Code BGP Platform

Intro & Demo

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Until last year we were only researchers :)

- **Fontas Dimitropoulos**

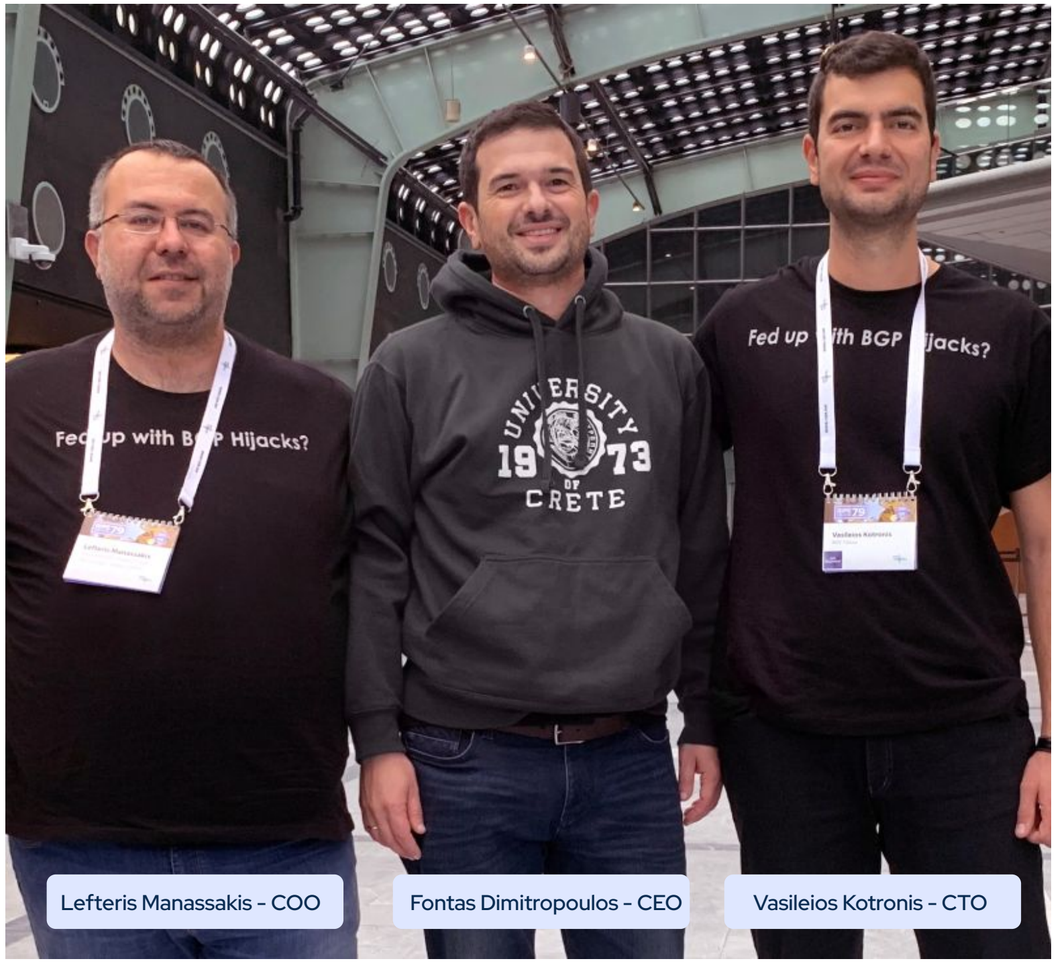
  CEO & Co-founder

- **Vasileios Kotronis**

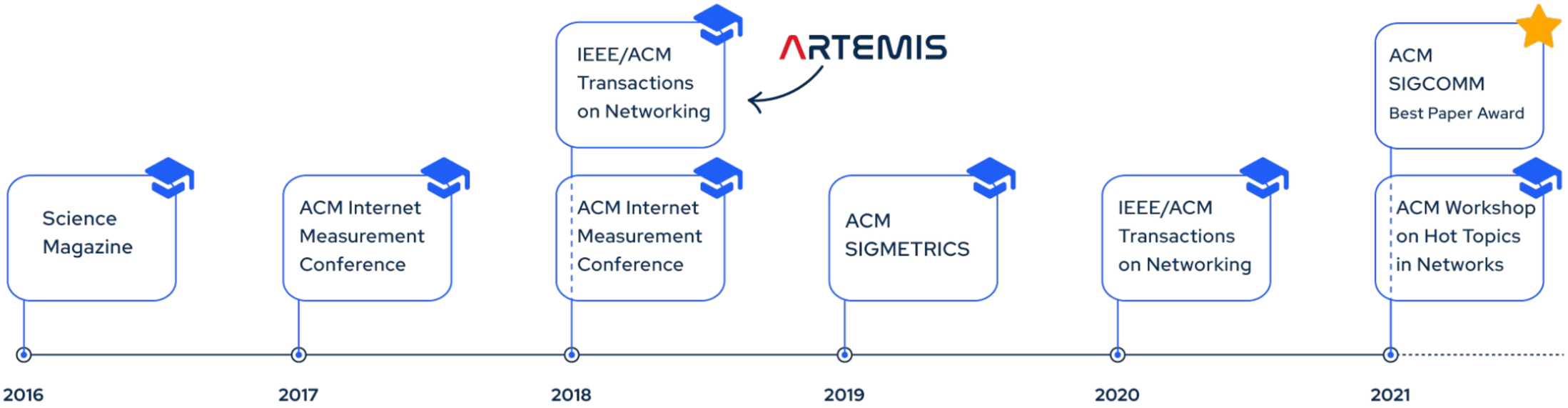
  CTO & Co-founder

- **Lefteris Manassakis**

  COO & Co-founder



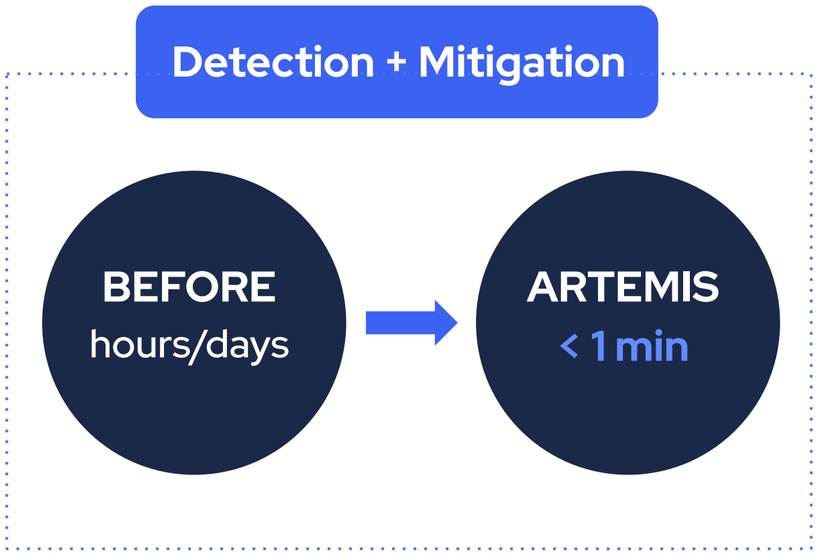
Publications



ARTEMIS

https://bgpartemis.org

- ARTEMIS is an on-prem **open-source** tool we developed and maintain
- Presented in GRNOG 7 & GRNOG 9



- We support a community of **users**

"ARTEMIS is a **fantastic** replacement for BGPmon. All around it seems like **an incredibly well-built tool** and **I use it in prod all the time**"

Chris Cummings
Network Engineer & modem.show podcast host

FORTH & MARATHON

- **Code BGP** is a **spinoff** of the Foundation for Research and Technology - Hellas

