

CLOUD

ADVANCED

5 DAYS

Multi-Cloud Architecture Bootcamp

Build a strong foundation in designing consistent and scalable multi-cloud architectures across AWS, Azure, and GCP using modern platform patterns. Learn how to map services, standardize security and networking, and deliver portable deployments using Terraform, Kubernetes, GitOps, and unified operational practices.

Why Multi-Cloud Architecture?

Reduced vendor dependency

Lower exposure to provider outages and constraints with a clearer portability strategy.

Improved governance and security maturity

Shared standards enforce repeatability across accounts and teams.

Better global reach and compliance

Place workloads where performance and regulations demand.

Future-ready platform design

Enables scaling teams, services, and regions with predictable operations.

Enterprise integration readiness

Supports acquisitions, legacy constraints, and mixed cloud estates with consistent patterns.

What you'll be able to do

- ✓ Understand what multi-cloud means and evaluate when it makes sense and when it does not.
- ✓ Compare and map core services across AWS, Azure, and GCP using a practical equivalency approach.
- ✓ Design secure, scalable cloud architectures using network segmentation, least privilege, and private connectivity patterns.
- ✓ Build multi-cloud network foundations with VPC and VNet designs, routing strategies, and ingress and egress governance.
- ✓ Plan identity and governance with enterprise strategies including IAM and RBAC alignment, org-level policies, and audit controls.
- ✓ Design cloud infrastructure patterns for compute, storage, and data layer options with provider-aware trade-offs.
- ✓ Design modern platform approaches for multi-cloud using Kubernetes-based workloads and standard deployment processes.
- ✓ Design CI/CD strategies that work across clouds using portable delivery practices.
- ✓ Define observability standards and operational readiness for multi-cloud production systems.
- ✓ Create a complete multi-cloud reference architecture and deployment blueprint including DR and cost governance.

Who this is for

- Cloud Engineers working across multiple providers
- DevOps, SRE, and Platform Engineers

- Solution Architects and Technical Architects
- Security and Governance teams supporting cloud adoption
- Engineering Leads driving cloud modernization

Curriculum

01 Multi-Cloud Fundamentals (When It Makes Sense and When It Does Not)

- What multi-cloud means (strategy vs implementation)
- Valid reasons for multi-cloud (resilience, regulatory, acquisitions, vendor strategy)
- When not to do multi-cloud (complexity, skills, cost, slow delivery)
- Decision framework (business drivers, workloads, constraints, success metrics)
- **Hands-on:** Activity: Evaluate 3 scenarios and decide single-cloud vs multi-cloud with justification

02 Service Equivalency Mapping (AWS vs Azure vs GCP)

- Equivalency approach (capabilities first, naming second)
- Compute mapping (VMs, autoscaling, serverless overview)
- Storage mapping (object, block, file) and trade-offs
- Networking and identity mapping (VPC/VNet, IAM/RBAC, policies)
- **Hands-on:** Lab: Create a service equivalency matrix for a reference application

03 Secure Architecture Principles (Segmentation, Least Privilege, Private Connectivity)

- Network segmentation patterns (public, private, data subnets)
- Least privilege identity patterns (roles, service identities)
- Private connectivity patterns (private endpoints, service endpoints concepts)
- Security boundaries (security groups/NSGs, NACL concepts)
- **Hands-on:** Workshop: Design a secure baseline architecture and threat model key risks

04 Multi-Cloud Network Foundations (VPC/VNet Design, Routing, Ingress/Egress Governance)

- VPC and VNet design patterns (CIDR strategy, subnet layout)
- Routing fundamentals (route tables, NAT/egress patterns)
- Ingress governance (load balancers, WAF concepts, TLS termination)
- Egress governance (NAT, firewall concepts, allowed destinations)
- **Hands-on:** Lab: Build a reference network blueprint per cloud with consistent segmentation and routing

05 Identity and Governance (IAM/RBAC Alignment, Org Policies, Audit Controls)

- IAM vs RBAC concepts and aligning roles across clouds
- Org-level governance (accounts/subscriptions/projects structure)
- Policy controls concepts (guardrails, allowed regions/services)
- Audit and traceability (logs, approvals, change history)
- **Hands-on:** Workshop: Define an enterprise governance model for teams and environments across clouds

06 Infrastructure Patterns (Compute, Storage, Data Layer Options and Trade-Offs)

- Compute patterns (VMs, managed Kubernetes, serverless selection criteria)
- Storage patterns (object storage as lake, backups, lifecycle policies)
- Data layer options (managed SQL, NoSQL, caching concepts)
- Provider-aware trade-offs (feature gaps, operational overhead, portability)
- **Hands-on:** Activity: Choose a compute + data architecture per cloud for the same workload and compare

07 Multi-Cloud Platform Approach (Kubernetes-Based Workloads and Standards)

- Why Kubernetes is the portability layer (and what it does not solve)
- Baseline workload standards (Deployments, Services, Ingress, config patterns)
- Security and isolation standards (namespaces, RBAC, policies concepts)
- Standard deployment processes (Helm/Kustomize concepts)
- **Hands-on:** Lab: Define a cloud-agnostic workload template with config, probes, and resource limits

08 Multi-Cloud CI/CD Strategies (Portable Delivery Practices)

- Portable CI patterns (build once, deploy many)
- Image strategy (registry approach, tagging, provenance concepts)
- Environment promotion strategy (dev → stage → prod across clouds)
- GitOps vs push-based CD and when to use each
- **Hands-on:** Workshop: Design a CI/CD flow that deploys the same app to multiple clusters/clouds

09 Observability and Operational Readiness (Standards for Multi-Cloud)

- Observability standards (metrics, logs, traces) and SLI/SLO basics
- Cross-cloud dashboards and alerting strategy (noise reduction)
- Operational readiness (runbooks, on-call, incident response)
- Resilience patterns (timeouts, retries, circuit breakers concepts)
- **Hands-on:** Activity: Create an operational readiness checklist and alerting baseline for a multi-cloud system

10 Capstone Blueprint (Multi-Cloud Reference Architecture with DR and Cost Governance)

- Capstone goal: Produce a complete multi-cloud reference architecture and deployment blueprint
- Network + identity + governance design across AWS/Azure/GCP
- Kubernetes-based platform approach with standard deployment process
- DR strategy (active-active vs active-passive concepts, data replication options)
- Cost governance plan (tagging, budgets, guardrails, reporting)
- **Hands-on:** Capstone Workshop: Deliver architecture diagram, decision matrix, and implementation checklist