

## **DEVOPS PRACTICES FOR AUTOMATING CLOUD MIGRATION: A CASE STUDY ON AWS AND AZURE INTEGRATION**

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### **ABSTRACT**

*Cloud migration has become a critical process for organizations aiming to enhance operational efficiency and scalability. DevOps practices, with their focus on automation, continuous integration, and continuous deployment (CI/CD), offer significant benefits for streamlining cloud migration. This case study explores the implementation of DevOps methodologies in automating cloud migration between AWS and Azure, two leading cloud platforms. By leveraging tools such as Terraform, Jenkins, and Ansible, we examine how automation can minimize human error, reduce migration time, and ensure consistency across cloud environments. The case study highlights key challenges encountered during the migration, including cross-cloud compatibility, security concerns, and system downtime, and presents best practices to address them. Furthermore, it demonstrates the role of containerization, infrastructure as code (IaC), and automated testing in ensuring a seamless and efficient migration. The findings underscore the importance of adopting DevOps in cloud migration strategies to enable businesses to achieve agility, cost optimization, and enhanced performance.*

**KEYWORDS:** *DevOps, cloud migration, AWS, Azure, automation, CI/CD, Terraform, Jenkins, Ansible, Infrastructure As Code, Containerization, Cross-Cloud Integration, Automated Testing, Cloud Security, Performance Optimization*

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### **Article History**

**Received: 12 Jun 2020 | Revised: 17 Jun 2020 | Accepted: 21 Jun 2020**

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