HANDLING PROBLEM OF ATTENUATION IN WIRLESS NETWORK USING SOCKET PROGRAMMING

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Abstract: Networking is a process that fosters exchange of information & ideas among individuals or groups that share common interests. In previous protocol enhancement network lifetime & increasing packet delivery ratio is strongly targeted. However proposed work focuses on reduction of packet size in order to reduce probability of attenuation. Because energy is distributed symmetric & traffic load is disseminated over network so we have to put minimum load on network during packet transmission.

Keyword Boosting, Data Transmission, professional, communication

I. INTRODUCTION

Computer network also known as data network is considered a digital telecommunications network that is allowing multiple nodes to share the resources such as files and devices. In case of computer networks the networked computing devices are transferring information to one other with the help of data link. Cable media or wireless media is used to establish the connection between nodes. A network forms interconnecting lines through passages, lines or wire. One line may intersect with another, & then second line goes in a different direction to connect to more lines, & soon & so forth to form a netlike structure. Symbolically, some network remains connected through a series of symbolic ties. Business connections might to someone education, employer, industry or common colleagues. In business networking, objectives are to form professional relationships that might boost one's future business & employment prospects.
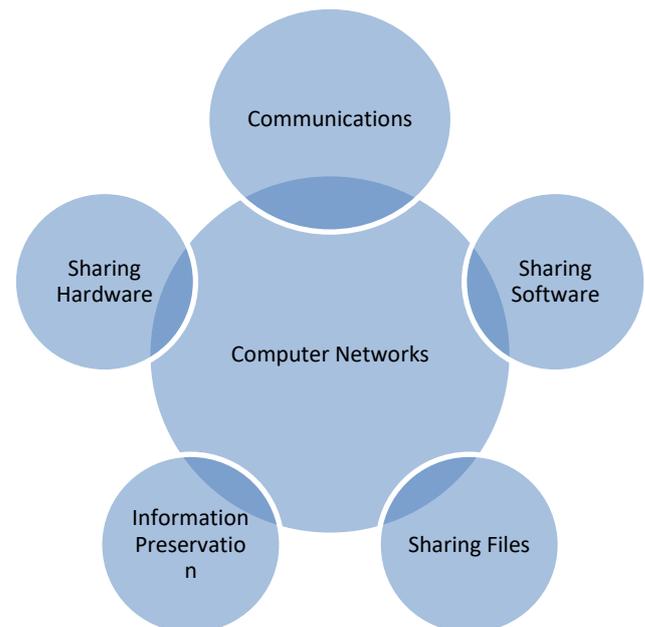

Fig 1 computer Network

Advantages of Networking

1. Files can be stored on a central computer allowing data to be shared throughout an organization.

2. Files can be backed up more easily when they are all on a central fileserver rather than when they are scattered across a number of independent workstations.

3. Networks also allow security to be established, ensuring that the network users may only have access to certain files and applications.

II. HYPERTEXT TRANSFER PROTOCOL

HTTP is hypertext transfer protocol. Usually we open websites on web browsers. These web browsers are actually clients that are accessing web pages from remote server. Web server hosts web pages. These web pages are either in form of html, jess, xml, asp etc. These web pages are transferred from web server to web client using http protocol.
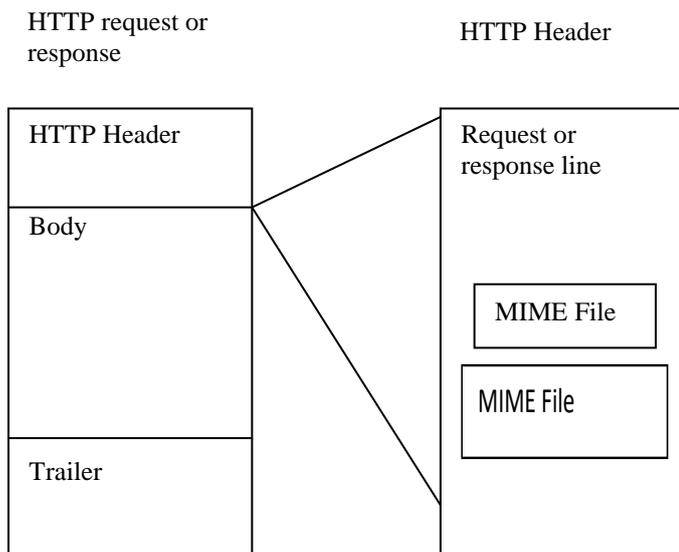
HTTP request or response   HTTP Header

