

Reliable VM Identification in Multi Cloud Environment

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ABSTRACT

Cloud computing is the latest trend in information technology. Cloud computing offer many services to the user. One of the major service in cloud computing is Infrastructure as a Service (IaaS). Today there is a greater demand in IaaS. This demand gives the server fault or the server gives the slow response. In multi cloud the server is called VM. There is number of VM are in Multi cloud. The proposed method is to find the reliable VM to process the data owner request. The indexing mechanism and the reliability assessment method is used to find the reliable server to respond the request gracefully to unexpected hardware or software failure. In proposed system, all the original files are stored in all VMs with the concept of replication. If suppose one VM can suffered by fault, others can produce the result efficiently based on the techniques used in the proposed mechanisms

KEY WORDS: Fault tolerance, Multi cloud, indexing, Reliability.

I. INTRODUCTION

Cloud computing provides the real-time applications. The real-time applications give many advantages to the user but at the same time it cause fault tolerance. In multi cloud the fault tolerance is identified by the server response time[1].

In multi cloud environment multiple server are involved and the user cannot know which server is reliable to process the data owner request. To find the better server process the data owner send the request to data center parallel and find the reliable server. The time checker method find all the VM's processing time and select the less time taken VM to process the data owner request.[2]

2. SYSTEM ARCHITECTURE

The system has the data owner, Client and CSP. The authorized client request is send from data owner to data center[3].

The system architecture is explained in Fig 2:

2.1 Data Owner

The data owner who owns the data can store their data on the cloud and avoid the fault tolerance. The data owner can create a replica and store it on multiple cloud using indexing mechanism. If the requested user is authorize the data owner generates the private id and sends it. If the user is not valid data owner will drop the request message.

2.2 Client

The user who uses the data from CSP is client. The users want this data send authentication message to data owner with the use of private ID. After receiving private ID, the request sends the data requisition message to Multiple VM's (Virtual Machine), CSP (Cloud Service Provider).

2.3 CSP

The Cloud service provider (CSP) can check the requested user private ID and data, if it's valid ID the requested data is sent to the acceptance test to find the reliable among multiple VM'

