Using gRPC in ASP.NET Core

WHAT IS GRPC?

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Overview

Understand gRPC

Find where it fits into your applications

Learn by doing

You'll see it all

What You'll Learn

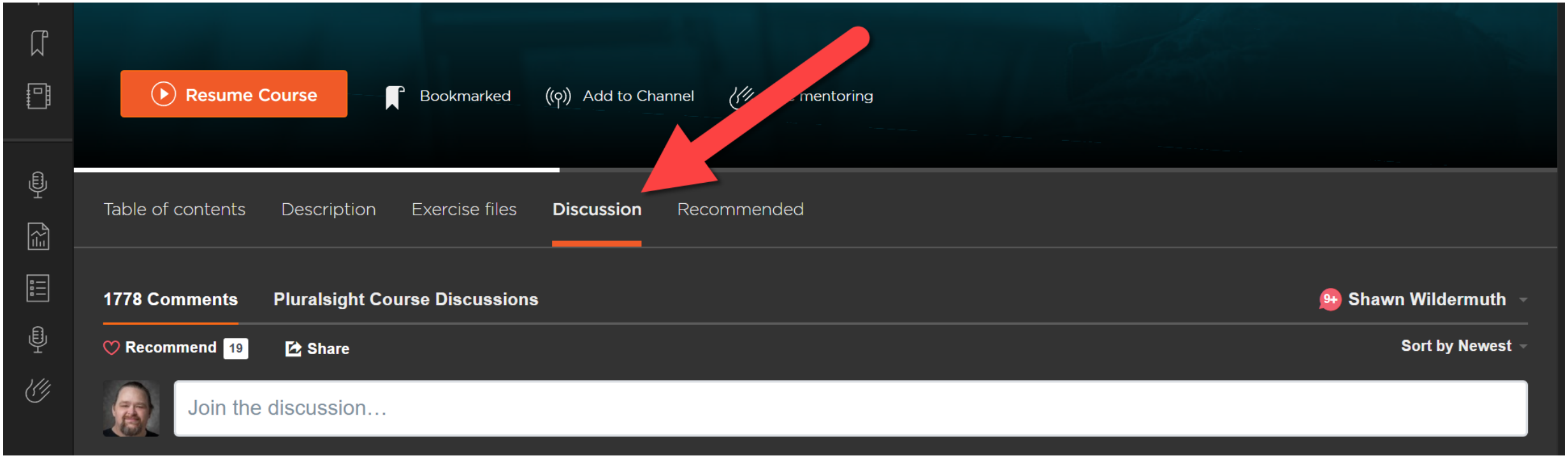
- gRPC in ASP.NET Core 3.0
- Protocol Buffers
- Writing Servers
- Writing Clients
- Securing gRPC

