

# RIPE Atlas

## Continuing Development

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# What is Atlas

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- Next-generation active measurement network
- Geographically spread vantage points
- Small, easily-deployable probes
  - USB powered
  - Hardwired trust material
  - No open ports
  - Don't listen to local traffic
  - Firmware can be remotely updated



# Benefits

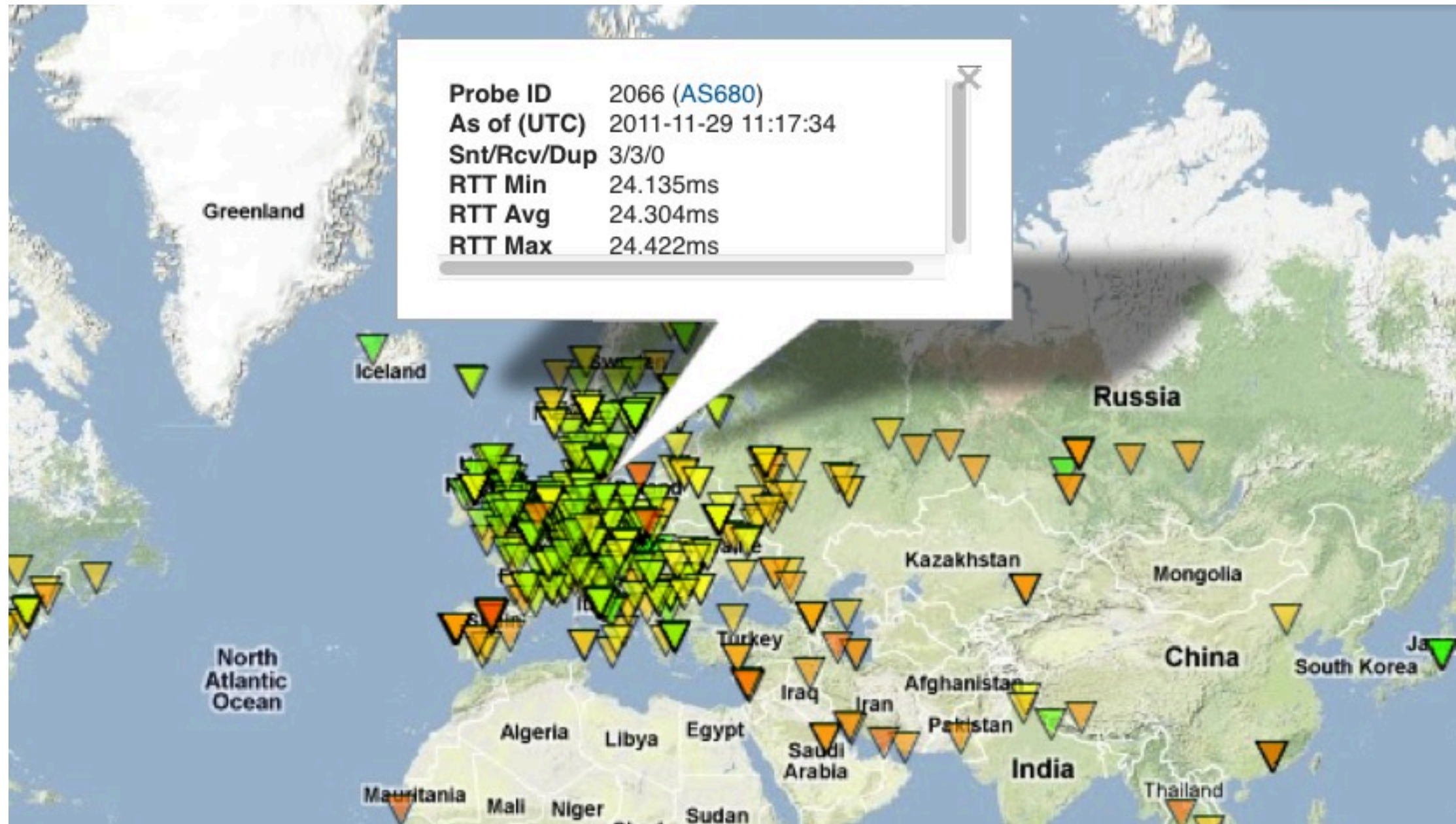
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- More vantage points
- Continuous measurements
- Cost-effective compared to individual efforts
- Independent source
  - Governments: comparative data about connectivity
  - LIRs: detect network abnormalities, optimise
  - Researchers: long baseline for trend analysis
  - Community: new tools based on aggregated data, situational awareness



