

Cloud Computing: Using XOR Metric for Peer-to-Peer and Client-Server Implementation

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decreases.

1. Abstract

Peer-to-peer networks connect two or more computers together to share resources such as printers, disk drives, and DVD players. Every machine connected to the network has access to these shared resources. Every computer communicates with other computers directly, serving as both a client and a server. For instance, any other computer on the network could use a printer on a peer-to-peer network. The setup costs for these networks are low. All you need is a means of connecting them, such as a wireless router or an Ethernet cable.

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

2. 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

3. 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.

4. Literature Review

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

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.

5. 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.

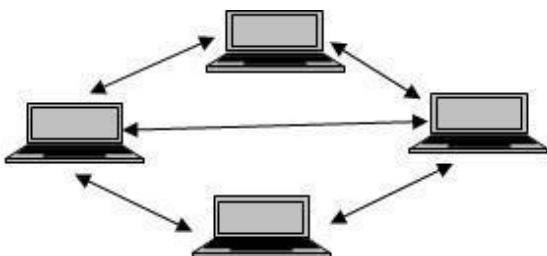


Figure 1: Peer to Peer Network

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.

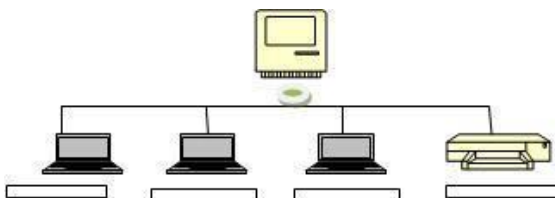


Figure 2: Client Server Model

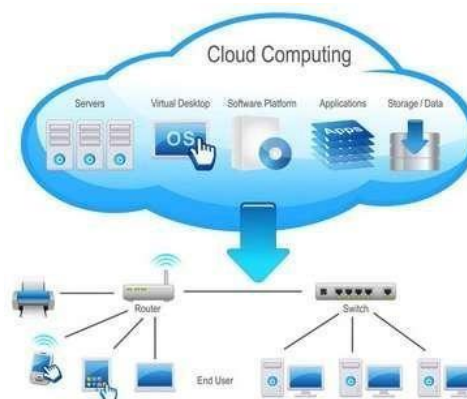


Figure 3: Cloud Computing

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

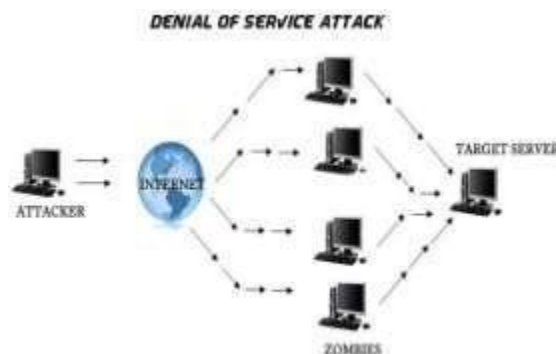


Figure 4: Denial of Service Attack

6. 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:

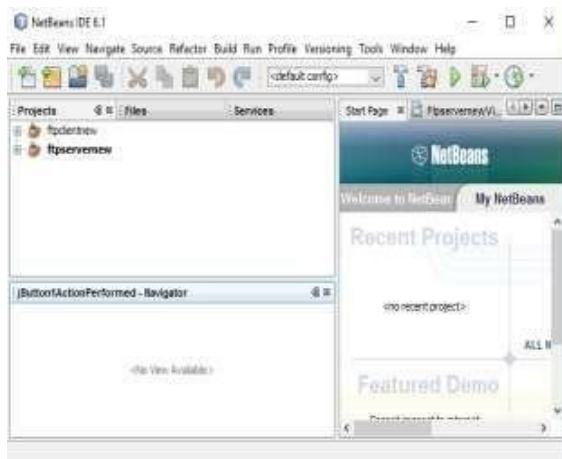


Figure 5: Client application in Net bean IDE

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.

