

# Help document (v1.1.2)

# Usage explained

### **Design Time**

1. After dragging the plugin's item from Schematic Elements and dropping it to a Schematic Page, the plugin's Schematic Element will look like this:



and the plugin's Properties will look like this:

	0 – 0	>
	CDE Sign	<u>n In</u>
	>	≥
Properties		
Activaire Curator	Properties	
Audio Players	2	
Channel Type	Mono	•
Audio Format	MPEG Layer III Audio	•
Crossfade Effect	Yes	•
Crossfade Time	7	
Crossfade Type	-3dB Constant Power	•
Cached Tracks	10	
Touch Screen	TSC-101-G3	•
Custom Schedules	Yes	•
Has Redundant Pair	No	•
Reboot Plugin	Yes	•
Reboot Moment	Everyday	•
Reboot Hour	5	_
Reboot Minute	0	
Event Log	None	•
Show Debug	No	•
Graphic Propertie	2S	
	Activaire	_
Label	Curator	
	v1.1.2.0	
Position	18,19	
Fill		1
Script Access		
Code Name	ActivaireCurator	
Script Access	None	•
		and the local division of the local division



2. The "Audio Players" property is a number between 1 and 128

	1
Value must be a number between 1 and 128	- artian
reavance caracor riv	percies
Audio Players	

and it stands for the number of Audio Player components embedded in the plugin. The initial value is 2, which means that the plugin initially incorporates only 2 Audio Players



which can be inspected when choosing "Check Design..." from the File menu. Also, the initial number of Audio Pins of the Schematic Element matches this value



**Observation**: if the "Crossfade Effect" property is turned on, the number of Audio Player components embedded in the plugin doubles (see below)

3. The number of Audio Player components that the plugin uses changes accordingly, and so does the number of its Audio Pins, upon incrementing the value of this property

	Properties		
	Activaire Curator	Properties	
	Audio Players	3	
Audio Player Tracks			3 Tracks
and upon decreme	ActivaireCurat Activaire Curator v1.1.2.0 enting the value of this prop	Stream #3	
	Properties		
	Activaire Curator	Properties	
	Audio Players	1	
Audio Player Tracks			1 Tracks
	ActivaireCurat Activaire Curator v1.1.2.0	Stream #1	



4. The "Channel Type" property is an enum consisting of the following choices

Activaire Curator Properties		
2		
Mono 💌		
Mono		
Stereo		

of which "Mono" is the default one. This property configures the channel type of the embedded Audio Tracks to be either Mono, or Stereo. When the "Stereo" choice is selected, each stream of the plugin will get 2 output Audio Pins, for the left & right channels of that stream

ActivaireCurat	ActivaireCurat	Stream #1 Right
Activaire Curator Stream #1 Left	Activaire Curator	
v1.1.2.0	v1.1.2.0	5

When using the "Stereo" setting, the "Check Design..." inspector will show a doubled number of Audio Player Tracks, since each channel is using such a track



5. The "Audio Format" property is also an enum with the following options

Properties			
Activaire Curator Properties			
Audio Players	2		
Channel Type	Mono 🔻		
Audio Format	MPEG Layer III Audio 🛛		
Crossfade Effect	MPEG Layer III Audio		
Cached Tracks	MPEG-4 Audio		
Taurala Canada	TCC 101 CD		

of which "MPEG Layer III Audio" is the default choice. This property controls what format for the tracks does the plugin use, either .mp3 or .m4a. The .m4a format was supported until QDS v9.10.\*, but since QDS v9.12.\* onwards, support for the .m4a format was removed. The plugin includes the possibility of setting this format too, for sites that still use an older QDS version because the .m4a format assures a better compression than the .mp3 one (about 3x smaller).

6. The "Crossfade Effect" property is a boolean value

Audio Format	MPEG Layer III Audio
Crossfade Effect	Yes 💌
Crossfade Time	Yes
Crossfade Type	No
Cached Tracks	10



which enables/disables the crossfade effect between tracks. Its default value is "Yes". This property also controls the visibility of another 2 properties called "Crossfade Effect" & "Crossfade Time", which appear when "Crossfade Effect" is set to "Yes", and they disappear when it is set to "No".

**Observation**: when this property is turned on, the number of Audio Player components embedded in the plugin doubles, each stream channel using 2 such components, in order to assure the desired crossfade effect

7. The "Crossfade Time" property is a number between 1 and 100

A Value must be a number between 1 and 100	MPEG Layer III Audio	•
Crossiade Ellect	Yes	•
Crossfade Time		

and it controls the length of time (in seconds) it takes the embedded Crossfader to fade from one channel to the other. The default value is 7.

8. The "Crossfade Type" property is an enum with the following choices

Crossfade Time	7
Crossfade Type	-3dB Constant Power
Cached Tracks	-6dB Constant Gain
Touch Screen	-3dB Constant Power
C 1 C 1 1 1	

"-3dB Constant Power" being the default value. This property allows selection of the crossfade type: -6 dB constant gain or -3 dB constant power. With -6 dB constant gain type selected, the embedded Crossfader sums the input signals with a constant combined gain. The midpoint gain is -6dB. This setting is suited for correlated input signals but results in a 3 dB dip at the midpoint for uncorrelated signals. With -3 dB constant power type selected, the embedded Crossfader sums the input signals to a constant combined power. The midpoint gain is -3dB. This setting is suited for uncorrelated input signals and is the preferred one.

