

# LIVESTREAM STUDIO



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# Requirements & Recommendations

# Recommended Hardware Specifications for Livestream Studio

Below are the recommended hardware specifications for running Livestream Studio, including example workflows that each system type can handle.

Please note that many of these scenarios involve using Livestream Studio's [hardware encoding feature](#). This is when the encoding is done either by a [supported graphics card](#) or in a [processor that has integrated graphics](#).

## Desktop Computer with Hardware Encoding Enabled

Hardware Component	Recommended Minimum Desktop (with Hardware Encoding)
Processor with Integrated Graphics	Quad Core Intel® i5 (6th Generation) or i7 (4th Generation) Processor or better
Graphics	Quick Sync-enabled CPU or NVIDIA NVENC-enabled GPU
Memory	8 GB or better
Storage	128GB SSD + 512GB HDD or better
Motherboard	Intel compatible motherboard
Example of a supported workflow	<ul style="list-style-type: none"><li>• Camera sources: Multiple HD inputs &amp; outputs</li><li>• Streaming: Up to 1080p multi-bitrate streaming profiles</li><li>• Graphics: Intermediate graphics templates and layering with picture-in-picture, chroma key, and image overlays</li></ul>

## Desktop Computer without Hardware Encoding

Hardware Component	Recommended Specifications (no hardware encoding)
Processor	6 (Hexa) Core Intel® i7 5th Generation Extreme Edition or better
Graphics	NVIDIA GeForce 600 Series or better
Memory	16GB or better
Storage	2TB SSD
Motherboard	Intel compatible motherboard
Example of a supported workflow	<ul style="list-style-type: none"> <li>• Sources: Multiple HD Inputs/Outputs</li> <li>• Streaming: Up to 720p multi-bitrate streaming <u>or</u> single-bitrate 1080p streaming</li> <li>• Graphics: Intermediate graphics templates and layering with picture-in-picture, chroma key, and image overlays</li> </ul>

## Advanced Desktop Computer with Hardware Encoding

Hardware Component	Recommended Desktop Specification
Processor	6 (Hexa) Core Intel i7 6th Generation Extreme Edition or better
Graphics	NVENC enabled NVIDIA GPU (Such as Nvidia Geforce GT 730)
Memory	32-64GB DDR4 Memory
Storage	2TB SSD
Motherboard	Intel compatible motherboard
Example of a supported workflow	<ul style="list-style-type: none"><li>• Sources: Multiple 4K / HD Inputs and Outputs</li><li>• Streaming: 4K / 1080p multi-bitrate streaming</li><li>• Graphics: Advanced graphics templates and layering with picture-in-picture, chroma key, and animated graphic overlays</li></ul>

## Minimum Laptop with Hardware Encoding

Hardware Component	Minimum Laptop Specification (with Hardware Encoding)
Processor with integrated graphics	4 (Quad) Core Intel i5 - 6th Generation or better
Memory	8GB or better
Graphics	Quick Sync enabled CPU or NVIDIA NVENC enabled GPU
Storage	500GB HDD (SSD preferred) or better
Example of a supported workflow	<ul style="list-style-type: none"><li>• Sources: USB Webcams, USB 3.0 Capture devices and Remote Cameras over LAN/WLAN</li><li>• Streaming: Up to 720p multi-bitrate streaming</li><li>• Graphics: Simple graphics templates with picture-in-picture and static overlays (no chroma key, no animated graphics)</li></ul>

## Advanced Laptop with Hardware Encoding

Hardware Component	Advanced Laptop specification (with hardware encoding)
Processor with integrated graphics	4 (Quad) Core Intel i7 - 6th Generation or better
Graphics	Quick Sync enabled CPU or NVIDIA NVENC enabled GPU
Memory	16 GB DDR4 Memory or better
Storage	500 GB SSD or better
Example of a supported workflow	<ul style="list-style-type: none"><li>• Sources: USB Webcams and USB 3.0 Capture devices</li><li>• Streaming: Up to 1080p Multi-bitrate streaming profiles..</li><li>• Graphics: Intermediate Graphics templates and layering w/ PiP, Chroma Key, and image overlays.</li></ul>

## Additional Notes

- Livestream Studio is not compatible with Windows 32-bit systems.
- Studio for macOS is currently available in [beta](#).
- If you intend to use USB 3.0 capture devices for any video input or output, we recommend your motherboard have an Intel X99 chipset, as X79 chipsets do not support these USB 3.0 devices. Please see [Blackmagic's notice regarding USB 3.0 device support](#).

# Supported Capture Devices for Livestream Studio™

Here is a full list of supported capture devices:

## PCIe

- \*\*Blackmagic Decklink SDI
- Blackmagic DeckLink SDI 4K
- \*\*Blackmagic DeckLink Duo
- Blackmagic DeckLink Duo 2
- \*\*Blackmagic DeckLink Quad
- Blackmagic DeckLink Quad 2
- \*\*Blackmagic DeckLink Optical Fiber
- \*\*Blackmagic DeckLink Studio
- Blackmagic DeckLink Studio 4K
- \*\*Blackmagic DeckLink HD Extreme 3D
- Blackmagic DeckLink 4K Extreme
- Blackmagic DeckLink 4K Extreme 12G - Quad SDI
- Blackmagic DeckLink 4K Pro
- Blackmagic DeckLink Mini Recorder (capture only)
- Blackmagic DeckLink Mini Monitor (playback only)
- Blackmagic Intensity Pro 4K
- Blackmagic DeckLink Mini Recorder 4K (capture only)
- Blackmagic DeckLink Mini Monitor 4K (playback only)
- Magewell Pro Capture AIO
- Magewell Pro Capture HDMI

- Magewell Pro Capture Quad HDMI
- Magewell Pro Capture SDI
- Magewell Pro Capture Quad SDI
- Magewell Pro Capture Mini HDMI
- Magewell Pro Capture Mini SDI

*\*\*Indicates this product has been discontinued. However, it is still compatible with our software if you already own it.*

## Thunderbolt

- Blackmagic UltraStudio Mini Recorder (capture only)
- Blackmagic UltraStudio Mini Monitor (playback only)
- \*\*Blackmagic UltraStudio 3D
- Blackmagic UltraStudio 4K
- Blackmagic UltraStudio 4K Extreme
- Blackmagic UltraStudio 4K Extreme 3
- \*\*Blackmagic UltraStudio Express
- Blackmagic Intensity Shuttle for Thunderbolt
- \*\*Blackmagic Intensity Extreme

*\*\*Indicates this product has been discontinued. However, it is still compatible with our software if you already own it.*



Blackmagic Design does not currently offer capture devices that connect via Thunderbolt 3.

 Please make sure you are plugging Thunderbolt capture devices into a ports that have a Thunderbolt logo; oftentimes, these can be confused with display ports.

## USB 3.0

- Blackmagic UltraStudio Pro
- Blackmagic UltraStudio SDI
- Blackmagic Intensity Shuttle for USB 3.0
- \*\*Blackmagic ATEM 1 M/E Production Switcher
- \*\*Blackmagic ATEM 2 M/E Production Switcher
- Magewell USB Capture HDMI
- Magewell USB Capture SDI

*\*\*Indicates this product has been discontinued. However, it is still compatible with our software if you already own it.*

 Blackmagic USB 3.0 encoding devices are not supported on all machines. In particular, motherboards with an Intel X79 chipset do not support Blackmagic USB 3.0 devices. Please see Blackmagic Design's notes about [USB 3.0 system requirements](#).

 Studio does not utilize the individual inputs on the ATEM production switchers. Studio can ingest the output from these production switchers via USB 3.0.



Important: Capture devices that connect via *USB 2.0* are not compatible with Livestream Studio.

The following Blackmagic Design products do not work with Livestream Studio:

- H.264 Pro Recorder
- ATEM Television Studio
- ATEM Production Studio 4K
- ATEM 1 M/E Production Studio 4K
- ATEM 2 M/E Production Studio 4K
- ATEM 2 M/E Broadcast Studio 4K

If you would like to connect one of the ATEM 4K switchers to Studio, it is recommended to utilize one of their video outputs (HDMI, SDI, etc.) into a Blackmagic Capture device that Studio does support.

# What Cameras Work with Livestream Studio?

Livestream Studio is compatible with USB webcams, consumer HDMI camcorders, and higher end HD-SDI cameras. Older cameras can also connect via component, composite, and S-Video provided you have the proper video capture cards to connect them to your PC.

USB Webcams are ideal for very localized use, as most webcams' cables do not extend beyond six feet.

HDMI cameras range in size and cost and work best for shorter distances. While longer HDMI cables are available, we recommending staying below 20 feet to retain optimal video quality.

HD-SDI cameras are much pricier but can be worth the cost if your production requires long cable runs. SDI cables can transmit audio & video over hundreds of feet without losing video quality.

Livestream Studio does support 4K camera inputs, provided that you install a 4K compatible capture card. Please be advised that not all providers support streaming in 4K at this time.

## A Note Regarding PTZ Cameras

If you wish to use a PTZ camera with Livestream Studio, it must either include a video output interface (e.g. SDI) or be [NDI compatible](#). If your PTZ camera does not include either of these specifications, then it will not work with Livestream Studio.

## 360 Cameras

Livestream Studio does not support 360 cameras and video formats at this time.

# Power Requirements for Livestream Studio™ Hardware Products

The power required to run Livestream Studio will be dependent on the type of system you are running the software on.

The HD51, HD510, and HD550 have the following power requirements:

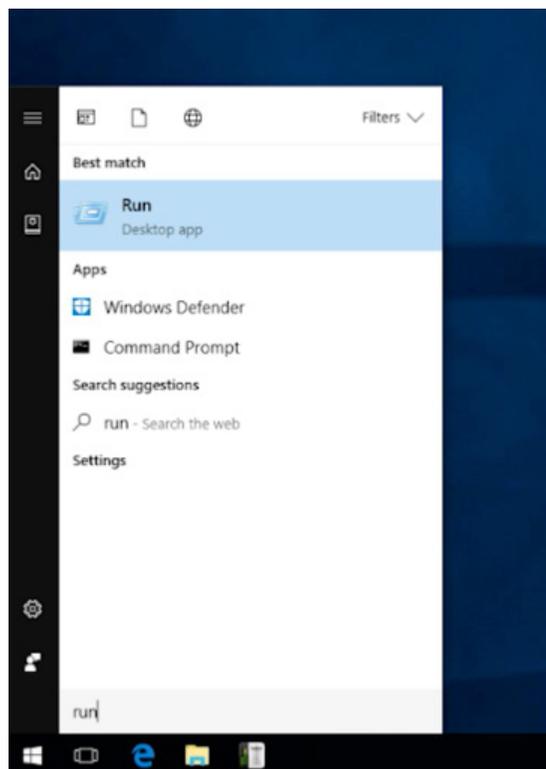
- 230 / 110 Volts
- Approximately 500 watts running at full capacity

# Forcing Windows PC to Run Maximum Amount of Cores

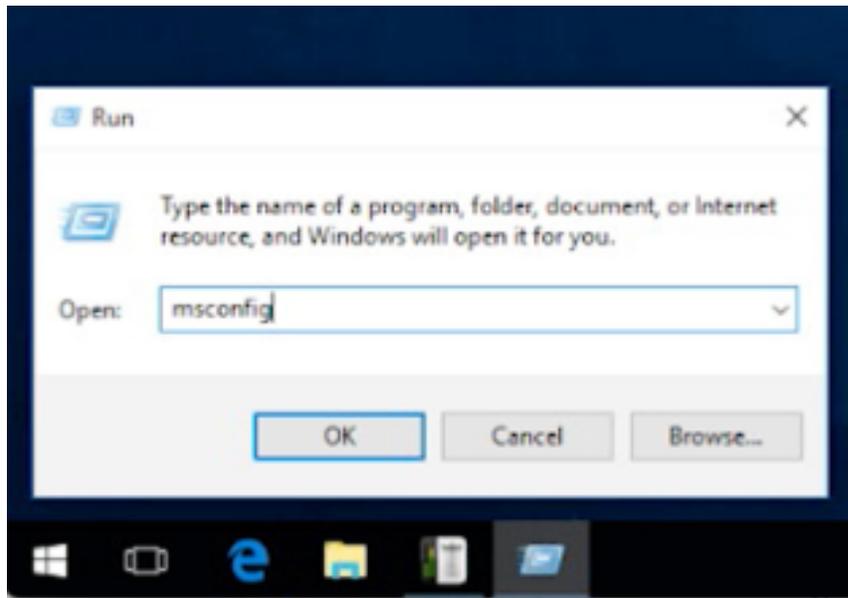
To optimize your computer's performance when using Livestream Studio, we recommend forcing your system to use its maximum amount of cores (usually four or six; the below example has eight).

! This does not apply to macOS systems.

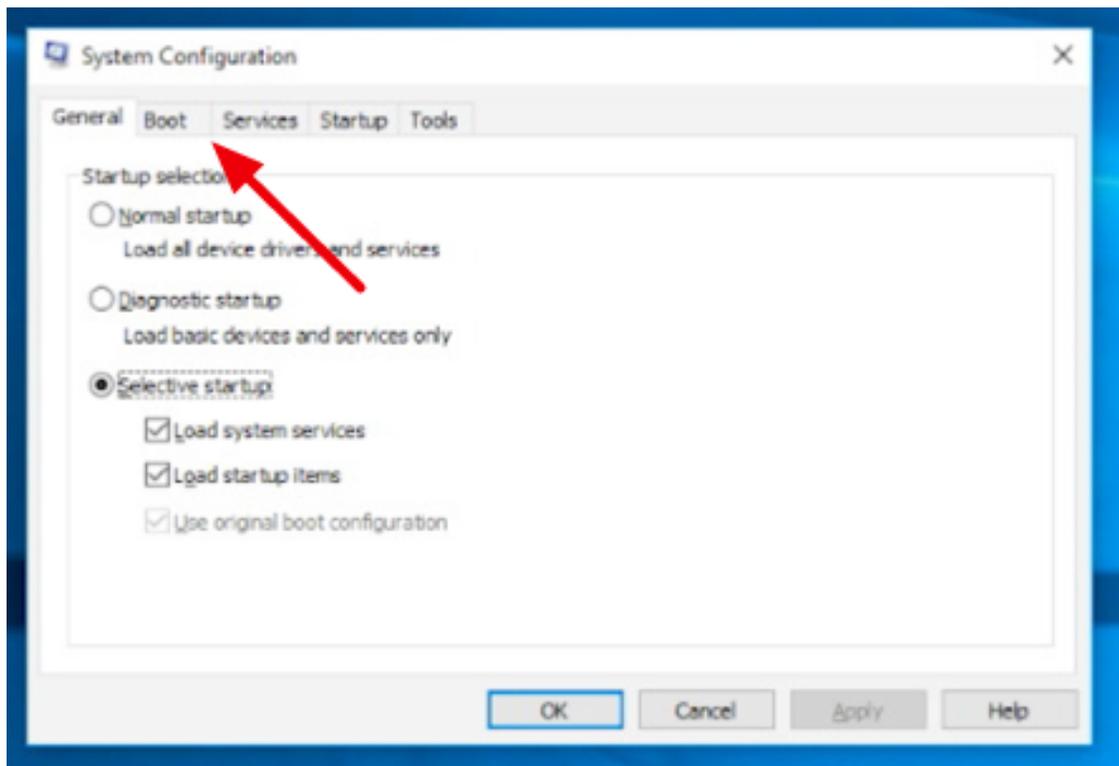
Open the Windows start menu and type "Run," then open the Run desktop app.



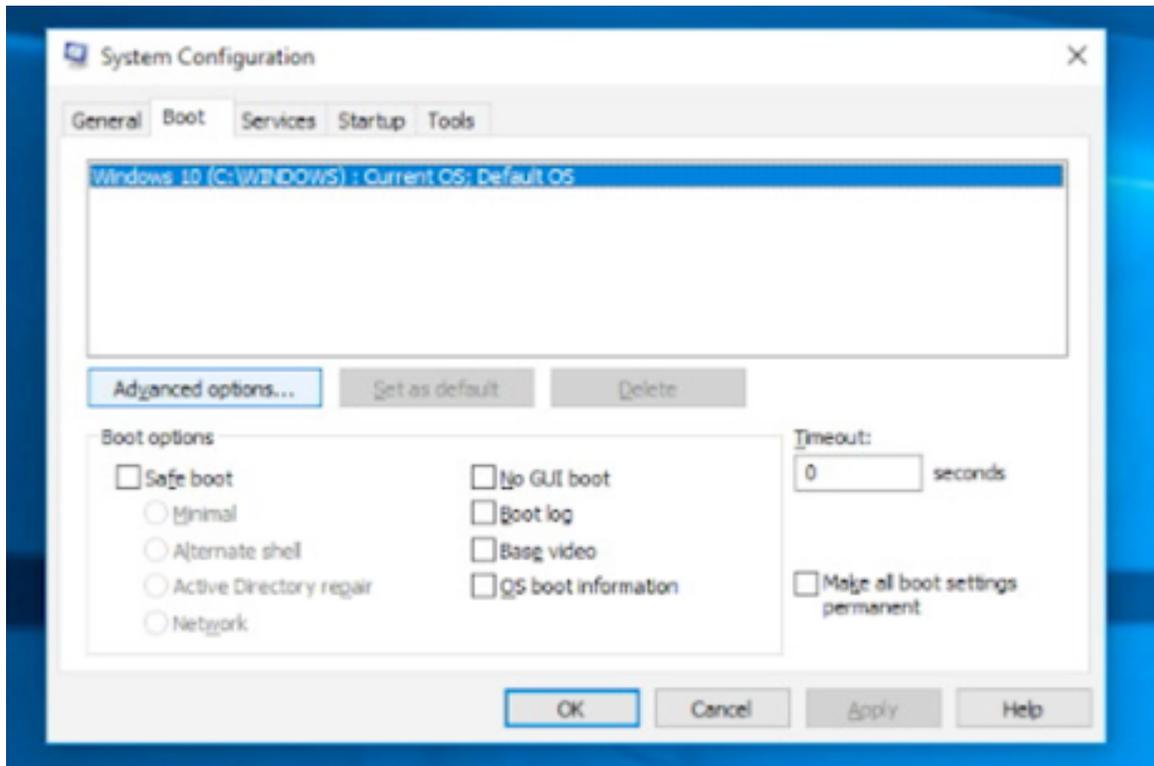
Type msconfig into the text field, then click OK.



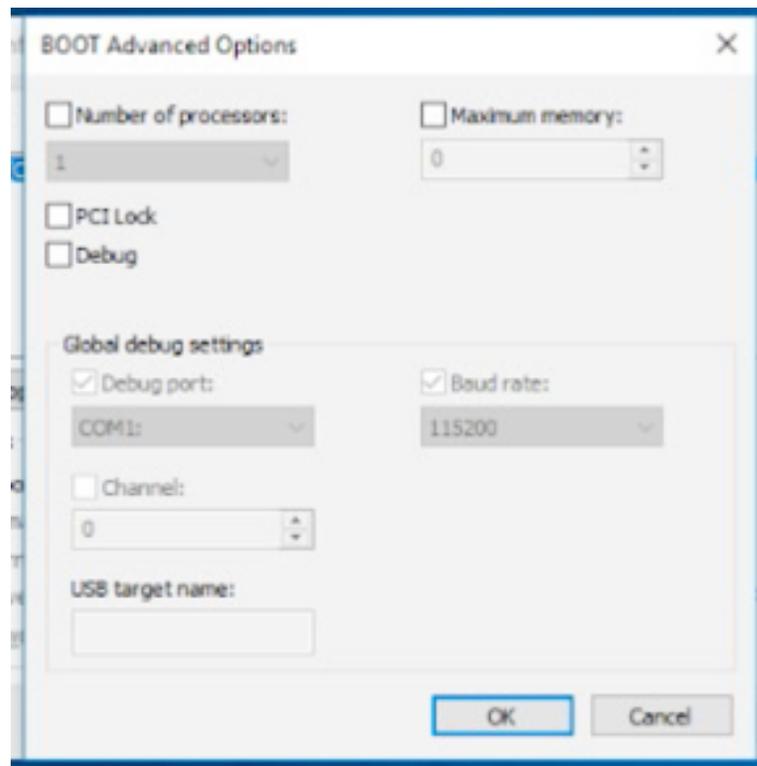
This window will open up. Navigate to the Boot tab.



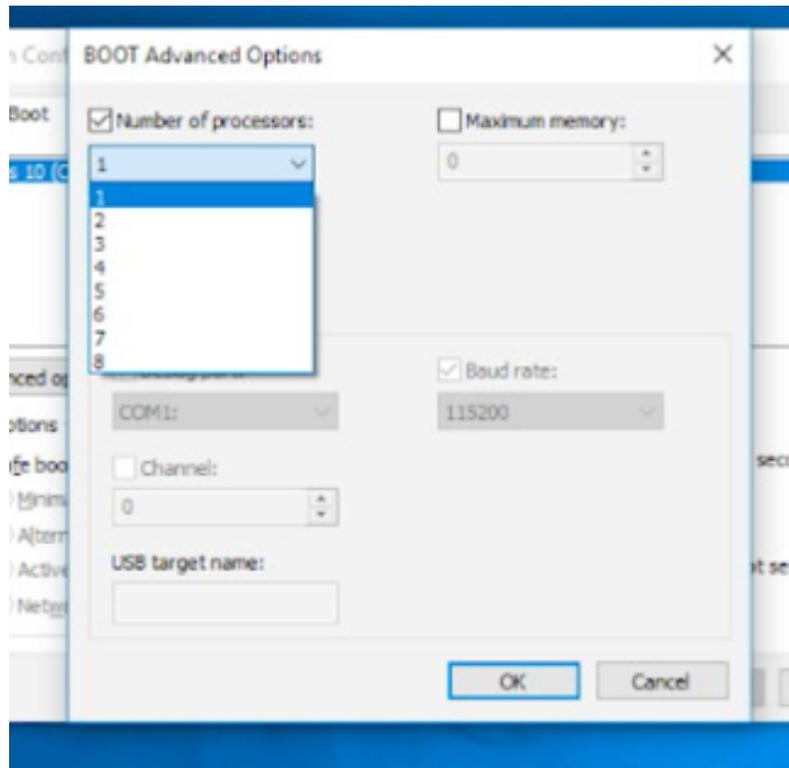
Click Advanced options...



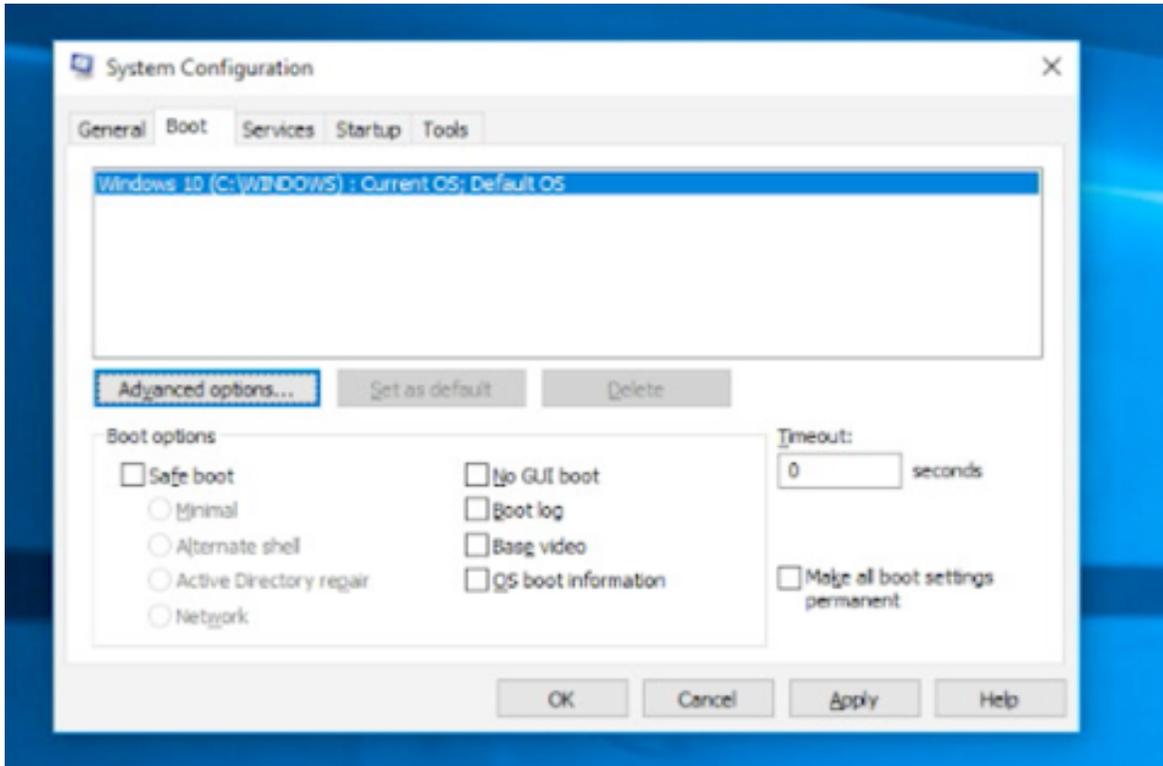
Check Number of processors to enable the dropdown menu.



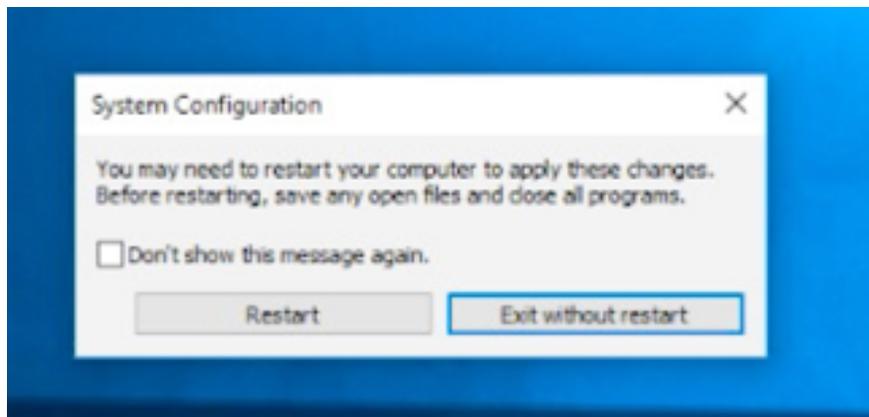
Select the highest number of processors your system has (in this case, 8). Then click OK.



Apply the settings, then click OK.



You will be advised that you may need to restart your computer to apply your settings. We recommend doing so before launching Studio to ensure the settings have taken effect.



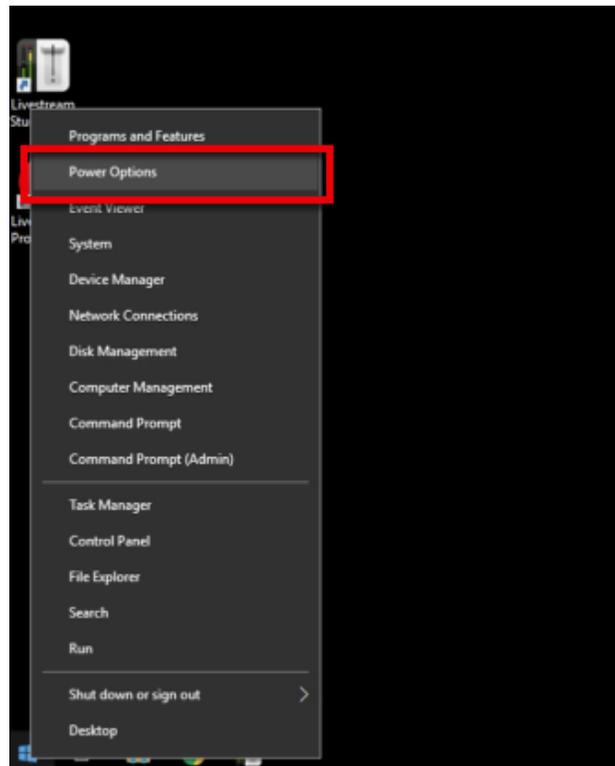
# Recommended Power Settings For Running Studio on a Laptop

Version 4.2 of Livestream Studio allows for a wider variety of PCs to run Studio with the addition of the [hardware encoding](#) feature. Below we have some additional settings in Windows to help optimize its performance.

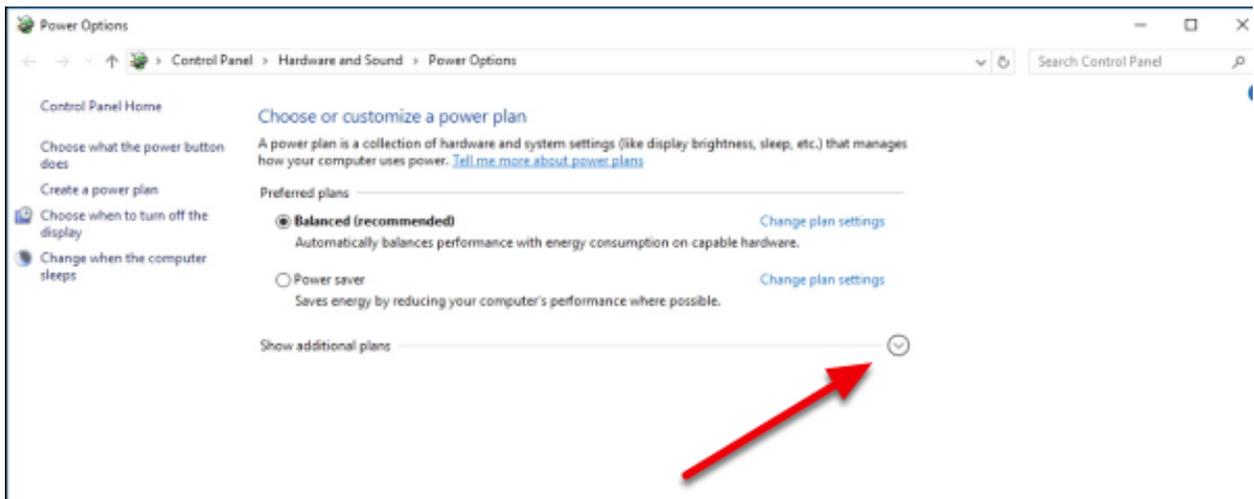
 This does not apply to macOS systems.

## Set Power Setting to High Performance Mode

Go to the Start Menu and navigate to Power Options. (This can also be found within the Control Panel.)



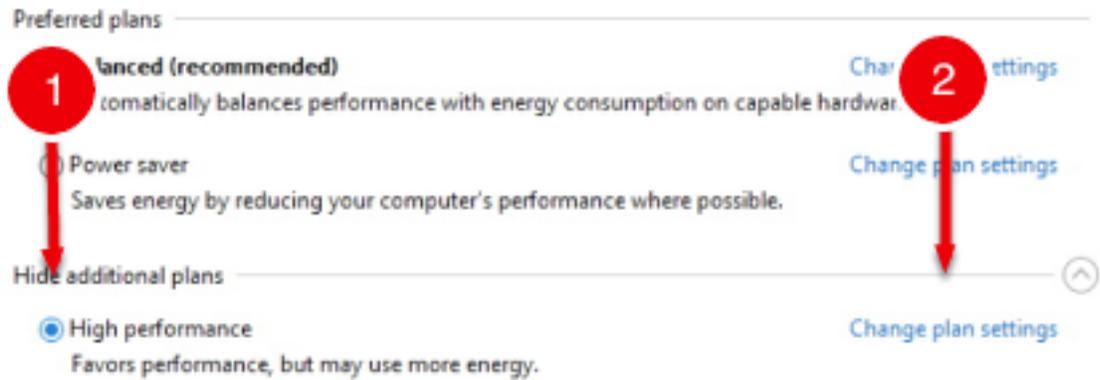
Click the dropdown arrow next to Show additional plans.



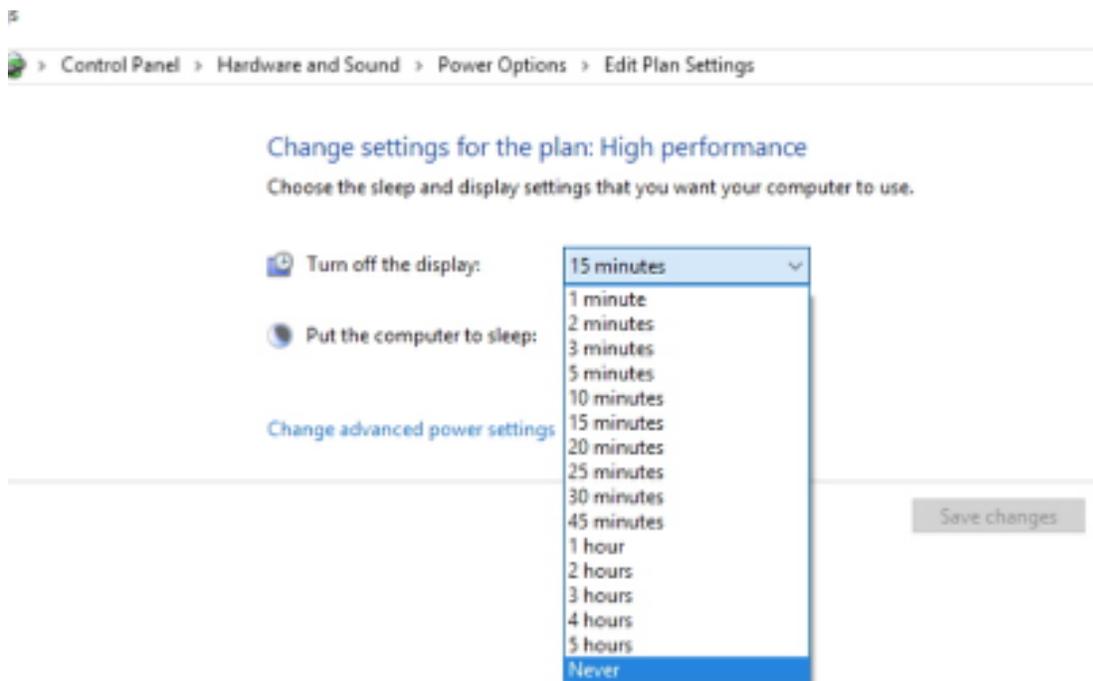
High performance will appear as an option. Click the corresponding radio button to select it. After doing so, click Change plan settings.

## Choose or customize a power plan

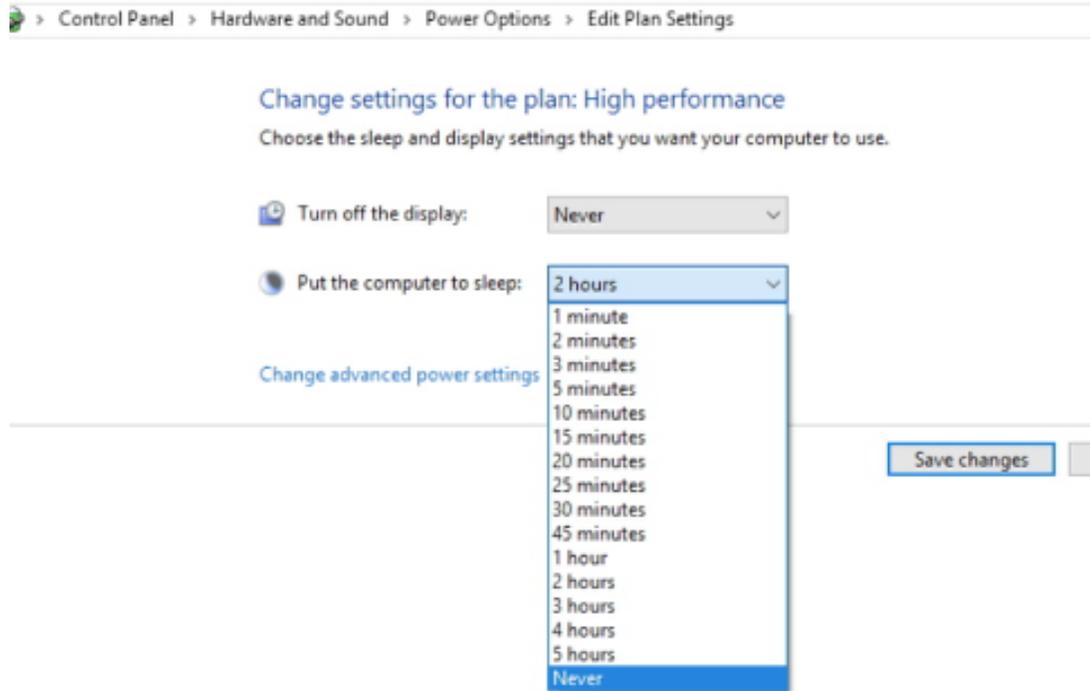
A power plan is a collection of hardware and system settings (like display brightness, sleep, etc.) that manages how your computer uses power. [Tell me more about power plans](#)



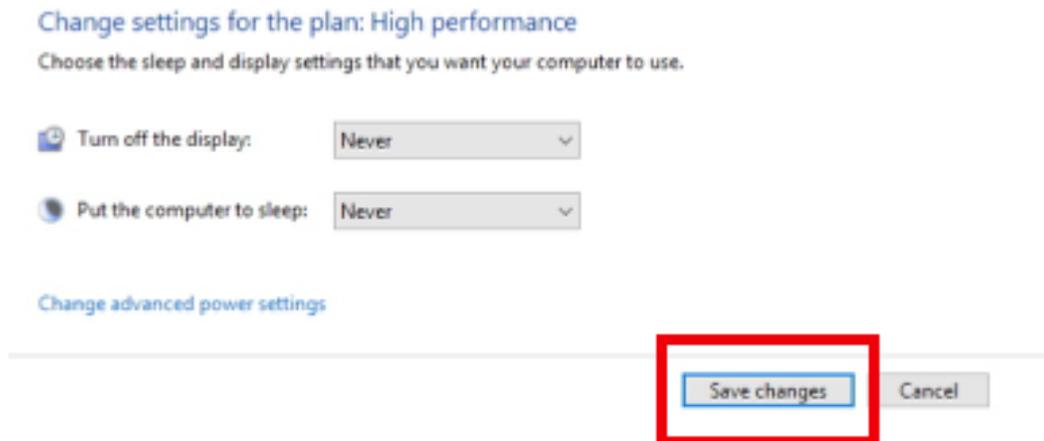
Under Turn off the display, select Never.



Under Put the computer to sleep, select Never.



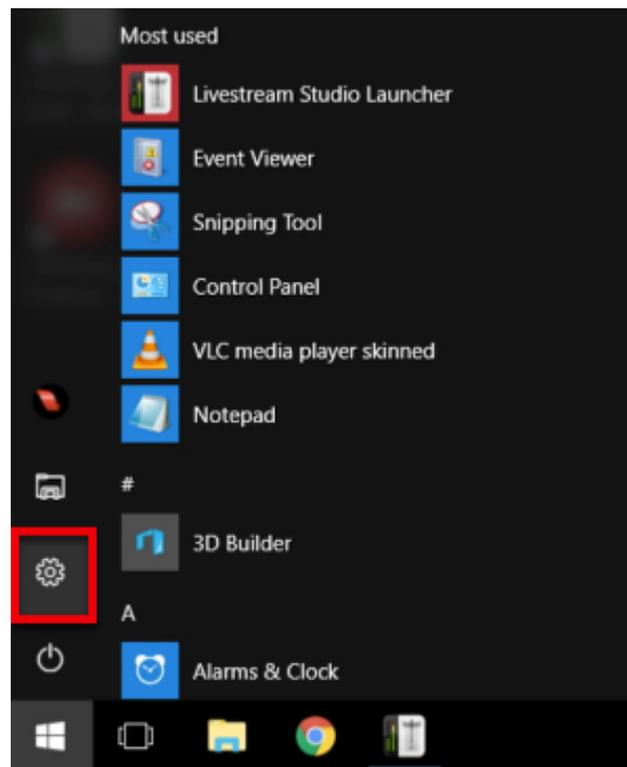
Click Save changes.



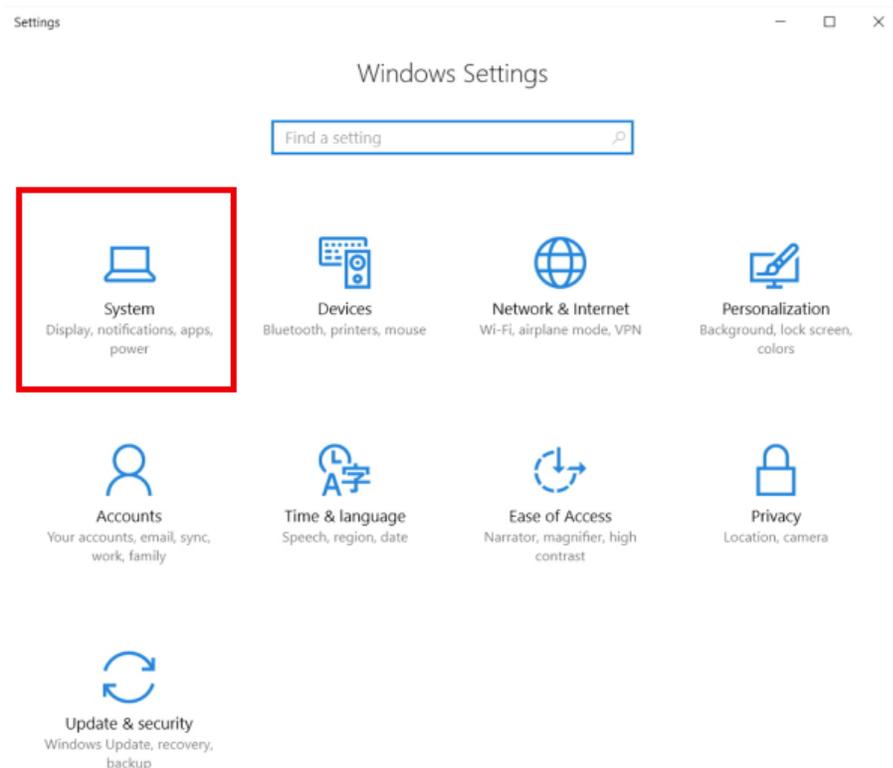
# Fix Font Sizing Issues in Windows 10

Scaling Windows font to 100% will make it easier to use Studio with Windows 10.

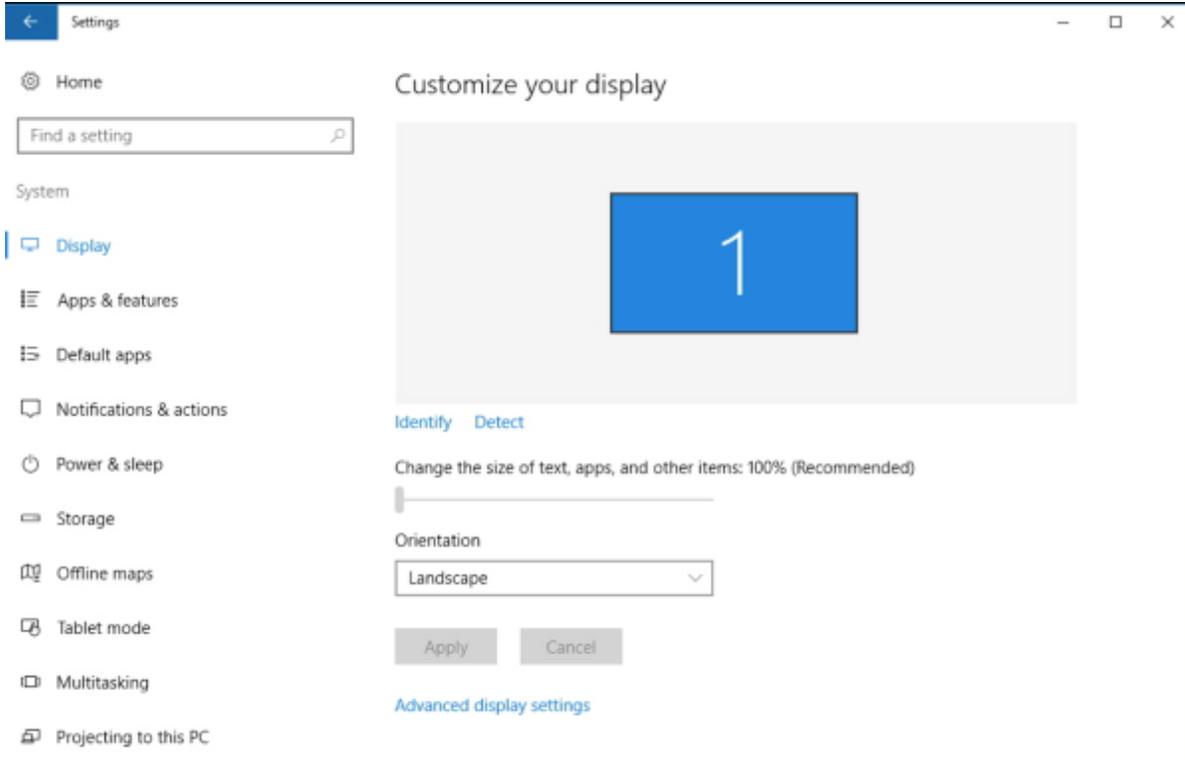
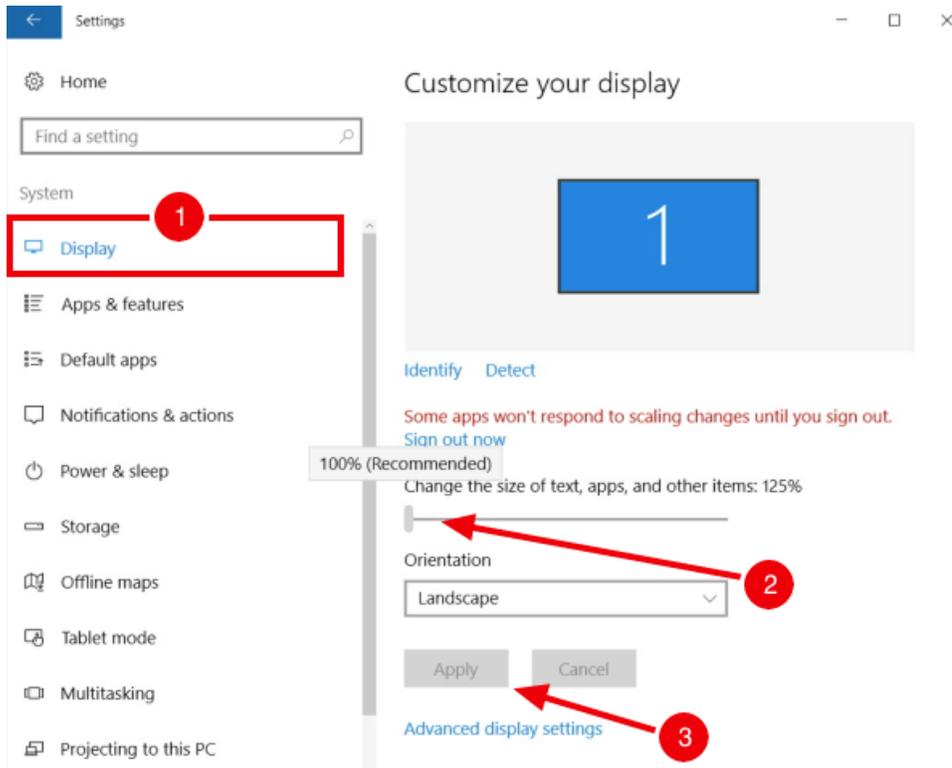
Navigate to Windows Settings.



Select System.



Select Display, and drag the scale all the way to the left so it reads 100%. Then click Apply to save the settings, which will then take effect immediately.

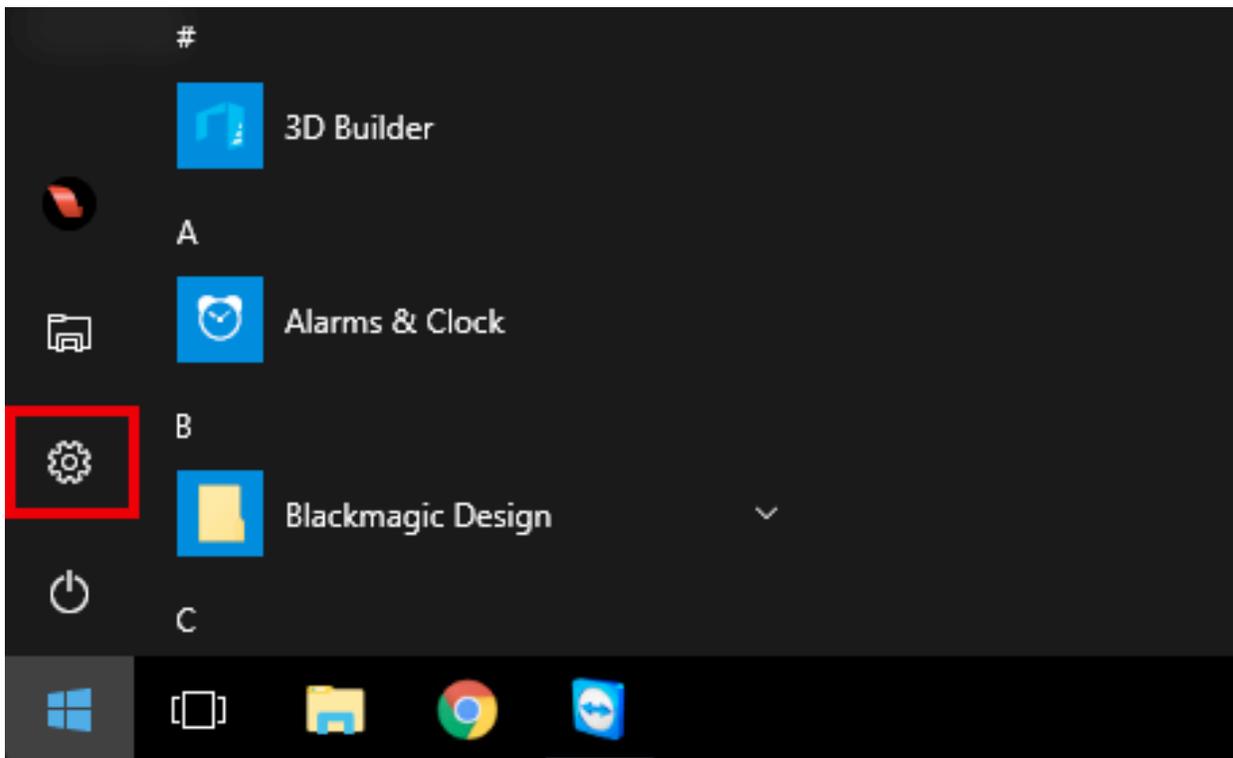


# Prevent Automatic Windows Updates

The last thing you want right before or during an event is to be forced to update Windows, which could postpone your setup or interrupt your stream. While there is no way to turn off updates entirely, you can configure Windows settings to run updates only at certain times.

! Since macOS does not automatically restart or force updates, this article only applies to Windows systems.

Open the Start menu and click the gearwheel to open Settings.



Select Update & security.

# Windows Settings

setting 



**Network & Internet**  
Wi-Fi, airplane mode, VPN



**Personalization**  
Background, lock screen,  
colors



**Accounts**  
Your accounts, email, sync,  
work, family

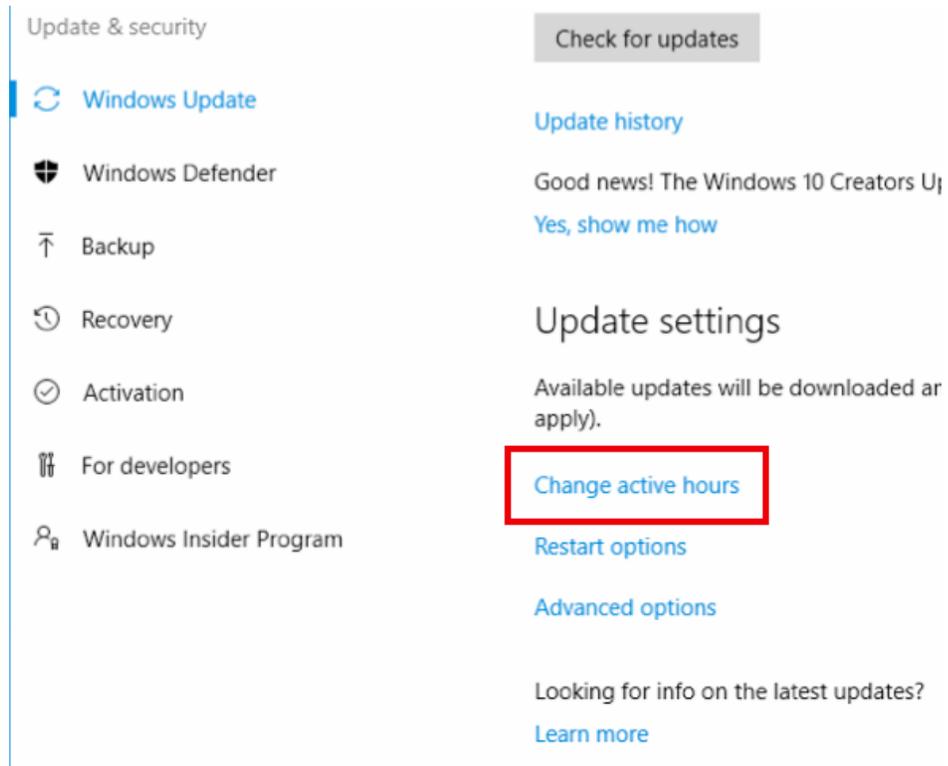


**Privacy**  
Location, camera



**Update & security**  
Windows Update, recovery,  
backup

Under the Windows Update tab, click Change active hours.



You can choose a 12-hour time range during which Windows will not automatically update. If an update becomes available during that time frame, a notification will appear letting you know that your computer will restart outside of active hours.

## Active hours

Active hours lets us know when you usually use this device. When a restart is necessary to finish installing an update, we won't automatically restart your device during active hours.

Note: We'll check to see if you're using this device before attempting to restart.

Start time

8	00	AM
---	----	----

End time

5	00	PM
---	----	----

Save

Cancel

If you do see the notification and feel your event is going to run longer, you can select Restart Options and tell Windows when to restart your computer to install updates.

Update & security

- Windows Update
- Windows Defender
- Backup
- Recovery
- Activation
- For developers
- Windows Insider Program

Check for updates

Update history

Good news! The Windows 10 Creators Update is available. [Yes, show me how](#)

Update settings

Available updates will be downloaded and installed automatically (unless you've changed your settings).

[Change active hours](#)

**Restart options**

[Advanced options](#)

Looking for info on the latest updates? [Learn more](#)

## Restart options

### Schedule a time

We'll restart to finish installing updates when you tell us to. Just turn this on and pick a time.

Off

Pick a time:

5 | 40 | PM

Pick a day:

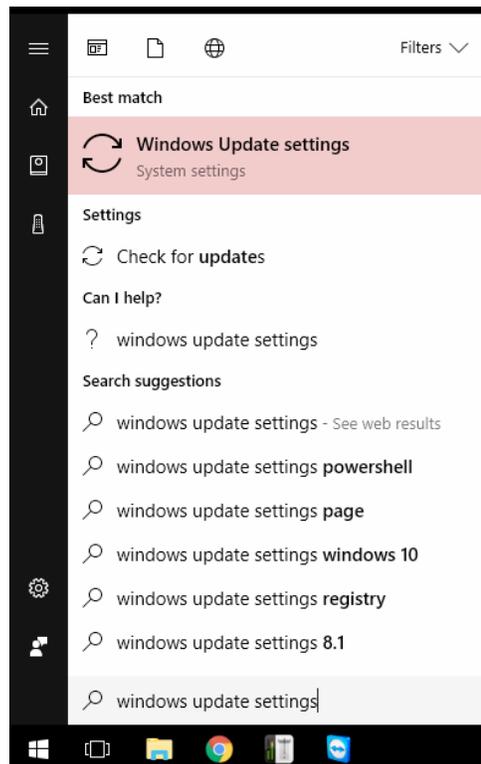
Today ▾

# Prevent Windows Update Sharing

Included with Windows 10 is the ability to send and receive software updates from other nearby PC's automatically. While this may be convenient in other use-cases, it can take up bandwidth and CPU resources that you would rather preserve for Livestream Studio, so we recommend disabling this feature while using Studio.

! This does not apply to macOS systems.

Open the Start menu and type in Windows Update settings. When this option appears in the menu, select it.



Under the Update settings section, select Advanced options.

## Windows Update

### Update status



Your device is up to date. Last checked: Yesterday, 2:12 PM

Check for updates

[Update history](#)

### Update settings

We'll automatically download and install updates, except on metered connections (where charges may apply). In that case, we'll automatically download only those updates required to keep Windows running smoothly.

[Change active hours](#)

[Restart options](#)

[Advanced options](#)

Looking for info on the latest updates?

[Learn more](#)

Have a question?

[Get help](#)

Scroll down to the bottom of the window to the Pause Updates section and select Choose how updates are delivered.

## Pause Updates

Temporarily pause updates from being installed on this device for up to 35 days. When updates resume, this device will need to get the latest updates before it can be paused again.

Off

Pausing now will pause updates until 10/4/2017

[Choose how updates are delivered](#)

Note: Windows Update might update itself automatically first when checking for other updates.

[Privacy settings](#)

Have a question?

[Get help](#)

Toggle the switch to Off.

### Updates from more than one place

Download Windows updates and apps from other PCs in addition to Microsoft. This can help speed up app and update downloads. [Learn more](#)

When this is turned on, your PC may also send parts of previously downloaded Windows updates and apps to PCs on your local network, or PCs on the Internet, depending on what's selected below.



Get updates from Microsoft, and get updates from and send updates to

- PCs on my local network
- PCs on my local network, and PCs on the Internet

Have a question?

[Get help](#)

## Known Issues with Studio for Mac Beta

We have released a public beta of [Studio 5.0 for macOS](#). This beta has some known issues and limitations which are detailed below.

- Studio access is only available via a Livestream or Vimeo subscription; the Studio dongle is not supported on Mac.
- There is currently no way to enable external multiview.
- The Studio Surface and Studio Surface Go are not supported at this time.
- Tally light systems are not supported at this time.
- Currently, the media bins can only import and transcode AVI/MJPEG files; other file types (.mp4, .wmv, etc.) will not load.
- Webcam sources may become intermittently unavailable after prolonged use.
- There are occasional connectivity problems with Studio Web Control.
- The network dashboard shows incorrect network information when streaming (i.e. it shows that one network device is in use when actually, another network device is being used).
- The Event from Livestream remote camera option currently does not work.
- The AutoFormat detection feature (in Input Settings > Convert) does not work for Blackmagic Devices.



These issues are not present in Studio 5.0 Beta for Windows.

# Can I Run Anti-Virus Software on my Studio PC?

Running anti-virus software that includes real-time protection while using Livestream Studio can use up CPU resources and possibly even interrupt your stream's connection.

As a best practice, anti-virus software, Windows Firewall, and similar real-time protections should be disabled while you are running Livestream Studio, and if possible, your system should be dedicated to just using Studio. Do not download files from sources you do not trust onto your Studio computer.

# Getting Started with Livestream Studio

# What is Livestream Studio?

Livestream Studio is a live production switcher that incorporates many elements of a professional live multi-camera production into one desktop software. Think of it as a live production truck or a TV station's master control room in your computer.

Its most basic features include:

- **Connect up to 25 camera inputs:** Plug in your cameras directly into your PC to get as many angles as you need.
- **Send up to 25 live video outputs:** Output your video to projectors or monitors; ideal for auditoriums, conferences, and houses of worship.
- **Three graphic overlay tracks:** Build graphic overlays to countdown to your event start, identify people, loop tweets using your event hashtag, or display a scoreboard.
- **Two media playback modules:** Bring in pre-recorded video clips to incorporate into your production, such as sponsored content or montages.
- **Built-in audio mixer:** Embed audio from your cameras or connect a USB mixer or microphone and control all the audio for your event directly from Studio.
- **Capture up to four high-resolution isolated (ISO) recordings:** Record your event or individual camera angles in broadcast quality for post-production editing or replay.
- **Basic replay:** Play back an ISO recording as your broadcast is happening, giving viewers a different angle of your event (e.g. a goal score).
- **Chroma key:** Eliminate a colored background to incorporate different background images into your event (e.g. a weather map, virtual studio)
- **Stream to Livestream and other providers:** Go live to Livestream, Facebook, YouTube, Periscope, Twitch, and more. Choose one or stream to multiple simultaneously.

Many more advanced features are also included.

## What Equipment Do I Need In Order to Use Livestream Studio?

First and foremost, you need cameras. Studio is compatible with most SDI, HDMI, component, composite, S-video, and USB web cameras that output broadcast standard formats. If you do not own any cameras and need some suggestions, we

have some [here](#). Keep in mind you will also need the proper cables to output these cameras' video signals into Studio (HD-SDI camera = HD-SDI cable, etc.)

Next, you need to be able to connect these cameras to the computer that is running Studio. This is done using a **capture device**. These can connect to your computer via PCIe, USB 3.0, or Thunderbolt, and convert your camera's video into a signal your PC can read. Read more about [what a capture device is](#) and which [capture devices Livestream Studio supports](#).

With few exceptions, you will need one capture device per camera. Webcams do not require a capture device.

Finally, you need a PC running Windows 64-bit version 7 or higher. Studio for Mac is currently in [beta](#) and works on Mac OSX Sierra or higher.

Studio requires a robust computer in order to run with all of its features successfully. We have a comprehensive guide of [recommended hardware specifications](#) depending on your workflow needs.

 If you are interested in or have already purchased a Livestream Studio hardware product (e.g. HD31, HD51, HD550), capture devices are already built into your machine. There is no need to purchase additional capture devices or an additional PC.

## How Do I Get Livestream Studio?

We offer Livestream Studio in various forms to accommodate as many needs and budgets as possible. Get started with a [30-day free trial](#) or learn about the [different ways to purchase Studio](#).

# The Different Ways To Access Livestream Studio

There are a variety of ways to gain full access to Livestream Studio:

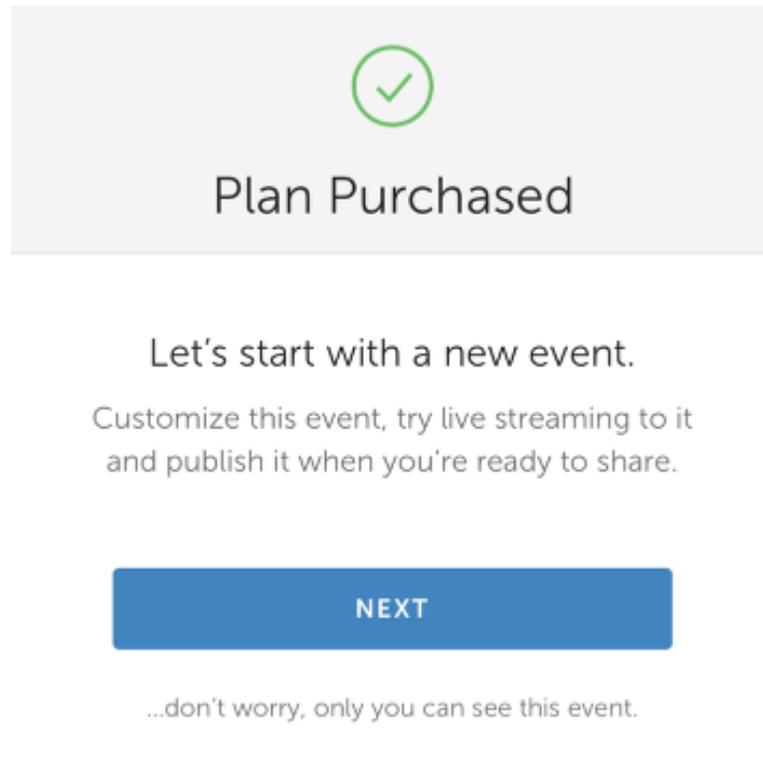
## Purchase a Livestream Subscription

Unlimited access to two (2) licenses of Livestream Studio is available with any Livestream platform subscription. [Download Livestream Studio](#) and launch the software. Select **Get Started** on the right side to choose subscription access.

Your browser will open, allowing you to sign up immediately for a plan. Select the **Sign Up Now** button that corresponds with the desired plan.

 [Learn more](#) about what each plan offers.

Choose whether to purchase a yearly plan or pay month-to-month and complete the form by entering your payment information. Once you are done, you will see a window indicating a plan has been purchased. Click **Next** to continue using your plan and Studio.



Livestream Studio will indicate that your full access has been unlocked.

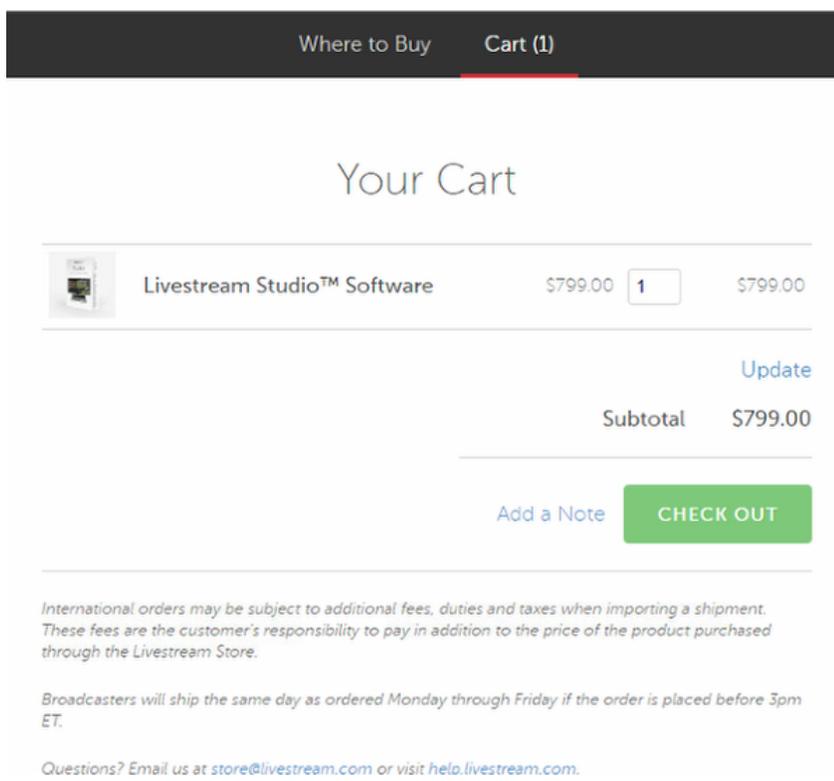
 You must be connected to the internet and logged in to your subscribed account on Livestream Studio in order to access the software.

## One-Time Purchase: Software Dongle

Livestream Studio requires an internet connection in order to run when using it in trial mode or as part of a subscription (described above). If you intend to use it offline or would prefer to not make recurring payments, you can purchase full access to the software via USB dongle with a one-time payment of \$799.

When you launch Studio, you will see a screen with various purchase options. Select Buy Studio on the left side.

Your web browser will open and direct you to the Livestream Store. Livestream Studio will be placed in your cart. Select Check Out to proceed with the order.



This one-time purchase of Studio includes a physical USB dongle that must stay connected to your computer in order to unlock access to Livestream Studio while using the software. This is why you will need to select a shipping method and enter shipping information along with your billing information.

Once you have completed the order, Livestream will process and ship the Livestream Studio dongle to your shipping address.

 This dongle does not include access to stream to the Livestream Platform. If

you wish to use Livestream as your streaming destination, you will need to [purchase a Livestream subscription](#).



💡 It's best to plug the dongle into a USB 2.0 port (black), not a USB 3.0 port (blue). Learn more about [using the USB dongle](#).

## One-Time Purchase: Hardware

If your computer does not meet our [recommended specifications](#) or you do not feel comfortable building a custom machine, we offer hardware options that include full access to Livestream Studio and Blackmagic Design capture devices pre-installed. This option, like the software dongle, also allows for offline use. Learn more our available models:

- [HD31](#)
- [HD51](#)
- [HD550](#)

 Studio hardware units do not include access to stream to the Livestream Platform. If you wish to use Livestream as your streaming destination, you will need to [purchase a Livestream subscription](#).

All features available with Studio, such as streaming to other providers, SDI/HDMI/NDI outputs, 10 remote cameras, etc. are available with all of these options.

The differences between these options are:

- Ability to Stream to the Livestream Platform
  - While the dongle and hardware solutions give you the ability to stream to various providers, a Livestream subscription is required in order to stream to the Livestream Platform.
- Number of Licenses:
  - Subscription access to Studio grants you access to two Studio licenses, allowing you to run Studio on two different computers using the same login.
  - Both one-time purchase options offer one Studio license per unit.
- Offline Availability:
  - Purchasing Studio via a subscription requires having an internet connection at all times.
  - Both one-time purchase options allow you to access Studio without an internet connection (although streaming will still require an internet connection).
- Phone Support:
  - Customers that purchase a subscription that includes phone support will have a PIN for the length of their subscription.
    - *Please note that phone support is not available with all plans.*
  - Customers who make a one-time purchase get one (1) year of phone support. After one year, you can contact customer care via email or [extend phone support access](#).
- Payment

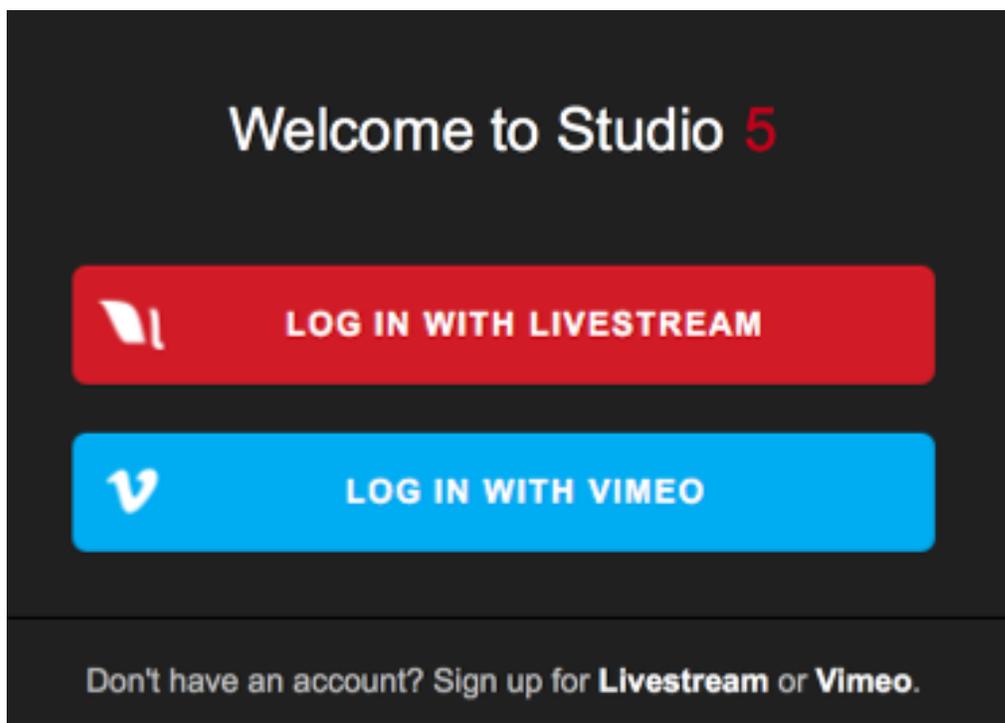
- Subscriptions are available on a monthly or yearly basis. If you plan to use Studio for a limited time, or you plan to use Studio with the Livestream platform, this is a more cost-effective option for you. Learn about our subscription options [here](#).
- When you purchase the dongle or a hardware unit, you have Studio access for life. If you intend to use Studio for the long-term with a provider other than Livestream, this is the most cost-efficient option for you. [Visit our store](#) to see all one-time purchase options.

As an additional note, customers who already made a one-time Studio purchase and have a Livestream subscription have access to up to three separate Studio licenses and thus have the ability to run Studio on three different machines if desired.

# Try Livestream Studio Before Buying

There is a trial option with Livestream Studio. The duration of the trial varies depending on the provider you are using.

[Download and install](#) Livestream Studio. When the installation is complete, the software will launch and you will see the following screen.



A demo of Studio is available by signing up for either Livestream or Vimeo. Select whichever provider you prefer at the bottom of the window. When you finished signing up, you can start testing out Studio.

## Livestream Trial

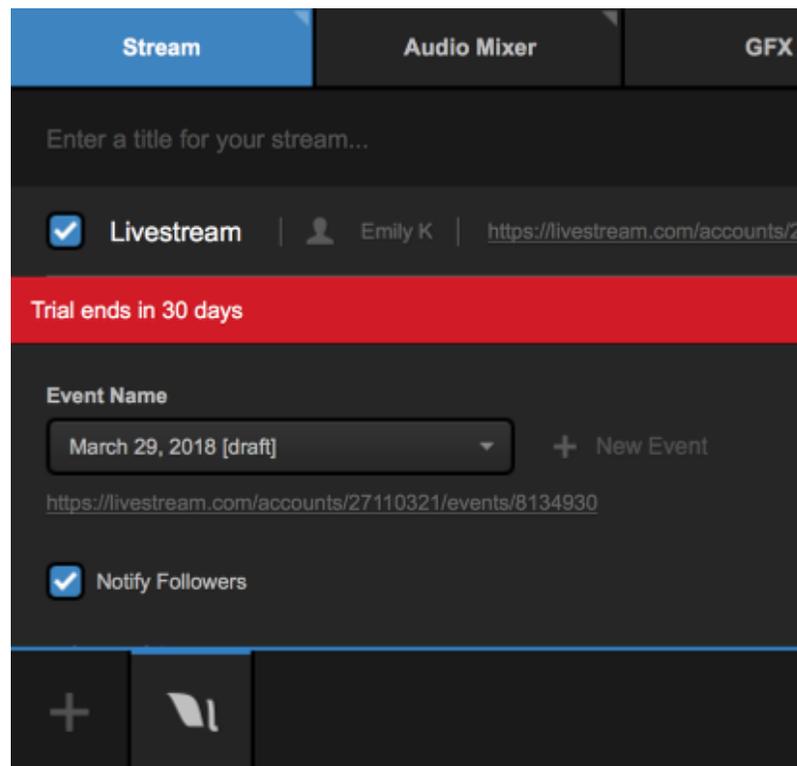
If you selected Livestream, you will have a trial of Studio available to you for 30 days. The limitations of this trial include:

- No more than 10 concurrent viewers per stream

- Maximum 20 minutes per stream.
- Viewers must be logged in to a Livestream account in order to see your content.

All other features of Livestream Studio are available to you during this trial. You will see a countdown for how many days you have left in the trial in the Stream module.

Your default draft event (created when you signed up for the trial) is already selected as your streaming destination. You can stream to this event or select + New Event to the right of the Event Name menu.



When your 30 days are up, you will be prompted to upgrade your Livestream account to a paid plan.

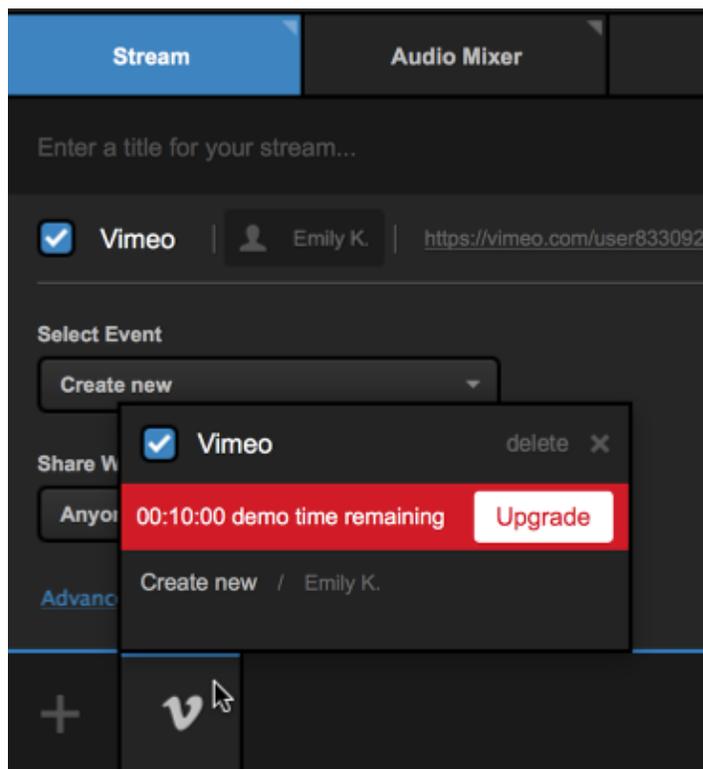
## Vimeo Demo

Signing up for Vimeo gives you access to a 10-minute live demo. This means you have full access to Livestream Studio and may broadcast for a total of 10 minutes before the demo expires.

A countdown of your demo time remaining will appear when you navigate to the Stream tab and hover the cursor over the Vimeo icon at the bottom of the interface.

All video recordings and outputs will include a watermark during this demo period.

Your demo will expire after you have streamed for a total of 10 minutes.



To continue using Livestream Studio when your free access expires, we have [a few options](#) for purchasing.

# How to Install Livestream Studio

Livestream Studio software can be downloaded onto a Windows or Mac (beta only) computer from [livestream.com/studio](https://livestream.com/studio) by clicking on the Download to Get Started button.

**!** If you are using Windows, you must be logged in as an Admin user in order to install and run Livestream Studio. You will also need an Internet connection for this entire process.

**i** If you purchased a Livestream Studio hardware product (HD31, HD51, HD550, etc.), Livestream Studio software is already pre-installed on your unit.



Studio 5 <sup>BETA</sup>

Live Production Switcher Software

Transform your computer into a professional live production control room with Livestream Studio. Input multiple feeds, add graphics, master audio, and stream in one robust, easy-to-use package.

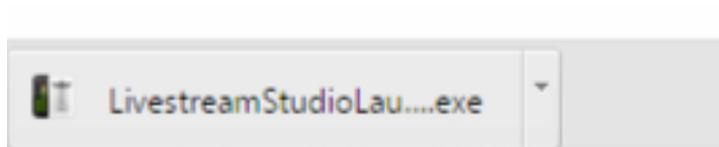
[DOWNLOAD TO GET STARTED](#) [HOW TO PURCHASE](#)

 Windows 7+  Mac

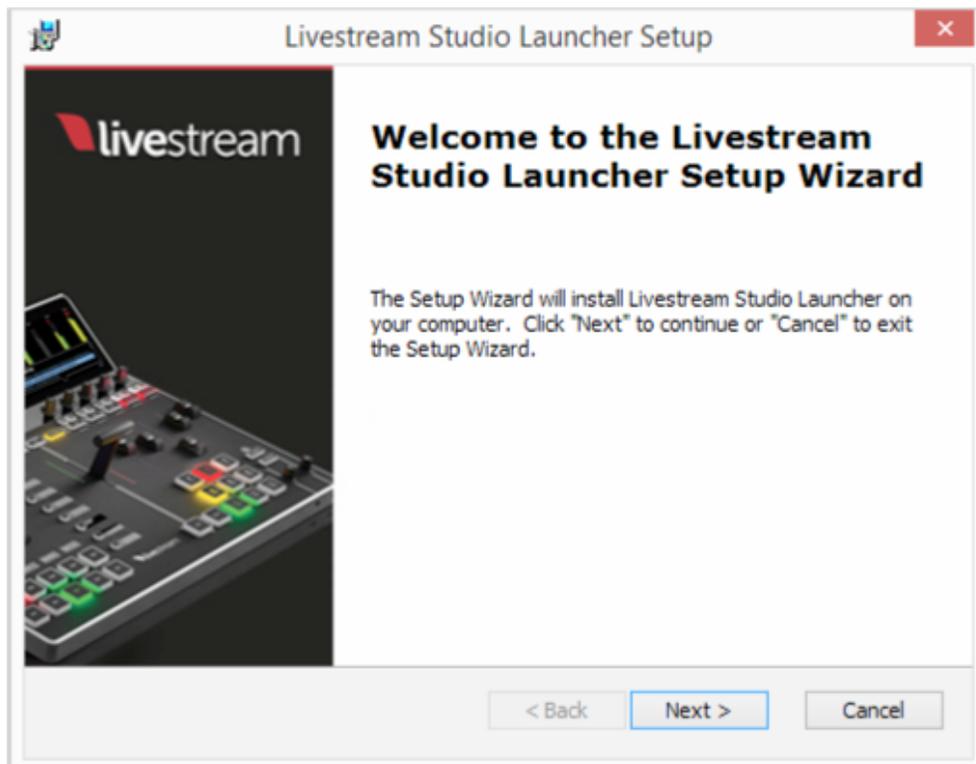
Select which operating system you are using: Windows or Mac. Keep in mind that Studio for Mac is currently in beta.

## Installing on Windows

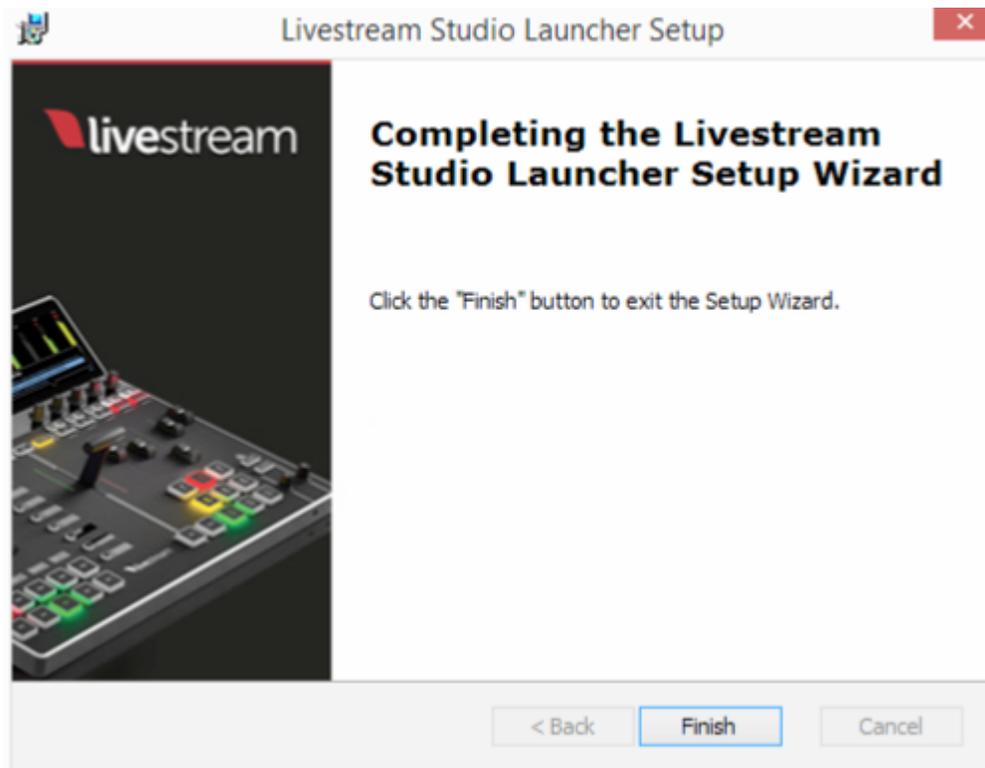
The download will begin automatically. Open the .exe file.



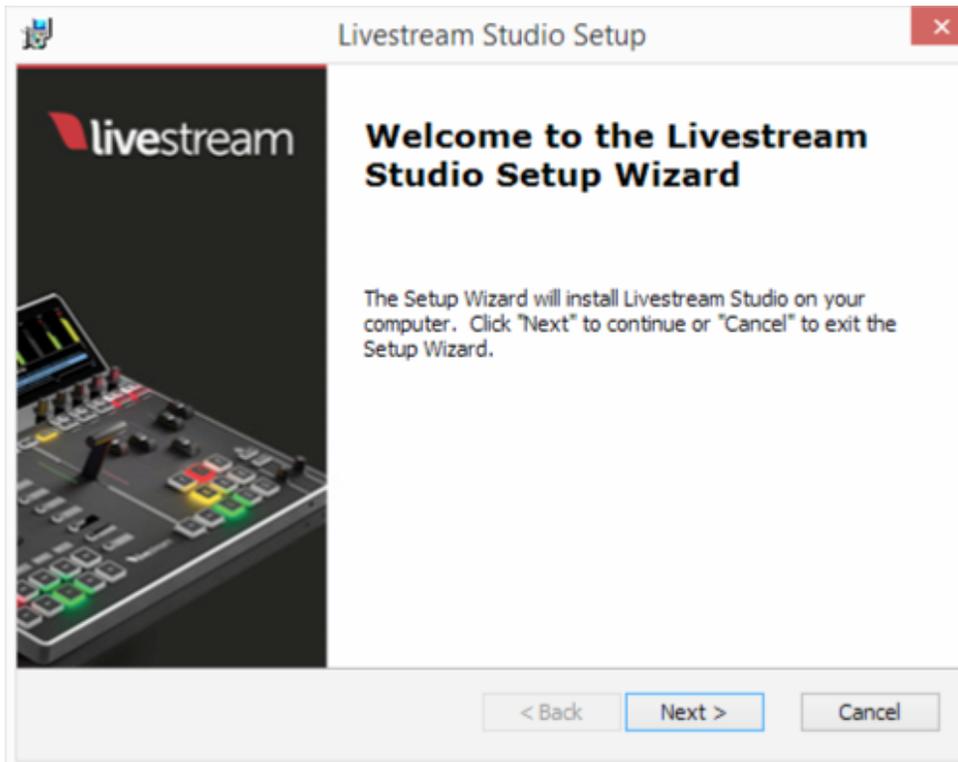
It will bring you to the installation wizard for the Livestream Studio Launcher.



Agree to the license terms and follow the on-screen steps to complete the installation process, then click Finish in the wizard.



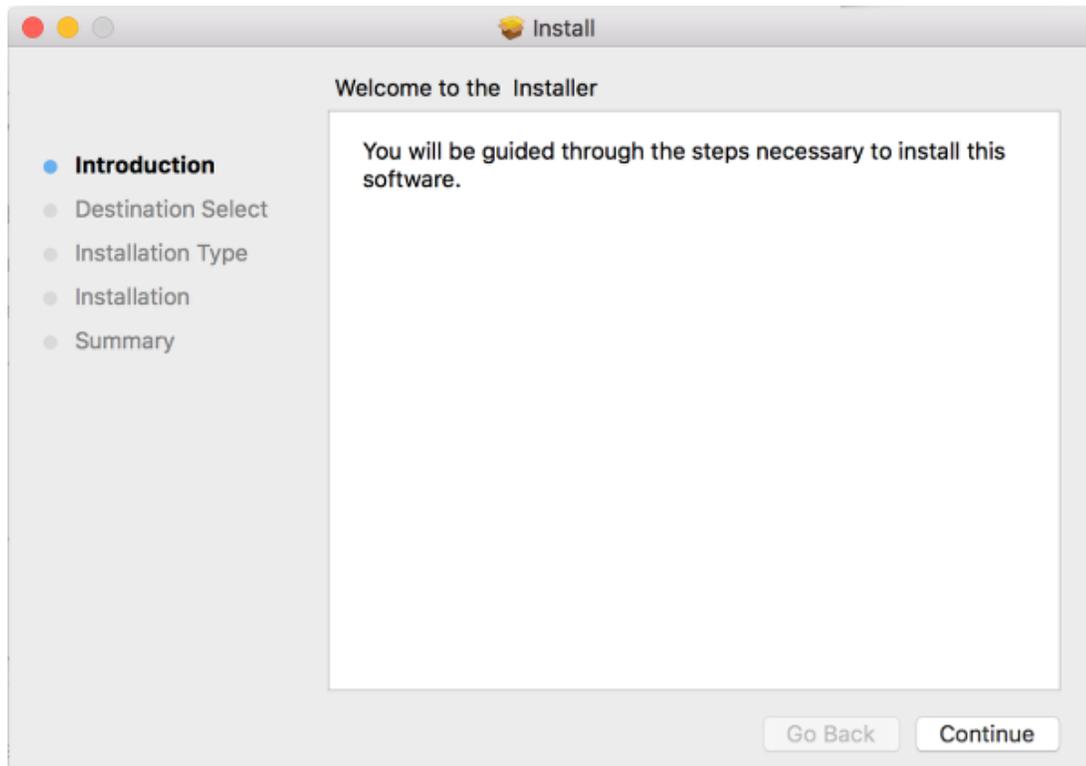
The Livestream Studio Launcher will open, download the Studio software, and prompt you to install the software via another installation wizard.



When the installation is finished, the most recent version of Livestream Studio will launch on your system.

## Installing on Mac

After the .pkg file downloads, click it to open it. The install wizard will open. Follow the on-screen steps to complete the installation. Upon completion, Livestream Studio will launch automatically.



# Using the Livestream Studio USB Dongle

If you made a one-time purchase of Livestream Studio for your own computer, you will receive a USB dongle which will give you access to your full Studio license.

By plugging this dongle into a USB 2.0 port, you'll be able to access all of the paid features of Livestream Studio without the need for a Livestream account.



The dongle must be connected to your PC at all times while using Livestream Studio in order to use the software. If you have multiple computers that require full access to Livestream Studio simultaneously, then you will need one dongle per system.

## Additional Notes about Using the Dongle

- The Studio Dongle does **not** include the ability to stream to the Livestream Platform; if you wish to use Livestream as your streaming destination, you will need to [purchase a Livestream subscription](#).
- Livestream Studio hardware units (HD31, HD51, HD550, etc.) do not require an additional software dongle. The license will already be unlocked when you launch Livestream Studio on those systems.
- We urge you to keep your Studio dongle in a safe place. If you are building a custom computer to run Studio, consider building it so that the dongle is on the inside of the unit.

- We do not support plugging the USB dongle into the USB 3.0 port due to inconsistent results. If you have done this and were able to load Studio successfully, please let us know by [contacting us](#) and providing your system's hardware specifications.

# What Happens If I Lose My Studio Dongle?

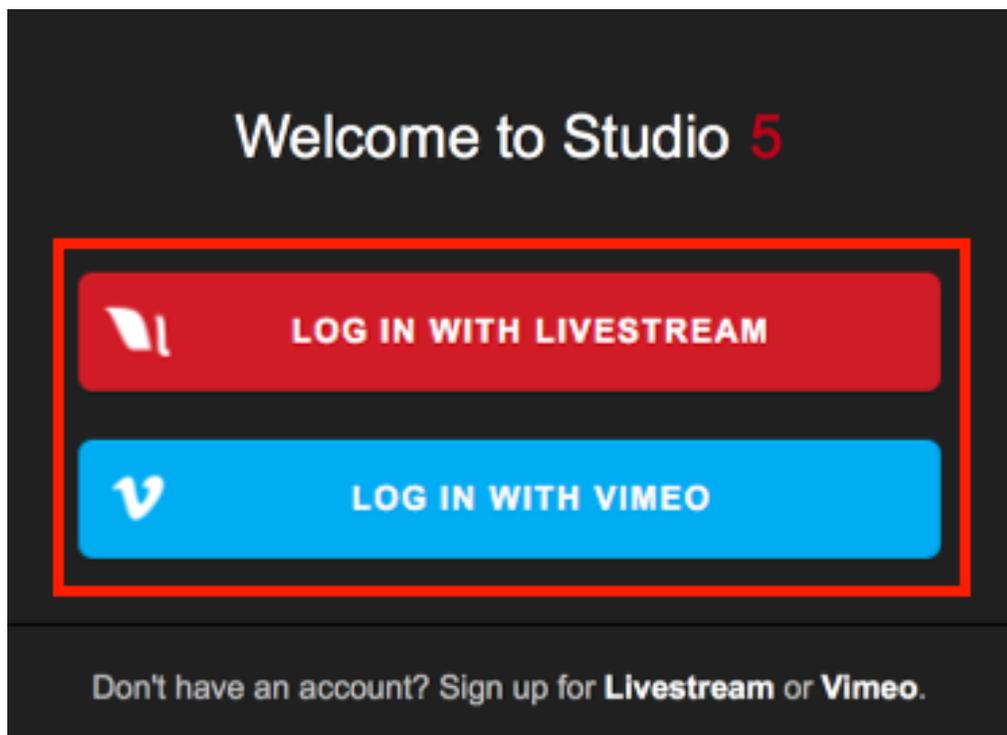
Per Livestream Studio [terms](#), if your Studio USB dongle is lost or stolen, you are responsible for purchasing a new one. Livestream will not replace Studio dongles.

We urge you to keep your Studio dongle in a safe place. If you are building a custom computer to run Studio, consider building it so that the dongle is on the inside of the unit.

## Log Into Livestream Studio via a Subscription

If you have already purchased a Livestream or Vimeo Live subscription, you also have full, unlimited access to two (2) Livestream Studio licenses. This means you can run Livestream Studio on two separate systems using your account login.

After you have [installed](#) the Livestream Studio software on a Windows or Mac computer, a welcome window will pop up prompting you to log in via Livestream or Vimeo. Select the provider you are using to log in.



If you select Livestream, enter your email and password in the next window, then select Log In With Email.

If you selected Vimeo, a browser window will open prompting you to log in to Vimeo and authorize Livestream Studio access to your account. Once you grant Studio access, navigate back to the software.

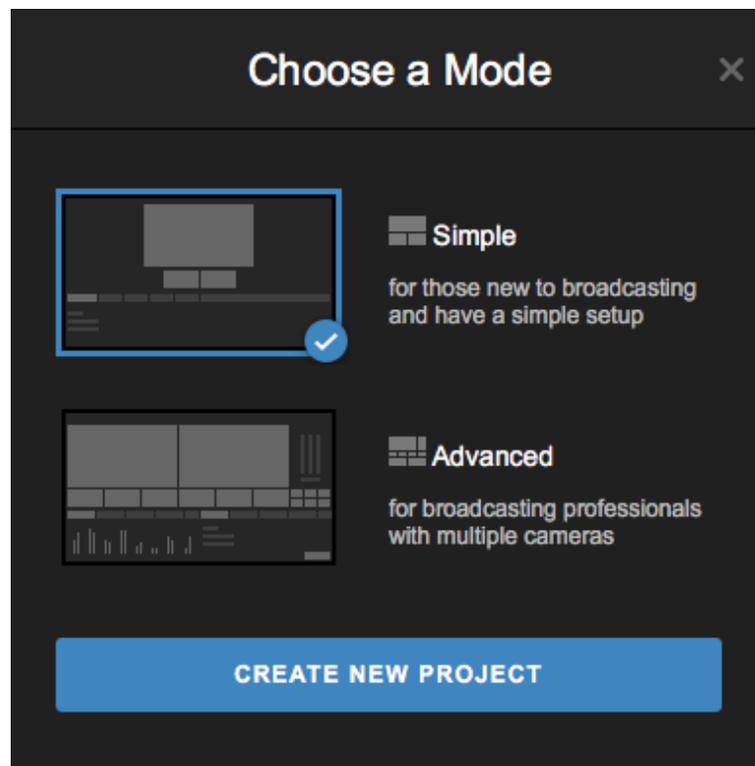
 Please be advised that subscription access to Livestream Studio will require an internet connection at all times. If you feel you will need to use Livestream Studio offline at any point, we recommend looking into our [one-time purchase options](#).

# Arranging & Simplifying the Livestream Studio Interface

While Livestream Studio maintains a generally consistent layout, there are a few ways you can customize the interface to best fit your needs.

## Select Your Interface Mode

When you first log into Livestream Studio, you will be given the option to Choose a Mode, as shown below.



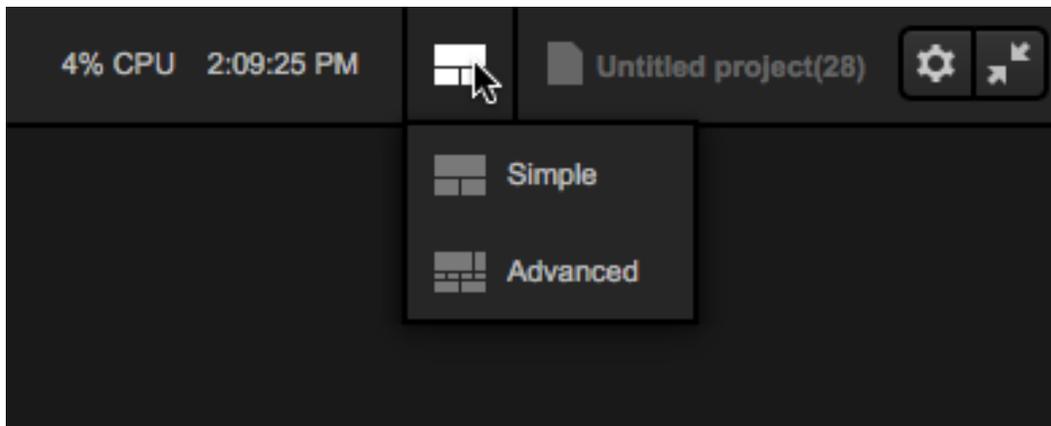
**Simple** is ideal for beginners and producers with smaller workflows (1-2 cameras, few graphics, some video playback). This will display one Output window and a multiview where you will click each source to select what is shown in the Output. By default, this mode displays a single column of producer tool tabs (e.g. Audio Mixer, Graphics,

Media, etc.). Selecting Simple will quickly remove a lot of clutter from the Studio interface that smaller scale productions may not need.

**Advanced** is best for producers with larger scale workflows (multiple camera inputs, multiple graphics channels, picture-in-picture, etc.). This features the traditional Preview/Program monitor setup and transition controls normally used in a multi-camera production, in addition to two columns of producer tool tabs by default so you can see more on your screen.

Select one, then click **Create New Project** to start using Studio.

You can easily switch your project from one mode to the other by clicking the interface icon in the upper right corner and choosing your interface mode.



Most demonstrations will feature the interface in Advanced mode. Instructions on how elements specific to Simple Mode work are available [here](#).

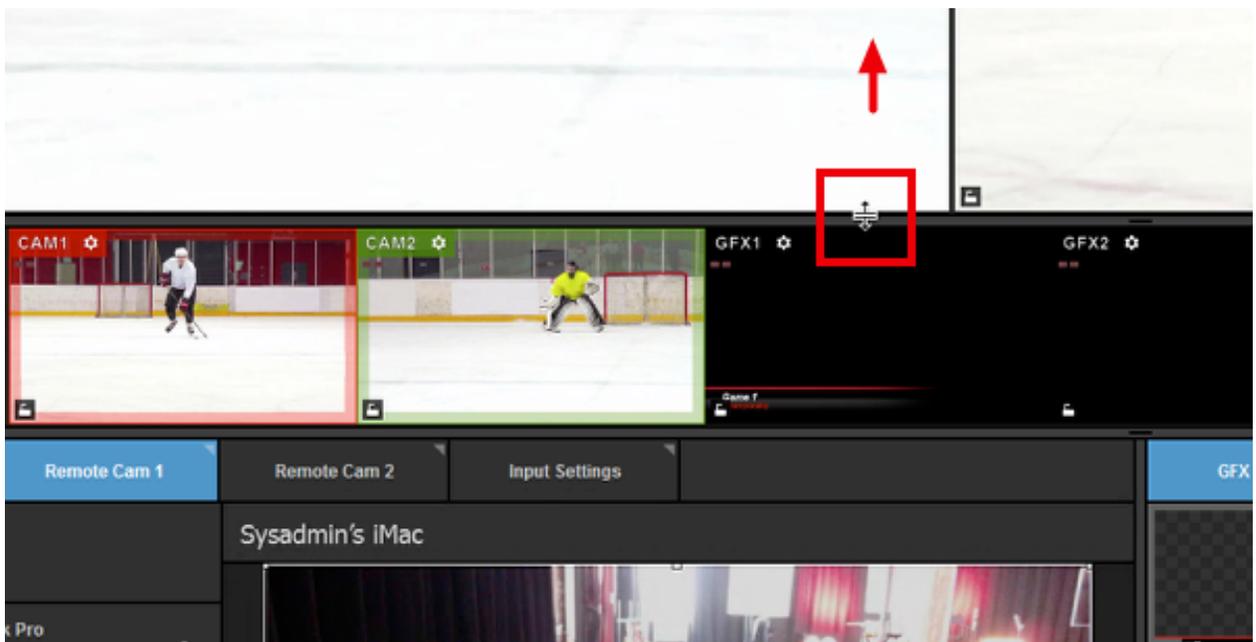
## Resize Three Main Sections

Studio's interface consists of the Preview & Program or Output monitors on top, the multi-view in the middle, and production element modules on the bottom third of the

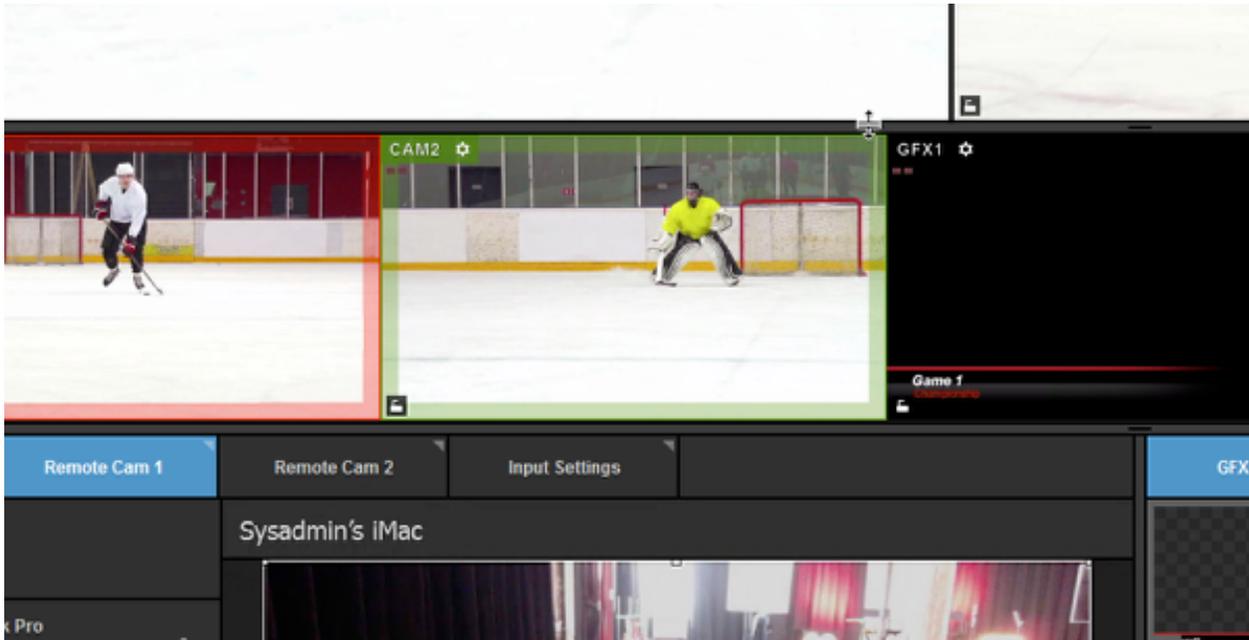
interface. This general layout cannot change, but you do have the ability to adjust the sizing of these three main sections by dragging and dropping the two section dividers up and down as you see fit.

In the example shown below, we raised the top divider to make the multiview section larger.

*Before:*



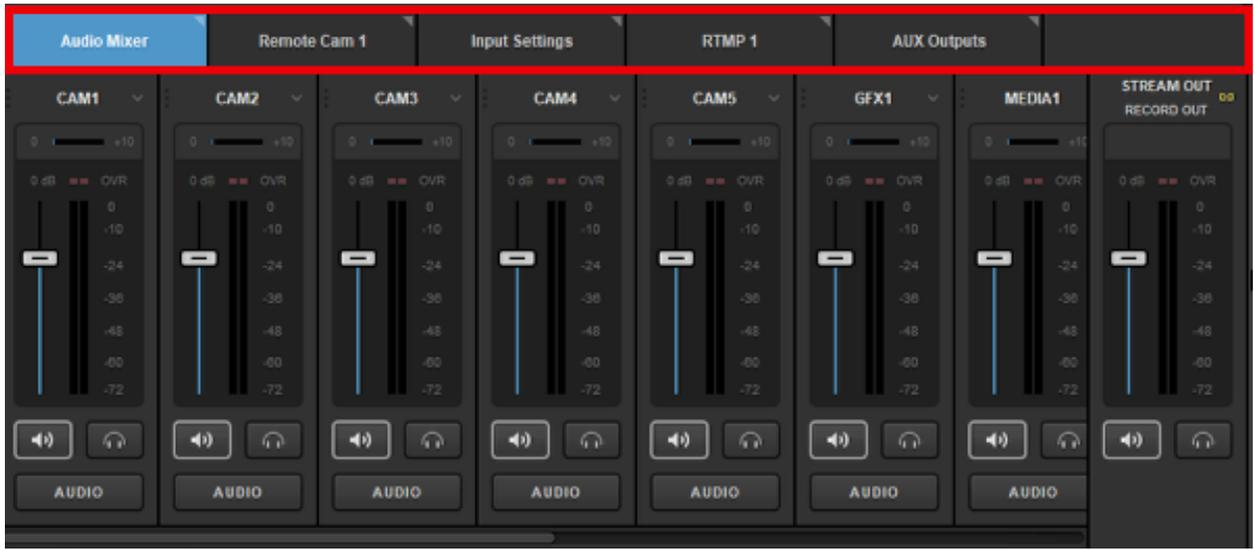
*After:*



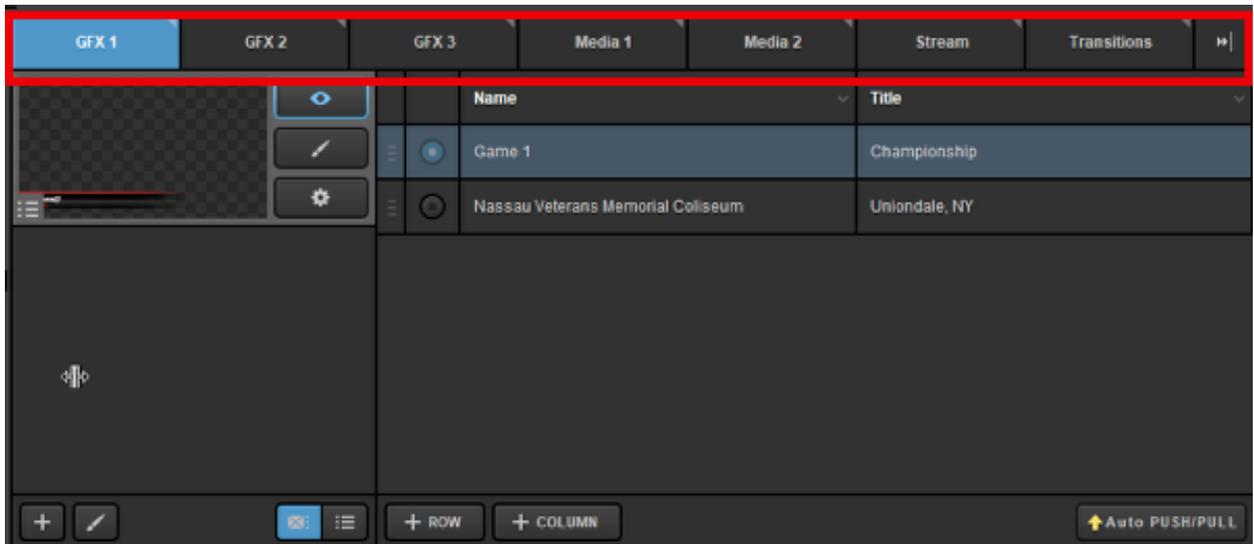
## Rearrange Lower Modules

When you first open Studio and add your inputs, the lower-third portion of the interface includes all your additional production elements (audio mixer, remote cameras, graphics, media, stream configuration, etc.). These have a default arrangement, separated into two columns.

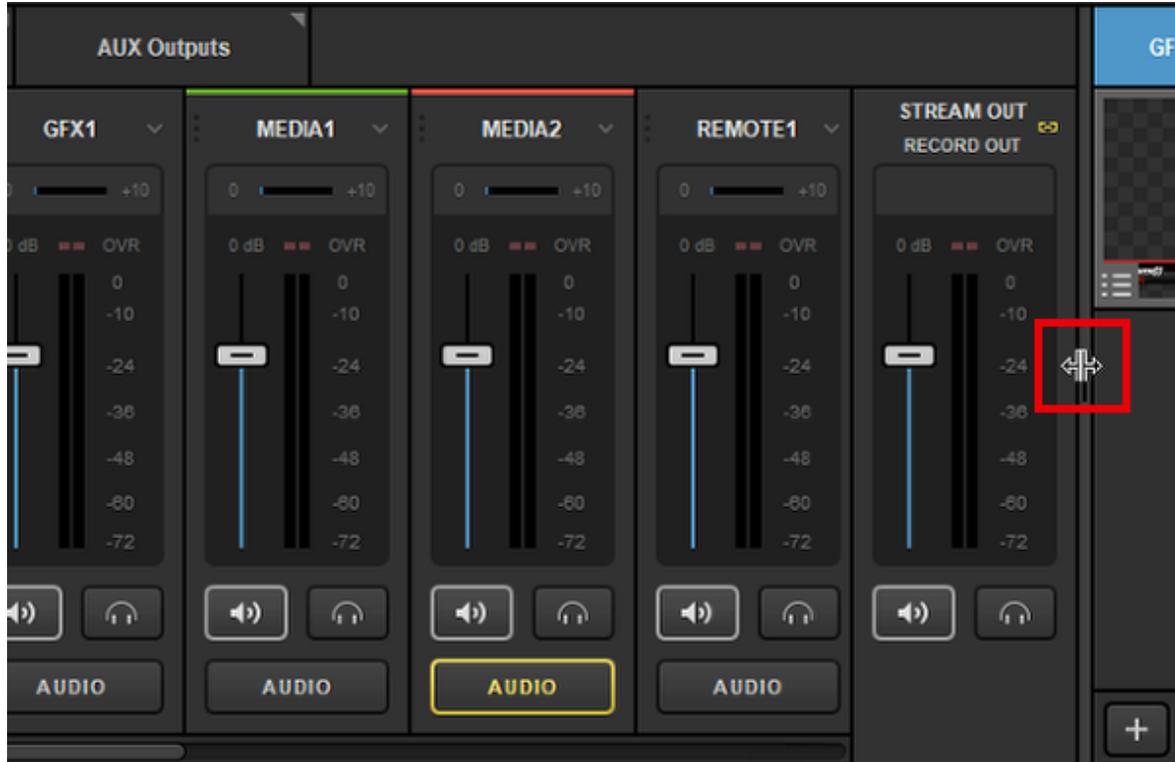
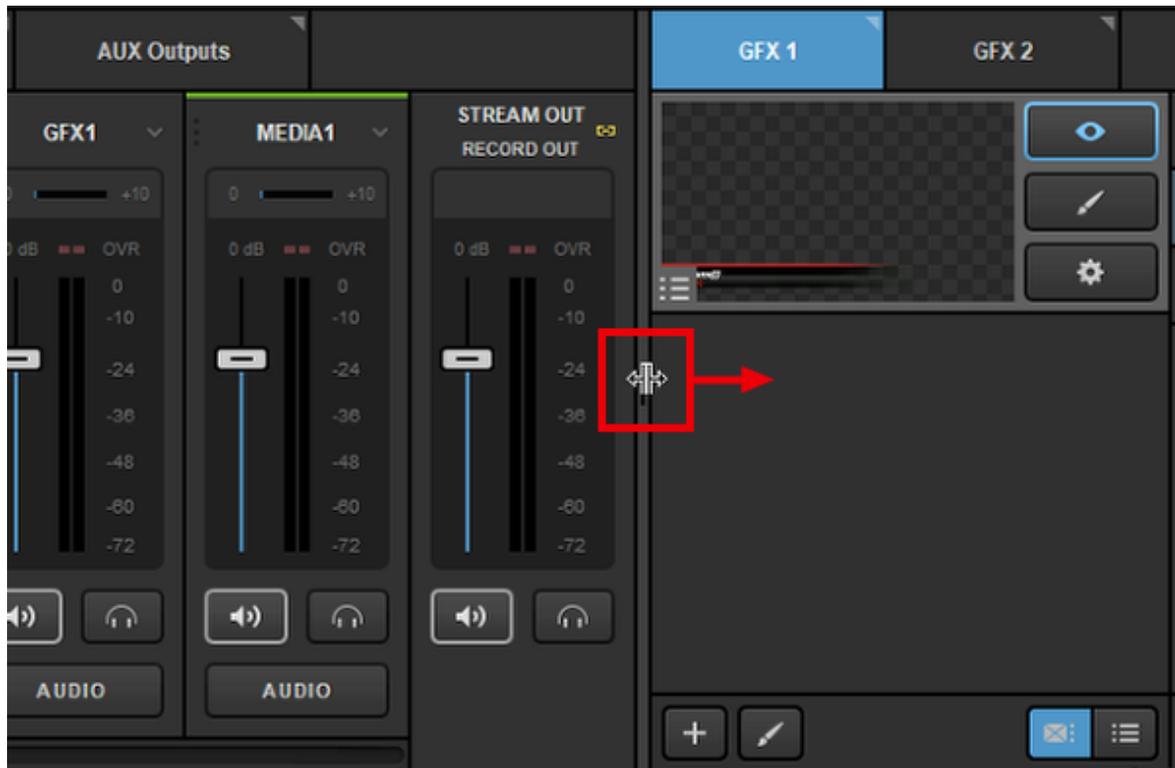
*Left column:*



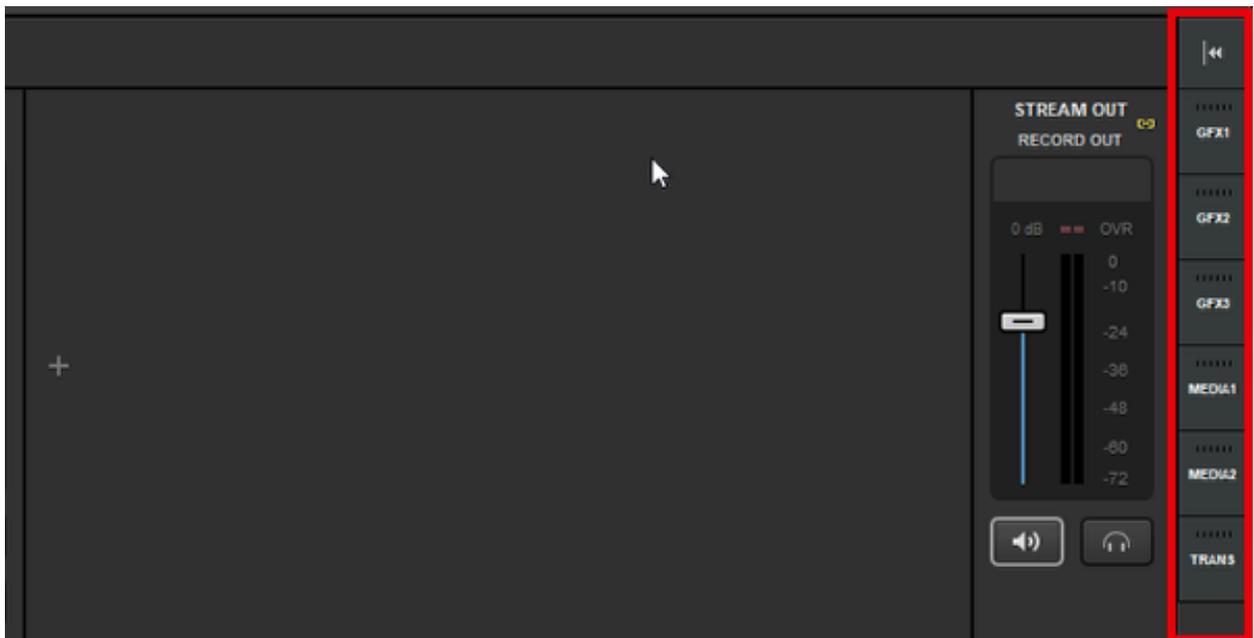
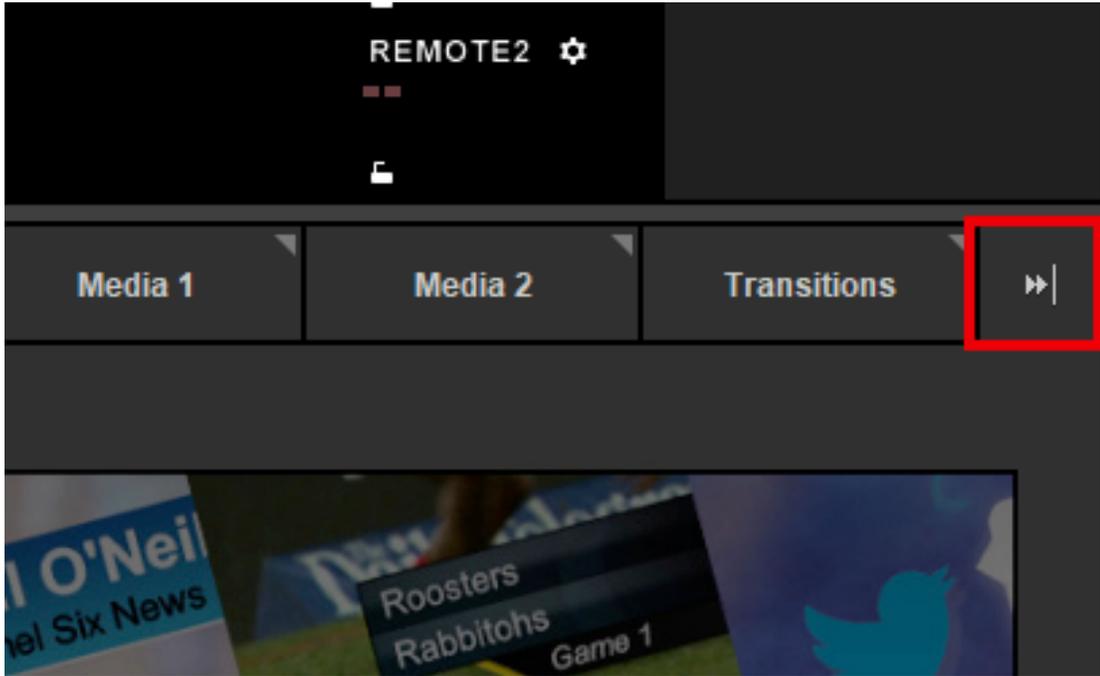
Right column:



When using advanced mode, each column splits the screen evenly by default. If you prefer one to be larger than the other, drag and drop the middle divider the desired location.

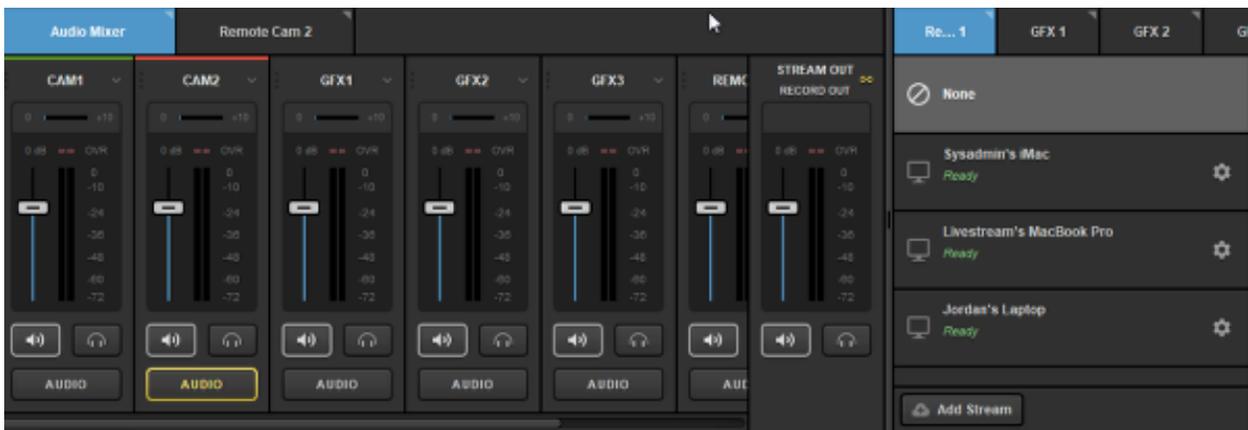


💡 You can also collapse the entire right column by clicking the collapse button on the far right side. Click it again to expand the column.



In addition to adjusting the width of each column, you can also rearrange the modules by dragging and dropping each tab between the two columns.

For example, if you need to monitor audio and remote cameras at the same time, drag the remote camera tab to the right column so you can see both the audio mixer and the remote camera module simultaneously.



If you are using a limited number of additional elements or simply wish to not have two separate columns, go to Settings: Project Format. Under the Tabs Configuration setting, select 1 Column.

Settings: Project Format CANCEL SAVE

**Project Format**

- Inputs
- Outputs
- Audio In
- Recording
- Media Player
- Streaming
- Web Control
- RTMP Server
- Dropbox
- Ad Insertion

**Quality and Format**

Definition

- Streaming Optimized
- Ultra HD
- HD
- Low Definition

Project Video Format

720p 30

**User Interface**

- Inputs Multiview

**Tabs Configuration**

- 1 Column
- 2 Columns
- 2 rows of Tabs Mode (High screen resolution required)

# Livestream Studio: First Steps

There are a variety of directions you can take when getting started with the software. Below are a few starting points to help guide you:

[Connect Cameras to Livestream Studio](#)

[Seeing Camera Inputs in Studio](#)

[Creating & Saving Projects](#)

[Introduction to the Multi-View](#)

[Use a Mouse to Switch Sources](#)

[Use a Keyboard to Switch Sources](#)

[Control the Audio Mixer](#)

[Monitoring Audio](#)

[Adding Graphic Overlay Modules](#)

[Mixing Graphic Overlays into Program](#)

[Importing Videos into the Media Playback Module](#)

[Set up a High-Resolution Recording](#)

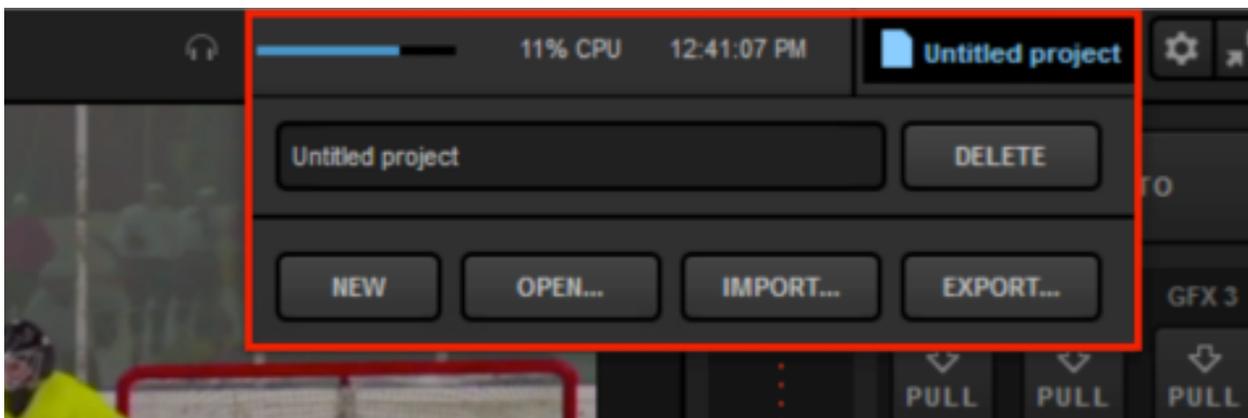
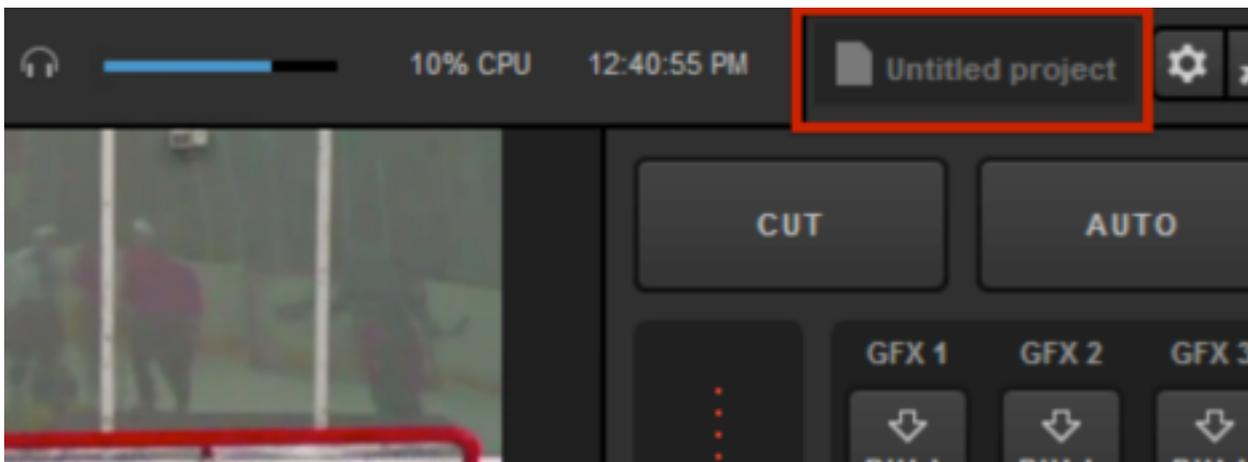
[Go Live to Livestream](#)

These only scratch the surface of Livestream Studio's capabilities. Look for more advanced walkthroughs in the [help center](#) and the [Livestream Studio User Manual](#).

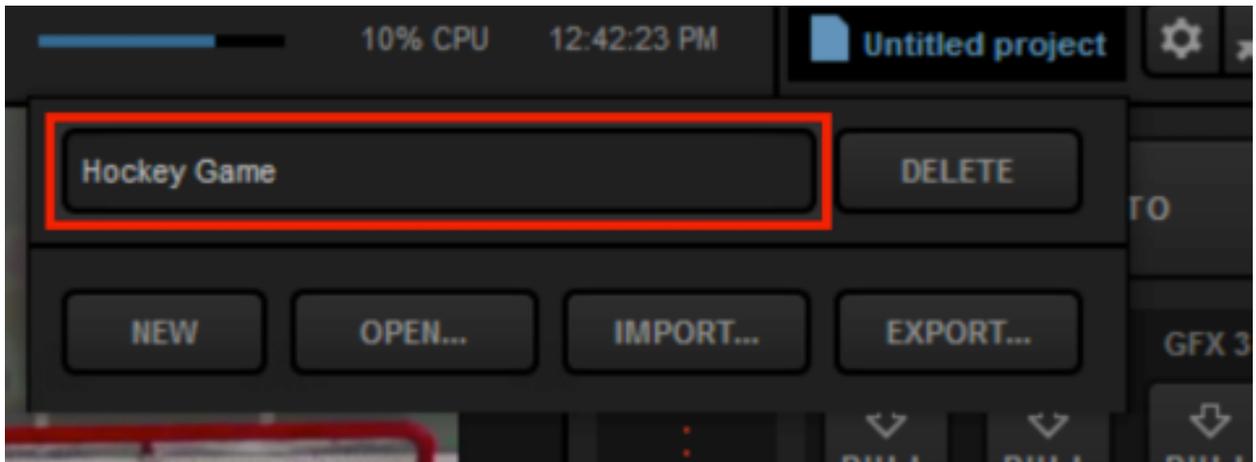
# Creating, Importing, and Exporting Projects

Livestream Studio has the ability to save, load, import, and export Livestream Project files, allowing you to keep configurations saved on your system so you can use them whenever you need to, without starting from scratch.

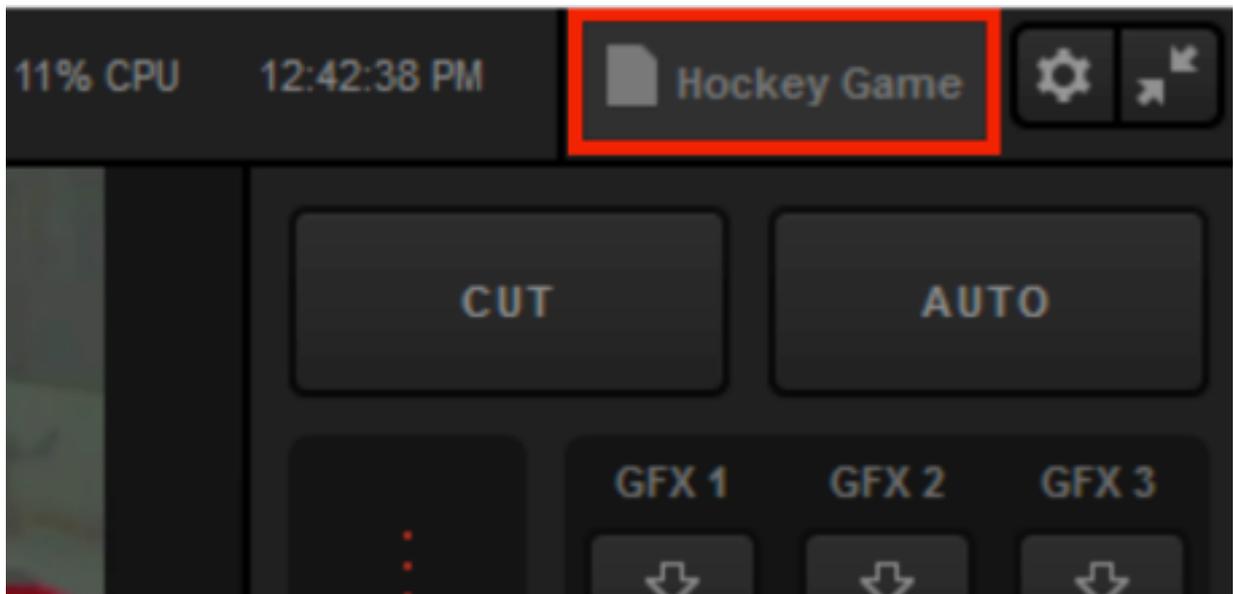
When you open Livestream Studio, by default you will be working on your previous project (or **Untitled Project** if it is your first time launching Studio). Click on the title in the upper right corner to see more options.



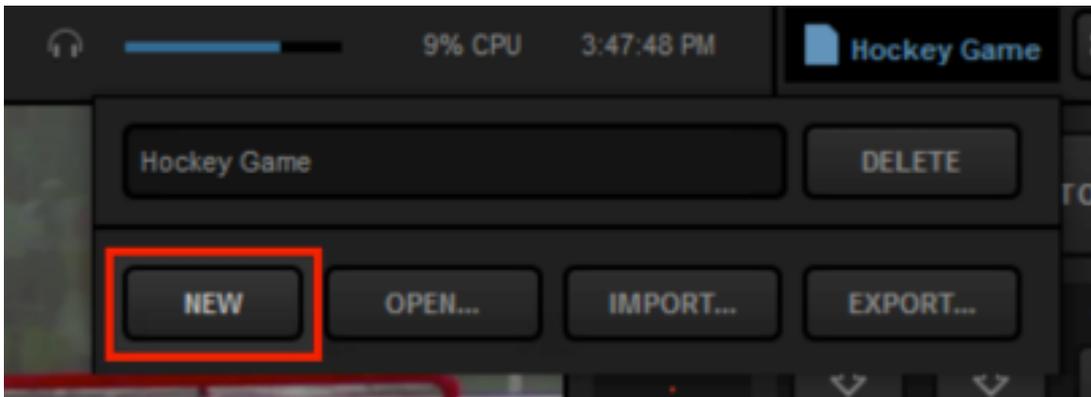
To rename your project, simply type the name into the text box. When you click out of the window, the project will automatically be renamed.



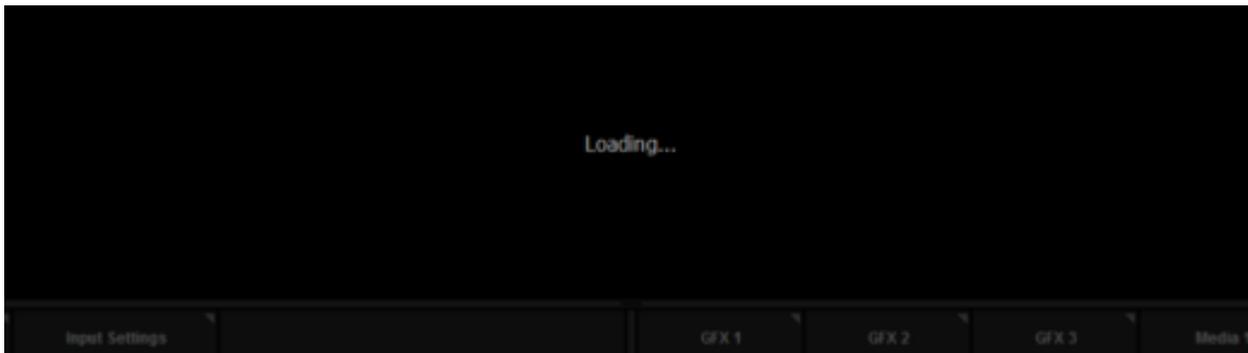
Now your project is renamed. As you configure it (e.g. add graphics templates, import media clips, arrange inputs, etc.), it will save automatically. This occurs regardless of the project being renamed, but now you can identify it.



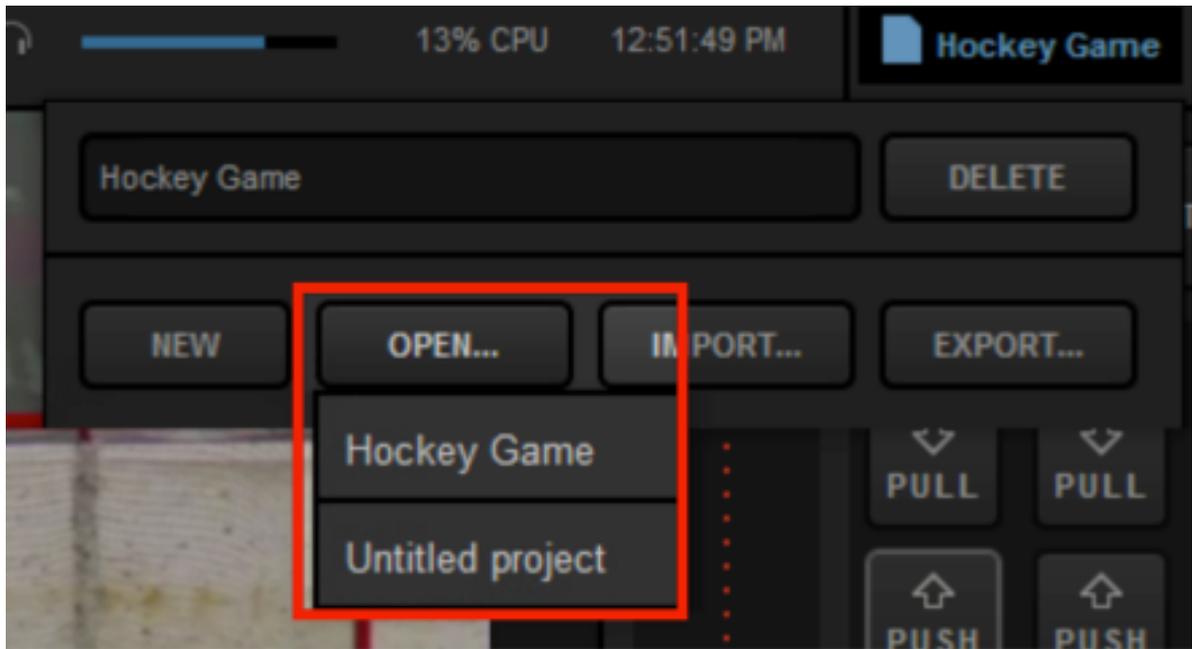
You can create a new project at any time by clicking on your project title and selecting New.



A new untitled project will open with default configurations. As mentioned above, you can rename the new project by clicking on the title.

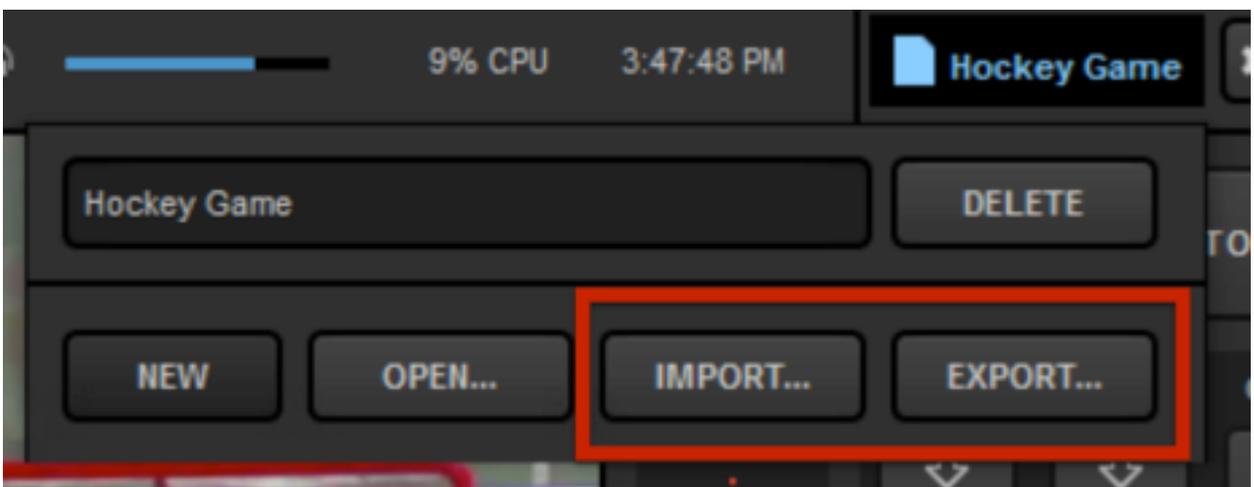


To go back to working on a previously saved project, click on the project title and click Open. A dropdown list of your projects will appear. Click the project that you want to work on.

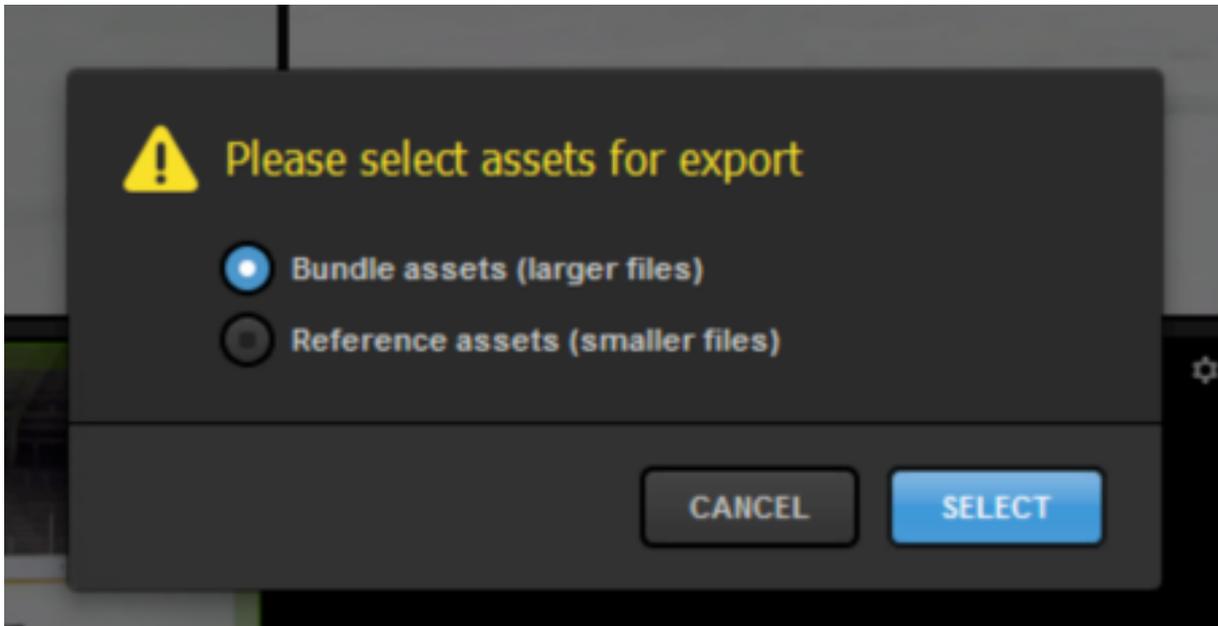


The selected project will then open as it last appeared in Livestream Studio.

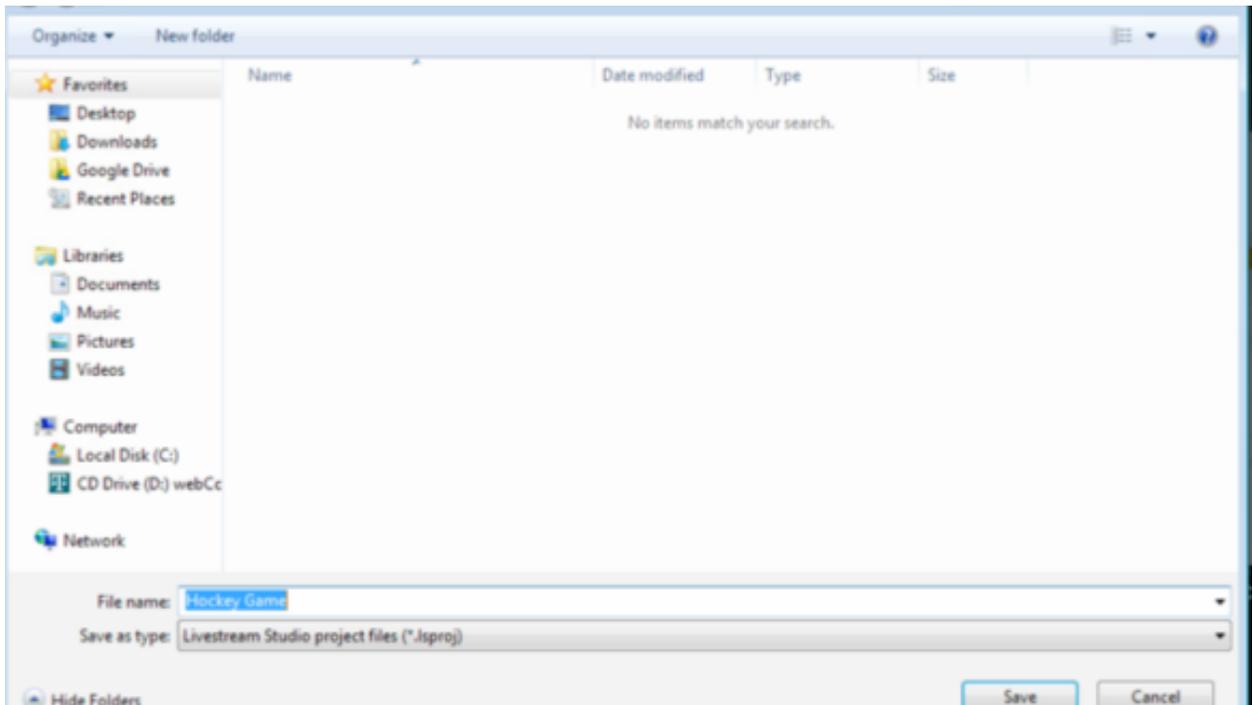
You may want to keep a Studio project configuration saved on your hard drive if you intend to use it often or move it to another Studio system. For this case, we created the Import/Export feature. When your Studio project is configured the way you like it, click the project title, then Export.



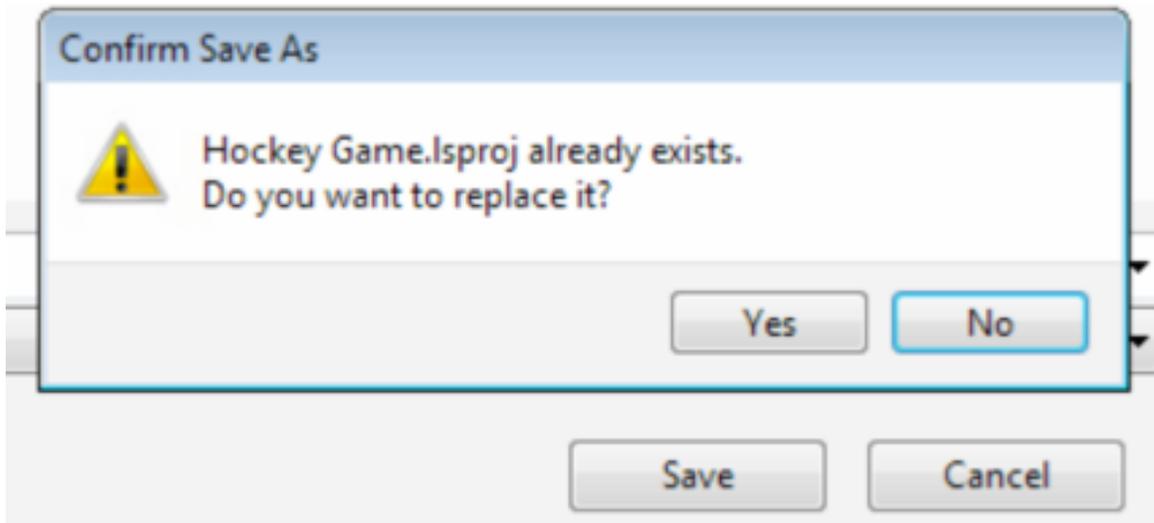
You will have the option to bundle or reference assets. Bundle is ideal if you need to move the file to a different hard drive or system, but creates a larger file. Reference is a smaller file, but will not move any associated assets (media clips, etc.) After selecting your preferred option, click **Select**.



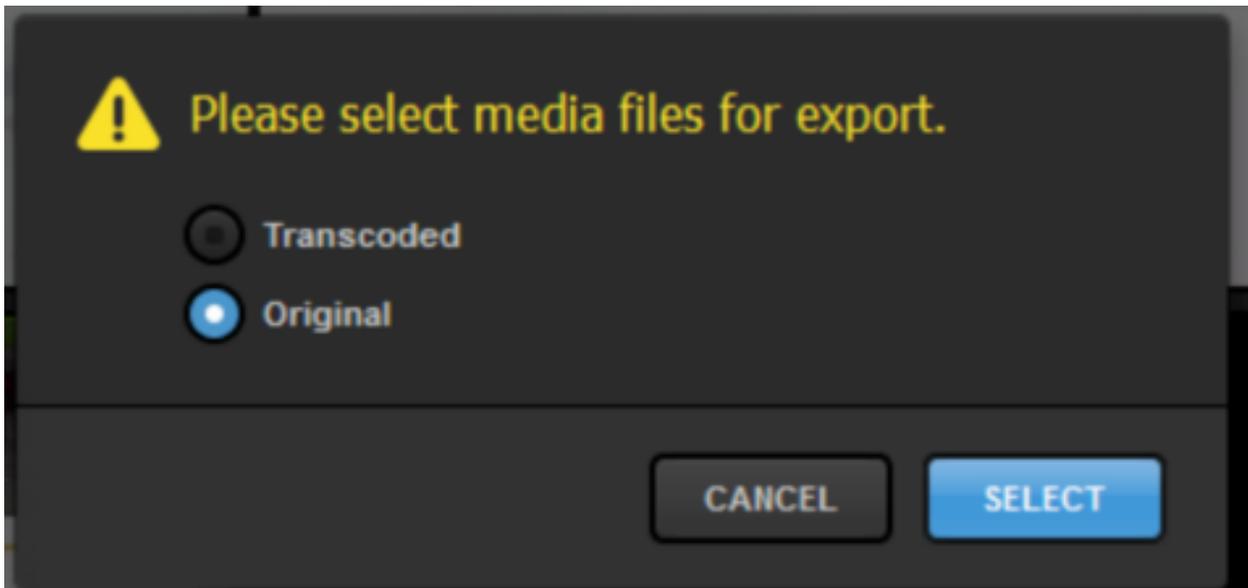
Choose where on your system you want to save the Livestream Project file (.lsproj). By default, your operating system will open a newly created Livestream Studio Export Projects folder under Documents, but you can save the file anywhere you want. Then, click **Save**.



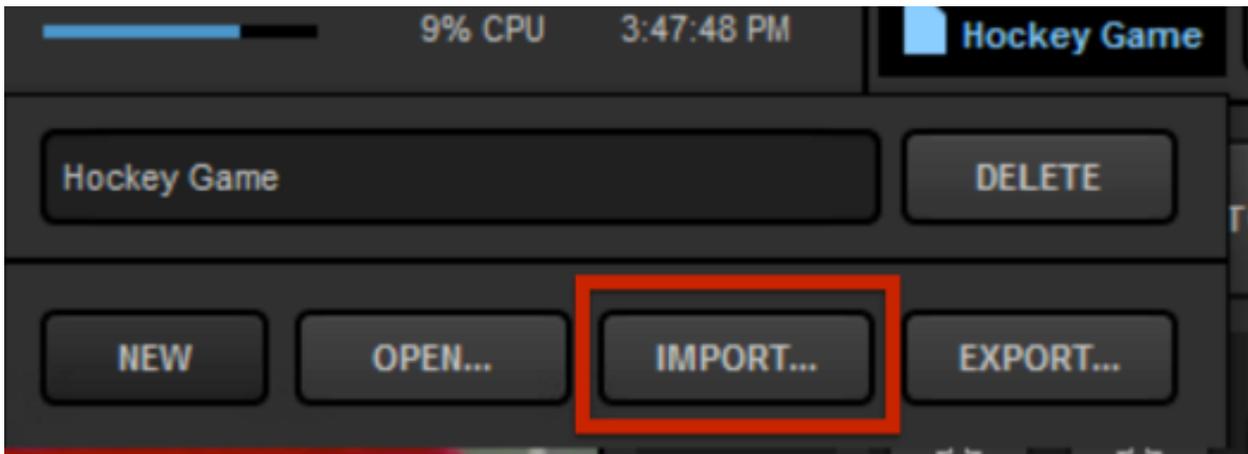
Your system will warn if you already have a .lsproj of the same name and give you the option of replacing it. If you click No, you will have the option to rename it in your save location.



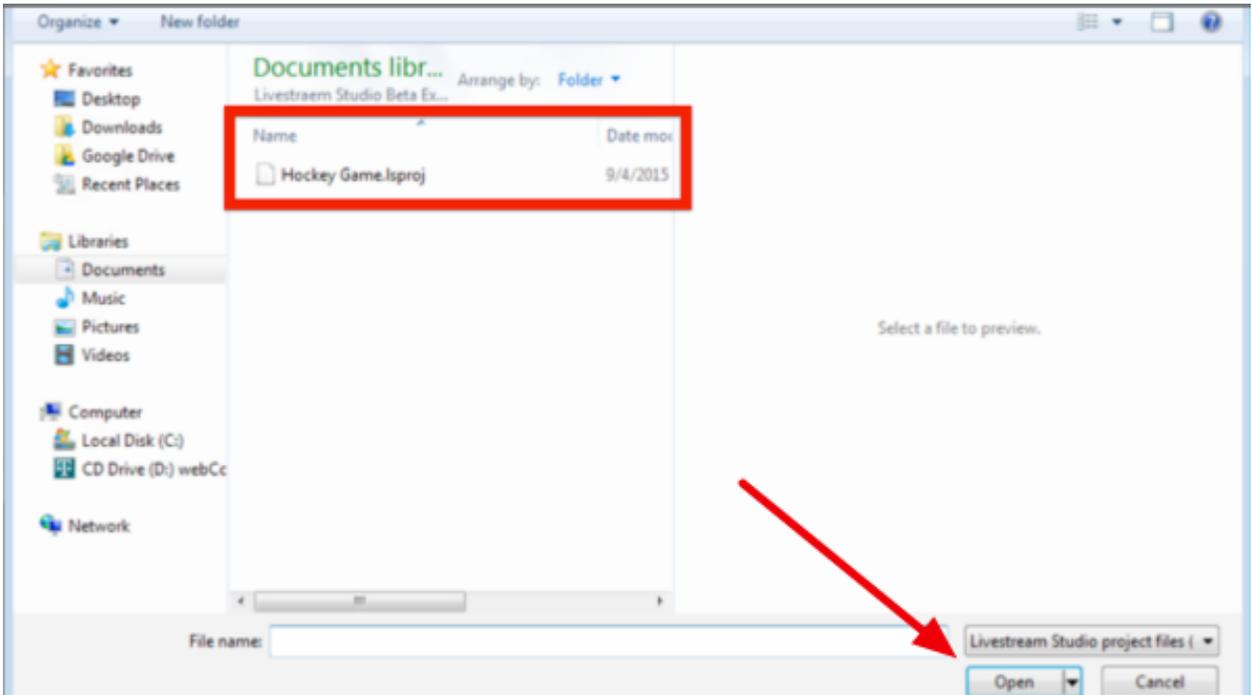
If you imported media files into your media bin, you will be asked whether to save the original video files or their transcoded versions (i.e., the files created after they were brought into Studio).



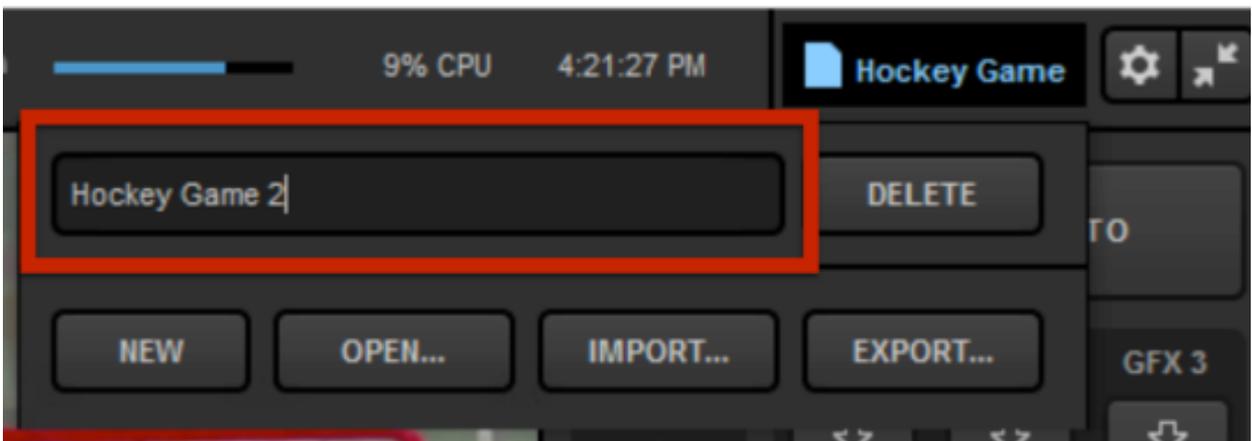
When you are ready to use that particular project file, you can click on the project title and then on Import.



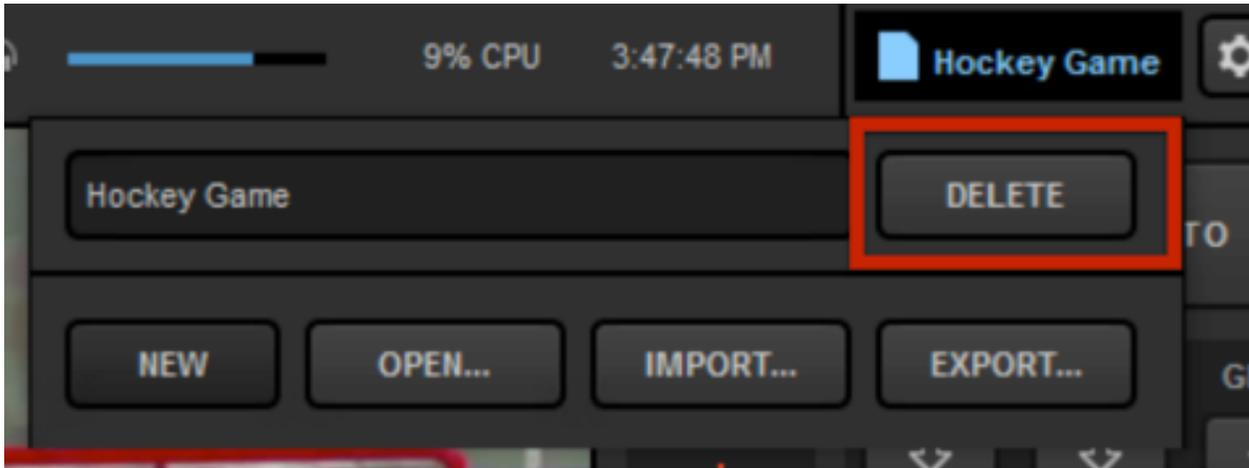
Find your .Isproj file in Windows, select it, and click Open.



This will create a new project in Livestream Studio with the proper configurations set. You can rename this by clicking the project title if desired.



If you no longer intend to use the project you are working on, you can click the project title and then Delete. This will not delete an exported file, but you will no longer be able to select it from the Open menu.



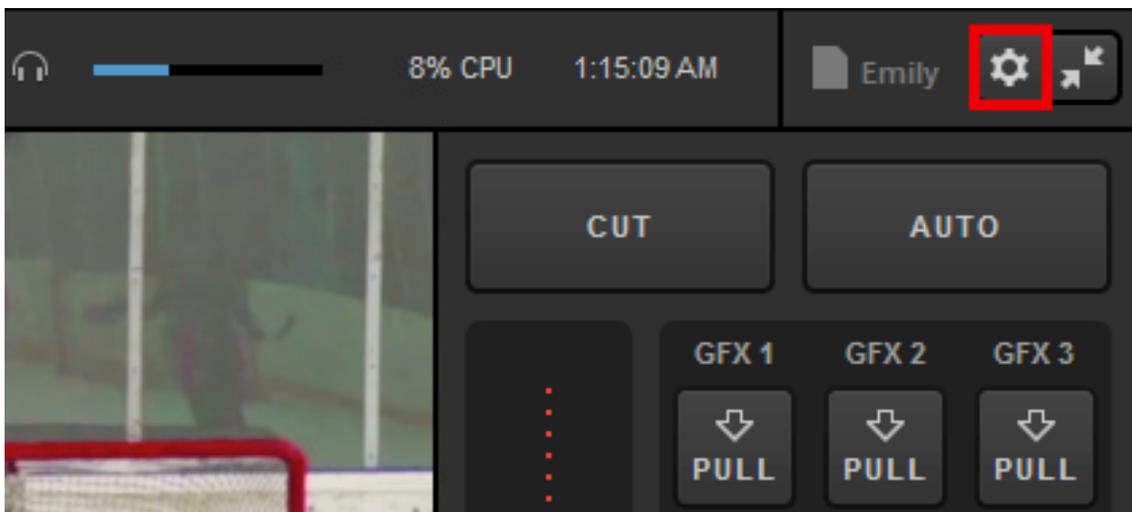
# Importing & Exporting Projects via Dropbox

You have the option to save your Livestream Studio project files to a Dropbox folder rather than a local folder if you wish. You can also import .lsproj files from Dropbox into any Livestream Studio system using the same integration.

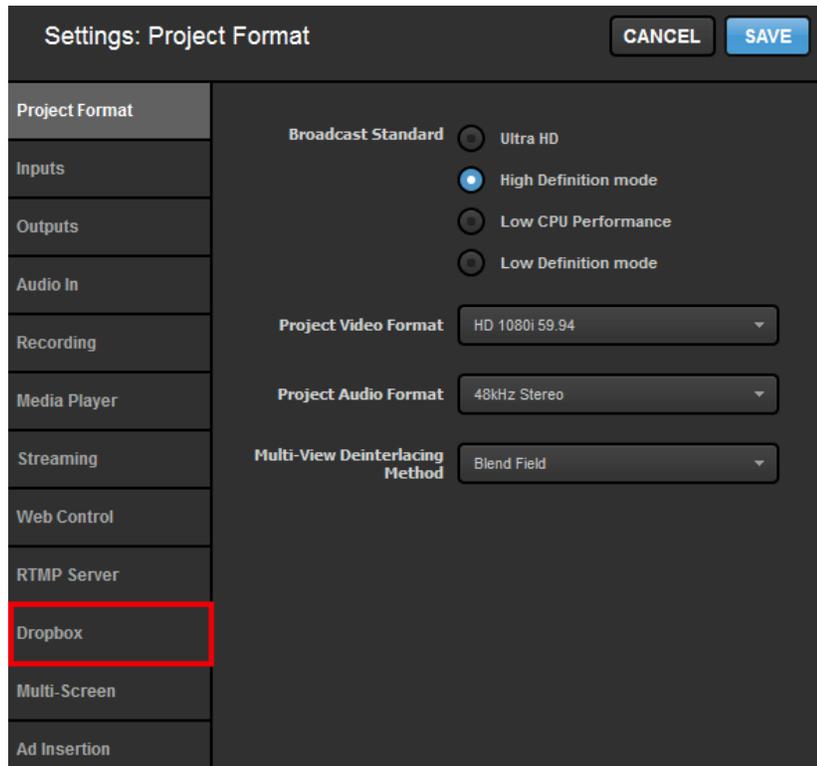
💡 For the best experience, we recommend simplifying your Dropbox folder structure to no more than 1 or 2 subfolders. Multiple subfolders can cause extended sync times with Dropbox.

## Connect Dropbox to Livestream Studio

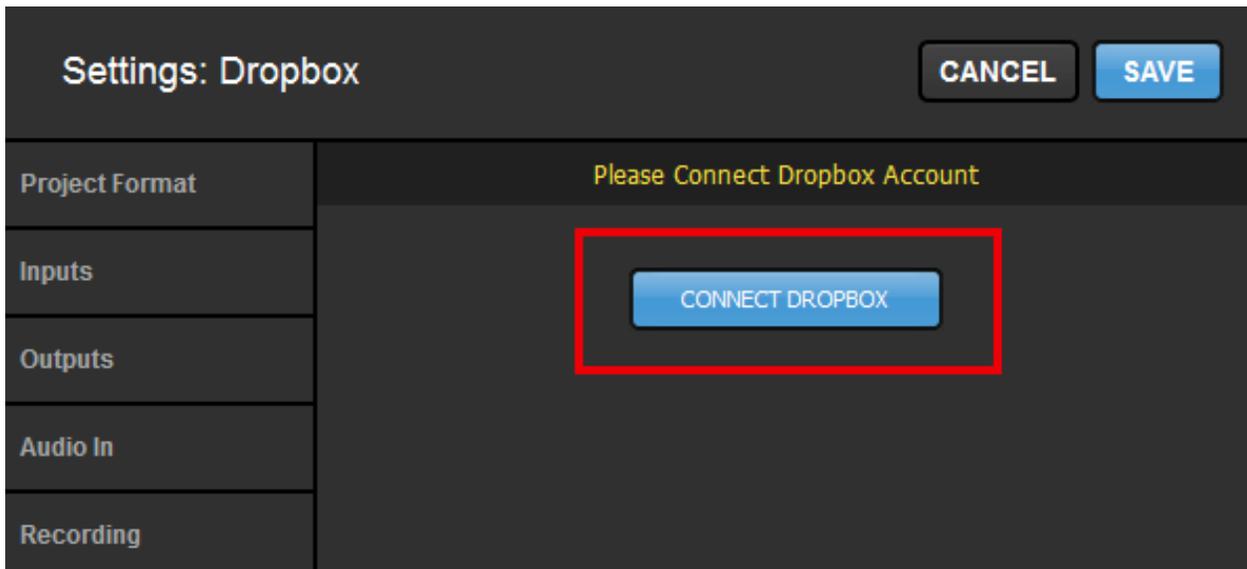
To configure Dropbox, navigate to settings by clicking the gearwheel icon in the upper right corner of Studio.



Navigate to the Dropbox tab.



Click Connect Dropbox.



A browser window will open. Log in to your Dropbox account to connect it with Livestream Studio.



Sign in to Dropbox to link with Livestream Studio

 [Sign In with Google](#)

or

[Forgot your password?](#) [Sign in](#)

The browser will indicate that authorization was successful. Return to Livestream Studio.



Livestream Studio



## Authorization Successful

Open your Livestream Studio. You may close this window.

The Settings: Dropbox window will indicate that your account is connected. Click Select Folders to choose which folder to use with Livestream Studio.

### Settings: Dropbox

**CANCEL** **SAVE**

Project Format Emily Knox ▾

**Inputs**  **Select Folders**  
Please specify remote Dropbox folder and folder for local files.  
**SELECT FOLDERS**

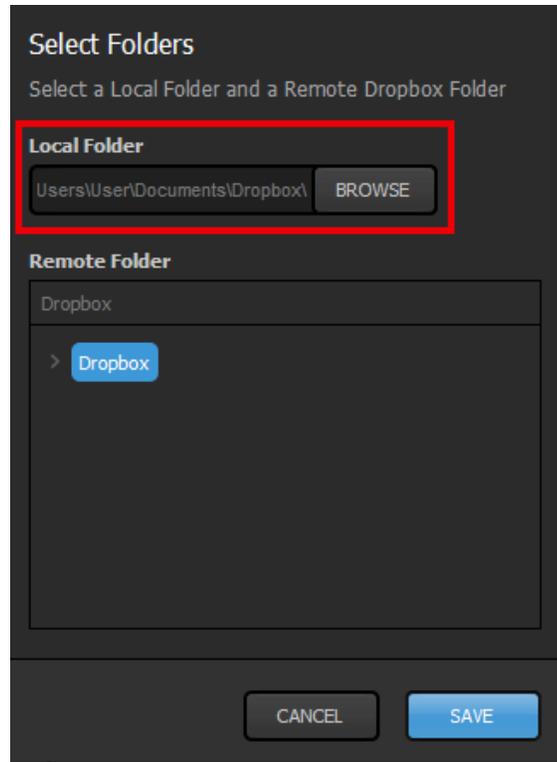
Outputs

Audio In

Recording

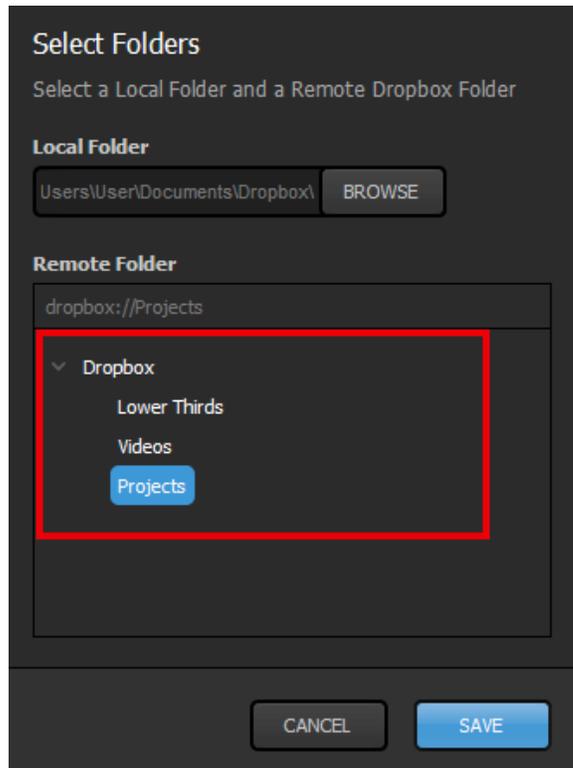
Media Player

Choose a local folder, which will include copies of anything you save to Dropbox on the local hard drive as well. By default, this will be set to Documents > Dropbox, but you can click **BROWSE** to choose a different location.

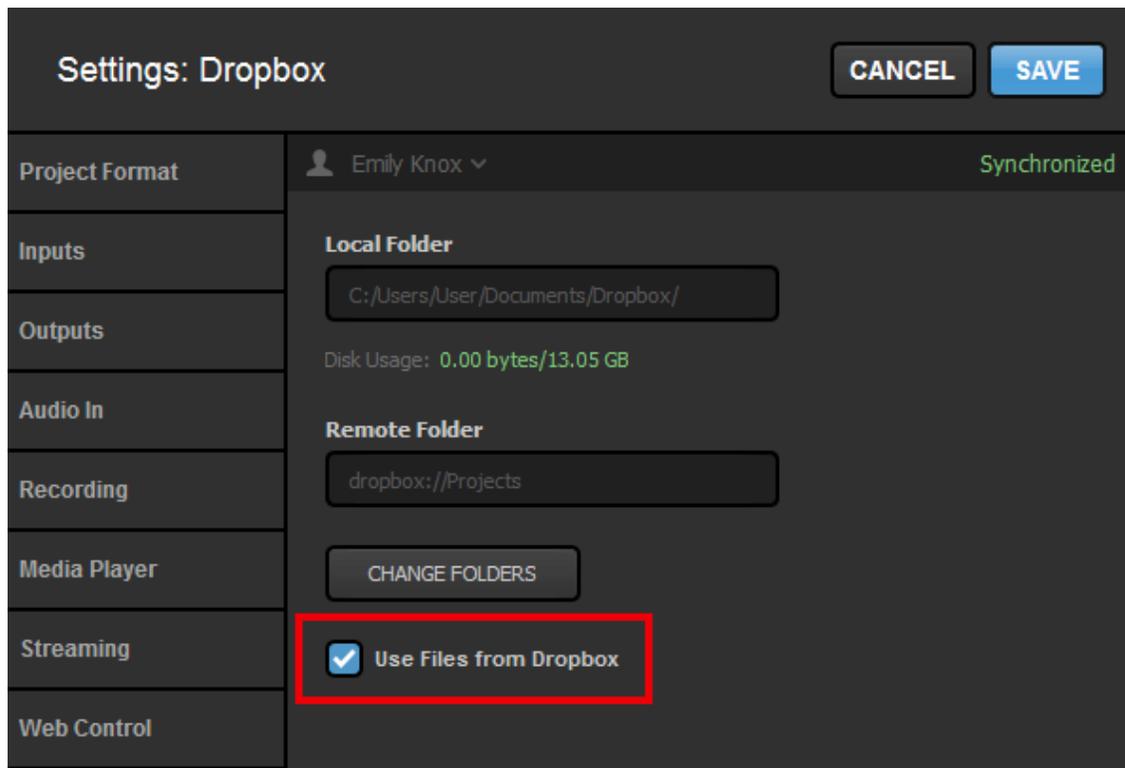


Next, choose the Dropbox folder you want to work out of. This can either be a generic "Dropbox" folder (as selected above) or you can expand into any folders within your Dropbox account (e.g. "Projects," seen below).

When you are done selecting your folders, click **Save**.

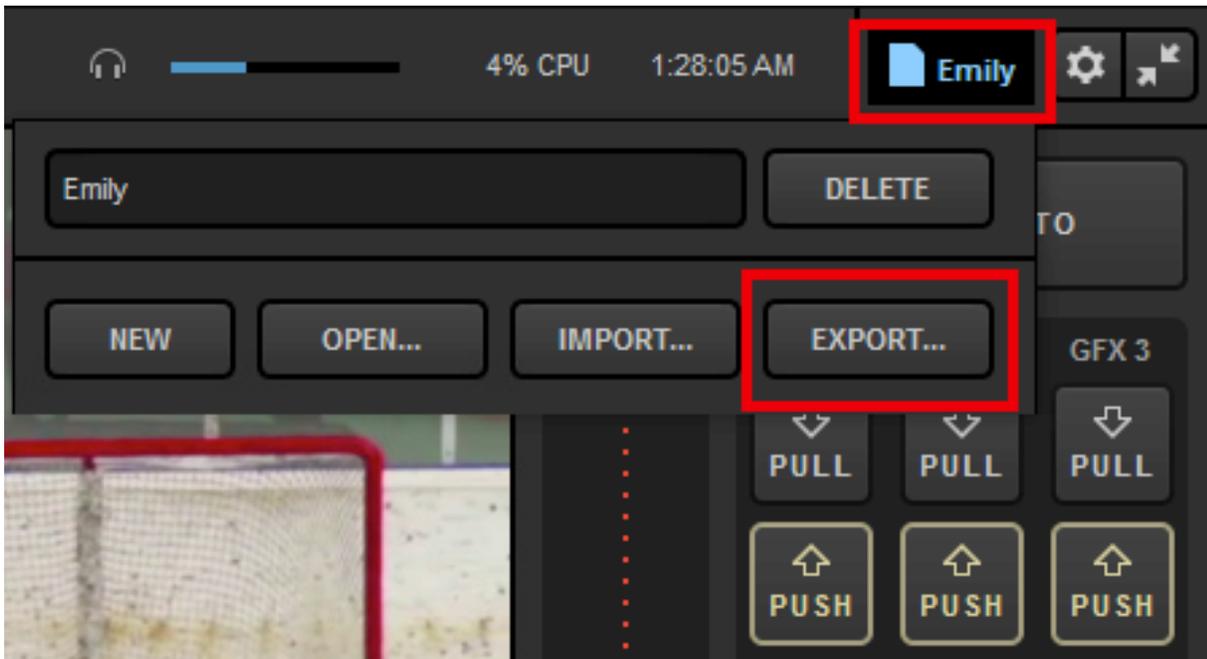


Your Dropbox account will sync with Livestream Studio. Make sure Use Files from Dropbox is checked. Then save your settings.

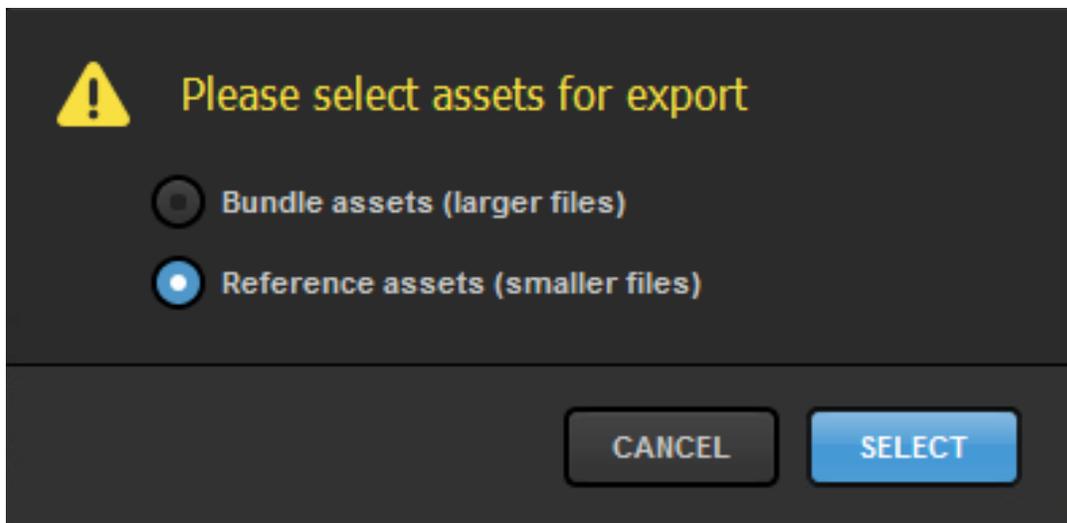


## Save Project to Dropbox

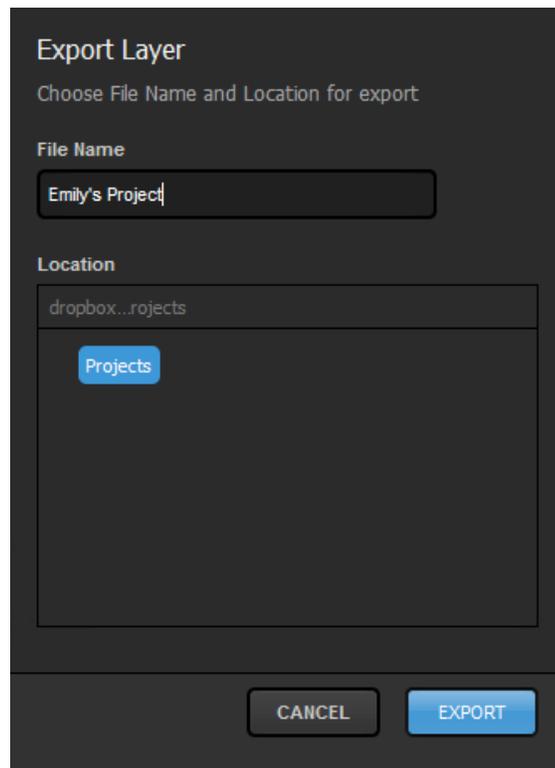
When you want to save your project to Dropbox, click the project name from the upper right corner, then click Export...



Select whether to **bundle** your assets into the project (e.g. graphics, media clips, etc.) or if the project should simply **reference** their file paths.



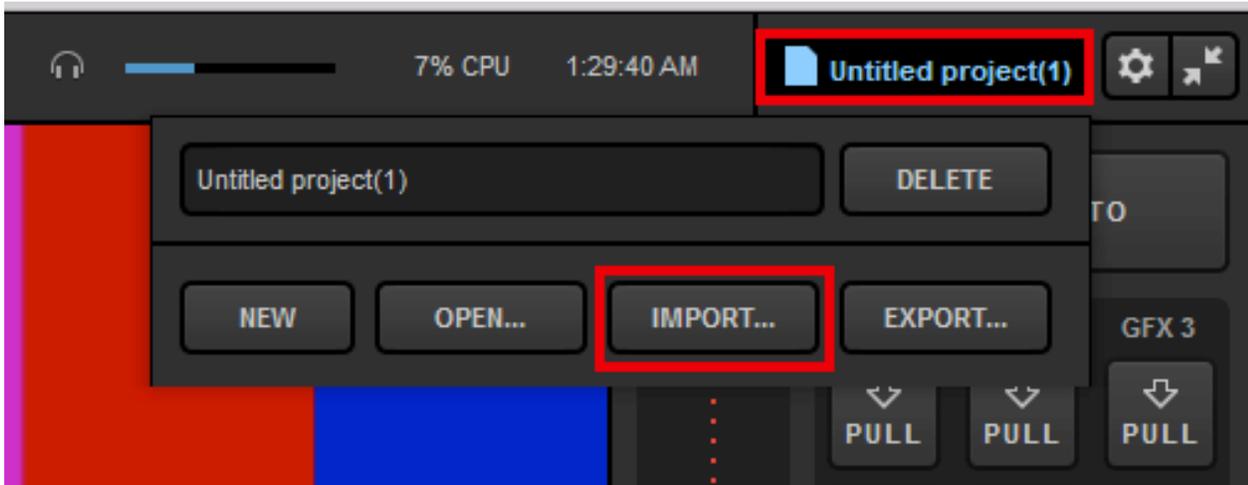
Give your project a name and make sure your folder is selected. Then click Export.



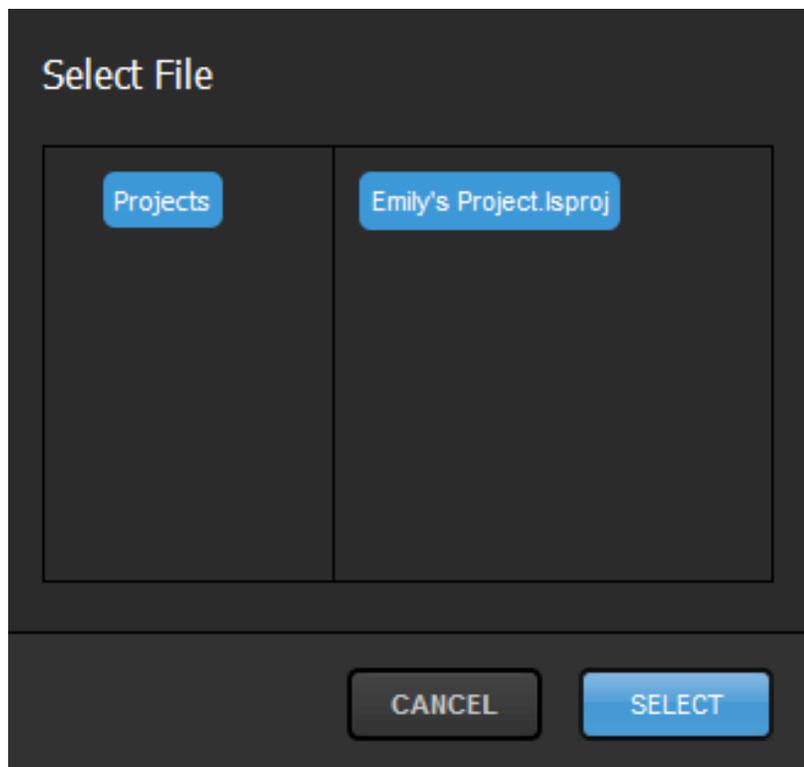
The .lsproj file will now be saved in your Dropbox folder as well as the local folder you selected in settings.

## Import Project from Dropbox

To import your project into Livestream Studio, click the project name in the upper right corner, then click Import...



Click on your .lsproj file from the Dropbox folder, then click Select. Your project will open up in Studio.



# Video Inputs

# Connect Cameras to Livestream Studio

To connect your cameras to Livestream Studio, you must have a supported capture device (unless you are using a webcam), a video cable that is compatible with your camera (HD-SDI cable, HDMI cable, etc.), and any necessary cables to connect your capture device to your computer.

## Webcams

Livestream Studio should recognize any USB webcam once its drivers are installed. Typically webcam drivers will download and install automatically once you connect the camera to a USB port on the computer.

Built-in webcams will also be recognized automatically.



CAM2	DeckLink Mini Re	Embedded	None
CAM3	DeckLink Mini Re	Embedded	None
Name	None	None	None
GFX1	None		None
	DeckLink Mini Recorder [1] SDI		
GFX2	DeckLink Mini Recorder [1] HDMI		None
	DeckLink Mini Recorder [2] SDI		
	DeckLink Mini Recorder [2] HDMI		
MEDIA1	DeckLink Mini Recorder [3] SDI		None
	DeckLink Mini Recorder [3] HDMI		
REMOTE1	Logitech HD Pro Webcam C920 [1]		None
	GFX 3		
	Media 2		

## Camcorders & Video Cameras

For other cameras, you will need a Blackmagic Design capture device in order for Livestream Studio to recognize the input. Magewell devices are also compatible.

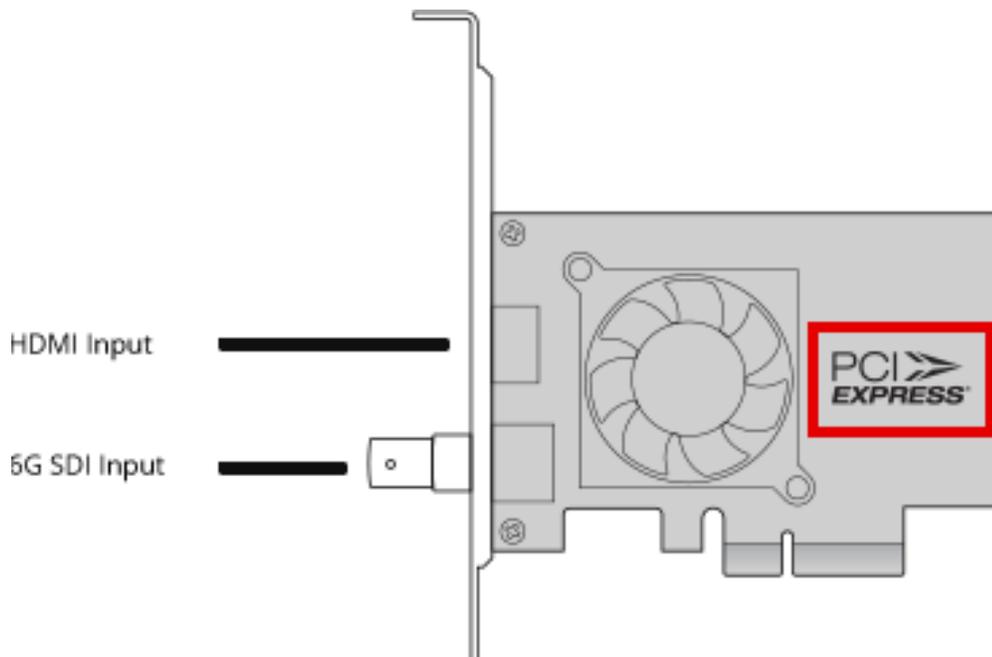


- i** Studio hardware products (HD31, HD51, HD550, etc.) all have Blackmagic DeckLink Mini Recorders and a DeckLink Mini Monitor and drivers pre-installed. These driver installation steps should be executed by customers who are running Studio on their own computer.

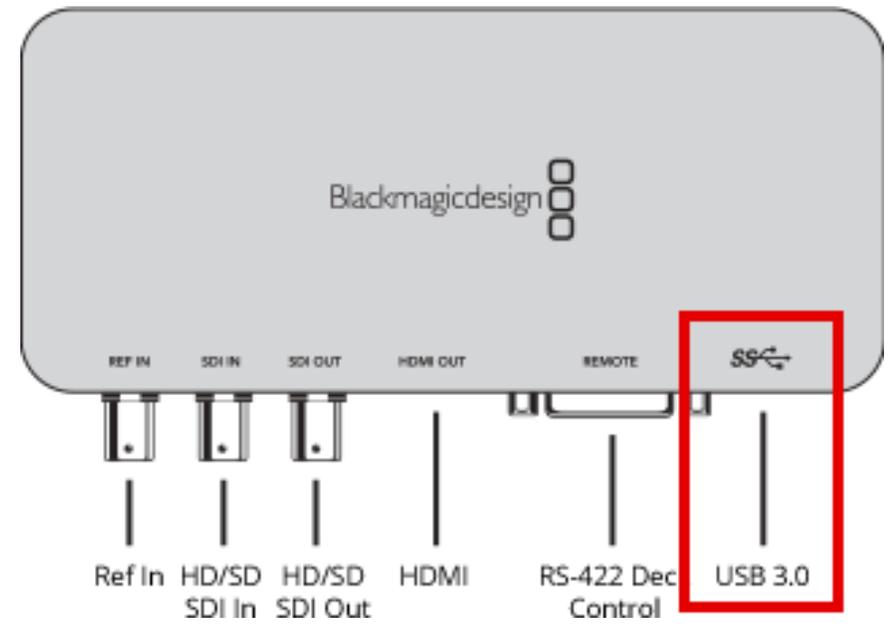
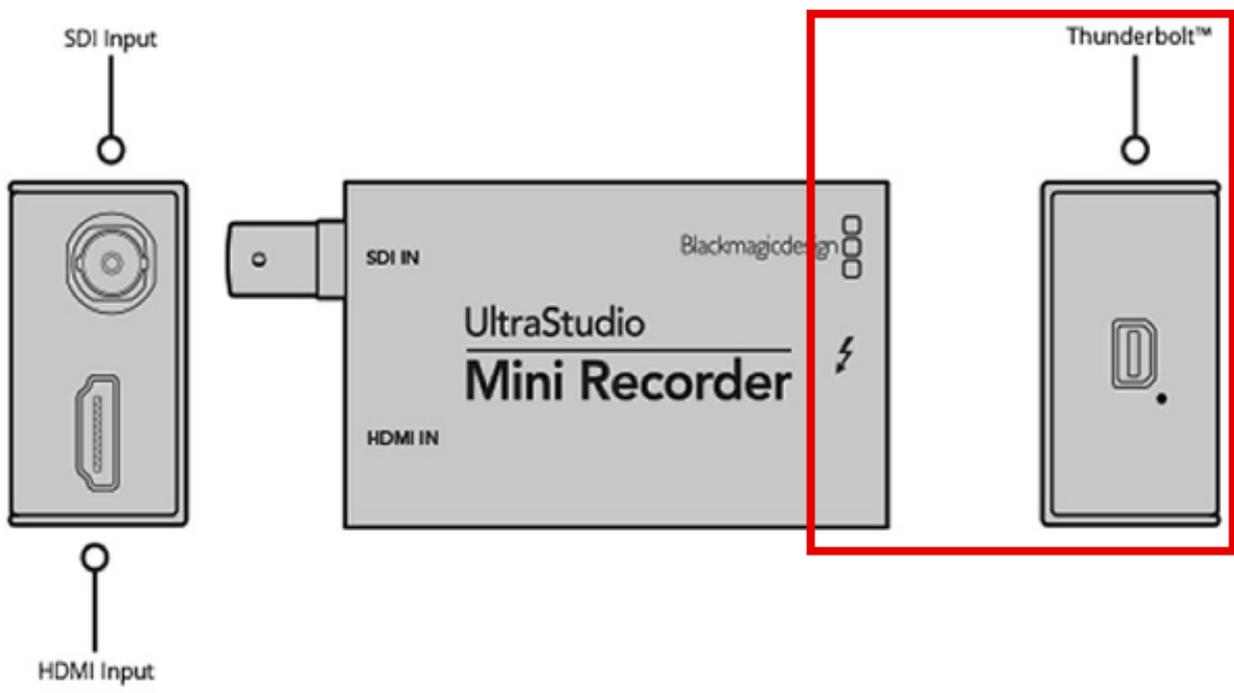


PCIe cards, Thunderbolt products, and USB 3.0 devices are certified to work with Livestream Studio. See our [full list](#) of compatible devices.

 Please note that USB 2.0 capture devices are not compatible with Livestream Studio.



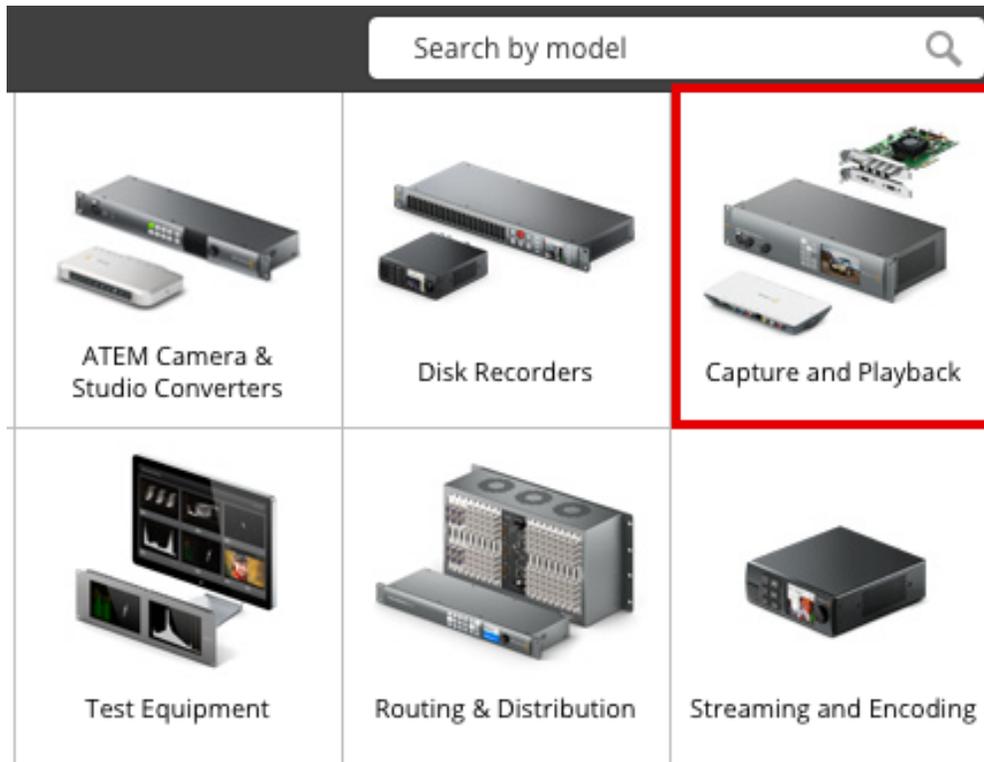
 PCI Express cards are cards installed directly into the motherboard inside the computer.



Connect the capture device to your computer if the device is not already installed. This example shows a USB 3.0 device (Blackmagic Design UltraStudio SDI).



Go to [Blackmagic Design's website](#). To install the devices drivers, click Capture and Playback on the right side.



Below the product menu on the left side is the Latest Downloads menu. Desktop Video is the device driver that you will need. Find the recommended version, then click the button that corresponds to your operating system (Mac OSX or Windows) to start the download.

! At this time, we recommend downloading Desktop Video version 10.9.10.

**Latest Downloads**

Software Update 29 May 2017

### Desktop Video 10.9.3

This software update improves playback for custom VANC data such as closed caption when playing back from DeckLink Duo 2 and DeckLink Quad 2 and fixes a plug in installation bug for Photoshop CC 2017 for all DeckLink and Intensity products. It also includes new Disk Speed Test 3.1, which provides improved support for faster disks, as well as general performance improvements. [Read more](#)

Mac OS X **Windows** Linux

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Developer SDK 29 May 2017

### Desktop Video 10.9.3 SDK

This SDK provides developer support for Desktop Video 10.9.3 that allows updating of hardware control and software interfaces for Desktop Video products.

Mac OS X Windows Linux

**Latest Support**

Instruction M:  
**Desktop Vid**  
This instruction installation and video products Intensity model  
[Download](#)

Information N  
**Configuring Quad 2**  
This Information configure Deckl full duplex mod  
[Read More](#)

Information N

You will be prompted to register your device, which is not required. If you wish to skip registration, click **Download Only** in the bottom left corner.

Phone\*

Country\*

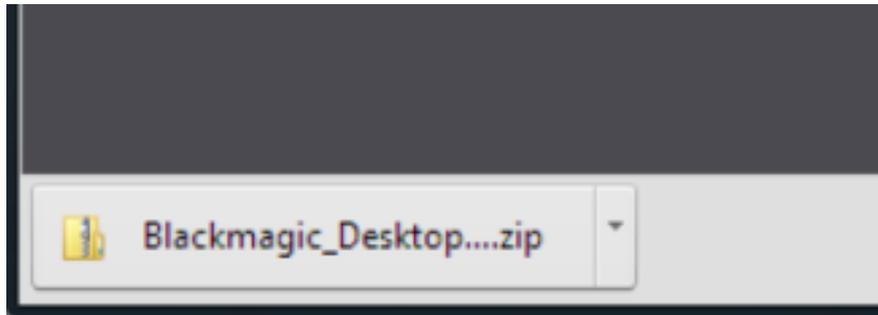
City\*

State\*

Which features should we add?

**Download Only**

When the download completes, open the file and follow the simple on-screen steps to install. Once the installation is complete, restart your computer.

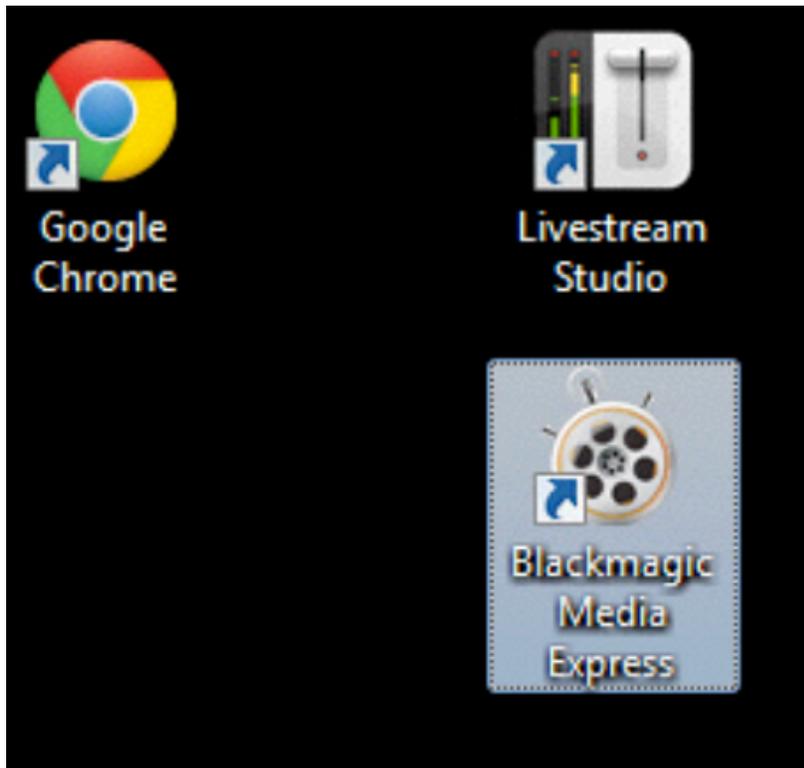


Now that the drivers are installed, turn on your cameras and connect them to your Blackmagic devices.

