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## RIPE Atlas probe for hackerspaces

RIPE Atlas <https://atlas.ripe.net>  is a measurements network consisting of 2000+ HW probes that send pings, traceroutes, DNS queries etc either to fixed targets (root name servers) or do customized measurements by the people who are hosting the probes. Data is made available to everyone, in form of maps and row data; probe hosts can get more details about their own measurements.


(RIPE NCC <http://ripe.net>  is a not-for-profit organisation that coordinates activities that are beneficial for the Internet community and its membership - mostly ISPs and other organisations in Internet business -- activities that require a neutral and impartial organisation to coordinate them. What i'm getting at is that this in not a marketing or sales pitch ;-)


Everyone can host a probe - there are no costs involved.

### Why should you get your probe at 29c3

Getting your probe at 29c3 is a \*better way\* because...


#### RIPE Atlas probes for hackerspaces

I am a Community Builder for RIPE Atlas and organiser of "hackerspaces exchange" workshop at 29c3. [https://events.ccc.de/congress/2012/wiki/Hackerspaces\\_exchange](https://events.ccc.de/congress/2012/wiki/Hackerspaces_exchange) 

My goal is to have one RIPE Atlas probe installed in every hackerspace -- combining work and pleasure ;-). If you want a RIPE Atlas probe, come see me, and have a chat with other people who have the same interests. <https://atlas.ripe.net> 

