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## Disaster recovery in single-cloud and multi-cloud environments : Issues and challenges (Conference Paper)

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### Abstract

Information Technology (IT) data services provided by cloud providers (CPs) face significant challenges in maintaining services and their continuity during a disaster. The primary concern for data recovery (DR) in the cloud is finding ways to ensure that the process of data backup and recovery is effective in providing high data availability, flexibility, and reliability at a reasonable cost. Numerous data backup solutions have been designed for a single-cloud architecture; however, making a single copy of data may not be sufficient because damage to data may cause irrecoverable loss during a disaster. Other solutions have involved multiple replications on more than one remote cloud provider (Multi-Cloud). Most suggested solutions have proposed obtaining a high level of reliability by producing at least three replicas of the data and either storing all replicas at a single location or distributing them over numerous remote locations. The drawbacks to this approach are high costs, large storage space consumption and (especially in the case of data-intensive cloud-based applications) increased network traffic. In this paper, we discuss the issues raised by DR for both Single-Cloud and Multi-Cloud environments. We also examine previous studies concerning cloud-based DR to highlight issues that researchers of cloud-based DR have considered to be most important. © 2017 IEEE.

### Author keywords

[cloud computing](#) [data backup](#) [Disaster recovery](#) [multi-cloud](#) [single-cloud](#)

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