Other monitoring tools

Bartek Gajda
Poznan Supercomputing and Networking Center
gajda@man.poznan.pl
EGI TF, Madrid
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Other monitoring tools

Do we need other monitoring tools?

- There are lots of them, free to use
  - *ping, fping, OWAMP, SmokePing, pchar, iperf, bwctl, nuttcp, netperf, RUDE/CRUDE, ttcp, NDT, Thrulay, PsPing, Unix traceroute,tcptraceroute,LFT,mtr,tracepath,SmokeTrace, layer 2 traceroute, tcpdump, Wireshark, libtrace, Netdude, jnettop, tcptrace, Network Monitor (Windows), TCP Analyzer (Windows SDK)*
  - *take a look at comprehensive list: kb.pert.geant.net*

BUT You need

- time to deploy them
- learn how to use
- maintain hardware, configs

= costs!

Other monitoring tools

What if somebody will deploy the monitoring environment for you?

- For free
- Inside your network
- Maintain it
  (you do neet to worry about security pachess, system maintenance etc.)
- Connect it into one big worldwide mesh
- Give you access to the whole mesh
- Provide easy to use intererfaces: http, cli, api
- Collect statistics
- You can make measurement from any other point of measure

Two monitoring tools

NLNOG RING

- LINUX VM deployed inside your environment
- Tools: several monitoring commands avialble (ssh) + web statistics

RIPE ATLAS

- USB tiny device (probe)
- Web based interface: atlas.ripe.net

NLNOG RING

What's NLNOG?

This is where It started!

- Loosely connected group of Dutch network operators
- Drink beer once a year
- Active IRC channel
- mostly dormant mailing-list

Source: Job Snijders https://ripe65.ripe.net/presentations/105-RIPE65_NLNOG_RING_Job_Snijders.pdf

NLNOG RING

So, what's this RING thing?

Metaphysical definition:

"Awesome network debugging platform"

Foundation:

Trust – I trust you with access to my resources, as you trust me with access to your resources

Source: Job Snijders https://ripe65.ripe.net/presentations/105-RIPE65_NLNOG_RING_Job_Snijders.pdf

NLNOG RING – Participants

- Organisations: **217**
- RING nodes: **243**
- ASNs: **218**
- Countries: **44**

2013/09

https://ring.nlnog.net/participants/

NLNOG RING - Motivation

- Debug network issues and troubleshoot ‘from the outside’
- A point of view outside your network is absolutely essential
- Seeing what others see is a useful thing with a variety of network problems

Source: ring.nlnog.net

NLNOG RING - Solution

- Provide a streamlined way of cooperating
- ”NLNOG RING” – simple essence:
  - You make a (virtual) machine available to the RING,
  - You gain access on all servers which are part of the project, hence the name “RING”.
  - Great example would be to launch a traceroute from 173 servers in different networks and quickly get the results instead of waiting till somebody has the time to run some tests for you.

Source: ring.nlnog.net

NLNOG RING – how to use it

- CLI interface: ring scripts
  - ***ring-all*** *– run commands on all servers*
  - ***ring-ping*** *– run comands from all servers*
  - ***ring-trace*** *- ICMP traceroutes from all servers*
    allows to create graphs which visualise traceroutes from a number of ring sources
- Distributed Smokeping
  - *Web based statistics*
  - *A smokeping Master/Slave setup has been created to graph latency between all nodes thus graphing nodes in context of a torus.*
- BGP Looking glass
  - *Web based on-line interface*