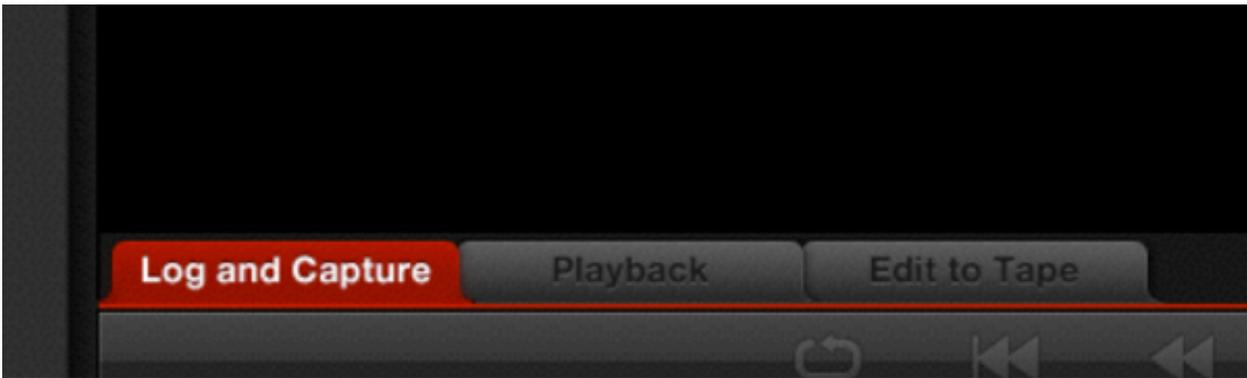




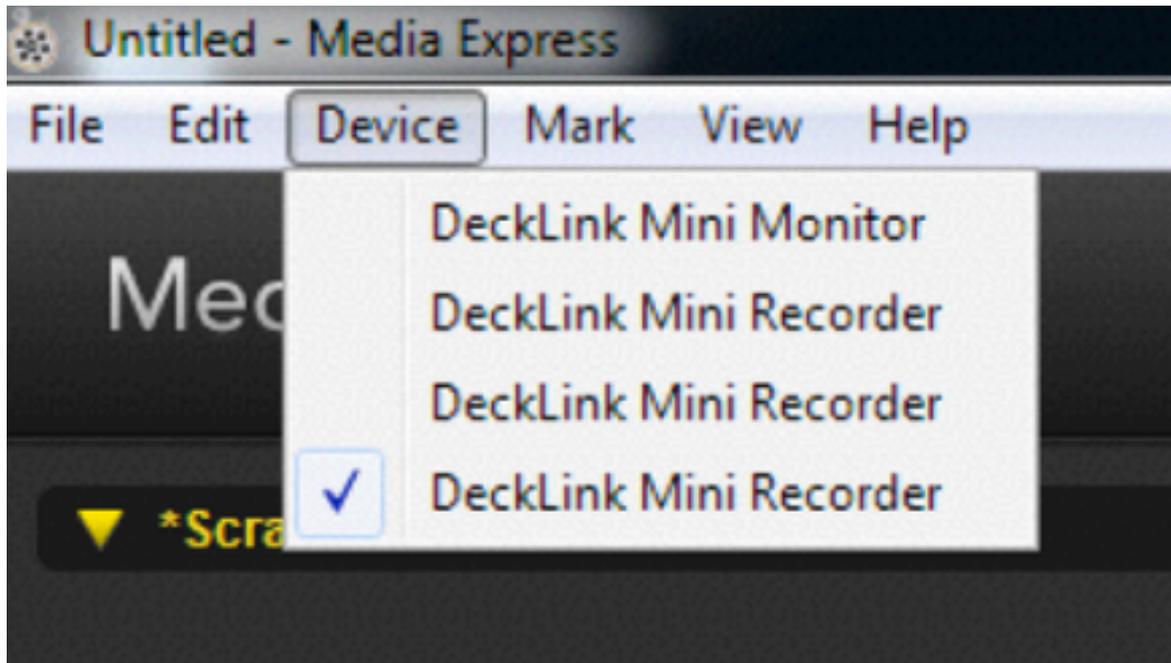
To check that your system is receiving a video in through the device, open Blackmagic Media Express *before* launching Livestream Studio. This program was installed with the Desktop Video driver.



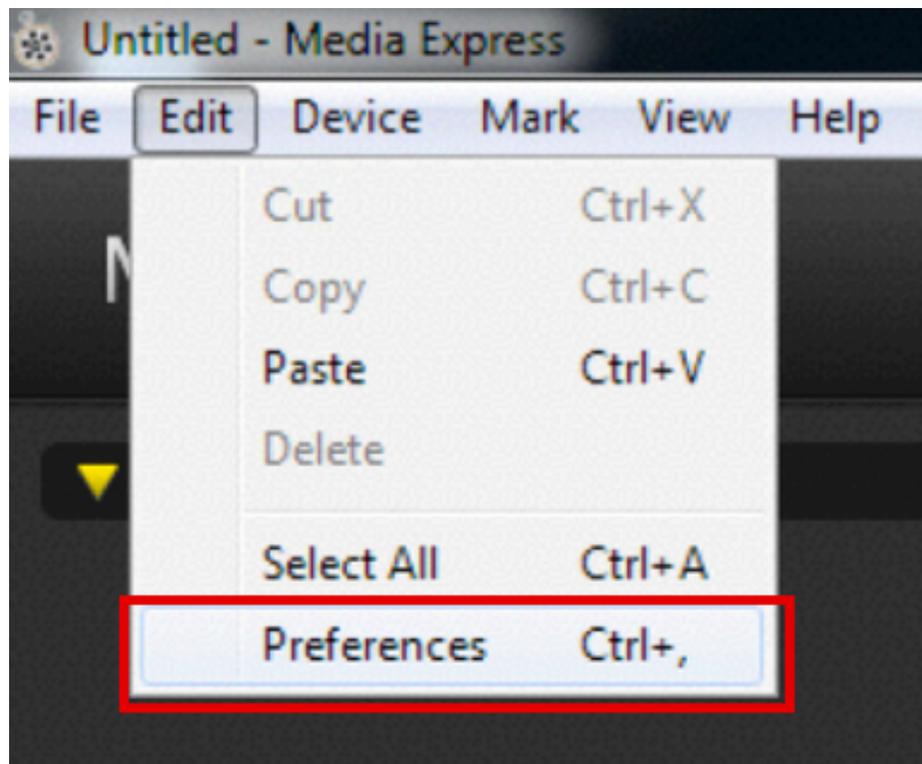
Click on the Log and Capture tab underneath the player.



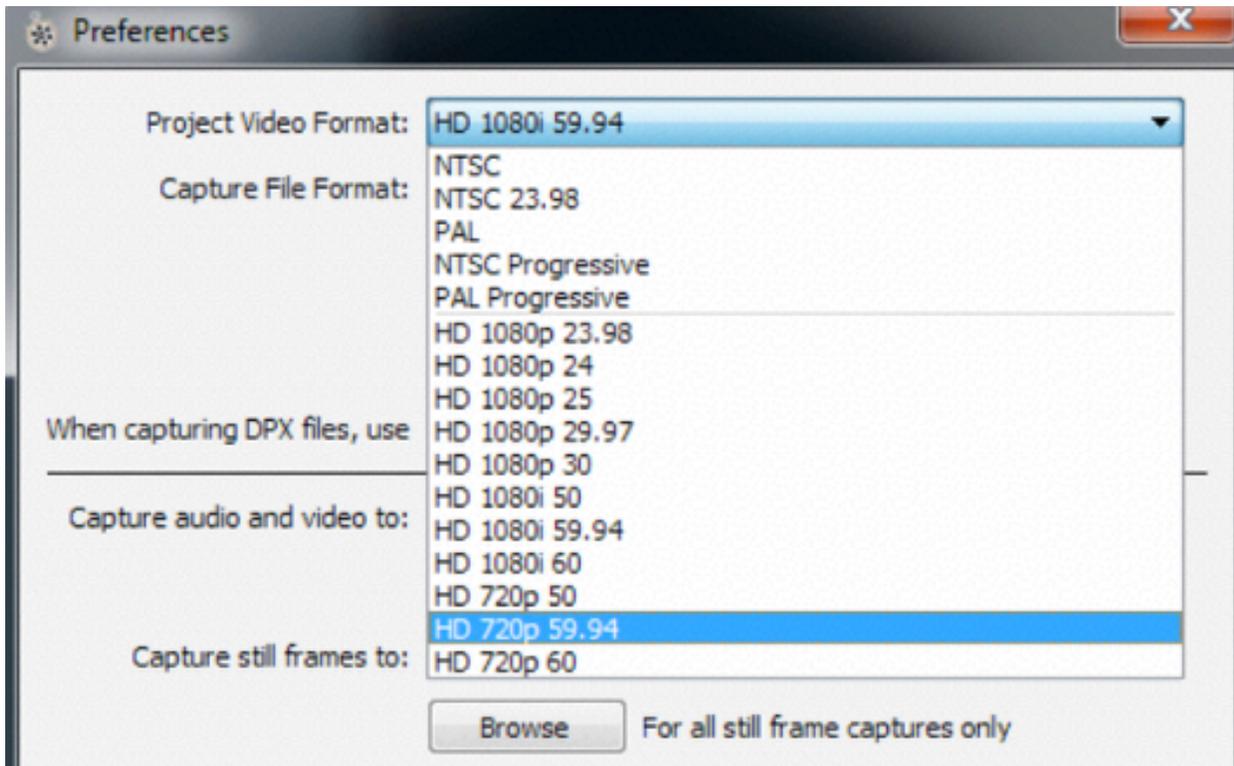
Select the device you want to check on the Devices menu.



Next, go to Edit and select the Preferences menu.



Under Project Video Format, select the format your camera is outputting, then click OK at the bottom of the window.



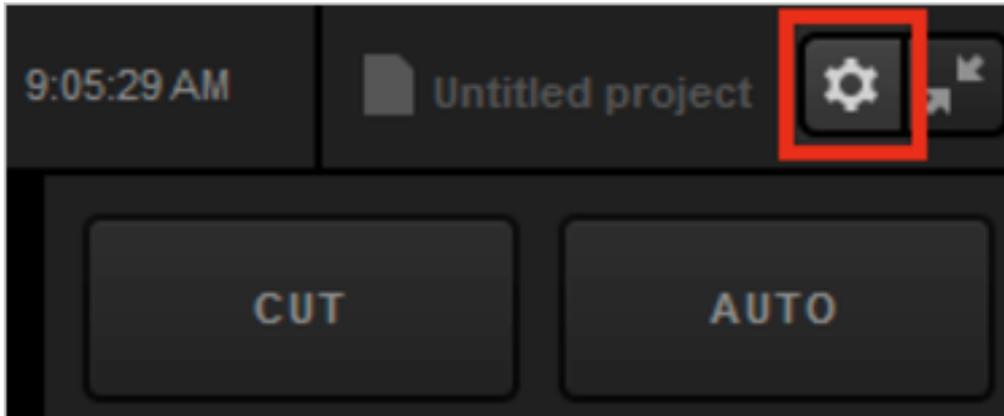
💡 If you noticed your video signal come in before selecting Edit > Preferences, simply take note of the currently configured project video format. You will need to know this in order to see your cameras in Livestream Studio.

Your video signal should now appear in the Media Express player, confirming that you have a video signal coming into your system. Be sure to close Media Express *before* launching Studio.



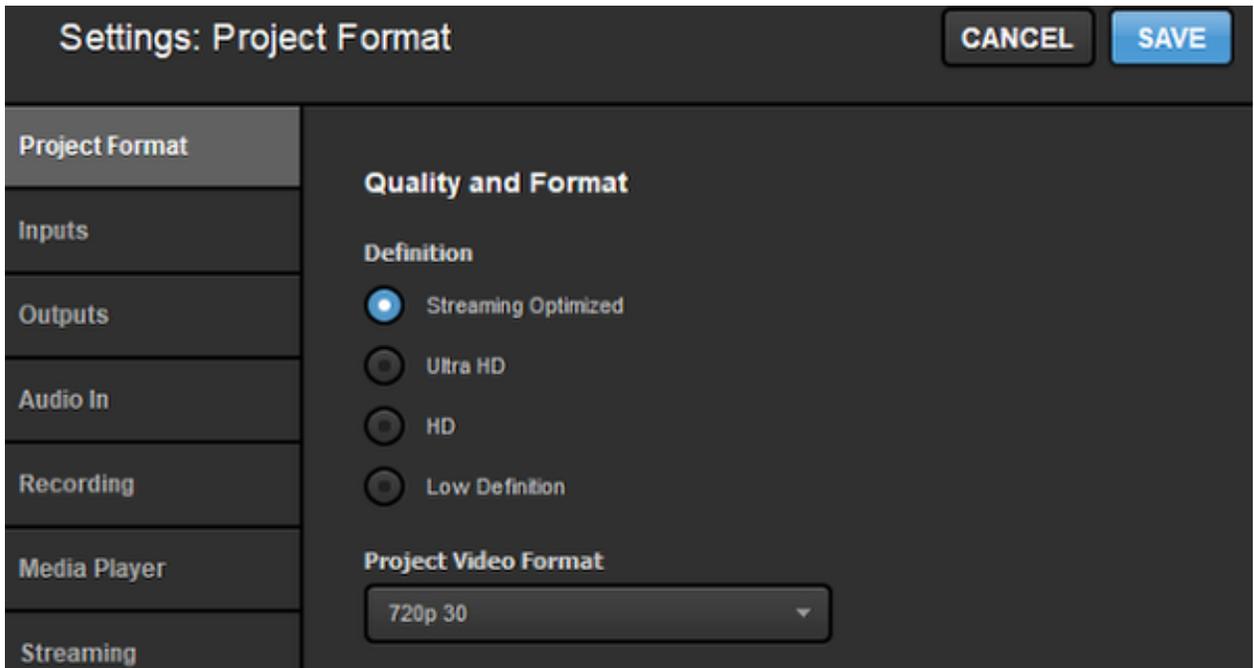
# Setting Your Project Format

To configure your Studio Project Format, click on the gear wheel in the upper right corner of Livestream Studio.



The first tab is **Project Format**. This menu is where you set your project video quality and format as well as adjust some interface configurations. The video formats that are available to choose from are based on which Definition you select.

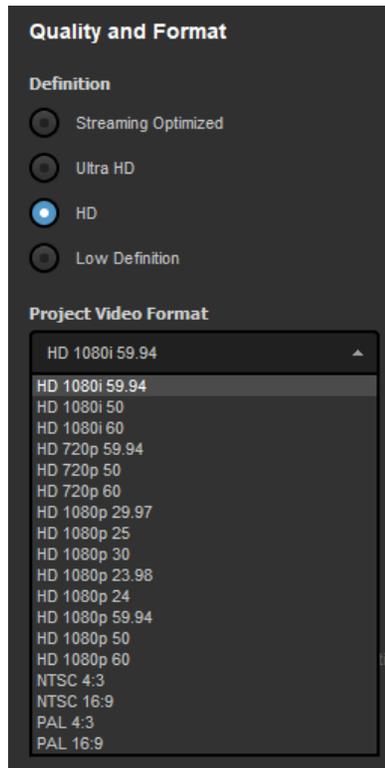
- **Streaming Optimized** (previously referred to as **Low CPU Performance**) includes 720p project formats, which are ideal for streaming particularly on laptops and lower end CPUs.
- **Ultra HD** includes 4K formats, which should only be used if you have 4K-compatible cameras and capture cards.
- **HD** has the most options for video formats, including 1080i, 1080p, 720p, NTSC, and PAL formats.
- **Low Definition** has 480p, 432p, 360p, NTSC, and PAL formats and will auto-downscale any HD inputs to the selected format.



 Either a 1080p or 720p format will produce the best quality stream, as they eliminate the need to de-interlace. All formats will be true broadcast quality when recording and outputting the video.

After choosing your Definition, choose your specific Project Video Format.

 Check each camera's settings to ensure that they all match each other as well as your project format. This will keep your CPU consumption low.



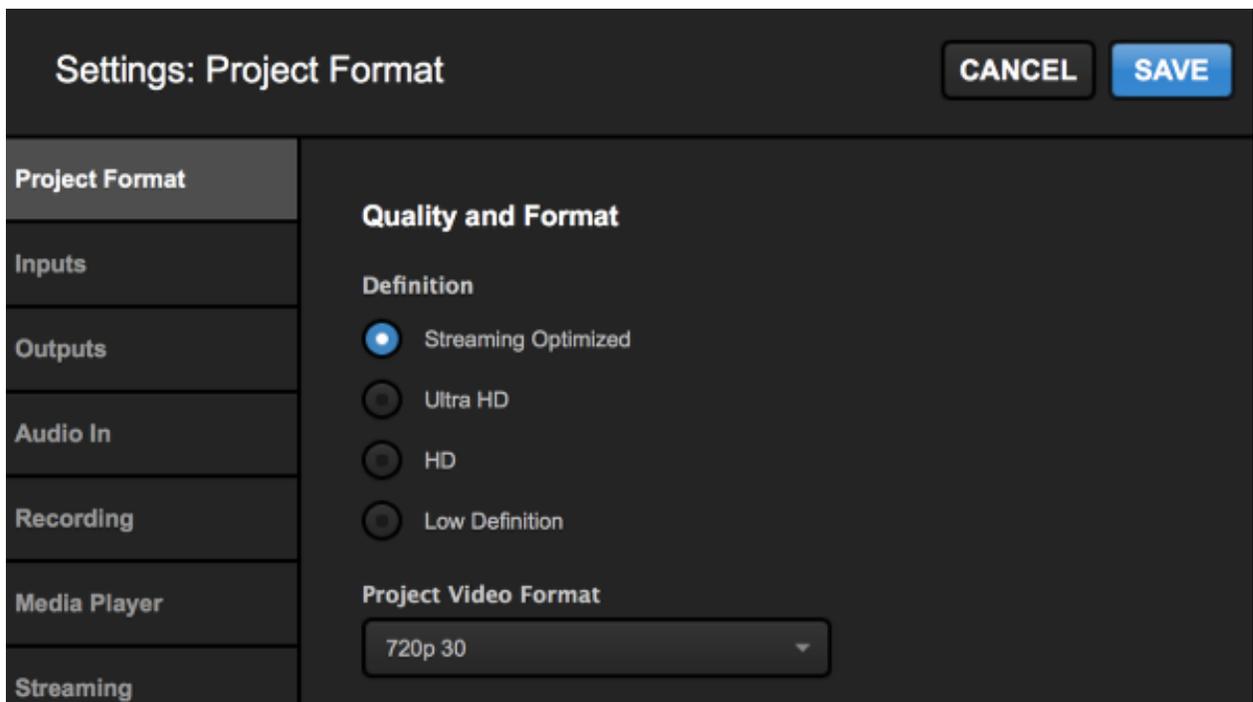
Be sure to save your settings. Next, [connect your cameras](#) if you haven't done so already, then [configure your inputs](#).

# Using 4K Project Formats

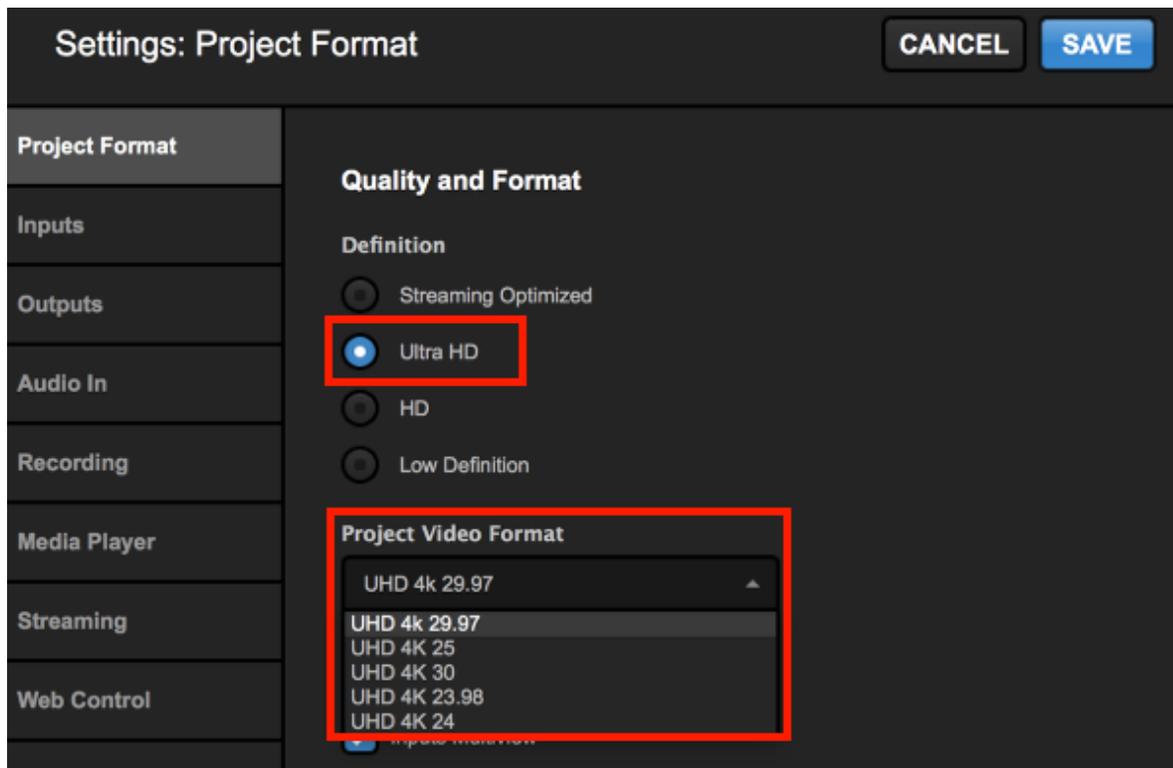
You can use 4K video capture cards to bring 4K video signals into Livestream Studio.

**!** Important: While you can record and output in 4K, you can only *stream* in 4K if you are able to enable [hardware encoding](#).

In settings, under the Project Format menu, there is a Definition section.



Selecting Ultra HD will allow you to choose a 4K format as your Project Format. This means that you can use 4K cameras with supported 4K capture cards to bring in 4K video signals.



Any camera sources that are not in 4K can be [converted](#) under the Input Settings tab. Please note that using the converter may increase your CPU consumption.

Audio Mixer      Remote Cam 1      **Input Settings**

CAM2 ▾

- GENERAL
- AUDIO
- CONVERT**
- CROP
- TALLY
- DELAY
- CLOSED CAPTIONS

## Converter

 ON

CAM2 Format

Auto (1080i59.94) ▾

Project Format

# UHD 4k 29.97

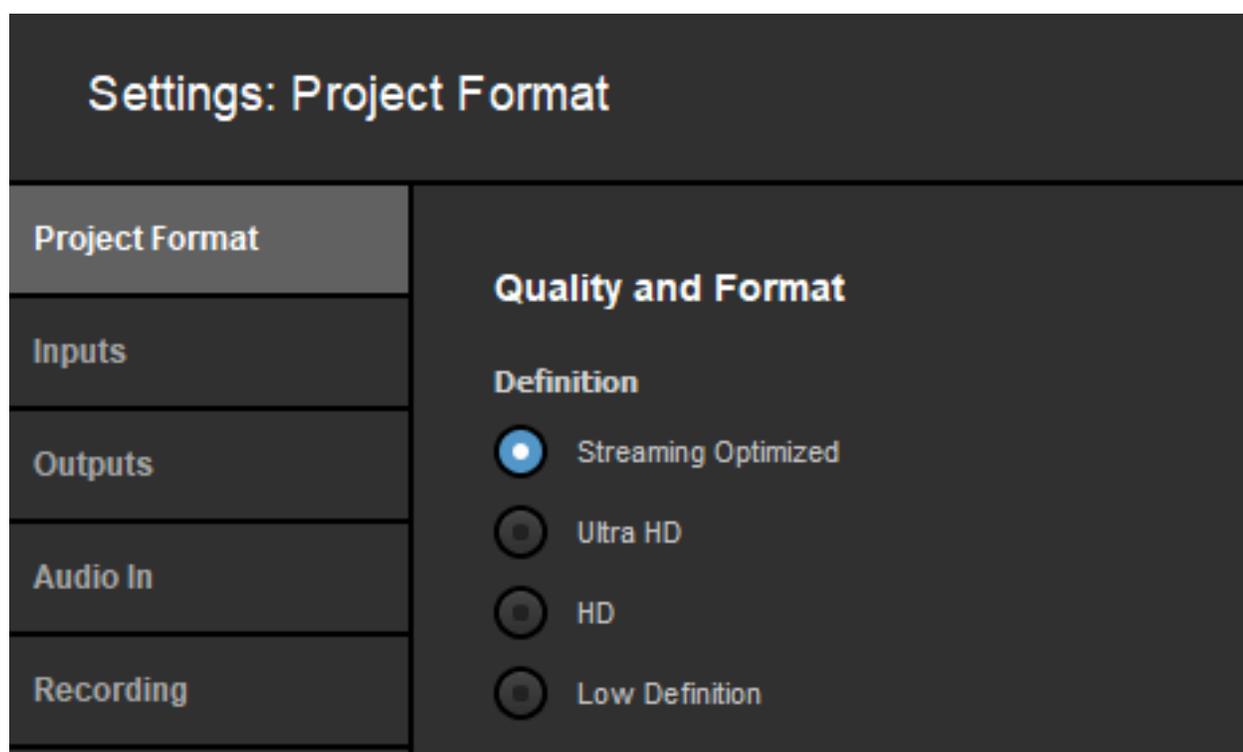
Reverse Field Order

 [Show Tips](#)

# Using Standard Definition-only Formats

Producers who use Livestream Studio on low-performance computers can now help preserve their CPU by using Low Definition and Streaming Optimized project formats.

In settings, under the Project Format menu, there are various options for Quality and Format. Alongside High Definition mode, Studio offers Streaming Optimized (previously known as Low CPU Performance) Ultra HD, and Low Definition modes.



Streaming Optimized includes 720p formats only; Low Definition mode includes 480p formats and lower. These should be selected when using low-performance computers and laptops.

### Settings: Project Format

Project Format	<h4>Quality and Format</h4> <p><b>Definition</b></p> <p><input checked="" type="radio"/> Streaming Optimized</p> <p><input type="radio"/> Ultra HD</p> <p><input type="radio"/> HD</p> <p><input type="radio"/> Low Definition</p> <p><b>Project Video Format</b></p> <p>720p 30 ▲</p> <p>720p 30</p> <p>720p 29.97</p> <p>720p 25</p>
Inputs	
Outputs	
Audio In	
Recording	
Media Player	
Streaming	
Web Control	

#### Quality and Format

**Definition**

Streaming Optimized

Ultra HD

HD

Low Definition

**Project Video Format**

480p 30 ▲

480p 30

480p 29.97

480p 25

432p 30

432p 29.97

432p 25

360p 30

360p 29.97

360p 25

NTSC 4:3

NTSC 16:9

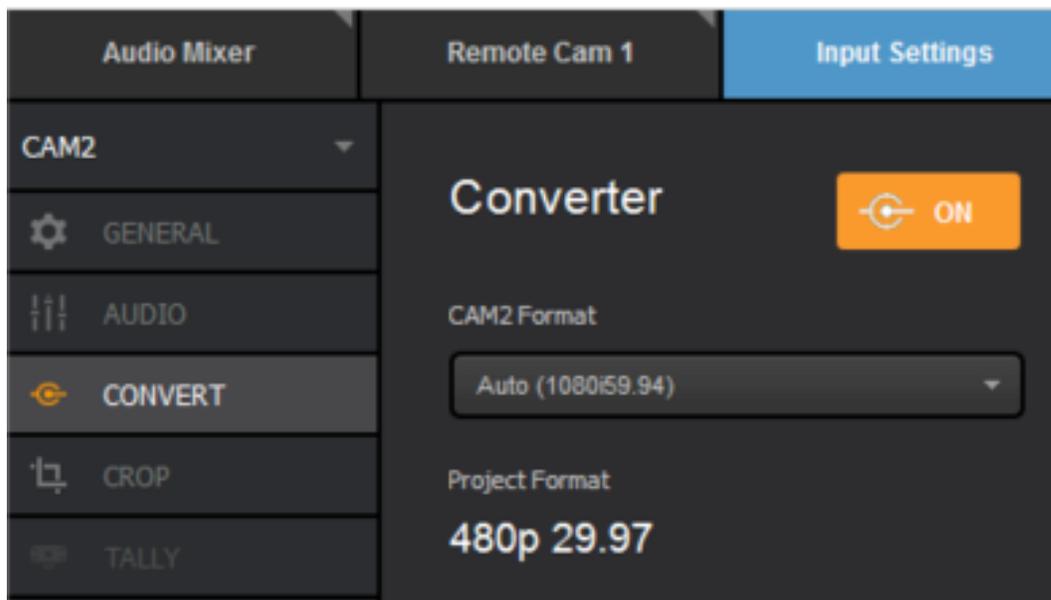
PAL 4:3

PAL 16:9

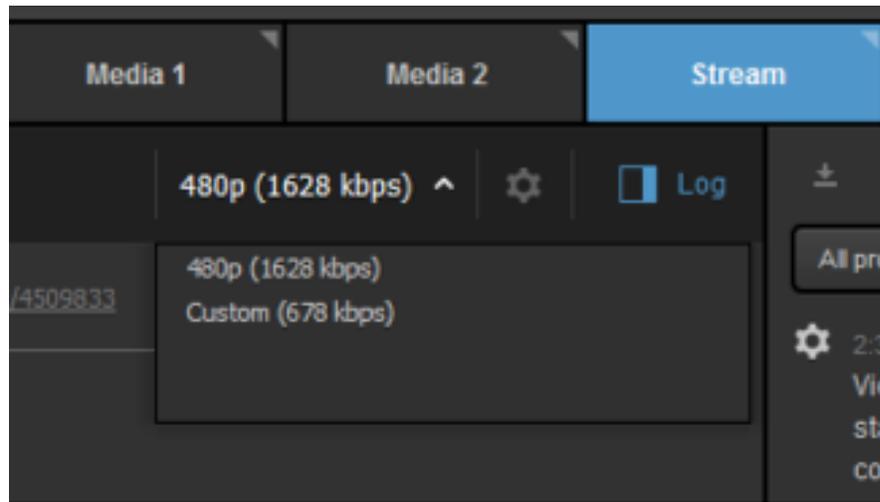
2 rows of Tabs Mode (High screen resolution)

💡 Studio supports hardware encoding and decoding via NVIDIA NVENC/NVDEC or Intel Quick Sync, which also greatly reduces CPU usage on low-performance computers.

Any HD input sources will convert to the selected project format automatically.

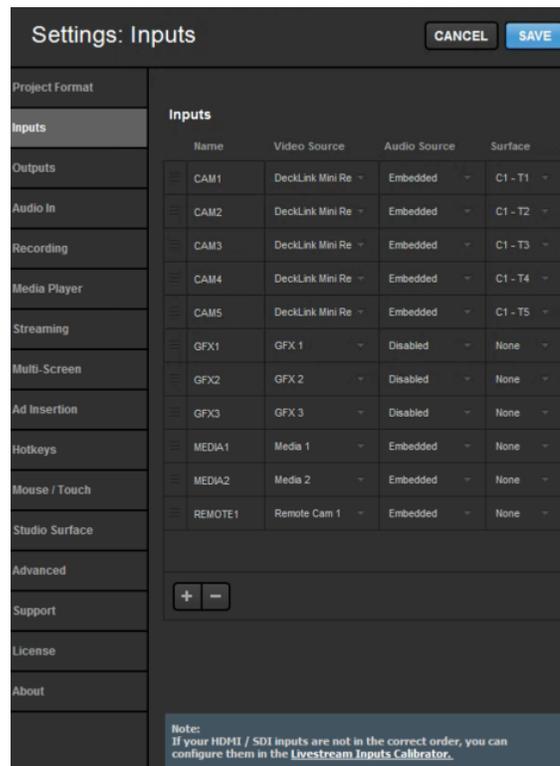


When using Low Definition mode, you will only be able to stream in a resolution equal to your selected Project Format regardless of which streaming provider you use. This is to preserve the CPU.



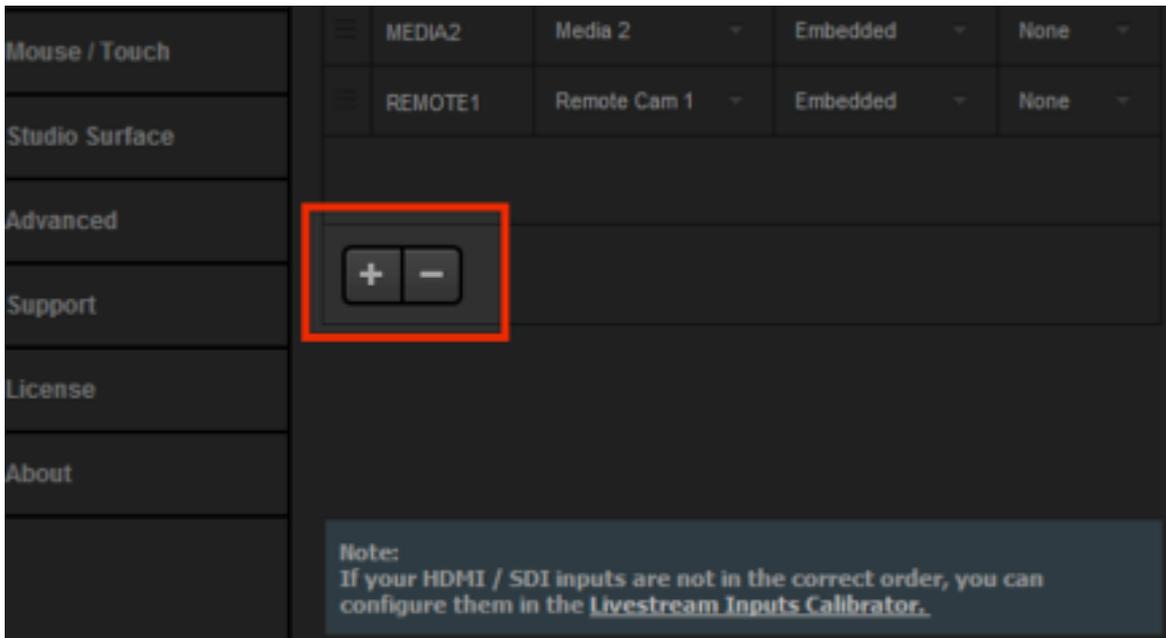
# Adding Input Sources

Navigate to Settings (gearwheel in the upper right corner of Studio), and then the **Inputs** tab. This is where you can choose every input source to use in your production, including graphics overlays, media, remote cameras, etc.

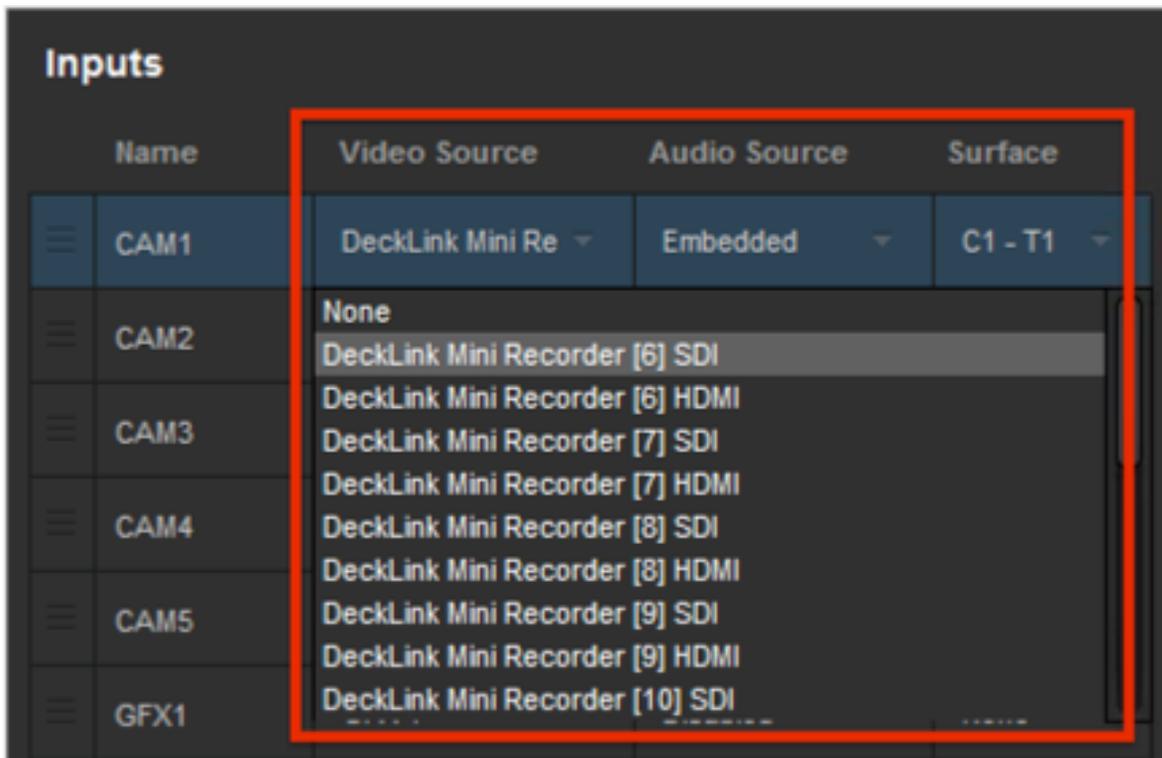


Livestream Studio allows for up to 25 direct camera inputs via Blackmagic Design or Magewell devices, webcams, and local screen captures.

Notice that on the bottom left corner of the window, there are + and - buttons. These allow you to add or remove inputs.



Start on the Video Source column. Click on the dropdown menu to select your source.



Select the desired audio input method from the **Audio Source** dropdown for each associated input channel. Some Blackmagic capture devices, such as the DeckLink Quad or DeckLink Mini Recorder, will only support embedded audio through their SDI and HDMI inputs. Other Blackmagic cards, such as DeckLink Studio, will support embedded, analog, or AES/EBU audio via the provided Blackmagic breakout cable.

CAM2	DeckLink SDI Qu	Embedded	None
CAM3	DeckLink SDI Qu	Embedded	None
CAM4	DeckLink SDI Qu	Embedded	None
CAM5	DeckLink Studio	Embedded	None
REMOTE1	Remote Cam 1	Embedded	None
GFX1	GFX 1	Disabled	None
GFX2	GFX 2	Disabled	None
GFX3	GFX 3	Disabled	None

The image shows a screenshot of a software interface with a table of input channels. The row for CAM5 is highlighted, and its 'Embedded' dropdown menu is open, showing options: Embedded, AES/EBU, and Analog. A red box highlights the CAM5 row and its open dropdown menu.

**!** Note: Blackmagic analog audio inputs **MUST** be accompanied by a video input source to be active. If video is not coming into the card, audio will not come through either.

You will notice that under the **Name** column, your sources are labeled automatically. If you want to use your own names, click on that source's name and type in your preferred name for that source.

**Inputs**

Name	Video Source
Jesse	DeckLink Mini Re ▾
Laura	DeckLink Mini Re ▾
Ed	DeckLink Mini Re ▾
Kristin	DeckLink Mini Re ▾
CAM5	DeckLink Mini Re ▾

If you have a Studio Surface or Surface Go connected to your system, you can assign the tracks under the Surface column. If you do not have Studio Surface, your only option will be None.

Name	Video Source	Audio Source	Surface
CAM1	DeckLink Mini Re ▾	Embedded ▾	Core Mo ▾
CAM2	DeckLink Mini Re ▾	None	Core Module 1 - Track 1
CAM3	DeckLink Mini Re ▾	None	Core Module 1 - Track 2
CAM4	DeckLink Mini Re ▾	None	Core Module 1 - Track 3
CAM4	DeckLink Mini Re ▾	None	Core Module 1 - Track 4
CAM5	DeckLink Mini Re ▾	Embedded ▾	None ▾

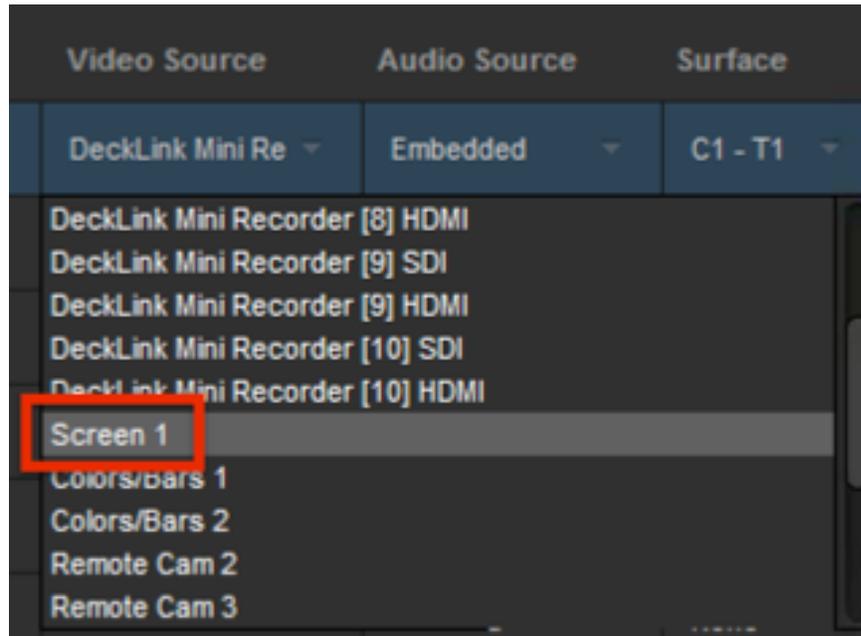
You can reorder your inputs by dragging and dropping them from the left side.

Inputs				
	Name	Video Source	Audio Source	Surface
☰	CAM1	DeckLink Mini Re ▾	Embedded ▾	C1 - T1 ▾
☰	CAM2	DeckLink Mini Re ▾	Embedded ▾	C1 - T2 ▾
☰	CAM3	DeckLink Mini Re ▾	Embedded ▾	C1 - T3 ▾
☰	CAM4	DeckLink Mini Re ▾	Embedded ▾	C1 - T4 ▾
☰	CAM5	DeckLink Mini Re ▾	Embedded ▾	C1 - T5 ▾
☰	GFX1	GFX 1 ▾	Disabled ▾	None ▾
☰	GFX2	GFX 2 ▾	Disabled ▾	None ▾
☰	GFX3	GFX 3 ▾	Disabled ▾	None ▾
☰	MEDIA1	Media 1 ▾	Embedded ▾	None ▾
☰	MEDIA2	Media 2 ▾	Embedded ▾	None ▾
☰	REMOTE1	Remote Cam 1 ▾	Embedded ▾	None ▾

When you are finished configuring your inputs, click Save in the upper right corner. Your sources will appear in your multi-view in the order in which you set them.

# Screen Capturing with Livestream Studio

When [adding your inputs](#) in Livestream Studio, one source you will notice is your computer's screen. Select this to add a local screen capture as an input.



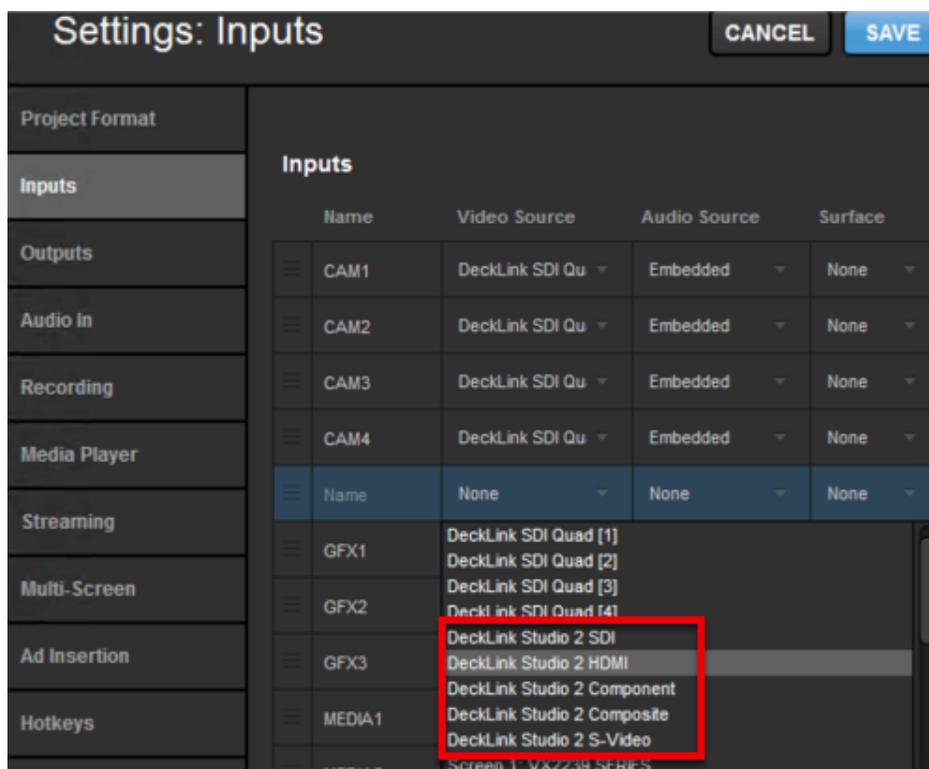
- 💡 This feature is ideal for systems with multiple monitors connected (e.g. Livestream Studio on one monitor, and a slideshow on another monitor). Please note that local screen capturing will increase CPU.

Save your settings to see the screen in your multi-view. You can transition it into Program the same as with any other input.

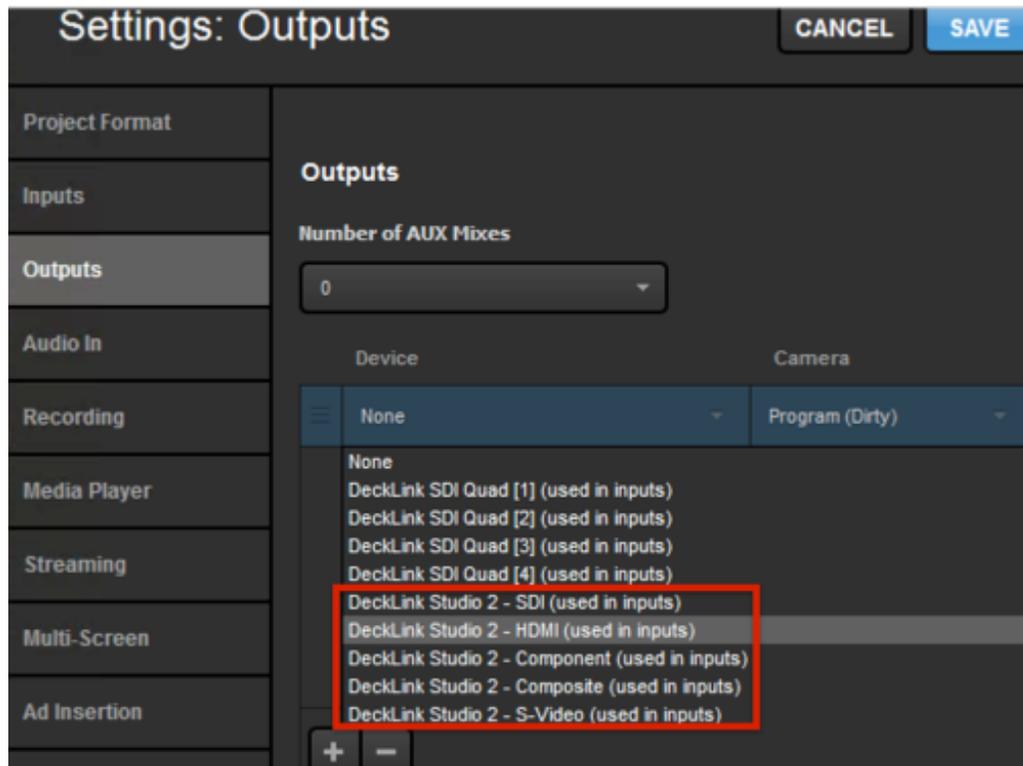
# Using the DeckLink Studio 2 and Similar Cards

Most Blackmagic Design capture devices can be used as either an input or output device. One example of this is the DeckLink Studio 2 card, which came preinstalled on Livestream's first generation of Studio hardware products (HD50, HD500).

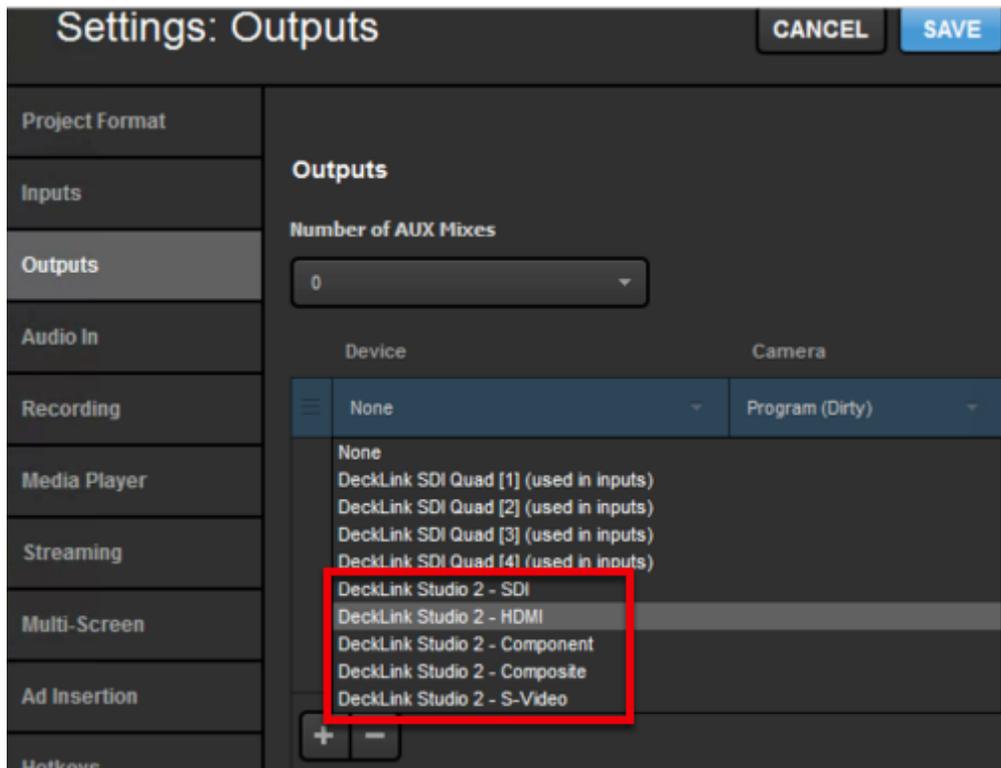
Add this card as an input by going to Settings > Inputs, then click the + button to add it with whichever connection type you are using.



If you add this as an input, but then try to add it as an output by going to the Outputs tab, Studio will notify you that it is already being used in Inputs.



If you want to use any device as an output, be sure to remove it from Inputs by selecting it, and then clicking the - button. Then you can go back to the Outputs tab and select it.



When you select it as an output, you will notice that if you try to add it as an input again, Livestream Studio will notify you that it is being used in Outputs.

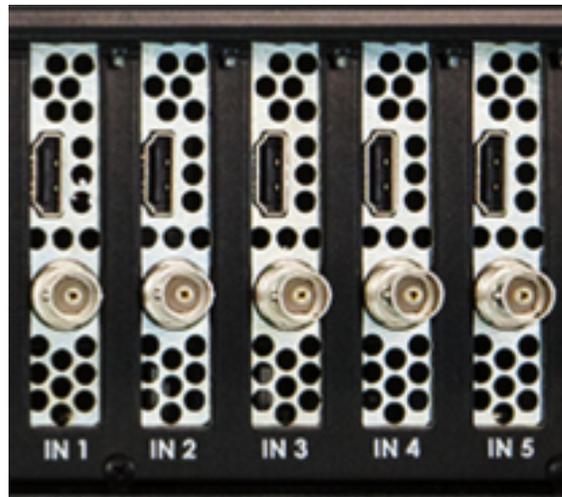
### Settings: Inputs

CANCEL SAVE

Project Format	Inputs			
Inputs	Name	Video Source	Audio Source	Surface
Outputs	☰ CAM1	DeckLink SDI Qu ▾	Embedded ▾	None ▾
Audio In	☰ CAM2	DeckLink SDI Qu ▾	Embedded ▾	None ▾
Recording	☰ CAM3	DeckLink SDI Qu ▾	Embedded ▾	None ▾
Media Player	☰ CAM4	DeckLink SDI Qu ▾	Embedded ▾	None ▾
Streaming	☰ Name	None ▾	None ▾	None ▾
Multi-Screen	☰ GFX1	<div style="border: 1px solid #ccc; padding: 2px;">                     None                      DeckLink SDI Quad [1]                      DeckLink SDI Quad [2]                      DeckLink SDI Quad [3]                      DeckLink SDI Quad [4]                      DeckLink Studio 2 SDI (used in output)                      DeckLink Studio 2 HDMI (used in output)                      DeckLink Studio 2 Component (used in output)                      DeckLink Studio 2 Composite (used in output)                      DeckLink Studio 2 S-Video (used in output)                 </div>		
Ad Insertion	☰ GFX2			
Hotkeys	☰ GFX3			
Mouse / Touch	☰ MEDIA1			
	☰ MEDIA2			

# Using the DeckLink Mini Recorder

The Livestream Studio HD51 and HD550 are each equipped with five Blackmagic DeckLink Mini Recorders; the HD31 has three cards installed.



Each card has one SDI input and one HDMI input.

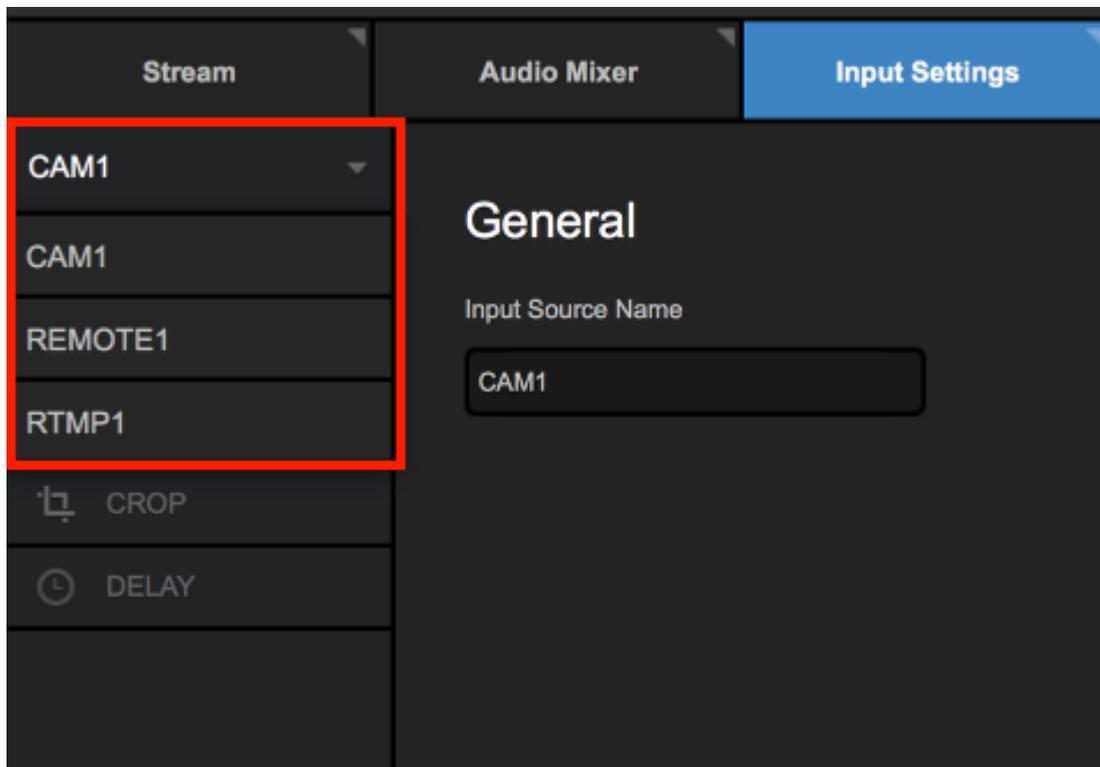
**i** The 4K editions of the HD51 and HD550 have 4K versions of these cards installed.

Each card can only handle one source at a time. You cannot use both the SDI and HDMI input on the same card. For example, if you use the HDMI input on Mini Recorder 1, you cannot also use the SDI input on Mini Recorder 1 and would thus have to use an SDI input on one of the other four Mini Recorder cards.

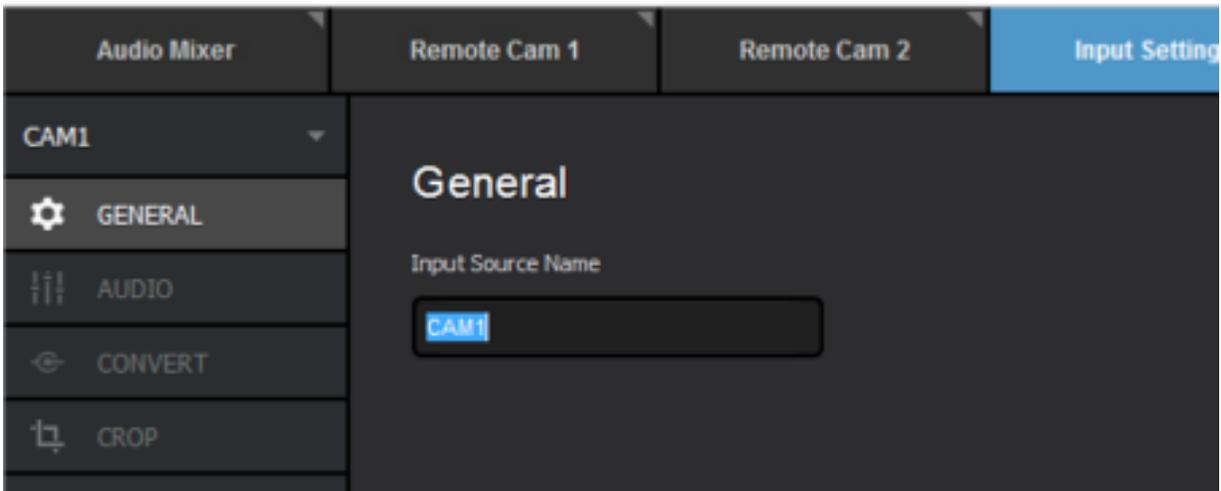
# Configuring Input Settings

Every physical input, NDI input, RTMP input, and remote camera in Livestream Studio has individual configurations you can set in under the **Input Settings** tab.

To open the input settings module for a given source, click the gearwheel icon next to the source's display name in the multi-view or audio mixer, or select the desired source from the **Input Settings** drop-down menu.

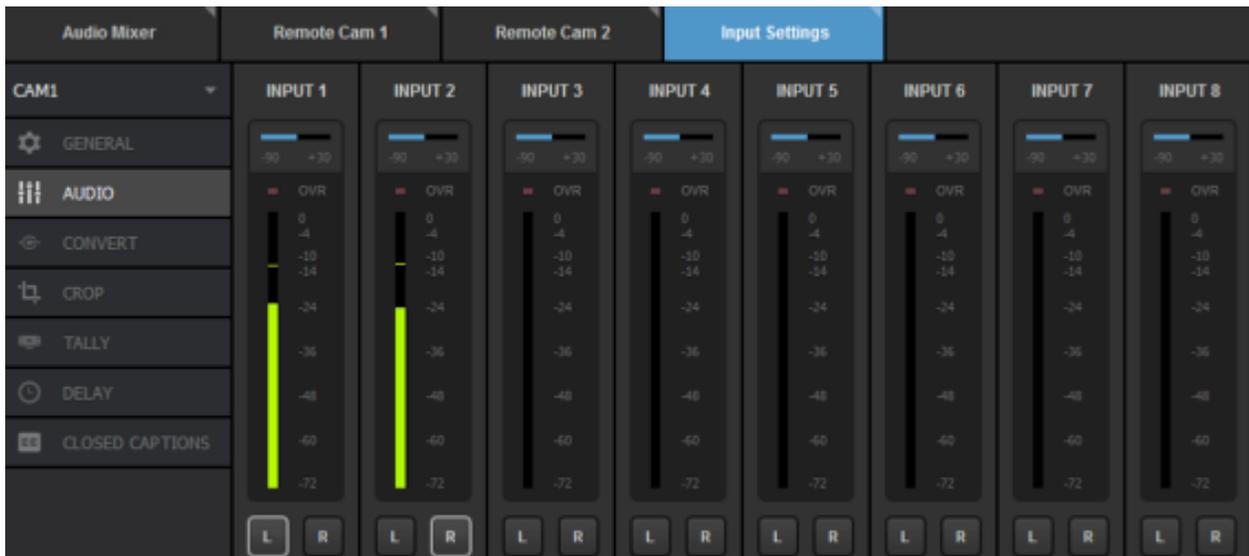


**General:** This allows you to rename the source. If you prefer a different naming convention from CAM1, CAM2, etc., this is where you can adjust each source to your preferred names.



Audio: 16 audio channels per input source in stereo mode, or up to eight audio channels per input in mono mode, with the respective source fader.

Stereo:



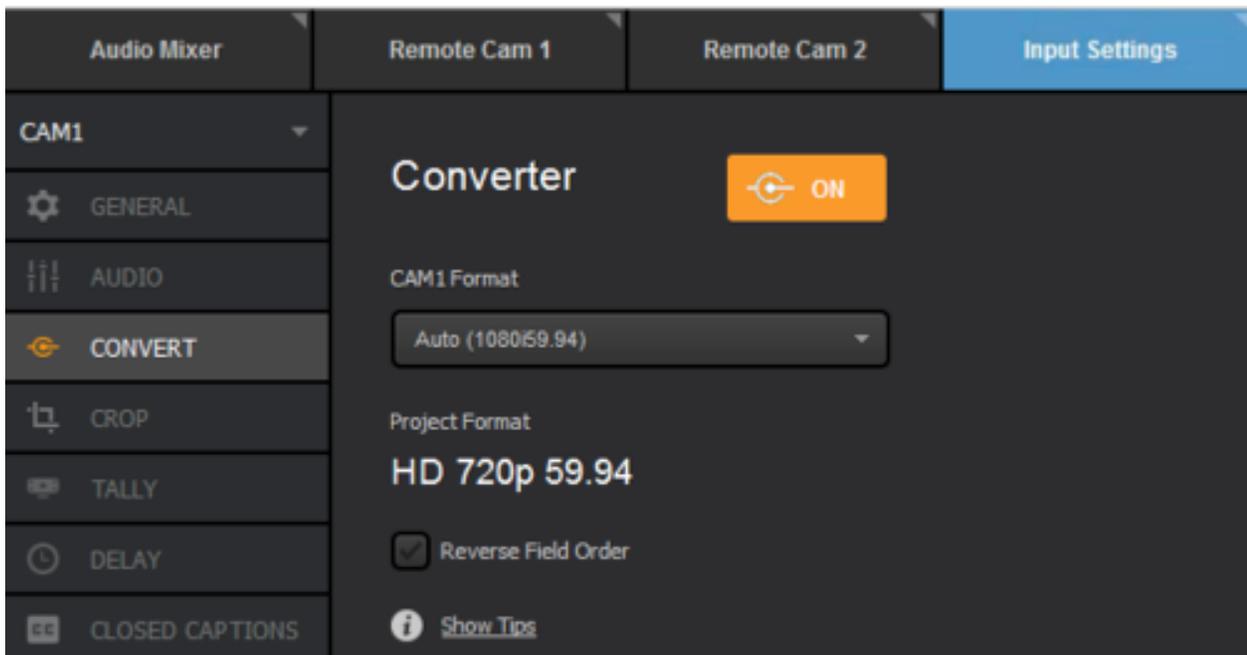
Mono:



Available audio channels are displayed for the selected source. In stereo mode, use the “L” and “R” buttons along the bottom of the module to assign left and right audio channels to the input source fader.

In mono mode, click the corresponding speaker icon button to assign input channels to the source fader. Each input channel has an individual level meter with gain control.

**Converter:** Allows for video inputs to be converted to your project video format in real-time. This allows producers to use different types of camera sources and formats. The video converter also has an auto-detect function that will recognize different formats instantly.

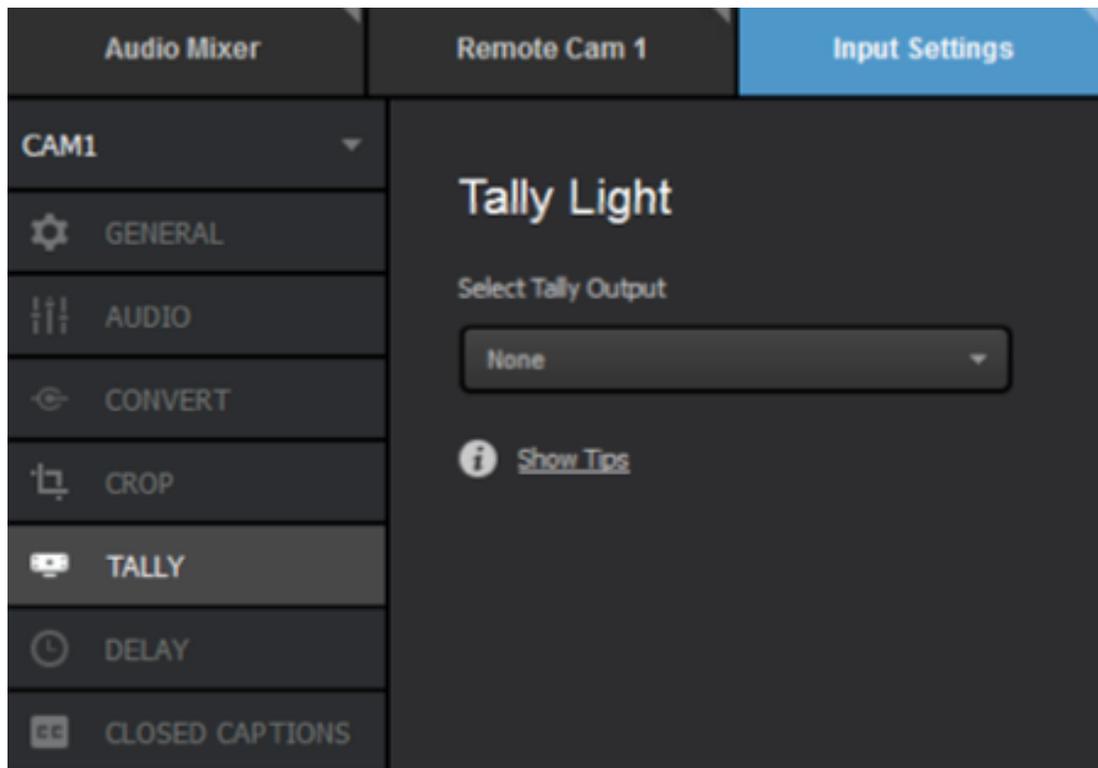


If the converter does not automatically detect the source format of the camera, select the converter tab to pick the format from a full range of 1080, 720, NTSC, and PAL options and convert it into the format that the current project is set to.

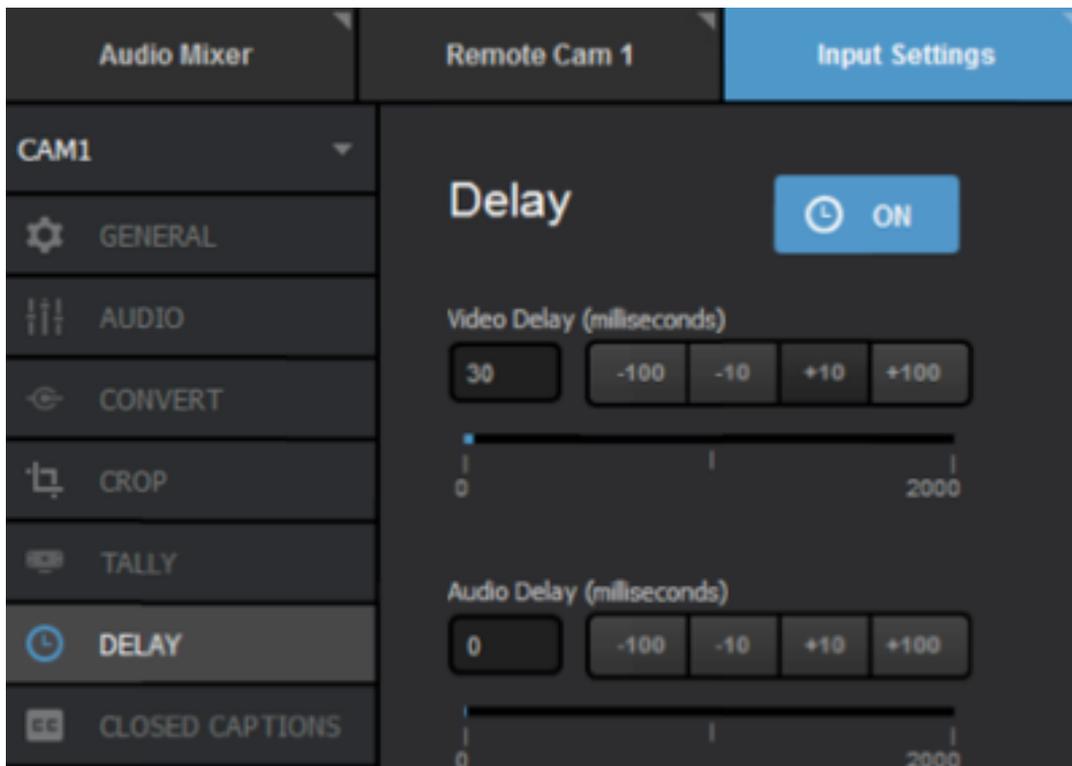
Crop: Allows you to [crop](#) your input's picture.

Tally: Activate and control a Tally Light system through Livestream Studio. After connecting a Metasetz tally system via USB, click the Tally icon shown here and select and available tally port to assign to that camera. Repeat this step for each camera source.

If you do not see this option, go to Settings: Advanced and make sure Tally is checked.



**Delay:** If you notice a discrepancy in synchronization between direct camera inputs and remote cameras, you can delay an individual input's video and audio by up to two seconds to help keep your sources in sync.



Closed Captions: Livestream Studio can receive a closed captioning signal from a closed captioning encoder via SDI, and output to Livestream's live player. This is where you control which channel of closed captions come through.

If you do not see this option, go to Settings: Advanced and make sure Closed Captioning is enabled.

! This feature only works on the Livestream live player. It does not work for third-party players, and it does not save on video on demand clips.

Audio Mixer    Remote Cam 1    **Input Settings**

CAM1

- GENERAL
- AUDIO
- CONVERT
- CROP
- TALLY
- DELAY
- CLOSED CAPTIONS**

### Closed Captions

Enabled

Closed Captions Channel

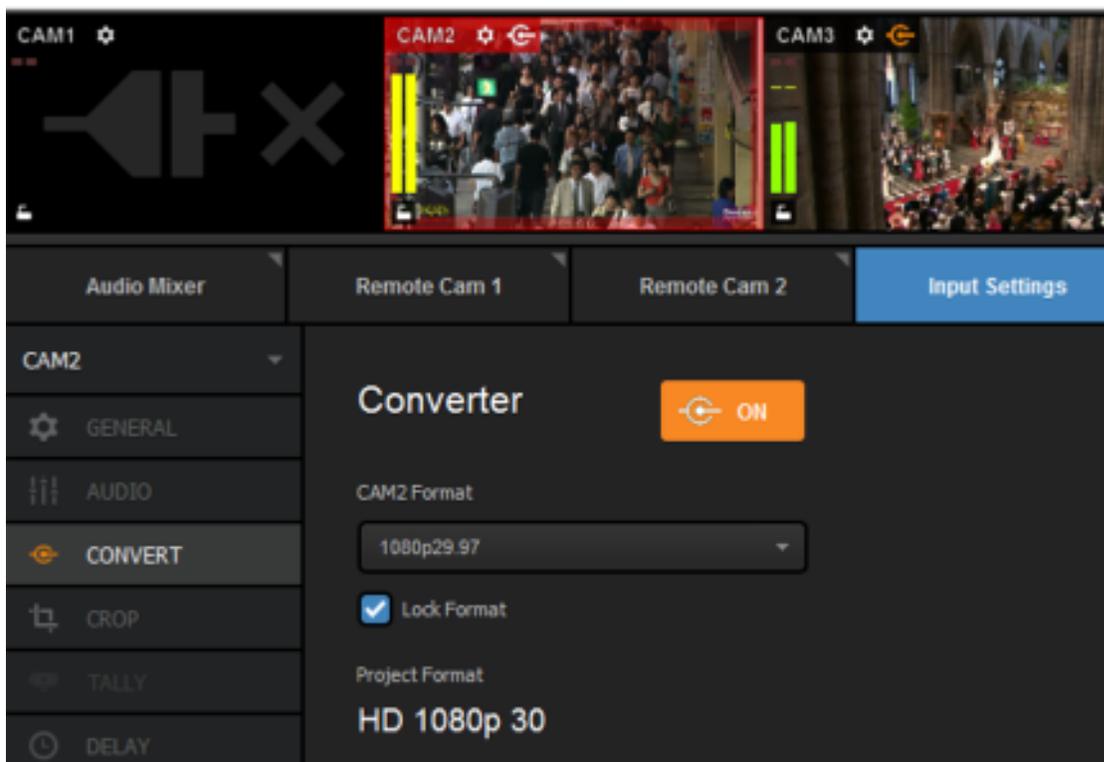
Off

[Show Tips](#)

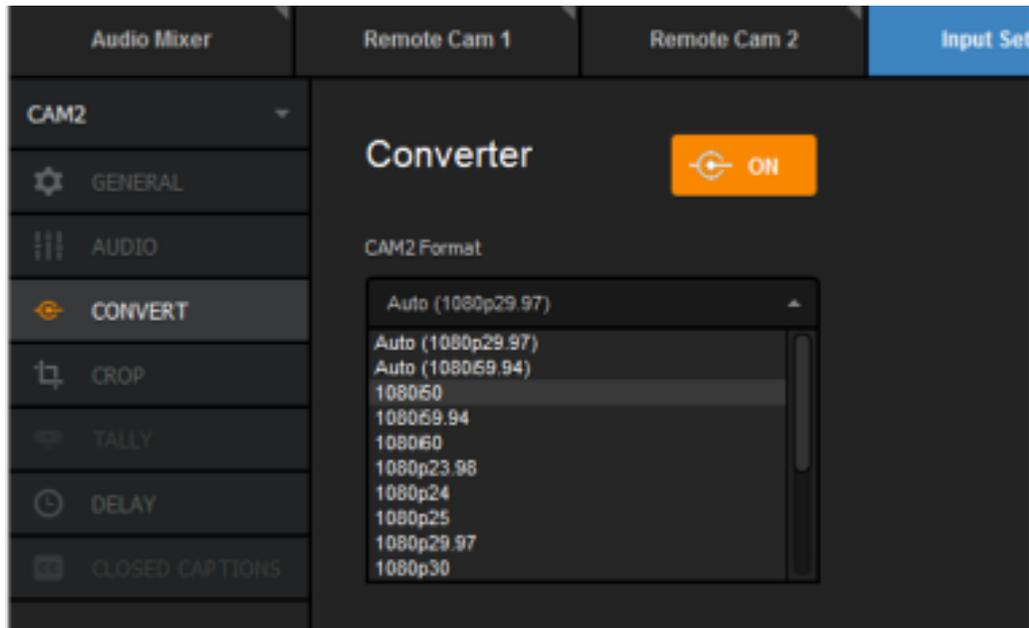
# Converting Input Sources of Different Formats

Livestream Studio works best when all video input sources match the same video format. However, with certain sources such as laptops and webcams, it may not be possible to match them all together. This is where the built-in any-to-any converter comes in.

Go to the Input Settings tab and select the input source you need to convert. Then select the Convert tab on the left side of the interface.



In many cases, Livestream Studio will be able to automatically convert your source. Otherwise, choose your input source's format from the dropdown menu.



Once the correct format is selected, the converter will turn on and you will see your video source.

 Using the converter will reduce the quality of your video signal and increase your CPU usage, so only use it when necessary.

## Bringing a Laptop into Livestream Studio

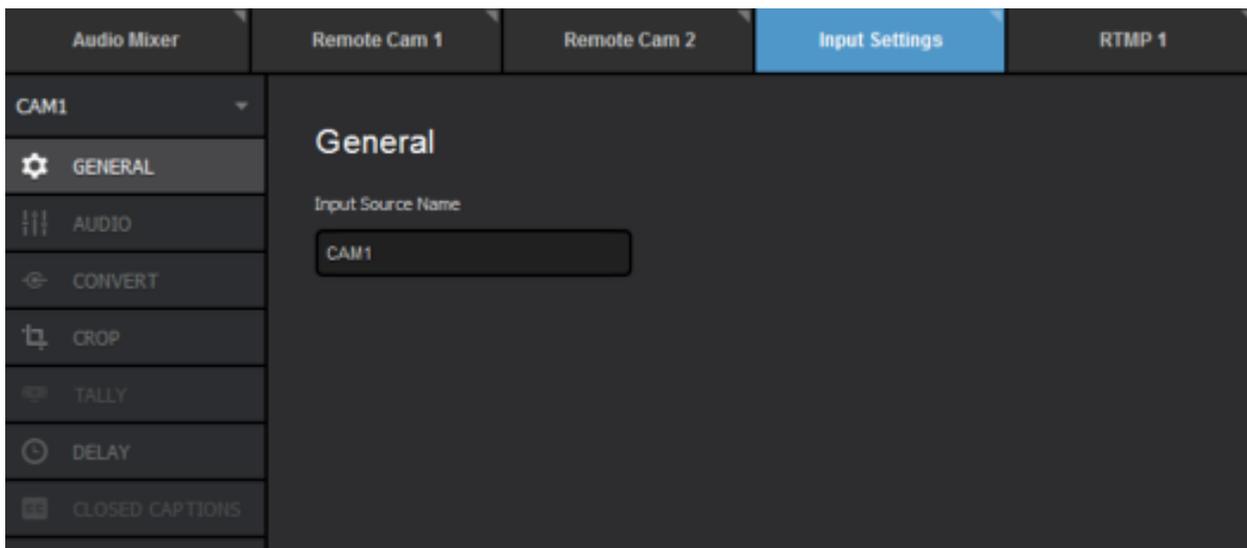
When bringing in a laptop, you will almost certainly use the converter. Many laptops come with an HDMI output port that can directly connect to a Blackmagic capture device via an HDMI cable. For those that do not have an HDMI output, we recommend using the [Blackmagic DVI Extender](#).

Another option for bringing a laptop into Livestream Studio as a source is to install the Remote Camera Client for [Windows](#) and [Mac](#) over your local network. This will avoid the need to use the converter.

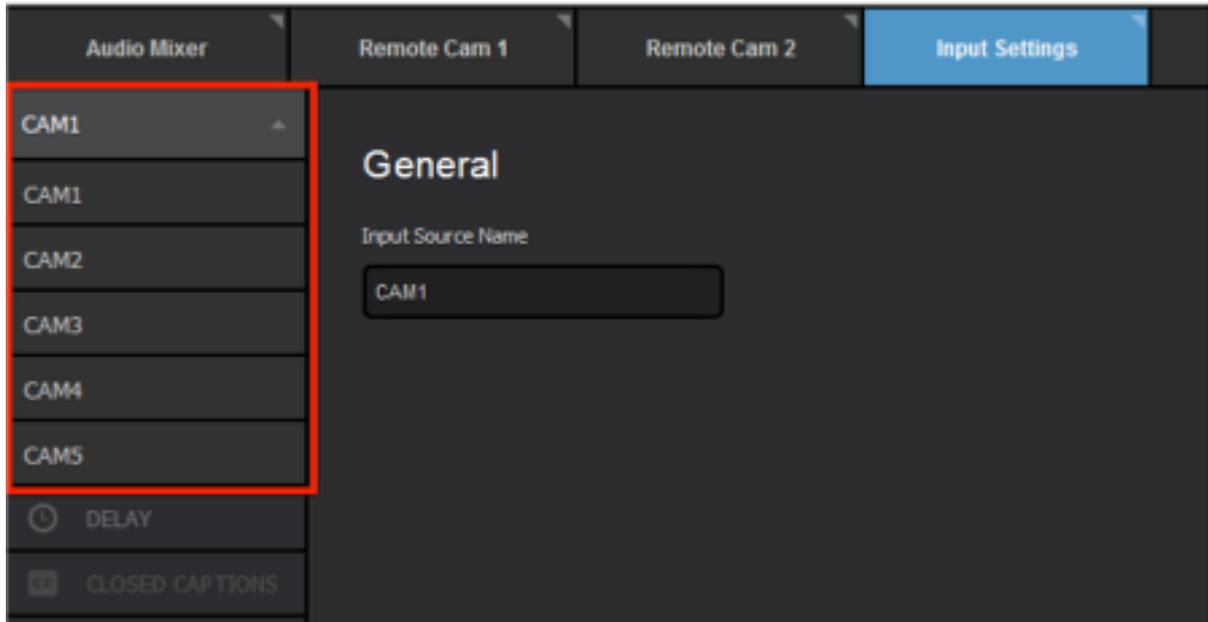
# Advanced Input Source Cropping

You can create multiple virtual camera shots per input source. This works best with 4K inputs.

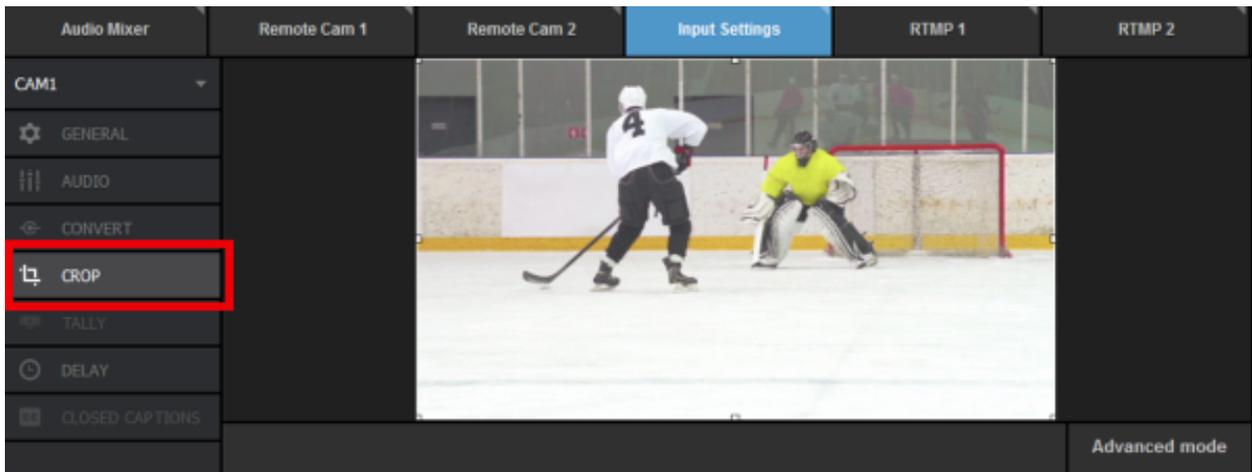
Navigate to the Input Settings tab.



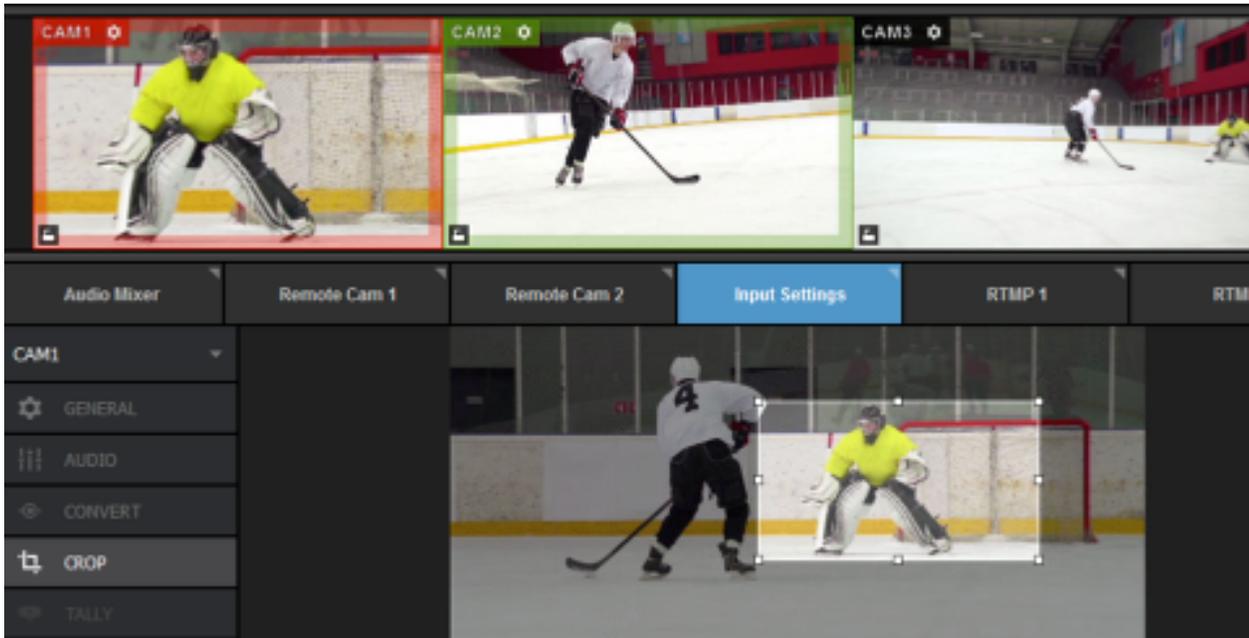
Select which camera you would like to adjust by clicking the dropdown in the upper left corner of the module.



Click the Crop tab. Your input source will appear in the space to the right.



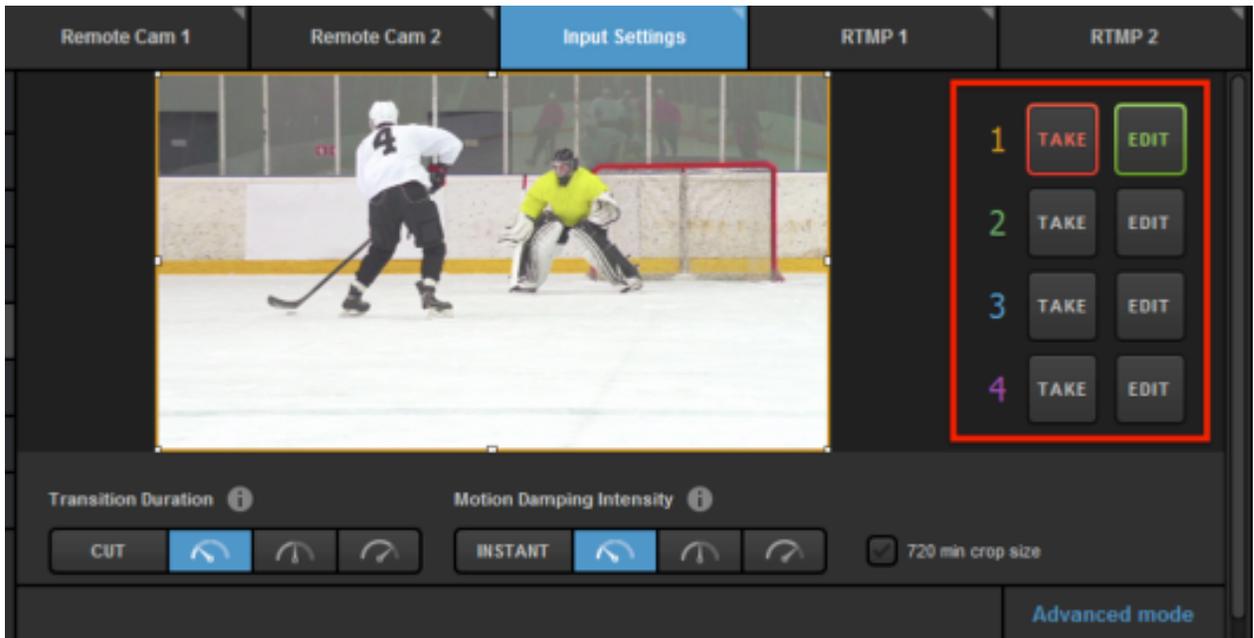
You can do a basic crop by clicking and dragging the corner of the image, and dragging and dropping the cropped frame.



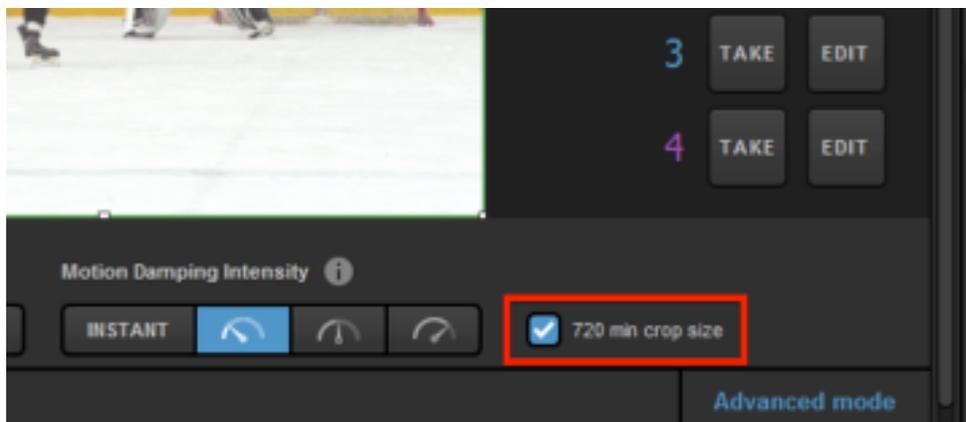
Click Advanced Mode to reveal more cropping options.



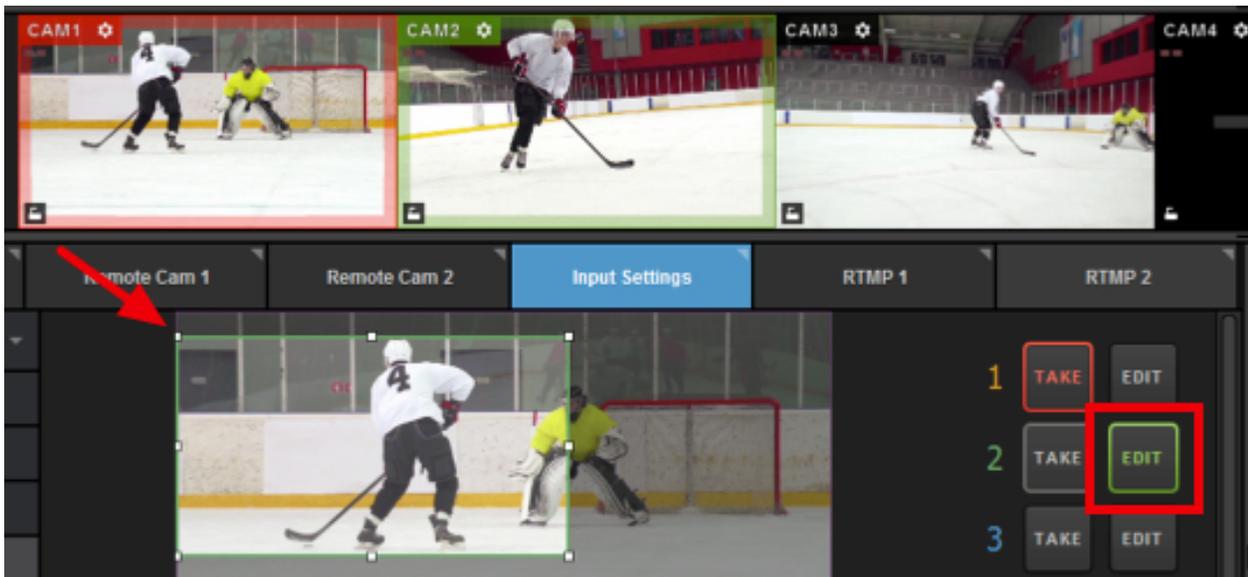
To the right of your source are numbers 1-4 in different colors, each with a corresponding Take and Edit button.



💡 Producers using 4K and 1080p input sources should consider checking the 720 min crop size, which will prevent any cropping to go less than a 720p resolution and thus reduce quality loss.

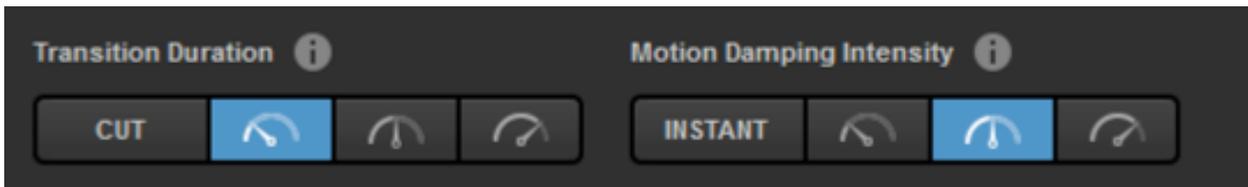


Clicking Edit on any shot will allow you to adjust that particular shot without affecting the output. Click and drag the corners to crop the shot. Notice the border of your shot matches the color of the corresponding number, and CAM1 in the multi-view is not yet showing the crop.



💡 If your mouse has a scroll wheel, you can also use that to crop your shot.

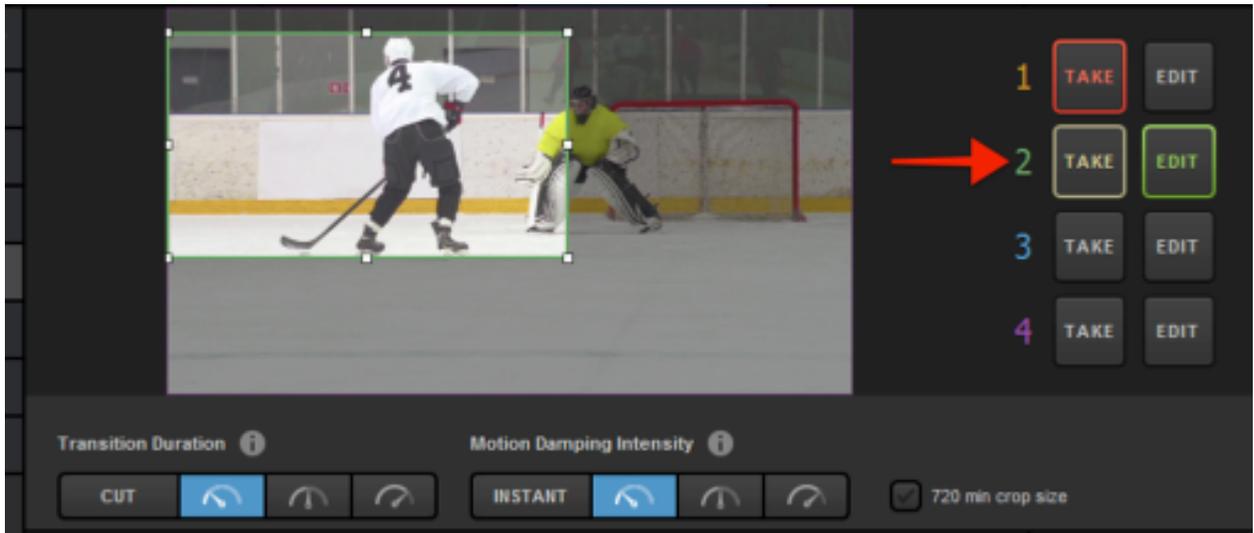
Before clicking the glowing Take button, check the Transition Duration and Motion Damping Intensity settings below.



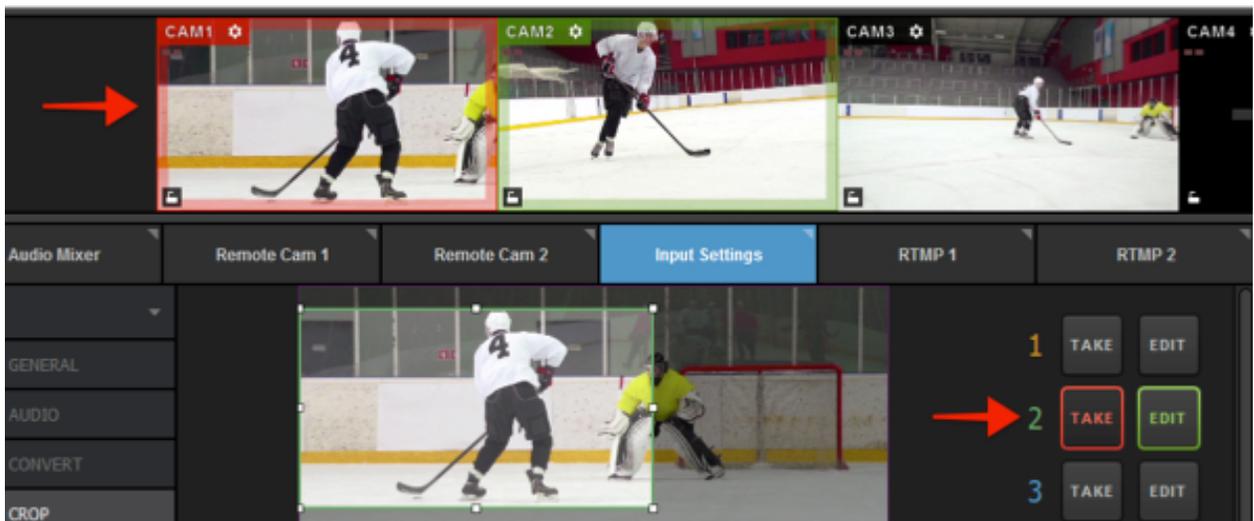
Under Transition Duration, you can choose how fast you want to move between shots. Cut will be an immediate switch. The following timer buttons indicate a virtual camera movement (i.e., a virtual tilt or pan) in order of increasing time (fast, medium, slow).

Motion Damping Intensity will adjust the smoothness of each camera motion. Instant will be a fast, real-time, and more jagged movement. Each option afterwards is slightly slower and smoother. This option does not impact virtual transitions if Cut is selected.

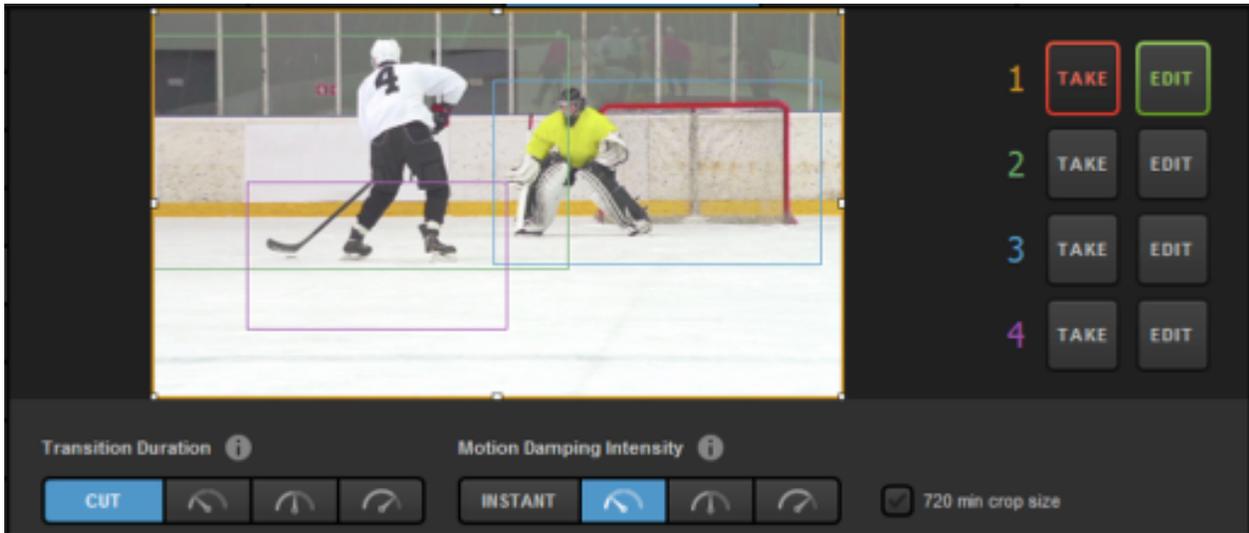
Once your Transition Duration and Motion Damping Intensity are set, click the glowing Take button.



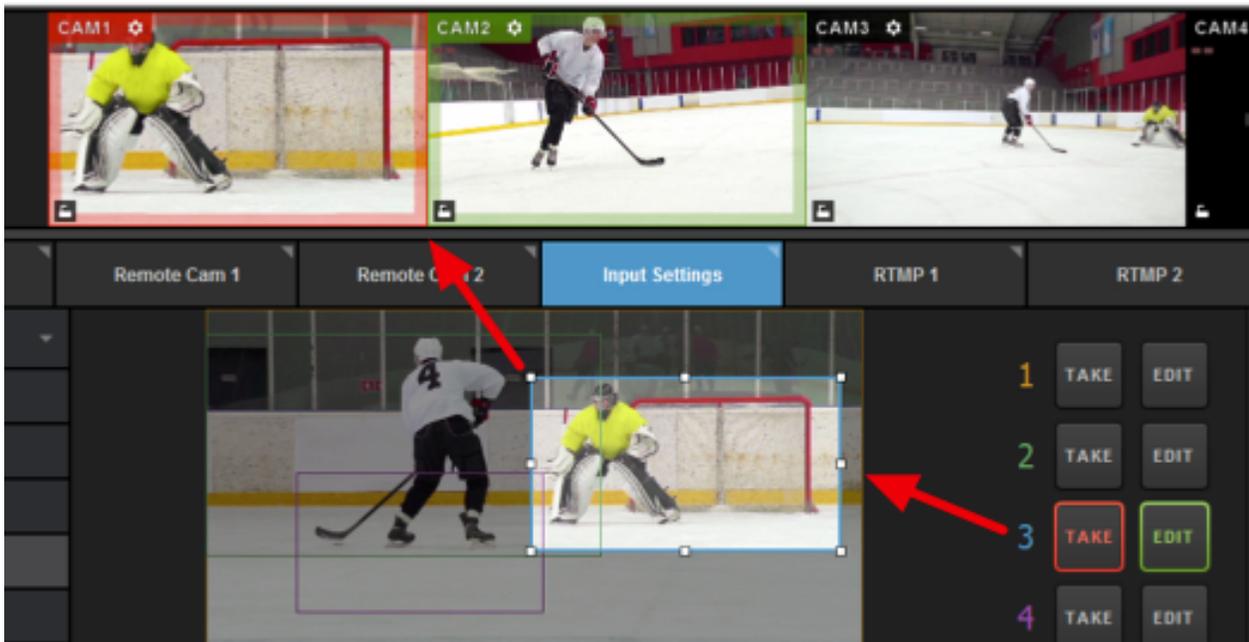
The Take button will turn red and you will notice your input will transition to the cropped area in your multi-view.



You can build up to four different cropped areas per input using the corresponding Edit buttons.



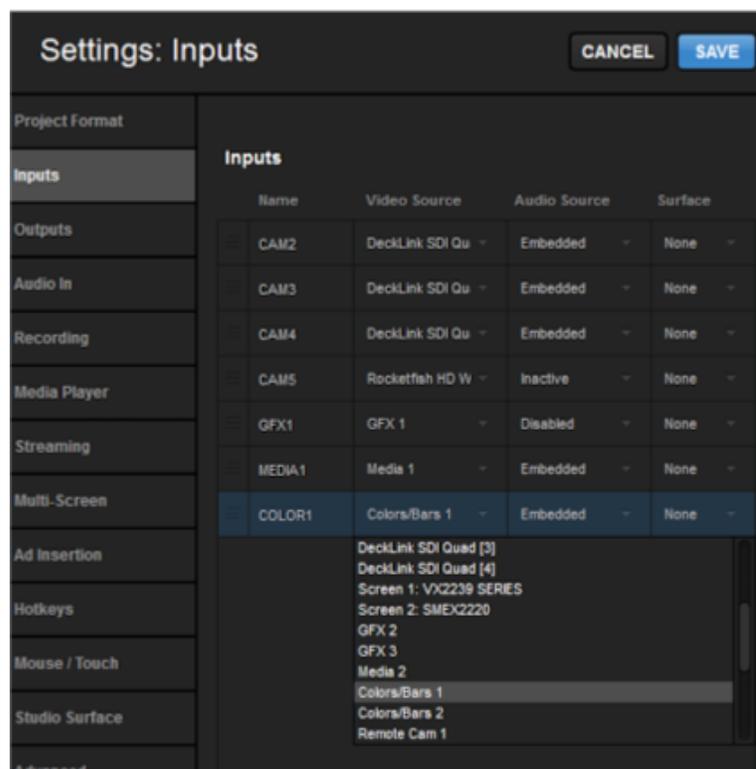
In this example, if we take Shot 3, only that cropped area appears under Cam 1 in the multiview.



# Using the Color Source Generator

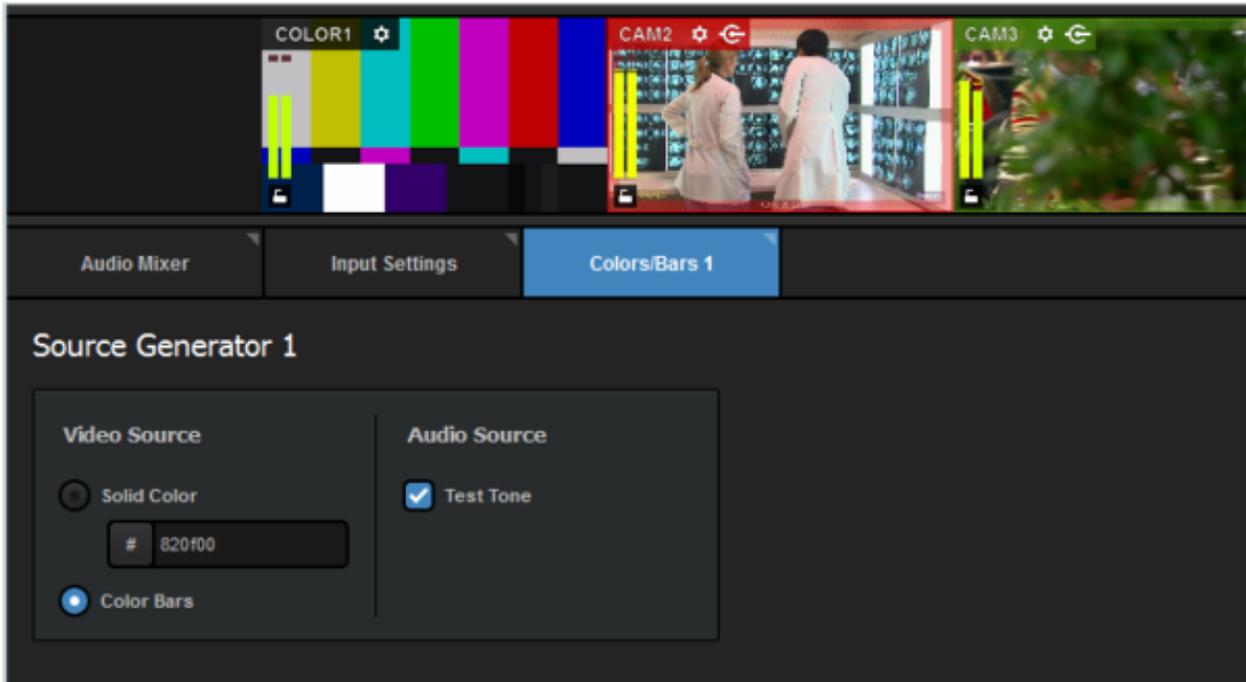
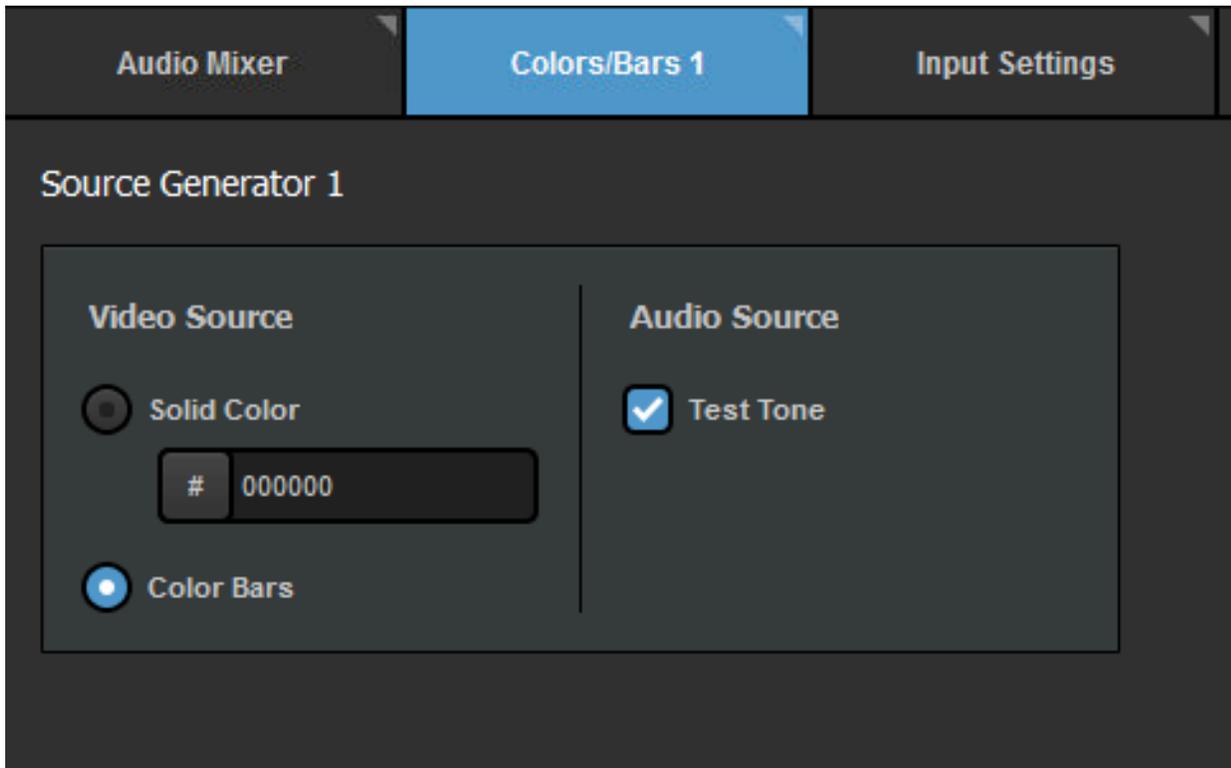
In addition to cameras, graphics and media sources, you can include up to two color sources in your Livestream Studio production.

To add a color source as an input source, navigate to the Inputs tab in settings. Click the + button and select Color/Bars from the dropdown menu.

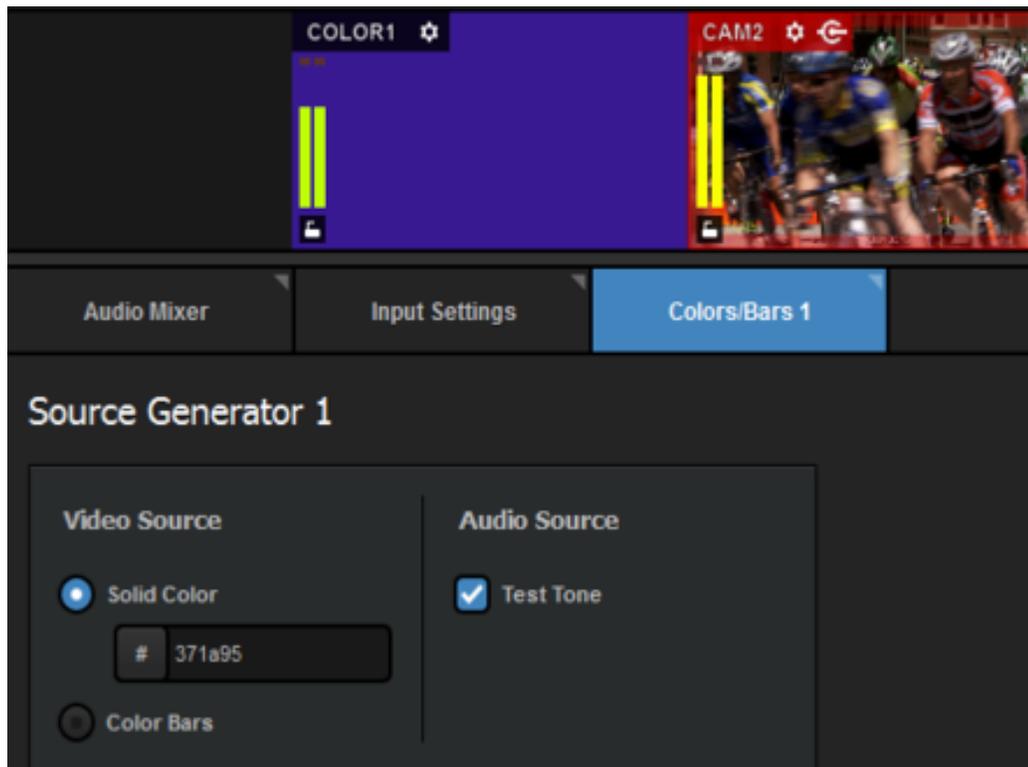
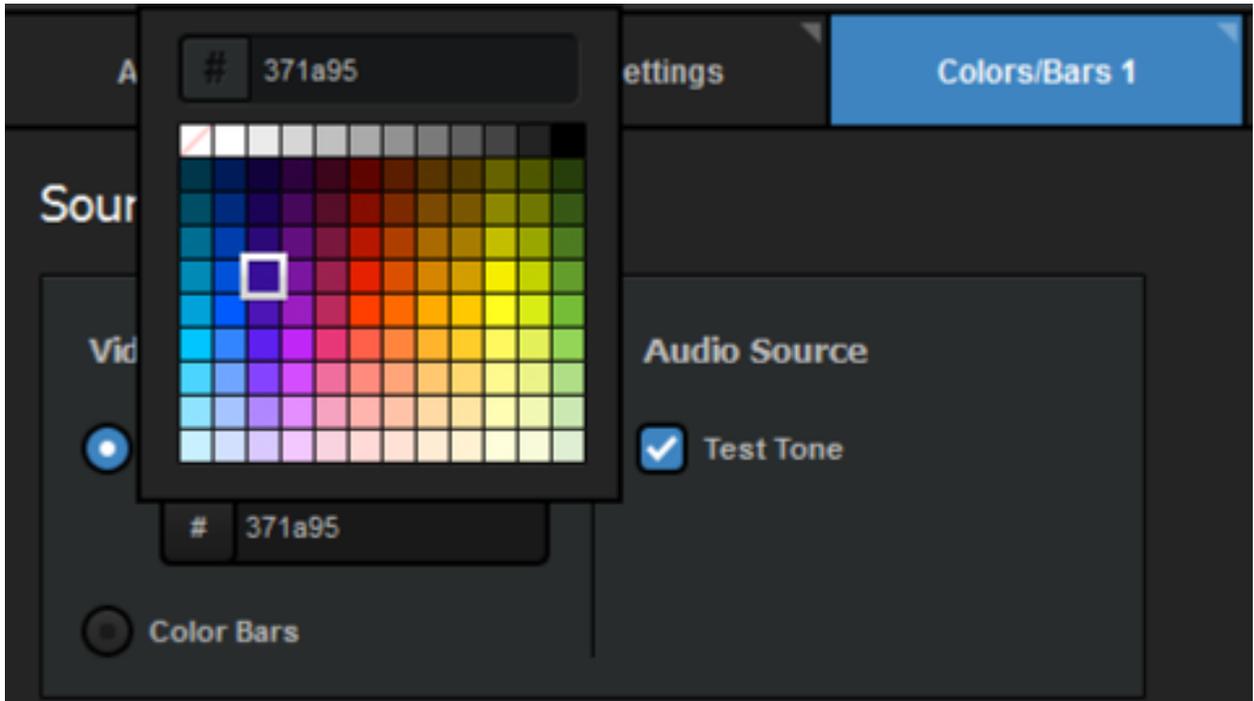


After saving your settings, you will notice a Colors/Bars tab appear in the lower left part of the interface.

Selecting Color Bars will produce standard bars as a source in your multi-view.



Selecting Solid Color will produce a single color in your multi-view. You can select which color by clicking the '#' button.



Selecting **Test Tone** will produce a standard audio tone that will come through the color source. Uncheck it if you do not want any audio coming through your color source.

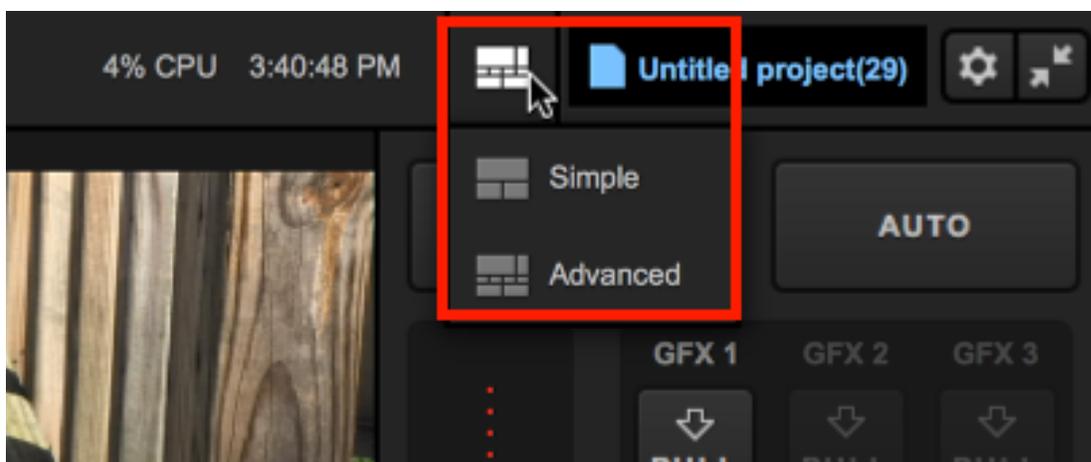
# Switching Controls

# Using Livestream Studio's Simple Interface

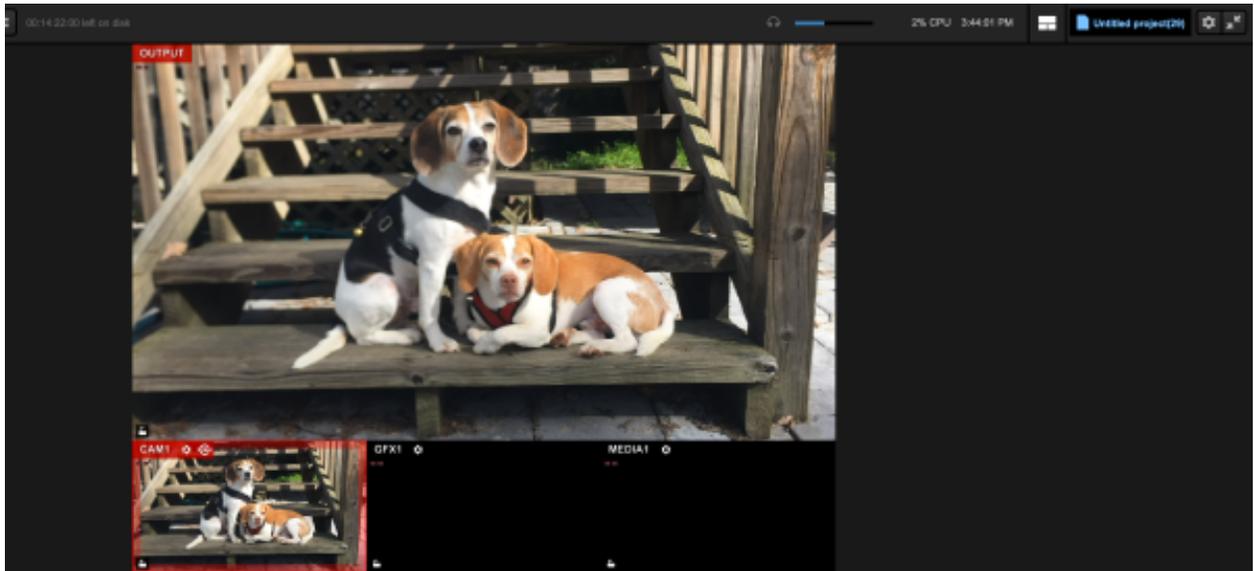
The Simplified Interface in Livestream Studio is a good option for customers with smaller production setups looking for minimal clutter.

When you first launch Studio or create a new project, you will be prompted to [choose your interface mode](#): Simple or Advanced, allow you to arrange Studio in the Simple interface from the start.

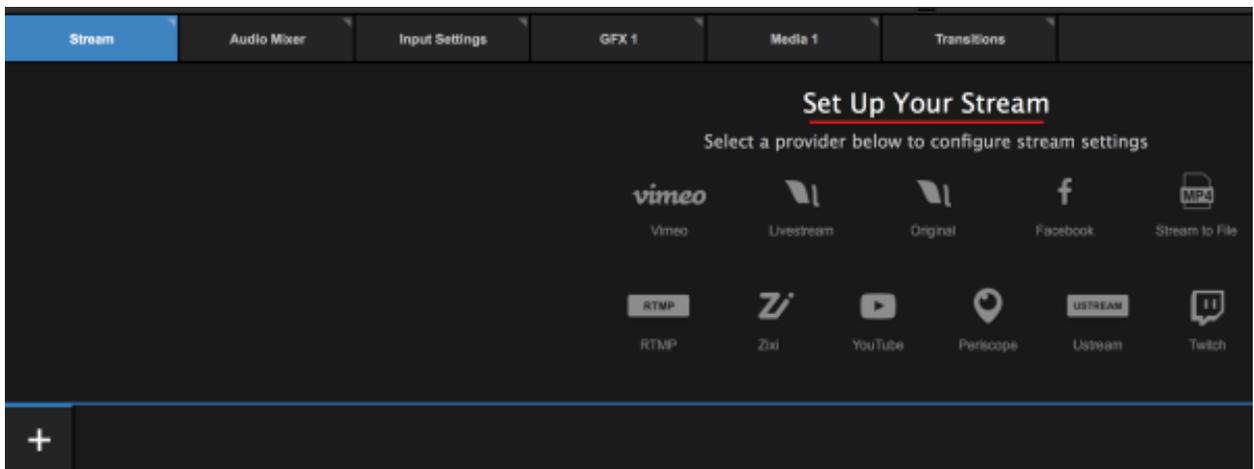
If you have an existing project in Advanced mode, you can easily switch to Simple mode by clicking the interface icon in the upper right corner and selecting Simple.



The most noticeable change can be seen in the upper portion of the interface. The Preview/Program monitors are replaced by a single Output monitor; whichever source is in this monitor is what your viewers are seeing. You will also notice the mixing panel that includes transition, graphics overlay, advert, and fade-to-black controls is also gone.



The Tabs containing your various production elements (graphics, media, etc.) will default to the 1 Column setting, meaning the lower portion of the Studio interface will be grouped into one column rather than have a divider splitting them into two interchangeable columns.

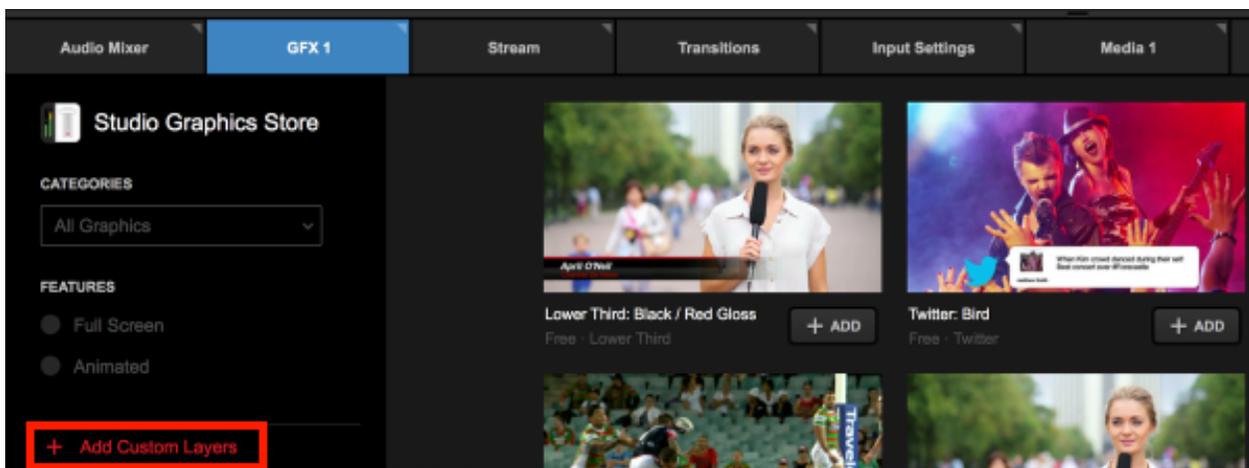


**i** Your default production elements will also reduce to one GFX channel and one Media bin in addition to your single camera. You can still add to your setup by going to [Settings: Inputs](#).

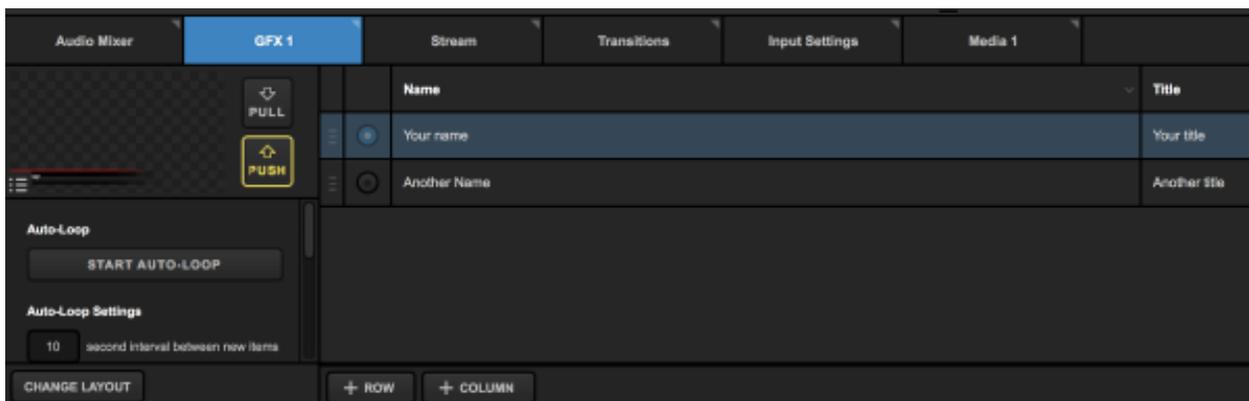
To switch between your video sources in this mode, use your mouse and left-click on the desired source in your multi-view. The source will transition into Output.

## Using Graphics in Simple Mode

To overlay graphics in this mode, navigate to the GFX tab. Add a graphic by browsing the Graphics Store or by clicking + Add Custom Layers to build your own.



You will see your graphics preview and settings on the left side with the ability to add and edit data fields on the right side.

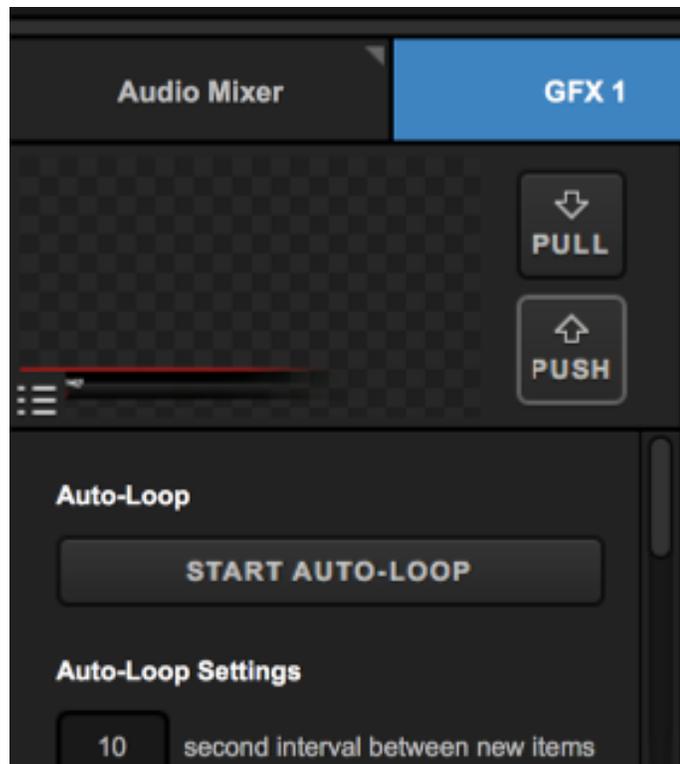


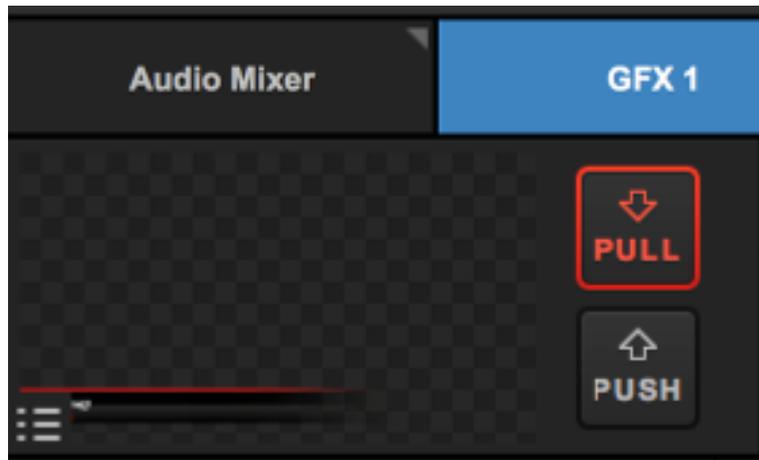
The main difference with graphics overlays in simplified mode versus advanced mode is how you transition graphics overlays into the Output. Since the mixing panel is not

present in Simple Mode, you will see PUSH and PULL options here, with the layer's auto-loop settings underneath.

To adjust the design of the graphic, double-click the preview to open the GFX Designer. A more in-depth explanation on building and using graphics overlays in Studio is covered in [another section](#).

When you are ready to show your graphic, click the flashing PUSH button. The graphic will transition into the Output; to remove it from Program, click the red PULL button.





## Transitions in Simple Mode

By default, the GFX transitions will be a 45-frame long edge wipe, whereas transitions between different video sources will be a cut.

You can change this by navigating to the **Transitions** module. Be sure to select the correct tab on the far left side when choosing your transitions; **Main** is your main video mix, followed by each graphics overlay track. You can then select among different transition types



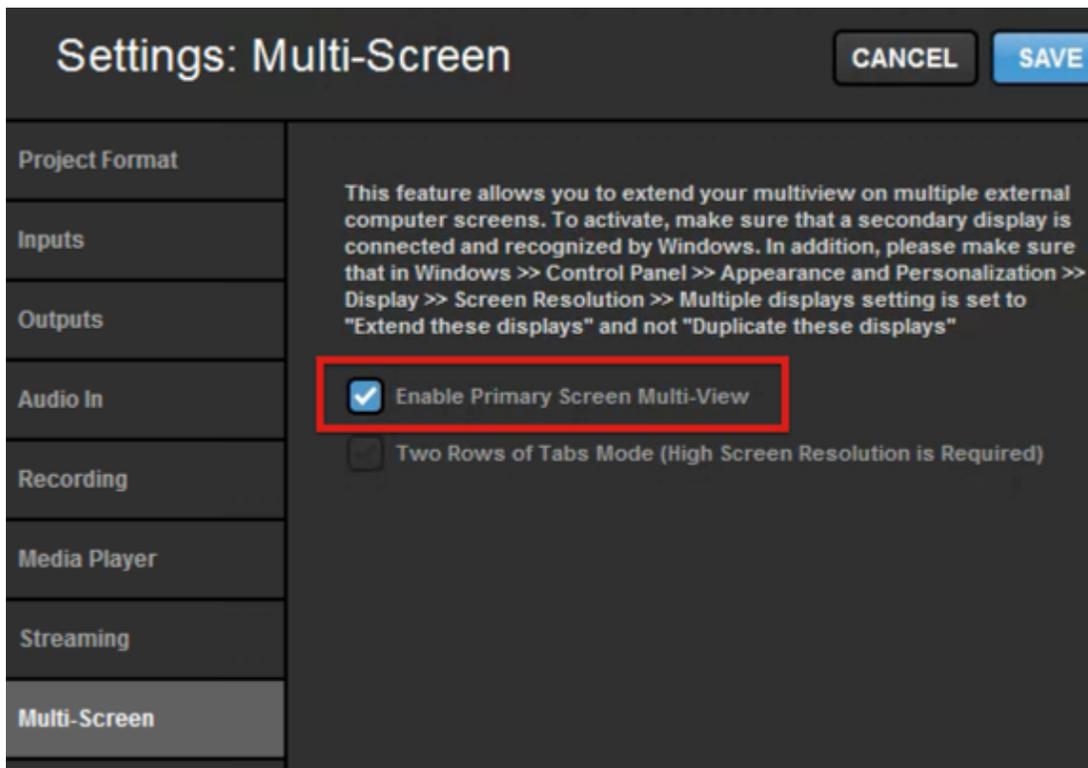
# Introduction to Multi-View & Preview/ Program Switching

The Advanced interface mode of Livestream Studio is designed for traditional Preview/Program switching, with controls available via mouse, defined keyboard shortcuts, and assigned controls on the Livestream Studio Surface or Surface Go.

The software includes a multi-view that allows you to see all of your video sources and graphics overlays in one display.



If you are not seeing your full multi-view, go to the Multi-Screen tab in settings, and check Enable Primary Screen Multi-View, then click Save.



At the top of this multi-view are two larger monitors, which are called Preview (left) and Program (right).

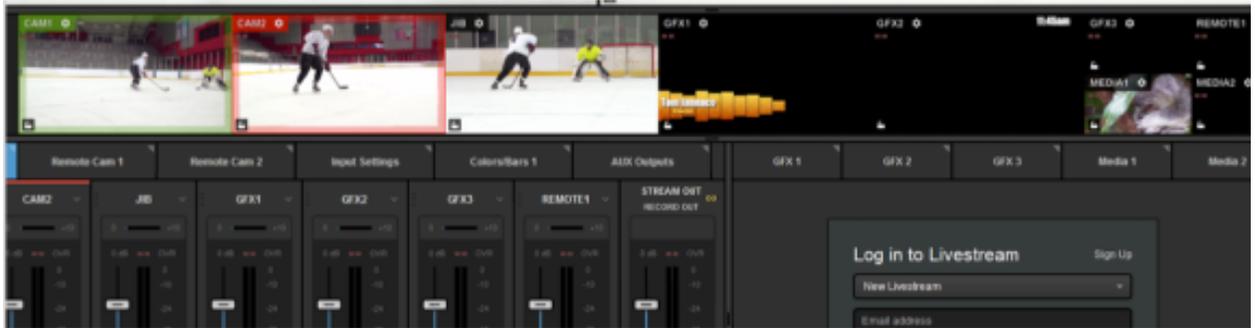


Preview is where you would typically review any video source or graphics overlay prior to transitioning it to your recording and/or stream.

Program is the content that is currently showing in your recording and/or stream; it is what your viewers are currently watching.

Below Preview and Program is an arrangement of smaller monitors with every camera

input, graphics overlay channel, media bin, remote camera, and color source that you are using.



A standard multi-camera production typically involves putting a source into Preview, then using a [transition control](#) to switch it into Program.

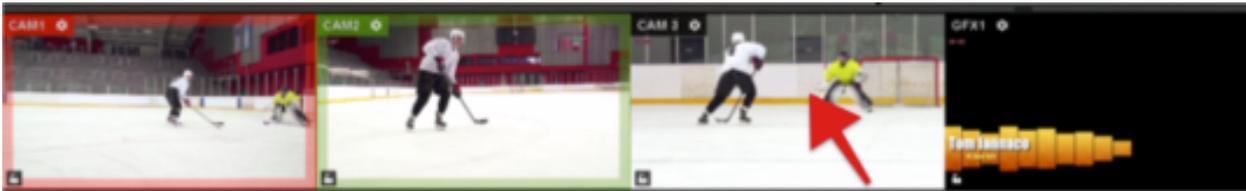


# Using a Mouse to Switch Preview and Program

Advanced Mode includes Preview and Program monitors as well as a mixing panel with transition controls, giving you more options for switching between your video sources using your mouse.

💡 If you are using the Simple Interface mode, see switching instructions [here](#).

To put any of your sources into Preview, hover over the source in the multi-view with your mouse, and simply click it.



That source will now be in the Preview monitor, and you should notice a green border around it in the multi-view.



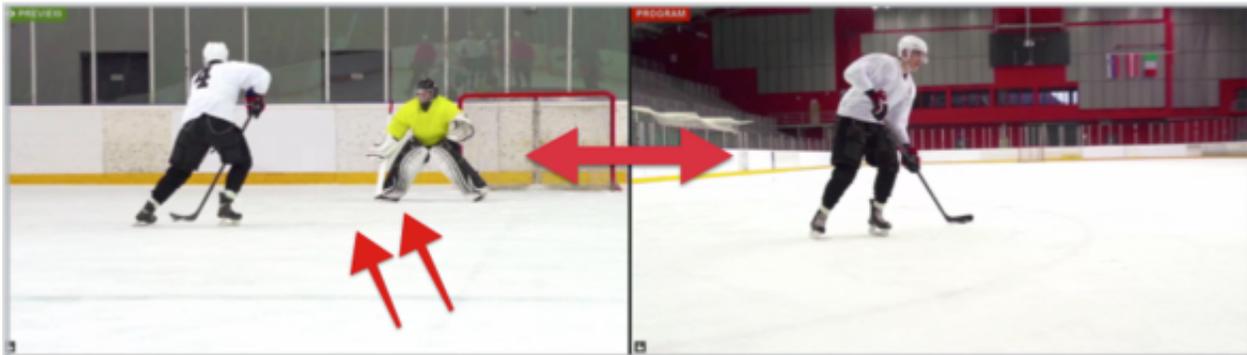
If you want to put a source directly into Program without previewing it, hover your mouse over it in the multi-view and right-click it.



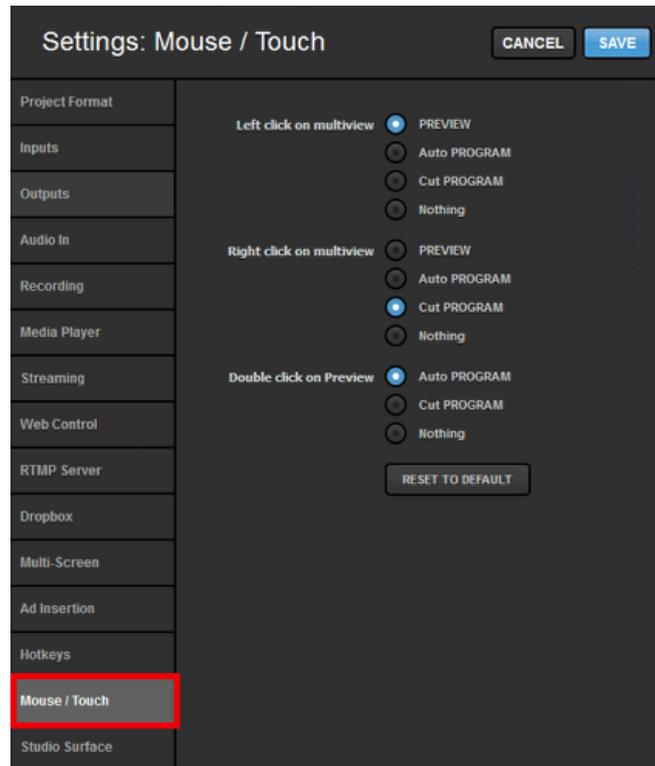
That source will now be in Program and will have a red border surrounding it in the multi-view.



You can also double-click on the Preview monitor, which will automatically transition that source into Program.



To adjust how sources are put into Preview and Program using your mouse, navigate to the Mouse / Touch tab in settings. Select the desired actions, then click Save.



Livestream Studio's transition controls can be found in the upper right corner of the software interface. Cut switches Preview and Program immediately with no overlap occurring between them. Clicking the Cut button activates this transition.



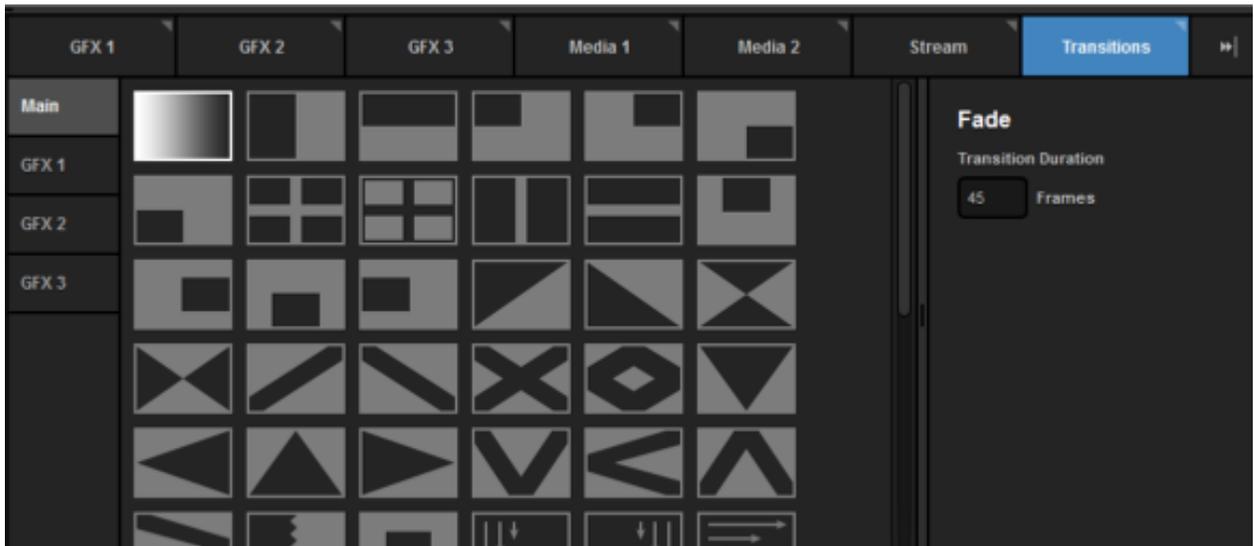
Another commonly used transition is Dissolve, which is an overlapping crossfade between the changing sources.



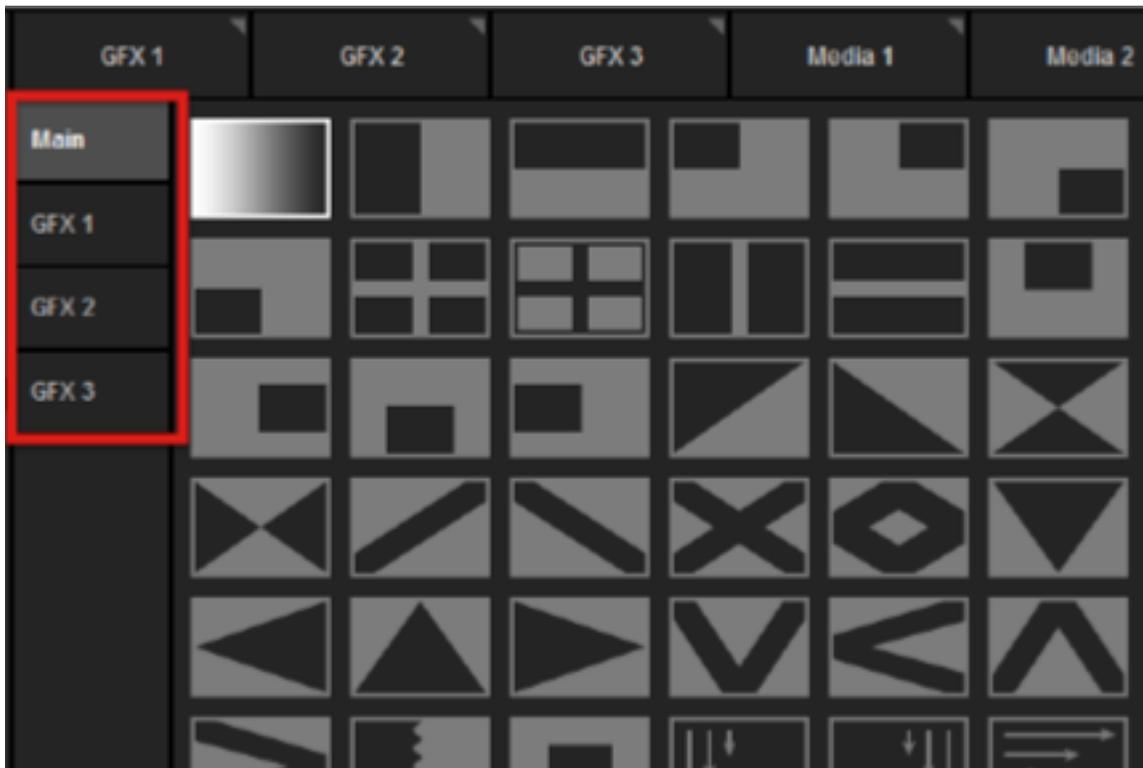
Finally, a **Wipe** is an animated transition where the Preview source overlays the Program source during the switch.



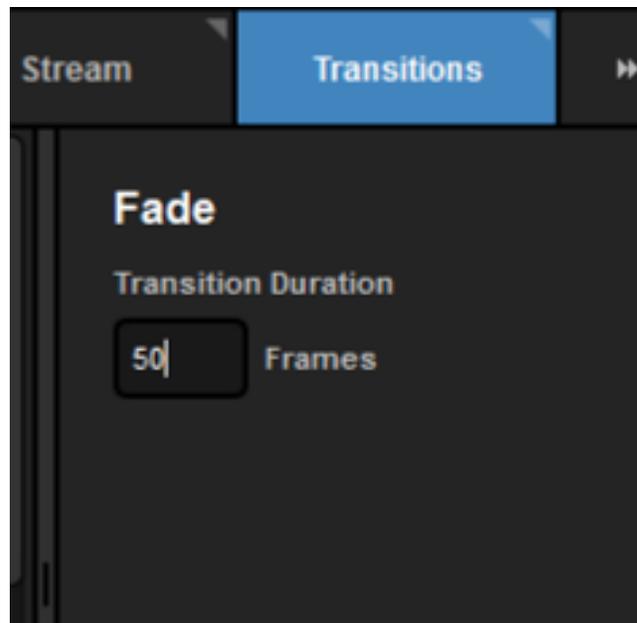
In Livestream Studio, you can configure fades and wipes under the Transitions tab in the lower right corner.



Notice on the left side that you can choose to set a transition for both your main mix (i.e., any source in Preview) and each individual graphics overlay channel.



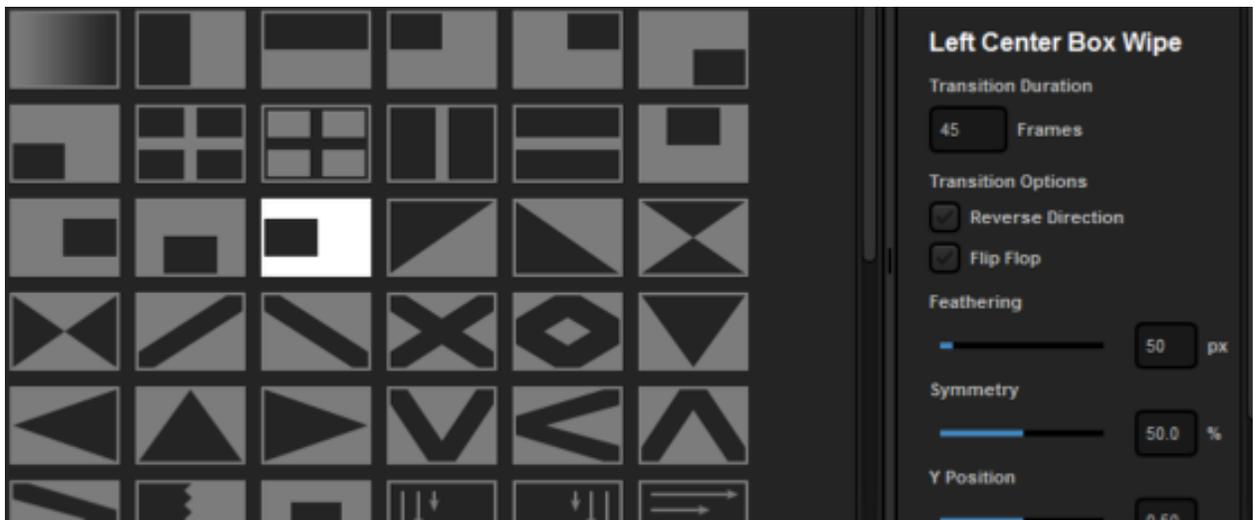
Fade is the first option in the menu, which is the dissolve transition. When you select it, you can set the amount of time you want an automatic transition between sources to last.



You can also double-click the duration time under the transition controls to change the speed of any automatic transition quickly.



The remaining options in this menu are different kinds of wipes. Selecting one will show additional settings on the right.



'Reverse Direction' will push the wipe in the opposite direction that it moves by default.



'Flip Flop' will alternate the wipe between the default direction and the reverse direction.



Feathering allows you to determine how hard or soft the edge of the wipe animation will be, in pixels. The more pixels you cover, the more faded the line will be.

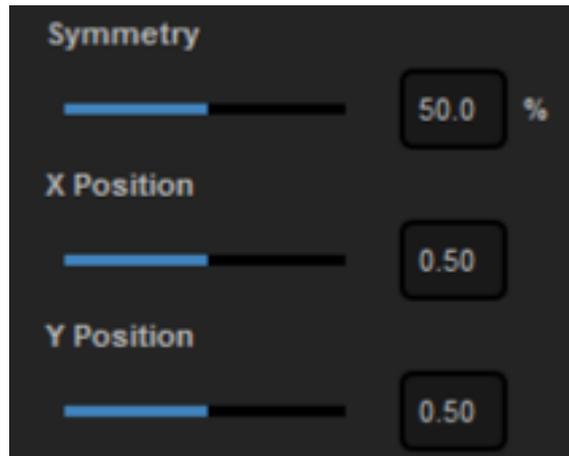


0 px



100 px

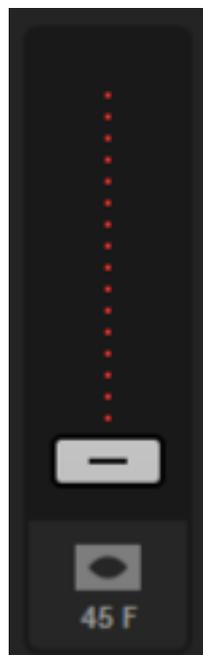
Some wipes also have options for adjusting their positions and appearance on the screen when they are used.



To activate an automatic transition, click 'Auto' in the upper right corner. The sources will then switch based on the duration you set for that transition.



You can always employ a manual transition by clicking and dragging the virtual T Bar below the transition buttons. This allows you to control the speed of that transition.

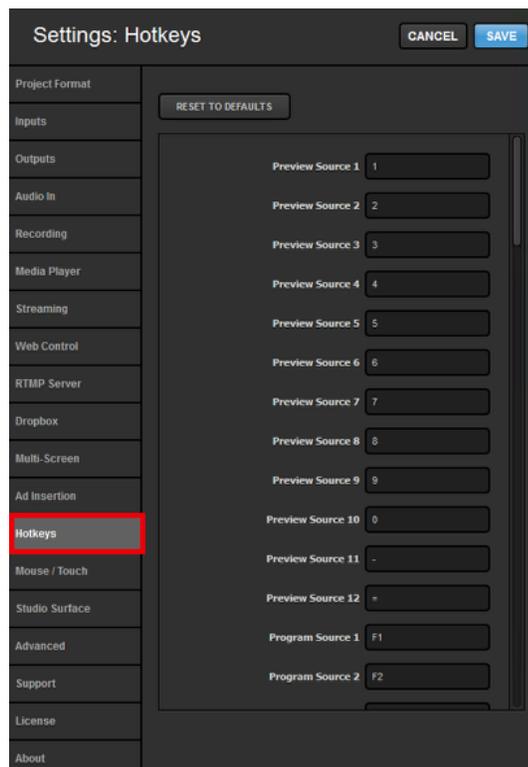


# Configuring a Keyboard to Use with Livestream Studio

You can create custom keyboard shortcuts in Livestream Studio by assigning hotkeys.

Open the settings menu and click the Hotkeys tab.

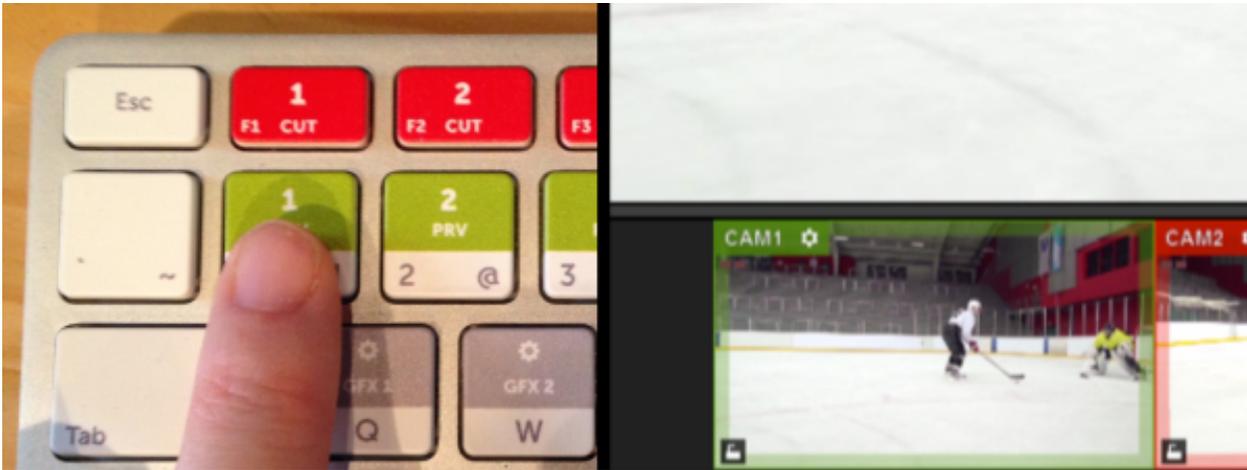
This will reveal a list of controls. Each control has a default hotkey assigned to it.



 The images below show the Livestream Studio Keyboard, which is simply a standard keyboard that is designed to reflect the default hotkey settings. However, you can use hotkeys in Livestream Studio with any keyboard.

Some common default keyboard commands include:

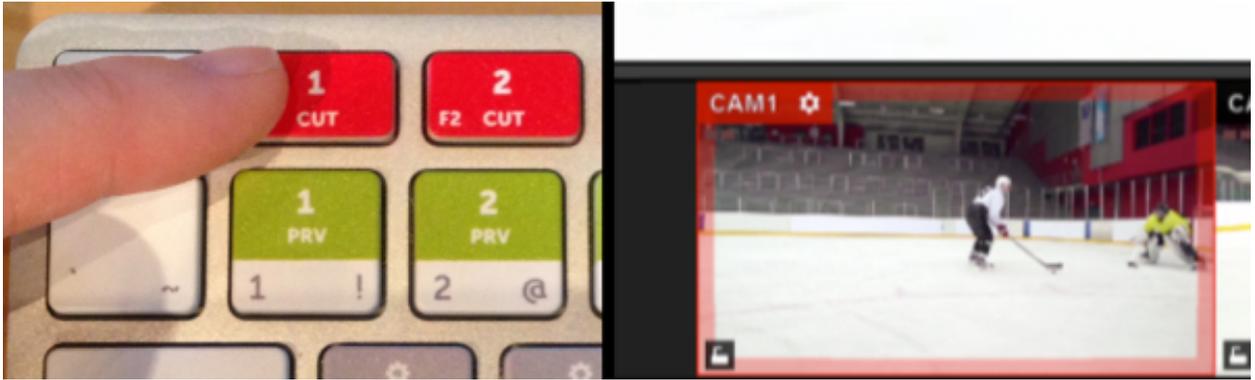
The 1 key will put your first input source into Preview



Pressing 2 puts the second input source into Preview, 3 puts the third source in Preview, and so on.



Similarly, to put your first input source directly into Program, press the F1 key on your keyboard.



F2 will put the second source into Program, F3 the third source, and so forth.



**i** Mac (beta) Users: In order to use the F1, F2, etc. hotkeys, you must either hold down the fn key when pressing them, or go to System Preferences > Keyboard and make sure Use F1, F2, etc. keys as standard function keys is checked.

Pressing Enter will cut between Preview and Program sources, while pressing the spacebar will activate an auto-transition between those sources.



You can customize these hotkeys to better fit your workflow if you wish.

- i The keyboard that Livestream provides with all Studio Hardware units (as well as for separate purchase in our [Store](#)) is designed to fit the default hotkey settings when you are producing a live event. It will operate like a normal keyboard when typing into text fields and when using with other applications.

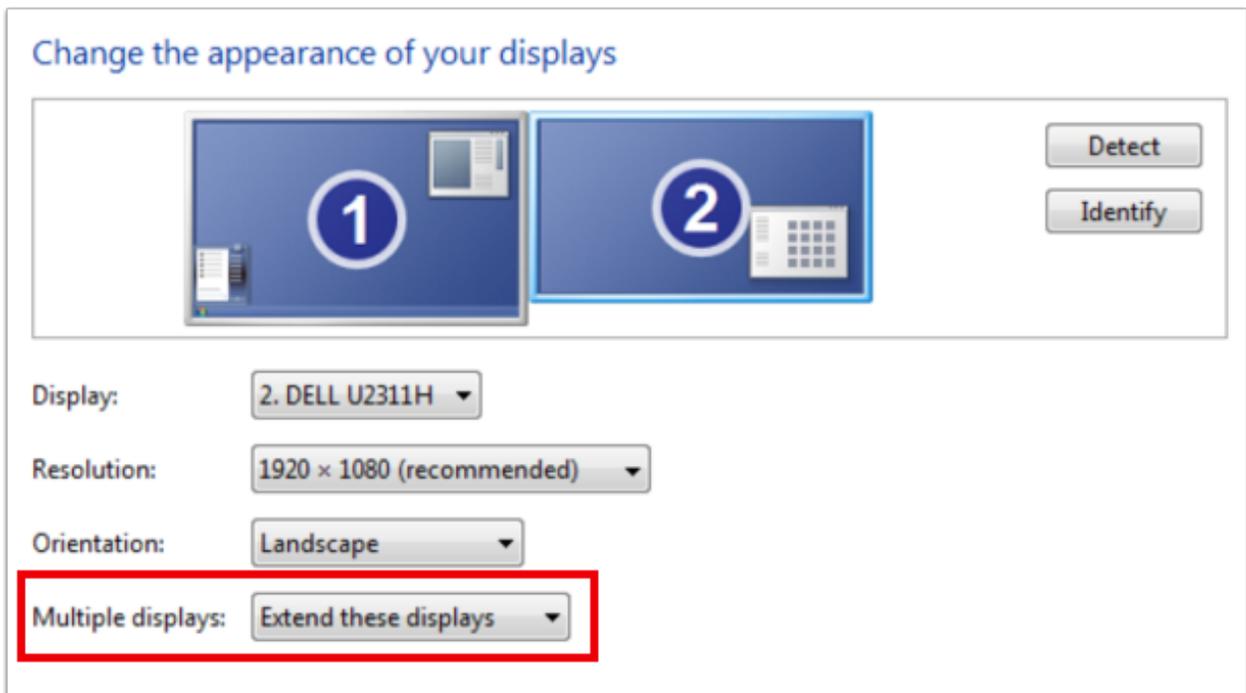


# Using External Multi-Screen with Livestream Studio

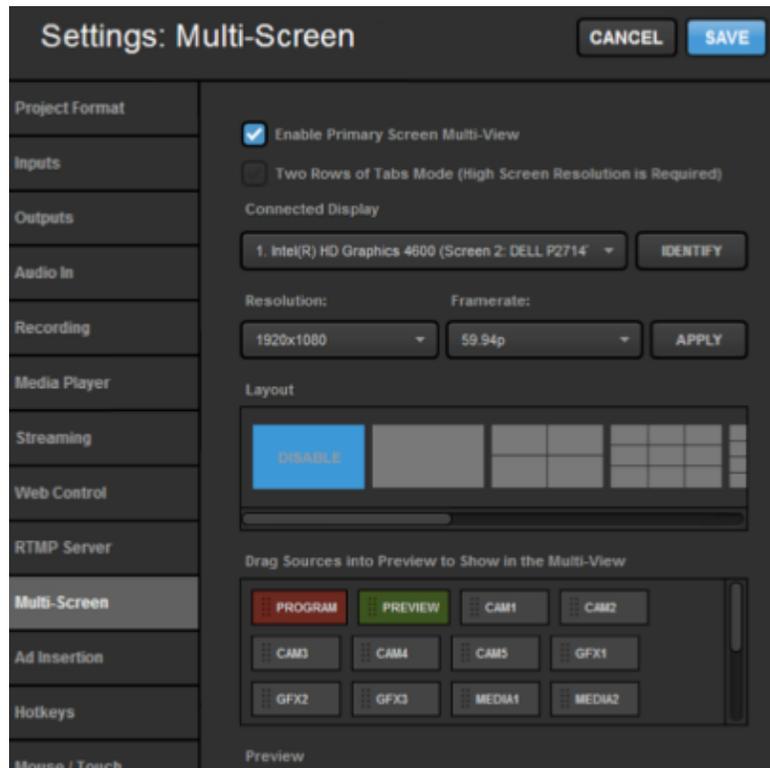
If you have a second monitor connected to your system, you have the option of displaying all or part of your multi-view by using your system's graphics card. The software can support up to a Quad GPU setup out of a graphics card which can output to up to 4 displays.

💡 For best results, we recommend connecting the secondary display to the available HDMI port on the graphics card connected to your Livestream Studio system (It will also work with DVI and VGA connections).

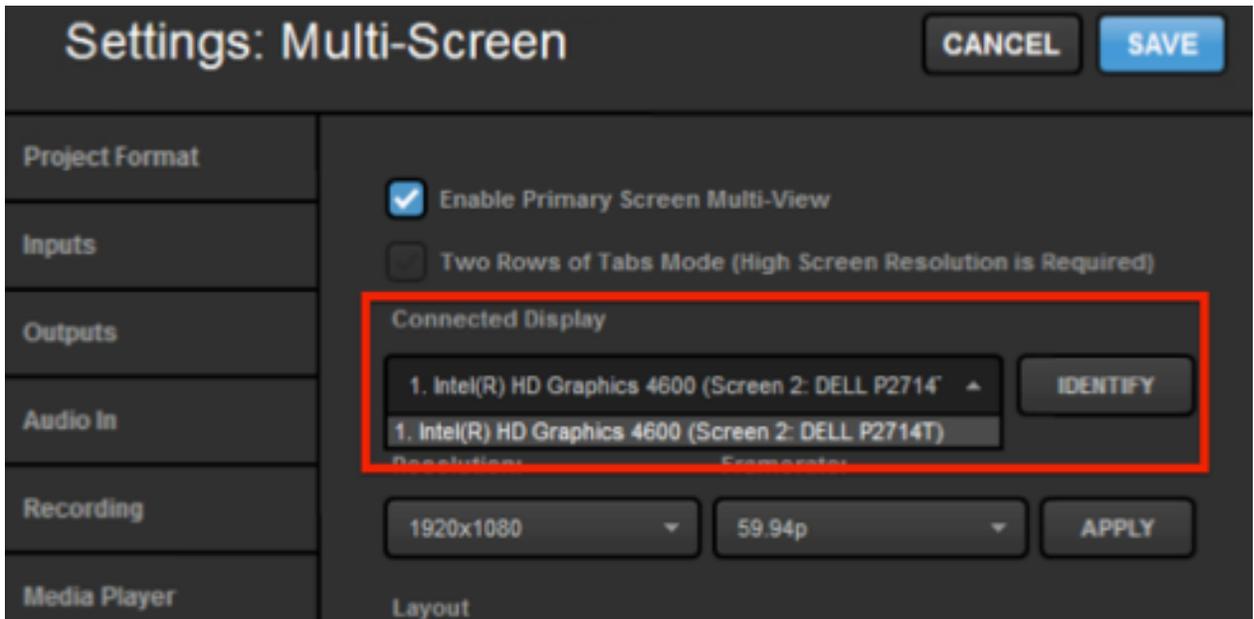
First, check your computer's display settings in Control Panel. In Screen Resolution, go to the Multiple Displays menu and select Extend these displays.



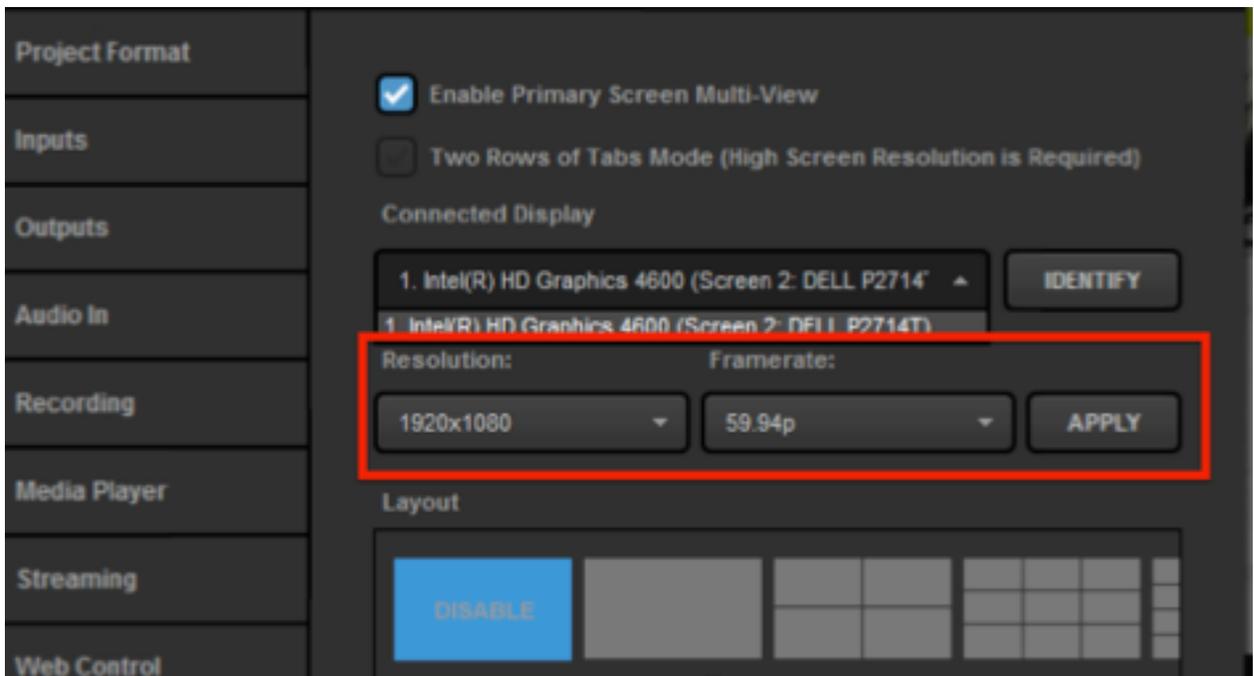
In Livestream Studio, go to settings and click on the Multi-Screen tab. With the second monitor connected, you will notice it looks different from [before](#).



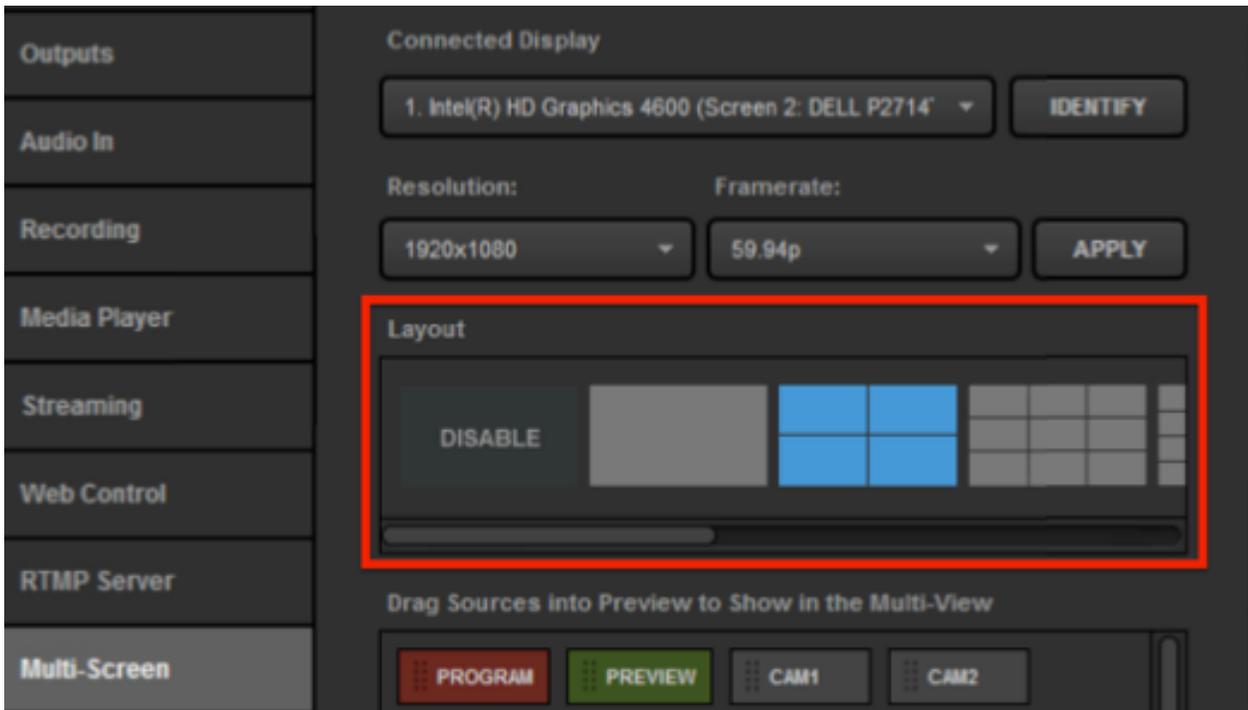
You should see your display listed in the Connected Display dropdown menu. Select the display and click Identify.



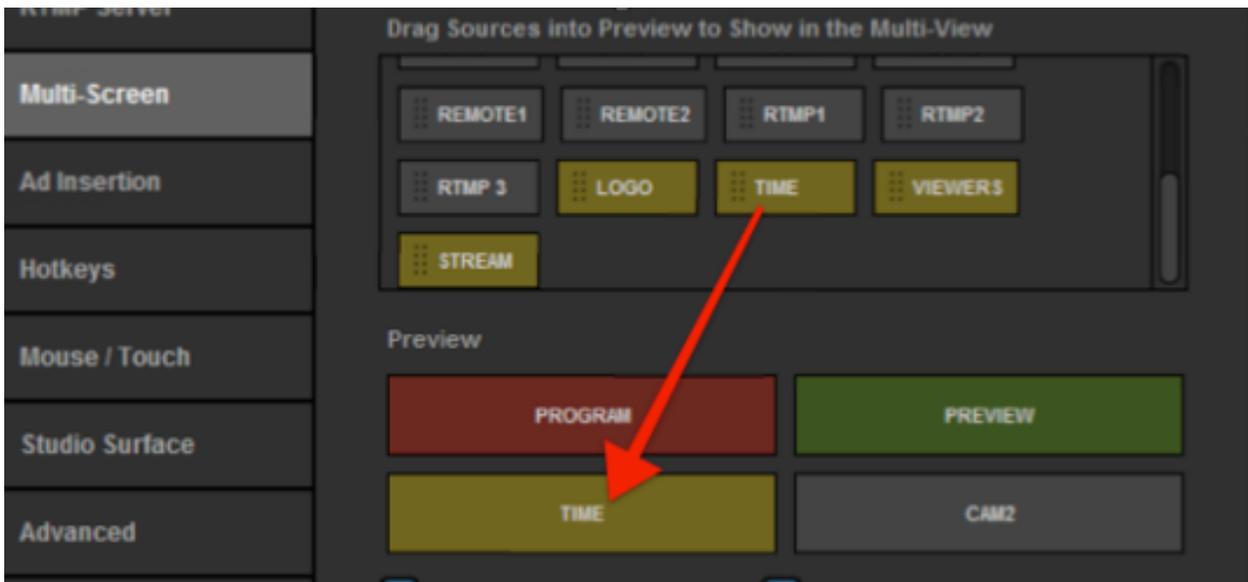
Select the resolution and frame rate at which you want Livestream Studio's multi-view to output.



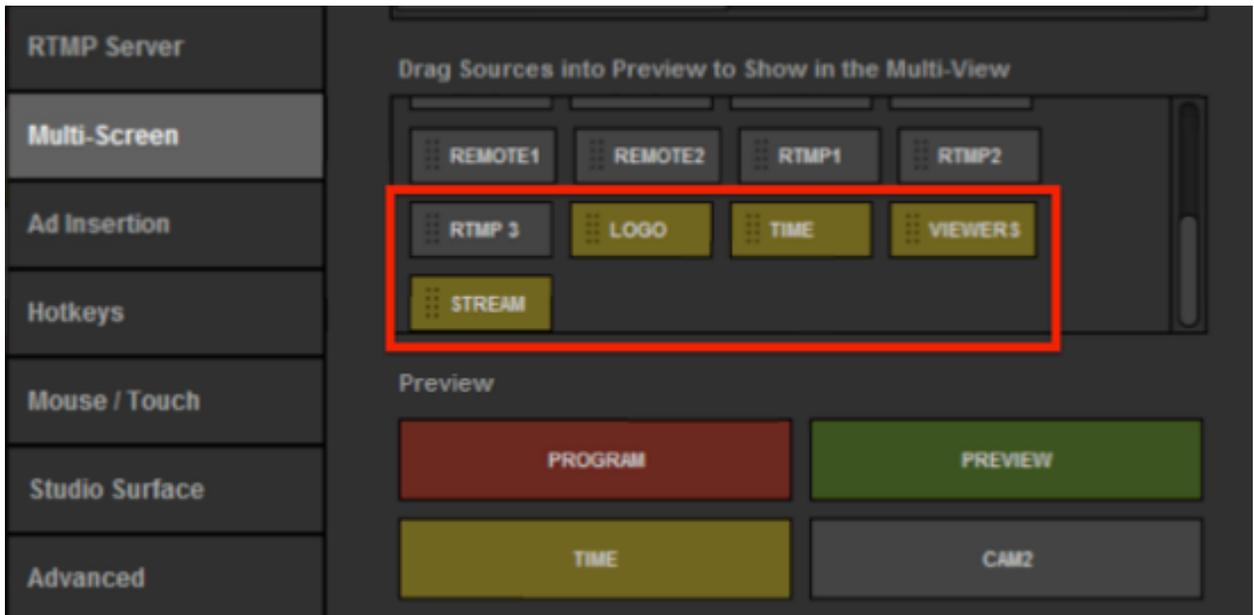
Next, determine which layout you want to see in your external monitor.



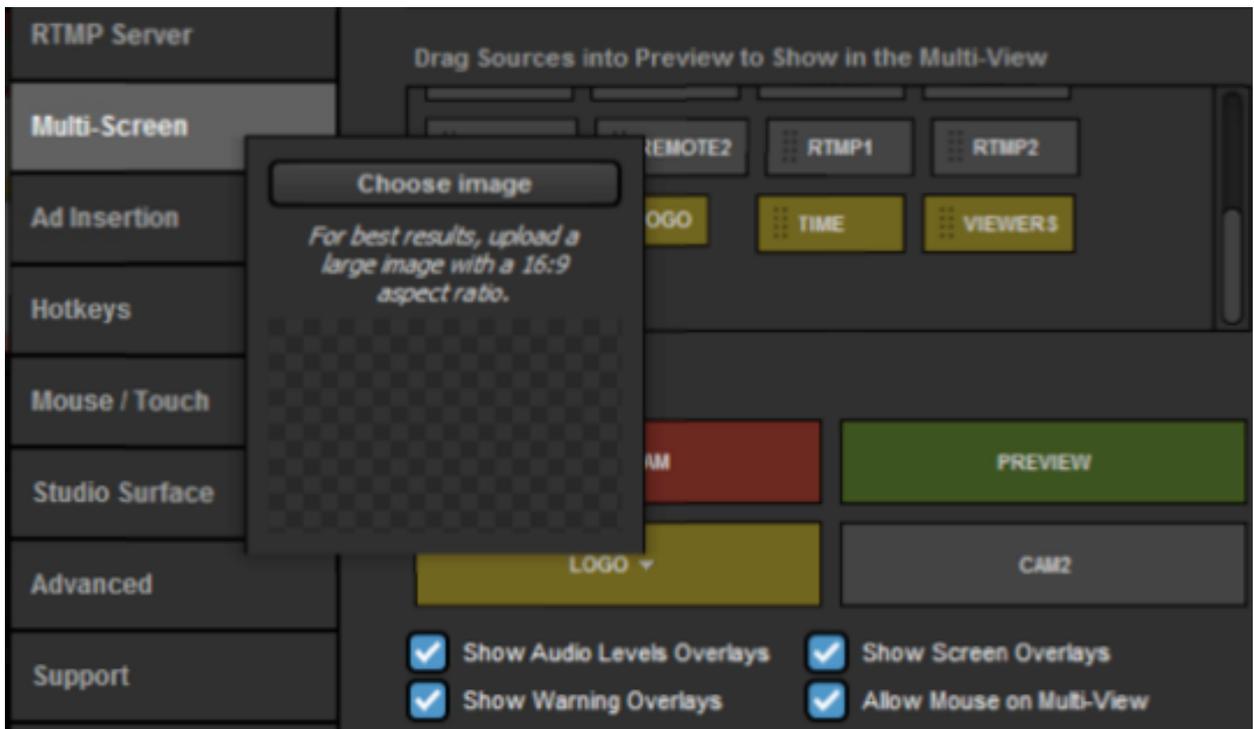
Below the layout selection, use your mouse to drag and drop each video source you want to see into the appropriate box below.



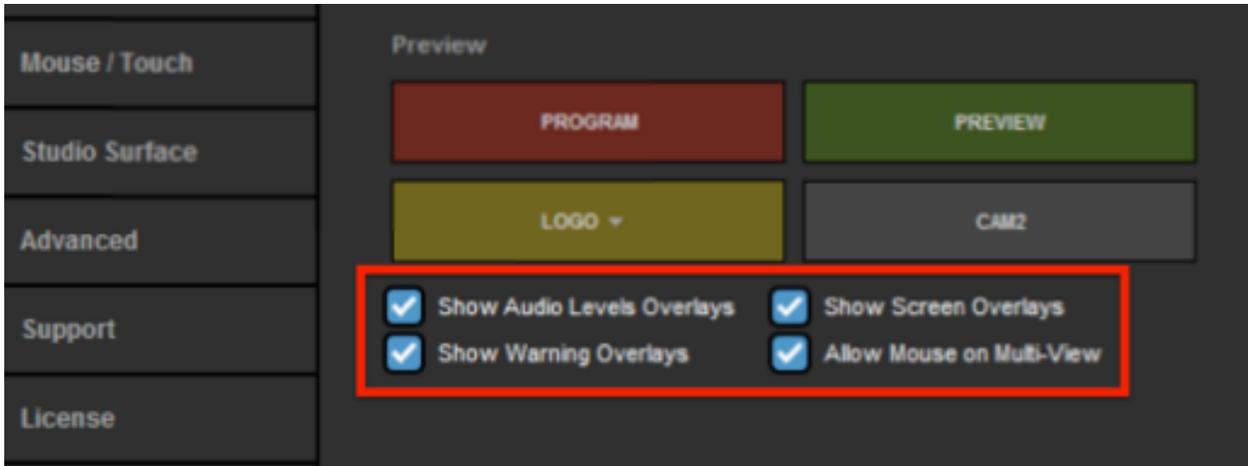
In addition to video sources, you can include a logo, time of day, viewer count, and stream status.



If you drag a logo into your external multi-view, click on it to be given the option to upload a logo image.



Underneath the multi-view preview, you will see options for showing or hiding specific overlays on the multi-view and for whether you want to allow your mouse onto that display.



When you have set your multi-view to your desired preferences, click Save. You will see the multi-view appear on your external monitor.





# Audio Workflow

# Adding Audio Sources

Livestream Studio's built-in audio mixer can be found in the lower left corner of the interface.



Each input source will have a corresponding audio source that you can monitor and adjust.



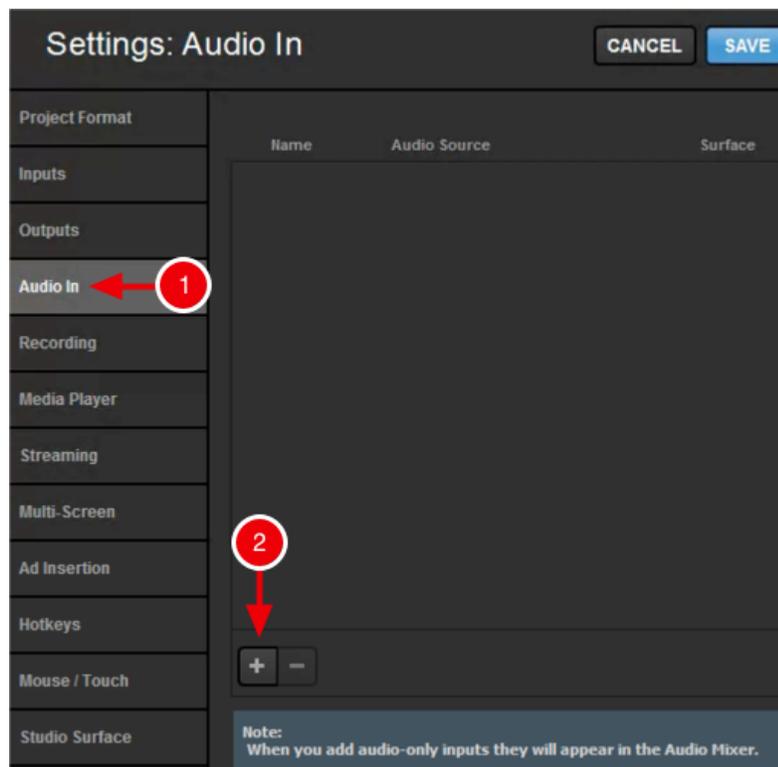
You may have a separate audio mixer or a microphone can connect to your system directly via USB or line-in (the HD550 also has two 1/4-inch XLR combo inputs built in).



We have successfully tested Onyx and M-Audio mixers with Livestream Studio. Generally speaking, any device your operating system--Windows or Mac (beta)--supports will work with Livestream Studio, although we recommend using audio devices that do not require drivers to be installed.

Navigate to Settings > Audio In to add these sources.

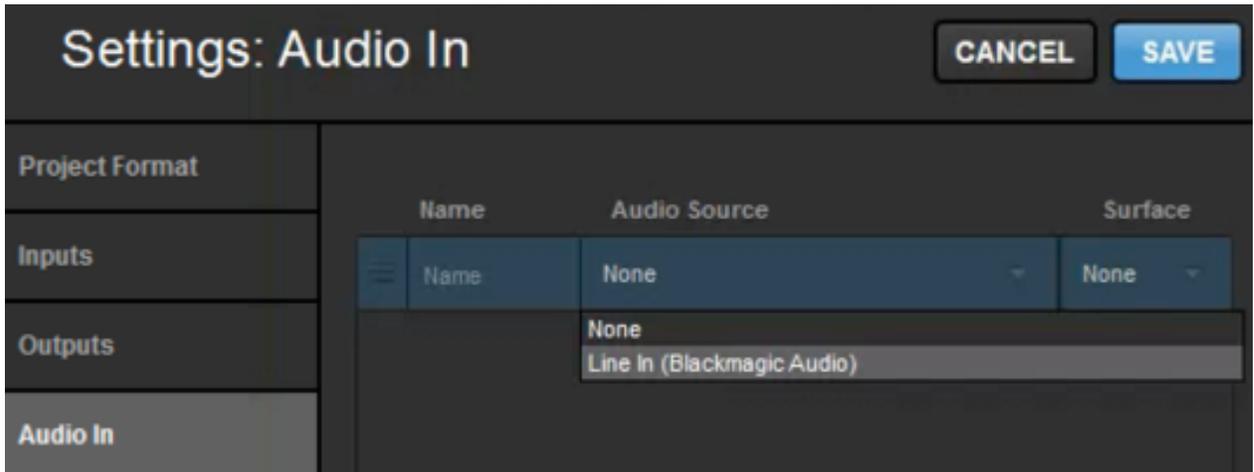
Press the + button at the bottom of the window to add an audio source.



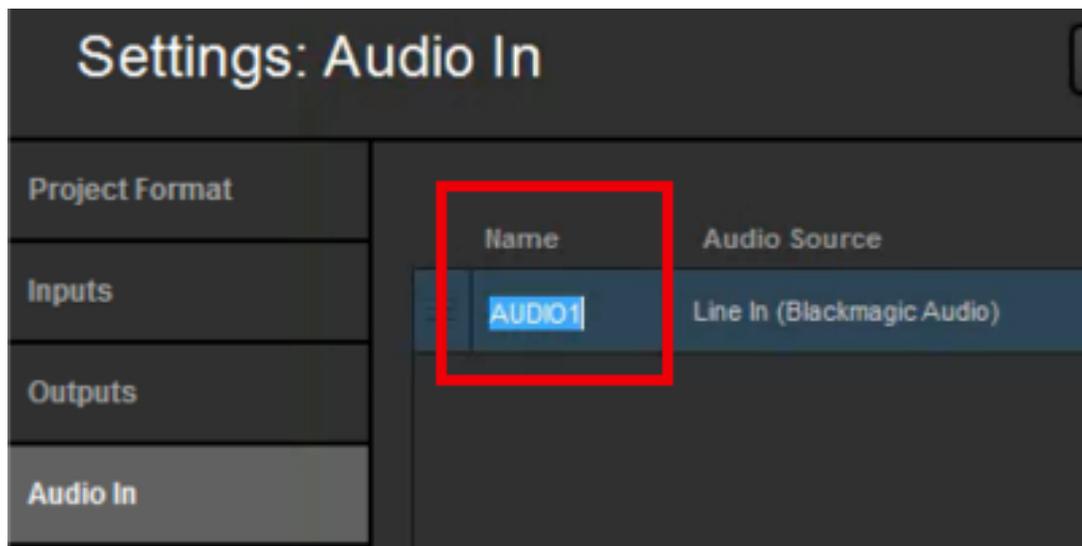
Under Audio Source, click the dropdown menu to select your source.



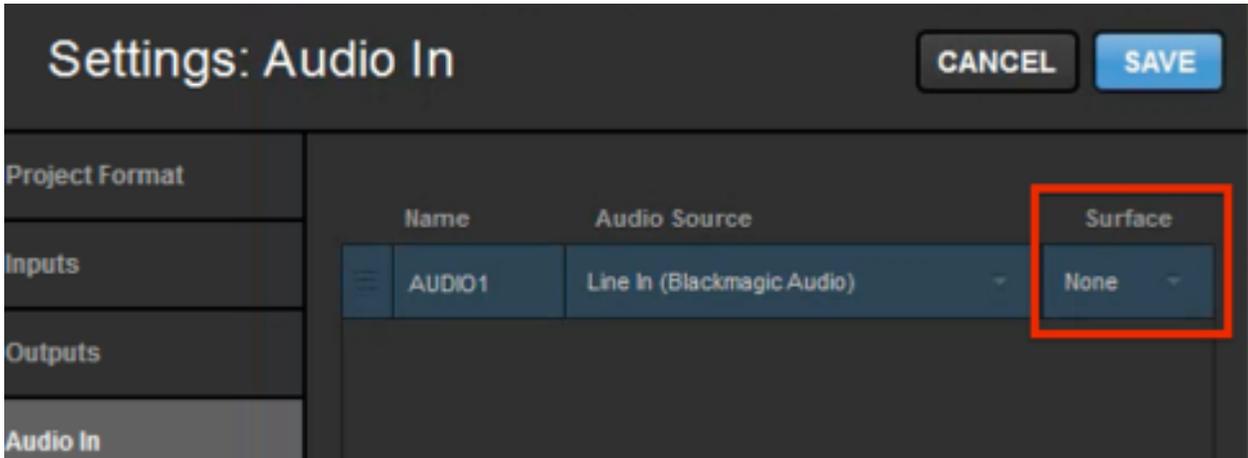
If your device is not recognized, check to see if it needs to have drivers installed.



Livestream Studio will automatically label the source (e.g., AUDIO1). Click on the name if you wish to change it.



This source can also be assigned to a track on Studio Surface if you have one connected. Otherwise, 'None' will be the only option available.



Click Save in settings. You should now see your audio source included with your other sources in the Audio Mixer.



## Monitoring Audio in Livestream Studio

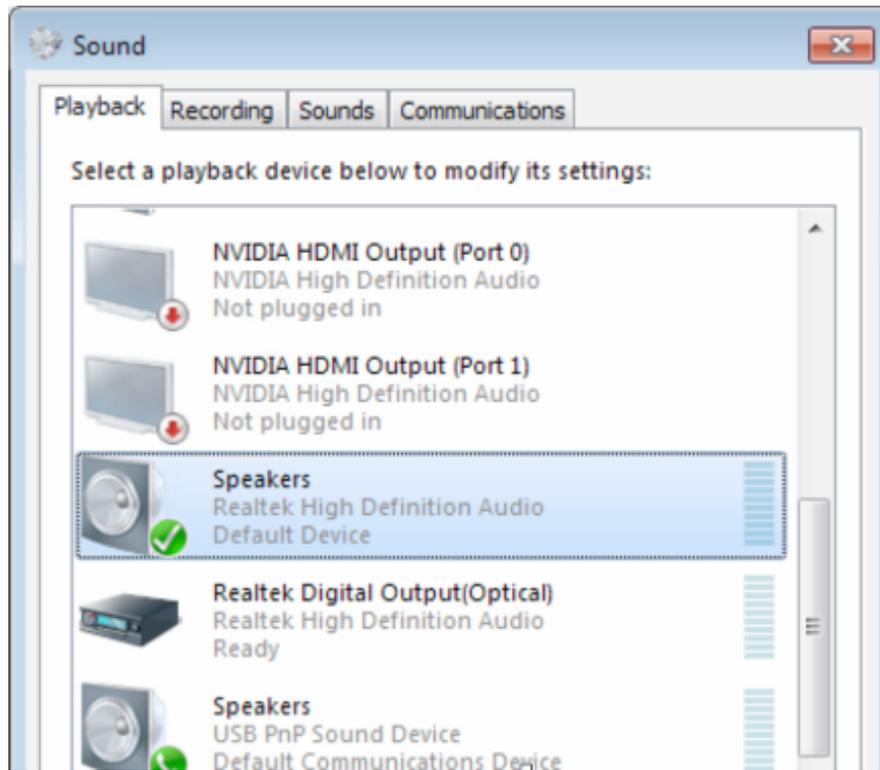
In order to mix your audio effectively, you need to be able to hear it. Start by plugging headphones or speakers into the headphone jack on your system.



You may not hear any audio right away, even if you see audio levels. If this is the case, there are settings on your system to check.

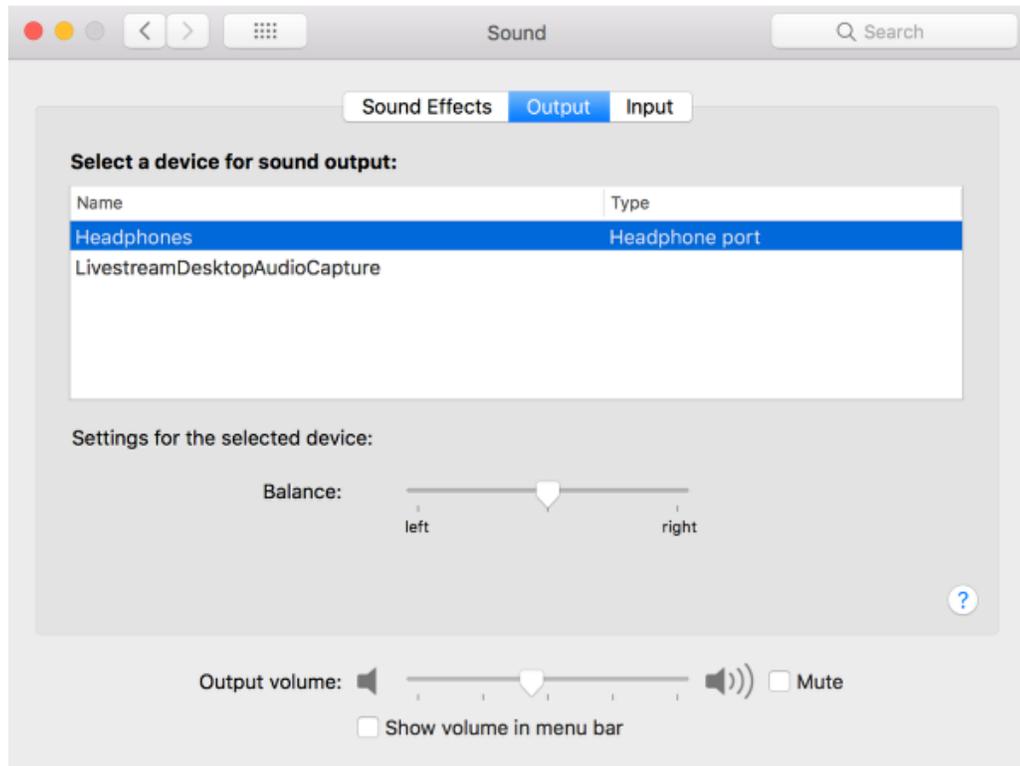
### Windows

Go to your Windows Control Panel and navigate to your Sound settings. Under the Playback tab settings, look for **Speakers - RealTek High Definition Audio**. Select that source, click **Set as Default**, then click **OK**.



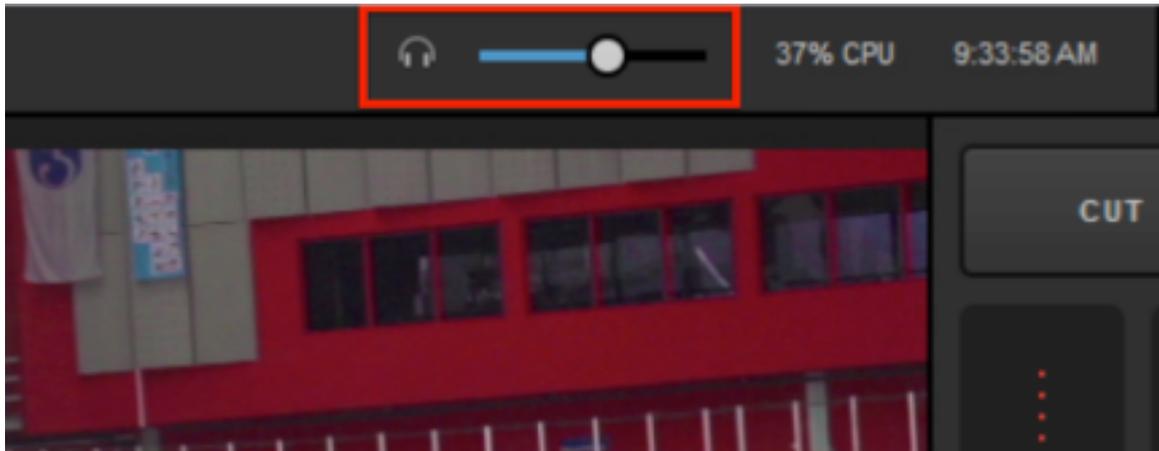
## Mac (beta)

Go to System Preferences > Sound. In the Output screen, make sure Headphones is highlighted.

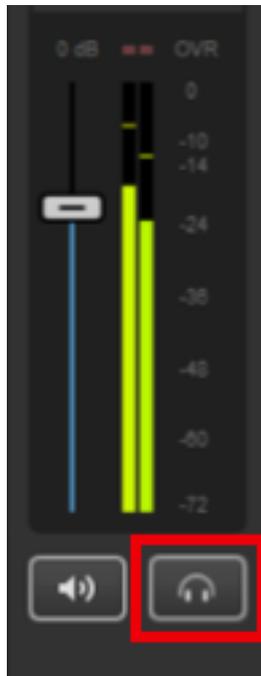


After confirming the above system settings, navigate to Livestream Studio. Check the headphone volume meter in the upper right corner and adjust the level to the desired volume. You can also adjust your Windows volume as you would when using any other program.

 This does not affect audio levels of the inputs, Preview, or Program.



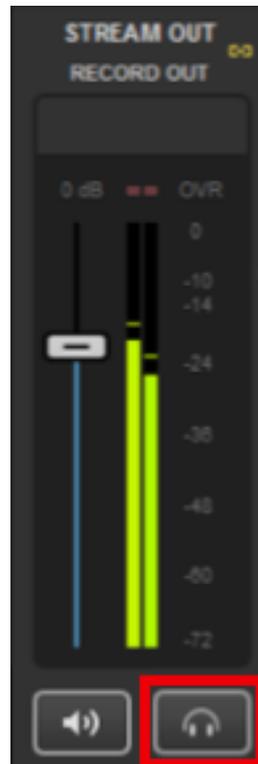
You will know which sources you are hearing in your headphones by checking the Audio Mixer. The bottom of each source has a headphone button.



Any headphone button with a white border is currently being heard in your headphones. You can monitor as many sources at any given time as you need. Click on the headphone button to stop monitoring the corresponding source; you will notice the white border will disappear from the button.

**i** This only impacts your local headphone output and does not stop the audio from outputting to your stream and/or recording.

This also applies to monitoring Program audio, which is typically represented by Record Out / Stream Out.



# Controlling the Audio Mixer

For each audio source in the Audio Mixer, you can see that source's levels, as well as a corresponding fader, speaker button, and Audio button.



When switching sources, you may notice the different Audio buttons turning yellow as you make the transitions.



This indicates that the audio source is heard in Program because its corresponding video input is in Program. It is not heard when the video input is not in Program.



If there is a particular audio source you want outputting to Program at all times, click the Audio button; it will turn red.



This locks that input source's audio into Program. Even if you continue switching video sources, you will still hear that audio source.