**Type:** Other

**Person organizing** [User:Becha](#)

**Orga contact** [becha@xs4all.nl](mailto:becha@xs4all.nl) 

**Starts at** 2012/12/27 06:30:00 PM

**Ends at** 2012/12/27 07:00:00 PM

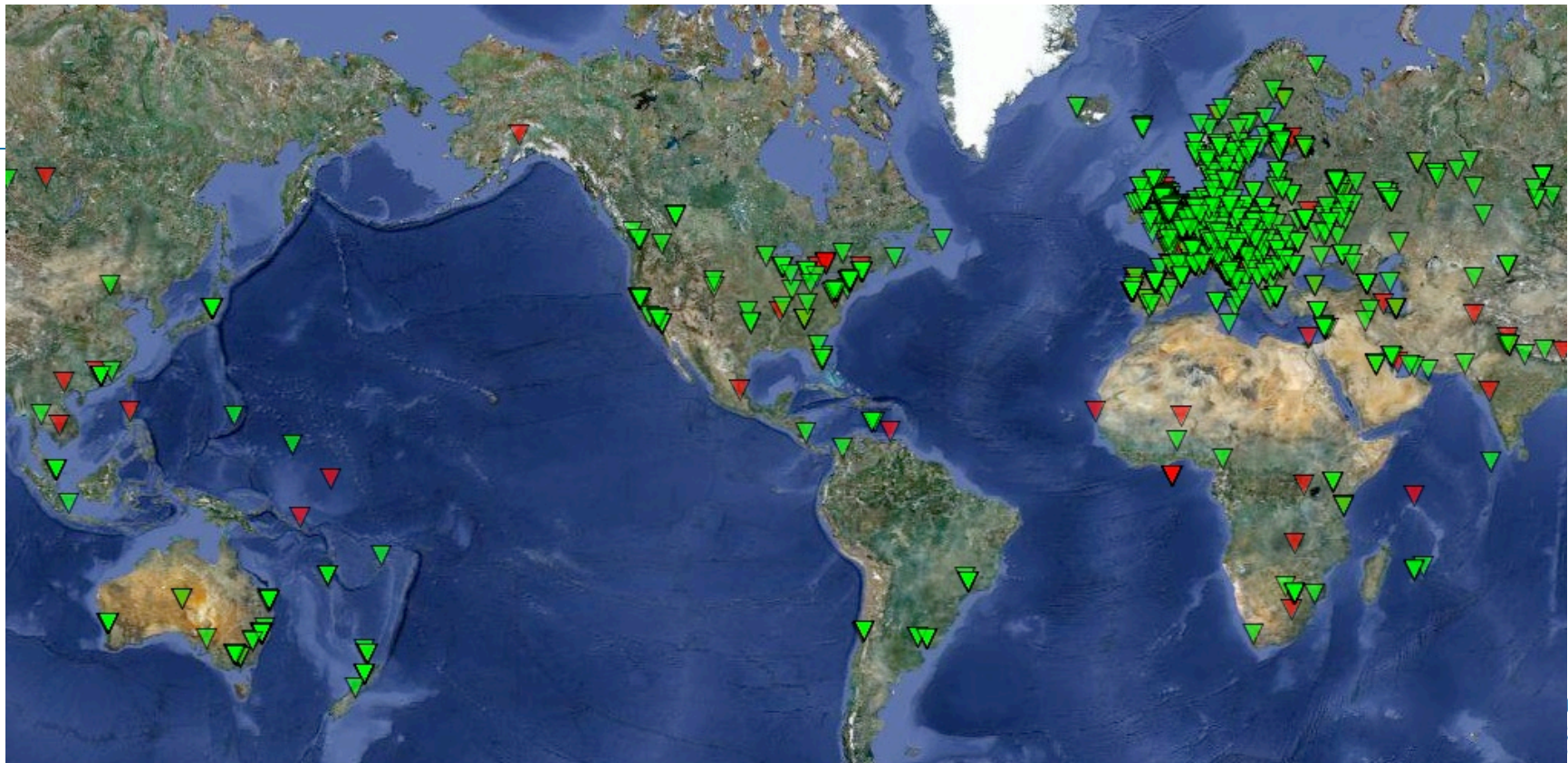
**Duration** 30 minutes

**Location** [Hall 13](#)

# RIPE Atlas

<https://atlas.ripe.net>

- RIPE Atlas: a network of active probes measuring the Internet infrastructure in real-time, since 2010



# Small hardware probes

- For accurate maps we need many measurement nodes
  - Small probes
  - Easily deployable
  - USB powered
  - 24 x 365 capable
- Hosted and sponsored by **you**
  - ISPs, Internet Exchange Points, individuals...



# Technical details of “probes”

- Probe (v1 / generation 1):
  - Lantronix XPortPro
