

## ABSTRACT

Cloud storage as one of the most popular cloud-based applications supplies users with scalable and elastic storage resources for remote data sharing, which dramatically reduces the local cost of data management and maintenance. The popularity of cloud storage as a cloud-based application lies in its provision of scalable and flexible storage resources for remote data sharing, resulting in reduced costs associated with local data management and maintenance. However, once data is moved to the cloud, security, and privacy risks become significant concerns for data owners who lose physical control over their data. Attribute-based encryption is commonly used to ensure data confidentiality and granular access control in cloud storage. To allow users to identify accessible data in multiple datasets, clear attributes must be added to the ciphertext, which compromises attribute privacy. This System proposes an efficient attribute-based access control scheme with authorized search in cloud storage by expanding anonymous multi-key-policy attribute-based encryption (MP-ABE) to support fine-grained data retrieval while preserving attribute privacy. Specifically, by incorporating key delegation techniques into MP-ABE, data users can customize search policies based on their access policies and generate corresponding trapdoors using the secret key granted by the data owner to retrieve their desired data.