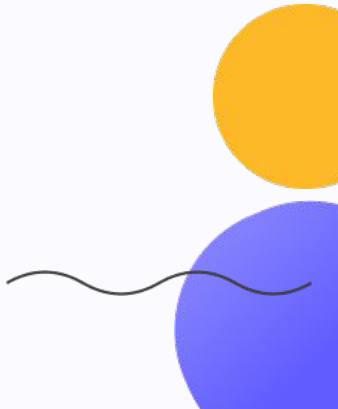
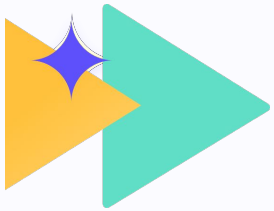
Govern Your Data Clients

The Right Way to Scale

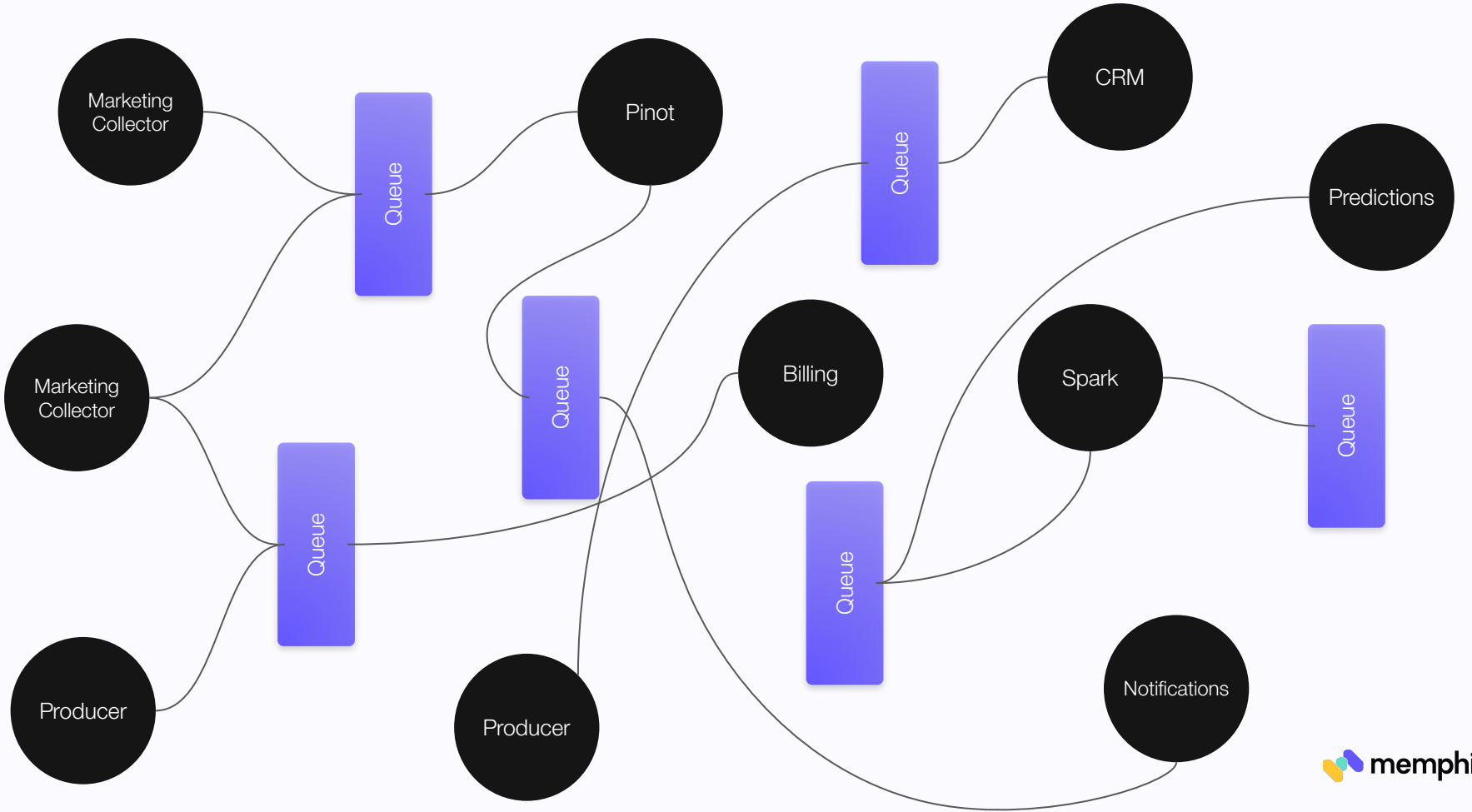


Data Council, Austin, 2023

What are data clients?