  - Very low power usage
  - 8MB RAM, 16MB flash
  - Runs uClinux
  - No FPU, no MMU, virtually no UI
  - A reboot costs <15 (<5) seconds
  - An SSH connection costs ~30 seconds
  - We can remotely update the firmware



# RIPE Atlas - Security aspects

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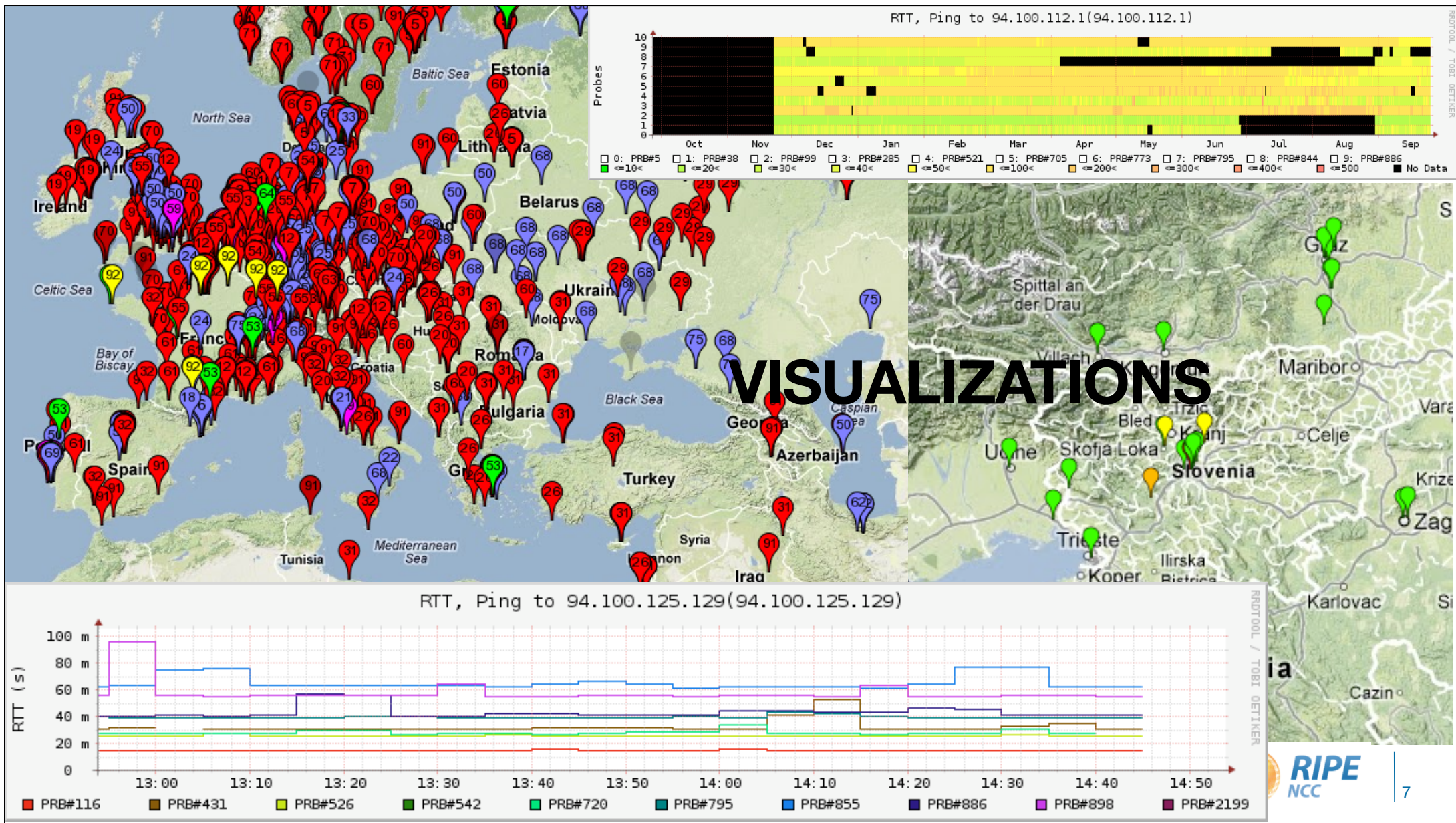
- Probes have hardwired trust material  
(registration server addresses / keys)
- The probes don't have any open ports, they only initiate connections
  - This works fine with NATs too
- Measurements are scheduled by centralized “command servers”
  - via reverse ssh tunnels
- Probes don't listen to local traffic, there are no passive measurements running
  - There's no snooping around



