Media I/O

Configuration Guide

VERSION 15.0.1

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: March 2, 2026. Printed in Canada.
- Software Issue: **15.0.1**

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

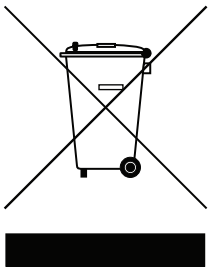
For customers that require a longer warranty period, Ross offers an extended warranty plan to extend the standard warranty period by one year increments. For more information about an extended warranty for your Media I/O Server system, contact your regional sales manager.

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 (General Information): solutions@rossvideo.com

Website: http://www.rossvideo.com

Contents

What’s New

Take advantage of the new features and improvements in Media I/O v15.0.1 to help simplify your workflow. Use the topics in this section to learn about important changes in Media I/O v15.0.1.

The following improvements are new in Media I/O v15.0.1:

- Shortcut to the Expanded Configuration Dialog

Shortcut to the Expanded Configuration Dialog

In the Media I/O Web-based User Interface (UI), you can now use the new '**Open Expanded Configuration**' button to open the **Expanded System Configuration** Dialog. Easily access the full range of configuration options without the need to type in the URL (**`http://x.x.x.x/phoenix`**).

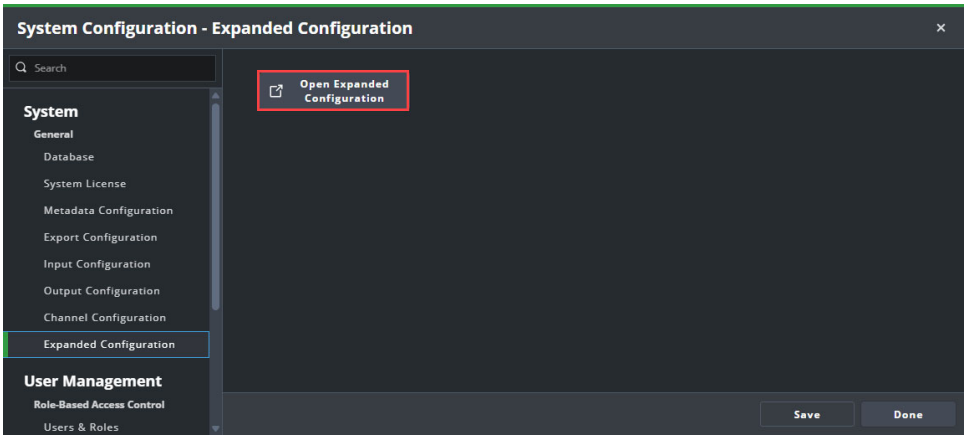


*Figure 1.1 Displays the **Open Expanded Configuration** Button*

To open the Expanded Configuration Dialog

1. In the Media I/O Web-based User Interface, go to **System Configuration**.

   The Standard System Configuration Dialog opens.

2. From the menu, select **Expanded Configuration** and click the **Open Expanded Configuration** menu.
   The Expanded System Configuration Dialog opens.

✶ **TIP**:
Make sure to bookmark the Standard and Expanded System Configuration Dialog URLs. If you accidentally close the Media I/O web-user interface, you can navigate back to the original bookmark, or type the URL (**`http://x.x.x.x/aura)`**. Where the **`x.x.x.x`** is the IP or name set by the administrator.

✶ **NOTE:**
The URL for the Expanded Configuration Dialog has a different suffix (**`http://x.x.x.x/phoenix)`.**

Introduction

A Word of Thanks

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

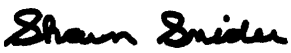
We are committed to providing you with the highest level of customer satisfaction possible. If, for any reason, you have questions or comments, please call Ross Video at +1-613-652-4886 or send us an e-mail at techsupport@rossvideo.com.

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 the Database"** describes how to configure the database, and then connect to the database from the Media I/O Web-based Interface.
- Chapter 6, **"Configuring Media I/O Web-based UI 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 experienced specialists ready to assist with any technical question or issue. Ross Video maintains support centers around the globe to ensure timely responses. Our primary technical support center is located in Ottawa, Ontario, Canada, with additional offices in the United Kingdom (London), Australia (Sydney), and Singapore, plus satellite locations in New York City, the Netherlands, and China. As our global presence grows, we continue to establish additional locations to better serve our customers.

North America

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

- **Phone:** +1-613-686-1557
- **Toll-Free (North America):** +1-833-859-0499

EMEA

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

- **International Toll-Free:** +800-3540-3545

✶ If the local support specialist is unavailable, your call will automatically transfer to North America.

Australia

Our Sydney, Australia office is located in Alexandria, NSW, and provides local support during regional business hours.

- **Local Support**: 1300-007-677

If the local support specialist is unavailable, your call will automatically transfer to North America.

Online Support

- **Email**: techsupport@rossvideo.com
- **Website**: Submit a support request at: http://www.rossvideo.com/support/tech-support.html

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

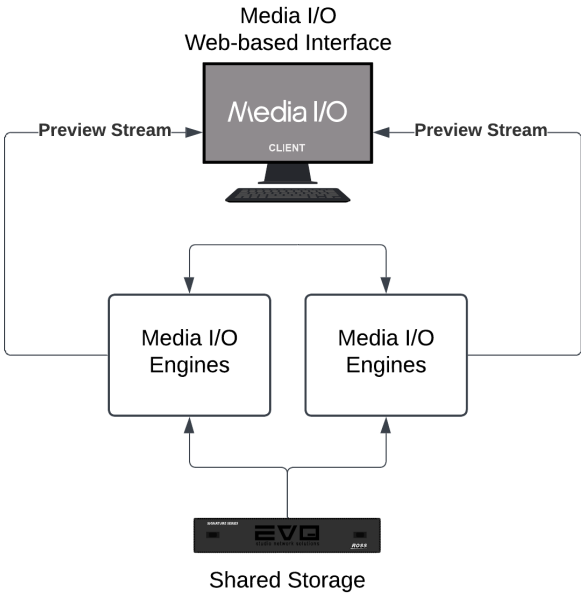


Figure 2.1 Media I/O Workflow Diagram

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
- Media I/O Server Settings

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

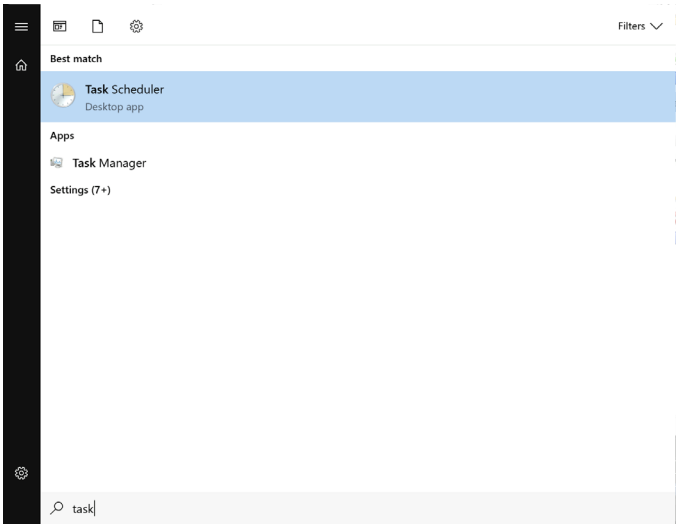
1. Select the **LocalDump** key and create three registry values as mentioned below.
2. Create a DumpFolder Registry Value
   - Right-click in the blank area on the right side and select **New > Expandable String Value**
   - Name it **`DumpFolder`**
   - Double-click it and enter **`C:\Crash Logs`** 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

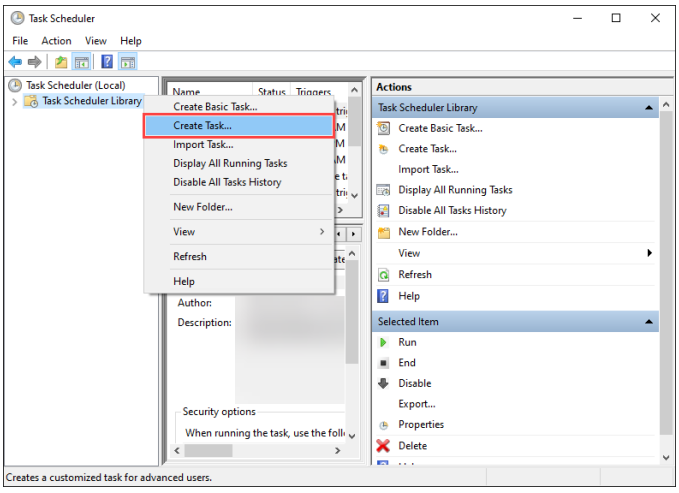
In order to use Media I/O with shared storage, you need to mount the storage with the highest privileges.

To Mount Storage in Task Scheduler

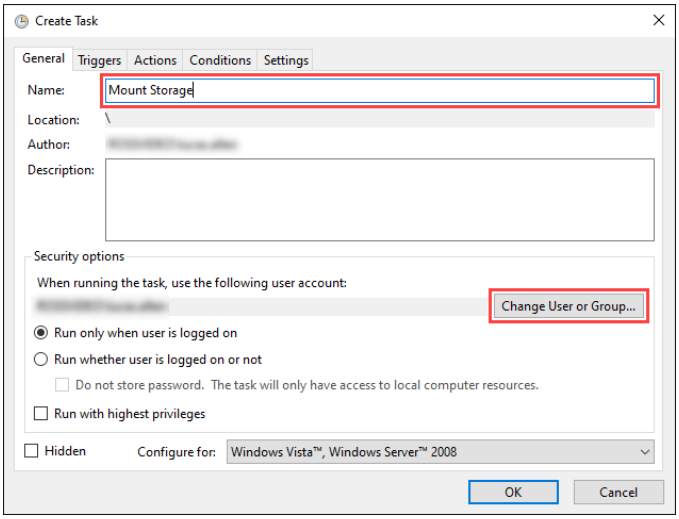
1. In Windows, open the Task Scheduler.



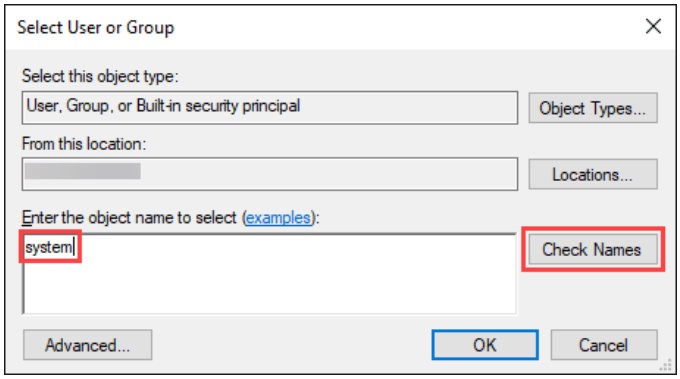
2. Select **Create Task**.



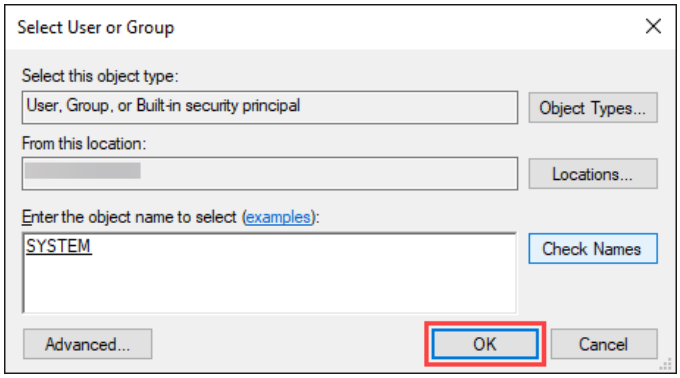
3. For the **Name**, enter **`Mount Storage`**. Select **Change User or Group**.



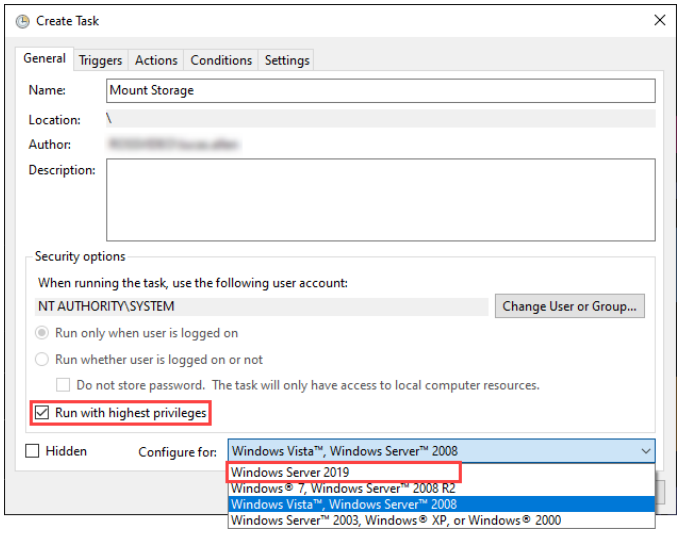
4. In the Object name, type **`system`** and select **Check Names**.



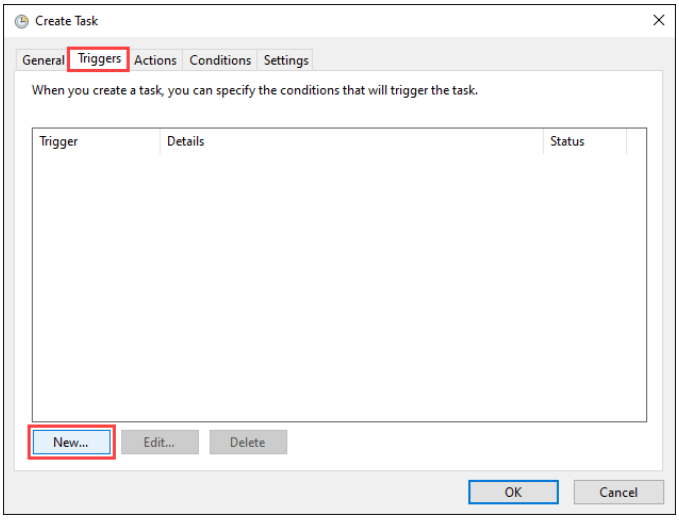
5. After selecting **Check Names**, select **OK**.



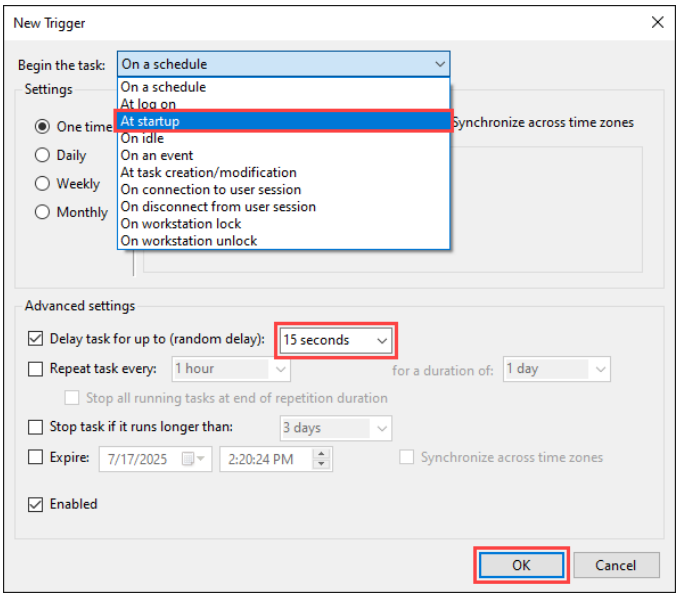
6. Check the checkbox labeled **Run with highest privileges**, then select **Windows 2019** from the **Configure for** dropdown.



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

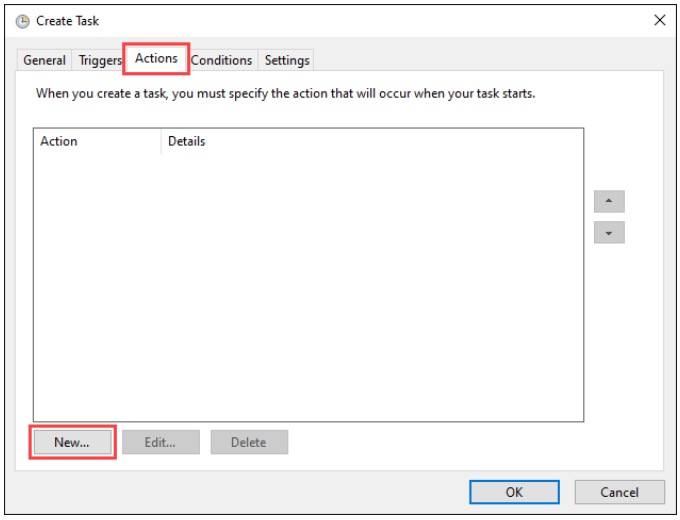


8. In the **Begin the task** dropdown, select **At Startup**. In Advanced Settings, select **Delay task for up to (random delay)** and enter `15 seconds`. Select **OK**.



The **Create Task** window opens.

