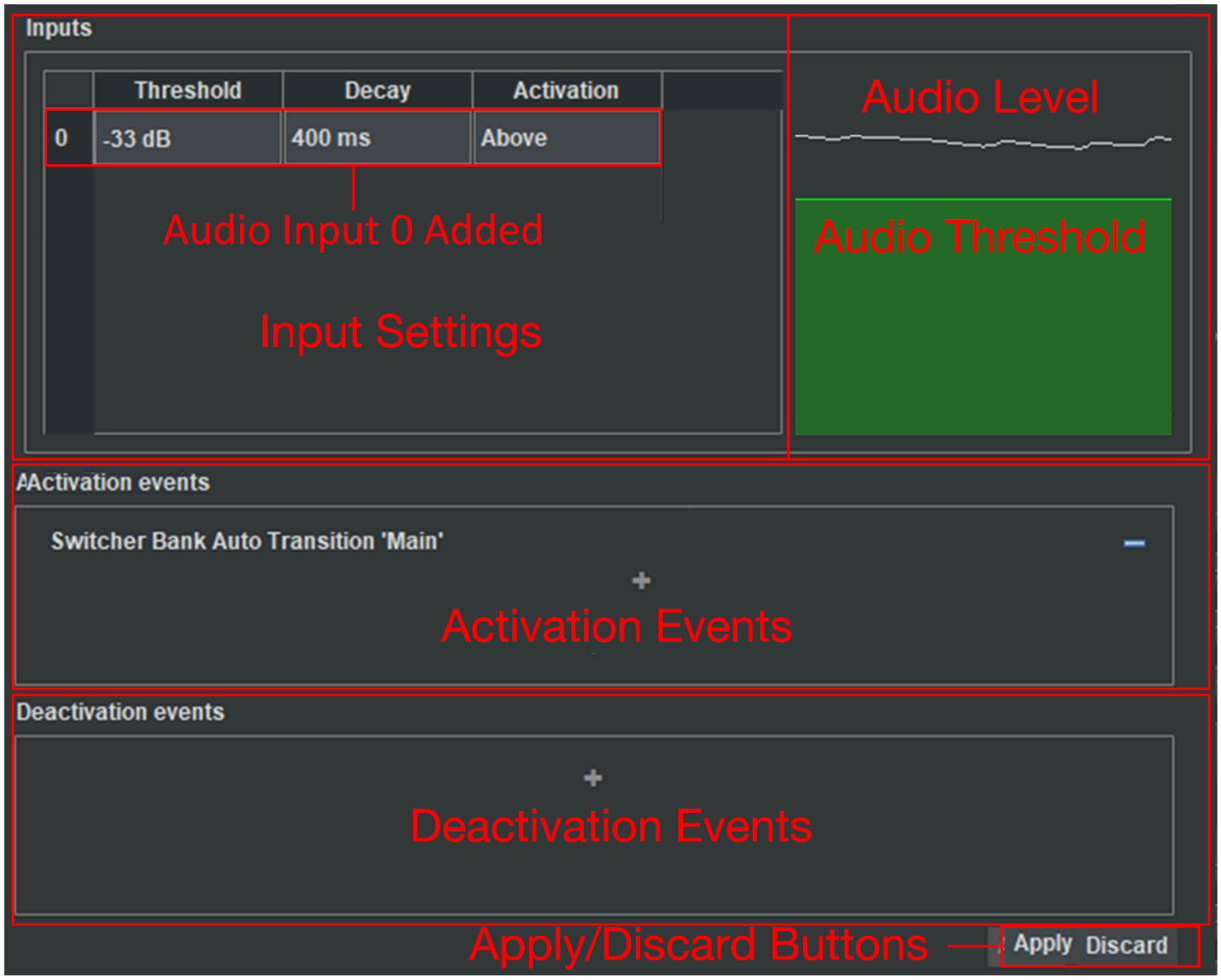
Audio Director triggers a rule based on the parameters set for specific **Audio Inputs**. For example, Audio Director can switch to the anchor's camera when the anchor's microphone level is at or above a specific **Audio Input Level**, and the guest's microphone is below a specific **Audio Input Level**. This boundary level is called the **Threshold**.

