

RIPE Atlas

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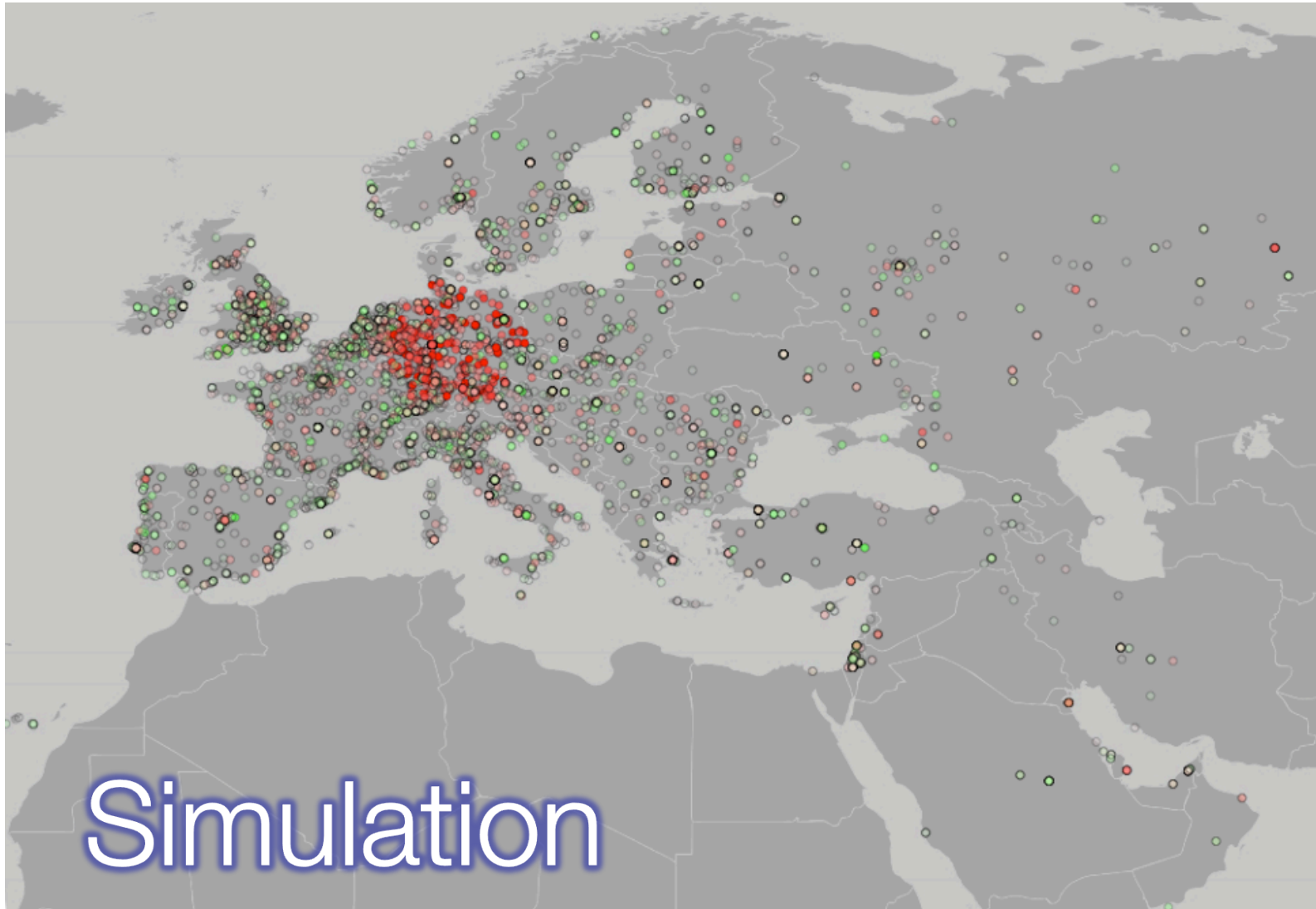


Introduction

RIPE Atlas:

- There are many Atlases, this is *RIPE Atlas*
- next generation Internet measurement network
 - To scale to thousands of measurement nodes
 - Potentially “be everywhere” and ready to run different measurements
 - Started last November, we’re still just building it and exploring possibilities

Intuition: 10k Probes & 1 AS



Probes Deployed Today



Ambitious Community Effort

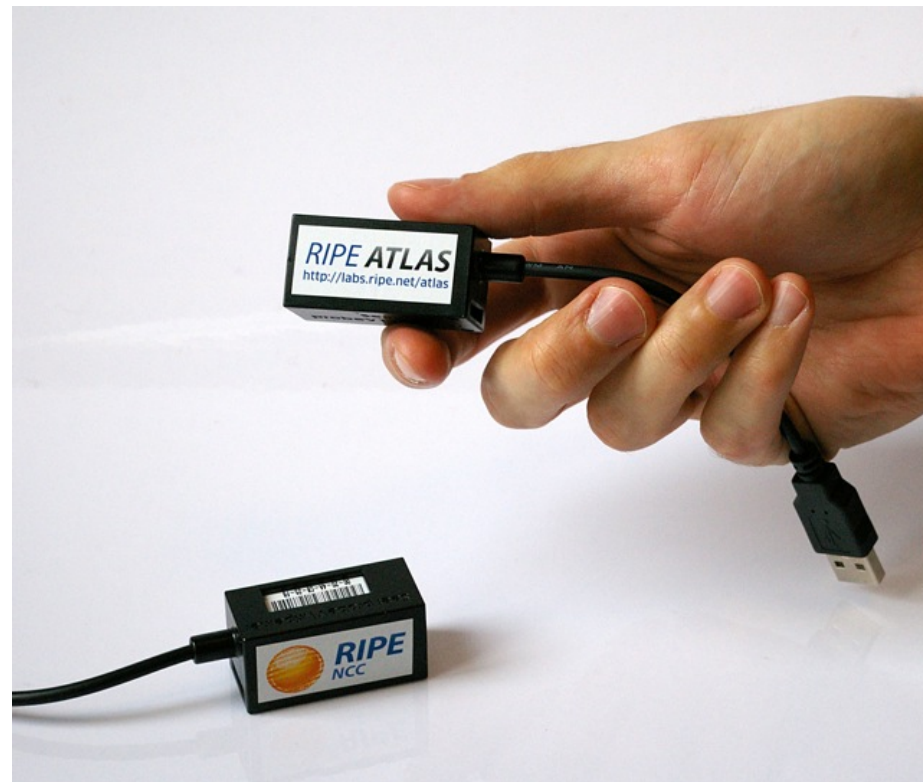
Instead of building small, separate,
individual & private infrastructures,
build a
huge common infrastructure
that serves *both* the private goals
and the community goals.

