Liquidsoap

Audio & Video Streaming Language

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A language to create audio and video streams

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Programming tools to help the user

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Error 7: Invalid value:
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security = single("~/radio/sounds/default.mp3")

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- Static typing catered for its users (source media content, unused variables, etc..)

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switch([
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- OCaml!

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my_function(arg1, arg2, labeled_arg="foo", optional_arg=123)
my_function(arg1, arg2, labeled_arg="foo")
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Scripting language:

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```
% liquidsoap -h input.srt

Start a SRT agent in listener mode to receive and decode a stream.

Type: (?id : string, ?bind_address : string,
 ?clock_safe : bool, ?content_type : string,
 ?dump : string, ?max : float, ?messageapi : bool,
 ?on_connect : ((unit) -> unit),
 ?on_disconnect : (() -> unit), ?payload_size : int,
 ?port : int) -> source('a)

Category: Source / Input

Parameters:

 * id : string (default: "")
     Force the value of the source ID.

 * bind_address : string (default: "0.0.0.0")
     Address to bind on the local machine.

...
```

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- Ladspa, dssi, lilv & ffmpeg filters

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Sam : And midi? 😅

Usage

```
# Configuration

set("server.telnet", true)
enable_replaygain_metadata()

# Files-based sources

files = playlist("~/radio/music.m3u")
jingles = playlist("~/radio/jingles.m3u")
files = random(weights=[1, 4],
  [jingles, files])

files = amplify(1.,override="replay_gain",
  files)

# User requests

user_requests = request.queue(
  id="user_requests")
radio = fallback(track_sensitive=true,
  [user_requests, files])

# Crossfade tracks

radio = crossfade(radio, smart=true)

# Live source

live = input.harbor("live")
```

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```
# Full radio

radio = fallback(track_sensitive=false,
  [live, radio])

radio = compress(radio)

# Outputs

formats = [
  ("mp3-high", %mp3(bitrate=96)),
  ("mp3-low",  %mp3(bitrate=128)),
  ("aac-high", %fdkaac(bitrate=64)),
  ("aac-low",  %fdkaac(bitrate=32)),
]

output.file.hls("/path/to/files",
  hls_formats, radio)

def mk_iceast_output(config) =
  let (name, format) = config

  output.icecast(format,
    host = "localhost", port = 8000,
    password = "hackme", mount = name,
    radio)
end

list.iter(mk_icecast_output, formats)
```

Usage (contd.)

Smart crossfade

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Smart crossfade

```
def transition(a,b,ma,mb,sa,sb)
  if
    a <= medium and
    b <= medium and
    abs(a - b) <= margin
  then
    log("Transition: crossed, fade-in, fade-out.")
    add(fade.out(sa),fade.in(sb))

  elsif
    # Do not fade if it's already very low.
    b >= a + margin and a <= medium and b <= high
  then
    log("Transition: crossed, no fade-out.")
    add(sa,sb)

  else
    log("No transition: just sequencing.")
    sequence([sa, sb])
  end
end

radio = cross(transition, radio)
```

Usage (contd.)

Clocks & latency control

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- Network glitches

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- Clock inconsistency

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```
input = input.alsa()

clock.assign_new(id="icecast",
  [output.icecast(%mp3,mount="blah",mksafe(buffer(input)))])

output.file(
  %mp3,"record-%Y-%m-%d-%H-%M-%S.mp3",
  input)
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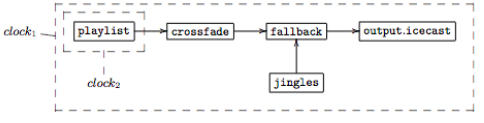

Future developments

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Support for encoded content

Questions?