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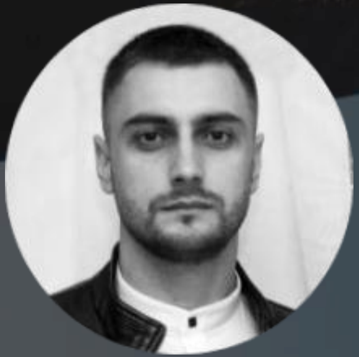
Azure Web PubSub

replacement of SignalR?



Roman Marusyk,
Lead Software Engineer

For the next hour

- Azure Web PubSub overview
- Demo chat application
- Azure Web PubSub vs Azure SignalR
- IoT use case

I love pressing F5.
It's so refreshing.
F5
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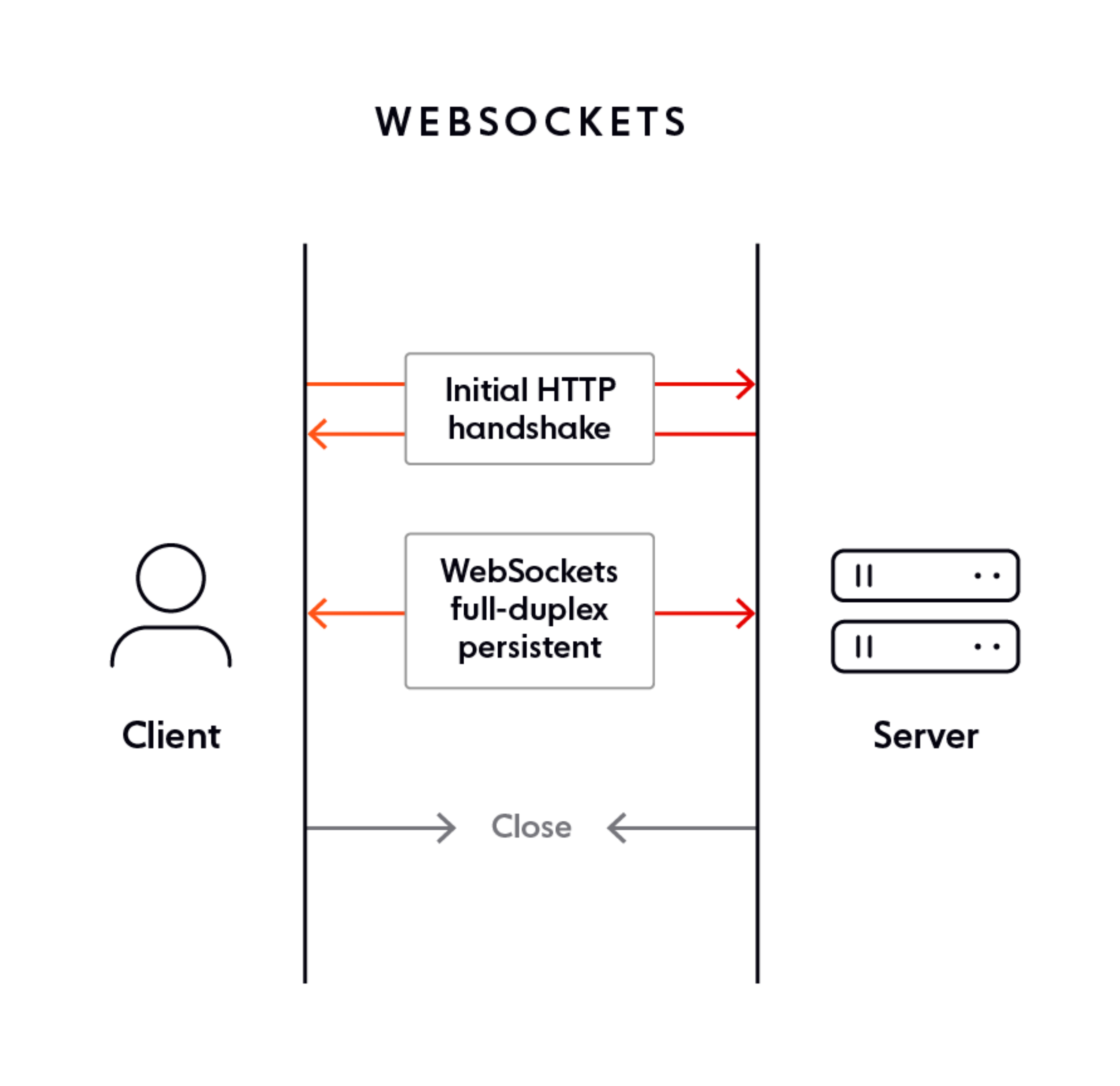
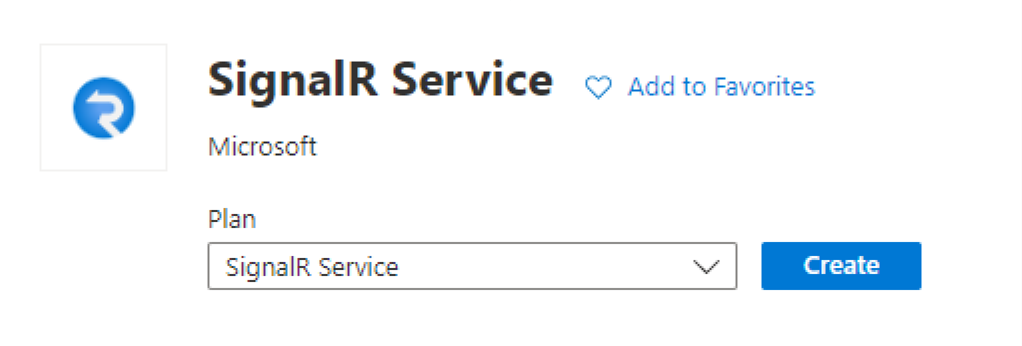
wiseGEEK
quickmeme.com

