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ADL based Cost Efficient Query Services

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Abstract: ***A Productive Data Recovery for Positioned Inquiries (EIRQ) plan is recuperation of positioned records on client request. An EIRQ worked in light of the Total and Conveyance Layer (ADL). An ADL is go about as middle person in the middle of cloud and end-clients. An EIRQ plan diminishes the correspondence expense and correspondence overhead. Cover Lattice is utilized to sift through as what client truly needs coordinated information before repeating to the Accumulation and Conveyance Layer (ADL). To maintain a strategic distance from little size of intrusions in distributed computing, take after two fundamental issues: - Security and Effectiveness. Private catchphrase based document recovery plan was expected by Ostrovsky.***
Keywords: Aggregation and Distribution Layer, Bloom Filter, Ostrovsky, Private Search, Rank Privacy.

I. INTRODUCTION

Cloud computing technology is a most necessary technology for information technology. Many more organizations are used cloud computing [1] for outsource sharing. The organizations needs to submit access the services of cloud and authorizes organizations workers to split files in the cloud. Each and every file is described by place keywords. The authorized workers at an organization can access the data of their benefits by querying from the cloud with particular keywords. In Cloud environment, user privacy can be protected on every transaction. User privacy is categorised by 2 types. They are search privacy and access privacy [2]. Search privacy is a process of searching, but cloud doesn't know anything about what user really searching for and Access privacy is searching technique. Here cloud knows about what user really searching on search engine. Private searching was introduced by ostrovsky scheme allows to users to recover data from the un-trusted servers n leakage of data. Ostrovsky [1] scheme is lofty computational outlay, because the cloud need to process keywords in the each and every file in the cloud. The user can send a query to every time to process the query. Because of this process the cloud is over headed queries from the many users from different organization. Through this process the communication and computation beyond the expectation.

II. RELATED WORK

Our aim of this work is to provide differential query services through Aggregation and Distribution Layer while protecting user privacy from the cloud. Private searching [3] is performed on the keyword based searches on unencrypted data. Private keyword based searching allows a server to filter out streaming data without compromising user privacy. In existing work an efficient decoding [2] mechanism is used which allows the recovery of files that crash in a buffer position. Private searching schemes only support searching for OR of keywords or AND of two sets of keywords. In query searching use Disjunctive normal forms (DNF) of keywords. Thus, when applying these schemes to a heavy cloud environment, querying costs will be increased. The drawback of existing private searching schemes is that both the computation and communication costs high. In existing systems waste of bandwidth [4] when only a small percentage of files are of interest. To avoid this problem, we introduced the concept of differential query services through Aggregation and Distribution Layer concept with low usage of bandwidth and low computational and communication cost. Cooperate searching protocol (cops) is like a proxy [4] server called as aggregation and distribution layer (ADL) is placed inside an organization. This ADL is act as a mediator between the cloud and an organization. The functioning of ADL is the aggregation and distribution. The ADL only reduces the computation cost.

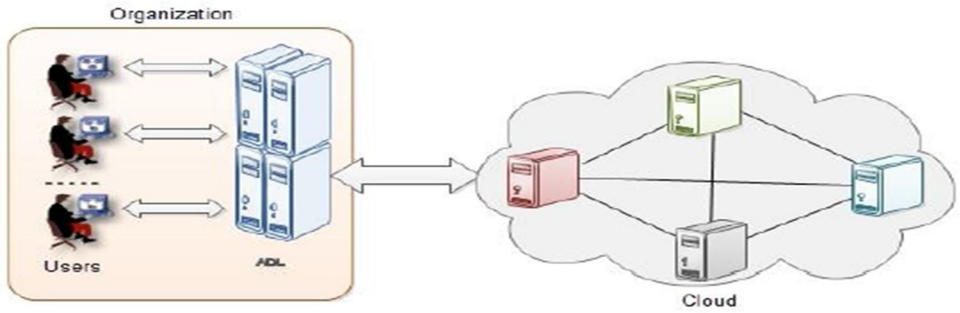


Fig. 1 Architecture of EIRQ

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The working of an ADL [2] is the many users can send many queries to ADL. Then adl can aggregate the different user's queries makes into a single query and then sends to cloud. The cloud will process the query sends response to ADL. Then the adl will distribute the results to particular users. Because of this process to reduce the communication cost and query overhead.

III. PROPOSED MODEL

A. *Efficient Information Retrieval for Ranked Queries*

Here introduce a major concept differential query services [3]. Where users are sends the queries to the cloud and process the query sends results to users. Lot of files are matched users query. But the user doesn't want that files, only they interested on certain percentage of files.

