Performance evaluation of multicast ad hoc on-demand distance vector protocol

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Abstract

Multicast Ad hoc On-demand Distance Vector routing protocol (MAODV) is an on-demand multicast routing protocol that constructs a shared delivery tree to support multiple senders and receivers in a multicast session. Existing research does not address the performance evaluation of MAODV for short-lived connections. Existing research have studied the protocol assuming only long-lived connection. MAODV performance may be affected when most of the connections are short-lived ones. We show that the efficiency of delivering data packets for short-lived connection is greater than that for long-lived connections. Different performance parameters have been considered such as mobility speed, number of senders, and multicast group size. The average Latency for long-lived connection is greater than that for short-lived connections. The channel access efficiency of MAODV over long-lived connections is better than that for short-lived connections. The scalability of MAODV in short-lived situation is better than that in long-lived connection with respect to the number of senders.

Keywords

Routing protocols; Mobile ad hoc networks; Multicast routing; Performance evaluation; MAODV protocol