WebSockets

- A two-way communication between the servers and the clients, which mean both the parties communicate and exchange data at the same time
- Provides true concurrency and optimization of performance, resulting in more responsive and rich web applications
- Provides a two-way communication (full duplex) over a single TCP connection



Microsoft Azure

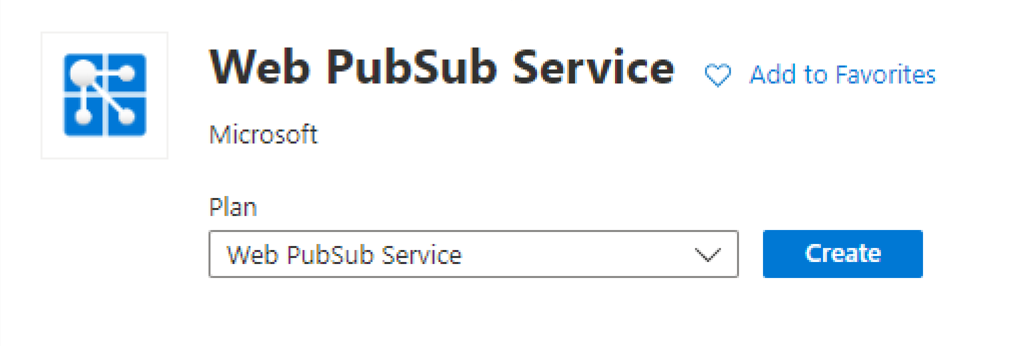


SignalR Service

Microsoft

Plan

SignalR Service



Web PubSub Service

Microsoft

Plan

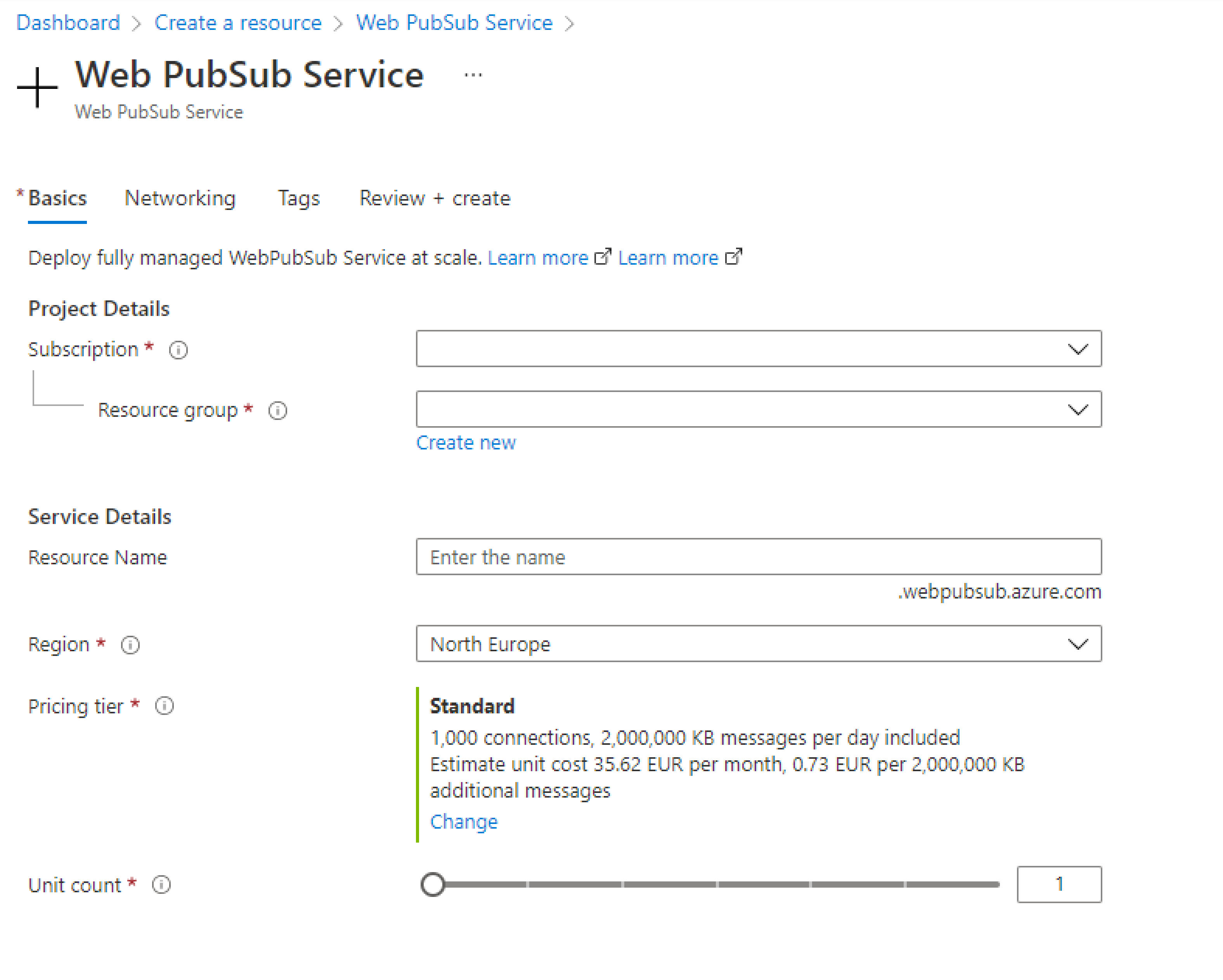
Web PubSub Service

Azure Web PubSub

Managed service for handling real-time communication using WebSockets and the publish-subscribe pattern.

- High frequency data updates
- Live dashboards and monitoring
- Real-time targeted ads
