

Livestream Studio<sup>TM</sup>

### Release Notes & New Features

For use with Livestream Studio<sup>™</sup> version 3.0.0

Published on April 13, 2015

## livestream

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## Release notes



### **3.0.0 Release Notes**

**Please note** - Livestream Studio works best with Blackmagic Design Desktop Video version 10.2.2. We recommend checking your driver version and downgrading to 10.2.2 if you upgraded to a more recent version.

NEW  $\rightarrow$  UHD (4K) signal capture and mixing support (using UHD 4K Blackmagic Design capture cards)

NEW → Increased amount of available inputs, outputs and remote cameras. (25 inputs/25 outputs/10 Remote Cameras).

NEW  $\rightarrow$  Low Definition (480p, 432p, 360) streaming-only project formats for live streaming is now supported for lower performance computers and laptops

NEW → "Slide" and "Push" transitions: available for main mix, graphics overlays and auxiliary mixes.

NEW → Livestream Interview feature in Remote Camera Module. Ability to bring remote interviewees with low latency over Internet (using WebRTC technology in Google Chrome browser).

NEW → Updated Streaming Module

- Bonded transmission is now out of Beta and the default streaming method to New Livestream. Now you can spread the live video data stream over multiple internet connections (Wifi, 3G/4G, Ethernet, ...)
- "Bonding if needed" feature. Network connections can be specified as "Primary" or "Backup". Backup interfaces will be used only if there are problems with the "Primary" connection
- Network dashboard for live stream instant control and monitor both while using Bonding or Standard RTMP connections
- New Streaming Provider Twitch.tv
- Persistent login within streaming provider
- Improved streaming log
- Streaming to Local MP4 files only (offline)



### 3.0.0 Release Notes (cont.)

- Easier to access features
- Improved streaming quality
  - New HD+ + High + Medium + Mobile quality option that creates a 720p stream at 4Mbps for increased video quality especially with sport content.
  - Improved deinterlacing component
  - Smooth, default 30 fps streaming
  - Ability to control streaming deinterlacing settings (accessible in Settings->Streaming panel).
  - Multiple custom qualities for RTMP/Zixi streaming
  - More flexible custom qualities configuration
- NEW → Remote Camera Sources
  - Airplay Mirroring
  - GoPro 3 and GoPro 4 (using WiFi hotspot feature)

NEW → Integrated automated tool for ISO recording recovery after failures (typically caused by accidental storage device removal or power outage)

NEW  $\rightarrow$  Graphics module Features:

• Group Layers - now it's possible to use multiple data sources within a graphics layer and ease control data that is coming from various sources

NEW → Closed caption ingestion (using HD-SDI embedded auxiliary data and compatible Blackmagic Design capture card) and forwarding to Livestream.

NEW → Crop/Zoom functionality in Input Settings module.

**live**stream

### 3.0.0 Release Notes (cont.)

#### Improvements:

- $\rightarrow$  Added explanation tooltips for most user interface elements
- → Remote Camera module can now handle interlaced video streams over RTMP or Zixi
- → New UI for the Input Settings Module
- → New UI in Remote Camera module
- → Added "Reset config to default" prompt to restore system from critical failure
- → Improved H.264 encoding component
- → Stability and performance improvements for RTMP and Zixi inputs in Remote Camera
- → Improved integration with Livestream Broadcaster and Broadcaster Mini
- → Improved handling of transcoder history and functionality to monitor transcoding cache size / clear cache. Transcoder stability improvements.
- → New version of Livestream Studio Remote Camera for Windows is available with stability and performance fixes
- → Livestream Studio Remote Camera for Mac OS X is available, include following improvements and fixes:
  - Desktop audio capture driver
  - 2x improved performance of Desktop capture (now can capture up to 60fps)
  - Automated mechanism of web camera resolution selection based on the Livestream Studio project format
  - Various stability improvements
  - Various UI improvements
- $\rightarrow$  Various UI improvements
- → Stability and Reliability improvements

# 4K/UHD and low definition project formats





## In settings, under the '**Project Format**' menu, there is a new option for Broadcast Standard.



0 - 11:		<b>D</b>		
Sem	nde.	Projec	T Forma	ar -
OCIU	ings.			
	<u> </u>	_		

CANCEL SAVE

	Project Format			
	7	Project Video Format	HD 720p 59.94	*
	Inputs		HD 1080i 59.94 HD 1080i 50	
	Outpute	Image: Project Video Format         HD 720p 59.94           HD 1080i 59.94         HD 1080i 50           HD 1080i 60         HD 720p 59.94           HD 720p 59.94         HD 720p 59.94           HD 720p 50         HD 720p 50           Multi-View Deinterlacing Method         HD 720p 60           Broadcast Standard         HD 1080p 29.97           HD 1080p 23.98         HD 1080p 24           HD 1080p 24         NTSC 4:3           NTSC 16:9         PAL 4:3           PAL 16:9         PAL 16:9		
	Outputs	Project Video Format         HD 720p 59.94           HD 1080i 59.94         HD 1080i 50           Project Audio Format         HD 1080i 60           HD 720p 59.94         HD 720p 59.94           HD 720p 59.94         HD 720p 59.94           HD 720p 59.94         HD 720p 50           Multi-View Deinterlacing Method         HD 720p 60           Broadcast Standard         HD 1080p 29.97           HD 1080p 23.98         HD 1080p 23.98           HD 1080p 24         NTSC 4:3           NTSC 16:9         PAL 4:3           PAL 16:9         PAL 16:9		
	Audio In	Multi-View Deinterlacing Method	HD 720p 50 HD 720p 60 HD 1080p 29.97 HD 1080p 25	
	Recording	Broadcast Standard	HD 1080p 30 HD 1080p 23.98 HD 1080p 24	
	Media Player		NTSC 4:3 NTSC 16:9	
	Streaming		PAL 16:9	

Earlier versions of Livestream Studio only had the options shown under High Definition mode.

