# **Cloud Platform Storage Management and Data Recovery Research**

### Yongkang Zou

School of Software Engineering, Chongqing University of Arts and Sciences, Yongchuan Chongqing, 402160, China

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**Abstract:** Cloud storage is an emerging concept that extends in the concept of cloud computing. The traditional web service and its own features bring great security risk. At present, it is becoming a key factor that impedes the development of cloud system. On the basis of the analysis of data security analysis in the cloud platform industry, the paper analyzes the storage management of cloud platform, the data security and the recovery of damaged data, and puts forward the distributed data recovery outlook and storage management through the mechanism of the computer recycle bin.

### 1. Introduction

As Google and many large companies like Microsoft and Amazon and IBM have begun to focus more on cloud computing, cloud computing is rapidly growing, and a growing number of users begin to store data to the cloud, but the cloud provides users with convenient services, Due to the risk of traditional web services and its own characteristics, it is becoming the key to the progress of cloud computing development, and under the cloud platform security mechanism, the recovery of the damaged data is simply analyzed under the cloud platform mode.

### 2. Cloud Computing Concepts and Data Storage Methods

#### 2.1. The concept of cloud computing

So far, there is no unified definition of cloud computing. Wikipedia, Microsoft and Google and many other platforms have come up with their own definitions of cloud computing, resulting in up to 25 types of cloud computing. This paper mainly defines cloud computing, cloud computing mainly refers to the service delivery mode and usage mode, it mainly refers to the network to obtain the required services according to the way of easy expansion, cloud computing mainly refers to distributed computing, parallel computing, grid computing and virtualization technology, load balancing and many other traditional computer network technology development integration and progress[1]. On the whole, cloud computing is essentially the same It is not an innovation technology, it is just a business model innovation, it mainly combines distributed computing and grid computing, virtualization technology and infrastructure services, virtualize data center computing resources, and provide related content to business users in the form of rental. Users pay fees according to their own actual needs, experience 10 trillion rapid operation ability per second, business users enter the data center with the help of their own mobile phones or laptops, and operate according to the actual needs to achieve their own needs.

Traditional data backup often uses mobile hard disk, but the emergence of cloud computing has completely changed the current pattern. Through the technology provided by cloud computing service providers, users need an account password and lower price than mobile hard disk, and use a faster service way than mobile hard disk anywhere there is Internet. With the development of cloud computing technology, mobile hard disk gradually began to fade on the historical storage stage[2].

According to figure 1, the scale and growth of cloud storage market in China from 2008 to 2009 show that the scale of cloud computing market in China in 2009 is 4.035 billion yuan, and the growth rate is 28.0% compared with 2008. In 2009, the cloud computing market in China has been rapidly increased by many applications, and the cloud storage market in China has maintained a stable and rapid growth trend. It maintains stable and rapid growth [3].

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Fig.1. Scale and growth of cloud computing market in China from 2008 to 2009

#### 2.2. Cloud platform data storage method

Most of the data in cloud computing platform belongs to semi-structured data or structured data, and the storage of data is realized through distributed database management. Distributed database can establish multi-dimensional mapping table for long-term storage of data information, users can store data in the table, each column in the table contains sorting primary keys and any many series of numbers, but its own sparsity is very different and different, the data of each row in a table is sorted differently, the name format is defined as sum, and the basic construction pattern is constructed by string. Each data table has a set and its own schema is not It is similar to the basic relational structure model of the relational table. The Label value implements a valid data change for all the rows in the table, and changes in the data is achieved by the transformation of the surface structure.

#### 2.3. Distributed database architecture

In the system construction of the server, the basic structure of the master-slave server is used as the basic basis, and the operation of the distributed database is carried out by means of the masher by means of the cluster resource of the server node. the function of the node server is the access mode, the synchronous registration of the nodes is realized in the main server by the slave server node of the computer cloud, the main server can cause the computer system to be disabled if the fault and the problem are present, As a result, backup recovery and redundant recovery can be used to avoid the problem of system paralysis.

Switch from the master mster server to the slave master server, get the slave server list, the relationship between the node and the primary server is stored in the node, and the other types of nodes are assigned in different types of servers. According to the characteristic functions contained in the data list, the primary server needs to feel the node location all the time, and the user obtains the node metadata information and location information in his own client. There are great differences between cloud computing table data and traditional databases. Cloud computing belongs to coefficient distribution type, and there are many mapping and sorting contents in cloud computing table data, and the traditional database is completely opposite to its actual implementation. In this paper, the schema is used as a basic mapping database to represent the data information by the key data mapping schema, so the structure of the database should be simplified.

