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Securing Mobile and Ad Hoc Network against Packet Dropping Attack

Pinki[1], Sonal[2]
M.Tech Student[1], Assistant Professor[2], BPS Mahila Vishwavidyalaya Khanpur Kalan (Sonipat)

***Abstract:** Ad hoc networks had been considered as wireless networking paradigm for mobile hosts for particular purpose only. Unlike traditional mobile wireless networks, ad hoc networks do not rely on any fixed infrastructure. Instead, hosts rely on each other to keep network connected. In today's society with development of mobile devices this had become important to stay online all time. In order to stay online all time this must be possible to set up a network fast & cost effective when moving between different infrastructures, ad hoc networks deals with this kinds of issues. Then we discuss security criteria of mobile ad hoc network & present main attack types that exist within it. After ad hoc network had been established nodes that connect network might move, that one military squad is under heavy attack & had to escape. In ad hoc networks would be competent to move to all commerce.*

***Key Words:** Ad Hoc Network, Security, Intrusion Detection, Secure Routing*

I. INTRODUCTION

An ad hoc network is a network that is composed of individual devices communicating with each other directly. Many ad hoc networks are local area networks where computers or other devices are enabled to send data directly to one another rather than going through a centralized access point. Ad hoc network does not need any router. It does not need any wireless base station this network is established for single session only. If someone wants to share file in multiple computers then he could set more than one hop ad hoc network that can be used to transfer information on more than one node. It is created to solve specific problem. It becomes permanent network if someone is going to establish such network for longer period.

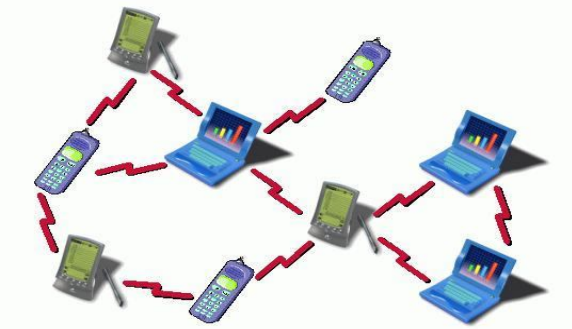

Fig 1. Mobile ad hoc network

The primary challenge in building a MANET is equipping each device to continuously maintain information required to properly route traffic. Such networks might operate by themselves or might be connected to larger Internet.
They might include one or several & different transceivers among nodes. This outcome in a highly dynamic, autonomous topology. Research on Wireless AdNetworks had ongoing for decades. Ad hoc network has played a main role by in military supplications &linked research efforts, for example, global mobile information systems (GloMo) program & near-term digital radio (NTDR) program. Current years have see a fresh spate of trade & commercial applications for wireless ad hoc networks[2], as viable communication[5] equipment & portable computers become more compact & available.

A. Advantages of MANETs

The following are advantages of MANETs:

1) Independence from central network administration
2) Self-configuring, nodes are also routers

3) Self-healing through continuous re-configuration
4) Scalable: accommodates addition of more nodes

B. Disadvantages of MANETs

Some of disadvantages of MANETs are as follows:
1) Limited resources & physical security.
2) Intrinsic mutual trust vulnerable to attacks.
3) Lack of authorization facilities.
4) Volatile network topology makes it hard to detect malicious nodes.
5) Security protocols for wired networks cannot work for ad hoc networks

II. COMMUNICATION MECHANISM

The endpoint with in an inter process communication is called a socket, or a network socket for disambiguation. Since on the whole communication among computers Internet is based on Protocol, an almost equivalent term is Internet socket. Data transmission between two sockets is organized by communications protocols [6], usually implemented within operating system of participating computers.

A. Client Server Model

It is possible for two network applications to begin simultaneously, but this is impractical to require it. Therefore, this makes sense to design communicating network [8] applications to perform complementary network operations with in sequence, rather than simultaneously.