- **We raised $1.5M** from Marathon VC

FORTH
INSTITUTE OF COMPUTER SCIENCE

MARATHON
VENTURE CAPITAL

Our team

Fontas Dimitropoulos

CEO & Co-founder

Vasileios Kotronis

CTO & Co-founder

Lefteris Manassakis

COO & Co-founder

Ioannis Sermetziadis

Senior Backend Engineer

Alexandros Kazantzidis

Senior DevOps Engineer

Elias Papavasileiou

Front End Engineer

Korina Kalergi

Web & UX / UI Designer

Ioannis Gavalas

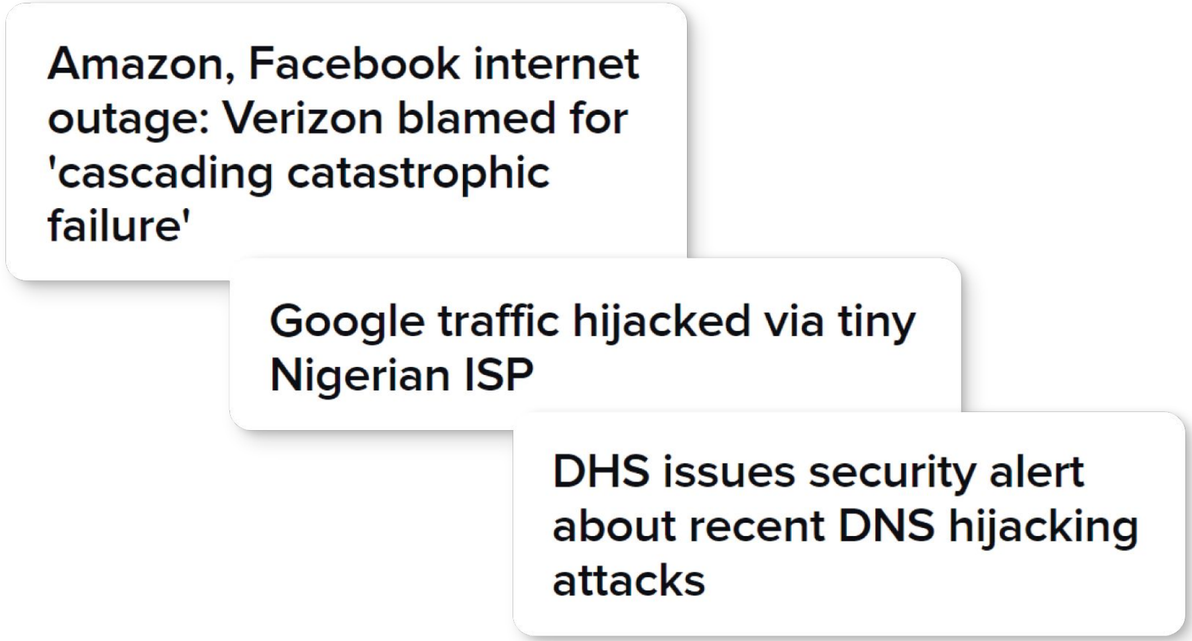
Operations & Business Analyst

Konstantinos Arakadakis

Data Analyst

Internet routing is a blind spot

- Network teams **are blind** to what is happening with their Internet addresses and routes
- Internet routing **misconfigurations and security incidents** can critically affect the availability and security of a business.
- **Many BGP reachability loss, hijack, and route anomalies** have made headlines.



Manually troubleshooting Internet routing is very slow

- Network teams need to manually troubleshoot Internet routing, which is **very slow**.
- Checking the state of a prefix in looking glass servers is an arduous task. This often needs to be repeated for many prefixes and servers, requiring **hours of repetitive manual work**.
- **No way** to seamlessly check the state of Internet routing in local and remote routers.

