

# **Vulkan Guide**

**Khronos Group**

# Logistics Overview

## What is Vulkan?

1. Vulkan is a new generation graphics and compute API
2. Vulkan provides high-efficiency, cross-platform to modern GPUs used in a devices like pc/mobile/embedded platforms
3. Vulkan provide a way for developers to program their modern GPU hardware
4. The Khronos Group is created and maintains Vulkan.

# Vulkan and OpenGL

## Difference

1. OpenGL is also a 3D Graphics API
2. Vulkan is not a replacement for OpenGL
3. Vulkan is an explicit API allows for more explicit control of the GPU

Feature	OpenGL ES	Vulkan
State management	Global state	State objects
API execution model	Synchronous	Asynchronous
API threading model	Single threaded	Multi-threaded
API error checking	Extensive runtime checks	Only via layers
Render pass abstraction	Inferred render passes	Explicit render passes
Memory allocation	Client-server pools	Shared memory pool
Memory usage	Typed allocations	Typed views