Inputs			
Outputs	Project Audio Format	48kHz Stereo	-
Audio In	Multi-View Deinterlacing Method	All Frames	-
Recording	Broadcast Standard	O Ultra HD	
Media Player		High Definition mode	
		Low Definition mode	

There are two new broadcast standards supported starting in version 3.0.0: Ultra HD and Low Definition mode.



Project Format		
	Project Video Format	UHD 4k 29.97
Inputs		UHD 4k 29.97
Outputs	Project Audio Format	UHD 4K 20 UHD 4K 23.98 UHD 4K 24
Audio In	Multi-View Deinterlacing Method	All Frames
Recording	Broadcast Standard	O Ultra HD

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.

CAMS	3	•		
\$	GENERAL			
	AUDIO		CAM3 Format	
¢	CONVERT		Auto (HD 1080i 59.94)	
Ϊ	CROP		Project Format	
			UHD 4k 29.97	
0	DELAY		Reverse Field Order	

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 usage.



### Stream Quality

Medium Quality (678kbps)	*
Mobile Quality (198kbps)	
Normal Quality (446kbps)	
Medium Quality (678kbps)	
High Quality (1756kbps)	
Medium + Mobile (876kbps)	
High + Medium + Mobile (2632kbps)	
HD + Medium + Mobile (3196kbps)	
HD + High + Medium + Mobile (4952kbps)	
HD+ + HD + High + Medium + Mobile (8952kbps)	

While your outputs and ISO recordings will be in your selected project format, streams cannot be transmitted higher than 720.



Audio In	Method
Recording	Broadcast Standard 🕜 Ultra HD
Media Player	High Definition mode
Streaming	Low Definition mode
Multi-Screen	Note: Low Definition Mode is currently active. HD and Full HD inputs will auto-downscale to Low Definition. You can adjust the settings above
Ad Incortion	above.

## In the 'Project Format'

menu under Broadcast Standard, you can also select Low Definition mode.



	Settings: P	roject Format	SAVE			
	Project Format					
10000		Project Video Format	480p 30		•	
	Inputs		480p 30			
the second of the	Outputs	Project Audio Format	480p 25 432p 30 432p 30 97			
	Audio In	Multi-View Deinterlacing Method	432p 25 432p 25 360p 30 360p 29 97			
	Recording	Broadcast Standard	360p 25 NTSC 4:3			
	Media Player		PAL 4:3 PAL 16:9			
	Streaming	Note: Low Definition Mode is co	urrently active. HD a	nd Full HD input	s will	
	Multi-Screen	above.	Definition. You can a	ujust the setting	JS	

This provides lower standard definition project formats, which are ideal for use on low performance computers and laptops.



l	Input Settings	Audio Mixer	Remote Cam 1	Remote Cam 2	
CAM1	. 🔻				
¢	GENERAL	Converter	- <del>C</del> ON	Тір	
ŧîŧ	AUDIO	CAM1 Format		For best video output converter. You can try	quality please avoid using a changing your project format
¢	CONVERT	Auto (HD 720p 59.94)	-	in the Settings > Proje format of the incoming	ect Format tab or change the source to match your project
τ	CROP	Project Format		format.	
100	TALLY	480p 29.97			
C	DELAY				

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

	🔝 Emily Knox 👻 📑 Penalty Shot 👻	Open event
lease avoid using a g your project format at tab or change the to match your project	Stream Title Game winnter	
	Stream Quality	
	480p Quality (1128kbps)	
	Bonded network	
	Standard	
	Settings	

In the streaming module, you will only be able to stream in a resolution equal to your selected project format regardless of which streaming provider you use, in order to limit CPU demand.

## New transitions





## Version 3.0.0 introduces eight new options under the '**Transitions**' tab.





There are four slide transitions that slide the Preview source over the Program source on transition.



There are also four push transitions, which make the Preview source and the Program source move into and out of Program in the same direction at the same time.



GFX	C1®	GFX 2	6	GFX 3	Media 1	I	Media 2	Stream	1	Transitions	₩
Main									Push Rig	ght	
AUX 1									Transition D 45 Fr	ouration rames	
AUX 2									Transition O	ptions	
AUX 3					느	<b>↓</b> *	<u> </u>		Flip Flo	e Direction P	
AUX 4									Reset	Transition Settings	
GFX 2		+	$\star$	*		T					
GFX 3					•						
						<b>†</b>					
	•	T T									

These new options are all available for the main mix, GFX transitions, and AUX transitions.



## Interview remote camera







The Live Interview feature is available under the remote camera tab. To add it as a source, click 'Add Stream,' then 'Live Interview.'





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 Live Interview URL to your guest.



When the guest opens the provided Interview URL in Google Chrome, a prompt will ask for a name and to and allow the camera and microphone to be accessed. When these simple steps are finished, the guest can click 'Join Interview.'





The guest will continue to see the camera feed, but will also see that a connection has been established and that an internal chat can be accessed.



< Back	Live Interview	Select guest (1) 🔻	Chat	亩
Status Please, select guest from the list	No interviewees selected		Emily Connected to chat	4:12 PM
Live Interview Link	Please select guest from the list.		Emily Connected to chat	4:12 PM
https://interview.livestream.com/interview/? COPY				
Moderator Link				
https://interview.livestream.com/interview/r COPY				
			Type your text here	
Remove from list			ijpo jour tom noro	

You will also see this chat in Livestream Studio, allowing you to communicate with the guest.

Remote Cam 2	Input Settings			
Live Interview		Select guest (1) 🔺	Chat	亩
No interviewees	selected	None	Emily Connected to chat	4:12 PM
Please select gue	est from the list.	Emily	Emily Connected to chat	4:12 PM
			YOU Hello	4:12 PM
	Remote Cam 2	Remote Cam 2 Input Settings	Remote Cam 2       Input Settings         Live Interview       Select guest (1) ▲         Mointerviewees selected       None         Please select guest from the list.       Emily	Remote Cam 2 Input Settings     Live Interview Select guest (1)      No interviewees selected   Please select guest from the list.     Select guest (1)      Imput Settings     Imput Settings     Select guest (1)      Imput Settings     Select guest (1)      Imput Settings     Imput Settings

You can bring in the guest's camera by clicking the dropdown in the upper right corner of the module and clicking the guest's name.