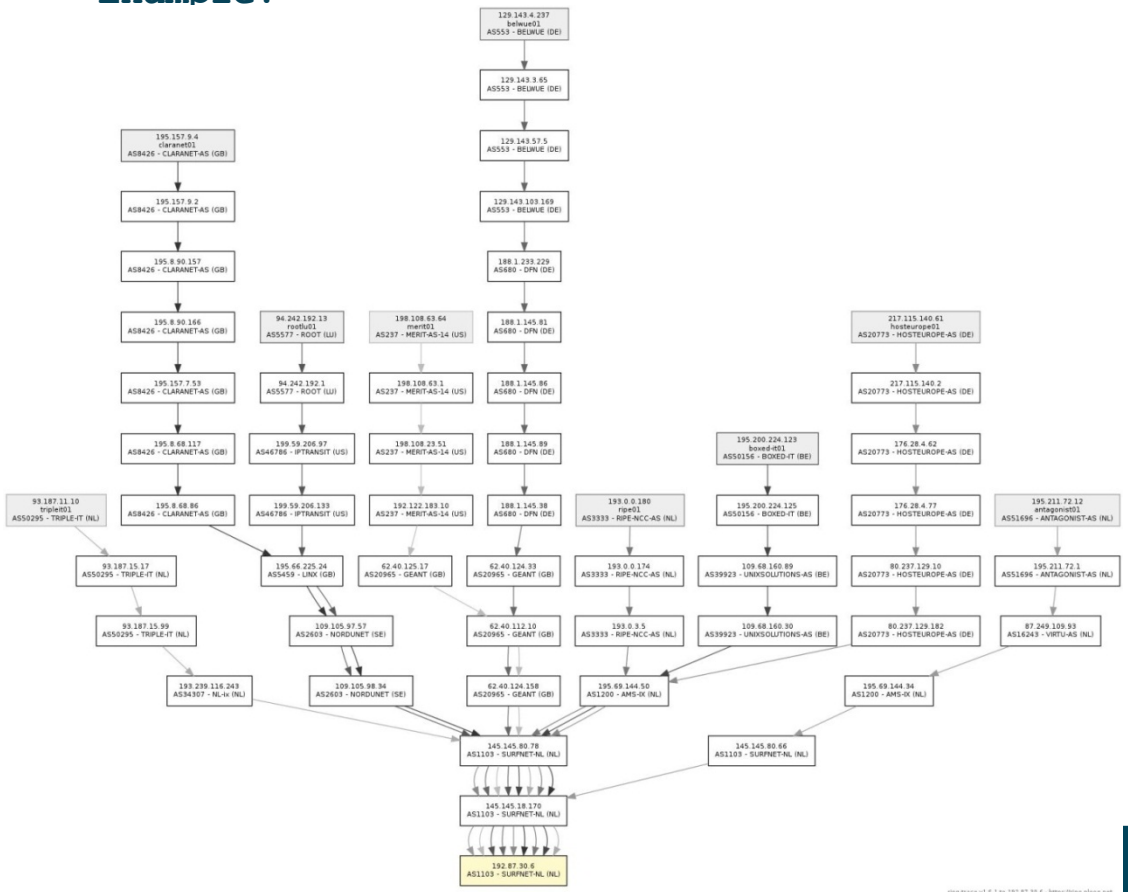
NLNOG RING examples - CLI interface


```
ring-ping [-6v] host
Example:
    poznan@poznan01:~$ ring-ping -v www.terena.org
    sidn01:                          3.934
    fnutt01:                         25.511
    a2binternet01:                   2.007
    melbourne01:                     16.713
    digiweb01:                       17.661
    …
    ring-ping www.terena.org
    connect: Network is unreachable
    www.terena.org - 173 servers: 44ms average
    www.terena.org - unreachable via: nlnetlabs01
    ssh connection failed: atrato01 bahnhof01 bci01 digmia01
    occaid01 solnet01 teamix0
```

NLNOG RING examples - CLI interface

```
ring-trace  -c -B -n 10 www.terena.org
```

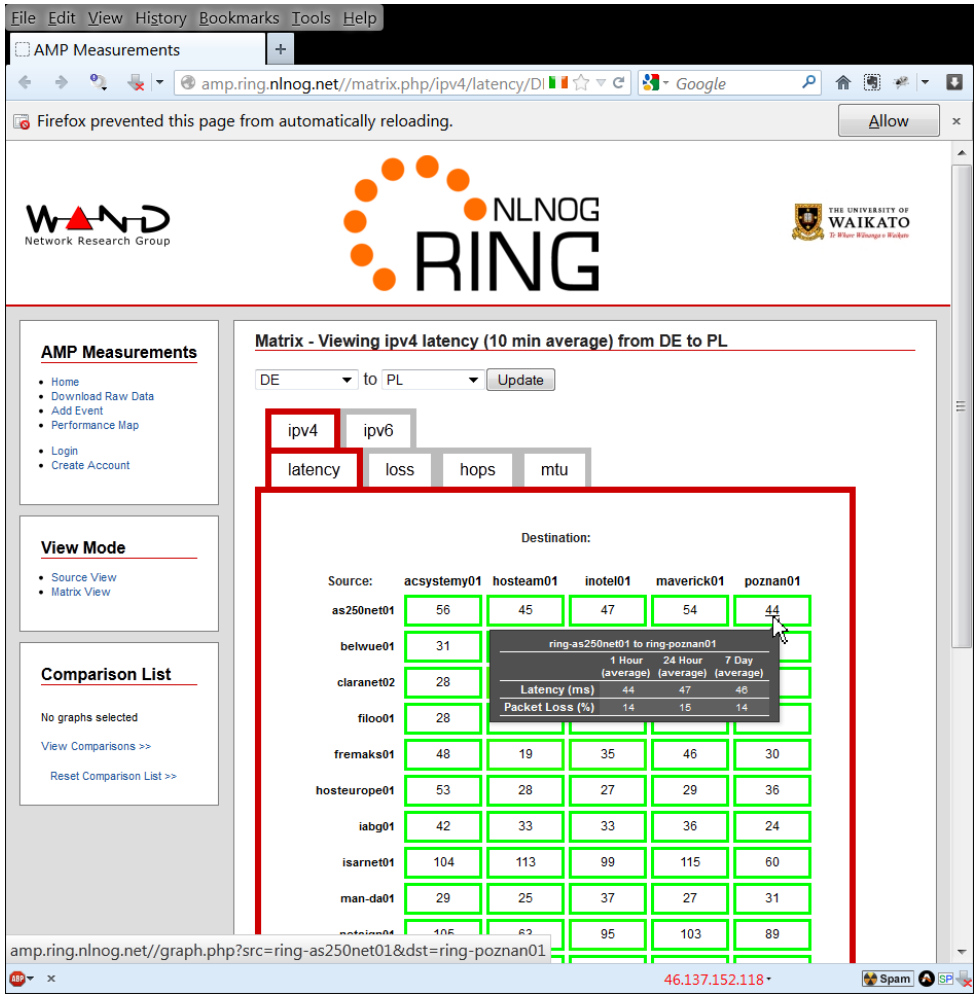
Example:



NLNOG RING examples - Distributed Smokeping

- AMP (AcIve Measurement Project)
- Developed by WAND Network Research Group
- http://amp.ring.nlnog.net/
  - *Ping*
  - *Historic Traceroutes*
  - *MTU testing*
  - *Jitter*
  - *loss, etc*

NLNOG RING examples - Distributed Smokeping



RIPE Atlas

- Tiny device
- USB powered
- ETH RJ45 connector
- Run measurements and reports these to the data collection components
  - *Configuration with DHCP*
  - *IPv6 enabled, IPv4 required*
  - *4-6 Kbps of bandwidth*

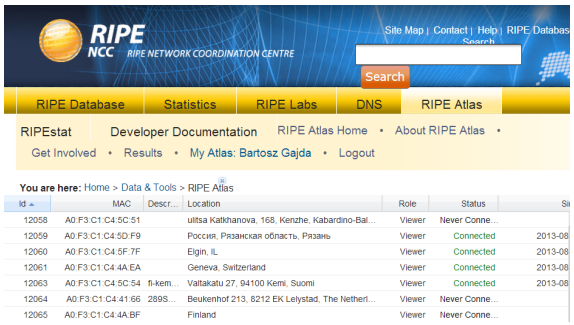
RIPE Atlas

- Probes connected to RIPE Atlas: 3869
- Measurements currently running: 1862
- Intended to scale up to many thousands of measurement probes distributed around the globe

https://atlas.ripe.net/results/maps/all-probes/

RIPE Atlas
- measurements

- atlas.ripe.net - web interface to create mesurements and access results
- Open access for all to public probes
- Two types of measurements:
  - *Built-in Measurements*
  - *User defined measurements (UDM)*

