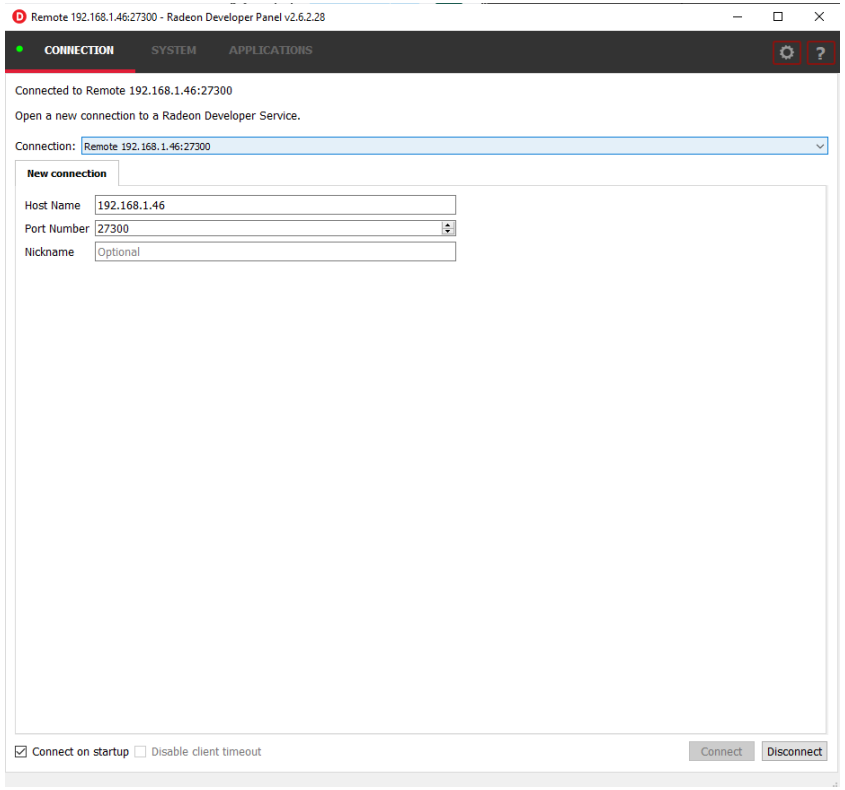
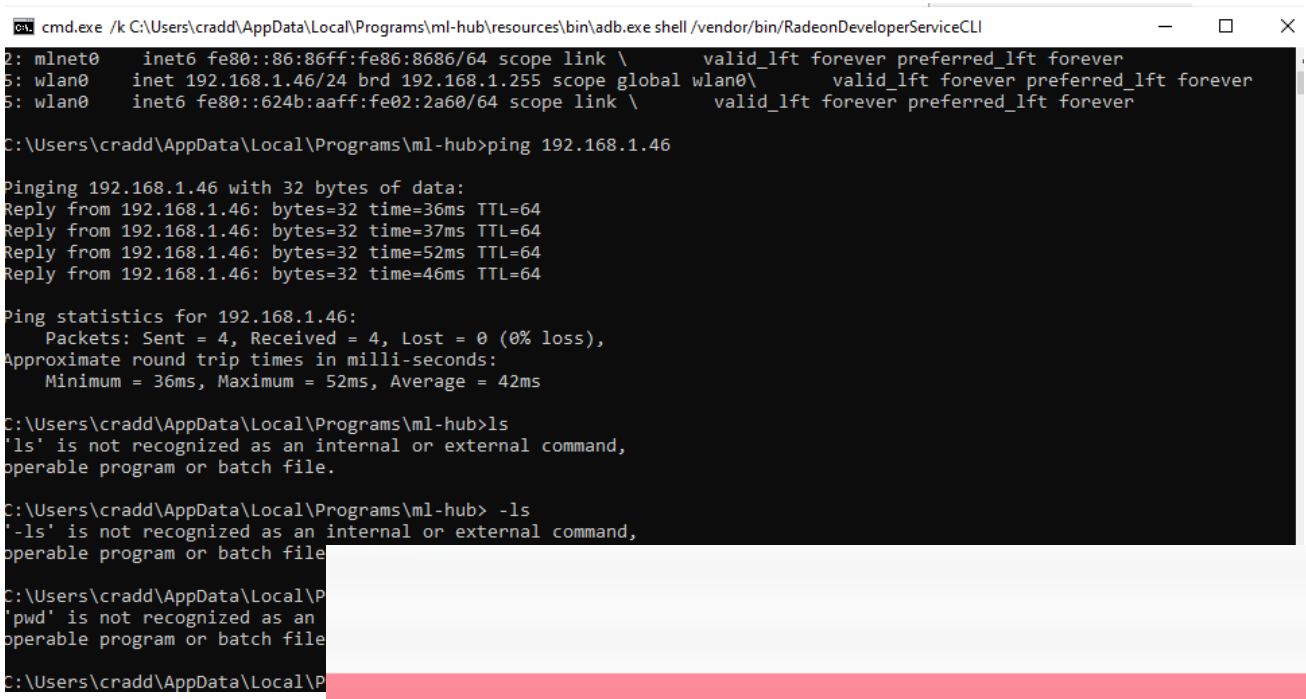
