

Playout Configuration Guide

Version 4.10



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PRIME PLAYOUT CONFIGURATION

The Playout Configuration Panel may be accessed from the Runtime Playout Interface "Config" main menu:

X 2.0.0.0
Config Help
Playout Configuration
Automation
Devices –
Content Distribution
🎲 Keyboard Shortcuts
Settings

🌃 Playout Configuration

!!	Video Channels
	Clip Players
۲	Clip Recorders
	Playlists
	Atlas
۲	Bypass
÷	ExternalData
€	Settings
¥	Advanced

From this dialog you may configure

- Video Channels: Inputs, Outputs, And Preview channels
- Clip Players
- Clip Recorders
- Playlists
- Atlas multiviewer
- Bypass
- External Data
- Settings
- Advanced



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	File Branding	🔹 🗋 New 👻 🔚 Save As	🗙 Delete				License Offline
Video Channels	Video Channels 돈 Ac	ld Output 🔻 🚬 Add Input 👻					
Clip Players Clip Recorders	Channel	Output 1 🕷	Output 2 🗶	Output 3 💥	Preview 1 🗙	Preview 2 💥	Preview 3 💥
laylists	Device	Application Window	Application Window V	Application Window 🗸	Application Window ~	Application Window V	Application Window V
Atlas	Туре	Video + Key Out 🛛 🗸 8 Bit SD	R Video + Key Out 🖂 8 Bit SDR	Video Out 🛛 🗸 8 Bit SDR	Video Out 🛛 🗸 8 Bit SDR	Video Out 🗸 8 Bit SDR	Video Out 🛛 🗸 8 Bit SDR
Bypass	Connector	Video Window 1	Video Window 2 🗸	Video Window 3 \sim	Video Window 4 \sim	Video Window 5 \sim	Video Window 6 \checkmark
ExternalData Settinos	Name	FB1	FB2	FB3	Preview 1	Preview 2	Preview 3
Advanced	Video Standard	1080i 59.94 Hz	v 1080i 59.94 Hz v	1080i 59.94 Hz 🗸	1080i 59.94 Hz ~	1080i 59.94 Hz 🗸	1080i 59.94 Hz 🗸
	Video Shape	Shaped	Shaped 🗸	Unshaped \vee	Unshaped \checkmark	Unshaped \checkmark	Unshaped \sim
	Downstream Input	None	V None V	None ~	None ~	None ~	None ~
	Audio Mode	System Audio	∠ Disabled ∨	System Audio 🗸 🗸	Disabled \sim	Disabled \sim	Disabled \checkmark
	Audio Device		-	×			
	Audio Channels	2	v 2 · · · ·	2 ~	2 ~	2 ~	2 ~
	Genlock Source						
	Genlock Timing (H/V)						
	Antialiasing	MSAA 2x	✓ MSAA 2x ✓	MSAA 2x ~	Disabled \sim	Disabled \sim	Disabled ~
	Preview Channel	Preview 1 ~ RI	T Preview 2 V RTT	Preview 3 V RTT	✓ RTT	✓ RTT	✓ RIT
	Proxy Output	Full Resolution V H26	4 Full Resolution V H264	Full Resolution V H264	1/8 Resolution V H264	1/2 Resolution V H264	1/4 Resolution V H264
	Proxy Frame Rate	Full	- Full -	Full ~	Quarter (1/4) V	Half (1/2) ~	Full ~
	Playout Toolbar	Show	Show	Hide			

OK Cancel Apply

Video Channels 💽 Add Out	💽 Add Output 🔻 🔟 Add Input 👻			
Channel	V Output 1	\$		
Device	Matrox DSX LE4	Ŧ		
Туре	Video Out	Ŧ		
Connector	Video BNC 2	-		
Name	Program 1			



VIDEO CHANNELS

Outputs, Inputs

Add an output or input by clicking their respective toolbar buttons

LATENCY

Latency settings are available for inputs for all inputs. This allows delaying the input video signal as a Fixed length delay through the system.



Channel Properties

We support any output resolution combination as long as the genlock resolution has the same frame rate family. Frame rate families are:

- 23.98/29.97/59.94
- 25/50
- 24/30/60

For example, you cannot have 1080i50 and 1080i60 channels.

Channel	Shows a check box to enable/disable the channel, the direction of the channel (Input or Output/Preview), and a button to remove the channel
Device	 Device types (only installed hardware devices will show up) Matrox DSX LE4 Matrox Q25 IP Bluefish444 Epoch Supernova (Deprecated) NDI® GPU Output Desktop Window Application Window Sub Channel Render (Only available on systems with System Type set to "Render". Used for CAMIO/LUCI previews. Remote Engine Network Streams (HTTP, RTMP, RTMPS) System Audio Input



	Image Input
Туре	 Selects between Video Out/Video + Key Out, or Video In/Video + Key In. Note: not all devices support Video + Key Select SDR 8-bit color depth, 10-bit color depth HDR 10-bit color depth HLG 10-bit color depth S-Log 3 10-bit color depth
	LUT LUT files can be applied to both Input and Output HDR, HLG, S-Log 3 channels (10bit) Supported formats: *.lut *.cube
Connector	Shows the connector to be used for the device. This may change as other devices are added or removed NDI Input: • System: Computer name or IP address • Source: Name of incoming stream NDI Output: • Source: User defined stream name. • Latency: Allows delaying source signal Network Stream: • URL Image: • File: path to use as static image
Name	User defined name that will be shown throughout the application
Video Standard	 Output resolution and frame rate to be used for the channel GPU Output: Size Mode can be set to Scale, Stripe. Scale will scale the output to the monitor size. Stripe will automatically section the output into stripes to fit on the output. Custom Stripe will section the output into custom stripes defined in the C:\ProgramData\ChyronHego\Prime Engine\layout#.xml file Sub Channel: X and Y position can be specified for the top left hand corner of the sub channel Inputs: Video Input Filtering: HALF size or Line Doubling



