CAMIO User Guide

Version 4.10

Contents

Using PRIME in the CAMIO Workflow

In order to understand how PRIME integrates into the CAMIO workflow, it's important to first understand the differentiation between content types in PRIME. On a PRIME system that will be used to play content to air, a user may configure one or more output video channels. These channels correspond to physical or virtual outputs (for example SDI, NDI, GPU, and so forth) and will appear in the PRIME playout window. These output channels may or may not have a visible preview.

PRIME scenes (PBX files) and messages (PBM files) are played on these output channels. These files are the most robust of scene types in the PRIME environment.

A user may also configure one or more clip players. Each clip player controls clip playback (typically PPC files) to a specific layer within an output channel. For example, a clip player may be configured to play content on layer -5 of output channel 1. Since layers are stacked based upon their relative numeric value, this means that any content on layer -4 or higher will always be on top of the content being played back on this clip player.

In the case of a dedicated clip player, an output channel is still required, but the expectation is that only the clip player itself will be used to render content on that output. The actual parent (output) channel will likely not be visible in the user interface to avoid confusion for an operator.

Put more simply:

- **Output Channels**: PRIME scene and message playback.
- **Clip Players**: PRIME clip playback.

CAMIO Licensing

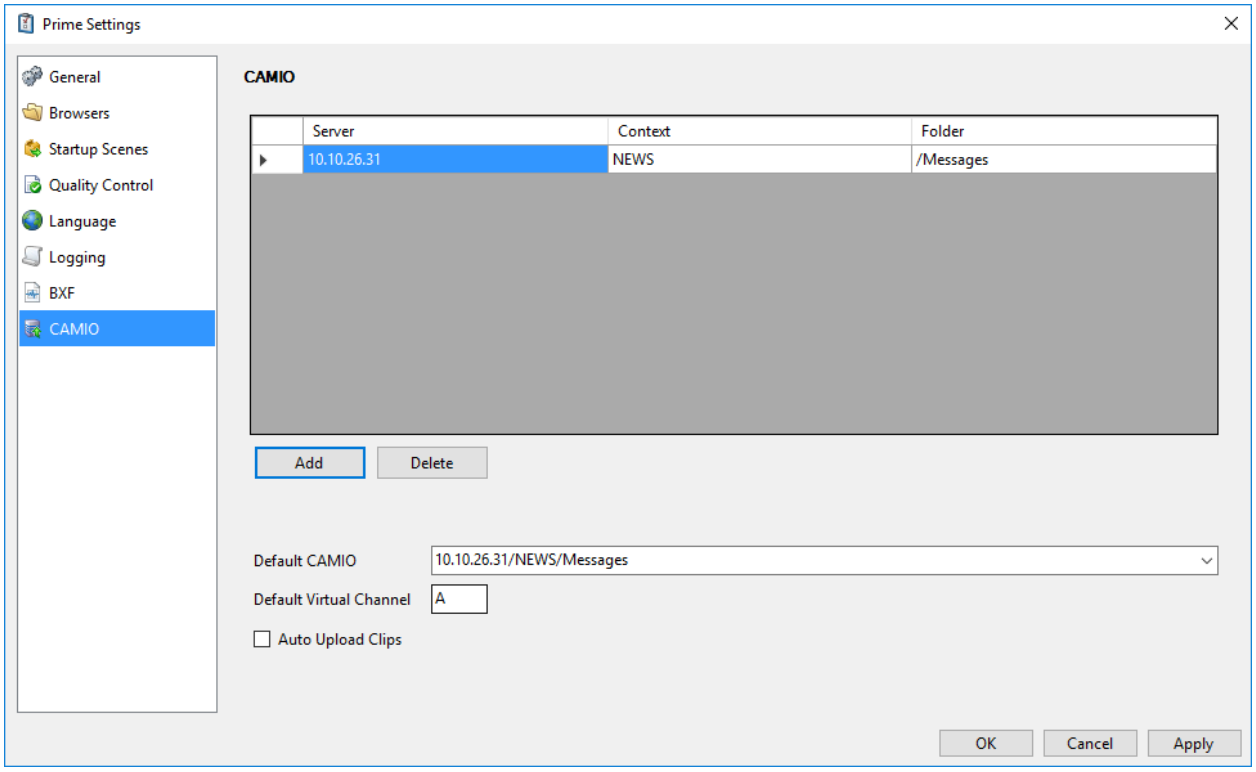
PRIME can be leveraged in the CAMIO workflow as long as licenses are configured appropriately. There are two main licensing and functionality types.

- **Playout**: When CAMIO is licensed on a PRIME system configured for playout, this means that the PRIME application will be used to play graphic scenes and/or clips. The exact configuration depends on what is exposed to ISQ; see page 7.
- **Render**: When CAMIO is licensed on a PRIME system configured for rendering, this means that the PRIME application will instead be used to generate thumbnails for use in news room applications (e.g. particularly the LUCI plugin).

