

# Implementation on Peer to Peer & Client Server using XOR Metric in Cloud Computing

Manak Madan<sup>1</sup> and Rekha<sup>2</sup>

<sup>1</sup>M.Tech. Student, CSE, CBS Group of Institutions, Fatehpuri, Jhajjar, Haryana (India)

<sup>2</sup>Assistant Professor, CSE, CBS Group of Institutions, Fatehpuri, Jhajjar, Haryana (India)

## Abstract

Peer-to-peer networks grip two and extra computers pooling person resources like disk drives, DVD players and printers. These shared resources are available to every computer in network. Each computer acts as both client & server, communicating directly within other computers. On a peer-to-peer network, for example, a printer on one computer could be used by any other computer on network. These networks are inexpensive to set up. All you need is a way to connect them, like an Ethernet cable or a Wi-Fi router.

**Keywords:** *Peer-To-Peer, Coordination, Structured Networks, Cloud Computing.*

## 1. Introduction

Peers-to-Peer Networks:

Peer-to-peer computing and networking spread is an application planning that division's tasks or workloads between peers. Peers are equally privileged, equipotent participants in application.

Architecture of P2P:

A P2P network is planned around notion of the same all together functioning as both "clients" and "servers" to any nodes on network.

Resilient & scalable computer networks:

The broadcast nature of peer to peer networks expanding robustness because it eraser single point of failure that could be inherent in a client-server based system. As nodes appear and demand on system increases total ability of

system all increases, and likelihood of failure decreases.

## 2. Applications of P2P

Content delivery:

In P2P networks, clients both provide & use resources. This process that not like client-server systemize content serving capacity of peer-to-peer networks could actually increase as more users begin to F access content.

## 3. Literature Review

**Petar Maymounkov (2011) Kademlia: A Peer-to-peer Information System Based on XOR Metric**

We describe a peer-to-peer system which had provable consistency & performance in a fault-prone environment. Our system routes objection and uncover nodes using a novel XOR-based metric topology that simplifies algorithm & facilitates our proof.

**Hardeep (2012) AdHoc: A DHT Substrate for MANET based on XOR Metric**

P2P resource lookup systems are widely used in wired networks. Within wireless networks becoming widespread through advances in technology, many systems formerly applied in wired networks must now be transplanted to wireless environments.

Monjur Ahmed (2014) cloud computing & security issues in Cloud computing Vol.6, No.1, January 2014

Cloud computing had formed conceptual & infrastructural basis for tomorrow's computing. Total computing communication is fast moving towards cloud based construction.

#### 4. Proposed Work

The objective of our research is to Implement of peer to peer & client server security using xor matrix in cloud computing. Here in this chapter we have discussed establishment of peer to peer network as well as client server security along within security threats.

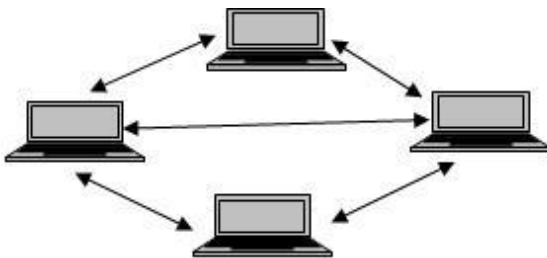


Figure 1: Peer to Peer Network

#### Client server Model

A Client server network model is computer network where one centralized & powerful server is considered as a hub to which several low powerful clients known as personal computers or workstations are connected.

