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Developing advanced Client/Server applications with Pascal

International Pascal Congress

abatic.es

About me

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Summary

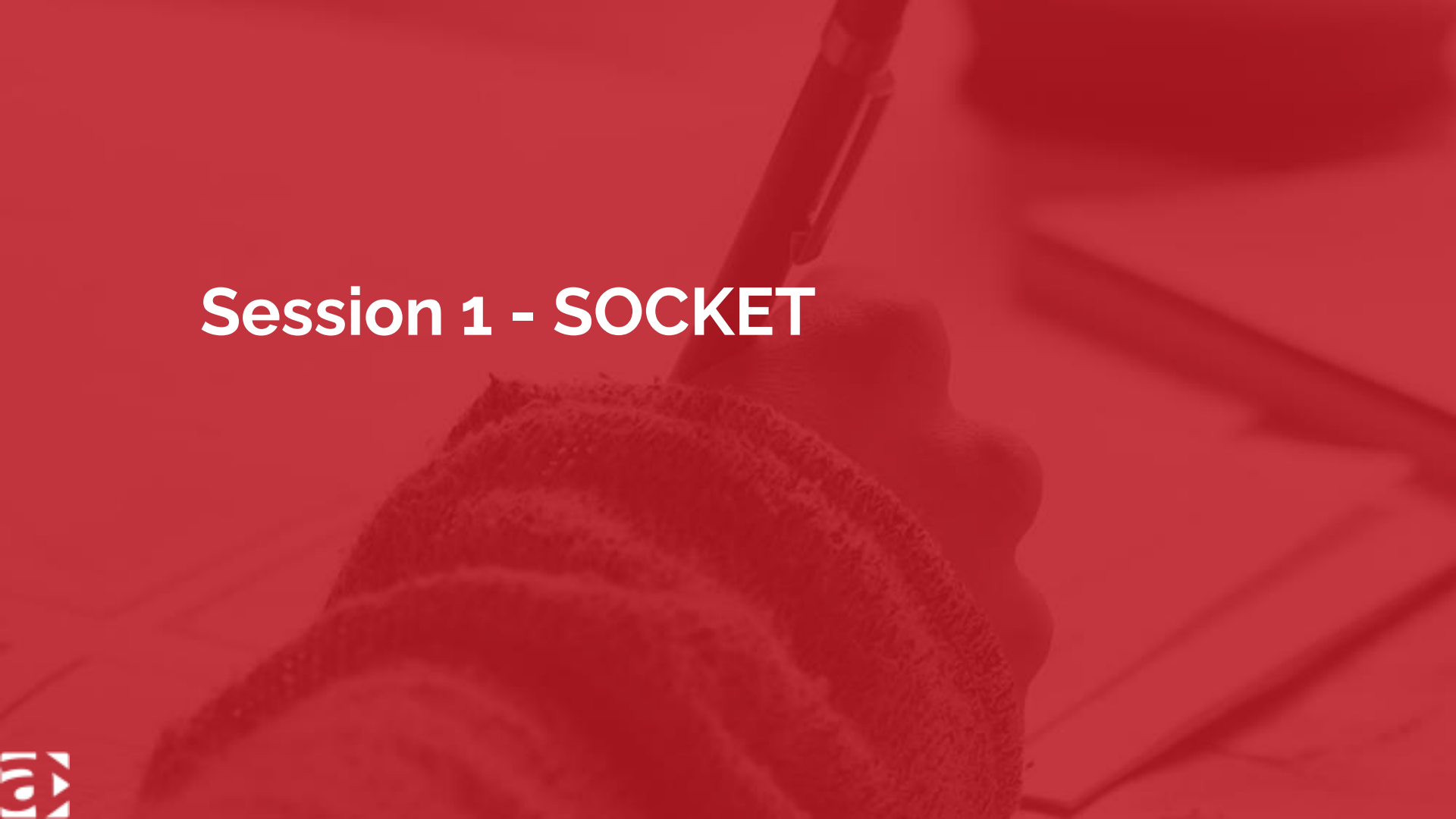
In this course we are going to see different technologies to be able to work in Client/Server mode.

Communication between devices is something primordial in current application development, as a large number of programs require these features to be incorporated.