Ambitious Community Effort

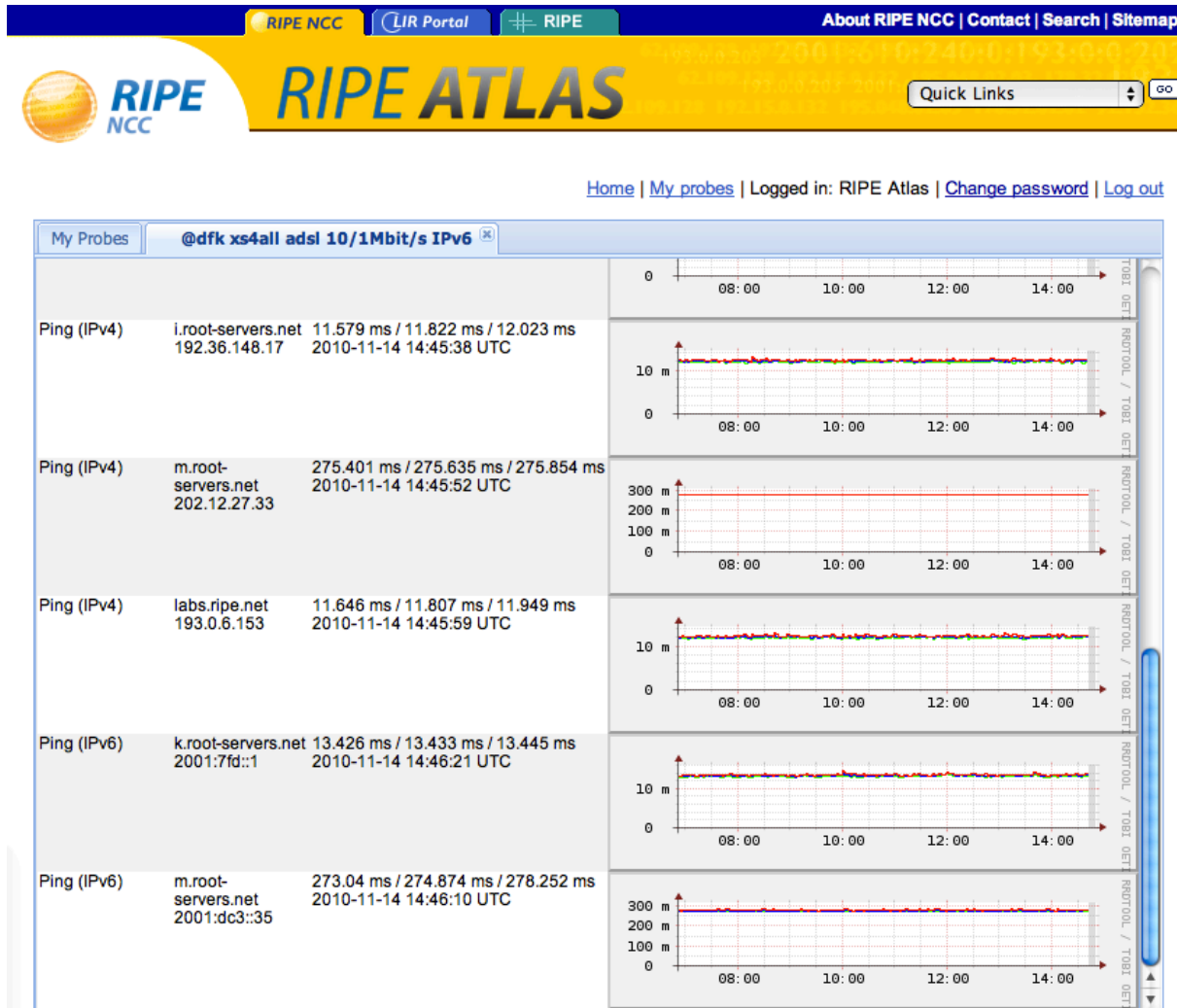
- Individual Benefits
 - Less expensive than rolling your own
 - More vantage points available
 - More data available
- Community Benefits
 - Unprecedented situational awareness
 - Wealth of data, ...

Intuition -> Plan

- For accurate maps we need more probes
- Deploying very many TTM boxes too expensive
- Smaller probes
- Easily deployable
- USB powered
- 24 x 365 capable

