RIPE NCC Tools for Network Operators

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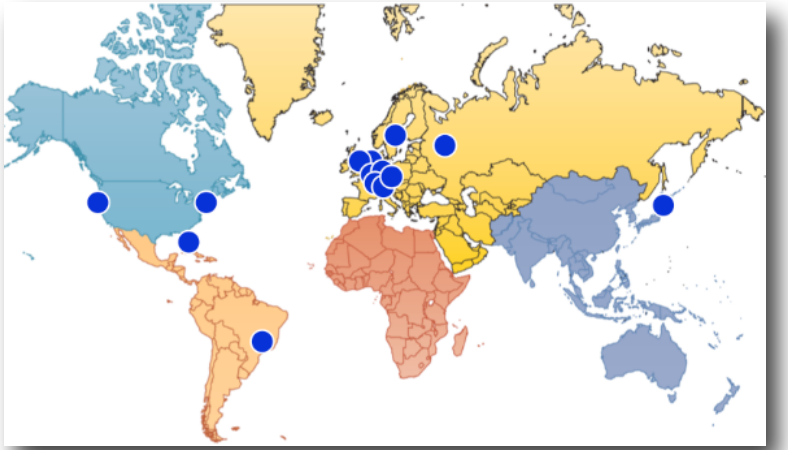
RIPE NCC

RIPE NCC Information Services

- Test Traffic Measurements (TTM)
  - Measures delay and loss
  - Stores traceroute data
  - Full mesh ~80 nodes
  - http://www.ripe.net/ttm

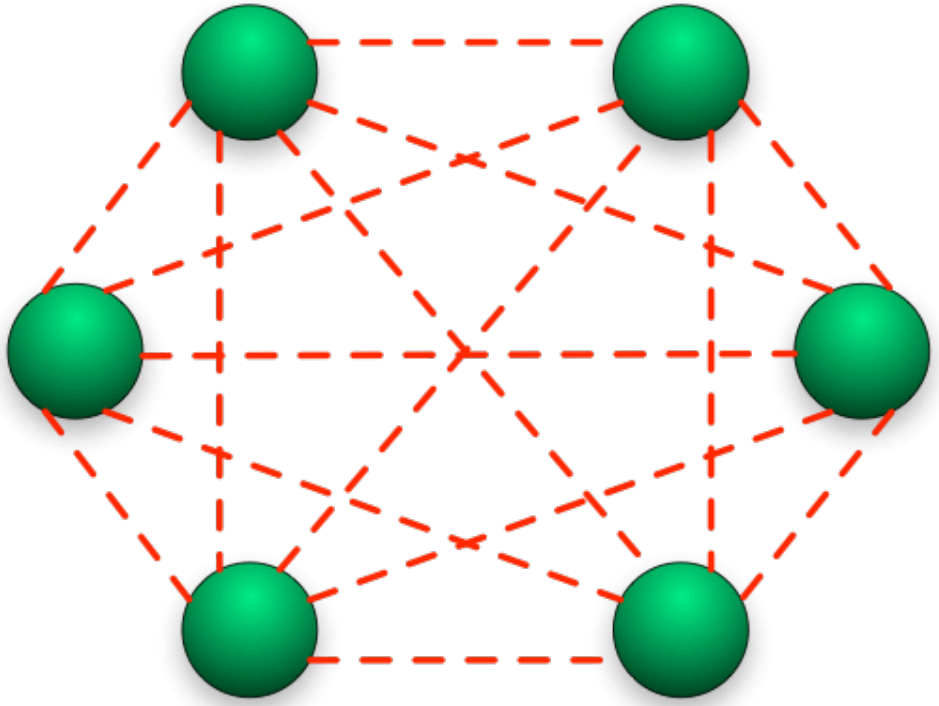
- Routing Information Service (RIS)
  - Collects BGP data
  - 600 peers
  - 16 Internet Exchange Points
  - http://www.ripe.net/ris



- DNSMON - http://dnsmon.ripe.net - Monitors 200 DNS servers

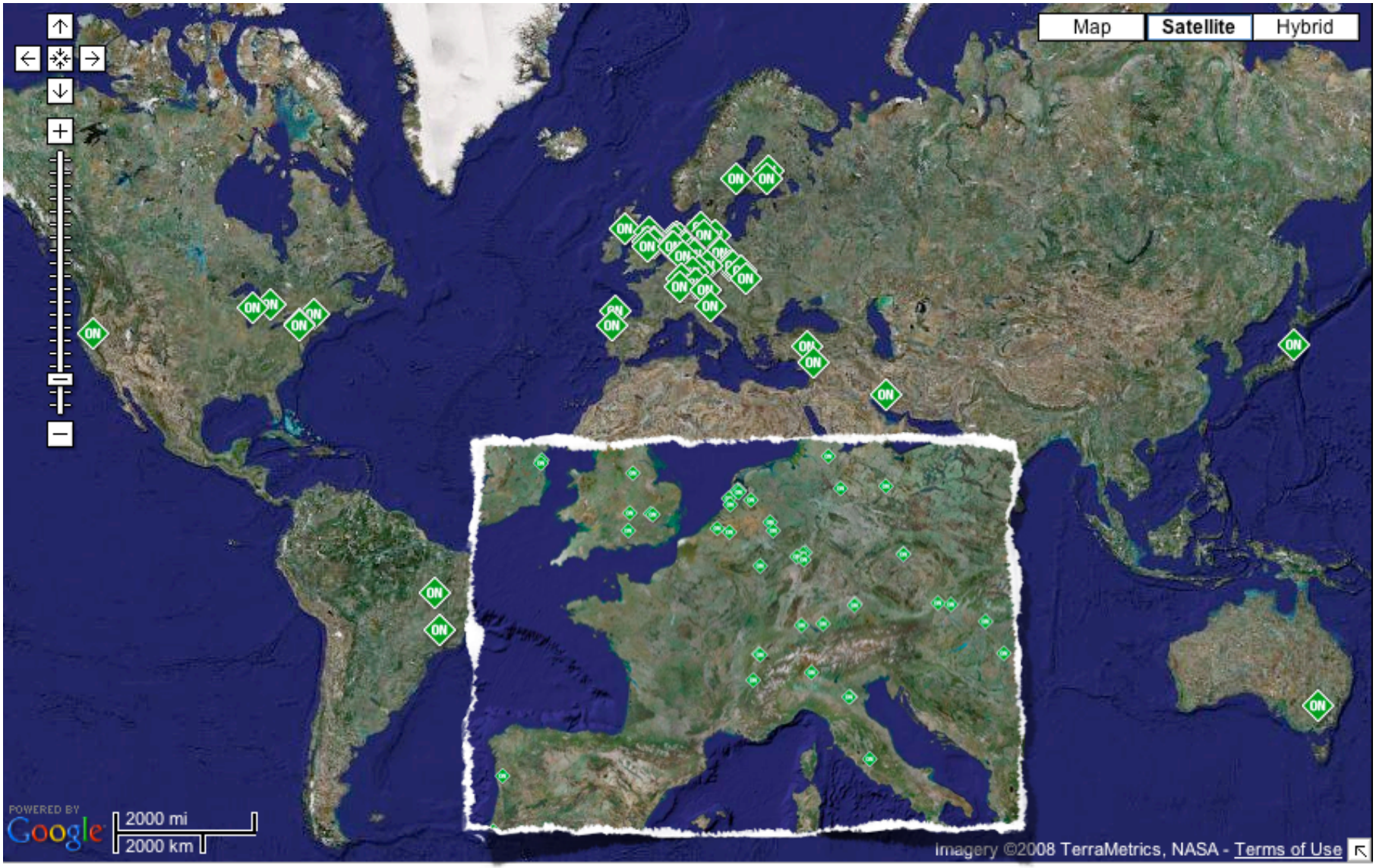
TTM - Test Traffic Measurements

- One way measurements of delay/loss/jitter between all nodes
- Uses GPS for timing
- Data freely available (subject to AUP)

