Abstract

Adhoc mobile network (MANET) networks is popular and widely used in telecommunications, despite the existence of security problems of confidential data and direct routes. MANET Network consists of a set of mobile nodes, with wireless interface, communicates with non-regular (Adhoc) manner. The type of networks needs a protocol different from the other networks. Many nodes can send at the same moment, which may cause the collision. In addition to using broadcast in sending messages allow every node participating in the network to hear the transmission. There are many protocols that meet MANET needs. Because the absence of a centralize infrastructure in the MANET network; it is necessity to find a mechanism for confidential data, and secure transmission.

There are many researches propose the confidentiality of MANET's routing protocols, most of them did not take into account the importance of authentication and verification of the nodes. In the other hand, it doesn't take into account the limited energy of the MANET's participating nodes. We need a proposal to secure AODV protocol for solving the problems of MANET's security, at the same time the limited power, providing confidentiality, by using the digital signature.

This thesis provide a confidential and security mechanism, and provide effective processes to send packages into the networks MANET. It used one time computational scheme to calculate the digital signature, which reduce the overhead of calculation and generation of signature.

This thesis used MD5 algorithm, in order to generate a digital signature. Taking into account, the limited resources of the MANET participation nodes, such as: the limit of the energy, the limit of memory storage, and the limit of transition range.

A digital signature has been added to each Hello message issued by the nodes, after entering the network. This signature will be used later by other nodes, to verify the identity of the node.