# PRIME Playout Configuration User Guide Version 5.1

March 2025



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| Clip Recorder Properties                           |    |

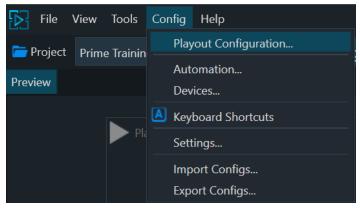


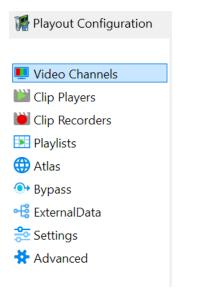
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# PRIME PLAYOUT CONFIGURATION

The Playout Configuration Panel may be accessed from the Runtime Playout Interface "Config" main menu:





From this dialog you may configure

- Video Channels: Inputs, Outputs, And Preview channels
- Clip Players
- Clip Recorders
- Playlists
- Atlas multiviewer
- Bypass
- External Data
- Settings
- Advanced



|                                | File Branding        | 🝷 🗋 New 👻 🔚 Save As 🗙       | Delete                      |                           |                       |                           | License Offline       |
|--------------------------------|----------------------|-----------------------------|-----------------------------|---------------------------|-----------------------|---------------------------|-----------------------|
| Video Channels                 | Video Channels 돈 A   | dd Output 👻 🚬 Add Input 👻   |                             |                           |                       |                           |                       |
| Clip Players<br>Clip Recorders | Channel              | 🗹 Output 1 🛛 💥              | 🗹 Output 2 🛛 💥              | 🕑 Output 3 🗙              | Preview 1 🗙           | 🗹 Preview 2 🛛 💥           | Preview 3 💥           |
| Playlists                      | Device               | Application Window ~        | Application Window V        | Application Window ~      | Application Window V  | Application Window ~      | Application Window    |
| Atlas                          | Type                 | Video + Key Out 🗸 8 Bit SDR | Video + Key Out 🗸 8 Bit SDR | Video Out Video S Bit SDR | Video Out 🗸 8 Bit SDR | Video Out Video S Bit SDR | Video Out Video Out   |
| Bypass                         | Connector            | Video Window 1 ~            | Video Window 2 ~            | Video Window 3 ~          | Video Window 4 ~      | Video Window 5 ~          | Video Window 6 ~      |
| ExternalData<br>Settings       | Name                 | FB1                         | FB2                         | FB3                       | Preview 1             | Preview 2                 | Preview 3             |
| Advanced                       | Video Standard       | 1080i 59.94 Hz V            | 1080i 59.94 Hz 🗸 🗸          | 1080i 59.94 Hz 🗸          | 1080i 59.94 Hz 🗸 🗸    | 1080i 59.94 Hz 🗸          | 1080i 59.94 Hz V      |
|                                | Video Shape          | Shaped ~                    | Shaped $\vee$               | Unshaped $\vee$           | Unshaped $\vee$       | Unshaped $\vee$           | Unshaped $\vee$       |
|                                | Downstream Input     | None ~                      | None ~                      | None ~                    | None ~                | None ~                    | None                  |
|                                | Audio Mode           | System Audio 🗸 🗸            | Disabled $\sim$             | System Audio 🗸 🗸          | Disabled $\checkmark$ | Disabled $\sim$           | Disabled ~            |
|                                | Audio Device         | ~                           |                             | ~                         |                       |                           |                       |
|                                | Audio Channels       | 2 ~                         | 2 🗸                         | 2 ~                       | 2 ~                   | 2 ~ ~                     | 2 ~                   |
|                                | Genlock Source       |                             |                             |                           |                       |                           |                       |
|                                | Genlock Timing (H/V) |                             |                             |                           |                       |                           |                       |
|                                | Antialiasing         | MSAA 2x ~                   | MSAA 2x ~                   | MSAA 2x ~                 | Disabled $\sim$       | Disabled $\sim$           | Disabled $\checkmark$ |
|                                | Preview Channel      | Preview 1 v RTT             | Preview 2 V RTT             | Preview 3 V RTT           | V RTT                 | ✓ RTT                     | V RTT                 |
|                                | Proxy Output         | Full Resolution V H264      | Full Resolution V H264      | Full Resolution V H264    | 1/8 Resolution V H264 | 1/2 Resolution V H264     | 1/4 Resolution V H264 |
|                                | Proxy Frame Rate     | Full ~                      | Full ~                      | Full ~                    | Quarter (1/4) 🗸       | Half (1/2) ~              | Full v                |
|                                | Playout Toolbar      | Show ~                      | Show ~                      | Hide 🗸                    |                       |                           |                       |

| Video Channels 💽 Add Ou | utput 🔻 🔟 Add Input 👻 |    |
|-------------------------|-----------------------|----|
| Channel                 | V Output 1            | \$ |
| Device                  | Matrox DSX LE4        | Ŧ  |
| Туре                    | Video Out             | Ŧ  |
| Connector               | Video BNC 2           | Ŧ  |
|                         |                       |    |





# VIDEO CHANNELS

**Outputs, Inputs, Preview** 

Add an output or input by clicking their respective toolbar buttons

## LATENCY

Latency settings are available for inputs for all inputs. This allows delaying the input video signal as a Fixed length delay through the system.



# **CHANNEL PROPERTIES**

We support any output resolution combination as long as the genlock resolution has the same frame rate family. Frame rate families are:

- 23.98/29.97/59.94
- 25/50
- 24/30/60

For example, you cannot have 1080i50 and 1080i60 channels.

| Channel | Shows a check box to enable/disable the channel, the direction of the channel (Input or Output/Preview), and a button to remove the channel  |
|---------|--|
| Device  | Device types (only installed hardware devices will show up)<br>*Not all Devices are available for Output, Input, or Preview<br>• SDI / IP2110<br>• Matrox DSX LE4<br>• Matrox DSX LE5<br>• Matrox Q25 IP<br>• Matrox D25 IP<br>• NDI®<br>• GPU<br>• AWS CDI<br>• Network Stream (HTTP, RTP, RTMP, RTMPS)<br>• SRT Stream |