Fig 2 HTTP Server

HTTP protocol follows port no 80. Following is process to access web page.

1. Local system is connected to remote server using Internet service provider.

2. Web client or web browser is opened at local system.

3. In URL bar address of remote web page is mentioned.

4. Request to web server is send from web client.

5. If web server is unable to provide web page then it returns error.

6. If web server is able to provide web page then it returns actual web page.

III. TCP BASED SOCKET PROGRAMMING

In our research we would use TCP based socket programming because this type of Network connection has following features:

1. These are Connection Oriented. Here acknowledgement is sent from receiver after getting data.

2. Such networks are considered more reliable. Systems is considered reliable as it handles lost packets & handles packet sequencing & controls duplicated packets

3. These are Full Duplex based.

4. They Feature of Flow Control.

5. It controls congestion.

TCP	UDP
Reliable, guaranteed	Unreliable. Instead, prompt delivery of packets
It is Connection-oriented	It is Connectionless
It is used in applications that require safety guarantee.	It is used in media applications.
Flow control, sequencing of packets, error-control.	No flow or sequence control, user must handle these manually.
Uses byte stream as unit of transfer.	Uses datagram as unit of transfer.
Allows two-way data exchange, once connection is established.	Allows data to be transferred in one direction at once.

Table 1 Difference between TCP & UDP

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IV. PROPOSED WORK

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.

Proposed Protocol

In previous protocol enhancement network lifetime & increasing packet delivery ratio is strongly targeted. However proposed work focuses on reduction of packet size in order to reduce probability of attenuation.

Fig 3 Proposed Model

Because energy is distributed symmetric & traffic load is disseminated over network so we have to put minimum load on network during packet transmission.

V. RESULTS & DICUSSION

In our research we would Establish of Network Environment to test flow of packets then we would make develop of packet sender & receiver module. After that we would test transmission, processing, queuing retard 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.

During research we concluded that these Factors influencing the transmission speed.
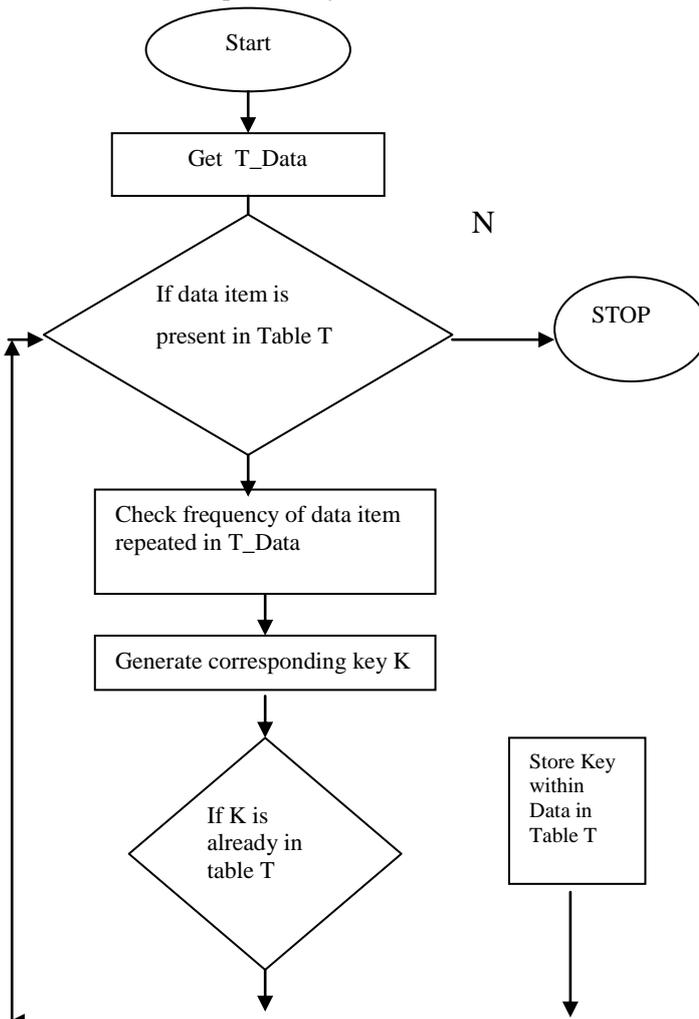
➢ **The size of Packet:** If the size of packet increases then it will take more time to transfer from receiver to sender

