OpenCL testing framework for Piglit

XDC 2012, Nuremberg

Background:

- EvoC project
- Piglit framework
- TDD and regression finding

Goals:

- Test OpenCL implementation compliance
- Test all OpenCL versions
- Easy writing of tests

- Piglit gives us:
 - · Concurrent testing
 - Grouping of tests
 - · Results display
- Test all platforms and devices if possible
- Tests can be platform and/or device specific
- Share as much common code between tests
- Helper functions (call multiple API functions or a subset of all API function arguments)

Test:

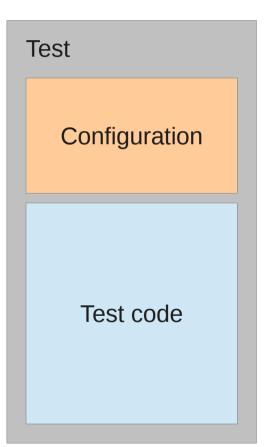
- Configuration section
- Test section

Different test types:

- · API
- · Program
- · Custom

• Why different types?

- · Share common code
- Write only the part you're testing



- Test OpenCL C programs without writing any C/C++ code
- Specify input, compare output
- Execute multiple tests on same program

Results:

Platform	Device	API	Program	Total
Clover	Evergreen	18/30	13/39	32/70
Intel OpenCL	Core i5 Arrandale	16/30	36/39	53/70
AMD APP	Core i5 Arrandale	15/30	39/39	55/70

Most of the API tests fail because of invalid returned error codes and crashes on "invalid" usage.

Users:

- · Clover
- · Radeon

Short term:

- Write a lot more tests
- Create clinfo binary (something similar to glxinfo)
- Add support for half type

Long term:

- OpenGL + OpenCL tests
- Support SPIR (Standard Portable Intermediate Representation)

Questions?