

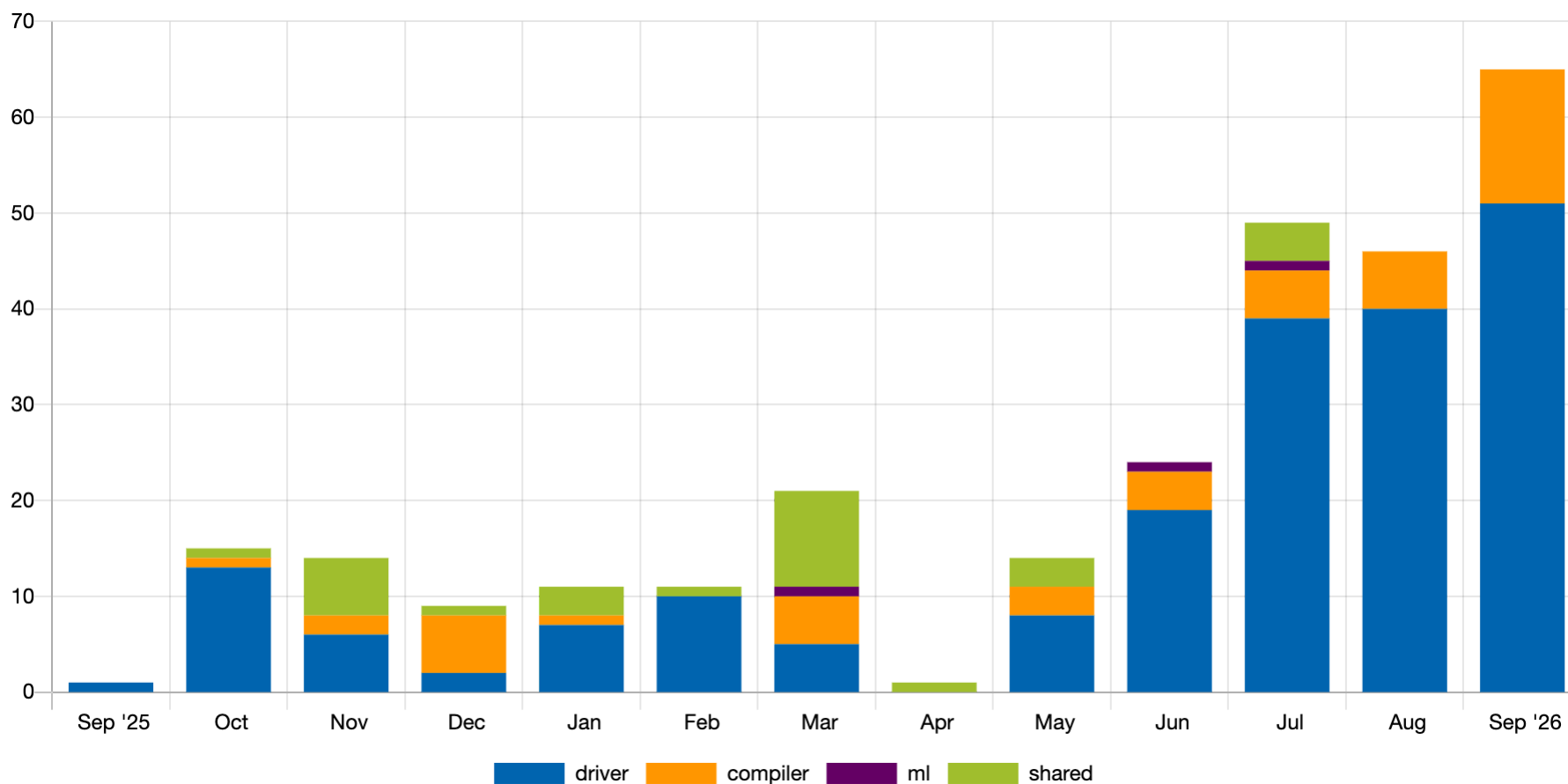
etnaviv: good things take time

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2026-09-29