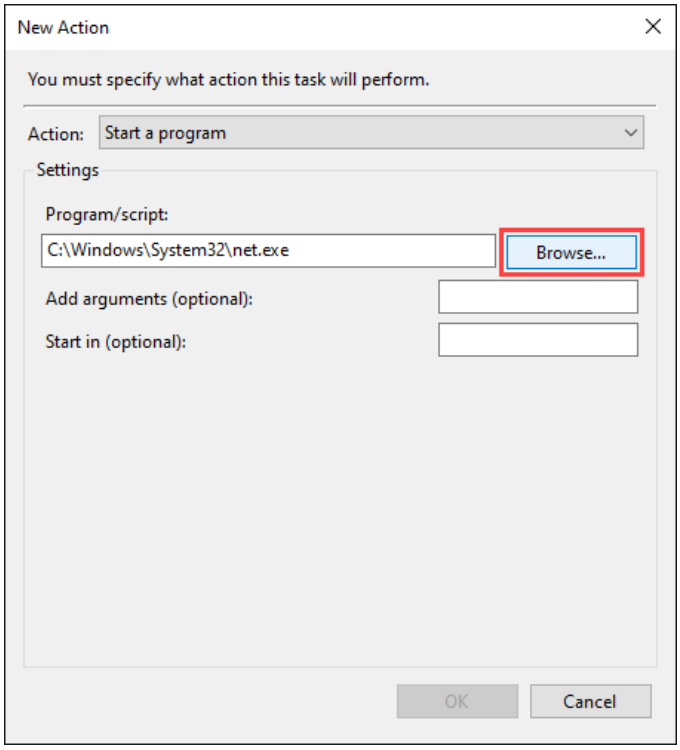
9. Select the **Actions** tab, then select **New...**



