A Hybrid P2P Storage Scheme Based on Erasure Coding and Replication

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Abstract : A peer-to-peer storage system has challenges like; peer availability, data protection, churn rate. To address these challenges different redundancy, replacement and repair schemes are used. This paper presents a hybrid scheme of redundancy using replication and erasure coding. We calculate and compare the storage, access, and maintenance costs of our proposed scheme with existing redundancy schemes. For realistic behaviour of peers a trace of live peer-to-peer system is used. The effect of different replication, and repair schemes are also shown. The proposed hybrid scheme performs better than existing double coding hybrid scheme in all metrics and have an improved maintenance cost than hierarchical codes.

Keywords : erasure coding, P2P, redundancy, replication
Conference Title : ICPDCS 2016 : International Conference on Parallel and Distributed Computing Systems
Conference Location : Paris, France
Conference Dates : January 21-22, 2016