- IoT and connected devices
- Cross-platform live chat
- Real-time location on map live chat
- Real-time broadcasting
- Push instant notifications

Create a Web PubSub instance



Dashboard > Create a resource > Web PubSub Service >

Web PubSub Service ···

Web PubSub Service

*Basics | Networking | Tags | Review + create

Deploy fully managed WebPubSub Service at scale. Learn more Learn more

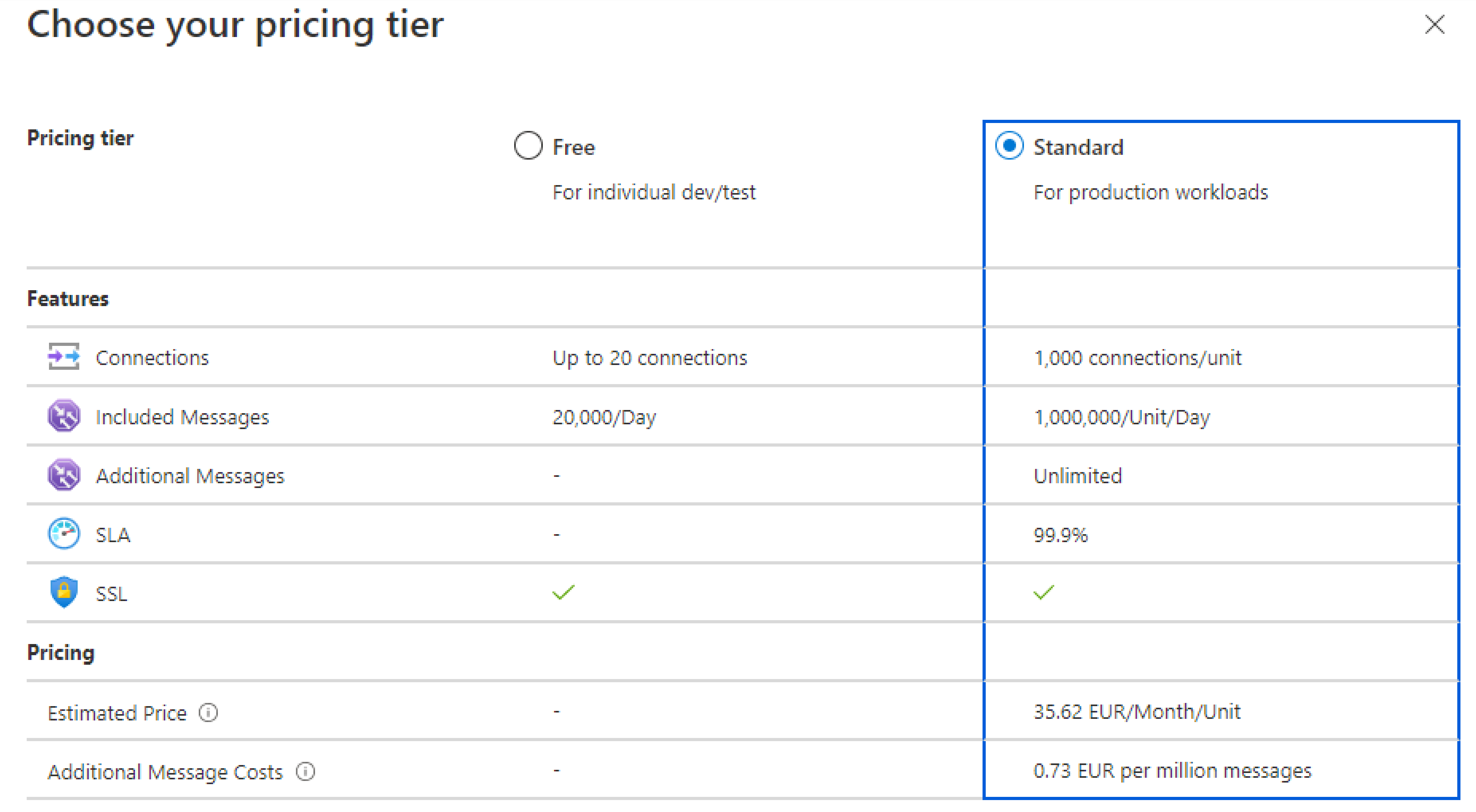
Project Details

Subscription * ⓘ	
Resource group * ⓘ	 Create new

Service Details

Resource Name	Enter the name .webpubsub.azure.com
Region * ⓘ	North Europe
Pricing tier * ⓘ	**Standard** 1,000 connections, 2,000,000 KB messages per day included Estimate unit cost 35.62 EUR per month, 0.73 EUR per 2,000,000 KB additional messages Change
Unit count * ⓘ	1

