

Simulation-Based Performance Comparison for Variants of Spray and Wait in Delay Tolerant Networks

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Abstract

Delay Tolerant Network (DTN) has been proposed to deliver data packets in an intermittently connected network by the store and carry technique. Among many existing routing protocols in DTN, spray and wait and its variants are based on replication by allowing the number of copies per message in the network but they still include some problems. To address energy issue and delivery ratio, we have presented the spray and fuzzy forwarding (S&FF) to employ the fuzzy inference systems (FIS). However, since our previous performance comparisons are simply evaluated over few cases, more extensive simulation scenarios need to be executed for accurate performance comparison. Based on this demand, in this paper, we compare S&FF with some variants of spray and wait in diverse aspects and provide analysis for their simulation results. Through the simulation results, we can observe that delivery ratio is acceptable while extending network lifetime in S&FF rather than comparable protocols under varying deadlines, the number of nodes and velocities.

Keywords: delay tolerant networks, spray and wait, spray and fuzzy forwarding, performance evaluation

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