Content

- Session 1- SOCKET.
- Session 2- REST APIs.
- Session 3- MQTT (The Standard for IoT Messaging)
- Session 4 - STOMP (Simple (or Streaming) Text Oriented Messaging Protocol)

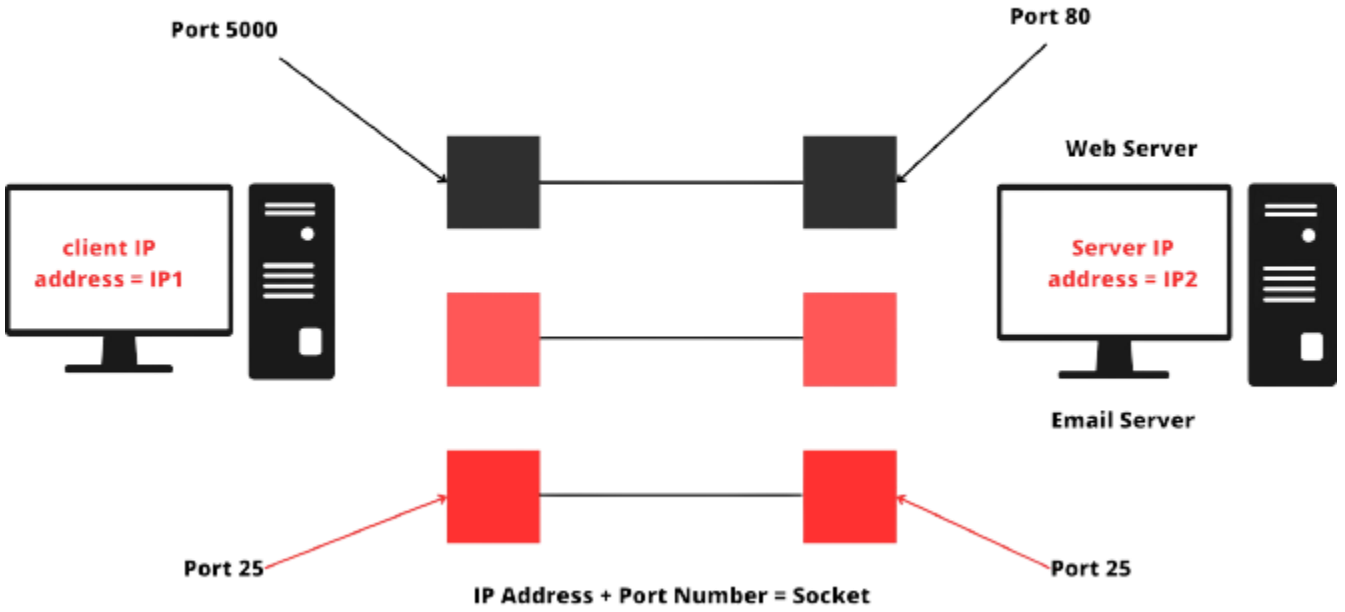
Session 1 - SOCKET



Index

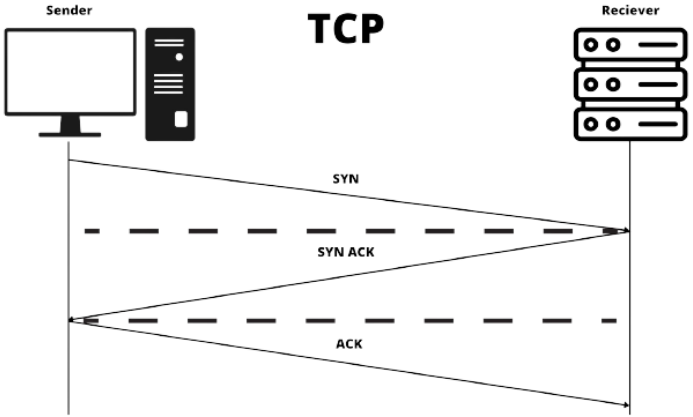
- Introduction.
- Different types of sockets and their usage.
- TCP Protocol
- UDP Protocol

