

Traffic Analysis In Manet Usingsmall Minimum-Energy

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Abstract— Mobile Ad-Hoc Networks (MANETs) have been used in wide range of applications such as disaster management, emergency and rescue operations where it is not possible to have well defined infrastructure. In MANETs, the topology is highly dynamic as nodes frequently join or leave the network, and roam in the network. Though MANETs are dynamic in nature, security services need to be provided in mobile nodes as they move from one place to another. Unlike fixed wired networks, mobile wireless adhoc networks need more security mechanisms as attackers may intrude into the network through subverted nodes. Therefore, a powerful security solution is required to identify and isolate malicious nodes in the network. In addition to protecting the network from intruders, the security solution should also protect each node in the network. The security scheme adopted by each node in MANET has to work within its own resource limitations in terms of energy supply, communication capacity, memory and computation capability. In this Project Small Minimum-Energy communication Network (SMECN) is used to focus on a traffic control by identify the characteristics, to improve an energy and avoid traffic. This property implies that for any pair of sensors in a graph associated with a network, there is a minimum energy-efficient path between them that is, a path that has the smallest cost in terms of energy consumption over all possible paths between this pair of sensors.

Keywords: Mobile Ad-Hoc Networks, malicious nodes, energy-efficient.

I. INTRODUCTION

Mobile Ad-Hoc Network (MANET) is a self-configuring infrastructure less network consisting of mobile hosts equipped with wireless communication devices such as Omni directional antennae. Each device in a MANET is free to move independently in any direction, and will therefore change its links to their devices frequently. No design MANET communicate with each other without the aid of any centralized administrator. The mobile node can directly communicate to nodes that are in its radio range, whereas to communicate with other nodes it needs the help of intermediate nodes to relay its packets. So, each device or node must forward traffic unrelated to its own use, and therefore will act as a router [12]. Each node in the network works both as router and host. As all nodes are movable so this changes topology of the network dynamically, that brings more challenges in security of Ad hoc network. In a protocol, every node in the network searches proactively for routes to other nodes and in parallel exchange routing messages in order to verify the information provided by the routing table is up to date and correct, such as DSDV (Destination sequence distance

vector) [3] and OLSR [4]. Every node in a MANET is limited to certain power and bandwidth, thus continuous transmission of routing messages would lead to congestion of the network.

II. RELATED WORKS

Shuchita Upadhyay and Charu Gandhi presented the paper title of "Role of Location Information to Achieve QoS route Discovery in Ad hoc networks- A Review", gives the Efficient routing policies for the Larger networks. In this paper, they reviewed various routing techniques which make routing decisions based on the location information and study how these attempt to achieve the goal of efficient QoS routing in real time and highly dynamic networks. [20]

Mahboobeh Abdoos, Karim Faez, and Masoud Sabaei presented the paper title of "Position Based Routing Protocol with More Reliability in Manets", introduces the concept of Greedy protocol with the MFR (Most forward within radius) technique. Using distance deciding metric in Greedy to forward packet to a neighbor node, is not suitable for all conditions. If closest neighbor to destination node has high speed, in comparison with source node or intermediate packet forwarder node speed or has very low remained battery power, then packet loss probability is increased. Their strategy uses combination of metrics distance-velocity similarity-power, to deciding about giving the packet to which neighbor. [8]

Ljubica Blazevic, Jean-Yves Le Boudec, Fellow, and Silvia Giordano presented the paper title of "A Location Based Routing Method for Manets", introduces the concept of Terminate routing protocols. Terminate routing, presented here, addresses these issues. It uses a combination of location-based routing (Terminate Remote Routing, TRR), used when the destination is far, and link state routing (Terminate Local Routing, TLR), used when the destination is close. This paper includes a special form of restricted search mode (Restricted Local Flooding, RLF), solves problems due to the inaccuracy of location information, in particular for control packets. [1]

Ghorbannia Delavar, Tayebeh Baktash and Leila Goodarzi presented the paper title of "RDWSN: To offer Reliable Algorithm for routing in wireless sensor networks", gives the brief study of routing methods used in wireless sensor networks.