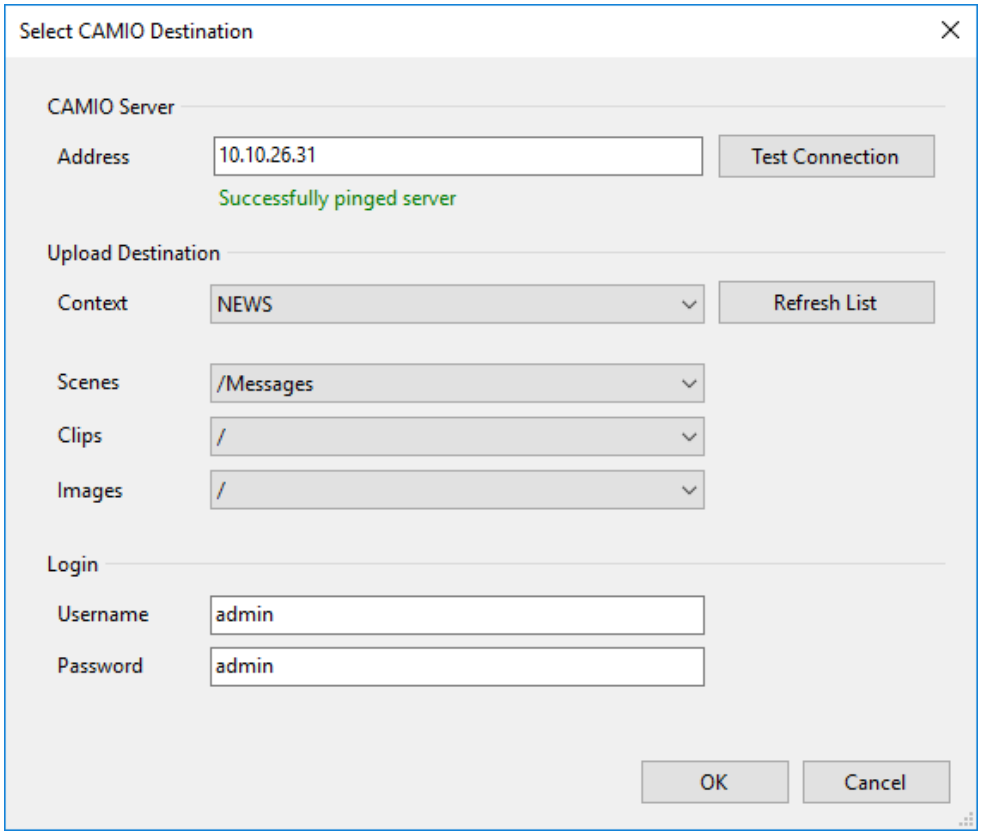
Publishing to CAMIO

Configure the CAMIO Server:

From the Runtime User Interface select the menu Config->Settings->CAMIO. Press the “Add” button to configure CAMIO Server(s):



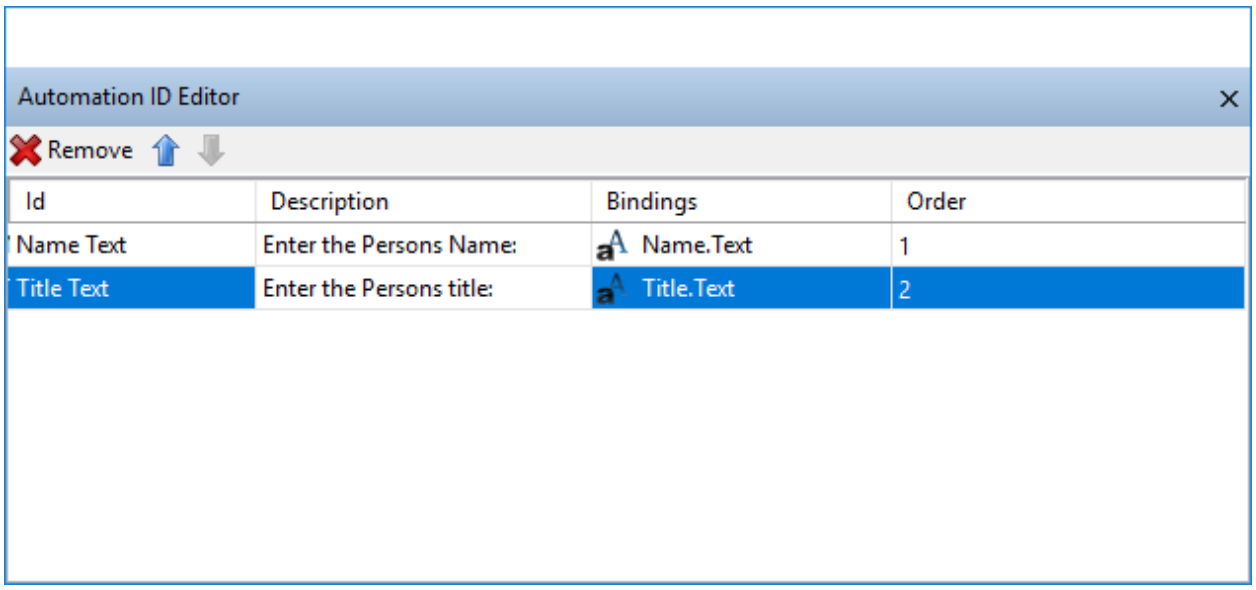
- **Auto Upload Clips:** Any Clip added to the Common Clips folder or Project Clips folder, gets automatically uploaded to the default CAMIO server.