9. The "Cached Tracks" property is a number between 1 and 200

A Value must be a number between 1 and 200		7	
ZT value must be a	crossrade type	-3dB Constant Power	•
	Cached Tracks		

and it stands for the number of tracks / artworks the plugin caches locally for assuring an uninterrupted playback experience even during internet outages, and server communication failures. Its default value is 10, meaning that the plugin will constantly and in advance pull & store locally to the Core 10 tracks / artworks per Stream, beside the currently playing one.

10. The "Touch Screen" property is an enum consisting of the following choices

Cached Tracks	10
Touch Screen	TSC-101-G3
Custom Schedules	TSC-50-G3
Has Redundant Pair	TSC-70-G3
Reboot Plugin	TSC-101-G3
Reboot Moment	TSC-55w-G2
Reboot Hour	TSC-80w-G2
Reboot Minute	TEC 110- CD
Event Loa	15C-116W-G2



of which "TSC-101-G3" is the default one. This property is part of the plugin's support for an adaptive UI based on a selected TSC panel type. This means that, when choosing a certain option from this list, the plugin's UI reconfigures so that it matches the screen resolution for the indicated TSC model. Hence, when deploying an UCI that is based on the plugin's UI adapted to a certain TSC panel type through the means of this property, the UCI will render perfectly on the TSC model.

11. The "Custom Schedules" property is a boolean value

Touch Screen	TSC-101-G3	•
Custom Schedules	Yes	-
Has Redundant Pair	Yes	
Reboot Plugin	No	
<b>D</b> 1 1 1 1	<b>F</b> 1	

that controls whether the plugin integrates schedule builder cards, in its 2nd page, called "Generic UI". When set to "Yes" (which is also the default option), each stream card from this plugin's page ("Generic UI") gets a dedicated schedule builder card that sits next to it



In addition to these, an extra schedule builder card, called "Injectable", appears next to the



### "AllStreams" card

AllStreams	•	Injectal	ole 🔥	CTIVE		$\otimes$
	•	From Prev		to 🤇	Next	•
	•	From		) to 🤇		•
1887 (Sec. 1997)		From		) to 🔵	Next	
		Prev From		to C	Next	
		Prev From	X	to	Next	
Prev Next		Prev			Next	•

The per Stream schedule builder card can be used to program up to 5 daily segments (not necessarily contiguous) for each Stream, while the injectable schedule builder card can be used to program up to 5 daily injectables (also not necessarily contiguous) for all Streams. These schedule builder cards are presented in detailed as part of the explanations for the "Generic UI" plugin page down below.

12. The "Has Redundant Pair" property is a boolean value

Custom Schedules	Yes
Has Redundant Pair	No
Reboot Plugin	Yes
Reboot Moment	No
	-

with a default option of "No". This instructs the plugin on whether or not there is a redundant core paired with the main one the plugin will be deployed to. The difference in behaviour when this is set to "Yes" is that the plugin will not erase the core & user related information saved inside the plugin, in a hidden embedded control, when detecting run-time on a different physical core.

13. The "Reboot Plugin" property is a boolean value

Has Redundant Pair	No
Reboot Plugin	Yes
Reboot Moment	Yes
Reboot Hour	No
Roboot Minuto	0

which enables/disables the plugin's periodical reboot. Its default value is "Yes". This property also controls the visibility of another 3 properties called "Reboot Moment", "Reboot Hour" & "Reboot Minute", which appear when "Reboot Plugin" is set to "Yes", and they disappear when it is set to "No".

**Observation**: these periodical plugin reboots are needed in order to assure a proper plugin's functionality when there are no core power cycles or design redeploys for a long period of time



14. The "Reboot Moment" property is an enum consisting of the following choices

Reboot Plugin		Yes			
Reboot Moment		Everyday 🗧			
Reboot Hour	Ever	ryday			
Reboot Minute	Ever	ry other day			
Event Log	Ever	v 3 davs			
Show Debug	Ever	v 4 days			
Graphic Propertie	Every 5 days				
Label	Every 6 days				
Luber	Every 7 days (No specific day)				
Position	Weekly on Monday				
Fill	Weekly on Tuesday				
Script Access	Weekly on Wednesday				
Code Name	Weekly on Thursday				
Script Access	Weekly on Friday				
Control Pins	Weekly on Saturday				
▷ All 2 Streams.	Weekly on Sunday				

of which "Everyday" is the default one. This property controls the day when the plugin reboots. The first 7 options (ranging from "Everyday" to "Every 7 days (No specific day)") reflect frequency-based reboot schedules (they describe how often the reboot happens), while the last 7 options (ranging from "Weekly on Monday" to "Weekly on Sunday") reflect specific day-based reboot schedules (they indicate a particular day when the reboot should happen).

