

# Firefox + Steam Deck

Seamless experience across two compositors

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# Why browsers?

- Very complex applications, good for testing compositors
- *Widely* used



# Why browsers?

- Very complex applications, good for testing compositors
- *Widely* used
- Deep surface trees with popups and tooltips
- Color management, mixing SDR and HDR
- Input needs (gamepad, touch, ...)
- And much more!

# The Steam Deck



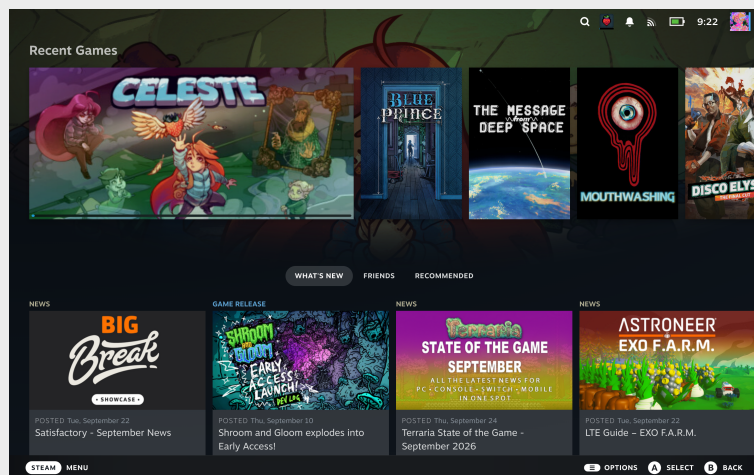
*(cat not included)*



# The Steam Deck

## Game Mode (Gamescope)

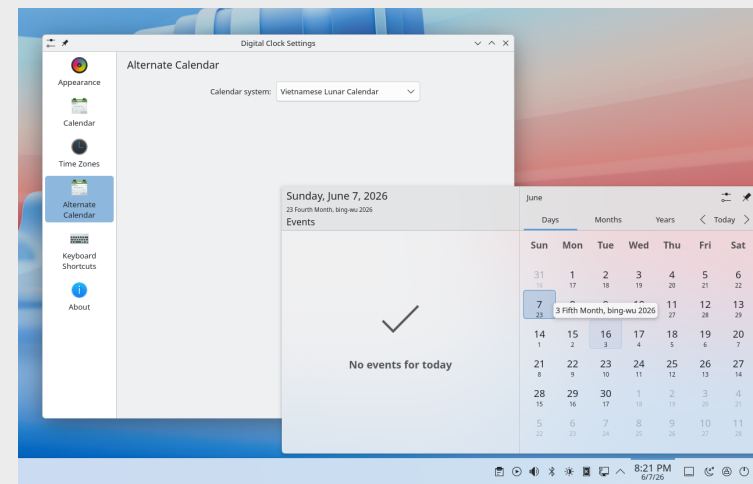
Steam big picture and games



Mostly XWayland

## Desktop Mode (KWin)

Regular KDE desktop



Wayland



# The Steam Deck



There is a protocol mismatch now!