Template Preparation

Clips and Graphic Templates can have replaceable elements that will show up in the ChyronHego NRS plugin. To define which elements will show up add them to the **"Automation ID Editor"** found in the Designer. Drag and drop from the scene tree the elements you want to exposed to the NRS plugin for producers to be able to fulfill.

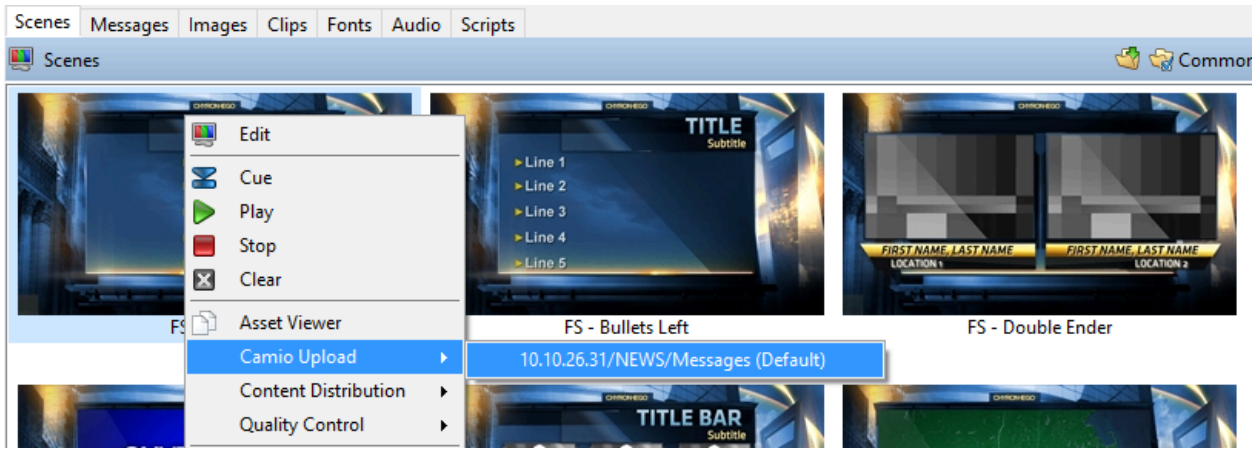
Note: These elements will also now be shown in the Play List as well.



- **Id:** This is the ID automation will use to identify this item.
- **Description:** This is a user-friendly description and is also used in the NRS Plugin (LUCI) as the label for the replaceable item.
- **Order:** Used by legacy automation commands.

Publish a single scene

Right click on a scene or clip and select “Upload to CAMIO”. Select the CAMIO server from the list of available servers defined in the above configuration:

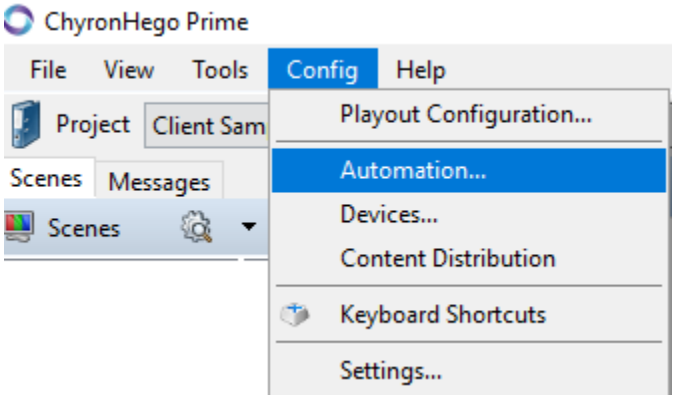


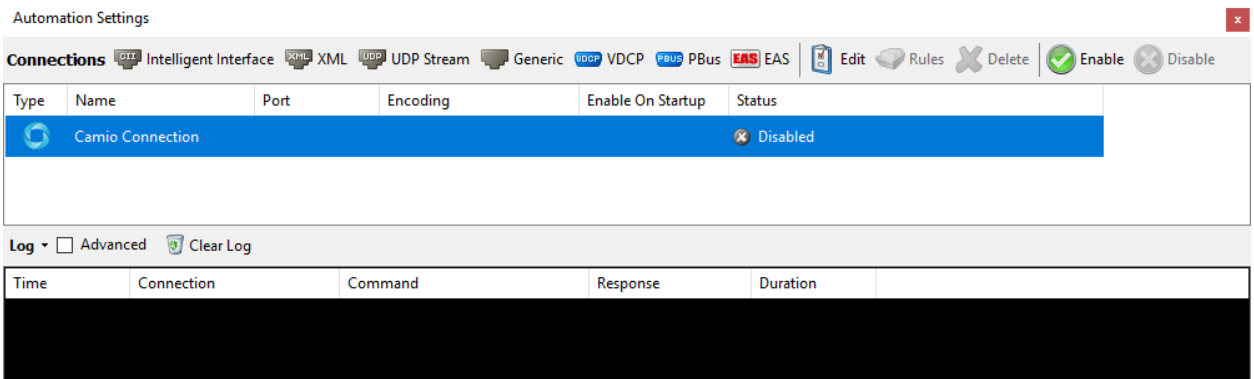
Publish a Project

Click the Project Icon in the upper left-hand corner of the Runtime user Interface and select “CAMIO Upload” menu. Select the CAMIO server from the list of available servers.