After clicking the name, you can use the guest's camera as a remote camera source, which you can switch to whenever you are ready.





The guest's view will change to seeing his/her camera in the lower left corner and a larger view of what is currently in Program. The guest will also hear Program audio.





2:14 P M
2:14 P M
2:19 P M

When the guest's camera is selected, he/she will see a 'Preview' notification in the upper right hand corner of the screen.





CHAT	Ē
Producer	2:14 P M
Connected to chat	
Me	2:14 P M
Connected to chat	
Producer	2:19 P M
Hello	

When the guest's camera is switched into Program, the guest will see a red 'On Air' notification in the upper right corner.

Note: The guest will hear all other Program audio but by default, will not hear guest audio.



The guest has controls at the bottom of the screen that allow the guest to mute his/her microphone or stop the guest video from sending. The gearwheel will allow the guest to change video and audio sources.



The moderator URL can be given to someone who can choose between different guests' sources. The moderator's camera will not be shown, but the moderator will be able to hear audio from all connected interviewees.



	Live Interview 1 No Use		Chat	
9e75-dd8509feda46 <b>COPY</b>	Define settings to activate this stream Please, select interviewee's from the list		YOU Hello	2:19 PM
			Moderator Connected to chat	2:33 PM
9e75-dd8509feda46 COPY			Emily Connected to chat	2:34 PM
			Emily Connected to chat	2:35 PM
			Moderator Hi	2:35 PM

The moderator is also connected to the chat to communicate with all guests and the producer.




The moderator can also mute and pause selected guests' camera sources by using the controls on the bottom left of the screen.



# Streaming module



GFX 1	GFX 2	GFX 3	Media 1	Media 2	Stream	Transitions	
Livestream -						Log 🛨	
<b>Log in</b> Use your New Lives	tream account to log in						
Email address							
LOG IN	No account? <u>Sign up</u>	2					

The streaming module has been redesigned to provide easier access to all streaming features available in Livestream Studio.





The first option is for the New Livestream platform. Enter your account email address and password, then click 'Log in.'



ULX I		017.5	
Livestream -			
Emily Knox 🔺	Penalty Shot 👻		
Open Profile Page	Ľ		
Open Account Settin	gs ⊠		
Log out			

You will see a dropdown menu with your account name and account cover image in the upper left. Clicking it will give you the options to open your account page, account settings and log out.



🔝 Emily Knox 👻	Penalty Shot 🔺	Open e
Stream Title	+ Create New Event	
Game Winner	* Test Event	
Stream Quality	Buddy and Buttons	
HD+ + HD + High + N	Penalty Shot	
Aspect Ratio	Voga on the Roof	
16:9	Ce Hockey	

Directly to the right of your account options is your event dropdown menu, where you choose which event you will stream to.

	GFX 2	GFX 3	Media 1	Media 2	Stream	
			You're	e ready to go live!	STREAM	L L
	🍧 Penalty Shot 👻				Open event 🛛 🖸	
		]				
2	khos)	1				

To the far right of the module is the option to open your event page in a web browser.



0 dB	ovr 0	Stream Title		
	-10 -14	Game Winner		
-	-24	Stream Quality		
	-36	Mobile Quality (198kbps) Mobile Quality (198kbps) Normal Quality (446kbps)	•	
	-48	Medium Quality (678kbps) High Quality (1756kbps) Medium + Mobile (876kbps) High + Medium + Mobile (2632kbps)		
	-60	HD + Medium + Mobile (3196kbps) HD + High + Medium + Mobile (4952kbps) HD+ + High + Medium + Mobile (6632kbps)		
	-72	Delivery Method		

Below, you can title your stream and select a streaming quality.





You will notice a new quality available in the stream quality menu, **HD+ + High + Medium + Mobile**. The new 'HD+' quality streams 720p at 4 mbps, which helps reduce video pixelation in streams with more activity (e.g. sports).



Next, you have three network options for how your stream can be delivered: 'Bonding If Needed,' 'Bonded Network,' or 'Standard.'





'Bonding If Needed' will allow you to pick Primary and Backup connections. This means that if your Primary connections fail, your Backup connections will push the stream out.



'Bonded Network' will allow you to choose which networks will be used and distribute the stream across all networks as evenly as possible.





Netw	ork Da	ishboard	
	«··»	Intel(R) I210 Connection #2	108.86 Kbps
	<··>	Intel(R) I210 ork Connection	

'Standard' will send your stream through only one selected network. This option should be selected if you intend to use Livestream Studio as a backup encoder.



#### Settings



Skip to the bottom of the module and you will see your bonded network optimization options, if you selected 'Bonded if Needed' or 'Bonded Network.'



#### Bonded Network Optimization

For slow speed connectivity

For fast speed connectivity

#### **Network Dashboard**



'For fast speed connectivity' should be selected if you have a faster, reliable upload speed.



#### **Bonded Network Optimization**

For slow speed connectivity

For fast speed connectivity

#### Network Dashboard

Intel(R) I210 ... Connection #2 0.00 Kbps

Intel(R) I210 ... ork Connection

'For slow speed connectivity' sends less Forward Error Correction (FEC) overhead and fewer FEC packets, allowing for a more efficient recovery and delivery time. This is ideal for slower connections.





Intel(R) I210 ... Connection #2 0.00 Kbps

Between your network options are further streaming settings, including whether you want to notify your followers and whether this is a backup stream to another Livestream Studio stream.





When you have finished configuring these streaming settings, you can go live by clicking the 'Stream' button.