Konstantinos Katsaros and Mehrdad Dianati presented the paper title of "A position Based Routing Module for Simulation of Manet's in NS-2". It describes the simulation methods for networks. This paper presents the architecture and implementation of CLWPR (Cross-Layer, Weighted, Position-based Routing), a position-based routing protocol optimized for MANETs in NS-2 simulation environment. It utilizes

mobility information from nodes and cross-layer information from PHY and MAC layer in order to increase its efficiency and reliability, respectively. More specifically, they presented the changes that have been introduced to facilitate geonetworking, as well as the carry and forward mechanism. In addition, they developed a basic navigation facility that can provide information about the road and distance between two nodes. [12]

Sonam jain and Sandeep sahu presented the paper title of "Geometric Routing Protocol based on Genetic Algorithm for Minimized Delay in MANETs "introduces the genetic algorithm based routing in Manets to reduce the delay in the networks". The objective of this paper is to create taxonomy of the mobile ad hoc routing protocols, and to survey and compare representative examples for the topology based and position based routing protocols. [19]

III. EXISTING METHOD

STARS aims to derive the source/destination probability distribution, the probability for each node to be a message source/destination, and the end-to-end link probability distribution, the probability for each pair of nodes to be an end-to-end communication pair. STARS works passively to perform traffic analysis based on statistical characteristics of captured raw traffic. STARS are capable of discovering the sources, the destinations, and the end-to-end communication relations. The disadvantages in the proposed system are

- Minimum energy consumption.
- Minimum time taken to control a traffic.

Overhead is occur.Do not store whole network topologyIt is also resilient a wide range of attacks.

IV. PROPOSED METHODOLOGY

Traffic analysis models have been widely investigated for static wired networks. The simplest approach to track a message is to enumerate all possible links a message could traverse, namely, the brute force approach. Recently, statistical traffic analysis attacks have attracted broad interests due to their passive nature, i.e., attackers only need to collect information and perform analysis quietly without changing the network behavior (such as injecting or modifying packets). Many anonymity enhancing techniques have been proposed based on packet encryption to protect the communication anonymity of mobile ad hoc networks (MANETs). STARS works passively to perform traffic analysis based on statistical characteristics of captured raw traffic. In this method STAR uses the SEAP protocol to improve the security of the network compared to SMECN.

V.SIMULATION

NETWORK SIMULATOR

NS is a public domain simulator boasting a rich set of Internet Protocols, including terrestrial, wireless and satellite networks. ns is the most popular choice of simulator used in research papers appearing in select conferences like [Sigcomm](#). NS is constantly maintained and updated by its large user base

and a small group of developers at ISI. NS is a discrete event simulator targeted at networking research. It provides substantial support for simulation of TCP, routing, and multicast protocols over wired and wireless (local and satellite) networks. It includes an optional network animator (NAM).

It is the collection of data, whether header is called or not all header files where present in the stack registers.

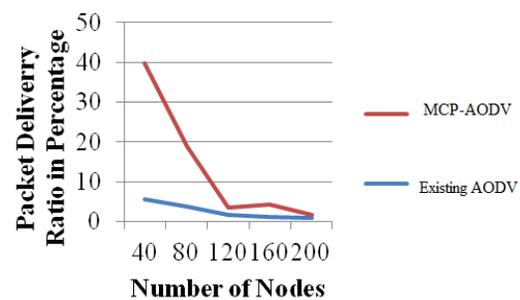
Event Scheduler

In this Event scheduler while we processing many data's at a time it will process one by one (i.e.) FIFO concept, so there is no congestion while transferring the packets.

Turn On Tracing

Trace packets on individual link Trace file format.

EXPERIMENTAL ANAYSIS:



VI. CONCLUSION

MOBILE ad hoc networks (MANETs) are originally designed for military tactic environments. MANET communications, many anonymous routing protocols such as ANODR, MASK, and OLAR have been proposed. Though a variety of anonymity enhancing techniques like onion routing and mix-net are utilized, these protocols mostly rely on packet encryption to hide sensitive information (e.g., nodes identities and routing information) from the adversaries. However, passive signal detectors can still eavesdrop on the wireless channels, intercept the transmissions, and then perform traffic analysis attacks. To demonstrate how to discover the communication patterns without decrypting the captured packets, we present a novel statistical traffic pattern discovery system (STARS). STARS works passively to perform traffic analysis based on statistical characteristics of captured raw traffic. STARS are capable of discovering the sources, the destinations, and the end-to-end communication relations.

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