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Sign up

AWS Advanced Networking Specialty Certification Training

4 days (28 hours)

Overview

AWS Advanced Networking Specialty is a certification designed for professionals who want to demonstrate their ability to design, deploy, secure, and manage complex, large-scale network architectures on AWS. This advanced approach to cloud computing relies on dynamic routing, hybrid connectivity, and perimeter security to design highly available, secure, and scalable infrastructures.

Our AWS Advanced Networking Specialty Certification training will enable you to master the full lifecycle of network infrastructure on AWS, from designing advanced, multi-account VPC architectures to globally interconnecting data centers with the cloud.

You will learn to use the main AWS networking services, including AWS Transit Gateway, AWS Direct Connect, Amazon Route 53, and AWS Network Firewall. The training will also enable you to build automated, repeatable, and secure network architectures using Infrastructure as Code (IaC).

Upon completion of this course, you will be able to design resilient cloud networks, configure BGP dynamic routing, secure access to critical workloads, optimize data transfer costs, and effectively diagnose complex network incidents.

Like all our training courses, this one will introduce you to **the latest stable version** of the technology and its new features.

Objectives

- Design advanced, highly available, and segmented VPC architectures.

- Master multi-account interconnection and Hub-and-Spoke architecture with AWS Transit Gateway.
- Implement highly resilient hybrid connectivity solutions (VPN, Direct Connect) and manage dynamic BGP routing.
- Secure network architectures using firewalls, strict access rules, and private connections (PrivateLink).
- Efficiently distribute application traffic and design intelligent failover strategies .
- Automate network deployments using Infrastructure as Code (CloudFormation, Terraform) and apply FinOps best practices.
- Effectively prepare for the AWS Advanced Networking Specialty certification.

Target Audience

- Network and Cloud Architects
- Cloud and DevOps engineers
- System and network administrators
- Network security engineers

Prerequisites

- Solid knowledge of traditional networking and related protocols (TCP/IP, DNS, routing, NAT, BGP)
- Proficiency in fundamental AWS concepts (basic VPC, EC2, IAM)
- An AWS Associate-level certification (Solutions Architect or SysOps Administrator) or equivalent experience is strongly recommended

Technical Requirements

- At least 8 GB of RAM, 16 GB if possible
- Linux (Ubuntu, Fedora, etc.), macOS, or Windows (preferably with WSL2)
- A terminal (Bash, Zsh, PowerShell / WSL) for running commands
- A code editor (e.g., VS Code) and a modern web browser
- An active AWS account with administrative privileges (or access provided for the workshops)

AWS Advanced Networking Specialty Certification Training Program

[Day 1 - Morning]

Understanding the fundamentals of AWS networking

- Identify the objectives of the AWS Advanced Networking Specialty certification
- Understand essential networking concepts: TCP/IP, DNS, routing, NAT, and segmentation

- Explore AWS network components: VPCs, subnets, route tables, gateways, and endpoints
- Distinguish between on-premises, cloud, and hybrid network architectures
- Understand the challenges of network performance, availability, latency, and security
- Hands-on workshop: Create a multi-subnet VPC and validate basic network flows.

[Day 1 - Afternoon]

Designing advanced VPC architectures

- Design a robust, highly available multi-AZ architecture
- Organize public, private, and isolated subnets according to application requirements
- Configure Internet Gateways, NAT Gateways, and routing tables
- Implement scalable network architectures for mission-critical environments
- Apply best practices for network segmentation and isolation
- Hands-on workshop: Design a complete VPC architecture for a three-tier application.

Connect VPCs and organize multi-account environments

- Understand the uses of VPC Peering and its operational limitations
- Implement a network strategy with AWS Organizations and separate accounts
- Discover AWS Resource Access Manager for sharing network resources
- Understanding hub-and-spoke architectures and centralized models
- Identify the risks of CIDR overlap and route propagation
- Hands-on workshop: Interconnecting multiple VPCs and validating traffic between environments.

[Day 2 - Morning]

Master AWS Transit Gateway

- Understand the role of AWS Transit Gateway in complex network architectures
- Configure VPC, VPN, and Direct Connect attachments
- Manage Transit Gateway routing tables and route propagation
- Segment network traffic between production, test, and partner environments
- Identify best practices for scalability and network governance
- Hands-on workshop: Deploying a hub-and-spoke architecture with Transit Gateway.

