Multicast Monitoring

Final Report

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Overview (I)

• Multicast Monitoring on RIPE NCC Test Traffic Boxes
  - RIPE Policy Proposal, April 2006

• Policy suggests
  - Multicast beacons
  - Multicast listeners
  - Raw data for interested parties
  - Pinpointing of problems
Overview (II)

• Multicast Monitoring Architecture, Status at RIPE 53
  - green: finished, yellow: under construction, red: to be implemented

![Diagram showing Multicast Monitoring Architecture]

- Problem “Pinpointer”
  - Alarm System
  - Listeners' Data & Graphs
  - Multicast Beacon & Listener (TTM)
  - Configuration Interface
  - Custom Listener (outside TTM)
  - Unicast
  - libTB
  - libMcast
Overview (III)

- Multicast Monitoring Architecture
  - today: all finished

![Diagram of Multicast Monitoring Architecture]

- Problem “Pinpointer”
- Alarm System
- Listeners' Data & Graphs
- Configuration Interface
- Multicast Beacon & Listener (TTM)
- Custom Listener (outside TTM)
- Unicast
- libTB
- libMcast
## Timeline

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<th>Link-Local testing</th>
<th>Routed testing</th>
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<td>Documentation work</td>
<td>Getting familiar with TTM/preparation</td>
<td>Install routed test setup</td>
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<td>Implementing multicast beacon (TTM)</td>
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<td>Implementing multicast listener (TTM)</td>
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<td>Graphs and TTM specific UI</td>
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<td>Alarm system</td>
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<td>Custom listener, Alarm integration and UI</td>
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<td>Move into production</td>
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<td>Documentation work</td>
<td>Moving everything in place, finish docs</td>
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<td>Documentation work</td>
<td>Overall code review</td>
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<td>Documentation work</td>
<td>Implementing problem “Pinpointer”</td>
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Results (I)

• Multicast Beacon
  - Open, well-known TTM packet format
  - Timestamps from GPS clocks
  - Standard configuration using NCC GLOP addresses

• Listeners
  - Performing one-way delay measurements using GPS-Clocks
  - Supporting measurements inside and outside the TTM network
  - Highly configurable Custom Listener

• Alarms
  - Email notification including links to relevant data
Results (II)

- Problem Pinpointer
  - Each testbox tracing the path to configured groups
  - Data gathered centrally and clustered by groups and timestamps
  - Presented in a convenient user interface
Demo

- Configuration Interface
- Problem Pinpointer
  - User Interface
  - Use Case
- Measurement Data
Plots from a debeacon in Italy towards tt73 (Vienna) via 233.2.47.1 14/03/2007:

from 233.2.47.1.10000.212.77.0.131 on Wed Mar 14 15:33:34 GMT 2007

Number of packets

Spread 50.00 ... 170.00 packets
Average 108.32 packets

Plots from a debeacon in Italy towards tt85 (Swizerland) via 233.2.47.1 14/03/2007:

from 233.2.47.1.10000.212.77.0.131 on Wed Mar 14 15:34:29 GMT 2007

Number of packets

Spread 50.00 ... 170.00 packets
Average 108.32 packets
How to get it

- Do you have a testbox?
- Do you have multicast routing on your network?
- Send an email!

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Questions?