

Using gRPC in ASP.NET Core

WHAT IS GRPC?



Shawn Wildermuth

MICROSOFT MVP, SPEAKER AND INSTRUCTOR

@shawnwildermuth <http://wilder minds.com>



Overview



Understand gRPC

Find where it fits into **your applications**

Learn by doing

You'll see it all



What You'll Learn



gRPC in ASP.NET Core 3.0

Protocol Buffers

Writing Servers

Writing Clients

Securing gRPC



What You'll Use

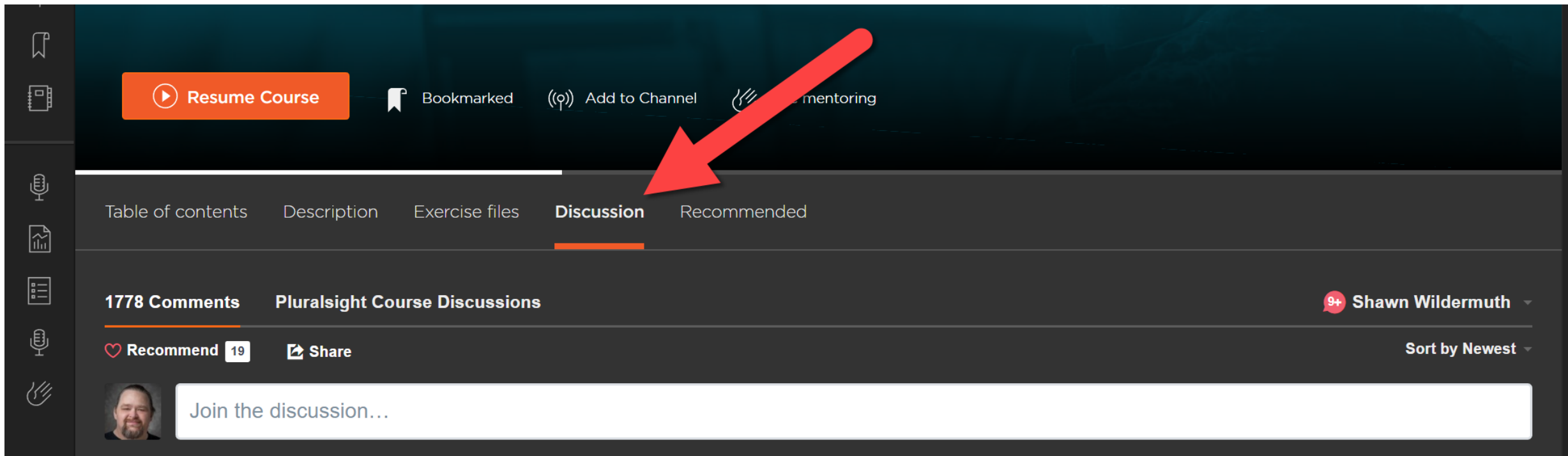


Visual Studio 2019

ASP.NET Core 3



Questions During the Course?



The screenshot displays the Pluralsight course interface. At the top, there is a dark blue header with a 'Resume Course' button and links for 'Bookmarked', 'Add to Channel', and 'mentoring'. Below this is a navigation bar with tabs: 'Table of contents', 'Description', 'Exercise files', 'Discussion' (highlighted with a red arrow and an orange underline), and 'Recommended'. Under the 'Discussion' tab, it shows '1778 Comments' and 'Pluralsight Course Discussions'. There is a 'Recommend' button with a heart icon and a 'Share' button. A user profile for 'Shawn Wildermuth' is visible on the right. At the bottom, there is a text input field with the placeholder 'Join the discussion...' and a small profile picture of a man.

