gRPC is a high-performance, open-source RPC (Remote Procedure Call) framework developed by Google, enabling efficient communication between distributed systems using HTTP/2 and Protocol Buffers.

The problem

- Inefficient communication
  - Traditional communication methods such as REST APIs often incur high overhead due to factors like serialization/deserialization, multiple round trips, and inefficient data formats.
- Scalability challenges
  - due to limitations in data serialization, payload size, and network performance..
- Limited streaming capabilities
  - Lack of support for bidirectional streaming and real-time data communication

The solution 

- Efficient Protocols
  - gRPC's use of HTTP/2 with binary serialization and multiplexing provides more efficient communication compared to REST over HTTP/1.x, especially in scenarios with high-frequency or large data exchanges.
- Efficient Data serialization
  - gRPC uses Protocol Buffers (Protobuf) instead of JSON or XML. With that achieves more efficient data serialization, leading to smaller payloads and faster transmission of messages
- Built-in streaming
  - gRPC natively supports bidirectional streaming and various streaming modes (server streaming, client streaming, and bidirectional streaming).

The team

Started by Google (https://opensource.googleblog.com/2008/07/protocol-buffers-googles-data.html)

but now have over 1000 contributors

Today's stats:

- 63,400 stars
- 15,200 forks
- 1039 contributors
- used by 61,100 people

The plan

- Is a stable and very widely used product
- Implement more features
- Fix any current issues
- Host events (gRPConf 2024 is on Aug. 27th)