# Back to Firefox

**Fullscreen**

#1867649

**Gamepad**

#1784381

**Notifications**

#1968513

**HDR**

#1539685

**Maximize**

#2065529

**Touch & input**

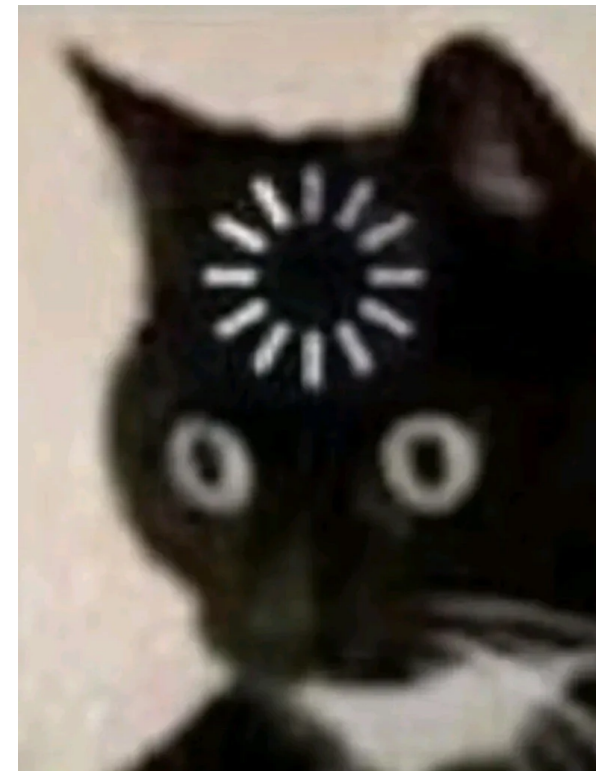
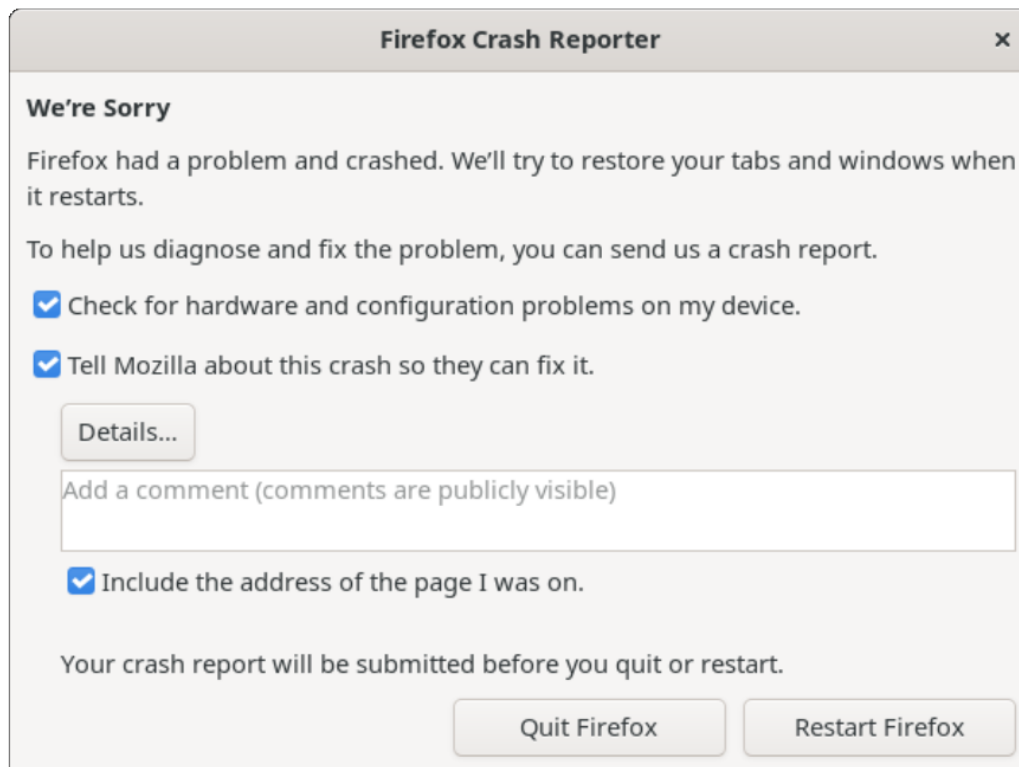
#2043315

The future is Wayland

# What happens if we try to use wayland?

If we try `--expose-wayland` with  
`GDK_BACKEND=wayland` and `MOZ_ENABLE_WAYLAND=1`...

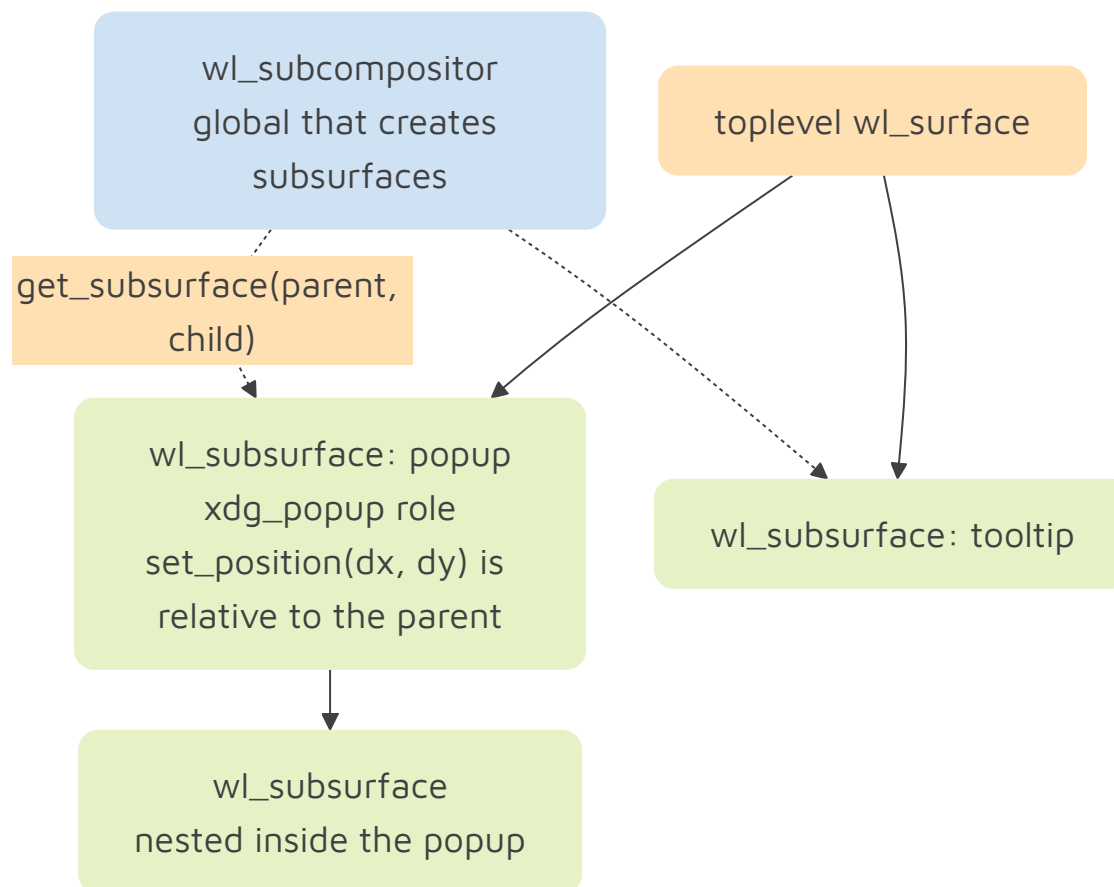
# What happens if we try to use wayland?



