Abstract

One of many advantages of cloud computing is to provide reliable data storage facility. The cloud computing provides seamless access to storage facility to the client to upload, download, and modifies unlimited amount data. However, at the same time, outsourcing data to the third party cloud storage system is a great cause of concern to the client. The client loses physical control of the data which compromises the security, reliability, and confidentiality of data. This paper proposes a new framework for reliable and secure data storage which ensure data
security, reliability and availability using Optimal Exact – Regenerating Codes [1]. This framework is different from existing approach of data redundancy for ensuring data availability and reliability. To, ensure the data availability our method relies on multiple cloud service providers (CSP). Each CSP is viewed as individual disks of RAID where some parts of client data are stored. Since none of the CSP have complete access to client data so, the individual CSP cannot breach the client data. The proposed framework is compared with traditional erasure coding such as Reed- Solomon Codes (RSC). RSC causes much higher repair cost for failed disk and even higher access latency.

References

Reliable and Secure Data Availability in Distributed Cloud Data Storage using Optimal Exact – Regenerating Codes


Index Terms

Computer Science

Information Sciences

Keywords

Regenerating Codes  Erasure Codes  Data Availability  Data Reliability  Data Security

Cloud Storage

Cloud Computing.