An Enhanced DSR Protocol for Improving QoS in MANET

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Abstract

Ad hoc network is a network without centralized administration in which different users can communicate and exchange information. In such a structure, all the nodes participate in order to achieve the network and ensure the travel of the information. Hence, multihopping techniques are used to achieve this task. The communication reliability within an ad hoc network and how the different nodes act are managed by routing protocols. Nowadays, different types of protocols exist. Nevertheless, the source routing ones, based on information known at the source of the communication, seem to attract more studies. Source routing protocols had shown interesting results in realistic scenarios in areas such as military battlefields or airport stations.

This Paper deals with DSR Protocol and is focused on the multipath aspect of this routing protocol. Since, it is necessary to understand that multipath techniques enhance reliability and can ensure security. We have simulated a new multipath algorithm. The solution had been evaluated with the network Simulator 2. Since we want to know how our protocol reacts in different mobility cases, the random waypoint model which allows us to present relevant results,
due to the fact this situation is taken into account.

Simulation results show that the multipath protocol behaves better than DSR, the main actual reactive protocol. The Proposed protocol MSR performs well in high mobility by using much less overhead than DSR. Additionally, it is interesting to see that DSR without any modifications manage poorly in high mobility situation.

References


Index Terms

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Keywords
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Ad hoc Network; DSR Protocol; MSR Protocol; NS2 Network Simulator; QOS; MANET; etc