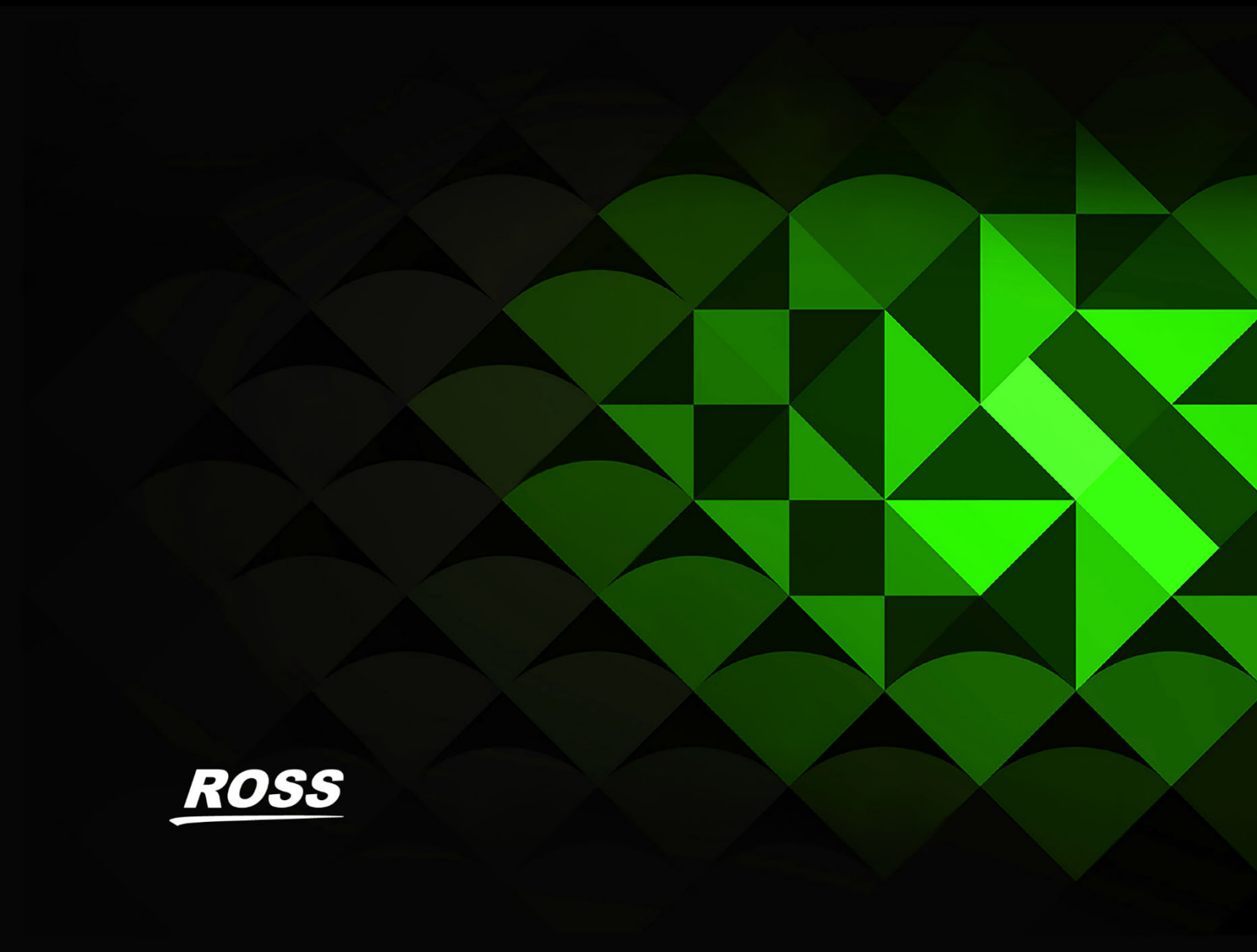
Media I/O

Configuration Guide

VERSION 14.0



ROSS

THANK YOU FOR CHOOSING ROSS VIDEO

You've made a great choice. We expect you will be very happy with your purchase of Ross Technology.

Our mission is to:

1. Provide a Superior Customer Experience
   - offer the best product quality and support
2. Make Cool Practical Technology
   - develop great products that customers love

Ross has become well known for the Ross Video Code of Ethics. It guides our interactions and empowers our employees. I hope you enjoy reading it below.

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

David Ross
CEO, Ross Video
david.ross@rossvideo.com

Ross Video Code of Ethics

Any company is the sum total of the people that make things happen. At Ross, our employees are a special group. Our employees truly care about doing a great job and delivering a high quality customer experience every day. This code of ethics hangs on the wall of all Ross Video locations to guide our behavior:

1. We will always act in our customers' best interest.
2. We will do our best to understand our customers' requirements.
3. We will not ship crap.
4. We will be great to work with.
5. We will do something extra for our customers, as an apology, when something big goes wrong and it's our fault.
6. We will keep our promises.
7. We will treat the competition with respect.
8. We will cooperate with and help other friendly companies.
9. We will go above and beyond in times of crisis. *If there's no one to authorize the required action in times of company or customer crisis - do what you know in your heart is right. (You may rent helicopters if necessary.)*

About this Guide

- Ross Part Number: **7950DR-002-01**
- Release Date: August 12, 2025. Printed in Canada.
- Software Issue: **14.0**

Copyright

Patents

Patent numbers 4,205,346; 5,115,314; 5,280,346; 5,561,404; 7,034,886; 7,508,455; 7,602,446; 7,834,886; 7,914,332; 8307284, 2039277; 1237518; 1127289 and other patents pending.

Warranty and Repair Policy

Ross Video Limited (Ross) warrants its Media I/O Server systems to be free from defects under normal use and service a time period of 15 months from the date of shipment:

If an item becomes defective within the warranty period Ross will repair or replace the defective item, as determined solely by Ross.

Warranty repairs will be conducted at Ross, with all shipping FOB Ross dock. If repairs are conducted at the customer site, reasonable out-of-pocket charges will apply. At the discretion of Ross, and on a temporary loan basis, plug in circuit boards or other replacement parts may be supplied free of charge while defective items undergo repair. Return packing, shipping, and special handling costs are the responsibility of the customer.

This warranty is void if products are subjected to misuse, neglect, accident, improper installation or application, or unauthorized modification.

In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profit). Implied warranties, including that of merchantability and fitness for a particular purpose, are expressly limited to the duration of this warranty.

This warranty is TRANSFERABLE to subsequent owners, subject to Ross' notification of change of ownership.

Extended Warranty

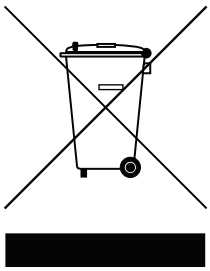
For customers that require a longer warranty period, Ross offers an extended warranty plan to extend the standard warranty period by one year increments. For more information about an extended warranty for your Media I/O Server system, contact your regional sales manager.

Environmental Information

The equipment that you purchased required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

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



If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration. You can also contact Ross Video for more information on the environmental performances of our products.

Use of Hazardous Substances in Electrical and Electronic Products (China RoHS)

Ross Video Limited has reviewed all components and processes for compliance to:

“Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products” also known as China RoHS.

The “Environmentally Friendly Use Period” (EFUP) and Hazardous Substance Tables have been established for all products. We are currently updating all of our Product Manuals.

The Hazardous substances tables are available on our website at:

http://www.rossvideo.com/about-ross/company-profile/green-practices/china-rohs.html

电器电子产品中有害物质的使用

Ross Video Limited 按照以下的标准对所有组件和流程进行了审查：

“电器电子产品有害物质限制使用管理办法”也被称为中国RoHS。

所有产品都具有“环保使用期限”（EFUP）和有害物质表。目前，我们正在更新我们所有的产品手册。

有害物质表在我们的网站：

http://www.rossvideo.com/about-ross/company-profile/green-practices/china-rohs.html

Company Address

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Email (Technical Support): techsupport@rossvideo.com

Email (General Information): solutions@rossvideo.com

Website: http://www.rossvideo.com

Contents

Introduction

A Word of Thanks

Thank you for choosing Ross Video Media I/O as your ingest and playout solution.

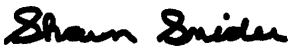
We are committed to providing you with the highest level of customer satisfaction possible. If, for any reason, you have questions or comments, please call Ross Video at +1-613-652-4886 or send us an e-mail at techsupport@rossvideo.com.

We hope that you visit our website www.rossvideo.com to stay up to date with ongoing software releases, join our customer forum and learn more about the complete range of Ross Video products.

Note that software maintenance and extended warranties are available for your system to protect and extend the life of your investment. Our sales team is more than happy to provide further information on the plans available. Members of our sales team will promptly respond to e-mails sent to: solutions@rossvideo.com.

Again, thank you for your purchase of a Media I/O solution from Ross Video. We are confident of your future pleasure with your choice.

Yours Sincerely,



Shawn Snider
Vice President of Production Workflow & Cloud Services

About This Guide

The Media I/O Configuration Guide begins after completing the instructions in the ***Media I/O Installation Guide***. This guide contains the following chapters that cover the configuration of Media I/O software:

- Chapter 1, **"Introduction"** summarizes the guide and provides important terms, conventions and feature descriptions.
- Chapter 2, **"System Overview"** provides a quick summary on what Media I/O provides as a service.
- Chapter 3, **"Preparing the Environment"** summarizes the initial setup procedures that must be performed before configuration of all Media I/O applications.
- Chapter 4, **"Configuring Media I/O Engine"** describes the configuration process for a Media I/O Engine.
- Chapter 5, "**Configuring Media I/O Transcode Agent"** describes the configuration process for the Media I/O Transcode Agent application.
- Chapter 6, **"Configuring Media I/O Workflow Server"** describes the configuration process for the Workflow Server, including General settings and Application settings.
- Chapter 7, **"Configuring Media I/O Task Agent"** describes how to configure the General settings for the Media I/O Task Agent application.
- Chapter 8, **"Configuring Media I/O Watch Agent"** summarizes how to configure the General settings for the Watch Agent and how to add Watch Agent Profiles.
- Chapter 9, **"Configuring Media I/O Dispatch"** summarizes how to configure the General settings for the Media I/O Dispatch application.
- Chapter 10, **"Configuring System Settings"** describes additional configuration steps within the web-based User Interface.

If you have questions pertaining to the operation of Media I/O, please contact us at the numbers listed in the section "**Contacting Technical Support**" on page 1–3. Our technical staff is always available for consultation, training, or service.

Documentation Conventions

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

Interface Elements

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

In the **Assets panel**, click **Delete**.

User Entered Text

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

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

Referenced Guides

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

For more information, refer to the section "**Managing Large Projects**" in the ***Media I/O User Guide***.

Menu Sequences

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

Important Instructions

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

✶ **NOTE:**
After upgrading Media I/O software, you must obtain feature licenses from Ross Video Technical Support before users can access Media I/O features.

Contacting Technical Support

Technical Support is staffed by a team of experienced specialists ready to assist you with any question or technical issue.

Ross Video has technical support specialists strategically located around the globe to ensure a prompt response to technical inquiries. Our primary technical support center is located in Ottawa, Ontario, Canada. In addition, we have offices in The United Kingdom (London), Australia (Sydney), and Singapore with satellite locations in New York City, the Netherlands, and China. As we expand our presence globally, we are constantly evaluating other key locations to have a local technical support specialist in order to better service our customers.

North America

Our North America center located in Ottawa, Ontario, Canada and is open Monday to Friday 8:30 a.m. to 6:00 p.m. EST, with 24/7/365 on-call service after hours.

Our telephone number is: +1-613-686-1557

Toll free within North America: +1 833-859-0499

EMEA

Our EMEA center is open Monday to Friday 8:30 a.m. to 5:00 p.m. GMT. After hours support is provided by our North America location.

International toll free: +800 3540 3545

If the local support specialist is not available, your call will be transferred automatically to our North America center.

Australia

Our Sydney, Australia office is located in Alexandria, NSW.

Our local support telephone number is: 1300 007 677

If the local support specialist is not available, your call will be transferred automatically to our North America center.

Online

E-mail: techsupport@rossvideo.com

Website: open a support request using the link http://www.rossvideo.com/support/tech-support.html to open a support request.

System Overview

Media I/O encodes and decodes streams of live or file-based video. It can do this from almost any format you can think of to any other format you can think of.

- **Flexibility:** Every channel can record, play or transcode almost any video format, codec and transport.
- **Ease of Use:** Flex Channels allow easy switching between countless arrangements and combinations to suit your needs.
- **Scalability:** Start as small as a single channel and grow as large as you need to.
- **Reliability:** Battle-tested software under active development and backed up by world-class customer support.
- **Adaptability:** Repurpose or group channels for ingest, playout or transcode as necessary.
- **Interoperable:** Run on-prem, virtualized or in the cloud, and manage with a modern web-based UI on any connected browser.

System Workflow Overview

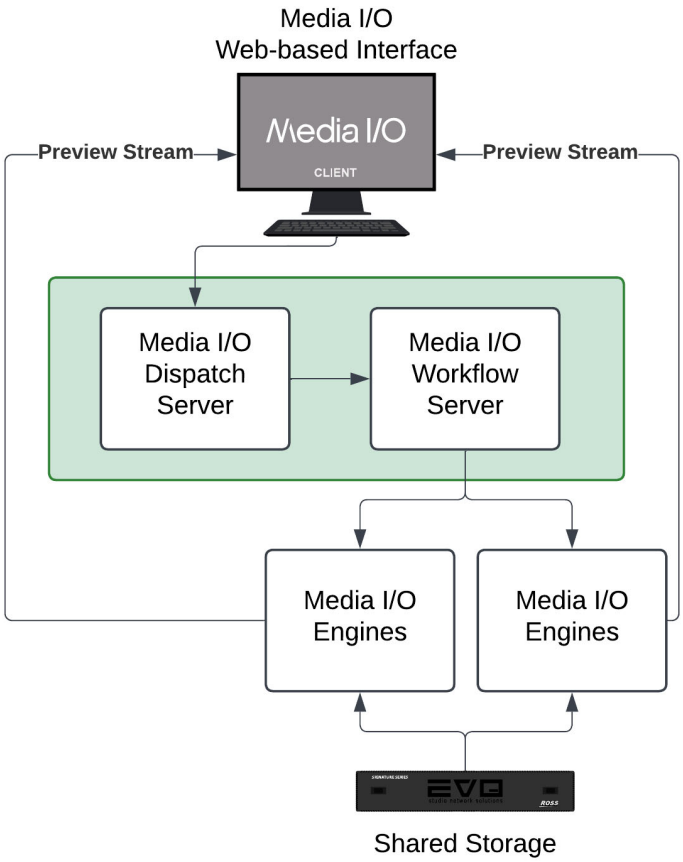


Figure 2.1 Media I/O Workflow Diagram

Prerequisites

This guide assumes that a Media I/O administrator has already installed and licensed the Media I/O system in accordance with the ***Media I/O Installation Guide***.

✶ **NOTE:**
Please contact your Ross Video sales representative or Ross Video technical support for assistance with installing the required software packages.

Preparing the Environment

This chapter discusses the following topics:

- Setting up Debug Logging
- Storage Mapping Using Task Scheduler
- Storing Access Information Using Credential Manager

Setting up Debug Logging

When a crash is undergoing troubleshooting on Windows machines, the development team at Ross Video may require a crash dump. A crash dump (also known as a dump file) is a file containing the digital record of a recent crash on a machine. By default, these files are not enabled on Windows, so this guide will explain how to enable them. Please proceed through the following procedures in order.

To create a Crash Log folder

1. Create a new folder with the name **`Crash Logs`** in the C:\ drive.

To run the Registry Editor

1. Press the Windows key and the R key to open the Run command box.
2. Type the following command and press the Enter key.
   `regedit`
3. Select **Yes** in the User Control Window pop-up box.

To create the LocalDumps key

1. Navigate to the following location.
   `HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\Windows Error Reporting`
2. Select the Windows Error Reporting key and create a new key named **`LocalDumps`** if it is not there already:
   - Right-click **Windows Error Reporting**.
   - Select **New** and then **Key**.
   - Name the key **`LocalDumps`**.

To create registry values in the LocalDumps key

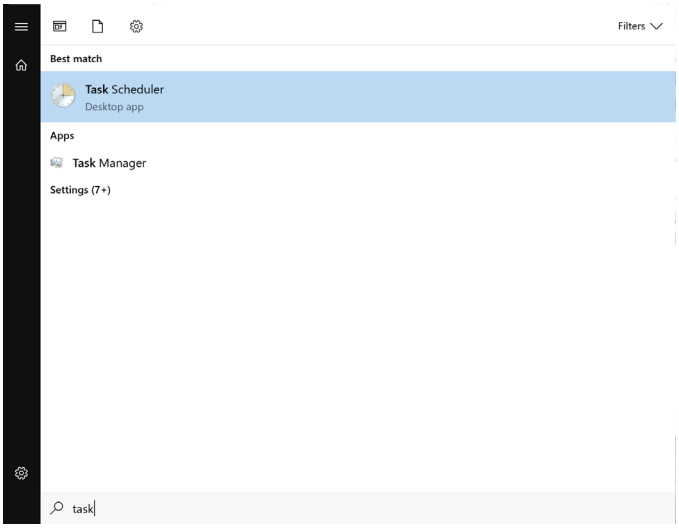
1. Select the **LocalDump** key and create three registry values as mentioned below.
2. Create a DumpFolder Registry Value
   - Right-click in the blank area on the right side and select **New > Expandable String Value**
   - Name it **`DumpFolder`**
   - Double-click it and enter **`C:\Crash Logs`** in the **Value** data field.
3. Create a DumpCount Registry Value
   - Right-click in the blank area on the right side and select **New > DWORD (32-bit) value**
   - Name it **`DumpCount`**
   - Double-click it and enter **`10`** in the **Value** data field.
4. Create a DumpType Registry Value
   - Right-click in the blank area on the right side and select **New > DWORD (32-bit) value**
   - Name it **`DumpType`**
   - Double-click it and enter **`1`** in the **Value** data field.

Storage Mapping Using Task Scheduler

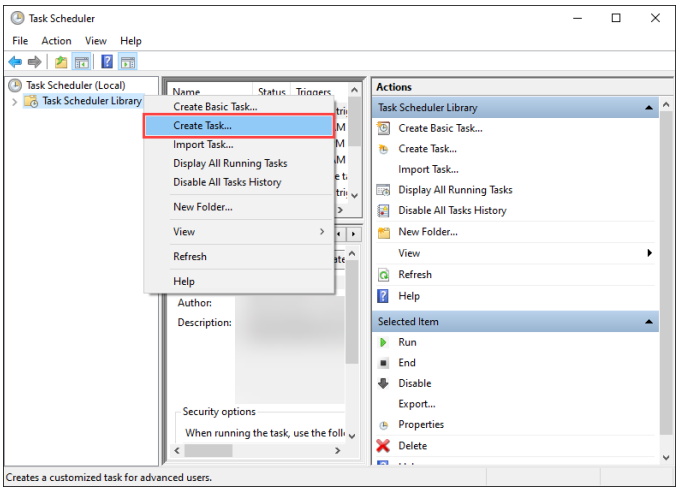
In order to use Media I/O with shared storage, you need to mount the storage with the highest privileges.

To Mount Storage in Task Scheduler

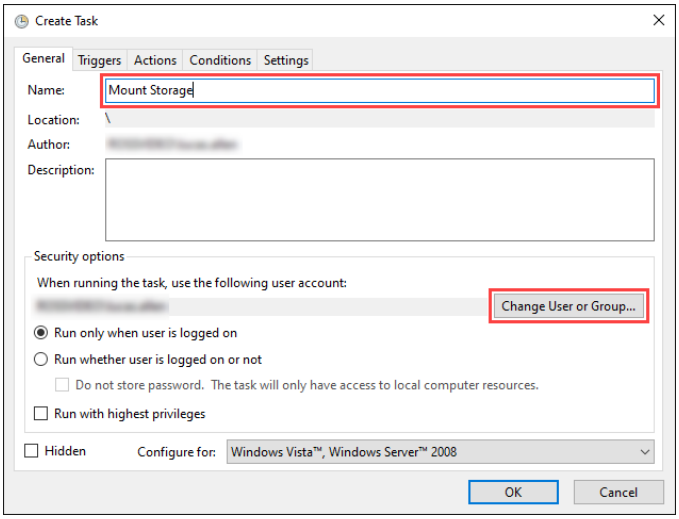
1. In Windows, open the Task Scheduler.



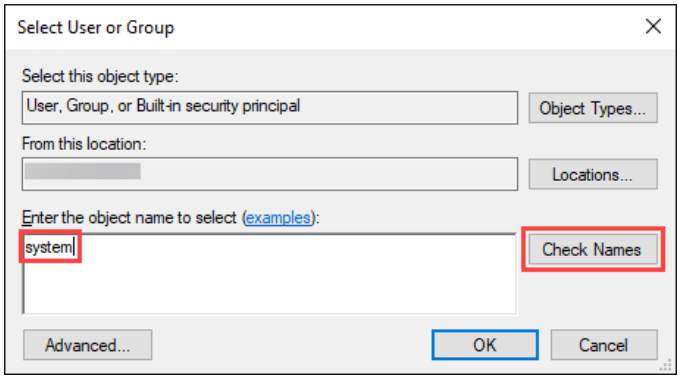
2. Select **Create Task**.



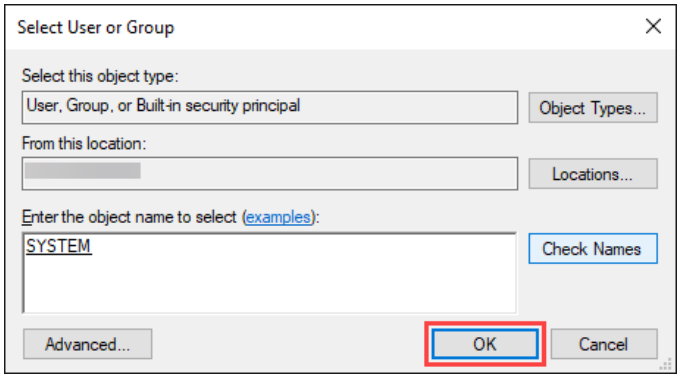
3. For the **Name**, enter **`Mount Storage`**. Select **Change User or Group**.



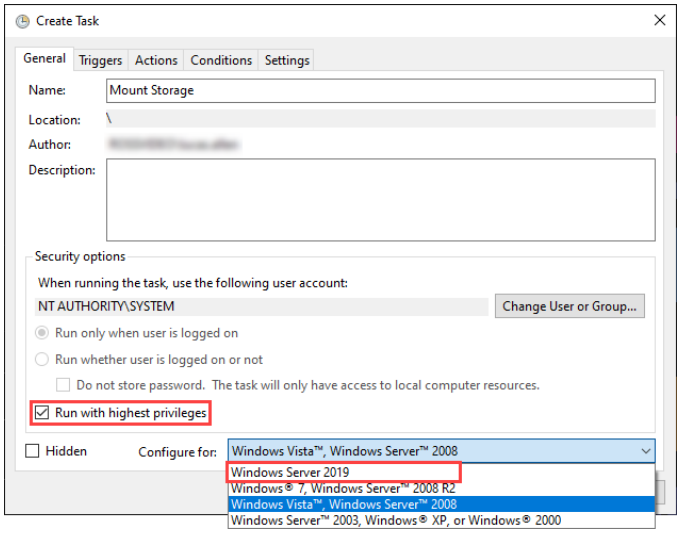
4. In the Object name, type **`system`** and select **Check Names**.



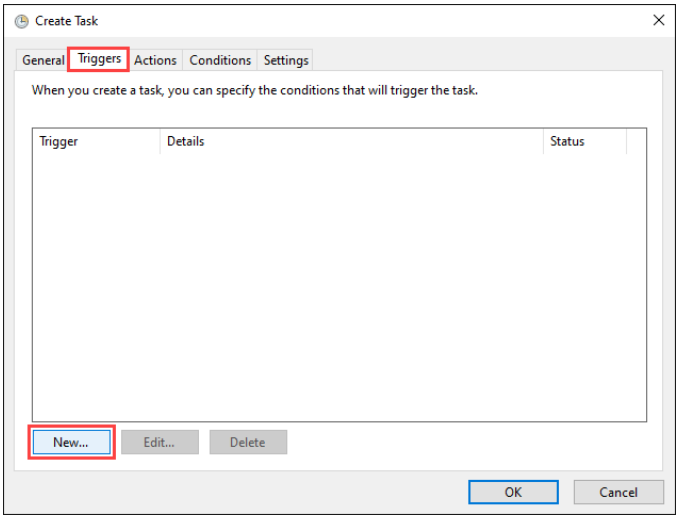
5. After selecting **Check Names**, select **OK**.



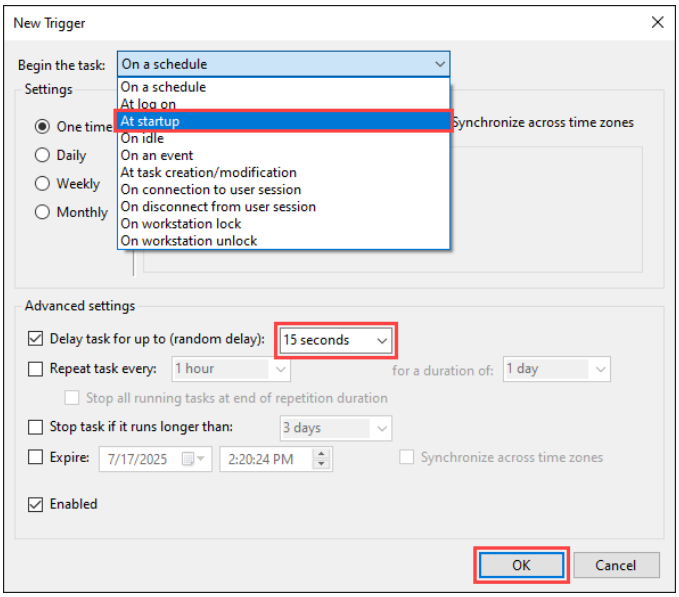
6. Check the checkbox labeled **Run with highest privileges**, then select **Windows 2019** from the **Configure for** dropdown.



7. Select the **Triggers** tab, then select **New...**

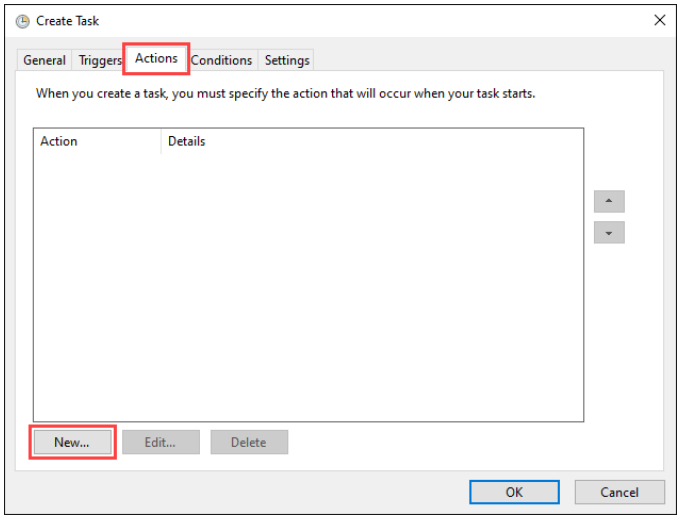


8. In the **Begin the task** dropdown, select **At Startup**. In Advanced Settings, select **Delay task for up to (random delay)** and enter `15 seconds`. Select **OK**.



The **Create Task** window opens.

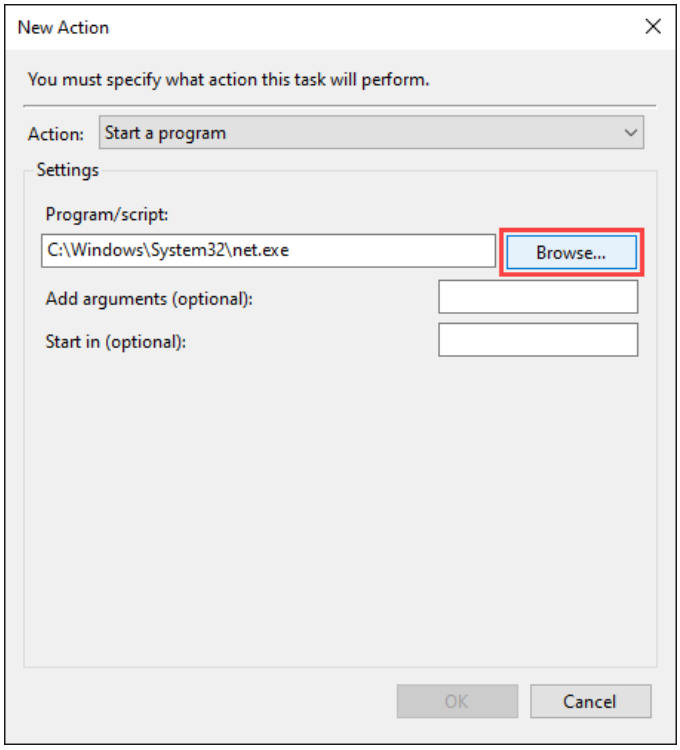
9. Select the **Actions** tab, then select **New...**



The **New Action** window opens.

10. Navigate to the **New Action** window.

    a. Select **Browse...** then browse through the **Windows\System32** directory and select **net.exe**.



    b. In the **Add arguments (optional)** text box, add the parameters to mount the remote shared storage, including the credentials.

    Enter an argument that is formatted to match the syntax below, where **M** is the assigned drive letter and the IP address is the UNC path of the remote storage.

    Syntax:

    M:\\<IP address>\<media folder name> /user:<username> <password>

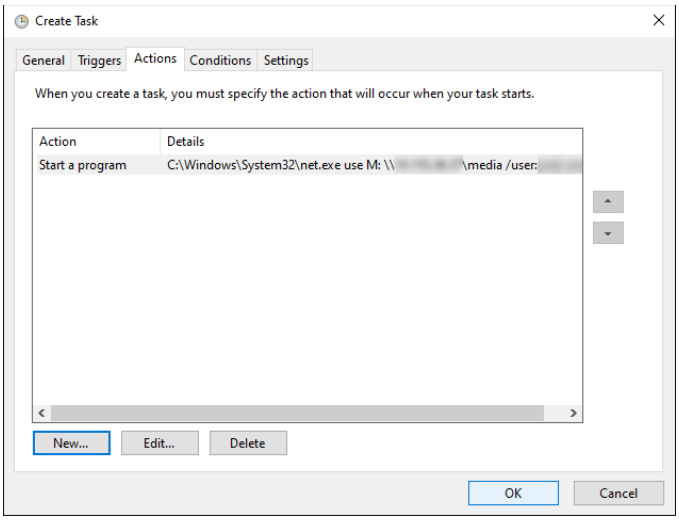
    Example:

```
M:\\192.168.0.2\media /user:smb smb
```

11. Select **OK**.

    The **New Action** window closes.

12. In the **Create Task** Window, select **OK**.

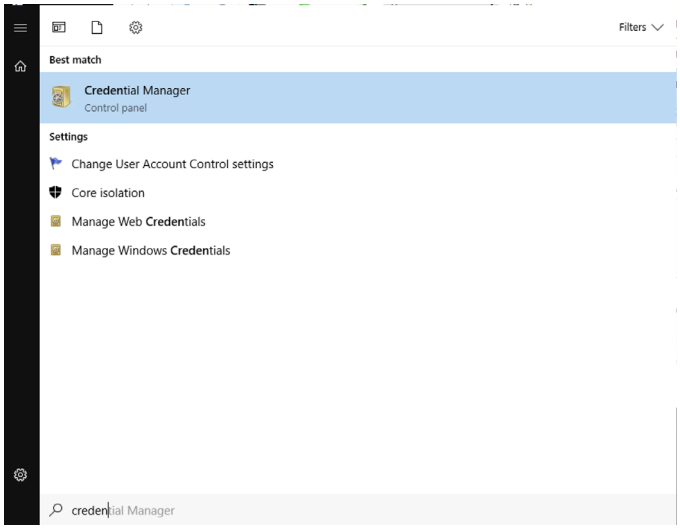


Storing Access Information Using Credential Manager

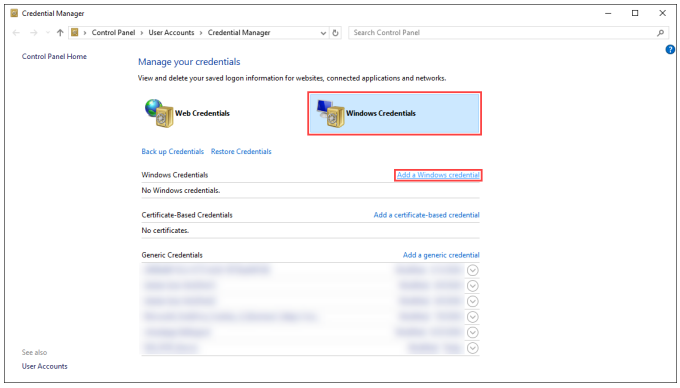
The Credential Manager stores the access information to be used by the Task Scheduler when using the SYSTEM user.

To Store Access Information in Credential Manager

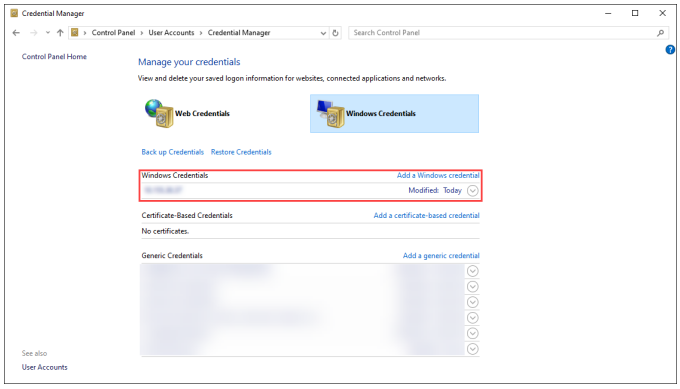
1. In Windows, open **Credential Manager**.



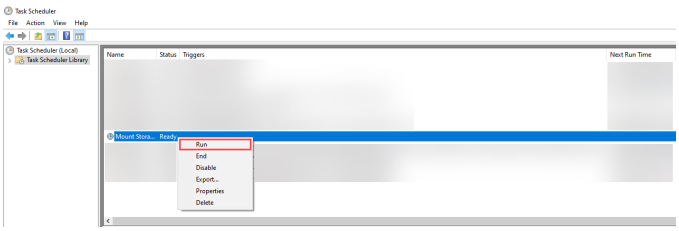
2. Select **Windows Credentials**, then **Add a Windows credential**.



3. Add a new Windows Credential. Enter the IP of the shared storage, the User name, and the Password.

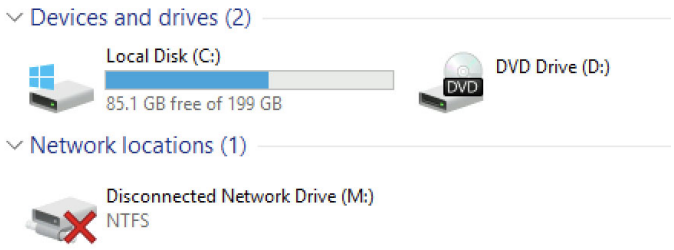


4. Either restart the server or go back to the Task Scheduler, right-click the task you added, and select **Run**.



5. Navigate back to Windows Explorer and confirm that the **M** Drive is connected.

✶ **NOTE:**
If the drive shows as disconnected, it is likely still connected. This is a known issue and is not indicative of user error.



Configuring Media I/O Engine

This chapter discusses the following topics:

- Installing Media I/O Engines
- Launching Media I/O Engine
- Configuring General Settings
- Configuring the VDCP Emulator

Installing Media I/O Engines

The Media I/O Engine installer will install 8 instances for Media IO Engines, a Directory Server, and the Timecode Engine.

For X1 Hardware you can configure up to 1 Engine for UHD or 4 Engines for HD. For X2 Hardware you can configure up to 2 Engines for UHD or 8 Engines for HD.

✶ **NOTE:**
The AJA Kona 5, AJA Kona Corvid 88, Matrox DLE5L/4/100/LP/12G, and Matrox DLE5L/8/100/LP/12G video cards can all be reconfigured for various I/O configurations. Please contact your Ross Video Sales Representative for inquiries and further information.

Launching Media I/O Engine

To launch a Media I/O Engine for the first time

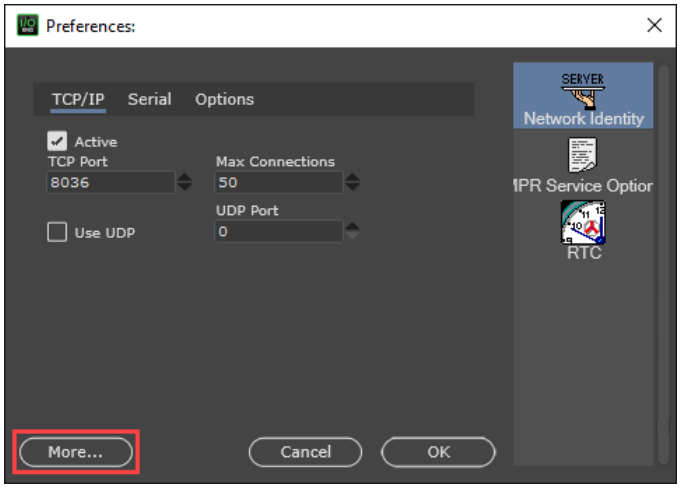
✶ **NOTE:**
This process needs to be done for each Engine that requires configuration, when it is launched for the first time.

1. Go to the following Media I/O Engine folder.
   `C:\Program Files\Ross Video\Media IO\Engines\01`
2. Double-click on the **Media IO Server.exe** application.

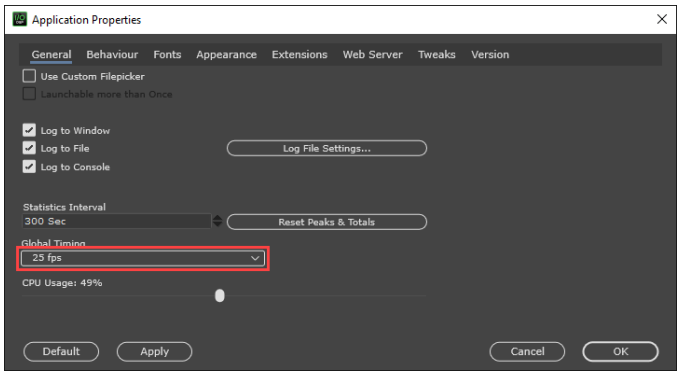
Configuring General Settings

To configure Application Timing

1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **More**.

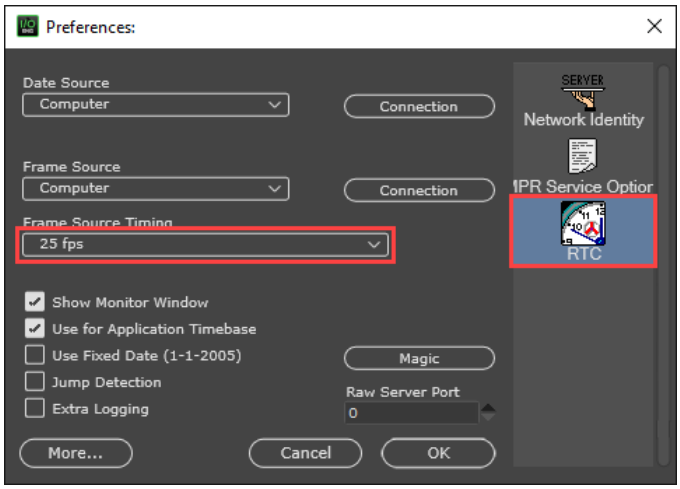


3. For **Global Timing**, from the list of settings, select one of the following options based on the appropriate frames per second:
   - 29.97 fps (SMPTE, 30000/1001)
   - 59.94 fps (SMPTE, 60000/1001)
   - 25 fps
   - 50 fps



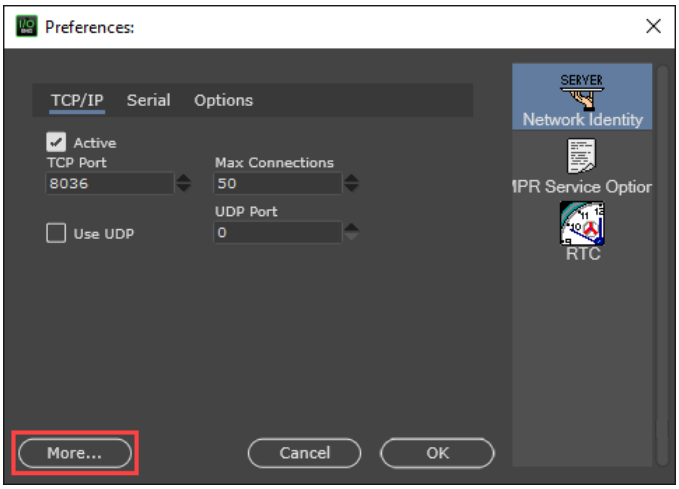
To configure RTC Timing

1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **RTC**.
3. For **Global Timing**, from the list of settings, select one of the following options based on the appropriate frames per second:
   - 29.97 fps (SMPTE, 30000/1001)
   - 59.94 fps (SMPTE, 60000/1001)
   - 25 fps
   - 50 fps

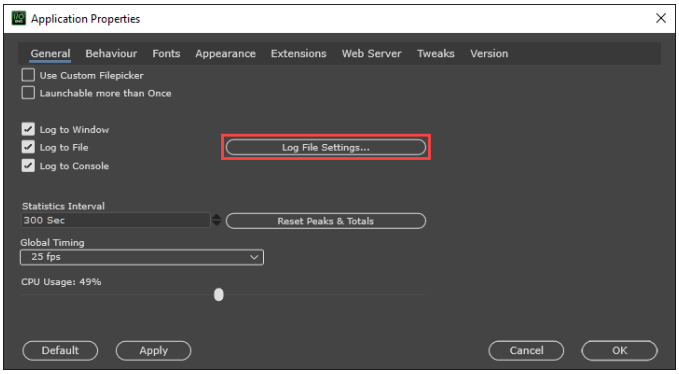


To configure Log Settings

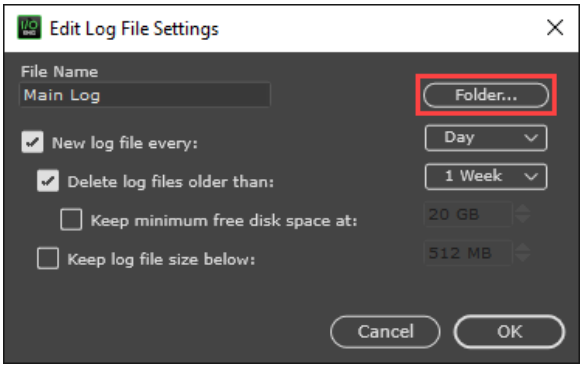
1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **More**.



