

Restream and GStreamer, a success story

GStreamer Conference, Oct 2026, Prague

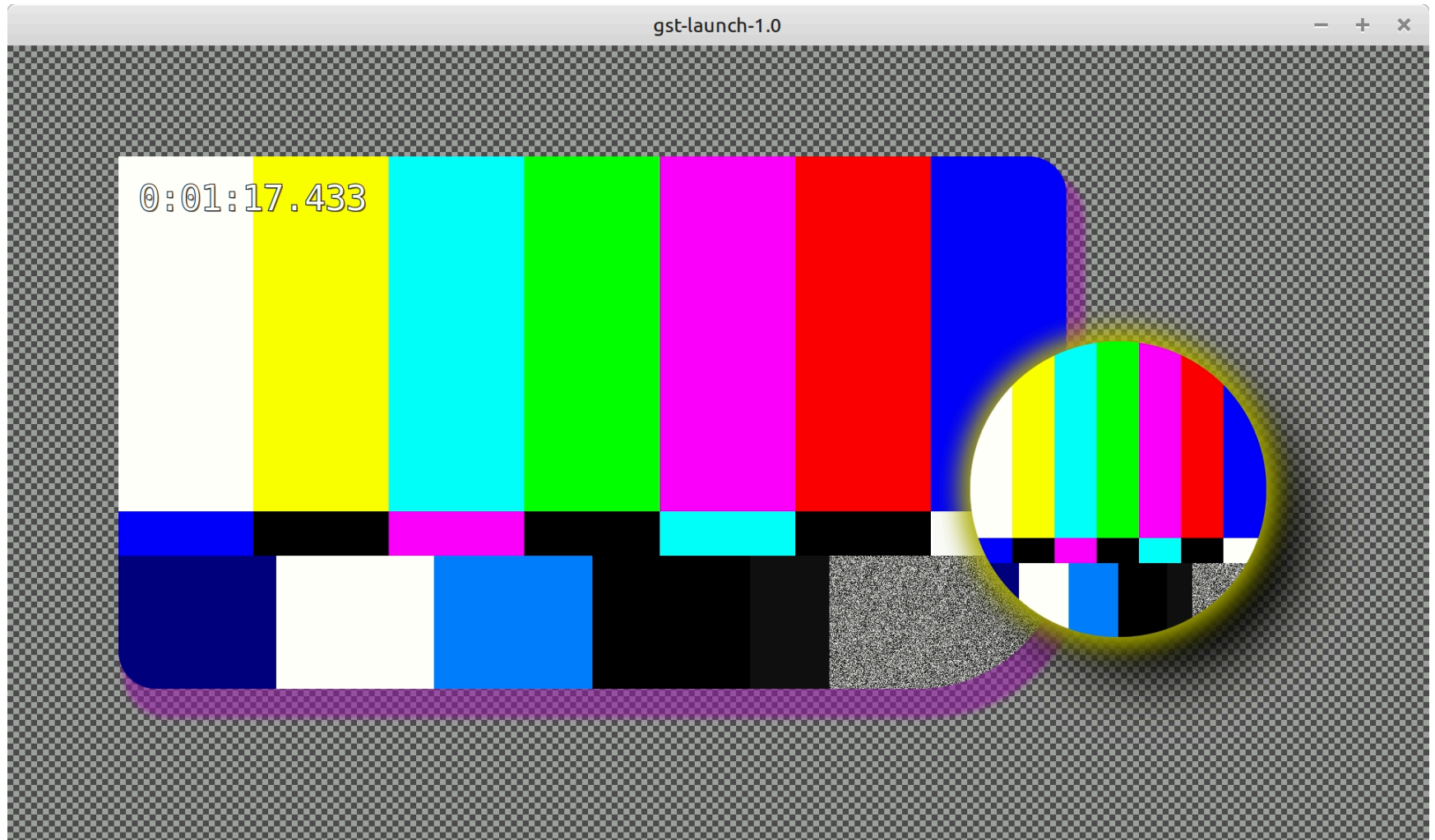


What is Restream?

- <https://restream.io/>
- A multistreaming system to more than 30 platforms
- A swiss-knife tool for content creators (live and pre-recorded broadcasting, transcoding, backup streams, etc...)
- Over 10 million users
- About 200.000 hours of streamed content every day

Example of broadcasted content

...If you like the rounded corners the [7639](#) PR also implements shadows for the software compositor element...