1 INTRODUCTION

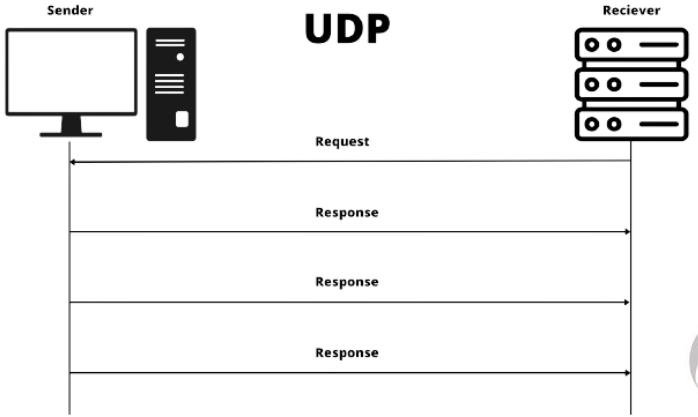


1 Different types of sockets and their usage.

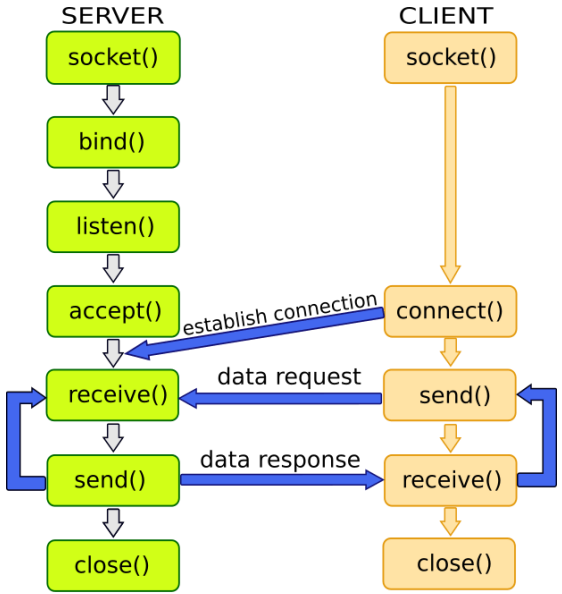
Stream Sockets



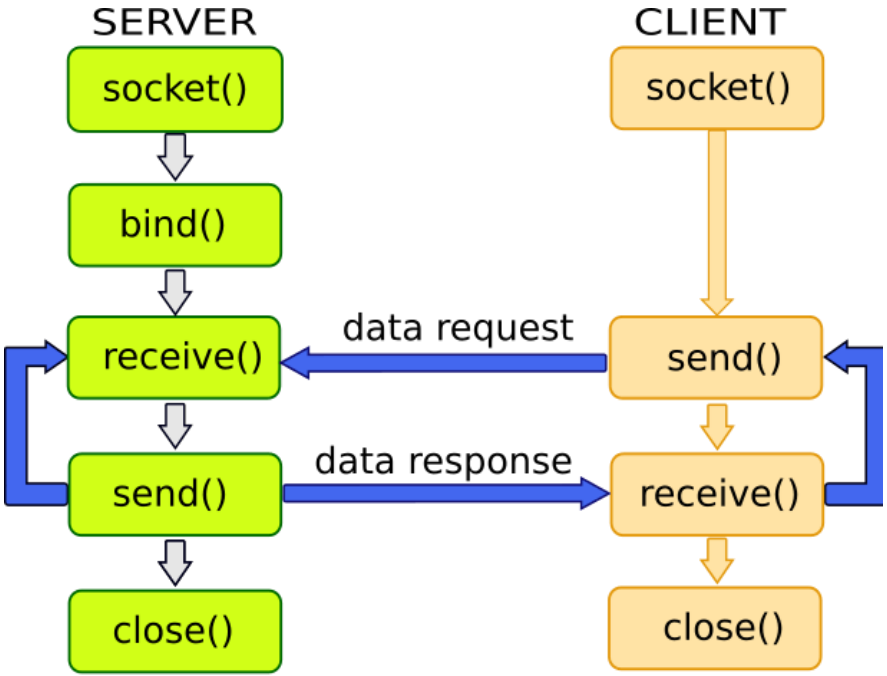
Datagram Sockets



2 TCP protocol



2 UDP protocol



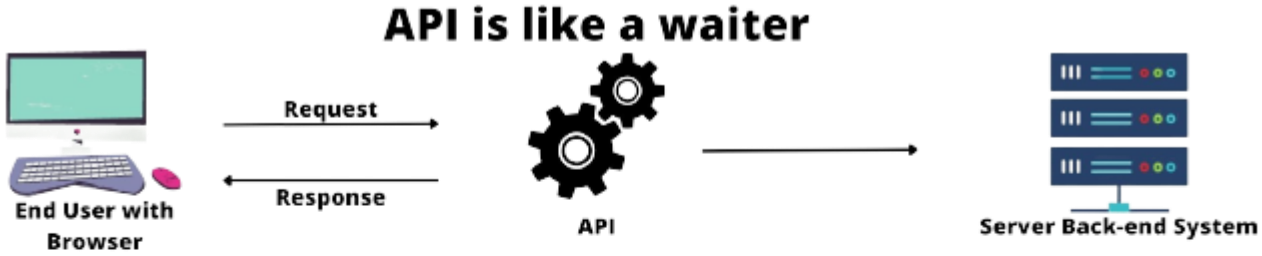
Session 2 - REST-APIs

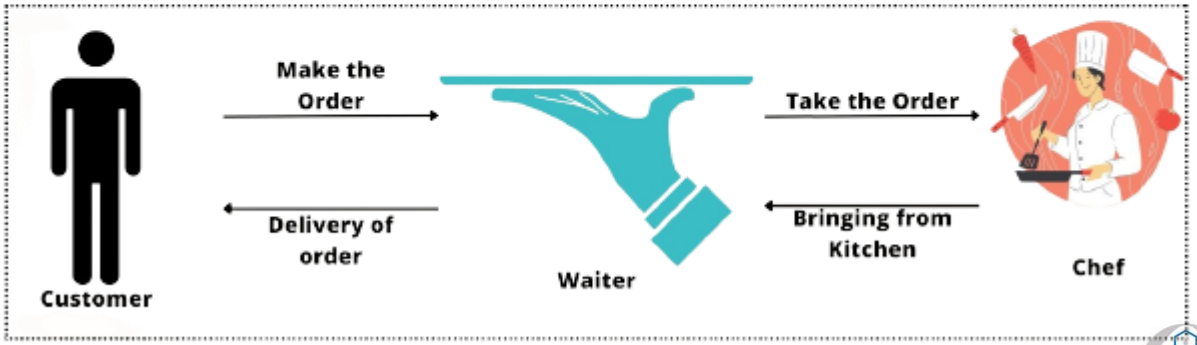
Index

- What is a API?