GFX 1	GFX 2	GFX 3	Media 1	Media 2	Stream	Transitions	*
vestream -				STI	REAMING	Log ±	
Emily Knox 👻	📑 Penalty Shot  🖴				)pen event 🛯 🖉	4:36pm EST Video broadcasting is starting	g
00:00:10;24 29	.56 FPS 99.61 Kb	ops 1 Viewer		Perf	ect Streaming	Establishing connection with server. 4:36pm EST H.264 recording started	
Network Dashboard	1					(2015.02.24 16.36.33@446kbps.mp4)	
● <…> Killer eź	2200 Per (NDIS 6.20)	99.61 Kbps		Perf	ect Streaming	Perfect Streaming - 4:36pm ES	Т

The module will change to showing your streaming status with a detailed log on the right side.



Media 1	Media 2	Stream		Transitions		₩
	STR	REAMING	Log		÷	亩
	O	)pen event [ 🛽	4:36pm ES Video bro	T adcasting is sta	arting.	
	Perf	ect Streaming	4:36pm ES H.264 rec	r ording started	with	
			(2015.02.) 16.36.33@	24 @446kbps.mp4	.)	

On the far right, you can choose to download or clear your streaming log by clicking the corresponding icons. You can click the blue 'Log' icon to hide the log.





Conversely, clicking the gray 'Log' icon will bring the streaming log back into the module.



### Livestream -

### Save Recording?

Do you want to post the recording of your broadcast to your event page? This will allow visitors on your event page to watch the broadcast at a later date.



Click the 'Streaming' button to stop your stream. You will have the option to save and post your broadcast, save a draft, or delete it without posting it.



GFX 1	GFX 2	GFX 3	Media 1	Media 2	Stream	Transitions
Livestream 👻			You'n	e ready to go live!	STREAM	Log
🛕 Emily Knox 👻	🎬 Penalty Shot 👻			(	Open event 🛯	4:32pm EST Video broadcasting is start Establishing connection wi
Stream Title						Server.
Game Winner						H.264 recording started.
Stream Quality					U	4:32pm EST
Normal Quality (446)	(bps)	•				H.264 recording stopped (2015.04.09 16.32.20@440 mp4).
Aspect Ratio						4:34pm EST
16:9						Video broadcasting: "Pena

## You will then be brought back to your event's streaming settings in the module.

	Livestream 🔺				
	New Livestream				
	Original Livestream	ount to log in			
	Youtube Live		l		
	Ustream		]		
I	Stream To File	ount2 Sign up			
	RTMP	ount: <u>Signu</u>	2		
udio	Zixi				
	Twitch				

Click the Livestream logo in the upper left corner to select a different streaming provider. This menu makes it easy to switch between providers quickly. There is no need to log out and log in to different accounts.

Livestream	<b>~</b>	You're ready to go live!	STREAM	Log
eeknox 👻	Emily's Test Channel 👻		Open channel 🛽 🖉	
Stream Title				
Game Winner				
Stream Quality				
HD+ + HD + Hig	h + Medium + Mobile (8952kbps) 🔻		l	
Aspect Ratio				
0 16:9				
4:3				

The interface of the streaming module for New Livestream is very similar to the next option, Original Livestream.



		•
- Livestream Studio would li	ke to:	
8 Manage your YouTube account	i	
By clicking Accept, you allow this app and Google to use your in with their respective terms of service and privacy policies. You o other Account Permissions at any time.	formation in accordance can change this and	
Canc	el Accept	

## YouTube Live will require you to log in through Google and authorize Livestream Studio to access your account.



GFX 1	GFX 2	GFX 3	Media 1	Media 2	Stream	Transitio
YouTube 👻			You'n	e ready to go live!	STREAM	Log
Emily Knox 👻 F	enalty Shot 👻				Open event 🛛 🖉	
Stream Quality						
480p Quality (112	Skbps) 🔻	]				
Network Dashbo	ird					
💿 ↔ Killer	e2200 P…er (NDIS 6.20)	0.00 Kbps			Ok	

The streaming module in YouTube Live offers a very similar interface as the Livestream streaming module.



GFX 1		GFX 2	GFX 3	Media 1	Media 2	Stream	Т
Ustream 👻							Log
Ustream To stream to a U RTMP Server fu	Istream accou <u>nctionality</u> .	unt, use the <u>instru</u>	ictions provided by Ustream	for RTMP Encoders in conj	junction with the Livestream	1 Studio	

To stream to UStream, follow the linked instructions from UStream to access your account's RTMP URL.



GFX 1	GFX 2	GFX 3	Media 1	Media 2	Stream	Transiti	ions
Stream To File 🔻				s	TART ENCODE	Log	2
MP4 File Save Location							
BROWSE C:\Users\I	Livestream\Videos\						
Stream Quality							
Medium Quality (678kbp	os) 🔻						
Choose Encoding Profi	ile						
Baseline							
Main							
High							

The next option, 'Stream to File,' is a new feature in version 3.0.0 that allows you to encode an .mp4 file to your hard drive without the need to stream live.



/	Select MP4 File Location					
	◯◯ ⊂ 🛃 ► Libraries ► Videos ►	▼ 4 <sub>2</sub>	Search Videos		BG TIE TI	ETIE
	Organize 🔻 New folder		E - (			
CAM2 CAM2	<ul> <li>★ Favorites</li> <li>▲ Desktop</li> <li>▲ Downloads</li> <li>▲ Google Drive</li> <li>☆ Recent Places</li> <li>■ Libraries</li> <li>▲ Documents</li> <li>▲ Music</li> <li>■ Pictures</li> <li>④ Music</li> <li>■ Pictures</li> <li>④ Videos</li> <li>♦ Homegroup</li> </ul>	nscoding		MEDIA1	ADVERT	FTB
note Cam 2 Input Settings			Select Folder Cancel	Stream	Transitio	ns ⊮
GFX1 ~ GFX2 ~	GFX3 V MEDIA1 STREAM OUT	Stream To File 👻		START ENCODE	Log	± ā
0 +10 0 +10 0 dB = OVR 0 dB = OVR 0 0 0	0 +10 0 +10 0 dB = OVR 0 dB = OVR 0 dB = OVR 0 0 0 0 0	MP4 File Save Location BROWSE C:\Users\Livestream\Videos\				

Click 'Browse' to select where the file will be saved. By default, the .mp4 file will save to your Videos folder.