Configuring Channels for ISQ Playback

CAMIO and ISQ communicate to PRIME via the ChyronHego “Data Engine”. This is transparent to the end user. To enable CAMIO and ISQ to communicate to PRIME you must enable the “CAMIO” connection in PRIME’s Automation Configuration dialog.



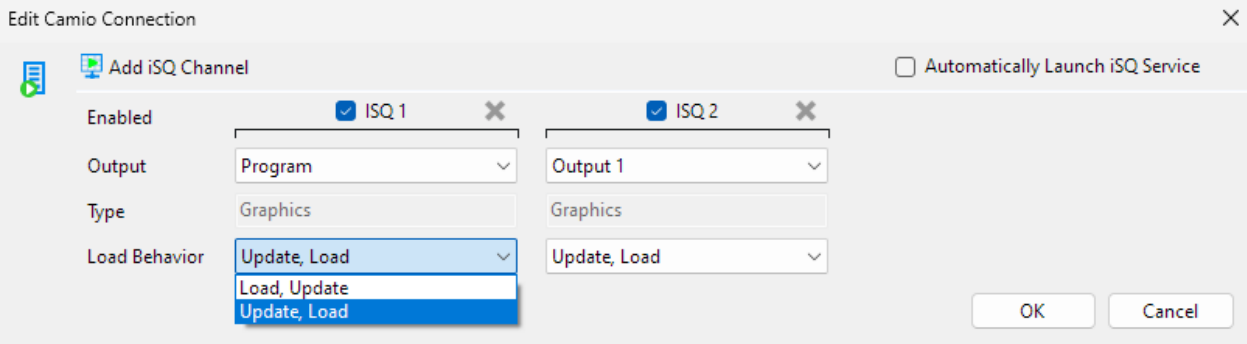


Note: The Port & Encoding fields are empty. This is expected and normal.

Creating ISQ Channels for Playback

This section refers to the PRIME Playout devices

Select the CAMIO connection from the Automation Settings dialog. Disable the connection then click the "Edit" button to show the ISQ Channels configuration dialog:



By default, no output video channels or clip players are exposed.

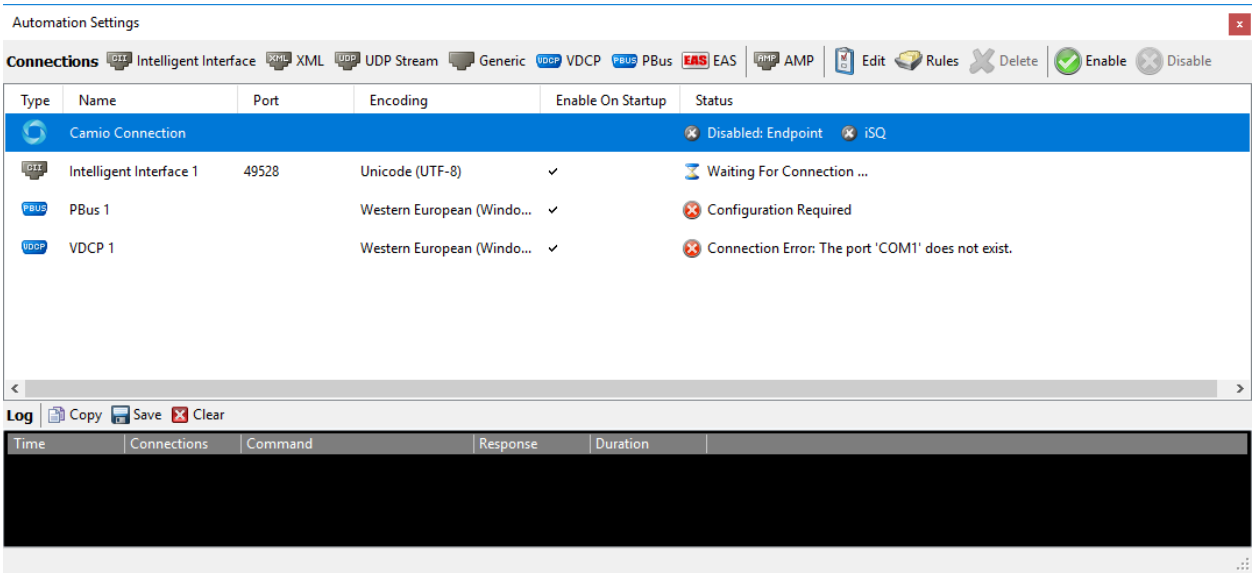
Not all channels and/or clip players need to be exposed to the playout or preview services for use in the news room workflow.