To set up the rule, you must add each of the **Audio Inputs** to the specific rule.

To add an **Audio Input** to a rule:

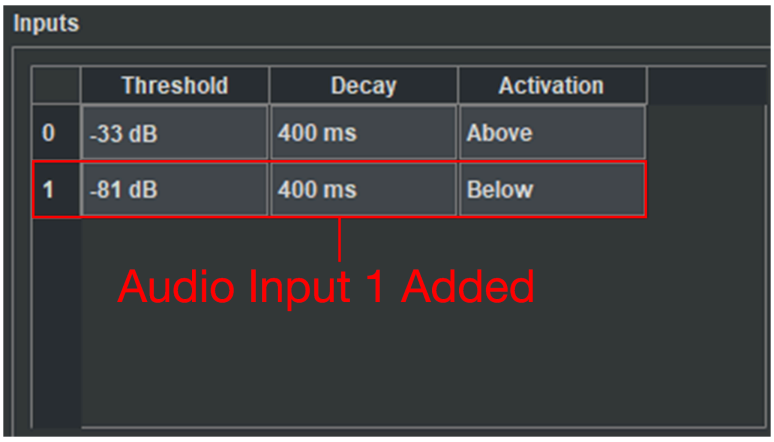
1. Select (click) the rule to which you would like to add the **Audio Input**.
2. At the top of the Audio Director interface, click the **Audio Input** that you would like to add to the rule. For example, if the guest's microphone is **Audio Input 1**, then click the **Audio Input** labeled **1**.

The **Audio Input** appears, and displays its **Threshold**, **Decay** and **Activation** parameters and a visual representation of the **Audio Input Level** and the specified **Threshold**.



To add an additional **Audio Input** to the rule:

- At the top of the Audio Director interface, click the **Audio Input** that you would like to add to the rule.



To display the visual representation of the **Audio Input Level** and **Threshold** for a specific **Audio Input**:

- Click the **Threshold**, **Decay** or **Activation** field in the row that displays the settings for that **Audio Input**.

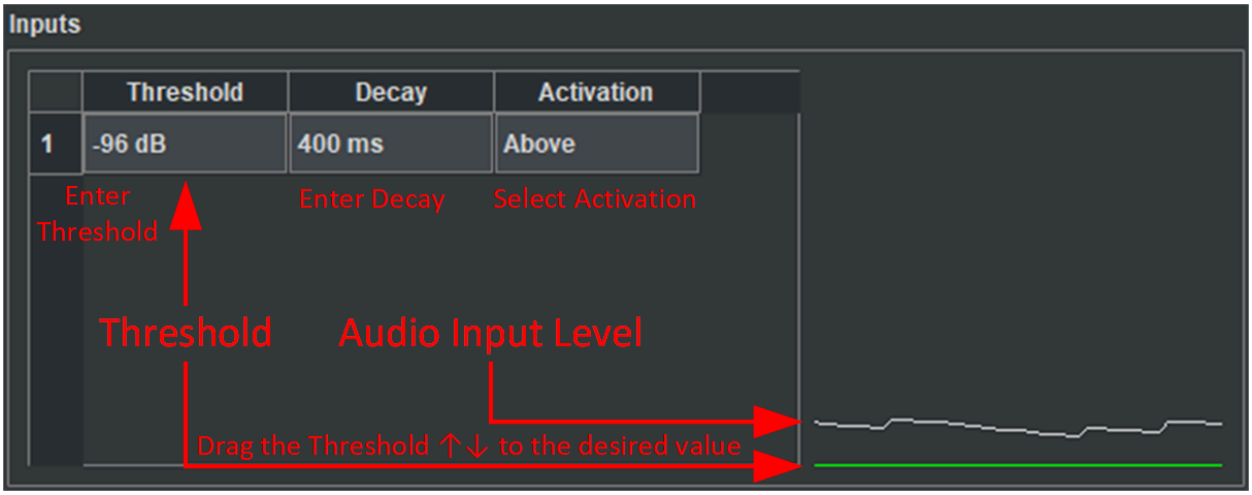
Delete an Audio Input from a Rule

To delete an **Audio Input** from a rule:

- At the top of the Audio Director interface, click the **Audio Input** that you would like to delete from the rule. The **Audio Input** no longer appears in the rule.