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>

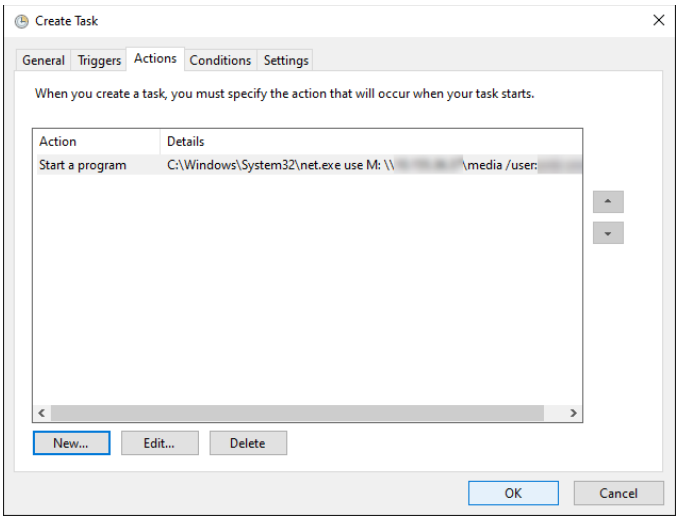
    Example:

```
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**.

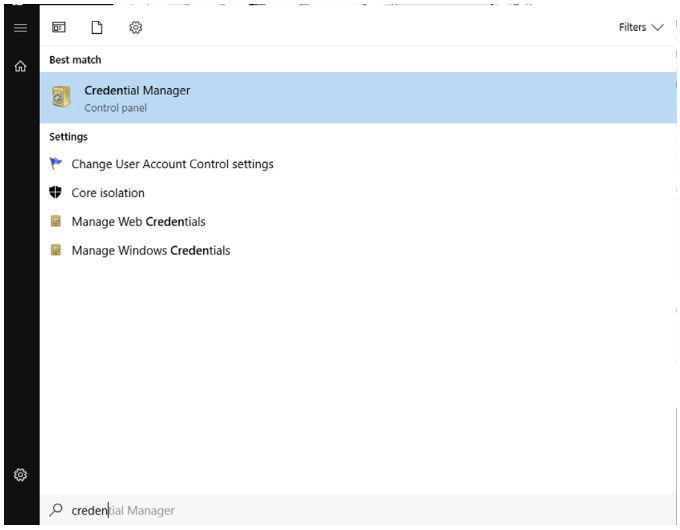


Storing Access Information Using Credential Manager

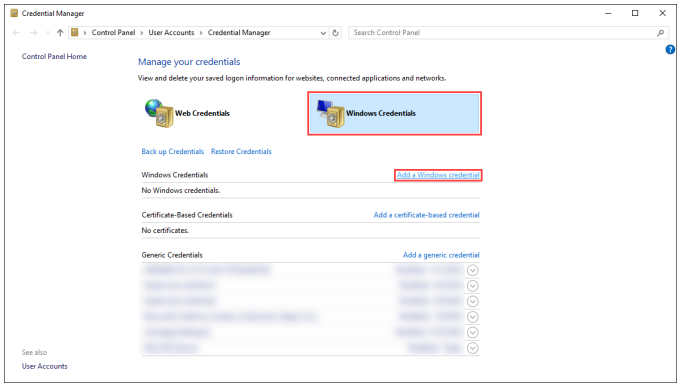
The Credential Manager stores the access information to be used by the Task Scheduler when using the SYSTEM user.

To Store Access Information in Credential Manager

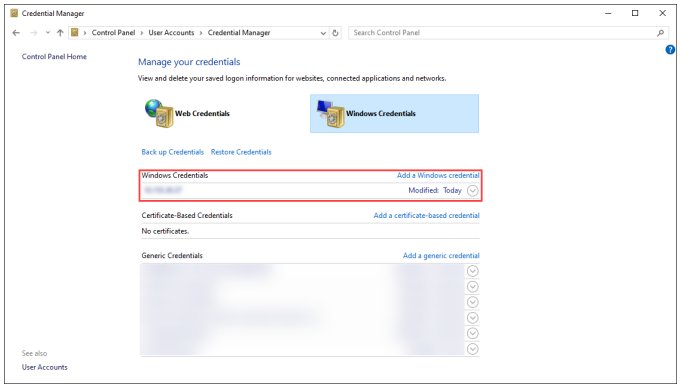
1. In Windows, open **Credential Manager**.



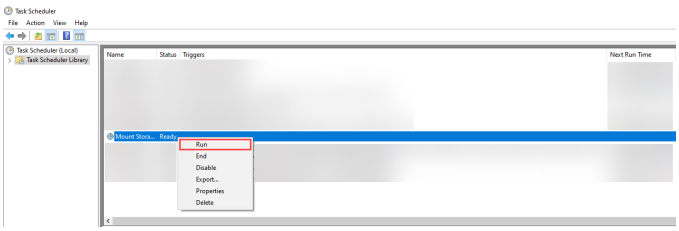
2. Select **Windows Credentials**, then **Add a Windows credential**.



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

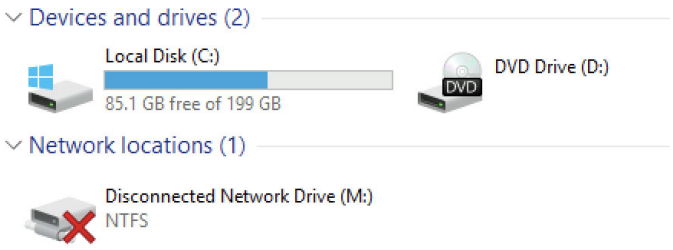


4. Either restart the server or go back to the Task Scheduler, right-click the task you added, and select **Run**.



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.



Media I/O Server Settings

The Media I/O Server saves configuration settings in the jvm.conf file. The settings to tune are as follows:

- wrapper.java.initmemory —sets the initial java heap size for the Media I/O server.
- wrapper.java.maxmemory — sets the maximum java heap size for the Media I/O server.

✶ You must retune Media I/O Server settings after each install or upgrade of Media I/O server software.

To tune Media I/O Server settings in the jvm.conf file

1. On the Media I/O Server computer, locate the **jvm.conf** file in the following folder.

   `C:\Program Files\Ross Video\Media IO\Web UI\configuration`

2. Use a text editor to open and edit the **jvm.conf** file.
3. In the **jvm.conf** file, locate the following setting:

   `wrapper.java.initmemory`

4. Replace the default memory value for the **wrapper.java.initmemory** setting with a tuned value. The tuned value for **wrapper.java.initmemory** depends on the software running on your Media I/O Server computer and the amount of RAM installed on the computer. Use the following table to set the wrapper.java.initmemory value for your Media I/O system:

Table 3.1

	System RAM					
	2 GB	**4 GB**	**8GB**	**12 GB**	**16GB**	**32GB**
Media I/O Server & Database	256	512	1024	1536	2048	4096
Dedicated Media I/O Server	1024	2048	4096	6144	8192	16384

5. Locate the following setting:

   `wrapper.java.maxmemory`

6. Replace the default memory value for the wrapper.java.maxmemory setting with a tuned value. The tuned value for wrapper.java.maxmemory depends on the software running on your Media I/O Server computer and the amount of RAM installed in the computer. Use the following table to set the wrapper.java.maxmemory value for your Media I/O system:

	System RAM					
	2 GB	**4 GB**	**8GB**	**12 GB**	**16GB**	**32GB**
Media I/O Server & Database	512	1024	1536	2048	4096	8192
Dedicated Media I/O Server	1536	3072	6147	9216	12288	24576

7. Save the updated jvm.conf file and exit the text editor.
8. Restart the Media I/O service as follows:
   a. From the Windows Desktop, press **Windows Key R**.
   b. In the Open box, type services.msc.
   c. Click OK.
   d. In the **Services** list, locate and select the Ross Media IO service.
   e. Click **Restart** for the Ross Media IO service.

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. There are two configuration defaults based on whether you are using X1 or X2 hardware:

- 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. For more information, please contact your Ross Video Sales Representative.

Launching Media I/O Engine

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

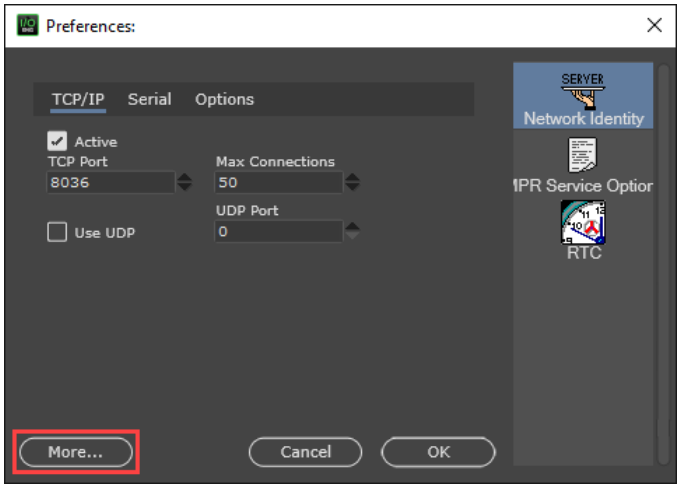
✶ **NOTE:**
This process needs to be done for each Engine that requires configuration, when it is launched for the first time.

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.

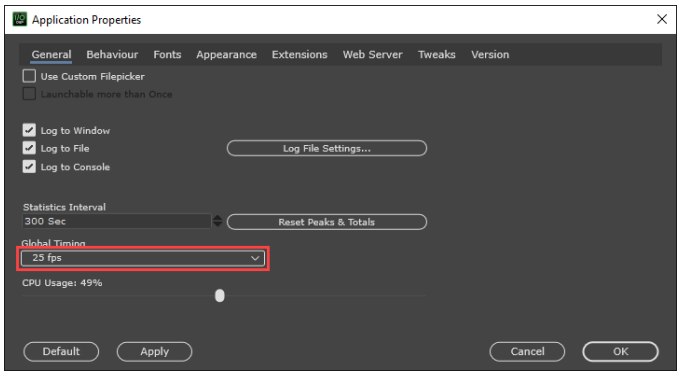
Configuring General Settings

To configure Application Timing

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

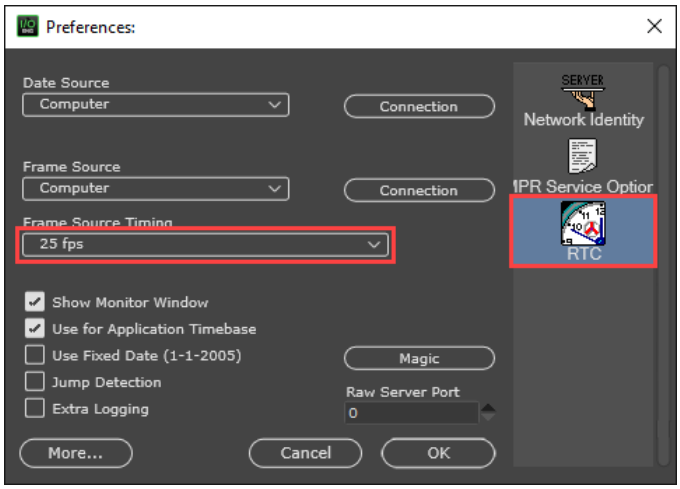


3. For **Global Timing**, from the list of settings, select one of the following options based on the appropriate frames per second:
   - 29.97 fps (SMPTE, 30000/1001)
   - 59.94 fps (SMPTE, 60000/1001)
   - 25 fps
   - 50 fps



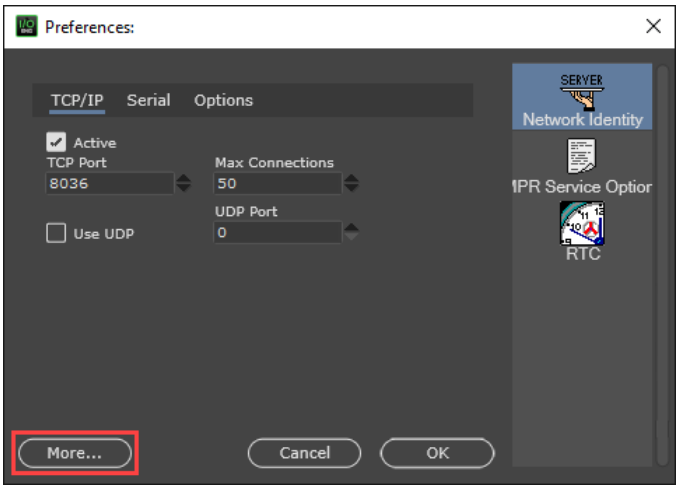
To configure RTC Timing

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

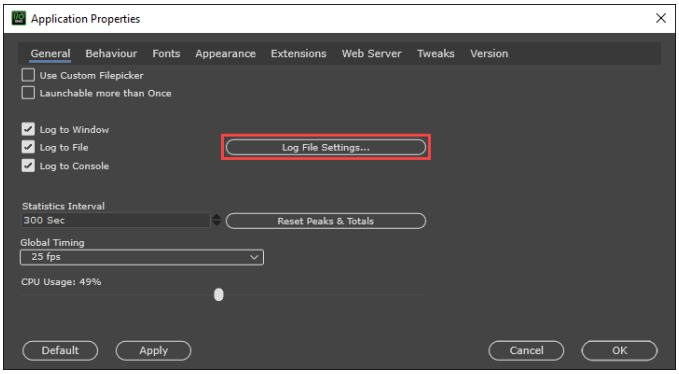


To configure Log Settings

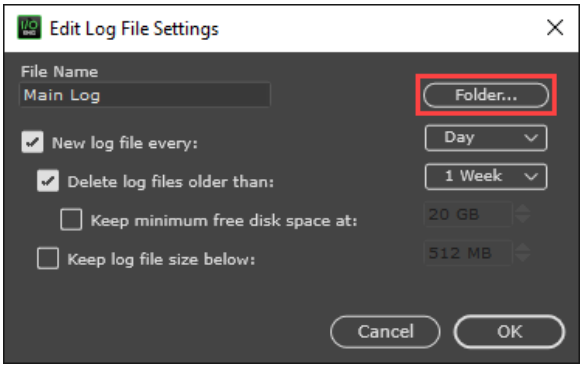
1. Go to **Media I/O Menu > Edit > Preferences**.
2. Select **More**.



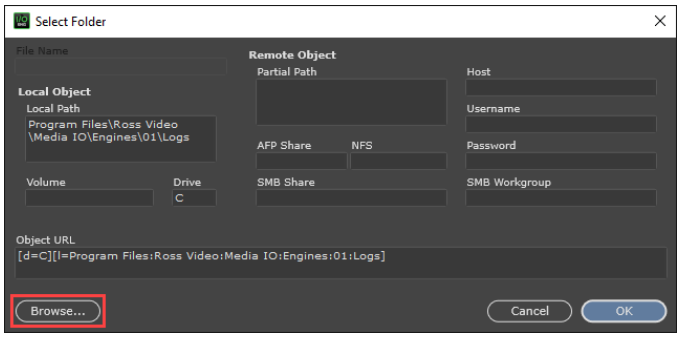
3. Select **Log File Settings**.



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

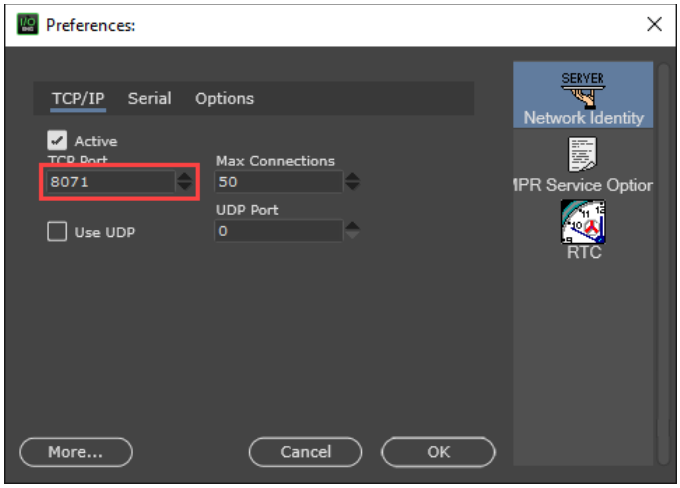
Each Media I/O Engine needs to be configured to listen in a TCP port. Since there are multiple engines in the same server, each Engine needs to be set up differently. Please refer to the table below.

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)

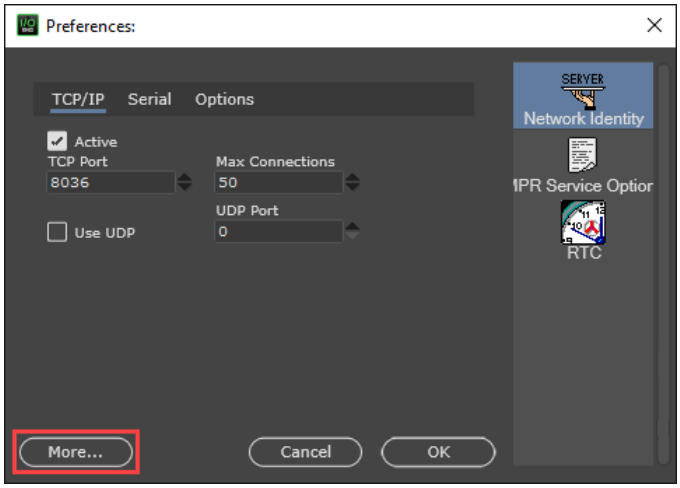
1. Go to **Media I/O Menu > Edit > Preferences**.



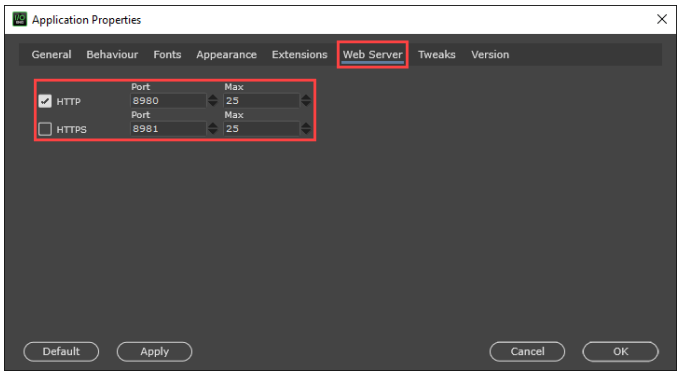
2. Select **Network Identity**.
3. Modify the TCP Port following Table 4.1, “TCP/IP Settings,” on page 5. This requires a restart of the application.

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

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



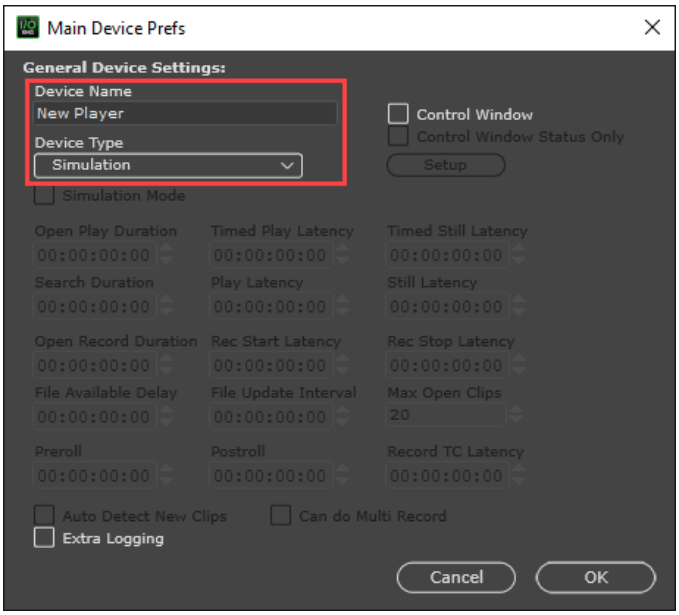