| <ul> <li>Application Window</li> <li>Desktop Window</li> <li>Sub Channel</li> <li>Auxiliary Audio</li> <li>Remote Engine</li> <li>System Audio Input</li> <li>Image Input</li> <li>Render         <ul> <li>Used for CAMIO/LUCI previews and JS Batch Renderin</li> <li>Velocity CAMIO/LUCI previews and JS Batch Renderin</li> </ul> </li> <li>Type Selects between Video Out/Video + Key Out, or Video In/Video + Key In Note: Not all devices support Video + Key</li> <li>Color Range, Depth, and LUT Note: Not all devices support all Ranges, 10-bit color depth, or LUT</li> <li>Options Note: Not all devices support all Ranges, 10-bit color depth, or LUT</li> <li>SDR 8-bit color depth, 10-bit color depth</li> <li>HDR (PQ) 10-bit color depth</li> <li>S-Log 3 10-bit color depth</li> <li>So SDI (1P 2110         <ul> <li>SDI (1P 2110</li> <li>Application Window</li> <li>Desktop Window</li> <li>Desktop Window</li> <li>Desktop Window</li> <li>Desktop Window</li> <li>Bestop Window</li> <li>Render</li> <li>Image Input</li> </ul> <li>HDR 10-bit (PQ based HDR)         <ul> <li>GPU</li> <li>Desktop Window</li> <li>Desktop Desktop</li> <li>Application Window</li> <li>Desktop Desktop</li> <li>Application Window</li> <li>Desktop Desktop</li> <li>Application Window</li> <li>HLG 10-bit (HLG based HDR)</li> <li>SDI / IP 2110             <ul> <li>NDI</li> <li>Application Window</li> <li>Besktop</li> <li>Application Window</li> <li>Desktop Desktop</li> <li>Application Window</li> <li>Besktop</li> <li>Application Window</li> <li>SDI / IP 2110             <ul> <li>NDI</li> <li>AWS CDI</li></ul></li></ul></li></ul></li></li></ul> |         |   |
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| <ul> <li>Auxiliary Audio         <ul> <li>Remote Engine</li> <li>System Audio Input</li> <li>Image Input</li> <li>Render                 <ul></ul></li></ul></li></ul>   |         | Desktop Window  |
| <ul> <li>Remote Engine</li> <li>System Audio Input</li> <li>Image Input</li> <li>Render         <ul> <li>O Used for CAMIO/LUCI previews and JS Batch Renderin</li> </ul> </li> <li>Type</li> <li>Selects between Video Out/Video + Key Out, or Video In/Video + Key In Note: Not all devices support Video + Key</li> <li>Color Range, Depth, and LUT</li> <li>Available Selections</li> <li>Depth, and LUT</li> <li>Note: Not all devices support all Ranges, 10-bit color depth, or LUT</li> <li>SDR 8-bit color depth 10-bit color depth</li> <li>HDR (PQ) 10-bit color depth</li> <li>HDR (PQ) 10-bit color depth</li> <li>S-Log 3 10-bit color depth</li> <li>SDD / IP 2110         <ul> <li>SDI / IP 2110</li> <li>AWS CDI</li> <li>AWS CDI</li> <li>AWS CDI</li> <li>BRR 10-bit (PQ based HDR)                 <ul> <li>GPU</li> <li>Application Window</li> <li>Image Input</li> <li>HDR 10-bit (HLG based HDR)                     <ul> <li>SDI / IP 2110</li> <li>Application Window</li> <li>Application Window</li></ul></li></ul></li></ul></li></ul>   |         | Sub Channel   |
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| <ul> <li>Image Input</li> <li>Render         <ul> <li>Used for CAMIO/LUCI previews and JS Batch Renderin</li> </ul> </li> <li>Type Selects between Video Out/Video + Key Out, or Video In/Video + Key In Note: Not all devices support Video + Key</li> <li>Color Range, Depth, and LUT Options Note: Not all devices support all Ranges, 10-bit color depth, or LUT</li> <li>SDR 8-bit color depth, 10-bit color depth, or LUT</li> <li>SDR 8-bit color depth</li> <li>HDR (PQ) 10-bit color depth</li> <li>HDR (PQ) 10-bit color depth</li> <li>SLog 3 10-bit color depth</li> <li>SDR 10-bit</li> <li>SDR 10-bit</li> <li>SDI (IP 2110</li> <li>AVS CDI</li> <li>Application Window</li> <li>Desktop Window</li> <li>Render</li> <li>Image Input</li> <li>HDR 10-bit (PQ based HDR)</li> <li>SPI (IP 2110</li> <li>Application Window</li> <li>HLG 10-bit (HLG based HDR)</li> <li>SDI / IP 2110</li> <li>NDI</li> <li>SDI / IP 2110</li> <li>Application Window</li> </ul>   |         | -   |
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| <ul> <li>SDI / IP 2110</li> <li>NDI</li> <li>GPU</li> <li>AWS CDI</li> <li>Application Window</li> <li>Desktop Window</li> <li>Render</li> <li>Image Input</li> </ul> HDR 10-bit (PQ based HDR) <ul> <li>GPU</li> <li>Desktop</li> <li>Application Window</li> </ul> HLG 10-bit (HLG based HDR) <ul> <li>SDI / IP 2110</li> <li>NDI</li> <li>AWS CDI</li> </ul>  |         | 10-bit color depth is available for the following Devices |
| <ul> <li>NDI</li> <li>GPU</li> <li>AWS CDI</li> <li>Application Window</li> <li>Desktop Window</li> <li>Render</li> <li>Image Input</li> </ul> HDR 10-bit (PQ based HDR) <ul> <li>GPU</li> <li>Desktop</li> <li>Application Window</li> </ul> HLG 10-bit (HLG based HDR) <ul> <li>SDI / IP 2110</li> <li>NDI</li> <li>AWS CDI</li> </ul>   |         | • SDR 10-bit  |
| <ul> <li>GPU</li> <li>AWS CDI</li> <li>Application Window</li> <li>Desktop Window</li> <li>Render</li> <li>Image Input</li> </ul> HDR 10-bit (PQ based HDR) <ul> <li>GPU</li> <li>Desktop</li> <li>Application Window</li> </ul> HLG 10-bit (HLG based HDR) <ul> <li>SDI / IP 2110</li> <li>NDI</li> <li>AWS CDI</li> </ul>  |         | <ul> <li>SDI / IP 2110</li> </ul>                         |
| <ul> <li>AWS CDI</li> <li>Application Window</li> <li>Desktop Window</li> <li>Render</li> <li>Image Input</li> <li>HDR 10-bit (PQ based HDR)</li> <li>GPU</li> <li>Desktop</li> <li>Application Window</li> <li>HLG 10-bit (HLG based HDR)</li> <li>SDI / IP 2110</li> <li>NDI</li> <li>AWS CDI</li> </ul>   |         | ○ NDI   |
| <ul> <li>Application Window</li> <li>Desktop Window</li> <li>Render</li> <li>Image Input</li> <li>HDR 10-bit (PQ based HDR)</li> <li>GPU</li> <li>Desktop</li> <li>Application Window</li> <li>HLG 10-bit (HLG based HDR)</li> <li>SDI / IP 2110</li> <li>NDI</li> <li>AWS CDI</li> </ul>  |         | ○ GPU   |
| <ul> <li>Desktop Window</li> <li>Render</li> <li>Image Input</li> <li>HDR 10-bit (PQ based HDR)</li> <li>GPU</li> <li>Desktop</li> <li>Application Window</li> <li>HLG 10-bit (HLG based HDR)</li> <li>SDI / IP 2110</li> <li>NDI</li> <li>AWS CDI</li> </ul>  |         | • AWS CDI   |
| <ul> <li>Desktop Window</li> <li>Render</li> <li>Image Input</li> <li>HDR 10-bit (PQ based HDR)</li> <li>GPU</li> <li>Desktop</li> <li>Application Window</li> <li>HLG 10-bit (HLG based HDR)</li> <li>SDI / IP 2110</li> <li>NDI</li> <li>AWS CDI</li> </ul>  |         | <ul> <li>Application Window</li> </ul>                    |
| <ul> <li>Image Input</li> <li>HDR 10-bit (PQ based HDR) <ul> <li>GPU</li> <li>Desktop</li> <li>Application Window</li> </ul> </li> <li>HLG 10-bit (HLG based HDR) <ul> <li>SDI / IP 2110</li> <li>NDI</li> <li>AWS CDI</li> </ul> </li> </ul>  |         |   |
| <ul> <li>HDR 10-bit (PQ based HDR)         <ul> <li>GPU</li> <li>Desktop</li> <li>Application Window</li> </ul> </li> <li>HLG 10-bit (HLG based HDR)         <ul> <li>SDI / IP 2110</li> <li>NDI</li> <li>AWS CDI</li> </ul> </li> </ul>   |         | •   |
| <ul> <li>GPU</li> <li>Desktop</li> <li>Application Window</li> <li>HLG 10-bit (HLG based HDR)</li> <li>SDI / IP 2110</li> <li>NDI</li> <li>AWS CDI</li> </ul>  |         | <ul> <li>Image Input</li> </ul>                           |
| <ul> <li>GPU</li> <li>Desktop</li> <li>Application Window</li> <li>HLG 10-bit (HLG based HDR)</li> <li>SDI / IP 2110</li> <li>NDI</li> <li>AWS CDI</li> </ul>  |         | <ul> <li>HDR 10-bit (PQ based HDR)</li> </ul>             |
| <ul> <li>Desktop</li> <li>Application Window</li> <li>HLG 10-bit (HLG based HDR)</li> <li>SDI / IP 2110</li> <li>NDI</li> <li>AWS CDI</li> </ul>   |         |   |
| <ul> <li>Application Window</li> <li>HLG 10-bit (HLG based HDR)         <ul> <li>SDI / IP 2110</li> <li>NDI</li> <li>AWS CDI</li> </ul> </li> </ul>  |         |   |
| <ul> <li>HLG 10-bit (HLG based HDR)</li> <li>SDI / IP 2110</li> <li>NDI</li> <li>AWS CDI</li> </ul>  |         | ·   |
| <ul> <li>SDI / IP 2110</li> <li>NDI</li> <li>AWS CDI</li> </ul>  |         |   |
| <ul> <li>NDI</li> <li>AWS CDI</li> </ul>   |         |   |
| <ul> <li>AWS CDI</li> </ul>  |         |   |
|  |         |   |
| • S-Log3 10-bit  |         | O AWS CDI   |
|  |         |   |
| • SDI / IP 2110  |         | • SDI / IP 2110   |



|                 | LUT (Lookup Table)  |
|-----------------|---|
|                 | Note: Please see the LUT section of this guide for more information about HLG   |
|                 | based HDR LUT Option Properties   |
|                 | Supported formats: *.lut *.cube   |
|                 | Note: LUT files can only be applied to the following HLG Input and Output Channels  |
|                 | HLG 10-bit color depth  |
|                 | • SDI / IP2110  |
|                 | • NDI   |
|                 | • AWS CDI   |
| Connector       | Shows the connector to be used for the device. This may change as other devices are added or removed NDI Input:                   |
|                 | <ul><li>System: Computer name or IP address</li><li>Source: Name of incoming stream</li></ul>                                     |
|                 | NDI Output:   |
|                 | Source: User defined stream name.   |
|                 | <ul> <li>Latency: Allows delaying source signal</li> </ul>  |
|                 | Network Stream:   |
|                 |   |
|                 | • URL   |
|                 | Image:  |
|                 | File: path to use as static image   |
| Name            | User defined name that will be shown throughout the application   |
| Video Standard  | Output resolution and frame rate to be used for the channel   |
|                 | GPU Output:   |
|                 | • Size Mode can be set to Scale, Stripe. Scale will scale the output to the   |
|                 | monitor size. Stripe will automatically section the output into stripes   |
|                 | to fit on the output. Custom Stripe will section the output into custom<br>stripes defined in the C:\ProgramData\ChyronHego\Prime |
|                 | Engine\layout#.xml file   |
|                 | Sub Channel:  |
|                 | • X and Y position can be specified for the top left hand corner of the   |
|                 | sub channel   |
|                 | Inputs:   |
|                 | Video Input Filtering: HALF size or Line Doubling   |
| Override Window | Customizes the selected Desktop Window Output Appearance by overriding  |
| Appearance      | position and resolution size  |
|                 |   |



| Video Shape                  | Setting to Shaped Causes Fill output to be pre-multiplied. Note: Video Shape is only enabled if Type is set to Video + Key Out Inputs:   |
|------------------------------|--|
|                              | <ul> <li>Frame Synchronizer: Hardware option that synchronizes the video<br/>input to the genlock. Enabling this feature adds one additional frame<br/>of delay.</li> </ul>  |
| Downstream Input             | Video input to be used as background video. If set, the Downstream Input can be manipulated from within scenes   |
| Audio Mode                   | Chooses output audio type: Disabled, Embedded (SDI, NDI, and Network<br>Stream only), AES (SDI only), System Audio or Virtual (used for Atlas output)  |
| Audio Device                 | Can be set to Primary Sound Driver to use the default audio output from the system, or to any of the audio devices available to the system   |
| Audio channels               | <ul> <li>The number of audio output channels</li> <li>SDI Input: <ul> <li>SDI/AES specifies the number of embedded and discrete audio channels to use.</li> </ul> </li> </ul>  |
| Genlock Source               | <ul> <li>SDI Output:</li> <li>The sync source for Genlock: Genlock Input, SDI Input or Internal</li> </ul>   |
| Genlock Timing<br>(H/V)      | Horizontal and Vertical timing value for Genlock   |
| Antialiasing                 | Sets the antialiasing for the output: Disabled, Multi Sample 2x-16x, Coverage<br>Sample (Quality) 8x-16x   |
| Preview Channel              | Sets a Preview channel for the output. If a Preview channel is set, scene control panels will show up in the Preview channel when loaded or stopped, and in the Output channel when playing                                  |
| Channel RTT                  | Channel Render to Texture: Texture effect applied to a scene enables all scenes<br>on corresponding output to be rendered to other configured channels   |
| Proxy Output<br>(Resolution) | Used to show a proxy of the output in the application window. Disable, $\frac{1}{2}$ , $\frac{1}{2}$ or full resolutions can be selected.  |
| H.264 Preview                | Simultaneously stream H.264 along with the configured device type  |
| Proxy Frame Rate             | Increases Program performance by allocating more resources to program<br>rather than preview.<br>Full - no frames are skipped<br>Half - every other frame is played (Default Setting)<br>Third - every third frame is played |
|                              | Quarter - every fourth frame is played   |



| Playout Toolbar | Show or Hide Channel in Prime Playout  |  |  |  |  |  |
|-----------------|--|--|--|--|--|--|
|                 | <ul> <li>Show (Default) - Program Channel will show in the toolbar of Prime</li> </ul> |  |  |  |  |  |
|                 | playout UI. Will be available for * to cycle between channels.                         |  |  |  |  |  |
|                 | Hide - Program Channel will NOT show in the toolbar of Prime playout                   |  |  |  |  |  |
|                 | UI. This will not be included in the * shortcut key to cycle of channels.              |  |  |  |  |  |

# SDI

Allows users with a supported SDI I/O board to use SDI Input and Output Channels

### IP

Allows users with a supported IP2110 I/O board to use IP2110 Input and Output Channels Refer to the "IP\_Playout\_Configuration\_Guide" document

### NDI

Stream NDI Input or Output Channels

### GPU

PRIME supports a single GPU card with 4x4k DisplayPort outputs.

