

AXILIS

Data Contracts Using Protocol Buffers

About us

- Team lead @Axilis
- Part of Superbet group
- Building scalable real time betting system
 - +120k daily active users
 - +800k daily bets
 - +180M daily messages
 - +15k settlements per second
 - +320 concurrent sport events



Căutare evenimente



Aviator



ATP



Jocuri Agenții

SPECIALE

Sport



TOATE 251

SUPEROFERTA 22

FOTBAL 34

TENIS 12

ESPORT-FOTBAL 71

BASCHET 14

HANDBAL 1

HOCHEI 13

FUTSAL 2

SNOOKER 4

BASEBALL 13

TENIS DE MASA 67

COUNTER-STRIKE 10

DOTA 2 6

ROCKET LEAGUE 4

LIVE

+3H

ASTĂZI

Mar. 13.04

Mie. 14.04

Joi 15.04

Vin. 16.04

Sâm. 17.04

Dum. 18.04

TOATE

SUPERPROMOȚII

Aici găsești toate ofertele zilei! Promoții speciale la pariuri, sloturi și cazinou live!

Alege oferta ta! →



APLICAȚIA DE PARIURI

Descarcă aplicația și intră pe SuperSocial, rețeaua socială a pariurilor!

Instalează acum →



SUPERBONUS

Disponibil și în Online!

JOCURILE SUPERBET

Premii zilnice! Participă gratuit!

BONUS SPORT

500 lei la primele 3 depuneri!

BONUS CASINO

1200 lei + 300 rotiri gratuite!

SUPEROFERTA

Super Cota

| FOTBAL - SPANIA - LALIGA | | | | SC-1 | SC-X | SC-2 | SC-1X | SC-X2 | SC-12 | |
|---------------------------------|-------------------|------|---|-------------|-------------|-------------|-------------|-------------|-------------|-----|
| LUN. | Celta | | | | | | | | | |
| 21:00 | Sevilla | 4325 | 📺 | 4.00 | 3.50 | 2.15 | 1.87 | 1.33 | 1.40 | +82 |
| TENIS - ATP - MONTE CARLO (MON) | | | | SC-1 | SC-X | SC-2 | SC-1X | SC-X2 | SC-12 | |
| LUN. | G.Dimitrov | | | | | | | | | |
| 21:00 | J.Struff | 3986 | 📺 | 1.60 | - | 2.65 | - | - | - | +13 |

Se pot combina cu orice alt meci. Se pot juca pe bilet mai multe Super Cote.

Super Extra

| FOTBAL - OLANDA - EERSTE DIVISIE | | | | SE-1 | SE-X | SE-2 | SE-1X | SE-X2 | SE-12 | |
|----------------------------------|------------------------|------|---|-------------|-------------|-------------|-------------|-------------|-------------|-----|
| LUN. | AZ Alkmaar Tin. | | | | | | | | | |
| 20:00 | Dordrecht | 4763 | | 1.67 | 4.70 | 5.30 | 1.23 | 2.49 | 1.27 | +33 |
| LUN. | Almere | | | | | | | | | |
| 20:00 | Telstar | 2760 | | 1.62 | 4.50 | 6.30 | 1.19 | 2.61 | 1.29 | +33 |
| TENIS - WTA - CHARLESTON 2 (SUA) | | | | SE-1 | SE-X | SE-2 | SE-1X | SE-X2 | SE-12 | |
| LUN. | S.Rogers | | | | | | | | | |
| 20:30 | C.McNally | 1534 | 📺 | 1.27 | - | 5.00 | - | - | - | +13 |

Agenda

- Data contracts in general
- Protocol buffers
- Real world usage
- Demo

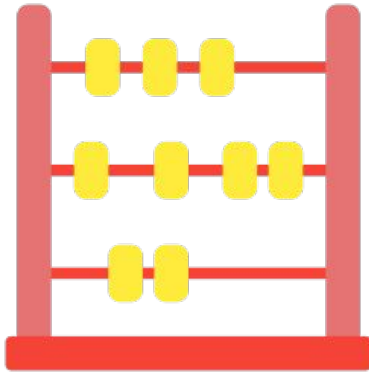
Data without contracts?



