

# Liquidsoap behind **the** **world's audio.**



Jon Stephenson  
Live365, CEO



*Liquidsoap*

Intended Audience:  
**Technical**

# Agenda

## History of Live365

What Live365 offers

How & why we use Liquidsoap

Challenges with Liquidsoap



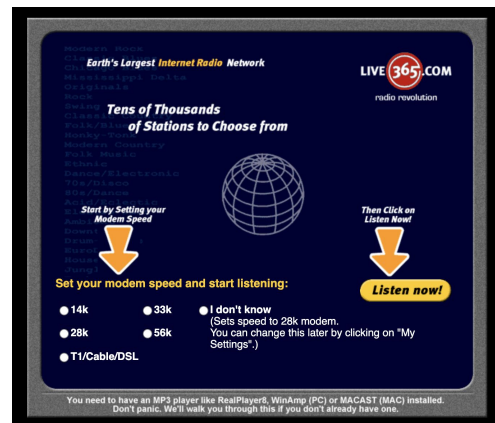
Jon Stephenson  
Live365, CEO



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# History of Live365

- Started in 1999
- Originally developed proprietary streaming software, "Nanocaster"
- Peak of 50,000+ concurrent "live" radio stations
- Live365, Inc. went bankrupt in 2016
- Re-launched in 2017, acquired by Media Creek, Inc.



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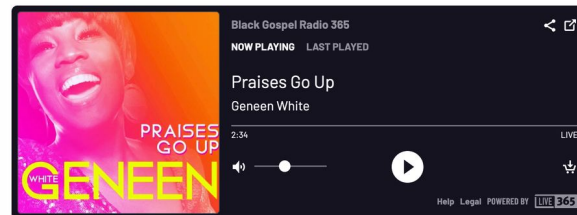
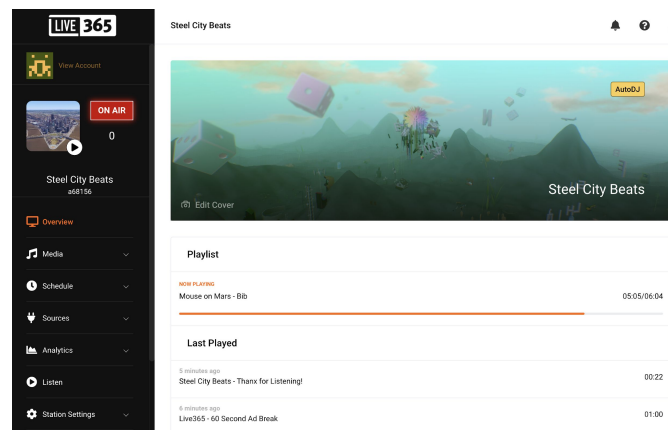
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# What Live365 Offers

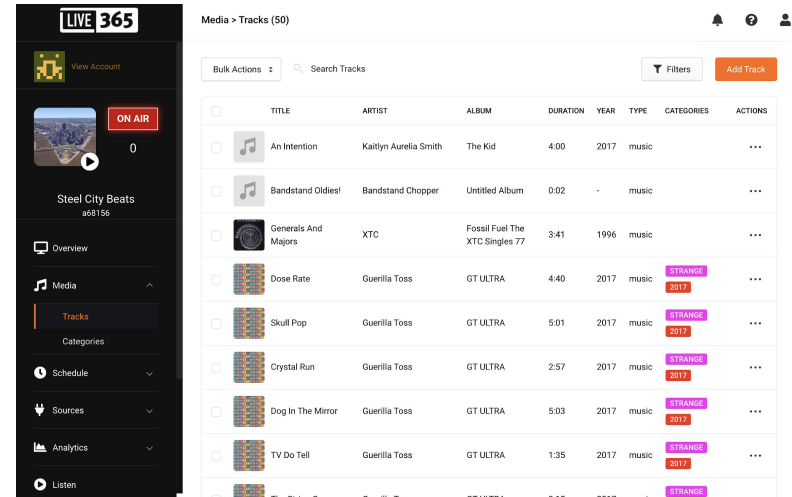
- End-to-end streaming solution to create 24/7/365 radio station
- Ability to go live or use our in house software
- Analytics & Players
- DMCA compliant, with US, UK, CA music licensing
- Listening directory
- Station monetization



