

Thesis  
B.Sc.

Thesis  
M.Sc.

Guided  
Research

# Performance Evaluation of Load Balancing in the In- ternet

## Motivation

With the rapid growth of the Internet users, particularly major content providers, distribution of traffic for performance and security 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 multi-path tracerouting. However, the impact of load balancing's application on Internet traffics' performance metrics have undergone less scrutiny.

With a strong focus on the related work [1,2], this thesis aims to compare the performance impact of different load balancing techniques for both IPv4 and IPv6 protocols.

## Your Tasks

- Employ suitable active/passive measurement techniques to detect various load balancing mechanisms
- Evaluate the performance impact of a load-balanced path in terms of latency, numebr of hops, etc.
- Investigate and compare the impacts for both IPv4 and IPv6 protocols
- Investigate the correlation between tracing a path to dual-stacked hosts (siblings) and the performance according to the underlying load balancing mechanism

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[1] <http://kresttechnology.com/krest-academic-projects/krest-major-projects/IT/dotnet/Network>

[2] <http://homepages.dcc.ufmg.br/cunha/papers/almeida17pam-mda6.pdf>

