



# Delta Media Server StackExpress 2.0.2 for Delta 2.7

User Guide



## StackExpress 2.0.2 for Delta 2.7 : User Guide

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Printed: March 2023

This edition is for software version Delta 2.7, Delta Web Service 2.4.16 build 27, Delta Web Platform 2.1.3, DeltaPreview 1.0.0, StackExpress 2.0.2  
Document ref.: M219-4

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## About StackExpress

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Designed for flat-plane displays, simple playlist sequences can be configured and run on a Delta Media Server via the Stack web interface. StackExpress is an add-in to the Stack core modules, and can be run on the same server as the DeltaServer software as 'localhost', or from a remote PC to port 3000 of the server's IP address. StackExpress shows can be built and saved, replayed, or used simply in real-time.

### Minimum Requirements

- Delta Media Server running DeltaServer software version 2.7
- Stack software
- Delta Web Service 2.4.16
- Delta Web Platform 2.1.3
- DeltaPreview 1.0.0
- StackExpress 2.0.2 software
- Web browser (Chrome is pre-installed on Delta servers, and is preferred).

Note that StackExpress 2.0.1 is used with Delta 2.6, and Stack Express 1.0 is used with Delta 2.5.

### Browser Support

The Delta Web Service aims to provide a modern and powerful web-based interface to the Delta Media Server, using a selection of web technologies to allow advanced user interfaces and real-time feedback. Some of these are not implemented in older web browsers. Whilst Delta Web Service may run without major issues in older browser versions, we do not actively test these versions and do not fix bugs or support issues that appear in them. If in doubt, use an up to date browser and version for the most reliable performance.

## How StackExpress 2.0 Works

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StackExpress provides the show, using the Stack web interface, and DeltaServer provides the display configuration. For the Stack web interface in general see the [Delta Web Service User Guide](#). For all features of Delta display configurations, channels, alignments, warps and blends, see the [Delta User Guide](#).

StackExpress allows resources to be dragged onto the timeline and given playback settings of their own, including length, repeating, fading and matching audio. Resources can be applied to up to 8 Timelines, with triggering of actions.

### How it Works

StackExpress interacts with the Delta Media Server over the Stack web interface. The Stack web interface also provides the core play controls and preview, in the StackExpress web page.

The StackExpress page reads and lists movie, image and capture resources that are available on the server being addressed, which, in similar manner to the DeltaGUI interface, can be dragged into a simple timeline order-of-play.

These resources can be given properties of length, repeat, fade, aspect and relative play speed, and they can be dragged to re-order them. Together they form a single sequential layer.

The destination layer and position are defined similarly in a user-configurable system file, and the Express timeline can either stand alone, or be merged with another show file on the server.

All this assembly creates a complete instruction set *in StackExpress* (the **Media Config** .json file). An 'Upload Timeline' button sends these instructions to the same-number timeline of the DeltaServer being addressed, to compile a specifically-named **show file** (*expressmode.xml*) and saves it. This becomes the DeltaServer default show (see DeltaGUI, *Config > Preferences > Startup & File Load*). Changes can be made and the show file regenerated at any time.

Any number of instruction sets (.json) files can be saved and reloaded, to recreate the DeltaServer show, as required. StackExpress can load these .json files to generate different *expressmode.xml* shows on multiple servers, set them running and interact with them, from a single remote PC.

## Installation and Setup

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### Installation and Setup

The Stack web service is included with software installed on a Delta Media Server (C:\7thSense\web\data\app\StackExpress). You will need to install the StackExpress .exe file on the server. This is a very straightforward applications installation, after which, restart the media server.

#### **Not using StackExpress any more?**

Installation will include a registry setting, and if you subsequently want to discontinue StackExpress, this may need to be reset. From the Windows search, find Regedit, and under Software > 7thSense > Delta, find 'ExpressMode' and reset it to 0.

Nothing needs to be added for reaching StackExpress from the server or a remote PC than a web browser.

### Languages

StackExpress is supplied with an English-language interface. Other languages can be made available by contacting 7thSense. New language translations can involve user collaboration over expressions and available space in the interface.

### Registry Edits (Thumbnails)

By default, DeltaServer creates a thumbnail of the first frame of every movie whenever the Resource Pool is refreshed, and stores these in C:\7thSense\web\data\thumbnails. Thumbnails are used in DeltaGUI as resource pool icons and on the timeline to help identify assets.

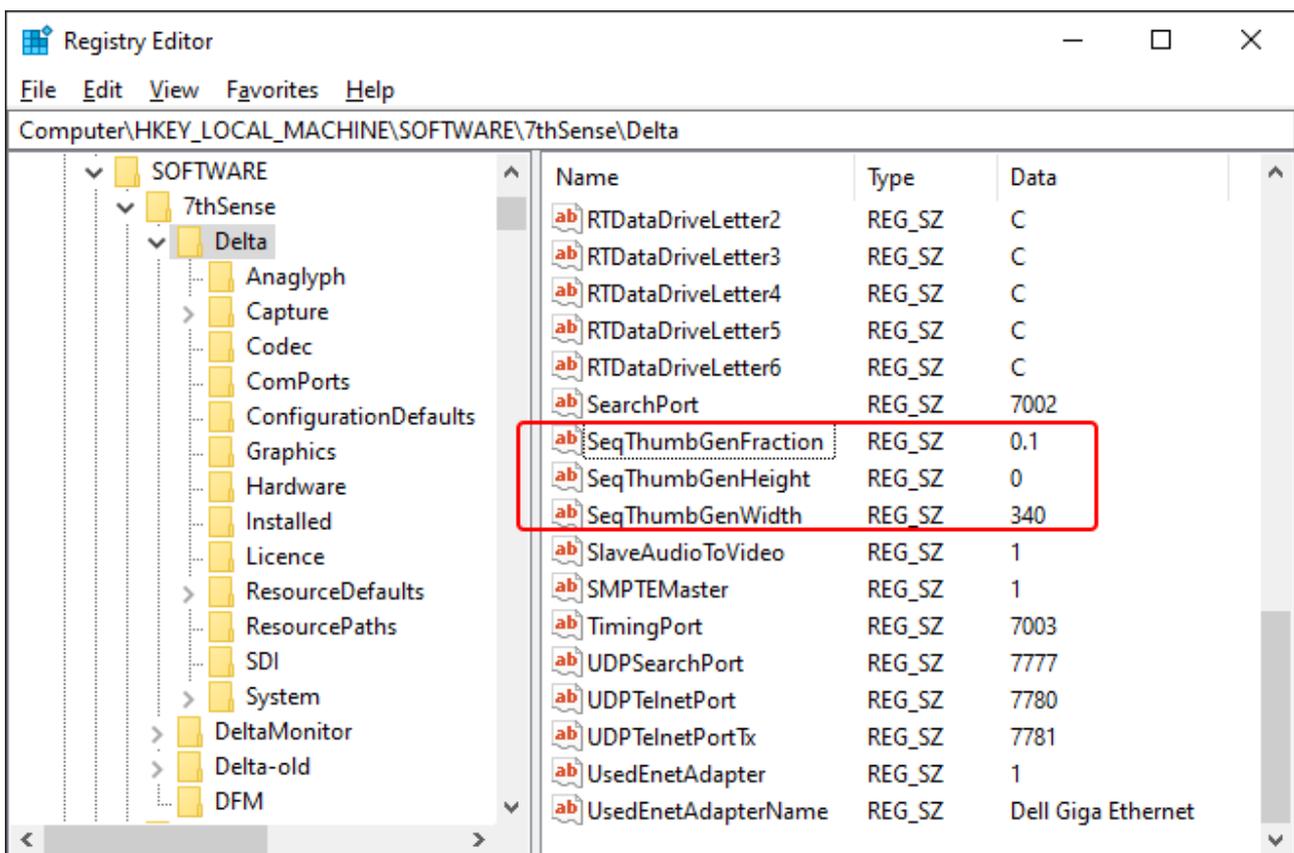
Thumbnails of selected frames can also be created for use in scrubbing through movie clips on the StackExpress timeline. Currently-supported formats are 7th 4:2:2, 4:2:0 and YCoCg.

## Registry Edits

7thSense software uses the Windows Registry extensively, and on occasion we make recommendations for changes.

- Before making any changes, close DeltaGUI and DeltaServer.
- DeltaServer can take up to 10 seconds to fully close in the background, even if it appears that all the Windows have closed. Ensure that Delta has *fully* closed before opening and/or refreshing, and finally editing. The best way to ensure this, is to watch Windows Task Manager > Details list. You will see 'DeltaServer.exe' in this list if DeltaServer is still running. If it won't close for any reason, you can right click on it in the list and choose 'End Process Tree'.
- Make a note of any setting before you change it, in case you want to change it back.
- Only make the changes as recommended and only to those registry keys.

To use the thumbnails feature for the StackExpress timeline, two registry edits must be made. Make sure DeltaServer is not running and in Windows search find 'Regedit':



### How many thumbnails

Double-click the name and set the value of **SeqThumbGenFraction**. For any value other than 0, when DeltaServer starts it will look for a folder: C:\7thSense\web\data\thumbnails\sequences. If this does

not exist, it will create the folder and the required thumbnails for all movie assets on the server. If you choose a large number of thumbnails, this will take some time.

Example	Result
2	A thumbnail every second frame
1	1 thumbnail per frame
0	No thumbnail creation
0.1	10 thumbnails distributed evenly across all frames
0.01	100 thumbnails distributed evenly across all frames

### Thumbnail size

For best resolution, set the value of **SeqThumbGenWidth** to 340 (the width of the resource preview window in the StackExpress web page; for height, the aspect ratio is maintained automatically if no value is added).