What You'll Use

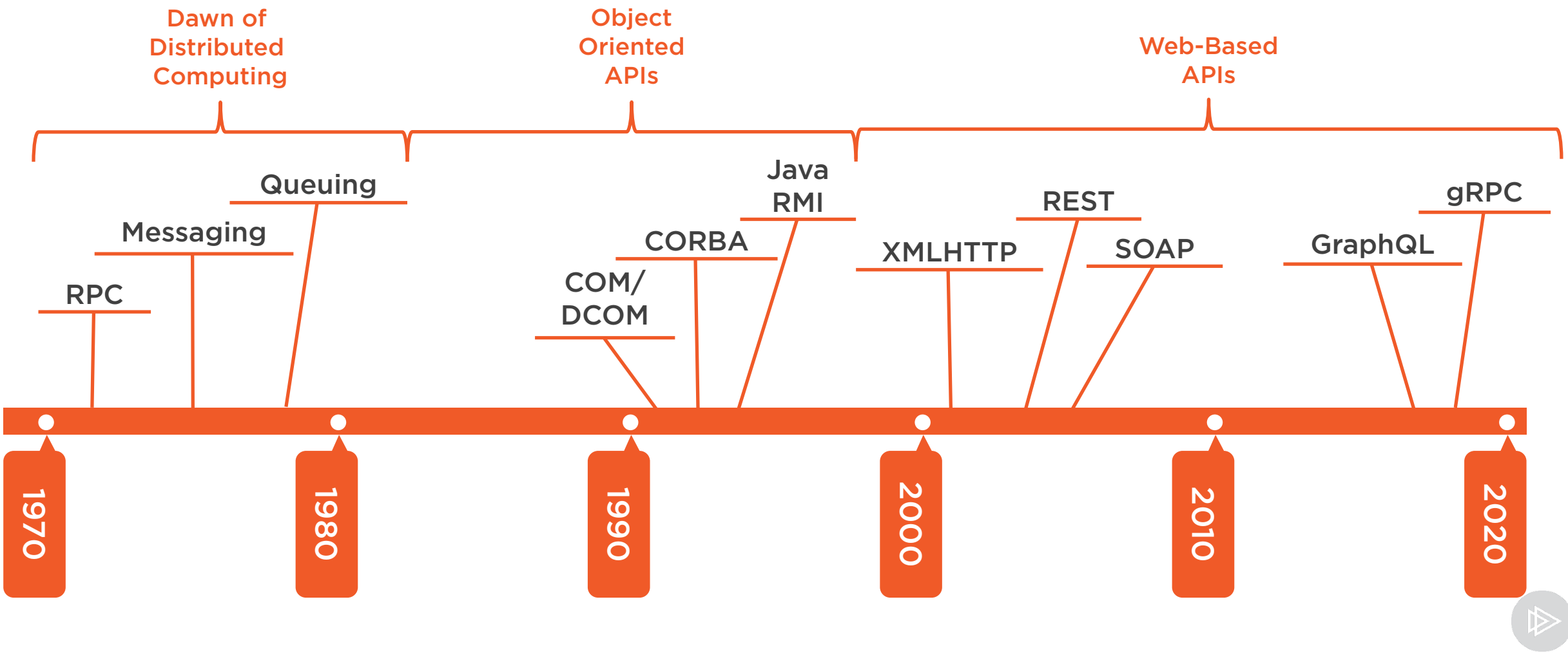
Visual Studio 2019

ASP.NET Core 3

Questions During the Course?



The 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?

GRPC

Google?

Remote

Procedure

Call

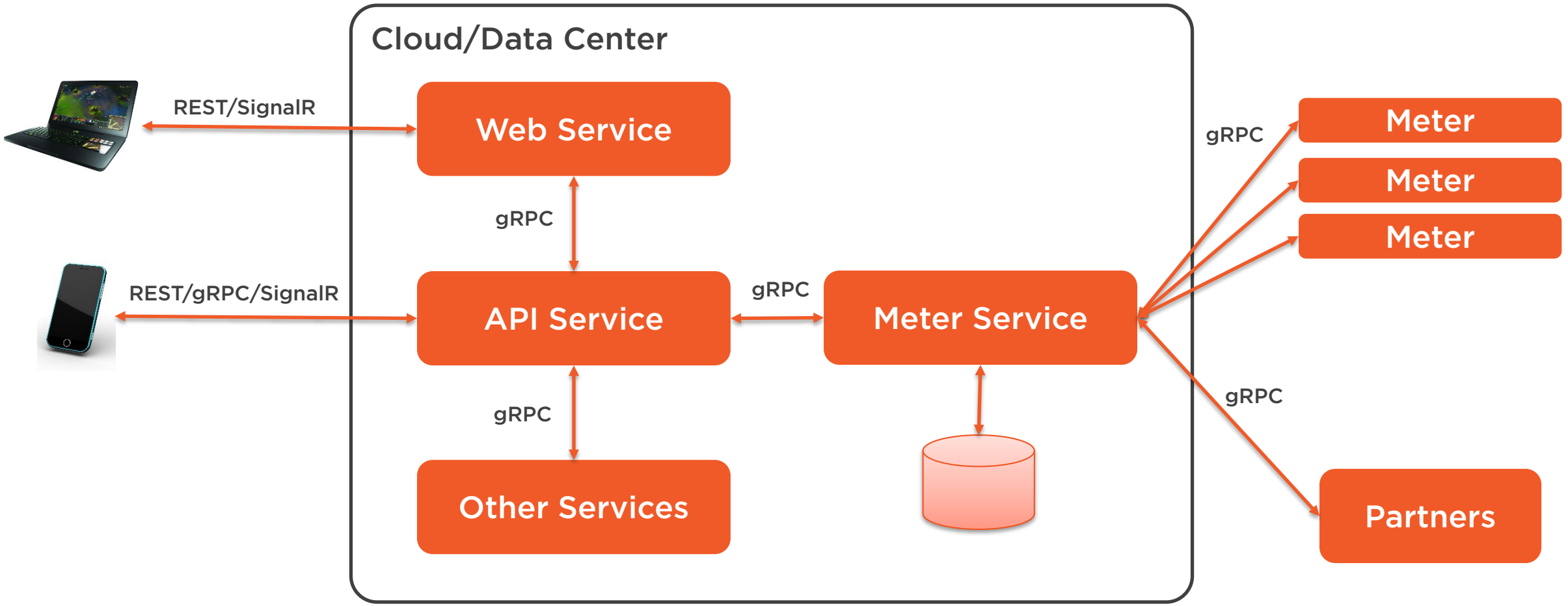
Does this mean REST is dead?

