RIPE NCC
Technical Services

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Technical Services Overview

- DNS services
- RIPEstat
- Research
- RIPE Atlas
- K-root expansion

Mostly global services, accessible by everyone

- In many cases, RIPE NCC members have an advantage

DNS Services

DNS Services

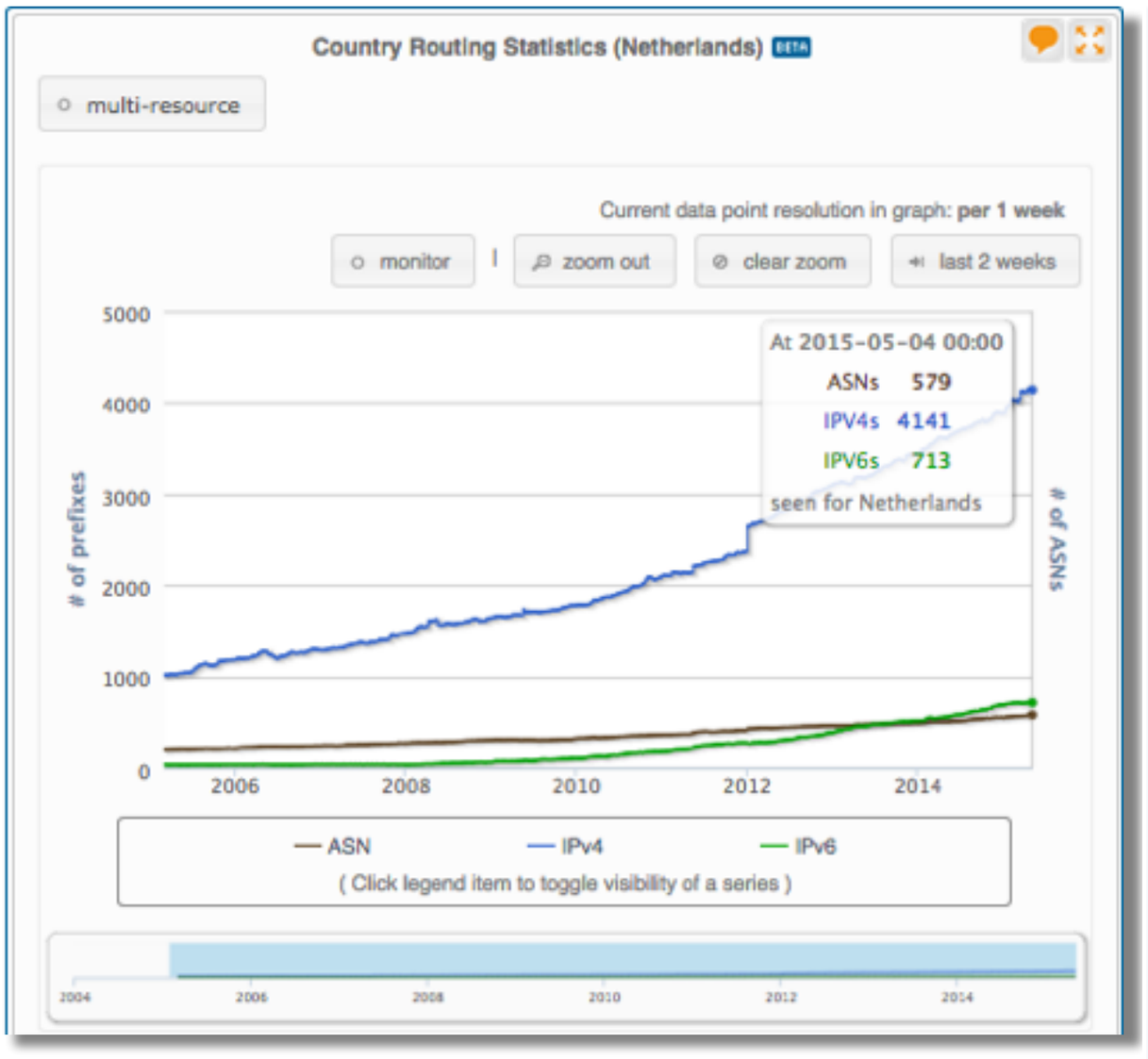
- Authoritative DNS service for in-addr.arpa and ip6.arpa for resources in RIPE NCC service region
- Secondary services for 77 ccTLDs
  - Selection criteria being discussed in DNS Working Group
- One provisioning site
  - Second provisioning site active this year
- Three anycast locations
  - Working on ideas to extend service locations
- Three different name server set-ups