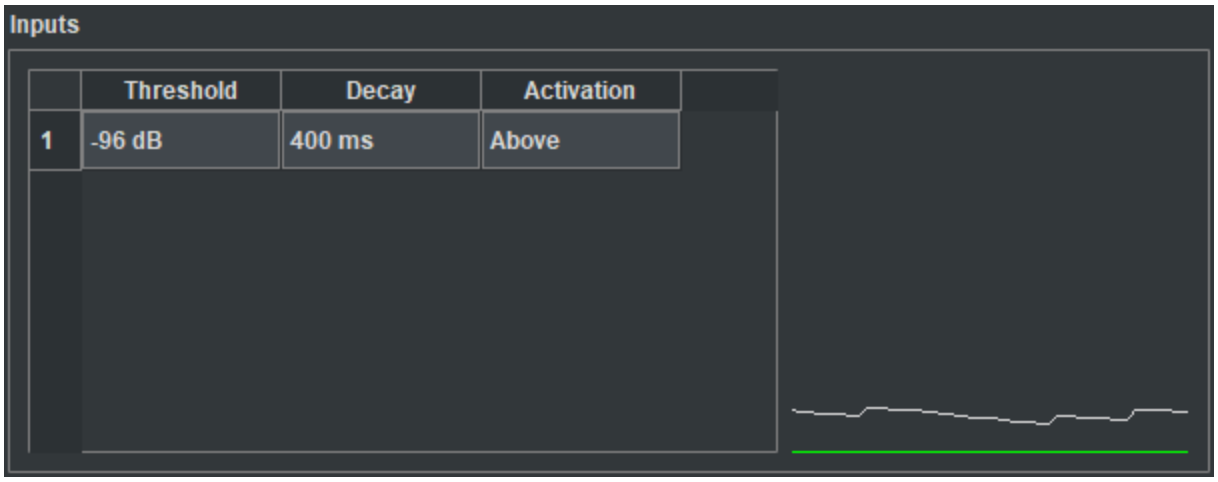
Threshold and Activation

Threshold defines at which **dB** value the **Audio Input** is active or inactive. This is determined in conjunction with the **Activation** setting.

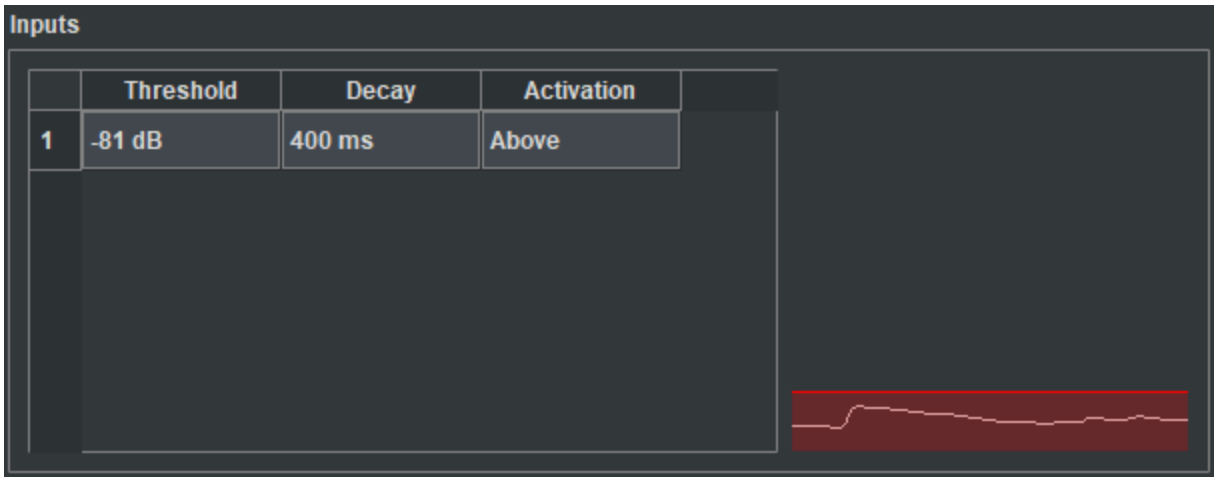


Activation specifies at which point the audio input is considered **active**, i.e., **Above** (or at) or **Below** the **Threshold**.