15. The "Reboot Hour" property is a number between 0 and 23

▲ Value must be a	number between 0 and 23	Yes	•
ZT value must be a	REDOUT MOMENT	Everyday	•
	Reboot Hour		

specifying the hour the reboot should happen at. The default is 5.

16. The "Reboot Minute" property is a number between 0 and 59

A Value must be a number between 0 and 59		Everyday	•
	KEDOOT HOUR	5	
	Reboot Minute		

specifying the minute the reboot should happen at. The default is 0.

17. The "Event Log" property is an enum consisting of the following choices

Reboot Minute	0
Event Log	None 💌
Show Debug	None
Graphic Properties	Error
	Warning
Label	Normal
7 /	01



of which "None" is the default one. This property controls the Event Logger component embedded in the plugin. When set to "None", no event gets logged in Event Log within Q-SYS Core Manager. When set to "Error", only error events are logged, which looks like this:

8 ACT|E|SPR: Playback failed to start in zone "Room 1st Floor" after 3 recovery attempts

When set to "Warning", both error & warning events are logged, looking like this:

ACT|E|SPR: Playback failed to start in zone "Zone 2" after 3 recovery attempts.

ACT|W|ALR: Auto logged in successfully after 8 recovery attempts

When set to "Normal", all events are logged:

- ACT|E|SPR: Playback failed to start in zone "Zone 2" after 3 recovery attempts
- ACT|I|TR: Auth Tokens will be renewed in 3600s
- ACT|I|TR: Auth Tokens will be renewed in 3600s
- ACT|W|ALR: Auto logged in successfully after 5 recovery attempts
- 18. The format of these events' message is **ACT** |<severity>|<class>: <detail>, where <severity> is one of
  - E for error
  - w for warning
  - I for info

<class> is one of

- ALR for auto login recovery
- CR for cookie renewal
- FC for folders cleanup
- FS for file system
- IO for internet outage
- IR for internet restored
- LCR for load container recovery
- MP for menu parse
- **OT** for option tap
- **PMR** for pause music recovery
- PR for plugin reboot
- PS for plugin status
- PT for playable tap
- QC for queue completed
- RA for remote action
- REQ for send request
- RES for response handler
- SPR for start playback recovery
- TR for token renewal
- **ZT** for zone tap

and <detail> contains custom information associated with the event, describing it.



19. The "Show Debug" standard property is a boolean value

Event Log	None 🔻
Show Debug	No
Graphic Properties	Yes
	No

which enables/disables the plugin's console. Its default value is "No". For Activaire Curator for Q-SYS plugin, this property also controls the visibility of another property called "Debug Print"

Event Log	None 🔻
Debug Print	None 🔻
Show Debug	Yes 💌
Graphic Properties	Yes
	No

which appears when "Show Debug" is set to "Yes", and it disappears when "Show Debug" is set to "No".

20. The "Debug Print" property is an enum consisting of the following choices

Event Log	None 💌
Debug Print	None 💌
Show Debug	None
Graphic Properties	Tx/Rx
	Tx
Label	Rx
	Function Calls
Position	Timers
Fill	GC
Script Access	FS
Code Name	Download Manager
Script Access	Diavback
Control Pins	Flow
All 2 Streams. Scheduling	All

of which "None" is the default one. This property controls the type of data that gets logged to the plugin's console. When set to "None", no data is logged to the console. When set to "Tx", only data pertaining to outbound network requests gets logged

2023-10-26T21:01:56.224 Sending POST request to https:// cq.qsys.activaire.com/v2.3/radio/p1%3a613a4106bae3343a7b1303d5/timePlayed

Symmetrically, when set to "Rx", only data on inbound network responses gets logged



```
2023-10-26T21:04:26.306 Receiving 200.0 
{"message":"Success","updates":false} response from GET request to 
https://gateway.qsys.activaire.com/heartbeat-all?
xQsysSeries=33e428f8-5182-443f-8e9d-c1f1dc3c1859
```

When set to "Tx/Rx", both inbound & outbound network communication appears in the console

```
2023-10-26T21:08:48.594
                            Sending
                                        GET
                                               request
                                                           to
                                                                 https://
cq.qsys.activaire.com/v2.3/radio/sc%3a60c78a0e513d2726654fb26f/context?
xQsysSeries=7d9b3167-5013-4c3e-bed2-73d1eec11e27
2023-10-26T21:08:48.920
                            Receiving
                                                                     200.0
{"message":"Success","updates":false}
                                      response from GET request
                                                                       to
https://gateway.gsys.activaire.com/heartbeat-all?
xQsysSeries=6001328a-88cb-4409-8f73-6b079e4bf2d7
```

When set to "Function Calls", the plugin logs some of the important function calls

2023-10-26T21:15:41.522	AssureTrackExists() called
2023-10-26T21:15:41.522 Activaire/Tracks name=5ca80	CheckFile() called: parentPath=media/Audio/ cbf8fce4b85ec6ac2cc10238eb8e.m4a
2023-10-26T21:15:41.710	CleanupTracksFolder() called
2023-10-26T21:15:41.711	AssureTrackArtworkExists() called
2023-10-26T21:15:41.711 Activaire/TracksArtworks na	CheckFile() called: parentPath=media/Audio/ ame=5ca8cbf8fce4b85ec6ac2cc10238eb8e.jpeg
2023-10-26T21:15:41.716	CleanupTracksArtworksFolder() called