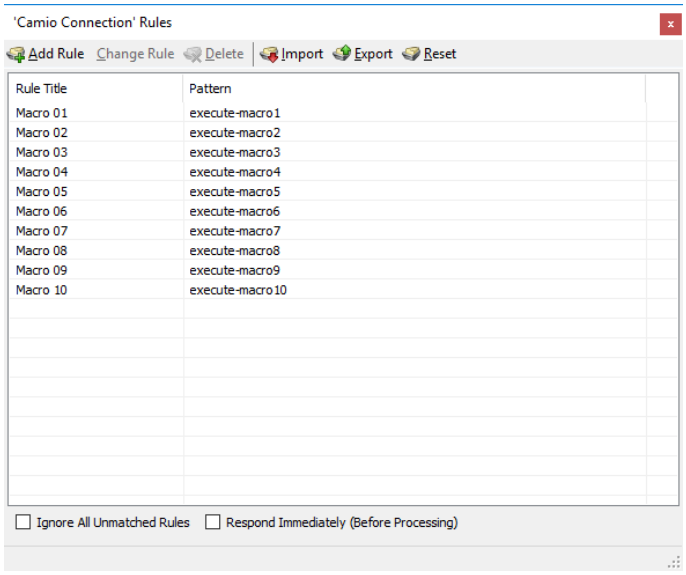
Load Behavior

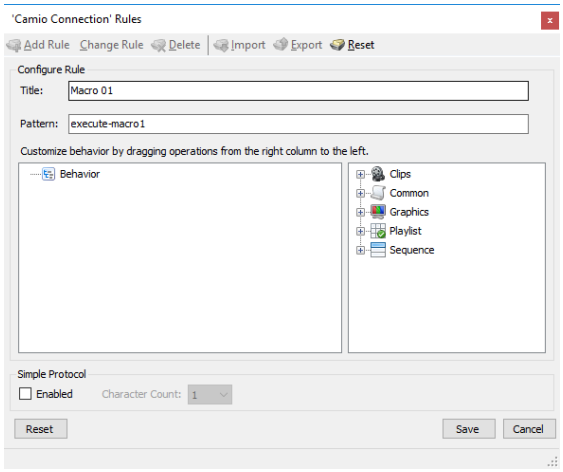
- Load, Update: Graphic (scene) will Load into the channel first and then the Replaceable Updates are applied
- Update, Load: Graphic (scene) is read (opened) and Replaceable Updates are applied before it's Loaded into the channel
    - Update, Load gives better performance, as fewer changes are sent to the render engine

Configuring ISQ Macro buttons

Use the Automation Rules Engine to configure the 10 available ISQ Macro buttons. Select the "CAMIO Connection from the list of connections then select the "Rules" from the toolbar. Double click on the rule to open up the available behaviors to add.


Automation Settings
Connections
Intelligent Interface
XML
UDP Stream
Generic
VDCP
PBus
EAS
AMP
Edit
Rules
Delete
Enable
Disable
Type
Name
Port
Encoding
Enable On Startup
Status
Camio Connection
Disabled: Endpoint
iSQ
Intelligent Interface 1
49528
Unicode (UTF-8)
Waiting For Connection ...
PBus 1
Western European (Windo...
Configuration Required
VDCP 1
Western European (Windo...
Connection Error: The port 'COM1' does not exist.
Log
Copy
Save
Clear
Time
Connections
Command
Response
Duration


'Camio Connection' Rules
Add Rule
Change Rule
Delete
Import
Export
Reset
Rule Title
Pattern
Macro 01
execute-macro1
Macro 02
execute-macro2
Macro 03
execute-macro3
Macro 04
execute-macro4
Macro 05
execute-macro5
Macro 06
execute-macro6
Macro 07
execute-macro7
Macro 08
execute-macro8
Macro 09
execute-macro9
Macro 10
execute-macro10
Ignore All Unmatched Rules
Respond Immediately (Before Processing)

