

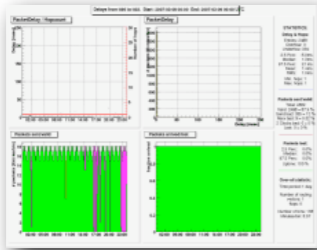


# Information Services Update

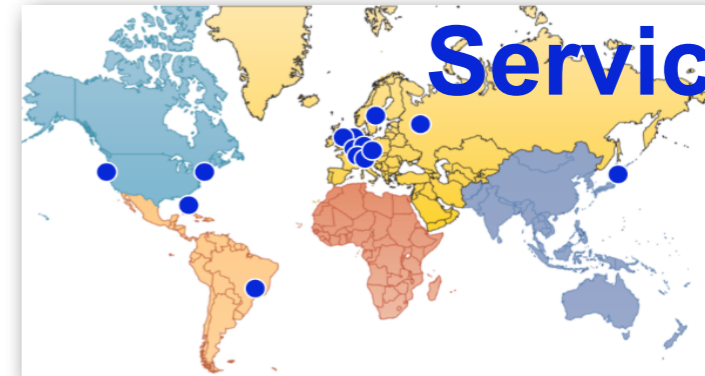
Franz Schwarzingger  
Software Engineer  
RIPE NCC  
[franz@ripe.net](mailto:franz@ripe.net)



## Test Traffic Measurement

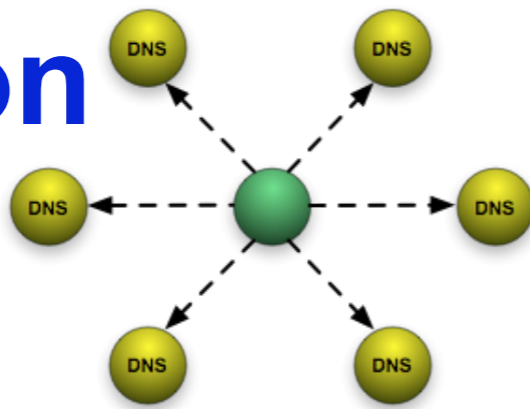
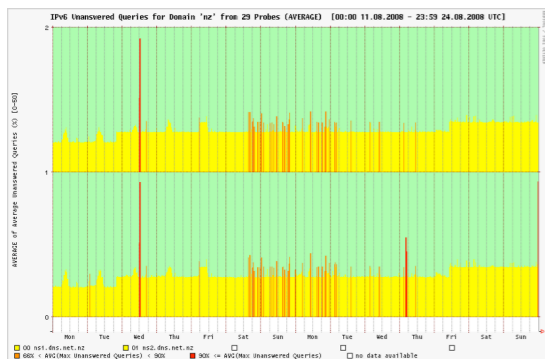


## Routing Information Service



# Information Services

## DNSMon

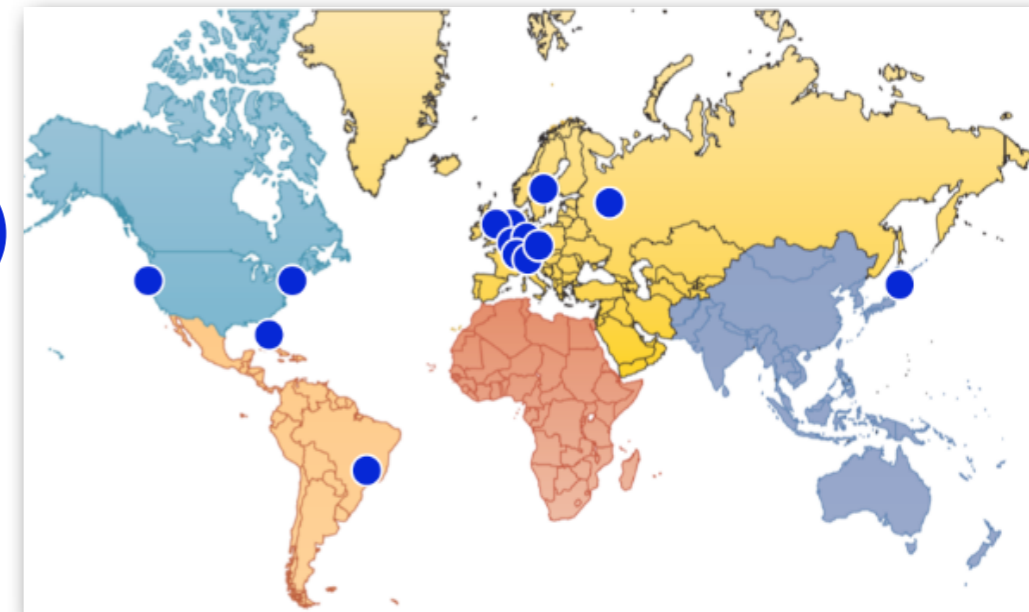


## Hostcount



# Routing Information Service

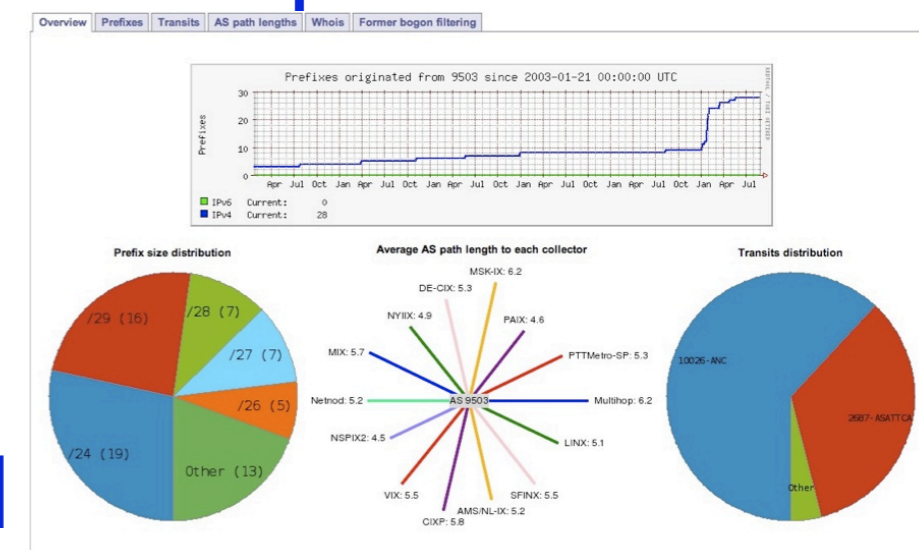
- Looking Glass with history
- Collects routing information (BGP)
  - 620 peers
  - 15 collectors around the world



- Last 3 Months of data can be queried with powerful tools.

