RIPE NCC
RIPE NETWORK COORDINATION CENTRE

RIPE Atlas

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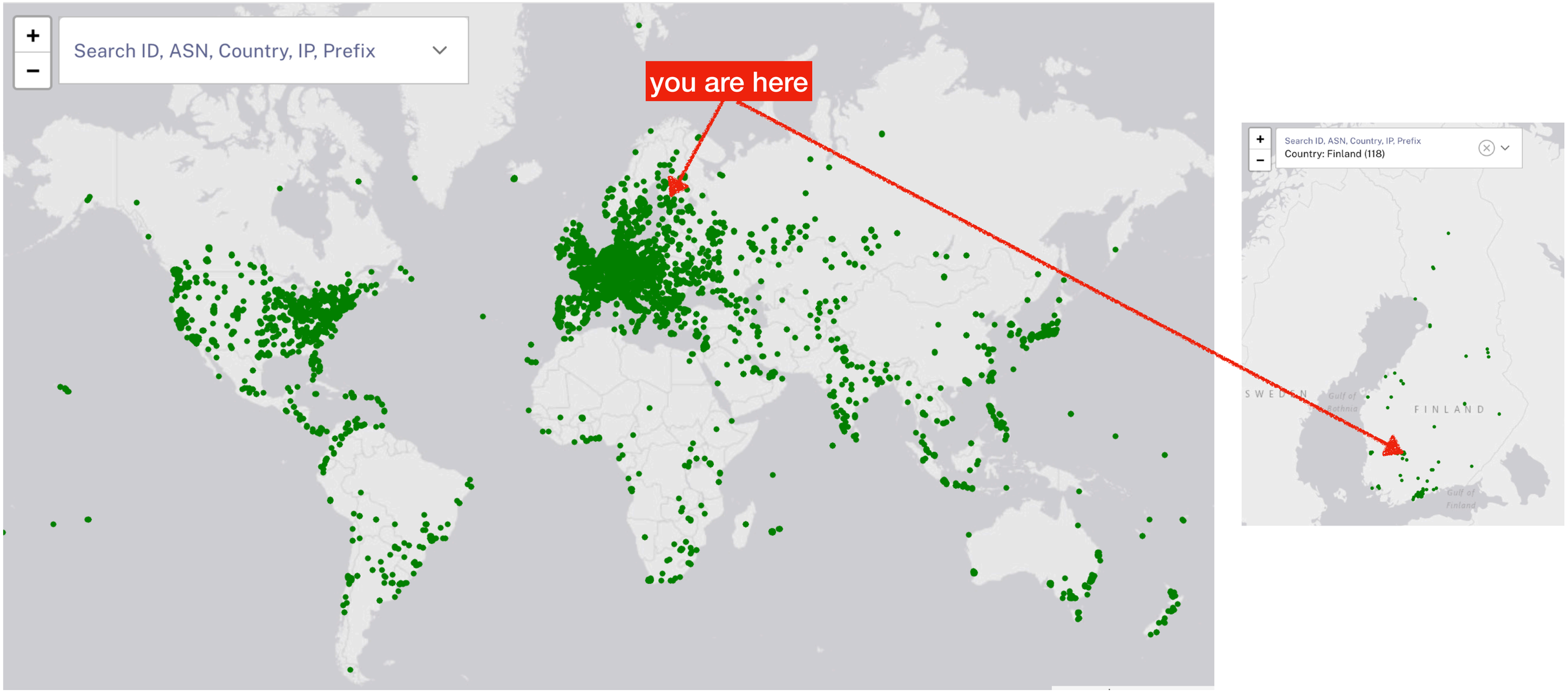
Introduction

- An active Internet measurement network
- Built and operated by the RIPE NCC
- Based on the community deploy and host vantage points (“probes”)
- Operating since 2010 - almost 14 years now!
- World-wide presence, though the focus is our service region
- Primary objective: support network operations
- Secondary objectives:
  - Understanding the state of the Internet
  - Support research

Concepts

- Probes: hardware (~8200), software (~3500), anchors (~800)
- Anchors
- Hosts
- Measurements: one-off and periodic
- Credits
- Data availability
- Ambassadors
- Sponsors

Current Status



Current Activities

- Ongoing: renewing our big data backend
  - *In general, moving to more cost-effective solutions*
  - *Moving our historical data to a different subsystem (with minimal effects on users)*
  - *Revitalising the infrastructure serving our recent / frequently accessed data*
- Current status:
  - Historical data has been copied to an object store (S3), and most of it is already served from there when requested
  - Happening right now: moving “hot data” from on-prem HBase to a cloud-based one
  - The combination is aimed at a significant reduction of data centre costs
- This activity is expected to conclude around summer

