

Securing Geographical Routing in Mobile Ad-hoc Networks

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Abstract

We present geographical secure path routing, an infrastructure free geographic routing protocol, that is resilient to disruptions caused by malicious or faulty nodes. Geographic locations of anonymous nodes are authenticated in order to provide location authentication and location privacy simultaneously. Our protocol also authenticates the routing paths taken by individual messages. This provides a basis for geographic security policies. This paper discusses the design and attack resistance of the secure geographic routing protocol. The overhead of location authentication is investigated under various scenarios through network simulation. Results show that the presence of malicious nodes increases the routing path length. A data delivery rate of better than 80% is sustained even if 40% of the nodes are malicious.

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