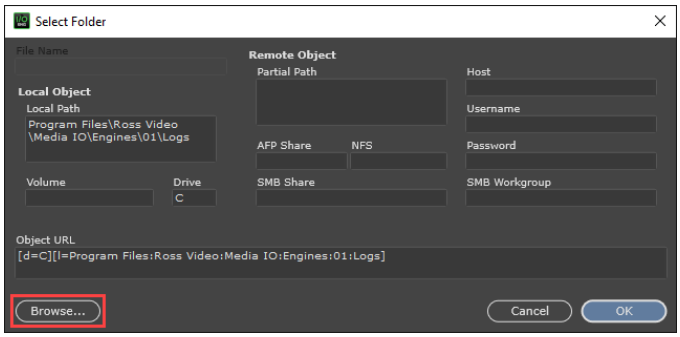
3. Select **Log File Settings**.



4. Select **Folder**.



5. Select the following Folder for the Engine:
   `C:\Program Files\Ross Video\Media IO\Engines\ENGINE_#\Logs`



Configuring TCP/IP Settings

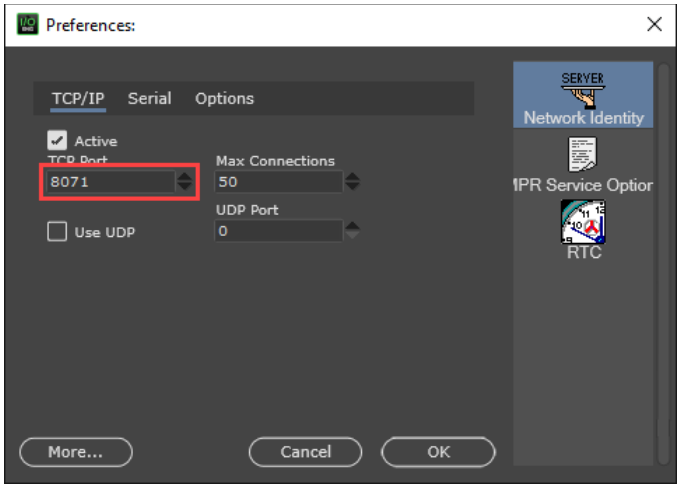
Each Media I/O Engine needs to be configured to listen in a TCP port. Since there are multiple engines in the same server, each Engine needs to be set up differently. Please refer to the table below.

Table 4.1 TCP/IP Settings

Media I/O Engine #	Control Port	WebSocket Port	WebSocket Port (SSL)	Monitor Port	VDCP Port
01	8071	8981	9981	8171	9071
02	8072	8982	9982	8172	9072
03	8073	8983	9983	8173	9073
04	8074	8984	9984	8174	9074
05	8075	8985	9985	8175	9075
06	8076	8986	9986	8176	9076
07	8077	8987	9987	8177	9077
08	8078	8988	9988	8178	9078

To configure Control Port - TCP/IP Settings (Network Identity)

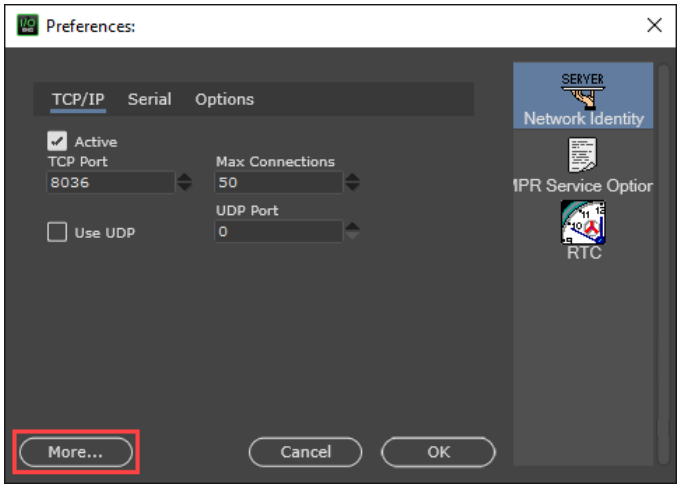
1. Go to **Media I/O Menu > Edit > Preferences**.



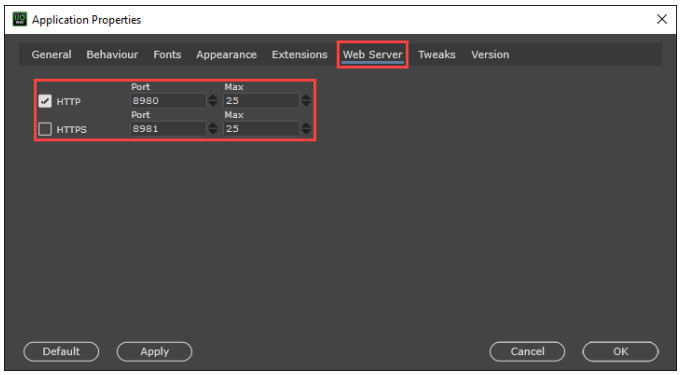
2. Select **Network Identity**.
3. Modify the TCP Port following Table 4.1, “TCP/IP Settings,” on page 5. This requires a restart of the application.

To configure Control Port - TCP/IP Settings (Web Server)

1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **More**.



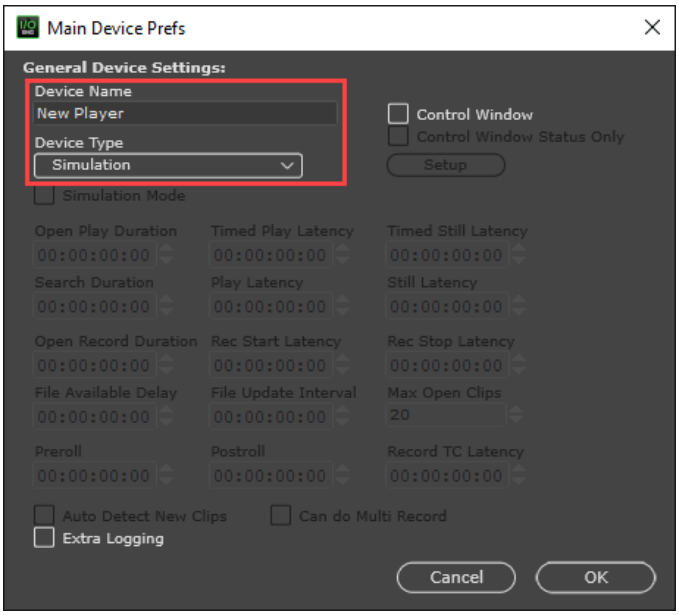
3. Select the **Web Server** tab. Modify the TCP Port following Table 4.1, “TCP/IP Settings,” on page 5. This requires a restart of the application.



To configure the Media Player Status

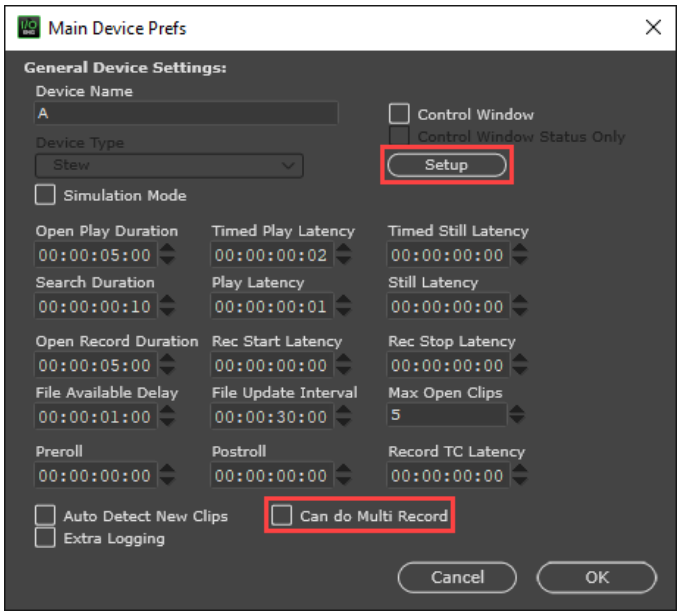
1. Go to **Media I/O Engine Menu > Window > Media Player Status**.
   A new window will open.
2. Select the + button on the lower right corner.

3. Set the name and device type, then select **OK**.
   - Device Name: The channel name should match the Channel Letter. (E.g., **A**. **B**, etc.)
   - Device Type: **STEW**

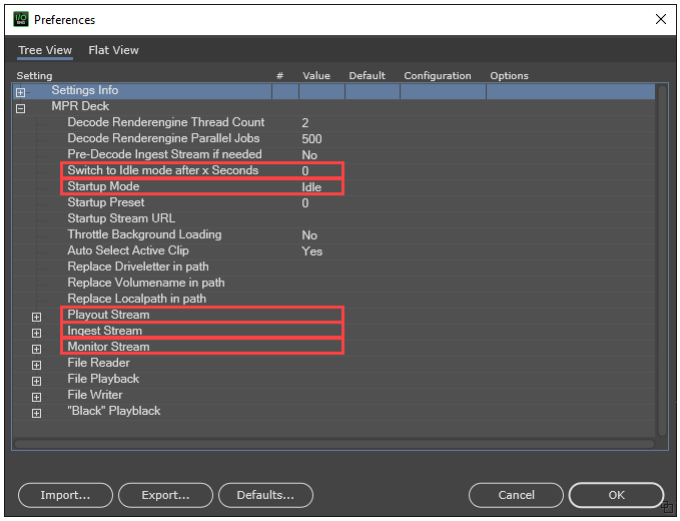


4. Once created, double-click the Player.

5. Select **Setup**.



6. Check the **Can do Multi Record** option.
   - This option allows the Media IO Engine to take over a Manual Recording when a Schedule recording starts.
7. The settings are displayed in a Tree View, grouped by topic and hierarchy. The settings can be switched to Flat View (sometimes called List View) and see the settings as a flat list with numbered items. Only the settings that differ from the defaults are stored.

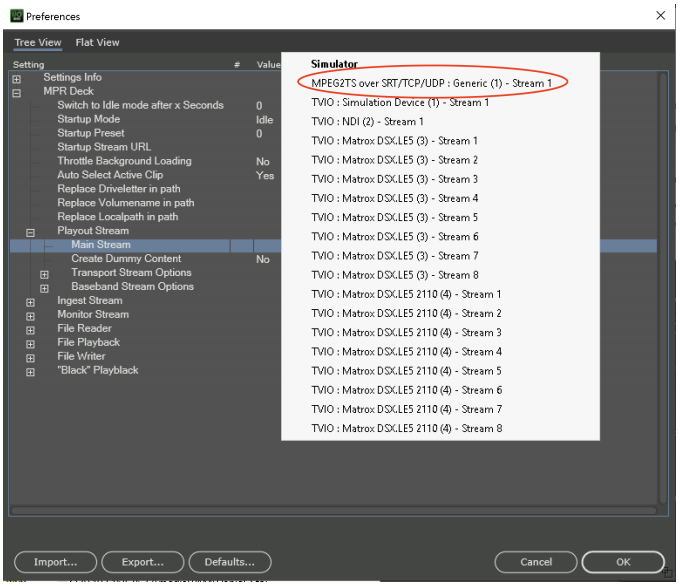


- **MPR Deck**
  - Switch to idle mode after x seconds - From 0 to 1 (only for Record Channels)
  - Startup Mode
    - Ingest for Record Channels
      - Idle (SDI, NDI, and SRT)
      - Ingest (2110) (**NOTE:** When you are setting up ingest for 2110, the **Switch to idle mode after x seconds** setting has to be set to `0`.)
    - Playout for Playback Channels
      - Playout (SDI, NDI, SRT, and 2110)

To configure the Playout Stream (SRT)

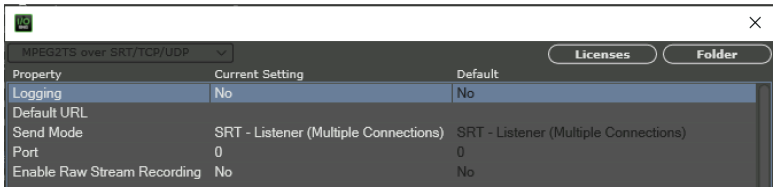
The Playout Stream determines the main output stream type. This would typically be an NDI Stream Output.

1. Select the second column (**Value**) and a popup window will open to select the stream. Select **MPEG2TS over SRT/TCP/UDP**.

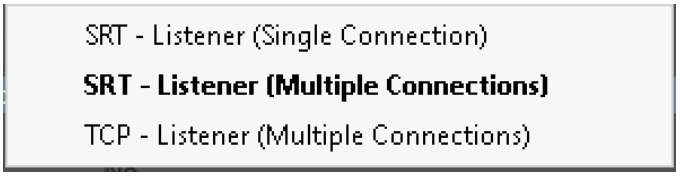


2. The configuration for SRT is automatically selected.

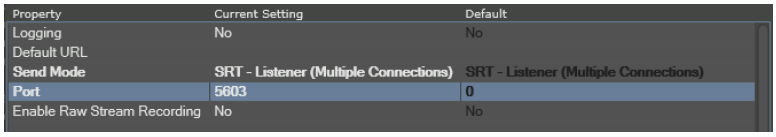
3. Double-click on the fifth column (**Options**) to open the SRT-specific settings.



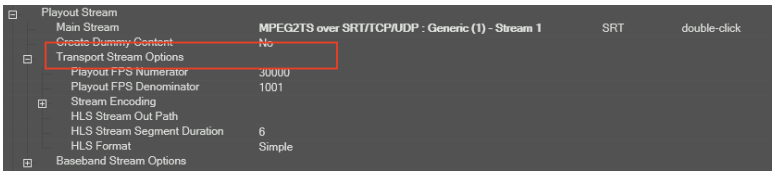
4. Set the **Send Mode** to **SRT - Listener (Multiple Connections)**. By Default, Media IO SRT Streaming will allow multiple clients to connect. It can be changed to single connection if the workflow requires it.



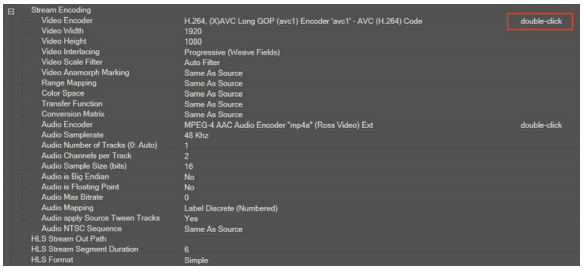
5. **Port** is the TCP port that the SRT stream will be licensing. Only TCP ports from `1025` and above should be used, as ports `0–1024` are generally reserved for well-known services and system processes.

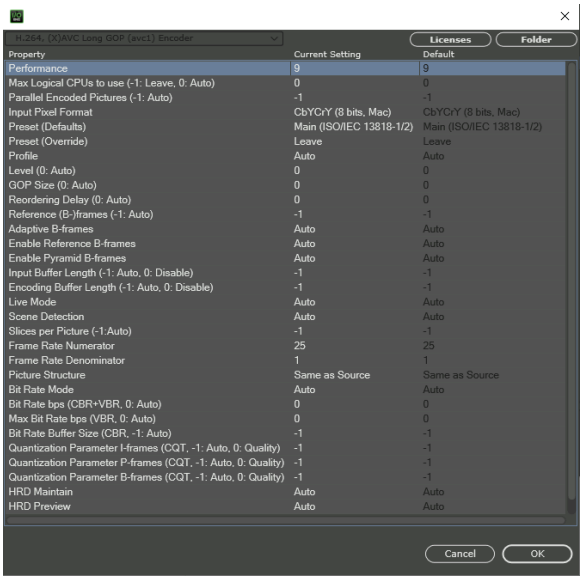


6. Expand the T**ransport Stream Options** to configure the default timebase and stream encoding.



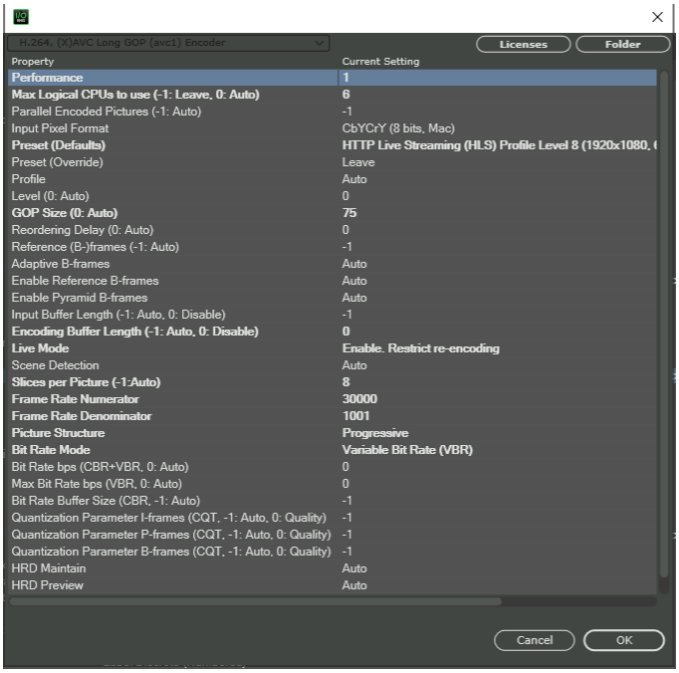
- **Timebase** (Defines the frame rate of the stream):
  - 25 fps
    - Playout FPS Numerator: 25
    - Playout FPS Denominator: 1
  - 25 fps
    - Playout FPS Numerator: 50
    - Playout FPS Denominator: 1
  - 29.97 fps
    - Playout FPS Numerator: 30000
    - Playout FPS Denominator: 1001
  - 59.94 fps
    - Playout FPS Numerator: 60000
    - Playout FPS Denominator: 1001
- **Stream Encoding** (For SRT streaming, only H.264 is supported. For audio, only a single PID with a stereo track is supported.):
  - Expand the **Stream Encoding** tree. By Default, the H.264 codec and audio settings are selected
  - Double-click on the fifth column (**Options**) to open the Codec-specific settings.





- Performance: 1
- Max Logical CPUs to use: 6
- Preset (Defaults): HTTP Live Stream (HLS) Profiles (depending on your output and bitrate select one from the available options)

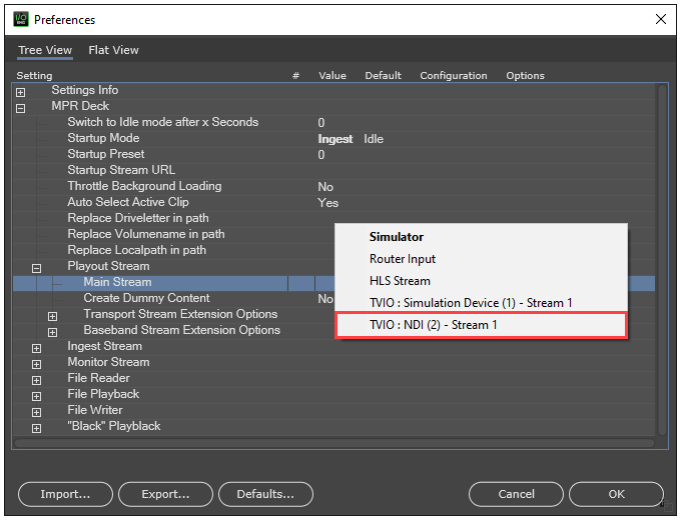
- GOP Size: 75
- Encoding Buffer Length: 0
- Live Mode: Enable. Restric re-encoding
- Slices per Picture: 8
- Frame Rate Numerator: Same as configured before.
- Frame Rate Denominator: Same as configured before.
- Picture Structure: Progressive
- Bit Rate Mode: Variable Bit Rate (VBR)



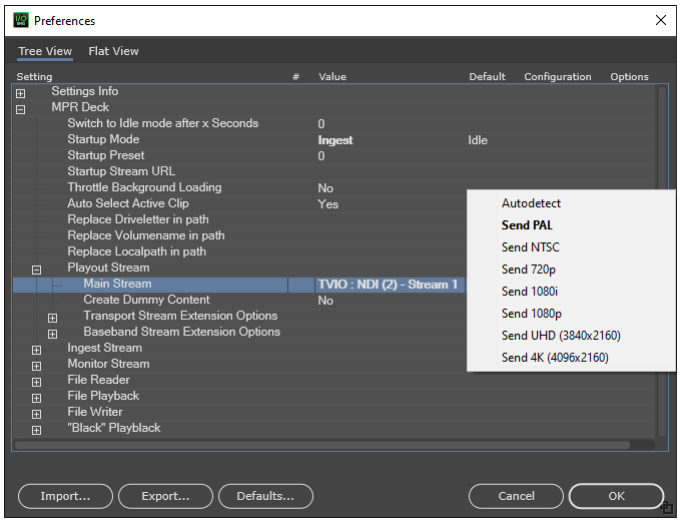
To configure the Playout Stream (NDI)

The Playout Stream determines the main output stream type. This would typically be an NDI Stream Output.

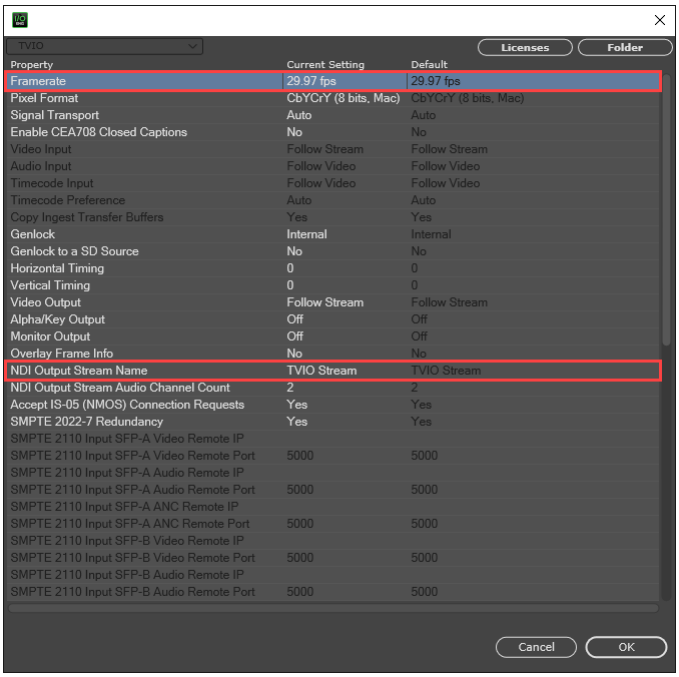
1. Select the second column (**Value**) and a popup window will open to select the stream. Select **TVIO: NDI (2) Stream 1**.



2. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



3. Double-click on the fifth column (**Options**). The Video Card specific settings will open.



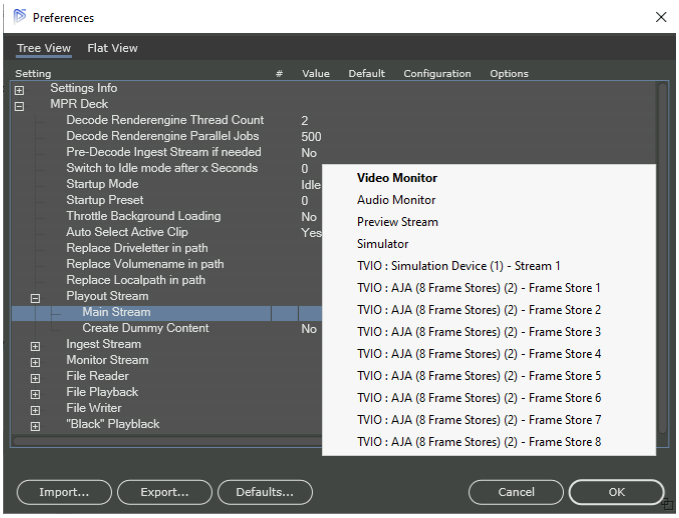
- For **Framerate**, match it to the application timing configuration.
- For **NDI Output Stream Name**, this is the name of the NDI stream that will be available over the network. This has to be unique for each Engine running in the system.

To configure the Playout Stream (SDI - AJA Kona 5)

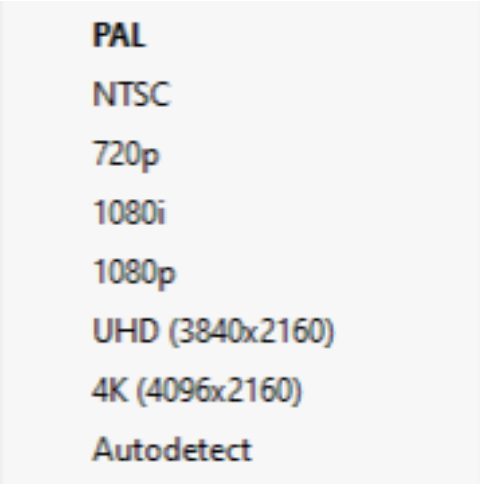
0 in x 8 out	1 in x 7 out	2 in x 6 out
3 in x 5 out	4 in x 4 out	5 in x 3 out
6 in x 2 out	7 in x 1 out	8 in x 0 out

The KONA 5 card can be reconfigured to different I/O configurations. It supports up to 4 bidirectional 12G-SDI connections with 16-channel embedded audio (HD/UHD).

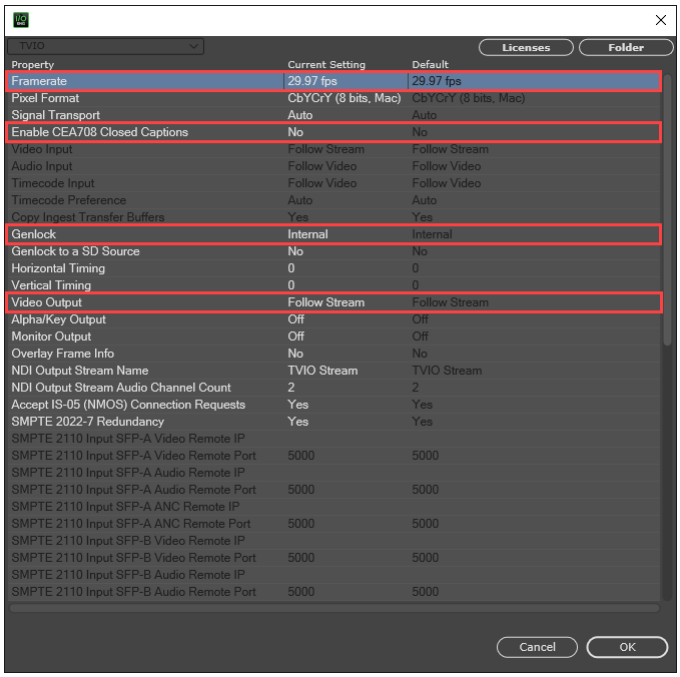
1. Select the second column (**Value**) and a popup window will open to select the stream.



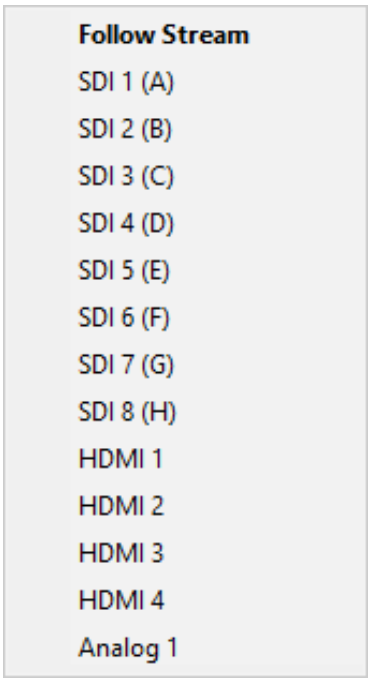
2. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



3. Double-click on the fifth column (**Options**). The Video Card specific settings will open.



- For **Framerate**, match it to the application timing configuration.
- For **Enable CEA708 Closed Captions**, select **Yes** if Closed Captions need to be enabled. If they do not, select **No**.
- For **Genlock**, select **External Reference**.
- For **Video Output**, select the SDI connector the Engine will use.

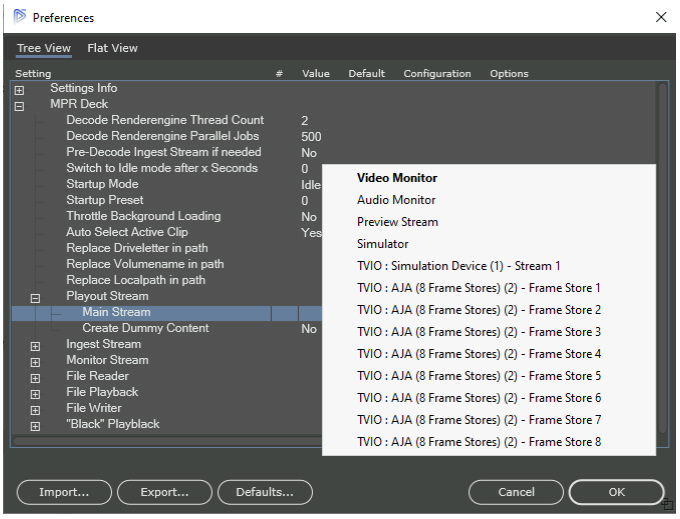


To configure the Playout Stream (SDI - AJA Kona Corvid 88)

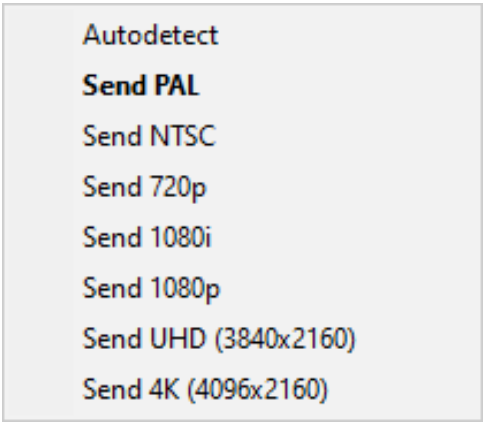
The KONA Corvid 88 card can be reconfigured to different I/O configurations. It supports up to 8 HD or SD channels in any combination.

0 in x 8 out	1 in x 7 out	2 in x 6 out
3 in x 5 out	4 in x 4 out	5 in x 3 out
6 in x 2 out	7 in x 1 out	8 in x 0 out

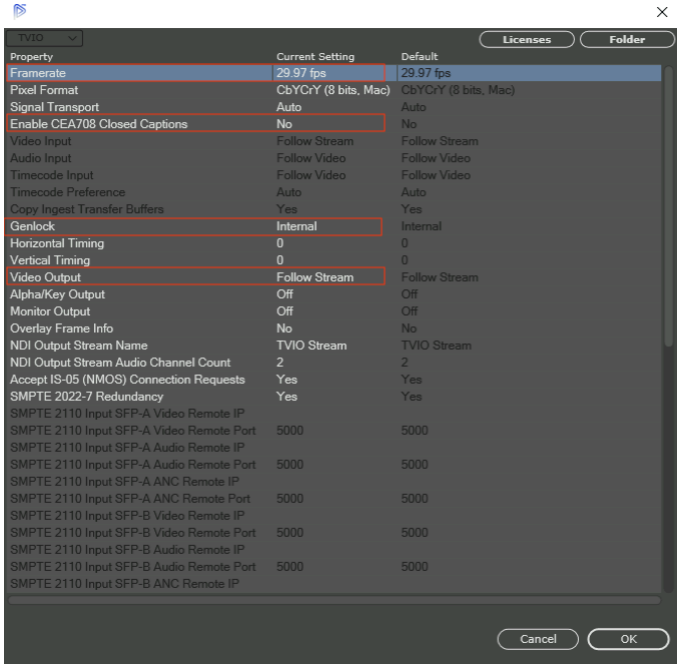
1. Select the second column (**Value**) and a popup window will open to select the stream.



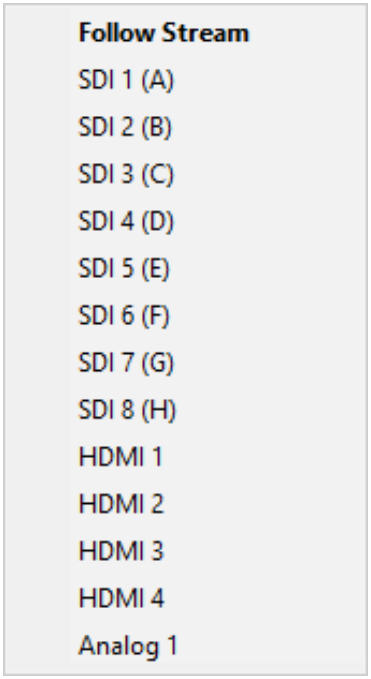
2. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



3. Double-click on the fifth column (**Options**). The Video Card specific settings will open.



- For **Framerate**, match it to the application timing configuration.
- For **Enable CEA708 Closed Captions**, select **Yes** if Closed Captions need to be enabled. If they do not, select **No**.
- For **Genlock**, select **External Reference**.
- For **Video Output**, select the SDI connector the Engine will use.



To configure the Playout Stream (SDI - MATROX DLE5L/4/100)

The MATROX DLE5L/4/100/LP/12G card can be reconfigured to different I/O configurations using I/O profiles.

Label	Bitstream 1				
	Channel (0 in, 4 out)	Channel (1 in, 3 out)	Channel (2 in, 2 out)	Channel (3 in, 1 out)	Channel (4 in, 0 out)
4	OUT F	OUT F	OUT F	OUT F	IN F
3	OUT E	OUT E	OUT E	IN E	IN E
2	OUT B	OUT B	IN B	IN B	IN B
1	OUT A	IN A	IN A	IN A	IN A

Legend for input/output capability

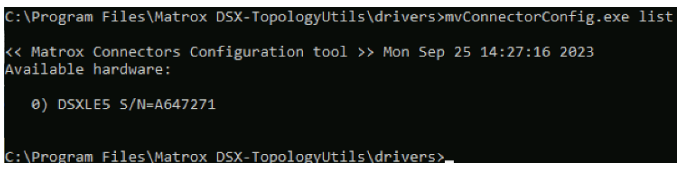
Input	Output	Input/Output capability
		up to 12G
		up to 3G

You can change the configuration using mvConnectorConfig.exe (requires a restart).

1. As an Administrator, open a Command Line window.
2. Navigate to the following directory:

   `C:\Program Files\Matrox DSX-TopologyUtils\drivers`
3. Run the following command to obtain the serial number of the Matrox card:

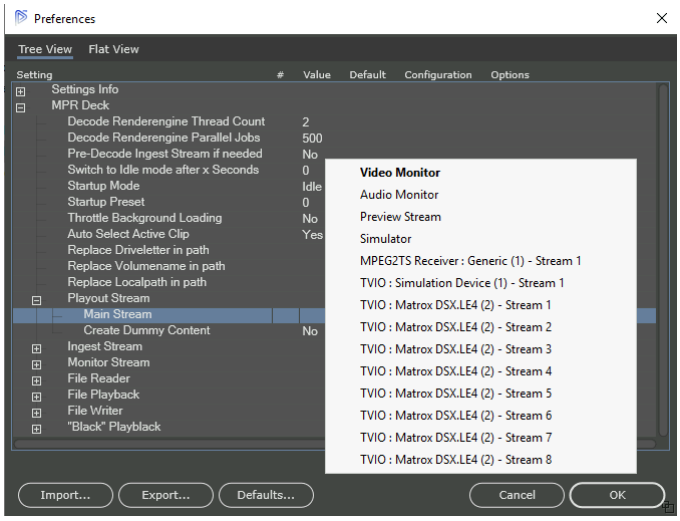
   `mvConnectorConfig.exe list`



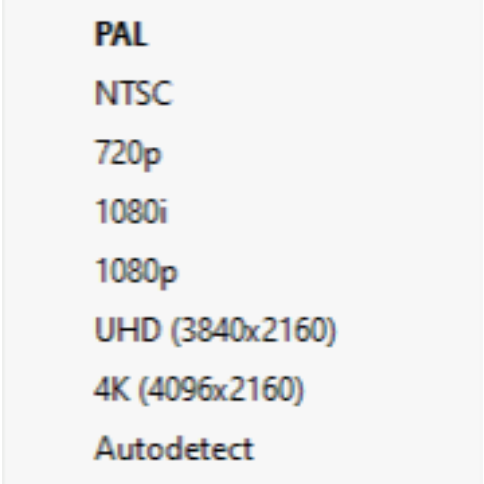
4. Run **`mvConnectorConfig.exe`** to load the proper input/output configuration. In the following example, the configuration is for 1 input and 3 outputs:

   ```
   mvConnectorConfig.exe load
   -f=Xmio5Le5ConnectorMapping\Dsxle5lp\dsxle5lp_4_01i03o.pin -sn=A647271
   ```

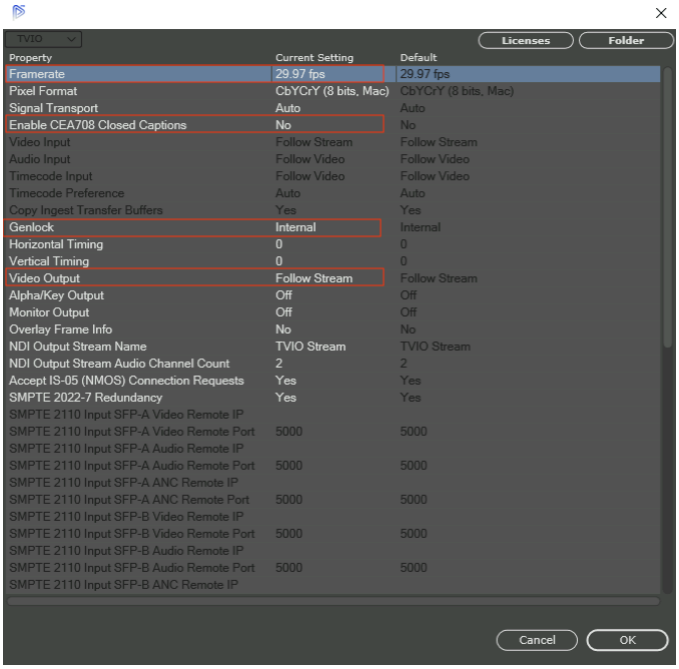
5. In the Media I/O Engine application, select the second column (**Value**) and a popup window will open to select the stream.



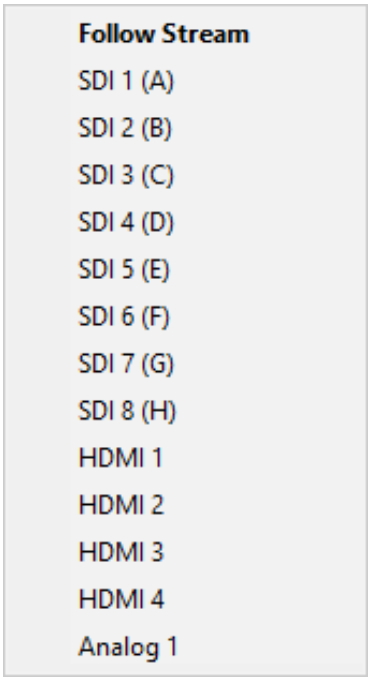
6. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



7. Double-click on the fifth column (**Options**). The Video Card specific settings will open.



- For **Framerate**, match it to the application timing configuration.
- For **Enable CEA708 Closed Captions**, select **Yes** if Closed Captions need to be enabled. If they do not, select **No**.
- For **Genlock**, select **External Reference**.
- For **Video Output**, select the Label (Letter) connector that the Engine will use. follow the table from the start of this procedure.



To configure the Playout Stream (SDI - MATROX DLE5L/8/100)

The MATROX DLE5L/8/100/LP/12G card can be reconfigured to different I/O configurations using I/O profiles.