# Maps

## RTT to Fixed Destinations





# Maps

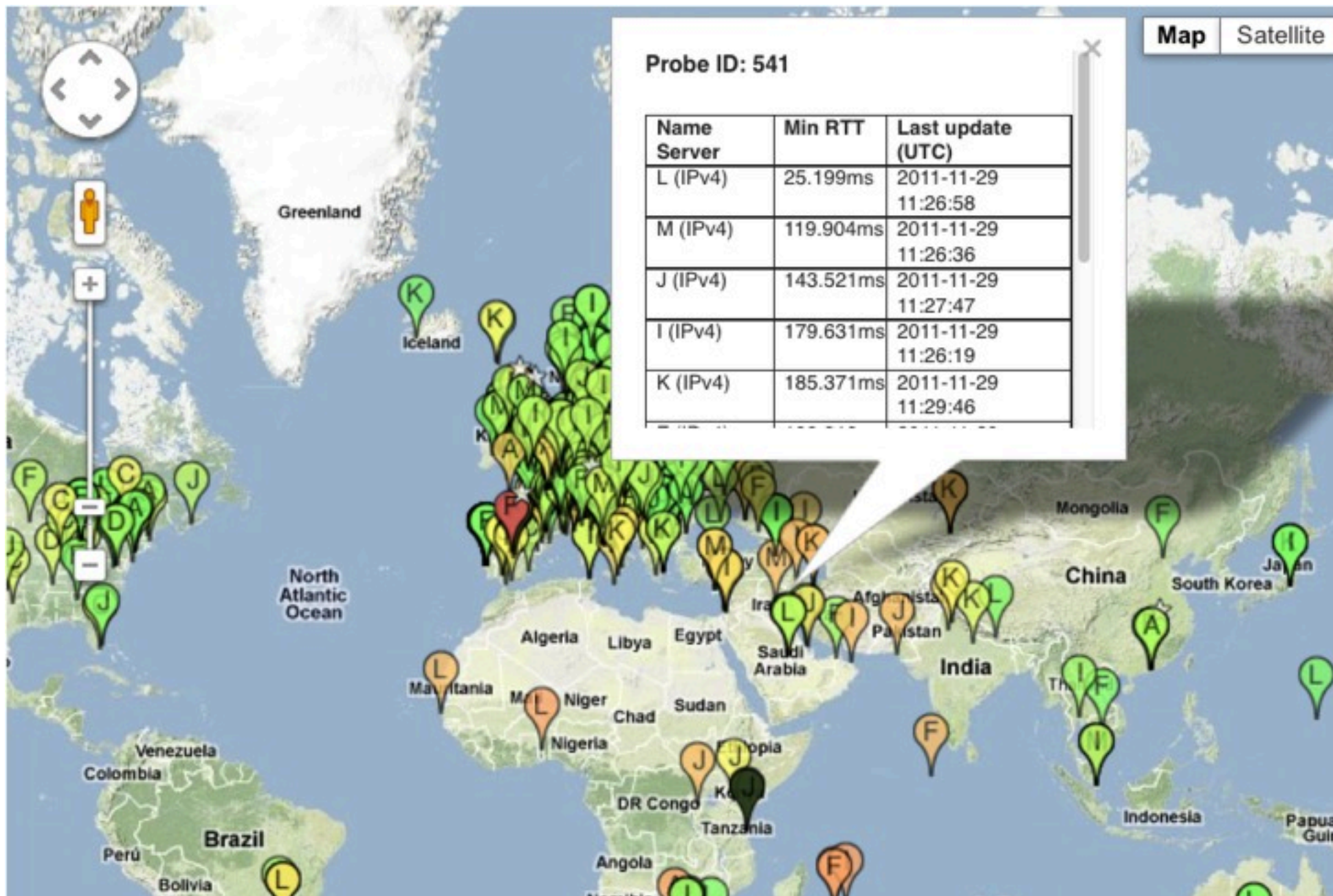
## DNS Anycast Check (c-root)





# Maps

## Comparative DNS Root RTT



# User Defined Measurements (UDM) Strategy

- Start with a small set of variables
- Enable features over time
- Allow more resource usage over time
- Add measurement types based on demand