- <http://www.ripe.net/ris/>

- Automated notifications with MyASN



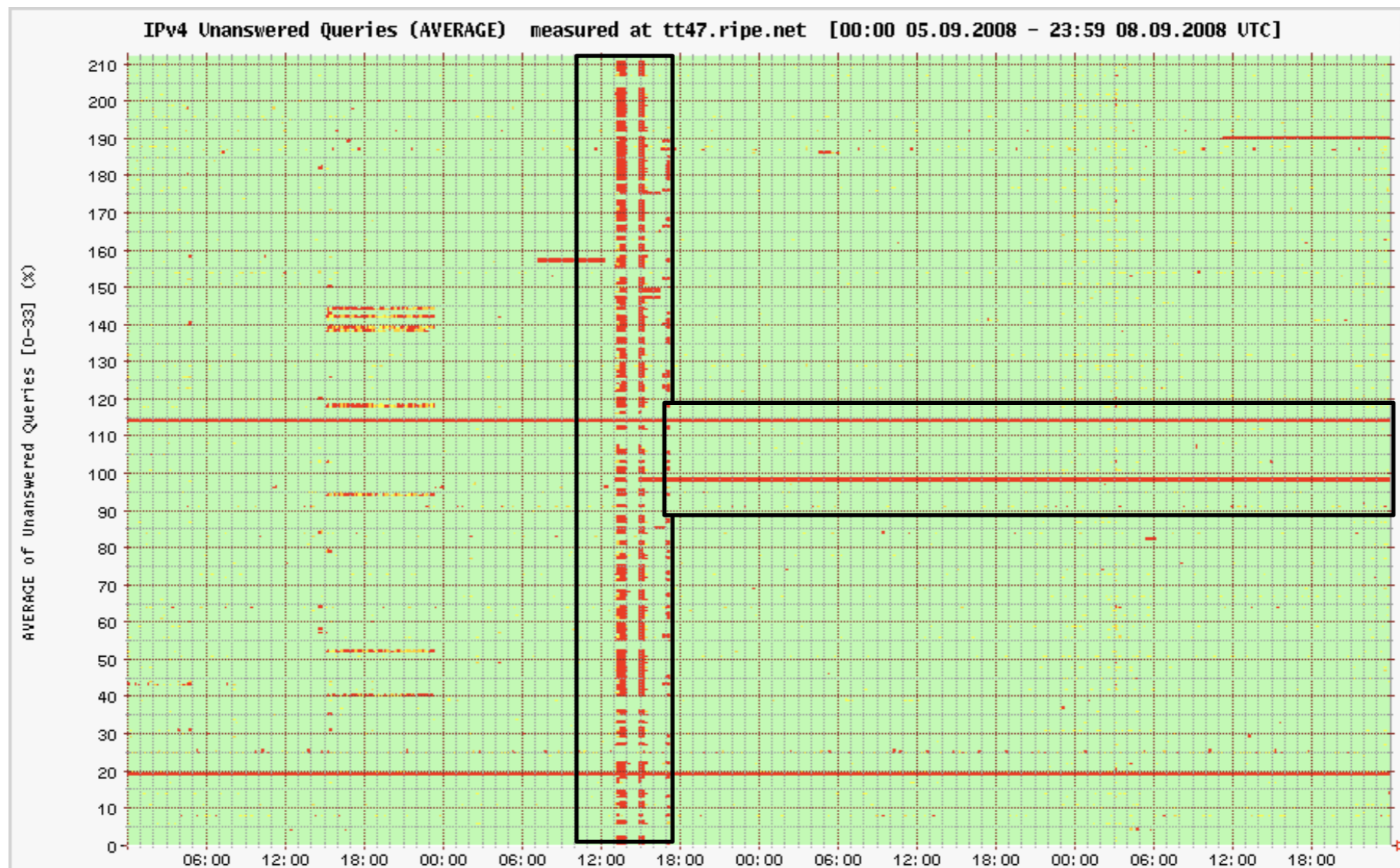


# Hostcount

- Utilising DNS to count unique hosts belonging to a TLD
  - Transfer a Top-Level Domain
  - Count unique hosts
  - Transfer any sub zones
  - Count unique hosts
  - ...
- Carried out once per month
- Data freely available on the RIPE NCC webpage
  - <http://www.ripe.net/hostcount/>
- Brand new user interface under construction

# DNSMon

- Monitoring DNS Servers
  - 78 probes around the world
  - monitoring 200+ ccTLD/gTLD servers worldwide



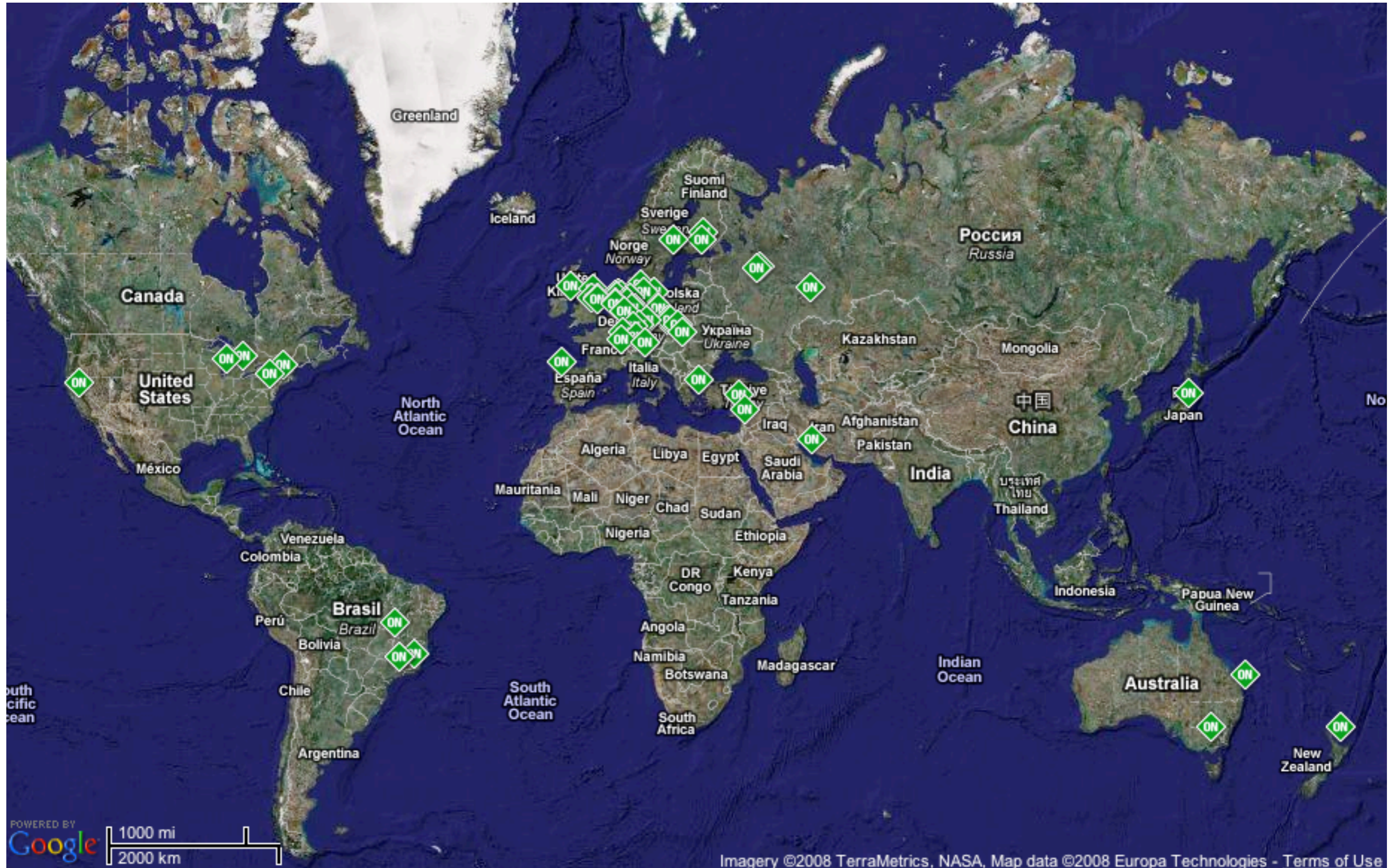


# Test Traffic Measurement

# Distributed Measurement System



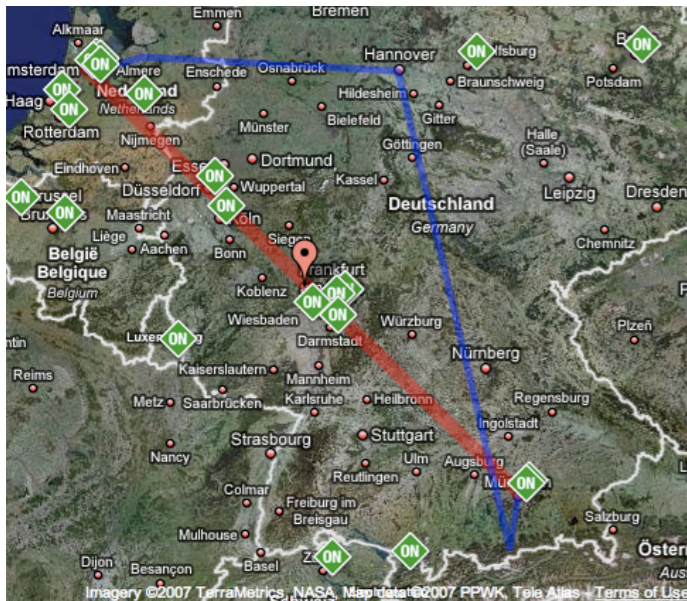
# Test Traffic Measurement



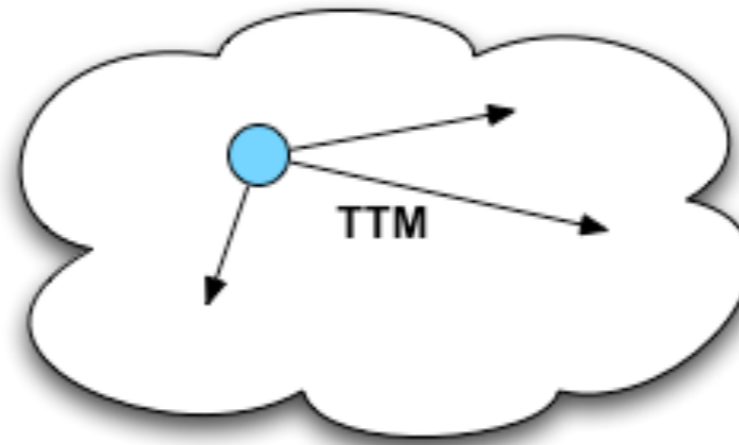
# Test Traffic Measurement

## What does it do?

### Traceroutes



### One-Way Delay & Loss



### Something New





# TTM - Traceroutes

From tt146 to tt01, between **16/9/2008 2:0** and **16/9/2008 13:22**.

