

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

*Interactive C++: cling and clang-repl*

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11.11.2021

# Status. Cling

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- ❖ Continuing to rebase cling on top of llvm13
- ❖ The ppc64 support for Cling is back (we lost it in llvm8).

# Status. InterOp

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- ❖ The document is ready. We are looking forward to your feedback.
- ❖ Addressed several comments and still some minor improvements but mostly happy with the current state.

# Status. Clad

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- ❖ A talk by Ioana on “Automatic Differentiation for C++ and Cuda using Clad” at ACAT
- ❖ Poster on NeurIPS about Clad

# People

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Parth Arora

Clad aggregate type  
support to support  
libraries such as Eigen  
(Dec 2021-May 2022)



Garima Singh

AD in RooFit  
(Jan 2022-Dec 2022)



Baidyanath Kundu

cppyy, libInterOp  
(Jan 2022-Dec 2022)

# Plans

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- ❖ Prepare a paper about the work we've completed.
- ❖ Enable error recovery for advanced C++ code (eg template instantiation)
- ❖ Accelerate upstreaming clang patches
- ❖ Automatically differentiate the CUDA kernels (including computation scheduler)

# CaaS Open Projects

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- ❖ Patches against clang.git
  - ❖ Implement FileManager uncaching
  - ❖ Adapt the user of invalidateCache to its new signature
  - ❖ Mark the file entry invalid, until reread
  - ❖ Propagate cache flags from LookupFile() to FileManager::getFile()
  - ❖ Pass the OpenFile flag also to DirectoryLookup
  - ❖ Do not load the source file just to get an irrelevant SourceLoc (ROOT-7111)
  - ❖ Allow interfaces to operate on in-memory buffers with no source location info [Pratyush Das]
- ❖ Open projects are tracked in our open projects page.

# Next Meetings

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- ❖ Monthly Meeting — 13th January, 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!