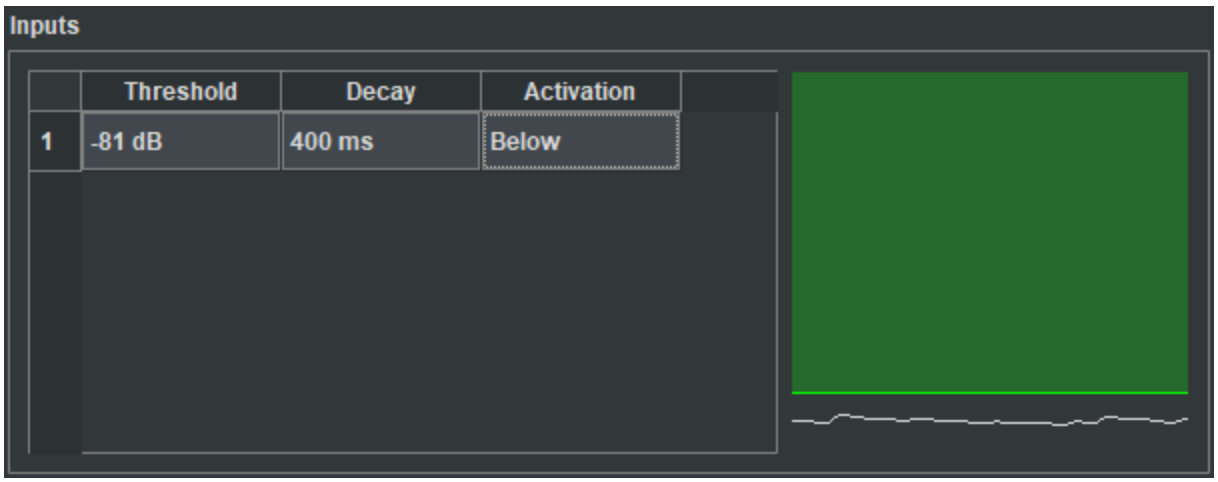
- If the **Activation** is set to **Above**, then the audio input is considered **active** if the signal is equal to or above the specified **Threshold**.



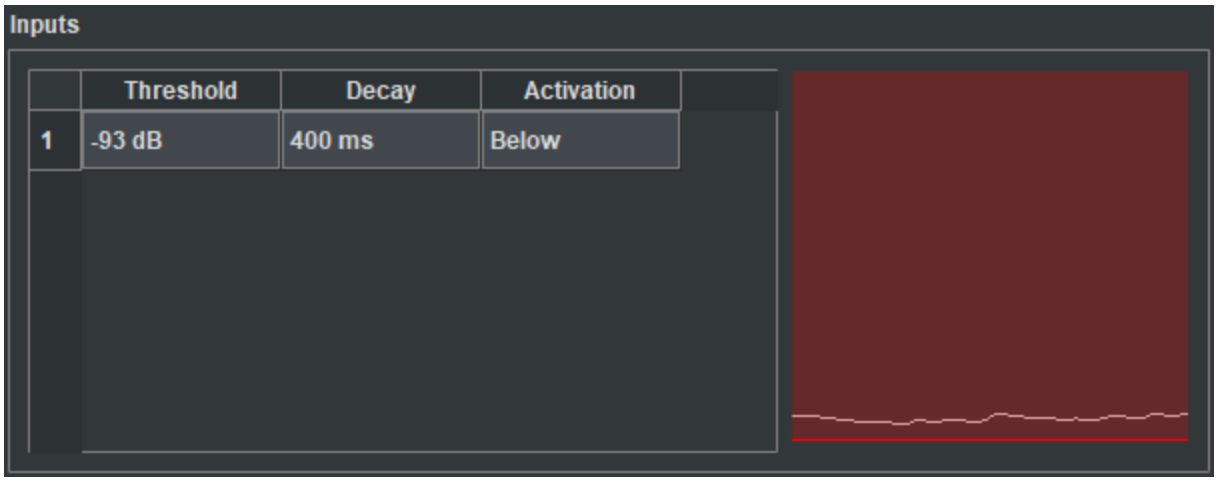
- If the **Activation** is set to **Above**, then the audio input is considered **inactive** if the signal is below the specified **Threshold**.