Label	Bitstream 1			Bitstream 2			Bitstream 3		
	Channel (0 in, 8 out)	Channel (1 in, 7 out)	Channel (2 in, 6 out)	Channel (3 in, 5 out)	Channel (4 in, 4 out)	Channel (5 in, 3 out)	Channel (6 in, 2 out)	Channel (7 in, 1 out)	Channel (8 in, 0 out)
8	OUT H	OUT H	OUT H	OUT H	OUT H	OUT H	OUT H	OUT H	IN H
7	OUT G	OUT G	OUT G	OUT G	OUT G	OUT G	IN G	IN G	IN G
6	OUT F	OUT F	OUT F	OUT F	OUT F	OUT F	OUT F	IN F	IN F
5	OUT E	OUT E	OUT E	OUT E	OUT E	IN E	IN E	IN E	IN E
4	OUT D	OUT D	IN D	IN D	IN D	IN D	IN D	IN D	IN D
3	OUT C	OUT C	OUT C	OUT C	IN C	IN C	IN C	IN C	IN C
2	OUT B	IN B	IN B	IN B	IN B	IN B	IN B	IN B	IN B
1	OUT A	OUT A	OUT A	IN A	IN A	IN A	IN A	IN A	IN A

Legend for input/output capability

Input	Output	Input/Output capability
		up to 12G
		up to 3G

You can change the configuration using mvConnectorConfig.exe (requires a restart).

1. As an Administrator, open a Command Line window.
2. Navigate to the following directory:

   `C:\Program Files\Matrox DSX-TopologyUtils\drivers`

3. Run the following command to obtain the serial number of the Matrox card:

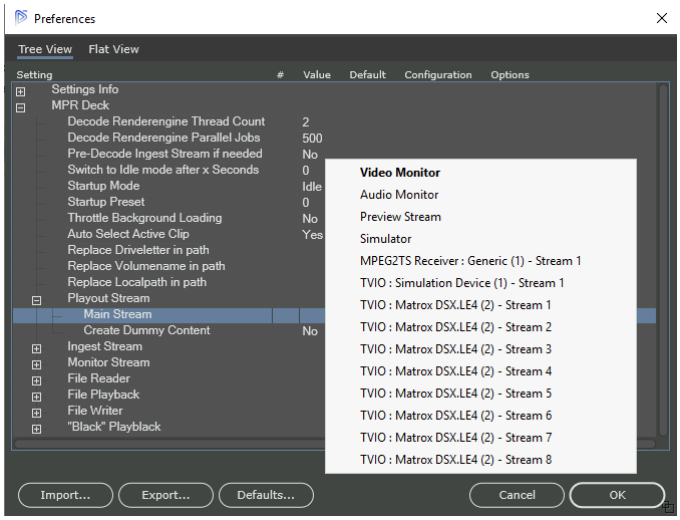
   `mvConnectorConfig.exe list`

```
C:\Program Files\Matrox DSX-TopologyUtils\drivers>mvConnectorConfig.exe list

<< Matrox Connectors Configuration tool >> Mon Sep 25 14:27:16 2023
Available hardware:

   0) DSXLE5 S/N=A647271

C:\Program Files\Matrox DSX-TopologyUtils\drivers>_
```

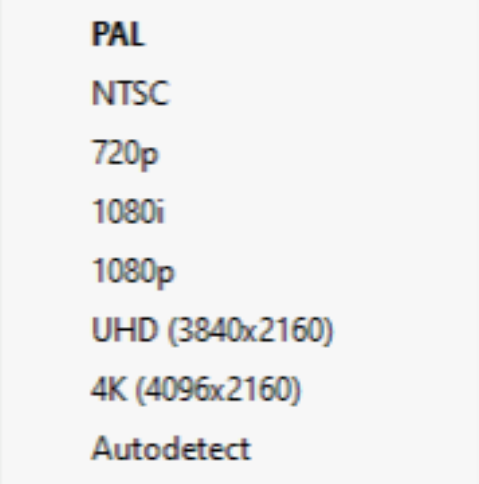
4. Run **`mvConnectorConfig.exe`** to load the proper input/output configuration. In the following example, the configuration is for 5 inputs and 3 outputs:

   `mvConnectorConfig.exe load -f=Xmio5Le5ConnectorMapping\Dsxle5lp\dsxle5lp_8_05i03o.pin -sn=A647271`

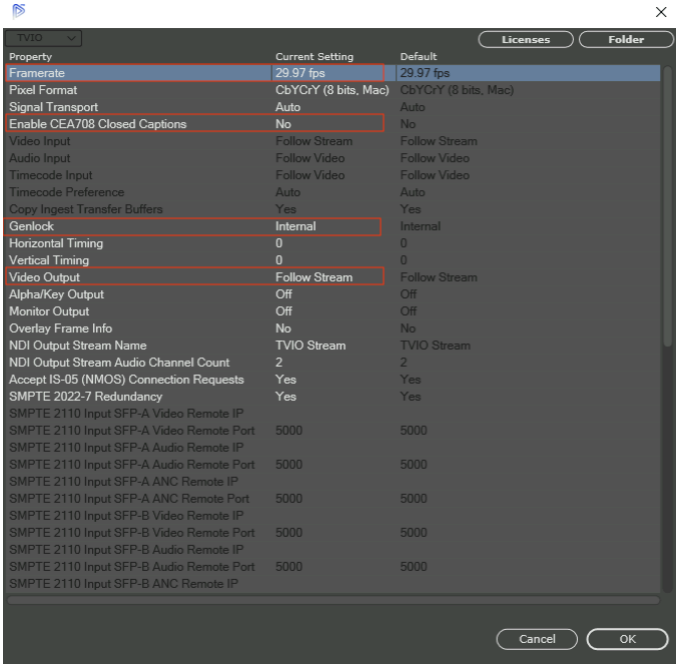
5. In the Media I/O Engine application, select the second column (**Value**) and a popup window will open to select the stream.



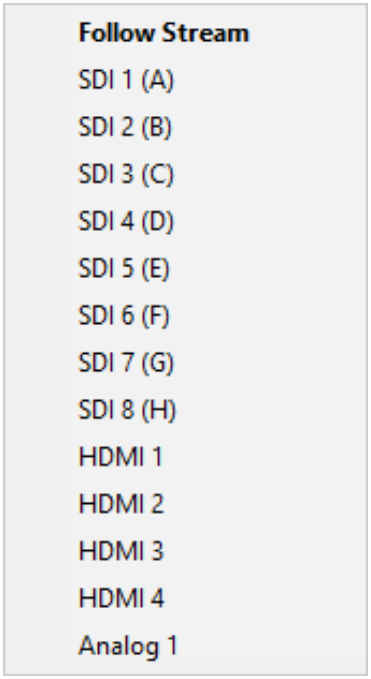
6. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



7. Double-click on the fifth column (**Options**). The Video Card specific settings will open.



- For **Framerate**, match it to the application timing configuration.
- For **Enable CEA708 Closed Captions**, select **Yes** if Closed Captions need to be enabled. If they do not, select **No**.
- For **Genlock**, select **External Reference**.
- For **Video Output**, select the Label (Letter) connector that the Engine will use. Follow the table from the start of this procedure.



To configure the Ingest Stream (NDI)

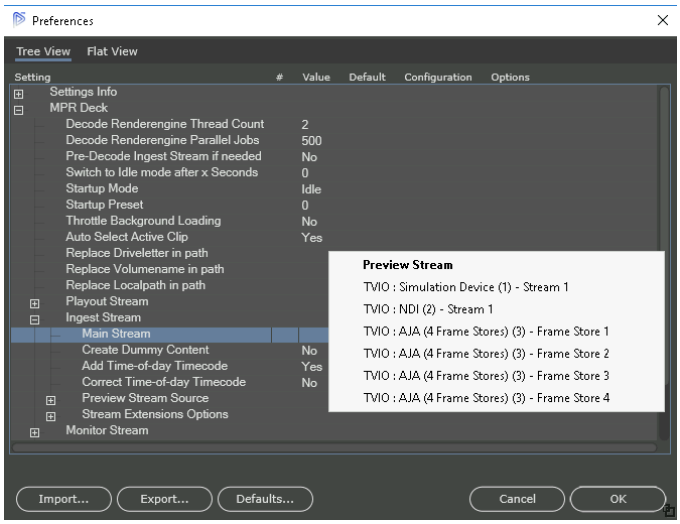
There is no configuration required for NDI Ingest.

To configure the Ingest Stream (SDI - AJA Kona 5)

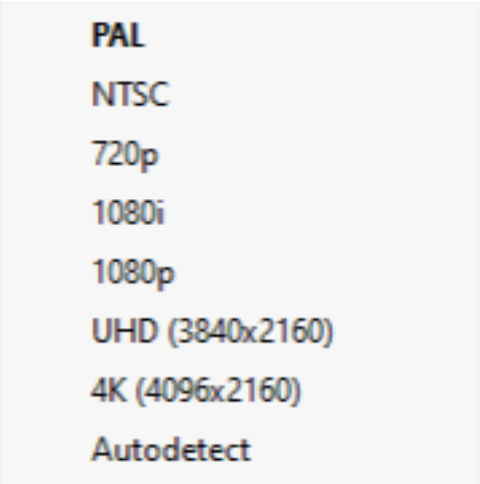
The KONA 5 card can be reconfigured to different I/O configurations. It supports up to 4 bidirectional 12G-SDI connections with 16-channel embedded audio (HD/UHD).

0 in x 4 out	1 in x 3 out	2 in x 2 out	3 in x 1 out	4 in x 0 out

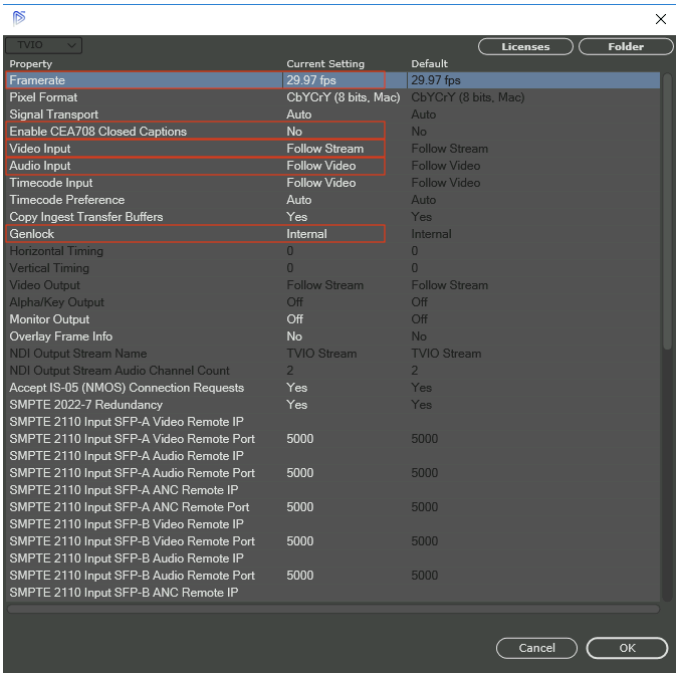
1. Select the second column (**Value**) and a popup window will open to select the stream.



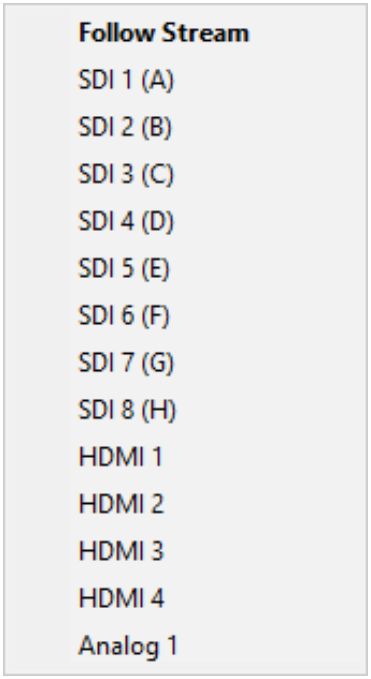
2. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



3. Double-click on the fifth column (**Options**). The Video Card specific settings will open.



- For **Framerate**, match it to the application timing configuration.
- For **Enable CEA708 Closed Captions**, select **Yes** if Closed Captions need to be enabled. If they do not, select **No**.
- For **Video Input**, select the SDI connector that the Engine will use.
- For **Audio Input**, select the SDI connector that the Engine will use.
- For **Genlock**, select **External Reference**.

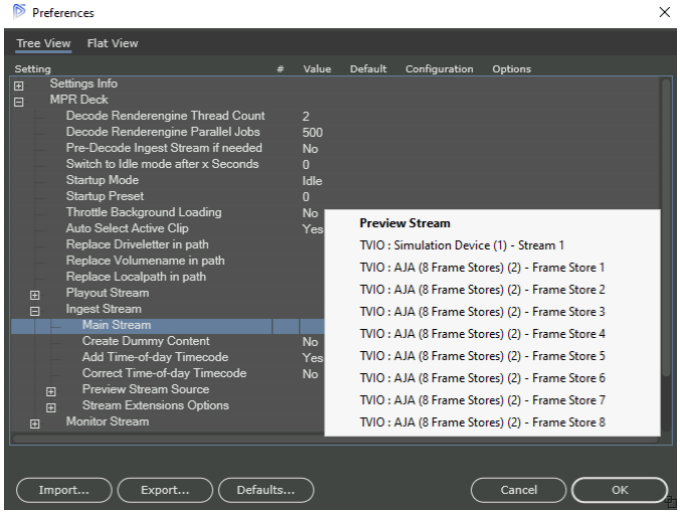


To configure the Ingest Stream (SDI - AJA Kona Corvid 88)

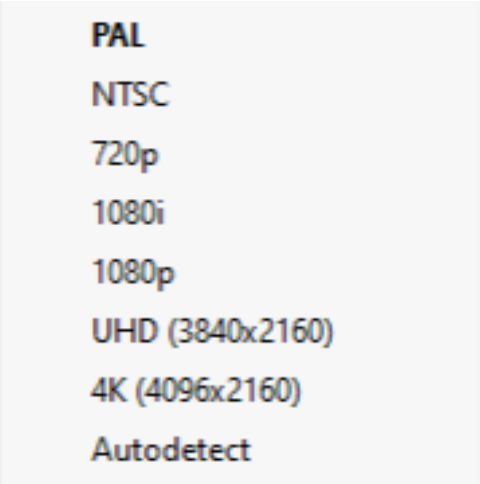
The KONA Corvid 88 card can be reconfigured to different I/O configurations. It supports up to 4 bidirectional 12G-SDI connections with 16-channel embedded audio (HD/UHD).

0 in x 8 out	1 in x 7 out	2 in x 6 out
3 in x 5 out	4 in x 4 out	5 in x 3 out
6 in x 2 out	7 in x 1 out	8 in x 0 out

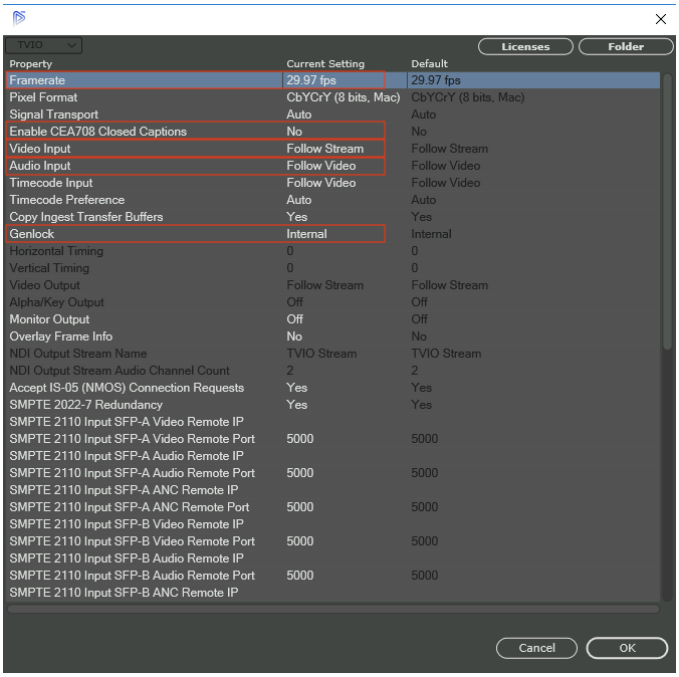
1. Select the second column (**Value**) and a popup window will open to select the stream.



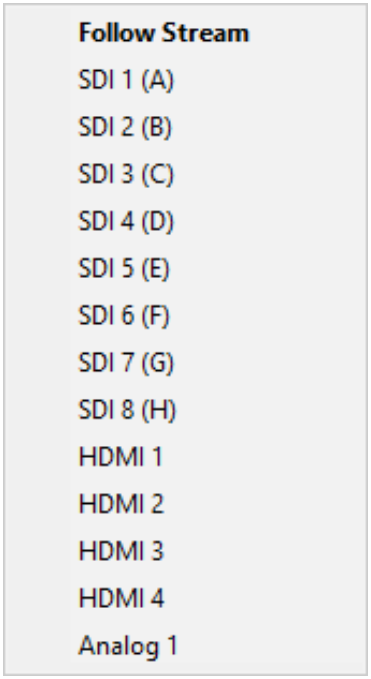
2. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



3. Double-click on the fifth column (**Options**). The Video Card specific settings will open.



- For **Framerate**, match it to the application timing configuration.
- For **Enable CEA708 Closed Captions**, select **Yes** if Closed Captions need to be enabled. If they do not, select **No**.
- For **Video Input**, select the SDI connector that the Engine will use.
- For **Audio Input**, select the SDI connector that the Engine will use.
- For **Genlock**, select **External Reference**.



To configure the Ingest Stream (SDI - MATROX DLE5L/4/100)

The MATROX DLE5L/4/100/LP/12G card can be reconfigured to different I/O configurations using I/O profiles.

Label	Bitstream 1				
	Channel (0 in, 4 out)	Channel (1 in, 3 out)	Channel (2 in, 2 out)	Channel (3 in, 1 out)	Channel (4 in, 0 out)
4	OUT F	OUT F	OUT F	OUT F	IN F
3	OUT E	OUT E	OUT E	IN E	IN E
2	OUT B	OUT B	IN B	IN B	IN B
1	OUT A	IN A	IN A	IN A	IN A

Legend for input/output capability

Input	Output	Input/Output capability
		up to 12G
		up to 3G

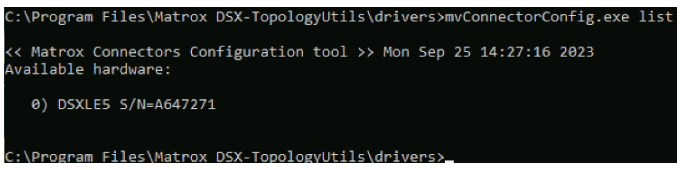
You can change the configuration using mvConnectorConfig.exe (requires a restart).

1. As an Administrator, open a Command Line window.
2. Navigate to the following directory:

   `C:\Program Files\Matrox DSX-TopologyUtils\drivers`

3. Run the following command to obtain the serial number of the Matrox card:

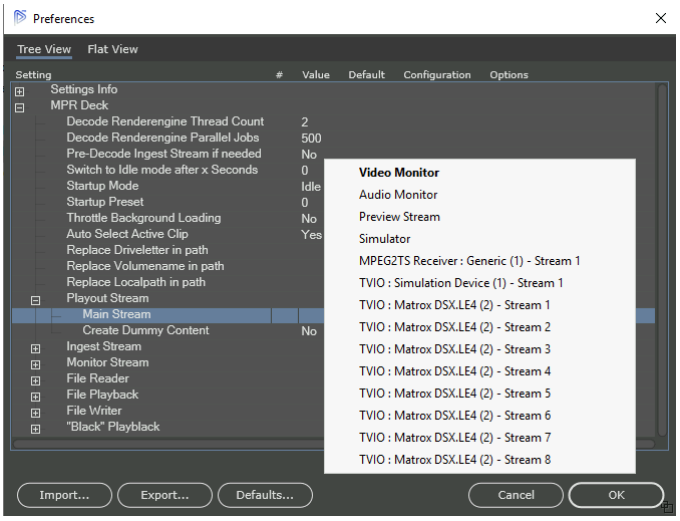
   `mvConnectorConfig.exe list`



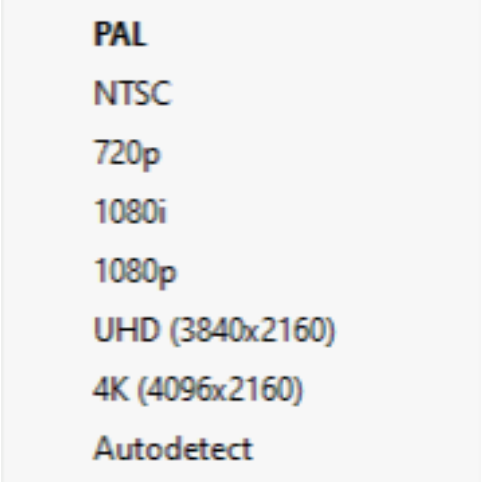
4. Run **`mvConnectorConfig.exe`** to load the proper input/output configuration. In the following example, the configuration is for 1 input and 3 outputs:

   ```
   mvConnectorConfig.exe load
   -f=Xmio5Le5ConnectorMapping\Dsxle5lp\dsxle5lp_4_01i03o.pin -sn=A647271
   ```

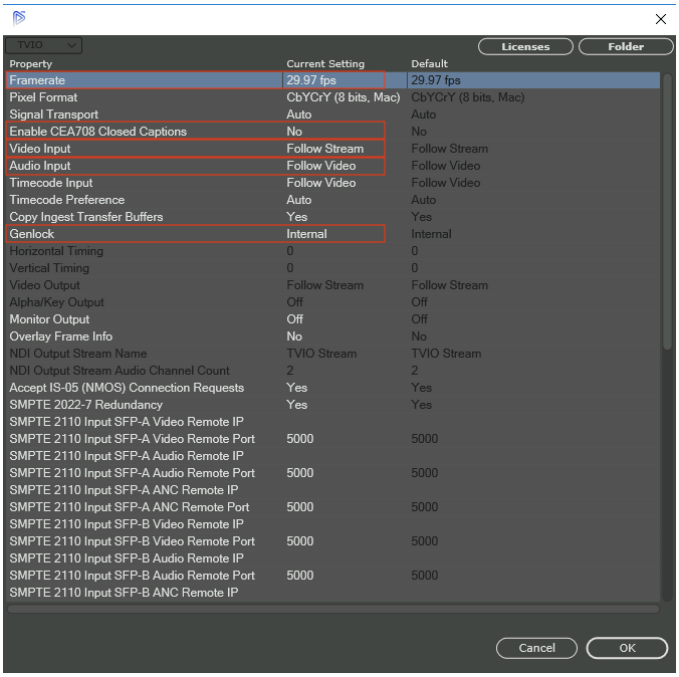
5. In the Media I/O Engine application, select the second column (**Value**) and a popup window will open to select the stream.



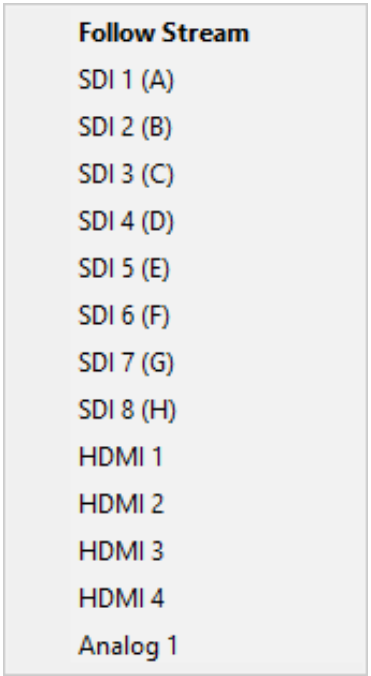
6. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



7. Double-click on the fifth column (**Options**). The Video Card specific settings will open.



- For **Framerate**, match it to the application timing configuration.
- For **Enable CEA708 Closed Captions**, select **Yes** if Closed Captions need to be enabled. If they do not, select **No**.
- For **Genlock**, select **External Reference**.
- For **Video Iutput**, select the Label (Letter) connector that the Engine will use. follow the table from the start of this procedure.



To configure the Ingest Stream (SDI - MATROX DLE5L/8/100)

The MATROX DLE5L/8/100/LP/12G card can be reconfigured to different I/O configurations using I/O profiles.

Label	Bitstream 1			Bitstream 2			Bitstream 3		
	Channel (0 in, 8 out)	Channel (1 in, 7 out)	Channel (2 in, 6 out)	Channel (3 in, 5 out)	Channel (4 in, 4 out)	Channel (5 in, 3 out)	Channel (6 in, 2 out)	Channel (7 in, 1 out)	Channel (8 in, 0 out)
8	OUT H	OUT H	OUT H	OUT H	OUT H	OUT H	OUT H	OUT H	IN H
7	OUT G	OUT G	OUT G	OUT G	OUT G	OUT G	IN G	IN G	IN G
6	OUT F	OUT F	OUT F	OUT F	OUT F	OUT F	OUT F	IN F	IN F
5	OUT E	OUT E	OUT E	OUT E	OUT E	IN E	IN E	IN E	IN E
4	OUT D	OUT D	IN D	IN D	IN D	IN D	IN D	IN D	IN D
3	OUT C	OUT C	OUT C	OUT C	IN C	IN C	IN C	IN C	IN C
2	OUT B	IN B	IN B	IN B	IN B	IN B	IN B	IN B	IN B
1	OUT A	OUT A	OUT A	IN A	IN A	IN A	IN A	IN A	IN A

Legend for input/output capability

Input	Output	Input/Output capability
		up to 12G
		up to 3G

You can change the configuration using mvConnectorConfig.exe (requires a restart).

1. As an Administrator, open a Command Line window.
2. Navigate to the following directory:

   `C:\Program Files\Matrox DSX-TopologyUtils\drivers`

3. Run the following command to obtain the serial number of the Matrox card:

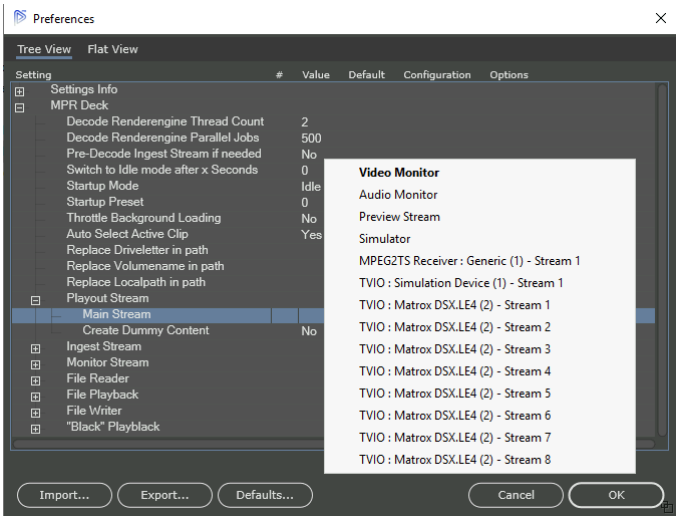
   `mvConnectorConfig.exe list`

```
C:\Program Files\Matrox DSX-TopologyUtils\drivers>mvConnectorConfig.exe list

<< Matrox Connectors Configuration tool >> Mon Sep 25 14:27:16 2023
Available hardware:

   0) DSXLE5 S/N=A647271

C:\Program Files\Matrox DSX-TopologyUtils\drivers>_
```

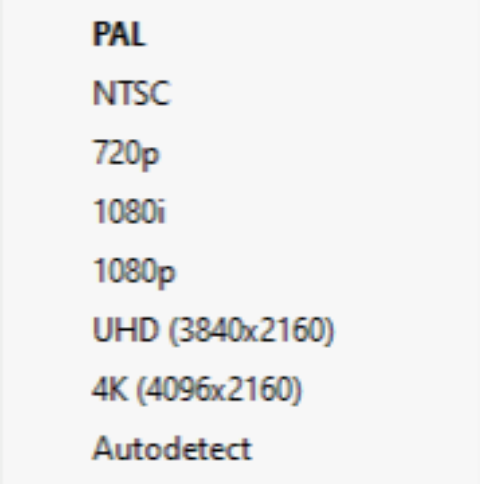
4. Run **`mvConnectorConfig.exe`** to load the proper input/output configuration. In the following example, the configuration is for 5 inputs and 3 outputs:

   `mvConnectorConfig.exe load -f=Xmio5Le5ConnectorMapping\Dsxle5lp\dsxle5lp_8_05i03o.pin -sn=A647271`

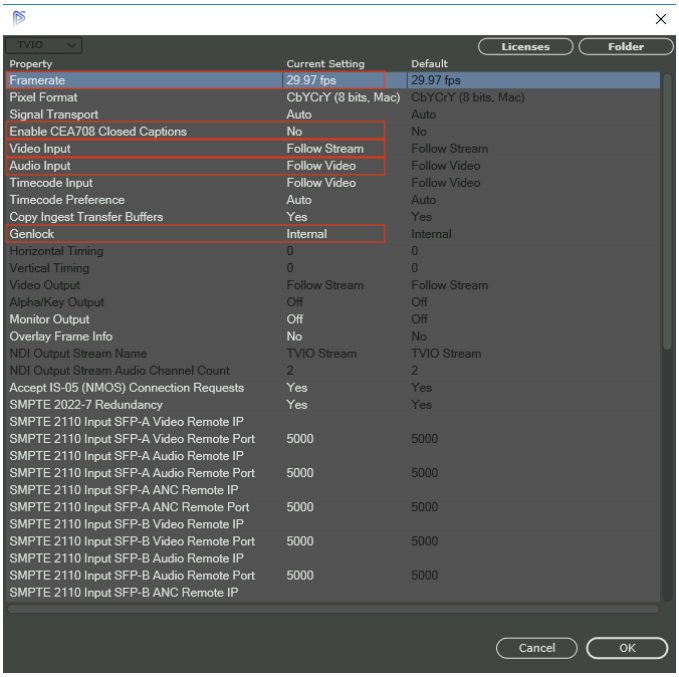
5. In the Media I/O Engine application, select the second column (**Value**) and a popup window will open to select the stream.



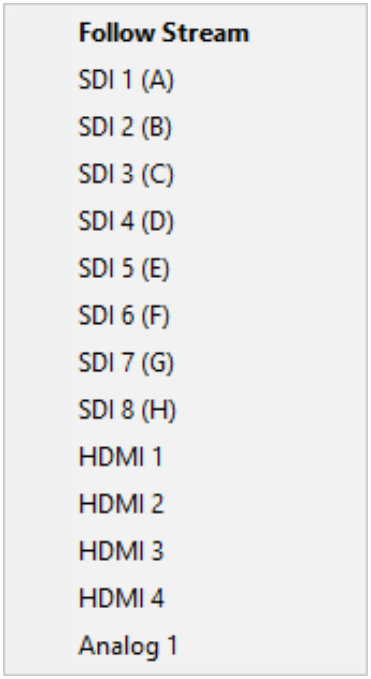
6. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



7. Double-click on the fifth column (**Options**). The Video Card specific settings will open.

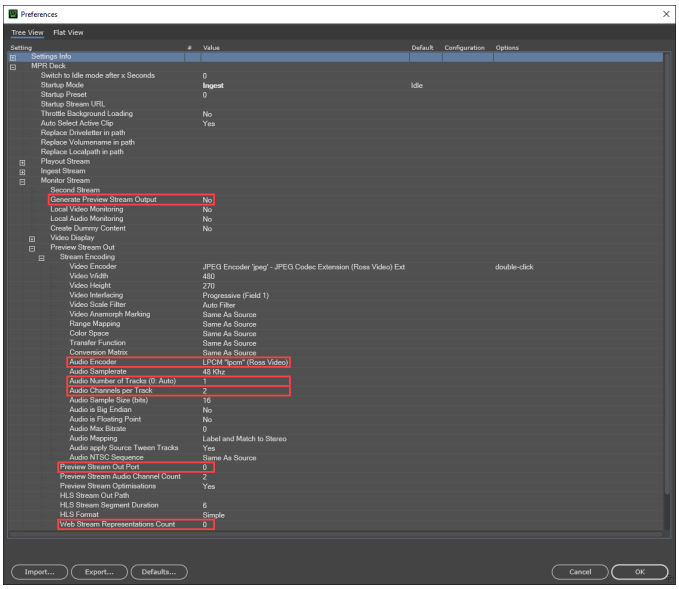


- For **Framerate**, match it to the application timing configuration.
- For **Enable CEA708 Closed Captions**, select **Yes** if Closed Captions need to be enabled. If they do not, select **No**.
- For **Genlock**, select **External Reference**.
- For **Video Output**, select the Label (Letter) connector that the Engine will use. Follow the table from the start of this procedure.



Configuring the Monitor Stream

Determines the monitor configuration for the Engine. See the image below for the settings that need to be changed.



- For **Generate Preview Stream Output**, choose YES.
- For **Audio Encoder**, choose MPEG4-Audio (AAC-LC) "mp4a (Ross Video) Ext”
- For **Audio Number of Tracks**, choose 2.
- For **Audio Channels per Track**, choose 1.
- For **Preview Stream Out Port**, see Table 4.1, “TCP/IP Settings,” on page 5.
- For **Web Stream Representation Count**, choose 1.

Configuring the Codec Profiles

To obtain codec profiles

1. Ensure the provided **`CodecProfiles.zip`** file is present. If it is not, please contact your Ross Video representative.

✶ **NOTE:** These codec profiles include the configuration for the HLS proxy.

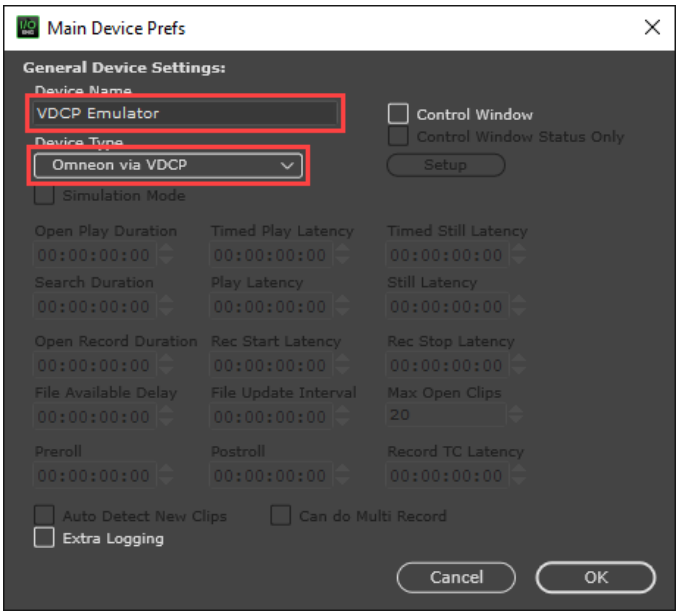
2. Copy the codec profiles into the following location.
   `C:\Program Files\Ross Video\Media IO\Engines\engine_#\Media IO Server Settings\Media Processing Framework Settings\Ingest Presets`

Configuring the VDCP Emulator

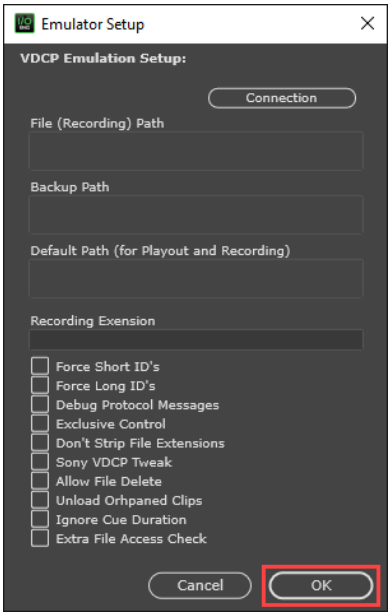
To add an emulator

1. Go to **Media I/O Engine Menu > Window > Media Player Status**.
   A new window opens.
2. Select the Emulator Device.

3. Select the + button in the lower right corner.
4. Set the name and device type, then select **OK**.
   - For the **Device Name**, enter **`VDCP Emulator`**
   - For the **Device Type**, select **Omneon via VDCP**.

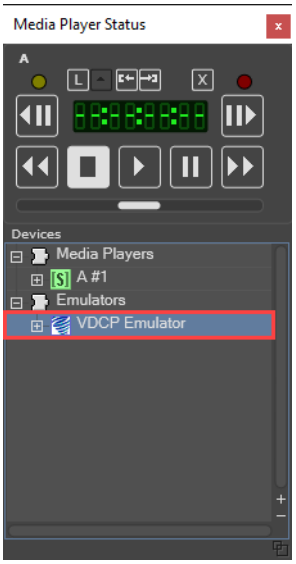


5. A new window opens. Select **OK**.

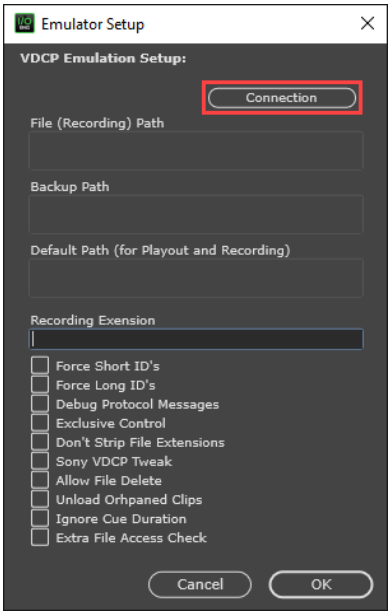


To configure the VDCP emulator

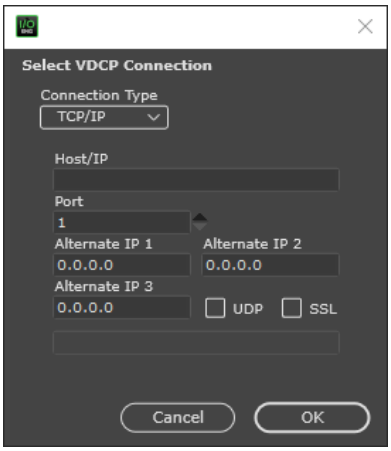
1. Select the Emulator Device that you created.



2. Select **Connection** to set up the TCP/IP port that the Engine will use to listen for VDCP commands.

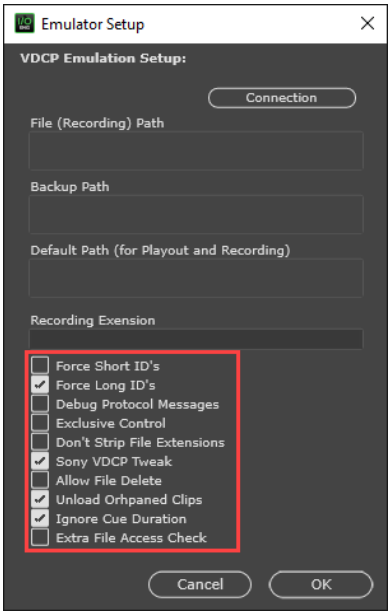


3. Select **TCP/IP** in the connection type and fill out the TCP port with the information from TCP/IP Table 4.1, “TCP/IP Settings,” on page 5.

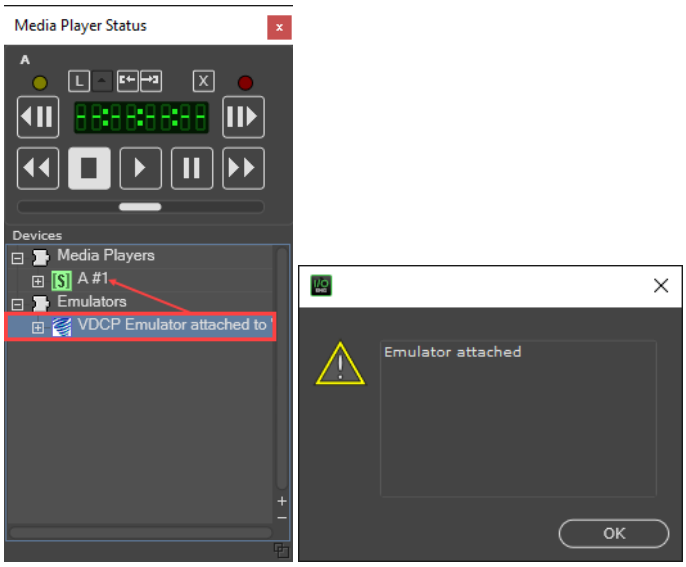


- For **Recording Extension**, this option is set to auto-populate the default extension for VDCP recordings.
  - The Valid Values are mxf, mp4 or mov

4. Select the settings below to enable them:
   - **Force Long ID's**
   - **Sony VDCP Tweak**
   - **Unload Orphaned Clips**
   - **Ignore Cue Duration**



5. Drag and drop the emulator into the previously configured channel to link the emulator and the player device. Once this is done, a confirmation window will open.


Media Player Status
A
Devices
Media Players
A #1
Emulators
VDCP Emulator attached to
Emulator attached
OK

Configuring Media I/O Transcode Agent

The Media I/O Transcode Agent is used to create proxies for any existing media before installing Media I/O v14. The creation of a proxy for old media is a manual process done in the Workflow Server.

This chapter discusses the following topics:

- Launching Media I/O Transcode Agent
- Configuring General Settings

The Media I/O Transcode Agent installer will install 8 instances of Media I/O Transcode Agents.

✶ **NOTE:**
This process needs to be done for each Transcode Agent that requires configuration.

Launching Media I/O Transcode Agent

To launch Media I/O Transcode Agent for the first time

1. Go to the Media I/O Transcode Agent folder, in the following directory:

   `C:\Program Files\RossVideo\Media IO\Transcode Agents\TRANSCODEAGENT_#.`

2. Double-click on the **Transcode Agent.exe** application.

Configuring TCP/IP Settings

Each Media I/O Transcode Agent needs to be configured to listen on a TCP port. Since there are multiple transcodes in the same server, each transcode needs to be set up differently. Please refer to the table below.