3. Select the **Web Server** tab. Modify the TCP Port following Table 4.1, “TCP/IP Settings,” on page 5. This requires a restart of the application.



To configure the Media Player Status

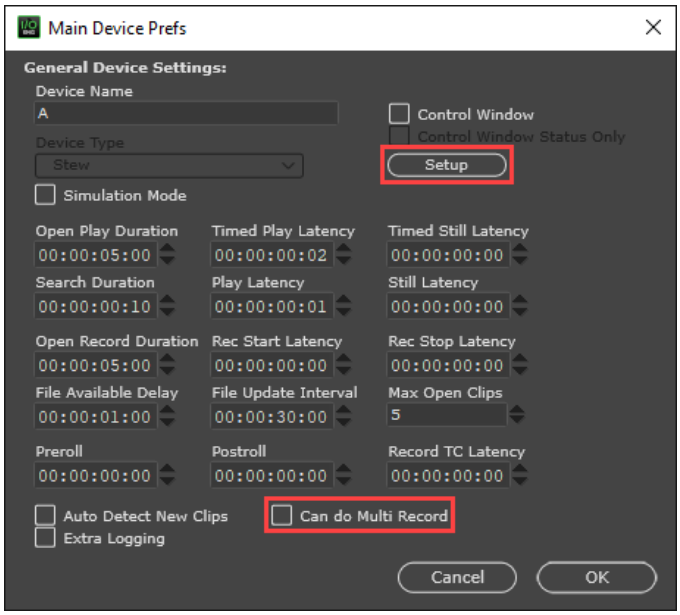
1. Go to **Media I/O Engine Menu > Window > Media Player Status**.
   A new window will open.
2. Select the + button on the lower right corner.

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**

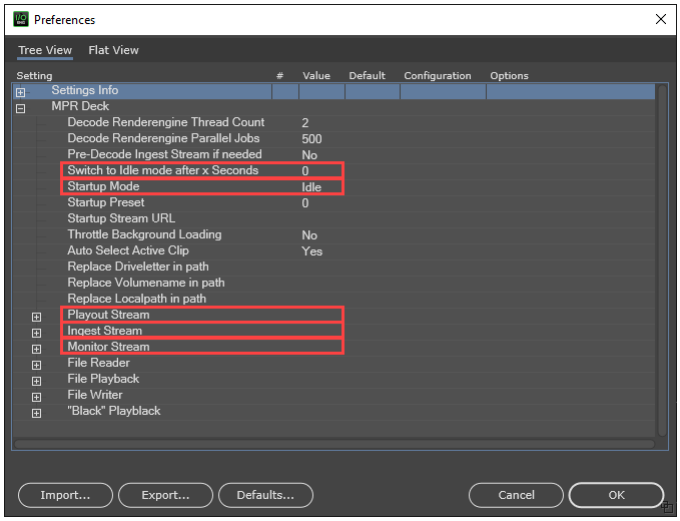


4. Once created, double-click the Player.

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.

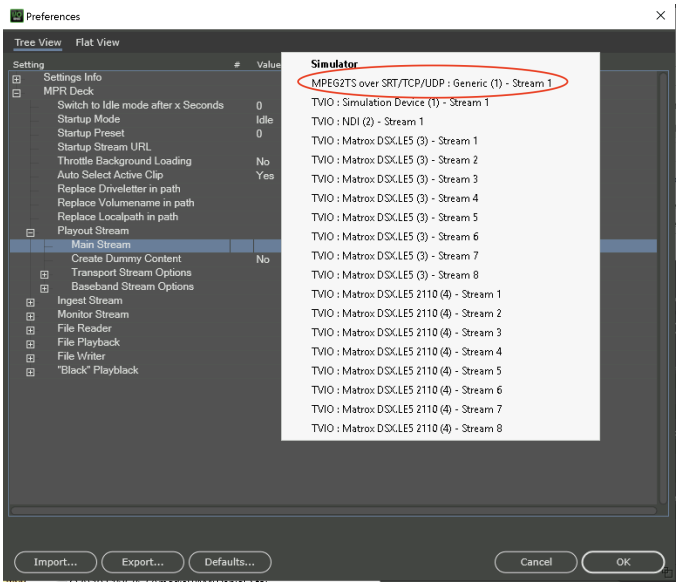


- **MPR Deck**
  - Switch to idle mode after x seconds - From 0 to 1 (only for Record Channels)
  - Startup Mode
    - Ingest for Record Channels
      - Idle (SDI, NDI, and SRT)
      - Ingest (2110) (**NOTE:** When you are setting up ingest for 2110, the **Switch to idle mode after x seconds** setting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

To configure the Playout Stream (SRT)

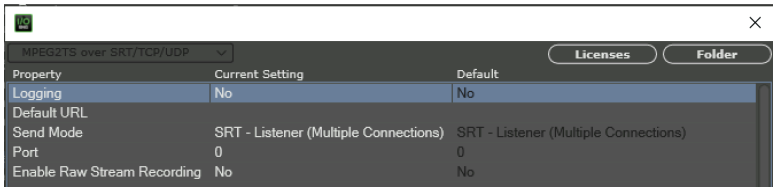
The Playout Stream determines the main output stream type. This would typically be an NDI Stream Output.

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

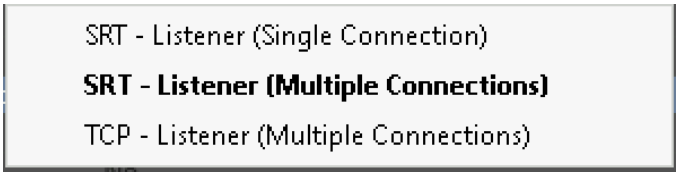


2. The configuration for SRT is automatically selected.

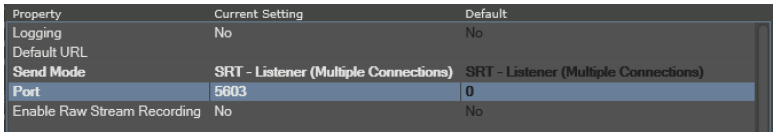
3. Double-click on the fifth column (**Options**) to open the SRT-specific settings.



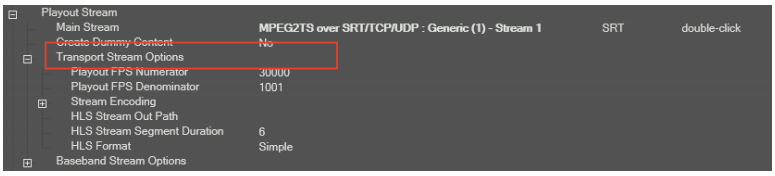
4. Set the **Send Mode** to **SRT - Listener (Multiple Connections)**. By Default, Media IO SRT Streaming will allow multiple clients to connect. It can be changed to single connection if the workflow requires it.



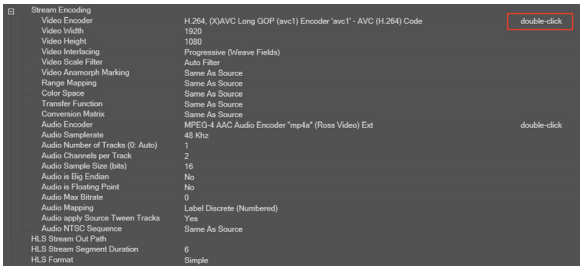
5. **Port** is the TCP port that the SRT stream will be licensing. Only TCP ports from `1025` and above should be used, as ports `0–1024` are generally reserved for well-known services and system processes.

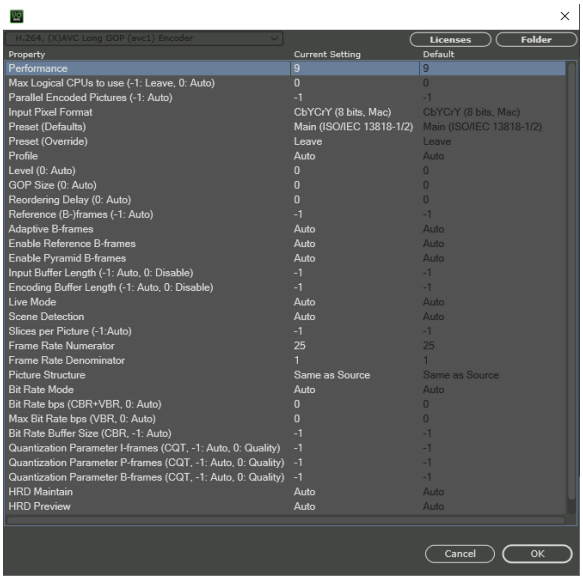


6. Expand the T**ransport Stream Options** to configure the default timebase and stream encoding.



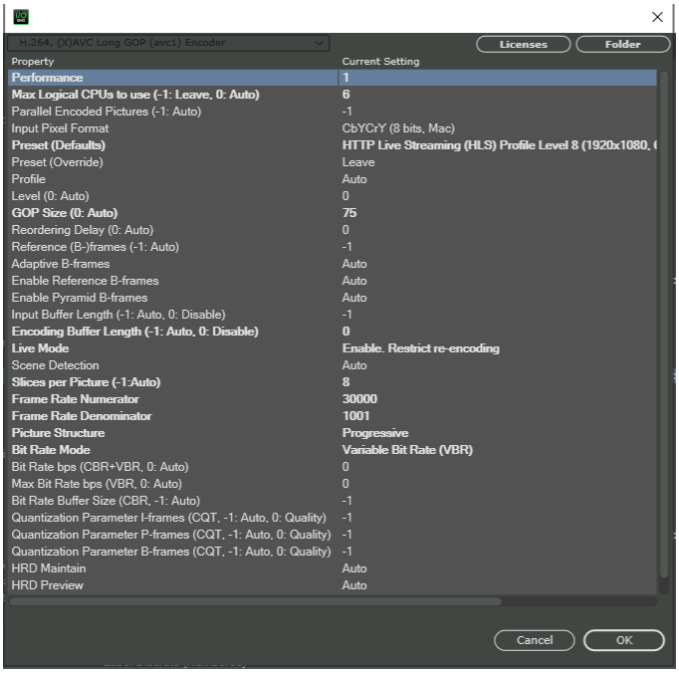
- **Timebase** (Defines the frame rate of the stream):
  - 25 fps
    - Playout FPS Numerator: 25
    - Playout FPS Denominator: 1
  - 25 fps
    - Playout FPS Numerator: 50
    - Playout FPS Denominator: 1
  - 29.97 fps
    - Playout FPS Numerator: 30000
    - Playout FPS Denominator: 1001
  - 59.94 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)

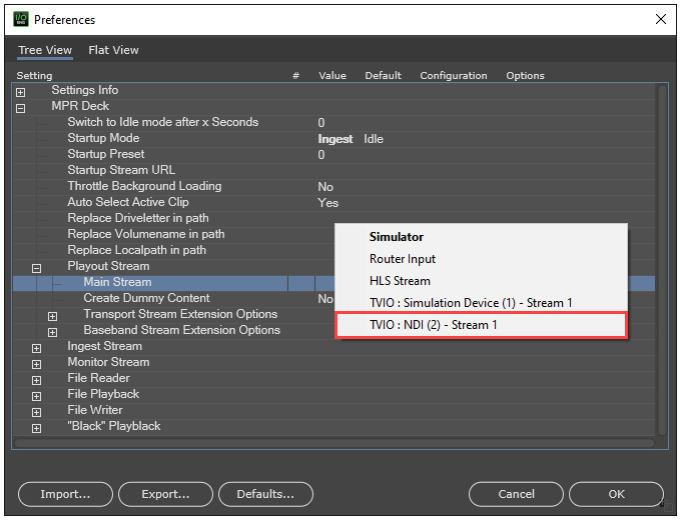
- GOP Size: 75
- Encoding Buffer Length: 0
- Live Mode: Enable. Restric re-encoding
- Slices per Picture: 8
- Frame Rate Numerator: Same as configured before.
- Frame Rate Denominator: Same as configured before.
- Picture Structure: Progressive
- Bit Rate Mode: Variable Bit Rate (VBR)



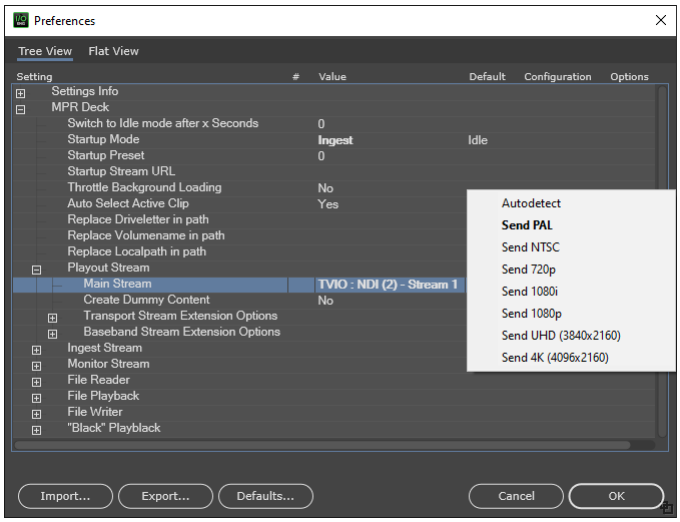
To configure the Playout Stream (NDI)

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

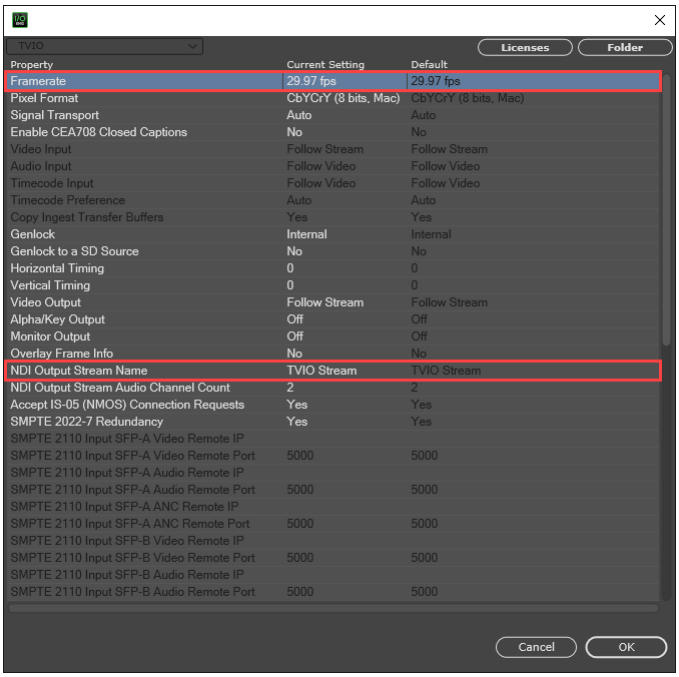
1. Select the second column (**Value**) and a popup window will open to select the stream. Select **TVIO: NDI (2) Stream 1**.



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.



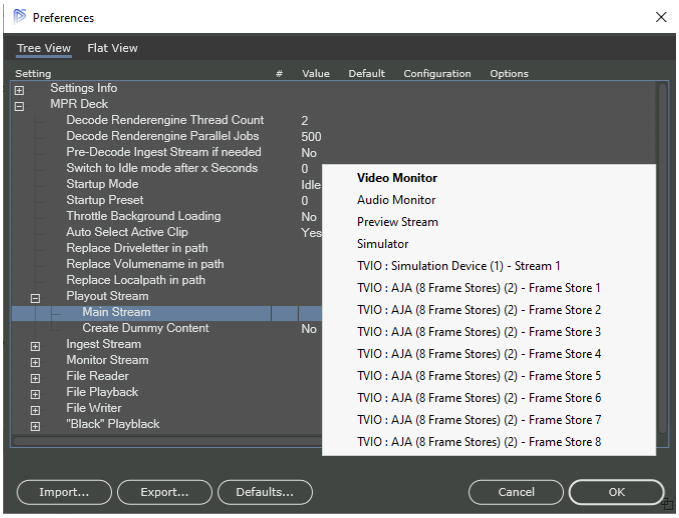
- For **Framerate**, match it to the application timing configuration.
- For **NDI Output Stream Name**, this is the name of the NDI stream that will be available over the network. This has to be unique for each Engine running in the system.

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

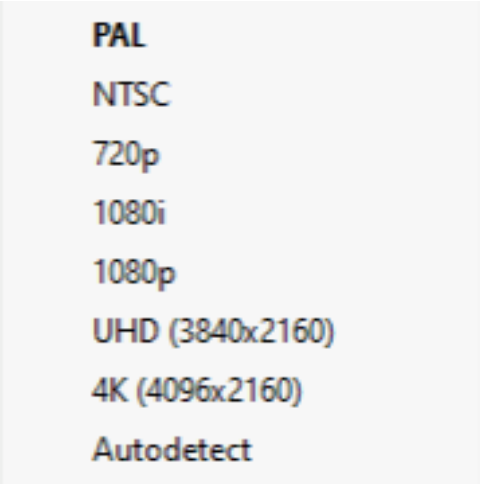
0 in x 8 out	1 in x 7 out	2 in x 6 out
3 in x 5 out	4 in x 4 out	5 in x 3 out
6 in x 2 out	7 in x 1 out	8 in x 0 out

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).

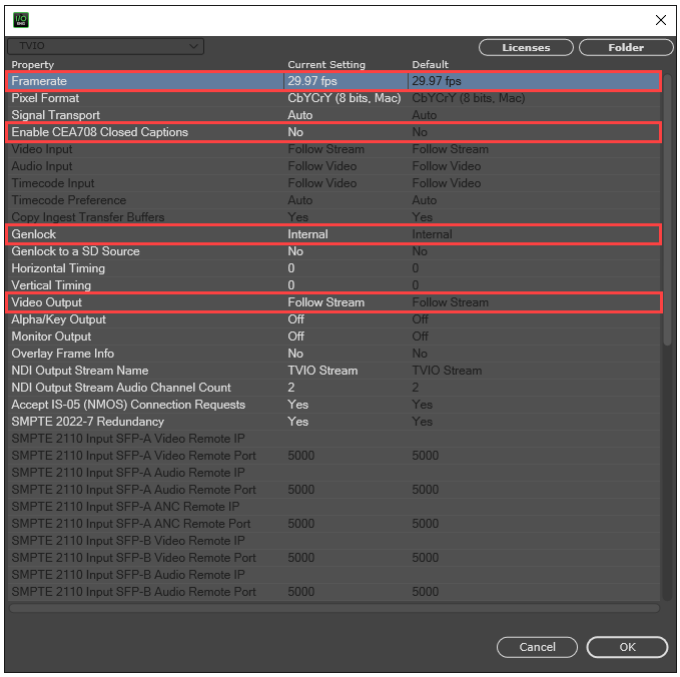
1. Select the second column (**Value**) and a popup window will open to select the stream.



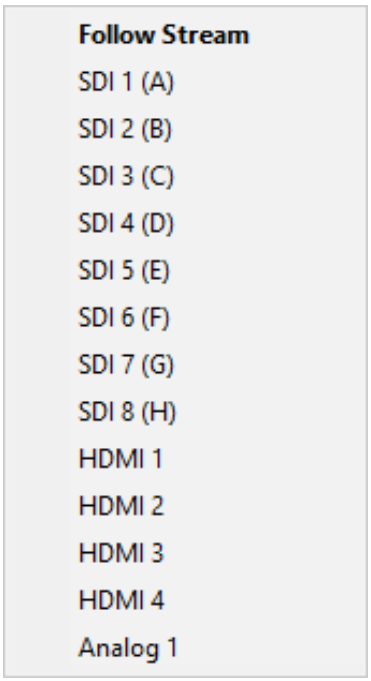
2. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



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.

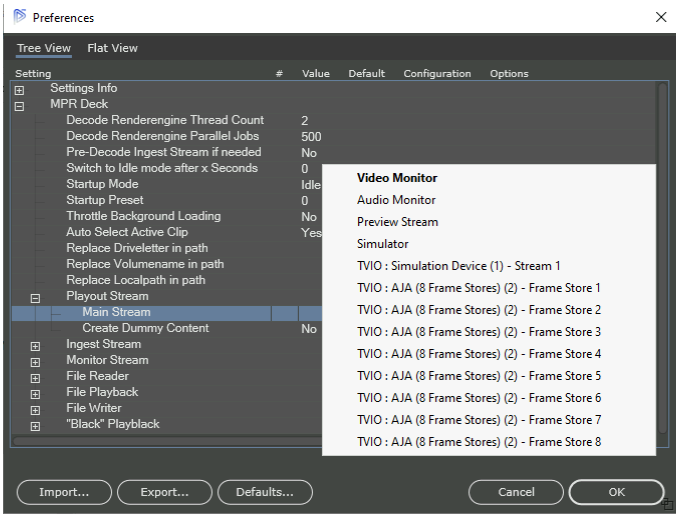


To configure the Playout Stream (SDI - AJA Kona Corvid 88)

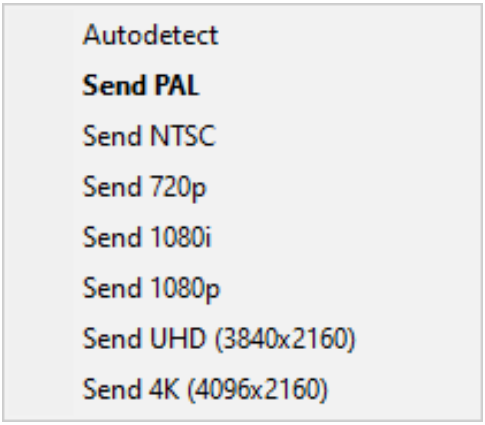
The KONA Corvid 88 card can be reconfigured to different I/O configurations. It supports up to 8 HD or SD channels in any combination.

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

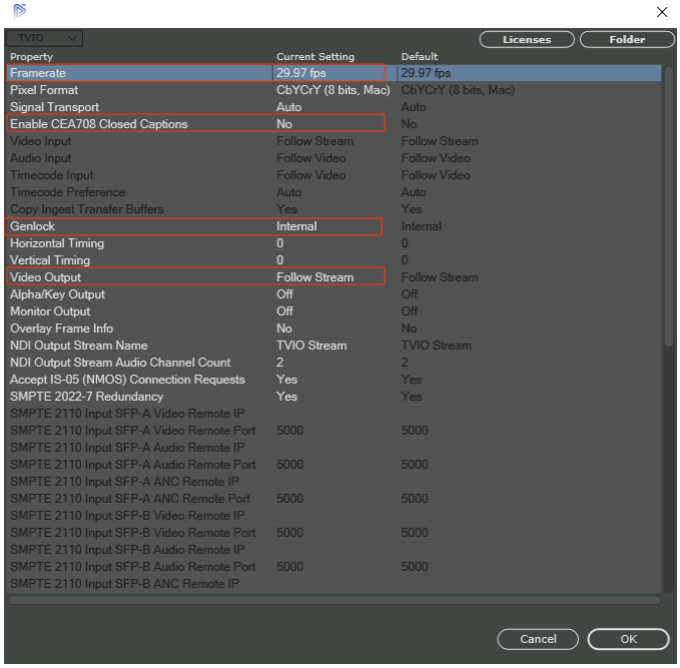
1. Select the second column (**Value**) and a popup window will open to select the stream.



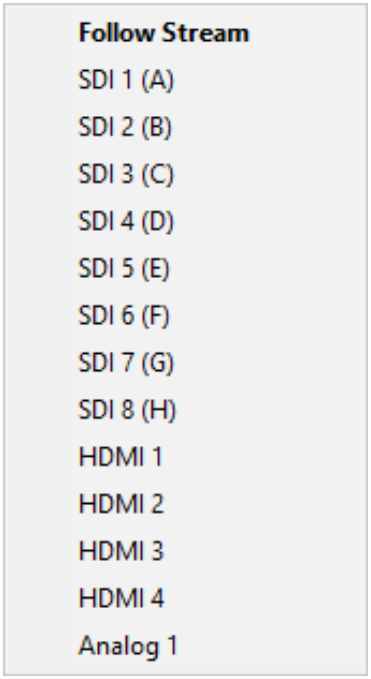
2. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



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

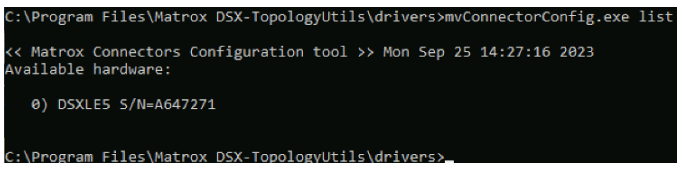
Input	Output	Input/Output capability
		up to 12G
		up to 3G

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:

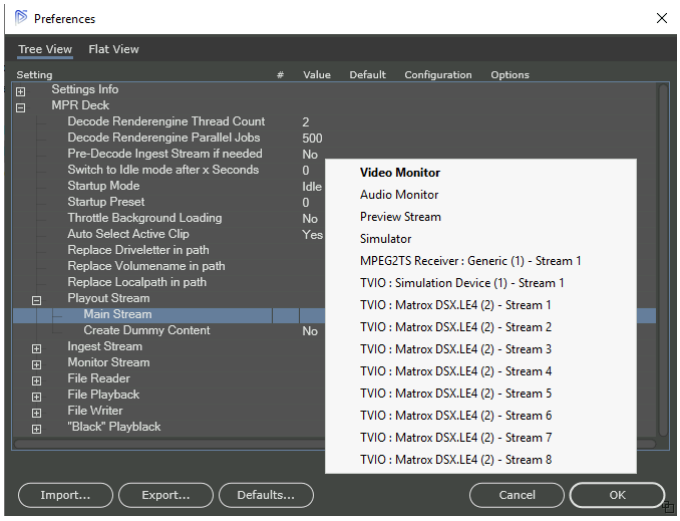
   `mvConnectorConfig.exe list`



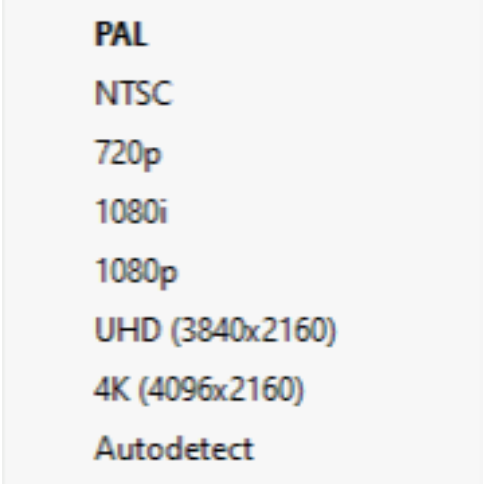
4. Run **`mvConnectorConfig.exe`** to load the proper input/output configuration. In the following example, the configuration is for 1 input and 3 outputs:

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

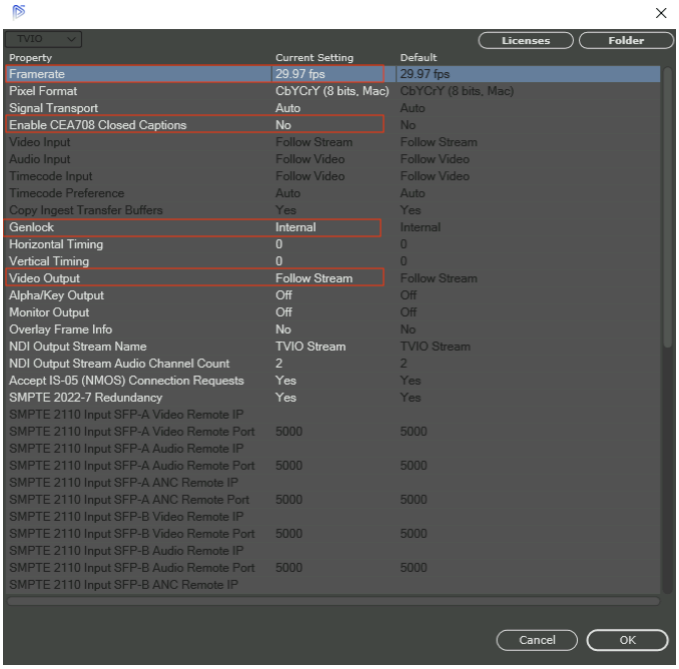
5. In the Media I/O Engine application, select the second column (**Value**) and a popup window will open to select the stream.



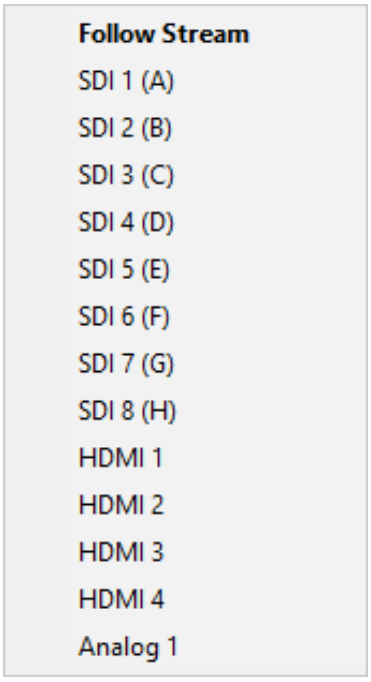
6. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



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:

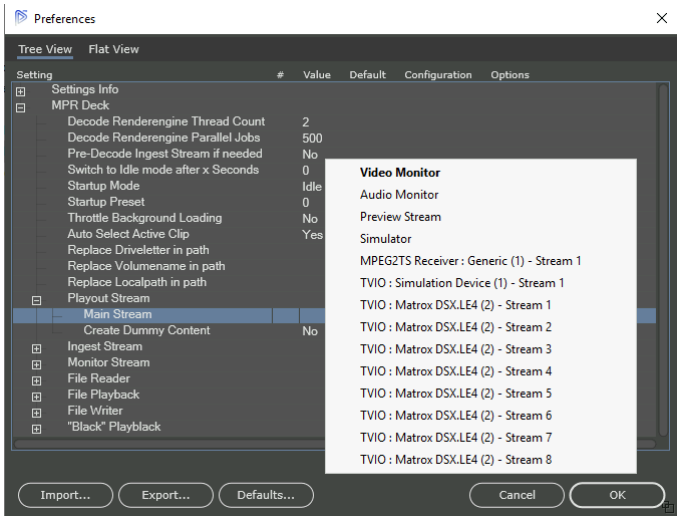
   `mvConnectorConfig.exe list`