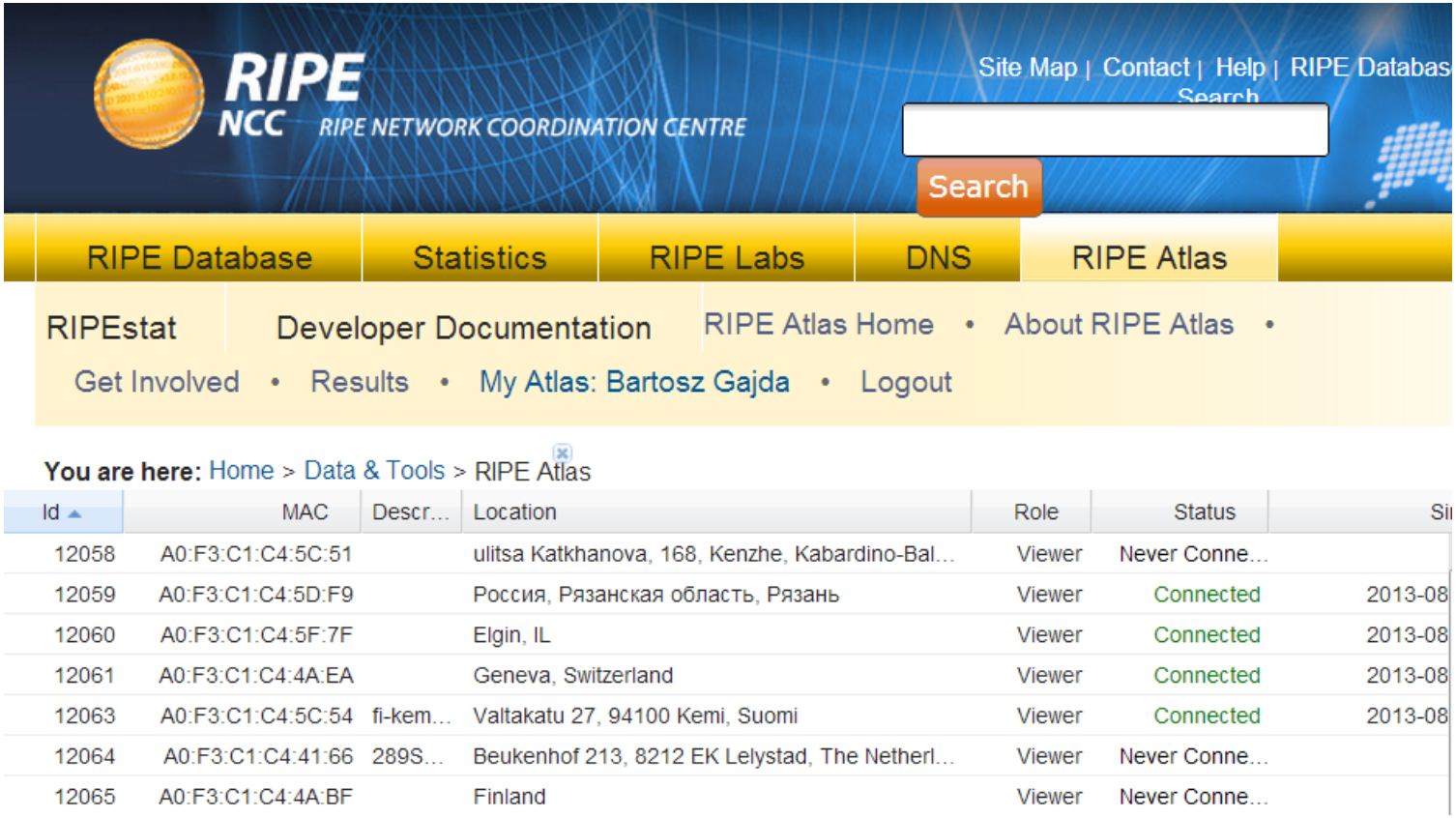


RIPE Atlas
- measurements

- Built-in Measurements
  - *Data available to everyone: maps, tables, public probes data and API to download raw data*
  - *Ping, traceroute, DNS querries towards root name servers and RIPE infrastructure*
- User defined measurements (UDM)
  - *Avialable for hosts and RIPE NCC members*
  - *Ping, Ping6, Traceroute, Traceroute6, DNS, DNS6, SSLCert, SSLCert6*
  - *You can make your UDM public*

RIPE Atlas
- measurements

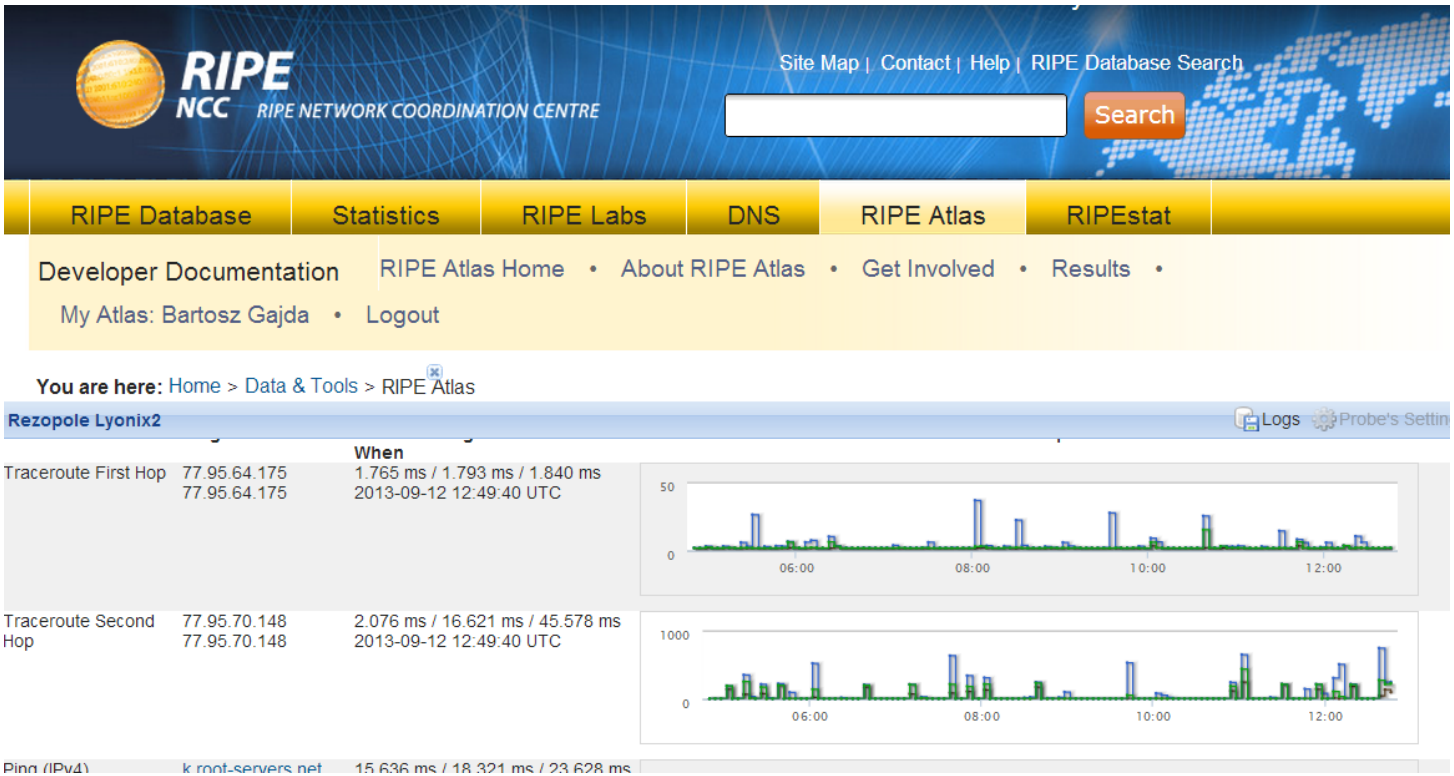
- User defined measurements (UDM)