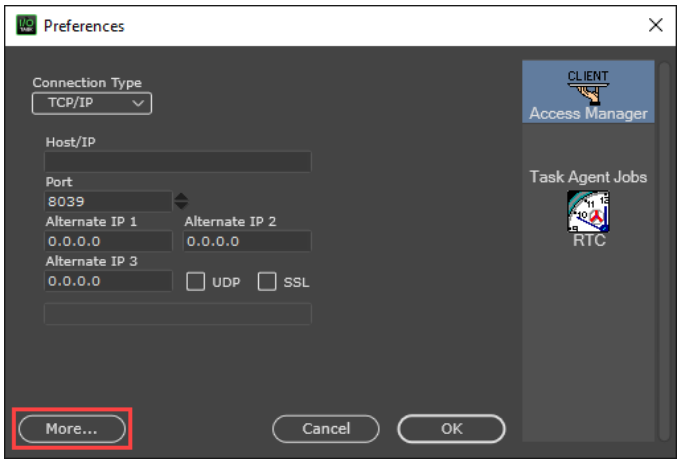
Table 5.1 TCP/IP Settings

Media I/O Transcode #	Control Port
01	8040
02	8041
03	8042
04	8043
05	8044
06	8045
07	8046
08	8047

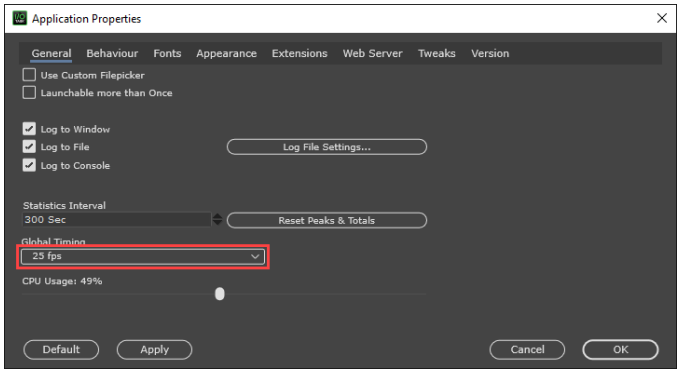
Configuring General Settings

To configure Application Timing

1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **More**.

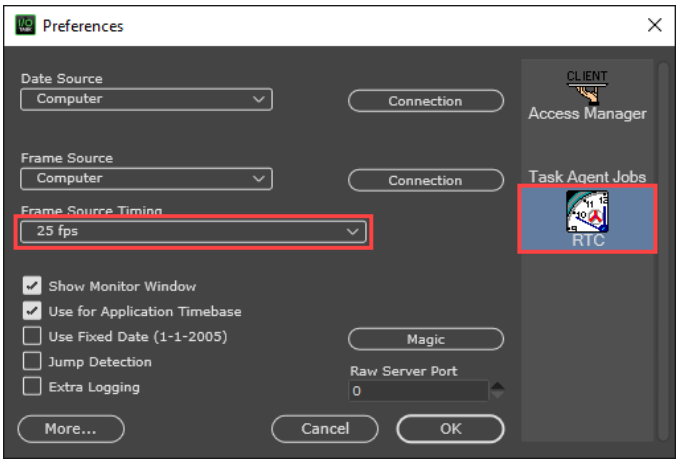


3. For **Global Timing**, from the list of settings, select one of the following options based on the appropriate frames per second:
   - 29.97 fps (SMPTE, 30000/1001)
   - 59.94 fps (SMPTE, 60000/1001)
   - 25 fps
   - 50 fps



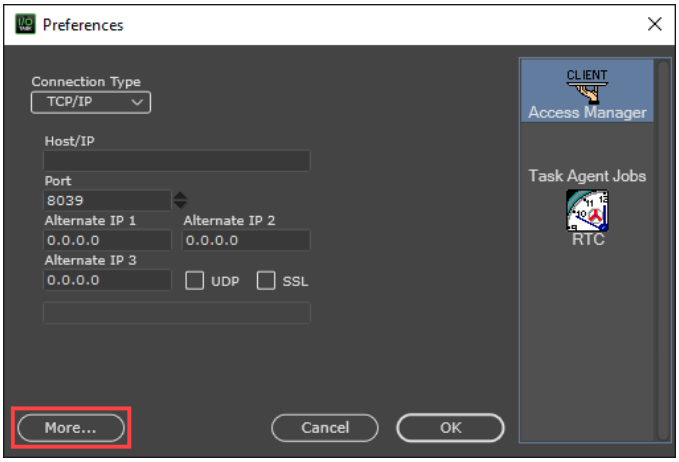
To configure RTC Timing

1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **RTC**.
3. For **Global Timing**, from the list of settings, select one of the following options based on the appropriate frames per second:
   - 29.97 fps (SMPTE, 30000/1001)
   - 59.94 fps (SMPTE, 60000/1001)
   - 25 fps
   - 50 fps

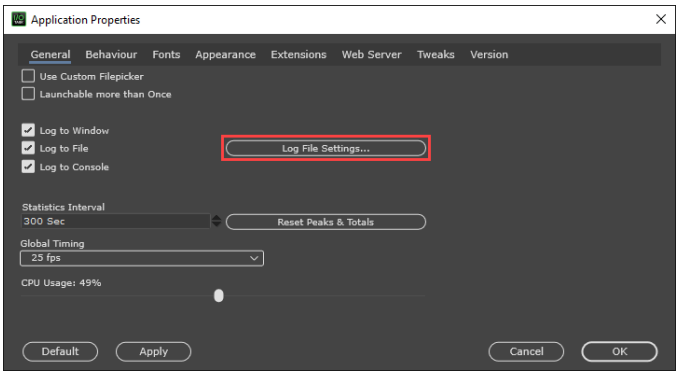


To configure Log Settings

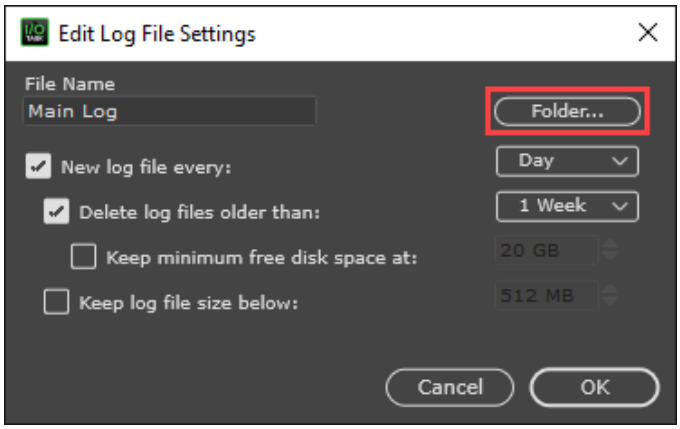
1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **More**.



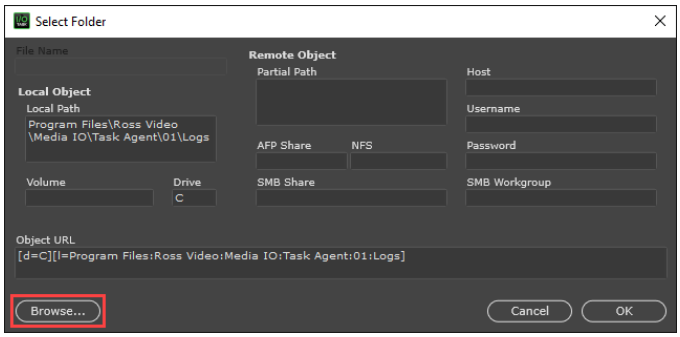
3. Select **Log File Settings**.



4. Select **Folder**.



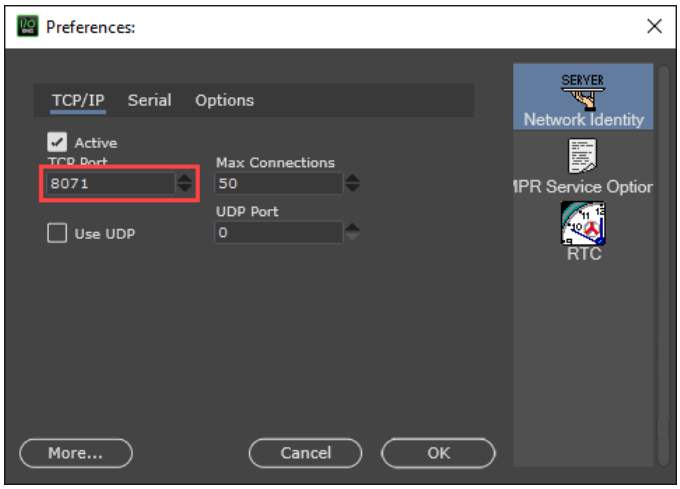
5. Select the following folder for the Engine:
   `C:\Program Files\Ross Video\Media IO\Transcode Agent\TRANSCODEAGENT_#\Logs`



To configure the Control Port TCP/IP Settings

1. Go to **Media I/O Menu > Edit > Preferences**.
2. Make sure **Network Identity** is selected.
3. Modify the TCP port according to Table 5.1, “TCP/IP Settings,” on page 2.

   After making changes, the Transcode Agents can be started via the **Services** tab of **Task Manager**.



Configuring Media I/O Workflow Server

This chapter discusses the following topics:

- Launching the Media I/O Workflow Server
- Configuring General Settings
- Configuring Application Settings
- Configuring Default Bin & Properties

Launching the Media I/O Workflow Server

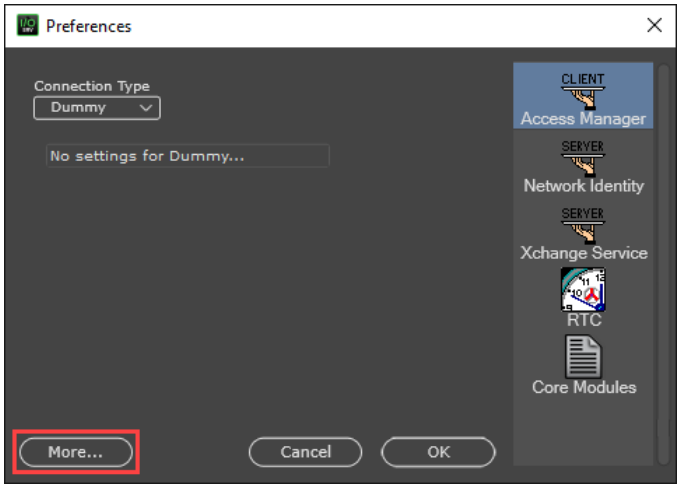
To launch the Media I/O Workflow Server for the first time

1. Go to the Media I/O Workflow Server folder, which is set by default to the following location.
   `C:\Program Files\Ross Video\Media IO\Workflow Server`
2. Double-click on the **Workflow Server.exe** application.

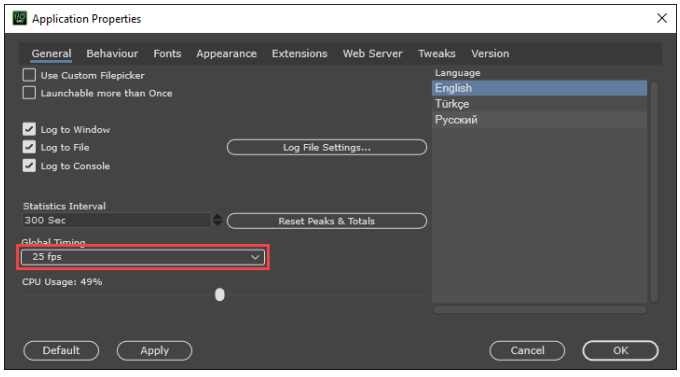
Configuring General Settings

To configure Application Timing

1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **More**.



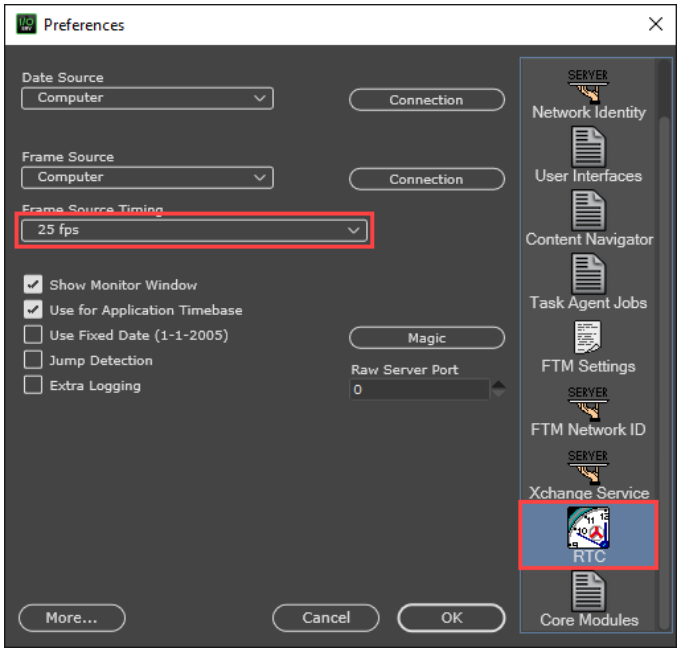
3. Select **Global Timing** and choose one of the following options based on the appropriate frames per second:
   - 29.97 fps (SMPTE, 30000/1001)
   - 59.94 fps (SMPTE, 60000/1001)
   - 25 fps
   - 50 fps



To configure RTC Timing

1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **RTC**.

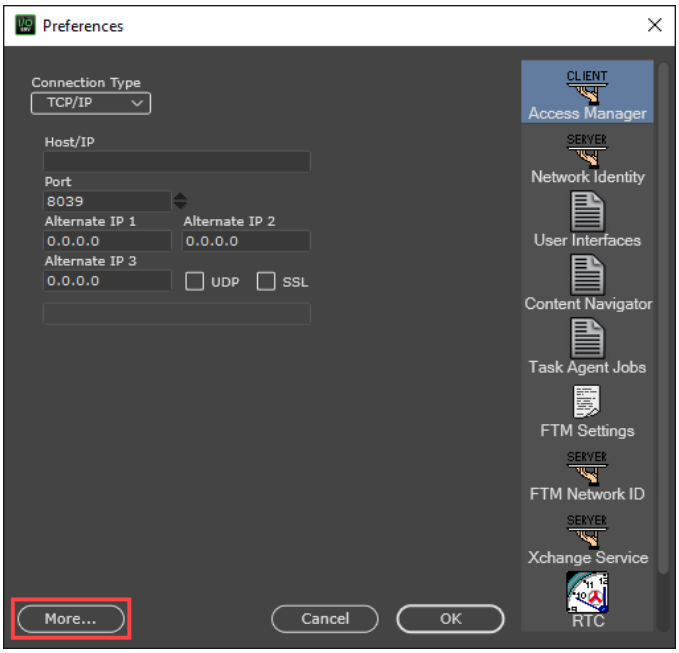
3. For **Global Timing**, from the list of settings, select one of the following options based on the appropriate frames per second:
   - 29.97 fps (SMPTE, 30000/1001)
   - 59.94 fps (SMPTE, 60000/1001)
   - 25 fps
   - 50 fps



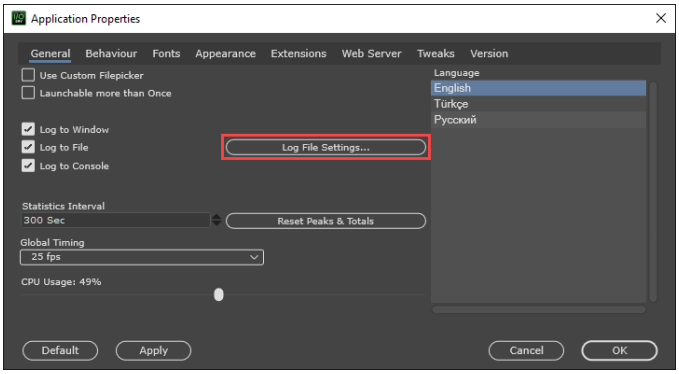
To configure Log Settings

✶ **NOTE:**
Before you begin, ensure that the recommended Visual C++ updates and NDi5 tools have been installed. If they have not been installed yet, a list of software requirements and additional instructions can be found in the ***System Overview*** chapter.

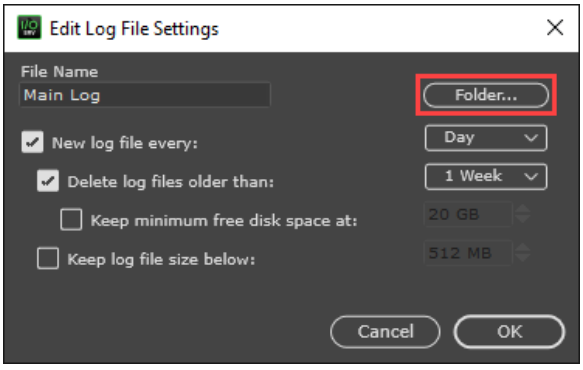
1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **More**.



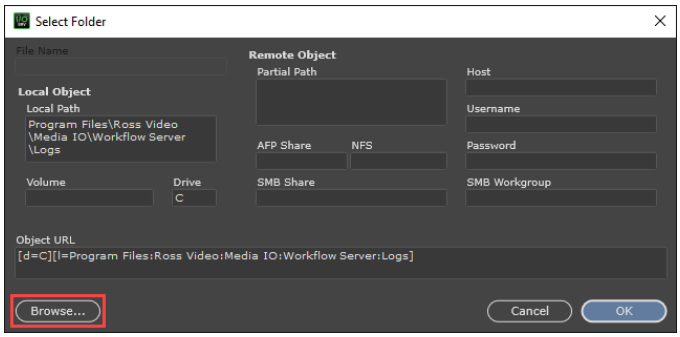
3. Select **Log File Settings**.



4. Select **Folder**.



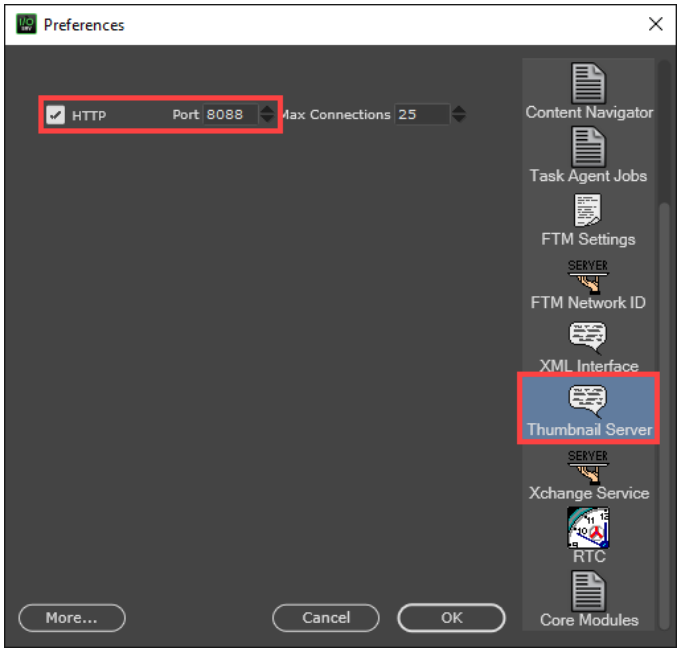
5. Select the following folder for the Engine:
   `C:\Program Files\Ross Video\Media IO\Workflow Server\Logs`



To configure Thumbnail Server settings

The Thumbnail Server is used by the Media I/O user interface to get the thumbnail of each asset in the system.

1. Go to **Media I/O Menu > Edit > Preferences**.
2. On the right-side menu bar, navigate to the Thumbnail Server option.
3. Check the **HTTP** box.
4. For the default port, enter **`8088`**



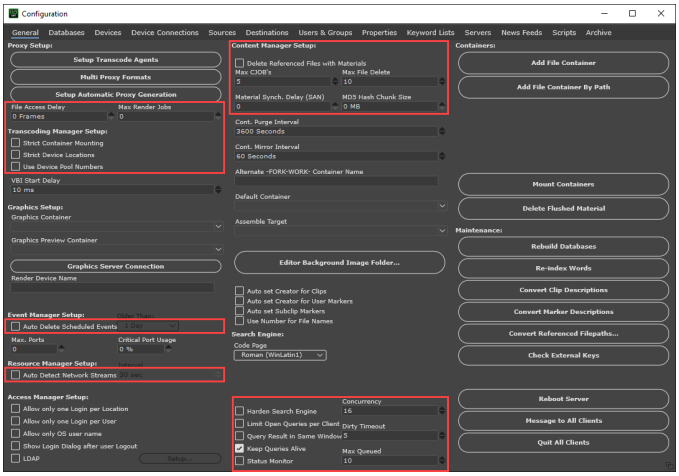
5. Select **OK** to save the changes.

✶ **NOTE:**
The Workflow Server must be restarted for these changes to take effect.

Configuring Application Settings

To configure application settings

1. Go to **Menu > Modules > Configuration** and select the **General** tab. Below are the required settings for Workflow Server.



- For **File Access Delay**, select **`120`**
- For **Use Device Pool Numbers**, check the box.
- For **Auto Delete Scheduled Events,** check the box.
  - Select **`10 Weeks`**
- For **Delete Reference Files with Materials**, check the box.
- For **Material Sync Delay (SAN)**, enter **`5 secs`**
- For **Harden Seach Engine**, check the box.
- For **Limit Open Queries per Client**, check the box.
- For **Query Results in Same Window**, check the box.
- For **Keep Queries Alive**, uncheck the box.
- For **Status Monitor**, check the box.
- For **Dirty Timeout**, enter **`1 sec`**

Configuring Storage Containers

A **Container** in the Workflow Server is the shared storage path where high-resolution media and proxies are recorded or stored for playback.

To configure storage containers

1. Go to the **Menu > Modules > Configuration** and select the **General** tab.
2. Select **Add File Container** in the top left corner and select the folder where the media will be stored.

   Two containers need to be added, one for High-Resolution Media and one for Low-Resolution Media.

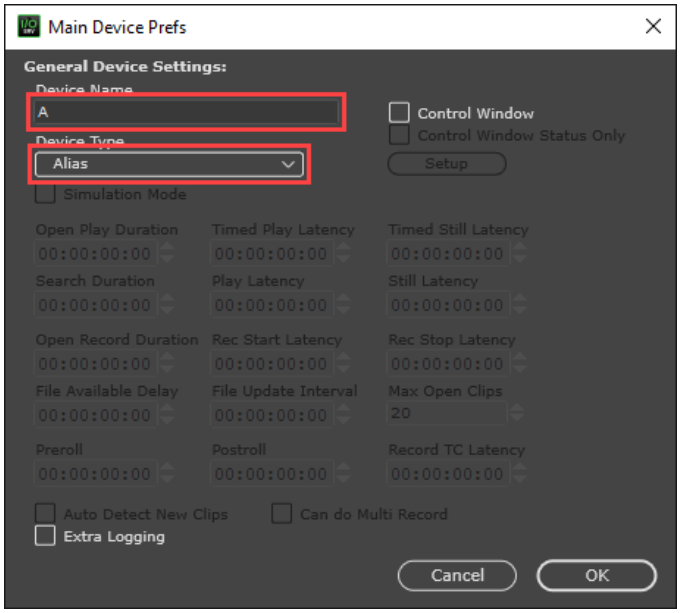
   - The default path for High-Resolution Media is > **`STORAGE DRIVE:\MediaIO\SharedMedia`**
   - The default path for Low-Resolution Media is > **`STORAGE DRIVE:\MediaIO\SharedMediaProxy`**

Configuring Media I/O Engine Aliases, Devices, Stream Monitors, and Pooling

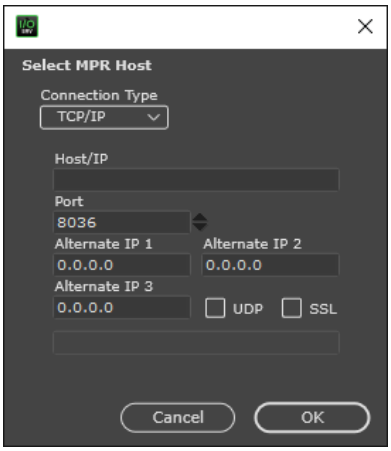
To add Media I/O Engine aliases

1. Go to **Workflow Server Menu > Window > Media Player Status**.
   A new player window will open.
2. Select the + button in the lower right corner.

3. Set the name and device type, then select **OK**.
   - **Device Name**: The channel name should match the Channel Letter (e.g., **A**, **B**, etc.) that was setup for each Engine.
   - **Device Type**: **Alias** (an alias device is a connection to the Media I/O engine. It allows control of the application for recording or playback).



4. Once **OK** is selected, a new window will open.

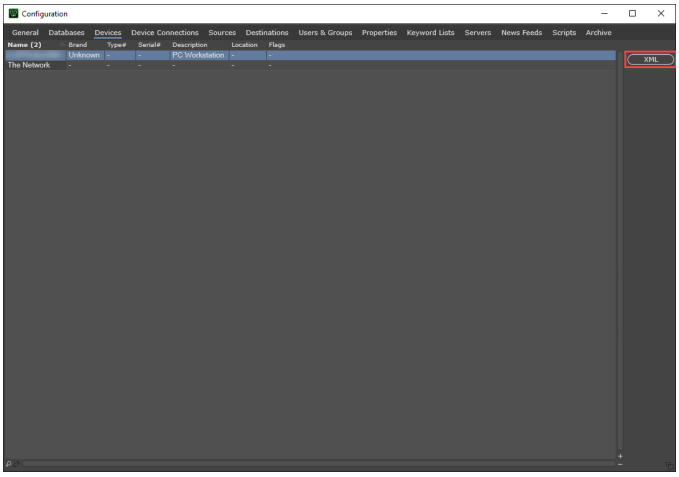


5. Select **TCP/IP** in the connection Type.
6. Fill out the IP and TCP Port of the Media I/O Engine that is being set up.

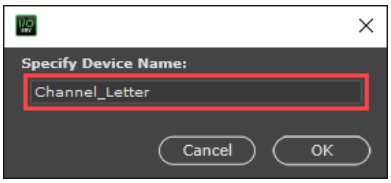
NOTE:
This process needs to be done for each Media I/O Engine that is available in the network.

To add Media I/O Engine devices

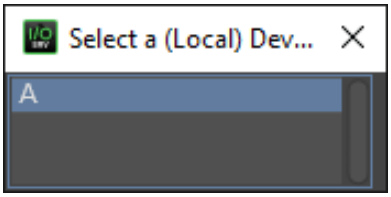
1. The device configuration is loaded from an XML file definition. Ensure the provided XML file is present. If it is not, please contact your Ross Video representative.
2. Once the Alias Devices are added, each Engine in the Workflow Server configuration needs to be added.
3. Go to the **Menu > Modules > Configuration > Device** tab
4. Select the **XML** button and choose the XML definition to be imported.
   - For MediaIO-PlaybackDevice_v3.xml, select **PLAYBACK**
   - For MediaIO-RecordDevice_v3.xml, select **RECORD**
   - For MediaIO-BiDirectionalDevice_v3.xml, select **BI-DIRECTIONAL**



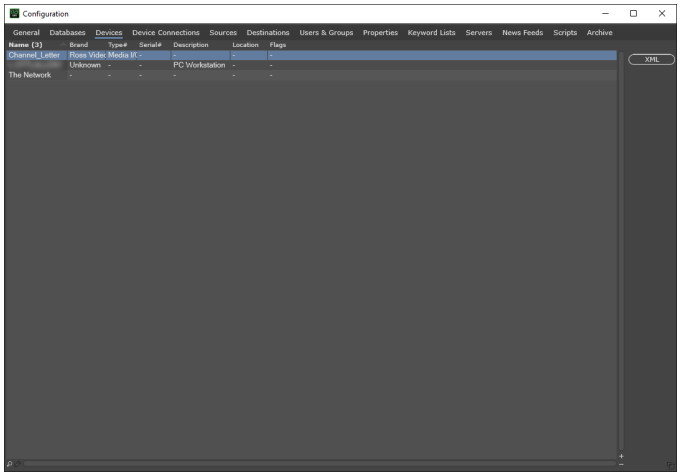
5. Once the XML is imported it will ask for the device name. The device name needs to match the one that was configured in the Engine and Alias.



6. Once **OK** is selected, a prompt will open to select the Alias device that was configured in the Workflow Server.



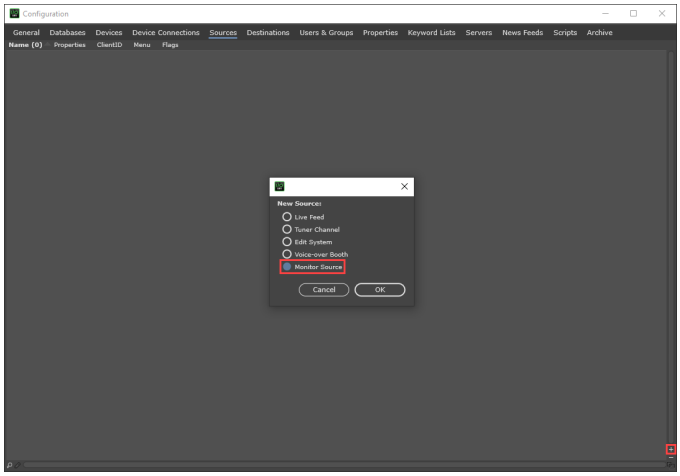
7. The new device will appear in the list of devices.



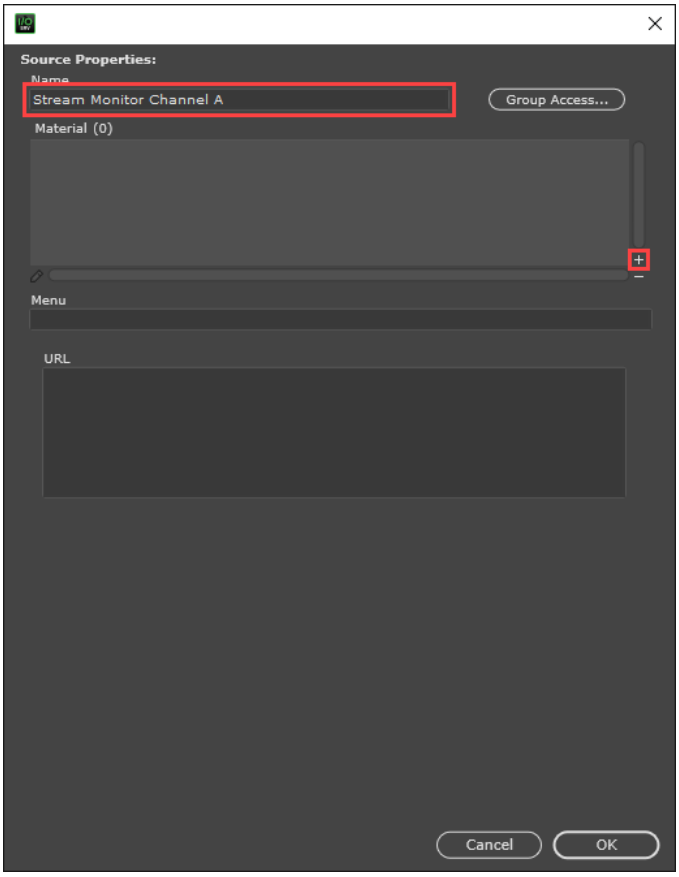
✶ **NOTE:**
This process needs to be done for each Media I/O Engine that is available in the network.

To add a Stream Monitor

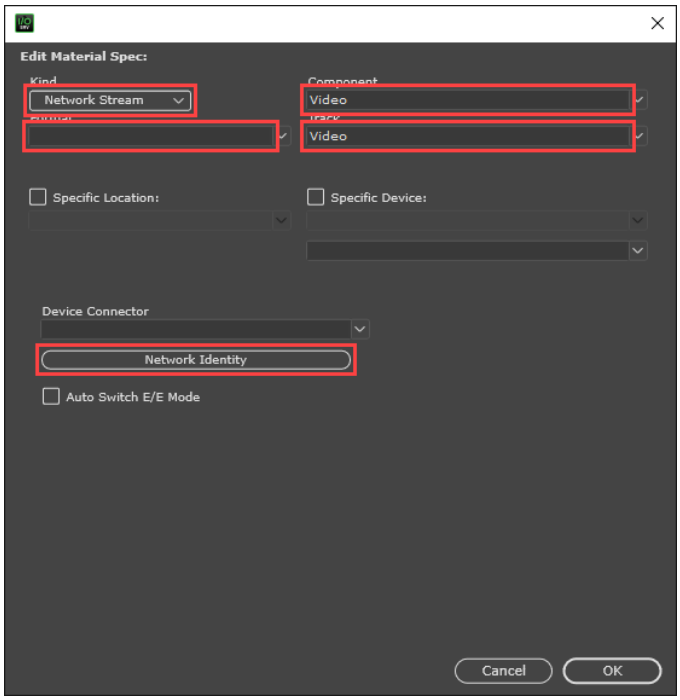
1. Go to **Workflow Server Menu > Modules > Configuration > Sources**.
2. Select the + button in the lower right corner.
3. Choose **Monitor Source** and select **OK**.



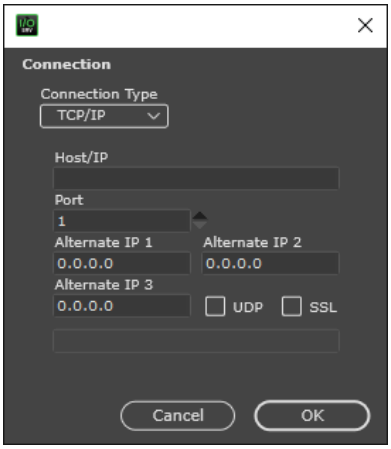
4. Fill out the following name for the Monitor.
   `Stream Monitor Channel A`
5. In the **Material** Window, select the + button.



6. In the Material Kind select **Network Stream**.
   - For **Format**, select **MPR Preview Stream**.
   - For **Component**, select **Video**.
   - For **Track**, select **Video**.
   - Select the **Network Identify** button.

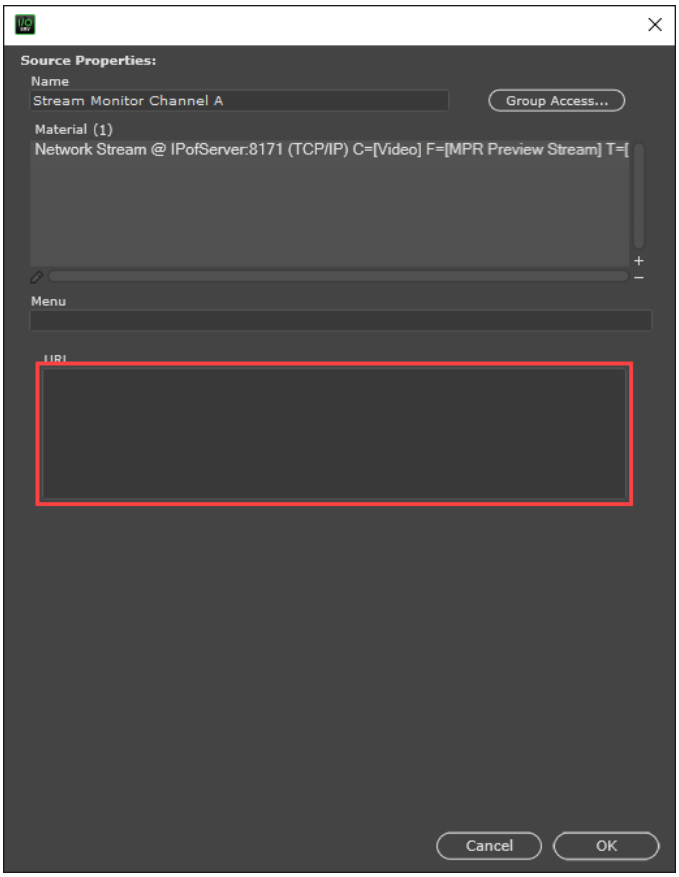


7. Set the **Connection Type** to be **TCP/IP**. Fill out the IP and TCP Port for the Engine that is being set up. Please refer to Table 4.1, “TCP/IP Settings,” on Page 4–5.



8. In the URL window, add the following string.
`mpr://IP_OF_ENGINE:8171&spoon=ws://IP_OF_ENGINE:8981/v1/mediaio/device/1/preview`

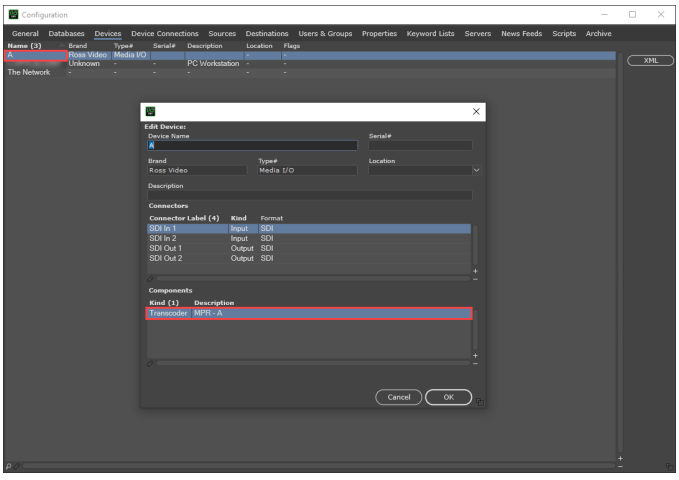
9. Fill out the IP and TCP Port for the Engine that is being set up. Please refer to “**TCP/IP Settings**” on page 4–5.



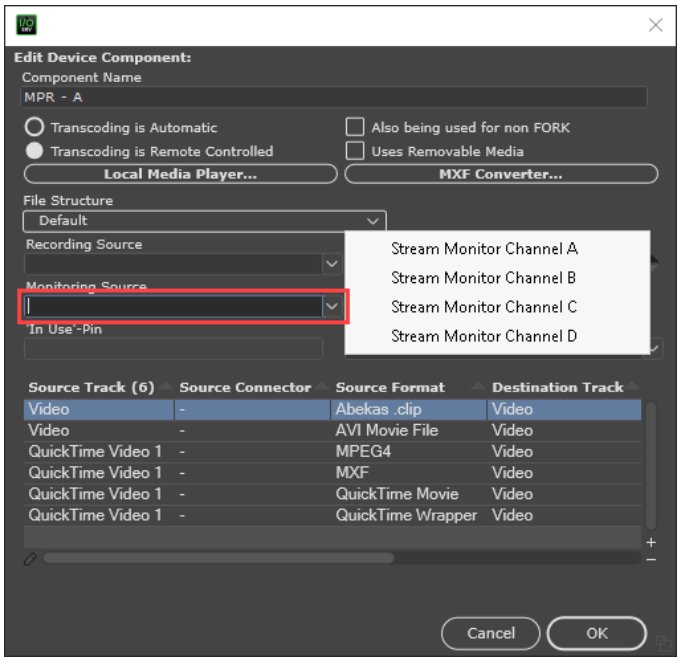
✶ **NOTE:**
This process needs to be done for each Media I/O Engine that is available in the network.

To configure a Stream Monitor in the Device

1. Go back to the **Devices** Tab and double-click the corresponding device. In an example where **A** is the device, the user would double-click the Transcoder Component (**MPR - A**).



2. Select the **Monitoring Source** drop-down and choose the correspondent stream monitor.

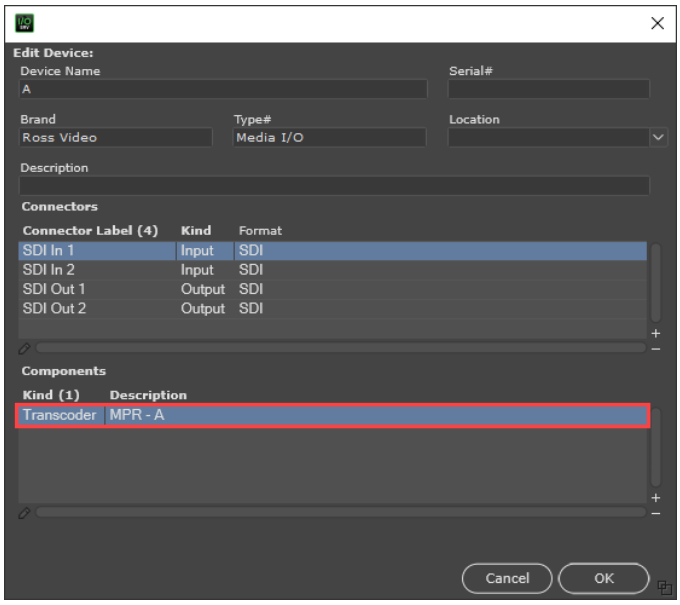


NOTE:
This process needs to be done for each Media I/O Engine that is available in the network.

