

RIPE Atlas Highlights (and more)

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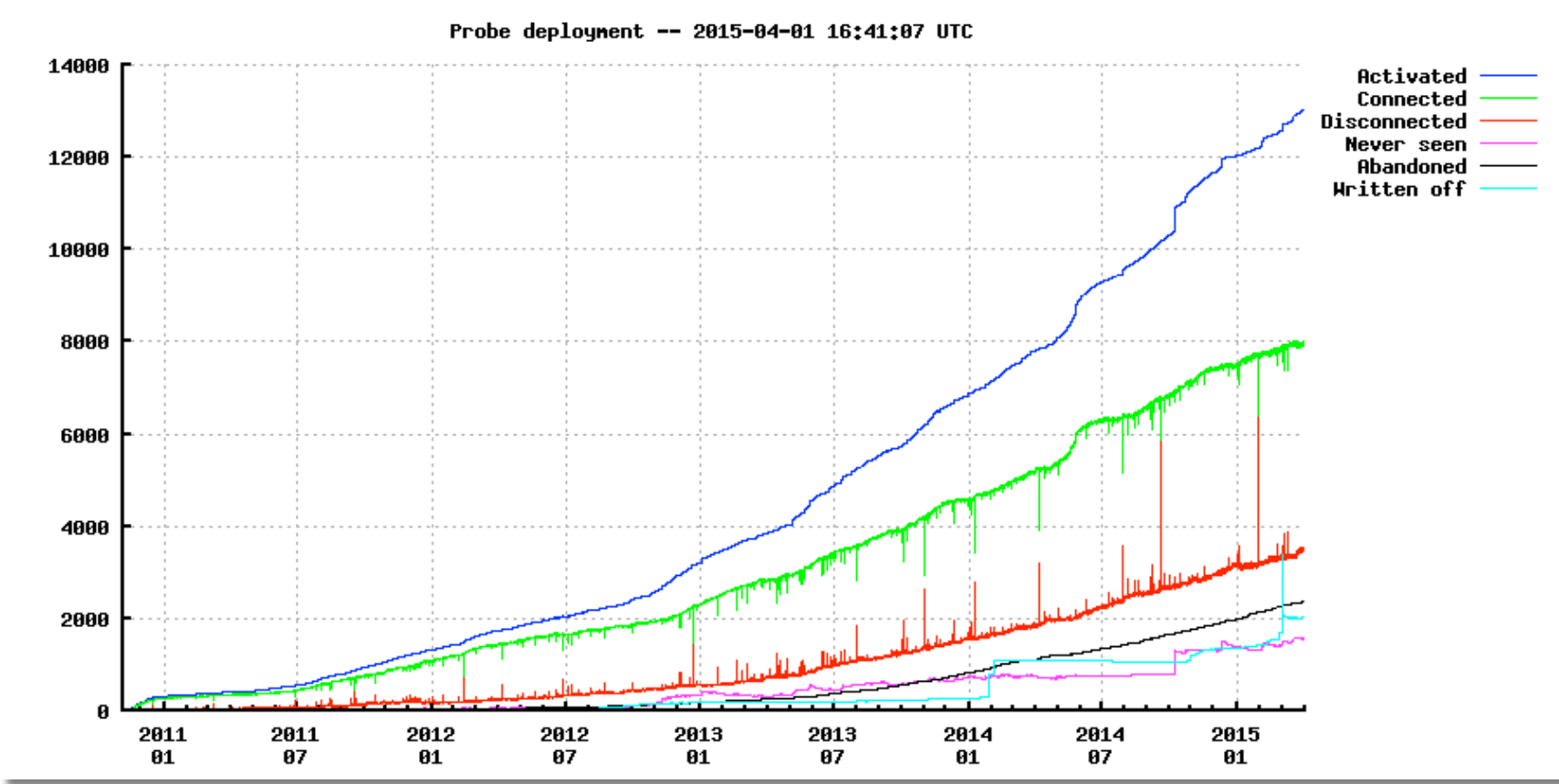
RIPE
NCC

- Better UIs and APIs
- Probe tagging
- New measurement types
- Data streaming
- Anchors
- Other Bits: locality checks, multi-msms, ...
- Hackaton 2015-1
- Outlook: OpenIPMap, RIS changes, BGP streaming

