

A Detector for Asymmetric Routing over an IXP

A RIPE Atlas Hackaton Project

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The Problem

- Smaller ISPs are often new to BGP and misconfigure their edge (* and larger ones)
- Misunderstanding traceroutes - they are not bidirectional
- Asymmetric routing is a common problem IXP operators deal with

The Solution

- Use RIPE Atlas probes to create bi-directional traceroute measurements between AS' at an exchange
- Constraints:
 - IXP must use the JSON export schema
 - Only supports networks with public (active) Atlas probes

Results

Results for: HEAnet (AS1213) @ INEX (IPv4)

Verizon Business (AS702) [v]	NON IXP
Cable & Wireless Worldwide (AS1273) [v]	NON IXP
BT Ireland (AS2110) [v]	SYMMETRIC
Eircom Net (AS5466) [v]	TRACE FAILED
<u>Hibernia Networks (AS5580) [v]</u>	NON IXP
Virgin Media Ireland Ltd (AS6830) [v]	NON IXP
Hurricane Electric (AS6939) [v]	SYMMETRIC
Colt Technology Services (AS8220) [v]	ASYMMETRIC OUT

Results

Colt Technology Services (AS8220) [v]

ASYMMETRIC OUT

Trace Out: AS1213 to AS8220

- 193.1.228.1
- 193.1.236.37
- 83.97.88.73
- 195.66.224.49
- 195.68.85.251
- 213.41.70.181

Trace In: AS8220 to AS1213

- 10.96.12.1
- 217.111.254.73
- 213.246.248.73
- 212.74.89.129
- 193.242.111.16
- 193.1.236.86
- 193.1.201.140

GEANT



Results

Conway Broadband (AS62059) [v]

ASYMMETRIC OUT

Trace Out: AS1213 to AS62059

- 193.1.228.1
- 193.1.236.37
- 193.1.238.246
- 194.88.240.22
- 78.137.184.211
- 78.137.138.66
- 31.169.100.37
- 10.255.254.193
- 31.169.103.130
- 31.169.98.27

Trace In: AS62059 to AS1213

- 10.1.1.2
- 31.169.103.129
- 10.254.254.1
- 193.242.111.16
- 193.1.236.86
- 193.1.201.140

INEX LAN2 via Viatel (AS31122)



Disclaimer & Thanks

- Disclaimer:
 - This is the fruit of a hackaton! Expect bugs, non-defensive programming, databases definitely harmed.
- Thanks:
 - RIPE Atlas team, Vesna and Michela
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Try it Out

<http://ard.inex.ie/>

Get the code (and some docs) at:

<https://github.com/inex/ixp-as>