

Master's Thesis

# Optimizing BGP Forwarding Information Base Aggregation Routines by Prediction of Updates

The Border Gateway Protocol (BGP) lies at the heart of the Internet. Internet routers use BGP to exchange routing information with neighbors. Based on their routing policy, current updates, and internal network routes, routers populate their local routing information base. The final paths are pushed to the forwarding information base (FIB). For fast matching, FIBs are implemented with expensive TCAM. In order to use TCAM space efficiently, aggregation algorithms compress the RIB before pushing the final paths to the FIB. However, each BGP update may demand a change of the FIB, leading to expensive compression and decompression tasks. Hence, this work focusses on the possibility of machine learning to enhance the FIB compression routine.

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