When set to "Timers", the plugin logs the start time, the end time and the total duration for each execution of a timer

2025-05-26T12:54:51.592 May 26 15:54:51 2025	TracksDownloadManagerLoopTimer	starts	at	Mon
2025-05-26T12:54:51.592 May 26 15:54:51 2025 (lasts	TracksDownloadManagerLoopTimer Øs)	ends	at	Mon
2025-05-26T12:54:51.592 Mon May 26 15:54:51 2025	ArtworksDownloadManagerLoopTime	r sta	rts	at
2025-05-26T12:54:51.592 May 26 15:54:51 2025 (lasts	ArtworksDownloadManagerLoopTime 0s)	r ends	at	Mon

When set to "GC", which stands for "Garbage Collector", the total memory in use by Lua before and after performing a full GC cycle gets logged to the console

```
2025-05-26T13:02:20.379Total memory in use by Lua BEFORE performing<br/>a full GC cycle is 4847467.0 bytes2025-05-26T13:02:20.385Total memory in use by Lua AFTER performing a<br/>full GC cycle is 4837982.0 bytes
```

When set to "FS", which stands for "File System", only FS-related plugin actions get logged to the console



2023-10-26T21:22:11.965	media/Audio/Activaire/
PlayablesArtworks/843dc72eb2	89f2b1970ed67d713826de.jpeg file does exist!
2023-10-26T21:22:13.424	media/Audio/Activaire/Tracks/
b025032c889d7c2326ba954c565d	8f81.m4a file does NOT exist!
2023-10-26T21:22:14.903	Writing track locally: media/Audio/Activaire/
Tracks/b025032c889d7c2326ba9	54c565d8f81.m4a
2023-10-26T21:22:15.097	Removing local track: media/Audio/Activaire/
Tracks/c89f9ae7c9aeb9fa20083	d063868ab23.m4a
2023-10-26T21:22:15.098	Removing local track: media/Audio/Activaire/
Tracks/9536e11d669bc567a56b4	4411fffa08f.m4a

When set to "Download Manager", all enqueueing & downloading actions appear in the console

2024-03-08T23:15:16.687 Enqueueing priority track download... Url: https://stream.activaire.com/7048b606348f8b384719ef32051705e1.m4a PlaybackId: sc:60c78d47513d2726654fb271 => 1 pending priority track downloads Downloading priority track... Url: https:// 2024-03-08T23:15:16.719 stream.activaire.com/7048b606348f8b384719ef32051705e1.m4a PlaybackId: sc:60c78d47513d2726654fb271 => 0 pending priority track downloads 2024-03-08T23:15:18.070 Enqueueing priority artwork download... Url: https://artwork.activaire.com/45d0aa50a84a58fbb308395d50ab135d.jpeg PlaybackId: sc:60c78d47513d2726654fb271 => 1 pending priority artwork downloads Downloading priority track artwork... Url: 2024-03-08T23:15:18.161 https://artwork.activaire.com/45d0aa50a84a58fbb308395d50ab135d.jpeg PlaybackId: sc:60c78d47513d2726654fb271 => 0 pending priority artwork downloads

When set to "Playback", the plugin constantly logs the remaining seconds for each active playback session

2023-10-26T21:26:10.861 completed in 196.498s	Queue	in	zone	"Room	3rd	Floor"	will	be
2023-10-26T21:26:10.868 completed in 113.566s	Queue	in	zone	"Room	2nd	Floor"	will	be
2023-10-26T21:26:10.894 completed in 143.951s	Queue	in	zone	"Room	1st	Floor"	will	be
2023-10-26T21:26:10.927 completed in 154.934s	Queue	in	zone	"Room	4th	Floor"	will	be
2023-10-26T21:26:11.194 completed in 416.712s	Queue	in	zone	"Room	Ro	oftop"	will	be

When set to "Flow", all type of events (error, warning & normal) are logged to the console

2023-10-26T21:31:33.938ACT | I | ZT: Selected zone is "Room 2nd Floor"2023-10-26T21:31:38.138ACT | I | OT: Selected option is "Vibes" => 30next choices are availableACT | I | OT: Selected option is "Cozy" => 6 next2023-10-26T21:31:41.468ACT | I | OT: Selected option is "Cozy" => 6 nextchoices are availableACT | I | PT: Selected option is "Coastal Lounge"2023-10-26T21:31:47.509ACT | I | PT: Selected option is "Coastal Lounge"



Finally, when set to "All", all previously described type of data get logged to the console.