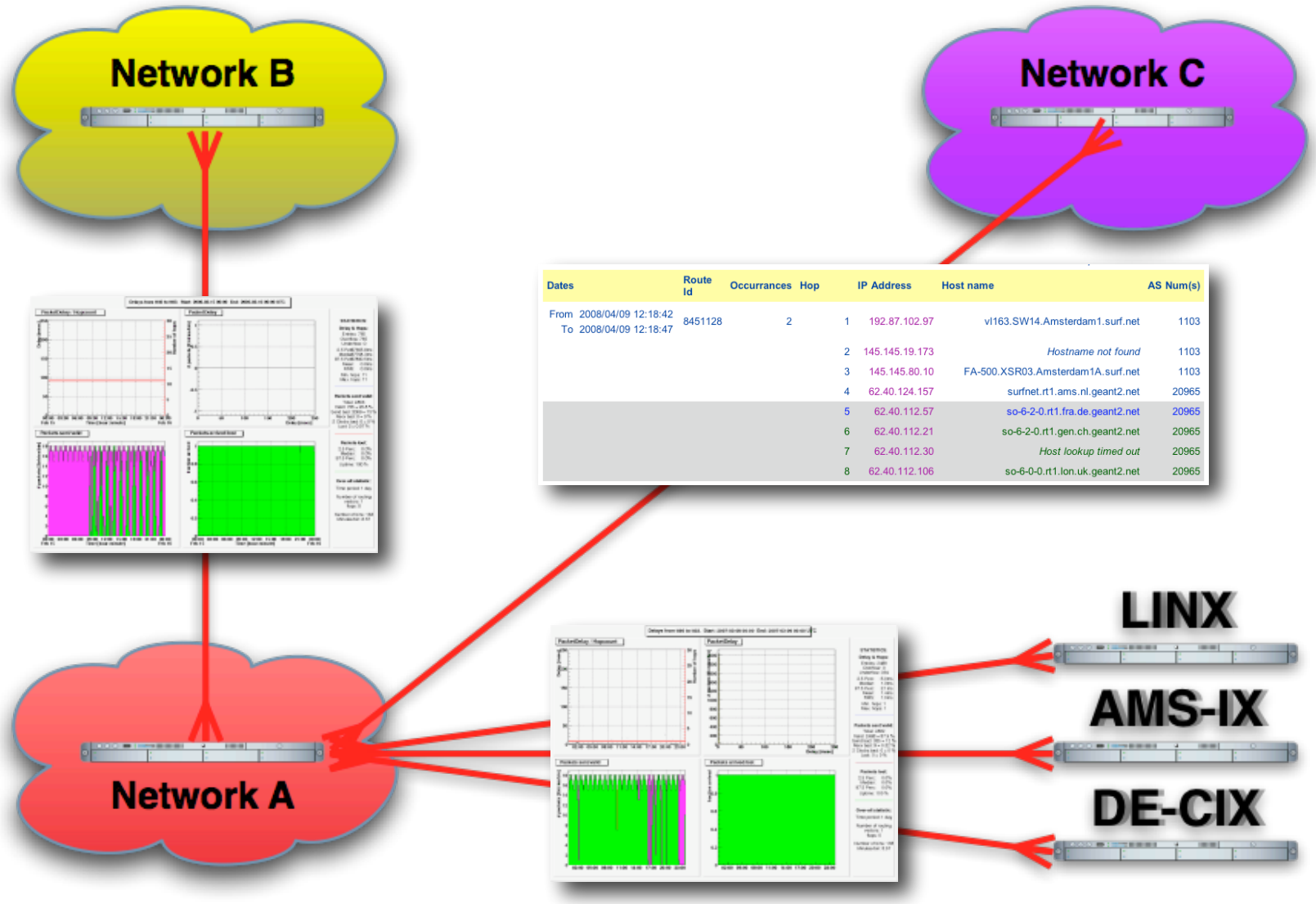


http://www.ripe.net/ttm

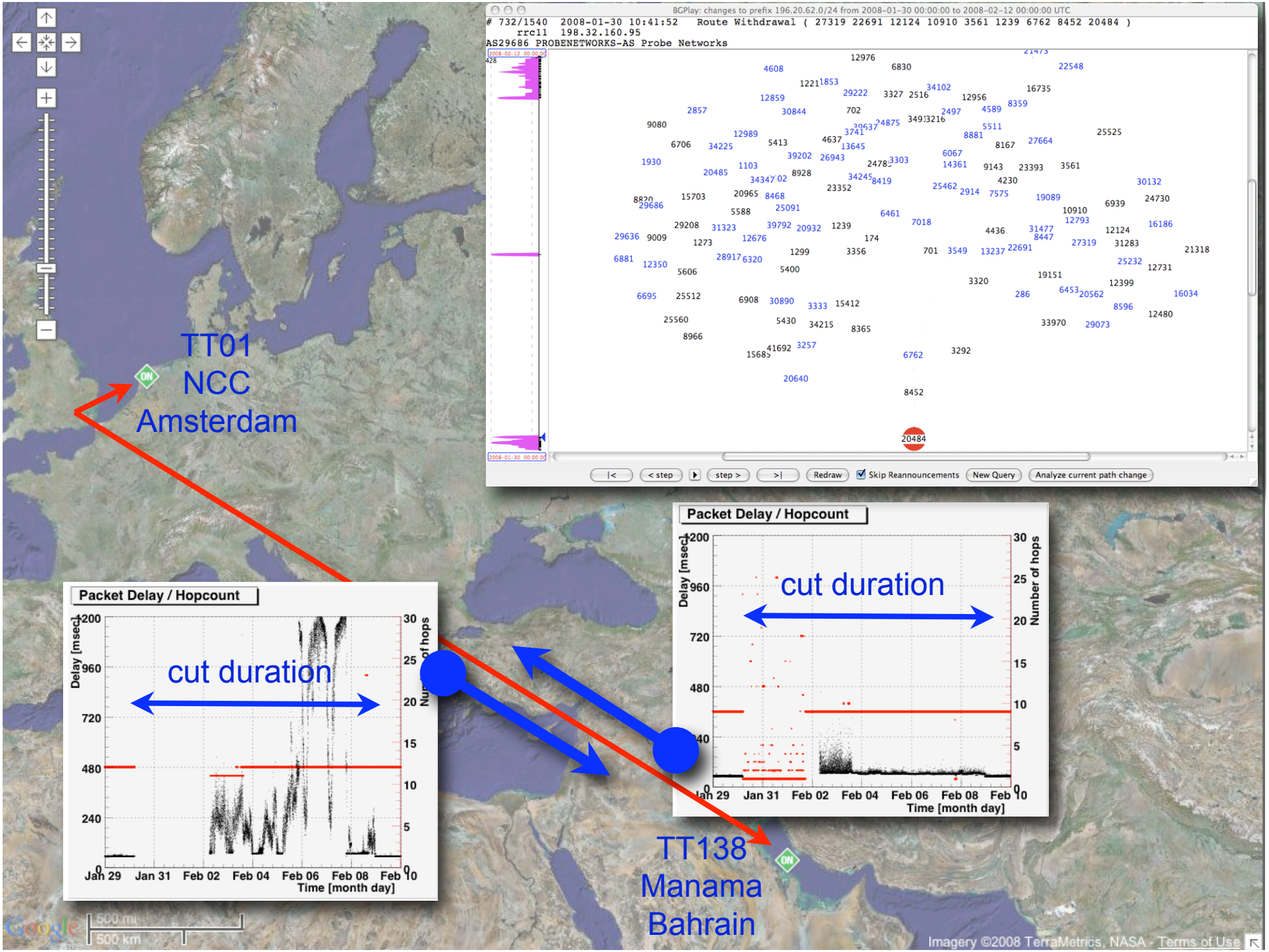
TTM - Test Traffic Measurements



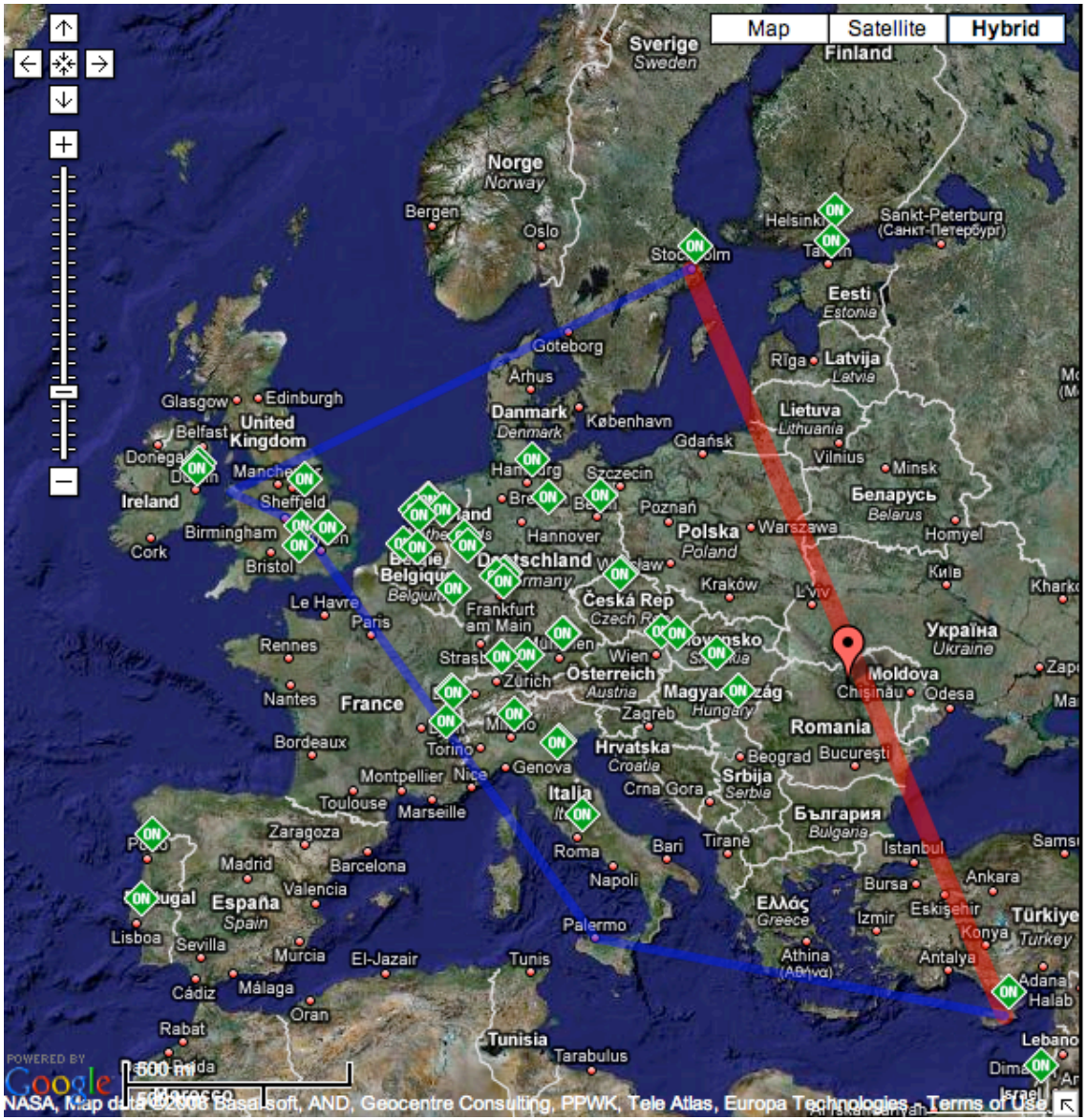
TTM - Test Traffic Measurements



Dates	Route Id	Occurrances	Hop	IP Address	Host name	AS Num(s)
From 2008/04/09 12:18:42 To 2008/04/09 12:18:47	8451128	2	1	192.87.102.97	vl163.SW14.Amsterdam1.surf.net	1103
			2	145.145.19.173	*Hostname not found*	1103
			3	145.145.80.10	FA-500.XSR03.Amsterdam1A.surf.net	1103
			4	62.40.124.157	surfnet.rt1.ams.nl.geant2.net	20965
			5	62.40.112.57	so-6-2-0.rt1.fra.de.geant2.net	20965
			6	62.40.112.21	so-6-2-0.rt1.gen.ch.geant2.net	20965
			7	62.40.112.30	*Host lookup timed out*	20965
			8	62.40.112.106	so-6-0-0.rt1.lon.uk.geant2.net	20965