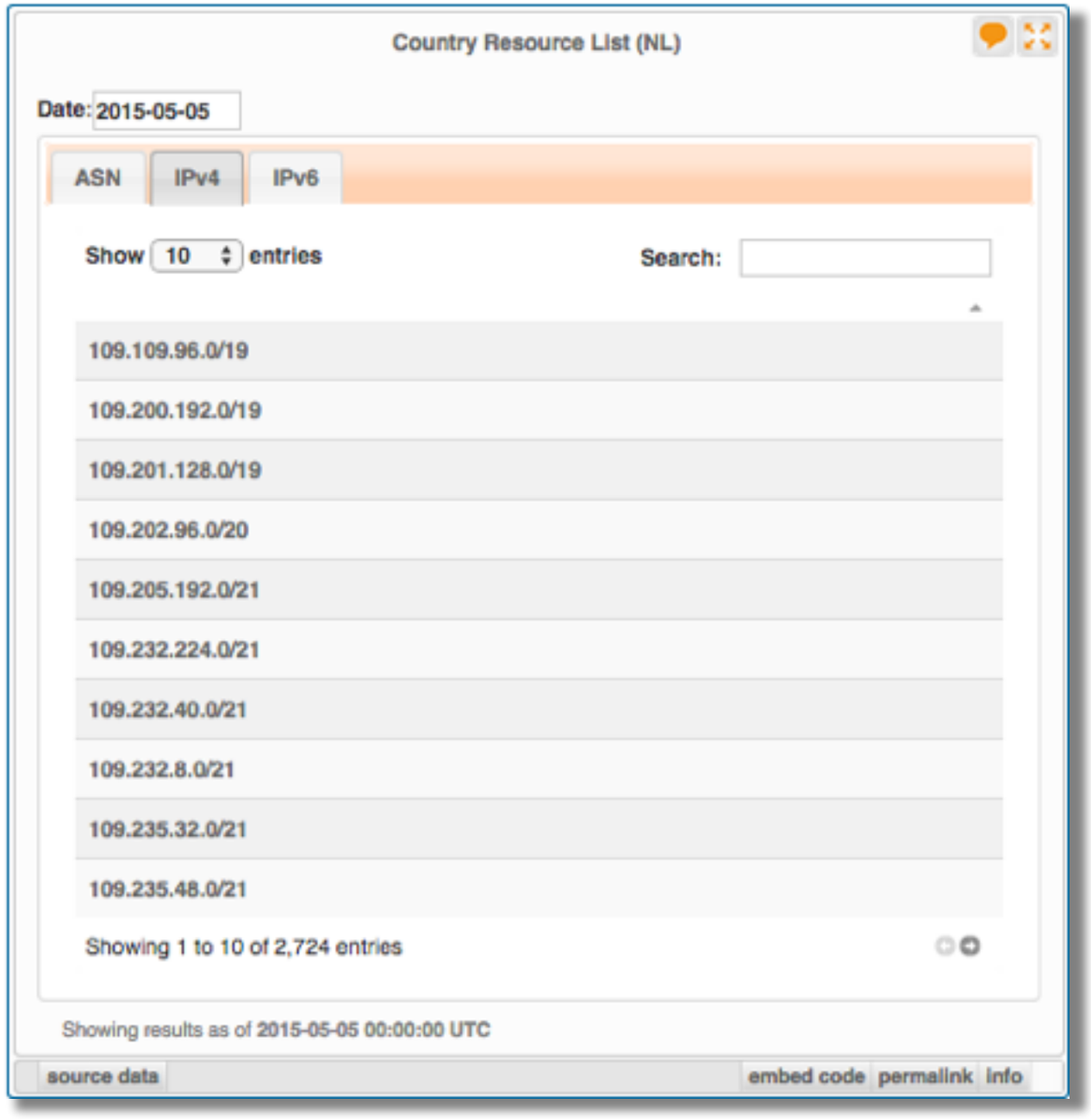
RIPEstat, Diagnostics & Research

Network Diagnostics and Analyses

- RIPEstat
  - Routing, registry, abuse, bandwidth, geolocation and RIPE Atlas data
  - Unique aggregation of information, including history
  - Web-based interface and API
    - Data grouped based on prefixes, ASNs, countries, hostnames
      - Regions, operators and other groupings being considered
    - ~135M data requests/month
- Services based on RIPE Atlas
  - Global network monitoring and alerting
  - DNSMON as widely used TLD monitoring system

Network Diagnostics and Analysis





Research

- Looking into interesting events and how they affect the Internet
  - BGP leaks
  - IPv4 runout and related policies
  - Massive power cuts, earthquakes, World Cup
- Looking into interesting trends and how they affect the Internet
  - IPv6 and DNSSEC uptake
  - Aggregation in routing table
- Working closely with researchers around the globe

RIPE Atlas

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Where We Are: Probes

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Where We Are: Anchors

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Where we are

- ~8,200 active probes and growing
- 120 active RIPE Atlas anchors
- Millions of measurements everyday
- ~76 billion measurements last year
  - Preserved history
- Current measurements: ping, traceroute, DNS, SSL
  - Working on HTTP(S) and WiFi measurements
- Data streaming
- Open APIs, many useful tools built on top of RIPE Atlas

Where we're going

- Aim to reach 10,000 active probes this year
  - Should provide a statistically relevant sample of the Internet
- New generation of probes
  - Support for optional WiFi measurements
- 20% reduction in 2015 budget; will continue same trend in 2016 and 2017
- But the project is not downsizing
  - More operational efficiency
  - Assistance from interested parties

