Abstract

Finding multipath routes for Ad Hoc networks is a challenging task due to mobility of nodes. In this paper, we propose a cross-layer node disjoint multipath routing protocol AODV-MCPI. This routing protocol works in conjunction with MAC-CPI protocol at MAC layer. The protocol at MAC layer ensures that there are no collisions due to interference as every node ensures a minimum of safe-distance from its nearest parallel transmitter-receiver pair before beginning its transmission. At routing layer every node gathers the number of packets and bytes awaiting transmission at MAC layers of nodes that are located within its circle of safe-distance; and then finds congestion free routes. In addition, the routing layer protocol finds multiple node-disjoint paths for every source destination pair that is separated by a minimum of safe-distance except for the nodes located within safe-distance of source and destination nodes. The protocol also perform local repair of existing routes thus providing a good degree of safeguard against mobility of nodes.
A Novel Cross-layer Node-Disjoint Multipath Routing Protocol for Ad Hoc Networks


Index Terms

Computer Science Wireless

Keywords

Multi-path routing in ad hoc networks interference SINR AODV load-aware routes