Gitlab-based Mesa CI

Eric Anholt
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
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

<table>
<thead>
<tr>
<th>Category</th>
<th>GLES2</th>
<th>GLES3</th>
<th>GLES3.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>softpipe</td>
<td>4*2 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>llvmpipe</td>
<td>4*3.5 minutes</td>
<td>1/10 tests @4 minutes</td>
<td></td>
</tr>
<tr>
<td>Adreno A307</td>
<td>4*10 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adreno A630</td>
<td>4 minutes</td>
<td>6*4.5 minutes</td>
<td>4*7 minutes</td>
</tr>
</tbody>
</table>

**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?