21. The plugin has as many main categories of Control Pins as it has Audio Players, plus 2

Control Pins	
All 2 Streams.	
Scheduling	
▷ Stream #1.	
▷ Stream #2.	
Disable	

pertaining to its Streams, then one to its All-Streams-in-one default page, and one to its Scheduling capabilities. Each of the plugin's Streams main category of Control Pins has 4 secondary categories, while the plugin's All-Streams-in-one main category has 5 extra secondary categories

- Stream #1.
  - CurrentPlayableCard
  - CurrentStream
  - CurrentTrack
  - CurrentTrackCard



and, finally, the Scheduling main category has its own specific secondary categories

#### Scheduling

- ClearScheduleStream
- FromHourScheduleAllStreams
- FromHourScheduleStream
- FromMinuteScheduleAllStreams
- FromMinuteScheduleStream
- ▷ IsPlayingStream
- IsValidScheduleAllStreams
- IsValidScheduleStream
- NextProgramScheduleAllStreams
- NextProgramScheduleStream
- NextProgramStream
- PauseStream
- PlayStream
- PrevProgramScheduleAllStreams
- PrevProgramScheduleStream
- PrevProgramStream
- ProgramScheduleAllStreams
- ProgramScheduleStream
- ProgramStream
- ProgressStream
- RemainingStream
- SkipStream
- ToggleScheduleStream
- ToHourScheduleAllStreams
- ToHourScheduleStream

- ToMinuteScheduleAllStreams
- ToMinuteScheduleStream
- VolumeStream ClearScheduleAllStreams IsPlayingAllStreams MenuAllStreams NextMenuAllStreams NextProgramAllStreams NextSearchResultsAllStreams PauseAllStreams PlavAllStreams PrevMenuAllStreams PrevProgramAllStreams PrevSearchResultsAllStreams ProgramAllStreams SearchClearAllStreams SearchLaunchAllStreams SearchQueryAllStreams SearchResultsAllStreams SetupClear SetupKeypad SetupSubmit SkipAllStreams ToggleScheduleAllStreams VolumeAllStreams



- 22. All the secondary categories outside the Scheduling main category pertain to the screens that compose the plugin's All-Streams-in-one default page, namely:
  - Setup
  - Streams
  - Music Library
  - Now Playing
  - Feedback

and to the relevant texts & images shown by the plugin's UI, namely:

- Current Stream
- Current Playable/Track Cards
- Current Track Metadata

23. The Control Pins for the Setup screen are these

▲ 1.Setup	
1.1.Menu	
Streams	
1.2.DisplayIndicators	
1	
2	
3	
4	
5	
6	
1.3.KeypadNumbers	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
BackspaceButton	
SubmitButton	

24. The Control Pins for the Streams screen are these

2.Streams	
2.1.Menu	
Setup	
LoadButton	
ScrollKnob	



25. The Control Pins for the Music Library screen are these

•	
3.Library	
3.1.Root	
3.1.1.Menu	
Back	
Search	
ButtonGenres	
ButtonIntensities	
ButtonScenes	
ButtonVibes	
3.2.Main	
3.2.1.Menu	
Back	
Home	
Search	
LoadButton	
ScrollKnob	
3.3.Secondary	
3.3.1.Menu	
Back	
Home	
Search	
LoadButton	
ScrollKnob	
3.4.Search	
3.4.1.Menu	
Back	
Home	
ClearButton	
LaunchButton	
LoadButton	
QueryBox	
ScrollKnob	
TopCard	

26. The Control Pins for the Now Playing screen are these

4.Playback	
4.1.Menu	
Back	
Home	
Search	
4.2.CurrentTrack	
ArtistAndAlbum	
Artwork	
Title	
4.3.TransportControls	
Pause	
Play	
Skip	
Volume	
FeedbackButton	
TopCard	



27. The Control Pins for the Feedback screen are these



28. And the Control Pins for the relevant texts & images are these

CurrentPlayableCard	
Artwork	
Explicit	
Name	
Prefix	
<ul> <li>CurrentStream</li> </ul>	
Name	
Prefix	
CurrentTrack	
ArtistAndAlbum	
Title	
CurrentTrackCard	
Artwork	
Explicit	
Name	
Prefix	



- 29. The secondary categories of the Scheduling main category pertain to the Transport Controls and Playback indicators, namely:
  - Play
  - Pause
  - Skip
  - Volume
  - IsPlaying
  - Progress
  - Remaining

and to the Programming capabilities, namely:

- Login / Setup
- Menu
- Search
- Program
- Schedule Builder
- 30. All the Control Pins belonging to these secondary categories of the Scheduling main category are these





### Run Time - "All N Streams" plugin page

1. After choosing "Save to Core & Run" from the File menu, the UI of the plugin will render a splash screen during plugin initialization, after which the Setup screen will be displayed





2. During initialization, among other actions, the plugin checks if there is a folder called "Activaire" on the Core's storage, within the "Audio" root folder, and if there isn't, it creates it



3. After this, it checks for 3 particular folders inside the "Activaire" one, and if the plugin can't find them there, it creates them





The 3 folders it looks for are:

- PlayablesArtworks
- Tracks\_<unique-suffix>
- TracksArtworks\_<unique-suffix>

where <unique-suffix> is an unique alphanumeric string of 5 characters that is generated by each plugin instance that is dragged & dropped to a Schematic Page from the Schematic Elements. This accommodates situations in which either a design file contains more than 1 plugin instance, or there isn't one single design file that gets deployed to a certain Core. In both cases, due to the fact that the tracks & the tracks' artworks folders are periodically cleaned up by the plugin, if these folders weren't unique between plugin instances, the cleanup flow of one instance would've erroneously cleaned up the tracks & tracks' artworks in use by the other instances. The "PlayablesArtworks" folder however is common to all plugin instances.