### **AWS CDI**

AWS Cloud Digital Interface Input and Output Channels

### **Network Stream**

HTTP, RTP, RTMP, RTMPS Output Channels RTP, RTSP, RTMP, RTMPS Input Channels

### **SRT Stream**

Secure Reliable Transport Input and Output Channels

# **Application Window**

Offline external window used for offline systems





# **Desktop Window**

Allows a proxy to show up in the PRIME playout User Interface

# **Sub Channel**

Allows users the ability to carve up a single output channel into multiple channels. Very useful for Studio monitors.

# **Auxiliary Audio**

Allows creating a standalone audio output without an associated video component

# **Remote Engine**

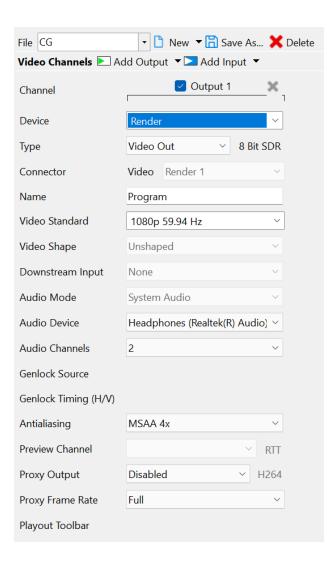
PRIME can connect to a PRIME Remote engine. With this use case users can control multiple instances of the PRIME Engine from a single PRIME User interface.

# **Render Channel**

### Prime Renderer and JavaScript Batch Rendering

Render Channel can be used in two different scenarios. The most common is for CAMIO/LUCI Preview and Render Functionalities utilizing the Renderer License Type.

For customers who wish to utilize the JavaScript Batch Rendering capabilities in Prime 5 using a CG or Branding License type for instance, you must purchase an additional Render Channel license. Only one additional Render channel is allowed to be purchased per license. Please contact Customer Success or your Chyron sales representation for purchase information.







While under any other Tier except for Renderer, Prime Licensing will not allow for more than 1 Render channel to be added. A popup error message will appear to users who attempt to add more than 1.

| File CG              | 🝷 🗋 New 🝷 🔚 Save As X 🛛                          | Delete  |
|----------------------|--|---|
| Video Channels 돈 Ad  | dd Output 🔻 🚬 Add Input 💌                        |   |
| Channel              | Output 1   | Output 2  |
| Device               | Render ~   | Render ~  |
| Туре                 | Video Out ~ 8 Bit SDR                            | Video Out × 8 Bit SDR   |
| Connector            | Video Render 1 ~                                 | Source Output 1   |
| Name                 | Program  | Output 1  |
| Video Standard       | 1080p 59.94 Hz ~                                 | 1080p 59.94 Hz ~  |
| Video Shape          | Unshaped ~                                       | Unshap Insufficient License X   |
| Downstream Input     | None ~   | None  |
| Audio Mode           | System Audio 🗸                                   | Disabled This change would exceed the maximum number of licensed channels of this type: |
| Audio Device         | Headphones (Realtek(R) Audio) $ \smallsetminus $ | RenderChannels : 1  |
| Audio Channels       | 2 ~  | 2   |
| Genlock Source       |  | ОК  |
| Genlock Timing (H/V) |  |   |
| Antialiasing         | MSAA 4x ~  | Disabled ~  |
| Preview Channel      | × RTT  | No Preview V RTT  |
| Proxy Output         | Disabled ~ H264                                  | 1/4 Resolution V H264   |
| Proxy Frame Rate     | Full ~   | Half (1/2) ~  |
| Playout Toolbar      |  | Show ~  |
|                      |  |   |



# **Channel RTT**

A channel render to texture effect may be applied to an individual Prime scene. That scene may be composed of various graphic objects, effects and resources. When that scene is played to output, it can be targeted as a rendered texture available to any other configured Prime channel(s). In addition, any other scenes played to the same output channel as the RTT scene will also be rendered as part of the channel rendered texture output.

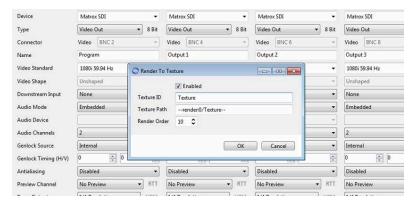
#### Setup

In PRIME Playout Configuration select the RTT button on the output channel you wish to render to a texture effect.

|                                 | Video Channels 💽 Add | Output 🔻 🚬 Add Input 👻       |     |                            |       |                  |       |  |
|---------------------------------|----------------------|------------------------------|-----|----------------------------|-------|------------------|-------|--|
| Video Channels                  | Channel              | Output 1                     | *   | V Output 2                 | *     | V Output 3       | ×     |  |
| Sclip Players<br>Clip Recorders | Device               | Matrox SDI                   | -   | Matrox SDI                 | •     | Matrox SDI       | •     |  |
| Playlists                       | Туре                 | Video Out 🔹 8                | Bit | Video Out 🔹                | 8 Bit | Video Out 🔹      | 8 Bit |  |
| External Data                   | Connector            | Video BNC 2                  | *   | Video BNC 4                | +     | Video BNC 6      |       |  |
| Settings                        | Name                 | Program                      |     | Output 1                   |       | Output 3         |       |  |
|                                 | Video Standard       | 1080i 59.94 Hz 🗸             |     | 1080i 59.94 Hz 🔹           |       | 1080i 59.94 Hz 🗸 |       |  |
|                                 | Video Shape          | Unshaped * None * Embedded * |     | Unshaped                   |       | Unshaped         |       |  |
|                                 | Downstream Input     |                              |     |                            |       |                  |       |  |
|                                 | Audio Mode           |                              |     |                            |       |                  |       |  |
|                                 | Audio Device         |                              | *   |                            | •     |                  |       |  |
|                                 | Audio Channels       | 2 🔹                          |     | 2 🗸                        |       | 2                |       |  |
|                                 | Genlock Source       | Internal                     | •   | Internal                   | •     | Internal         | •     |  |
|                                 | Genlock Timing (H/V) | 0 🖨 0                        | *   | 0 🗘 0                      |       | 0 🖨 0            | ×     |  |
|                                 | Antialiasing         | Disabled                     | •   | Disabled                   | •     | Disabled         | •     |  |
|                                 | Preview Channel      | No Preview 👻 F               | π   | No Preview 👻               |       | No Preview       | RTT   |  |
|                                 | Proxy Output         | 1/4 Resolution 👻 H.          | 264 | nable Channel Render To Te | HZ04  | 1/4 Resolution 👻 | H264  |  |

#### **Render Order**

By default this is set to 10. This number will be applied as a negative layer number to the render to texture channel. In this case -10. If you intend to play other scenes to the render to texture channel they may need to be set to -9 or higher to be composited on top of the RTT. Or



alternatively adjust the layer of your RTT channel accordingly.



#### **Texture Path**

The texture path that is generated must then be applied as an image file path within a Prime scene.

#### Prime Playout Configuration:

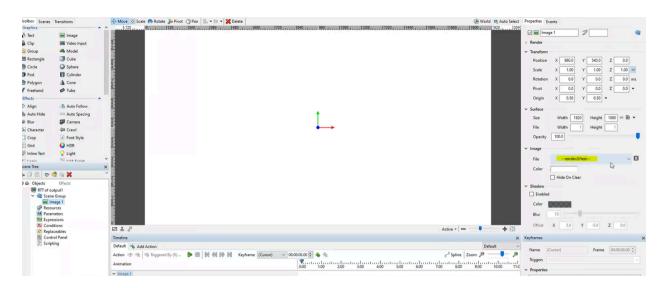
| 🛇 Render To Te | xture            | — | $\times$ |
|----------------|------------------|---|----------|
|                | ✓ Enabled        |   |          |
| Texture ID     | Texture          |   |          |
| Texture Path   | render:0/Texture |   |          |
| Render Order   | 10 🗘             |   |          |

#### Prime Designer:

| ∨ Image |                  |     |
|---------|------------------|-----|
| File    | render:0/Texture | ~ 🗙 |
| Color   |                  |     |

#### Render to Texture Prime Scene Construction

Create a scene with a full screen image object. Create a new scene and add an image. Paste the texture path into the File property of the Image object. (Note: You will not see any change in Designer). The image path must exactly match the RTT texture path. You can add as many other scene objects in this scene as well.





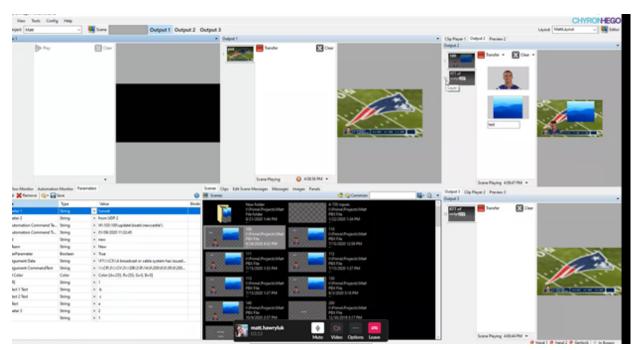
### Setting Prime Scene as Channel Output

In Startup Scenes you can set the render to texture scene as the output channel for multiple configured channels.

| General<br>Appearance   | Startup Scenes          |   |                                     |                                 |    |        |       |
|---|-------------------------|---|-------------------------------------|---------------------------------|----|--------|-------|
| Strutup Scenes Startup Scenes Clips Quality Control Logging Clogging CAMIO HubDrive | Project<br>Matt<br>Matt | Scene<br>RTT of output1<br>RTT of output1 | Command<br>Play Scene<br>Play Scene | Channel<br>Output 2<br>Output 3 |    |        |       |
|   |                         |   |                                     |                                 | OK | Cancel | Apply |

### Render to Texture Output

In this example "RTT of output1.pbx" is replicated on output 2 and output 3 (as configured in startup scenes).



