Abstract

Mobile ad hoc networks (MANETs) consist of a collection of wireless mobile nodes which dynamically exchange data among themselves without the reliance on a fixed base station or a wired resolution network. MANET nodes are typically well known by their precise power, transformation, and memory effects as well as high degree of mobility. In MANET mobile node is responsible for route establishment using wireless link where each node behave like both as a host and router. In such networks, the wireless mobile nodes may dynamically enter the network as well as go-ahead the network. Mobile ad hoc network is a group of many more devices or nodes with the capability of communication and networking. MANET encounter by number of security threat because of its open entrusted environment with little security settlement, even if security over MANET is not to be enhance up to satisfactory level because of its characteristics Security is an essential service for wired and wireless network communication. Due to its mobility and self routing effective nature, there are many deficiencies in its security. Various security threats show their impact at different layers, Among all of security threat worm hole is consider to be a very serious security threat over MANET. In wormhole two selfish node which is geographically very far away to each other, makes tunnel between each other to cover their actual location and try to believe that they are true neighbors and makes conversation through the wormhole tunnel. Wormhole attacks enable an attacker
An Efficient Approach for Detection of Wormhole Attack in Mobile ad-hoc Network

with limited resources and no cryptographic material to wreak havoc on wireless networks. For
wormhole attack to have a best impact on the wired or wireless network, it must fascinate a
huge amount of network traffic which is done by giving a shortest route to destination in the
network. Therefore, the routes going through the wormhole must be shorter than alternate
routes through valid network nodes. This Paper focuses on threat that wormhole attack
possesses on network and also mentions few of the initiatives with their respective
specifications to solve the problem of wormhole attack.

References

- Maulik, R. ; Chaki, N. , &quot;A comprehensive review on wormhole attacks in
MANET&quot;; IEEE 2010, Page 233-238.
- Pallavi Sharma, Prof. Aditya Trivedi &quot;An Approach to Defend Against Wormhole
Attack in Ad Hoc Network Using Digital Signature&quot; in IEEE, 2011
- Perkins C. and Bhagwat P. : Highly dynamic destination-sequence distance vector
routing (DSDV) for mobile computers, In Proceedings of ACM Conference on Communications
Architectures, Protocols and Applications (ACM SIGCOMM 94), London, UK, pp. 234-244
(1994)
- Upadhyay S. and Chaurasia B. K. : Detecting and Avoiding Wormhole Attack in MANET
using Statistical Analysis Approach, In the Second International Conference on Computer
- Devinder Pal Singh et al., INVESTIGATING THE EFFECT OF WORMHOLE
ATTACK ON AODV in 2012.
- Azer, M. A. , El-Kassas S. M. , Hassan, A. W. F. , El-Soudani M. S. , &quot;Intrusion
Detection for Wormhole Attacks in Ad hoc Networks a Survey and a proposed Decentralized
Scheme Marianne &quot; IEEE Third International conference on Availability, Reliability and
- K. Issa, B. Saurabh, and B. S. Ness, &quot;LiteWorp: Detection and Isolation of the
Wormhole Attack in Static Multihop Wireless Networks,&quot; The International Journal of
- S. Choi, D. Kim, D. Lee, J. Jung, &quot;WAP: Wormhole Attack Prevention Algorithm
in Mobile Ad Hoc Networks&quot;; Int&amp;apos;l conf. on Sensor Networks, Ubiquitous and
- Mahajan, V. Natu, M. Sethi, A, &quot;Analysis of wormhole intrusion attacks in
- Jie Zhou1, Jiannong Cao, Jun Zhang1, Chisheng Zhang and Yao Yu, &quot;Analysis
and Countermeasure for Wormhole Attacks in Wireless Mesh Networks on a Real Test
bed&quot;; in 26th IEEE International Conference on Advanced Information Networking and
Applications,2012
- Pallavi Sharma, Prof. Aditya Trivedi &quot;An Approach to Defend Against Wormhole
Attack in Ad Hoc Network Using Digital Signature&quot;; in IEEE , 2011

Index Terms

Computer Science
Security

Keywords
MANET Wormhole attack Wormhole detection technique Wormhole Avoidance Routing protocols

Wormhole attack modes.