[\[Earlier\]](#) [\[Later\]](#)

- Example: Amsterdam - Moscow

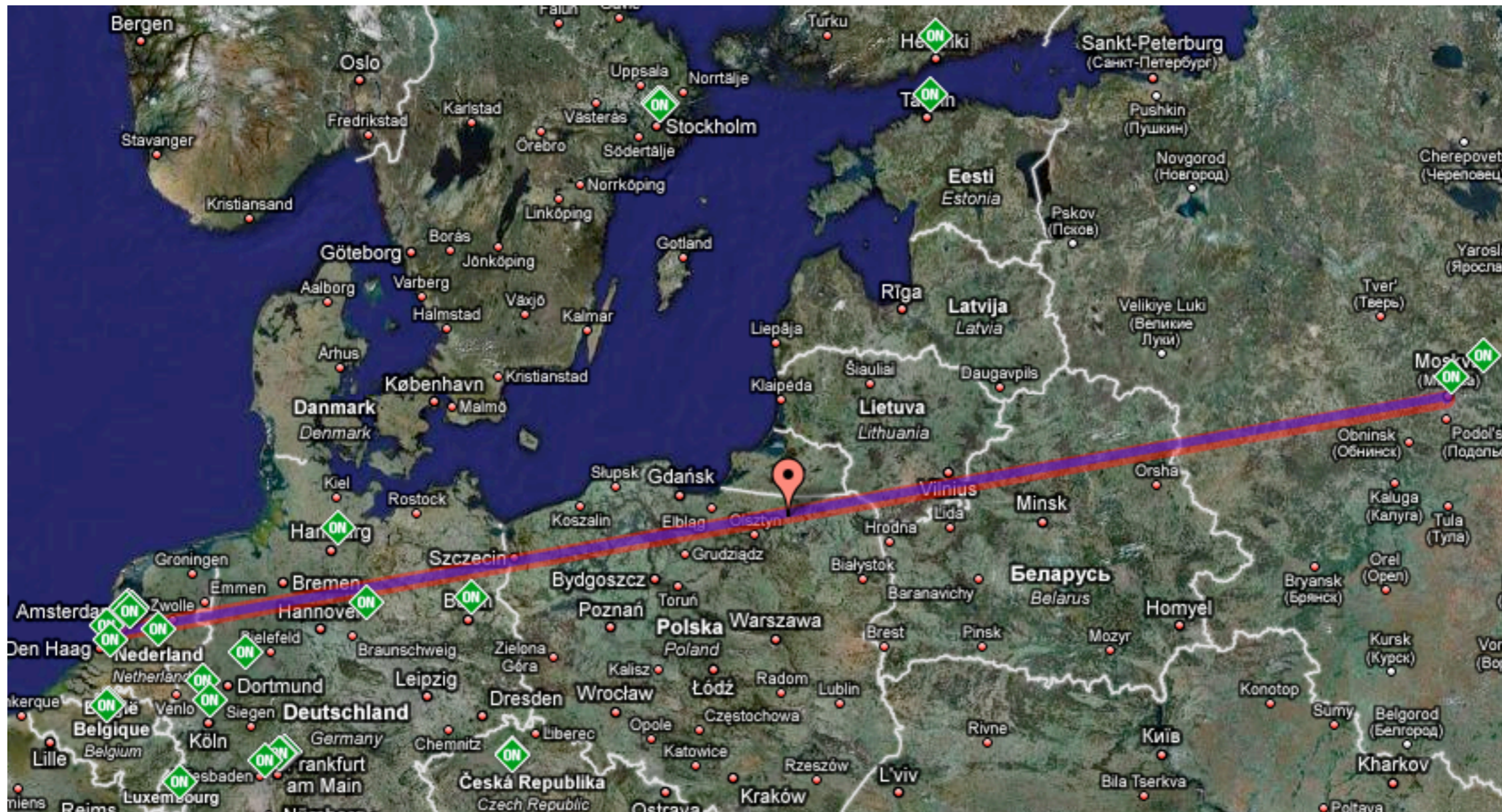
1. 193.233.1.70 (2895) [\[tt146\]](#)

2. 147.45.19.138 (2895)

3. 195.209.14.18 (5568)

4. 195.69.144.68 (1200/31283/16150/12989)

5. 193.0.0.228 (3333) [\[tt01\]](#)



# TTM - Traceroutes

From tt146 to tt01, between **16/9/2008 14:9** and **17/9/2008 1:31**.

[\[Earlier\]](#)

- Example: Amsterdam - Moscow

1. 193.233.1.70 (2895) [\[tt146\]](#)

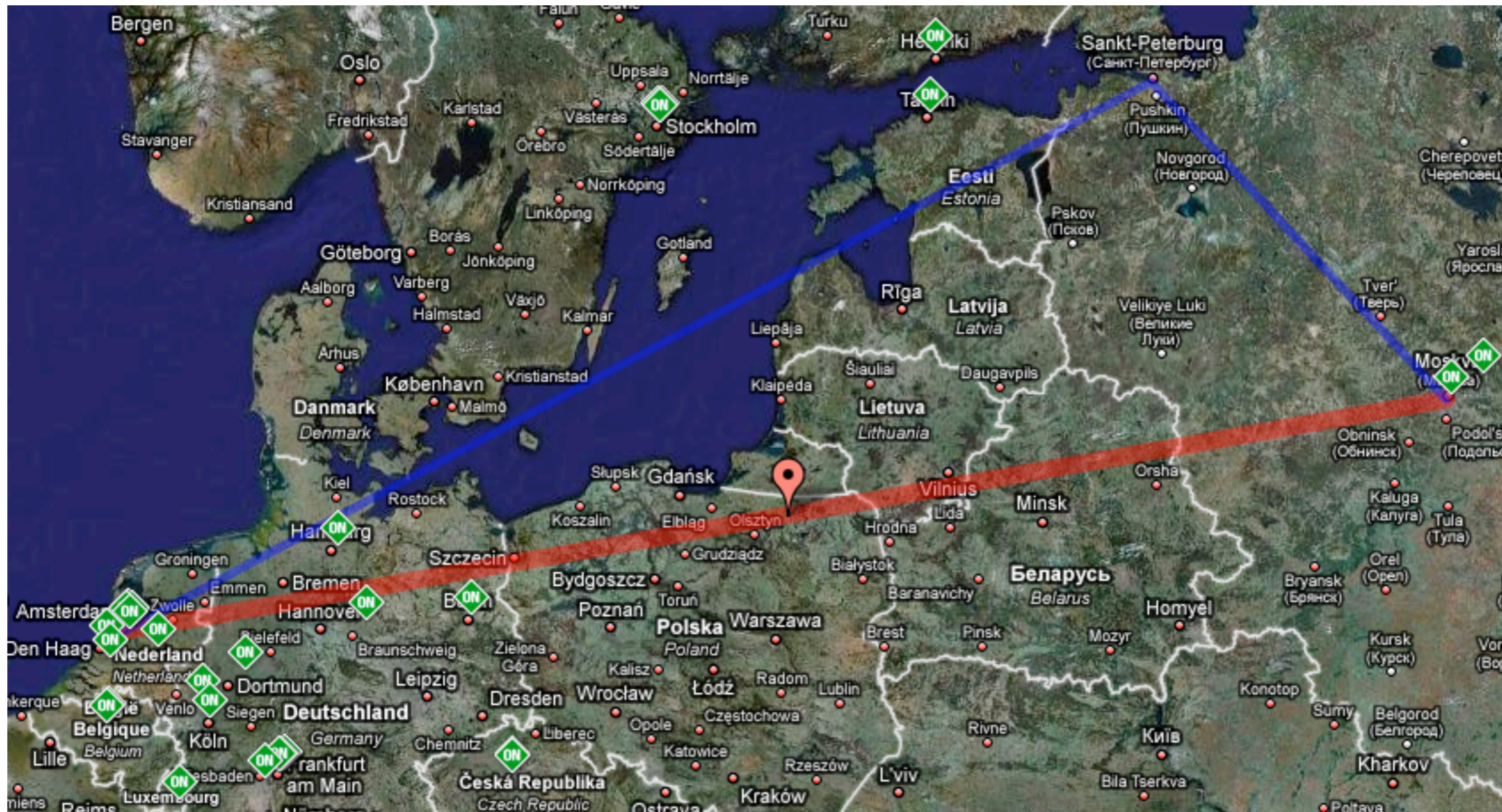
2. 194.190.255.53 (3267)

