

Multi-Cloud Management

Merits and Demerits



Top Few Highlighters

- Greater Innovation
- Super Flexibility
- Nearly Perfect Zero Outage
- Play with Cost Efficiency
- Near Perfect Solution for BCP

Almost all major Production Critical Firms leverage 3 major clouds like *NetFlix, Walmart, HSBC, Target, Spotify, Airbnb, CapitalOne, Coca Cola, GE, Philips, Cerner* and many more....

Challenges of Multi-Cloud

1. **Dealing with Complexity:** Switching around Clouds, Tracking Services, Possible State of Confusion.
2. **Can Prove to be Expensive:** If not dealt properly, may end-up incurring more than expected cost.
3. **Security Concerns:** Ensuring consistent security across different platforms can be challenging.
4. **Integration Issues:** Integrating services and data across various clouds can be difficult.
5. **Scarcity of Skills:** Skilled IT professionals are essential to manage and optimize multi-cloud environments.
6. **Latency Challenges:** Overall Business Application Performance may take a hit due to Latency issues.

Best Practices for Multi-Cloud

- **Unified Management and Monitoring:** VM Insights of Azure Monitor, AWS Cloud Watch, GCP Operations Suite.
- **Consistent Policies:** Implement consistent security and compliance policies across all platforms using tools like Azure Policy, AWS Config, and Google Cloud's Policy Intelligence.
- **Networking:** Ensure seamless connectivity between clouds using VPNs or dedicated interconnects.
- **Data Integration:** Use data integration tools like Google Cloud's Big Query, AWS Glue, and Azure Data Factory to manage data flows between clouds.
- **Intercloud Development:** Use AWS API Gateways, Azure API Management, GCP Apigee
- **Terraform:** Use Terraform to create cloud-agnostic modules that support AWS, Azure, and GCP. Avoid hard-coded values and use input arguments for flexibility.
- **CI/CD Pipelines:** Implement CI/CD pipelines that can deploy applications across multiple clouds using tools like Jenkins, GitHub Actions, or Azure DevOps.

Inter-Cloud Development Tools

Key Cloud Services	AWS	Azure	GCP
API Gateways	AWS API Gateway	Azure API Management	GCP Apigee
Serverless Functions	AWS Lambda	Azure Functions	GCP Cloud Functions
Data Integration Tools	AWS Glue	Azure Data Factory	GCP Data Fusion
Container Orchestration	Amazon Elastic Kubernetes Service (EKS)	Azure Kubernetes Service (AKS)	Google Kubernetes Engine (GKE)
Cloud-Native Application Platforms	AWS Elastic Beanstalk	Azure App Service	GCP App Engine
Cloud-Native Development Frameworks	AWS Lambda Powertools	Azure Spring Cloud	GCP Cloud Functions Framework
Cloud-Native Security Tools	AWS Security Hub	Azure Security Center	GCP Security Command Center
Cloud-Native Monitoring Tools	AWS CloudWatch	Azure Monitor	GCP Stackdriver

