

Abstract

Vehicular Ad Hoc Network (VANET) is a network that consists of a set of wireless mobile nodes that communicate with each other without a fixed infrastructure. Node mobility in VANET is very high and this causes a change of network topology VANET very often. Based on network conditions are changing the process of finding the right path is one that is at issue in the VANET. One of the VANET architecture model that requires the process of finding the right lane is Simple Highway Mobility Model (SHWM). SHWM is a regional model VANET which has limitations in the availability of RSU device. SHWM data communications can be performed on the cluster or no cluster. And for that, the area is also necessary process of finding the right path. In this research, SHWM without the cluster that will be simulated and analyzed the results.

There are two types of routing protocols, namely reactive and proactive. Destination Sequence Distance Vector (DSDV) and Ad Hoc on Demand Distance Vector (AODV) routing protocol is the two are often recommended for use on the VANET. DSDV is a proactive routing protocol, while AODV is a reactive routing protocol. Both of these routing protocols will be simulated in a state of VANET networks with nodes 10, 20, and 40 as well as node speed of 10m / s, 20m / s and 25m / s by using the network simulator 2 (NS-2).

Evaluate the performance of DSDV and AODV routing protocol is in terms of parameters: the routing overhead, normalized routing load, packet delivery ratio, packet loss ratio, and the convergence time. However, the parameter packet delivery ratio and packet loss ratio is very influential on the results of the simulation, because this parameter indicates the success of data packets sent from source node to destination node. The results of simulations are then analyzed and produced that AODV is better to network conditions and the high mobility rate nodenya much. In this scenario the number of node 10 with a speed of 10m / s is found that the packet delivery ratio of AODV 94.9071% while the packet delivery ratio of DSDV 77.0833%, and packet loss ratio for the parameter values of 5.09294%, while AODV DSDV of 22.9167%.

Keywords: VANET, SHWM, reactive, proactive, routing protocols, DSDV, AODV, routing overhead, normalized routing load, packet delivery ratio, packet loss ratio, convergence time, and NS-2