### Sequence Filtering

StackExpress has a config.json file on the server, held in C:\7thSense\web\data\app\Express\app

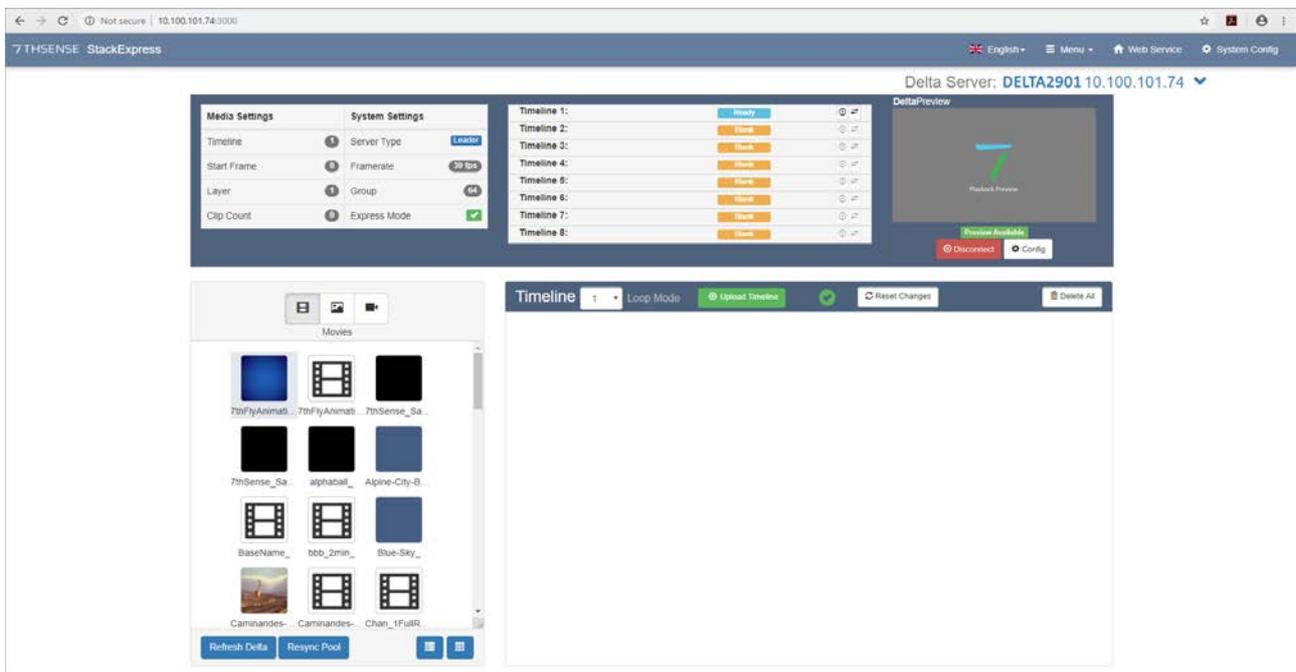
This file contains two lines enabling filtering of sequences by prefix or suffix. By default, only sequences with names starting with 'SE\_' will be revealed in Stack Express. You can edit this file if you want to use an alternative prefix, or add a suffix instead (see [Media Properties](#)<sup>26</sup>).

```
{
  "client":
  {
    "dateDisplayFormat": "DD-MM-YYYY",
    "logNameDateFormat": "DDMMYYYY",
    "backupThumbnailFraction": 0.01,
    "maxTimelines": 8,
    "disableRS422": true
  },
  "logPath": "%PROGRAMFILES%\7thSense\Delta\Logs\",
  "backupMediaPath": "C:\7thSense\JSON\backup\",
  "sequence_prefix": "SE_",
  "sequence_suffix": ""
}
```

## Start StackExpress

Start DeltaServer software on the server.

- If accessing the Stack web interface using a web browser on the same server, use the IP address 'localhost/ws/'. From a remote PC, use the IP address '[serverIP/ws]' (e.g. //10.100.101.74/ws).
- The initial username and password for the Stack web service are both 'admin'. See the [Delta Web Service User Guide](#) for changing this.
- From the top menu 'Configure', select 'Add-ons' from the left-side menu and click the green **Start Service** button next to 'Stack - Express'.
- On the top menu, click 'StackExpress'.
- Once running, the StackExpress web pages communicate via port 3000, so the direct url is: [serverIP]:3000.



## Quick Checklist: Ready to go?

### In System Settings, is Express Mode ticked?

Check that the StackExpress service shows green in 'Add-ons' (as above)

### Is the green tick next to the 'Upload Timeline' button message there?

If there is a yellow !, press F5 to refresh the page. If still yellow, you may need to go to *DeltaServer > File > New* to clear an old timeline.

**Can you [Connect](#) to DeltaPreview?**

If everything else is OK, this is unlikely, but check your IP connection, and under 'System Config' (top menu) that WebRTC is enabled.

**Are the server's movie resources visible as expected on the left?**

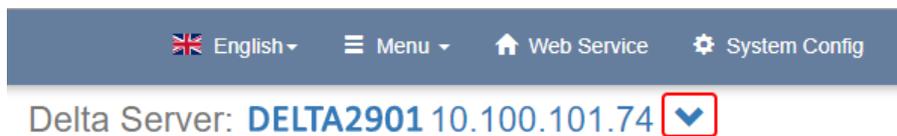
If not, and everything else is OK, try 'Refresh Delta' followed by 'Resync Pool'. If you add resources at any time, you will also need to do this.

## Express Page Elements

### Top Menu Bar

If implemented, select alternative [Languages](#)<sup>6</sup>; use the StackExpress [Main Menu](#)<sup>17</sup> for configuration options; go to the [Web Service](#) home page and to the StackExpress [System Config Settings](#)<sup>22</sup>.

### Server Selection



Click the down arrow in the top-right of the Express page to select alternative connected (available) servers. For this and other Stack connectivity information, see the [Delta Web Service User Guide](#).

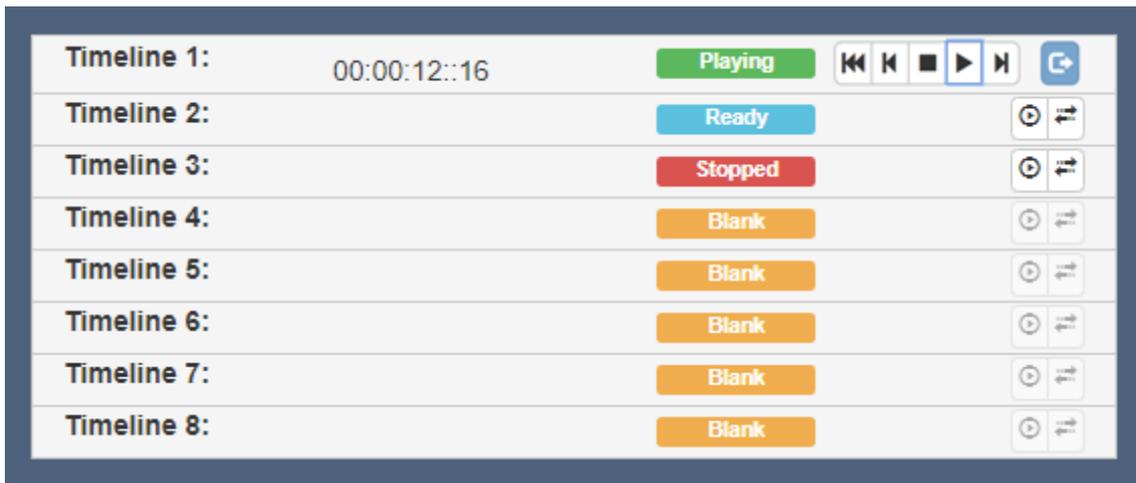
### Express / Server Information

This top left panel shows the settings that are made in Media Config and System Config:

Media Settings		System Settings	
Timeline	1	Server Type	Leader
Start Frame	0	Framerate	30 fps
Layer	1	Group	64
Clip Count	1	Express Mode	✓

### Timeline Controls

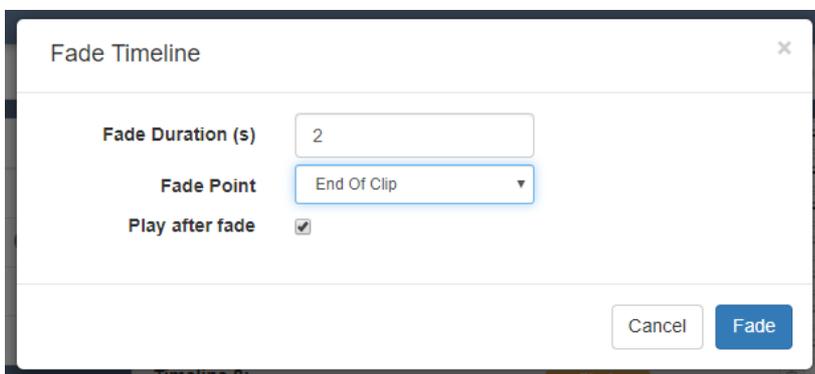
In the centre is the timelines control panel:



StackExpress can operate up to 8 timelines. Each timeline can show 'Ready' (blue), 'Playing' (green), 'Stopped' (red) or Blank – i.e. unused (yellow).

To start playing any timeline immediately, click its start button: 

To fade the current playing timeline to transparency and then fade in the selected timeline, click the selected timeline fade button 



The fade point is immediate, end of clip or end of timeline.