A new approach is needed

SaaS

Use our platform **in seconds**, without any overheads

Aggregation

Aggregate data from 100s of BGP routers and RPKI **in a single spot**

Real-time telemetry

Use **real-time telemetry** and **stream analytics**

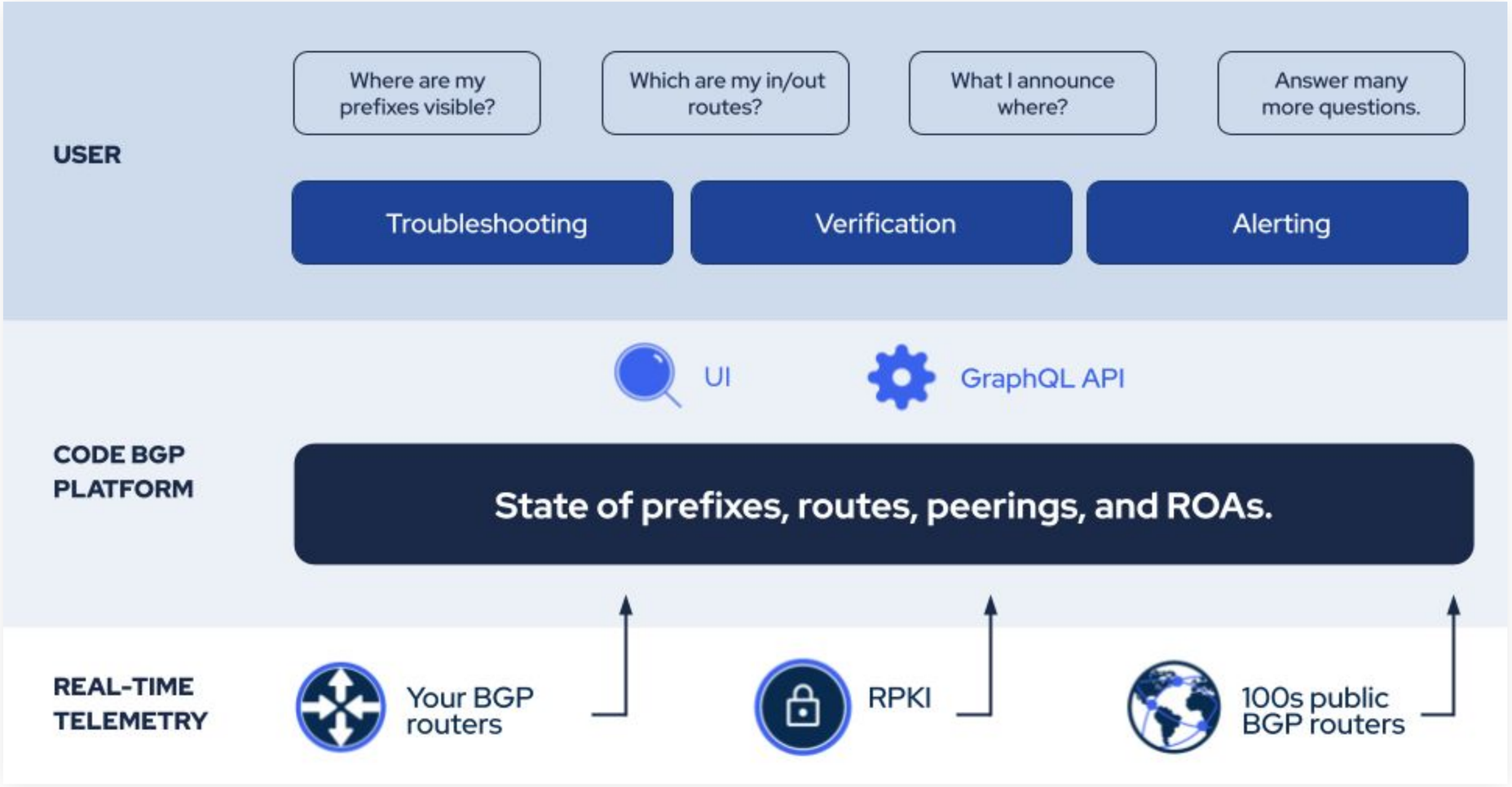
GraphQL

Get a **query language** for our **API**

Reliability and Security

Introducing Code BGP Platform

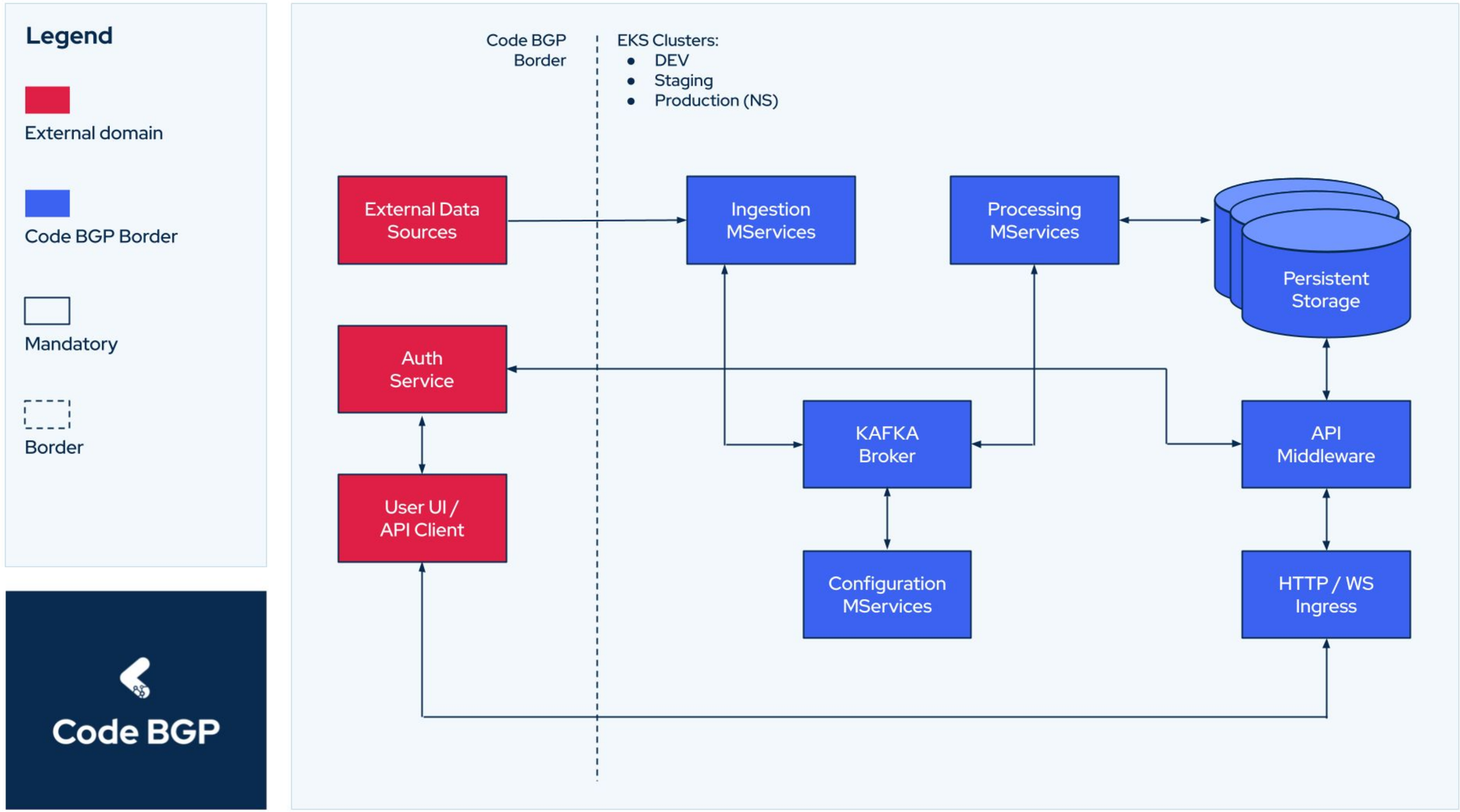
Monitor • Detect • Protect



Our software stack

Stack

Software architecture



How it works

- We collect/ingest BGP data (state) from real-time (streaming) data sources
  - From: Code BGP monitors, RIS Live, BGP/BMP sessions (your own routers), RPKI
  - Via: BGP, BMP, websockets, REST, etc.

- We process and store this state in real-time
  - Data source → Kafka → Golang → PostgreSQL

- We expose it to the user in real-time (UI/API)
  - PostgreSQL → Hasura →GraphQL subscription

Data Service: RIS Live

Provides real-time JSON BGP messages via a fully filterable interactive WebSocket JSON API, and a full stream ("firehose") containing all of the messages generated by RIS. → https://ris-live.ripe.net/

Total peerings (IPv4 & IPv6): **1448**

BGP full feeds:

