

# COST REDUCTION TECHNIQUE USING CLOUD COMPUTING

T. Navin Kumar<sup>1</sup>, K. V. Manoj Kumar<sup>1</sup>, M. R. Srinivasulu<sup>1</sup> and Mrs. Girija<sup>2</sup>

<sup>1</sup> Student, Department of Computer Science, Jeppiaar Engineering College, Chennai-119.

<sup>2</sup> Assistant Professor, Department of Computer Science, Jeppiaar Engineering College, Chennai-119.  
tnavinkumar93@gmail.com

**Abstract-** In this paper, we using cloud computing for eliminating traffic redundancy and reducing cost for a benefit of cloud customers. Here, we introduce the technique as bandwidth prediction through synchronization over user and server. The user's bandwidth were predicted by the server and proceed with the acknowledgement process, server of cloud provide the bandwidth to the end user of which customer needs. From this, cloud providing different bandwidth for different user which automatically eliminating end-to-end traffic redundancy and cost beneficial for an every customer accessing cloud. So easily cloud customer obtain their task and pay only for the usage in the cloud.

**Keyword-** Cloud Computing, Bandwidth, Traffic redundancy Elimination, Authentication.

## I. INTRODUCTION

Cloud Computing is providing data, storage and resources to the customer use. Cloud is a large resources which provides to all over a scale. It task has enriched in this competitive world. Cloud providing a huge enhancement of data which are use or beneficial for the customers. Every customers are enrolled in the Cloud. Cloud has a various services as Infrastructure as a service [IaaS], Software as a Service [SaaS] and Platform as a Service [PaaS]. Each services gives various tools for using in system data. Cloud offer to a customer an economically pay-per-use method for their usage. Customers using cloud for their resources and data. Which are embedded in various techniques.

Cloud customers are using cloud resources repeatedly and occur traffic due to accessing data, uploading and downloading file etc., [2]. Every user's accessing file in various place. So traffic occurring in the cloud server and providing services to the customers are reduced automatically i.e. the bandwidth given to the user has reduced and finally the cloud customer cannot able to access over in Cloud.

Bandwidth provides are slow down due to traffic occur in server for getting more number for request from the user. Prediction bandwidth is introduced [1] and given to the user which bandwidth is suitable for their process. According to that their bandwidth is predicted and provides to the cloud customers. This techniques has reduced the traffic between the users. The customer has pay their process only for the usage [3]. The easily got pay for their only resources. For this process the traffic has reduced and enhanced the service to the cloud customer without any interrupt. So customer simultaneously use their data and resources.

## II. RELATED WORKS

Traffic redundancy elimination has been researched in recent years. Several works are demonstrated in traffic elimination. EndRE needs to be fast, adaptive in memory usage in order to opportunistically resources on end hosts [2].

A low bandwidth system has introduced to reduce the traffic redundancy to require the simultaneous process to the cloud customer as much as needed [5].

Measuring the protocol of internet has determined and duration of the usage of customer in cloud is calculated and study through an analysis and reduce the traffic to the end customers from the service providers [4].

The prediction bandwidth of users details has collected and provide services to the required bandwidth of which customer can work. This method can reduce the cost to the customer and eliminate the traffic redundancy [1].

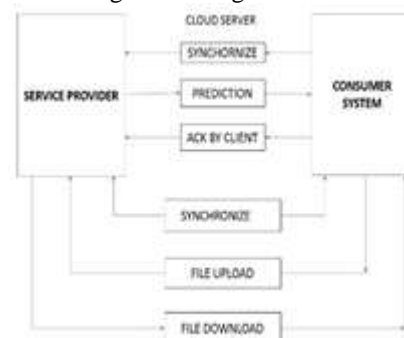
To determine the policy for pricing cloud bandwidth reservations, in order to increase social welfare in Pricing cloud bandwidth and so they pay for their usage only [3].

## III. PROPOSED SYSTEM

We introduce the technique as bandwidth prediction through synchronization over user and server. The user's bandwidth were predicted by the server and proceed with the acknowledgement process, server of cloud provide the bandwidth to the end user of which customer needs. From this, cloud providing different bandwidth for different user which automatically eliminating end-to-end traffic redundancy and cost beneficial for an every customer accessing cloud. So easily cloud customer obtain their task and pay only for the usage in the cloud. It is receiver-based, cloud-friendly, end-to-end TRE that is based on unusual speculative principles that reduce latency and cloud operational cost.

## IV. ARCHITECTURE

Architecture diagram shows the relationship between different components of system. This diagram is very significant to understand the overall concept of system. Architecture diagram is a diagram of a cloud and consumer system, in which the major parts or functions are represented by blocks connected by lines that show the relationships of the blocks. They are heavily used in the industrial world in hardware design, electrical design, software design, and process flow diagrams in Fig1.