- 4. The Status control initially reads "Fault Unavailable Auth Token" because the plugin doesn't hold any authentication token when it's first loaded to a Core, so the auto login cannot be performed. But later, after the user has manually logged in at least once, thus the plugin obtained a valid authentication token from the remote backend, the plugin stores the token securely inside a private embedded component, enabling it to auto login at plugin start.
- 5. After the user obtains a Pin Code from <u>Activaire</u> and it types it on the plugin's keypad, the Connect button gets enabled and upon clicking it, the plugin logs in the user, taking it to the Streams screen



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6. During logging in, there is a series of statuses the plugin goes through, but because they are rapidly in succession, the user doesn't always get to see them. However, if "Event Log" plugin property is set to "Normal", Plugin Status events similar to the following should be encountered in Event Log within Q-SYS Core Manager



The Core is identified first, then the actual login takes place, then the territory from which the plugin is used is checked against, then the music menu is obtained and parsed, and finally, the UI is initialized, so the plugin can be used by the user.

7. The Streams page contains a scrollable list of all Streams the user has access to, limited by the configured number of Audio Players via the "Audio Players" plugin's property. Thus, if the user's Activaire account is set to have 7 Streams, but the plugin's "Audio Players" property is set to 6, the plugin will only show 6 Streams and will set the Status control to Compromised

Select a stream	
← Setup	
Streams (6)	
Front Desk Playing: Too Busy Thinking About M	
Lobby Playing: Bustling by Freddie Joachin	
Dining Room Playing: Sweet Little Sixteen by Chu	
Pool Paused: Level Up by Ciara	
Compromised - 1 New Stream	



- 8. In the reciprocal case, when the plugin has more Audio Player components than the user's Activaire account has Streams, the plugin simply uses the number of Audio Player components that it needs, leaving the rest unused.
- 9. The plugin instantly detects runtime changes in Streams number, refreshing the user's content and informing it through the same Status control, but also through corresponding messages in Event Log



10. When the user explores a certain Stream, it sees the root entries from the Music Library, namely Scenes, Genres, Intensities and Vibes

	Stream #3: Dining Room
Now Playing: The New Beatles -	Day Tripper
G Back	Q Search
Scenes Expertly curated Scenes for ever	ery business type
Genres Discover new and classic tracks	s sorted by the genre.
Intensities Set the perfect pace from easy	to upbeat.
<b>Vibes</b> Find the vibe that resonates with	h your crowd.



11. Also, in the top right corner, it sees the current Stream's index and name. Then, in the middle and a little bit lower but still on top, the card displays the currently playing song, if any. Upon exploring let's say the Scenes entry, the user sees the main categories of it, and if going deeper, selecting Beauty category let's say, it discovers the secondary categories of it

	Stream #3: Dining Room		Stream #3 Dining Room	: 1
Now Playing: American Breed - Bend Me, Shape Me		Now Playing: American Bree	d - Bend Me, Shape Me	
Home Sack Q Search		Home Sack Q Search		
Scenes Expertly c business	urated Scenes for every type.	Scenes: Beau	ty	
Retail	Beauty	Anti Aging Clinic	Barbershop	T
Offices & Coworking	Restaurants & Eaterie:	Beauty Salon	Body Piercing	
Entertainment & Sport	Health & Wellness	Brow Bar	Cosmetics	
Medical Services	Financial Services	Dry Bar	Hairstylist	
LOAD	MORE	LOAD	MORE	

- 12. The 3 menu buttons, Home, Back, and Search can be used to navigate all the way back, to the Music Library's root entries, to navigate one step back, to the previous level, and to access the search functionality of the plugin.
- 13. Also, the scroll control on the right and the LOAD MORE button on the bottom can both be used by the user to see all available items on the current Music Library level. Both controls automatically hide when there are fewer items than there are available places. In addition, the LOAD MORE button also hides when the scroll's thumb reaches the lowest position.



14. When exploring a main category of Genres, Intensities or Vibes, or a secondary category of Scenes, the user gets to see the Activaire playlists and scenes within that category



15. In the background, the plugin downloads the artworks of the playlists & scenes to the folder called "PlayablesArtworks"

Files / Audio / Activaire / PlayablesA	🗅 土 d		ſ
Name ≑	Type 🌐	Size ‡	
00fd9b9e2d2b6207e7832253454008ae	jpeg	7 KB	^
0131125636a7c07c7a7c5ad2bb09bcb9	jpeg	3.01 KB	
01e1daea5db5a287d1def9c29cf4ef8d	jpeg	7.12 KB	

16. In a similar fashion, after clicking the Search menu button, typing a search query and hitting the enter button, the user sees a list of playlists and scenes that have their artworks automatically downloaded in the background by the plugin, if not already present





17. When the user taps on any playlist or scene, the plugin instantly communicates with the Music Manager, demanding songs from the selected playable, downloading them to the tracks folder, and also downloading their artworks to the tracks artworks folder