When a timeline is playing, the switch controls are replaced by the play controls:

-  Rewind to start of show and stop.
-  Go back to previous clip in the playlist (will play if the show is still playing, but just go to next if the show is stopped)
-  Stop playing

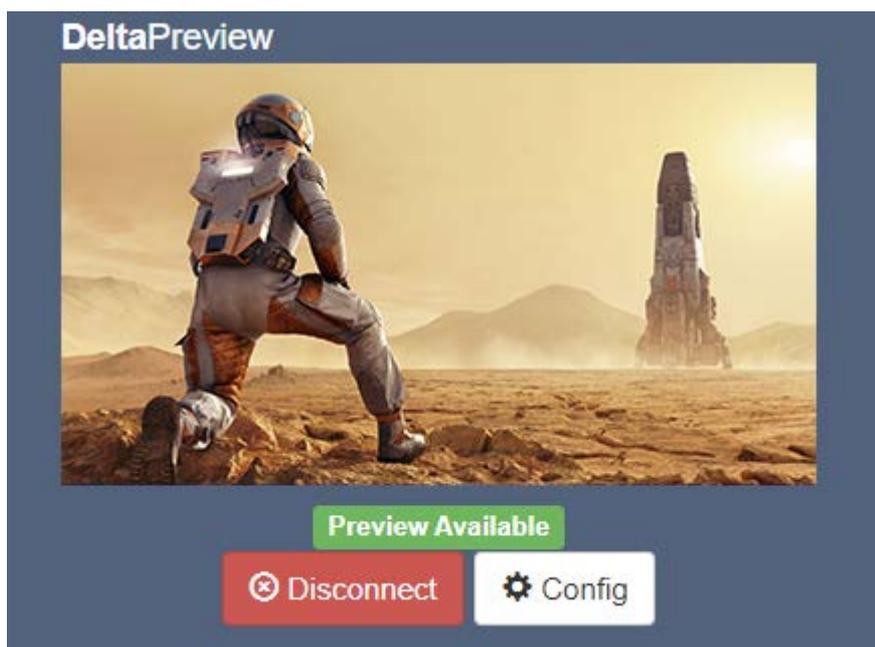
-  Play
-  Go to next clip in the playlist (will play if the show is still playing, but just go to next if the show is stopped)
-  Stop looping a 'Play Until Triggered' resource (next action is configurable).

If the Express timeline is merged with another show, previous and next clip buttons will only go to the Express resource start points.

In Loop mode, the timeline will repeat (this is a GOTO command to the first clip) until stopped.

## Preview Config

Preview now makes use of a separate DeltaPreview app, embedded in the StackExpress page. Playing Preview adds to traffic and needs not be connected continuously. Click 'Connect' to view what is actually playing on the target server.

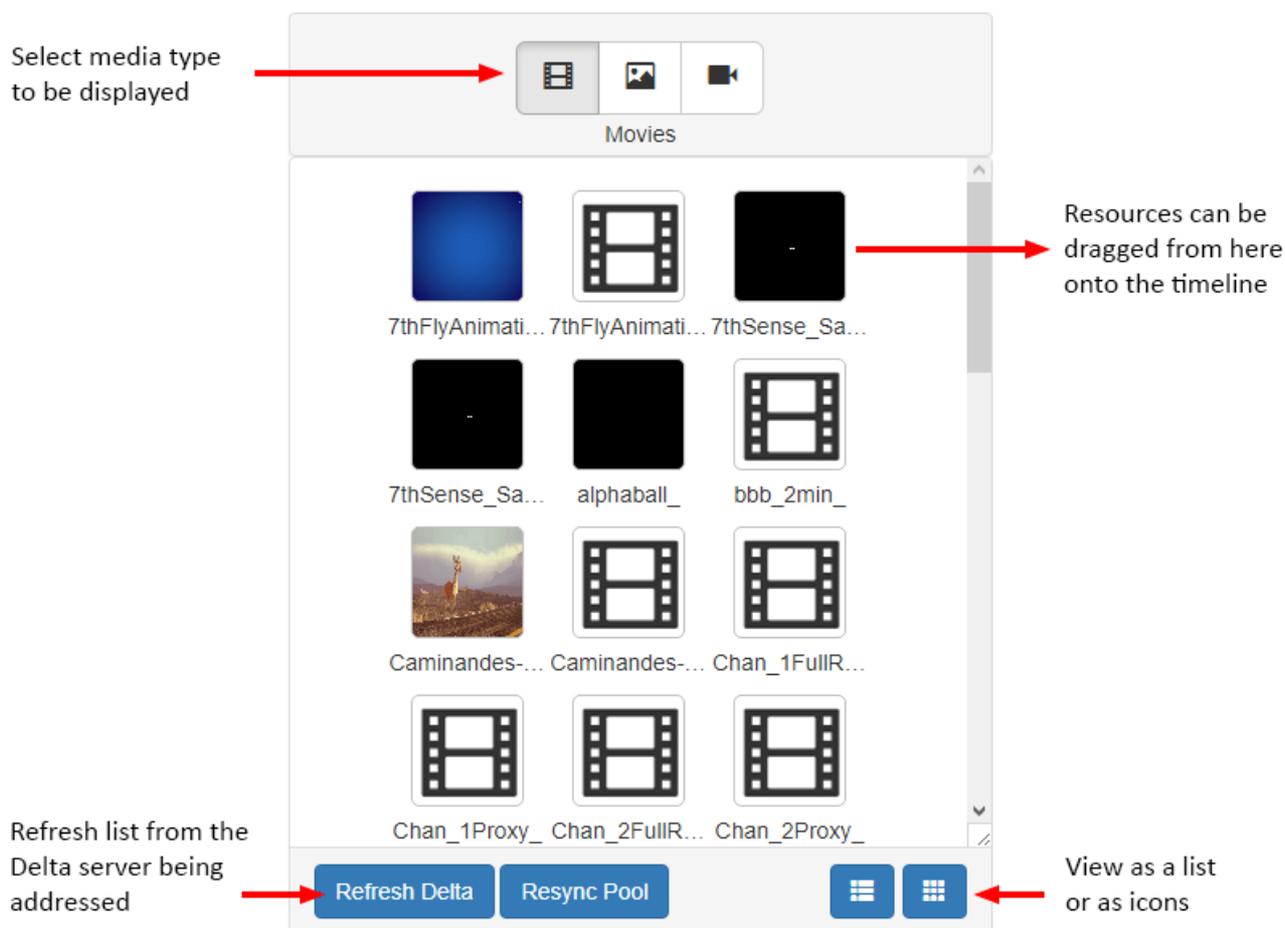


Click on 'Config' for display options of superimposed audio bars, performance graph or playback stats. For full details on Preview functions, see under Preview in the [Delta Web Service User Guide](#).

**Note:** Preview shows you what is currently playing on the Delta server being addressed. It will not show your current Express show settings until **Upload Timeline** is clicked after any change.

## Resource Pool

The lower part of the screen belongs to available resources (movies, images and capture sources) and populating timelines.



If new media resources are added to, or deleted from, the server being addressed, two actions are required:

1. Refresh the Delta server.
2. Resync StackExpress with the server.

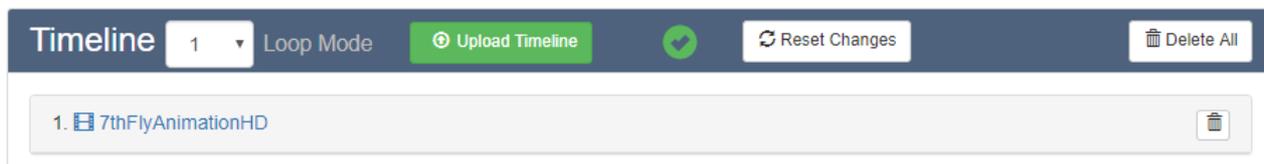
The resource pool will now reflect all available media. **Preset** resources that have been created here or in DeltaGUI, will be displayed here, with a blue **P** in the corner.

**Capture devices** are live, not recorded, and simply play back on-screen as they are streamed. To record capture devices, use the DeltaGUI preview recording facility (refer to the [Delta User Guide Recording](#) section).

**Note** that audio resources are not available as separately configurable files, but codec audio and matched resources (with the same name as visual media) will be found.

## Timeline (Show) Creation

Resources are dragged from the pool on the left into the Timeline area. First select which timeline you want to populate.



At first you will see a yellow exclamation icon appear. This indicates a mismatch between this Delta timeline and the equivalent StackExpress timeline. Click the green **Upload Timeline** button, and the icon will change to a green tick as shown above. Changes can be reset, and the timeline can be cleared.

If you see a red exclamation icon, this is a warning that the loaded config does not represent the content loaded on the Delta server. Go to *Menu > Reload Default Media Config* (or load a specific) config, and then **Upload Timeline**.

## Timeline Area (Loop Mode)

When resources are dragged from the pool into the timeline area, they create headline bars that can be rearranged or deleted. Icons indicate the media type.

This timeline is only an instruction set in StackExpress, until the **Upload Timeline** button is pressed, to generate or update the timeline in the *expressmode.xml* show file of the Delta server being addressed.

Click on the resource name to expand the resource editor (see [Media Properties](#))<sup>26</sup>:

**Timeline** 1 Loop Mode Upload Timeline Reset Changes Delete All

1. Delta splash screen 🗑️
2. 7thFlyAnimationHD 🗑️
3. sintel\_4k 🗑️  

**Resource preview**



**Resource Frame:**

**Timeline Frame:** 810

**Type:** Movie (mov)

**Length:** 00:14:48:00 (26640f )

**Size:** 3840 x 1744 px

Length Actions **Play Mode** Fade Mode Misc.