Azure Web PubSub pricing



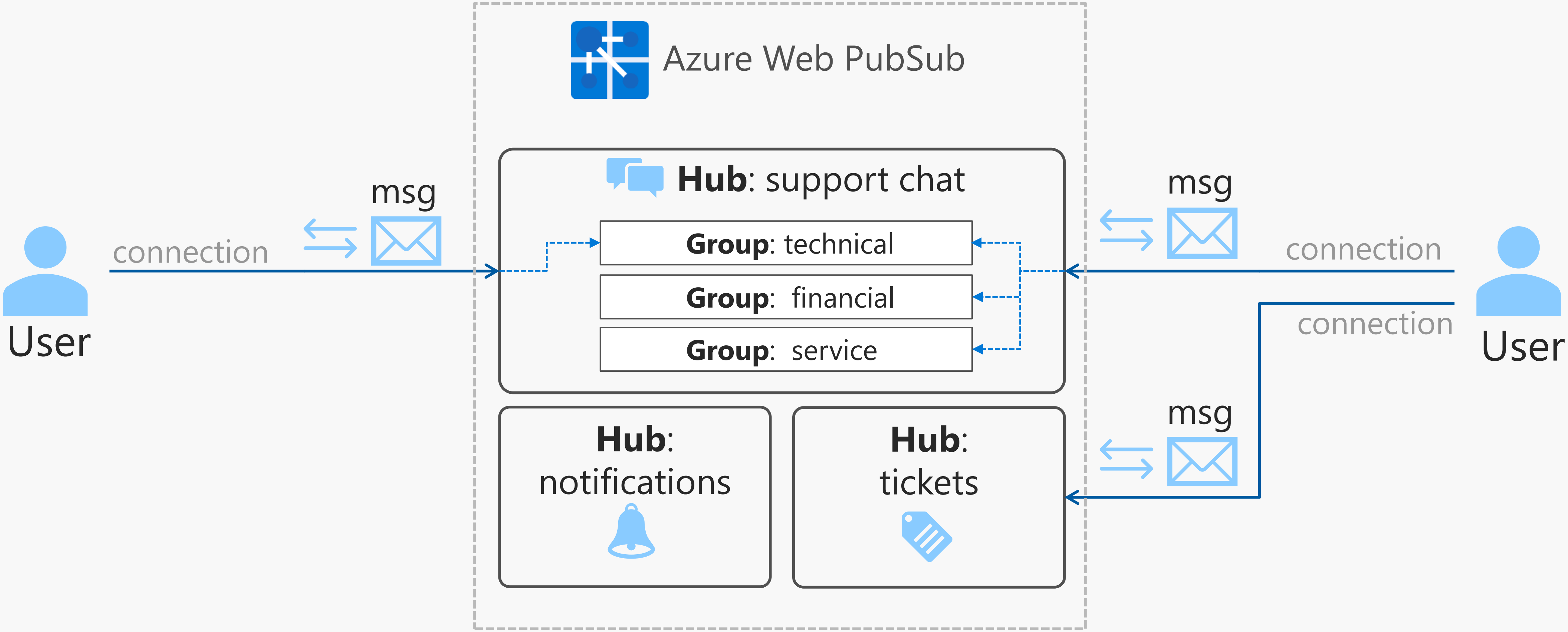
Choose your pricing tier

Pricing tier	○ Free For individual dev/test	● Standard For production workloads
Features		
Connections	Up to 20 connections	1,000 connections/unit
Included Messages	20,000/Day	1,000,000/Unit/Day
Additional Messages	-	Unlimited
SLA	-	99.9%
SSL	✓	✓
Pricing		
Estimated Price ⓘ	-	35.62 EUR/Month/Unit
Additional Message Costs ⓘ	-	0.73 EUR per million messages

Key concepts

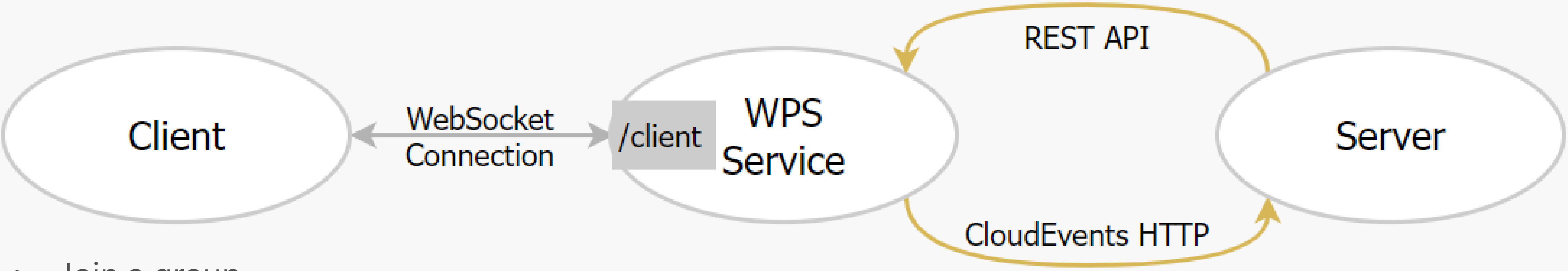
- **Hub** is a logic isolation for one application. Different apps can share one Web PubSub service by using different hub names
- **Group** is a subset of connections to the hub. Clients can join/leave a group, publish message to a group. A client can join multiple groups, and a group can contain multiple clients
- **User** might have multiple connections. Connections to the Web PubSub can belong to one user
- **Connection** represents an individual WebSocket connection connected to the Web PubSub service
- **Message** can be sent to the upstream application, or received from the upstream application, through the WebSocket connection
- **Server** can handle client events, manage connections, publish messages