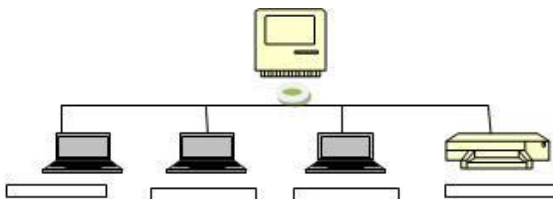


Figure 2: Client Server Model

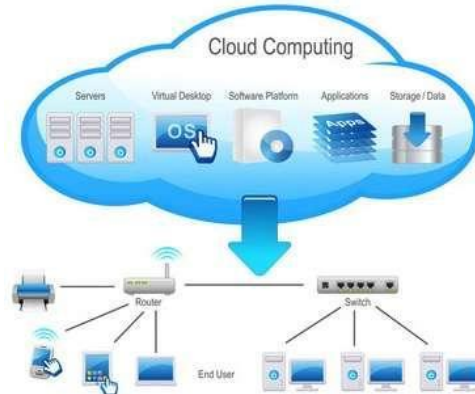


Figure 3: Cloud Computing

Then, could recreate forgotten data when ACK comes within from legitimate connection.

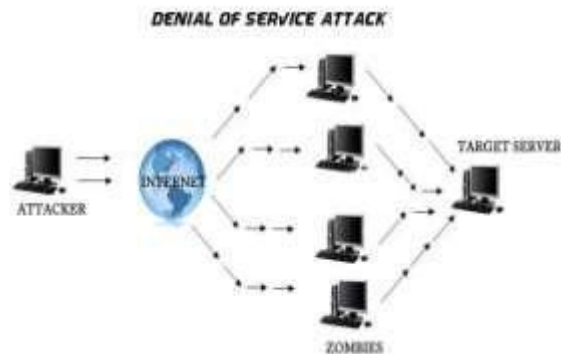
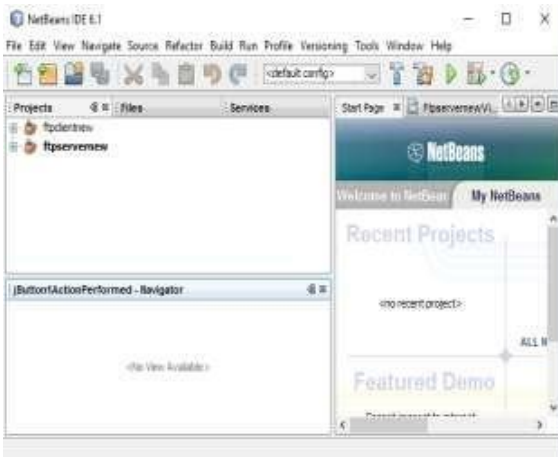


Figure 4: Denial of Service Attack

#### 5. Implementation

##### Server Side Implementation

In this project we have developed a server application as well as client application in Net bean IDE. As shown in following figure:



**Figure 5: Client application in Net bean IDE**

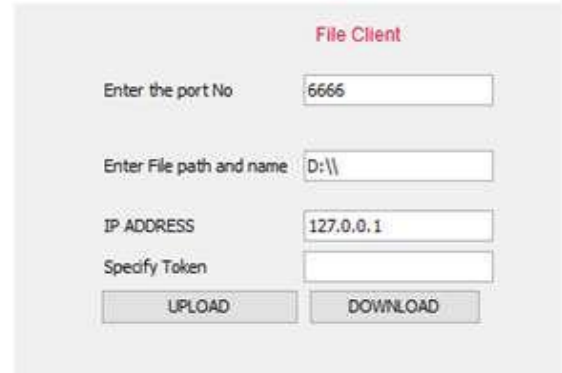
Following is design view of server side application. Here we have to specify port no, file path, & token (to decode data).



**Figure 6: Design view of server side application**

**Client side implementation**

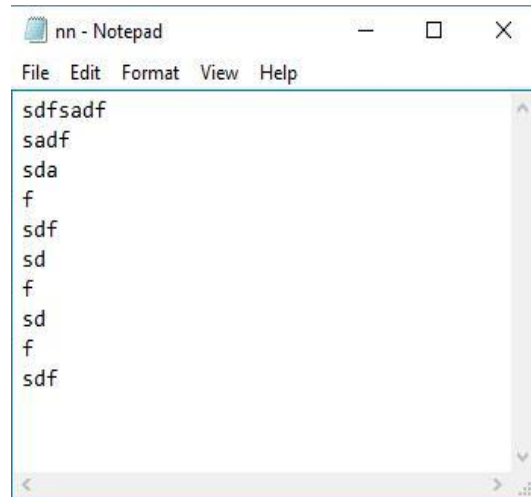
Following is design view for file client in order to upload & download data. Here we have to specify port no, file path, ip address of server & token (to encode data).