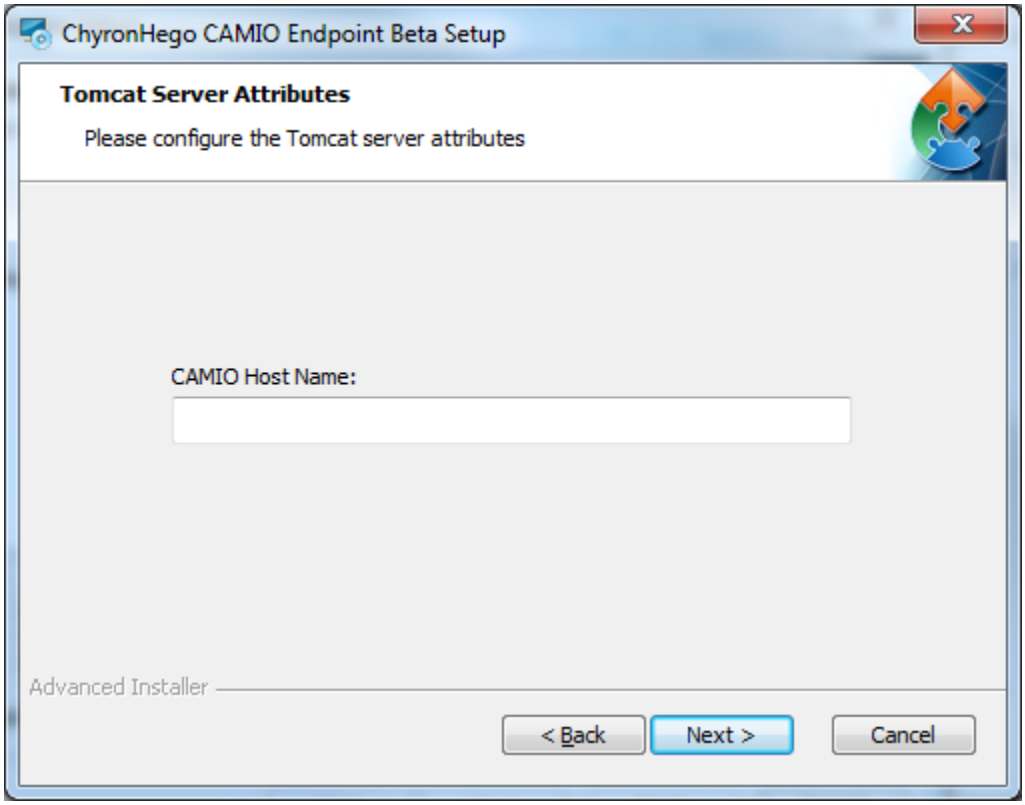


Installing the CAMIO Endpoint

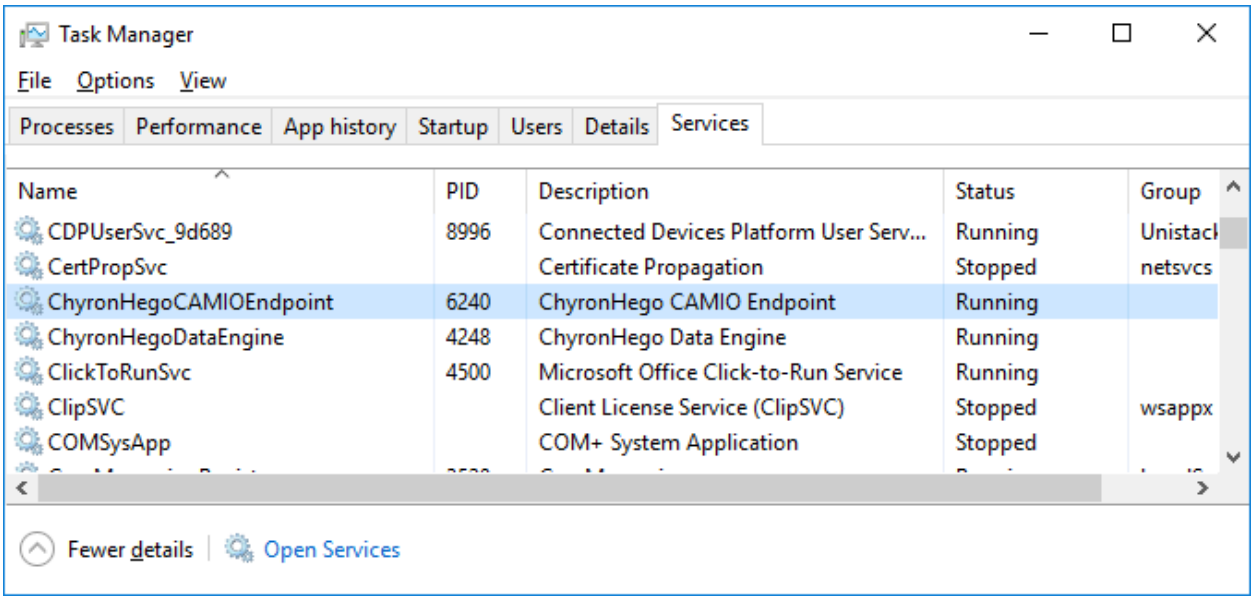
The CAMIO Endpoint should be installed by default with the full PRIME installer. If not, you will need to install it by running the PRIME full installer and checking the option during the PRIME full install setup.

Alternatively, attempting to enable the CAMIO connection in PRIME will first verify that the ChyronHego Data Engine and CAMIO Endpoint services are installed. If not found, PRIME will prompt the user and offer the option of running the installer.

During the CAMIO Endpoint setup, enter the CAMIO server host name or IP Address in the field below.



If successful, you should see the new ChyronHegoCAMIOEndpoint service in the Services section of the Task Manager as seen below.



CAMIO Renderer

This section refers to the CAMIO PRIME Preview Render Application that runs on the separate CAMIO Render device.

CAMIO PRIME is the PRIME software configured to generate previews within the NRS plugin.

The ChyronHego Dongle will show the “Device Type” as “CAMIO Renderer”. When set, the PRIME application will serve as a Preview Renderer ONLY. Many features within the PRIME software will be disabled or unavailable. When launched the splash screen will show a “CAMIO PRIME Renderer”.

Configuration of the Renderer remains the same, however the playout configuration window will be limited to devices of type Render Output (instead of options like GPU, NDI, Application Window, etc.). The CAMIO Connection under automation requires no additional setup on the Renderer system type. The number of channels exposed for rendering will exactly match the playout configuration and the connection will automatically be enabled by default.

Note: Render channels are divided between graphics and clips. For example, if the user configures eight Render Output channels in the Playout Configuration, then the first four will be designated as graphics and the last four will be for clips. Consequently, a minimum of two channels is required to support rendering previews for both graphics and clips.