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Override Window Appearance	Customizes the selected Desktop Window Output Appearance by overriding position and resolution size
Video Shape	 Setting to Shaped Causes Fill output to be pre-multiplied. Note: Video Shape is only enabled if Type is set to Video + Key Out Inputs: Frame Synchronizer: Hardware option that synchronizes the video input to the genlock. Enabling this feature adds one additional frame of delay.
Downstream Input	Video input to be used as background video. If set, the Downstream Input can be manipulated from within scenes
Audio Mode	Chooses output audio type: Disabled, Embedded (SDI, NDI, and Network Stream only), AES (SDI only), System Audio or Virtual (used for Atlas output)
Audio Device	Can be set to Primary Sound Driver to use the default audio output from the system, or to any of the audio devices available to the system
Audio channels	 The number of audio output channels SDI Input: SDI/AES specifies the number of embedded and discrete audio channels to use.
Genlock Source	 SDI Output: The sync source for Genlock: Genlock Input, SDI Input or Internal
Genlock Timing (H/V)	Horizontal and Vertical timing value for Genlock
Antialiasing	Sets the antialiasing for the output: Disabled, Multi Sample 2x-16x, Coverage Sample (Quality) 8x-16x
Preview Channel	Sets a Preview channel for the output. If a Preview channel is set, scene control panels will show up in the Preview channel when loaded or stopped, and in the Output channel when playing
Channel RTT	Channel Render to Texture: Texture effect applied to a scene enables all scenes on corresponding output to be rendered to other configured channels
Proxy Output (Resolution)	Used to show a proxy of the output in the application window. Disable, $\frac{1}{4}$, $\frac{1}{2}$ or full resolutions can be selected.
H.264 Preview	Simultaneously stream H.264 along with the configured device type
Proxy Frame Rate	Increases Program performance by allocating more resources to program rather than preview. Full - no frames are skipped Half - every other frame is played (Default Setting) Third - every third frame is played Quarter - every fourth frame is played
Playout Toolbar	 Show or Hide Channel in Prime Playout Show (Default) - Program Channel will show in the toolbar of Prime playout UI. Will be available for * to cycle between channels. Hide - Program Channel will NOT show in the toolbar of Prime playout UI. This will not be included in the * shortcut key to cycle of channels.



SDI

Prime support

IP

Refer to the "IP_Playout_Configuration_Guide" document

NDI

Stream NDI output

GPU

PRIME supports a single GPU card with 4x4k DisplayPort outputs.

Desktop Window

Allows a proxy to show up in the PRIME playout User Interface

Application Window

Offline external window used for offline systems

Sub Channel

Allows users the ability to carve up a single output channel into multiple channels. Very useful for Studio monitors.

Remote Engine

PRIME can connect to a PRIME Remote engine. With this use case users can control multiple instances of the PRIME Engine from a single PRIME User interface.

Channel RTT

A channel render to texture effect may be applied to an individual Prime scene. That scene may be composed of various graphic objects, effects and resources. When that scene is played to output, it can be targeted as a rendered texture available to any other configured Prime channel(s). In addition, any other scenes played to the same output channel as the RTT scene will also be rendered as part of the channel rendered texture output.

Setup



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In PRIME Playout Configuration select the RTT button on the output channel you wish to render to a texture effect.

	Video Channels 💽 Add	Output 🔻 🚬 Add Input 👻				
🚚 Video Channels	Channel	🔽 Output 1 🛛 🗱	🗹 Output 2 🗱	💟 Output 3 🛛 🗱		
Clip Players		Parameter and a second s		r Falsa ang ang ang ang ang ang ang ang ang an		
Clip Recorders	Device	Matrox SDI -	Matrox SDI	Matrox SDI -		
Playlists	Туре	Video Out 🔹 8 Bit	Video Out 🔹 8 Bit	Video Out 🔹 8 Bit		
🚪 External Data	Connector	Video BNC 2 -	Video BNC 4 +	Video BNC 6 -		
Settings Video St Video Sh Downstr	Name	Program	Output 1	Output 3		
	Video Standard	1080i 59.94 Hz 👻	1080i 59.94 Hz 👻	1080i 59.94 Hz Unshaped None Embedded		
	Video Shape	Unshaped *	Unshaped *			
	Downstream Input	None 👻	None 🔹			
	Audio Mode	Embedded 👻	Embedded 🔹			
	Audio Device	*	•			
	Audio Channels	2 🔹	2	2 -		
	Genlock Source	Internal 🔹	Internal 🔹	Internal 👻		
	Genlock Timing (H/V)	0 🗘 0				
	Antialiasing	Disabled 👻	Disabled 👻	Disabled 🗸		
	Preview Channel	No Preview	No Preview	No Preview - RTT		
	Proxy Output	1/4 Resolution + H264	11/4 Kesolution	1/4 Resolution + H264		

Render Order

By default this is set to 10. This number will be applied as a negative layer number to the render to texture channel. In this case -10. If you intend to play other scenes to the render to texture channel they may need to be set to -9 or higher to be composited on top of the RTT. Or alternatively adjust the layer of your RTT channel accordingly.