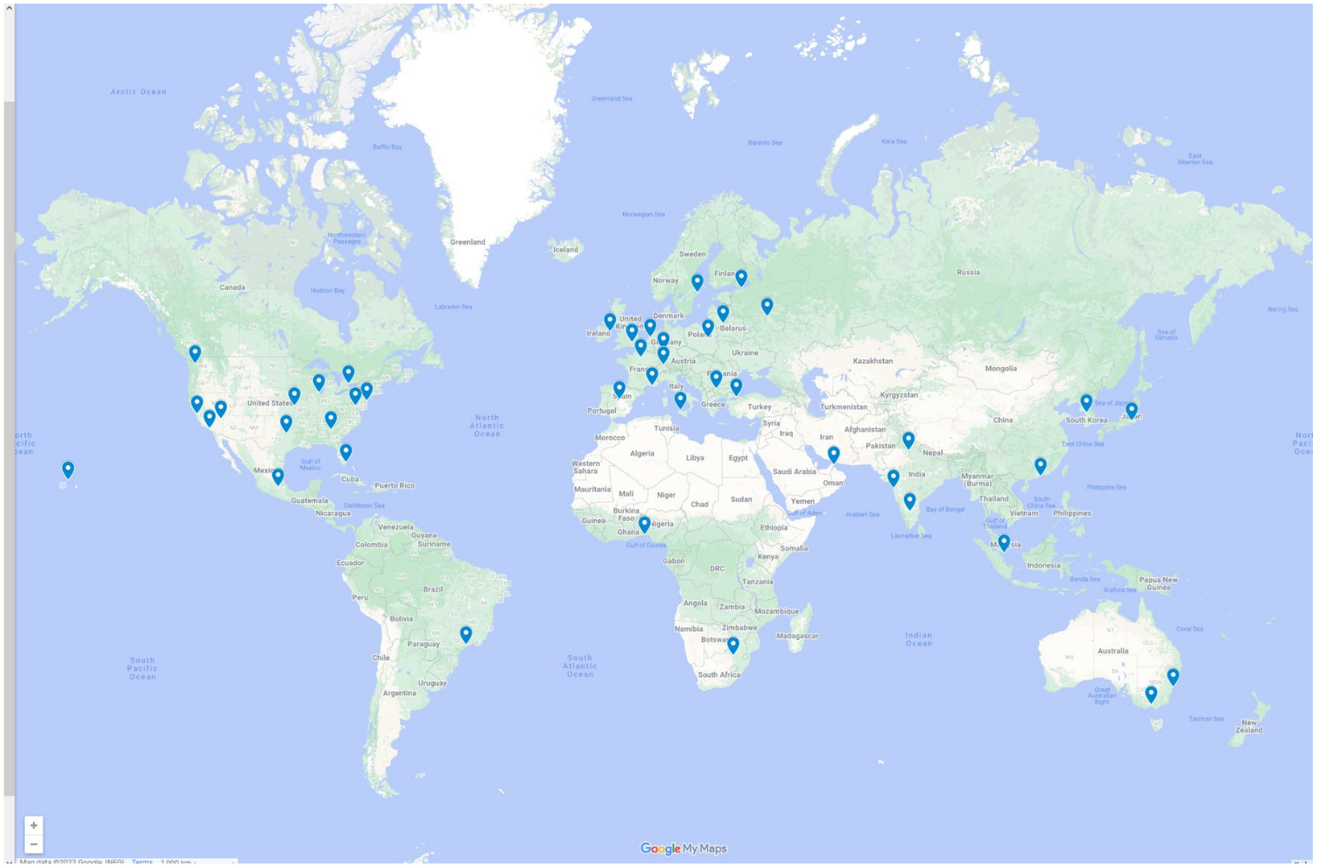
- IPv4: **366**
- IPv6: **401**

List of Route Collectors: https://ris.ripe.net/docs/10_routecollectors.html

List of Peers: https://www.ris.ripe.net/peerlist/all.shtml

Data Service: Code BGP Monitor

- Mumbai, India
- Melbourne, AUS
- Amsterdam, Netherlands
- Moscow, Russia
- Johannesburg, SA
- Hong Kong
- Seattle, US
- Sao Paulo, Brazil
- New Jersey, US
- Mexico City, Mexico
- Singapore
- Tokyo, Japan
- Seoul, South Korea
- Stockholm, Sweden
- London, UK
- Frankfurt, Germany
- Paris, France
- Warsaw, Poland
- Toronto, Canada
- Miami, US
- Madrid, Spain
- Honolulu, US
- Los Angeles, US
- Chicago, US
- Sydney, AUS
- Lagos, Nigeria
- Ashburn, US
- Kansas City, US
- San Jose, US
- Dublin, Ireland
- St. Petersburg, Russia
- Marseille, France
- Zurich, Switzerland
- Bangalore, India
- Atlanta, US
- Delhi, India
- Istanbul, Turkey
- Dallas, US
- Fujairah, United Arab Emirates
- Las Vegas, US
- Sofia, Bulgaria
- Palermo, Italy
- Vilnius, Lithuania



Total peerings (IPv4 & IPv6): **90**

Route Collector:

- IPv4: **~42 million routes**
- IPv6: **~ 7 million routes**
- Networks: **~1,11 million prefixes**

