Comparative Study of AODV, DSDV and DSR Protocol under various Network Sizes

Abstract

MANET stands for mobile ad-hoc network, it consists of mobile devices which are free to move arbitrary, and here inter-node connectivity may change frequently during normal operation. It has dynamic topology and no fixed infrastructure. Here all Network activities are executed by node themselves. It is widely used in military Battle field, sensor networks (to monitor environmental condition over large area), Vehicular ad hoc network, emergency operation (for disaster relief etc). There are certain limitation using MANET i.e. it has dynamic topology, limited security for data, limited bandwidth and routing problems. The main objective of this work is to compare and analyses the performance of routing protocols (AODV, DSDV and DSR) in terms of throughput rate, good-put, average End to End delay, packet drop, number of packets Send and number of packet received. The major goal of this study is to analyze the performance of well known MANET's routing protocol in case under low, medium and high density scenario. We find that the performance varies widely across different network sizes and results from one scenario cannot be applied to those from the other scenario. AODV performance is the best considering its ability to maintain connection by periodic exchange of
information. As far as Throughput is concerned, AODV and DSR perform better than the DSDV even when the network has a large number of nodes. Overall, our simulation work shows that AODV performs better in a network with a larger number of nodes whereas DSR performs better when the number of nodes is small.

References

Index Terms

Computer Science  Networks

Keywords

MANET; AODV, DSDV, DSR Routing Protocol; NS2; Throughput, good-put, packet delivery ratio