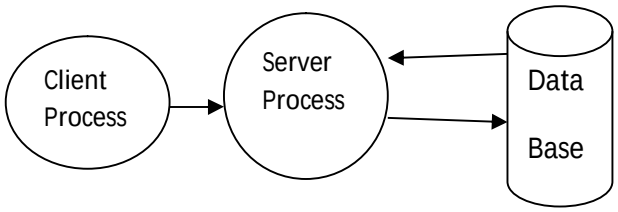

Fig 2. Client server model

Port	Service Name, Alias	Description
1	Tcpmux	TCP port service multiplexer
7	Echo	Echo server
9	Discard	Like/dev/nu11
13	Daytime	Systemsdate/time
20	ftp-data	FTP data port
21	ftp	Main FTP conection
23	telnet	Telnet connection
25	Smtp, mail	UNIX mail
37	Time, timeserver	TIME server
42	Name server	Time server
70	Gopher	Text/menu information
79	Finger	Current users
80	www,http	Web server

Table 1: Port

Above table represent the port no and the protocol used in case of different servers such as echo server, time server, UNIX server, web server.

B. Data Flooding

Not every successful reading of a tag (an observation) is useful for business purposes. A large amount of data might be generated that is not useful for managing inventory [10] or other applications. For example, a customer moving a product from one shelf to another, or a pallet load of articles that passes several readers while being moved in a warehouse, are events that do not produce data that is meaningful to an inventory control system.

III. EXISTING PROTOCOL

Enhancing network lifetime & increasing packet delivery ratio is strongly targeted in Existing protocol. Former criterion is met by considering Euclidean distance in existing fuzzy system in order to transmit packets to node nearest to destination as well as latter criterion considers number of neighbors of each neighbor node in order to transmit packets to neighbor node which had more neighbors rather than other neighbor nodes.

IV. PROPOSED ALGORITHM

A. At beginning consider Data packet & control packet are packets which are used.
B. Reduce Data Packet by replacing of T_Data with xT_data.
C. Select CNs from among neighbors with (RE>REavg) & (ABS>ABSavg).
D. Specify NP based on sender node, SR & base station.
E. Determine distance between CN & np, Determine number of neighbors at CN.
F. Perform Fuzzification using Fuzzy set, cluster Base, Rule base in inference Engine.

IV. RESULT & DISCUSSION

In our research we would establish a MANET Environment to test flow of packets then we would make develop of packet sender & receiver module. After that we would test transmission, processing, queuing delay in packet transmission. Then we would compare both work previous & proposed work. We would use java based socket programming to transfer packet from sender to receiver in minimum time.