**Play Mode:** Play Once

**Count:** 1

**End Transition:** Stop

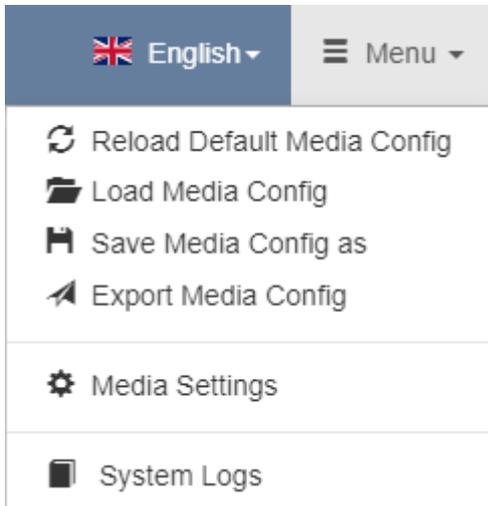
End of this Clip

Start of next clip

## Main Menu

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From the menu bar, select 'Menu':



### Media Config

In StackExpress, this is a JSON file containing the playlist, and parameters of resources to be used in an Express show. Essentially it is the complete instruction set to recreate a previous show.

Any StackExpress show (Media Config) can be saved as a .json file backup in C:\7thSense\JSON\backup. Any number of Media Configs can be saved and reloaded. Once reloaded, click the green **Upload Timeline** button to pass the information to the Delta server. Resources referenced in the config file must already exist on the server so that they can play on the server's timelines.

#### Reload Default Media Config

Loads the show currently generated on the server (expressmode.xml).

#### Load Media Config

Loads a saved .json file, which replaces the current StackExpress timeline.

#### Save Media Config as

Creates a backup .json file of the current resources and their parameters, in C:\7thSense\JSON\backup on the Delta Media Server.

#### Export Media Config

Creates a backup .json file of the current resources and their parameters, in another destination.

**Media Settings**

Access the general media settings that locate the Express show on the destination server (see [Media Settings](#)<sup>19</sup>).

**System Logs**

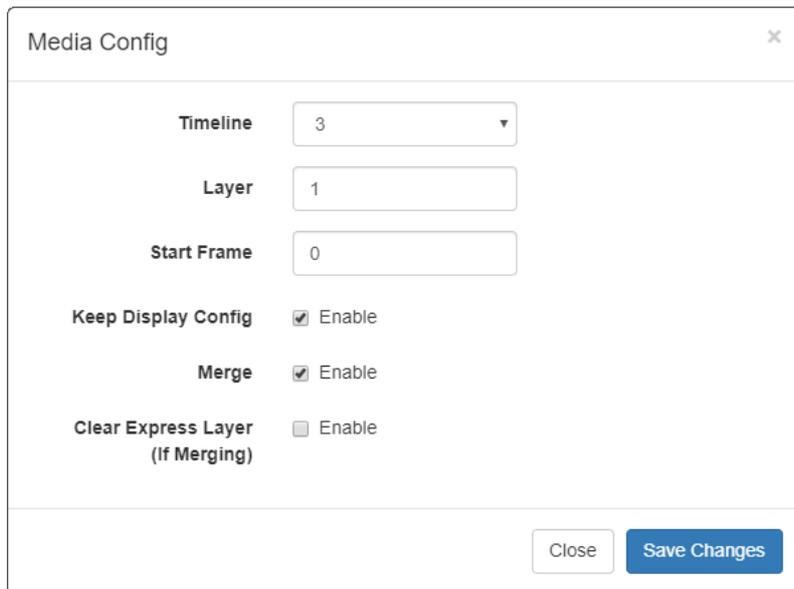
Opens and goes to the logs panel in the Express web page. Logging is enabled in System Settings.

## Media (Display) Settings

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These settings configure the Express timelines to be inserted on DeltaServer, in the `expressmode.xml` show file.

From the top 'Menu', select 'Media Settings':



Media Config

Timeline: 3

Layer: 1

Start Frame: 0

Keep Display Config:  Enable

Merge:  Enable

Clear Express Layer (If Merging):  Enable

Close Save Changes

### Timeline

The timeline on the server to be configured.

### Layer

The layer of this timeline to use to play the Express playlist. Audio will be added to this layer+4.

### Start Frame

The timeline frame to use as a start position.

## Merge Show Options

StackExpress can be used to combine a dynamic element (`expressmode.xml`) with a regular Delta `.xml` show.

### Keep Display Config

In a merged show, there may be background layer display configurations. These may have been devised for a different display.

### Merge

Add an existing show into the StackExpress show (i.e. to show with it). The existing show must

first be loaded. The Express show will be inserted at the configured timeline, layer and frame, and the show name will remain *expressmode.xml*.

**Note** that the start and end of the merged show are that of the Express timeline, not any merged resources outside of its scope.  
*expressmode.xml* itself can also be set as 'Merge Permanent Show File' in DeltaGUI: *Configure > Preferences > Startup & File Load*, to play its latest generated content. However, any other existing permanent merge file will not be merged into *expressmode.xml* when it is loaded.

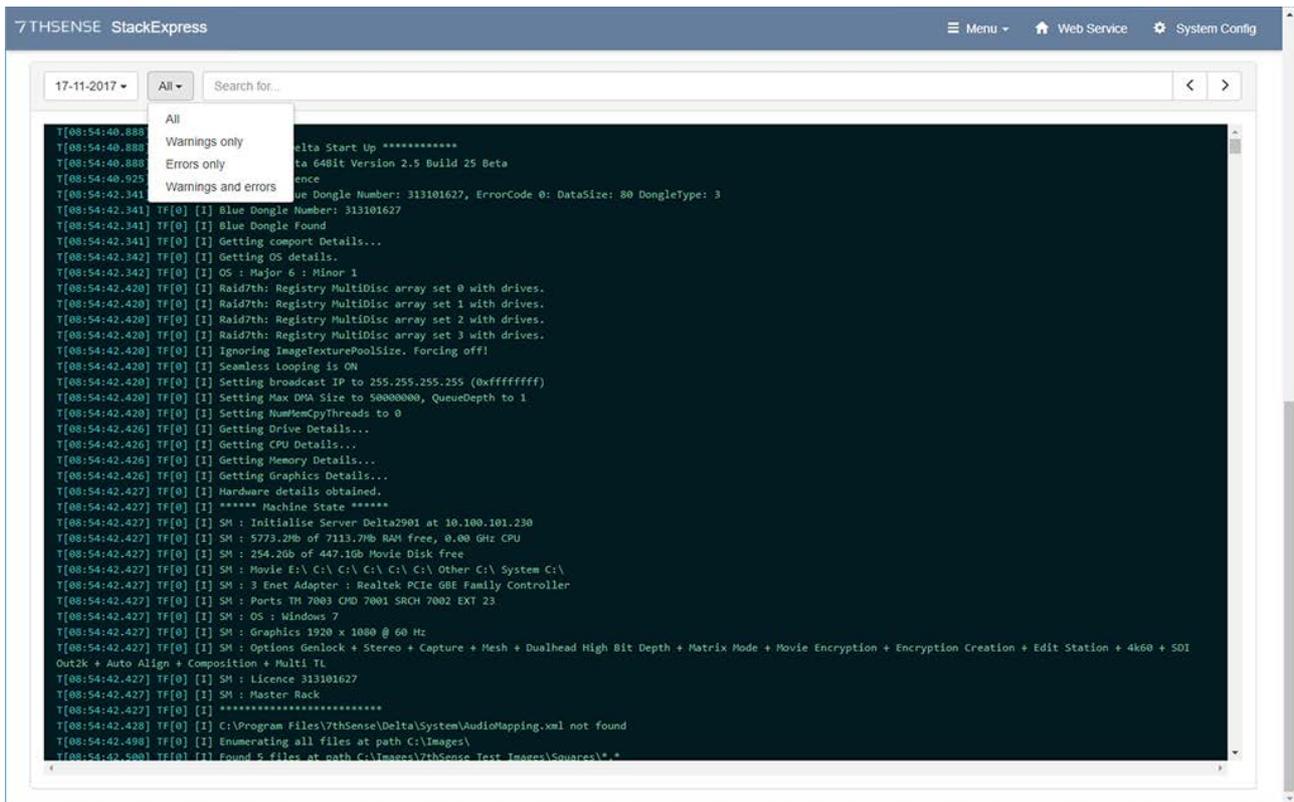
#### **Clear Express Layer (if Merging)**

Clear any existing Express layer in a merged show before remerging.

## System Logs

If *System Config > System Logging* is enabled, these can be retrieved. Open and jump to the Logs panel in the StackExpress page from the top Menu > *System Logs*.

Select the date/session from the first drop-down and filter items in the second:



The Logs panel is dismissed again by refreshing the browser page.

## System Config Settings

The Delta Media Server being address can be managed from here for some basic configurations when running StackExpress. These settings are stored on the Delta Media Server in C:\7thSense\JSON\config.json.

From the top menu, select 'System Config'.

System Config StackExpress Version: 2.0.2

Group

Leader

GPU Framerate   Custom  fps

Audio Playback Device

LTC Device  Enable

System Logging

Web RTC Preview

**SDI Config**

SDI Enabled

Mode

ⓘ No SDI modes found; if you have an SDI capable Delta server then contact 7thSense.

Current SDI Settings						
Device	Bitdepth	8	Outputs	16	Width	1280
	Colour Space	RGB	Refresh	60 Hz	Height	720

### Group

The Group set for the server in *DeltaServer > Preferences > System*.

### Leader

The server type as set in *DeltaServer > Preferences > System*.

### GPU Framerate

Select the appropriate framerate.

## Audio Playback Device

Select which device to use.

