

Cloud Computing (AWS/Azure/GCP)

A job-ready, fully online program that takes you from cloud foundations to deploying real, secure, automated infrastructure across AWS, Azure & GCP — cloud networking, security, Terraform, Docker & Kubernetes, and multi-cloud deployment. Build a portfolio and get interview-ready.

Total: 60–65 Hours

Free Foundation: 15 Hours

Job-Ready Program: 45–50 Hours

Online & Live

Certificate

Free Foundation — 15 Hours

Start learning for free. Build your core cloud, Linux, networking, and version-control foundations.

Module 1: Cloud Computing Fundamentals

Estimated Time: 5 Hours**Learning Objectives**

- Understand core cloud concepts and why the cloud powers modern IT careers
- Compare AWS, Azure, and GCP and their service models confidently

Topics

- Cloud service models (IaaS, PaaS, SaaS) and deployment models
- Regions, availability zones, and the shared responsibility model
- Pricing basics, free tiers, and the three major cloud providers

Hands-on

- Create free-tier accounts on AWS, Azure, and GCP and explore their consoles

Assessment: Quiz + Console Exercise

Module 2: Linux, Networking & CLI Essentials

Estimated Time: 4 Hours**Learning Objectives**

- Operate Linux servers and the command line with confidence
- Understand the networking fundamentals every cloud engineer needs

Topics

- Linux file system, permissions, and package management
- Shell commands, SSH, and remote server access
- IP addressing, subnets, DNS, ports, and firewalls

Hands-on

- Connect to a cloud Linux VM over SSH and run essential admin commands

Assessment: Quiz + Lab

Module 3: Version Control with Git & GitHub

Estimated Time: 2 Hours

Learning Objectives

- Track infrastructure code and configs with Git
- Collaborate and showcase your cloud work on GitHub

Topics

- Repositories, commits, and branches
- Merging, pull requests, and conflict resolution
- Building a professional cloud/DevOps GitHub profile

Hands-on

- Push your first infrastructure scripts and projects to GitHub

Assessment: Quiz + Lab

Module 4: Cloud Core Services Overview (Compute, Storage, Networking)

Estimated Time: 4 Hours

Learning Objectives

- Map the core building blocks common to every cloud provider
- Launch your first compute, storage, and network resources

Topics

- Virtual machines, containers, and serverless compute
- Object, block, and file storage concepts
- Virtual networks, subnets, and load balancing basics

Hands-on

- Deploy a virtual machine and object storage bucket in the cloud

Assessment: Quiz + Lab

Paid Job-Ready Program — 45–50 Hours

Go from foundations to fully employable across AWS, Azure, GCP, cloud security, Terraform, Kubernetes, and multi-cloud deployment.

Module 5: Deep Dive — AWS Core Services

Estimated Time: 6 Hours

Learning Objectives

- Deploy and manage core AWS compute, storage, and networking services
- Architect a highly available application on AWS

Topics

- EC2, EBS, S3, and Elastic Load Balancing
- VPC, subnets, security groups, and Route 53
- Auto Scaling, Lambda, and AWS management tools

Hands-on

- Deploy a highly available web application on AWS with load balancing

Assessment: Project Milestone

Module 6: Microsoft Azure Core Services

Estimated Time: 5 Hours

Learning Objectives

- Deploy and manage core Microsoft Azure services
- Translate cloud concepts across providers with confidence

Topics

- Azure Virtual Machines, App Service, and Functions
- Azure Blob Storage and managed disks
- Virtual Networks, resource groups, and Azure Portal/CLI

Hands-on

- Deploy an app and virtual network on Microsoft Azure

Assessment: Project Milestone

Module 7: Google Cloud Platform (GCP) Core Services

Estimated Time: 5 Hours

Learning Objectives

- Deploy and manage core Google Cloud Platform services
- Compare GCP services with their AWS and Azure equivalents

