Ad hoc on demand distance vector is most suited for Mobile ad hoc network under random topology. MANET provide a backbone to recent wireless communication technologies. MANET in which nodes communicate with other nodes without any central support. Improvement in AODV is done by cross-layer design to avoid link crash. New ideas for cross-layer design has been suggested and implemented but it needs to be tested in the different simulator for its reliability. This paper intends to check the reliability of new ideas for cross-layer design in different simulators such as Qualnet, NS2, and NS3. Each simulator has its own feature, and they work on different platforms. Now in this paper, it will be clear that which simulator is most suitable for MANET simulation. In this paper studies and experimentation shows that NS3 and Qualnet are the best real-time simulator. Peculiarities of each simulator with its simulation settings are discussed in detail.


**Index Terms**

Computer Science  
Communications

**Keywords**

AODV, MANET, Cross layer Design, NS-2, NS-3, Qualnet