Click the Audio button again to disable the locking. What you hear will revert to the default setting of following the video source into and out of Program.

If there is a particular source's audio that you do not want to hear at any point, click on the corresponding speaker button.



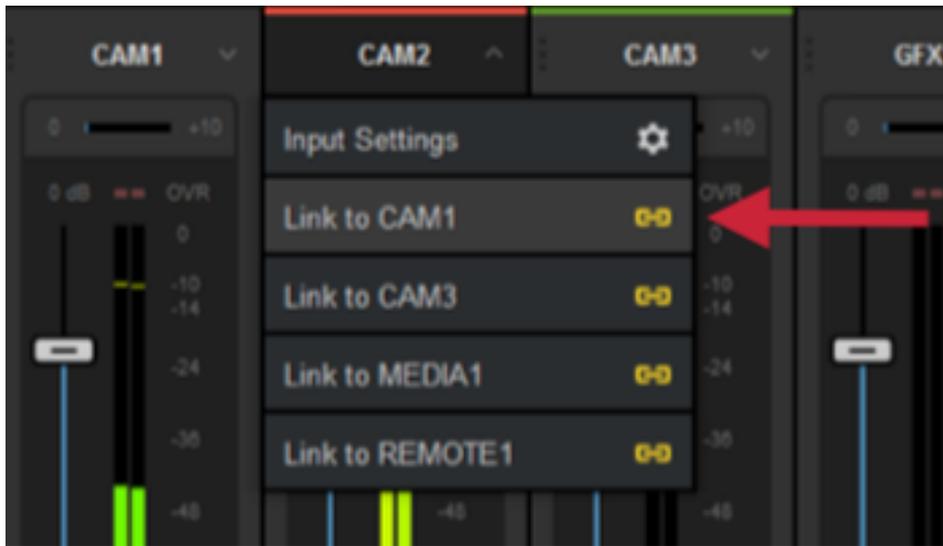
The button should go from white to black, and the levels will fade from green/yellow to gray. This indicates that the source is muted. You can turn off muting for any source by clicking its speaker button again.

- i** Muted sources can still be monitored through headphones as long as the headphone button is activated.



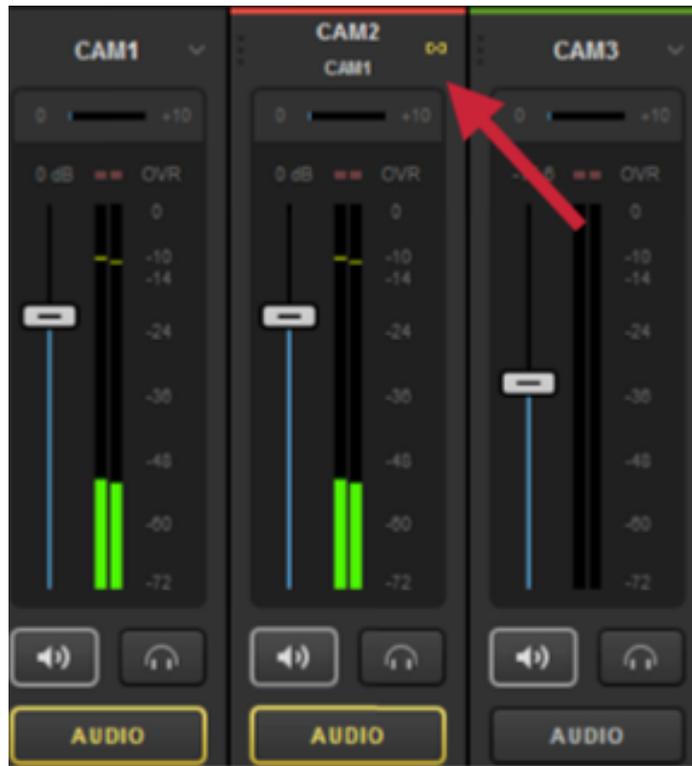
You can also link audio sources to each other. For example, if you have all audio coming in from CAM1, you may want to link other cameras to that source for seamless transitions.

Click on the name of the source at the top of the audio module. You will notice you have the option to link to any other input source.



Linking an input will cause the linked source to override the audio that had been coming in originally. The mixer will indicate which source's audio is being heard.

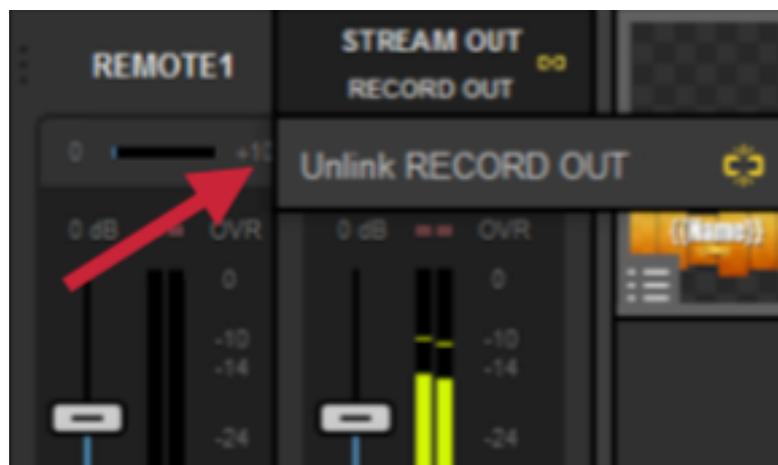
In this example, CAM1 has been linked to CAM2, so viewers will hear CAM1's audio when either CAM1 or CAM2 are in Program. Notice in the image below how the levels are identical and both Audio buttons are yellow (the red bar above the CAM2 label indicates that CAM2 is in Program).



You can link multiple inputs to one audio source for smooth transitions.



Most producers link Record Out and Stream Out together for consistent Program audio across all output sources. Those two outputs may be unlinked if desired, but they cannot be linked to any other source.



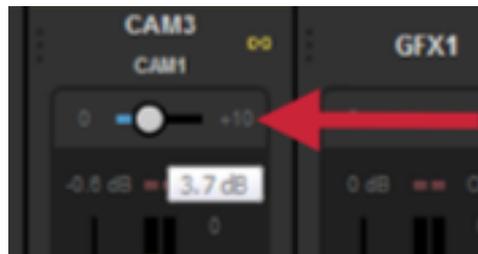
To adjust the levels of any audio source, click and drag the corresponding fader for that source.



If audio levels are too high, the mixer's OVR meter for any over-modulating source will blink red.



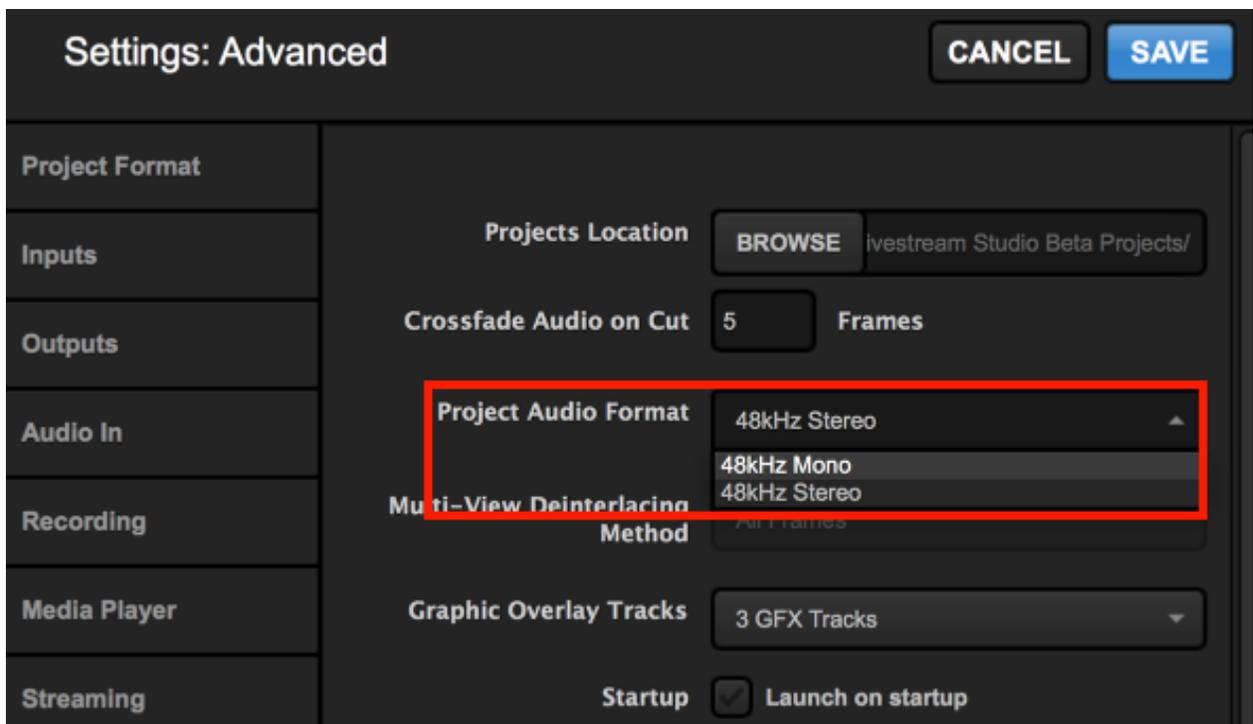
You can also adjust the gain of each source by clicking and dragging the small gain meter above that source's level meter.



## Fold Audio Channels Into Mono

In Livestream Studio, your audio setup can be set to either mono or stereo.

To fold all of your audio channels into mono. Go to **Settings: Advanced**. In the **Audio Format** dropdown menu, select **Mono**.



Now all of your audio inputs will be in mono, which you can see reflected under **Input Settings > Audio**.



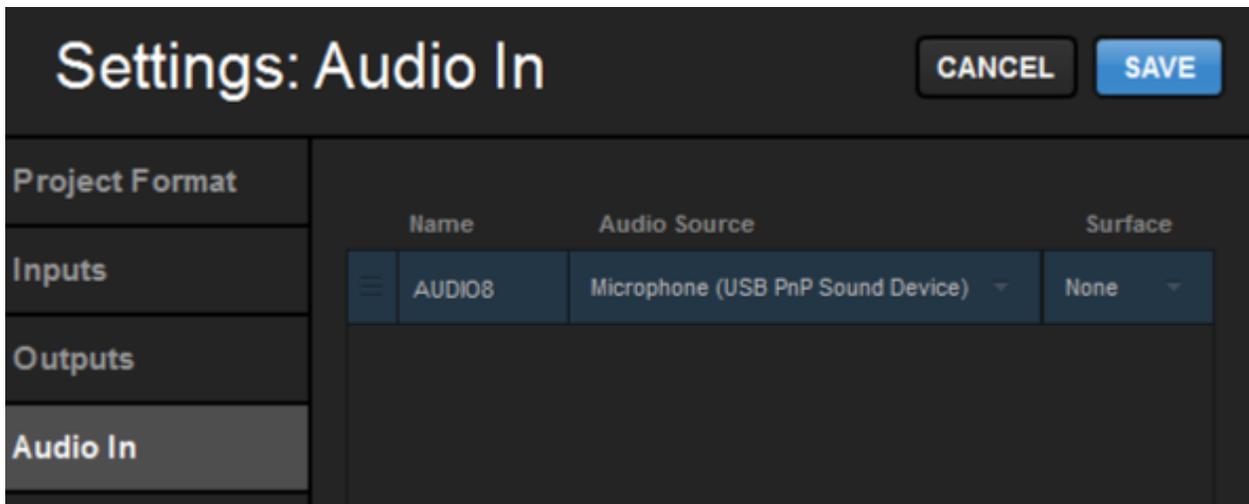
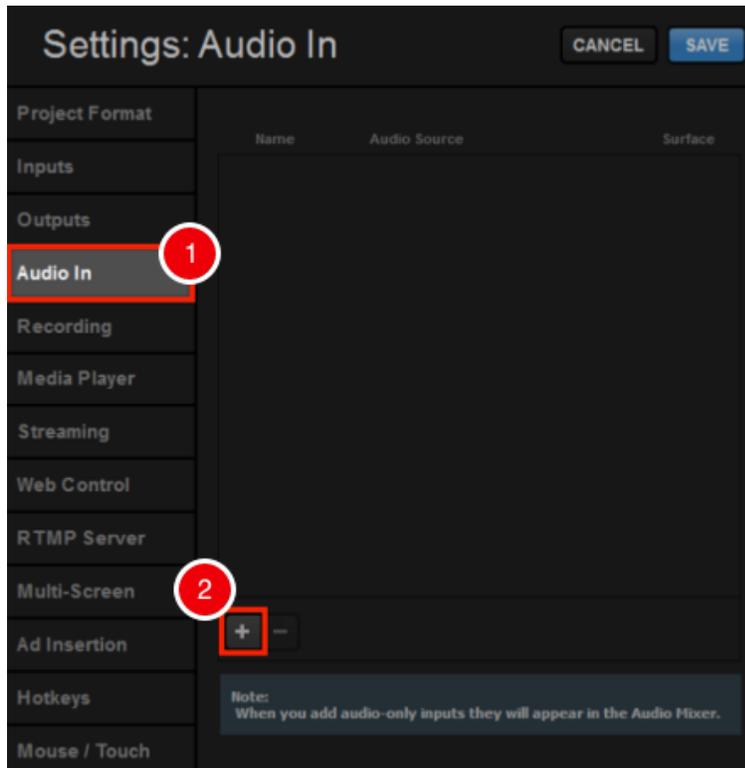
## Using HD550 Direct Audio Inputs

HD550 users have the ability to plug in an XLR or 1/4" audio input directly into their unit without the need for a USB adapter.



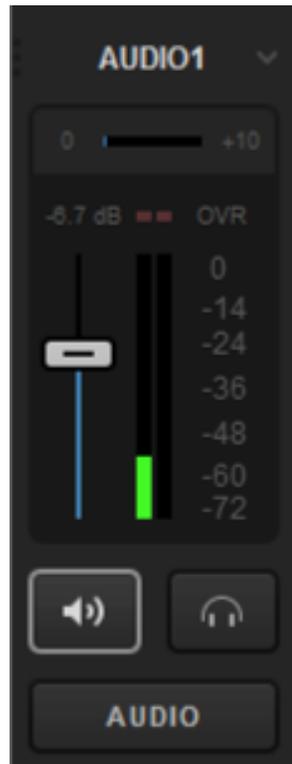
 Please note that these inputs support mic level audio signals only. If your audio equipment is line level, [see here](#) for a workaround.

When you plug in your audio source, be sure to add it as an audio input by going to 'Settings' > 'Audio In,' and click the '+' button.



When you click Save, you will see the source in the audio mixer. You may notice a very low level of sound coming in.

**i** This low level of audio may appear regardless if your source is connected or not.



This "white noise" should not exceed -48dB on either input and is characteristic of all USB-based PC audio devices and is virtually inaudible.

# Using Line In Audio Sources with the HD550

If you own an HD550 and wish to use a line in audio input rather than a mic in audio input, you will need to add an additional accessory to your setup.

The HD550 XLR inputs support mic level inputs only, which ranges from -60dBV to -40dBV. Line level audio on consumer products starts much higher at -10dBV.

If you add a **Whirlwind IMPAD In-Line XLR Barrel Transformer** to your workflow, this will allow you to bring in a line level source into the XLR inputs on the HD550. These accessories reduce the decibel (dB) level coming from your audio source so that Studio can support it.

These barrel transformers vary based on the amount of dB they remove from the source. For example, the [Whirlwind IMPAD40](#) removes 40dB from your source's audio. Also available are:

- [Whirlwind IMPAD30](#) - removes 30dB
- [Whirlwind IMPAD20](#) - removes 20dB
- [Whirlwind IMPAD10](#) - removes 10dB

Simply connect your audio source to the female end of the transformer, then connect the male end of the transformer to your HD550. Then [configure your audio](#) as you normally would.

 We cannot guarantee that other similar products will work with the HD550 as we have not tested them. If you have success bringing in a line-in source using a different workflow, please [let us know!](#)

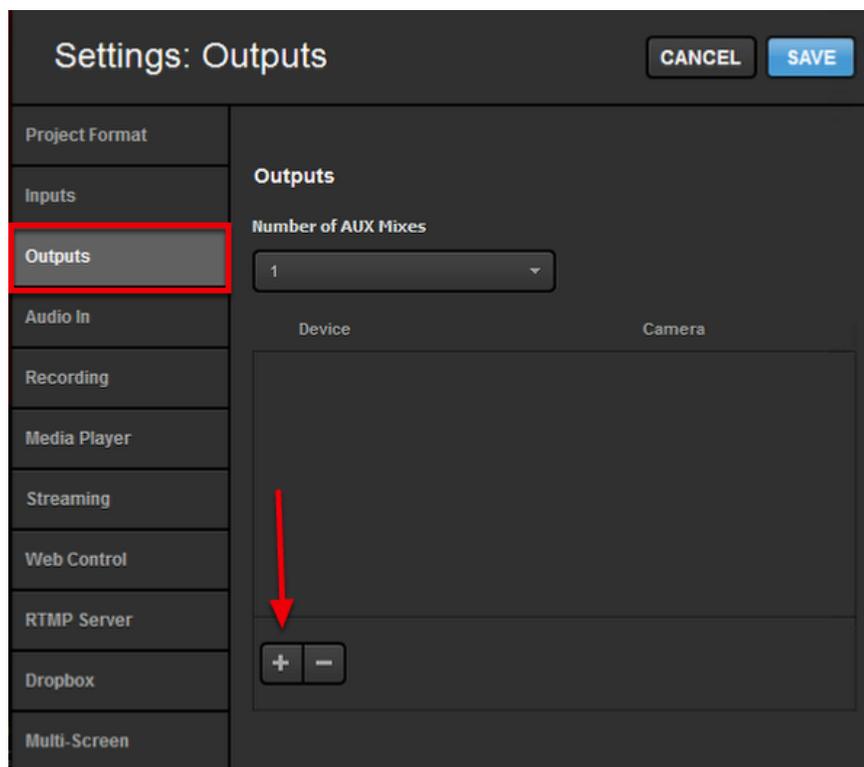
# Outputting & Recording

# Setting Up a Video Output

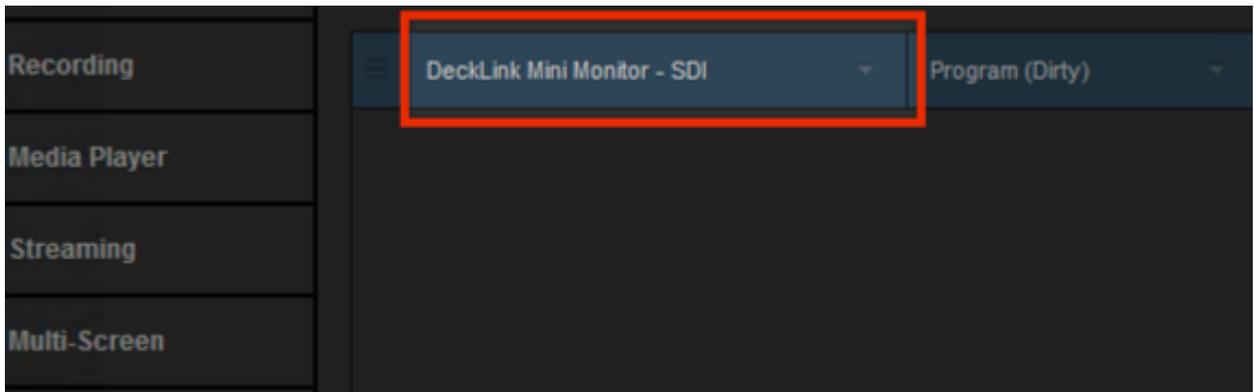
Livestream Studio allows you to send up to 25 video signal separate to different sources such as monitors, projectors, etc. This requires multiple Blackmagic Design video cards that can output a video signal.

💡 Trying to set up an NDI output? [Learn more](#).

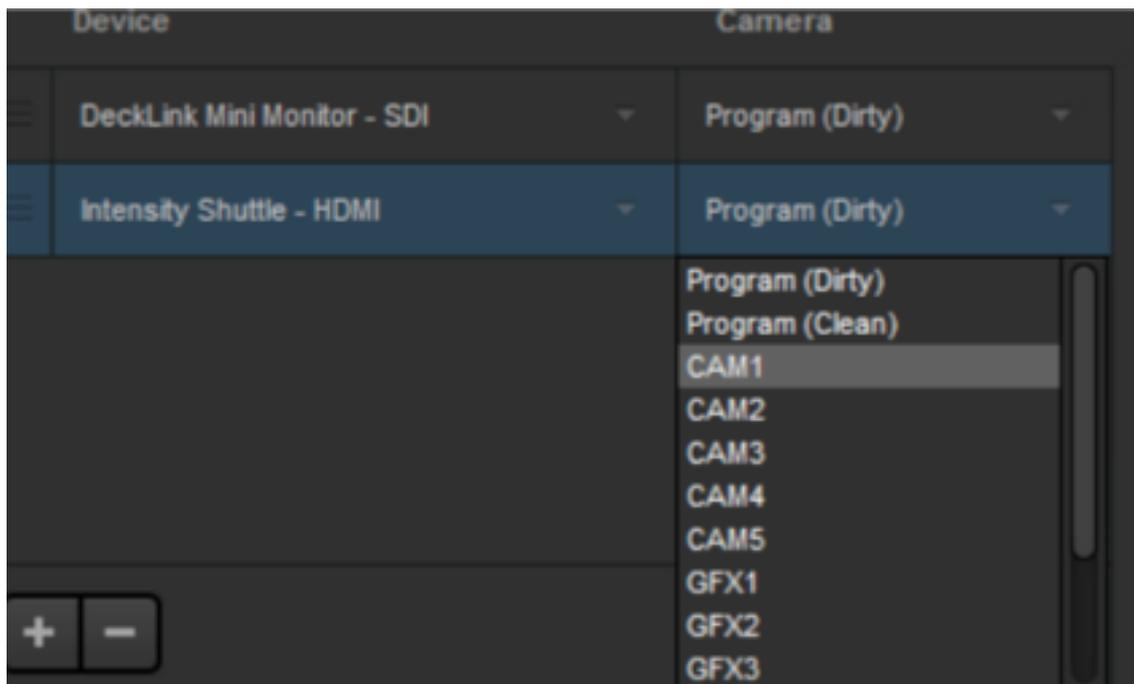
Navigate to the Outputs tab in Settings and click the + button to add an output source.



Select which device will be used for the output (Studio hardware products such as the HD550 have the DeckLink Mini Monitor pre-installed).



Next, select which source will be output through each device. You can output your Program feed or any other input source (e.g., CAM1).



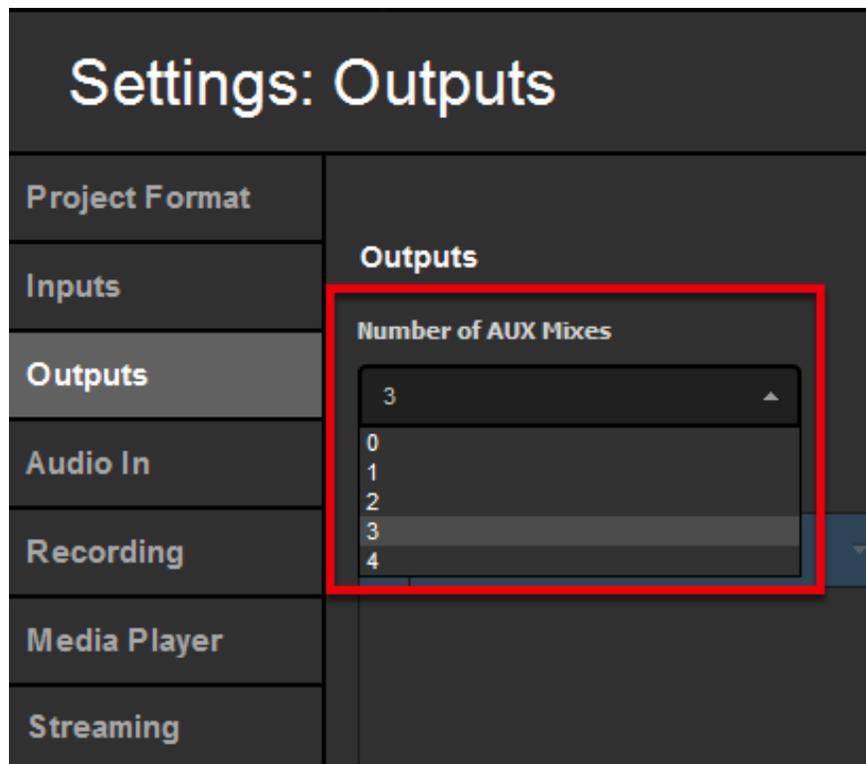
When you have finished setting your output(s), click **Save**. You will now see the selected source(s) being sent to your monitor, projection system, etc.



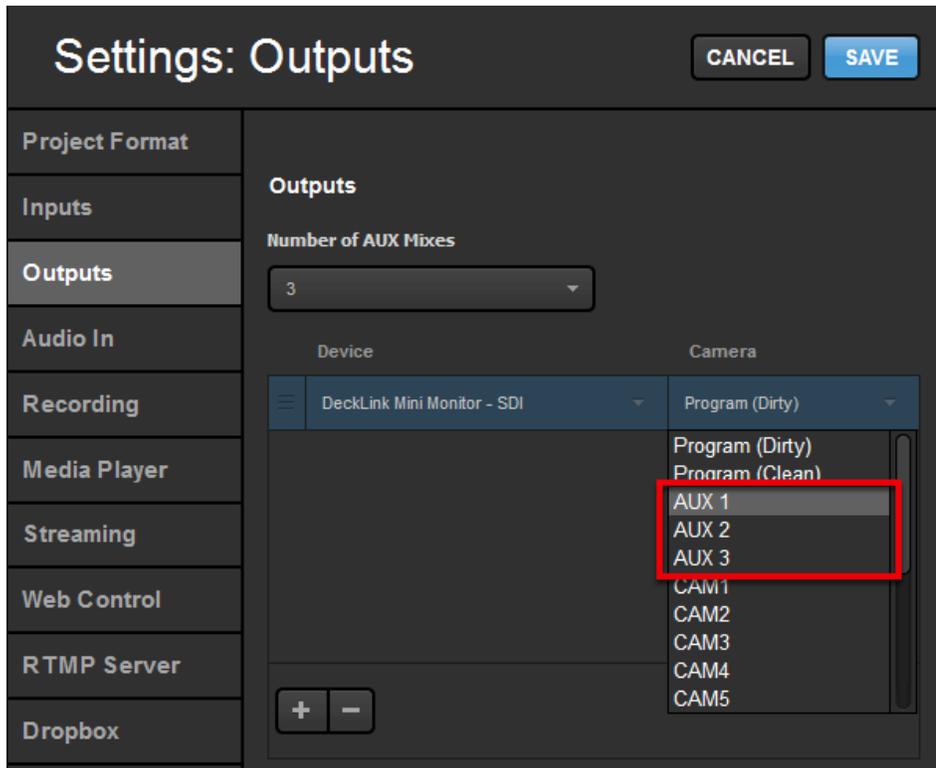
# Configuring Auxiliary Outputs

Livestream Studio gives you the ability to choose up to four auxiliary output mixes. This can be helpful for changing picture-in-picture and output sources (monitors, projectors, etc.).

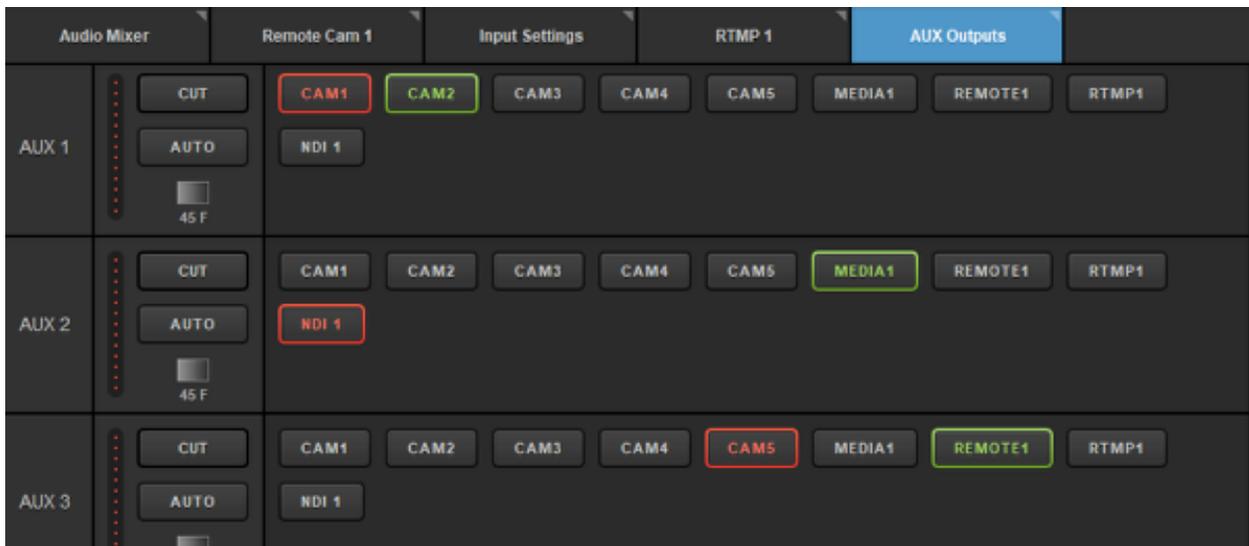
Navigate to settings, and enter the Outputs menu. Under Number of AUX Mixes, select how many auxiliary outputs you want to use.



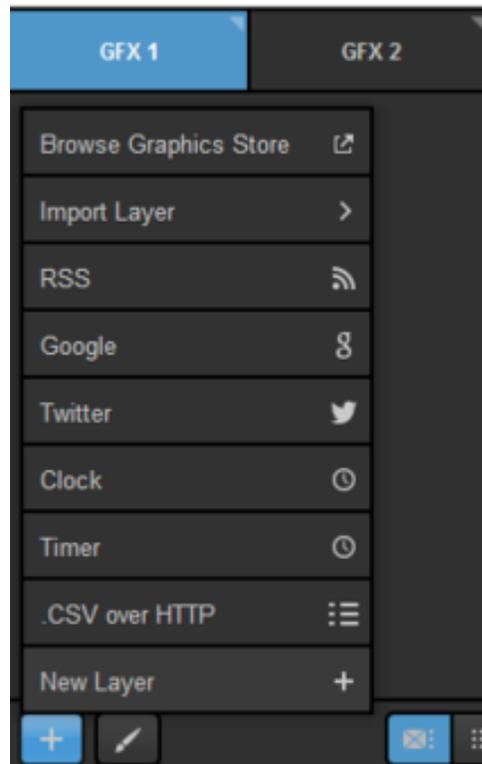
You can set any output to use an auxiliary source, which is helpful if you intend to change the sources shown to your onsite viewers.



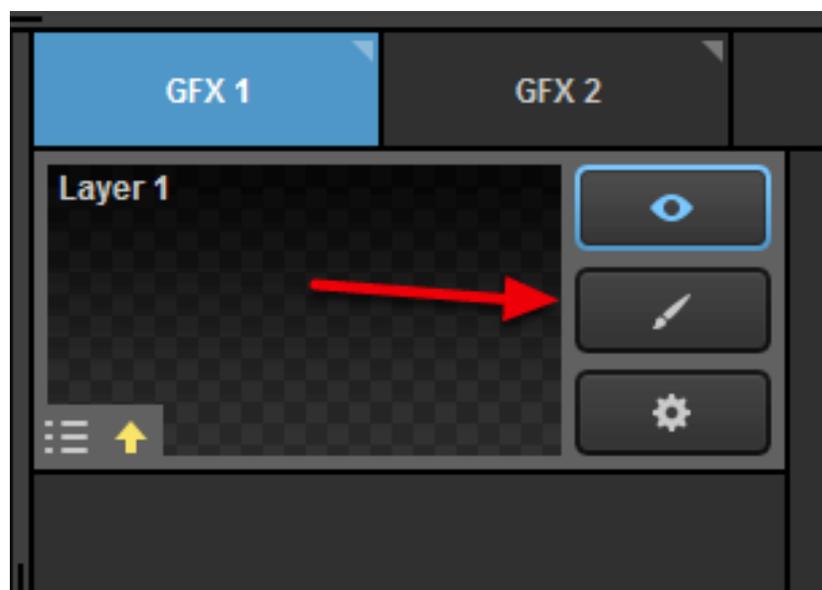
When you set your auxiliary outputs, you should see an AUX Outputs tab appear in the lower right section. Each auxiliary output includes all camera inputs, graphics tracks, media bins, remote cameras, RTMP inputs, and NDI inputs.



To utilize this with your picture-in-picture graphics, go to a Graphics tab (e.g., GFX 1) and create a new layer.



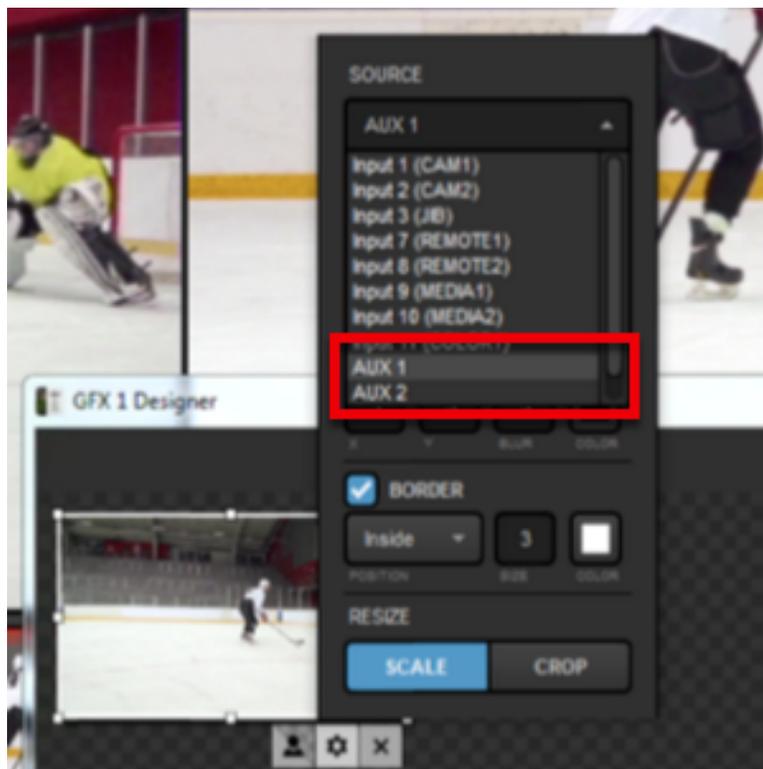
Click the Paintbrush icon.



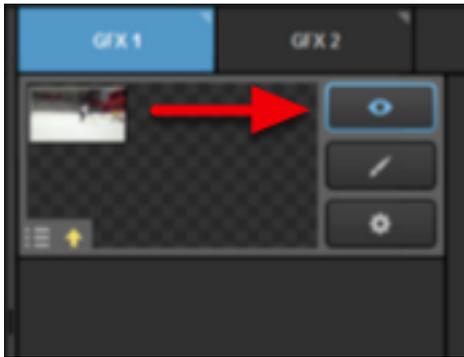
The GFX Designer will open. Click on the Video button to bring a video source into your graphics layer.



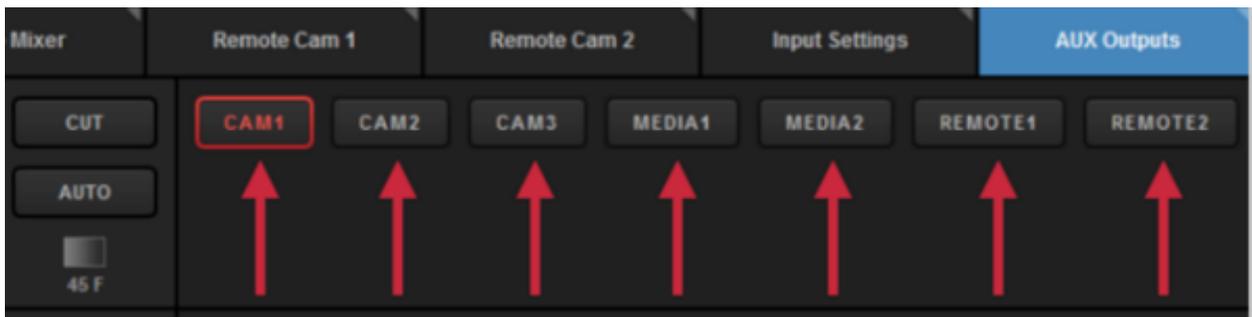
Click on the dropdown menu to change any settings, including your video source. Note that AUX sources are now among your options.



When you have finished setting your video source in the graphics layer, close out of the GFX Designer and make sure that layer is visible.



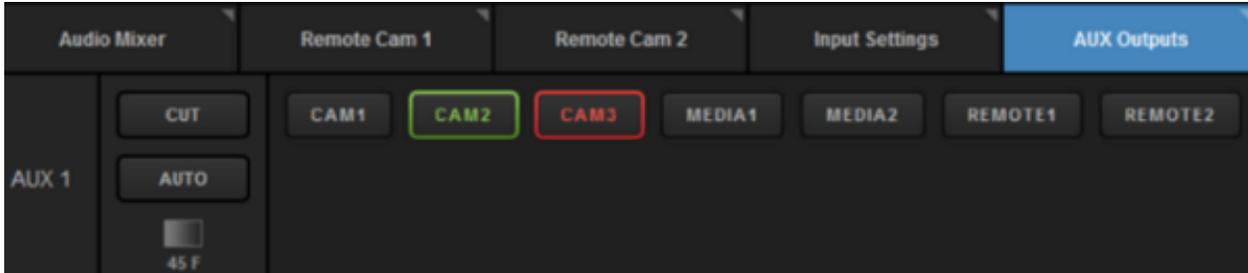
Navigate to the AUX Outputs tab of the AUX source you are using. Here you can select which of your inputs you want to see in the AUX output. You can choose among camera inputs, media sources, remote cameras, and NDI sources.



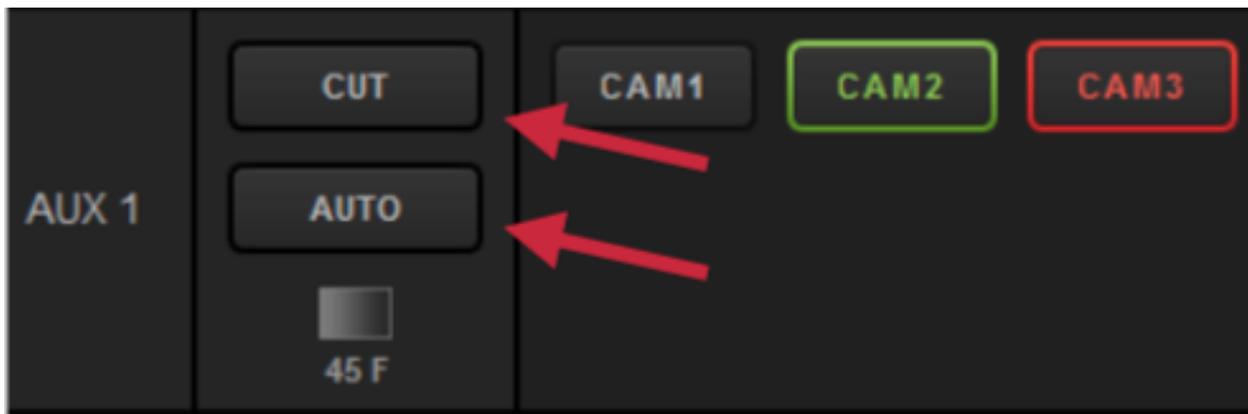
Push the graphics channel to Program to allow you and your viewers to see it.



To change the source in your graphics overlay, go back to the AUX Outputs tab and click on the desired source. That source will turn green, indicating that it is being previewed.



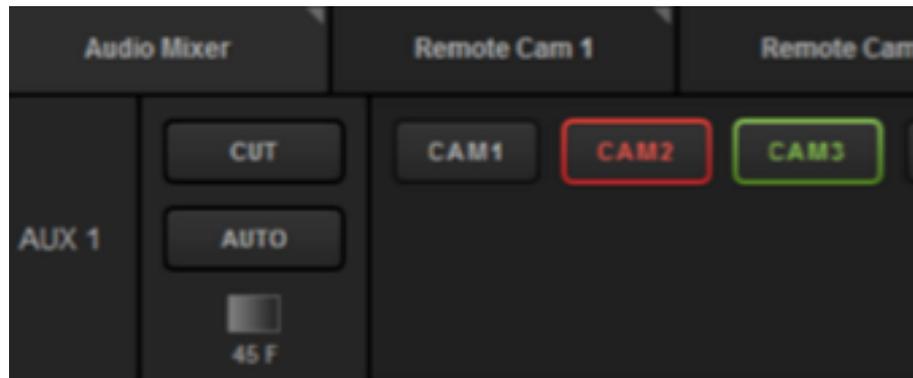
To switch sources, use either the Cut or Auto button to the left.



💡 If you click on the transition type under Auto, you can choose both the type and speed of the transition used for each AUX source.



Click a transition control and the AUX Outputs tab will indicate that the new source is being pushed through that auxiliary source by highlighting that source in red.

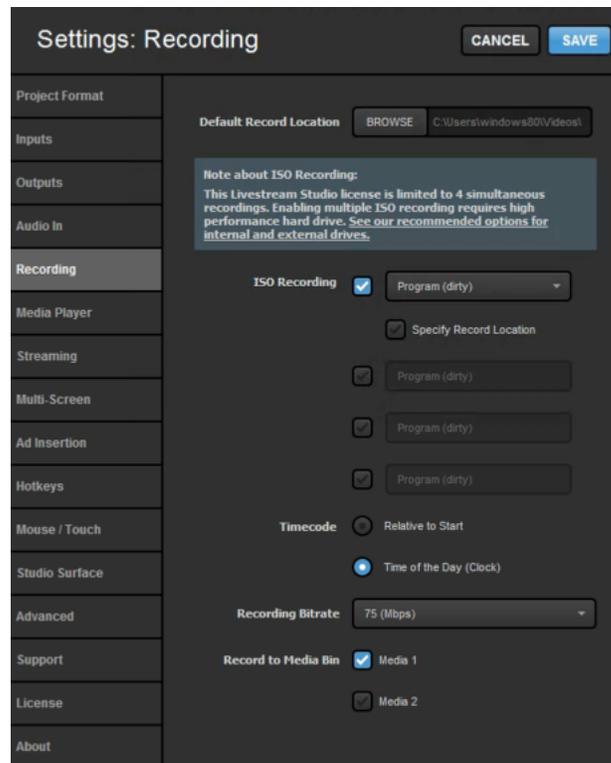


You will also see the change in your graphics overlay in Preview and Program.

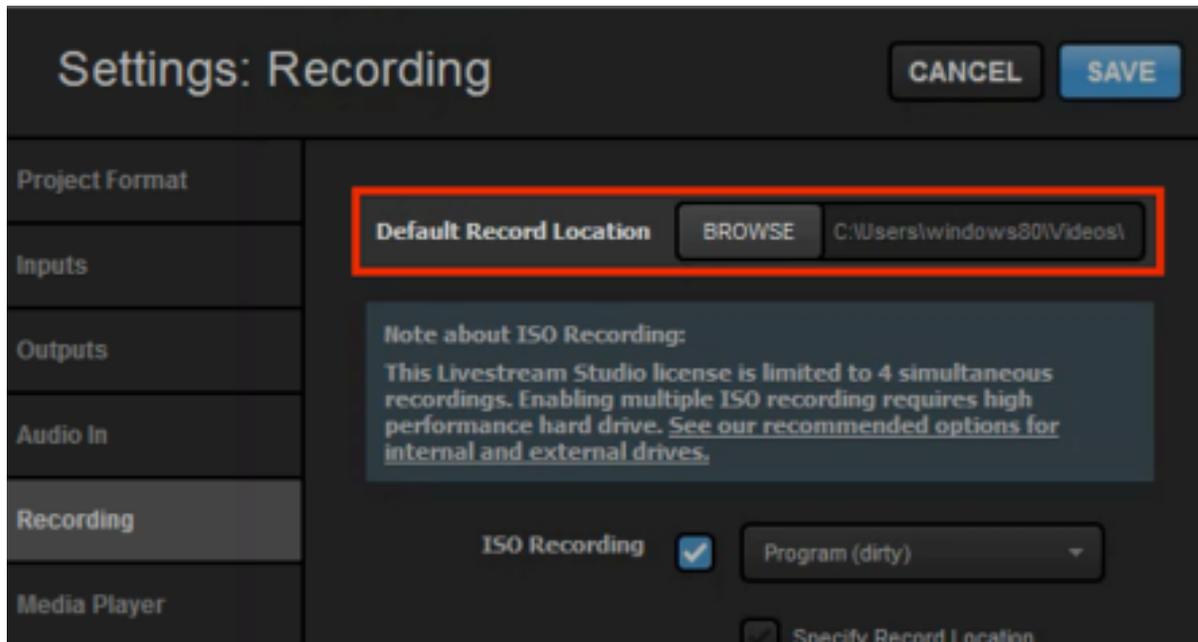


# Set up High-Resolution & ISO Recordings in Livestream Studio

In Livestream Studio, click the gearwheel icon in the upper right hand corner to access settings, then select the Recording tab.



**Default Record Location:** Selects the location where the Livestream Studio recordings will be saved by default--typically the "Videos" folder in Windows and the "Movies" folder in Mac (beta). Click the **Browse** button to select a different default record location.



ISO Recording: ISO is an abbreviation for "Isolated". When referring to cameras in video production, this term indicates that the individual camera video signals are being isolated and recorded independently of each other and the final Program mix. These files can be used later for further editing offline or [live replay](#) during or after an event.

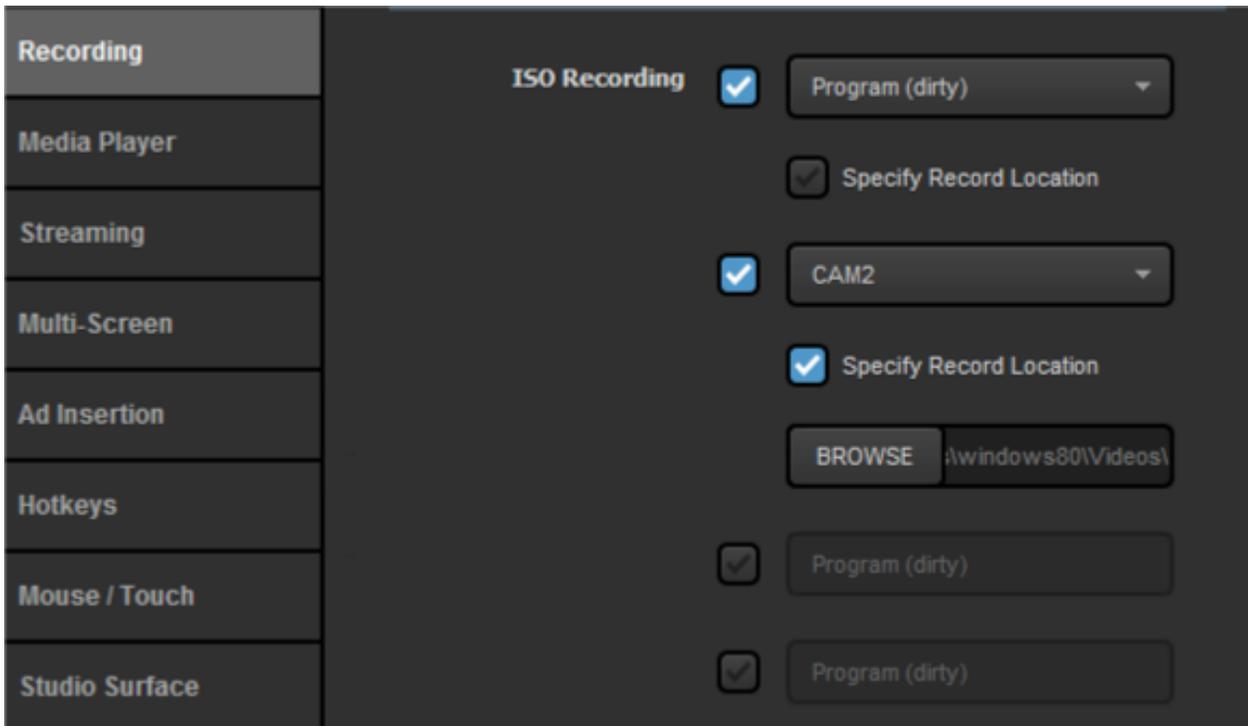
Select how many hi-resolution recordings you want to produce (up to four), and which sources you want to record. You can record Program (dirty), Program (clean), and any other source in your multi-view. We have more recommendations regarding [ISO recordings](#).

Along with the single cameras, you can also record the Program output in 'Clean' or 'Dirty' mode.

- Clean: Without graphic overlays
- Dirty: With graphic overlays

By default, the selected option is Program (dirty).

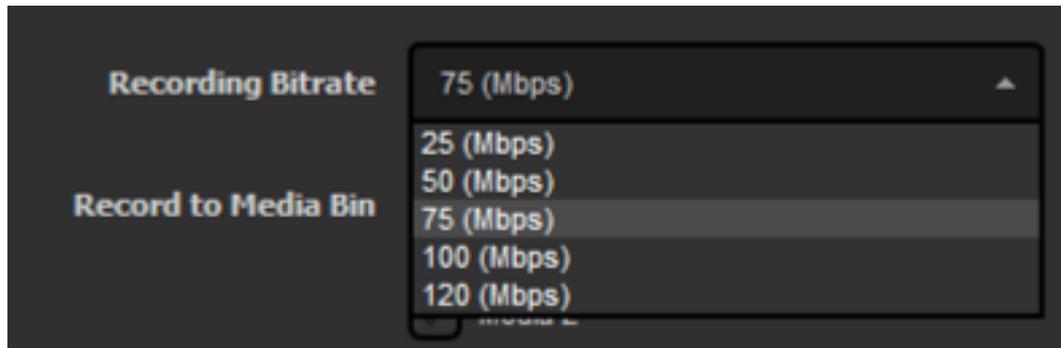
Specify Record Location: As a best practice, choose different locations for each ISO recording. This can help resolve any hard drive performance related issues when recording multiple ISOs by spreading to multiple HDDs.



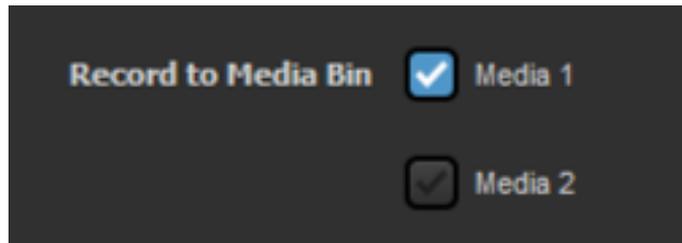
Timecode: You can select how you want timecode to be presented. This is meant for users who intend on editing the recordings together and have a preference on which type of timecode to use when matching up the sources.



Recording Bitrate: Chooses the quality your recording will be in. Higher bitrates will be higher quality, but also produce much larger files.

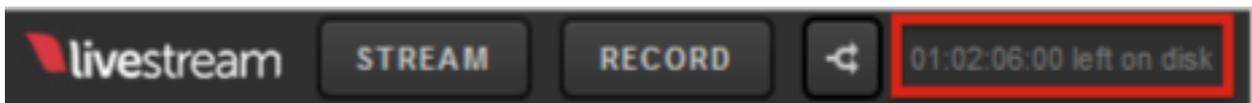


Record to Media Bin: When a recording begins, it will immediately be added to the selected media bin. Both bins can be selected or deselected simultaneously. This is necessary in order to use the basic replay feature.

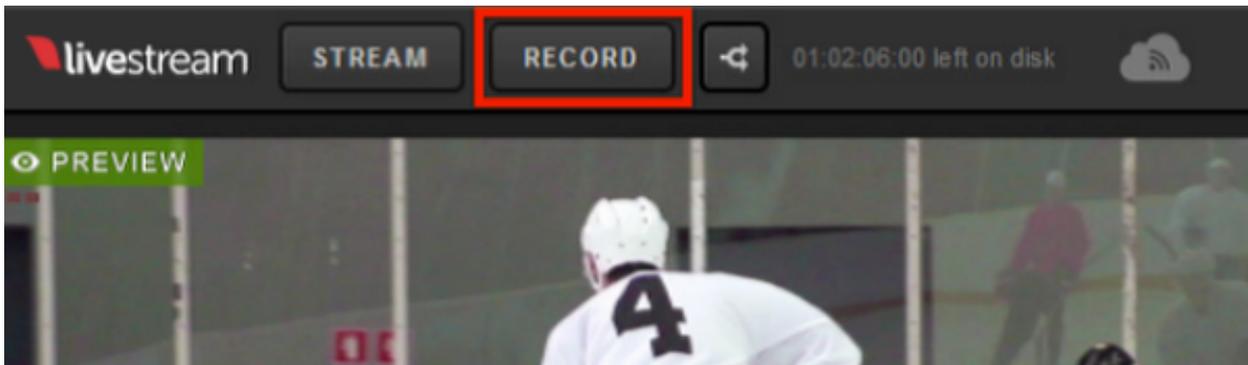


Click **Save** and you will be able to start recording.

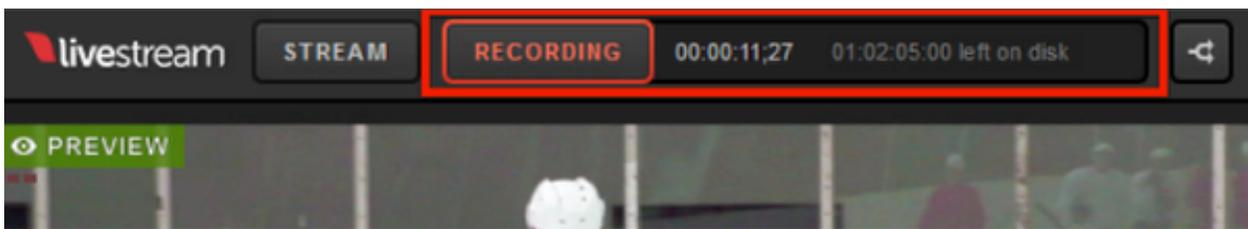
Available recording time is dictated by available internal disk space. If necessary, external devices with transfer speeds of at least 50MB/sec may be used for recording, though performance may vary. Make sure your external device is connected and choose save to that location in the Recording settings. Studio also lets you know how much space is remaining on your hard drive.



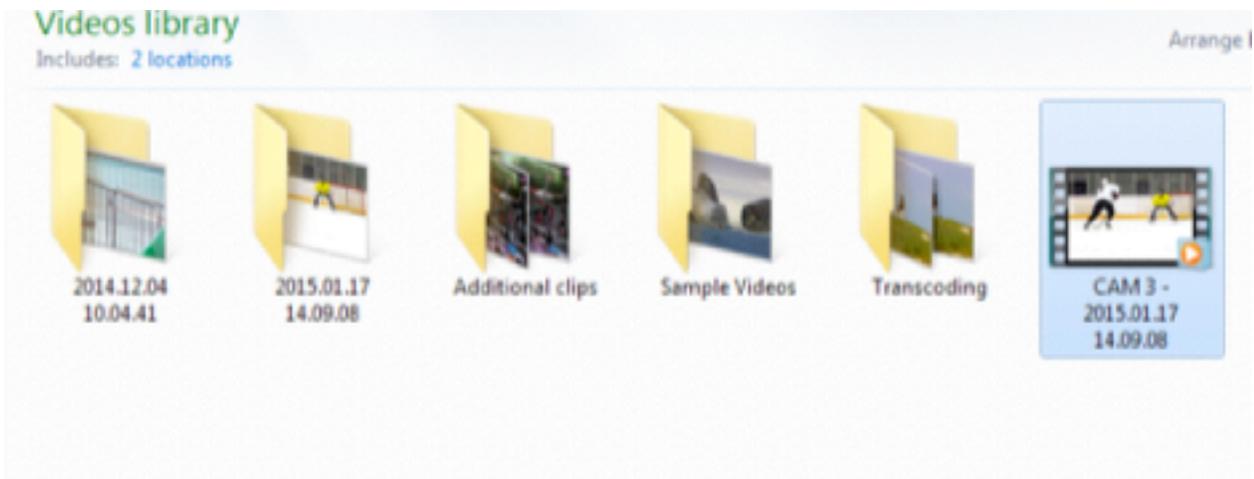
When you are ready to start recording, click **Record** in the upper right corner.



The Record button will turn red and change to Recording. You can also track your recording time and hard drive space.



When you are ready to stop recording, press the Recording button at the top of the interface. All recorded files will be located where you specified in the Recording settings.



# ISO Recording Best Practices

Below is information regarding internal and external hard drive recommendations for producers who want to do multiple, simultaneous ISO recordings.

## For owners of our series of Studio HD hardware units:

The HDD or SSD currently installed on your system have the following specs:

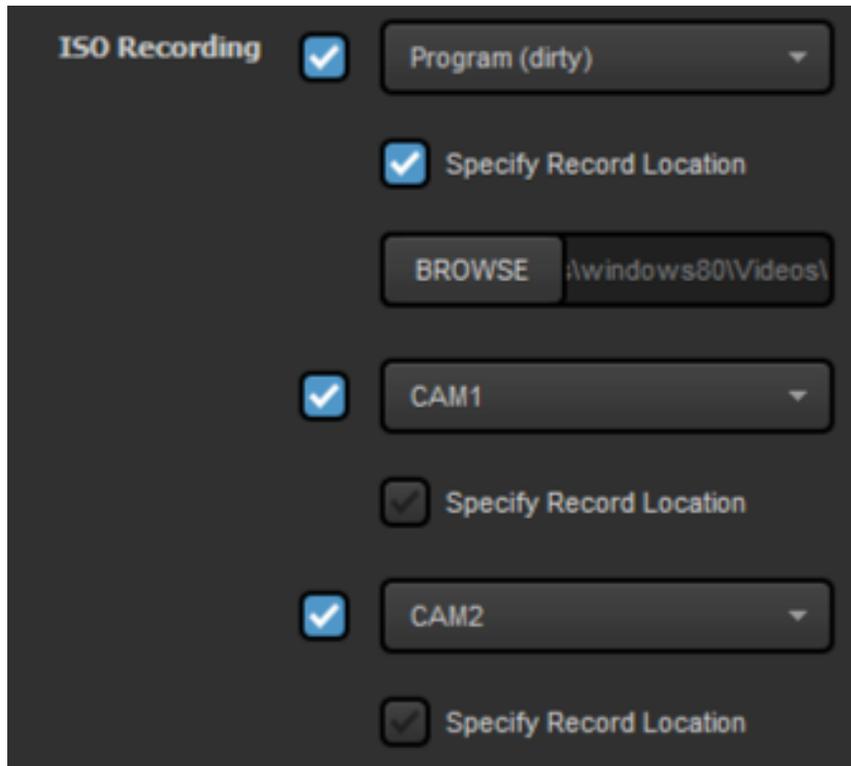
- HD31: 2TB WD BLACK SERIES WD2003FZEX 7200 RPM / SATA 2.5" Internal HDD
- HD50\*: 1 TB / 5400 RPM / SATA 3.5" Internal HDD
- HD51: 1 TB / Western Digital Red 7200 RPM / SATA 2.5" Internal HDD
- HD51 4K Edition: Samsung 850 EVO 2TB SSD
- HD500\*: 500 GB/ 5400 RPM / SATA 2.5" Internal HDD
- HD510\*: 1 TB / Western Digital Red 7200 RPM / SATA 2.5" Internal Hard Drive
- HD550: 1 TB/ Western Digital Red 7200 RPM/ SATA 2.5" Internal Hard Drive
- HD550 4K Edition: Samsung 850 EVO 2TB SSD
- HD900\*: 2 TB / 5400 RPM & 500 GB / 5400 RPM SATA 2.5" Internal HDDs
- HD1700\*: 2 TB / 5400 RPM & 500 GB / 5400 RPM SATA 2.5" Internal HDDs
- HD1710\*: Dual quick-time front removable (2) x WD Red 1TB / 7200 RM ISO recording drives, mid-plane, access door, receiver mounting kits. 1 internal fix mounted WD Red 1TB / 7200 RM ISO hard drive & 1 internal fix mounted 120GB SSD OS / application drive.



*\*indicates a discontinued product*

[Check out the full product technical specifications.](#)

To avoid performance issues, we recommend using an external HDD via USB 3.0 as mentioned below and/or spreading the recording across multiple drives by selecting the Specify Record Location option within the Recording section of the Livestream Studio settings.



## What type of hard drive is recommended when recording ISOs?

We recommend recording to a separate HDD, either installed on the desktop system or an external HDD connected via USB 3.0, that adheres to the following specification:

- 7200 RPM
- 64 MB Cache
- Formatted NTFS (Full format)
- 2TB or larger (for longer broadcasts)

The [Western Digital Red](#) series hard drives have been tested and approved for recording 4 isolated cameras. You can pair this with a USB 3.0 HDD enclosure such as this one from [Macally](#).

I don't have a Western Digital Red series drive but my HDD meets the recommended specification:

If a Western Digital Red series drive is not available, using more than one HDD and specifying different record locations may help resolve any performance issues.



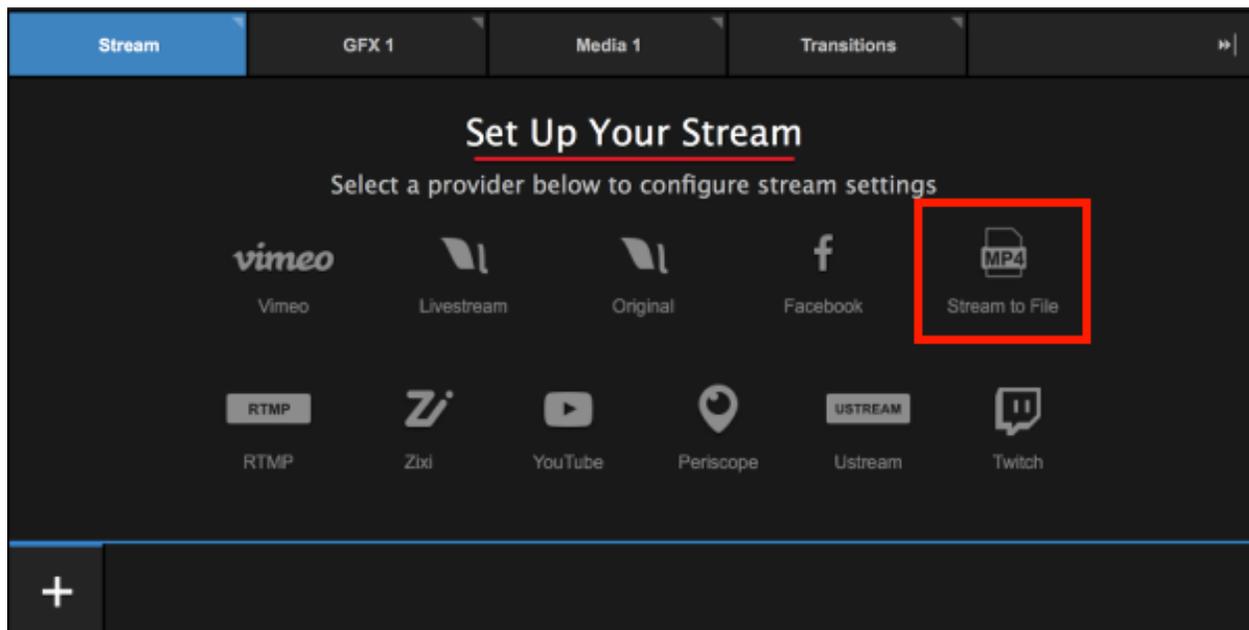
Testing done using other brand hard drives with the recommended specification have resulted in poor performance when recording 3-4 ISO cameras. Recording 2 ISO cameras performed well in these cases.

# Recording Options in Livestream Studio

Livestream Studio includes various ways to record your Program and ISO recordings. Recordings are saved in a user selected destination folder; by default, you can find the files in the Videos folder on Windows and the Movies folder on Mac (available in beta only).

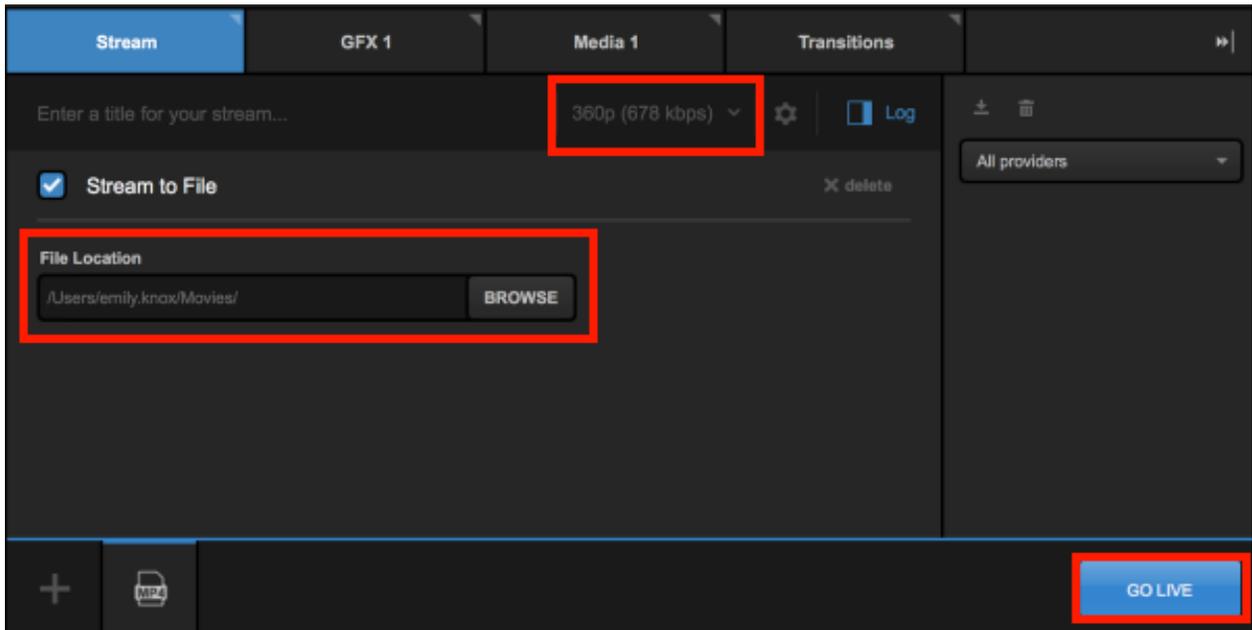
## Simple Encode

If you are just looking to record an .mp4 of your event, you can still do this via the Stream tab. Select Stream to File as your destination.



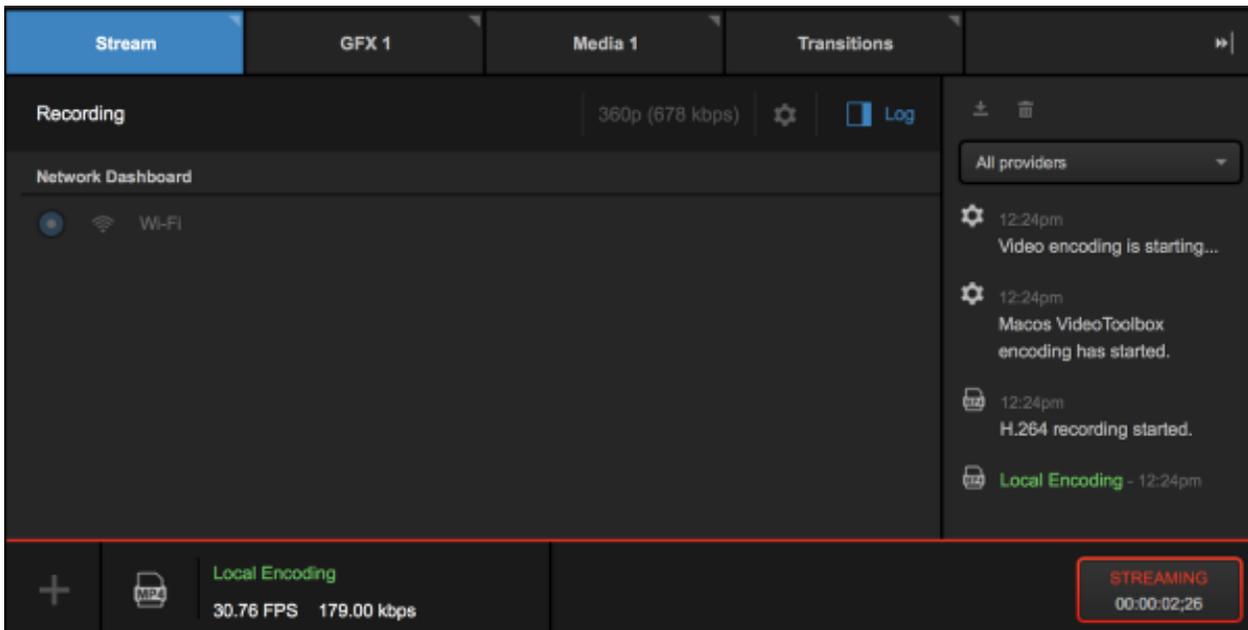
Choose the quality you wish to encode at and choose where you want to save the recording (by default it will save to the Videos folder on Windows or the Movies folder on macOS).

When you are ready to start encoding, click Go Live.



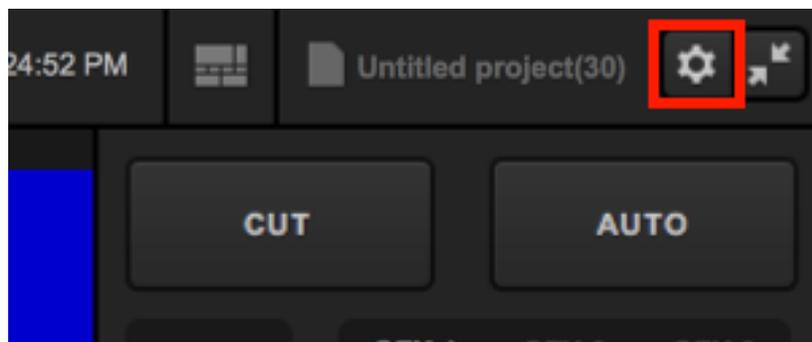
The Studio Log will indicate the encoding has started. When you are ready to stop recording, click the red Streaming button in the bottom right corner of the Stream module.

Your recording will be saved in the location you specified.



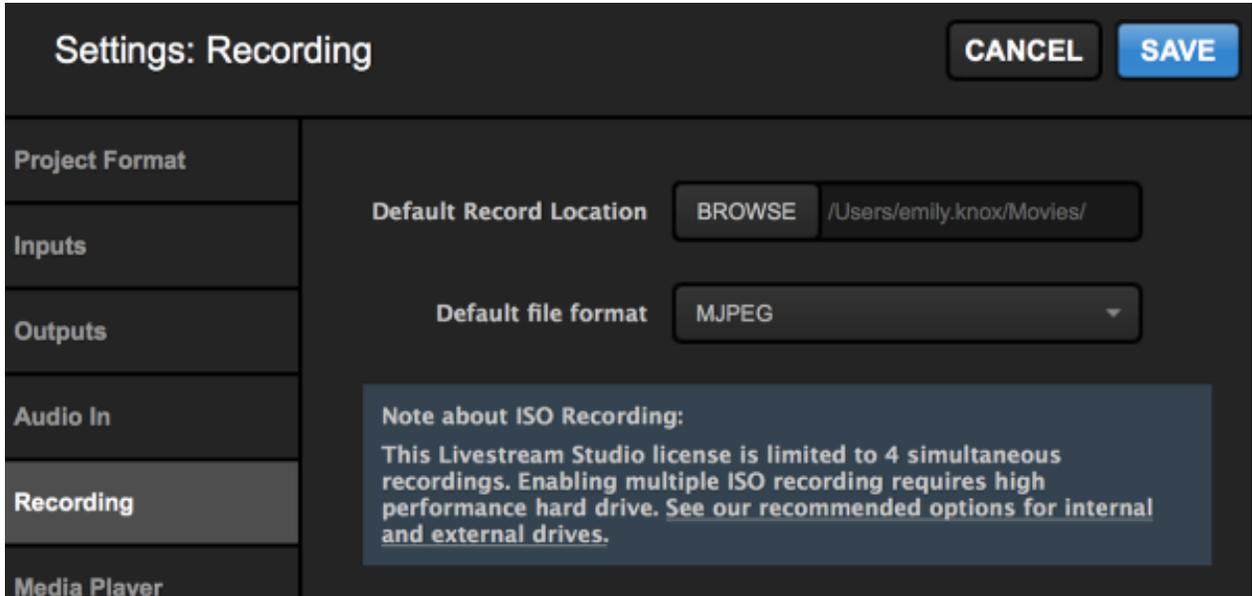
## Hi-Resolution Program and ISO Recording

If you are looking for a broadcast quality high resolution Motion JPEG recording of either your Program output or any of your isolated (ISO) video sources, navigate to Studio settings by click the gearwheel button in the upper right corner of the interface.

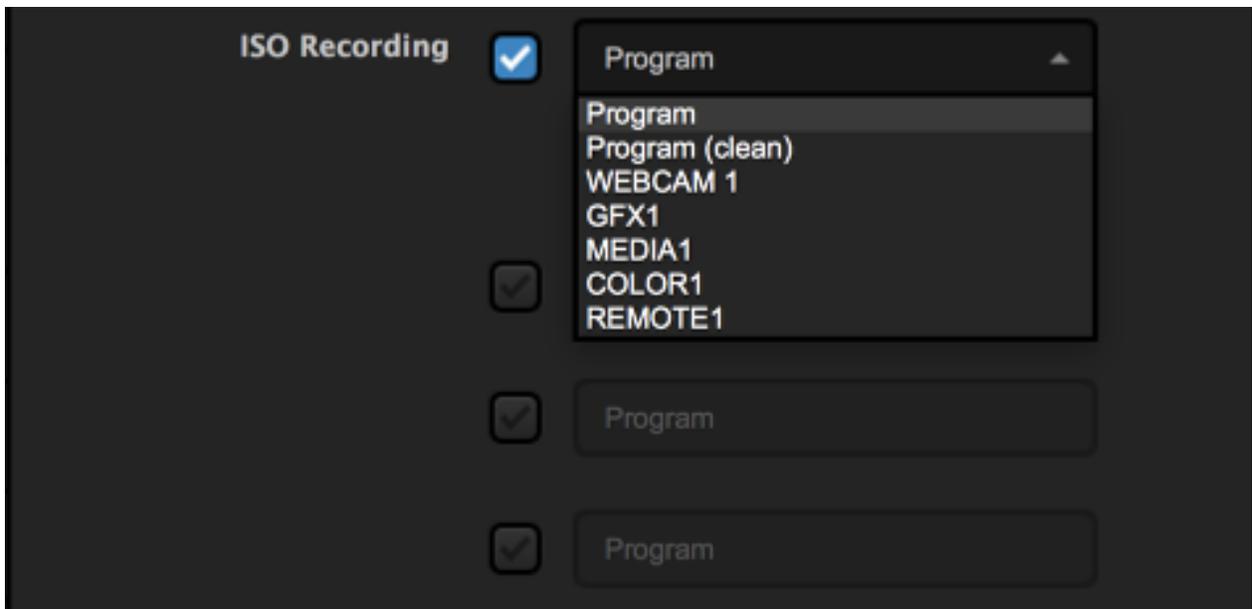


Navigate to the **Recording** tab on the left side of the menu. The default recording location is where your recordings will be saved (by default, "Videos" for Windows computers and "Movies" for macOS). Click Browse if you want all of your recordings to save somewhere else, such as an external hard drive.

The Default file format of your recording will be MJPEG by default. H.264 is covered in a section below.



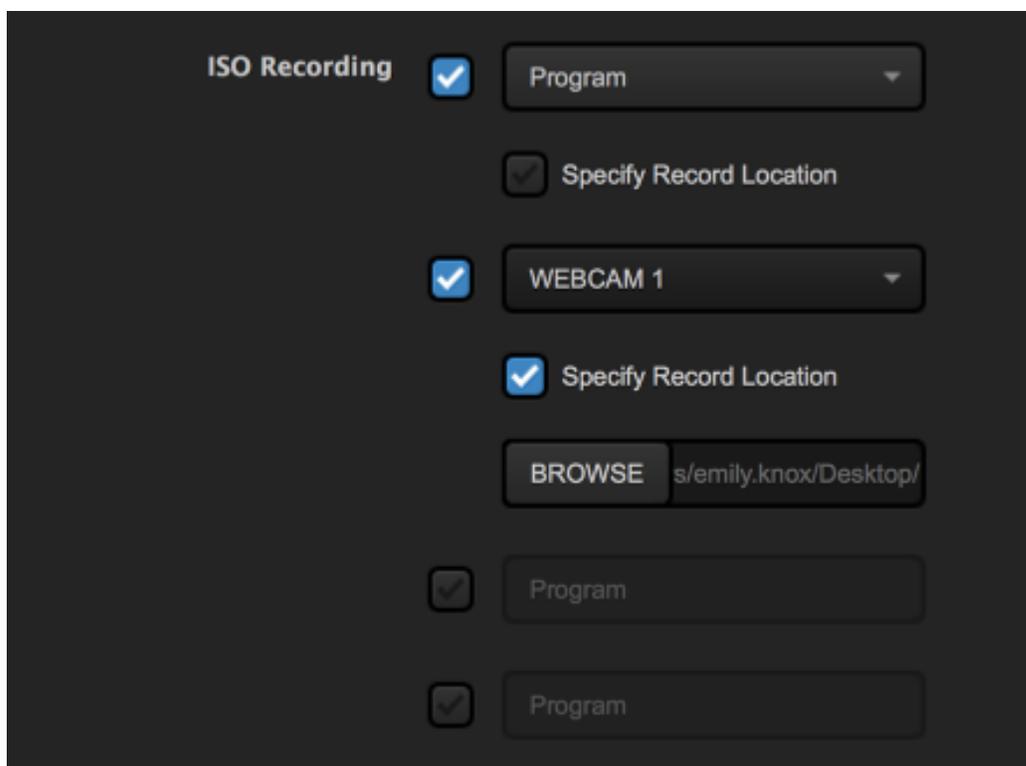
Farther down in the menu are your ISO Recording options. With MJPEG selected as the default file format, you can run up to four recordings simultaneously. This is helpful if you wish to edit your sources together in post-production or you intend to use the basic replay feature.



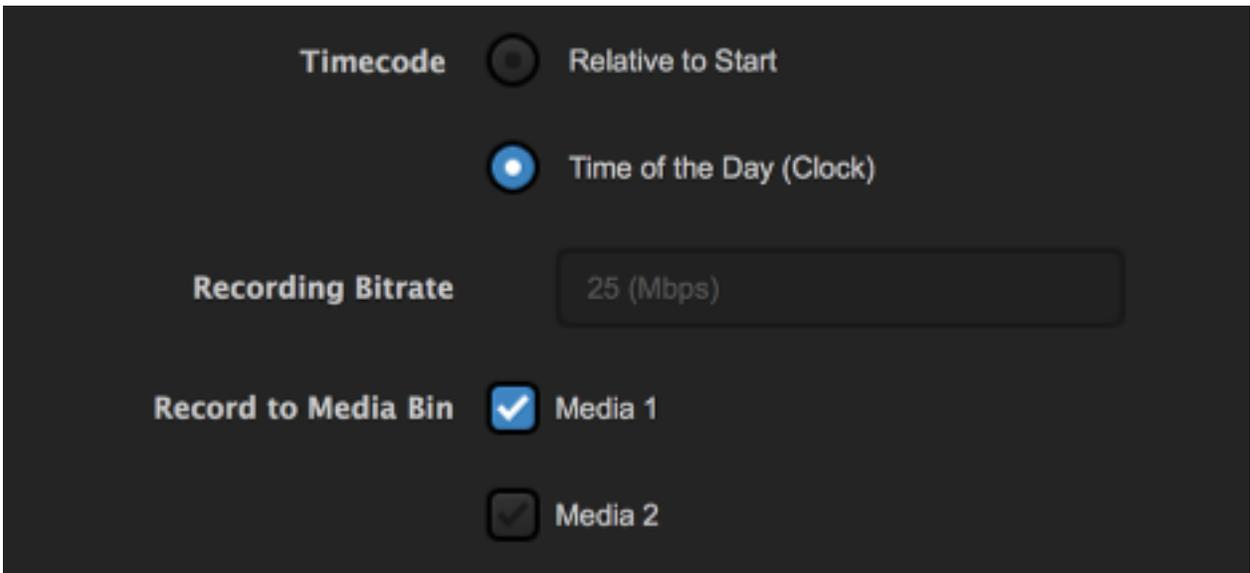
Each checkbox will activate a recording. Select which sources you wish to record.

**i** Program (clean) is your Program recording without any graphics overlays. Choose this if, for example, you need to repurpose your recording for different brands.

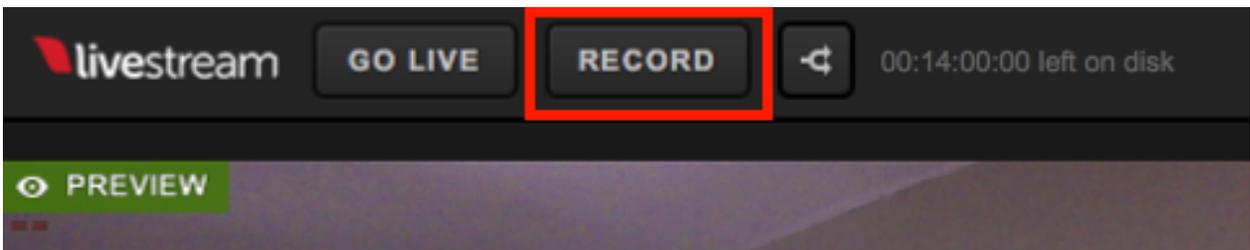
Below each source selection is the option to Specify Record Location. This allows you to save any of your recordings in a location separate from the Default Record Location configured above.



Below your ISO recordings specifications are additional settings for your recordings, include how timecode is recorded, your recording bitrate, and the ability to also save your recordings in either Media bin. Record to Media Bin is essential if you intend to use the basic replay feature.

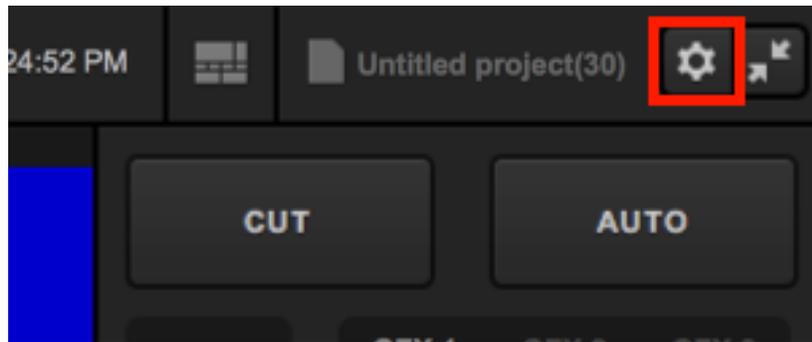


Once your recordings are configured, save your settings. To start recording, click **Record** in the upper left corner of the Studio interface; click it again to stop recording. You can find your .MJPEG in the specified recording location(s).

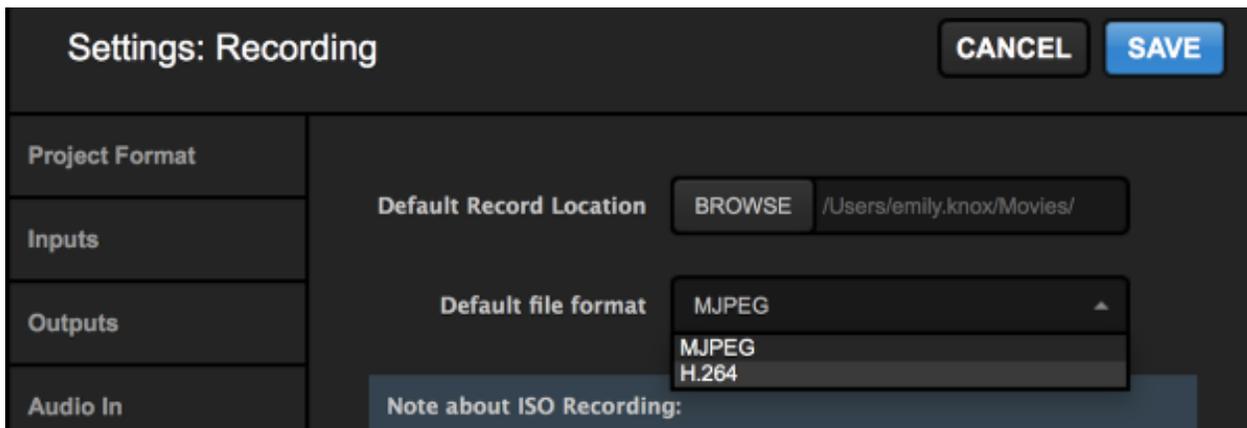


## Compressed Program or ISO Recording

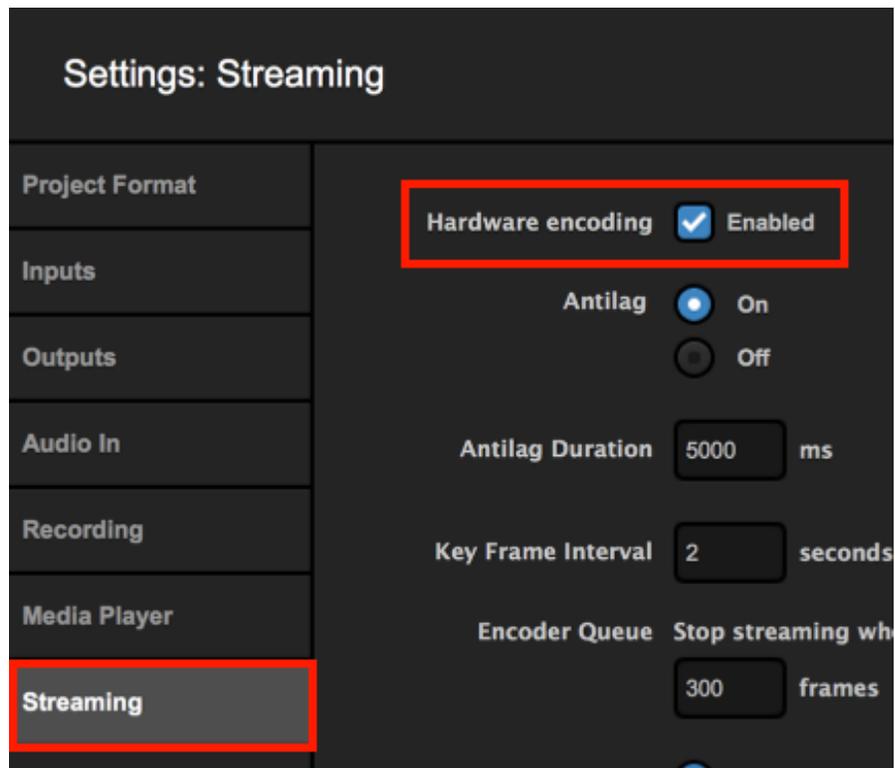
If you are operating on a system that supports [hardware encoding](#), you can also record an .mp4 file of either your Program or a single video source. Click the gearwheel button in the upper right corner of the Studio interface to enter the Settings menu.



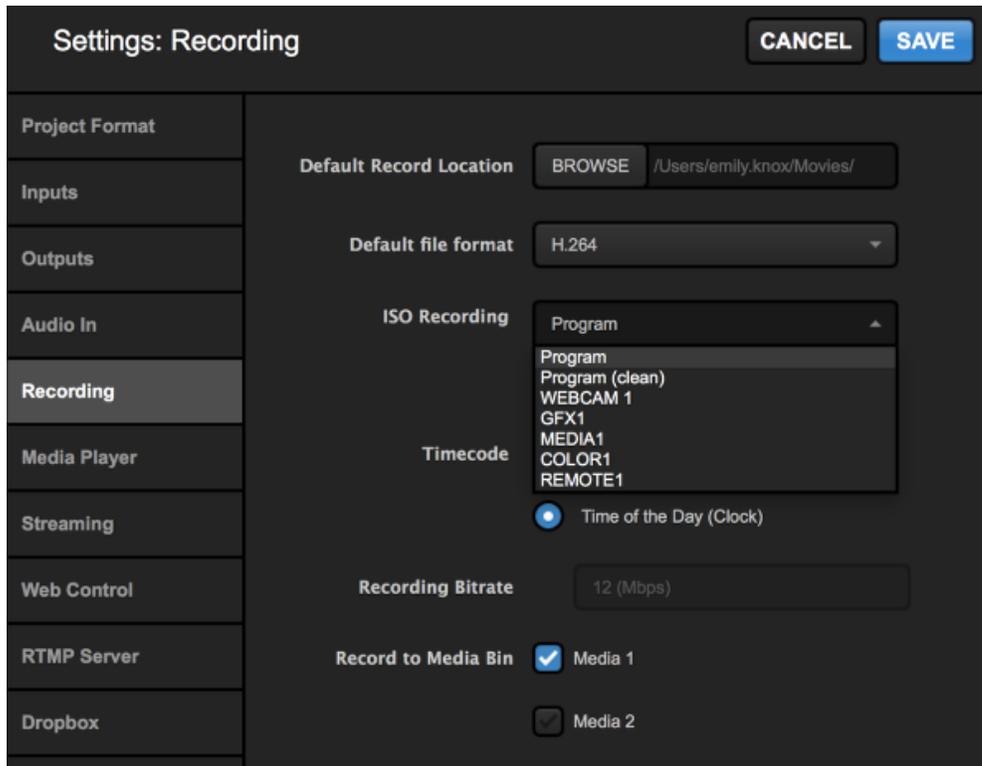
Select the Recording tab on the left side of the menu. You can change the Default file format to H.264 to create a compressed recording that consumes less hard drive space than the MJPEG recording.



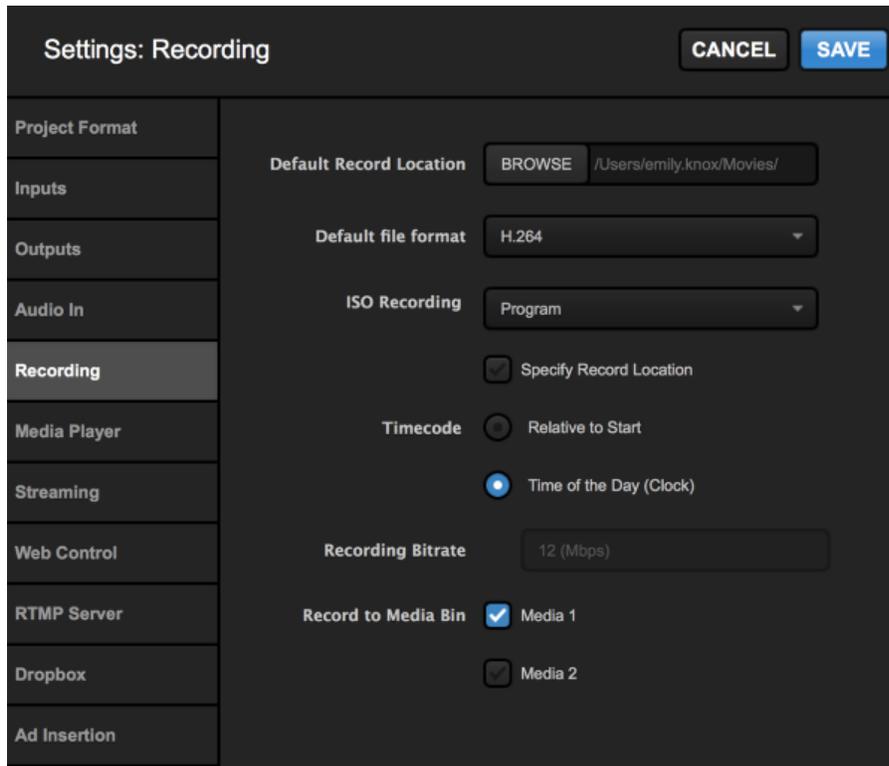
If you do not see this option, navigate to Settings: Streaming and make sure Hardware encoding is enabled. If you do not see an option for Hardware encoding, then your system does not have the proper hardware installed to support it.



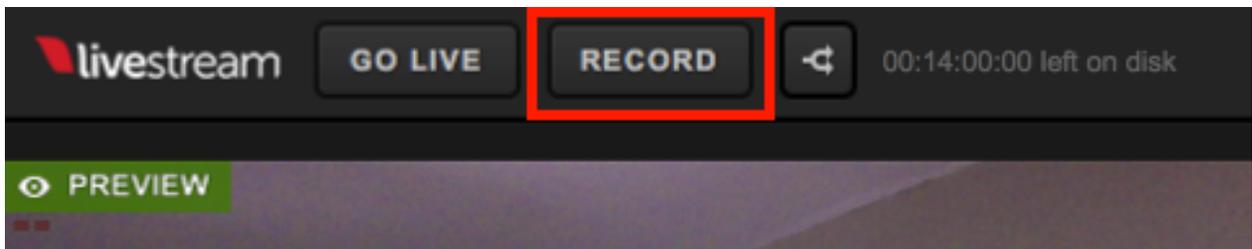
This setting only allows you to create one ISO recording, as opposed to four hi-resolution recordings. Choose which source you would like to record.



You can specify a record location that is different from the default setting by checking Specify Recording Location. In addition, you can configure which timecode you prefer, recording bitrate, and whether to also record your source into the Media Bin (essential if you plan to use the Basic Replay function).

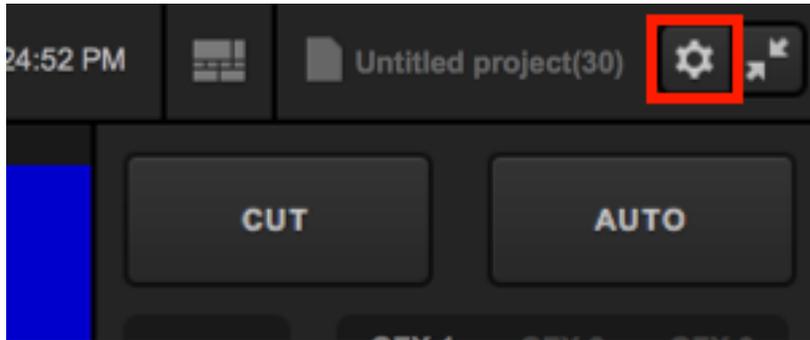


Save your settings. When you are ready to start recording, click Record in the upper left corner of the Studio interface. You can find the .mp4 file in your specified record location.

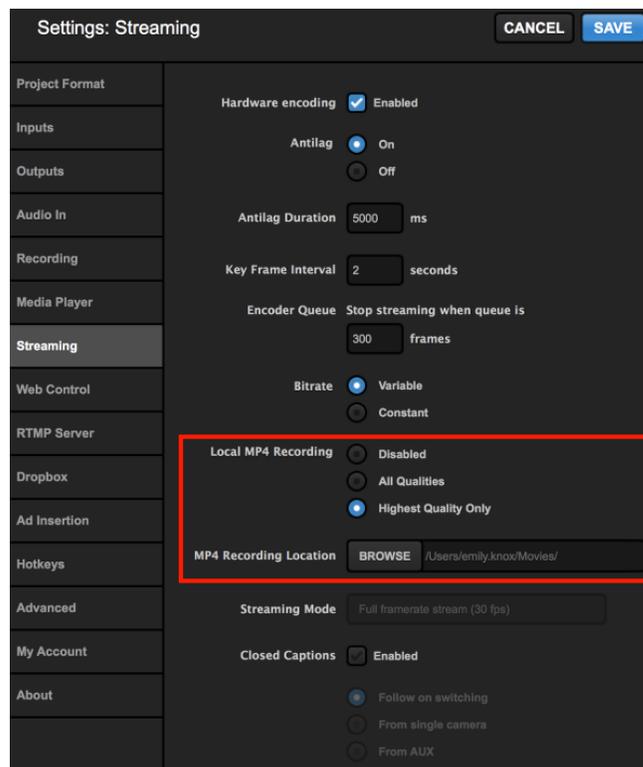


## Backup Recording

When you stream to any provider, Studio will by default save a backup .mp4 recording of your Program to your hard drive. You can change these settings by clicking on the gearwheel button in the upper right corner of the Studio interface.



Navigate to the Streaming tab. Towards the bottom you will see settings for Local MP4 Recording and MP4 Recording Location.



We recommend leaving **Highest Quality Only** selected, as this will recorded only the file of the highest selected bitrate when you configure your stream. If you choose **All Qualities** and select a multi-bitrate streaming quality, you system will record separate files of each quality, which can tax your CPU.

Unless you are also recording separately using the methods described above, we do not recommend disabling the local recording.

By default, the **MP4 Recording Location** will be either the Videos folders on Windows or the Movies folder on macOS. You can click **Browse** to choose a different location, such as an external hard drive.

Be sure to save your settings.

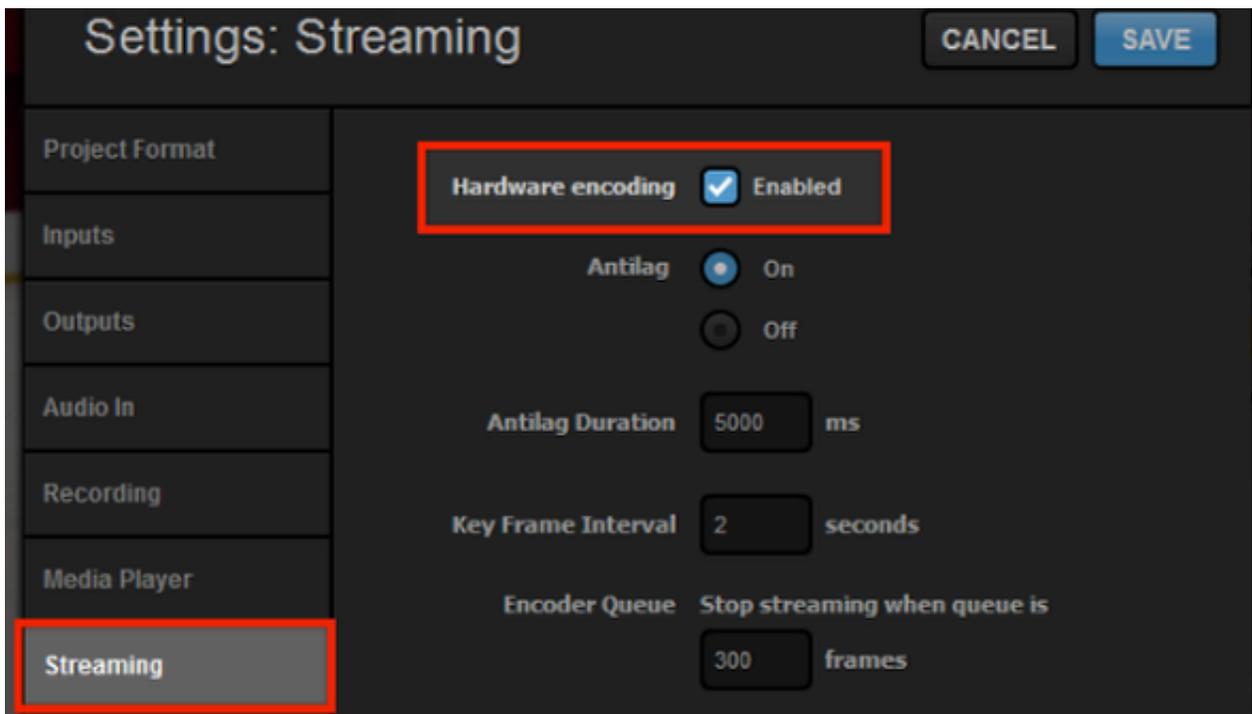
# Streaming

# Choose a Streaming Quality in Livestream Studio

Livestream Studio has more flexibility and streaming bitrate options than ever before. These include the ability to stream in 1080p, 4k, and custom bitrates.

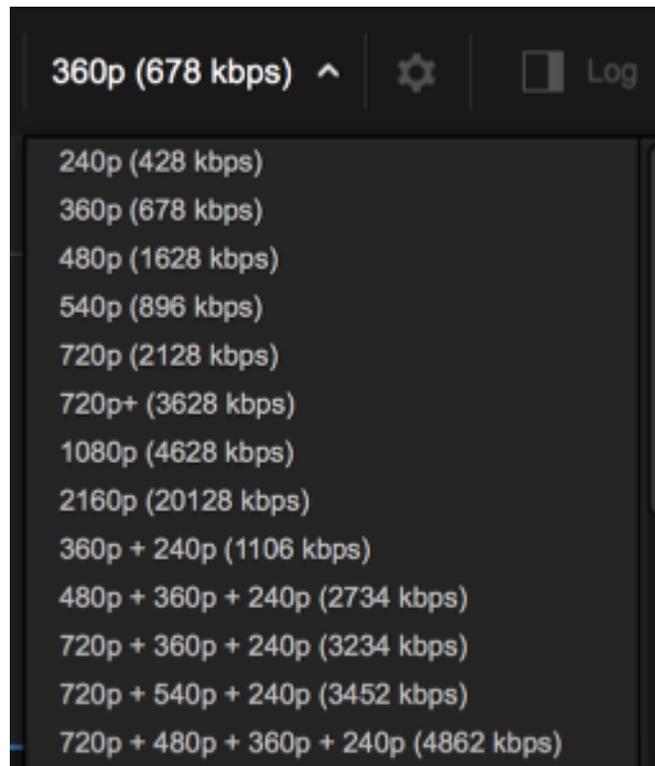
In order to see the highest quality options, you must have [hardware encoding](#) enabled on your Studio system by going to your Settings > Streaming.

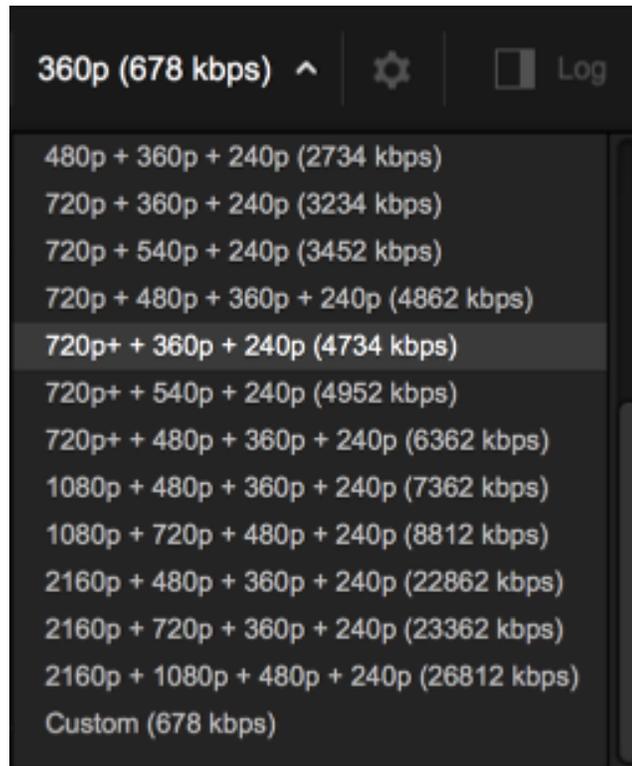
This means your computer must have either an [Intel Processor](#) or [NVIDIA card](#) installed that supports this feature. Computers that do not have these will not see the hardware encoding option and have a more limited selection of streaming bitrates available to them.



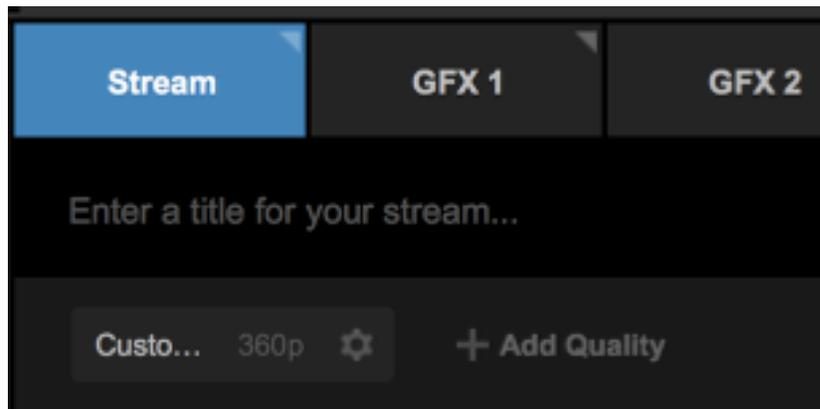
After saving your settings, navigate to the Stream tab in the lower portion of Studio.

After configuring your streaming providers, open the Stream Quality dropdown menu in the upper right corner of the Stream module; the lower qualities will be listed first with higher, multi-bitrate qualities populating below. Each quality lists the resolution(s) being pushed out with the average total bitrate in parenthesis.

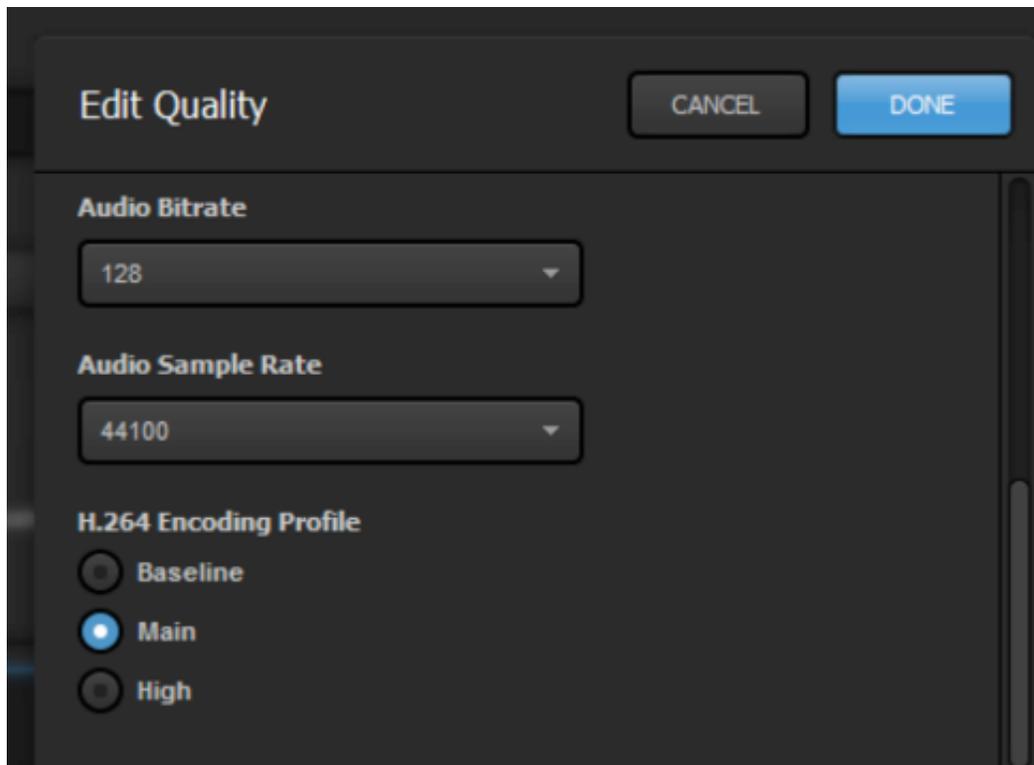
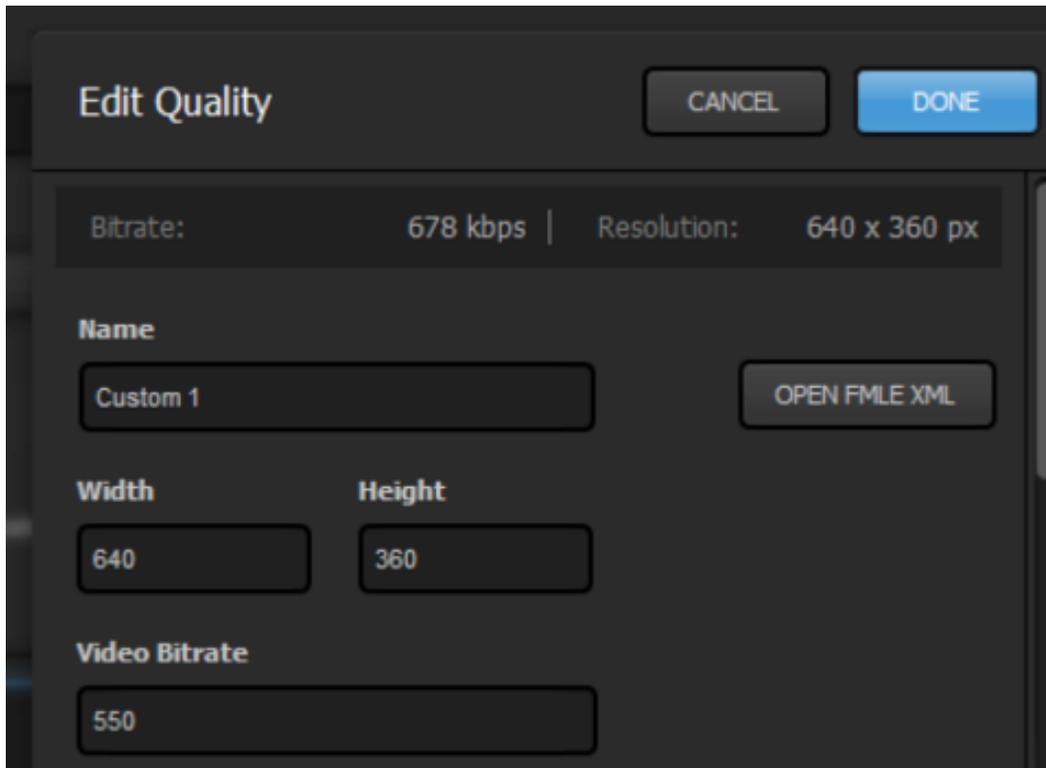




Selecting Custom allows you to configure your own bitrate in case none of the presets suit your needs. Click the corresponding gearwheel to open up the bitrate settings.



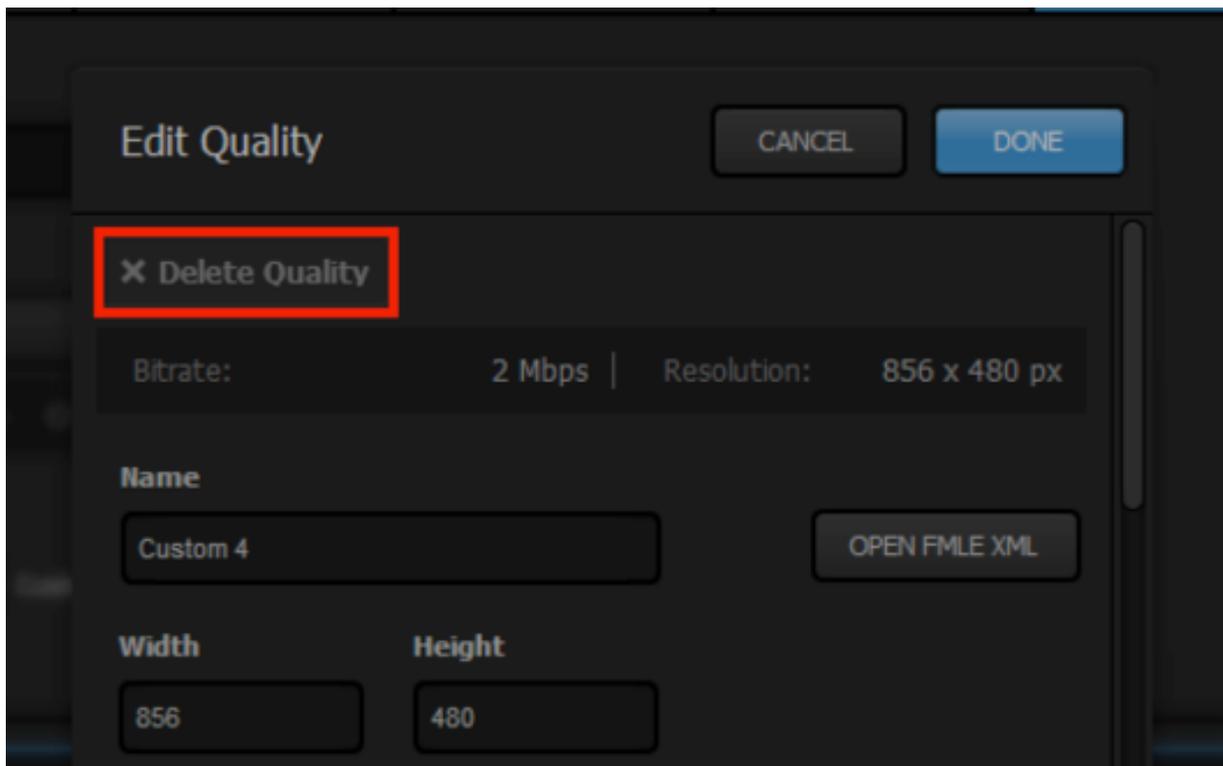
Choose a name for this particular quality (e.g. High), set the width, height, video bitrate, audio bitrate, audio sample rate, and encoding profile. Once you have configured the settings, click Done.



You can add up to four custom bitrates by clicking Add Quality. Each quality can be edited individually by clicking the corresponding gearwheels.



You can remove a quality by going into its Edit Quality menu and selecting Delete Quality.



## What's the Best Quality for Me?

There are two factors to consider when choosing a streaming quality: Network Upload Speed and CPU.

Upload speed is easier to determine, especially if you are connected to a dedicated network via Ethernet. Go to [www.speedtest.net](http://www.speedtest.net) and start a speedtest. Pay attention to your upload speed results.

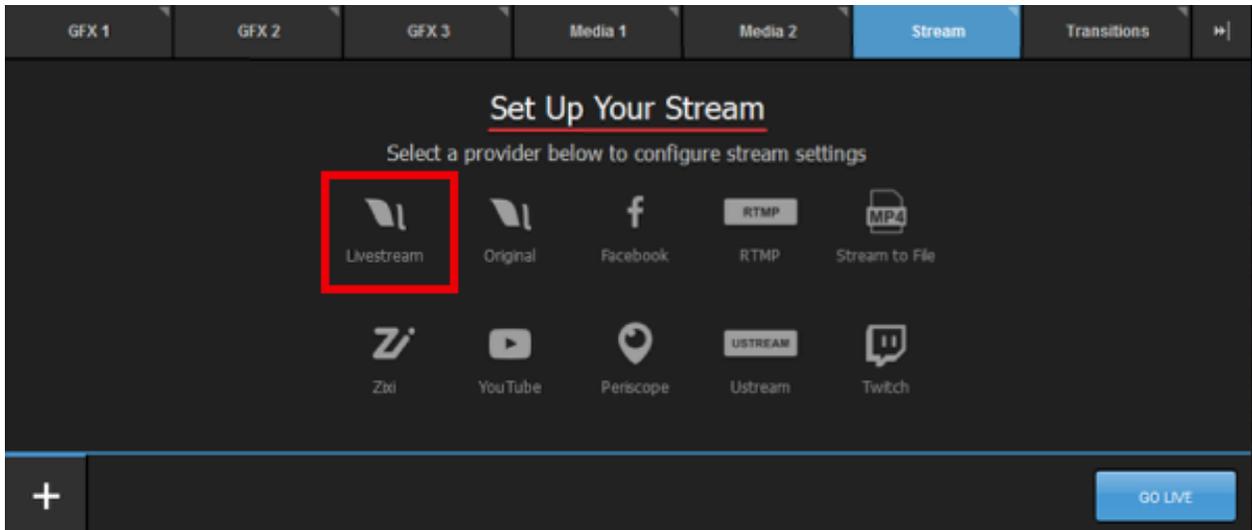
If you perform a speed test on a shared network, the results will display the upload and download speeds available for the total network, not just your device, so the numbers will be less accurate. It's best to remove other computers and devices from your network.

Our rule of thumb is to choose a quality whose total bitrate is **half** of your upload speed. This allows room for network fluctuation. For example, if your upload speed is about 10Mbps, which equals about 10,000Kbps, then you can safely assume your network can push out 720p + 480p + 360 + 240p (4862Kbps) and lower.

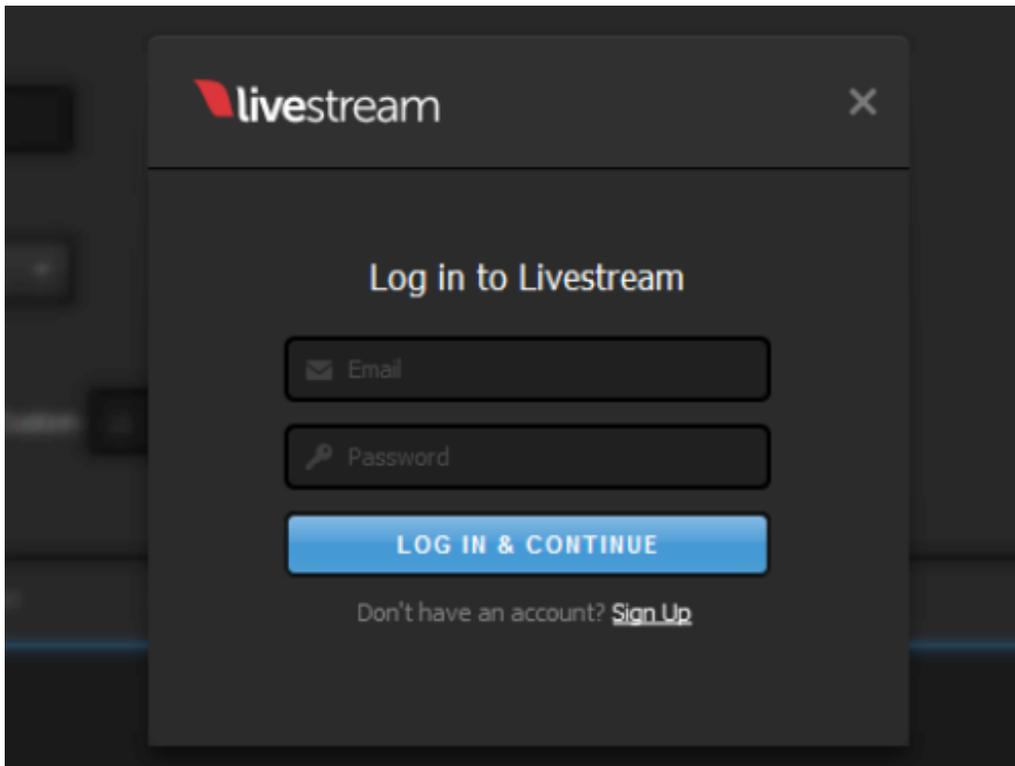
When choosing your hardware, be sure to review our [recommended hardware specifications](#), which includes expected performance benchmarks for different types of processors.

# Streaming to Livestream with Livestream Studio

Select the Stream tab in Livestream Studio. Here you will see a few providers to choose from. Select Livestream.



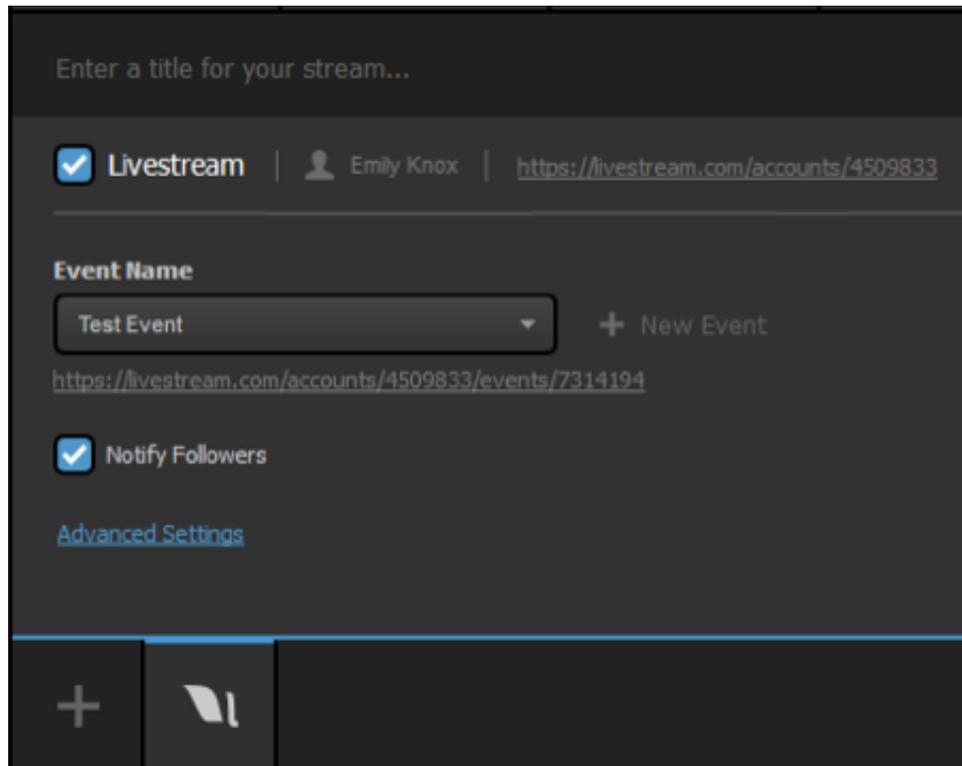
Log in to your Livestream account.



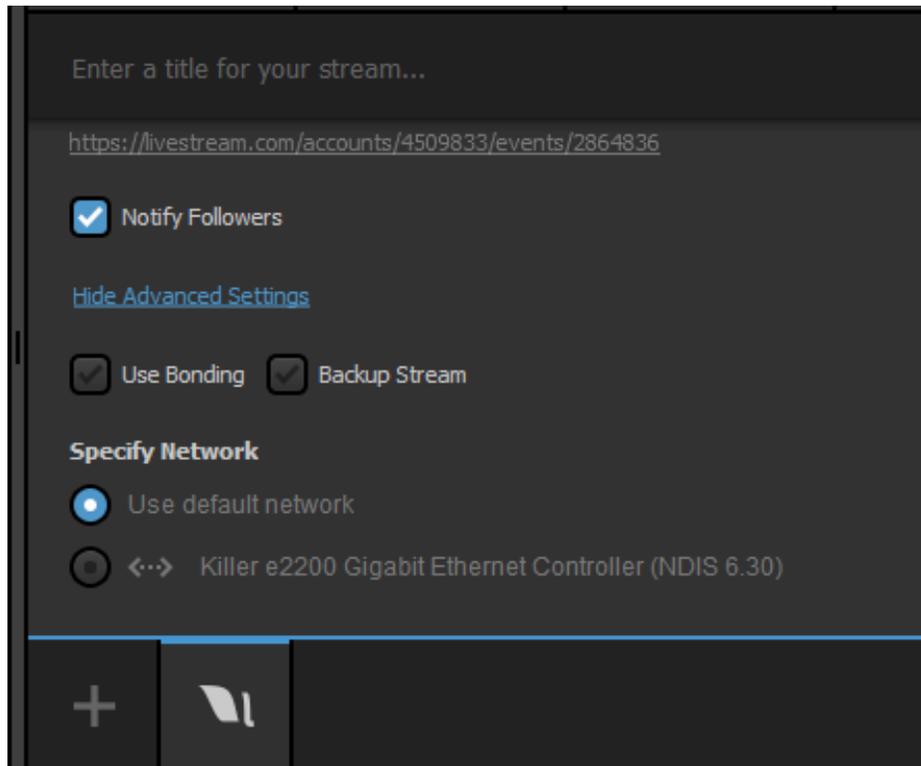
At the top of the module is a text field labeled Enter a title for your stream... Type a stream title in here.

Choose an event from the Event Name drop-down menu (or click + New Event to create a new event).

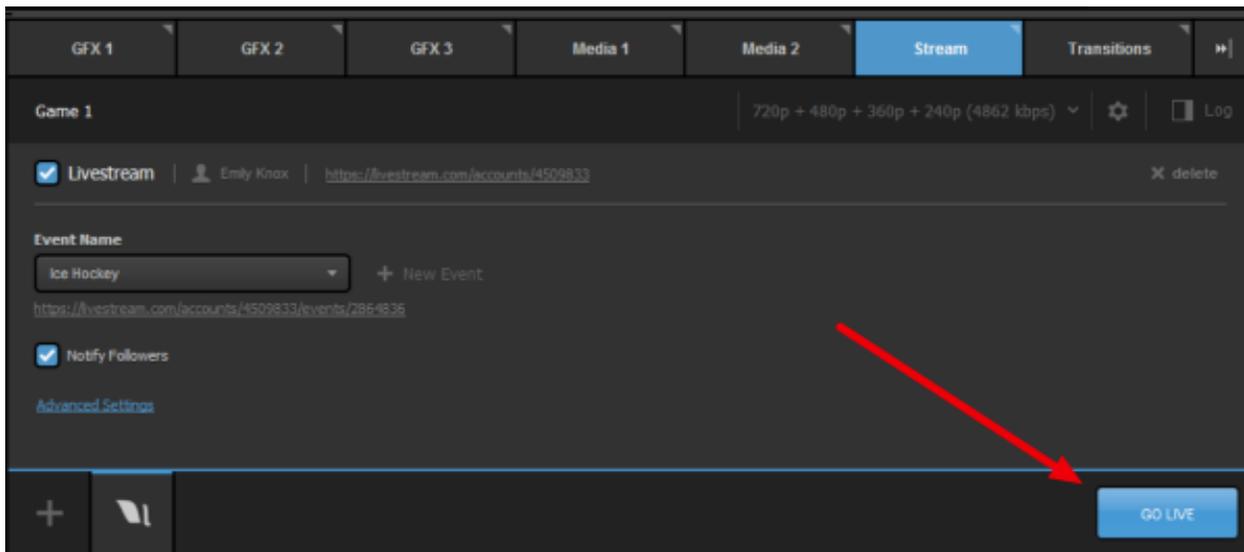
By default, your Livestream followers will receive a notification when you go live. If you do not want to send out a notification, uncheck Notify Followers.



Click Advanced Settings if you want to send the stream over a [bonded connection](#), send it as a [backup stream](#), or specify which network(s) to use for your stream.



When you are ready to start your stream, click Go Live in the bottom right corner.



When streaming is active, the stream module and streaming log on the right side provide live updates on streaming status.

Streaming Info Window: Displays live streaming status info.

Duration: Displays the current streaming duration.

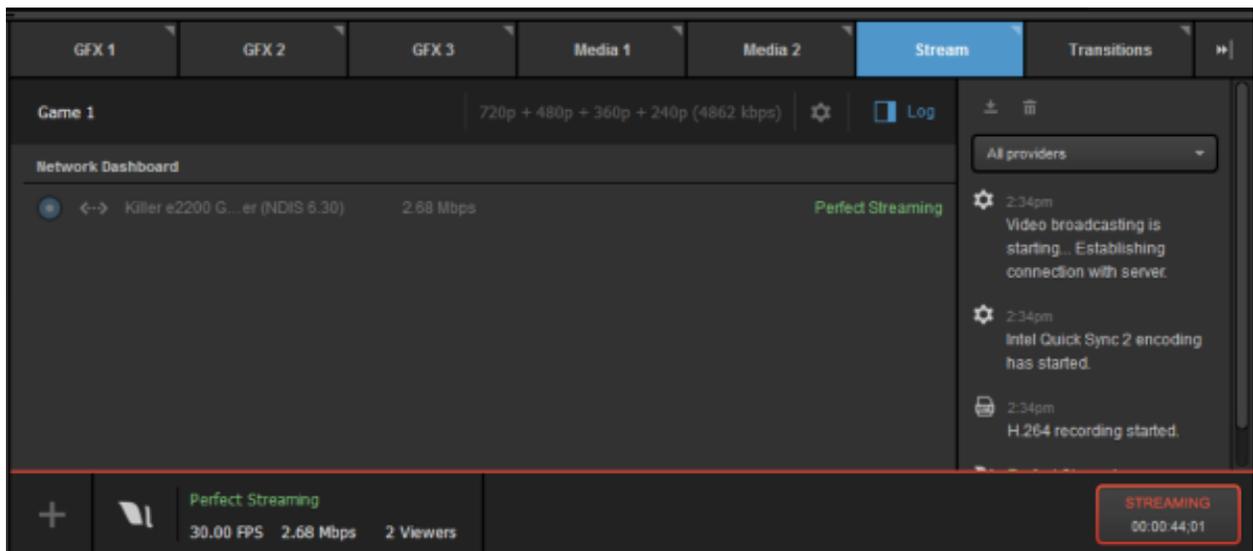
FPS: Displays the current outgoing FPS.

Kbps: Displays the current outgoing bitrate.

Viewers: Displays the number of concurrent viewers watching the stream.

Stream Status: Displays the current status of the stream.

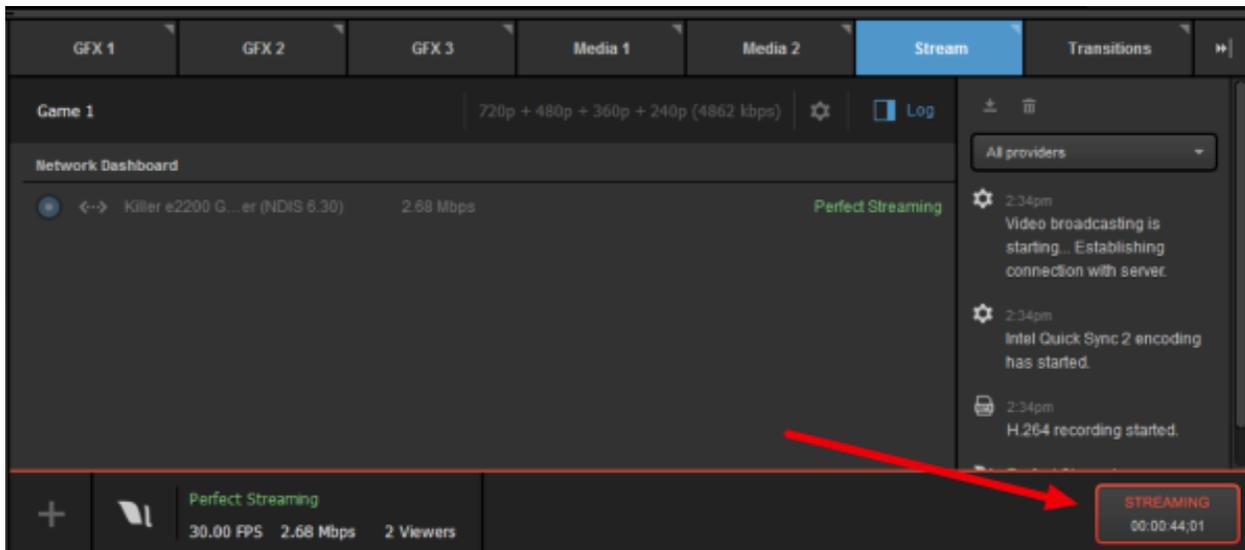
Streaming Log: Displays live streaming updates.

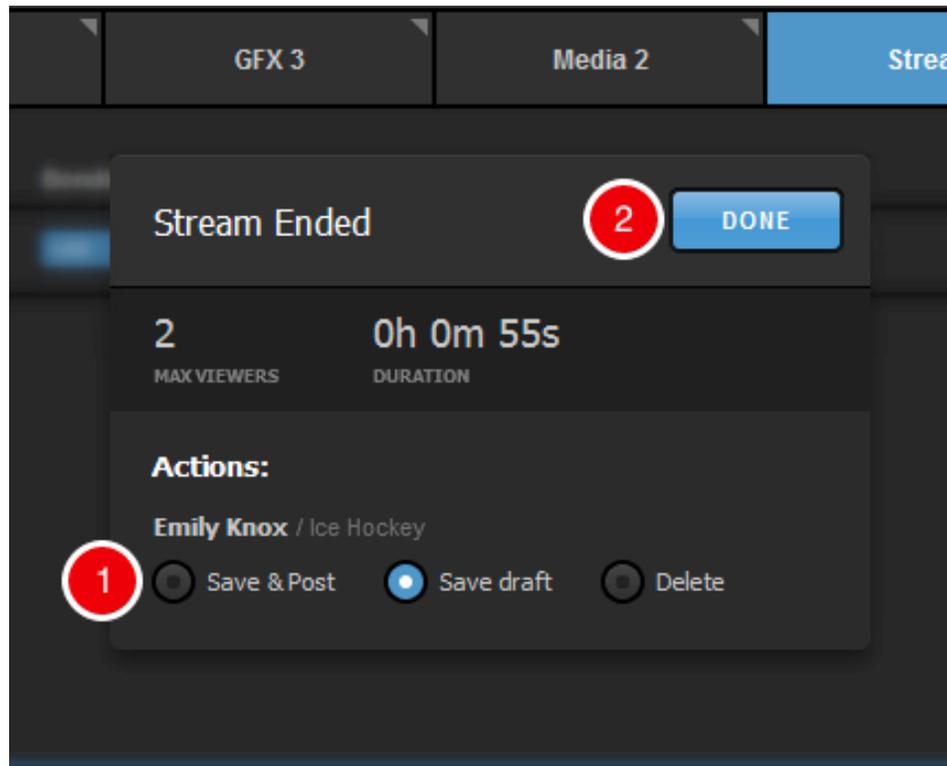


- Perfect Streaming: The stream is going out with no issues.
- Internet Too Slow for Quality: Upload bandwidth does not support selected quality. This is generally an on-site IT issue and should be escalated to the IT department. Changing quality requires the stream to be stopped and restarted.
- Lost Internet Connection: Internet connection has been lost. Again, check with onsite IT if this happens.
- CPU Warning: CPU percentage is getting very high.
- Problem publishing to primary server: Studio is unable to stream to the primary publishing point due to local Internet connection issues or an issue with the publishing point.

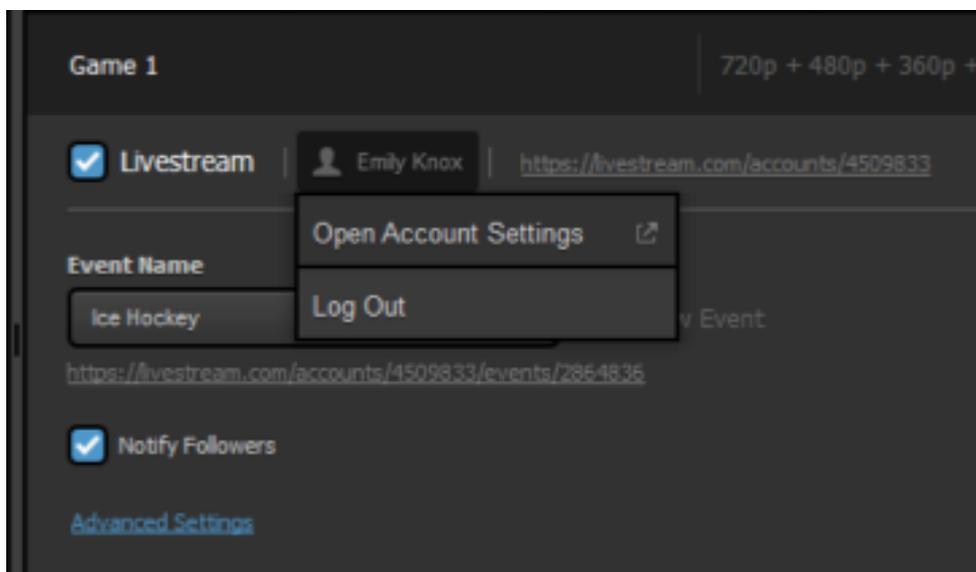
- Antilag Feature Triggered: Antilag has been triggered based on the selected queue limit (see "Streaming Preferences" above).  
Audio Peak Warning: Audio levels are peaking above normal levels.

Press the Streaming button again to end the stream. When a stream is terminated, the user will be prompted to post the video on-demand to the event, save the clip as a draft on the event page, or delete the cloud recording.





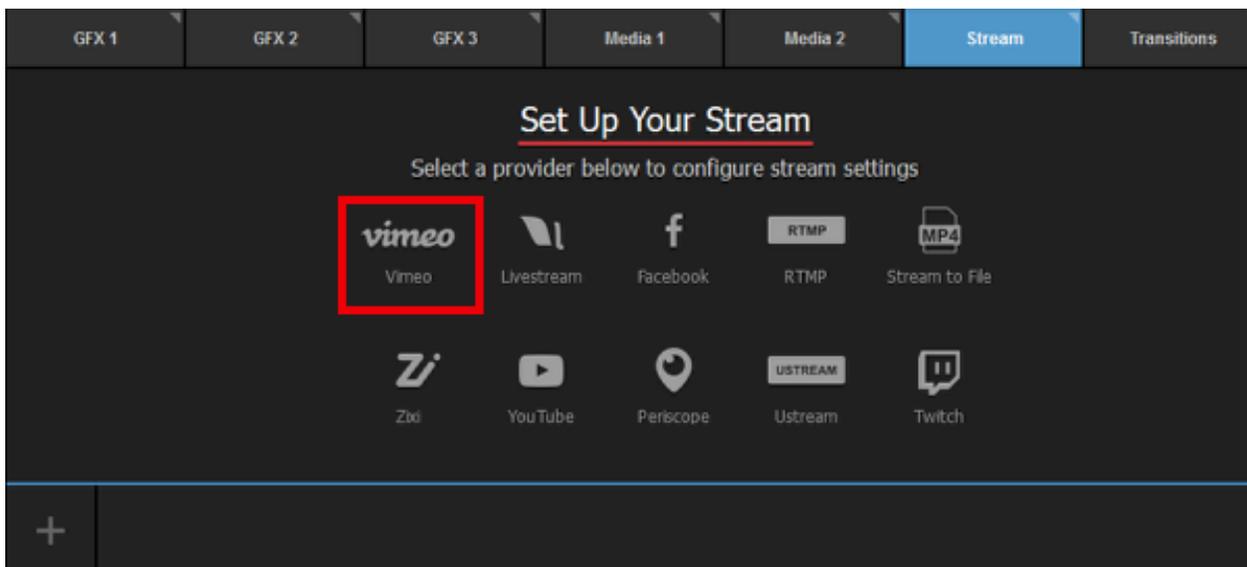
To change the Livestream account you stream to, click on your account name inside the Stream module. From here, you can either open a browser to your Livestream Account Settings or Log Out of your account in Studio.



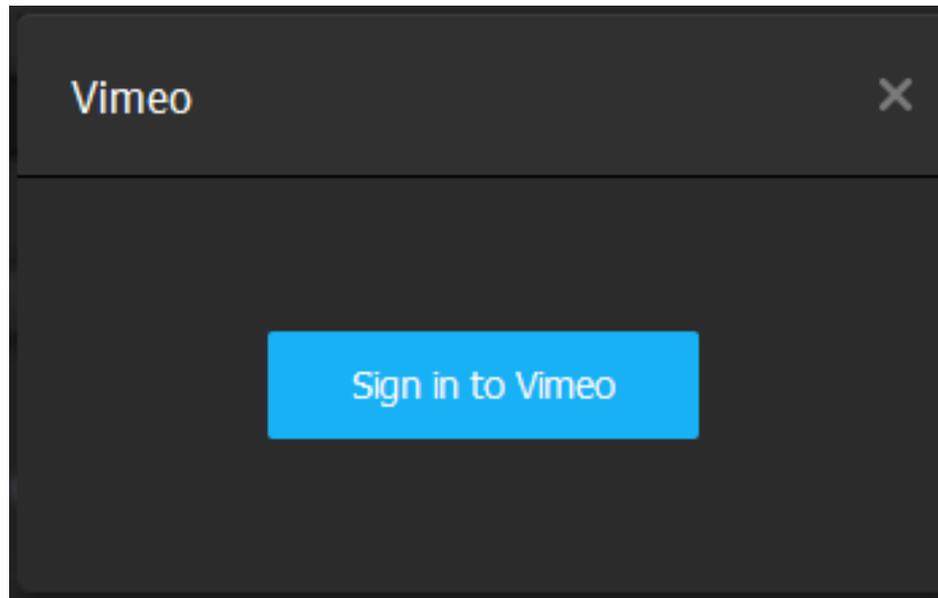
# Streaming to Vimeo via Livestream Studio

Livestream Studio supports streaming to [Vimeo Live](#) for all Vimeo Live subscribers.

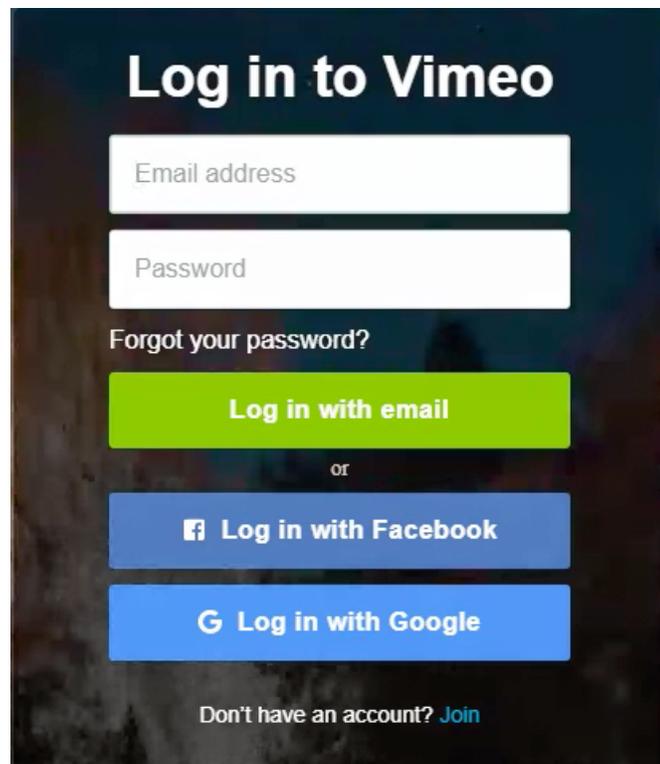
In the Stream, tab, select Vimeo.



The following window will pop up. Click Sign in to Vimeo.

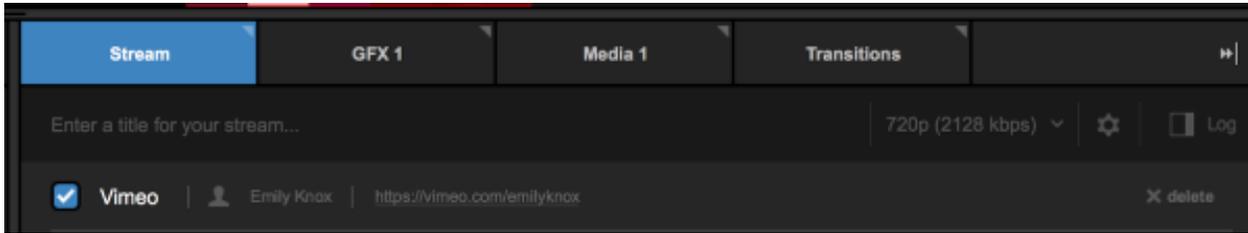


A browser window will open; you may need to minimize Studio in order to see it. Log in to your Vimeo account and authorize Studio to access information from your account to proceed.

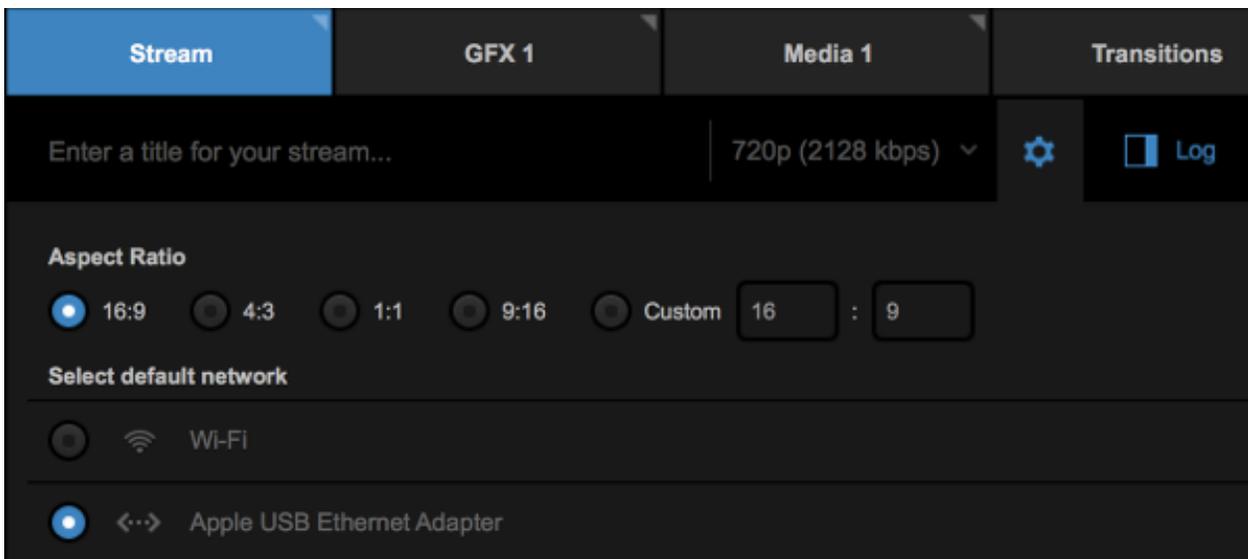


Now that you are logged in, you can configure your stream. At the top of the module, give your stream a title and select your streaming quality on the right side.

💡 Since Vimeo Live includes cloud transcoding, we recommend selecting a [single bitrate quality](#).

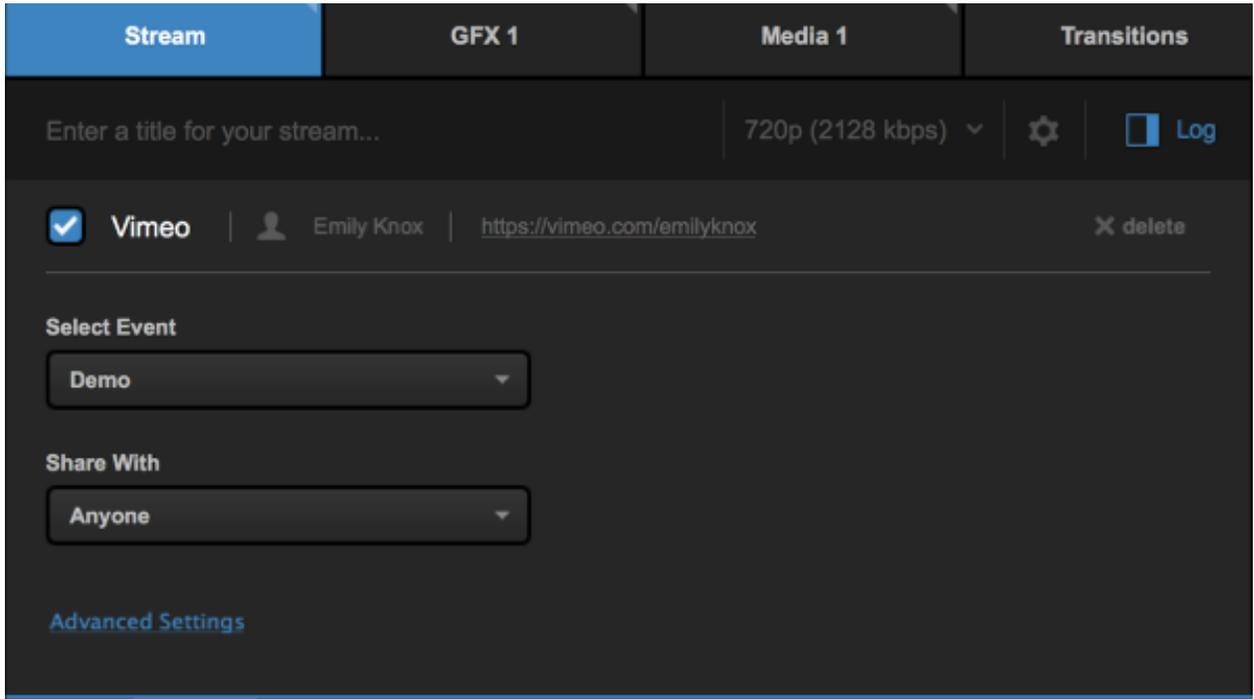


In the top right corner is a gearwheel icon. Selecting this will allow you to set your aspect ratio and choose your default network to use for streaming. The default network will be used when streaming to any provider you [add to Studio](#) unless you specify a different device for a specific provider (shown in a later step).



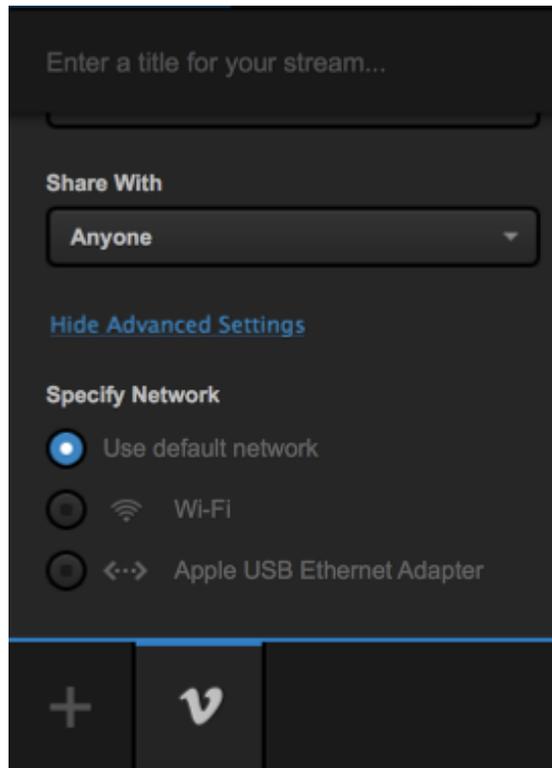
Next choose which Vimeo event you want to stream to or select **Create New** to stream to a new event. Then choose your desired privacy settings under the **Share With** menu.

 You currently cannot stream to a live event more than once on Vimeo. You will need to create a new one each time you go live to Vimeo.

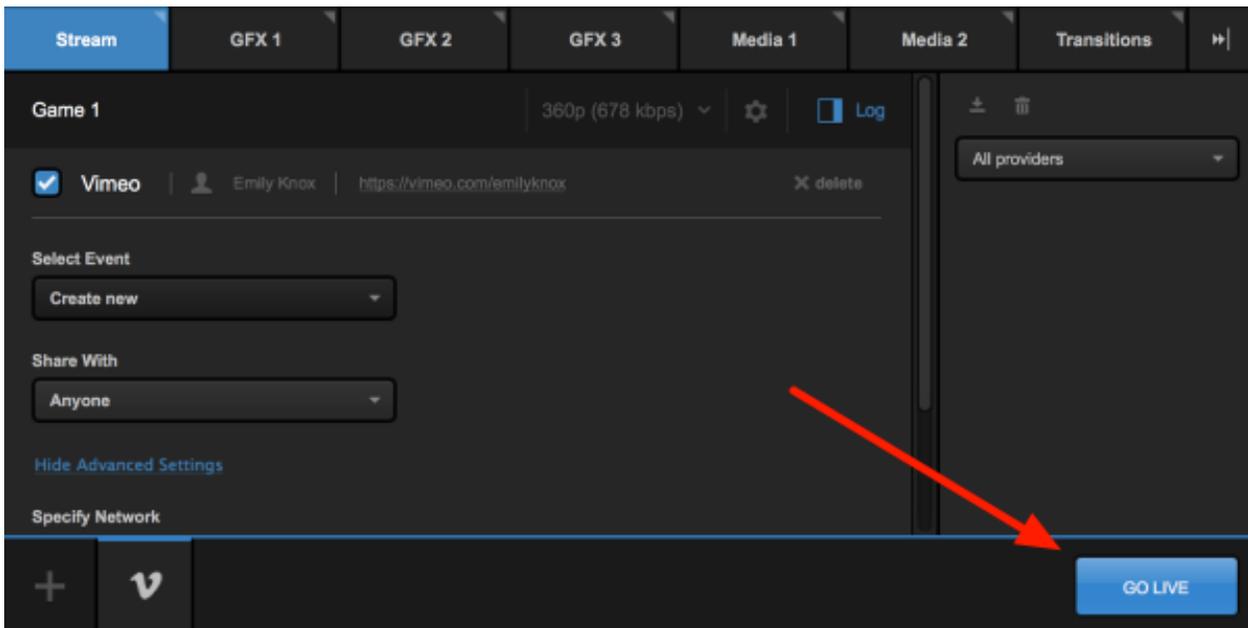


Clicking **Advanced Settings** will give you the option to use a specific network device to stream to Vimeo; **Use default network** will use the network device you selected earlier, but you may override that setting here if you wish to use a different connection for Vimeo. This can be handy if you want to keep simultaneous streams on separate networks as a failsafe.

Click **Hide Advanced Settings** to collapse this menu.



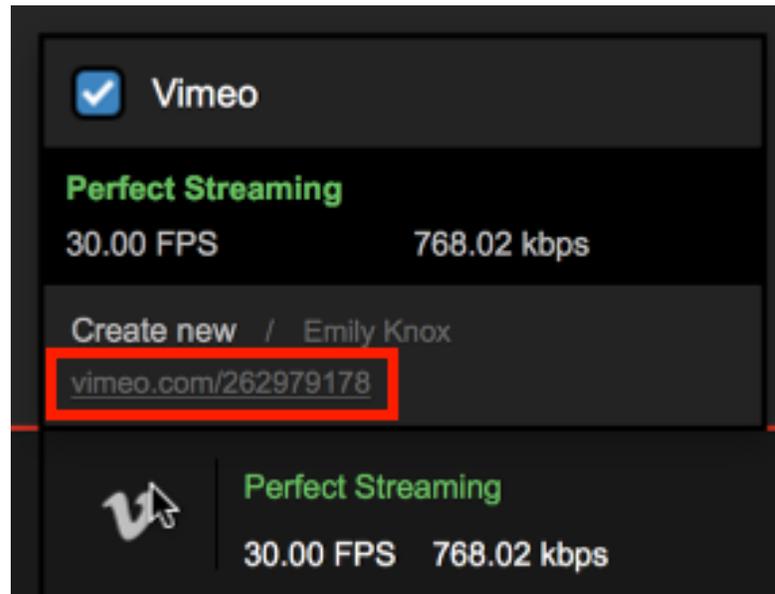
When you are ready to start your stream, click Go Live in the bottom right corner.



Your Program output will appear in your chosen video destination on Vimeo.

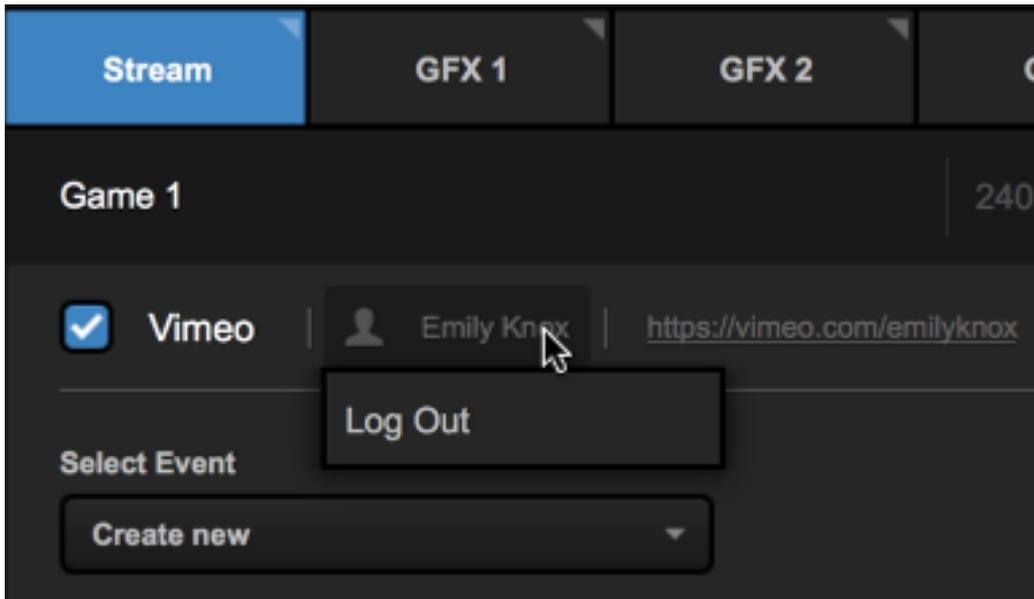


💡 For easy access to your stream, hover your cursor over the Vimeo icon; the URL to your stream will appear there.



When your event is over, end the stream by clicking the red Streaming button in the lower right corner.

To log out of Vimeo, click your profile name below the stream title and click Log Out.



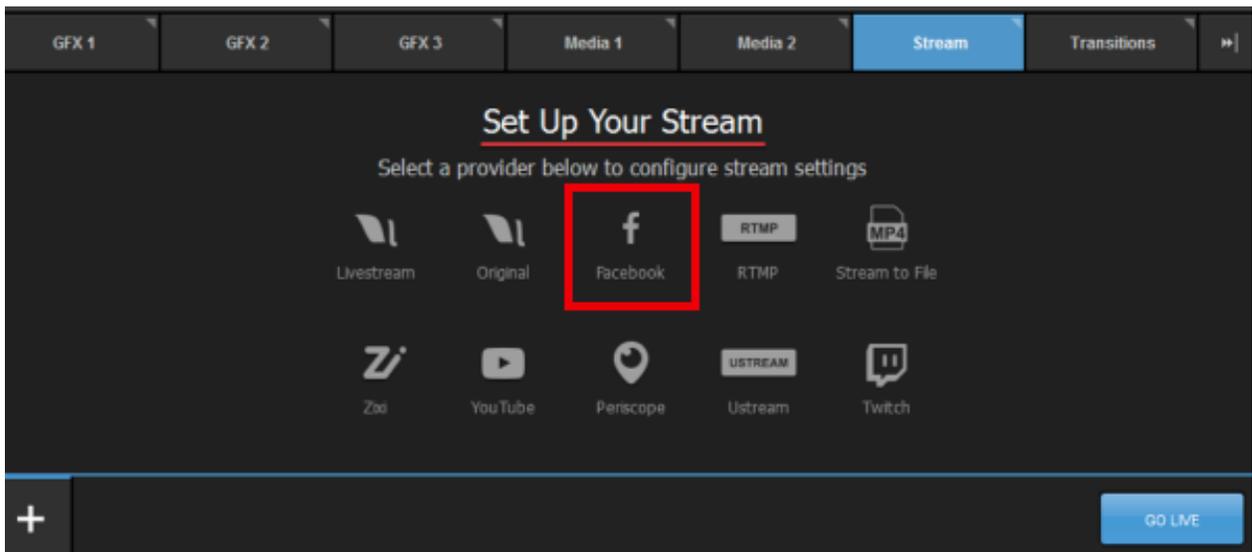
# Streaming to Facebook Live via Livestream Studio

You have the option to stream directly to your Facebook Profiles and Facebook Events, as well as Pages and Groups of which you are an admin.

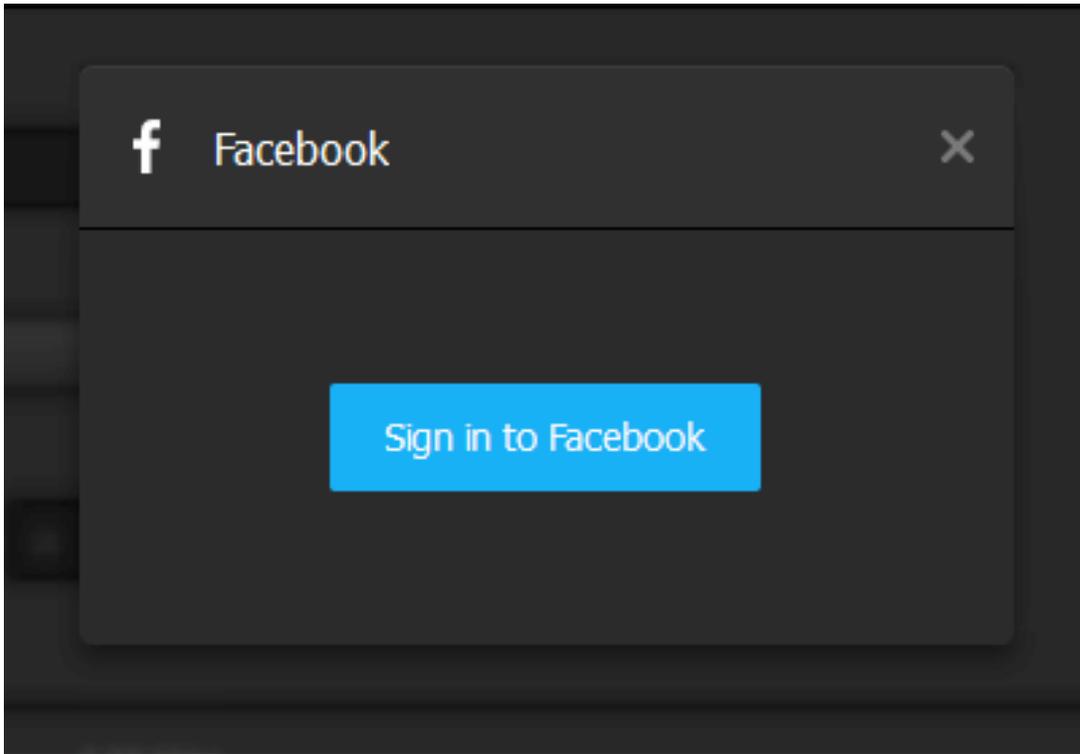
! This are details going live to Facebook via Livestream Studio. *If you are trying to stream to Facebook via the Livestream Platform Simulcast feature, see [here](#).*

## Log in to Facebook.

Navigate to the Stream tab in the lower right corner of Studio, then select Facebook.



Click Sign in to Facebook. A browser window will open.



Enter your Facebook credentials, and select whether you wish to stay persistently logged into Livestream Studio. Then click **Log In**.

**Log into Facebook**

**Log In**

**Keep me logged in to Livestream Studio**

or

**Create New Account**

[Forgot account?](#)

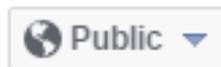
[Not now](#)

Livestream Studio will request several permissions, including your friend lists, events, ability to post, and access to pages you manage. Be sure to allow these and continue.

 We recommend setting your default audience settings to **Public**, especially if you ever intend to stream to an audience beyond your friends list. You can restrict your audience for each broadcast within Livestream Studio before you go live.



**Livestream Studio** would like to post publicly to Facebook for you.  
Who should be able to see these posts?



Click OK to finish permission settings.



**Livestream Studio** would like to manage your Pages, publish as Pages you manage, show a list of the Pages you manage and access the groups you manage.

[Choose what you allow](#)

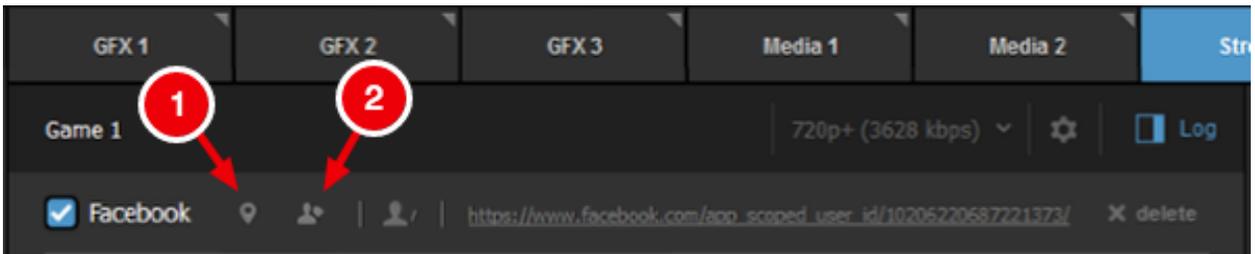
Not Now

OK

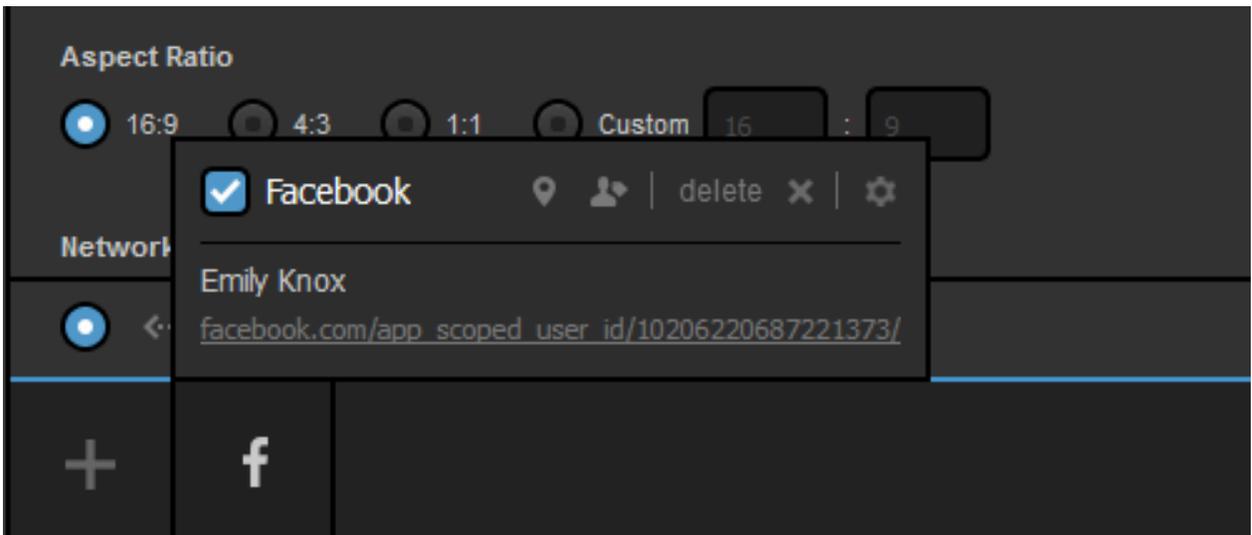
When authorization is complete, you can close your browser window if it does not close automatically.

## Configure Facebook Settings

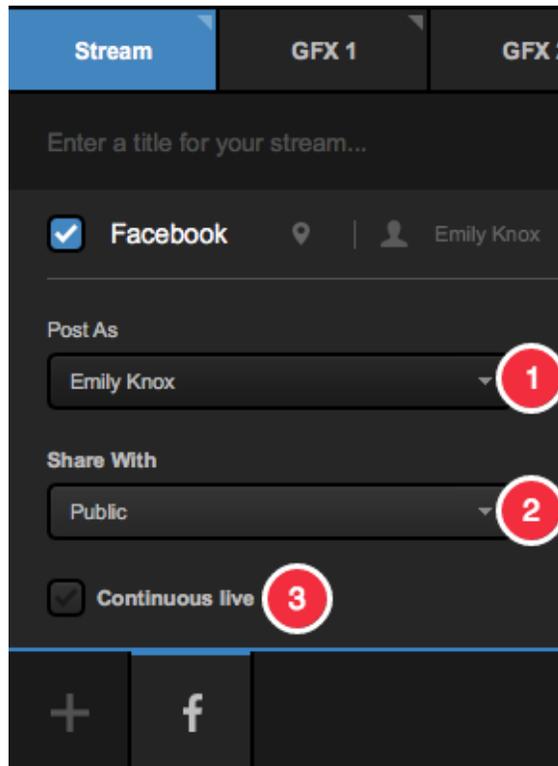
Across the top of the Stream module are a handful of add-ons for your stream, including the abilities to tag your (1) location and (2) friends. You can also log out of your Facebook account, click the URL to open the page where your stream will be hosted, or remove Facebook as a streaming destination.



💡 You can also access these options by hovering your cursor over the Facebook icon at the bottom of the module.



Below these options are basic stream configuration settings.

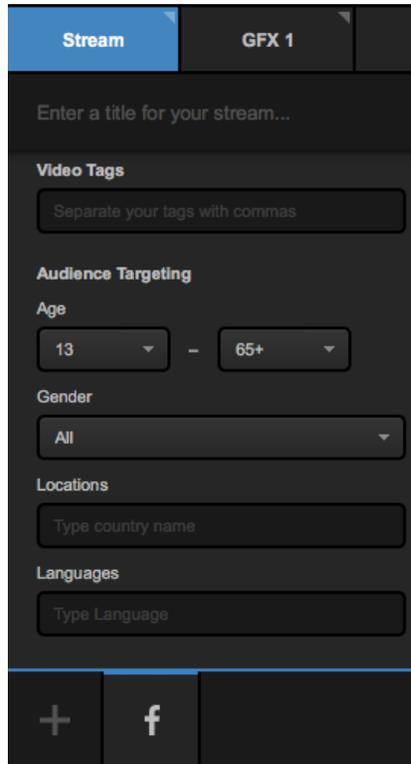


1. In the Post As dropdown, you can choose between your personal profile, any pages you *admin*, or any groups you *admin*.
2. **Share with** lets you choose which audience you would like to share your stream with.
3. Check **Continuous Live** if you wish to keep streaming beyond Facebook's four-hour streaming limit (note that this will *not* send out additional notifications or save any VOD from your stream onto Facebook).

Below these basic configurations, click **Advanced Settings** to set a variety of options for customizing your live video post on Facebook, such as adding tags for other pages on Facebook, and audience targeting tools.

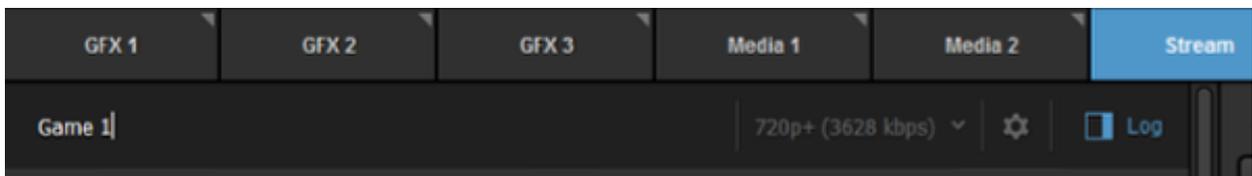
You can also provide other metadata for your stream, such as targeted countries and what language the broadcast will be in.

At the bottom of this section, you can select which network to stream over, if you have multiple available.



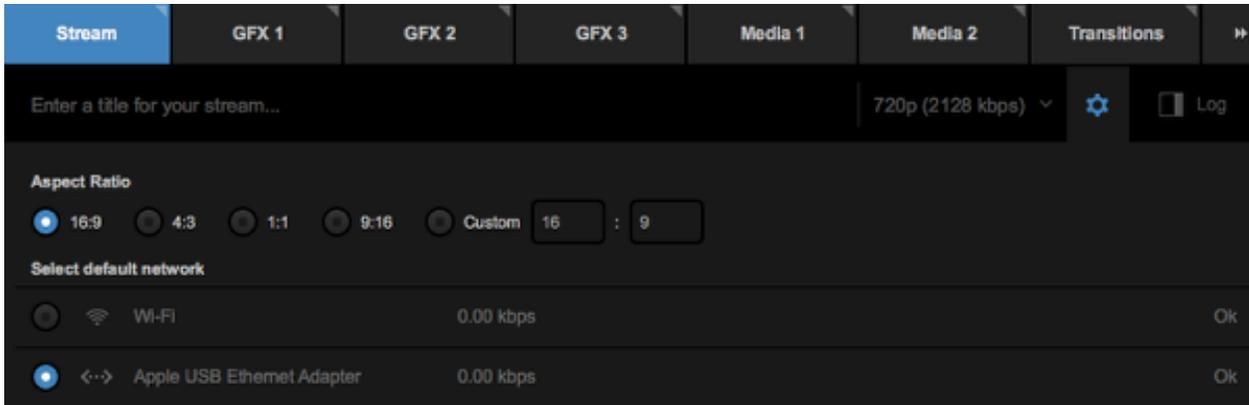
## Go Live to Facebook

At the top of the module, give your stream a name and select a streaming quality. For optimum performance on Facebook, select a single bitrate (e.g. 720p+) rather than a multi-bitrate quality (e.g. 720p + 540p + 240p).

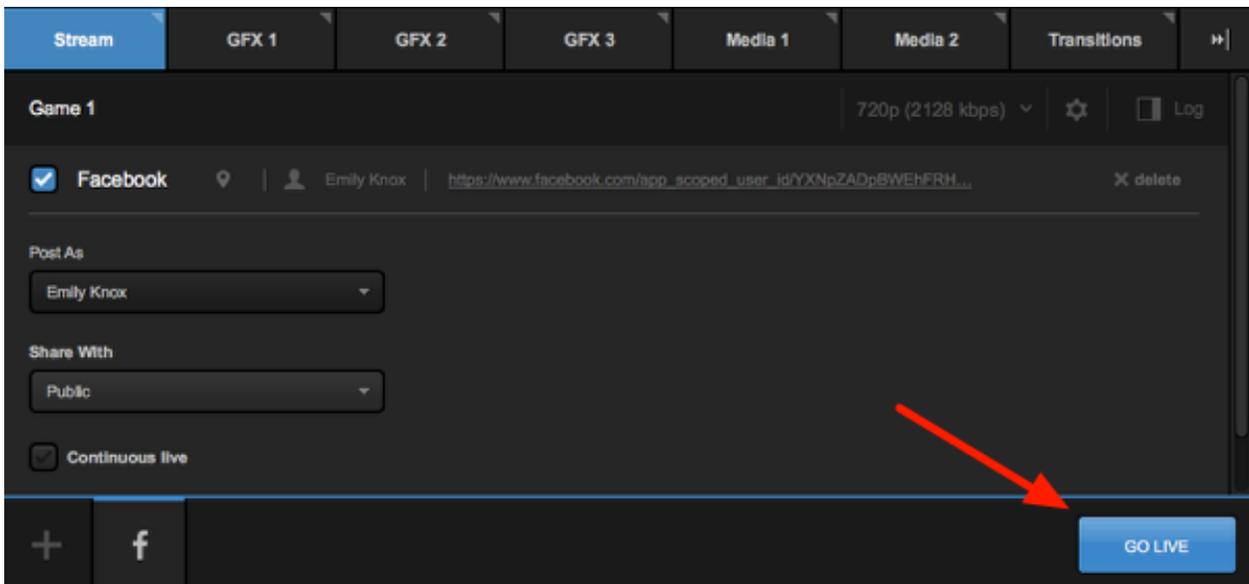


Clicking the gearwheel allows you to select your preferred aspect ratio. Choosing 1:1 or 9:16 will display a yellow **Safe Area Display** in Program and Preview demonstrating what your stream's output will look like so you can set your shots accordingly. You also have the option to see the display is all multiview sources, or to turn it off entirely.

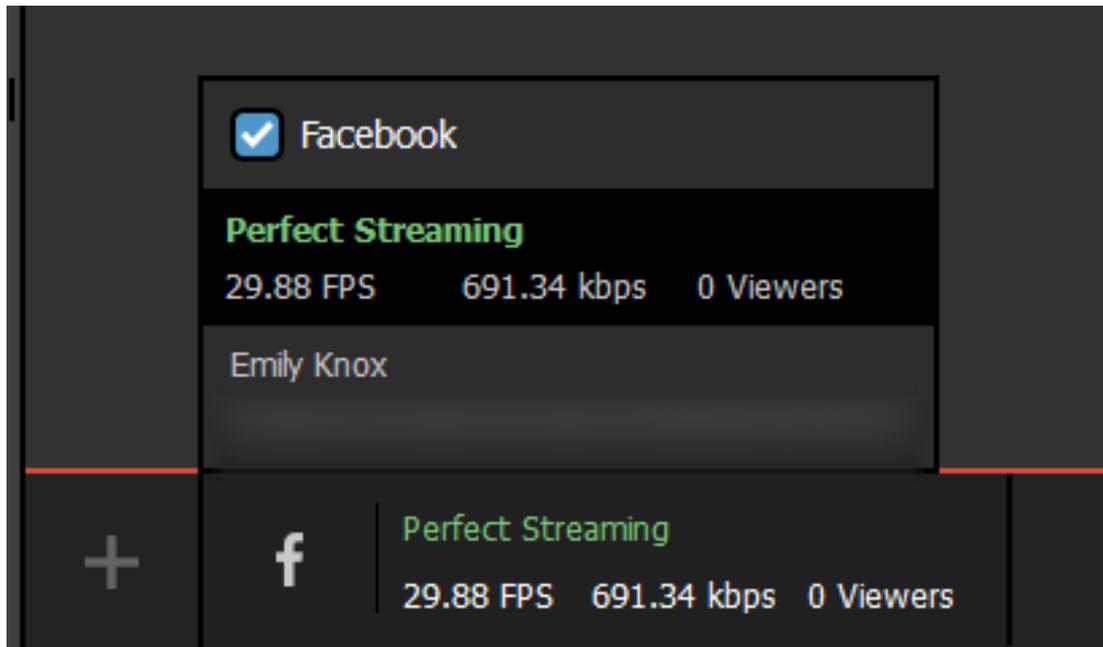
Here, you can also choose your default streaming network. Unless you specified a different network in the **Advanced Settings** section, your stream will broadcast over this network.



Click **Go Live** to start your stream.



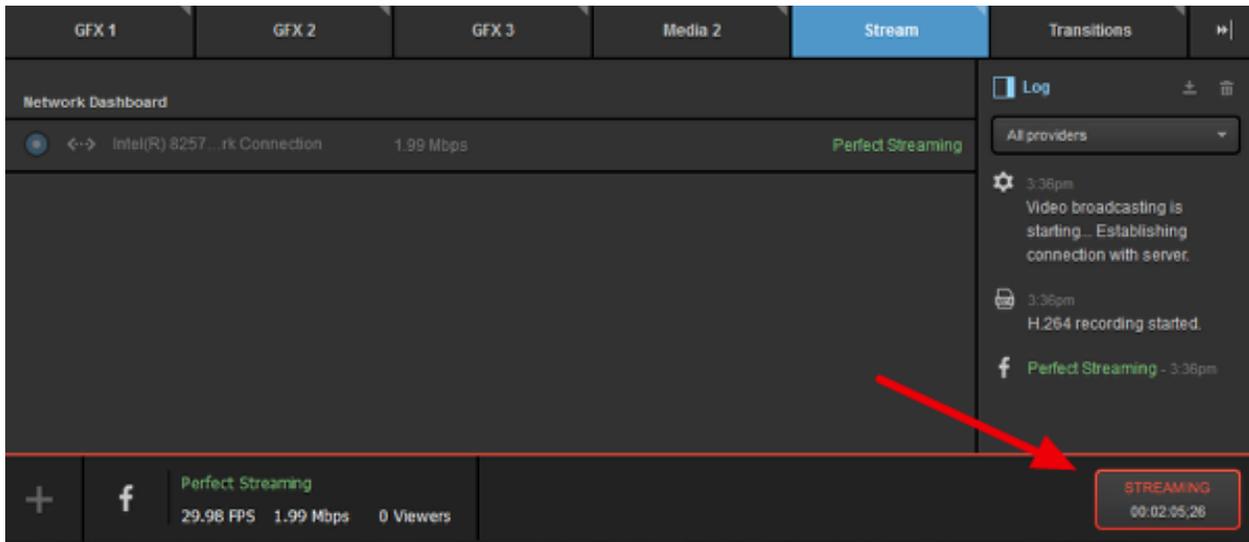
Once you are live, you can view your stream by hovering the mouse over the Facebook logo and clicking the URL in the menu that pops up.



The stream will appear in your Facebook timeline after about 10 seconds.



When you want to end your stream, click the red Streaming button.



The broadcast will end promptly and the stream will save on your Facebook timeline for on-demand playback.

# Stream to a Scheduled Live Post on Facebook via Livestream Studio

While you can go live to your Facebook pages and groups at any time, many publishers on Facebook prefer to use Facebook's Scheduling feature so that their followers have prior notice and are more likely to watch their live event.

## Schedule a Live Video on Facebook

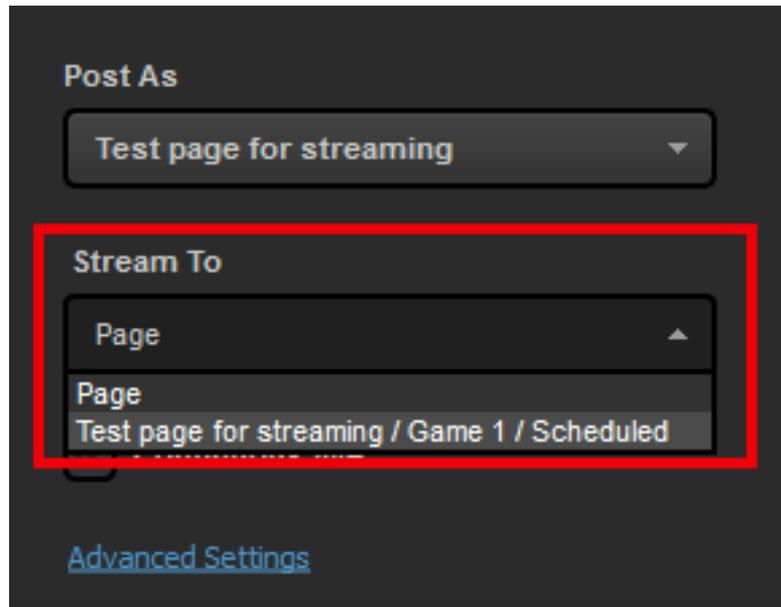
In order to stream from Studio to a scheduled live video on Facebook, you will first need to create the scheduled post on Facebook.

Facebook provides [a comprehensive tutorial](#) and best practices to scheduling a live video on Facebook. A broader live overview for Publishers on Facebook is [also available](#).

Once your live video is scheduled, you can configure Studio to stream to it.

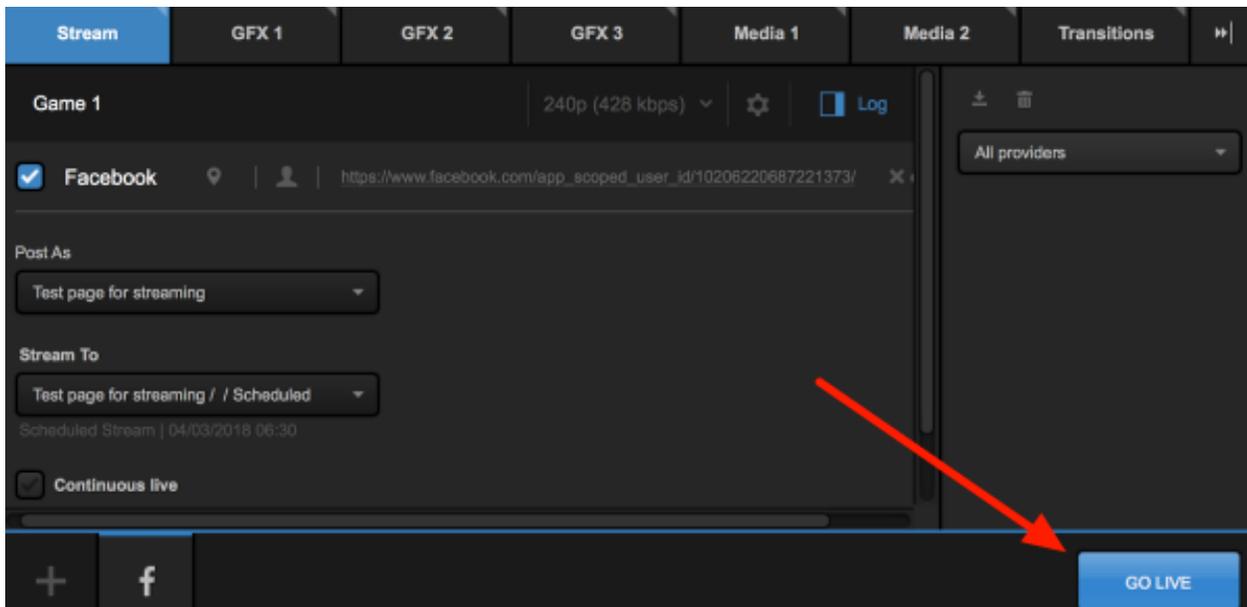
## Go Live to Your Scheduled Live Post

In Livestream Studio, navigate to the **Stream** tab, select Facebook and log in to the same account. Select your Page under **Post As**, and then open the **Stream To** drop-down menu. Your scheduled live video post will appear there.



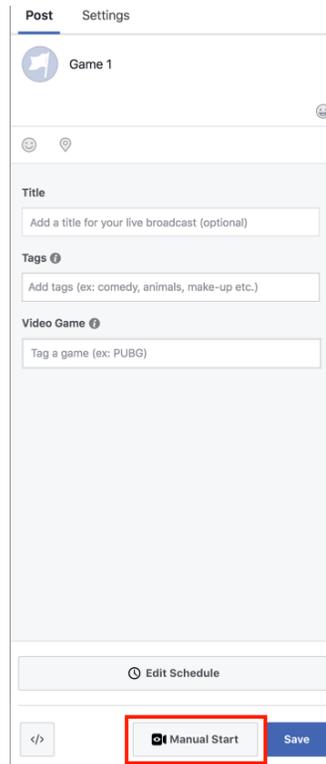
Select that scheduled post. Configure the rest of your stream is the same as all streams to Facebook.

When you are ready to start broadcasting, click Go Live in the bottom right corner.



When you edit your scheduled post on Facebook, you can see your stream come in and monitor it. However it will not appear live on your timeline until the time you scheduled your post to go live.

If you want to go live sooner, click the **Manual Start** button at the bottom of the post editor in Facebook.



Once you confirm you want to proceed and Facebook fetches your stream preview, click **Go Live**. Your stream will be live on your Facebook timeline.



**Test page for streaming** is live now.

Published by Emily Knox [?] · Just now · 🌐 · 🌐

### Game 1



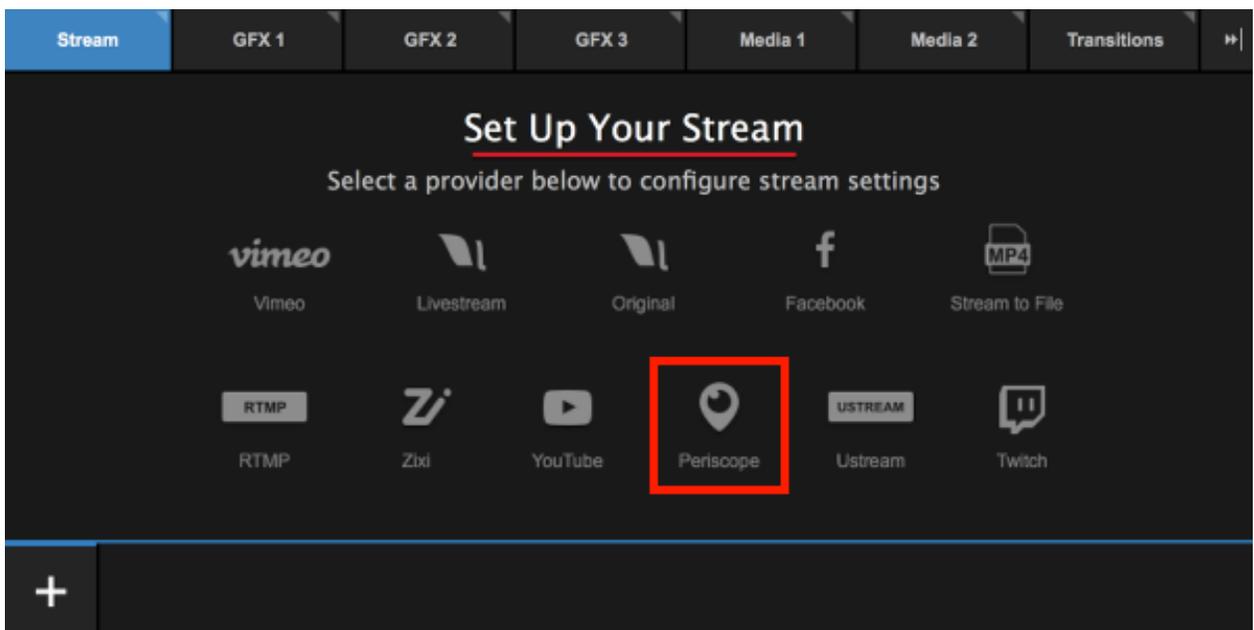
Alternatively, wait until your scheduled start time; the stream will appear on the timeline automatically.

When your event is over, you can simply click the red **Streaming** button in Studio to end your live event on Facebook.

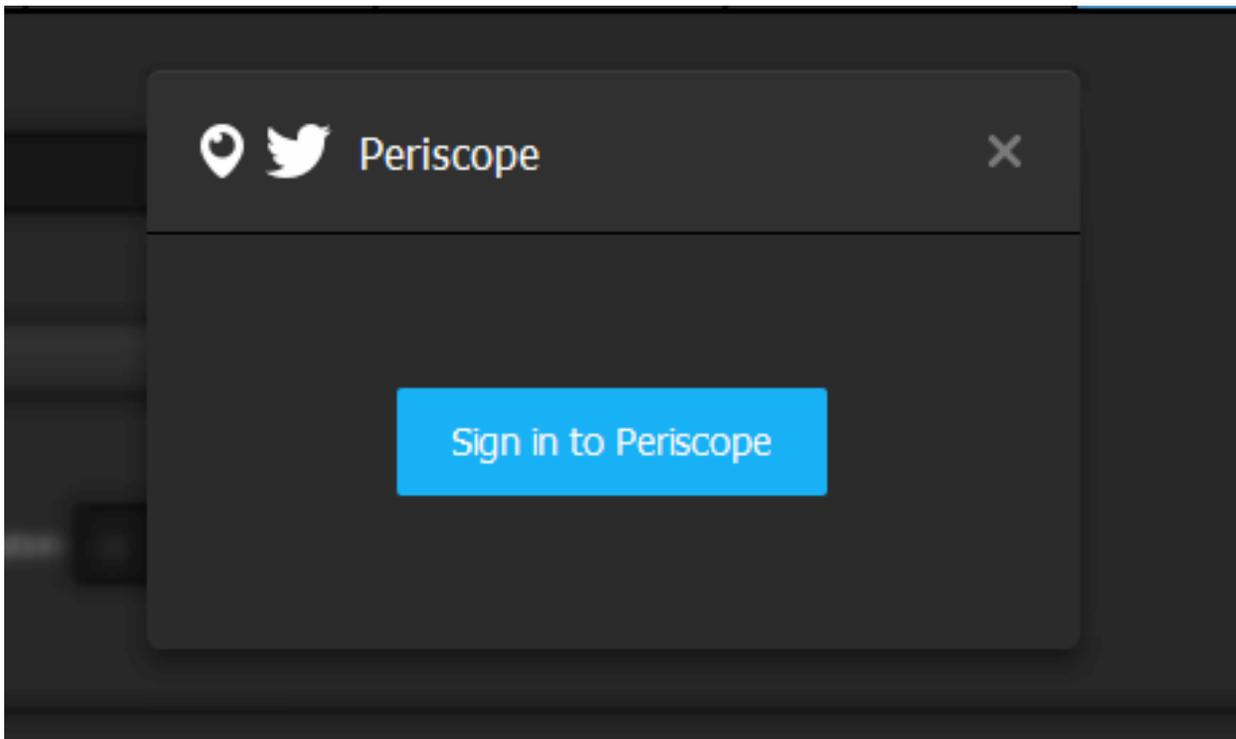
# Stream to Twitter & Periscope via Livestream Studio

Livestream Studio integrates with and streams directly to Periscope.

Navigate to the Stream tab and select Periscope as your streaming provider.



Click Sign in to Periscope.



This will open your web browser to Periscope's login page. If your browser does not automatically come to the front of your screen, you may need to manually switch over to it. Do not exit Studio.

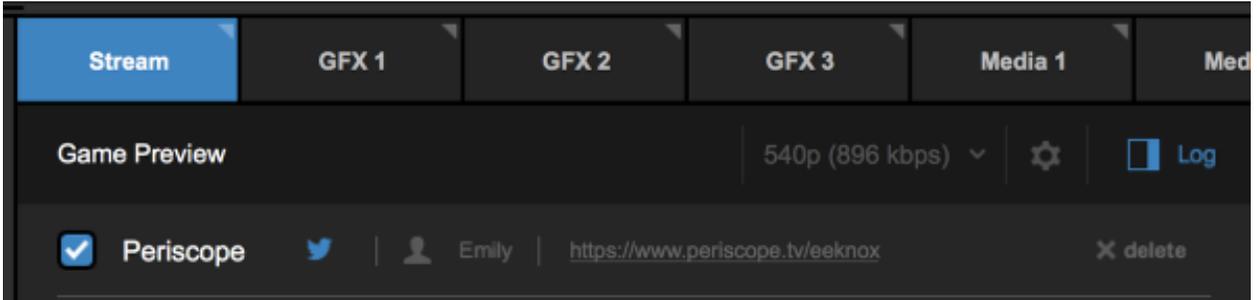
 This will not work if Microsoft Edge is your default browser. Set Google Chrome or Mozilla Firefox as your Windows default browser in order to log in.

Log in to Periscope and authorize Studio to access your Periscope account. This is necessary in order for the two applications to communicate to each other.

Once authorized, you can close your browser and go back to Studio.

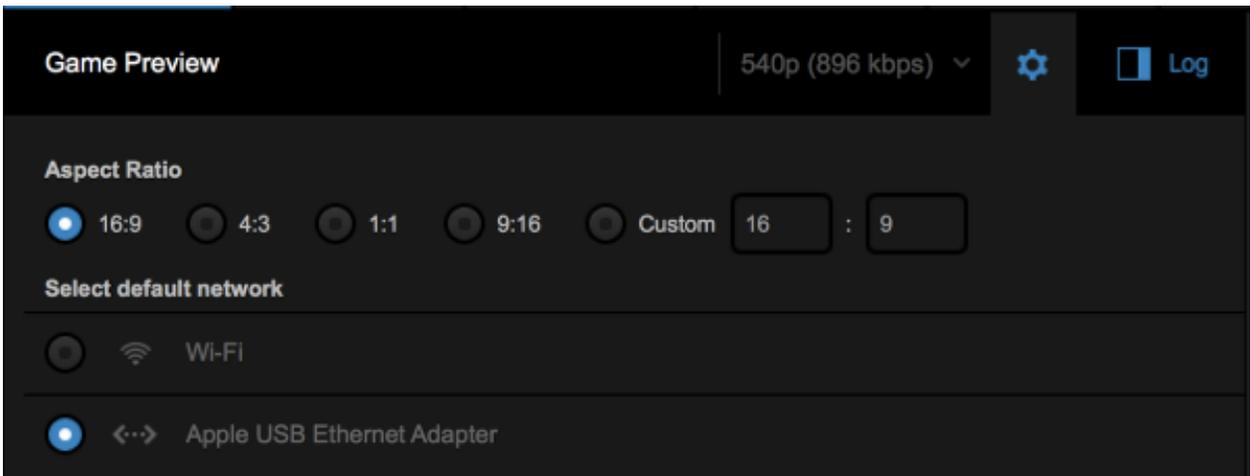
In the Stream module, give your stream a title and be sure to select 540p as your quality.

! Periscope does not support any other streaming quality. 540p is the streaming quality profile that is [recommended by Periscope](#).



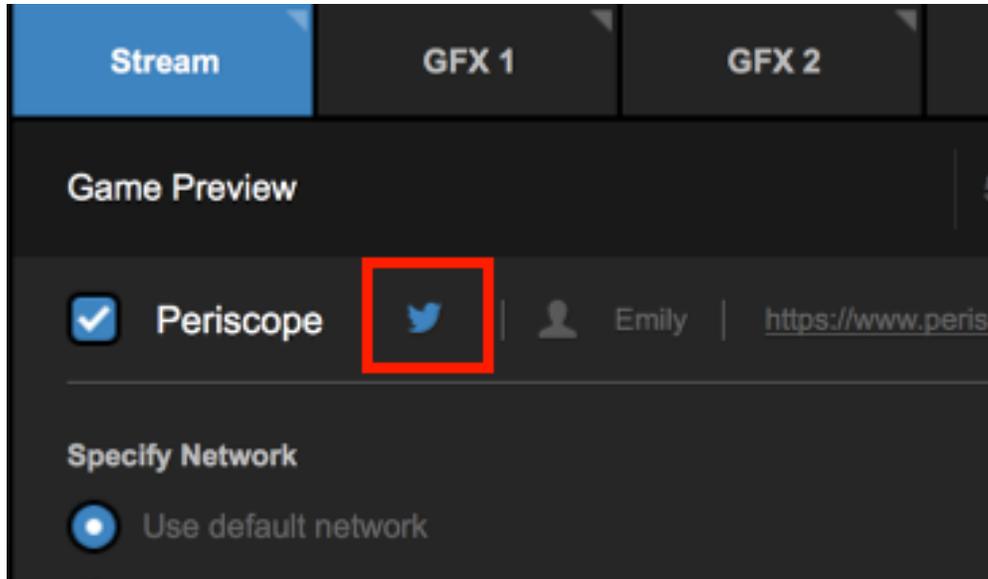
Click the gearwheel on the upper right side to set your aspect ratio and your default network to stream with.

When you have configured these settings, click the gearwheel again to collapse this menu.