➢ **The encryption and decryption of Data:** For security reasons we use encryption decryption that lead to slow speed of network

➢ **The bandwidth of the network.:** the bandwidth of network is another factor that lead to fast or slow data transmission.

➢ **Queuing delay:** The delay occurred during queuing of packets during transmission influence the transmission speed of packet

➢ **Processing Delay:** The time taken during preprocessing of data to be sent , during sending operation also slows down packet transmission speed.

➤ **Transmission Delay:** The time take to transfer data from one location to other locations is another reason of delay in data transmission.

Type of Deley	Effected/ No Effect
Transmission Delay	Effected
Processing delay	Effected
Queuing Delay	Effected
Propagation Delay	Effected

Table 2 Type of delay

Comparative analysis of traditional data transmission with proposed work

In our work we have reduced the packet length that leads to fast data transmission.

Impact of our research on transmission delay

Size of File (KB)	Traditional Time Taken (Sec)	Proposed Time Taken (Sec)
10	2	1
20	2	1
30	3	2
40	3	2
50	4	3
60	4	3
70	4	4
80	5	4

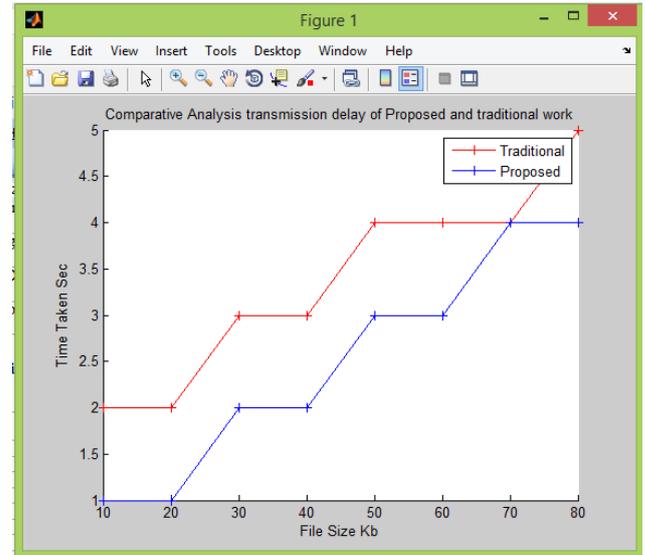Table 3 Comparative Analysis transmission retard of Proposed & traditional work

Fig 4 Comparative analysis of traditional data transmission with proposed work

Impact on processing Delay

As there is additional time taken for pre processing and post -processing of data the time taken to process packet get increased.