BGP stack at monitors: Bird2

SaaS BGP stack: GoBGP

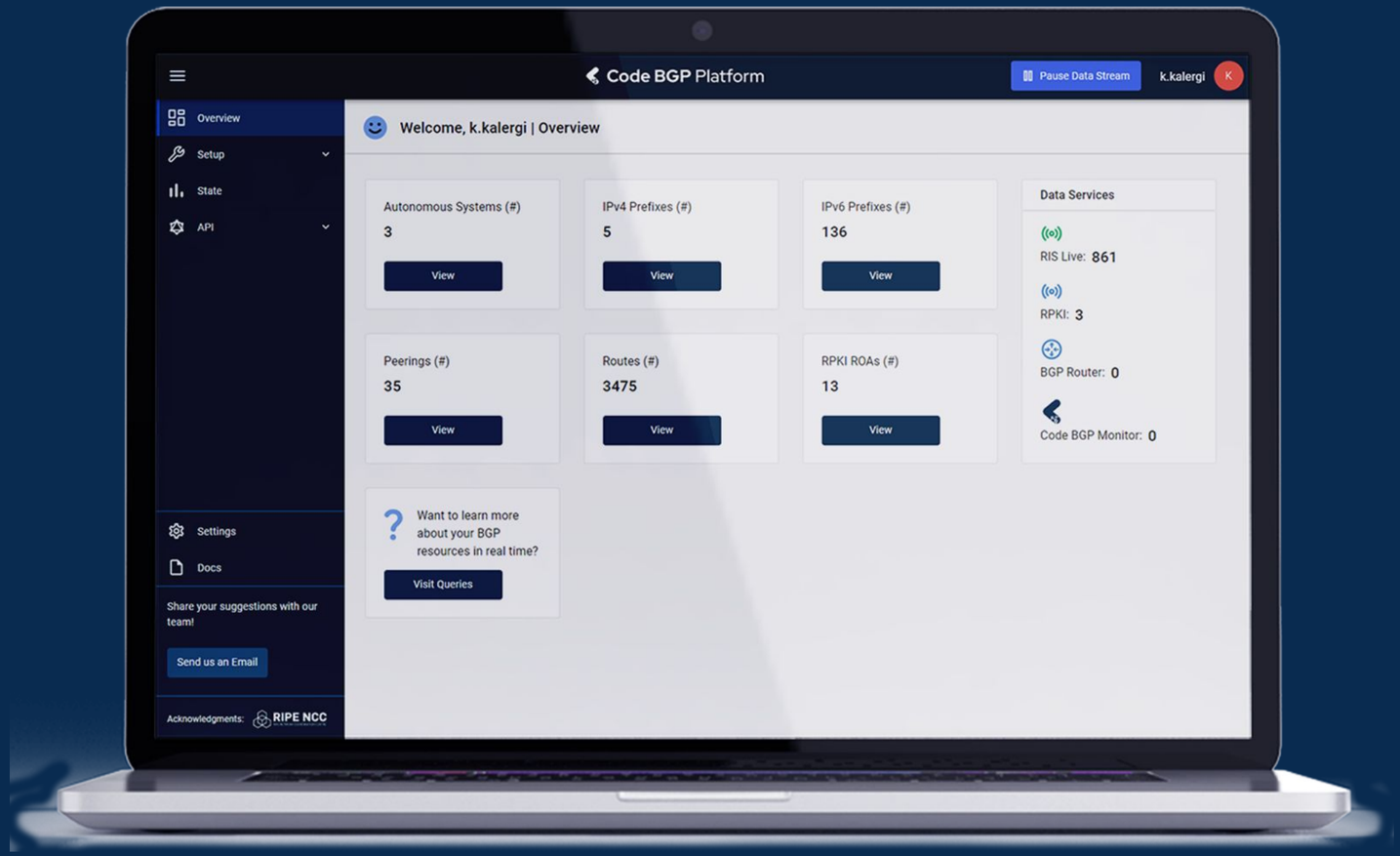
(gRPC for auto filtering)

Roadmap

1. Alerting
    a. Metrics on BGP resources and anomaly detection
    b. Pairwise comparisons of various data sources
    c. BGP filtering alerts
2. Historical views + travel back in time
3. More data sources and integrations (e.g. Routeviews, IRR data, Netbox, application data)

Demo

codebgp.com



Questions

Thank you!

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