# UDM Implementation

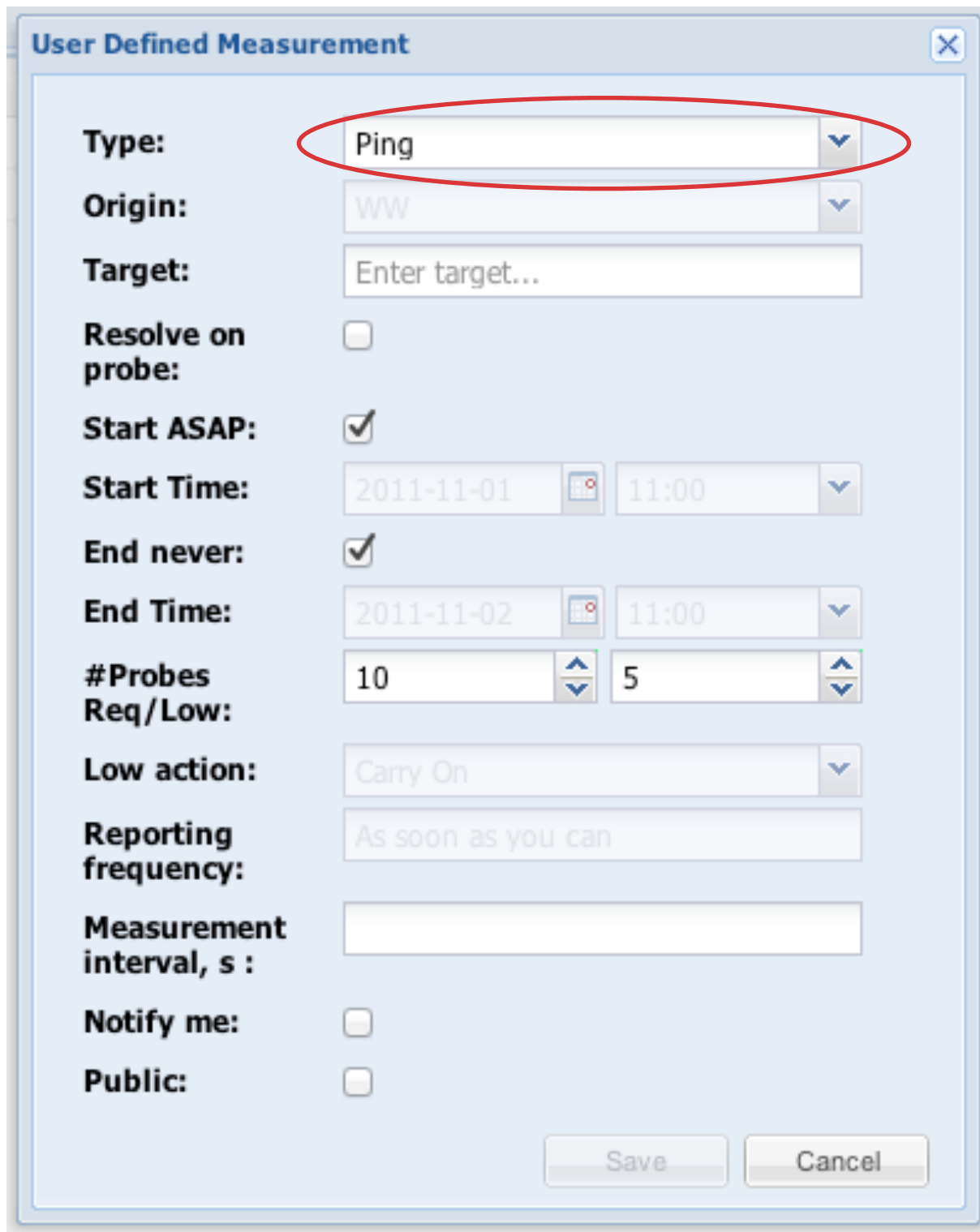
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- Tied to credit system
- Centralised scheduling
- Consideration for host's requirements
- In beta testing
  - Promising results