	✓ Matrox SDI ✓ Matrox SDI		•	watro	X SUI			
Video Out	▼ 8 Bit	Video	Video Out		Video Out	▼ 8 Bit	Video Out	
Video BNC 2	Ŧ	Video	BNC 4	-	Video BNC 6	Ŧ	Video	BNC 8
Program		Output 1		Output 2		Output 3		
1080i 59.94 Hz	C Render	C Render To Texture					1080i 59.94 Hz	
Unshaped		17	Enabled			Ŧ	Unsha	ped
None	Texture II	Texture ID Texture Texture Pathrender0/Texture				•	▼ None	
Embedded	Texture P					•	Embed	Ided
	Render O	rder 10	• •			*		
2						•	2	
Internal				OK	Cancel	•	Interna	al
0 0						*	0	× 0
Disabled	•	Disabl	led	-	Disabled	•	Disable	ed
No Preview	▼ RTT	No Pr	eview 👻	RTT	No Preview	▼ RTT	No Pre	view
	Video UR Video BNC 2 Program 1080i 59.94 Hz Unshaped None Embedded 2 Internal 0 & 0 Disabled No Preview	Video Utit Video BNC 2 ~ Program 1080:59:94 Hz Render Unshaped None Texture II Embedded Texture II Internal 0 * 0 * Disabled ~ No Preview RTT	Video Uut Video Uut Video Uut Video Uut Video Uut Video Uut Video Program Output 1080i 59.94 Hz Unshaped None Texture ID Tr. T	Video Out Video BNC 2 Video BNC 4 Video B	Video Uut Video Uut Video Uut Video Uut Video ENC 2 Video ENC 4 Vi	Video Out Video Out Video Out Video Out Video BNC 4 Video BNC 6 Program Output 1 Output 2 1080: 59.94 Hz Render To Texture Embedded Texture ID Texture Embedded Texture Pathrenden0/Texture Render Order 10 \$ Disabled V Disabled No Preview RTT No Preview RTT No Preview	Video Out Video	Video Uut Video



Texture Path

The texture path that is generated must then be applied as an image file path within a Prime scene.

Prime Playout Configuration:

🛇 Render To Te	xture	—	\times
	✓ Enabled		
Texture ID	Texture		
Texture Path	render:0/Texture		
Render Order	10		

Prime Designer:

✓ Image		
File	render:0/Texture	~ 🗵
Color		

Render to Texture Prime Scene Construction

Create a scene with a full screen image object. Create a new scene and add an image. Paste the texture path into the File property of the Image object. (Note: You will not see any change in Designer). The image path must exactly match the RTT texture path. You can add as many other scene objects in this scene as well.





Setting Prime Scene as Channel Output

In Startup Scenes you can set the render to texture scene as the output channel for multiple configured channels.

Render to Texture Output

In this example "RTT of output1.pbx" is replicated on output 2 and output 3 (as configured in startup scenes).



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Vew Tools Config	1.149	-								0	HYRONHEGO
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			1000	0.13	Mate V	ideo Options Leave		Scene Playing Al	BALFM +		
										Insul 1 @ Insul 2 @ G	etical 0 in Busen

*Note: Audio from RTT channel will not be playing on other channels. Only video is passed.



Network Stream Output

PRIME can output a H.264 Network Stream to a targeted streaming service. Select "Network Stream" as device type.

Video Channels 💽 A	dd Output 🔻 🚬 Add Input 🔻		
Channel	Output 1	×	
Device	Network Stream	~	
Type	NDI		
iype	Network Stream		
Connector	GPU		
Name	Desktop Window Application Window	[
Video Standard	Sub Channel	1	
	Remote Engine	L.	
Video Shape	Render	_	

To enable audio on a Network Stream Output, make a selection from the Audio Mode dropdown. Some streaming services require audio to be enabled for proper performance. Audio must be enabled here on the parent channel to allow further audio selections within the Network Stream Settings configuration.

Channel	✓ Output 1	×
Device	Network Stream	~
Туре	Video Out \sim	8 Bit
Connector	http://192.168.74.1:1234	
Name	Output 1	
Video Standard	1080i 59.94 Hz	~
Video Shape	Unshaped	\sim
Downstream Input	None	~
Audio Mode	Disabled	~
Audio Device	Disabled Embedded	
Audio Channels	System Audio Virtual	

To configure streaming service type, click on the ... button in the connector row.



		_
Connector	http://10.8.0.10:1234	

This will open the Network Stream Settings window.

Network Stream Services:

To configure a Network Stream Output, select the appropriate service type from the dropdown list.

Network St	ream Settings X	(
General		
Service	Custom ~	
Protocol	Custom	
Local IP	Facebook Live YouTube	
Port	Twitch	
Path	Twitter/Periscope	
URL	http://10.8.0.10:1234	
Video		
Codec	H264 ~	
Muxer	TS 🗸	
GOP Size	60 🗢	
Bitrate	20971520 🗢 🖌 Auto	
Audio		
	Enabled	
Channels	2 🔿 🖌 Auto	
Bitrate	128000	
	OK Cancel	

Custom



Facebook Live

When Facebook Live service is selected, Prime will dynamically populate fields with recommended settings; RTMPS Protocol, Port 443 (if auto is checked) and URL to rtmps://live-api-s.facebook.com:443/rtmp

The Stream Key field will appear with a red box highlight to indicate that no Stream Key is blank.

Network S	tream Settings	\times
General		
Service	Facebook Live 🗸	
Protocol	RTMPS ~	
Hostname	live-api-s.facebook.com 💙	
Port	443 💽 🖌 Auto	
Path	rtmp	
Stream Key		
URL	rtmps://live-api-s.facebook.com:44	3/rtmp

To generate a Facebook live stream key you will need to log into facebook from a web browser. Click on Live Video.

What's o	n your mind?	
Ot Live video	Photo/Video	🕌 Life Event

Navigate to the Live Producer page and select "Use Stream Key". The Live Stream setup section will become visible. Select use a persistent stream key if desired. Select the Copy button next to the Stream Key field.





Return to Prime UI and paste the Stream Key from Facebook into Prime's Stream Key field. Select OK. A dialogue prompt will appear stating "Prime needs to be restarted for the new settings to be applied". Restart Prime.