```
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>_
```

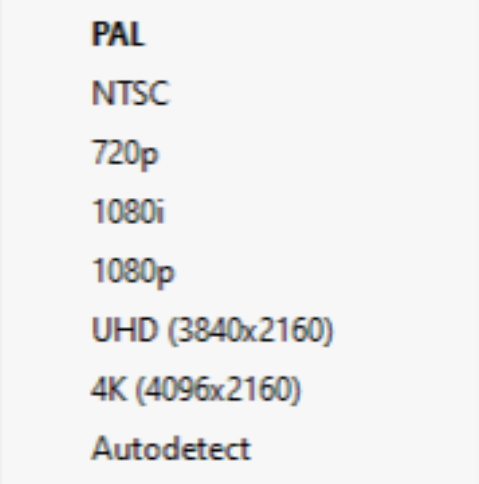
4. Run **`mvConnectorConfig.exe`** to load the proper input/output configuration. In the following example, the configuration is for 5 inputs and 3 outputs:

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

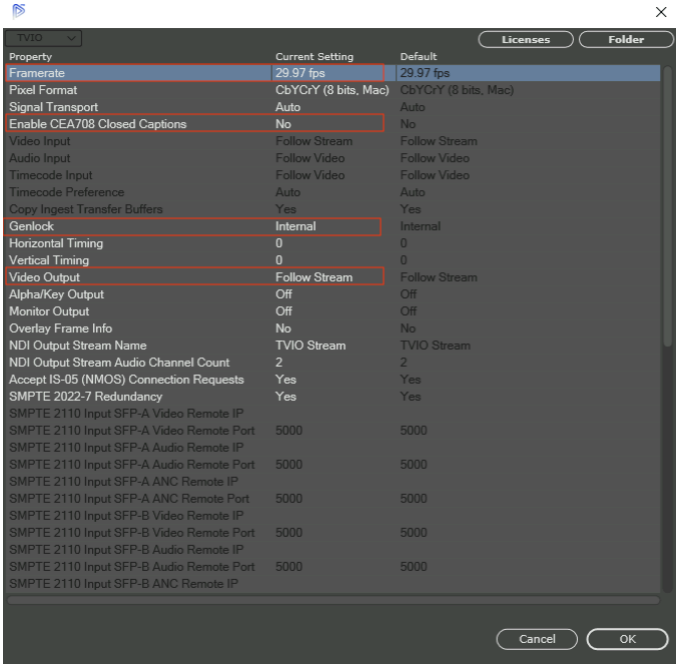
5. In the Media I/O Engine application, select the second column (**Value**) and a popup window will open to select the stream.



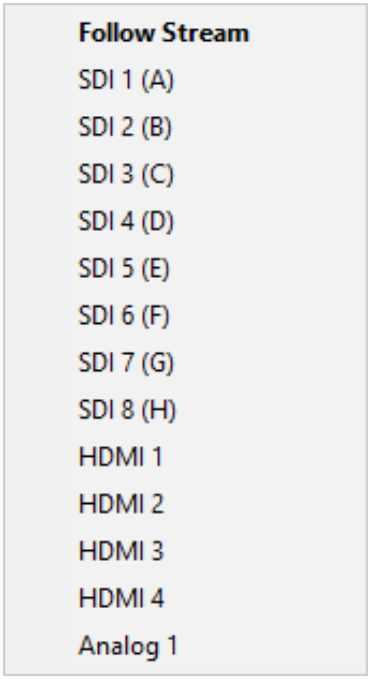
6. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



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)

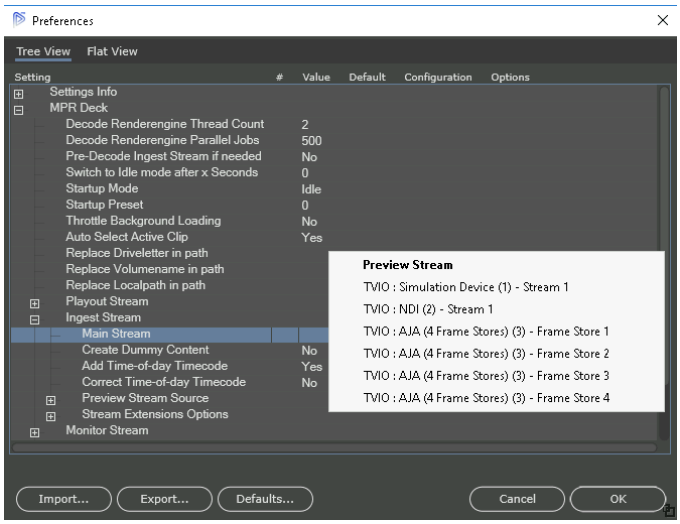
There is no configuration required for NDI Ingest.

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

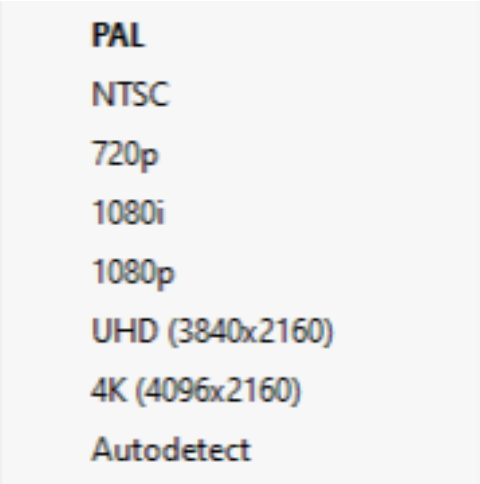
The KONA 5 card can be reconfigured to different I/O configurations. It supports up to 4 bidirectional 12G-SDI connections with 16-channel embedded audio (HD/UHD).

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

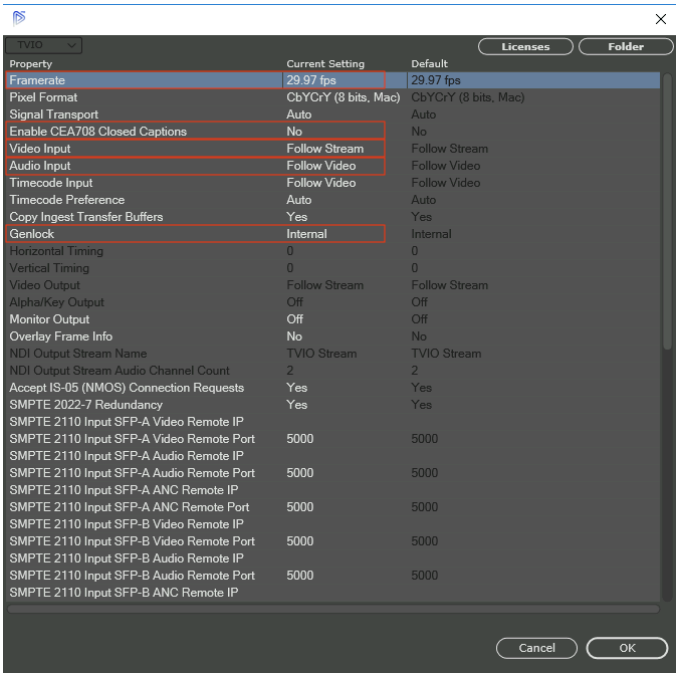
1. Select the second column (**Value**) and a popup window will open to select the stream.



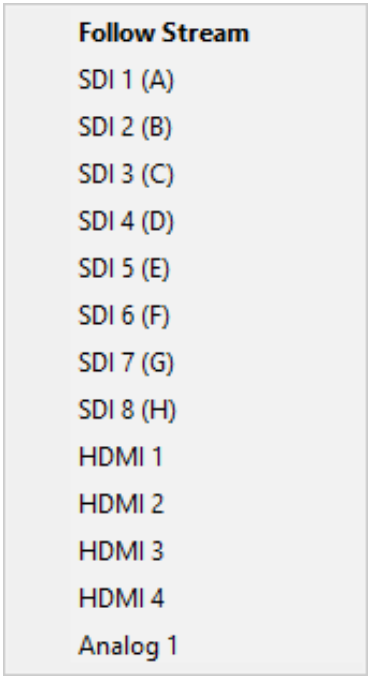
2. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



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**.

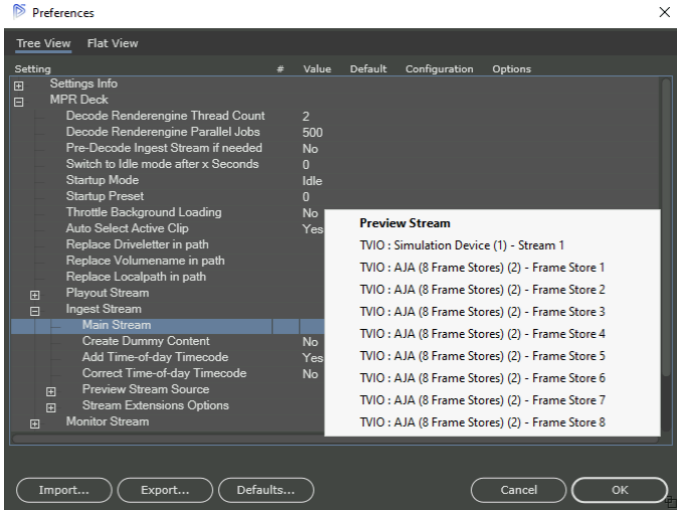


To configure the Ingest Stream (SDI - AJA Kona Corvid 88)

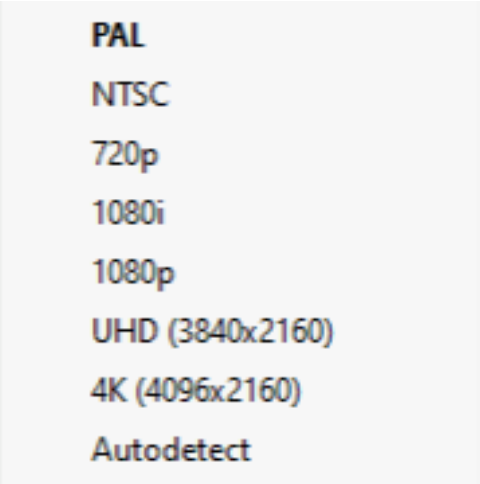
The KONA Corvid 88 card can be reconfigured to different I/O configurations. It supports up to 4 bidirectional 12G-SDI connections with 16-channel embedded audio (HD/UHD).

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

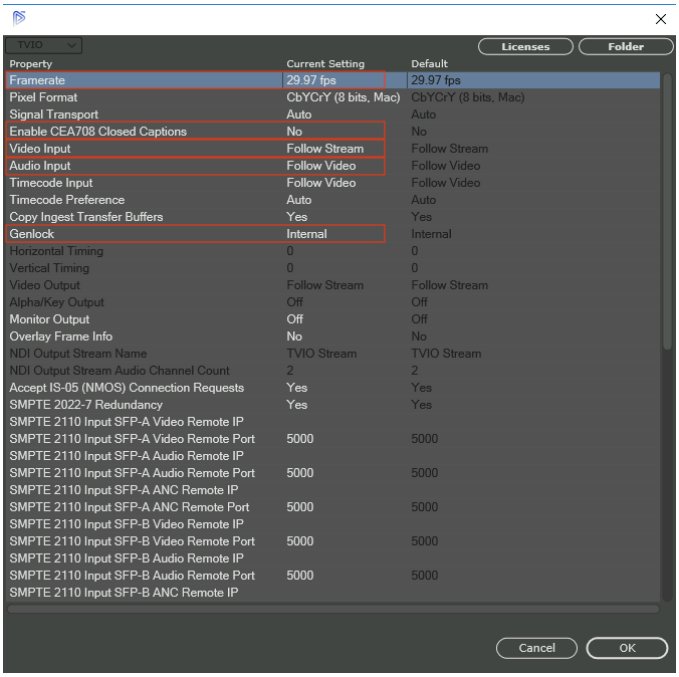
1. Select the second column (**Value**) and a popup window will open to select the stream.



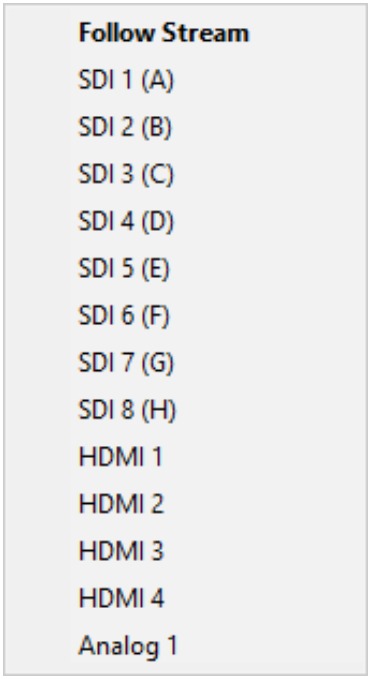
2. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



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

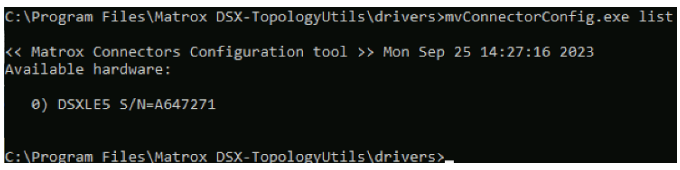
You can change the configuration using mvConnectorConfig.exe (requires a restart).

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:

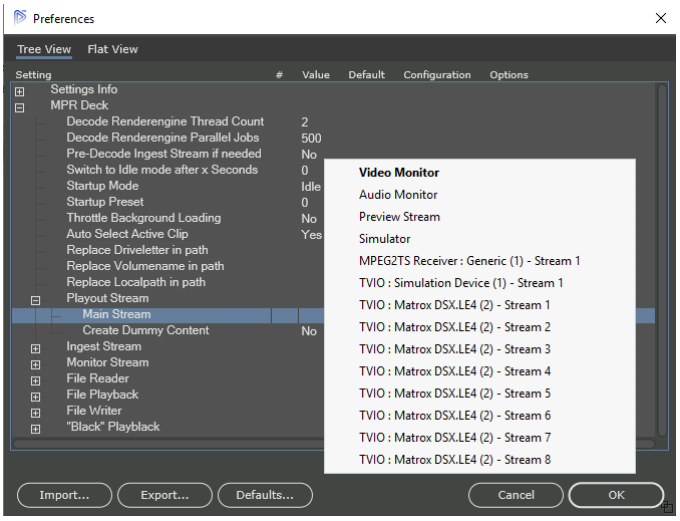
   `mvConnectorConfig.exe list`



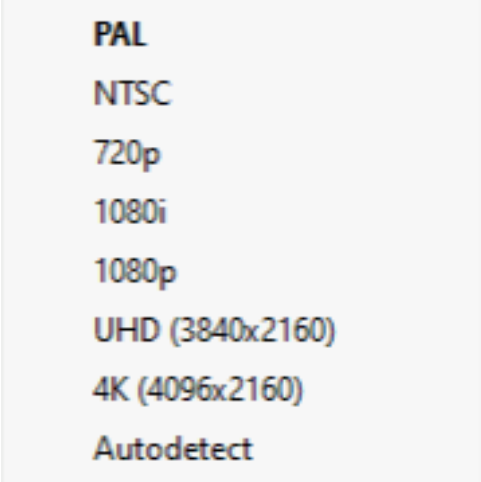
4. Run **`mvConnectorConfig.exe`** to load the proper input/output configuration. In the following example, the configuration is for 1 input and 3 outputs:

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

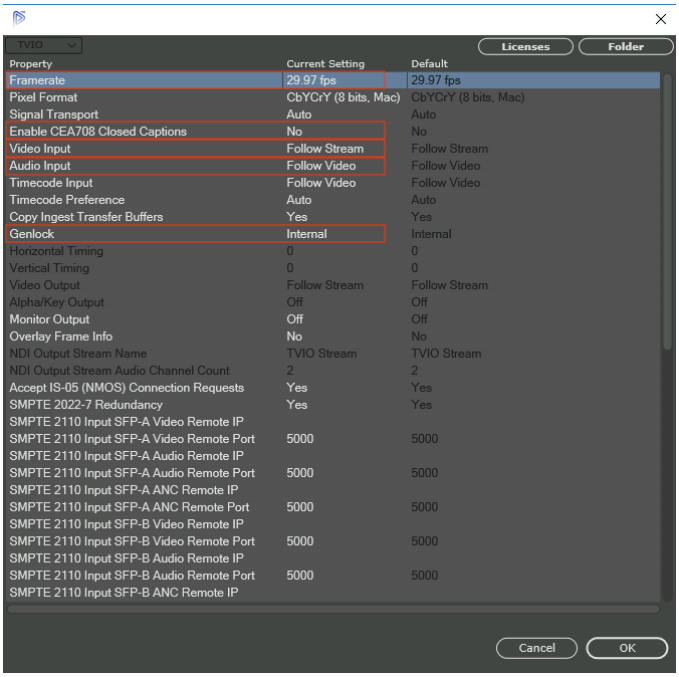
5. In the Media I/O Engine application, select the second column (**Value**) and a popup window will open to select the stream.



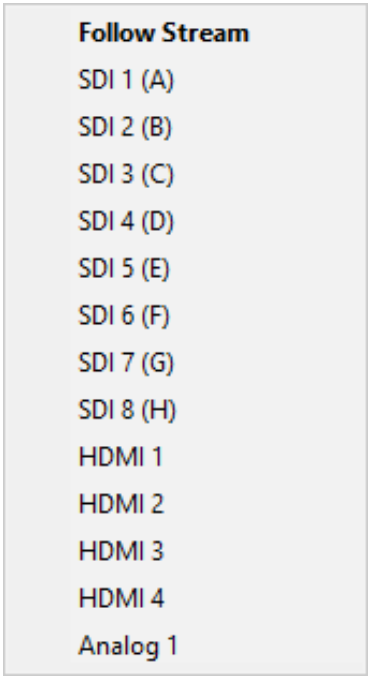
6. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



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:

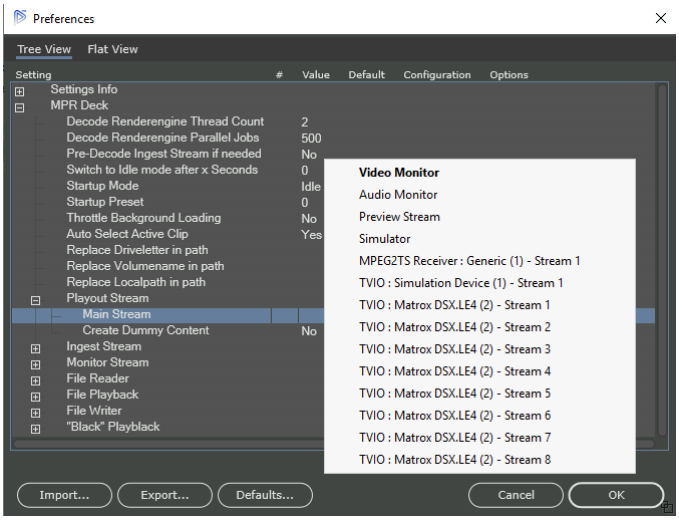
   `mvConnectorConfig.exe list`

