Introduction to Information Services

Mark Dranse
Information Services Manager
markd@ripe.net
Information Services

TTM - *Test Traffic Measurements*

DNSMON - *DNS Monitoring*

RIS - *Routing Information Service*

Hostcount - *NCC region host count*
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 - Locations

Manama
TTM - Test Traffic Measurements

ISP A → LINX
ISP A → AMSIX
ISP A → DE CIX
ISP B
ISP C

Mark Dranse
Qatar Regional Meeting - November 2007
http://www.ripe.net
TTM - Case study

Shorter path!

Longer delay
TTM - Traceroutes

<table>
<thead>
<tr>
<th>Dates</th>
<th>Route Id</th>
<th>Occurrences</th>
<th>Hop</th>
<th>IP Address</th>
<th>Host name</th>
<th>AS Num(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>2004/12/09 04:11:04</td>
<td>4649858</td>
<td>18</td>
<td>193.0.0.14</td>
<td>o002.sinadr.ripe.net</td>
<td>3333</td>
</tr>
<tr>
<td>To</td>
<td>2004/12/10 04:11:04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Some hosts in telia.net where removed from the path:

- 213.248.65.162 hbg-bb2-pos7-0-0.telia.net 6762
- 213.248.65.121 ffm-bb2-pos7-0-0.telia.net 6762
- 213.248.65.142 mno-b1-pos4-0.telia.net 6762

...
# TTM - Traceroute database

## Test Traffic Measurement

### Query Traceroute Database [tt26 - tt120]

<table>
<thead>
<tr>
<th>SRC: tt26</th>
<th>DST: tt120</th>
</tr>
</thead>
</table>

Start Date: 20070715 00:00 UTC  
End Date: 20070716 00:00 UTC  
Resolve IPs: yes  
Sort on: Date

Traces in: IP, AS, IPv4, IPv6, test traffic, Show diffs: yes

[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.

<table>
<thead>
<tr>
<th>Dates</th>
<th>Route Id</th>
<th>Occurrences</th>
<th>Hop</th>
<th>Host name</th>
<th>AS Num(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 2007/07/07 01:03:54 To 2007/07/30 23:43:16</td>
<td>4588612</td>
<td>5630</td>
<td>1</td>
<td>195.66.248.73</td>
<td>e3-1.tr3.tcm.linx.net</td>
</tr>
<tr>
<td>2</td>
<td>195.66.248.125</td>
<td>g0-1.pr2.tcm.linx.net</td>
<td>5459</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>195.66.226.61</td>
<td>fe1-1-nom-col2.nominet.org.uk</td>
<td>5459</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>213.248.206.227</td>
<td>tt120.ripe.net</td>
<td>8683</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TTM - Enhancements

Selection

- tt26, London (UK)
- tt03, Amsterdam (NL)

Zoom

Filter

- SETUP
- HISTORIC
- CUSTOM

Traceroutes

[Earlier][Later]

1. 195.66.248.73 (5459) [tt26]
2. 195.66.248.125 (5459)
3. 195.66.226.77 (5459)
4. 212.113.0.118 (3356)
5. 468.116.98 (3356)
6. 212.167.126.26 (3356)
7. 468.120.176 (3356)
8. 195.69.144.68 (1200/12989)
9. 193.0.0.145 (3333) [tt03]
TTM - Enhancements
DNSMON

Measures quality of DNS service
... from diverse locations
... and retains historical data for analysis

http://dnsmon.ripe.net
DNSMON - Root DDoS February 2007

Unanswered Queries for Domain 'root' from 56 Probes (AVERAGE) [06.02.2007 08:00 - 07.02.2007 07:59 UTC]
DNSMON - All TTM view
DNSMON - Per probe view
DNSMON

- Monitoring limited to ‘infrastructure’ operators
  - Root, gTLD, ccTLD

- But!
  - Data is available to everyone (with a short delay)
  - See how your local ccTLD operator performs
  - Get a TTM box and see stats from your own network!

http://dnsmon.ripe.net
RIS - Routing Information Service

- Looking glass with history
- Collects routing information (BGP)
  - AS12654 has 580 peers
  - 14 Remote Route Collectors (RRCs)
- 3 months live data searchable online
- All raw data available to everyone

http://www.ris.ripe.net
RIS - Remote Route Collectors

![Map of RIS - Remote Route Collectors]

- Running
- Setup
RIS - Tools

you are here: home -> RIPE NCC Projects -> RIS

Tools

RIS Status

- [RIS Status Overview](http://www.ris.ripe.net) lists maintenance announcements, outages and the current RIS status