- If the **Activation** is set to **Below**, then the audio input is considered **active** if the signal is below the specified **Threshold**.

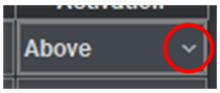


- If the **Activation** is set to **Below**, then the audio input is considered **inactive** if the signal is equal to or above the specified **Threshold**.



To set **Activation**:

1. Double-click the **Activation** field for the audio input, then click the drop-down arrow.



2. From the **Activation** drop-down menu for the rule, select **Above** or **Below**.

To set **Threshold**, do one of the following:

- Enter the threshold in the **Threshold** field.
- In the **Audio Level/Threshold** display at the right, drag the **Threshold** indicator up or down to the desired position.

Decay

Decay defines the length of time, in **ms**, in which the **Audio Input Level** decays to silence.

The **Audio Input Level** stores the last level from the **Audio Source** (e.g., discrete AES from the microphone, embedded audio, etc.).

- If the **Source Audio Level** rises above the last stored **Audio Input Level**, then the **Audio Input Level** immediately raises to match the **Source Audio Level**.
- If the **Source Audio Level** drops below the last stored **Audio Input Level**, then the **Audio Input Level** immediately drops to match the **Source Audio Level**. Depending on the specified **Decay**, however, the **Audio Input Level** takes time to reach the lower level. As such, it provides a buffer for silence, preventing unnecessary switching.
    - If the **Decay** value is set high, then the **Audio Input Level** slowly decays, even after a short peak. As such, speech that is spaced out or halting will not cause the audio to become inactive.
    - If the value is set low, then the **Audio Input Level** decays much faster and requires a sustained peak to maintain a higher **dB** value. As such, speech that is spaced out or halting may cause the audio to become inactive, as the **Source Audio** must be continually maintained at a higher level, in order for the **Audio Input Level** to remain active.

Apply/Discard Rule Edits

Apply Rule Edits

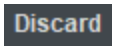
To exit **Edit Rules Mode** and apply edits made to rules:

- At the lower right bottom of the Audio Director interface click the **Apply** button 

. The rules edits are applied and **Edit Rules Mode** closes.

Discard Rule Edits

To exit **Edit Rules Mode** and discard edits made to rules:

- At the lower right bottom of the Audio Director interface click the **Discard** button 

. The rules edits are discarded and **Edit Rules Mode** closes.

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Chapter 5: Troubleshooting

Set and Review the Log

To troubleshoot **Audio Director**:

- Review the **Log files** that are created by Audio Director.

Via the **Log menu**, you can define the following settings:

- **Location:** Where to store the log files.
- **Size limit:** When the log file exceeds this value, a new log file will be created.
- **Count limit:** When the number of log files exceeds this value, then the oldest existing log file is removed.
- **Open log directory:** Opens log file directory, from which you can select and open a log file.