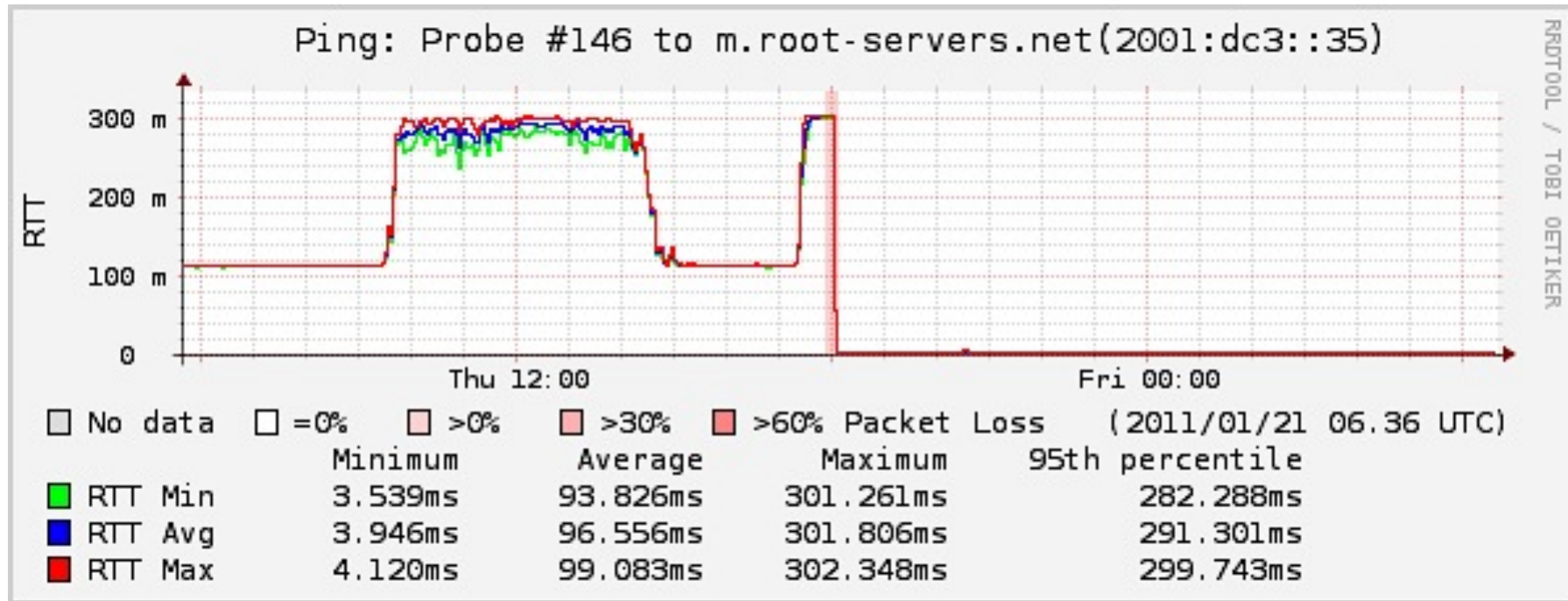


What you see is what you get



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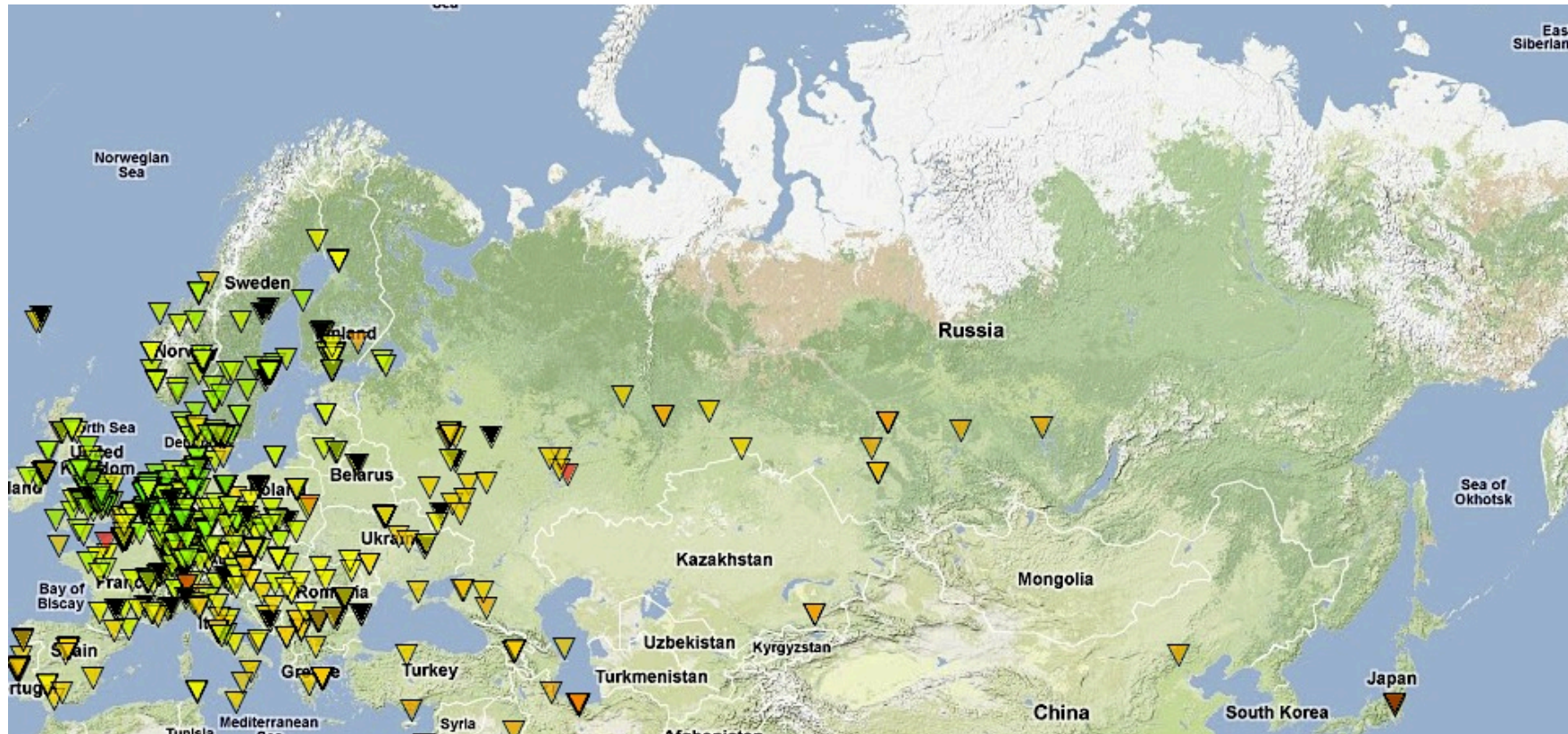
What you see is what you get



How we see labs.ripe.net (IPv4 RTT)

