CLOUD, DEVOPS, AND CONTAINERS

Cloud Computing Essentials

Level: Foundation • 2 days (expandable to 3) • Virtual, In-person

Overview

Nearly every organization now runs on the cloud, yet many of the people working around it, and plenty working in it, have never been given a clear explanation of what the cloud actually is and why it changed the economics of computing. Vendor courses fill the gap with product catalogs, which teaches names, not understanding.

This is a hands-on, foundation course. It is deliberately vendor-neutral and deliberately focused: rather than surveying every service the major clouds offer, it builds a durable mental model that makes any provider's catalog readable. The gradient runs from what the cloud changes, through the service and deployment models, to the universal building blocks of compute, storage, and networking, and finally to security, cost, and the cloud-native ideas shaping modern systems. Every module includes a lab, and each module builds on the one before.

Who Should Attend

- Professionals in any role who need to understand the cloud their organization runs on
- IT staff and developers about to start working with AWS, Azure, or Google Cloud
- Managers and analysts who need to follow, and question, cloud decisions

  Learners already committed to a specific provider may prefer *AWS Cloud Practitioner Essentials* or *Microsoft Azure Fundamentals (AZ-900)*.

Prerequisites

- General comfort with computers and the web
- No cloud or programming experience required

What You Will Learn

- Explain what cloud computing is and why it changed how organizations buy and run technology
- Distinguish IaaS, PaaS, and SaaS, and public, private, and hybrid deployment models
- Describe the universal cloud building blocks: compute, storage, networking, and managed databases
- Explain the shared responsibility model and the fundamentals of cloud security
- Judge how cloud pricing works and why cloud bills surprise people
- Recognize cloud-native concepts (containers, serverless, elasticity) and where they fit

Course Outline

Day one: the mental model and the building blocks

- What the Cloud Changes
  - From owned servers to rented capability: elasticity and pay-for-use
  - Why the cloud won: speed, scale, and the economics behind it
  - Lab: compare the cost and lead time of a server bought versus a server rented

- Service and Deployment Models
  - IaaS, PaaS, and SaaS: who manages what
  - Public, private, hybrid, and multi-cloud, honestly compared
  - Lab: classify a set of real services by model and defend the classifications
- The Building Blocks
  - Compute: virtual machines, and where containers and serverless fit
  - Storage: object, block, and file, and when each is right
  - Networks and managed databases in plain language
  - Lab: deploy a small application on a cloud free tier using the core building blocks

Day two: security, cost, and what comes next

- Cloud Security Fundamentals
  - The shared responsibility model
  - Identity and access: the control that matters most
  - Lab: configure who can do what in a cloud account, then verify it
- Cloud Economics
  - How pricing really works: on-demand, committed use, and hidden costs
  - Why bills surprise people, and the habits that prevent it
  - Lab: estimate the monthly cost of a described workload with a pricing calculator
- Cloud-Native and Your Next Step
  - Containers, serverless, and elasticity: the ideas behind the buzzwords
  - How organizations actually adopt the cloud: migration in brief
  - Choosing your next course: provider tracks and specializations
  - Lab: map your own organization's systems to cloud concepts and pick one candidate to move

Extended Version

The three-day version keeps the same gradient and adds:

- A guided comparison of AWS, Azure, and Google Cloud running the same workload
- Deeper treatment of migration strategies and hybrid architectures
- More hands-on time with monitoring and cost tooling
- A capstone: design a cloud solution for a realistic scenario and present the reasoning