

Thesis
B.Sc.

Thesis
M.Sc.

Route Monitoring to Detect Anomalies On Your Connection

Motivation

When a packet is sent to the Internet, users lose all control over what is happening the way to the destination. With route monitoring, we are not able to give the user more control over that packet, but the possibility to understand what happens and if that matches certain expectations or not. If not, this might be an indicator for attacks on the routing or just the usage of overloaded links.

The idea of this thesis is to combine many different possible ways to check the path between A and B and to provide a tool that combines parts of these checks in an online tool that could be used in general also in productive use, and some checks that might only be suitable in a research context. An example of the latter could be BGP data that tries to verify the traceroute with the paths implied by the Internet routing mechanisms.

Difficulties: Among many issues, the asymmetric nature of paths on the Internet may make some analysis difficult (A to B often goes different way than B to A).

Your Task

This thesis deals with route monitoring techniques based on traceroutes, reverse name lookup, geolocation, TTL values, The goal is to spot routing anomalies and ensure certain path properties.

- Study related work and results
- Study and test related tools to check what can applied
- Generate tools for the multiple tests
- Run them continuously for the time of the thesis
- Analyze observed
- Integrate them in a tool

Contact

Dr. Heiko Niedermayer niedermayer@net.in.tum.de
Sree Harsha Totakura totakura@net.in.tum.de