Id	MAC	Descr…	Location	Role	Status	Si
12058	A0:F3:C1:C4:5C:51		ulitsa Katkhanova, 168, Kenzhe, Kabardino-Bal…	Viewer	Never Conne…	
12059	A0:F3:C1:C4:5D:F9		Россия, Рязанская область, Рязань	Viewer	Connected	2013-08
12060	A0:F3:C1:C4:5F:7F		Elgin, IL	Viewer	Connected	2013-08
12061	A0:F3:C1:C4:4A:EA		Geneva, Switzerland	Viewer	Connected	2013-08
12063	A0:F3:C1:C4:5C:54	fi-kem…	Valtakatu 27, 94100 Kemi, Suomi	Viewer	Connected	2013-08
12064	A0:F3:C1:C4:41:66	289S…	Beukenhof 213, 8212 EK Lelystad, The Netherl…	Viewer	Never Conne…	
12065	A0:F3:C1:C4:4A:BF		Finland	Viewer	Never Conne…	

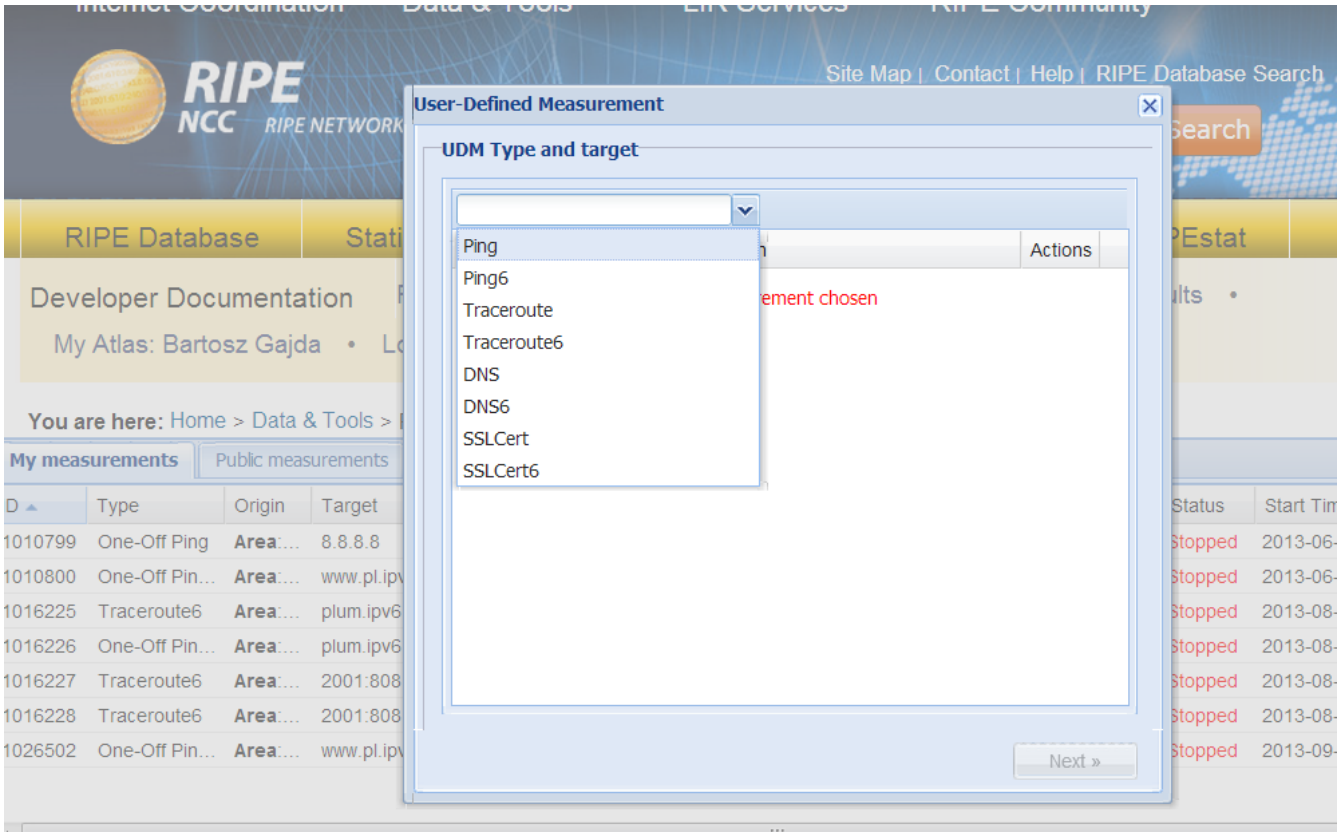
RIPE Atlas - measurements

- User defined measurements (UDM)