## RIPE Atlas: Now (30-12-2012)

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- **2300+** probes are up and running
- Data of built-in measurements available to **everyone**
  - in forms of maps, tables, public probes data and API to download raw data
- Customized measurements in 4 flavors available to **hosts**
  - ping, traceroute, DNS, SSL: <https://atlas.ripe.net/udm>
- Easy to become a host of the Atlas probe: **apply** now
  - <https://atlas.ripe.net/apply>



## User Defined Measurement

### UDM Type and target

Ping

Ping6

Traceroute

Traceroute6

DNS

DNS6

HTTP

HTTP6

SSLCert

SSLCert6

#### SSLCert

Measurement interval, s:

1800

Port:

Public:



Do not visualise:



Description:

Ok

Cancel

#### DNS

Measurement interval, s:

300

UDP Reply bytes:

512

D0:



TCP query:



NSID:



Use probe's resolver:



Recursion desired:



Query:

IN A

Argument:

Public:



Do not visualise:

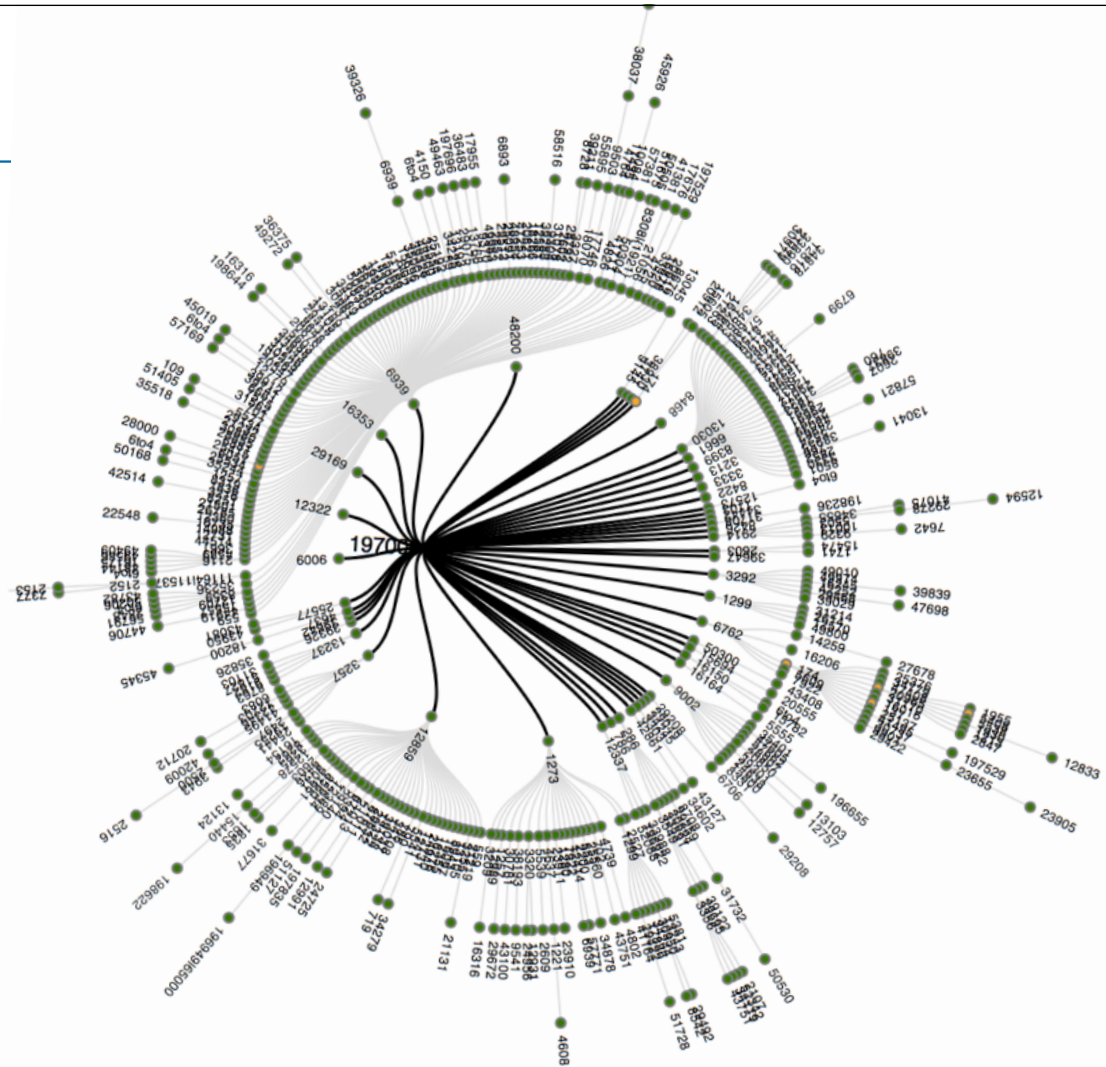


Description:



# RIPE Atlas: for LIRs

- One-click measurement
  - **"Test your IPv6"** is available to members
    - with beautiful interactive visualization of traceroute results:
    - <https://labs.ripe.net/Members/emileaben/visualise-your-ipv6-connectivity-using-ripe-atlas>



## Introducing RIPE Atlas Anchors

- powerful probes and well-known targets
  - pilot started in September 2012
  - goal: ~50 deployed in 2013



# Case-studies of RIPE Atlas usage

- Testing an occasional operational issue to verify DNS responses from a number of widely distributed measurement points:
  - <https://labs.ripe.net/Members/pk/denic-case-study-using-ripe-atlas>
- A Case Study of IPv6 /48 Filtering, Emile Aben
- IPv6 reachability testing before and during World IPv6 Launch
  - <https://labs.ripe.net/Members/becha/world-ipv6-launch-ripe-atlas-use-cases>
- Correlating Routing Configuration Changes with Forwarding Changes
  - [David Lebrun, University of Louvain, Belgium](#)
- Discovering Path MTU Black Holes on the Internet Using RIPE Atlas
  - [Maikel de Boer, Jeffrey Bosma](#)
- **[labs.ripe.net/atlas](https://labs.ripe.net/atlas)**



# RIPE Atlas Roadmap: 2013 Plans

- Migrating **DNSmon** functionality to Atlas and Atlas Anchors
- Improving presentation layer by
  - representing Atlas data in **RIPEstat**
    - possible to customize views, and embed widgets in your dashboard
  - mobile applications for viewing measurements results
- Expanding Atlas with **4000** more probes (TP-link!)
  - ***TechInc members Antony & Philip working on it :)***
- ... and many more features, based on user feedback!
  - anomaly detection - customized notifications
  - HTTP/TCP measurements





The background of the slide features a light blue gradient with faint, stylized, and slightly blurred IP addresses in a lighter blue color. These addresses are arranged diagonally from the top-left towards the bottom-left. Visible fragments include '40:0:80:10', '93.0.19.21.15', '240:11::c100:13', '0:1315 193.0.0.1', and ':240:0:53::193'.

RIPE Atlas community

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# Community Information

General information about Atlas members and their contributions.

- Always Up
- Big Spenders
- New Arrivals

These are the new users in the past ten days. Note that the flags are representative of their probe locations and not necessarily their nationality.



