



RIPE NCC

RIPE NETWORK COORDINATION CENTRE

RIPE NCC Tools

A Glimpse

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Two Types of Tooling



- Internal
 - Results are often externally visible
- External
 - Heavily used internally as well
- Evolution of our tooling
 - Many start as internal tools
 - Somebody asking a particular question
 - Ideas during hackatons



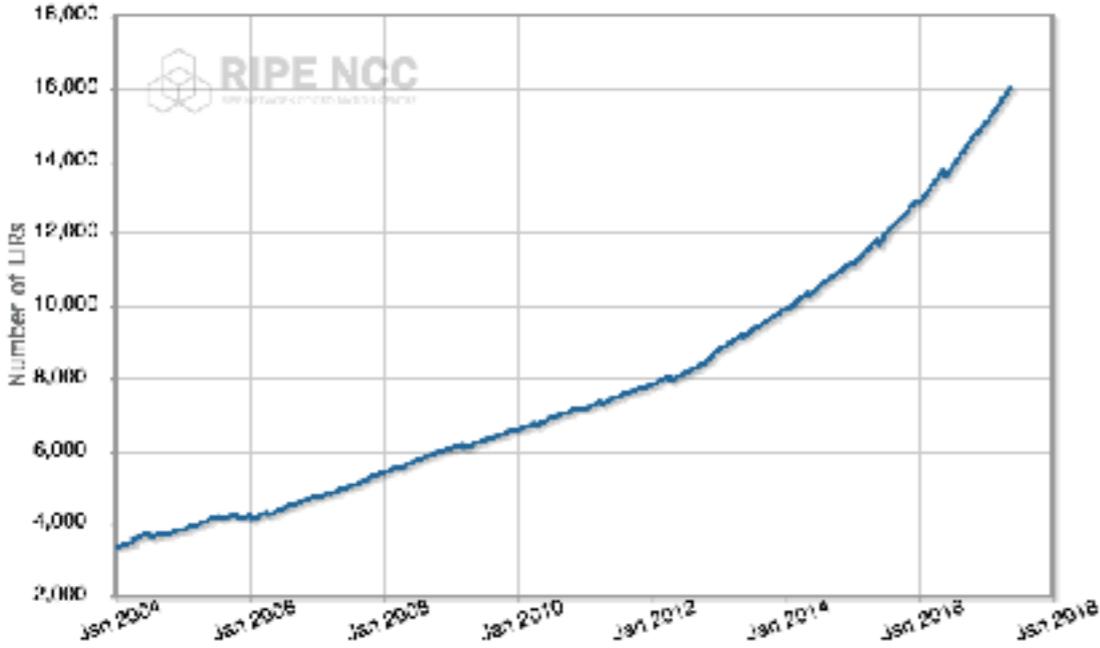
Internal Tools