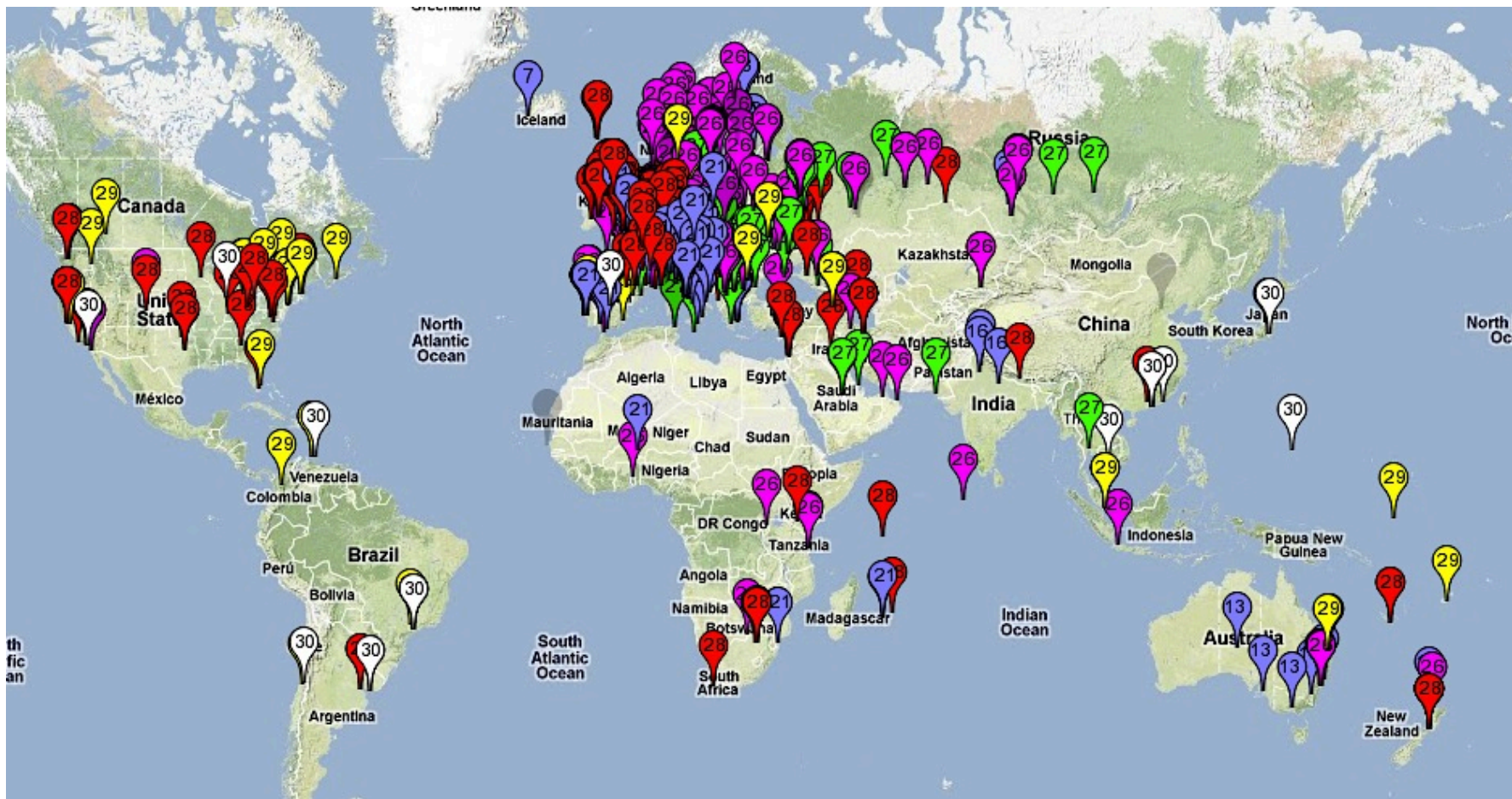


How we see labs.ripe.net (IPv4 RTT)



New Features of RIPE Atlas

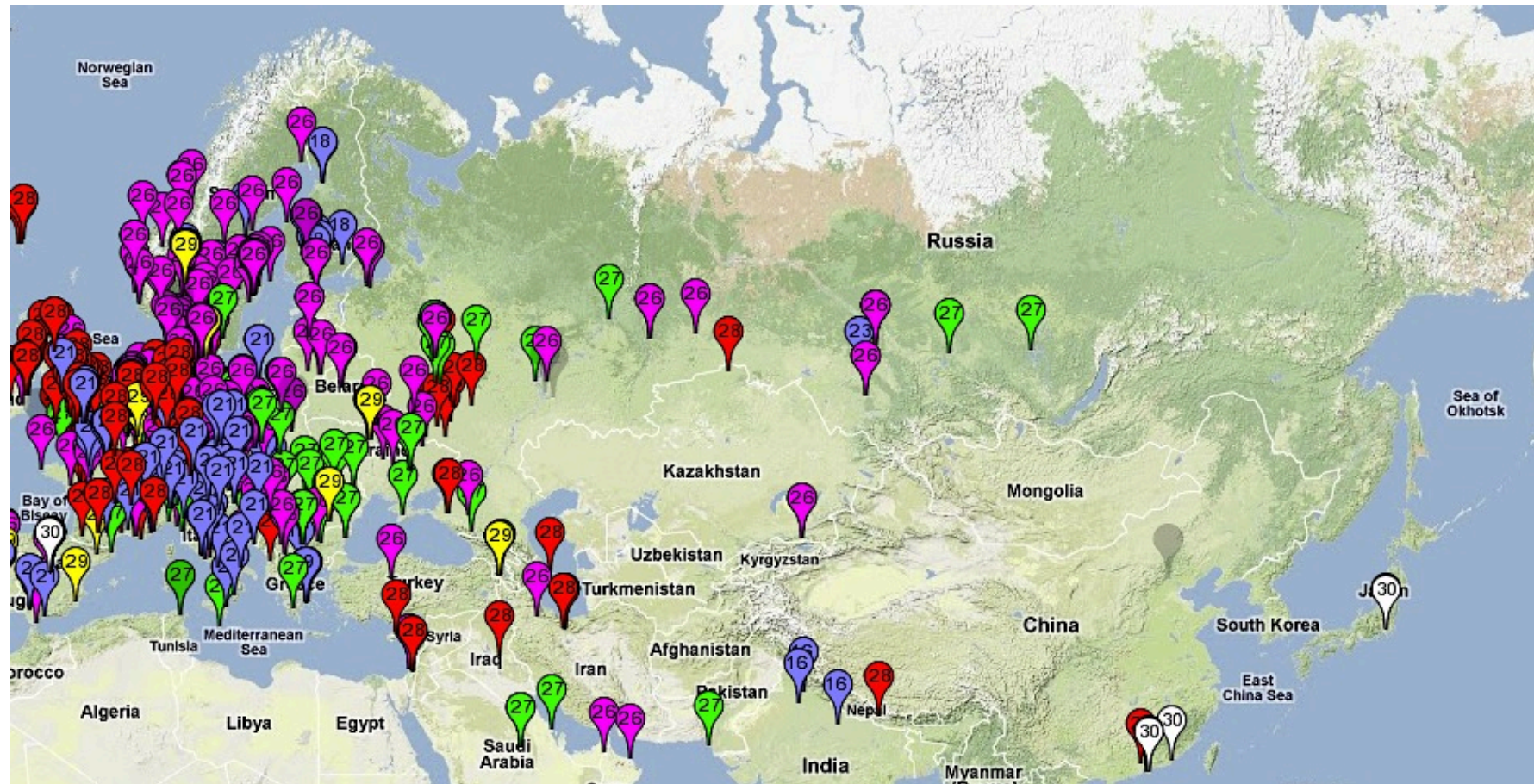
DNS anycast checks (k-root)



(purple: ams-ix, green: denic, red: linx, yellow: nap, white: tokyo, blue: other)