Key concepts



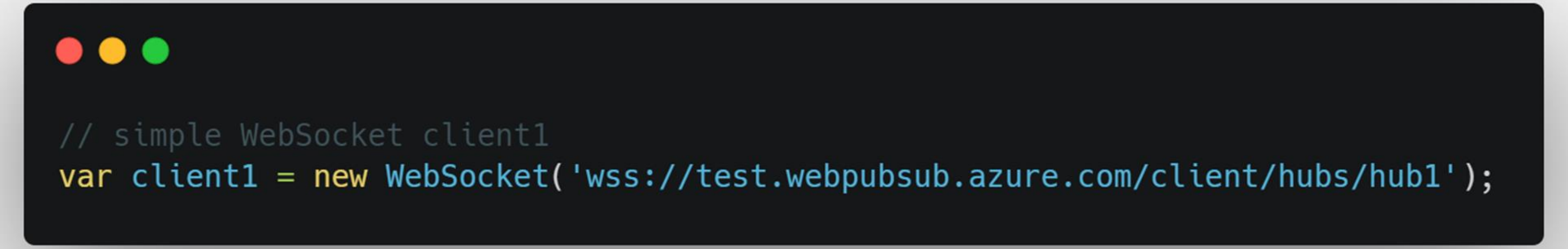
Azure SignalR

Workflow



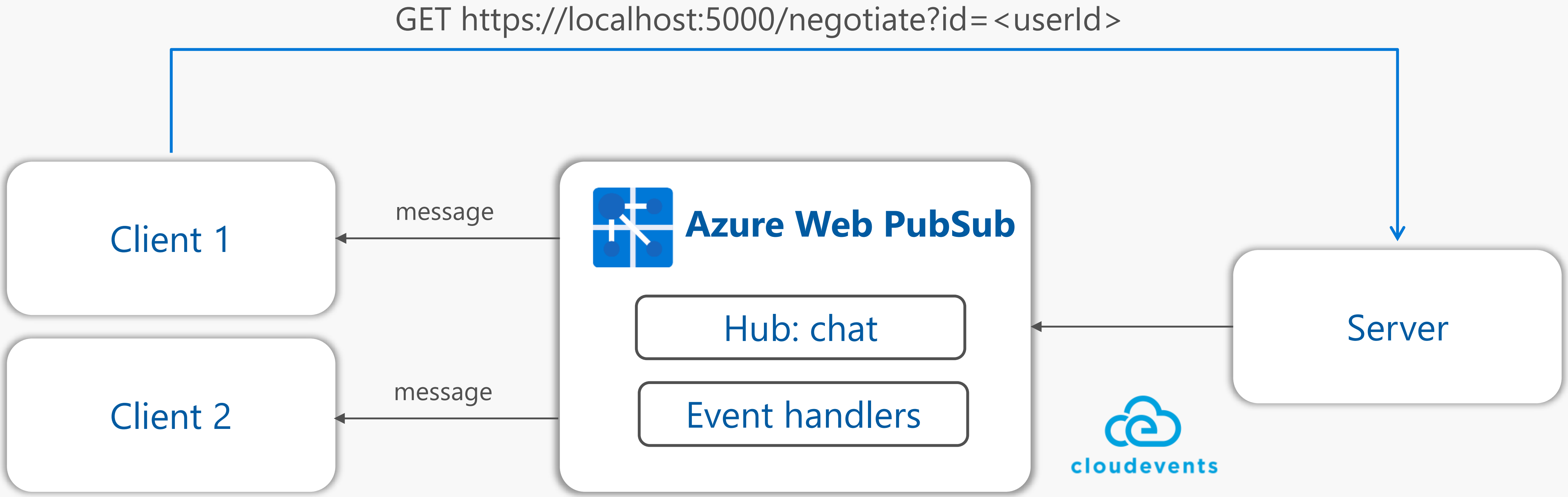
- Join a group
- Leave a group
- Publish messages to a group
- Send custom events to the server