Sometimes it looks like that



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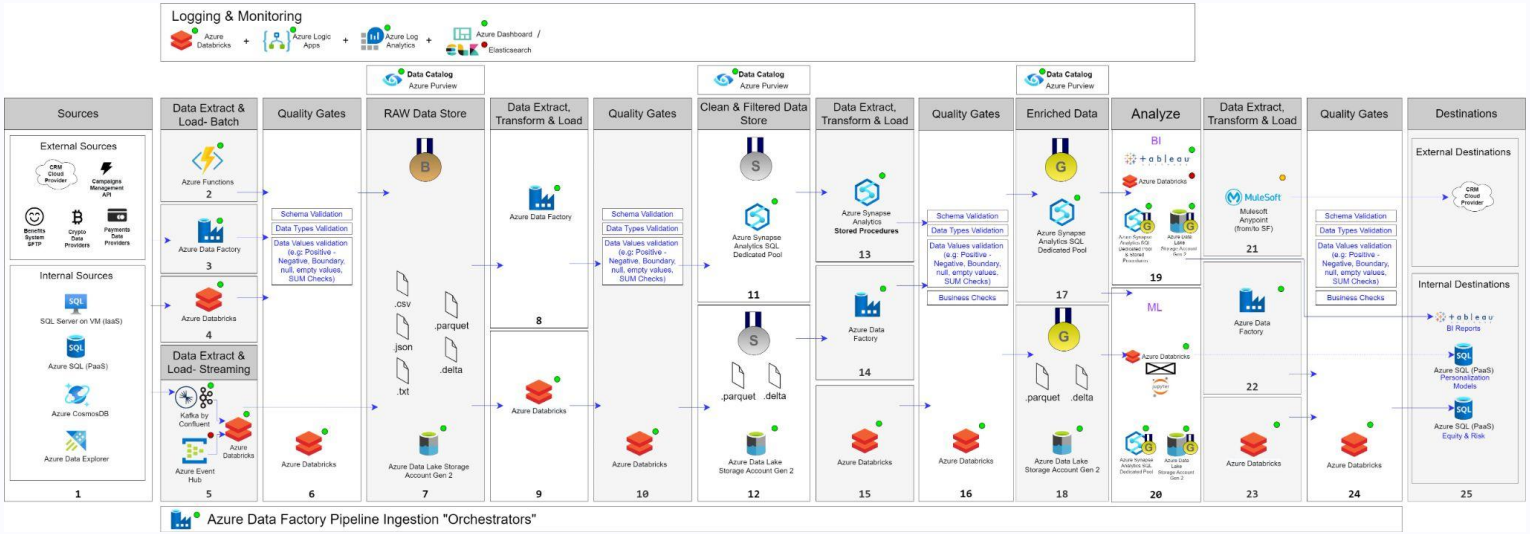
Also, like that