0       -10       0       -10       0 <th><i>I</i>3 ∨</th> <th>GFX1 ~</th> <th>GFX2 ~</th> <th>RECORD OUT</th> <th>Stream To File 👻</th> <th>START ENCODE</th> <th>Log</th>	<i>I</i> 3 ∨	GFX1 ~	GFX2 ~	RECORD OUT	Stream To File 👻	START ENCODE	Log
• Orf       0 · · · · · · · · · · · · · · · · · · ·	+10	0 +10	0 +10		Stream Quality		
a       a       a       a       a       b		0 dB == OVR	0 dB == OVR	0 dB == OVR			
x $x$		0	0	0			
10 $10$ $10$ $10$ $10$ $10$ $10$ $10$ $14$ $14$ $14$ $14$ $14$ $0$ $14$ $0$ $14$ $14$ $14$ $0$ $14$ $0$ $14$ $0$ $14$ $14$ $14$ $0$ $14$ $0$ $14$ $0$ $14$ $14$ $14$ $14$ $0$ $14$ $0$ $14$		-4	-4	-1	Aspect Ratio		
.4       .44       .44       .43         .4       .44       .43         .4       .44       .44         .4       .44       .44         .4       .44       .44         .4       .44       .44         .4       .44       .44         .4       .44       .44         .4       .44       .44         .4       .44       .44         .44       .44       .44         .45       .45       .45         .45       .45       .45         .45       .45       .45         .45       .45       .45         .46       .46       .46         .47       .46       .46         .48       .46       .46         .49       .46       .46         .40       .40       .40         .40       .40       .40         .40       .40       .40         .400       .400       .400         .400       .400       .400         .400       .400       .400         .400       .400       .400		-10	-10	-10	16:9		
4       4       4       4       4       4       4       With         52       52       52       52       52       52       53       52         46       48       48       48       48       48       148		-14	-14	-14	O 4:3		
-4       -4       -4       -4       With         -5       -4       -5       -5       -5         -4       -4       -4       -4       -4         -5       -4       -4       Video Bitrate       -50         -50       -40       -40       -40       -40       -40         -72       -72       -72       -72       -72       -72		<b>-</b>	<b>-</b>	<b>-</b>	Custom 16 : 9		
-00       -		-24	-24	-24	Width		
-30       -30       -30       Height         -43       -48       -48       -48       Video Bitrate         -50       -40       -40       -40       Video Bitrate         -50       -40       -40       -40       -40         -72       -72       -72       -72       -72         -10       -72       -72       -72       -72         -10       -72       -72       -72       -72         -10       -72       -72       -72       -72					512		
-48       -48       -48       -48       -48       -49       Video Bitrate         -60       -60       -60       -60       Audio Sample Rate       -60       -60         -72       -72       -72       -72       -72       -72       -72		-38	-38	-38	Height		
-48       -48       -48       Video Bitrate         -60       -60       -60       Audio Sample Rate         -72       -72       -72       -72         -10       -72       -72       -72         -10       -10       -10         -20       -20       -20         -20					288		
-50 -50 -60 -50 Audio Sample Rate -72 -72 -72 -72 -72 -72 -72 -72 -72 -72		-48	-48	-48	Video Bitrate		
-60       -60       -60       Audio Sample Rate         -72       -72       -72       -72       Audio Bitrate         -72       -72       -72       -72       320					350		
-72 -72 -72 -72 -72 44100 - Audio Bitrate 320 -		-80	-80	-60	Audio Sample Rate		
-72 -72 -72 Audio Bitrate 320 •					44100 🔻		
		-72	-72	-72	Audio Bitrate		
					320 🔹		

Choose the bitrate for your video. You can choose a preset quality or create a custom quality using the options below.



GFX 1	GFX 2	GFX 3	Media 1	Media 2	Stream	Transitions	;
Stream To File 👻					START ENCODE	Log	2
MP4 File Save Location BROWSE C:\Users\L	vestream\Videos\						
Stream Quality Medium Quality (678kbps	;) 🔻						
Choose Encoding Profil	e						
<ul> <li>Baseline</li> <li>Main</li> <li>High</li> </ul>							

When you are ready to start your recording, click 'Start Encode.'



GFX 1	GFX 2	GFX 3	Media 1	Media 2	Stream	Transitions	*
Stream To File					ENCODING	Log 🛓	± 📅
00:00:10;15 29.59	9 FPS 131.63 Kbps					I1:10am EST /ideo encoding is started.	
MP4 File Save Location BROWSE C:\Users\	l Livestream\Videos\						
Stream Quality							
Medium Quality (678kbp	ps)						
Choose Encoding Prof							
Baseline							

The module and the streaming log will indicate that the encoding has started. Click 'Encoding' to stop the recording.



-24	-24	Ustream	
-36	-38	Stream To File	
-48	-48	RTMP	o account? <u>Sign up</u>
-60	-60	Zixi	
-12 43		Twitch	
<b>4</b> 77		Open Settings	

The next two streaming options are RTMP and Zixi, which also feature updated interfaces.



Stream Qualities		
Sormal 🗘	Import Settings from FMLE XML BROWSE None	
🖌 Medium 🌣	RTMP URL	
MD 🌣	Stream Name	
+ Add Quality		
	Settings	
	Backup publishing point	

Both streaming options allow for selecting up to four preset bitrates for streaming at. Click the corresponding gearwheel to import or type in your RTMP or Zixi URL and stream name.

