

DCT CLOUD FUNDAMENTALS

Duration: 3 Days

Course Code: DCT - DS - CF

Overview:

- This 3-day hands-on workshop introduces participants to the foundational concepts of cloud computing — including cloud models, deployment architectures, and essential services. Learners will explore real-world use cases, perform guided labs using open-source or free-tier tools, and build confidence in navigating cloud environments.

Course Objectives

By the end of the workshop, participants will be able to:

- Understand core cloud computing concepts and terminology
- Differentiate between IaaS, PaaS, and SaaS
- Identify and explain public, private, and hybrid cloud models
- Use a cloud platform to deploy and manage basic workloads
- Understand cloud networking, storage, and security fundamentals
- Estimate and optimize cloud costs

Course Outline

Day 1: Introduction to Cloud Concepts and Architecture Module 1: Cloud Fundamentals

- What is Cloud Computing?
- Key characteristics (on-demand, elasticity, scalability, pay-as-you-go)
- The evolution of cloud computing
- Benefits and challenges
- Common use cases

Module 2: Cloud Service Models

- Infrastructure as a Service (IaaS)
- Platform as a Service (PaaS)
- Software as a Service (SaaS)
- When to use each model

Hands-on Lab 1 (2 hours):

- Deploying a Virtual Machine using a free-tier or open cloud (e.g., AWS Free Tier, Azure Free, or OpenStack demo)
- Exploring instance types, regions, and availability zones

Module 3: Cloud Deployment Models

- Public, Private, Hybrid, and Multi-cloud
- Cloud providers overview: AWS, Azure, Google Cloud, OpenStack
- Comparing deployment strategies

Target Audience

- IT professionals new to cloud technologies
- System administrators and developers transitioning to cloud environments
- Students or tech enthusiasts with general IT knowledge

Day 2: Core Cloud Services and Infrastructure

Module 4: Cloud Compute, Storage, and Networking

- Virtual Machines and Containers
- Object, Block, and File Storage
- Cloud Networking Basics (VPCs, subnets, routing, security groups)

Hands-on Lab 2:

- Create a virtual network and connect two VMs
- Configure firewall rules and test connectivity
- Upload and retrieve files using an object storage bucket

Module 5: Cloud Security and Compliance

- Shared Responsibility Model
- Identity and Access Management (IAM)
- Encryption basics (data at rest, in transit)
- Security best practices

Group Activity

- Design a secure cloud environment for a small business scenario

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Day 3: Cloud Automation, Management, and Cost Optimization

Module 6: Cloud Management and Monitoring

- Cloud dashboards and CLI tools
- Resource tagging and organization
- Monitoring and logging basics
- Introduction to Infrastructure as Code (IaC)

Hands-on Lab 3:

- Automate VM creation with a simple Terraform or cloud CLI script
- Monitor instance performance and resource usage

Module 7: Cloud Economics and Cost Optimization

- Pricing models (on-demand, reserved, spot)
- Estimating cloud costs
- Cost optimization strategies
- Tools for budgeting and billing alerts

Module 8: Emerging Cloud Trends & Wrap-up

- Serverless computing overview
- Containers and Kubernetes basics
- Edge and hybrid cloud trends
- Review and final Q&A