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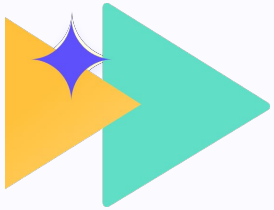
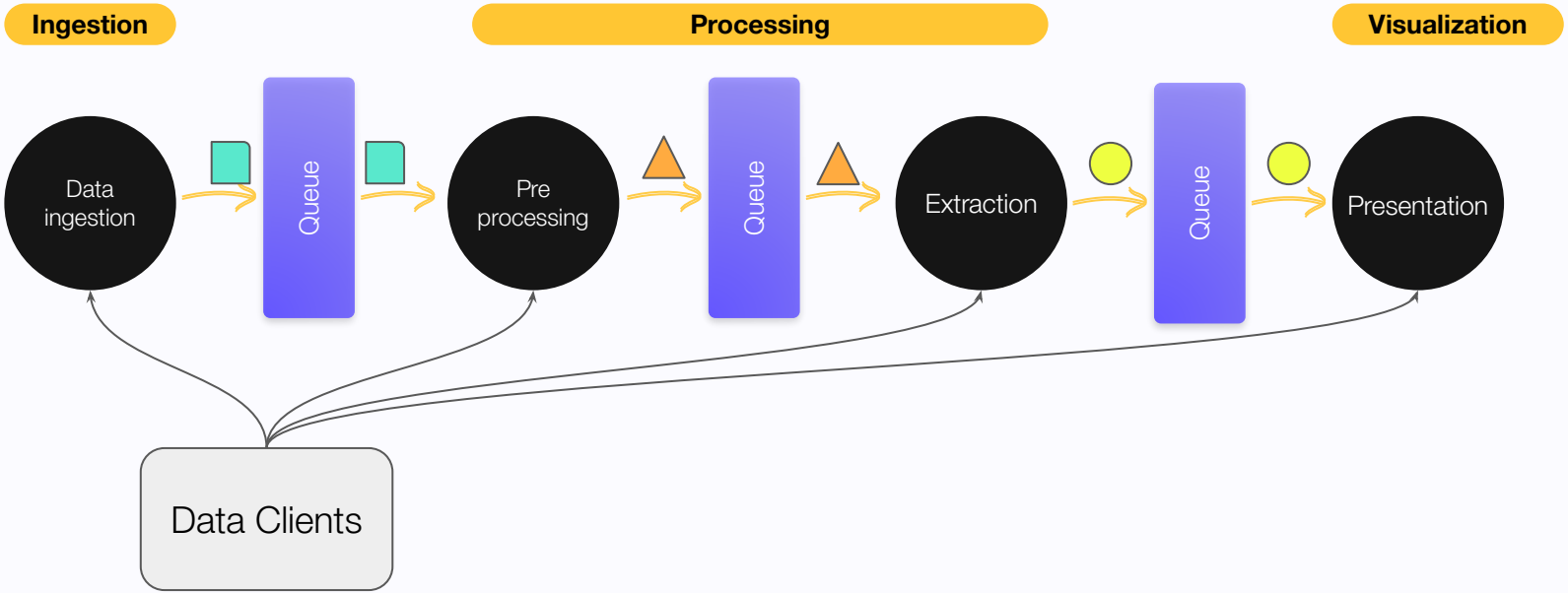
Streaming Pipelines



Streaming pipeline



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As we scale,
upstream changes will happen often

309 Bytes

```
const BIG_QUERY_TABLE_FIELDS = [
    { name: 'uuid', type: 'STRING' },
    { name: 'id', type: 'STRING' },
    { name: 'event', type: 'STRING' },
    { name: 'properties', type: 'STRING' },
    { name: 'elements_chain', type: 'STRING' },
    { name: 'person', type: 'STRING' },
]
```

543 Bytes

```
const BIG_QUERY_TABLE_FIELDS = [
    { name: 'uuid', type: 'STRING' },
    { name: 'id', type: 'STRING' },
    { name: 'event', type: 'STRING' },
    { name: 'properties', type: 'STRING' },
    { name: 'elements_chain', type: 'STRING' },
    { name: 'person', type: 'STRING' },
    { name: 'elements', type: 'STRING' },
    { name: 'set', type: 'STRING' },
    { name: 'set_once', type: 'STRING' },
    { name: 'distinct_id', type: 'STRING' },
]
```

801 Bytes

```
const BIG_QUERY_TABLE_FIELDS = [
    { name: 'uuid', type: 'STRING' },
    { name: 'id', type: 'STRING' },
    { name: 'event', type: 'STRING' },
    { name: 'properties', type: 'STRING' },
    { name: 'elements_chain', type: 'STRING' },
    { name: 'person', type: 'STRING' },
    { name: 'elements', type: 'STRING' },
    { name: 'set', type: 'STRING' },
    { name: 'set_once', type: 'STRING' },
    { name: 'distinct_id', type: 'STRING' },
    { name: 'distinct__ids', type: 'STRING' },
    { name: 'team_id', type: 'INT64' },
    { name: 'ip', type: 'STRING' },
    { name: 'site_url', type: 'STRING' },
    { name: 'timestamp', type: 'TIMESTAMP' },
    { name: 'type', type: 'STRING' },
    { name: 'is__identified', type: 'STRING' },
    { name: 'bq_ingested_timestamp', type: 'TIMESTAMP' },
]
```