- What is REST architecture?
- What are REST-APIs?

1 What is a API?

- Set of Protocols, tools and definitions;
- Provides a layer of abstraction;
- Can use various protocols. Most common is HTTP.





2 What is REST architecture?

- Can be accessed through URI and manipulated by Get, Post, Put and Delete;
- Should be stateless.

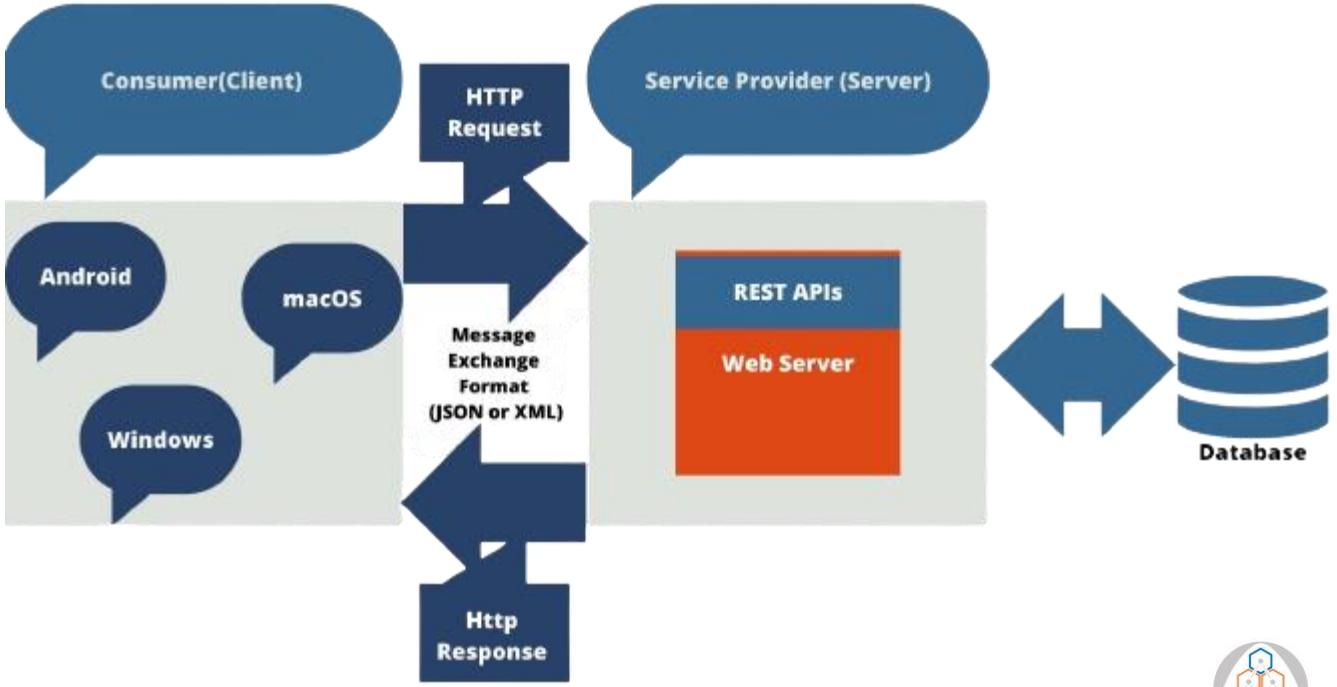
2 What is REST architecture?