Resume Course

Bookmarked Add to Channel mentoring

Table of contents Description Exercise files **Discussion** Recommended

1778 Comments Pluralsight Course Discussions

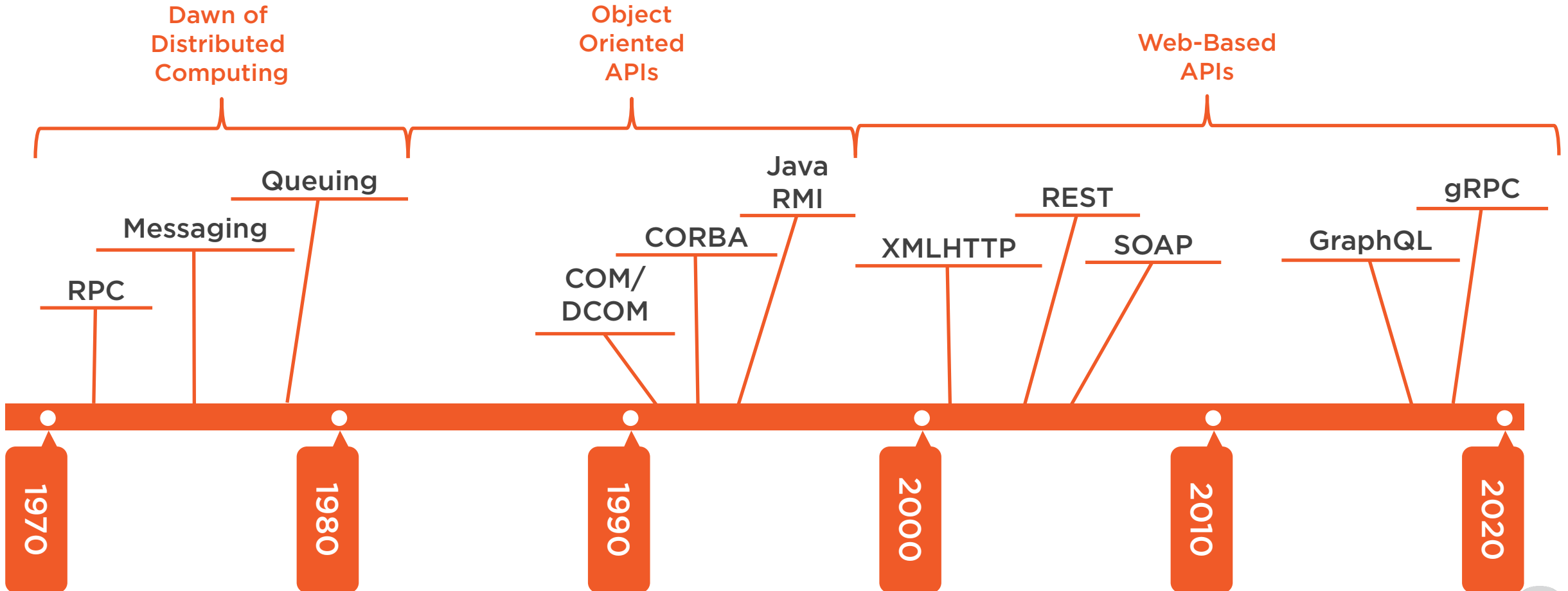
Recommend 19 Share

Sort by Newest

Join the discussion...



The History of Distributed APIs



gRPC:

A high performance, open-source
universal RPC framework

grpc.io





What Is gRPC?

- Binary communication
- Contract-based
- Available across ecosystems
- Secure by default
- Uni and Bi directional streaming





What Is gRPC?

Google?
Remote
Procedure
Call



Does this mean REST is
dead?



No.



Is gRPC for the Web?