Looking at Our Membership

How We Usually Show Our Members

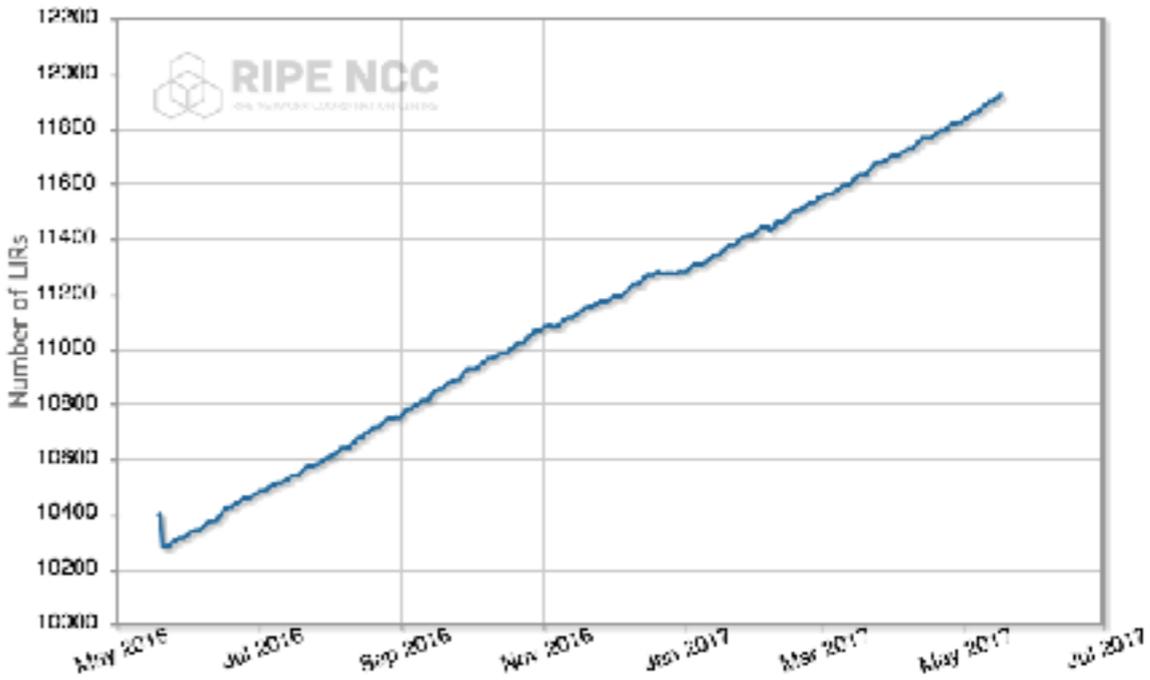


Total Number of LIRs



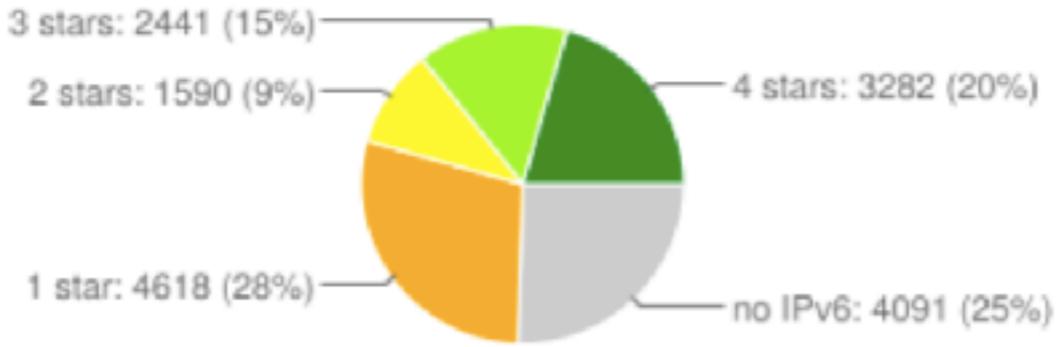
Current number of Local Internet Registries (LIRs) in the RIPE NCC service region. (Note that in April, some LIRs with outstanding invoices get closed.)

LIRs With IPv6



Number of Local Internet Registries (LIRs) in the RIPE NCC service region that have IPv6 resources.

All (16022 LIRs)