**Figure 7: Design view of client side application**

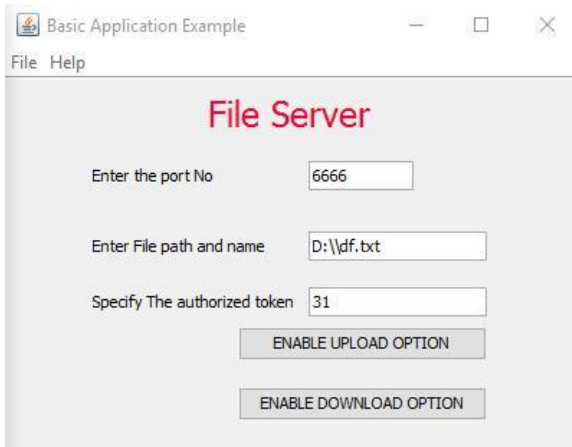
**Running application**

Here we have to upload nn.txt from client to server. Following is nn.txt file.



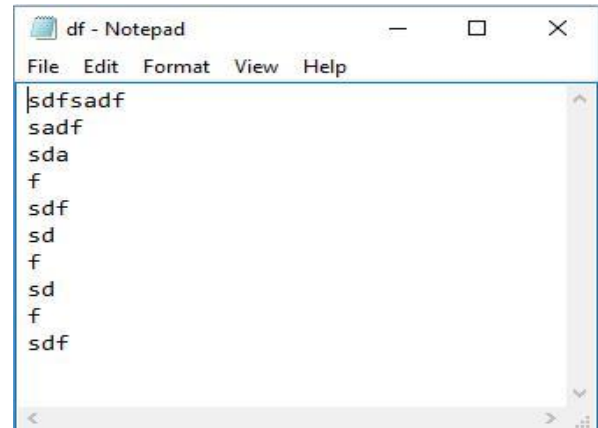
**Figure 8: Running Application**

After running server side module we have to specify port no above 1023, file path & authorization token.



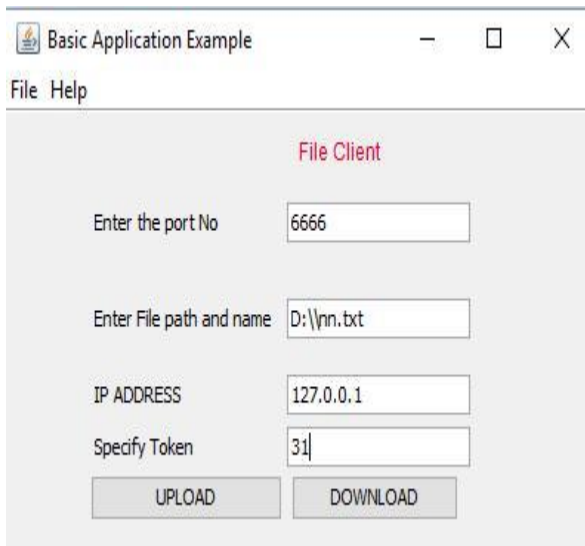
**Figure 9: Running Application Cont.**

After running client side module we have to specify port no 6666, file path & authorization token. Here we have to specify IP address too to set destination path for file to be transmitted.



