C++ as a service — rapid software development and dynamic interoperability with Python and beyond

Interactive C++: cling and clang-repl

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Status. Cling

✤ No news here: We need to fix 6 tests in Cling

Status. Clang-Repl

✤ Incremental Input (RFC)

   ✤ D143142 — Enable Lexer to grow its buffer

   ✤ D143144 — Add TryGrowLexerBuffer/SourceFileGrower

   ✤ D143148 — Add basic multiline input support

✤ Value Handling (RFC)

   ✤ D141215 — Introduce Value and implement pretty printing. Quite far down the review process.

   ✤ D146389 — Initial interactive CUDA support for clang-repl. Almost ready.

The goal is to provide better stability and robustness which can later cling can reuse.

Status. InterOp

✤ Implemented allocate/deallocate interfaces

✤ Implemented Construct/Destruct interfaces

✤ Enabled smart pointer support

✤ Enabled debugging output (llvm::DebugFlag)

✤ Enabled debugging jitted code (clang-repl mode only)

✤ Added CI builds that enable valgrind checks

✤ Rebased to our cppyy forks.

✤ libInterOp-based cppyy: passes 170/504 tests.

Status. Clad

✤ Code refactoring of the tests infrastructure

✤ Added constexpr and consteval test cases

✤ Improved support of 32bit

✤ Fixed bugs in clad::array init

Status. Xeus-Clang-Repl/Xeus-Cpp

✤ Fixed a bug in declaration/statement disambiguation D147319

Upstreaming Patches

✤ Spreadsheet tracking the progress <u>here</u>.

✤ Total amount of upstreamed cling patches 26(26+0) out of 52 upstreamable.

CaaS Open Projects

- Open projects are tracked in our <u>open projects page</u>.

Next Meetings

✤ Monthly Meeting — 1st June, 1700 CET/0800 PDT

If you want to share your knowledge/experience with interactive C++ we can include presentations at an upcoming next meeting

Thank you!