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

Interactive C++: cling and clang-repl

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Release of ROOT is done. 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

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

- GitHub actions-based CI is done
- Improved the template instantiation API
- Added several tests to describe missing functionality
- Opened issues for GSoC students to try addressing
- Merged CallFunc work: PR 11252
- libInterOp-based cppyy: pass 60/476 tests.
  - Fixed missing gInterpreter-related test failures
  - Better template instantiation logic
Looking at how to optimize the time for generation in Cling. Investigating the current performance issue
Status: Xeus-Clang-Repl

- Colored diagnostics
- Working on Parameterized kernel specs proposal
- Working on deploying Clad
- Working on shipping the InterOp-based cppyy
- Backporting the Clang-Repl patches under review to progress with the Zeus kernel integration towards a feature complete product
Upstreaming Patches

- Spreadsheet tracking the progress [here](#).
- Total amount of upstreamed cling patches $26(26+0)$ out of 52 upstreamable.
Open projects are tracked in our open projects page.
Next Meetings

✧ Monthly Meeting — 6th Apr, 1700 CET/0800 PDT
  ✧ A talk on Numba

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