



RIPE NCC
RIPE NETWORK COORDINATION CENTRE

Global Technical Services Update

Kaveh Ranjbar | 10 May 2017 | RIPE 74

Global Technical Services?



- These are services provided to the global Internet community by the RIPE NCC
 - e.g. K-root
 - RIPE Atlas
 - RIPEstat
 - Routing Information Service (RIS)
- They do not include services tailored for RIPE NCC Members, services that support Internal IT operations or the RIPE Database
 - e.g. LIR Portal, Ticketing system

Hosted Services



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Routing Information System



- Publicly available global BGP Data collection since 1999
 - Raw data has been historically available in MRT format in 5 minute update intervals and 8 hour full table dumps
 - Data is used extensively in RIPEstat
- 21 active collectors
 - New, message-based, data collection platform, allows for streaming RIS data
 - Migrate old style collectors to new system

DNS Services



- Serving K-root from five core plus 46 K-root hosted locations
 - Adding capacity to deal with increased load from genuine queries and attacks
- Reverse Zone for RIPE region
 - Discussions on the distribution system after the hiccup a month ago
- Secondary service for ccTLDs
 - Reviewing contracts based on community guidelines
- ripe.net domain and resiliency

RIPE Atlas Anchors



- Deployment and maintenance of anchors
 - Very high level of automation for deployments, required to support further scaling
 - Reached 'magical' number of 256 anchors this year. Further growth planned.
- Anchors hardware replacement
 - Soekris might stop production of the current device
 - With help from our supplier we have enough in stock
 - Will investigate further and consult with the community on the replacement hardware

Big Data Backend



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Elena
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Big Data Backend



- Underlying storage and data processing
 - For all of our big data applications
 - Including the datasets driving RIPE Atlas, RIS and RIPEstat
- Based on a set of cutting edge tools
 - Including Hadoop, RabbitMQ, Apache Spark, Kafka, ElasticSearch, Kibana logging analysis tool, etc.
- DevOps operation
 - Mainly Java/Scala development, full operations automation
- Moved to single main cluster

Global Peering, Monitoring, Alerting

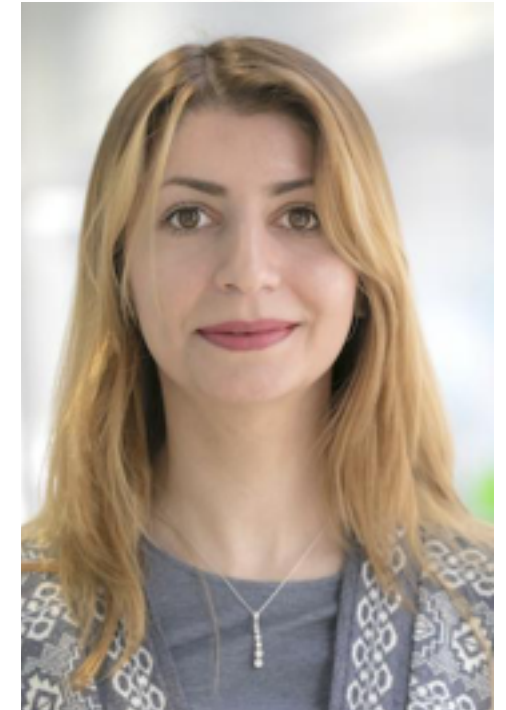


- Monitoring and maintenance of our global infrastructure
 - Including RIS nodes, K-root nodes, RIPE Atlas Anchors and the storage infrastructure
 - RIS Collector migration
- Complex monitoring and alerting scenarios



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Obser

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RIPE Atlas Infrastructure and APIs



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Strichs

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Viktor
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RIPE Atlas Infrastructure and APIs



- Middleware between the Big Data backend and RIPE Atlas frontend
- Critical RIPE Atlas services
 - General System Architecture
 - Measurements management
 - Accounting and user management
 - Coding and maintaining controllers
 - Scheduling and task distribution
 - Logging, debugging, deployments

RIPE Atlas Probes



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Lia
Hestina

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RIPE Atlas Firmware



- Probes and anchors firmware
- USB Stick issues
 - Not-visible pattern
 - Major improvements to the service with the new firmware with less writes to disk
- Other developments:
 - V1 probe firmware will be limited to security updates
 - New probe hardware being investigated
 - Virtual probes

RIPE Atlas Logistics



- Procurement of probes
 - Coordinating purchase, initialisation, Inventory, shipping and return of probes
 - 9,500+ active probes
- Managing Distribution Strategy
 - Quotas for regions, supporting events and meetings
 - Relationship management w/Ambassadors, Sponsors, RIRs.
 - 383 ambassadors today
- Power adapters and imports

RIPEstat and Country Reports



- RIPEstat
 - Very popular among network operators
 - 30M+ data calls a day
 - Information about Internet Resources
- Country Reports
 - Based on RIPEstat services
 - Aggregate of country and regional information with comparison
 - Aims to extend our reach to a wider audience