- Principles:

1. Uniform interface
2. Stateless
3. Layered system
4. Client-server architecture
5. Cacheable
6. Data types

3 What are REST-APIs?

- Set of Rules;
- Based in Representational State Transfer;
- Allows to access data and functions on the server.



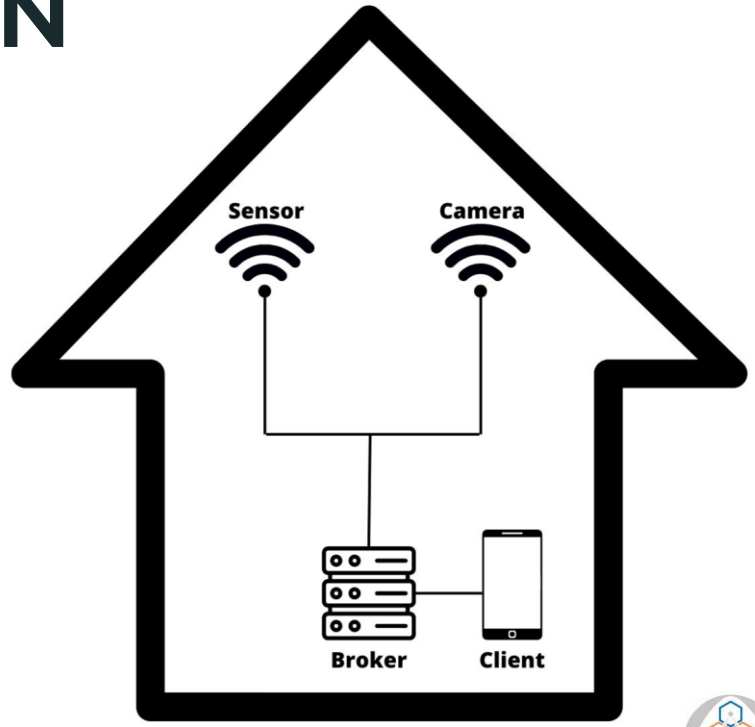
Session 3 - MQTT (The Standard for IoT Messaging)

1 INTRODUCTION

- What is it?