CAMIO Preview Frame

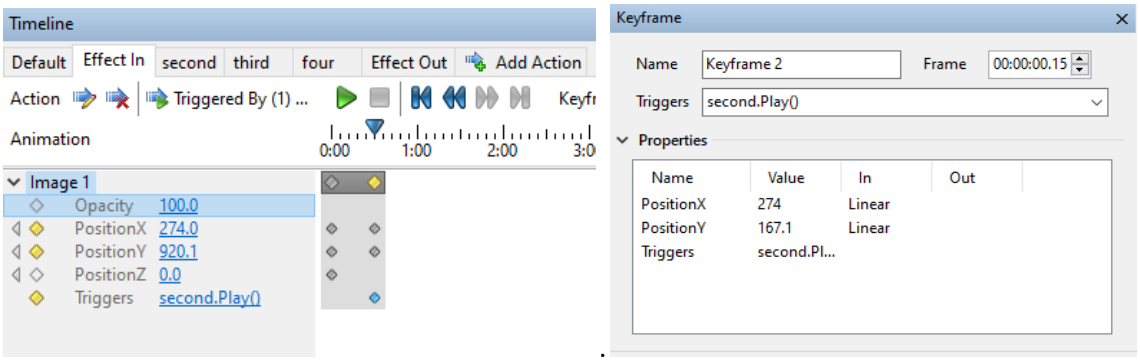
The last frame of the effect in.

Media Engine Workflow

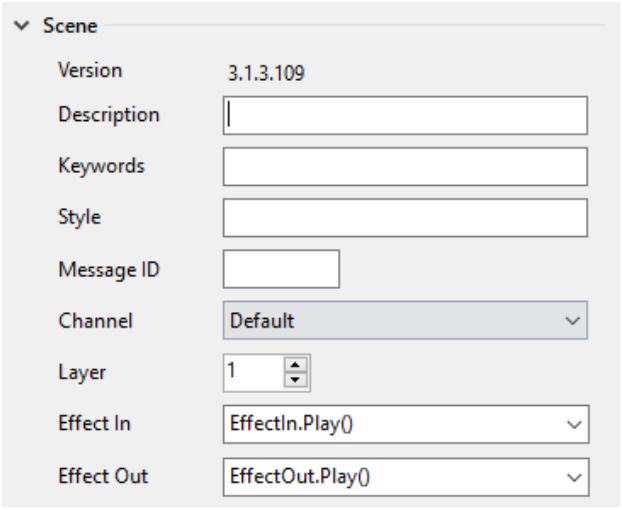
Media Engine enhances the PRIME and CAMIO workflow by rendering scenes as clips using replaceable information from LUCI. This workflow does have some scene design limitations users should be aware of.

Supported Scene Designs

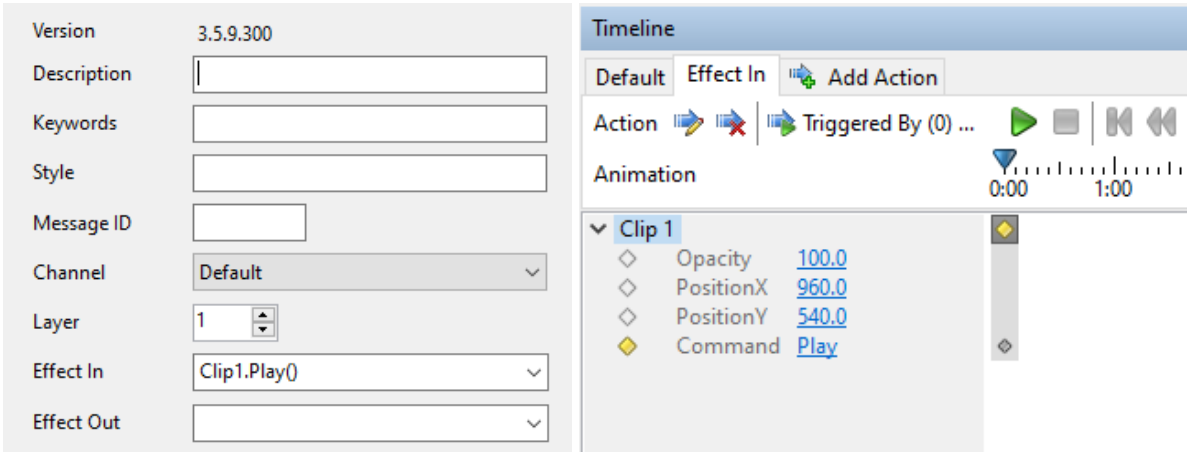
Media Engine will support PRIME scenes constructed in a linear fashion where timeline actions trigger other timeline actions via keyframes.



It is recommended that the Effect In and Effect Out scene events are hooked up to timeline actions. This will flag in and out points of the clip being rendered.

