Google

Gitlab-based Mesa CI

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The Not Rocket Science Rule of Software Engineering

> “Automatically maintain a repository of code that passes all the tests.”

Graydon Hoare
Creator of Rust

Gitlab CI: Jobs

- mesa/.gitlab-ci.yml specifies jobs to be run and their dependencies
- Jobs communicate to other jobs using “artifacts” uploaded to freedesktop.org
- Jobs can be tagged to require a specific set of runners
- Jobs can use docker images for running their scripts

Gitlab CI: Runners

- Mesa uses freedesktop.org's large shared pool of x86_64 runners:
  - docker container builds containing compilers and dEQP
  - Mesa x86_64 and ARM builds and unit tests (qemu for ARM)
  - softpipe/llvmpipe dEQP
- freedesktop.org has one shared arm runner for building ARM docker test container (no compilers)
- Shared A307 (3 db410c) and A630 (6 cheza) runners in our lab at Google

Current test matrix

Category	GLES2	GLES3	GLES3.1
softpipe	4*2 minutes		
llvmpipe	4*3.5 minutes	1/10 tests @4 minutes	
Adreno A307	4*10 minutes		
Adreno A630	4 minutes	6*4.5 minutes	4*7 minutes

Key Takeaway: Pre-merge CI turnaround time ~10 minutes, targeting <5

Next steps

- Get compile times back down (nir_range_analysis !2104, algebraic !2000)
- Vulkan testing (up on tu-ci branch of anholt/mesa)
- Test more drivers
  - Panfrost getting enabled shortly (!2064)
  - Your preferred driver, too?
- Parallelize dEQP inside the job instead of outside
  - Use volt's dEQP wrapper? Write another one?