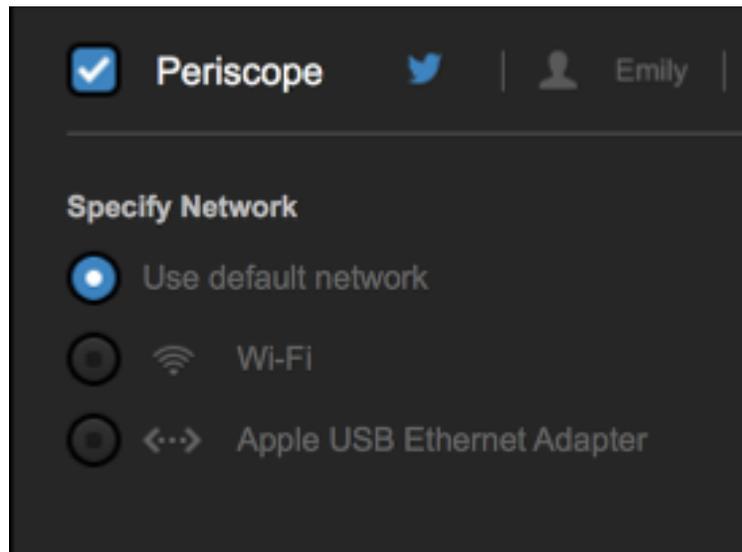


Below the stream name is a small Twitter bird icon. By default, it is blue, indicating that the stream to Periscope will also be tweeted to the Twitter account connected to your Periscope account. If you do not want your stream on Twitter, click the bird icon to disable it.

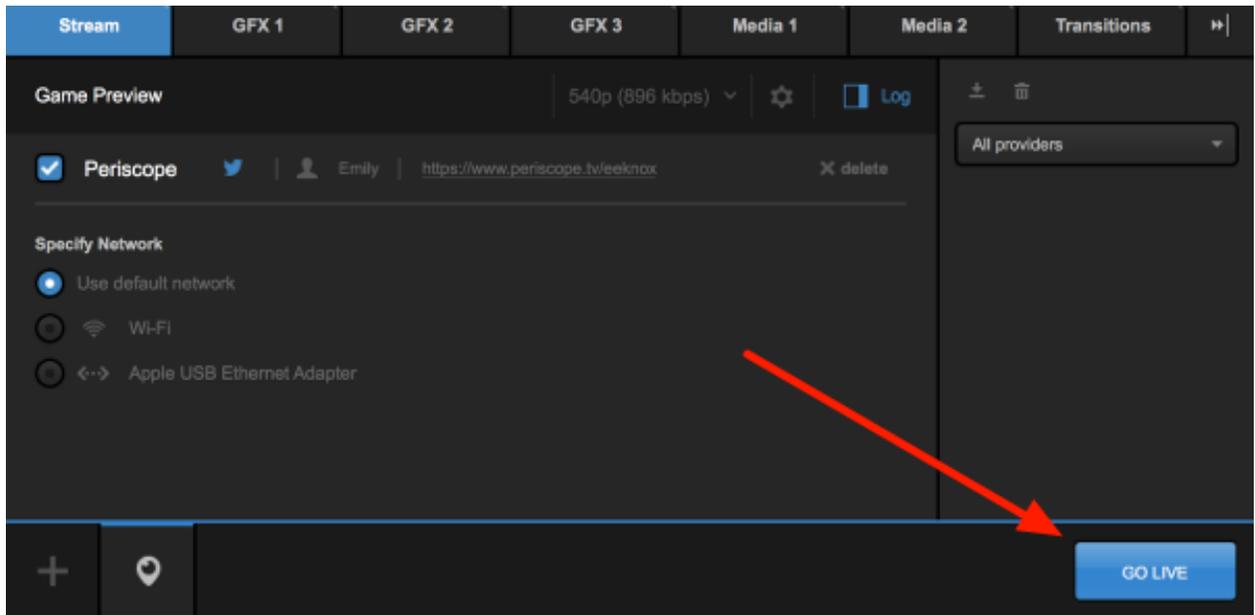
Clicking the gearwheel in the popup menu will allow you to choose which of your available network connections you will send your stream through (this example only has one).



Below this, you can specify a network to use if you wish to stream using a network different from your default set network. This is handy if you intend to [add other providers](#) and wish to use different connection types for each stream.



When you are ready to start streaming, click Go Live in the bottom right corner.



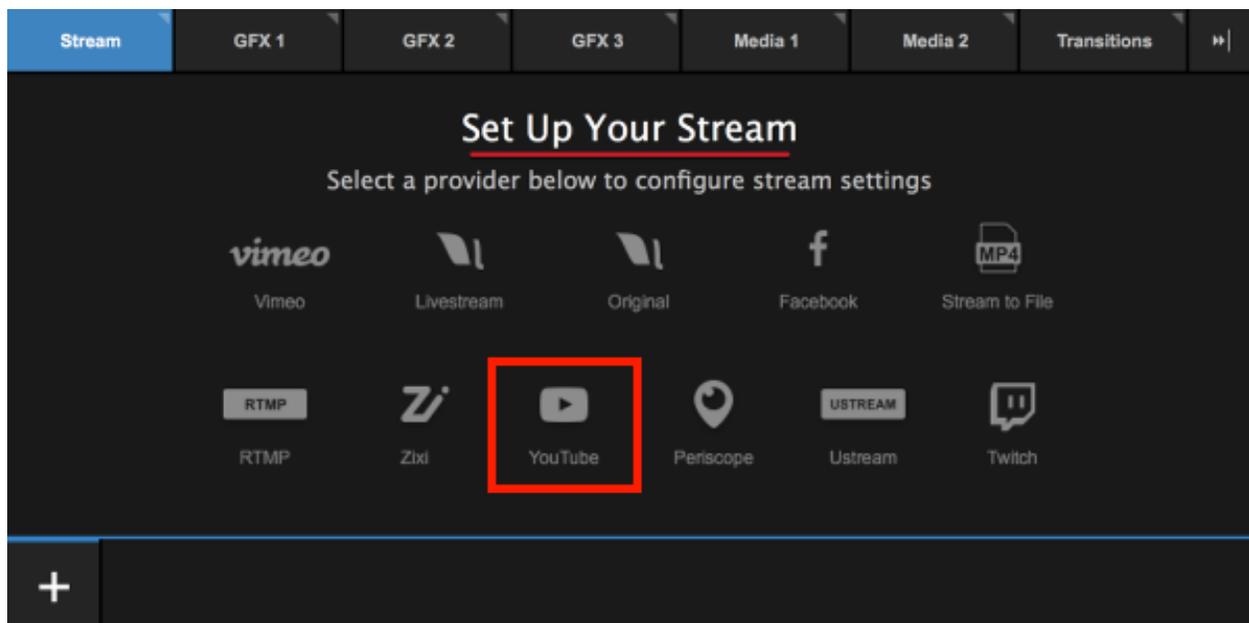
When your event is over, click the red Streaming button to end the stream.

When you stream ends, you can see information about your viewers and for how long you streamed. Choose to either save your video on demand or delete it.

# Streaming to YouTube via Livestream Studio

You can stream to your YouTube channel directly from Livestream Studio. There are two ways YouTube supports streaming: either their "Stream Now" option or the Live Events Dashboard.

To get started, go to the Stream tab and select YouTube as a provider.

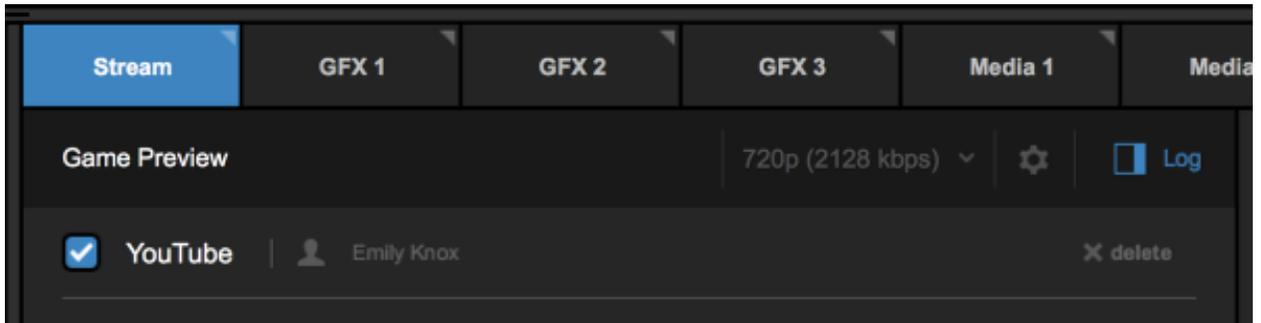


You will need to log in using your YouTube/Google credentials and allow Livestream Studio to access your account. This will open a new browser window; if your browser does not come to the front of your screen, navigate away from Studio to see it and log in. Do not close Studio.

**i** If you are using Google apps (i.e. an Google account that is not a standard @gmail.com address), you may need to authorize access to third-party applications in your Google account or via an admin.

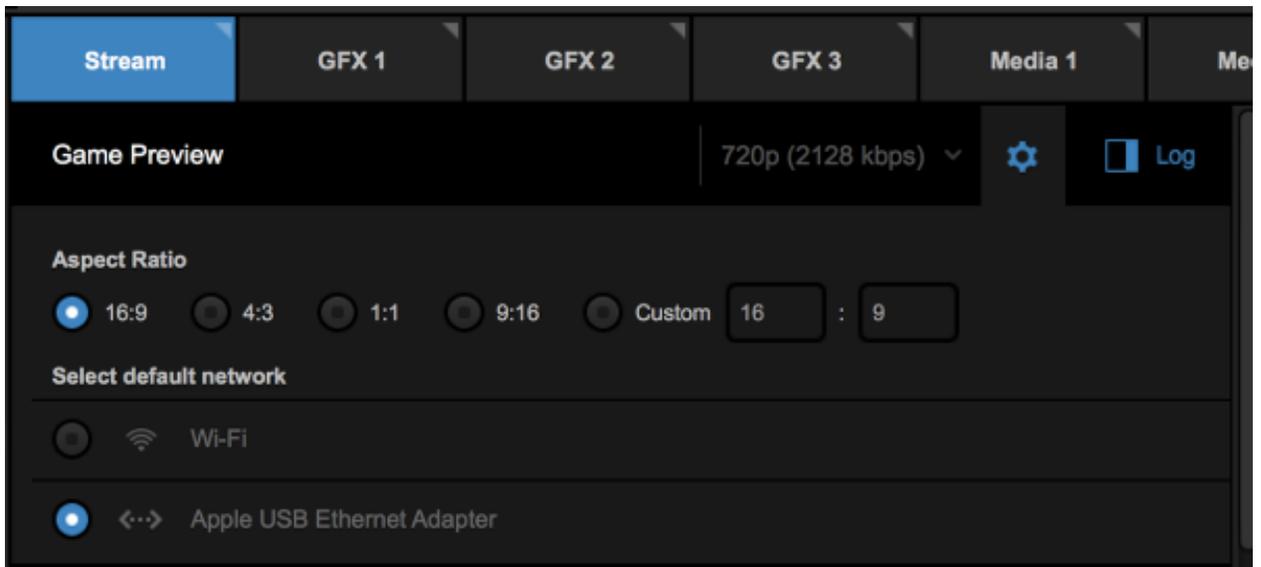
Once you are logged in and authorize Studio access to your Google account, you can close the browser and navigate back to Studio.

Give your stream a title and choose a streaming quality. Since YouTube provides cloud transcoding, we recommend selecting a single-bitrate quality.

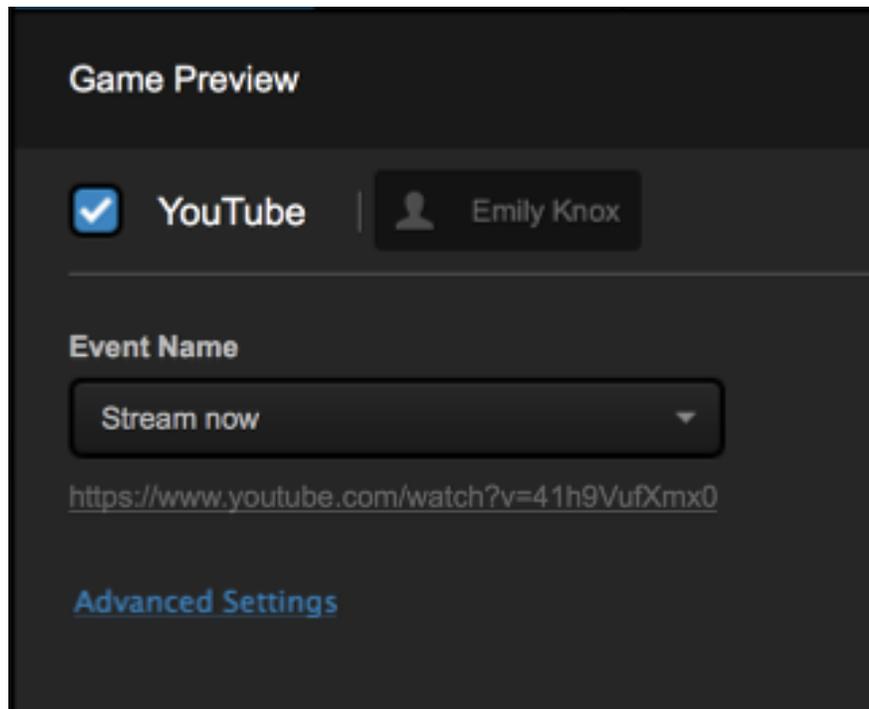


Clicking on the gearwheel will allow you set your aspect ratio and choose your default network. This is the network that will be used to stream with by default for any provider in Studio.

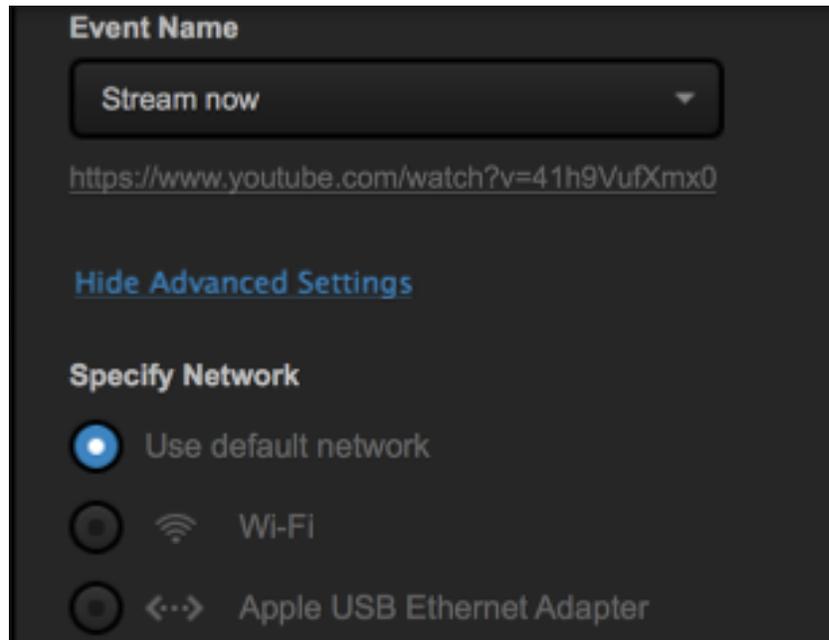
Once you have configured these settings, you can click the gearwheel icon again to collapse the menu.



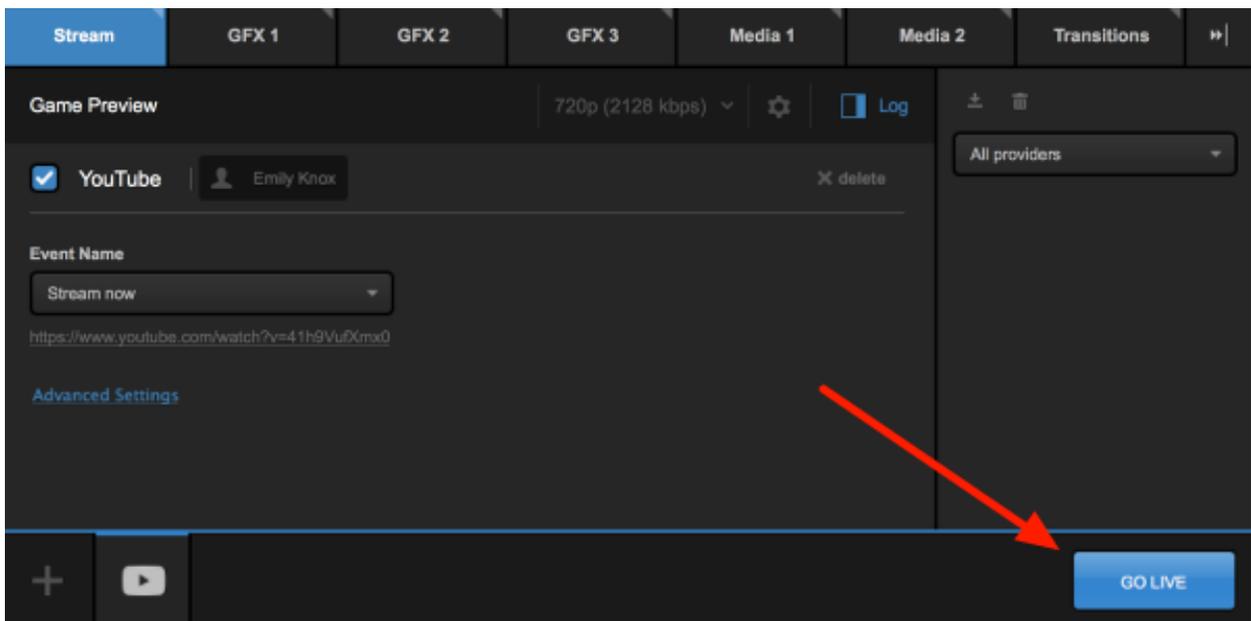
You can select which YouTube event you want to stream to in the **Event Name** drop-down menu. Selecting **Stream Now** will simply start a new stream to your channel rather than broadcasting to a previously created event. The URL to your stream will be available below the menu.



Clicking **Advanced Settings** will allow you to choose a different network rather than your default network to stream with. This is handy if you intend to [add other providers](#) to Studio and wish to keep them on different network devices. When you specify YouTube's network, you can click **Hide Advanced Settings** to collapse the menu.



When you are ready to start streaming, click Go Live in the lower right corner.



When your event is over, click the red Streaming button to end the stream. If you need to log out of YouTube, click your name below the stream title, then click Log Out.

## Game Preview

YouTube

 Emily Knox

Log Out

Event Name

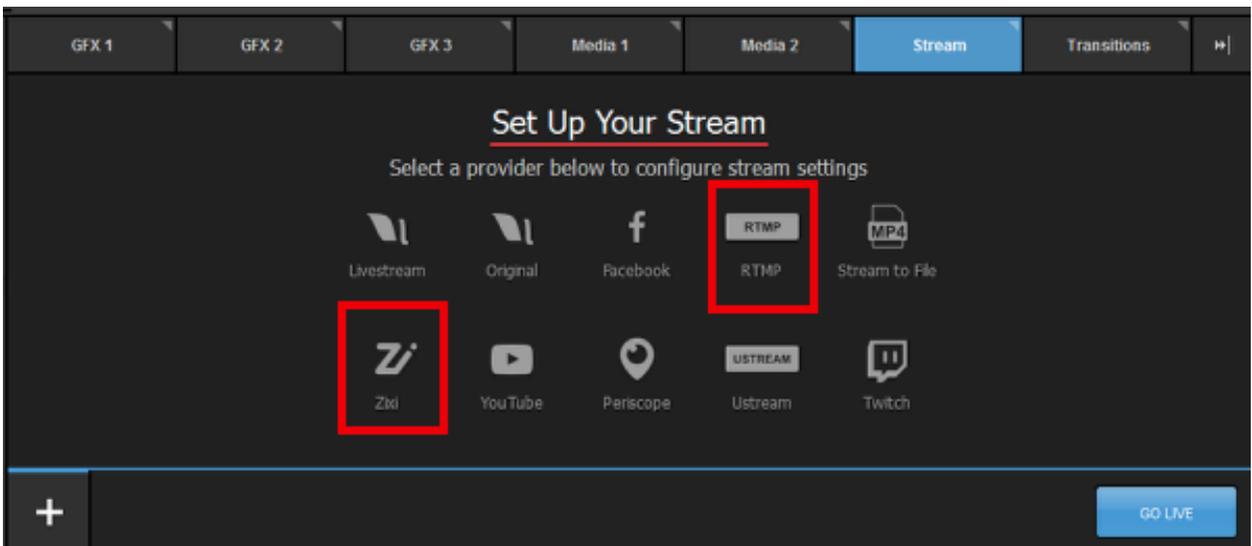
Stream now 

<https://www.youtube.com/watch?v=41h9VufXmx0>

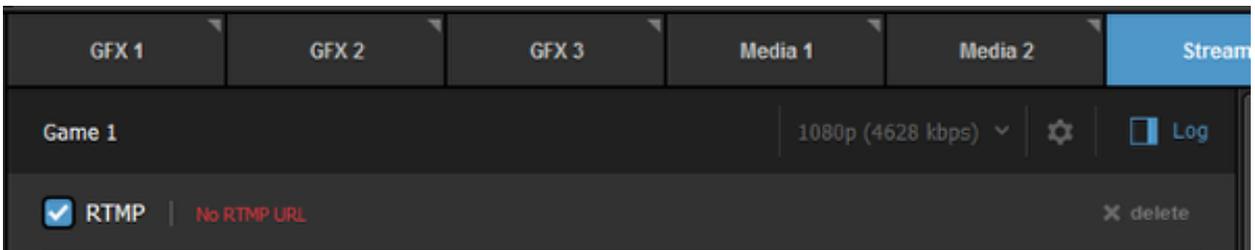
# Streaming via RTMP and Zixi from Livestream Studio

You can stream directly from the Livestream Studio software to other services using any RTMP server (e.g. Wowza, Akamai, etc.) as well as Zixi. Both use-cases have very similar interfaces.

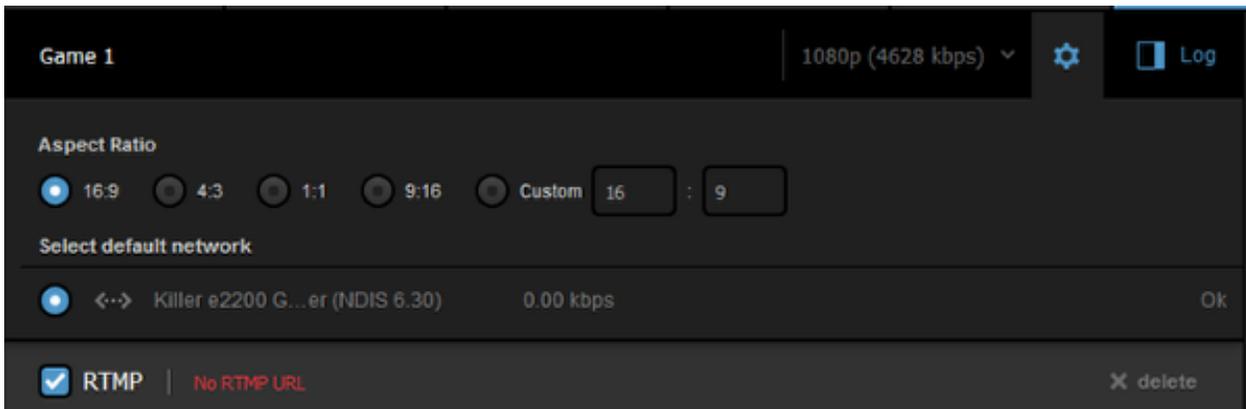
Under the Stream tab, click the streaming protocol you plan to use (RTMP or Zixi).



At the top of the module, configure a stream title and streaming quality.



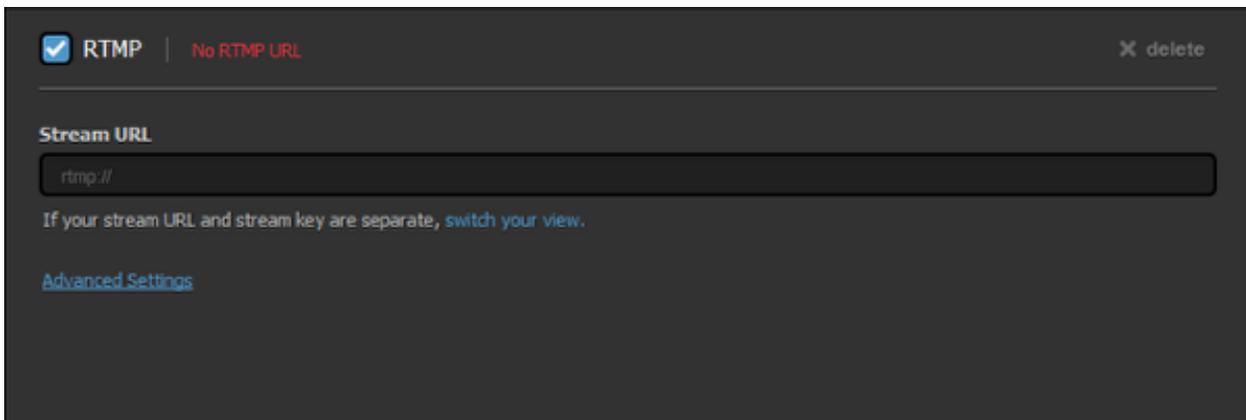
Click the gearwheel to adjust your aspect ratio or choose a default network for sending your stream.



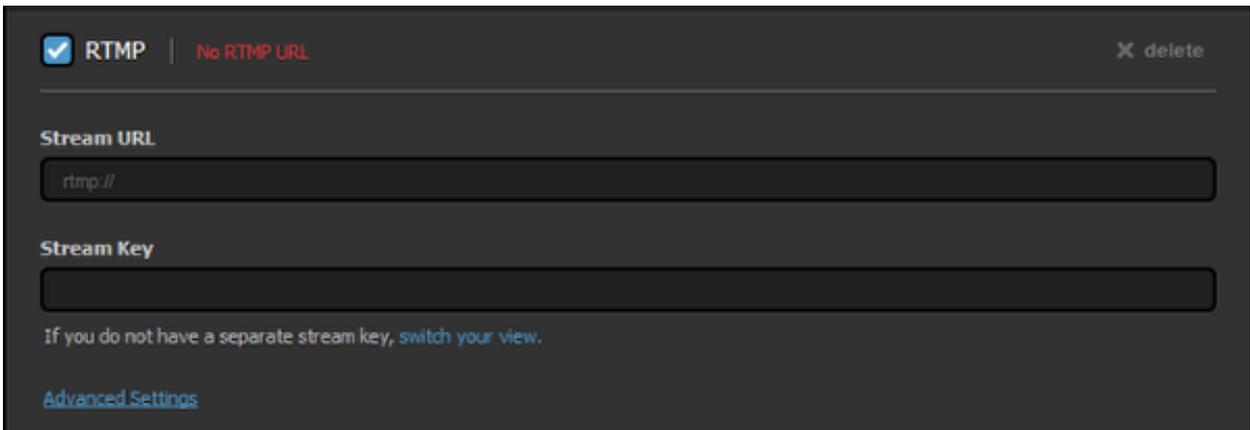
With RTMP streaming, you need to get the RTMP URL from your streaming provider in order for Studio to know where to send the stream. Zixi provides a similar URL.

Paste the appropriate URL into the **Stream URL** field.

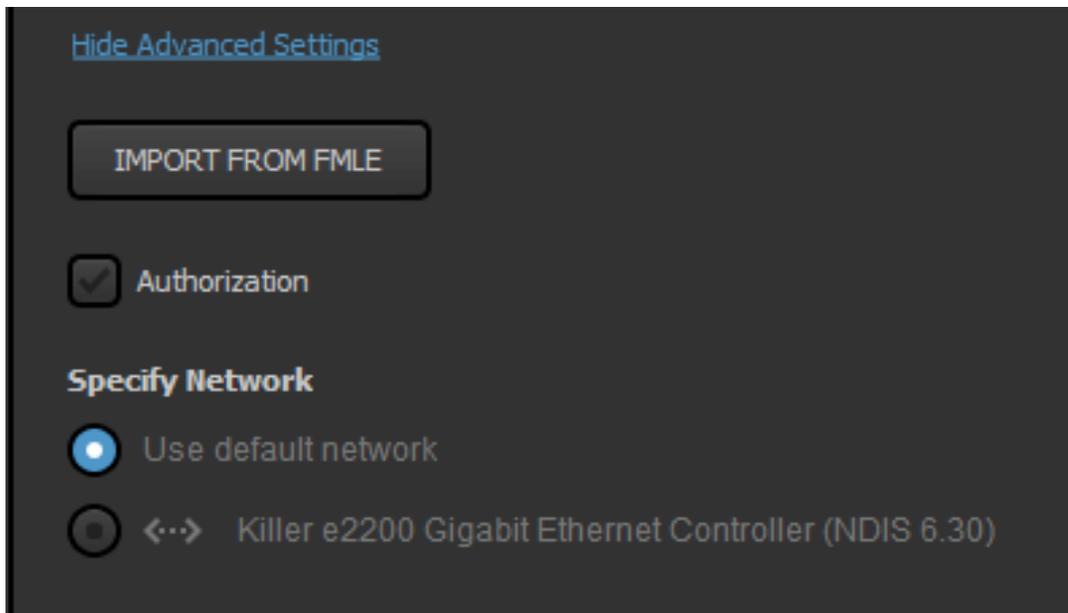
**i** Studio now supports streaming via **RTMPS** protocol; select **RTMP** as your provider and paste the RTMPS URL in the Stream URL field. Studio will recognize the protocol and send it as such.



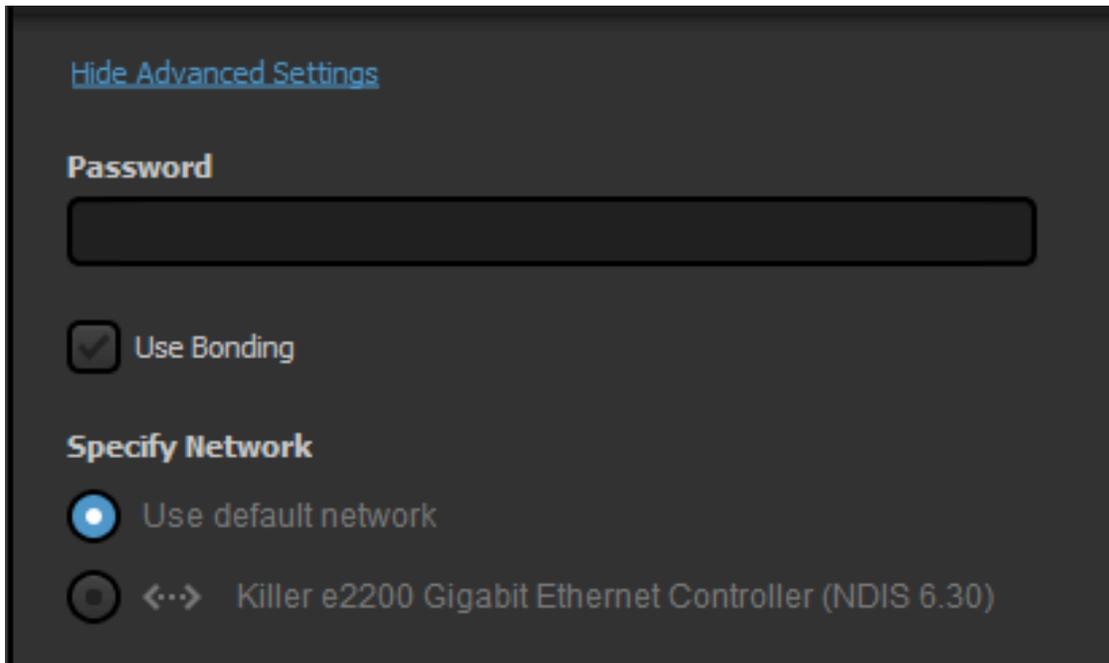
Some streaming providers only give a single Stream URL with the stream key included, while others provide the stream URL and stream key separately. If your provider does the latter, click **switch your view** to see two text fields: Stream URL and Stream Key



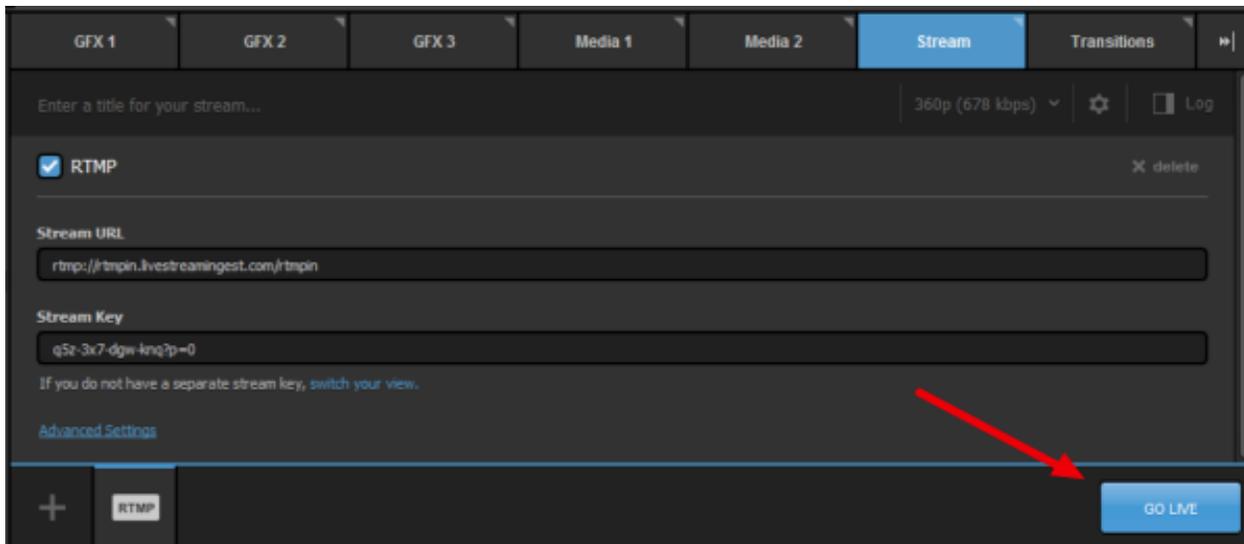
Clicking **Advanced Settings** will show additional options, such as importing the configuration XML file (**Import From FMLE**), enabling authorization, and choosing which network to stream over if you do not wish to use your



Zixi users will see the option to enter a Zixi password, as well as the option to use a bonded connection or specify a network under their **Advanced Settings**. Checking **Use Bonding** will automatically use all available networks to which your Studio PC is connected.

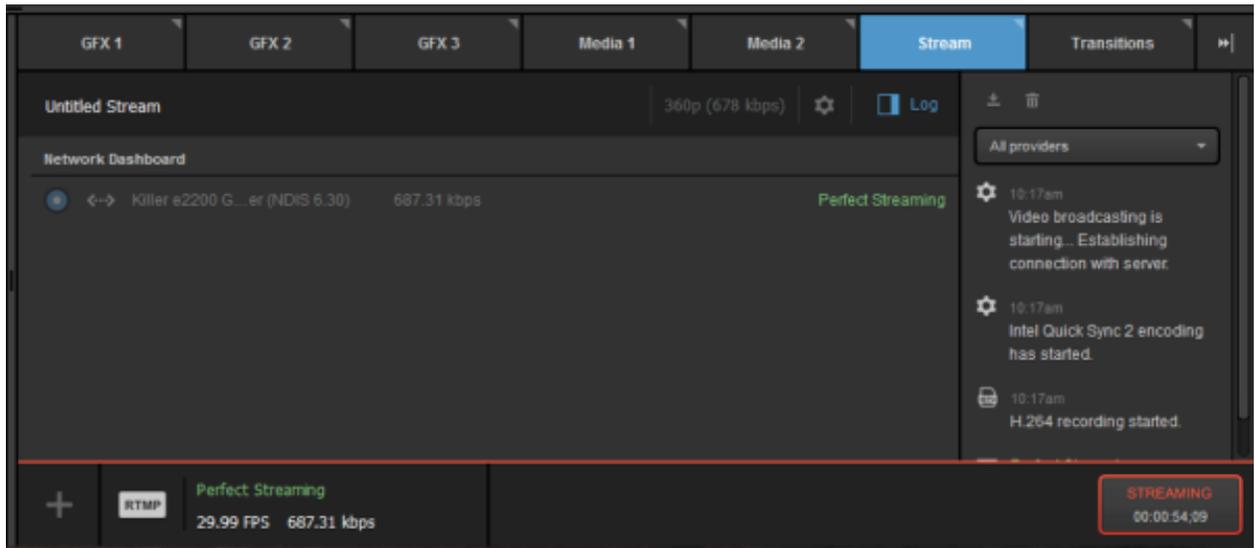


When your RTMP or Zixi settings are configured, click Go Live to start streaming to your destination.



Studio will start streaming your content to your destination and display information such as outgoing frame rate and bitrate. Any potential issues will display in the log on the right side.

When your event is over, click the red Streaming button to end your stream.



# Streaming to Ustream

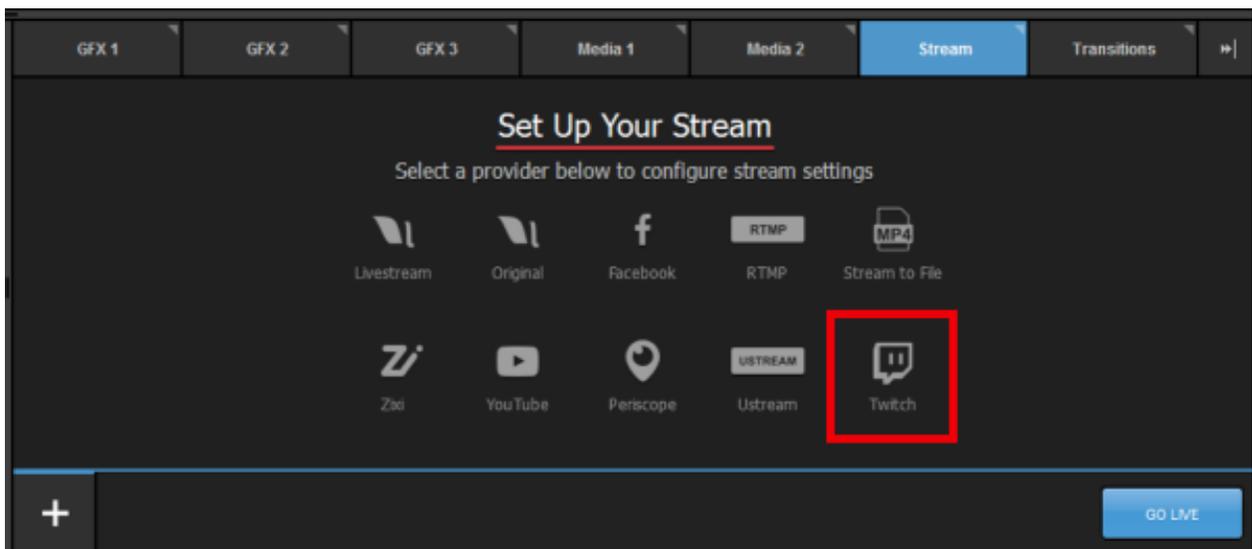
In order to stream to Ustream via Livestream Studio, producers must use the [RTMP](#) section of the **Stream** module.

Ustream provides instructions on how to obtain the RTMP URL for your channel [here](#).

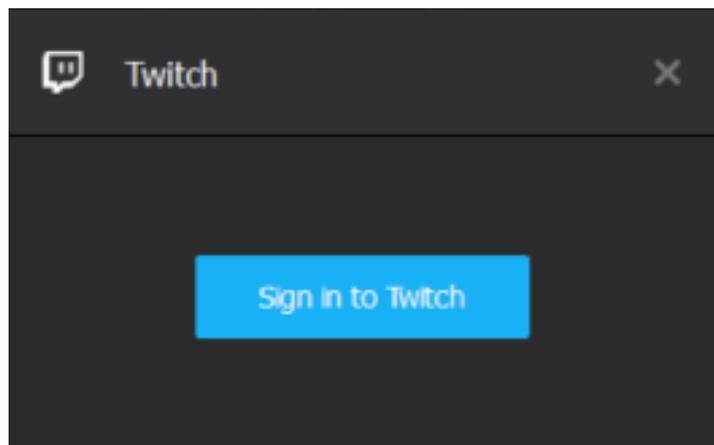
# Streaming to Twitch via Livestream Studio

Livestream Studio offers direct integration with Twitch for producers who wish to stream their content there.

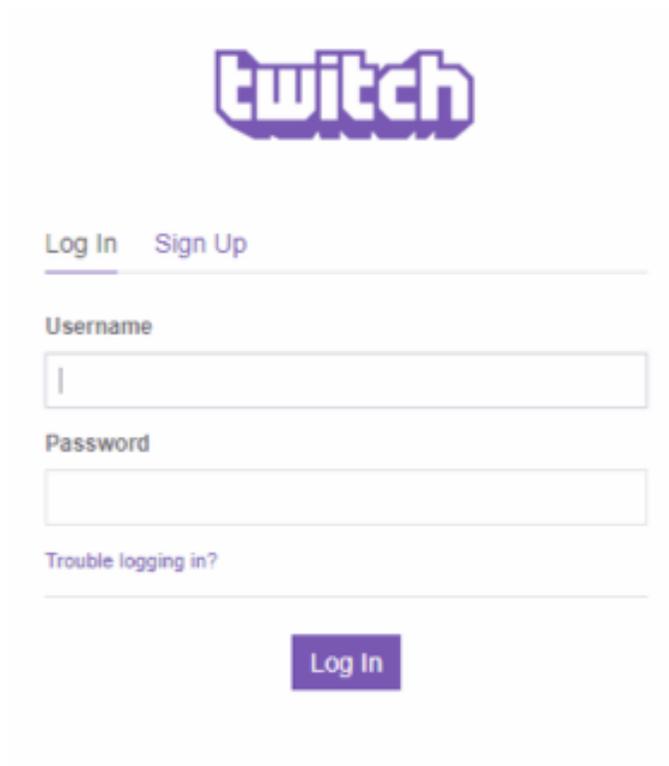
In the Stream module, click the Twitch logo to start configuring your stream settings.



The pop-up window seen below will appear. Click Sign in to Twitch and navigate to your web browser if it does not switch over automatically.

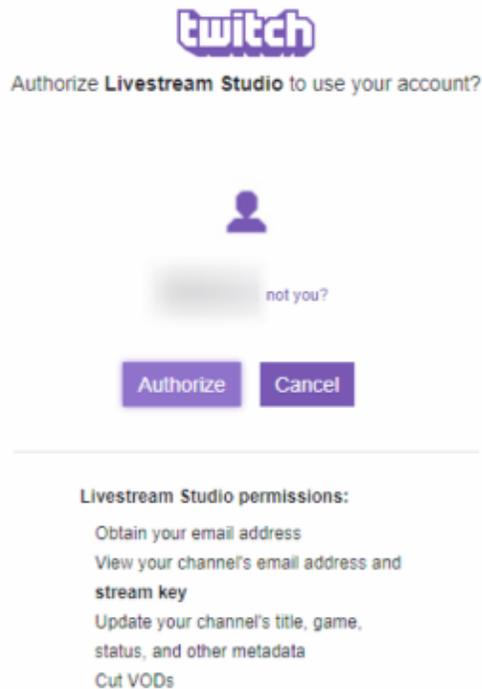


Log in to your Twitch account within the browser.

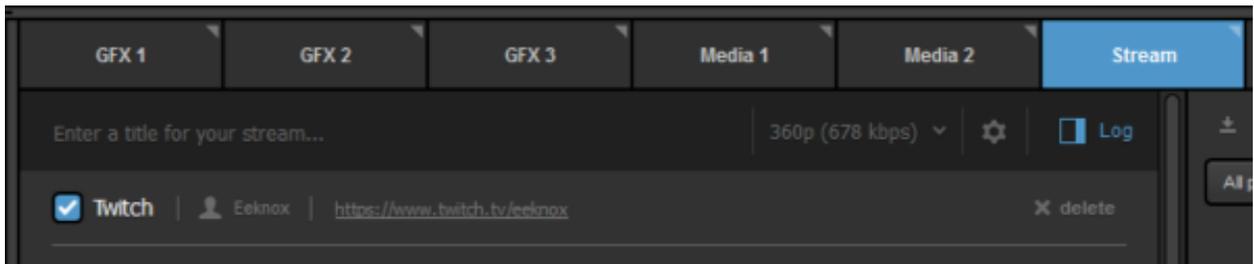


The image shows the Twitch login page. At the top center is the Twitch logo in a stylized, purple, blocky font. Below the logo, there are two links: "Log In" and "Sign Up". The "Log In" link is underlined. Below these links are two input fields: "Username" and "Password". The "Username" field contains a single vertical bar character. Below the "Password" field is a link that says "Trouble logging in?". At the bottom center of the form is a purple button with the text "Log In" in white.

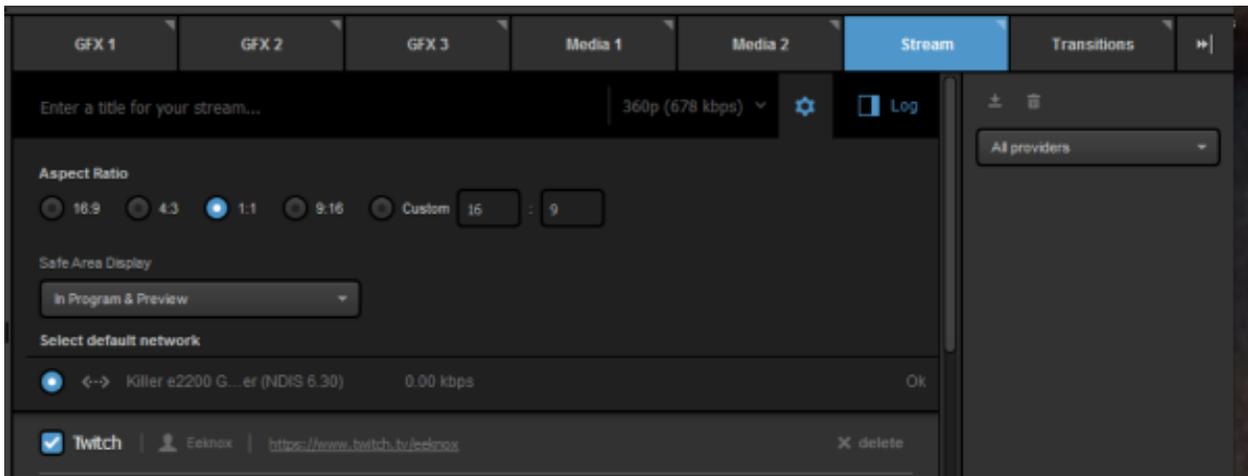
Authorize Livestream Studio to access information from your Twitch account by clicking **Authorize**. After doing so, navigate back to Studio if the browser does not close by default.



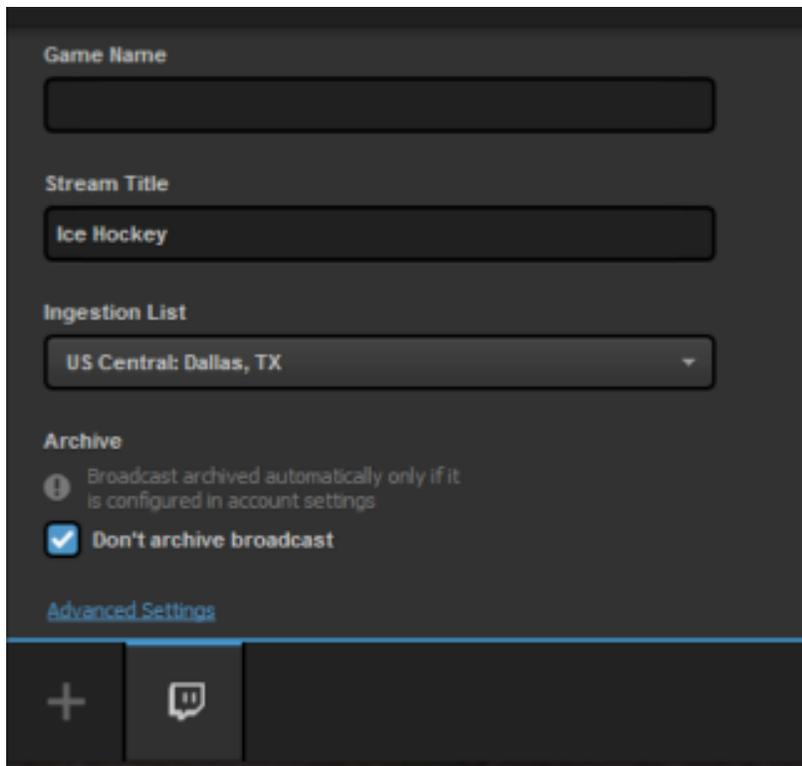
Enter a title for your stream and set your streaming quality.



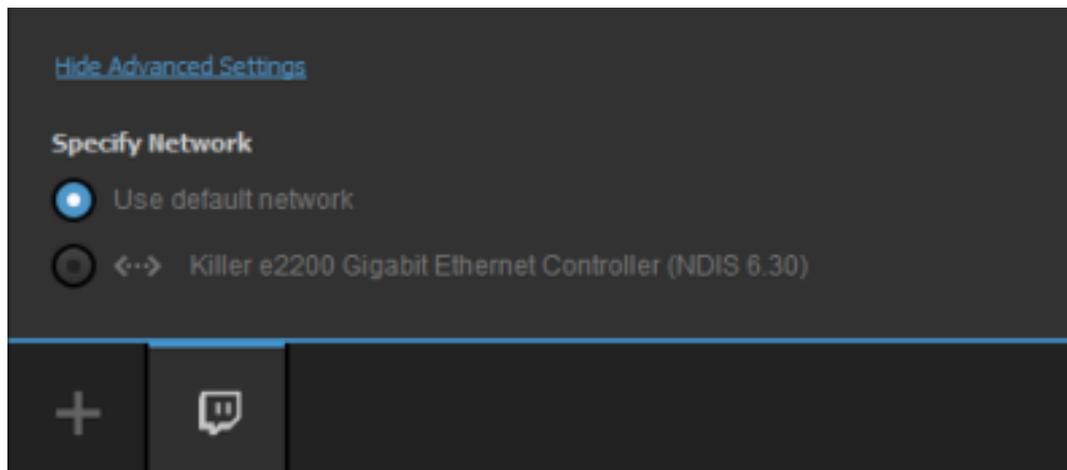
Click the gearwheel icon to set your desired output aspect ratio and the default network to use with your stream. If you choose a 1:1 or 9:16 ratio, a Safe Area Display will appear in your output by default. You can change this to show in all sources in your multiview or to not display at all.



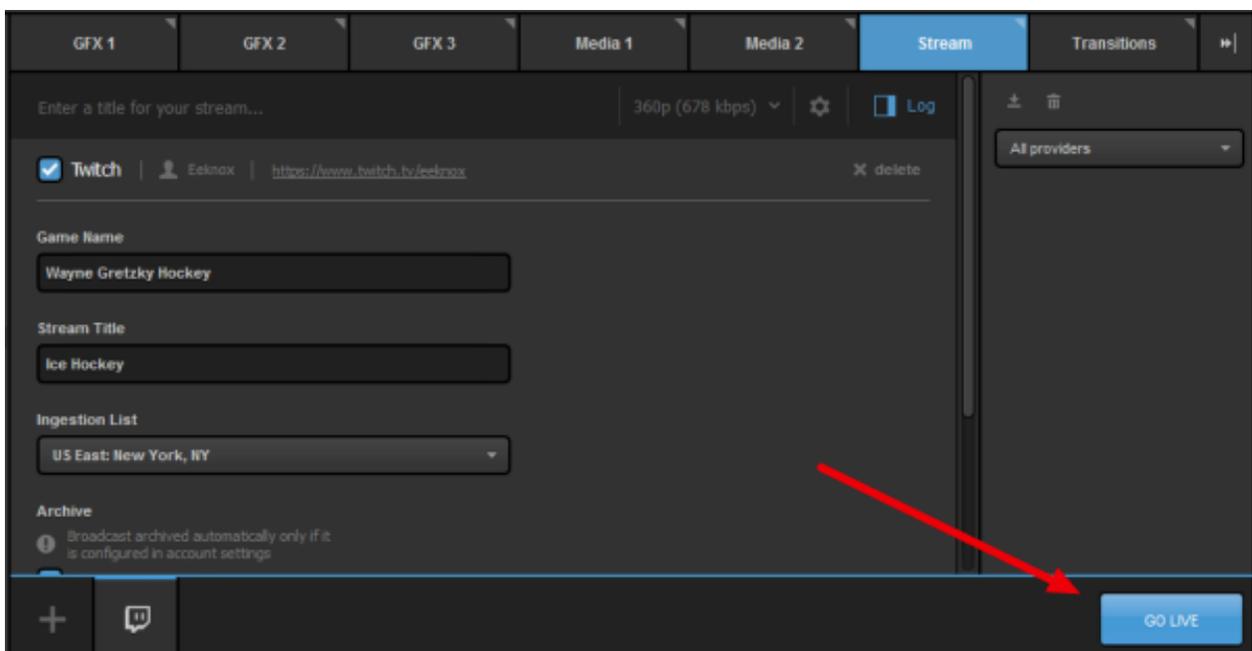
Set your game name, stream title on Twitch, ingestion location, and whether to save your VOD on Twitch.



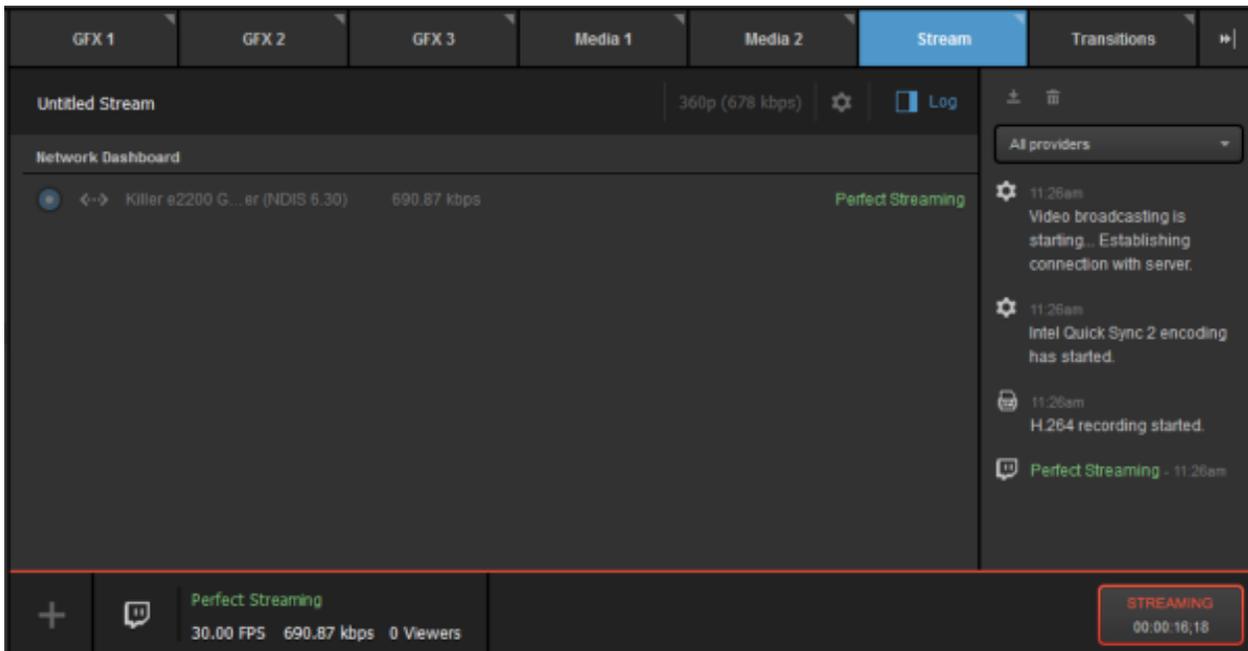
Clicking Advanced Settings will allow you to specify a network to stream out at if you do not wish to use your default network selected earlier.



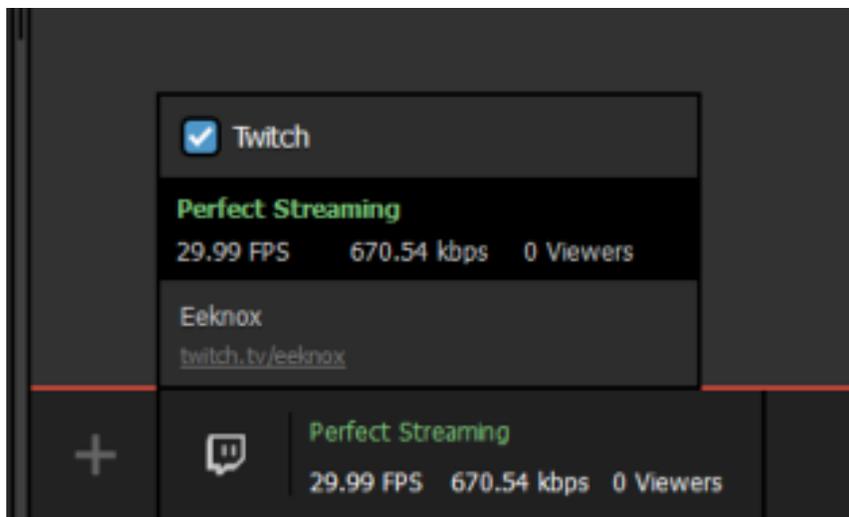
Click Go Live when you are ready to start broadcasting. Livestream Studio will indicate that the stream has started and display your streaming status.

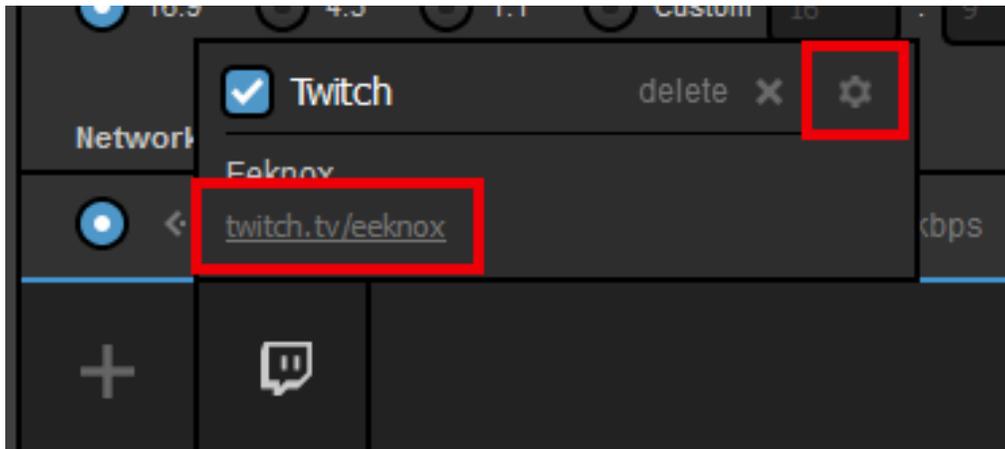


When you are ready to finish streaming, click the red Streaming button.



Hover your mouse over the Twitch icon at the bottom of the module. You will find a link to your Twitch channel.





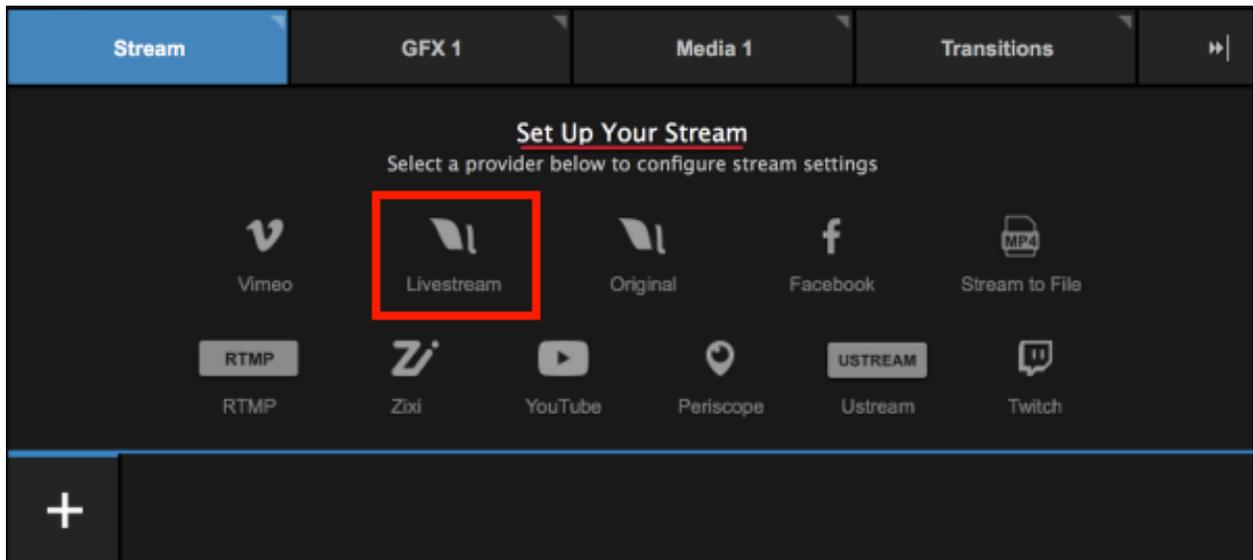
# Stream to Multiple Providers Using Livestream Studio

You have the option to stream to multiple providers at the same time using Livestream Studio.

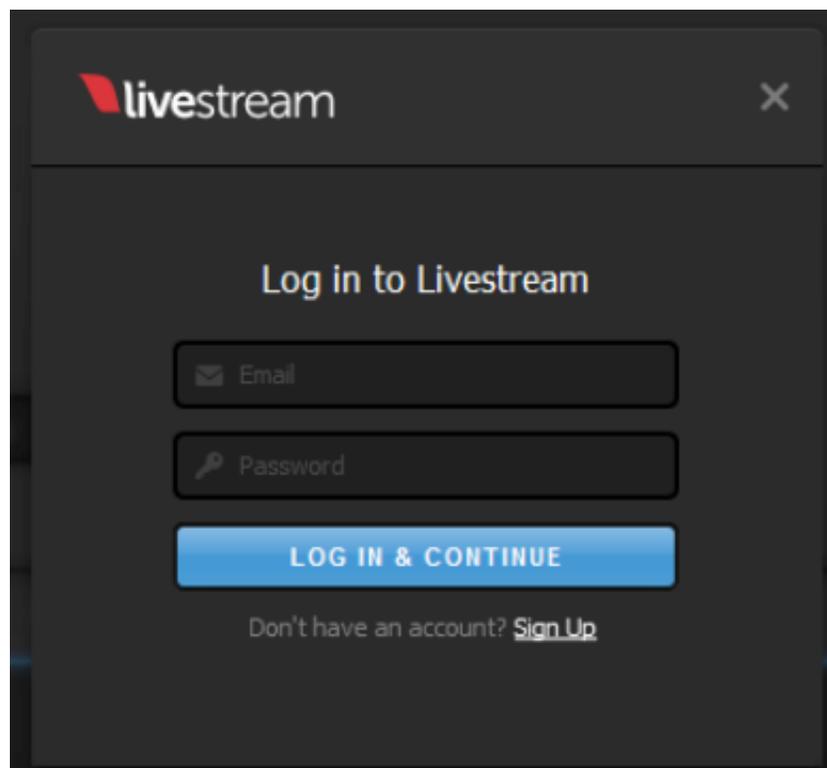
Your video is only encoded once, so CPU demands for this feature are similar to those for streaming to just one provider. However, bandwidth requirements will be higher. Multiple streams will use as much bandwidth as the qualities selected for each provider.

Example: If 720p + 480p + 360p + 240p (4862Kbps) Stream Quality is selected for Livestream and 'Highest Quality' is selected for Facebook (in this case, 720p), then the total outgoing bitrate will average  $4862 + 2128 = 6990\text{Kbps}$ . We always recommend having twice the upload speed on your network as the selected bitrate, which is about 14Mbps upload speed in this case.

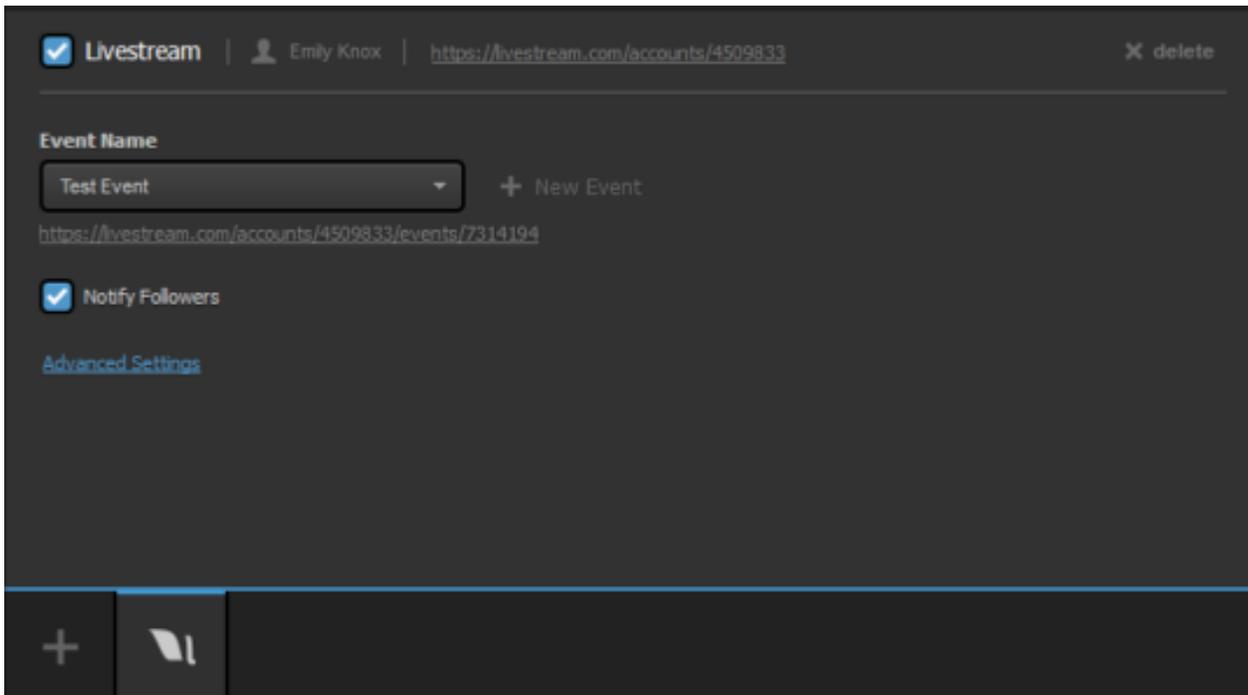
Start by clicking one provider's logo to add it to Studio (this example will use Livestream).



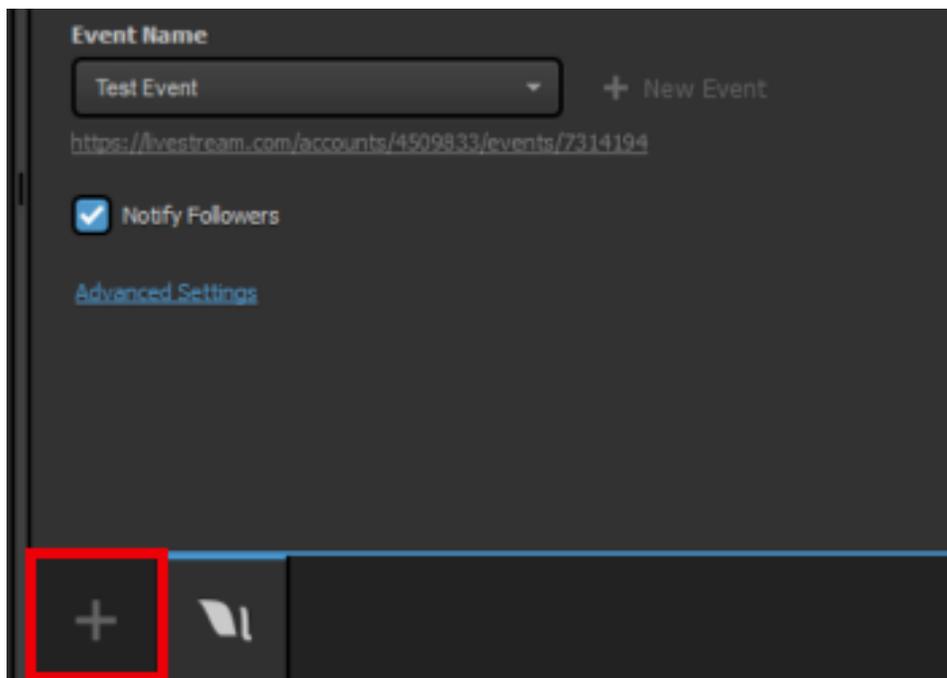
Log in to the selected provider to configure your stream settings.



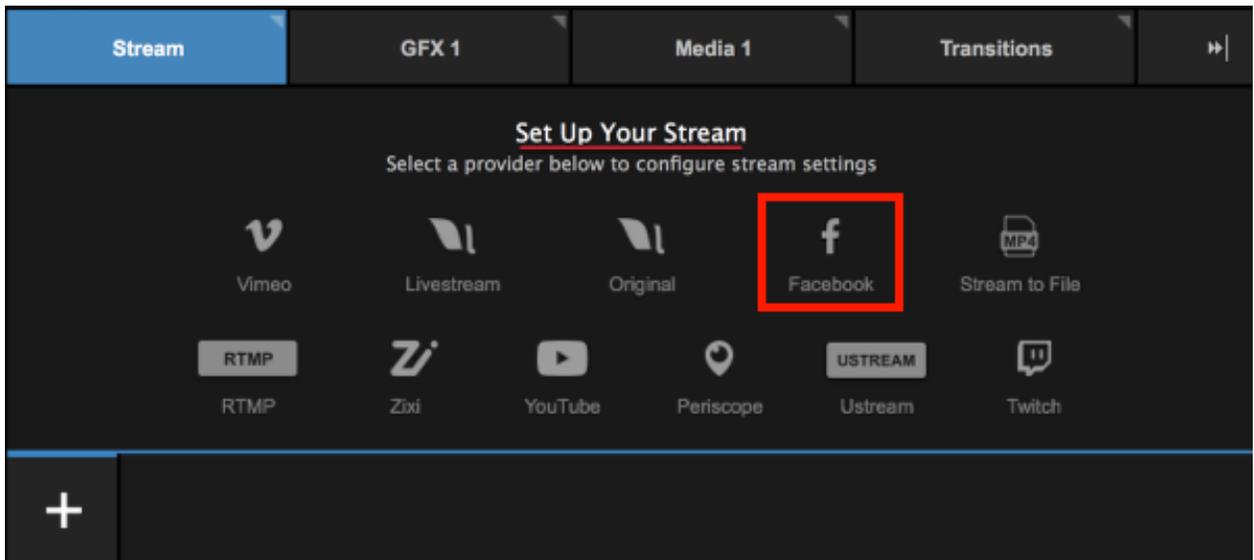
Configure your stream destination as you normally would (e.g. select your Livestream event).



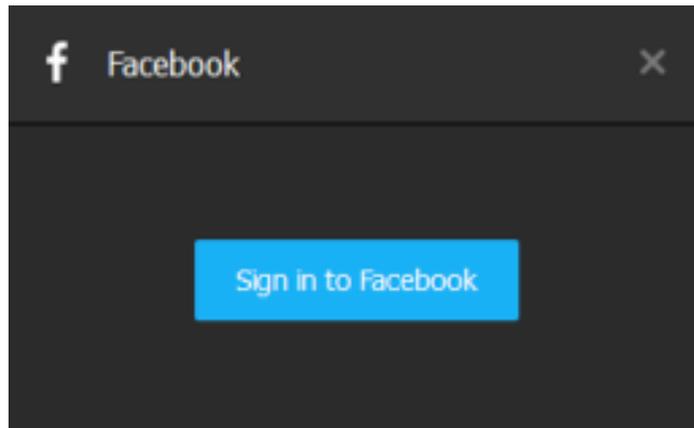
Now add a second provider by clicking the + button in the lower left corner of the Stream module.



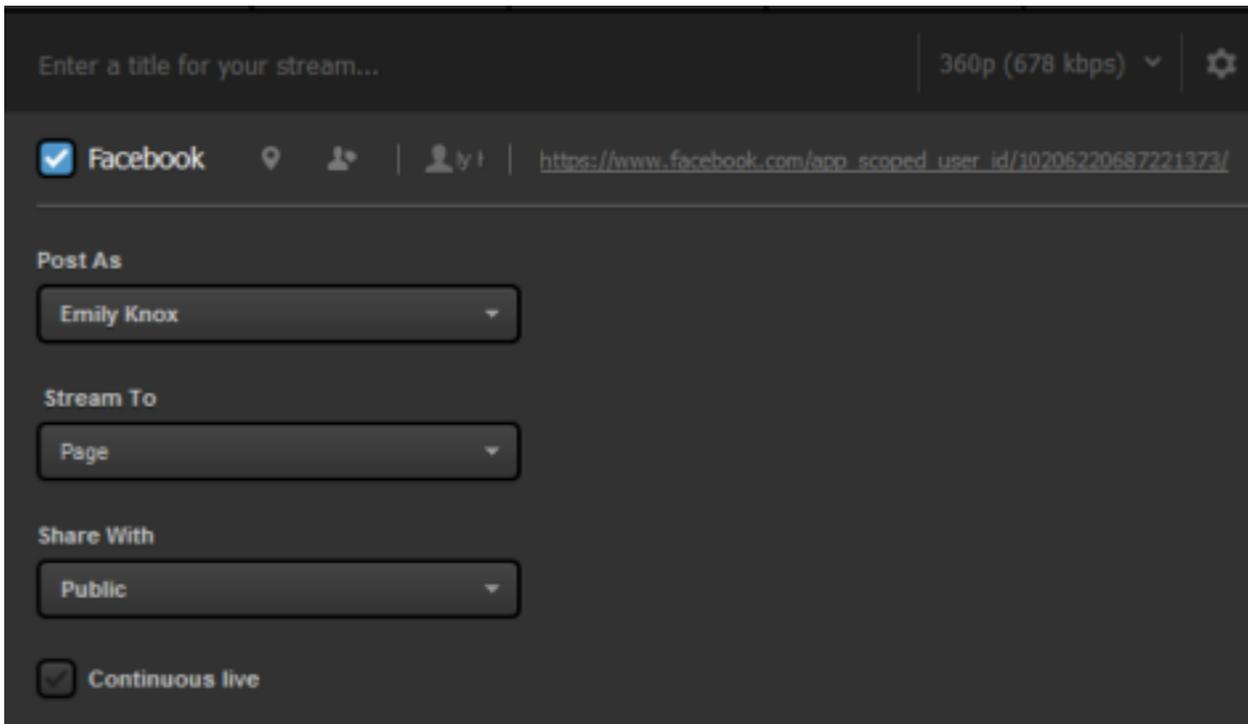
Select a second provider (this example will show Facebook).



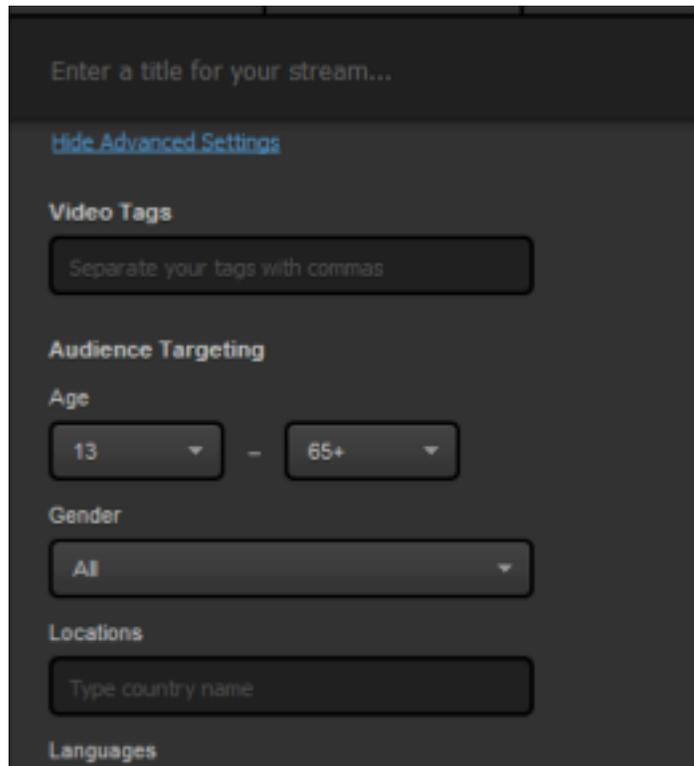
Log in to that provider; allow any permissions that the provider may request in order to use it with Studio.



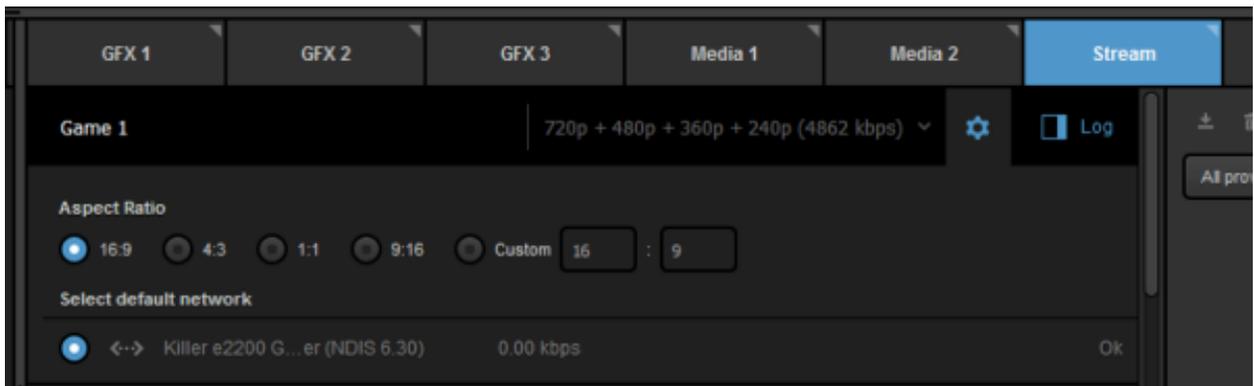
Configure your stream's destination for that provider, i.e. which profile is streaming, to which page or group, and your desired audience.



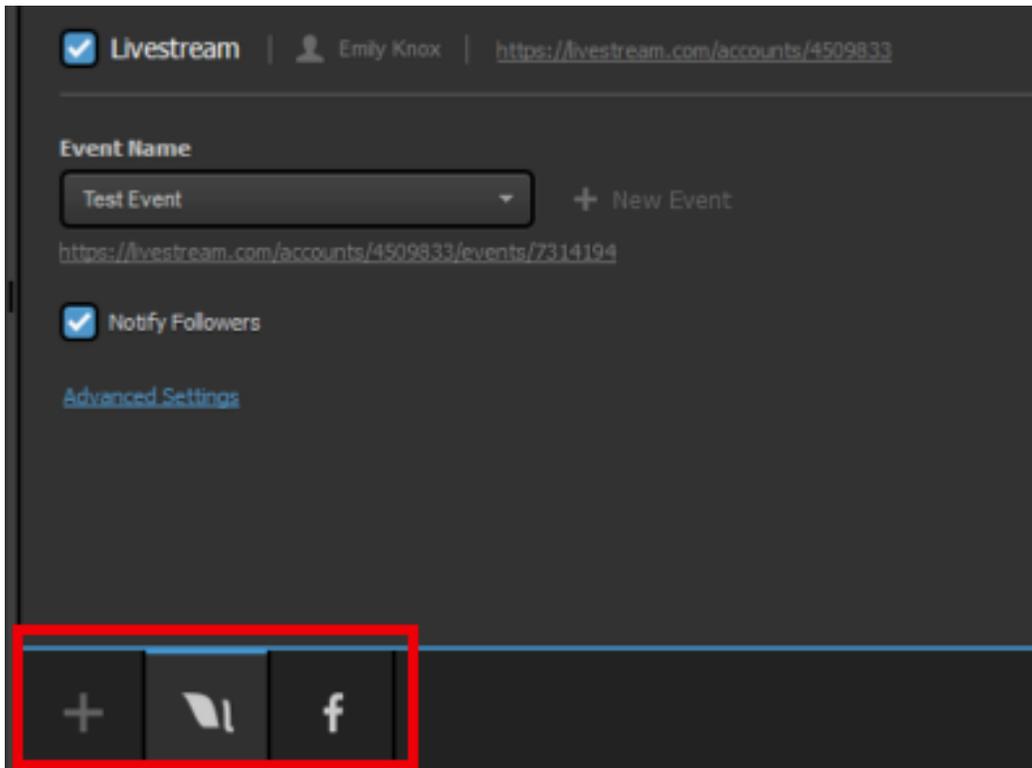
You can click Advanced Settings to configure further settings for that provider if you wish.



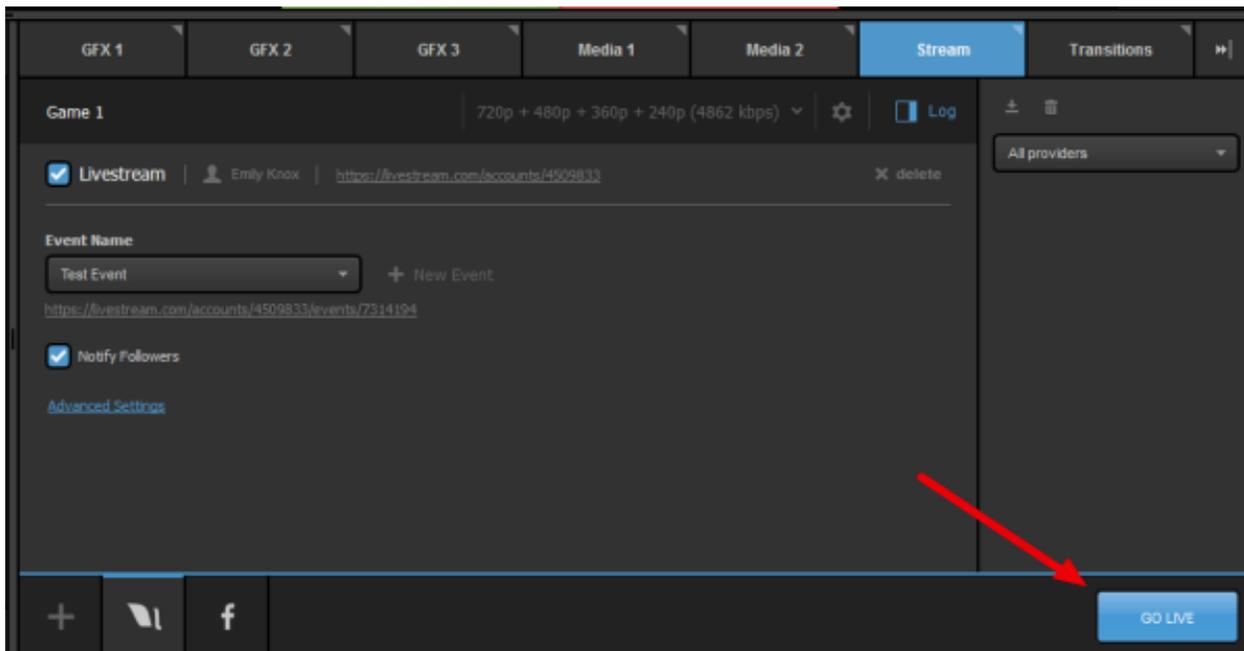
At the top of the overall Stream panel, your stream title, bitrate, and aspect ratio.



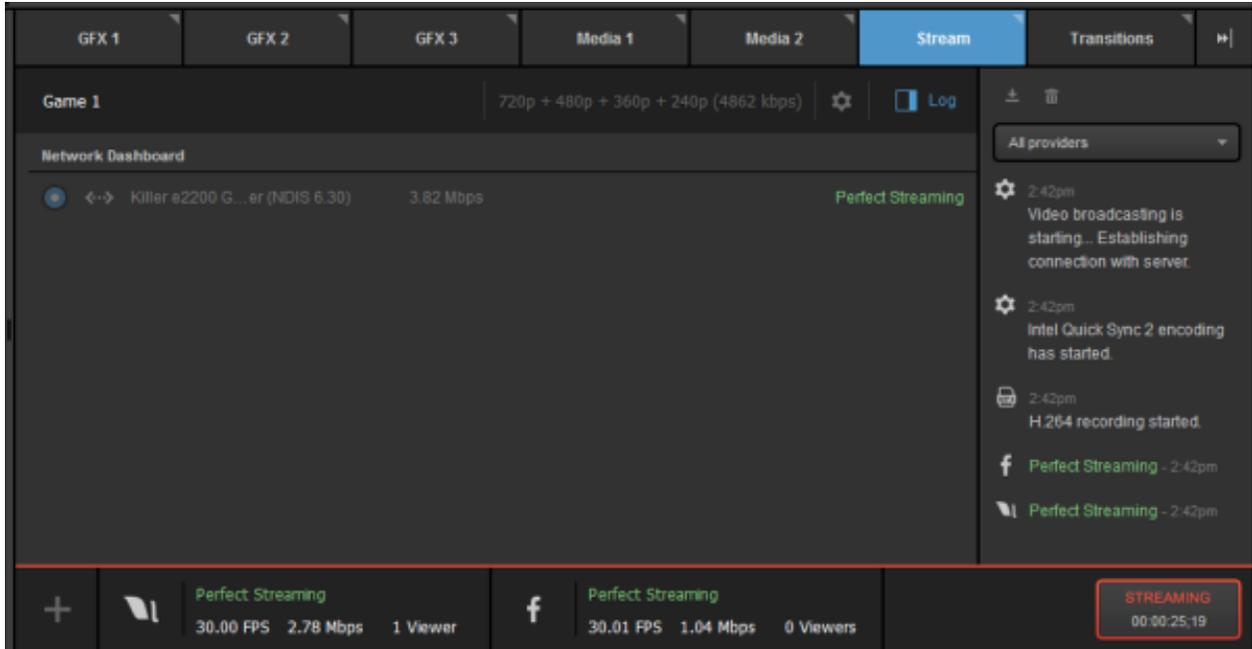
If you need to change a setting for a particular provider, click the provider's icon at the bottom of the panel. The selected provider will be a lighter shade of gray.



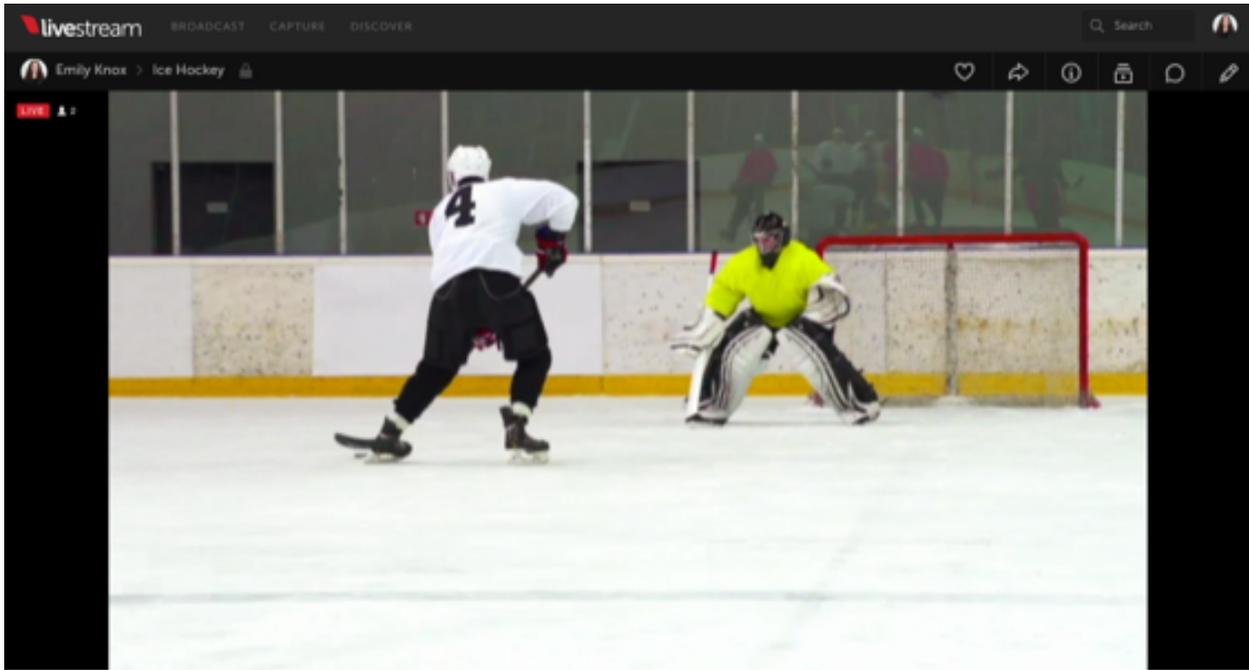
Click 'Go Live' in the bottom right corner to start your stream.



The Stream module in Studio will show the streaming status for each provider along the bottom of the interface, as well as the overall outgoing bitrate in the middle of the panel.



Open a web browser and go to your selected stream destinations. You will see the exact same live content in each player.

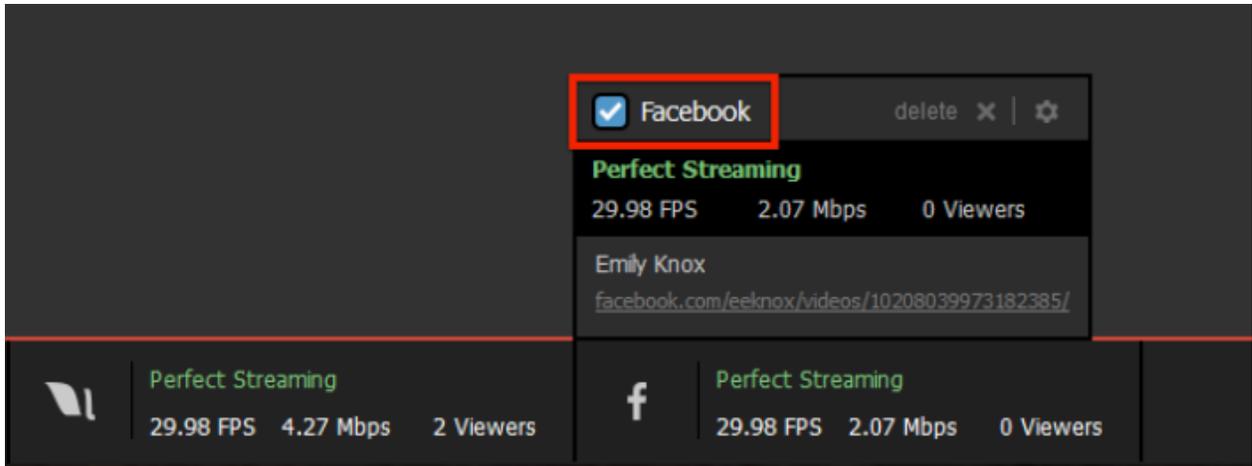


Game 1

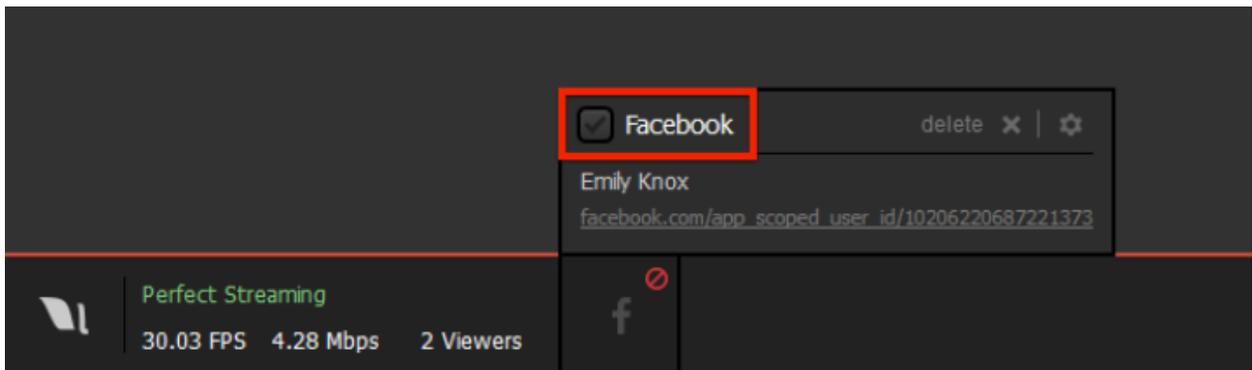


Like Comment Share

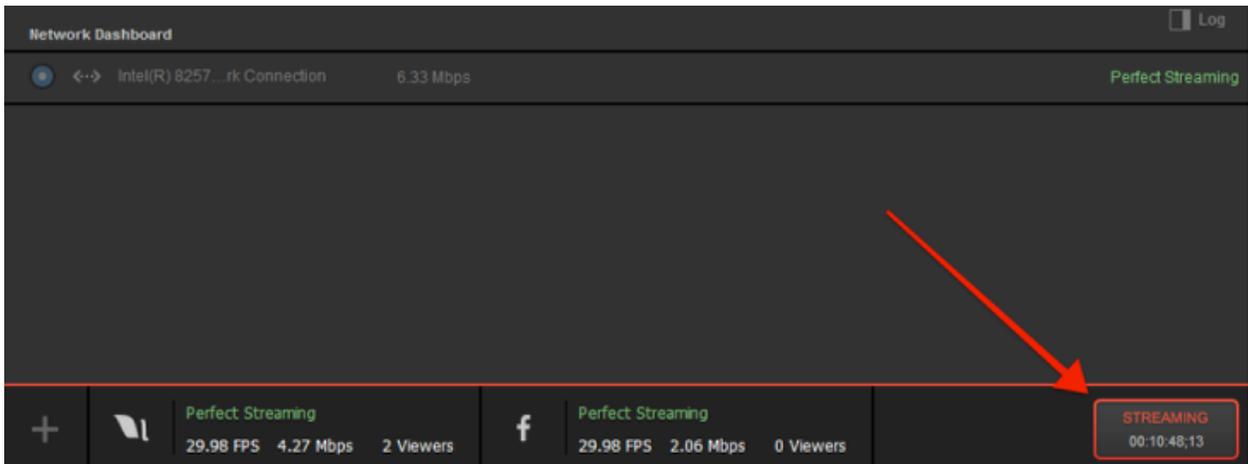
You can deactivate a provider by hovering your mouse over its icon and unchecking the checkbox in the upper left corner of the popup box. If this is done while you are streaming, that will stop the stream on that provider only.



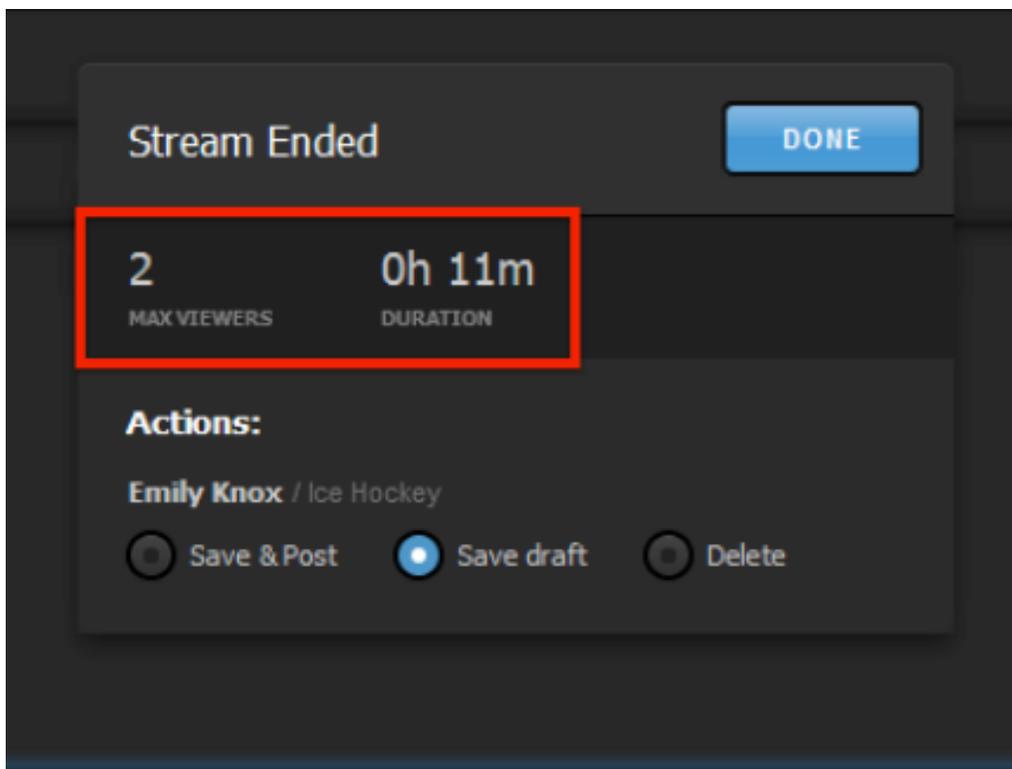
You can reactivate that provider at any time (live or not live) by checking the checkbox.



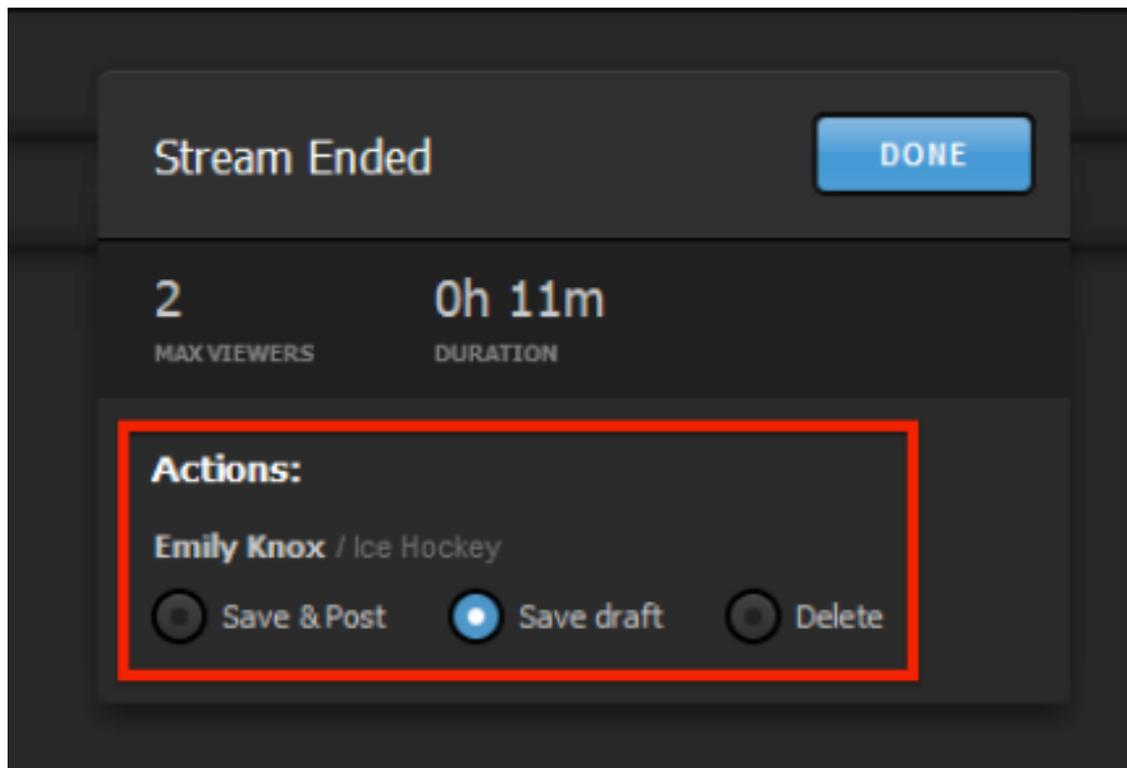
When your event is over, click Streaming in the lower left corner to end the stream.



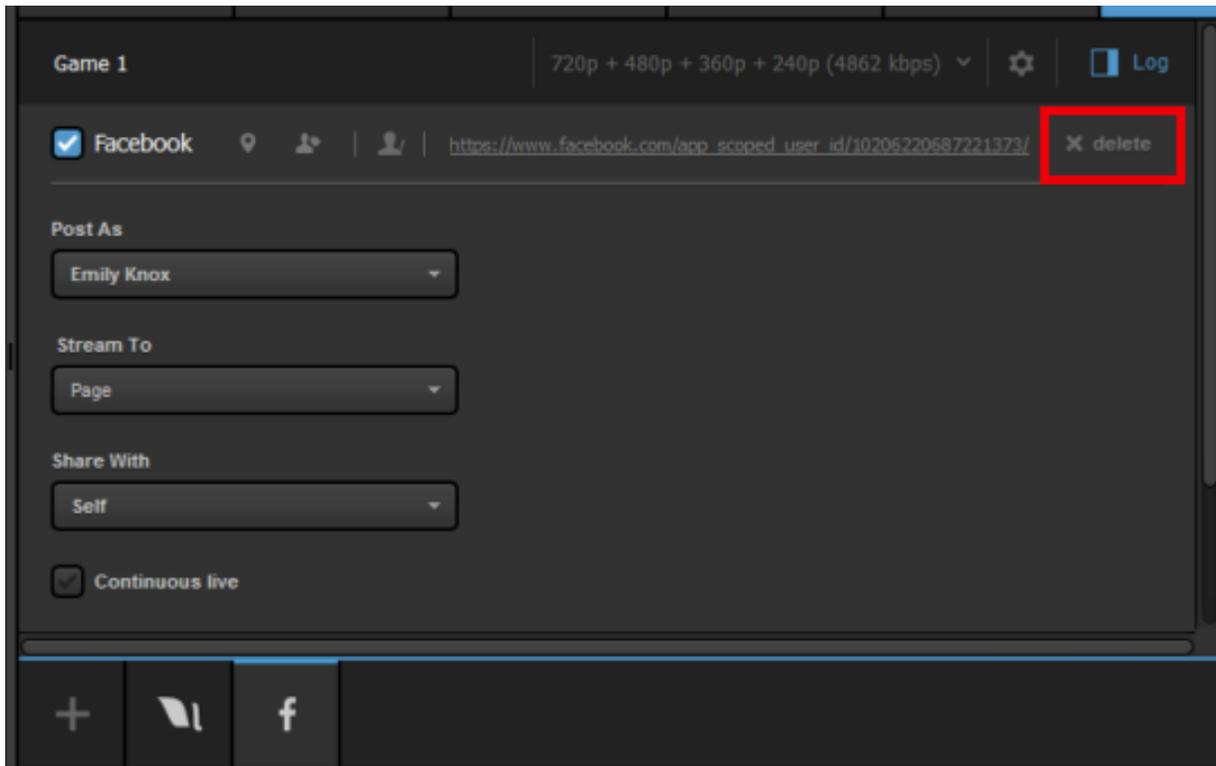
Studio will let you know that the stream has ended and display the maximum viewers your event had and the stream duration.



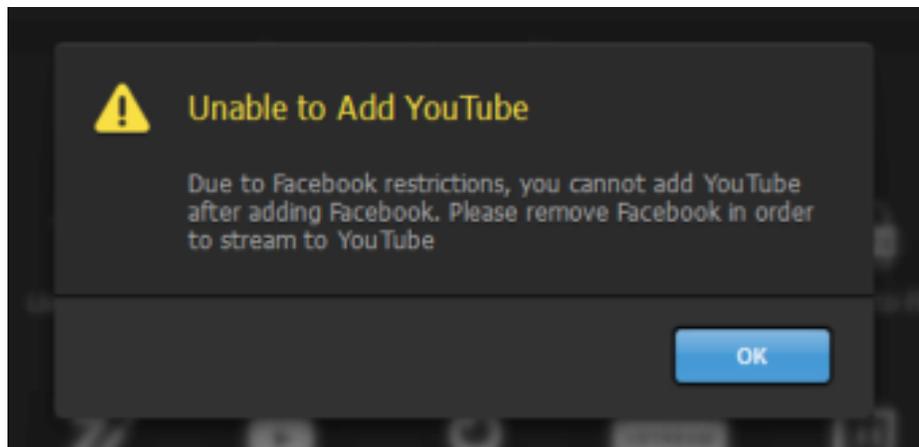
Certain providers may have actions for you to take after the broadcast. For example, Livestream will ask if you want to post the video on demand, save it as a draft, or delete it ('Save draft' is selected by default.) Choose your desired option, then click Done.



If you want to remove a provider from your workflow entirely, select its icon in the bottom of the interface to open its settings, then click X delete in the upper right corner of the module. You can add it back at any time.



It's important to note that Facebook will not stream alongside any other streaming provider besides Livestream. Facebook will have to be disabled in Studio prior to streaming to YouTube, etc.

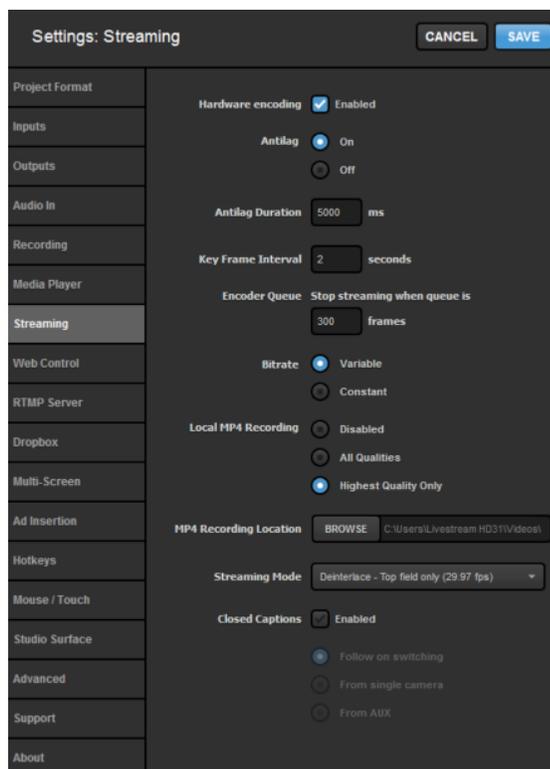


If you wish to stream to Livestream and Facebook but have limited bandwidth, you may want to look into [Facebook Live for Livestream on the Livestream Platform](#).

# Advanced Streaming Settings in Livestream Studio

Livestream Studio allows you to configure additional settings regarding your stream's output and response to certain situations.

These settings can be found by clicking the gearwheel in the upper right corner of the Studio interface and navigating to the Settings: Streaming menu.



**Hardware encoding:** This option only appears on PC's that have integrated graphics cards that support video encoding. [Learn more.](#)

**Antilag:** Selecting 'On' for Antilag works to reduce latency on the viewing end. If a delay on the encoding side builds up past the chosen **Antilag Duration** (below), the frame buffer will be cleared. Turning Antilag off will continue to build a cache of frames

without clearing the data, thus building latency to your viewers. If low latency is a critical component of your stream, disabling Antilag is not recommended.

**Key Frame Interval:** Places key frames into the stream to track changes in movement. Two seconds is a standard setting, but you may want to consider a higher interval if your event has a lot of motion.

**Encoder Queue:** The number of frames that Livestream Studio will allow to build up prior to a stream terminating due to bandwidth or CPU issues.

**Bitrate:** A 'Variable' bitrate will change the outgoing bitrate based on the movement in the video. Static images will send at a lower bitrate; high movement will increase the bitrate. 'Constant' bitrate will maintain the outgoing bitrate regardless of the amount of movement in the video.

**Local MP4 Recording:** Automatically records an .mp4 of your stream as a backup. It is strongly recommended to leave this feature enabled. Selecting **Highest Quality Only** will record in only the highest bitrate and resolution that you are outputting (e.g. if your stream quality is 720p + 540p + 240p, your backup recording will record in 720p, whereas selecting **All Qualities** will produce three separate recordings simultaneously, one for each quality).

**MP4 Recording Location:** Choose where the backup recording described above is saved. By default, your recordings will save to the Videos folder on your system's C drive, but you may choose to save it elsewhere, such as an external hard drive.

**Streaming Mode:** Allows you to choose the outgoing frame rate. The higher the rate you choose, the more CPU usage will increase.

**Closed Captioning:** If you need to ingest closed captions over SDI, here is where you enable it. Learn more about Studio's [closed captioning support](#).

# Can Livestream Studio Stream to Facebook Workplace?

Facebook Workplace is not directly integrated with Livestream Studio. However, you can [stream](#) to your Workplace community via [RTMP](#).

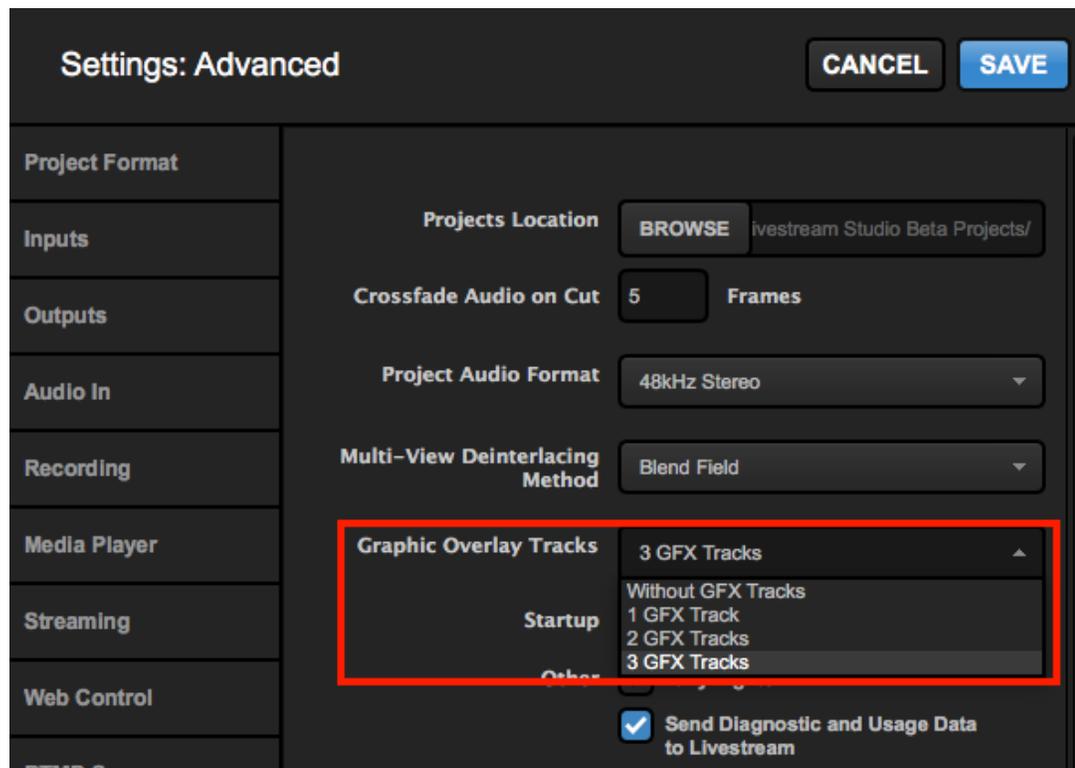
# Graphic Overlays

# Adding Graphics Overlay Tracks

Livestream Studio gives you the option to use three graphics overlay channels, all of which can include multiple layers of static or data-driven graphics.

To ensure you have the desired number of graphics overlay channels available, go to your settings and navigate to the **Advanced** tab.

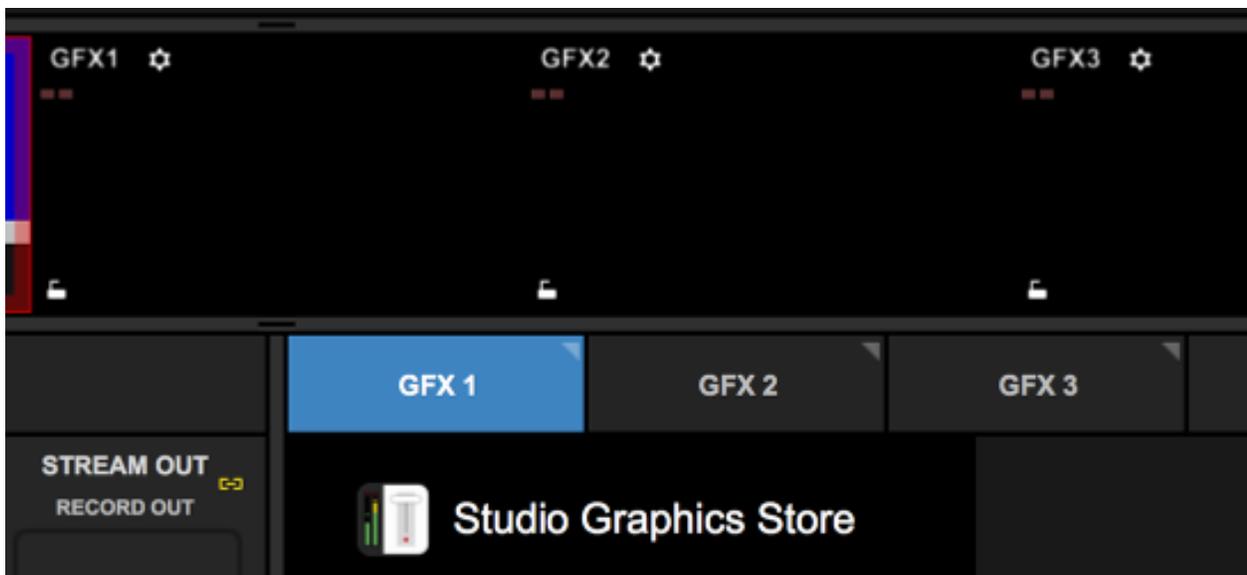
Look for the **Graphic Overlay Tracks** menu. This is where you select the number of GFX tabs you want available to you in the Livestream Studio interface (up to three).



Next, in the **Inputs** tab, add your GFX channels as video sources if you wish to see them in your multi-view. This is especially helpful if you are using picture-in-picture or other full-screen graphics.

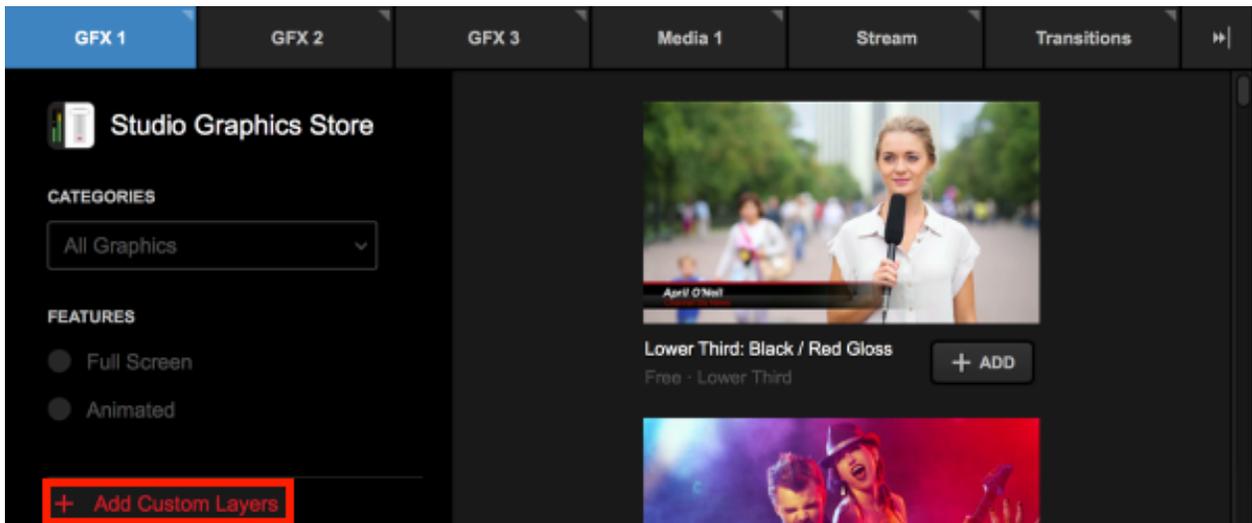
CAM3	DeckLink Min	Embedded	None
REMOTE1	Remote Cam	Embedded	None
REMOTE2	Remote Cam	Embedded	None
GFX1	GFX 1	Disabled	None
GFX2	GFX 2	Disabled	None
GFX3	GFX 3	Disabled	None
MEDIA1	Media 1	Embedded	None

After saving your settings, you will see the desired number of GFX channels and any GFX channels added to your multi-view.

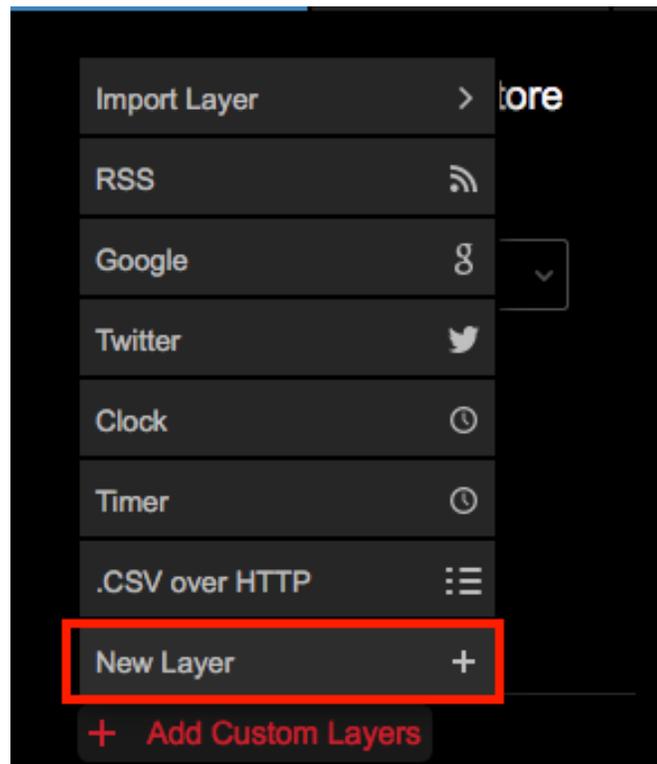


The first step in adding graphics overlays to the GFX channel is adding a layer. You can easily add a Livestream pre-built graphic template such as a lower third by navigating the Studio Graphics Store seen inside the graphics module.

To add your own custom graphic, select + Add Custom Layers in the bottom left corner of the interface.



Many options will pop up. To get started, select New Layer at the bottom of the list.

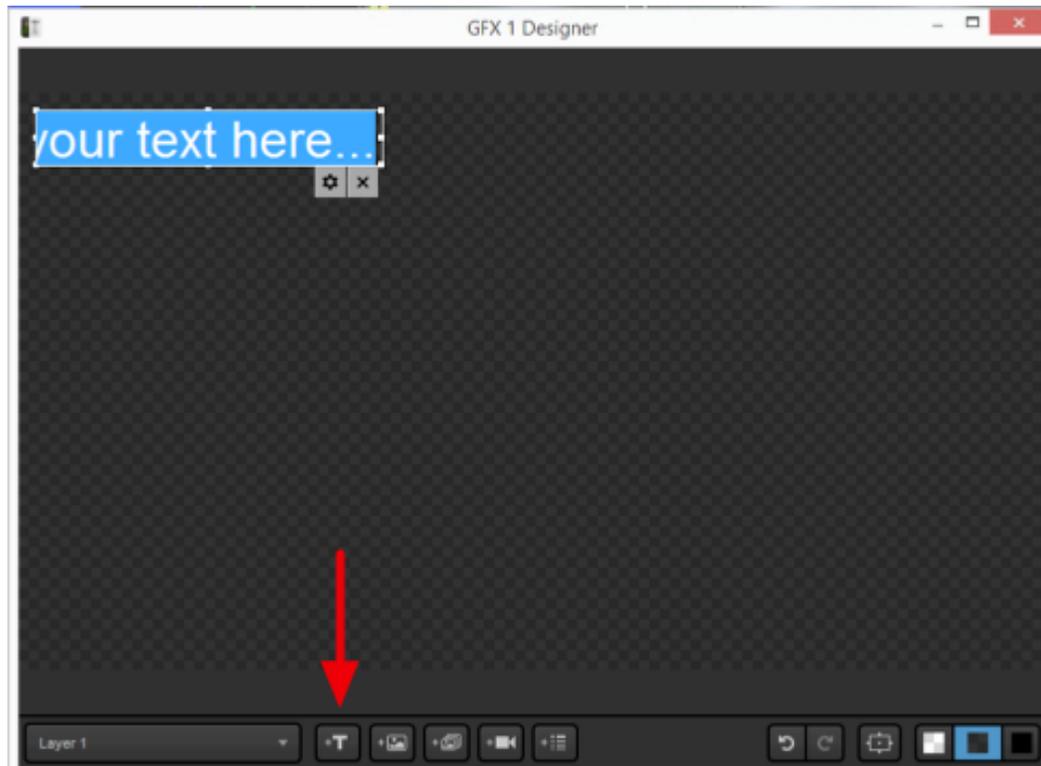


The layer will appear on the left side of the module. Click either paintbrush button to enter the GFX designer to build your graphic.

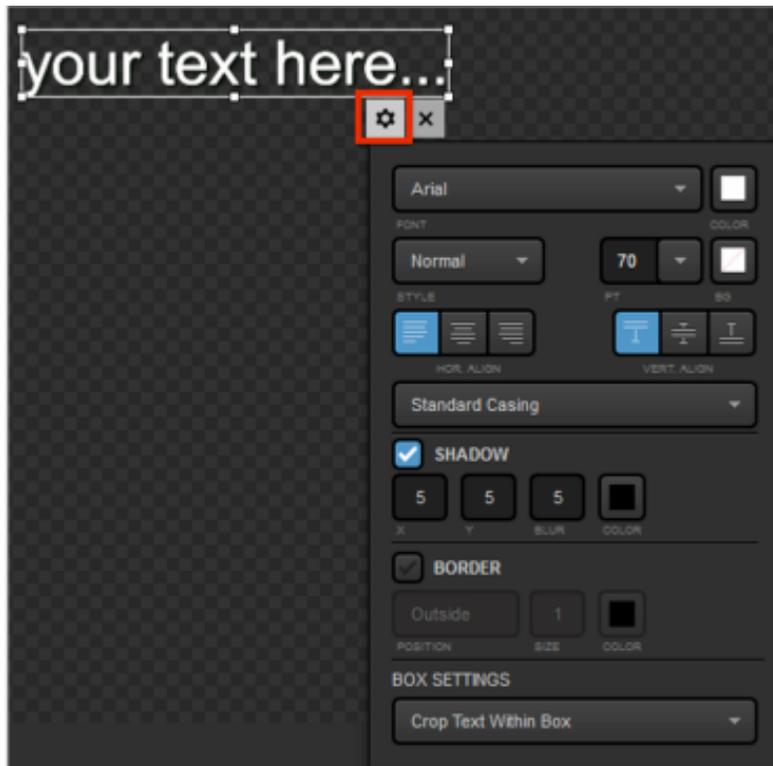


**i** Simple Mode: To open the GFX Designer in Simple mode, double-click the graphics layer.

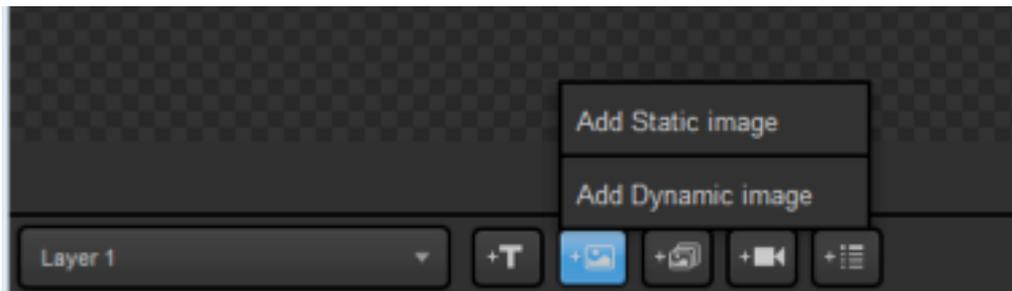
Clicking the +T button will add static text to your graphics layer.



Click the attached gearwheel button for editing options (font, size, color, etc.)



The next button allows you to add either a static or dynamic image to your graphics layer.

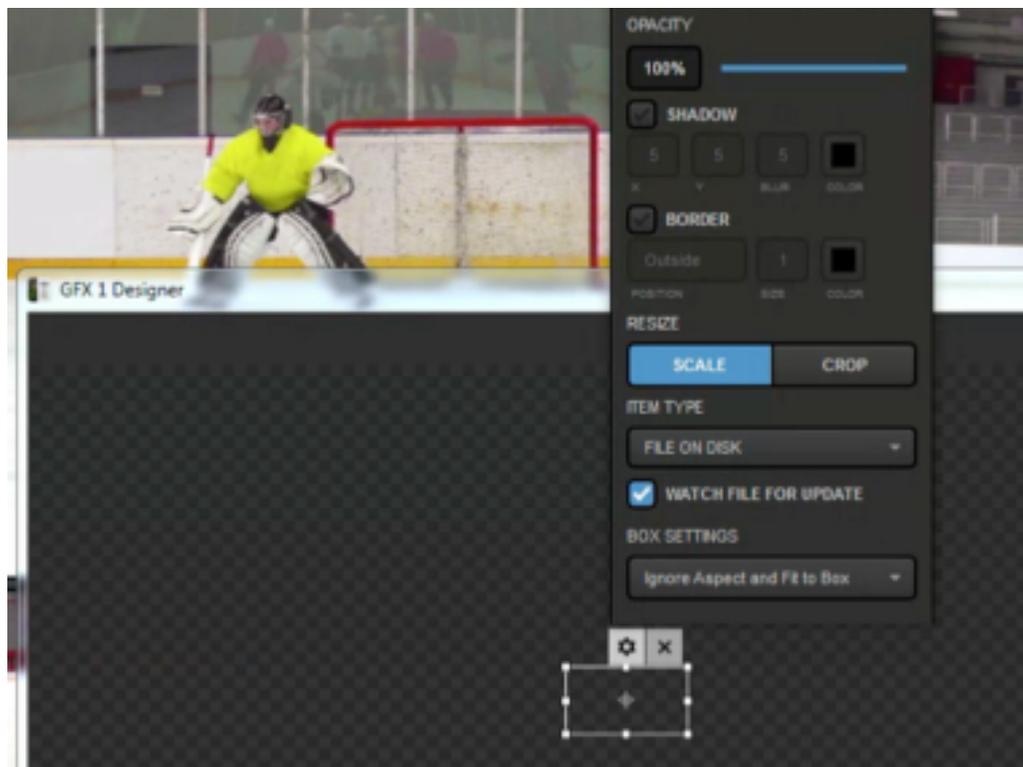


A static image is any image file you can import, which will always be visible when that graphics layer is also visible. The image will not change.

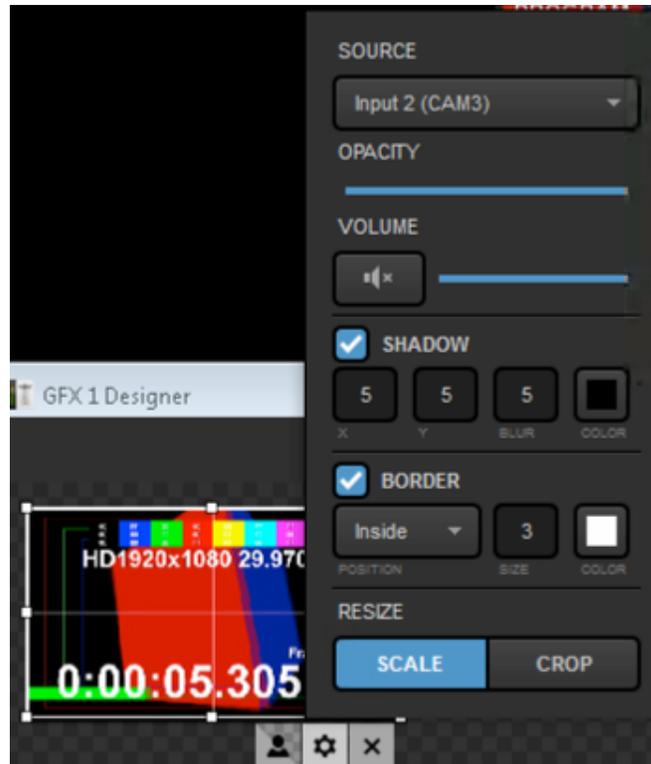
Supported image formats are .png, .jpg, .jpeg, .bmp, .xpm, .tif, .tiff



A dynamic image will change if the hosted file is also changed. In the designer, you choose the file where it is located and its dimensions.



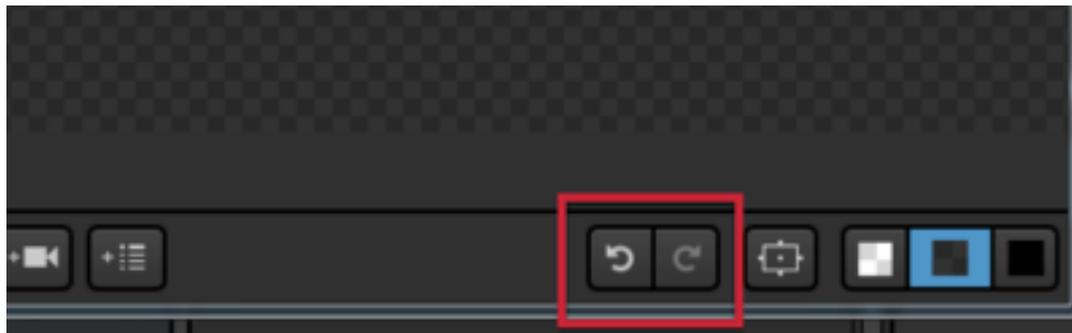
The next option you can add is a video source. Clicking this will allow you to choose which video source you want to include in your graphics channel, place it, size it, etc. Each layer can support up to five video sources.



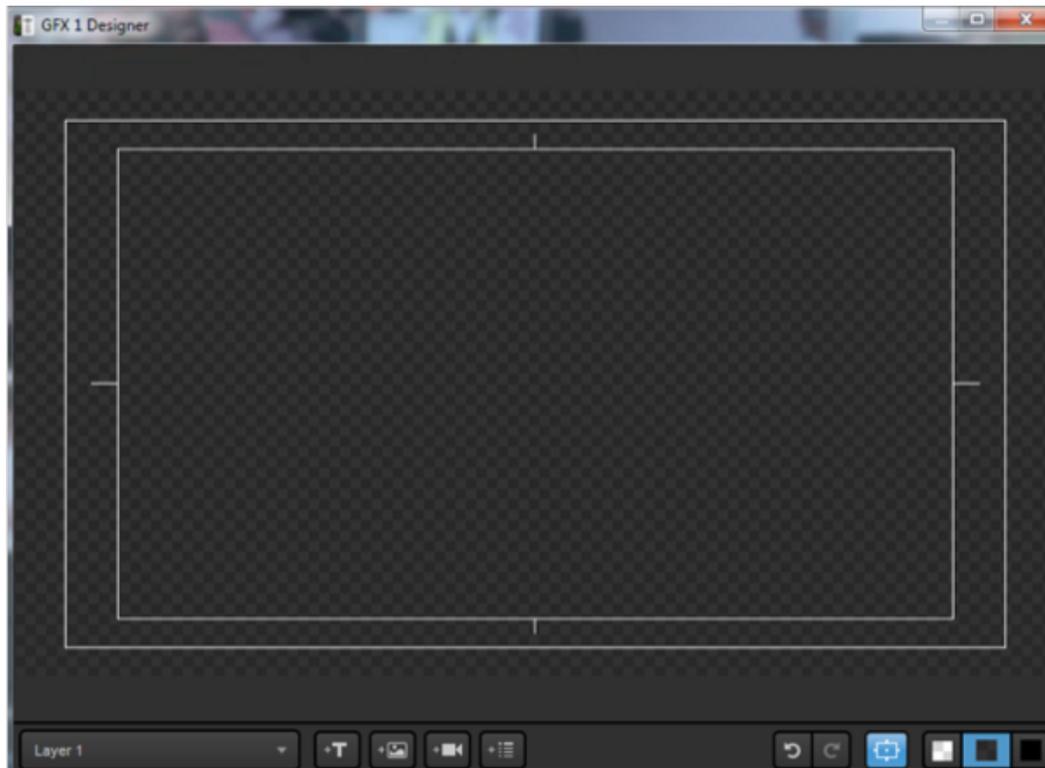
The following button allows you to add text or image data fields. Here is where you set where assets will be, their sizes, font colors, etc. The content of those fields is added in a later step.



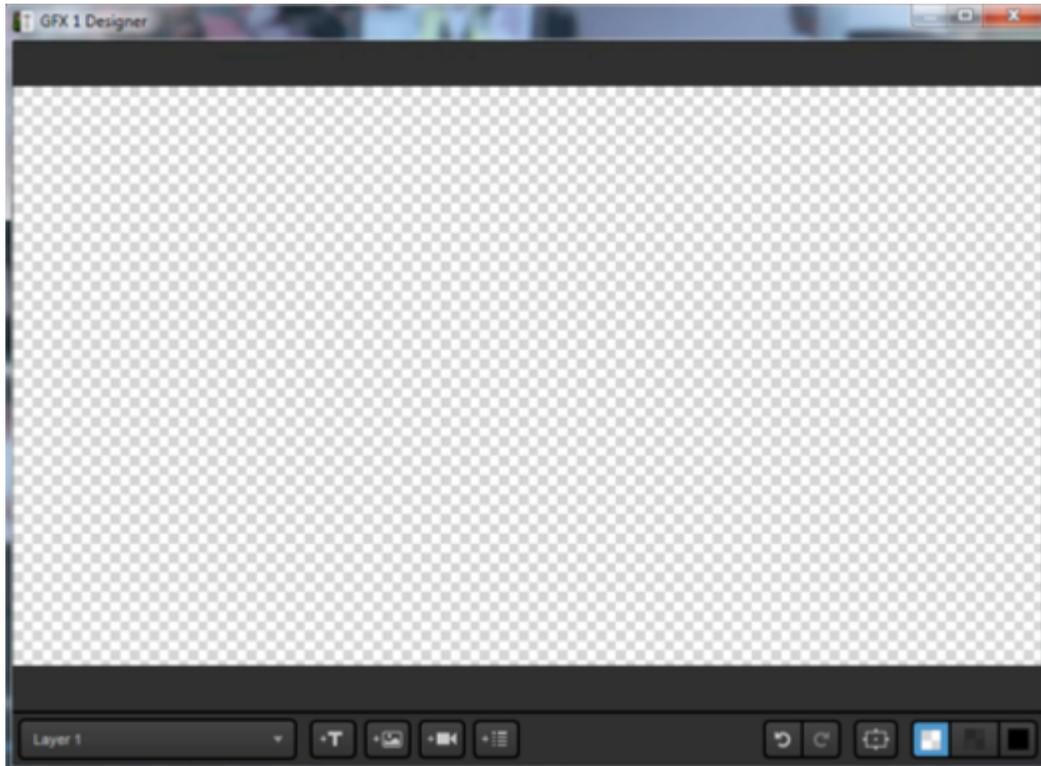
Farther to the right, the two arrow buttons are for Undo and Redo.



The next button will provide you with a box identifying the title safe (inner box) and action safe (outer box) areas. This lets you know that your graphics will not be cut off the screen.



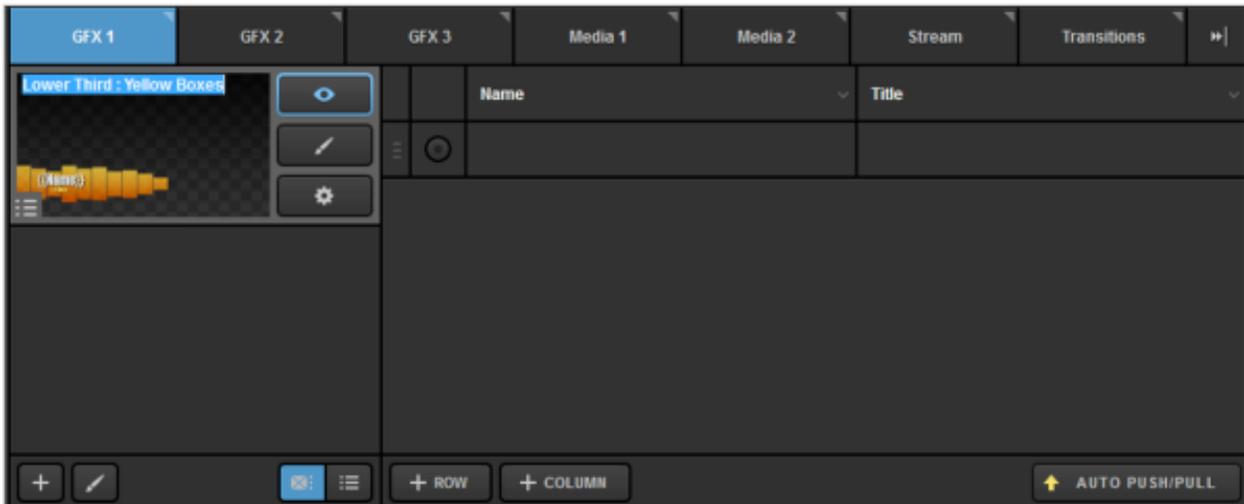
The next three buttons allow you to change how the GFX Designer displays transparency. This has no impact on the appearance of your graphics overlays.



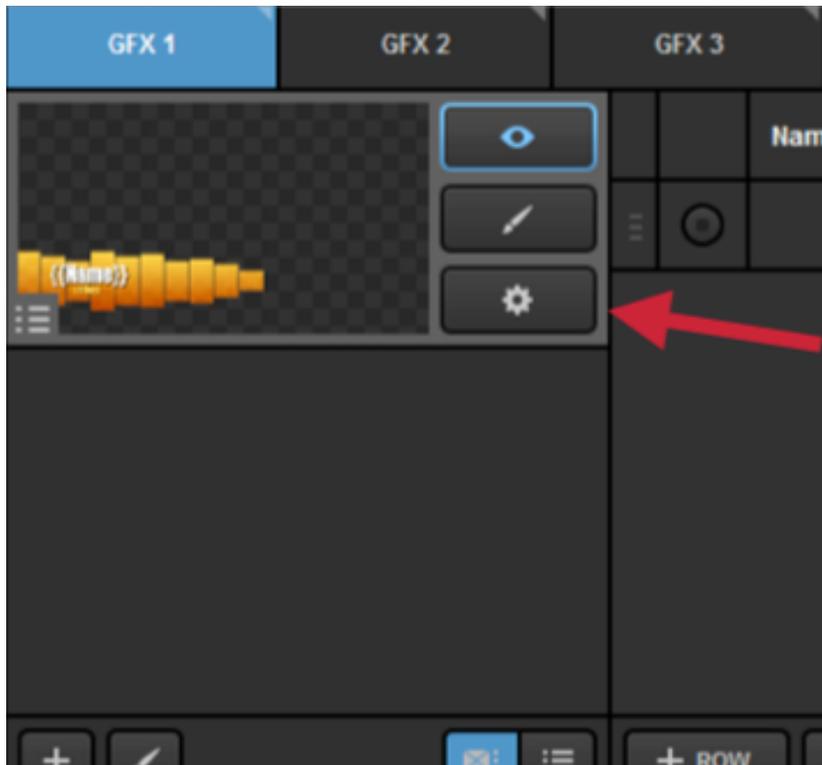
Right clicking on your content in the designer allows you to undo and redo actions, move content between layers, copy, paste, etc.



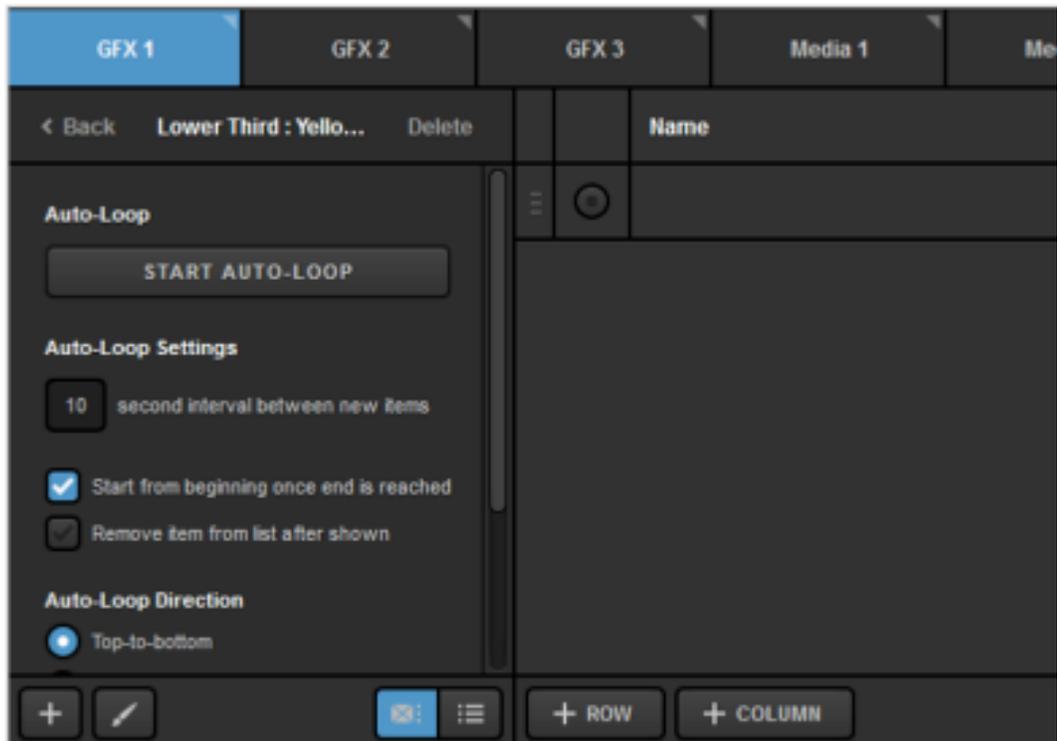
Close out of the GFX Designer when you have finished building your graphics layer. If you hover your mouse over your GFX layer, you will notice a name appear at the top-left of the image. Double-click the text to rename this GFX layer.



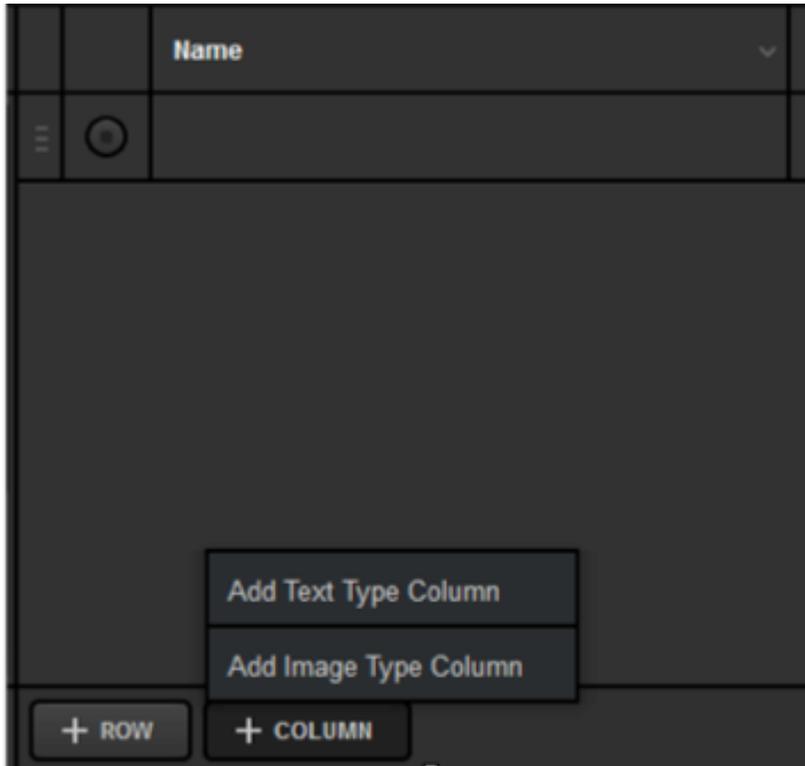
You can adjust other settings for that graphics layer by clicking the gear wheel button. The settings shown will change based on the type of graphics overlay being used.



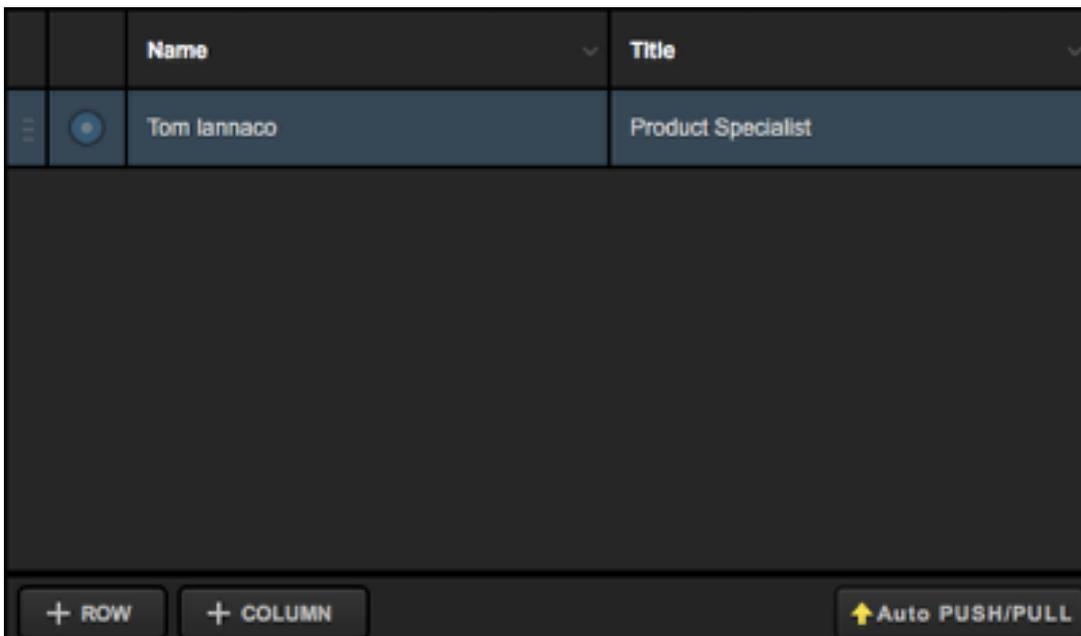
Most GFX layer settings will be related to your data fields. If you added a text or image field, a column for each should have been created to the right, which you can rename.



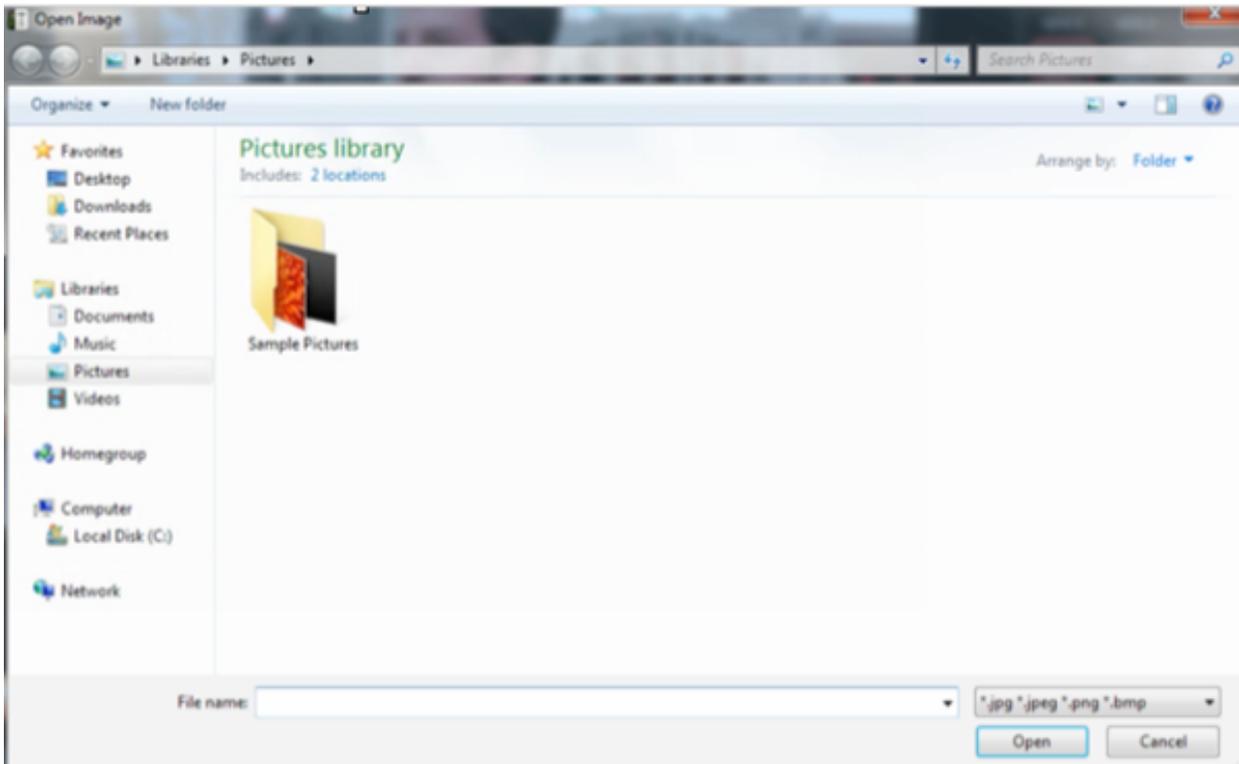
You can also add a column by clicking + COLUMN underneath where the data populates and add that asset in the GFX Designer.



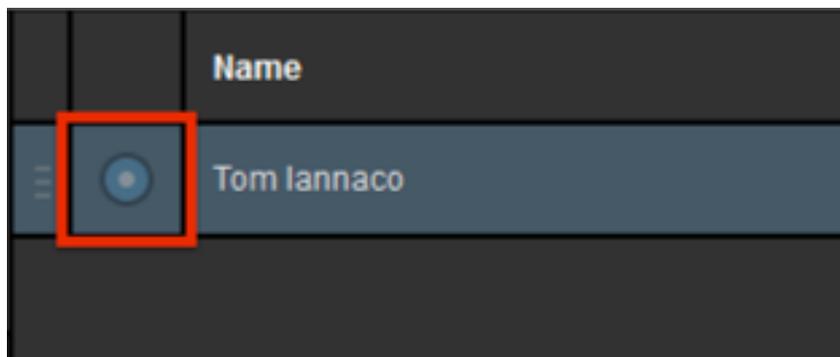
In the one row that appears, you can add content to those fields by clicking in the cell. You can then type any desired content into a text field.



Double-clicking an image field will allow you to browse your computer for an image to put in that image field.



Click the adjacent radio button to highlight it blue. This will make that row of data visible when that layer is shown in Preview or Program.



To use the same graphics overlay template for different information or data, click + ROW on the bottom.

		Name
☰	<input checked="" type="radio"/>	Tom Iannaco
		<input type="radio"/> + ROW <input type="radio"/> + COLUMN

Fill in the data cells with the information you want to use for those text or image fields.

		Name	Title
☰	<input checked="" type="radio"/>	Tom Iannaco	Product Specialist
☰	<input type="radio"/>	Emily Knox	Product Specialist

Click the corresponding radio button to make that row of data visible in your graphics layer.

		Name	Title
☰	<input type="radio"/>	Tom Iannaco	Product Specialist
☰	<input checked="" type="radio"/>	Emily Knox	Product Specialist

You can add as many rows and columns as necessary for any given graphics overlay layer.

		Name	Title
☰	<input type="radio"/>	Tom Iannaco	Product Specialist
☰	<input checked="" type="radio"/>	Emily Knox	Product Specialist
☰	<input type="radio"/>		

+ ROW
+ COLUMN
↑ Auto PUSH/PULL

The settings allow you to loop your data content automatically. You can change the interval between switches, whether the loop re-starts, if rows are kept, and what direction the loop moves.

START AUTO-LOOP

**Auto-Loop Settings**

10 second interval between new items

Start from beginning once end is reached

Remove item from list after shown

**Auto-Loop Direction**

Top-to-bottom

Bottom-to-top

**Auto-Loop Starting Item**

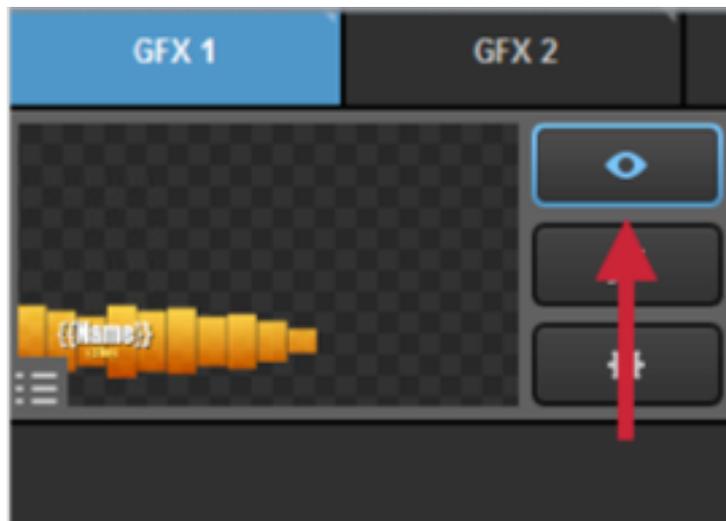
Start from top/bottom

Start from selected list item

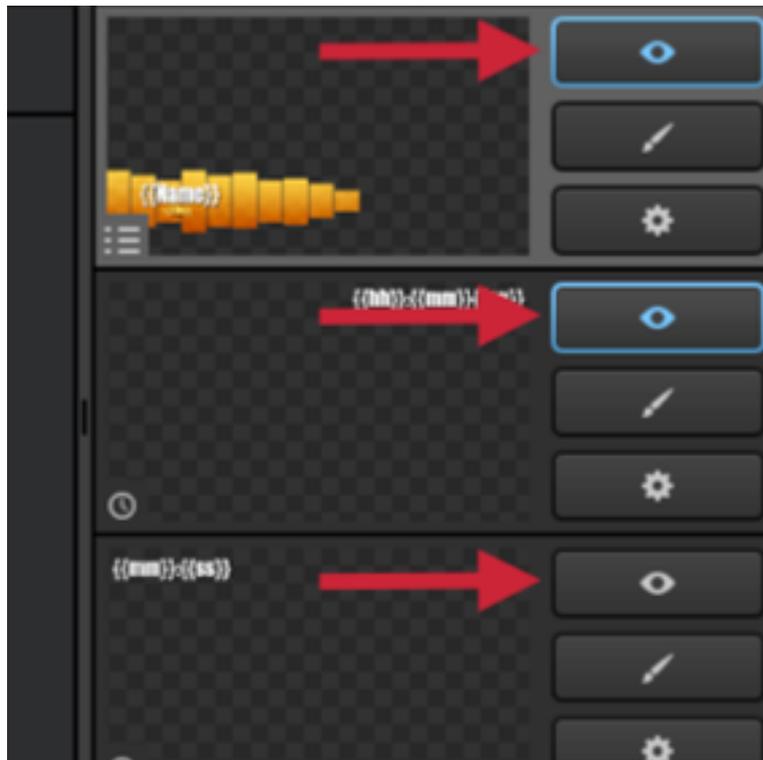
## Mixing Graphics Overlays into Program

! The mixing panel shown in this section is only visible when Studio is in **Advanced Interface Mode**. Mixing graphics in Simple Mode is covered [here](#).

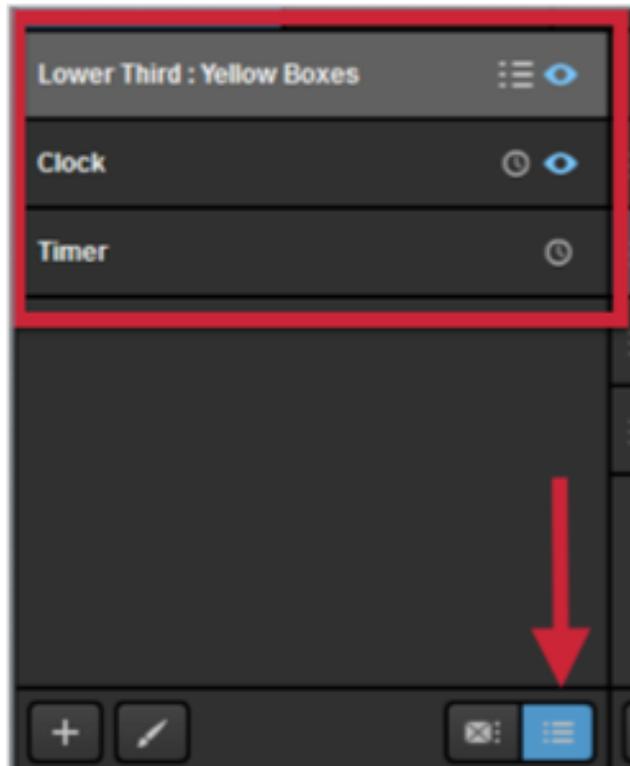
Once your graphic is designed and configured, you can start adding it to your production. First, make sure your layer is visible by clicking the eyeball icon. It should be highlighted blue.



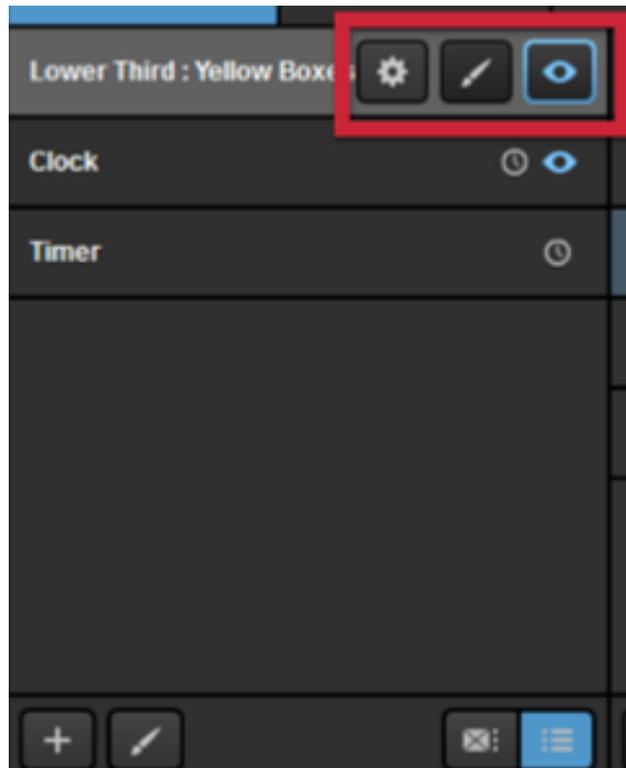
If you have multiple layers in your graphics overlay channel, highlight the eye icon of any layer that you want to be visible; more than one layer can be visible at a time.



Please note that if you have multiple layers in one module, you can click the display buttons on the bottom to show your layers in list mode to manage them more easily.



You can still access settings, the GFX Designer, and change visibility for each layer when using this view.



If you want to put a graphics overlay channel in Preview before pushing it to Program, click the corresponding PRV button in the upper right corner of the interface.



You should now see the visible layers of your graphics overlay channel in Preview.



You should also notice the yellow PUSH button flashing. Click it to bring your graphics overlays into Program.



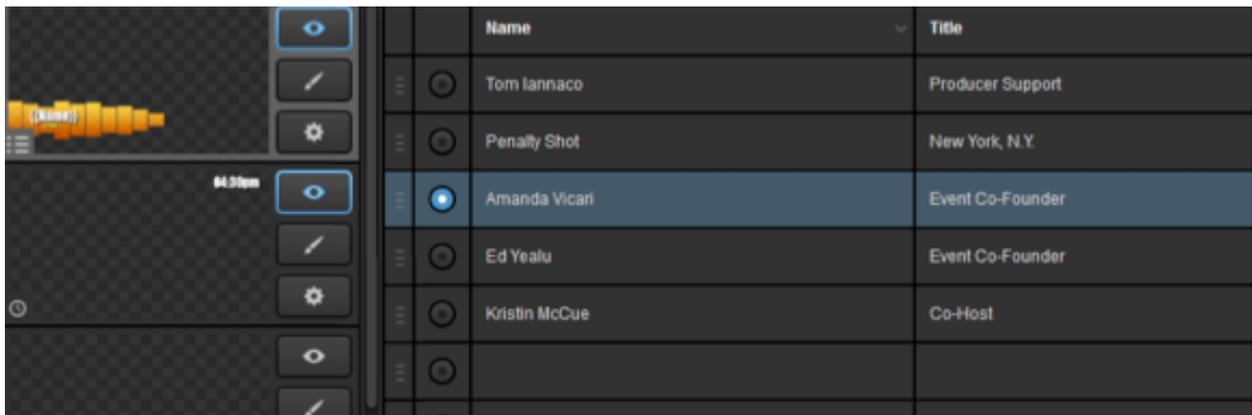
Your visible layers are now seen in both Preview and Program.



This is also indicated by PUSH no longer flashing and the PULL button turning red.



Now try making a change to your graphics overlay channel, such as changing a layer's visibility or selecting a different row of data in a currently visible layer.



You will notice the change is visible in Preview but is not yet seen in Program.



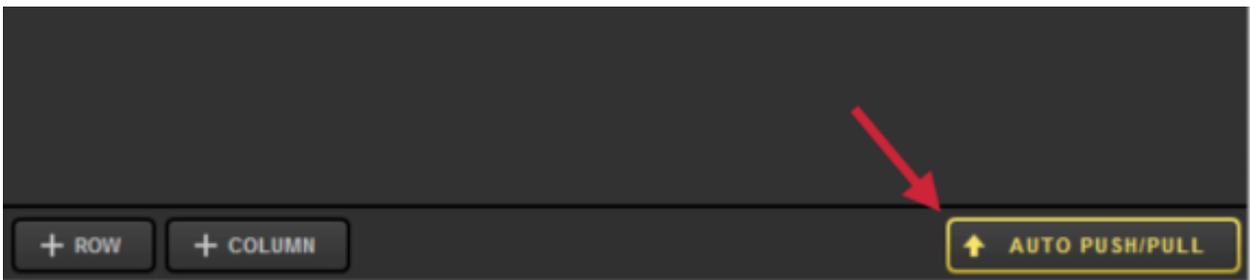
The PUSH button has also started flashing again. This means that Livestream Studio has detected a change in that GFX channel and is ready to change it in Program. Click it when you are ready to show the change to viewers.



You should now see the change reflected in both Preview and Program.



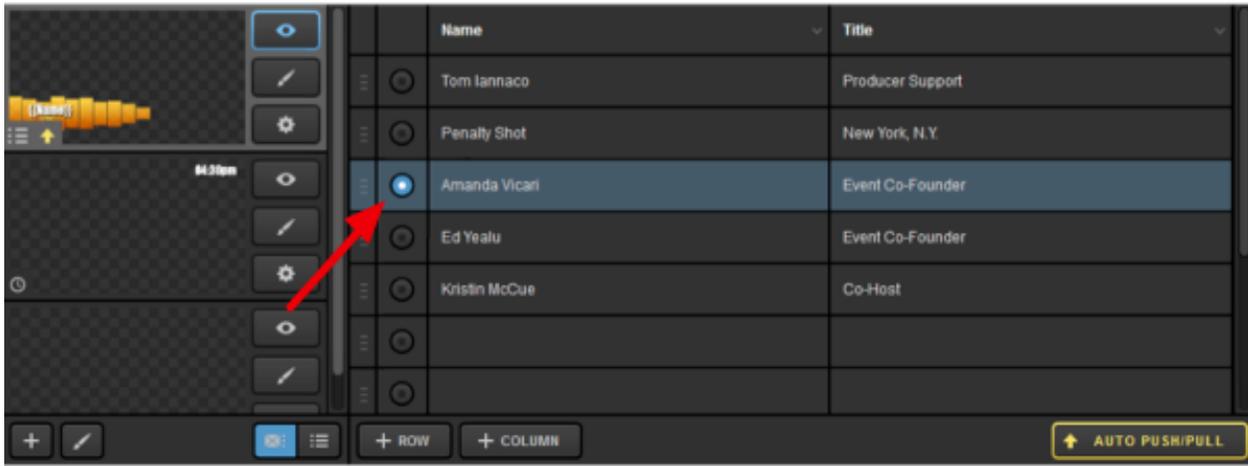
For each layer, you have the option to have every change automatically pushed to Program immediately by selecting the AUTO PUSH/PULL button on the bottom right.



Please note that if the graphics overlay is not yet in Program, you will need to push it manually by clicking PUSH in the upper right corner.

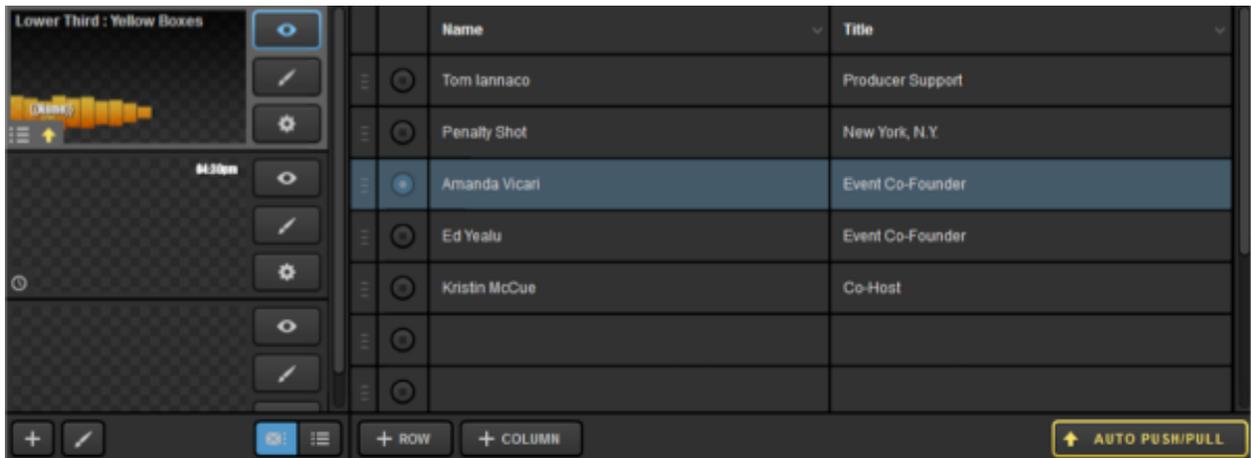


To remove a visible graphics overlay quickly while AUTO PUSH/PULL is enabled, simply click on the highlighted radio button of the visible row.



Now the graphic has been removed from Program and the radio button has faded in the graphics module to indicate this.





Click the red PULL button that corresponds to that channel to remove everything from that graphics overlay channel from Program.



Doing so will remove that graphics overlay from Program, but you will still see it in Preview if the PRV button is still selected.



To remove a graphics overlay from Preview, click the corresponding green PRV button.



You should no longer see your graphics overlay in either Preview or Program.



# Using the Tie Controls

You may need to switch a video source and a graphics overlay simultaneously. This is where the TIE BG and TIE buttons in Livestream Studio (Advanced Interface only) come in.

At least one of these TIE buttons must be selected at all times. This tells the transition controls what to reference when switching.



If only TIE BG is highlighted yellow, then only the video source in Preview will switch to Program when transitioning.



After using a transition control, notice how the video source switched, but GFX 1 remained in Preview because only TIE BG was selected.



To switch the video source and bring in a graphics overlay at the same time, select TIE BG and the corresponding TIE button for your graphic. Be sure to select the PRV button for the graphics overlay channel that is tied to your video source.



Your Preview and Program monitors should look similar to this, with a GFX channel in Preview. Use a transition control to switch the sources.



Now your video sources have switched and your graphics overlay has been pushed to Program.



If only the GFX 1 and GFX 2 TIE buttons are lit and both sources are in Preview, then both overlays will switch into Program when transitioning. The video will not change.



In this example, GFX 1 has a lower-third graphic, and GFX 2 is a clock. Use a transition control to bring both into Program.



After the transition, both graphics overlays are now in Program, but the video source is the same since TIE BG was not selected.



To pull a graphics overlay out of Program simultaneously with a video source, tie the background and the graphics overlay together.



Next, you will need to remove the graphics overlay from Preview. This will tell the transition controls that the graphic should not be shown in Program on the next switch.



Your monitors should look similar to this now, with Preview showing a different video source and no graphic. Use a transition control to switch the sources.



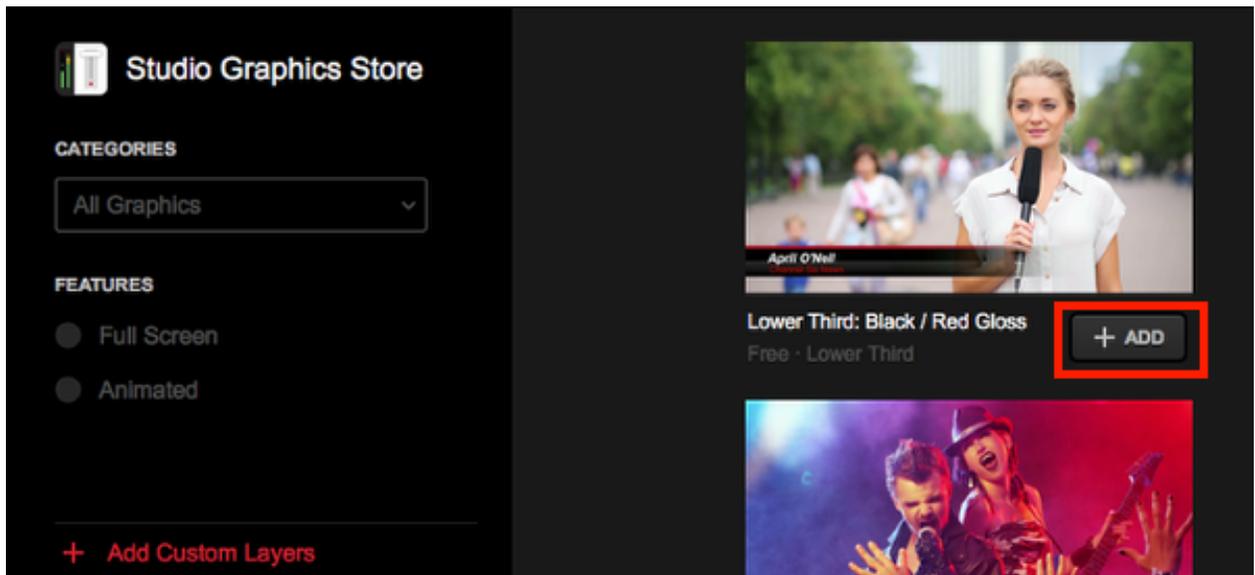
Now your video sources have changed, and your graphics overlay is no longer in Program.



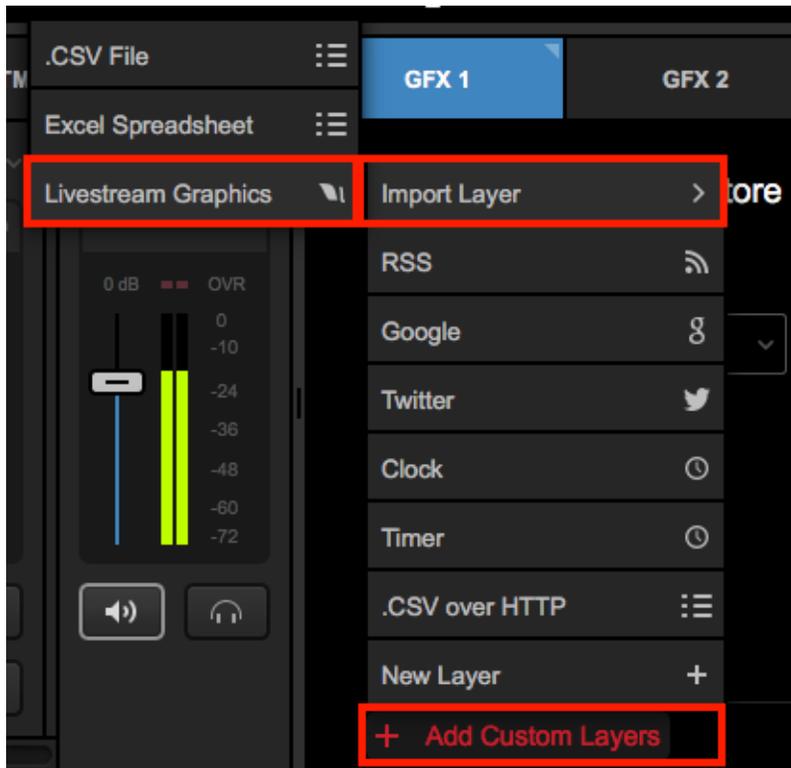
# Importing Livestream Graphics Files

Livestream's [Graphics Store](#) has numerous free templates that can be downloaded and imported into Livestream Studio. You can also export any template you build in Studio and import it into another Studio project later using this feature.

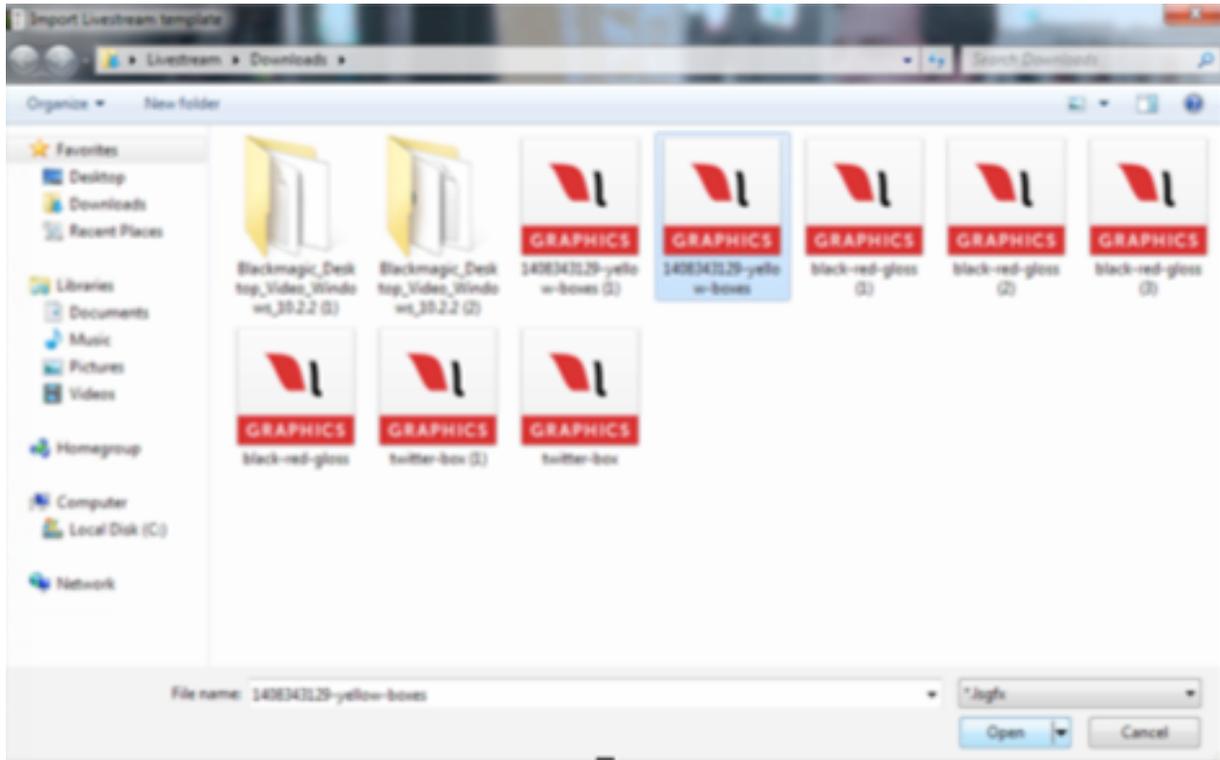
Studio has the Livestream Graphics Store built into its interface. Navigate to any GFX module. Open the Categories menu or select Features you would like your graphic to have on the left side and browse through template options on the right side. If you find a design you like you can simply click +Add below the corresponding template.



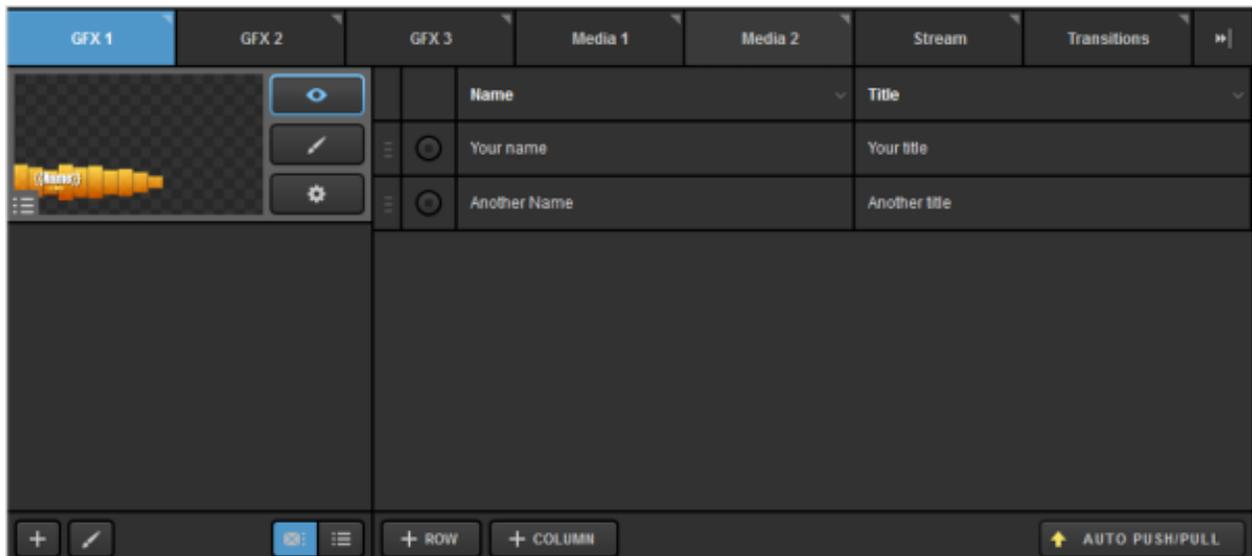
Alternatively, if you downloaded a template from the Store website or exported an .lsgfx file previously, you can import that file from your local hard drive by selecting +Add Custom Layers > Import Layer > Livestream Graphics.



Browse your computer for the .lsgfx file you just downloaded (this is typically found in the Downloads folder). When you find the file, click Open.



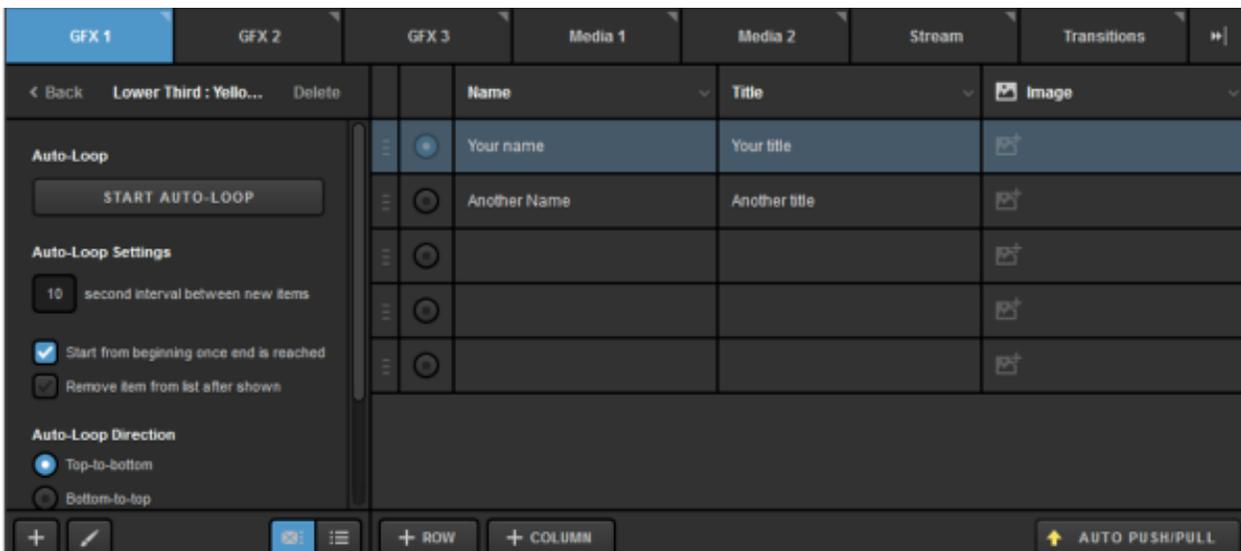
The layer will appear in your graphics overlay channel. For lower third graphics downloaded from the Graphics Store, there are two text type columns and two rows included by default.



If you open the GFX Designer by clicking the paintbrush icon, you will see clearly which text fields the two columns correspond to and can adjust them as necessary.



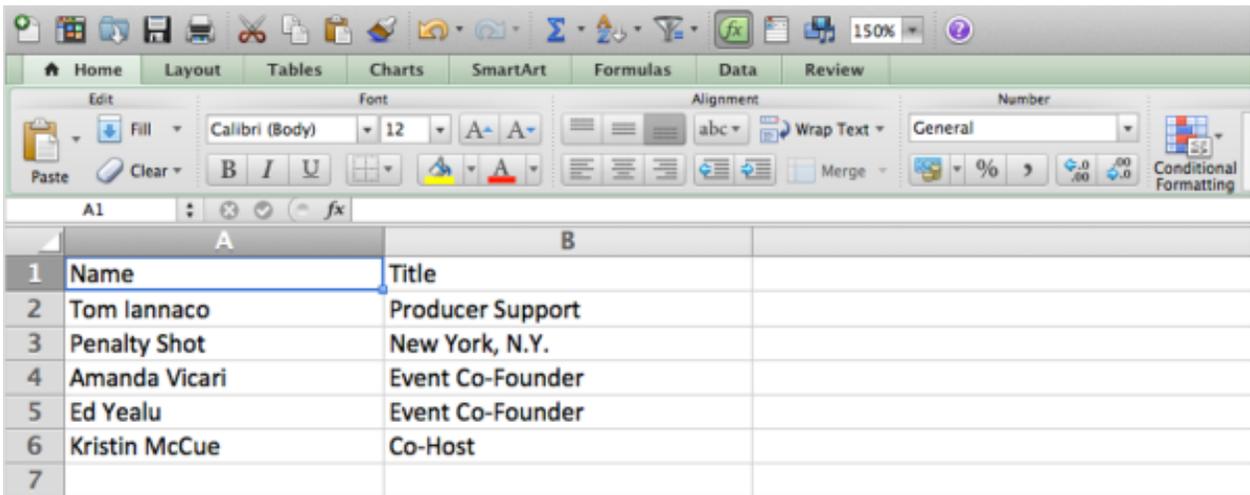
Just as with any manually built graphic, you can add as many columns for data fields or rows of content as necessary.



# Importing Excel Spreadsheets and .CSV Files

Rather than manually inputting your data in Livestream Studio, you can import all your data from an Excel (.xlsx) spreadsheet or .CSV file.

 For the best experience, we recommend that your document have no more than 250 rows. You can use other Excel or .CSV files in as many graphics layers as needed if you need to show more data.

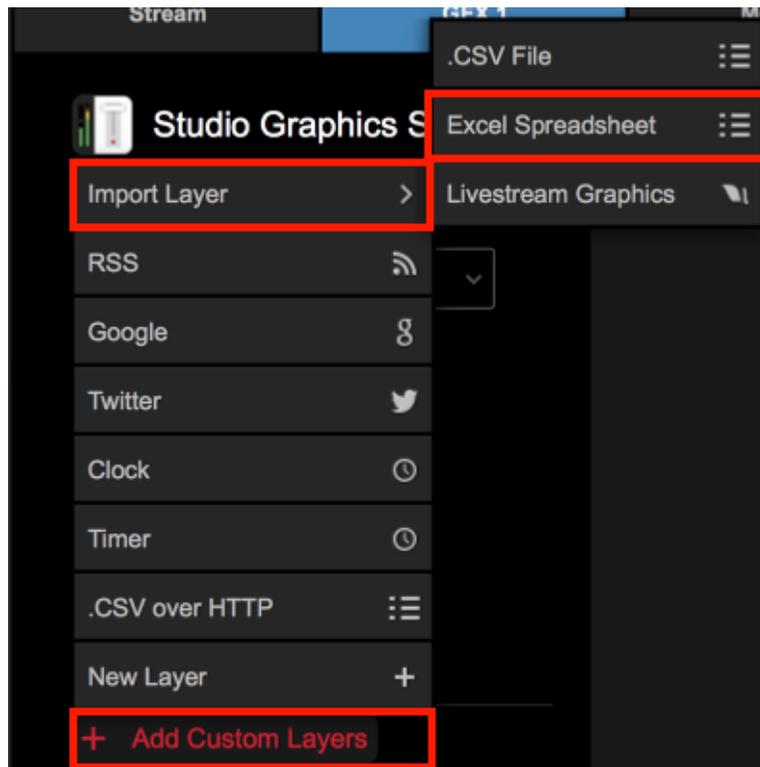


	A	B	
1	Name	Title	
2	Tom Iannaco	Producer Support	
3	Penalty Shot	New York, N.Y.	
4	Amanda Vicari	Event Co-Founder	
5	Ed Yealu	Event Co-Founder	
6	Kristin McCue	Co-Host	
7			

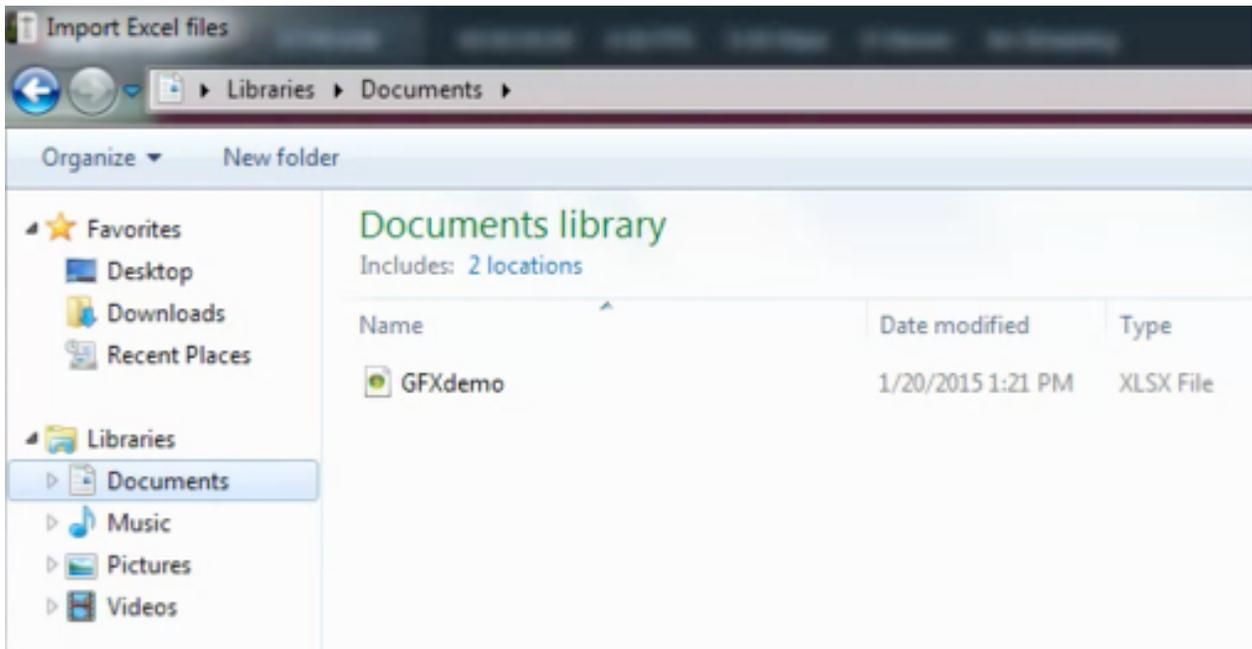
If you want to include images, make a column with the URLs where the images are hosted.

	A	B	C
1	Name	Title	[img] Photo
2	Tom Iannaco	Producer Support	<a href="http://img.new.livestream.com/events/000000000039017f/81d29ef2">http://img.new.livestream.com/events/000000000039017f/81d29ef2</a>
3	Penalty Shot	New York, N.Y.	<a href="http://img.new.livestream.com/events/000000000039017f/81d29ef2">http://img.new.livestream.com/events/000000000039017f/81d29ef2</a>
4	Amanda Vicari	Event Co-Founder	<a href="http://img.new.livestream.com/events/000000000039017f/81d29ef2">http://img.new.livestream.com/events/000000000039017f/81d29ef2</a>
5	Ed Yealu	Event Co-Founder	<a href="http://img.new.livestream.com/events/000000000039017f/81d29ef2">http://img.new.livestream.com/events/000000000039017f/81d29ef2</a>
6	Kristin McCue	Co-Host	<a href="http://img.new.livestream.com/events/000000000039017f/81d29ef2">http://img.new.livestream.com/events/000000000039017f/81d29ef2</a>
7			
8			

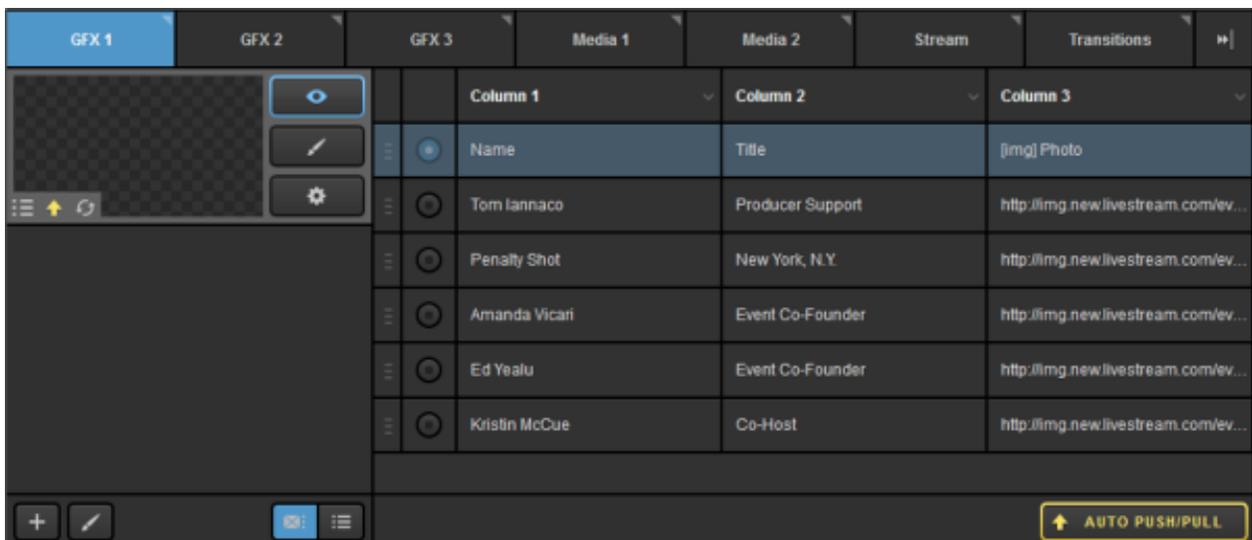
To get started, click +Add Custom Layers, then select Import Layer. Choose either Excel Spreadsheet or .CSV File.



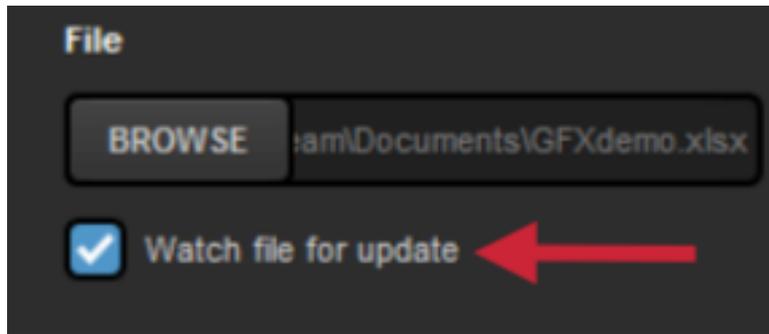
The browse window will appear, allowing you to select your file and import it.



The data from your file will appear on the right side of the module. Click the gear wheel to enter its settings.



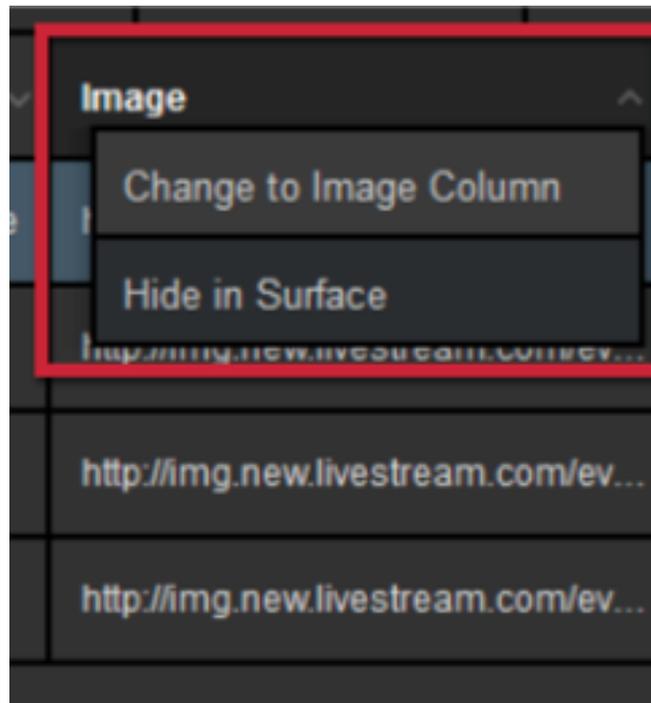
Checking Watch file for update will prompt Livestream Studio to make any changes to the data that are made in the original .xlsx file on your hard drive.



Checking Use first row as column titles will change row A in your spreadsheet to be titles of the corresponding columns in the GFX layer.

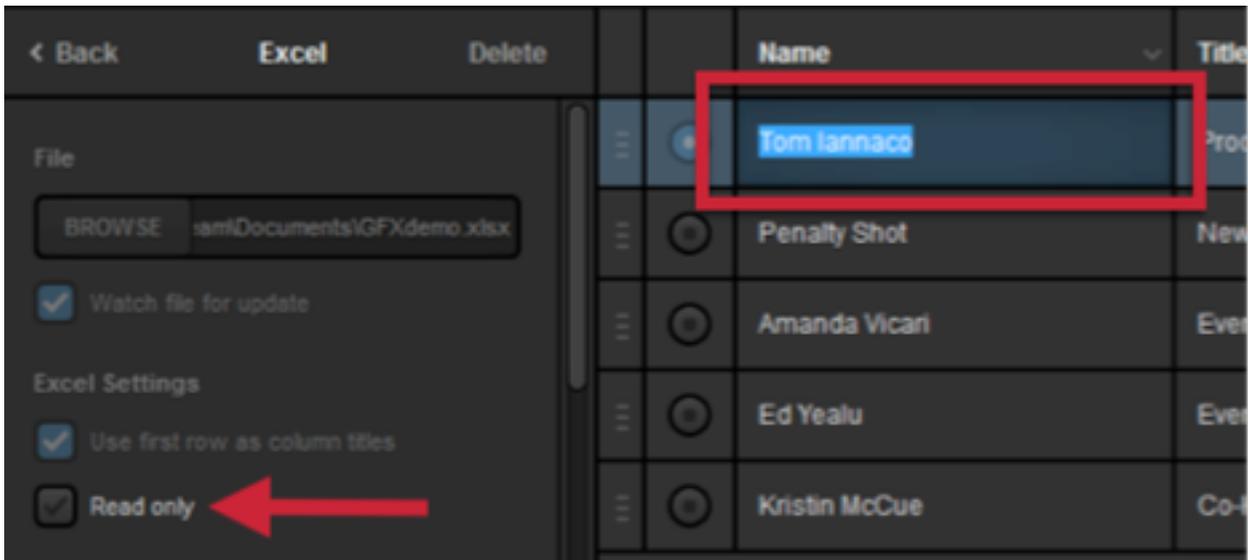


Click on the name of any column to change the data type that is in the column (text or image).