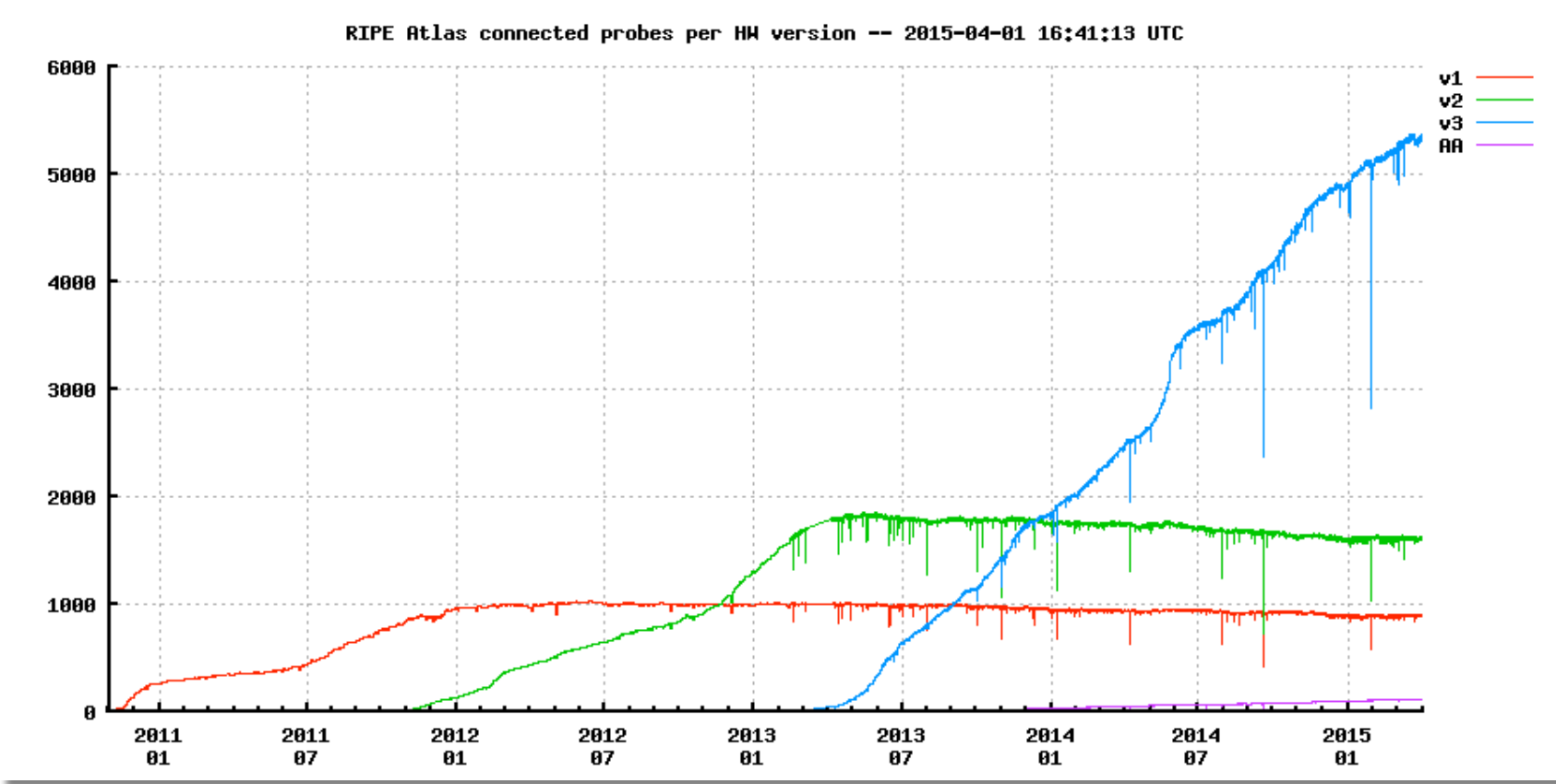
Mandatory Ark Slide



Network Growth



Network Growth



Better Probe UI

Probes

Filter by id/asn/location/country/description Connected IPv4/v6 Any Country

My Probes My Favourites My Hidden Probes My Sponsored Probes My Ambassador Probes Public Probes All

Id	ASN v4	ASN v6	Country	Description
22625	5607			Rural ADSL (soon upgrading to fibre)
22620	11426			118 Timber Hitch v3
22617	38229			PGIM, University of Colombo
22616	6697			
22613	6697			Moroz's probe
22609	58445			Dutch-Bangla Bank Limited
22608	6079			NY probe
22604	54858	54858		jvo seattle
22603	58381			Wowrack Indonesia
22591	6830	6939		Home Berg