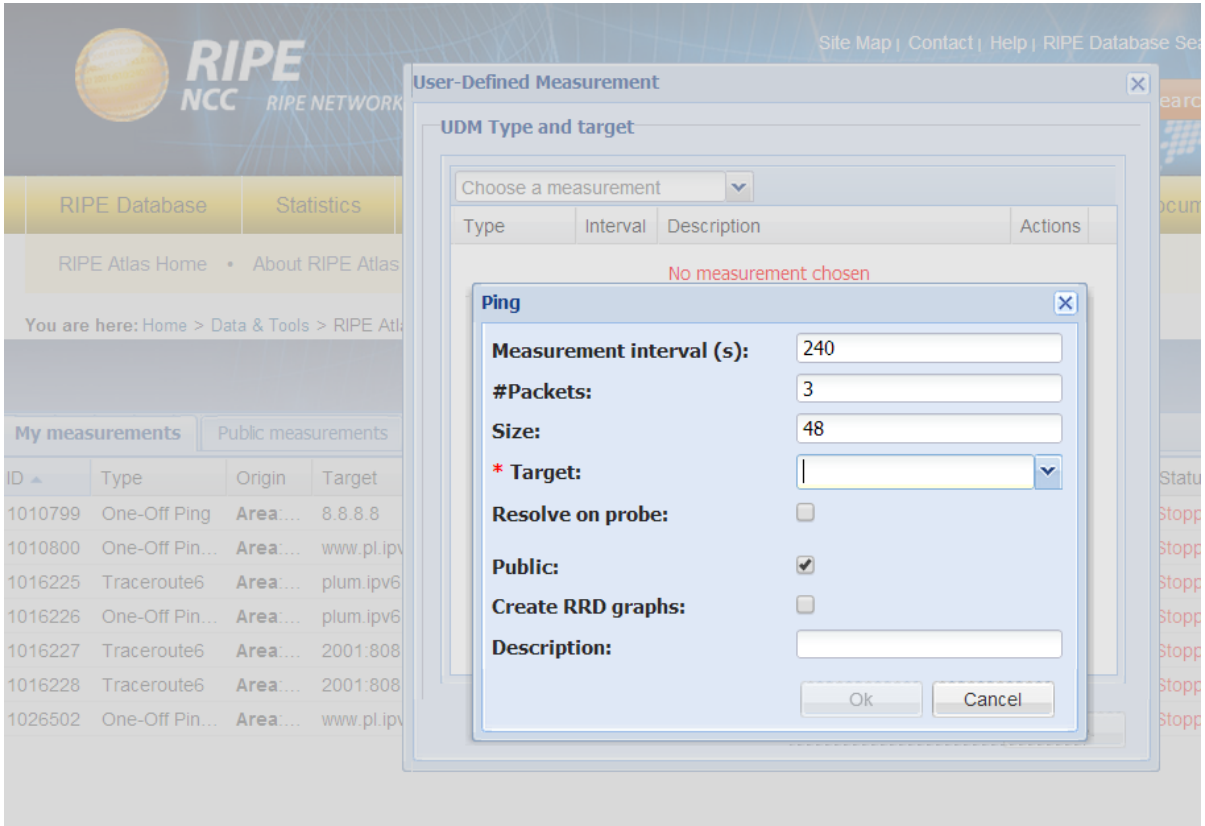
RIPE Atlas
- measurements

- User defined measurements (UDM) – new measurement



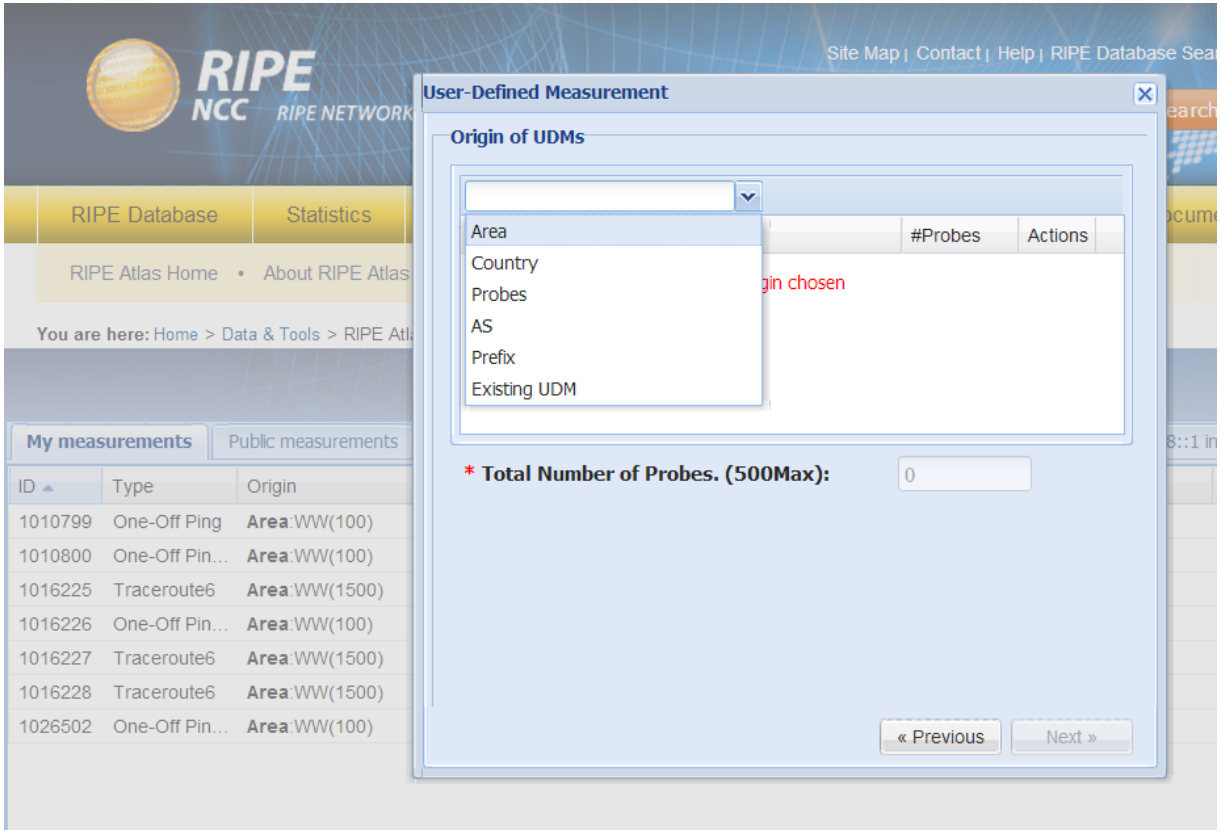
RIPE Atlas
- measurements