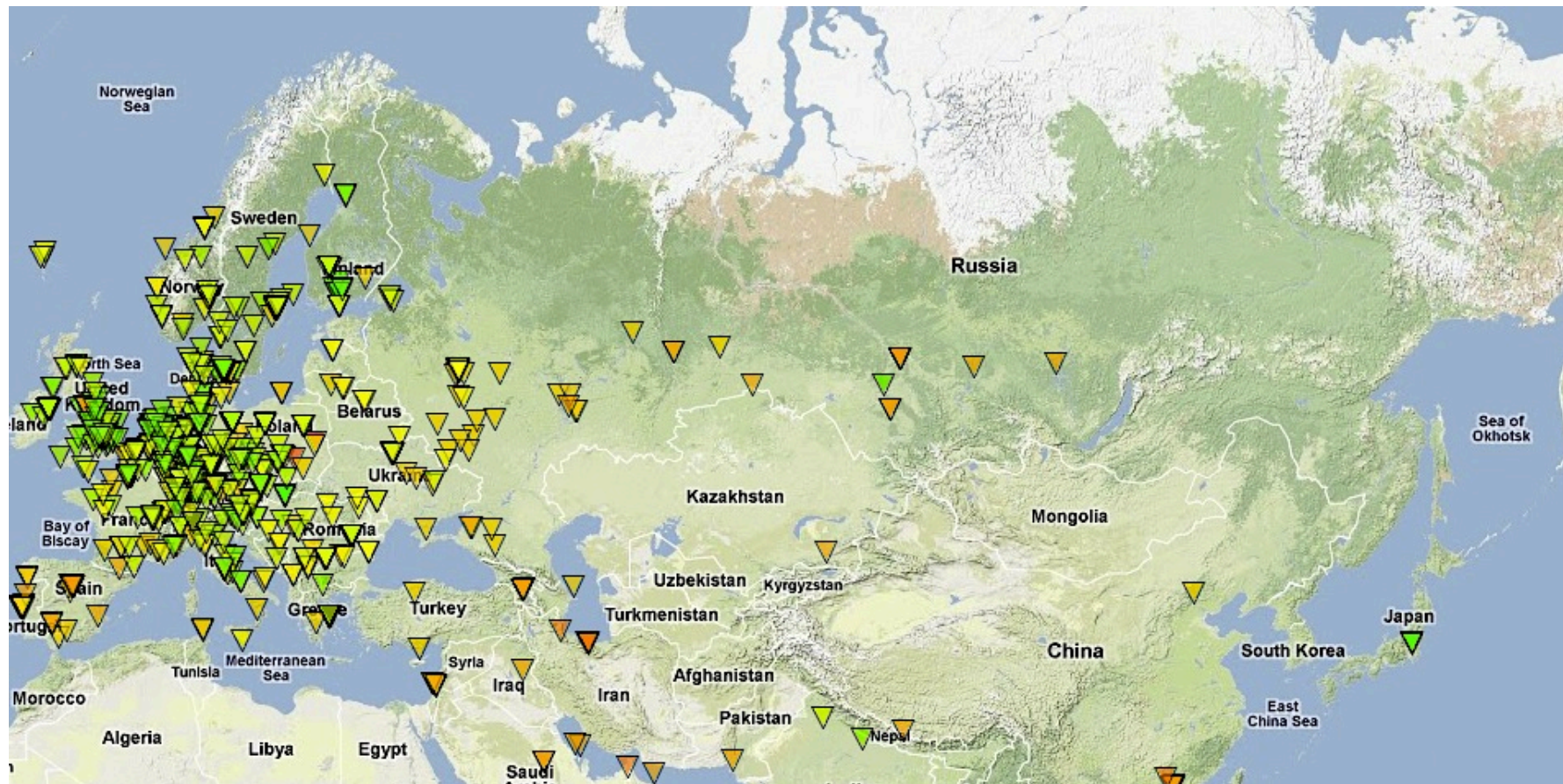
New Features of RIPE Atlas

DNS anycast checks (k-root)



(purple: ams-ix, green: denic, red: linx, yellow: nap, white: tokyo, blue: other)

How we see k.root-servers.net (IPv4 RTT)



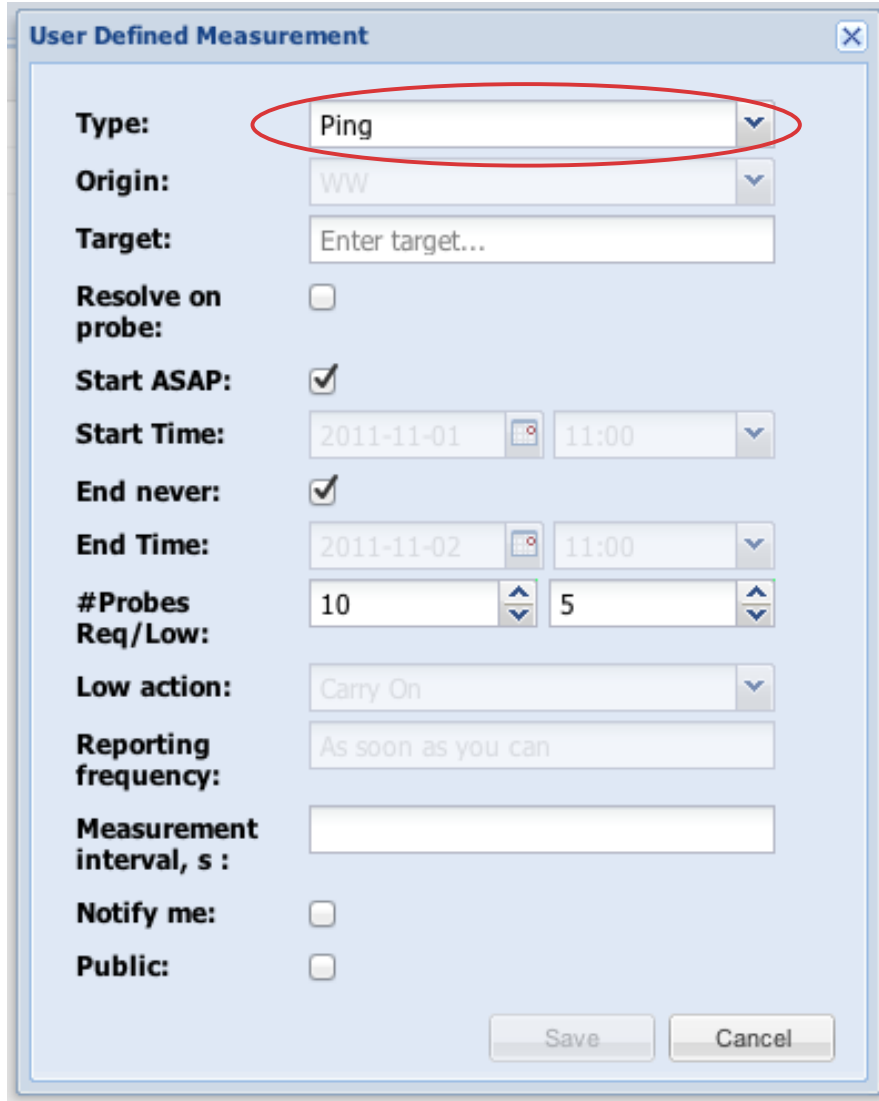
User Defined Measurements

Strategy:

- Start with a basic set of variables that can be set by the user
- Enable more and more features over time
- Allow more and more resource usage over time
- Add more measurement types – based on user demand

All of this ties into the “credit system”.

Specify Your Measurement...