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In good cases, you get

XXX% of waste traffic

Drops, extra hops, if statements, higher latency

Higher costs

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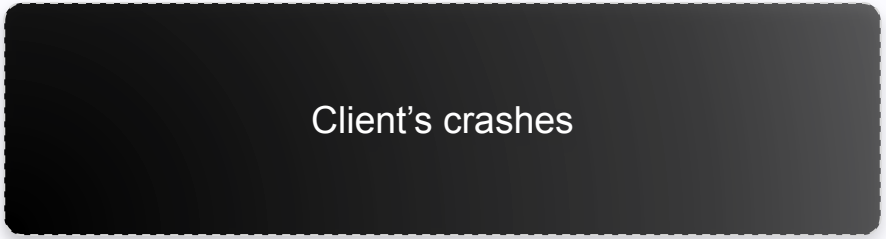
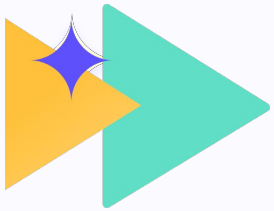
In bad cases, you get

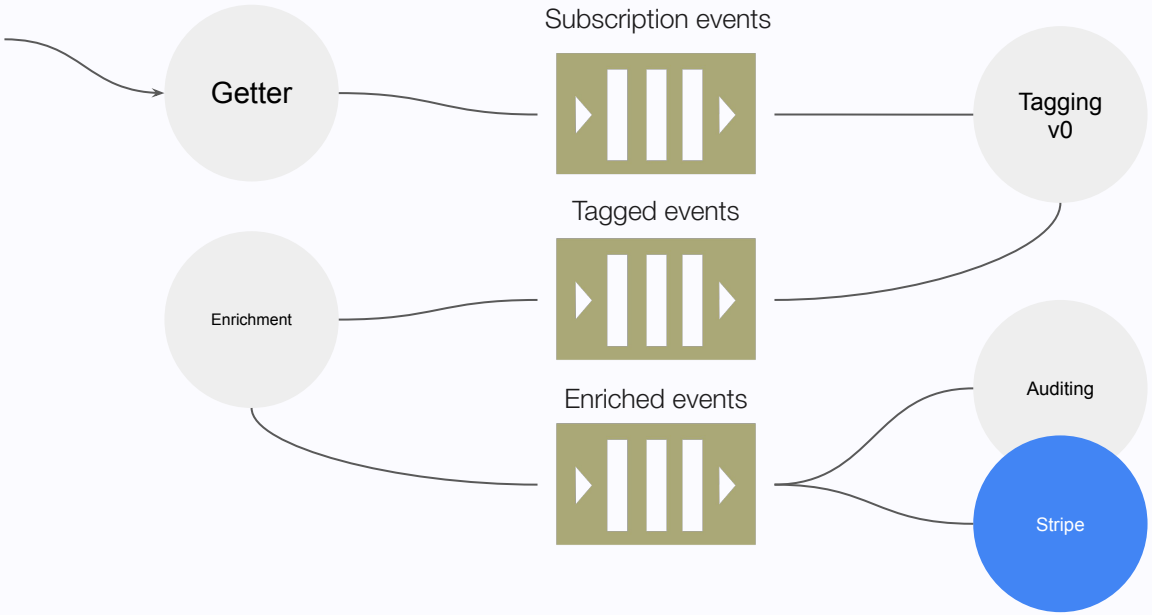


An unexpected journey of event



“Infrastructure looks ok, but stripe is not consuming data / messages get redelivered,
Please figure it out”

Data-level issue (Upstream changes)