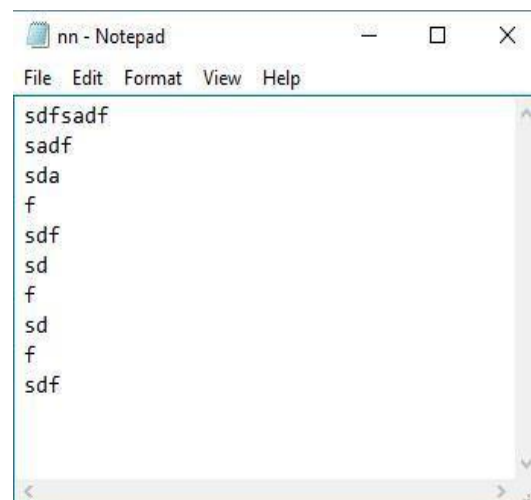


Figure 8: Running Application

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

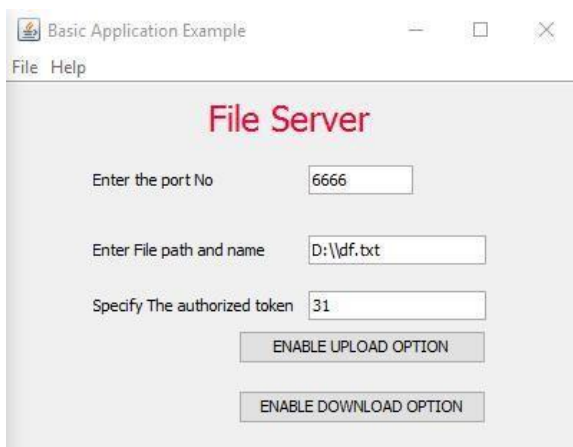


Figure 9: Running Application Cont.

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.

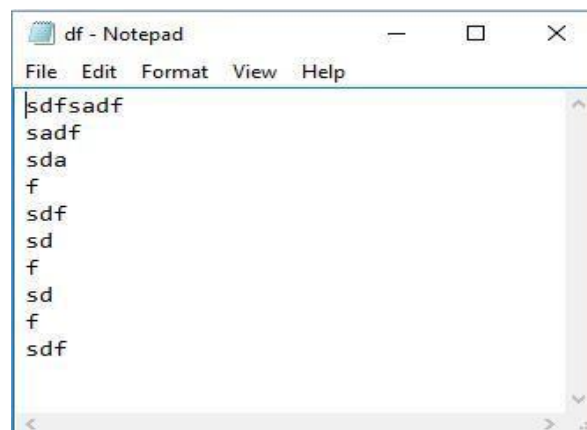


Figure 11: Running Application Cont.

Result of Output

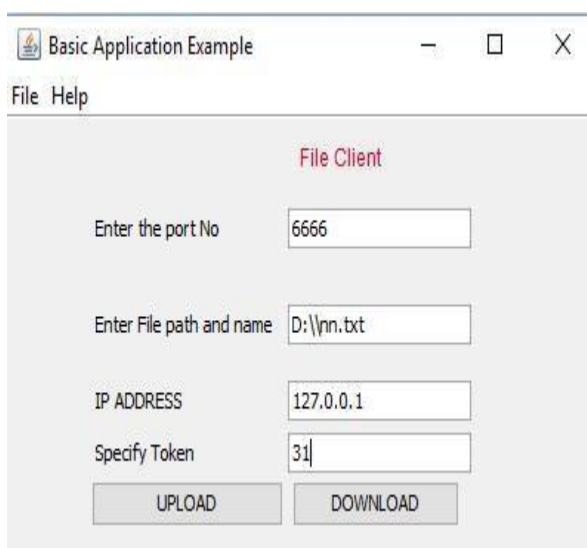


Figure 10: Running Application Cont.