TT01
NCC
Amsterdam
BGPlay: changes to prefix 196.20.62.0/24 from 2008-01-30 00:00:00 to 2008-02-12 00:00:00 UTC
732/1540 2008-01-30 10:41:52 Route Withdrawal (27319 22691 12124 10910 3561 1239 6762 8452 20484)
rrc11 198.32.160.95
AS29686 PROBENETWORKS-AS Probe Networks
20484
|< < step step > >| Redraw Skip Reannouncements New Query Analyze current path change
Packet Delay / Hopcount
cut duration
Delay [msec]
Number of hops
Jan 29 Jan 31 Feb 02 Feb 04 Feb 06 Feb 08 Feb 10
Time [month day]
Packet Delay / Hopcount
cut duration
Delay [msec]
Number of hops
Jan 29 Jan 31 Feb 02 Feb 04 Feb 06 Feb 08 Feb 10
Time [month day]
TT138
Manama
Bahrain
Google
500 mi
500 km
Imagery ©2008 TerraMetrics, NASA - Terms of Use

TTM Enhancements



Selection

tt07, S-10272 Stockholm (SE) Select

tt136, Lefkosia (CY) Select

Show Traceroutes

Filter

- [x] Online
- [ ] Setup
- [ ] Historic
- [ ] Offline
- [ ] Custom Selection

tt01, Amsterdam (NL)

Testbox in custom list (click to remove): None

Traceroutes

From tt07 to tt136, between **7/5/2008 0:56** and **14/5/2008 1:53**.
[Earlier]

1. 192.36.143.193 (1880) [tt07]
2. 194.71.10.16 (1880)
3. 192.108.195.125 (1880)
4. 213.206.129.86 (1239)
5. 213.206.129.33 (1239)
6. 213.206.129.37 (1239)
7. 213.206.128.57 (1239)
8. 82.195.191.6 (1239)
9. 213.144.181.1 (6762)
10. 213.144.181.42 (6762)
11. 195.14.157.60 (6866) [tt136]

Disclaimer: The geolocation data is based on the GeoLite database and might not be 100% correct.

TTM - Traceroute database

Test Traffic Measurement

Query Traceroute Database [tt26 - tt120]

SRC: tt26: LINX, London, UK

DST: tt120: Nominet UK, London, GB

Start Date 20070715 Start Time 00:00 UTC Resolve IPs (•) yes ( ) no

End Date 20070716 End Time 00:00 UTC Sort on Date

Traces in (•) IP ( ) AS For (•) IPv4 ( ) IPv6 test traffic Show diffs (•) yes ( ) no

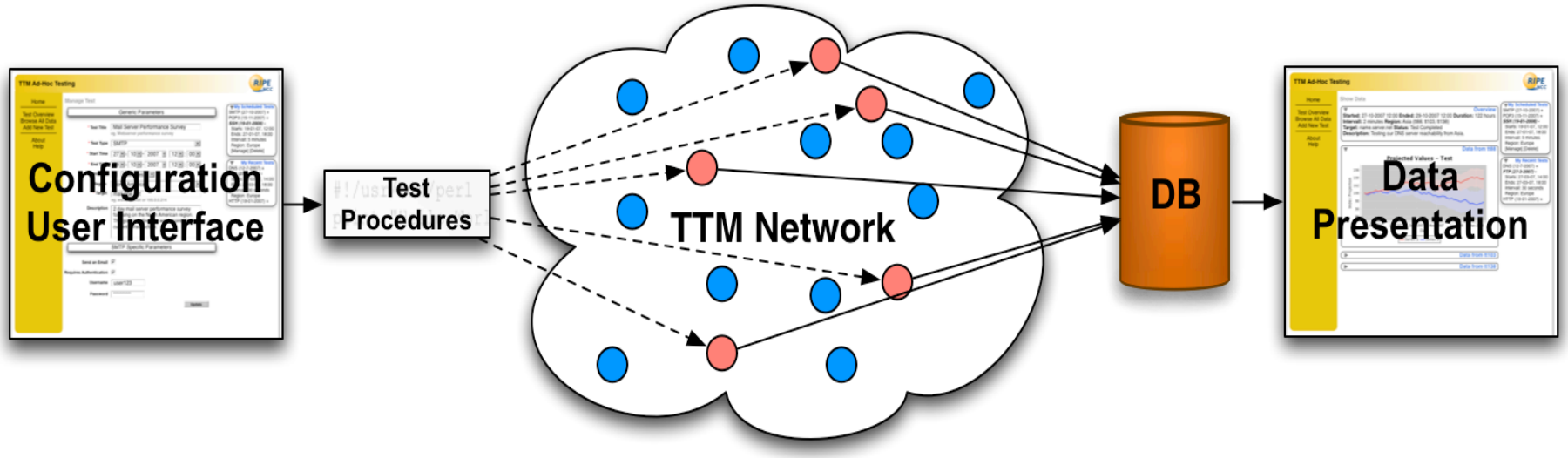
Submit

[See delay or jitter plots for this time period] [swap source and destination]

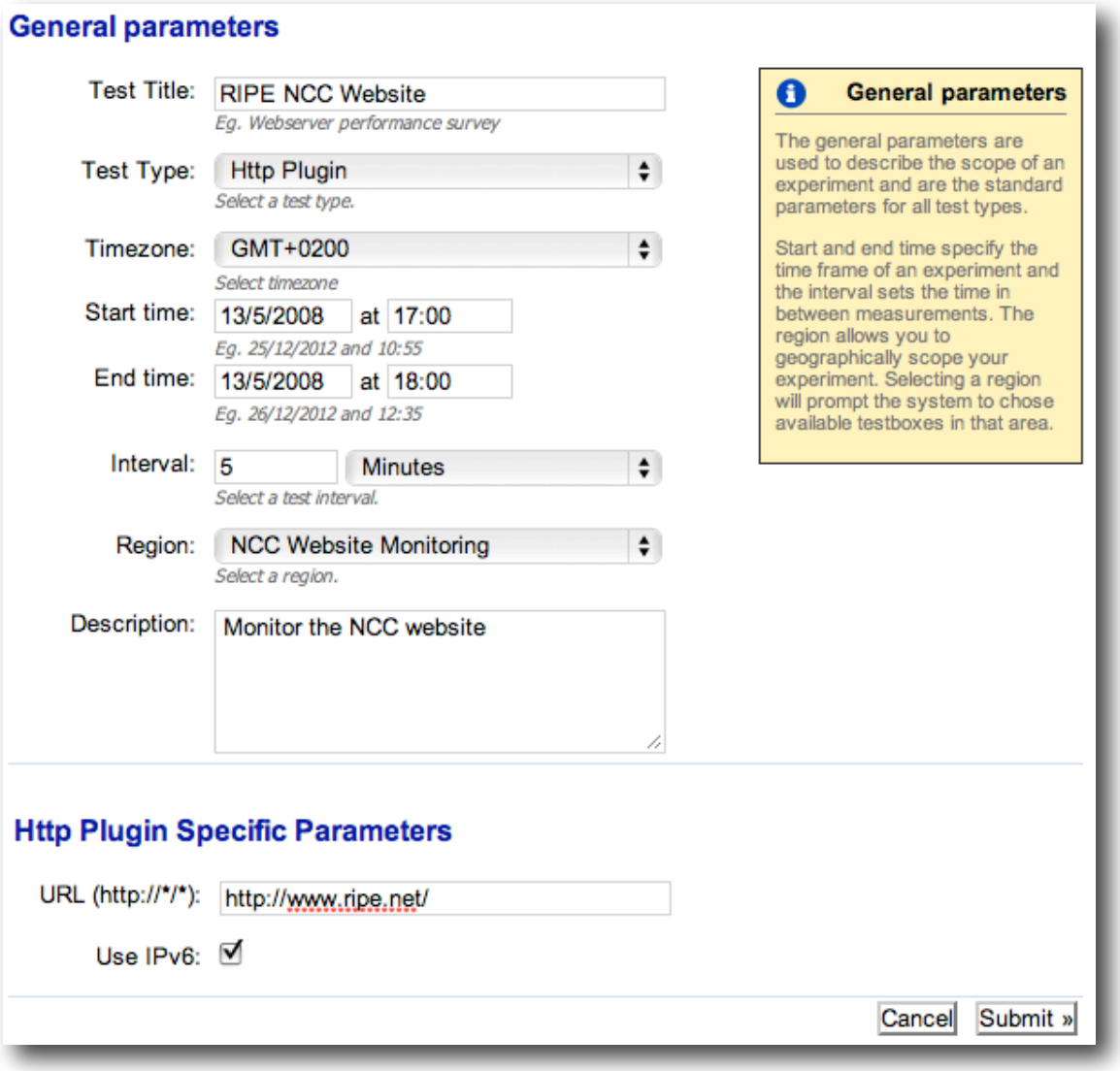
Click here for an explanation regarding the Query Traceroute Database CGI, or go to the legend instead.