## LTC Device

If chasing a timecode, this will set the device for all timelines. (For LTC in more detail, see [Chasing LTC.](#))

## System Logging

Tick to enable. StackExpress will store system logs by date, which help diagnose any problems, or be used to review activity. The logs appear at the bottom of the StackExpress page, and are cleared when the browser window is refreshed.

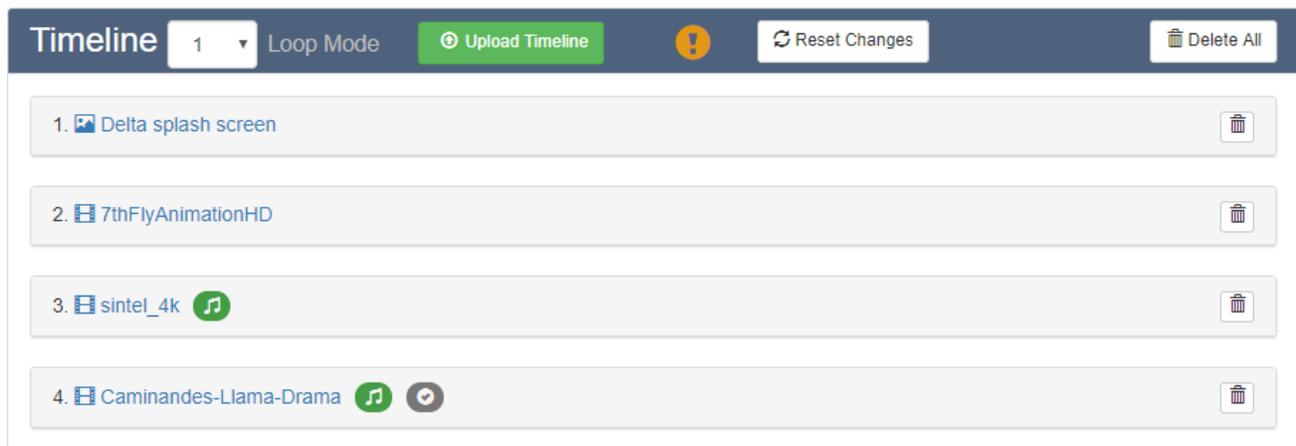
## WebRTC Preview

This must be enabled in DeltaGUI > *Preferences* > *Preview* for the DeltaPreview to work.

## Populating the Timeline

The resource pool shows what is available on the currently connected server according to the latest refresh and resync (see [Express Page Elements](#)<sup>(11)</sup>).

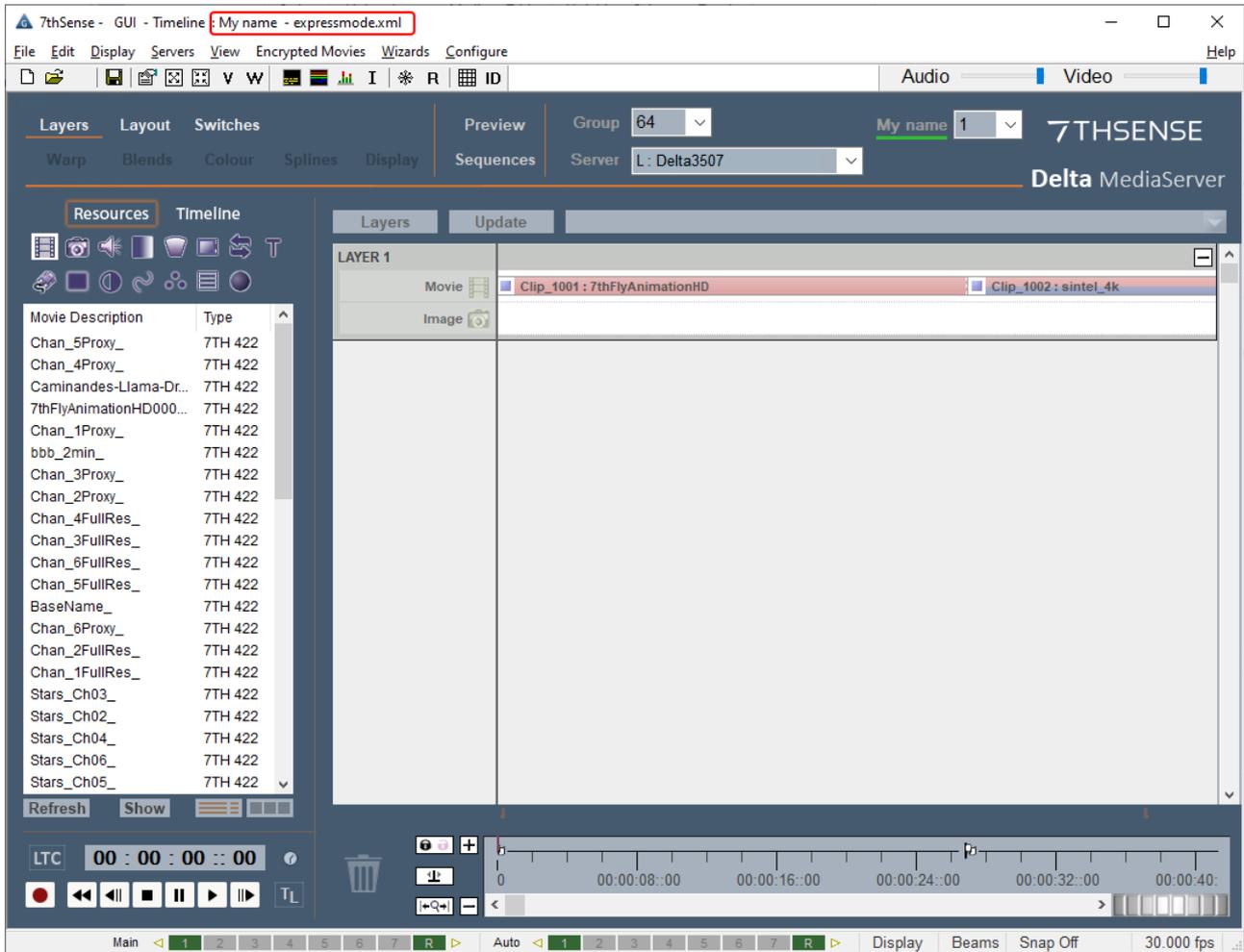
Resources are dragged out of the pool onto the timeline, where each becomes represented by a bar showing order of play number, media type (icon), resource name, an audio indicator (where applicable) and, to the right, a delete button to remove it.



Items on the timeline can be rearranged by dragging the order. New items are always added to the end, so to insert anywhere else, drag them into the correct position.

Changes of any kind will require the green **Upload Timeline** button to be clicked *for the timeline that has changed*. This will send the StackExpress instruction set to the currently selected server's timeline, in the `expressmode.xml` show file. If this file is not present it will be created. If it exists it will be updated.

If an Express show is playing the same timeline that is being uploaded, a warning message is given before the upload can be completed, that play will be stopped.



You are now ready to address the properties of any of your resources.

## Media Play Properties

Click a resource name to open its play properties:

The screenshot shows a 'Timeline' interface with a dark blue header. The header includes a dropdown menu with '1', 'Loop Mode', a green 'Upload Timeline' button, a green checkmark icon, a 'Reset Changes' button, and a 'Delete All' button. Below the header, there are five resource entries in a list:

1. Delta splash screen
2. 7thFlyAnimationHD
3. sintel\_4k (selected, with a music note icon)
4. Caminandes-Llama-Drama (with music and play icons)
5. visitor-welcome-panel-left-words

The selected resource 'sintel\_4k' is expanded to show a 'Resource preview' window and a 'Play Mode' configuration panel. The preview window shows a video frame with a green border, a scrubber, and the following metadata:

- Resource Frame: 0
- Timeline Frame: 810
- Type: Movie (mov)
- Length: 00:14:48:00 (26640f)
- Size: 3840 x 1744 px

The 'Play Mode' configuration panel has tabs for 'Length', 'Actions', 'Play Mode', 'Fade Mode', and 'Misc.'. Under the 'Play Mode' tab, the following settings are visible:

- Play Mode:** Play Once (dropdown)
- Count:** 1 (input field)
- End Transition:** Stop (dropdown)
- End of this Clip
- Start of next clip

## Thumbnails and Movie Scrubbing

Movie frames in YCoGc and 7th format generate thumbnails for scrubbing in this view when DeltaServer is started. Other formats will just display the thumbnail of the first frame.

Frame thumbnails shown in the preview are the subset (e.g. 1 in 10 or 1 in 20 frames) as defined in registry settings during [Installation and Setup](#)<sup>6</sup>. As you scroll through frames, the border will be green when the thumbnail is in view and red when between them. Under the thumbnail you will see a count of frames from the current thumbnail. Go to a specific frame by typing a frame number in. This view allows you to scrub through the movie; it is not a play preview. You can use this to place an action.