### 3. Cloud Computing Data Security

In the current cloud computing mode, enterprises transfer data to cloud computing service providers by means of network, which is mainly faced with many problems, including how to ensure that enterprise data is strict and not stolen in the network transmission, secondly, how to effectively ensure that cloud computing service providers can not disclose their own data when obtaining data. Finally, it is ensured that the subsequent user access produces strict authority authentication when the data is stored, so that the data information stored in cloud computing can be accessed at will in a secure state [4].

#### 3.1. Data security

When the management and control of information is transferred from one party to the other, the enterprise may not be able to protect, retrieve or transfer information. Therefore, identity and access management is particularly important in the process of data use in cloud computing. Ensuring the security of identity and access can ensure the security and confidentiality of enterprise data to the greatest extent. To manage identity and access security, cloud computing requires cross-regional collaboration, but also to ensure that the identity of the relevant personnel and related devices are not abused [5].

#### **3.2. Data transmission security**

In the case of data in a network transmission, it is first to be ensured that the security and the confidentiality of the data, that is to say, perform appropriate encryption during the actual data transmission, such as by using vanilla or using the protocol ftp and the http protocol, etc., Currently, for network data, especially Internet data transmission, it is necessary to ensure the integrity and security of data information, such as whether to use the FTP protocol of SSL, whether to use the HTTPS protocol, whether to use the security copy degree or the like the greatest threat to data in network transmission when in real public cloud. That is, it can't die using an encryption algorithm. This mode is not able to protect the integrity and security of the relevant data if the secure data is used to save the pattern and to use a non-secure transport protocol [6].

#### 4. Cloud Storage Platform Data Recovery Research

The redundant recovery refers to the downtime and the burst that are present in the data during the network transmission, thereby causing the associated data to be corrupted, The network system provides a very powerful error recovery technology by means of a Reed-Solomon code, thereby ensuring the problems of the cloud system and correcting the measures in time, thereby realizing the recovery of the data, ensuring the safety and the reliability of the cloud storage data [7]. The recovery of computer cloud data is often used in a way that is combined with a copy and a backup. by using the distributed document system as described above. According to the study of the system, three or more copies of the data on the data of the computer cloud system are stored, and if the server of a certain computer has the data error, the data of the damaged server is replaced by the data of the computer cloud and the related server. Therefore, the recovery of the cloud storage data is realized, which is the disaster back-up mechanism in the off-site [8].

Replica recovery is to create a certain copy of the data information stored in the cloud to realize the storage of data. Through the way of replica recovery, with the help of the characteristics of distributed system storage and the replica function of cloud server replication data, the recovery of information data can be realized. The damaged data is found in the complete verification of computer cloud computing storage. With the help of the replication program of the cloud computing server, the copy of the data copy can be recovered from the damaged or lost data, which is the main recovery mode of the data copy already saved in the cloud.

However, at present, for replica recovery, it can not rule out other extreme cases. After the data is modified or destroyed arbitrarily, the replication process is started according to the original replication policy. The corrupted or modified data will be copied and saved in many servers, and the original stored correct data will be overwritten, which will cause the data block to be corrupted. In order to draw lessons from the backup mechanism of windows system, the damaged data can be restored to the state before the damage [9]. The backup mechanism can realize the recovery management of the data, but it needs to save the relevant historical data and information backup regularly in the computer cloud. And the historical information saved in the cloud cannot be updated.

At present, the data backup and technology of cloud data storage have become mature. According to the model and structure of cloud data storage, the backup strategy of cloud computing is to realize the backup management of cloud data through the combination of backup or increment and backup which is different from other data storage methods by means of regional backup. The backup and recovery function of cloud data is to restore the lost user data to the normal state by modifying the lost user data in good time. According to the above, the normal recovery process of damaged data is to find that it is stored in the computer cloud with the help of the recovery function of the cloud system. The recovery program of damaged data is as follows: first, redundant recovery, replica recovery after recovery, and finally backup recovery, so as to complete the recovery of related data.

## 5. Conclusion

In recent years, with the rapid development of cloud computing, more and more SMEs recognize the importance of informatization. The construction of informatization helps enterprises to improve their competitiveness, and cloud computing provides new possibilities for the future development of enterprises because of its own advantages in enterprise applications.

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