

Project Boxxxy: Open Source GPU Remote Access & Development Suite

Project Report-I

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What is Boxyy?

- What Google Colab did to GPU compute, Boxyy aims to do for graphics
- Consists of an engine, streaming server, and a development environment for real-time debugging

Project Design

WebRTC

- Delivery of content from the engine to the user
- Cross-platform (browser-based)

WebGPU

- Component which interacts with the hardware on the server
- Uses WebGPU to ensure that it is OS agnostic
- Handle popular shader languages like GLSL and SPIR-V

DevSync

- Enable real-time coding and debugging.
- Code in a local environment but execute the binary on the remote server
- Have QoL features such as hot reloading

Compiler Infrastructure

- Implement remote caching and reduce turnaround time for builds
- Utilise distributed caching to store unchanged artifacts
- Allow for distributed builds to fully utilise compute

My work at Coditation so far...

- Bazel
 - Artifact-based
 - Remote-caching
 - Remote-execution
- CMAKE and vcpkg
- WebGPU

Questions?