Probe #10001

General Network Built-in Measurements User-defined Measurements

General Information

Id 10001 [Edit](#)

MAC Address F8:D1:11:A9:F0:90

Architecture tl-mr3020

Host Robert Kisteleki

Sponsor RIPE Atlas

Firmware Version 4680 ()

Router Type ASUS RT-N66U

Bandwidth Limit 20 Kbit/s

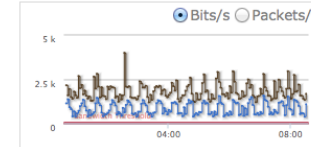
DNS Entry Off

Shared Publicly Yes

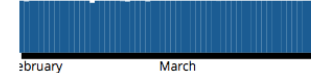
User Tags [Cable](#) [Home](#) [NAT](#)

System Tags [V3](#) [Resolves A Correctly](#) [Resolves AAAA Correctly](#) [IPv4 Works](#)

Connection & Traffic



Connected Time



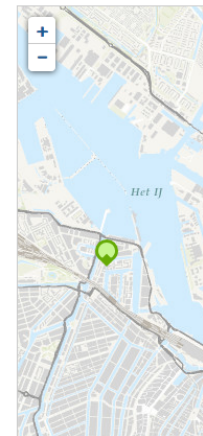
4 days, 16 hours

Firmware 4680 **#10001**

Architecture tl-mr3020

MAC Address F8:D1:11:A9:F0:90

[Update Location](#)



Management Sharing

Only the probe host is permitted to administer this probe. [Edit](#)

Notifications

[Edit](#)

- See <https://atlas.ripe.net/probes/>

Measurements

+ Create a Measurement

Filter by target and/or description

Any Status

IPv4/v6

All types

Of all time

⌵ ✕

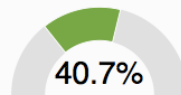
My Measurements My Favourite Measurements My Hidden Measurements Pu

Id	Type	Target	Description
1911668	anna maria mandalari	IPv4 http 163.117.253.7	HTTPGet port 7443 w subset 9 of 200 probe:
1911667	anna maria mandalari	IPv4 http 163.117.253.7	HTTPGet port 7443 w subset 8 of 200 probe:
1911666	anna maria mandalari	IPv4 http 163.117.253.7	HTTPGet port 7443 w subset 7 of 200 probe:
1911665	anna maria mandalari	IPv4 http 163.117.253.7	HTTPGet port 7443 w subset 6 of 200 probe:
1911664	anna maria mandalari	IPv4 http 163.117.253.7	HTTPGet port 7443 w subset 5 of 200 probe:
1911663	anna maria mandalari	IPv4 http 163.117.253.7	HTTPGet port 7443 w subset 4 of 200 probe:
1911662	automat atlas	IPv4 ping no-osl-as39029.anchors.atla...	ATLAS Self-test N8
1911661	FANOU Roderick	IPv4 trace... 41.206.64.93	UDP Af-tr4 to 41.206.64.93 id:Gg_cache_in_AF ...
1911660	anna maria mandalari	IPv4 http 163.117.253.7	HTTPGet port 7443 w subset 3 of 200 probe:

Create a New Measurement

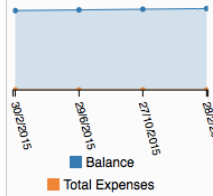
Costs summary

Daily cost: 300 credits



By scheduling this measurement, your total daily consumption will be 40.7% of your daily income

You will not run out of credits in a year



Step 1 Definitions

> Ping measurement to www.caida.org ✕

+ Ping + Traceroute + DNS + SSL + HTTP

Step 2 Probe Selection

Worldwide 50 ✕

+ New Set - wizard + New Set - manual + IDs List + Reuse a set from an old measurement

Step 3 Timing

This is a One-off:

Start time:

Now

Measurement API Compatible Specification

```
$ curl --dump-header - -H "Content-Type: application/json" -H "Accept: application/json" -X POST -d {"definitions": [
```

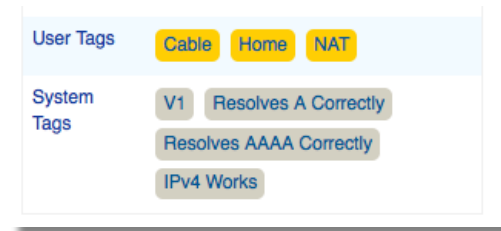
- See <https://atlas.ripe.net/measurements/>