# UDM (beta)



**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 :**

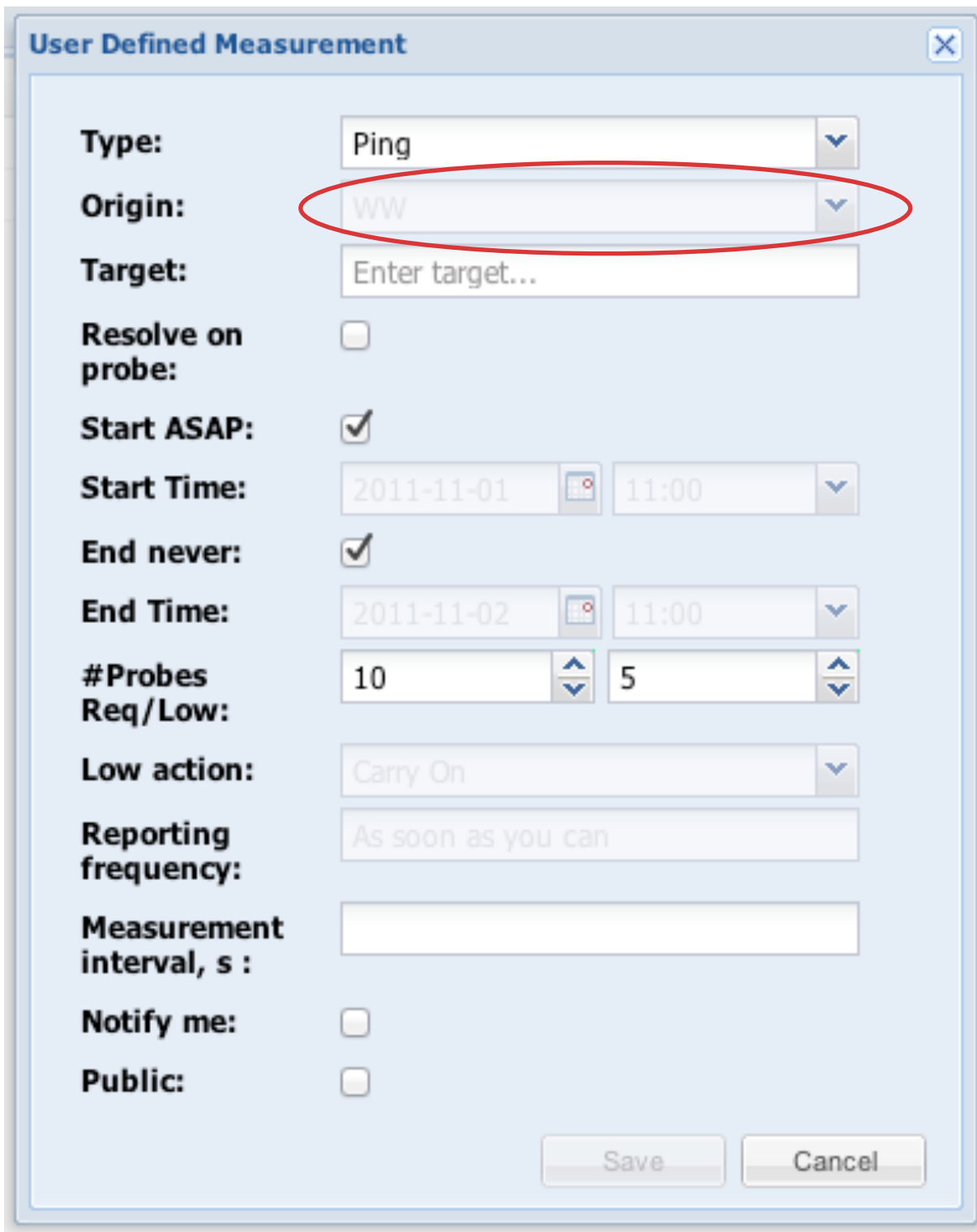
**Notify me:**

**Public:**

Save Cancel

- Currently:
  - Ping (v4/v6)
  - Traceroute (v4/v6)
- Upcoming:
  - DNS query

# UDM (beta)



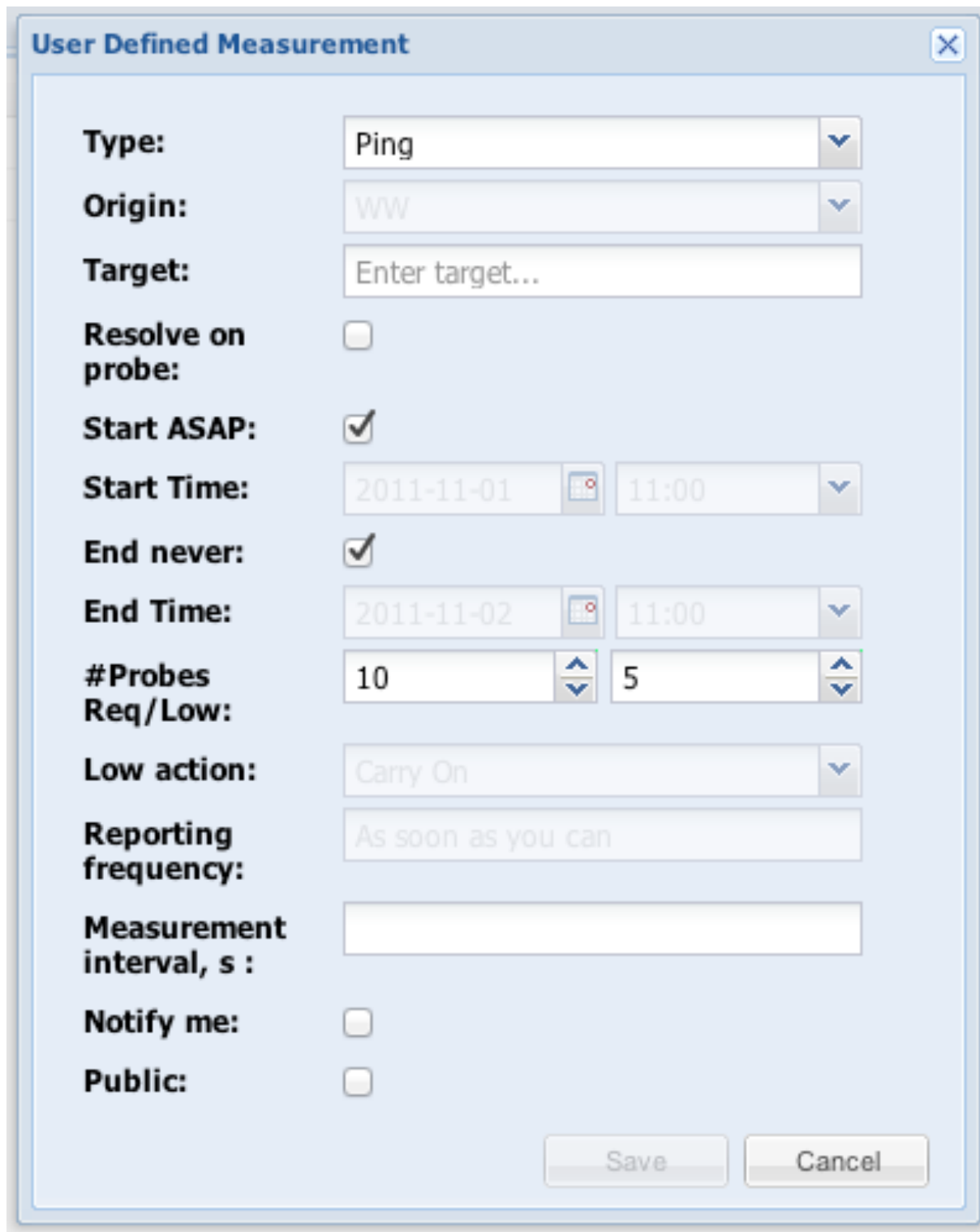
The screenshot shows a 'User Defined Measurement' dialog box with the following fields and values:

- Type: Ping
- Origin: WW (circled in red)
- 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:
  - Worldwide
- Upcoming:
  - Region
  - Country
  - AS
  - Prefix
  - Probe

# UDM (beta)



The screenshot shows a dialog box titled "User Defined Measurement" with a close button (X) in the top right corner. The dialog contains the following fields and controls:

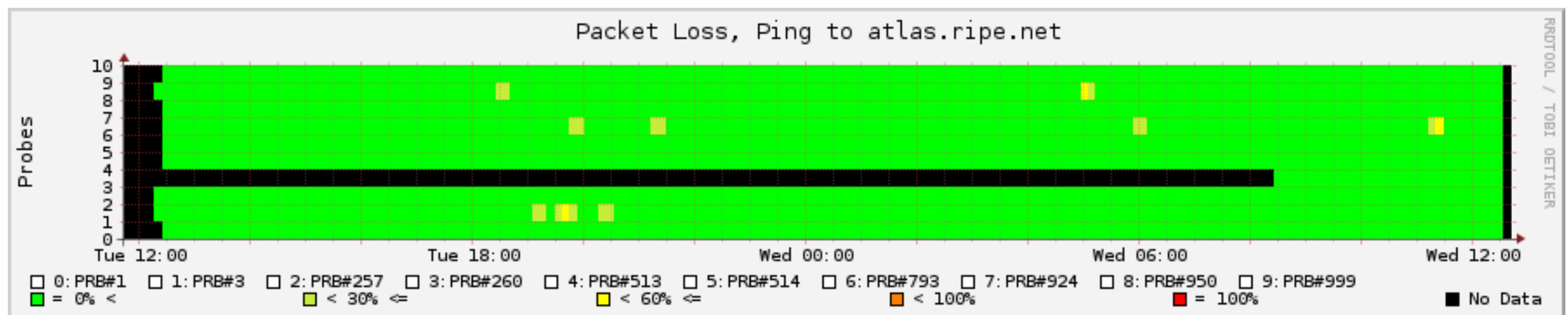
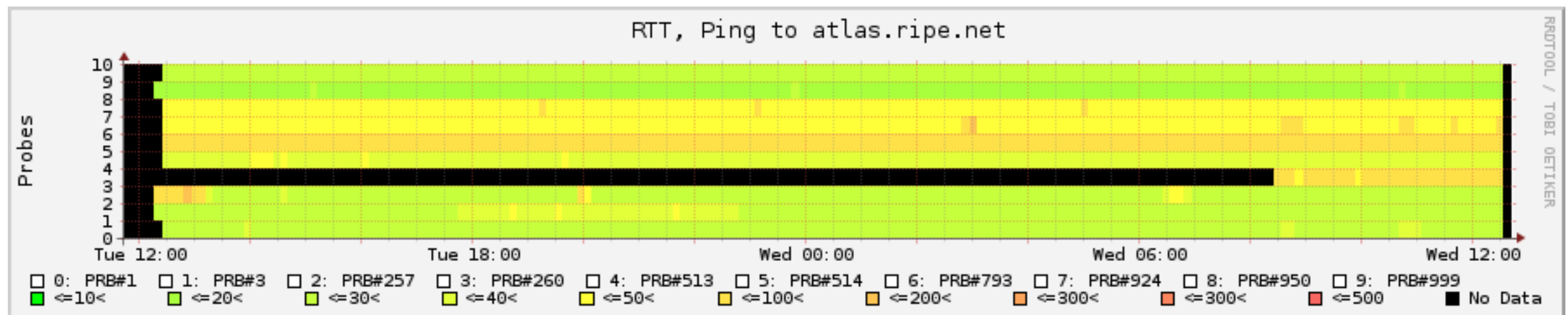
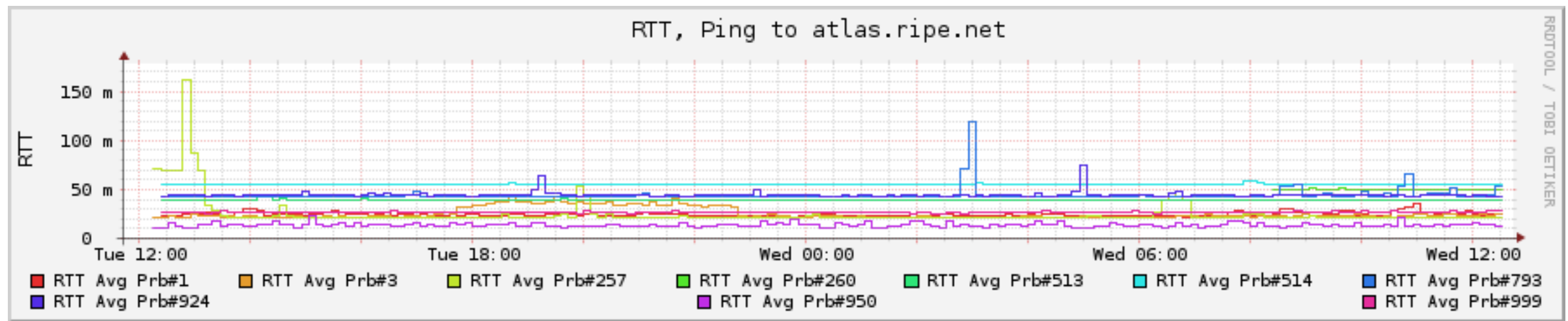
- Type:** A dropdown menu with "Ping" selected.
- Origin:** A dropdown menu with "WW" selected.
- Target:** A text input field containing "Enter target...".
- Resolve on probe:** An unchecked checkbox.
- Start ASAP:** A checked checkbox.
- Start Time:** A date and time selector showing "2011-11-01" and "11:00".
- End never:** A checked checkbox.
- End Time:** A date and time selector showing "2011-11-02" and "11:00".
- #Probes Req/Low:** Two spinners. The first is set to "10" and the second to "5".
- Low action:** A dropdown menu with "Carry On" selected.
- Reporting frequency:** A text input field containing "As soon as you can".
- Measurement interval, s :** An empty text input field.
- Notify me:** An unchecked checkbox.
- Public:** An unchecked checkbox.

