

*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

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- ❖ Jonas Hahnfeld moved cling to using the llvm monorepo
- ❖ He works on reducing the ROOT patches in llvm / clang: [PR13072](#), [PR13099](#), [PR13123](#)

# Status. Clang-Repl

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- ❖ Incremental Input (RFC)
  - ❖ D143142 — Enable Lexer to grow its buffer
  - ❖ D143144 — Add TryGrowLexerBuffer/SourceFileGrower
  - ❖ D143148 — Add basic multiline input support
- ❖ Value Handling (RFC)
  - ❖ D146809 — [clang-repl] Implement Value pretty printing for containers
  - ❖ D152109 — [clang-repl] Improve the clang-repl documentation **Landed!**
  - ❖ D154382 — [ClangRepl] support code completion at a REPL

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

# Status. InterOp

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- ❖ Updated the ReadMe GitHub file
- ❖ Implemented a way to get the class template instantiation arguments
- ❖ Properly implement placement new via InterOp::Construct
- ❖ Implemented better handling of typedefs
- ❖ Added doxygen-style documentation
- ❖ libInterOp-based cppyy: passes 207 / 504 tests.

# Status. Clad

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- ❖ Initial support of forward vector mode AD. Array support to come.
- ❖ Clad is able to run one of the major LHC higgs combination benchmarks and show improvements in minimization time.

# Status. Xeus-Clang-Repl/Xeus-Cpp

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- ❖ Progressing in embedding CppInterOp into xeus-clang-repl
- ❖ Progress in implementing the inspect request in xeus-cpp
- ❖ Progress in implementing the web assembly support

# Upstreaming Patches

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- ❖ Spreadsheet tracking the progress [here](#).
- ❖ Total amount of upstreamed cling patches 26(26+0) out of 52 upstreamable.

# CaaS Open Projects

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- ❖ Open projects are tracked in our [open projects page](#).



# Next Meetings

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- ❖ Monthly Meeting — 3rd August, 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!