gRPC is Awesome

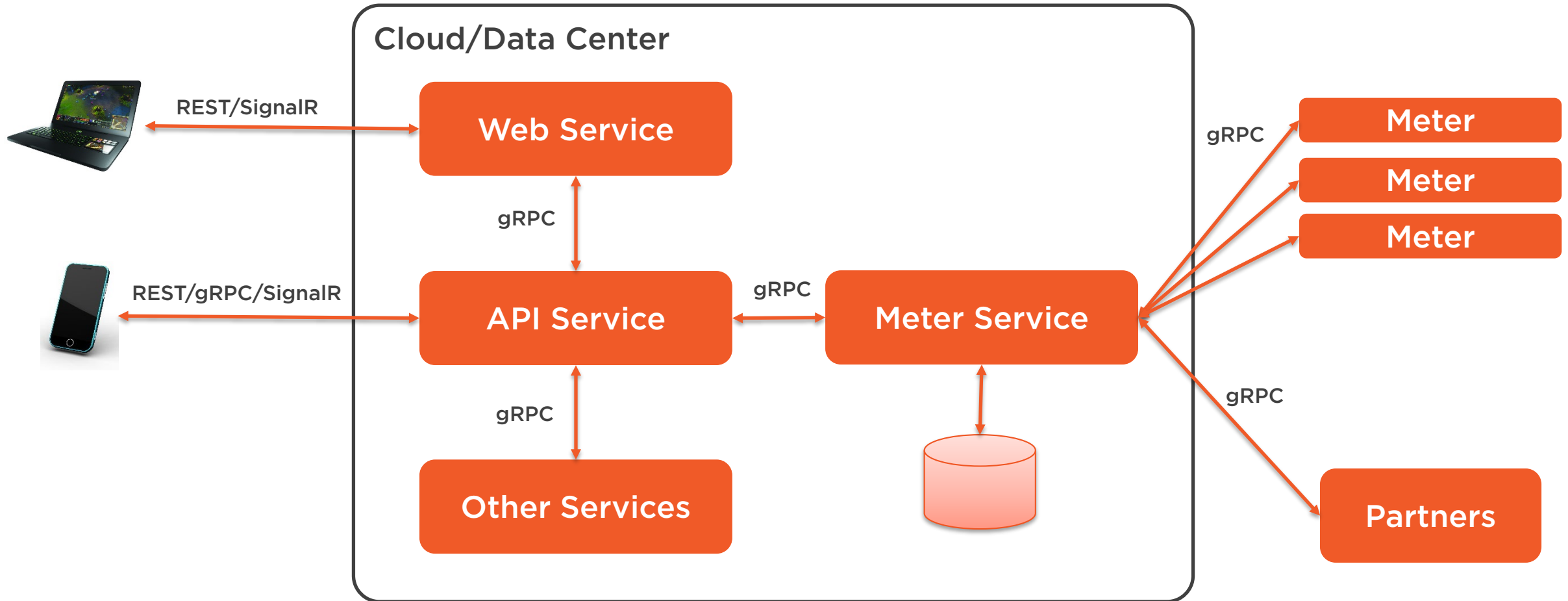
gRPC requires HTTP/2
Format is ordinal binary
Contracts are required

...but

Most browsers don't...yet
Harder for JS to parse
Aren't great for web apps



Where Does gRPC Belong?



A close-up photograph of several glass tubes, likely part of a scientific instrument. The tubes are colored in shades of green and yellow, with some showing internal structures and reflections. They are arranged in a cluster, with some in sharp focus and others blurred in the background.

Stop Thinking of Winners

- REST
- gRPC
- SignalR
- GraphQL
- Etc.