Log Messages

Log format	**Event**	**Arguments** *NOTE: "NA" indicates that there is no argument.*
parsed %1 rule(s)	session loaded successfully	number of rules
rule "%1" attack	rule valid, attack timer starts	rule name
rule "%1" idle	rule invalid during attack	rule name
rule "%1" active	rule activated after attack	rule name
rule "%1" releasing	rule invalid during active, release timer starts	rule name
rule "%1" active	rule activated during release timer	rule name
rule "%1" released	rule released after release timer	rule name
selecting new rule on the basis of '%1' cycle mode	cycling to next rule	cycle mode
next cycle time: %1	after cycle shows next occurrence	next cycle time
activating rule: "%1"	rule activated (sending commands)	rule name
deactivating rule: "%1"	rule deactivated (sending commands)	rule name
Connected	switcher connected	NA
Disconnected	switcher disconnected	NA
Received error for request %1 %2	switcher command returned error	command, error

Received error from unknown request:	switcher command returned error (unknown command)	error
Could not send commands because Switcher state is missing	switcher state is missing	NA
Could not send command %1: %2	command could not be created (e.g., bank not found)	command, specific error
Reconnecting...	trying to reconnect after disconnect	NA

Common Issues

Audio Input Level Does Not Display

If an **Audio Input Level** does not display, i.e., there appears to be no audio input signal, then ensure that the audio source is connected to the audio card, and is operating properly.

Cannot Access Combo Boxes

You can add and edit rules regardless of whether or not Audio Director is connected to PRIME Switcher. If you have opened the session, and have not yet connected the session to PRIME Switcher, however, then you will not be able to access the **Activation/Deactivation Event** combo boxes that allow you to select items such as **Bank**, **Bus**, **Source** and **Transition**. Instead, you must enter (type in) the settings.

- Once you connect the session to PRIME Switcher, then the combo boxes become available, even if you subsequently disconnect from PRIME Switcher.
- If you close the session and reopen it, then you will need to connect the session once again to access the combo boxes.

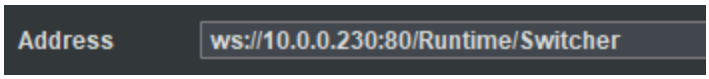
Log Shows that Switcher State Cannot Be Retrieved

The log indicates that the PRIME Switcher state cannot be retrieved. Example:

Received error for request 'call GetState' Could not find object: This.GetState

To remedy, ensure that:

- Audio Director is connecting to the correct PRIME Switcher address; and,
- "**/Runtime/Switcher**" is at the end of the **URL**, as shown in the following:



Log Shows that Command Cannot Be Sent

The log indicates that the command cannot be sent to PRIME Switcher, i.e., the command is addressing a non-existing entity on PRIME Switcher. Example:

> *Could not send command Switcher Select Source 'ME2.Preset = BLK': Bank ME2 not found*

To remedy:

- Ensure that you correctly configure the **Bank**, **Source** and **Transitions** on PRIME Switcher.
- If you are setting up **Activation/Deactivation Events** while not yet connected to PRIME Switcher during a session, then ensure that you enter the **Bank**, **Bus**, **Source**, and **Transition** names exactly as they are spelled, and that you do not enter **Bank**, **Bus**, **Source**, and **Transition** names that either do not (because they are not configured) or cannot (e.g., Bank4, Key5) exist on PRIME Switcher.
- If you entered a **Custom** **Activation/Deactivation Event**, then ensure that the syntax is correct, and that it correctly references the **Bank**, **Bus**, **Source**, and **Transition** names.

Switcher Switches Sources, and then Quickly Switches Again, Part 1

If PRIME Switcher switches from Source A to Source B, and then quickly switches back to Source A, it may be due to the rule having **Force** enabled, and **Cycle Mode** set to either **Random** or **List**. When **Cycle Mode** triggers the switcher to switch Source A to Source B, the **Force** setting in Source A causes it to immediately switch back to Source A.

To remedy, you can do one of the following:

- Keep **Force** enabled, and set **Cycle Mode** to **Hold**. This disables **Cycle Mode**.
- Disable **Force**, and keep **Cycle Mode** set to **Random** or **List**.
- Disable **Force** and set **Cycle Mode** to **Hold**.

Switcher Switches Sources, and then Quickly Switches Again, Part 2

If PRIME Switcher switches from Source A to Source B, and then quickly switches again, it may be due to the rule's **Deactivation Event** triggering a transition, and the subsequent rule's **Activation Event** triggering a transition. The result is that when the first rule triggers its transition upon deactivation, then the subsequent rule then immediately triggers another transition upon activation.

