Chapter 8

CONCLUSIONS

For conducting studies on MANET, we first compared the two commonly used simulators NS2 and Qualnet for routing protocols namely AODV (reactive) and OLSR (proactive). It was observed that NS2 has scalability issues when the network size exceeds 500, which confirms the study in [3].

The result on variation of routing protocols, node speed, node density and mobility models suggests that LAR and OLSR with MG model gives 100 %, due to the fact that a restriction in mobility area in a grid betters the throughput. LAR and OLSR give best performance in RPGM, due to the presence of a group leader, who is responsible for the mobility of the group and even distribution of group members. Due to localization property LAR performs better under RWP. This is due to the fact that in RWP model the nodes are distributed such that they are able to move freely and independently of others. We also suggested applications, based on the observations of simulation.

The study on variation of routing protocol (OLSR (proactive), DSR (reactive) and ZRP (hybrid)), node density and speed shows that when the transmission range and node density increases, better performance is achieved. This applies commonly to all the protocols. ZRP outperformed the other protocols in almost all scenarios.

To assess the fault tolerance of single path and multi path routing protocols, we studied the effect of variation in pause time and faultiness. Multipath algorithms offer greater fault tolerance than single path algorithms. The performance of single path algorithms, degraded when 50% or more nodes failed.

Finally we proposed and evaluated a model for post disaster situation. We have simulated framework of mobility with two routing protocols AODV and OLSR. We have used reference point group mobility model. Our simulations suggest that routing protocols behaves significantly different under the mobility scenarios designed on the same platform. For analyzing the performance of routing protocols in practice, such a scenario-based approach is vital.

Our comparison study of MANET routing protocols can provide guidance for one to choose proper routing protocols for particular MANETs. Analysis and conclusions can guide users when they choose routing protocols for their MANET applications.