No.

Is gRPC for the Web?

gRPC is Awesome	...but
gRPC requires HTTP/2	Most browsers don't...yet
Format is ordinal binary	Harder for JS to parse
Contracts are required	Aren't great for web apps

Where Does gRPC Belong?



Stop Thinking of Winners

- REST
- gRPC
- SignalR
- GraphQL
- Etc.

Matching Communication to Technology

REST: CRUD and purely web apps

SignalR: Multicasting and web messaging

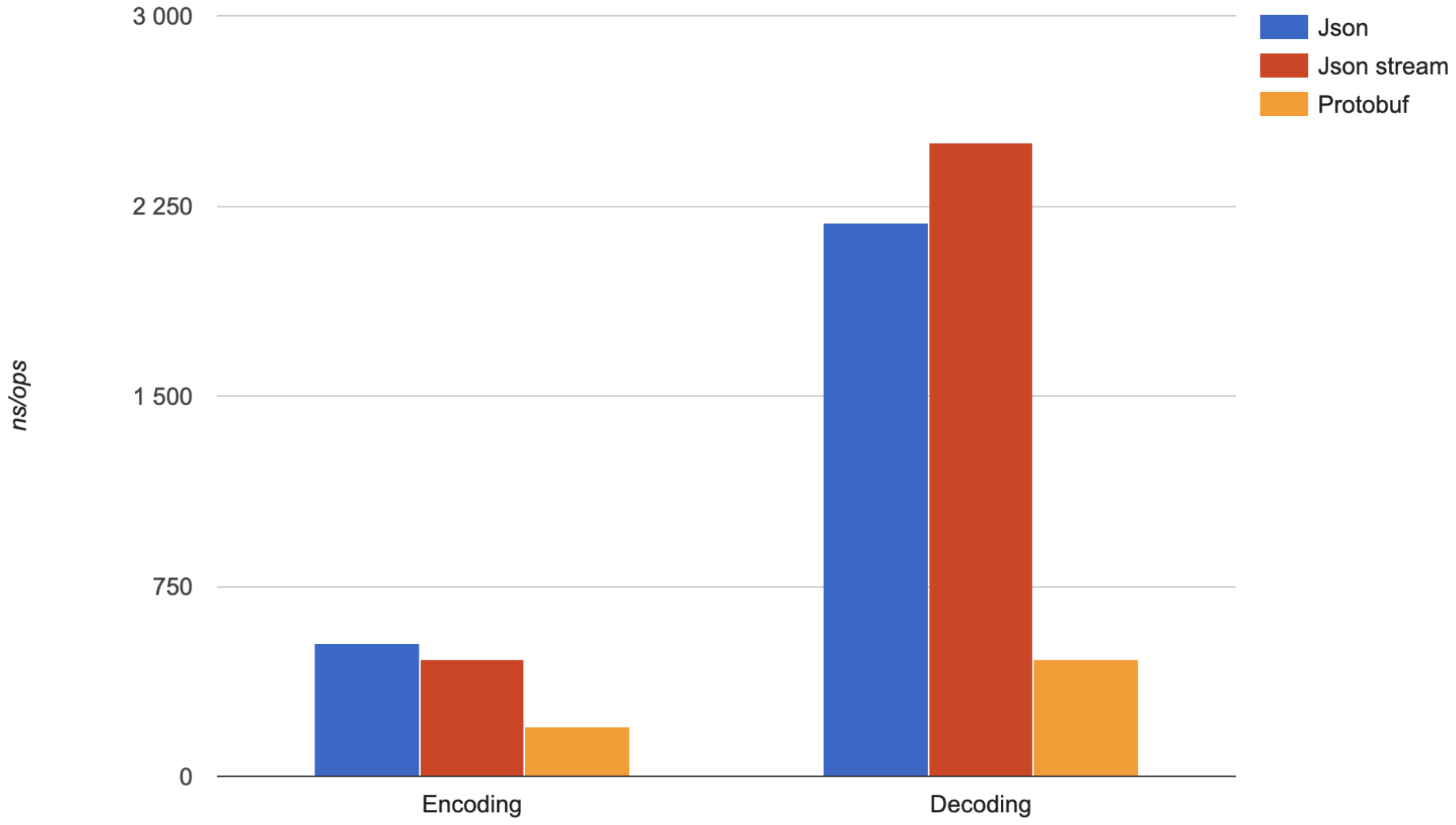
GraphQL: Open querying of large datasets