\*Note: Audio from RTT channel will not be playing on other channels. Only video is passed.



# LUT

LUT files can be applied to both Input and Output HLG 10bit channels *Note: SDR, HDR, and S-Log3 10Bit does not support LUT files* 

Supported formats: \*.lut \*.cube

| Color Range Options X |             |        |       |   |  |
|-----------------------|-------------|--------|-------|---|--|
| Color                 |             |        |       |   |  |
| Range                 | HLG         | ~      |       |   |  |
| Depth                 | 10 Bit      | $\sim$ |       |   |  |
| LUT                   |             |        |       |   |  |
|                       | ✓ Enabled   |        |       |   |  |
| File                  |             |        |       | ~ |  |
|                       | Import      |        |       |   |  |
|                       | SDR Norm    | naliza | ation |   |  |
| Input Range           | Narrow      | ~      |       |   |  |
| Output Range          | Narrow      | ~      |       |   |  |
| Interpolation         | Tetrahedral | ~      |       |   |  |



#### **SDR Normalization**

• SDR Normalization is checked by default for Output Channels and unchecked by default for Input Channels.

SDR Normalization determines whether the normalized Input RGB to the LUT is in SDR or HLG normalized space. SDR Normalization is intended for SDR to HLG conversions on Output, or for extracting the SDR signal on Input. HLG Normalization is intended for HLG tone mapping on Output, or for HLG to SDR conversions on Input.

#### Input Range

- Narrow (Default)
- Full

Determines whether the normalized Input RGB to the LUT is in Narrow or Full Range.

#### **Output Range**

- Narrow (Default)
- Full

Determines whether the normalized Output RGB from the LUT is in Narrow or Full Range

#### Interpolation

- Nearest
- Linear
- Tetrahedral (Default)

Determines the Filtering quality for the LUT. Nearest Filtering may be used for 1D LUT which is well-defined for all input. Tetrahedral is preferred for 3D LUT, unless otherwise specified by the LUT designer.



# **NETWORK STREAM OUTPUT**

PRIME can output a H.264 Network Stream to a targeted streaming service. Select "Network Stream" as device type.

| Channel          | Output 1                                | ٦ |
|------------------|---|---|
| Device           | Network Stream                          | ] |
| Туре             | Matrox SDI / IP (Not Installed)<br>NDI® |   |
| Connector        | GPU<br>AWS CDI                          |   |
| Name             | Network Stream                          |   |
| Video Standard   | SRT Stream<br>Application Window        | ) |
| Video Shape      | Desktop Window<br>Sub Channel           |   |
| Downstream Input | Auxiliary Audio                         | l |
| Audio Mode       | Remote Engine<br>Render                 |   |

To enable audio on a Network Stream Output, make a selection from the Audio Mode dropdown. Some streaming services require audio to be enabled for proper performance. Audio must be enabled here on the parent channel to allow further audio selections within the Network Stream Settings configuration.

| Channel          | 🗹 Output 1 🛛 💥              |
|------------------|-----------------------------|
| Device           | Network Stream $\checkmark$ |
| Туре             | Video Out 🛛 🗸 8 Bit         |
| Connector        | http://192.168.74.1:1234    |
| Name             | Output 1                    |
| Video Standard   | 1080i 59.94 Hz 🗸 🗸          |
| Video Shape      | Unshaped $\sim$             |
| Downstream Input | None ~                      |
| Audio Mode       | Disabled $\checkmark$       |
| Audio Device     | Disabled<br>Embedded        |
| Audio Channels   | System Audio<br>Virtual     |





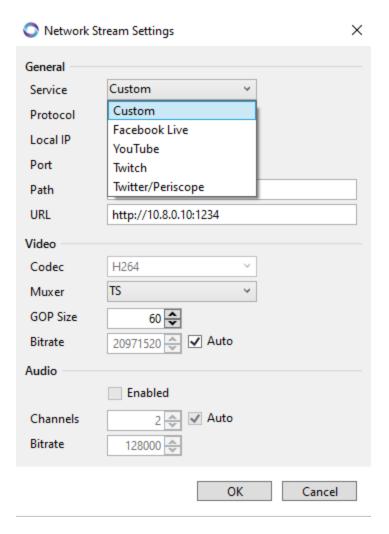
To configure streaming service type, click on the ... button in the connector row.

| Connector | http://10.8.0.10:1234 |  |
|-----------|-----------------------|--|
|           |                       |  |

This will open the Network Stream Settings window.

#### **Network Stream Services:**

To configure a Network Stream Output, select the appropriate service type from the dropdown list.



Chyron.

#### General

#### Service

- Custom: Allows full manual configuration.
- Facebook Live
- YouTube
- Twitch

#### Protocol

Select the transport protocol for the stream

- RTP: Real-Time Transport Protocol
- RTMP: Real-Time Messaging Protocol
- RTMPS: RTMP over SSL/TLS for encrypted streams

#### **Connection Details**

- Local IP: Specify the IP address for outgoing streams
- Port: Assign a port number for the stream
- Path: Define the stream path (e.g., /live/stream)
- URL: Automatically generated based on the combination of Local IP, Port, and Path
  - Format: <protocol>://<Local IP>:<Port>/<Path>

#### Video Codec

Choose the encoding format for video:

- H.264 (AVC): A widely supported video compression standard. Best suited for streaming due to its efficient balance between quality and bandwidth. Supported by most devices and platforms.
- H.265 (HEVC): Offers improved compression compared to H.264 but may have compatibility issues with older devices.

#### Muxer

Select the container format for the stream:

- MP4: Suitable for most platforms
- MPEG TS: Ideal for broadcasting and real-time transport



#### GOP (Group of Pictures) Size

- Defines the interval between keyframes
- Typical values: 30 for low-latency or 60 for better compression efficiency

#### Video Bitrate

Prime always uses Low Latency High Profile, however configured bitrate will depend on the resolution and the selected codec. Use the following guidelines for H.264 (4:2:0 8-bit):

- 720p (1280x720): 2500-4000 kbps
- 1080p (1920x1080): 4000-8000 kbps
- 4K UHD (3840x2160): 12,000-20,000 kbps
- For H.265, you can achieve similar quality at roughly 50–70% of the above bitrates

#### Enable Audio (Optional)

- Audio Enabled: Enable or disable audio in the stream
- Audio Channel Count: Choose the number of audio channels
  - Auto: Inherit from the render channel
  - Custom: Specify the channel count (e.g., mono, stereo)
- Audio Bitrate: The bitrate depends on the channel count. A good default is 64 kbps per channel:
  - Mono: 64 kbps
  - Stereo: 128 kbps
  - Surround (5.1): 384 kbps

#### **Please Note**

Video Bitrate: Ensure sufficient network bandwidth to accommodate the configured bitrate

Audio Bitrate: Match the selected bitrate to the desired audio quality and channel count.

Configure the firewall and network settings to allow traffic on the chosen port.

Align protocol and service requirements for smooth operation.



#### Facebook Live

When Facebook Live service is selected, Prime will dynamically populate fields with recommended settings; RTMPS Protocol, Port 443 (if auto is checked) and URL to rtmps://live-api-s.facebook.com:443/rtmp

The Stream Key field will appear with a red box highlight to indicate that no Stream Key is blank.

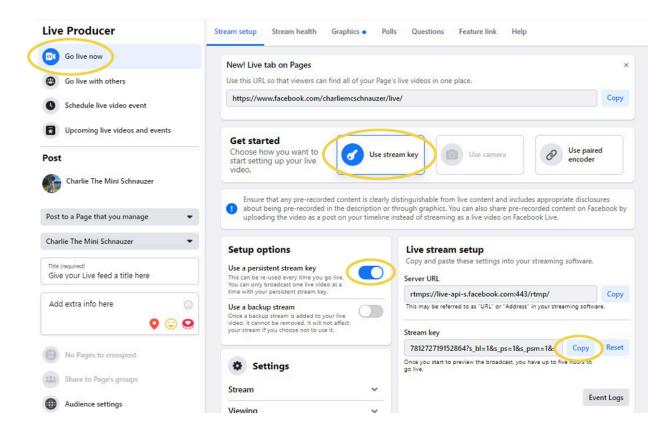
| Network Stream Settings |                        |                    |  |  |  |
|-------------------------|------------------------|--------------------|--|--|--|
| General                 |                        |                    |  |  |  |
| Service                 | Facebook Live          | >                  |  |  |  |
| Protocol                | RTMPS                  | $\checkmark$       |  |  |  |
| Hostname                | live-api-s.facebook.c  | or Y               |  |  |  |
| Port                    | 443 🏯 🖌 Au             | to                 |  |  |  |
| Path                    | rtmp                   |                    |  |  |  |
| Stream Key              |                        |                    |  |  |  |
| URL                     | rtmps://live-api-s.fac | ebook.com:443/rtmp |  |  |  |

To generate a Facebook live stream key you will need to log into facebook from a web browser. Click on Live Video.

| What's on yo | our mind?   |              |
|--------------|-------------|--------------|
| Live video   | Photo/Video | 🜾 Life Event |

Navigate to the Live Producer page and select "Use Stream Key". The Live Stream setup section will become visible. Select use a persistent stream key if desired. Select the Copy button next to the Stream Key field.





Return to Prime UI and paste the Stream Key from Facebook into Prime's Stream Key field. Select OK. A dialogue prompt will appear stating "Prime needs to be restarted for the new settings to be applied". Restart Prime.

The Network stream Output will be available in Prime Playout with the name assigned to the configured output in the Playout Configuration settings.



| Mayout Configuration   |                |    | ×                         |
|------------------------|----------------|----|---------------------------|
|                        | Video Channels |    | 🏐 Import 📊 Export 🛛 🚱     |
| Switcher               | Channel        | 8  | 🗹 Output 4 🛛 💥            |
| 📰 Video Channels       |                |    |                           |
| Clip Players           | Device         | _  | Network Stream ~          |
| Clip Recorders         | Туре           | it | Video Out 🛛 🗸 8 Bit       |
| Playlists              | Connector      | -  | htmp://live-api-s.facebor |
| External Data Settings | Name           | Ē  | Facebook                  |
|                        | Video Standard |    | 10801 59.94 Hz 🗸          |

Turn on/off visibility of the Network stream output via the View menu.

