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Gallium3D Overview

Jens Owen

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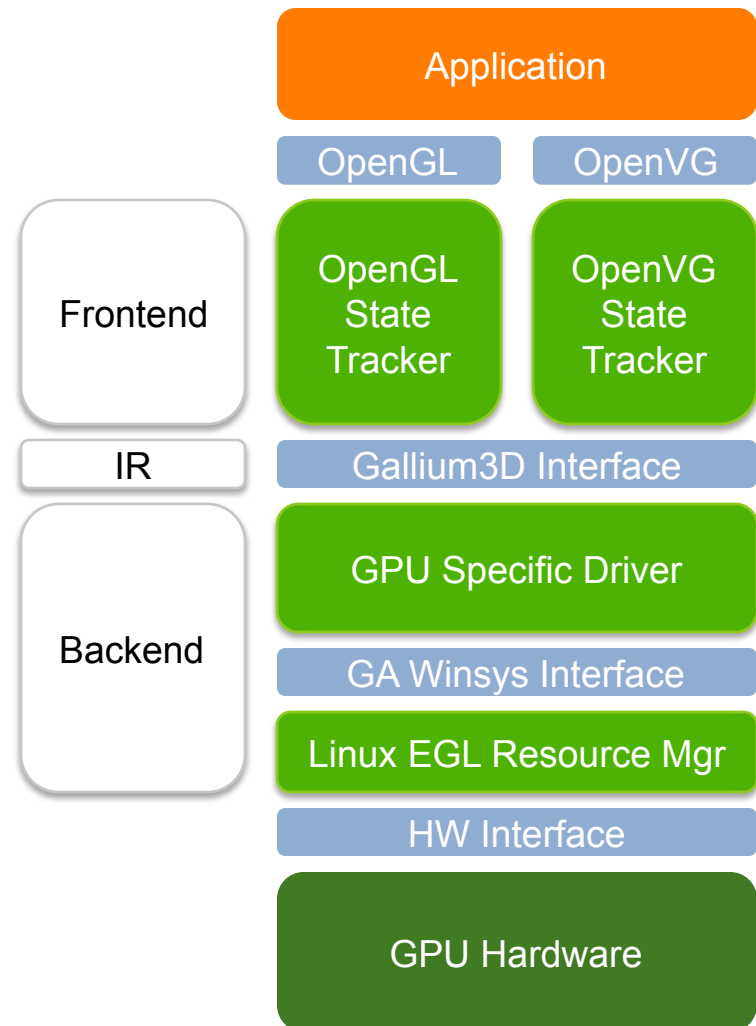Virtual Machine Group

Gallium3D Design Goals

✧ Portability to all major operating systems and graphics interfaces

✧ Make drivers smaller and simpler

✧ Model modern graphics hardware

Gallium3D Architecture

- ✧ Simplify implementation of complex shader pipelines by borrowing compiler concepts

- ✧ Gallium3D Interface is the IR

- ✧ Frontends are specific to API's

- ✧ Backends are specific to GPU Hardware

Application

OpenGL | OpenVG

Frontend

OpenGL State Tracker | OpenVG State Tracker

IR — Gallium3D Interface

Backend

GPU Specific Driver

GA Winsys Interface

Linux EGL Resource Mgr

HW Interface

GPU Hardware

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Status of Open Source Components

Complete:

✧ OpenGL 2.x State Tracker

✧ OpenGL ES 1.1 State Tracker

✧ OpenGL ES 2.0 State Tracker

✧ OpenVG 1.0 State Tracker

✧ Softpipe (Software Renderer)

✧ EGL 1.0 Winsys

✧ X11/DRI Winsys

Partially Complete:

✧ OpenVG 1.1 (over 75% complete)

✧ OpenCL 1.0 (just started, less than 10% complete)

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Status Relative to OpenKOGs

- ✧ OpenGL ES 1.1 and 2.0 support is solid

- ✧ OpenVG 1.1 requires some work (75% complete)

- ✧ Software renderer complete for above APIs

- ✧ OpenMax has not been addressed

- ✧ EGL requires work to integrate common surface management among all the above API's

- ✧ Going forward OpenCL requires significant work including significant enhancements to Gallium3D Interface

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Face to Face Technical Session

✧ Full day, In depth, technical session on Gallium3D internals

✧ Face to face in Palo Alto on Nov 13th

✧ Contact jowen@vmware.com to reserve a seat at this session

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