

C++ Club Meeting Notes

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GitHub

- ▶ Website
 - ▶ Marshall Clow joined as a staff engineer
- ▶ C++ Slack workspace invitation
- ▶ Reddit

- ▶ [Blog post](#)
- ▶ [Remote development](#)

Use the official Boost.Hana with MSVC 2017 Update 8 compiler

► Post

Today, we're happy to announce that the vcpkg version of Boost.Hana now just points to the official master repo, instead of our fork.

► Post

In the most recent, 15.9, update to Visual Studio 2017 Enterprise Edition, we've added "Step Back" for C++ developers targeting Windows 10 Anniversary Update (1607) and later. With this feature, you can now return to a previous state while debugging without having to restart the entire process.

- ▶ **Release**
 - ▶ Added experimental support for data generators
 - ▶ Added support for compiling and running Catch without exceptions
- ▶ **Reddit**
 - ▶ **Why CATCH?**

std::optional: How, when, and why

- ▶ VCBlog post
 - ▶ Reddit

- ▶ Post

- ▶ [Reddit 1](#)

- ▶ [Reddit 2](#)

I no longer plan to update my books to fix technical errors.

- ▶ [Blog post](#)
 - ▶ Includes Godbolt links to try it out using an experimental Clang-based implementation
- ▶ [CppCon 2015 talk at 29:06](#)
- ▶ [PDF](#)
- ▶ [Bind Returned/Initialized Objects to the Lifetime of Parameters, by R. Smith and N. Josuttis](#)

<This paper> shows how to efficiently diagnose many common cases of dangling (use-after-free) in C++ code, using only local analysis to report them as deterministic readable errors at compile time.

C++ Now 2018: Compile Fast, Run Faster, Scale Forever: A look into the **sol** Lua library, by JeanHeyd Meneide

- ▶ [Video](#)
- ▶ [sol2 on GitHub](#) (MIT, but will become Apache 2), [Docs](#), [Tutorials](#), [Examples](#)
 - ▶ Used in: databases (Redis), OS components, games and game engines, HPC, GUI scripting (Waze, OpenMPT), chat servers etc.
 - ▶ Written on top of Lua C API
- ▶ Soon: paper on `std::optional` (rebind on assignment)
- ▶ Soon: `sol3`

What can C++ do for embedded systems developers? - Bjarne Stroustrup

- ▶ [NDC TechTown - August 2018 - Keynote](#)
 - ▶ [Reddit](#)
- ▶ Most people in the audience use C++ alone or with C and other languages for embedded development
- ▶ Grace Hopper is the grandmother of COBOL
- ▶ Zero overhead doesn't mean zero cost
- ▶ Use predictable subset of C++ for small safety-critical systems (no dynamic memory)
- ▶ Allocate at startup, use as a pool, don't ever free (memory fragmentation)
- ▶ Unpredictable: `new/malloc`, `throw`, RTTI, standard containers, `std::function`

- ▶ Start of the series
 - ▶ Reddit

Range-based for over a struct object

- Post
- `magic_get` library (GitHub)

```
1 struct {
2     std::uint32_t fw_version = 0;
3     std::uint16_t sector_0_version = 0;
4     std::string id = "";
5     std::array<std::uint8_t, 6> options{};
6 } data;
7
8 boost::pfr::for_each_field(std::forward<decltype(data)>(data), [](auto&& val)
9 {
10     Process(val);
11 });
```

Post

5.3.5/3 in the C++11 standard:

If the static type of the object to be deleted is different from its dynamic type, the static type shall be a base class of the dynamic type of the object to be deleted and the static type shall have a virtual destructor or the behavior is undefined.

Blog: C++ on a Friday

Joe Armstrong, creator of Erlang:

You wanted a banana but what you got was a gorilla holding the banana and the entire jungle.

Twitter: Almost Always Auto