Message Queuing

Telemetry Transport



2 FEATURES

- Lightweight and Efficient

2 FEATURES

- Scalable

2 FEATURES

- Reliable

2 FEATURES

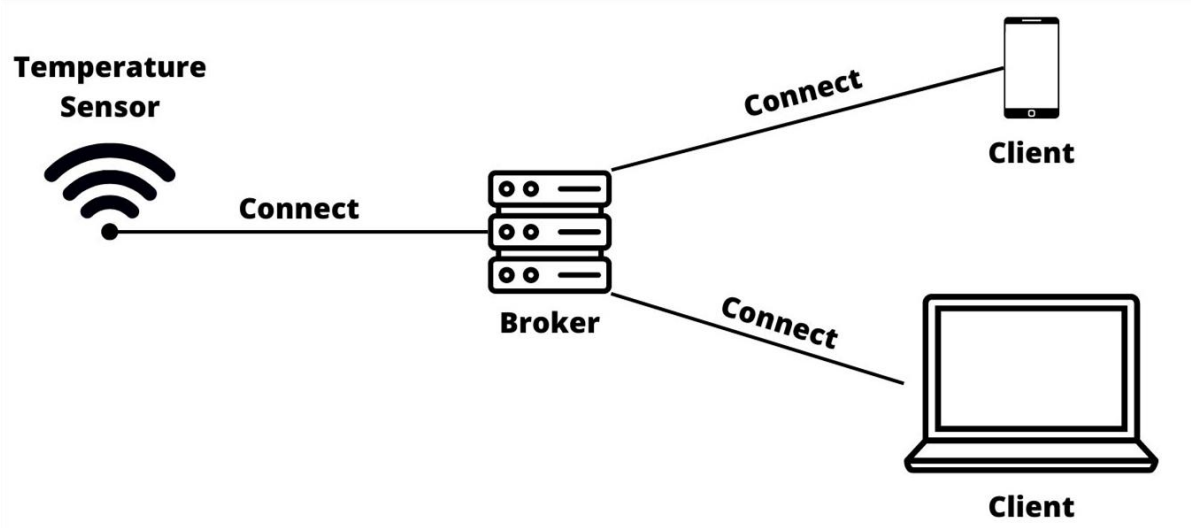
- Secure

2 FEATURES

- Supported by multiple programming languages

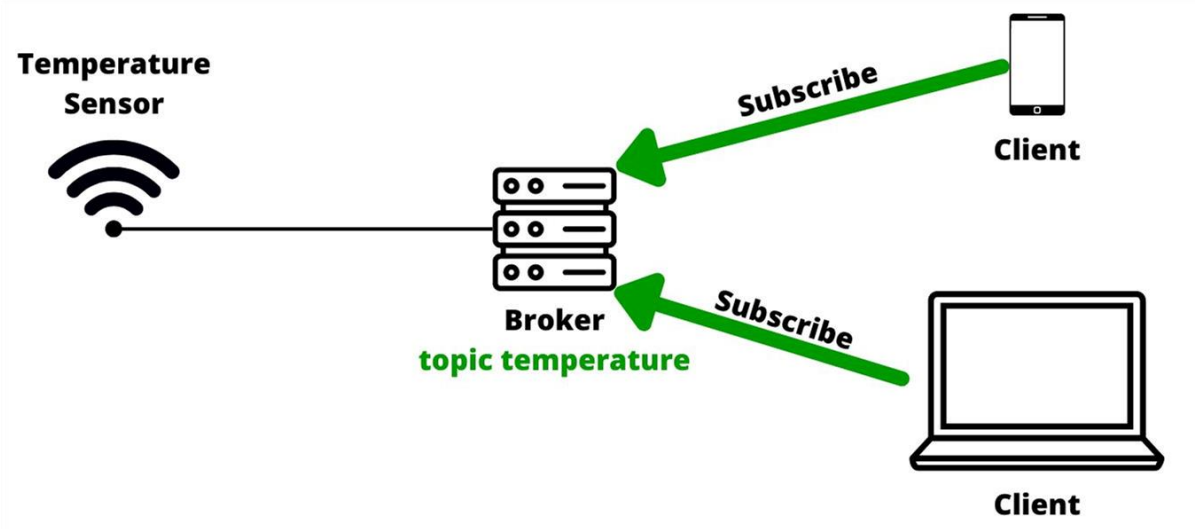
3 HOW DOES IT WORK?

1. Clients connect to the Broker



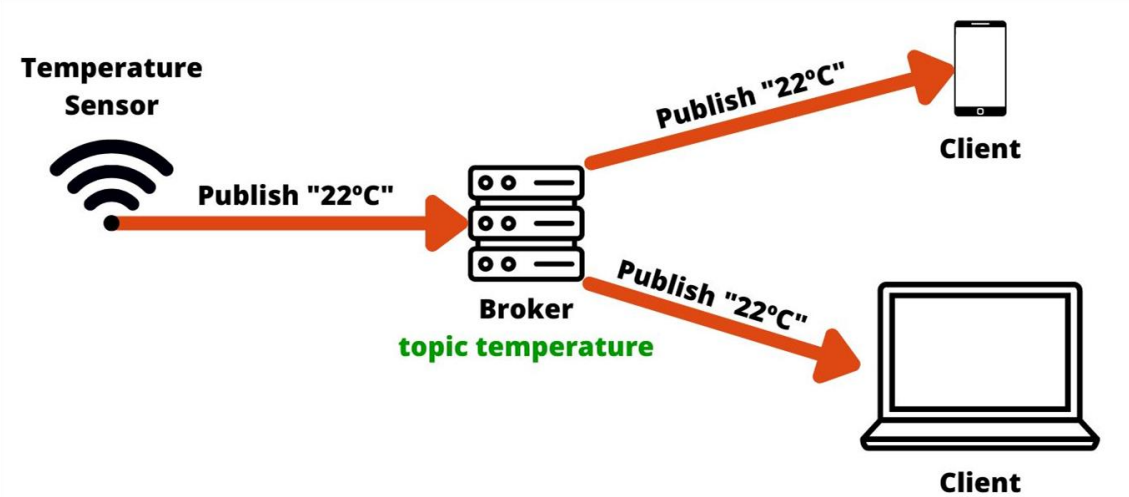
3 HOW DOES IT WORK?

2. Clients subscribe to topic



3 HOW DOES IT WORK?

3. The client “Temperature Sensor” publish to topic
4. Clients Subscripted receive the message



Session 4 - STOMP (Simple (or Streaming) Text Oriented Messaging Protocol)

1 INTRODUCTION

- What is it?