Dates	Route Id	Occurrances	Hop	IP Address	Host name	AS Num(s)
From 2007/07/07 01:03:54 To 2007/07/30 23:43:16	4588612	5630	1	195.66.248.73	e3-1.tr3.tcm.linx.net	5459
			2	195.66.248.125	g0-1.pr2.tcm.linx.net	5459
			3	195.66.226.61	fe1-1-nom-col2.nominet.org.uk	5459
			4	213.248.206.227	host-213-248-206-227.nominet.org.uk	8683

Ad-Hoc tests


Configuration
User Interface
Test
Procedures
TTM Network
DB
Data
Presentation

Ad-Hoc tests


General parameters
Test Title:
RIPE NCC Website
Eg. Webserver performance survey
Test Type:
Http Plugin
Select a test type.
Timezone:
GMT+0200
Select timezone
Start time:
13/5/2008
at
17:00
Eg. 25/12/2012 and 10:55
End time:
13/5/2008
at
18:00
Eg. 26/12/2012 and 12:35
Interval:
5
Minutes
Select a test interval.
Region:
NCC Website Monitoring
Select a region.
Description:
Monitor the NCC website
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 chose available testboxes in that area.
Http Plugin Specific Parameters
URL (http://*/*):
http://www.ripe.net/
Use IPv6:
Cancel
Submit »

Test output

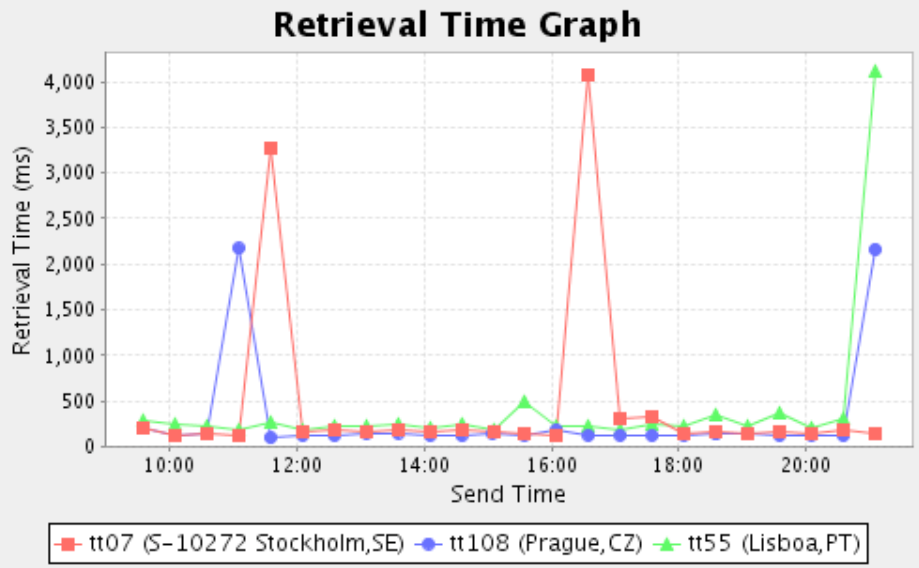
Overview

Started: 05/05/2008 11:35 CEST **Ended**: 05/05/2008 23:25 CEST **Interval**: 30 m **Region**: Europe
URL (http://*/*): http://rosie.ripe.net/ **Use IPv6**: 0
TTM Boxes: tt55 tt108 tt07
Description:

Measurement technique

Downloads the configured webpage, checks for HTTP status "200 OK", and logs the time it took to retrieve it in ms. In case the status was not "200 OK" it will log 0.

Retrieval Time Graph

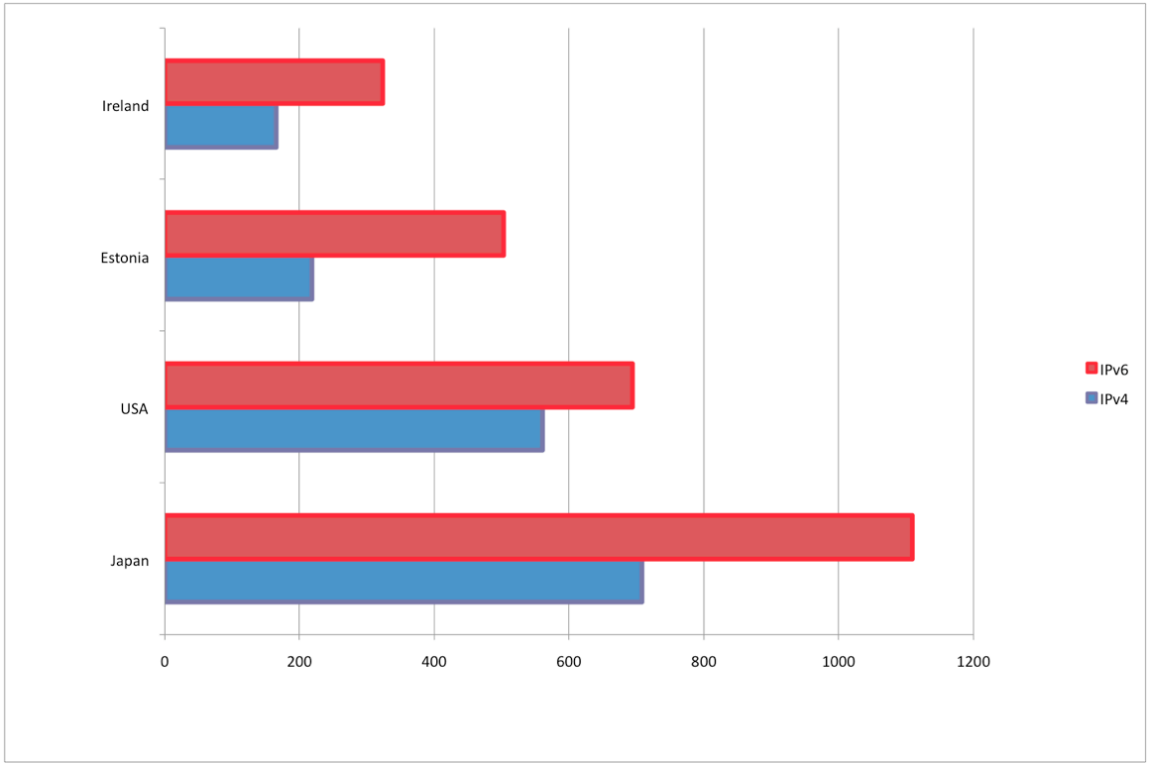


Enlarge

Test output

Round-Trip Delay Table

TTM Box	Send Time	Round-Trip Delay (ms)
tt56 (Tallinn,EE)	2008-05-07 11:54:58.0	67.9739
tt144 (Redwood City, CA 94063,US)	2008-05-07 11:54:55.0	193.538
tt103 (Yokohama,JP)	2008-05-07 11:54:54.0	309.386
tt25 (Dublin 14,IE)	2008-05-07 11:54:53.0	66.097