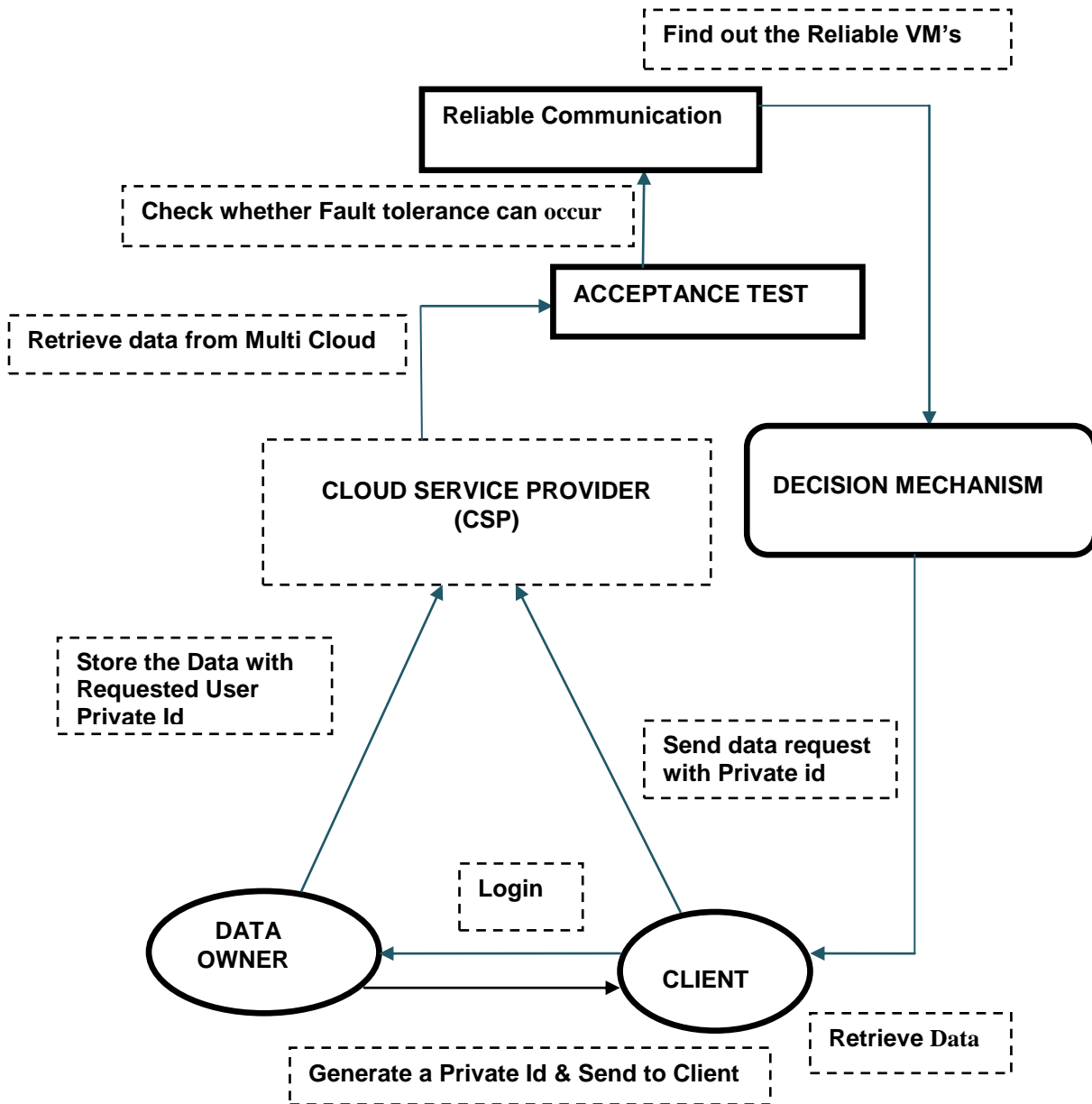


Fig 2: System Architecture

3. PROPOSED METHOD

The proposed work is to identify the reliable VM multi cloud server[4]

3.1 Reliability Assessment Mechanism

Begin

```

a:=1, Status, Vm:=3;
Input Npt
While vm >=3
Tpt: = TReq + TDelivered
Ri =Tpt
If Ri <Npt then
a: = a-1
Status=Active
Else if Ri >Npt then
a:=a+1;
Status:=dead
    
```

Wend
End

This pseudo code, can be used to find out the Reliability node among Virtual Machine, where N_{pt} it denotes the average processing time for each Vm's, T_{Req} denotes the total request time, $T_{Delivered}$ denotes the Response time, R_i denotes the Reliability assessment[5]. To formalize and reducing the file searching time over the cloud using effective fuzzy-based Indexing search. Fuzzy-based indexing search greatly enhances the system usability by return the corresponding matching files when users searching inputs exactly match the predefined indexing value. When exact match fails, it returns an error message. The fuzzy Indexing search, can do the optimized storage. Identify the reliability and data integrity through MAC generation. A message authentication code called MAC is use to authenticate the message and detect any changes in the message content. The sender message can digest

through a MAC algorithm to produce a MAC data tag. The message and MAC tags were send to the receiver.