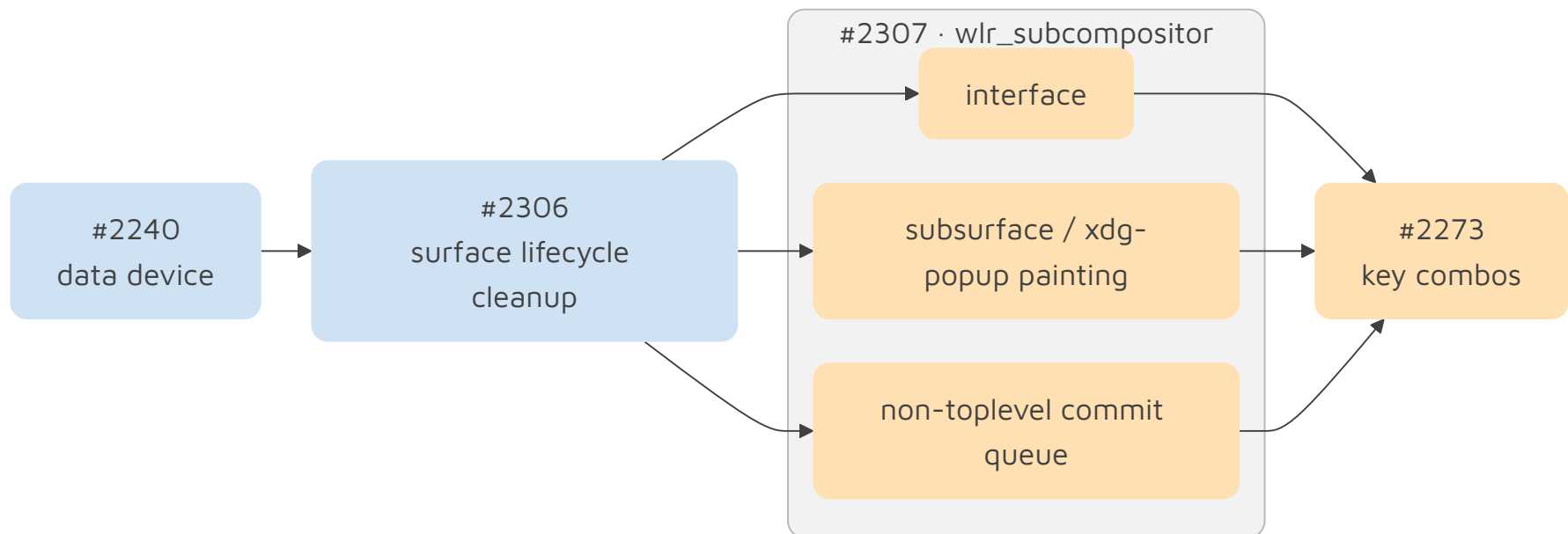
# wl\_subcompositor

- Needed by Firefox
- Ties child `wl_surface` to a parent
- Used for popups, tooltips, menus, overlays...
- `wl_surface.set_input_region` decides where input lands