Streaming Text Oriented Messaging Protocol

2 FEATURES

- Simplicity and Lightweight

2 FEATURES

- Language and platform independent

2 FEATURES

- Messaging abstraction
- Publish-subscribe model

2 FEATURES

- Metadata
- Support for different transport systems

2 FEATURES

- Transaction Control

COMMANDS

Clients:

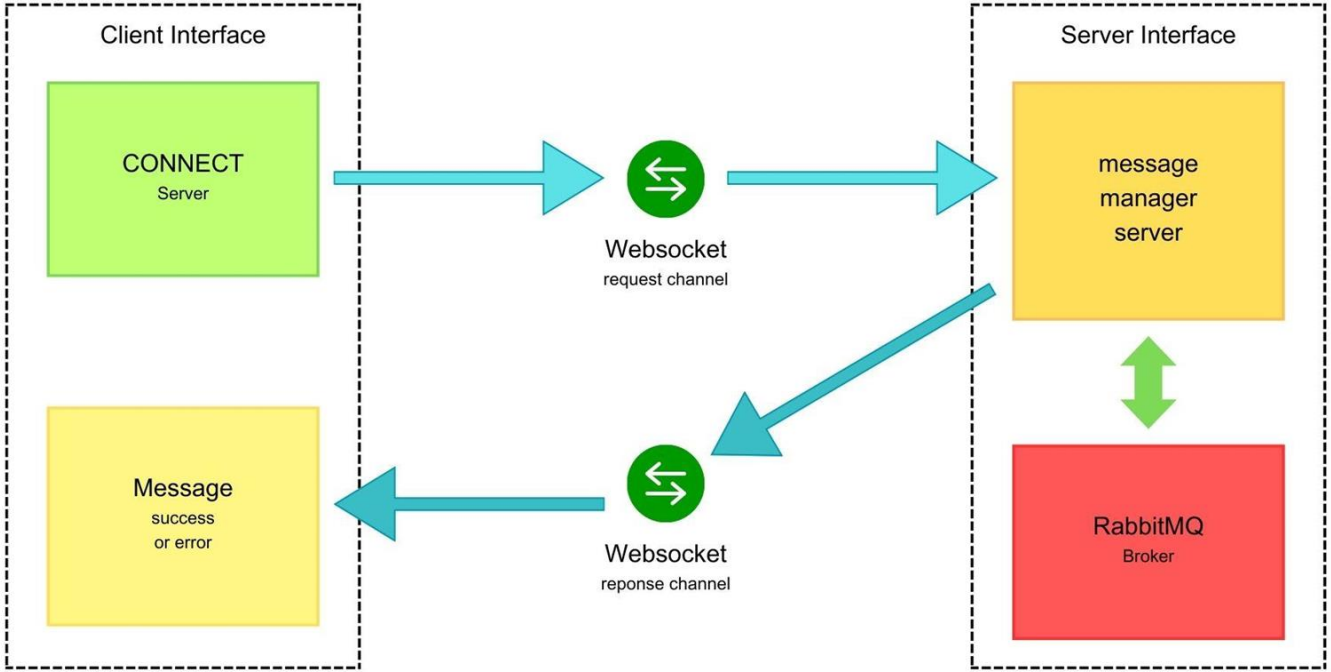
- CONNECT
- SEND
- SUBSCRIBE

COMMANDS

Servers:

- CONNECT
- SEND
- SUBSCRIBE

3 HOW DOES IT WORK?



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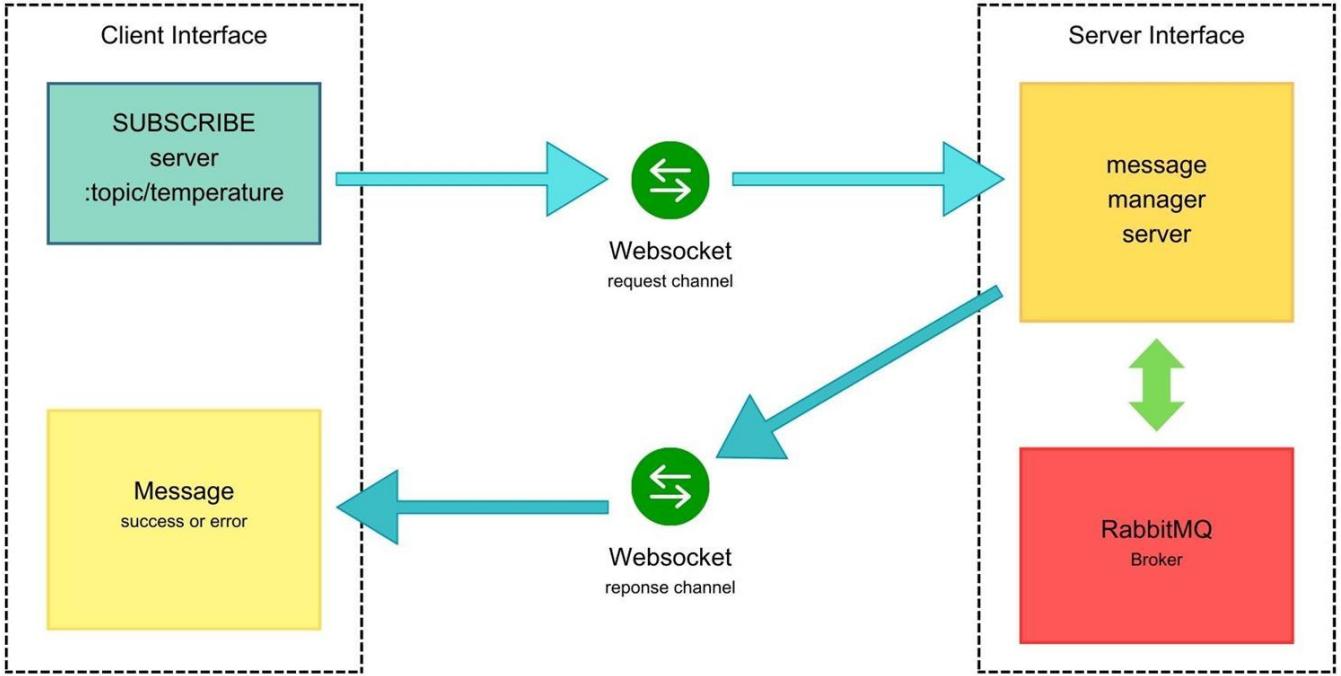

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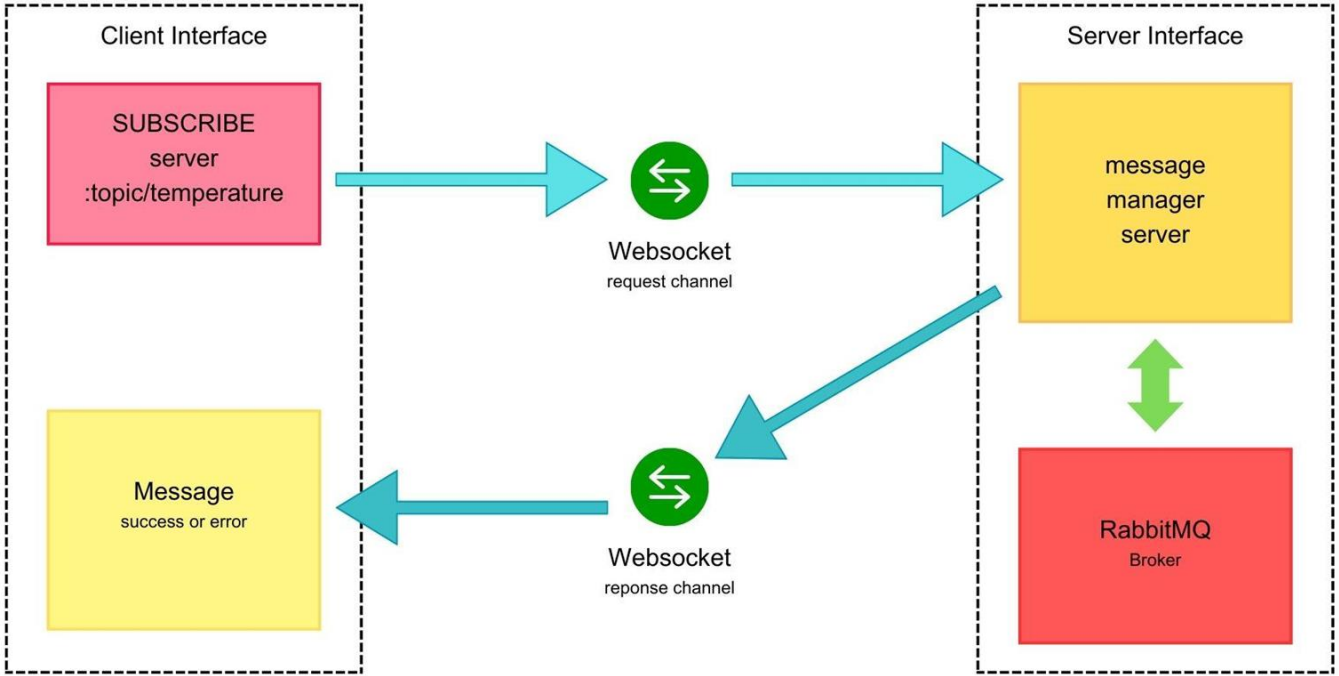

3 HOW DOES IT WORK?