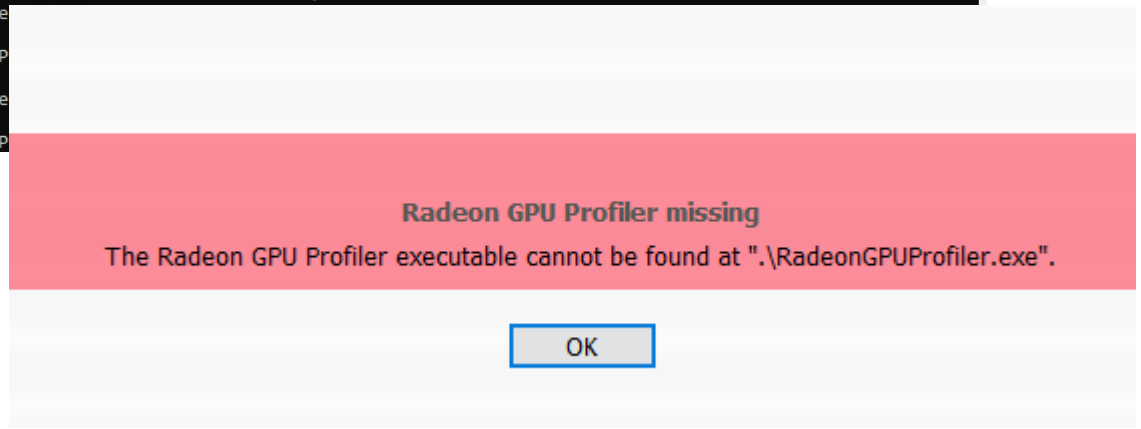
AR Security 9/27