The receiver can digest the received data through the MAC algorithm using the same key, producing a second MAC data tag. Then compares the first MAC tag to the second MAC tag. If they are same, the receiver can assume that the integrity of the message is not compromised and the message was not altered or tampered with during transmission. Using this algorithm we can make sure our data[6]

3.2 Decision Mechanism Algorithm

Begin

Input Threshold

$Best_{R_i}$: = **find_reliability** of node with highest reliability among all VM's.

if $Best_{R_i} > \text{Threshold}$

Data: = loss

Else

Data: = Gives data to Requested user

End

This pseudo code can be used to find out the best reliability time duration among all VM's, based on the result corresponding data can be delivered to the perspective user from highly Reliable VM. Where threshold denotes some predefined criteria, $Best_{R_i}$ denotes the best reliable value among various VM's. DM determines the success or failure of a task result in a computing cycle. It selects an output from the VM with maximum reliability. That the maximum reliability[7]

VM is selected based on the correct output within time limit. Storing a retrieving the data from cloud in the form of encryption, for data security, here the Symmetric key cryptography technique is used for data security. Password based Encryption algorithm can be used to encrypt the file for data storage[6]. The proposed method shows an efficient speed up to access the desired data using indexing mechanisms and propose a fault tolerant mechanism in multi cloud environment and can efficiently retrieve the requested data reliably[8][9]

4. RESULTS AND DISCUSSION

The experiment takes two CSP for testing and analysis to find the reliable CSP which process the data owner request to the data center. The reliability mechanism achieves the fault tolerance.

The data storage in the server has stored securely with the use of cryptographic method. Storing a retrieving the data from cloud in the form of encryption, for data security, here the Symmetric key cryptography technique is used for data security.

The data owner can easily search the request data from the client with the use of file ID. The file ID is generate by Fuzz logic method using fuzzy keyword-Based indexing search mechanism, The owner can retrieve a specific file using file id, even though more than two file can have a same name. Each file or data in cloud can have a unique ID[9]Fig 3:

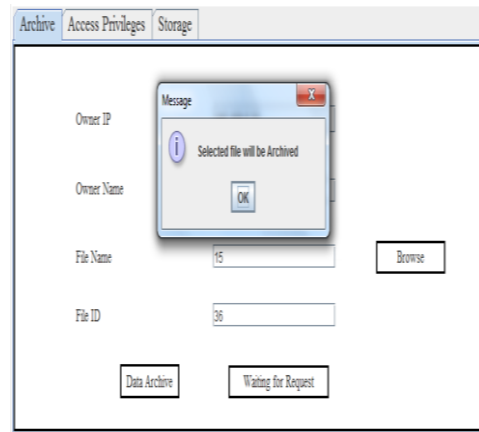


Fig 3: The Creation of File Id

The reliability of two CSP's is find the response time of the CSP in Fig 4: The time checker can find the reliable VM and enable that VM for the process to the client request with the use of data owner. The time consumption is measured as milliseconds[10][11]