At the bottom of the dialog are two buttons: "Save" and "Cancel".

- Configurable aspects:
  - Resolve on probe
  - Timing
  - Number of probes
  - Response to low number of probes
  - Intervals
  - Notifications
  - Public

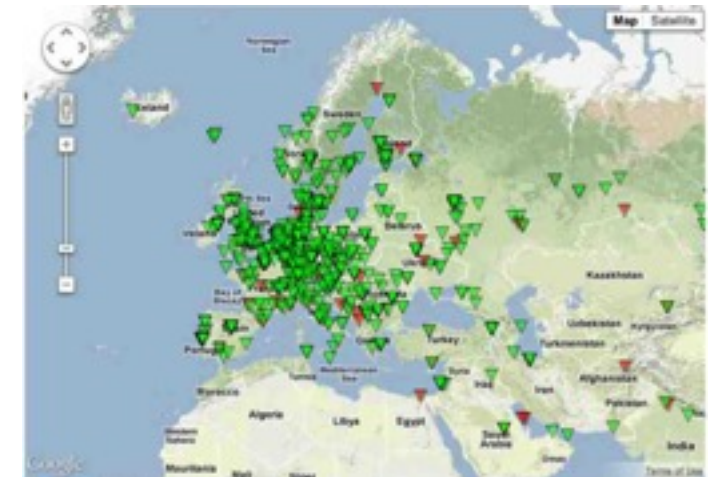