When you wish the Facebook Live Network stream output in Prime to begin streaming to Facebook, select the "Go Live" button in Facebook. *Facebook does require that you give the Live feed video a title.* 

| Title (required)<br>Put Stream Title Here |          |
|---|----------|
| This is a streaming feed from Prime       | <u>.</u> |
| Go Live                                   |          |

Once "Go Live" has been selected, any Prime graphics played to the Facebook Live Network stream Output will be streamed to the configured Facebook page.



| Project Prin                 |                           | v 関 Scene  | Pro           | gram Program 2 Program 3   | Facebook Output 1   | Program            |              |                               |   |                |          |        | Layout | Default |
|------------------------------|---------------------------|--|---------------|--|---|--------------------|--------------|-------------------------------|---|----------------|----------|--------|--------|---------|
| CVICW                        |                           |  |               |  | 😗 Live Producer   Facebook  | × +                |              |                               |   |                |          |        |        |         |
| 200                          | Transfer                  |  | X Clea        |  | ← → C 🔒 faceb   | ook.com/live/produ | cer/25452350 | 09402747/?entry_              | point=pages_fee                                 | d              |          |        | Q 🖈    |         |
|                              | OTS Direction             |  | 1             |  | Q Search Facebook   |                    | ŝ            |                               |   | ۲              | 5        | $\leq$ | +      | ٠       |
|                              |                           | Repla\OTS Sydny Bridge.tif                       | 5             | OTS HEADLINE   | • Live 0:14<br>Insights   |                    | LIVE         | OTS I                         | HEADLINE  |                |          |        |        |         |
|                              | Bullet One<br>Bullet Two  |  | Pause Reveal? | Builtet One<br>Builtet Three Wood we may have<br>Date to be wood we may have | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | 0                  |              |                               | 240   |                |          |        |        |         |
|                              | Bullet Three              | word wraps here this is where it                 | v             |  | View insights   |                    |              |                               | Bullet One                                      | $(\mathbf{b})$ | )        |        |        |         |
|                              | Action Played: 8          | Bullets ALL                                      | 5:17:43 PM 👻  |  | Charlie The Mini Schnauzer<br>Nut now.<br>Give your Live feed a title i<br>Add extra info here                  | -                  |              | Bullet Three wo<br>this is wh | Bullet Two<br>ord wraps here<br>ere it wraps to |                | <i>,</i> |        |        |         |
|                              |                           | lonitor Parameters<br>ear Events 🔀 Edit Appearan |               |  | No Pages to crosspost   |                    |              |                               |   |                |          |        |        |         |
| ime                          | Event                     | Scene Descripti                                  | on            |  |   |                    |              |                               |   |                |          |        |        |         |
| 16:53.545 PM                 | Condition                 | 100 TextGrow                                     |               |  | Comments  |                    |              |                               |   |                |          |        |        |         |
| 16:53.547 PM                 | ActionPlayed              | 100 Text Gro                                     |               |  | connents  |                    |              | Video                         |   | Audio          |          | Ac     | ions   |         |
| 17:02.018 PM<br>17:02.018 PM | Condition<br>ActionPlayed | 100 TextGrov<br>100 Text Grov                    |               |  |   |                    |              | 787.0 Kbps                    |   | 2.9 Kbp        | \$       | France | t Logs |         |
| 17:16.859 PM                 | ActionPlayed              | 100 Effect O                                     |               |  | Comment moderation  | Vot set 💌          |              | 1920×1080, 29 fps             |   | AAC            |          | Loci   | Logs   |         |
| 17:16.867 PM                 | ActionPlayed              | 100 Effect O                                     |               |  | Comment as Charlie Th   | e Mini 😳 😳         |              |                               |   |                |          |        |        |         |
| 17:17.444 PM                 | SceneState                | 100 Stopped                                      |               |  | Drass Enter to cost   |                    |              |                               |   | _              |          |        |        | 14.23   |
| 17:20.191 PM                 | SceneState                | 100 Closed                                       |               |  |   |                    |              |                               |   | ~              |          |        | New    | tip     |
| 17:24.859 PM                 | ActionPlayed              | 500 Default                                      |               |  | End Live Vide   | •                  |              |                               |   |                |          |        |        |         |
|                              |                           |  |               |  | the second se |                    |              |                               |   |                |          |        |        |         |

Refer to Facebook's Help Center for Video format guidelines and restrictions for live streaming on Facebook.

#### YouTube

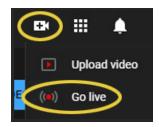
When YouTube is selected in the Service dropdown, Prime will dynamically populate fields with recommended settings; RTMP Protocol, Port 1935 (if auto is checked) and URL to tmp://a.rtmp.youtube.com:1935/live2

The Stream Key field will appear with a red box highlight to indicate that no Stream Key is blank.

| 🛇 Network S | tream Settings         | ×              |
|-------------|------------------------|----------------|
| General     |                        |                |
| Service     | YouTube                | <b>*</b>       |
| Protocol    | RTMP                   | $\sim$         |
| Hostname    | a.rtmp.youtube.com     | ¥              |
| Port        | 1935 🌧 🗹 Auto          |                |
| Path        | live2                  |                |
| Stream Key  |                        |                |
| URL         | rtmp://a.rtmp.youtube. | com:1935/live2 |



To generate a YouTube live stream key you will need to log into YouTube from a web browser. Click on the icon that looks like a camera with a Plus symbol, and select Go Live. If you haven't already, follow the prompts to verify your channel. Enabling your first live stream may take up to 24 hours (this is a restriction enforced by YouTube). Once enabled, you can live stream instantly.



#### Twitch

When Twitch is selected in the Service dropdown, Prime will dynamically populate fields with recommended settings; RTMP Protocol, Port 1935 (if auto is checked) and URL to rtmp://live.twitch.tv:1935/app

The Stream Key field will appear with a red box highlight to indicate that no Stream Key is blank.

| Network Stream Settings |                          |         |  |  |  |
|-------------------------|--------------------------|---------|--|--|--|
| General                 |                          |         |  |  |  |
| Service                 | Twitch                   | ~       |  |  |  |
| Protocol                | RTMP                     | ~       |  |  |  |
| Hostname                | live.twitch.tv           | ~       |  |  |  |
| Port                    | 1935 🤤 🗹 Auto            | D       |  |  |  |
| Path                    | арр                      |         |  |  |  |
| Stream Key              |                          |         |  |  |  |
| URL                     | rtmp://live.twitch.tv:19 | 935/app |  |  |  |

To generate a Twitch stream key you will need to log into Twitch from a web browser. In Twitch, click on the profile icon at the top right of the page. Select Settings from the menu dropdown. After the profile page has loaded click the Channel and Videos tab.

Click the Copy button next to the Primary Stream Key field.



| Stream Key & Preferences |      |      |       |  |  |
|--------------------------|------|------|-------|--|--|
| Primary Stream key       |      | Сору | Reset |  |  |
|                          | Show |      |       |  |  |

Paste the value into the Stream Key Field in the Network Stream Settings in Prime.

Select OK. A dialogue prompt will appear stating "Prime needs to be restarted for the new settings to be applied". Restart Prime.

The Network stream Output will be available in Prime Playout with the name assigned to the configured output in the Playout Configuration settings.

| Scene                 | Faceb          | ook T | witter Twitch           |        |
|-----------------------|----------------|-------|-------------------------|--------|
| Playout Configuration | n              |       | - 0                     | ×      |
|                       | Video Channels |       | 🏐 Import 🛛 🖓 Expo       | rt 🕜 🏾 |
| 뚫 Switcher            | Channel        | ĸ     | Output 3                | ×      |
| Video Channels        |                |       |                         |        |
| Clip Players          | Device         | ~     | Network Stream          | ~      |
| Clip Recorders        | Туре           | lit   | Video Out               | 8 Bit  |
| Playlists             | Connector      |       | .tmp://live.twitch.tv:1 | 935,   |
| External Data         | Name           |       | Twitch                  |        |
| Settings              | Name           |       | Iwiten                  |        |
|                       | Video Standard |       | 10801 59.94 Hz          | ~      |
|                       | Video Shape    | ~     | Unshaped                | ~      |
|                       |                | _     |                         |        |

Turn on/off visibility of the Network stream output via the View menu.

Return to Twitch and select the Profile icon at the top right of the page. Select channel from the dropdown menu. twitch.tv/ACCOUNTNAME page is loaded and stream should be Live. Any Prime graphics played to the Twitch Network stream Output will be streamed to the configured Twitch account.



| File View Tools Config Help                               | Faceboo        | ok Twitter Twitch   | nikolechyron - Tv |              | × +           |                    |  |
|---|----------------|---------------------|-------------------|--------------|---------------|--------------------|--|
| witch   |                | ←                   | → C               | twitch.tv/ni | ikolechyron   |                    |  |
| OTS Text Transfer   | 🔀 Clear        |                     | Following         | Browse       |               | Search             |  |
| OTS Direction LEFT  Streaming to twitch From Chyron Prime |                | STREAMING TO TWITCH |                   | From Chyror  |               |                    |  |
|   |                |                     | The The           | e profile i  | mage can take | you to the channel | home ×                                   |
| Scene Playing   | ⚠ 3:40:44 PM 👻 |                     |                   | nikolec      | hyron         | <b>Q 1</b> 0:11:16 | <ul><li>♥ Follow</li><li>Ø ↑ :</li></ul> |
| Workflow Monitor Automation Monitor Parameters            |                |                     | LIVE              |              |               |                    |  |

#### H.264 Previews

A PRIME output can simultaneously stream H.264 in addition to its configured device type (SDI, GPU, NDI etc...). All output types, including Preview channels, support H.264 streams with the exception of Remote Engines and Sub Channels. When H.264 is configured, both the primary output type and the H.264 stream will render PRIME scenes.

| O H264 Sett | ings        | $\times$ |
|-------------|-------------|----------|
|             | ✓ Enabled   |          |
| Hostname    | 127.0.0.1 ~ |          |
| Port        | 10128 🗢     |          |
| GOP Size    | 60 🗢        |          |
| Bitrate     | 20 🗢 Mbps   |          |
|             |             |          |
|             | OK Cancel   |          |



#### **NDI** considerations

NDI® is a registered trademark of Vizrt NDI AB <u>https://ndi.video/</u>

NDI operates most efficiently in a dedicated network with high bandwidth and high availability. This is in contrast to unmanaged environments such as the public Internet or networks where video rides along with data without priority. While a single stream of HD video can possibly be delivered on a Fast Ethernet (100 Mbps) network, Gigabit (1000 Mbps) networks are essential in production workflows. A typical NDI stream consisting of 1080i HD video yields a data rate up to 100 Mbps per stream. This extremely efficient stream is designed to have very low latency and allows multiple streams to be stacked together on a single Gigabit network. Even so, a production environment may require more capacity based on the type and quantity of simultaneous NDI video streams in a particular workflow. The following table is intended as a guide for calculating bandwidth needs based on video resolutions and frame rates. It should be noted, however, that NDI is not deterministic. Bandwidth needed for NDI video streams should be based on determination of the average utilization required.