[Day 2 - Afternoon]

Implement hybrid connectivity

- Compare Site-to-Site VPN, Client VPN, and AWS Direct Connect solutions
- Understand connection scenarios between data centers, campuses, and AWS
- Configure VPN tunnels, gateways, and high-availability options
- Identify constraints related to bandwidth, latency, redundancy, and security
- Choose the right connectivity strategy based on business needs

- Hands-on workshop: Design a resilient hybrid architecture between AWS and an on-premises network.

Manage advanced routing and BGP

- Understand the principles of static and dynamic routing in AWS
- Use BGP with VPN, Direct Connect, and Transit Gateway
- Analyze route propagation and AWS routing priorities
- Troubleshoot issues related to asymmetric routes and multiple paths
- Optimize routing decisions for resilience and performance
- Hands-on workshop: Diagnosing and resolving a hybrid routing issue.

[Day 3 - Morning]

Securing AWS network architectures

- Configure Security Groups and Network ACLs according to best practices
- Implement network segmentation tailored to sensitive environments
- Use AWS Network Firewall to filter advanced traffic
- Protect access to services via VPC Endpoints and PrivateLink
- Reduce public exposure of critical workloads and services
- Hands-on workshop: Hardening the network security of an AWS application architecture.

[Day 3 - Afternoon]

Distribute traffic and manage high availability

- Compare Application Load Balancer, Network Load Balancer, and Gateway Load Balancer
- Designing highly available multi-AZ and multi-region architectures
- Use Amazon Route 53 for DNS, intelligent routing, and failover
- Implement health check and automatic failover policies
- Optimize load balancing based on application requirements
- Hands-on workshop: Configure a load balancing architecture with DNS failover.

Monitor and diagnose network issues

- Use VPC Flow Logs to analyze network traffic
- Use CloudWatch, CloudTrail, and Reachability Analyzer for diagnostics
- Identify common causes of connectivity loss and latency
- Analyze network performance metrics and security events
- Establish an AWS network troubleshooting methodology
- Hands-on workshop: Resolving a complex network incident on an AWS architecture.

[Day 4 - Morning]

Automate network deployments

- Understand the benefits of Infrastructure as Code for network architectures
- Deploy network components with AWS CloudFormation and Terraform
- Standardize VPCs, subnets, routes, gateways, and security rules
- Implement reusable templates for multi-account environments
- Integrate network changes into a controlled DevOps process
- Hands-on workshop: Automating the deployment of a secure VPC architecture.

[Day 4 - Afternoon]

Optimize network performance and costs

- Identify the main network cost drivers on AWS
- Optimize inter-AZ, inter-region, NAT Gateway, and outbound traffic
- Analyze the impact of design choices on latency, throughput, and availability
- Choose the right network services based on performance and cost constraints
- Apply FinOps best practices to AWS networking architectures
- Hands-on workshop: Analyze and optimize a costly network architecture.

Preparation for the AWS Advanced Networking Specialty certification

- Understand the structure of the AWS Advanced Networking Specialty exam
- Review key topics: VPC, routing, hybrid, security, performance, and automation
- Analyze scenario-based questions and identify the most appropriate answers
- Recognize common pitfalls related to routing, Direct Connect, and Transit Gateway
- Create a personalized study plan after the training
- Hands-on workshop: taking the practice exam + review.

Target Audience

This training is intended for both individuals and companies, large or small, seeking to train their teams in new advanced IT technologies or to acquire specific professional knowledge or modern methods.

Assessment upon enrollment

The pre-training assessment complies with Qualiopi quality standards. Upon final registration, the learner receives a self-assessment questionnaire that allows us to evaluate their estimated proficiency in various types of technologies, as well as their expectations and personal goals for the upcoming training, within the limits imposed by the selected format. This questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could pose challenges for monitoring and ensuring the smooth running of the training session.

Teaching Methods

Practical Course: 60% Practical, 40% Theory. Training materials distributed in digital format to all participants.

Organization

The course alternates between theoretical input from the trainer, supported by examples and reflection sessions, and group work.

Assessment

At the end of the session, a multiple-choice questionnaire is used to verify that the skills have been properly acquired.

Certification

A certificate will be issued to each trainee who has completed the entire training program.