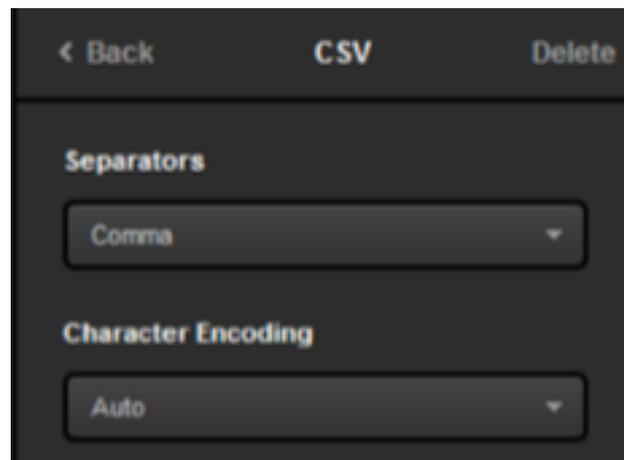


If you want to be able to edit the information within Livestream Studio, uncheck Read Only. Otherwise, changes can only be made in the original file.

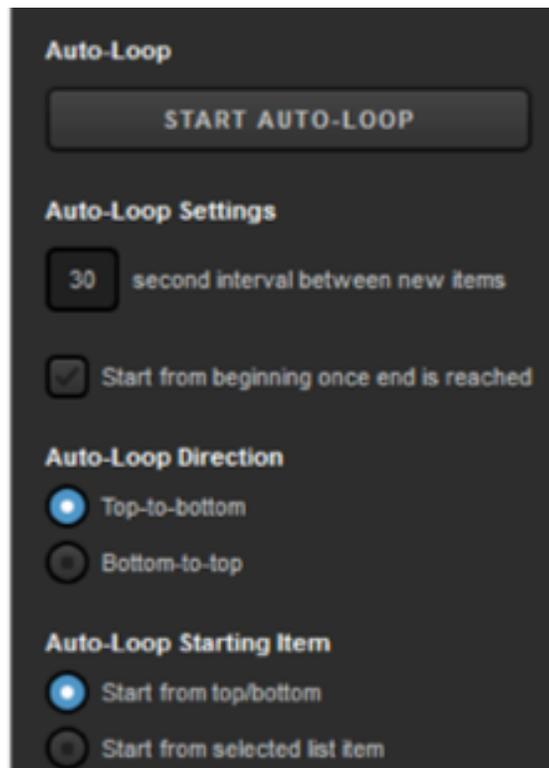
 Any edits made to in Livestream Studio will not change content in the original document.



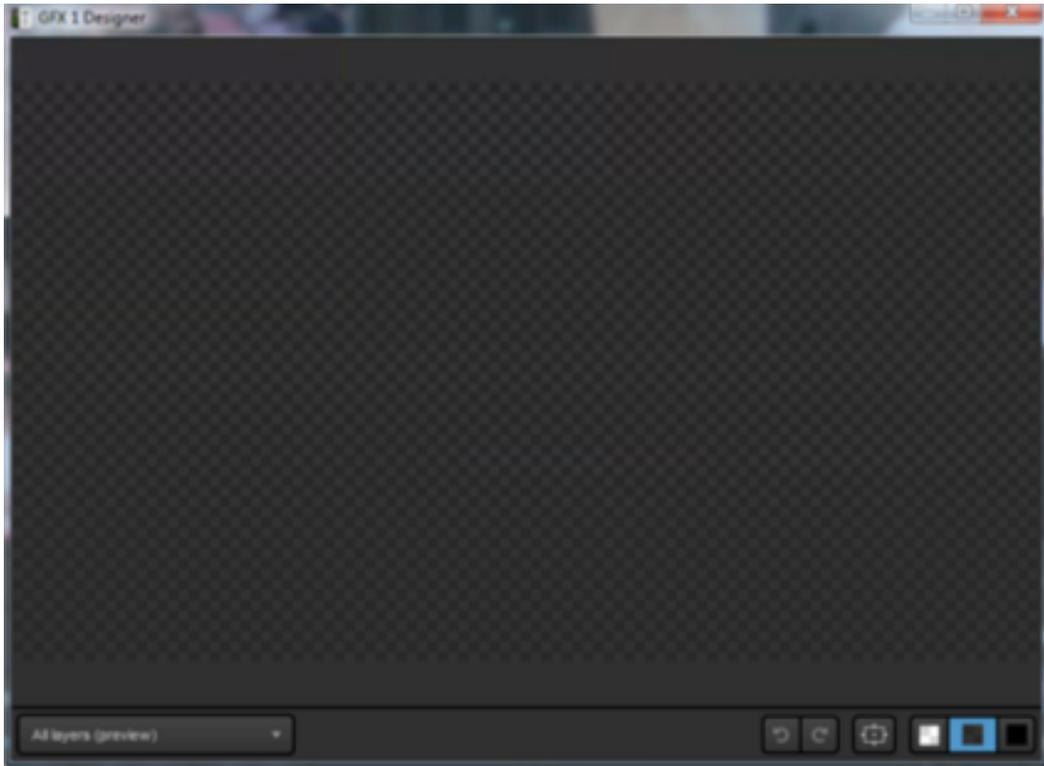
.CSV File Only - Further down in the settings, you can adjust the separators in the document as well as the character encoding (which is typically detected automatically).



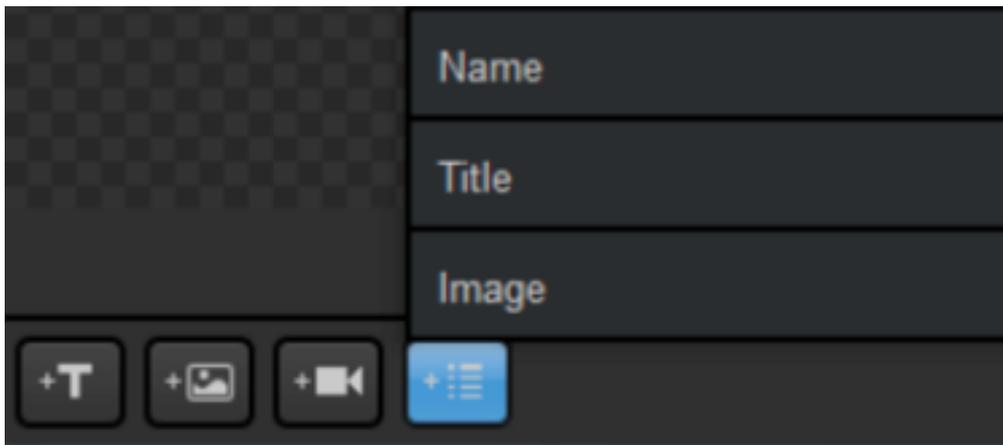
Scroll down to find your Auto-Loop settings, including interval between rows, direction, and starting point.



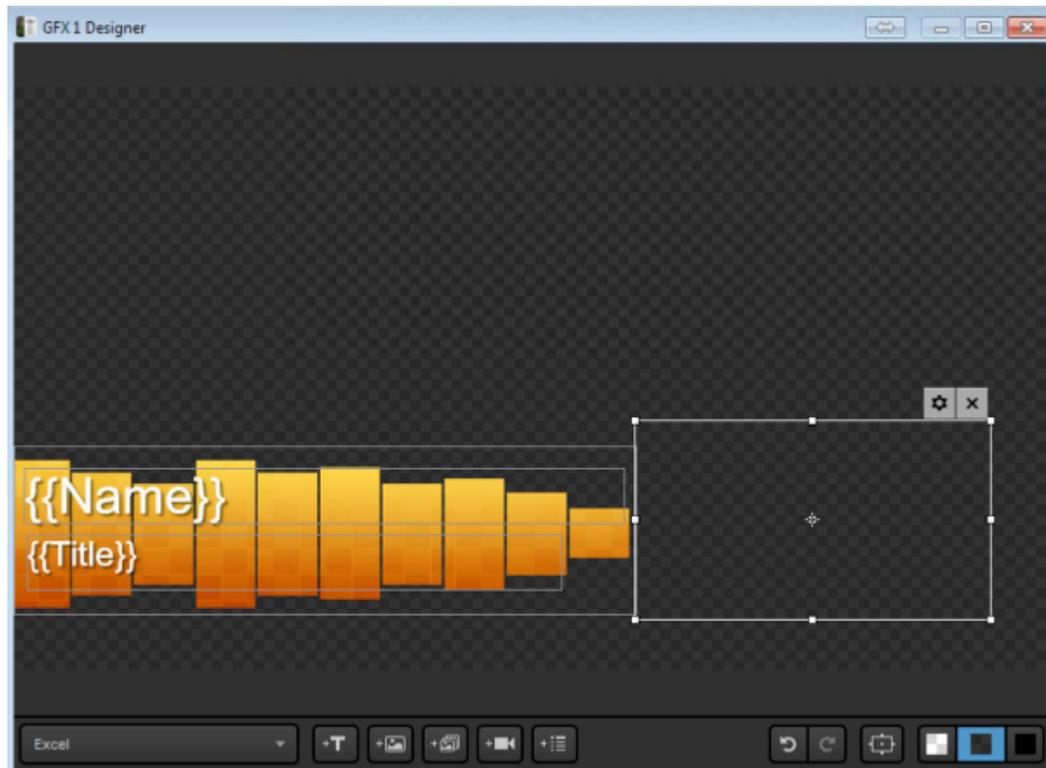
Next, click on the paintbrush icon at the bottom of the graphics module to enter the GFX Designer.



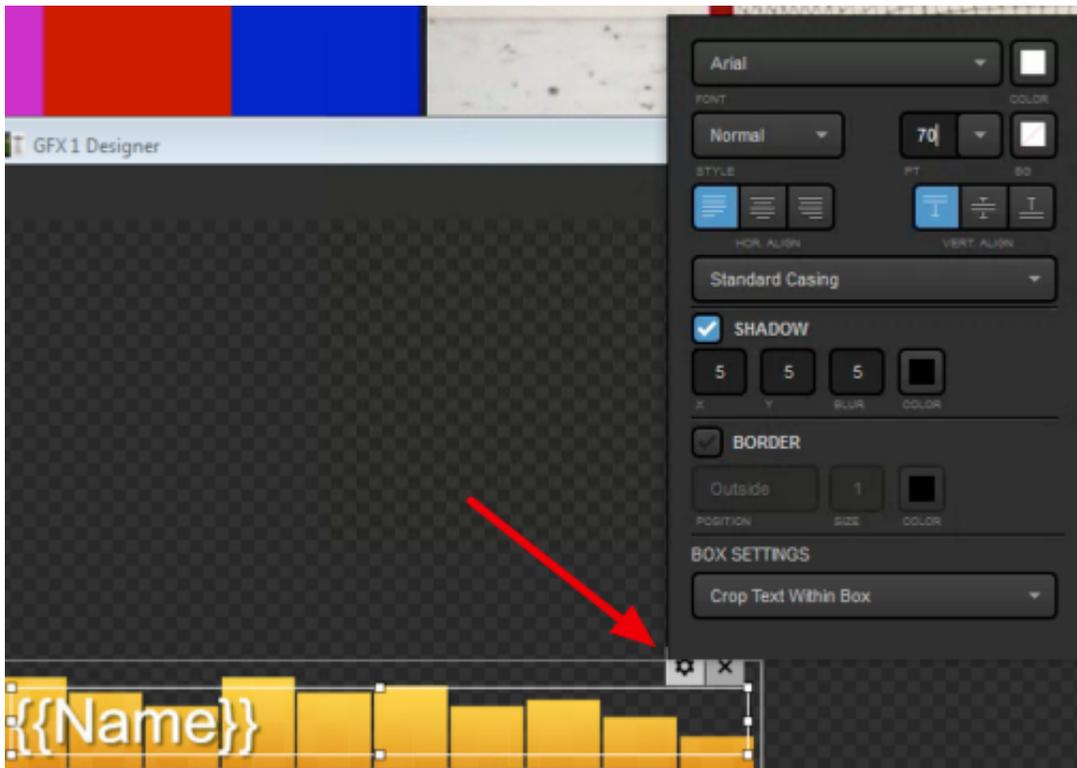
Select Excel or .CSV in the dropdown menu and click the list icon to insert your text and image fields into the designer.



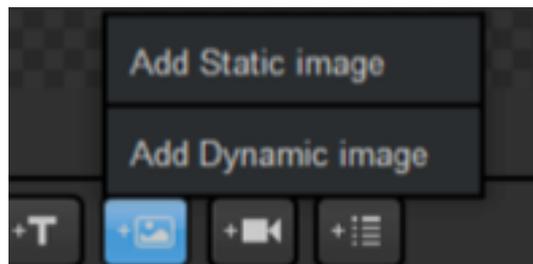
From here, you can drag and drop each field to wherever you want it to be displayed.



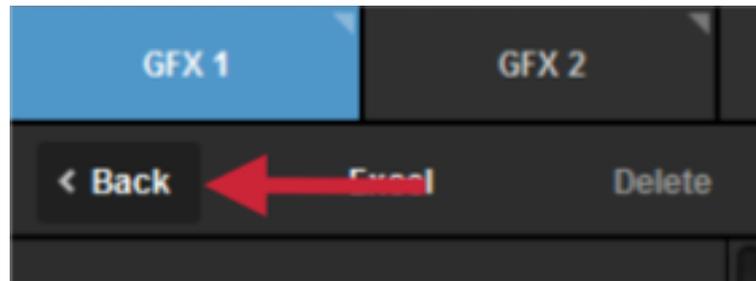
Click the gearwheel icon on each field to choose font, size, color, opacity, etc.



Feel free to add any additional elements to your graphics overlay using the other icons at the bottom of the designer.



Close out of the GFX Designer when you have finished. To use the graphic, click **Back** to view the layer module.



Make sure the eye icon corresponding to that layer is highlighted blue, meaning that it is visible.

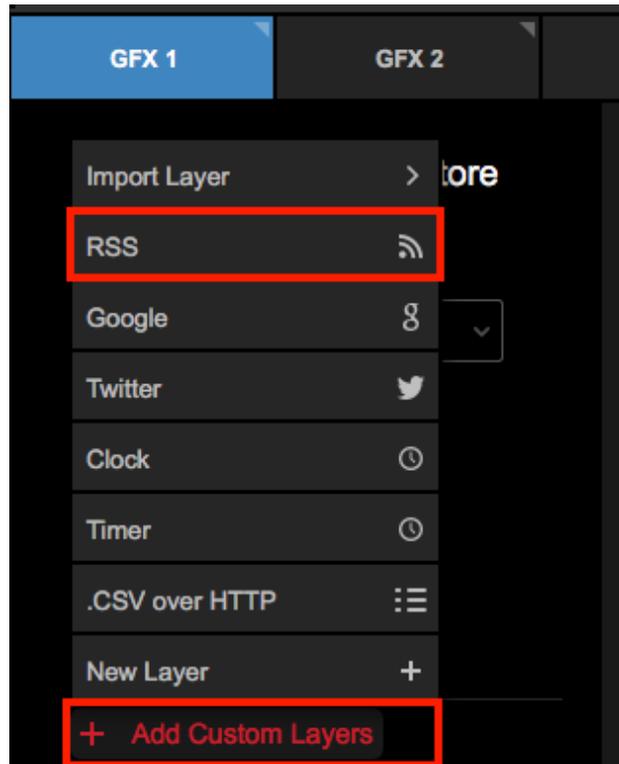


You can then click the associated PRV, PUSH, and PULL buttons to utilize that graphics overlay.



## Using RSS Feeds

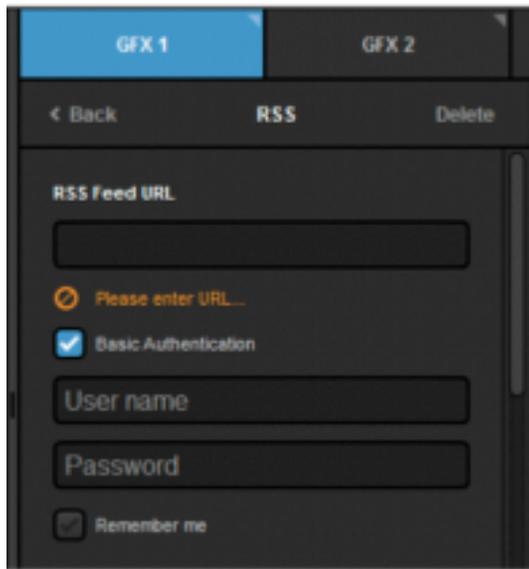
If you want to include an RSS feed in your Livestream Studio production, go to a GFX module, open the +Add Custom Layers menu and select RSS from the graphics menu.



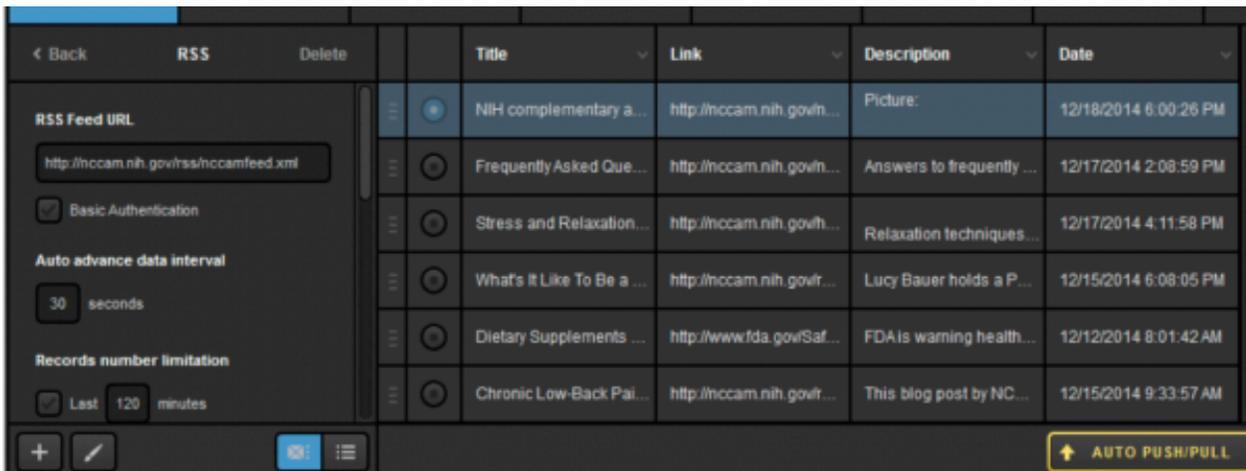
The RSS layer will appear in the graphics overlay channel. Click the gear wheel to enter its settings.



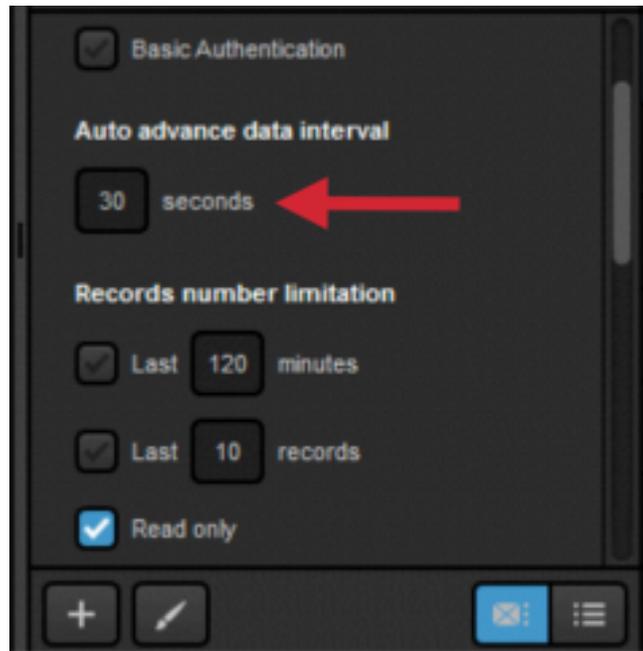
If access to your RSS feed requires authentication, check Basic Authentication and enter your credentials.



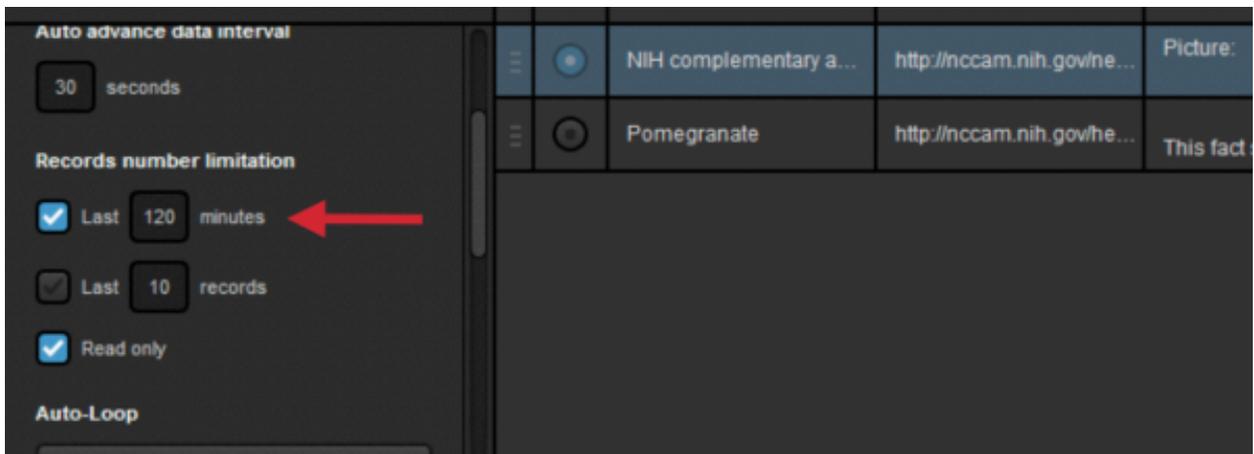
When you enter the RSS URL, the data should populate on the right and give you access to further settings.



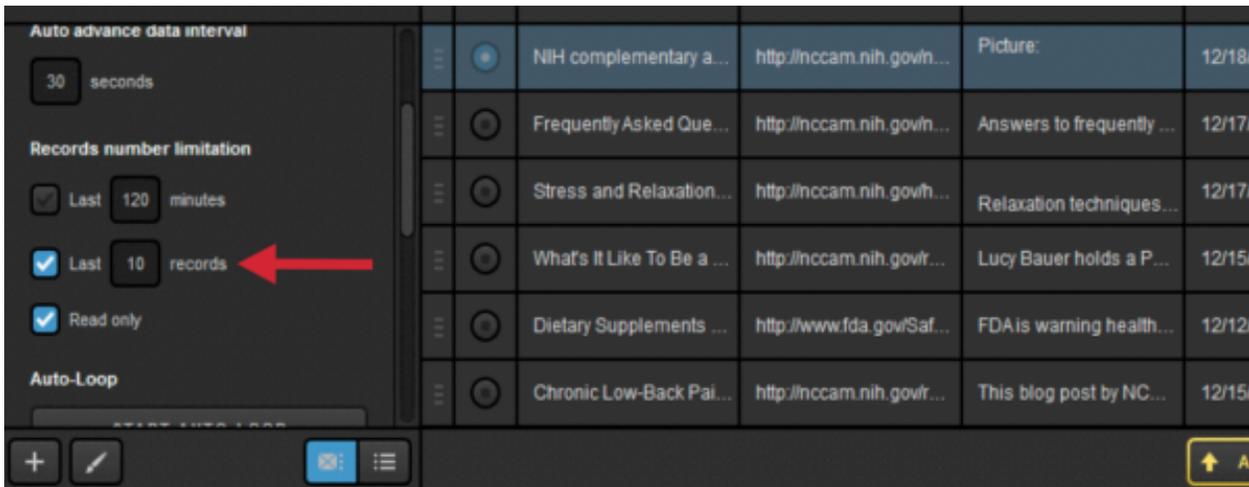
Set the time interval in seconds that you want Livestream Studio to look for new information from your RSS feed under Auto advance data interval.



To control the number of posts from your RSS feed, you can choose to only include posts within a recent time frame.

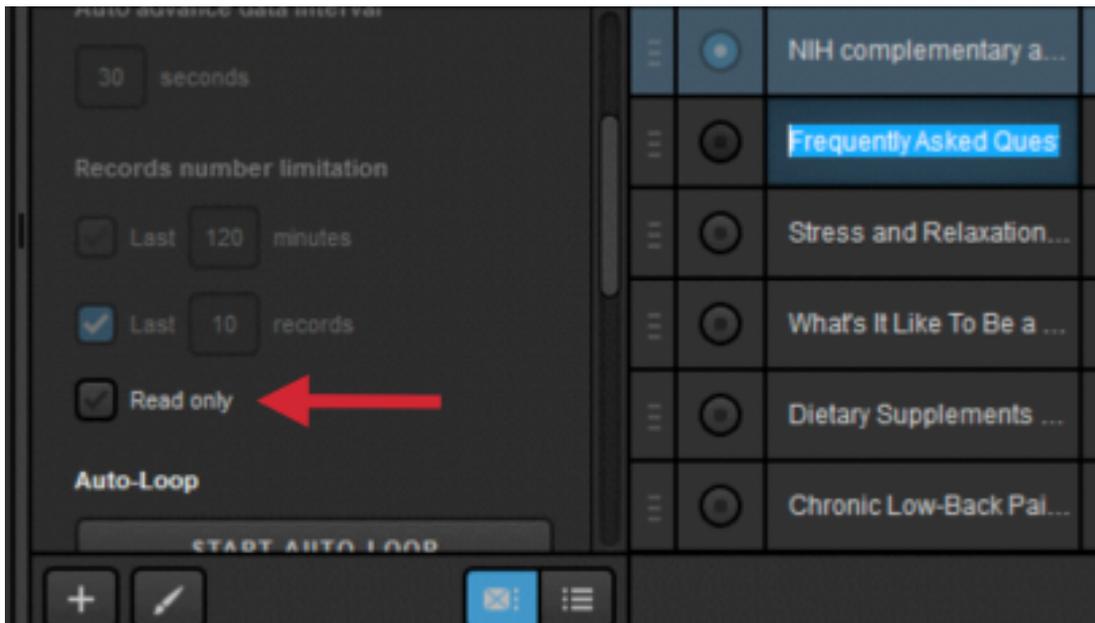


You can also limit Livestream Studio to pull only a certain number of most recent posts.

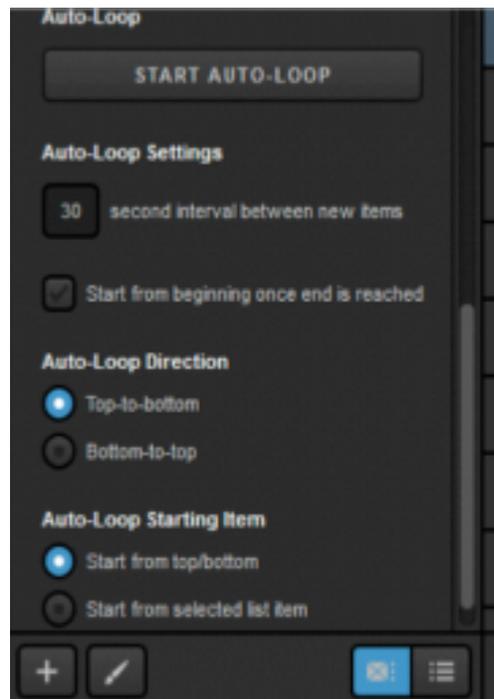


If you wish to edit any data within Livestream Studio, uncheck Read only.

**i** Any edits made to data sources in Livestream Studio will not change content in the original source.



At the bottom of the settings are the Auto-Loop options for this graphics layer.



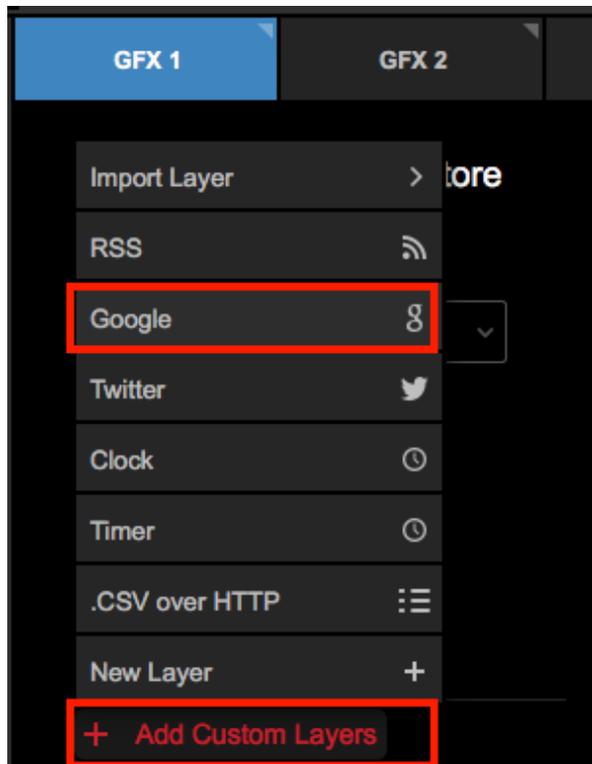
Next, enter the GFX Designer, and select RSS from the dropdown. Click the list icon to select your data fields.



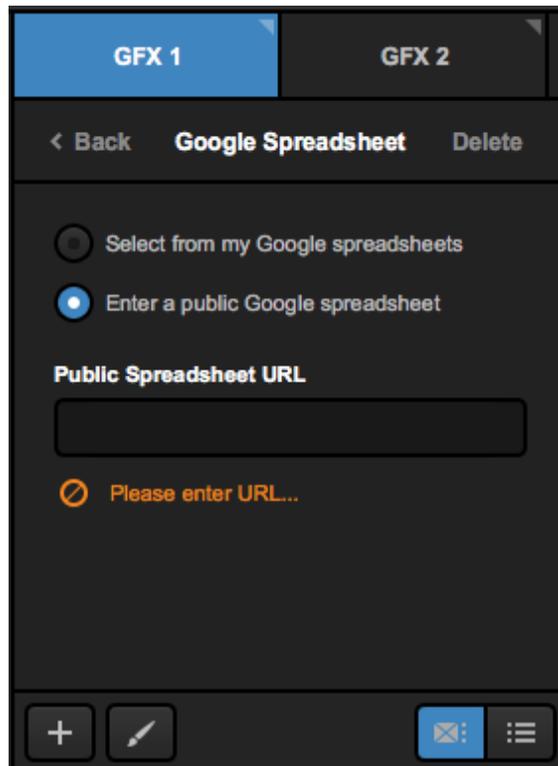
# Integrating Google Spreadsheets

An easy way to integrate and manage data in a graphics overlay from an external source is to use Google Sheets. Livestream Studio can integrate up to 15 Google Sheets graphics layers; this is an authorization limitation determined by Google.

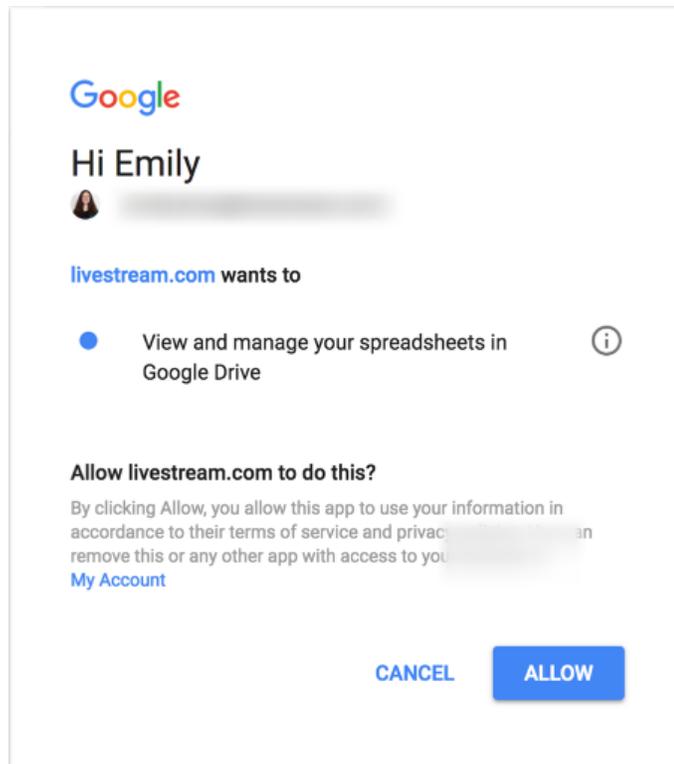
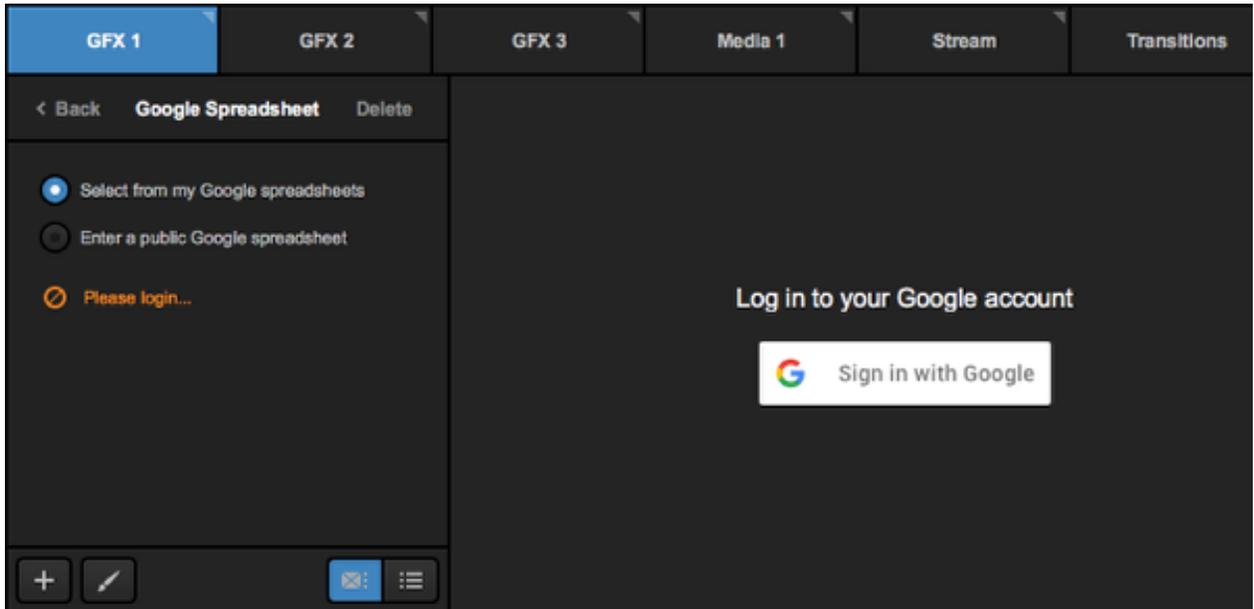
Navigate to a graphics overlay track, open the + Add Custom Layers menu and select Google.



You do not need to log in if you select Enter a public Google spreadsheet. Selecting this will allow you to enter the document's URL.



If you want to use your own private Google document, you will need to sign in to a Google account to allow access to your Google Drive. When you click **Sign in with Google**, a new browser window will open allowing you to sign in and allow this permission.



Once you see the Authorization Successful message, navigate back to Studio and select the document with the information you want to include in your graphic. The selected document's data will populate on the right.



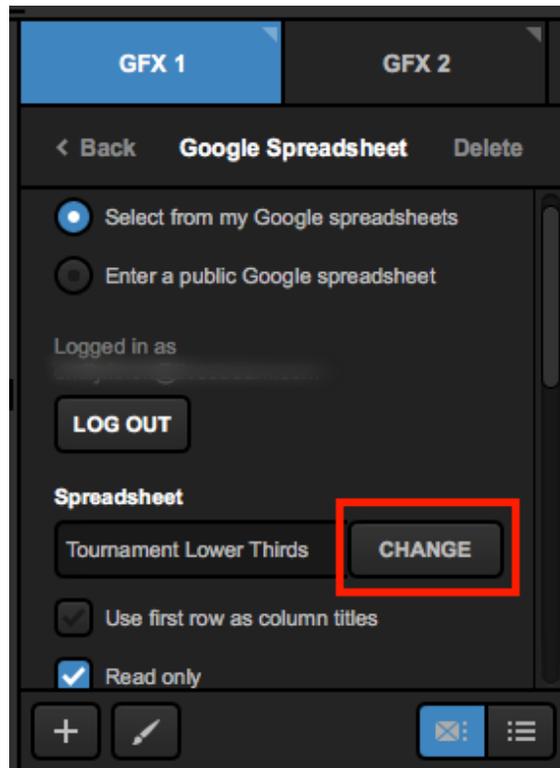
For the best experience, we recommend that your document not have more than 250 rows. You can use Google in multiple graphics layers if you need to show more data.

The screenshot shows a software interface with a top navigation bar containing tabs for 'GFX 1', 'GFX 2', 'GFX 3', 'Media 1', 'Stream', and 'Transitions'. Below this is a 'Google Spreadsheet' configuration panel. On the left, there are options to 'Select from my Google spreadsheets' (selected) or 'Enter a public Google spreadsheet'. A 'LOG OUT' button is visible. Under 'Spreadsheet', the current spreadsheet is 'Tournament Lower Thirds' with a 'CHANGE' button. A checkbox 'Use first row as column titles' is checked. The main area displays a table with two columns: 'Name' and 'Position'. The data rows are:

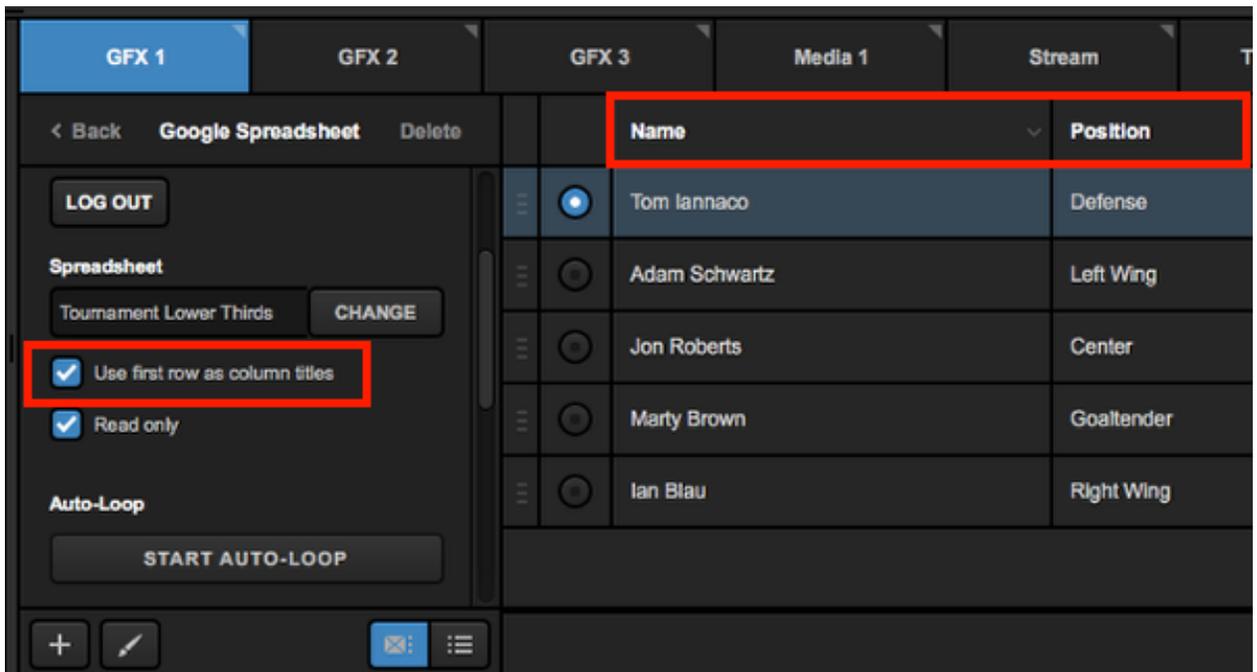
Name	Position
Tom Iannaco	Defense
Adam Schwartz	Left Wing
Jon Roberts	Center
Marty Brown	Goaltender
Ian Blau	Right Wing

At the bottom right, there is a yellow button labeled 'Auto PUSH/PULL'.

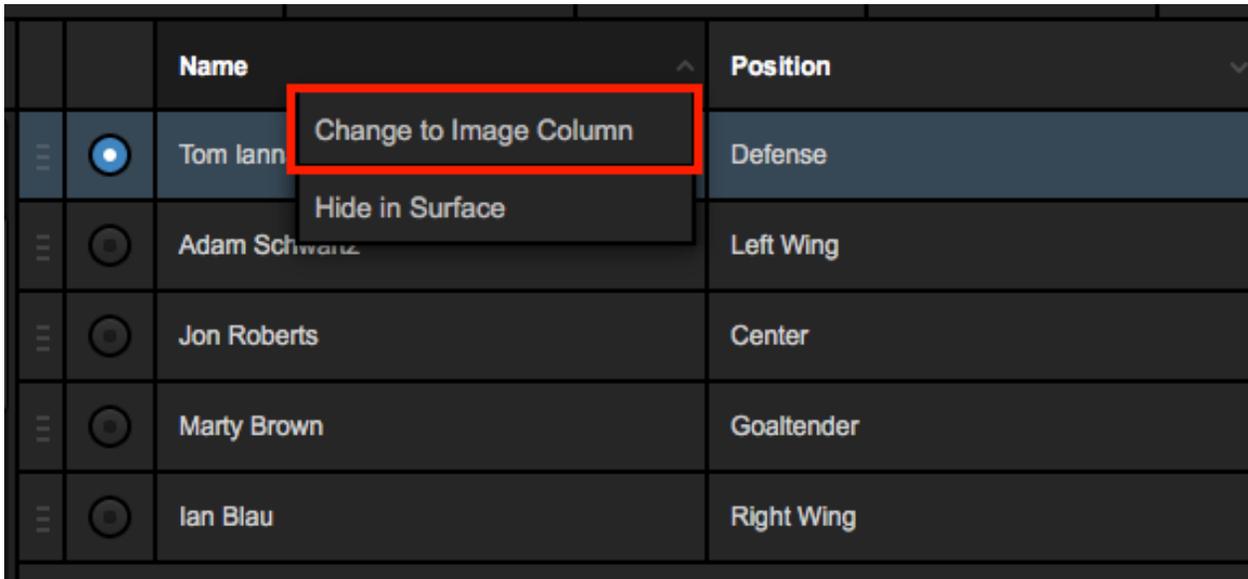
You can always use a different spreadsheet in your Google Drive by clicking the Change button. Spreadsheets will be ordered by most recently modified.



Scroll down to adjust additional settings for this layer. To turn your first row into column titles, check Use first row as column titles.



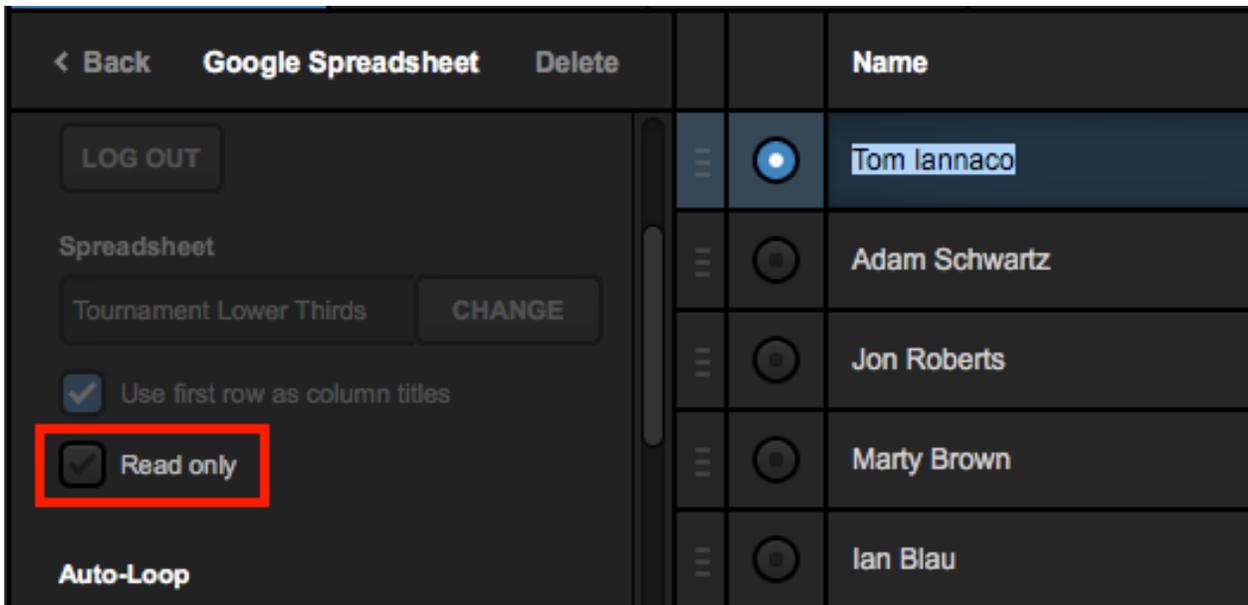
Click on any column title to change the type of data included in that field (text or image).



The screenshot shows a table with two columns: 'Name' and 'Position'. The 'Name' column header is highlighted, and a context menu is open over it. The menu has two options: 'Change to Image Column' (highlighted with a red box) and 'Hide in Surface'. The table contains five rows of data.

	Name	Position
<input checked="" type="radio"/>	Tom Iann	Defense
<input type="radio"/>	Adam Schwartz	Left Wing
<input type="radio"/>	Jon Roberts	Center
<input type="radio"/>	Marty Brown	Goaltender
<input type="radio"/>	Ian Blau	Right Wing

Uncheck Read only if you want to be able to edit the information within Livestream Studio. Otherwise, changes can only be made in Google Docs.



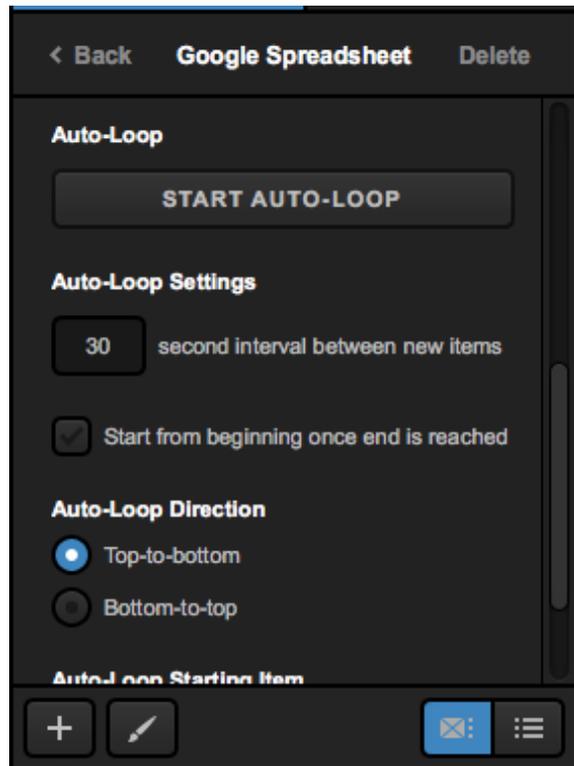
The screenshot shows the settings panel for a Google Spreadsheet. The 'Read only' checkbox is checked and highlighted with a red box. The panel also shows a 'LOG OUT' button, a 'Spreadsheet' dropdown menu set to 'Tournament Lower Thirds', and an 'Auto-Loop' section.

Settings Panel:

- LOG OUT
- Spreadsheet: Tournament Lower Thirds (CHANGE)
- Use first row as column titles
- Read only
- Auto-Loop

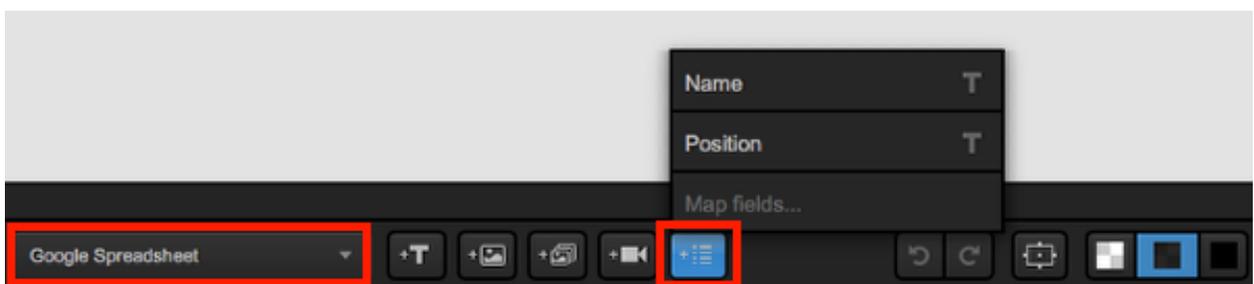
	Name
<input checked="" type="radio"/>	Tom Iannaco
<input type="radio"/>	Adam Schwartz
<input type="radio"/>	Jon Roberts
<input type="radio"/>	Marty Brown
<input type="radio"/>	Ian Blau

Scroll down in the settings to configure your Auto-Loop preferences, including how often Studio switches to the next row, the direction the loop should go, and where the loop should start from.

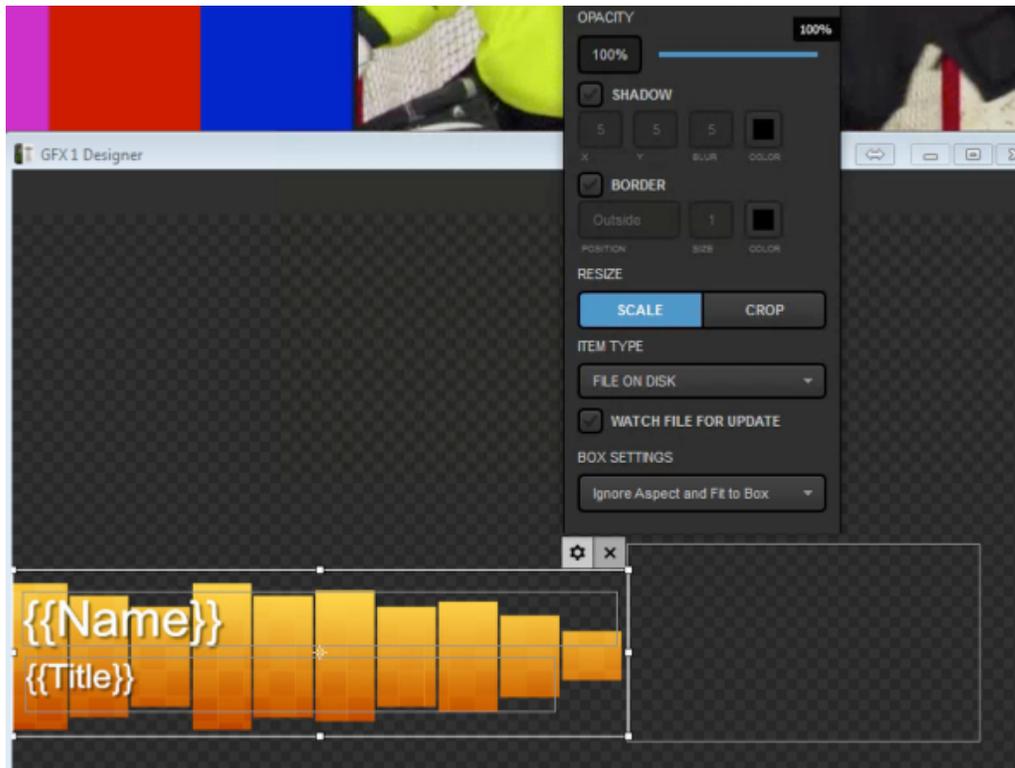


The next step is to start designing your graphic. Click on the paintbrush button to enter the GFX Designer.

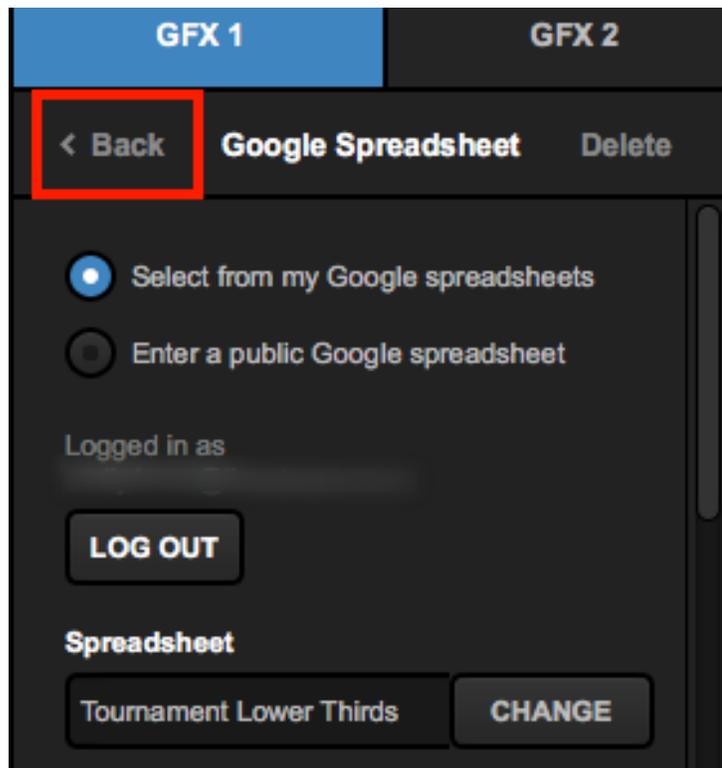
In the Google Spreadsheet layer, click on the list icon to see your columns. Click on one to insert it into the GFX Designer.



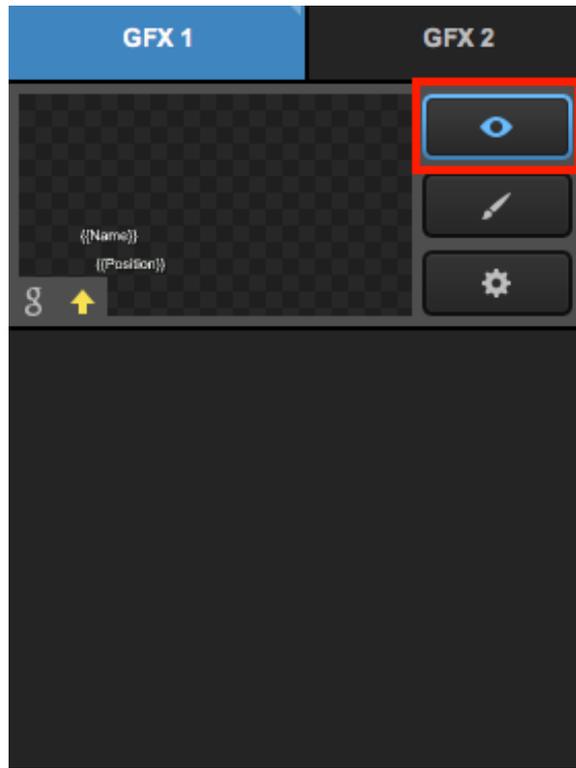
Click on the gearwheel button to access more options for your font, colors, etc.



Close out of the GFX Designer when you have finished. In the graphics overlay channel, click Back in the upper right corner to return to the layer module.



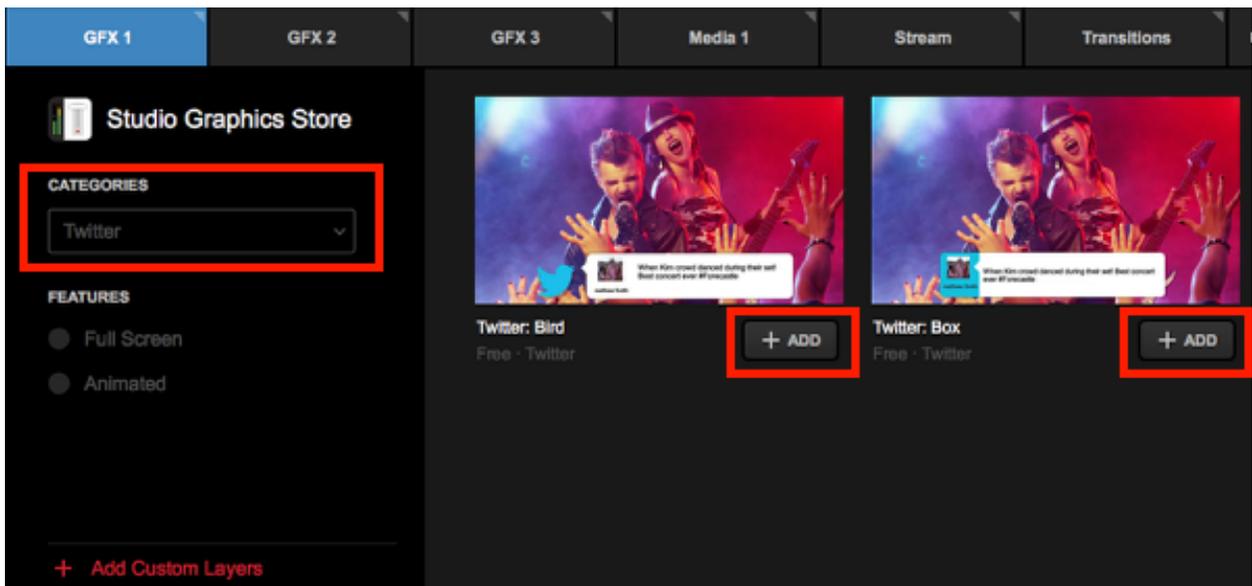
Make sure the Google spreadsheet layer is visible by selecting the eye icon. This will allow you to this graphics overlay to be visible in Livestream Studio.



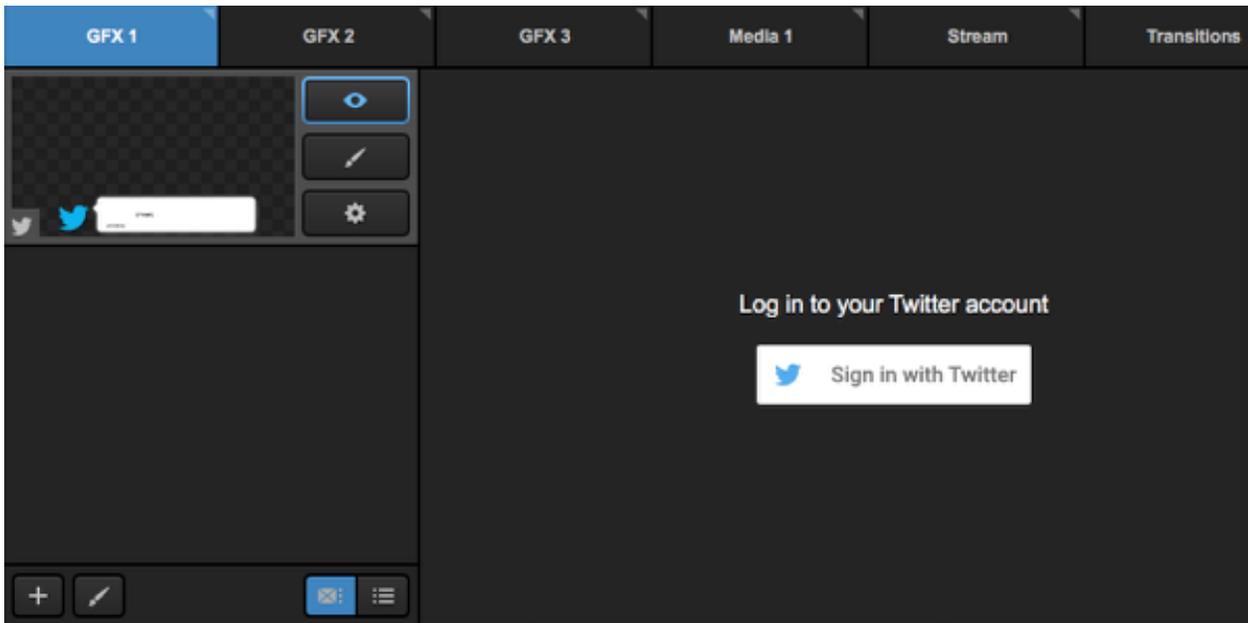
# Importing a Twitter Feed into Livestream Studio

You can include a graphics layer of a Twitter feed from a username or hashtag as a graphics overlay in Livestream Studio.

To get started, you may want to consider adding a Twitter graphic template from our Graphics Store. In the GFX module, select **Twitter** from the Categories menu, then click **+ADD** under one of the design options.



When the graphic is imported, you will see the design preview on the left side and a prompt to sign in on the right. Click **Sign in with Twitter** to open a browser window and sign in to Twitter. This is required in order to allow Studio and Twitter to communicate with each other, however you are not restricted to displaying tweets from your own Twitter account.



## Authorize Livestream Studio HD to use your account?

Authorize app

Cancel

### This application will be able to:

- Read Tweets from your timeline.
- See who you follow.

### Will not be able to:

- Follow new people.
- Update your profile.
- Post Tweets for you.
- Access your direct messages.
- See your email address.
- See your Twitter password.

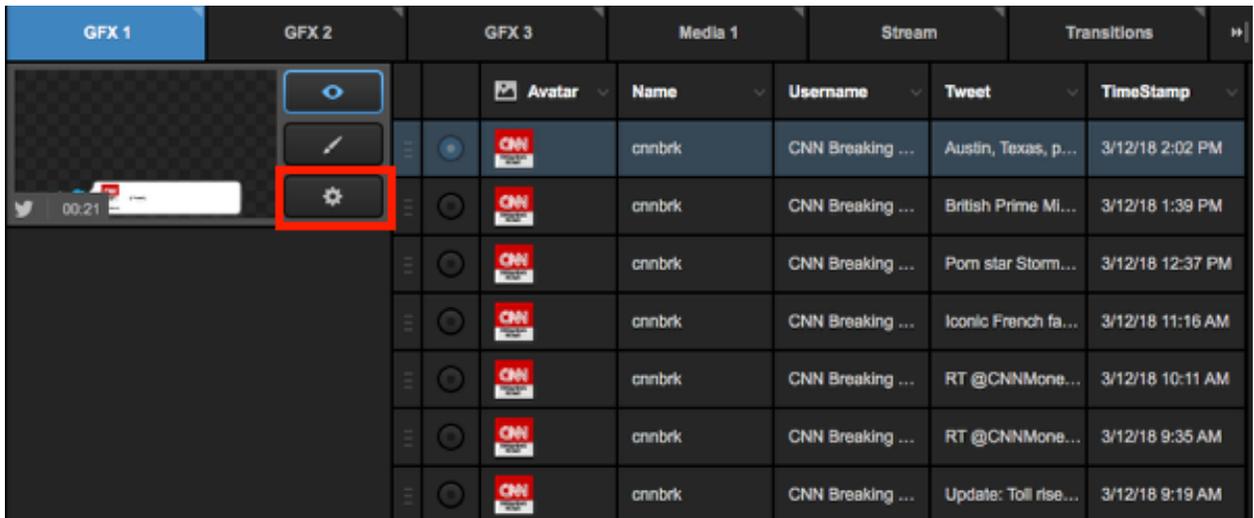


Livestream Studio HD

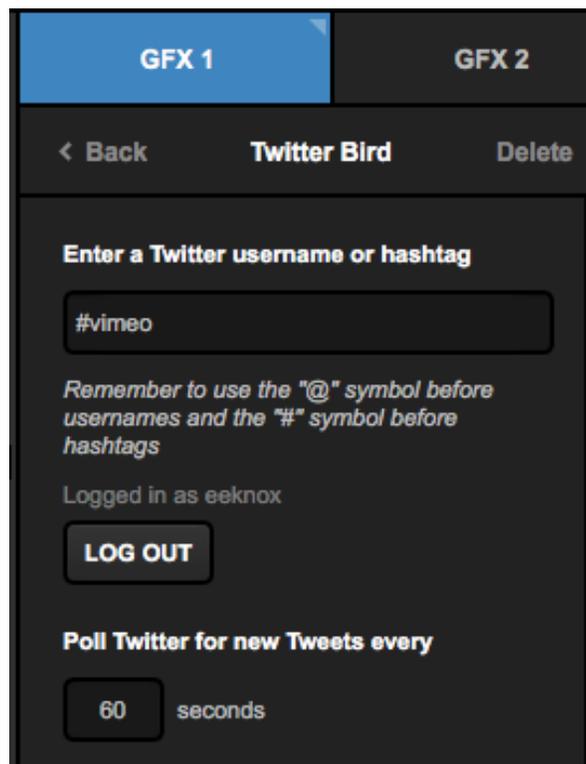
[new.livestream.com/studio](https://new.livestream.com/studio)

Video switching software with graphic overlays and streaming capability.

Once you authorize the app, navigate back to Studio. The layer module will open with a default account. Click the gearwheel to enter the graphic's settings.



Select a username or hashtag to poll. Keep in mind that you must include '#' in the front of hashtags and '@' in front of usernames. When you have typed in the desired asset, press the Enter or Return key.



On the right, tweets from that username or hashtag will load on the right side, including each tweet's avatar, name, username, and time stamp.

Twitter Bird		Avatar	Name	Username	Tweet	TimeStamp
<input type="text" value="#vimeo"/> <small>Remember to use the "@" symbol before usernames and the "#" symbol before hashtags</small> Logged in as eeknox <input type="button" value="LOG OUT"/> <b>Poll Twitter for new Tweets every</b> <input type="text" value="60"/> seconds <b>Records number limitation</b>	<input type="checkbox"/>		stylingthefit	Kimber C.	Watch "ONE LO...	3/12/18 2:33 PM
	<input type="checkbox"/>		rhodesmessiah	Messiah Rhodes	I just uploaded "...	3/12/18 2:32 PM
	<input type="checkbox"/>		tbrunetm	Toni Brunet	Ver "Los Nuevo...	3/12/18 2:32 PM
	<input type="checkbox"/>		emmacathsofp	Emma Cathelin...	Regardez « Pub...	3/12/18 2:31 PM
	<input type="checkbox"/>		raregem6	Jacqueline A. D.	Watch "Feel The...	3/12/18 2:31 PM
	<input type="checkbox"/>		joelafferty	Joe Lafferty	I just uploaded "...	3/12/18 2:31 PM
	<input type="checkbox"/>		bookies_quote	Laurie Ramacey	RT @sergio1be...	3/12/18 2:31 PM

Scroll down on the left side of the module to find more settings. You can select how often Livestream Studio should look for new tweets. Newer tweets appear at the top of the module. You can also tell Livestream Studio how many tweets to look for within a certain time frame. Select Read Only if you do not want to be able to edit the tweets.

GFX 1
GFX 2

< Back
Twitter Bird
Delete

**Poll Twitter for new Tweets every**

seconds

**Records number limitation**

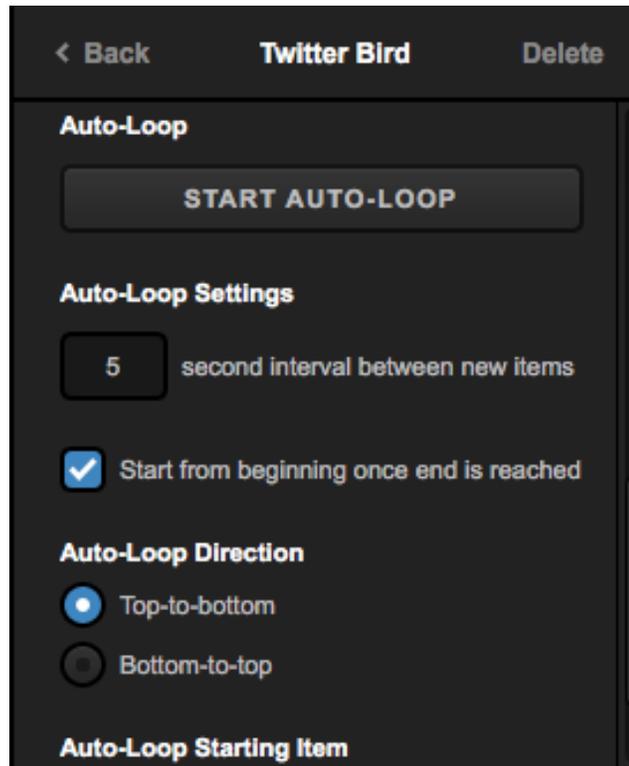
Last  records

No Time Limitation

Last  minutes

Read only

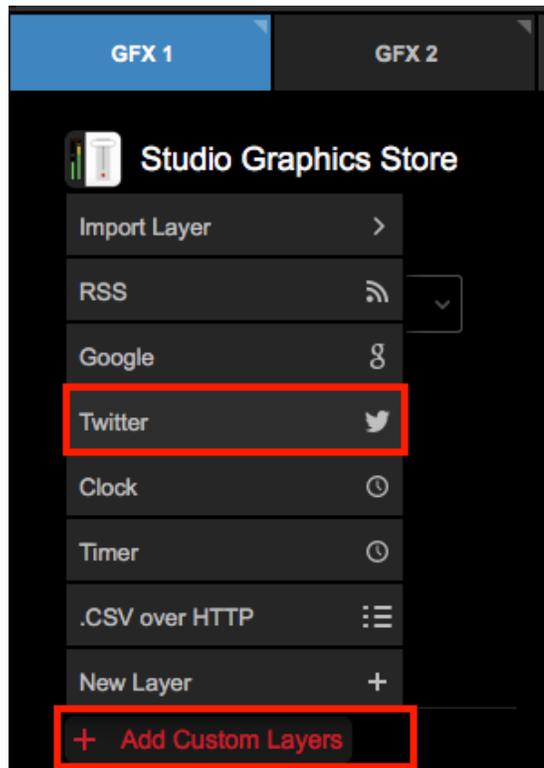
Scroll down in the settings to configure any desired Auto-Loop options.



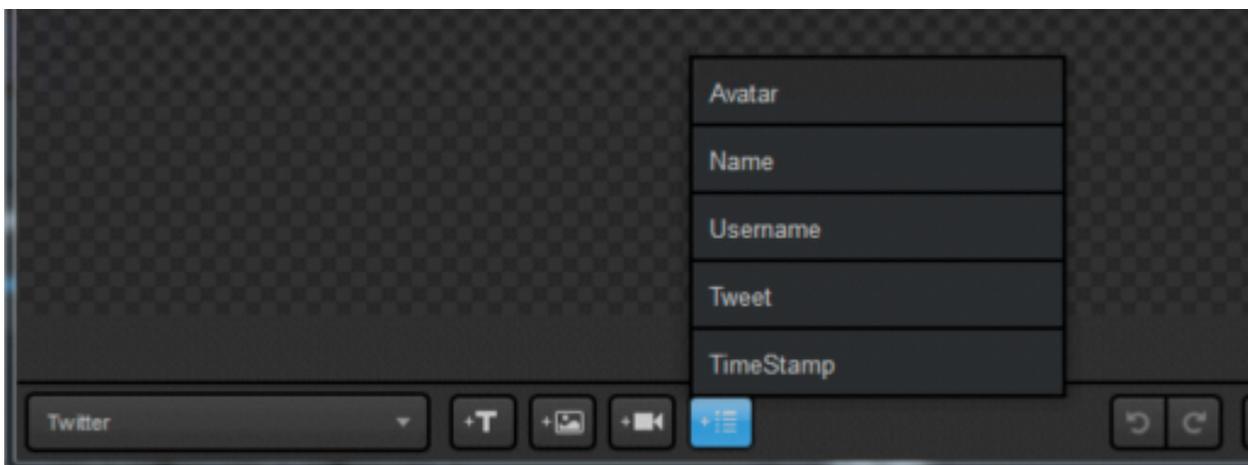
If you wish to adjust the appearance of the graphic or change what information is shown, click the paintbrush icon to open the GFX Designer. You can adjust the placement, size, font, and color of any of the text fields by selecting it and clicking the gearwheel icon.



If you do not wish to use a Livestream Graphics template, you can also create your own by opening the + Add Custom Layers menu and selecting Twitter.



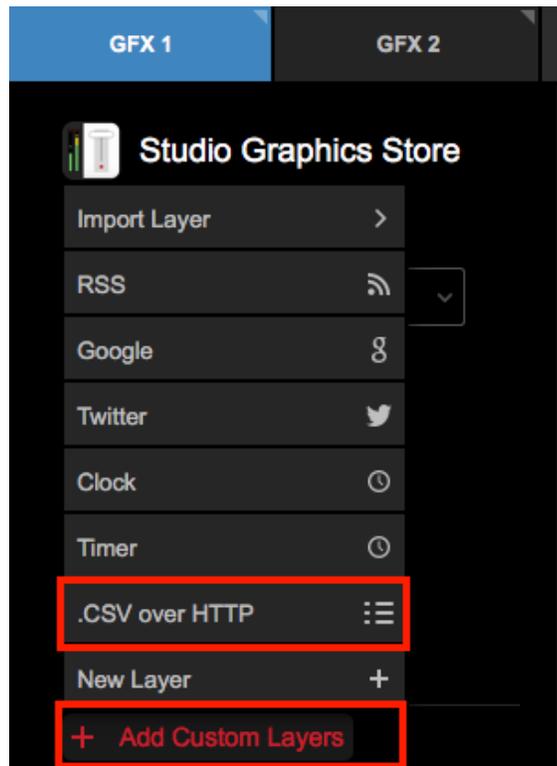
Follow the login steps as described above, then open the GFX Designer. Click on the list button in the Twitter layer, and you can add any data field from Twitter such as the tweet, username, avatar, etc. as well as any other design element.



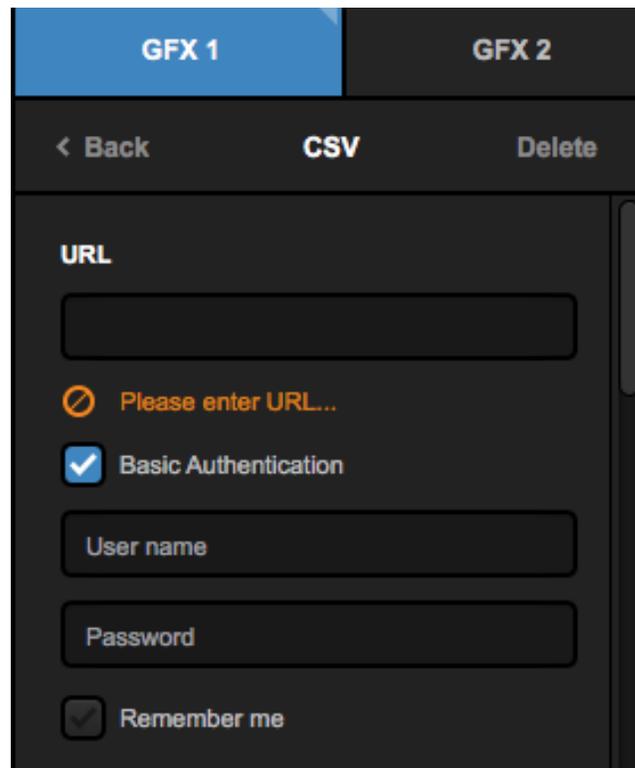
## Using a .CSV Over HTTP

If you are hosting a .CSV file on a web server, you can use graphics overlays in Livestream Studio to display data from it.

In a GFX module, open the +Add Custom Layers menu and select .CSV over HTTP.



If your file requires authentication in order access it, check Basic Authentication and enter your credentials.

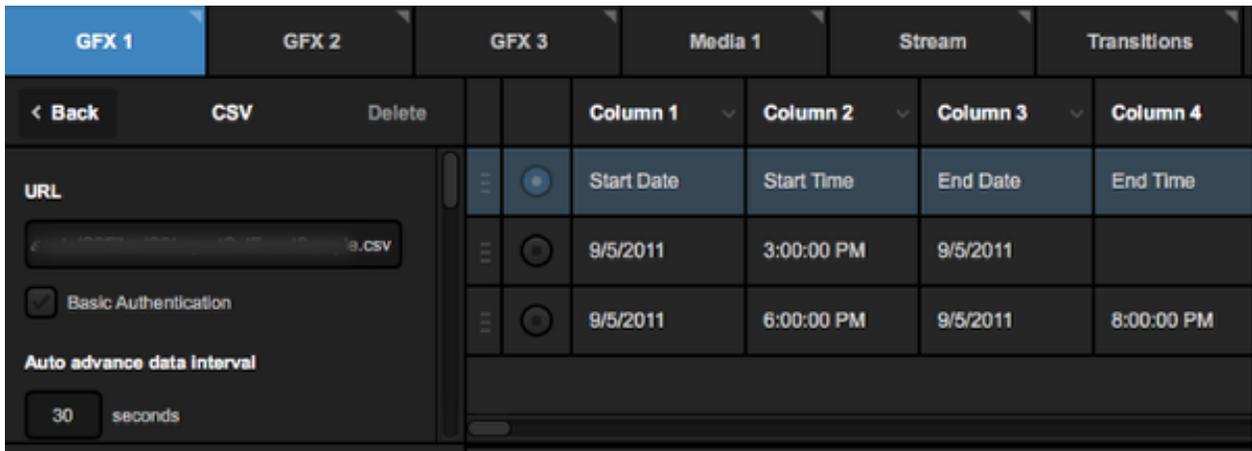


In the settings, input the URL where the .CSV file is located, then press Enter or Return key on your keyboard. Your data will populate on the right with further settings becoming available on the left.

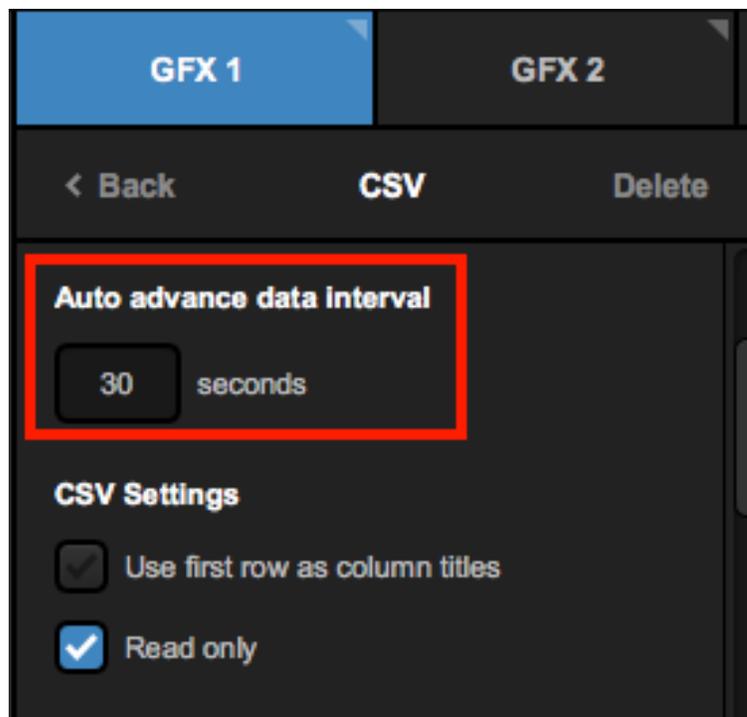
- ! Make sure there are no spaces between either field; only commas should separate each value.

CORRECT: Data 1,Name,http://cdn.livestream.com/resources/branding/  
livestream-logo.png

INCORRECT: Data 1, Name, http://cdn.livestream.com/resources/branding/  
livestream-logo.png

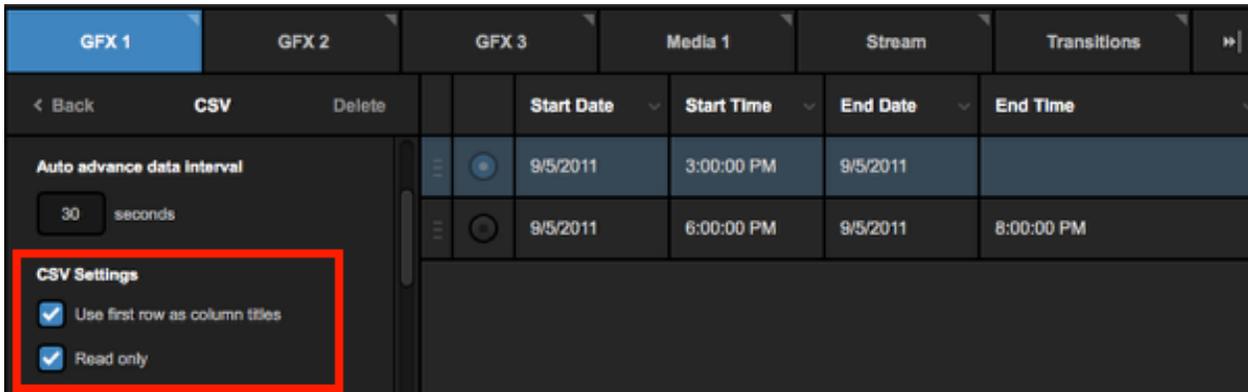


Scroll down on the left side of the module to configure additional settings. Set the amount of time in seconds that Livestream Studio should refresh and look for new data in your .CSV under Auto advance data interval.

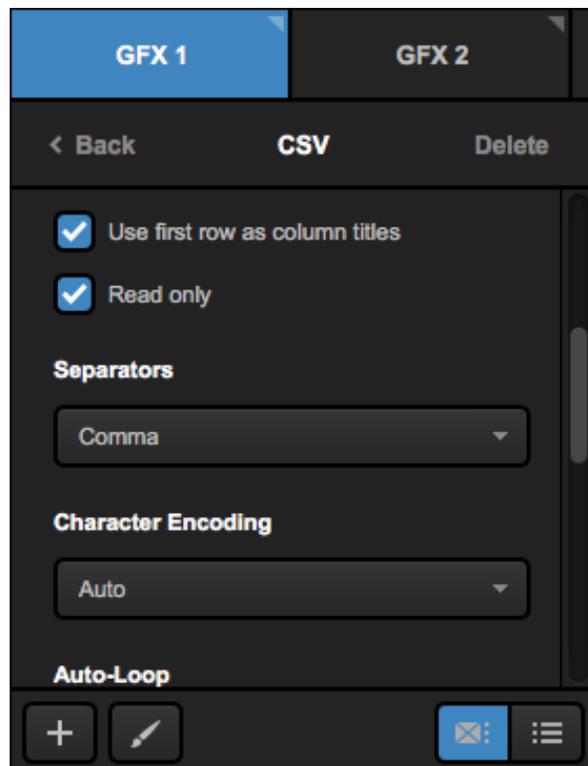


If the first row actually contains the titles of each field, you can check Use first row as column titles to move them up to the title field.

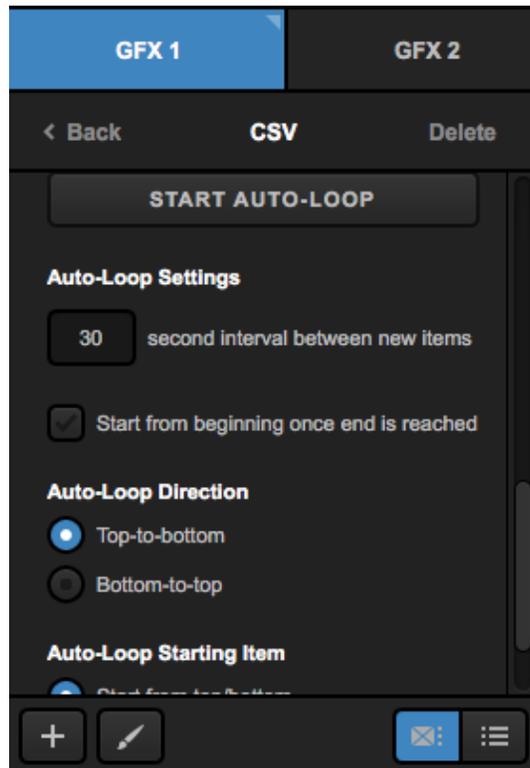
If you want to make changes to your .CSV content via Livestream Studio, uncheck Read only. Otherwise, leave it checked.



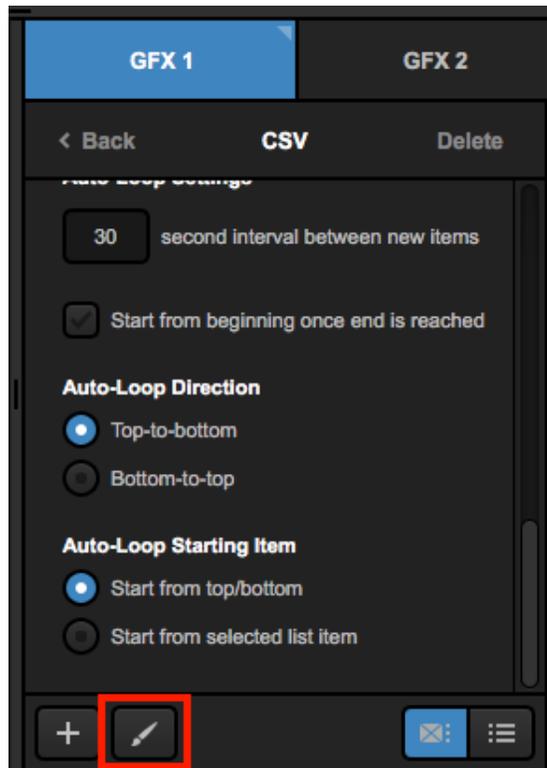
Scroll down to tell Livestream Studio what your column separators are and the types of characters being used (typically auto-detected).



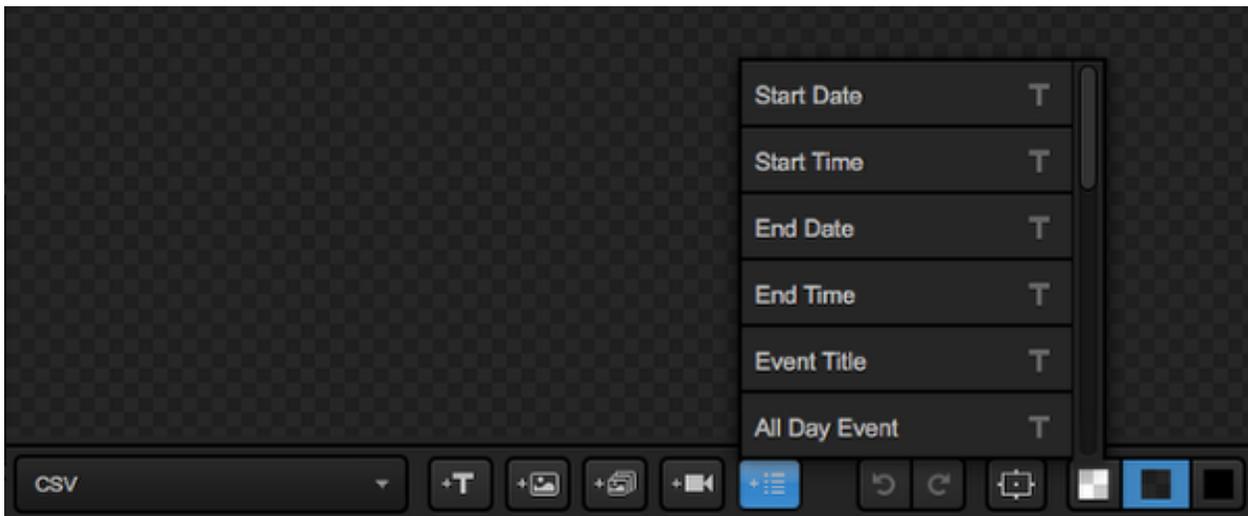
At the bottom are your Auto-Loop settings if you want Livestream Studio to rotate through your .CSV data; these settings include how often the displayed row changes, what direction it loops in, and its starting point.



To design the graphic, click the paint brush icon to enter the GFX Designer.



Select the CSV layer from the dropdown in the lower left corner and design your graphic as desired.



You can now control the graphics overlay by using PRV, PUSH, and PULL as desired.

# Livestream Studio Certified Data Sources

A Livestream Studio Certified Data Source (LSCDS) is a spreadsheet document formatted according to the Livestream Studio specification. An Excel (.xlsx), CSV or Google Spreadsheet document can be used to define LSCDS. Below, you'll find information on the benefits and instructions on how to create/utilize a LSCDS formatted file.

## Why do I need Livestream Studio™ Certified Data Sources?

The main advantage of LSCDS in Livestream Studio™ graphics layer compared to any standard custom excel, Google spreadsheet or CSV file is the ability to remotely control data selection “eyeball” in Livestream Studio™. This feature is primarily designed for distributed production workflows, meaning when a dedicated person operates graphics data during a live video production.

This feature can also be used for automation, for example, in combination with custom web services that generate CSV files on the fly to control graphics data in production, such as sports scoring.

In the examples below, you'll find small scripts for data ON/OFF program validation, as well as illustrations on how to bring dynamic image objects into Livestream Studio using external files.

## How to define Livestream Studio™ Certified Data Sources

You can copy one of the examples below and add columns, rows and data to the example as needed (make sure the PROGRAM column remains in the A1 position). You may also use an existing file as a Livestream Certified spreadsheet, just add an additional first column and name the first cell (Cell A1) - PROGRAM. Once you have load the file to Livestream Studio as a graphics data layer, you will see a small Livestream logo over the layer thumbnail.



Once the file is identified as a certified data source, Livestream Studio will look for "ON" and "OFF" values within the first column (A2:Ax). "ON" value will activate that row in the Livestream Studio™ GFX layer, while "OFF" deactivates that row. The "ON" or "OFF" status will be represented by the "eyeball" logo within Livestream Studio.

If there are multiple ON values in the column, Livestream Studio will use the first from the top. You can add validation scripts to your spreadsheet by following instructions below to maintain single row selection. More information on using validation scripts below.

**Note:** All the values that are not equal to ON and OFF will be ignored.

Livestream certified CSV files can be used in Studio via file path on local disk/network or over HTTP protocol.

## Sample LSCDS Files

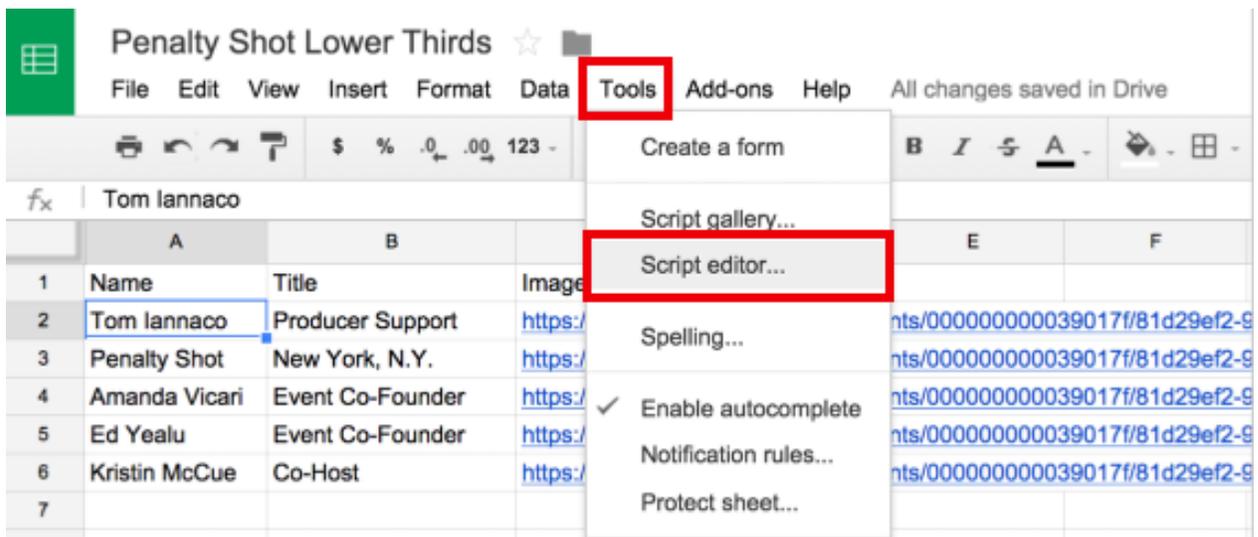
- [Excel](#)
- [Google Spreadsheet Template](#) - You can add this template to your own Google Drive by clicking the "Use This Template" button.
- [CSV](#)

## Installing Validation Scripts

Google Spreadsheet:

The Google Spreadsheet templates linked above already include validation scripts. Below is a link to the source code of the validation script we used for the sample. You can use the text to install the script on your own custom Google Spreadsheets. To install the script, do the following:

- Click 'Tools' > 'Script Editor...' (or 'Script Manager...'):



- Copy the Google Spreadsheet Validation Script found [here](#) and paste it into the editor

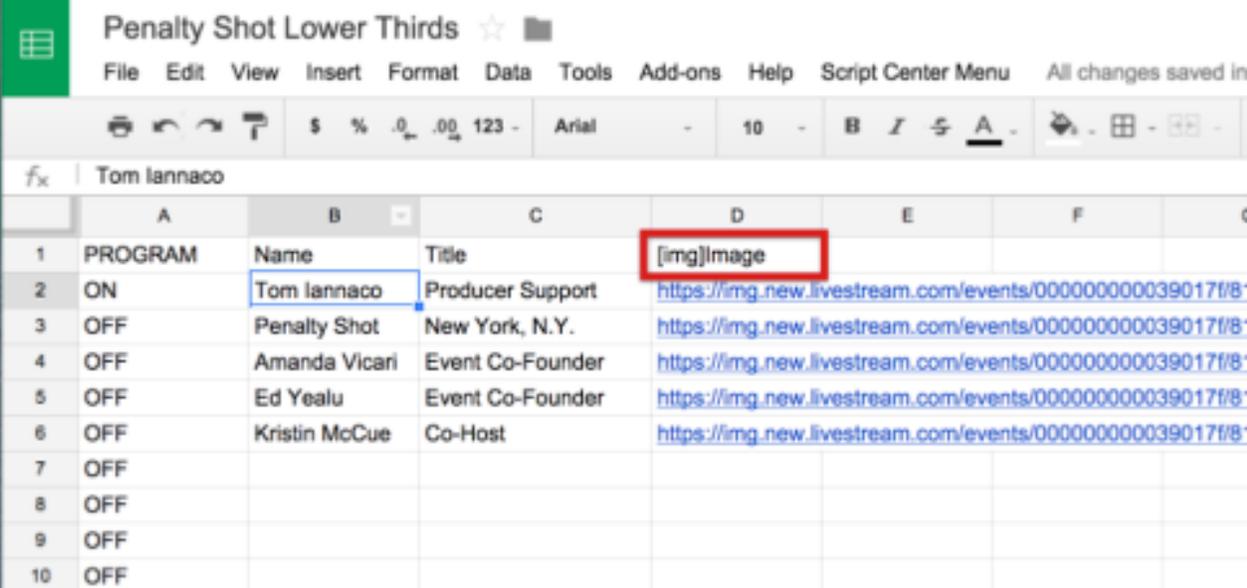
- Click the Save icon and name it.

Excel:

The sample file provided above has the validation script built in. If you already have a file you would like to use, you can use the validation script linked [here](#).

## Dynamic images and LSCDS

External data files may contain columns with HTTP URLs or local/network addresses referencing images you would like to use in your GFX template. To define a column as an Image type column, add `[img]` at the beginning of the column name. Livestream Studio™ will recognize the path as an image and display it in your graphics template.



The screenshot shows a spreadsheet with the following data:

	A	B	C	D	E	F
1	PROGRAM	Name	Title	[img]image		
2	ON	Tom Iannaco	Producer Support	<a href="https://img_new.livestream.com/events/000000000039017f/8">https://img_new.livestream.com/events/000000000039017f/8</a>		
3	OFF	Penalty Shot	New York, N.Y.	<a href="https://img_new.livestream.com/events/000000000039017f/8">https://img_new.livestream.com/events/000000000039017f/8</a>		
4	OFF	Amanda Vicari	Event Co-Founder	<a href="https://img_new.livestream.com/events/000000000039017f/8">https://img_new.livestream.com/events/000000000039017f/8</a>		
5	OFF	Ed Yealu	Event Co-Founder	<a href="https://img_new.livestream.com/events/000000000039017f/8">https://img_new.livestream.com/events/000000000039017f/8</a>		
6	OFF	Kristin McCue	Co-Host	<a href="https://img_new.livestream.com/events/000000000039017f/8">https://img_new.livestream.com/events/000000000039017f/8</a>		
7	OFF					
8	OFF					
9	OFF					
10	OFF					

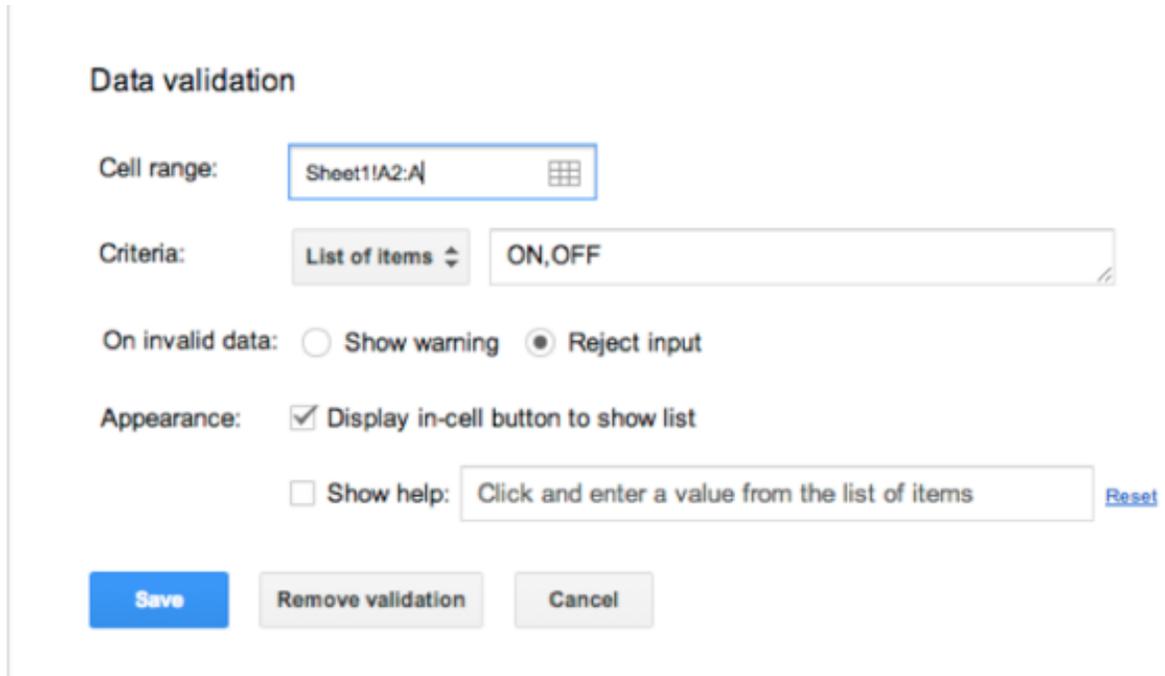
**i** Note: When an image can not be found at the provided URL or path, Studio will display an empty (transparent) image field.

## Spreadsheet Formatting Best Practices

Google Spreadsheet:

- Freeze row 1 and column 1 (View - Freeze Row / Freeze Column)

- Add data validation using the shown parameters:



**Data validation** ✕

Cell range:  

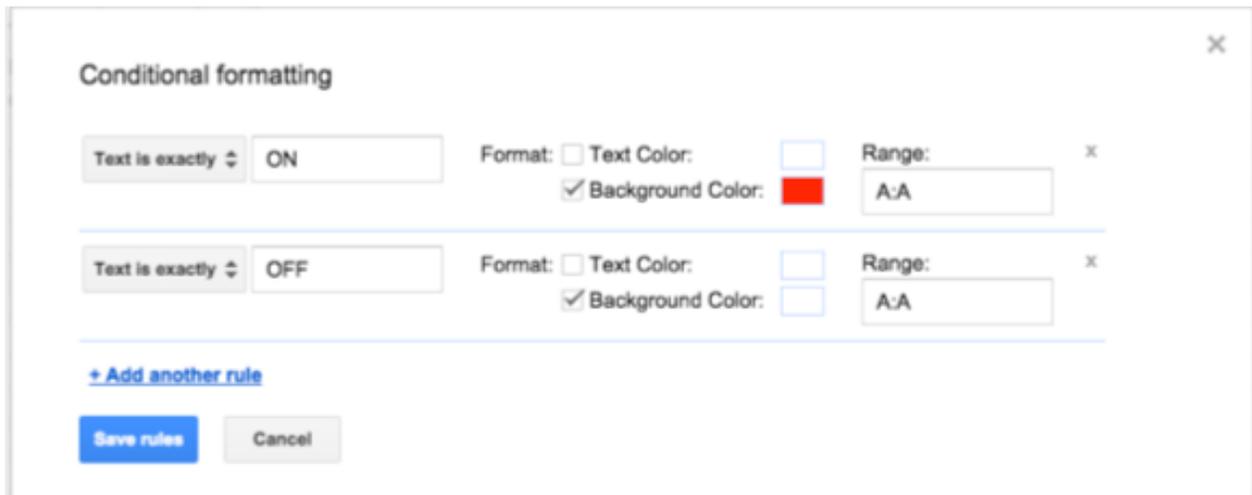
Criteria:

On invalid data:  Show warning  Reject input

Appearance:  Display in-cell button to show list

Show help:  [Reset](#)

- Add conditional formatting to the A2:A (all the values in A row except A1)



**Conditional formatting** ✕

Text is exactly  Format:  Text Color:   Background Color:  Range:  ✕

---

Text is exactly  Format:  Text Color:   Background Color:  Range:  ✕

[+ Add another rule](#)

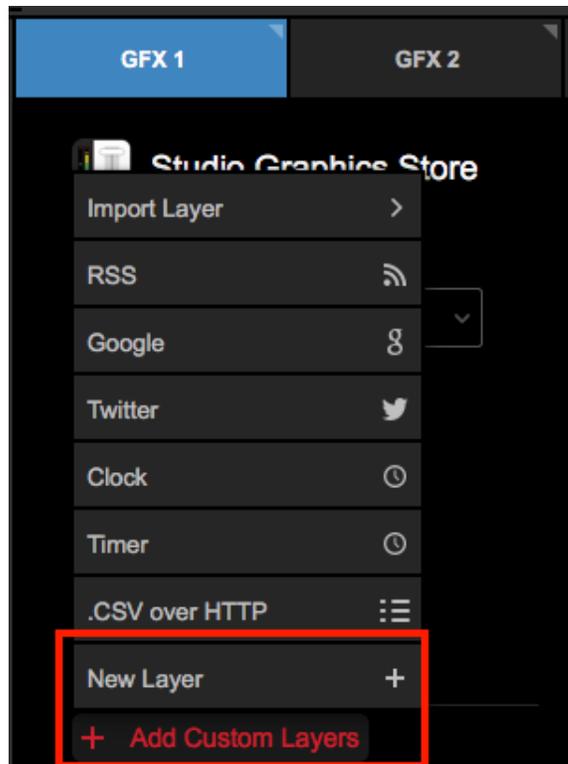
Excel file formatting:

We recommend using the template available [HERE](#) when using Excel files for LSCDS.

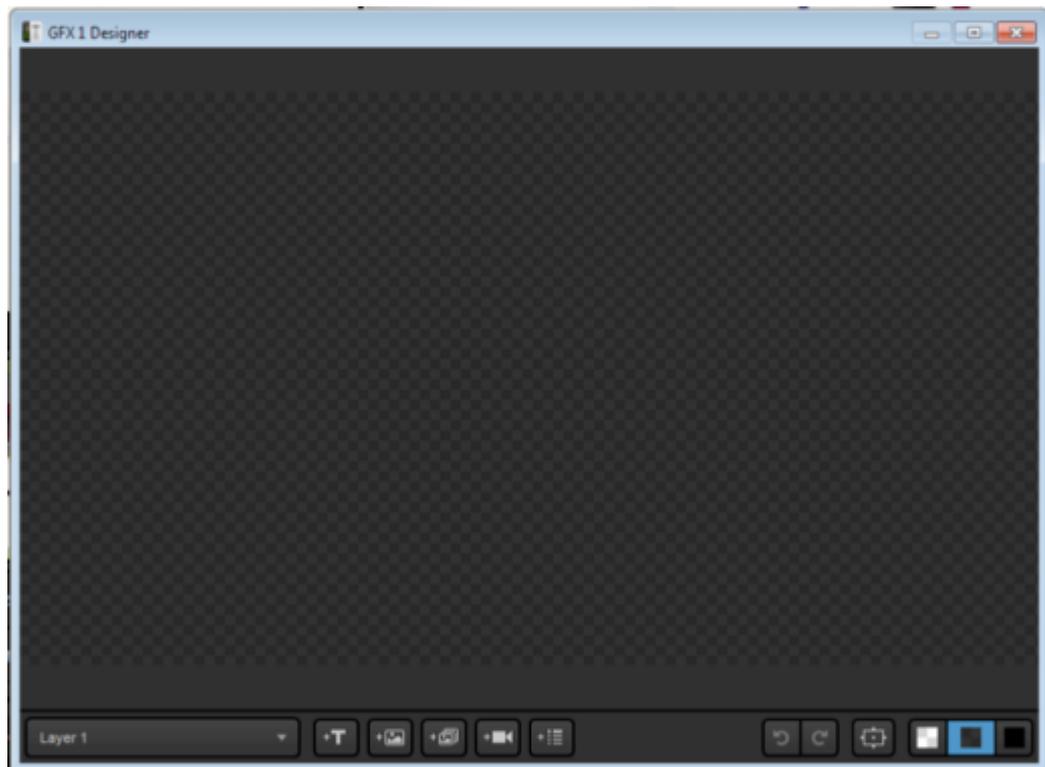
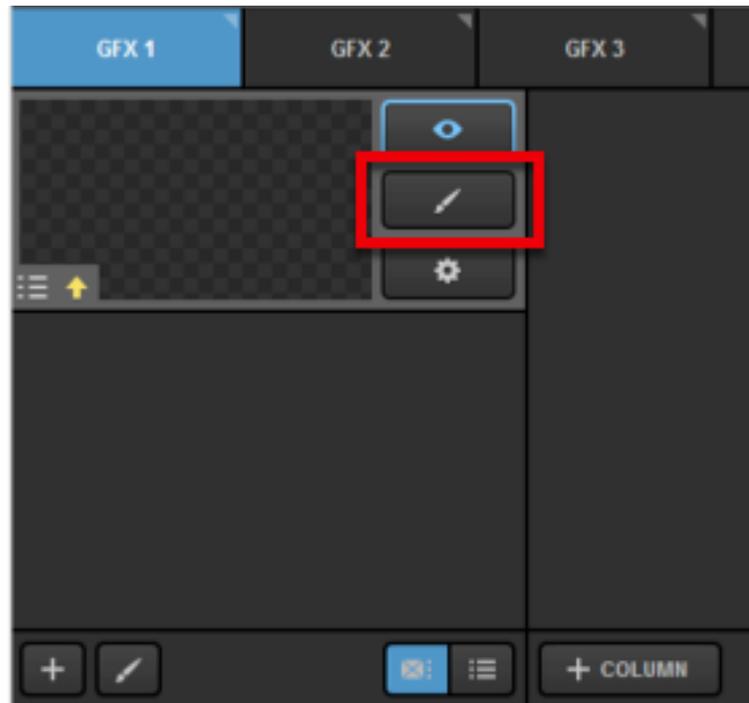
# Building a Picture-in-Picture Graphic

When doing a multi-camera production, many producers sometimes like to show two or more camera shots at the same time. Livestream Studio gives you the ability to show up to five cameras within one picture-in-picture graphics layer.

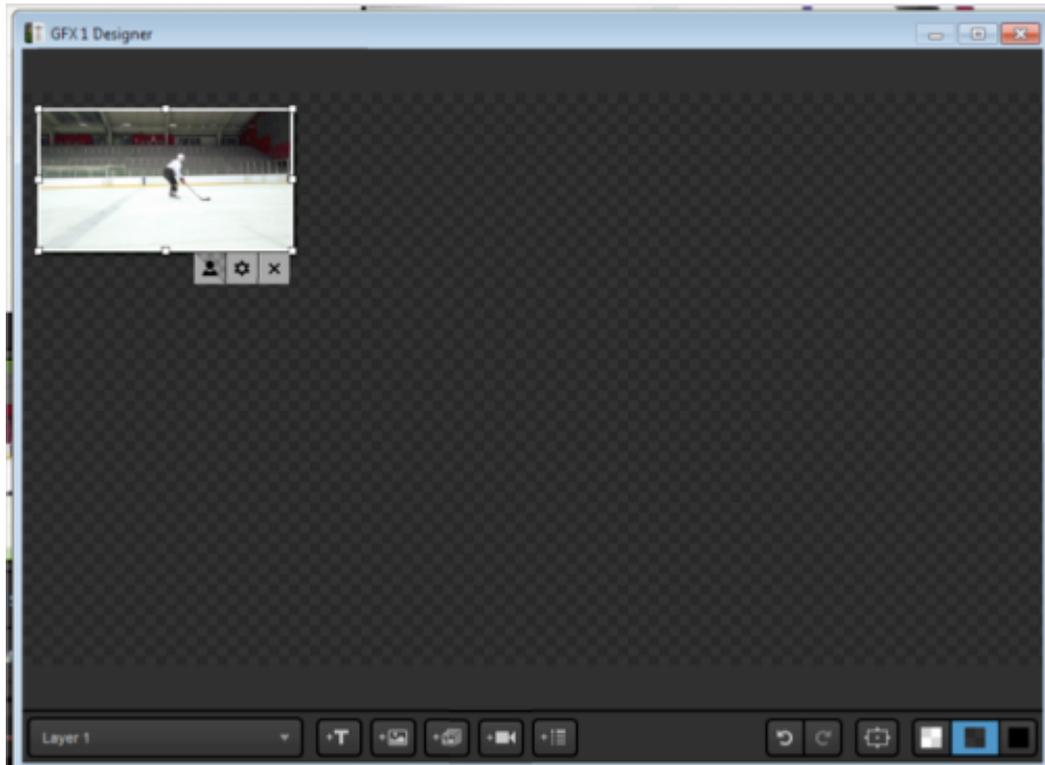
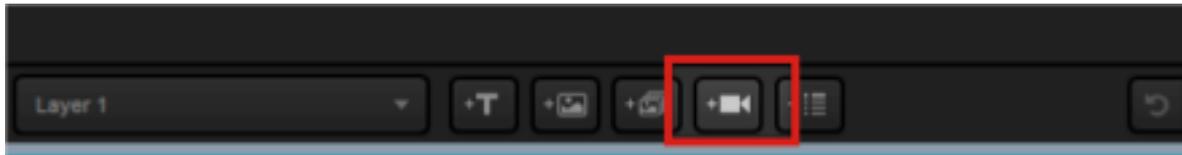
Navigate to a graphics tab, open the +Add Custom Layers menu and select New Layer.



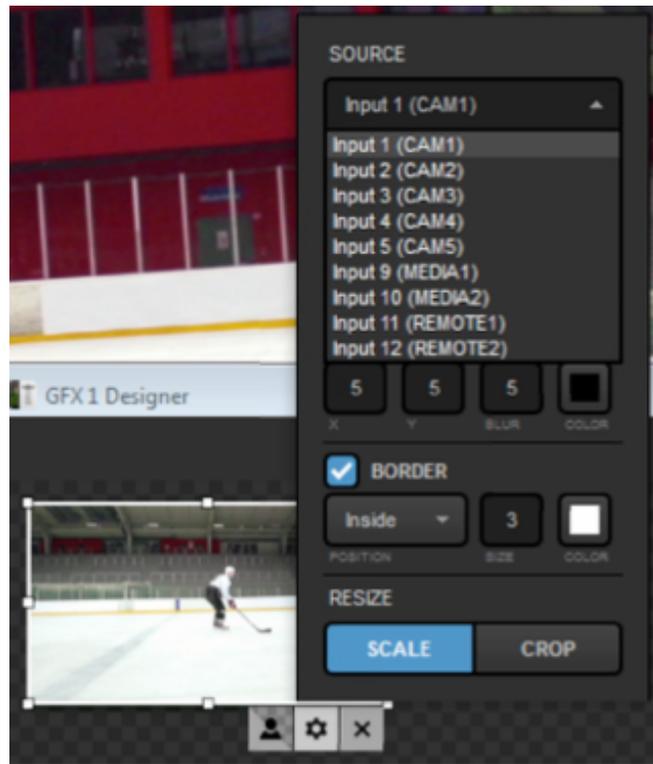
Click the corresponding paint brush button to enter the GFX Designer.



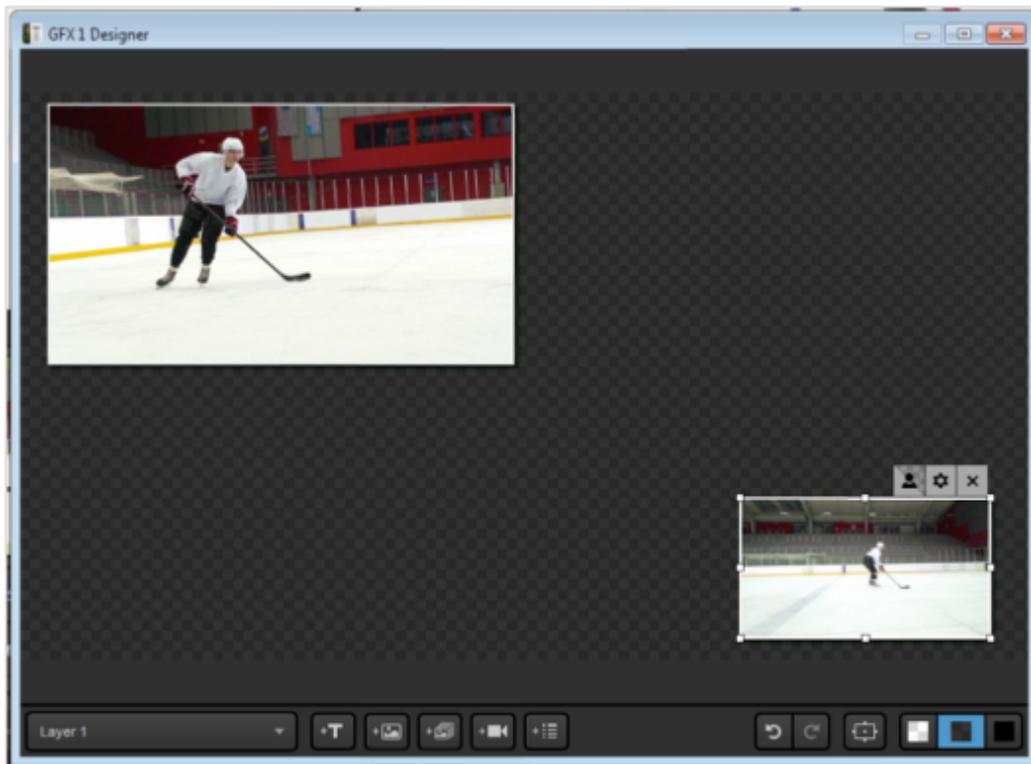
Click the camera icon at the bottom of the window. A video source will appear in the designer.



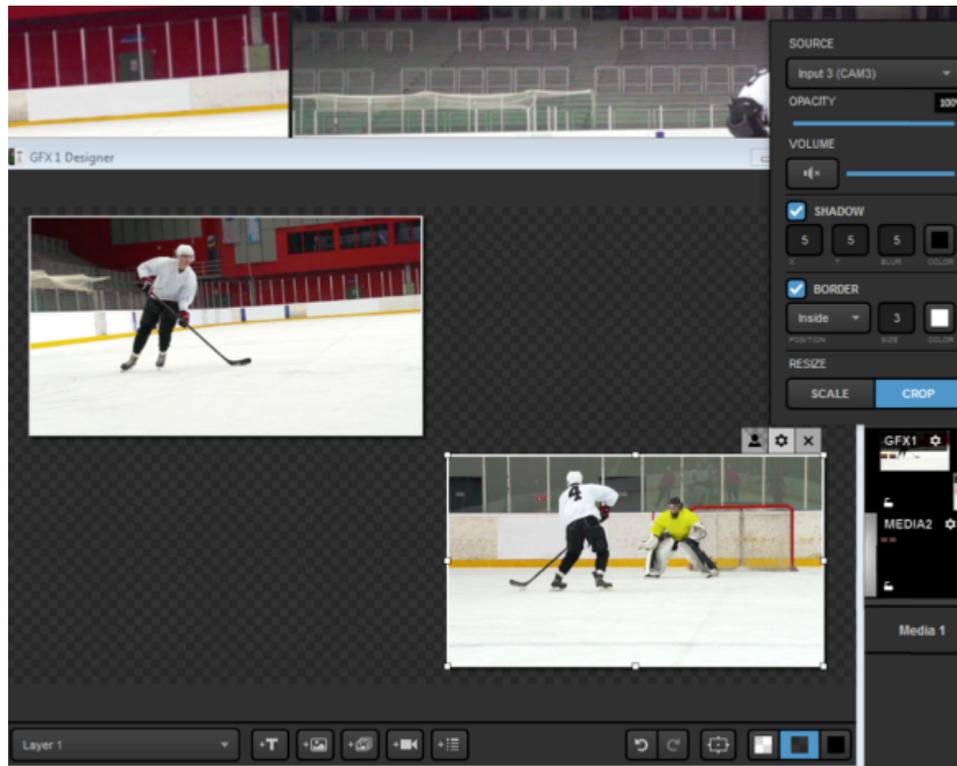
Click the attached gearwheel icon to change which source appears in there. You can choose any camera input, media source, remote camera, graphics track, or color source.



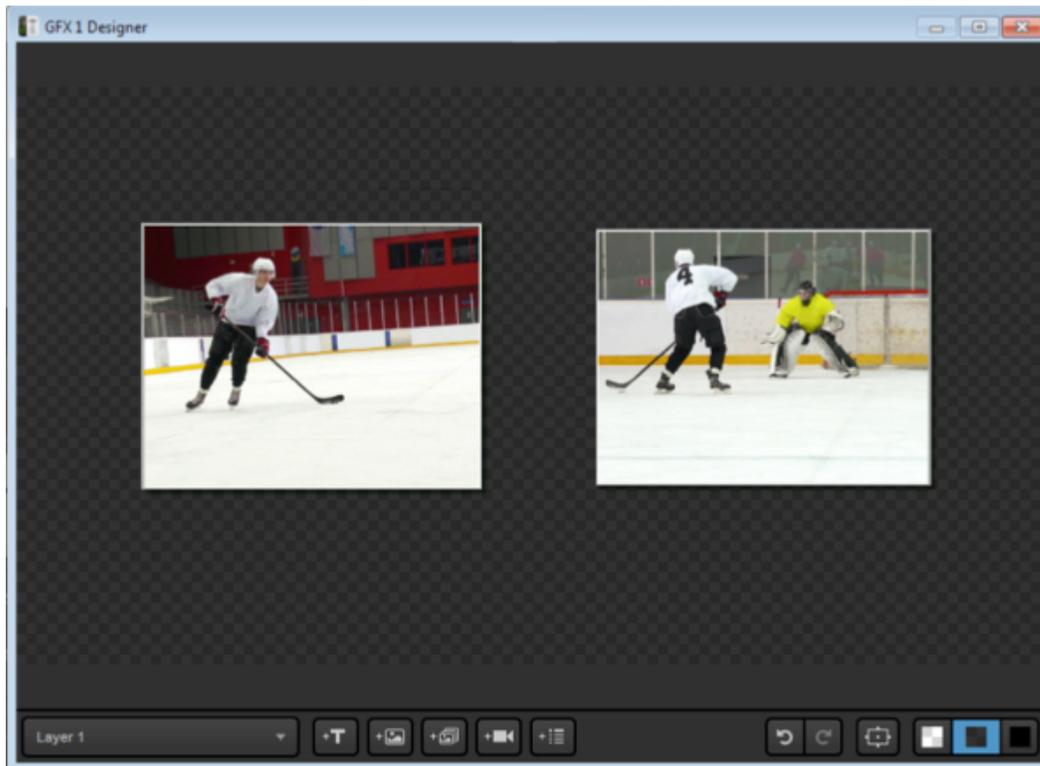
Add another source.



You can drag and drop either of these anywhere within the designer. Clicking the gearwheel will also allow you to resize and crop your sources.



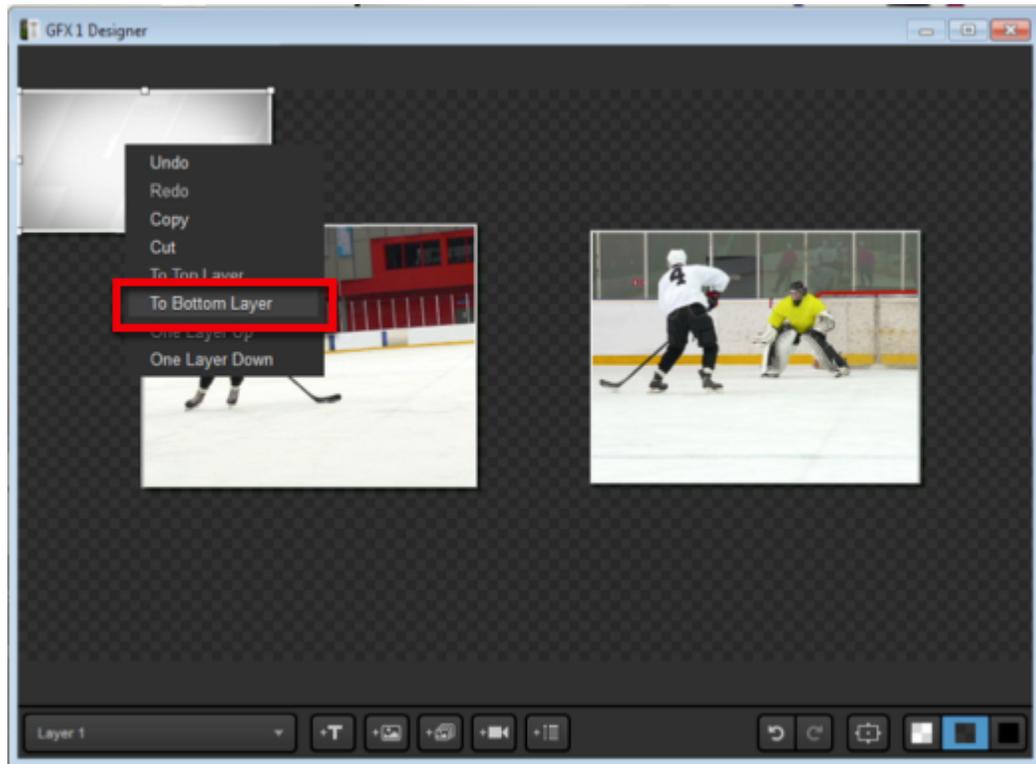
A sample double-box (or two-box) might look something like this:



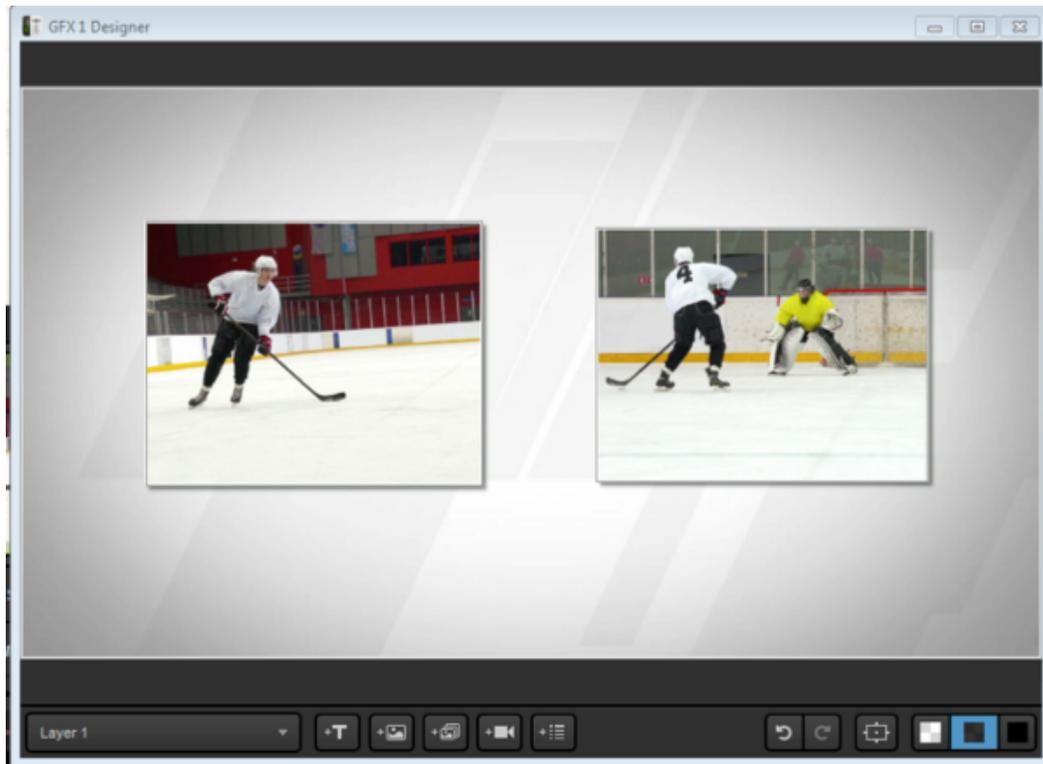
If you want to give a background to your picture-in-picture, add a third source to the GFX designer. In this example, we're using a looping video background in Media 1.



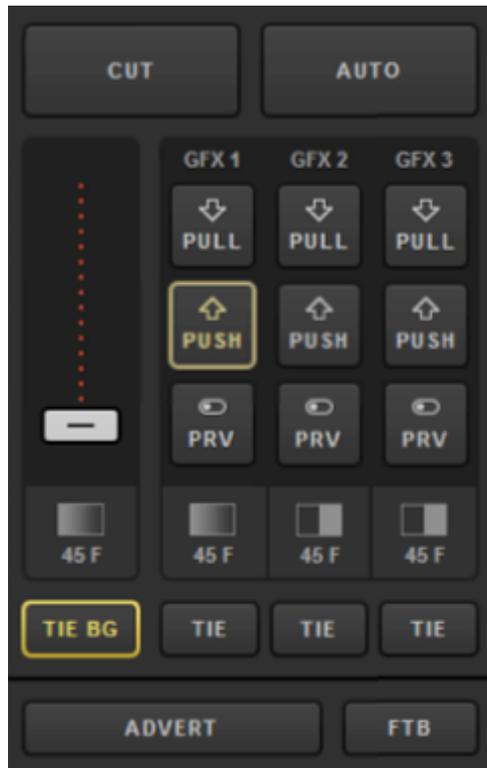
Right-click the third source and click To Bottom Layer. This will force it to be behind your other two sources.



Scale it so it fills the designer. Now your picture-in-picture looks like this.



Close out of the designer and make sure your layer is visible (the eye icon is blue). Then click the corresponding flashing Push button to bring it into Program.



Now both sources are seen in Program at the same time with your background. Click Pull whenever you are ready to show your previous Program source.

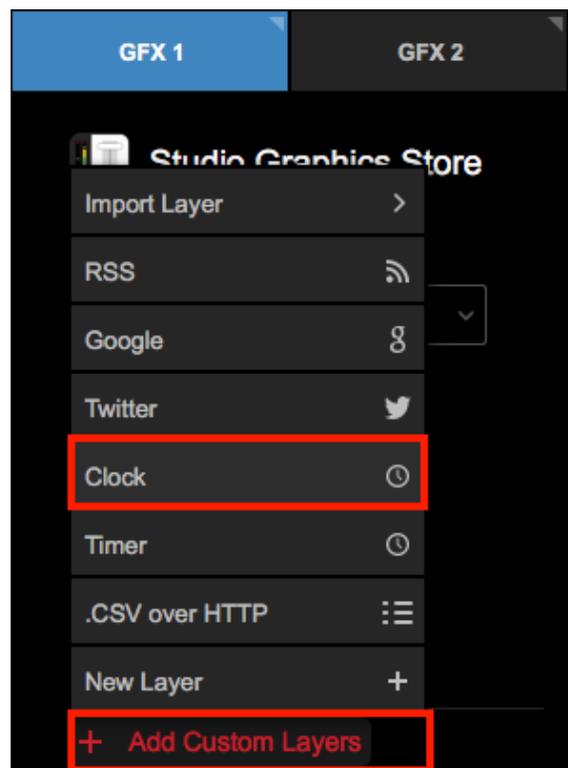


# Building a Clock or Timer

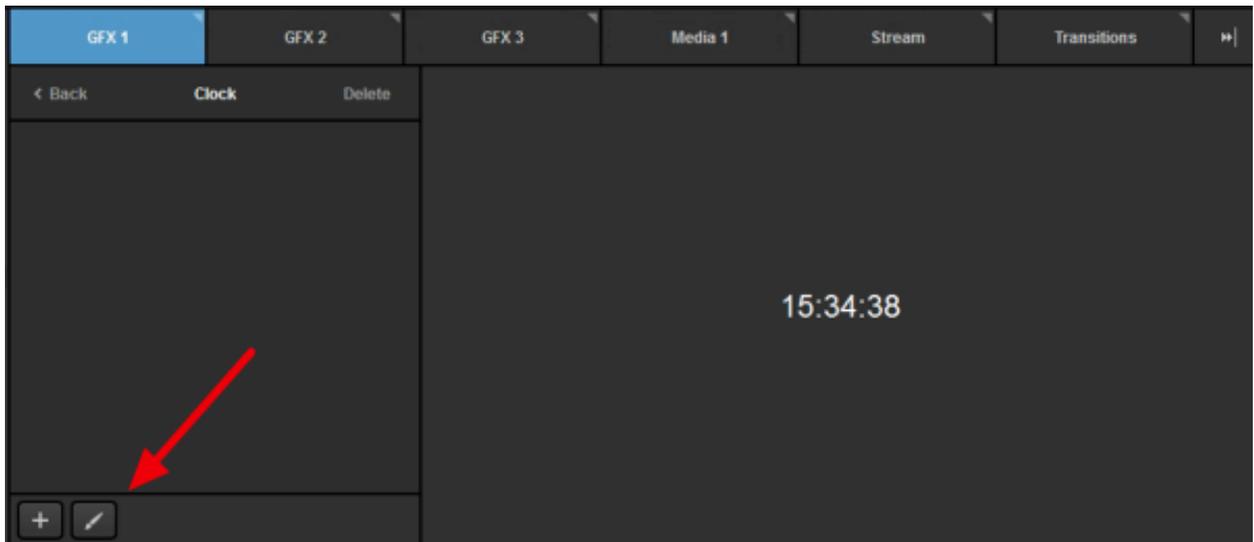
Adding a time-of-day clock or a countdown timer are very similar processes.

## Clock

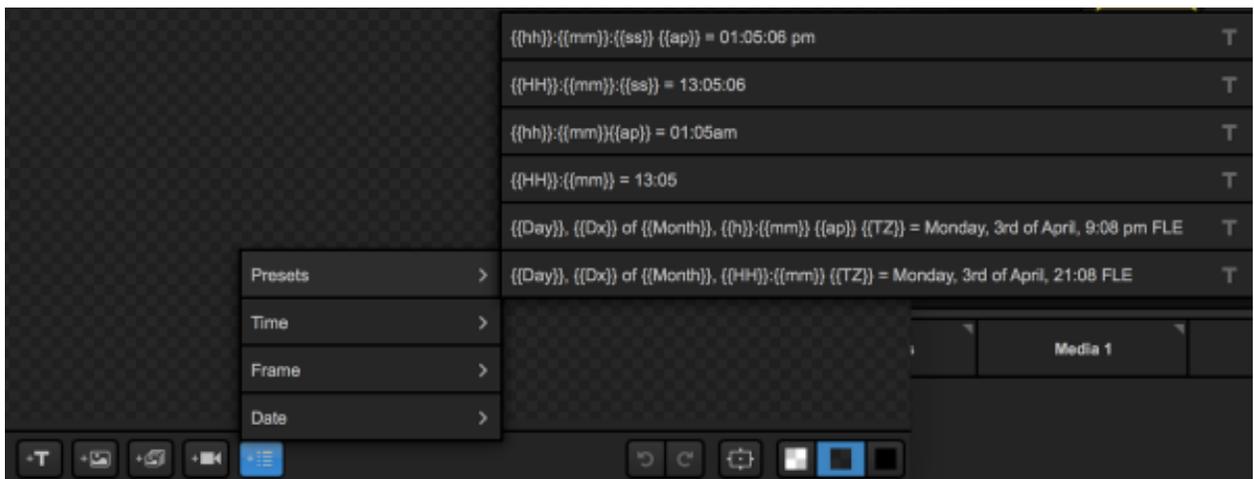
You may want to overlay a time-of-day clock into your production. This can be done by opening the +Add Custom Layers menu selecting the Clock option in the graphics overlay channel.



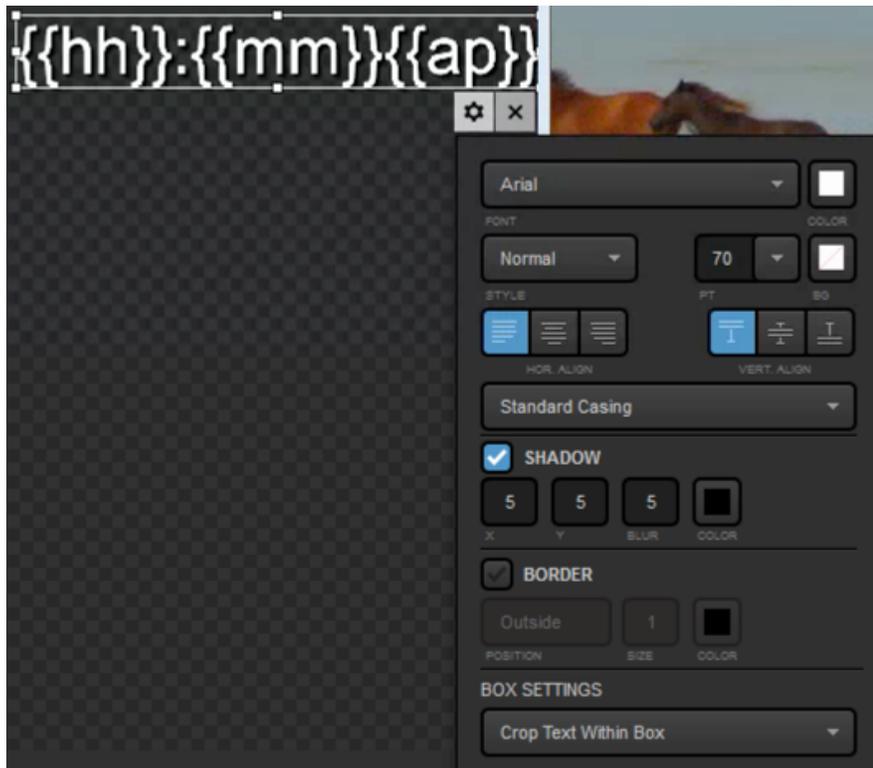
This will add a clock layer to the graphics channel. Click on the paintbrush icon to open the GFX Designer for that layer.



Click on the list icon for options of time fields to add. Consider checking the presets first to save the time needed to add individual fields.



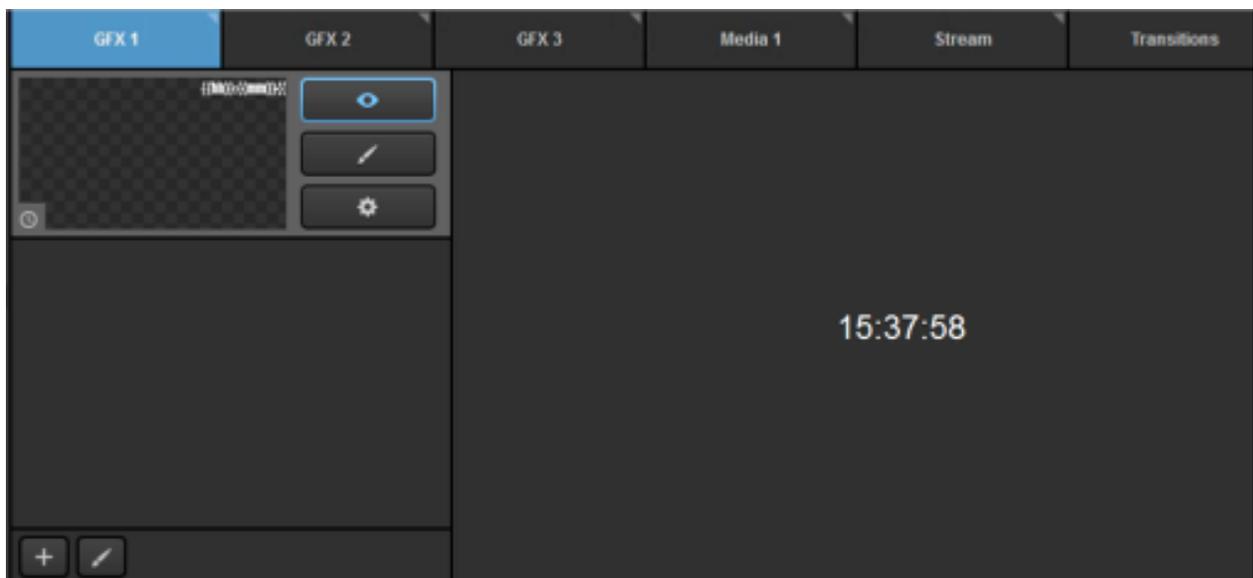
Once you have added the time fields you need, click the arrow button to change each one's font, size, color, etc.



Drag and drop the clock to where you want to have it appear. When you are done designing the clock, close out of the GFX Designer.

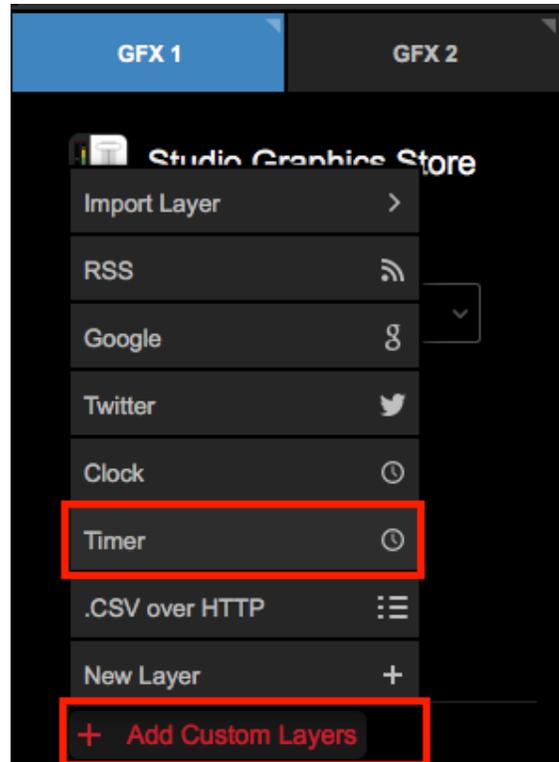


There are no additional settings for the clock layer other than deleting it. Click Back to return to the layer module. Then click the eye icon to ensure the clock layer is visible when you want to include it in your production.

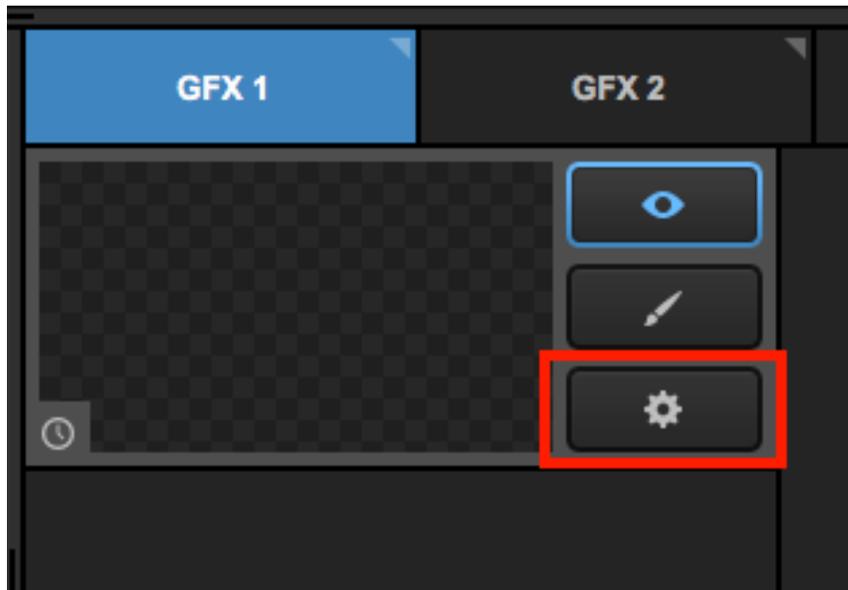


## Timer

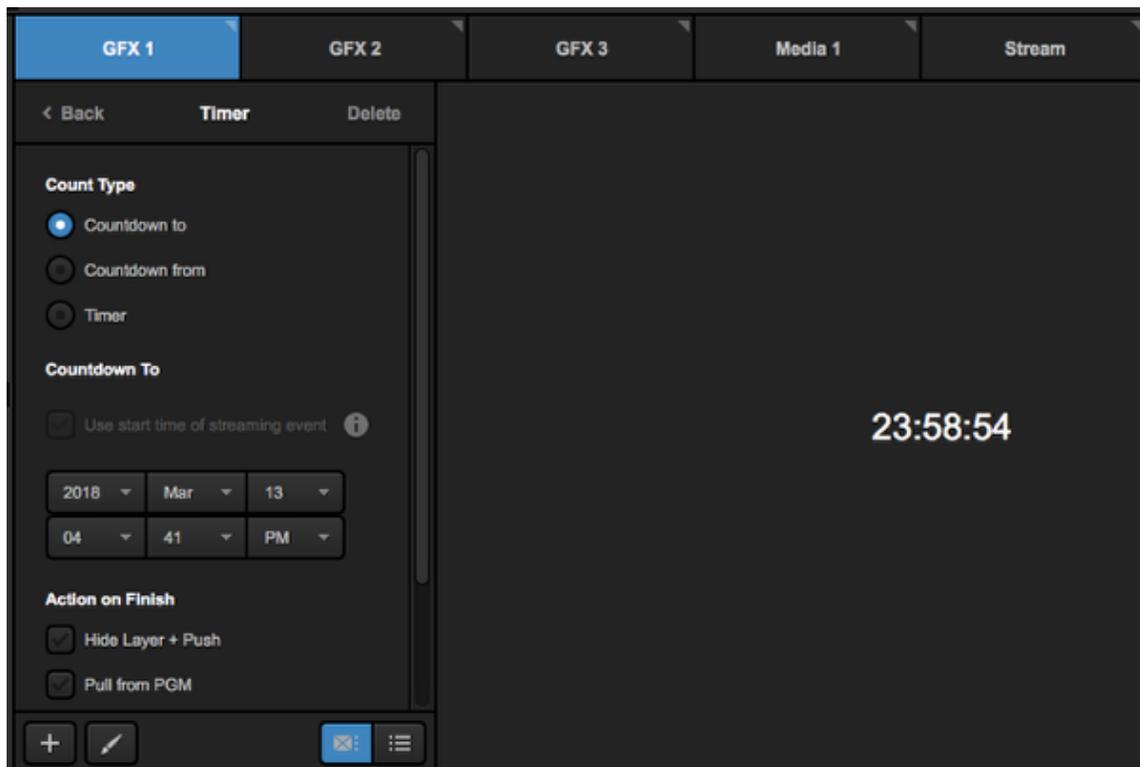
To integrate a countdown or timer overlay into your production, open the +Add Custom Layers menu and select Timer in the graphics overlay channel.



Click the gear wheel icon to enter that layer's settings.



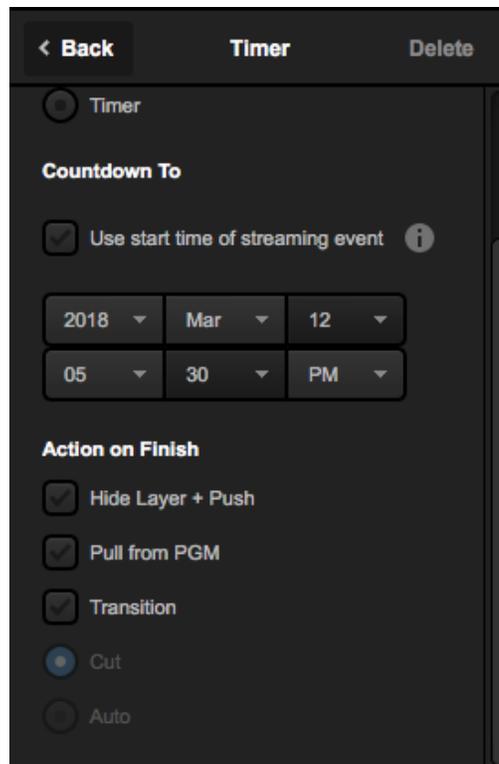
The settings for that layer will appear on the left side, with the reflected timer displaying on the right.



Countdown to allows you to set a specific time and date for when the countdown should end. The countdown will update on the right side.

💡 For a quick configuration, you can check **Use start time of streaming event** to automatically set the countdown to end at the start time of an event you have selected in the Stream tab.

Below the time/date setting are options for what the graphics overlay should do when the countdown completes.



Hide Layer + Push will keep GFX 1 in Program, but remove the timer GFX layer from being visible. Other layers in GFX 1 will remain in Program.



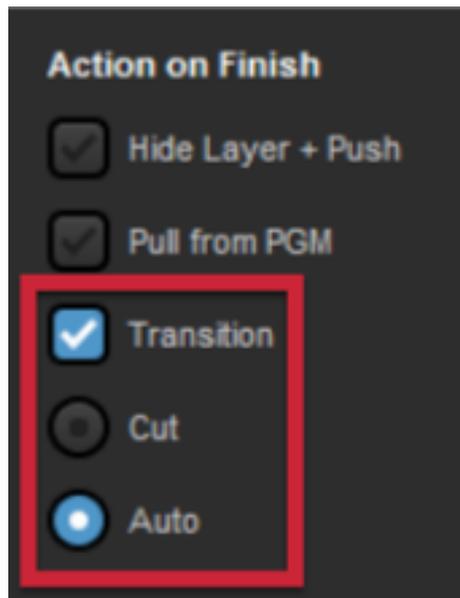
Pull from PGM will pull all layers under that GFX channel from Program when the countdown ends.



Transition can be used when the GFX channel is cued as a video source from the multiview instead of an overlay. It will take the Preview source once the countdown ends.



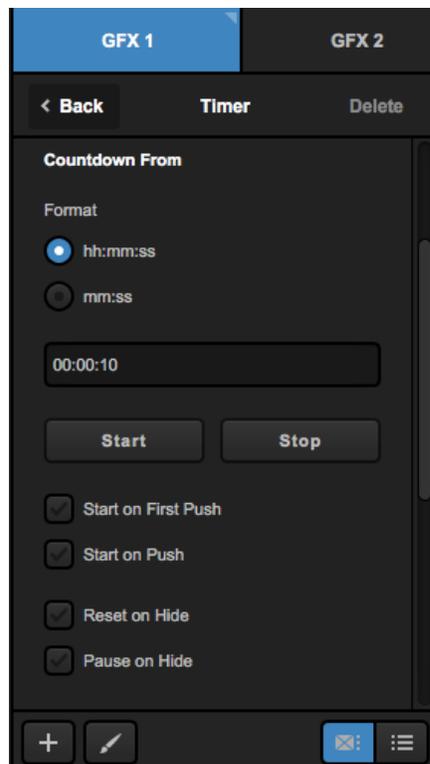
The transition type can be selected in the settings for that GFX layer.



Leaving all options unchecked will keep the completed countdown graphic in Program.

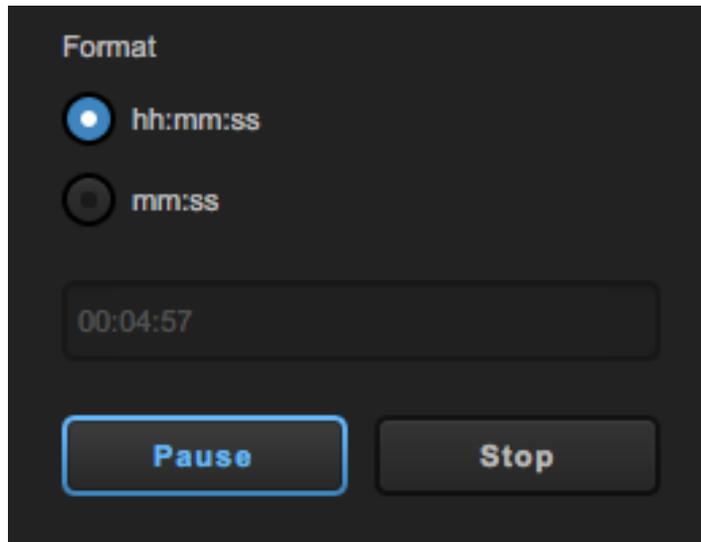


The next setting is Countdown from, where you set the time that the countdown will start. The format of this countdown can either be hours:minutes:seconds, or minutes:seconds.



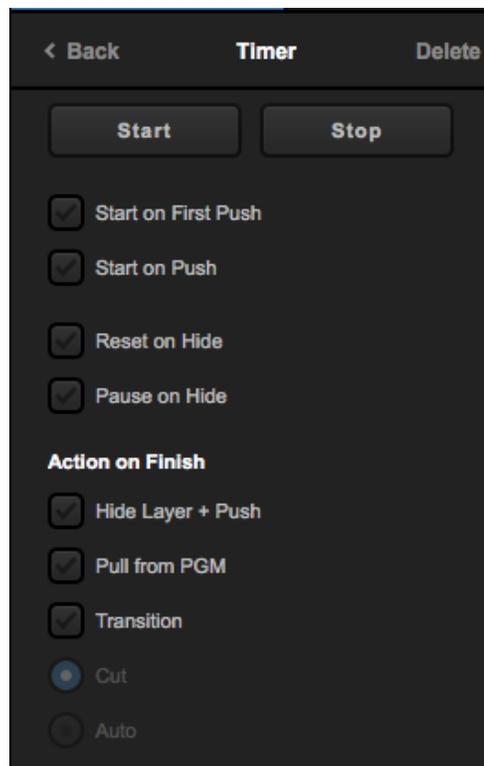
Type in the time you want to count down from. Clicking **Start** will begin the countdown manually.

When the countdown has started, a **Pause** button will replace it. Click **Pause** if you want the countdown to stop but stay at the current time, allowing you to resume from that point.

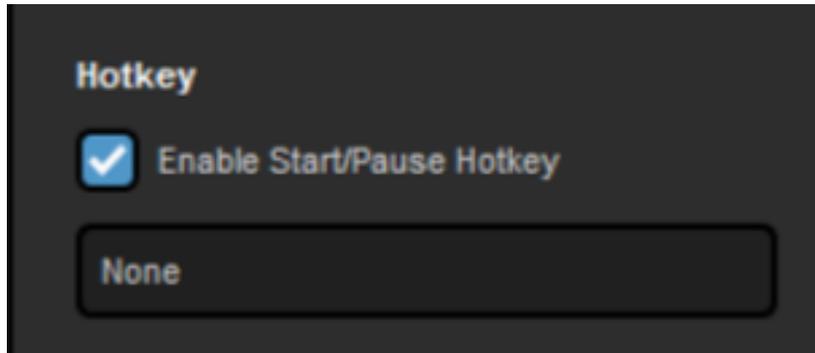


Clicking **Stop** will both stop the countdown and reset it to the beginning.

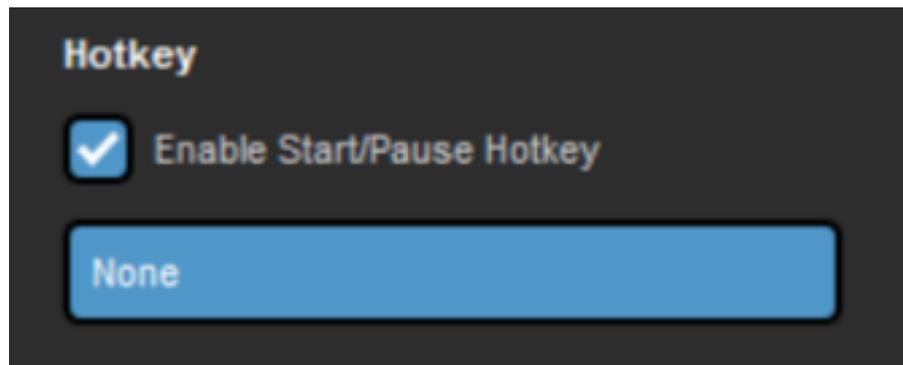
Below the Start and Stop options, there are options for what the clock should do when pushed, pulled, or finished.



Scroll down further in the layer settings to find the hotkey option. Click the checkbox to enable it.

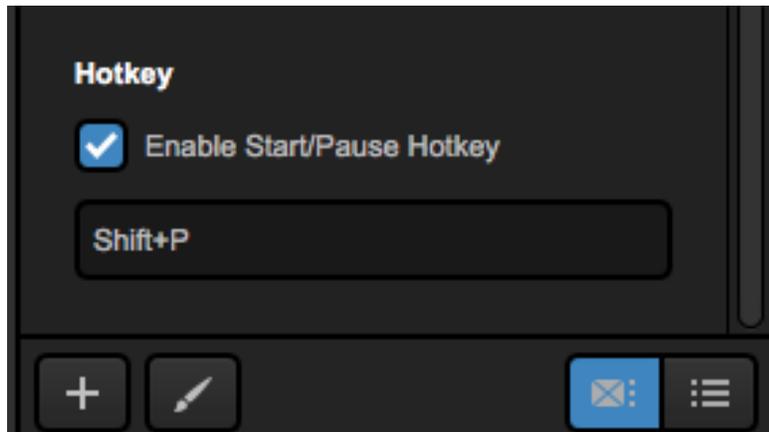


Click on the box that reads None. This will highlight it blue.



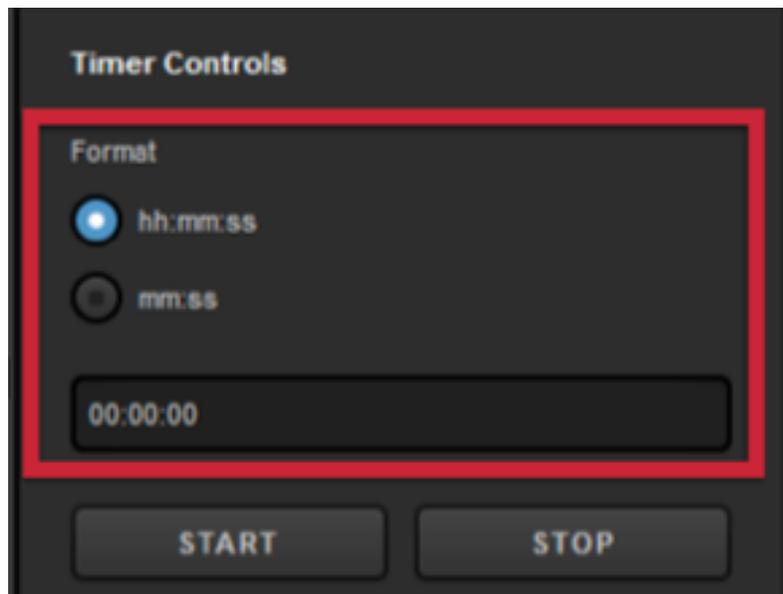
Once it is blue, use the buttons on your keyboard to create a hotkey (e.g., Shift+P).

 It cannot be a hotkey command that already has an action in Livestream Studio assigned to it.

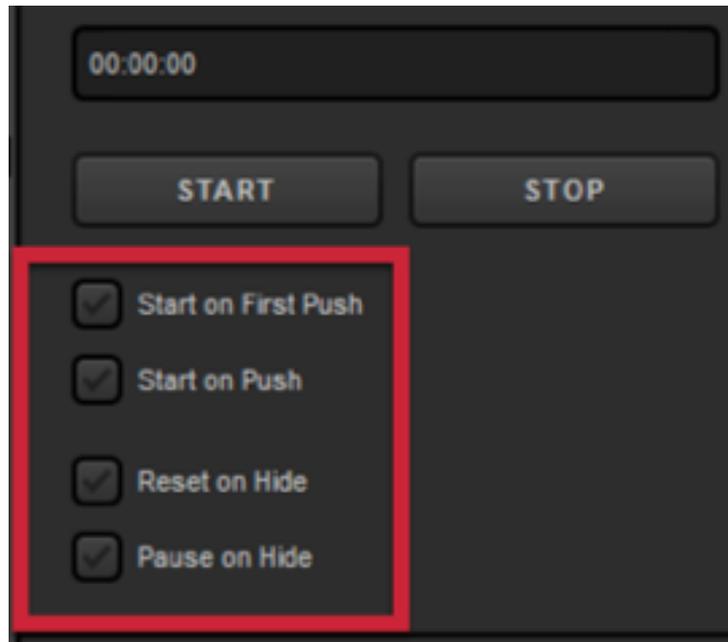


Now you can push your countdown graphic to Program like normal. Instead of pressing the buttons in the GFX module, you can use your keyboard to quickly and easily pause and continue your clock.

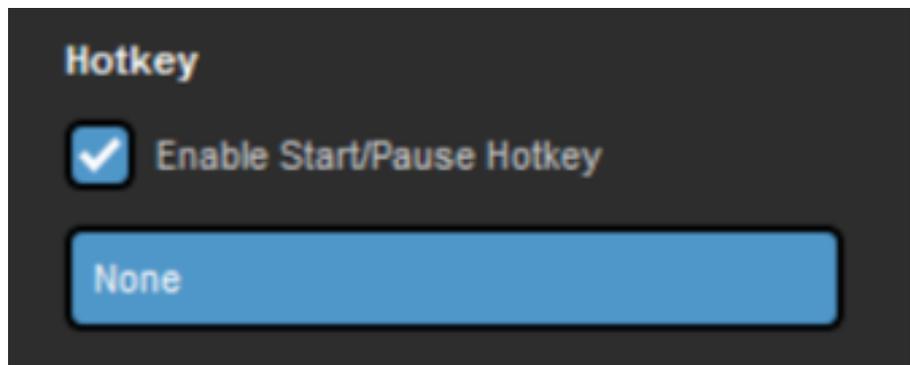
The last option for this layer is Timer, which gives you a clock that counts up from zero. As with the Countdown from option, you can set the format and start and stop the timer.



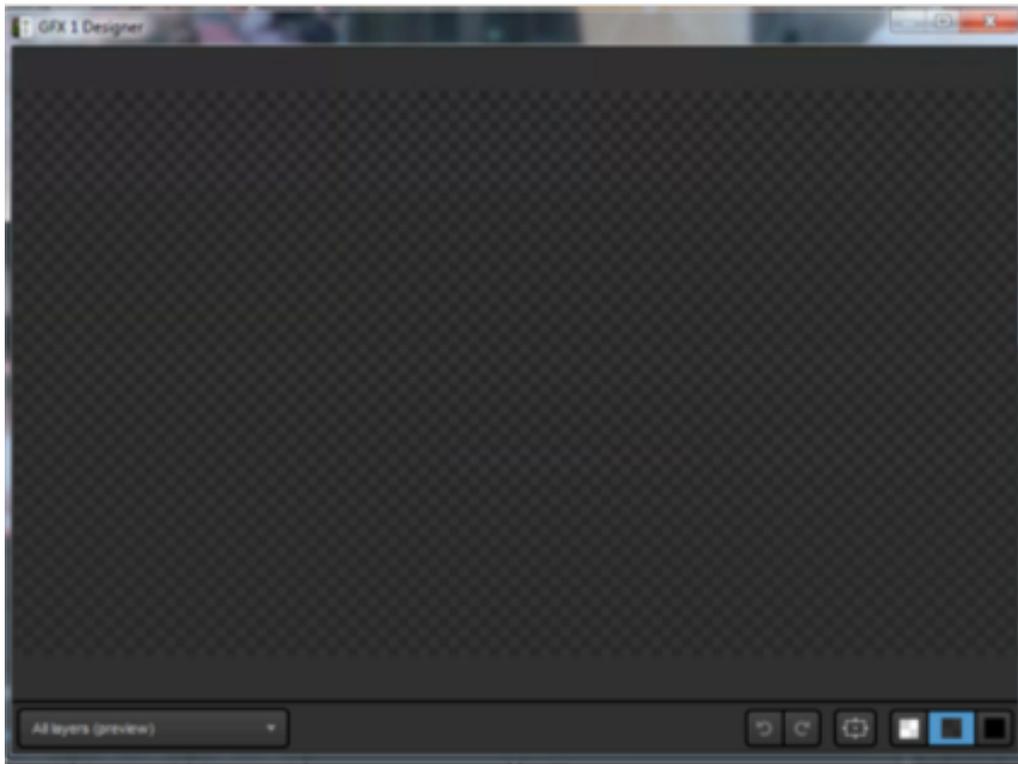
Below these controls are the actions the graphic will take when first pushed to and pulled from Program.



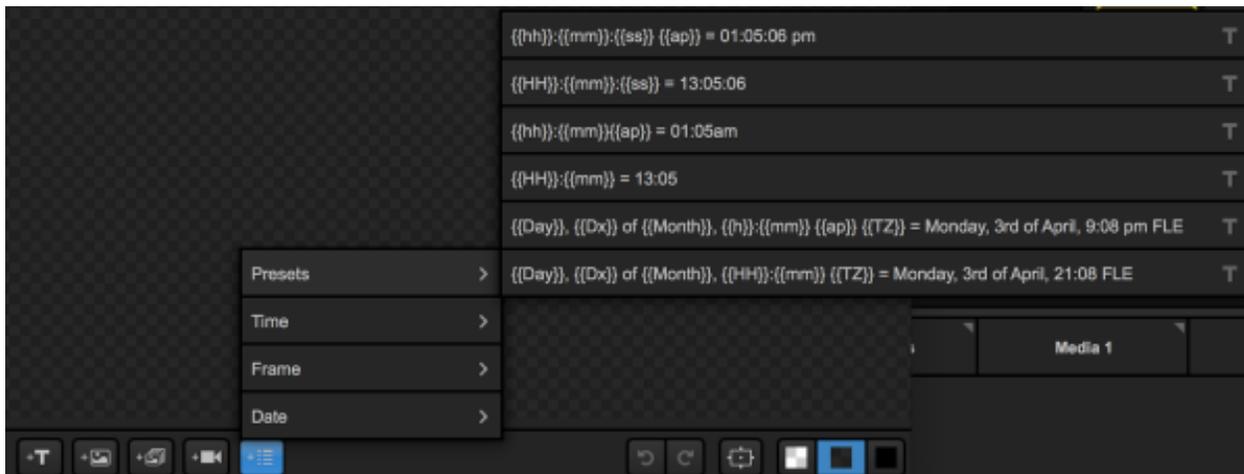
The Timer also includes the ability to add a hotkey command for pausing and resuming.



With any of the three options, be sure to click the paintbrush icon to enter the GFX Designer.



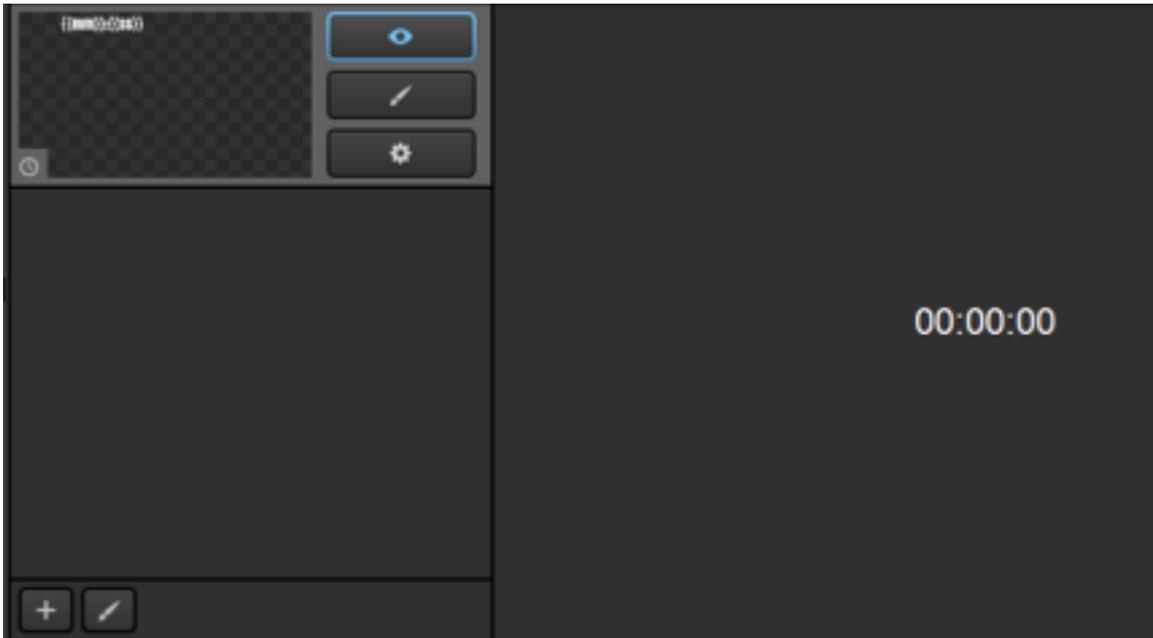
In the Timer layer, click on the list icon to add time fields. Check the presets first, as this may save time in designing the graphic.



Use the dropdown menu to customize how the clock looks.



When finished, close out of the GFX Designer, then click Back in the graphics layer settings. Your timer graphic can now be made visible and pushed to Program when desired.

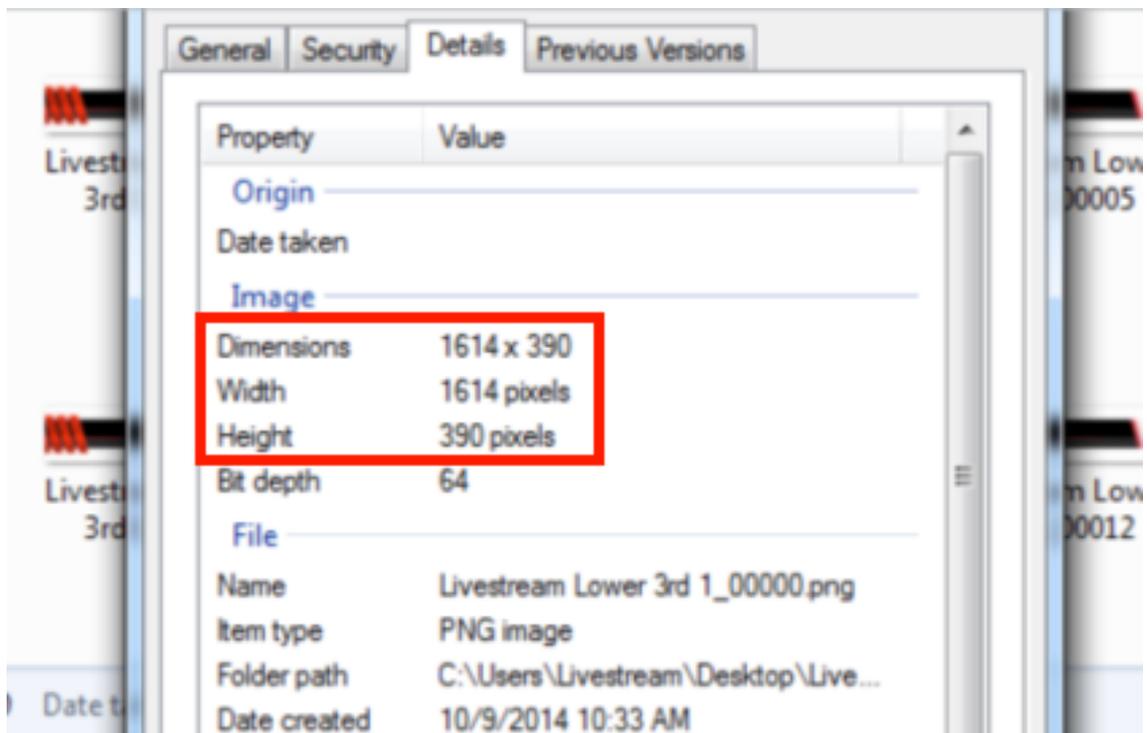


## Importing Animated Graphics

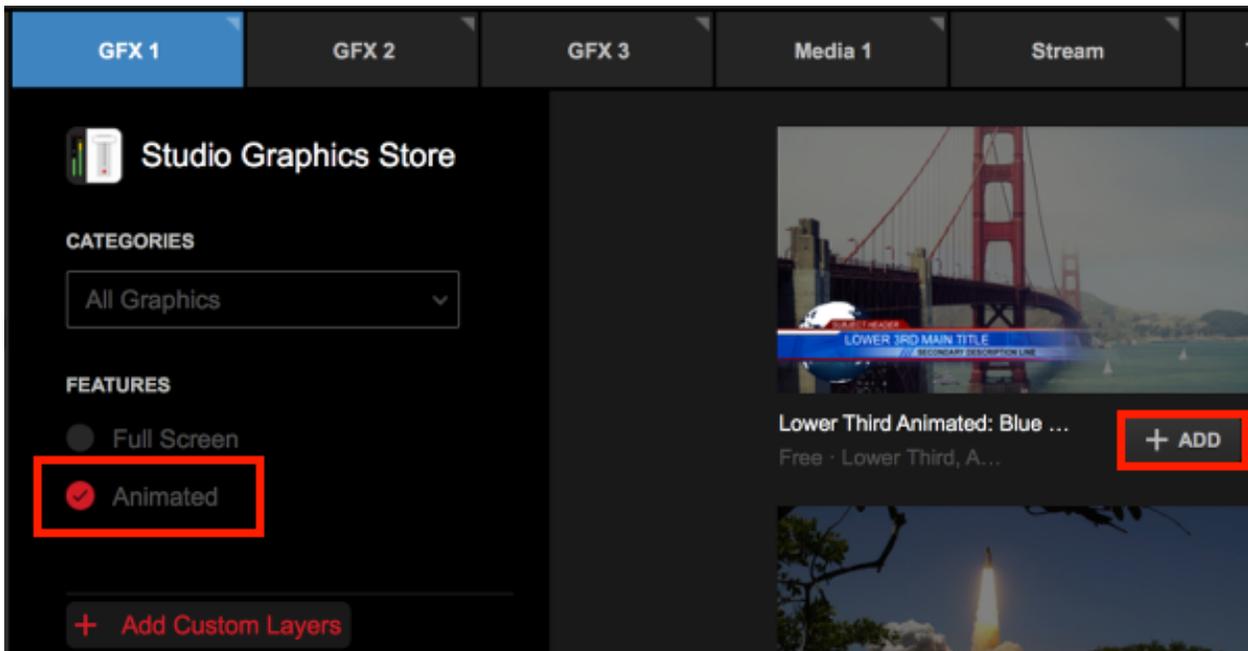
Livestream Studio can accept a folder of images that it will loop through to create an animated graphics overlay.

This feature is best for lower-third graphics and corner bugs. Larger animated graphics, such as backdrops, should be exported at videos and come in through a media bin. To keep your images' backgrounds transparent, .PNG files are recommended.

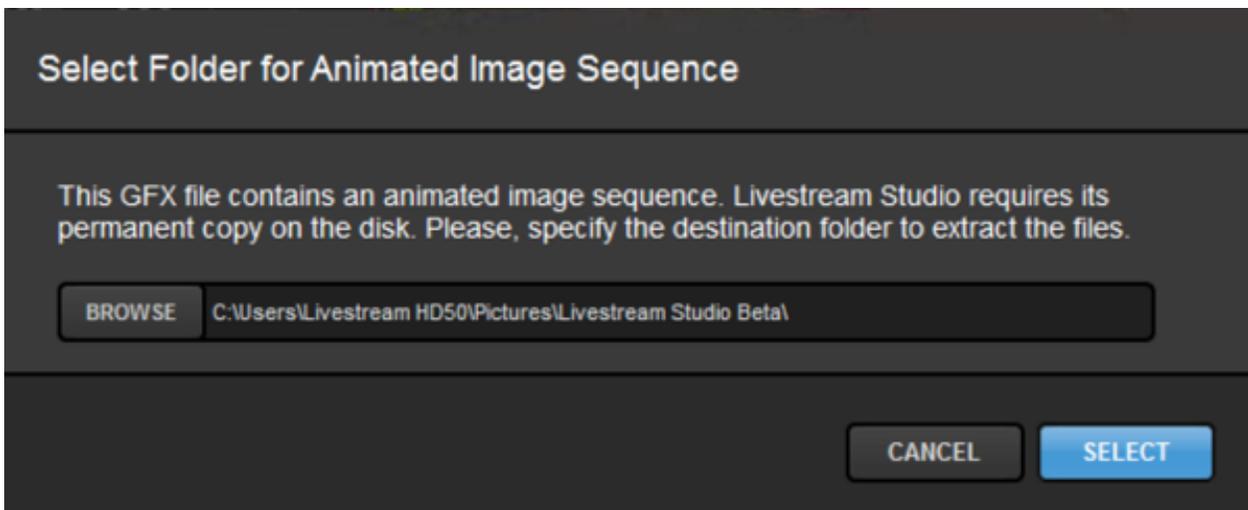
Your .PNG files must be less than 1.5 million pixels. To determine a .PNG file's pixels, view that file's properties and multiply the height by the width. For this graphic, which has subtle animations,  $1614 \times 390 = 629,460$  pixels.



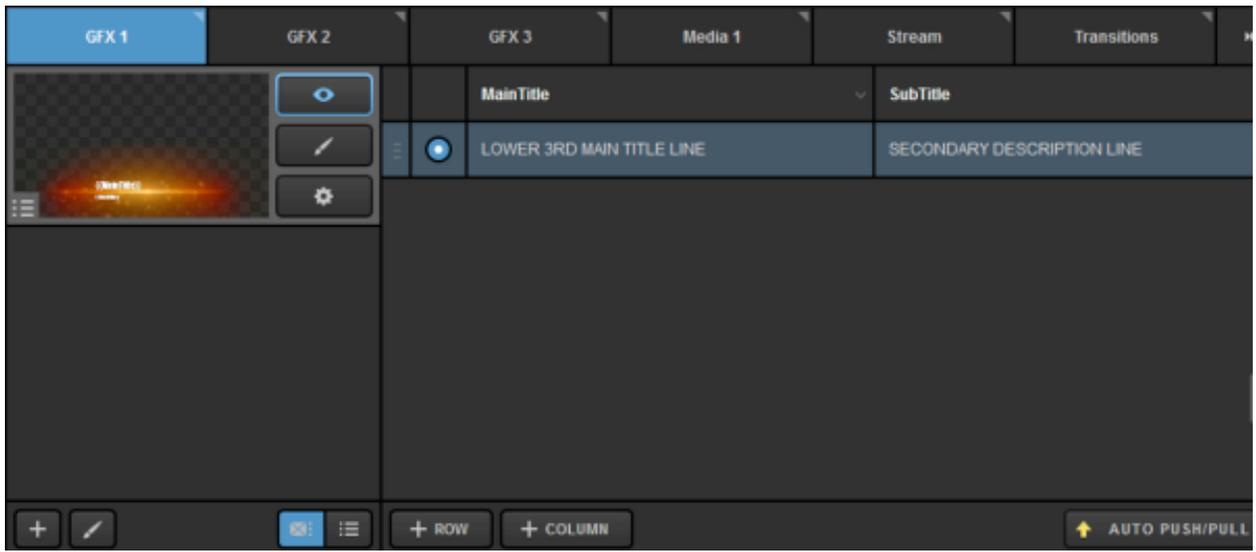
To add an animated graphic, go to a graphics overlay channel. There are a number of templates available for free in the [Livestream Graphics Store](#). To quickly access one, select the **Animated** option under Features. Scroll through the template options on the right side and click +ADD below the corresponding design.



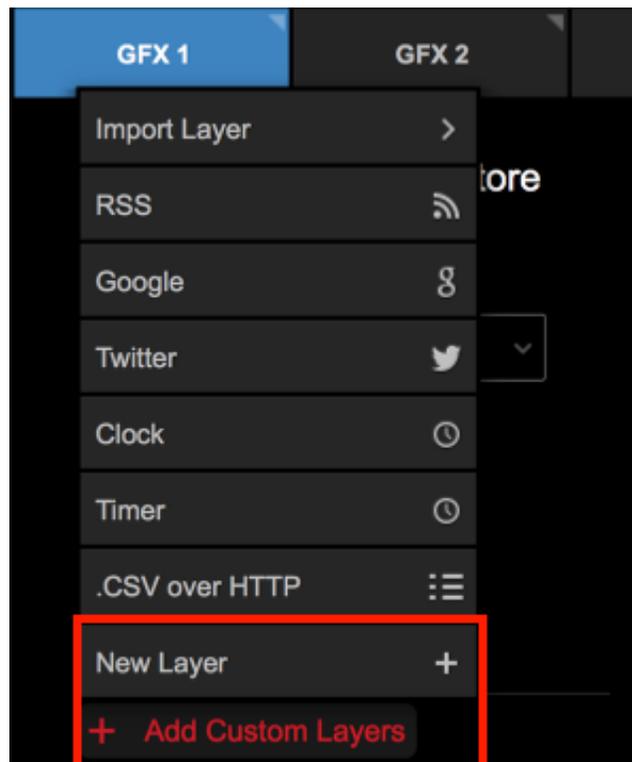
Livestream Studio will prompt you to select where you want to save the file on your computer's hard drive. Choose your destination and then click Select.



The graphic file will load in Livestream Studio and you can edit it in the same fashion as with any any other graphic.

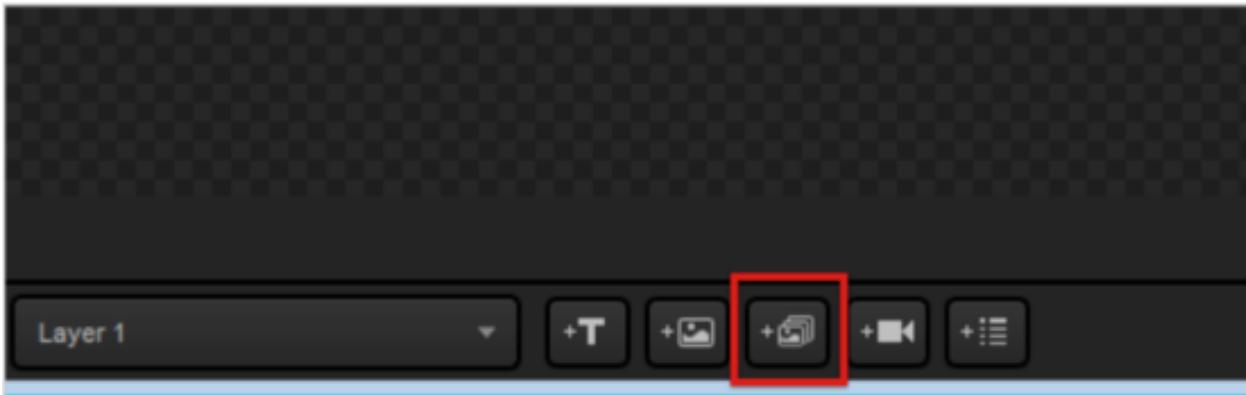


You can also add your own .png sequence by selecting +Add Custom Layers > New Layer.



If you are adding a custom layer, open the designer by clicking the paintbrush icon, then click the sequence icon. Open the folder that has your .PNG file sequence

and select the first file in that folder. The graphic will take a moment to render and then appear in the GFX Designer.



From there, designing the graphic follows the same procedure as designing still graphics (adding data fields, etc.).



All other functions of the graphics overlay, including adding data, changing settings, and pushing and pulling the layer are the same as other graphics.

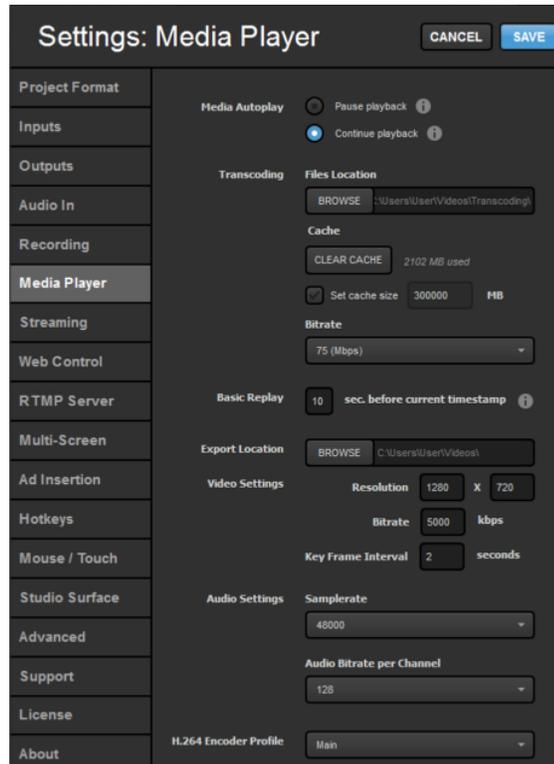
A screenshot of the Livestream graphics overlay control panel. The panel shows a table with two columns: "Text" and "Text 1". The table contains five rows of data. The first row is highlighted in blue. The table is part of a larger interface with various control buttons and a preview window on the left.

Text	Text 1
Tom Iannaco	Producer Support
Penalty Shot	New York, N.Y.
Amanda Vicari	Event Co-Founder
Ed Yealu	Event Co-Founder
Kristin McCue	Co-Host

# Media Playback

# Configuring Media Playback Settings

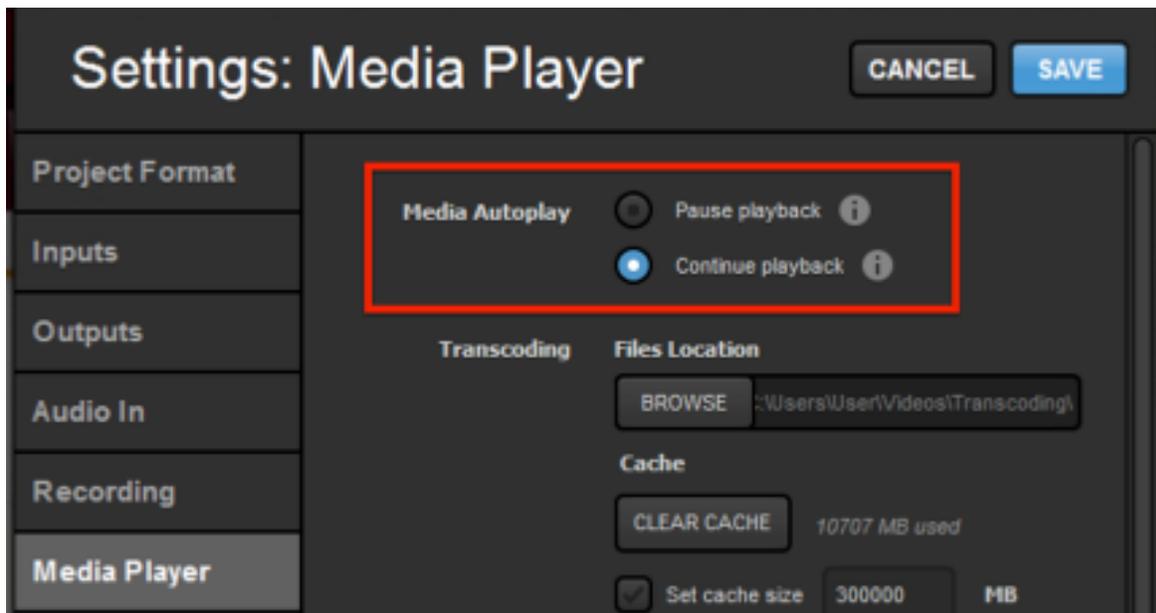
In Studio settings, go to the Media Player tag to configure settings for your media bins.



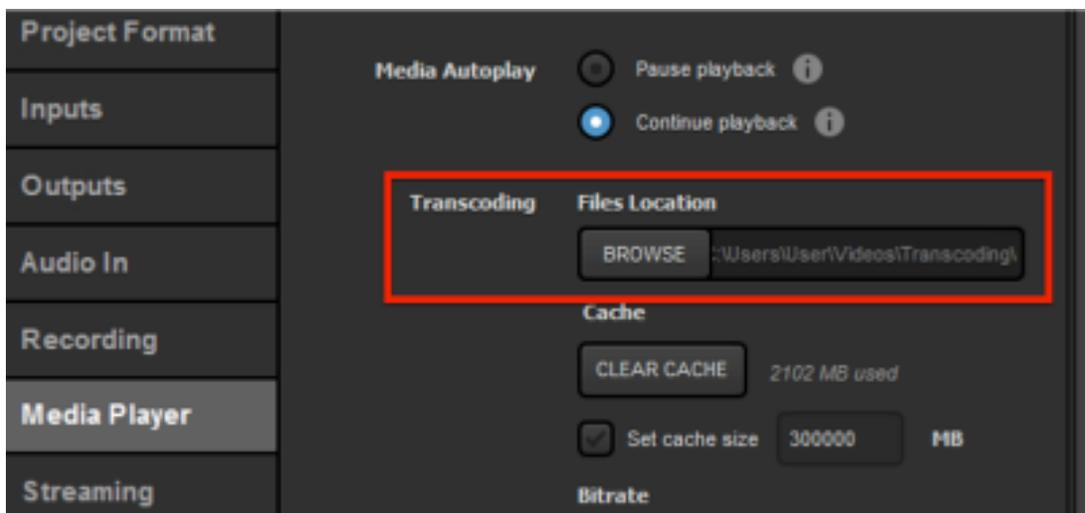
Media Autoplay allows you to choose if a video will either pause or continue playing when a media source is transitioned out of Program. It also determines whether the video will continue playing from its current location (Pause) or start from the beginning of the IN point (Continue).

**Pause Playback:** The video will pause when manually transitioned out of Program. It will also pause when it reaches the OUT point and not transition out of Program.

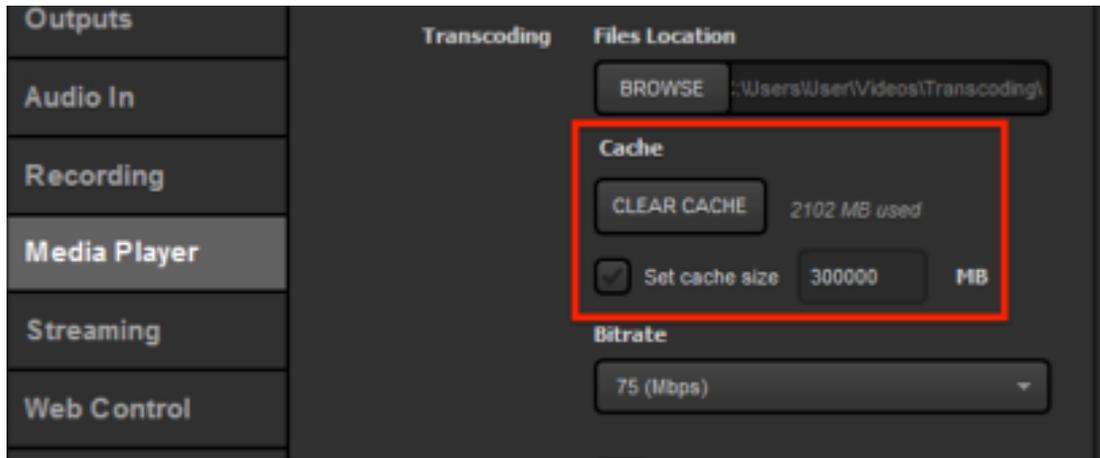
**Continue Playback:** Video will continue playing when manually transitioned out of Program. It will also transition out of Program at the OUT point automatically.



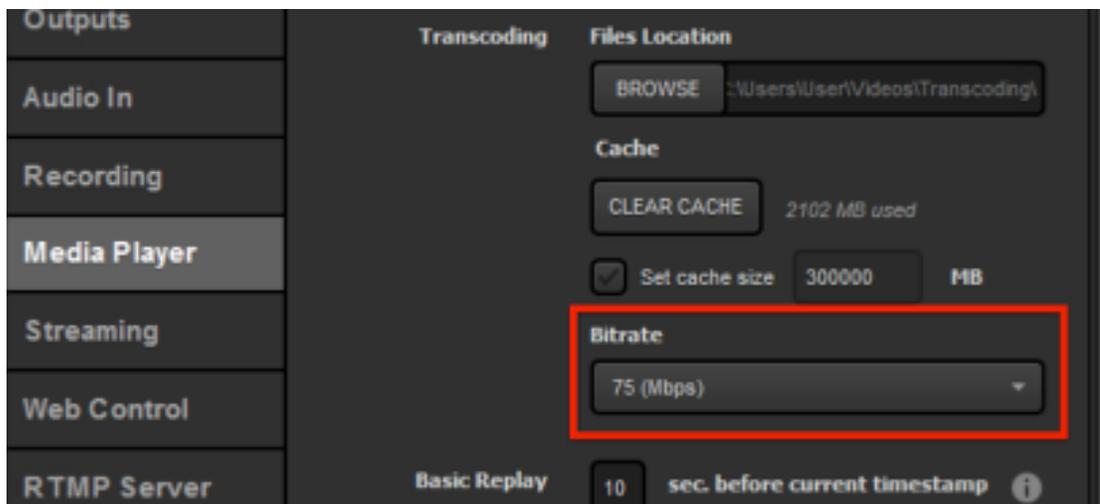
Transcoding Files Location is where any transcoded videos (i.e., videos you bring into your media bin) will be saved. You can bring those videos into a media bin again without transcoding.



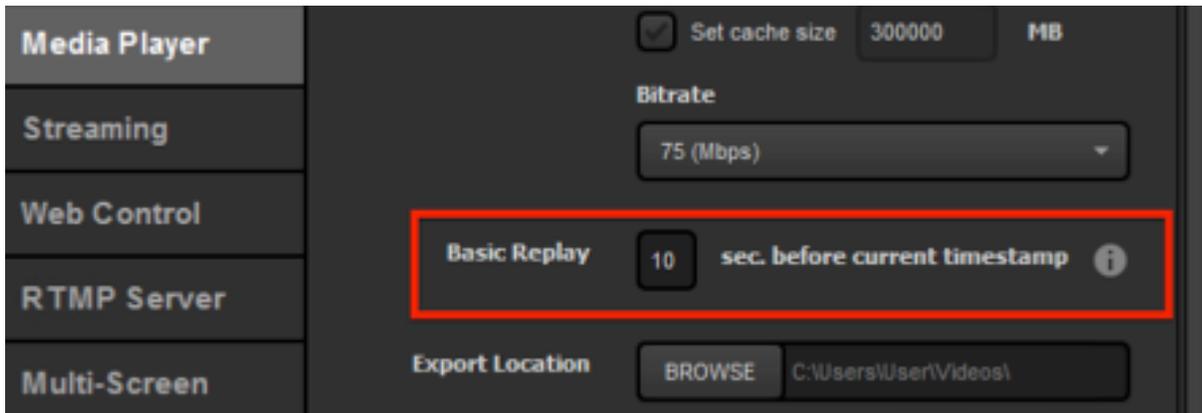
Transcoding Cache lets you control the amount of data stored in the transcoding folder before files are deleted. You can also manually clear the cache here.



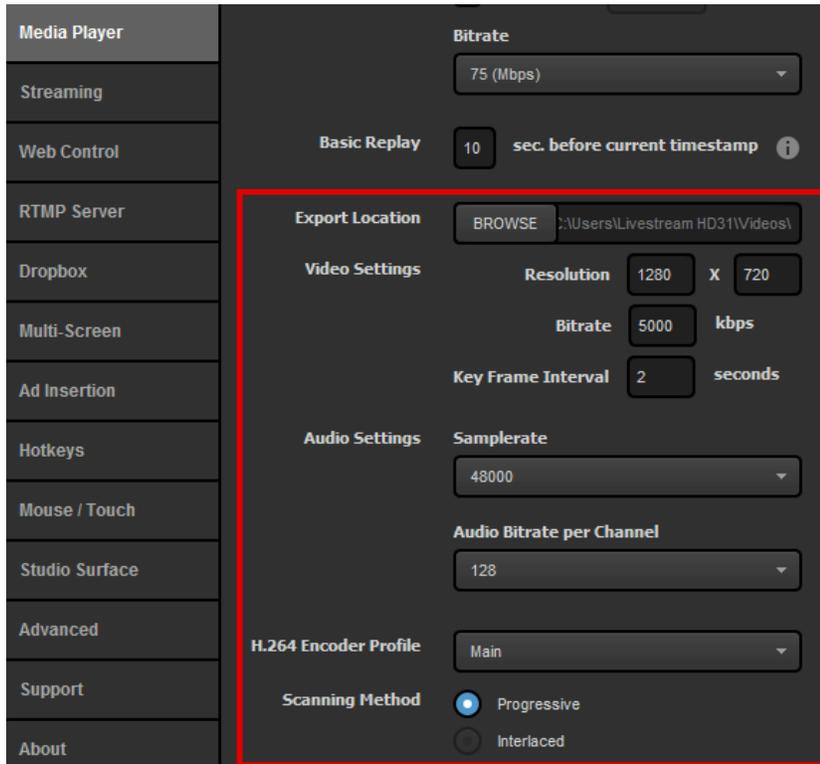
Transcoding Bitrate determines the bitrate to which the videos are transcoded. Higher bitrates will have higher resolution but also create larger files.



[Basic](#) Replay lets you tell Livestream Studio how far back from the current timestamp to set an In point. The Out point will be set to the current timestamp.



You can [export videos](#) or portions of videos from your media bin. You can choose their export location and video settings here.



When your media bin settings are configured to your liking, click Save.

# Media Playback Transcoder Supported Video Formats

Livestream Studio can accept most common video format files.

The codecs listed below are from "Supported media formats in Media Foundation (Windows)." Supported media formats in Media Foundation (Windows). Microsoft, 28 Nov. 2012. Web. 7 Feb. 2013: <http://msdn.microsoft.com/en-us/library/windows/desktop/dd757927%28v=vs.85%29.aspx>.

Please note that Studio does not support Apple-only based formats (e.g. ProRes).

File Containers:

Format	File Extensions	Media Source	Media Sink	Requires
3GP	.3g2, .3gp, .3gp2, .3gpp	MPEG-4 File Source	3GP File Sink	Windows 7
Advanced Streaming Format (ASF)	.asf, .wma, .wmv	ASF Media Source	ASF Media Sink	Windows Vista
Audio Data Transport Stream (ADTS).	.aac, .adts	ADTS File Source	None	Windows 7
AVI	.avi	AVI File Source	None	Windows 7
MP3	.mp3	MP3 File Source	MP3 File Sink	File source: Windows Vista File sink: Windows 7
MPEG-4	.m4a, .m4v, .mov, .mp4	MPEG-4 File Source	MPEG-4 File Sink	Windows 7
Synchronized Accessible Media Interchange (SAMI)	.sami, .smi	SAMI Media Source	None	Windows Vista
WAVE	.wav	AVI File Source	None	Windows 7

## Audio Codecs

Format	Decoder	Encoder	Requires
μ-law Coding	Audio Compression Manager (ACM) μ-law Codec	None	Windows Vista
Advanced Audio Coding (AAC)	AAC Decoder	AAC Encoder	Windows 7
MP3	Windows Media MP3 Decoder	None	Windows Vista
GSM 6.10	ACM GSM 6.10 Codec	None	Windows Vista
Windows Media Audio (WMA)	Windows Media Audio Decoder Windows Media Audio Voice Decoder	Windows Media Audio Decoder Windows Media Audio Voice Decoder	Windows Vista

 Media Foundation provides wrappers for several ACM codecs listed in the previous table. However, Media Foundation does not support arbitrary ACM codecs.