- Measurement API:
 - query/search, create, change, stop, ...
 - download results, latest results, state checks, ...
 - **Parse results:** <https://atlas.ripe.net/docs/sagan/>
- Probe API: query/search, probe archive (bulk access)
- **Result streaming:** results and probe connections
- Coming up:
 - APIs for Anchors, anchoring measurements
- See <https://atlas.ripe.net/docs/>



APIs Mellifera

- Users can tag their probes **any way the like**
 - The commonly used tags are available to everyone
- The **system** also tags them **automatically**
 - (non)working IPv6, IPv4, DNS (A/AAAA), ...
- Reason: **use these tags** when scheduling measurements
 - measure from home or not
 - measure from broken or working IPv6 probes
 - Combine this with other filters (eg. country)
- See <https://atlas.ripe.net/docs/probe-tags/>

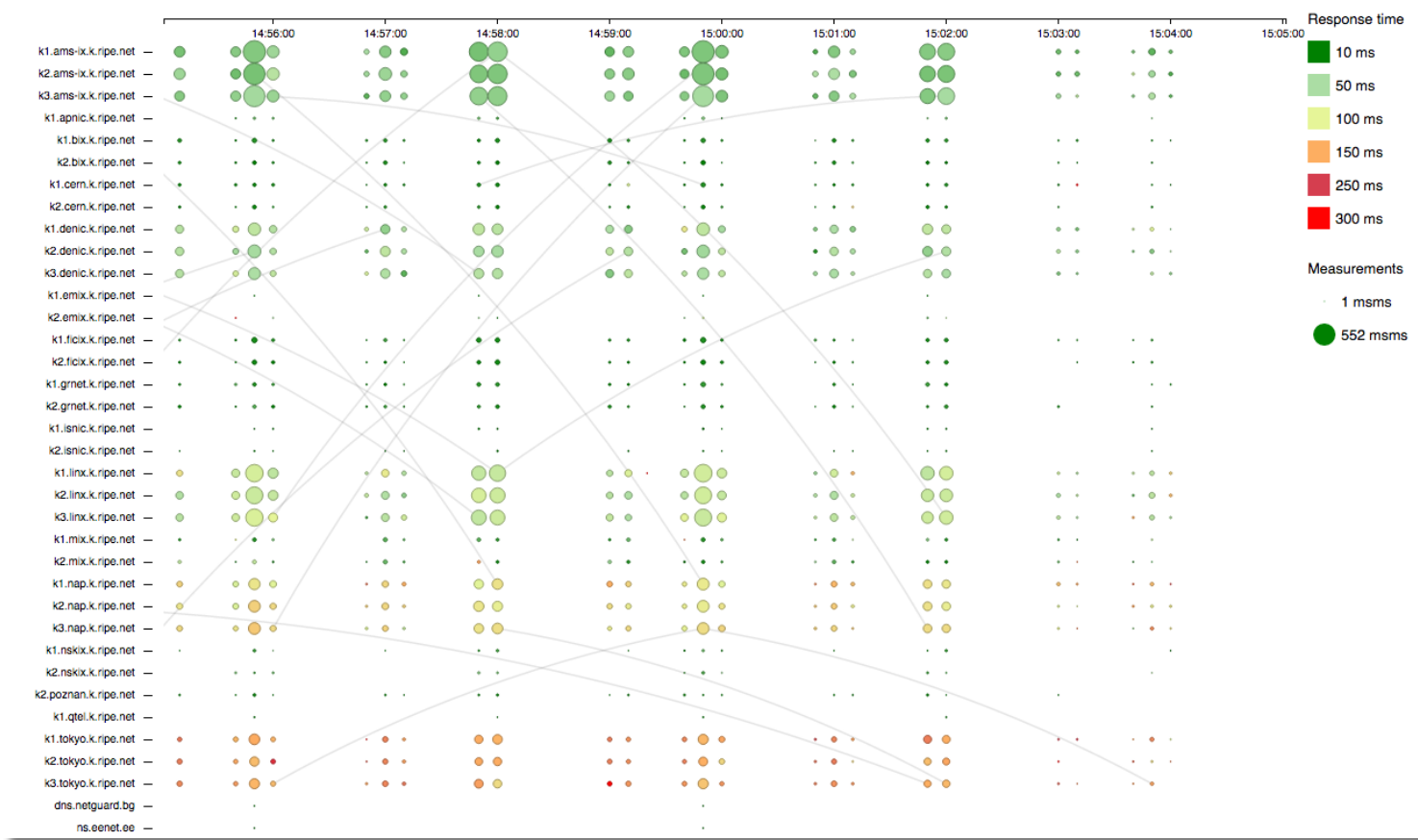


- NTP: query NTP servers
- Wifi