What We See Internally



Demographics

 Export to CSV 

Country  x NORWAY 

Apply Filter **Reset** Filtering done Total result 493

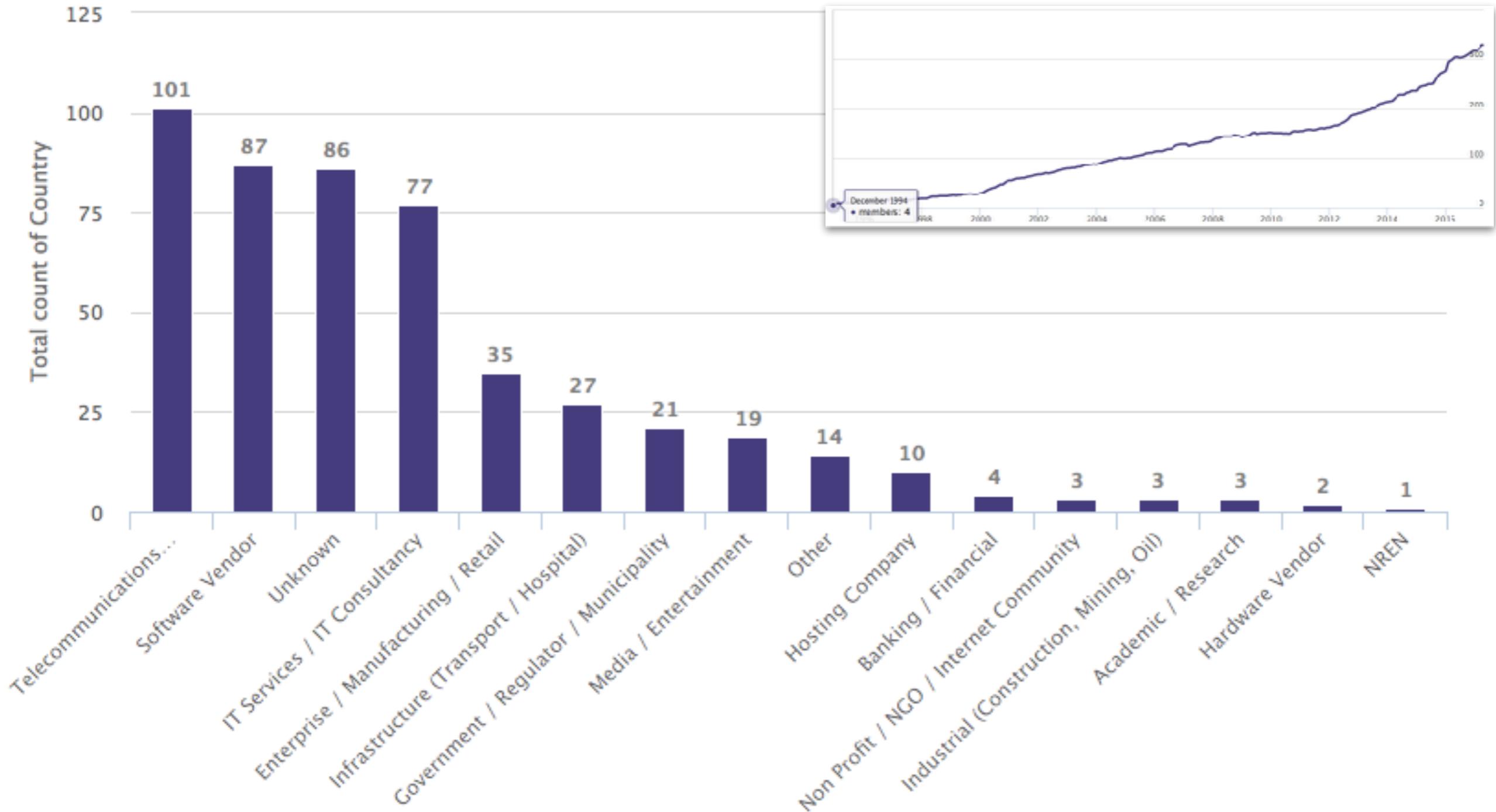


REG-ID 	Legal name 	Country 	Industry 	Size 	Status 	Activation Date 
no.daldata	DALDATA AS	NORWAY	Media / Entertainment	50-249 employees	PROVIDER	2014-12-07
no.nkr	NordkappNett AS	NORWAY	IT Services / IT Consultancy	2-9 employees	PROVIDER	2015-08-19
no.raskesider	Raske Sider AS	NORWAY	IT Services / IT Consultancy	2-9 employees	PROVIDER	2015-03-09
no.ae	AGDER ENERGI AS	NORWAY	Infrastructure (Transport / Hospital)	50-249 employees	PROVIDER	2015-11-03
no.harstadkommune	Harstad Kommune	NORWAY	Government / Regulator / Municipality	2,500 and more employees	PROVIDER	2016-01-26
no.sniper	Sniper Paintball AS	NORWAY			PROVIDER	2017-03-20