Jack Pennings



BECHA (Xs4all)



Sonny Piers



Kiran Chittimaneni



Ruud Verstijnen



Nikolay Melnikov



Philip Basford



Vegard Haaverstad



Mark Martin

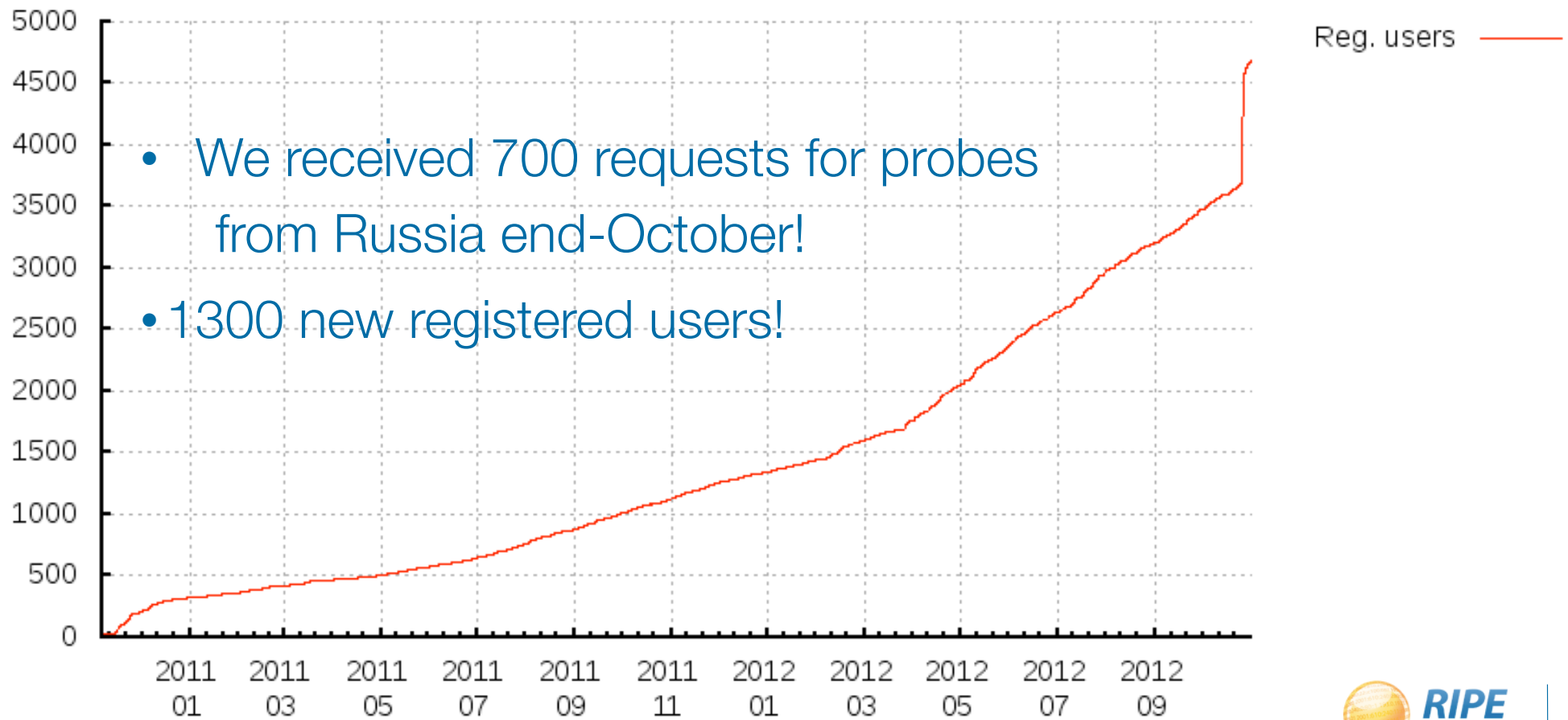


Dorothy Gellert



## “slashdotted” by Russian blog in October

Atlas users 2012-10-31 14:40:16 UTC



# RIPE ATLAS is sponsored by:





# RIPE Atlas: Get in touch!

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- Get a probe: **[atlas.ripe.net/apply](https://atlas.ripe.net/apply)**
- Direct feedback:
  - Mailing list for active users: <**[ripe-atlas@ripe.net](mailto:ripe-atlas@ripe.net)**>
  - Measurement, Analysis and Tools working group
    - <http://www.ripe.net/ripe/wg/mat/>, **[mat-wg@ripe.net](mailto:mat-wg@ripe.net)**
  - Questions (ticketised): **[atlas@ripe.net](mailto:atlas@ripe.net)**
  - **#RIPEAtlas** on Twitter (and/or **@Ms\_Measurements**)
- **<https://atlas.ripe.net>**

## RIPE ATLAS PROBES FOR HACKERSPACES

I am a Community Builder for RIPE Atlas and organiser of ~~hacker spaces~~ **exchange** workshop at 29c3.

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