 - Mind you: this is **not** running the probe using wifi, but associating to wifi, authenticating, measuring things, then disconnecting, **while** being connected on a wire
 - Most likely with a new hardware probe
- HTTP
 - Against predefined targets (anchors) to start with
- TLS Check
 - check for protocols, ciphers, certificates, ...

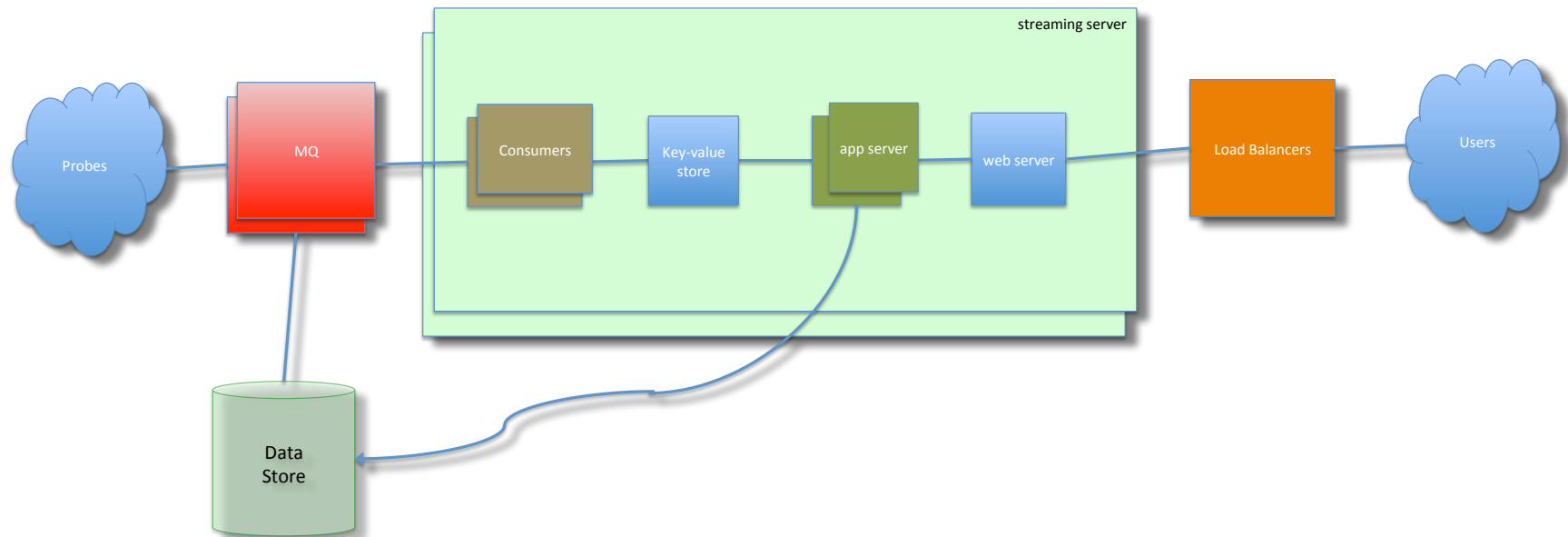


- Data result streams
 - real-time access to data (drinking from the firehose)
 - can listen to the incoming data of public msms(s)
 - websocket clients + legacy support using polling
 - allows for really cool visualisations
 - has short term memory and can also **replay historical data**, optionally at different-than-regular speed (bullet-time for Atlas data, yeey!)
- Probe connection streams
 - similar to results but about probe connections/disconnections
 - annotated by ASN/prefix/country/...
- See <https://atlas.ripe.net/docs/result-streaming/>

