



RIPE NCC

RIPE NETWORK COORDINATION CENTRE

RIPE Atlas

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Introduction



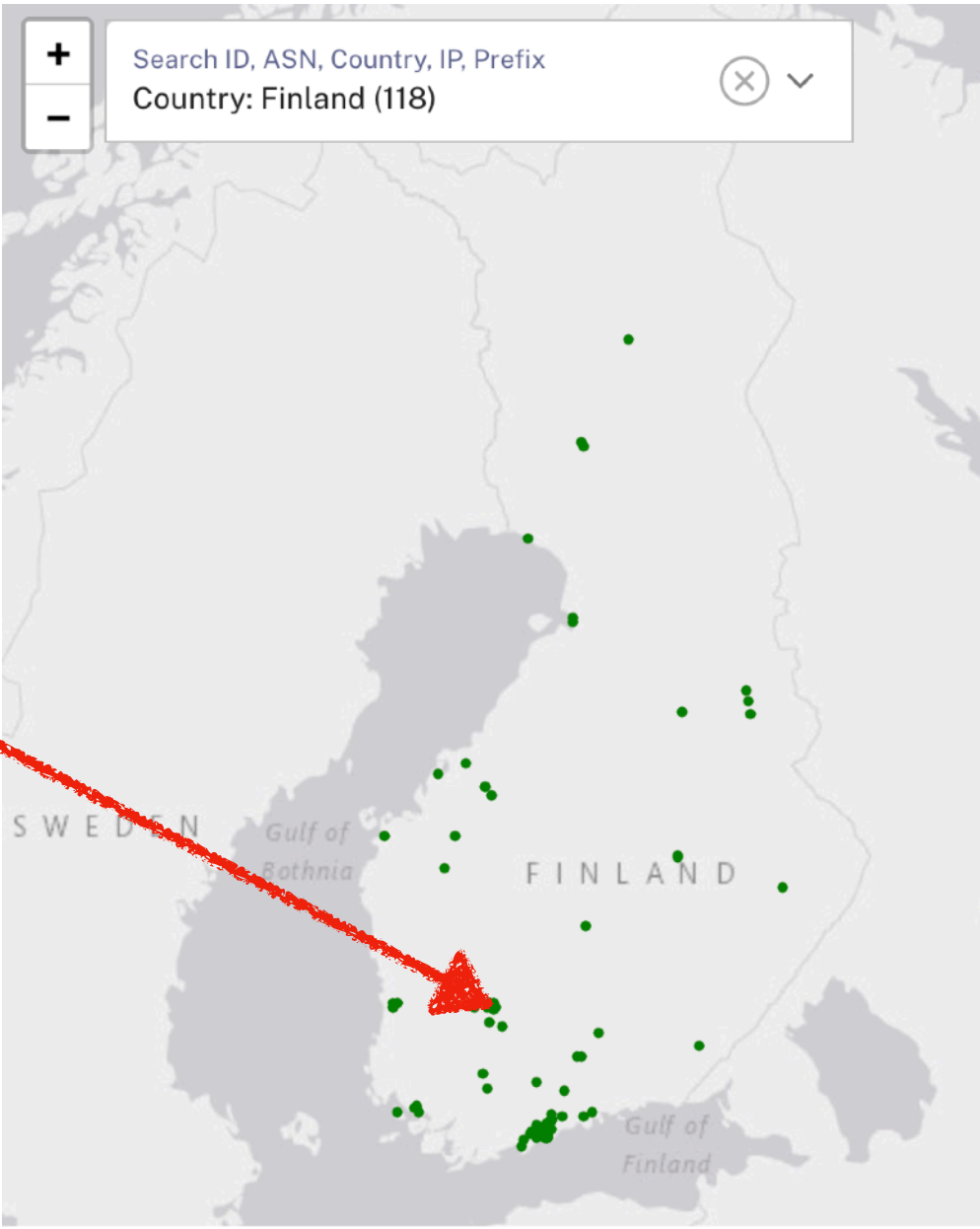
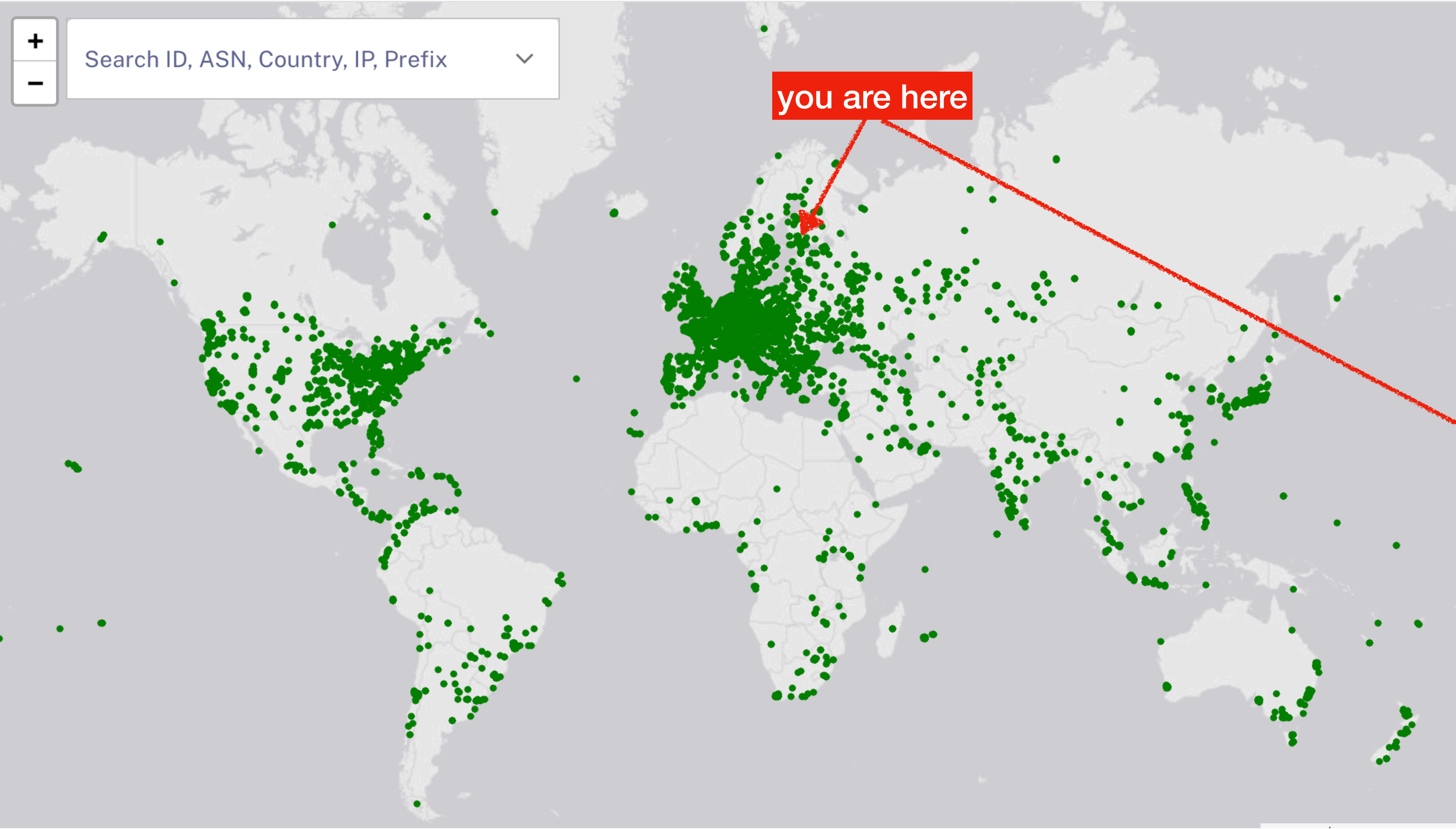
- An active Internet measurement network
- Built and operated by the RIPE NCC
- Based on the community deploy and host vantage points (“probes”)
- Operating since 2010 - almost 14 years now!
- World-wide presence, though the focus is our service region
- Primary objective: support network operations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



