

# ActionCable vs Anycable vs Pusher - Part 2

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# Review: Websocket

coinbase

Pro

Trade

SIGN IN

ETC-EUR

9.55 EUR

Last trade price

+2.47%

24h price

38,762 ETC

24h volume

SIGN IN

or

CREATE ACCOUNT

Order Form

BUY

SELL

MARKET

LIMIT

STOP

Amount

Max

0.00

EUR

Fee (EUR) =

€0.00

Total (ETC) =

€0.00000000

PLACE BUY ORDER

Order Book

Order Book

Trade History

| Market Size | Price (EUR) | My Size |
|-------------|-------------|---------|
| 349.0302    | 9.62        | -       |
| 389.0667    | 9.61        | -       |
| 52.0610     | 9.60        | -       |
| 1.5000      | 9.59        | -       |
| 22.6620     | 9.58        | -       |
| 100.0000    | 9.57        | -       |
| 1.0000      | 9.56        | -       |
| 142.4994    | 9.55        | -       |

EUR Spread

0.03

|             |      |   |
|-------------|------|---|
| 88.4043     | 9.52 | - |
| 1.6000      | 9.51 | - |
| 824.0000    | 9.50 | - |
| 1.5000      | 9.49 | - |
| 1156.9794   | 9.48 | - |
| 393.9720    | 9.47 | - |
| 243.1960    | 9.46 | - |
| 10.0000     | 9.45 | - |
| Aggregation | 0.01 | + |

Price Charts

5m

Candle

Overlay

0: 9.55

H: 9.55

L: 9.55

C: 9.55

V: 4

9.535

Mid Market Price

Open Orders

Open

Fills

| Side              | Size | Filled (ETC) | Price (EUR) | Fee (EUR) | Status |
|-------------------|------|--------------|-------------|-----------|--------|
| No orders to show |      |              |             |           |        |

All Systems Operational

## Pros

### ActionCable

- Easy to implement
- Rails convention

### AnyCable

- Scalable
- Plug n play\*

### Pusher

- Easy to implement
- Great free tier pricing

## Cons

### ActionCable

- Not scalable\*\*

### AnyCable

- Additional dependencies

### Pusher

- Expensive when you're building the next Whatsapp
- Closed source, vendor lock-in.

\* There might be some code change for user authentication

\*\* Might be fixed in the far future: Rails 6 + Ruby 3

## This session:

1. Deployment
2. Benchmark

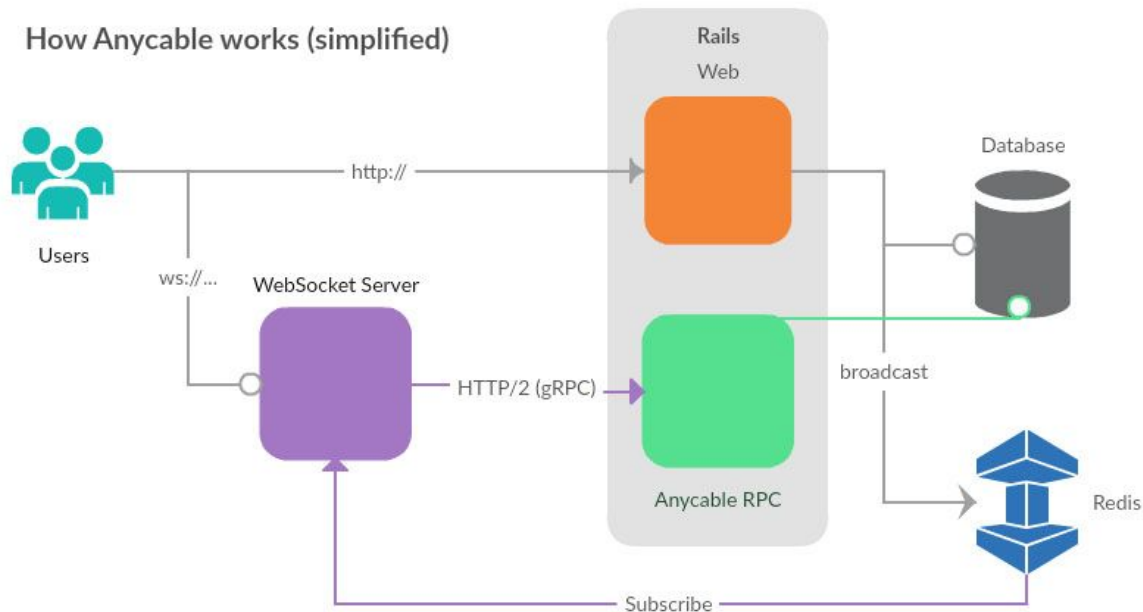


docker

Google Cloud

# Deployment - Anycable Architecture

## How Anycable works (simplified)



© palkan

```
rpc:
  build:
    context: .
    cache_from:
      - ${DOCKER_IMAGE}:${BRANCH_TAG}
    image: ${DOCKER_IMAGE}:${BRANCH_TAG}
    container_name: athena_rpc
    command: bin/anycable
    ports:
      - "50051:50051"
    environment:
      - ANYCABLE_RPC_HOST=0.0.0.0:50051
      - ANYCABLE_REDIS_URL=redis:6379

websocket:
  image: anycable/anycable-go:0.5.4
  environment:
    - RPC=rpc:50051
    - REDIS=redis://redis:6379
    - ADDR=0.0.0.0:3334
  ports:
    - "3334:3334"
```

- Benchmark machine



Google cloud platform

Benchmark VM: Compute Engine - 8vCPU and 32GB of RAM

Server: Compute Engine - 4vCPU and 16GB of RAM

- Load testing tool

The logo for Artillery.io, featuring a dark gray triangle pointing to the right. Inside the triangle, the text "ARTILLERY.IO" is written in white, bold, uppercase letters. A small white icon resembling a flag or a stylized 'A' is positioned to the left of the text.