The Network stream Output will be available in Prime Playout with the name assigned to the configured output in the Playout Configuration settings.



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Program Program 2	Program 3	Facebook	Output 1	
Playout Configuration			- 0	×
C	Video Channe	els	🏐 Import 🛛 📊 Export	: 🕜 »
Switcher	Channel	\$	Output 4	*
📰 Video Channels		_		
Clip Players	Device	2	Network Stream	~
Clip Recorders	Туре	it	Video Out 🔗 🗸	8 Bit
Playlists	Connector	-	timps://live-api-s.faceb)00
🖳 External Data	Name		Facebook	
P Settings		_		
	Video Stanga	iù 🔟	10801 59.94 Hz	~
	ACHER CHARA	10	Hashered	14

Turn on/off visibility of the Network stream output via the View menu.

When you wish the Facebook Live Network stream output in Prime to begin streaming to Facebook, select the "Go Live" button in Facebook. *Facebook does require that you give the Live feed video a title.*

^{Title (required)} Put Stream Title Here	
This is a streaming feed from Prime	÷
Go Live	

Once "Go Live" has been selected, any Prime graphics played to the Facebook Live Network stream Output will be streamed to the configured Facebook page.



Layout Defau Project Prime Demo 2020 v 📕 Scene Program Program 2 Program 3 Faceb ok Output 1 😗 Live Pro cer | Facebook X Clear Q ☆ 뢰 OTS Direction LEFT Q. Search Facebook • ŵ 8 ۲ 5 + + OTS HEADLINE • Live 0:14 **OTS HEADLINE** a...\OTS Sydny Bridge.ti Insights ش o 0
 Bullet One Pause Reveal Bullet Two REVEAL NEXT \$ 0 0 0 Bullet Three word wraps here this is where it v lacksquareBullet On Charlie The M now. Just now · @ Bullet Three word wraps here this is where it wraps to Give your Live feed a title here Add extra info here 5:17:43 PM · Action Played: Bullets ALL kflow Monitor Auto w Monitor Automation Monitor Parameters w 🔄 Copy Events 🧓 Clear Events 📝 Edit Ap No Pages to cr Audio 2.9 Kbps Video 787.0 Kbps 1920 x 1080, 29 fm Event Logs Not set 👻 🚱 Cor ent as Charlie The Mini ... 🙂 🗐 (v 9 New tip

Refer to Facebook's Help Center for Video format guidelines and restrictions for live streaming on Facebook.

YouTube

When YouTube is selected in the Service dropdown, Prime will dynamically populate fields with recommended settings; RTMP Protocol, Port 1935 (if auto is checked) and URL to tmp://a.rtmp.youtube.com:1935/live2

The Stream Key field will appear with a red box highlight to indicate that no Stream Key is blank.

Network Stream Settings		
General		
Service	YouTube	>
Protocol	RTMP	<u> </u>
Hostname	a.rtmp.youtube.com	~
Port	1935 🚑 ✔ Auto	
Path	live2	
Stream Key		
URL	rtmp://a.rtmp.youtube.	.com:1935/live2

To generate a YouTube live stream key you will need to log into YouTube from a web browser. Click on the icon that looks like a camera with a Plus symbol, and select Go Live. If you haven't

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already, follow the prompts to verify your channel. Enabling your first live stream may take up to 24 hours (this is a restriction enforced by YouTube). Once enabled, you can live stream instantly.



Twitch

When Twitch is selected in the Service dropdown, Prime will dynamically populate fields with recommended settings; RTMP Protocol, Port 1935 (if auto is checked) and URL to rtmp://live.twitch.tv:1935/app

The Stream Key field will appear with a red box highlight to indicate that no Stream Key is blank.

Network Stream Settings ×			<
General			
Service	Twitch	>	
Protocol	RTMP	<u> </u>	
Hostname	live.twitch.tv	~	
Port	1935 🤤 🗹 Au	to	
Path	арр		
Stream Key			
URL	rtmp://live.twitch.tv:	1935/app	

To generate a Twitch stream key you will need to log into Twitch from a web browser. In Twitch, click on the profile icon at the top right of the page. Select Settings from the menu dropdown. After the profile page has loaded click the Channel and Videos tab.

Click the Copy button next to the Primary Stream Key field.

Stream Key & Preference	ces	
Primary Stream key		Copy Reset
	Show	

Paste the value into the Stream Key Field in the Network Stream Settings in Prime.



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Select OK. A dialogue prompt will appear stating "Prime needs to be restarted for the new settings to be applied". Restart Prime.

The Network stream Output will be available in Prime Playout with the name assigned to the configured output in the Playout Configuration settings.

Scene	Faceb	ook T	witter Twitch	
Playout Configuration	n		- 0	×
	Video Channels		🏐 Import 🔒 Export	0 '
Switcher	Channel	ĸ	Output 3	×
Uideo Channels				
Clip Players	Device	\leq	Network Stream	~
Clip Recorders	Туре	lit	Video Out 🛛 🗸 🗸	8 Bit
Playlists	Connector		.tmp://live.twitch.tv:193	5,
External Data	Name		Twitch	
	Video Standard		10801 59.94 Hz	~
	Video Shape	\sim	Unshaped	~
		_	10000	

Turn on/off visibility of the Network stream output via the View menu.

Return to Twitch and select the Profile icon at the top right of the page. Select channel from the dropdown menu. twitch.tv/ACCOUNTNAME page is loaded and stream should be Live. Any Prime graphics played to the Twitch Network stream Output will be streamed to the configured Twitch account.





