Boosting Data Transmission Speed by Analysing the Factors: Size Of Packet And Security Of Data Using Encryption

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Abstract- Cloud services are offeringflexible&scalable services. But there is always issue of security. When data is transferred from centrally located server storage to different cloudcompromise of person&private data would increase. There are lot of resources such as remote computer, cloud server&cloud storage connected to our systems. There is requirement of multiple layer security. So that user could not transfer data on unauthentic system. In this paper we have discussed the security issues in cloud computing. During research we concluded that these Factors influencing the transmission speed such as the size of Packet and encryption and decryption of Data.

Keyword- Cloud Computing, Transferred, Storage

I.   INTRODUCTION

Cloud computing is a remote based computing that givenpublic computer processing resources & data to computers & other devices on demand. Cloud services are offering flexible & scalable services. But there is always issue of security. When data is transferred from centrally located server storage to different cloud compromise of person & private data would increase.   There is always risk to confidentiality & availability of data prior to selecting a cloud vender or choosing own cloud & cloud service migration. Cloud services usually have their security concerns that must be addressed
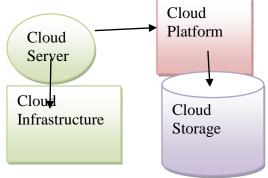

Fig.1: Cloud computing

We have discussed threats to cloud service & data in case of conventional security system & modern security system & proposed an idea to secure data on cloud using multiple layers of security.

Cloud computing relies on sharing of resources to achieve coherence & economy of scale, similar to a utility over an electricity network.Advocates claim that cloud computing allows companies to ignore up-front infrastructure costs. As well, it enables organizations to focus on core businesses instead of spending time & money on computer infrastructure.

II.   SECURITY ISSUES IN CLOUD COMPUTING

Third party provides data&infrastructure management in cloud computing sosecurity of cloud is biggest concern.
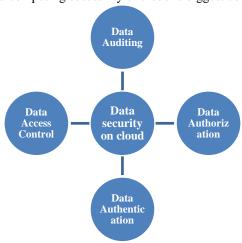

Fig.2: Data Security on cloud

There is a risk in providing sensitive data to cloud service provider. Any security breach could result in customer or business loss so venders provide protection to accounts.

Customer cannot switch from one cloud service provider to another quickly so he is dependent on cloud service provider for service.

Customer management interface is usually accessible on network in case of various public cloud service providers.

III.   RESEARCH METHOLOGY

Client Server Model

It is possible for two network applications to begin simultaneously, but it is impractical to require it. Therefore, it makes sense to design communicating network applications[8] to perform complementary network operations in sequence, rather than simultaneously. The server executes first & waits to receive; client executes second & sends first network packet

to server. After initial contact, either client or server is capable of sending & receiving data.

Server authenticate user & user authenticate server generating a very strong session key using their shared password over an insecure channel by using symmetric cipher.
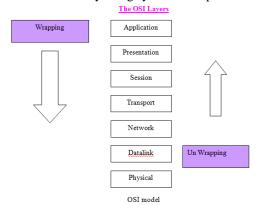

Fig.3: OSL Model

A special function issued by having distortion & picture subroutines used as password in order to save password from offline dictionary attack.

Work is implemented in one of major used language named java.

This model would create a separate layer for data transmission &hacker[15] would not be capable to access data on wireless network without application layer required on client.
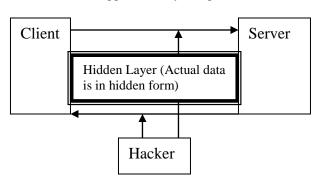

Fig.4: Client Sever Model

IV.   TOOLS AND TECHNOLOGY
1. HARDWARE
2. CPU (1GB)
3. Harddisk (10 gb free space)
4. RAM (2 GB)
5. High resolution monitor

SOFTWARE
1. WINDOW 7
2. JAVA
3. NET BEANS
4. MS ACCESS

V.   PROPOSED WORK
The research is to boost data transmission speed over network without introducing any new hardware. To do this we have to under stand reasons of delay in data transmission. We are focusing on following objectives:
1. Establishment of Network Environment to test flow of packets
2. Development of packet sender & receiver module.
3. Testing transmission delay in packet transmission
4. Testing processing delay during packet transmission
5. Testing queuing delay of network packets
6. Testing propagation delay at time of data transmission
7. Development of algorithm using java based socket programming to transfer packet from sender to receiver in minimum time.

VI.   IMPLEMENTATION
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 the transmission, processing, queing delay in packet transmission. Then we would compare both work previous and 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 1 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.
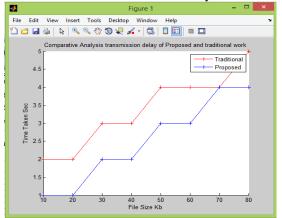
Impact of our research on transmission delay

Fig.1: 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.
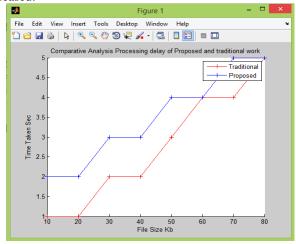

Fig.2: Impacts On Processing Delay

Impacts on Queuing Delay

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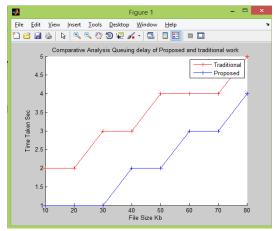

Fig.3: Impacts on Queuing Delay

Impact on propagation Delay

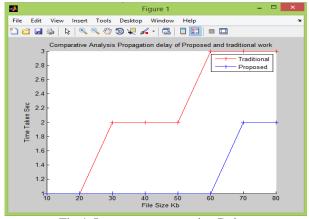The propagation delay gets reduced as packet length gets reduced.

Fig.4: Impact on propagation Delay

VII.   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.

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