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Efficient Multi Keyword Search In Heterogeneous Environment Based On Ranking Technique

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Abstract: In this paper, data analysis in cloud environment according to the requirement is planned to implement with the appropriate process of service with flexible and reliable way. Additionally, the detailed process of accessing the data from the server is based on the searching process in a secure manner, which is based on authentication. To end with, the database stored information can be retrieved efficiently by implementing the approaches and processed according to the control access as appears in RBAC. The enhanced system development process is integrated for the efficient connection between the user and the provider. Based on Multi data searching approach, the access of information by the user is allowed with the secure process through strings in the dictionary and the keyword co-ordinates are estimated.

Keywords: Cloud Service Provider, Reliable Access, System Storage Access, Control Technique, Searching, Multi Keywords

1 Introduction

Generally, the technology generating process is altering the computing process in the environment. Through network service the storage process of information, processing the system and the service oriented access are emerged in the cloud environment. The accompaniment of the current generating model software and the device of storage system are considered in an efficient manner. In computing system, the infrastructure process of hardware and software are based on the needs of requirement, which is used for the scalable process with the platform service. So, the resource need of virtualization in the cloud is invalidate the investment economically for information preserving and its preservation.

However, the system design generating process in the cloud environment is helpful to many clients with the scalability process and the streams in ultimatumcheck. Nowadays, the major demand service is Cloud computing, which helps to access the information from anywhere at any time with the service and as per the client's needs the device providing process is planned at a precise period.

The service access in storage and power access in cloud system is provided for costs and it is validated as per the usage of the client according the requirements. It deals with the option of organizations and flexibility through the effective process and gain the service with the price decreasing in IT fields. In the server, the storage of the information is carried out in a huge area with the privacy process for outsourcing the data. Generally, data privacy is foremostconcerndue to the server providing with less secure process and trusted information. So, the access is provided according to the needs of clients.

The process of accessing the information from the server is based on the query. So, the information is discovered as per the needs of the clients over cloud server and it is an essential process with a complex process. However, for the resolving of the issues of data access, various searching approaches are used for retrieving in the cloud environment from the server. The design with its simulations of cloud computing is carried out as in Figure 1. Therefore, the major role of the computing for information sharing plays an important role over the network. The information is provided to the user as per the query but with the security, for ensuring the secure process in the network. In service process, huge data are accessed by a huge number of users as per the authentication process in cloud service. So, for having

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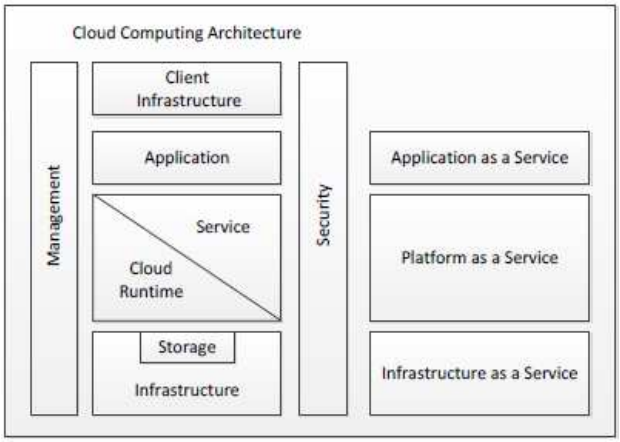

Fig. 1: Cloud Computing Architecture

efficient searching multi-keyword process is carried out in this research with the ranking similarity and effective service in retrieving the information from cloud environment.

This paper is organized as follows: Section 2 presents the literature Survey. Section 3 explains the proposed system in details. Implementation and performance analysis of the proposed system is presented in Section 4. Section 5 concludes the main findings of this paper.

2 Literature Survey

Indhuja et al. [1], presented the scheme of secure searching based on Dynamic Multi-keyword Ranked Search over coded information. It is processed due to the huge users in environment and they motivated to access the outsourced data in the server. So the information security and management process is implemented to have a secure process with the least cost of access. It is also instantaneously cares the function of dynamic modernizes like data insert and removal in the storage.

Niranjan et al. [2], is contributing the system of retrieving data from the traditional relational database systems based on the queries by the users. However, for flexible and versatile process the retrieval system is developed based on queries of the keyword rank. The heterogeneous information is the streamed, Semi-structured and social networking processed. Also, various applications are emerged with this process for maintain process of information with the capabilities.

According to the motivation process of huge information, which is outsourced in cloud environment is processed as the resource computing with the saving of financial. So, the privacy process is implemented with the secure access of the sensitive data, which is coded before being outsourced to the clients. It provides a traditional and well-organized approach of plaintext keyword search [3].

The plain text keyword of the searching process is used to retrieve the information as per the query in the utilizing the inefficient data. The encoded data are provided to have security by avoiding unauthorized access or threats. Huge clients can access at any time with various information in the cloud computing. The access of data is based on the multiple key search process according to the relevant process as per the needs [4].

CengizOrencik and ErkaySava [5], was discussed that the search document from in a huge storage device from the remote database. The document is discovered as per the searching terms in the cloud server. However, the terms are defined the secret process of sensitive details and concern the relevant files with the privacy process to have sensitive search terms.