Topics

- Compute Engine, App Engine, and Cloud Functions
- Cloud Storage and persistent disks
- VPC networking, projects, and the gcloud CLI

Hands-on

- Deploy a workload and storage bucket on Google Cloud Platform

Assessment: Project Milestone

Module 8: Cloud Networking & Security

Estimated Time: 5 Hours

Learning Objectives

- Design secure, well-connected cloud networks
- Protect workloads with layered cloud security controls

Topics

- VPCs, subnets, peering, and hybrid connectivity (VPN)
- Firewalls, security groups, and network ACLs
- Encryption, key management, and security best practices

Hands-on

- Build a secure, segmented cloud network with firewall rules

Assessment: Lab

Module 9: Identity, Access Management & Governance

Estimated Time: 4 Hours

Learning Objectives

- Control access with least-privilege identity management
- Apply governance and compliance across cloud accounts

Topics

- IAM users, roles, groups, and policies across AWS, Azure, and GCP
- Multi-factor authentication and federated identity
- Organizations, billing controls, tagging, and governance

Hands-on

- Configure least-privilege IAM roles and policies for a project

Assessment: Lab

Module 10: Infrastructure as Code with Terraform

Estimated Time: 5 Hours

Learning Objectives

- Provision cloud infrastructure automatically and repeatably
- Manage multi-cloud resources as version-controlled code

Topics

- Terraform providers, resources, variables, and state
- Modules, plan/apply workflow, and remote state
- Provisioning across AWS, Azure, and GCP with one tool

Hands-on

- Provision a reproducible cloud environment entirely with Terraform

Assessment: Project Milestone

Module 11: Containers & Kubernetes on the Cloud

Estimated Time: 6 Hours

Learning Objectives

- Package and run applications with Docker containers
- Orchestrate containers at scale with Kubernetes

Topics

- Docker images, containers, registries, and Dockerfiles
- Kubernetes pods, deployments, services, and scaling
- Managed Kubernetes (EKS, AKS, GKE) fundamentals

Hands-on

- Containerize an app and deploy it to a managed Kubernetes cluster

Assessment: Project Milestone

Module 12: Cloud Databases & Storage Solutions

Estimated Time: 4 Hours

Learning Objectives

- Select the right managed database for each workload
- Design durable, scalable cloud storage solutions

Topics

- Managed relational databases (RDS, Azure SQL, Cloud SQL)
- NoSQL options (DynamoDB, Cosmos DB, Firestore)
- Storage tiers, backups, and data lifecycle management

Hands-on

- Provision a managed database and connect an application to it

Assessment: Lab

Module 13: Monitoring, Cost Optimization & Deployment

Estimated Time: 4 Hours

Learning Objectives

- Monitor cloud systems and respond to issues proactively
- Optimize cost and automate reliable deployments

Topics

- Monitoring, logging, and alerting (CloudWatch, Azure Monitor, Cloud Monitoring)
- Cost management, budgets, and right-sizing resources
- CI/CD pipelines and automated cloud deployment

Hands-on

- Set up monitoring, alerts, and a cost budget for a live workload

Assessment: Lab

Module 14: Capstone Multi-Cloud Project, Portfolio & Job Readiness

Estimated Time: 4 Hours

Learning Objectives

- Ship a complete, portfolio-ready multi-cloud project
- Prepare for the cloud engineering job search

Topics

- End-to-end multi-cloud project planning and build
- Portfolio, GitHub, and resume optimization
- Cloud interview, scenario, and certification prep

Hands-on

- Build and deploy an end-to-end multi-cloud capstone project; mock interviews and resume review

Assessment: Capstone Project + Mock Interview

Total Course Duration: 60–65 Hours

Free Foundation (15h) + Paid Job-Ready Program (48h). Includes portfolio projects, resume & interview prep, mock interviews, and a Progmatrix Certificate of Completion. Enroll at www.progmatrix.com