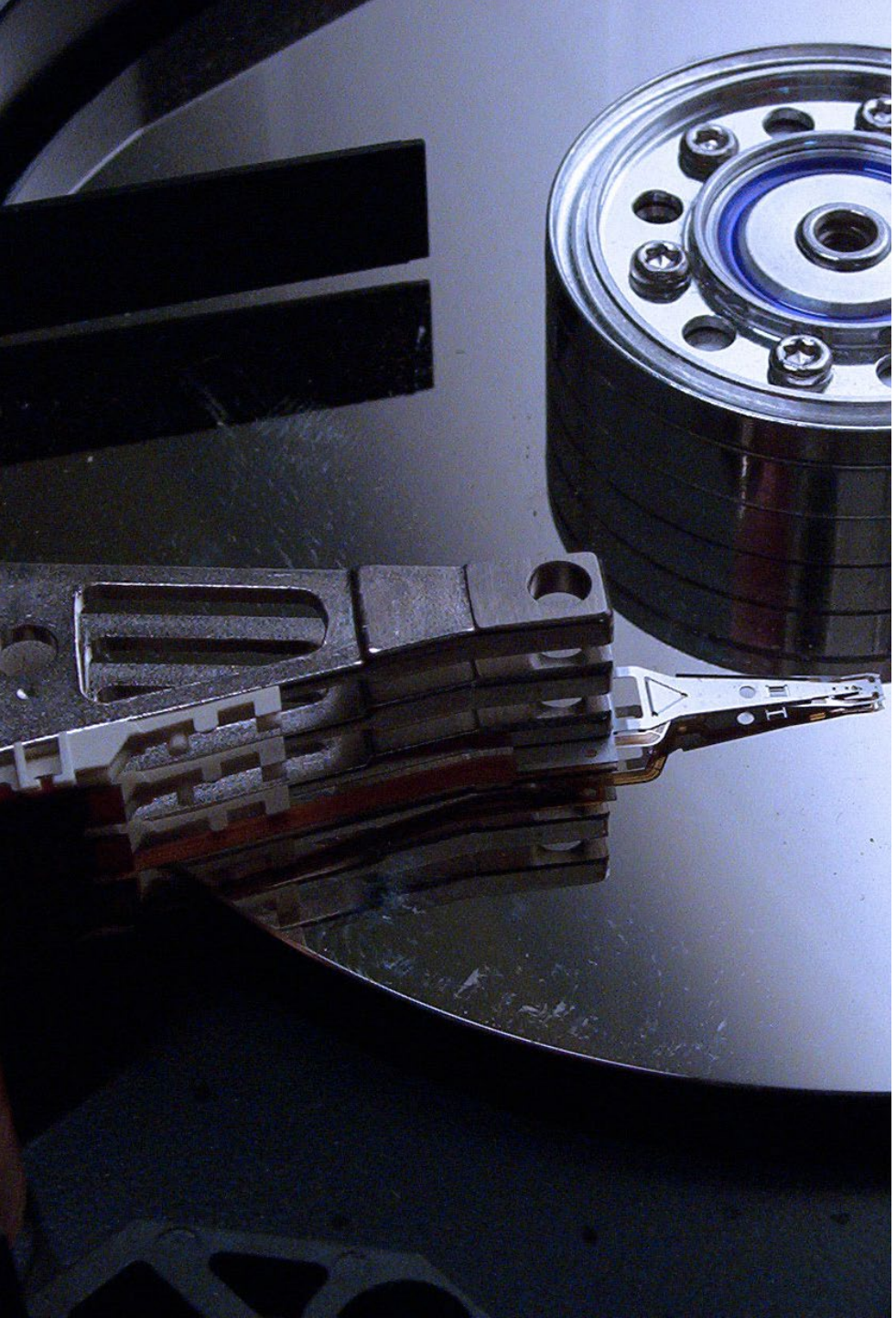
gRPC: Streaming, low resource clients, and inter-data center

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