# Results of 'ping' UDM







# Planned Developments

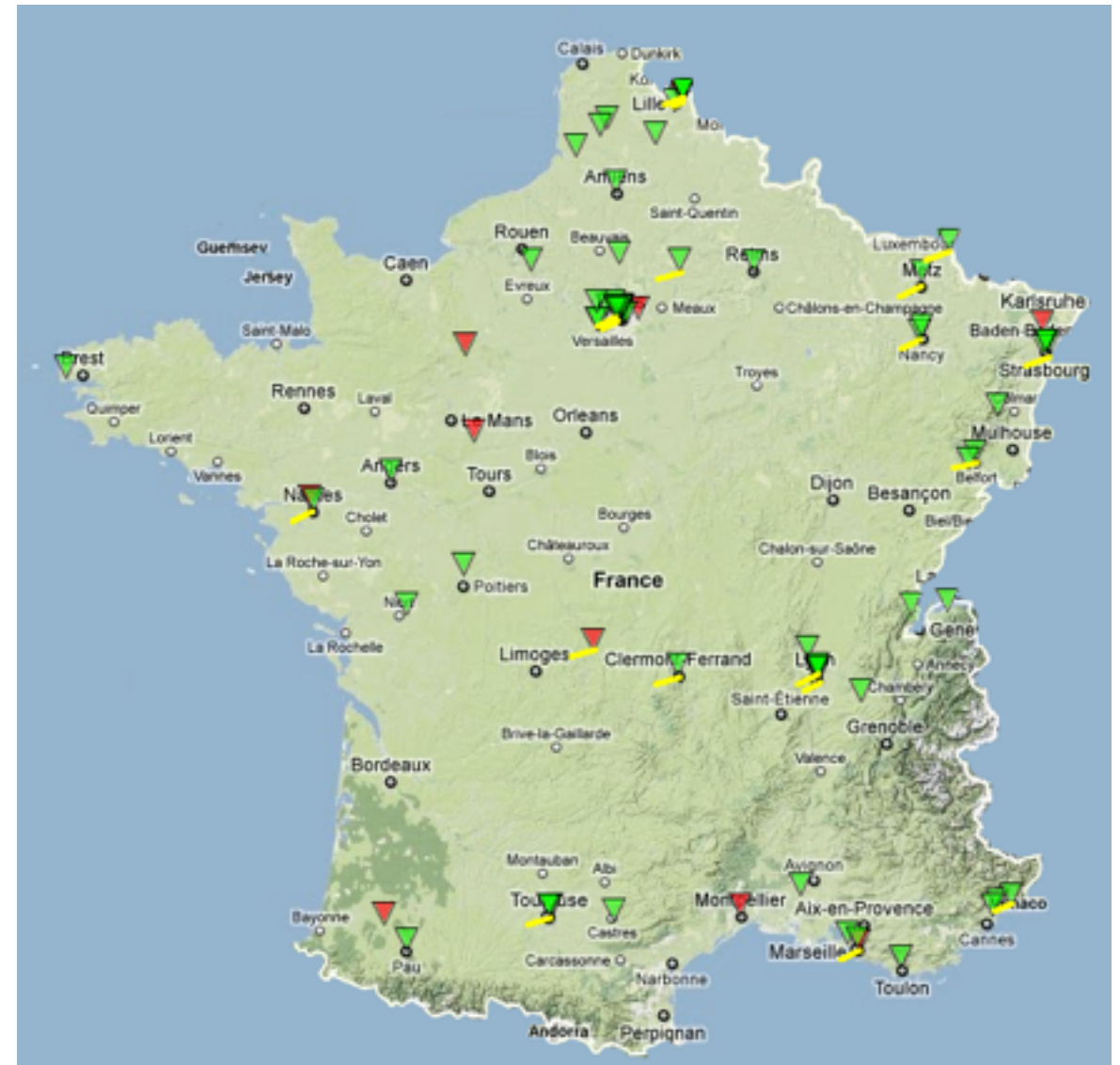
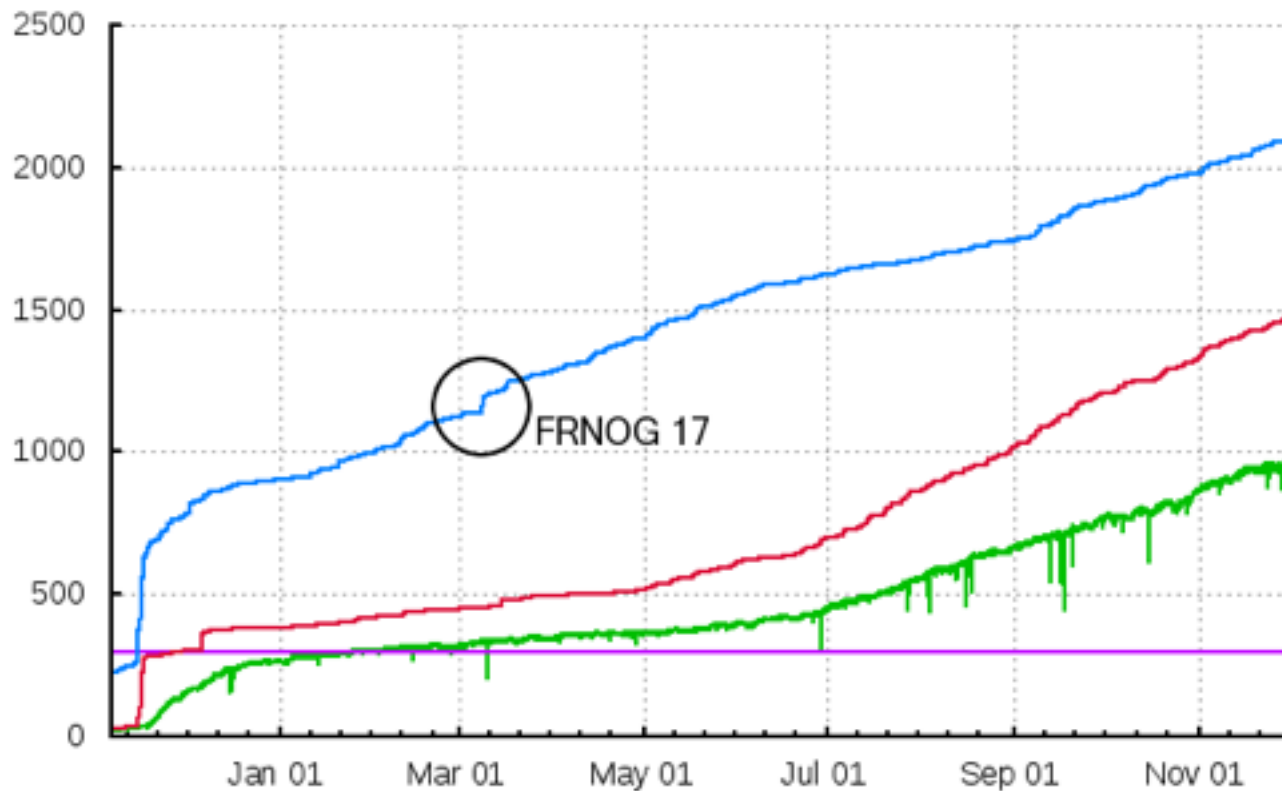
- Roll-out of UDM
- More UDM types
- Real-time access to (raw) data
- APIs to the system
- Automatic alerts/notifications
- More (types of) maps
- More probes distributed and installed