Christian
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Upcoming Tools



Jasper
den Hertog

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Massimo
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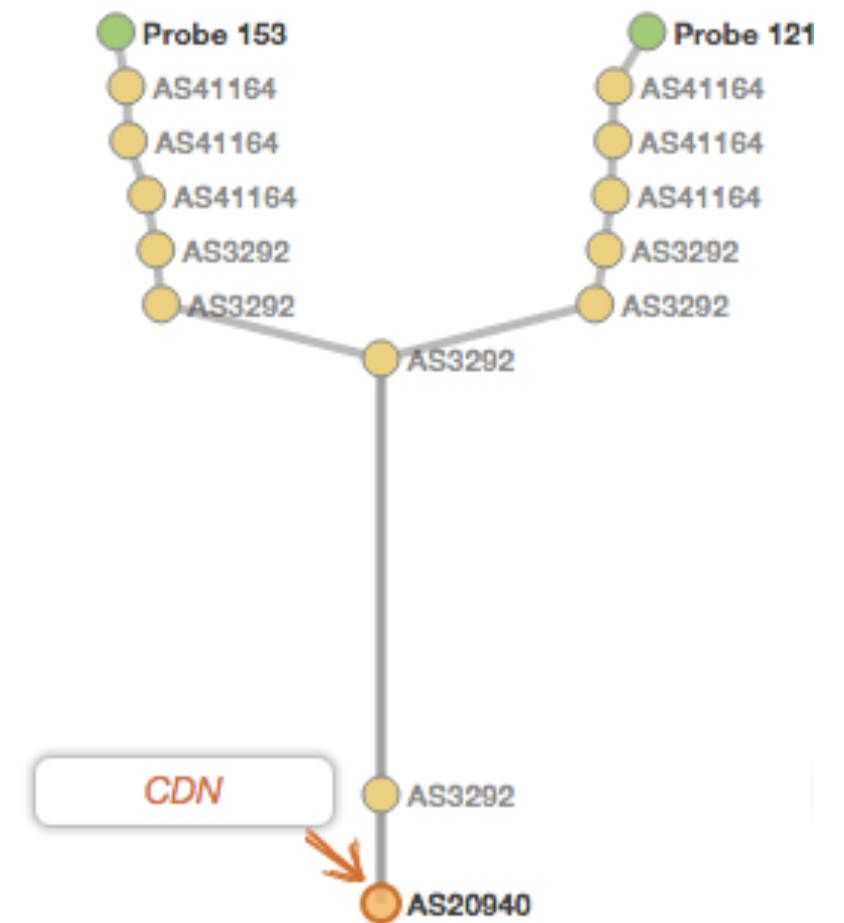
OpenIPMap



- Productising OpenIPMap idea from Emile
- Infrastructure IP Geolocation project
 - NOT end-user geolocation
 - Combining multiple geolocation methods including community input, naming schemes and measurement data
 - Production service expected this year

TraceMON, DomainMON and DNSMON

- TraceMON is the newest addition to our visualisation toolbox
 - Open Source
 - Unique way of visualising trace routes
 - Look for it next to traceroute results
- DNSMON
 - go-to tool for root and tld diagnostics
- DomainMON
 - DNSMON for the masses!



Research, Statistics, Data Analysis



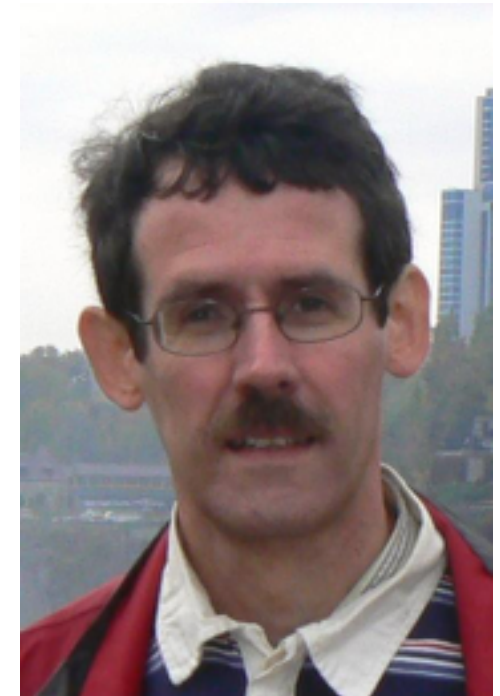
Emile
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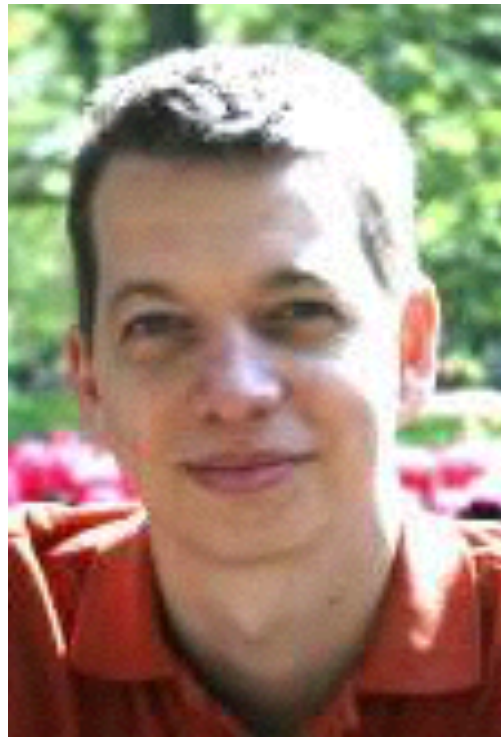
*With RIPE NCC since:
1996*

Research, Statistics, Data Analysis



- ... also prototype tools and internal data support including membership analysis.
- Team of world class researchers
 - Researching Internet routing, numbering and naming systems producing public reports and papers
 - Focussed on operationally relevant research
 - Source of new ideas and digging data and facts
 - Adding structure to external collaboration projects
 - 25 RIPE Labs articles published on research activities since start of 2016

Management team



Robert
Kisteleki

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Romeo
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Questions

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Please kindly provide feedback on this presentation style!