3. 194.85.40.201 (3267)

4. 194.85.40.237 (3267)

5. 195.69.144.68 (1200/31283/16150/12989)

6. 193.0.0.228 (3333) [\[tt01\]](#)





# TTM - Traceroutes

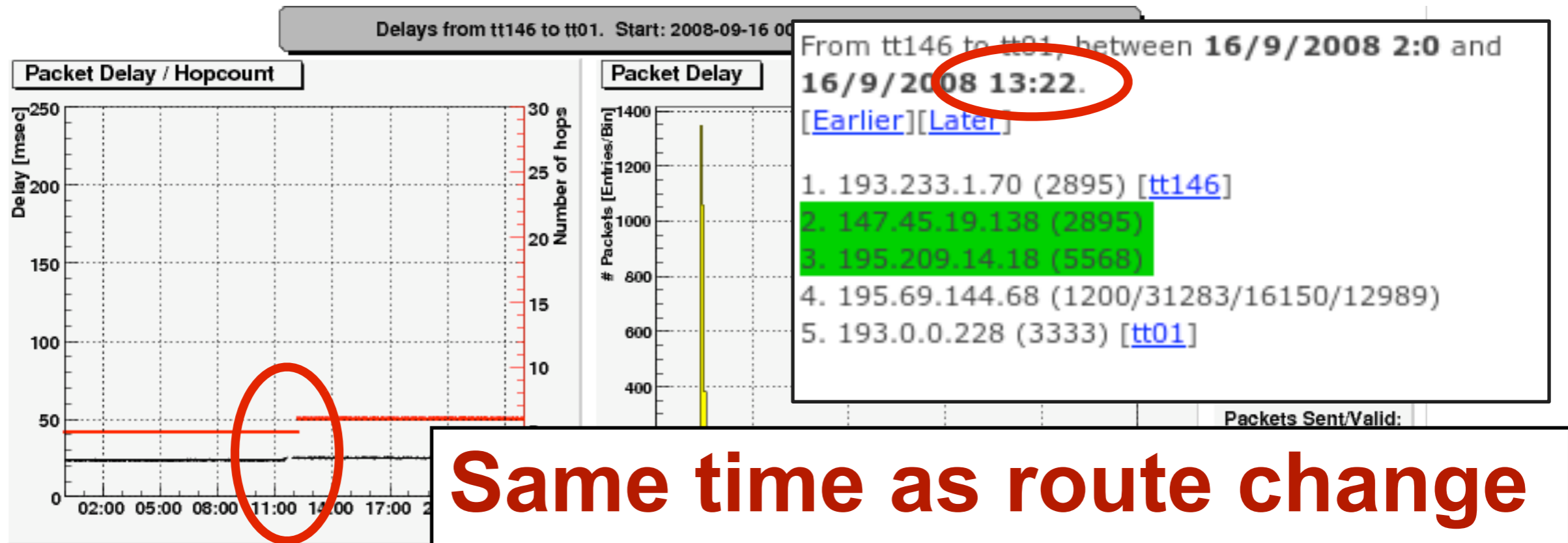
- Example: Amsterdam - Moscow

Additional Information

Dates	Route Id	Occurrences	Hop	IP Address	Host name	AS Num(s)
From 2008/09/16 00:00:39 To 2008/09/16 11:22:16	9655467	130	1	193.233.1.70	Moscow-BNS042-Gig0-1-341.free.net	2895
			2	147.45.19.138	RBNet-FREENet-8.free.net	2895
			3	195.209.14.18	AMS-RBNet-1.RBNet.ru	5568
			4	195.69.144.68	nikrtr.ripe.net	1200/31283/16150/12989
			5	193.0.0.228	tt01.ripe.net	3333

Dates	Route Id	Occurrences	Hop	IP Address	Host name	AS Num(s)
From 2008/09/16 12:09:33 To 2008/09/16 23:31:53	9292126	129	1	193.233.1.70	Moscow-BNS042-Gig0-1-341.free.net	2895
			2	194.190.255.53	ru-msk-gw.tv11.msk.runnet.ru	3267
			3	194.85.40.201	m9-1-gw.msk.runnet.ru	3267
			4	194.85.40.237	hikhef-1-gw.ams.runnet.ru	3267
			5	195.69.144.68	nikrtr.ripe.net	1200/31283/16150/12989
			6	193.0.0.228	tt01.ripe.net	3333