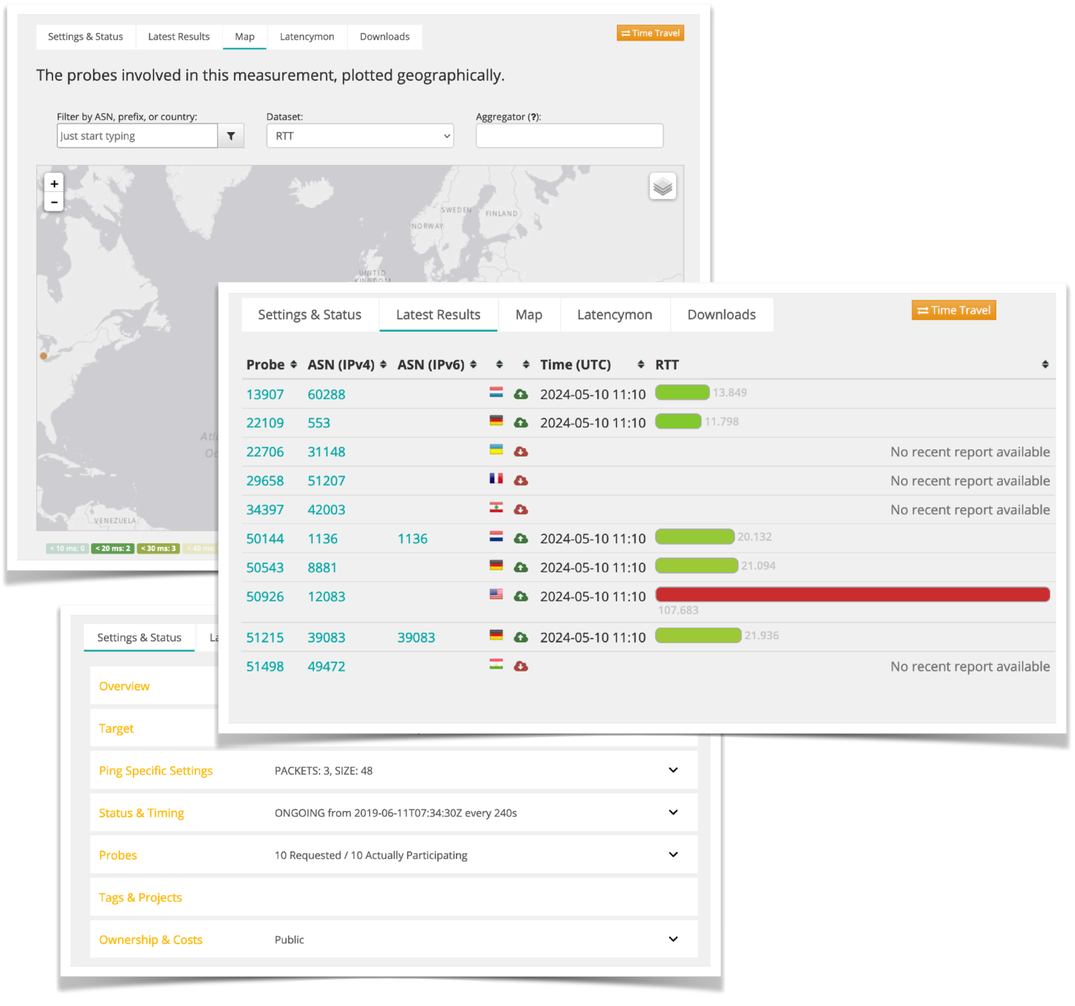
Current Activities

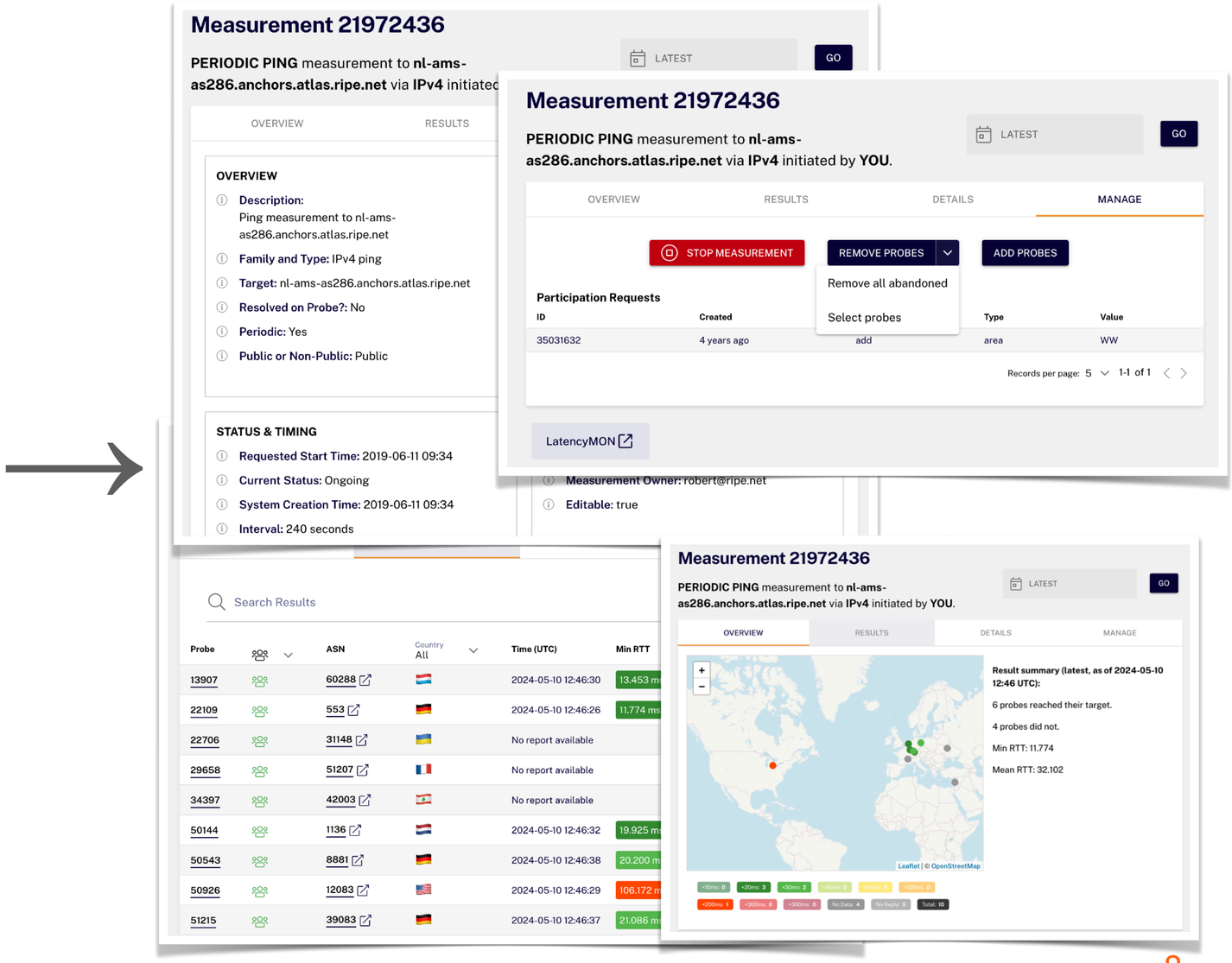
- Ongoing: renewing our infrastructure components
  - *Working on containerising components of our distributed infrastructure*
- Current status:
  - Measurement metadata has been removed from on-prem ElasticSearch, is now stored / served from AWS OpenSearch (=> cost reduction)
  - First containerised / cloud-based “controllers” are alive and being tested
  - Containerisation of the other components is ongoing
  - Ultimate aim: reduce associated costs by using as much dynamic capacity as we can
- This activity is expected to conclude around the end of Q3

Current Activities

- Ongoing: User Interface (website/app) renewal
  - *Done: documentation site, coverage & statistics*
  - *Done: measurement creation, probe and measurement listing*
  - Just released: measurement pages, “my dashboard”, promotional pages
  - Coming up: probe status pages
  - Coming up: global maps and all other pages

New Measurement Layout





Current Activities

- Ongoing: probe firmware packaging
  - *Reworking the probe package to better match popular Linux distributions*
  - *Main goal is to simplify development, installation and upgrades (maintenance)*
  - *Looking forward to working with package maintainers*
- Current status:
  - Getting ready for a proper RPM release (RHEL 8 and 9)
  - Preparing for Debian and OpenWRT releases

Summary of Earlier Proposals

- Probe farming:
  - Implement the discussed restrictions
- Measurement aggregators:
  - Implement hint of who the actual client is
  - Mandate proper attribution of RIPE Atlas
  - Incentivise aggregators to step up as sponsors
  - Additional requirements may be applied later to ensure sustainability
- Data retention principles:
  - Continue implementation along the proposed principles
  - See Felipe’s article about some current cost reduction activities

Summary of Earlier Proposals

- Remove per-hop “late” packets from traceroute:
  - plan implementation
- Measure well-known CDNs:
  - Do not implement as proposed
  - Smaller-scale experiment instead
- Generic HTTP measurements:
  - do not implement as proposed
- Add support for STARTTLS measurements:
  - plan implementation
- Remove support for non-public measurements:
  - no changes now

Possible Deep Dives

- APIs
- Tools
- LatencyMON, TraceMON
- Big Data or not
- Data analysis
  - Daily dumps
  - BigQuery
- Related services
  - DNSMON / DomainMON
  - IPmap

Questions

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