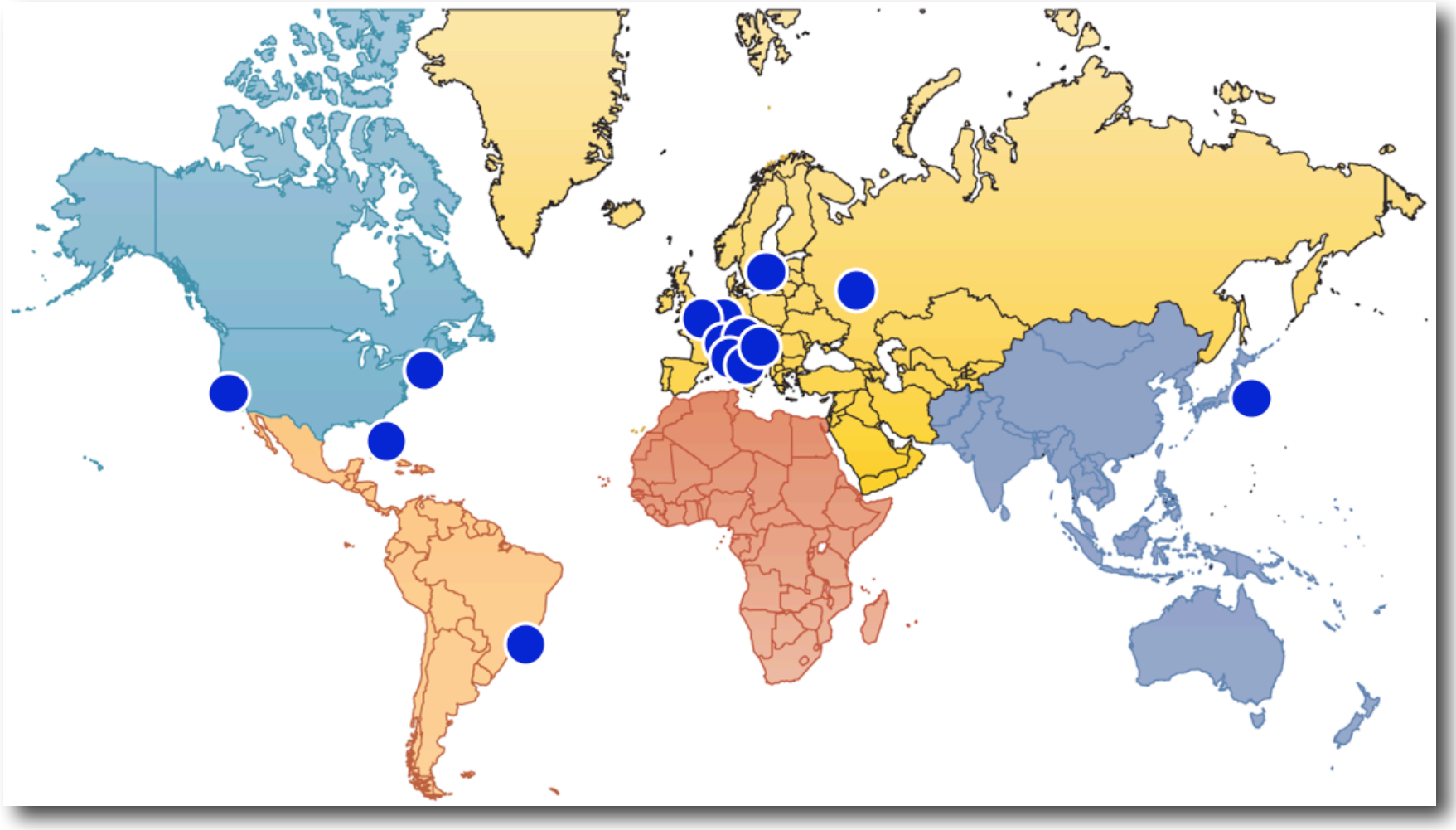


Routing Information Service - RIS

- Looking glass with history
- Collects routing information (BGP)
  - AS12654 has 600 peers
  - 15 Remote Route Collectors (RRCs) at IXPs
- 3 months live data searchable online
  - Powerful query tools
- All raw data available to everyone