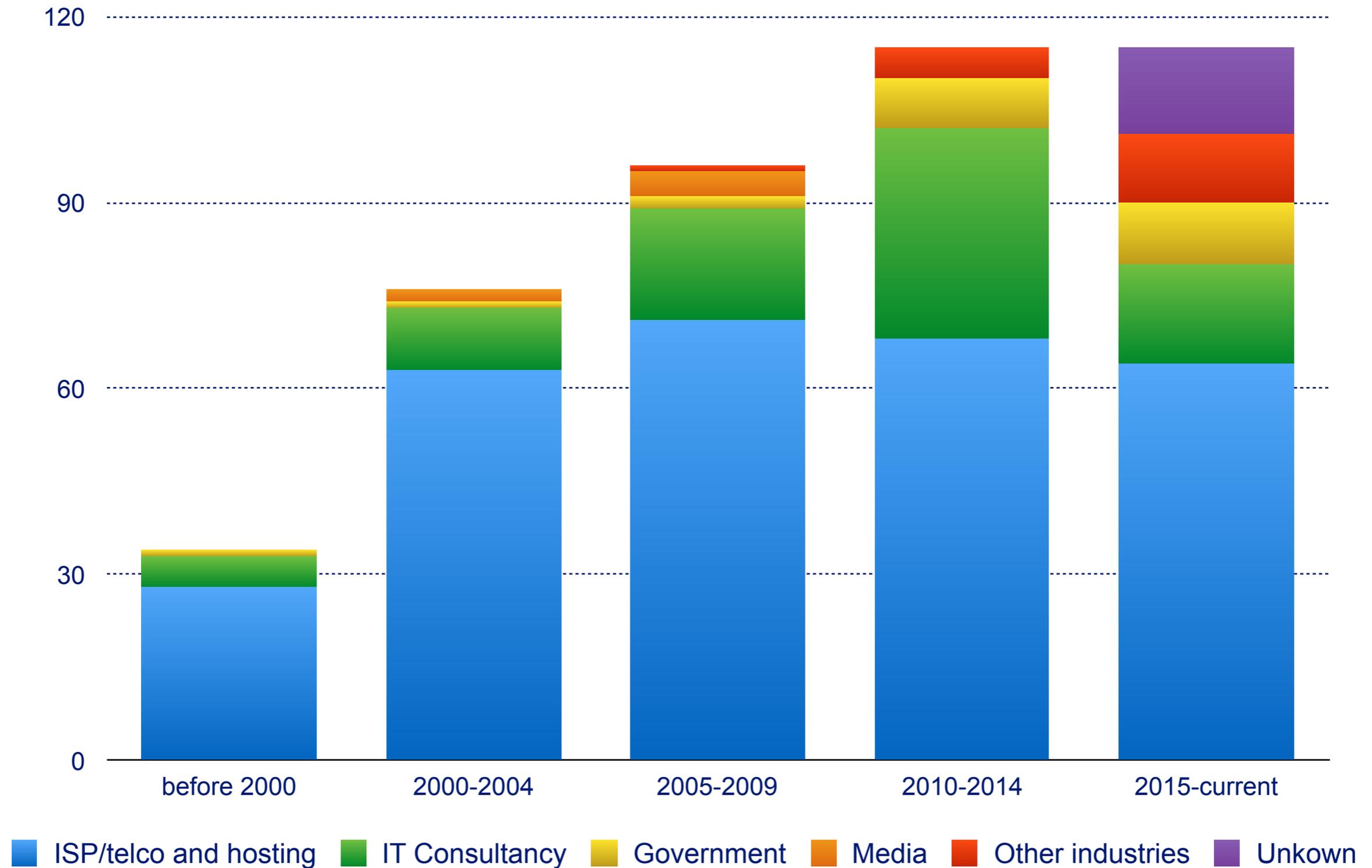
Combining Datasets



Industry by Country



Test: New Membership in Norway?



Different View: Top Networks



Internet Users covered : 4446378

Total Internet Users: 5167573

Internet users coverage is estimated using percentage of IPv4 Public and Private probes.

■ IPv4 Public Probes >= 3

■ 3 > IPv4 Public Probes > 1

Search:

ASN	Name	Estimated Population %	IPv4 Public Probes	IPv4 Private Probes	IPv4 Total Probes	IPv6 Public Probes	IPv6 Private Probes	IPv6 Total Probes	More
2119	TELENOR-NEXTEL	42.88	21	4	25	10	1	11	View
29695	ALTIBOXAS	15.23	13	3	16	6	1	7	View
41164	GET-NO	10.63	8	3	11	3	1	4	View
15659	NEXTGENTEL	7.23	6	0	6	1	0	1	View
2116	ASN-CATCHCOM	5.36	5	0	5	0	0	0	View
3292	TDC	2.06	0	0	0	0	0	0	View
12929	NETCOM-AS	1.97	1	0	1	0	0	0	View
34087	NTE-BREDBAND	1.49	4	1	5	0	0	0	View
50608	VENTELOHOSTING	1.37	0	0	0	0	0	0	View

Membership Diversity is Growing



- Many new members from other sectors
 - Do not have an Internet background
 - Internet is an important part of their business case
 - Partially driven by IPv4 address shortage?
- Traditional ISP market consolidated
 - Few large players have majority of market share
- Different members have different needs
 - We always appreciate your feedback