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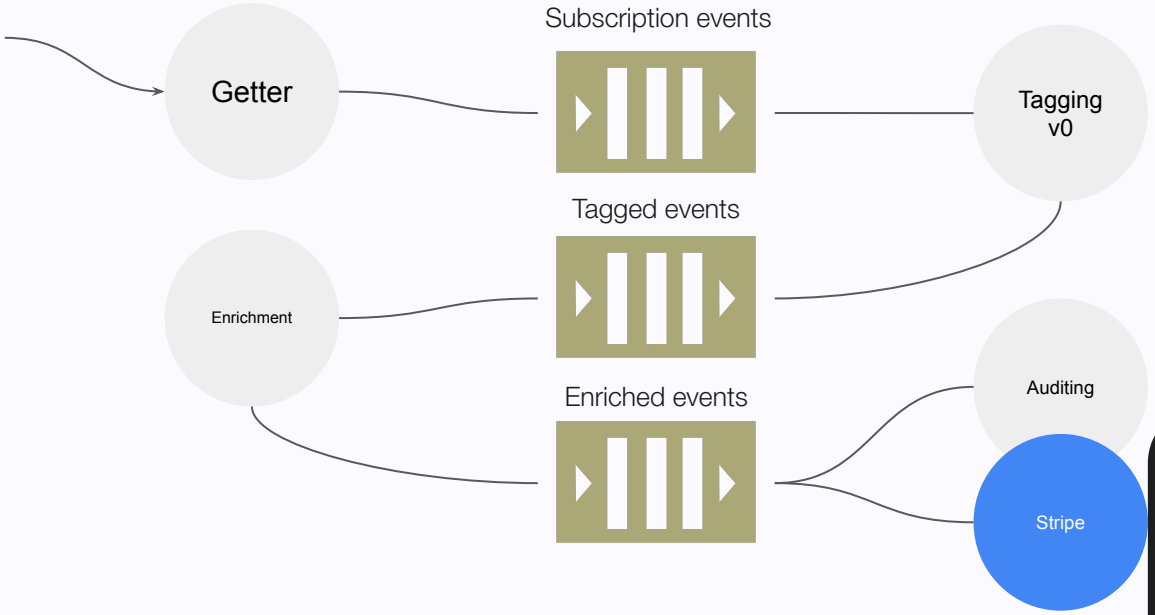
Data-level issue (Upstream changes)



```
syntax = "proto3";
package employees;

message PaymentRequest {
    string userId = 1;
    string tag = 2;
    string date = 3;
    string cardNumber = 4;
}
```

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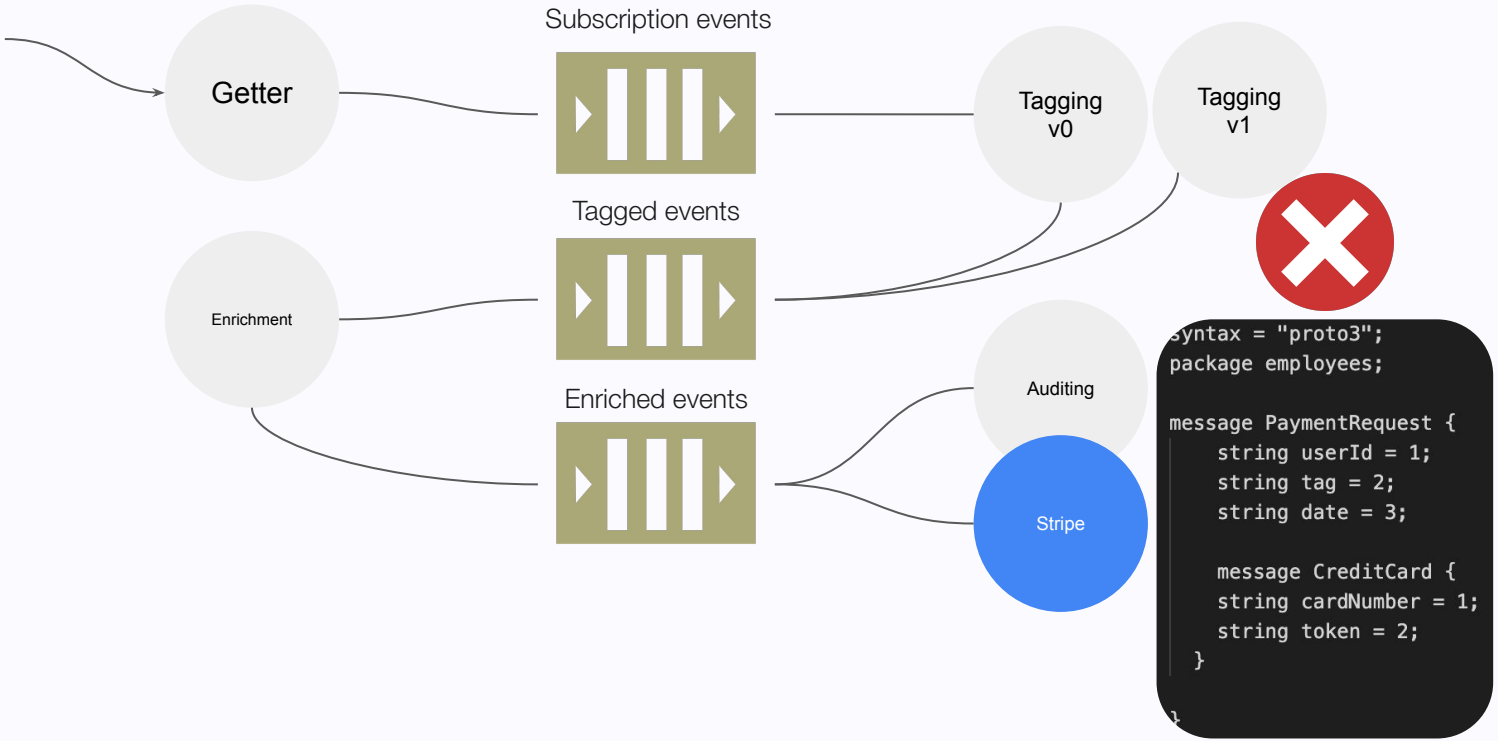
Data-level issue (Upstream changes)