Twitter/Periscope

When Twitter/Periscope is selected in the Service dropdown, Prime will dynamically populate fields with recommended settings; RTMP Protocol, Port 80 (if auto is checked) and URL to rtmp://or.pcsp.tv:1935/x

Network Stream Settings		
General		
Service	Twitter/Periscope	>
Protocol	RTMP	\checkmark
Hostname	or.pscp.tv	~
Port	80 🖨 🗌 Auto	
Path	x	
Stream Key		
URL	rtmp://or.pscp.tv:80/x	

The Steam Key field will appear with a red box highlight to indicate that no Stream Key is blank.

Login to Periscope in a web browser. Click the account icon between Channels and the Add on App store at the top right. Select the Producer button. The Producer page will open. Select create new source.

Copy the Stream Key from Periscope/Twitter to the Steam Key field in Prime.



	23
Producer	Channels App Store Google Play
This information allows you to connect from outside encoding sources. For more information please visit our Help Center	Create New Source
Source 1	
Checking for Source	Edit Region rtmp://va.pscp.tv:80/x Stream Name / Stream Key 675p1x86kyx1 Source Display Name (optional) Cow Latency @ Accept Super Hearts @

Select the hostname region closest to your streaming location from the dropdown. *VA Virginia, OR Oregon and CA California.* The URL field will dynamically update to match the region selected.

General			
Service	Twitter/Periscope	~	
Protocol	RTMP	\sim	
Hostname	or.pscp.tv	~	
Port	or.pscp.tv		1
Path	ca.pscp.tv va.pscp.tv		
Stream Key	675p1x86kyx1		
URL	rtmp://or.pscp.tv:80	0/x/675p	1x86kyx1
Video			

Select OK. A dialogue prompt will appear stating "Prime needs to be restarted for the new settings to be applied". Restart Prime.

The Network stream Output will be available in Prime Playout with the name assigned to the configured output in the Playout Configuration settings.



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Playout Configuration	ı		_
	Video Channels 💽 A	Add Output 🔻	🏐 Import 🔚 Ex
Switcher	Channel	: 🗹	Output 2 🗱
💌 Video Channels			
Clip Players	Device	/ Network St	ream V
🐞 Clip Recorders	Туре	t Video Out	 8 Bit
Playlists	Connector	rtmp://or.p	scp.tv:80/x/67
External Data	Name	Twitter	

Turn on/off visibility of the Network stream output via the View menu.

When you wish the Twitter/Periscope Live Network stream output in Prime to begin streaming to Periscope, select the "Go Live" button.

Twitter					
1				Producer	Channels 🧕 🗯 App Store Coogle Play
	OTS Direction LEFT OTS HEADLINE Repla\OTS Sydny Bridge.tif Bullet One Bullet Two Bullet Three word wraps here this is where it the second secon	Pause Reveal? REVEAL NEXT	OTS HEADLINE Field Car Bailet Car Bailet Too Bailet Too Bailet Car Bailet Car Baile	This information allows you to connect from outside encoding sources. For more information please visit our Help Center Source 1	Create New Source Cancel Preview Broadcast Title Public Public
Westfley, Meniter	Action Played: Bullets ALL	12:45:23 PM 👻		Builtet Three word was bere Builtet Three word was bere this is where it wraps to	 Turn off hearts and chats Share this broadcast on Twitter
Workflow	py Events of Clear Events a Edit Appearance	•			Low Latency @
Time 12:44:45.437 PM 12:44:49.887 PM	Event Scene Description SceneState 200 Loaded ActionPlayed 100 Effect Quit	on			Accept Super Hearts 📵
12:44:50.443 PM 12:44:53.303 PM 12:44:53.304 PM 12:44:52.205 PM	SceneState 100 Stopped Condition 200 Left.Play(ActionPlayed 200 Left				Go LIVE

Once "Go Live" has been selected, any Prime graphics played to the Twitter/Periscope Live Network stream Output will be streamed to the configured Periscope account.



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H.264 Previews

A PRIME output can simultaneously stream H.264 in addition to its configured device type (SDI, GPU, NDI etc...). All output types, including Preview channels, support H.264 streams with the exception of Remote Engines and Sub Channels. When H.264 is configured, both the primary output type and the H.264 stream will render PRIME scenes.

O H264 Sett	ings ×	
	✓ Enabled	
Hostname	127.0.0.1 ×	
Port	10128 🗢	
GOP Size	60 🗢	
Bitrate	20 🗢 Mbps	
	OK Cancel	

NDI considerations

NDI® is a registered trademark of Vizrt NDI AB <u>https://ndi.video/</u>

NDI operates most efficiently in a dedicated network with high bandwidth and high availability. This is in contrast to unmanaged environments such as the public Internet or networks where video rides along with data without priority. While a single stream of HD video can possibly be delivered on a Fast Ethernet (100 Mbps) network, Gigabit (1000 Mbps) networks are essential in production workflows. A typical NDI stream consisting of 1080i HD video yields a data rate up to 100 Mbps per stream. This extremely efficient stream is designed to have very low latency

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and allows multiple streams to be stacked together on a single Gigabit network. Even so, a production environment may require more capacity based on the type and quantity of simultaneous NDI video streams in a particular workflow. The following table is intended as a guide for calculating bandwidth needs based on video resolutions and frame rates. It should be noted, however, that NDI is not deterministic. Bandwidth needed for NDI video streams should be based on determination of the average utilization required4

Bandwidth Requirements. The approximate bandwidth required per NDI video stream for common video resolutions and frame rates.

Example NDI video stream	Approximate bandwidth required
1 x UHDp60 video stream	250 Mbps
1 x UHDp30 video stream	200 Mbps
1 x 1080p60 video stream	125 Mbps
1 x 1080i60 video stream	100 Mbps
1 x 720p60 video stream	90 Mbps
1 x SD video stream	20 Mbps

Starting in PRIME 4.10, Prime's NDI integration now supports 10-bit HDR using the HLG transfer function defined in Rec. 2100 as adopted for broadcast television workflows. Prime customers must be licensed in order to use this feature. The PQ transfer function is not supported in Prime 4.10, nor is NDI-based Genlock.

