

Lesson 6

Web APIs

How to communicate with a remote resource?

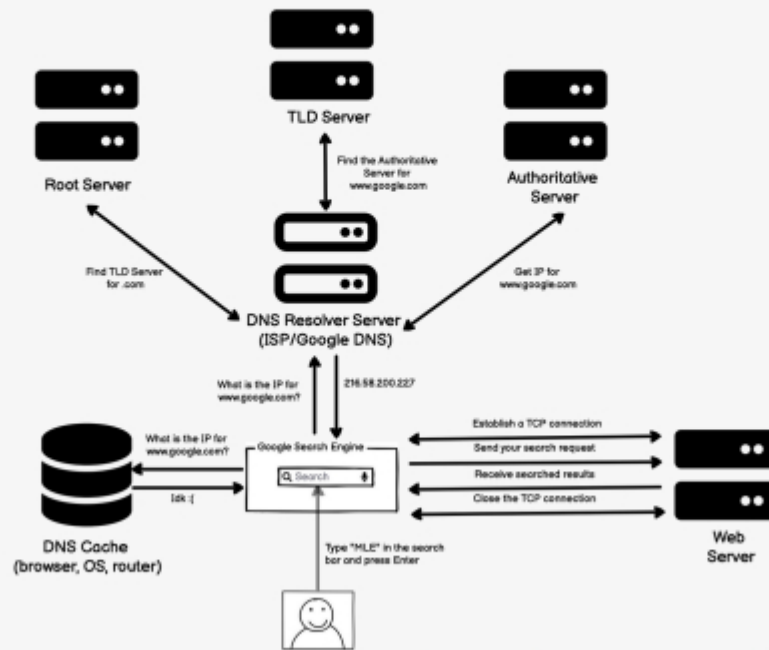
Learn About



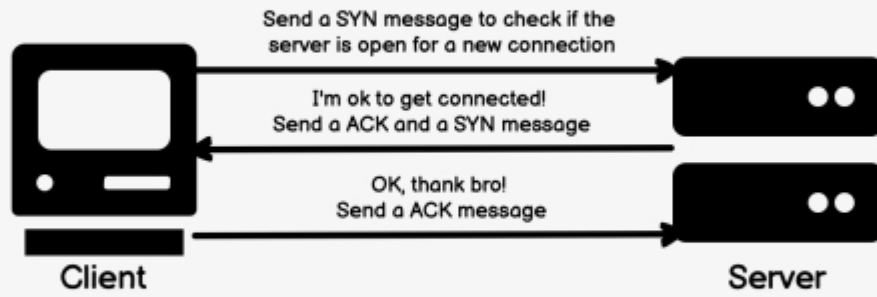
- **Behind a Google Search**
- **API Architecture Styles**
- **Software Testing**
- **Improve API performance**