# Probes Distributed

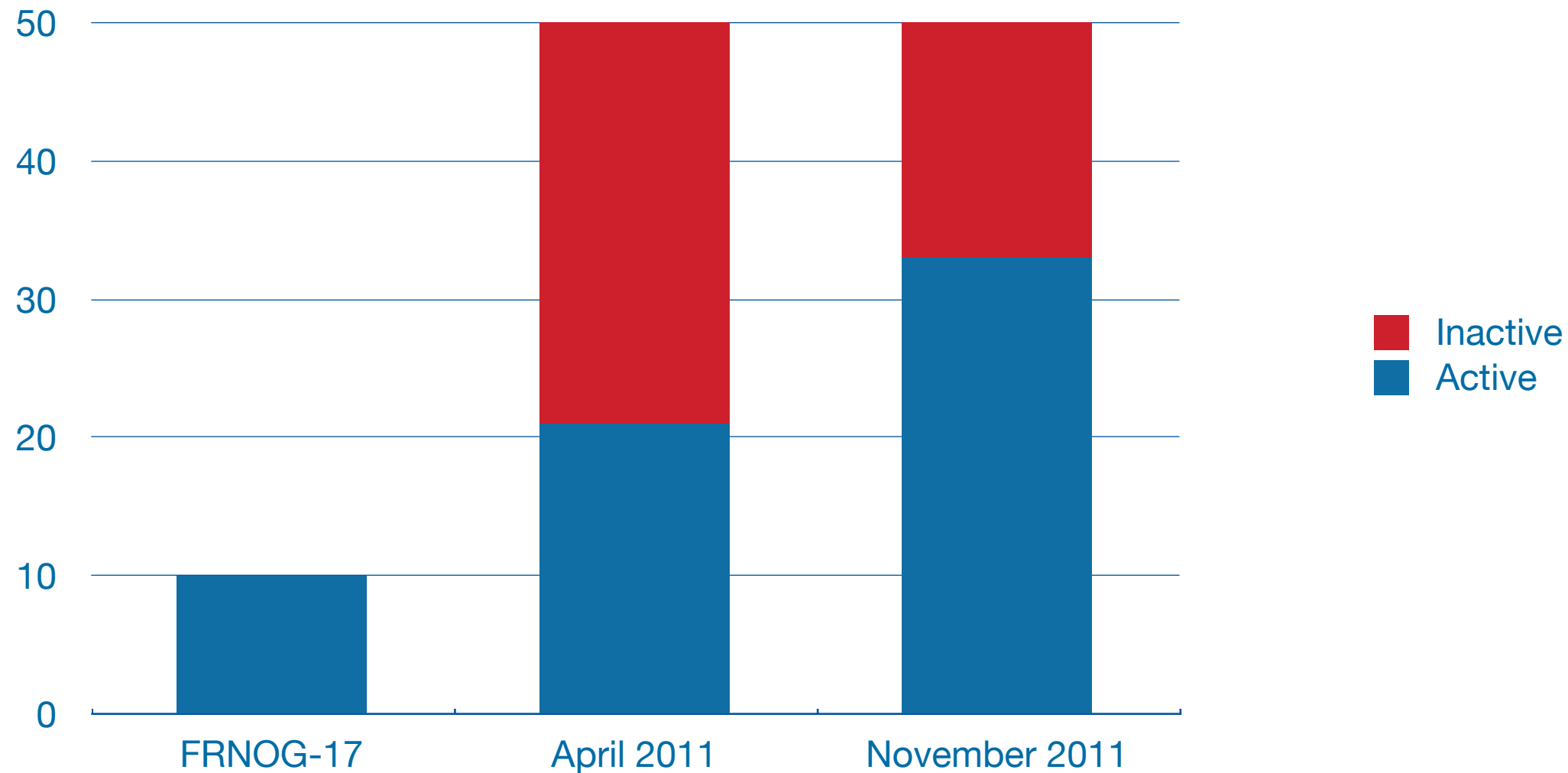
- Register for a probe
- Collect your probe

Probes Up   
Initial goal of 300   
Requested probes   
Probes Distributed 





# Probes Deployed



- Register your probe
- Connect your probe

# Links

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- **Atlas:** <http://atlas.ripe.net>
- **Articles:** <http://labs.ripe.net/atlas>
- **UDM testing:** [atlas-dev@ripe.net](mailto:atlas-dev@ripe.net)
- **Measurements Community Builders:**  
[mcb@ripe.net](mailto:mcb@ripe.net)
- **RIPEstat:** <http://stat.ripe.net>
- **TTM:** [ttm@ripe.net](mailto:ttm@ripe.net)
- **Labs:** <http://labs.ripe.net>

Questions?