To remedy, it is best to set the transitions for all of the rules in the session to trigger from the **Activation Events** or all of the rules in the session to trigger from **Deactivation Events**, preferably **Activation Events**.

GLOSSARY

Audio Director Terms

The following terms apply to Audio Director. *See PRIME Switcher Terms for definitions of PRIME Switcher-specific terms.*

Underlined term headings link to additional content.

Activated

A rule whose **Audio Input Levels** meet the rule's **Threshold** and **Activation** requirements, whose **Attack Time** has elapsed, and is not overridden by another rule. When a rule becomes activated, it sends its **Activation Events** to PRIME Switcher.

Activation

The boundary that defines the **Audio Input Level** at which an **Audio Input** is determined to be active or inactive.

Activation Event

An API command that is sent to PRIME Switcher upon a rule becoming activated. Each rule can include one or more **Activation** and **Deactivation Events**, i.e., API commands, such as selection of a **Bank**/**Bus**, **Source**, selection of an **Active Transition**, or execution of a transition, that are sent to PRIME Switcher upon the activation or deactivation of the rule.

Active (Audio Input)

An **Audio Input Level** that meets a rule's **Threshold** and **Activation** requirements.

Active (Rule)

A rule whose **Audio Input Levels** meet the rule's **Threshold** and **Activation** requirements, and whose **Attack Time** has elapsed.

Attack

A transitory state in which the rule is **Idle**, all audio inputs are active, but the **Attack Time** has not yet elapsed.

Attack Time

The user-specified length of time that the **Release Timer** must run before the rule becomes **Active** or **Activated**.

Attack Timer

A timer that starts to run when an idle rule meets the requirements to become active, i.e., the **Audio Input Levels** meet the rule's **Threshold** and **Activation** requirements and are therefore active. If the **Audio Input Levels** remain active for the entire specified **Attack Time** duration, then the rule becomes **Active** or **Activated**.

Audio Input

An incoming audio signal from **Source Audio**. Audio Director monitors all enumerated (numbered) inputs and displays their levels at the top of the Audio Director interface.

If you are unsure as to which input number is assigned to which microphone, then touch the mic and watch which input reacts.

Audio Input Level

The strength of the **Audio Input** signal, in decibels (**dB**).

Connected

Specifies that Audio Director is connected to the PRIME Switcher specified in the **Session Address** field.

Cycle Mode

To provide more of a "live" feel to a show, Audio Director can introduce randomness to rule activation. For example, the rule that switches PRIME Switcher Program to a talk show host camera is probably the most frequently activated rule. Audio Director's **Cycle Mode** can ensure variation in rule activation, so that the switching appears more natural.

Deactivated

A rule that had been activated, that no longer meets the requirements to remain activated, or has been overridden due to **Force** or **Cycle Mode**. A deactivated rule can be either active or idle.

Deactivation Event

An API command that is sent to PRIME Switcher upon a rule becoming deactivated. Each rule can include one or more **Activation** and **Deactivation Events**, i.e., API commands, such as selection of a **Bank**/**Bus**, **Source**, selection of an **Active Transition**, or execution of a transition, that are sent to PRIME Switcher upon the activation or deactivation of the rule.

Decay

The length of time, in **ms**, in which the **Audio Input Level** decays to silence.

- If this value is high, then the **Audio Input Level** slowly decays, even after a short peak.
- If the value is low, then the **Audio Input Level** decays much faster and requires a sustained peak to maintain a higher **dB** value.

Disconnected

Specifies that Audio Director is not connected to the PRIME Switcher specified in the **Session Address** field.

Event

Activation or **Deactivation Event**.

Force

A setting that specifies that when a rule becomes **active**, it takes precedence over any other rule that is already **activated**.

Idle

A rule that is not active or activated.

Inactive (Audio)

An **Audio Input Level** that does not meet a rule's **Threshold** and **Activation** requirements.

Invalid

A state in which the rule's **Audio Input Levels** are inactive, i.e., they do not meet the conditions for the rule to become **active**/**activated**.