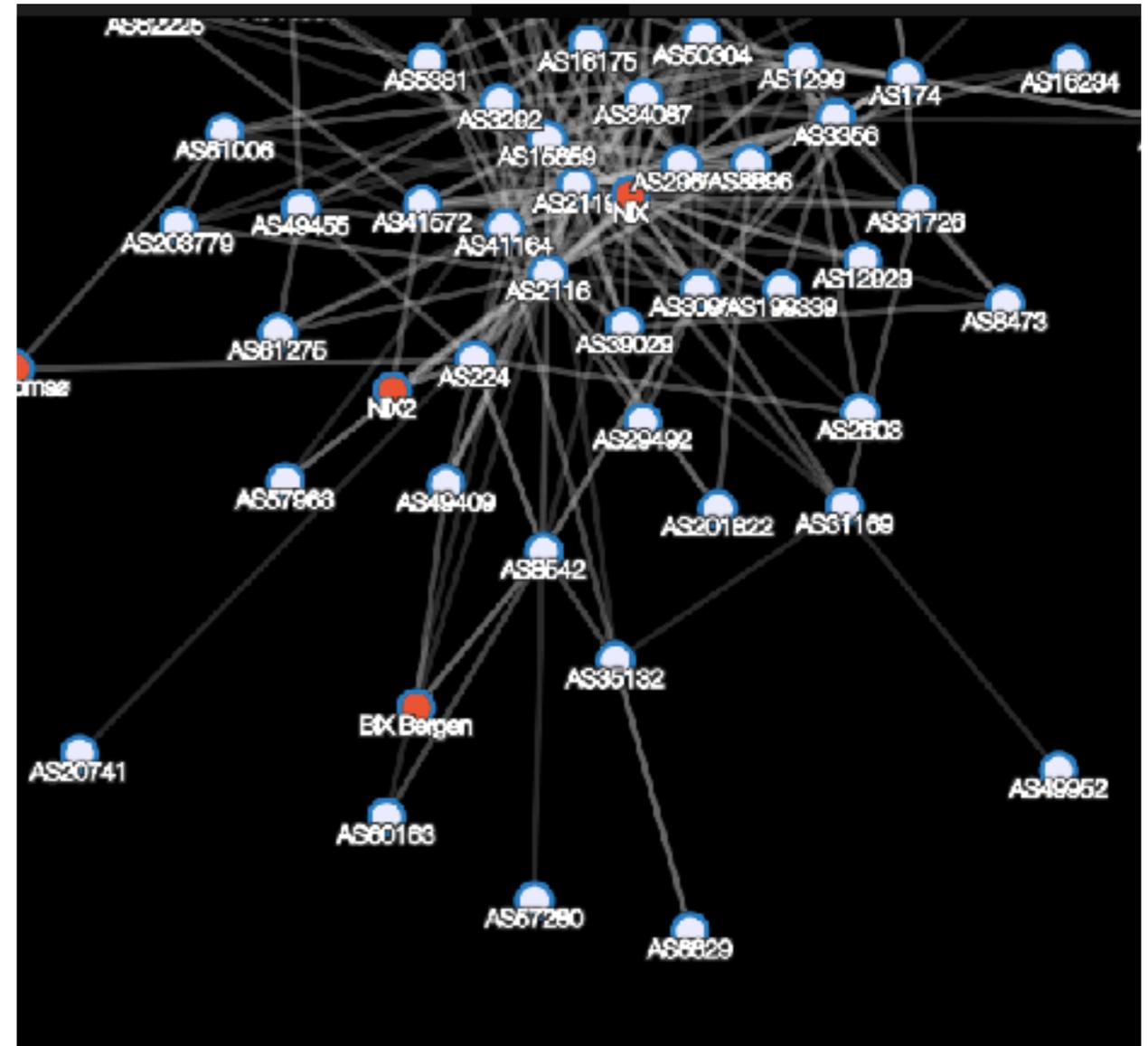
External Tools

Visualising Operational Reality

Showing Network Relationships



- Based on routing information
 - Collecting BGP data
 - Combined with AS Data
- Tools include:
 - BGP Play
 - IXP Country Jedi
 - RIPE Stat



ASN Interconnection graph for Norway
<http://sg-pub.ripe.net/emile/ixp-country-jedi/latest/NO/>

