A Multicast Routing Optimization Algorithm with Bandwidth and Delay Constraints Based on GA*

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ABSTRACT

With the rapid development of Internet, mobile networks and high-performance networking technology, QoS multicast routing in networks with uncertain parameters has become a very important research issue in the areas of networks and distributed systems. This is also a challenging and hard problem for the next generation Internet and high-performance networks. It attracts the interests of many people. This paper proposes a new multicast routing optimization algorithm based on Genetic Algorithms, which finds the low-cost multicasting tree with bandwidth and delay constraints. The simulations results show that the proposed algorithm is able to find a better solution, fast convergence speed and high reliability. It can meet the real-time requirement in multimedia communication networks. The scalability and the performance of the algorithm with increasing number of network nodes are also quite encouraging.

Keywords: QoS, multicast routing, genetic algorithm, routing optimization.

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