Performance Evaluation of Position-Based Routing Protocols using Different Mobility Models in MANET

Abstract

A Mobile Ad hoc network (MANET) is a dynamic self-organizing multi-hop wireless network. Owing the random and unpredictable movement of the mobile nodes, the topology is changing rapidly and frequently. In MANET, where is no routing infrastructure like fixed routers and routing backbones, all MNs participate in the routing process. Recently, position-aware routing protocols, and because of their simplicity, position awareness, and scalability, are the most routing protocols used with MANET. In recent years, a variety of position-aware routing protocols have been developed. The efficiency of such protocol affects by the used underlying mobility model. Thus, wrong selection of the Mobility model may has devastating consequences on the performance MANET. Research efforts haven’t focused much in evaluating their performance when applied to different mobility models. In this paper, we have
studied the effect of two different mobility models; Random Waypoint mobility model (RWP) and Boundless Mobility Model (BDM) on the performance of selected group of position-based routing protocols. The performance analysis was carried out by using the network simulator, Ns2. The simulation results clarify the performance of the selected routing protocols with three performance metrics.

References

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Index Terms

Computer Science

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Keywords
MANET  Routing Protocol  Mobility Model  RWP  BDM