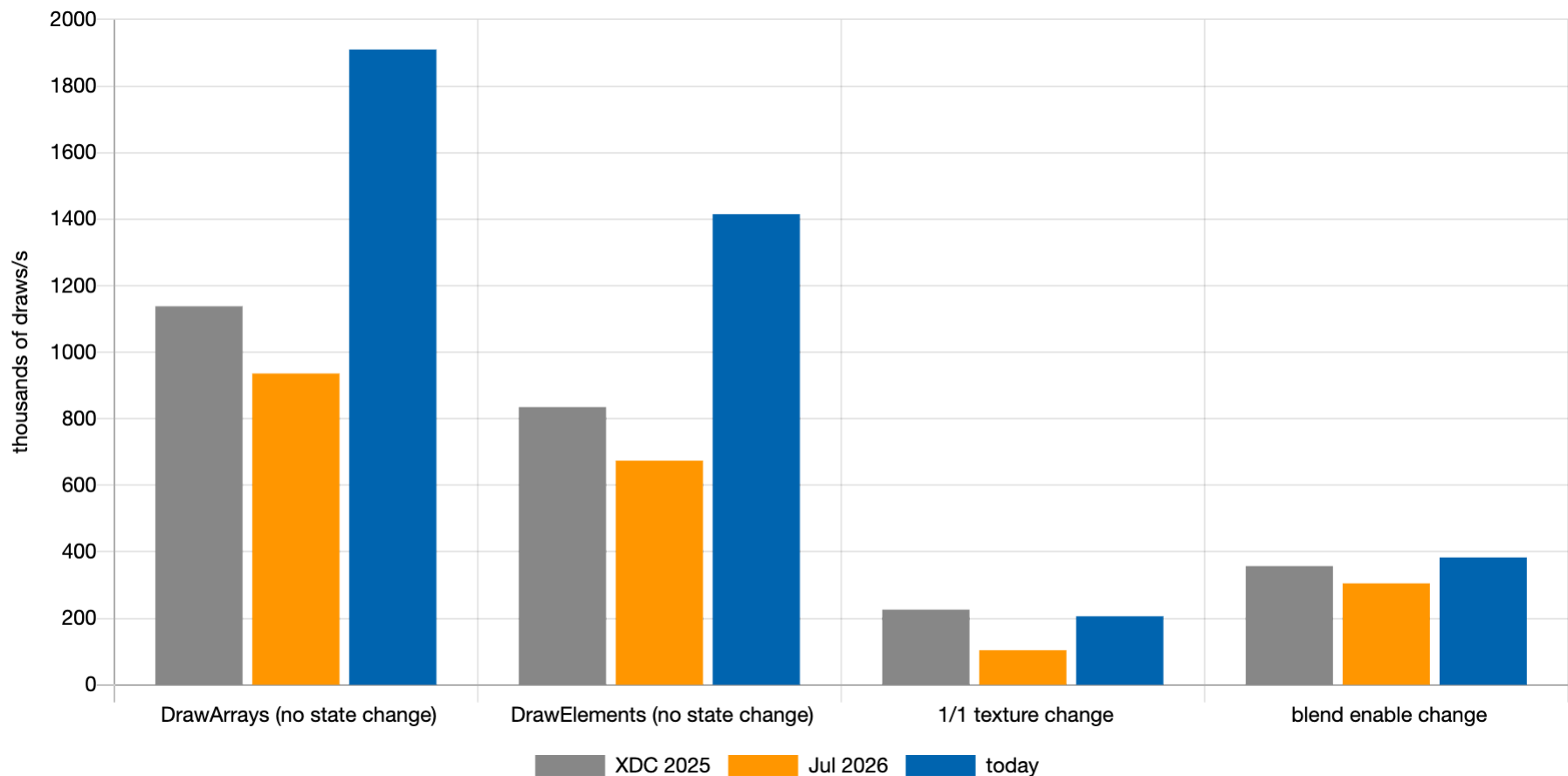
One year since XDC 2025

`git log --since=2025-09-30 -- src/gallium/drivers/etnaviv src/etnaviv` · CI commits excluded