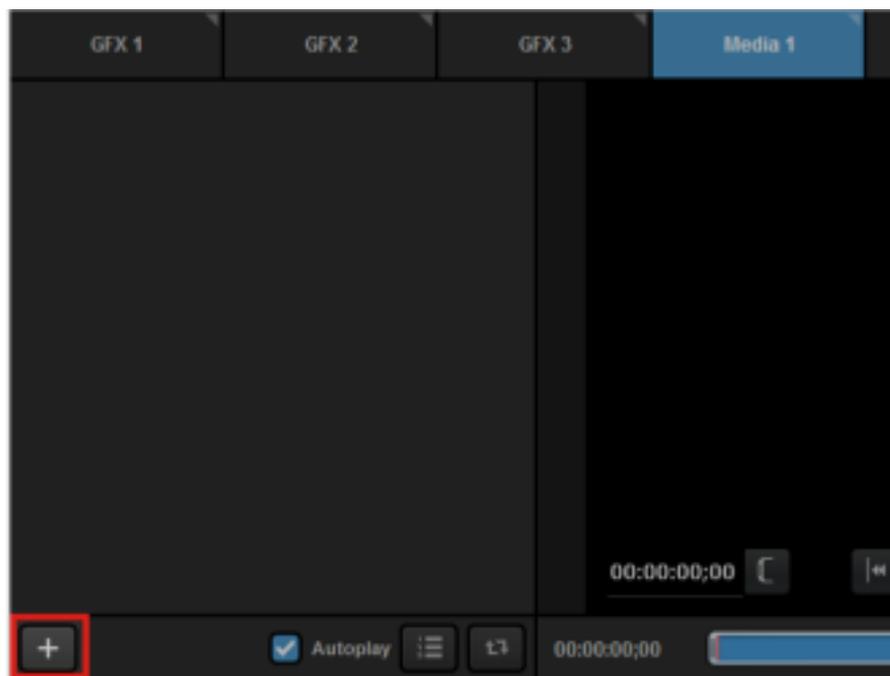
## Video Codecs

Format	Decoder	Encoder	Requires
DV Video	DV Video Decoder	None	Windows 7
H.264	H.264 Video Decoder	H.264 Video Encoder	Windows 7
MJPEG	MJPEG Decoder	None	Windows 7
MPEG-4 Part 2	MPEG-4 Part 2 Video Decoder	None	Windows 7
MPEG-4 v1/v2/v3	Windows Media MPEG-4 V3 Decoder Windows Media MPEG4 V1/V2 Decoder	None	Windows Vista
Windows Media Video (WMV)	Windows Media Video 9 Decoder Windows Media Video 9 Screen Decoder	Windows Media Video 9 Encoder Windows Media Video 9 Screen Encoder Windows Media Video 7/8 Encoder	Windows Vista

# Importing Videos into the Media Playback Module

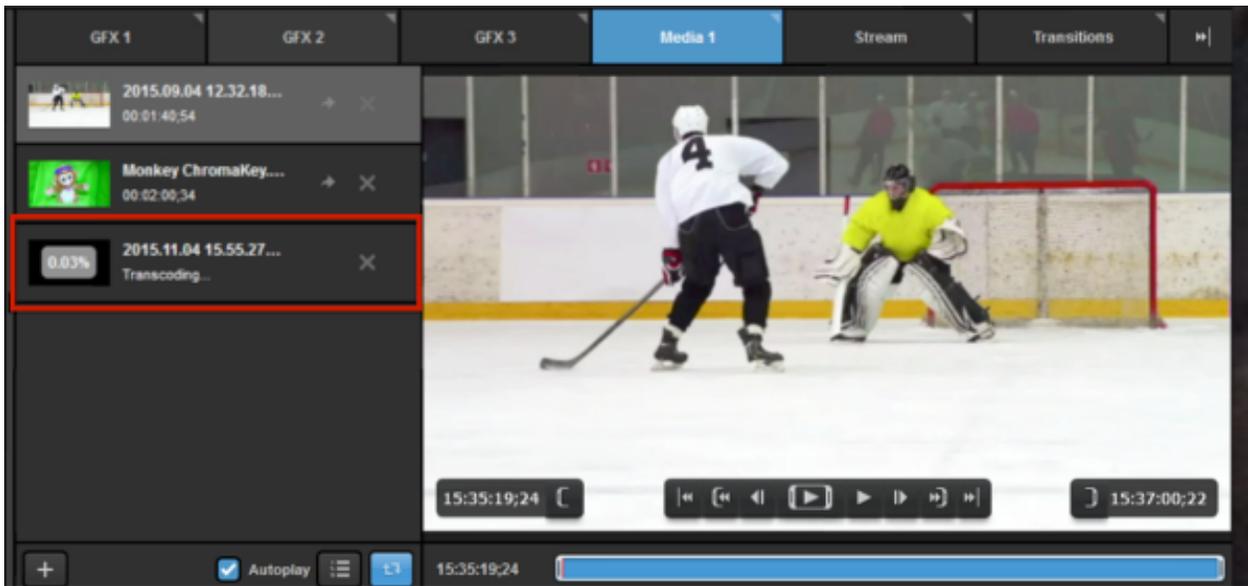
Livestream Studio has a video transcoder built into its two Media bins.

In your media bin, press the + button in the bottom left corner.



Browse your computer for your video, then click open.

Livestream Studio will begin transcoding your video immediately.



**i** Transcoding time depends on the clip length.

If you are having trouble transcoding your video, check that it can successfully playback in Windows Media Player. Videos that cannot be played in Window Media Player will likely not be able to be transcoded in Livestream Studio's media bins.

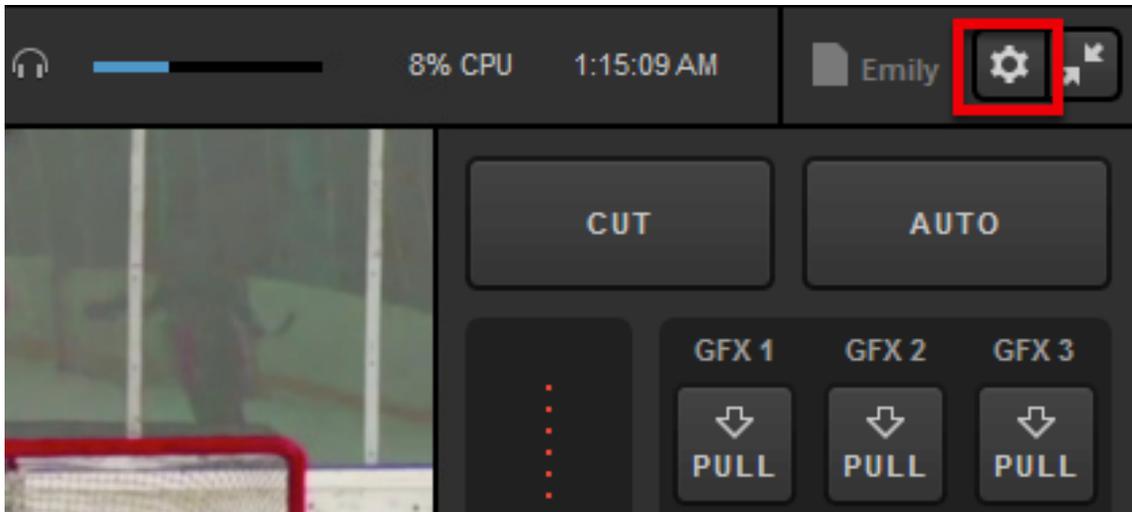
## Use Dropbox to Import Video Files

Videos saved in a Dropbox account can now be imported into the Media bins in Livestream Studio through a simple integration.

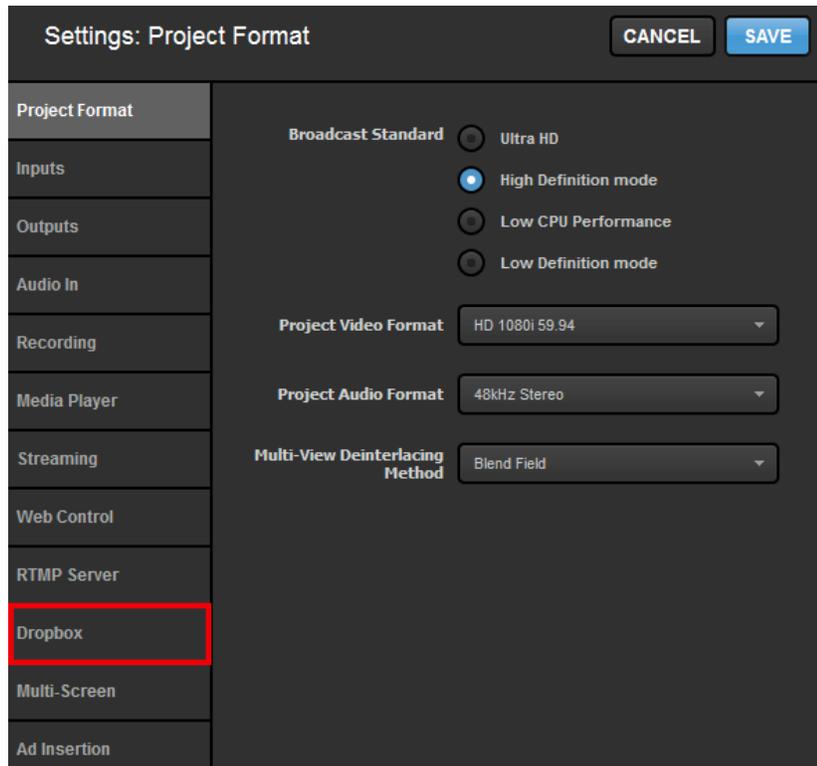
 For the best experience, we recommend simplifying your Dropbox folder structure to no more than 1 or 2 subfolders. Multiple subfolders can cause extended sync times with Dropbox

## Connect Dropbox to Livestream Studio

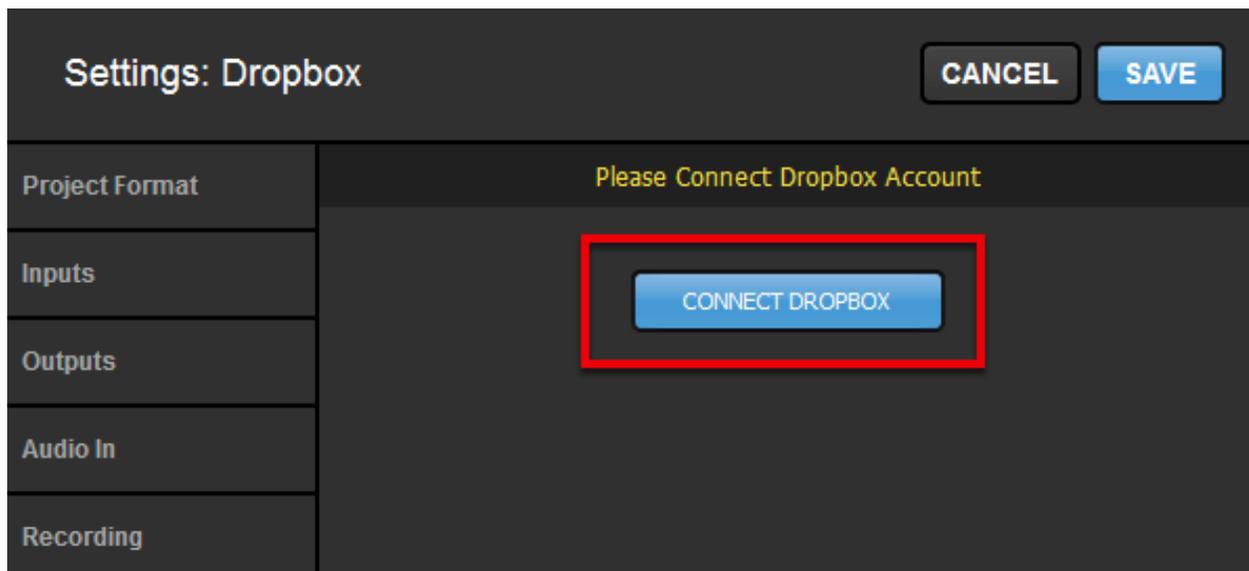
Start by clicking the gear wheel in the upper right corner to enter Settings.



Navigate to the Dropbox tab.



Click Connect Dropbox.



Your browser will open. Sign in to your Dropbox account in order to connect it to Livestream Studio.



Sign in to Dropbox to link with Livestream Studio

 Sign In with Google

or

Email

Password

[Forgot your password?](#)

[Sign in](#)

When authorization is successful, return to Livestream Studio.



Livestream Studio



## Authorization Successful

Open your Livestream Studio. You may close this window.

The settings will indicate that you are logged in. Click Select Folders.

### Settings: Dropbox

**CANCEL** **SAVE**

Project Format Emily Knox ▾

**Inputs**  **Select Folders**  
Please specify remote Dropbox folder and folder for local files.

**Outputs**

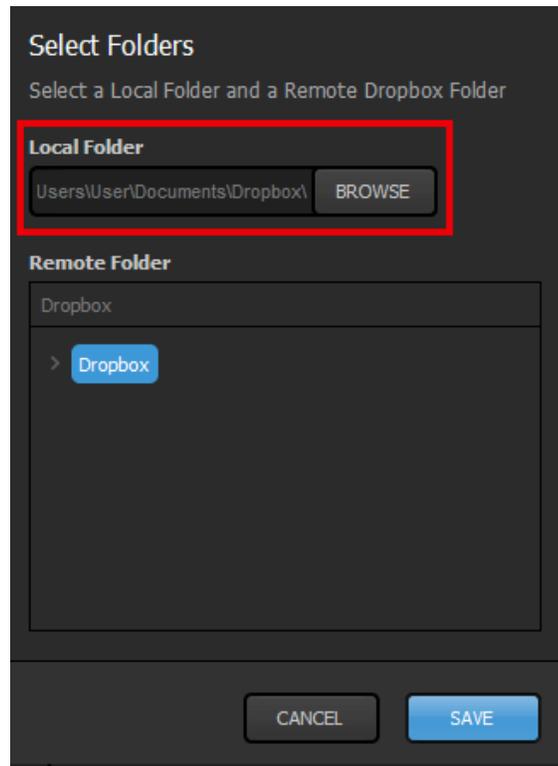
**Audio In**

**Recording**

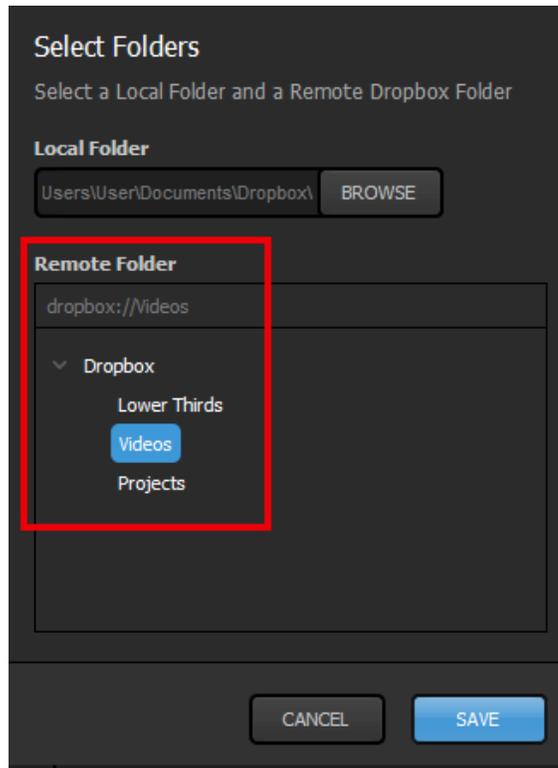
**Media Player**

**SELECT FOLDERS**

Choose a Local Folder from your computer's hard drive. This will allow any files you save to your Dropbox, such as transcoded videos, to also be saved locally.

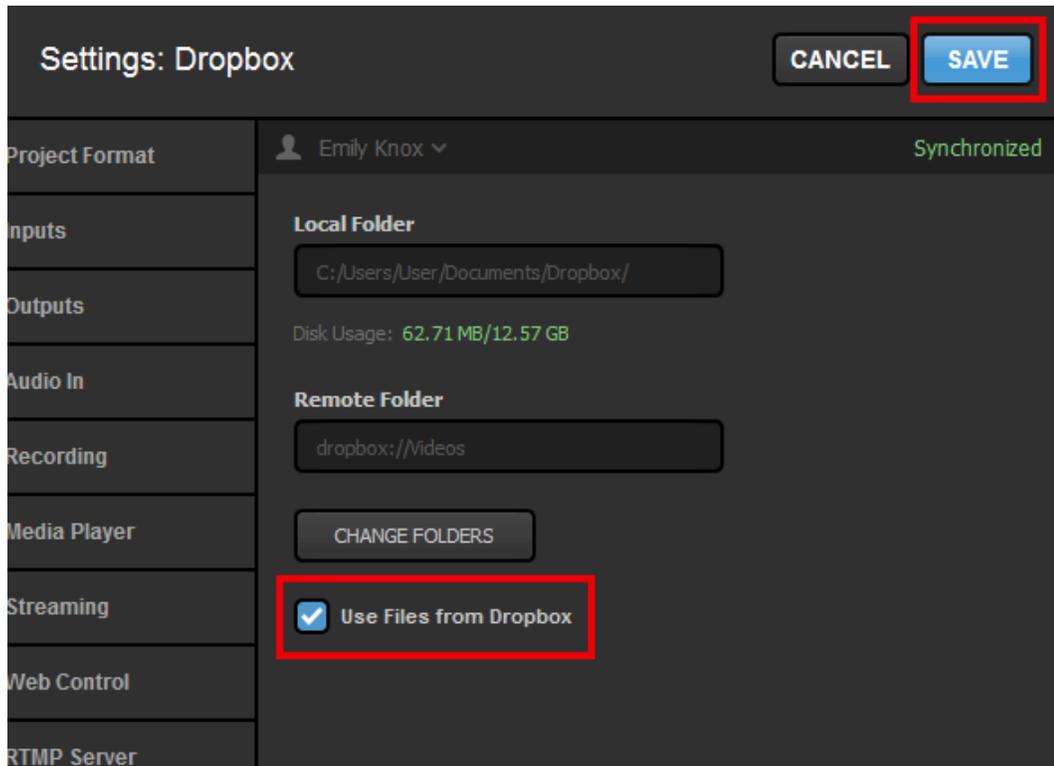


Then choose the folder within your Dropbox where the videos you want to use are stored. This can be either your general Dropbox, or a folder within your Dropbox (in this example, "Videos"). Click Save when you are done.



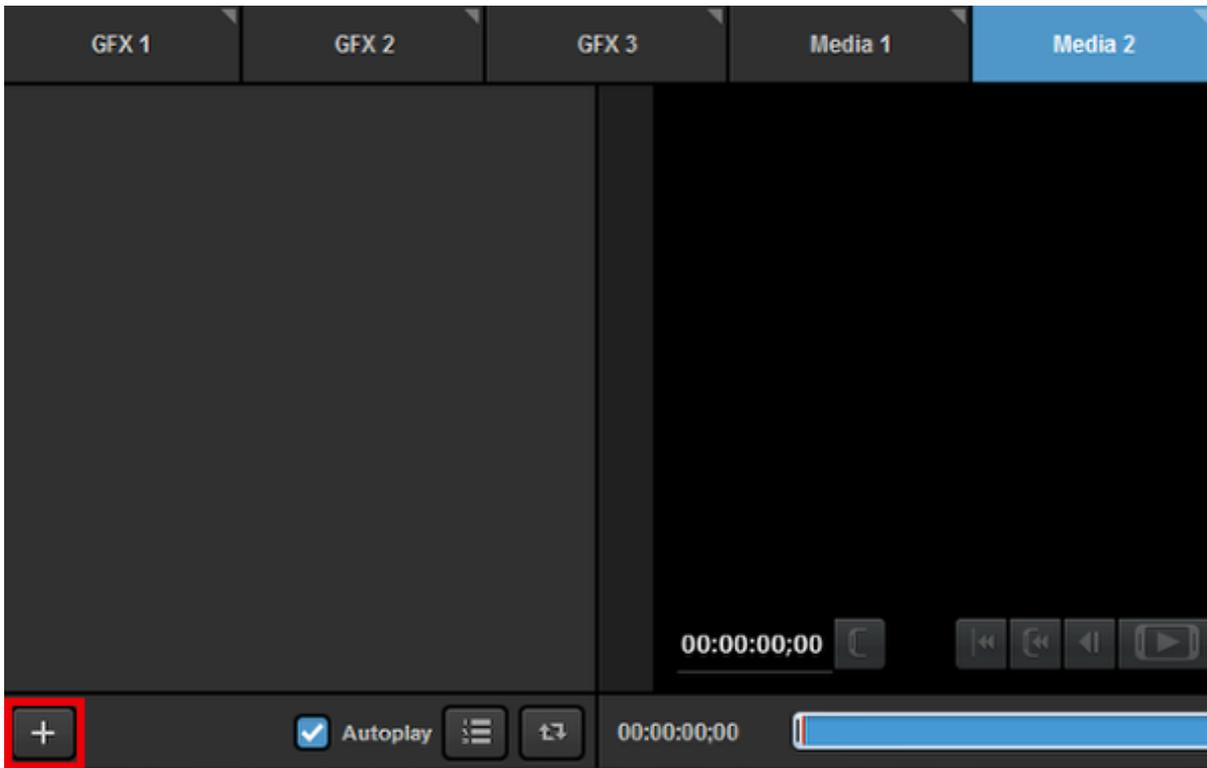
Your Dropbox account will sync to Livestream Studio.

Make sure that Use Files from Dropbox is checked. Then click Save.

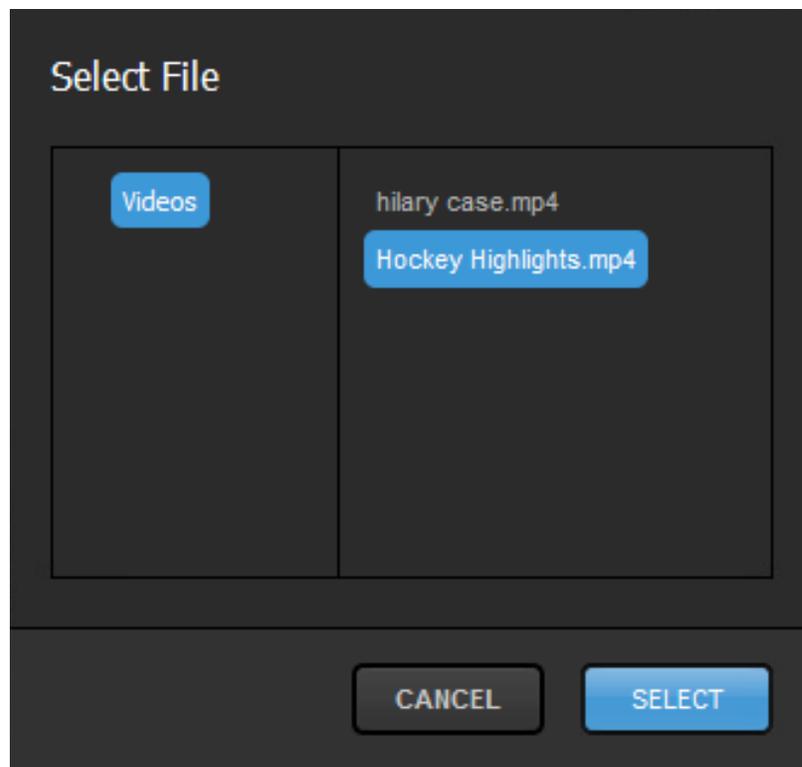
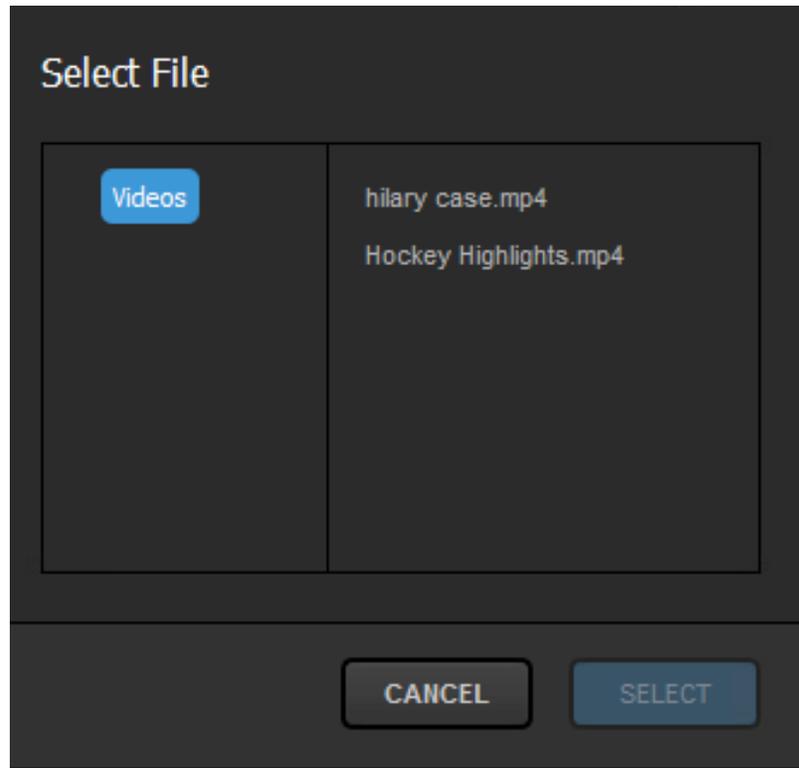


## Import Videos from Dropbox

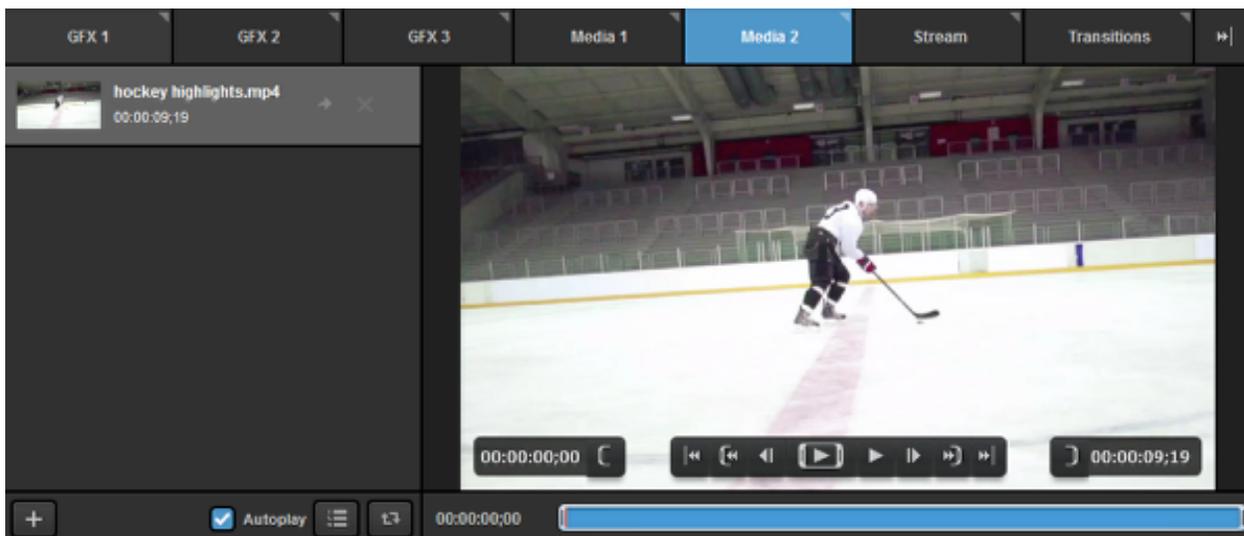
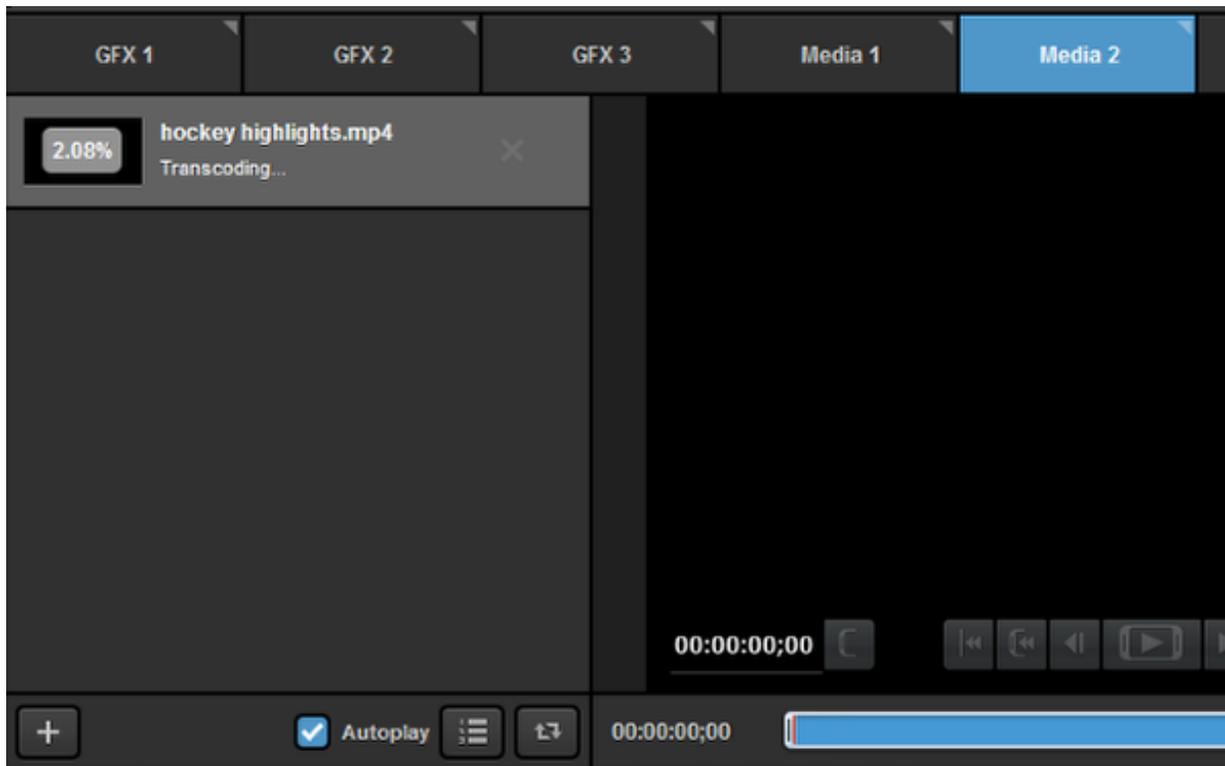
Navigate to one of your Media bins. Click the + button in the lower left corner of the module.



Your dropbox folder will open. Click on the video you wish to import, then click Select.



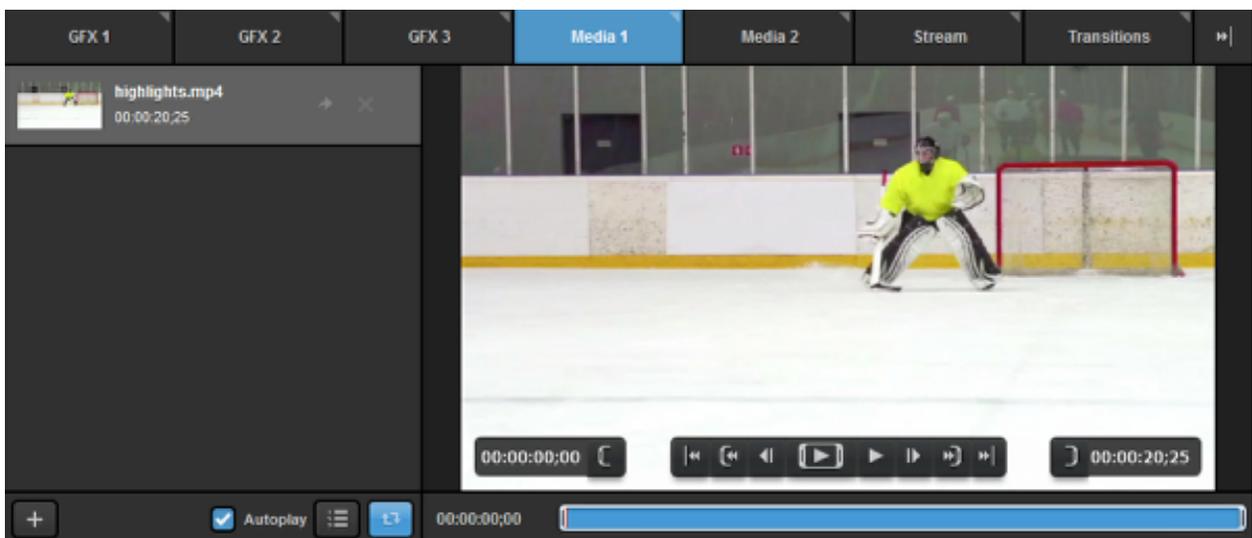
The video will start transcoding in the media bin. When it is finished, you will be able to play it back like normal.



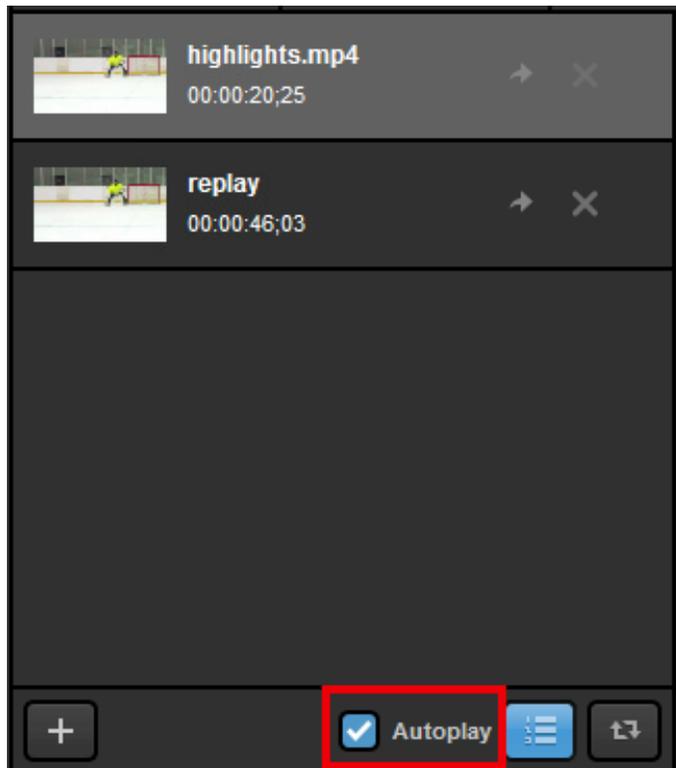
# Controls & Options in Livestream Studio Media Bin

Each Media Bin comes with a variety of controls and options for playing back your clips.

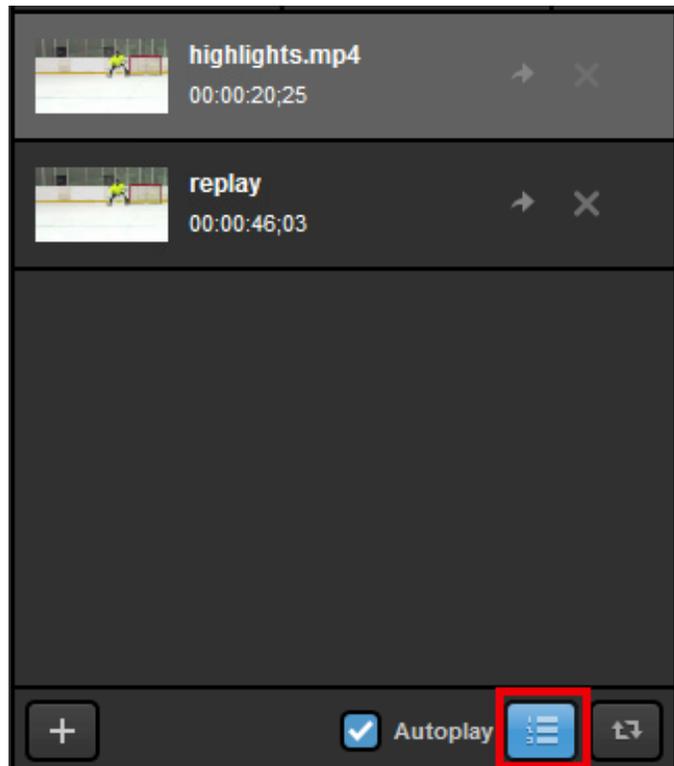
To queue a clip in your media bin, simply click on it with your mouse to highlight it. It will appear in the player to the right.



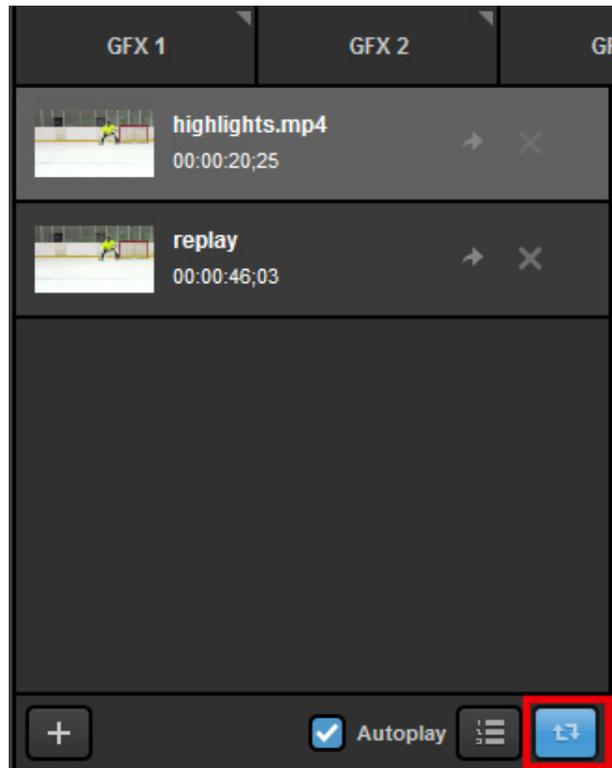
The bottom left corner of the module includes general playback options. If you want your video to start playing as soon as you transition it into Program, make sure Autoplay is checked. Otherwise your video will start on a freeze frame.



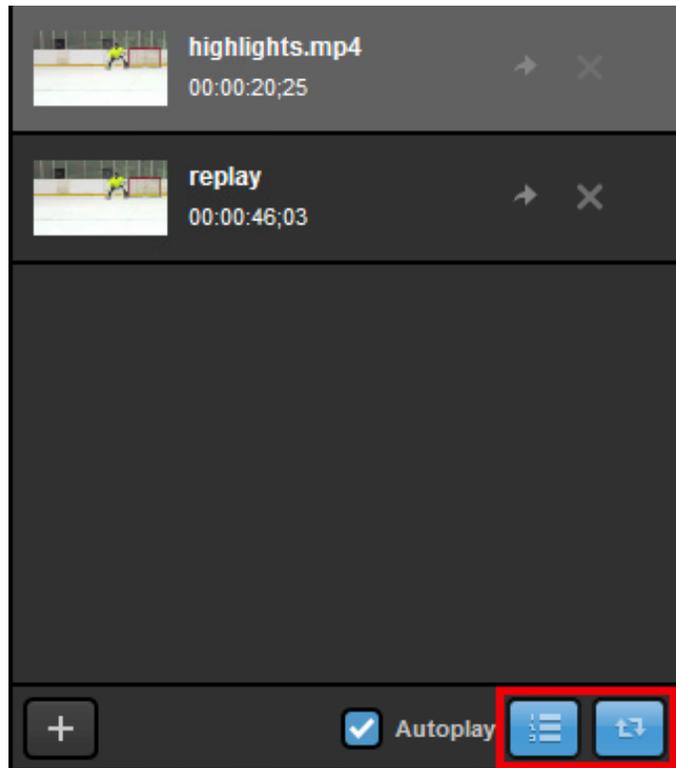
To the right of Autoplay is Play as List, which will play all video files in your bin chronologically with no break or black frames in between. When the last clip plays, Studio will automatically transition from the Media Bin to the source in Preview.



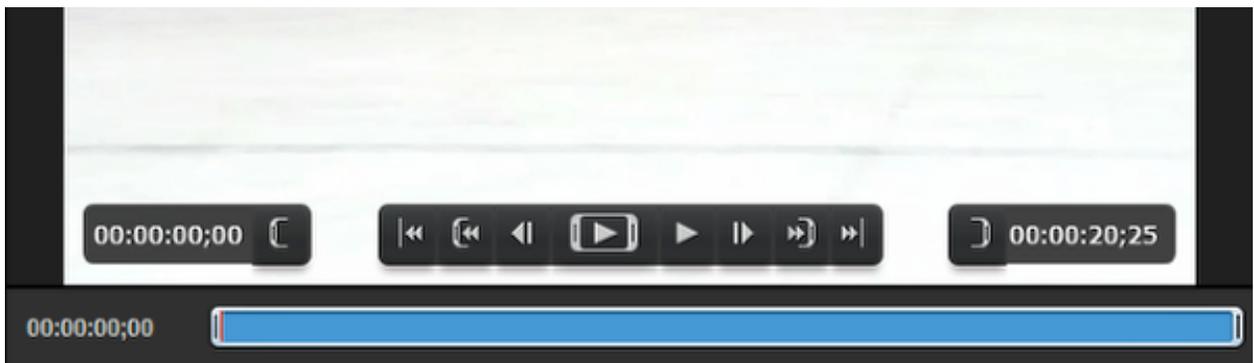
Next is the Loop Playback button, which will play the selected video on repeat rather than play the next clip or transition to the Preview source.



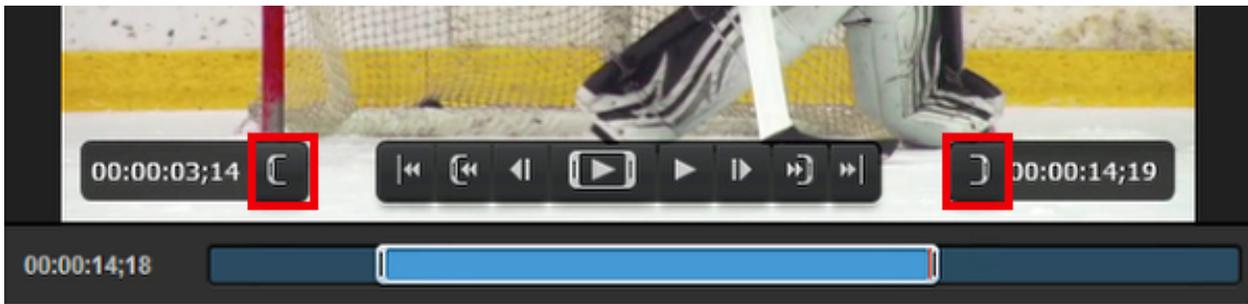
Selecting both Play as List and Loop Playback will play all of your clips back to back and restart from the top when the last clip ends.



At the bottom of the player are player controls and a blue timebar. Use your mouse to drag the red scrubber to any point within the clip.

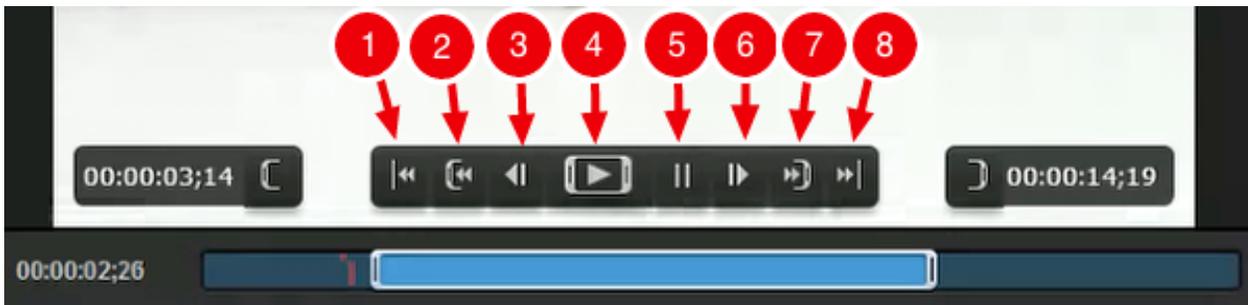


With your mouse, you can drag and drop both ends and set In and Out points if you want to playback only a portion of your clip. You can also set In and Out points by dragging the scrubber to the desired point and pressing the corresponding In or Out bracket button above the timeline.

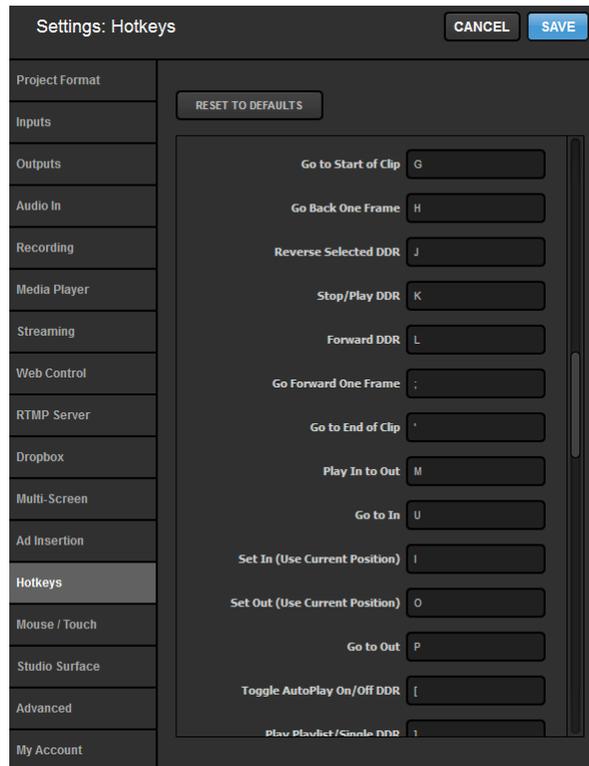


The main playback controls primarily control where the scrubber moves to. They are:

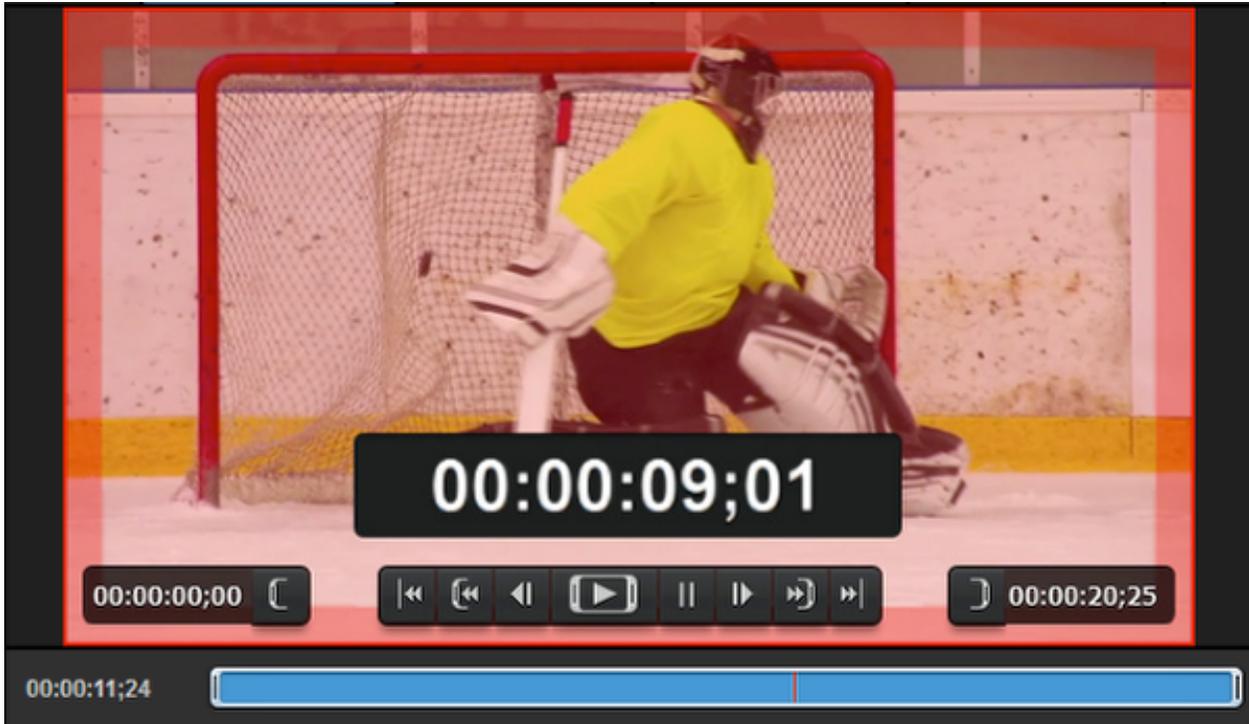
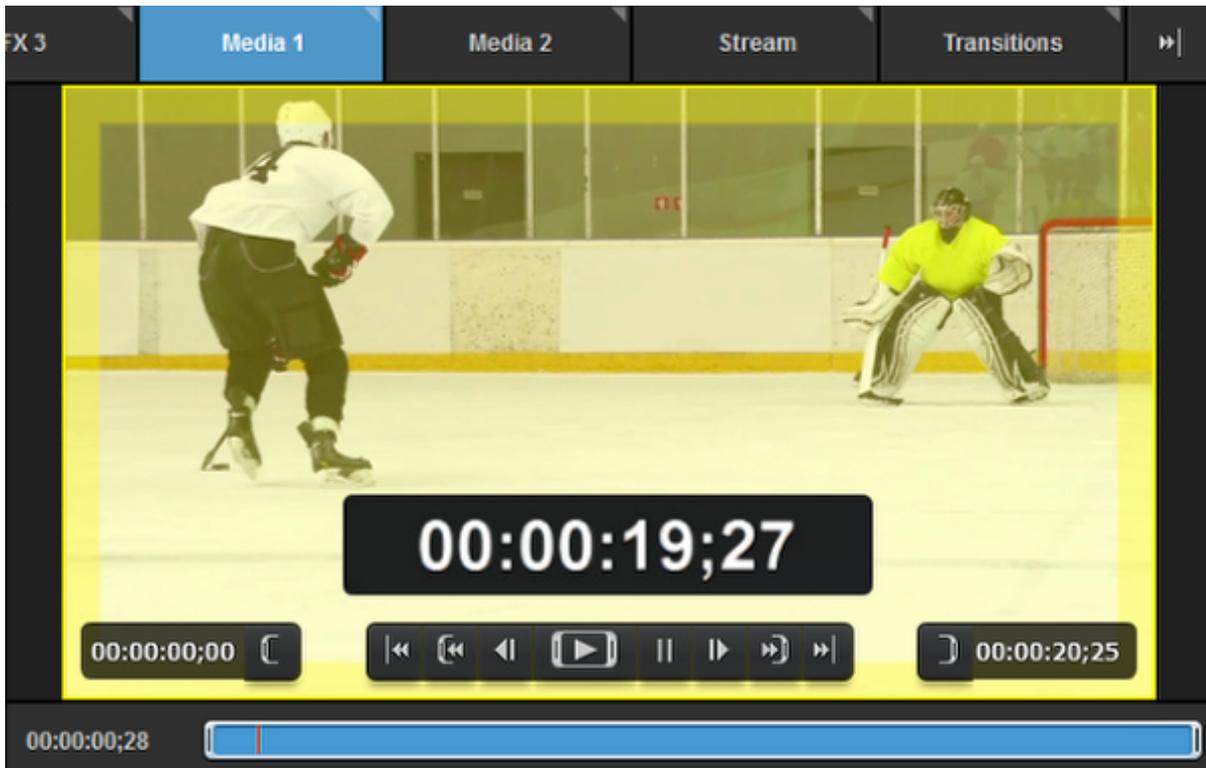
1. Jump to beginning of entire clip
2. Jump in In point
3. Frame back
4. Play from In point to Out point
5. Play from scrubber's current location to the end of the clip
6. Frame forward
7. Jump to Out point
8. Jump to end of entire clip



There are default hotkeys set for various media playback options, which you can find and custom configure by navigating to **Settings: Hotkeys**.



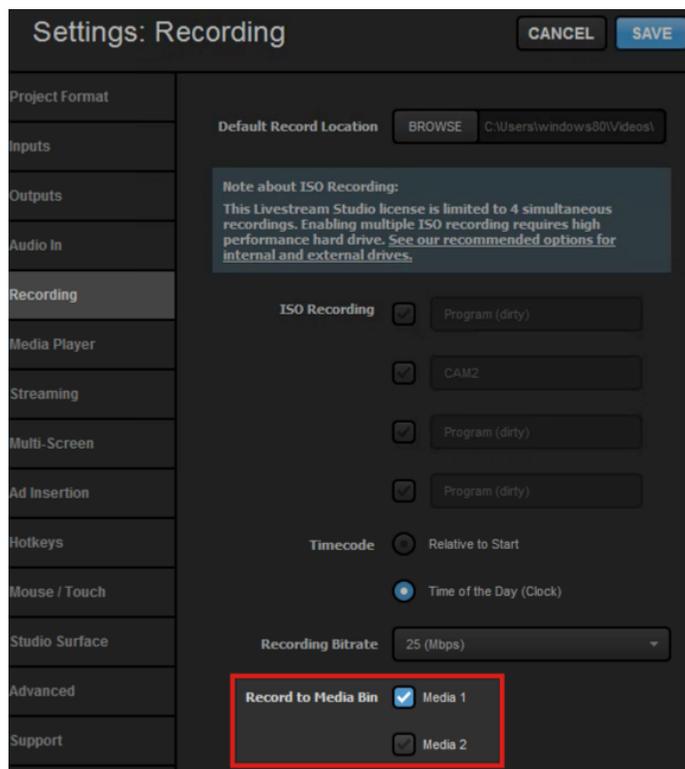
When Loop Playback is turned off, Studio will countdown your video from 20 seconds (yellow) and then 10 seconds (red), allowing you to prepare your next source in Preview. When the clips reaches zero, Studio will seamlessly transition from the Media Bin to the source in Preview.



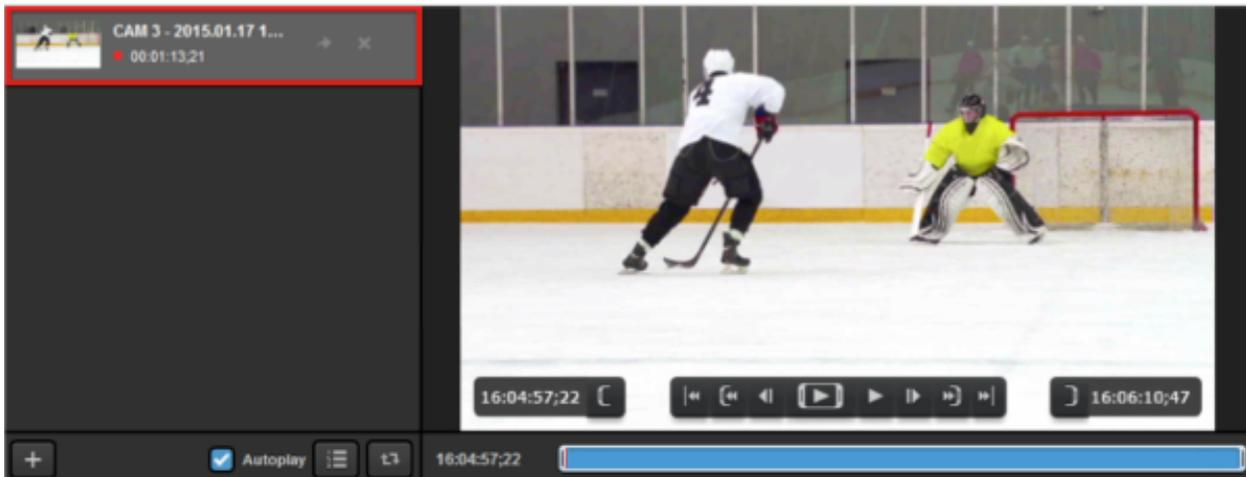
# Basic Video Replay While Recording

Livestream Studio allows you to play back media while you are recording it for easy, basic replay options during a live event.

To start, make sure that one of your Media Bins is selected in the Recording section of the Livestream Studio settings.



Your media will automatically populate within the selected Bin once the recording has started.



**i** The red dot to the left of the clip duration indicates that this clip is currently being recorded.

When recording, the clip in your Media Bin will behave much like any other media. You can set an IN and an OUT point for playback and scrub along the timeline as well. The main difference is that the timeline is growing as long as the recording process is active which does not occur when using pre-recorded media.

By default, pressing R on your keyboard will set IN and OUT points on your clip for the most recent 10 seconds. Taking that media bin into Program will automatically playback that section of your recording. You can adjust this setting under the Media Player tab in settings.

### Settings: Media Player

CANCEL SAVE

- Project Format
- Inputs
- Outputs
- Audio In
- Recording
- Media Player**
- Streaming
- Multi-Screen
- Ad Insertion
- Hotkeys

**Media Autoplay**

- Pause playback ⓘ
- Continue playback ⓘ

**Transcoding**

**Files Location**

BROWSE

**Cache**

CLEAR CACHE 19670 MB used

Set cache size  MB

**Bitrate**

**Basic Replay**  sec. before current timestamp ⓘ

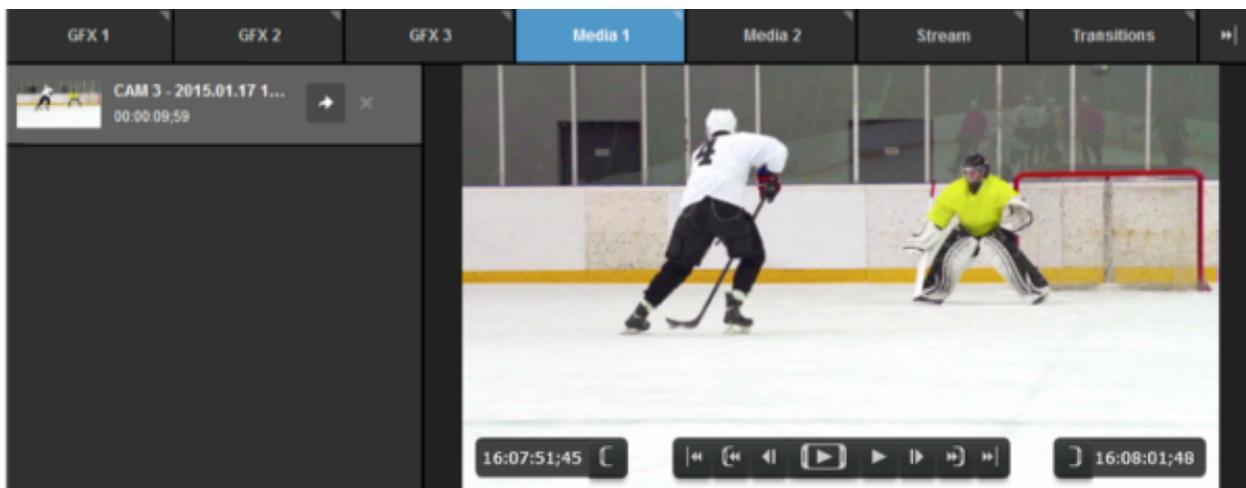
**Export Location**

BROWSE

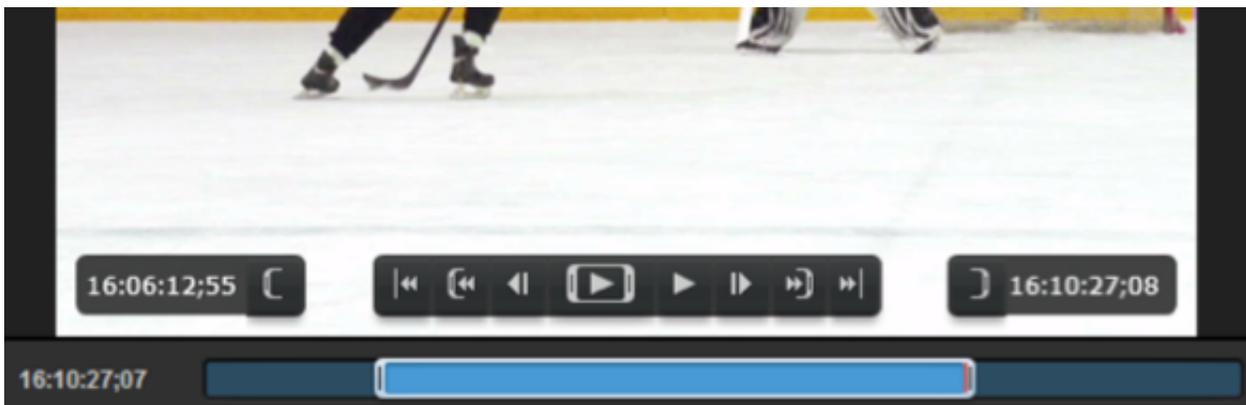
# Exporting Clips from Livestream Studio

The media bins have an export tool that allows you to save your recordings or clips of recordings in them as .mp4 files on your hard drive.

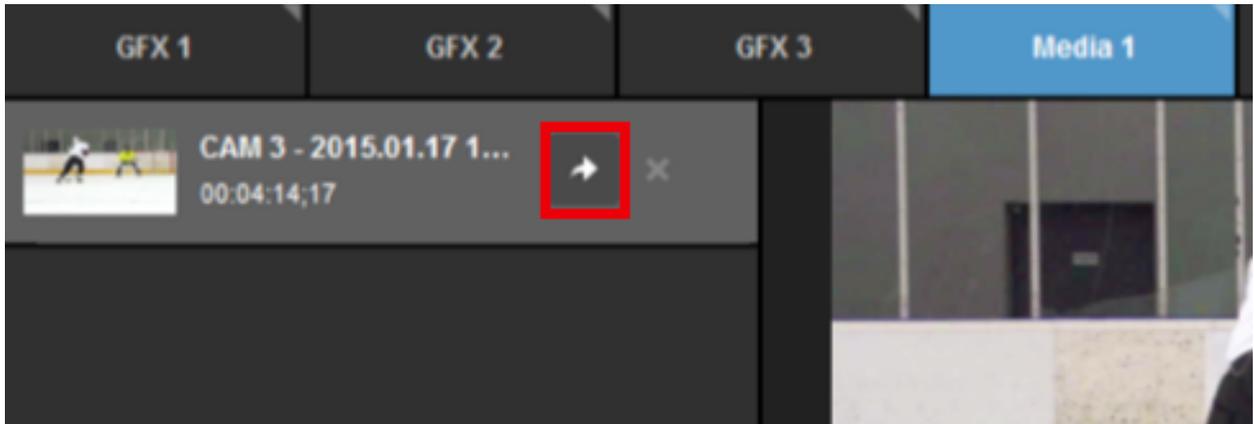
First, select a video you want to export.



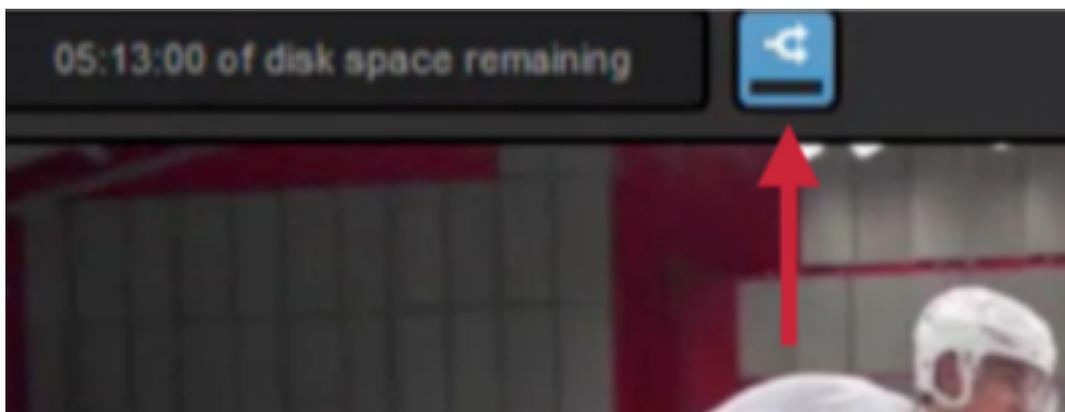
Set In and Out points for your clip. If you want to export the full video, make sure the brackets enclose the entire timeline.



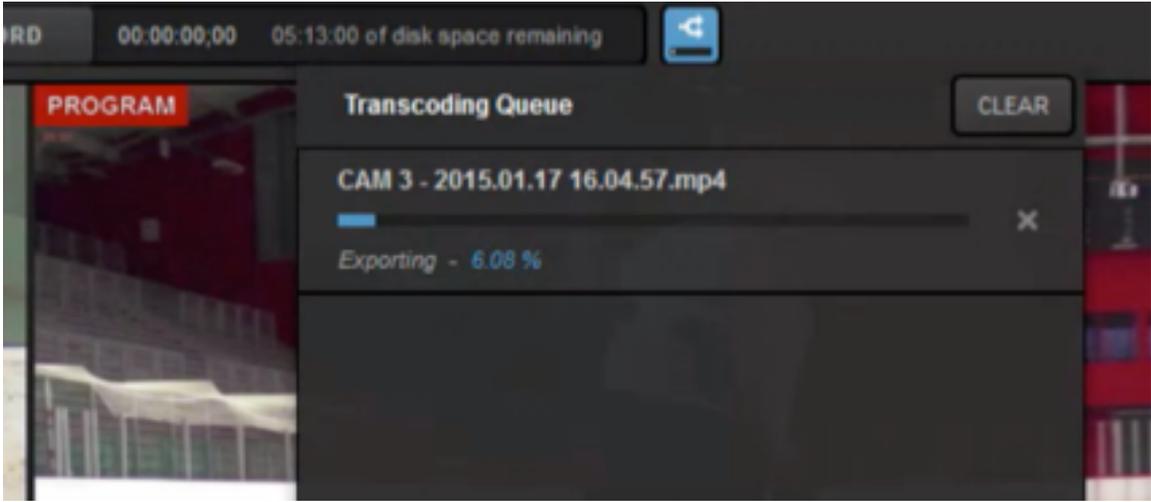
When you are ready to export your clip, click on the arrow icon next to the video's name.



The double arrow button at the top of the interface turn blue and show a small progression bar as your clip is exporting.



Click on the button to view your transcoding queue. This will tell you how much time is left in your clip and the status of any other transcoded or exported video.



# Remote Cameras

# Activating Bonjour Service for Remote Camera Sources

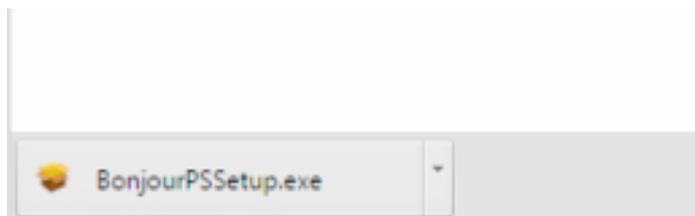
In order to use remote cameras in Livestream Studio, you must make sure you have Bonjour service installed and activated on your Windows computer. Remote cameras will not work without Bonjour running.

Bonjour is pre-installed on Studio hardware units (e.g. HD31, HD51, HD550, etc.) and is always running on Mac systems. Customers who only purchased the software should have gotten a prompt to install it.

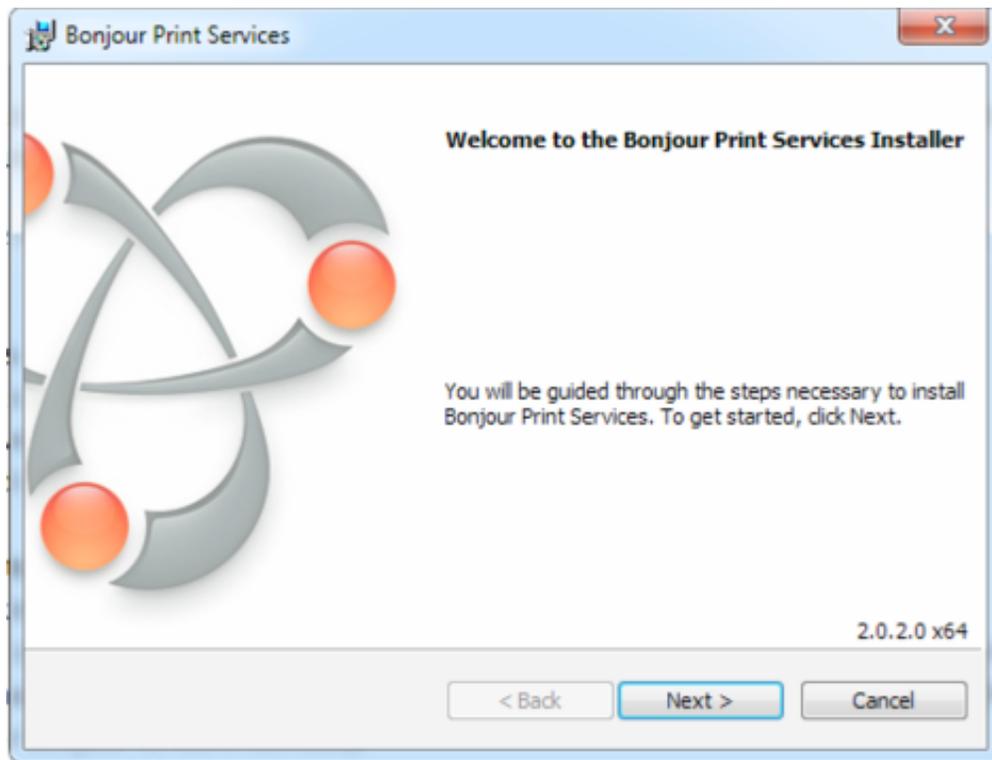
To install Bonjour manually, click [here](#) and click Download.



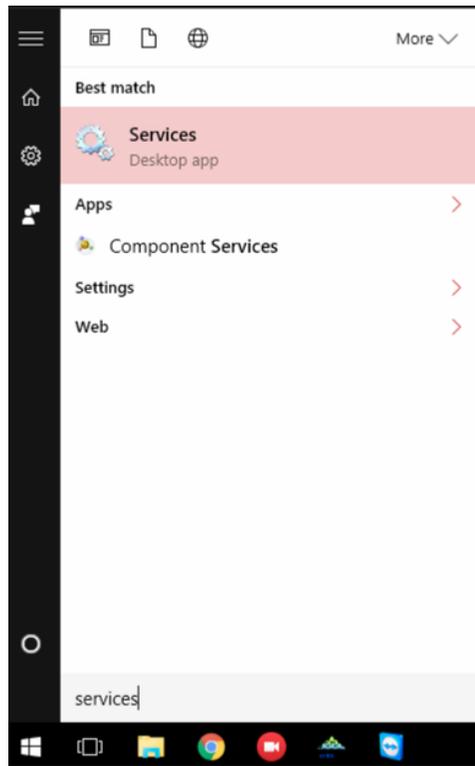
Once the software has finished downloading, open the installation wizard.



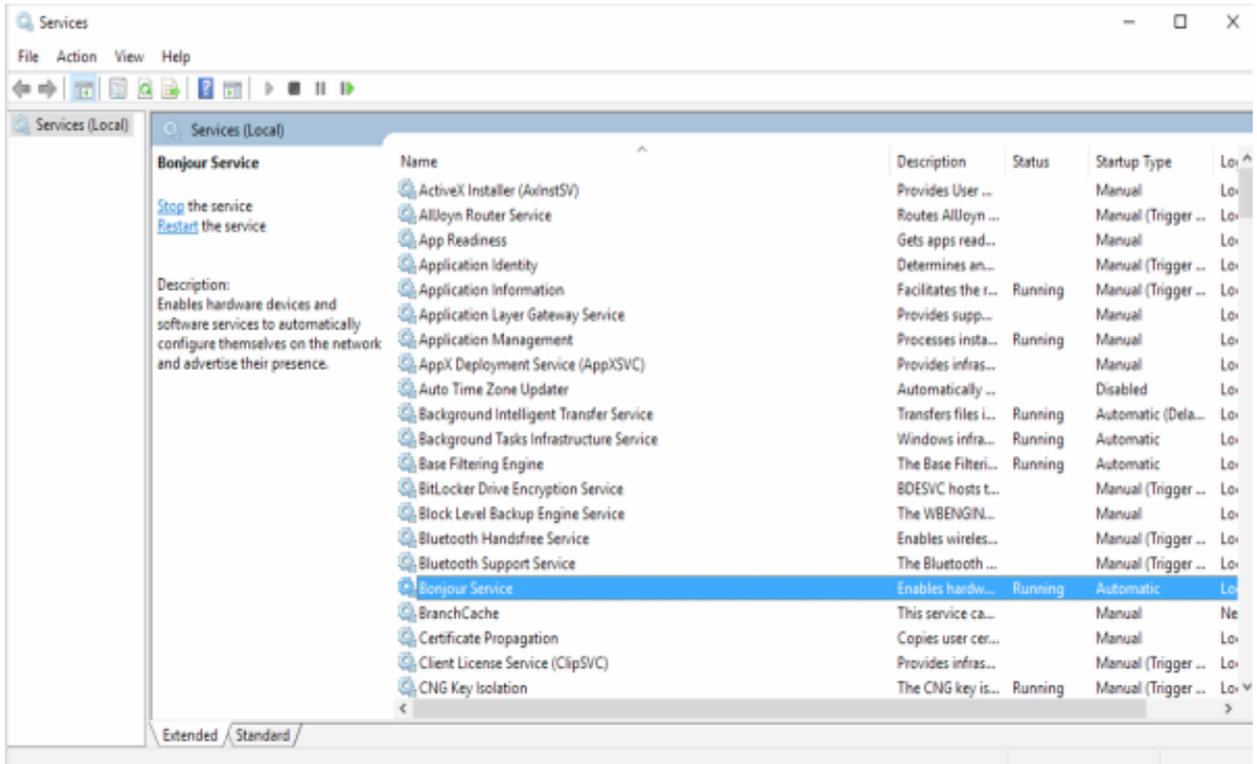
Follow the on-screen prompts to complete the installation.



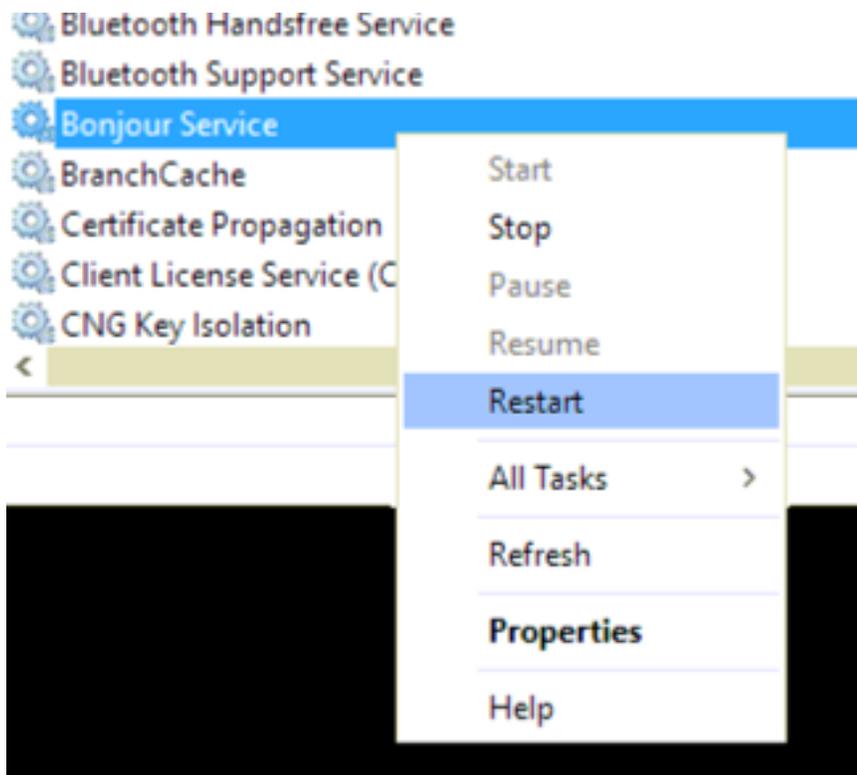
To ensure Bonjour is running, first make sure Studio is closed. Then open the start menu and type Services. Click the Services icon that appears at the top of the menu.



Look for Bonjour Service in the menu and select it.



Right-click it and click Restart.

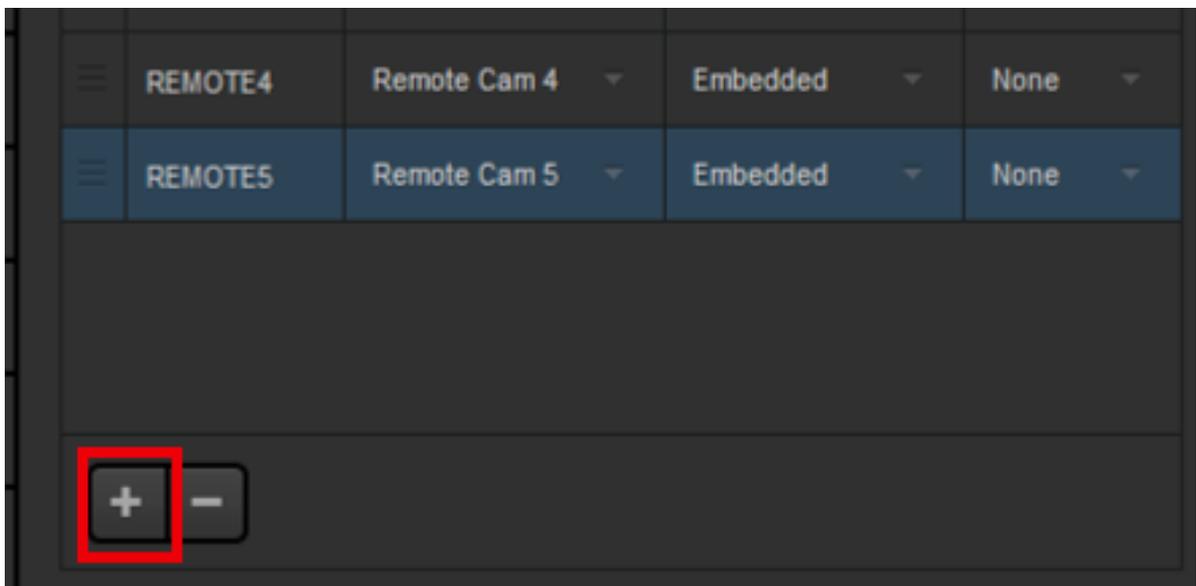


Close out the menu and relaunch Studio. Remote cameras on your network should now be detected by Studio.

# Using the Remote Desktop Client for Windows

In Livestream Studio, you have the option of using a Windows desktop system as a remote camera source by connecting it to Studio over your local network connection. This is great for adding a slideshow presentation into your production.

Before configuring any remote camera settings, be sure to add the necessary amount of remote camera modules to your project by going to **Settings: Inputs** and adding remote cameras. You can have up to 10 remote cameras in your multi-view

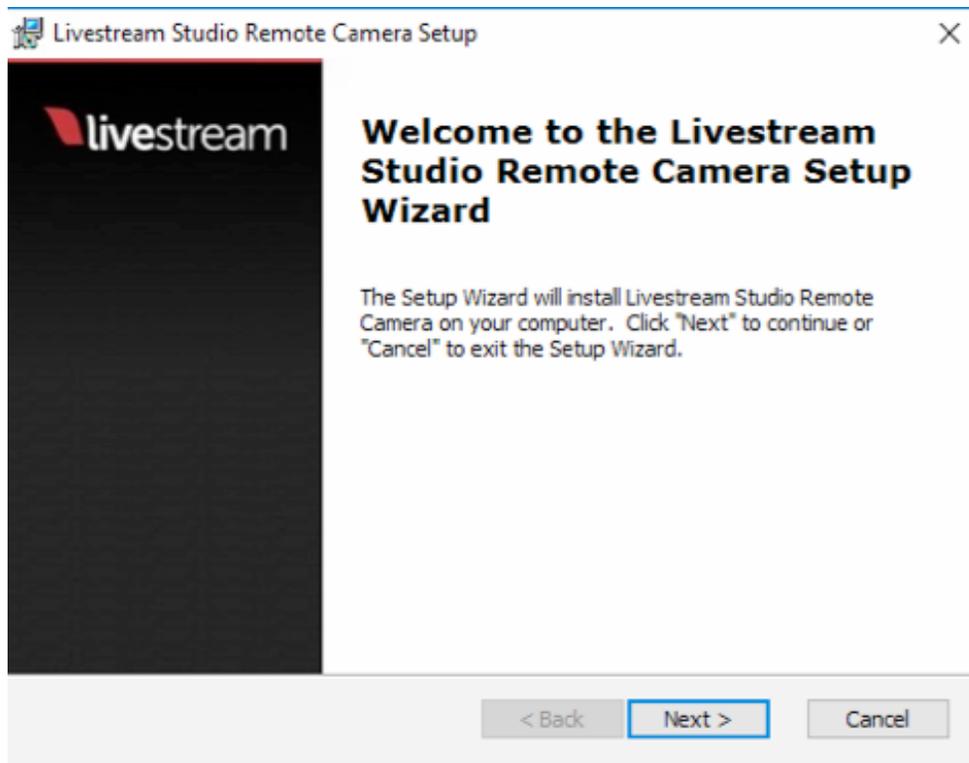


## Installing & Configuring the Remote Client

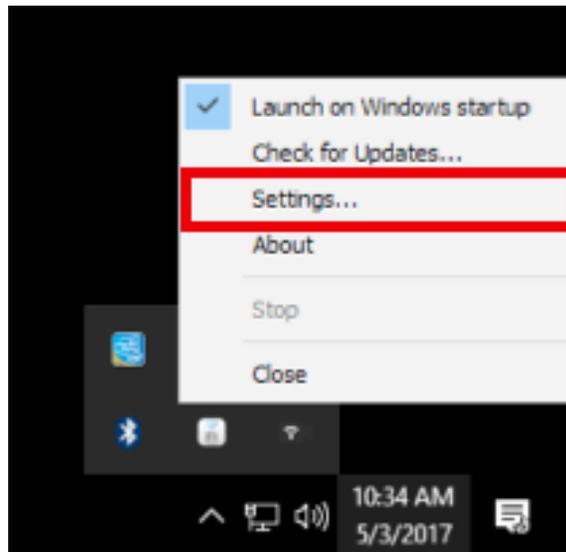
First, be sure to connect your remote Windows computer to the same network to which the computer running Livestream Studio is connected.

! [Download the Remote Desktop Client onto your Windows computer here.](#)

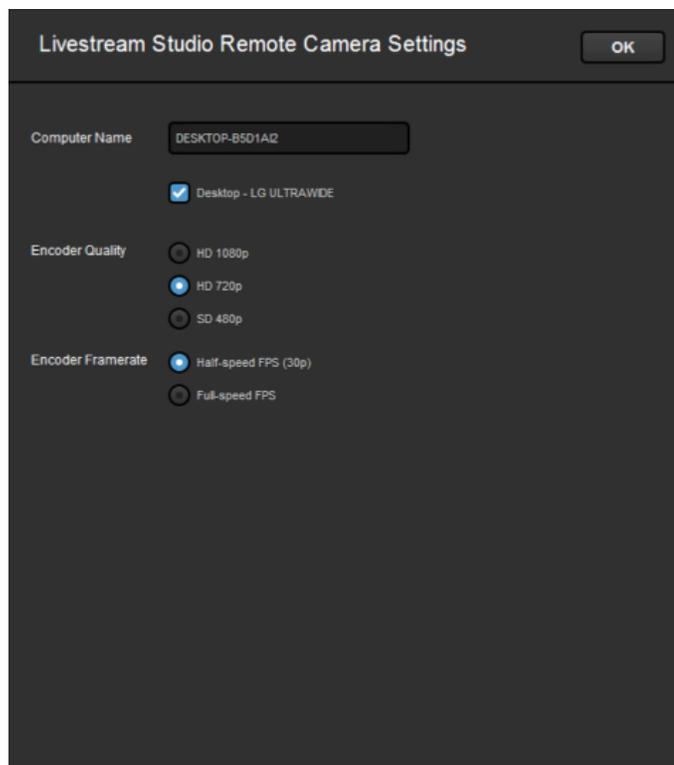
Open the downloaded file and follow the on-screen steps to run the installation wizard, then click Finish.



Remote Camera will launch in the background of your PC. Right-click on the icon in the bottom toolbar and click Settings.



Here you can adjust your remote camera's name as well as set which video and audio signals are visible from that PC. In this example, only the Desktop screen is visible, but other video sources that are later added to this computer can also be detected (e.g. webcams).



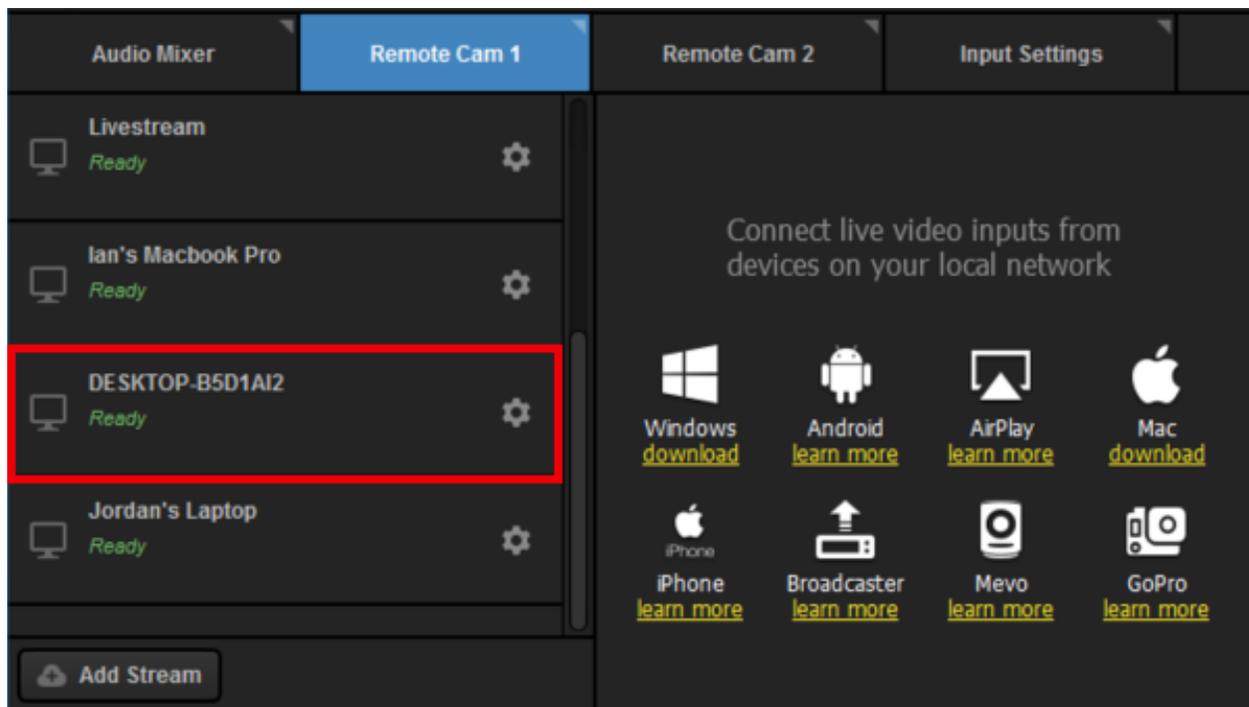
**Computer Name:** The name that will appear in the remote camera module for your remote camera source.

Checked sources will be available to use from this system as a remote camera source. Uncheck any sources you do not want to use.

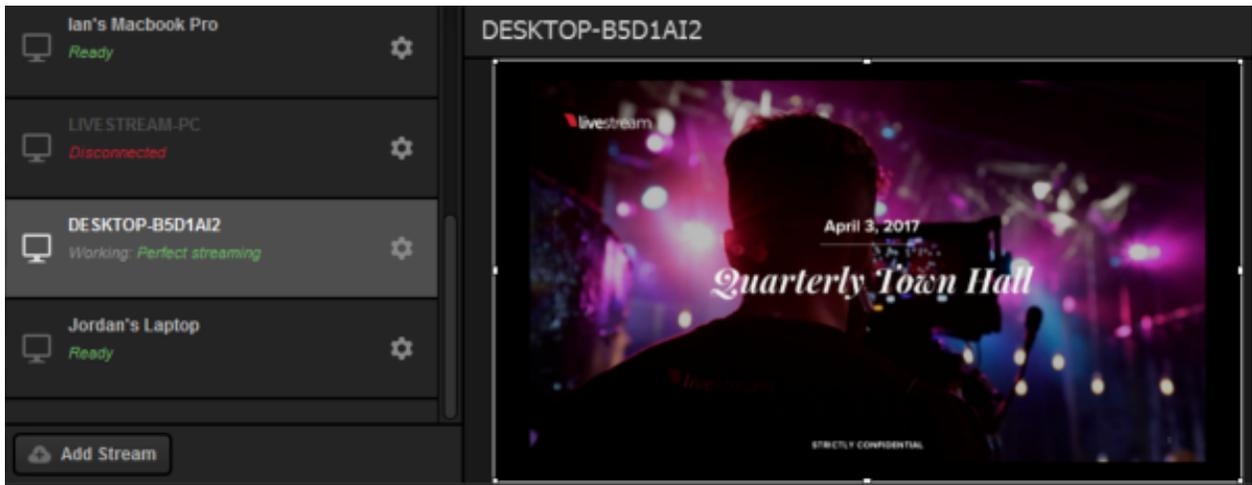
**Encoder Quality:** The resolution you want the video to stream at over your network to Livestream Studio. Slower CPU's should use a lower resolution.

**Encoder Framerate:** The frame rate you want the video to stream at over your network to Livestream Studio. Slower CPU's should use 'half-speed FPS (30p).'

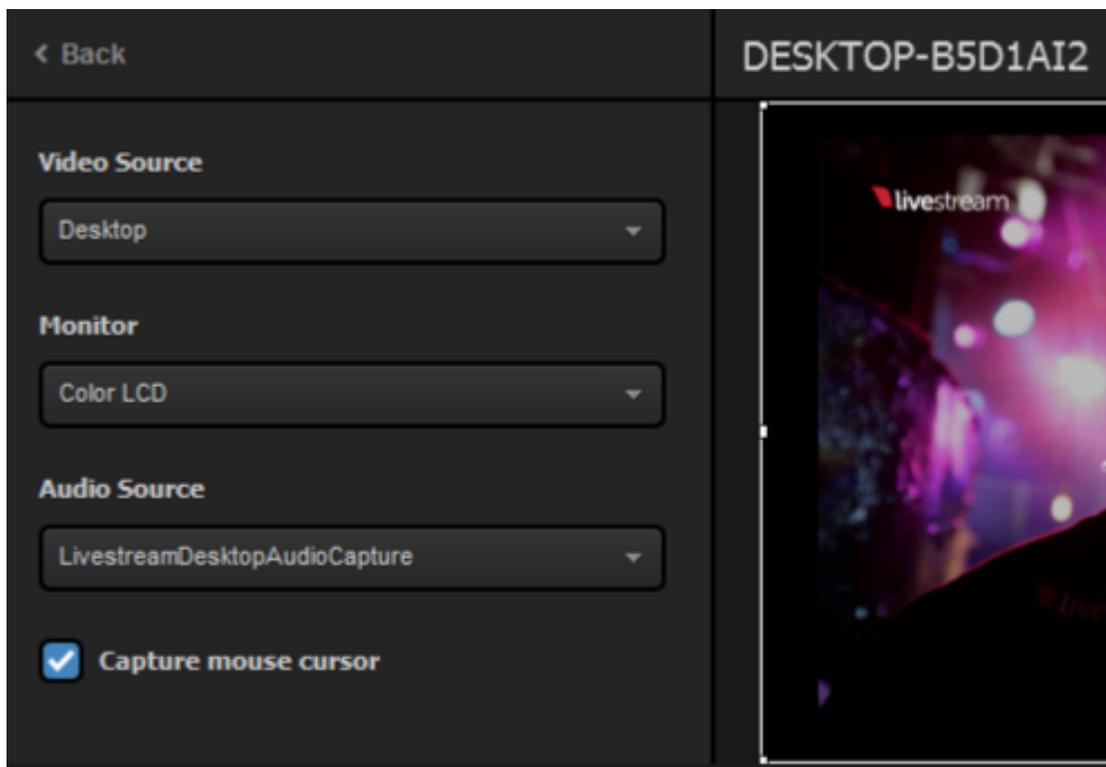
Back in Livestream Studio, under the Remote Cam tab, you should see your PC listed as a source as long as it is connected to your Portal router either via Ethernet or Wi-Fi.



Select it from the list to activate the source; it will appear on the right side of the module.



Click the corresponding gearwheel to see more options.



**Video Source:** The remote client has the ability to use either the system's desktop, an attached webcam, or an installed Blackmagic capture device as a video source. Use the dropdown menu to select which one you want to use.

**Monitor:** If you select 'Desktop' as the video source and the remote system has multiple displays, you can configure which display you would like to use as a source by selecting it from the drop-down menu.

**Capture Device:** If you select a Blackmagic Capture Device as your video source and have more than one installed on your system, choose which one you want to use.

**Audio Source:** You also have the option of selecting from any of your available audio devices. The default is the standard system audio output.

**Capture Mouse Cursor:** Unselect this option if you would not like to see the mouse cursor on the remote system.

## Troubleshooting

If you are not seeing any options on the list within the Remote Cam tabs, please check the following:

- Make sure the remote system is on the same network, connected to the same Router or Access Point as your Studio system.
  - If the system is on the same network but using a different access point, the Remote Camera will not properly connect.
- Check that the following ports are open if you use a firewall:
  - UDP: 5353, 60936 - 61036
  - TCP: 60936 - 61036
- Check that Bonjour Service is [started](#).

# Using the Remote Desktop Client for macOS

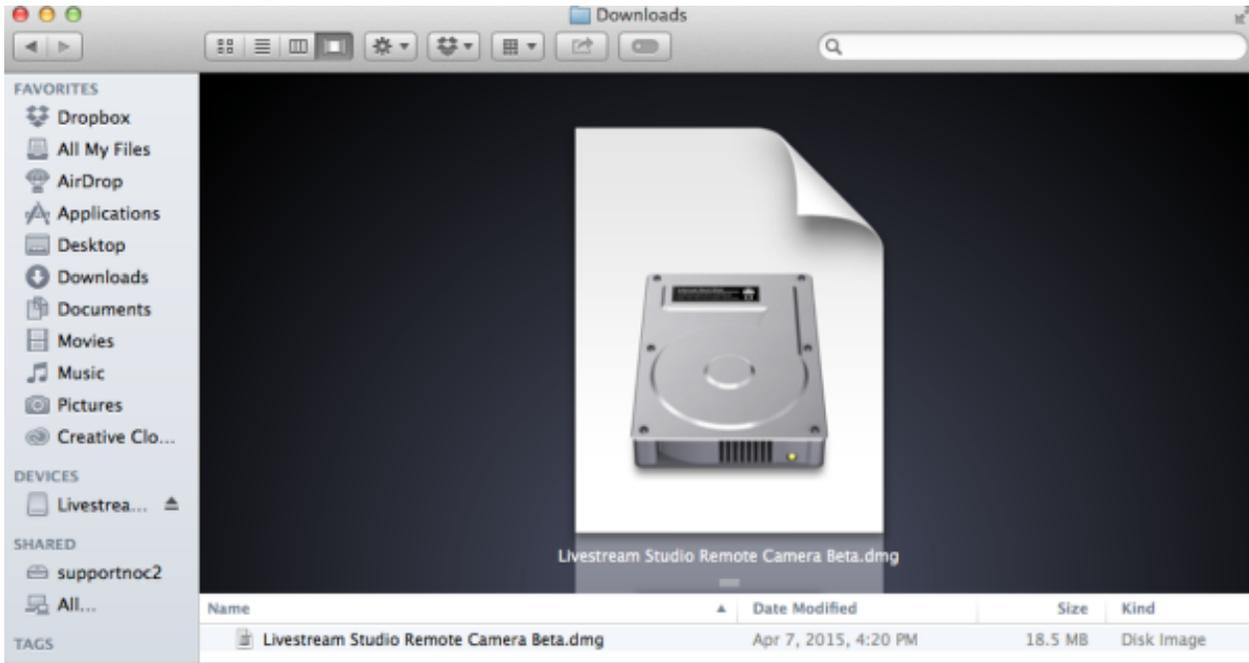
In Livestream Studio, you have the option of using an Apple Mac OS X/ macOS desktop system as a remote camera source.

## Installing the Remote Client

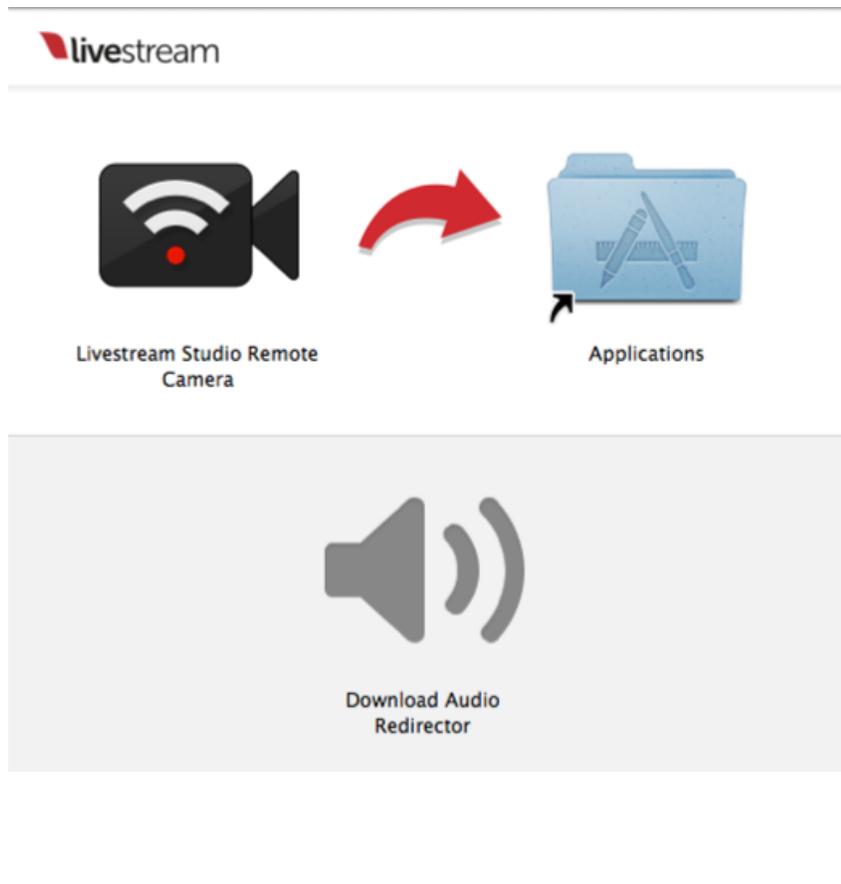
If you haven't already done so, install the Livestream Studio Remote Camera client on the computer you're planning to use as the remote system.

 [Download the small program here.](#)

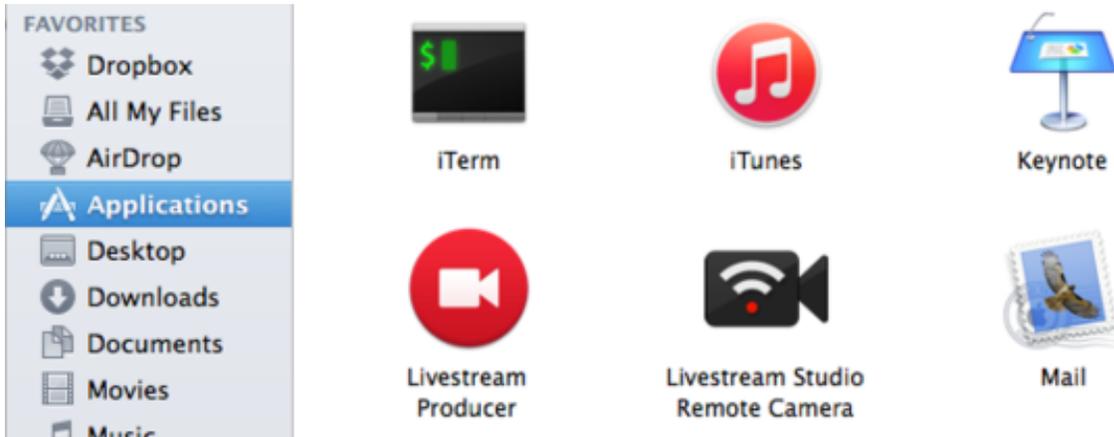
Double-click the Livestream Studio Remote Camera.dmg file in your Finder to start the installer.



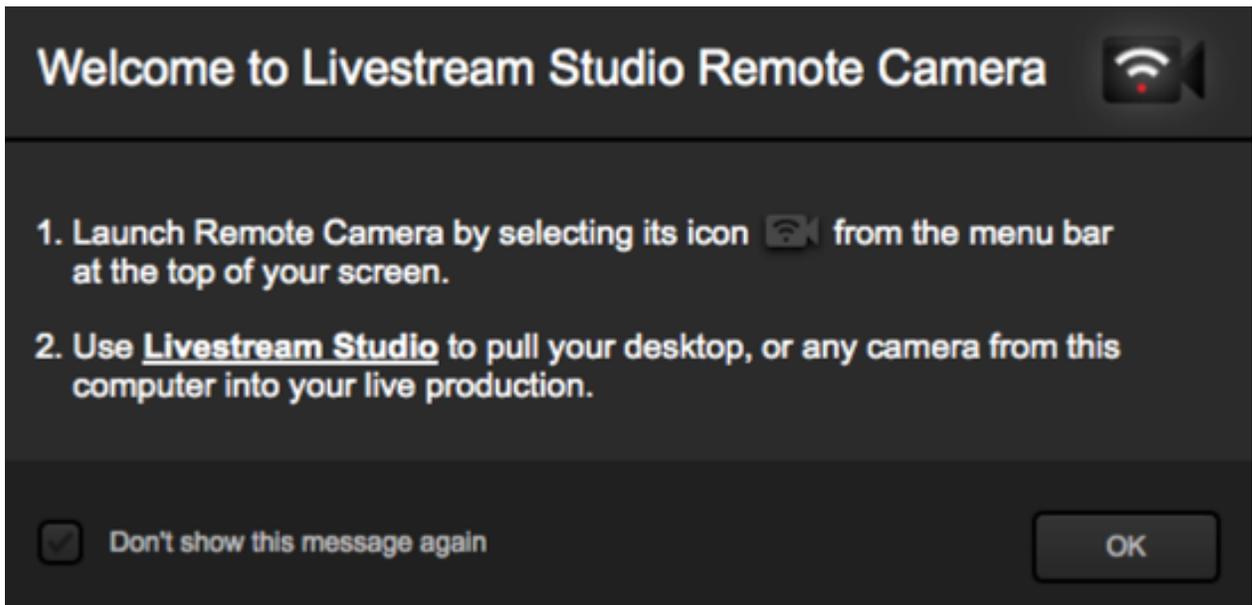
Drag the Livestream Studio Remote Camera into the Applications folder.



Go to the applications folder and double click on Livestream Studio Remote Camera to open the application.

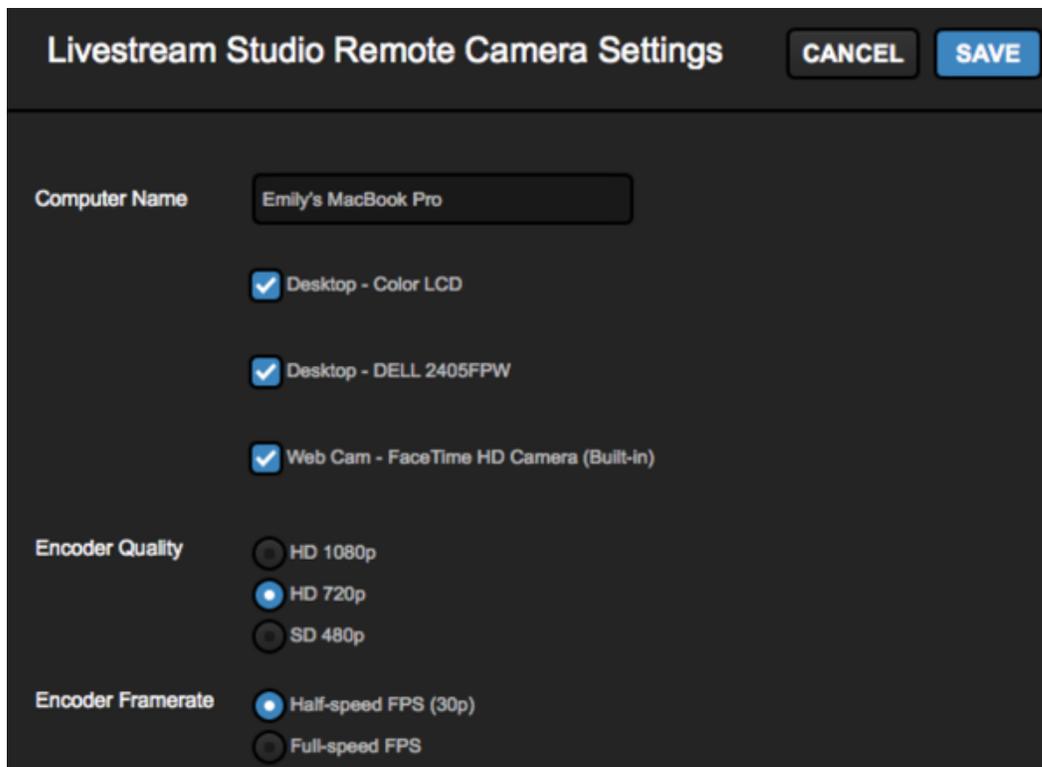
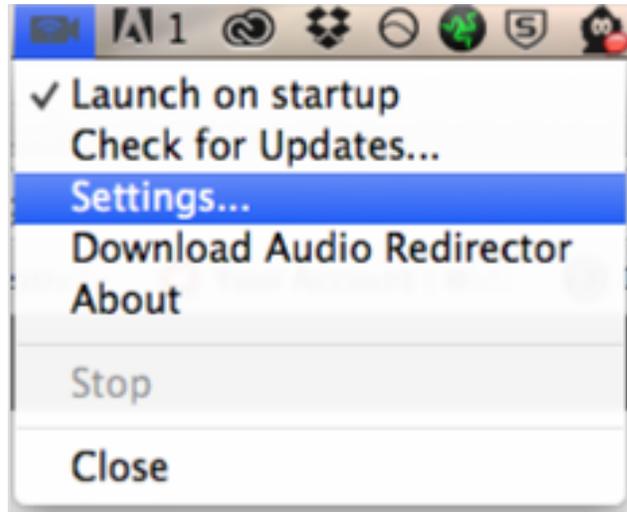


You will see this window pop up indicating that the remote camera icon will appear in your menu bar at the top of your screen. You can choose to prevent the message from appearing again.



Make sure the remote system is on the same network as your Livestream Studio™ system. It will run in the background until you close it. You can close it by clicking on the icon in the menu bar and clicking 'Close.'

When the Remote Client is running, you can click the icon and click 'Settings' to make further adjustments to your remote camera source.



Computer Name: The name that will appear in the remote camera module for your remote camera source.

Checked sources will be available to use from this system as a remote camera source.

Uncheck any sources you do not want to use.

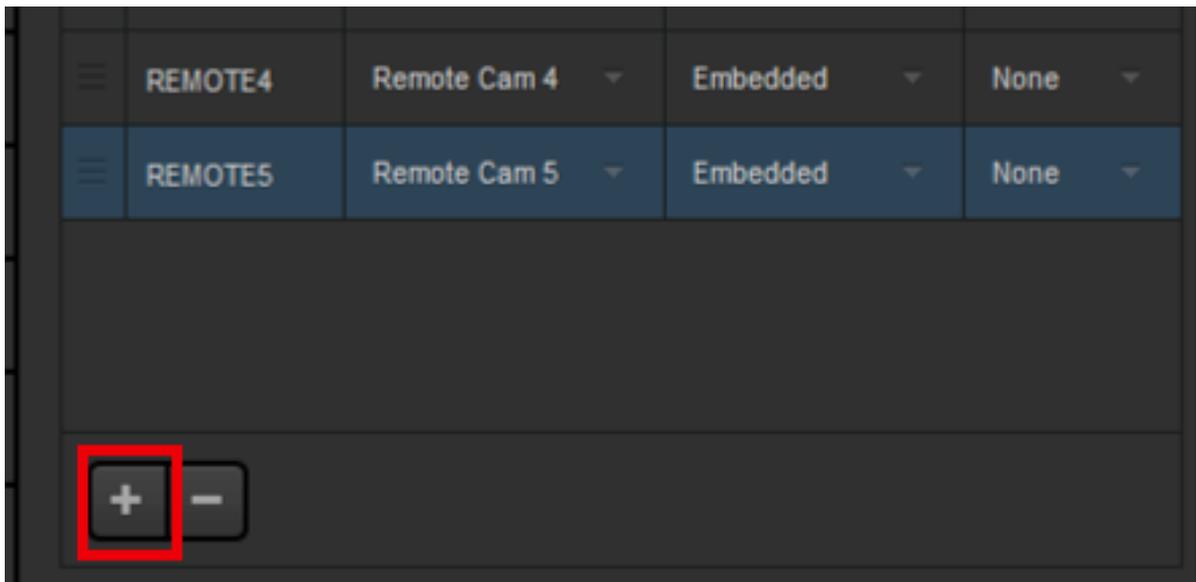
**Encoder Quality:** The resolution you want the video to stream at over your network to Livestream Studio. Slower CPU's should use a lower resolution.

**Encoder Framerate:** The frame rate you want the video to stream at over your network to Livestream Studio. Slower CPU's should use 'half-speed FPS (30p).'

## Adding and Configuring a Remote Source in Livestream Studio:

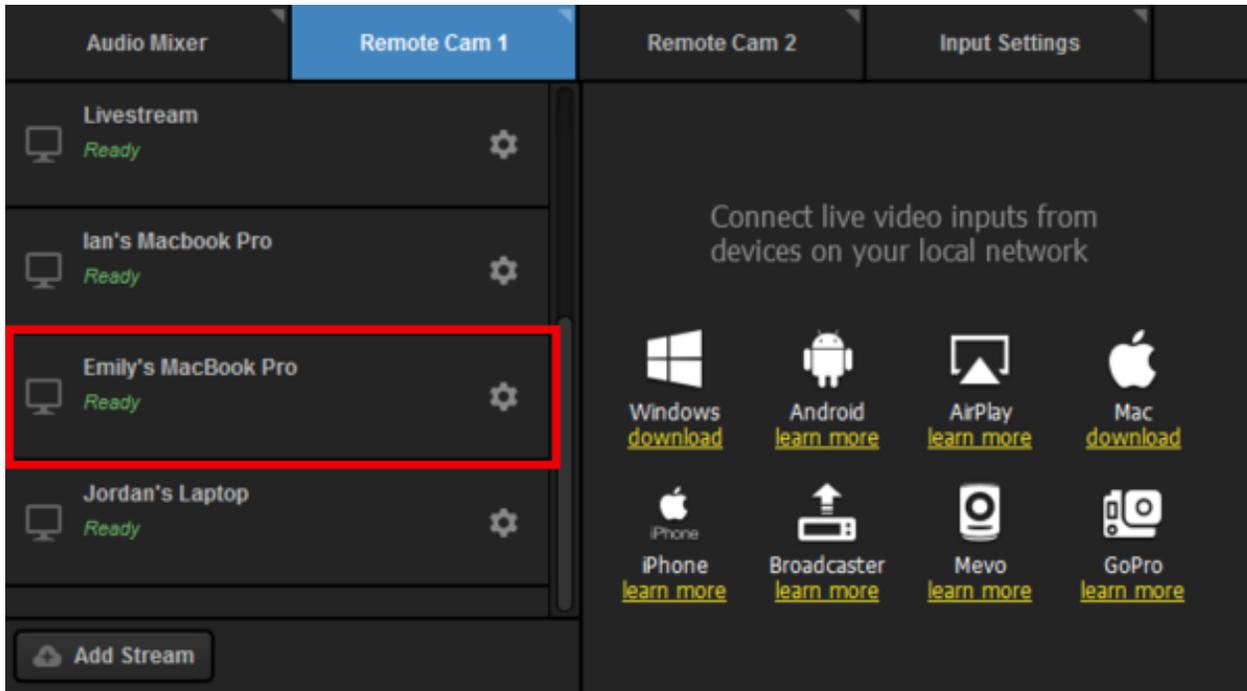
Once the client is installed on the remote system and is running, you can use it as a source in Livestream Studio.

Make sure to add a **Remote Camera** as an input within the **Inputs** section of the Livestream Studio settings and click save at the top.

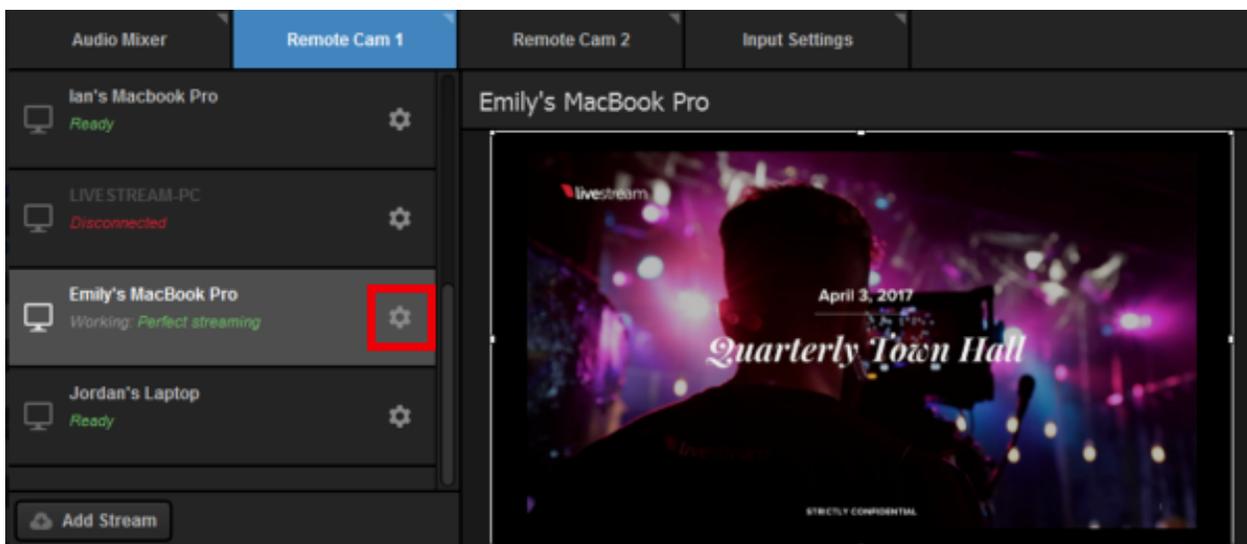


On the bottom left of the Studio interface, you should now see a tab labeled Remote Cam 1. Click on that to reveal a list of available options.

If Studio can find the remote system over your local network connection, you should see it come up as an option on the left side.

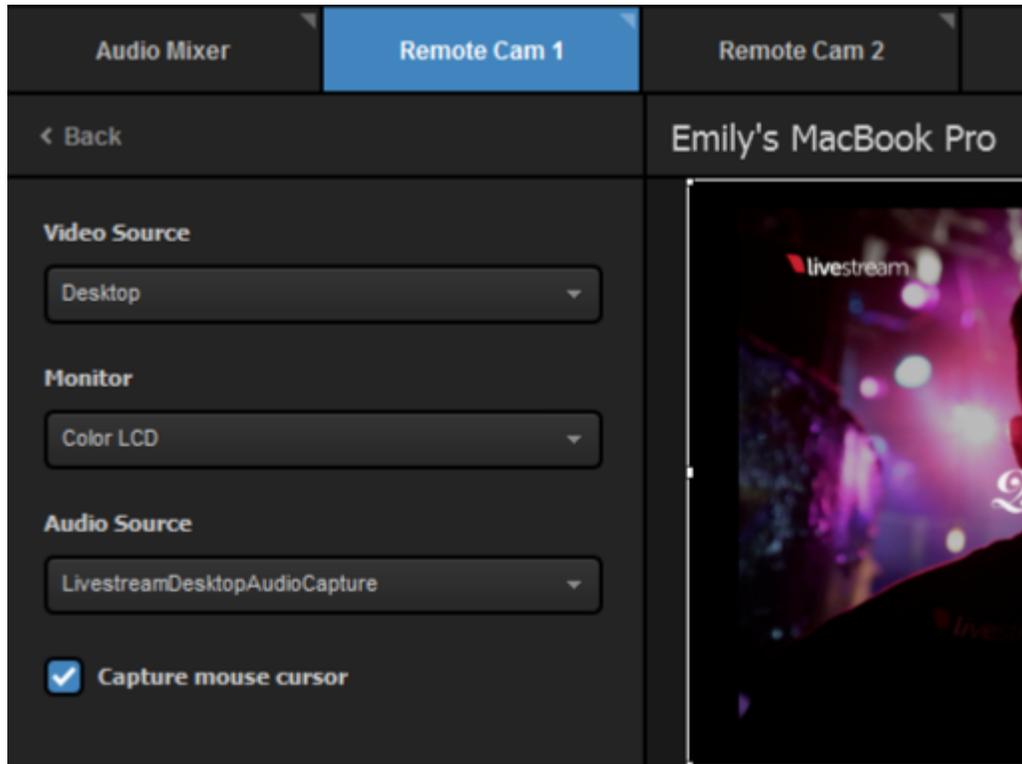


Select your Mac computer to activate it in Studio. It will appear on the right side of the module.



## Additional Options:

Click the gear wheel next to the remote camera source in the list to access further settings.



**Video Source:** The remote client has the ability to use either the system's desktop, an attached webcam, or an installed Blackmagic capture device as a video source. Use the dropdown menu to select which one you want to use.

**Monitor:** If you select 'Desktop' as the video source and the remote system has multiple displays, you can configure which display you would like to use as a source by selecting it from the drop-down menu.

**Capture Mouse Cursor:** Unselect this option if you would not like to see the mouse cursor on the remote system.

**Capture Device:** If you select a Blackmagic Capture Device or a webcam as your video source and have more than one installed on your system, choose which one you want

to use.

**Audio Source:** You also have the option of selecting from any of your available audio devices. The default is the standard system audio output.

## Troubleshooting

If you are not seeing any options on the list within the Remote Cam tabs, please check the following:

- Make sure the remote system is on the same network, connected to the same Router or Access Point as your Studio system.
- If the system is on the same network but using a different access point, the Remote Camera will not properly connect.
- Check that the following ports are open if you use a Firewall:
  - UDP: 5353, 60936 - 61036
  - TCP: 60936 - 61036
- Check that Bonjour Service service is [enabled](#) on the Studio system.

## Adding a Remote Live Interview

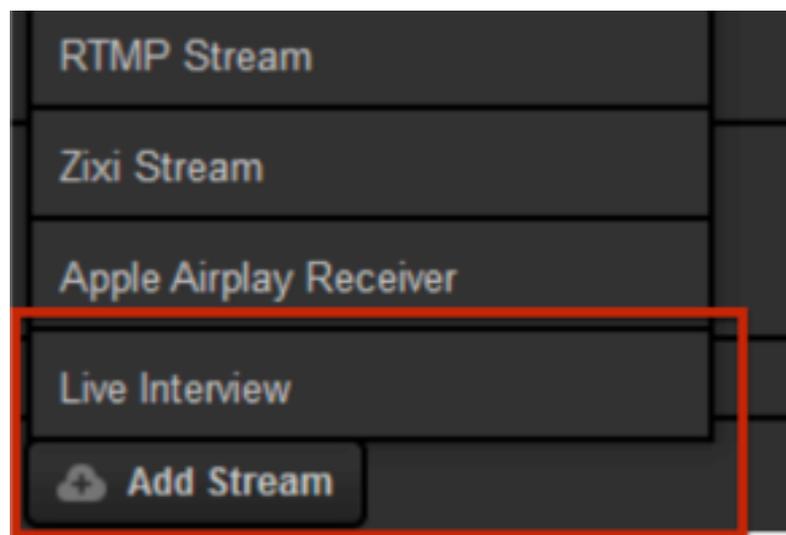
Livestream Studio customers can add a live webcam source from another location into their Studio production. This is called **Live Interview**.

Interview guest(s) will need an Internet connection, Google Chrome, a webcam, and a microphone connected to their computer.

💡 It is strongly recommended that audio is provided to any local hosts or interviewer directly via the headphone out jack on your Studio unit using headphones, IFB's, etc. Otherwise, there will be a distinct echo in your stream during the interaction.

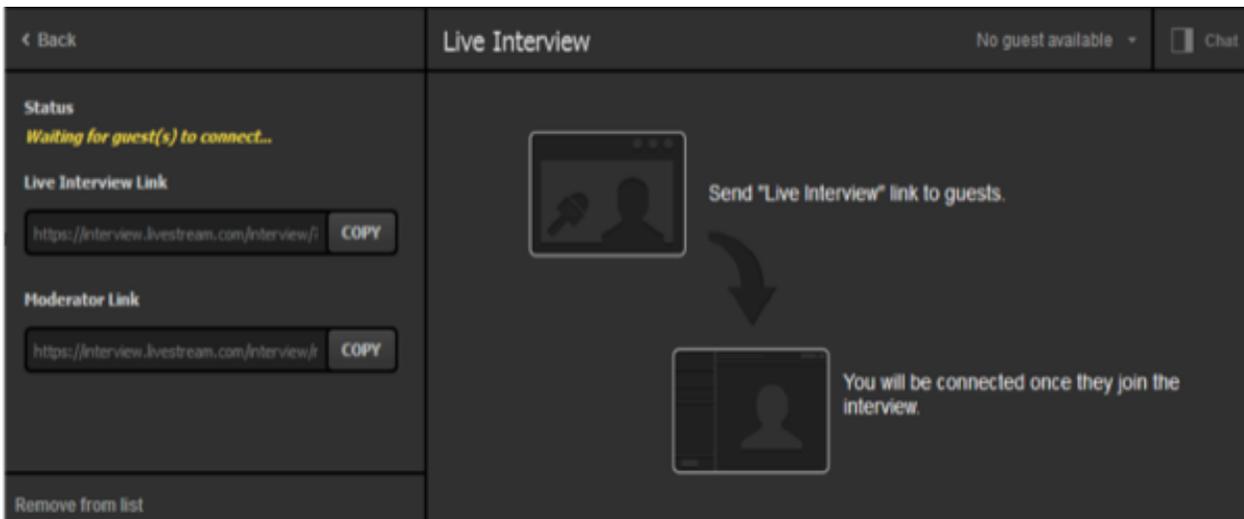
⚠️ Live Interview currently only works on desktop Chrome; there is currently no support for Live Interview via mobile devices.

Navigate to a Remote Camera tab and click **Add Stream**. Then click **Live Interview**.



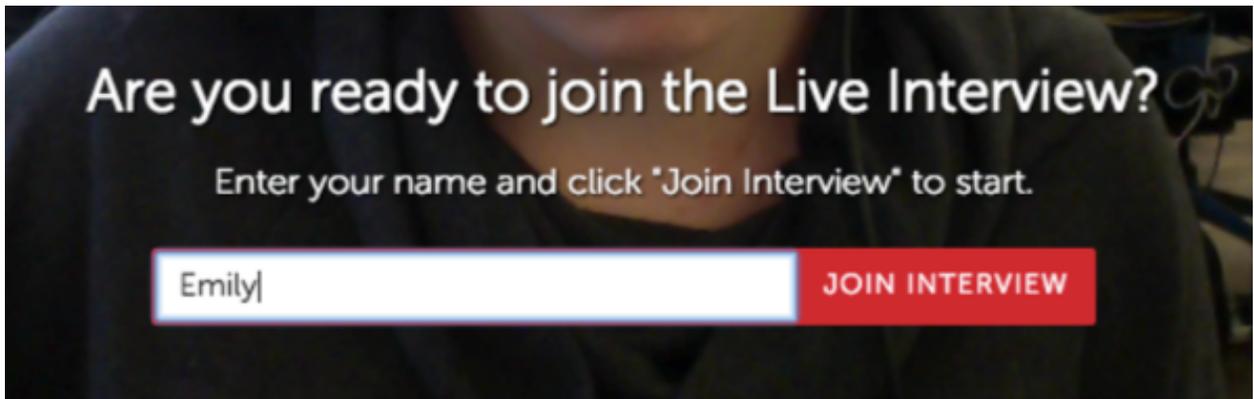
 Only one Interview can occur in Livestream Studio at this time.

You will be provided two URLs: a Live Interview Link and a Moderator Link. Press the Copy button to copy the corresponding URL to your clipboard and provide the URL to your guest(s) via email or other means).

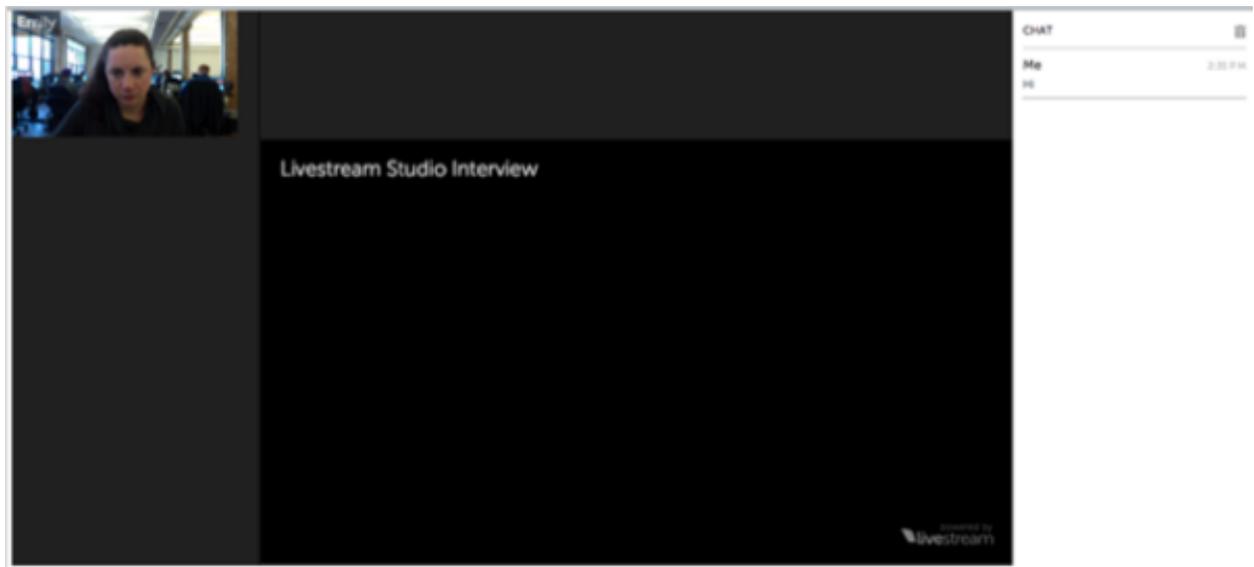


 New URLs generate each time a Live Interview is added. If you wish to provide a URL in advance, do not click Remove from list.

When someone opens on the provided Interview URL in Google Chrome, he/she will be prompted to type in a name and allow the camera and microphone to be accessed. When finished, he/she can click Join Interview.

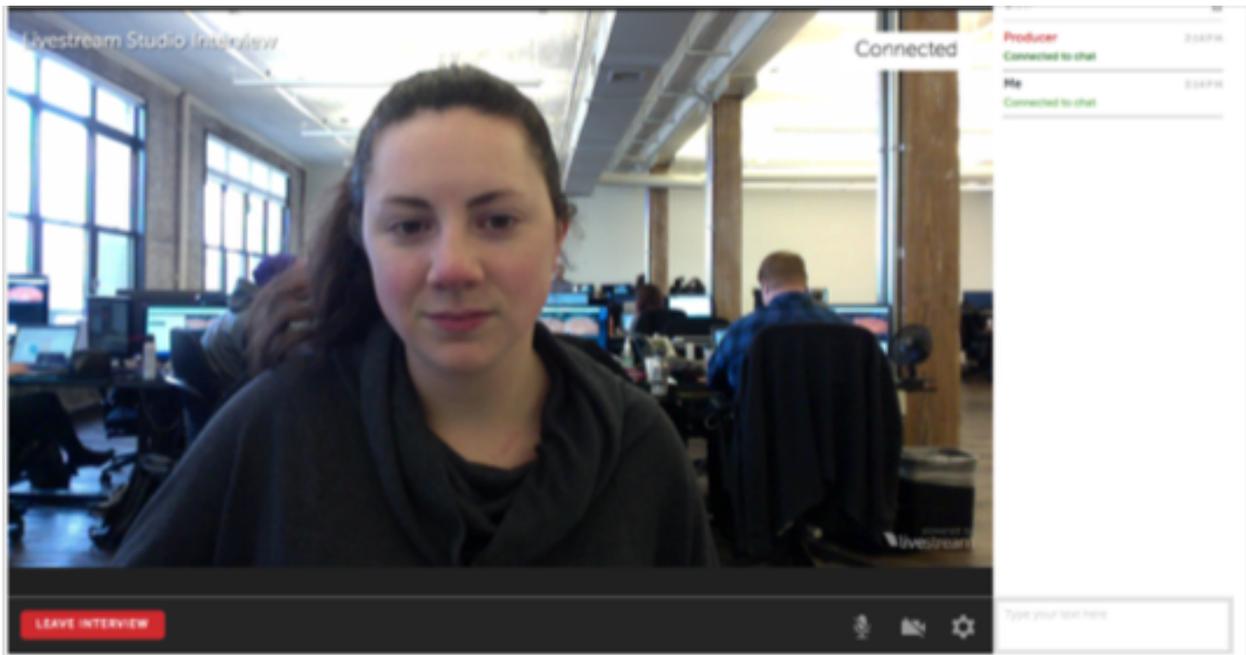


The moderator URL can be given to someone who can choose between different interview guest sources. The moderator's camera will not be shown, but will be able to hear audio from all connected interviewees.

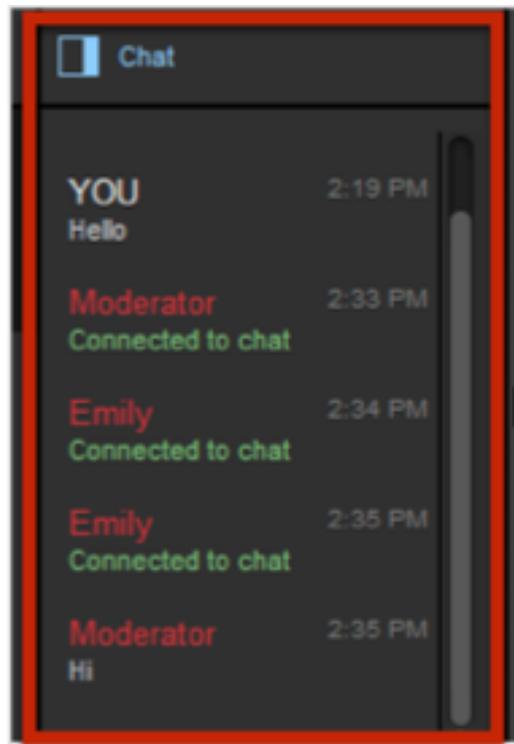


The moderator is also connected to the chat to help communicate with all interview guests and the producer.

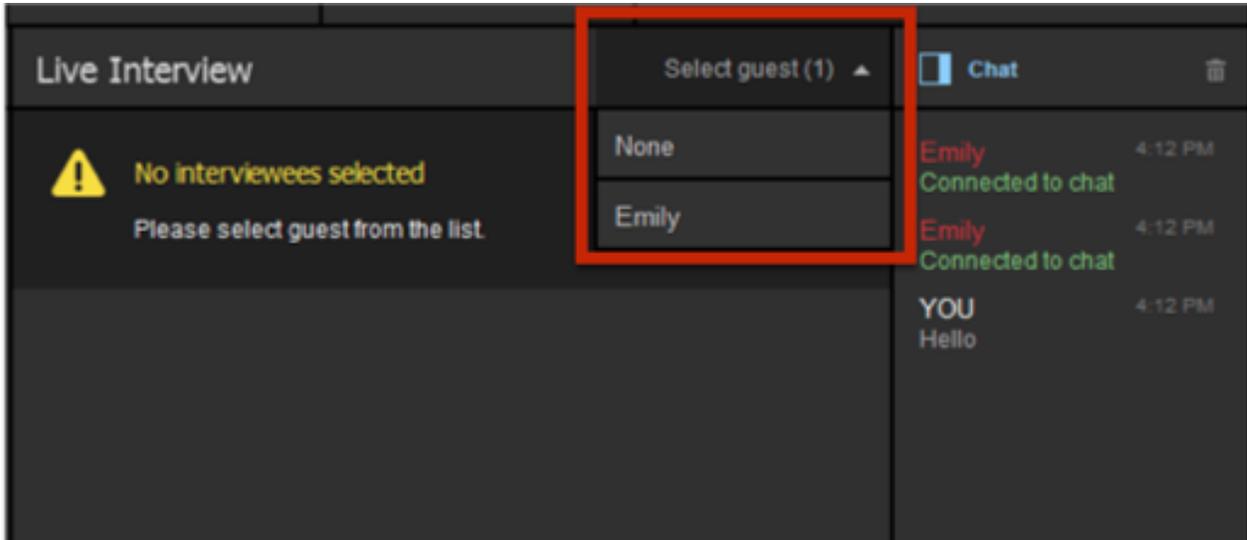
When a guest has joined the Interview, they will see his/her camera feed, but will also see that he/she is connected and have access to the internal chat.



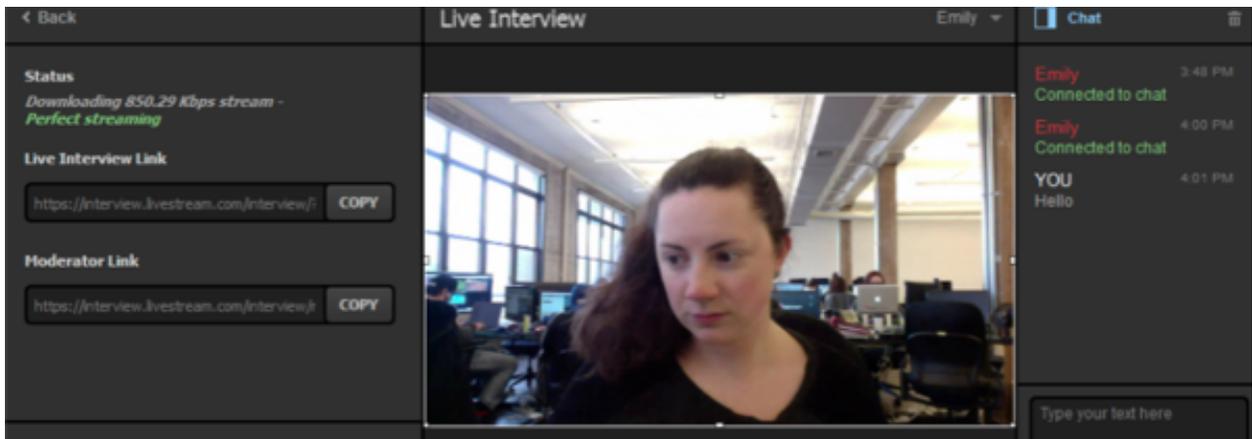
In Livestream Studio you will see this chat as well, allowing you to communicate with the guest.



You can bring in the guest's camera by clicking the dropdown in the upper right corner of the module and clicking his/her name. You can have as many guests as you wish in the list, but you can only select one guest at a time.



After clicking a name, the guest's camera will be available as a remote camera source, which you can switch to whenever you are ready.

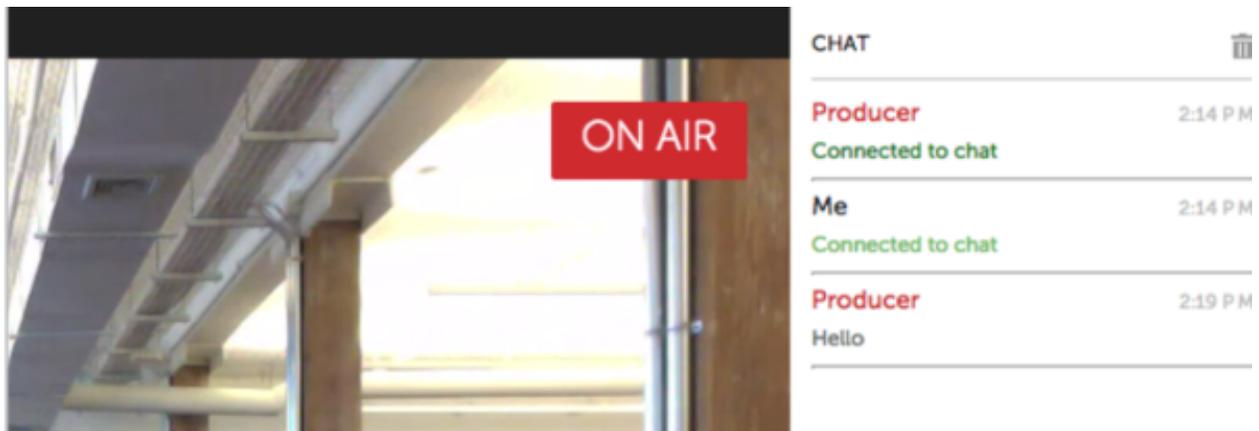


The guest's view will change to seeing their camera in the lower left corner and overlay a larger view of what is currently in Program. He/she will also hear Program audio and a Preview notification in the upper right-hand corner of the screen.



When the guest's camera is switched into Program, they will see a red On Air notification in the upper right-hand corner.

By default, the guest will hear Program audio but not hear their own audio, even when they are in Program.

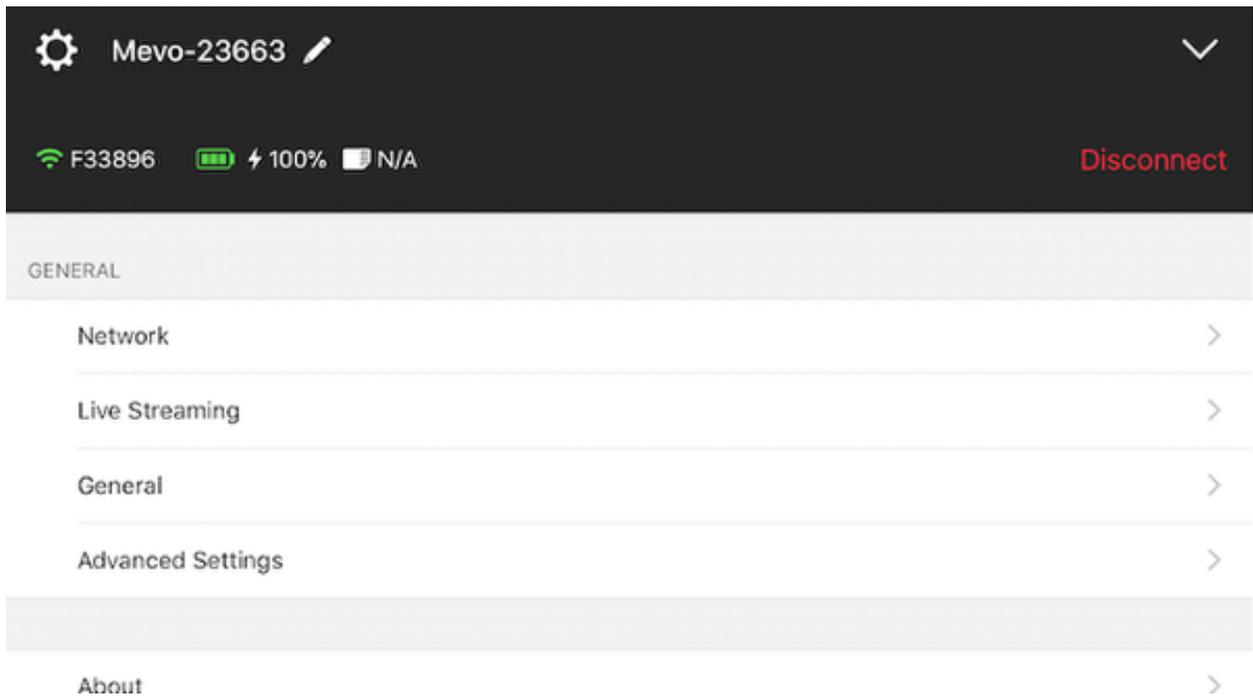


# Using Mevo as a Remote Camera

Livestream Studio can accept Mevo as a remote camera source when connected to the same network.

Make sure that your Mevo is turned on and connected to the same local network as your Livestream Studio machine.

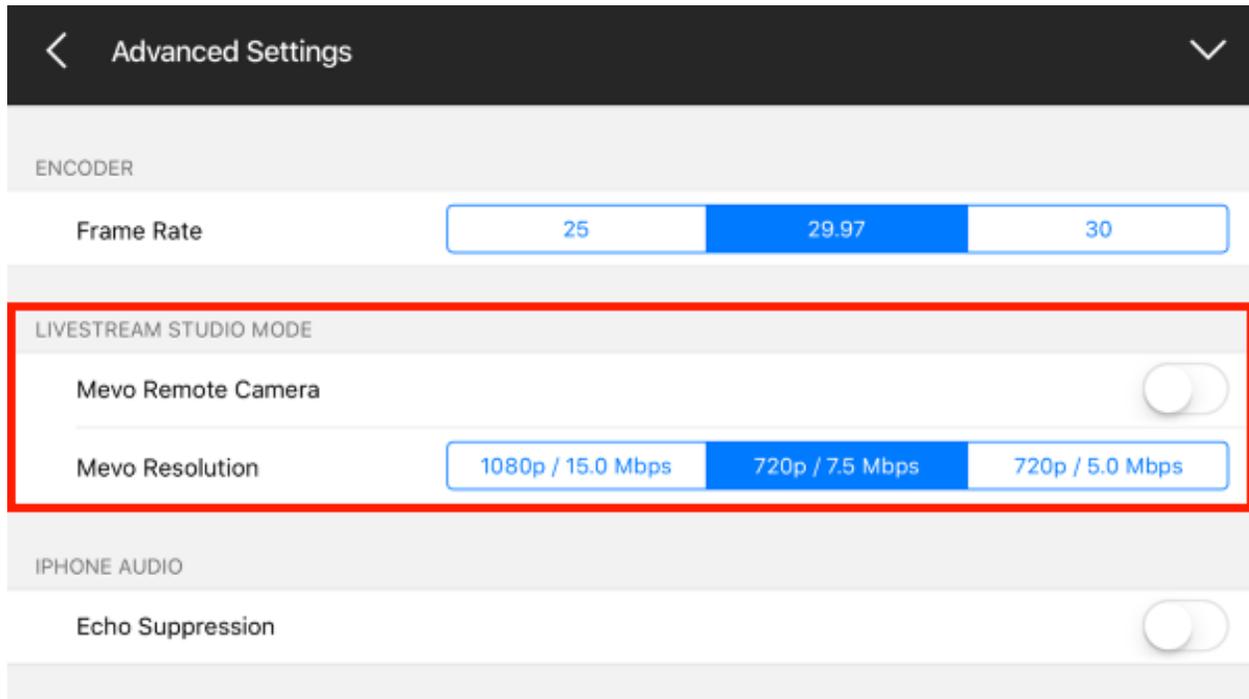
Launch the Mevo app and navigate to the main menu. Choose **Advanced Settings**.



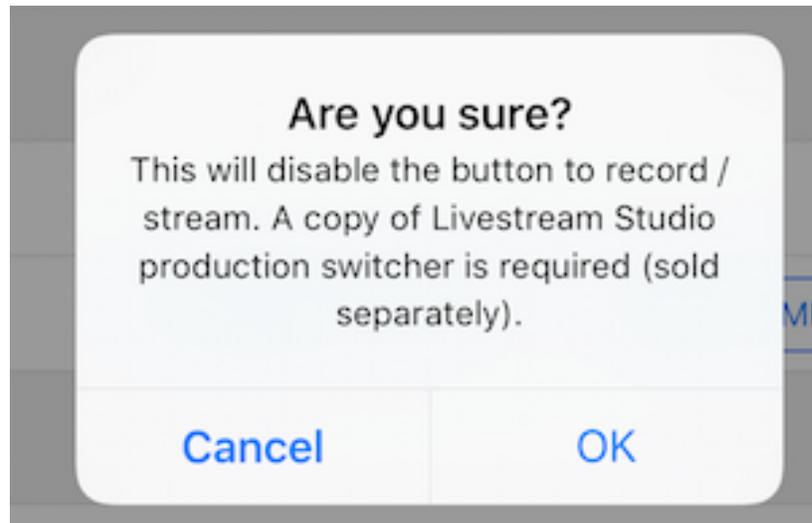
You will see a section for **Livestream Studio Mode**. Choose your desired resolution and bitrate for your camera's output into Studio, then toggle on the **Mevo Remote Camera** switch.

 You cannot change your resolution while remote camera mode is enabled.

 Selecting 1080p / 15.0Mbps will disable all Camera Assistant features (Face Detection, Live Follow, Auto Pilot, Static Shots)



This notification will pop up, which is simply to notify you that you are changing your camera's use and that it is only functional with Studio. You may toggle the switch back off at any time.



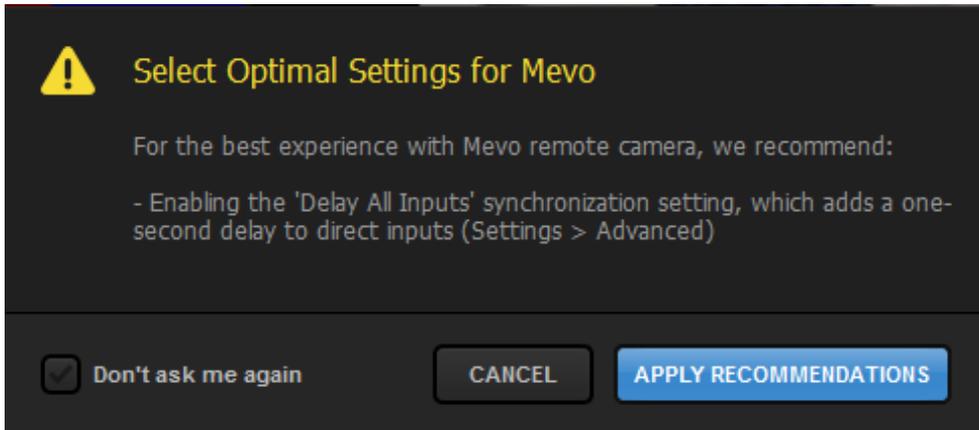
Your Mevo will appear at an Remote Camera option in Studio. Select it to see your camera's output in Studio.

 If you have re-named your Mevo in the app, be aware that it will still show up in Studio with its original identification number.

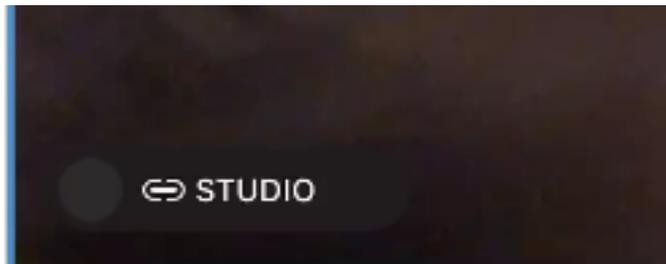


The below message will prompt you to change some settings in Studio to improve the experience with Mevo remote camera. Clicking Apply Recommendations will set all

direct inputs to be delayed by one second, syncing them with Mevo and any other remote camera sources.

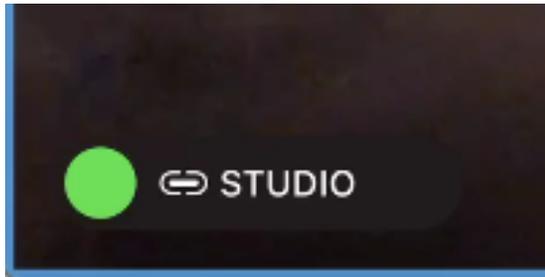


In the Mevo app, you will notice the bottom left corner now shows a dark gray button indicating it is linked to Studio but is not currently in Preview or Program. If you tap this button, the option to push it to the Preview (PRV) or Program (PGM) monitors in Studio will appear.

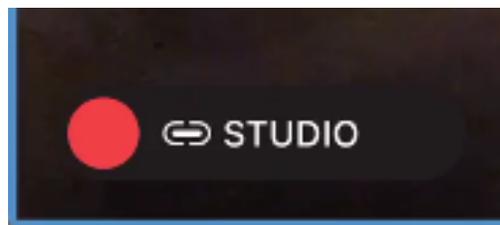
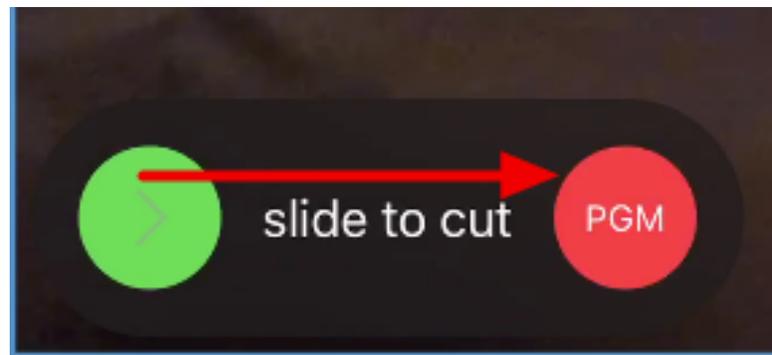


Use your finger to slide the gray button to either PRV or PGM to put your Mevo into either Preview or Program in Studio, respectively





Once Mevo is in the Preview or Program monitor, tap the button again and slide it to switch it between the monitors in Studio.



While Mevo is being used a Remote Camera in Studio, you may still live edit your Mevo shot in your Mevo app. Your Mevo will output this live editing to Studio, just as it would to a local recording or Mevo stream to Livestream or Facebook Live.

-  You cannot start a separate Mevo stream to Livestream or Facebook Live while Studio Remote Camera Mode is enabled. You also cannot record to a microSD card inside the camera while in Studio Remote Camera Mode.



Once your Mevo is connected, [check here](#) for best practices and recommendations for using Mevo as a remote camera source.

## Troubleshooting

If you are not seeing any options on the list within the Remote Cam tabs, please check the following:

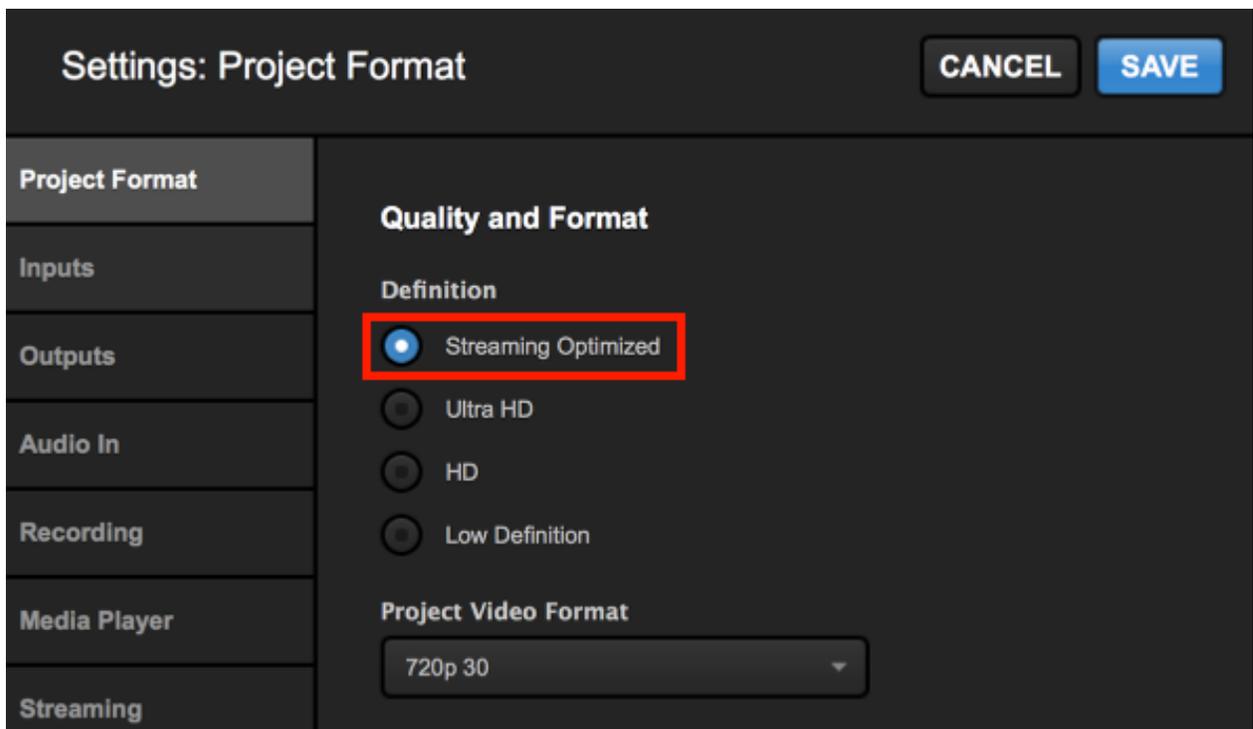
- Make sure the remote system is on the same network, connected to the same Router or Access Point as your Studio system.
  - If the system is on the same network but using a different access point, the Remote Camera will not properly connect.
- Check that the following ports are open if you use a firewall:
  - UDP: 5353, 60936 - 61036
  - TCP: 60936 - 61036
- Check that Bonjour Service is [started](#).

# Best Practices for Mevo as a Remote Camera Source

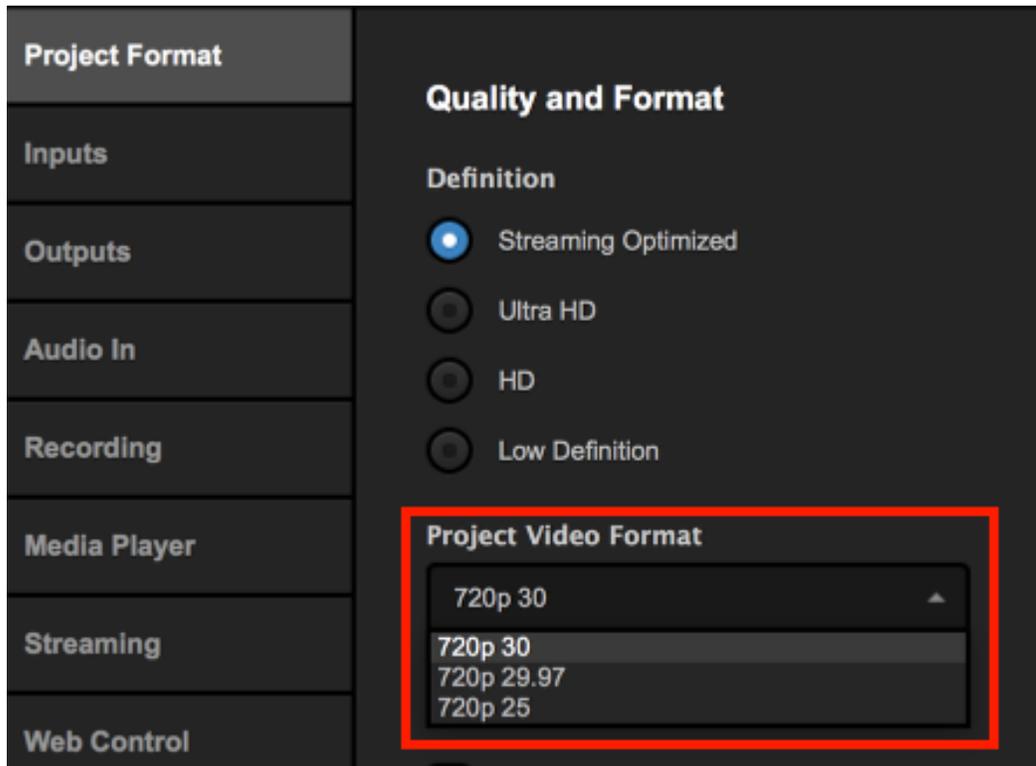
If you intend to [use Mevo as a remote camera source](#) in Livestream Studio, our team has some configuration recommendations for optimal performance.

## Project Format

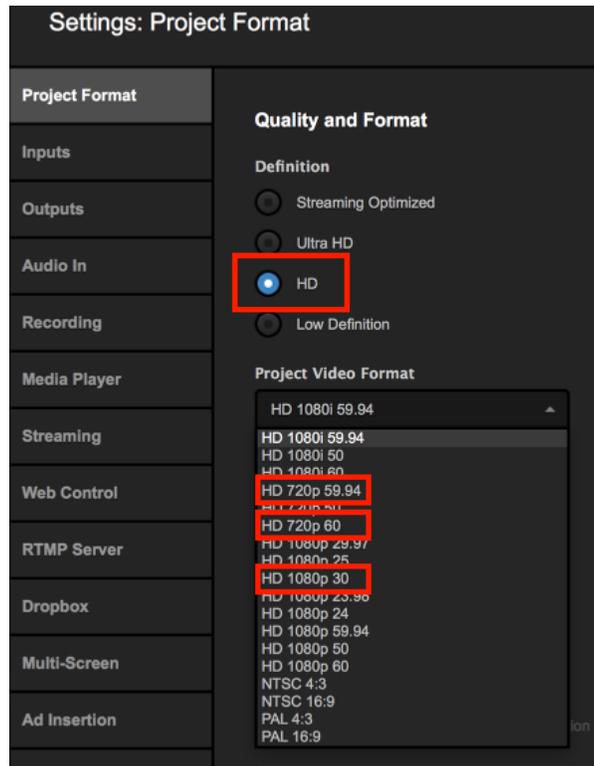
First, under Settings: Project Format, you should select Streaming Optimized.



Choose a Project Format that matches your Mevo's Frame Rate. Doing this will match the Mevo's video resolution and frame rate, therefore increasing the quality while also reducing CPU usage that would otherwise be used to resize the Mevo's video feed.



If you need to output from Studio via HDMI or SDI, then you will need to select an HD format. In Settings: Project Format, change the Broadcast Standard to HD. This in case, we recommend using either 720p59.94, 720p60, or 1080p30. These will produce the best image quality but will increase CPU usage.



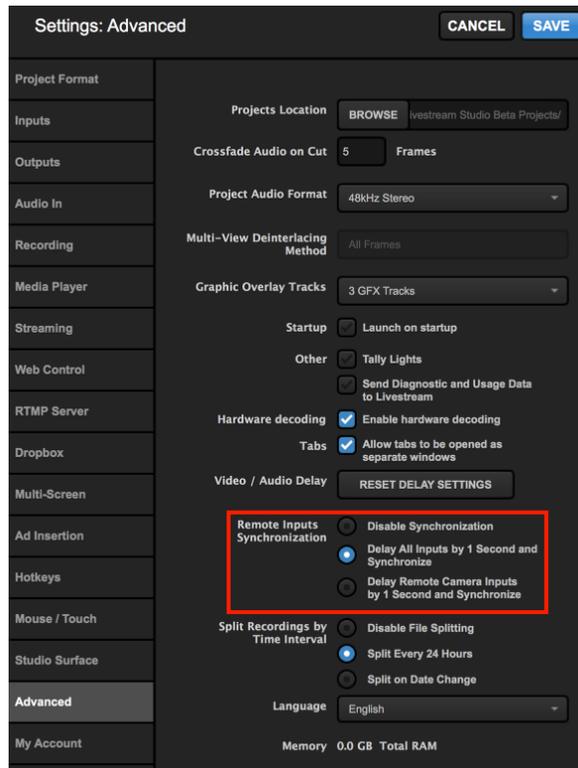
When you select your Project Format, click Save.

## Camera Synchronization

To avoid sync issues, it's best that you set your direct input sources to be delayed by one second. Studio has an easy setting to do this.

Click the gearwheel in the upper right corner of Studio, then click the **Advanced** tab.

Navigate to the **Remote Inputs Synchronization** setting and select **Delay All Inputs by 1 Second and Synchronize**. This will allow your wired inputs to compensate for the latency experienced by wireless sources (in this case, Mevo) and sync them together.



Be sure to save your settings.

# Bringing an iOS Camera Signal into Livestream Studio

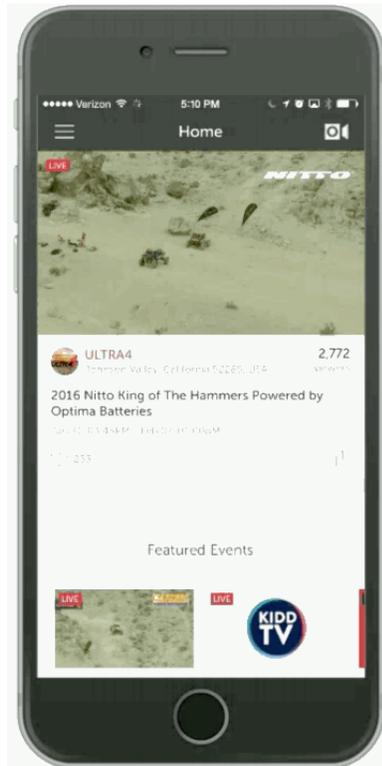
Livestream Studio allows you to use your iOS device as a remote camera source. You will need a Livestream account in order to use this feature.

[Download](#) the Livestream iOS application.

Connect your iOS device via Wi-Fi to the same network as your Livestream Studio system. Open the Livestream iOS application, tap the menu icon in the upper right, then tap the gear wheel. This will open the application settings.

Tap "Studio Remote Camera" and make sure Studio Remote Camera is enabled.

Then select the blue Livestream Studio Remote Camera bar.



If you have not added a remote camera as an input, go to **Settings: Inputs**. Click the **+** button to add a new input and select **Remote Camera** from the video input drop-down menu.

Open the **Remote Cam** tab. You will find a list of all remote camera devices currently connected to your network. Find your iOS device from the list of devices. Now you use your iOS Device as a camera source in your Livestream Studio production.



If you click on the gear wheel next to your remote iOS source, you can change settings such as which camera is being used and at what resolution.

## Troubleshooting

If you are not seeing any options on the list within the Remote Cam tabs, please check the following:

- Make sure the remote system is on the same network, connected to the same Router or Access Point as your Studio system.
  - If the system is on the same network but using a different access point, the Remote Camera will not properly connect.
- Check that the following ports are open if you use a firewall:
  - UDP: 5353, 60936 - 61036
  - TCP: 60936 - 61036
- Check that Bonjour Service is [started](#).

# Bringing a Broadcaster Signal into Livestream Studio

Livestream Studio allows you to use your Livestream Broadcaster device as a remote camera source.

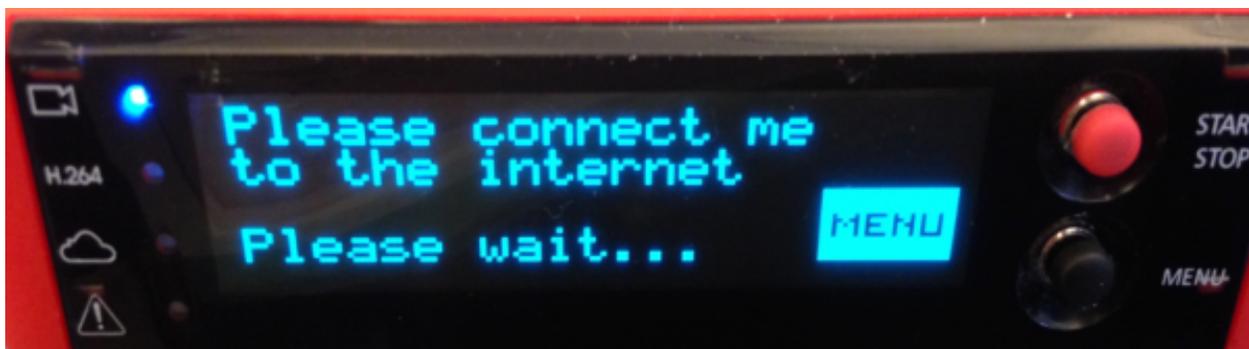
Connect your Broadcaster to the same network as the Livestream Studio computer.

In Studio, make sure you have added a remote camera as an input.

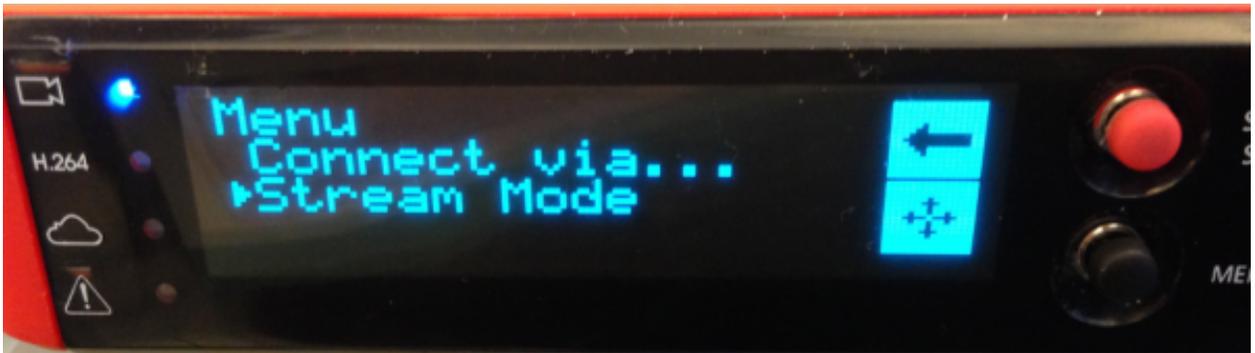
If you have not yet done this, open your Studio settings and select the **Inputs** tab. Click the **+** button to add a new input and select **Remote Camera** from the drop-down menu.

## Livestream Broadcaster Pro

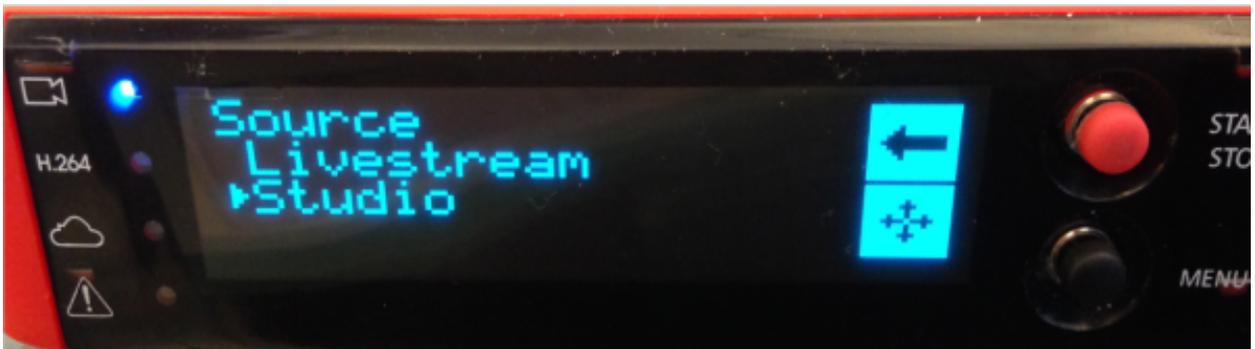
Power on the device and use the bottom Menu joystick to connect it to the same network that your Livestream Studio system is connected to.



After connecting it, push in the joystick to enter the menu and select Stream Mode.



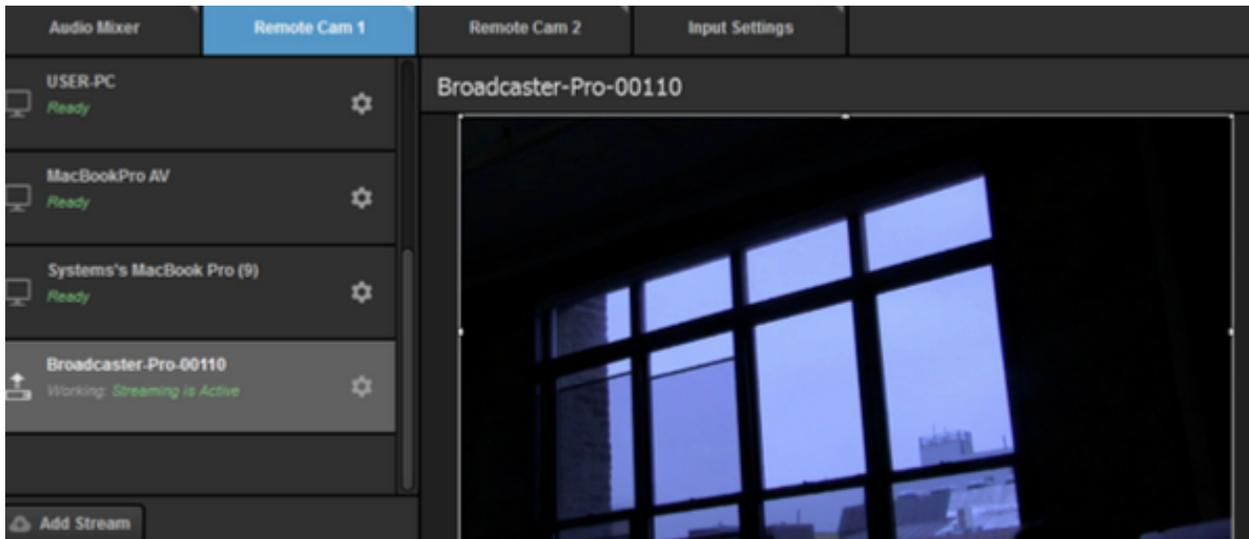
Toggle the joystick to Studio.



The Broadcaster Pro will indicate that it is connected and ready to send its signal to Livestream Studio.

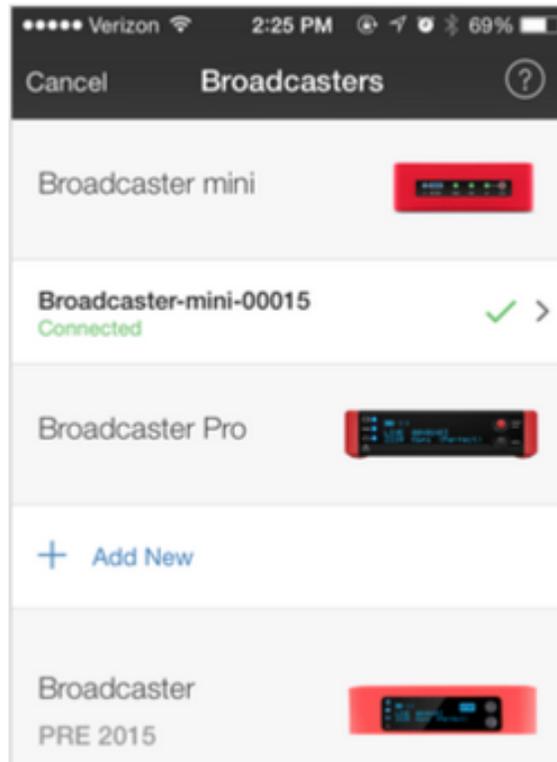


In Livestream Studio, you will see your Broadcaster Pro appear as a source under the Remote Camera module. Click on it to preview it. You will see your camera source appear and the Broadcaster Pro will indicate that it is now streaming a signal to your Livestream Studio.



## Livestream Broadcaster mini

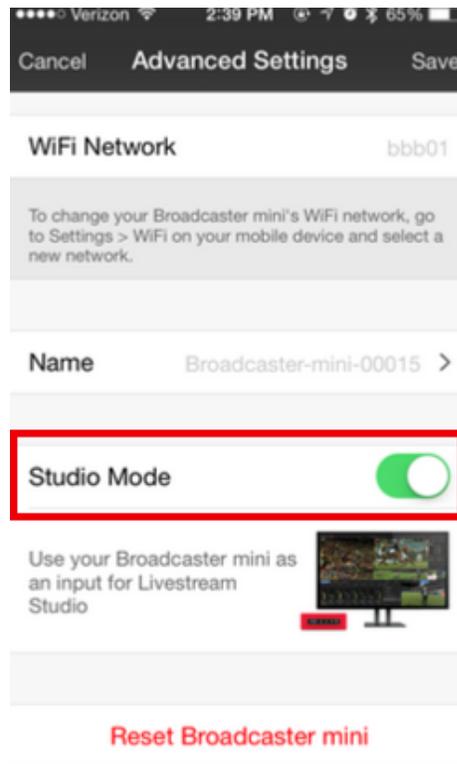
You can also connect a Broadcaster mini to Livestream Studio as a remote camera. When you finish [pairing it through the Livestream app](#), using the same network your Livestream Studio system is connected to, select it from the Broadcaster list.



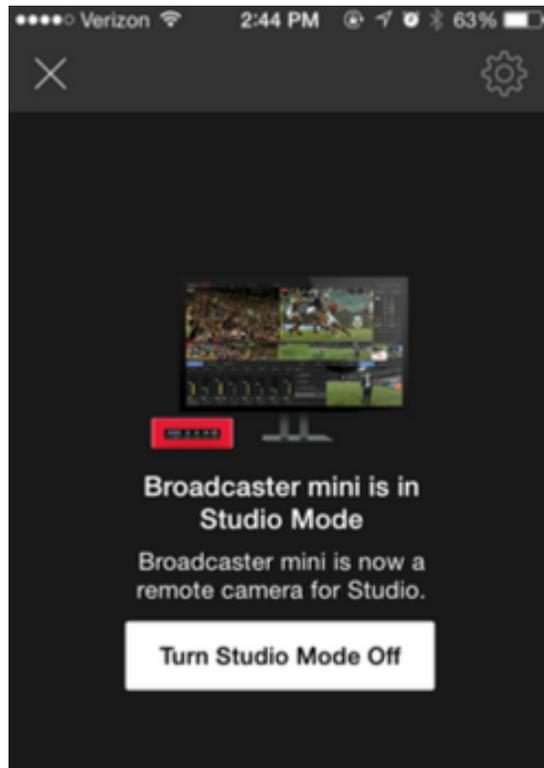
It will open the camera view finder. Click on the gearwheel in the top right corner to access settings.



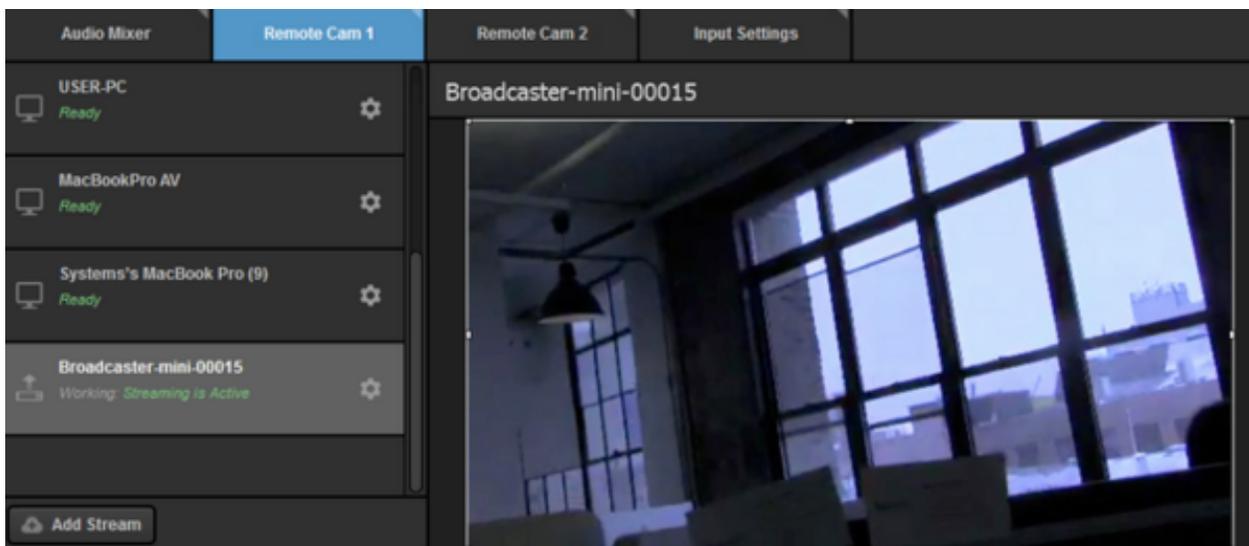
Scroll down and you will see Studio Mode. Toggle the switch on (green) to enable Studio Mode. Then click Save in the upper right corner.



The mobile app will indicate that your Broadcaster mini is in Studio mode.



In Livestream Studio, your Broadcaster mini will appear in the list of remote cameras. Click on it to preview your camera source and switch it into Studio's Program monitor as desired.



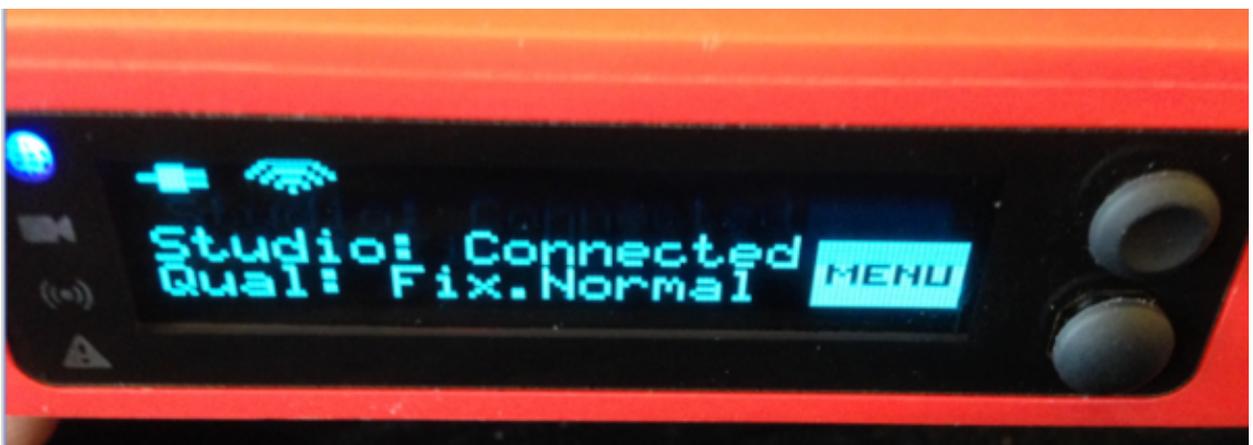
## Livestream Broadcaster (V1)

Bringing a Broadcaster into Livestream Studio as a remote camera is very similar to bringing the first Broadcaster into Livestream Studio.

Select Stream Mode from the Broadcaster menu, and then select Studio.



This will activate your Broadcaster as a live remote camera source.



Select the Remote Cam tab. If your Broadcaster is on the same network as your Studio system, it will automatically appear in the list and you can add it to your production.

## Troubleshooting

If you are not seeing any options on the list within the Remote Cam tabs, please check the following:

- Make sure the remote system is on the same network, connected to the same Router or Access Point as your Studio system.
  - If the system is on the same network but using a different access point, the Remote Camera will not properly connect.
- Check that the following ports are open if you use a firewall:
  - UDP: 5353, 60936 - 61036
  - TCP: 60936 - 61036
- Check that Bonjour Service is [started](#).

# Bringing an Android Camera Signal into Livestream Studio

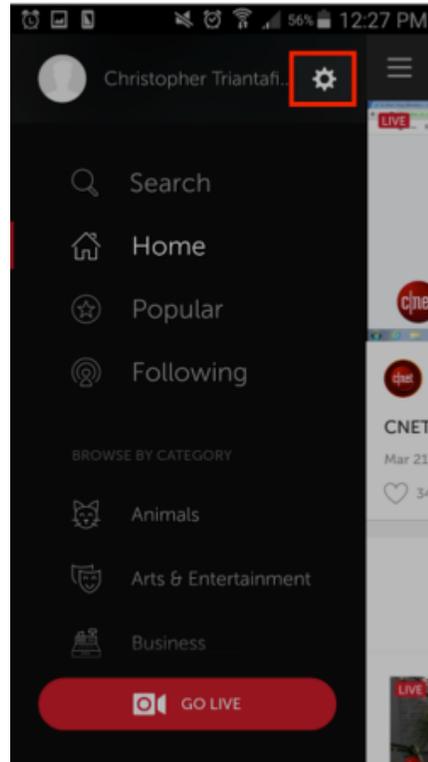
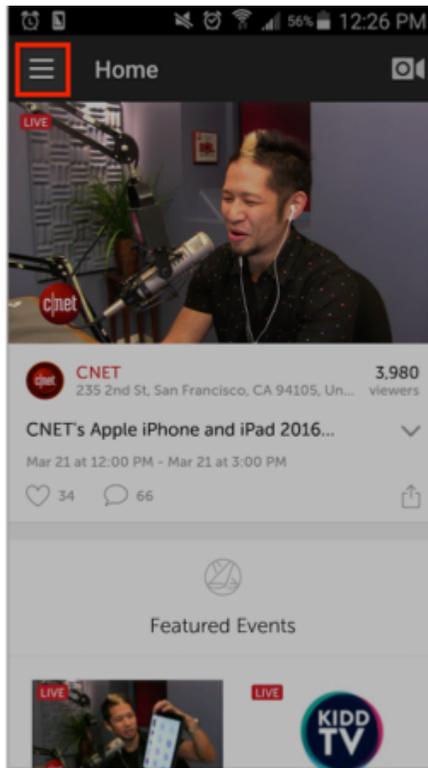
Livestream Studio allows you to use your Android device as a remote camera source. You will need a Livestream account in order to use this feature.

[Download](#) the Livestream Android application.

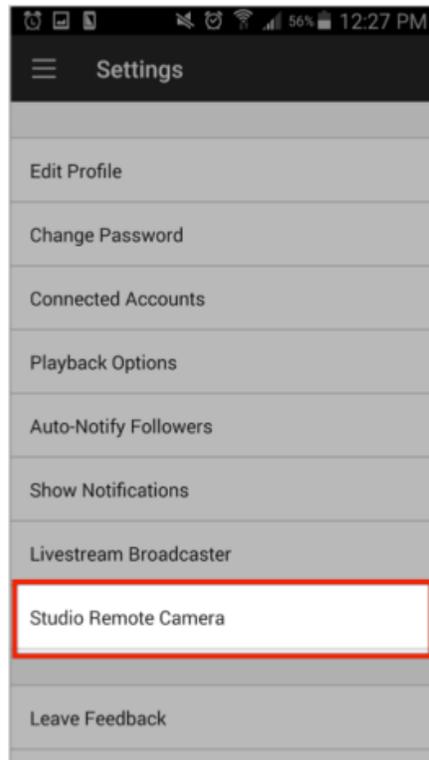
 You must be running Android version 4.0 or higher in order to install the Livestream app on Android devices.

Connect your Android device via Wi-Fi to the same network that your Livestream Studio system is connected to.

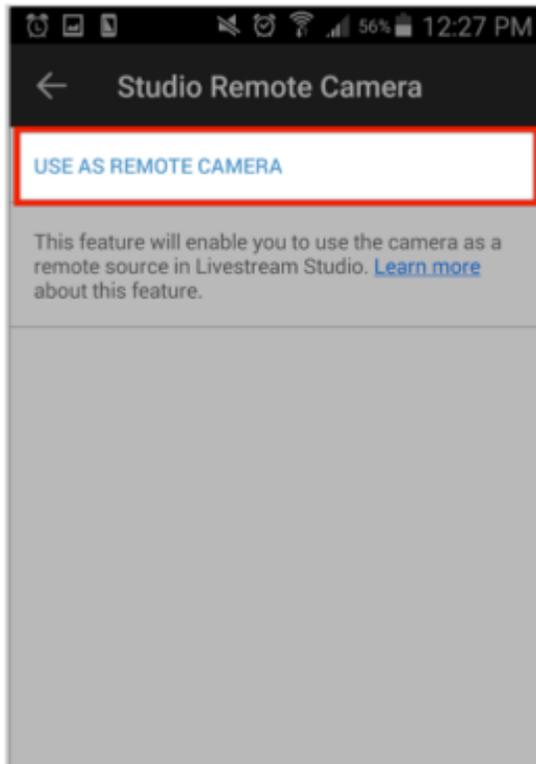
Open the Livestream Android application and tap the menu icon in the upper left corner, then the gearwheel.



This will open your settings menu. Tap Studio Remote Camera.

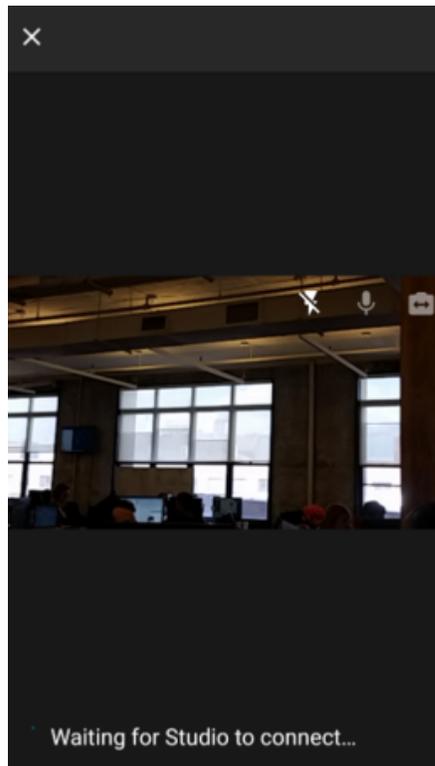


Tap Use as Remote Camera.



This will activate your Android device as a live Remote Camera source. The notification will read "Waiting for Studio to connect..."

💡 You can hold your camera at portrait or landscape mode; the picture will still hold a 16:9 aspect ratio.



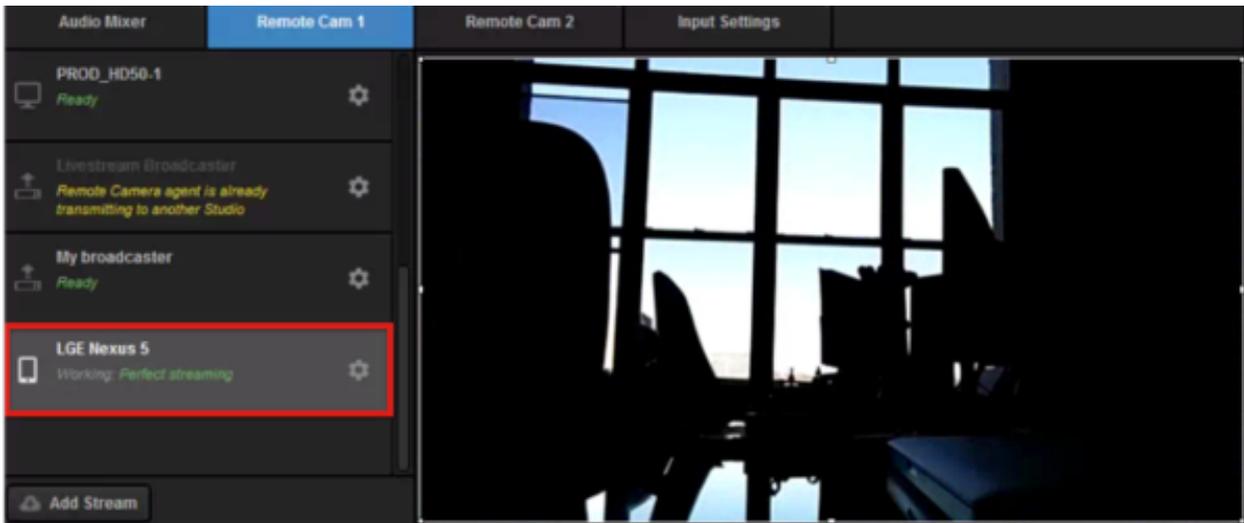
In Studio, ensure you have added a Remote Camera as an input.

- If you have not added a Remote Camera as an input, open your Studio settings and select the **Inputs** tab.
- Click the + button to add a new input and select **Remote Camera** from the drop-down menu.
- Save your changes.

In Studio, select the **Remote Cam** tab.

You will find a list of all remote camera devices currently connected to your network. You can click each remote camera device to reveal a preview.

Find your Android device from the list of devices.



Now you may use your Android Device as a Remote Camera source in your Livestream Studio production.

## Troubleshooting

If you are not seeing any options on the list within the Remote Cam tabs, please check the following:

- Make sure the remote system is on the same network, connected to the same Router or Access Point as your Studio system.
  - If the system is on the same network but using a different access point, the Remote Camera will not properly connect.
- Check that the following ports are open if you use a firewall:
  - UDP: 5353, 60936 - 61036
  - TCP: 60936 - 61036
- Check that Bonjour Service is [started](#).

# Connecting a GoPro Camera to Livestream Studio

Livestream Studio includes the ability to bring a GoPro Hero 4 as a remote camera source via the GoPro camera's built-in WiFi hotspot.



At this time, the GoPro Hero 4 Session and GoPro Hero 5 cannot be used as remote cameras in Livestream Studio. There is currently a known issue GoPro Hero 3 as a remote camera as well.

To connect a GoPro Hero 4 as a remote camera, first enable the WiFi on the camera by pressing the WiFi button the side of the camera (or by activating it within its settings).



GoPro Hero 4 Black will have lower latency (less than 1 second) than GoPro Hero 3 (1-2 seconds).



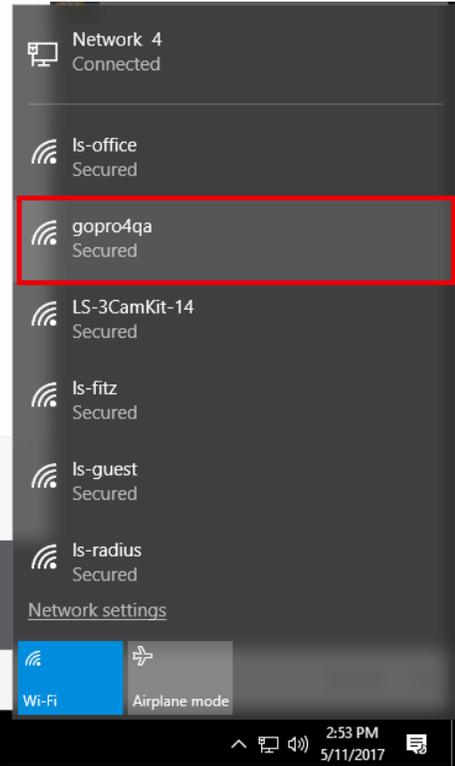
If your Livestream Studio system does not have a built-in Wi-Fi receiver\*, you can purchase a USB receiver, such as TP-LINK TL-WN727N 150Mbps, and plug it in to a USB port or a USB hub.

**i** \*Livestream Studio hardware products (HD31/HD51/HD510/HD1710, etc.) do not include built-in Wi-Fi receivers. Newer HD550's do have a Wi-Fi receiver built-in, but you will need an additional receiver if you intend to broadcast over Wi-Fi.

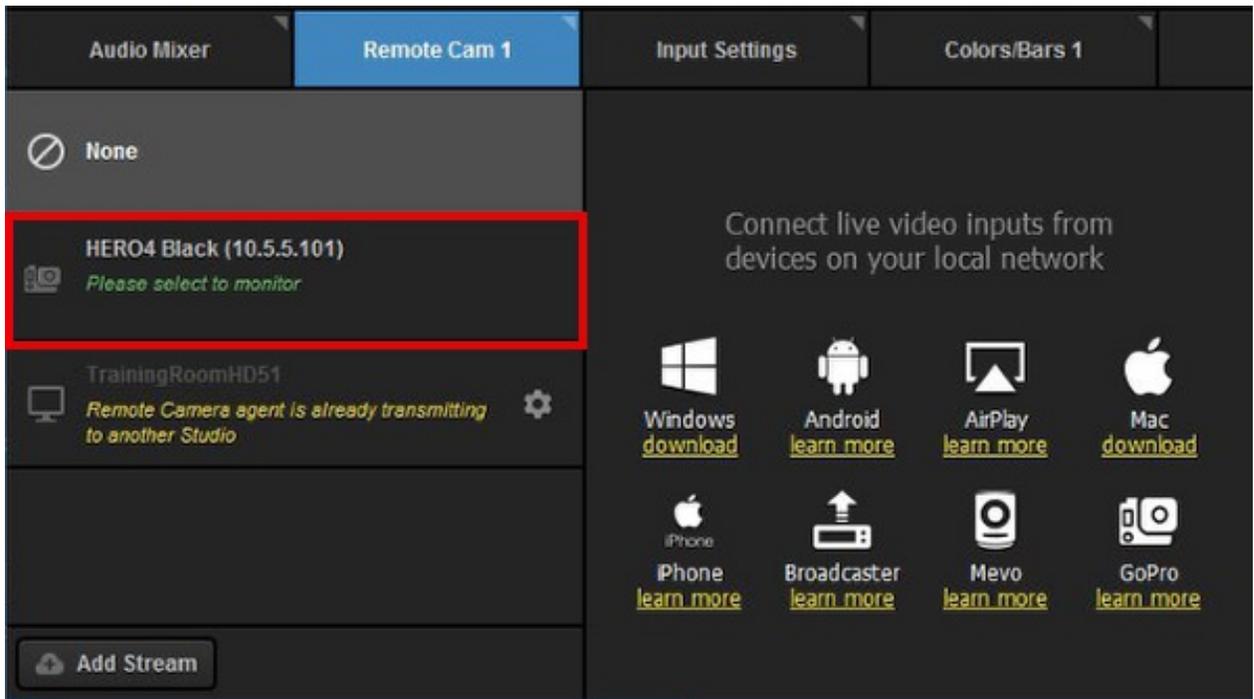


Check your system's network settings to ensure the Wi-Fi is enabled and connected to your GoPro camera.

- ❗ If you have secured your GoPro's Wi-Fi hotspot, you will need to enter the password in order for Livestream Studio to recognize it.

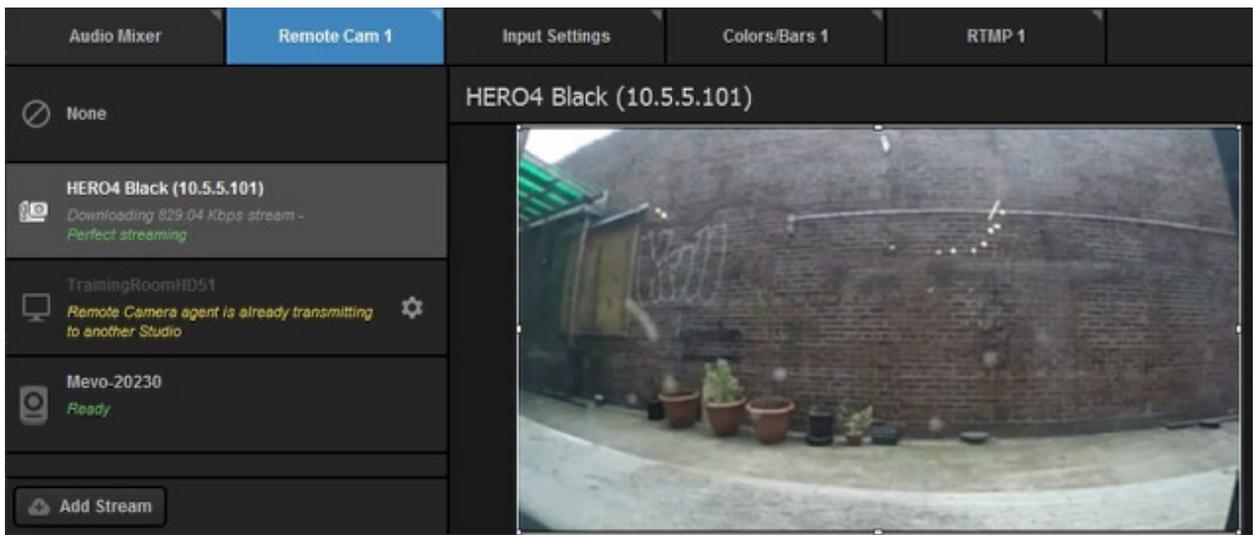


Once your system recognizes the GoPro's WiFi, the GoPro will appear as a source in your remote camera modules.



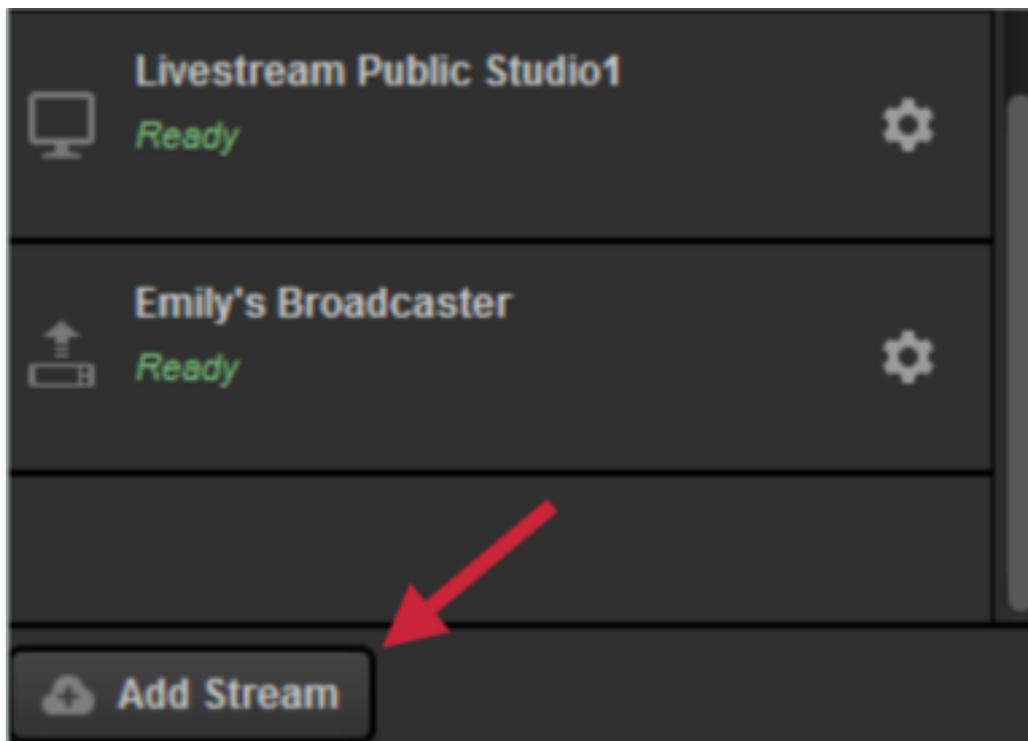
Select the GoPro to activate it. You can then switch it into Program as desired.

**i** Please note that the GoPro's wireless output to Studio does not exceed 240p. For the best quality, connect the GoPro to Studio directly via HDMI.