```
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>_
```

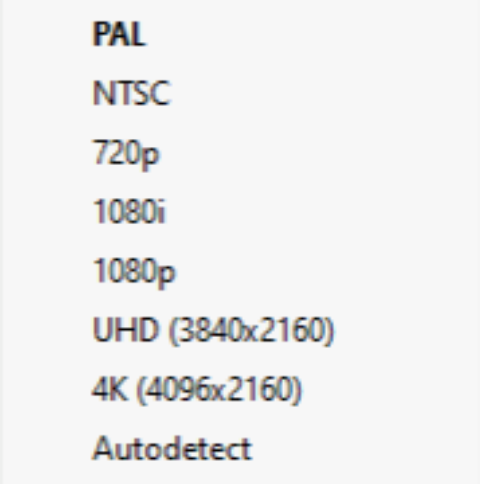
4. Run **`mvConnectorConfig.exe`** to load the proper input/output configuration. In the following example, the configuration is for 5 inputs and 3 outputs:

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

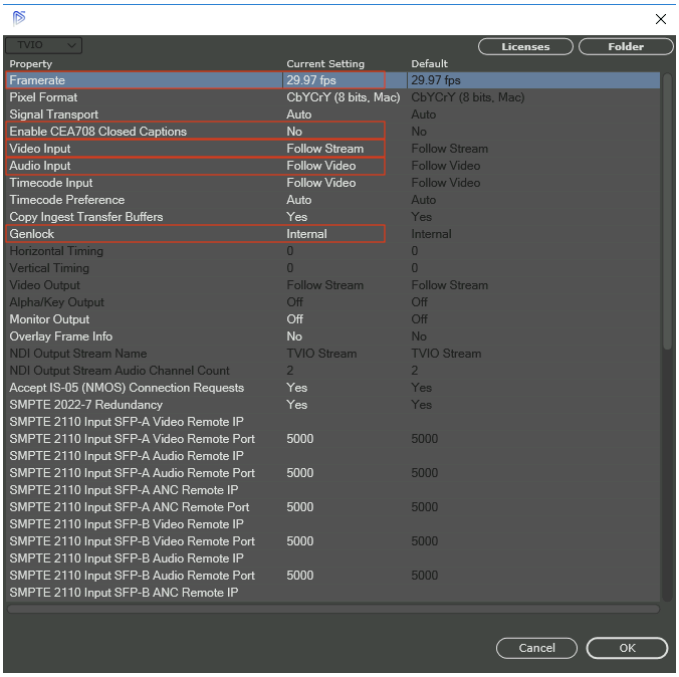
5. In the Media I/O Engine application, select the second column (**Value**) and a popup window will open to select the stream.



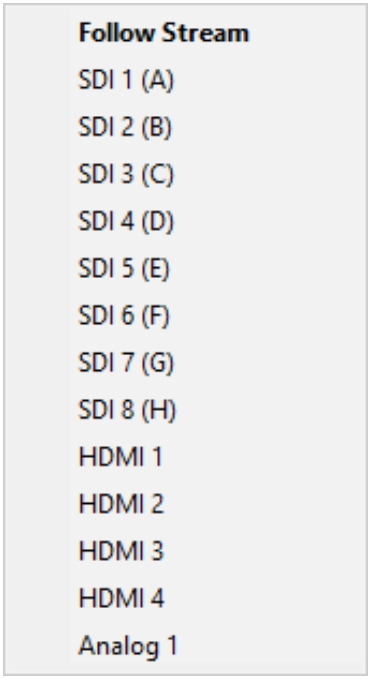
6. Select the fourth column (**Configuration**) and a popup window will open to select the video frame size.



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

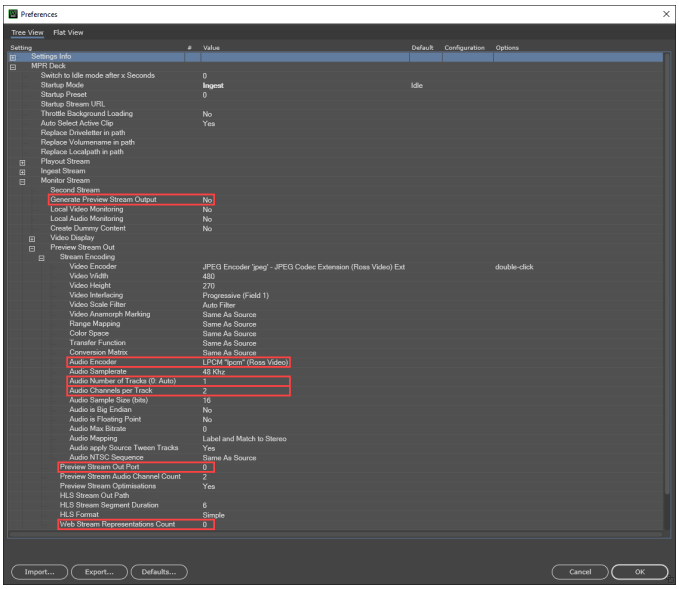


- For **Framerate**, match it to the application timing configuration.
- For **Enable CEA708 Closed Captions**, select **Yes** if Closed Captions need to be enabled. If they do not, select **No**.
- For **Genlock**, select **External Reference**.
- For **Video Output**, select the Label (Letter) connector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

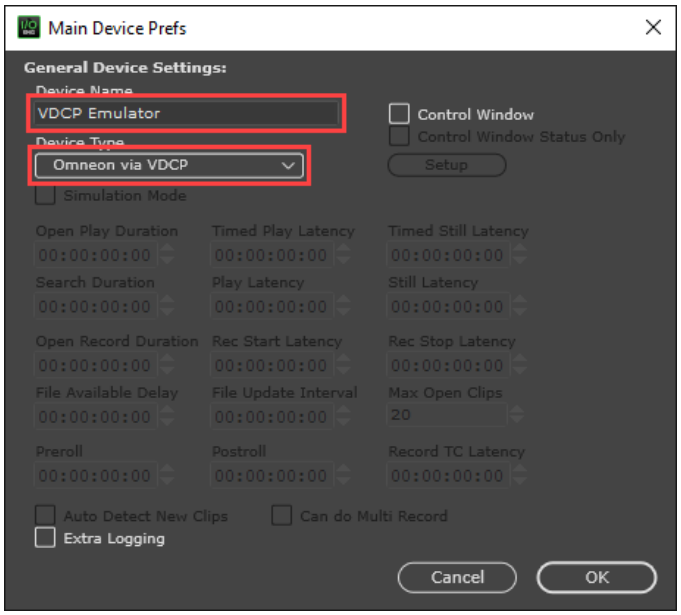
2. Copy the codec profiles into the following location.
   `C:\Program Files\Ross Video\Media IO\Engines\engine_#\Media IO Server Settings\Media Processing Framework Settings\Ingest Presets`

Configuring the VDCP Emulator

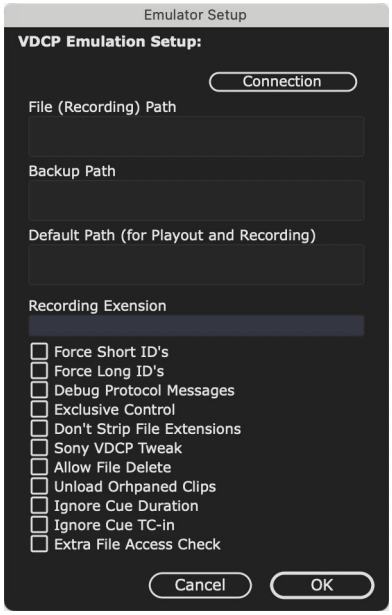
To add an emulator

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**.



A new Emulator Setup window opens.



5. In the Emulator Setup dialog complete the following fields:

   a. Enter the File (Recording) Path and Backup Path.

   b. Optional: You can also add a Default Path (for Playout and Recording).

   c. Enter the File (Recording) Path and Backup Path.

   d. Enter the Recording Extension(s). Only accepts valid comma separated values. For example: .mxf, .mp4, .mov.

   e. Enable any of the following options to apply additional VDCP requirements:

      •**Force Short ID's** — Select this checkbox to apply the short-ID format. This option has no functional effect in the current version.

      •**Force Long ID's** — Select this checkbox to apply the long-ID format. This option has no functional effect in the current version.

•**Debug Protocol Messages** — Select this checkbox to enable extended VDCP protocol logging, including some timing information.

•**Exclusive Control** — Select this checkbox to disallow the emulator from controlling the device if the device has its own clips loaded.

•**Don't Strip File Extensions** — Select this checkbox to include file extensions in VDCP IDs.

•**Sony VDCP Tweak** — Select this checkbox to apply Sony-specific VDCP adjustments to limit the jog step size to 32700 and strike the cue-status flag.

•**Allow File Delete** — Select this checkbox to allow the controller to delete IDs and clips.

•**Unload Orphaned Clips** — Select this checkbox to periodically unload all clips from the device except the current foreground and background clips.

•**Ignore Cue Duration** — Select this checkbox to always play clips to the end.

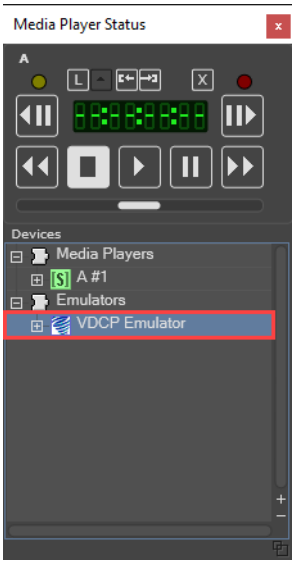
•**Ignore Cue TC-in** — Select this checkbox to always play clips from the beginning.

•**Extra File Access Check** — Select this checkbox to add files from the watched folder only when they are stable and not locked.

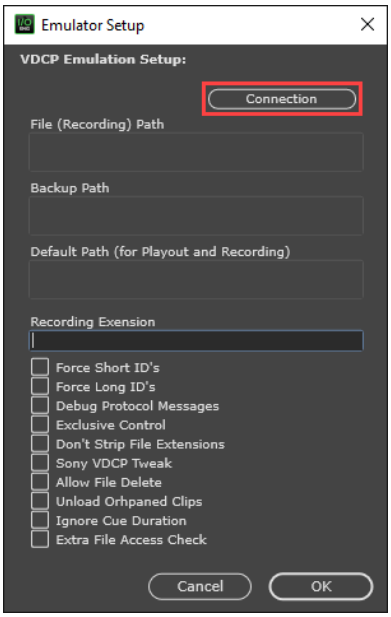
f. Select **OK**.

To configure the VDCP emulator

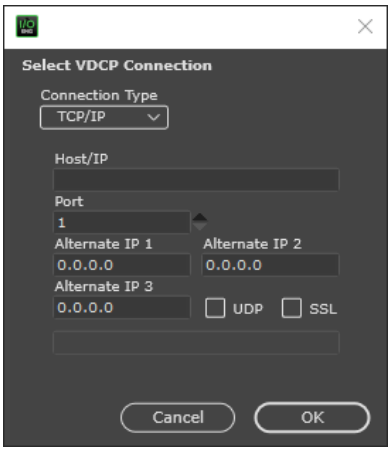
1. Select the Emulator Device that you created.



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

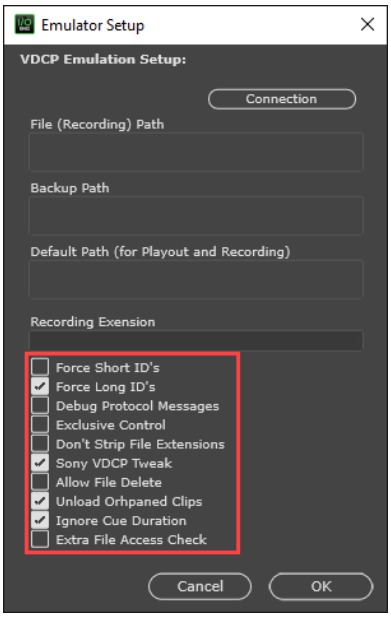


3. Select **TCP/IP** in the connection type and fill out the TCP port with the information from TCP/IP Table 4.1, “TCP/IP Settings,” on page 5.

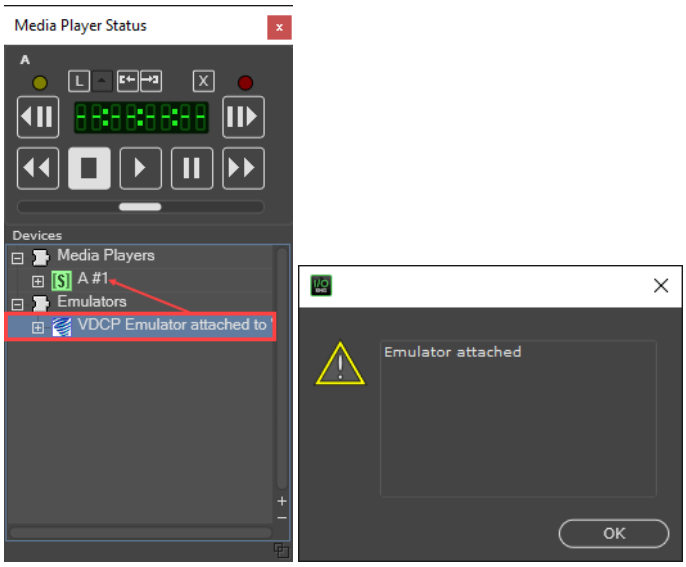


- For **Recording Extension**, this option is set to auto-populate the default extension for VDCP recordings.
  - The Valid Values are mxf, mp4 or mov

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.



Configuring the Database

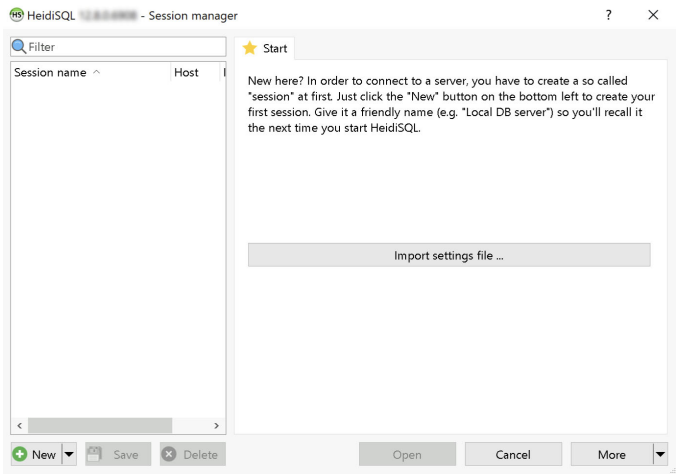
This chapter discusses the following topics:

- Creating the Media I/O Web UI Database
- Configuring Timezone Settings
- Opening the Media I/O Web-based UI for the first time

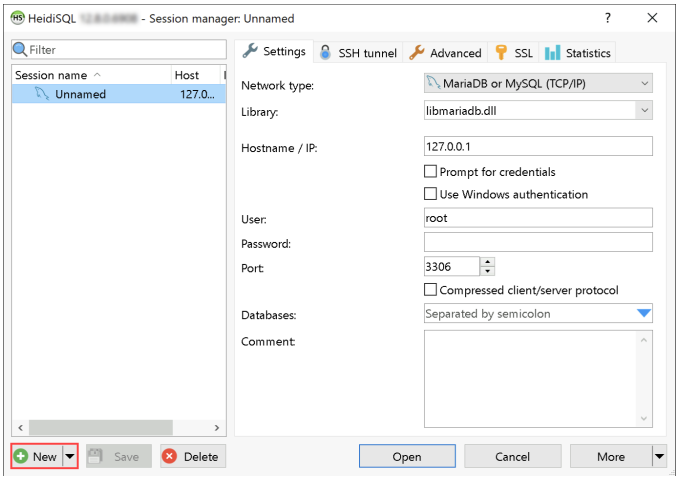
Creating the Media I/O Web UI Database

To configure the Media I/O Web UI Database

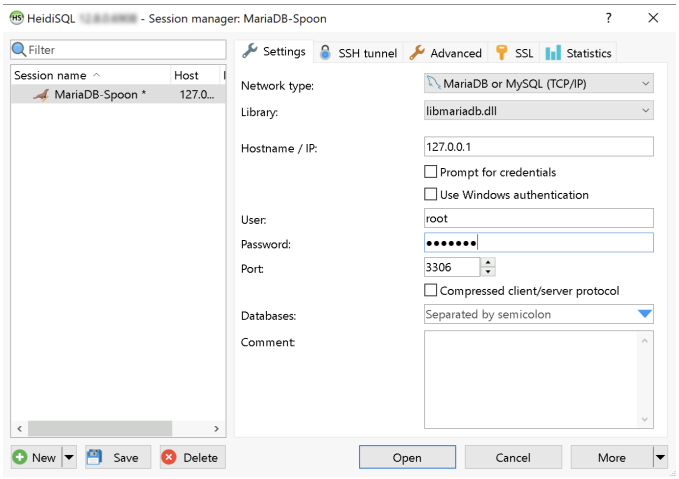
1. After installing MariaDB 11.4.4 LTS, open HeidiSQL.



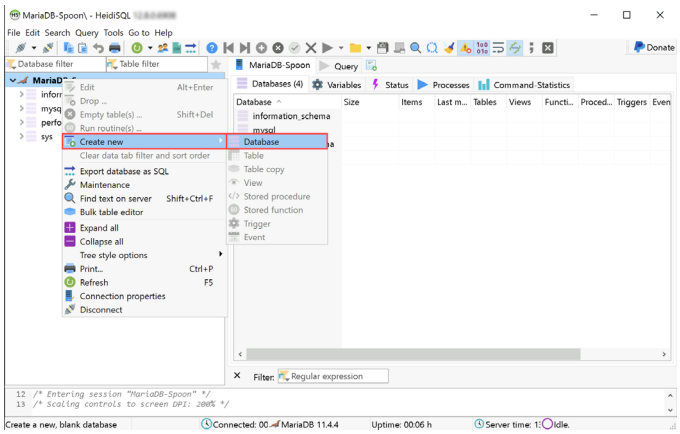
2. Select **New** and create a new Database Connection.



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



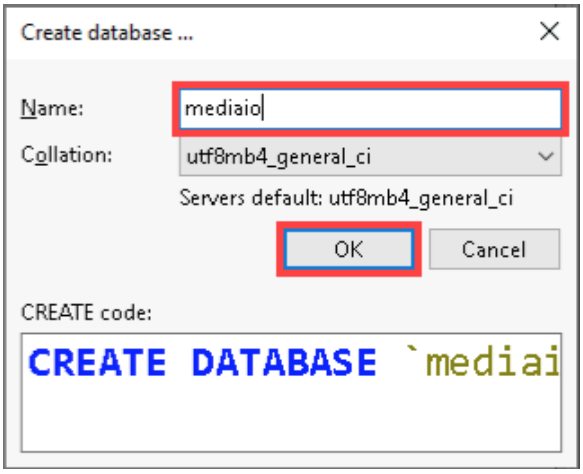
4. Right-click on the Database icon and select **Create new** > **Database**.



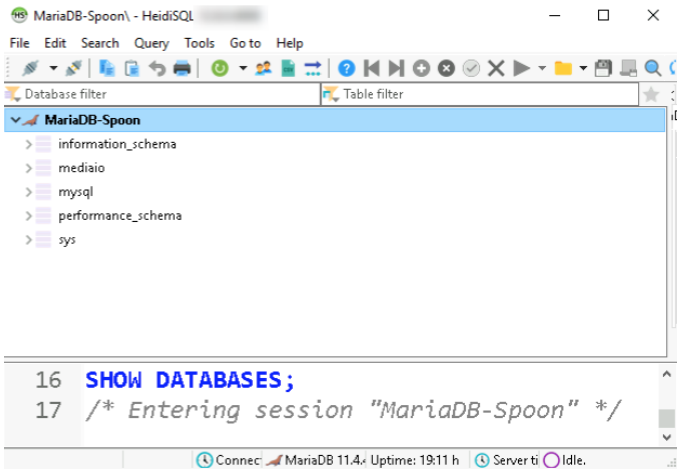
5. Enter the following database name:

   `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 Web UI for the first time, it is required to configure the timezone settings in JAVA.

To configure Timezone Settings in the http.conf File

1. Go to **`C:\Program Files\Ross Video\Media IO\Web UI\configuration`**.
2. Open the **`http.conf`** file and add the following line:
   `wrapper.java.additional.42=-Dtimezone=TimeZone`
3. 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`

4. After adding the line and saving the file, go to the next procedure before restarting Media I/O Web UI: "**To configure Timezone Settings in the service.conf File**"

To configure Timezone Settings in the service.conf File

1. Go to **`C:\Program Files\Ross Video\Media IO\Web UI\configuration`**.
2. Open the **`service.conf`** file and under **System** change the default timezone setting to the following:
   `wrapper.java.additional.10=-Duser.timezone=America/New_York`
3. Under **Logging Properties** change the default timezone setting to the following:
   `wrapper.timezone=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`

4. After adding the line and saving the file, restart the Media I/O Web UI.

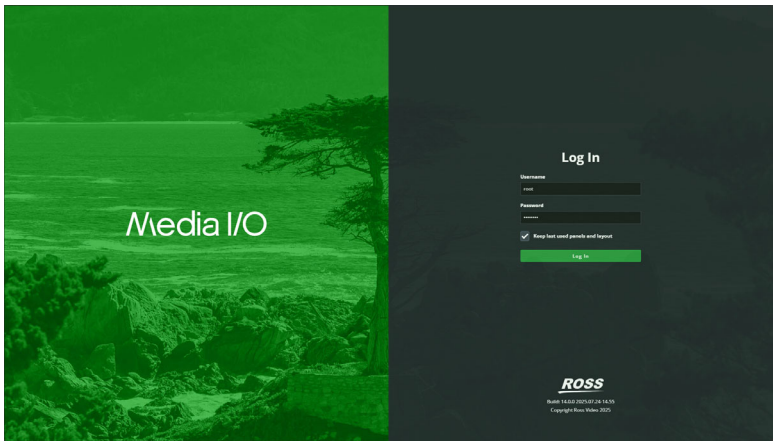
Opening the Media I/O Web-based UI for the first time

The Media I/O web-based user interface is only accessible from a desktop computer; you cannot access it from a mobile device.

To open the Media I/O Web-based UI

1. Open a supported web browser.
   - Google Chrome™ browser version 51 or greater
2. To open the Media I/O web-based user interface, enter the URL provided by your Media I/O administrator. The URL will be structured as follows, where your IP address replaces the placeholder text **`SERVER_IP`**: **`http://SERVER_IP/aura`**

   The **Log in** 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`**
4. Click **Log In**.

✶ **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.

Configuring Media I/O Web-based UI Settings

This chapter discusses the following topics:

- Media I/O Configuration Overview
- Configuring General Settings
- Configuring Role-Based Access Control
- Configuring Nodes and Services
- Configuring Media Management
- Configuring Ingest and Playout Settings

Media I/O Configuration Overview

The Media I/O user interface has been updated to simplify configuration and expand capabilities directly within the user interface. You can view the Standard Configuration dialog and Expanded System Configuration Dialog below.

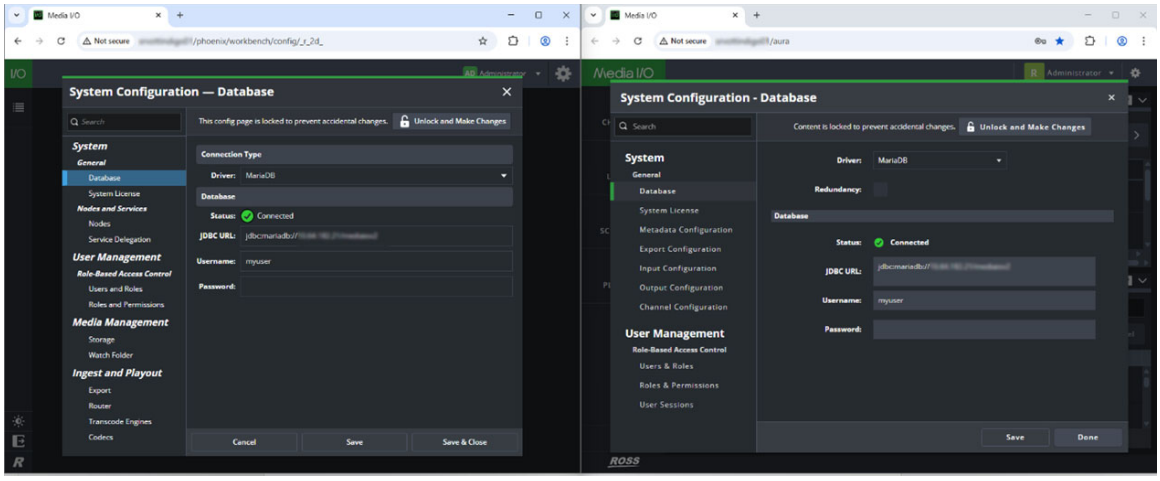


Figure 6.1 Expanded System Configuration Dialog (left) and Standard System Configuration Dialog (right)

✶ **NOTE**:
The term 'Standard' and 'Expanded' are temporary terminology for the System Configuration dialogs, as these dialogs will eventually be combined.

Standard System Configuration Dialog

The Standard System Configuration dialog, accessible from **`http://<x.x.x.x>/aura`** under the System Configuration menu, remains available for core Media I/O configuration tasks listed below.

- System
  - › General
    (Database | System License | Metadata Configuration | Export Configuration | Input Configuration | Output Configuration | Channel Configuration)
- User Management
  - › Role-based Access Control
    (Users & Roles, Roles & Permissions, and User Sessions)

To access the Standard Configuration Dialog

1. Enter the URL provided by your administrator in a supported browser, such as Google Chrome. It should match this format:
   `http://<x.x.x.x>/aura.`

2. In the top right, go to **System Configuration**.

   The Standard System Configuration menu opens.

Expanded System Configuration Dialog

An expanded System Configuration dialog is now available at **`http://<x.x.x.x>/phoenix`** under the **System Configuration** menu. While this dialog appears visually identical to the standard System Configuration dialog, it provides access to additional configuration options listed below.

✶ **TIP**: A shortcut button is available in the side menu under **System Configuration> General > Expanded Configuration**.

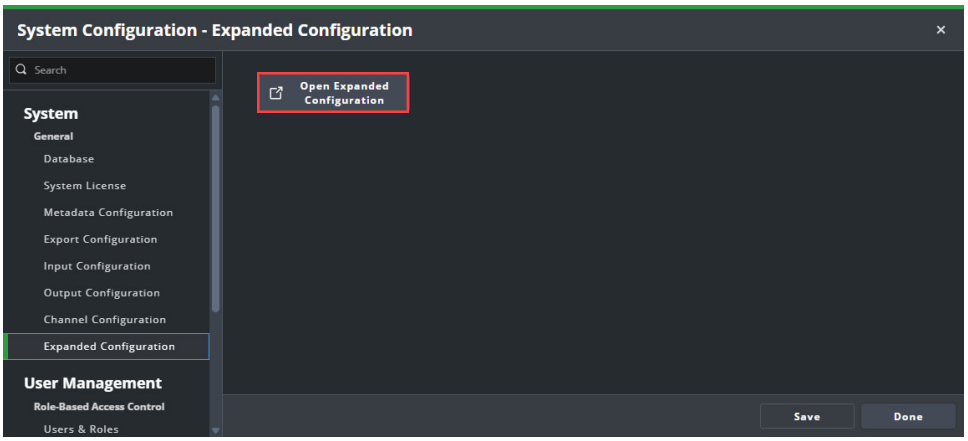
- System
  - › General
    (Database | System License)
  - › Nodes and Services
    (Nodes | Service Delegation)
- User Management
  - › Role-Based Access Control
    (Users and Roles | Roles and Permissions)
- Media Management
  - › Storage
  - › Watch Folder
- Ingest and Playout
  - › Export
  - › Router
  - › Codecs
  - › Transcode Engine

To open the Expanded Configuration Dialog

1. In the Media I/O Web-based User Interface, go to **System Configuration**.

   The Standard System Configuration Dialog opens.

2. From the menu, select **Expanded Configuration** and click the **Open Expanded Configuration** button.



The Expanded System Configuration Dialog opens in the web-browser.

✶ **TIP**:
Make sure to bookmark the Standard and Expanded System Configuration Dialog URLs. If you accidentally close the Media I/O web-user interface, you can navigate back to the original bookmark, or type the URL (`http://x.x.x.x/aura`). Where the `x.x.x.x` is the IP or name set by the administrator.

Considerations with Duplicate Configuration Settings

This separation allows the expanded configuration settings to be accessed when needed, without impacting the standard configuration workflow.

✶ **IMPORTANT**: There is currently some overlap with the menu options that are present in both Standard and Expanded Dialog currently. You must not duplicate configurations for RBAC, Licensing, and Database settings!

› For Database Configuration and Licensing it is recommended that you use the Standard Configuration menu. You only need to add the database and license to ONE Configuration Dialog (Expanded or Standard).