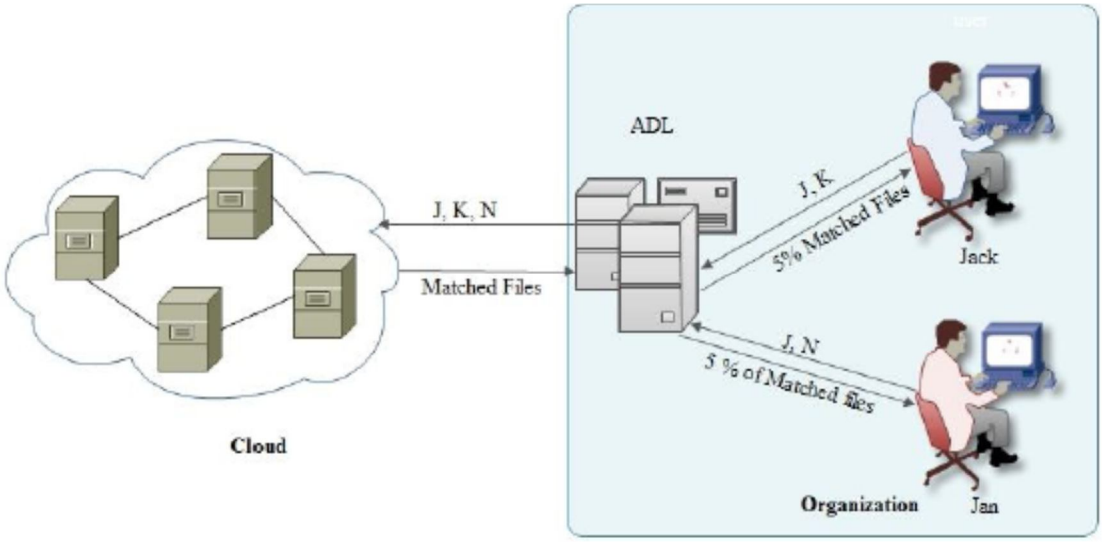


Fig. 2 EIRQ Model

In the proposed model have the cloud, organization and ADL. ADL is placed inside the organization based on requirement of number users. In this model used only single ADL inside an organization. Assume an organization have two users. They are Jack and Jan. They want files from the cloud. The Jack and Jan want files which are starts with the letters J, K and J, N respectively. The design goals of this scheme are Cost Efficiency and User Privacy. We achieve these goals by using Bloom Filters.

B. *Ostrovsky Scheme*

The Ostrovsky scheme is a process of accessing the files from cloud to clients. This process has the following steps:

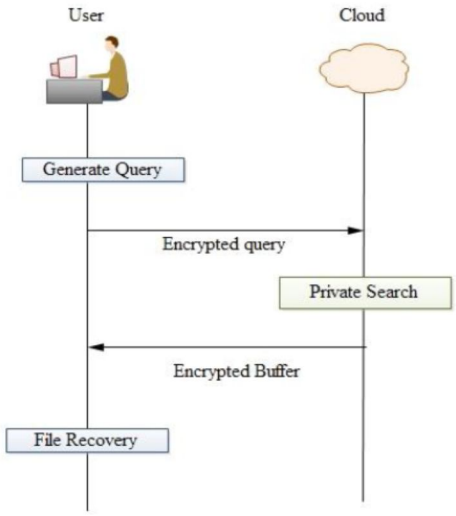


Fig. 3 working process of Ostrovsky Scheme

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1) Ostrovsky Scheme having the user and cloud. The users are only authorized [3] from the cloud network, and then only accessing is possible otherwise it is not possible.
2) This process is going on both wired network [3] and wireless network also. First send request from the user to cloud for establishment of a connection form the cloud. Then authorized user should have their own login name and passwords.After login to user Generate a query [2]. This query is encrypted into 0's and 1's and then sends to cloud. At the cloud side Private Search has been done. So those find out the matched files.
3) Cloud sends the matched files to encrypted [1] buffer. Then Files are recovered at the user side. This scheme is very query overhead as well as every time accesses the broadband connection. This process is more costly to accessing files at every query.