K-root Expansion

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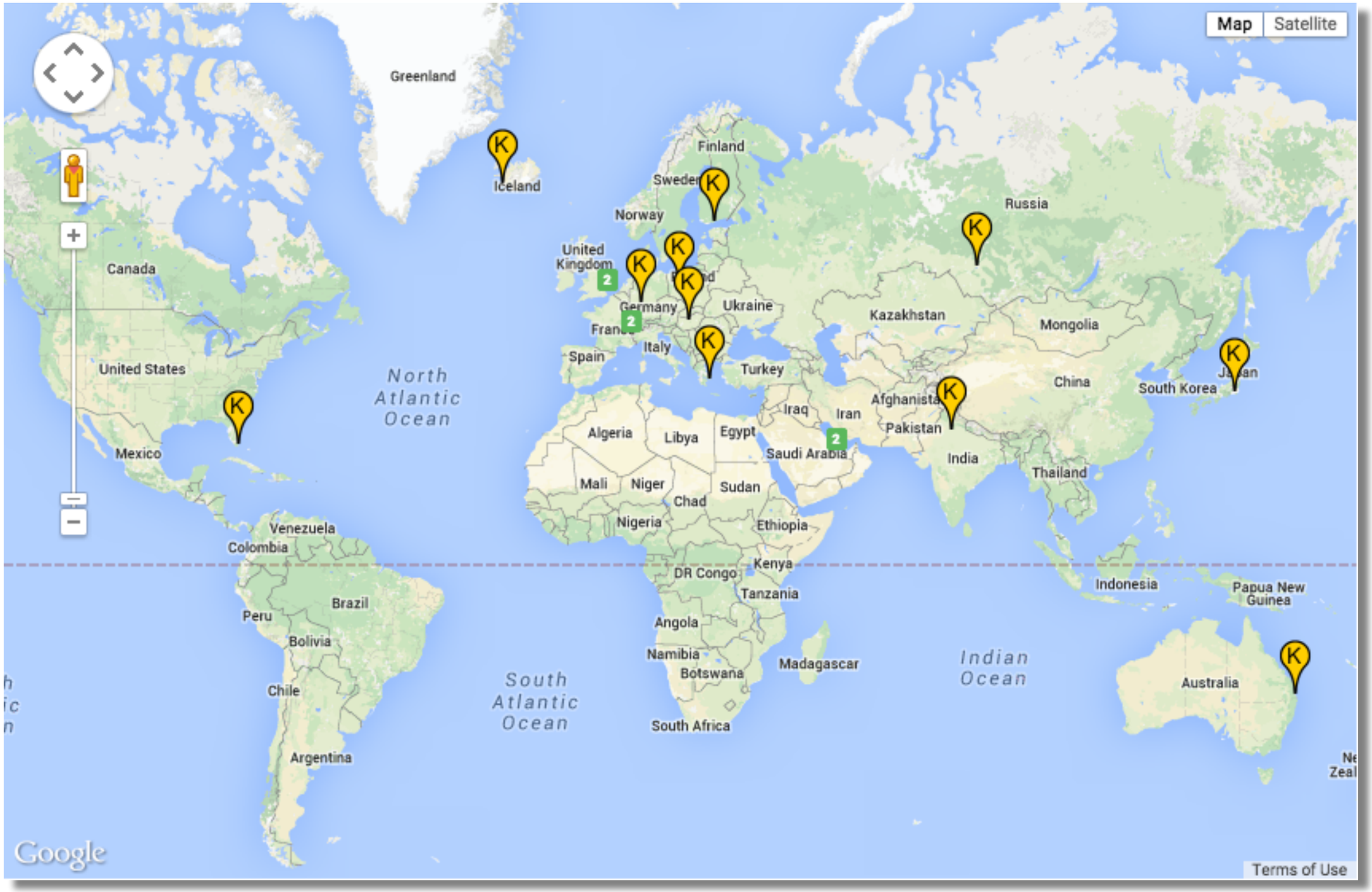
K-root: Current Model



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Current model

- Five “core” (global) nodes: Miami, Amsterdam, Frankfurt, Tokyo, London
- 12 “hosted” (local) nodes around the globe
  - High maintenance, mostly caused by peering management resource requirements
  - Adding new nodes involved a lot of arrangements, with high demand on hosting and connectivity requirements
- Current “local” nodes are being migrated to the new model (“hosted nodes”)

K-root: New Model

- Hosted nodes based on single-box solution
- Easy to set up, peering with one organisation
  - Host is free to decide on anycast announcing policies
- Full automation
  - Nodes will be taken out of the anycast network automatically if something is wrong, only three out of five core nodes are needed to handle peak K-root traffic
  - Almost all technical set-up and monitoring systems are automatically added on our side
- No expensive resource requirements for hosts
- Much less resource intensive on our side

K-root: Accepting Requests

- We will consider every request
  - Technical requirements published on k.root-servers.org
- We are particularly interested in:
  - Hosts that can improve K-root access globally, based on our measurements
  - Hosts in the RIPE NCC service region
- We don’t expect a huge number of requests
  - But will consult membership about any potential changes to resources or budget should that happen

Questions?