

The Minimum Spanning Tree (MST) problem is one of the most popular and important problems in the research area of distributed computing and networks. Contrary to the theoretical models where we usually have a global knowledge of all nodes and the corresponding distances for MST construction, in a realistic network (e.g., Internet) a node always has to rely on local knowledge only, that is it neither knows all other nodes nor exact distances between these nodes. In this paper we propose an approach for MST approximation based on local knowledge of a small subset of existing nodes by using the CARMA metric as a distance substitute. According to the evaluation results, our approach achieves a good MST approximation with respect to a communication cost and avoids extraneous communication needed for latency measurements.

Keywords-Minimum Spanning Tree Problem; Application Level Multicast; P2P Networking

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