Bandwidth Requirements. The approximate bandwidth required per NDI video stream for common video resolutions and frame rates.

| Example NDI video stream | Approximate bandwidth required |
|--------------------------|--------------------------------|
| 1 x UHDp60 video stream  | 250 Mbps                       |
| 1 x UHDp30 video stream  | 200 Mbps                       |
| 1 x 1080p60 video stream | 125 Mbps                       |
| 1 x 1080i60 video stream | 100 Mbps                       |
| 1 x 720p60 video stream  | 90 Mbps                        |
| 1 x SD video stream      | 20 Mbps                        |

Starting in PRIME 4.10, Prime's NDI integration now supports 10-bit HDR using the HLG transfer function defined in Rec. 2100 as adopted for broadcast television workflows. Prime customers must be licensed in order to use this feature. The PQ transfer function is not supported at this time nor is NDI-based Genlock.

\*Please contact your Chyron sales representative for NDI licensing information.



### Desktop Window Output | Override Window Appearance

Exclusive to Desktop Window Outputs, selecting the blue Override Window Appearance button next to Video Standard, users can customize their desktop window experience by overriding the position and size.

### Default **Position:** Left = 560, Top = 0

Default Size (Resolution): Defaults to selected or customized Video Standard resolution

| 🎆 Playout Configuration    |                      |                          |          |                         |   |
|----------------------------|----------------------|--------------------------|----------|-------------------------|---|
|                            | File Offline         | 🝷 🗋 New 👻 🔚 Save As 🗙 De | lete     |                         |   |
| 💻 Video Channels           | Video Channels 돈 Add | d Output 🔻 🚬 Add Input 👻 |          |                         |   |
| 🔛 Clip Players             | Channel              | 🗹 Output 1 🛛 🗶           |          |                         |   |
| 💽 Playlists                | Device               | Desktop Window 🗸         |          |                         |   |
| 🌐 Atlas                    | Туре                 | Video Out 🛛 🗸 8 Bit SDR  |          |                         |   |
| ● Bypass<br>ੳ ExternalData | Connector            | Video Window 1 ~         |          |                         |   |
| 😤 Settings                 | Name                 | Output 1                 |          |                         |   |
| 🔆 Advanced                 | Video Standard       | 1080p 59.94 Hz 🗸 🗸       | Desktop  | Window Appearance       | × |
|                            | Video Shape          | Unshaped $\sim$          | Position |                         |   |
|                            | Downstream Input     | None ~                   | Left     | 560 🗢                   |   |
|                            | Audio Mode           | Disabled $\checkmark$    | Тор      | 0                       |   |
|                            | Audio Device         |                          | Size     |                         | - |
|                            | Audio Channels       | 2 ~                      |          | Override Size           |   |
|                            | Genlock Source       | Sync                     | Width    | 1920 🚔                  |   |
|                            | Genlock Timing (H/V) |                          | Height   | 1080 🗢                  |   |
|                            | Antialiasing         | Disabled $\checkmark$    |          | ✓ Maintain Aspect Ratio |   |
|                            | Preview Channel      | No Preview V RTT         |          | OK Cancel               |   |
|                            | Proxy Output         | 1/4 Resolution V H264    |          | OK Cancel               |   |
|                            | Proxy Frame Rate     | Half (1/2) ~             |          |                         |   |
|                            | Playout Toolbar      | Show                     |          |                         |   |



**Example:** x4 Desktop Window Outputs, each with a customized Override Window Appearance



### Flashing the Matrox Board

When you change the channel configuration that doesn't match the current board configuration you will be prompted the following:

| Firmware | Update  | 23 |
|----------|---|----|
| <b></b>  | Your hardware requires a firmware update to support the desired<br>configuration.<br>You must restart your system after modifying the firmware in order for<br>the changes to take effect.<br>Would you like to continue? |    |
|          | <u>Y</u> es <u>N</u> o  |    |



| Type Video Out • Video Out • Video Out • Video In • Video In • Video In  |                | Video Channels 💽 Add   | Dutput 🔻 🚬 Add Input 👻     |          |                       |   |                |   |                |   |                |   |                |   |
|--|----------------|------------------------|----------------------------|----------|-----------------------|---|----------------|---|----------------|---|----------------|---|----------------|---|
| Device       Matrix USX LE4       Matrix USX LE                   |                | Channel                | Output 1                   | ×        | Preview 1             | × | 🗹 Output 2     | × | Input 1        | × | 🔽 Input 2      | × | 💟 Input 3      | - |
| Type       Wideo Uut       Video Uut       Wideo Uut       Wideo Uut       Wideo In       Wideo In       Wideo In         Connector       Video BNC2       Video BNC4       Video BNC6       Video BNC1       Video BNC3       Video N/A         Name       Output1       Preview1       Output3       Input1       Input2       Input3         Video Shadad       1080:59.94Hz       1080:59.94Hz       1080:59.94Hz       1080:59.94Hz       Input2       Input3         Video Shaped       Unshaped       Unshaped       Unshaped       Unshaped       Unshaped       Input3         Audio Mode       Embedded       System Audio       Embedded       Enabled       Enabled       Embedded 1-8       Embedded 1-8         Genlock Source       Genlock Input       Genlock Input       Genlock Input       Imput 0       Imput 0       Imput4  |                | Device                 | Matrox DSX LE4             | -        | Matrox DSX LE4        | • | Matrox DSK LE4 | • | Matrox DSX LE4 | • | Matrox DSX LE4 | • | Matrox DSX LE4 |   |
| Name       Output 1       Preview 1       Output 3       Input 1       Input 2       Input 3         Video Sandard       10801 59.94 Hz       10801   | Clip Recorders | Туре                   | Video Out                  | -        | Video Out             | - | Video Out      | • | Video In       | - | Video In       | - | Video In       |   |
| Video Shandard       1080is 59.94 Hz       1 | Playlists      | Connector              | Video BNC 2                | -        | Video BNC 4           | - | Video BNC 6    | - | Video BNC 1    | - | Video BNC 3    | - | Video N/A      |   |
| Video Shape     Unshaped     Unshaped     Unshaped       Downstream Input     Input 1     None     None       Audio Mode     Embedded     System Audio     Embedded     Enabled     Enabled     Enabled       Audio Channels     2     2     2     Embedded 1-8     Embedded 1-8     Embedded 1-8       Genlock Source     Genlock Input     0     0     0     0     0   |                | Name                   | Output 1                   |          | Preview 1             |   | Output 3       |   | Input 1        |   | Input 2        |   | Input 3        |   |
| Downstream Input     Input 1     None       Audio Mode     Embedded     System Audio     Embedded     Enabled     Enabled       Audio Channels     2     2     2     Embedded 1-8     Embedded 1-8       Genlock Source     Genlock Input     Genlock Input     Genlock Input     0       Genlock Timing (HVM)     0     0     0     0   |                | Video Standard         | 1080i 59.94 Hz             | •        | 1080i 59.94 Hz        | • | 1080i 59.94 Hz | • | 1080i 59.94 Hz | • | 1080i 59.94 Hz | • | 1080i 59.94 Hz |   |
| Audio Mode     Embedded     System Audio     Embedded     Enabled     Ena  |                | Video Shape            | Unshaped                   | Ŧ        | Unshaped              | Ŧ | Unshaped       | Ŧ |                |   |                |   |                |   |
| Audio Channels     2     v     2     v     Embedded 1-8     Embedded 1-8       Genlock Source     Genlock Input     Genlock Input     Genlock Input     Genlock Input       Genlock Timing (H/V)     0     0     0     0     0   |                | Downstream Input       | Input 1                    | •        | None                  | • | None           | • |                |   |                |   |                |   |
| Genlock Source     Genlock Input     Genlock Input     Genlock Input       Genlock Trining (H/V)     0     0     0     0     0   |                | Audio Mode             | Embedded                   | •        | System Audio          | • | Embedded       | • | Enabled        | • | Enabled        | • | Enabled        |   |
| Genlock Timing (H/V)   |                | Audio Channels         | 2                          | •        | 2                     | • | 2              | • | Embedded 1-8   | • | Embedded 1-8   | • | Embedded 1-8   |   |
|  |                | Genlock Source         | Genlock Input              | •        | Genlock Input         | • | Genlock Input  | • |                |   |                |   |                |   |
| Antialiasing Disabled  |                | Genlock Timing (H/V)   | 0                          | *<br>*   | 0                     | * | 0 🚔 0          | * |                |   |                |   |                |   |
|  |                | Antialiasing           | Disabled                   | •        | Disabled              | • | Disabled       | • |                |   |                |   |                |   |
| Preview 1 v No Preview v   |                | Preview                | Preview 1                  | -        |                       | Ŧ | No Preview     | • |                |   |                |   |                |   |
|  |                | •                      |                            |          |                       |   |                |   |                |   |                |   |                |   |
| ۲ m  |                | Matrox Firmware Curren | t 2 In / 6 Out Required 41 | [n / 4 0 | )ut 🔥 Update Firmware |   |                |   |                |   |                |   |                |   |



### SRT | Secure Reliable Transport

An open-source streaming transport protocol which delivers low latency while maintaining professional video quality even over unreliable networks.

