

SECURITY THREATS AND PREVENTIONS IN MOBILE AD-HOC NETWORK (MANET)

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ABSTRACT

A mobile ad-hoc network (MANET) is a self-configuring network consists of mobile routers (included associated hosts) connected by wireless links which build a capricious topology forms the union. The routers are free to move randomly and organize themselves at a random manner; as a result, the network's wireless topology could change rapidly and unpredictably. MANETs are usually used in the situations of urgency for temporary operations or simply if there are no resources to set up sophisticated networks. These types of networks operate in the absence of any fixed infrastructure, which makes them easy to set up, at the same time however, due to the absence of any fixed structure, it becomes difficult to make use of the existing routing techniques for network services. At this circumstance it poses a number of challenges for the security of the communication, something that is not easily done as many of the demands of network security conflict with the demands of mobile networks, mainly due to the nature of the mobile devices those has the properties like low power consumption, low processing load etc. Many of the ad hoc routing protocols that address security issues rely on inherent trust relationships to route packets among participating nodes. Besides the general security issues like authentication, confidentiality, integrity, availability and non-repudiation, the ad hoc routing protocols should also address location confidentiality, cooperation equality and absence of traffic diversion. In this Paper the security issues of MANETs are emphasized in concern of different aspects.

KEYWORDS: MANET, Topology, Infrastructure, Power Consumption, Protocol, Authentication, Confidentiality, Integrity, Non-Repudiation