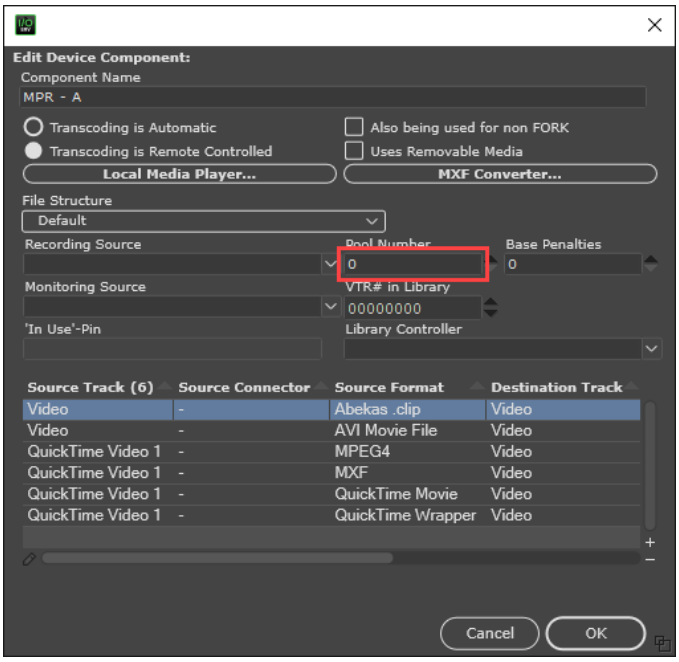
To configure pooling

Pooling is a feature within Workflow Server that allows it to assign an Engine to a Channel in the user interface. The configuration for pooling is located on each of the Engines added in the configuration.

1. Go to **Workflow Server Menu > Modules > Devices**.
2. Double-click on a **Device**.
3. Double-click the Transcoder Component (**MPR - A**).



4. In the device configuration, the **Pool Number** can be filled out.



5. The configuration for pooling is manual. It's a number that starts from 1 onwards.

✶ **NOTE:**
This process needs to be done for each Media I/O Engine that is available in the network.

Pooling Example

The configuration for pooling is manual. For example, for a system that has 15 channels, the pooling configuration would look like this:

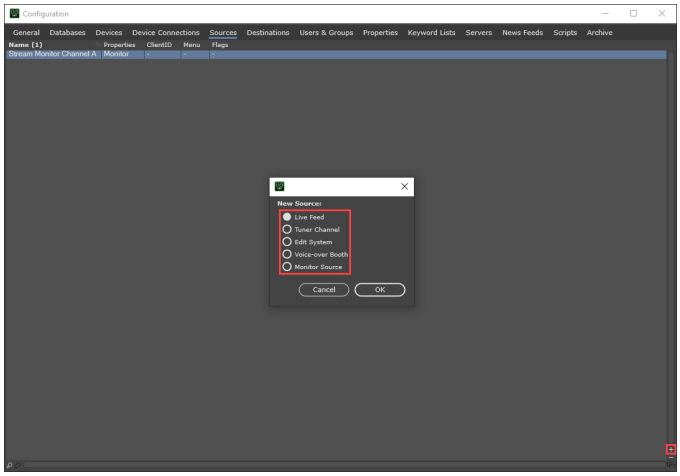
Device / Channel Letter	Pool Number
A	1
B	2
C	3
D	4
E	5
F	6
G	7
H	8
I	9
J	10
K	11
L	12
M	13
N	14
O	15

Configuring Inputs

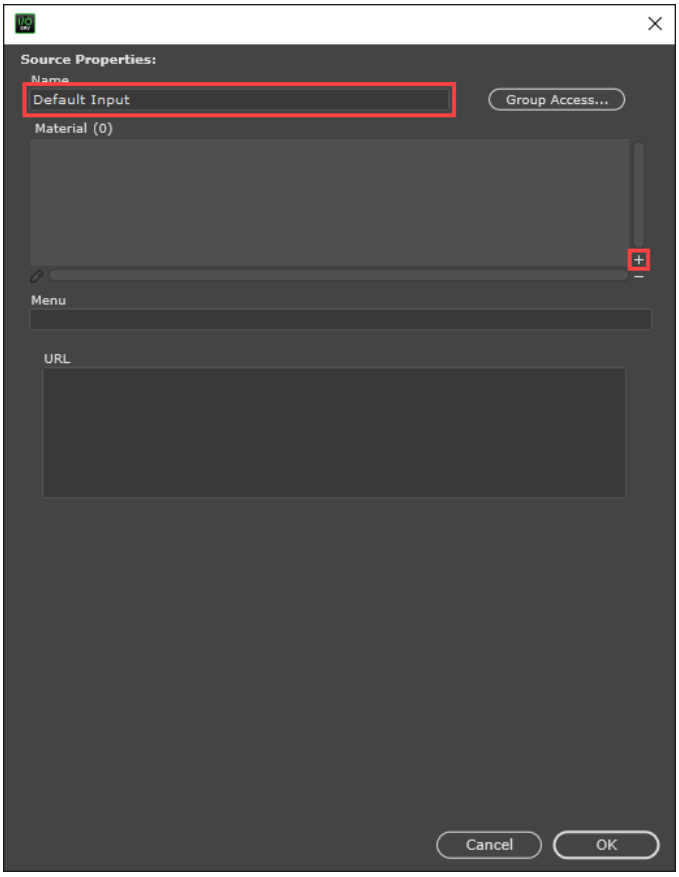
An input is what the user interface uses to tell the Engine where it needs to record from. It could be an SDI input from a Video Router or an NDI URL.

To configure the Default Input

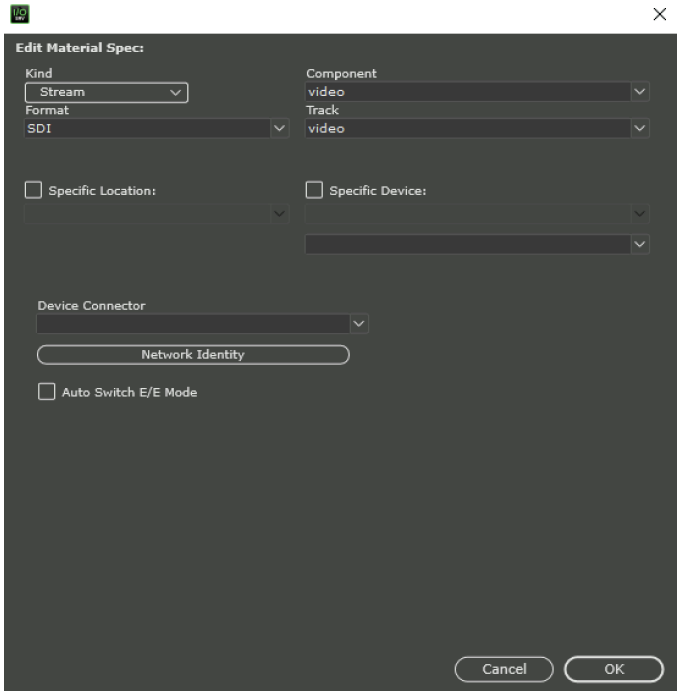
1. Go to **Workflow Server Menu > Modules > Sources**.
2. Select the + button in the lower right corner. In the popup window, select **Live Feed**.



3. Under Source Properties, in the **Name** box enter **`Default Input`**.
4. Under Material, select the + plus button.



5. Fill in the following boxes:
   - For **Format**, select **SDI**.
   - For **Component**, select **Video**.
   - For **Track**, select **Video**.



Configuring SDI Inputs

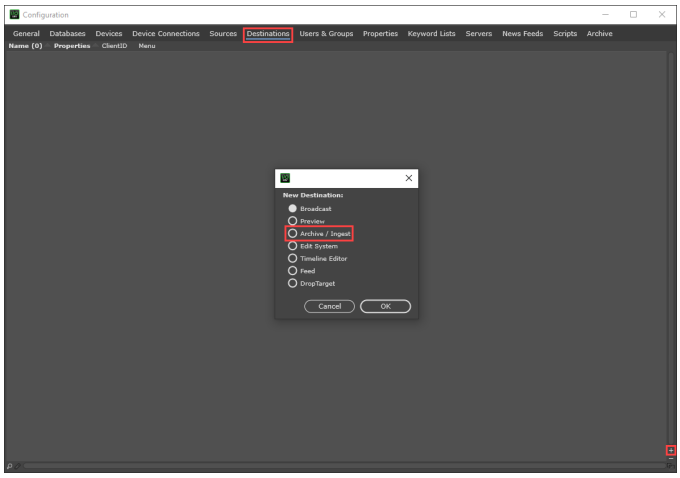
See **"In the RFU Machine box, enter the label for the Transcode Agent. The following is an example:**" on page 6–23.

Configuring Outputs

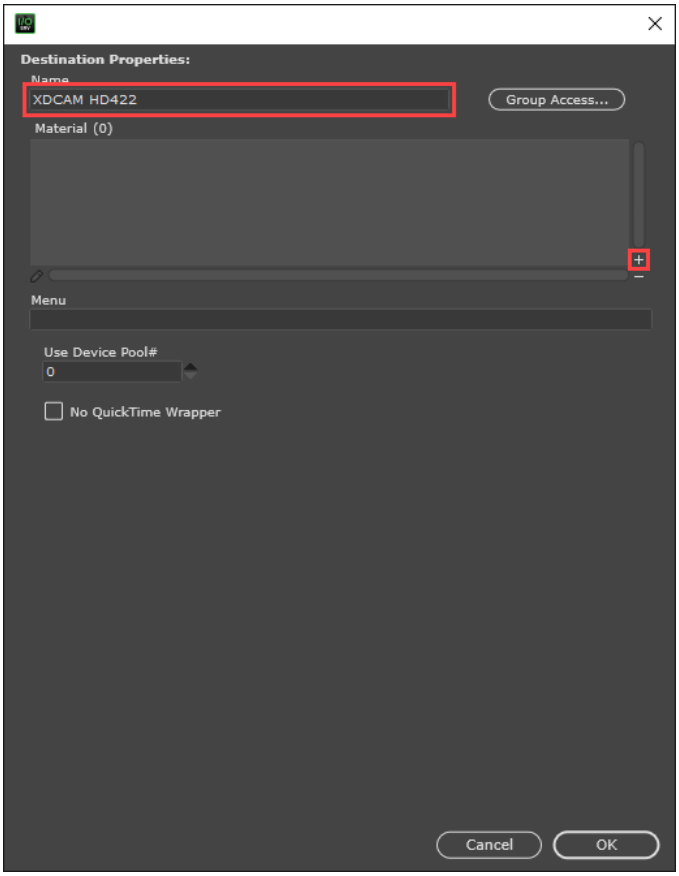
Outputs are what the user interface uses to tell the Engine where it needs to record to and in which format.

To configure Recording Outputs

1. Go to **Workflow Server Menu > Modules > Configuration > Destinations**.
2. Select the + button in the lower right corner. A new popup window will open. Select **Archive / Ingest**.



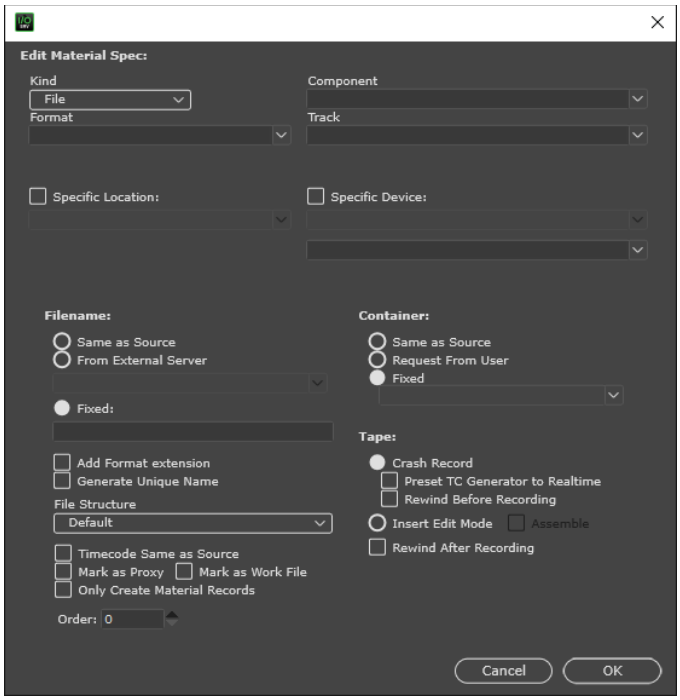
3. Fill out the name of the output. Generally, this is the Codec the user wants to record. Some examples include:
   - Pro-Res
   - XDCAM HD422
   - AVCi-100M
   - H.264
4. In the Material Window, select the + button.
   - For **XDCAM**, **AVC** and **H.264** Destinations, make sure **No Quicktime Wrapper** is selected.



- For Pro-Res:
  - High Resolution Material:
    - **Format**: QuickTime Movie
    - **Component**: Video
    - **Track**: QuickTime Video 1
    - **Container**: Fixed > Select the Container previously created > SharedMedia
    - **Filename**: Same as Source
    - **Add Format Extension**: Checked
    - **Generate Unique Name**: Checked
    - **File Structure**: Media IO Preset 1 (This matches the Codec Profile configuration installed in the ingest channel.)
    - **Timecode Same as Source**: Checked
  - Low Resolution Material:
    - **Format**: HLS Stream
    - **Component**: Video
    - **Track**: Video
    - **Container**: Fixed > Select the Container previously created for proxies > SharedMediaProxy
    - **Filename**: Same as Source
    - **Add Format Extension**: Checked
    - **Generate Unique Name**: Checked
    - **File Structure**: Media IO Preset 1 (This matches the Codec Profile configuration installed in the ingest channel.)
    - **Timecode Same as Source**: Checked
    - **Mark as Proxy**: Checked
- For XDCAM HD422:
  - High Resolution Material:
    - **Format**: MXF (**NOTE: No Quicktime Wrapper** must be selected.)
    - **Component**: Video
    - **Track**: Quicktime Video 1
    - **Container**: Fixed > Select the Container previously created > SharedMedia
    - **Filename**: Same as Source
    - **Add Format Extension**: Checked
    - **Generate Unique Name**: Checked
    - **File Structure**: Media IO Preset 2 (This matches the Codec Profile configuration installed in the ingest channel.)
    - **Timecode Same as Source**: Checked
  - Low Resolution Material:
    - **Format**: HLS Stream
    - **Component**: Video
    - **Track**: Video
    - **Container**: Fixed > Select the Container previously created for proxies > SharedMediaProxy
    - **Filename**: Same as Source

        - **Add Format Extension**: Checked
        - **Generate Unique Name**: Checked
        - **File Structure**: Media IO Preset 2 (This matches the Codec Profile configuration installed in the ingest channel.)
        - **Timecode Same as Source**: Checked
        - **Mark as Proxy**: Checked
- For AVCi-100M:
    - High Resolution Material:
        - **Format**: MXF
        - **Component**: Video
        - **Track**: Quicktime Video 1
        - **Container**: Fixed > Select the Container previously created > SharedMedia
        - **Filename**: Same as Source
        - **Add Format Extension**: Checked
        - **Generate Unique Name**: Checked
        - **File Structure**: Media IO Preset 3 (This matches the Codec Profile configuration installed in the ingest channel.)
        - **Timecode Same as Source**: Checked
    - Low Resolution Material:
        - **Format**: HLS Stream
        - **Component**: Video
        - **Track**: Video
        - **Container**: Fixed > Select the Container previously created > SharedMediaProxy
        - **Filename**: Same as Source
        - **Add Format Extension**: Checked
        - **Generate Unique Name**: Checked
        - **File Structure**: Media IO Preset 3 (This matches the Codec Profile configuration installed in the ingest channel.)
        - **Timecode Same as Source**: Checked
        - **Mark as Proxy**: Checked
- For H.264:
    - High Resolution Material:
        - **Format**: MPEG4
        - **Component**: Video
        - **Track**: Quicktime Video 1
        - **Container**: Fixed > Select the Container previously created > SharedMedia
        - **Filename**: Same as Source
        - **Add Format Extension**: Checked
        - **Generate Unique Name**: Checked
        - **File Structure**: Media IO Preset 7 (This matches the Codec Profile configuration installed in the ingest channel.)
        - **Timecode Same as Source**: Checked
    - Low Resolution Material:
        - **Format**: HLS Stream

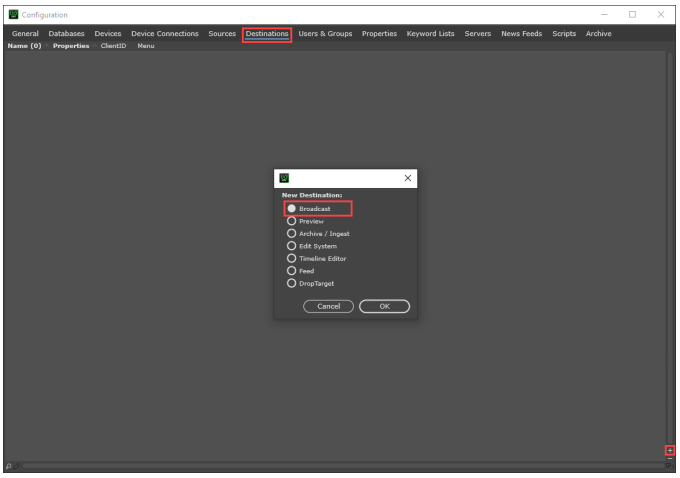
- **Component**: Video
- **Track**: Video
- **Container**: Fixed > Select the Container previously created > SharedMediaProxy
- **Filename**: Same as Source
- **Add Format Extension**: Checked
- **Generate Unique Name**: Checked
- **File Structure**: Media IO Preset 7 (This matches the Codec Profile configuration installed in the ingest channel.)
- **Timecode Same as Source**: Checked
- **Mark as Proxy**: Checked



5. Once the output is configured, select **OK**.

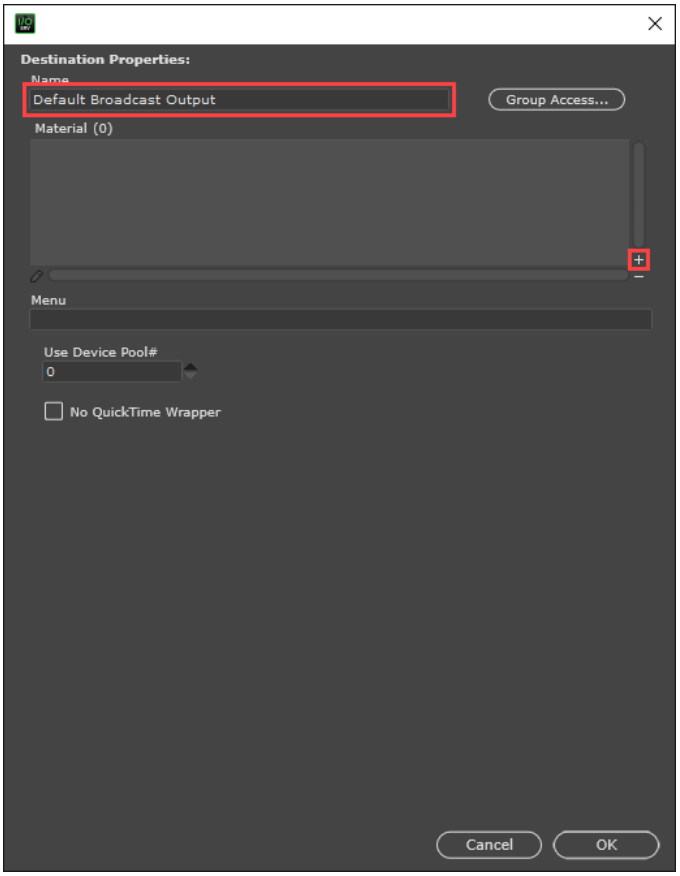
To configure Playback Output

1. Go to **Workflow Server Menu > Modules > Destinations**.
2. Select the + button in the lower right corner.
3. A new popup window will open. Select **Broadcast**.



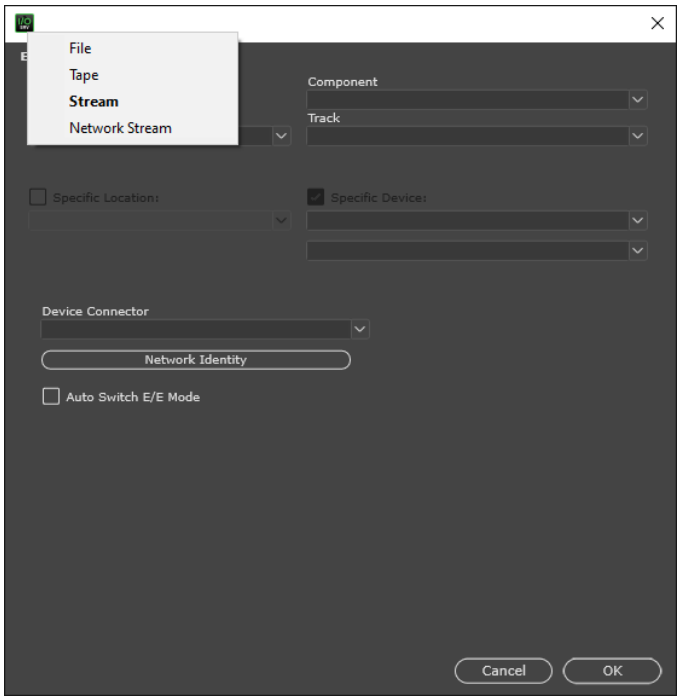
4. Select **OK**.

   • Fill out the following name for the output: **`Default Broadcast Output`**



5. In the Material Window, select the + button.

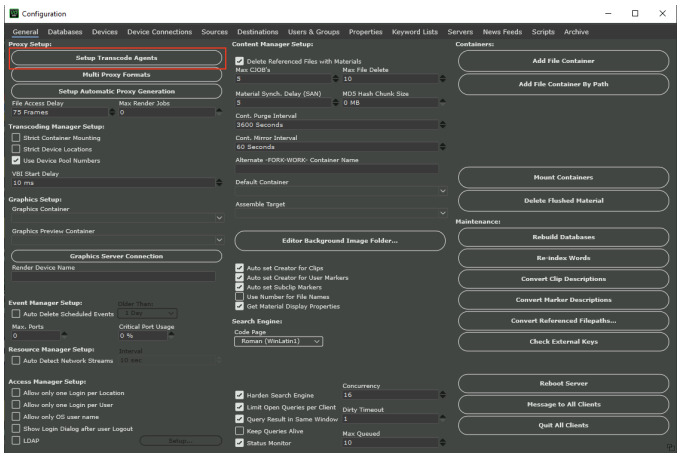
- **Format** > SDI
- **Component** > Video
- **Track** > Video



Managing Transcode

To add Transcode Agents

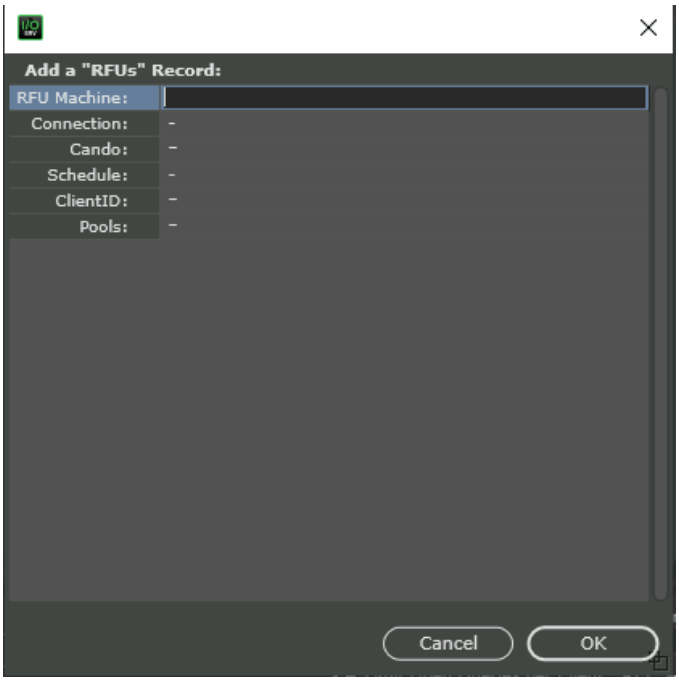
1. On the Workflow Server menu, navigate to **Modules** > **Configuration** > **General**. Select the **Setup Transcode Agents** button.



   A new window opens.

2. Select the + button in the lower-right corner. A new window opens.
3. In the RFU Machine box, enter the label for the Transcode Agent. The following is an example:

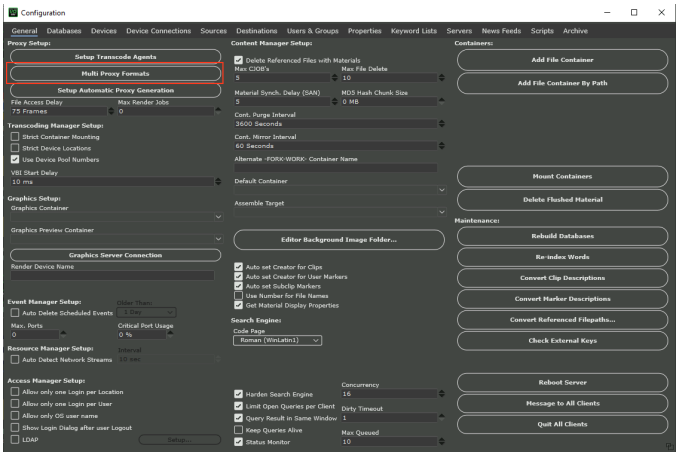
   `TrA-01`



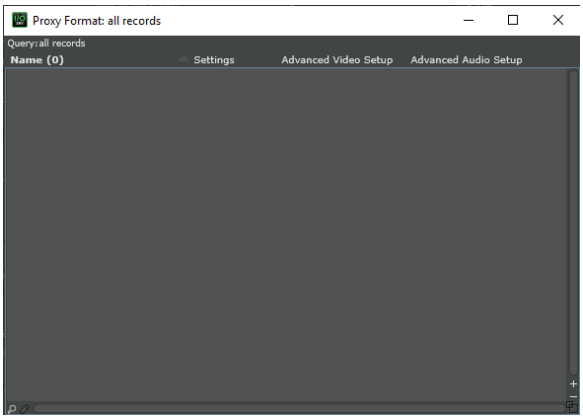
✶ **NOTE:**
Repeat this procedure for each Transcode Agent that needs to be configured. Generally, two Transcode Agents will be configured while the rest are disabled through Services.

To configure the Proxy Profile

1. On the Workflow Server menu, navigate to **Modules** > **Configuration** > **General**. Select the **Multi Proxy Formats** button.

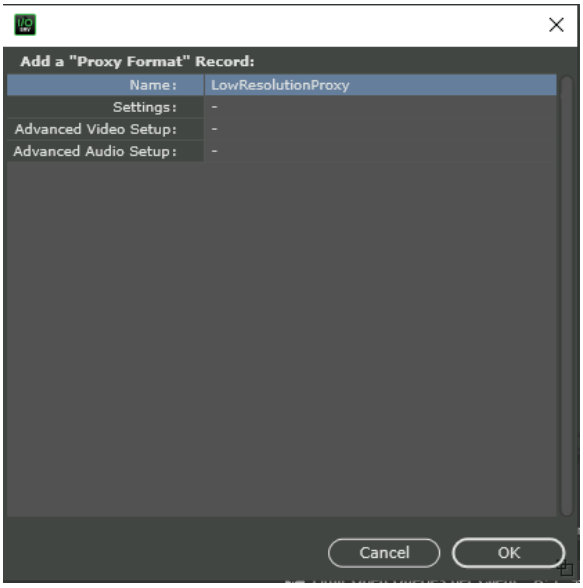


A new window opens.

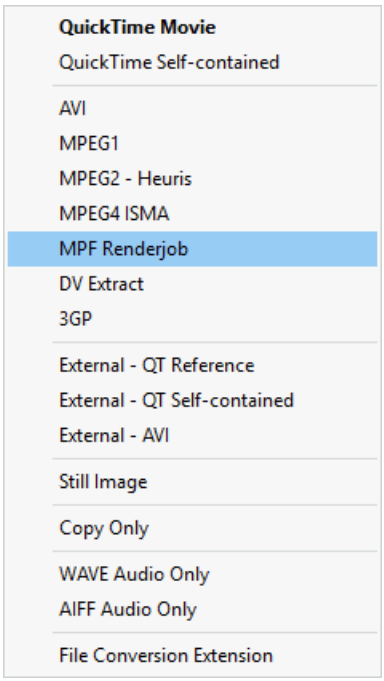


2. Select the + button in the lower-right corner. The **Add a "Proxy Format" Record** window opens.
3. In the **Name** box, enter a name for the profile. The following is an example:

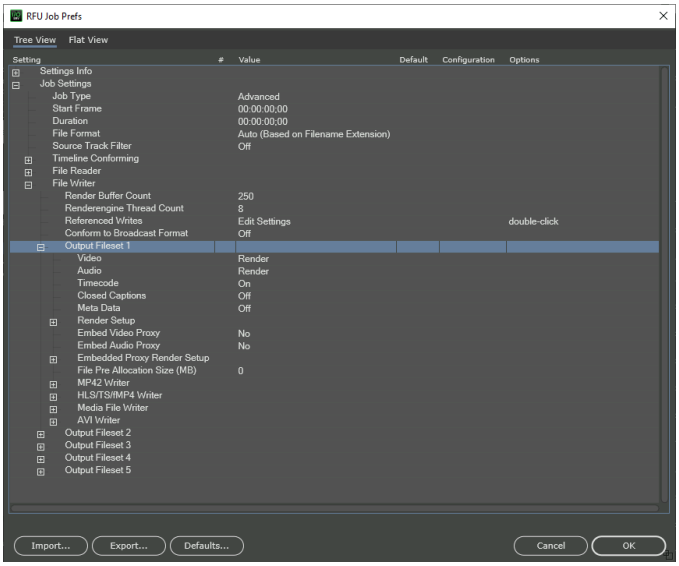
   `LowResolutionProxy`



4. Select Settings to open a new window. In the window, click the **Render Type** drop-down and select **MPF Renderjob**.

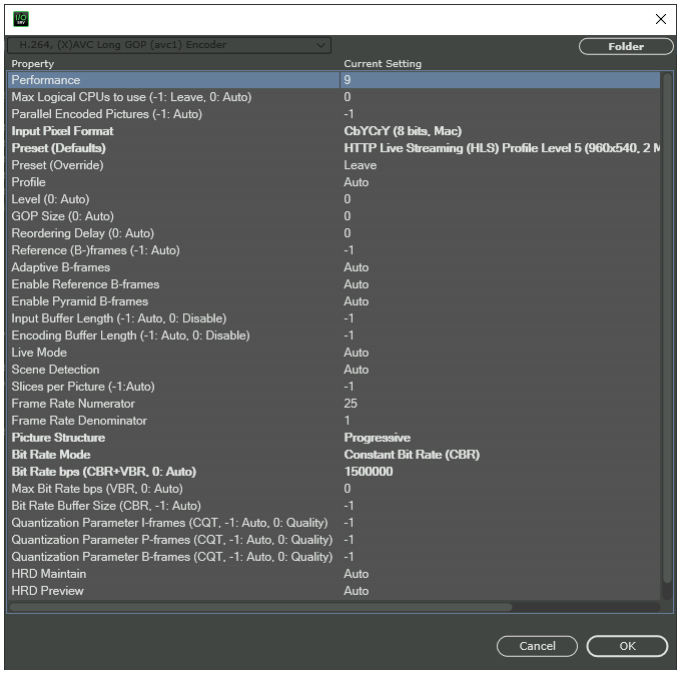


5. Select **Render Settings**, then modify the **Output Fileset 1** Value.

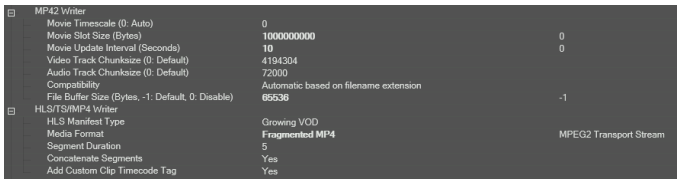


6. Configure the Render Setup as shown in the image below.

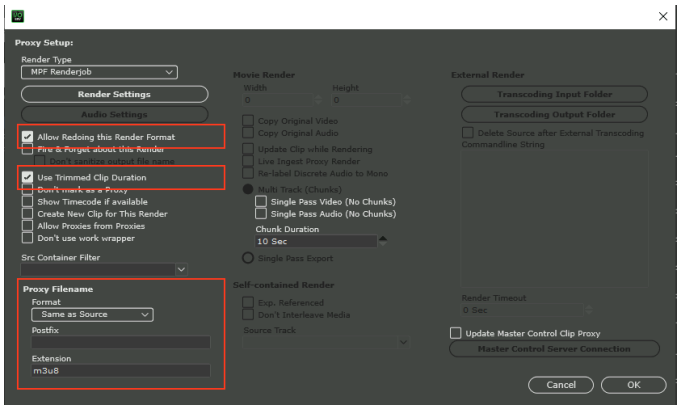
7. Select the option to view the codec settings to the right.



8. Configure the MP42 Writer and HLS/TS/fMP4 Writer, as shown in the image below.



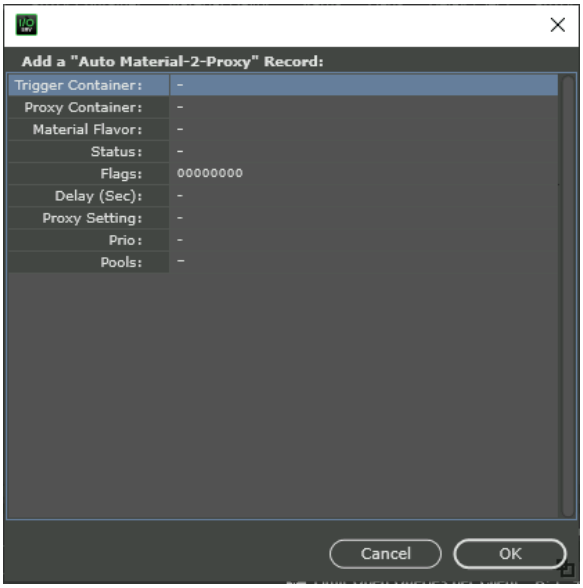
9. Configure additional settings, as shown below.



To configure Automatic Proxy for Watch Agent Workflows

1. On the Workflow Server menu, navigate to **Modules** > **Configuration** > **General**. Select the **Setup Automatic Proxy Generation** button.
2. Select the + button in the lower-right corner.

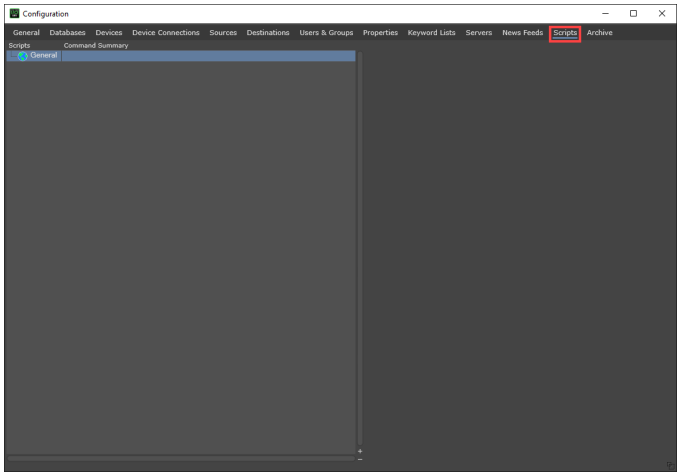
   A new window opens.



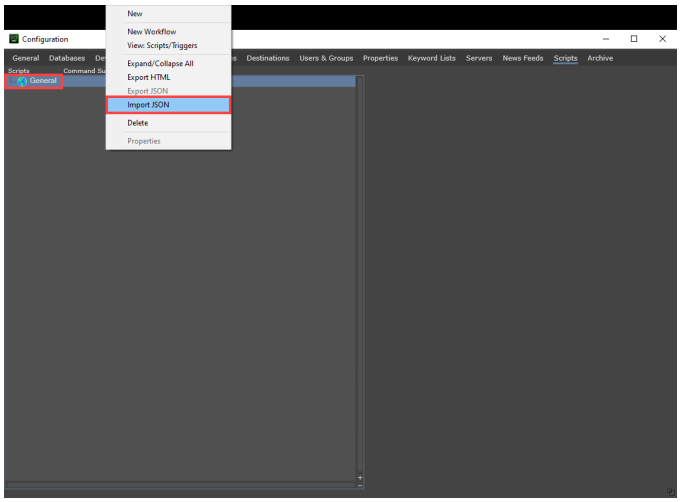
3. In the window, fill out the following information:
   - **Trigger Container:** The container where the high-res clips will be stored. Any new clip that is added to this container will trigger the creation of a proxy. This container must be a different container from the one selected for high-resolution ingest.
   - **Proxy Container:** The container where the proxy is going to be created.
   - **Material Flavor:** What type of media do you want to create a proxy from? If you have multiple flavors, such as MOV or MXF, you will need to create separate triggers.
   - **Status:** `Ready for Use`
   - **Delay:** `15 seconds`
   - **Proxy Setting:** Select the proxy profile that was previously created.

To configure Manual Proxy Trigger

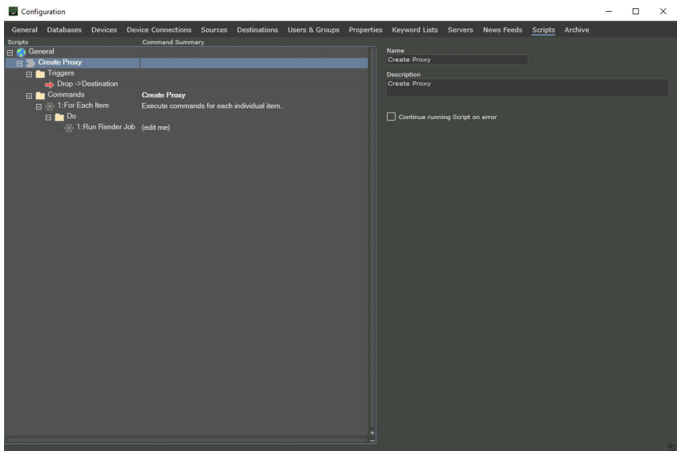
1. On the Workflow Server menu, navigate to **Modules** > **Configuration** > **Scripts**.



2. Ensure that the JSON configuration script has been provided by Ross Video. If it has not, please contact Ross Video Technical Support or your Ross Video representative.
3. In the Scripts tab, right-click on the **General** icon, select **Import JSON**, and select the provided JSON file.

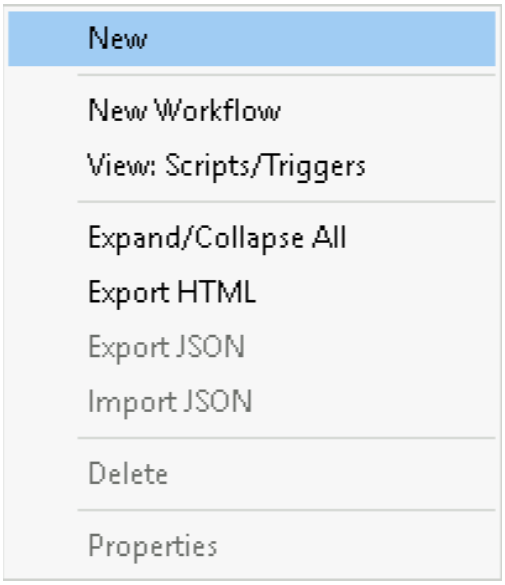


4. Once the JSON is imported, the script that was imported will be visible.

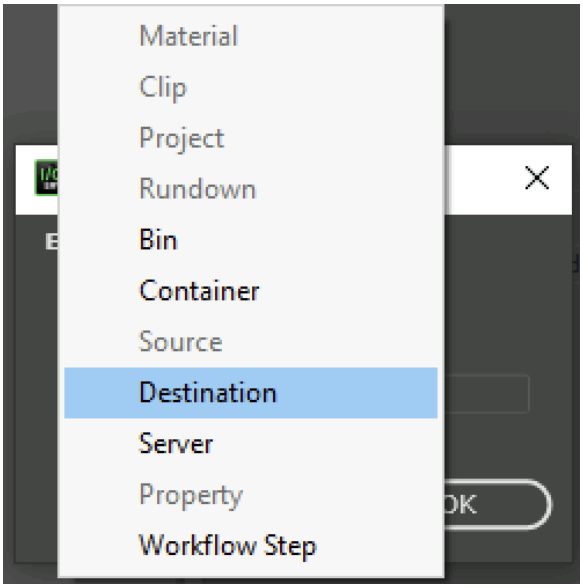


5. Delete any triggers that were created during the import process.

6. Right-click on the **Triggers** icon and select **New**.

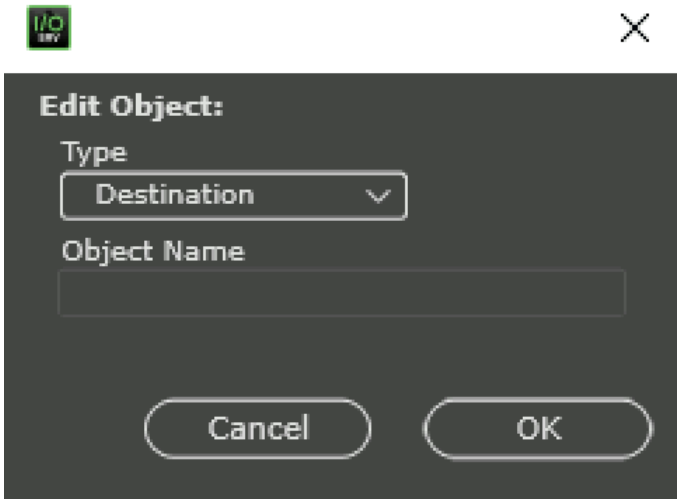


7. Double-click the **Unknown Type** trigger. In the drop-down that opens, select **Destination**.

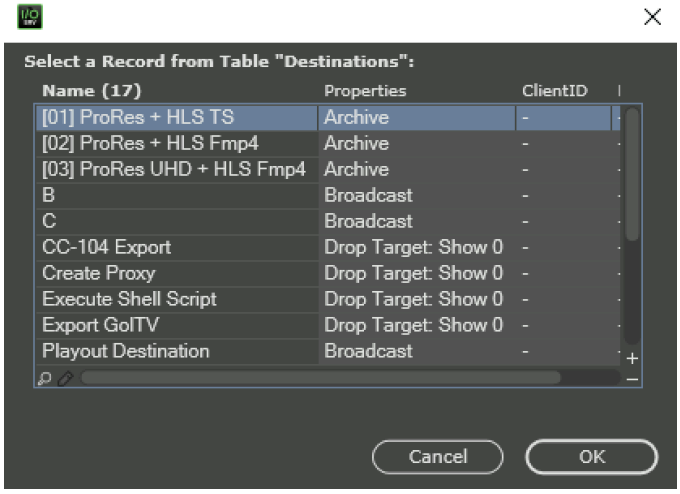


8. Double-click on the object name.

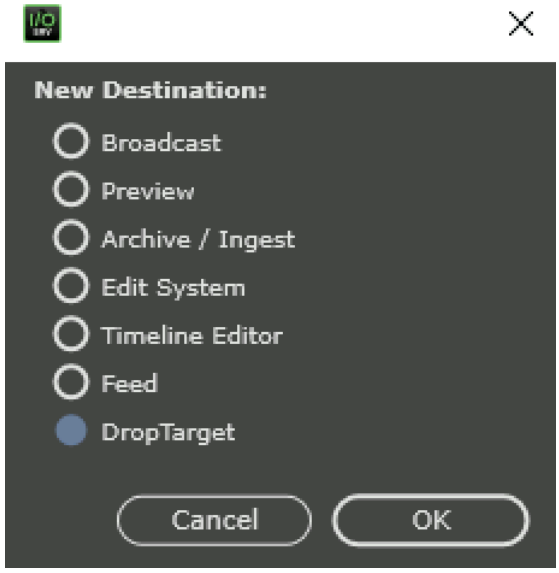
   A new window opens.



