

Status of the WPE & GTK WebKit ports

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The Talk

- High-level, non-exhaustive
- Unintentionally incomplete, maybe unfactual (sorry)
- GPT-free

WebKit

- Common Web platform implementation
- Portable platform-specific bits
- Mac, iOS, Linux, Windows, PlayStation
- Apple, Igalia, Sony

GTK & WPE Ports

- Primarily targetting Linux
- GTK — oriented towards integration with the GTK toolkit
- WPE — more low-level embedding/integration design
- Lots of commonalities — GLib, Libsoup, GStreamer, etc.

GTK

- Go-to solution when embedding Web content inside GTK environment
- GTK3 and GTK4 support
- Integration with other GNOME components (a11y, password management, etc.)

WPE

- Low-level integration, adaptable to any viable use-case
- No toolkit — sometimes a problem
- Flexible but minimal
- Embedded devices and systems
 - Also Android

Commonalities

- Largely shared graphics stack
- Multimedia — GStreamer
- Networking — Libsoup
- Different Web standards implementations
- Release process — current stable series 2.40
- Development tooling

Differences

- Details in the graphics stack
 - Different implementations of cross-process operations
- GTK toolkit support (e.g. different helper widgets)

Graphics

- ANGLE support
 - Better WebGL conformance
 - WebGL2
- Initial GPUProcess support
 - For now, just WebGL execution
- Initial DMABuf utilization

Multimedia

- GStreamer
- MSE, EME polish
- WebRTC progress — gstwebrtc
- Media Capture, Media Stream, Media Recorder
- Experimental WebCodecs support
- DMABuf support

Networking

- Libsoup3
 - New release, new API
 - HTTP2
- Libsoup2 still supported

JavaScriptCore

- Maintained support for 32-bit ARM and MIPS
 - Basic JIT tiers
 - WebAssembly support on ARM
- Initial RISC-V support

Plans — GTK, WPE

- More alignment — where possible
- Continued stable releases from common baseline branches
- Simplified API for WPE
 - Easier, more plug-and-play mode

Plans – Graphics

- GPUProcess
 - 2D painting, WebGL, WebGPU(?)
- Composition migration
 - UIProcess?
- Requirement: Cross-process buffer sharing
 - DMABuf
 - But other platforms?

Plans — Graphics

- Breakout session: *WebKit and Linux graphics*
 - Tuesday, 10:00 - 11:30

Plans – Multimedia

- WebRTC, WebCodecs
- GPUProcess for media handling

Plans — JavaScriptCore

- 32-bit platforms, RISC-V
- WebAssembly