C. *EIRQ Scheme:* The EIRQ scheme is a process of recover the files from cloud to clients. This process has the following steps:

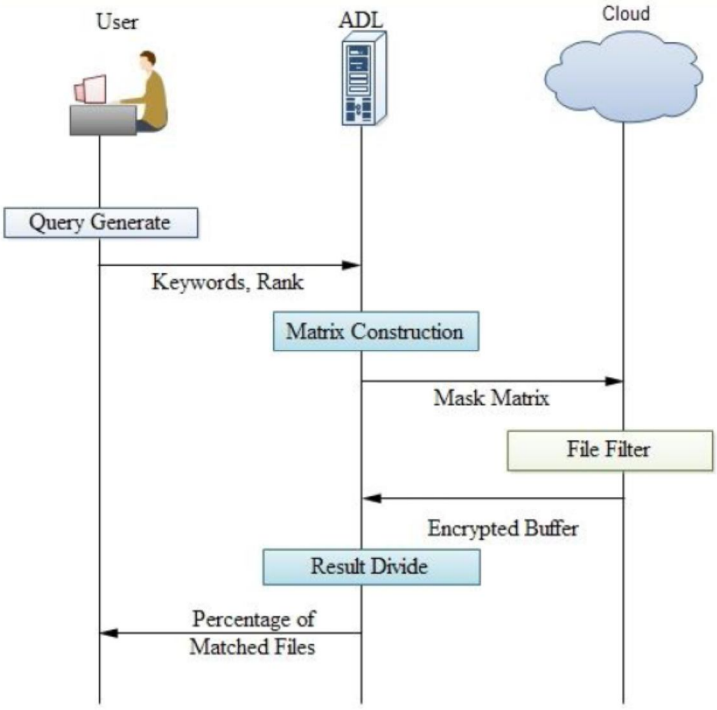


Fig. 4 working process of EIRQ Scheme

1) The EIRQ Scheme having the user and cloud [3]. The users are only authorized from the cloud network, and then only accessing is possible otherwise it is not possible.
2) This process is going on both wired network and wireless network also. First send request from the user to ADL for establishment of a connection form the ADL. Then authorized user should have own login name and passwords.
3) After login to user generate a query. This query is encrypted into 0's and 1's and then sends to ADL. At the ADL side Matrix Construct Algorithm [2] has been done based on that Keywords and Ranks. This process we called as Aggregation.
4) After the aggregation process, ADL sends the Mask Matrix to Cloud. At cloud side File Filter Algorithm has been done. This algorithm filter out the files based on the Ranks and keywords.

IV. RESULT AND DISCUSSION

The results are observed on the file survival [4] rate and computation cost. These schemes are tested at the Amazon Elastic Compute Cloud (EC2) to test the file survival rate and computation cost. File survival rate is observed in the both Ostrovsky scheme settings and Bloom Filter setting in EIRQ simple, EIRQ privacy and EIRQ Efficient. Here queries are categorised under the ranks into 0 to 3 ranks. Rank 0, Rank 1, Rank 2 and Rank 3 should recover the files 100%, 76%, 52%, 24% of matched files. By using Bloom filter parameter [3] setting, first recover the optimal times 6, 3, 1, and 0 respectively. Through this optimal times calculate the Buffer Size. Here three schemes of EIRQ provide differential query services. And no bandwidth wasted for every transaction.

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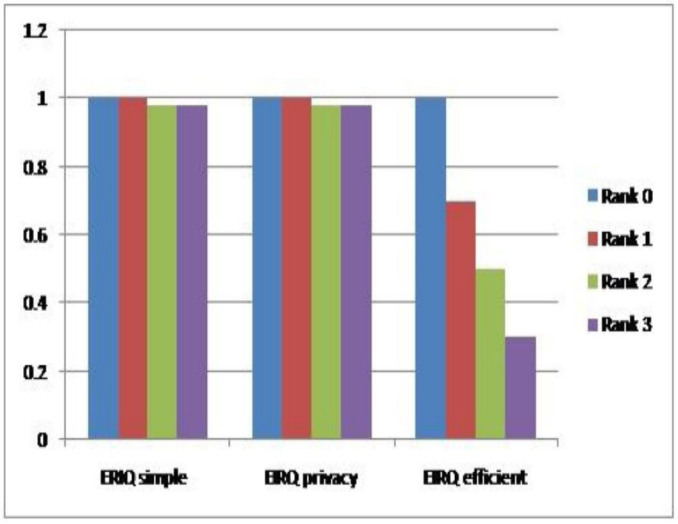


Fig. 4 Ostrovsky Scheme file survival rate

In Fig 4, shows the graph of Survival Rate Vs EIRQ Schemes under the Ostrovsky scheme. Throughput of Ostrovsky Scheme is not satisfied by using Parameter Settings