\*Please Note - SRT I/O requires additional licensing fees. Please contact Chyron Sales or Customer Success for purchasing information.

SRT Input Channels are always configured for Listener Mode SRT Output Channels are always configured for Caller Mode

### SRT Limitations and Unsupported Features

| SRT I/O Channels<br>(Fill / Alpha Support) | Fill Only<br>*Alpha (Key) is not supported |
|--|--|
| SRT ARQ (Automatic Repeat<br>Request)      | Fixed to 120ms                             |
| Caller Mode                                | SRT Output Channels Only                   |
| Listener Mode                              | SRT Input Channels Only                    |
| Rendezvous Mode                            | Not Supported                              |
| AES 128/256-bit Encryption                 | Not Supported                              |
| SRT Stream IDs                             | Not Supported                              |
| Firewall Traversal                         | SRT Input Channels Only                    |

| File CG             | 🝷 🗋 New 🔻 🛅 Save As                         | . 💢 Delete                       |           |  |  |  |  |
|---------------------|---|----------------------------------|-----------|--|--|--|--|
| Video Channels 돈 Ad | /ideo Channels 돈 Add Output 🔻 🚬 Add Input 👻 |                                  |           |  |  |  |  |
| Channel             | Output 1                                    | - X Ing                          | out 1 🗙 ד |  |  |  |  |
| Device              | SRT Stream                                  | <ul> <li>✓ SRT Stream</li> </ul> | ~         |  |  |  |  |



# CLIP PLAYERS

Configures the number available clip players for the system. Clip Players can play clip scene files directly to a Layer on an output channel. Click the Add Clip Player toolbar button to add new clip players.

| Mayout Configuration |                             |                                |                        |          |                         |        | >                          | × |
|----------------------|-----------------------------|--------------------------------|------------------------|----------|-------------------------|--------|----------------------------|---|
|                      | Clip Controllers 🛞 Add Clip | Player                         |                        |          |                         |        | (                          | 2 |
| Wideo Channels       | Clip Player                 | Clip Player 1 🗱                | Clip Player 2          | ×        | Clip Player 3           | ×      | 🗹 Clip Player 4 🛛 💥        |   |
| Clip Players         | Name                        | Clip Player 1                  | Clip Player 2          |          | Clip Player 3           |        | Clip Player 4              |   |
| Clip Recorders       | Parent Channel              | NDI Output ~                   | NDI Output             | $\sim$   | NDI Output              | $\sim$ | NDI Output ~               |   |
| Playlists            | Layer                       | 1                              | 0                      | <b>*</b> | -1                      | •      | -2                         |   |
|                      | Transition                  | OUT Clip Cross Grid Wipe.pc' 🗸 | IN Clip Push Right.pct | ~        | OUT Clip Cloth Warp.pct | ~      | IN Clip Wipe Right.pct 🗸 🗸 |   |
|                      | Transition Priority         | Clip Player $\checkmark$       | Clip File              | $\sim$   | Clip File               | $\sim$ | Clip File $\checkmark$     |   |
|                      |                             |                                |                        |          |                         |        |                            |   |
|                      |                             |                                |                        |          |                         |        |                            |   |
|                      |                             |                                |                        |          |                         | OK     | Cancel Apply               |   |

### **Clip Player Properties**

- Name Assign a user-friendly name to identify the Clip Player throughout the application
- **Parent Channel** Select a channel from the list. The list will be populated from the configure **output** channels in the "Video channels" section.
- **Layer** Assign a layer number for which this clip player will use in the output channel. The higher the number the more forward in the order it will play. You can assign negative or positive numbers. If you assign -5 it will likely be a background clip in that channel unless another clip player or graphic scene has a higher negative value.
- **Transition** Select a file based transition. File based transitions can be created using the Scene Designer. See the Main PRIME User Guide.
- **Transition Priority** Allows you to select which clip, incoming or outgoing, has the top most priority when transitioning between clips



# CLIP RECORDERS

Configures the number of available clip recorders on the system. Click the Add Clip Recorder toolbar button to add new clip recorders

| 🎆 Hardware Configuration |                            |                           |                           |
|--------------------------|----------------------------|---------------------------|---------------------------|
|                          | Clip Controllers 👔 Add Cli | p Recorder                |                           |
| Video Channels           | Clip Recorder              | 📝 Clip Recorder 1 🛛 🗱     | 💟 Clip Recorder 2 🛛 🗱     |
| Clip Players             | Name                       | Clip Recorder 1           | Clip Recorder 2           |
| Clip Recorders           | Parent Channel             | Input 1 🔹                 | Input 2 🗸                 |
|                          | Default Folder             | Clips                     | Clips                     |
|                          | Default Compression        | JPEG 🔹                    | JPEG 🗸                    |
|                          | Frame Grab                 | Generate Clips for Stills | Generate Clips for Stills |
|                          |                            |                           |                           |

## **Clip Recorder Properties**

- **Parent Channel** Select a channel from the list. The list will be populated from the configure input channels in the "Video channels" section.
- Name Assign a user-friendly name to identify the Clip Player throughout the application
- Default Folder Sets the default folder to which recorded clips will be saved
- **Default Compression** Sets the default compression of recorded clips: None (uncompressed), JPEG (better for footage), LZO (better for graphics)
- Frame Grab If set, causes clip player meta data files to be generated when frame grabs are captured



## PLAYLISTS

Configures the number of playlist windows to create on startup. Use the Add Playlist button to add new playlist windows.

| 🎆 Playout Configuration |                      |              |   |              |   | -                |     | ×  |
|-------------------------|----------------------|--------------|---|--------------|---|------------------|-----|----|
|                         | Playlists 🝺 Add Play | list         |   |              |   |                  |     | 2  |
| Video Channels          | Playlist             | Playlist 1   | × | Playlist 2   | × | Playlist 3       | ×   |    |
| Clip Players            | Name                 | 5PM News     |   | 6PM News     |   | Clips & Graphics |     |    |
| Clip Recorders          | Auto Advance         | Auto Advance |   | Auto Advance |   | Auto Advance     |     |    |
| Playlists               |                      |              |   |              |   |                  |     |    |
|                         |                      |              |   |              |   |                  |     |    |
|                         |                      |              |   |              |   | OK Cancel        | Арр | dv |
|                         |                      |              |   |              |   |                  |     | ., |

- **Name** Assign a user-friendly name to identify the Playlist throughout the application
- Auto Advance Auto advance mode will automatically cue the next item in the playlist

## ATLAS

| 腸 Playout Configuration   |                                       |  |                |   |   |                                     | —            | □ ×      |
|---|---------------------------------------|--|----------------|---|---|-------------------------------------|--------------|----------|
|   | File CG                               | - 🗋 Ne   | w 🔻 📙 Save     | As 🗙 Delete                                 |   | Lic                                 | ense CG      |          |
| <ul> <li>Video Channels</li> <li>Clip Players</li> <li>Clip Recorders</li> <li>Playlists</li> <li>Atlas</li> <li>External Data</li> </ul> | Channel<br>Grid<br>Labels<br>Channels | Enabled   Output 1   3   Y   Auto   Show Bottom Left, I   Add % Remove | Height: 20%, P | adding: Opx 👻                               | ]   | Preview                             | 71 Preview 2 | Output 2 |
| Settings  |                                       | ♦ Channel         ■ Preview 1         ▶ Preview 2         ♥ Output 2   | Small Y        | Label<br>Preview 1<br>Preview 2<br>Output 2 | Include Audio<br>Disabled ×<br>Disabled ×<br>Disabled × | Audio Channels<br>N/A<br>N/A<br>N/A |              |          |

Users can define an H264 output stream for all the available outputs. This will stream to a web browser or third party application as a MultiViewer



## **B**YPASS

As referenced in the PRIME User Guide, systems with a compatible Matrox DSXLE4 card can switch between Bypass and In Circuit directly in PRIME Playout.

#### Compatible Matrox DSX LE4 cards for PRIME Bypass:

DSX LE4 FH / X2 DSX LE4 FH / 4 DSX LE4 FH / 8

١

| Mayout Configuration |      |         |                |      |     |     |
|----------------------|------|---------|----------------|------|-----|-----|
|                      | File | CG      |                | - 🗅  | New | - 🖪 |
| 💻 Video Channels     | Вур  | ass Set | tings          |      |     |     |
| 🔛 Clip Players       |      |         |                |      | v   | 1   |
| 🗎 Clip Recorders     | D    | evice   | None           |      |     |     |
| Playlists            |      |         | None           |      |     |     |
| () Atlas             |      |         | External Panel | l    |     |     |
|                      |      |         | Matrox Hardw   | vare |     |     |
| Bypass               |      |         |                |      |     |     |

| Mayout Configuration        |          |                       |
|-----------------------------|----------|-----------------------|
|                             | File CG  | - 🗋 New - 🛅 S         |
| Video Channels Clip Players | Bypass S | ettings               |
| Clip Recorders              | Device   | Matrox Hardware 🛛 🖌 ! |
| 🔀 Playlists                 |          | ✓ Start In Circuit    |
| 🌐 Atlas                     |          |                       |
| ● Bypass                    |          |                       |



## **Bypass Settings**

PRIME Playout > Config > Playout Configuration > Bypass

- Device
  - **None** (Disables PRIME Bypass functionality only.
  - External Panel (select for external bypass panel operation)
    - When selected, the external bypass panel is in control of bypass
  - **Matrox Hardware** (select for PRIME software bypass operation)
- Start in Circuit (Matrox Hardware Device Only)
  - When checked PRIME will startup In Circuit

\*Known Limitation with Matrox Hardware Device - Start In Circuit will always be checked and grayed out. You cannot uncheck this. PRIME can not startup in Bypass when using Matrox Hardware Device. User will need to start PRIME first and then select Go In Bypass.

For new settings (Brand new system) - Device will default to None

If coming from previous settings, Bypass Device setting will use External Bypass Device (even if the Supported Matrox card is present or the physical External Bypass panel is absent) similar to how it is in 4.8.

#### **Bypass Not Available Scenarios**

When PRIME Bypass is not available, the menu will display Not Available. Not available indicates that either None, an incompatible Matrox card, or External Panel has been selected within the Bypass Playout Configuration. If External Panel is selected and you still receive Not Available, either it is not connected or has thrown an error.