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:

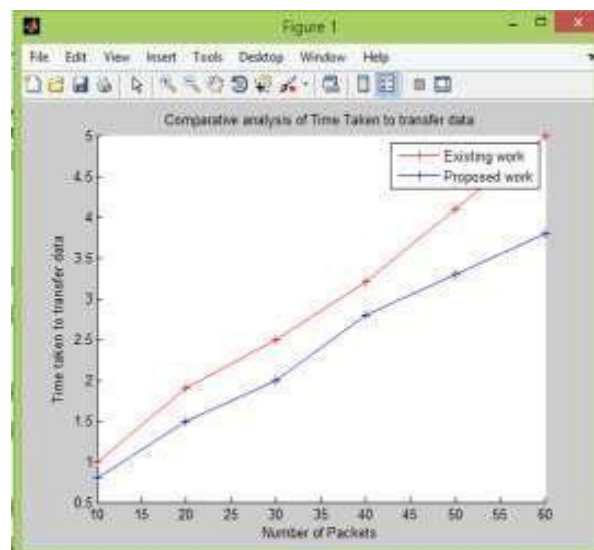


Figure 12: Comparative analysis of time taken to transfer Packet

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

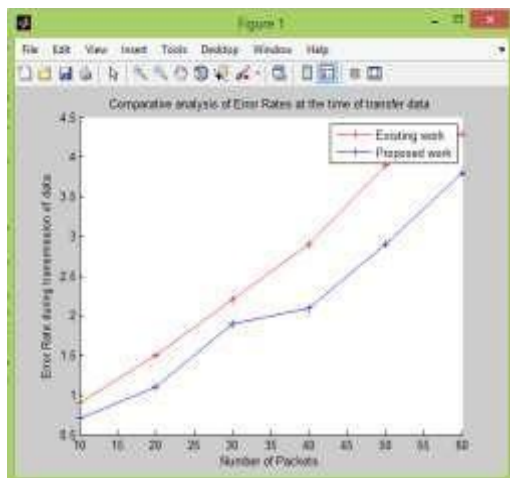


Figure 13: Comparative analysis of error rates at time of transfer data

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

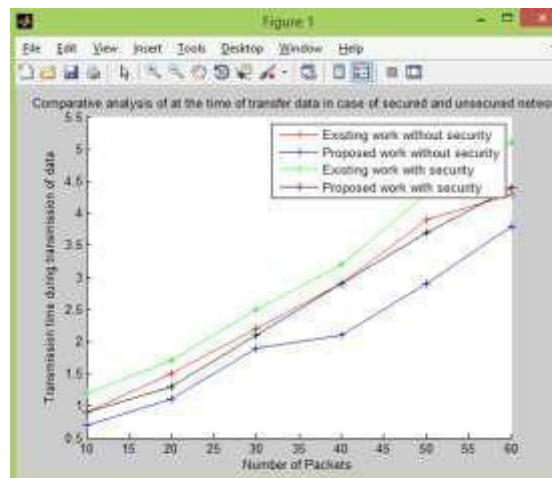


Figure 15: Comparative analysis of transmission time in case of secure & unsecured traditional & proposed work

Comparative Analysis of Packet Size Result

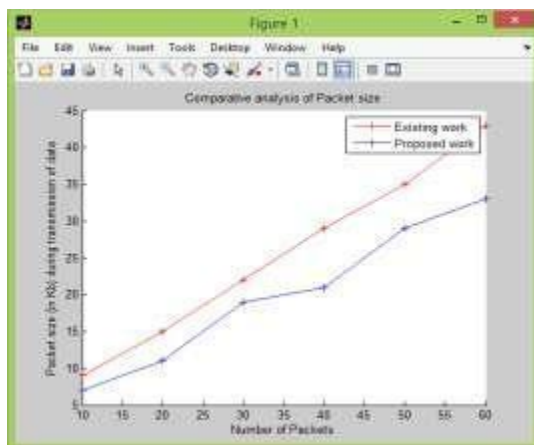


Figure 14: Comparative analysis of packet size

7. 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.

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