

SUPERMAN: Security Using Pre-Existing Routing for Mobile Ad hoc Networks

ABSTRACT

Mobile autonomous networked systems have seen increased usage by the military and commercial sectors for tasks deemed too monotonous or hazardous for humans. The flexibility and mobility of Mobile Ad hoc Networks (MANETs) have made them increasingly popular in a wide range of use cases.

EXISTING SYSTEM

In existing systems, the flexibility and mobility of Mobile Ad hoc Networks (MANETs) have made them increasingly popular in a wide range of use cases. To protect these networks, security protocols have been developed to protect routing and application data. However, these protocols only protect routes or communication, not both. Both secure routing and communication security protocols must be implemented to provide full protection. The use of communication security protocols originally developed for wireline and Wi-Fi networks can also place a heavy burden on the limited network resources of a MANET.

DRAWBACKS

- It protects only routes or communication but not both.
- The communication is commonly wireless. Wireless communication can be trivially intercepted by any node in range of the transmitter. This may cause attacks like the Sybil attack and route manipulation attacks that can compromise the integrity of the network.

PROPOSED SYSTEM

This paper proposes a novel security protocol, Security Using Pre-Existing Routing for Mobile Ad hoc Networks (SUPERMAN). The protocol is designed to address node authentication, network access control, and secure communication for MANETs using existing routing protocols. SUPERMAN combines routing and communication security at the network layer. This contrasts with existing approaches, which provide only routing or communication security, requiring multiple protocols to protect the network. The remainder of this paper is organized as follows: It analyses the problem in the context of previously published work. It introduces SUPERMAN, providing a technical discussion of the protocol. It outlines the characteristics chosen for modeling, and the results of simulating SUPERMAN compared against selected secure routing and data security protocols. It draws conclusions from the research findings.

ADVANTAGES

- This protects the network and communication in MANETs.
- Secure access to a virtually closed network (VCN).

SYSTEM REQUIREMENTS

➤ H/W System Configuration:-

- Processor - Pentium –IV
- RAM - 4 GB (min)
- Hard Disk - 20 GB
- Key Board - Standard Windows Keyboard
- Mouse - Two or Three Button Mouse
- Monitor - SVGA

➤ S/W System Configuration:-

- Operating System : Windows 7 or 8 32 bit

- Application Server : Tomcat5.0/6.X
- Backend coding : Java
- Tool : Virtual Box
- Environment : Ubuntu
- Technology : Hadoop