# Bringing Other Streams into Livestream Studio

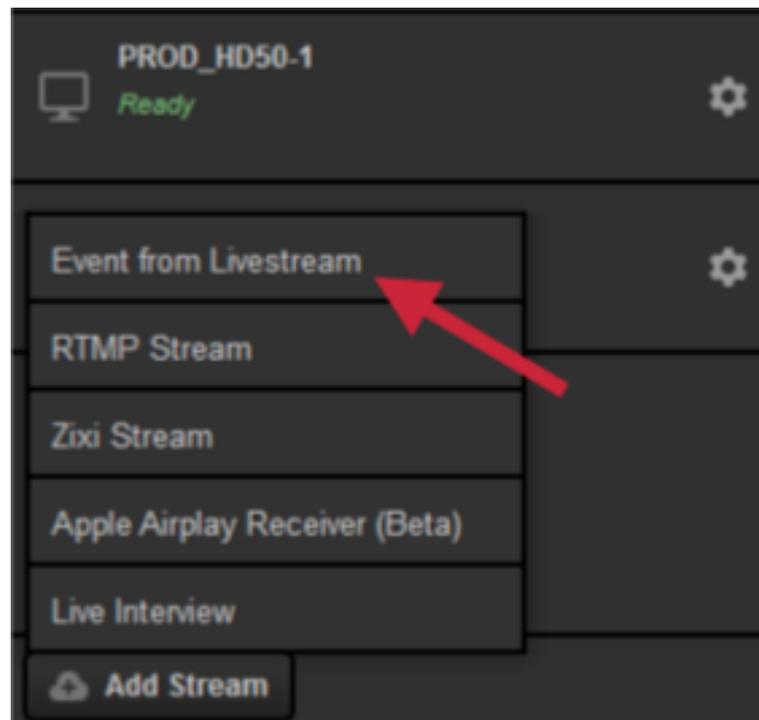
If you have a camera streaming to another destination, you can pull that stream into your Livestream Studio as a remote camera source by clicking 'Add Stream.'



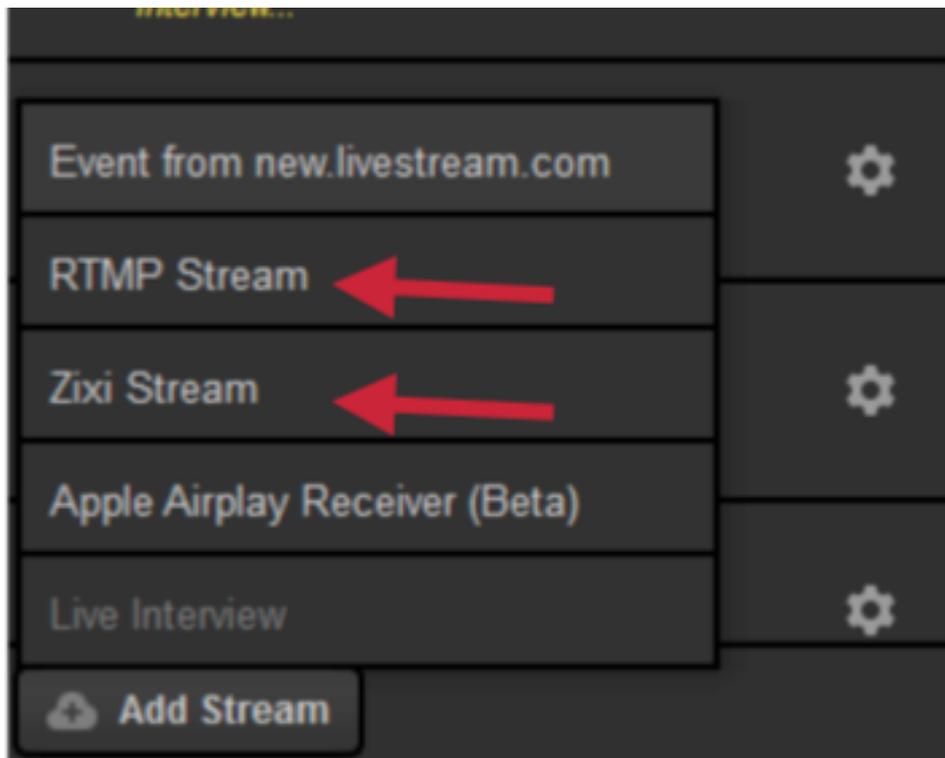
Clicking this will give you a few options.

The first option listed is Event from Livestream. This allows you to pull in a stream from an event on Livestream.com as a remote camera source.

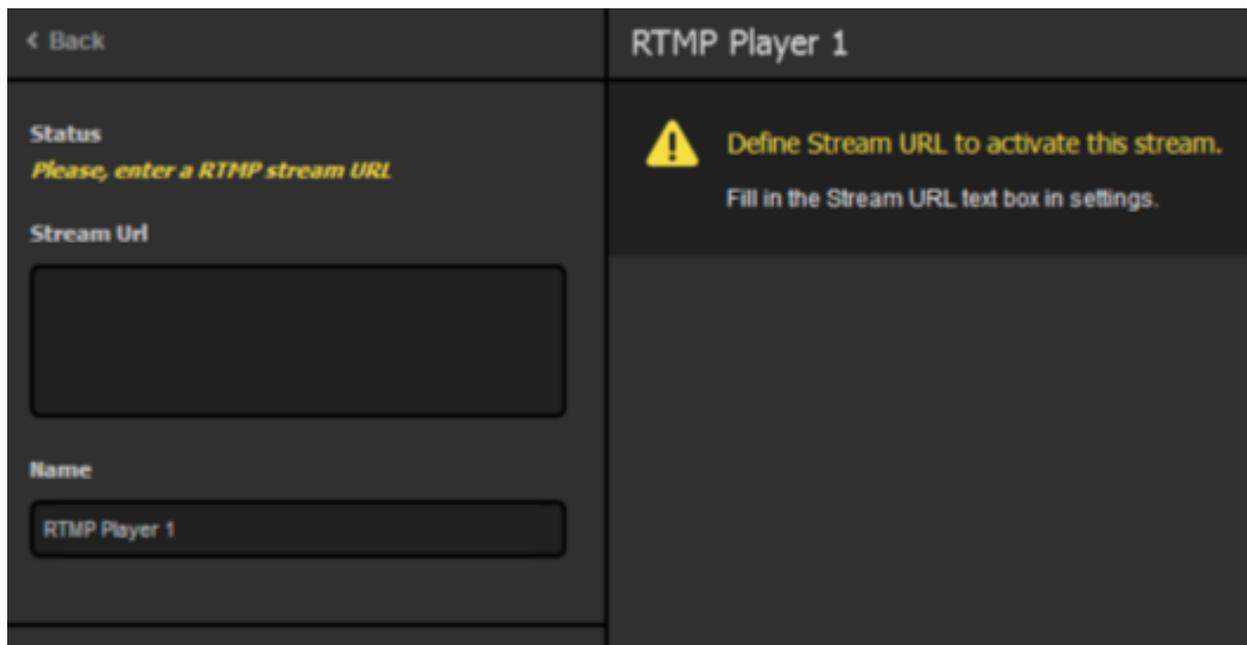
**i** You must have the login credentials for the account hosting the event you wish to bring in.



The next options are to pull in an RTMP or Zixi stream. Click Add Stream and select which one you are using.



Enter the appropriate playback URL for accessing the stream into the text box in the module, then press the Enter key.

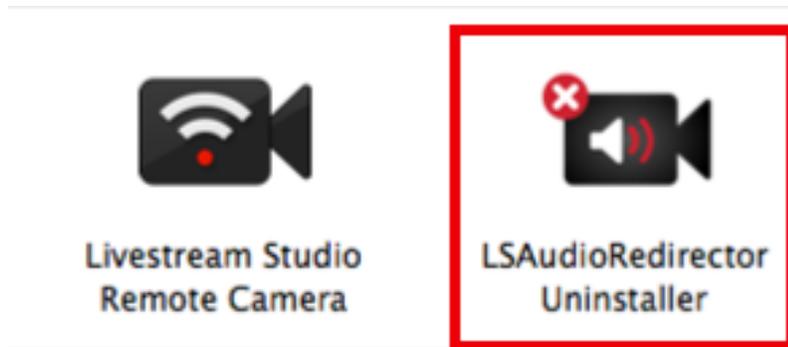


The stream will appear in the remote camera module. Expected latency will vary depending on connectivity strength, but will likely hover around ten seconds.

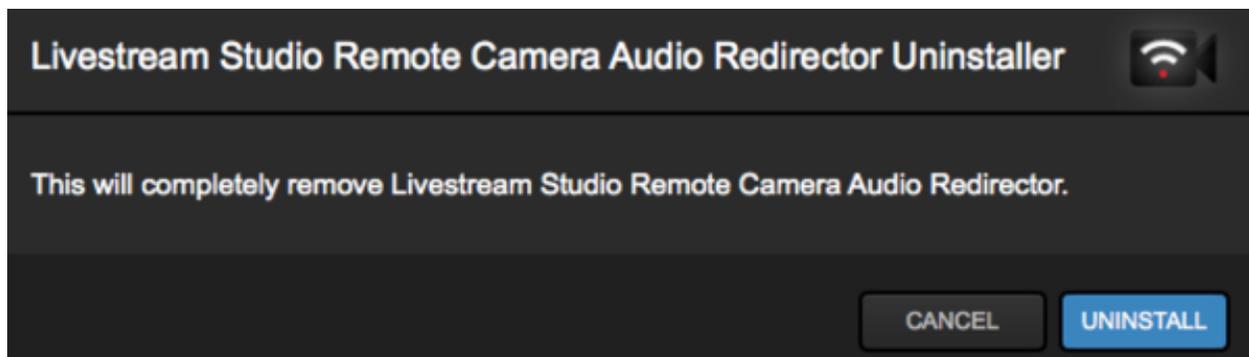


# Uninstall Mac OS X Remote Camera and Audio Redirector

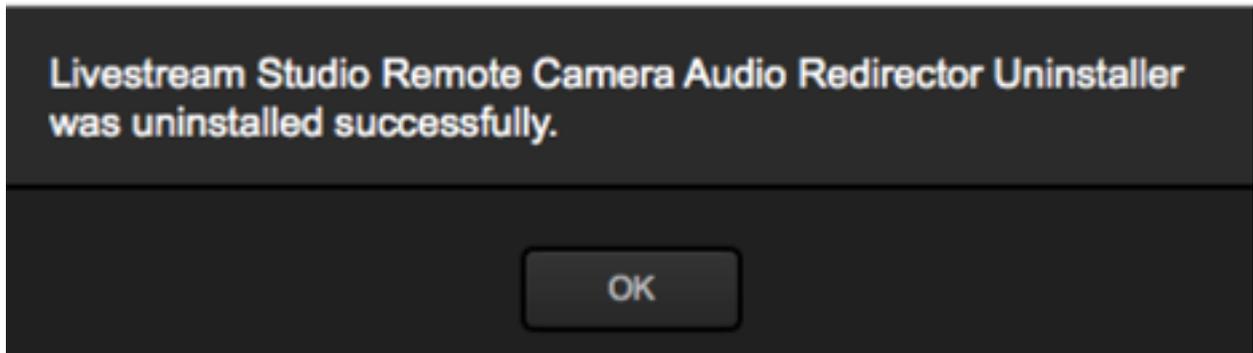
To uninstall the Remote Camera Desktop Audio Redirector, navigate to your Applications folder and locate the LSAudioRedirectorUninstaller application. Double-click it.



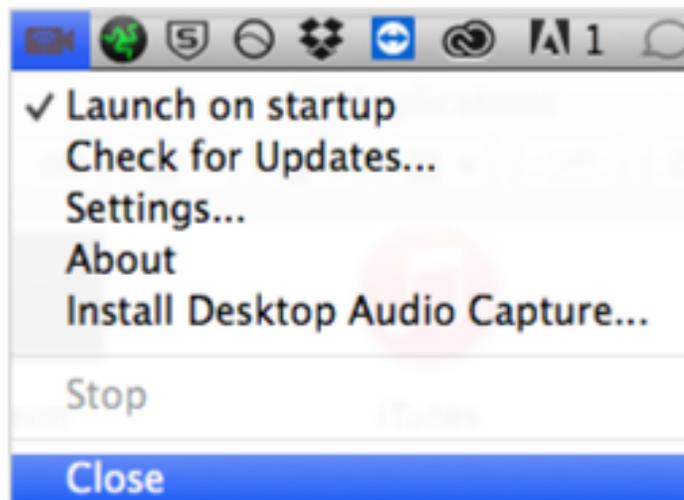
This message will pop up asking you to confirm that you want to uninstall the Audio Redirector. Click Uninstall.



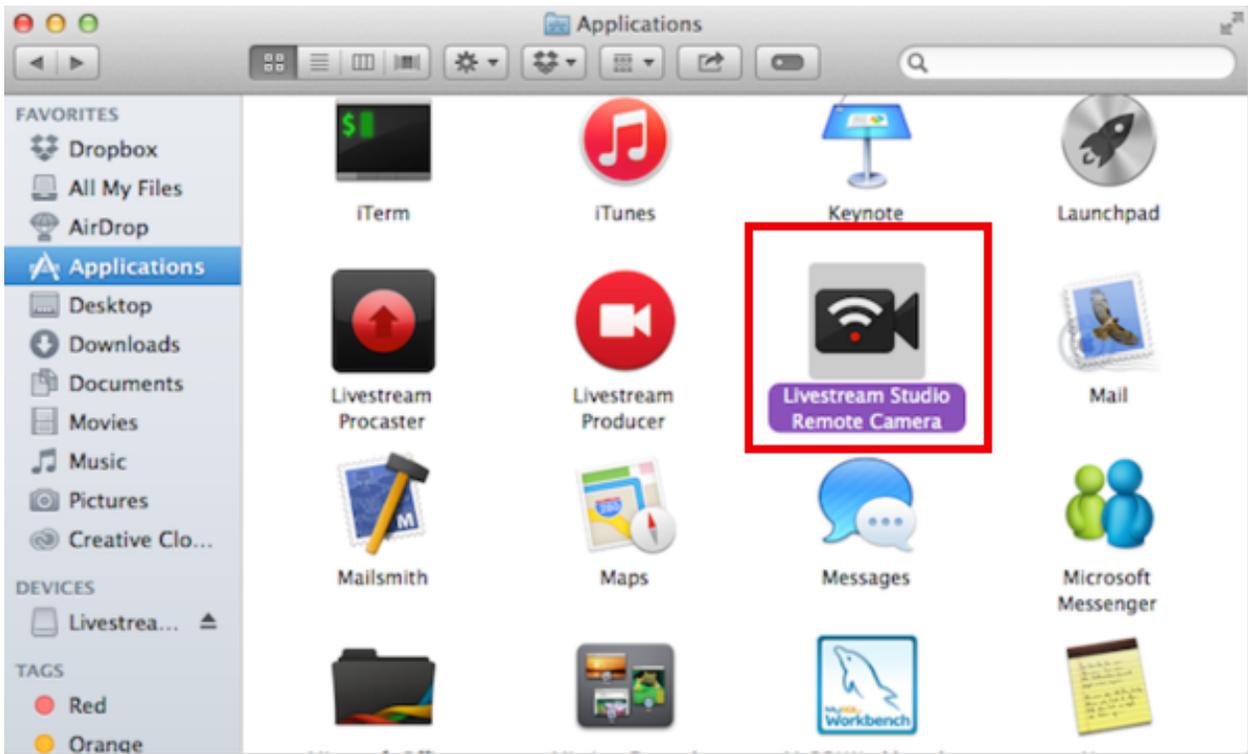
When the script finishes running, this message will pop up, confirming the Audio Redirector has been uninstalled successfully.



To uninstall the Remote Camera Desktop Client on a Mac system, first close the application by clicking the icon in the top menu bar.



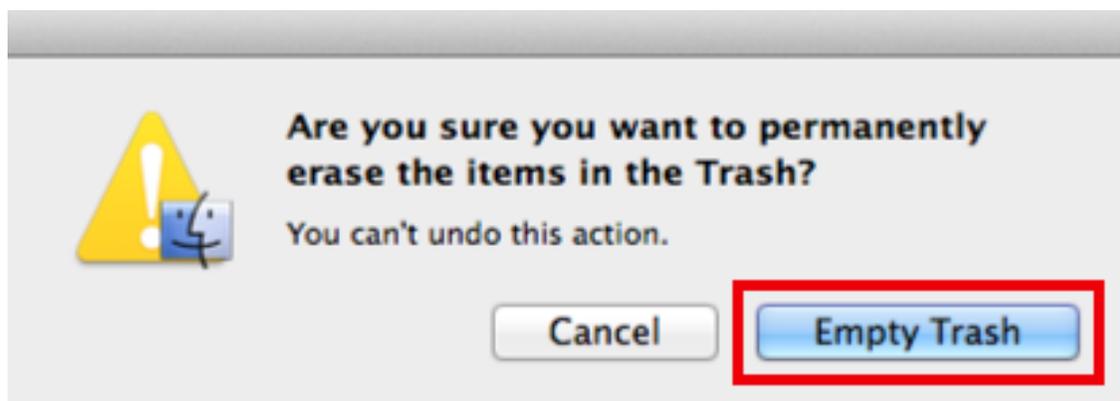
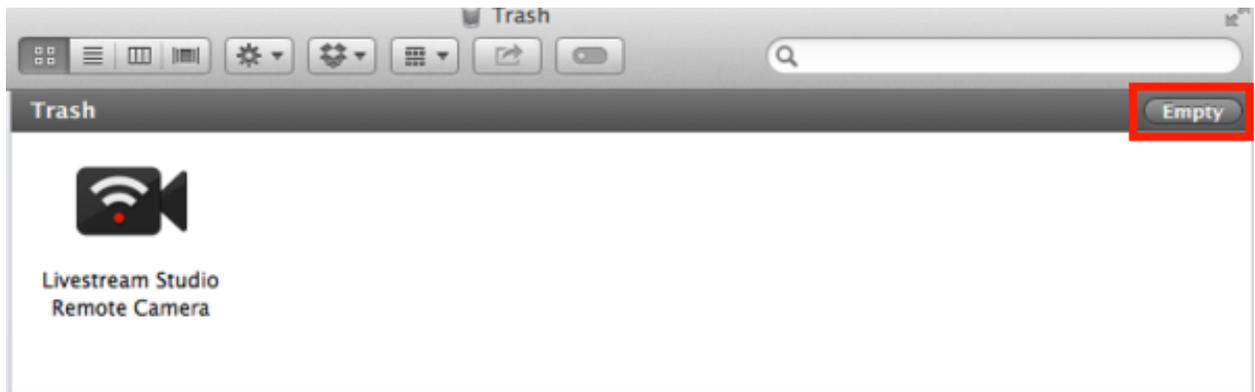
Locate the Remote Camera application in your Applications folder.



Drag the application to Trash.



Empty the trash.

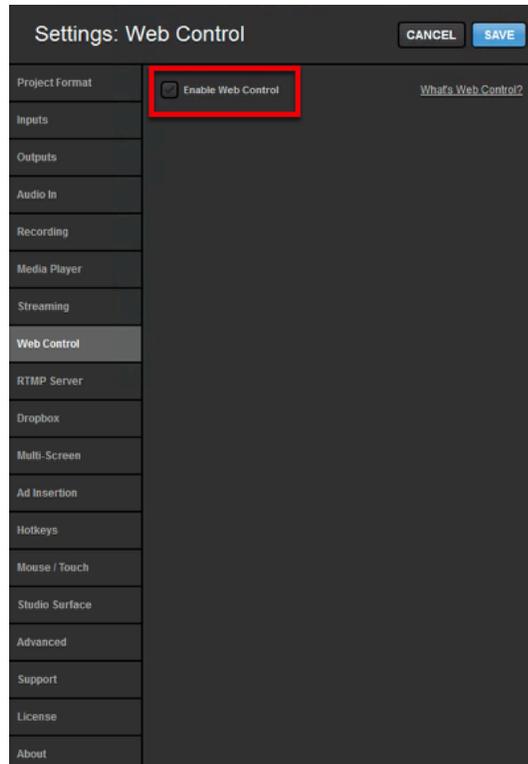


# Web Control

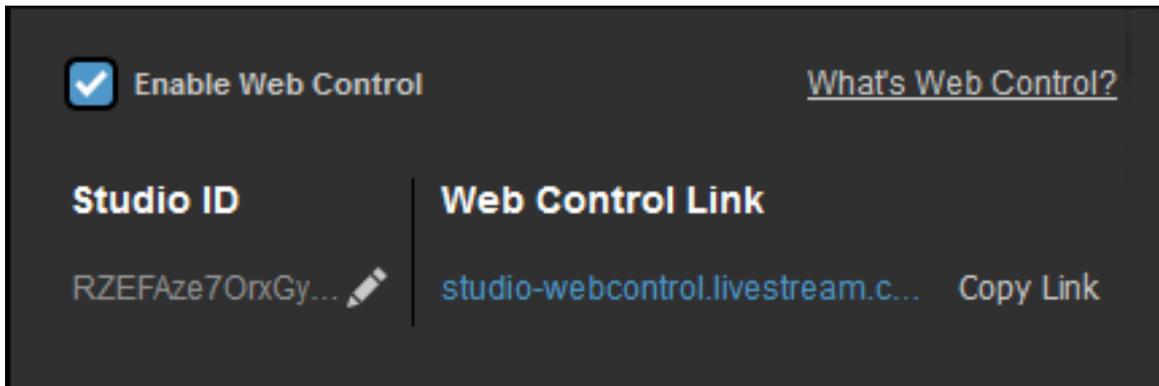
# What is Studio Web Control?

Now available with Studio 4.1, Studio Web Control allows you to give yourself or others access to a Livestream Studio system directly from a [supported browser](#).

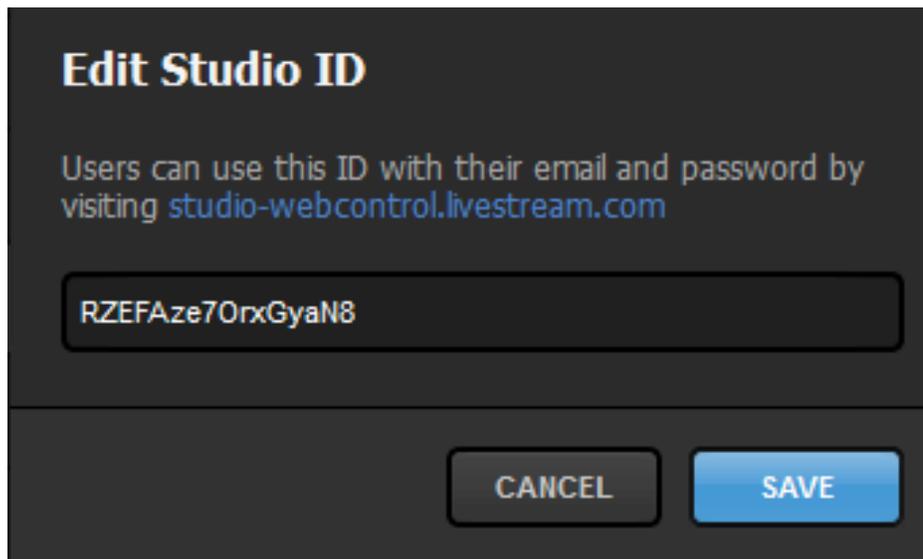
On your Studio system, go to settings, then click the **Web Control** tab. Click the checkbox next to **Enable Web Control** to see more options.



First, you will see a Studio ID and a Web Control Link. These are used to add users to your Studio system.



You can use the default ID that populates, or create your own by clicking the pencil icon to edit it. Click save when you are done, or cancel to keep the previous name.



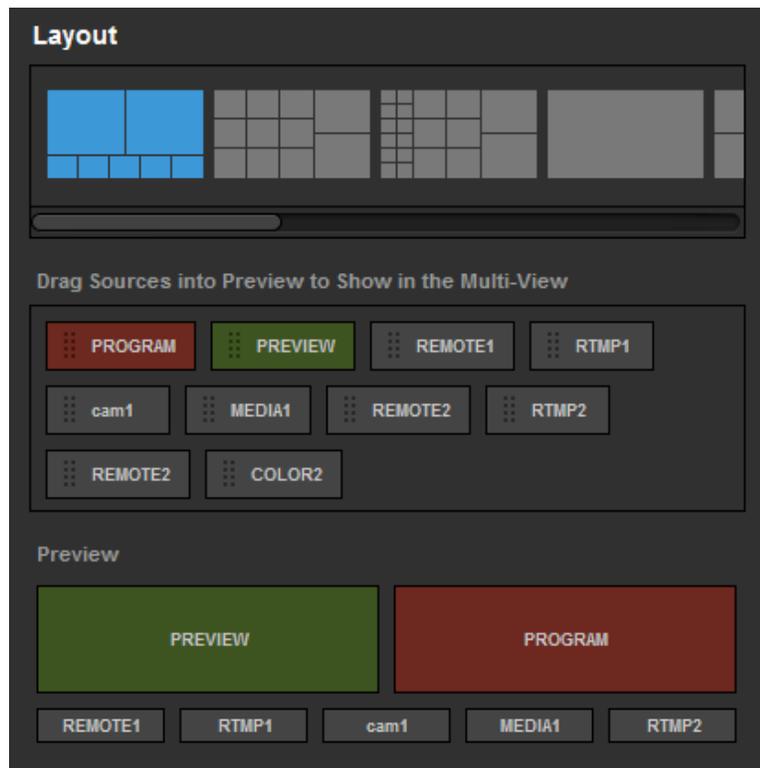
Below is your list of allowed users that you have invited to your Studio Web Control. You can also adjust how much access each user has to your Studio.

### Users

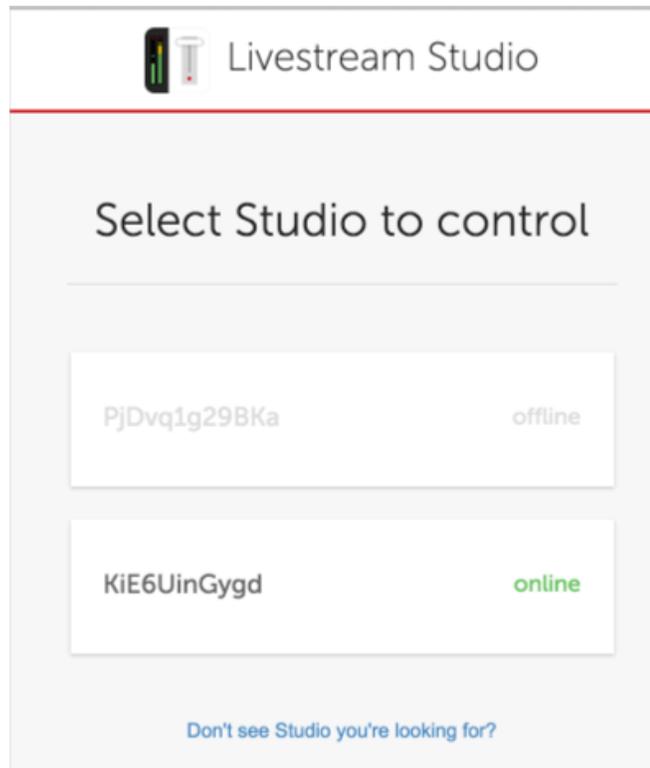
E-mail	Access to
[blurred]	Administrator ▾
[blurred]	Full Access ▾
[blurred]	Administrator ▾
[blurred]	Administrator ▾
[blurred]	Full Access ▾

+ -

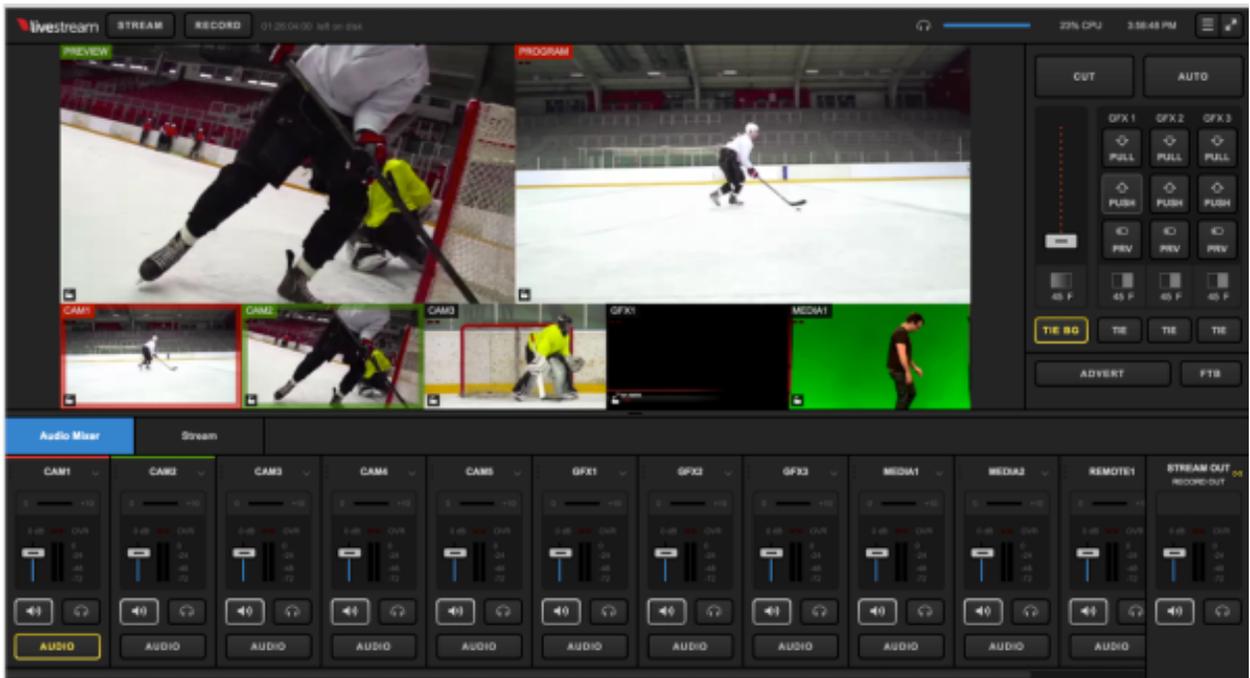
Finally you can choose how your Studio Web Control is laid out in the module below. Choose a layout and drag and drop sources you wish to see into the position you want them in.



When you log in to [Studio Web Control](#) using your Livestream or Vimeo account credentials, any Studio system you have been added to will be listed below as offline or online. Select your online Studio.



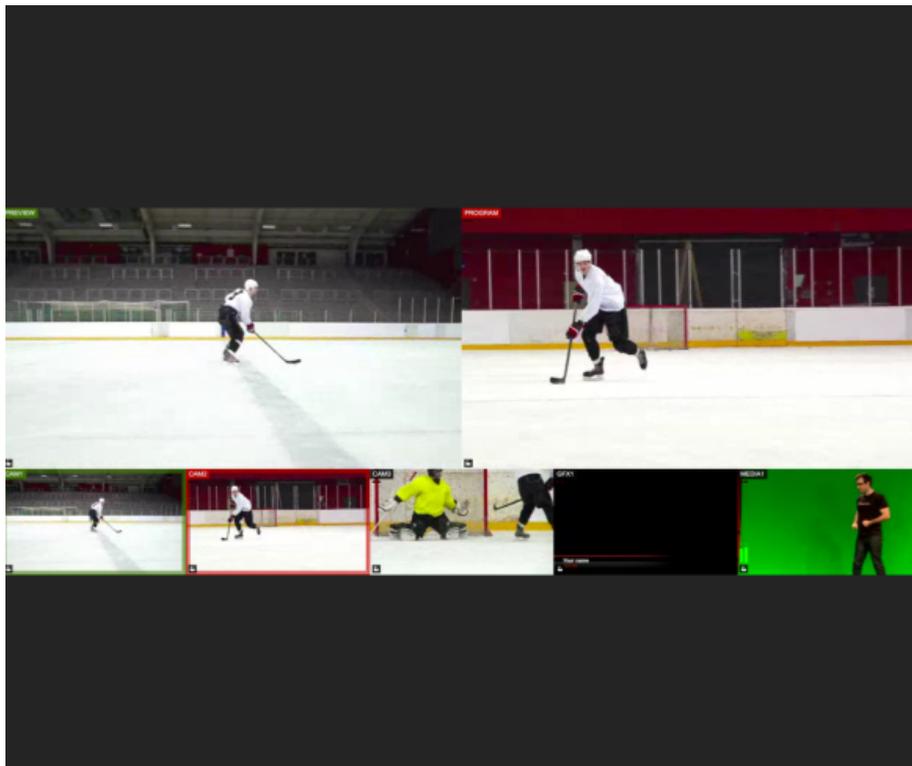
A window such as the one below will open for users granted Full Access:



Here is where those users will be able to see and control the multiview, control the audio mixer, operate the transition controls as well as insert mid-roll advertisements and fade to black. They can also click the menu icon in the upper right corner to change their view and log out.

Read only users will see a similar window to those given Full Access, with the exception of a 'Read Only' ribbon in the upper right control. These users can see every part of the interface that Full Access users can, but they cannot control it or make any changes.

Users granted access to the multiview will see something similar to below, depended on your layout settings.



They can click on the sources to put into Preview and Program. They can also click **Stream** and **Record** at the top of the module to go live and start recording, respectively.

Users granted access to controls only will see the audio mixer, stream module, [GFX modules](#), all the options seen under the transition controls. However they do not have the ability to see or control the multiview.

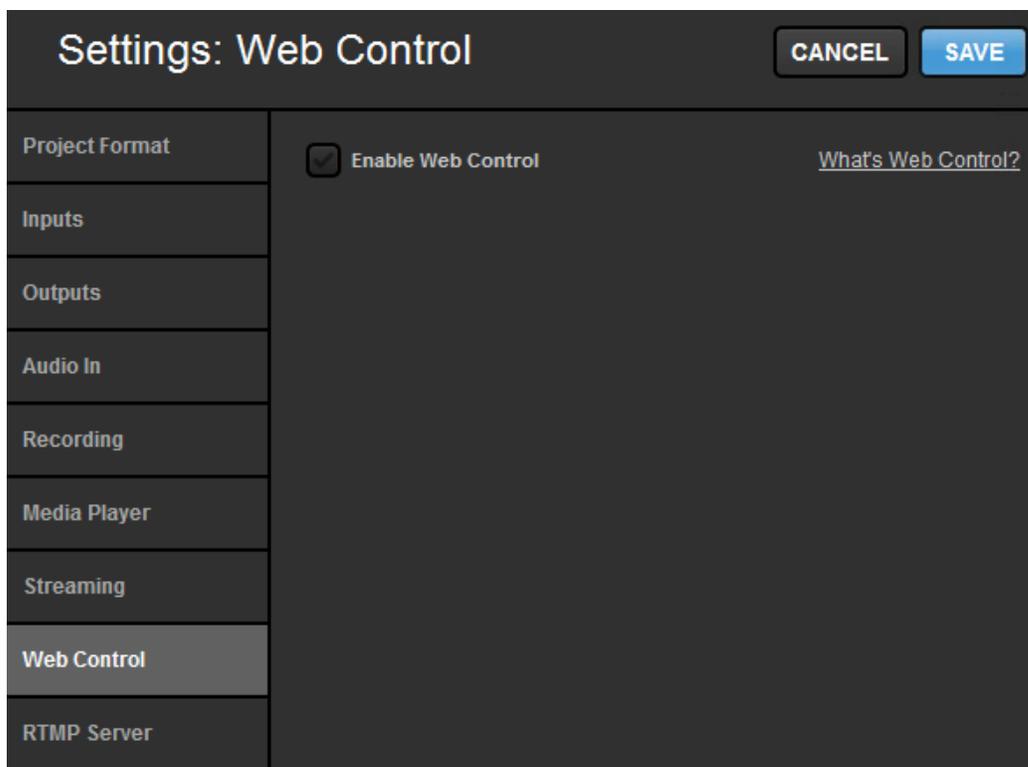


All users can log out of web control by click the menu icon in the upper right corner and clicking Log Out.

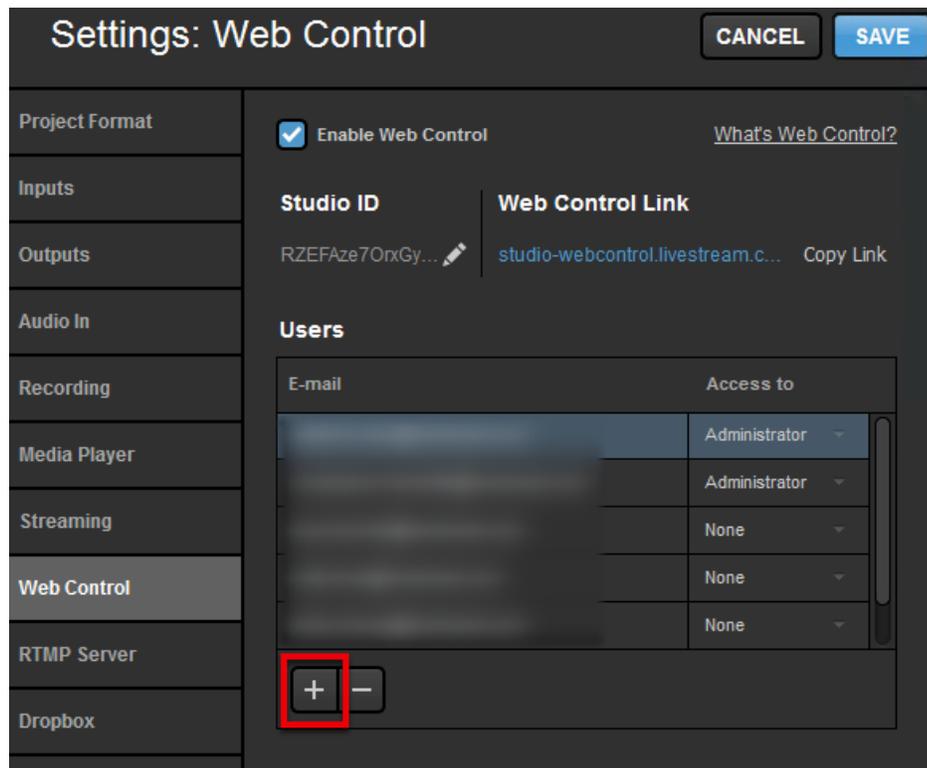
# Add a User to Studio Web Control

You can add additional users to control your Studio via Google Chrome and [other supported browsers](#).

In your Livestream Studio system, go to Settings > Web Control.



Enable Web Control by clicking the check box, then navigate to the Users box.



To add a user, click the + button. The following window will appear.

**Add User**

Enter user's email and access parameters

Email

Access to

Full Access

CANCEL SAVE

Enter the person's email address and how much access you wish to grant them. The options are:

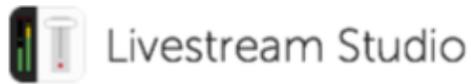
- **Administrator** - full access plus ability to change access for themselves and other users
- **Full access** - full use of all Studio Web Control features (multi-view and controls); cannot change other users access.
- **Read only** - can only view web control with no ability to control Studio
- **Multiview** - can see the multi-view as configured from Studio and use mouse controls to put sources in Preview and Program
- **Controls only** - can control audio mixer, GFX, stream tab, RTMP inputs, and other transition controls in web control but cannot see the multi-view.

Click **Save** and then save your Studio settings. The user you have invited to access your Studio via Web Control will not be able to join it until you save your settings.



You can always adjust what kind of access each user has when you go back into the settings. Doing so will kick them out of any current session and they will have to re-enter the Studio Web Control interface again.

The email address you sent the invite to will receive the following email:



**You have been invited to Livestream Studio Web Control!**

**Now you can control Livestream Studio ID PjDvq1g29BKa remotely from your browser.**

**Use your Livestream account email and password to log in to Livestream Studio Web Control at [studio-webcontrol.livestream.com](https://studio-webcontrol.livestream.com).**

**OPEN WEB CONTROL**

The user should click the blue **Open Web Control** button. They will be prompted to log into a Livestream or Vimeo account if they are not already, and then directed to the Studio Web Control interface that they have been given access to.

**i** The user must have an account on Livestream or Vimeo in order to log into Studio Web Control. If they do not have an account, they can click [Join Livestream](#) or [Vimeo](#). The user must use the email address that was invited to Studio Web Control.

# Supported Browsers and Devices for Studio Web Control

In order to use [Web Control](#) with Livestream Studio, customers must use the most recent versions of [Google Chrome](#) or [Mozilla Firefox](#) on the following operating systems only:

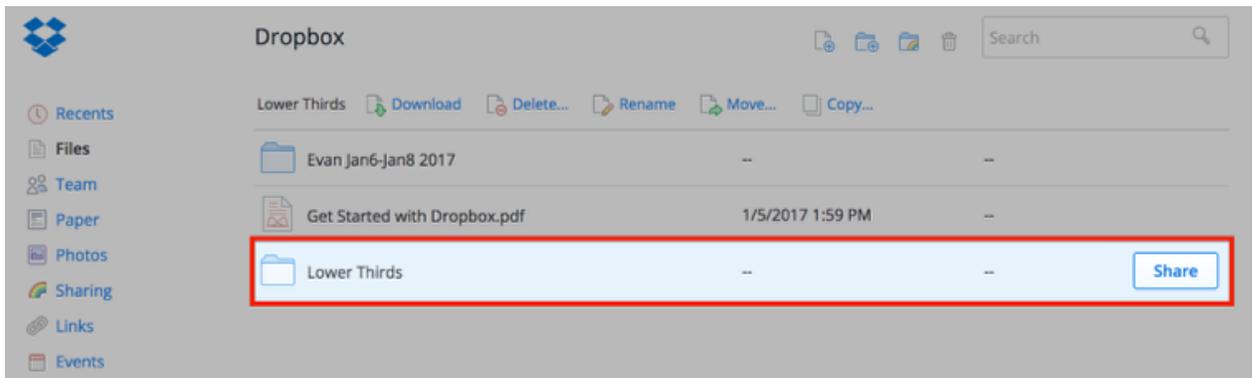
- macOS
- Windows
- Chromebook
- Android

Web Control is not supported on Microsoft Edge, Safari, and all iOS devices.

# Using Graphics Overlays in Studio Web Control

[Web Control](#), the Livestream Studio feature allowing the ability to control certain aspects of Livestream Studio via a web browser that supports WebRTC (e.g., Google Chrome, Mozilla Firefox), includes the ability to add .lsgfx files via Dropbox, insert data, and have full control over your graphic overlays' settings.

A [Dropbox](#) account is required in order to use this feature. Log in to Dropbox and locate your folders (or create a new one).



Save the .lsgfx files you wish to use in Livestream Studio in this folder. Only .lsgfx files are supported in Studio Web Control.



## Dropbox > Lower Thirds

Recents

Files

Team

Paper

Photos

Name ▲



black-red-gloss.lsgfx

Sample .lsgfx files can be found in the [Studio Graphics Store](#), or can be created when you export a graphics overlay layer that you *manually created* in Livestream Studio.

Browse Graphics

How to Install

Share Your Graphics

Browse Graphics / Lower Third



Lower Third: Black / Red Gloss  
Free · Lower Third



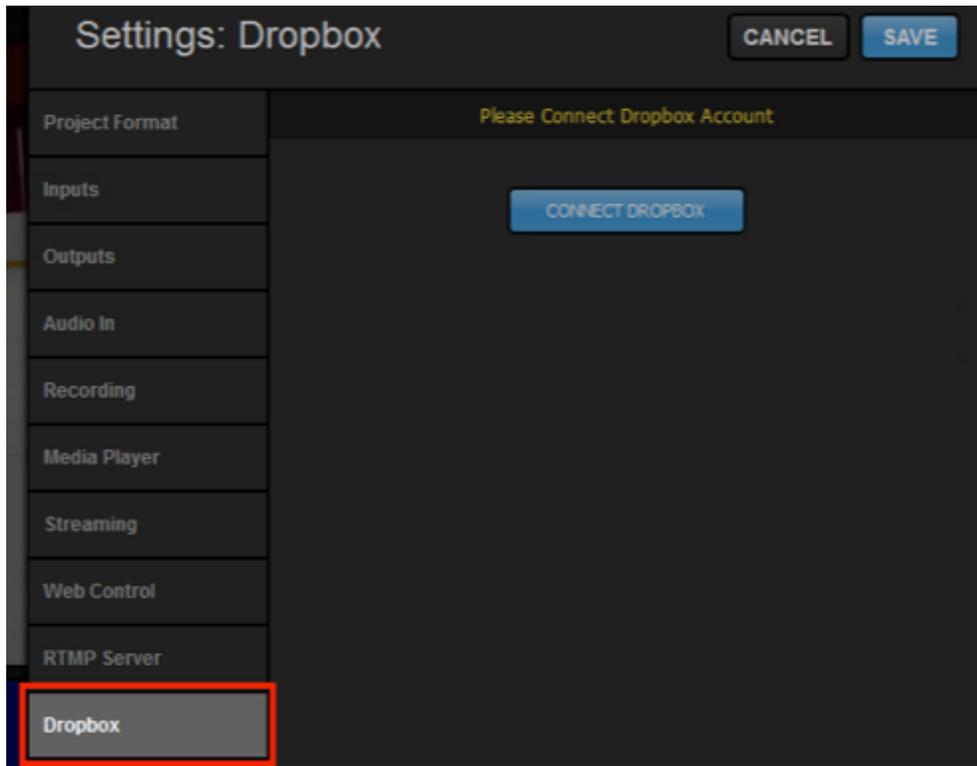
Lower Third: Yellow Boxes  
Free · Lower Third



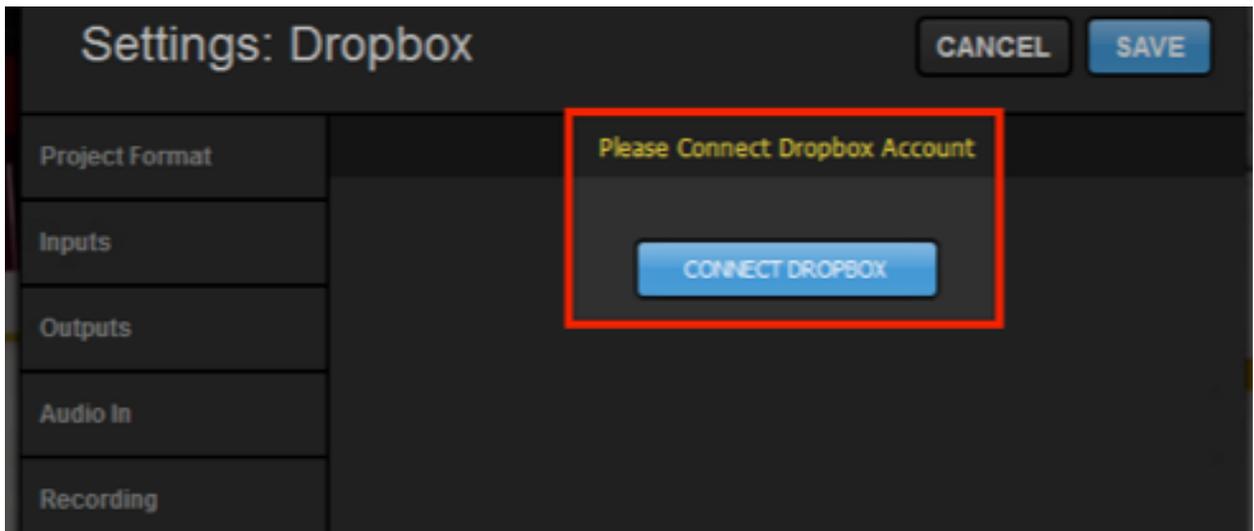
Lower Third: Blue Angular  
Free · Lower Third



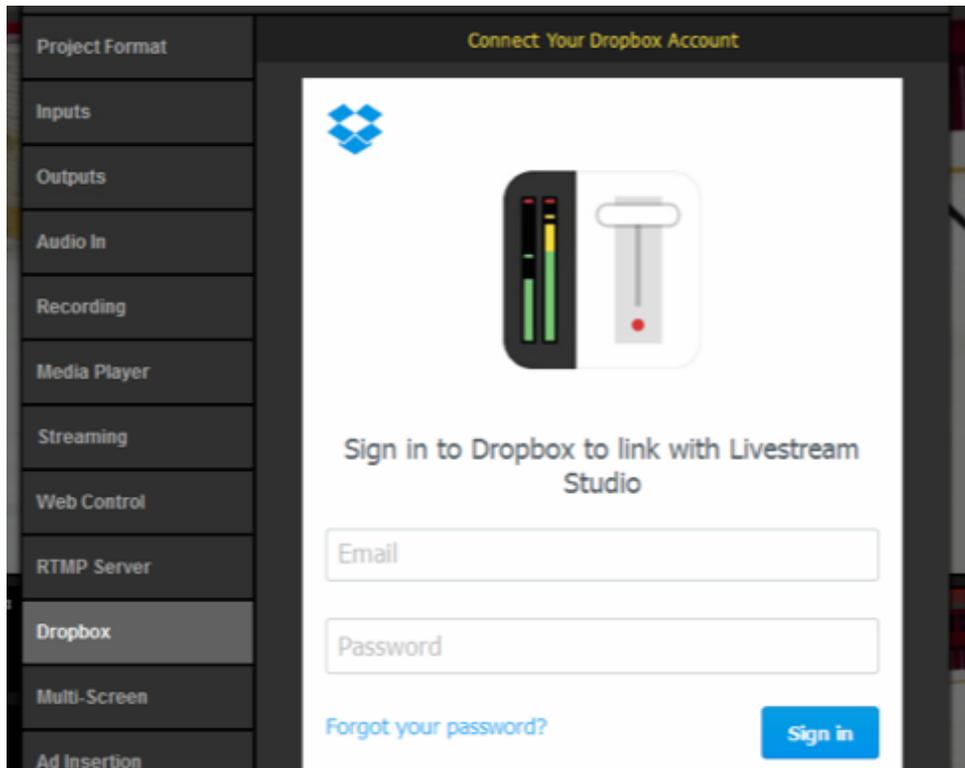
The first step is within the Livestream Studio software. Navigate to Settings, then select the Dropbox tab.



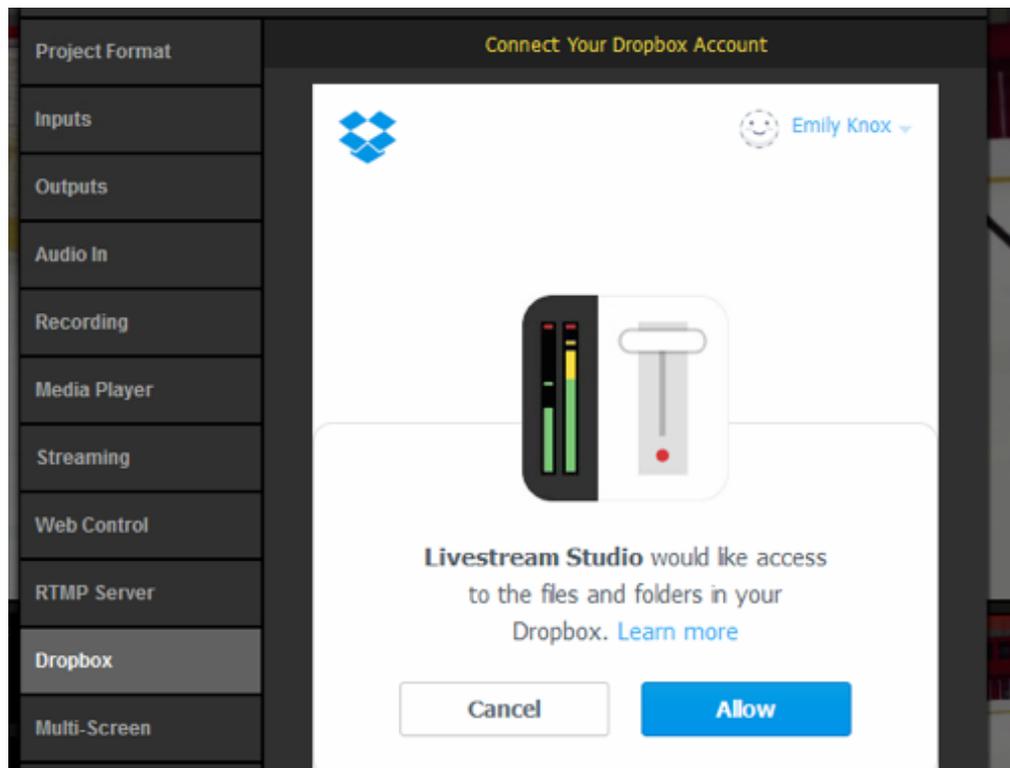
Click Connect Dropbox.



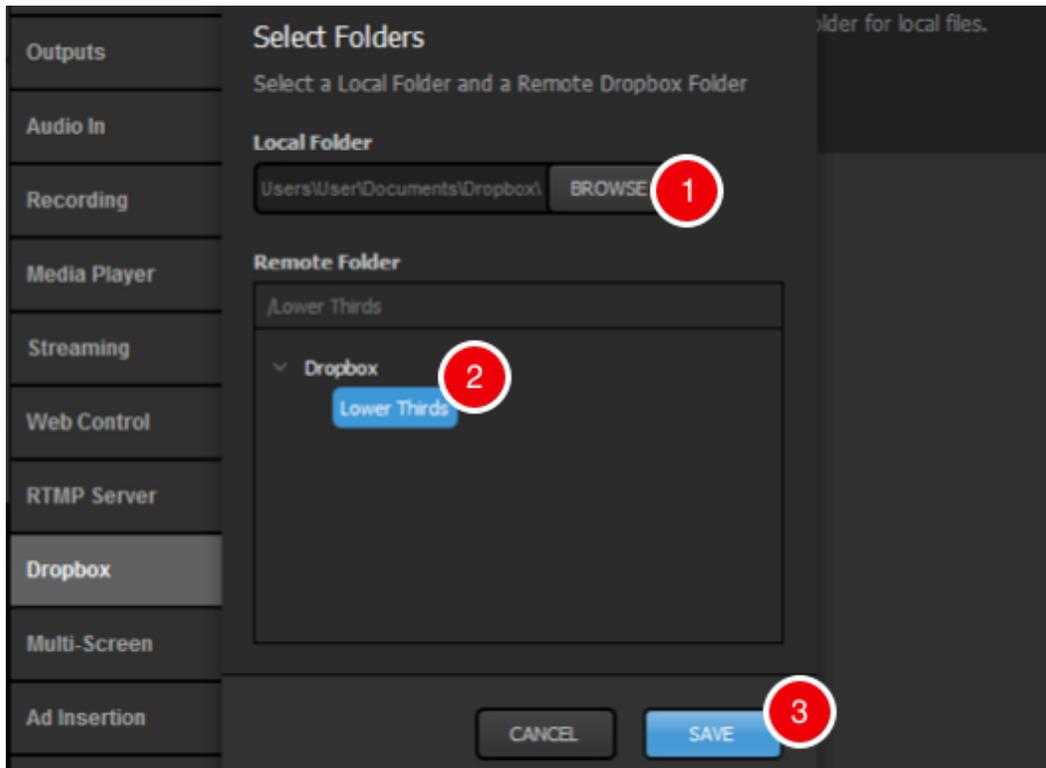
Log in to your Dropbox account by entering your account credentials and clicking Sign in.



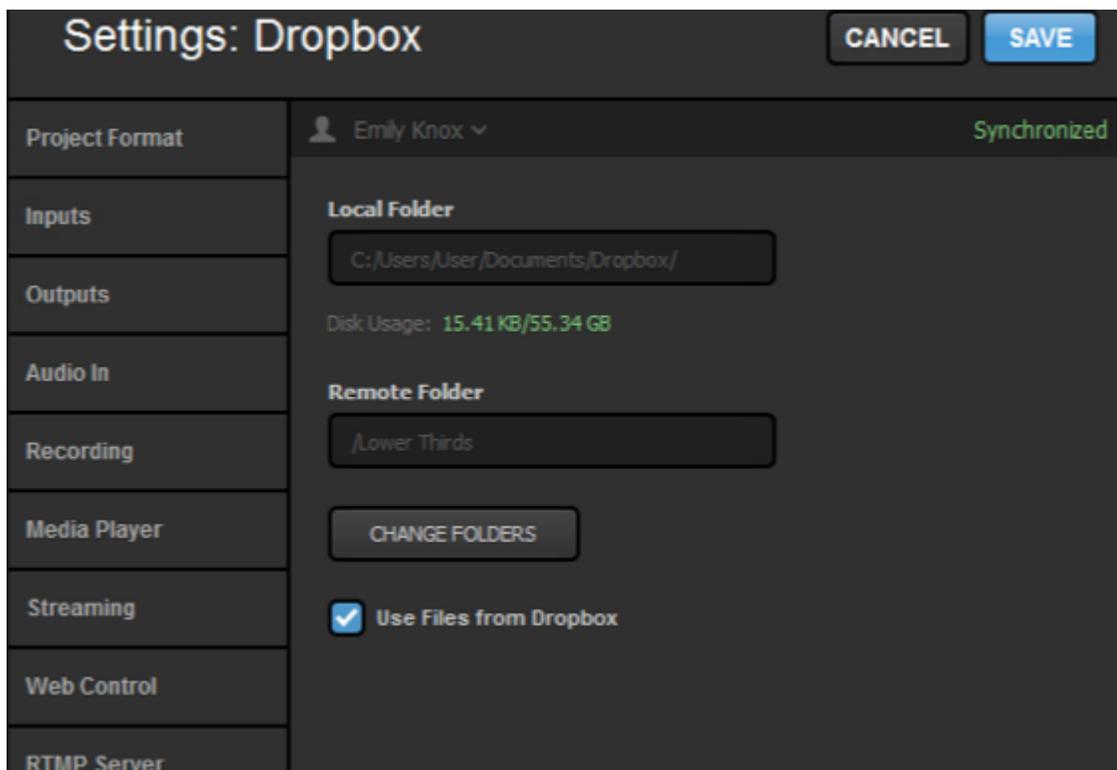
Studio will request permission to access your files in Dropbox. Click Allow.



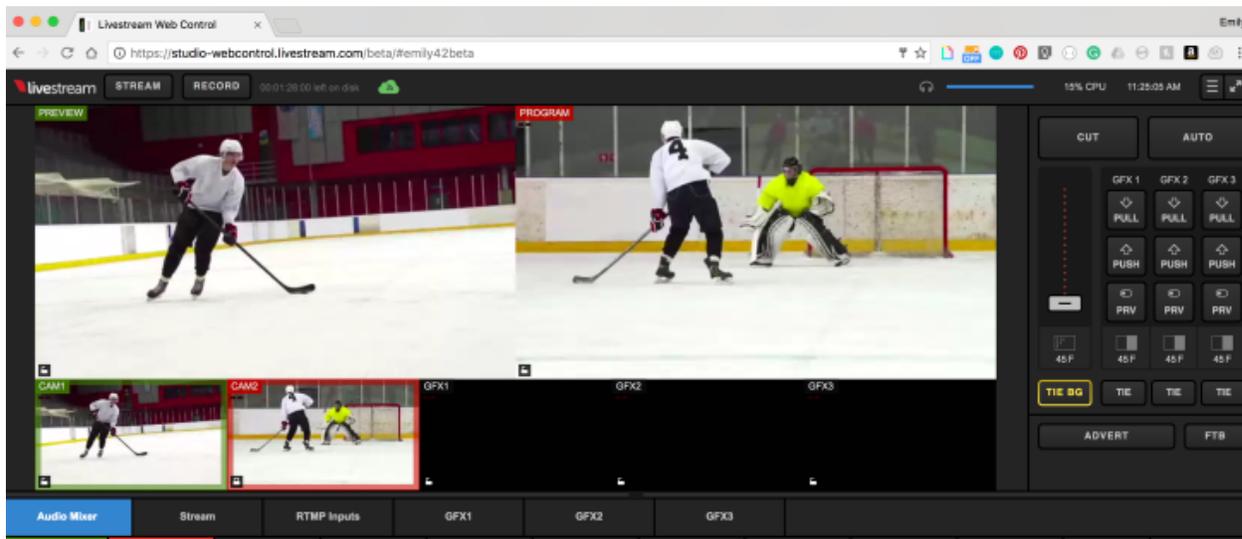
You will need to select a folder on your local drive to save your imported file to and a folder in your Dropbox from which to select .lsgfx files. Once you made you choices, click Save.



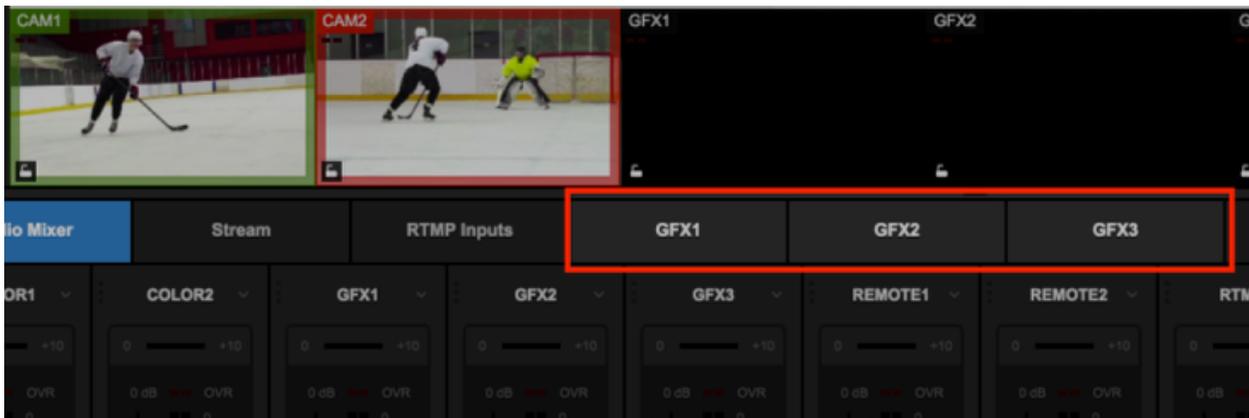
Studio will indicate that your Dropbox account is synchronized with Studio.



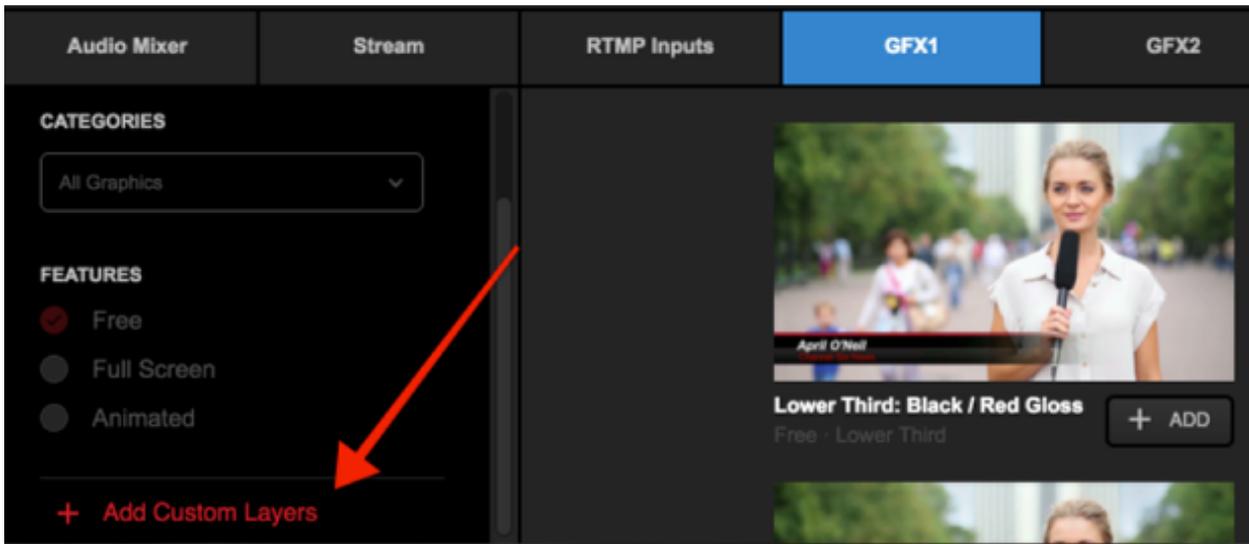
Next, log in to [Web Control](#) and open your Studio (assuming you have already [added yourself as a user](#)).



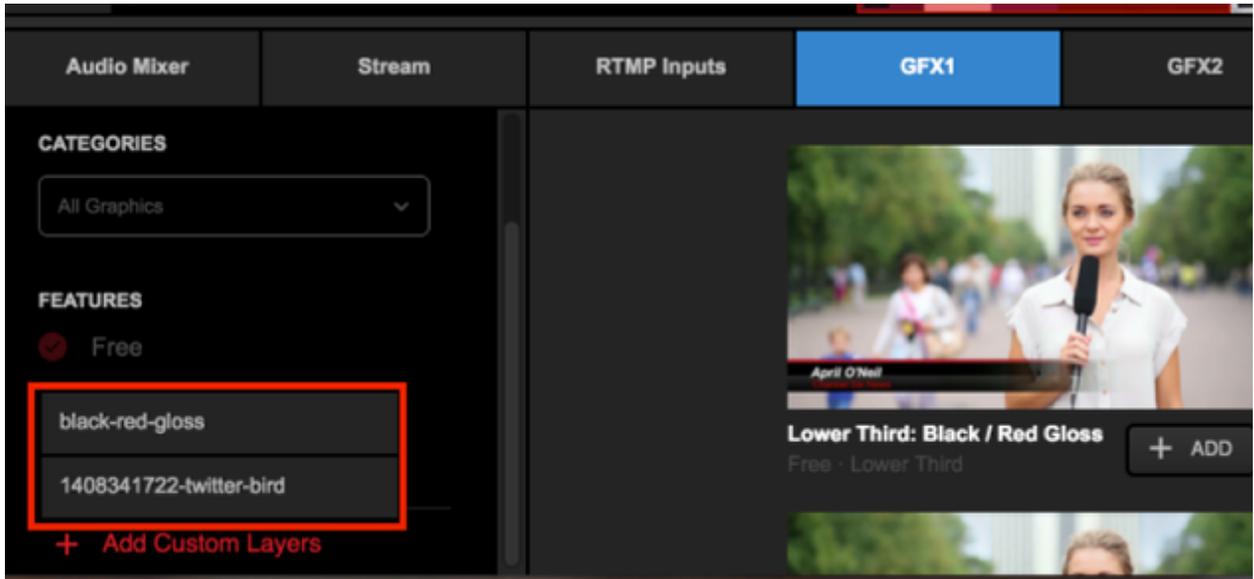
You should notice the three graphics overlay tabs in the bottom portion of the screen; select one of them to continue.



You can either browse the free Graphics Store within the Web Control graphics overlay module, or scroll down and click Add Custom Layers.

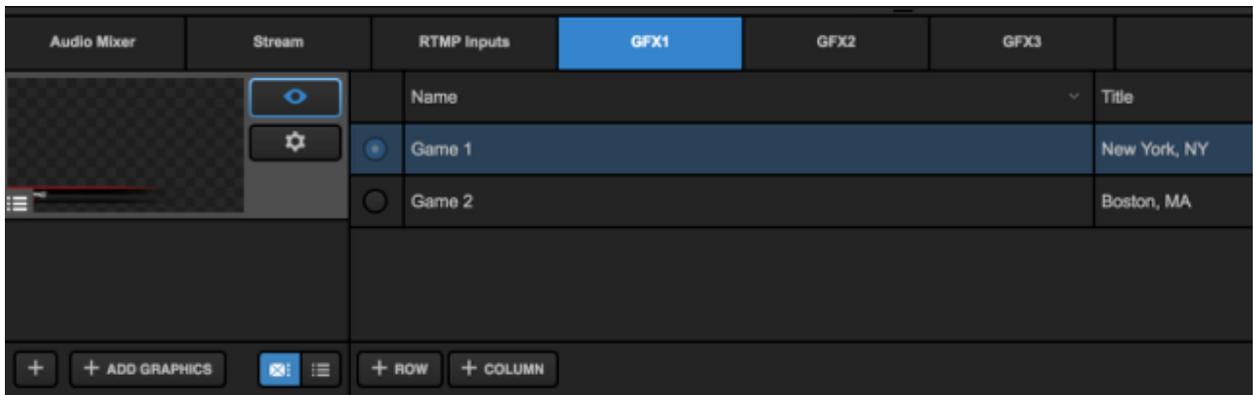


Any .lsgfx files saved in your selected Dropbox folder will be listed here. Click the name of the file you wish to use.

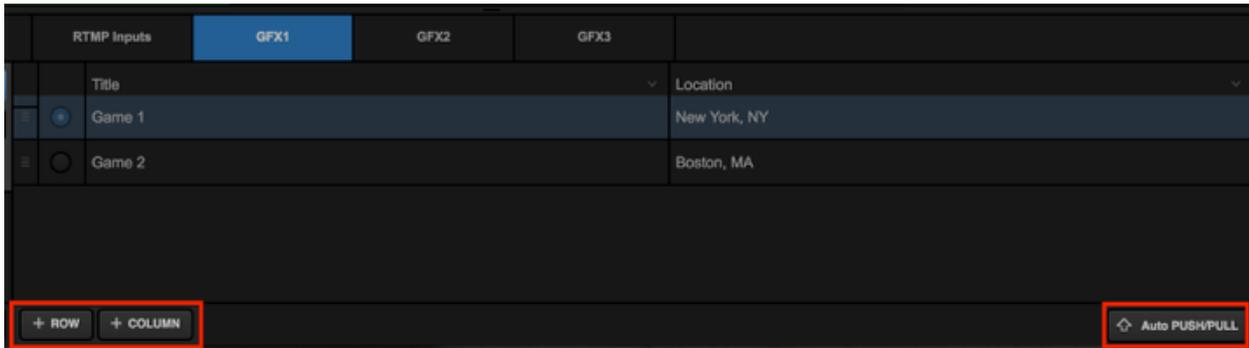


The graphics file will load with its design and settings on the left and its data on the right.

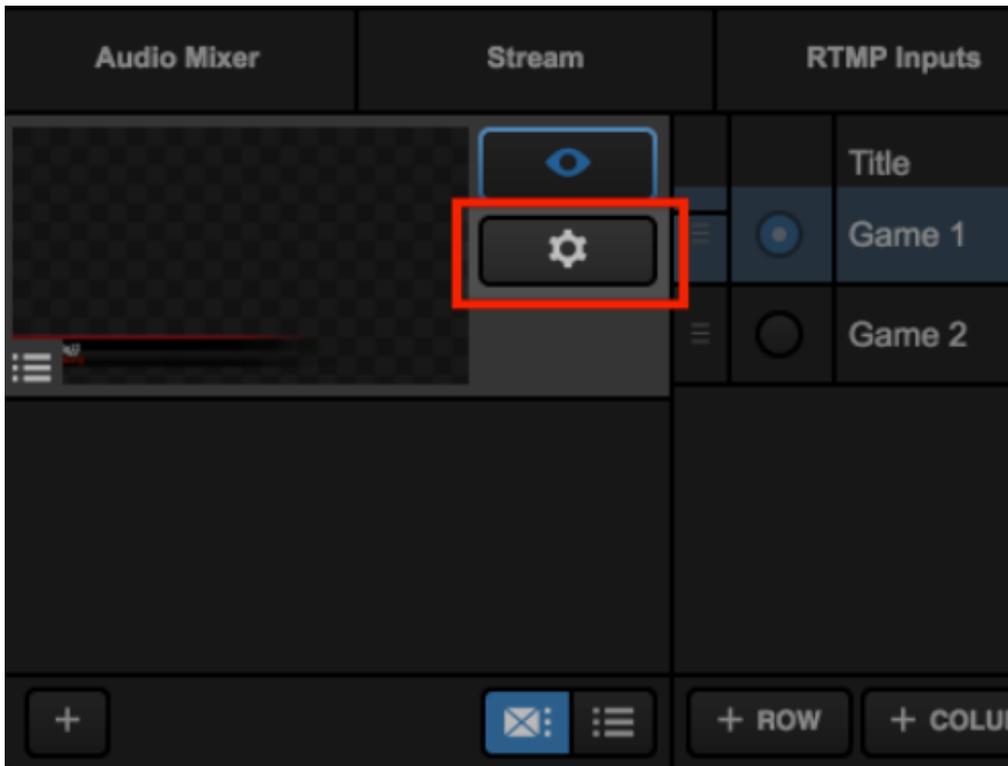
! It is not possible to open the GFX Designer in Web Control. The appearance of the graphic can only be edited within the Studio software.

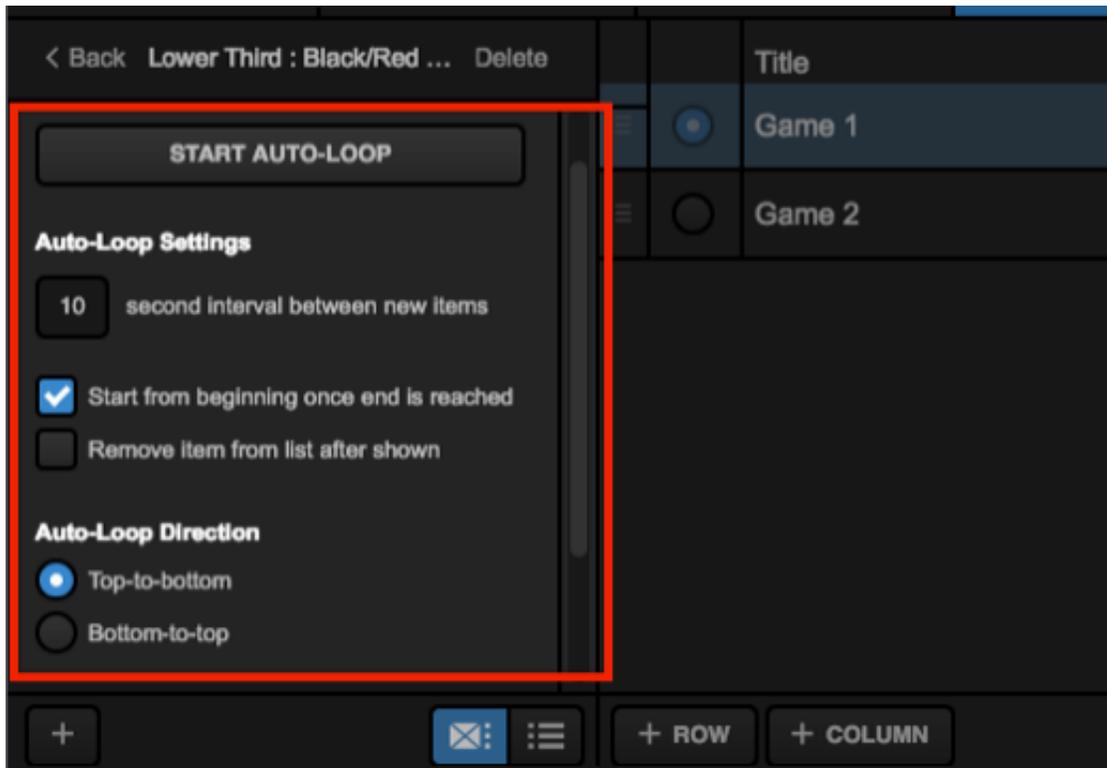


On the right side, you have the ability to add data rows and columns and enable the Auto Push/Pull feature when selecting different rows.

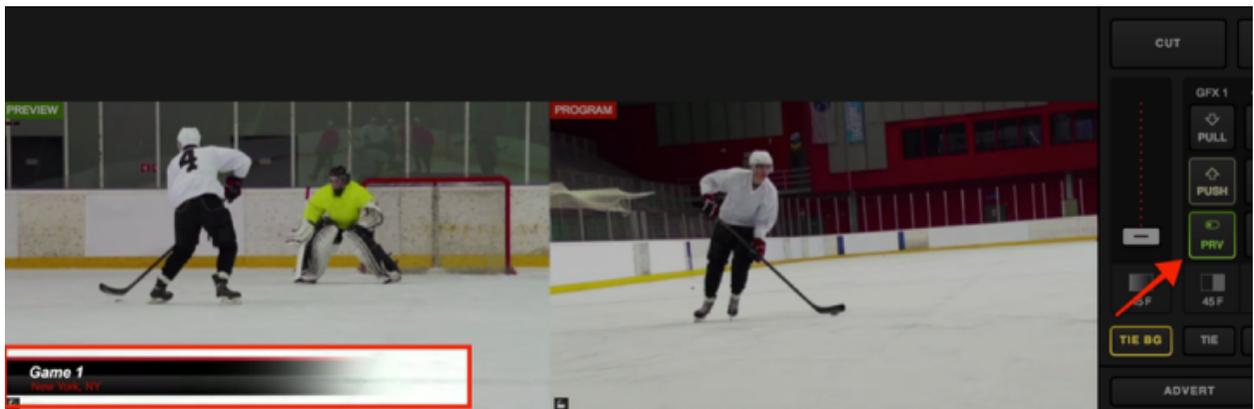


Clicking the gearwheel on the left side will open the settings available with that graphic, such as auto-loop timing, direction, and starting point.





Overlaying graphics in Web Control is the same as in Studio software. Click the corresponding PRV button to show your graphics overlay in Preview.



Click PUSH to transition the graphic overlay into Program.



Now, you will see the graphic overlay in your Program monitor.



To remove it from Program, click the corresponding PULL button.

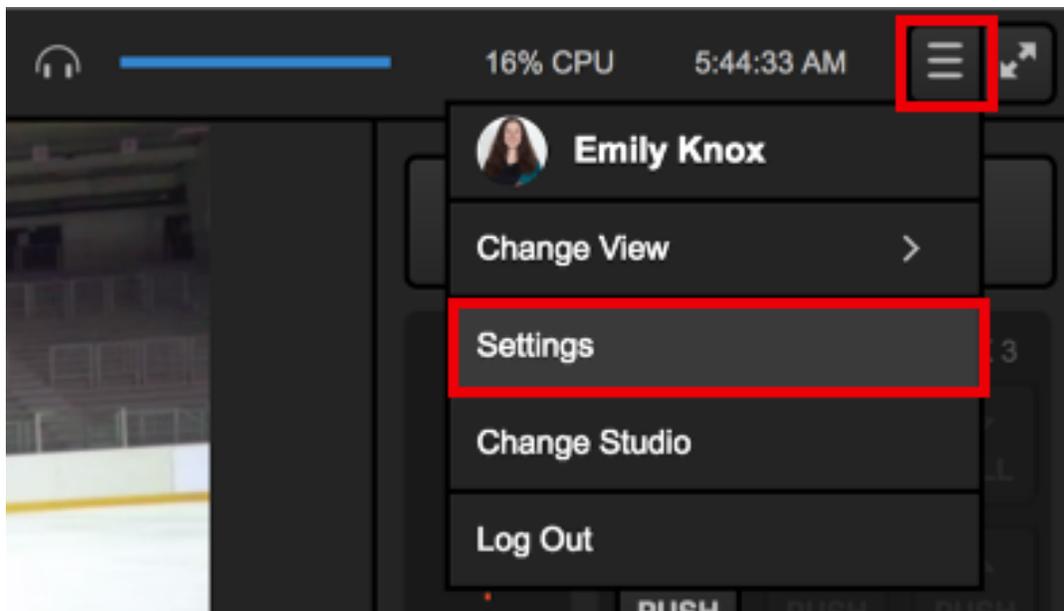


# Media Playback in Web Control (Beta)

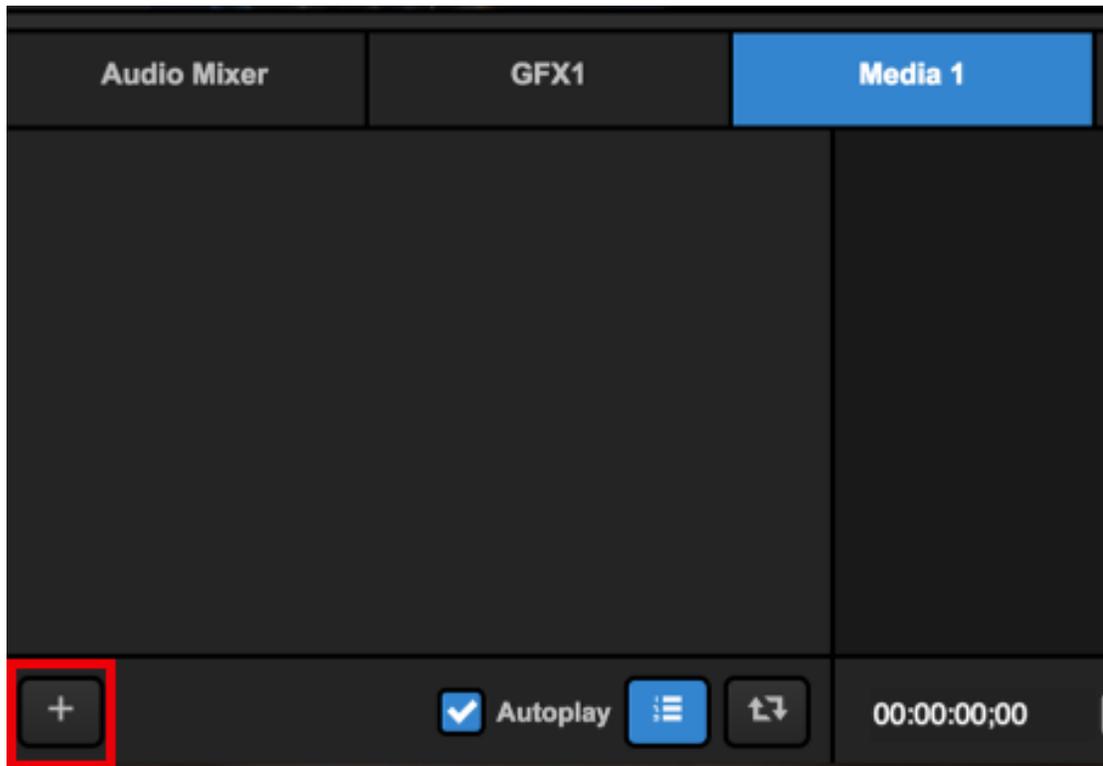
You can import videos from Dropbox into your Media bins via a Web Control [supported browser](#).

**⚠** Please note this is a beta feature. We are aware that previewing video in the player is not functioning at this time. If you experience other issues, please contact us so we can investigate.

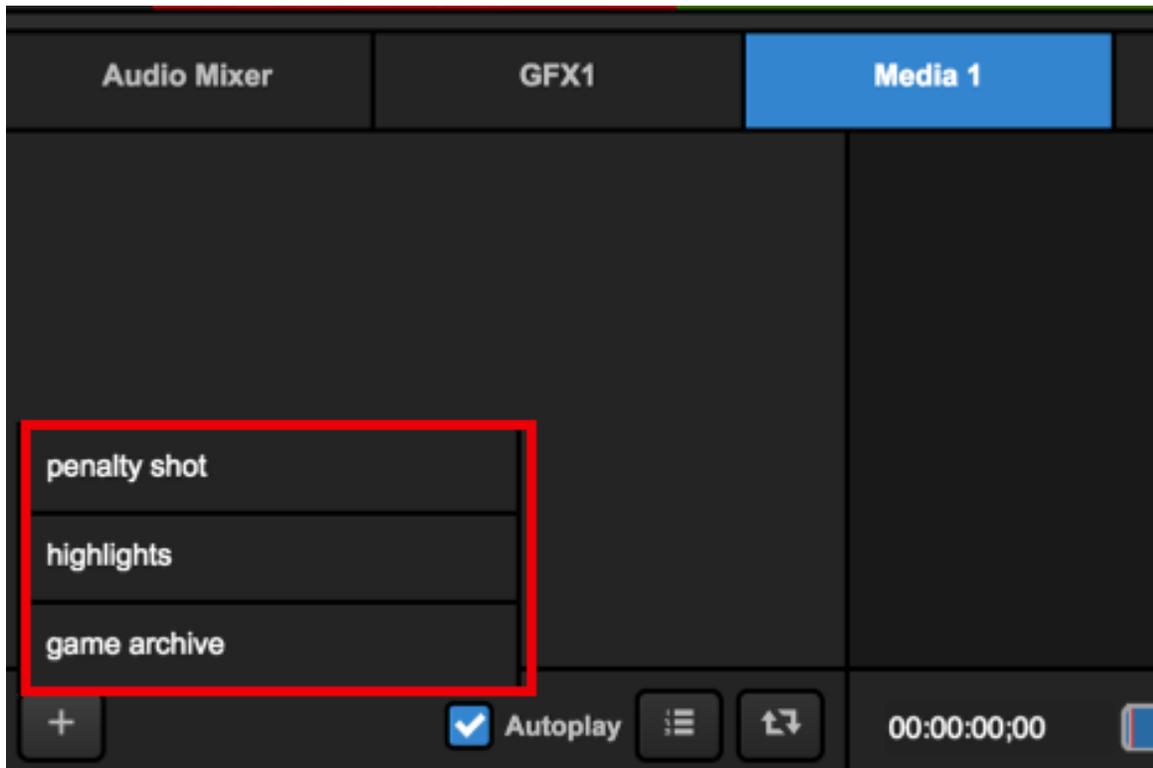
Open Web Control for your Studio system. If you have not already integrated a Dropbox account with Studio, you can do so by opening the Settings menu in the upper right corner, then navigating to the Dropbox tab. The steps to [integrate Dropbox with Studio](#) are the same with Web Control.



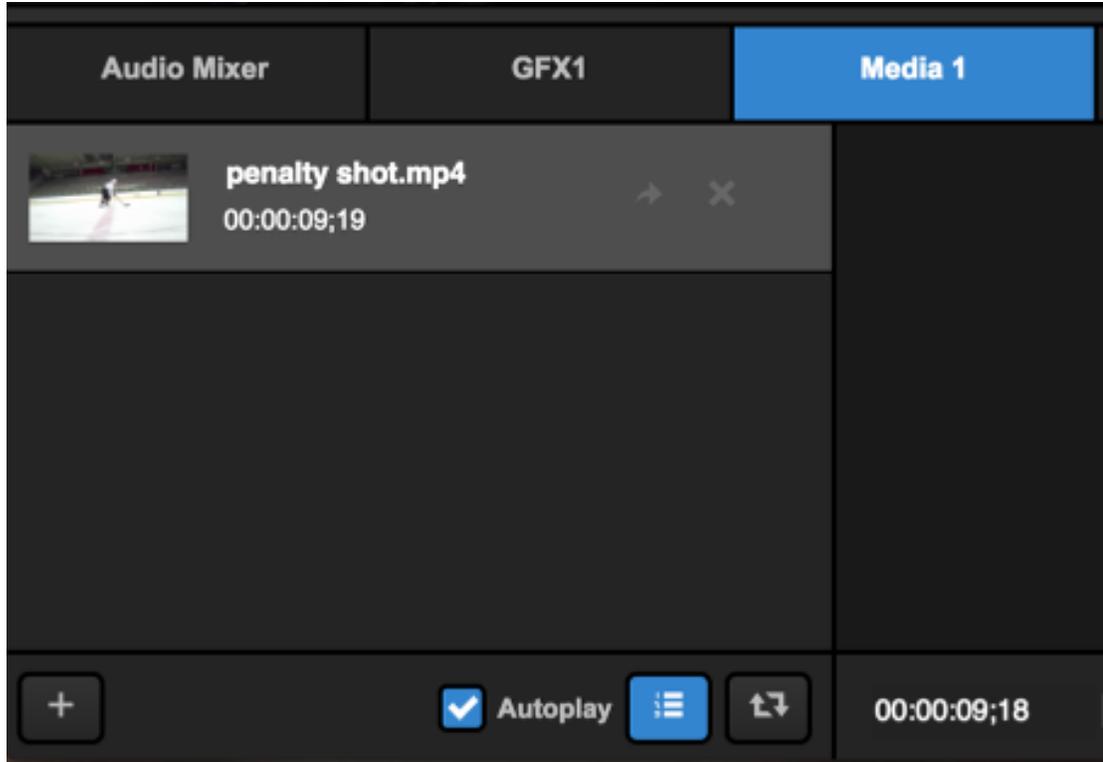
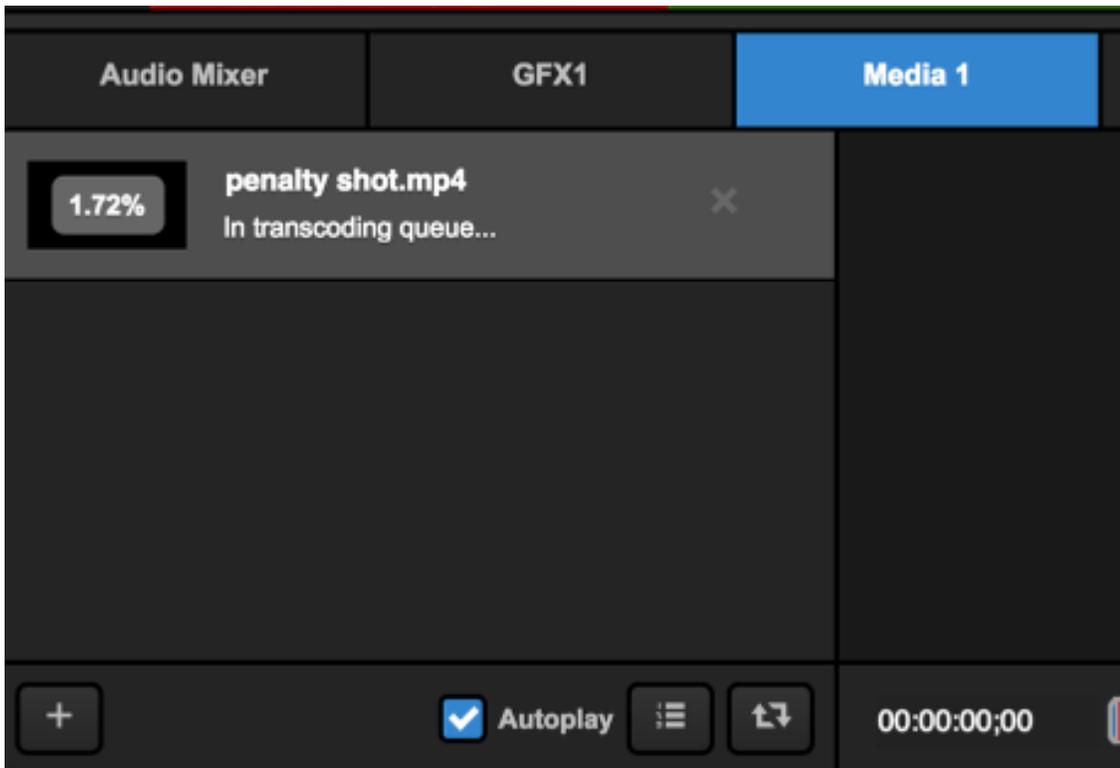
Once Dropbox is connected to Studio, select one of the Media tabs in Web Control and click the + button in the bottom left corner.



Any video file that is stored in your selected Dropbox folder will appear in the pop-up menu. Select the file you wish to import into Studio.



The file will begin transcoding. When transcoding completes, you will see a thumbnail of the clip on the right side of the panel.

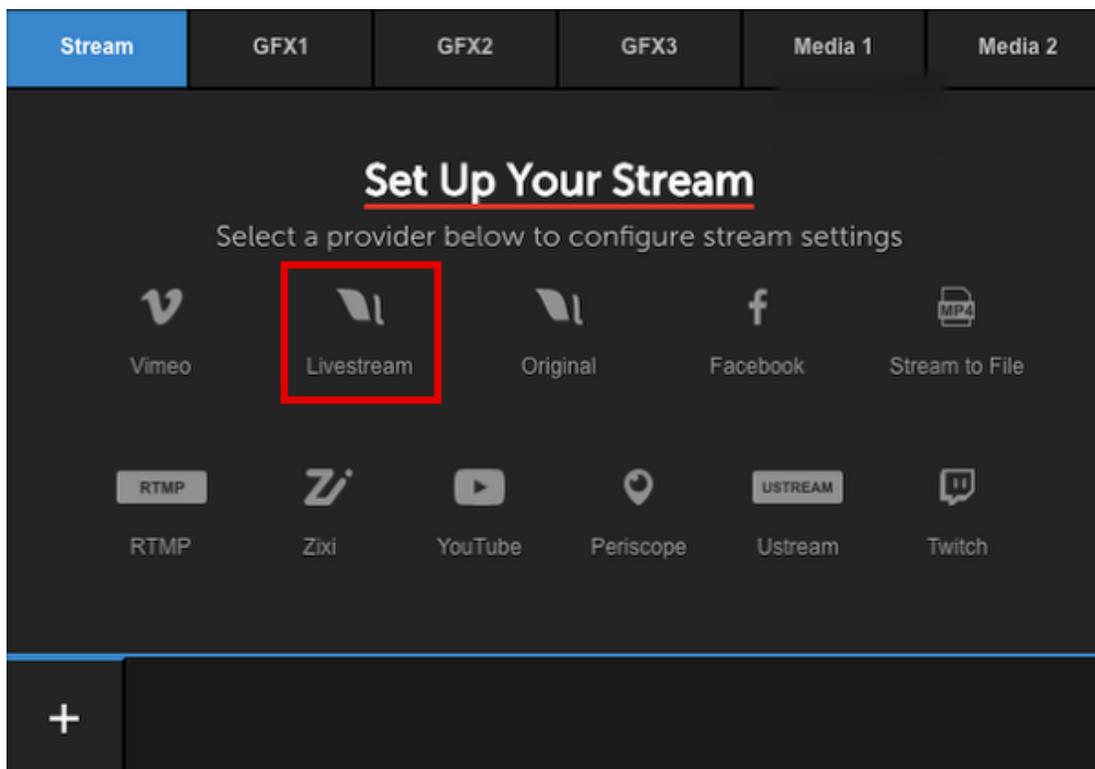


All player [controls and options](#) function exactly the same way in Web Control as they do in the Studio software.

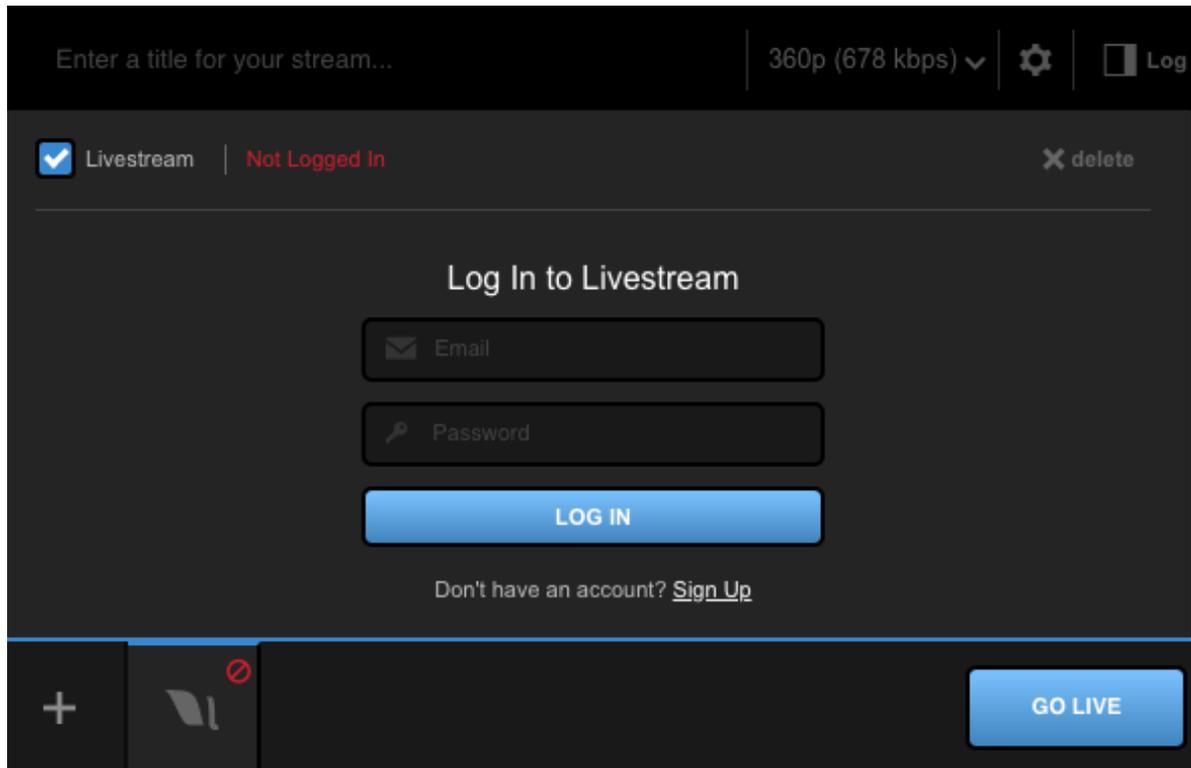
# Studio Simulcasting via Web Control

Simulcasting via Livestream Studio can now be set up via Studio Web Control. It works similarly to [setting up simulcasting](#) within the Livestream Studio software.

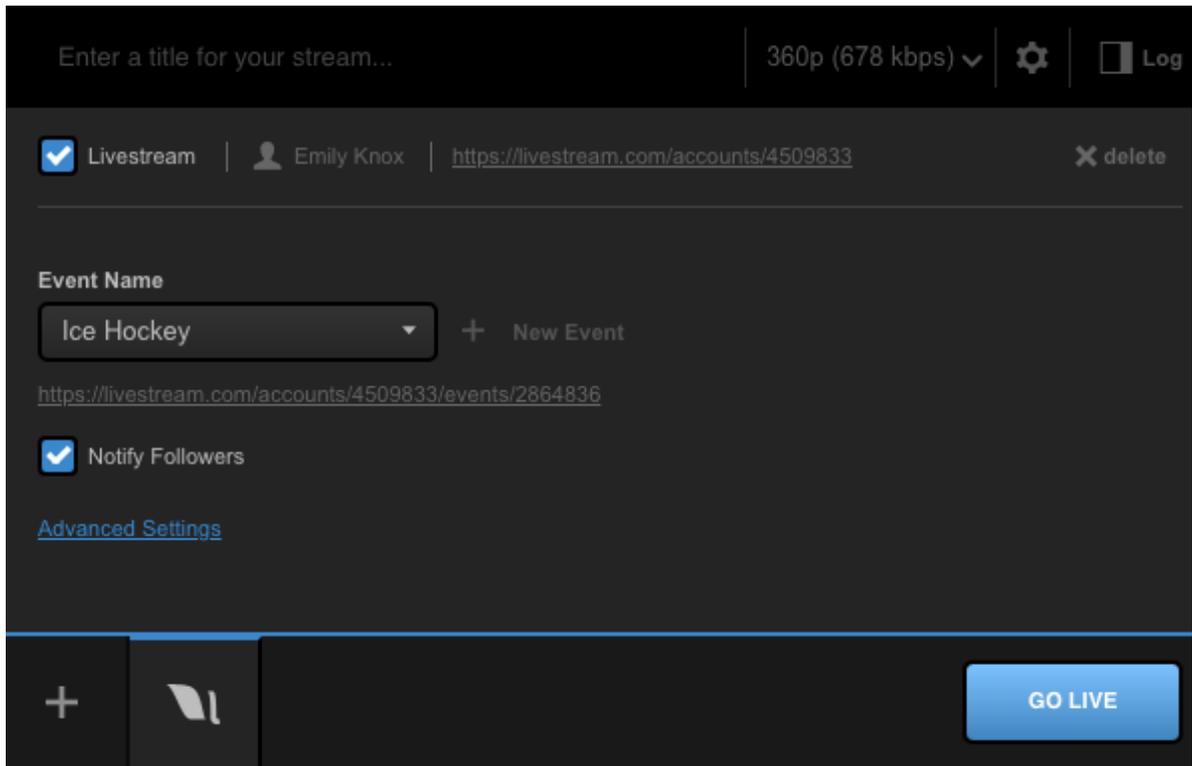
[Log in](#) to Web Control and navigate to the lower left corner. Select the Stream tab. Choose one provider to start with; this example will use Livestream.



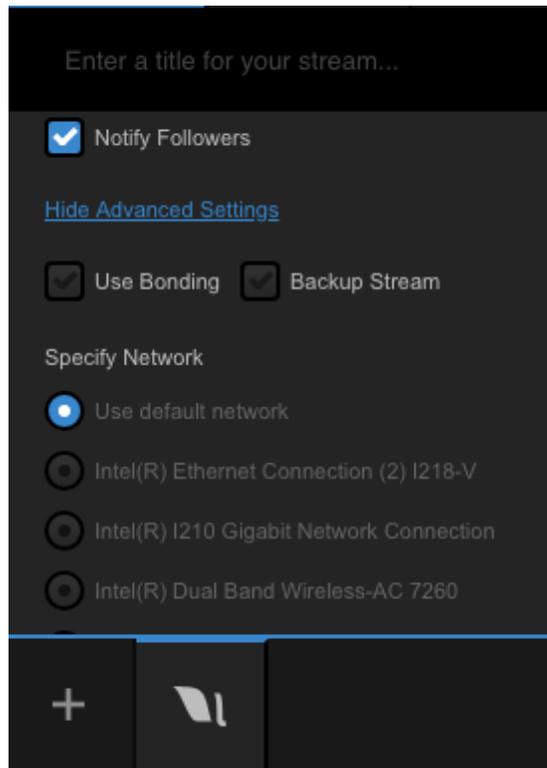
Log in to your account.



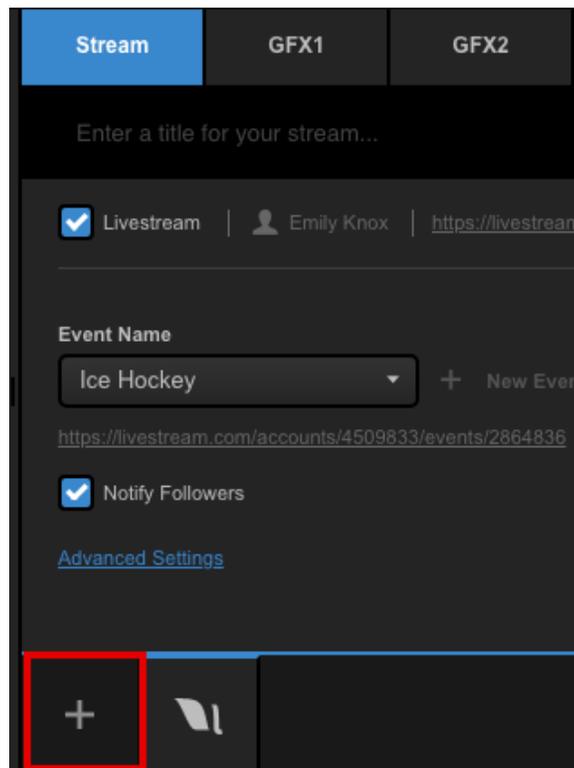
Configure your provider's settings. For example, choose your Livestream event and whether or not to notify your Livestream followers when you go live.



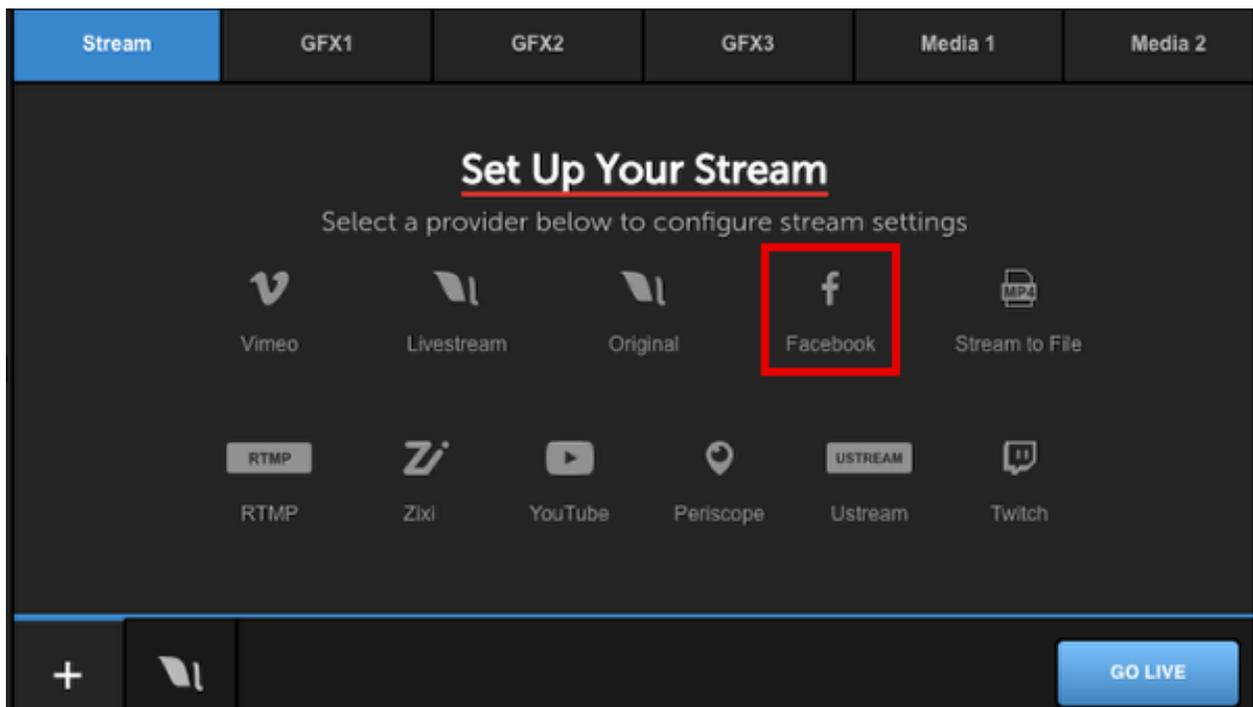
Click [Advanced Settings](#) to reveal further options below; in Livestream's case, using [bonding](#) or using this Studio as a [backup stream](#). All providers will allow you to specify a network to stream through.



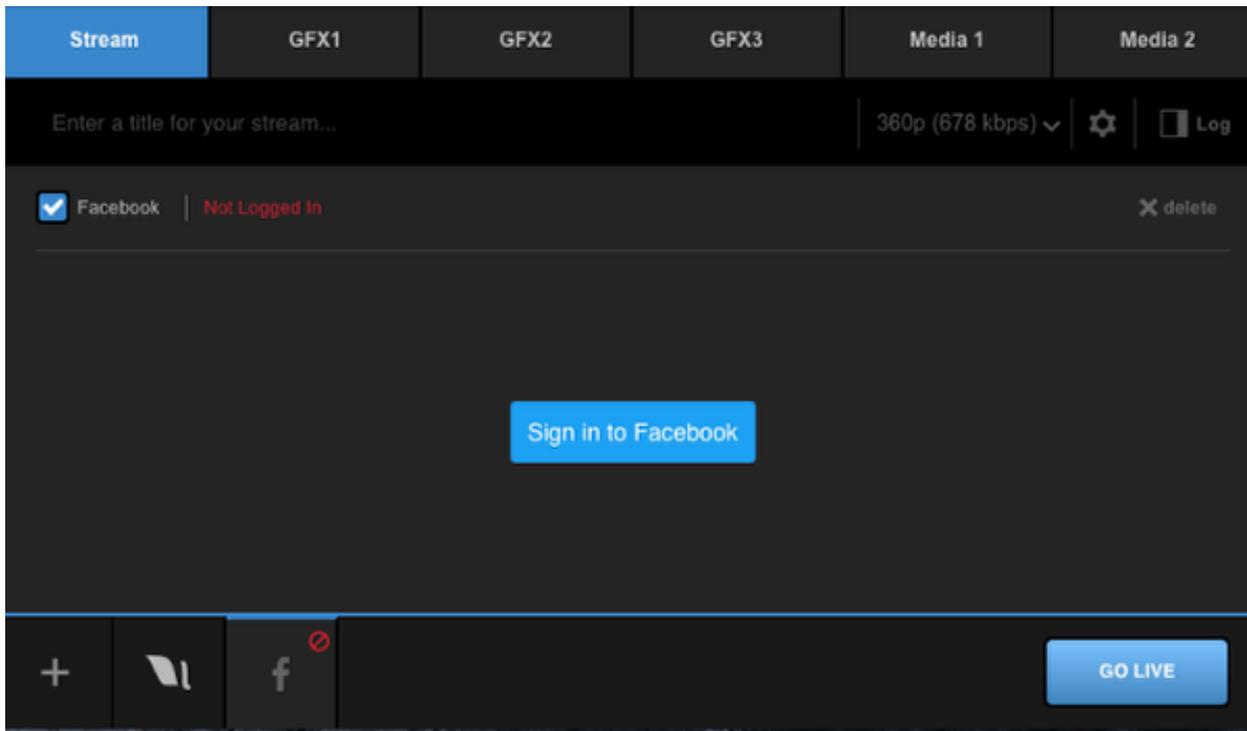
When you have finished configuring your settings for your first provider, select the + icon in the lower left corner to add another provider.



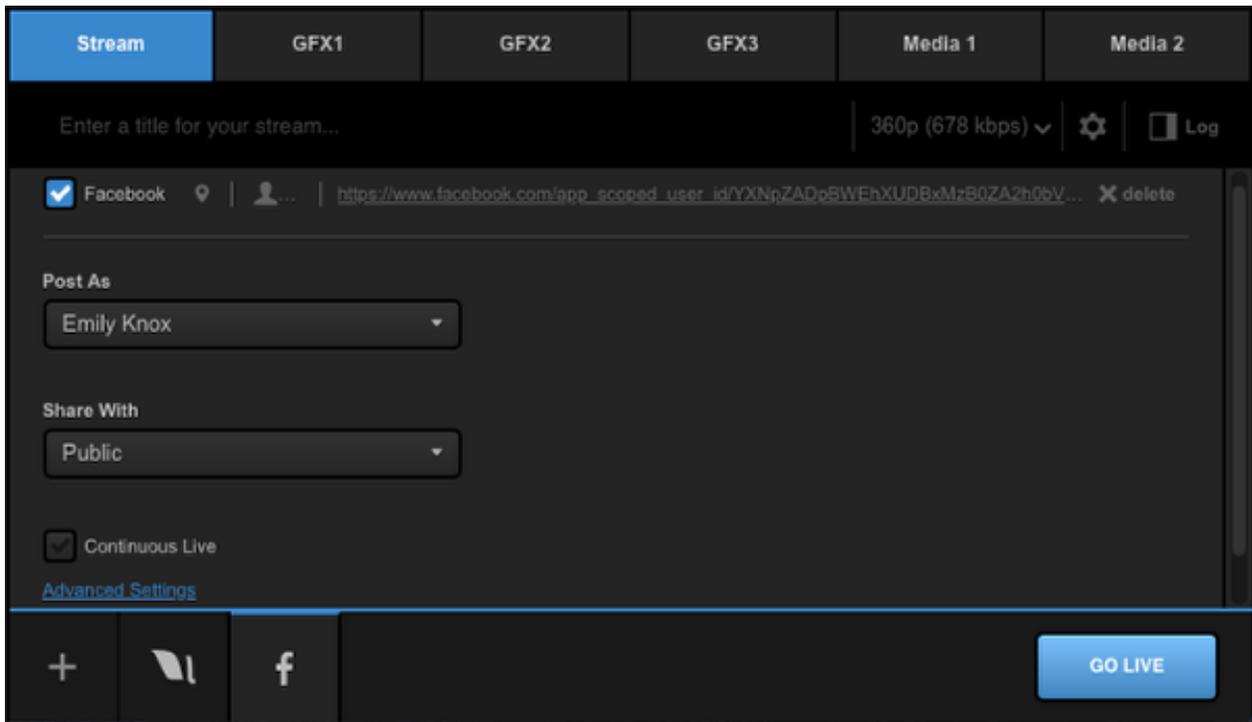
Choose another provider (this example uses Facebook).



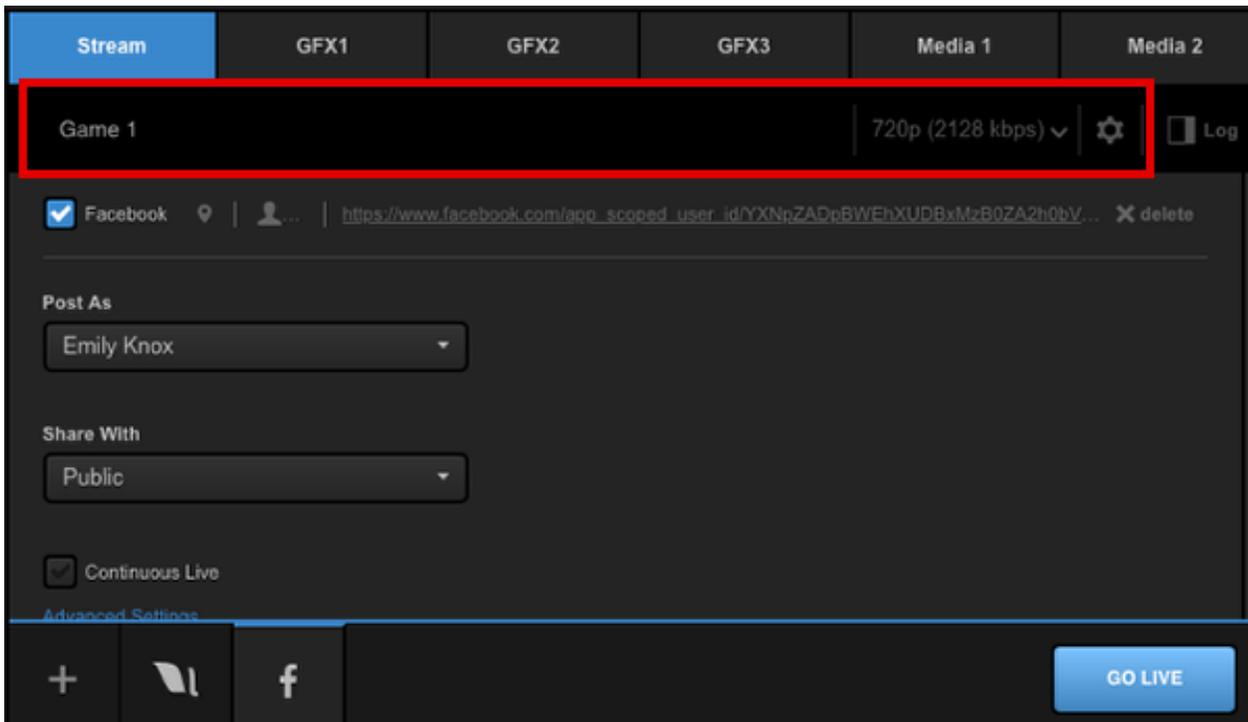
Sign in to your account. This may open a new browser window. Once you are signed in, navigate back to Web Control.



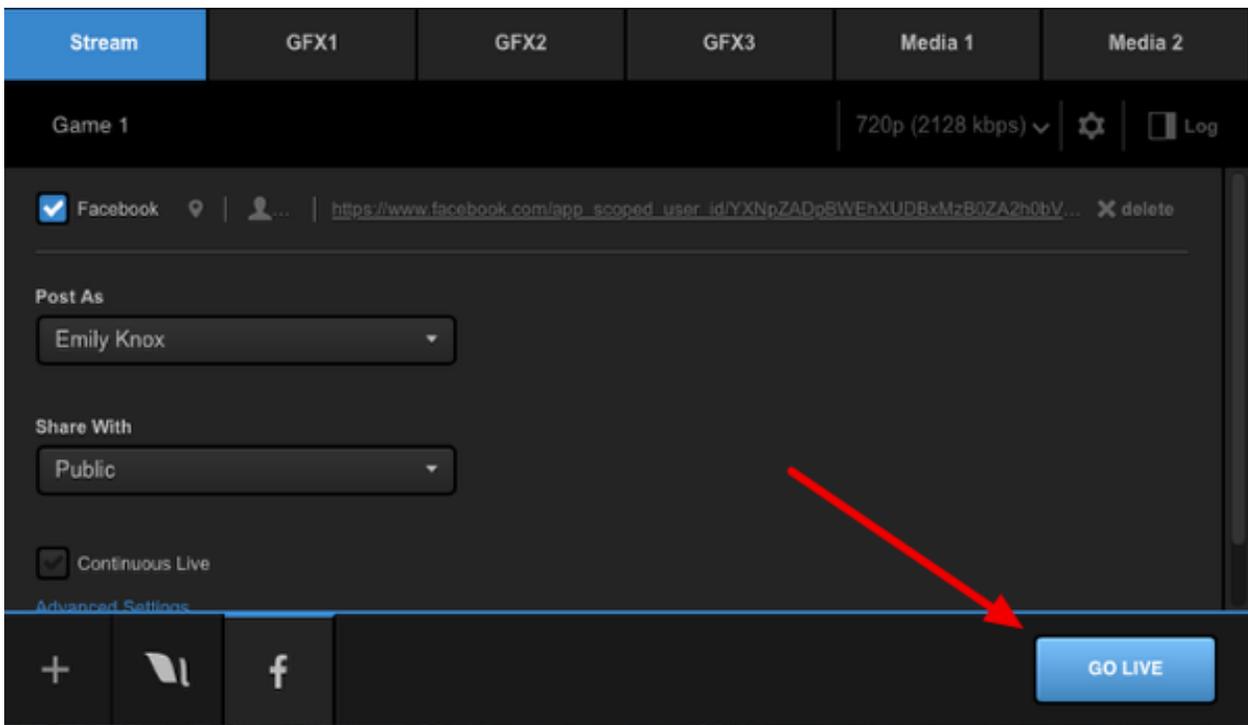
The provider's icon will appear as a new bottom tab within the module. Clicking it will allow you to configure settings for that streaming destinations (e.g. where on Facebook you are streaming, audience, tag location, etc.)



Now you can give your stream a title and choose a streaming quality. Keep in mind that not all quality options are supported by all providers (e.g. Facebook does not currently support 1080p or higher).

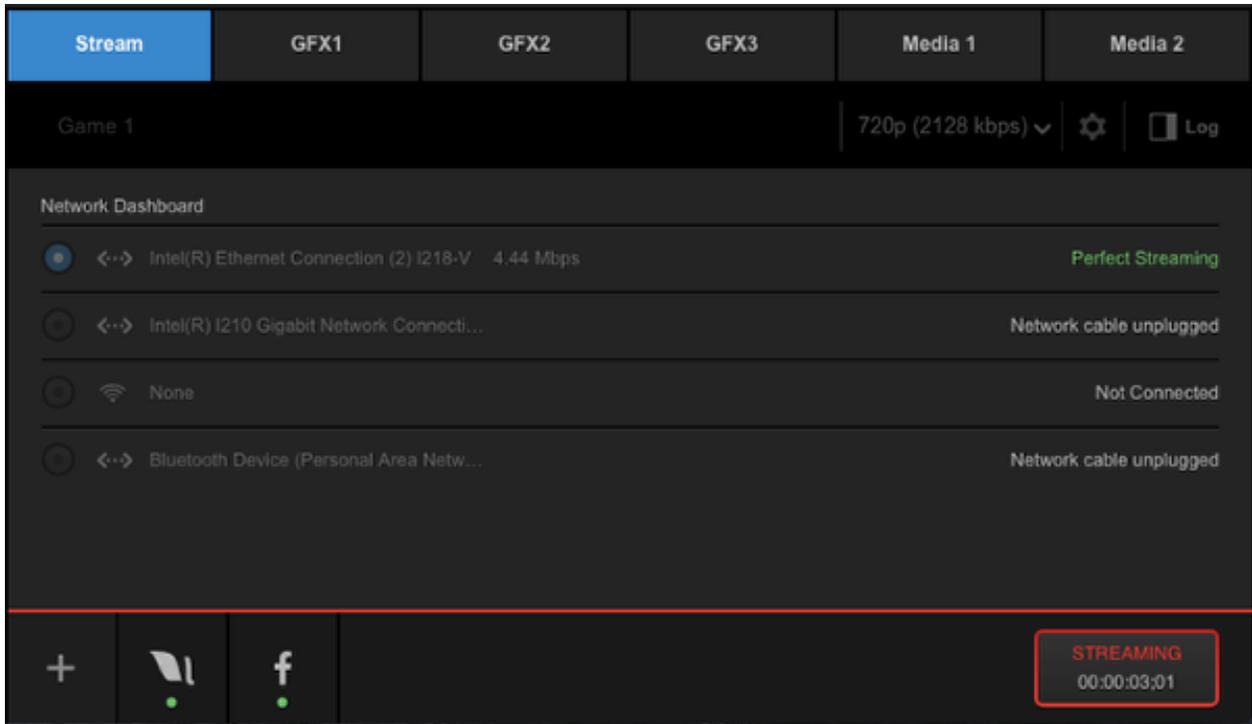


To start streaming, click Go Live in the lower right corner of the Stream module.



Your stream will begin immediately and the Stream module will turn into a dashboard explaining your outgoing bitrates, frame rates, viewer counts, and any error messages or warnings regarding your stream.

When you are down streaming, click the red Streaming button in the lower right corner.



Your stream will end immediately and a dialogue box will open with information regarding your stream and any action items required (e.g. post the video on demand to your event page).

Stream Ended

DONE

1

MAX VIEWERS

0h 0m 23s

DURATION

**Actions:**

Emily Knox / Ice Hockey



Save & Post



Save draft



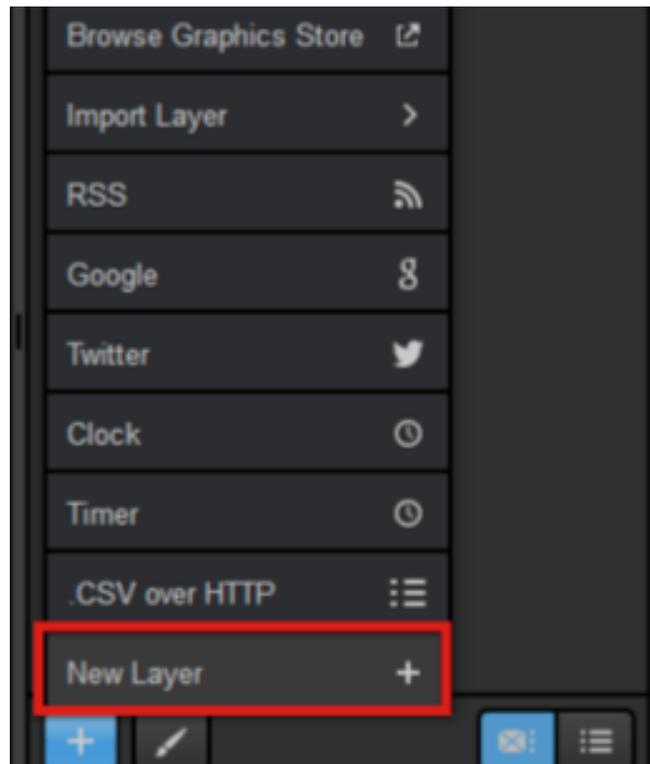
Delete

# Advanced Features

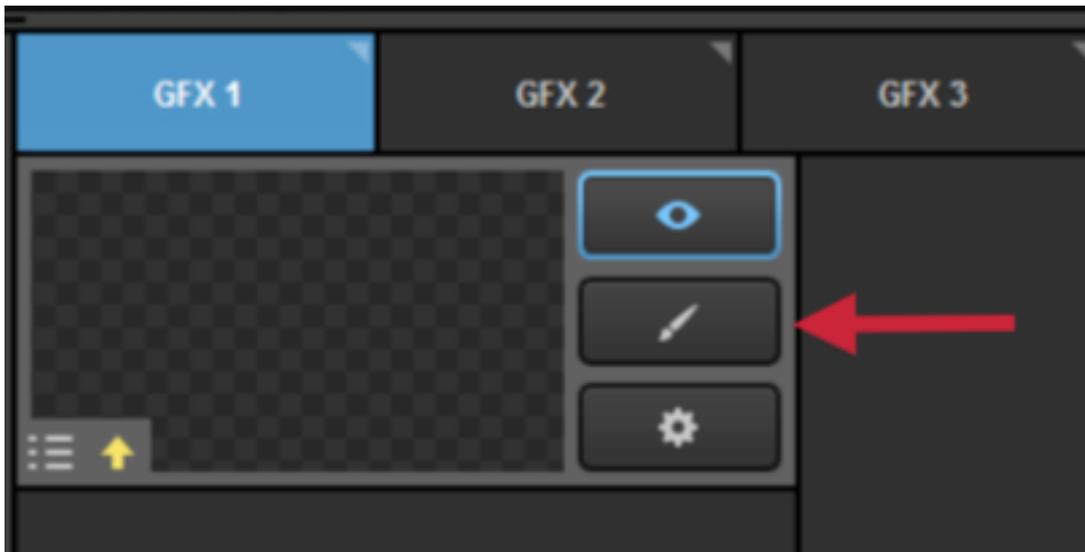
# Using Chroma Key

Livestream Studio includes chroma key, giving users the ability to remove a color from the video source, typically a background color to replace with an image such as a virtual set.

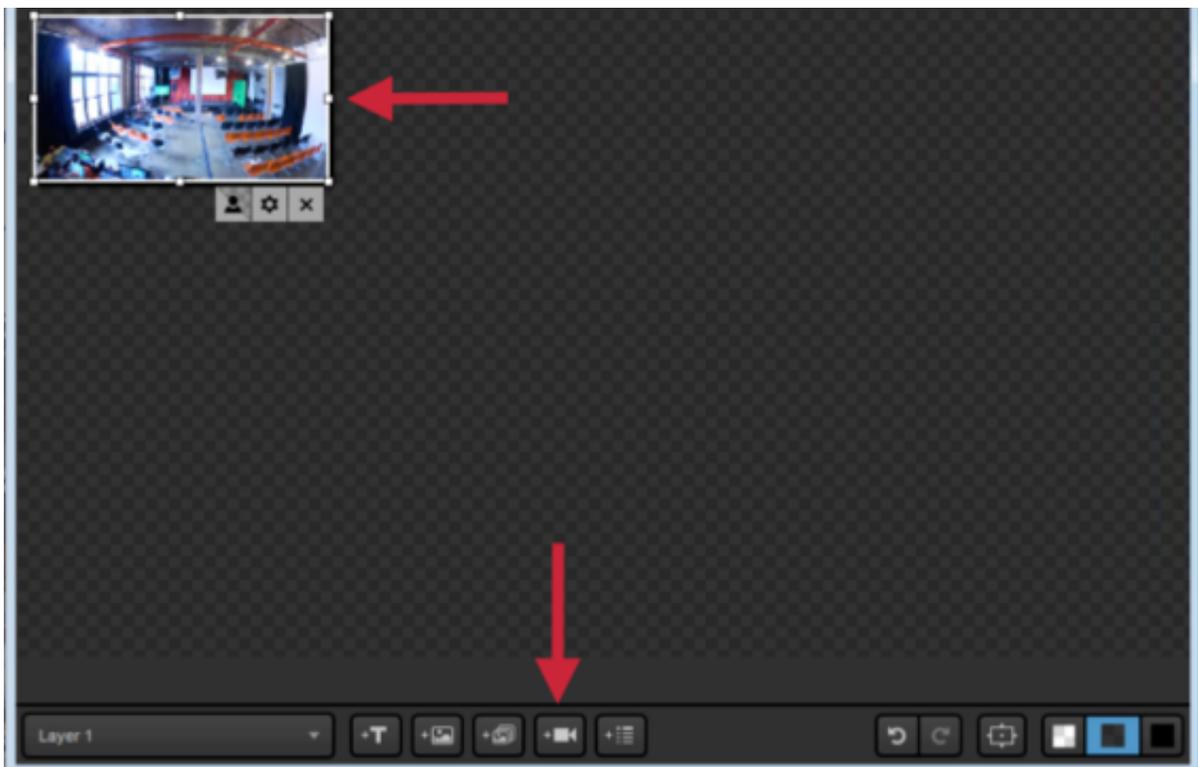
Chroma key is done through the graphics module. Start by adding a new layer to any graphics overlay channel.



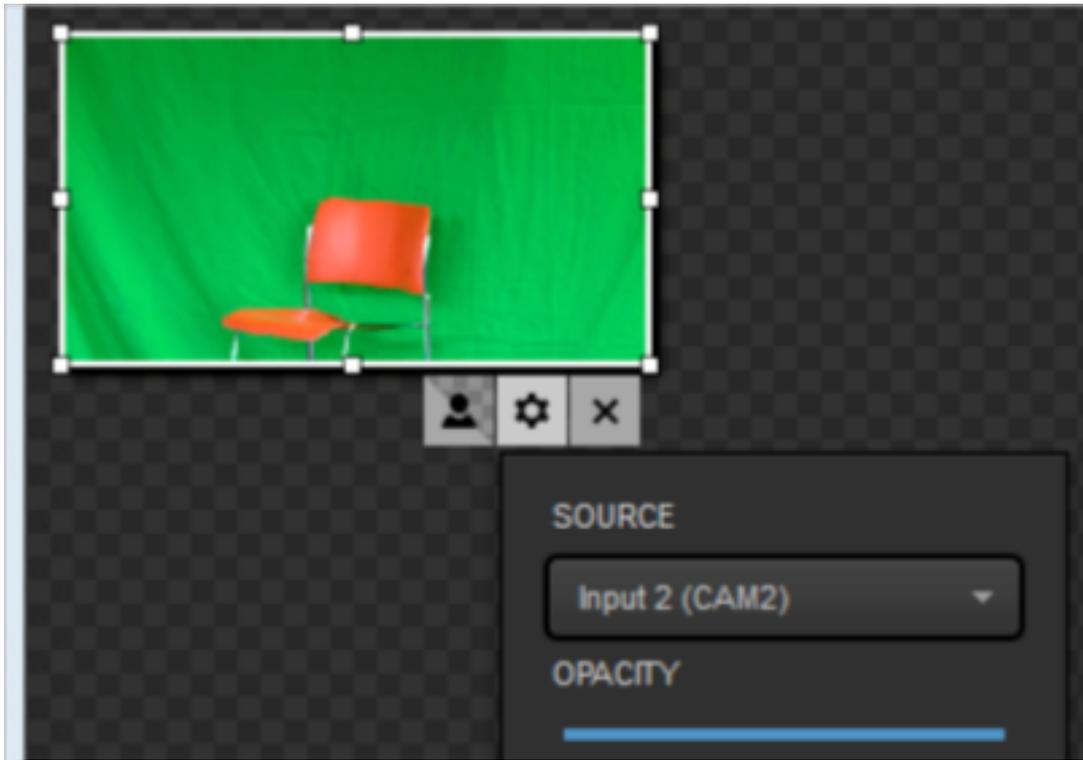
Click the paintbrush icon to enter the GFX Designer.



Next, click on the camera icon to add an input source to your graphics layer.



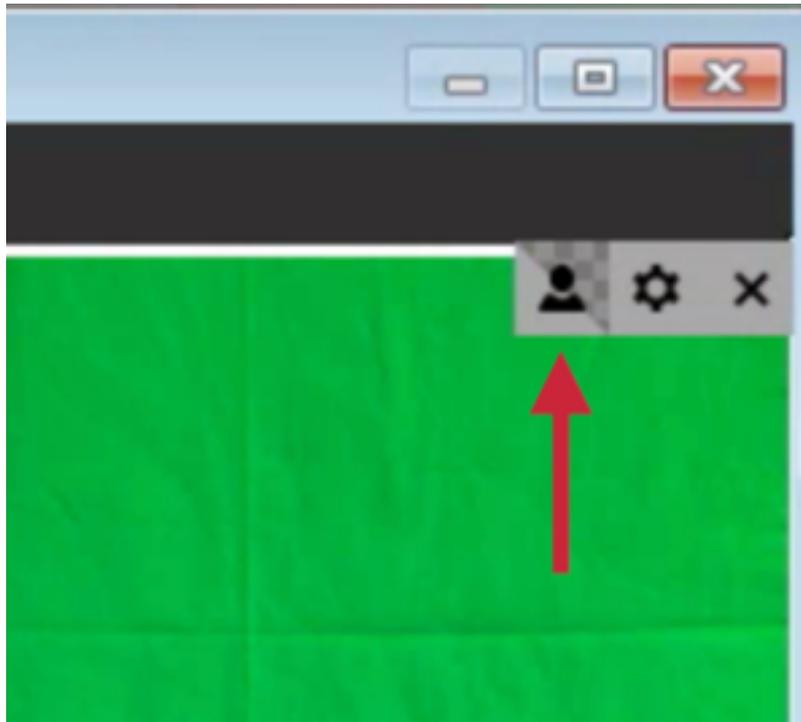
Click the gearwheel to select which input source you want to use for chroma key.



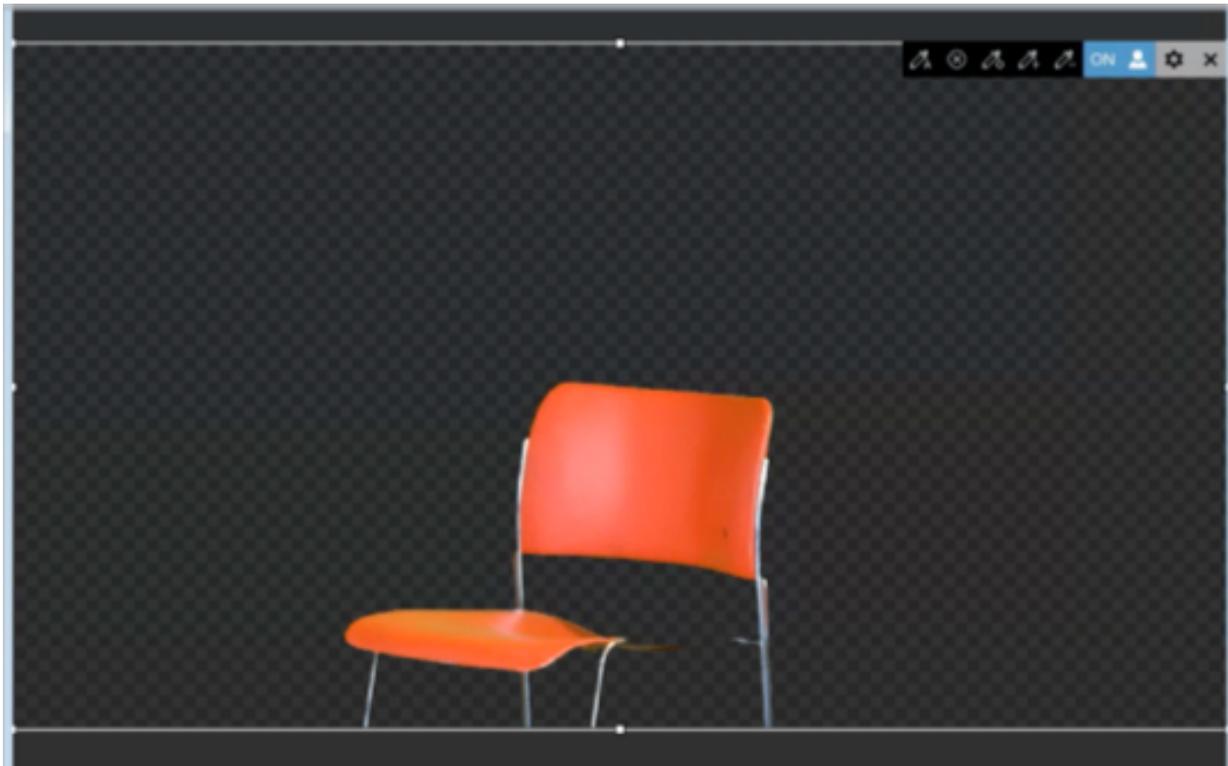
You can adjust how your input source looks inside the GFX Designer as necessary, such as scaling it to fit the whole screen.



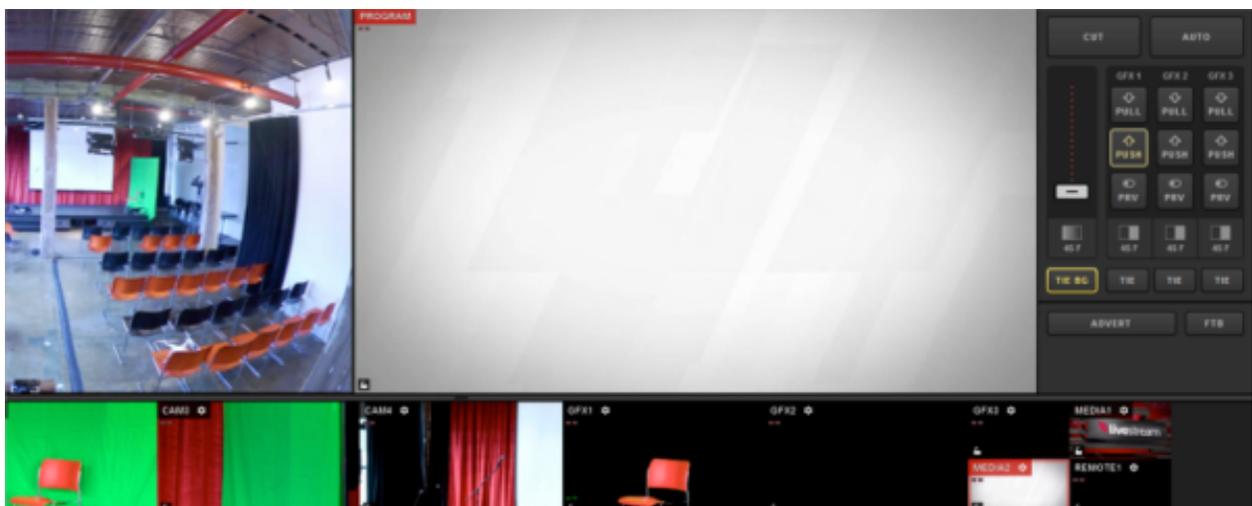
Click the person icon to turn on chroma key.



Livestream Studio will automatically detect the most prominent color (green in this example) and key it out once chroma key is turned on.



Next, close out of the GFX Designer and put either a camera, media source, or graphics source into Program from your multi-view. The example above has a white background video from Media 2.



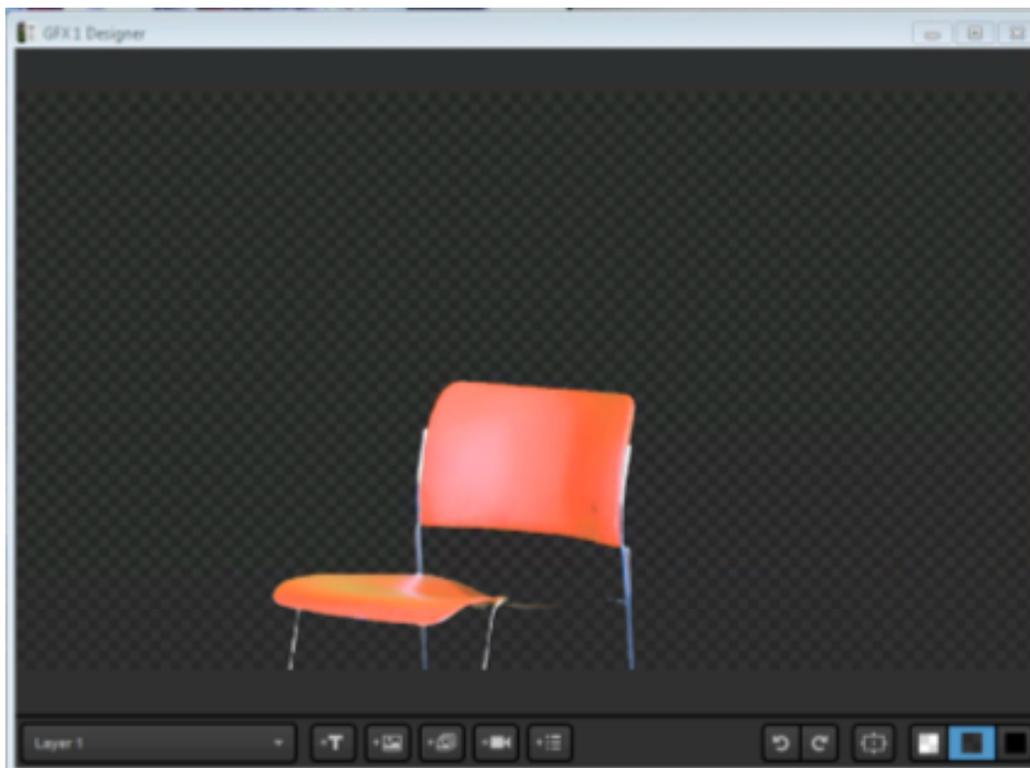
Now push your graphics overlay layer into Program by clicking the corresponding 'PUSH' button.



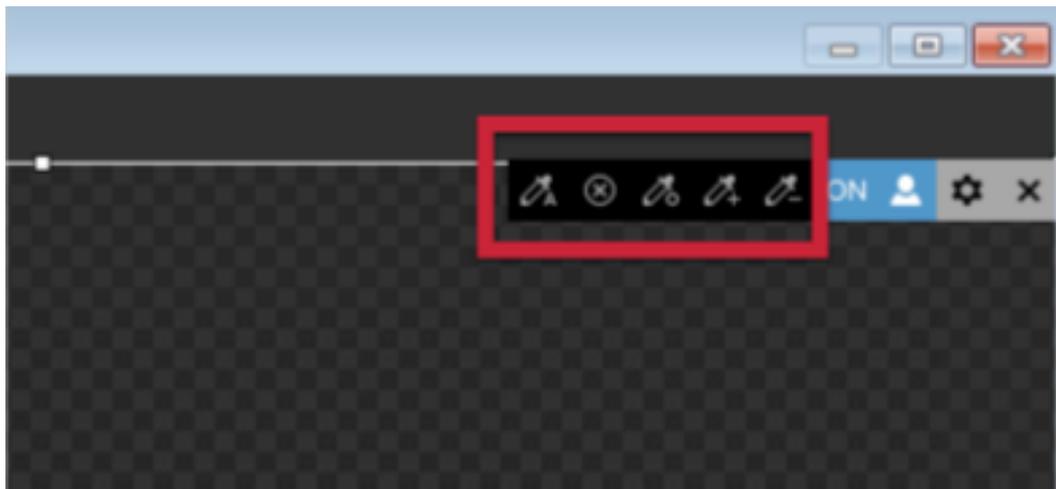
You should now see your chroma keyed input source overlaying your Program source.



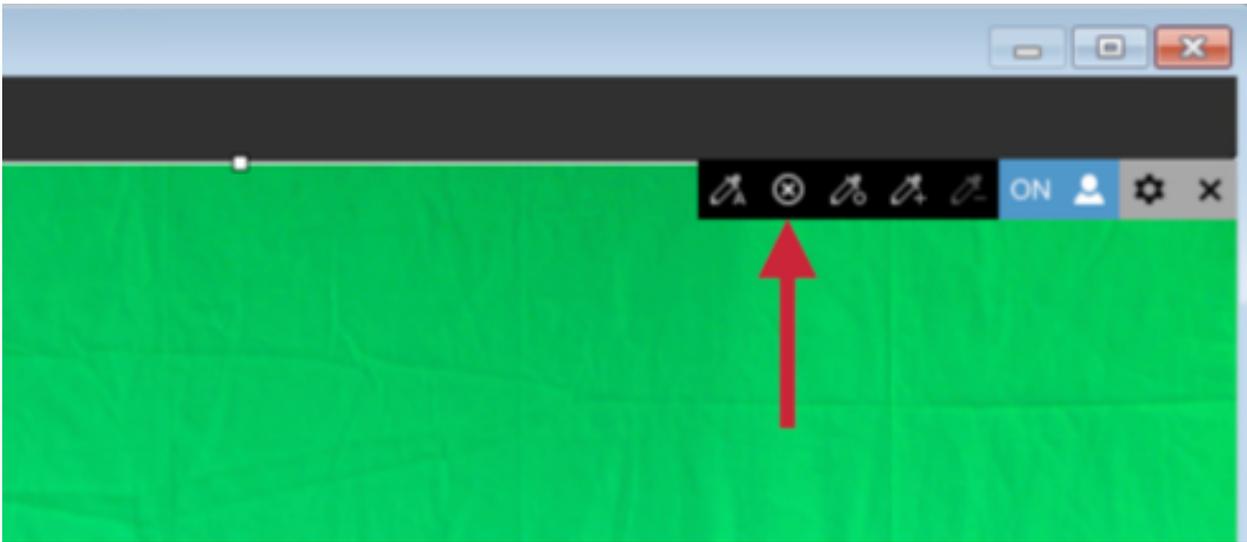
To make further adjustments to your chroma key graphic, go back to the GFX Designer.



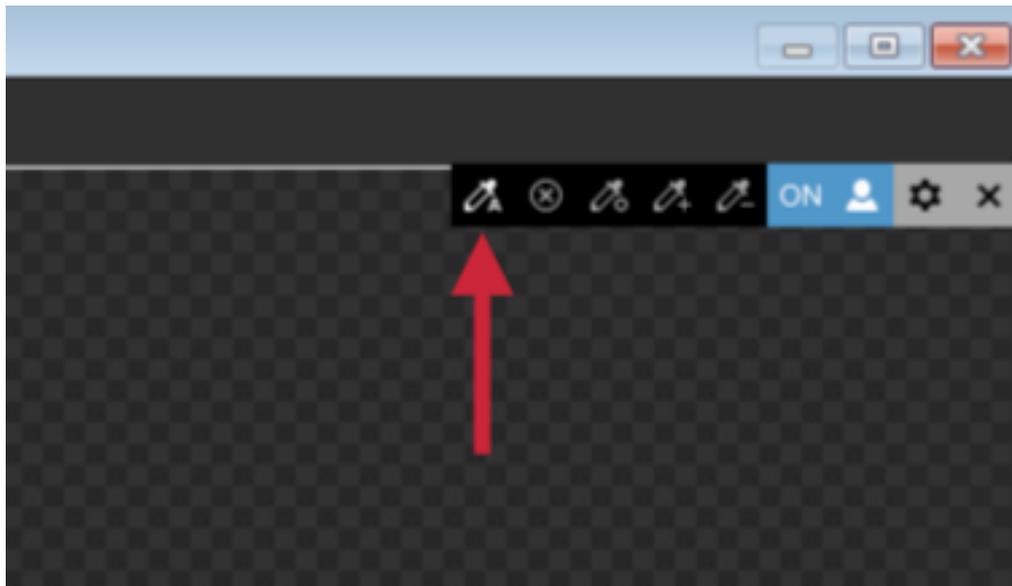
When you select your input source in the graphics overlay while chroma key is turned on, you will see other options in the upper right corner.



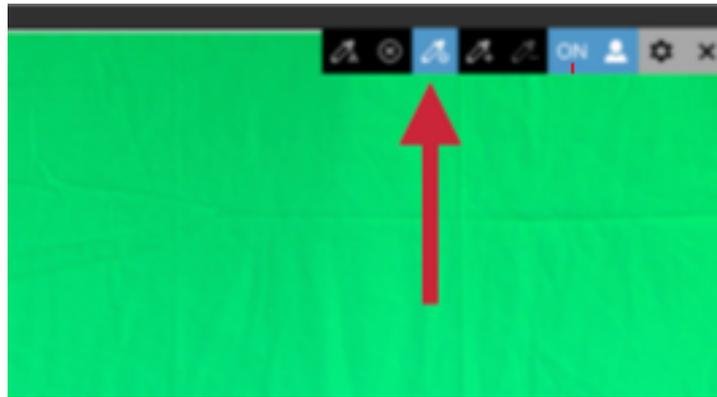
To erase all chroma keying on your input source, click the 'X' icon. Note that the green background has returned to the picture.



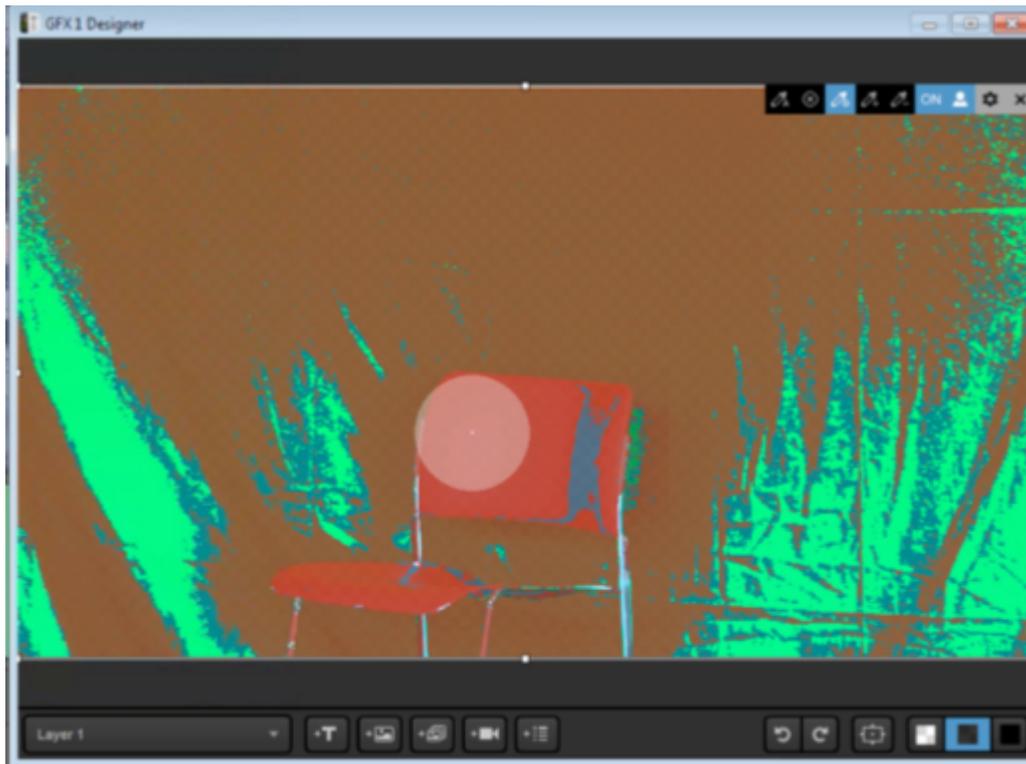
To apply automatic chroma keying (i.e., key out the most prominent color), click the icon of the eyedropper with an A.



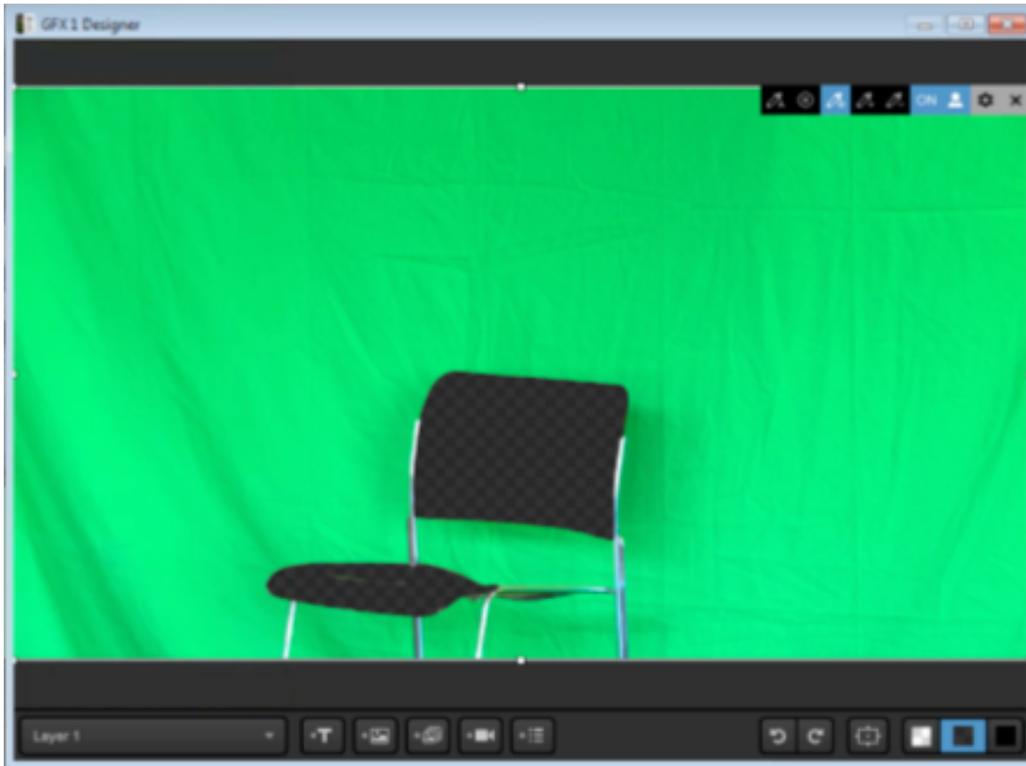
The eyedropper-circle icon will allow you to do rough keying by hand. Select this option, then hover your mouse to the area you want to key (e.g. the back of the chair).



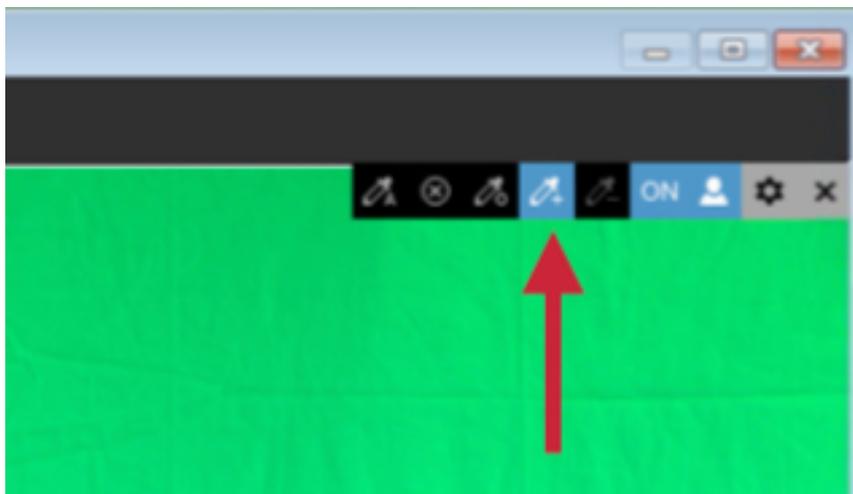
Click and drag your mouse to start real-time keying. You can increase or decrease the keying color range, which will be indicated by a circle around the area.



The end result should be similar to the image above, where the colors within the range that was selected are now on the chroma key palette and thus not visible.

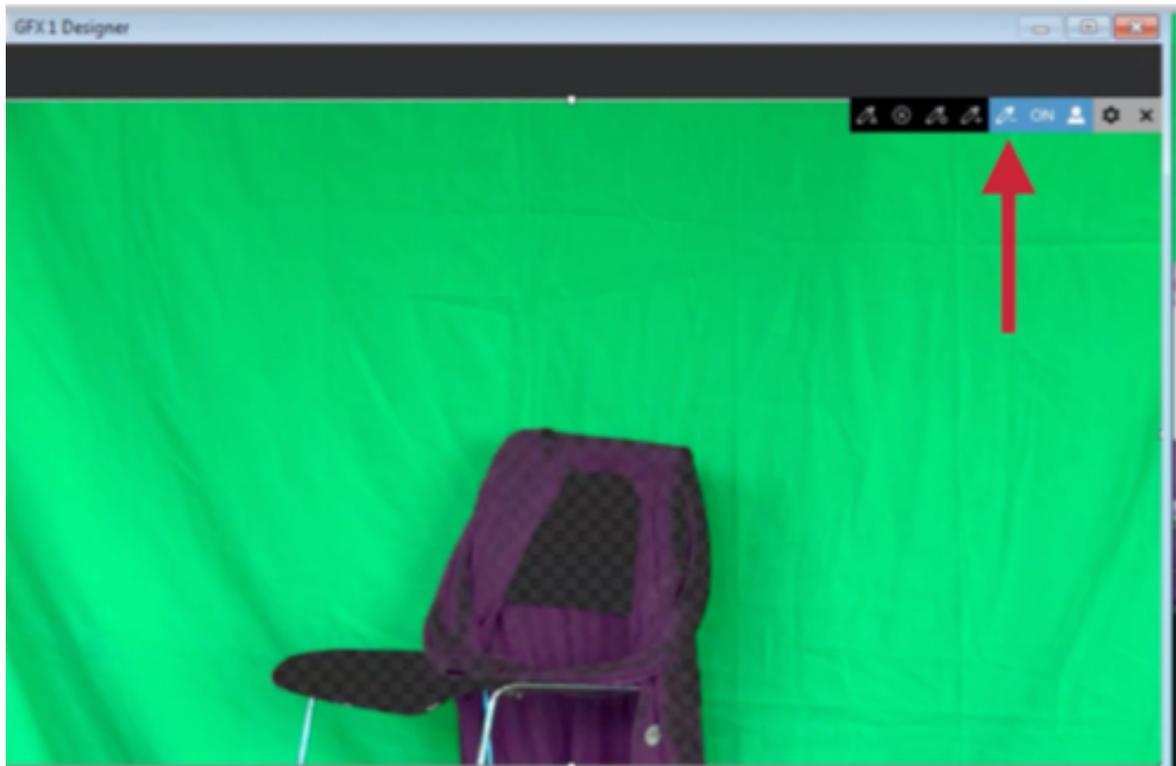


The eyedropper with a plus sign either initializes the chroma key or adds color hues to the chroma key palette. This is helpful if there are shadows in your background that did not key out fully.



The eyedropper with a minus sign will exclude colors from your chroma key palette. This is helpful if a color on your set is similar to the color you keyed out and is faded. In

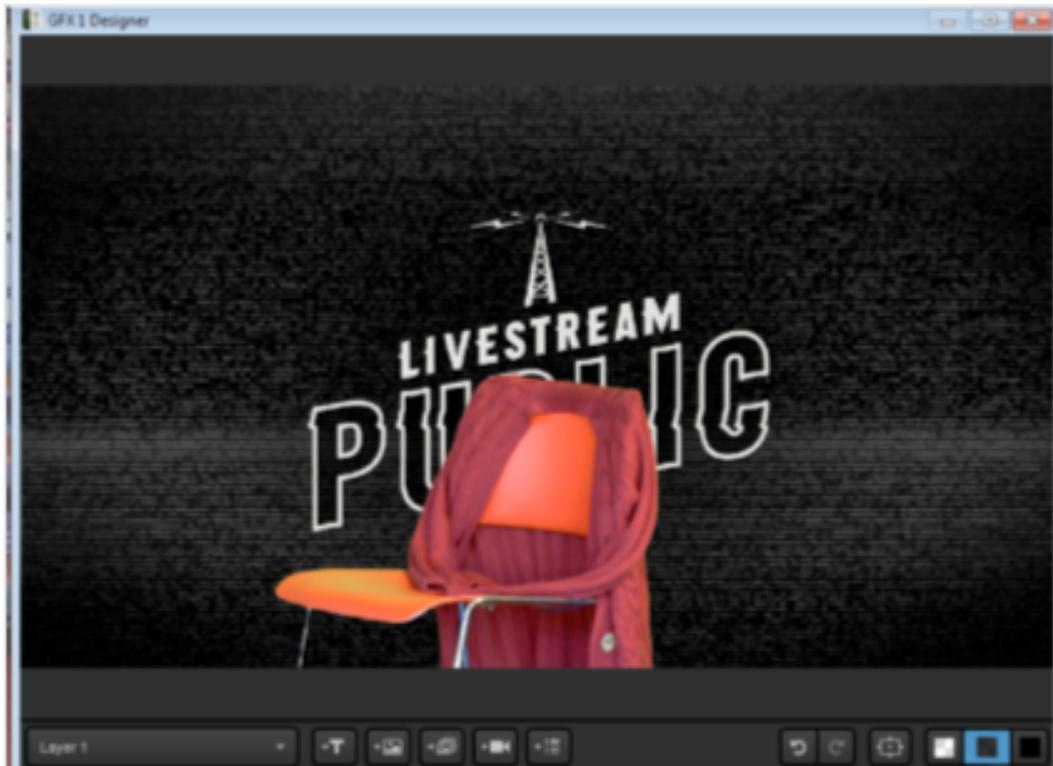
this example, the orange chair is keyed out and the red sweater is also largely keyed out.



After using the eyedropper minus tool on the red sweater, you can now see the sweater; orange is still on the chroma key palette.



Please note that other graphics or images in the same graphics layer will be visible. Use caution with this type of workflow, as it is likely to increase your CPU usage.



# Hardware Encoding and Decoding with Livestream Studio

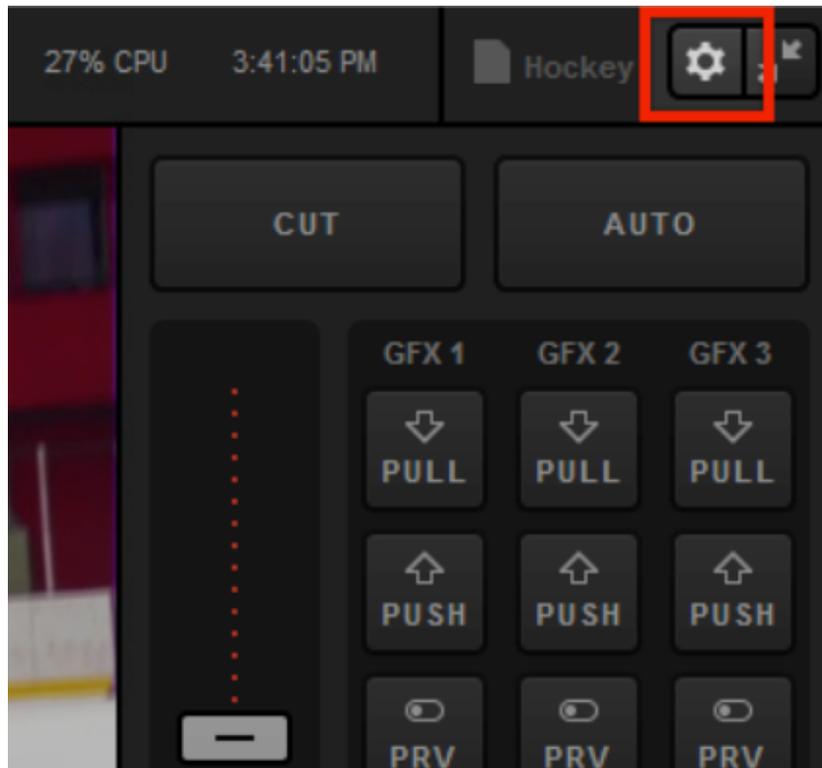
Studio includes [hardware encoding](#) and [hardware decoding](#) which moves the video processing to a dedicated GPU, greatly reducing your CPU usage while running Studio.

These features are only available on computers with Intel processors that include Quick Sync Video ([which are listed here](#)) or have an NVIDIA GeForce card that includes NVENC and NVDEC. We have instructions on how to determine if your computer has an [Intel Quick Sync processor](#) or has an NVIDIA card [that supports NVENC and NVDEC](#).

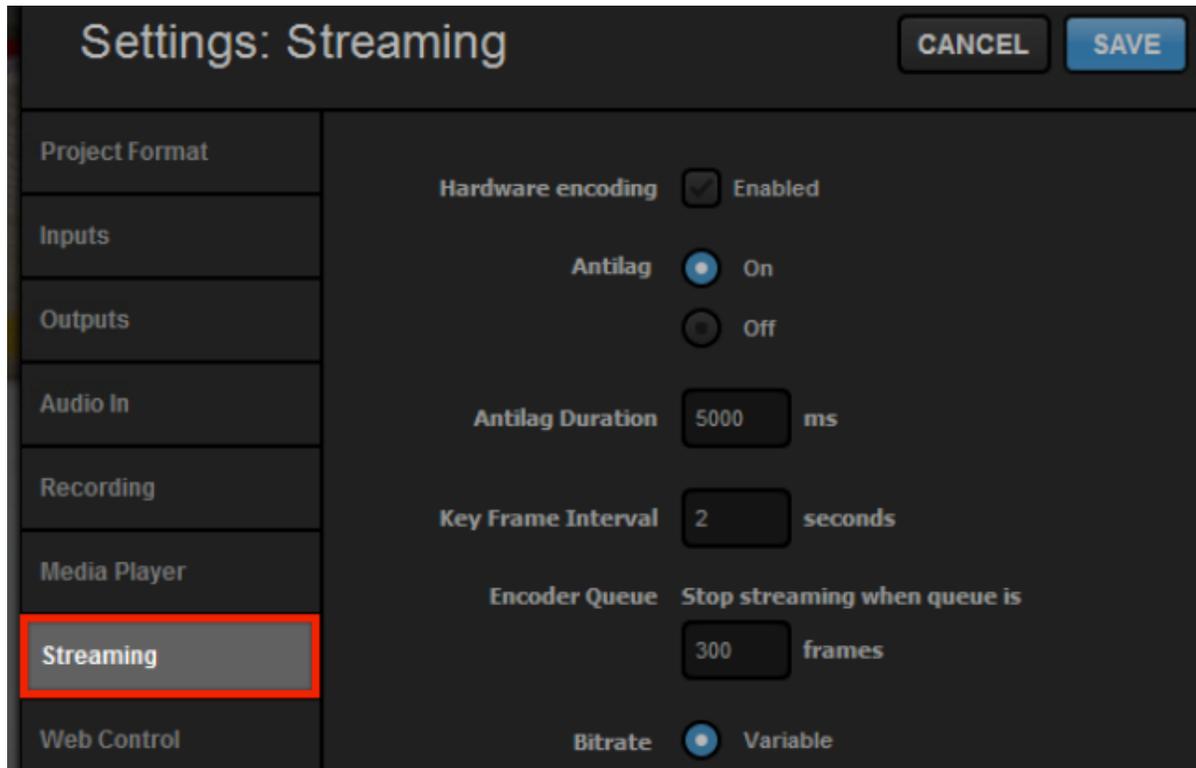
The HD31, HD51 4K, and HD550 4K are the only *Livestream-built* units that have the required hardware that includes these features. Many laptops include them as well.

Computers that do not have the proper hardware installed will not display these features in Studio.

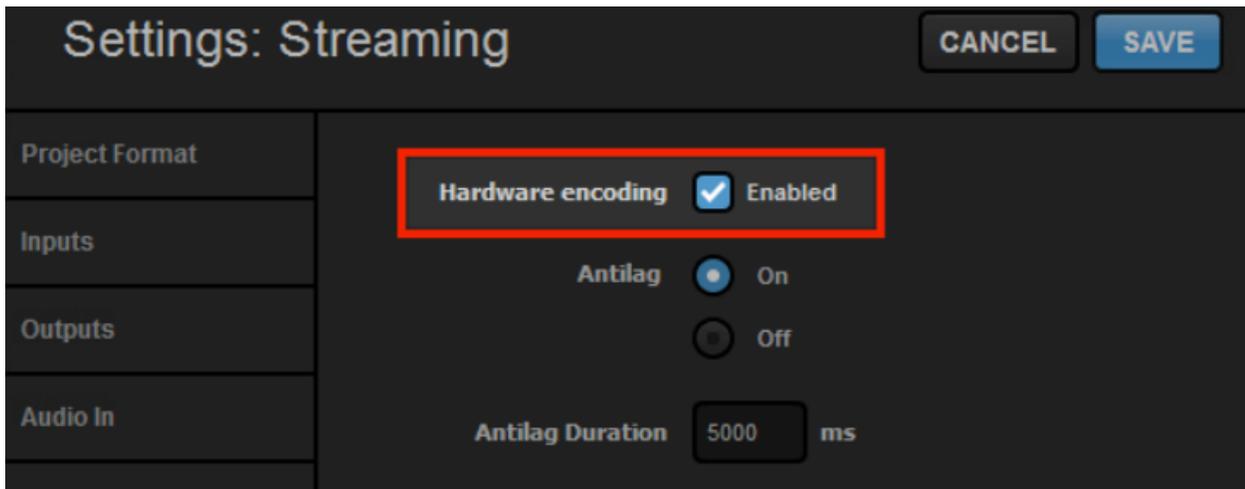
To enable hardware encoding in Livestream Studio, click the **Settings** icon in the upper right corner of the interface.



Navigate to the Streaming menu.



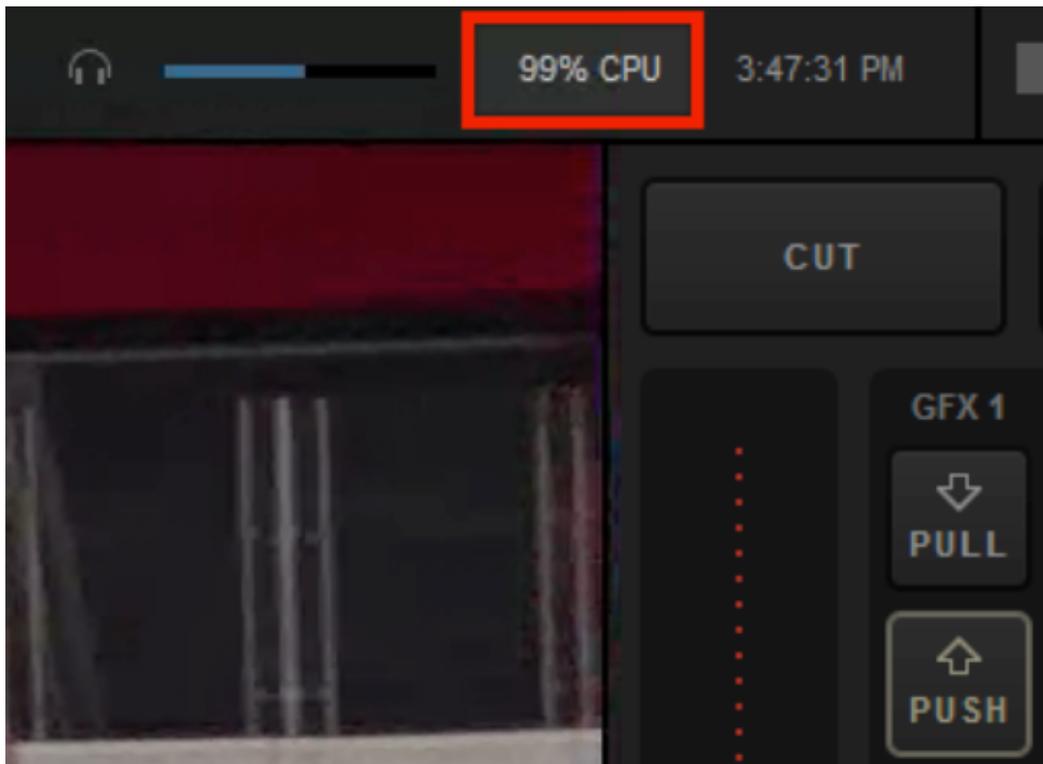
At the top of the menu, check Hardware Encoding. Then click Save.



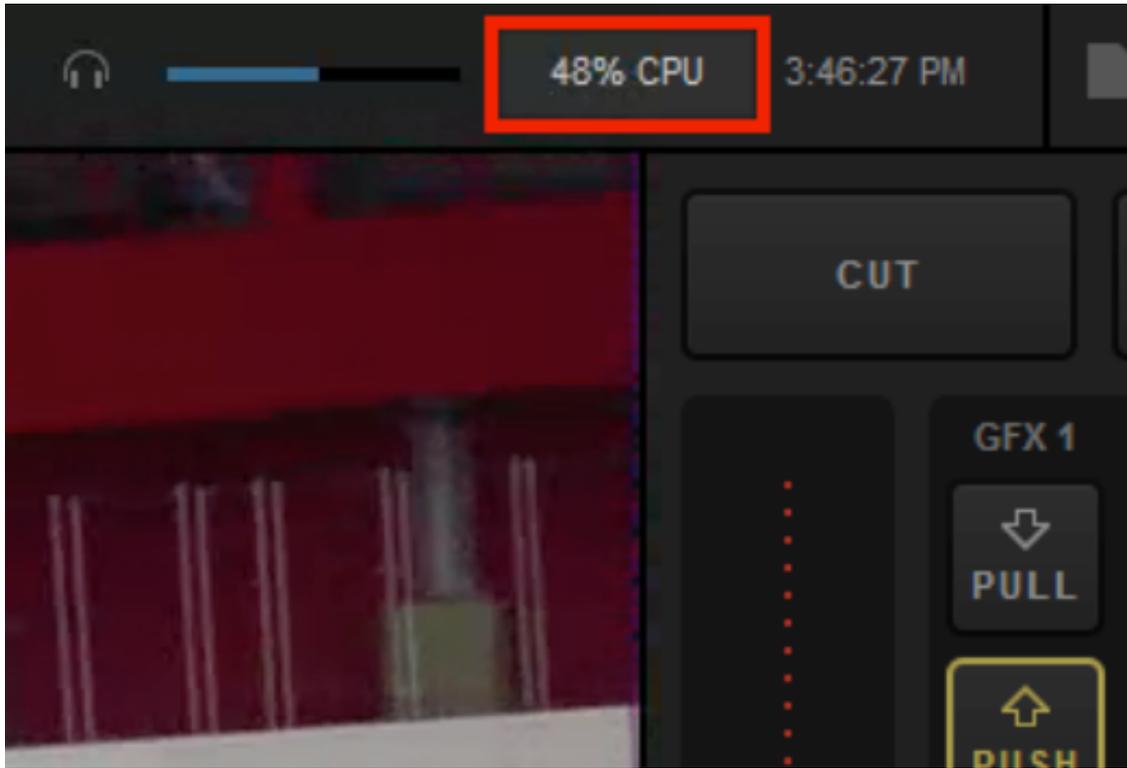
As an example, here is the processor being used on a Windows 10 computer.

Notifications & actions	Edition	Windows 10 Pro
Power & sleep	Version	1607
Storage	OS Build	14393.447
Offline maps	Product ID	00330-80000-00000-AA648
Tablet mode	Processor	Intel(R) Core(TM) i7-4790K CPU @ 4.00GHz 4.00 GHz
Multitasking	Installed RAM	16.0 GB (15.9 GB usable)
Projecting to this PC	System type	64-bit operating system, x64-based processor
	Pen and touch	No pen or touch input is available for this display
		<a href="#">Change product key or upgrade your edition of Windows</a>
		<a href="#">Read the Privacy Statement for Windows and Microsoft services</a>

The CPU usage when hardware encoding is turned off—streaming a single bitrate averaging 2128kbps, with 2 media bins, and 1 animated graphics overlay—is nearly 100%. The stream timed out after about 1 minute due to lack of resources.



In comparison, the CPU usage with the same workflow while hardware encoding is turned on was cut in half, down to 48%.



To enable hardware decoding, navigate to the Advanced menu in settings. Make sure Enable hardware decoding is checked. This will reduce the CPU resources needed to bring in your camera sources.

**Graphic Overlay Tracks** 3 GFX Tracks

**Startup**  **Launch on startup**

**Other**  **Tally Lights**

**Send Diagnostic and Usage Data to Livestream**

**Hardware decoding**  **Enable hardware decoding**

**Tabs**  **Allow tabs to be opened as separate windows**

**Video / Audio Delay** RESET DELAY SETTINGS

# How Do I Know if My Intel Processor Includes Quick Sync?

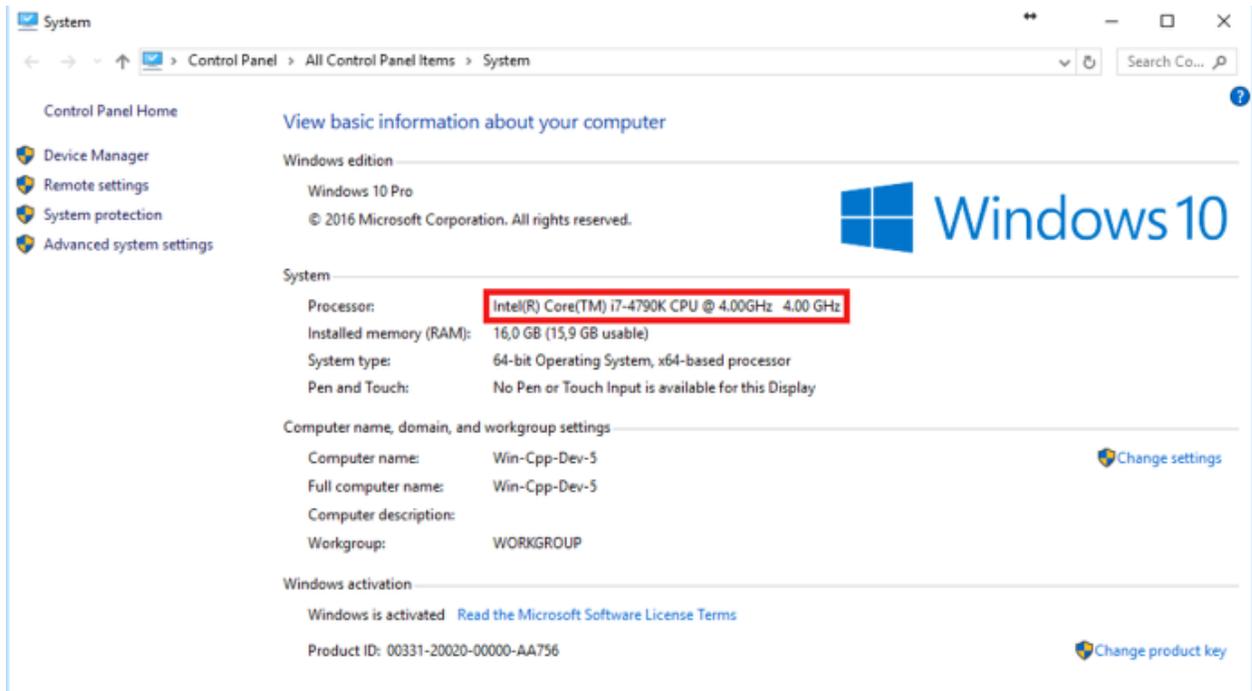
In order to be able to use the [hardware encoding](#) feature in Livestream Studio, you must have the proper hardware installed on your computer. One of these options is having a processor that include Intel Quick Sync. (The other is NVENC via NVIDIA GeForce GPUs.)

Intel Quick Sync is Intel's version of dedicated video encoding and decoding hardware core. Rather than using a general GPU, this core is located on the processor die and is dedicated just for video processing.

 Studio will automatically detect if you have the proper hardware or not. You can quickly check this by going to the **Settings: Streaming** menu. If **Hardware Encoding** does not appear at the top of the menu, then you do not have the GPU hardware.

To determine if your processor includes Quick Sync, first you need to determine your CPU model.

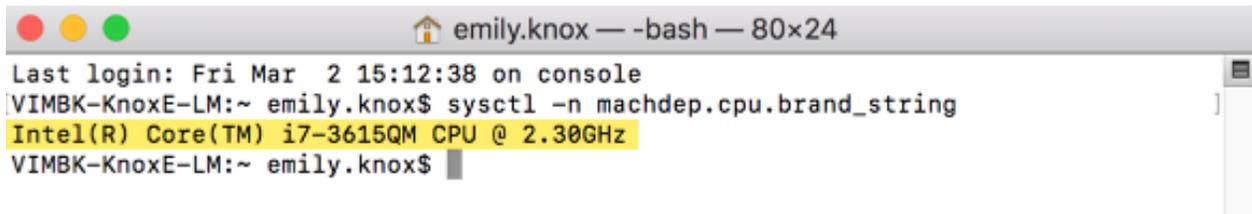
- Windows 7: Open the Start menu, right-click **Computer**, then click **Properties**.
- Windows 8 & 10: Right-click the Start menu, then click **System**.



If you are running Studio (beta) on a Mac, to find the exact CPU model you will need to open the Terminal application. Enter the following command, then press the Return key:

```
sysctl -n machdep.cpu.brand_string
```

Your CPU model will be displayed underneath.



In a web browser, navigate to [this list](#) and find your CPU model (Tip: Use the CTRL+F/ CMD+F search function in your browser and type in the model ID).

The screenshot shows the Intel website's search interface. At the top, the Intel logo is on the left, and a search bar contains the text 'i7-4790k'. A red callout box with the text 'CTRL+F' and an arrow points to the search bar. Below the search bar is a search results table. The table has columns for processor name, release date, price, core count, base frequency, turbo frequency, cache, and graphics. The row for the Intel Core i7-4790K Processor is highlighted with a red border.

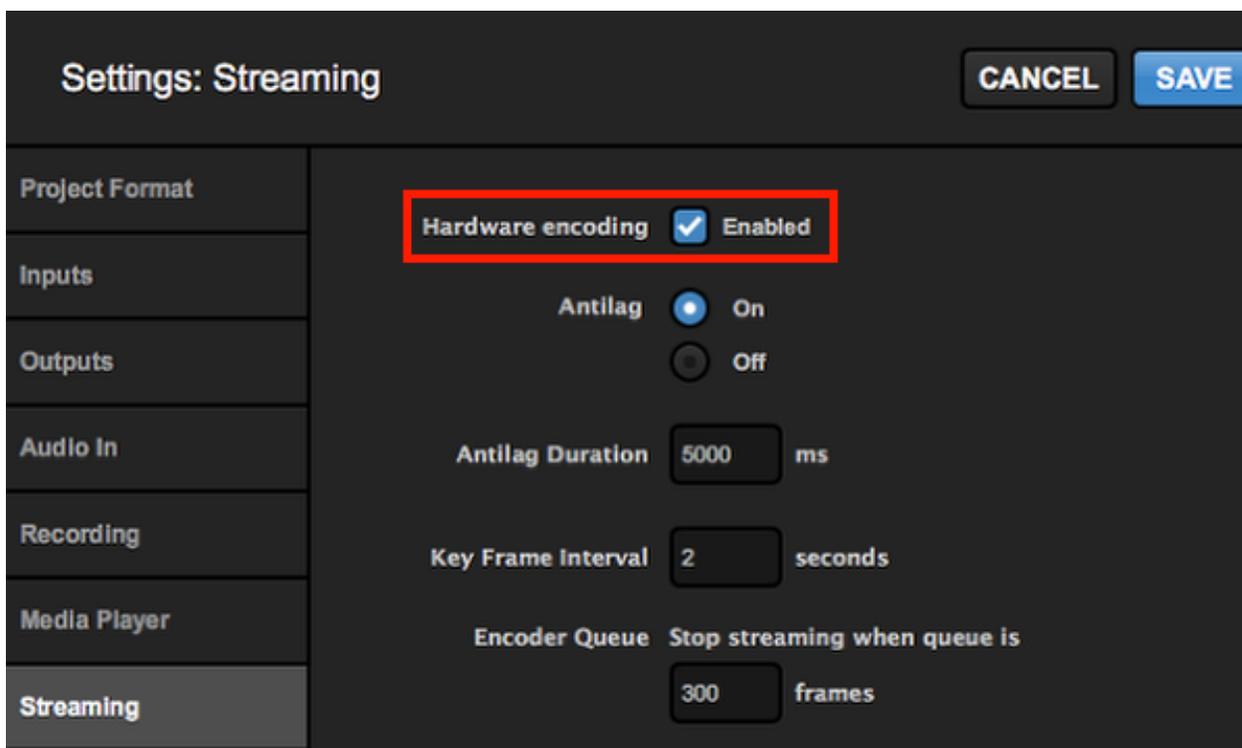
Compare +	Processor Name	Release Date	Price	Cores	Base Frequency	Turbo Frequency	Cache	Graphics
Compare +	Intel® Transcend™ T2130	Q3'14	N/A	2	750.00 MHz			
Compare +	Intel® Transcend™ T2120	Q3'14	N/A	2	750.00 MHz			
Compare +	Intel® Transcend™ T2100	Q3'14	\$26.00	2	750.00 MHz			
Compare +	Intel® Atom™ Processor Z3736G (2M Cache, up to 2.16 GHz)	Q2'14	\$20.00	4	1.33 GHz		2 MB L2	Intel® HD Graphics
Compare +	Intel® Atom™ Processor Z3736F (2M Cache, up to 2.16 GHz)	Q2'14	\$20.00	4	1.33 GHz		2 MB L2	Intel® HD Graphics
Compare +	Intel® Atom™ Processor Z3530 (2M Cache, up to 1.33 GHz)	Q2'14	\$18.00	4			2 MB	
Compare +	Intel® Core™ i7-4790K Processor (8M Cache, up to 4.40 GHz)	Q2'14	\$339.00 - \$350.00	4	4.00 GHz	4.40 GHz	8 MB SmartCache	Intel® HD Graphics 4600
Compare +	Intel® Core™ i5-4690K Processor (6M Cache, up to 3.90 GHz)	Q2'14	\$242.00 - \$243.00	4	3.50 GHz	3.90 GHz	6 MB SmartCache	Intel® HD Graphics 4600

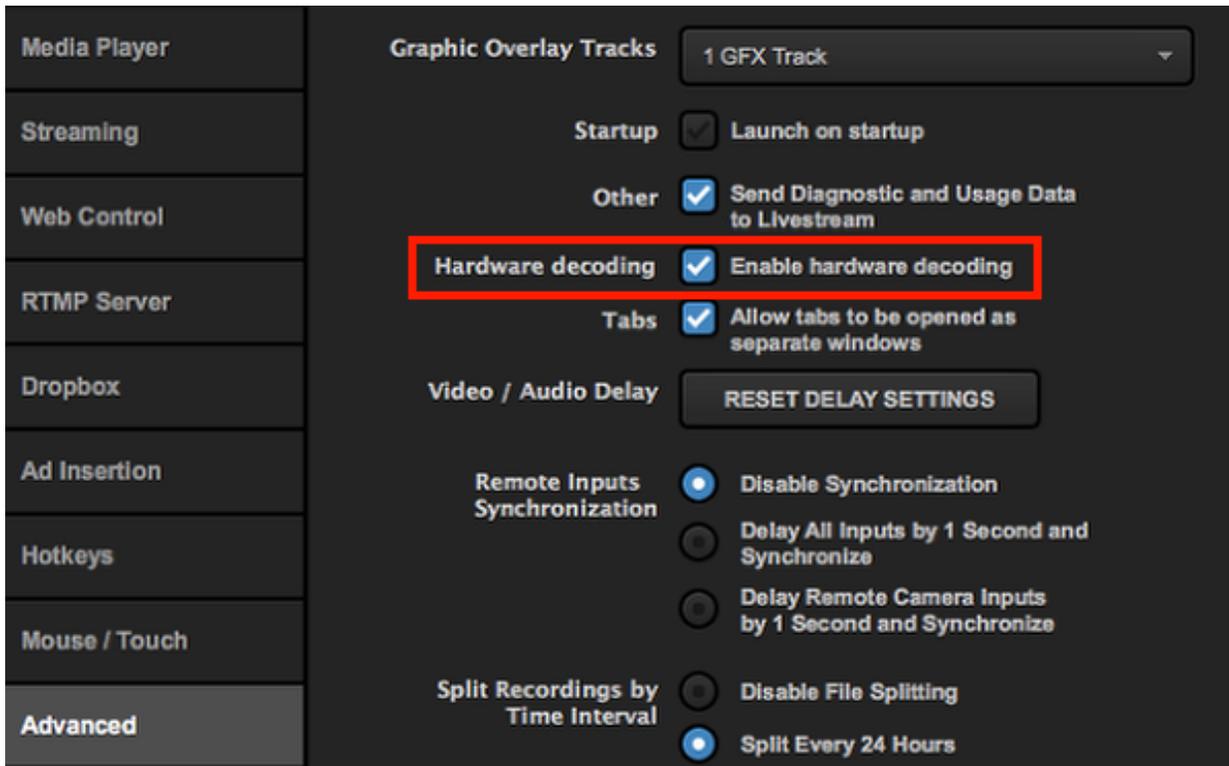
If your CPU does not appear in the list, then you do not have Intel Quick Sync available with your computer's processor.

## How Do I Know if My GPU Supports NVENC and NVDEC?

In order to be able to use the [hardware encoding and hardware decoding](#) features in Livestream Studio, you must have the proper hardware installed on your computer. One of these options is via NVENC (encoding) and NVDEC (decoding), which process the video via a supported NVIDIA GeForce graphics card.

The first sign of knowing whether your PC supports these features is to go into Studio and check Settings: Streaming for Hardware Encoding, then check Settings: Advanced for Hardware Decoding. If these options do not appear in these menus, then, unfortunately, you do not have the supported hardware.





**i** We have successfully tested the following NVIDIA GeForce models:

- GTX1050
- GTX950
- GT730 (GK208-400-A1 - other versions of this model have been reported to not work)
- GTX650

To find out if a specific model supports these features, first visit [this list](#) and search for the card's model name. The quickest way to do this is to hold CTRL+F (Windows) or CMD+F (Mac) and type the model name into the page search. The browser will jump to the first matching result.

Find your model in one of the tables and take note of the Code name (in this case, GTX 1050 is GP107-300).

Model	Launch	Code name	Fab (nm)	Transistors (billion)
GeForce GT 1030 <sup>[7]</sup>	May 17, 2017	GP108-300	14	1.8
GeForce GTX 1050 <sup>[13]</sup>	October 25, 2016	GP107-300		3.3
GeForce GTX 1050 Ti <sup>[13]</sup>	October 25, 2016	GP107-400		3.3
GeForce GTX 1060 <sup>[14]</sup>	August 18, 2016	GP106-300		4.4
	July 19, 2016	GP106-400		

Now visit the [NVIDIA GPU Support Matrix](#). The first table on this page represents cards that support hardware encoding (NVENC), the second table is for cards that support hardware decoding (NVDEC). Search for the first two letters and three numbers of the code name (in this example, GP107).

If your code name is on the first table, then your GPU supports hardware encoding in Livestream Studio. If it appears in the second table, then it supports hardware decoding.

Quadro M2000	Maxwell (GM206)	GM206	1	1	Unlimited
Quadro P400	Pascal	GP107	1	1	2
Quadro P600	Pascal	GP107	1	1	2
Quadro P1000	Pascal	GP107	1	1	2
Quadro P2000	Pascal	GP106	1	1	Unlimited

If your NVIDIA card falls outside of these parameters, then NVENC and NVDEC may not be supported on that card.

# Using a Bonded Network to Stream

Livestream Studio has the ability to stream via a bonded connection, allowing you to stream over multiple Ethernet, Wi-Fi or 4G/LTE network connections, increasing your bandwidth while also allowing you to create network redundancy.

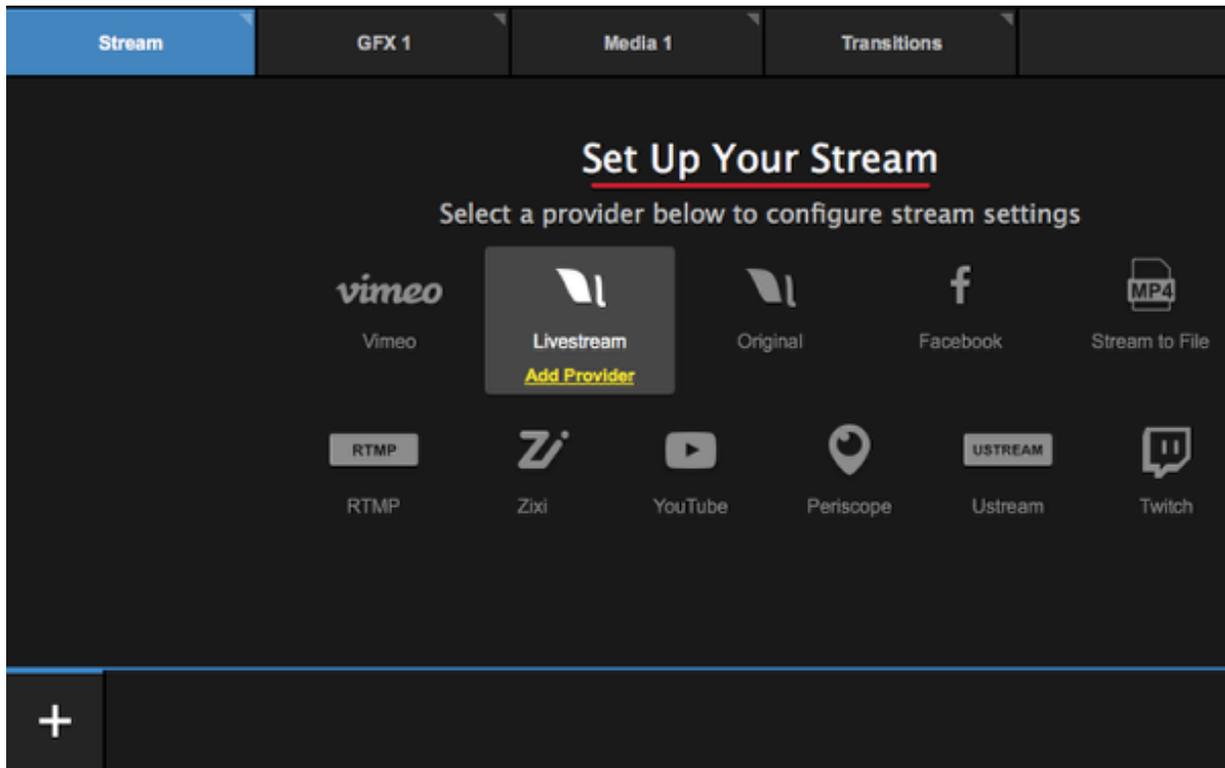
**!** **Important:** Bonding is only available when streaming to Livestream. If choosing multiple providers, be aware that other providers will use only the network you selected when configuring each provider's stream settings.

While Windows should recognize and automatically install any necessary drivers for USB modems, the drivers can also be manually downloaded from the modem vendor's site. Ensure that all networks can access the Internet.

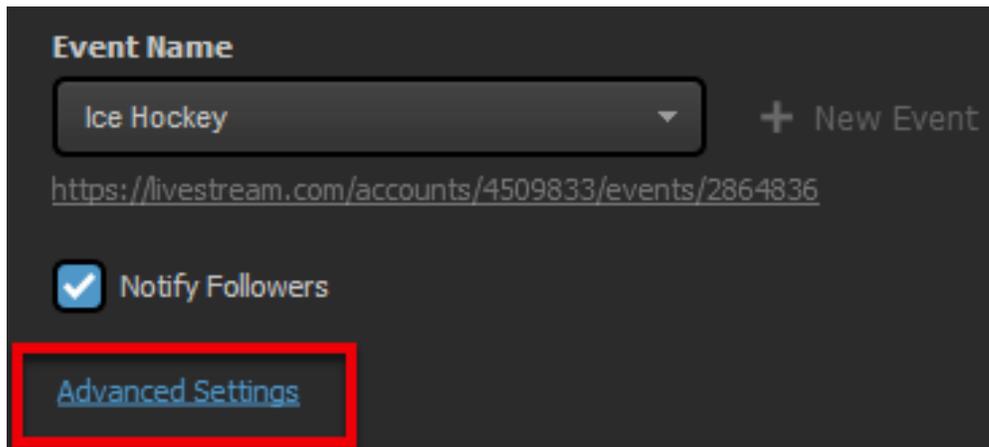
In order to successfully stream with a bonded connection, ports UDP 2088 and TCP/IP 80 need to be open in addition to standard Firewall ports.

As a best practice, it's recommended that USB devices are spread across your PC's various USB ports and hubs. This avoids taxing each USB hub and ensures that each modem's connection is used.

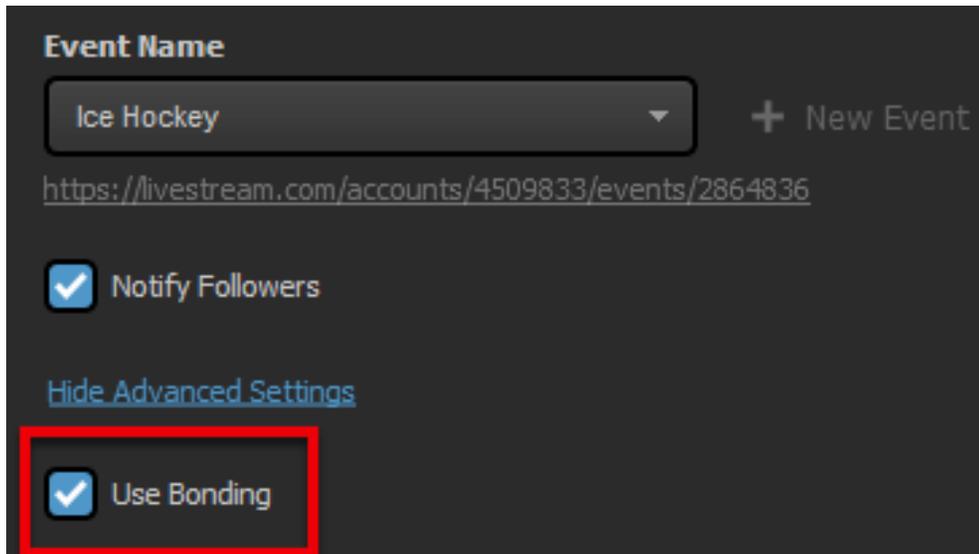
In Livestream Studio, navigate to the **Stream** tab and login to your Livestream account.



Select your event, then click Advanced Settings.