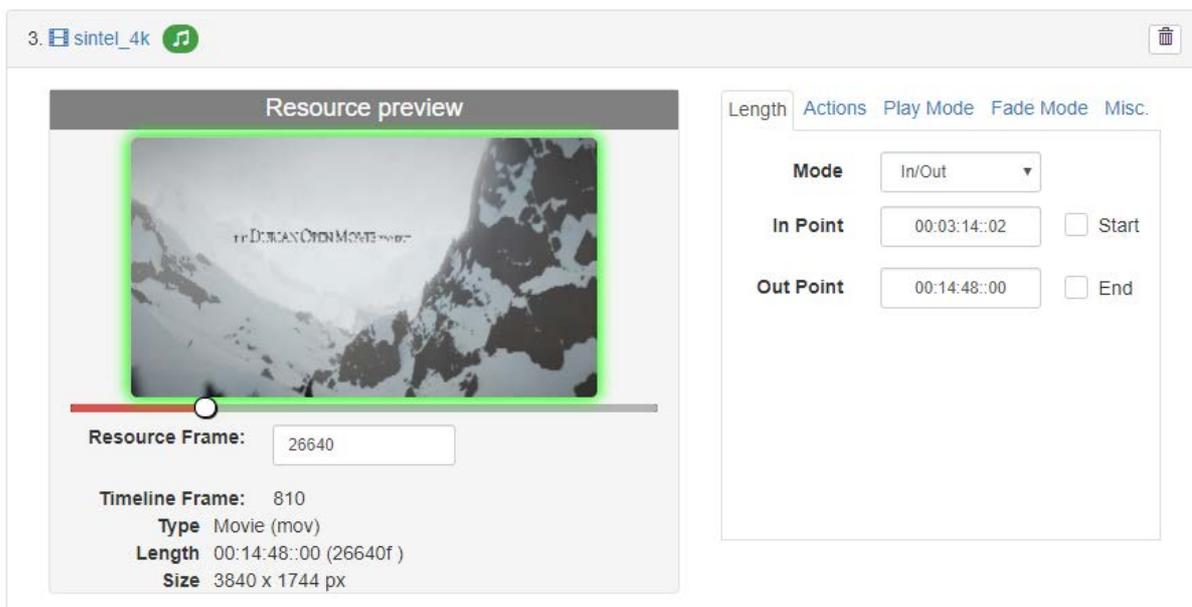
## Properties: All Resources

### Length Tab

This is the segment and duration that the resource will play, in SMPTE format.

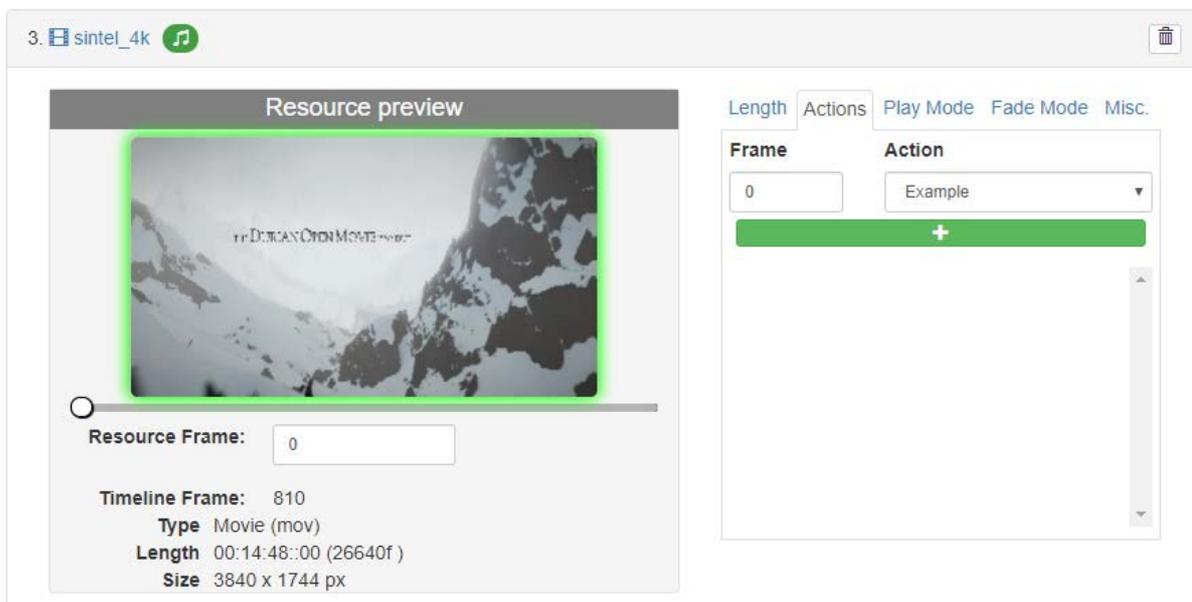
Mode: Length = length from start

Mode: In/Out = starting and/or ending at particular frames



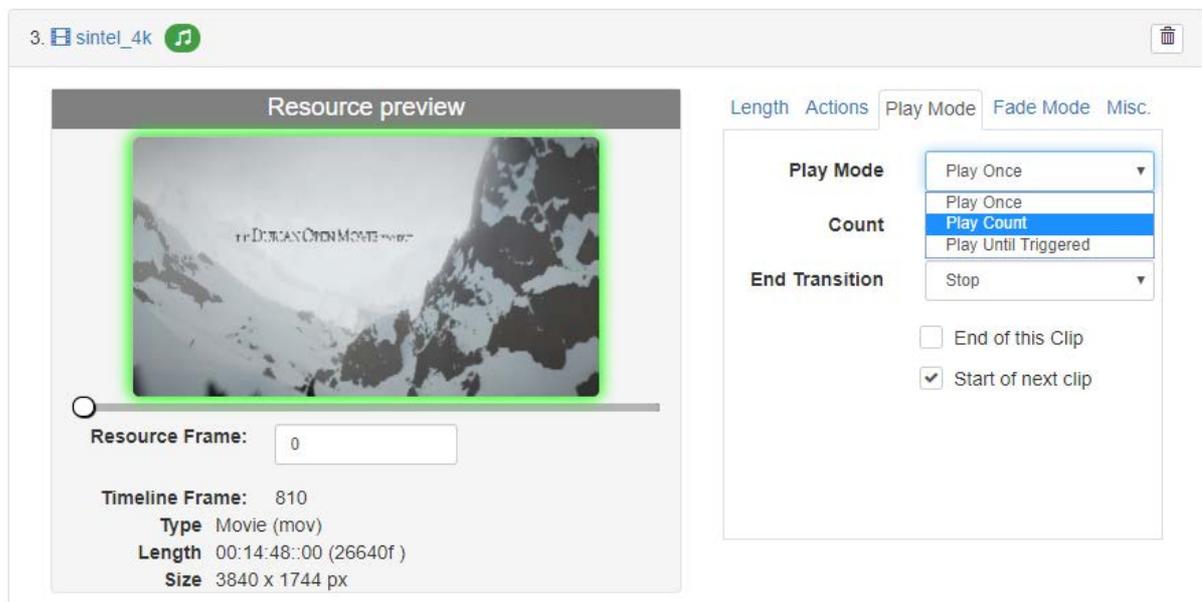
### Actions tab

Actions are instruction to play Delta sequences at specific frames along a clip (this position is not relative to the overall timeline in Delta). Sequence names pertinent to StackExpress are filtered according to the sequence name prefix (default 'SE\_'). This is configurable (see: [Installation and Setup](#)<sup>6</sup>).



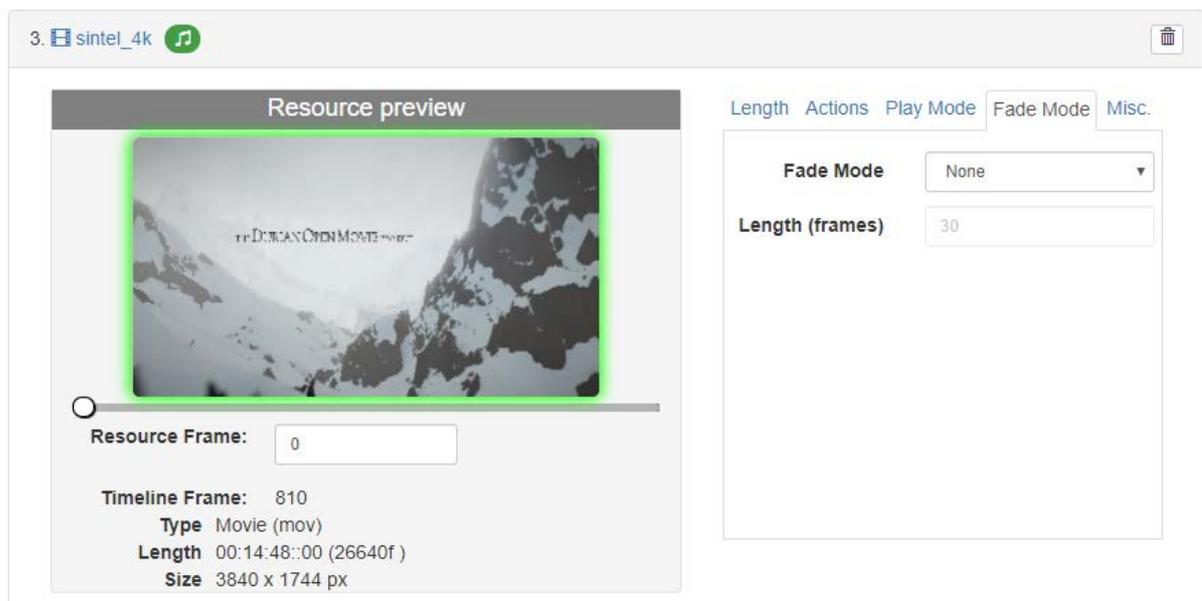
### Play Mode Tab

A movie can be played just once, looped a number of times, or set to play until triggered (the blue button to the right of the Express play controls). When triggered it can be set to complete the current play loop including any end fade, or stop immediately.