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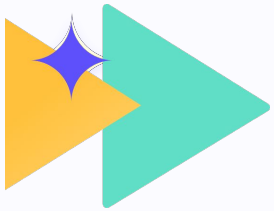
How to avoid?

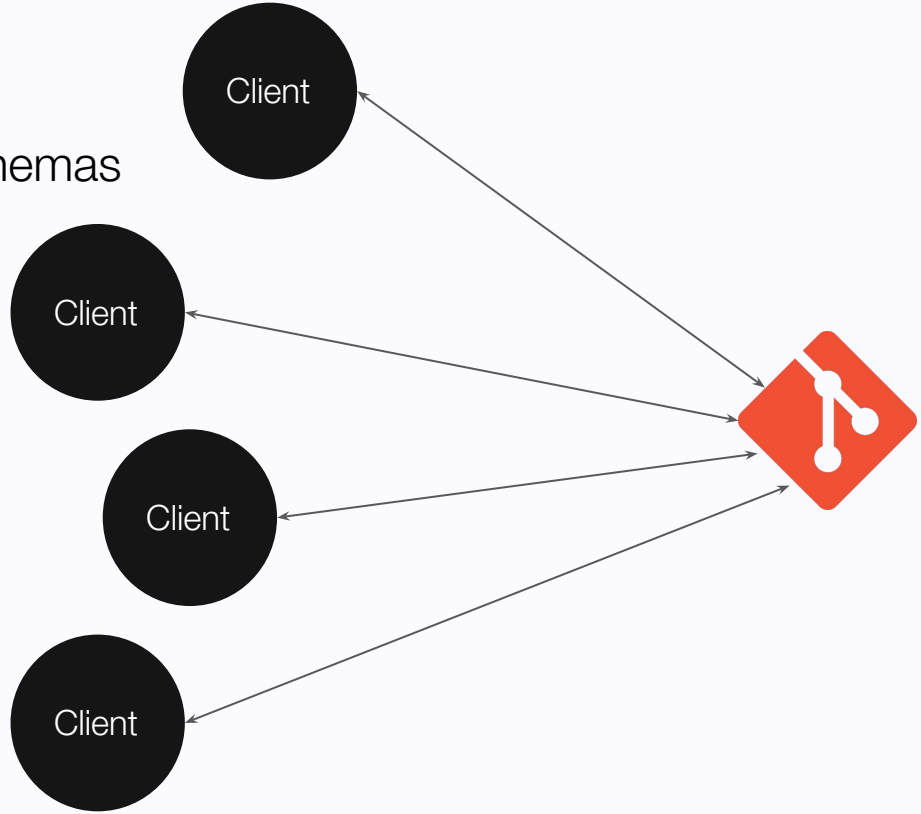


3 simple steps

- Establish a central place for your schemas.
- Create a schema.
- Enforce it.

How

- Create a git monorepo as your schemas store.
- Create a “broadcast” server that Will publish the schemas to the different clients using ws sockets.
- Make sure each client check for updates every couple of seconds.
- Use protobuf/Avro and implement serialization functions.
- Educate your team members!



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Thank you!

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