http://www.ripe.net/ris

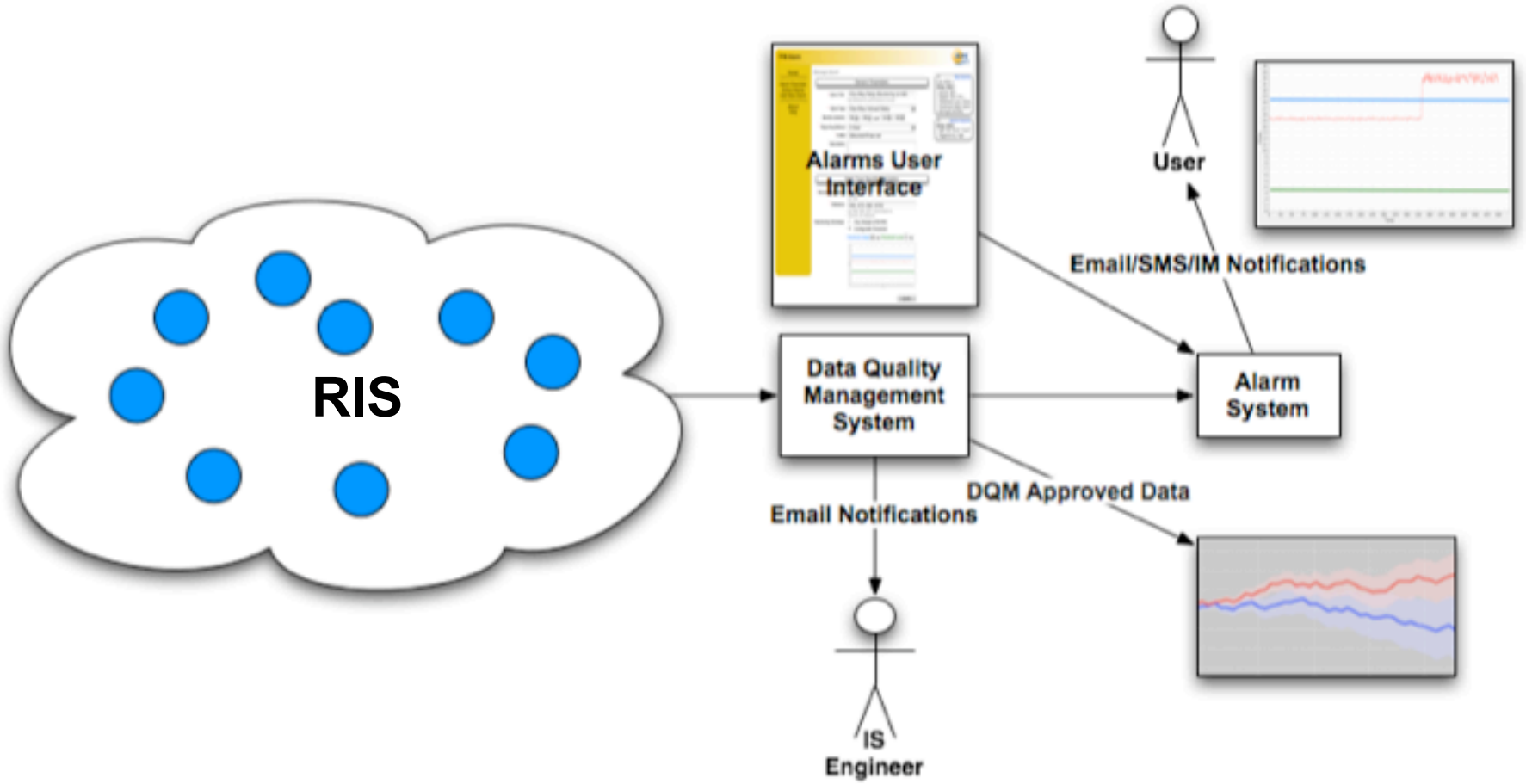
Routing Information Service - RIS



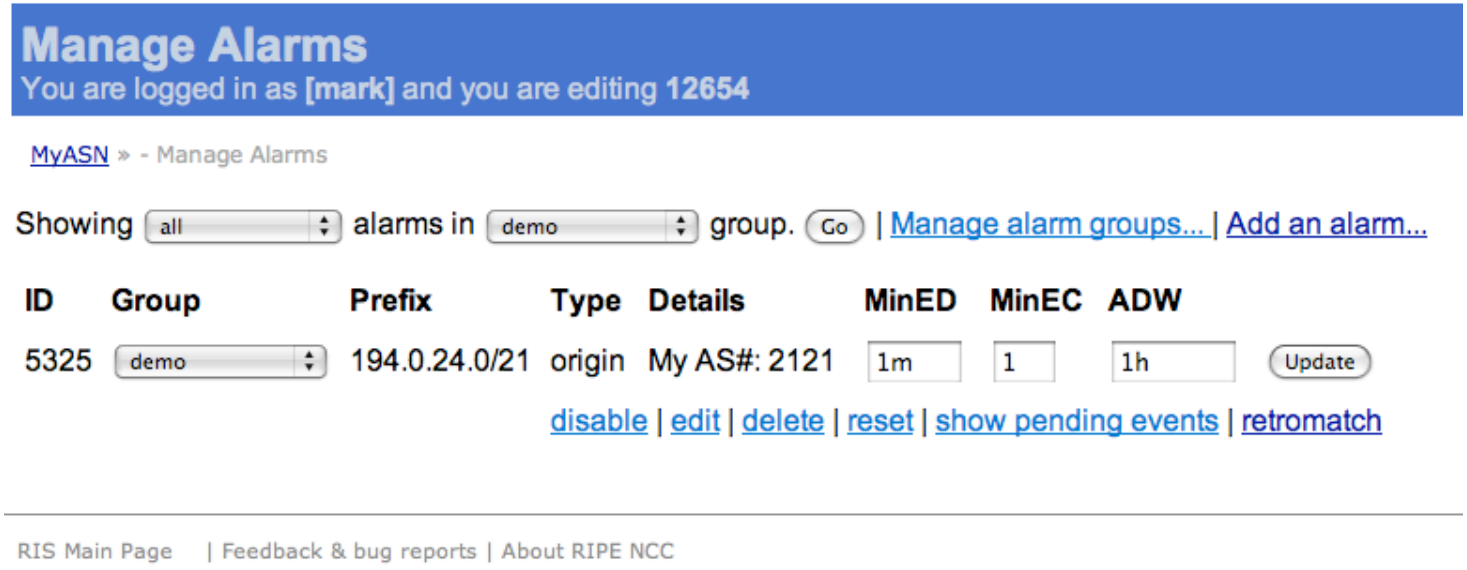
RIS - MyASN

http://www.ris.ripe.net/myasn.html

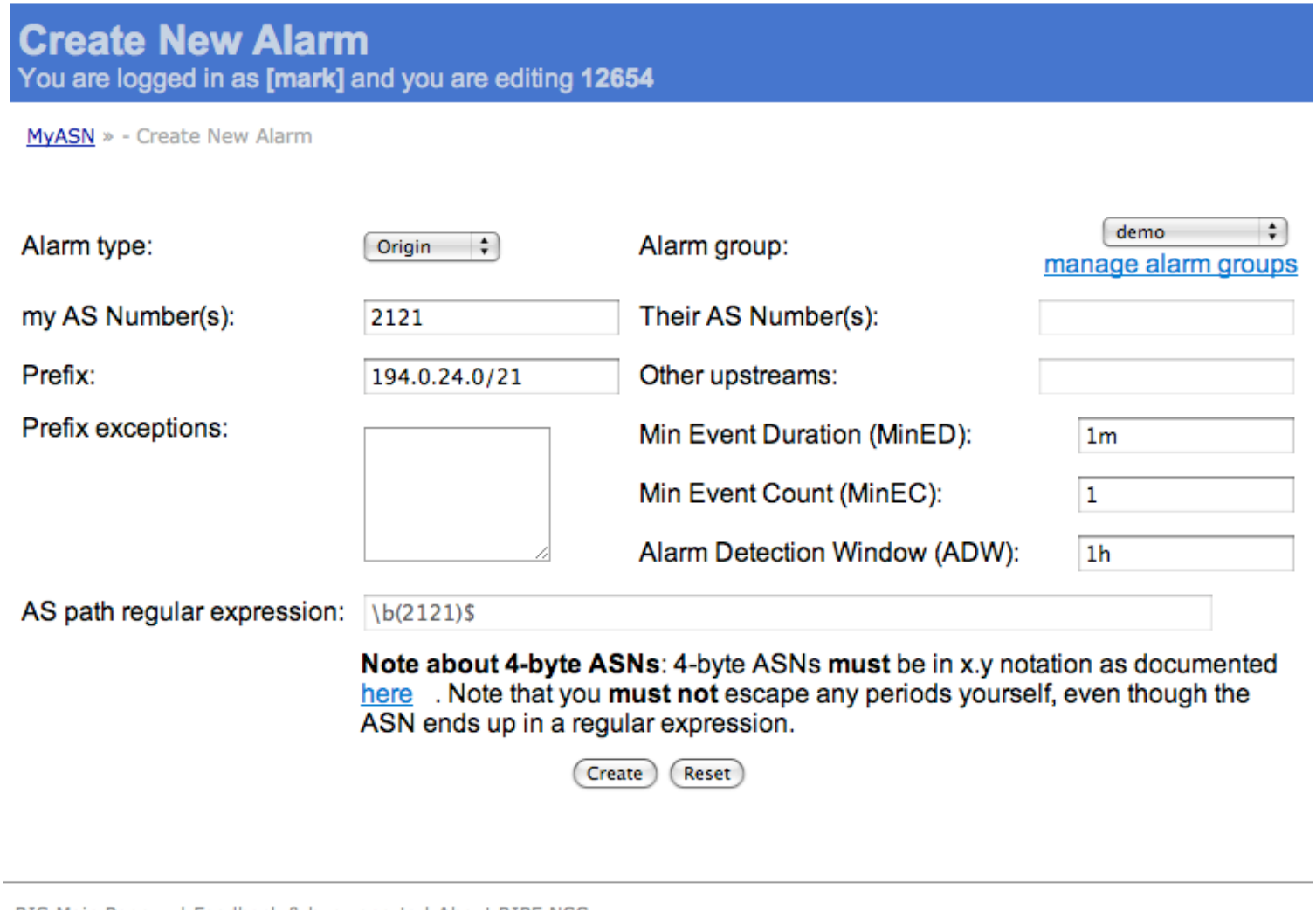
MyASN - Alarms



MyASN - Managing Alarms



MyASN - Creating Alarms



MyASN - Triggered Alarms

View triggered alarms

You are logged in as **[mark]** and you are editing **12654**

MyASN » - View Alarms

Showing all alarms in any group. Go | Manage alarm groups... | Add an alarm...

ID	Group	Prefix	Type	RegEX	MinED	MinEC	ADW	State	Events	Details	Delete log
3294	va	+ 84.205.67.0/24	origin	My AS#: 65510	1m	1	1h	A	232275	view	delete log
2736	nagios monitor	+ 147.60.0.0/16	origin	My AS#: 65533	1m	1	1m	A	6419	view	delete log
748	dfk	+ 192.6.143.0/24	origin	My AS#: 14496	1m	1	1h	A	9	view	delete log

RIS Main Page | Feedback & bug reports | About RIPE NCC

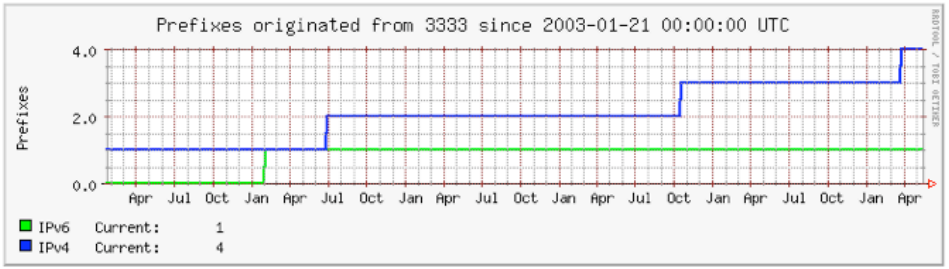
MyASN - Notifications

```
From: MyASN Notifications <ris@ripe.net>
Date: February 24, 2008 18:48:22
To: alerts@youtube.com
Subject: New MyASN alarms for 36561

Dear MyASN contact,

New alarms were detected for 36561. Please find the details below.
Depending on your detail level settings you might not see all the events.

Please use the web interface for further details:
http://www.ris.ripe.net/myasn/

If you have any questions, don't hesitate to contact us at:
ris@ripe.net
```

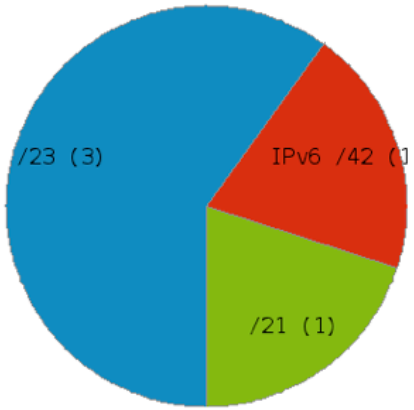
RRC	Prefix	AS Path	Conflict AS	Peer	First seen
rrc00	208.65.153.0/24	3333 6320 3549 3491 17557	17557	193.203.0.124	Sun Feb 24 18:47:32 2008

RIS - AS Dashboard

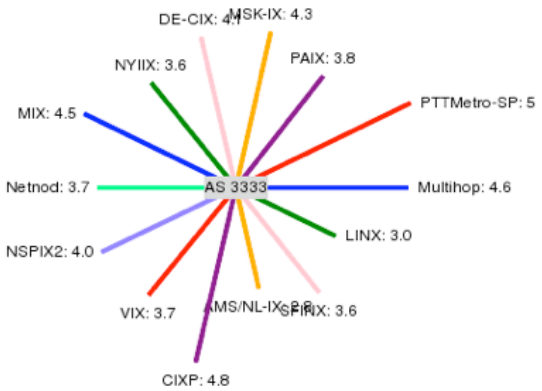
Overview | Prefixes | Transits | AS path lengths | Whois | Former bogon filtering | Update graphs



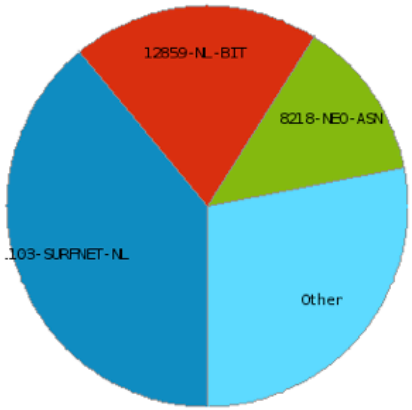
Prefix size distribution

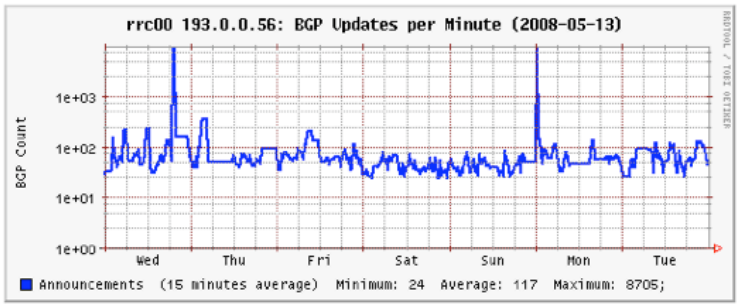


Average AS path length to each collector



Transits distribution





RIS - Prefix dashboard

This prefix originated from AS5459 (LINX-AS London Internet Exchange Ltd.).

This prefix comes from space allocated to RIPE NCC by the IANA.

Related (overlapping) prefixes seen by RIS in the last 30 days

Prefix	Origin AS	AS name	Last seen
195.66.230.0/24	2914	NTT-COMMUNICATIONS-2914 - NTT America, Inc.	2008-05-03 21:42:11 UTC

Note: Prefixes marked orange are currently not announced. The entries refer to announcements in the past.

