gRPC in Python
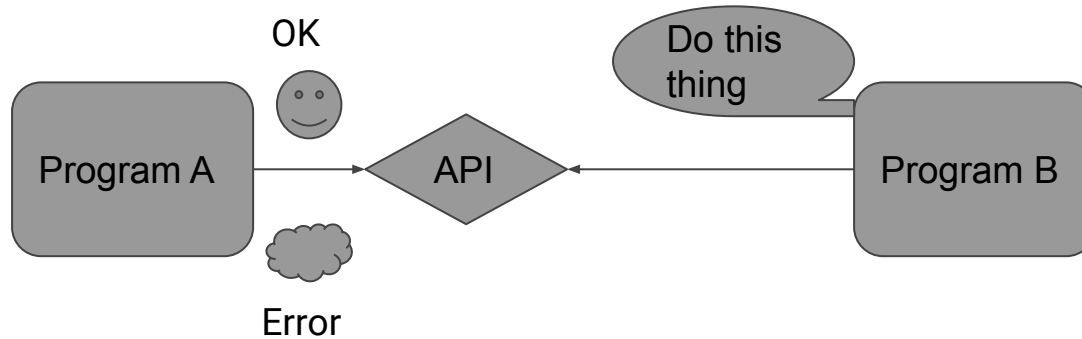
Build fast, scalable APIs for your services

Introduction

1) History of APIs
2) What is gRPC. Why you should use it and what are its benefits.
3) Disadvantages of gRPC
4) Demo
5) Advanced features like interceptors, etc.
6) Serving frontends using gRPC Web

What is an API

API stands for application programming interface, which is a set of definitions and protocols for building and integrating application software.
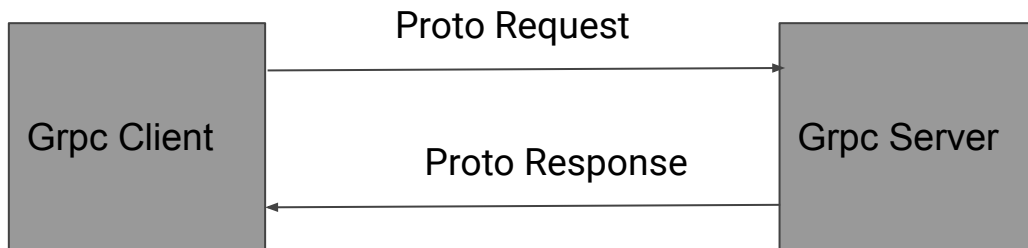
OK

Do this thing

Program A → API ← Program B

Error

Different API technologies

1) SOAP (Simple Object Access Protocol)

1) REST (Representational State Transfer)

1) GraphQL

1) Apache Thrift

1) gRPC

What is gRPC

gRPC is a cross-platform open source high performance Remote Procedure Call framework.

Advantages of gRPC

1) High performance (Uses HTTP/2)

1) Code Generation

1) Strict Specification (Strongly Typed)

1) Duplex streaming

1) Deadline/timeouts and cancellation

Disadvantages of gRPC

1) Newer technology

1) No support for browsers (Can use gRpc Web)

1) Requires proto files to be shared and client stubs generated ahead of time

1) Complicated

1) Not as widely adopted as REST

When should you use gRPC

1) Service to service communication

1) Microservices

1) Point-to-point real-time communicatio

1) High performance low latency applications

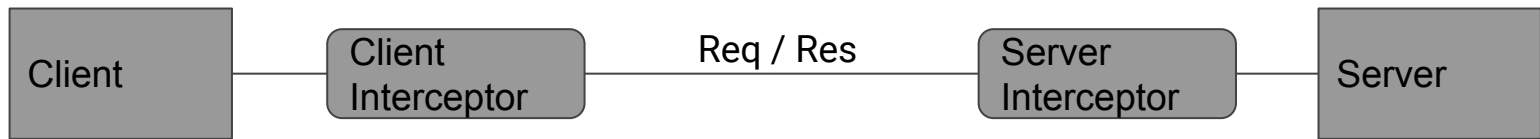# Implementation

Advanced Features

Interceptors

1) Interceptors are a gRPC concept that allows apps to interact with incoming or outgoing gRPC calls. Like Middleware, but for gRPC.

1) Can be on both the client and the server.

1) Used for logging, monitoring, authentication, and validation.

Client — Client Interceptor — Req / Res — Server Interceptor — Server

Types of interceptor

1) Client Unary

1) Server Unary

1) Client Stream

1) Server Stream

Serving Frontends with gRPC Web

1) gRPC-Web allows browser apps to call gRPC services with the gRPC-Web client and Protobuf.

1) Similar to normal gRPC, but it has a slightly different wire-protocol, which makes it compatible with HTTP/1.1 and browsers.

1) Requires the browser app to generate a gRPC client from a .proto file.

1) Allows browser apps to benefit from the high-performance and low network usage of binary message

Thank You