### Fade Mode Tab

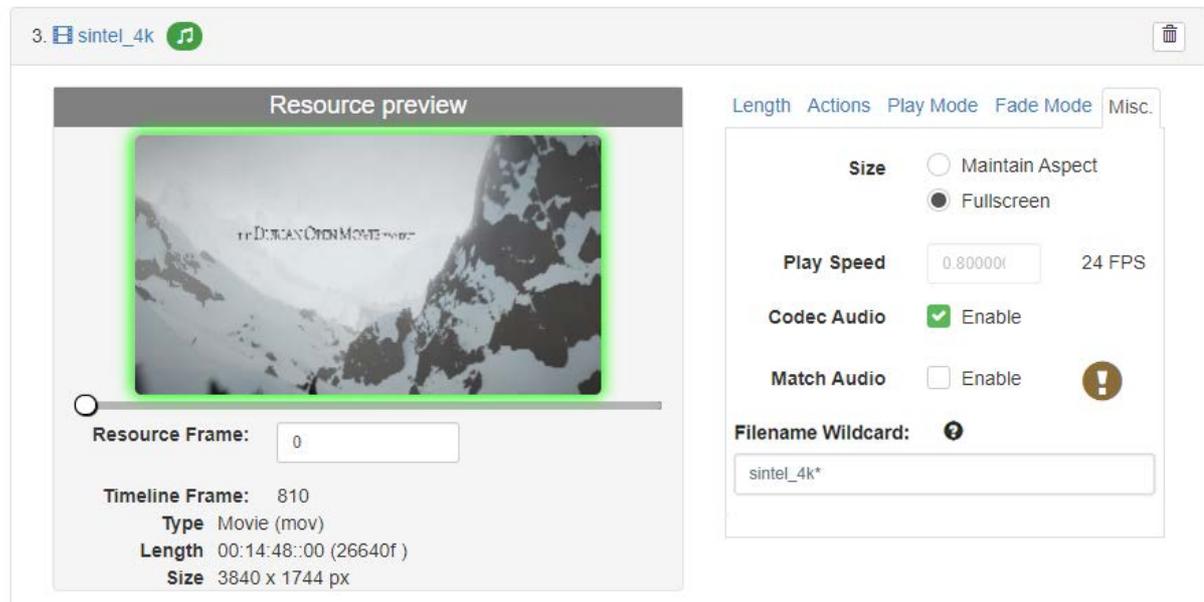
Media can be faded to transparent over a set number of frames (default is 30). This will apply a fade in and a fade out between clips.



### Misc Tab

**Size:** Media can be forced to fullscreen, otherwise it will maintain its aspect ratio. For frame-based movies (non-codec), play speed can also be incrementally adjusted. Resource length and time points as displayed, remain according to original framerate.

**Audio:** Next to the movie name above, a green 'music' audio icon is showing. This indicates that codec audio is present and enabled:

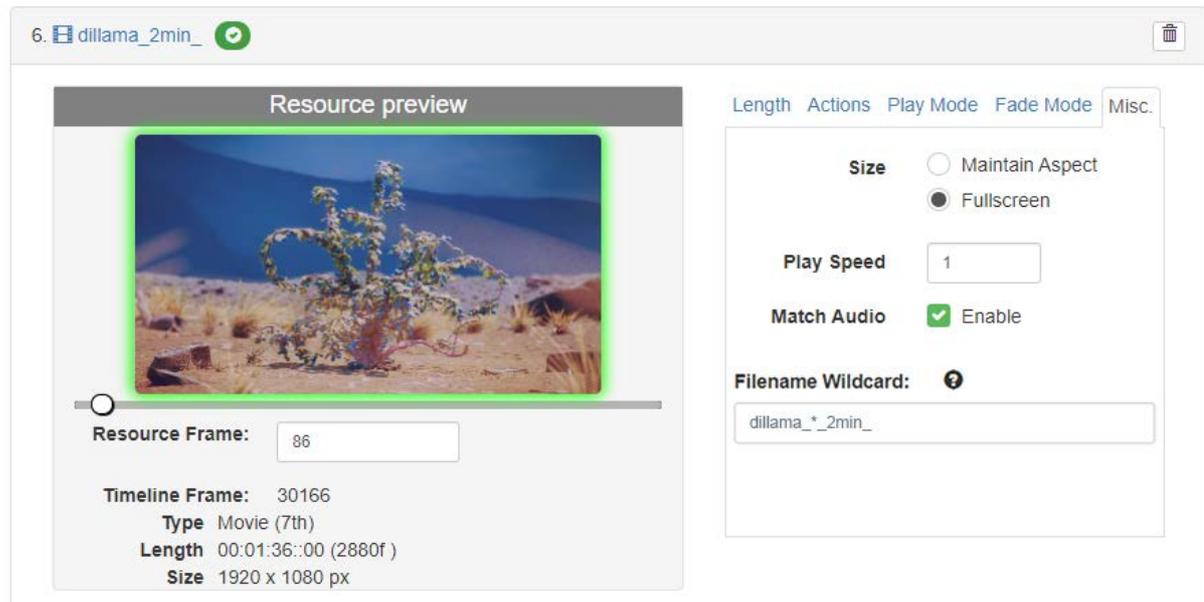


If disabled, the icon will be grey.

The ! alert shown above, has the tooltip: 'no matching audio found in resources'. Instead the audio is enabled for the codec (.mov) file selected.

Separate audio files will be detected as **matched** if they share the same filename stem of a frame-based (e.g. 7th, sth, or .tga) movie. Movies extracted using DFM ([Distributed File Manager](#)) will already have channel ID suffixes in their filenames.

If matched audio is found, it can be enabled. The resource bar will show a green tick. Disabled matched audio will show a grey tick.



Example of matched files:

C:\Audio\Caminandes-Llama-Drama\Caminandes-Llama-Drama\_L.wav

C:\Audio\Caminandes-Llama-Drama\Caminandes-Llama-Drama\_R.wav

will match:

E:\Movies\Caminandes-Llama-Drama\Caminandes-Llama-Drama\_00000.7th

E:\Movies\Caminandes-Llama-Drama\Caminandes-Llama-Drama\_00001.7th

E:\Movies\Caminandes-Llama-Drama\Caminandes-Llama-Drama\_00002.7th

etc.

### Filename Wildcard (new with StackExpress 2.0.2 and Delta 2.7)

If required, you can edit the file name of a clip to add wildcarding. This will allow a media json file to simply be copied to multiple servers which have carves of the same file (where the base name is almost identical bar some suffix) and so program each Delta server identically.

\* : matches any string

# : matches any numeric character once

\$ : matches any alphabetical character once

? : matches any character once

[x] matches any number in the range 0-x

{{ }} can be used to enclose a global Delta variable/string

## Playing Express Timelines

---

StackExpress is interactive over the Stack web interface using the Delta web preview. The preview is a feed back from DeltaServer, so you can see the show as it plays, including any merged show. The play controls allow you to skip to next and previous clips in the Express show, stop and play, or return to the start and then play again. An unattended timeline without triggered items will reach the end and go back to the start, continuously.

The timeline you see in Express is created as a show (*expressmode.xml*) on the Delta server being addressed, and the Stack web interface allows you to view and interact with any server visible on the network. This means that you can play an Express timeline on one server and still look across at another server simply playing its own timeline, using web preview as normally available.

- If any information seems incomplete, try refreshing the web page (F5). This will not create any interaction with the Delta server.
- If you want to manually move a show along to another clip, then the next clip button whilst playing, will bring in the next clip and continue playing.
- Different transition effects can be achieved by applying fade to a solid colour image between clips, but unlike the more sophisticated DeltaGUI features, resources within a StackExpress timeline cannot overlap.
- If you want to change the playing properties of a clip, or the order of play, then the timeline must be regenerated on the server; this will stop the show playing until restarted. Play will resume at the SMTPE point at which it stopped. If this is beyond the new show end (GOTO start) point, playing will resume out of scope of the timeline resources. It can therefore be better to return the play at least to the previous clip before Generating and restarting play.
- DeltaGUI can be used simultaneously, if you want to manage the display configuration, merged shows, or control an Express show from there.

## Appendix: JSON Scripting Directly

---

Whilst StackExpress writes Express Mode shows for you via a simple web browser interface, Delta shows can be constructed, managed and run using external control commands written manually as JSON scripts. These can be loaded into Delta, again using external controls, and with Delta running in Express Mode, the programmed show will run.

This part of the guide is not about StackExpress, but shows how you can interact with Delta Express mode directly with the same result. StackExpress can be used to subsequently read and edit the JSON file created manually.

- For communicating with Delta remotely, see also [DWS API user guide](#)

## Configuring Delta for Express Mode

---

### Initialising Delta Express Mode

DeltaServer needs to be running for all external controls and API calls to work.

Express Mode in Delta can be enabled in one of three ways.

#### External Control

The quickest method to enable/disable Express Mode is to call the external command:

- send SETEXPRESSMODE ENABLED=[Y/N] from a UDP terminal, or via the web API:
- [http://\[Delta Server IP\]:80/api/delta/rpc/setExpressModeON](http://[Delta Server IP]:80/api/delta/rpc/setExpressModeON)

#### Registry Edit

Alternatively it can be done through the Registry Editor by navigating to:

**HKEY\_LOCAL\_MACHINE\SOFTWARE\7thSense\Delta**. From there locate the **ExpressMode** and change the value to 1.

#### On Load

If neither of these methods is used, Express Mode will be enabled automatically when a media json config file is loaded using the **LOADMEDIAJSON** external control command.

### Media Resources

It is also necessary to ensure all media in the Movies and Images folders is loaded into Delta by either:

- sending **REFRESHRESOURCES** from a UDP terminal, or
- opening DeltaGUI and clicking the refresh button below the resource panel.

## The JSON Structure

---

The Top Level structure handles timeline objects and which timeline from which to read (tlToEdit property). The reason Delta only builds one timeline at a time is so that new timelines can be created while another is playing, without interrupting the playback.

