What's new with drm_hwcomposer?

Drew Davenport (Google)

What is drm_hwcomposer?

- Implements Android's Hardware Composer API on top of drm uAPI
- Originally used for Pixel C tablet back in ~2015
- Since then, it's been adopted by a number of other devices, and also forked a bunch of times
- See also XDC/LPC talks from 2016, 2017, 2018, 2019 (and any others I may have missed)
- https://gitlab.freedesktop.org/drm-hwcomposer/drm-hwcomposer

Recent developments

- Modernized to support Hardware Composer 3 (HWC3)
  - HWC2 was deprecated in Android 13 (2022) in favour of HWC3
  - All new HWC APIs will be made only in HWC3
- Supported in Cuttlefish Android Virtual Device (AVD)
  - Cuttlefish focuses on high-fidelity to closely replicate the behavior of a real device
- Testing drm_hwcomposer in gitlab CI
  - We can catch VTS and CTS regressions early
  - Taking advantage of the latest vkms functionality
- New functionality
  - cursor support
  - seamless refresh rate changes

What's next?

- Further improve reliability and testing
- Support for the newest HWC APIs
- Support for the newest drm uAPIs
- Get more out of underlying hardware

Thank you!

- https://gitlab.freedesktop.org/drm-hwcomposer/drm-hwcomposer

Appendix

Previous presentations

https://www.x.org/wiki/Events/XDC2016/Program/paul_reizner_drm_hwcomposer/

https://www.collabora.com/news-and-blog/news-and-events/xdc-2017.html

https://static.linaro.org/connect/yvr18/presentations/yvr18-204.pdf

https://lpc.events/event/5/contributions/319/attachments/442/696/Android_DRM_KMS_Update_XDC2019.pdf