Files / Audio / Activaire / Tracks_S7J	t 🗄	
Name ≑	Type 🌻	Size ≑
<b>5</b> f4f9239338e984230a5b042	m4a	972.87 KB
➡ 5f4fa4d5338e984230a5c972	m4a	1.29 MB
Files / Audio / Activaire / TracksArtw	t t	
Name 🗢	Type 🌲	Size ‡
32d000a4263fb23775dfcc0f20913eed	jpeg	72.7 KB
5f4fcf36338e984230a60331	jpeg	31.31 KB



18. After getting the first song's .mp3/.m4a and .jpeg files written to the Core's storage, the plugin starts the playback and takes the user to the Now Playing screen, changing the top card to display details about the currently playing playlist / scene



19. From the Now Playing screen, the most bottom control takes the user to the Feedback screen, which enables the user to react to the currently playing track. If the chosen reaction is one from the top half, the track continues to play and the reaction button that was pressed gets highlighted, but if the user reacts negatively, choosing one reaction from the bottom half, the track is skipped immediately



CURATOR Stream #2: Lobby	CURATOR Stream #2: Lobby
Scene: Upscale Lounge	Scene: Upscale Lounge
Home     Home     G     Back     Q     Search     Sorry     by Edgar Allan Poets     from Downbeat & Dub - Switch One	Home & Back Q Search <b>Nobody Knows</b> by The Dining Rooms from Art Is a Cat
More like this please!	More like this please!
New discovery!	Sew discovery!
Personal fav!	ersonal fav!
Perfect fit!	Perfect fit!
Not feeling this	Not feeling this
छ Yawn	🧭 Yawn
Explicit lyrics	Explicit lyrics
Didn't I just hear this?	Didn't I just hear this?

- 20. After a track is over or it gets skipped, the first run of the plugin's cleanup flow which runs every 10 minutes will remove both its corresponding files, that is the .mp3/.m4a song file and the .jpeg song's artwork file, so that, every 10 minutes, each active Stream has locally on the Core's storage at most the value of the "Cached Tracks" property plus 1 song files and song artwork files.
- 21. The plugin continuously communicates with the Music Manager to grab the next songs, or to inform it on playback actions like Skip, Pause or Play. On the other hand, the Music Manager informs the plugin of how many Skips per hour are left.
- 22. Another continuous communication of the plugin is that with the remote backend, which gets notified by the plugin of volume changes and of song reactions. From the backend's direction, remote actions are communicated to the plugin, as performed by Curator from the web, in order to be reflected on the plugin side as well.



### Run Time - "Generic UI" plugin page

- 1. This page contains cards grouped per functionality, that can be incorporated in a custom UCI. The style & visibility of the controls present on this page don't change at run time, so they're fit to be used for building a custom UCI with a certain theme and structure (including layers and visibility rules). The controls included in this page cover all the functionalities of the plugin.
- 2. This is how this page looks like for an already activated (PIN code was introduced) plugin



3. The top left card is the Setup one, that can be used to programmatically introduce the PIN code and then hit the arrow button for the plugin to automatically login with a certain PIN via script or manual action. It also includes a clear button that erases the text box, and a QR code with the Q-SYS section on the Activaire site.





4. The 2 cards underneath it are the AllStreams card and the Injectable card. These cards are unique within this page, each one embedding dedicated controls for a certain part/flow of the plugin. The AllStreams card includes metadata for the Stream that was lastly explored via the plugin's "All N Streams" page, transport controls and paginated drop-down list of stations for controlling all the Streams at once, while the Injectable card includes a specific schedule builder that, when active, can program up to 5 different segments to be played by all the streams in the same time. For a detailed breakdown of these 2 cards, see points 7 & 8.



5. The card under these 2 is the Menu card, which holds the flat, alphabetically sorted, paginated list of the programs that form the entire Music Library the user has access to in the plugin's "All N Streams" page. This list is read-only, so selecting any of its items doesn't do anything. However, the items of this list form the default list of choices for all the paginated drop-down lists of stations from the other cards.



6. The bottom left card is the Search card, which can be used to incorporate some or all of the search functionality controls in a custom UCI. It contains a text box where the search query is introduced, an arrow button for launching the search, a clear button for clearing the query, and a flat, alphabetically sorted, paginated list where the search results are published. When a search is performed, the results of that search replace the choices for all the paginated drop-down lists of stations from the other cards, so that the user can use those lists to select the desired station for any particular Stream. When resetting the search (which is done by using the clear button), all these lists from the other cards get back their initial choices.



7. Starting from the 3rd column onwards, all odd columns are populated with Stream cards which, similarly to the AllStreams card, include metadata, transport controls and paginated drop-down list of stations for the Stream that's indicated in the card header. Additionally, these Stream cards also include 2 playback indicators controls, one for the progress of the currently playing track, and one for the remaining time of it.

The metadata contains the following information:



The name of the Stream

The type of the program (playlist/scene), the name and the artwork of it, and whether it's explicit or not

The state of the playback (playing/paused), the title, the artist, the album and the artwork of the track, and whether it's explicit or not

The transport controls include the ability to play, pause, skip, and change volume. While the paginated drop-down list of stations allow for an easy selection of the desired program.



