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OPTIMIZED MULTICAST ROUTING AND TRAFFIC DISCOVERY IN MANET

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ABSTRACT: *Mobile ad hoc networks in emergency communications where network needs to be constructed at that moment and faster.Since the nodes move in random manner, routing protocols must be highly effective and reliable to guarantee successful packet delivery and traffic discovery. In this paper, we propose an Enhanced STARS for MANETs. STARS are basically an attackers, which only needs to capture the raw traffic from the PHY/MAC layer without looking into the contents of the intercepted packets.*

KEYWORDS: Anonymous communication, mobile ad hoc networks, statistical traffic analysis.

I. INTRODUCTION

A **mobile ad hoc network** (**MANET**) is a continuously self-configuring, infrastructure-less network of mobile devices connected without wires. Ad hoc is Latin and means "for this purpose". Each device in a MANET is free to move independently in any direction, and will therefore change its links to other devices frequently. Each must forward traffic unrelated to its own use, and therefore be a router. The primary challenge in building a MANET is equipping each device to continuously maintain the information required to properly route traffic. Such networks may operate by themselves or may be connected to the larger Internet. They may contain one or multiple and different transceivers between nodes. This results in a highly dynamic, autonomous topology. MANETs are a kind of Wireless ad hoc network that usually has a routable networking environment on top of a Link Layer ad hoc network. MANETs consist of a peer-to-peer, self-forming, self-healing network in contrast to a mesh network has a central controller (to determine, optimize, and distribute the routing table). MANETs circa 2000-2015 typically communicate at radio frequencies (30 MHz - 5 GHz). Multi-hop relays date back to at least 500BC. The growth of laptops and 802.11/Wi-Fi wireless networking have made MANETs a popular research topic since the mid-1990s. Many academic papers evaluate protocols and their abilities, assuming varying degrees of mobility within a bounded space, usually with all nodes within a few hops of each other. Different protocols are then evaluated based on measures such as the packet drop rate, the overhead introduced by the routing protocol, end-to-end packet delays, network throughput, ability to scale, etc.

II. OUR PROPOSAL

In the proposed system, we enhance our protocol called E-STARS. We include Channel Aware technique in our protocol for secure and lost less communication between sources to destinations. Channel - aware scheduling is a technique that adapts the transmission start time of a packet to the channel condition. Sending packets over a channel in a bad state is avoided. There are four modules: Node formation, Channel prediction, Applying E-STARS, Packet transmission.

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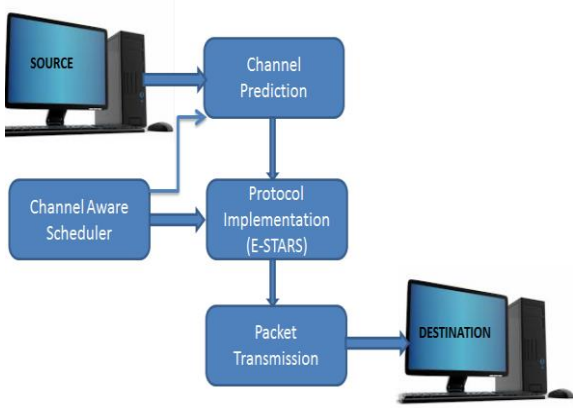
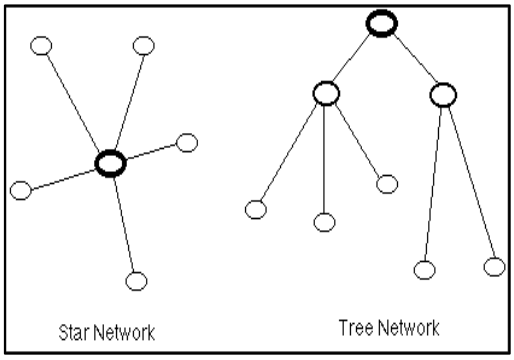
ARCHITECTURE DIAGRAM:



MODULE DESCRIPTION:

Node Formation:

- In a network, a node is a connection point, either a redistribution point or an end point for data transmissions. In general, a node has programmed or engineered capability to recognize and process or forward transmissions to other nodes. In this module we format all the nodes and group in to one network.
- **Technique:** Star Topology



Channel Prediction:

- The random movement of nodes in multi-channel MANETs has significant impact upon the stability of network topology due to connection loss and co-channel interference. To solve this problem, a channel aware scheduler algorithm is proposed, which adjusts nodes' power levels and transmission channels according to the link state predicted by a probabilistic network, so as to maintain the stability of links and network topology.

Applying E-STARS:

- In this module used for applying E- STARS for MANETs. E-STARS are basically an attacking system, which only needs to capture the raw traffic from the PHY/MAC layer without looking into the contents of the intercepted packets. From the captured packets, STARS constructs a sequence of point-to-point traffic matrices to derive the end-to-end traffic matrix, and then uses a heuristic data processing model to reveal the hidden traffic patterns from the end-to end matrix and also it contains channel aware technique for overcome a connection lost in channel reconfiguring.

Packet Transmission:

- The emerging need for wireless mesh networks and secured data transmission phase is of crucial importance depending upon the environments like military. In this paper, a new way to improve the reliability of message transmission is presented. In the open collaborative networking environment, any node can maliciously or selfishly disrupt and deny communication of other nodes.

III. SOFTWARE USED

NETWORK SIMULATOR – NS-2: is an open-source event-driven simulator designed specifically for research in computer communication networks. Since its inception in 1989, NS2 has continuously gained tremendous interest from industry, academia, and government. Having been under constant investigation and enhancement for years, NS2 now contains modules for numerous network components such as routing, transport layer protocol, application, etc. To investigate network performance, researchers can simply

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use an easy-to-use scripting language to configure a network, and observe results generated by NS2. Undoubtedly, NS2 has become the most widely used open source network simulator, and one of the most widely used network simulators. Unfortunately, most research needs simulation modules which are beyond the scope of the built-in NS2 modules. Incorporating these modules into NS2 requires profound understanding of NS2 architecture. Currently, most NS2 beginners rely on online tutorials. Most of the available information mainly explains how to configure a network and collect results, but does not include sufficient information for building additional modules in NS2. Despite its details about NS2 modules, the formal documentation of NS2 is mainly written as a reference book, and does not provide much information for beginners. The lack of guidelines for extending NS2 is perhaps the greatest obstacle, which discourages numerous researchers from using NS2.

IV. CONCLUSION

In this system we propose we enhance our protocol called E-STARS. We include Channel Aware technique in our protocol for secure and lost less communication between sources to destination.Channel - aware scheduling is a technique that adapts the transmission start time of a packetsto a channel condition.sending packets over a channel in a bad state and communication loss is avoided.

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