# wl\_subcompositor



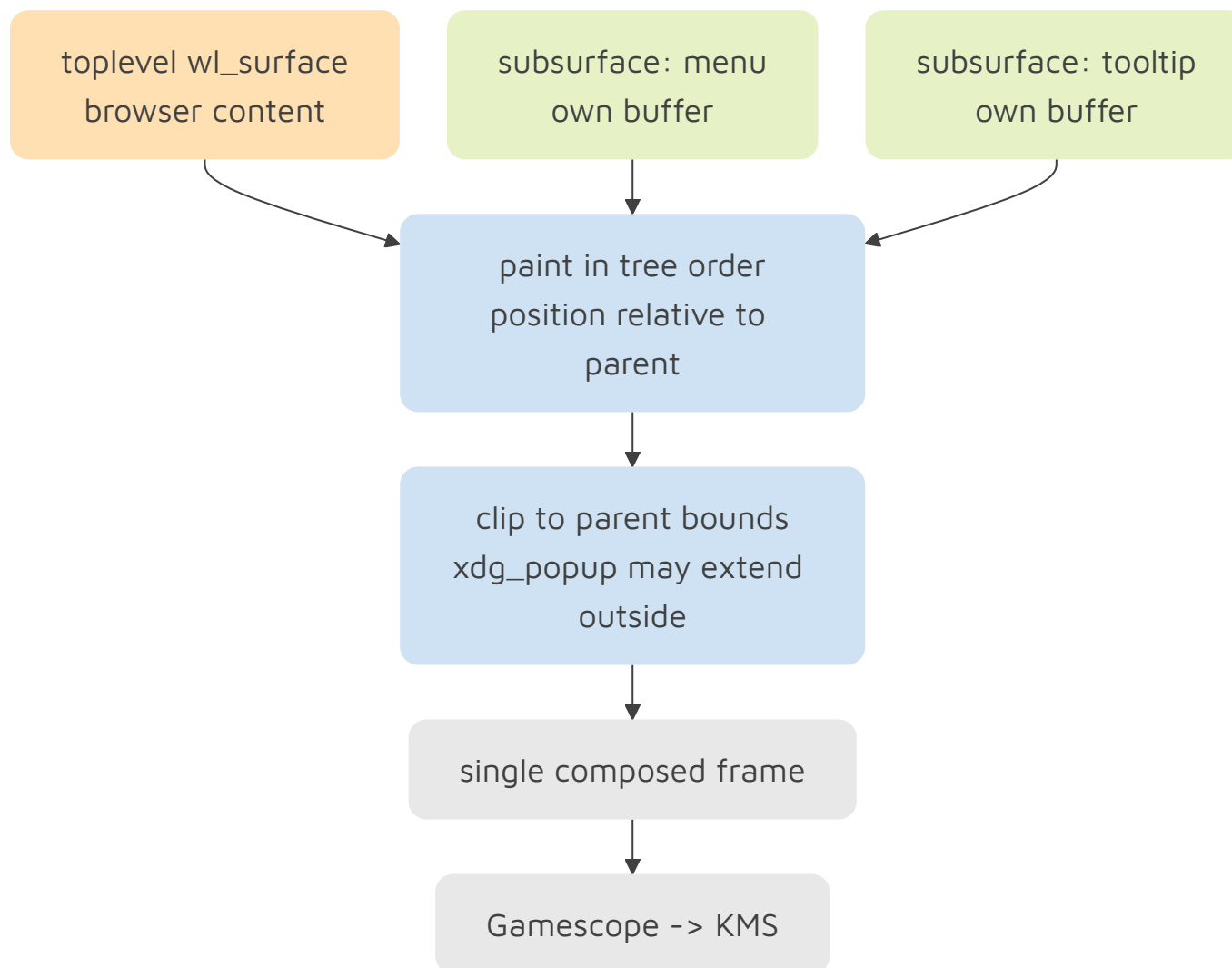
# wl\_subcompositor





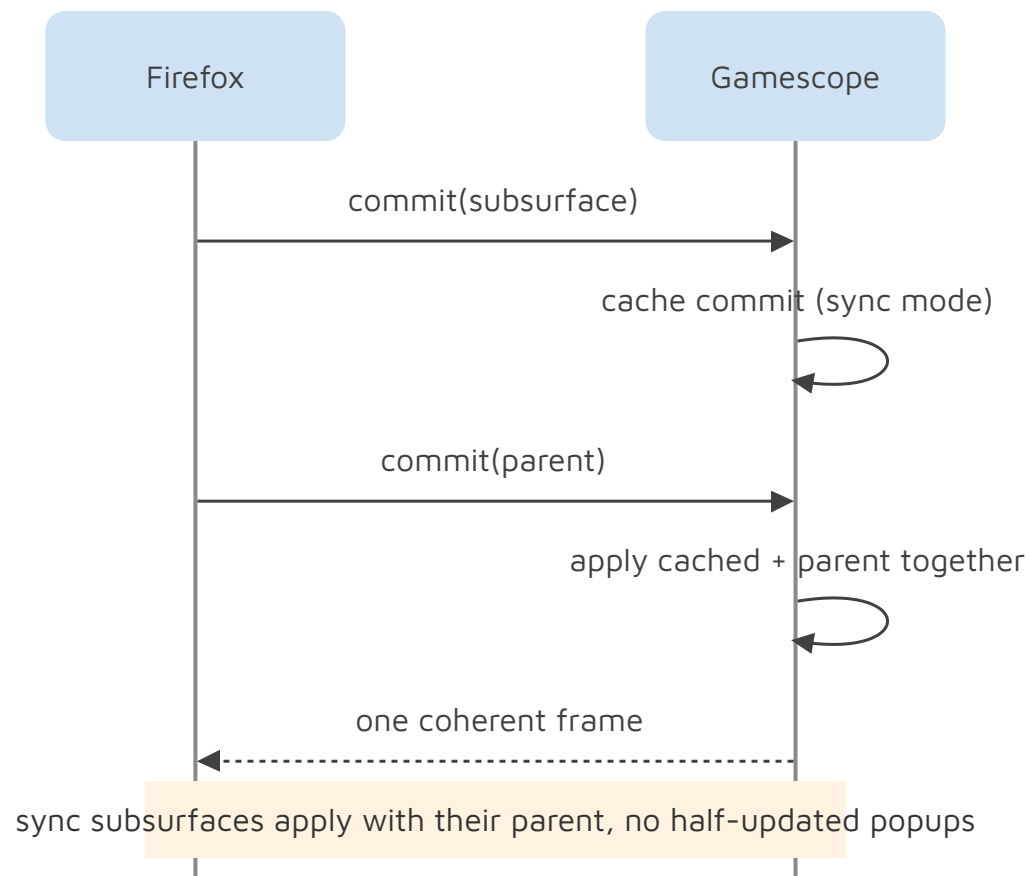
# wl\_subcompositor

Popups are first painted as subsurfaces, clipped to the parent, then composited:

