

Data Backup and Recovery With a Minimum Replica Plan in a Multi-Cloud Environment

By: [Alshammari, MM](#) (Alshammari, Mohammad M.)^[1]; [Alwan, AA](#) (Alwan, Ali A.)^[2]; [Nordin, A](#) (Nordin, Azlin)^[3];

[Abualkishik, AZ](#) (Abualkishik, Abedallah Zaid)^[4]

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Abstract

Cloud computing has become a desirable choice to store and share large amounts of data among several users. The two main concerns with cloud storage are data recovery and cost of storage. This article discusses the issue of data recovery in case of a disaster in a multi-cloud environment. This research proposes a preventive approach for data backup and recovery aiming at minimizing the number of replicas and ensuring high data reliability during disasters. This approach named Preventive Disaster Recovery Plan with Minimum Replica (PDRPMR) aims at reducing the number of replications in the cloud without compromising the data reliability. PDRPMR means preventive action checking of the availability of replicas and monitoring of denial of service attacks to maintain data reliability. Several experiments were conducted to evaluate the effectiveness of PDRPMR and the results demonstrated that the storage space used one-third to two-thirds compared to typical 3-replicas replication strategies.

Keywords

Author Keywords: [Cloud Computing](#); [Cost-Effective Storage](#); [Data Reliability](#); [Data Replication](#); [Disaster Recovery](#)

Author Information

Reprint Address: Alshammari, MM (corresponding author)

+ Int Islamic Univ Malaysia, Selangor, Malaysia.

Addresses:

+ [1] Int Islamic Univ Malaysia, Selangor, Malaysia

+ [2] Int Islamic Univ Malaysia, Kulliyah Fac Informat & Commun Technol, Selangor, Malaysia

+ [3] Int Islamic Univ Malaysia, Kulliyah Informat & Commun Technol, Dept Comp Sci, Selangor, Malaysia

[4] Amer Univ Emirates, Software Engr, Dubai, U Arab Emirates

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