

Analysis the Performance of MANET Under Nodes Breakdown

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Abstract- In MANET nodes perform actions on battery. So by the use of battery it is possible that the battery gone dead. Due to this node off the working. So In this paper this effect of node failure is analysed on the performance of AODV, OLSR, GRP and mix. To analyse this performance further the nodes are passed at different speed in same scenario. To analyse this effect Opnet Modeller 14.5 is used, the performance is taken in terms of nodes.

Keyword- Manet, Protocol, mobility, varying nodes, node failure

I. INTRODUCTION

MANET is a temporary wireless network which does formed without the use of any existing network infrastructure and without any centralized administration. Nodes are mobile in nature in MANET, hence the topology and structure of the network changes frequently. In MANET nodes also act as a router and play role in routing. If the nodes are mobile, routing become the most important and challenging task in MANET.

In this paper to analyse the effect of node failure different scenarios are made. Firstly 87 nodes are taken by using protocol AODV. In this scenario some Nodes are moving with speed fixed speed of 0.6m/s and some nodes are moving at varying speed of 0-10m/s. To analyse the effect of node failure some nodes are failed between 20 sec and recovered at 30 sec. then this scenario is repeated by increasing the no. of nodes to 105. Then these scenarios are repeated by using protocol OLSR, GRP. Further it is possible that different protocol come in same scenario. So to analyse this effect these scenarios are repeated in which some nodes have AODV some have OLSR and some have GRP.

II. MANET ROUTING PROTOCOLS MANET

Routing protocol is a resolution that controls how nodes decide the ways of routing packets between the source and a destination. In mobile ad hoc networks, nodes have to determine their network topology. A new node announces its presence and it listens to the announcements broadcast by its neighbours. MANET routing protocols are three types namely, reactive protocol (on demand), proactive protocol (table driven) and hybrid protocol. Fig.2 represents some types of MANET routing protocols [2]:

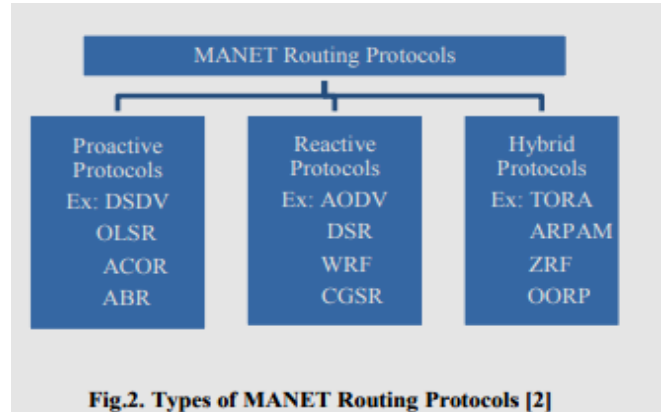


Fig.2. Types of MANET Routing Protocols [2]

MANET routing protocols related with the concerns like appeared and disappeared of nodes in different locations [3]. These routing protocols need to have smaller routing tables in order to reduce routing link overheads.

III. RESULT

In this paper the result is taken in terms of Delay, wireless LAN traffic send and Traffic received.

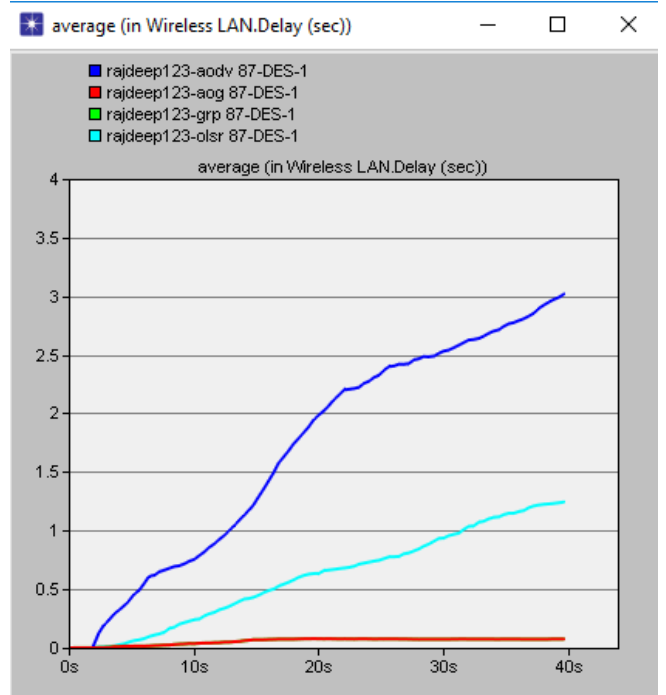


Fig.1: delay(sec)

Form fig1 it is clear that when AODV is used then the response time is 3 second. When OLSR is used then the

response time is 1 second .when GRP is used then the response time is 0.2 second . Whenmixed is used then the response time is also 0.2 second. fig1 also shows that during node failure response time decrease because data sending to node is lost and new path is build.

response time is also 1.4 second. fig 3 also shows that during node failure time decrease because data sending to node is lost and new path is build.