**Figure 11: Running Application Cont.**

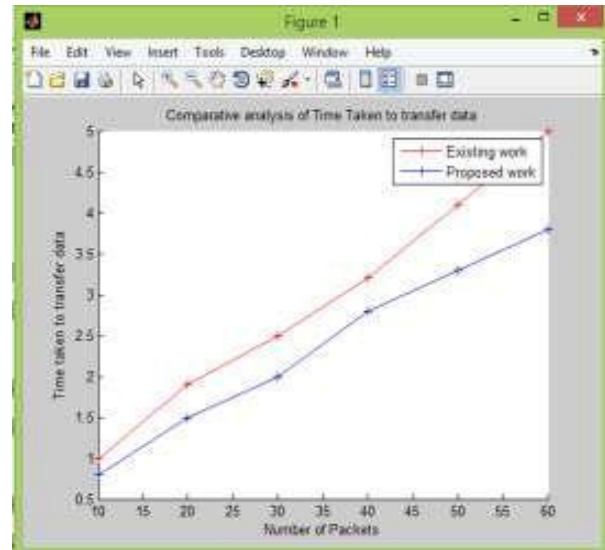
**Result of Output**



**Figure 10: Running Application Cont.**

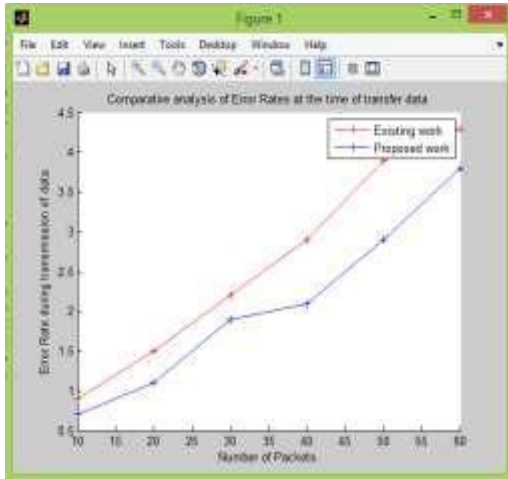
File nn.txt is encoded using xor operation first then transferred from client to server.

On receiving end file is decoded again using xor operation & df.txt on server would be as follow:



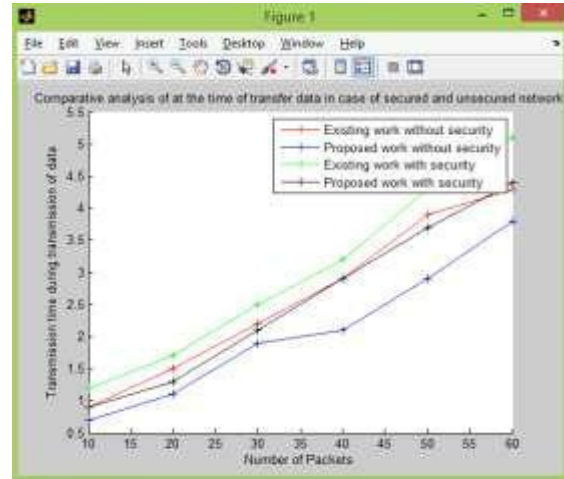
**Figure 12: Comparative analysis of time taken to transfer Packet**

**Comparative analysis of error rates at time of transfer data Result of Analysis**



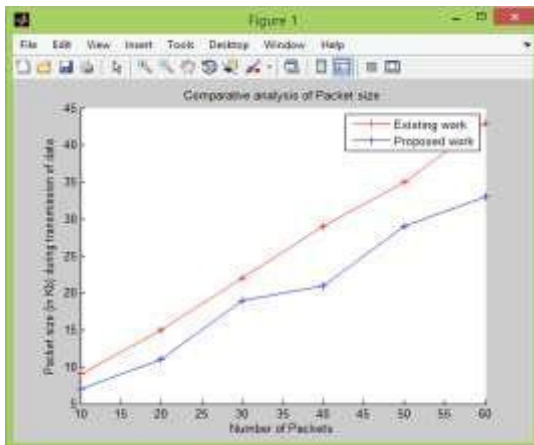
**Figure 13: Comparative analysis of error rates at time of transfer data**