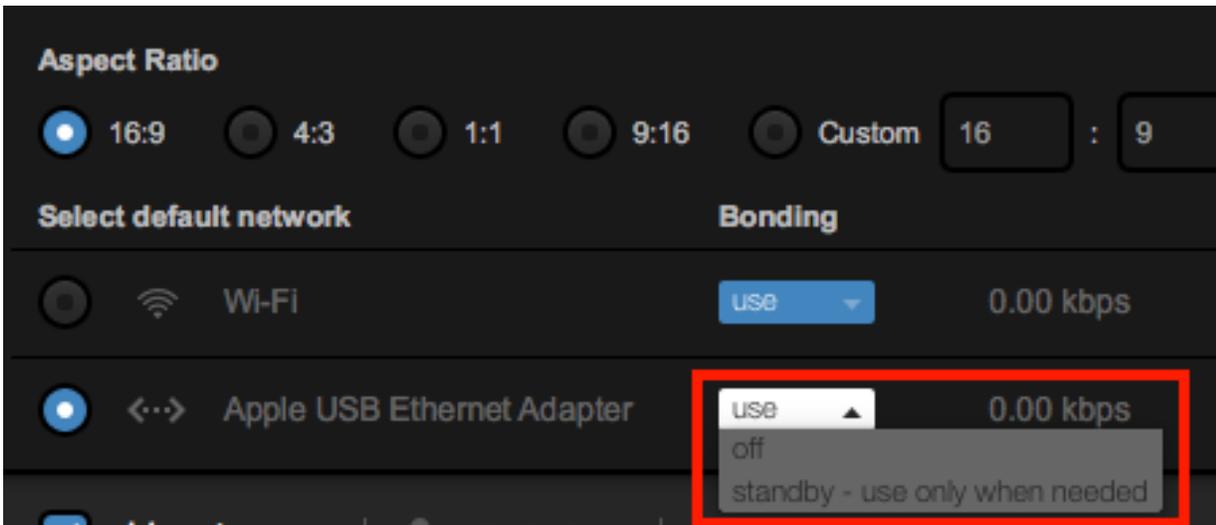


Check Use Bonding, then click Done.

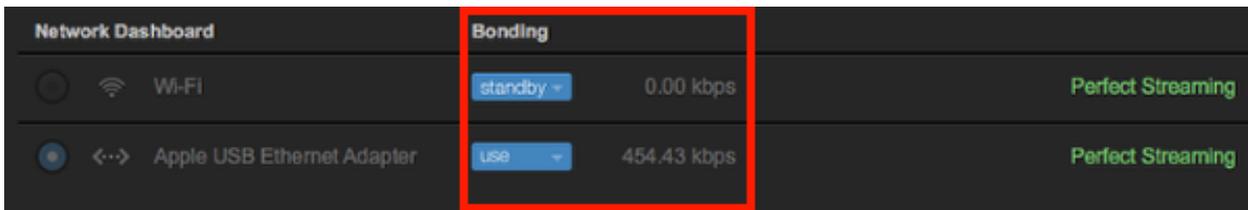


At the top-right corner of the Stream module is a gearwheel. Select this to configure default settings for your stream, including your default network. Here you will see a **Bonding** column with each corresponding network and a small dropdown menu with the following options:

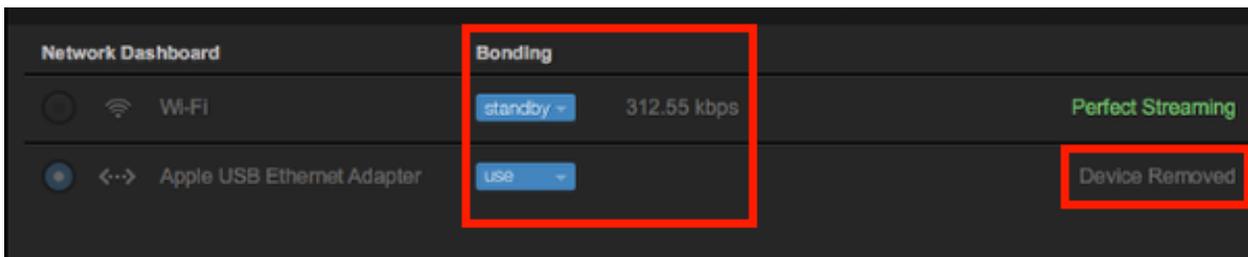
- **Use:** Networks with this option selected will combine together and distribute the stream.
- **Standby - use only when needed:** This network will not be used unless all other active networks lose connection. For example, if you have a 4G USB modem plugged in with data caps, you may want to consider saving that as your backup connection to avoid data overage charges.
- **Off:** Will not be used at any point during your broadcast regardless of the status of other network connections.



When you go live, your network dashboard will show information for each network, such as the bitrates each active one is distributing and if one disconnects.



Your **standby** networks will not stream unless a problem occurs with all of your selected primary networks (i.e. those with Use selected).

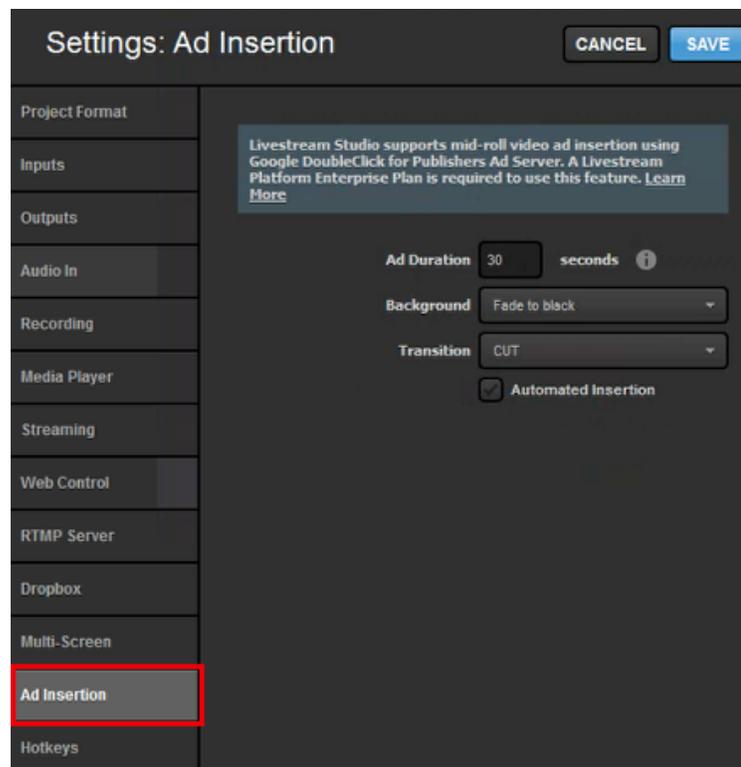


# Configuring Mid-Roll Advertisements

Owners of the Livestream Studio™ software who also have an [Enterprise plan](#) on Livestream can now insert a mid-roll advertisement during a live broadcast with the press of a button. In order for this feature to work, make sure you have set-up and [configured a Google DFP account](#).

Once the Google DFP account is properly configured with Livestream, launch Livestream Studio.

Open the settings menu and navigate to the Ad Insertion menu.



Within this menu tab, you'll find the following options:

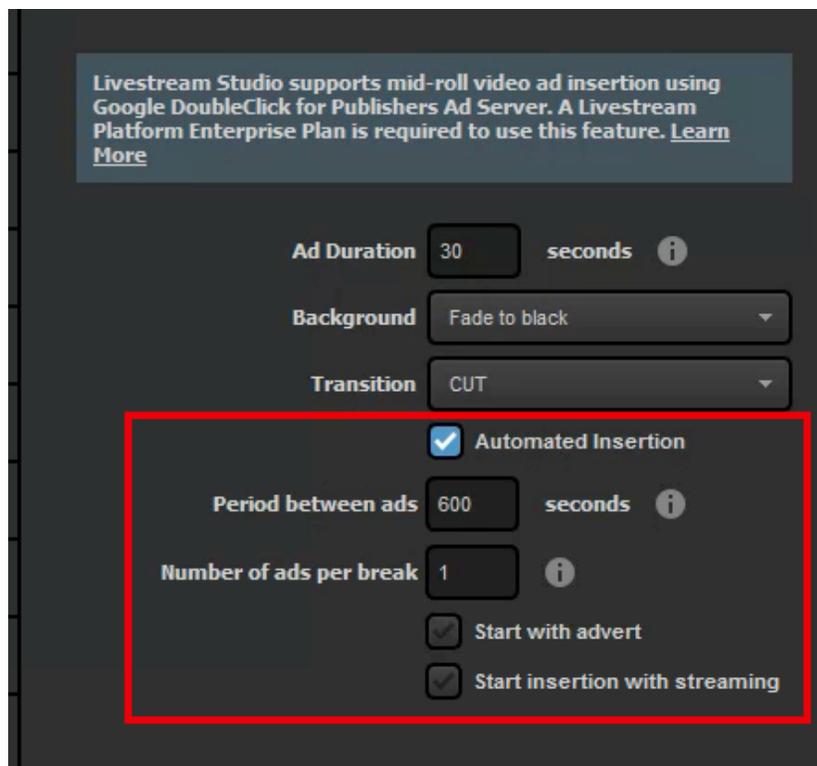
Segment Duration: adjust the length of the mid-roll advertisement segment. This is

how long an advertising segment will last before it starts over. When you click 'Advert' again, Livestream Studio will switch to the Preview source at the end of the segment.  
**Background:** Adjust the image displayed behind the advert. Options include:

- Fade to Black
- Any of the available GFX/Color/Media inputs

**Transition:** Adjust the transition in and out of the advert. Options include 'Cut' 'Auto'

**Automated Insertion:** Checking this will bring up additional settings if you want your advertisement to run at a set interval. This can be helpful if you have strict time limitations or have to meet certain sponsorship requirements.



**Period between ads:** The time, in seconds, between your advertisements being triggered.

**Number of segments per period:** How many segments roll before advertisements are no longer triggered.

**Start with advert:** Segment will begin by playing the advertisement, rather than starting with showing what you selected to go in the background.

**Start insertion with streaming:** When you go live, the first content your viewers will see is your advertising.

After configuring the Ad Insertion Preferences, click Save. To activate a mid-roll manually, click the 'Advert' button below the transition controls.



When inserting an advertisement via the Livestream Studio™ Software, the following should occur:

- Depending on your choice of background, the Program window will change to reflect the selected option.
- The **Advert** button will become red and include a Countdown timer.
- On the top Left of the Program window, it will read "OUTPUT Advertisement: [Transition] is locked until End". In the below example the option selected is "Fade to Black".

After clicking **Advert** again, it will switch to a countdown to when your stream will return to content.



## Adding & Configuring Tally Lights

A tally light is a small signal-lamp on a professional video camera or monitor. It is usually located above the lens or on the electronic viewfinder and communicates that the camera is 'live' - i.e. its signal is being used for the 'main program' at that moment.

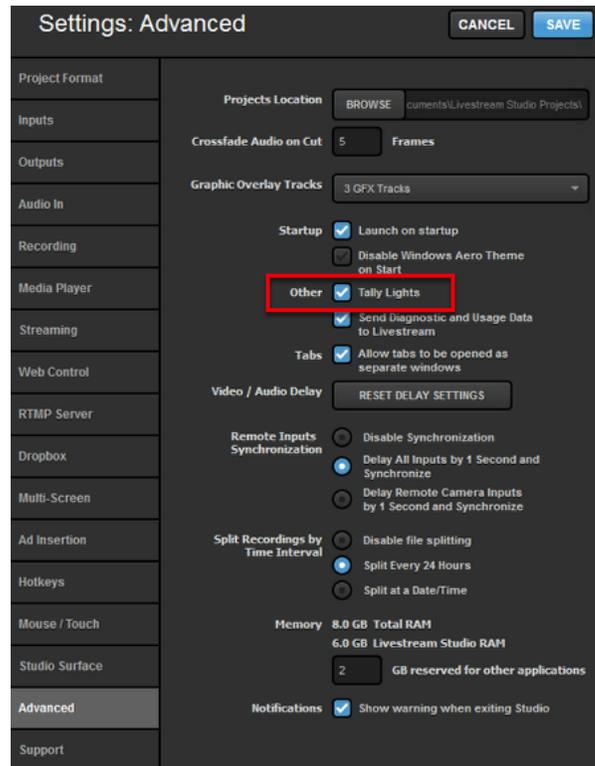
Tally light systems by MetaSETZ (<http://www.metasetz.com>) are currently the only systems supported by Livestream Studio.



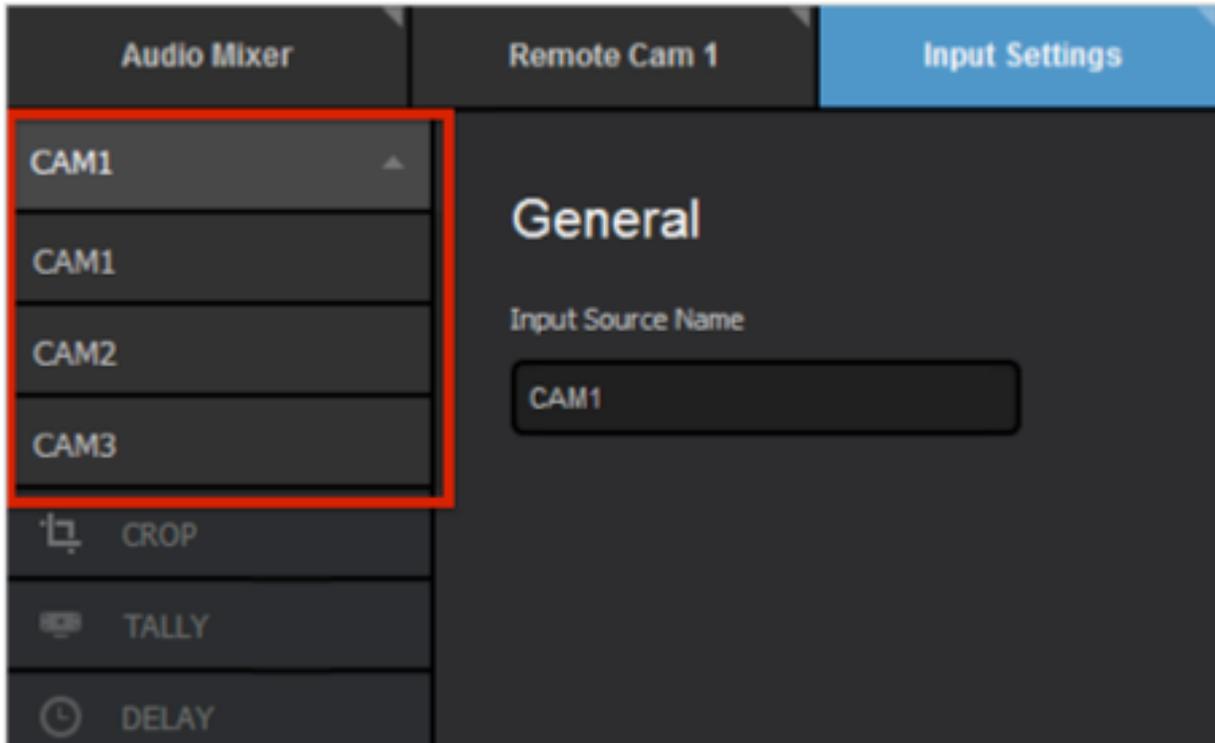
Once you have acquired your Tally Light system, connect it to your computer via an available USB port. The system should recognize it and automatically install the drivers.

Open the Livestream Studio software and open Settings: Advanced.

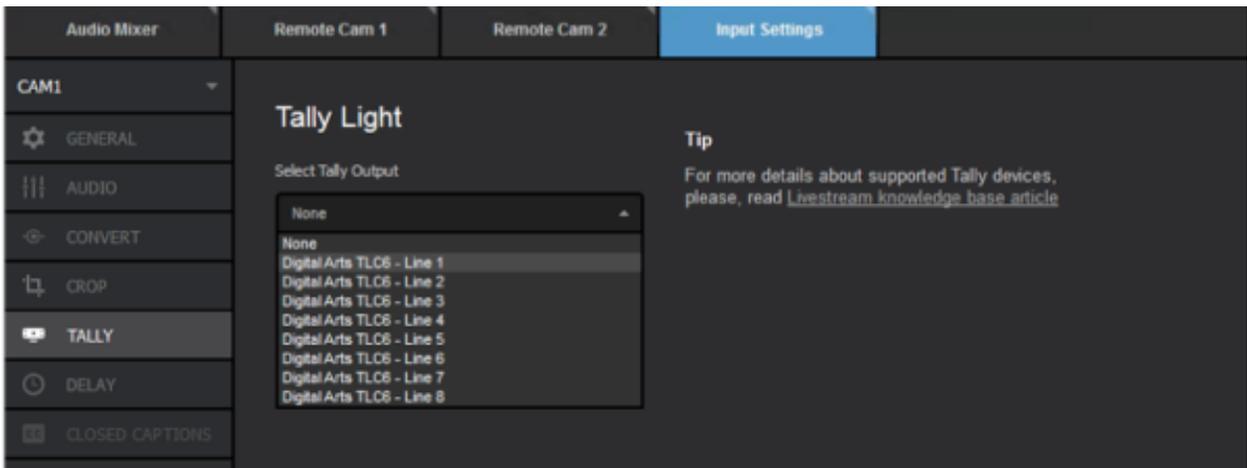
Under Other, check the Tally Lights option. Save your settings.



Go to the Input Settings tab and select the camera to which you want to assign a tally port.



Select Tally and assign one of the available tally ports to your camera as seen below. Do this for each of your cameras.



When the camera is set to Program, the selected Tally Light will turn on.



# NewTek NDI Integration in Livestream Studio

Livestream Studio includes NewTek NDI Integration, allowing Livestream Studio producers to input or output video sources over their local network with other NDI enabled software and devices.

## What is NewTek NDI?

NDI, which stands for **Network Device Interface**, is an open protocol developed by NewTek that allows for high-quality video & audio signals to be transferred between devices over a local area network (LAN). In other words, different video software products with the [NDI tools and applications installed](#)--such as Livestream Studio, TriCaster, Adobe Premiere Pro, and more--can now communicate their video signals to each other over your local network with very low latency.

## IS NDI|HX Supported?

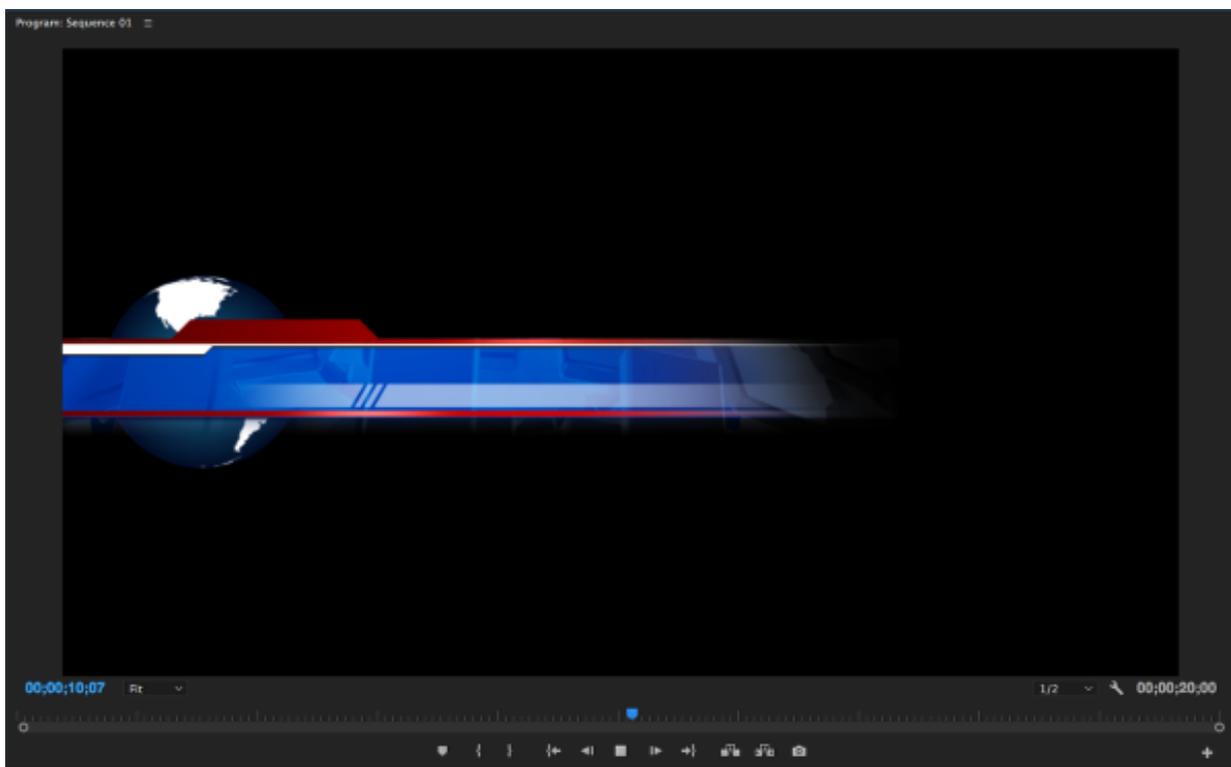
Yes, provided that you are using Studio 5.0 or higher and you have the NDI|HX driver installed on your Studio machine. You can find the driver download [here](#).

## How Do I Set Up NDI Integration with Livestream Studio?

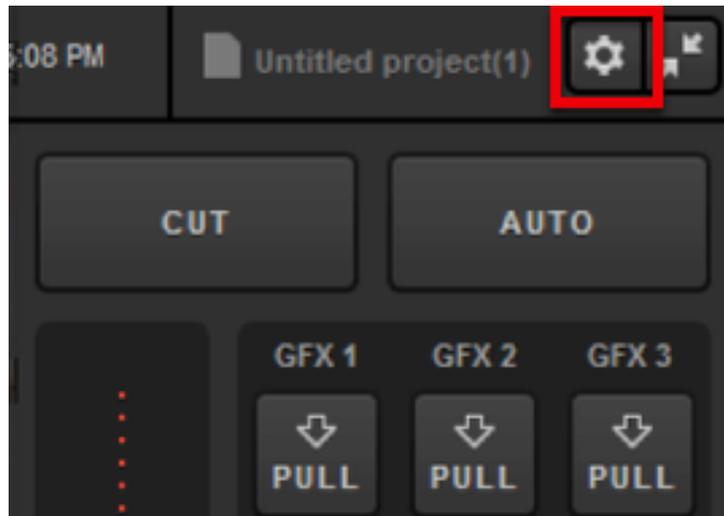
All you need to do is make sure you are running version 4.5 (or later) of Livestream Studio and make sure it is connected to the same local IP (i.e. same network) as any other NDI enabled devices you wish to use with Livestream Studio. The integration is built into the software.

## How Do I Bring In Another Source via NDI?

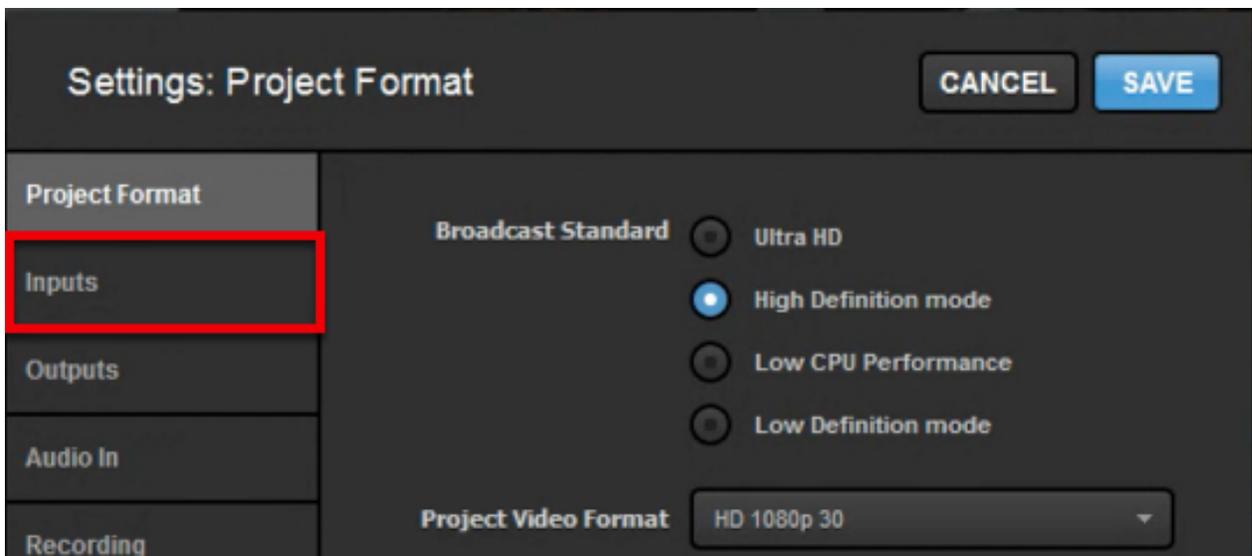
First, you need to have another NDI enabled source connected to the same network as your Livestream Studio system. This example will show a looping graphic sequence in Adobe Premiere Pro running on an iMac. [Learn more about Newtek's NDI tools and downloads.](#)



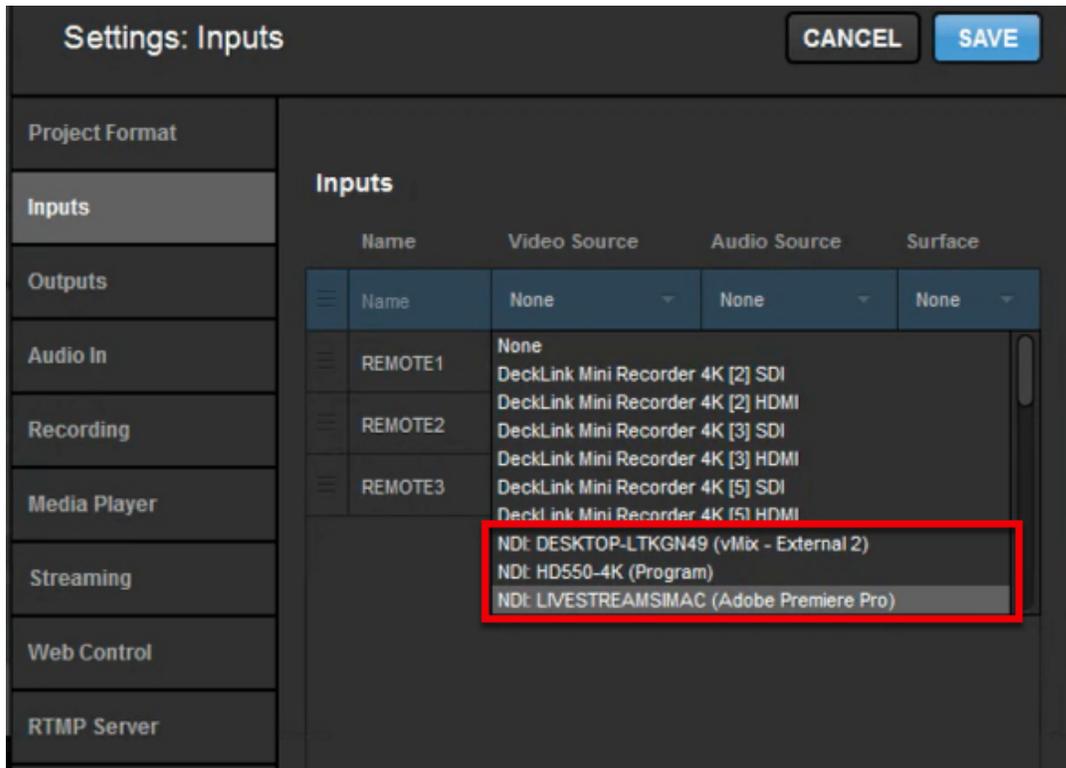
In Livestream Studio, click the gearwheel in the upper right corner to access settings.



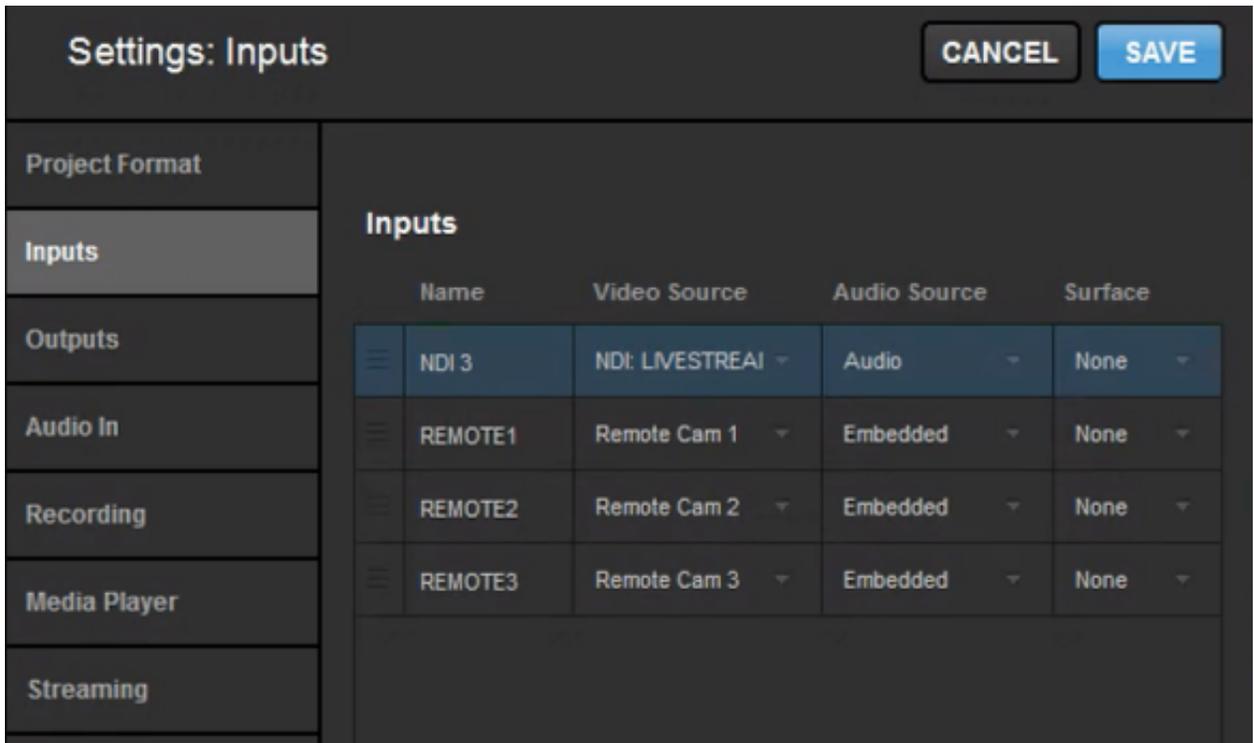
Navigate to the Inputs menu.



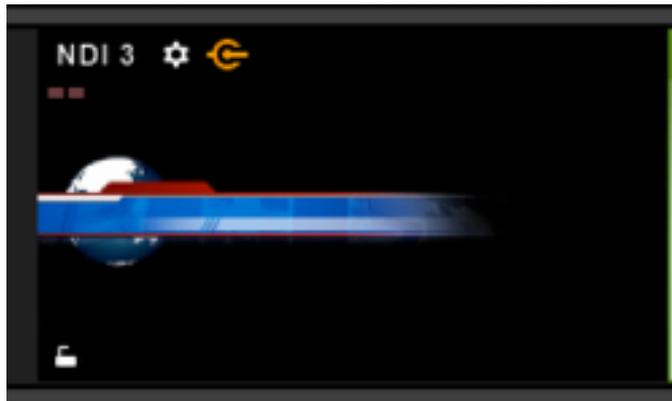
Add an Input and click the Video Source dropdown menu. NDI enabled sources on your network will be available as input options. The third option here is the iMac running Adobe Premiere Pro.



Select your desired NDI source(s), then click Save. Studio can handle up to 25 NDI sources.

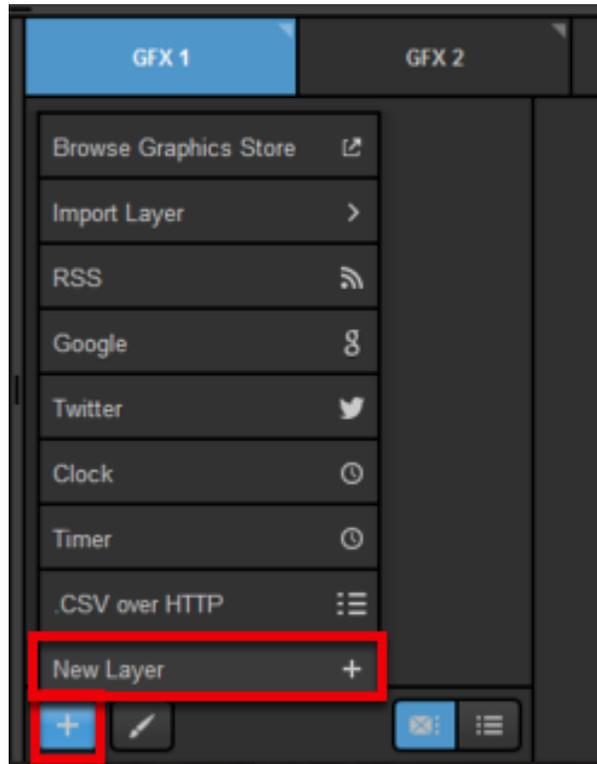


Your NDI source will appear in your multi-view in Livestream Studio along with all other inputs. You can switch it into Preview and Program as you would any other source.

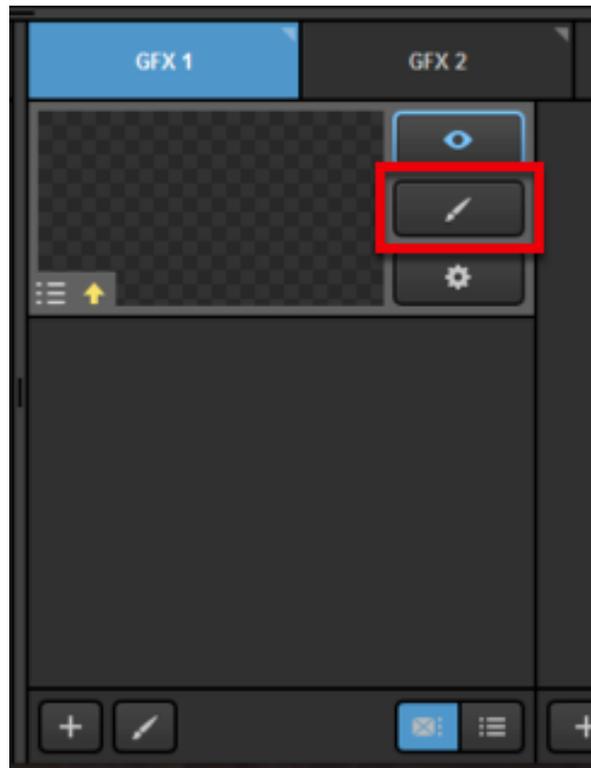


A key feature with NDI is **alpha channel support**. This means a source like the one shown above, which is a looping graphic with no background, can also be brought into Livestream Studio with a transparent background.

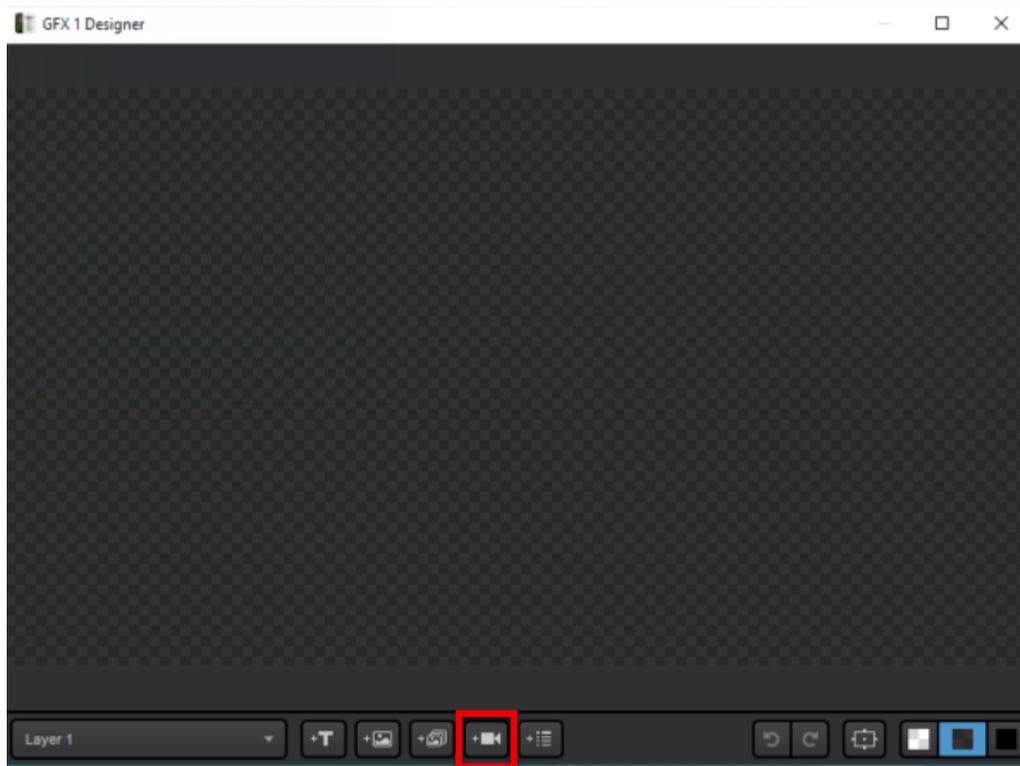
To enable this in Studio, navigate to one of the GFX menus, select + and click New Layer.



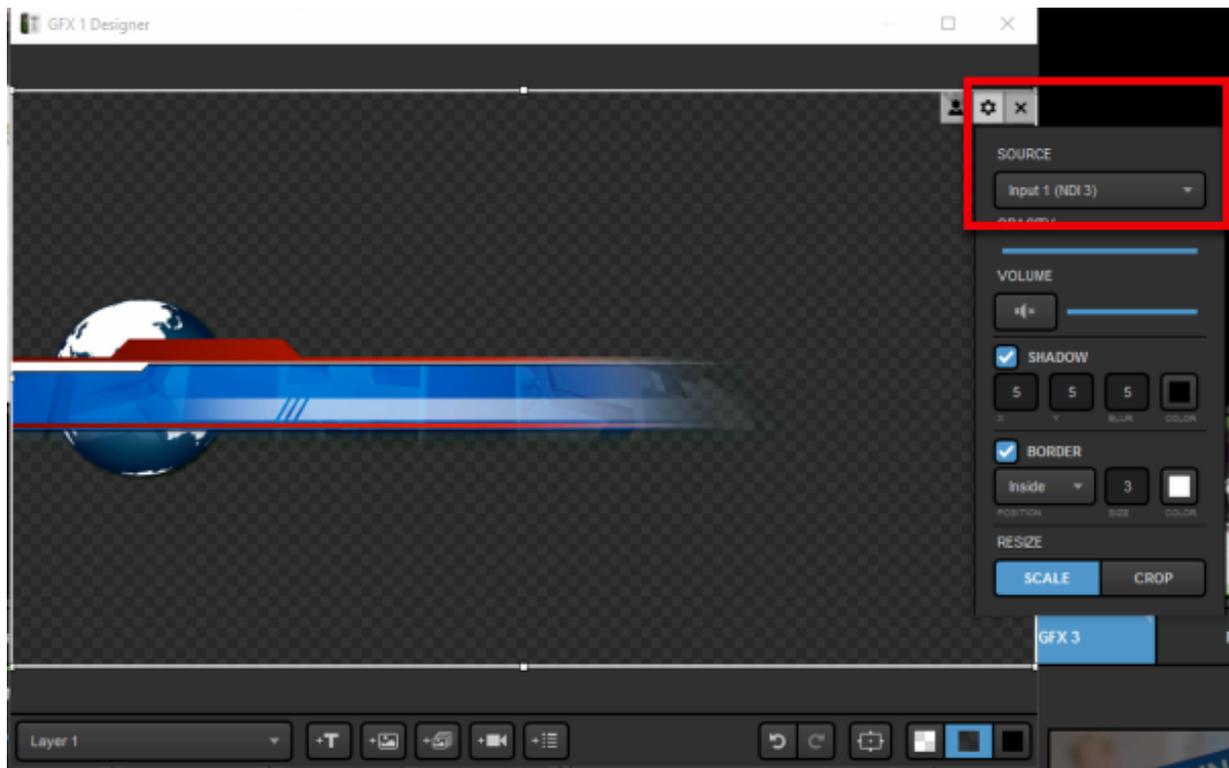
Click the paintbrush icon to open the GFX Designer.



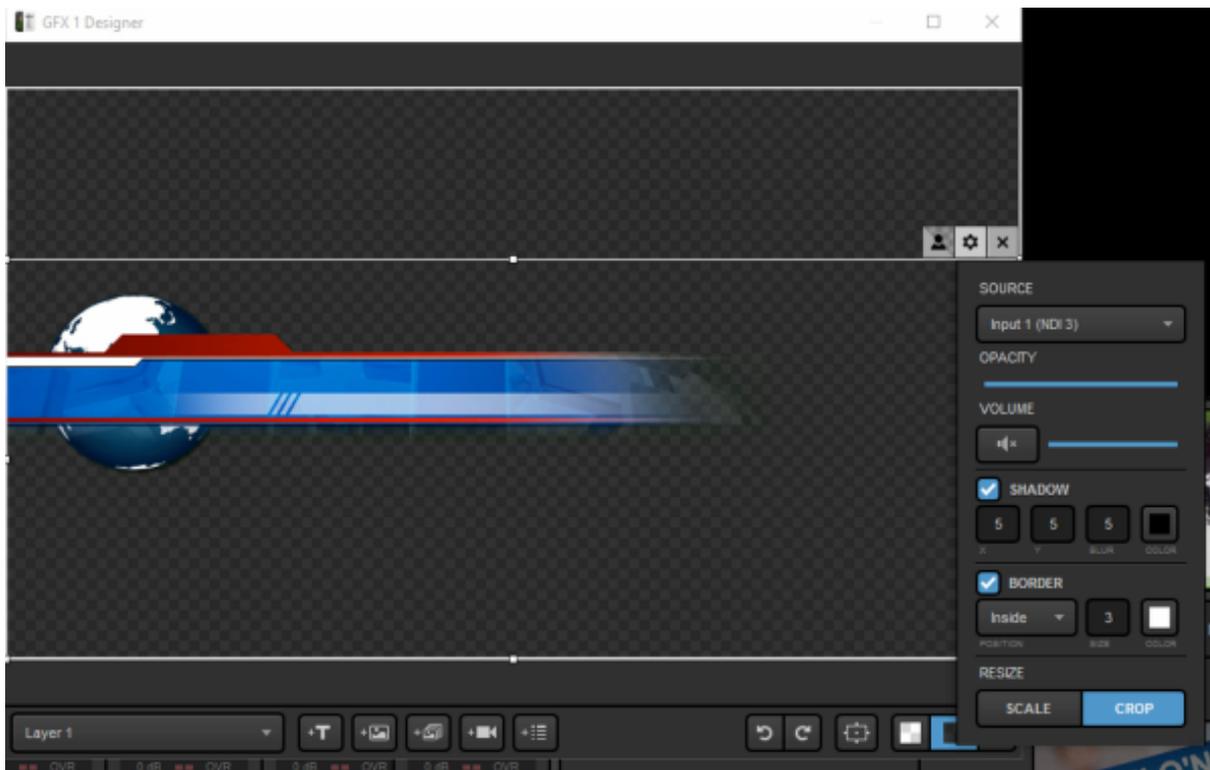
To bring in your NDI source as a graphic, click the camera icon.



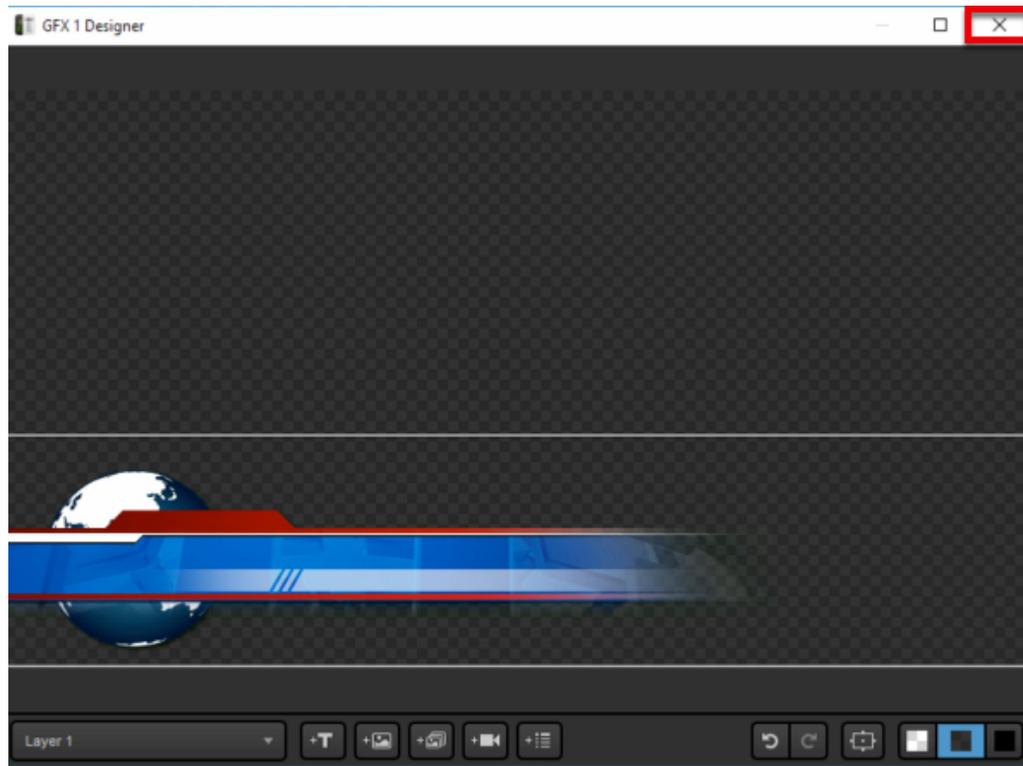
Your first input source will appear. Click the corresponding gearwheel to select your NDI source. Notice that the graphic has a transparent background, rather than a black one.



Make any appearance adjustments as necessary (in this example, we cropped the empty space and dragged the graphic to the bottom to make it a true lower-third graphic).



When you are satisfied with your NDI source's appearance, close the GFX Designer.



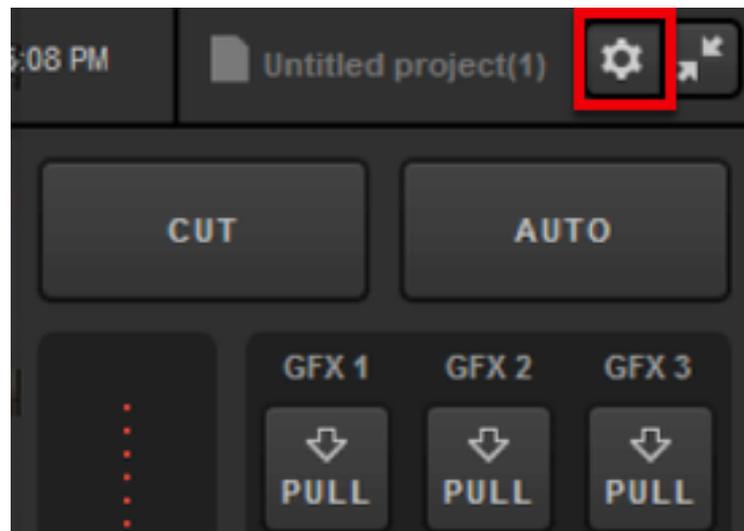
Now you can use your graphics overlay controls in the upper right corner of Livestream Studio to bring in your NDI source as a graphics overlay with alpha channel support.



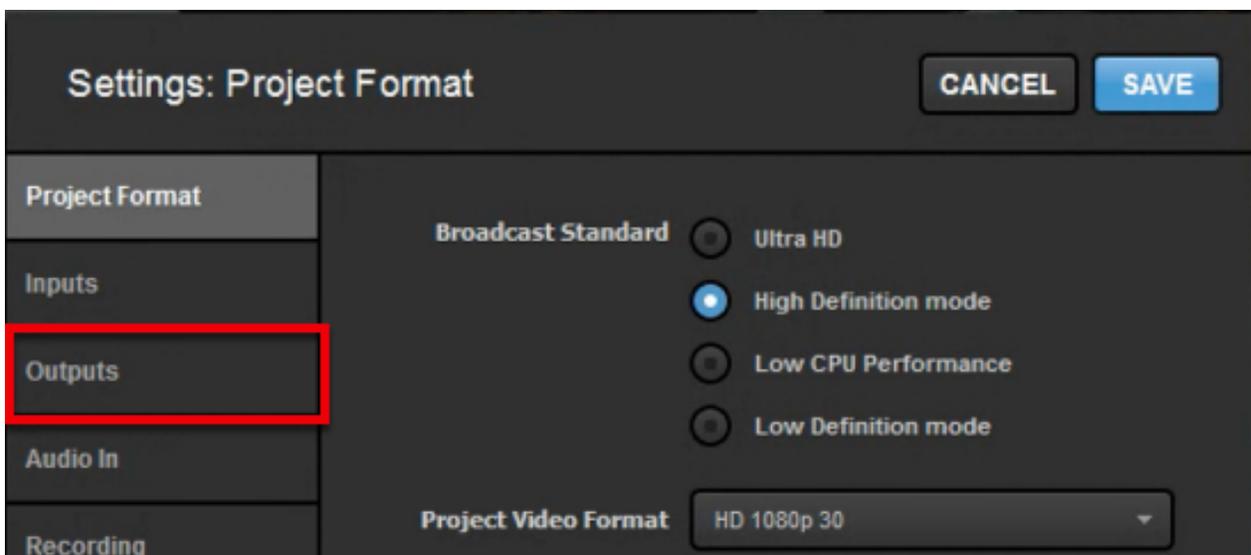
## How Do I Output via NDI?

Setting up an NDI output is similar to setting up a normal live video output. The difference is that instead of using a video card and video cables to output your Program or other Studio source, you are outputting over your local network.

Click the gearwheel in the upper right corner to access settings.

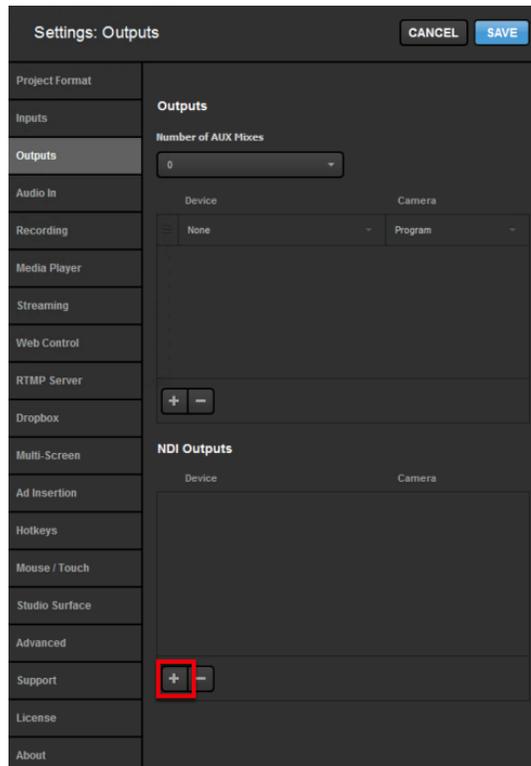


Navigate to the Outputs menu.



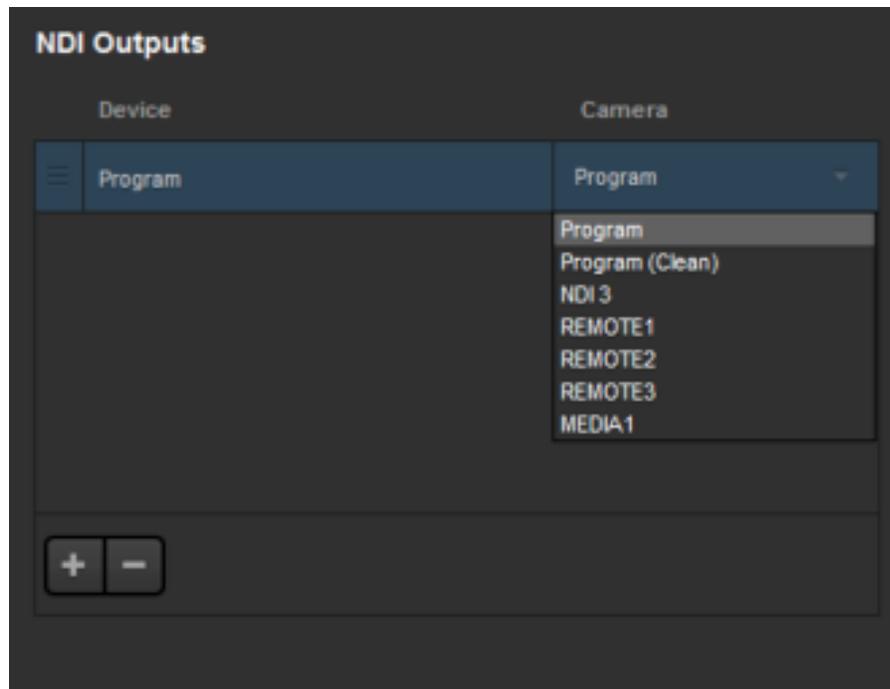
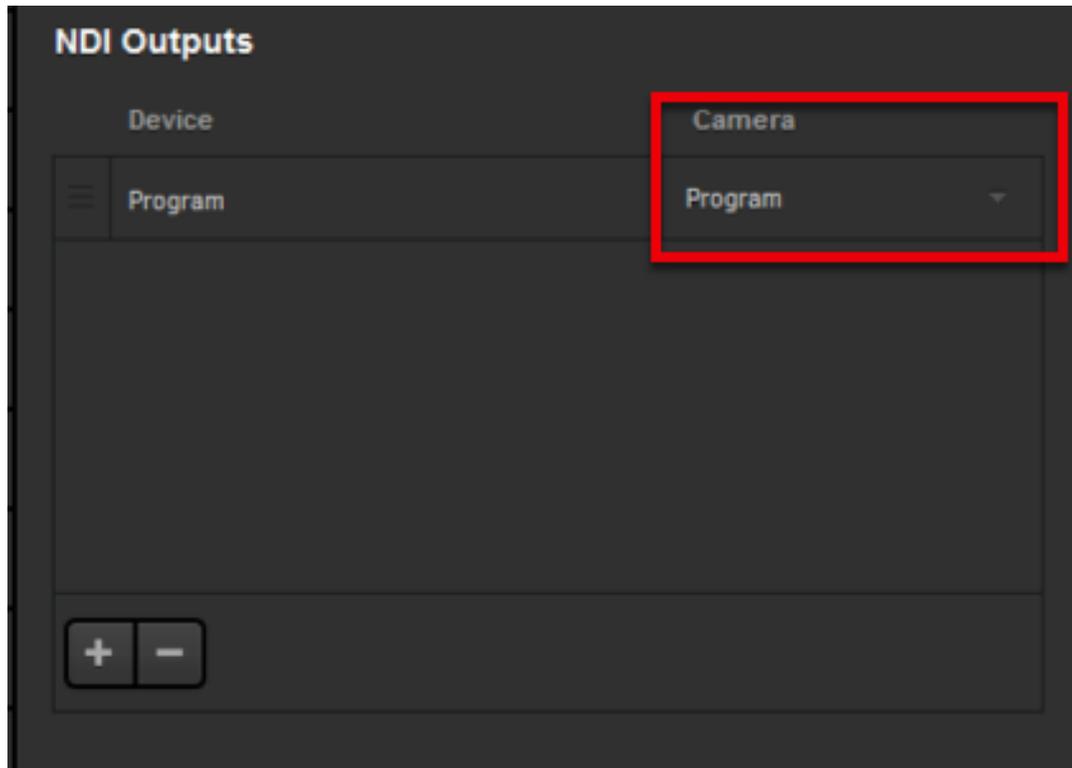
The lower half of the menu is the NDI Outputs section. Click the + button to add an NDI output.

! Studio supports a maximum of five (5) NDI outputs.

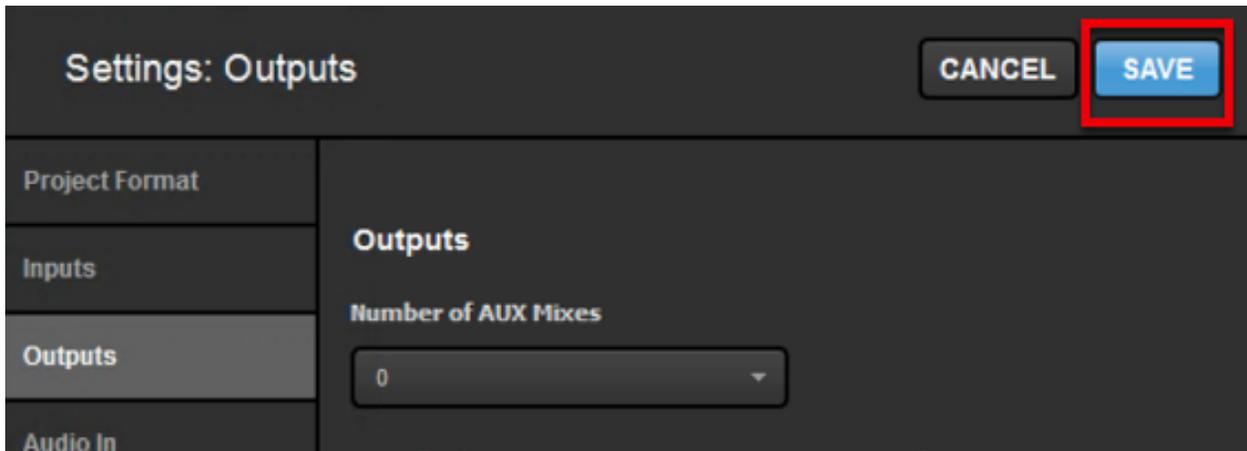


By default, your Program will appear at the output. Click the dropdown menu under Camera to select a different source if you wish.

You can rename the field under Device if you wish; this name is what your NDI output will be shown as in other NDI recognizing devices.



After selecting your output(s), be sure to save your settings.

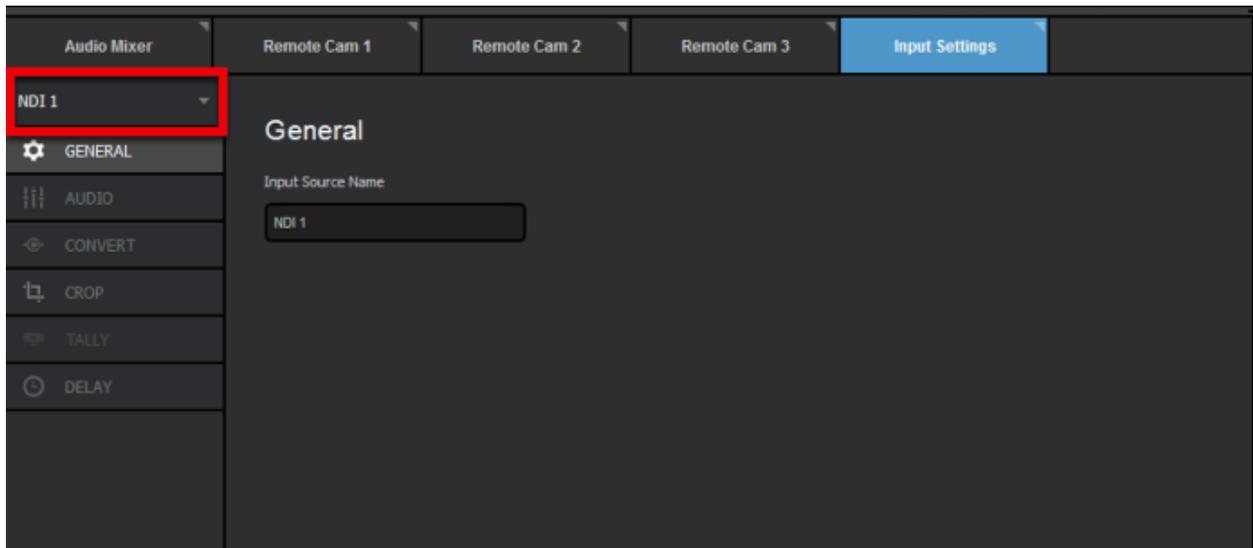


Now other NDI enabled devices and software on your network will be able to bring in your selected output(s) as a source or input (e.g. other Studio systems, vMix, TriCasters, etc.)

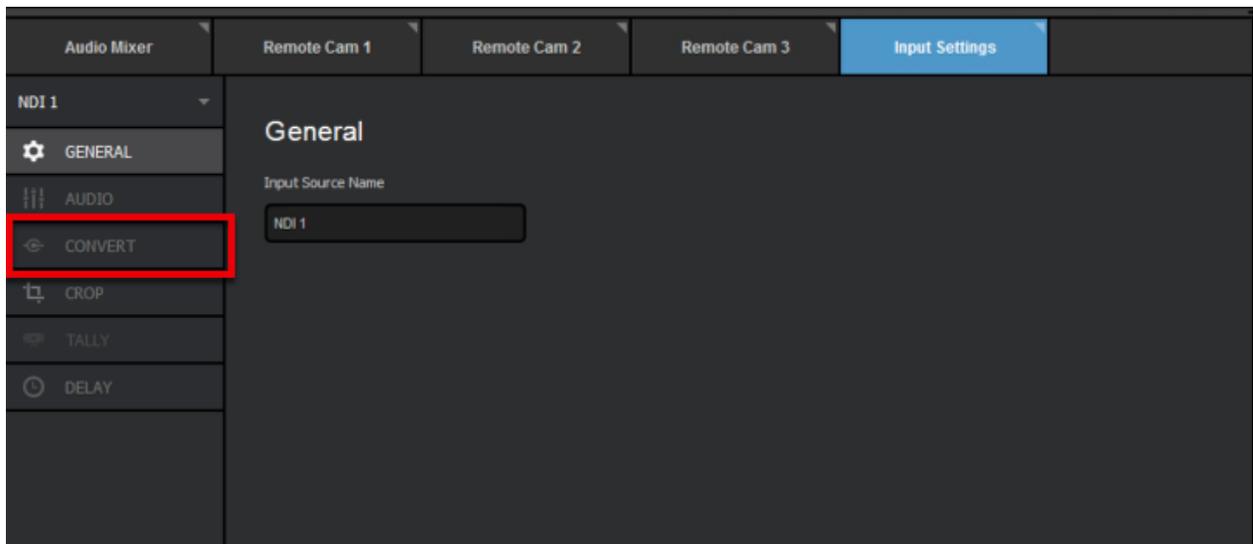
## My NDI Sources are Buffering, How do I Prevent This?

If you notice buffering or lag in your NDI sources, you can reduce the bandwidth required to bring them in via **Input Settings**, in the lower left corner of Livestream Studio.

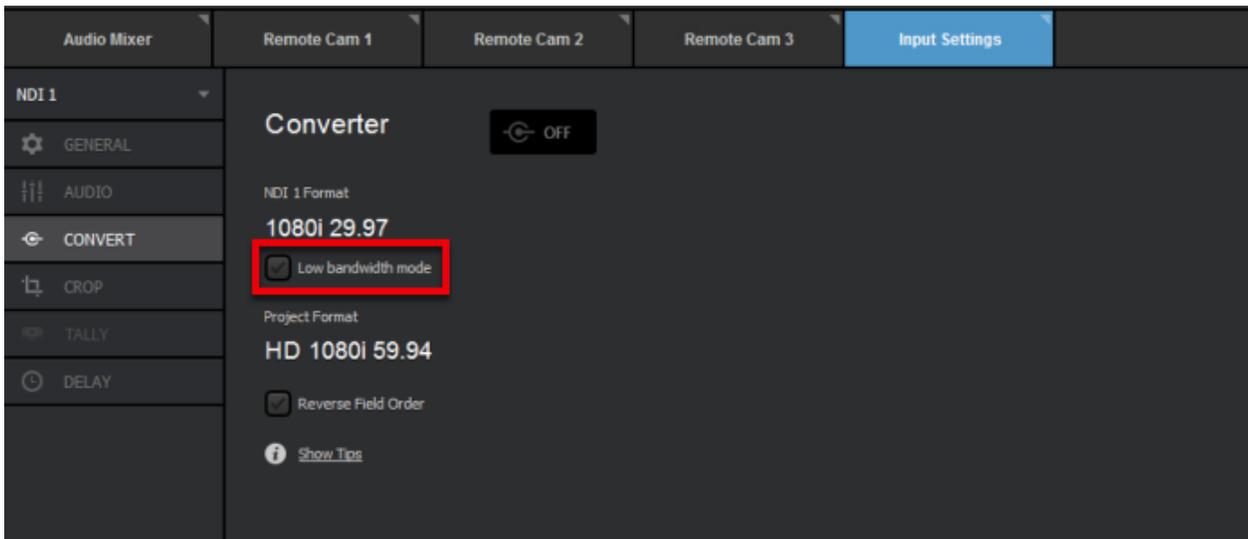
Select your NDI source from the input dropdown menu on the left side.



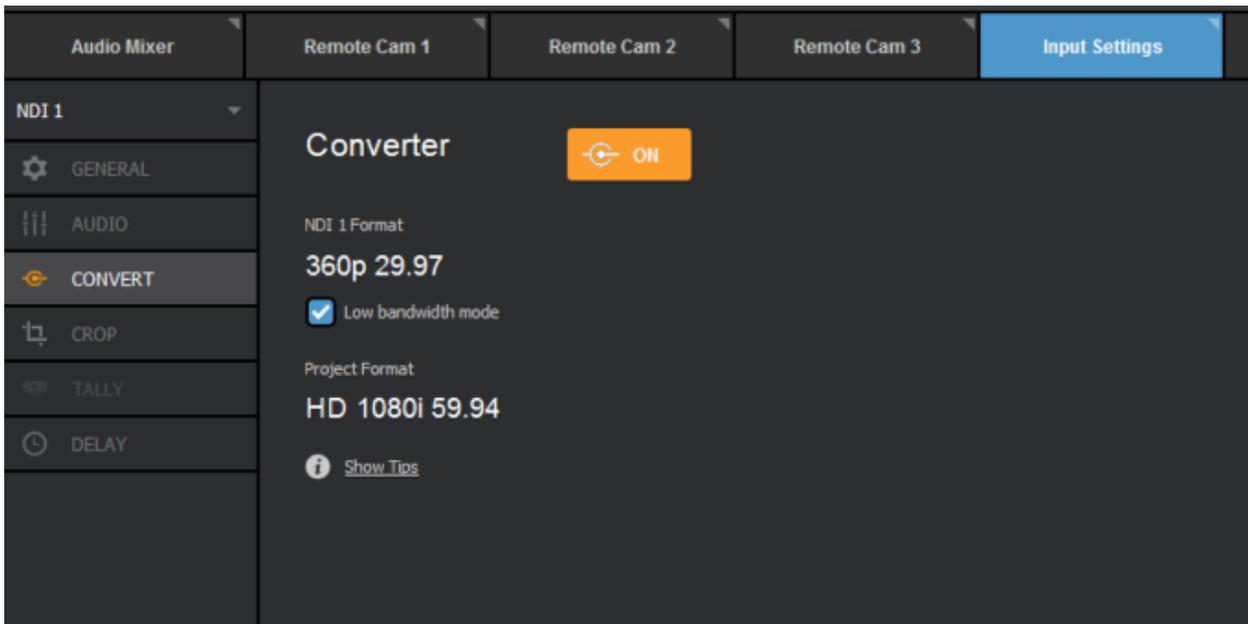
Navigate to the Convert menu.



By default, Low bandwidth mode is turned off. Check it to enable it.



Your NDI input is now converted to a lower resolution, which will soften its appearance but deliver the video signal more steadily.



# Setting Up Studio as an RTMP Server

With Livestream Studio, you can send a stream from a third-party encoder via RTMP directly to Studio and bring that stream in as a source.

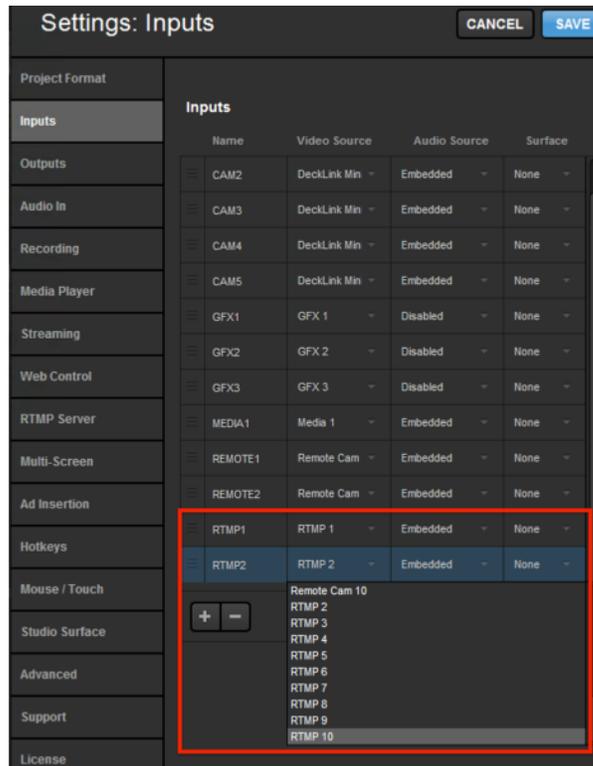
**!** **Important:** In order for this feature to work successfully, your network must have Port 1935 open to **all** communication, as it is a UDP connection. This port also needs to be forwarded to the internal IP address of the machine using the server.

If your encoder is streaming to Studio from an external location (i.e. not from the same network), you must ensure that both systems are on a public-facing IP address in order for your encoder and Studio to communicate with each other.

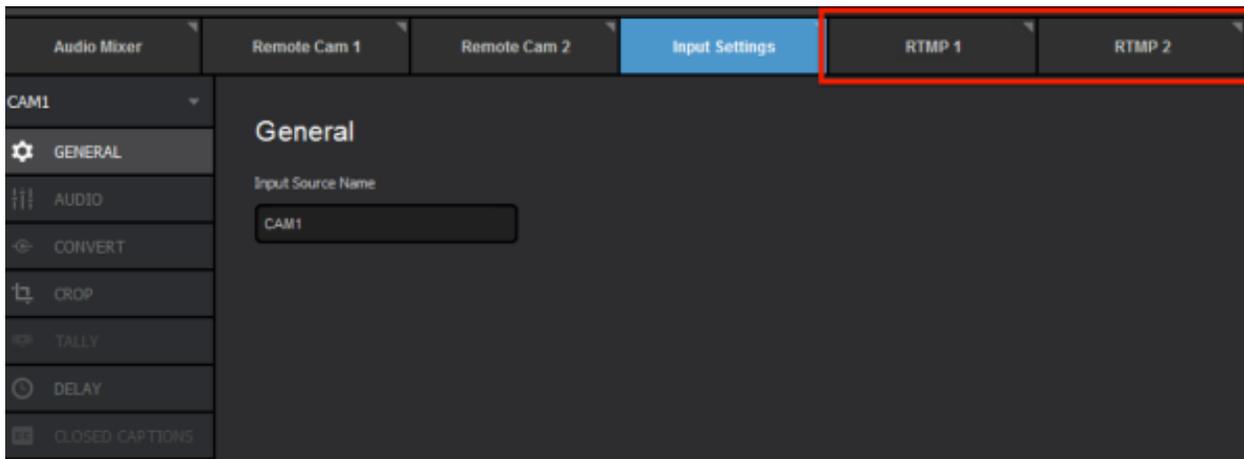
Speak with your IT administrator if your network requires these changes to be made.

## RTMP Input Basics

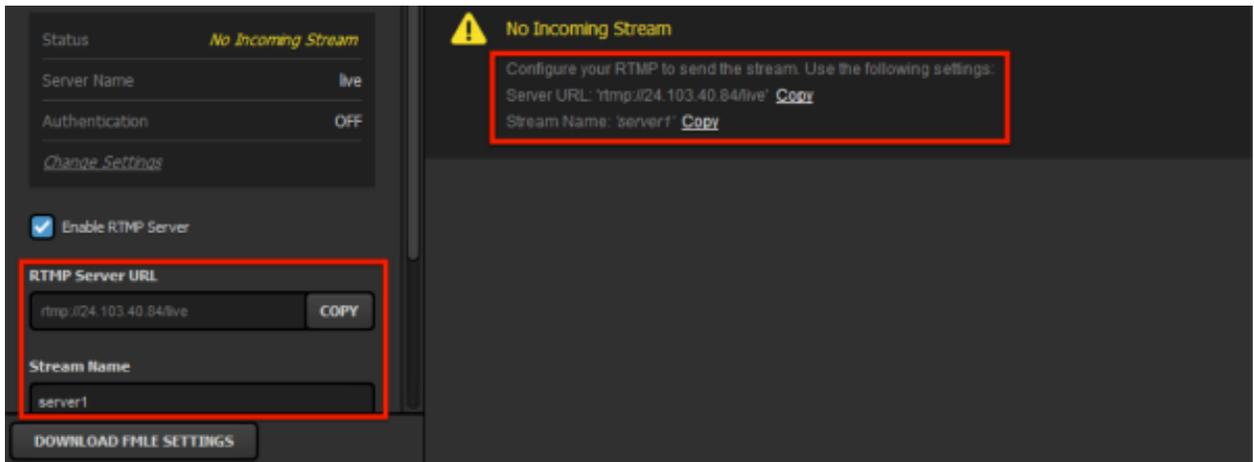
Go to **Settings: Inputs**. You can add up to 10 RTMP input sources. Make sure to save your settings.



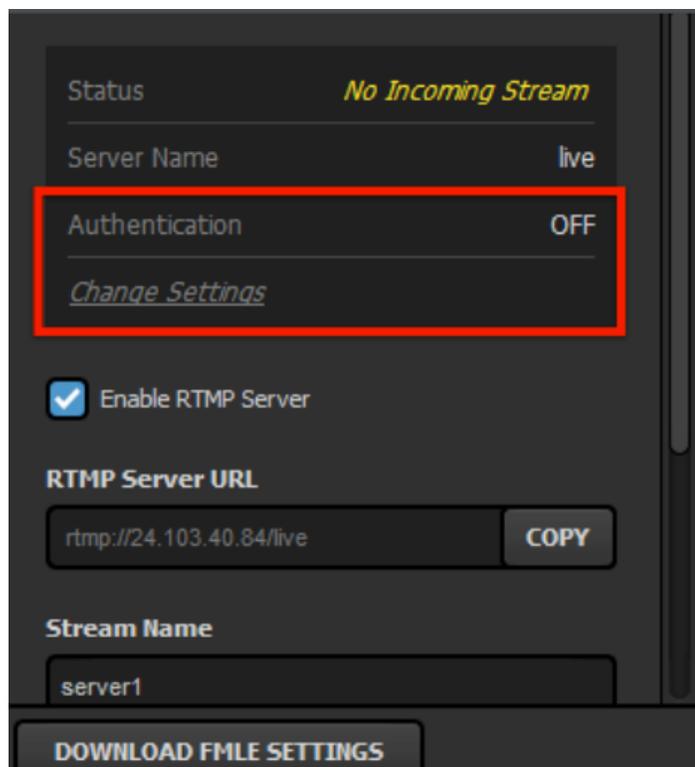
Your RTMP tab(s) will appear in the lower left corner of the interface; select one to continue.



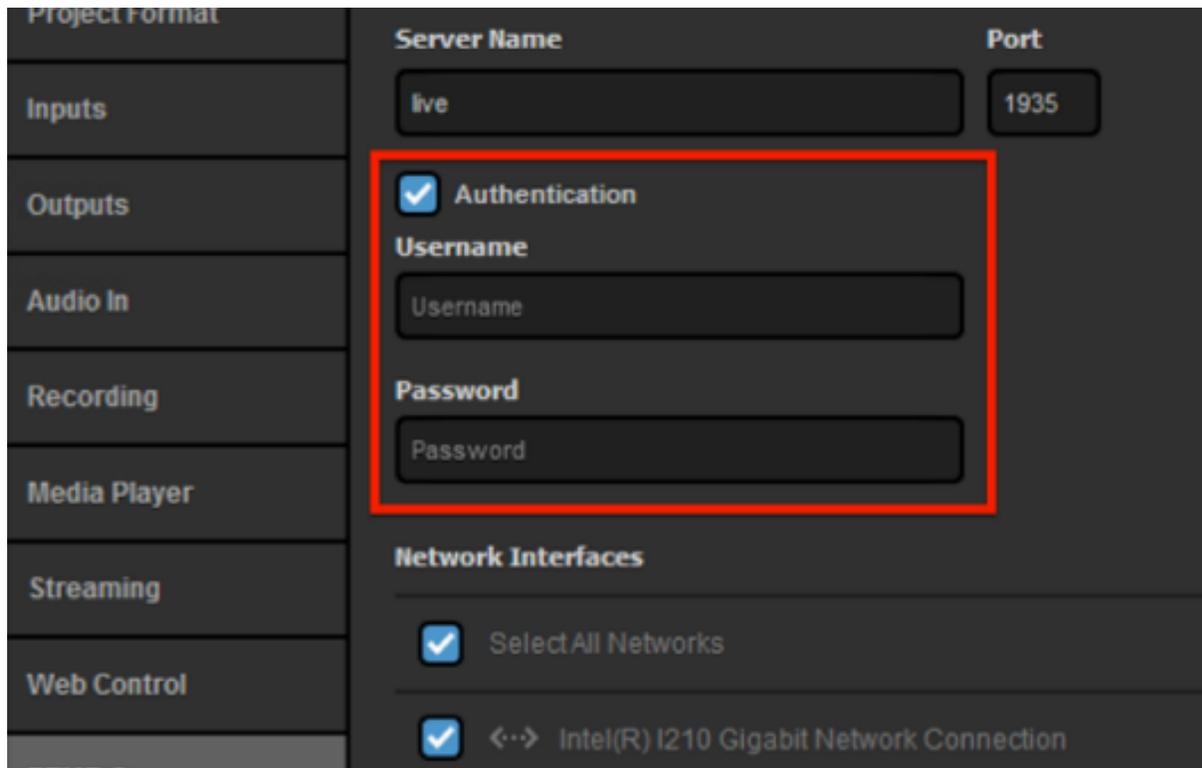
Your RTMP URL and Stream Name are displayed on the right side as well as the left-hand side menu.



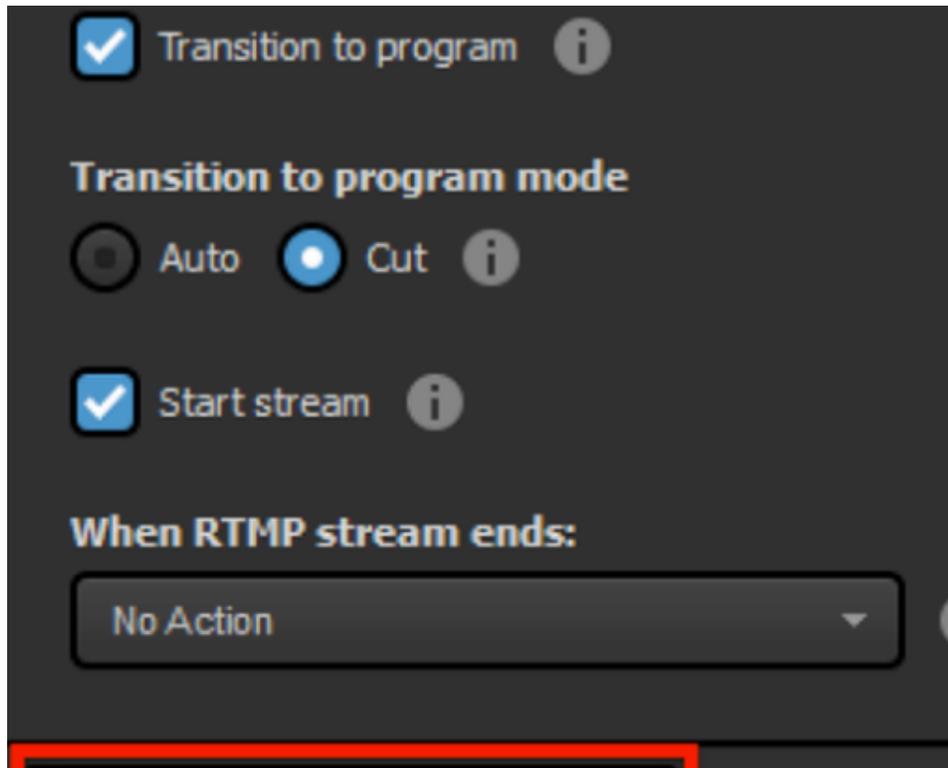
By default, authentication is turned off. If you would prefer to have a username and password affiliated with your RTMP Server, click Change Settings.



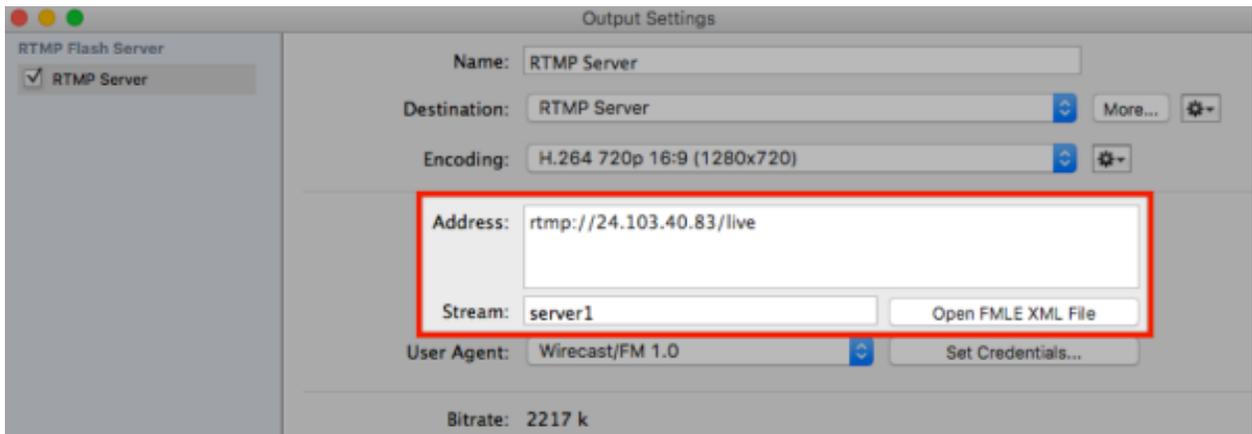
This will open the RTMP Server tab in Studio's settings. Check Authentication and enter the desired username and password; then click Save.



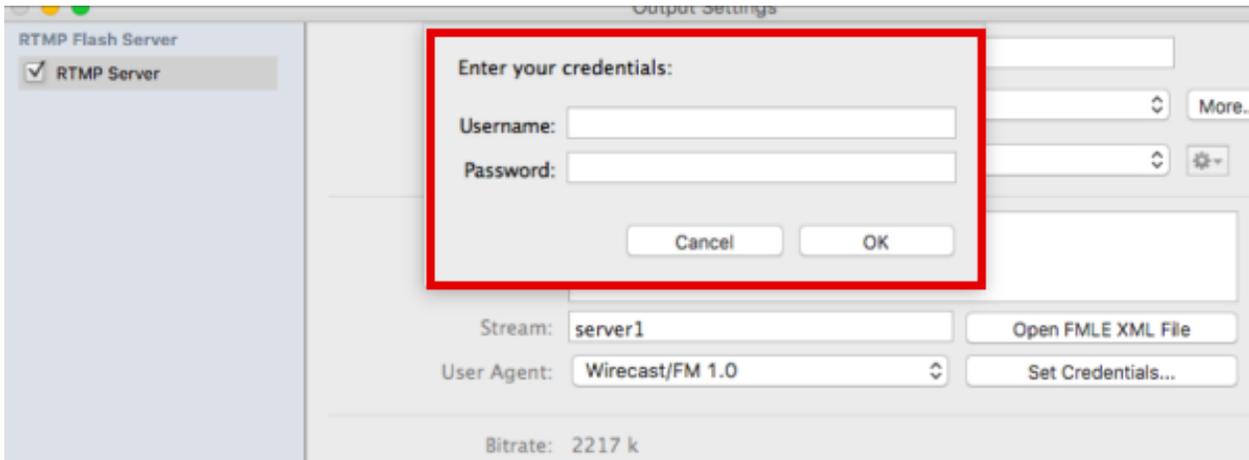
💡 To save time copying and pasting, Studio gives you the option to Download FMLE Settings, which you can then import into your encoder.



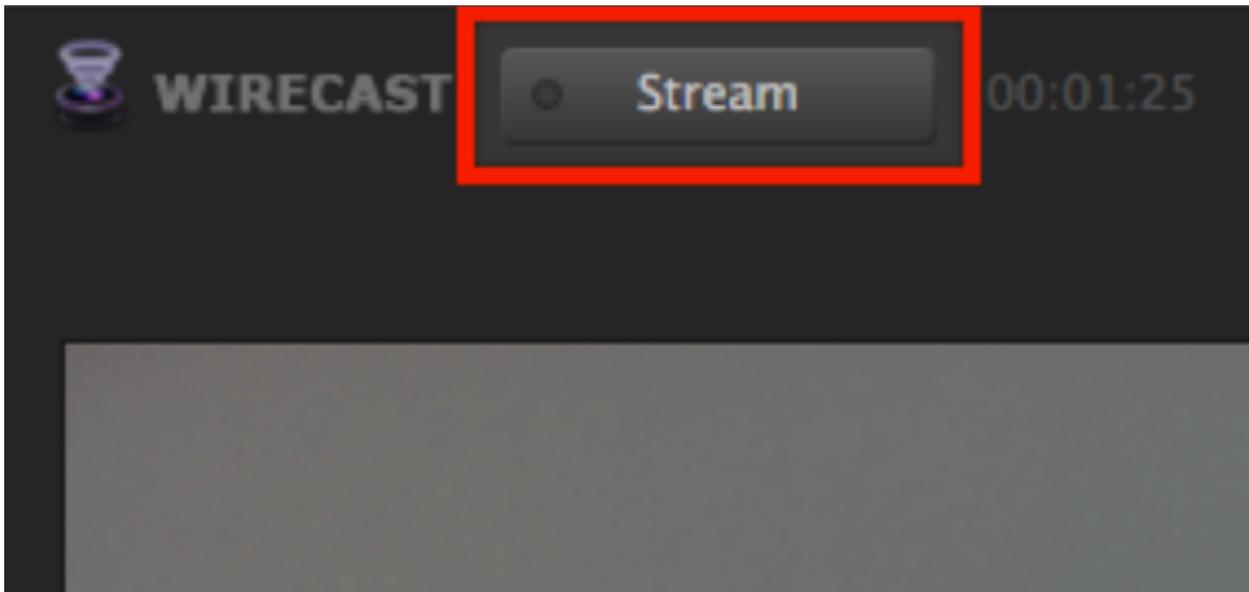
In your third-party encoder (e.g., Wirecast, OBS, etc.), open your RTMP settings and enter the RTMP URL and Stream Name from Studio into the corresponding fields.



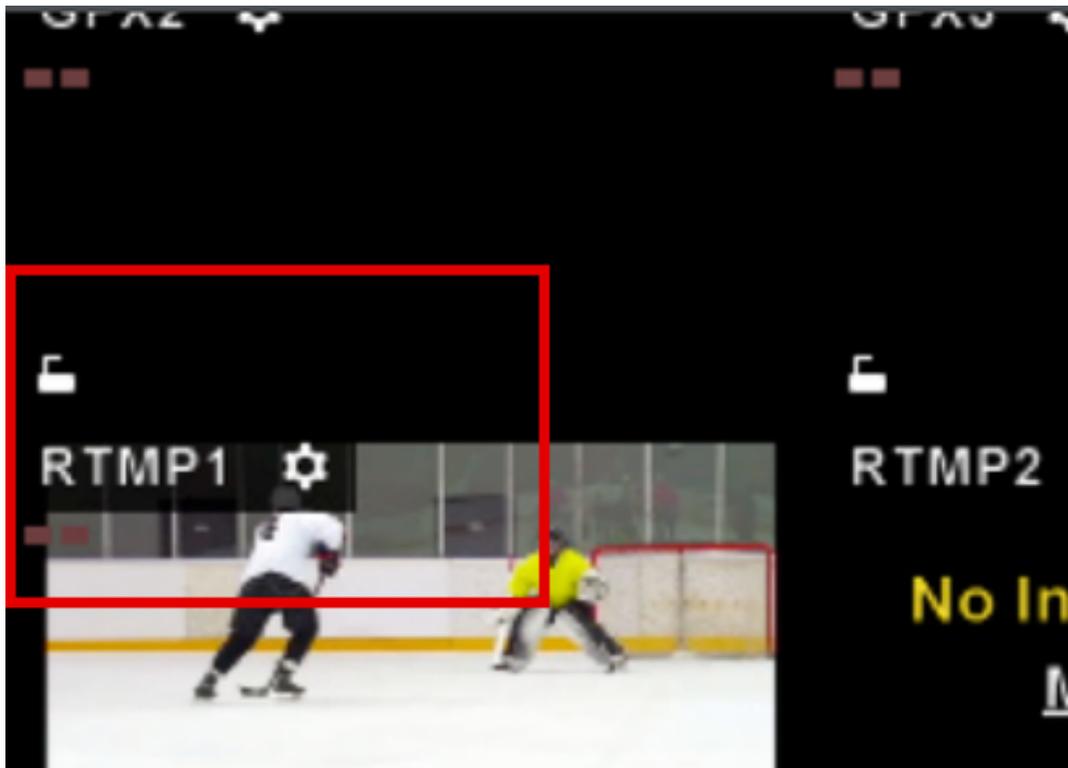
If you enabled authorization, enter your RTMP Input's username and password into your third-party encoder.



Start streaming from your third-party encoder to your RTMP Input.



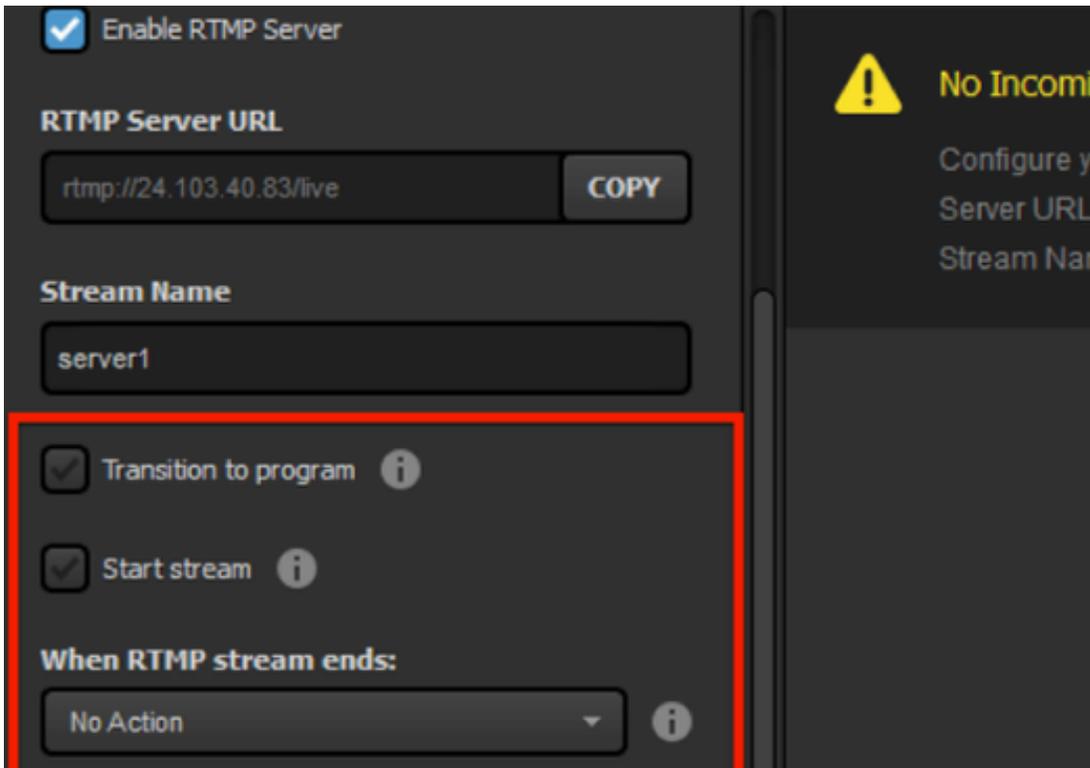
In the Livestream Studio multi-view, the video output from your third-party encoder will appear in your RTMP Input.



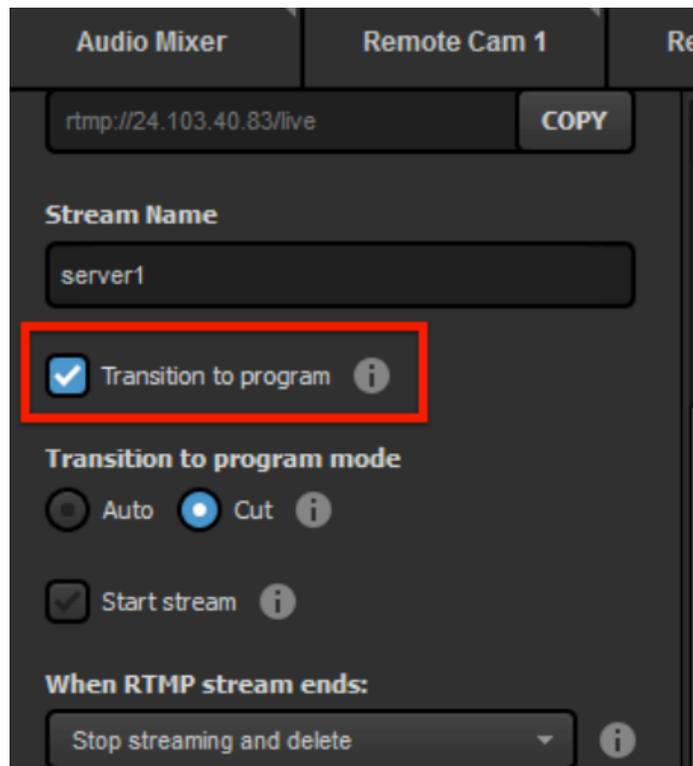
You can transition your RTMP Input into Program, just as you would with any other source. When you end the stream from your third-party encoder, the source will no longer be visible in Livestream Studio.

## Advanced Settings

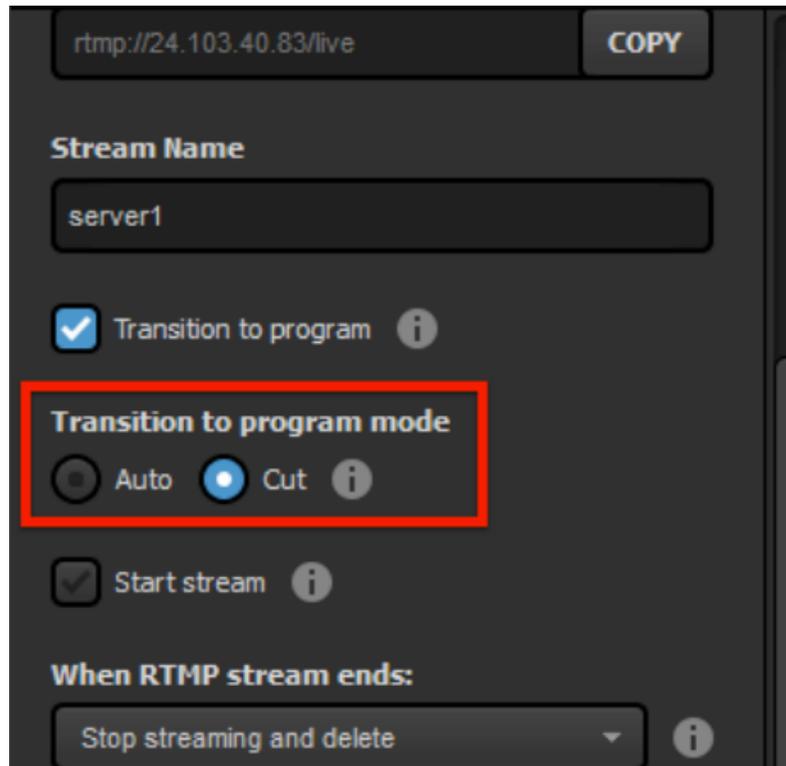
On the left side of the module, scroll down to find more options.



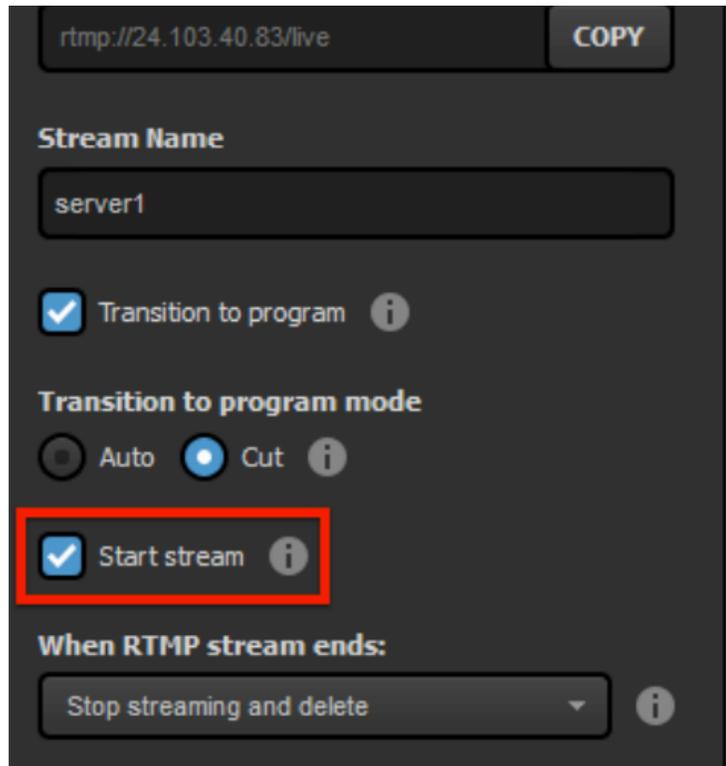
Checking Transition to Program will automatically switch the RTMP input into Program as soon as Studio receives the stream.



Select your Transition to program mode, which allows you to choose whether your input will Cut or Auto-Transition into Program once the stream is received.

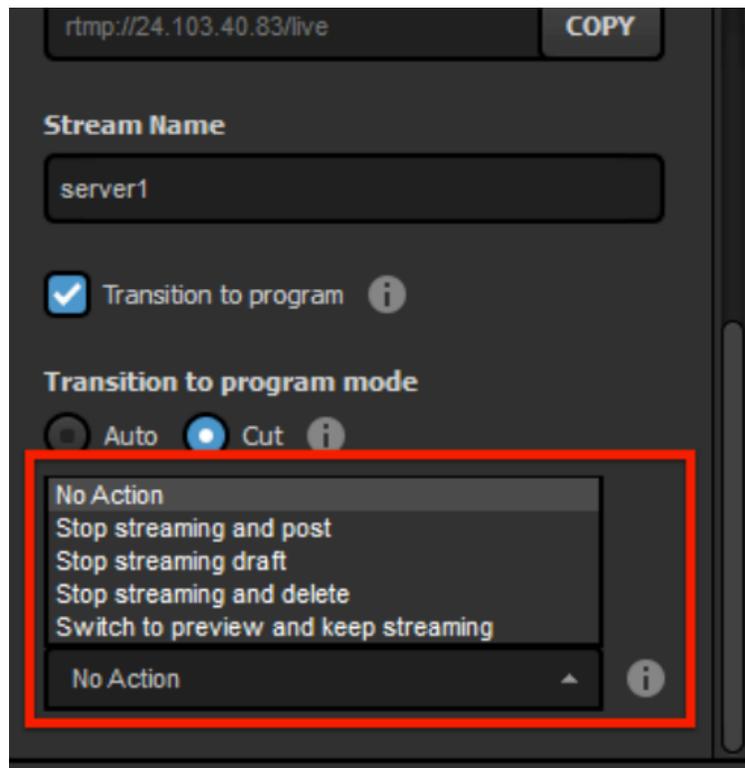


Next is **Start Stream**, which can prompt Studio to automatically start streaming to your selected provider(s) in Livestream Studio (e.g. Livestream) as soon as it receives the RTMP input.



When RTMP stream ends allows you to select what Livestream Studio should do when you stop streaming from your third-party encoder. The options are:

- **No Action:** Studio will not react to the RTMP stream stopping
- **Stop Streaming and Post:** Studio will end its stream and post the video on demand.
- **Stop Streaming Draft:** Studio will end its stream and save the video as a draft post (Livestream only).
- **Stop Streaming and Delete:** Studio will end its stream and delete the video on demand (Livestream only).
- **Switch to Preview and Keep Streaming:** Studio will continue streaming, but transition the Preview source into Program.



With these settings enabled, your RTMP source will now automatically appear in Program and Livestream Studio will start streaming to your chosen provider without any additional action needed.



You can also configure RTMP input settings via [Livestream Studio Web Control](#).

## Troubleshooting

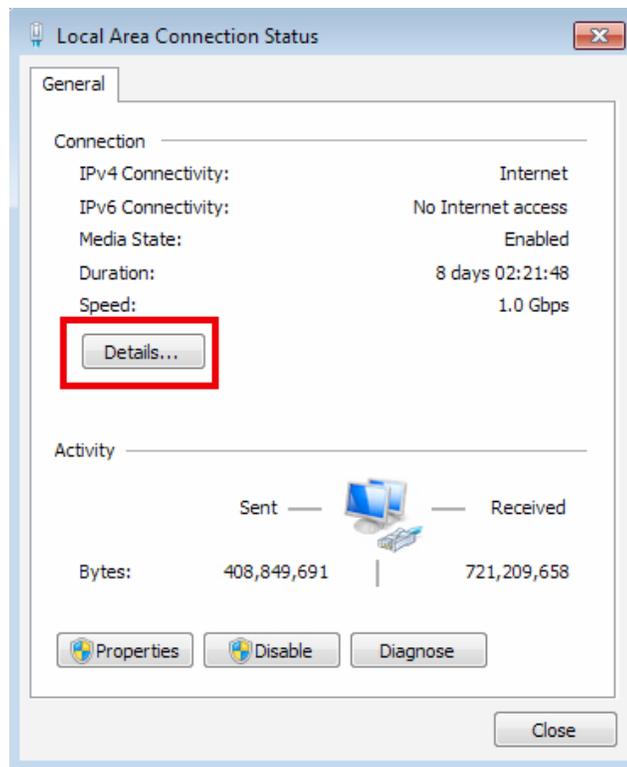
If you attempt to stream from your encoder and are unable to reach the RTMP server, it could be that Studio is not displaying your machine's internal IP address. Follow the steps below to get the correct IP address

Go to your Windows network settings and find your connection status; click Local Area Connection.

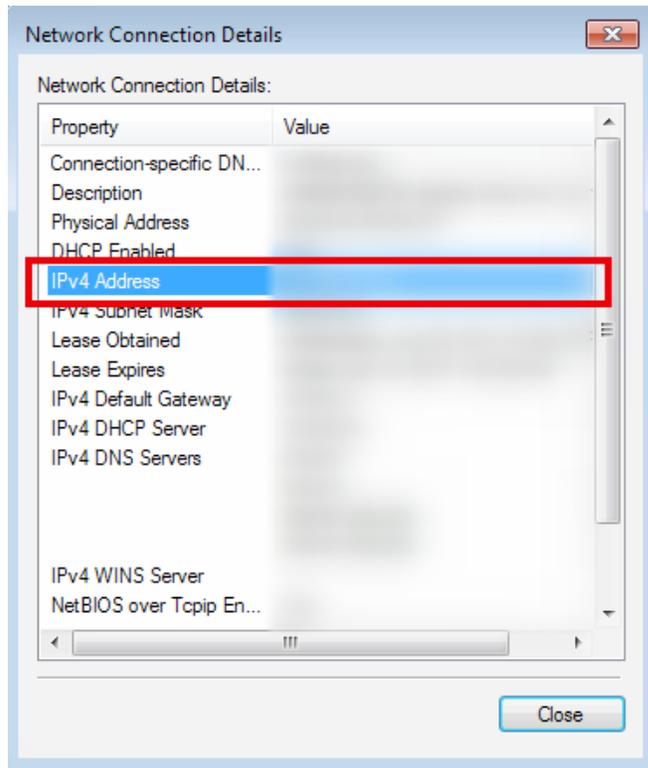
Connect or disconnect

Access type: Internet  
HomeGroup: Ready to create  
Connections:  Local Area Connection

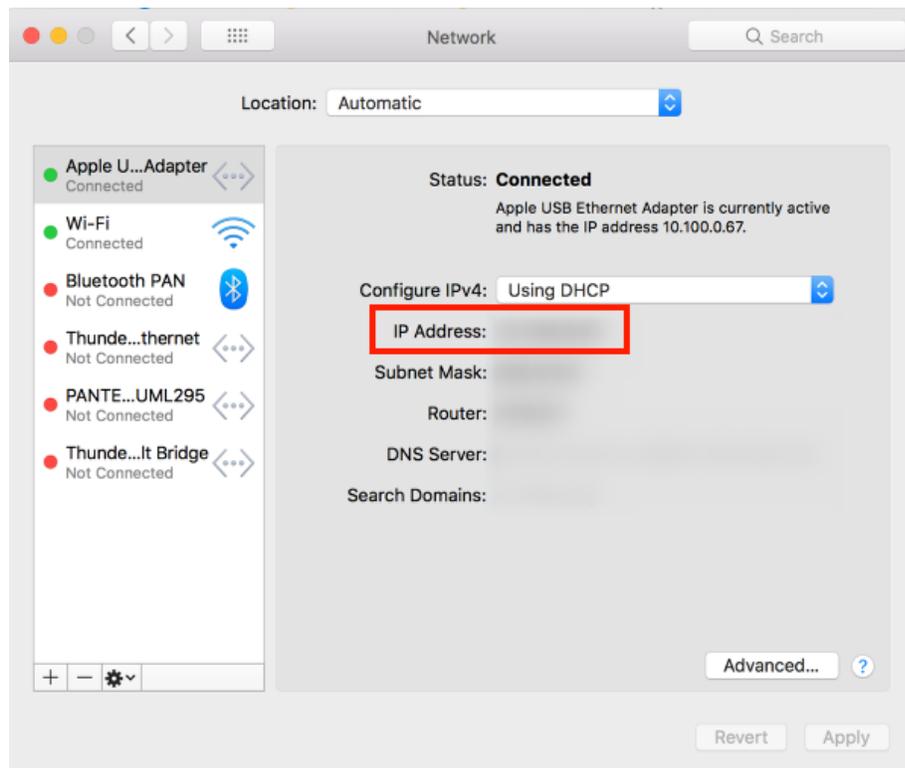
Select Details.



The IPv4 Address is the IP address that you need. Replace this with the IP address displayed in RTMP URL in your encoder (e.g. rtmp://10.20.30.40/live). The stream name remains the same.



If you are using a Mac system (only available in beta), open System Preferences > Network. Use the IP Address listed here in the RTMP URL.



You should now be able to go live to your Studio RTMP server.

# Create a Backup Stream to Livestream

! Unfortunately, this feature is currently not functioning properly. Our development team is aware and working on a fix. We will update this article when a fix has been released. Please contact us if you are trying to create a backup stream via Livestream Studio.

You can create a backup stream to Livestream using Livestream Studio. This is helpful if you are looking to add redundancy to your workflow in the event of a bandwidth drop or power failure. You will need two systems running Livestream Studio. Determine which will be your primary encoder and secondary encoder.

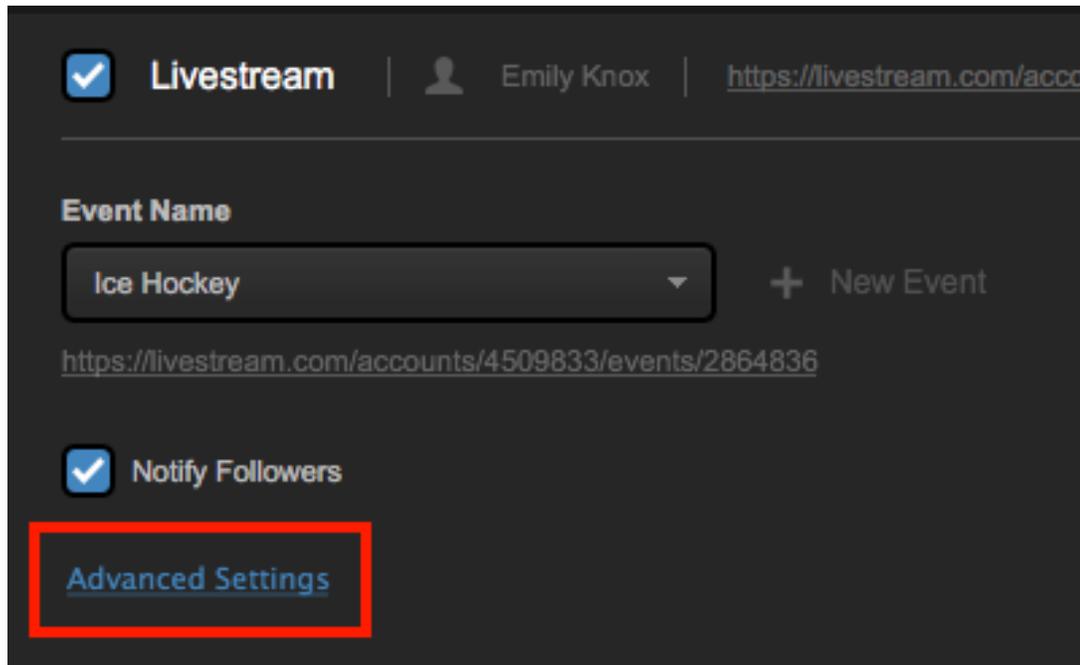
This feature only works when streaming to Livestream.com. Livestream Studio cannot create a backup stream for other providers.

Start your [stream to Livestream](#) on your primary encoder as you normally would.

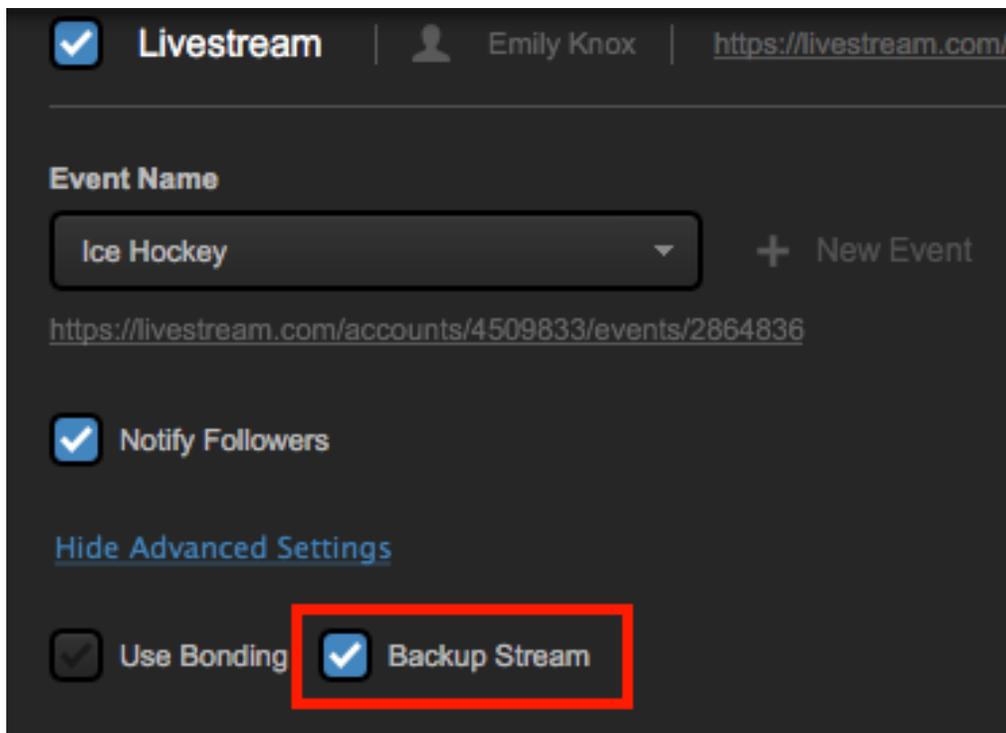
Open Livestream Studio on your secondary encoder. Navigate to the **Stream** module, log in to Livestream. Make sure the following streaming settings match the settings on your primary encoder:

- Event
- Streaming Quality

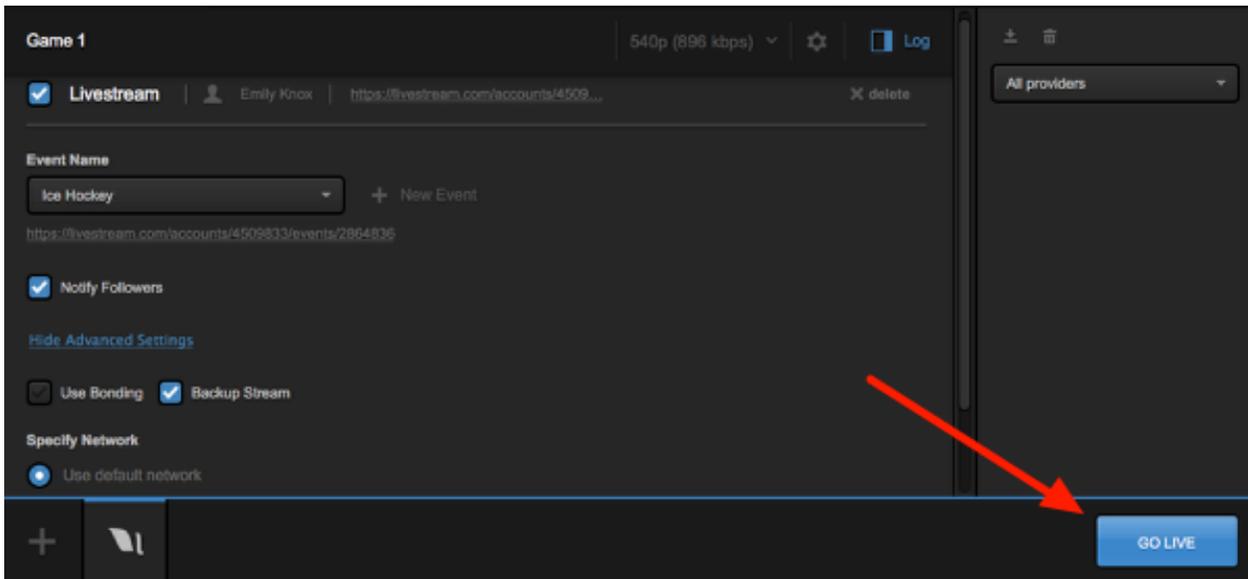
Next, select **Advanced Settings**.



Check Backup Stream.



When your settings are configured, select Go Live to start streaming your backup.



If the stream from the primary encoder fails due to bandwidth drop or power failure, the stream from secondary encoder will continue without interrupting the viewing experience on Livestream.

**⚠ Important:** Backup Stream is not available when using Bonding as your delivery method.

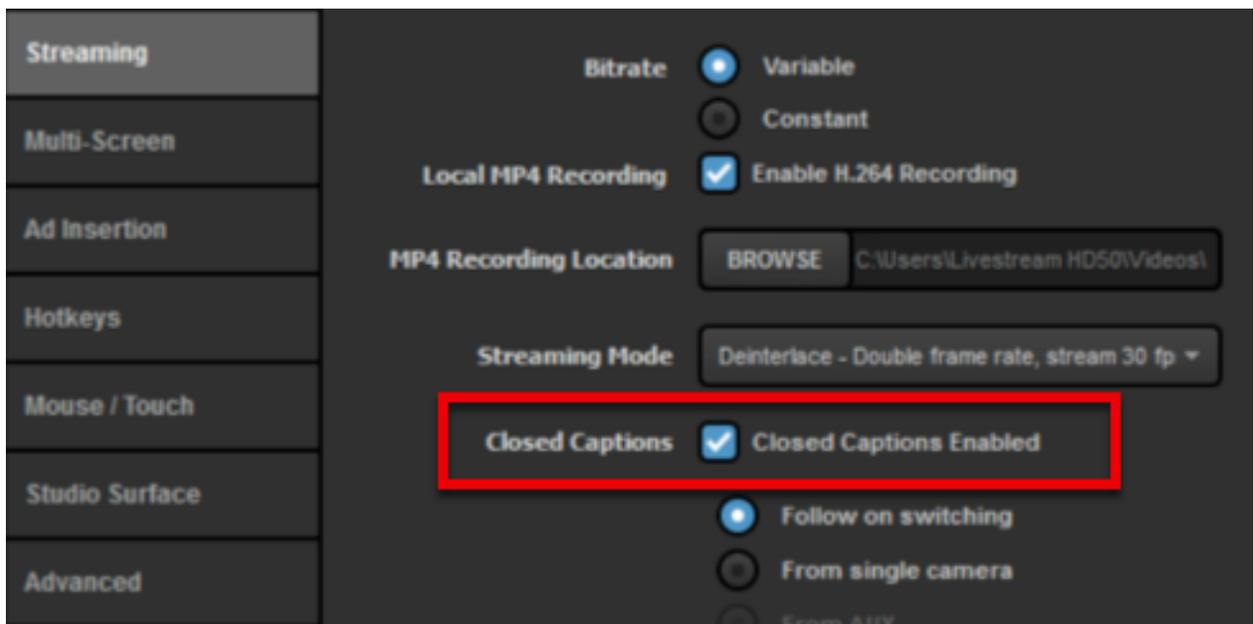
# Enabling Closed Captioning Ingestion

Livestream Studio can ingest FCC compliant closed captioning data with their input sources and stream it out to Livestream.

Livestream Studio supports CEA 608 and CEA 708 closed captioning signals. Most closed captioning encoders support these type of signals, as they are FCC compliant.

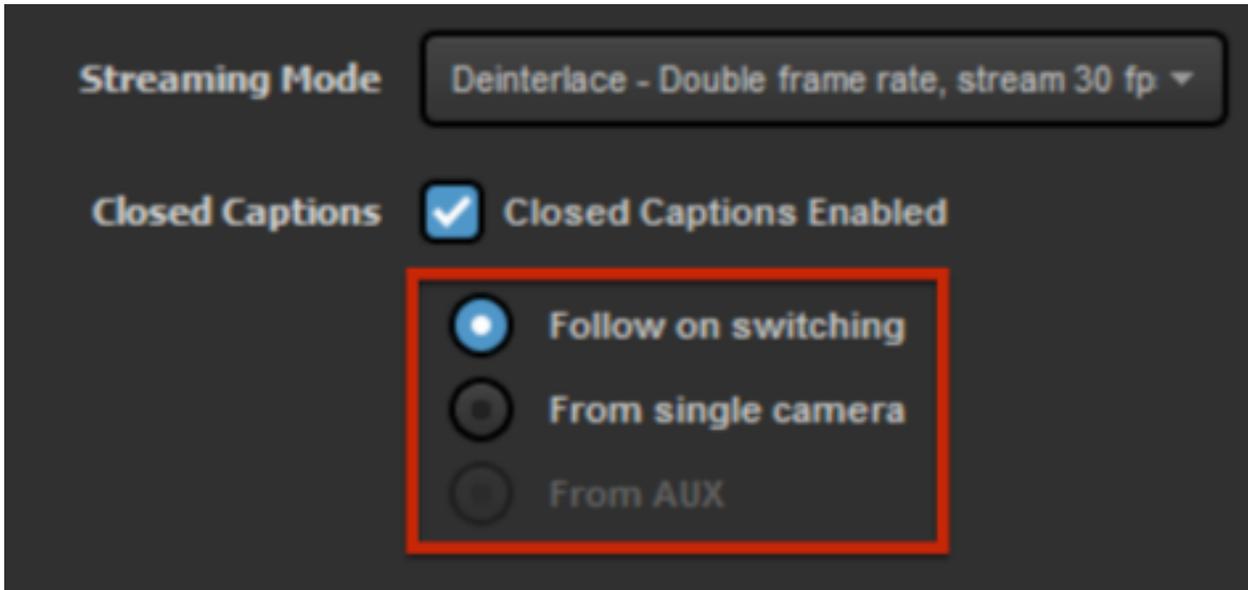
**!** Important: The captions must be embedded into an SDI input in order to be recognized.

To enable closed captions forwarding to Livestream, go to settings and enter the Streaming menu. At the bottom you will see Closed Captions. Check Closed Captions Enabled to allow for closed captioning data to be received.

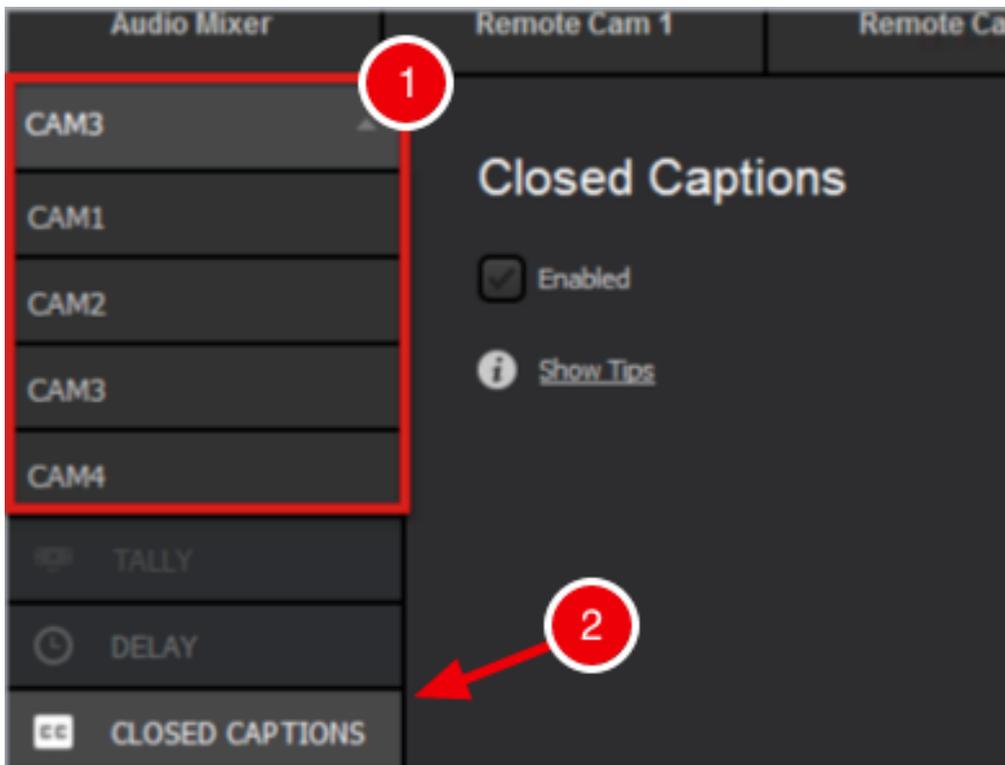


Next, select whether the closed captions are available only with the source they are coming from (Follow on switching), if the captions should show regardless of what

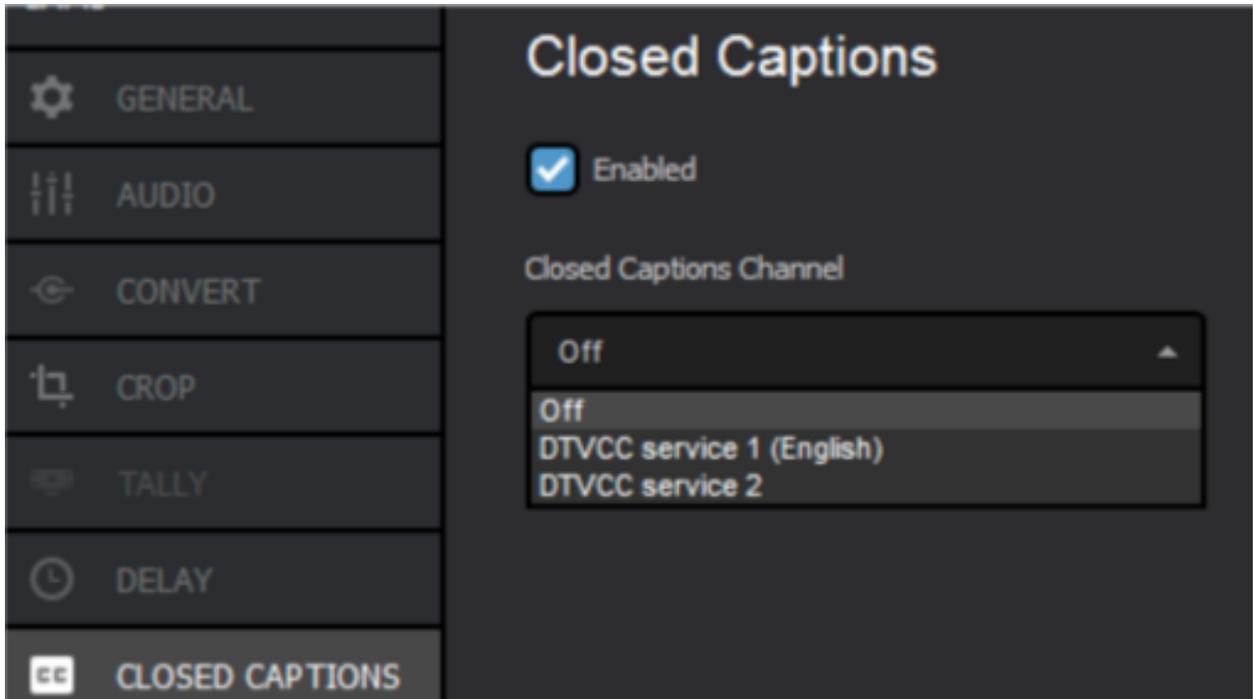
source is in Program (From single camera) or only when the source is in AUX program (From AUX).



Save your settings, then return to the Input Settings tab. Select the camera source(s) that has the closed captioning data embedded, then click on Closed Captions.



Check **Enabled**, and then select which channel your closed captions are coming through. This will require that the selected input source be a 10-bit input signal, rather than 8-bit.



When you go live, your captions will be available as an option in the Livestream player as well as your Livestream VOD. Please note you will not see any captions in Livestream Studio or when you download the video file from your event page.

COURTESY: WHBO



**FOX 26**

12:10 86°

**JAMES ENGLE**

THEY CONFRONTED THE SUSPECT AND SAMPSON  
APPARENTLY SHOT IN THE STRUGGLE, AND



# Import & Export Recorded Files Using Adobe Premiere Pro

First, make sure you have Blackmagic Design Desktop Video installed on your system. Go to <https://www.blackmagicdesign.com/support>, select 'Capture and Playback,' and download Desktop Video.

- Open Adobe Premiere Pro and choose a new project
- Select the capture format
- Select the sequence settings

*Important: These should match the video format settings of the Livestream Studio Project*

Import the video clip.

- Go to: File > Import
- Select the video file and select open.

The imported file should appear in the clip bin.

- Drag the clip into the timeline.

The user will be prompted to change or keep sequence settings. Choose "Keep sequence settings."

Exporting video clips:

- Go to File > Export > Media
- Select "Match Sequence Settings"
- Enter an output name.
- Click "Export"

# Import & Export Recorded Files Using Final Cut Pro 7

Follow the steps below in Final Cut Pro 7 to bring a clip into the editing software.

**Note:** If you are simply looking to export a recording as a compressed .mp4 file, you may want to consider trying the [export feature](#) in Livestream Studio's media bin.

1. Open Final Cut Pro and choose a new project.
2. Drag the video clip into the file bin.
3. Drag the clip into the timeline.
  - a. A prompt to "Change the Sequence Settings" will display.
  - b. Choose "Yes"
4. Go to Files > Export > Quicktime Movie
5. Choose "Sequence Settings"

*Note: Settings must be exactly the same as the settings on the Livestream Studio™ project.*

6. Save the clip.

# Troubleshooting

# Troubleshooting Steps: Not Seeing Input Source

If you are unable to receive a video signal in your Studio software please make sure you confirm the following:

## Are you using a Blackmagic or Magewell capture device?

Livestream Studio will best work with video signals from certified Blackmagic Design capture devices. Magewell cards are also supported. If you are using a non-Blackmagic device there is a chance your signal will not appear in the software.

[Check here](#) for our list of supported devices.

## Do you have the recommended version of the Blackmagic Design drivers?

Currently recommended version: 10.9.10

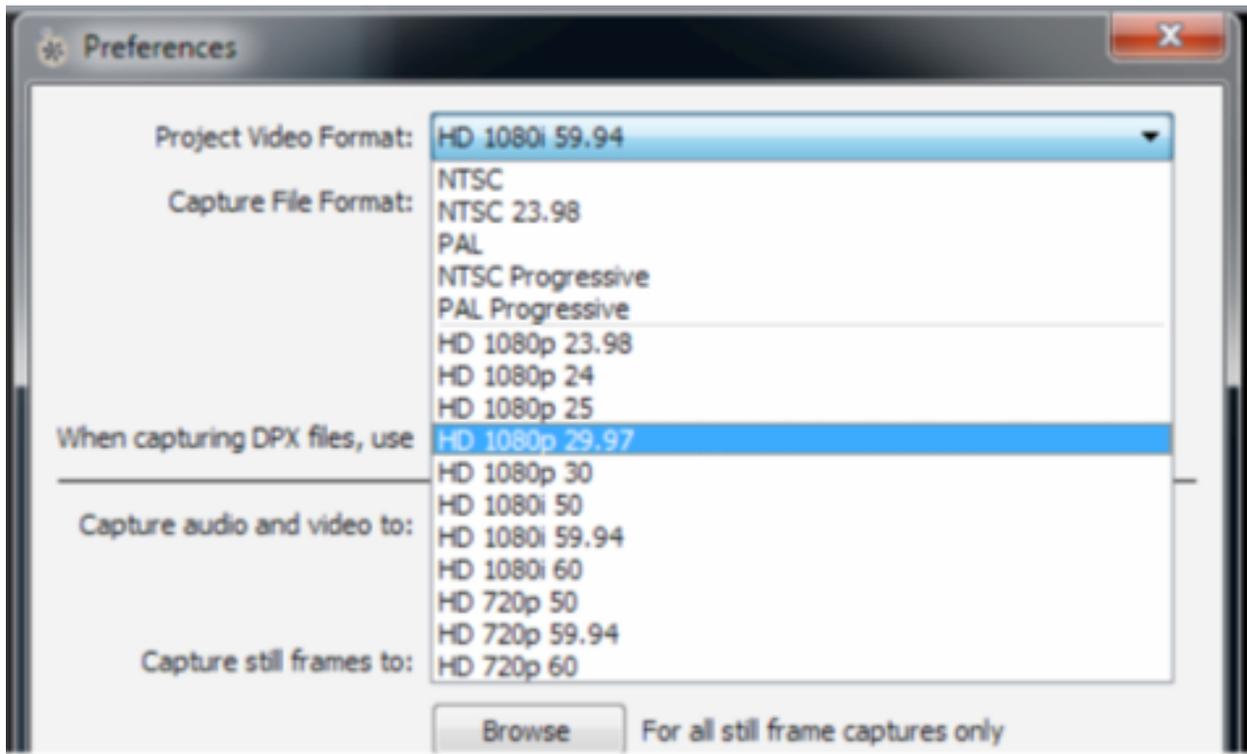
\*\*If you are running Windows 10 Pro version 1709, we recommend using Desktop Video version 10.9.5.

Drivers found on the Blackmagic Design package discs are often out of date as Blackmagic frequently releases updates. Please be sure you are using the proper version of the Blackmagic drivers, which you can download at [blackmagicdesign.com/support](https://blackmagicdesign.com/support).

- Select **Capture & Playback** and download the above-recommended version of Desktop Video.

## Are you getting a video signal in Blackmagic Media Express?

Click the Start button and search for Media Express, then click Blackmagic Media Express to open the program. Select the **Log and Capture** tab to display the video input. Click **Edit** on the menu bar at the top of the program and select **Preferences**, then confirm that your Project Video Format matches the format of your video source.



If you receive a video signal in Media Express, you should check Studio's video format settings. If you do not receive a video signal in Media Express, confirm you are connected to the correct input and your camera is configured properly (e.g. SDI or HDMI correctly selected).

Inputs				
Name	Video Source	Audio Source	Surface	
☰ CAM1	DeckLink Mini Re ▾	Embedded ▾	C1 - T1 ▾	
☰ CAM2	None			
☰ CAM3	DeckLink Mini Recorder [6] SDI			
☰ CAM4	DeckLink Mini Recorder [6] HDMI			
☰ CAM5	DeckLink Mini Recorder [7] SDI			
☰ CAM5	DeckLink Mini Recorder [7] HDMI			
☰ CAM5	DeckLink Mini Recorder [8] SDI			
☰ CAM5	DeckLink Mini Recorder [8] HDMI			
☰ CAM5	DeckLink Mini Recorder [9] SDI			
☰ CAM5	DeckLink Mini Recorder [9] HDMI			
☰ GFX1	DeckLink Mini Recorder [10] SDI			

Does Livestream Studio's video format match your input source?

Open Studio's Preferences by clicking the gearwheel icon at the top right-hand side of the program window. In the Project Format tab at the left-hand side of the Preferences window, and choose the video format that matches your input source's format. Please note that all your input sources should match Studio's video format setting.

## Are you connected to the correct input of your Blackmagic device?

Generally, Blackmagic Design doesn't specifically mark the input/outputs of the device on the actual hardware. Please check your capture device's documentation to confirm the proper input.

## Is your camera configured properly?

Many cameras with multiple output formats allow you to define your specific output method. Check your camera's settings to confirm you are properly configured for HD-SDI, HDMI or analog, depending on your input to the Blackmagic Design device.

## Does your camera output to an external display?

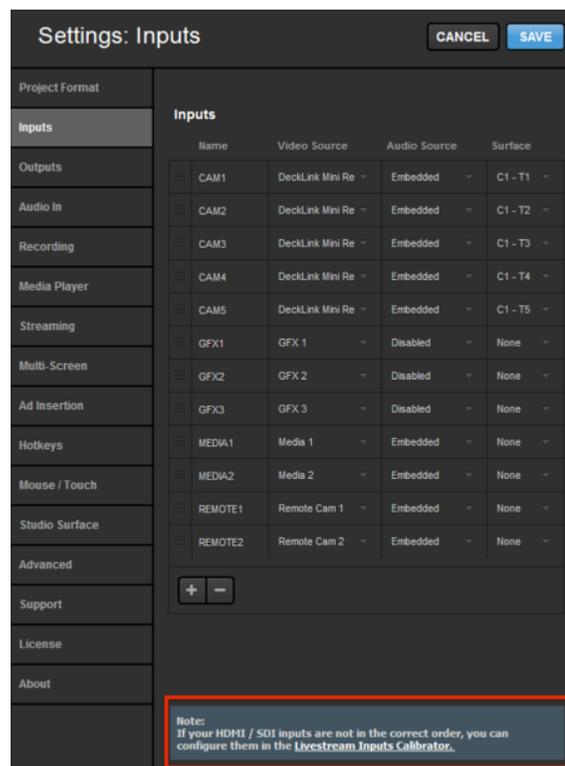
Connect the camera's output to an external display such as a monitor to verify the video signal. If you do not receive a signal, try a new wire of the same type or double-check your camera's settings.

If all of the above fail please contact Livestream Support by going to Livestream Studio settings and navigating to the **Support** tab. You will find contact information and your Support PIN there.

# Incorrect Order of Inputs

Some producers using some Livestream Studio hardware products **only** (HD51/HD510/HD550) have noticed their inputs not appearing in the multiview in the proper order. Livestream Studio includes an input calibrator for these specific units that can resolve this issue.

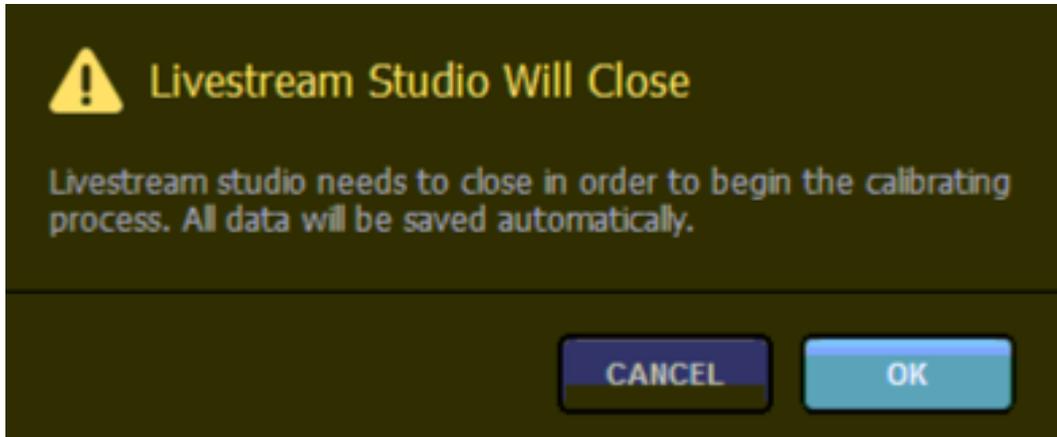
In Livestream Studio, click on the gearwheel to open settings, then click **Inputs**. A link to the Livestream Inputs Calibrator will be at the bottom of the window.



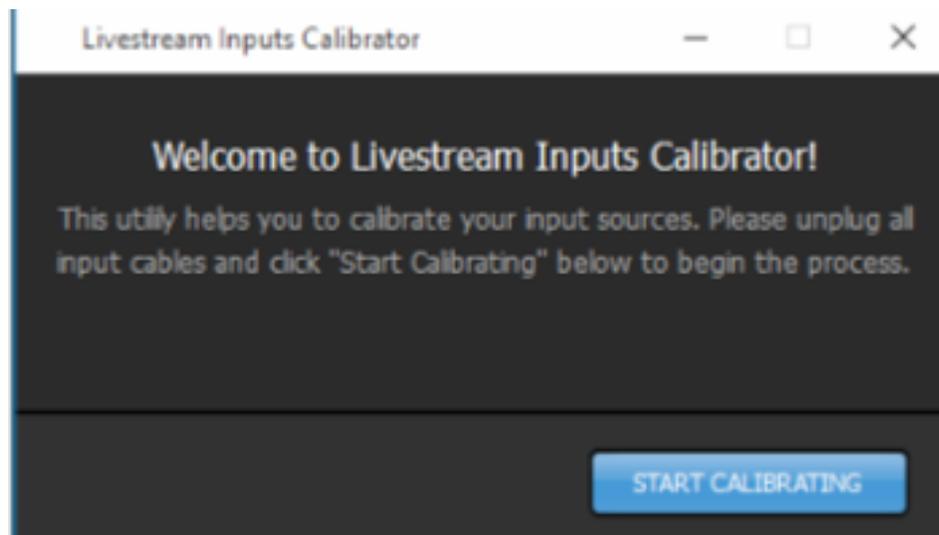
**i** Customers using the HD31 will need to open the tool manually by going to their Windows Start menu > Search > type in %localappdata% > select

Livestream Studio > select LSDeviceOrderCalibration. This tool is not compatible with other computers running Livestream Studio software.

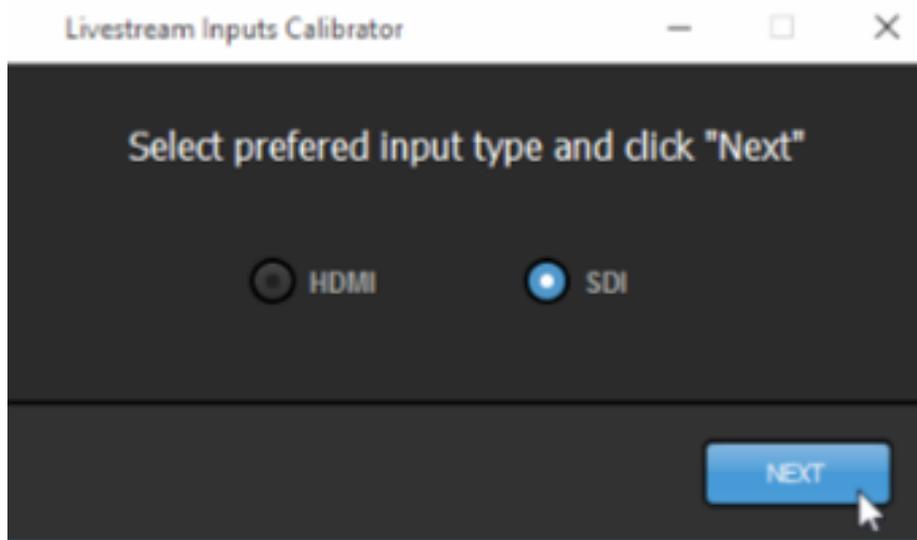
A window will pop up prompting that Livestream Studio will close. Click OK.



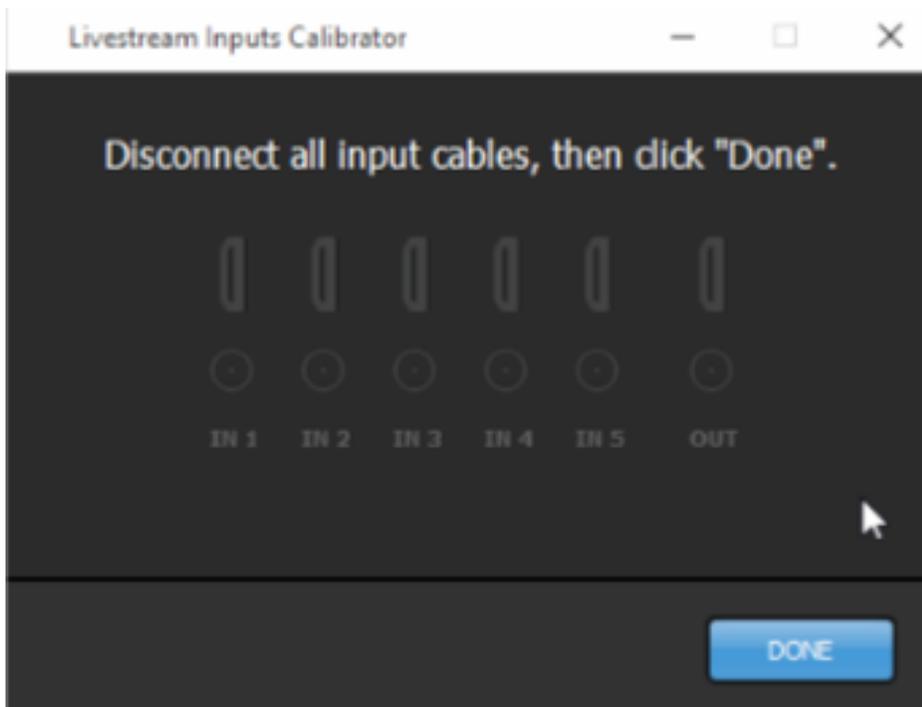
When Livestream Studio closes, a new window will pop up that will prompt you to unplug all of your cameras from all of your Blackmagic Design devices. After you do this, click Start Calibrating.



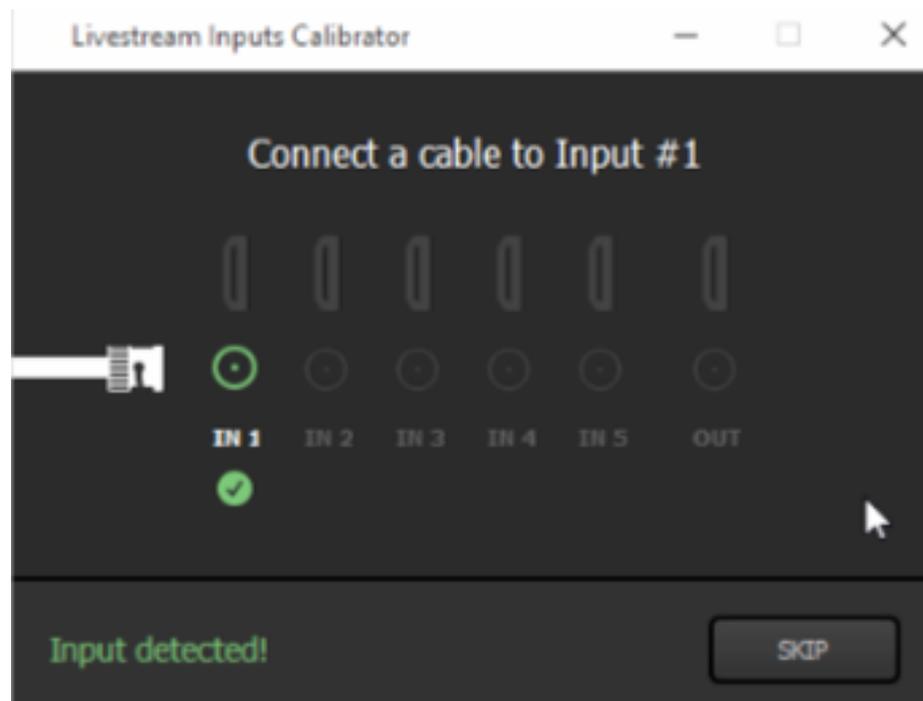
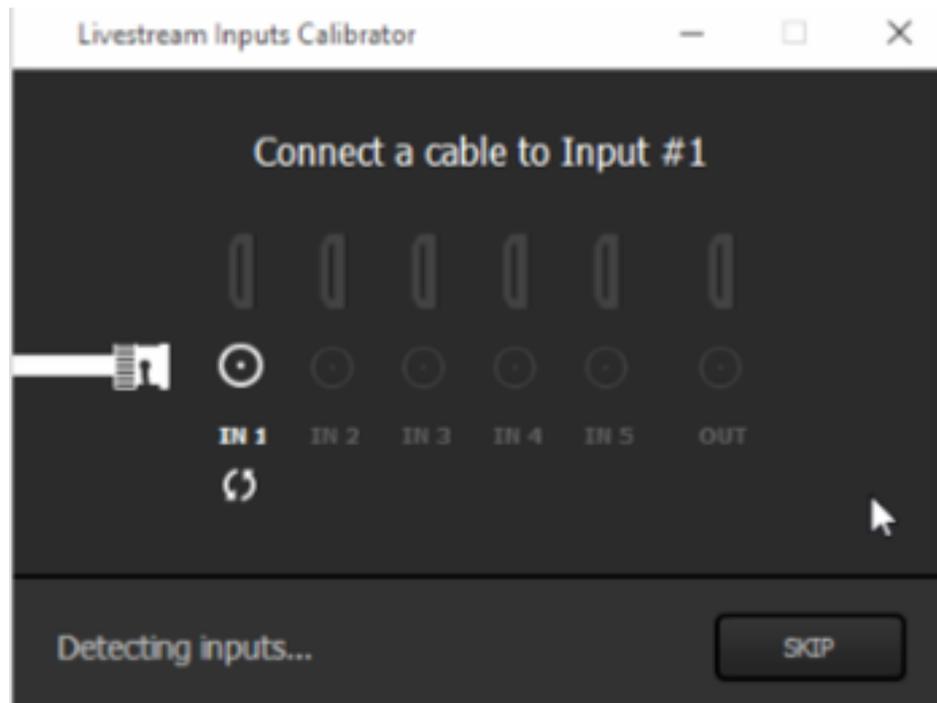
Select your preferred input type, either HDMI or SDI. You will only need one camera for this process, so if you are alternating input types, choose which ever one you are using more of. The calibration will still work. Then click Next.



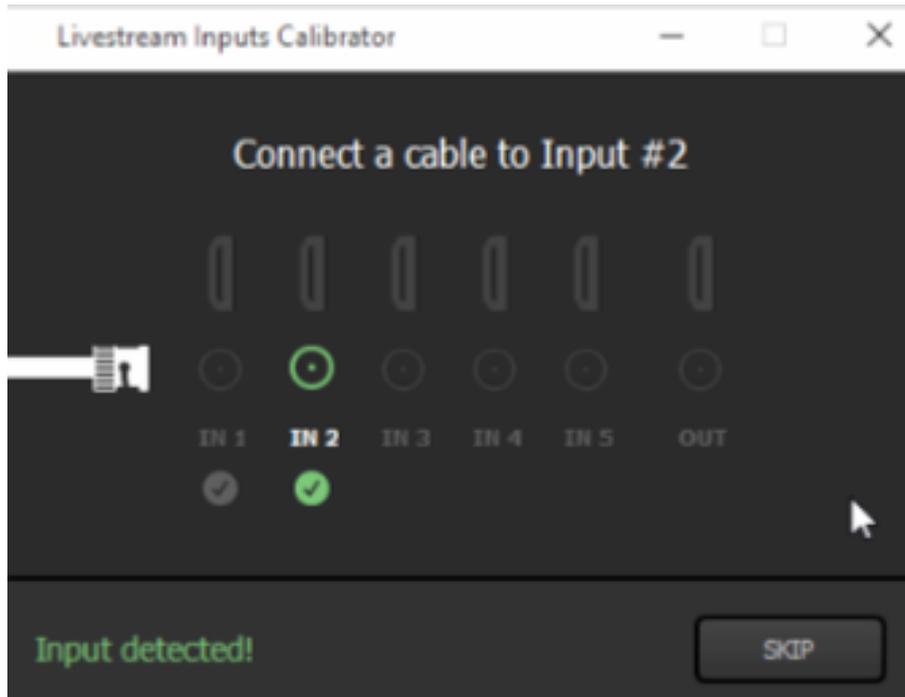
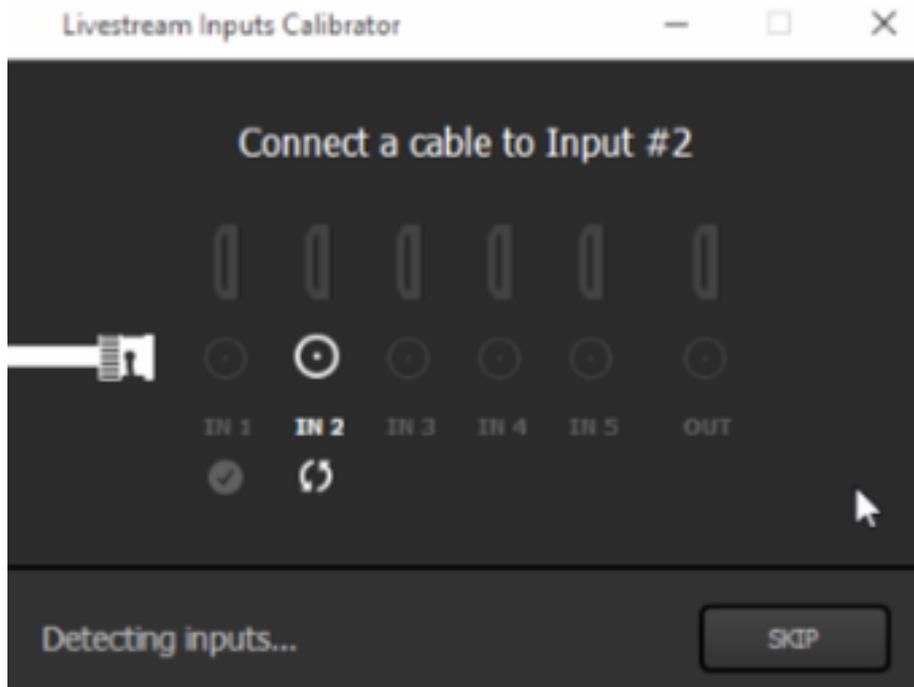
If you haven't disconnected all of your cables yet, do so now. Then click Done.

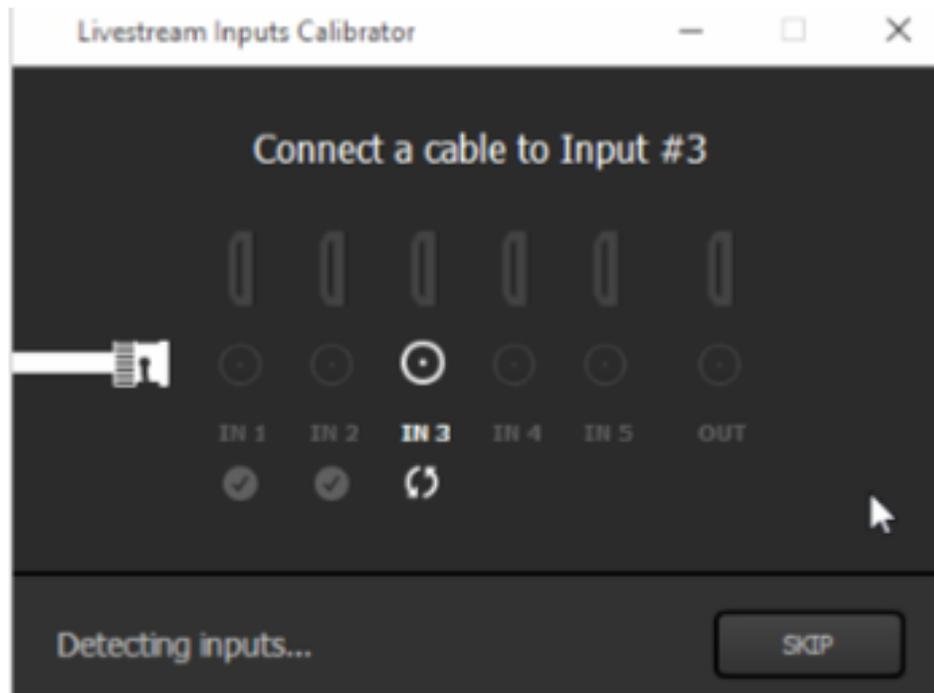


Connect a camera to In 1 on your system. The calibrator will indicate when it has detected it and completed calibrating it.

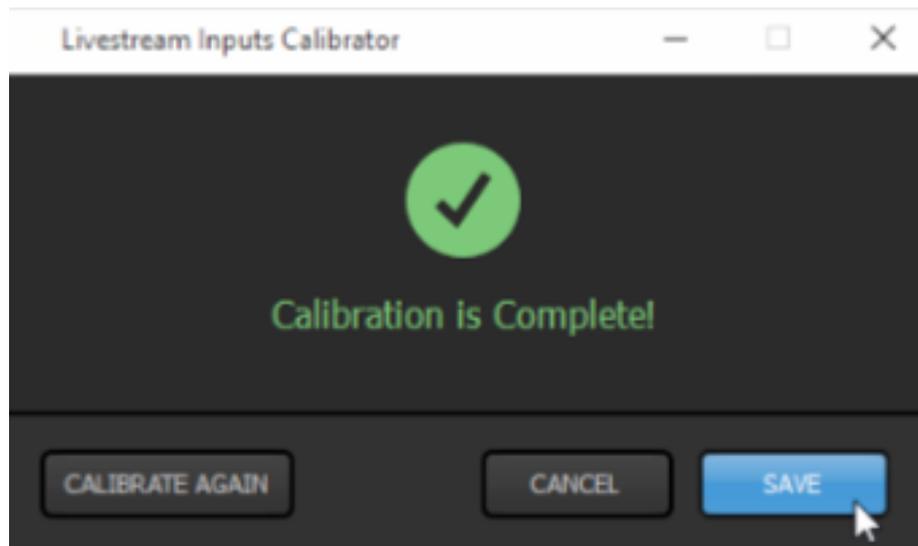


The calibrator will automatically prompt you to move to the next input. Unplug your camera from In 1 and plug it into In 2. Repeat this for the all five Blackmagic Design cards.





After you've gone through all inputs, the calibrator will inform you that calibration is complete. Click Save and Livestream Studio will reopen with your inputs in the proper order.



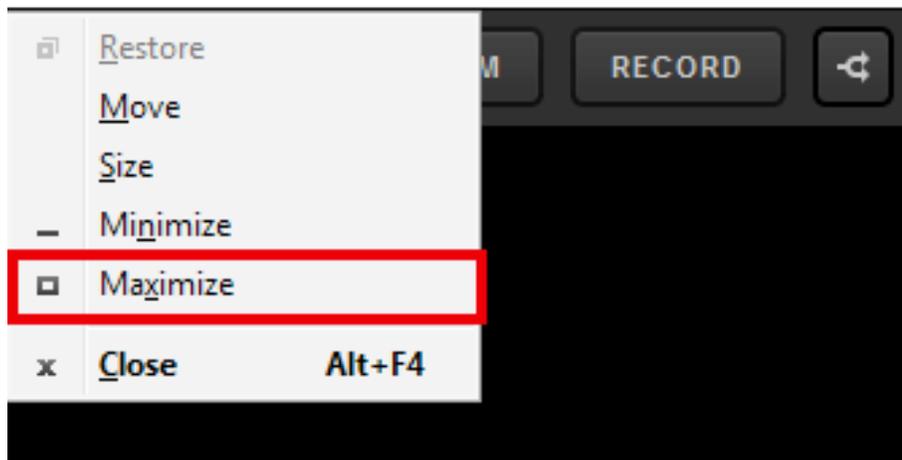
Please note that calibration is project-based. If you create a new project, you may need to calibrate your input sources again.

# Livestream Studio Not Fitting Within Screen

When using Livestream Studio, it's ideal for your display resolution to be set to 1920x1080. Otherwise, you may not be able to see the full software interface on your screen. If your display does not support a resolution this high, there are workarounds detailed below.

If you are using Windows:

1. Launch Livestream Studio
2. Press ALT+Spacebar on your keyboard
3. Select **Maximize** on the menu that pops up

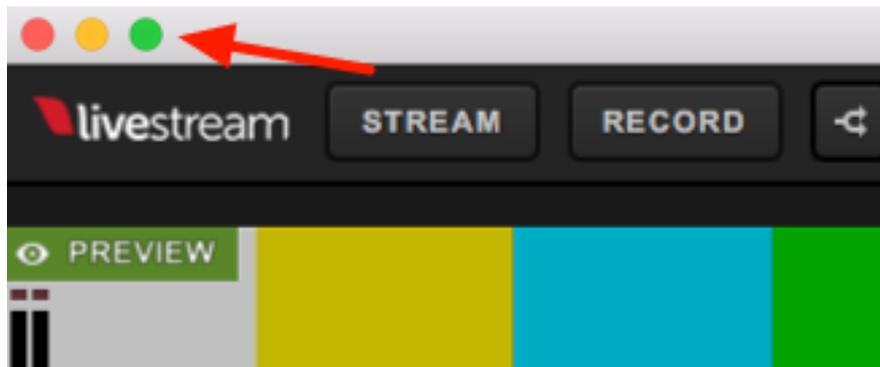


Customers using Studio (beta only) on Mac can fix this by going to System Preferences > Displays. Under Resolution, select Scaled.

Built-in Mac displays can be scaled based on appearance; select an option closer to More Space. Secondary displays will allow you to choose a numerical resolution.



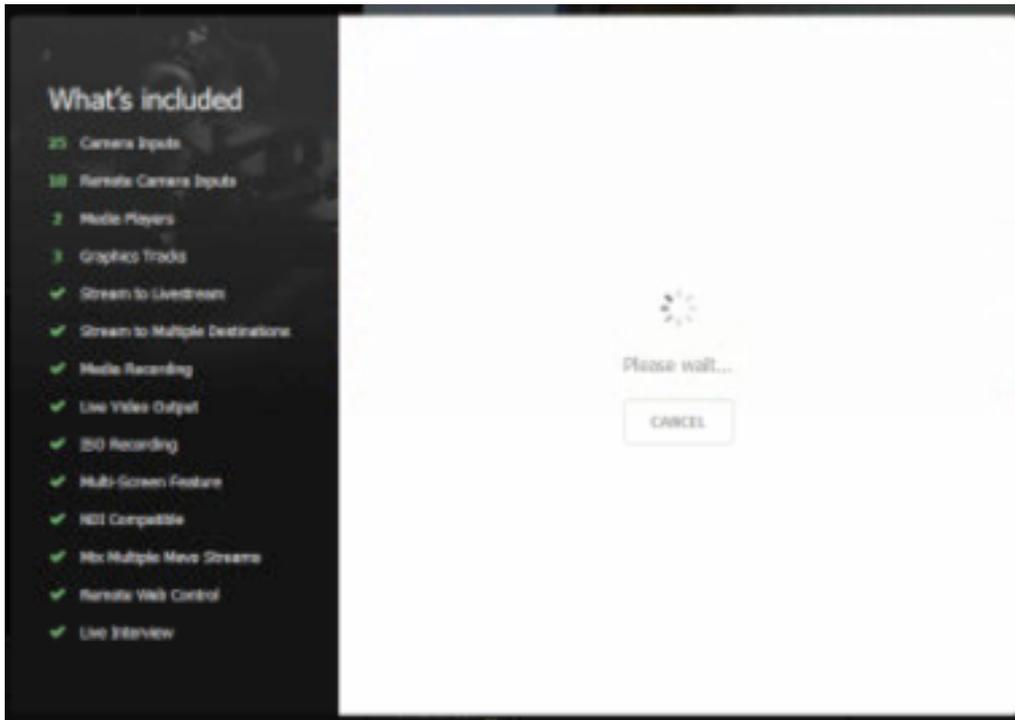
Alternatively, you could also click the green fullscreen button in the upper left corner of the Studio window.



Livestream Studio should now fill out your display without any parts of the interface being cut off.

# Can't Access Studio From Login Window

Some customers who access Livestream Studio via a subscription (rather than a USB dongle or hardware unit) have encountered a constant spinning wheel and cannot get past the first login window to access the software interface.



If you experience this, there are a few steps to take that can resolve this:

- Check that Windows is fully up to date. Some customers have resolved this issue by simply running Windows updates.
- Clear your Internet Explorer SSL state. We have specifically seen clearing browser cache in Internet Explorer help resolve this issue.
  1. To access the Delete Browsing History dialog:
    - If you are using Internet Explorer 8, on the Tools menu, click Internet Options.
    - If you are using Internet Explorer 9 or 10, click the gearwheel icon, and then click Internet Options.
  2. Click the Content tab.
  3. Click Clear SSL state, and then click OK.

- Clearing your cache in Internet Explorer as instructed on [this webpage](#) has helped with this issue in the past as well.

 We have only encountered this behavior on Windows machines. If you experience this issue while testing Studio for Mac beta, please contact us to investigate.

# My Studio PIN Is Invalid. What Do I Do?

Your [Studio PIN](#) allows you to speak with our Customer Care team via phone seven days a week, 9:30 AM-8:30 PM EST. Studio PINs are valid for one (1) year from the date of purchase of the Studio software or hardware unit.

If you believe that your Studio support PIN has expired less than a year after purchase, [contact us](#) with your product's [serial number](#) and attach a receipt or invoice from your purchase for our team to investigate.

If you have owned Studio for more than a year and you would like to renew your Studio PIN, please contact us with your product's serial number. PIN renewals are available for \$499 per year.

Please note that renewing your Studio PIN does not extend Studio's one (1) year warranty. Learn more about Studio's warranty [here](#).

# Studio Recording Does Not Play Back

If you used Livestream Studio to record and the AVI file does not play back in other software, Studio may be able to recover the file via the built-in transcoder in the Media bin.

To repair your AVI file, navigate to either Media tab in Livestream Studio and [import your AVI file](#). If the file transcodes and plays back in the Media bin, then Studio was able to recover it. After doing so, [export the file](#) to your hard drive.

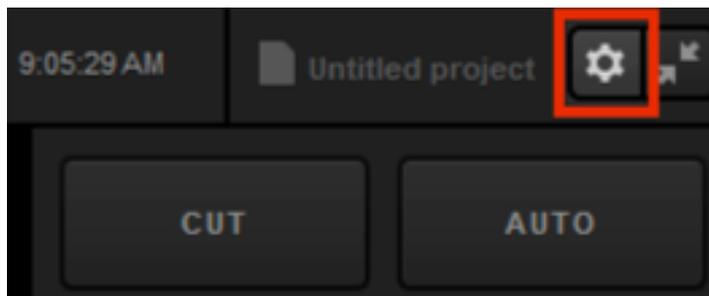
We have seen this method work in cases where Studio crashed during the recording and the AVI file left over was corrupt and unplayable.

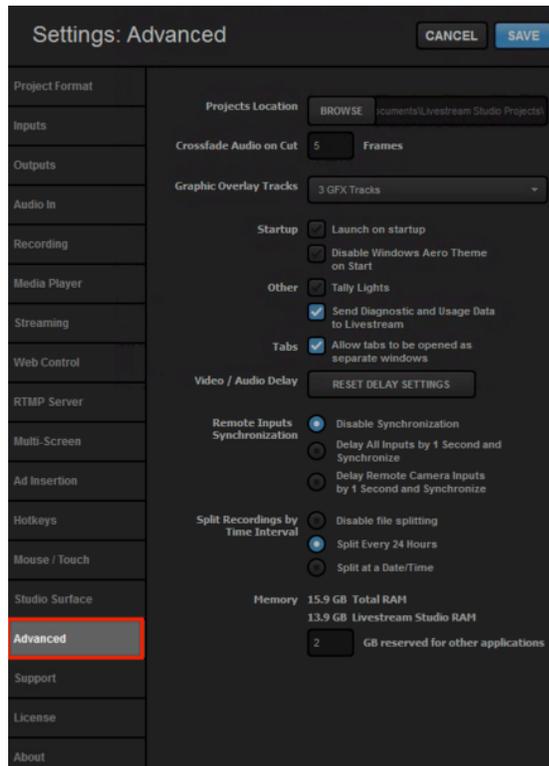
# Remote Cameras and Direct Inputs out of Sync

It's common for hard-wired cameras and remote cameras to not be exactly synced up. This is due to the nature of their individual workflows; wireless signals generally travel slower than directly connected signals.

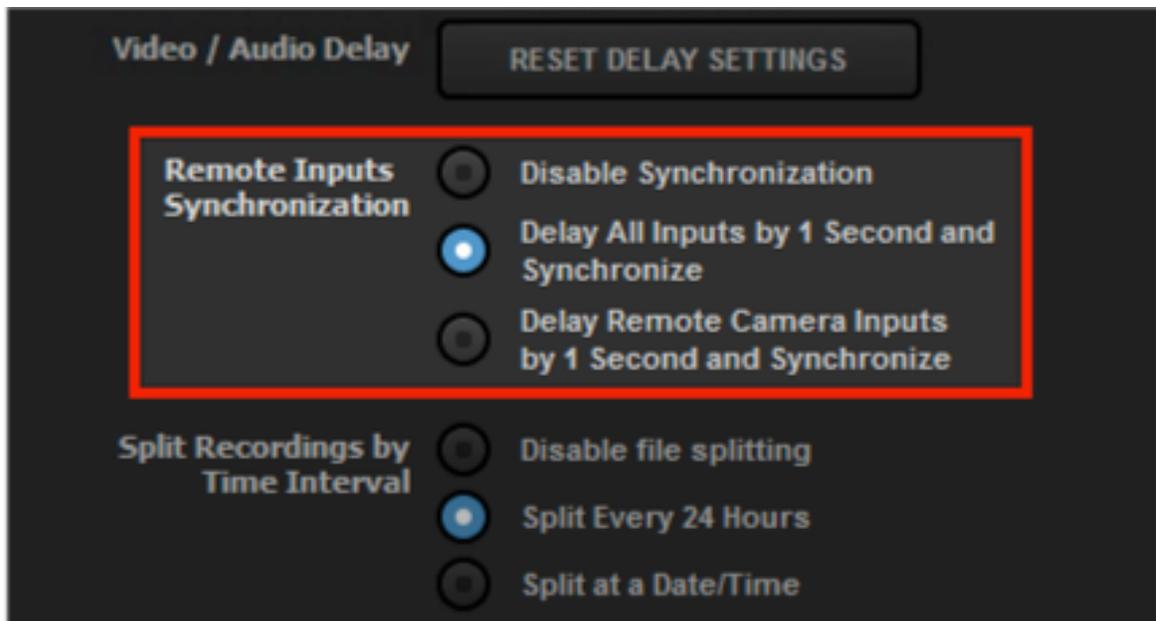
To resolve this, Studio has a simple setting to sync all your camera sources together.

Click the gearwheel in the upper right corner of Studio, then click the **Advanced** tab.





Navigate to the Remote Inputs Synchronization setting and select Delay All Inputs by 1 Second and Synchronize. This will allow your wired inputs to compensate for the latency experienced by wireless sources (in this case, Mevo) and sync them together.



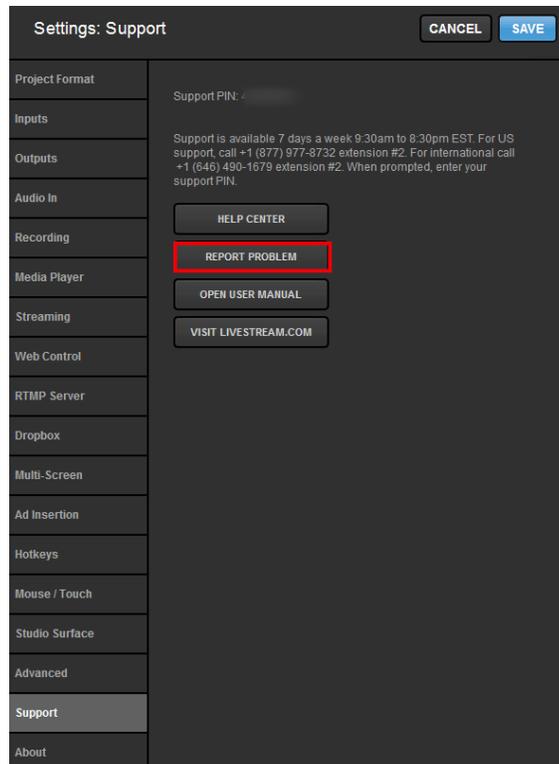
If you are only using remote camera sources, then select Delay Remote Camera Inputs by 1 Second and Synchronize.

Be sure to save your settings.

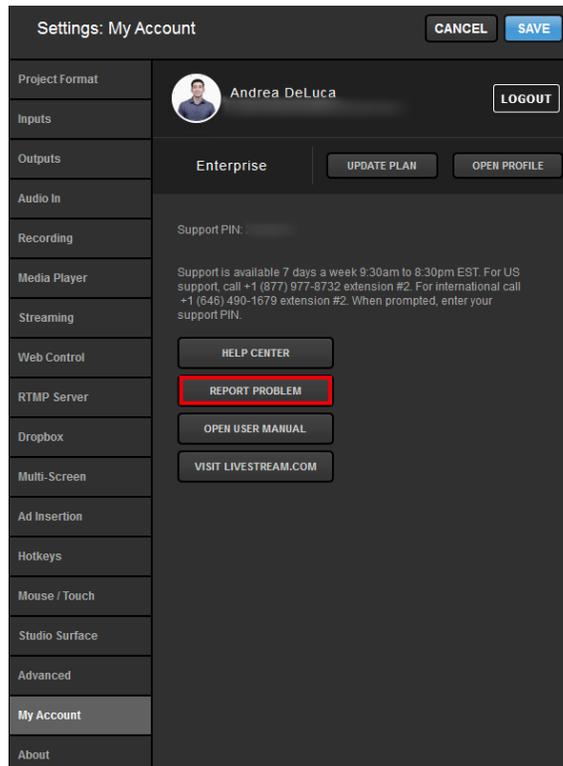
# Send Studio Logs to Livestream

If you continually experience issues streaming with Livestream Studio, the best way to troubleshoot with our customer care team is to report a problem and send logs via Studio.

If you are accessing Studio on a hardware unit (HD31, HD51, HD550, etc.) or via a red USB dongle, then navigate to **Settings: Support** and select **Report Problem**.



If you are accessing Studio via your Livestream account login, go to **Settings: My Account** and select **Report Problem**.



Fill in the required information and make sure Include logs and debug information is checked. Then click **Send**. Our team will respond as soon as possible.

Settings: Support CANCEL SAVE

Project Format	<h3>Report Problem</h3> <p>Your support PIN</p> <input type="text"/>  <p>Name</p> <input type="text"/>  <p>E-mail address</p> <input type="text"/>  <p>Description of problem</p> <div style="border: 1px solid black; height: 80px; width: 100%;"></div> <p><input checked="" type="checkbox"/> Include logs and debug information</p> <p><span>SEND</span> <span>CANCEL</span></p>
Inputs	
Outputs	
Audio In	
Recording	
Media Player	
Streaming	
Web Control	
RTMP Server	
Dropbox	
Multi-Screen	
Ad Insertion	
Hotkeys	
Mouse / Touch	
Studio Surface	
Advanced	
Support	

# How to Use the Studio USB Recovery Drive

Included with the 4K editions of Livestream Studio hardware units (HD51 4K, HD550 4K) are USB recovery drives, which you can use whenever there is a Windows system failure or any situation in which you would like to restore your system to Windows default settings. The full process takes about 20 minutes.



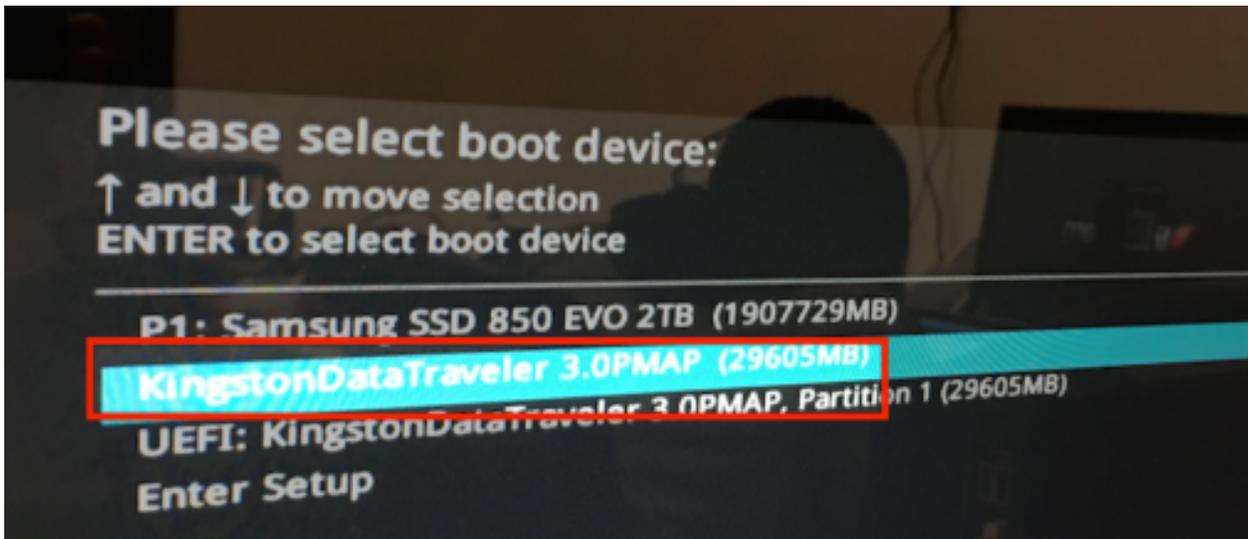
**!** **IMPORTANT:** Please read and fully understand all of the instructions before starting the process. If you have any questions or concerns, please contact customer care.

Before beginning this process, make sure you have your Windows License number available to you. It is included in the 'Studio Bits and Bops' box that is shipped with your Studio hardware unit.

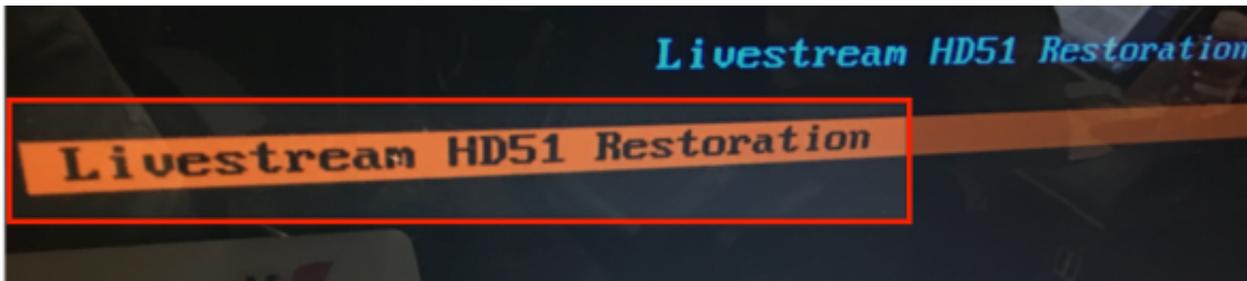
1. **Back up any files you wish to preserve.** This process is destructive and will return the system to factory settings and result in the loss of all user files.
2. Insert your USB Restore Drive into any of your Studio unit's USB ports.



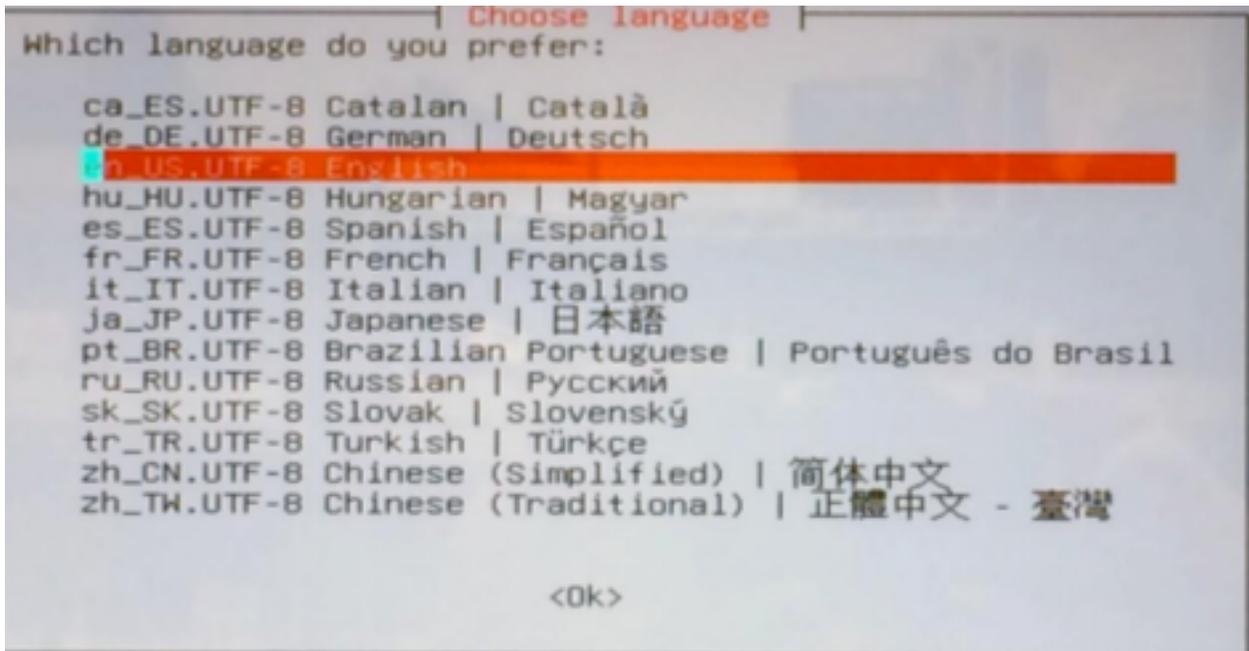
3. Power the system on using the power button.
4. Once the Livestream logo appears for the first time, tap the "F8" key repeatedly to enter the Boot Menu.
5. In the Boot Menu, select 'KingstonDataTraveler 3.0PMAP,' then hit the Enter key.



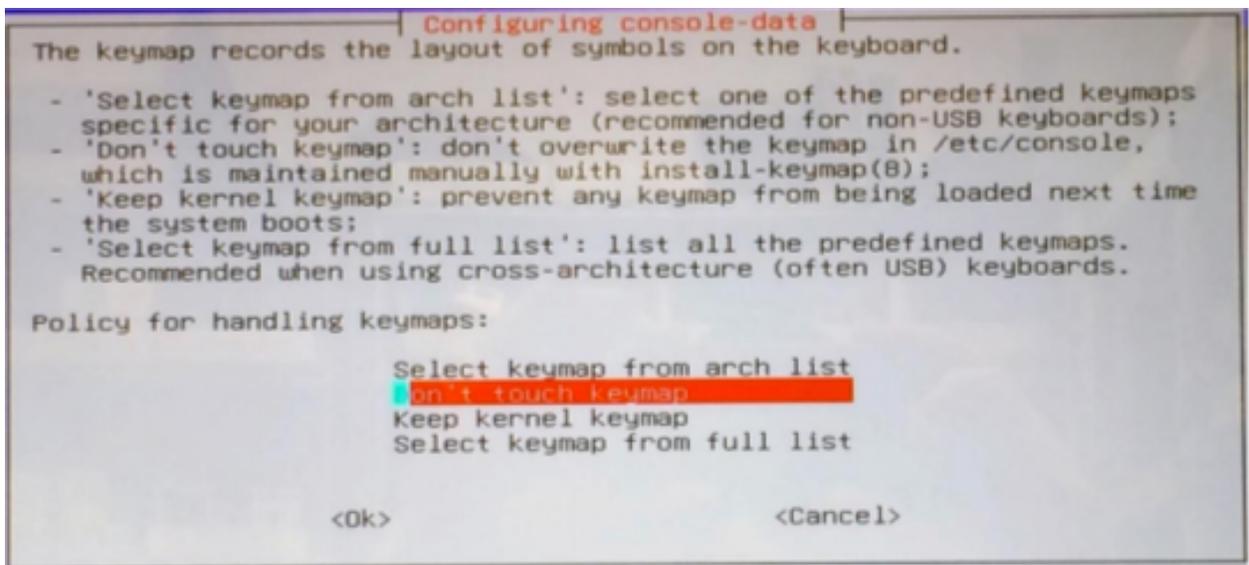
6. You will be presented with the main menu following a few seconds of load time. Your Studio unit's Livestream restoration option will be selected. Hit the Enter key.



7. At the 'Choose language' screen, press the 'Enter' key to select the default option of English.



8. At the 'Configuring console-data' screen, press the 'Enter' key to select the default option of Don't touch keymap.



9. Wait for the system to complete its image verification. This process will take about 10 minutes. ETA and Progress bar will be visible on the screen to indicate the process.



```

checked successfully.
The image of this partition is restorable: sda2
*****
All the images of partition or LV devices in this image were checked and they are restorable: Test_I
mage_1
Summary of image checking:
*****
Partition table file for disk was found: sda
MBR file for this disk was found: sda
The image of this partition is restorable: sda1
The image of this partition is restorable: sda2
All the images of partition or LV devices in this image were checked and they are restorable: Test_I
mage_1
*****
activating the partition info in /proc... done!
Getting /dev/sda1 info...
Getting /dev/sda2 info...
*****
The following step is to restore an image to the hard disk/partition(s) on this machine: "/home/part
img/Test_Image_1" -> "sda sda1 sda2"
The image was created at: 2016-0421-1110
WARNING!!! WARNING!!! WARNING!!!
WARNING. THE EXISTING DATA IN THIS HARDDISK/PARTITION(S) WILL BE OVERWRITTEN! ALL EXISTING DATA WILL
BE LOST:
*****
Machine: HD550
sda (1000GB_HDC_HD10JFCX-68N_HDC_HD10JFCX-68N6GN0_HD-HXE1AA59636P)
sda1 (350M_ntfs_System_Reser(In_HDC_HD10JFCX-68N)_HDC_HD10JFCX-68N6GN0_HD-HXE1AA59636P)
sda2 (931.26_ntfs(In_HDC_HD10JFCX-68N)_HDC_HD10JFCX-68N6GN0_HD-HXE1AA59636P)
*****
Are you sure you want to continue? (y/n) _

```

11. Confirm your selection by typing 'y' key again and pressing the "Enter" key (NOTE: Data loss will occur *immediately* once the 'Enter' key is pressed).

```

All the images of partition or LV devices in this image were checked and they are restorable: Test_I
mage_1
*****
activating the partition info in /proc... done!
Getting /dev/sda1 info...
Getting /dev/sda2 info...
*****
The following step is to restore an image to the hard disk/partition(s) on this machine: "/home/part
img/Test_Image_1" -> "sda sda1 sda2"
The image was created at: 2016-0421-1110
WARNING!!! WARNING!!! WARNING!!!
WARNING. THE EXISTING DATA IN THIS HARDDISK/PARTITION(S) WILL BE OVERWRITTEN! ALL EXISTING DATA WILL
BE LOST:
*****
Machine: HD550
sda (1000GB_HDC_HD10JFCX-68N_HDC_HD10JFCX-68N6GN0_HD-HXE1AA59636P)
sda1 (350M_ntfs_System_Reser(In_HDC_HD10JFCX-68N)_HDC_HD10JFCX-68N6GN0_HD-HXE1AA59636P)
sda2 (931.26_ntfs(In_HDC_HD10JFCX-68N)_HDC_HD10JFCX-68N6GN0_HD-HXE1AA59636P)
*****
Are you sure you want to continue? (y/n) y
Ok, let's do it!!
This program is not started by clonezilla server.
*****
Let me ask you again.
The following step is to restore an image to the hard disk/partition(s) on this machine: "/home/part
img/Test_Image_1" -> "sda sda1 sda2"
The image was created at: 2016-0421-1110
WARNING!!! WARNING!!! WARNING!!!
WARNING. THE EXISTING DATA IN THIS HARDDISK/PARTITION(S) WILL BE OVERWRITTEN! ALL EXISTING DATA WILL
BE LOST:
*****
Machine: HD550
sda (1000GB_HDC_HD10JFCX-68N_HDC_HD10JFCX-68N6GN0_HD-HXE1AA59636P)
sda1 (350M_ntfs_System_Reser(In_HDC_HD10JFCX-68N)_HDC_HD10JFCX-68N6GN0_HD-HXE1AA59636P)
sda2 (931.26_ntfs(In_HDC_HD10JFCX-68N)_HDC_HD10JFCX-68N6GN0_HD-HXE1AA59636P)
*****
Are you sure you want to continue? (y/n) _

```



# Studio Software Crashes From Launch

If you attempt to launch Livestream Studio and it crashes before the opening splash screen finishes loading, you may be missing important Windows components.

Please check the following:

- Ensure that Windows is fully-updated.
- Check that Livestream Studio has been installed under the Administrator account on your computer.
- Make sure you have installed [Visual C++ 2013 Redistributable Package](#) x64 on your computer.

## Windows 10 Users

If you experience this behavior, it may be due to having Windows 10 N or Windows 10 KN editions installed. These versions do not come with the Windows Media Feature Pack, which is required in order for Livestream Studio to run. You can download the pack from Microsoft's website [here](#).

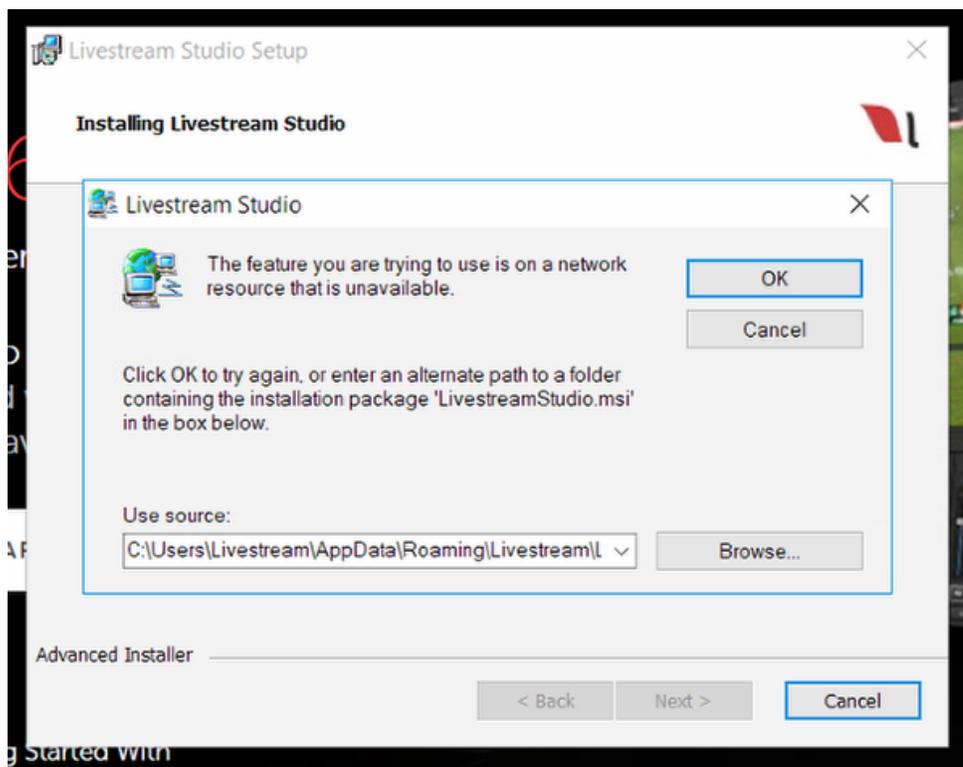
 We have only encountered this behavior on Windows machines. If you experience this while testing Studio for Mac beta, please contact us to investigate.

# Network Resource Unavailable When Installing Studio

There is a known issue when attempting to install Livestream Studio on your Windows PC after rolling back your Windows version. Below outlines what the issue looks like and how to resolve it.

We have specifically seen this behavior when customers have rolled back from Windows 10 version 1709 to Windows 10 version 1703, but it possible with other Windows rollbacks as well.

After rolling back Windows, if you attempt to install Livestream Studio on your PC again, you may see a message indicating that a network resource is unavailable.



What happened is that Windows damaged some of Studio's data in the registry during the rollback.

To fix this, run the installer of the version of Studio you were running **prior** to the Windows rollback; if you are seeing this error, it was likely not the most recent version. You can find downloads to all of our previous installers in the [Version History](#) article.

Since technically this version of Studio already exists on your PC, the installation wizard will prompt you with options to Remove or Repair it; select **Remove**. This will fix the registry damage and thus allow you to install any version of Livestream Studio.

# What is Livestream Studio's Warranty?

Our full Livestream Studio warranty is available [here](#). We recommend you review the terms in full.

Some major points include:

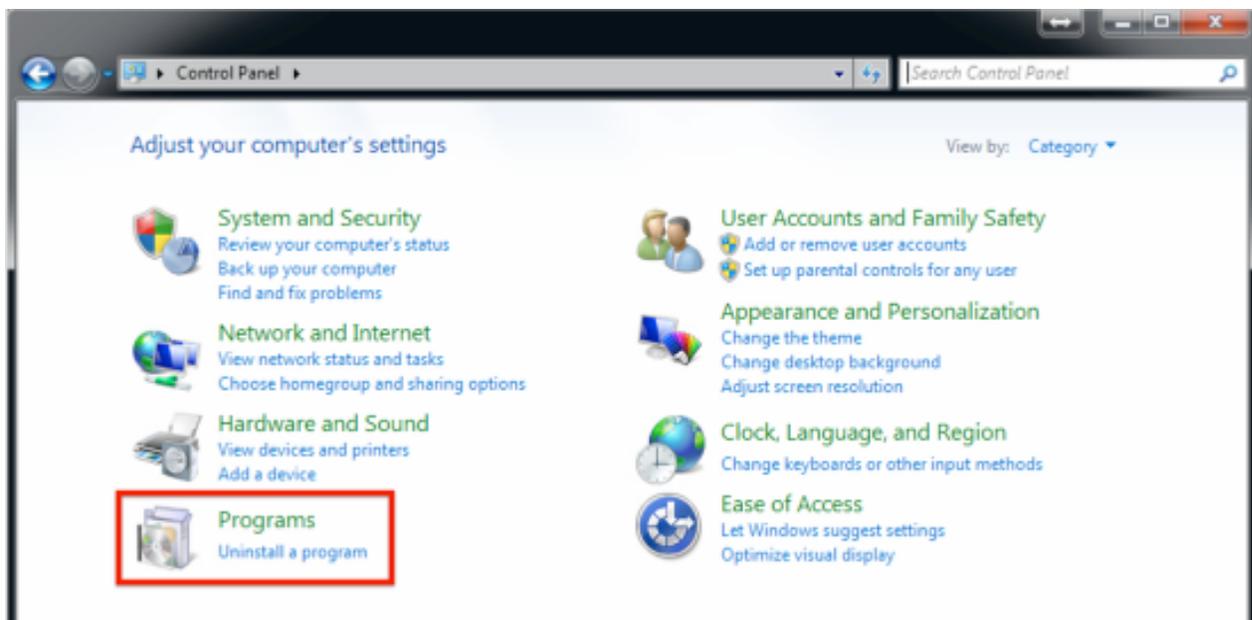
- Livestream Studio hardware products have a one (1) year warranty.
- If the Studio dongle is lost or stolen, it is the responsibility of the customer to purchase a new one.
- You have thirty (30) days to return an item from the date of purchase if you purchased directly from the [Livestream Store](#).
- Livestream products purchased through other retailers must be returned in accordance with their respective returns and refunds policy.

# Uninstalling Livestream Studio

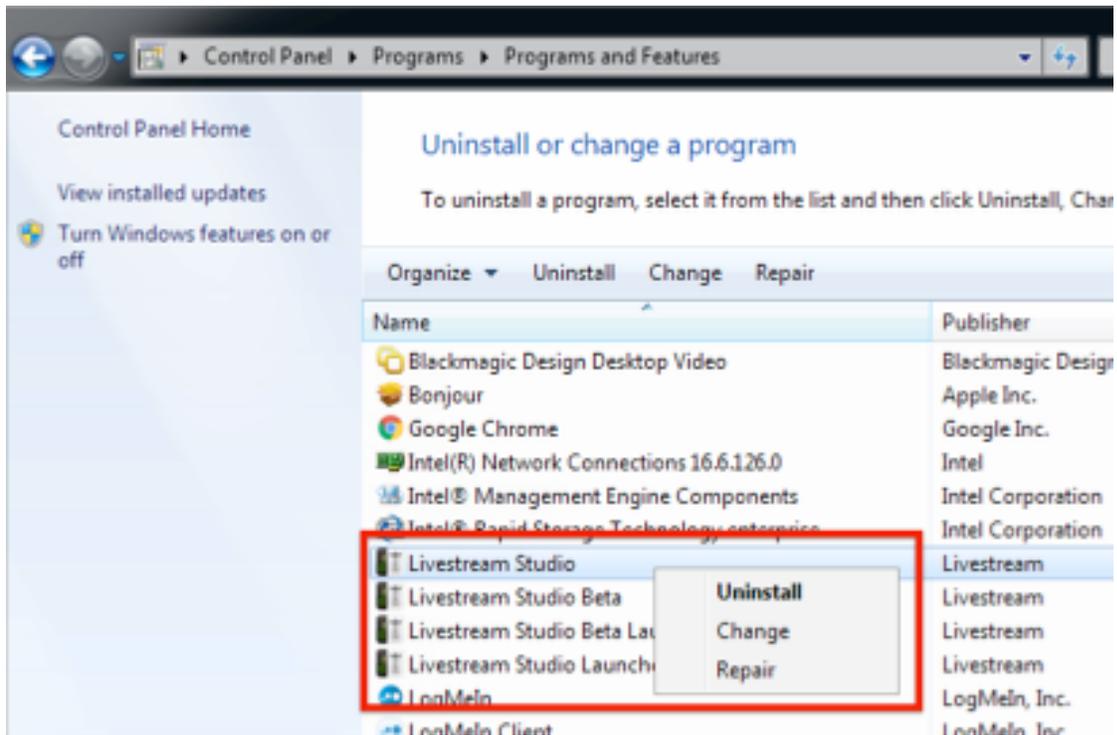
To uninstall Livestream Studio, first make sure that Studio is not running, regardless of which operating system you are using.

## Uninstall Studio from Windows

Then go to the Control Panel in Windows and select Uninstall a Program.



Find Livestream Studio, then right-click and click Uninstall.

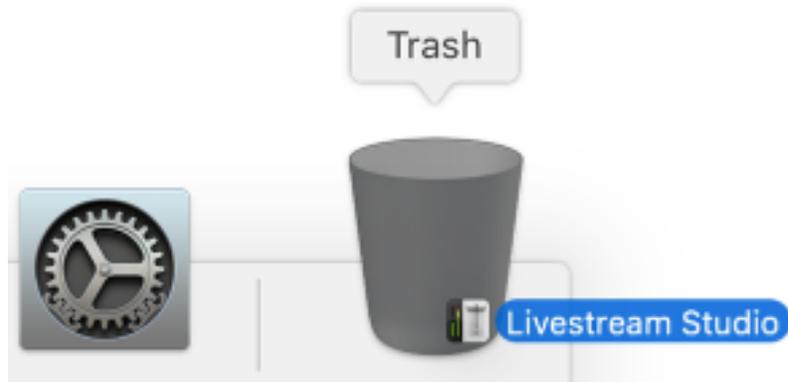


Follow the on-screen prompts to run the uninstaller. This will only remove the software, not the launcher.

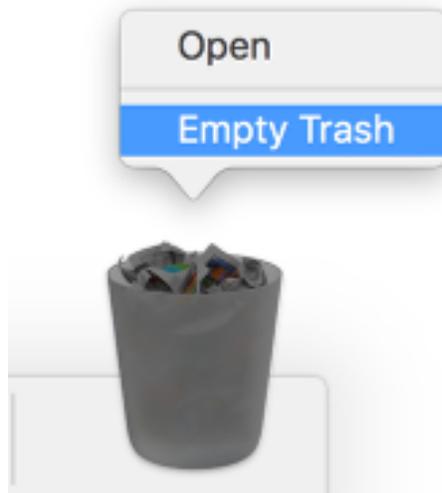
You can re-install the software if you double click the launcher on the desktop.

## Uninstall from MacOS (beta only)

To uninstall Studio beta from a Mac system, simply find Livestream Studio in your Applications folder and click and drag it to the Trash. Alternatively, right-click Livestream Studio in your Applications folder and select **Move to Trash**.



Once Livestream Studio is in the Trash, right-click the Trash icon and click Empty Trash.



Livestream Studio is now uninstalled.