› For Role-Based access control it is recommended to configure settings in the Standard Configuration dialog to more conveniently access the **User Sessions** tab to configure the timeout duration. It is not available in the Expanded Configuration menu. You only need to configure RBAC in ONE Configuration Dialog (Expanded or Standard).

Configuring General Settings

You can configure settings for metadata, exports, inputs, outputs, and channels.

✶ **TIP**: These settings can be found from the Media I/O web-interface **`http://<x.x.x.x>/aura`** under **System Configuration > General.**

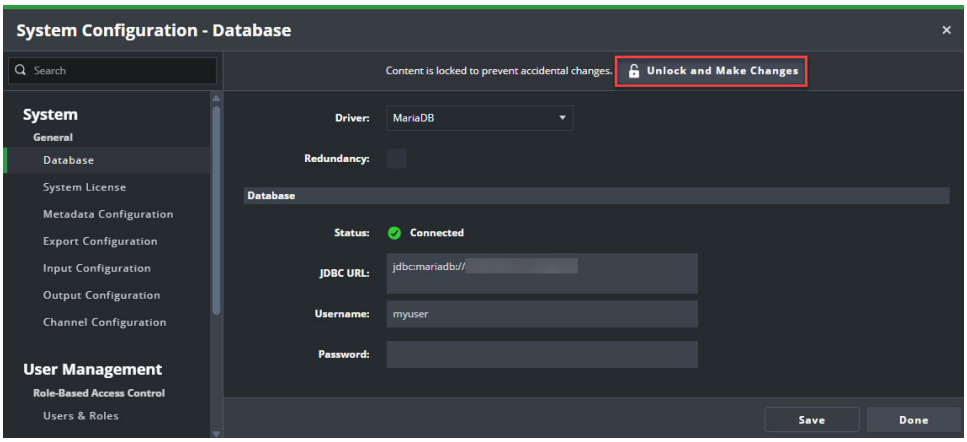
Configuring the Database Settings [Standard Dialog]

You must first connect Media I/O to the MariaDB database from the Media I/O web-based interface. You will add the host connection to connect to the database you configured in the previous chapter.

To add the Database Configuration Settings

1. From the top menu click **System Configuration**.

   The System Configuration Dialog opens.
2. Under **System Configuration > General**, select **Database**.
3. To edit the database settings, click **Unlock and Make Changes**.



4. Under **Connection Type**, for **Driver** enter a meaningful name for the driver.
5. Under **Database**, verify that the **Status** displays a green checkmark.
6. Set the JDBC URL to your MariaDB connection URL.
   The format should match the following: **`jdbc:mariadb://<host>:<port>/<database>`**.
7. Set the **Username** to **`root`**.
8. Set the **Password** to the default root **`password`**.
9. Click the **Save** button.

Licensing Media I/O [Standard Dialog]

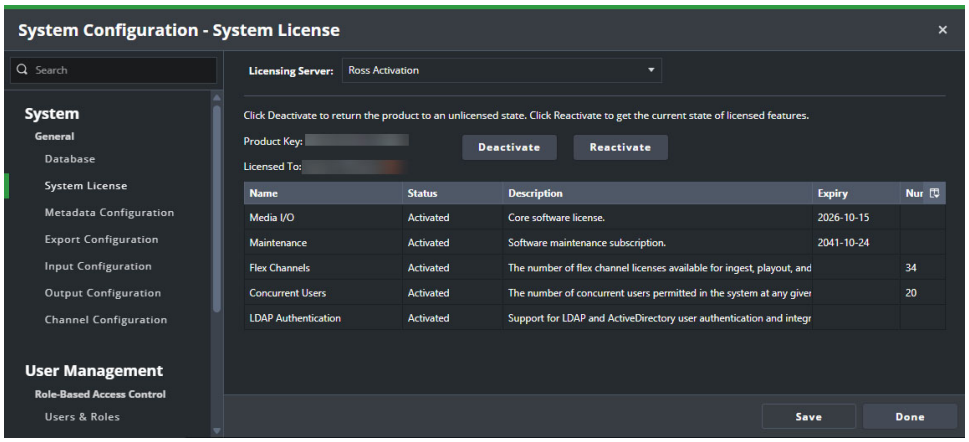
Media I/O must be licensed before the System Configuration features become visible in the User Interface. Licensing is performed by a commissioner, and is only required to activate the Media I/O system for the first time. Contact your Media I/O administrator if your licenses have not be activated.

To License Media I/O

1. Go to **System Configuration** button.

   The System Configuration dialog opens.

2. In the left tree view, under **System Configuration > General**, select **System License**.



3. In the **Licensing Server** dropdown menu, select **Ross Activation**.
4. In the **Product Key** input box, paste the product key provided by Ross Video.

✶ **NOTE**: Dashes must be included.

5. Verify that the product key was successfully applied by checking the **Status** column. The status of the following four Media I/O licenses should show as **Activated**:
   - **Media I/O**
   - **Maintenance**
   - **Flex Channels**
   - **Concurrent Users**

To Deactivate Media I/O Licenses

1. Go to **System Configuration** button.

   The System Configuration dialog opens.

2. In the left tree view, under **System Configuration > General**, select **System License**.
3. Select the license from the table, and then click the **Deactivate** button.
4. Click the **Save** button.
   You can now add a new license, or if you need to reactivate the old one, simply select and click the **Reactivate** button.

Configuring Metadata Attributes [Standard Dialog]

To create a Metadata Attribute

1. Go to **System Configuration** button.

   The System Configuration dialog opens.

2. In the left tree view, under **System Configuration > Genpassword**
3. **eral**, select **Metadata Configuration**.
4. Ensure the **Attributes** tab is selected, and select the + **Create** button.
5. Enter the following:
   a. **Name** — Enter a meaningful name.
   b. **Key Name** — The key name is automatically generated.
   c. **Type** — Select a type from the drop-down menu: Single-Line String, Multi-line String, Choice, & Boolean.
   d. **Description** — Optionally enter a useful description.
6. Once the attribute properties are completed, click the **Save** button.

To edit a Metadata Attribute

1. Go to **System Configuration** button.

   The System Configuration dialog opens.

2. In the left tree view, under **System Configuration > General**, select **Metadata Configuration**.
3. Under the **Attributes** tab, and select the attribute you wish to edit, and click the **Edit** button.
4. Make your changes, and select **Save**.

✶ If you wish to cancel your changes, click the **Back** button at the top of the page or close the **System Configuration - Metadata Configuration** dialog. Alternatively navigate to your next destination on the menu.

An **Unsaved Changes** notification appears to confirm whether you want to save your changes. To cancel, click **Don't Save**.

To create a Metadata Type

1. Go to **System Configuration** button.

   The System Configuration dialog opens.

2. In the left tree view, under **System Configuration > General**, select **Metadata Configuration**.
3. Select the **Metadata Types** tab and select the + **Create** button.
4. In the **Name** box, enter a meaningful metadata type name.
5. For the list of attributes, select the Display checkbox or Required checkbox to include this Metadata Type for a specific attribute. The Display checkbox will appear optional, and the Required checkbox is required and will appear with a red asterisk next to it. For example, for the attribute **Date Created t**he metadata type **Year** is required.
6. Click the **Save** button.

To edit a Metadata Type

1. Go to  **System Configuration** button.

   The System Configuration dialog opens.

2. In the left tree view, under  **System Configuration > General**, select **Metadata Configuration**.
3. Select the **Metadata Types** tab, select the **Metadata Type** you wish to edit, and then select the **Edit** button.
4. Modify the name or the selections for the list of attributes, where: the Display checkbox will appear optional, and the Required checkbox is required and will appear with a red asterisk next to it. For example, for the attribute **Date Created t**he metadata type **Year** is required.
5. Click the **Save** button.

Configuring the Export Settings [Standard Dialog]

You can optionally set up Media I/O to export sidecar XML automatically. Sidecar exports allows administrators to view live updates of the Media I/O system recordings by viewing the exported XML logs.

To Export Sidecar XML

1. Go to  **System Configuration** button.

   The System Configuration dialog opens.

1. In the left tree view, under  **System Configuration > General**, select **Export Configuration**.
2. Check the **Export Sidecar XML Automatically** checkbox.
3. Enter the **Default Folder Path** that the sidecar XML will automatically be downloaded to. For example: **`<M:\PAM>`**
4. Click the **Save** button.

To view the exported sidecar XML

1. On the admin computer, navigate to the **Default Folder Path** specified in the "**To Export Sidecar XML**" on page 6–8.
2. Double-click to open the exported sidecar XML file with your preferred editor. For example, Notepad++.
3. To confirm if the exported sidecar XML is updating with new metadata values, you can close the XML file, and then go back into the Media I/O web-based user interface and go to the Clip Viewer to edit any of the metadata values. Open the appropriate XML file and confirm that the updated values are present.

Configuring the Input Settings [Standard Dialog]

Use this page to configure input types, such as HLS 1, SB Input, and etc.

✶ You cannot edit inputs that are actively in use.

To configure an Input

1. Go to **System Configuration** button.

   The System Configuration dialog opens.

2. In the left tree view, under **System Configuration > General**, select **Input Configuration**.
3. Select the + **Create** button and enter the following:
   a. **Name** — Enter a meaningful input name.
   b. **Type** — Select a supported input type from the dropdown menu (SDI, 2110, NDI, HLS, or SRT).
      - **SDI -** For the SDI Setup, you must check the **Use Router** checkbox, and enter the **Router Input.**
      - **NDI -** For the NDI Setup, you must enter the source URL.
      - **HLS** - For the HLS setup, you must enter a source URL.
      - **SRT** - For the SRT setup, you must enter a source URL.
4. Click the **Save** button.

Configuring the Output Settings [Standard Dialog]

Use this page to configure output types, such as H264 1080p-5994, AVCi 100M-1080p-5994, and etc.

✶ You cannot edit inputs that are actively in use.

To configure an Output

1. Go to **System Configuration** button.

   The System Configuration dialog opens.

2. In the left tree view, under **System Configuration > General**, select **Output Configuration**.
3. Select the + **Create** button and enter the following:
   a. **Name** — Enter a meaningful output name.
   b. Storage — Select one of the configured storage options.
   c. **Codec** — Select a supported codec type from the dropdown menu. For example: AVCi 100M-1080p-5994, AVCi 50M-1080p-5994, H264 1080p-5994, H264-Proxy, ProresHQ-1080p-5994.
4. Click the **Save** button.

Configuring the Channel Settings [Standard Dialog]

Use this page to configure channels, such as Channel A, Channel B and etc.

✶ You cannot edit channels that are actively in use.

To configure a Channel

1. Go to  **System Configuration** button.

   The System Configuration dialog opens.

2. In the left tree view, under  **System Configuration > General**, select **Output Configuration**.
3. Select the + **Create** button and enter the following:

   a. ***Letter** — Enter a meaningful output name.

   b. Label — Optionally, add a meaningful label for this Channel.

   c. *Type — Select a type (Ingest, Playout, or Bidirectional). The type cannot be changed after your settings are saved.

   d. *IP — Enter the server IP.

   e. * Port — Enter the Port.
4. Depending on the channel type, please fill in the following:

   - **Ingest Configuration** — Check the **Use Router** checkbox, and enter the **Router Output**.
   - **Playout Configuration** — Enter the **IP** address and **Port** number.
   - **Bidirectional Configuration** — For the Ingest Configuration, check the **Use Router** checkbox, and enter the **Router Output**.
5. Click the **Save** button.

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 [Standard Dialog]

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 [Standard Dialog]**" on page 6–11.

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 [Standard Dialog]

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.

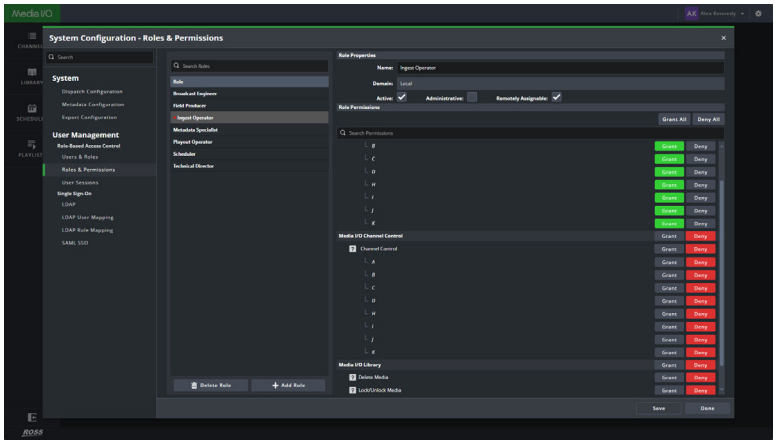
