

INTELLIGENT APPROACH TO IMPROVE THE MULTITASKING AD-HOC ON DEMAND DISTANCE VECTOR PROTOCOL (MAODV)

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Abstract

MAODV protocol keeps sending control packets within static periods, whether there is sending of data packets or not, and it is not concerned with the amount of these data packets. Based on this, many people found out that there are a high number of control packets in the short-lived connection [1,2].

The main idea of this research is to reduce the number of control packets by increasing the period between the control packet transmissions. The length of the transmission period depends on the amount of data packets sent on the network. The final result is reduce the CO and TO.

Keywords MAODV, CO, TO, GRPH, NS2, MANET.

1. Introduction

A mobile ad hoc network (MANET) is a type of wireless networks. This type depends on the mobile nodes, and there is no infrastructure in such type. There are no routers, servers, access points or cables. Nodes (mobiles) can move freely and in arbitrary ways, so it may change its location from time to time.

MAODV protocol is an extension of the last AODV routing protocol. It discovers multicast routes just on demand by using a broadcast route discovery. MAODV employs the same control messages found in the unicast AODV protocol, and it developed other messages to perform a multicast operation for itself [3].

MAODV has a set of control messages that are required to perform its work: route requests (RREQ), route replies (RREP), multicast (MACT) and group hellos (GRPH) are the basic MAODV protocol control messages. These messages are used to establish a delivery tree, and then maintain it [4,5].

MAODV protocol keeps sending control packets within static periods, whether there is sending of data packets or not, and it is not concerned with the amount of these data packets. Based on this, many people found out that there are a high number of control packets in the short-lived connection [1,2].

The main idea of this research is to reduce the number of control packets by increasing the period between the control packet transmissions. The length of the transmission period depends on the amount of data packets sent on the network. While there is no data packets transmit over the network, the period has been increased in a mathematical equation. This period will not still increase to be a long time, because this may cause a delay. The period that increased, will back to default value once any data packet sent.

After implementing for the enhanced code on the NS-2 simulator, the result that gained was a decrement of the TO and CO.

This research will discuss previous idea and the gained results. This research falls in five sections; section number two will show the previous work, section three will study the formulation of the problem, the proposed solution will be discussed in section four, section five will show the results of study simulation, and final section is summary and conclusion.