Stream Qualities	s	Name	Delete 🗙	n	
Mobile	¢	Custom			
Normal	ф	Import Settings from FMLE XML			
Medium	\$	BROWSE None		μ	
💎 High	\$				
💎 нр	\$				
🗹 Custom	\$				
🗹 Custom	\$	Stream Name			
🗹 Custom	\$				
🗹 Custom	\$	Aspect Patio			
🕂 Add Qual	ity	16:9			

You can also create up to four custom bitrates for streaming to your RTMP or Zixi server. Click 'Add Quality' to do so.
- OVR	Stream Qualities	16:9
0	💎 Mobile 🌣	O 4:3
-4	Normal 🌣	Custom 16 : 9
-14	💎 Medium 🏼 🌣	
	💎 High 🛛 🌣	Width
-24	🗸 HD 🌣	512
	🛃 Custom 🔅	Height
-36	🗹 Custom 🔅	288
	🗹 Custom 🌣	Video Ritrate
-48	🗹 Custom 🌣	
-80	🕂 Add Quality	350
~~		Audio Sample Rate
-72		11025 👻
G		Audio Bitrate
		320 👻

Each custom setting will require you to set the aspect ratio, resolution, video and audio bitrates, audio sample rate, and encoding profile.

GFX 1	GFX 2	GFX 3	Media 1	Media 2	Stream	Transitions	<b>*</b>
RTMP -				(	STREAM	Log	上市
Stream Qualities	Name Custom Import Settings from BROWSE None RTMP URL Stream Name	n FMLE XML			Delete ×		

Any custom setting can be deleted from the module by clicking 'Delete' in the upper right corner.

-24 -38 -48	<ul> <li>HD A Horization</li> <li>Authorization</li> <li>Backup publishing point</li> </ul>
-80 -72	RTMP User Agent FMLE/3.0
	Network Dashboard
UC	Killer e2200 Per (NDIS 6.20) 0.00 Kbps

Further down in the module is where you will see additional settings for your streaming server. Under RTMP, you will need to select the user agent that your server supports.



		-10	Zixi Settings
-14		-14	FEC Overhead
-24		-24	30
-36		-36	FEC Packet Size
-48		-48	30
-60		-80	Latency 1000
-72		-72	Delivery Method
	<b>()</b>		Bonded Network
סוסנ	AUC		Standard
-24 -36 -48 -60 -72	AUC	-24 -38 -48 -60 -72	30FEC Packet Size3030Latency1000Delivery MethodOBonded NetworkOStandard

Zixi users will need to set the FEC overhead, FEC packet size and latency.



Authorize Livestream Studio to use your account?	=	=
Log In Sign Up		
Username		
Password		
Log In Cancel		Ŧ

The next streaming option is Twitch. Enter your Twitch account information and click 'Log In.' This integration is also new with Livestream Studio version 3.0.0.



Twitch -	You're ready to go live! STREAM	Log	*
Eeknox -	Open channel 📝		
Stream Quality 480p Quality (1128kbps)			
Ingestion List US East: New York, NY 🔫			
Game Name Enter the name of your game			
Stream Title Penalty Shot			

Set your quality, ingestion location, game name, and stream title. You can also choose not to archive your broadcast on your Twitch account.





Click 'Stream' when you are ready to go live. Livestream Studio will indicate that the stream has started in the log and the module. When you are ready to finish streaming, click the 'Streaming' button.

		Stream To File		Settings: St	treaming	CANCEL SAVE		
	-36	Stream to Hie		Project Format		• ~	-	1200
		RTMP		Inputs	Antilag	O off		
	-48			Outputs	Antilag Duration	5000 ms		
		Zixi		Audio In	Key Frame Interval	2 seconds		
	-80			Recording	Encoder Queue	Stop streaming when queue is		
		Twitch		Media Player	-	300 frames		
				Streaming	Bitrate	• Variable		GFX2 🌣
	-72	Open Settings 🛛 🌣		Multi-Screen	Local MP4 Recording	Constant Constant Enable H.264 Recording		<u>-</u>
		r churry onor		Ad Insertion	MP4 Recording Location	BROWSE C:\Users\Livestream\Videos\		MEDIA2 🌣
-	<b>"</b>			Hotkeys	Streaming Mode	30 fps stream 🔹		-
		Archive	s	Mouse / Touch	Closed Captions	Closed Captions Enabled		Media 1
		Record cost archived automati	calv ooly it	Studio Surface				
			cary of by it motes	Advanced				
					1			

You can also enter the general streaming settings directly from the streaming module.



Apple Airplay receiver



Another remote camera option is the ability to bring in any Apple device that includes Apple Airplay. To do so, click 'Add Stream,' then 'Apple Airplay Receiver.'





Livestream Studio will prompt you to turn on AirPlay on your iOS device. On an iPhone, this can be done by swiping up from the bottom of the screen.





When you press the AirPlay icon, a menu will appear on your iPhone prompting you to select a source.



	AirPlay	Done
	<b>◀</b> ))) iPhone	~
_	Apple TV (4)	
Ľ	Livestream Studio - USEF	I-PC
	livestream-laptop-2014-m	im
	Livestream's Mac mini	
	With AirPlay Mirroring you can send ev on your iPhone's display to an Apple T wirelessly.	verything V,

Livestream Studio will indicate your system's name; select that from the menu.

	AirPlay	Done
<b>■</b> )))	))) iPhone	
	Apple TV (4)	
	Livestream Studio -	USER-PC 🗸
	Mirroring	
	livestream-laptop-20	)14-mm
	Livestream's Mac m	ini
With A on you wireles	th AirPlay Mirroring you can s your iPhone's display to an A relessly.	end everything Apple TV,

## When you select it, enable mirroring.

< Back	Livestream Studio - USER-F	PC	
Status Downloading 227.32 Kbps stream - Perfect streaming		AirPlay Done	
Name		(I)) iPhone Apple TV (2)	
Livestream Studio - USER-PC		Livestream Studio - I7M-PC	
		Livestream Studio - USER-PC 🧹	
		Mirroring	
		Livestream's Mac mini	
		MacBookPro AV	
		MacBookPro AV Ex	
		With AirPlay Mirroring you can send everything on your iPhone's display to an Apple TV, wirelessly.	
Remove from list			

After a few seconds, your device's screen will appear as a remote camera source, which you can then switch into Livestream Studio as desired.

## GoPro remote camera





To connect a GoPro Hero 3 or 4 as a remote camera, first enable the Wi-Fi on the camera by pressing the Wi-Fi button the side of the camera.

Note: GoPro Hero 4 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.

