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The Importance of Wise Protocol Semantics in the Design of Microservices

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computer 😂

distributed systems 🚱

microservices === distributed systems

How To Make Distributed Systems that Don't Require a Crystal Ball to Use.

Three Principles of Stress-Free Service Communication.

1. Your Transport Layer Matters More than You Think it Does.

HTTP is Not Your Friend.

"Every HTTP API eventually grows until it can consume email contains a buggy implementation of about half of TCP."

TCP is your Frenemy.

Pretend You're In Third Grade and Pass Messages Around.

(Yes, it's OK to build an RPC framework on top of this.)

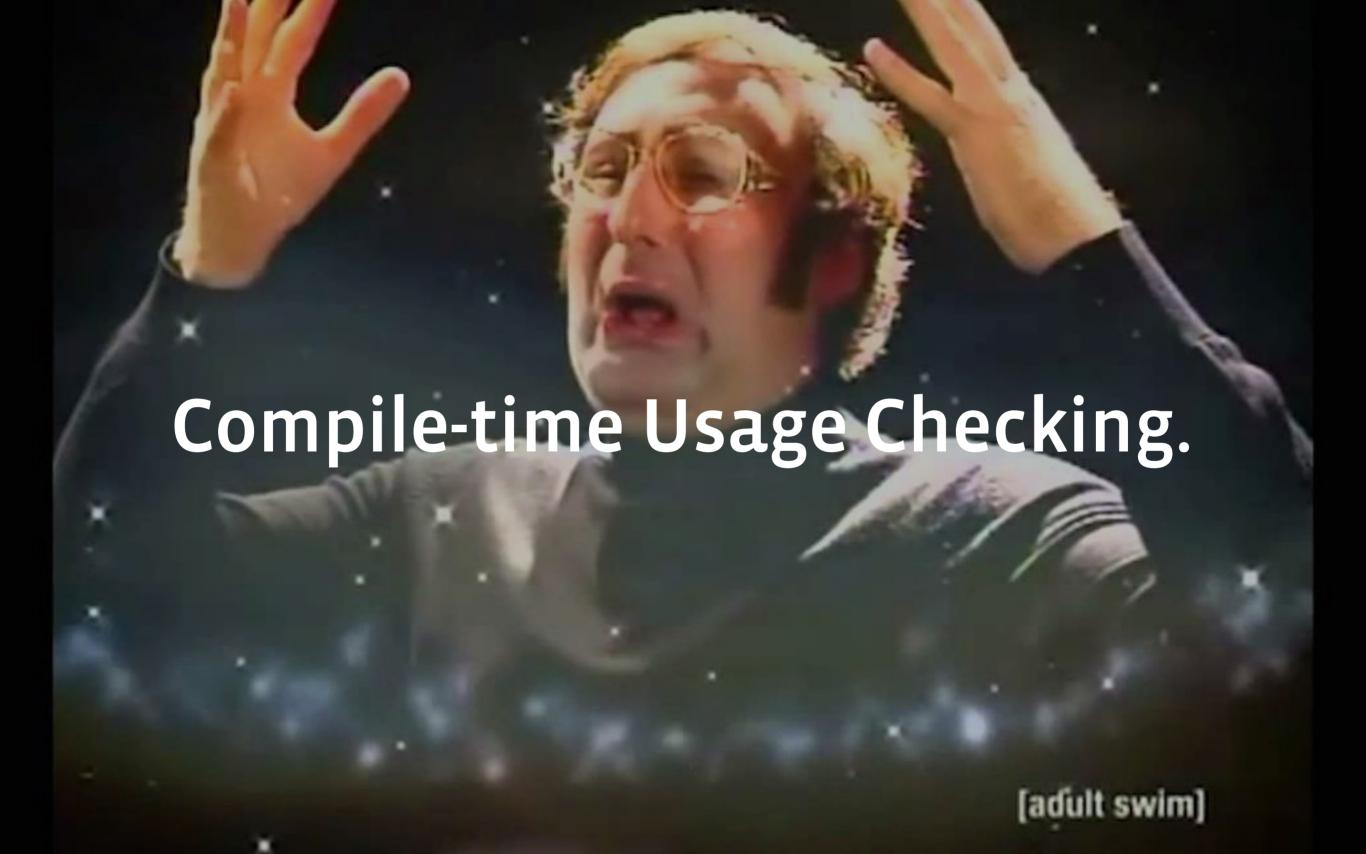
2.Use a Structured Data Format with a Schema.

```
struct Task {
  1: i64 task_id
  2: string title
  3: string description
  4: i64 uid
  5: bool completed
}
```

```
struct Comment {
   1: i64 id
   2: i64 taskID
   3: i64 uid
   4: string text
   5: i64 created
}
```

```
service TaskService {
   // Pass in a mostly-filled Task struct, returns ID of the new Task.
   i64 createTask(1:Task t)
}
```

```
service TaskService {
   // Get all the comments on a particular task.
   list<Comment> getCommentsForTask(1:i64 taskID)
}
```



3. Smarter People than You or I have Already Built What You Need.

Open-Source Transport/Protocol Formats

It's OK to Stand on the Shoulders of Giants

Name	Creator	License
Thrift	Facebook	Apache
gRPC/Protocol Buffers	Google	BSD
Cap'n Proto	Sandstorm	MIT

"There are three types of lies: lies, damn lies, and consistency guarantees."



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