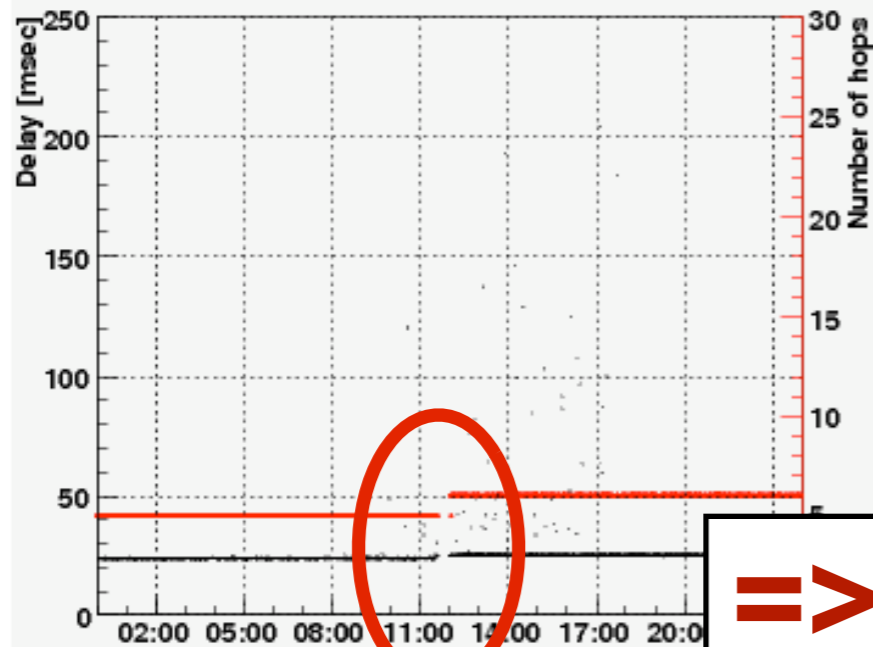
# TTM - Delay & Loss



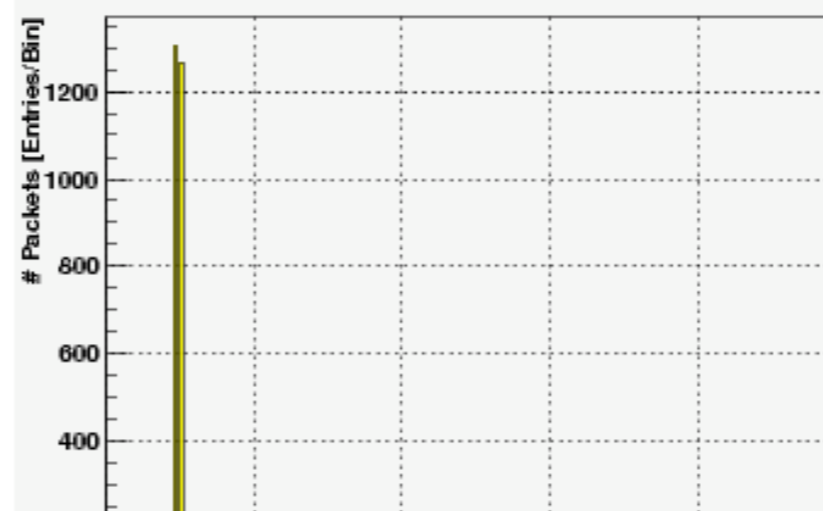
# TTM - Delay & Loss - Symmetry

Delays from tt01 to tt146. Start: 2008-09-16 00:00 End: 2008-09-17 00:00 UTC

Packet Delay / Hopcount



Packet Delay



**STATISTICS:**

**Delay & Hops:**

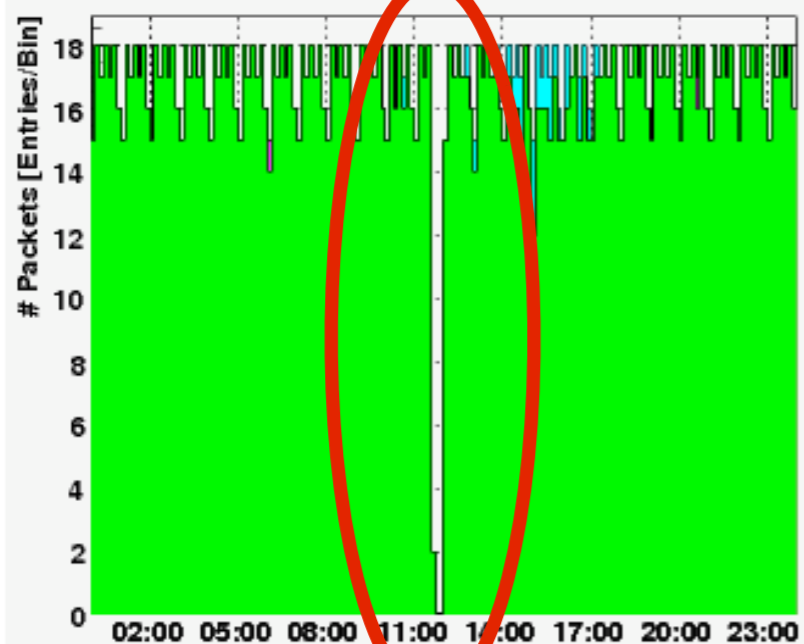
Entries: 2774  
 Overflow: 1  
 Underflow: 0  
 2.5 Perc: 23.5ms  
 Median: 25.0ms  
 97.5 Perc: 25.6ms  
 Mean: 25.3ms  
 RMS: 8.8ms  
 Min. hops: 5  
 Max. hops: 6

**Packets Sent/Valid:**

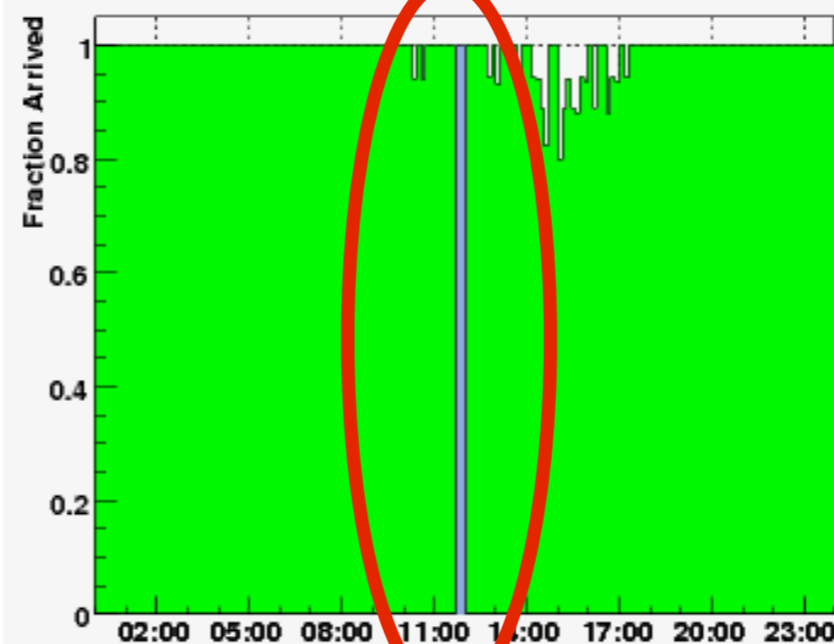
2807  
 = 98.8 %  
 = 0.071 %  
 = 0 %  
 = 0 %  
 = 1.1 %

**=> Symmetric Effect**

Packets Sent/Valid



Packets Arrived/Lost



**Packets lost:**

2.5 Perc: 0.0%  
 Median: 0.0%  
 97.5 Perc: 11.8%  
 Uptime: 98.8 %

**Over-all statistic:**

Time period: 1 day  
 Number of routing  
 vVectors: 2  
 Flaps: 1  
 Number of bins: 168  
 Minutes/bin: 8.57



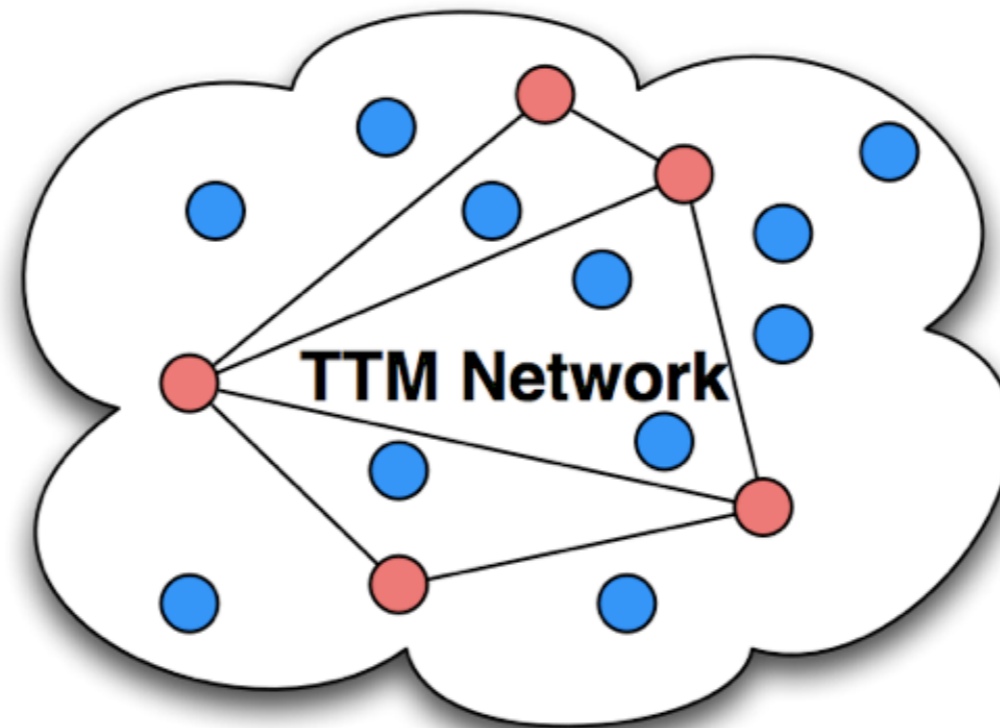
# TTM - Use Cases

- Demonstrate network reliability to your stakeholders
- Efficiently pin-point and troubleshoot problems
- Discover and analyse asymmetric effects in your network's connectivity
- Continuous measurements
  - Historic data back to 1999
  - Measurements are there whenever you need them