The screenshot shows a 'User Defined Measurement' dialog box with the following fields and values:

- Type:** Ping (highlighted with a red oval)
- Origin:** WW
- Target:** Enter target...
- Resolve on probe:**
- Start ASAP:**
- Start Time:** 2011-11-01 11:00
- End never:**
- End Time:** 2011-11-02 11:00
- #Probes Req/Low:** 10 / 5
- Low action:** Carry On
- Reporting frequency:** As soon as you can
- Measurement interval, s:** (empty)
- Notify me:**
- Public:**

Buttons: Save, Cancel

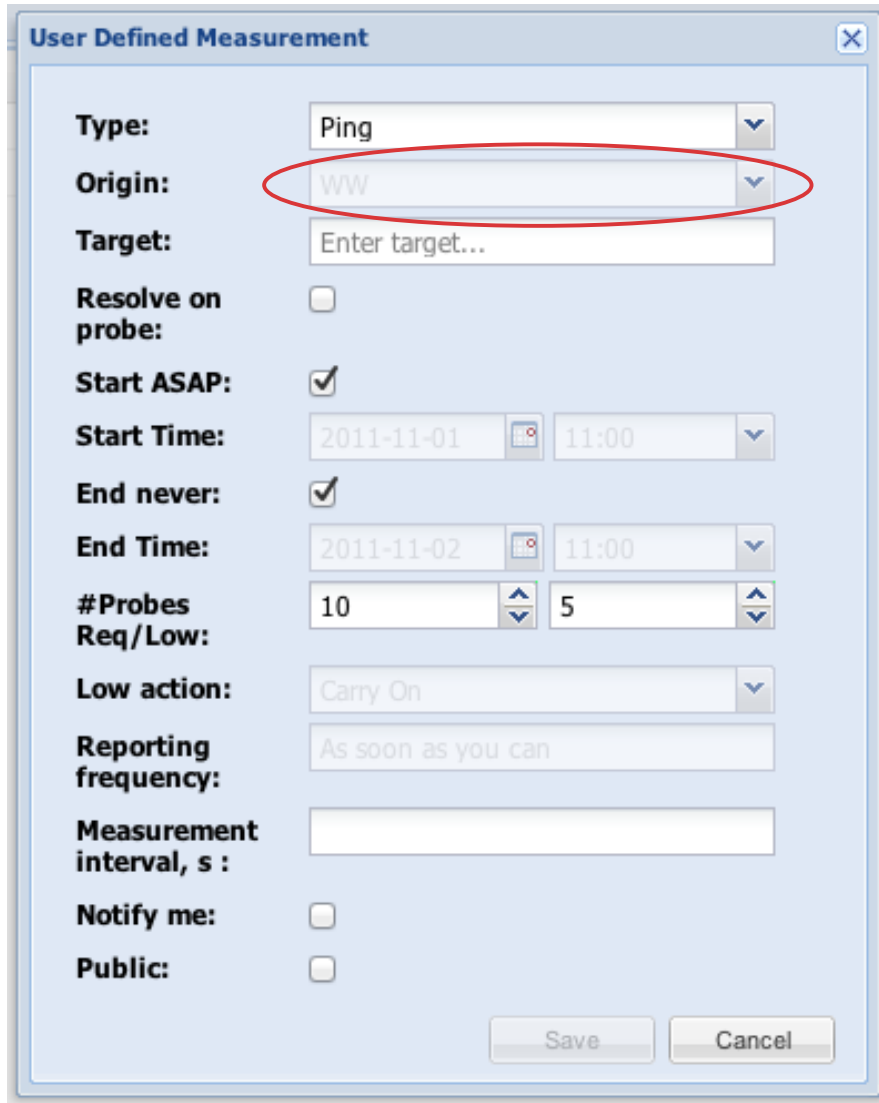
Currently:

- Ping: v4/v6
- Traceroute: v4/v6

Coming up:

- DNS query
- Others (later)

Specify Your Measurement...



User Defined Measurement

Type: Ping

Origin: WW

Target: Enter target...

Resolve on probe:

Start ASAP:

Start Time: 2011-11-01 11:00

End never:

End Time: 2011-11-02 11:00

#Probes Req/Low: 10 5

Low action: Carry On

Reporting frequency: As soon as you can

Measurement interval, s:

Notify me:

Public:

Save Cancel

Currently:

- Worldwide

Coming up:

- From a region
- From a country
- From an AS
- From a prefix
- From a probe

Specify Your Measurement...

User Defined Measurement

Type: Ping

Origin: WW

Target: Enter target...

Resolve on probe:

Start ASAP:

Start Time: 2011-11-01 11:00

End never:

End Time: 2011-11-02 11:00

#Probes: 10

Req/Low: 5

Low action: Carry On

Reporting frequency: As soon as you can

Measurement interval, s:

Notify me:

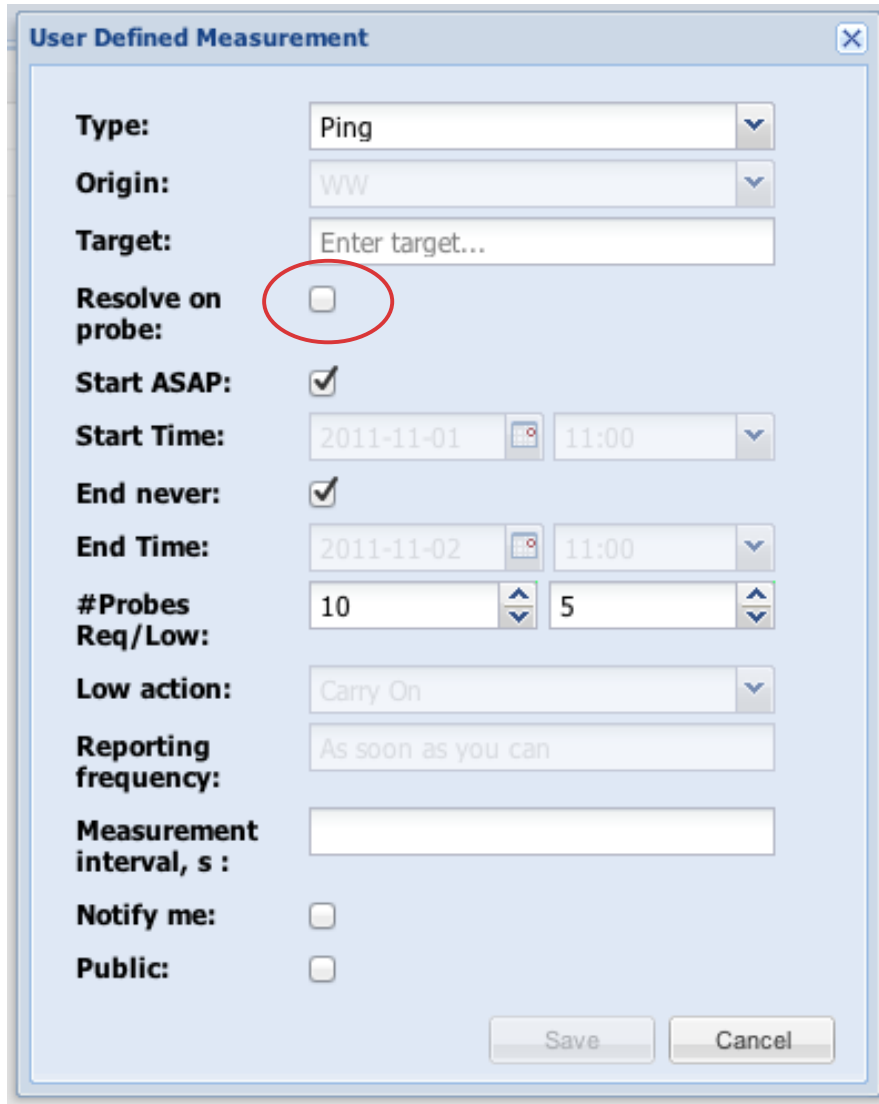
Public:

Save Cancel

Currently:

- IP or name

Specify Your Measurement...