*Please contact your Chyron sales representative for NDI (SDR and HLG based HDR) licensing information.



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Desktop Window Output | Override Window Appearance

Exclusive to Desktop Window Outputs, selecting the blue Override Window Appearance button next to Video Standard, users can customize their desktop window experience by overriding the position and size.

Default **Position:** Left = 560, Top = 0

Default Size (Resolution): Defaults to selected or customized Video Standard resolution

🌃 Playout Configuration		
	File Offline	🝷 🗋 New 🔻 🔚 Save As 🗙 Delete
💶 Video Channels	Video Channels 돈 Add	Output 🔻 🚬 Add Input 💌
🔛 Clip Players	Channel	Output 1 💥
💌 Playlists	Device	Desktop Window 🗸
🌐 Atlas	Туре	Video Out - 8 Bit SDR
● Bypass ੳ ExternalData	Connector	Video Window 1
🐣 Settings	Name	Output 1
🔆 Advanced	Video Standard	1080p 59.94 Hz V 🖸 Desktop Window Appearance X
	Video Shape	Unshaped Voition
	Downstream Input	None V Left 560 🜩
	Audio Mode	Disabled V Top 0 🔷
	Audio Device	Size
	Audio Channels	2 Verride Size
	Genlock Source	Sync Width 1920
	Genlock Timing (H/V)	Height 1080 🗇
	Antialiasing	Disabled V 🖌 Maintain Aspect Ratio
	Preview Channel	No Preview V RT
	Proxy Output	1/4 Resolution V H264
	Proxy Frame Rate	Half (1/2) ~
	Playout Toolbar	Show ~

Example: x4 Desktop Window Outputs, each with a customized Override Window Appearance





- • **•**

📝 Input 3

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Enabled

Embedded 1-8

Cancel Apply

0

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Flashing the Matrox Board

Downstream Input

Audio Mode

Audio Channels

Genlock Source

Antialiasing

Preview

Genlock Timing (H/V)

When you change the channel configuration that doesn't match the current board configuration you will be prompted the following:

Firmware	Update							23				
4	Your hardwa configuratio	Your hardware requires a firmware update to support the desired configuration.										
	the changes											
	Would you l	Would you like to continue?										
					<u>Y</u> es		<u>N</u> o]			
腸 Playout Configuration												
	Video Channels 💽 Ac	id Output 🔻 💌 Add Input 👻										
Video Channels	Channel	📝 Output 1 🛛 💥	Preview 1	×	📝 Output 2	×	📝 Input 1 🛛 💥		📝 Input 2	×	V Inpu	
Clip Players	Device	Matrox DSK LE4 👻	Matrox DSX LE4	•	Matrox DSX LE4	•	Matrox DSX LE4 🔹	Mate	rox DSX LE4	•	Matrox DSK LE4	
Clip Recorders	Туре	Video Out 🔻	Video Out	-	Video Out	•	Video In 👻	Video	o In	•	Video In	
Playlists	Connector	Video BNC 2 -	Video BNC 4	Ŧ	Video BNC 6	Ŧ	Video BNC 1 -	Video	BNC 3	-	Video N/A	
	Name	Output 1	Preview 1		Output 3		Input 1	Input	: 2		Input 3	
	Video Standard	1080i 59.94 Hz 👻	1080i 59.94 Hz	-	1080i 59.94 Hz	•	1080i 59.94 Hz 🗸	1080	i 59.94 Hz	•	1080i 59.94 Hz	
	Video Shape	Unshaped -	Unshaped	-	Unshaped	-						

None 🔻 Embedded

2

÷ 0

▼ Genlock Input

No Preview

•

-

▲ ▼

-

•

-

Enabled

Embedded 1-8

Input 1

Genlock Input 👻 Genlock Input

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System Audio 👻

•

÷ 0

2

Disabled

Disabled

Disabled

Disabled

Embedded 🔹

2 •

Matrox Firmware Current 2 In / 6 Out Required 4 In / 4 Out \Lambda Update Firmware

0 🔹 0

Preview 1



CLIP PLAYERS

Configures the number available clip players for the system. Clip Players can play clip scene files directly to a Layer on an output channel. Click the Add Clip Player toolbar button to add new clip players.

Mayout Configuration							- 0	×
	Clip Controllers 🛞 Add Clip	Player						2
Video Channels	Clip Player	Clip Player 1 🗱	Clip Player 2	×	Clip Player 3	×	Clip Player 4	×
Clip Players	Name	Clip Player 1	Clip Player 2		Clip Player 3		Clip Player 4	
Clip Recorders	Parent Channel	NDI Output ~	NDI Output	~	NDI Output	\sim	NDI Output	\sim
Playlists	Layer	1	0	*	-1	-	-2	•
	Transition	OUT Clip Cross Grid Wipe.pc' 🗸	IN Clip Push Right.pct	~	OUT Clip Cloth Warp.pct	\sim	IN Clip Wipe Right.pct	~
	Transition Priority	Clip Player \checkmark	Clip File	\sim	Clip File	\sim	Clip File	\sim
						ЭК	Cancel Appl	ly

Clip Player Properties

- Name Assign a user-friendly name to identify the Clip Player throughout the application
- **Parent Channel** Select a channel from the list. The list will be populated from the configure **output** channels in the "Video channels" section.
- **Layer** Assign a layer number for which this clip player will use in the output channel. The higher the number the more forward in the order it will play. You can assign negative or positive numbers. If you assign -5 it will likely be a background clip in that channel unless another clip player or graphic scene has a higher negative value.
- **Transition** Select a file based transition. File based transitions can be created using the Scene Designer. See the Main PRIME User Guide.
- **Transition Priority** Allows you to select which clip, incoming or outgoing, has the top most priority when transitioning between clips