Network Performance Indicators

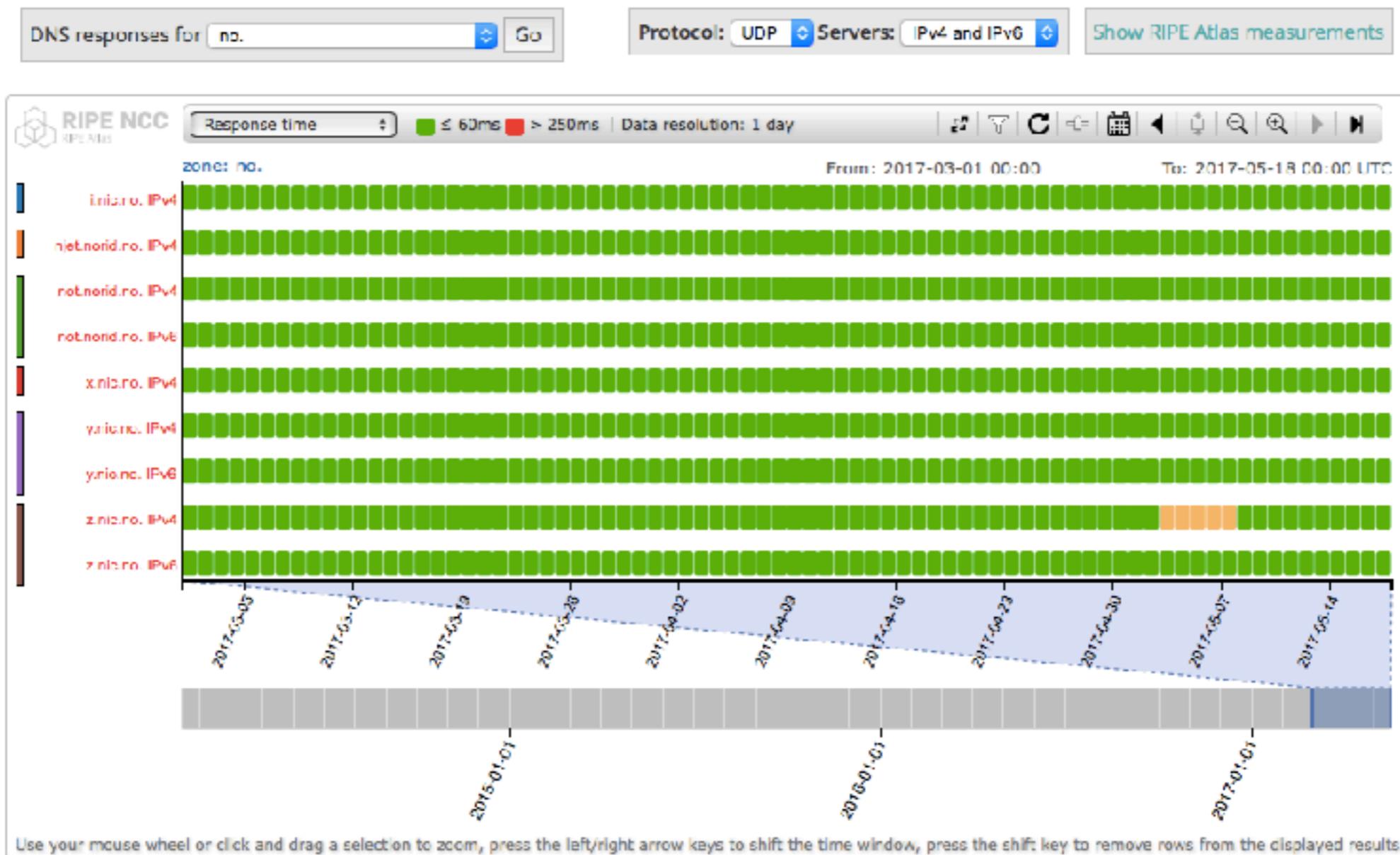


- Not a new adventure
 - Remember the old Test Traffic Measurement (TTM)?
 - Older versions of DNSMON
- Times and tools change
 - Meanwhile we have built RIPE Atlas
 - Multipurpose measuring platform
 - Thousands of vantage points

The New DNS Monitoring (DNSMON)



- Based on RIPE Atlas measurements
- More data points and new visualisations



DomainMON: Measure Your Own



- Based on the same tools as DNSMON
- Test your own domains using RIPE Atlas
 - Specify your own set of nameservers
 - Configure and select a set of probes
 - RIPE Atlas credits deducted based on number of probes

There Is More



- RIPE Atlas is huge
 - Approximately 9700 probes connected
 - We have 258 anchors online
 - About 14,000 concurrent measurements running
 - Recording close to 5000 results per minute
- A lot of these results are public
 - You can also configure your own measurements
- Our data is getting big

RIPE Atlas LatencyMON



- Easy tool to combine and show latency trends
 - Select an arbitrary set of probes and measurements
 - Compare results even to different targets
 - Zoom and select on specific time periods
 - Streaming updates the charts in real time
- Multiple display options
 - Show absolute values or relative to each other
 - High, low and average or just the average

LatencyMON: Select Probes



General Information Probes Map **LatencyMON** Results

General Information

ID #1402318

Group ID #1402318

Select the probes you want to add to the group. NOTE: you can use only probes not participating in other charts