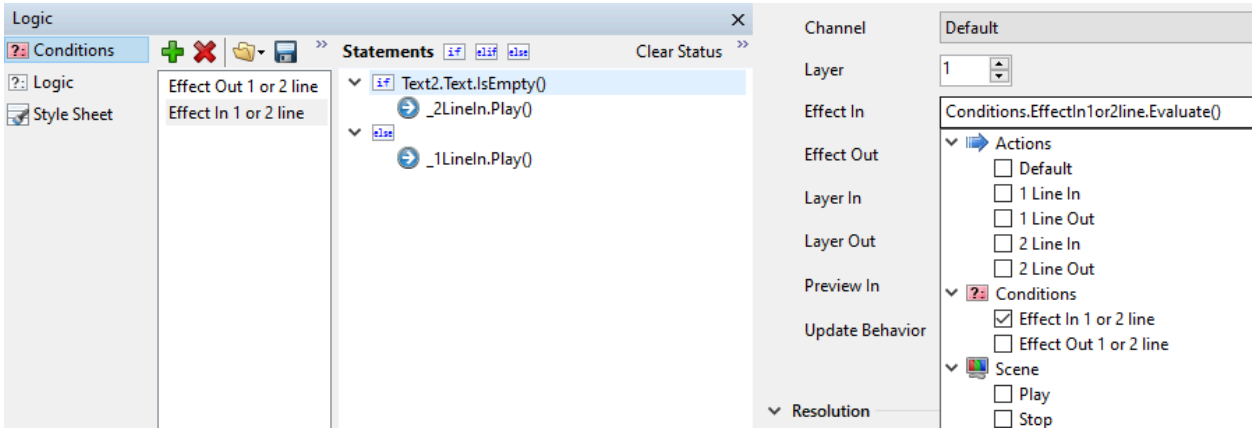


Clip commands can be triggered directly from the Effect In event or from a timeline keyframe.



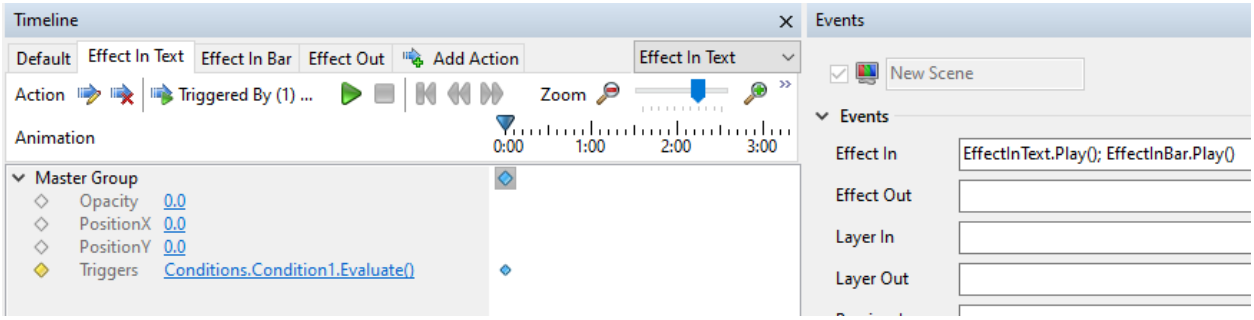
Conditional evaluations are supported in the Media(Video) render workflow with limitations. A condition evaluation can be set to trigger on the Effect In Event. For the Media(Video) animation to render correctly, all objects that are evaluated in the condition must have their value set at frame zero (before the animation begins to render).

For example a conditional evaluation could be used to determine which action should be triggered either “1 Line In” or “2 Line In”, by evaluating if the text object “Text 2” is empty or not.



If changes are applied to the value of “Text 2” from being empty to containing some text value, while the scene is playing or being played, then the conditional evaluation may not be correct as the state of the object cannot be pre determined during rendering.

Conditional evaluations can be triggered from a keyframe with limitations. The trigger conditional evaluation keyframe, must be set to frame zero of an action that is triggered in the Effect In Events.



Base scenes that are referenced in a parent scene will render in the Media(Video) render workflow. The longest Effect In duration of either the parent scene or the base scene will be honored. If the Effect In duration is longer than the requested duration defined in LUCI, then the Effect Out will not be rendered. If the Effect In triggers another Action and their combined duration is longer than the defined duration in

LUCI then the second animation will render in its entirety. In turn the delivered media will be longer than the duration defined in LUCI.

Scene Design Limitations

Conditional evaluations will only be honored for the Effect In and Effect Out Events, it does not extend to the Preview In Event. A conditional evaluation can be triggered from the Effect Out Event. However, any variables in that condition should be set before the Media(Video) animation begins to render. No variables in the condition should be updated or changed while the animation is rendering.

If a Conditional statement changes or updates their values while the scene is playing, or is played then the conditional evaluation may not be correct because the state of an object cannot be pre determined during rendering. This is especially applicable to any scene using a data object. All scene objects that are data bound, must have their values set at frame zero of the Effect In Event. Any data updates applied after frame zero will not be applied during the render.

Conditional evaluations are only supported for a keyframe, when the keyframe is set to frame zero of an action triggered by the Effect In Event. Any condition set to trigger on a keyframe past frame zero, or an action that is not triggered in the Effect In Event will not be supported.

The Media(Video) render workflow does not support any conditions that require evaluation of external data, including the evaluation of an external scene. For example, evaluating if another scene is on output.

Auto Follow source mode is only evaluated for the first frame of the Effect In Action. If autofollow expressions (including position and size) are evaluated after the initial keyframe then the render will not evaluate. For example if the source object's position or size changes during the animation, then autofollow will not evaluate on the target object.