# Generic Measurements

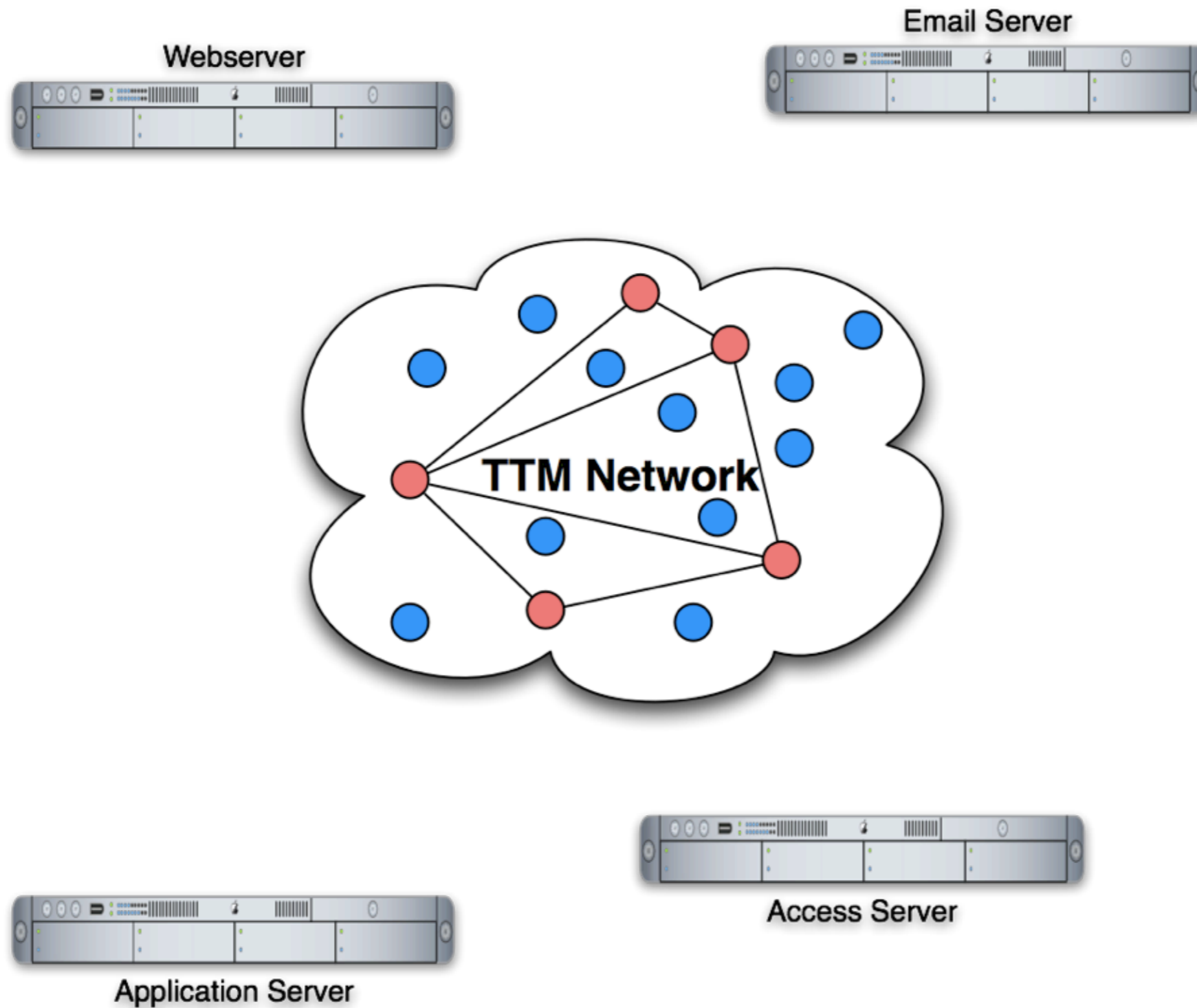


# Generic Measurements

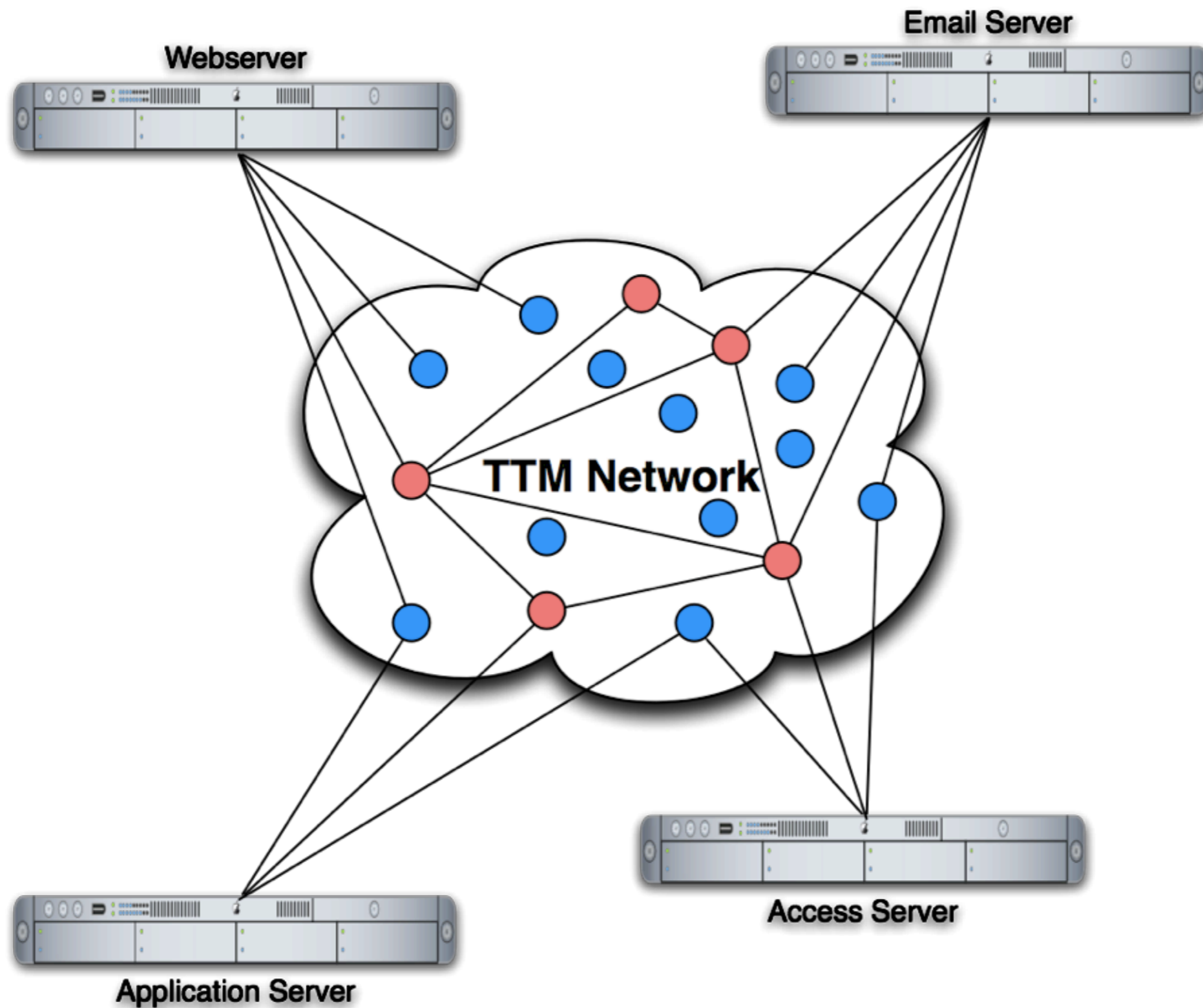




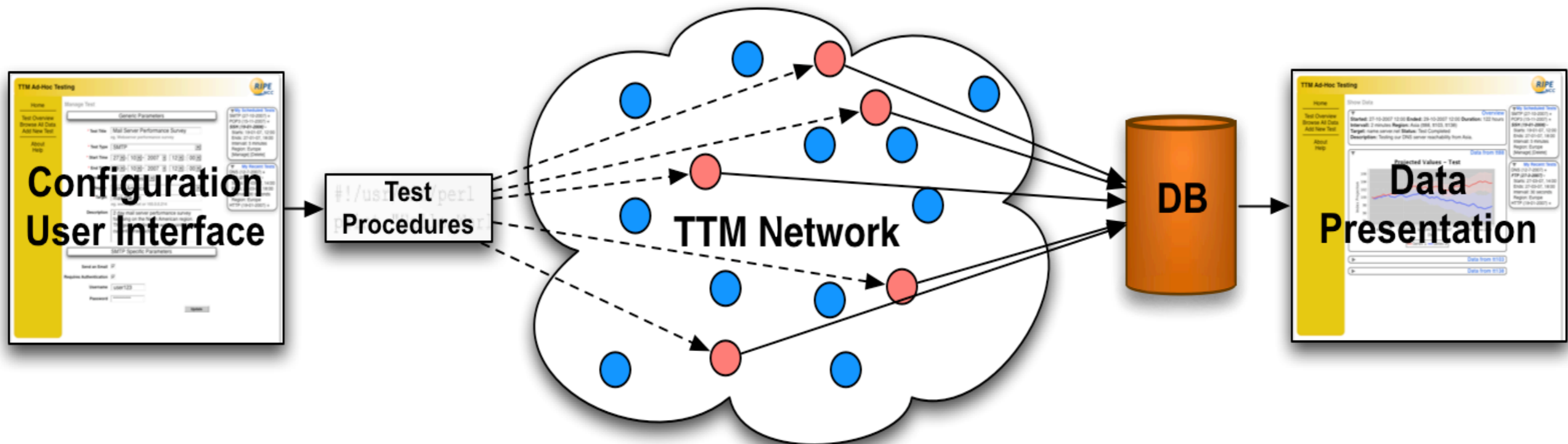
# Generic Measurements



# Generic Measurements



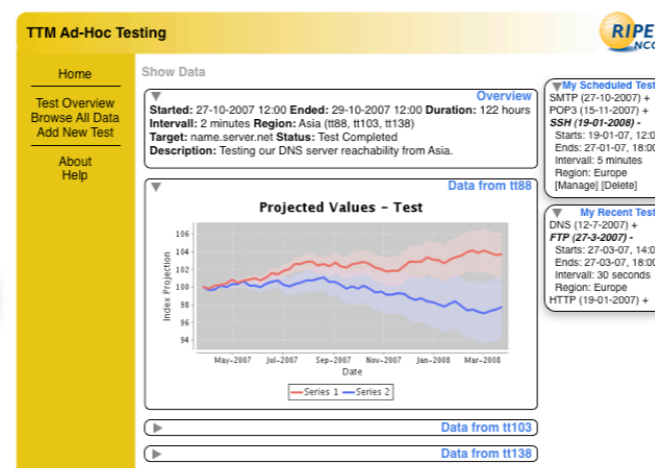
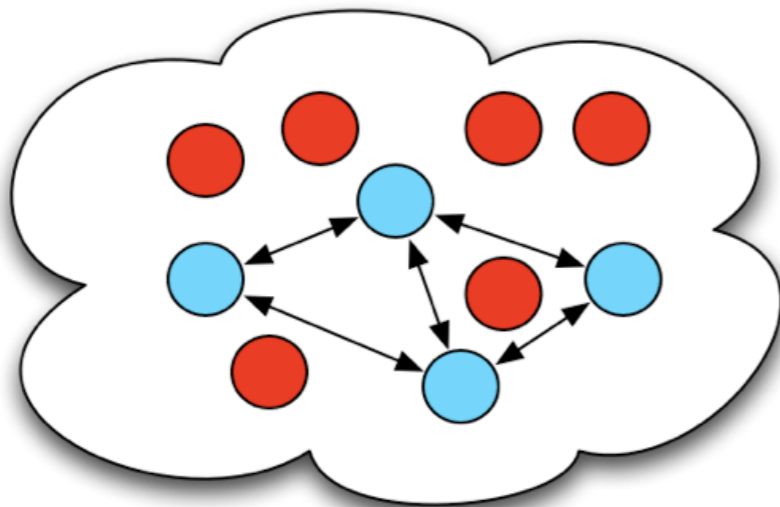
# Generic Measurements





# Generic Measurements

- Framework to run a variety of measurements on the TTM network
- Ability to easily extend to new protocols through a plug-in system
- Configuring custom subsets of TTM nodes on which experiments are executed (Custom Meshes)
- Maintaining a common look and feel for users



**TTM Ad-Hoc Testing**

Home  
Test Overview  
Browse All Data  
Add New Test  
About  
Help

Manage Test

Generic Parameters

\* Test Title: Mail Server Performance Survey  
eg. Webservice performance survey

\* Test Type: SMTP

\* Start Time: 27-10-2007 12:00

\* End Time: 29-10-2007 12:00

\* Interval: 10 minutes

\* Region: North America

\* Target: mail.ripe.net  
eg. www.ripe.net or 193.0.0.214

Description: 2 day mail server performance survey focusing on the North American region. The goal is to find any weak points in the current infrastructure.

SMTP Specific Parameters

Send an Email

Requires Authentication

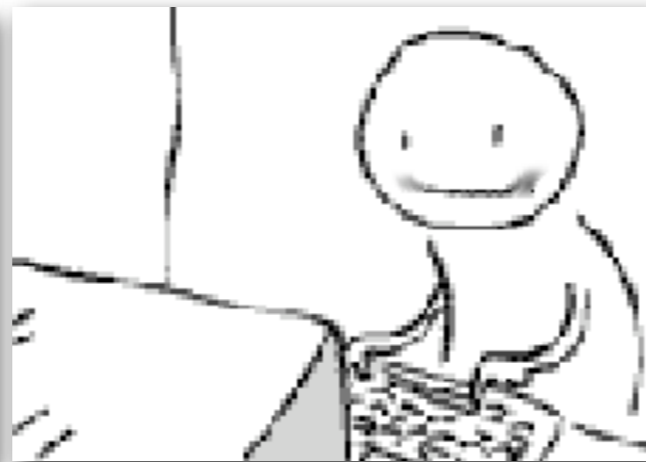
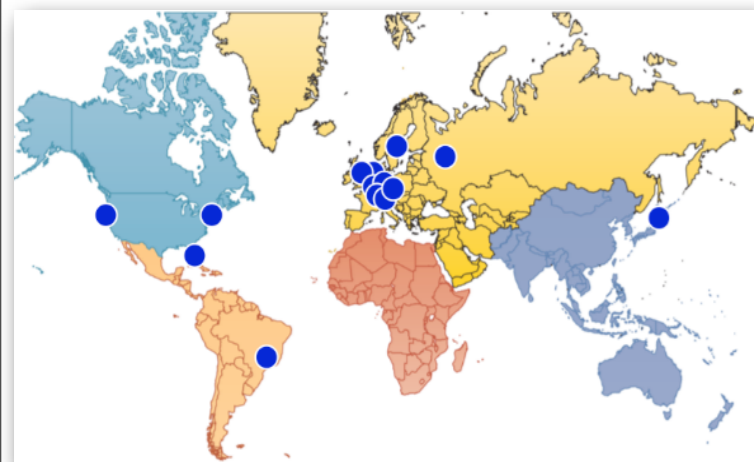