In recent times, for saving energy, various techniques is planned in the networks. However, the efficiency of the information is cooperated with the gaining process of source with lifetime. The optimized process is suggested to have the network development as per the scheme implemented, in order to save energy [6].

In various applications, the sensing of information with the accessing process in the network is the major role and the control process with the monitoring and management using security. The query based searching is processed as per the query. The mechanisms process of tolerance of faults is processed with the reliable access through redundancy. The faults are sensed in the unreliable services with the exhausted process of saving the energy [7].

Hwa Young Lim et al. [8], presented the consumption of source in the network based on the optimization and routing. The maximum source of saving the lifetime between nodes is utilized with the scheme of clustering. LEACH is a protocol with various difficulties due to the consumption of inefficient dynamism.

3 The Proposed System

In this section, the design and implementation process of the planned system is explained. The technique of searching is performed with the control access in order to have efficient retrieval process. In the query process the function of accessing the data is processed not only with the keyword. In the generating function the request query keyword is processed with the form of trapdoor.

In cloud server, the query process that have an access to document is based on the search technique and the request process is to have the corresponding document. Also, the access in cloud is ensuring the process which is depending on the authentication. The user receives the document in a secure manner and applied in various purposes for efficient communication through network. According to the terms used for searching, the files processed as per the implemented technique and obtain the outcomes which are relevant to the query in a flexible way.

Initially, the search function in this system is based on the searching method for accurate access and exacts the efficient function without several predicting faults. In the searching process if the terms keyword is not correct then the accessing is more difficult to have satisfactory outcomes. The flexible process depends on the searching process in the terms of keyword in listing the files. So, ranking the files is placed in this process to access with the appropriate process. The search process is with the capability of search scope in the environment.

Therefore, the keyword searching procedure is according to the rank and the score (S) of the files in the database with accurate results. The enhanced system is defined the matching terms to list the files as per the usability in an order to assured for significance standards. It is hosting the preserving process in the environment with the process of frequency.

$$S = \frac{1}{File\ Size} * (1 + \log(frequency)) * (1 + \log(Files/frequency)) \quad (1)$$

The searching approach depends on the privacy, while the multi keyword ranked search depends on the co-ordinate similar. The similarity terms are processed as per the files content. The product matching describes the approach implementation of multi keyword ranked search over cloud data.

The technique features are used to avoid the unnecessary access and to have an efficient and accurate data access in the clod environment. The technique presents a subordinate overhead and proceeds the process in communication system with the computation. Also, it used to make the integrity form into the list order of ranking based on the score, and it guarantees avoiding threats.

In this paper, the searching process is processed with the strings comparison in the dictionary and the keyword co-ordinates is evaluated for the terms access. According to the terms the ranking and the actual key are completed with the values of the scores and the frequency terms. The implemented scheme of rating the files is processed with the MKRS process for defining the appropriate document as per the terms.

For security purposes the verification processed for data access is based on the one time password and it is received by the user through the mail for accessing the document at any time in an efficient manner. The searching of information is discovered via the password and one time key terms. The process of file retrieving in the application environment through out MKRS, rating of client files, and combined process of rating and searching technique to regain accurate documents. The listing of the scored files is carried out as given below.

In MKRS, the file rating is only in the point of data owner. In user rating, the file is rated based on their needs. In MKRS, the rating of files as per the score and the matching process is considered according to the obtained outcomes.

```
if(size[F-Score-List]==k)
for i 1,...,M
displayD list
end else if(size[F-Score-List]>k)
initialize s;
for(s= 0; s ≤ k; s++)
displayD list;
```

4 Implementation and Performance Analysis

In this section, the proposed system implementation and the performance evaluation are carried out. The implementation process is carried out using the tool MATLAB and the obtained results are used to analyze the performance to show the improvement of the proposed system.

However, the design process is applicable for various fields and the access of document is processed in the cloud environment. Also, the process is based on the keyword rating and similarity of terms in order to have accurate results. The implementation process is carried out in modules of login, registration, OTP, rating and search module.

In this process if the OTP is not correct then the error message will be displayed, otherwise the login successfully take place.

The results display of the files according to the rating and technique process is carried out in an effective way with accurate outcomes. As per the rating the list of files is ordered from high to low level as per the user's list. The rating list of documents.

Also, the rating of the files will vary according to the user requirements. The list which is displayed in the top level rating is list of the first rating, else it will be in scheme process, or it is a combined process of rating and method procedure. If the rating is differs then MKRS is proceed to rank the document as per the score and similarity. So, as per the terms the list of documents is carried out with accurate results.

5 Conclusion

In this paper, the process of multiple keywords ranked search is implemented with the control access in order to have an efficient process in a better manner. Multi keyword enables the semantic process of searching with efficient and accurate process in listing the information as per the user needs. As per the ranking frequency of keyword the access of data from the server is carried out in a flexible way. The search rank is based on the repeated search of the data in the server through network.

Also, the process of the system is carried out through out the approach of Multi data searching process with accurate process of searching as per the user query. Here, the query process will be more secure with the process of proceeding the strings in the word list and including the obtained co-ordinates of the keyword for searching. Further, think to extend the process of security and privacy in an effective manner with less consumption of storage and time period.

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