The screenshot shows a 'User Defined Measurement' dialog box with the following fields and options:

- Type: Ping
- Origin: WW
- Target: Enter target...
- Resolve on probe: (circled in red)
- Start ASAP:
- Start Time: 2011-11-01 11:00
- End never:
- End Time: 2011-11-02 11:00
- #Probes Req/Low: 10 / 5
- Low action: Carry On
- Reporting frequency: As soon as you can
- Measurement interval, s: [empty field]
- Notify me:
- Public:

Buttons: Save, Cancel

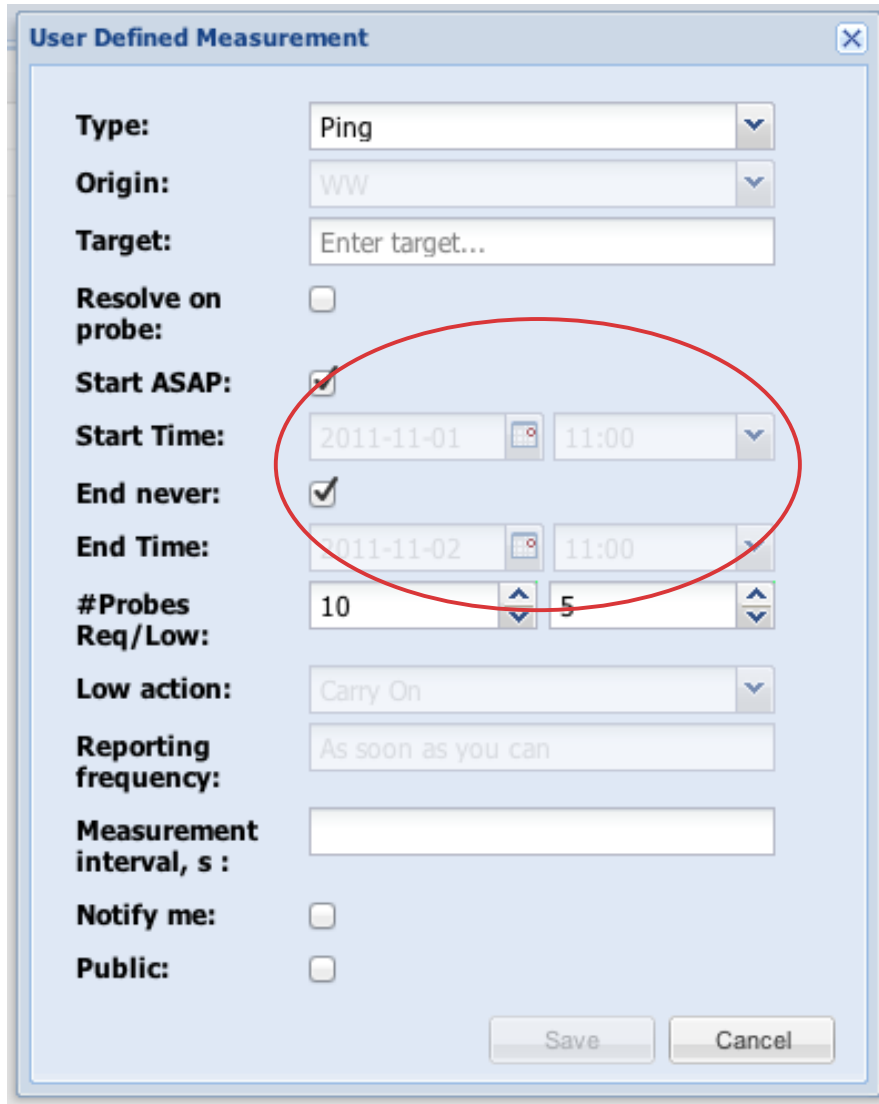
Resolve centrally:

- Probes get IP as destination

Resolve on probe:

- Each probe resolves independently

Specify Your Measurement...



User Defined Measurement

Type: Ping

Origin: WW

Target: Enter target...

Resolve on probe:

Start ASAP:

Start Time: 2011-11-01 11:00

End never:

End Time: 2011-11-02 11:00

#Probes: 10

Req/Low: 5

Low action: Carry On

Reporting frequency: As soon as you can

Measurement interval, s:

Notify me:

Public:

Save Cancel

- Controlling when and how long the measurement should run

Specify Your Measurement...

User Defined Measurement

Type: Ping

Origin: WW

Target: Enter target...

Resolve on probe:

Start ASAP:

Start Time: 2011-11-01 11:00

End never:

End Time: 2011-11-02 11:00

#Probes Req/Low: 10 5

Low action: Carry On

Reporting frequency: As soon as you can

Measurement interval, s:

Notify me:

Public:

Save Cancel

How many probes?

- Requested
 - I'd like to have this many
- Minimum
 - Low threshold for further action
- Low action (later):
 - What to do at low threshold

Specify Your Measurement...

User Defined Measurement

Type: Ping

Origin: WW

Target: Enter target...

Resolve on probe:

Start ASAP:

Start Time: 2011-11-01 11:00

End never:

End Time: 2011-11-02 11:00

#Probes Req/Low: 10 5

Low action: Carry On

Reporting frequency: **As soon as you can**

Measurement interval, s:

Notify me:

Public:

Save Cancel

How often to report?

- Currently:
 - ASAP
- Later:
 - It does not have to be real-time

Specify Your Measurement...

User Defined Measurement

Type: Ping

Origin: WW

Target: Enter target...