Matching Communication to Technology



REST: CRUD and purely web apps



SignalR: Multicasting and web messaging



GraphQL: Open querying of large datasets



gRPC: Streaming, low resource clients, and inter-data center

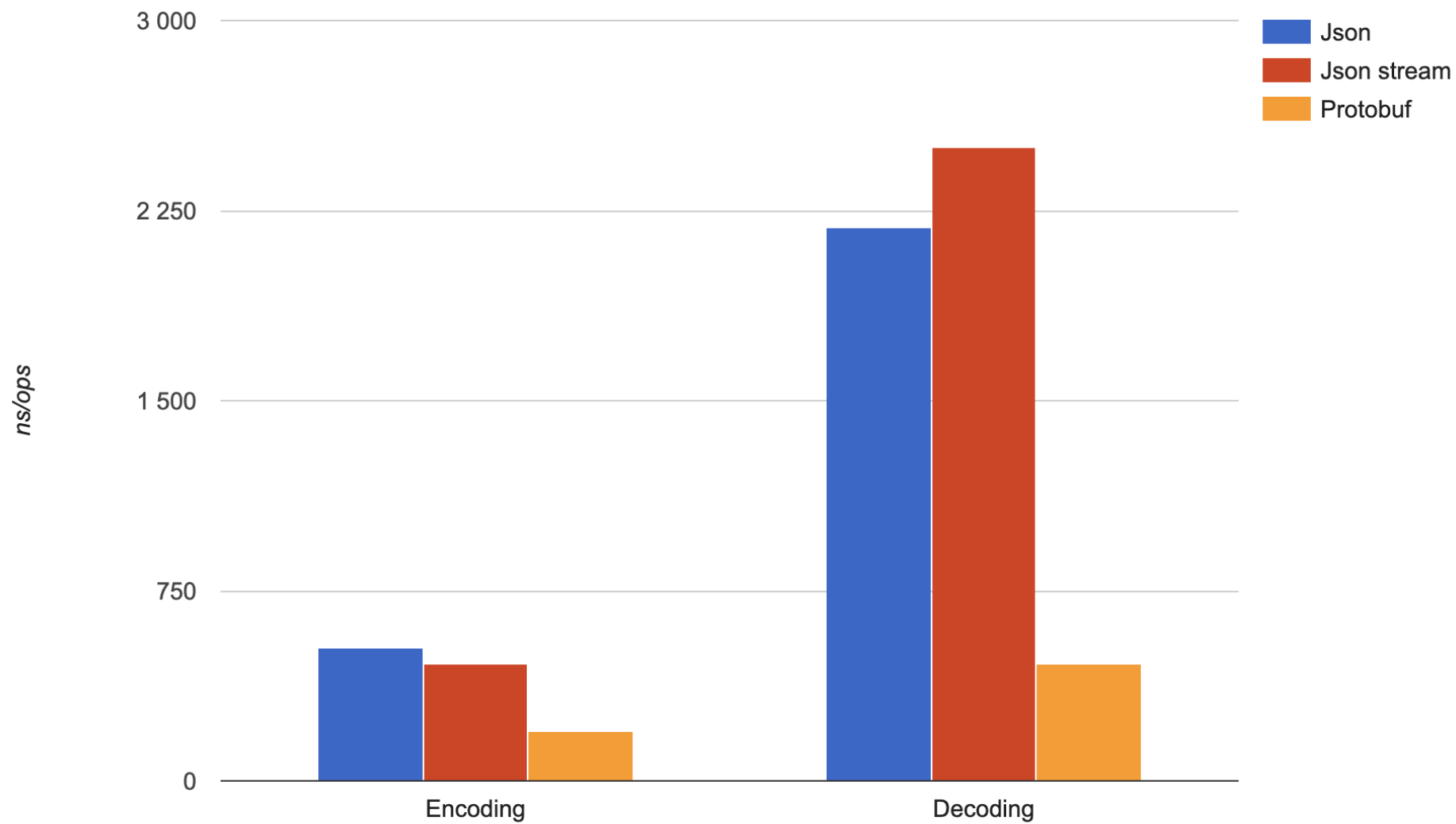


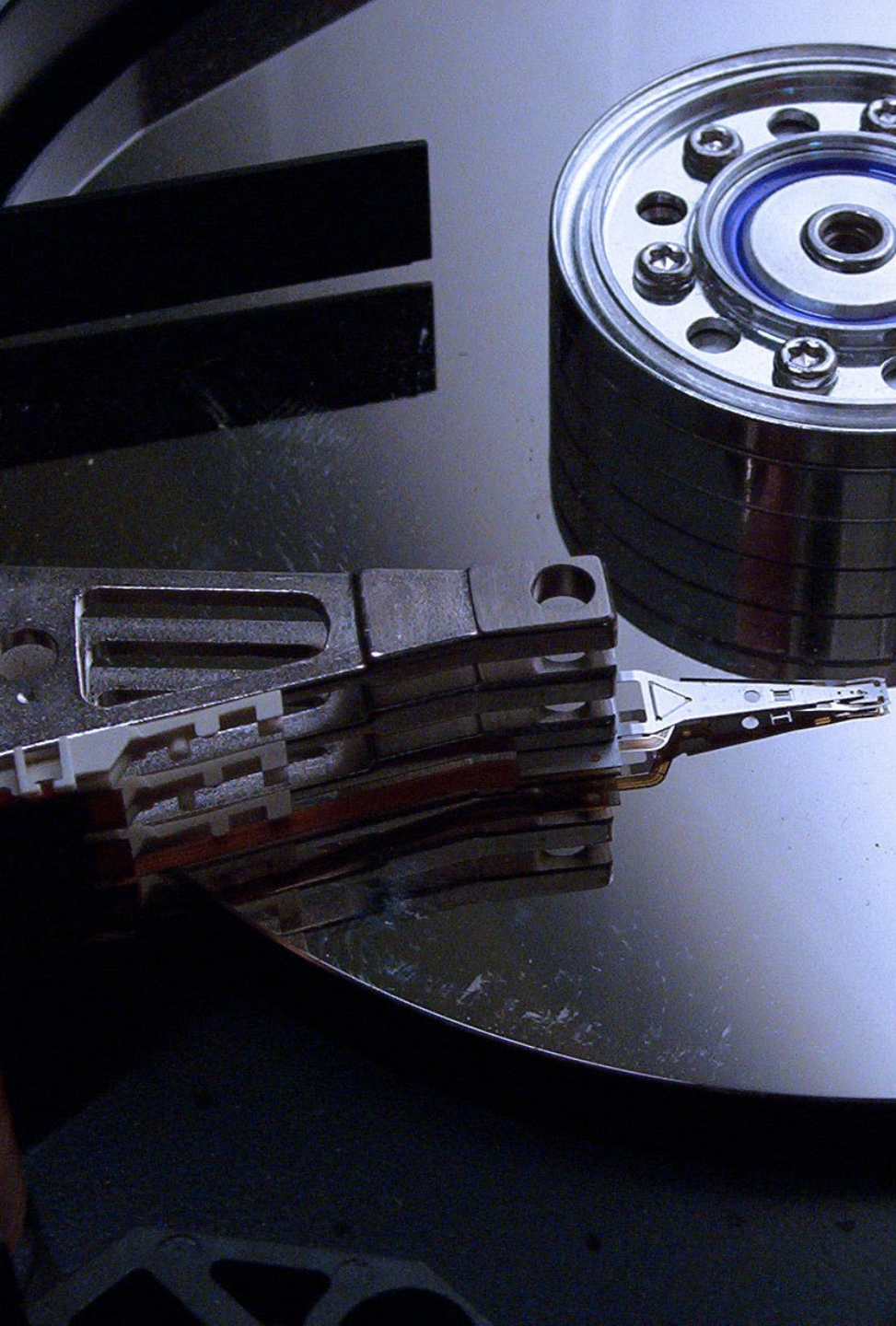


Contracts

- Generated Clients/Servers
 - Uses interface definition language
 - Protocol Buffers (ProtoBuf)
 - Language Independent
 - C++
 - Java
 - Obj-C
 - Python
 - Ruby
 - Go
 - NodeJS

“Is It Really Faster?”





Protocol Buffers

- Interface Definition Language
- Language-neutral
- Platform-neutral
- Extensible
- Serializable
- Not specific to gRPC



Pseudo Serialized ProtoBuf

Request

```
1: 100  
2: "Hello There"
```

Response

```
1: 94.5  
2: 15.4  
3: .5
```



What We've Learned



gRPC is a new, higher performance way to build APIs



Protocol Buffers is an interface language to build our contracts



gRPC isn't going to replace REST, but fill other service requirements



Coming Up Next:

Adding gRPC to ASP.NET Core

