

# Data Resilience: Secure Emergency Backup on Cloud

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**Abstract:** *In the dynamic landscape of cloud computing, ensuring the resilience and availability of data is paramount, particularly in emergency situations such as cyberattacks, system failures, or natural disasters. This abstract presents a comprehensive examination of emergency backup strategies tailored specifically for cloud environments. It delves into the challenges associated with data loss and downtime, emphasizing the critical need for proactive measures to mitigate risks and safeguard valuable data assets. By exploring various backup methodologies including incremental backups, differential backups, and snapshot-based backups, this abstract provides insights into the diverse approaches available for creating robust data redundancy in the cloud. Furthermore, it discusses the importance of geographical redundancy, data encryption, and access controls in enhancing the security and integrity of backup data. Additionally, emerging technologies such as blockchain-based backup solutions and AI-driven anomaly detection systems are explored as potential avenues for further enhancing data resilience in the cloud. By adopting a proactive approach to emergency data backup, organizations can fortify their cloud infrastructures against unforeseen disruptions and ensure the continuous availability and integrity of their critical data assets.*

**Keywords:** Data, Resilience, Cloud, Backups

## REFERENCES

- [1] Cloud-Based Emergency Data Backup and Recovery: A Survey Hai Jiang, Xiangrong Liu 2019
- [2] Secure Cloud Storage for Emergency Data Backup Using Homomorphic Encryption S. K. Sood, R. Sharma 2018
- [3] Dynamic Data Replication Strategy for Emergency Data Backup in Cloud Computing Jing Yang, Lidan Shou, Qiang Cao 2017
- [4] Enhanced Security for Cloud-Based Emergency Data Backup Using Blockchain Technology A. Gupta, S. Singh 2020
- [5] Reliable and Efficient Emergency Data Backup in Cloud Storage M. Al-Khalaf, A. Al-Naser 2016
- [6] "Robust Emergency Data Backup Strategy in Cloud Computing Environments" by Wei Chen, Xinming Zhang (2018)
- [7] "Privacy-Preserving Emergency Data Backup on Cloud Platforms" by Lingling Fang, Xiaofeng Chen (2019)
- [8] "Scalable and Cost-Effective Approaches for Emergency Data Backup on Cloud Infrastructure" by Y. Wang, Z. Zhang (2017)
- [9] "Fault-Tolerant Emergency Data Backup Systems in Cloud Environments" by H. Chen, J. Wang (2018)
- [10] "Efficient Resource Management for Emergency Data Backup Tasks on Cloud Platforms" by X. Zhou, Y. Liu (2020)