- User defined measurements (UDM) – new measurement



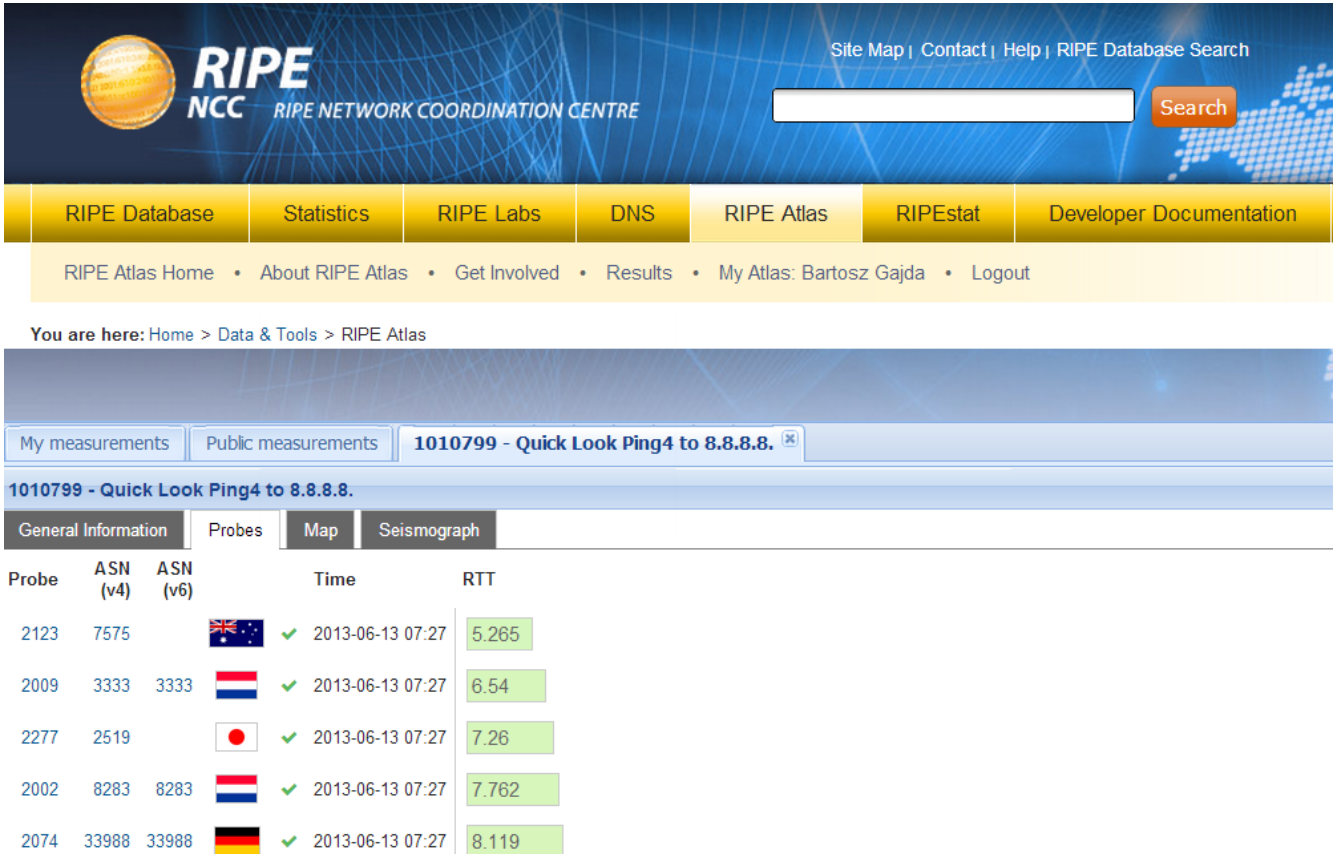
RIPE Atlas
- measurements

- User defined measurements (UDM) – new measurement



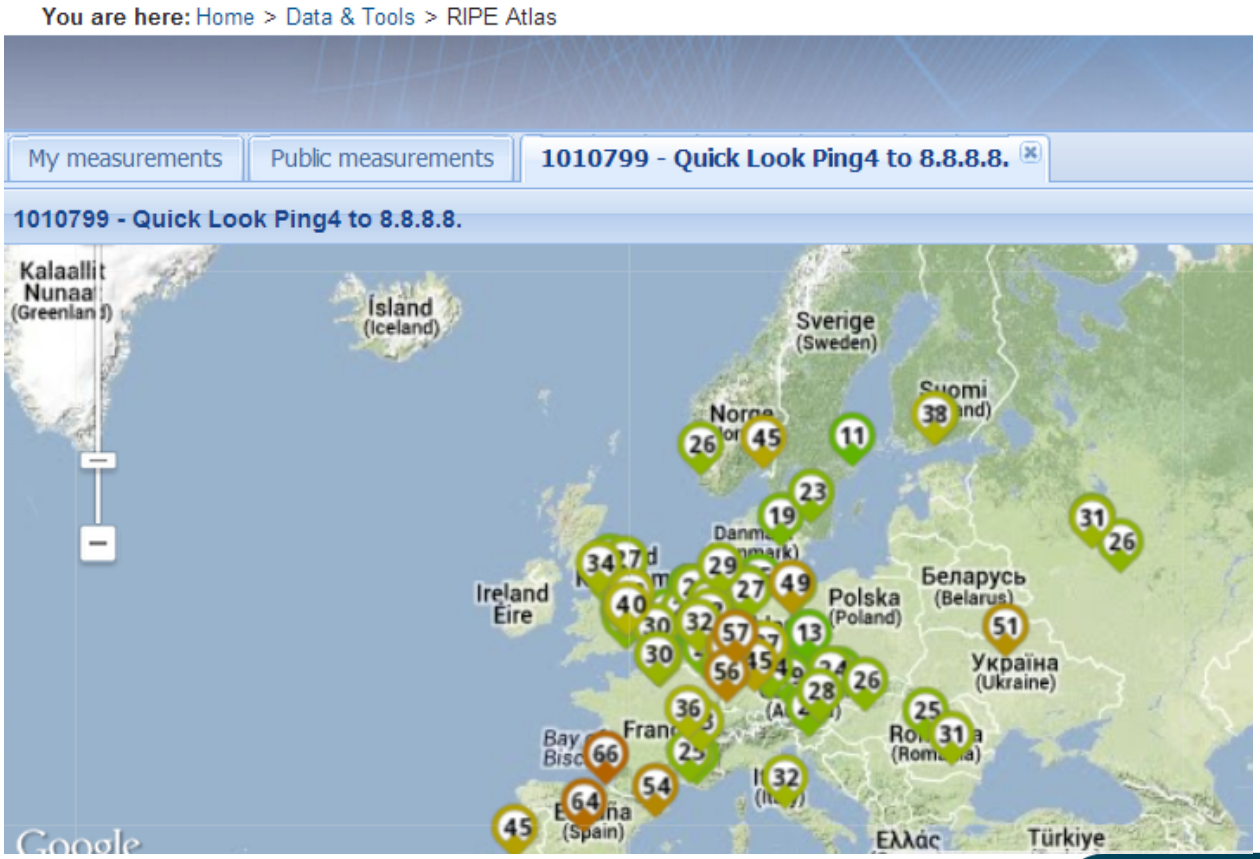
RIPE Atlas - measurements

- User defined measurements (UDM) –measurement results



RIPE Atlas
- measurements

- User defined measurements (UDM) –measurement results



Thank you!