A. Comparative Analysis of Overall Time Consumption in Tradition & Proposed Comparison System

PACKETS	TRADITIONAL	PROPOSED
10	5	2
20	5	2
30	8	3
40	8	3
50	10	4
60	10	4
70	11	5
80	11	5

Table 2: Time consumption in tradition & proposed comparison system

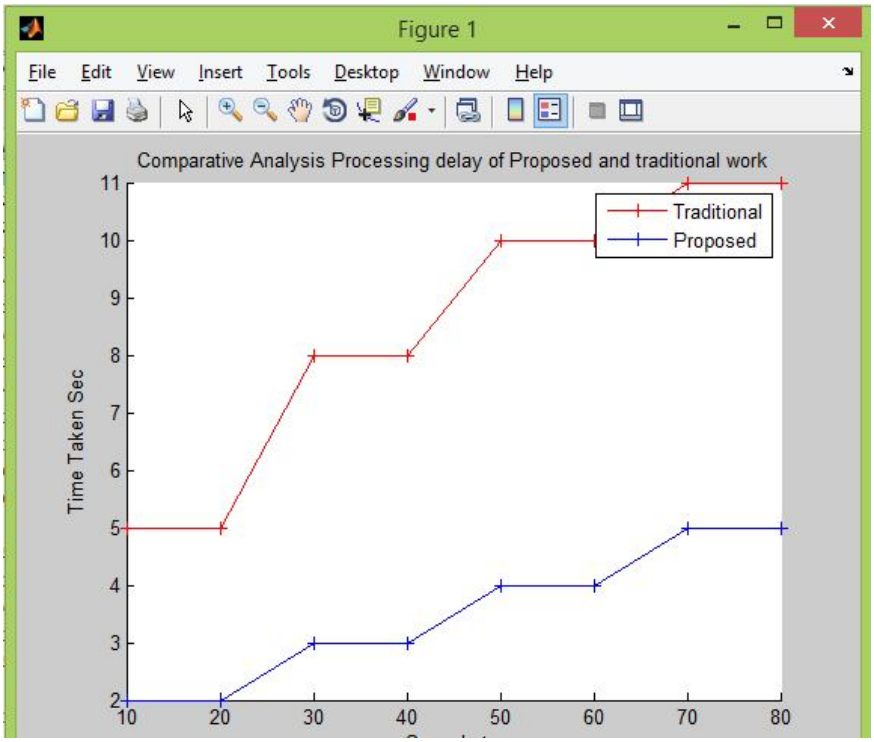

Fig 3.Comparative analysis of overall Time consumption

B. Comparative Analysis of Queuing Delay in Tradition & Proposed Comparison System

FILE SIZE	TRADITIONAL	PROPOSED
10	6	3
20	6	3
30	9	4
40	9	4
50	11	4
60	11	4
70	13	5
80	13	5

Table 3: Queuing delay in tradition & proposed comparison system

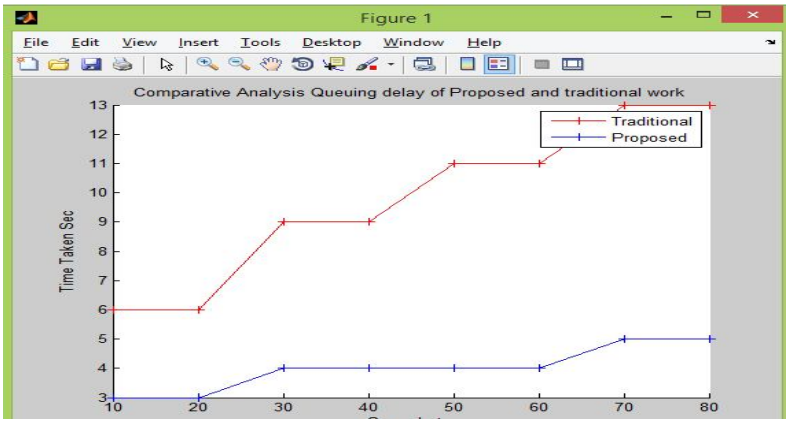

Fig 4. Comparative analysis of Queuing delay in tradition & proposed comparison system

C. Comparative Analysis of File Size in Tradition & Proposed Comparison System

PACKETS	TRADITIONAL	PROPOSED
10	4020	1020
20	8090	2050
30	12100	3600
40	16201	4201
50	20300	5100
60	24200	6300
70	29002	7210
80	33100	8543

Table 4: Comparative analysis of File Size in tradition & proposed comparison system

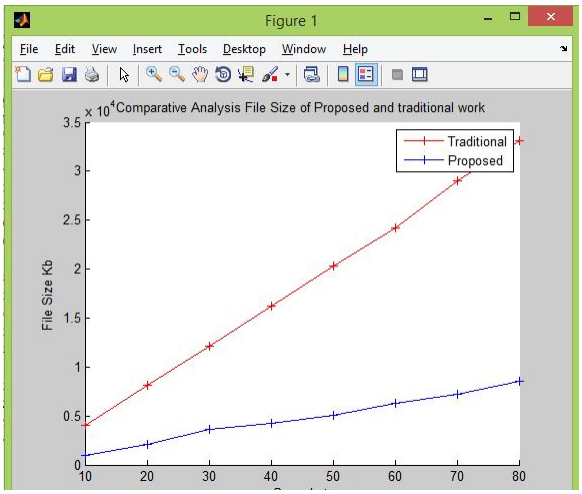

Fig 5. Comparative analysis of File Size in tradition & proposed comparison system

V. CONCLUSION

Issue of ADHOC Network security is demand of day. Proposed implementation had enhanced security of ADHOC Network. Data transmission could be made more secure from hacker to by encrypting data on sender side & decrypt it on client side. To perform this we need to merge two technologies. & on part of .net play its best role to develop GUI interface to make system easy to operate by user

