

AWS Networking: VPC, Transit Gateway & Direct Connect

Learn to design, secure and automate AWS networks using VPC, Transit Gateway, Direct Connect, Route 53 and CloudFront.

4 Days

32 HOURS

14

MODULES

64

TOPICS

6

HANDS-ON ACTIVITIES

COURSE OVERVIEW

The course covers fundamentals to complex networking concepts, hybrid connectivity, routing, security, network automation, and monitoring using AWS native services. Through hands-on labs, architectural examples, and real-world scenarios, learners will gain the skills needed to design, deploy, and manage advanced networking solutions on AWS.

WHO THIS COURSE IS FOR

Network Engineers and Cloud Network Architect**DevOps and Site Reliability Engineers (SREs)****Security professionals focusing on cloud infrastructure**

PREREQUISITES

- AWS Certified Solutions Architect – Associate or equivalent knowledge
- Strong understanding of TCP/IP, DNS, VPN, and routing
- Experience with AWS services like EC2, VPC, IAM, and networking basics
- Familiarity with cloud concepts and basic scripting (e.g., Python, Bash) is helpful

LEARNING OBJECTIVES

By the end of this course, participants will be able to:

- Design and implement hybrid cloud and multi-region network architectures on AWS
- Configure secure and scalable connectivity using VPC, Transit Gateway, VPN
- Optimize routing, DNS, and content delivery using Route 53 and CloudFront
- Automate and monitor networking environments using AWS tools and services

14 Modules, 64 Topics

DAY 1

Foundations

01

Introduction to Amazon Web Services

TOPICS

Introduction to AWS Cloud · Security in the AWS Cloud

02

AWS Compute

TOPICS

Compute as a service in AWS · Introduction to Amazon Elastic Compute Cloud · Amazon EC2 instance lifecycle · AWS container services · What is serverless? · Introduction to AWS Lambda · Choose the right compute service

03

AWS Storage

TOPICS

- AWS storage types
- Amazon EC2 instance storage and Amazon Elastic Block Store (Amazon EBS)
- Object storage with Amazon S3
- Choose the right storage service

04

Databases

TOPICS

Explore databases in AWS · Amazon Relational Database Service · Purpose-built databases · Introduction to Amazon DynamoDB · Choose the right AWS database service

05

Introduction to AWS Networking Stack

TOPICS

- AWS Networking reference architecture
- Understanding CIDR Notation
- **Key services:** VPC, ENI, Subnets, Route Tables
- IPv4 vs IPv6 in AWS
- Configuring and Deploying VPCs with Multiple Subnets

06

VPC Design and Routing Deep Dive

TOPICS

Custom VPCs and subnet design · Route propagation and route priorities · TGW Architecture · VPC Peering vs Transit Gateway · Multi-AZ and Multi-Region designs

07

Load Balancers

Hands-on Lab

TOPICS

- Getting Started with Application Load Balancer
- Getting Started with Gateway Load Balancer
- Getting Started with Network Load Balancer (NLB)
- ELB, ALB, NLB selection and tuning

08

Hybrid Connectivity: VPN and Direct Connect

Hands-on Lab

TOPICS

Static Routing vs Dynamic Routing · How Border Gateway Protocol (BGP) works? · Site-to-Site VPN setup and troubleshooting · AWS Client VPN · AWS Direct Connect architecture · Redundancy and failover strategies

09

Hands-on Lab

Security and Network Access Control

TOPICS

NACLs vs Security Groups · VPC endpoints and private connectivity · AWS Network Firewall and Firewall Manager · AWS Web Application Firewall (WAF) · AWS Shield · AWS Certificate Manager

10

DNS and Strategies

TOPICS

Route 53 hosted zones and routing policies · Geo DNS and latency-based routing · AWS Global Accelerator

11

Hands-on Lab

Content Delivery and Edge Networking

TOPICS

What is a CDN (Content Delivery Network)? · CloudFront overview · Origin configurations and cache behaviors · Using Lambda@Edge for request modification

12

Hands-on Lab

Network Automation and Infrastructure as Code

TOPICS

AWS CloudFormation for network provisioning · Using AWS CLI and SDKs for automation · Automating routing and endpoint updates

13

Monitoring, Logging, and Troubleshooting

TOPICS

- VPC Flow Logs and Traffic Mirroring
- AWS CloudWatch and CloudTrail for networking
- Network troubleshooting tools (Reachability Analyzer, ELB access logs)
- Best practices for proactive network monitoring

AWS Networking Management and Governance

TOPICS

- Introduction to AWS Management & Governance Services
- Amazon VPC IP Address Manager (IPAM)
- AWS CloudFormation
- AWS Service Catalog
- AWS Config
- AWS CloudTrail

HANDS-ON ACTIVITIES

Practise What You Learn

#	MODULE	ACTIVITY
07	Load Balancers	Configuring Application Load Balancer
08	Hybrid Connectivity: VPN and Direct Connect	Configuring VPN connection
09	Security and Network Access Control	Working with AWS WAF
11	Content Delivery and Edge Networking	Security and CDN Setup: Implement NACLs, CloudFront, and VPC endpoints
12	Network Automation and Infrastructure as Code	Working with AWS Cloudformation
14	AWS Networking Management and Governance	Setup IPAM

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

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Flexi (Self-Paced)

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✉ info@koenig-solutions.com