Bypass Yellow Exclamation Mark - Bypass is Not Available for the selected device

Device Yellow Excalamation Mark explanation: **Matrox Hardware** Not Available. Bypass is only supported on the following Full Height Matrox Boards: DSXLE4/4 DSXLE4/8 DSXLE4/X2

Supported board not detected on this system.





#### External Panel

Not Available. Unspecified Bypass Panel error reported. Check if Bypass Panel is connected.

When a compatible Matrox card is detected and Device is set to Matrox Hardware, Bypass will automatically be invoked if PRIME is closed, crashes, or power is lost to the physical system.

In order for Bypass to work as intended, Matrox card I/O topology must be configured to certain specifications. Please contact your Chyron support specialist for Matrox configuration guidelines based on your DSX LE4 card and your desired setup.



# **External Data**

| 🌃 Playout Configuration |                     |           |          | _           |          | $\times$ |
|-------------------------|---------------------|-----------|----------|-------------|----------|----------|
|                         | File CG             | • 🗋 New 💌 | Save As  | License CO  | i        |          |
| 💻 Video Channels        | LIDIA               |           |          |             |          |          |
| 🔛 Clip Players          | Enabled             |           |          |             |          |          |
| 📔 Clip Recorders        | DID                 | 84 🌲 Ox   | 54       |             |          |          |
| Playlists               |                     |           |          |             |          |          |
| -🗟 External Data        | SDID                | 34 🗘 0x   | 22       |             |          |          |
| Settings                | Insert Packet Count | 2         |          |             |          |          |
| 🔆 Advanced              | Remove Packet Coun  | t 4 🔺     |          |             |          |          |
|                         | TRACAB              |           |          |             |          |          |
|                         | Enabled             |           |          |             |          |          |
|                         | Address 127.0       | .0.1      |          |             |          |          |
|                         | UDP Port 9006       | *         |          |             |          |          |
|                         | Signal Port 4900    | *<br>*    |          |             |          |          |
|                         | UDP                 |           |          |             |          |          |
|                         | Enabled             |           |          |             |          |          |
|                         | Port 21416          |           |          |             |          |          |
|                         | Cesium              |           |          |             |          |          |
|                         | Enabled             |           | Run Cesi | um Target C | onverter |          |
|                         | Address 127.0       | .0.1      |          |             |          |          |
|                         | Port <b>7100</b>    | *<br>*    |          |             |          |          |
|                         | Delay 0             | *         |          |             |          |          |
|                         |                     |           |          |             |          |          |
|                         |                     |           | ОК С     | ancel       | Apply    |          |

- LIDIA: Refer to the separate PRIME Lidia.pdf file in the documents folder
- **TRACAB:** Allows Chyron TracAb data to stream directly into PRIME's render engine
  - Address: The IP Address of the Tracab system broadcasting the data.
  - $\circ$   $\$  **UDP Port:** The main Tracab transmission data port
  - o Signal Port: Port to receive addition event data





- **UDP:** Allows external parameter data to stream directly into PRIME's render engine
- **Cesium:** Allows Pan, Tilt and Zoom (PTZ) data from the Chyron Cesium application. This enables PRIME Augmented Reality.
  - o Address: The IP Address of the Cesium system broadcasting the data
  - UDP Port: The main Cesium transmission data port
  - Delay: Values are in frames and can only be set between 0 and 100

## Settings

The settings dialog allows users to overwrite the default PRIME startup settings. Users can start up with a defined Project, Layout and or shortcuts file.

| 🎆 Playout Configuration     |                  |                 | _   | _     |        | $\times$ |
|-----------------------------|------------------|-----------------|-----|-------|--------|----------|
|                             | File CG          | - [             | New | 🕶 📙 S | ave As | . »      |
| Video Channels Clip Players | Override Applica | tion Settings – |     |       |        |          |
| Clip Recorders              | ✓ Project        |                 | ~   |       |        |          |
| 💽 Playlists                 | Layout           |                 | -   |       |        |          |
| ⊶es External Data           | Shortcuts        |                 |     |       |        |          |
| Settings                    |                  |                 |     |       |        |          |
| 🔆 Advanced                  |                  |                 |     |       |        |          |
|                             |                  |                 |     |       |        |          |
|                             |                  |                 |     |       |        |          |
|                             |                  |                 |     |       |        |          |
|                             |                  |                 |     |       |        |          |
|                             |                  |                 |     |       |        |          |



## **A**dvanced

| 🎆 Playout Configuration         |                           |                                 | _          | $\times$ |
|---------------------------------|---------------------------|---------------------------------|------------|----------|
|                                 | File CG 🗸                 | 🗅 New 🔻 🔚 Save As 🗶 Delete      | License CG |          |
| Video Channels                  | Text                      |                                 |            |          |
| Clip Players                    | Font Engine DirectWrite   | ✓ Use DirectWrite for complex s | cripting   |          |
| 🐞 Clip Recorders<br>💽 Playlists | Media Cache               |                                 |            |          |
| () Atlas                        | System Memory 32453       | MB                              |            |          |
| 💿 Bypass                        |                           |                                 |            |          |
| 📲 ExternalData                  | Cache Size 25961          |                                 |            |          |
| 🔁 Settings                      | Cache Percent 80          |                                 |            |          |
| 🔆 Advanced                      | Clip                      |                                 |            |          |
|                                 | Memory Size               | 0 MB 🔞                          |            |          |
|                                 | Preload Size              | 256 MB                          |            |          |
|                                 | Preload HD Frames         | 32                              |            |          |
|                                 | Copy Threads              | 0                               |            |          |
|                                 | Video Input               |                                 |            |          |
|                                 | Disconnect Hold Frames    | Indefinite ~                    |            |          |
|                                 | LyricX Connection         |                                 |            |          |
|                                 | Output Channel            | Disabled $\sim$                 |            |          |
|                                 | Display                   |                                 |            |          |
|                                 | 🗹 Ignore System DPI       |                                 |            |          |
|                                 | Graphic Drivers           |                                 |            |          |
|                                 | Always Install Graphics I | Profile                         |            |          |
|                                 |                           |                                 |            |          |
|                                 |                           |                                 |            |          |
|                                 |                           |                                 |            |          |
|                                 |                           |                                 |            |          |

Text Font Engine – Switches between GDI & DirectWrite

Media Cache System Memory – Read only indicator of available System RAM

**Cache Size** – Set a defined size for PRIME to cache scene elements.

Cache Percent - Assign a percentage of System Memory.

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### Clip

**Memory Size** - This can be adjusted to enhance clip performance playback. Suggested memory size: HD=1024 MB, 4K=4096 MB, 0 = Automatic (Legacy)

Preload Size\* - Assign how much read ahead to load clips.

**Preload HD Frames\* -** Assign a user-friendly name to identify the Playlist throughout the application

Clip Preload settings work in tandem.

**Copy Threads -** Increase this setting for additional CPU Threads to improve clip codec playback performance. For example, if your PRIME graphics use a lot of ProRes clips, increasing the number of CPU threads the system uses for clip processing helps improve clip playback performance.

**\*Please Note:** The higher this value, the more impact it will have on overall PRIME and system performance. This can impact realtime output and input channel performance.

Default Value = 0 Max Threads = 64

### Video Input

**Disconnect Hold Frames:** If an interruption occurs with the video input source, the video texture will display the last valid frame received for this many frames before going to black

## LyricX Connection

Allows a LyricX output channel to be routed to a PRIME output. Refer to the PRIME Lyric Mode Configuration Guide for more information.

Output Channel: Specifies the PRIME output channel which will rendered LyricX.

Display

Ignore System DPI - only affects Desktop Window outputs

- If checked, will ignore the system display scaling for the window. For instance, a desktop window set to 1920x1080 on a monitor with 200% scaling would remain at 1920x1080.
- If unchecked, system display scaling will apply to the window. For instance, a desktop window set to 1920x1080 on a monitor with 200% scaling would be scaled up to 3840x2160.



#### **Graphic Drivers**

**Always Install Graphics Profile** - Prime Engine requires a specific graphics profile (low level driver settings) to run properly. When Prime Engine is installed the profile is installed however updating graphics drivers overwrites this profile. This setting installs the necessary profile on startup for PRIME to run properly.

## **GPU STRIPING/SCALE**

Press the "Scale" button to choose the options

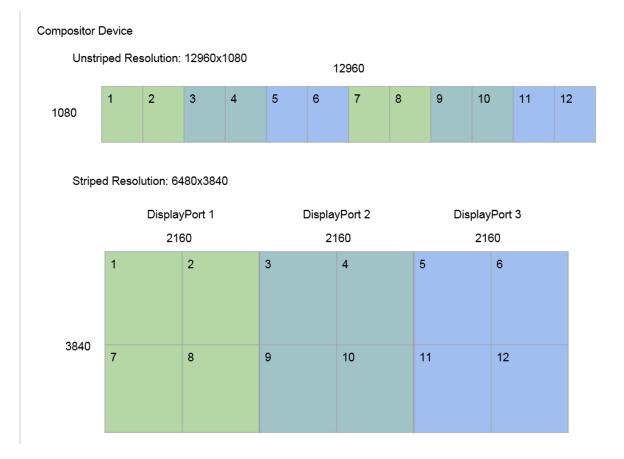
|       | 🗹 Output   | 4      | ×                       |           |
|-------|------------|--------|-------------------------|-----------|
| GPU   |            |        | ~                       |           |
| Video | o Out      | $\sim$ | 8 Bit                   |           |
| Video | Monitor 1  |        | ~                       |           |
| Outp  | ut 1       |        |                         |           |
| 1080  | i 59.94 Hz | $\sim$ | Scale                   | er        |
| Unsh  | aped       |        | <ul> <li>• •</li> </ul> | Scale     |
| None  | 2          |        |                         | Stripe    |
| Disab | oled       |        |                         | Custor    |
|       |            | Us     | es a cust               | tom xml f |

- Scale: This will scale the PRIME output to the specified output of the target monitor.
- Stripe: This will truncate the video by dividing the video into sections to fit the monitor resolution.
- Custom: Modify the file "C:\Program Data\ChyronHego\Prime Engine\Layout.xml" to define the striping.

| C:\ProgramData\ChyronHe ×  |  |
|--|--|
| xml version="1.0"?<br>- <source height="1080" width="1920"/><br><stripe dstx="0" dsty="0" height="1080" srcx="0" srcy="0" width="1920"></stripe><br> |  |



# COMPOSITOR DEVICE FOR STRIPING





# **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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