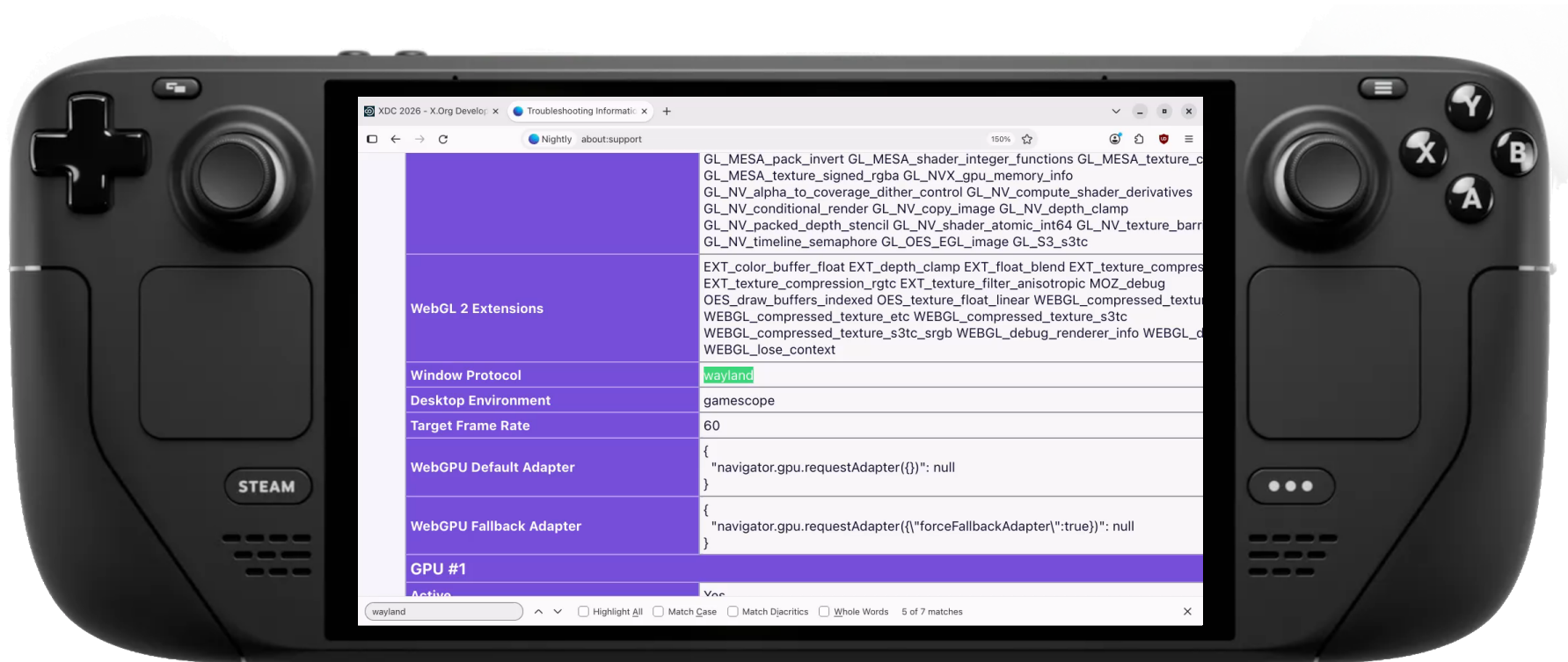


# wl\_subcompositor

Non-toplevel commits are queued and flushed together with their parent:



# What we have



# Not just Firefox

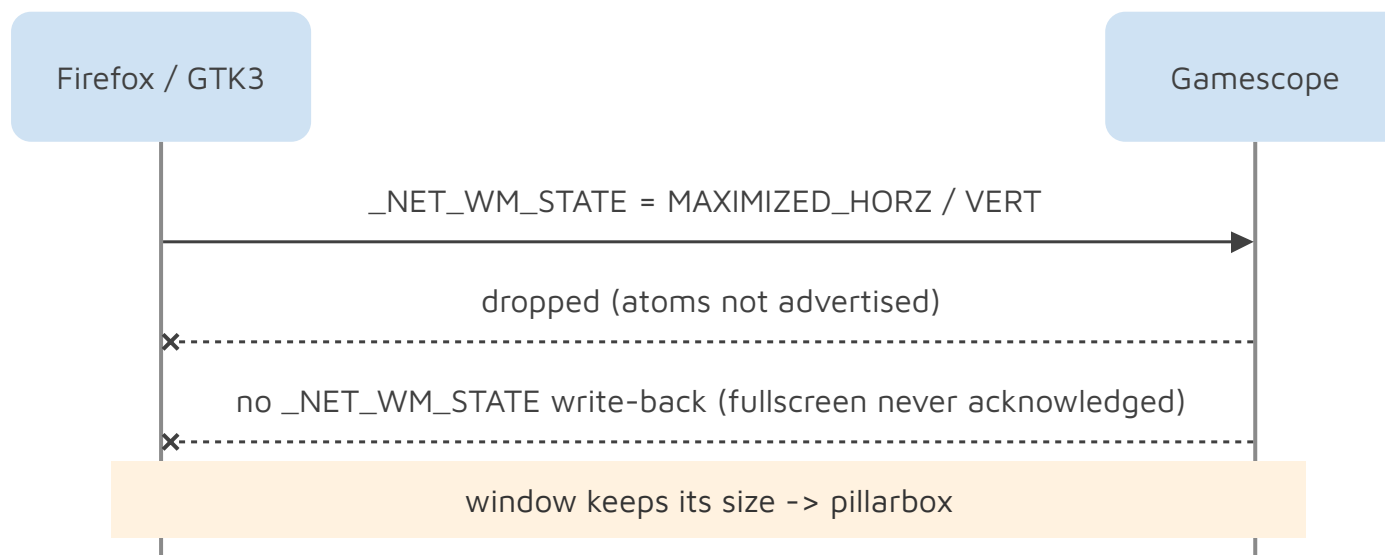
#543 support native Wayland clients

Wine / Proton also need the same interface

This is a step into this direction

# Full screen and sizing

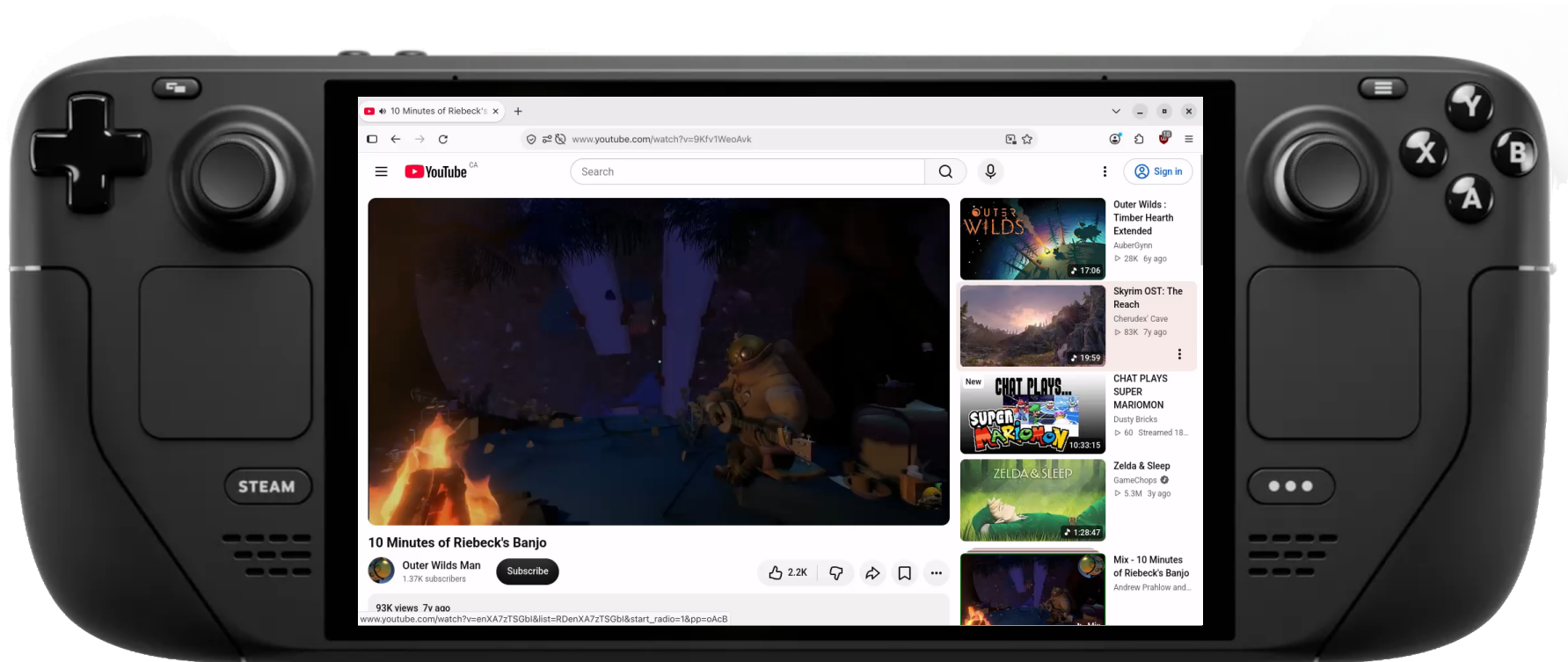
- **#1867649** Gamescope never wrote `NET_WM_STATE` back, so fullscreen didn't work
- **#2065529** Gamescope doesn't advertise `NET_WM_STATE_MAXIMIZED_*`, so the maximize request Firefox sends doesn't work -> Black borders