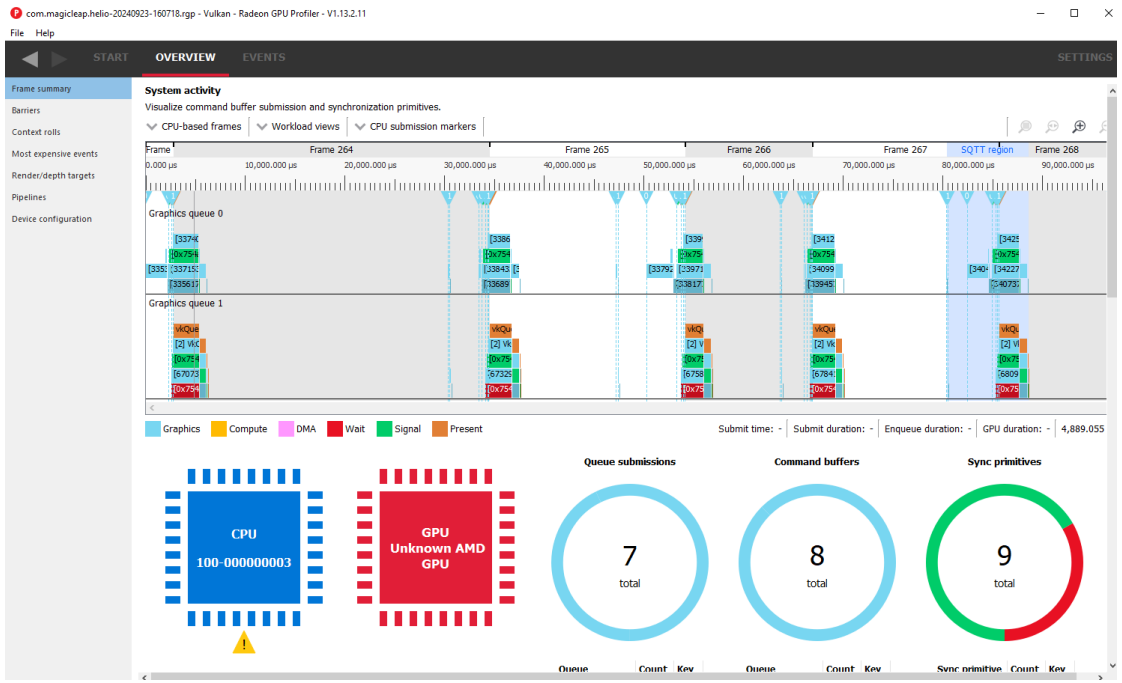
Allie Craddock & Casie Peng

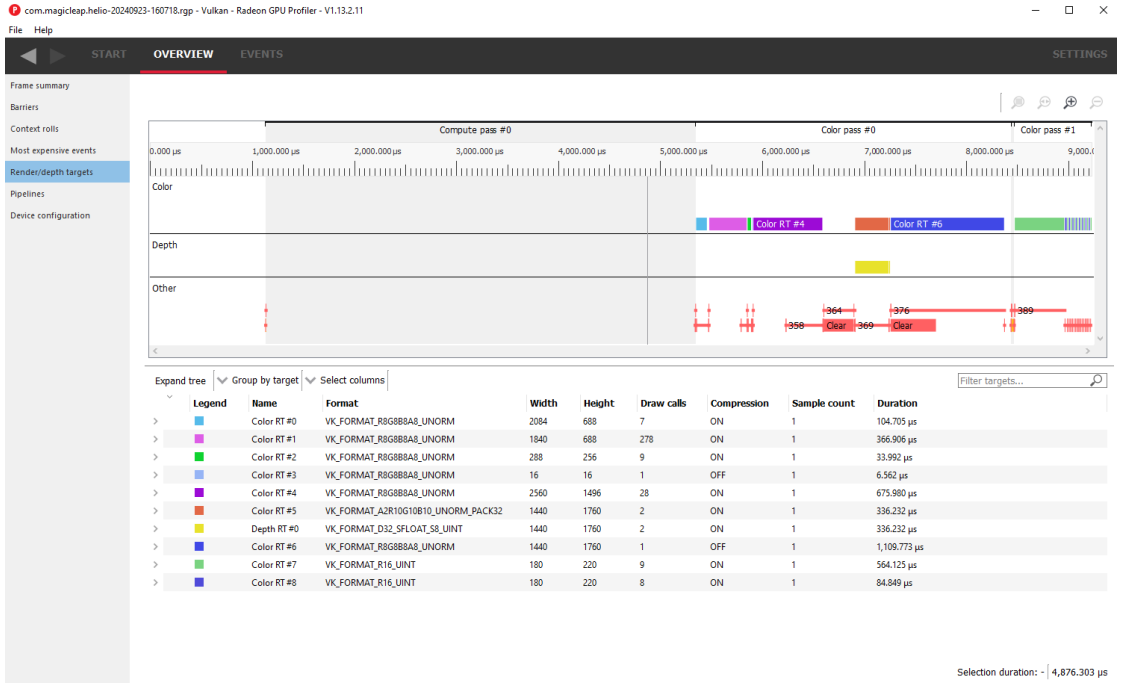
Radeon GPU Profiler








com.magicleap.helio-20240923-160718.rgp - Vulkan - Radeon GPU Profiler - V1.13.2.11
File Help
START
OVERVIEW
EVENTS
SETTINGS
Frame summary
Barriers
Context rolls
Most expensive events
Render/depth targets
Pipelines
Device configuration
System activity
Visualize command buffer submission and synchronization primitives.
CPU-based frames
Workload views
CPU submission markers
Frame
Frame 264
Frame 265
Frame 266
Frame 267
SQTT region
Frame 268
Graphics queue 0
Graphics queue 1
Graphics
Compute
DMA
Wait
Signal
Present
Submit time: -
Submit duration: -
Enqueue duration: -
GPU duration: -
4,889.055
CPU
100-000000003
GPU
Unknown AMD
GPU
Queue submissions
7
total
Command buffers
8
total
Sync primitives
9
total