| % Total | % Received | % Xferd | Average Speed | Time | Time | Time | Current |
|---------|------------|---------|---------------|----------|----------|----------|---------|
| | | | Dload Upload | Total | Spent | Left | Speed |
| 100 | 99 | 100 | 99 | 0 | 0 | 16500 | 0 |
| | | | | --:--:-- | --:--:-- | --:--:-- | 16500 |
| | 7b | 0a | 20 | 20 | 22 | 64 | 61 |
| | 20 | 20 | 22 | 63 | 75 | 73 | 74 |
| | 20 | 31 | 30 | 2c | 20 | 0a | 20 |
| | 74 | 22 | 3a | 20 | 32 | 30 | 2c |
| | 61 | 6b | 65 | 22 | 3a | 20 | 2c |
| | 69 | 63 | 6b | 65 | 74 | 5f | 69 |

| Key | Value | Timestamp ▼ |
|---|---|-------------------------|
| 35333233386339662D303134362D34636562... | 0A300801100118012205726F2D524F2A0352... | 2021-04-11 06:22:10.620 |
| 62396530336439342D616463382D34343737... | 0A300801100118012205726F2D524F2A0352... | 2021-04-11 06:22:10.560 |
| 35333233386339662D303134362D34636562... | 0A300801100118012205726F2D524F2A0352... | 2021-04-11 06:22:04.872 |
| 61323532656133312D633939642D34393266... | 0A300801100118012205726F2D524F2A0352... | 2021-04-11 06:22:04.864 |
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| 62396530336439342D616463382D34343737... | 0A300801100118012205726F2D524F2A0352... | 2021-04-11 06:22:04.735 |
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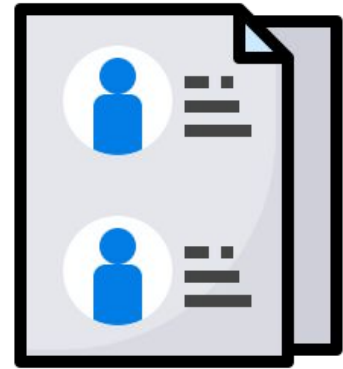
Data Contracts



Technology agnostic

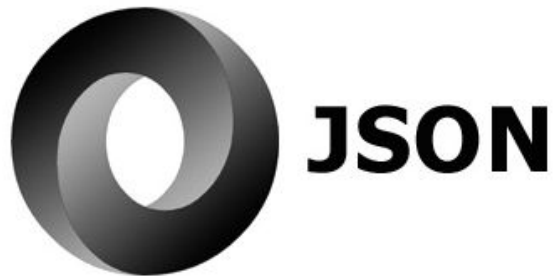


Type safe



Self documented

Data Contracts



Why Protocol Buffers?





Protocol Buffers

- Technology agnostic
 - RPC and Kafka
 - Python, Go, Node, C++, Java, .NET
- Type safe
- Self documented
- Precompiled DTO's and clients
- Backwards and forwards compatibility
- Compact wire format
- Performance
- Well adopted

```
1  syntax = "proto3";
2  package tickets;
3
4  message Ticket {
5      int32 ticket_id = 1;
6      int32 customer_id = 2;
7      double stake = 3;
8      double payout = 4;
9  }
10
11 service TicketService {
12     rpc GetTicket(GetTicketRequest) returns (Ticket);
13     rpc GetCustomerTickets(GetCustomerTicketsRequest) returns (stream Ticket);
14 }
15
16 message GetTicketRequest {
17     int32 ticket_id = 1;
18 }
19
20 message GetCustomerTicketsRequest {
21     int32 customer_id = 1;
22 }
23
```

How it looks like in production?