Each timeline object has a **Config** object and a **Clips** array. You should only really need to change clipCount (length of clips array). This can contain any number of clip objects, each of which gives details about a single piece of media to add to the timeline.

The main properties to change are MediaType, Length, and Name. The ID and Type properties are also important.

- ID is used to name clips within Delta
- Type distinguishes between Movie and Image resources so that the script will look for resource names in either the \Movies or \Images folders.

### Top Level Structure

```
1  {
2    "tl-1": {
3  >   "Config": { ...
14   },
15 >   "Clips": [ ...
85   ],
86   "timeline": 1
87   },
88 >   "tl-2": { ...
127  },
128  "tlToEdit": 1
129 }
```

At this level, there should only be timeline objects and the "tlToEdit" field.

Add a timeline object in the format of "tl-x": {} for every timeline you want to create.

The "tlToEdit" field specifies which timeline object from the JSON to load into the show.

## Config Structure

```
"Config": {
  "ClipCount": 3,
  "StartFrame": 0,
  "Timeline": 1,
  "KeepDisplayConfig": 0,
  "Layer": 1,
  "Channel": 1,
  "Merge": 0,
  "ClearExpressLayer": 0,
  "Dirty": 0,
  "JSONFileVersion": 1
},
```

### ClipCount

Should match the number of clips in the "Clips" array.

### StartFrame

The frame on which to start placing the first clip in the Clips array.

### Timeline

Should match the number of the outer object, e.g. for tl-1 this must be 1.

### KeepDisplayConfig

Set to 1 to keep the current display config, set to 0 to overwrite the current display config.

### Layer

The layer on the timeline on which to place the clips.

### Channel

(Not used.)

### Merge

Set to 1 if you have a base file you want to merge the express layer into, rather than completely overwriting the existing file.

### ClearExpressLayer

(If "Merge" is set to 1)

0: Load in clips from this file without clearing the current Express layer.

1: Clear the current express layer before loading in the new clips.

**Dirty**

Set to 1 if "Merge" is 1 and the clips in this file have changed since Delta last processed this file, otherwise set to 0.

**JSONFileVersion**

Should always be 1.

**Clips Structure**

For each array added here, use a unique ID and increment the ClipCount property under Config. Creating a show with this method will result in all clips being placed sequentially on the timeline with no gaps between them.

```
"Clips": [  
  {  
    "ID": 1000,  
    "Type": "Movie",  
    "MediaType": "tga",  
    "Length": 100,  
    "Name": "7thFlyAnimationHD",  
    "InPoint": 0,  
    "OutPoint": "end",  
    "CrossFade": 0,  
    "PlayMode": "playOnce",  
    "PlayModeDetails": 1,  
    "Size": "Fullscreen",  
    "FadeMode": "None",  
    "FadeModeDetails": "both",  
    "FadeModeLength": 30,  
    "PlaySpeed": 1,  
    "DisableCodecAudio": 0,  
    "MatchAudio": 1,  
    "EndTransition": "Play",  
    "StopType": "First",  
    "Actions": [],  
    "LengthMode": "length"  
  },  
]
```

**ID**

Used to uniquely name the clip on the timeline. Will be formatted as "Clip\_{ID}" : {Name}. Common practice is to make the ID sequential, starting at x000 where x is the timeline number.

**Type**

The type of resource. Can be "Movie", "Image", or "Capture".

**MediaType**

Needs to match the file extension of the media; e.g. "tga", "mp4", "jpg". If "Type" is "Capture" then leave this blank ("").

**Length**

The length in frames of the resource (or set to "Full" to use the full length of the resource). For movie resources, if this does not match the number of frames in the movie, it will be trimmed or looped to meet this value.

**Name**

The name of the resource on disk (*excluding the extension*). If on a movie resource, looks in "C:\Movies", if on an image resource, looks in "C:\Images", if on a capture resource this should be the name of the capture device, e.g. "Integrated Webcam :ID 10000".

**InPoint**

Trim a movie resource to start from a specified frame. Must be between 0 and the total number of frames in the movie and always less than Outpoint.

**OutPoint**

Trim a movie resource to end on a specified frame. Must be between 0 and the total number of frames in the movie and always greater than InPoint. Set to "end" to not trim the movie.

(Ensure "LengthMode" is set to the correct value when using "Length" vs "InPoint"/"OutPoint".

**CrossFade**

Leave as 0.

**PlayMode**

"PlayOnce": This clip will play once then move on to the next clip.

"PlayCount": This clip will play the amount of times specified in "PlayModeDetails" before moving on to the next clip.

**PlayModeDetails**

The amount of times to loop this clip (only if "PlayMode" is "PlayCount").

**Size**

Leave as "FullScreen".

**FadeMode**

"None": No transition between clips.

"Transparent": A fade in/out is applied to the clip with a length specified in "FadeModeLength" (seconds).

**FadeModeDetails**

Always "both".

**FadeModeLength**

Time in seconds to fade in/out of resource (if "FadeMode" is "Transparent").

**PlaySpeed**

Sets the play speed of a movie resource. Doesn't affect the length of the resource on the timeline.

**DisableCodecAudio**

Only used for Codec Movie resources. If set to 1 then the movie's audio will be disabled.

**MatchAudio**

Search for any audio files which contain the same resource name as the movie and add them to the timeline at the same frame as the movie and 4 layers lower.

**EndTransition**

"Play" – continue playing after this clip.

"Stop" – stop playback after this clip.

**StopType**

"EndTransition" must be "Stop" for this to have any effect.

"Last": Stop at the end of this clip

"First": Stop at the beginning of the next clip

**Actions**

Place Delta sequences on the timeline

```
"Actions": [  
  {  
    "id": "1",  
    "frame": 20,  
    "tlFrame": 20,  
    "action": "SE_test-sequence",  
    "valid": true  
  }  
],
```

<b>id</b>	Sequential action ID
<b>frame</b>	The RESOURCE frame number on which to place the sequence
<b>tlFrame</b>	The TIMELINE frame number on which to place the sequence
<b>action</b>	The name of the sequence to add to the timeline
<b>valid</b>	Set to "true"

#### LengthMode

"length" – Use the "Length" field to determine the length of the resource.

"in/out" – Use the "InPoint" and "OutPoint" fields to determine the length of the resource.

## Using Markers and Play Features

---

### Timeline Markers

When Delta creates the show file from the JSON file, it adds markers at the start and end of each clip in the format "Clip\_Start\_<ID>" and "Clip\_End\_<ID>" where ID is the ID specified in the JSON file.

You can then navigate to these markers using the external control: GOTOMARKER "markername".

### InPoint, OutPoint, and LengthMode

Changing LengthMode to "in/out" uses "InPoint" and "OutPoint" external controls to trim the clip. If using this method, the Length property of the clip should be changed to reflect the new length of the clip.

If Length is then longer than the trimmed clip, the clip will be looped to fill the number of frames specified in Length.

### PlayMode and PlayModeDetails

If "PlayMode" is changed to "PlayCount", then the clip will loop the number of times specified in "PlayModeDetails" before moving to the next clip.

### FadeMode and FadeModeLength

Changing "FadeMode" from "None" to "Transparent" adds a fade in and out effect to the media over the time set in "FadeModeLength".

If the previous clip has no fade, the video level drops to 0 then fades in. If the following clip has no fade, a 5-frame fade-in is applied.

## Ingesting into Delta

---

Once the JSON file has been created, copy it into **C:\7thsense\JSON** name it **media.json**.

To trigger Delta to generate the timeline, either:

- use the **LOADMEDIAJSON TL=x** external control (x = the number of the timeline onto which to load the show), or use the web API:
- [http://\[server IP\]:80/api/delta/rpc/loadMediaJSON?tl=x](http://[server IP]:80/api/delta/rpc/loadMediaJSON?tl=x)

This takes one argument, **"tl=x"** where x is the number of the timeline you want to populate. This does not have to match the **"tlToEdit"** field in the top level of the JSON file. **"tlToEdit"** specifies which of the timeline objects to process from the JSON file, whereas the **tl** argument to the **LOADMEDIAJSON** command specifies which timeline within Delta onto which to load content.

If you wish to populate multiple timelines, then it is recommended to store all the timelines in **media.json** (as **tl-1**, **tl-2**, etc.) and load them one at a time by updating **"tlToEdit"** to point to the desired timeline, and calling **LOADMEDIAJSON TL=X** to upload it to the correct timeline in Delta.

## Document Information

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Date	Document edition	Software version	Revision Details	Author/Editor
September 2016	1	StackExpress 1.0.2	New release	Helen Ward
November 2017	2	StackExpress 1.0.10 DeltaServer 2.5	New edition	Andie Davidson
November 2019	3	StackExpress 2.0 DeltaServer 2.6.73	Revised with new features	Andie Davidson
September 2021	4	Delta Web Service 2.4.16 build 27 Delta Web Platform 2.1.3 StackExpress 2.0.2 DeltaServer 2.7 DeltaPreview 1.0.0	Changes to Preview Filename wildcarding added JSON scripting directly in Delta Express mode, in place of StackExpress, added	Andie Davidson

### Windows Registry Settings

This document is supplied for informational purposes only. Any modification to Windows Registry values that are not exposed via the DeltaServer or DeltaGUI application interfaces – or otherwise advised by 7thSense personnel – may result in performance degradation and/or complete instability of the products. Any attempt to engage 7thSense for support in troubleshooting may result in the reversal of all Registry settings to the factory default or last known good 7thSense-approved configuration. **The customer assumes all risk when manually editing any Windows Registry values on any 7thSense product.**

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