Handle events •
Manage connections •
Publish messages •

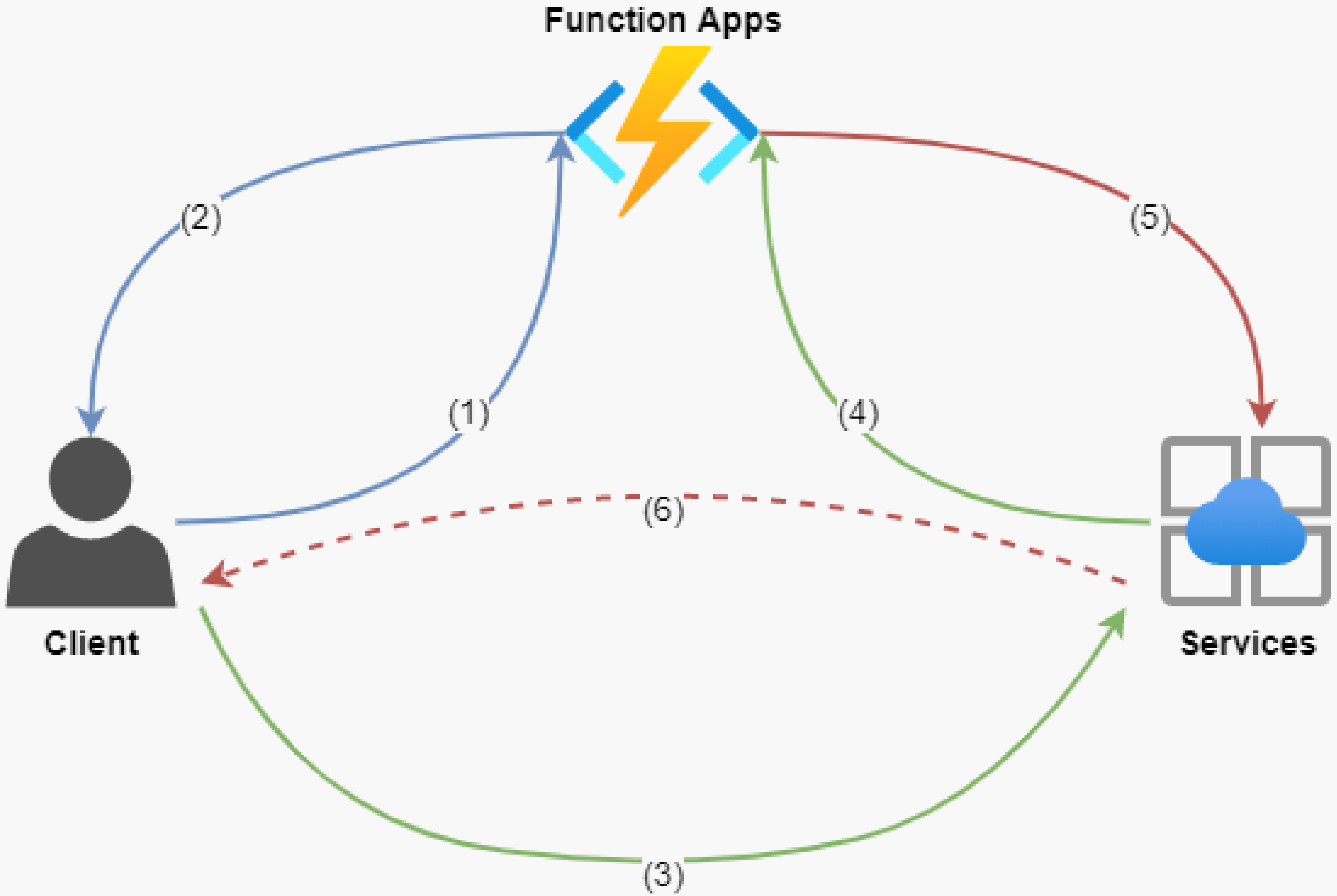


```
// simple WebSocket client1
var client1 = new WebSocket('wss://test.webpubsub.azure.com/client/hubs/hub1');
```

