State of Linux Audio in 2009

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Who Am I?

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Perspective

So, what happened since last LPC?

RIP: EsounD is officially gone.

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Audio API Guide

http://0pointer.de/blog/projects/guide-to-sound-apis

We now use realtime scheduling on the desktop by default.

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2s Buffers

We moved a couple of things into the audio server:

Timer-based audio scheduling; mixing; flat volume/volume range and granularity extension; integration of volume sliders; mixer abstraction; monitoring

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Mixer abstraction? Due to user-friendliness, i18n, meta data (icons, ...)

udev integration: meta data, by-path/by-id/...

Bluetooth Audio, A2DP, HSP/HFP, Lip-Sync!

ALSA mixer initialization database

Other: Drivers for X-Fi, LSB work

What are the challenges to tackle until next LPC?

Drivers: Power saving distortions

Drivers: Incorrect dB information

Drivers: Wrong mixer element names

Drivers: Missing/broken device strings

Drivers: Non-standard negotiation logic

Drivers: Missing from mixer initialization database

Drivers: Broken timing

`snd_pcm_delay()`, `snd_pcm_avail()`

ALSA API addition:

Multi-PCM clock synchronization

ALSA API addition:

Routing/PCM-to-mixer-element mapping/auto discovery

Current system depends on assumptions made based on consumer hardware, which doesn't scale to professional and embedded hardware

ALSA API addition:

Jack sensing, labelling, colouring, matching

Mixed HW/SW switching

ALSA API addition:

Timing/data transfer granularity

ALSA API addition:

Channel mapping, current system does not scale

ALSA API addition:

Latency control, Hifi DSP

ALSA:

HDMI negotiation

ALSA:

Atomic status updates

ALSA:

Atomic mixer updates?

PCM synchronized mixer updates?

General:

Codec pass-through for A2DP, SPDIF, HDMI, embedded

General:

Simpler, high-level PCM API

General:

20s Buffering

General:

Revoking, synchronous session switching

That's all, folks.

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Any questions?