**Fig 1. The architecture diagram shows how the customer bandwidth is predicted**

The process flow in the architecture which represent in that a customer system and cloud server is synchronize with the network and then server predicts the user's bandwidth and server send the acknowledgement to the user. Process in held, client receives an acknowledgement from the server. After confirmation, as per the need the various bandwidth are provided to the different users.

## V. SYSTEM DESIGN

### A. Sign-on

New User want to create an account in cloud means they have to sign on this page with providing some asked details from this page. Fig-2 If users' provided details are all valid means account was created in the cloud. In this module many mandatory and validation controls should be used for the needs of account creation, so user must provide correct details in it.

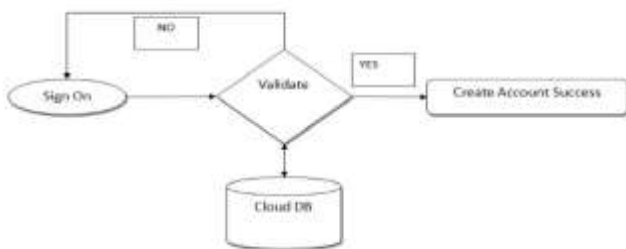


Fig-2 It's shows on sign-on module

### B. Predict Bandwidth

After providing the details, consumers' system bandwidth will be calculated for prediction purpose of costing their usage in cloud. The calculated bandwidth range will be stored in the database. Fig-3 helps to know how the customer bandwidth is predicted by a cloud server.



Fig-3 Relates between customer system and cloud server

The consumer system is synchronize with the cloud server each bandwidth is predicted and analysis the accurate bandwidth of the user.

### C. Consumer Acknowledgement

In this module, acknowledgement process will be processed by cloud provider side. The predicted range of consumers' bandwidth has to be confirmed by consumer side. So predicted value has to be send to consumer and they will acknowledge for that means the costing will be calculate for consumer based on bandwidth.

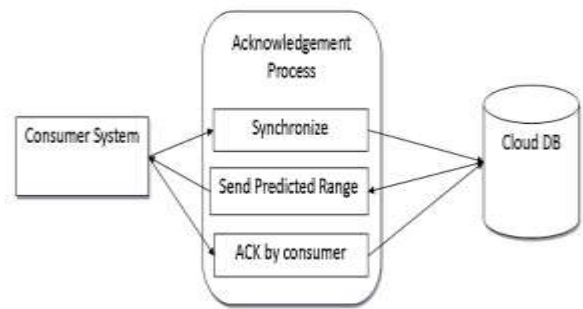


Fig-5 Consumer acknowledgement

### D. Authentication

Consumer want to access their account means they have to sign in first with providing their personal user id and password. If users' given authentication will be valid means the user use their account. In this module mandatory and validation controls should be used.

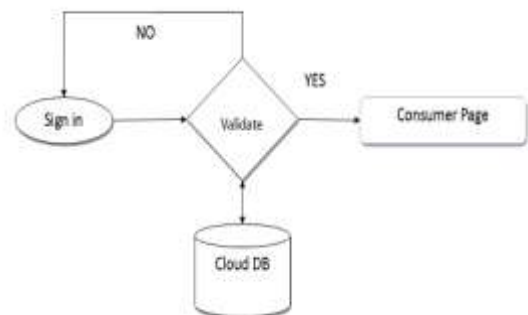


Fig-6 Authentication is done between the user and cloud server

Fig-6 the user authenticate to the server page its check the consumer details and same details which contains on server details would be match. After the process the details are correct it will allow to access the user in cloud or otherwise its redirect to the login page and check the user id and password to rewrite.

### E. File upload

Consumer want to upload their files into their cloud space means they first select the uploading files and the path is mandatory. After chosen the file path click the Upload button starts to uploading process depends upon bandwidth range of consumers system.



Fig-7 a user upload data to the cloud

### F. File download

Consumer want to download their files from their cloud space means they first select the file to get be downloading file from their directory is mandatory. After chosen the file click the Download button file will be starts to download to consumers system.



Fig-8 a user can download data from the cloud

Fig-8 the user can download any file and access from the cloud, it's been brought the platform and the user can access the service provides from the cloud.

## VI. RESULT AND EVALUATION

The result performance shows that the evaluation when calculating user's bandwidth. The cloud provider predict the user bandwidth and calculating average requirement they need to perform their task. From that it find the solution of calculating the bandwidth speed of the user to upload and retrieve file from the network. This table shows that various number of user have accessing the cloud with different bandwidth to access in Fig 9 and algorithm [7] for bandwidth allocation.