**ARTILLERY.IO**

Artillery

Modern, easy-to-use load-testing toolkit written in Node.js

# Benchmark - Load testing tool



```
config:
  target: "ws://35.186.155.251:3334/cable"
  phases:
    - duration: 20
      arrivalRate: 50
  scenarios:
    - engine: "ws"
      flow:
        - send: "{\"identifier\":{\"channel\":\"NotificationsChannel\"},\"message\":{\"message\":\"Example Message\"}}"
```

Create yaml script file



```
$ ./artillery run websocket_load_test.yml
```

Run artillery test script



# Benchmark - ActionCable vs Anycable

- 1000 Connections in 10 seconds

```
1  [ 0.0%] Tasks: 60, 140 thr; 1 running
2  [ 0.0%] Load average: 0.00 0.05 0.07
3  [| 0.7%] Uptime: 03:26:18
4  [| 0.7%]
Mem[||||| 573M/15.7G]
Swp[ 0K/0K]
```

Actioncable

```
1  [ 0.0%] Tasks: 64, 206 thr; 1 running
2  [| 0.7%] Load average: 0.00 0.05 0.10
3  [| 0.7%] Uptime: 03:23:33
4  [| 0.7%]
Mem[||||| 781M/15.7G]
Swp[ 0K/0K]
```

Anycable

# Benchmark - ActionCable vs Anycable

- 5000 Connections in 10 seconds

```
1  [ 0.0%] Tasks: 60, 141 thr; 1 running
2  [ 0.0%] Load average: 0.16 0.32 0.19
3  [ 0.7%] Uptime: 03:34:19
4  [ 0.7%]
Mem[||||| 584M/15.7G]
Swp[ 0K/0K]
```

Actioncable

```
1  [ 0.0%] Tasks: 64, 206 thr; 1 running
2  [ 0.0%] Load average: 0.01 0.01 0.02
3  [ 0.0%] Uptime: 03:38:48
4  [ 0.7%]
Mem[||||| 743M/15.7G]
Swp[ 0K/0K]
```

Anycable

# Benchmark - ActionCable vs Anycable

- 5000 Connections in 10 seconds

```
All virtual users finished
Summary report @ 08:06:39(+0000) 2018-09-14
Scenarios launched: 5000
Scenarios completed: 4906
Requests completed: 4906
RPS sent: 106.77
Request latency:
  min: 0
  max: 2.8
  median: 0.1
  p95: 0.1
  p99: 0.2
Scenario counts:
  0: 5000 (100%)
Codes:
  0: 4906
Errors:
  ECONNRESET: 94
```

Actioncable

```
All virtual users finished
Summary report @ 08:09:33(+0000) 2018-09-14
Scenarios launched: 5000
Scenarios completed: 5000
Requests completed: 5000
RPS sent: 477.1
Request latency:
  min: 0
  max: 1.6
  median: 0
  p95: 0.1
  p99: 0.1
Scenario counts:
  0: 5000 (100%)
Codes:
  0: 5000
```

Anycable

# Going back to Pusher: Real-time as a service

## Sandbox plan

Free

GET STARTED FOR FREE

**100** Max Connections

**Unlimited** Channels

**200k** Messages / Day

**Limited** Support ⓘ

SSL Protection

## Paid plans

\$49 - \$499 per month

GET STARTED FOR FREE

**500 - 10,000** Max Connections

**Unlimited** Channels

**1 - 20 million** Messages / Day

**Limited** to **Standard** Support

SSL Protection

[Compare paid plans](#)

## Enterprise plan

A tailored solution

GET IN TOUCH

**Custom** Max Connections

**Unlimited** Channels

**Custom** Messages / Day

**Premium** Support ⓘ

SSL Protection

Monitoring Integrations ⓘ

## Companies using Pusher



FINANCIAL TIMES



# Pusher implementation



```
pusher.trigger('my-channel', 'my-event', {  
  message: 'hello world'  
})
```

Server side (Ruby)



```
var channel = pusher.subscribe('my-channel');  
channel.bind('my-event', function(data) {  
  alert('Received my-event with message: ' + data.message);  
});
```

Client side (JavaScript)

# Comparison: from Best to Worst

Engineering\* 🔧

Pusher > Actioncable > AnyCable

Performance 🔥

AnyCable = Pusher > Actioncable

Cost 💰

Actioncable > AnyCable > Pusher

Maintenance 🚚

Pusher > Actioncable > AnyCable

\* We haven't spent so much time implementing feature. So this is only from early hands-on.

ActionCable



AnyCable

vs



PUSHER

- Develop with ActionCable. Scale with AnyCable. Or use Pusher.
- Use AnyCable if the main feature needs real-time. Use Pusher if side feature needs real-time.
- Use Pusher if cost is not a problem, they handle the scalability.



# Thanks!

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