ROUTE EFFICIENCY ON DSR PROTOCOL USING PA-SHORT

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ABSTRACT

Ad Hoc net has node infrastructure net impermanently. The net consists of several nodes with mobile nature by one or more interface on each node. As the example, if there is shifted node, it will cause disruption in the form of disconnection and the disrupted node can ask the new route link forming to continue data package transfer. Optimum route process in routing influences the net performance, especially when the load is high. The longer route path forming will cause wider bandwidth consumption, and more fragile toward disconnection. One routing protocol which conducting route searching process by susceptibility long time is dynamic source routing (DSR), consists of two parts, route discovery and route maintenance. If it has link failure, it will have frequent route discovery.

One possibly approach is routing optimization between node that is not burdening link. Optimization problem should be reached is the most optimum route with the minimum used time parameter. Therefore, it is used route optimization calculation by using objective function. To support links optimization information that form the route, it is used Path Aware Short Algorithm by ensuring that passed link is in good condition (the choosing of many route alternatives is from available back-up route). Parameter value used is AVG, NRL, and PDR.

The result of research shows that testing for scenario I the optimum value of AVG for 50 node is 0.002m/s and 100 node is 0.0051m/s. Optimum value of NRL for 50 node is 0.026 and 100 node is 0.0136. The optimum value of PDR for 50 node is 78.5801% and 100 node is 81.7333%. Meanwhile, the result of testing of scenario II the optimum value of AVG for 50 node is 0.0004m/s and 100 node is 0.0007m/s. The optimum value of NRL for 50 node is 0.0112 and 100 node is 0.0058. The optimum value of PDR for 50 node is 85.6523% and 100 node is 98.9327%. Testing simulation uses Network Simulator 2.30.

Keywords : MANET, DSR, Path-Aware, Route Efficiency, NS-2.