ConsumerID	Duration	SizeRequired	BandwidthReq	ValidFrom	ExpireOn	Status
1	6	200	1	2014-08-25	2015-02-23	1
2	13	200	0	2014-08-25	2015-09-25	1
3	5	200	3	2014-09-27	2015-01-27	1
4	10	400	0	2014-08-28	2015-06-28	1
5	5	200	2	2014-10-24	2015-03-24	1
#	NULL	NULL	NULL	NULL	NULL	NULL

Fig-9 user's bandwidth requirement table

```

Userbandwidth Ub;starttime st:endtime et;
Display()
{
Loadshedding();
monitoring all Ub;
Return unusebandwidth;
}
Peruserbilling()
{
While(user==true)
ABD();
}
Concurrentuser()
{
ABD();
If(all users are active)
Return 0;
Else if(some users are not using) Allocate();
Else if(bandwidth available in loadshedding) Allocate();
Else
Continue with available bandwidth
}
Usageofuser()
{
ABD();
If(Ub ==slr agreement) Return 0;
Elseif(Ub <slragreement ) Allocate();
}
Else
  
```

```

}
Contact provider
Hybridbilling()
{
ABD();
It is mixture of any available approaches ;
}
Loadshedding()
{
What are the max services providing by the provider and
their max values
}
ABD()
{
For(i= st ; i< et ; i++) If(user==idle)
{
}
}
Else
}
}
Allocate();
Return 0;
Allocate()
{
Assign unuse Ub to active user;
}
  
```

## VII. FUTURE ENHANCEMENT

Consumer want to download their files from their cloud space means they first select the downloading file from their directory is mandatory. After chosen the file click the Download button file will be starts to download to consumers system.

Data De-duplication has revolutionized the data center, improving data protection and reducing the storage cost. Today there are more ways than ever to leverage data de-duplication; from flash arrays, to backup application and of course disk backup appliances.

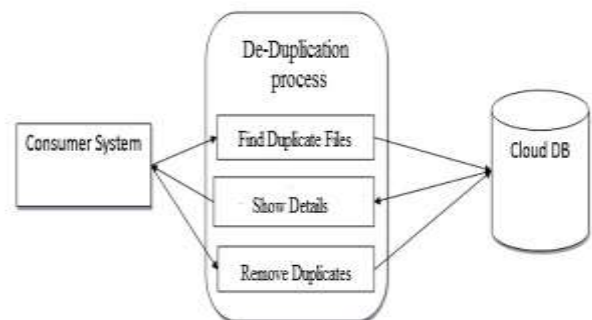


Fig-10 de-duplication process held in cloud

De-duplication process allow in cloud is useful to remove the existing file. The file is already exist in the cloud, if the cloud customer upload a files into the cloud, it check the each file which it is already exist if it is exist then the file which upload is edit and back to the same data. From this system de-duplication method can increase the storage capacity to the customer.

## VIII. CONCLUSION

It does not require the server to continuously to maintain client's status, thus enabling cloud elasticity and user mobility to preserving long-term eliminate traffic

redundancy. Moreover, this method is capable of eliminating the redundancy based on content arriving from the cloud to the client from multiple servers without applying a three-way handshake. The Multiple predictions are used to more accurate delivery of service to consumers from provider. This system is more reliable and reducing cost for eliminating the traffic problem from existing techniques.

#### REFERENCE

- [1] E. Zohar, I. Cidon, and O. Mokryn, "The power of prediction: Cloud bandwidth and cost reduction," in *Proc. SIGCOMM*, 2011, pp. 86–97.
- [2] N. T. Spring and D. Wetherall, "A protocol-independent technique for eliminating redundant network traffic," in *Proc. SIGCOMM*, 2000, vol. 30, pp. 87–95.
- [3] Di Niu, chen Feng, Baouchun Li, "Pricing Cloud bandwidth reservations under demand uncertainty," *Commun. ACM*, pp. 50–58, 2012.
- [4] Alberto Medino, Mark Allman, Sally Flyod, "Measuring the evaluation of transport protocol in the internet" *Commun. ACM*, pp. 67-90, April 2005.
- [5] A. Muthitachoen, B. Chen, and D. Mazières, "A low-bandwidth network file system," in *Proc. SOSP*, 2001, pp. 174–187.
- [6] E. Lev-Ran, I. Cidon, and I. Z. Ben-Shaul, "Method and apparatus for reducing network traffic over low bandwidth links," US Patent 7636767, Nov. 2009.
- [7] Sreelakshmi, Krishnan, Sathyanarayana, "Effective bandwidth allocation approach based on users billing in cloud environment" *IJCSMC*, Vol. 3, Issue. 7, July 2014, pg.689 – 693