# Full screen and sizing

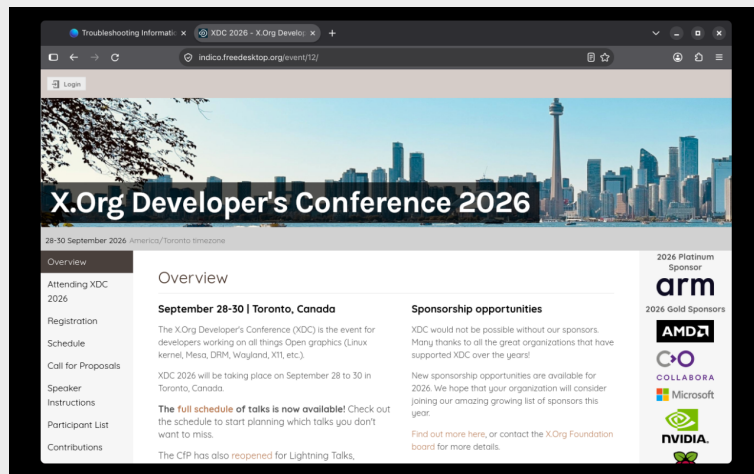
- **#2322** Proper writing of `NET_WM_STATE`
- [WIP] Handle maximize requests
- Also made Firefox detect gamescope for specific tweaks
- What's left: restore geometry when unfullscreening for resizable clients to match the spec