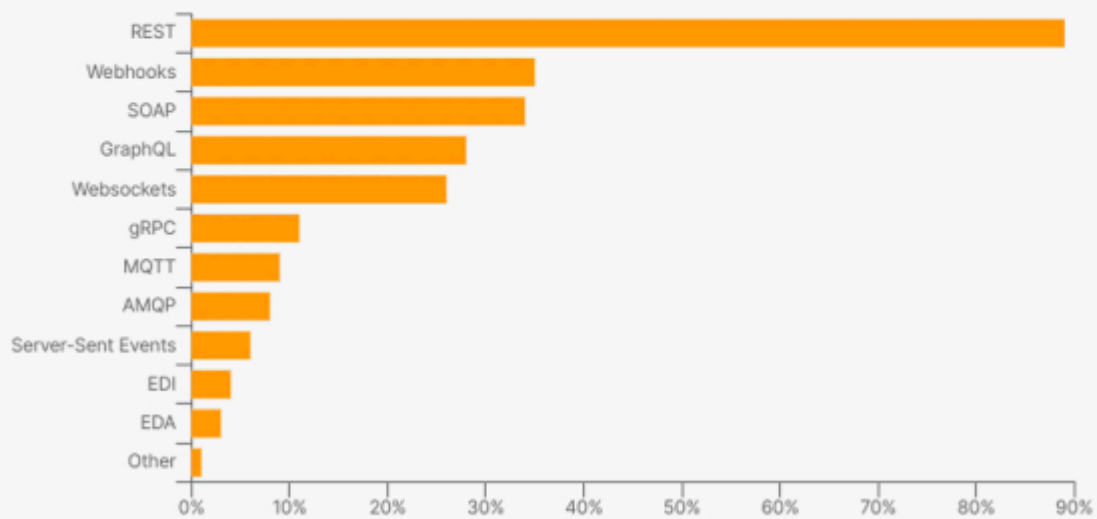
Behind a Google Search



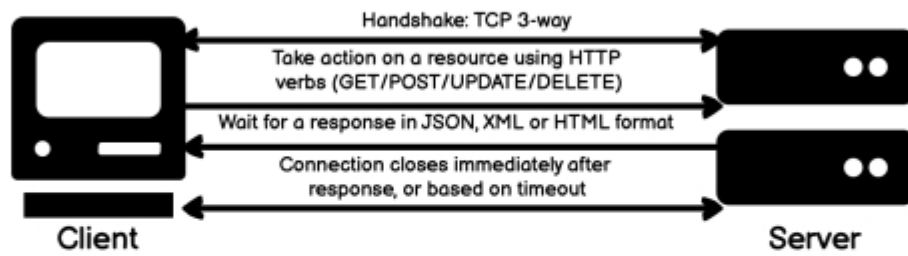
TCP 3-way handshake



API Architecture Styles



REST API



Pros

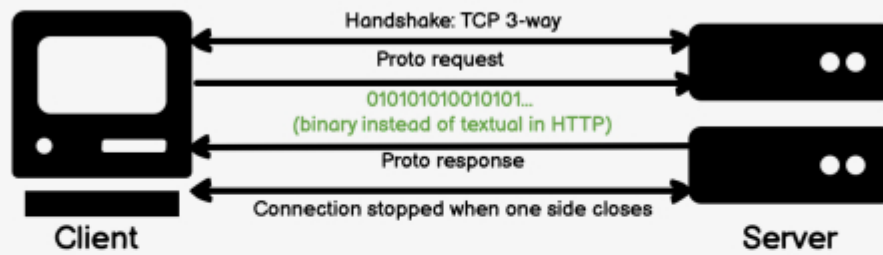
- **Easy to learn and code**



Cons

- **Must document to communicate b/w client and server**

gRPC



Pros

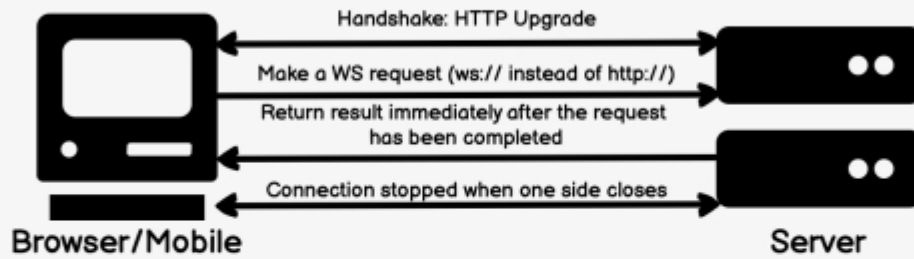
- **Strongly typed**
- **Lightweight messages result in faster communication**
- **Support streaming**



Cons

- **Lack of maturity**
- **Can't call a gRPC service from a web browser directly**

WebSocket



Pros

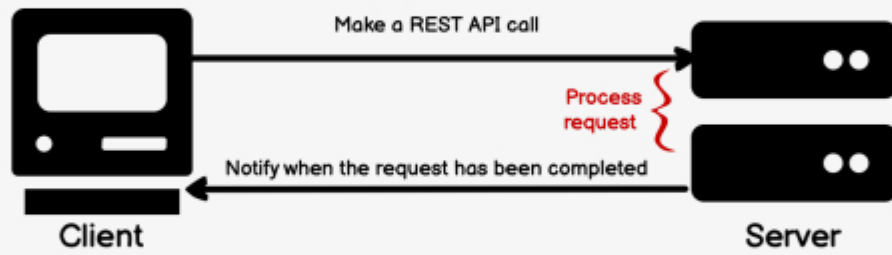
- **Support streaming**
- **Faster than REST**
- **Call and receive a response directly from browser and mobile**