Resolve on probe:

Start ASAP:

Start Time: 2011-11-01 11:00

End never:

End Time: 2011-11-02 11:00

#Probes Req/Low: 10 5

Low action: Carry On

Reporting frequency: As soon as you can

Measurement interval, s :

Notify me:

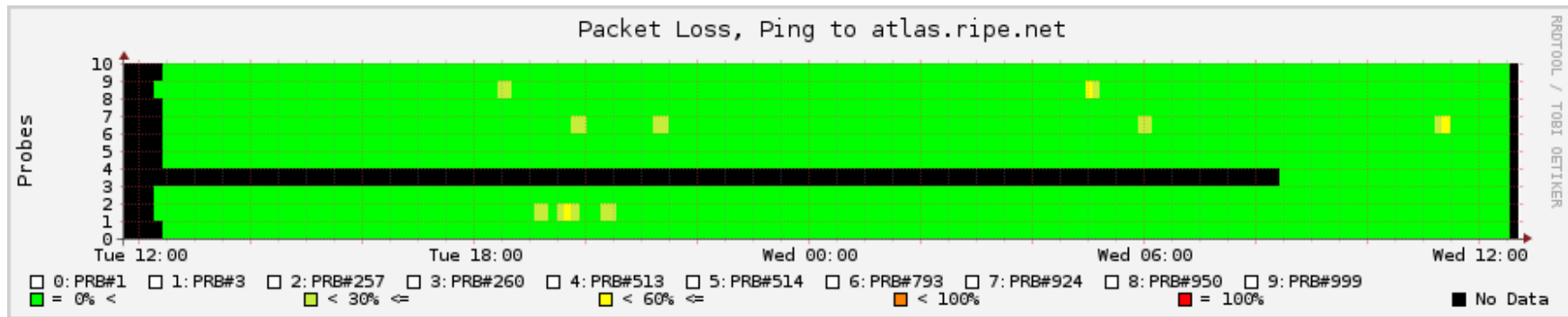
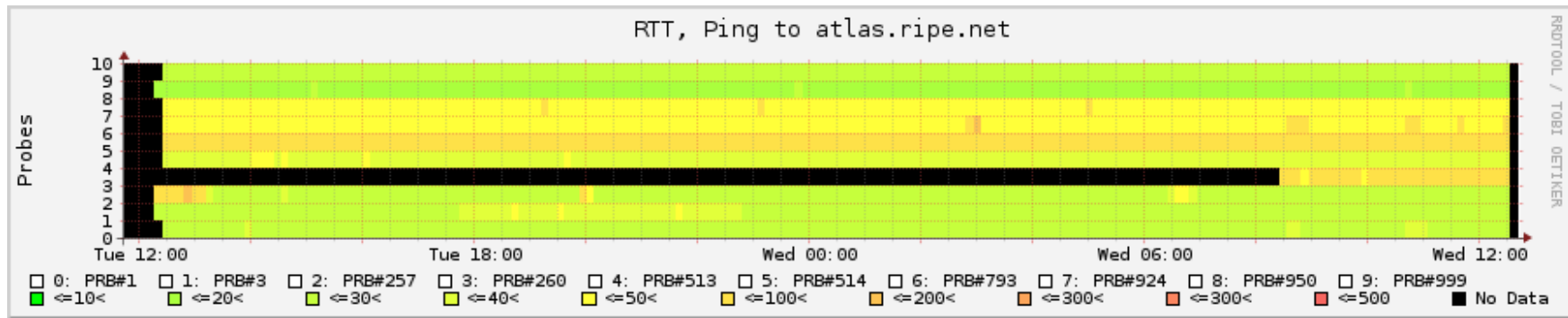
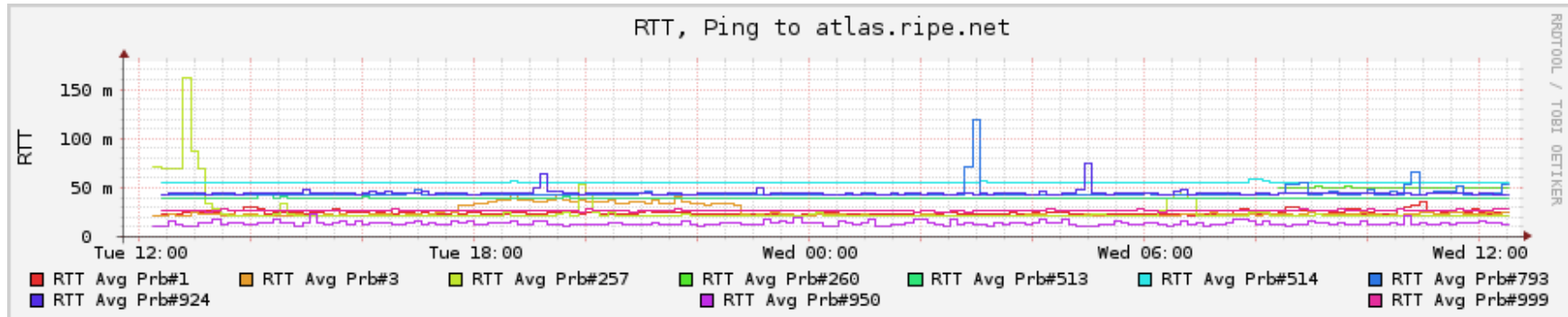
Public:

Save Cancel

Other:

- Decrease measurement frequency
- Notify me if something happens
- Make data public

Results of a “ping” UDM



RIPE Atlas - The Road Ahead

We're starting to test UDM in real life. If you're interested in beta-testing:

- Drop a mail to atlas-dev@ripe.net
- We'll likely have more beta testers than we can handle...

RIPE Atlas - The Road Ahead

Planned next steps include:

- Real-time access to (raw) data
- APIs to interact with the system
- Automatic alerts and notifications
- ...
- Your preferences?

Hosting = Credits = Measurements

- We cannot be everywhere without your help

Become a probe host!

- Donate a fraction of your bandwidth
- Donate a very small amount of electricity

You get:

- Recognition
- Access to fixed measurements from your probe
- Credits = Measurements **from any probe**

Sponsorship = Credits = Measurements

- 50k probes too expensive for RIPE NCC alone
- Sponsorship Plans:

2K €	8 probes
4K €	16 probes
	...
64K €	256 probes

- Recognition and **many more credits**
- Access to fixed measurements from probes **s** now
- Credits = Measurements **from any probe**

Sponsorship = Credits = Measurements

- 50k probes too expensive for RIPE NCC alone

- Sponsorship Plans:

that is 2048€	2K €	8 probes
	4K €	16 probes
geek compatible pricing SM		...
	64K €	256 probes

- Recognition and **many more credits**
- Access to fixed measurements from probes **s** now
- Credits = Measurements **from any probe**

RIPE Atlas community effort

Remember the individual and community benefits:

- Wealth of data collected and available for you and for the community
- Based on fixed measurements and UDMs
- For situation awareness, monitoring, debugging, ...

Questions?

Ask now

Catch me

Write to ripe-atlas@ripe.net

Visit <http://atlas.ripe.net/>

