**Blockchain Technique for Decentralized Cloud Environments**

**ABSTRACT:-**

Cloud storage is one of the leading options to store massive data, however, the centralized storage approach of cloud computing is not secure. On the other hand, Blockchain is a decentralized cloud storage system that ensures data security. Any computing node connected to the internet can join and form peers network thereby maximizing resource utilization. Blockchain is a distributed peer to peer system where each node in the network stores a copy of blockchain thus making it immutable. In the proposed system, the user’s file is encrypted and stored across multiple peers in the network using the IPFS (InterPlanetary File System) protocol. IPFS creates hash value. The hash value indicates the path of the file and is stored in the blockchain. This paper focuses on decentralized secure data storage, high availability of data, and efficient utilization of storage resources.

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| **EXSISTING SYSTEM** | **PROPOSED SYSTEM** |
| * In existing system a massive increase in the data, cloud storage is required to store the data. Much of the data currently available through the internet is quite centralized and is stored with a handful of technology companies that have the experience and capital to build massive data centers capable of handling this enormous data. * The problem with this approach is the security of data. As this data is stored in a centralized manner, if an attacker can gain access to the server he can easily view and modify the data. * Another problem with this approach is the privacy of user data. | * In this paper the use of encryption technique outlines the importance of data security and privacy protection. * Discusses the increasing demand for cloud storage with associated security and privacy issues in centralized cloud storage. As per the discussion by encrypting the data and scattering the data across multiple nodes, a high level of data security can be achieved. * Authors have used the AES encryption algorithm to enhance security with speed without impacting the system’s performance. * The peer-to-peer network uses proof-of-work to record a public history of transactions. |
| **EXISTING ALGORITHM**  Centralized Storage Mechanism. | **PROPOSED ALGORITHM:-**  AES Algorithm. |
| **ALGORITHM DEFINITION:-**  In many instances, this data is used by third parties for data analysis and marketing purposes. Also, the cost incurred in storing data in centralized servers is more and many times users have to pay for the entire plan which they have selected even if they have used only a fraction of storage portion thus it does not provide flexibility to the user to pay only for what they are using. Another issue is the scalability of the system, it is difficult to scale a centralized storage system to meet the increasing demand. | **ALGORITHM DEFINITION:-**  The Advanced Encryption Standard (AES) is a symmetric [block cipher](https://searchsecurity.techtarget.com/definition/block-cipher). AES is implemented in software and hardware throughout the world to [encrypt](https://searchsecurity.techtarget.com/definition/encryption) sensitive data. It is essential for government computer security, cybersecurity and electronic data protection.AES-128 uses a 128-[bit](https://whatis.techtarget.com/definition/bit-binary-digit) key length to encrypt and decrypt a block of messages, while AES-192 uses a 192-bit key length and AES-256 a 256-bit key length to encrypt and decrypt messages. Each cipher encrypts and decrypts data in blocks of 128 bits using [cryptographic](https://searchsecurity.techtarget.com/definition/cryptography) keys of 128, 192 and 256 bits, respectively. Ciphers use the same key for encrypting and decrypting. |
| **DRAWBACKS:-**   * Less Security and privacy for data. * Takes more cost for storing data. * Less resources utilization. | **ADVANTAGES:-**   * High Security and privacy for data. * Takes less cost for storing data. * More resources utilization. |

**MINIMUMSYSTEM REQUIREMENTS**

**HARDWARE REQUIREMENTS**

* PROCESSOR : DUAL CORE 2 DUO.
* RAM : 2GB DD RAM
* HARD DISK : 250 GB

**SOFTWARE REQUIREMENTS**

* FRONT END : J2EE (JSP, SERVLET)
* BACK END : MY SQL 5.5
* OPERATING SYSTEM : WINDOWS 7
* IDE : ECLIPSE