



Secure Massive Data Storage with Consistency and Route Control on the Cloud

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Received date: 06 June, 2022, Manuscript No. JCEIT-22-61674;

Editor assigned date: 08 June, 2022, PreQC No. JCEIT-22-61674(PQ);

Reviewed date: 15 June, 2022, QC No JCEIT-22-61674;

Revised date: 13 July, 2022, Manuscript No. JCEIT-22-61674(R);

Published date: 28 July, 2022, DOI:10.4172/jceit.1000239.

Description

As the advent of computer has thrown light to the storage of massive data in small spaces the resources has been reduced broadly. Cloud computing in recent times has become a trend among organization to store data and retrieve it on-the-go around the globe. With this the data storage devices and data retrieval process arise a greater responsibility of security that should be provided to the client. This task provides a challenge to the service providers in terms of security and consistency. As shared systems are prone to be attacked, various counter measures have been proposed by experts to secure the stored data. In this work yet another efficient technique is introduced to the storage and retrieval process. Here the data is being encrypted by the advanced encryption algorithm which is considered to be the most competent in the present security scenario. A symmetric key is generated to the stored file. To further enhance the trust of the service provider the trust certificate of the company is being sent along with the keys to the client. The data is being encrypted by the AES-NI algorithm which is considered to be the most efficient up to date. A hash function is also generated to further enhance the security of the stored file. Also the trust of the service provider is provided to the client by sending the trust certificate of the company along with the keys to the client. All the communication process is taken place using the DH Key Exchange protocol. These techniques are performed to ensure the client that the stored data is being secured, integrated and a total control over the route in which the data is being communicated. In this research work, a new efficient technique is proposed which indicates the effectiveness, flexibility of the storage and retrieval process by a generic framework. This framework fills the gap between the security needs and challenges. Diffie Hellman, Advanced Encryption Standards, New Instructions, Cloud Service Provider, Data Encryption Standards, Message Digest, Message Authentication Code and Cloud Security Alliance group.

Cloud Computing Architecture

The cloud is evolving as the modern way to slant marginal distribution models for IT competences. It is a way of allocating IT-enabled services in the form of software, infrastructure and more. This study and work observes the meaning of cloud computing and the ways it will advance. With old-fashioned desktop computing, we run facsimiles of software programs on our own computer. The documents we produce are kept on our own pc. Even though documents can be

retrieved from other computers on the network, they can't be retrieved by computers exterior the network. With cloud computing the software programs that we use aren't run from our own pc, but are rather warehoused on servers retrieved via internet. Anyone with accurate security authorizations can not only has the right to use the documents but can also control and work in partnership on those documents in real time without the need of any software and the user no longer need knowledge of, skill in or mechanism over the technology infrastructure in the cloud. Moreover, nearly all IT resources can be distributed as a cloud service, application, power computation, storage capacity, networking, programming tools, communication facilities and collaboration tools. The term Cloud is used as an exemplification for the internet, based on the cloud picture used to portray the internet in computer network illustrations. Summing up, Cloud computing is comparatively new data storage and handling concept. It enables one to access, create and store files apart from accessing various applications like word processing, spread sheets etc. online from any computer with internet access, combined with the fastest processing speed regardless of the Operating System.

When discussing about cloud computing, it's supportive to choose it into two segments, the front end and the back end. They join together through a network, usually the Internet. The front end is on the side the user, or simply the client. The back end is the cloud section of the structure. If the cloud computing corporation has a portion of clients', there's a possible of high request for storage area. Some firms involve hundreds of digital storage manoeuvres. Cloud computing systems need at least twice the number of storage strategies it needs to keep all its clients data warehoused. That's because these strategies, like all computers seldom brake down. Cloud computing system necessities make a copy of all its clients' data and store it on other devices. The copies allow the central server to contact backup machines to recover data that or else would be inaccessible. Making copies of data as a backup is called redundancy. These are managed by third parties. Works from different customers may be assorted together on the servers, storage structures, and other infrastructure in the cloud. End user does not know whose job may be executing on the same server, network, or disk as their own jobs. Private clouds are a good option for corporations that are involved with data security and SLA. These are on demand infrastructure operated by a single customer who maintains which application to run, and where. They possess the server, network, and disk and can choose which users are permitted to use the infrastructure. Hybrid cloud combines the public and private cloud models. Industries own parts of the cloud and share others in a controlled way. It also offers on-demand, externally managed scale, but in addition to it the difficulty of defining how to dispense applications diagonally across these different places. While enterprises may be fascinated to these features of a hybrid cloud, these will likely be set aside for simple displaced applications that are not in need of complex databases or synchronization. The applications of cloud computing are almost boundless. With the middleware, these would execute all the programs that a usual computer could do. Possibly, the whole thing from basic word processing software to tailored computer programs planned for an explicit company could work on a cloud computing system.

Influential Internet Link

One of the main motives why cloud computing is hostilely being established is the creativity or the business setting. Many industries,

big and small, have come to realize the prospective of cloud computing in terms of enabling business communications without having to devote too much on supplementary organization, manpower and even time. There mere statistic that dealings in almost any form could be through online has made cloud computing a decent response to diverse business snags. Cloud computing will only be conceivable with a strong internet link. Cloud computing might not work in areas where link is feeble. Even though there are presentations that might work with humble dial-up connectivity, the application could easily go down particularly when there is too many data to be handled. A chief barricade to cloud computing is the interoperability of applications. Though it is conceivable to enclosure an Adobe Acrobat file into a Microsoft Word document, possessions get a little bit tackier when we discourse about web based applications. Vivacious facts located in cyber space faces meaningfully greater dangers that in interior data

depositories and software system. The cost of shielding that data can balance the advantages of the cloud, especially if there is a security break. Hacks on the structure will last to be there as well. The outbreak that users experience today will also progress to adjust to different sorts of security methods. Worries can continue about loss of control over convinced sensitive data, and the lack of security for stowed kernels. Privacy is another problem. If a client can log in from any locality to access data and applications, it's likely the client's privacy could be negotiated. Cloud computing corporations will need to find methods to defend client privacy. One way is to use verification techniques such as user names and passwords. Components Effective application of cloud computing needs proper implementation of certain components. Without any of these components, cloud computing will not be possible.