# Full screen and sizing

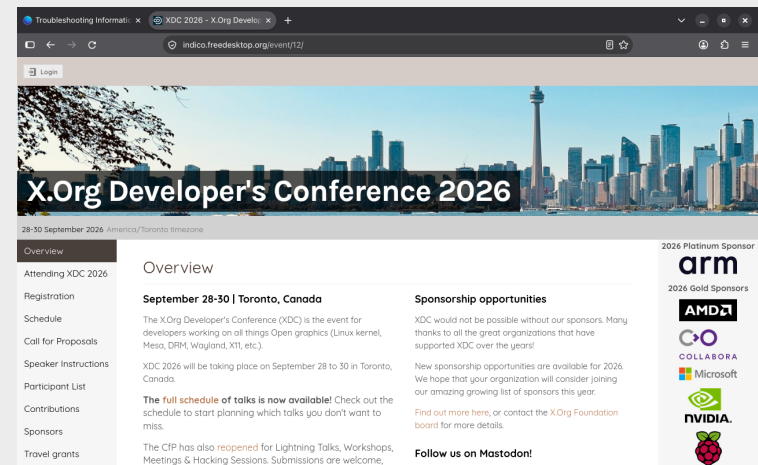


# Full screen and sizing

## Before



## After



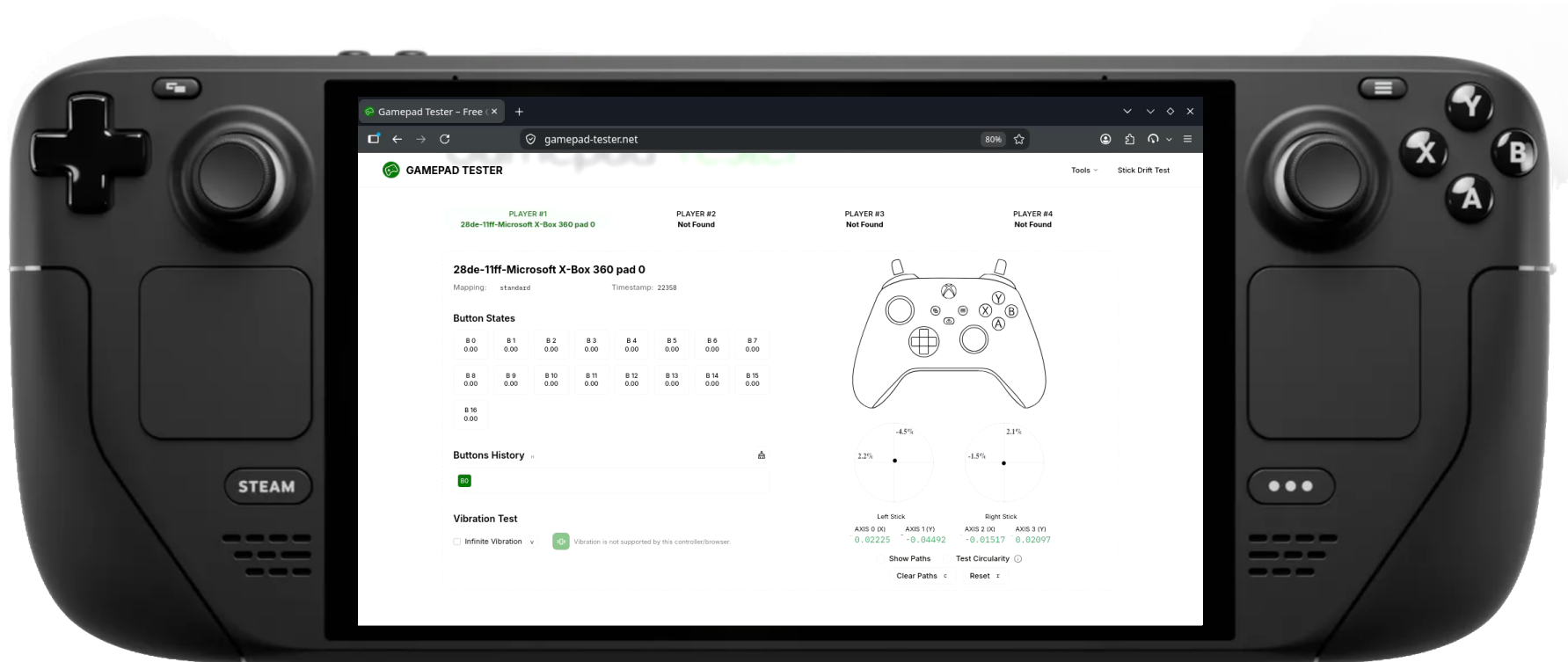


# Input fixes

- [#1784381](#), [#2065511](#) Gamepad was not detected in Firefox (in either mode)
- [#2043315](#) Touch scrolling stutter (investigating)
- [#1870900](#) Touch menu sizing
- Looking at inputfd portal (wayland protocols) instead of udev



# Input fixes



# DBus

- **#2044186** / **#2074009** Currently sync calls, they freeze the UI
- Default timeout 25s
- The blocker was in Firefox in the end
- **#2074009** New async method caching the sync path, migrating consumers with await

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- **#1968513** For game mode, gamescope doesn't implement `org.freedesktop.portal.Notification`
- `steam_notif_daemon` is a stub for external notifications, forwards to Steam only

# Notifications

- Desktop mode notifications are working correctly with the KDE backend
- **#1968513** For game mode, gamescope doesn't implement `org.freedesktop.portal.Notification`
- `steam_notif_daemon` is a stub for external notifications, forwards to Steam only
- **#1882464** Firefox removed the XUL fallback, so there is no in window presenter either
- **#2059329** Working on a new rust based portal backend, but it has no in window presenter still

# Notifications

Would it be worth it to add a Game Mode notification provider reachable through the portal?

Can this be interesting for other use cases?

# HDR

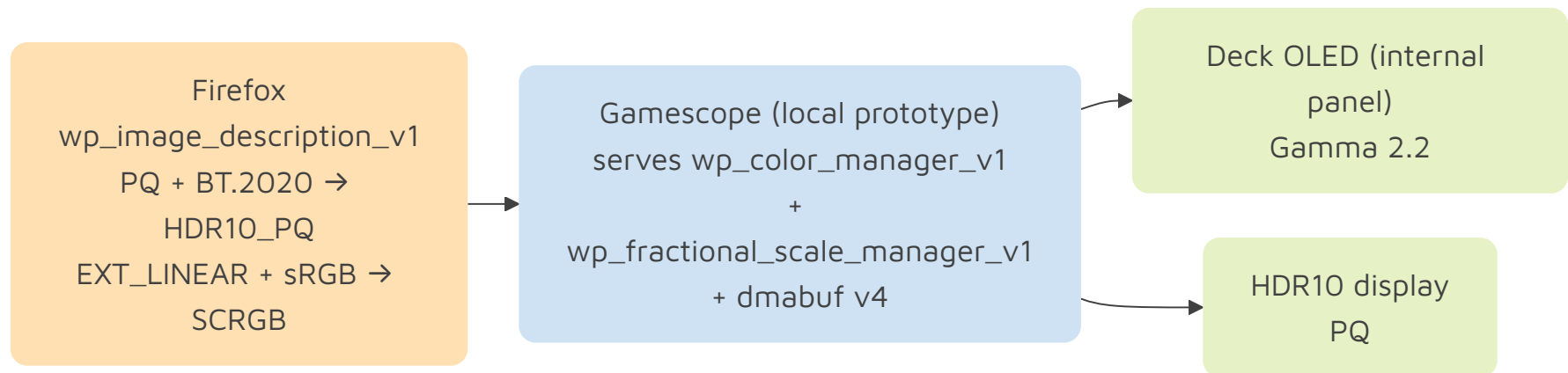
- [#2057759](#) HDR support in Firefox has been improving a lot in the past months
- It works on KWin / Gnome desktops (preference gated)
- [#2353](#), [#1725](#) However, in the Steam Deck the internal OLED is EDR only





# HDR on gamescope

- Gamescope consumes `wp_color_manager_v1` as a nested client
- It doesn't serve it to its clients
- Working prototype to implement the server



# HDR on gamescope



**Both modes are  
finally getting closer**



# What's left?

- Continue reviewing and upstreaming gamescope patches
- Discuss about notification portals
- Work on inputfd to replace udev
- Continue working on HDR support
- Session management

# Q&A