A. Socket Programming
B. Data Encryption.

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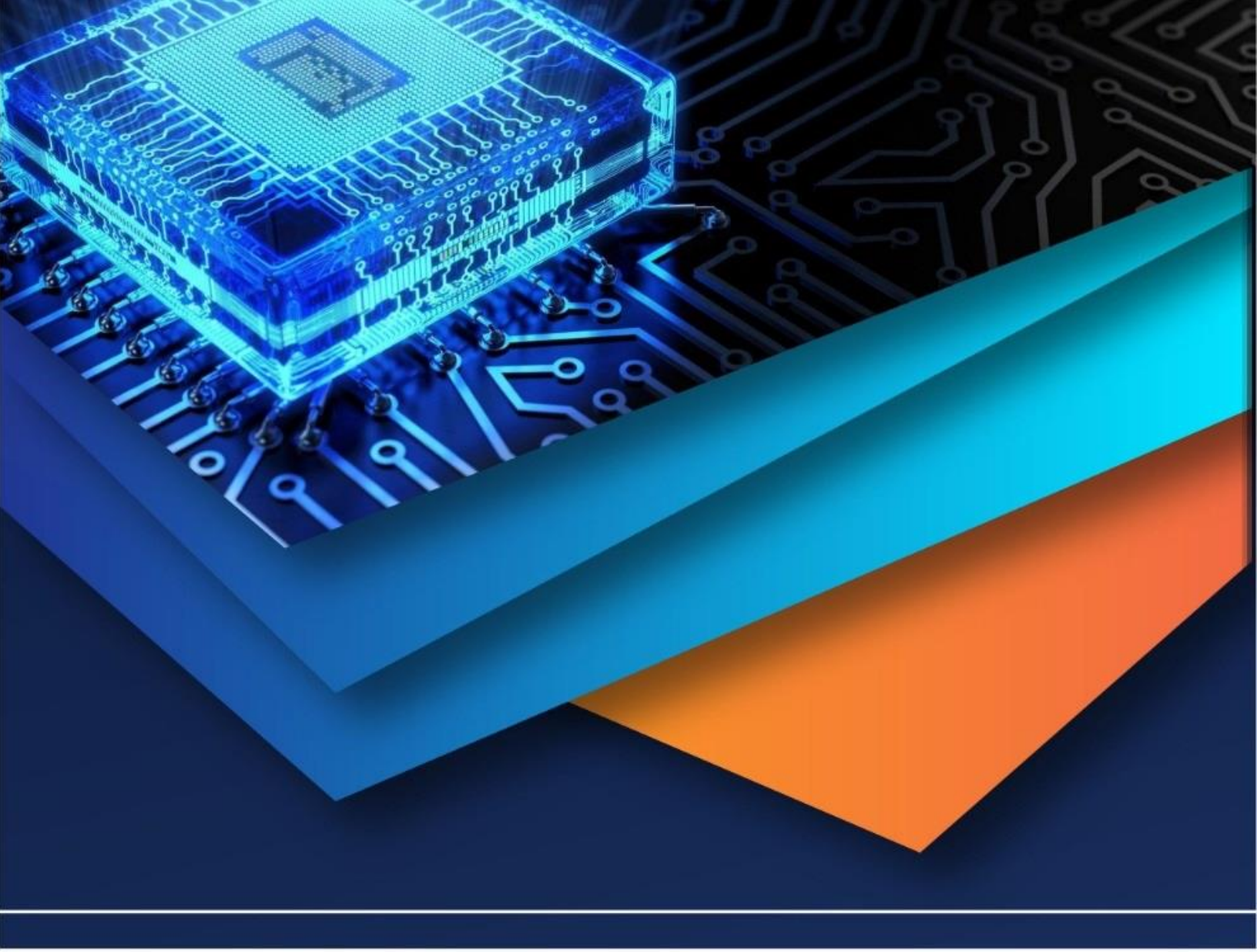

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