**Comparative analysis of transmission time in case of secure & unsecure traditional & proposed work**



**Figure 15: Comparative analysis of transmission time in case of secure & unsecured traditional & proposed work**

**Comparative Analysis of Packet Size Result**



**Figure 14: Comparative analysis of packet size**

**6. Conclusion**

The conclusion of our research is to Implement of peer to peer & client server security using xor matrix in cloud computing. Here in this research we have discussed establishment of peer to peer network as well as client server security along within security threats. With XOR-based metric we provide consistency & performance, latency minimizing routing, & a symmetric, unidirectional topology to peer to peer & client server cloud. It is also difficult to provide system-wide services because desktop operating system typically used in this type of network is incapable of hosting service. Client-server networks have a higher initial setup cost. We have tried to make investigation of limitation to existing security system & use tradition XOR metric & discuss how it is more secure as compare to previous XOR based encryption secure as compare to previous XOR based encryption.

## References

- [1] Petar Maymounkov (2011) Kademia: A Peer-to-peer Information System Based on XOR Metric International Journal of Network Security & Its Applications Vol.8, No.1,
- [2] Rabi Prasad Padhy (2011) "Cloud Computing: Security Issues & Research Challenges" IRACST - International Journal of Computer Science & Information Technology & Security (IJCSITS) Vol. 1, No. 2, December 2011
- [3] Hardeep (2012) KAdHoc: A DHT Substrate for MANET based on XOR Metric Cloud International Journal of Network Security & Its Applications (IJNSA), Vol.5, No.1,
- [4] Monjur Ahmed (2014) cloud computing & security issues in Cloud International Journal of Network Security & Its Applications (IJNSA), Vol.6, No.1, January 2014
- [5] Manpreet Kaur (2015) A Review of Cloud Computing Security ISSUES International Journal of Advances in Engineering & Technology, June, 2015
- [6] Rowstron & P. Druschel. Pastry: Scalable, distributed object location & routing for large-scale peer-to-peer systems. Accepted for Middleware, 2001, 2001.
- [7] Ben Y. Zhao, John Kubiatowicz, & Anthony Joseph. Tapestry: an infrastructure for fault tolerant wide-area location & routing. Technical Report UCB/CSD-01-1141, U.C. Berkeley, April 2001.
- [8] Andr'ea W. Richa C. Greg Plaxton, Rajmohan Rajaraman. Accessing nearby copies of
- [9] Replicated objects in a distributed environment. In Proceedings of ACM SPAA, pages 311– 320, June 1997.
- [10] Stefan Saroiu, P. Krishna Gummadi & Steven D. Gribble. A Measurement Study of Peer-to- Peer File Sharing Systems. Technical Report UW-CSE-01-06-02, University of Washington, Department of Computer Science & Engineering, July 2001.
- [11] Ion Stoica, Robert Morris, David Karger, M. Frans Kaashoek, & Hari Balakrishnan. Chord: A scalable peer-to-peer lookup service for internet applications. In Proceedings of ACM SIGCOMM '01 Conference, San Diego, California, August 2001.
- [12] Malden A. Vouk (2014) Cloud Computing – Issues, Research & Implementations International Conference on Cloud Computing.
- [13] Abhinay B. Angadi, (2013) Security Issues within Possible Solutions in Cloud Computing-A Survey International Journal of Advanced Research in Computer Engineering & Technology (IJARCET) Volume 2, Issue 2, February 2013
- [14] Raj Kumar (2015) Research on Cloud Computing Security Threats using Data Transmission Volume 5, Issue 1, January 2015 International Journal of Advanced Research in.
- [15] Meiko Jensen (2009) On Technical Security Issues in Cloud Computing 2009 IEEE International Conference on Cloud Computing.
- [16] Saju Mathew (2012) Implementation of Cloud Computing in Education– A Revolution International Journal of Computer Theory & Engineering, Vol. 4, No. 3, June 2012.