9. Click the + button.



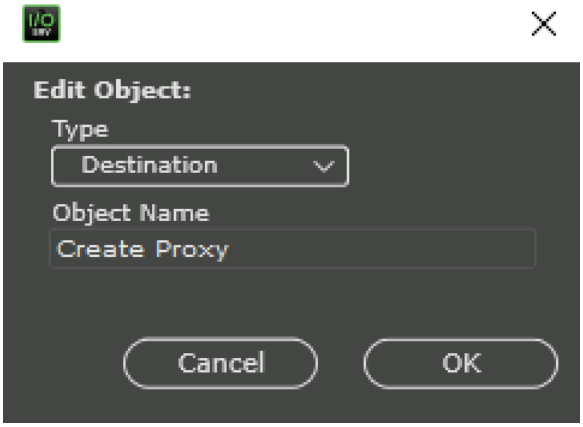
10. In the window that opens, select **DropTarget**.



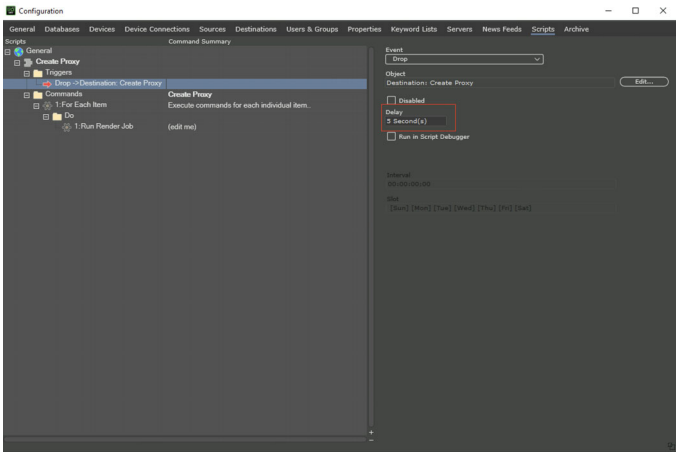
11. In the **Destination Properties** window, enter the following name:

Create Proxy

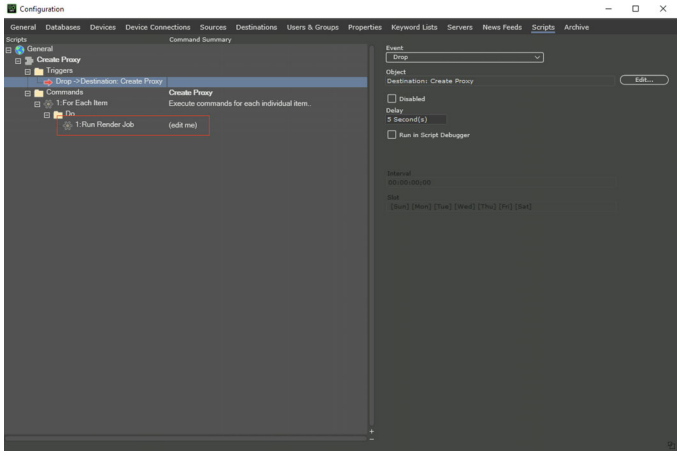
12. Select **OK** to save the changes.



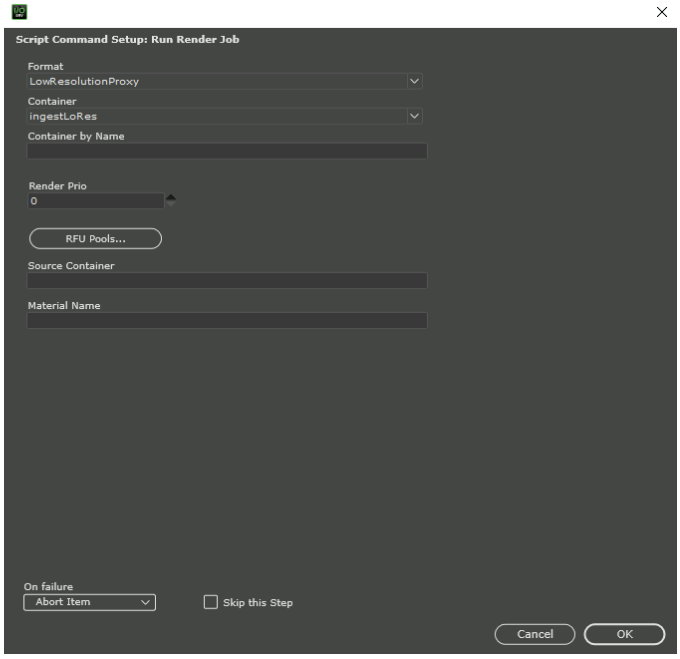
13. Add a Delay to the trigger > 5 seconds



14. Double-click the Run Render Job command.



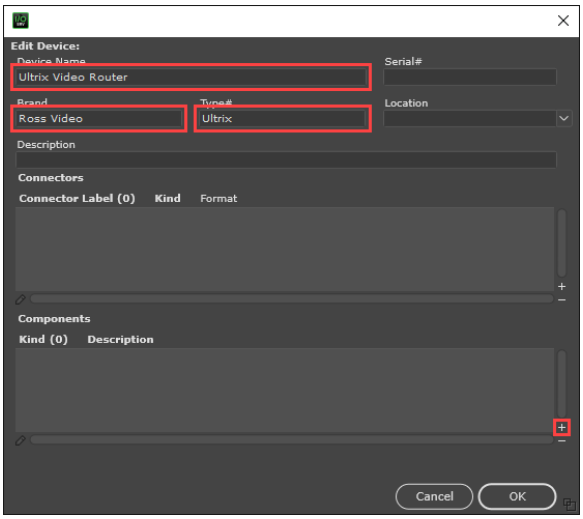
15. Select options from the respective drop-down lists for the following properties:
    - › Format
    - › Container (where proxies will be stored)



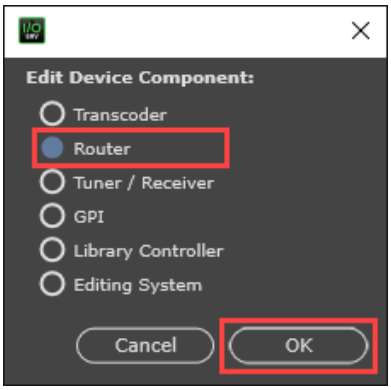
Configuring a Video Router (Optional)

To configure a Video Router

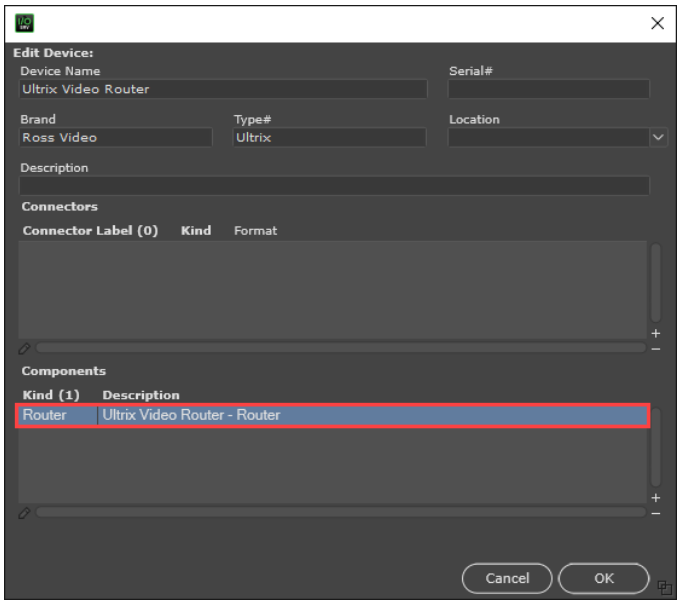
1. Go to the **Menu > Modules > Configuration > Device**.
2. Select the + button in the lower right corner.
3. A new window will open. Fill out the following:
    - For **Device Name**, enter **`Ultrix Video Router`**
    - For **Brand**, enter **`Ross Video`**
    - For **Type**, enter **`Ultrix`**



4. Select the + button in the Component Window. Choose Router and select **OK** to save the Router's initial configuration.



5. Open the Ultrix Video Router again and select the **Component** that was just created. This will open the Video Router configuration window.


Edit Device:
Device Name
Ultrix Video Router
Serial#
Brand
Ross Video
Type#
Ultrix
Location
Description
Connectors
Connector Label (0)
Kind
Format
Components
Kind (1)
Description
Router
Ultrix Video Router - Router
Cancel
OK

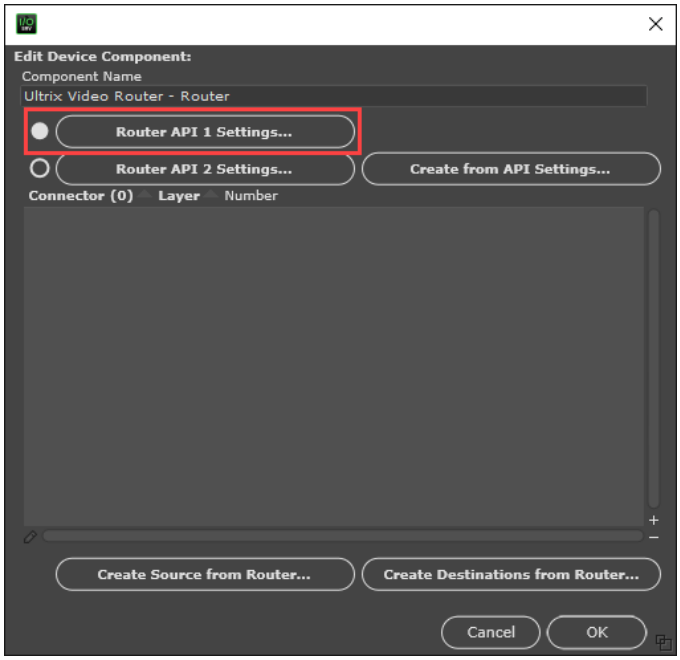
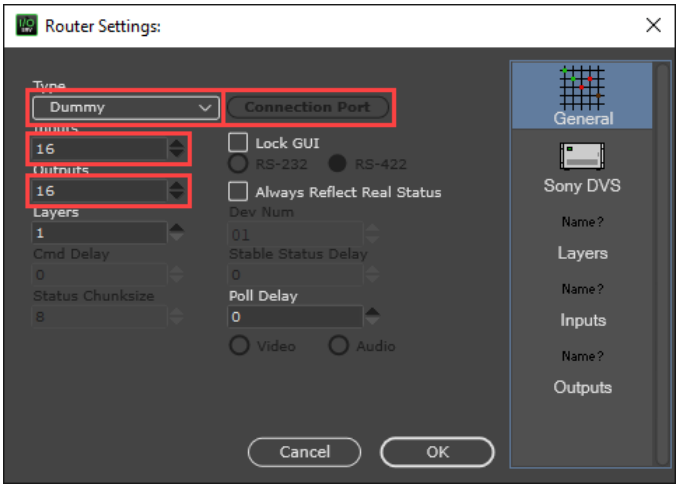

Edit Device Component:
Component Name
Ultrix Video Router - Router
Router API 1 Settings...
Router API 2 Settings...
Create from API Settings...
Connector (0)
Layer
Number
Create Source from Router...
Create Destinations from Router...
Cancel
OK

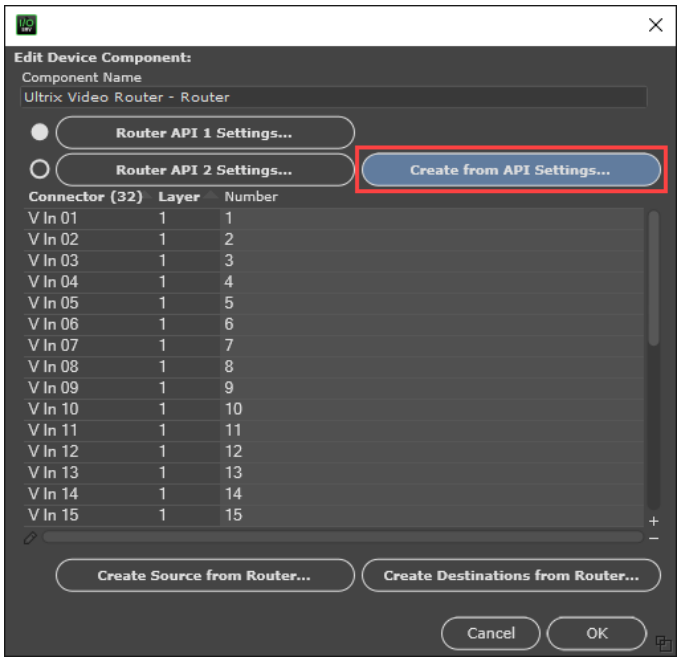
Table 6.1

API v1
SLX-161
Sony - Analog
Sony - DVS
Sony - PVS
GvG - Performer
GvG - Native
Leitch - ASCII
PESA
VikinX

1. Select **Router API 1 Settings...** and select the **Router API 1 Settings...** button.
2. Select the router/protocol from the **Type** dropdown.
   - Configure the **Input/Output** number for the router.
   - Select **Connection Port** to configure the IP/Port or the Serial Connection.
   - Select **OK**.



3. Select the **Create from API Settings** button. This will create the database records of the router input and outputs.



Configuring API v2 Router Protocol

Table 6.2

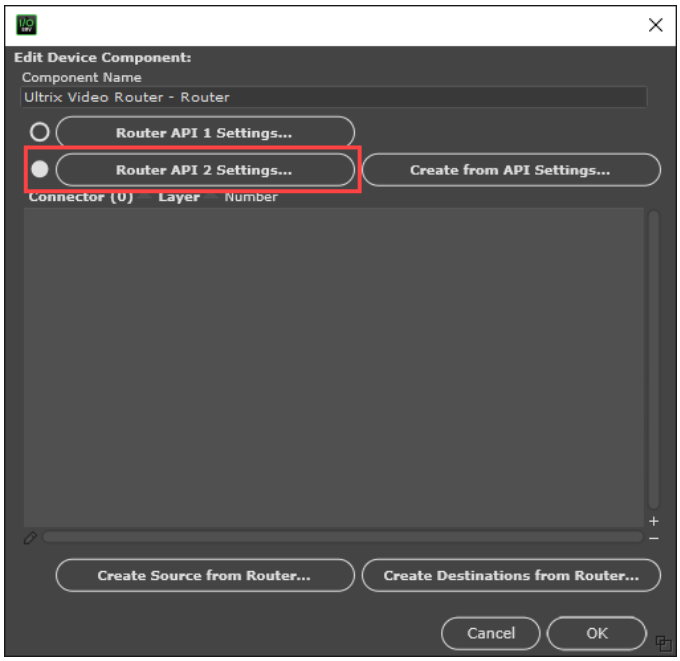
API v2
Leitch - Pass Through
Leitch - Terminal
Pro-Bel - General Switcher Protocol
Pro-Bel - General Router Protocol
Pro-Bel - TX500 Series Mixer
Pro-Bel - Master Control Switcher Protocol
B4M - MultiCam Router
Quartz
Kramer - Protocol 2000
Kramer - SD7308
Kramer - ASCII
Vortex
BTS - ASCII
Klotz - ASCII
Thomson - Saturn Master Control Switcher
Grass Valley - Router Control Language
Grass Valley - Acappella (T/Ci)
NetWork - VikinX
Sony - CART

Table 6.2

Sony - CART +
Sony - CART ++
Sony - DFS 700
Sigma
Crystal Vision SW0808
PESA - CPU Link Protocol
Datavideo - SE800
nVision - NV9000 (TCP/IP)
BlackMagic - VideoHub (TCP/IP)
AJA - KUMO (HTTP)
PESA - P1N (TCP/IP)
Evertz QMC
BTS - ES Switch
Oresmaster
Utah Scientific RCP-3A
SW-P-08
Oxtel Protocol
Imagine LRC

To configure API v2 router protocol

1. Select **Router API 2 Settings...** and select the **Router API 2 Settings...** button.



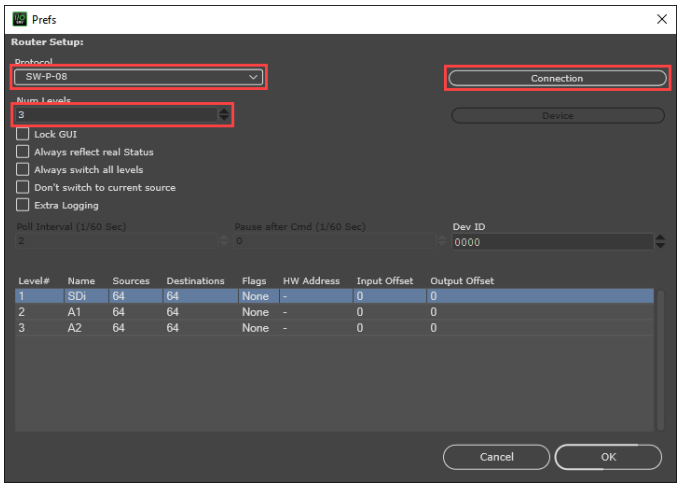
2. Select the router/protocol from the **Type** dropdown.

   • Configure the **Input/Output** number for the router.

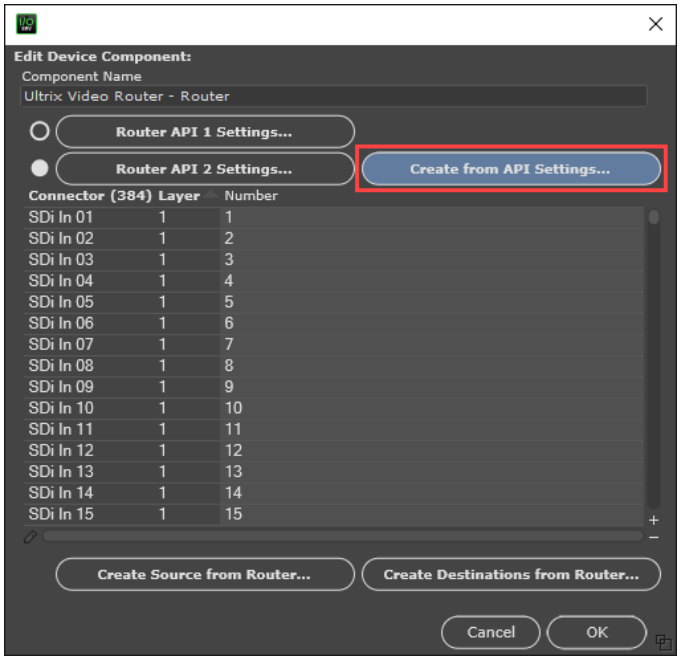
   • Select **Connection** to configure the IP/Port or the Serial Connection.

   • Ensure that the Flags column for all levels is set to Marry Next. This ensures that when you route Level 1 of the routers, it will also route the next levels.

   • Select **OK**.



3. Select the **Create from API Settings** button. This will create the database records of the router input and outputs.



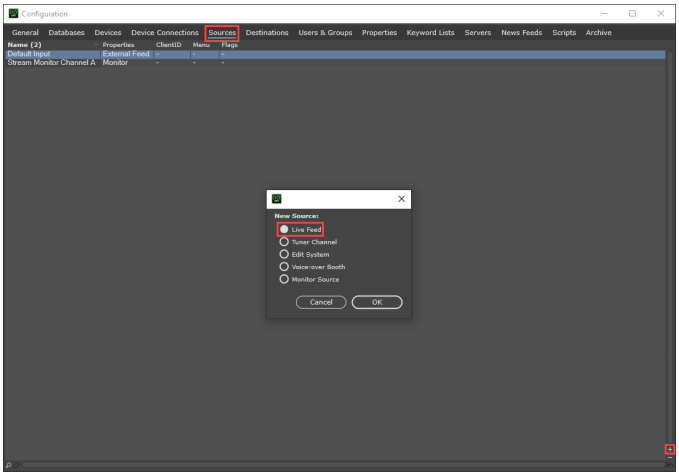
To add Router Inputs

Once the Router is created, the user is ready to add all the necessary inputs to Workflow Server.

✶ **NOTE:**
There is a feature that allows the user to create all the configured inputs by using a template source.

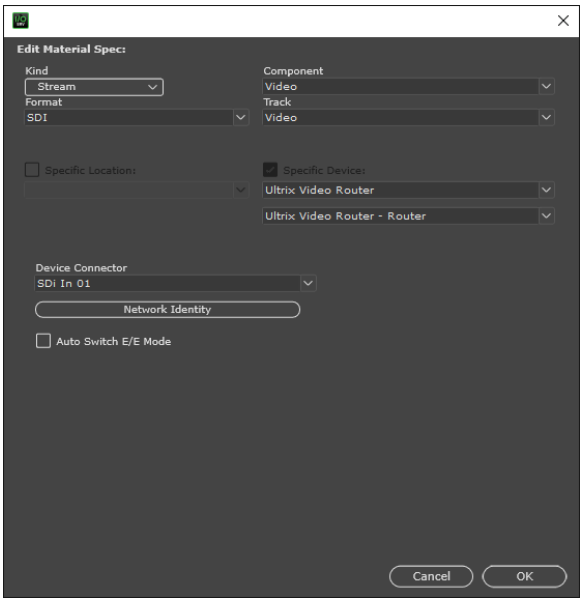
1. Go to **Workflow Server Menu > Modules > Configuration > Sources**.
2. Select the + button in the lower right corner.

3. Choose **Live Feed** and select **OK**.

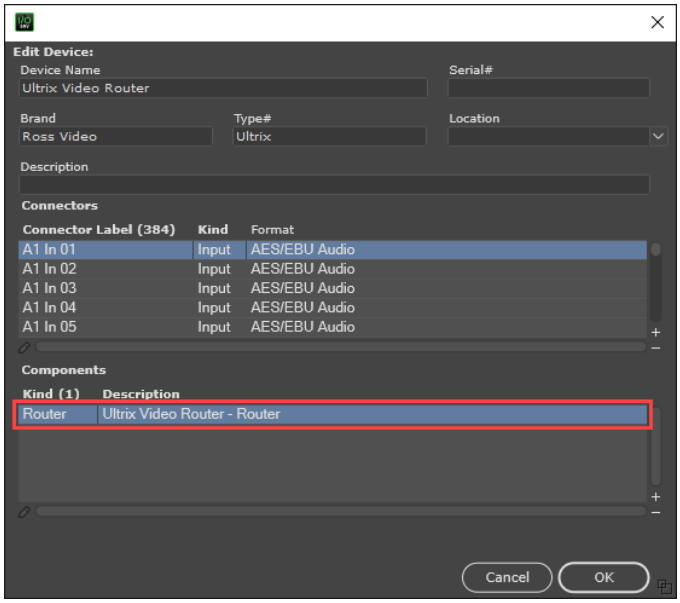


4. Set the name to **`Template Router Input`**
5. In the Material window, select the + button.

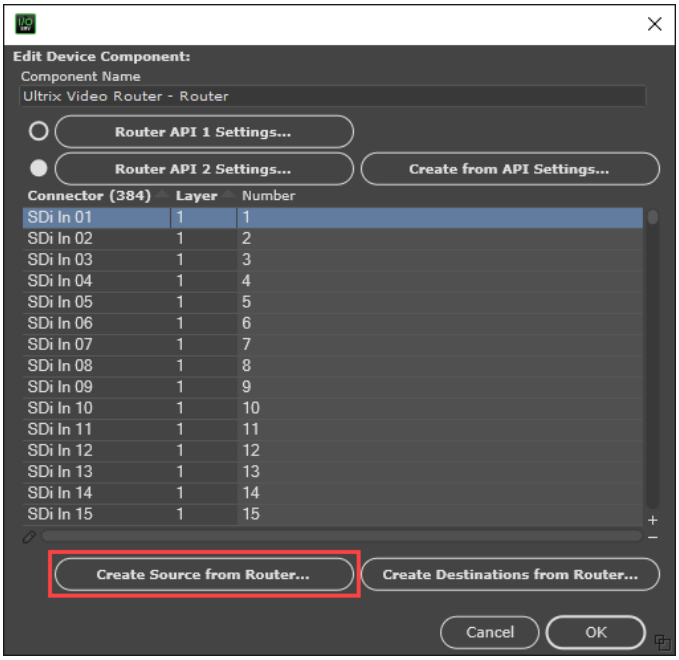
6. In the Material window, select the **Kind** dropdown menu and choose **Stream**. Configure the following settings:
   - For **Format**, select SDI.
   - For **Component**, select Video.
   - For **Track**, select Video.
   - Select **Specific Device** and select the appropriate router information:
     - Ultrix Video Router
     - Ultrix Video Router - Router
   - For **Device Connector**, select SDi In 01.

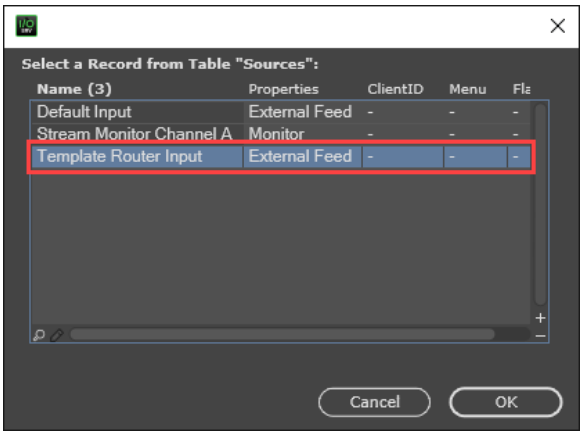


7. Go back to the **Device** tab and select the **Ultrix Video Router**.
8. Select the component.



9. Select **Create Source from Router** and select the Template Source created above.





10. Go back to the sources table. See that all the inputs from the router were created.
11. Delete the Template Router Input that was created above.
12. Delete all the Audio Inputs that were created.
13. After creating all the sources, the name of each of the sources can be changed depending on the user's preferences.

Connecting Engines to the Video Router

Once the Video Router is configured, the user will need to set up the output connections to the different engines configured in the system. The user will need to have the router table information relevant to the customer for this.

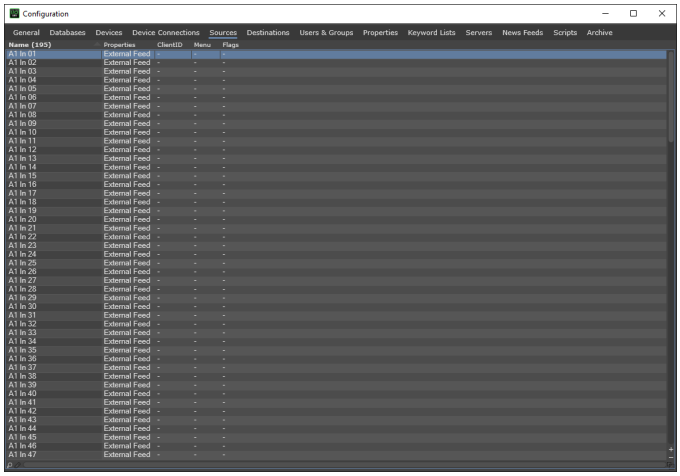
Take, for example, a system with a Video Router of 128 x 128 and 10 Engines. Below is the table of the router connections.

Table 6.3

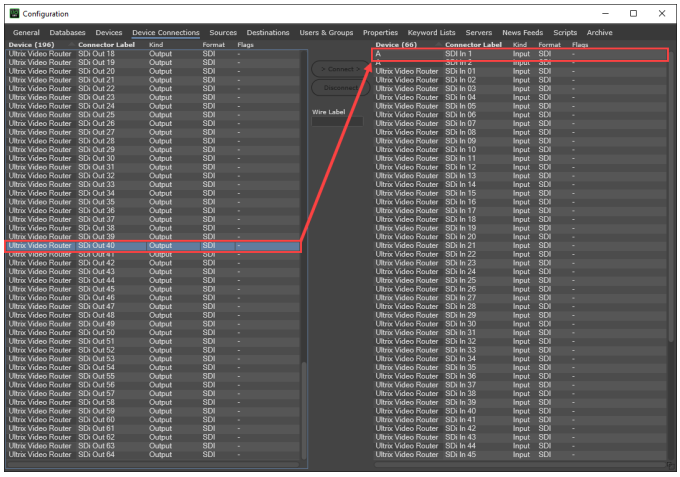
Engine	Router Output
Engine 1 (A)	SDI Out 40
Engine 2 (B)	SDI Out 41
Engine 3 (C)	SDI Out 42
Engine 4 (D)	SDI Out 43
Engine 5 (E)	SDI Out 44
Engine 6 (F)	SDI Out 45
Engine 7 (G)	SDI Out 46
Engine 8 (H)	SDI Out 47
Engine 9 (I)	SDI Out 48
Engine 10 (J)	SDI Out 49

To connect Engines to a Video Router

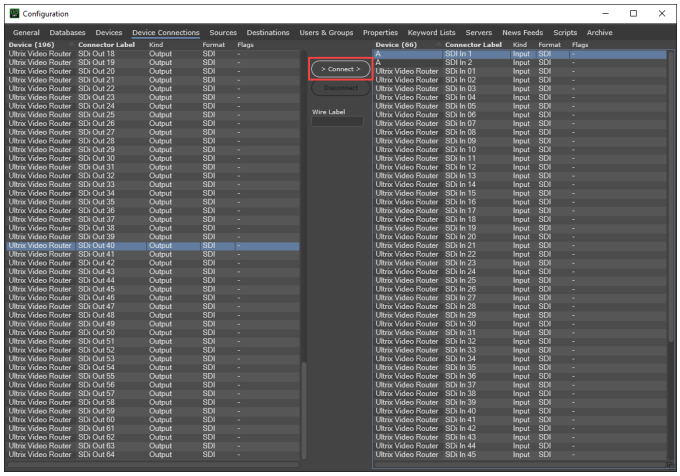
1. Go to **Workflow Server Menu > Modules > Configuration > Device Connections**.



2. Select **Router Output 40**. When the output on the right side is selected it will show all the devices that can be connected to that output. If the above example is followed, Engine 1 (**A**) is connected to Output 40.



3. Select channel A and click **> Connect >**.



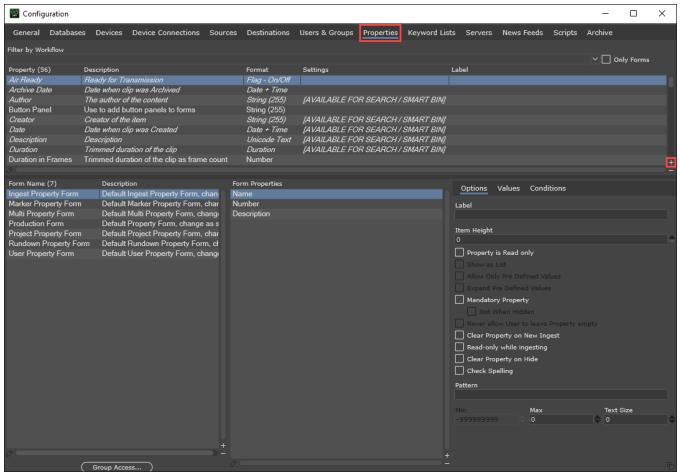
4. Repeat the process for each of the engines connected to the router.

✶ **NOTE:**
This requires a restart of the Workflow Server.

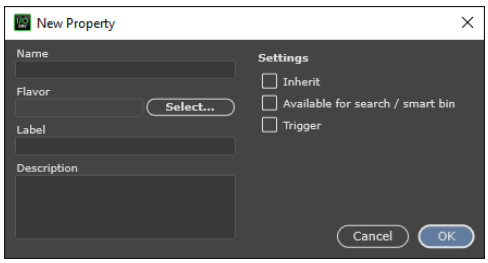
Configuring Default Bin & Properties

To create Properties

1. Go to **Workflow Server Menu > Modules > Configuration > Properties**.
2. Select the + button in the **Properties** top window to create a property.



3. The **New Property** window will open.

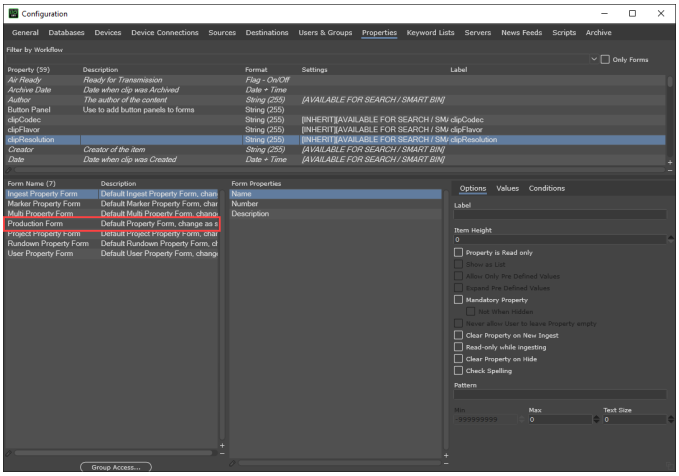


4. 6 properties will have to be created:
   - **`clipCodec`**
     - For **Name**, enter **`clipCodec`**
     - For **Flavor**, enter **`String (255)`**
     - For **Inherit**, check the box.
     - For **Available for search / smart bin**, check the box.
   - **`clipFlavor`**
     - For **Name**, enter **`clipFlavor`**
     - For **Flavor**, enter **`String (255)`**
     - For **Inherit**, check the box.
     - For **Available for search / smart bin**, check the box.
   - **`clipResolution`**
     - For **Name**, enter **`clipResolution`**
     - For **Flavor**, enter **`String (255)`**
     - For **Inherit**, check the box.
     - For **Available for search / smart bin**, check the box.
   - **`clipPath`**
     - For **Name**, enter **`clipPath`**
     - For **Flavor**, enter **`Unicode`**
     - For **Inherit**, check the box.
     - For **Available for search / smart bin**, check the box.
   - **`clipProxy`**
     - For **Name**, enter **`clipProxy`**
     - For **Flavor**, enter **`Unicode`**
     - For **Inherit**, check the box.
     - For **Available for search / smart bin**, check the box.
   - **`clipColorSpace`**
     - For **Name**, enter **`clipColorSpace`**
     - For **Flavor**, enter **`String (255)`**
     - For **Inherit**, check the box.
     - For **Available for search / smart bin**, check the box.

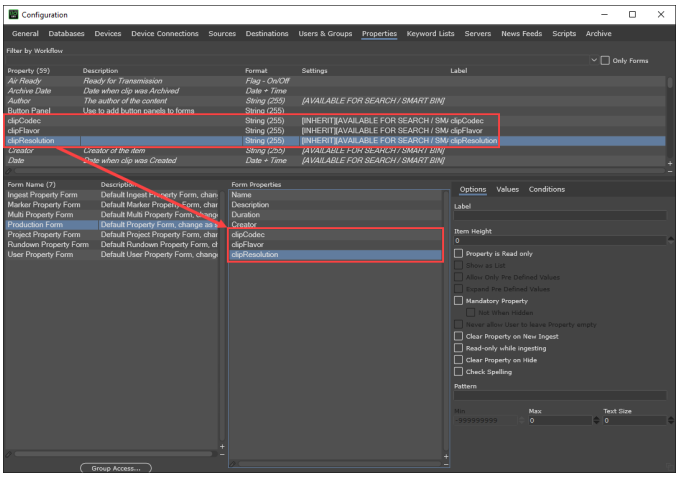
✶ **NOTE:**
To get the ColorSpace, the **Get Material Display Properties** option needs to be enabled in the **General** tab. This requires a restart of the application.

To add Properties to Form

1. In the same window select **Production Form**.

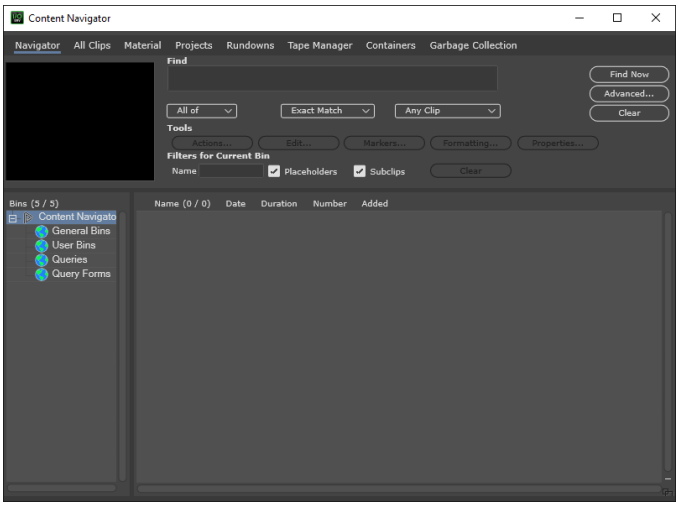


2. Drag-and-drop the properties created above, one by one, to the **Form Properties** window.

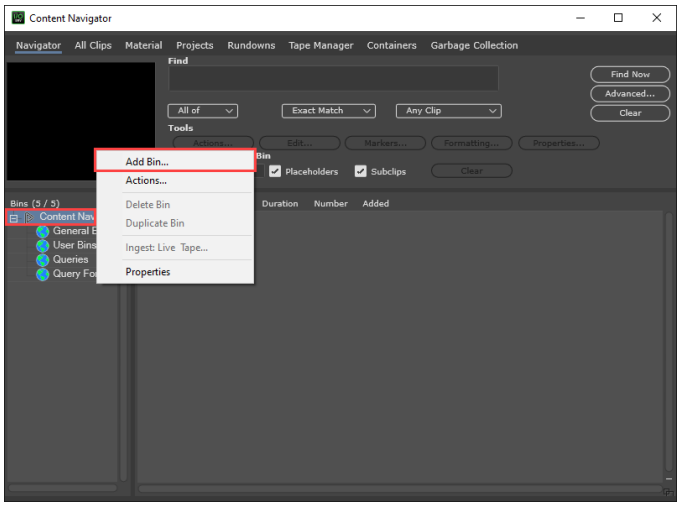


To create MediaLibraryBin

1. Go to **Workflow Server Menu > Modules > Content Navigator**.

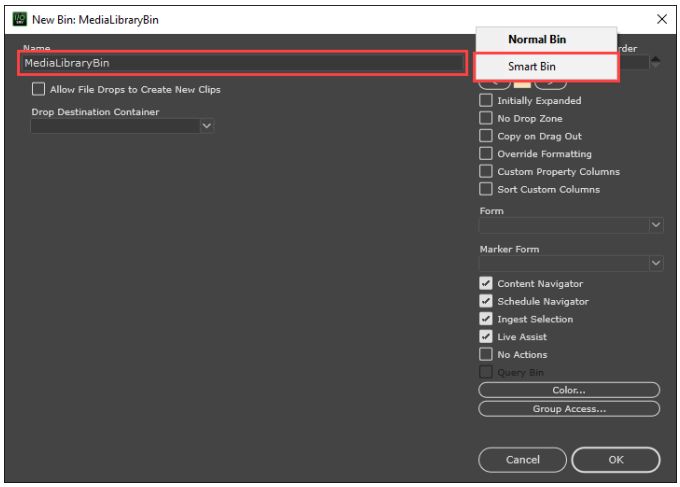


2. Right-click on the selected Bin and select **Add Bin**.

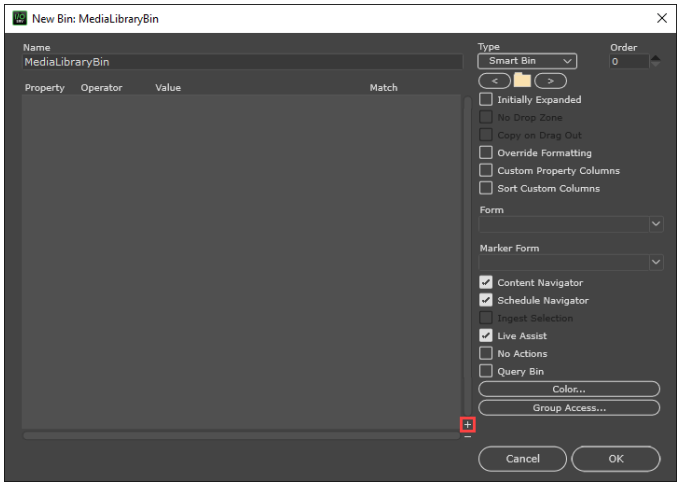


3. Fill out the following name.
   `MediaLibraryBin`

4. From the dropdown on the top right corner, select **Smart Bin**.



5. Select the + button to add a filter.

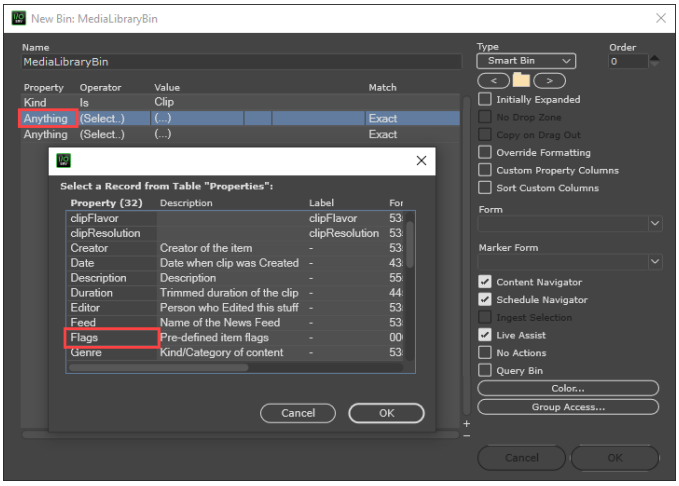


6. 4 filters need to be added.