Settings & Status | Latest Results | Map | Latencymon | Downloads | Time Travel

The probes involved in this measurement, plotted geographically.

Filter by ASN, prefix, or country: just start typing | Dataset: RTT | Aggregator (?):

Probe	ASN (IPv4)	ASN (IPv6)	Time (UTC)	RTT
13907	60288		2024-05-10 11:10	13.849
22109	553		2024-05-10 11:10	11.798
22706	31148			No recent report available
29658	51207			No recent report available
34397	42003			No recent report available
50144	1136	1136	2024-05-10 11:10	20.132
50543	8881		2024-05-10 11:10	21.094
50926	12083		2024-05-10 11:10	107.683
51215	39083	39083	2024-05-10 11:10	21.936
51498	49472			No recent report available

PACKETS: 3, SIZE: 48

ONGOING from 2019-06-11T07:34:30Z every 240s

10 Requested / 10 Actually Participating

Public



Measurement 21972436

PERIODIC PING measurement to nl-ams-as286.anchors.atlas.ripe.net via IPv4 initiated by YOU.

LATEST GO

OVERVIEW RESULTS

OVERVIEW

- Description: Ping measurement to nl-ams-as286.anchors.atlas.ripe.net
- Family and Type: IPv4 ping
- Target: nl-ams-as286.anchors.atlas.ripe.net
- Resolved on Probe?: No
- Periodic: Yes
- Public or Non-Public: Public

STATUS & TIMING

- Requested Start Time: 2019-06-11 09:34
- Current Status: Ongoing
- System Creation Time: 2019-06-11 09:34
- Interval: 240 seconds

Measurement Owner: robert@ripe.net

Editable: true

STOP MEASUREMENT REMOVE PROBES ADD PROBES

Remove all abandoned

Select probes

ID	Created	Type	Value
35031632	4 years ago	area	WW

Records per page: 5 1-1 of 1

LatencyMON

Measurement 21972436

PERIODIC PING measurement to nl-ams-as286.anchors.atlas.ripe.net via IPv4 initiated by YOU.

LATEST GO

OVERVIEW RESULTS DETAILS MANAGE

Search Results

Probe	ASN	Country	Time (UTC)	Min RTT
13907	60288	HU	2024-05-10 12:46:30	13.453 ms
22109	553	DE	2024-05-10 12:46:26	11.774 ms
22706	31148	RO	No report available	
29658	51207	FR	No report available	
34397	42003	HU	No report available	
50144	1136	HU	2024-05-10 12:46:32	19.925 ms
50543	8881	DE	2024-05-10 12:46:38	20.200 ms
50926	12083	US	2024-05-10 12:46:29	106.172 ms
51215	39083	DE	2024-05-10 12:46:37	21.086 ms

Result summary (latest, as of 2024-05-10 12:46 UTC):

- 6 probes reached their target.
- 4 probes did not.
- Min RTT: 11.774
- Mean RTT: 32.102

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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