

Let's cmakeify the
C++ standard library

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This talk is not about compiling
the standard library with CMake.

C++ has a lot of stuff

`int`

`std::vector<>`

`std::map<>`

`class/struct`

`wchar_t`

`std::pair<>`

`std::priority_queue<>`

`std::regex<>`

`std::optional<>`

`pointers`

`std::unordered_set`

`std::duration<>`

They are all unnecessary
and should be thrown away

Everything should be replaced with
the **One True Data Structure**[™]

`std::string`

Integers

"123456789"

Structs and classes

`"var1;var2;var3;var4"`

`std::vector`

`"value1;value2;value3"`

`std::map`

`"key1;value1;key2;value2"`

std::unordered_map

“hash1;value1;hash2;value2;hash3;value3”

Advantages

No need for name mangling

Maintaining ABI stability is trivial

Small size optimization
for all containers

Also for types

Storing a single char is only 24 bytes
rather than 24 bytes + malloc!

No need for templates

Cut down on code bloat
and compile times

No need for reflection

All types are trivially serializable

No need for allocators

All containers are densely packed
within a single allocation

Performance!

Converting `vector<string>` to
`vector<int>` is an $O(0)$ operation

This is **formally proven** to be optimal!

Boring and slow

$$\begin{array}{r} 4820480 \\ + 739270 \\ \hline 5559750 \end{array}$$

SIMD accelerated awesomeness!

```
      "4820480"  
+    "739270"  
-----  
      "5559750"
```

I mean apart from readability, performance, bug elimination, architectural foundations and preventing your entire code base from collapsing into a pile of toxic sludge that destroys your soul and all the things you hold dear,



what have types ever done for us?