d. **Administrator** — Select this checkbox to assign Administrator level privileges to the account.

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.



Managing User Sessions [Standard Dialog]

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 Nodes and Services

You can configure nodes and service delegation in the Expanded System Configuration Dialog. Nodes and Services are only required if you are setting up a High Availability system with a secondary server.

✶ **TIP**: The Expanded System Configuration Dialog can be found from the Media I/O web-interface `http://<x.x.x.x>/phoenix` under **System Configuration > Nodes and Services.**

Verifying Nodes [Expanded Dialog]

If you are configuring a High Availability system, the primary and secondary Media I/O servers will appear in the list of nodes to the right of the System Configuration menu. You can verify that they are successfully connected by confirming that a green checkbox appears next to the server name. Select either primary or secondary server to view the full details (name, host, status, peers, active services and assigned services).

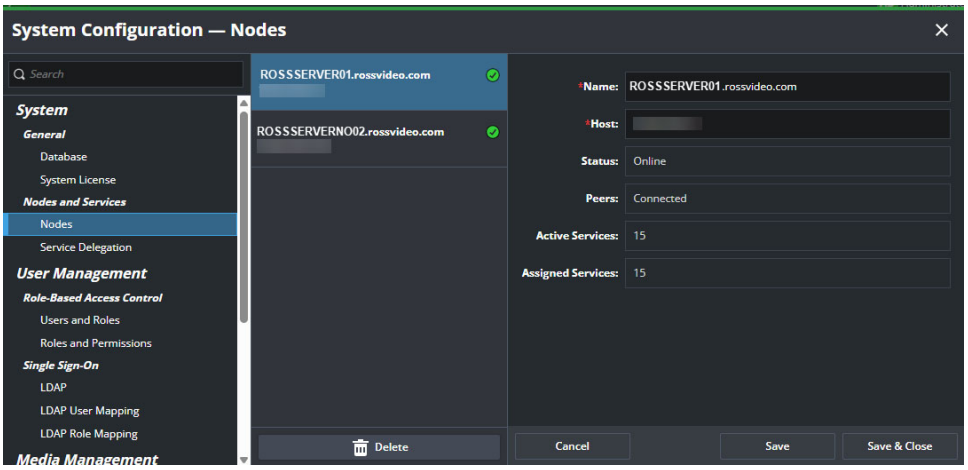
✶ High Availability (HA) setups require that the Media I/O web-based interface is successfully installed on two separate admin computers and points to the same MariaDB database. The nodes must be able to communicate and appear in the Expanded **System Configuration > Nodes and Services > Nodes** area before channel configuration.

To Verify the Primary and Secondary Server Connections (Only Required for High Availability Setup)

1. Once the Media I/O web-interface for the Expanded System Configuration Dialog is open, go to **System Configuration** button.

   The Expanded System Configuration Dialog opens.

2. In the left tree view, under **System Configuration > Nodes and Services**, select **Nodes**.



3. You can verify that they are successfully connected by confirming that a green checkbox appears next to the server name.

Assigning a Node to a Service Delegation [Expanded Dialog]

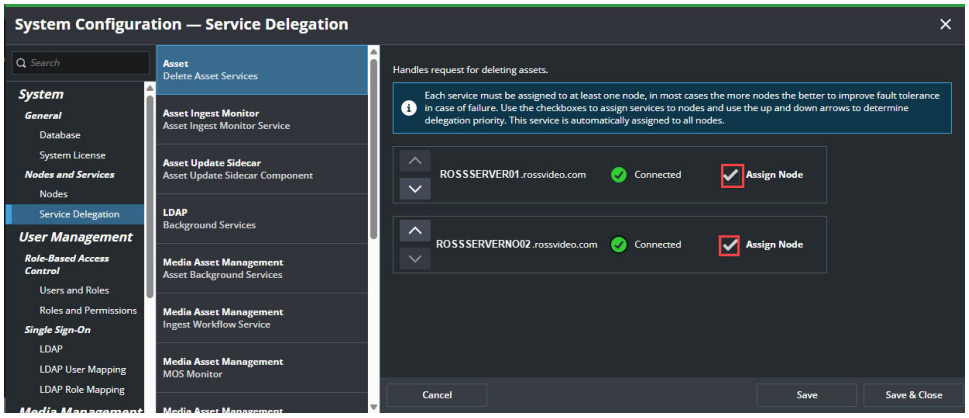
You can assign nodes to any of the service delegations that appear on the Service Delegation list.

To Assign a Node to a Service Delegation

1. Once the Media I/O web-interface for the Expanded System Configuration Dialog is open, go to **System Configuration** button.

   The Expanded System Configuration Dialog opens.

2. In the left tree view, under **System Configuration > Nodes and Services**, select **Service Delegation**.
3. You can select a Service Delegation from the list to the right of the System Configuration menu and then select the Assign Node checkbox to assign it to either the Primary or Secondary server node. For example, Asset: Delete Asset Services, Asset Ingest Monitor: Asset Ingest Monitor Service, Asset Update Sidecar: Asset Update Sidecar Component, LDAP: Background Services, and etc.



4. Click the **Save** button.

Configuring Media Management

You can configure media management by adding a local storage system and watch folders.

✶ **TIP**: The Expanded System Configuration Dialog can be found from the Media I/O web-interface `http://<x.x.x.x>/phoenix` under  **System Configuration > Media Management**.

Configuring a Storage System [Expanded Dialog]

You must configure a default local storage system.

To configure a storage system

1. Once the Media I/O web-interface for the Expanded System Configuration Dialog is open, go to  **System Configuration** button.

   The Expanded System Configuration Dialog opens.

2. In the left tree view, under  **System Configuration > Media Management**, select **Storage**.
3. To create a new storage, select the + **Add** button.
4. Fill in the following:
   a. ***Provider** — Enter the provider. For example, `FileSystem`.
   b. ***Name** — Enter a meaningful name for the storage system. For example, `Primary Media Storage`.
   c. ***Namespace** — Enter a unique identifier for this storage namespace.
   d. ***Path** — Enter the directory path. For example, `M:/MAM`.
   e. If you wish to enable indexing, select the **Enable Indexing** checkbox.

      When enabled, Media I/O performs a register-in-place operation:

      - Existing media files are scanned and registered in the Media I/O database.
      - Files are not moved or copied.
      - Only supported media formats, frame rates, and file extensions are registered.
      - Images and thumbnails are not included.
      - Indexing does not generate proxy media.

   f. If you wish to enable an initial state scan, select **Initial State Scan**.
5. Click the **Save** button.
6. Select the storage you just created.
7. Select the **Enabled** checkbox to make this storage active.
8. Select the **Default** checkbox if you wish this to be your default storage.
9. Click the **Save** button.

Configuring a Watch Folder [Expanded Dialog]

You must configure a watch folder for your Media I/O system.

To configure a watch folder

1. Once the Media I/O web-interface for the Expanded System Configuration Dialog is open, go to  **System Configuration** button.

   The System Configuration dialog opens.

2. In the left tree view, under  **System Configuration > Media Management**, select **Watch Folder**.
3. To create a new watch folder, select the + **Add** button.
4. Select the **Enabled** checkbox.
5. Fill in the following:
   a. ***Name** — Enter a meaningful name for the watch folder.
   b. ***Path** — Enter the directory path for the watch folder. For example, **`M:/PAM`**.
   c. ***Destination Storage** — Select the destination storage. For example, **`Live Ingest Recordings`**.
   d. ***Polling Interval** — Select the preferred Media I/O polling interval. For example: **`10 seconds`**.
   e. **Allowed File Extensions** — Enter the preferred file extension type, separated by commas. For example, **`.mxf, .mp4, .mov, .avi, .clip.`**
6. Click the **Save** button.

Configuring Ingest and Playout Settings

You can configure the following ingest and playout settings: exports, router, codecs and transcode engines.

TIP: The Expanded System Configuration Dialog can be found from the Media I/O web-interface `http://<x.x.x.x>/phoenix` under **System Configuration > Ingest and Playout Settings.**

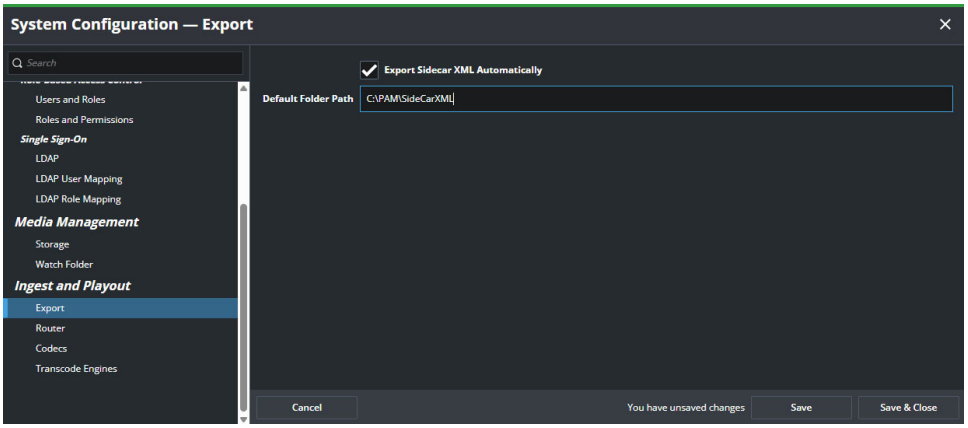
Configuring Export Settings for Ingest and Playout [Expanded Dialog]

You must configure the default folder path where you wish the sidecar XML to be automatically exported.

1. Once the Media I/O web-interface for the Expanded System Configuration Dialog is open, go to **System Configuration** button.

   The System Configuration dialog opens.

2. In the left tree view, under **System Configuration > Media Management > Ingest and Playout**, select **Export**.



3. If you wish to export sidecar XML, select the **Export Sidecar XML Automatically** checkbox.
4. Add a **Default Folder Path** to the directory you wish the XML files to be stored.
5. Click the **Save** button.

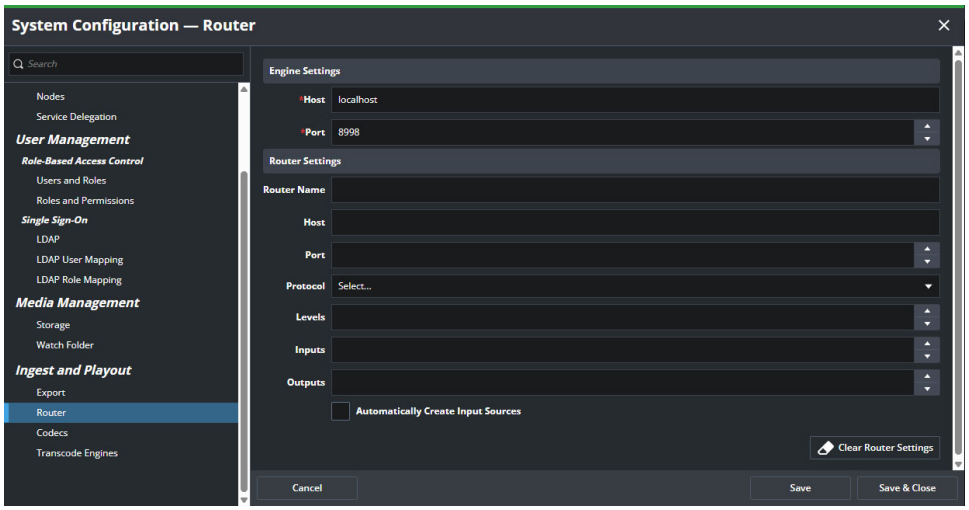
Configuring Router Settings for Ingest and Playout [Expanded Dialog]

You can configure router settings in the Media I/O web interface.

1. Once the Media I/O web-interface for the Expanded System Configuration Dialog is open, go to **System Configuration** button.

   The System Configuration dialog opens.

2. In the left tree view, under **System Configuration > Media Management > Ingest and Playout**, select **Router**.



3. For the Engine Settings, you must fill in the required field (indicated by a red asterisk):
   a. **Host** — Enter your localhost.
   b. **Port** — Enter the port of the admin computer your engine is installed on.
4. Optionally, if you need to add a router connection enter the following Router Settings:
   a. **Router Name** — Enter the router name.
   b. **Host** — Enter the host IP address.
   c. **Port** — Enter the router port number.
   d. **Protocol** — Select the protocol from the dropdown menu.
   e. **Levels** — Enter a level.
   f. **Inputs** — Select the inputs you wish to use for the router.
   g. **Outputs** — Select the outputs you wish to use for the router.
   h. **Automatically Create Input Sources** — Select this checkbox if you wish input sources to be automatically created.
   i. Click the **Save** button.

To Clear Router Settings

1. Once the Media I/O web-interface for the Expanded System Configuration Dialog is open, go to  **System Configuration** button.

   The System Configuration dialog opens.

2. In the left tree view, under  **System Configuration > Media Management > Ingest and Playout**, select **Router**.
3. Click the **Clear Router Settings** button.

Configuring Codecs for Ingest and Playout [Expanded Dialog]

You must configure your codec settings, wrapper type and paste in the appropriate validated JSON file.

✶ **IMPORTANT**: Use a JSON formatter or validator on your JSON snippet to ensure correct configuration.

1. Once the Media I/O web-interface for the Expanded System Configuration Dialog is open, go to **System Configuration** button.

   The System Configuration dialog opens.

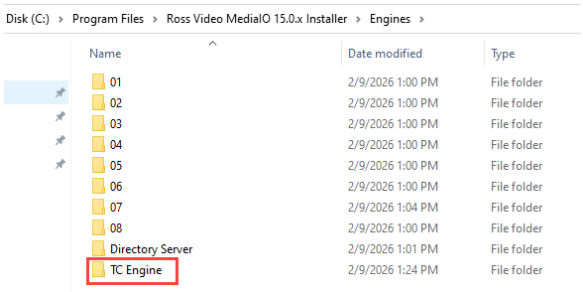
2. In the left tree view, under **System Configuration > Media Management > Ingest and Playout**, select **Codecs**.

3. To add a new codec type, select the **Add** button.
4. Fill in the following:
   a. ***Name** — Enter a meaningful name for the storage system.
   b. ***Wrapper Type** — Select the preferred wrapper type from the drop-down menu. For example, **MOV**.
   c. ***Codec JSON** — Paste the parsed JSON codec file.
5. Click the **Save** button.

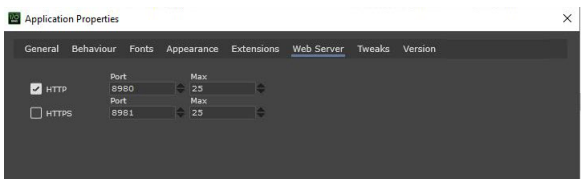
Configuring Transcode Engine Settings for Ingest and Playout [Expanded Dialog]

You must add the Transcode Engine on the admin computer to the Media I/O web-based interface.

1. Before you begin, verify your Transcode Engine settings on the administrative computer. Navigate to the appropriate folder and open the Transcode Engine application.



2. You can find the Port number under **Application Properties > Web Server.**



3. Once the Media I/O web-interface for the Expanded System Configuration Dialog is open, go to **System Configuration** button.

   The System Configuration dialog opens.

4. In the left tree view, under  **System Configuration > Media Management > Ingest and Playout**, select Transcode Engine

5. Click the  **Add** button to add the Transcode Engine.

   a. ***Host** — Enter the host of the Transcode Engine.

   b. ***Port** — Enter the port of the Transcode Engine.

6. Click the **Save** button.