Note, however, that when an activated rule becomes invalid, then the **Release Time** and **Minimum Delay** must elapse before the rule becomes idle.

Log

A continually updating set of messages that communicate the state of Audio Director.

Minimum Delay

A global setting for the session that defines a minimum length of time before the next rule can become activated. **Minimum Delay** overrides **Cycle Mode** and **Force**.

Release

A transitory state in which the rule is **Activated**, but:

- One or more **Audio Input Levels** have become inactive.
- The **Release Time** has not yet elapsed.

Release Time

The user-specified length of time that the **Release Timer** must run before the rule becomes **Idle**.

Release Timer

A timer that starts to run when an activated rule no longer meets the requirements to remain active, i.e., one or more of the **Audio Input Levels** does not meet the rule's **Threshold** and **Activation** requirements to remain active. If one or more of **Audio Input Levels** remain inactive for the entire specified **Release Time** duration, then the rule becomes **Idle**.

Rule

A **rule** defines how PRIME Switcher reacts to user-set audio levels and timing parameters. User-configured **Activation** and **Deactivation Events**, i.e., API commands, are assigned to rules and sent to PRIME Switcher. *Also see Create/Edit Rules.*

Session

A **session** represents a specific connection to PRIME Switcher. For each show that you run on a PRIME Switcher, you can create a different session. You can also run multiple sessions simultaneously, with each session connecting to a different PRIME Switcher device. *Also see Session Operations.*

Source Audio

Audio source to Audio Director, using the Audio Stream Input/Output (ASIO) protocol. ASIO bypasses the normal audio path through various Windows operating system layers, so that Audio Director connects directly to the audio card, thereby reducing latency.

Source Audio Level

The audio level from the **Audio Source**, that is processed as an Audio Director **Audio Input**.

Threshold

The specified **dB** value at which the audio input is active or inactive. This is determined in conjunction with the **Activation** setting.

Valid

A state in which the rule's **Audio Input Levels** are active, i.e., they meet the conditions for the rule to become **active**/**activated**.

Note, however, that when the **Audio Input Levels** in an idle rule become active, then the **Attack Time** and **Minimum Delay** must elapse before the rule becomes idle.

PRIME Switcher Terms

The following terms apply to PRIME Switcher. *See the PRIME Switcher User Guide for information on configuring and operating PRIME Switcher.*

The commands involving these terms are set in the **Activation** and **Deactivation Events**.

Active Transition

In the PRIME Switcher **Transition Area**, the currently selected transition. For example, if the Active Transition is a **Wipe**, then when Audio Director triggers an **Auto Transition**, PRIME Switcher performs a **Wipe**. *Also see **Transition** and **Auto Transition**.*

Auto Transition

The command that triggers the **Active Transition**. *Also see **Transition** and **Active Transition**.*

Bank

A PRIME Switcher bank (**Main** or **ME1**). The PRIME Switcher Bank comprises the **Program**, **Preset** and **Key Buses**.

Bus

A PRIME Switcher bus. Buses include **Program**, **Preset**, **Key1**, **Key2**, **Key3** and **Key4**.

Source

A PRIME Switcher video input. Sources can include black, camera or other video feeds, clips, graphics, and the Mix Effects (ME1) bank output.

Transition

The visual effect applied when PRIME Switcher switches Program from one source to another. Transitions include **Cut**, **Dissolve**, **Wipe**, as well as **Custom** transitions that have been configured in PRIME Switcher. *Also see **Active Transition** and **Auto Transition**.*

ABOUT US

Chyron is ushering in the next generation of storytelling in the digital age. Founded in 1966, the company pioneered broadcast titling and graphics systems. With a strong foundation built on over 50 years of innovation and efficiency, the name Chyron is synonymous with broadcast graphics. Chyron continues that legacy as a global leader focused on customer-centric broadcast solutions. Today, the company offers production professionals the industry's most comprehensive software portfolio for designing, sharing, and playing live graphics to air with ease. Chyron products are increasingly deployed to empower OTA & OTT workflows and deliver richer, more immersive experiences for audiences and sports fans in the arena, at home, or on the go.

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