My Scheduled Tests  
SMTP (27-10-2007) + POP3 (15-11-2007) + SSH (19-01-2008) - Starts: 19-01-07, 12:00 Ends: 27-01-07, 18:00 Interval: 5 minutes Region: Europe [Manage] [Delete]

My Recent Tests  
DNS (12-7-2007) + FTP (27-3-2007) - Starts: 27-03-07, 14:00 Ends: 27-03-07, 18:00 Interval: 30 seconds Region: Europe HTTP (19-01-2007) +



# Generic Measurements - Use Cases

- See how your services perform around the world
- Study effects of system maintenance
- Debug network problems in real time
- Compare performance of different protocols
  - Example: IPv4 & IPv6





# Generic Measurements

## General parameters

Test Title:

*Eg. Webservice performance survey*

Test Type:

*Select a test type.*

Timezone:

*Select timezone*

Start time:  at

*Eg. 25/12/2012 and 10:55*

End time:  at

*Eg. 26/12/2012 and 12:35*

Interval:

*Select a test interval.*

Region:

*Select a region.*

Description:

### General parameters

The general parameters are used to describe the scope of an experiment and are the standard parameters for all test types.

Start and end time specify the time frame of an experiment and the interval sets the time in between measurements. The region allows you to geographically scope your experiment. Selecting a region will prompt the system to choose available testboxes in that area.