Size of File (KB)	Traditional Time Taken (Sec)	Proposed Time Taken (Sec)
10	1	2
20	1	2
30	2	3
40	2	3
50	3	4
60	4	4
70	4	5
80	5	5

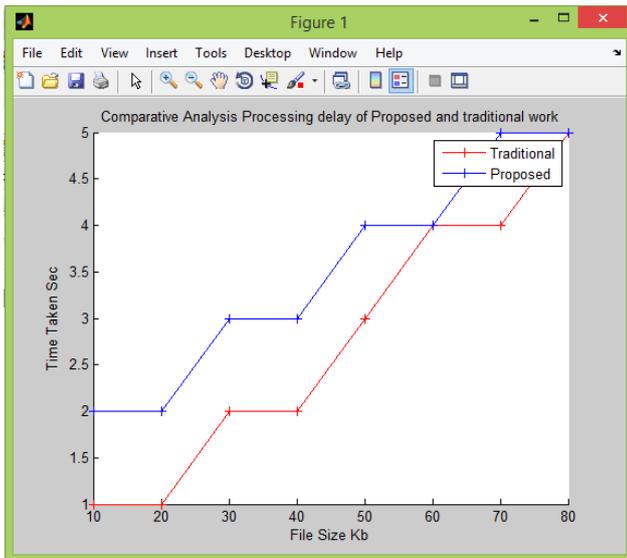Table 4 Comparative Analysis Processing retard of Proposed & traditional work
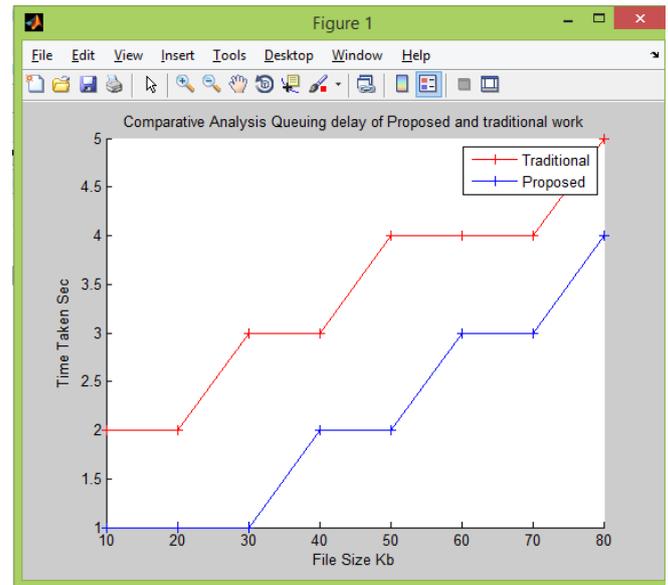
Fig 5 Impacts on Processing Delay

Fig 6 Impacts on Queuing Delay

Impacts on Queuing Delay

As the transmission delay gets reduced the queuing delay gets reduced as packet length gets reduced.

Size of File (KB)	Traditional Time Taken (Sec)	Proposed Time Taken (Sec)
10	2	1
20	2	1
30	3	1
40	3	2
50	4	2
60	4	3
70	4	3
80	5	4

Table 5 Comparative Analysis file retard of Proposed & traditional work

Impact on propagation Delay

The propagation delay gets reduced as packet length gets reduced.

Size of File (KB)	Traditional Time Taken (Sec)	Proposed Time Taken (Sec)
10	1	1
20	1	1
30	2	1
40	2	1
50	2	1
60	3	1
70	3	2
80	3	2