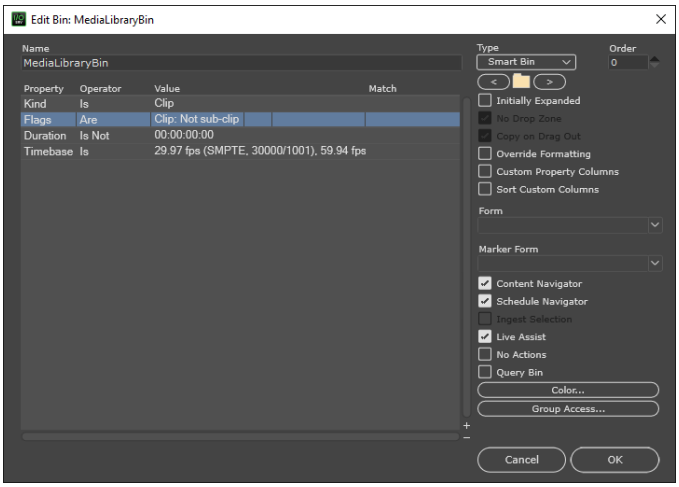
   - **Kind is Clip**
   - **Flags are NOT Subclip**
   - **Duration is Not 00:00:00:00**
   - **Timebase is 29.97 fps, 59.94 fps**

✶ **NOTE:**
The timebase file must match the default timebase of the Workflow Server, Dispatch, and the Media IO Server.

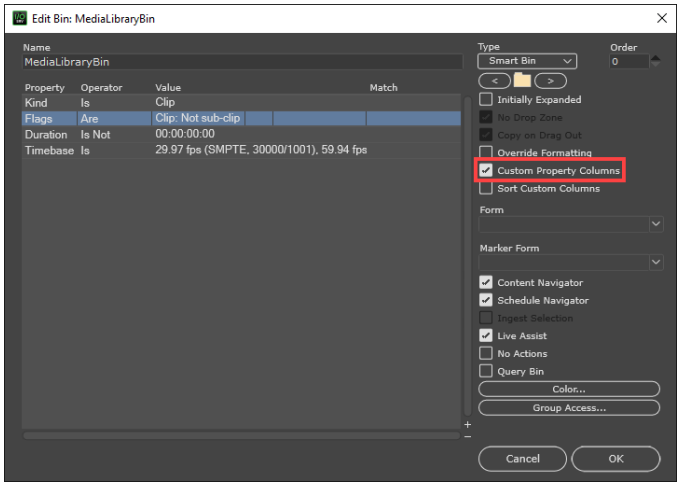
- To add these filters, select one of the three categories (Property, Operator, and Value) and select an option from the popup window that opens.



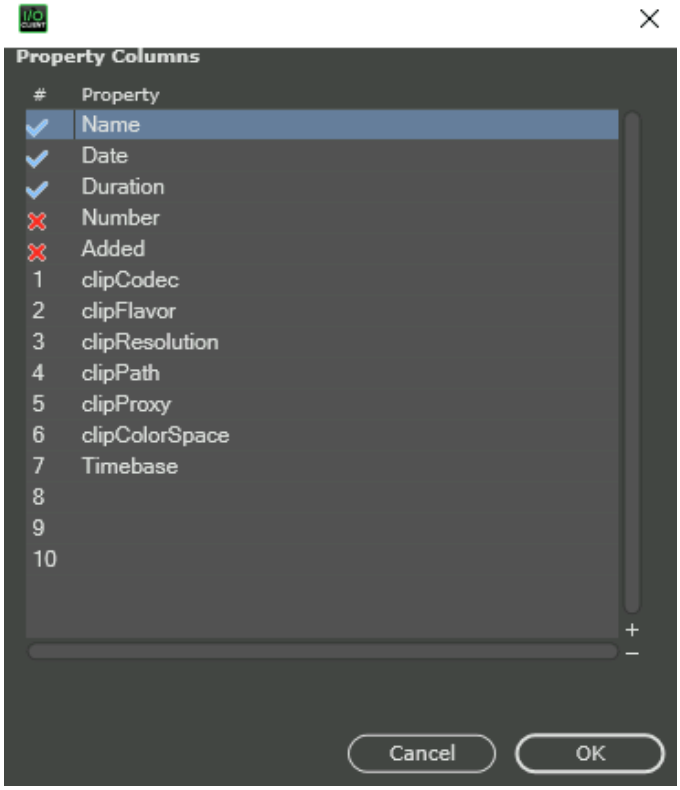
- When the filters are configured, it should look like this:



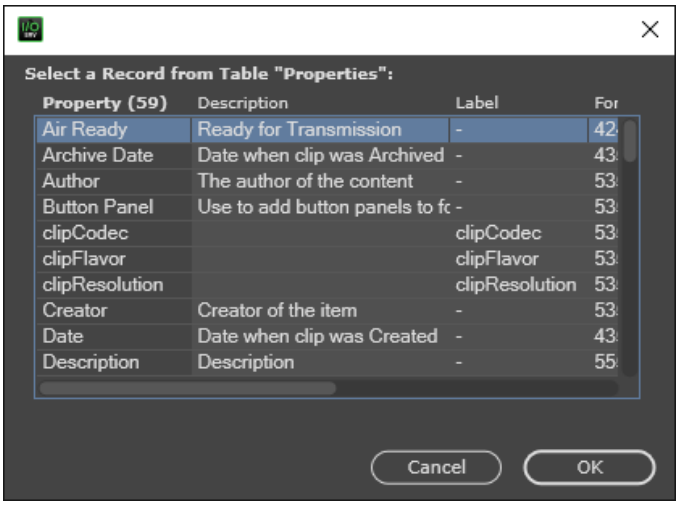
7. Select **Custom Property Columns** on the right side of the window.



- Configure the properties to match the screenshot below:

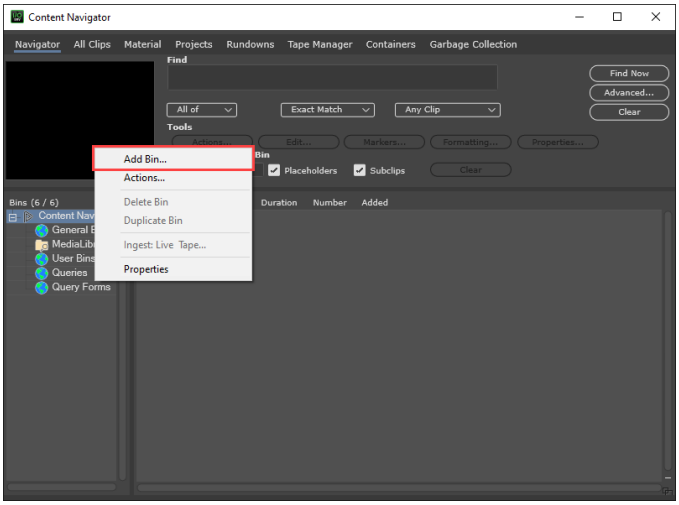


The properties will need to be chosen from the list in the popup window that opens upon selecting a column, as seen below:

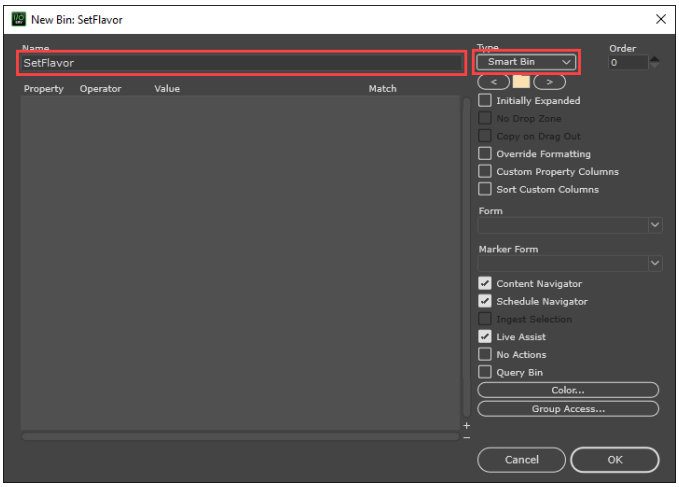


To create an Automation Bin

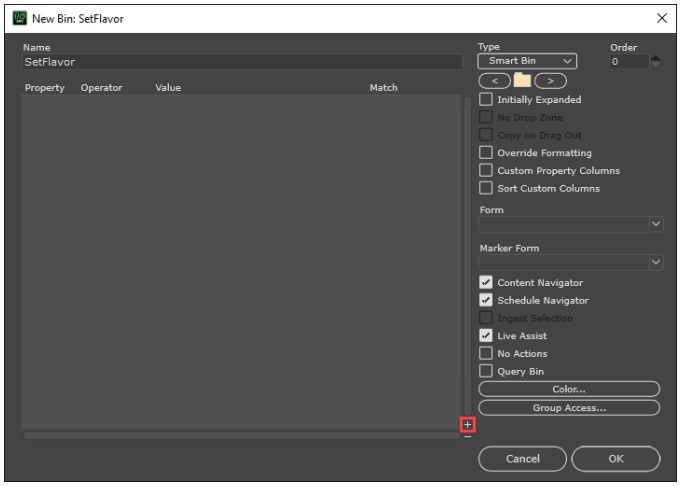
1. Go to **Workflow Server Menu > Modules > Content Navigator**.
2. Right-click on the selected Bin and select **Add Bin**.



3. Enter **`SetFlavor`** as the name, then select the **Type** dropdown on the right corner and choose **Smart Bin**.



4. Select the + button to add a filter.

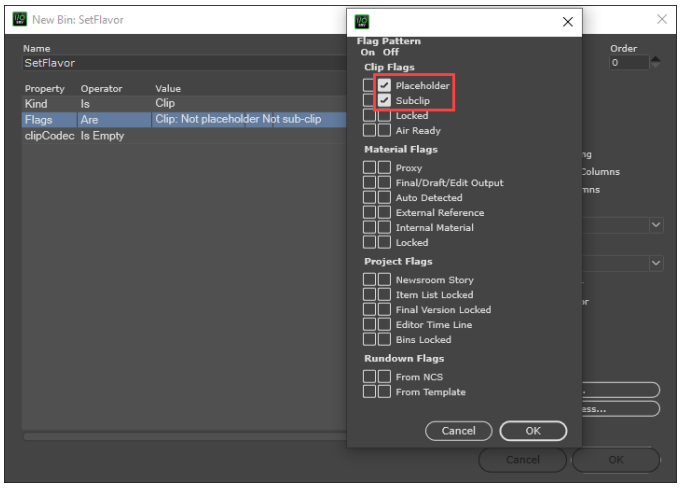


5. 5 filters must be added.

   - **Kind is Clip**
   - **Flags are NOT Placeholder / Subclip**
   - **Duration is Not 00:00:00:00**
   - **clipCodec is Empty**
   - **Timebase is 29.97 fps, 59.94 fps**

NOTE:
The timebase file must match the default timebase of the Workflow Server, Dispatch, and Media IO Server. Ensure the provided **`DeviceProfiles`** file is present. If it is not, please contact your Ross Video representative.

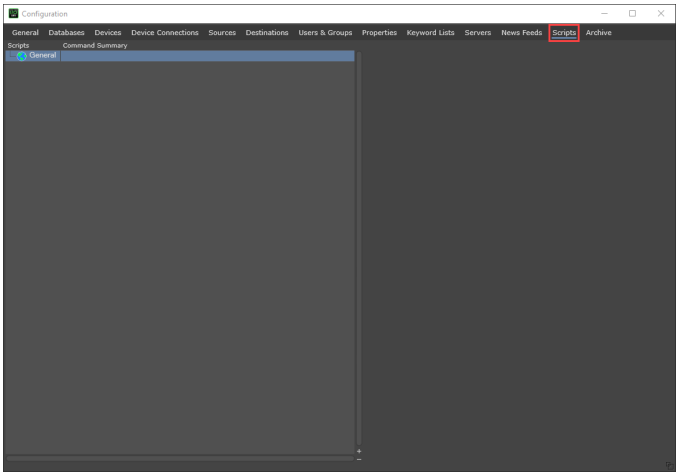
- The filters can be added using the same method as before; select one of the columns and choose an option from the popup window that opens.



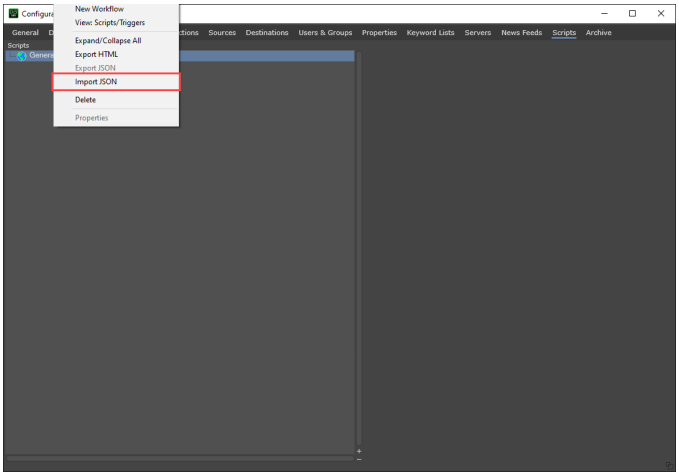
To configure Scripting

Scripting is used to collect the additional metadata that is required in the user interface, like Codec, Resolution & Flavor.

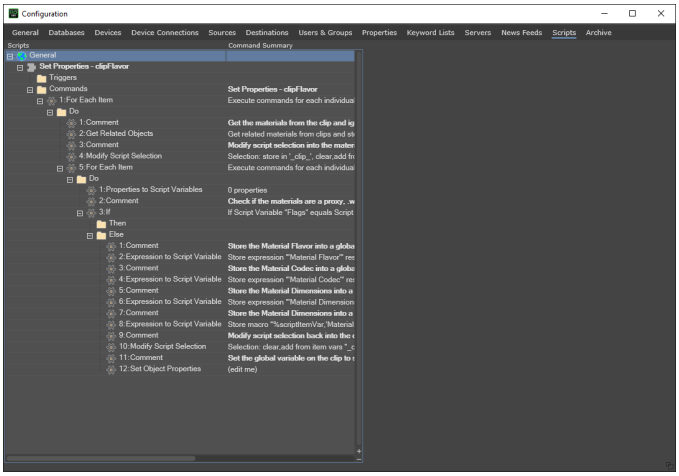
1. Go to **Workflow Server Menu > Modules > Configuration > Scripts**.



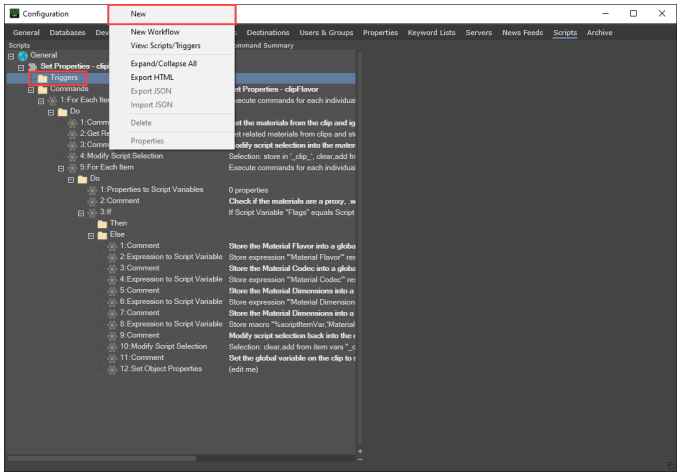
2. Ensure the provided JSON configuration script is present. If it is not, please contact your Ross Video representative.
3. Right-click on the **General** icon, select **Import JSON**, and select the JSON file that was provided.



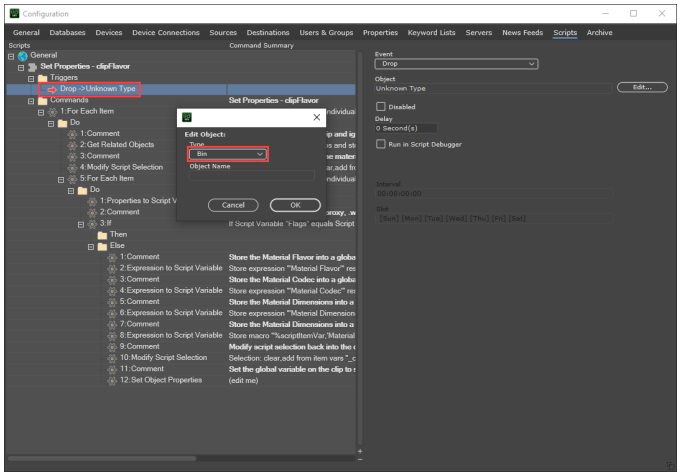
4. Once the JSON is imported, the script that was imported will be visible.



5. Delete any triggers that were created by the import process.
6. Right-click on the **Triggers** icon and select **New**.

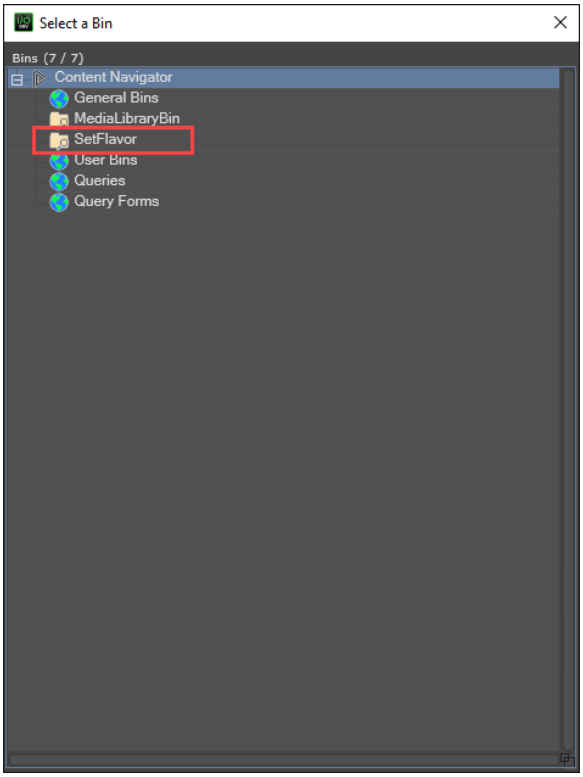


7. Double-click on the **Unknown Type** trigger that was created by selecting **New** in the previous step. In the small window that opens, select **Bin**.

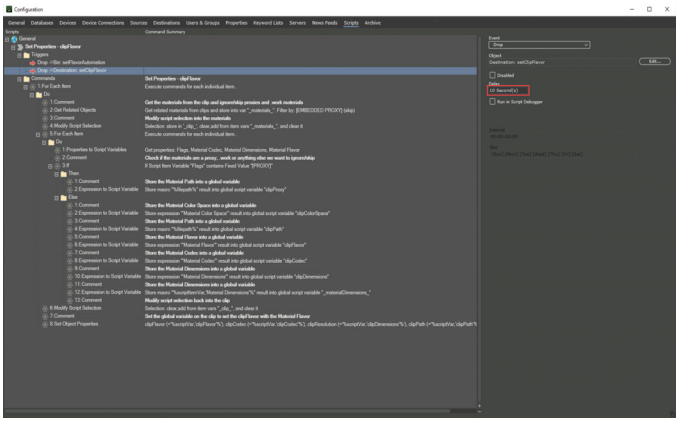


8. Double-click on the **Unknown Type** trigger again and double-click on the **Object Name** box. A new window will open.

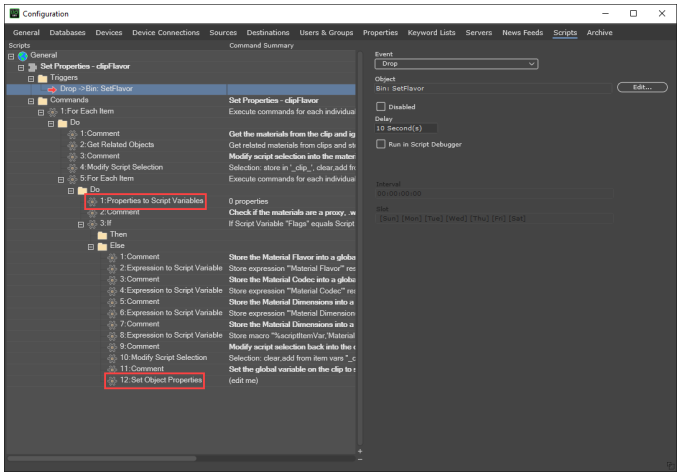
9. Double-click the previously created bin, **SetFlavor**, and select **OK**.



10. Add a Delay to the Trigger by entering `5 seconds`

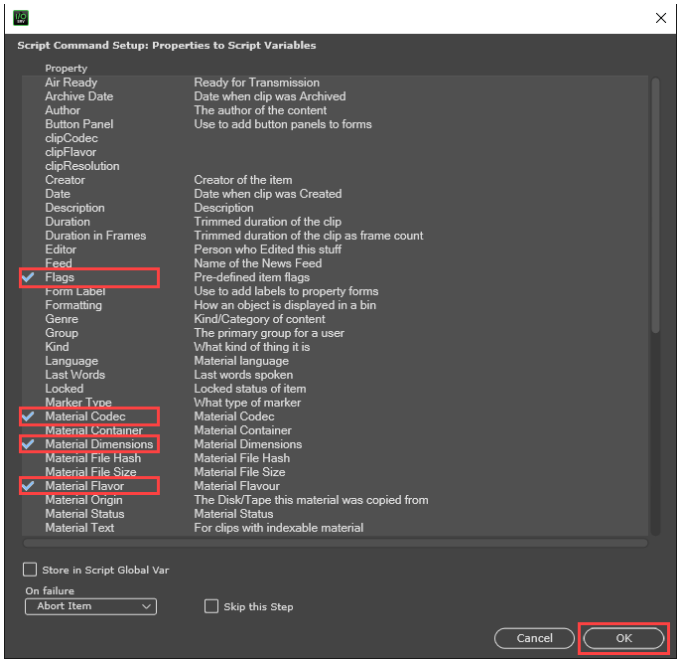


11. Two commands need to be modified, as highlighted below.

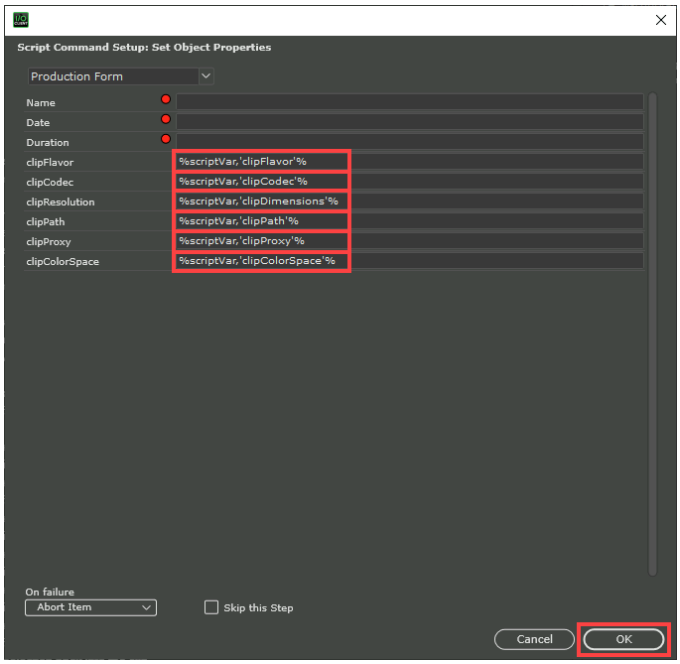


12. For **Properties to Script Variables**, double-click the command and check the following properties:

- **Flags**
- **Material Codec**
- **Material Dimensions**
- **Material Flavor**
- **Material Color Space**



13. For **Set Object Properties**, double-click the command and select the following properties:
    - For **clipFlavor**, select **%scriptVar,'clipFlavor'%**
    - For **clipCodec**, select **%scriptVar,'clipCodec'%**
    - For **clipResolution**, select **%scriptVar,'clipDimensions'%**
    - For **clipPath**, select **%scriptVar,'clipPath'%**
    - For **clipProxy**, select **%scriptVar,'clipProxy'%**
    - For **clipColorSpace**, select **%scriptVar,'clipColorSpace'%**



Configuring Media I/O Task Agent

This chapter discusses the following topics:

- Launching Media I/O Task Agent
- Configuring General Settings

Media I/O Task Agent installer will install 4 instances for Media IO Task Agents.

✶ **NOTE:**
This process needs to be done for each Task Agent that requires configuration.

Launching Media I/O Task Agent

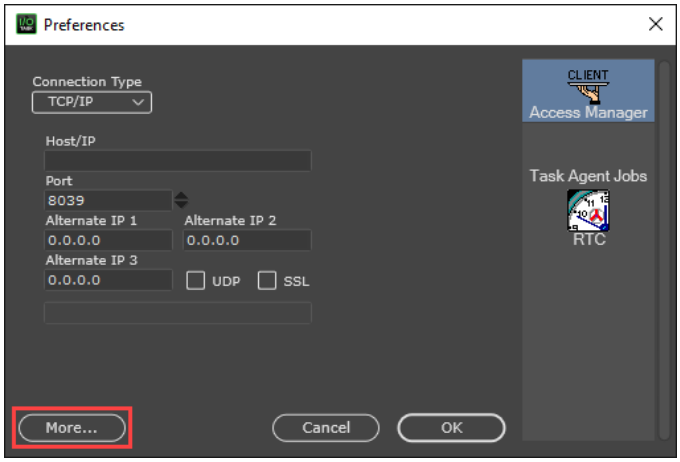
To launch Media I/O Task Agent for the first time

1. Go to Media I/O Task Agent folder, **`C:\Program Files\Ross Video\Media IO\Task Agents\TASKAGENT_#`**
2. Double-click on the **Task Agent.exe** application.

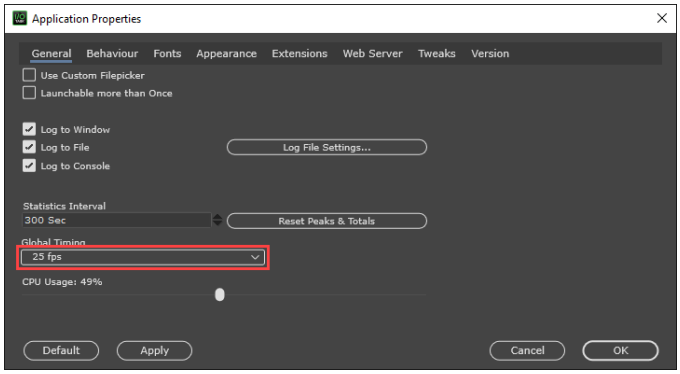
Configuring General Settings

To configure Application Timing

1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **More**.

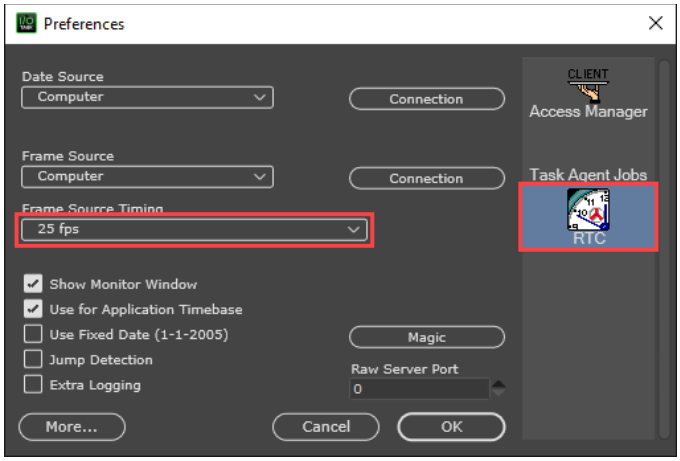


3. For **Global Timing**, from the list of settings, select one of the following options based on the appropriate frames per second:
   - 29.97 fps (SMPTE, 30000/1001)
   - 59.94 fps (SMPTE, 60000/1001)
   - 25 fps
   - 50 fps



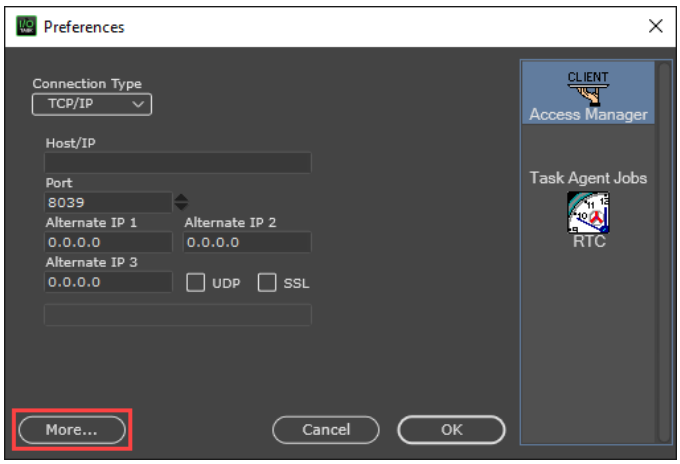
To configure RTC Timing

1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **RTC**.
3. For **Global Timing**, from the list of settings, select one of the following options based on the appropriate frames per second:
   - 29.97 fps (SMPTE, 30000/1001)
   - 59.94 fps (SMPTE, 60000/1001)
   - 25 fps
   - 50 fps

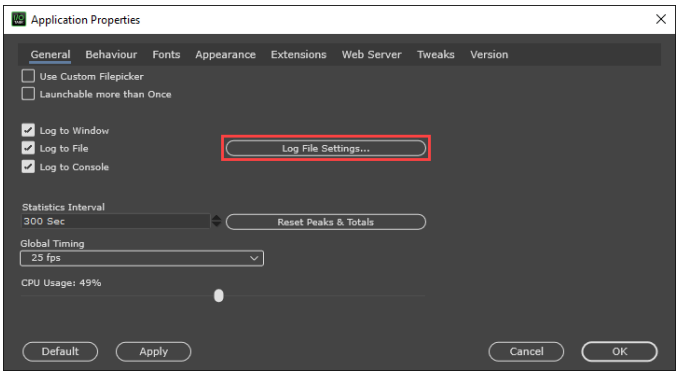


To configure Log Settings

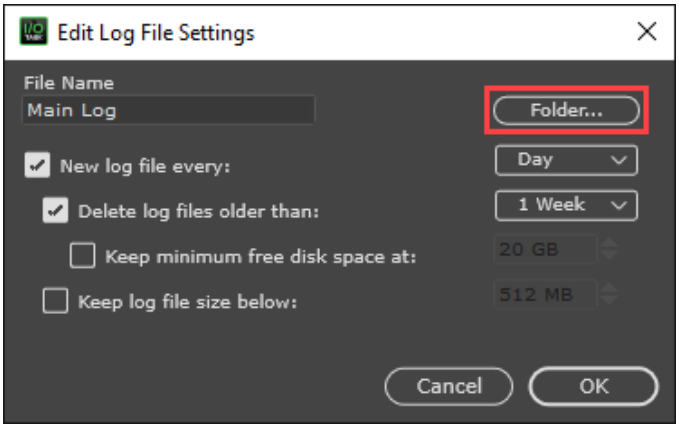
1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **More**.



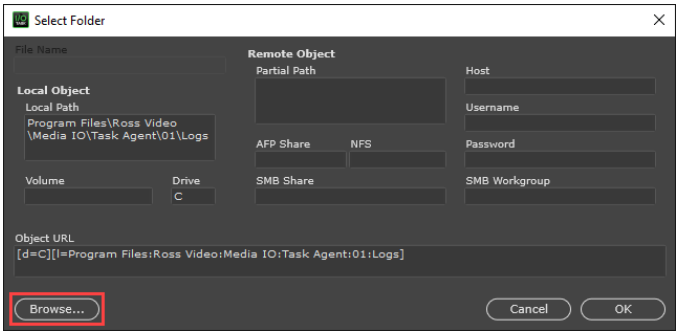
3. Select **Log File Settings**.



4. Select **Folder**.

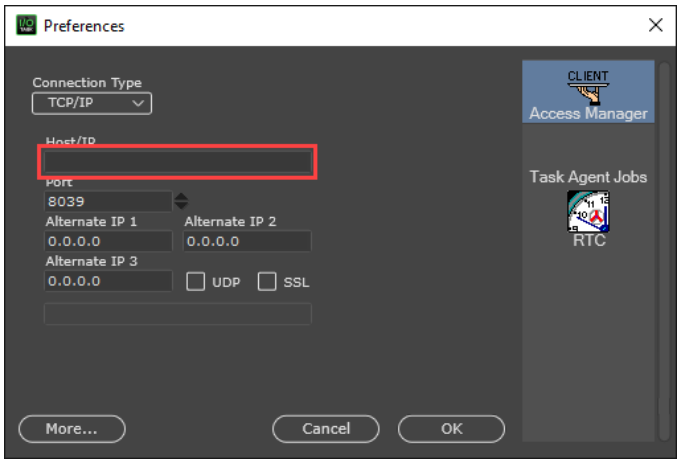


5. Select the following folder for the Engine:
   `C:\Program Files\Ross Video\Media IO\Task Agent\TASKAGENT_#\Logs`



To configure the Workflow Server connection

1. Go to **Media I/O Task Agent > Edit > Preferences**.
2. Make sure **Access Manager** is selected.
3. Modify the Host/IP and select **OK**. This requires a restart of the application.


Preferences
Connection Type
TCP/IP
Host/IP
Port
8039
Alternate IP 1
0.0.0.0
Alternate IP 2
0.0.0.0
Alternate IP 3
0.0.0.0
UDP
SSL
More...
Cancel
OK
CLIENT
Access Manager
Task Agent Jobs
RTC

Configuring Media I/O Watch Agent

This chapter discusses the following topics:

- Launching Media I/O Watch Agent
- Configuring General Settings
- Configuring Watch Agent Profiles

Launching Media I/O Watch Agent

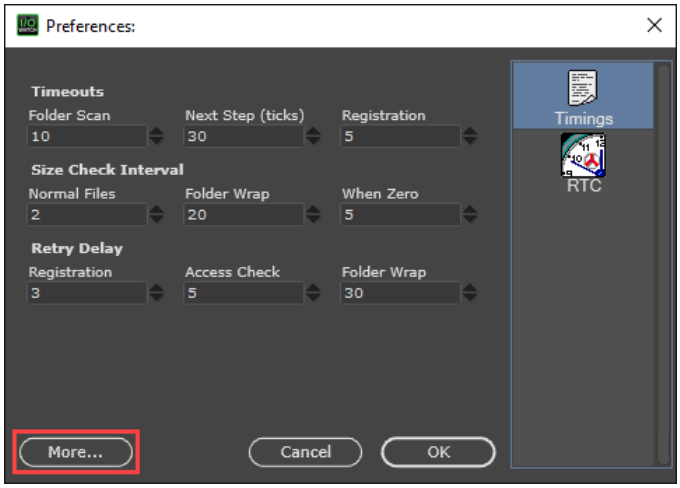
To launch Media I/O Watch Agent for the first time

1. Go to the following Media I/O Watch Agent folder:
   `C:\Program Files\Ross Video\Media IO\Watch Agent`
2. Double-click on the **Watch Agent.exe** application.

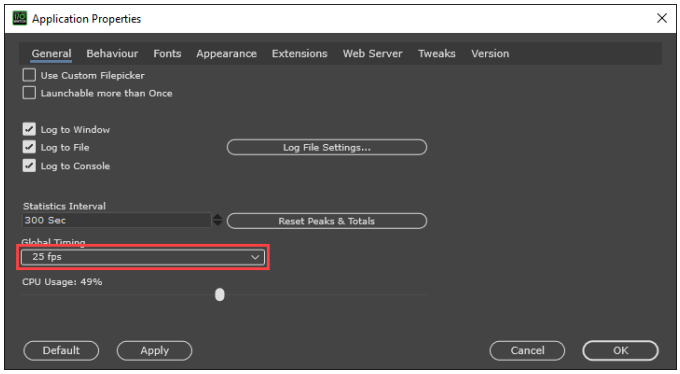
Configuring General Settings

To configure Application Timing

1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **More**.



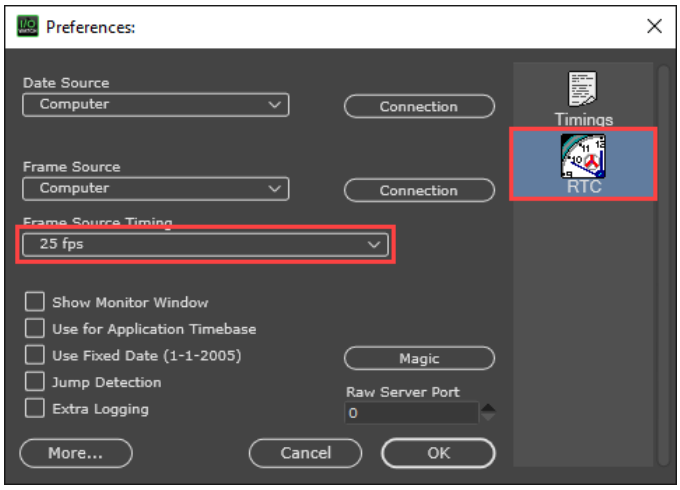
3. For **Global Timing**, from the list of settings, select one of the following options based on the appropriate frames per second:
   - 29.97 fps (SMPTE, 30000/1001)
   - 59.94 fps (SMPTE, 60000/1001)
   - 25 fps
   - 50 fps



To configure RTC Timing

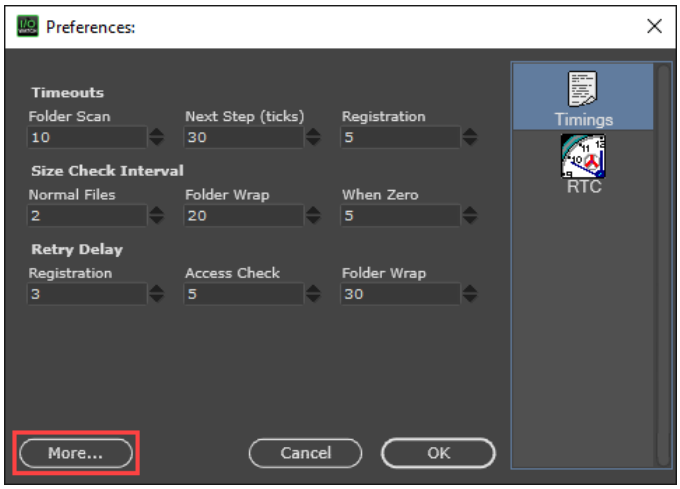
1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **RTC**.

