

Introducing the Vulkan WSI Layer

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3D graphics with new hardware designs and APIs (such as Vulkan) are evolving rapidly. At the same time, windowing systems evolve with new protocols, use-cases, formats, synchronization mechanisms and so on. To effectively support all this GPU drivers separate the implementation of Windowing System Integration (WSI) from the Core 3D rendering.

In Vulkan, WSI is implemented through windowing-specific surface extensions and a swapchain implementation. However, through the Vulkan layer mechanism, we can naturally decouple the WSI code from the core GPU driver. This can make development simpler by allowing people to focus on either supporting new windowing systems and features or new GPU hardware drivers.

By making use of the Vulkan specification with extensions as an interface between WSI code and rendering drivers, it enables more cross-vendor sharing. This also encourages more standardization in how drivers integrate with the OS and leads to more feature-rich Linux graphics stacks.

Introducing the Vulkan WSI layer: the starting point for a driver-agnostic Vulkan swapchain implementation. We've open sourced a working layer that implements `VK_EXT_headless_surface` and `VK_KHR_swapchain`, as a starting point to develop a generic implementation for the different Linux windowing systems.

We'll present the project and its current status, and open for discussion on how we can best collaborate on this important piece of the wider Linux graphics puzzle.

<https://gitlab.freedesktop.org/ mesa/vulkan-wsi-layer>

Code of Conduct

Yes

GSoC, EVoC or Outreachy

No

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Session Classification: Main Track

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