com.magicleap.helio-20240923-160718.rgp - Vulkan - Radeon GPU Profiler - V1.13.2.11
File Help
START
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Color pass #0
Color pass #1
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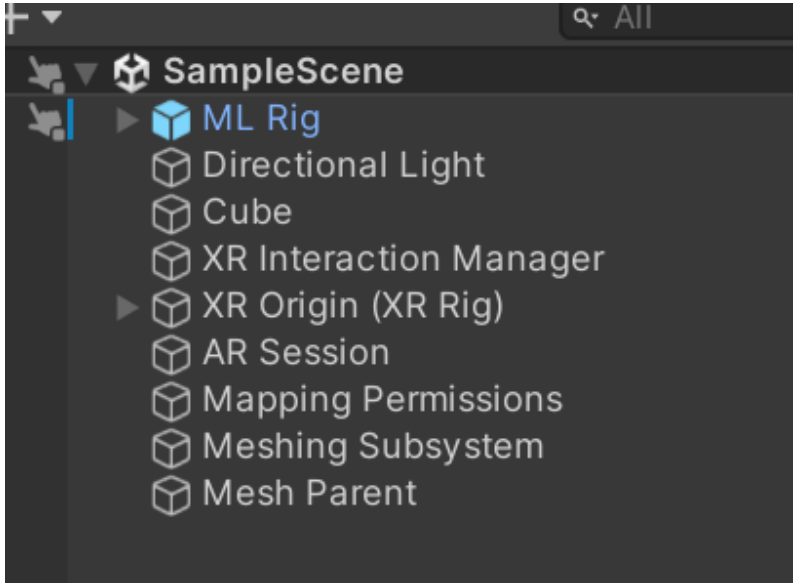
Color RT #4
Color RT #6
Depth
Other
Clear
Clear
Expand tree
Group by target
Select columns
Filter targets...
Legend
Name
Format
Width
Height
Draw calls
Compression
Sample count
Duration
Color RT #0 VK_FORMAT_R8G8B8A8_UNORM 2084 688 7 ON 1 104.705 µs
Color RT #1 VK_FORMAT_R8G8B8A8_UNORM 1840 688 278 ON 1 366.906 µs
Color RT #2 VK_FORMAT_R8G8B8A8_UNORM 288 256 9 ON 1 33.992 µs
Color RT #3 VK_FORMAT_R8G8B8A8_UNORM 16 16 1 OFF 1 6.562 µs
Color RT #4 VK_FORMAT_R8G8B8A8_UNORM 2560 1496 28 ON 1 675.980 µs
Color RT #5 VK_FORMAT_A2R10G10B10_UNORM_PACK32 1440 1760 2 ON 1 336.232 µs
Depth RT #0 VK_FORMAT_D32_SFLOAT_S8_UINT 1440 1760 2 ON 1 336.232 µs
Color RT #6 VK_FORMAT_R8G8B8A8_UNORM 1440 1760 1 OFF 1 1,109.773 µs
Color RT #7 VK_FORMAT_R16_UINT 180 220 9 ON 1 564.125 µs
Color RT #8 VK_FORMAT_R16_UINT 180 220 8 ON 1 84.849 µs
Selection duration: - 4,876.303 µs

Power Profiler

Unity Development Side – API searching

Simple Meshing Setup

In this tutorial, you'll learn how to set up the Spatial Mapping component with Magic Leap 2 in Unity. By the end of this guide, you'll have a scene capable of meshing the world around you, providing a foundation for immersive mixed reality experiences. The Spatial Mapping in Magic Leap 2 is similar to AR Foundation's Spatial Mapping component.



Detecting performance bottlenecks with Unity Frame Timing Manager

Which measurements does the Frame Timing Manager API provide?

The Frame Timing Manager API provides a set of useful CPU and GPU measurements per frame as the FrameTiming struct. Here's a list of them:

- **cpuFrameTime** refers to the total CPU frame time. It is calculated as the time between the start of the frame and the next frame on the main thread.
- **cpuMainThreadFrameTime** is the main thread's work time, or the total amount of time between the start of the frame and the main thread finishing its job.
- **cpuRenderThreadFrameTime** refers to the render thread's work time, or the total amount of time between the first work request submitted to the render thread and the time when the Present() function is called.
- **cpuMainThreadPresentWaitTime** is the duration the CPU spends waiting for Present() to complete during the frame.
- **gpuFrameTime** is the GPU's work time, or the total amount of time between the work submitted to the GPU and the signal indicating that the GPU has finished the job. See relevant limitations in the "Supported platforms and limitations" section below.

Note that the **cpuMainThreadPresentWaitTime** is the sum of shown "[wait]" blocks, and includes waits for Present() and target fps. It's harder to show GPU work time, as it starts somewhere in the middle of "Scene rendering" and finishes on the next frame's sync point with the previous frame.

Current Questions