

OpenCL testing framework for Piglit

XDC 2012, Nuremberg

About

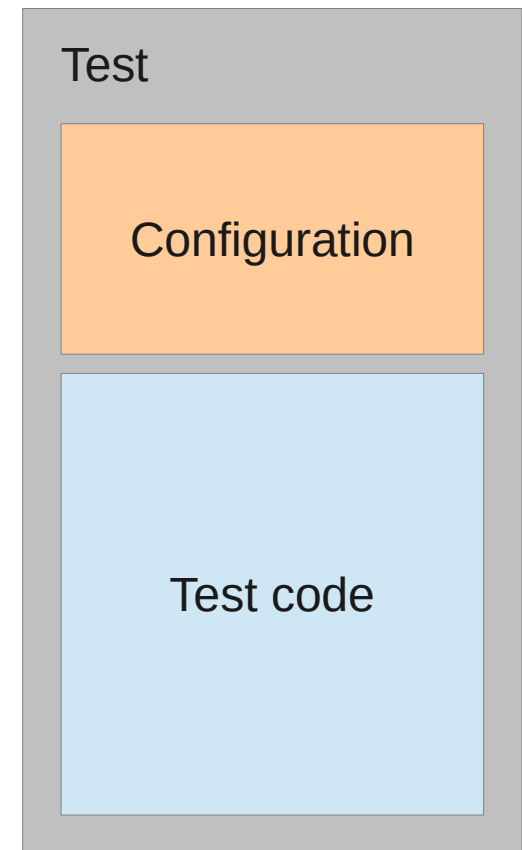
- **Background:**
 - EvoC project
 - Piglit framework
 - TDD and regression finding
- **Goals:**
 - Test OpenCL implementation compliance
 - Test all OpenCL versions
 - Easy writing of tests

Design

- 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)

Tests

- **Test:**
 - Configuration section
 - Test section
- **Different test types:**
 - API
 - Program
 - Custom
- **Why different types?**
 - Share common code
 - Write only the part you're testing



Program tester

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

Current status

▪ 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

Future plans

- **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)

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End

Questions?