Prefix stability and visibility in the last 48 hours

⊞ *Explanation*

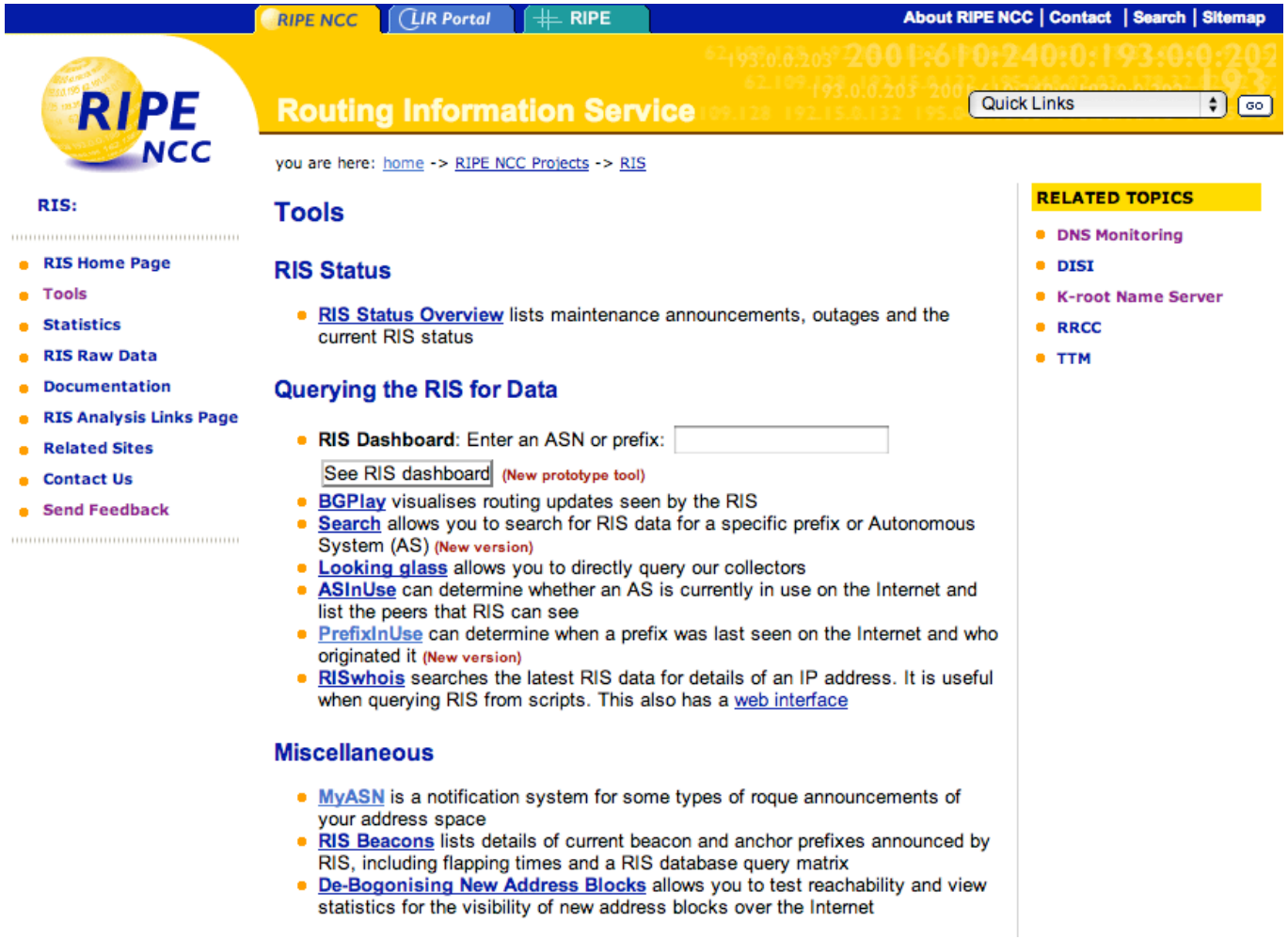
Visibility

The visibility of this prefix is **99%**.

During the last 48 hours, **0 updates** per peer sending this prefix were found.

Stability

RIS Tools



http://www.ris.ripe.net

RIS Tools - prefixinuse

Prefix	195.184.224.0/19	Exact match	Submit
RRC Box	rrc03, AMS-IX		
Sort results	by time		
Time interval	1 month		
Output type	HTML Text		

The last announcement of this prefix occurred on **2008-05-14 09:34:43 UTC**. The RIS database contains data until **2008-05-14 10:25:00 UTC**.

1 entries found for 195.184.224.0/19

Prefix	Last announced	Origin AS
195.184.224.0/19	2008-05-14 09:34:43 UTC	8897

RIS Tools - asinuse

AS number	3333	Submit
RRC Box	rrc00, RIPE NCC	
Sort results	by peer AS	
Time interval	1 month	
Output type	HTML Text	

The RIS database contains data until 2007-08-15 07:55:00Z. Copy the link to get the URL for this search.

AS3333 was last announced on 2007-08-15 07:54:52Z. 108 peers are found for **AS3333.**

Neighbor of AS3333	Last seen	ASpath
42	2007-08-15 00:49:01Z	3333 42 32978
174	2007-08-15 07:51:50Z	3333 174 9299 7491
286	2007-08-15 07:54:13Z	3333 286 209 721 27064 27066 3538 5988
702	2007-08-15 07:44:52Z	3333 702 20485 21127 8410 8410 34833
1103	2007-08-15 07:54:51Z	3333 1103 20965 24490 24475 4621
1126	2007-08-07 04:10:47Z	3333 1126 21286
1257	2007-08-15 07:03:42Z	3333 1257 42732 21042
1299	2007-08-15 07:54:28Z	3333 1299 5518 35809
1836	2007-08-13 00:25:13Z	3333 1836

RIS Tools - riswhois

```
% This is RIPE NCC's Routing Information Service
% whois gateway to collected BGP Routing Tables
% IPv4 or IPv6 address to origin prefix match
%
% For more information visit http://www.ripe.net/ris/riswhois.html


route:        195.66.224.0/19
origin:       AS5459
descr:        LINX-AS London Internet Exchange Ltd.
lastupd-frst: 2008-02-18 21:10Z  198.32.160.96@rrc11
lastupd-last: 2008-05-14 07:34Z  195.69.145.216@rrc03
seen-at:      rrc00,rrc01,rrc02,rrc03,rrc04,rrc05,rrc06,rrc07,rrc10,rrc11,rrc12,rrc13,rrc14,rrc15,rrc16
num-rispeers: 133
source:       RISWHOIS
```

rrc00 | Query RIS Looking Glass | Query RIS Database

Address or Prefix 195.66.224.0/23

All more specific matches All less specific matches

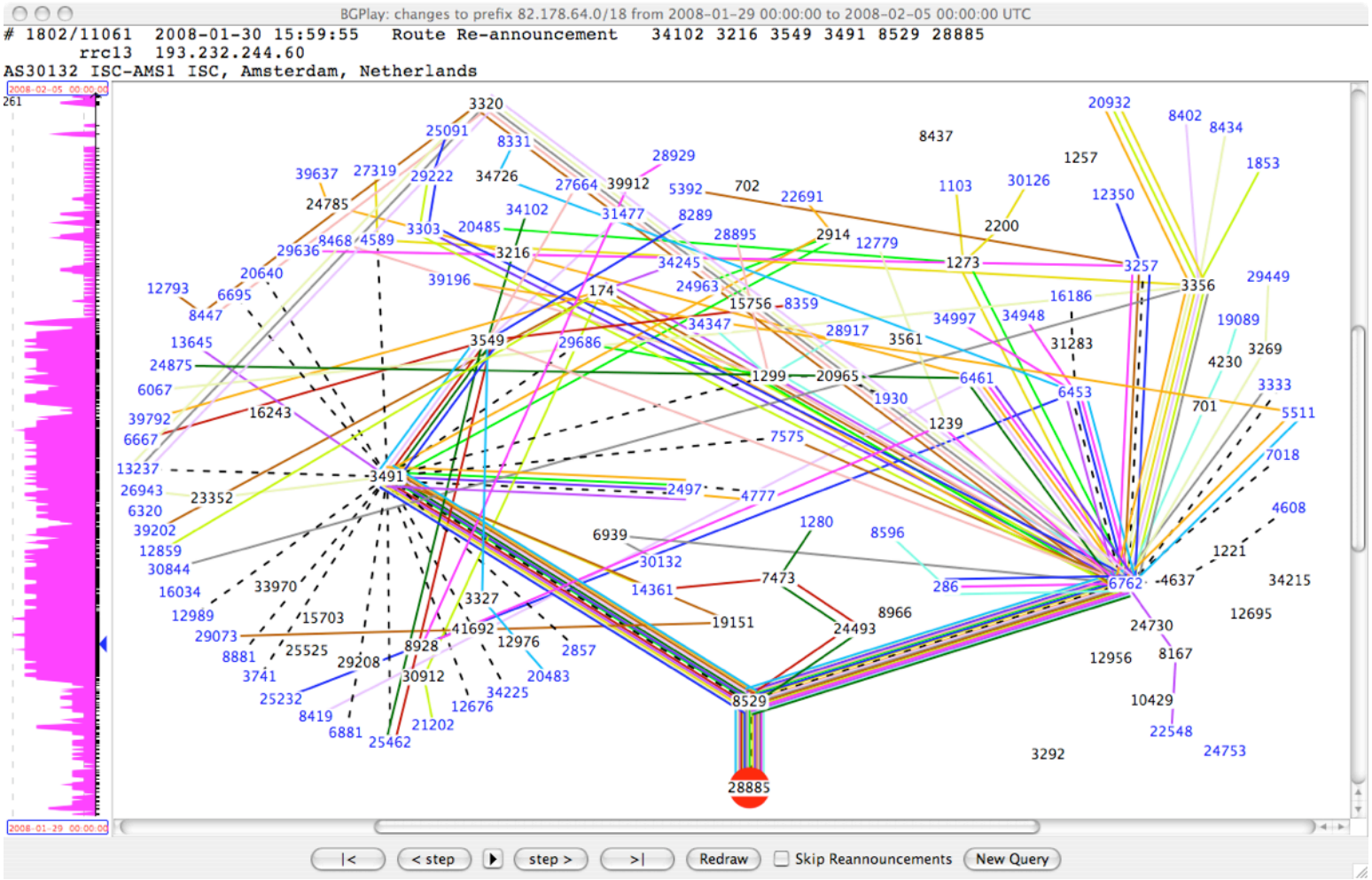
Exact match only

Short fast output Return primary keys only

Clear Form Query RISwhois

- whois -h riswhois.ripe.net 195.66.224.0/23

RIS Tools - BGPlay



RIS - Reporting and statistics

- RIS weekly reports:
  - Prefix distribution
  - Average AS path lengths
  - Numbers of single and multihomed ASs
  - Martians and hotspots

o List of hot-spots during the week.

