Simulation Analysis of Routing Protocols using Manhattan Grid Mobility Model in MANET

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Abstract

A Mobile Ad-hoc Network (MANET) is a self-configuring infrastructure less network of mobile devices connected by wireless links. In this network technology, simulative analysis is a significant method to understand the performance of routing protocols. In this paper three protocols AODV, DSDV and DSR were simulated using Manhattan Grid Mobility Model. The reactive (AODV, DSR) and proactive (DSDV) protocol’s internal mechanism leads to considerable performance difference. The performance differentials are analyzed using NS-2 which is the main network simulator, NAM (Network Animator), AWK (post processing script) and were compared in terms of Packet Delivery Fraction (PDF), Average end-to-end Delay and Throughput, in different environments specified by varying network load, mobility rate and number of nodes. Our results presented in this research work demonstrate the performance analysis of AODV, DSDV and DSR routing protocols. It has been observed that, under Manhattan Grid mobility model, AODV and DSR performs better than DSDV in terms of PDF.
and Throughput. However in term of Average end-to-end Delay, DSDV appears to be the best one.

References

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Index Terms

Computer Science  Wireless

Keywords

Aodv  Dsr  Dsdv  Performance Parameters  Network Simulator (ns-2)  Mobile Ad Hoc Network  Manhattan
Grid Mobility Model  Bonnmotion