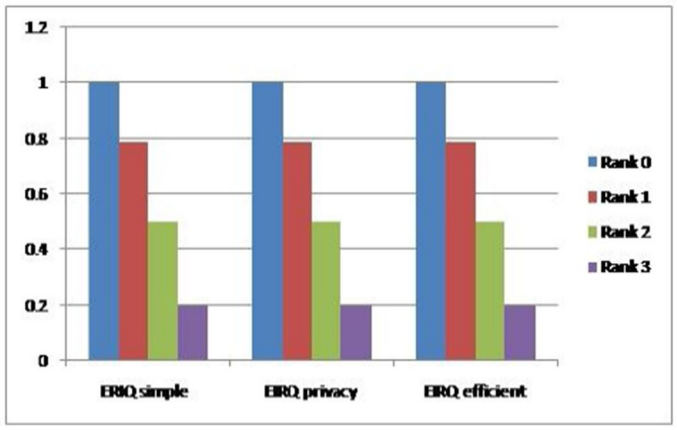


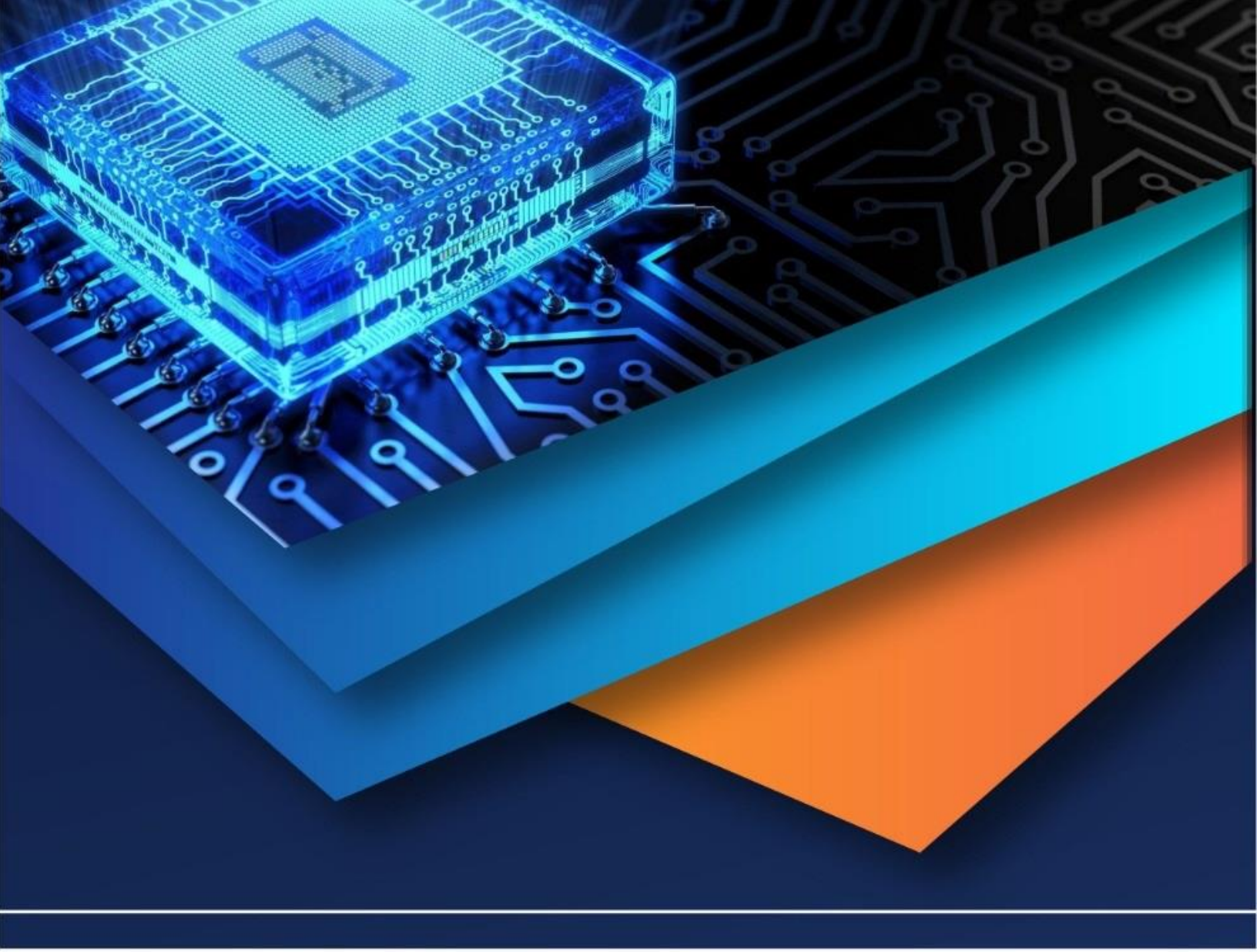
Fig. 5 File survival rate under Bloom Filter Setting

The Fig.5 Throughput of the EIRQ Scheme under Bloom Filter Setting is satisfied cost efficient services and file retrieving from the cloud to ADL and as well as ADL to End-users.

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