

Multi-path routing

Measure performance difference across alternative next hops

Over the years Internet is becoming flatter, in that network operators are continually trying to peer directly with more ASes in order to achieve better performance. This increase in alternative paths does not come with a change in the monitoring or routing infrastructure though. As such, our understanding of the dynamic characteristics of the alternative paths is limited. The purpose of this project is to investigate and analyse the performance difference among alternative next hops from stub ASes. In particular, we are interested in understanding the temporal and spatial patterns of performance difference among alternative paths and across different destinations. Using this knowledge we can then model and predict the performance difference of alternative paths.

Requirements

- Good Programming skills
- Preferably familiarity with machine learning techniques

Contact

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Tentative schedule

Week 1	• Familiarize with the RIPE Atlas platform
Week 2	• Find interesting stub networks (multi-homed & with ATLAS probes & static routing)
Week 3	
Week 4	• Perform measurements from multiple stub networks for multiple days.
Week 5	• Analyse data with respect to path selection (static / dynamic)
Week 6	• Analyse data with respect to performance in time and per destination
Week 7	
Week 8	• Predict performance or ranking or performance difference
Week 9	• Predict optimal routing decisions
Week 10	
Week 11	• Write report
Week 12	