

The thesis presents a self-stabilizing protocol for overlay networks that constructs the Minimum Spanning Tree (MST) of a given tree metric. A tree metric is based on a weighted tree, such that the distance between two nodes is the weighted length of their shortest path in the tree. However, not all nodes of the tree must also be part of the overlay.

The thesis's main part is the rigorous analysis of the protocol. It is shown that it works correctly under asynchronous and non-FIFO message delivery. Further, the protocol stabilizes after  $\mathcal{O}(n^2)$  rounds in case of synchronous message delivery.

Last, the thesis discusses some of the MST's properties. In particular, that the MST supports greedy routing and there can be no other overlay with a smaller degree than the MST that also supports greedy routing. This makes the MST a good building block for more elaborate overlay topologies based on tree metrics.