## Http Plugin Specific Parameters

URL (http://\*/\*):

Use IPv6:



# Generic Measurements

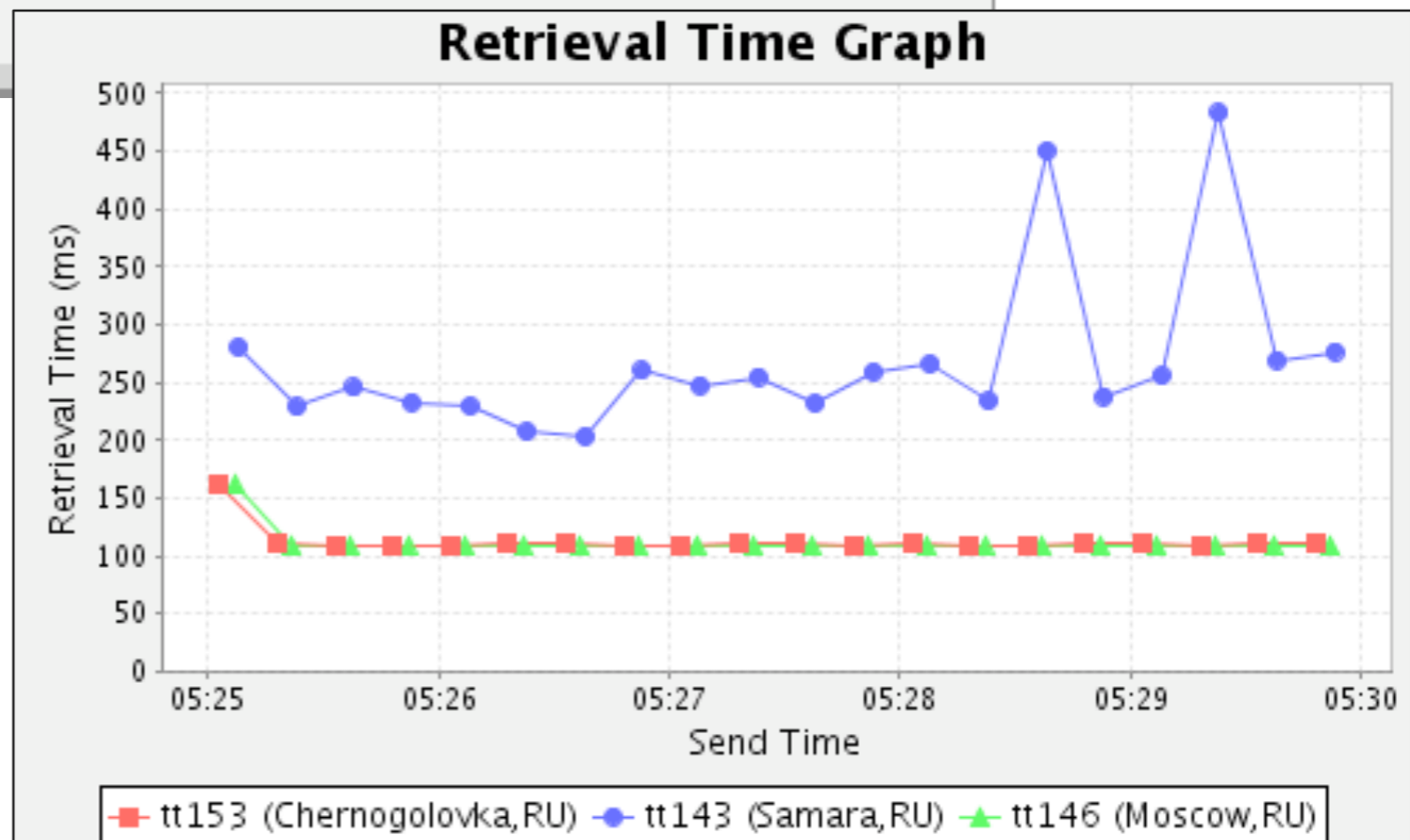
Overview

Started: 23/09/2008 07:25 CEST Ended: 23/09/2008 07:30 CEST Interval: 15 s Region:

URL (http://\*/\*): http://www.ripe.net/ Use IPv6: 0

TTM Boxes: tt153 tt143 tt146

Description:

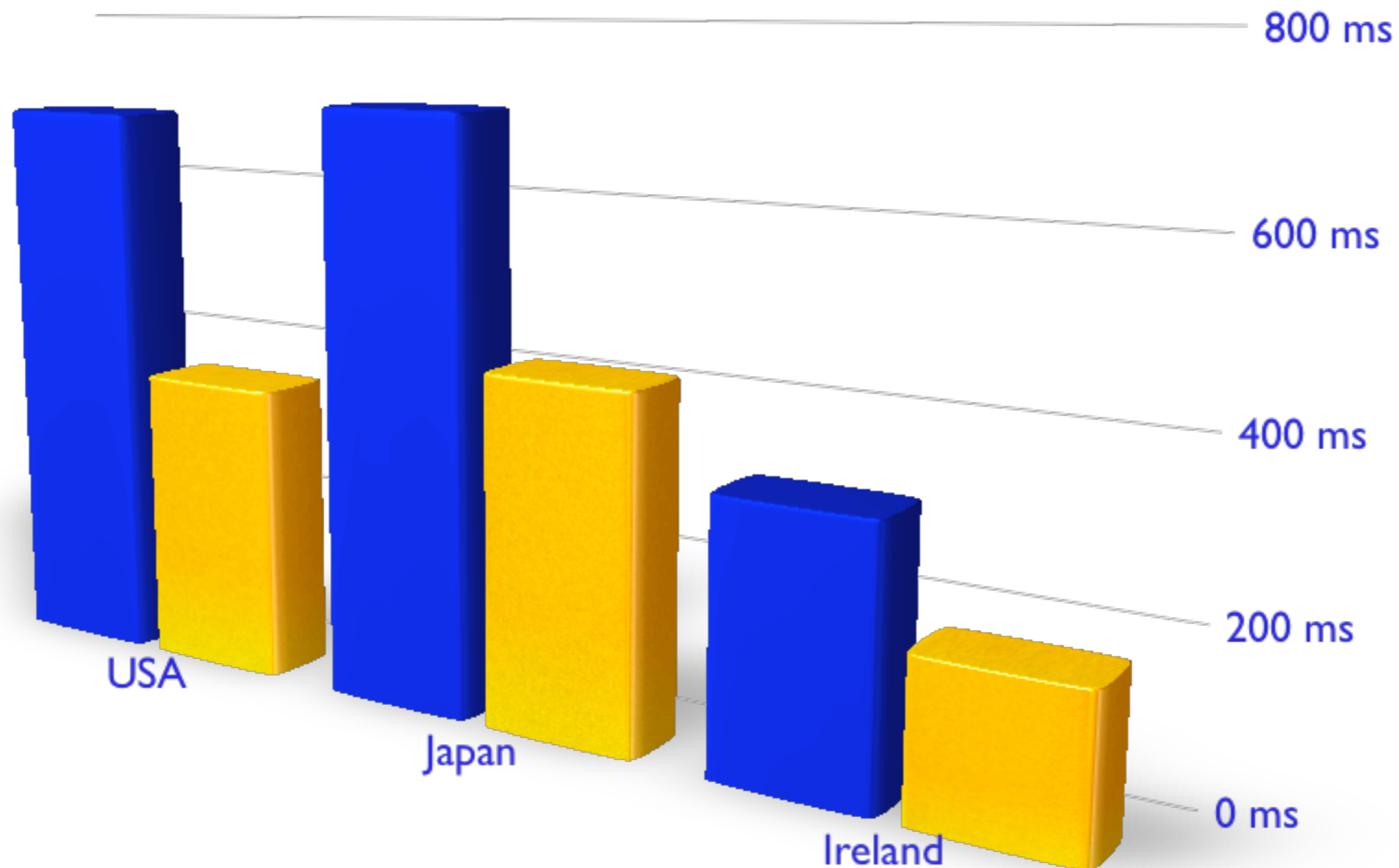


TTM Box	Send Time	Retrieval Time (ms)
tt153 (Chernogolovka, RU)	2008-09-23 05:25:03.0	161.539
tt146 (Moscow, RU)	2008-09-23 05:25:07.0	161.309
tt143 (Samara, RU)	2008-09-23 05:25:08.0	280.477

[Download CSV](#)



# Comparison - RIPE NCC Website







# Generic Measurements

# DEMO

**Showcasing a live generic measurement.**



# Be a part of TTM!

- Sign up at <http://www.ripe.net/ttm/>
- Cost:
  - 1800 Euros / Year
  - or
  - 5000 Euros for 3 years
- Includes:
  - All hardware + shipping
  - Maintenance and support of hardware and software
  - Access to all tools and features
  - Future software updates

# A look inside the box



**10 $\mu$ s accuracy**

**1000 $\mu$ s  $\approx$  camera flash**

# Stratum 1 NTP Server!



# Get in touch with us

- More information: <http://is-portal.ripe.net>
- Technical contact: [is-ops@ripe.net](mailto:is-ops@ripe.net)
- Or email me directly: [franz@ripe.net](mailto:franz@ripe.net)

# Questions? Comments?