Result Streaming Demos



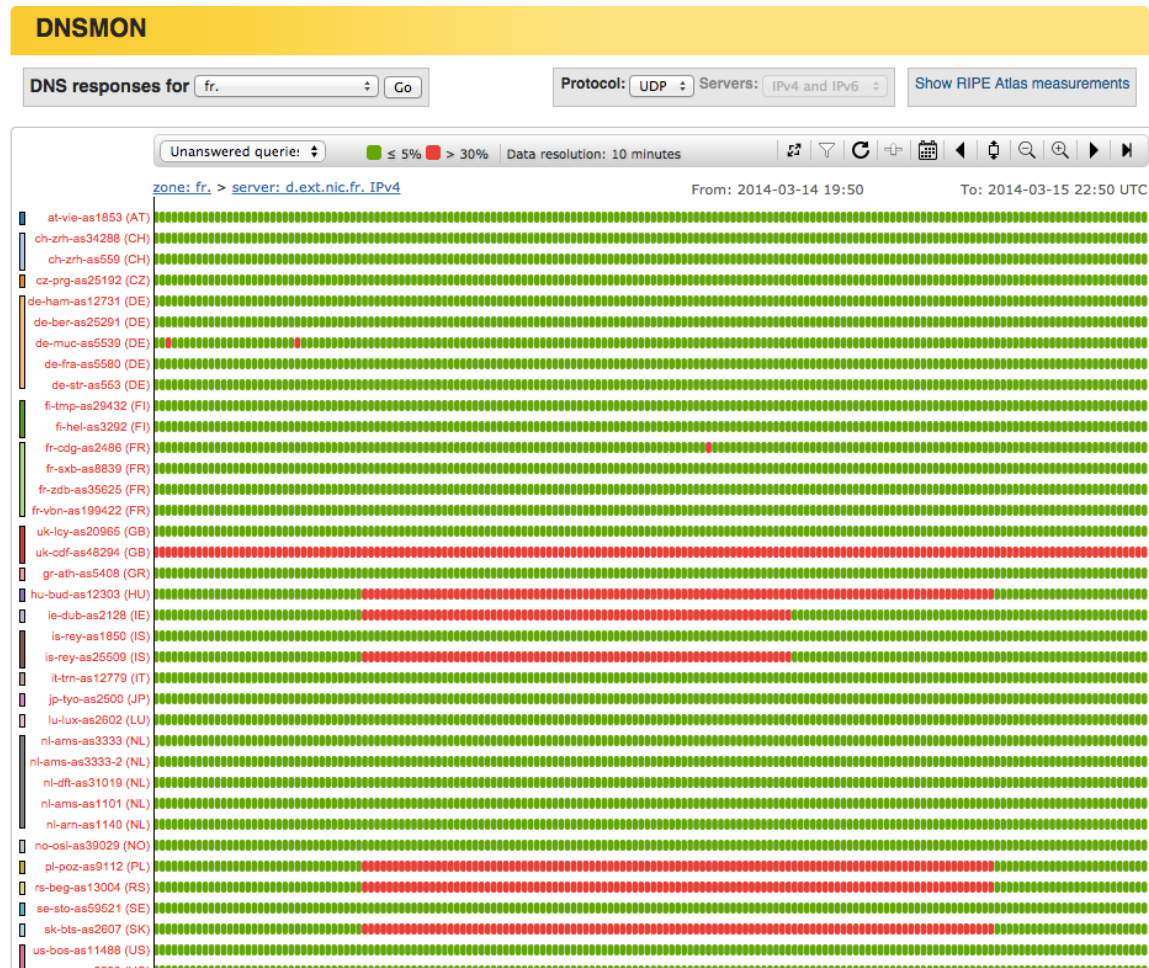
Streaming Architecture



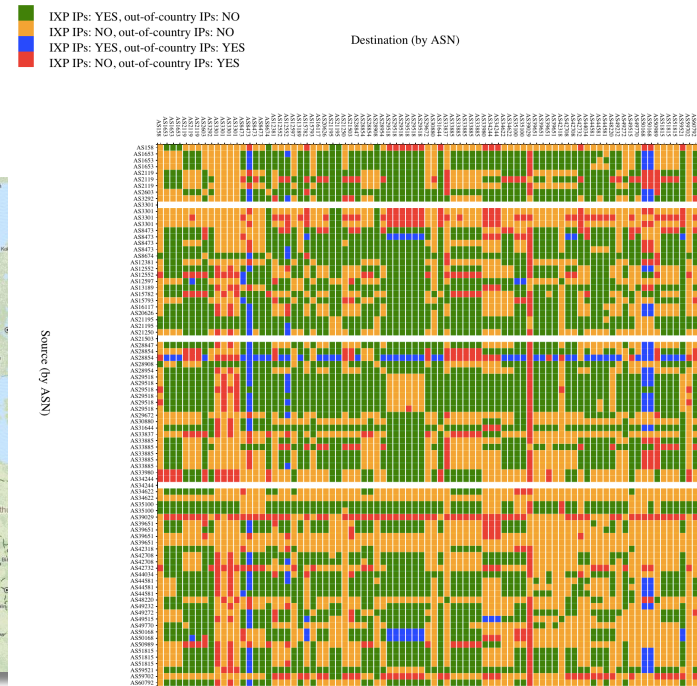
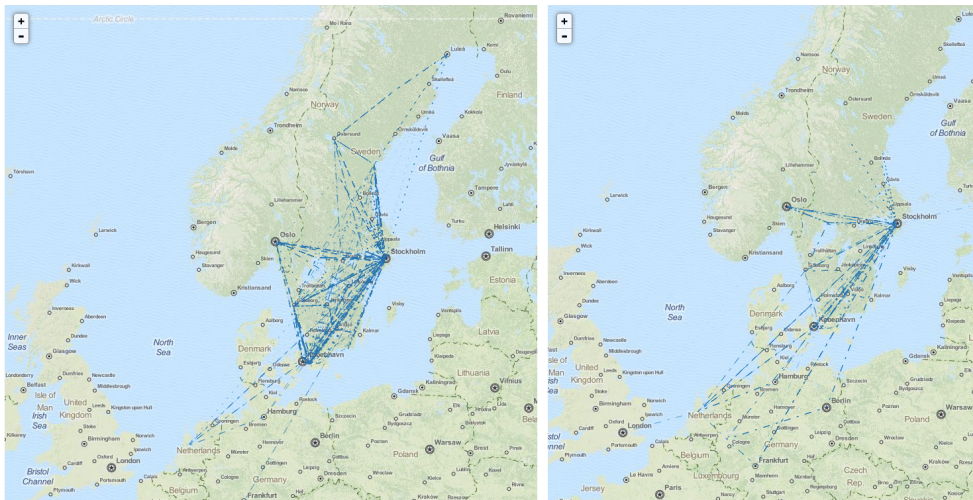
- The closest thing we have to an Ark node
- Powerful probes as well as willing targets
- Hosts of anchors get a number of perks
 - more credits
 - automatically measured by hundreds of probes, high freq
- Rack mounted PC (Soekris)
 - As opposed to Ark :-)
- May be VMs too in the future
- About 120 as of now
- Mostly in data centres



- Revamped DNSMON



- IXP / locality checks



- See <https://labs.ripe.net/Members/emileaben/measuring-ixps-with-ripe-atlas>

Multi-target measurements:

- Atlas was built with ISPs in mind: use **lots** of vantage points to check on **few** targets
- Researchers many times need the opposite
- Workaround: building a DNS server to supply names of targets on demand, ask probe to use DNS every time
 - Can do campaigns or round-robins or ...
 - Ideally has support on the probe side

- First instance: 27-29 May, 2015
- About 25 hackers, 6 jury + some support staff
- Goal: visualise RIPE Atlas (and related) data
- After forming groups, 10 projects were worked on
- Highlight: power outage in Amsterdam

- Massive outage just before the hackaton
- It was not caused by us :-)

- https://labs.ripe.net/Members/andreas_strikos/amsterdam-power-outage-as-seen-by-ripe-atlas

Measuring #Amsterdam power outage using
@RIPE_Atlas atlas.ripe.net/results/maps/n ...



- RIPE RIS has been collecting BGP Data since 1999
 - 12-15 route collectors, 6-700 peering sessions
 - Scalability is a challenge
- Not much focus on it in the last few years
- Revamp is in the making
 - Modernise the collection architecture
 - Scale up to more RRCs and more peers
 - Support more use cases
 - looking glass, “country based” dumps and more
 - Make it more realtime
- https://labs.ripe.net/Members/wouter_miltenburg/researching-next-generation-ris-route-collectors

- Apply our streaming architecture experiences in streaming Atlas data to RIS — if done right, 90% is the same
- Allows listening to BGP updates in real-time
 - Ideally with filtering on: RRC/peer/ASN/prefix/...
- Allows a whole new set of tools to be developed
 - Notice the synergy with Atlas streams
 - We'll be working on some of these tools
- Exploring collaboration with other interested parties
- Demo...

Questions?