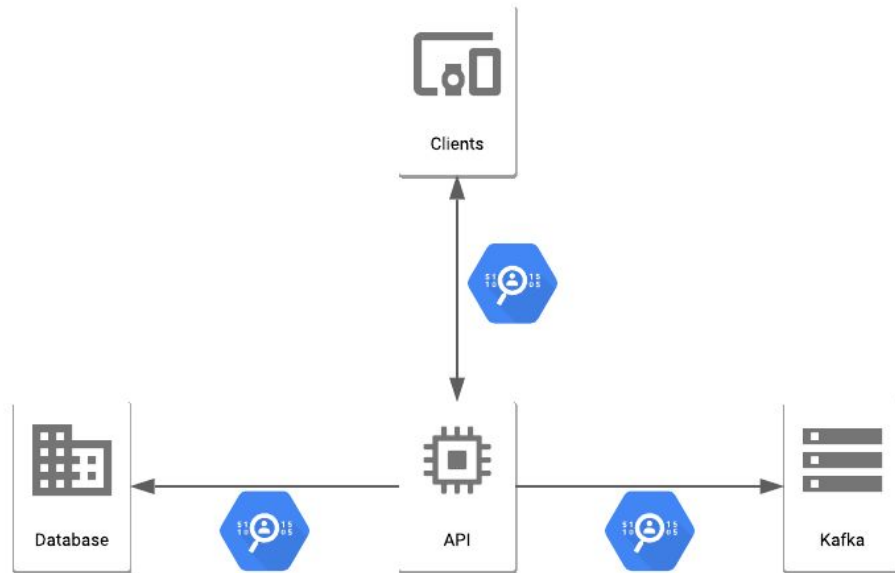
Data Contract Library

- Source of truth for data contracts
- Precompiled libraries for supported platforms
 - Three languages
 - Go, Node and Python
 - Two transport technologies
 - gRPC and Kafka

```
✓ BETTING.CONTRACTS
  > go
  > node
  > python
  ✓ schema
    > acceptance
    > settlement
    ✓ tickets
      > domain
      ✓ messages
        ≡ message_type.proto
        ≡ message.proto
      ✓ services
        ≡ ticket_service.proto
```

Protobuf Everywhere

- Servers
 - gRPC
- Databases
 - Redis
 - CockroachDB
- Kafka

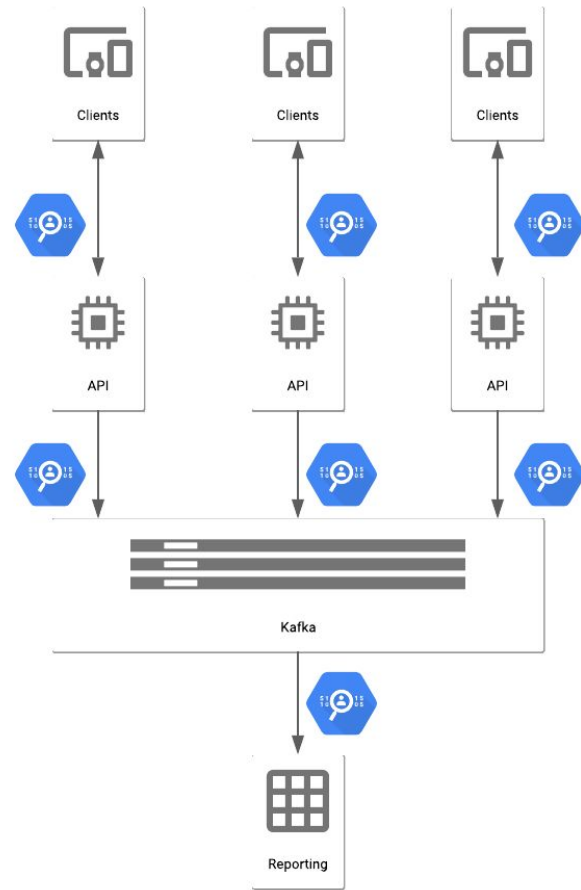


Homogeneous Data Platform

- Ingesting data from various sources
 - Different teams
 - Different systems
- Protobuf contracts
 - Simple integration
 - Safe schema evolution

```
pip install betting_contracts
```

```
from betting_contracts import ticket_pb2
```





Demo



Questions?



References

- <https://swagger.io/docs/specification/about/>
- <https://www.jsonrpc.org/specification>
- <https://graphql.org/learn/schema/>
- <https://developers.google.com/protocol-buffers/docs/overview>
- <https://www.confluent.io/blog/avro-kafka-data/>
- <https://docs.confluent.io/platform/current/schema-registry/index.html>
- <https://github.com/gusaul/grpcx>
- <https://github.com/fullstorydev/grpcurl>
- <https://github.com/MislavMandarinic/meetup.protobuf>



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Mislav Mandarić