CLIP RECORDERS

Configures the number of available clip recorders on the system. Click the Add Clip Recorder toolbar button to add new clip recorders

🌃 Hardware Configuration										
	Clip Controllers 🚳 Add Clip Recorder									
📰 Video Channels	Clip Recorder	📝 Clip Recorder 1 🛛 🗱	🔽 Clip Recorder 2 🛛 🗱							
Clip Players	Name	Clip Recorder 1	Clip Recorder 2							
Clip Recorders	Parent Channel	Input 1 🔹	Input 2 👻							
	Default Folder	Clips	Clips							
	Default Compression	JPEG 🔹	JPEG 🔹							
	Frame Grab	🔲 Generate Clips for Stills	Generate Clips for Stills							

Clip Recorder Properties

- **Parent Channel** Select a channel from the list. The list will be populated from the configure input channels in the "Video channels" section.
- Name Assign a user-friendly name to identify the Clip Player throughout the application
- Default Folder Sets the default folder to which recorded clips will be saved
- **Default Compression** Sets the default compression of recorded clips: None (uncompressed), JPEG (better for footage), LZO (better for graphics)
- Frame Grab If set, causes clip player meta data files to be generated when frame grabs are captured



PLAYLISTS

Configures the number of playlist windows to create on startup. Use the Add Playlist button to add new playlist windows.

🎆 Playout Configuration						_		×
	Playlists 🝺 Add Play	list						2
Video Channels	Playlist	✓ Playlist 1	×	Playlist 2	×	☑ Playlist 3	*	
Clip Players	Name	5PM News	6	5PM News		Clips & Graphics		
Clip Recorders	Auto Advance	Auto Advance		Auto Advance		Auto Advance		
Playlists								
						OK Cancel	Арр	ly
								-

- **Name** Assign a user-friendly name to identify the Playlist throughout the application
- Auto Advance Auto advance mode will automatically cue the next item in the playlist

ATLAS

腸 Playout Configuration							— [⊐ ×
	File CG	+ 🗋 Ne	w 🔻 📙 Save	As 🗙 Delete		l	License CG	
💻 Video Channels		✓ Enabled						
🔛 Clip Players	Channel	Output 1 ~				Previ	ew 1 Preview 2	Output 2
🔘 Clip Recorders	Grid							outputz
Playlists	Labala		L-1-1-1-200/ D		1			
🌐 Atlas	Labels		Height: 20%, P	adding: Upx 🔹				
📲 External Data	Channels	📕 Add 💢 Remove						
출 Settings		Channel	Size	Label	Include Audio	Audio Channe	ls	
🔆 Advanced		E Preview 1 V	Small Y	Preview 1	Disabled 🗸 🗸	N/A		
		Preview 2 *	Small v	Preview 2	Disabled 🗸	N/A		
		■ Output 2 ~	Small Y	Output 2	Disabled 🗸 🗸	N/A		

Users can define an H264 output stream for all the available outputs. This will stream to a web browser or third party application as a MultiViewer



BYPASS

As referenced in the PRIME User Guide, systems with a compatible Matrox DSXLE4 card can switch between Bypass and In Circuit directly in PRIME Playout.

Compatible Matrox DSX LE4 cards for PRIME Bypass:

DSX LE4 FH / X2 DSX LE4 FH / 4 DSX LE4 FH / 8

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🌃 Playout Configuration							
	File	CG		•	🗋 Nev	v	- 🖪
Video Channels	Вур	ass Set	tings				
Clip Players	De	evice	None			~	
💽 Playlists			None				
🌐 Atlas			External Panel Matrox Hardv	vare			
● Bypass							

Mayout Configuration		
	File CG	- 🗋 New - 🛱 S
Video Channels	Bypass Se	ettings
Clip Recorders	Device	Matrox Hardware 🛛 💙 !
💴 Playlists		✓ Start In Circuit
🌐 Atlas		
● Bypass]	



Bypass Settings

PRIME Playout > Config > Playout Configuration > Bypass

- Device
 - **None** (Disables PRIME Bypass functionality only.
 - External Panel (select for external bypass panel operation)
 - When selected, the external bypass panel is in control of bypass
 - **Matrox Hardware** (select for PRIME software bypass operation)
- Start in Circuit (Matrox Hardware Device Only)
 - When checked PRIME will startup In Circuit

*Known Limitation with Matrox Hardware Device - Start In Circuit will always be checked and grayed out. You cannot uncheck this. PRIME can not startup in Bypass when using Matrox Hardware Device. User will need to start PRIME first and then select Go In Bypass.

For new settings (Brand new system) - Device will default to None

If coming from previous settings, Bypass Device setting will use External Bypass Device (even if the Supported Matrox card is present or the physical External Bypass panel is absent) similar to how it is in 4.8.

Bypass Not Available Scenarios

When PRIME Bypass is not available, the menu will display Not Available. Not available indicates that either None, an incompatible Matrox card, or External Panel has been selected within the Bypass Playout Configuration. If External Panel is selected and you still receive Not Available, either it is not connected or has thrown an error.

Bypass Yellow Exclamation Mark - Bypass is Not Available for the selected device

Device Yellow Excalamation Mark explanation: **Matrox Hardware** Not Available. Bypass is only supported on the following Full Height Matrox Boards: DSXLE4/4 DSXLE4/8 DSXLE4/X2

Supported board not detected on this system.



External Panel

Not Available. Unspecified Bypass Panel error reported. Check if Bypass Panel is connected.

