

Thesis
B.Sc.

Thesis
M.Sc.

IDP,
Guided
Research

Multi-protocol Path Topology Evaluation

Motivation

With the rapid growth of the Internet users, particularly major content providers, distribution of traffic for performance reasons is imperative and commonplace. Many studies have explored the prevalence and characteristics of IPv4 [1] and IPv6 [2] load balancing by employing techniques such as paris-traroute [3]. However less investigations have been targeted towards finding out whether packets destined for the same network/hosts running in a dual-stacked manner share mutual paths or sub router-topology.

Your Task

- Employ multipath routing detection algorithms (e.g. paris-traceroute) to detect all paths to a population of dual-stacked hosts on both IPv4 and IPv6 versions
- Having the router topology for both IPv4 and IPv6 paths, investigate whether there are any full or partial similarities between the distinct topology maps
- In case a match is found, employ suitable metrics to detect whether the entities of the detected identical (sub-)topology match for the IPv4 and IPv6 maps

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[1] Augustin, Brice, et al. "Measuring multipath routing in the internet." .

[2] Almeida, Rafael, et al. "A Characterization of Load Balancing on the IPv6 Internet."

[3] Augustin, Brice, et al. "Avoiding traceroute anomalies with Paris traceroute."