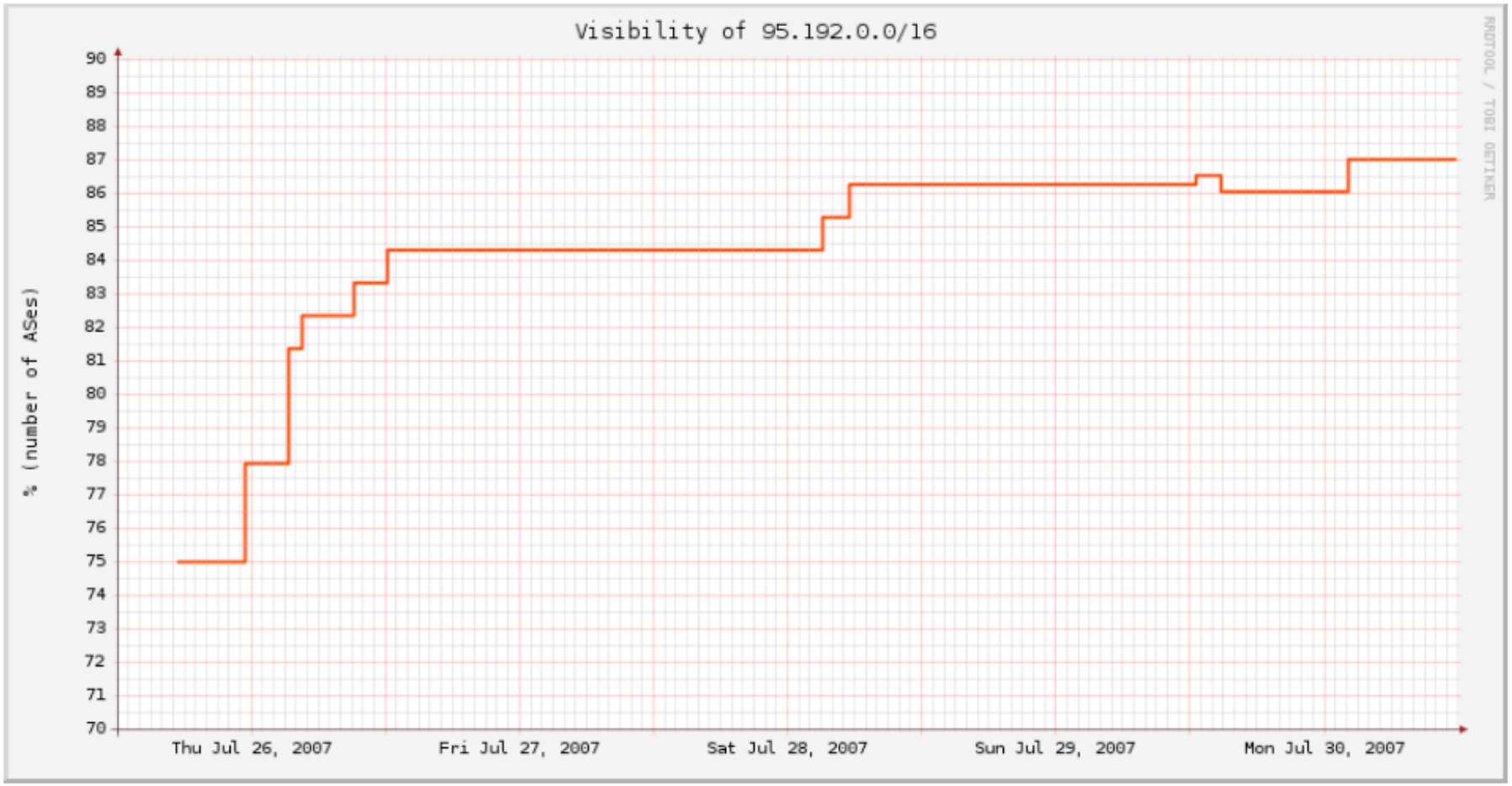
Prefix	Origin AS	Number of updates
203.34.88.0/24	18117	2986855
194.110.73.0/24	30850	1062492
62.24.238.0/24	13285	625800
193.242.111.0/24	2128	624969
77.247.128.0/20	43043	515486
221.135.253.0/24	9583	335059
80.243.64.0/20	21332	268483
12.106.30.0/24	22072	265643

o List of martians appearing throughout the week.

Prefix	Origin AS
10.11.12.0/24	34245
10.90.3.0/24	174
172.16.0.0/16	7908
172.16.2.2/32	8447
192.0.2.0/24	2854
192.168.1.0/24	7908

http://www.ripe.net/projects/ris/stats

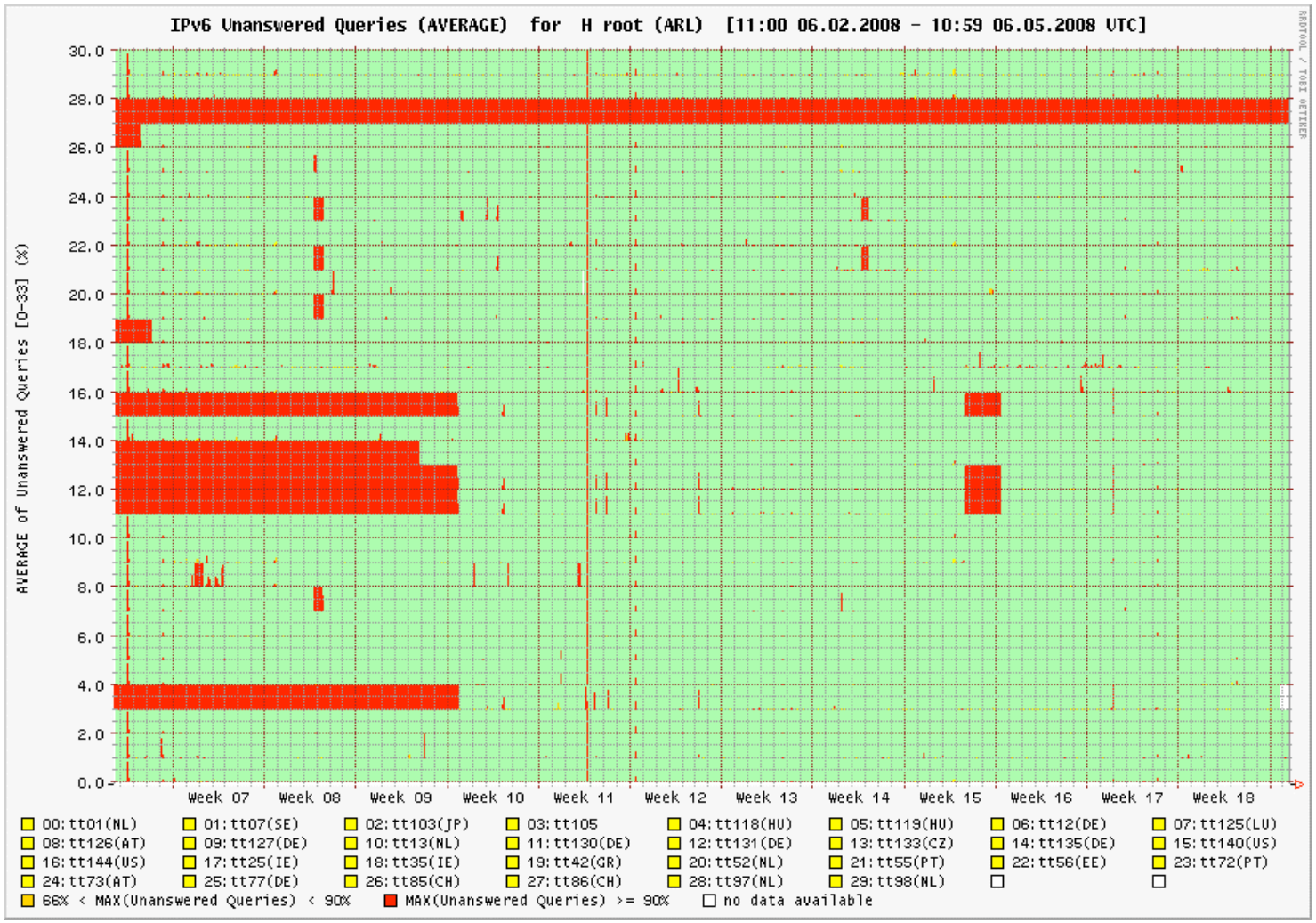
RIS - Debogon (95/8)



http://www.ris.ripe.net/debogon

DNSMON

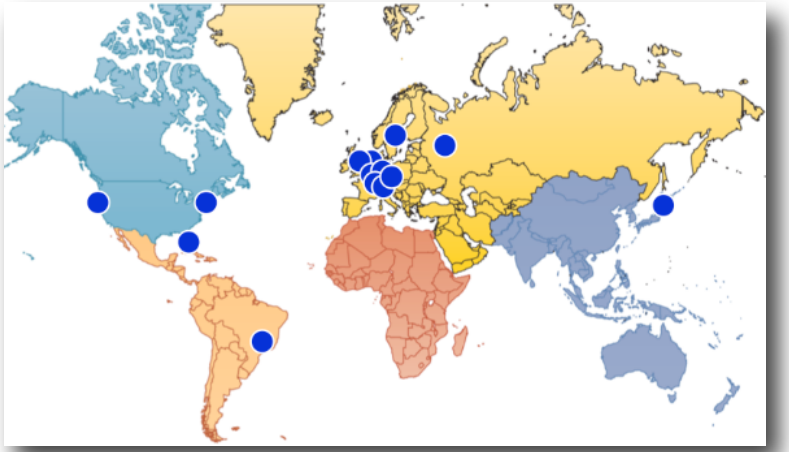
- Monitors 200+ DNS servers (ccTLD/gTLD) worldwide



DNSMON

Credits

- RIPE NCC Information Services
  - http://is-portal.ripe.net
- Routing Information Service (RIS)
  - http://www.ripe.net/ris
- Test Traffic Measurements (TTM)
  - http://www.ripe.net/ttm
- DNSMON
  - http://dnsmon.ripe.net
- Full NCC Science Group analysis
  - http://ripe.net/projects/reports/2008cable-cut
  - http://www.ripe.net/news/study-youtube-hijacking.html



Questions?