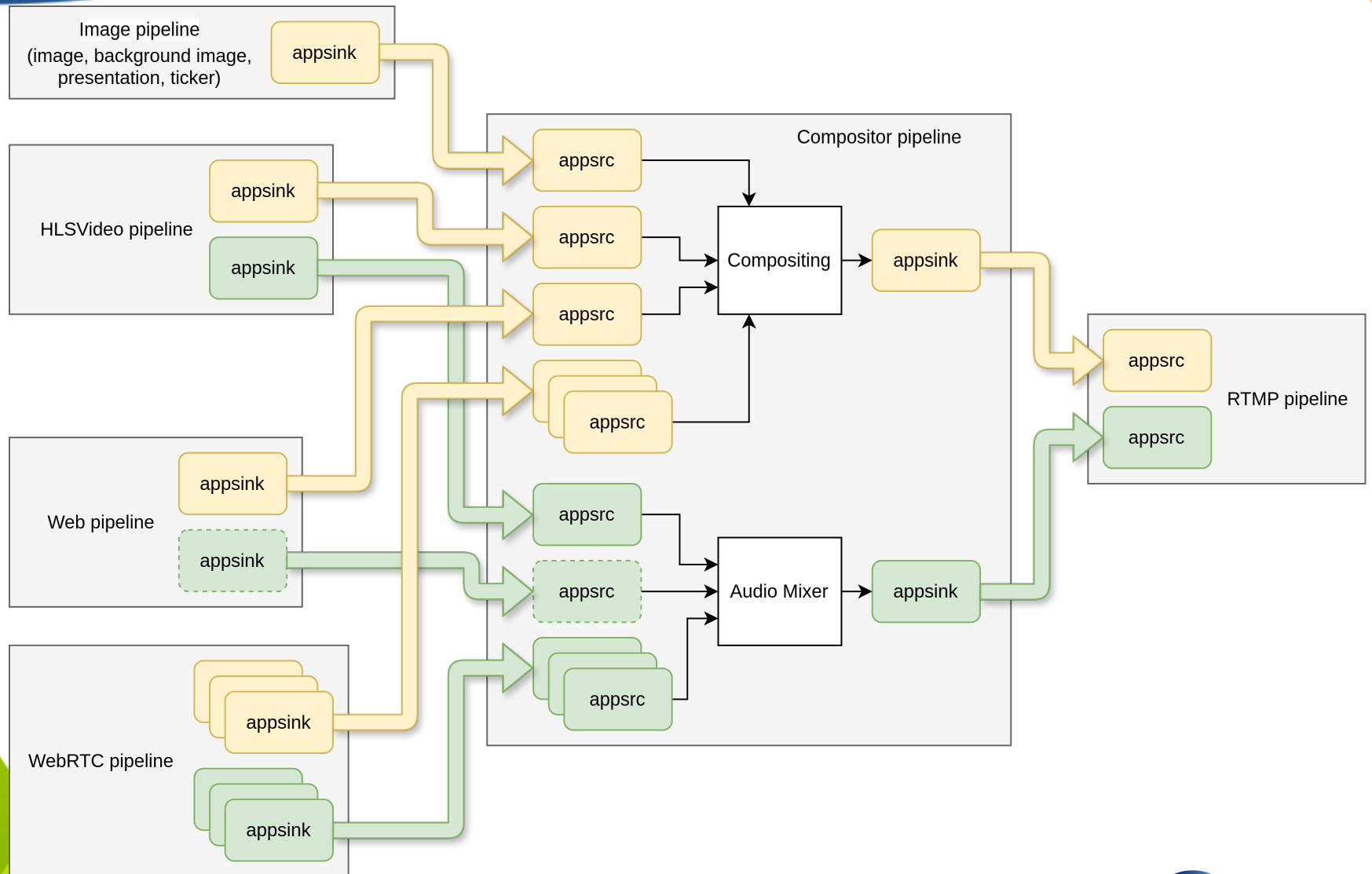


A scalable architecture

- Lots of distributed services running in parallel (reading and compositing videos, transcoding, recording, backuping, etc...)
- Most of them powered by GStreamer pipelines
- One of the most critical and complex component is the Compositor

The Compositor

- a central compositing pipeline
- multiple independent pipelines for each layer/source
- appsink/appsrc connections



Challenges

- Deadlocks/race conditions
- Web browser crashes (and hot-replacement)
- Memory and CPU usage
- Optimization of the latency and resilience in case of network disturbances

Lessons learnt

- Necessity to reproduce the issues directly in production
- Importance of logging and tracers
- Triggering and analyzing core dumps
- Prototyping to reproduce deadlocks with very-low occurrence
- Advantages/drawbacks of using AI for the analyze of huge GStreamer logs

Questions ?

Thank you