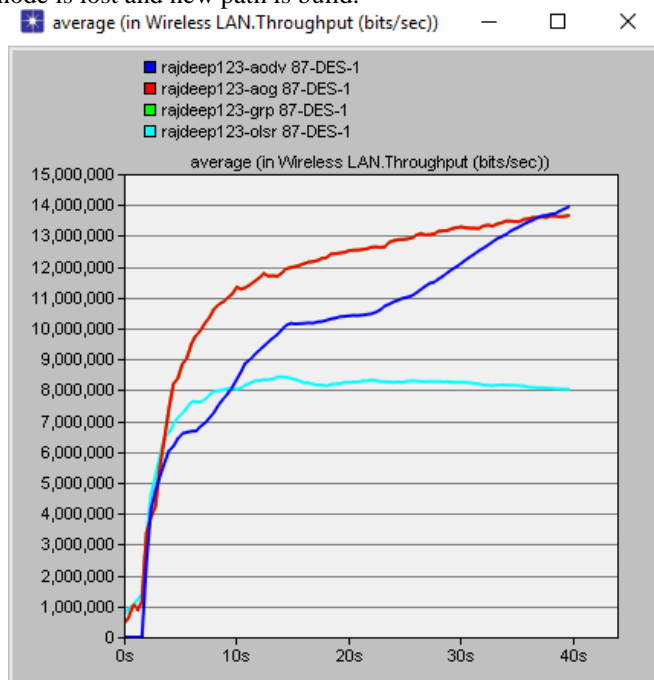


Fig.2: throughput for 87 nodes

Form fig2 it is clear that when AODV is used then throughput(processed data)is 14,000,000bits/sec . when OLSR is used then throughput is 8,000,000 bits/sec .when GRP is used then throughput is 13,000,000 bits/sec . when mixed is used then throughput is 13,000,000 bits/sec. fig2 also shows that during node failure throughput decrease because data sending to node is lost and new path is build.

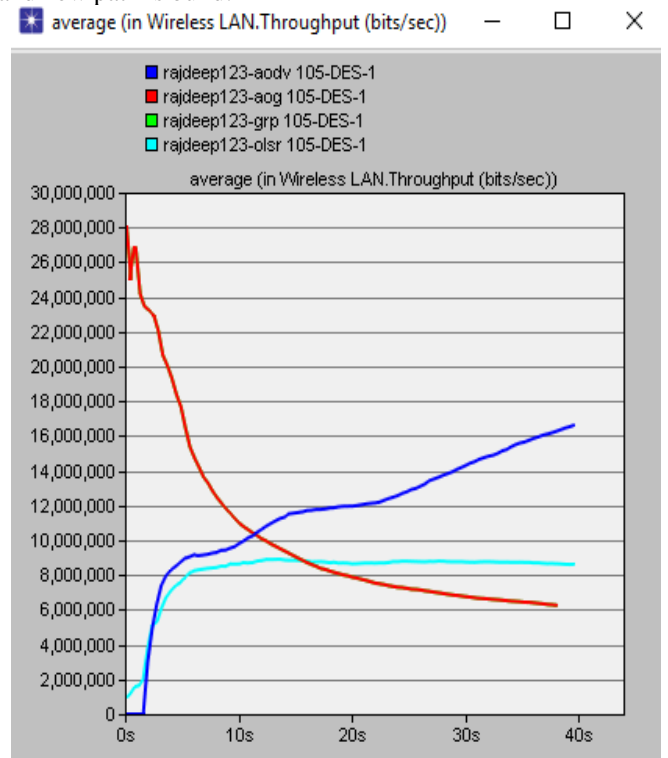


Fig.4: throughput for 105 nodes

Form fig4 it is clear that when AODV is used then Traffic sent is 16,000,000bits/sec . When OLSR is used then Traffic sent is 8,000,000bits/sec .When GRP is used then Traffic sent is 28,000,000 bits/sec . When mixed is used then Traffic sent is 28,000,000 bits/sec. fig 4 also shows that during node failure load decrease because data sending to node is lost and new path is build.

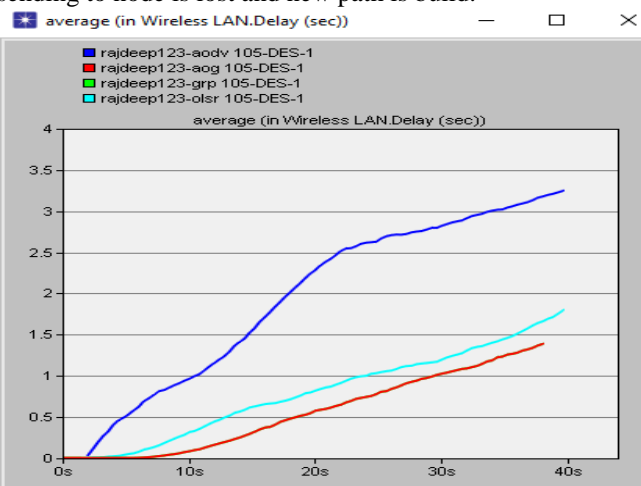


Fig.3: delay 105

Form fig3 it is clear that when AODV is used for 105 nodes then the response time is 3.3 second . when OLSR is used then the response time is 2 second .when GRP is used then the response time is 1.4 second . when mixed is used then the

IV. CONCLUSION

In this paper node failure effect is analysed on AODV,OLSR,GRP and combined protocol. To analyse this effect further nodes are moved at different speeds in same scenarios. Further to enhance the work no. node are vary from 87 to 105. The result is taken in terms of delay and throughput Data processed and wireless response time. Form the result it is clear that performance of DSR and Mix protocol is better for 87 nodes and for 105 nodes OLSR is better. When mix protocol is used then with increase in no. of nodes the performance decreases.

V. REFERENCES

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