\*Livestream Studio hardware products (HD31/HD51/HD510/HD550/ HD1710) do **not** include built-in Wi-Fi receivers. View your basic network information and set up connections

		- 💐 -			See full map
USE (This c	ER-PC omputer)	Multiple networks		Internet	
View your activ	e networks				Connect or disconnect
	Network 5 Public network		Access type: Connections: 🏼 🏺	Internet Local Are	a Connection 2
	goprosupport Home network		Access type: HomeGroup: Connections: all	No Intern Ready to Wireless N (goprosu	et access create Vetwork Connection 4 pport)

Check your system's network settings to ensure that Wi-Fi is enabled and connected to your GoPro camera.



Ţ	Public Music Ready	\$ 1
Ţ	livestream-PC Ready	\$
<u>;</u> 0	HERO3+ Black Edition (10.5.5.109) Please select to monitor	\$



LEARN MORE

Once your system recognizes the GoPro's Wi-Fi, the GoPro will appear as a source in your remote camera modules.





HERO3+ Black Edition (10.5.5.109)



Select the GoPro to activate it. You can then switch it into Program as desired.



## Closed captioning





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 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').



Audio IIIIACI	Remote Cam 1	Kennote Cann 2	input settings	
CAM3				
CAM1	Closed Capti	ons		
CAM2	Enabled			
CAM3	i Show Tips			
CAM4				
🕒 DELAY				
CLOSED CAPTIONS				

Save your settings, then return to the '**Input Settings**' tab. Select the camera source(s) with the closed captioning data embedded, then click 'Closed Captions.'

		Olasad Cantiana			
₽	GENERAL	Closed Captions			
	AUDIO	Enabled			
•@•	CONVERT	Closed Captions Channel			
Ξ	CROP	Off A Off			
		DTVCC service 1 (English) DTVCC service 2			
0	DELAY				
88	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. Please note you will not see any captions in Livestream Studio and captions will not be recorded with your video on-demand.

**live**stream

## Input Settings module



Audio Mixer	Remote Cam 1	Remote Cam 2	Input Settings	
CAM1		Neme		
CAM1	Input Source	Name		
CAM2	Input Source Name			
CAM3	CAM1			
·넙. CROP				
THE TALLY				

The Input Settings module also has a new interface in version 3.0.0. The top menu in the upper left corner of the module allows you to select which input source you would like to configure.

		۲		6		E	3
	Audio Mixer		Remote Cam 1	Remote Cam 2	Input Settings		
CAM	1	4		Manaa			
\$	GENERAL		Input Source	Name			
ŧîŧ	AUDIO		Input Source Name				
÷	CONVERT		CAM1				
Έ	CROP						

The next option down is 'General,' which allows you to rename your input source.



CAM	1 ~	INPUT 1	INPUT 2	INPUT 3	INPUT 4	INPUT 5	INPUT 6	INPUT 7	INPUT 8
≎	GENERAL	-90 +30	-90 +30	-90 +30	-90 +30	-90 +30	-90 +30	-90 +30	-90 +30
łîł	AUDIO	= OVR	= OVR	= OVR	= OVR	= OVR	= OVR	= OVR	= OVR
-œ-	CONVERT		0 -4	0 -4	0 -4	0 -4			0 -4
τĻ	CROP		-10 -14	-10 -14	-10 -14	-10 -14			-10 -14
120	TALLY		-24	-24	-24	-24			-24
©	DELAY								
	CLOSED CAPTIONS		-36	-36	-36	-36			-36
			-48	-48	-48	-48			-48
			-60	-60	-60	-60			-60

The 'Audio' option below allows you to assign which of the eight possible channels of audio from that source are heard when being output to Program.

	Audio Mixer	Remote Cam 1 Remote Cam	2 Input Settings	
CAM	1 ~			
۵	GENERAL	Converter -C	OFF Tip	
ţ	AUDIO	CAM1 Format	For best video output converter. You can try	quality please avoid using a changing your project format
¢	CONVERT	Auto (HD 720p 59.94)	in the Settings > Projection format of the incoming format	ect Format tab or change the g source to match your project
τ	CROP	Project Format	iormat.	
		HD 720p 59.94		
0	DELAY			
66	CLOSED CAPTIONS			

Next is the 'Convert' tab, which is the built-in any-to-any converter. This allows you to use input sources that do not match your project format. Please note that this will increase your CPU usage.



The following tab, 'Crop,' is a new feature added in version 3.0.0, where you can crop your input source, effectively zooming into a specific area within your source.



	Audio Mixer	Remote Cam 1	Remote Cam 2	Input Settings	
CAM	1 ~	Talka Linka			
₽	GENERAL	Tally Light		Тір	
¦†¦	AUDIO	Select Tally Output		For more details about s please, read <u>Livestream</u>	upported Tally devices, knowledge base article
÷	CONVERT	None None	<b>▲</b>		
τŗ	CROP	Digital Arts TLC6 - Line 1 Digital Arts TLC6 - Line 2 Digital Arts TLC6 - Line 3	2		
÷	TALLY	Digital Arts TLC6 - Line 4 Digital Arts TLC6 - Line 5	4 5		
©	DELAY	Digital Arts TLC6 - Line 6 Digital Arts TLC6 - Line 7 Digital Arts TLC6 - Line 8	5 7 3		
•••	CLOSED CAPTIONS				

Next is the 'Tally' tab, which allows you to select which tally port is connected to that input source.

