A Vulkan Renderer for Weston

Erico Nunes
Red Hat

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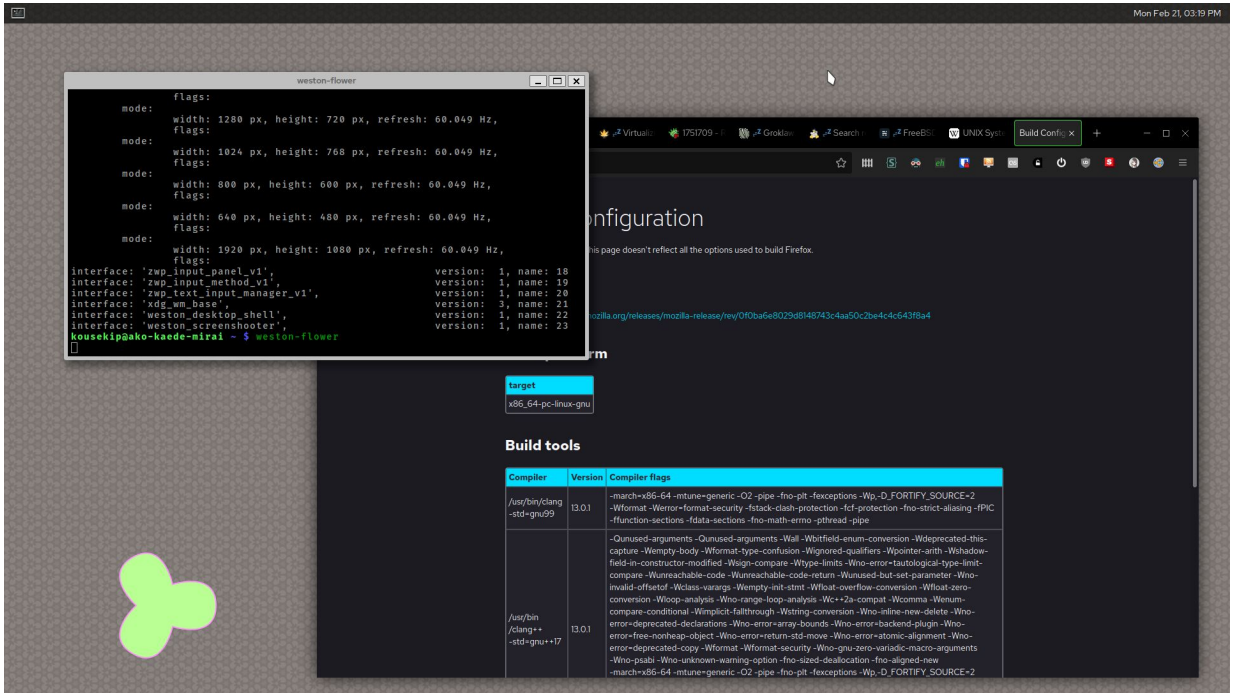
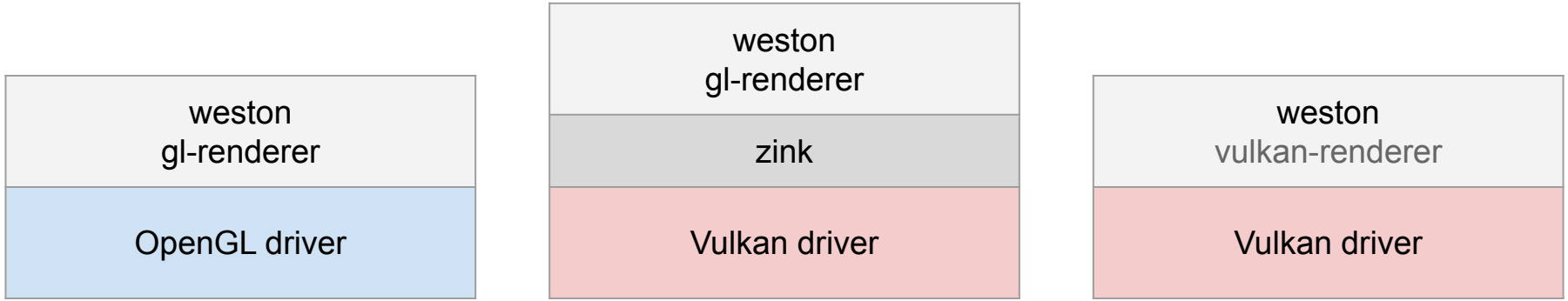
Weston



