IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.67
Volume 5, Issue 7, March 2025

Multi-Cloud and Hybrid Infrastructure: Addressing Consistency Challenges Across Cloud Providers

Prabhu Govindasamy Varadaraj
Anna University, India

Abstract: *The adoption of multi-cloud and hybrid cloud environments enables organizations to optimize flexibility, scalability, and cost efficiency. However, maintaining consistency across platforms such as Amazon Web Services (AWS), Google Cloud Platform (GCP), Microsoft Azure, and on-premises systems presents significant technical and operational challenges. This article investigates key issues in architecture, security, data synchronization, and operational practices across these platforms while focusing on integration obstacles, security gaps, data consistency issues, and standardized management tools. The article proposes a comprehensive framework addressing these challenges through cross-platform integration technologies, unified security policies, data management strategies, and centralized monitoring solutions, contributing to an enhanced understanding of multi-cloud infrastructure management and providing actionable insights for organizations implementing hybrid and multi-cloud architectures.*

Keywords: Multi-cloud architecture, Hybrid cloud integration, Cloud security frameworks, Data synchronization, Resource optimization

DOI: 10.48175/IJARSCT-24465