# What Live365 Offers

With Live365 + Liquidsoap, users have the ability to:

- Upload music content
- Create playlists
- Create clockwheels (rotations)
- Schedule Playlists



The screenshot displays the Live365 user interface. On the left is a dark sidebar with navigation options: View Account, ON AIR (with a play button and '0'), Steel City Beats (a68156), Overview, Media, Tracks (highlighted), Categories, Schedule, Sources, Analytics, and Listen. The main content area shows 'Media > Tracks (50)'. At the top of this area are 'Bulk Actions', 'Search Tracks', 'Filters', and 'Add Track' buttons. Below is a table of tracks with columns for Title, Artist, Album, Duration, Year, Type, Categories, and Actions.

	TITLE	ARTIST	ALBUM	DURATION	YEAR	TYPE	CATEGORIES	ACTIONS
<input type="checkbox"/>	An Intention	Kaitlyn Aurelia Smith	The Kid	4:00	2017	music		...
<input type="checkbox"/>	Bandstand Oldies!	Bandstand Chopper	Untitled Album	0:02	-	music		...
<input type="checkbox"/>	Generals And Majors	XTC	Fossil Fuel The XTC Singles 77	3:41	1996	music		...
<input type="checkbox"/>	Dose Rate	Guerilla Toss	GT ULTRA	4:40	2017	music	STRANGE 2017	...
<input type="checkbox"/>	Skull Pop	Guerilla Toss	GT ULTRA	5:01	2017	music	STRANGE 2017	...
<input type="checkbox"/>	Crystal Run	Guerilla Toss	GT ULTRA	2:57	2017	music	STRANGE 2017	...
<input type="checkbox"/>	Dog In The Mirror	Guerilla Toss	GT ULTRA	5:03	2017	music	STRANGE 2017	...
<input type="checkbox"/>	TV Do Tell	Guerilla Toss	GT ULTRA	1:35	2017	music	STRANGE 2017	...
<input type="checkbox"/>	The Price Goes	Guerilla Toss	GT ULTRA	9:16	2017	music	STRANGE	...

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# How & Why We Utilize Liquidsoap

A bit of history:

- Live365 originally developed proprietary streaming software, “Nanocaster”
- To re-launch, we stumbled upon Liquidsoap
- Launched MVP product in less than three months



# How & Why We Utilize Liquidsoap

How we use Liquidsoap today:

- Used to play very dynamic playlists controlled by Live365 users
  - Automatically generated playlists based on multiple parameters
  - Scheduled static playlists created by users
  - Jingles and advertisements inserted according to the user's preferences
- Used for transcoding live streams to other bitrates
- Scale of 3,000+ concurrent LS instances
- Dynamic cross-fading between tracks configured by users
- Automatic audio normalization
- FFmpeg integrated for multiple codec support

# How & Why We Utilize Liquidsoap

How we control Liquidsoap:

- Relatively simple Liquidsoap script with a few queues and interactive variables
- Micro-managing playback from a Python application, which is communicating with Liquidsoap over UNIX socket
- Separate application for dynamically starting new Liquidsoap instances on assigned servers

# How & Why We Utilize Liquidsoap

What happens to the audio stream from Liquidsoap:

- Audio stream from Liquidsoap gets pushed to Icecast running on the same server
- From there, it gets pulled into our audio CDN platform
- Audio CDN edge servers then distribute the stream to listeners

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# Challenges with Liquidsoap

- Documentation
- Lockups / “stuck”
  - When using “request.dynamic(.list)”, we often found Liquidsoap instances stuck and streaming silence
- Micro-management of the playback is hard
  - During track switches, the server will return inconsistent queue view
    - Missing playing track
    - Missing resolving tracks
    - Wrong order of resolving tracks
  - Skipping or ignoring tracks in the primary queue is unreliable
  - Not possible to clear non-active queue
- Memory usage constantly growing

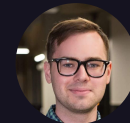
# Thank you!



**Get in touch**

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