Querying the RIS for Data

- [Looking Glass](http://www.ris.ripe.net) allows you to execute commands on our Remote Route Collectors (RRCs), viewing the most up to date routing data
- [BGPPlay](http://www.ris.ripe.net) visualises routing updates seen by the RIS
- [Search](http://www.ris.ripe.net) allows you to search for RIS data for a specific prefix or Autonomous System (AS)
- [RISwhols](http://www.ris.ripe.net) searches the latest RIS data for details of an IP address. It is useful when querying RIS from scripts. This also has a [web interface](http://www.ris.ripe.net)
- [ASInUse](http://www.ris.ripe.net) can determine whether an AS is currently in use on the Internet and list the peers that RIS can see
- [PrefixInUse](http://www.ris.ripe.net) can determine when a prefix was last seen on the Internet and who originated it

Miscellaneous

- [MyASN](http://www.ris.ripe.net) is a notification system for some types of rogue announcements of your address space
- [RIS Beacons](http://www.ris.ripe.net) lists details of current beacon and anchor prefixes announced by RIS, including flapping times and a RIS database query matrix
- [De-Bogonising New Address Blocks](http://www.ris.ripe.net) allows you to test reachability and view statistics for the visibility of new address blocks over the Internet

http://www.ris.ripe.net
### RIS - MyASN

#### Manage Alarms

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

<table>
<thead>
<tr>
<th>ID</th>
<th>Group</th>
<th>Prefix</th>
<th>Type</th>
<th>Details</th>
<th>MinED</th>
<th>MinEC</th>
<th>ADW</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>748</td>
<td>dfk</td>
<td>192.6.143.0/24</td>
<td>origin</td>
<td>My AS#: 14496</td>
<td>1m</td>
<td>1</td>
<td>1h</td>
<td>Update</td>
</tr>
<tr>
<td>2736</td>
<td>nagios monitor</td>
<td>147.60.0.0/16</td>
<td>origin</td>
<td>My AS#: 65533</td>
<td>1m</td>
<td>1</td>
<td>1m</td>
<td>Update</td>
</tr>
<tr>
<td>3498</td>
<td>nagios monitor</td>
<td>193.0.0.0/21</td>
<td>origin</td>
<td>My AS#: 12654</td>
<td>1m</td>
<td>1</td>
<td>1h</td>
<td>Update</td>
</tr>
<tr>
<td>3294</td>
<td>va</td>
<td>84.205.67.0/24</td>
<td>origin</td>
<td>My AS#: 65510</td>
<td>1m</td>
<td>1</td>
<td>1h</td>
<td>Update</td>
</tr>
</tbody>
</table>

[More information](http://www.ris.ripe.net/myasn.html)
RIS - BGPlay

Java Applet Window

# 92/116 2006-09-13 03:59:15 Path Change from 25462 6695
to 25462 6695
rrc13 193.232.244.187
AS3549 GBLX Global Crossing Ltd.
RIS - Reporting and statistics

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

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

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Origin AS</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.11.12.0/24</td>
<td>34245</td>
</tr>
<tr>
<td>10.90.3.0/24</td>
<td>174</td>
</tr>
<tr>
<td>172.16.0.0/16</td>
<td>7908</td>
</tr>
<tr>
<td>172.16.2.2/32</td>
<td>8447</td>
</tr>
<tr>
<td>192.0.2.0/24</td>
<td>2854</td>
</tr>
<tr>
<td>192.168.1.0/24</td>
<td>7908</td>
</tr>
</tbody>
</table>

http://www.ripe.net/projects/ris/stats
RIS - Debogonising

http://www.ris.ripe.net/debogon
RIS - Debogonising 95/8

Visibility of 95.192.0.0/16

http://www.ris.ripe.net/debogon
RIS - AS Dashboard

Prefix size distribution
IPv6 /42 (1)
/23 (2)
/21 (1)

Average AS path length to each collector

Upstream distribution

rrc00 193.0.0.56: BGP Updates per Minute (2007-09-24)
RIS - Prefix dashboard

Prefix stability and visibility in the last 48 hours

Visibility

Stability

The visibility of this prefix is 100%. During the last 48 hours, 0 updates per peer seeing this prefix were found.

Updates for prefix in the last two weeks

Updates per minute (last two weeks)
Hostcount

• Counts hosts in ccTLDs in the NCC service region
• Updated 2007
  - IPv6 support
  - Uses in-addr data
  - Visibility data
  - DIY kit for ccTLDs

Allow AXFR from 193.0.0.0/22

http://www.ripe.net/hostcount
Hostcount - Enhancements
Information Services Portfolio

http://www.ripe.net/ttm

http://www.ripe.net/ris

http://www.ripe.net/hostcount

http://dnsmon.ripe.net
Questions?