(from https://commons.wikimedia.org/wiki/File:Weston_10.0_screenshot.png)


weston
gl-renderer
OpenGL driver
weston
gl-renderer
zink
Vulkan driver
weston
vulkan-renderer
Vulkan driver

Why

- Attempt to do initial Wayland WSI enablement on powervr
- Vulkan-only driver
- Early development phase (aiming to get Vulkan 1.0 compliance at the time)

TI SK-AM62

TI SK-AM69

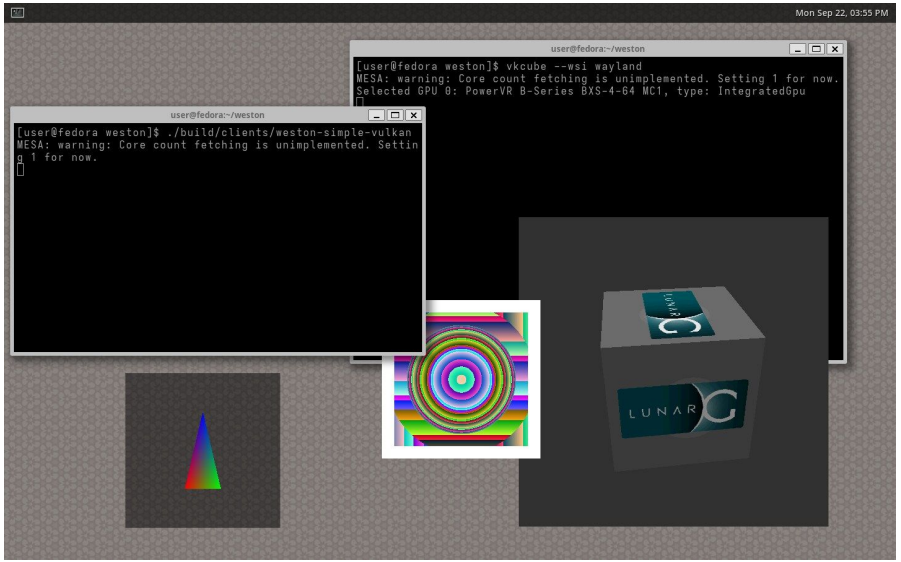
Working on Wayland WSI

1. Add Wayland WSI to driver
2. Which compositor to use?
    - Just try any compositor?
        - no OpenGL driver…
    - zink?
        - support still in progress, needs significant more driver enablement…
    - wlroots Vulkan renderer?
        - Vulkan 1.1+ right now, additional required features…
    - Software-rendered compositor?
        - won't trivially expose linux_dmabuf for GPU clients…

It would be really nice if Weston had a simple Vulkan renderer…

Weston Vulkan renderer

- Vulkan 1.0 with extensions model
- Most extensions are optional according to the backend
- Backends: drm, wayland, x11, headless, vnc, rdp, pipewire
- Weston CI tests
- Some new demos with Vulkan
- Multiple outputs/backends, Xwayland, etc




```
$ weston --renderer=vulkan
```

* for Weston 15.0.0 release

Some use cases

- Vulkan-only platforms
- Development, testing for Vulkan drivers
- CI for Vulkan drivers
- Embedded/Kiosk use cases
- Potentially less overhead(?)

Current challenges

- Still depends on GBM, mesa renderonly still requires a gallium driver (!)
- DRM integration is still challenging (corner cases)
- Supportability of Vulkan 1.0 + extensions model ?
- Discover more use cases / applications ? (Mesa CI?)

Features TODO

- Debug bindings
- YUV formats
- Color management