

The Memetic Algorithm for The Minimum Spanning Tree Problem with Degree and Delay Constraints

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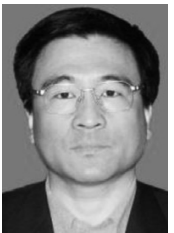
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Abstract—As the critical technology of many real-time applications, application layer multicast requirements limit the transmission time and the number of receivers to which each node can transmit. Such a communication scheme in an overlay network can be regarded as a degree- and delay-constrained minimum spanning tree (DDCMST) problem, and appears to be NP-complete. This paper proposes a novel Memetic algorithm(MA) to solve the DDCMST problem and compares it with some related methods. The results of a series of simulations show the efficiency and effectiveness of the proposed algorithm.

Keyword—Application layer multicast, Degree and delay constraints, Memetic algorithm



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