

Clouds and Multi-Cloud Management Strategies: Issues and Solutions

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Abstract: *The proliferation of cloud computing technologies has radically transformed the IT landscape, allowing enterprises to enhance scalability, flexibility, and innovation. As organizations increasingly embrace digital transformation, the reliance on a **single cloud provider** poses risks such as vendor lock-in, service outages, and regional regulatory challenges. Consequently, the adoption of **multi-cloud management strategies** has surged, wherein enterprises leverage multiple cloud providers simultaneously to optimize performance, costs, compliance, and resilience. This paper systematically explores the architecture of multi-cloud environments, identifies key management challenges, proposes strategic solutions, and discusses emerging technologies shaping the future of multi-cloud computing. Drawing from case studies and industry practices, the paper provides a comprehensive guide for successful multi-cloud deployment and governance.*

Keywords: cloud computing.