Audio Mixe	F	Remote Cam 1	Remote Cam 2	Input Settings	
CAM1	-				
🔅 GENERAL		Delay	ON ON		
¦î¦ AUDIO		Video Delay (milliseconds)	)		
- CONVERT		350 -100	10 +10 +100		
면. CROP		 0	2000		
🕮 TALLY		Audio Delay (milliseconds	)		
C DELAY		350 -100	-10 +10 +100		
CLOSED C	PTIONS		2000		

The following feature is 'Delay,' allowing you to delay the video and audio for up to two seconds, should you notice any synchronization issues between your sources.
Closed Captions   III AUDIO   CONVERT   Show Tips   Show Tips   III ALLY   DELAY   CLOSED CAPTIONS	CAM1 ~		
Image: convert   Image: convert	¢	GENERAL	Closed Captions
CONVERT   CROP   TALLY   DELAY   CLOSED CAPTIONS	ŧiŧ	AUDIO	Enabled
<ul> <li>CROP</li> <li>TALLY</li> <li>DELAY</li> <li>CLOSED CAPTIONS</li> </ul>	-@-	CONVERT	Show Tips
<ul> <li>TALLY</li> <li>DELAY</li> <li>CLOSED CAPTIONS</li> </ul>	τ	CROP	
DELAY   CLOSED CAPTIONS			
CLOSED CAPTIONS	G	DELAY	
	66	CLOSED CAPTIONS	

The last option in the input settings module is closed captioning, where you would enable the embedded data to forward to Livestream.

## Group graphics layers





Up to three layers within one graphics overlay channel can now be grouped together. To do so, create and design your layers as you normally would.



	•	Smith Score 🗸	McDonald Score 🗸	Smith v	McDonald 🗸 🗸	USA
		0	0	Smith	McDonald	USA
()	*					
	•					
	*					
	•					
((Name))	*					

Hold down the Shift key on your keyboard and select which layers you want to group together by clicking them.



GFX 1	GFX 2	By Copying	м	ledia 1	N	ledia 2	Stream
	Create Group >	By Moving	>	McDonald S	score 🗸	Smith	McDonald
	Delete selected	∃ ⊙ 0		0		Smith	McDonald
©	*						
	•	]					
		]					
	*						

Once you have selected up to three layers, right click on your mouse. You will see the option to create a group, followed by 'By Copying' and 'By Moving.'





'By Copying' will make a copy of all selected layers in that graphics channel, in addition to the individual layers. This allows you to use those layers separately as well as in a group.



'By Moving' will merge the two layers into a group without making a copy. This is ideal when you only intend to use those graphics simultaneously, thus reducing clutter within the graphics overlay channel.



	GFX 1	GFX 2		GFX 3		;	м	ledia 1	Media 2		
	Lower Third : White G	radient	∷≣			Smith	Score 🗸	McDonald S	>	Smith	
	🗁 Group 1		•	Ξ	$\odot$	0		0		Smith	
	Timer		0								
l	Scoreboard		∷≣								
l											

If you prefer to use the list view mode in the graphics overlay channels, you can depict where groups are by the folder icon next to the group name.



((Norre)) : =	*	
Group 1		00:05:00
Prosedurate: Since 10 Proceeding: Since 10 Proceeding: Since 10 Proceeding: Constant		
Timer	Q	
Scoreboard	∷≣	
+ /	≥: :≡	

# You can rename the group by double-clicking it.



		GFX3 🕏
		<b>-</b>
	\$	REMOTE
{{Scoreboard: {{Scoreboard: }		E.
{{Scoreboard: {{Scoreboard}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}		
Remot {{mm}}:{{ss}}	Med	ia 1
	e v N	AcDonald S~
Tip		

The paintbrush button will take you to the designer where both layers are combined, allowing you to make any needed appearance changes.



Timer	0	
Scoreboard	*	
+	⊠: :≡	+ ROW + COLUMN

Below the group is a list of each layer within the group. You can still configure the individual settings for each layer below by clicking the appropriate gearwheel.





Using groups will allow you to reduce the number of layers that need to be made visible by the user within one graphics channel. Making the group visible will make all included layers visible.



### Mac OS X remote camera







Alongside the release of version 3.0.0 comes Livestream Studio Remote Desktop Client for Mac OS X. <u>Click here</u> to download the small application.





Double-click the Livestream Studio Remote Camera Beta.dmg file in Finder to start the installer.





#### Drag the Livestream Studio Remote Camera into the Applications folder.





Go to the Applications folder and double-click the Livestream Studio Remote Camera to open the application.





This window will pop up, indicating that the remote camera icon will appear on the menu bar at the top of your screen. You can choose to prevent this message from appearing again.



🔤 🗛 1 🕲 😴 🖯 🚱 🗐 💁
✓ Launch on startup Check for Updates
Settings
Download Audio Redirector About
Stop
Close

When the Remote Client is running, you can click the icon and click 'Settings' to make further adjustments to your remote camera source.





Here, you can change your computer's name (as it appears in Livestream Studio), what sources will be available, and the resolution and framerate the video signal will stream over your network to Livestream Studio.

livestream

Hotkeys		MEDIA1	Media 1		Embedded	None	
Mouse / Touch		MEDIA2	Media 2		Embedded	None	
Studio Surface		REMOTE1	Remote Cam 1		Embedded	None	
Studio Surface		REMOTE2	Remote Cam 2		Embedded	None	
Advanced							
Support	+ -						

Once the application is installed and running on your Mac, be sure your Livestream Studio and Mac systems are connected to the same network. Then add a remote camera source in the 'Inputs' menu.



In the Remote Camera module, look for your Mac in the list of remote sources, and click it to activate.





Your first video source will appear. Click the gearwheel in the selection menu to access more settings.





Here, you can change which video and audio sources are being shown from your Mac. If you select a desktop monitor, you can also choose to hide or show the mouse cursor.



	A 1	۲	\$	0	3	5	Ŷ
√ L	aunch	on s	tarti	q			
S	etting	or U 5	puat	es	•		
D	ownlo	ad A	udio	Re	dire	cto	r i
A	bout						
S	top						
C	lose						

Please note the application will run in the background of your Mac system until you close it, which you can do by clicking the icon in the menu bar and selecting 'Close.'



#### Settings: Support



Project Format	Support PIN:						
Inputs	Support is quailable 7 days a weak 0:20am to 0:20pm EST For US						
Outputs	support, call +1 (877) 977-8732 extension #2. For international call +1 (646) 490-1679 extension #2. When prompted, enter your						
Audio In	support PIN.						

Have feedback, questions, or issues? Go to Livestream Studio settings and click the '**Support**' tab for Livestream Support contact information.