Table 6 Comparative Analysis Propagation retard of Proposed & traditional work
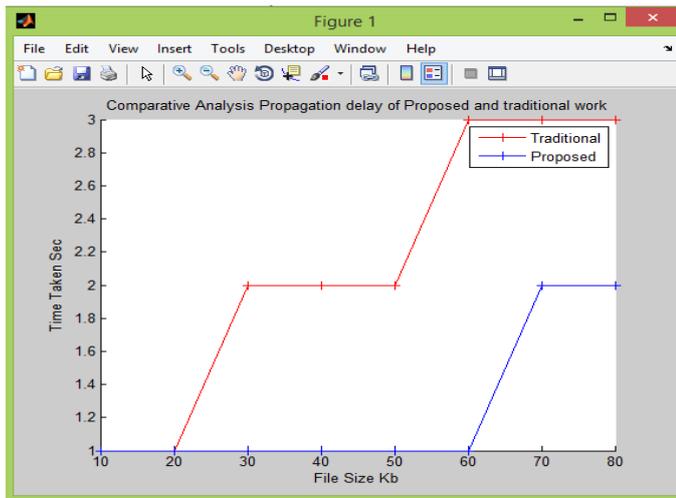
Fig 7 Impact on propagation Delay

VI. CONCLUSION

From our research it is clear that after reducing the size of packet the delay in transmission get reduced. Instead of this queing delay and propagation delay also got reduced. But the pre processing of packet takes more time as the data is updated from sending packet. However this is process before sending and after receiving of packet. Our work has reduced the transmission delay of packet at different networks.

REFERENCES

1. Zygrnunt Haas(1991) "Protocol Structure for High-speed Communication over Broadband ISDN Network Magazine", IEEE

2. David B. Johnson, Member (2006)"Wormhole charges within Wireless Networks", International Journal in Foundations of Computer Science & Technology (IJFCST), Vol.4, No.6, November 2006

3. Ahmed M. Al Naamany, Ali Al Sheehan (2006) "Wireless LAN Security Overview", Conferences in Research and Practice in Information Technology, Vol. 200, 2006

4. Di Ma Michigan Dearborn (2010) "Security & Privacy in Emerging Wireless Networks', International Journal in Foundations of Computer Science & Technology, Vol.8, No.9, November 2010

5. Andriy Panchenko (2011) "Lightweight unhide Services", International Journal of Scientific Engineering and Technology Volume No.11 Issue No.7, 2011

6. Satish Ms. Sonal Rane(2012) "Performance Evaluation of Wired & Wireless Local Area Networks", International Journal of Engineering Research and Development, Volume 1, Issue 1, 2012

7. Mr. Sachin Taluja (2012) "Survey on Network Security, Threats & Firewalls", International Journal of Advanced Research in Computer Engineering & Technology (IJARCET) Volume 1, Issue 7, September 2012

8. Nur Amalina (2013) "Enhanced Network Security System Using Firewalls ARPN", Journal of Engineering and Applied Sciences, VOL. 8, NO. 12, DECEMBER 2013

9. Vaishali.S.Raj1, Dr. R. Manick Chezian(2013) "DELAY Disruption Tolerant Network (DTN), its Network Characteristics & Core Applications", International Journal of Advanced Research in Computer Engineering & Technology Volume 1, Issue 7, September 2012

10. Archit Uprit (2014) "Network Security Using Linux/Unix Firewall", International Journal of Scientific Engineering and Technology Volume No.3 Issue No.3, 2014

11. Kuldeep Tomar (2014) "Enhancing Network Security & Performance Using Optimized Acls", International Journal in Foundations of Computer Science & Technology (IJFCST), Vol.4, No.6, November 2014

12. Udaya Wijesinghe (2015) "An Enhanced Model for Network Flow Based Botnet Detection Proceedings", Conferences in Research and

Practice in Information Technology, Vol. 159, 2015

13. Sandra Scott (2017)Hayward A Survey of Security in Software Defined Networks A Survey of Security in Software Defined Networks. IEEE Communications Surveys and Tutorials,2017

14. Artemios G. Voyiatzis, "A survey of retard – disruption tolerant networking applications", Journal of Internet engineering, Vol 5 no 1, pp: 331-343, June 2012.

15. K.Fall, "A retard Tolerant Network Architecture for Challenged Internets", in Proceedings of ACM SIGCOMM, pp: 27-34, August 2003.