When a compatible Matrox card is detected and Device is set to Matrox Hardware, Bypass will automatically be invoked if PRIME is closed, crashes, or power is lost to the physical system.

In order for Bypass to work as intended, Matrox card I/O topology must be configured to certain specifications. Please contact your Chyron support specialist for Matrox configuration guidelines based on your DSX LE4 card and your desired setup.



External Data

🌆 Playout Configuration						—	\times
	File CG		- 🗋 New -	📙 Save As	Licen	se CG	
Video Channels	LIDIA						
Clip Players	Enabled						
Clip Recorders	DID		84 🌲	0x54			
Playlists	SDID		34	0x22			
Settings	5010			UNLL			
Advanced	Insert Packet C	ount	2				
	Remove Packe	t Count	4				
	TRACAB						
	Enabled						
	Address	127 0 0 1					
	Address	0000					
	UDP Port	9006	¥				
	Signal Port	49001	* *				
	UDP						
	Enabled						
	Port	21416	A				
							
	Cesium						
	Enabled				Run Cesium Ta	rget Converte	er
	Address	127.0.0.1					
	Port	7100	* *				
	Delay	0					
				ОК	Cancel	A	pply

- LIDIA: Refer to the separate PRIME Lidia.pdf file in the documents folder
- TRACAB: Allows Chyron TracAb data to stream directly into PRIME's render engine
 - **Address:** The IP Address of the Tracab system broadcasting the data.
 - **UDP Port:** The main Tracab transmission data port
 - Signal Port: Port to receive addition event data
- UDP: Allows external parameter data to stream directly into PRIME's render engine



• Cesium: Allows Pan, Tilt and Zoom (PTZ) data from the Chyron Cesium application. This enables PRIME Augmented Reality

Settings

The settings dialog allows users to overwrite the default PRIME startup settings. Users can start up with a defined Project, Layout and or shortcuts file.

🌃 Playout Configuration			- 🗆 X
	File CG	- 🗋 New	🕶 📙 Save As 🔅
💶 Video Channels 🔛 Clip Players	Override Applica	ntion Settings	
Clip Recorders	Project	v	
💽 Playlists	Layout	-	
📲 External Data	Shortcute		
Contraction Settings			
🔆 Advanced			



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ADVANCED

🌃 Playout Configuration		-	Х
	File CG 🔹 🖿 🗅 New 👻 🔚 Save As 💥 Delete Licer	nse CG	
💶 Video Channels	Text		
Clip Players	Font Engine DirectWrite V Use DirectWrite for complex scripting	9	
Clip Recorders	Mulia Casha	·	
Atlac	Media Cache		
Auds	System Memory 32453 MB		
📲 ExternalData	Cache Size 25961 MB		
Settings	Cache Percent 80		
🔆 Advanced	Clip		
	Memory Size 0 MB ③		
	Preload Size 256 MB		
	Preload HD Frames 32		
	Copy Threads 0		
	Video Input		
	Disconnect Hold Frames Indefinite ~		
	LyricX Connection		
	Output Channel Disabled \checkmark		
	Display		
	🕝 Ignore System DPI		
	Graphic Drivers		
	Always Install Graphics Profile		

Text Font Engine – Switches between GDI & DirectWrite

Media Cache System Memory - Read only indicator of available System RAM

Cache Size – Set a defined size for PRIME to cache scene elements.

Cache Percent - Assign a percentage of System Memory.

Clip

Memory Size - This can be adjusted to enhance clip performance playback. Suggested memory size: HD=1024 MB, 4K=4096 MB, 0 = Automatic (Legacy)



Preload Size* - Assign how much read ahead to load clips.

Preload HD Frames* - Assign a user-friendly name to identify the Playlist throughout the application

Clip Preload settings work in tandem.

Copy Threads - Increase this setting for additional CPU Threads to improve clip codec playback performance. For example, if your PRIME graphics use a lot of ProRes clips, increasing the number of CPU threads the system uses for clip processing helps improve clip playback performance.

***Please Note:** The higher this value, the more impact it will have on overall PRIME and system performance. This can impact realtime output and input channel performance.

Default Value = 0 Max Threads = 64

Video Input

Disconnect Hold Frames: If an interruption occurs with the video input source, the video texture will display the last valid frame received for this many frames before going to black

LyricX Connection

Allows a LyricX output channel to be routed to a PRIME output. Refer to the PRIME Lyric Mode Configuration Guide for more information.

Output Channel: Specifies the PRIME output channel which will rendered LyricX.

Display

Ignore System DPI - only affects Desktop Window outputs

- If checked, will ignore the system display scaling for the window. For instance, a desktop window set to 1920x1080 on a monitor with 200% scaling would remain at 1920x1080.
- If unchecked, system display scaling will apply to the window. For instance, a desktop window set to 1920x1080 on a monitor with 200% scaling would be scaled up to 3840x2160.

Graphic Drivers

Always Install Graphics Profile - Prime Engine requires a specific graphics profile (low level driver settings) to run properly. When Prime Engine is installed the profile is installed however updating graphics drivers overwrites this profile. This setting installs the necessary profile on startup for PRIME to run properly.



GPU STRIPING/SCALE

Press the "Scale" button to choose the options



- Scale: This will scale the PRIME output to the specified output of the target monitor.
- Stripe: This will truncate the video by dividing the video into sections to fit the monitor resolution.
- Custom: Modify the file "C:\Program Data\ChyronHego\Prime Engine\Layout.xml" to define the striping.

e C:\ProgramData\ChyronHe... × <?xml version="1.0"?> - <Source height="1080" width="1920"> <Stripe height="1080" width="1920" dstY="0" dstX="0" srcY="0" srcX="0"/> </Source>



COMPOSITOR DEVICE FOR STRIPING