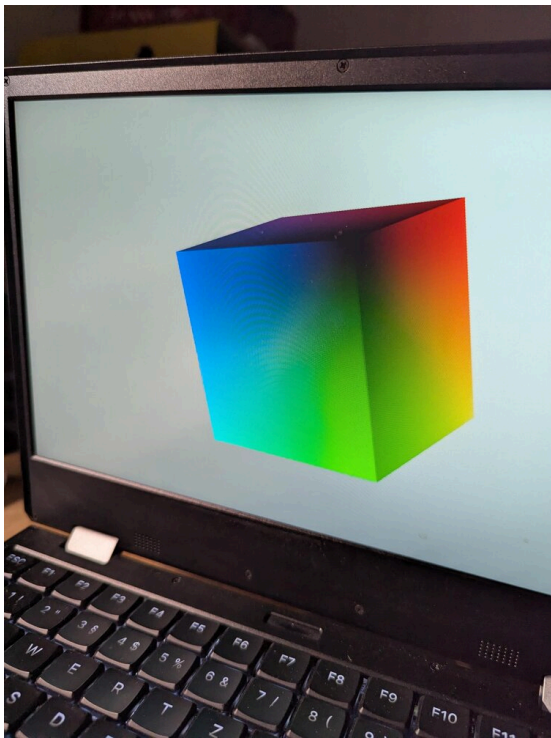
281 commits · 22 people · +12.4k / -2.9k lines

Draws got cheaper



piglit drawoverhead · MNT Reform (i.MX8MQ, 4× Cortex-A53) · median of 3

A new backend compiler

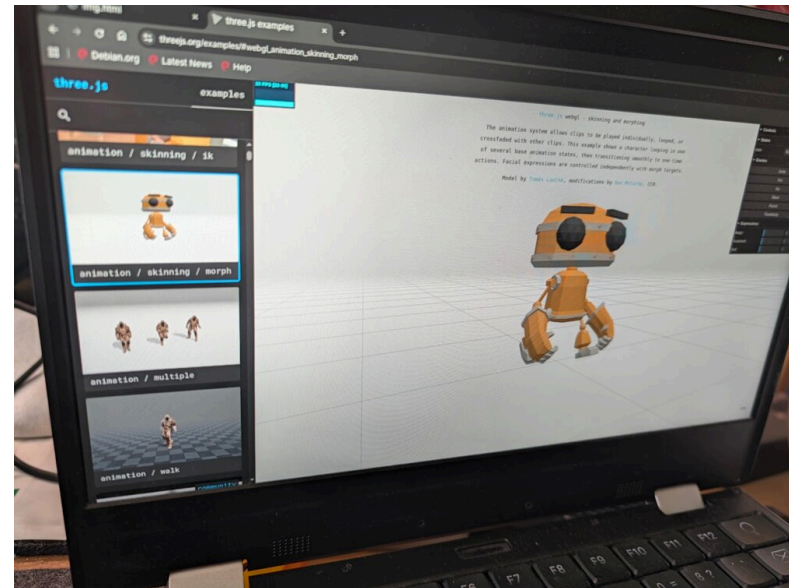


May 2026: first kmscube, VS + FS on the new backend

- **Rust, SSA** from the start, new register allocator
- One compiler for **graphics and OpenCL** (via rusticl)
- **May**: first kmscube → **July**: dEQP-GLES3
~**98.5 %**
- Works on **lowered I/O**
- Supports **geometry shaders**
- The base for everything **above GLES 3.0**:
already passes a lot of GLES 3.1
- **Not merged yet**: GLES 3.0 got priority over
upstreaming

The big one: OpenGL ES 3.0

- Stuck at **ES 2.0** for years
- Filled in the many **missing features**: multisample textures, 128-bit render targets, depth32f, integer targets, ...
- **XFB emulation** for GPUs without hardware transform feedback
- Result: real apps, **WebGL 2** in Chromium



Sep 2026: three.js in Chromium on sway, MNT Reform

GL ES 3.0 conformance: submitted

Khronos CTS: passed

	GPU	Resolve engine	XFB
i.MX8MQ (MNT Reform)	GC7000L	BLT	emulated
i.MX8MP (SolidRun CuBox-M)	GC7000UL	RS	emulated
i.MX8QM (Toradex Apalis) <i>not submitted yet</i>	GC7000XSVX	BLT	hardware

What's next

- Land the last GLES3 fixes → submit **i.MX8QM** too
- Upstream the new compiler → **OpenCL on etnaviv**
- **GLES 3.1** and beyond: geometry + tessellation shaders
- **Performance**: tooling for perf analysis, then make it faster

Years in the making, worth every step.