8. Starting from the 4th column onwards, all even columns are populated with Schedule cards which, similarly to the Injectable card, include a schedule builder that, when active, can program up to 5 different segments to be played by the Stream that's indicated in the leftward card header.

The schedule builder contains a toggle in the top part, which controls whether the schedule is active or not. For edits done to an active schedule, a toggle off and then a toggle on is needed for the plugin to apply the edit. In the top-right corner of the Schedule cards there is the clear button which resets all the 5 segments to their initial state.

Each segment is defined by a starting hour and minute and by an ending hour and minute. These values can be set from the 2 pairs of drop-down lists. Additionally, a segment has an assigned program to it, which can be easily selected via the included paginated drop-down list of stations. After all these 5 values are set (start hour, start minute, end hour, end minute, and program), a led indicator on the right side of the card will light up if that segment is valid, which means that its end time is bigger than its start time, with the exception of when the end time is the midnight, and it doesn't overlap with another segment.





## Troubleshooting and warnings

- 1. To work properly, the plugin needs access to internet. In case of an internet outage, the music in a Stream will not stop, but it will loop after all the cached tracks for that Stream are consumed. If internet is restored before this happens, that Stream's music will not replay. If the music replayed due to such an internet outage, when the internet is restored, the music will continue its normal sequence, other than when a skip is ordered, when instead of performing a simple skip, the plugin will skip to the end of the group of cached tracks that were already played, assuring a fresh new segment.
- 2. As disk space requirements, the needed available space can be calculated as it follows:

### For .mp3s

- (~ 10 KB per playable artwork) x (~ 2000 playables) => ~ 20 MB
- (~ 50 KB per track artwork) x ((N + 1) tracks) x (Z active Streams) => ~ 0.05 x (N + 1) x Z MB
- (~ 5 MB per track) x ((N + 1) tracks) x (Z active Streams) => ~ 5 x (N + 1) x Z MB

so N cached tracks and Z active Streams would require ~ (5.05 x (N + 1) x Z + 20) MB of storage. A few examples:

- 2 cached tracks & 2 active Streams require ~ 50.3 MB of storage
- 2 cached tracks & 10 active Streams require ~ 171.5 MB of storage
- 2 cached tracks & 32 active Streams require ~ 504.8 MB of storage
- 10 cached tracks & 2 active Streams require ~ 131.1 MB of storage
- 10 cached tracks & 10 active Streams require ~ 575.5 MB of storage
- 10 cached tracks & 32 active Streams require ~ 1.8 GB of storage
- 200 cached tracks & 2 active Streams require ~ 2.05 GB of storage
- 200 cached tracks & 10 active Streams require ~ 10.17 GB of storage
- 200 cached tracks & 32 active Streams require ~ 32.5 GB of storage

### For .m4as

- (~ 10 KB per playable artwork) x (~ 2000 playables) => ~ 20 MB
- (~ 50 KB per track artwork) x ((N + 1) tracks) x (Z active Streams) => ~ 0.05 x (N + 1) x Z MB
- (~ 1.5 MB per track) x ((N + 1) tracks) x (Z active Streams) => ~ 1.5 x (N + 1) x Z MB

so N cached tracks and Z active Streams would require ~  $(1.55 \times (N + 1) \times Z + 20)$  MB of storage. A few examples:

- 2 cached tracks & 2 active Streams require ~ 29.3 MB of storage
- 2 cached tracks & 10 active Streams require ~ 66.5 MB of storage
- 2 cached tracks & 32 active Streams require ~ 168.8 MB of storage
- 10 cached tracks & 2 active Streams require ~ 54.1 MB of storage
- 10 cached tracks & 10 active Streams require ~ 190.5 MB of storage
- 10 cached tracks & 32 active Streams require ~ 565.6 MB of storage
- 200 cached tracks & 2 active Streams require ~ 643.1 MB of storage
- 200 cached tracks & 10 active Streams require ~ 3.1 GB of storage
- 200 cached tracks & 32 active Streams require ~ 10 GB of storage

**Observation**: because the plugin's cleanup flow only runs every 10 minutes, the storage capacity should also accommodate the files downloaded in a span of 10 minutes, during either a no intervention playback session (~ 3 tracks per Stream), or an active one, in which playlists/scenes are changed (~ N+1+3 tracks per playlist/scene change per Stream)



3. As a general troubleshooting strategy, one should set the "Event Log" plugin's property to "Normal", then use the plugin again and reproduce the problem, and then inspect Event Log within Q-SYS Core Manager for any errors or warnings. In the majority of cases, the detailed messages of these events are pointing clearly to the culprit in question.

When still in doubt, one should set "Debug Print" plugin's property to "All", and then try to reproduce the problem once more, while autosaving the console's output to a file. After the problem has occurred, one should inspect both the Event Log within Q-SYS Core Manager and the autosaved file for any signs of problem. Again, with this extra level of information, majority of the time the issue should be closed after this point.

If still no success, one should export the relevant Event Log entries to a .csv file and, together with the autosaved file from the previous step, send them to <u>cristian.darau@activaire.com</u>, explaining the situation.