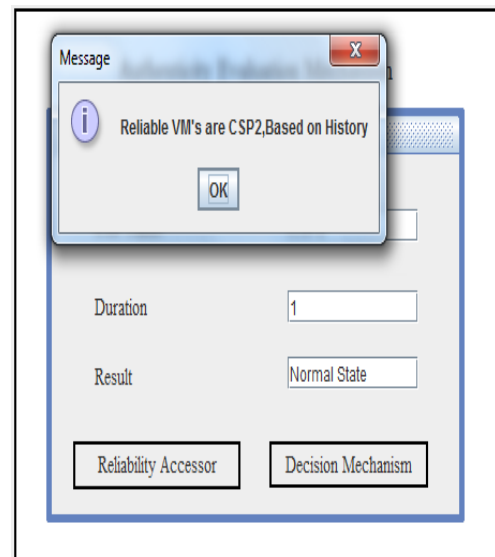


Fig 4: Identification of Reliable CSP

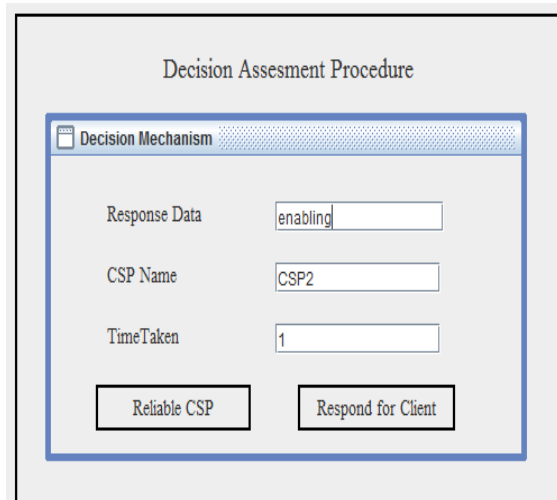


Fig 5: CSP2 enabling process

The performance chart shows the time process of two VM in 9 cycles. At each cycle the CSP2 gives the less time consumption compare to CSP1. With the use of these cycles to conclude the CSP2 is the reliable VM for the further process.

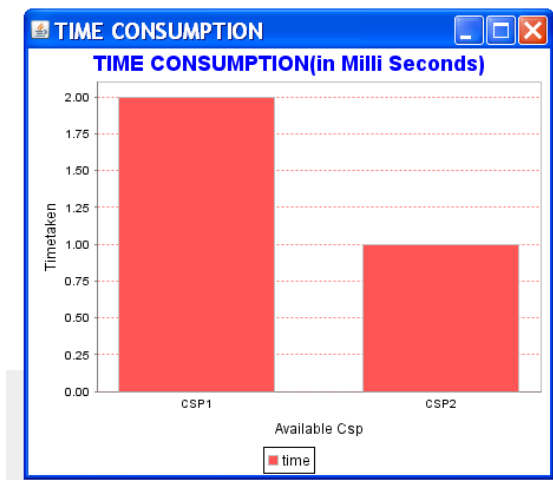


Fig 5: Time consumption of two CSP

The CSP can store our data in cloud using some cryptographic algorithm like PBE, and to store the data in compressed format, thereby we can optimize the cloud resources. Third-party can hashing like SHA, the content of file stored in cloud. It can check the data retrieved from the multi-cloud based on hash key, if key is modified some fault can occur in our retrieved data[10]

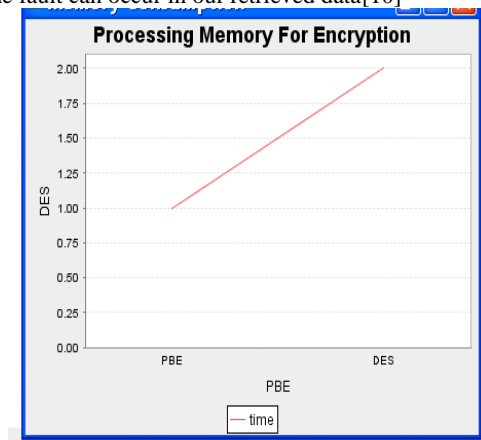


Fig 6: The performance of Memory

In this system, third-party hashing like SHA content file is stored in cloud. It can check the data retrieved from the multi-cloud based on hash key, if key is modified the user can easily identify some fault can occur in the retrieved data

The result gives multiple VM for reliable, automatically the previous history is search. The reliable VM are find based on the Previous history of the each particular VM's[11]. The CSP find reliable VM to process the client request, because the CSP has taken less time to process.

5. CONCLUSION

In general, the reliable identification techniques cannot have indexing mechanism. In proposed method the data owner use the Fuzzy logic indexing mechanism create file ID for each file. The file ID is used avoid the replication of

the same file name which is stored in the cloud server from the different user multi cloud. The user cannot remove any cloud server because the fault can't occur in cloud server, that fault will be occurred only retrieving; removing cloud server is not efficient one

6. FUTURE ENHANCEMENT

The dynamic resource allocation for multi cloud is the future scope. The scheduling mechanism schedule and allocate resource in multi cloud environment. Resource allocation improves the memory usage and the CPU usage and use the cloud more effective.

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