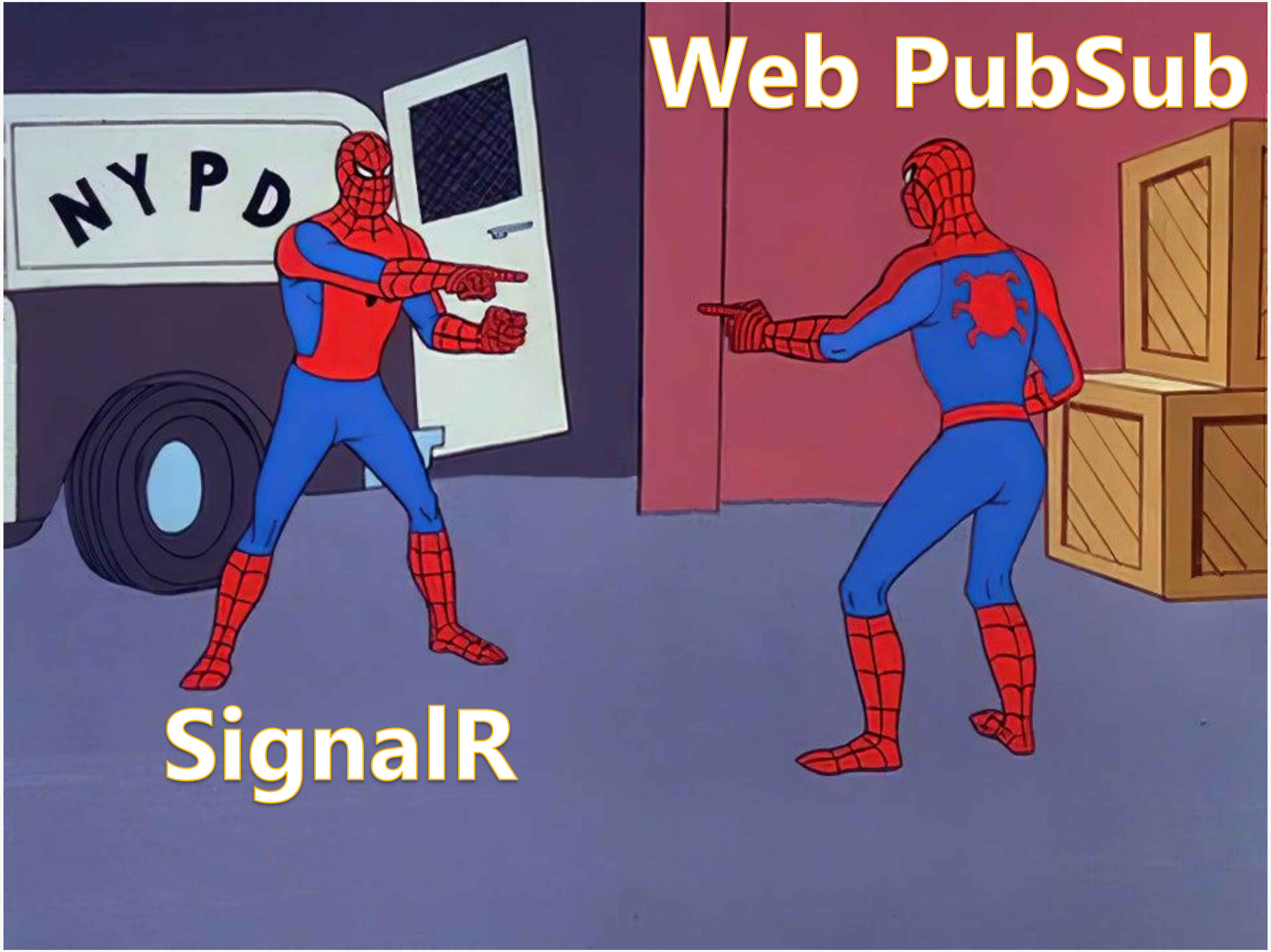
Chat app


GET https://localhost:5000/negotiate?id=<userId>
Client 1
Client 2
message
message
Azure Web PubSub
Hub: chat
Event handlers
Server
cloudevents

Serverless chat



https://docs.microsoft.com/en-us/azure/azure-web-pubsub/reference-functions-bindings?tabs=csharp