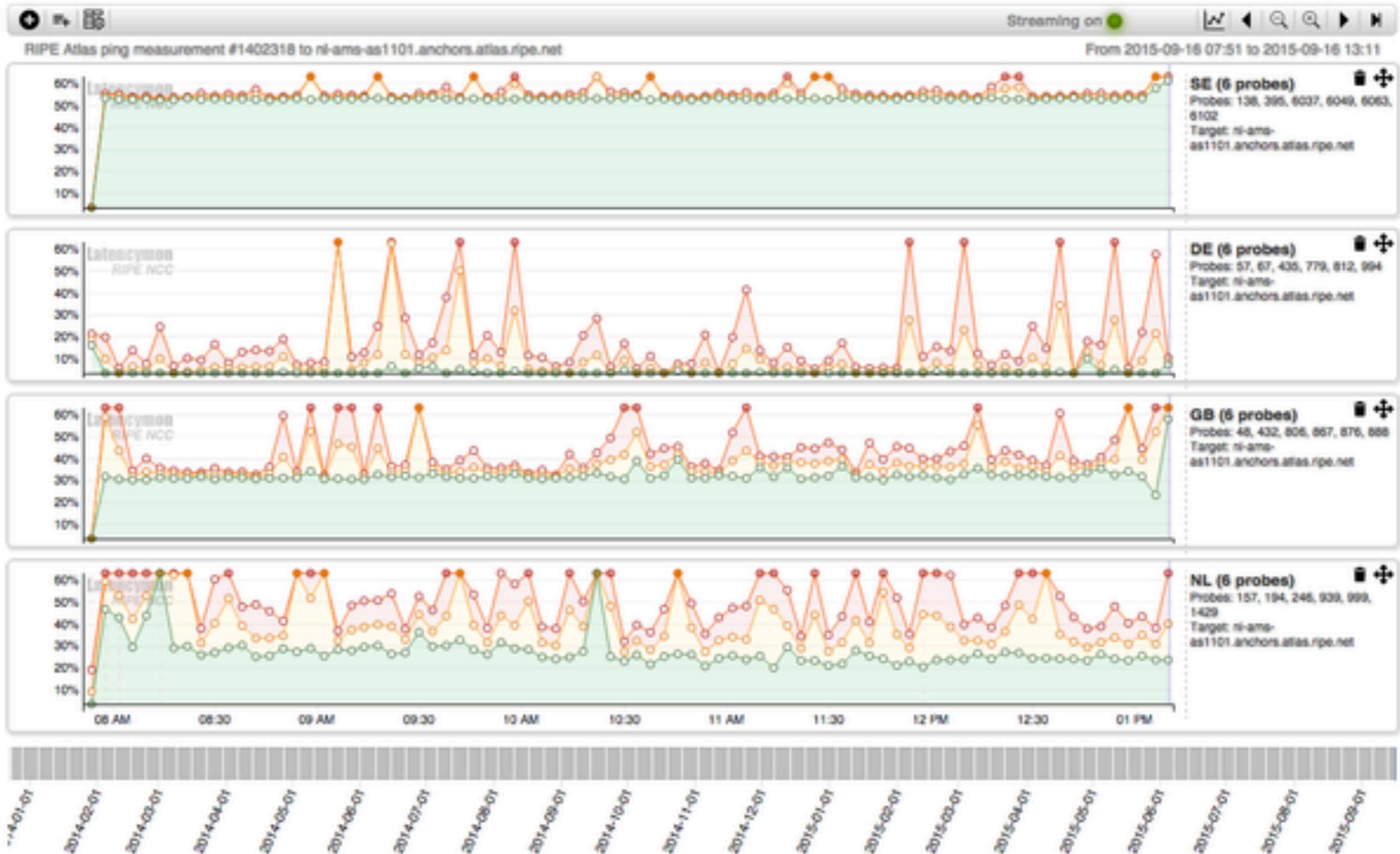
Search

<input type="checkbox"/>	Probe ID	Country	ASv4	ASv6	IPv4	IPv6	Measurement ID
<input type="checkbox"/>	57	DE	20621	20621	217.69.64.206	2001:aa8:ffe:3:220:4aff:fec8:2098	1402318
<input type="checkbox"/>	67	DE	31334	31334	95.90.204.77	2a02:8108:9e40:a0:220:4aff:fec8:249e	1402318
<input type="checkbox"/>	157	NL	3265	3265	82.95.106.192	2001:981:5e40:1:220:4aff:fec8:20b9	1402318
<input type="checkbox"/>	194	NL	39309	39309	88.159.164.218	2a01:670:6aa4:da00:220:4aff:fec8:2099	1402318
<input type="checkbox"/>	226	AU	4739	4739	203.16.208.142	2001:44b8:1121:1a00:220:4aff:fec8:245d	1402318
<input type="checkbox"/>	239	SN	8346	8346	196.1.95.16	2001:4278:1000:1::16	1402318
<input type="checkbox"/>	246	NL	6830	-	77.251.180.141	-	1402318
<input type="checkbox"/>	333	JP	17676	17676	126.72.61.194	2400:2410:20c0:4400:220:4aff:fec8:242e	1402318

Showing 1 to 8 of 426 rows

Group name:

LatencyMON: Example



LatencyMON: Example

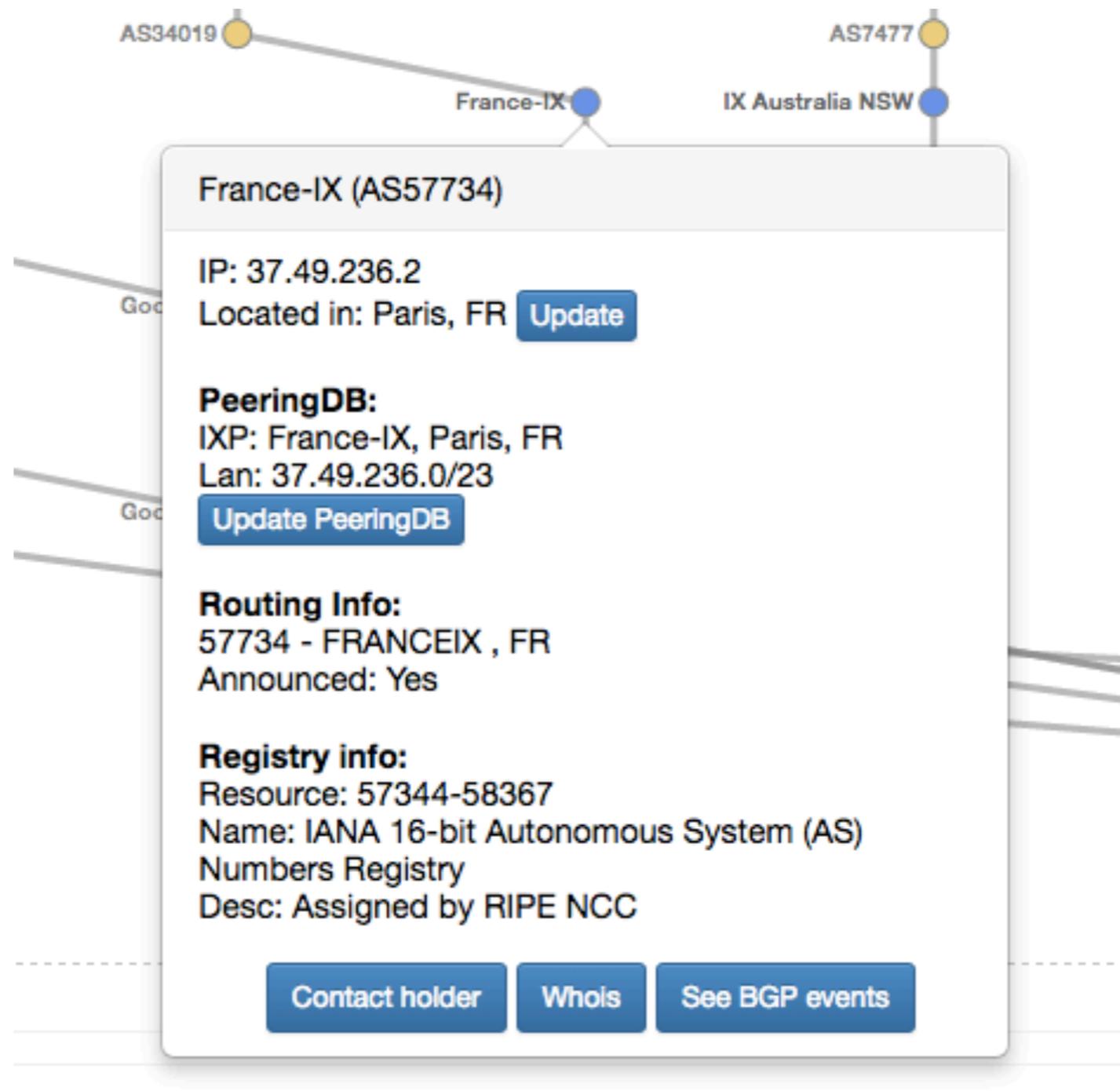


The Next Step: TraceMON



- We have a huge collection of traceroutes
 - And of course you can create your own set
 - We also have access to similar third party data
- Visualise network topology
 - From a wide collection of vantage points
 - Time based just as the other tools
- Add other related information to nodes
 - Recognise and indicate known IXPs
 - Include geolocation data

TraceMON: Node Details



TraceMON: Network Annotations



Future Development



- These tools are still being developed
 - We rely on your feedback for improvement
 - Tell us what is good and what isn't
 - Suggest new features
- Help us to maintain our datasets
 - Keep PeeringDB records up-to-date
 - Add and maintain data to the OpenIPMap project
 - TraceMON contains a number of update buttons

More Reading



- Several RIPE Labs articles about these tools
 - See <http://labs.ripe.net>
- Documentation
 - <https://atlas.ripe.net/docs/tools-tracemon/>
 - <https://atlas.ripe.net/docs/tools-latencymon/>
 - <https://atlas.ripe.net/docs/domainmon/>
- Have a look at <http://atlas.ripe.net>
 - Sign up, request probes and configure measurements
 - Become a part of the community

Questions?

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