Cons

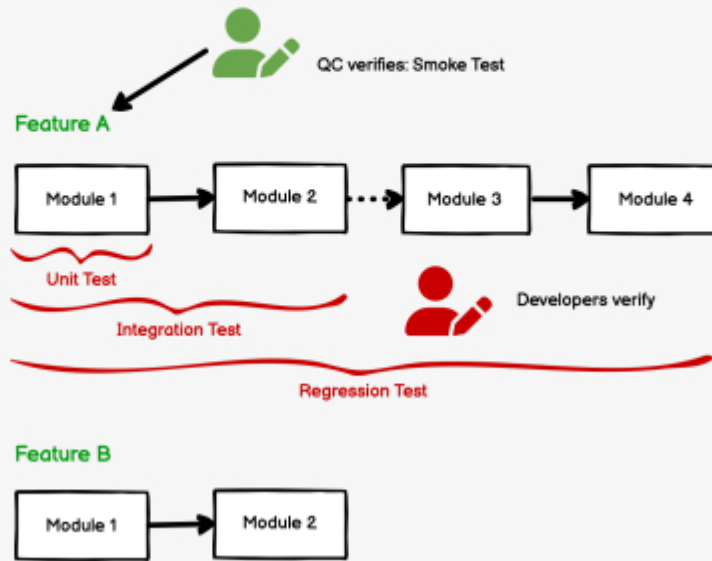
- **More difficult to develop than REST**

Webhook



Software Testing

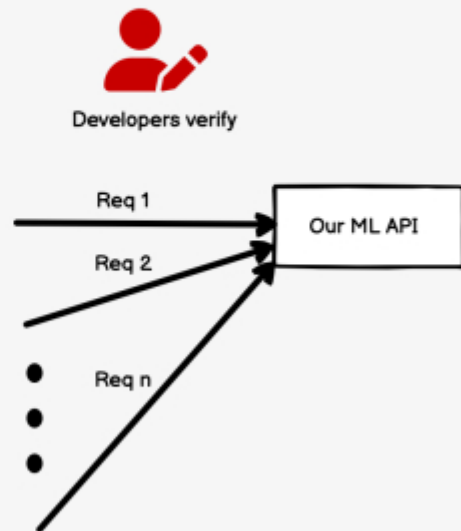
Functional Testing



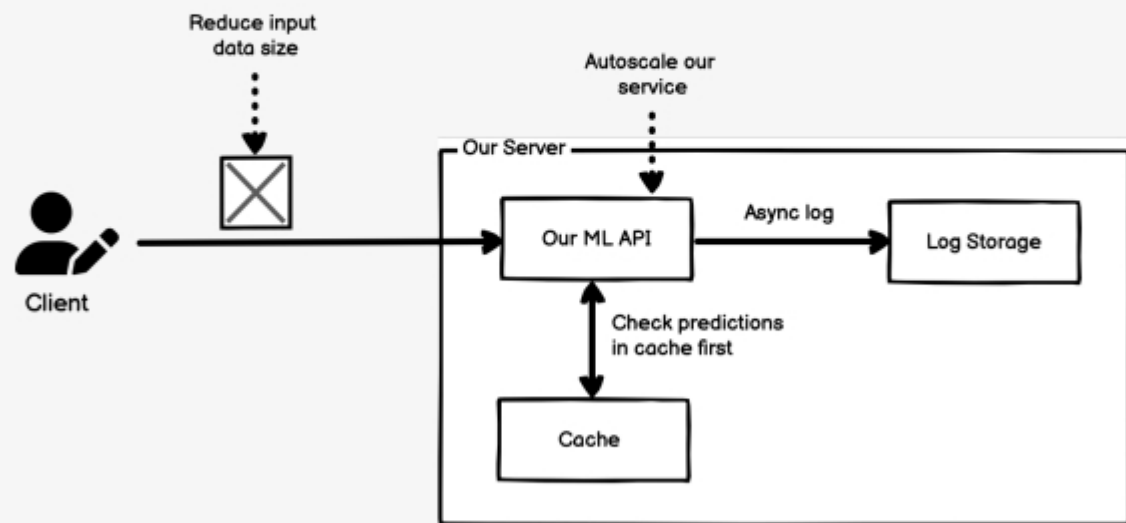
Software Testing

Non-Functional Testing

- **Load Test:** **what** is the upper limit?
- **Stress Test:** **how** the system reacts under unexpected load?



Improve API performance



References

- <https://dev.to/chainguns/fastapi-vs-flask-v-1cjb>
- <https://flask.palletsprojects.com/en/2.2.x/async-await/>



Thank You!



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