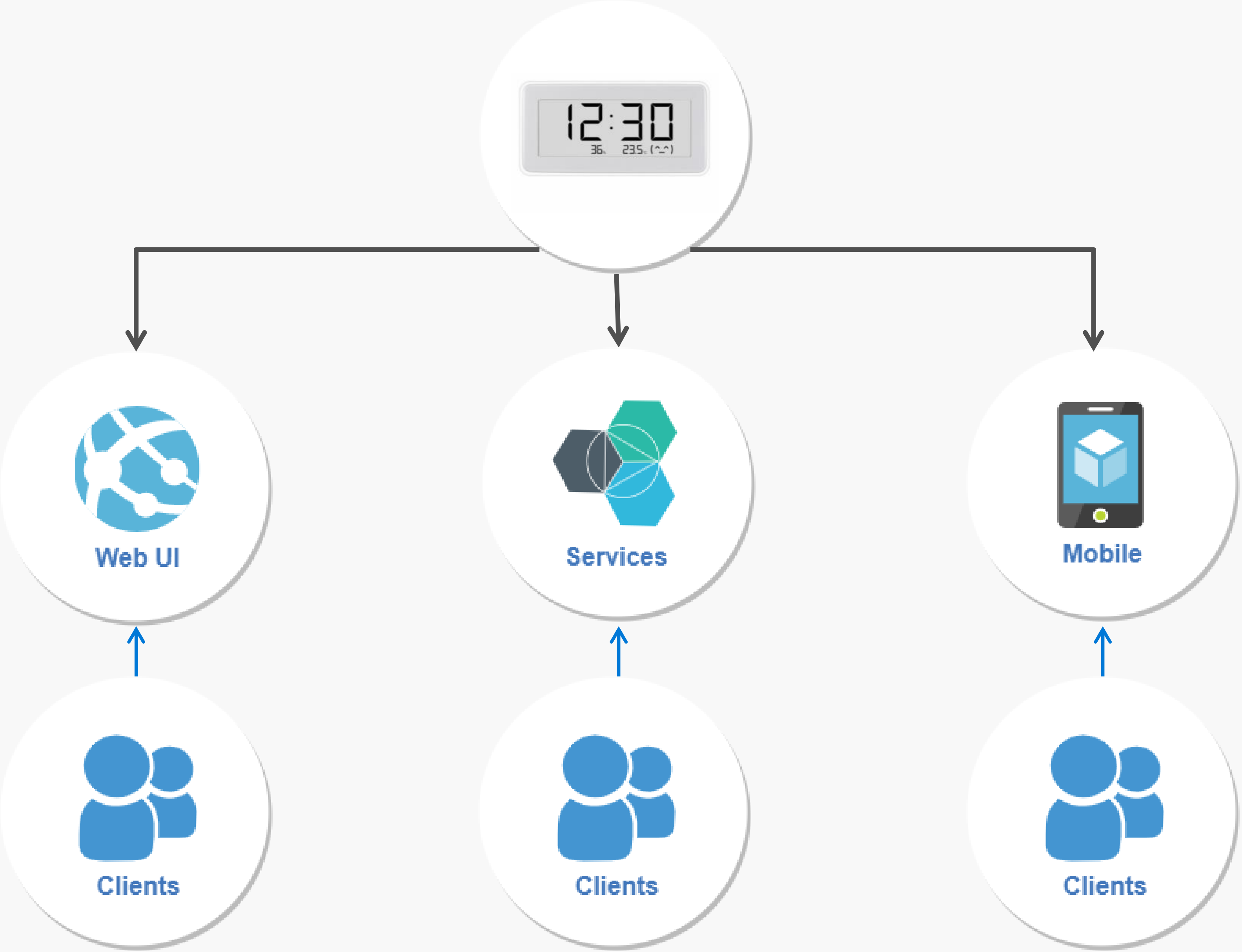

Web PubSub
NYPD
SignalR

Azure Web PubSub vs Azure SignalR

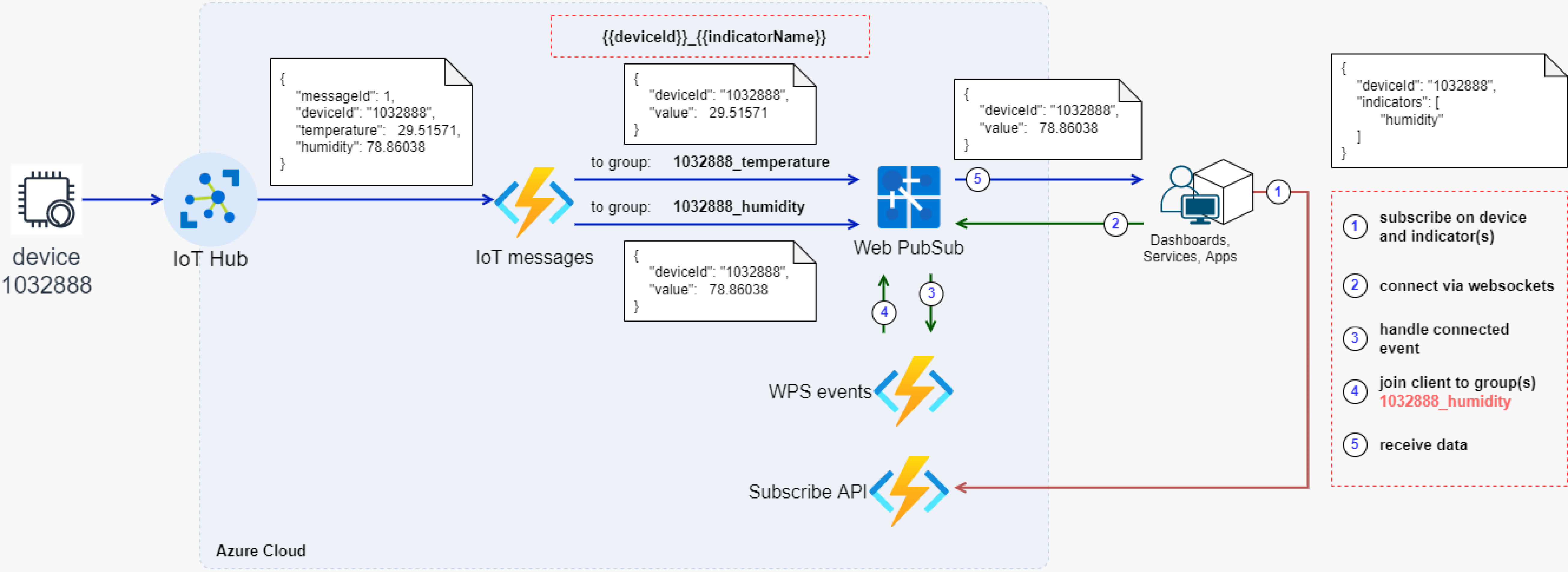
	Azure SignalR Service	Azure Web PubSub Service
Client platforms	.NET, JavaScript, Java, (C++, Swift, Python)	Any platform that supports WebSockets
Transports	WebSockets, Server-Sent Events, Long Polling, Streaming, RPC	WebSockets
Automatic reconnect	Yes	No
Client interactions without server-side code	No	Yes, using subprotocol

https://www.mi.com/global/product/xiaomi-temperature-and-humidity-monitor-clock/

IoT Telemetry



IoT Telemetry



```
{
   "messageId": 1,
   "deviceId": "1032888",
   "temperature":   29.51571,
   "humidity": 78.86038
}
```

```
{
   "deviceId": "1032888",
   "value":   29.51571
}
```

```
{
   "deviceId": "1032888",
   "value":   78.86038
}
```

```
{
   "deviceId": "1032888",
   "value":   78.86038
}
```

```
{
   "deviceId": "1032888",
   "indicators": [
      "humidity"
   ]
}
```

1 subscribe on device and indicator(s)

2 connect via websockets

3 handle connected event

4 join client to group(s) 1032888_humidity

5 receive data

Summary

- Real-time messaging via WebSockets: Azure SignalR, Azure Web PubSub
- Azure Web PubSub is platform agnostic
- Serverless (+ subprotocol)
- If you’re using Azure SignalR continue to do:
  - You primarily use .NET
  - If you need fallback transports other than WebSockets
  - The existing SignalR client platforms work for you
  - If you don't want to manage the reconnect logic yourself
  - You need more complex invocation patterns and you don't want to manage a custom protocol

Thanks!

Q&A

@MarusykRoman

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