3. For **Global Timing**, from the list of settings, select one of the following options based on the appropriate frames per second:
   - 29.97 fps (SMPTE, 30000/1001)
   - 59.94 fps (SMPTE, 60000/1001)
   - 25 fps
   - 50 fps

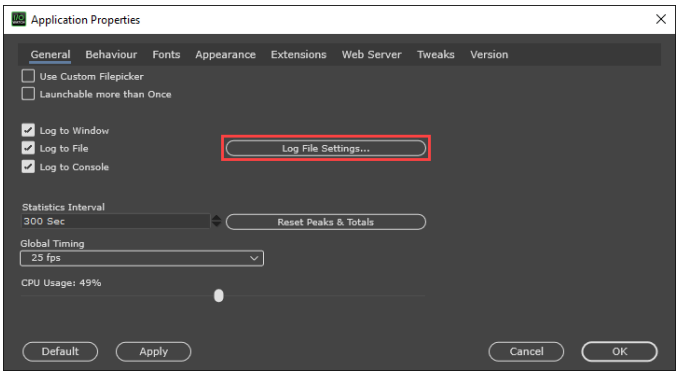


To configure Log Settings

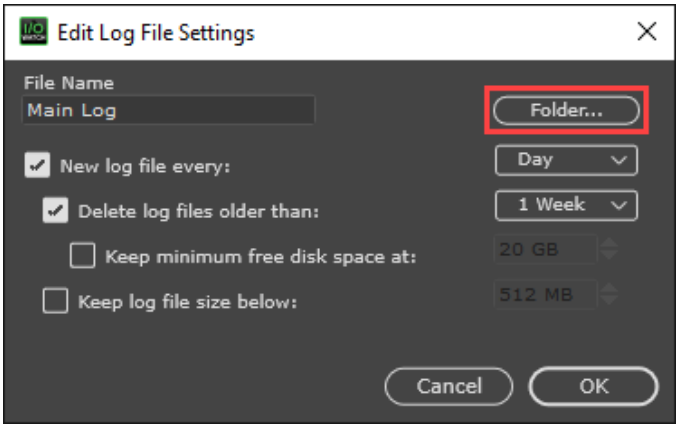
1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **More**.



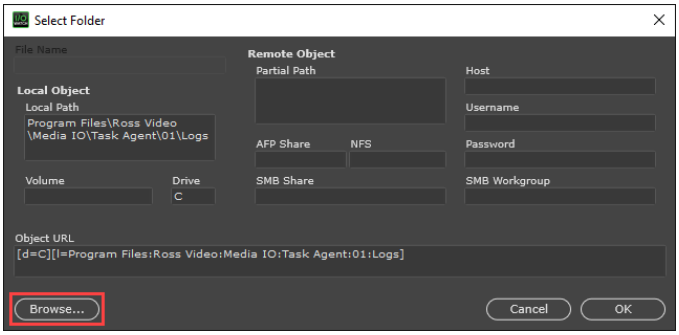
3. Select **Log File Settings**.



4. Select **Folder**.



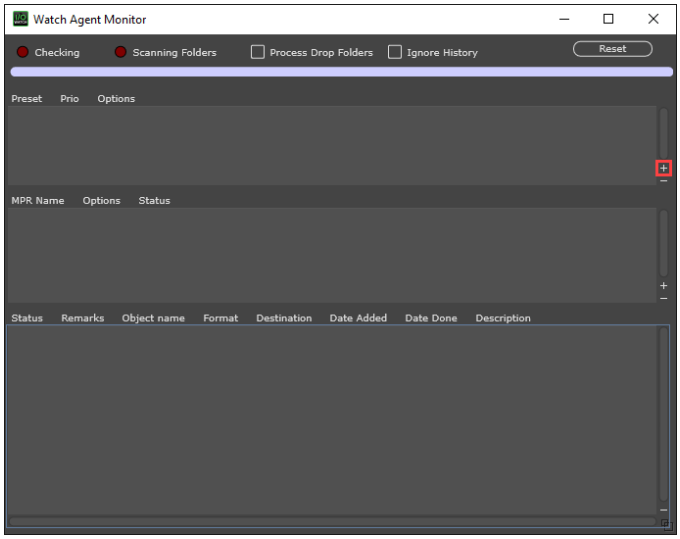
5. Select the following folder for the Engine:
   `C:\Program Files\Ross Video\Media IO\Task Agent\TASKAGENT_#\Logs`



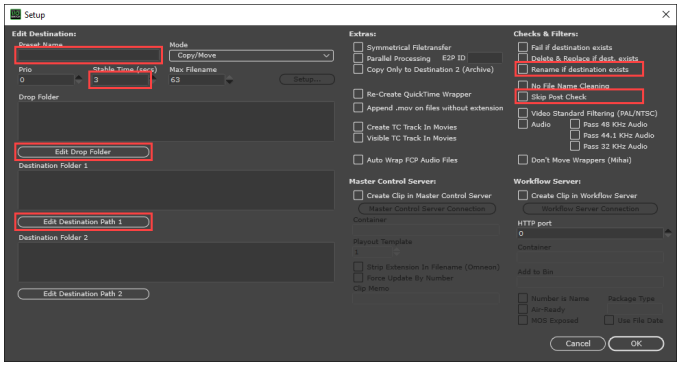
Configuring Watch Agent Profiles

To add a Watch Agent Profile

1. Go to **Menu > Window > Watch Agent Monitor**. Select the + button on the right corner of the **Preset** Window.



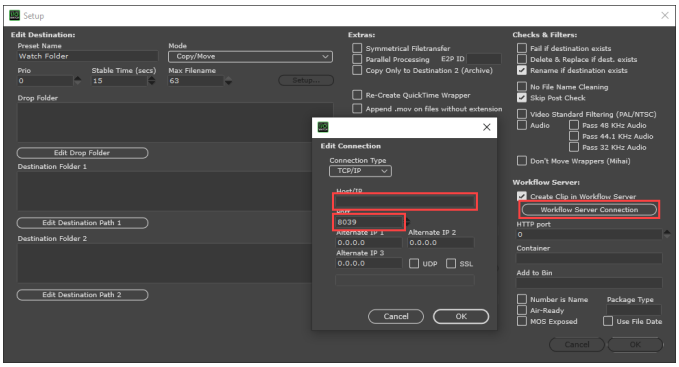
2. The new preset window opens.



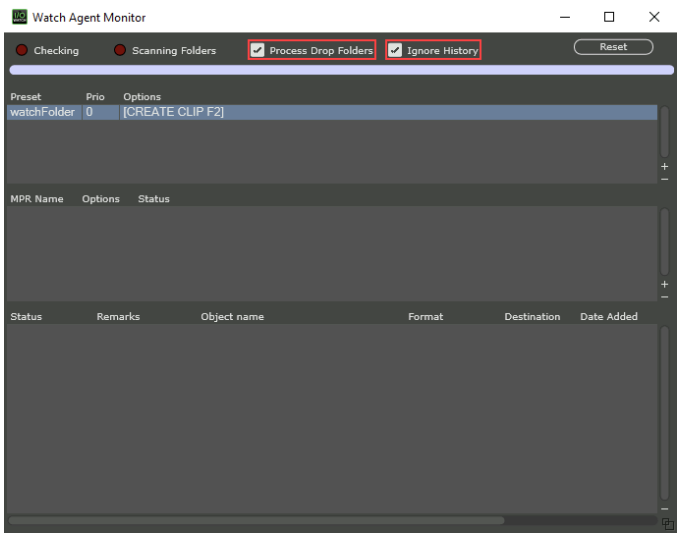
3. **Preset Name** & **Timing**
   - For **Name**, enter **`Watch Folder`**
   - For **Stable Time**, enter **`15 secs`**
4. **Watch Folder** & **Destination Folder**
   - **Drop Folder**: This folder is the one that Watch Agent is monitoring for new content to arrive:
     - **`STORAGE DRIVE:\MediaIO\WatchFolder`**
   - **Destination Folder**: This folder is where Watch Agent will move the media:
     - **`STORAGE DRIVE:\MediaIO\SharedMedia`**

✶ **NOTE:**
Both of these folders need to be created manually in the storage.

5. Checks & Filters
   - For **Rename if destination exists**, check the box.
   - For **Skip Post Check**, check the box.
6. For Workflow Server:
   - Click **Create Clip** in Workflow Server and then click the **Workflow Server Connection** button.
     - Set up the IP of where Workflow Server is located. The TCP port is `8039`.
   - Define the HTTP port by entering `8180`
   - Define the Container by entering `SharedMedia` (This is the container that you created in Workflow Server.)



7. Select OK to save the changes. Ensure that the **Process Drop Folders** and **Ignore History** boxes are checked. This ensures that the Watch Folders will process files.



Configuring Media I/O Dispatch

This chapter discusses the following topics:

- Launching Media I/O Dispatch
- Configuring General Settings

Launching Media I/O Dispatch

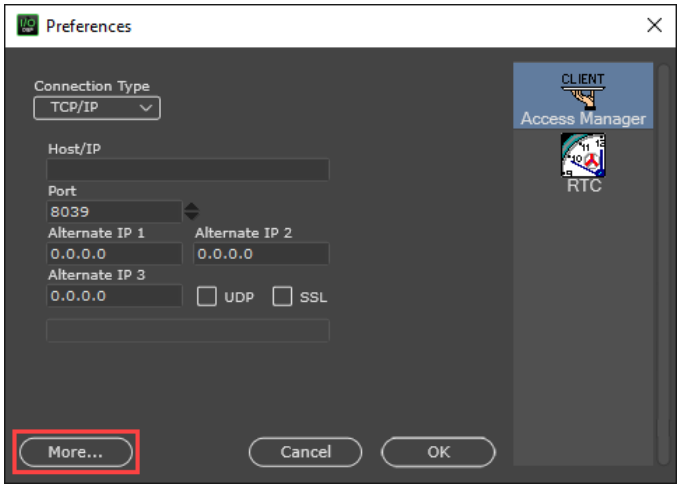
To launch Media I/O Dispatch for the first time

1. Go to the following Media I/O Dispatch folder:
   `C:\Program Files\Ross Video\Media IO\Dispatch`
2. Double-click on the **Media IO Dispatch.exe** application.

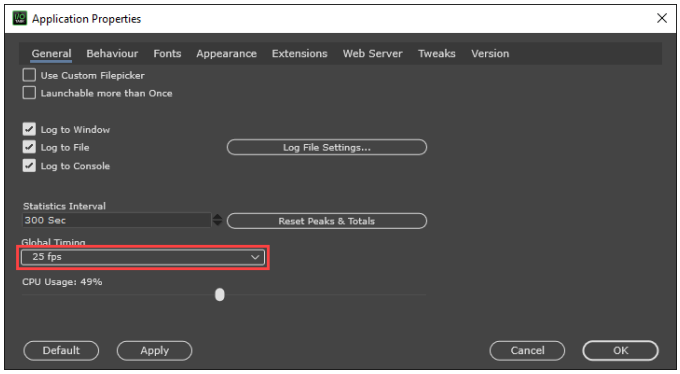
Configuring General Settings

To configure Application Timing

1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **More**.

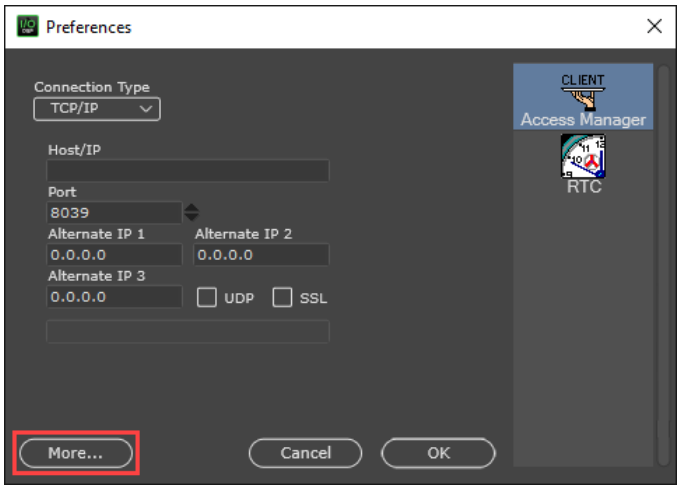


3. For **Global Timing**, from the list of settings, select one of the following options based on the appropriate frames per second:
   - 29.97 fps (SMPTE, 30000/1001)
   - 59.94 fps (SMPTE, 60000/1001)
   - 25 fps
   - 50 fps

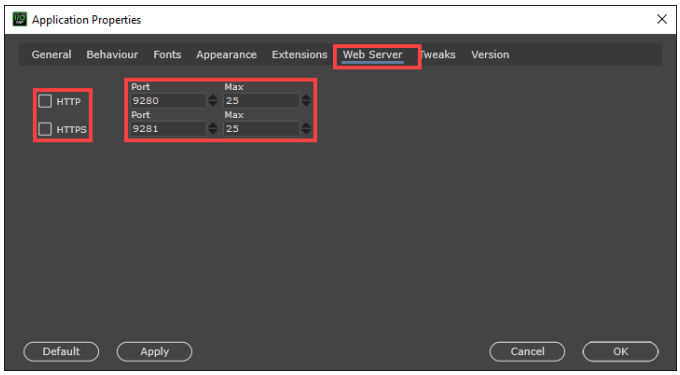


To configure Ports

1. Go to **Media I/O Menu** > **Edit** > **Preferences**.
2. Select **More**.

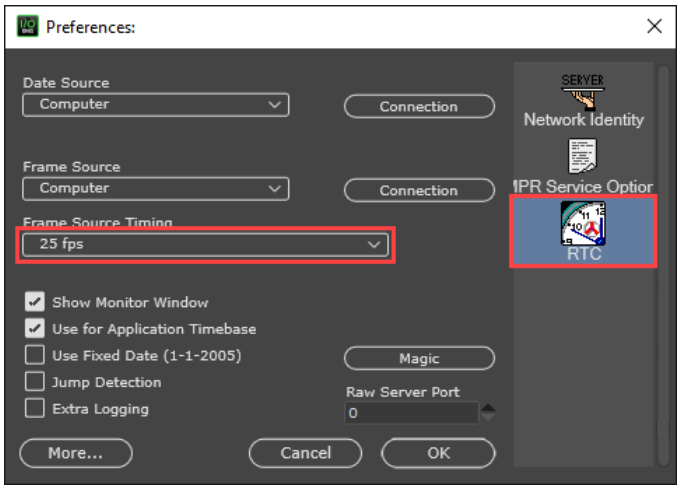


3. Select the **Web Server** tab.
4. Check the **HTTP** or **HTTPS** checkbox, depending on the appropriate configuration.
5. Enter the desired port into the **Port** box.



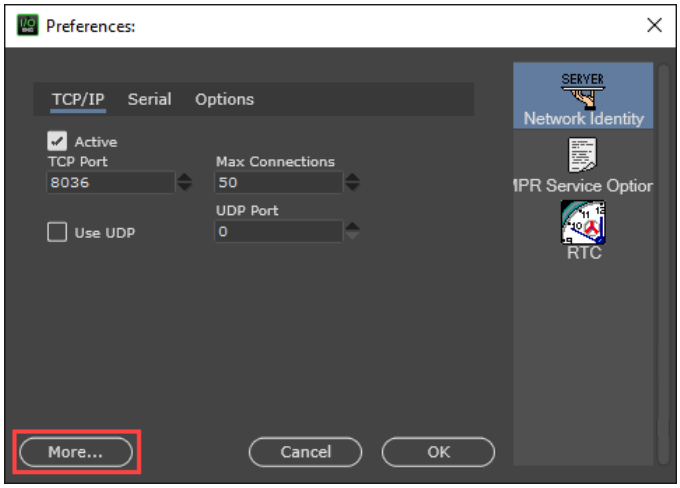
To configure RTC Timing

1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **RTC**.
3. For **Global Timing**, from the list of settings, select one of the following options based on the appropriate frames per second:
   - 29.97 fps (SMPTE, 30000/1001)
   - 59.94 fps (SMPTE, 60000/1001)
   - 25 fps
   - 50 fps

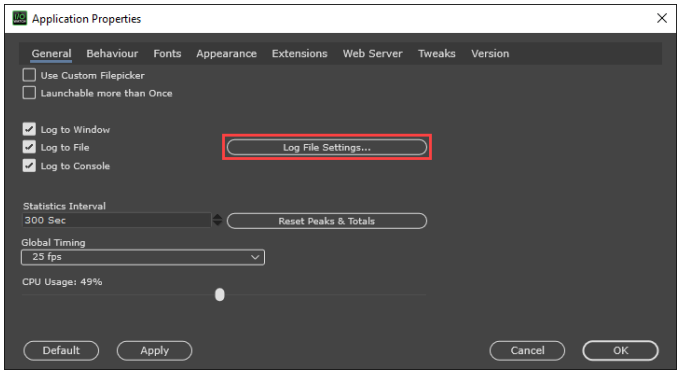


To configure Log Settings

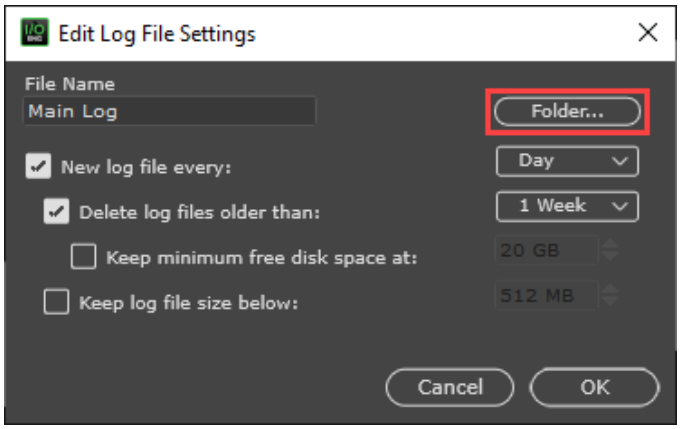
1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **More**.



3. Select **Log File Settings**.



4. Select **Folder**.



5. Select the following folder for the Engine:
   `C:\Program Files\Ross Video\Media IO\Engines\ENGINE_#\Logs`

To configure the Workflow Server connection

1. Go to **Media I/O Dispatch > Edit > Preferences**.
2. Make sure **Access Manager** is selected.
3. Modify the Host/IP and select **OK**. This requires a restart of the application.

Configuring System Settings

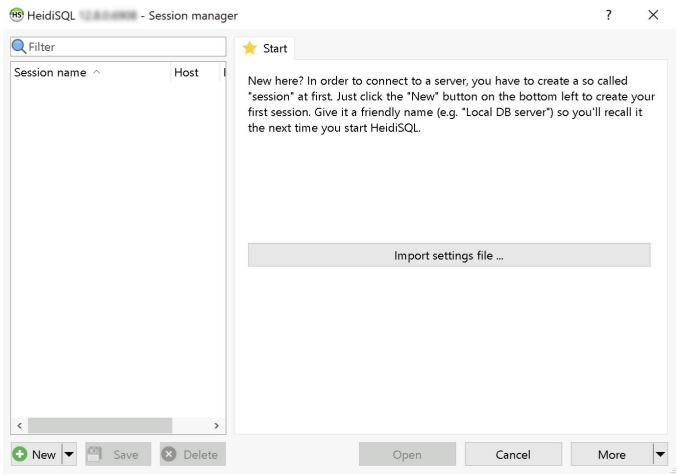
This chapter discusses the following topics:

- Creating the Media I/O Web User Interface Database
- Configuring Timezone Settings
- Setting up Dispatch Configuration
- Configuring Role-Based Access Control

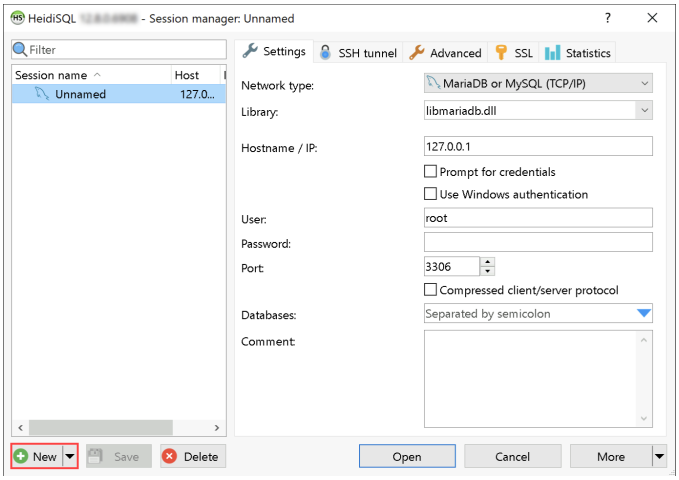
Creating the Media I/O Web User Interface Database

To configure the Media I/O Web User Interface Database

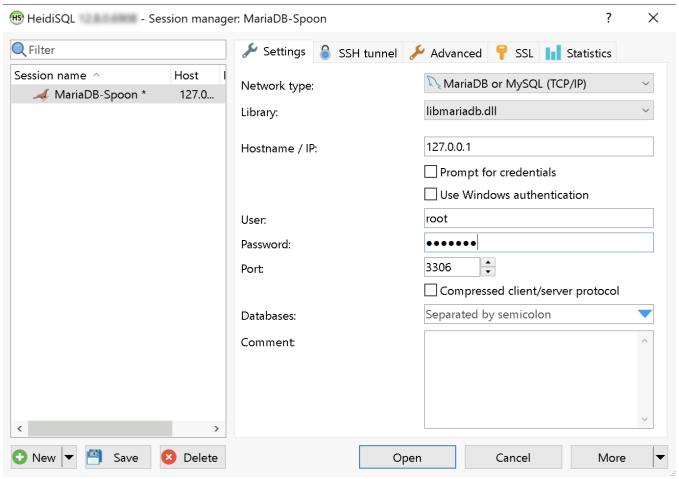
1. After installing MariaDB 11.4.4 LTS, open HeidiSQL.



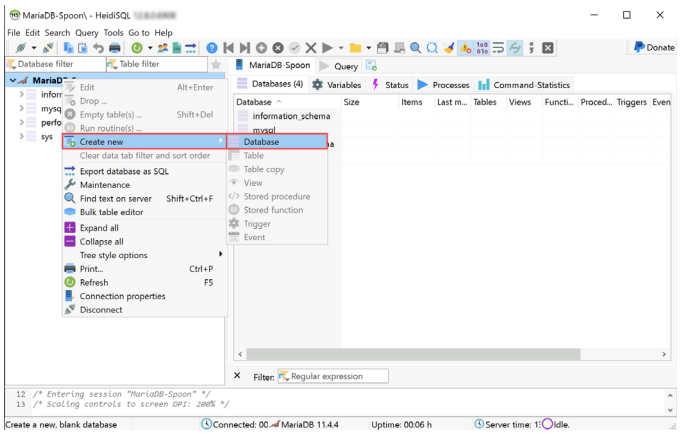
2. Select **New** and create a new Database Connection.



3. Modify the **Name**, **User**, and **Password** of the database connection, then click **Open**.



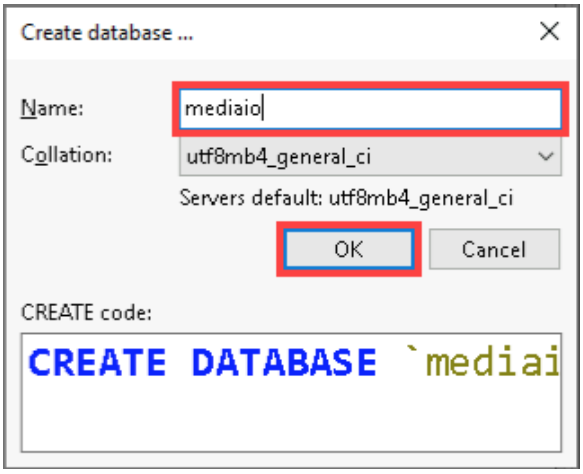
4. Right-click on the Database icon and select **Create new** > **Database**.



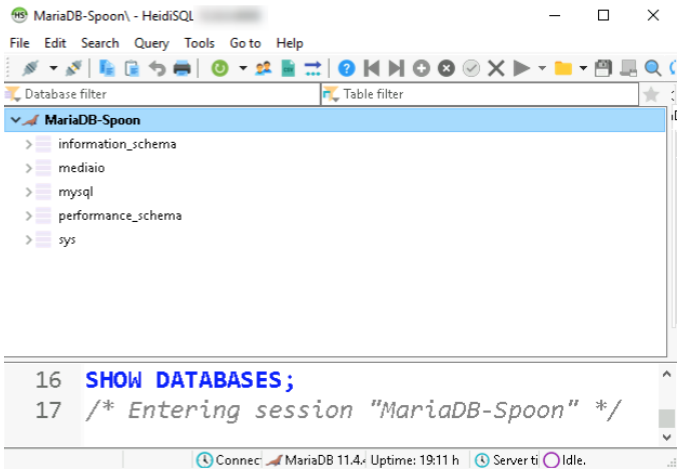
5. Enter the following database name:

   `mediaio`

   Click **OK**.



6. Once created, the database for **`mediaio`** is listed under the **Databases** icon.



Configuring Timezone Settings

Before logging into the Media I/O user interface for the first time, it is required to configure the timezone settings in JAVA.

To configure Timezone Settings

7. Go to **C:\Program Files\Ross Video\Media IO\Web UI\configuration**. Open the **http.conf** file and add the following line:
   wrapper.java.additional.42=-Dtimezone=TimeZone
8. For example, for a system that is installed in Miami, the configuration file would look like this:
   wrapper.java.additional.42=-Dtimezone=America/New_York

✶ **NOTE:**
For a list of all available timezones by country, go to the following link:
https://en.wikipedia.org/wiki/List_of_tz_database_time_zones

9. After adding the line and saving the file, restart the Media I/O user interface.

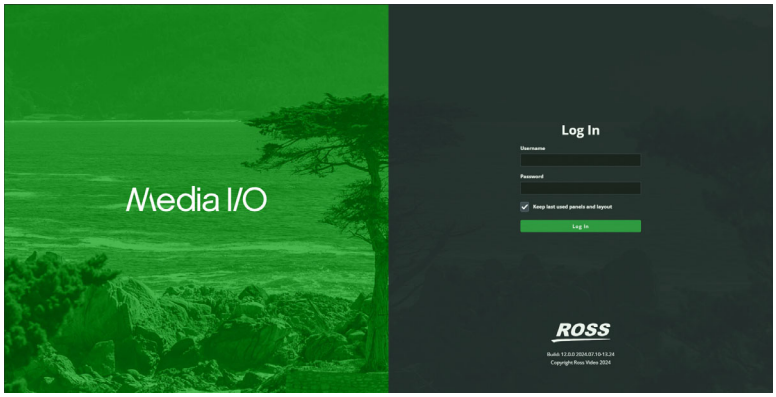
Accessing Media I/O Web User Interface for the first time

To access the Web User Interface for the first time

1. Open a supported web browser, open the user interface, and log in.
   - For the URL, enter **http://SERVER_IP/aura**
   - To log in as the Default User, enter **root** as the username and **password** as the password.

✶ **IMPORTANT:**
Change the **root** password on your first login.

✶ **NOTE:**
If the database is down or the **mediaio** database was not created, a message that the system in maintenance mode will be shown. Make sure the database is running and the **mediaio** database was created.



Setting up Dispatch Configuration

As a Media I/O administrator, you can connect to the Dispatch Configuration Setup through the Configuration window of Media I/O.

Accessing the Media I/O Configuration Window

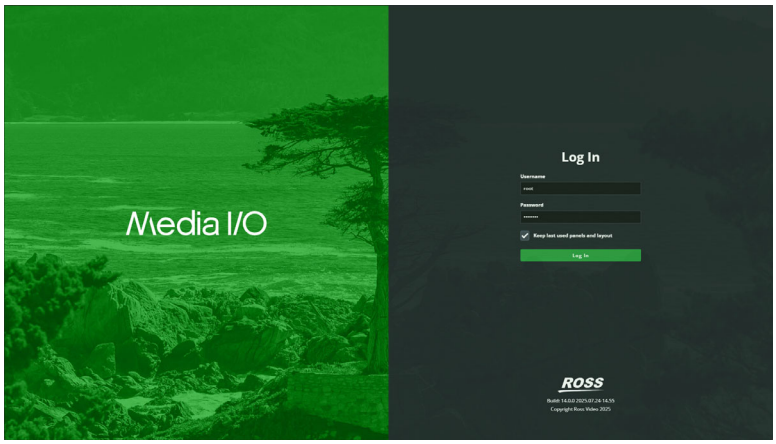
The Media I/O Server Configuration window is only accessible from a desktop computer; you cannot access the Configuration window from a mobile device.

To log in and access the Configuration Window

1. In one of the following supported web browsers, navigate to the Media I/O user interface.
   - Google Chrome™ browser version 138.0
   - Microsoft Edge™ browser version 138.0

2. The URL will be structured as follows, with the IP address instead of **`SERVER_IP`**:
   `http://SERVER_IP/aura`

   The Login panel opens.



3. In the Login panel, enter your Media I/O administrator login credentials in the Username and Password boxes. The default administrator login credentials are as follows:

   - **Username** — **`root`**
   - **Password** — **`password`**

✶ **IMPORTANT:**
Change the **`root`** password on your first login.

4. Click **Log In**.

5. Select **System Configuration**.

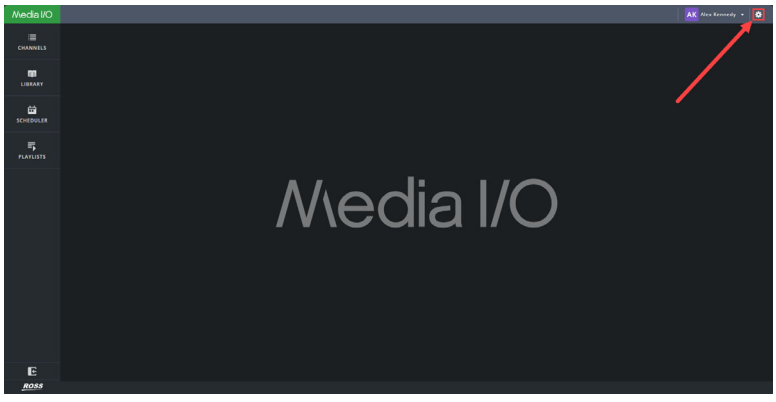
   The System Configuration Dialog opens.

Connecting to the Dispatch Server

The Media I/O System Configuration dialog enables you to connect to the Dispatch Server.

To add a Connection to the Dispatch Server

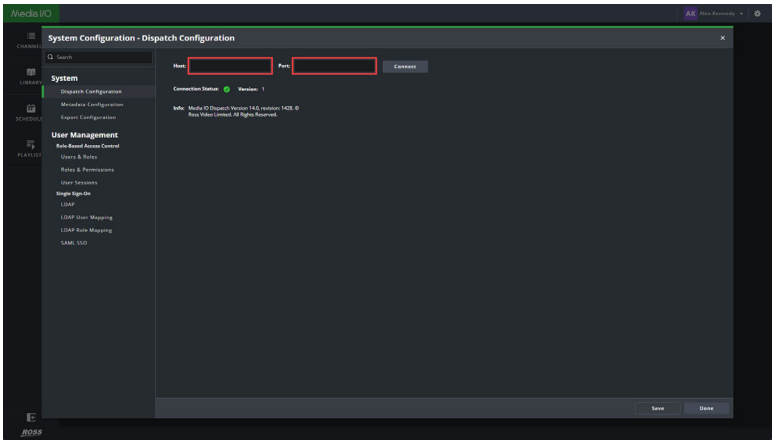
1. To open the System Configuration dialog, go to **System Configuration.**



2. In the left menu, under **System**, select **Dispatch Configuration**.

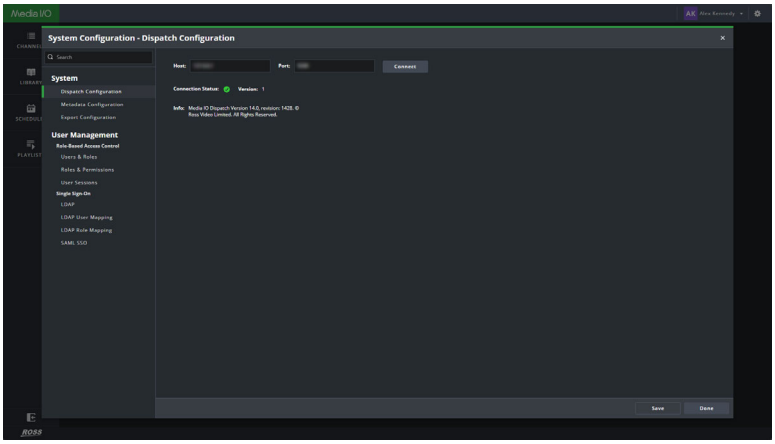
a. In the **Host** box, enter the hostname or IP address of the Media I/O Dispatch Server.

b. In the **Port** box, enter the port number of the Media I/O Dispatch Server.



3. Select **Save**.

4. Confirm that the **Connection Status** displays a green checkbox to indicate it is successful.



To add a Host Connection

1. To open the System Configuration dialog, go to **System Configuration.**

2. In the left menu, go to **System** and under General, select **Database**.

   a. In the **JDBC URL** box, enter the host or IP address of the JDBC URL.
   For example, `jdbc:postgresql://localhost/mediaio`.

   b. In the **Username** box, enter the Postgres username.

   c. In the **Password** box, enter the Postgres password.

3. Select **Save**.

4. Confirm that the **Connection Status** displays a green checkbox to indicate it is successful.

Managing User Sessions

You can manage user sessions by setting the session timeout value.

To set the User Session Timeout

1. To open the System Configuration dialog, go to **System Configuration.**
2. In the left menu under User Management, select **User Sessions**.
3. In the **User Session Timeout** box, enter the duration time (in minutes). You can use the up and down arrows to add or subtract by increments of 5 minutes.

Configuring MariaDB After Upgrading to Media I/O v14.0

✶ **NOTE:**
This process is required if you have upgraded Media I/O from version 12.0.0 or earlier. If you are performing a new installation of version 14.0.0 or later, these procedures can be skipped.

✶ **IMPORTANT:**
To migrate the database from PostgreSQL to MariaDB, your installation of PostgreSQL must be version 15.13. If an earlier version is installed, such as version 9.3, please refer to the ***Media I/O v14 PostgreSQL Upgrade Instructions*** Application Note for information about upgrading to PostgreSQL version 15.13 before continuing.

To switch the database driver and upgrade the database in the user interface

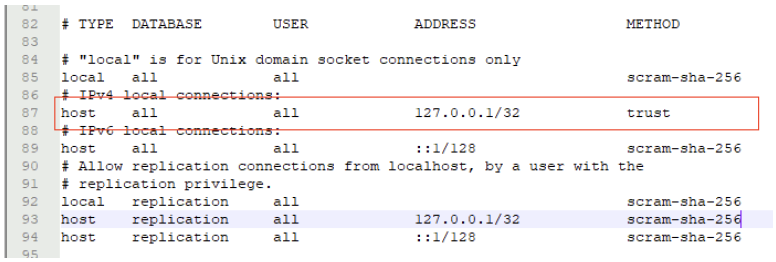
1. Log in to the Media I/O user interface using the root admin account.
2. Click the **System Configuration** icon.
3. In the System Configuration window, select **Database**. Select the **Unlock and Make Changes** button.
4. In the **Driver** drop-down box, select **Postgres**.
5. Log out of Media I/O.
6. In the Windows Services application, restart the **Ross Media I/O** service.
7. Open the Media I/O user interface and select the **Upgrade** button.
8. After the upgrade is complete, log in to Media I/O.
9. In the System Configuration window, select **Database**. Select the **Unlock and Make Changes** button.
10. In the **Driver** drop-down box, select **MariaDB**.
11. Enter the appropriate credentials in the boxes.
12. Save your changes and log out of the user interface.
13. In the Windows **Services** application, restart the **Ross Media I/O** service.

✶ **NOTE:**
After applying the new settings for the database, you might need to re-enter the license information.

To migrate the database from PostgreSQL v15.13 to MariaDB

1. In **Task Manager**, ensure that the Media I/O service is stopped.
2. Navigate to the following directory:

   `C:\Program Files\PostgreSQL\15\data`
3. Open the **pg_hba.conf** file and modify the permissions for a local connection, as shown in the image below:



4. Restart PostgreSQL.
5. Open a Command Prompt and navigate to the directory using the following command:

   `cd "C:\Program Files\Ross Video\Media IO\Web UI\utilities\MediaIOMigrateToMySQL"`
6. Execute **MigrateToMySQL.bat**.
7. The following questions will be displayed by default. Enter the provided answers below:
   - Source Schema (inception)?
     - › Enter **`mediaio`** and press the **return** key.
   - Source Username (postgres)?
     - › Press the **return** key to use the default.
   - Source Password (postgres)?
     - › Press the **return** key to use the default.
   - Source URL (jdbc:postgresql://localhost/)?
     - › Press the **return** key to use the default.
   - Destination Schema (inception)?
     - › Enter **`mediaio`** and press the **return** key.
   - Destination Username (root)?
     - › Press the **return** key to use the default.
   - Destination Password (password)?
     - › Enter the password that was set when installing MariaDB and press the **return** key.
   - Destination URL (jdbc:mysql://localhost/)?
     - › Press the **return** key to use the default.
   - Destination Driver (org.mariadb.jdbc.Driver)?
     - › Press the **return** key to use the default.
8. When the migration process is finished, the window will close.
9. Start the **Ross Media I/O** service again.
10. Ensure that you re-activate the license after the migration process is complete.

Configuring a Proxy

In order to preview proxies in the user interface, the location where proxies are stored must be configured.

To configure proxies

1. Navigate to the following directory:

   `C:\Program Files\Ross Video\Media IO\Web UI\configuration`
2. Open the **http.conf** file. Add the following:

   `wrapper.java.additional.45=-Dfilesystem.proxy.url="M:/PAM/ingestLowRes/`

✶ **NOTE:** The exact directory included in the VM argument may be different depending on the proxy directory.

3. To list multiple proxy directories, use the same VM argument as above, but separate the directories with the following character:

   |

   An example of the result is as follows:

   ```
   wrapper.java.additional.43=-Dfilesystem.proxy.url="M:/PAM/ingestLowRes/proxy1/|M:/PAM/ingestLowRes/proxy2/
   ```

4. After modifying and saving **http.conf**, restart the Media I/O Web UI service.

Configuring Role-Based Access Control

As a Media I/O administrator, you can configure Role-Based Access Control through the Configuration window of Media I/O.

Configuring RBAC Users & Roles

You can add new users and roles under the Role-Based Access Control tab.

To add a new user

1. To open the System Configuration dialog, go to  **System Configuration.**
2. In the left menu under **User Management**, select **Users & Roles**.
3. In the User Properties area, enter the following:
   a. **Active** —Select the checkbox to make a user active in the Media I/O system.
   b. **Domain** — Enter the enter the host or IP address of the domain.
   c. **Username** — Enter the user name.
   d. **Password** — Enter the password.
   e. **First Name** — Enter the first name of the user.
   f. **Last Name** — Enter the last name of the user.
   g. **Title** — Enter the job title of the user.
   h. **Department** — Enter the department of the user role.
   i. **Email** — Enter the email of the user.
   j. **Phone** — Enter the phone number of the user.
   k. **Mobile** — Enter the mobile number of the user.
   l. **API Key** — Select the checkbox to enable the API. If selected you must add the API key below it.
   m. **API Key** — If required, enter the API key.
4. In the User Roles area, search for any roles you wish to add and select the checkbox next to the role to add it.

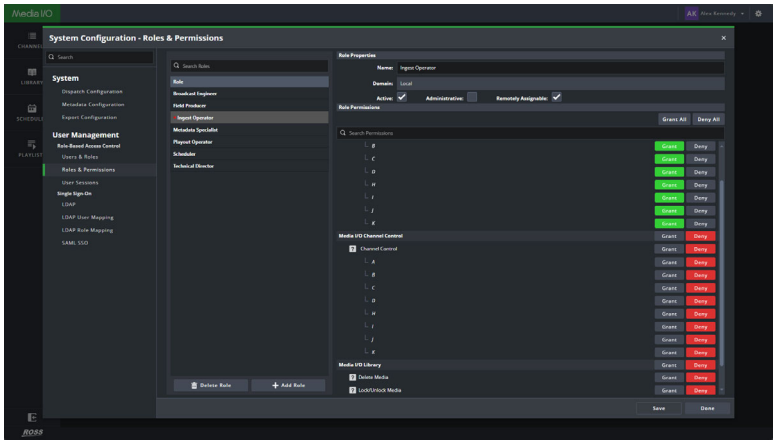
✶ **NOTE**:
If the desired role is not available, see "**Configuring RBAC Roles & Permissions**" on page 10–10.

5. Select **Add User**.
6. Select the **Language** tab to set a different language for the user. Select **Save** when the desired language has been chosen.
7. Confirm that the User has been added to the list successfully, and that all the properties and roles have been configured correctly. To make any changes, select the role, edit it, and select **Save**.

Configuring RBAC Roles & Permissions

To add a new role

1. To open the System Configuration dialog, go to **System Configuration.**
2. In the left menu under **User Management**, select **Roles & Permissions**.
3. Select the **Add Role** button.
4. Under Role Properties, enter the following:
   a. **Name** — Enter a name for the role.
   b. **Domain** — Enter the enter the host or IP address for the domain.
   c. **Active** — Select this checkbox to activate this role in the Media I/O system.
   NOTE: You must save this role before it will appear in the system.
   d. **Administrator** — Select this checkbox to assign Administrator level privileges to the account.
   e. **Remotely Assignable** — Select this checkbox to make the role remotely assignable.
   f. If you did not select **Administrator** level privileges, then a list of role permissions to choose from appears. Select **Allow** for any of the Role Permissions you wish to apply to the role. You can use the **Grant All** or **Deny All** buttons to quickly apply permissions to the entire list of Role Permissions.
5. Select **Save**.
6. Confirm that the role you created is now available in the list of Roles.



For more information...

- Please refer to the ***Media I/O User Guide***.