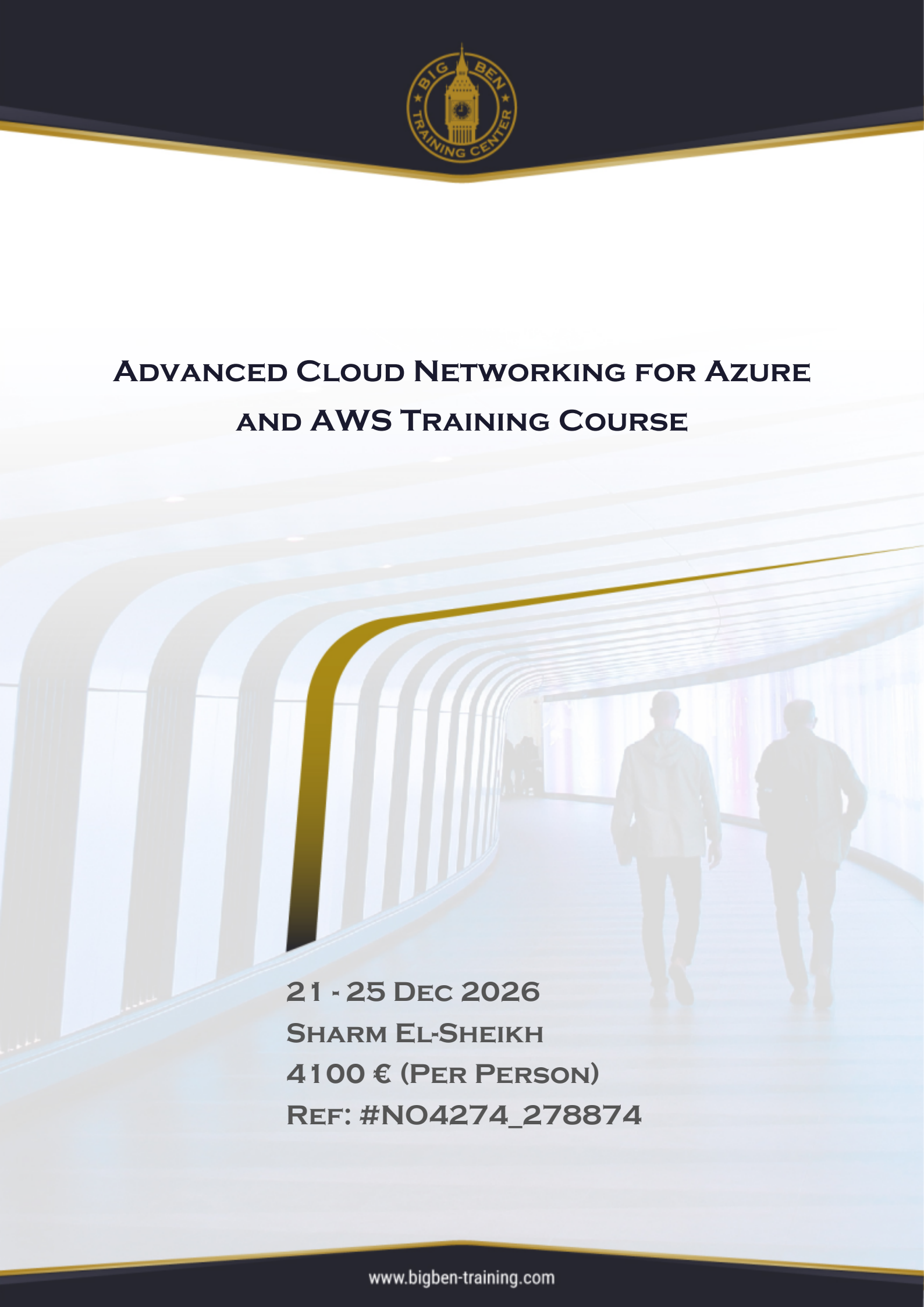
# Advanced Cloud Networking for Azure and AWS Training Course



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Sharm El-Sheikh

4100 € (Per Person)

Ref: #NO4274_278874

## Course Introduction / Overview:

This course provides a comprehensive exploration of advanced networking principles and practices across the two leading cloud platforms, Amazon Web Services (AWS) and Microsoft Azure. In an era where multi-cloud and hybrid strategies are becoming the standard, mastering the intricacies of networking in both ecosystems is a critical skill for IT professionals. This program moves beyond foundational concepts to delve into complex architectural patterns, security implementations, and automation techniques. We will examine the core networking services of each platform, from virtual networks and subnets to advanced connectivity options like AWS Direct Connect and Azure ExpressRoute. The curriculum is designed to equip participants with the knowledge to design, deploy, and manage secure, scalable, and resilient network infrastructures that span multiple cloud environments and on-premises data centers. Drawing on principles discussed by experts like Douglas E. Comer in works such as "Computer Networks and Internets", this course emphasizes a practical, hands-on approach. BIG BEN Training Center has developed this training to bridge the gap between theoretical knowledge and real-world application, ensuring participants can confidently tackle complex multi-cloud networking challenges and optimize network performance and cost-efficiency for their organizations.

## Target Audience / This training course is suitable for:

- Network Engineers and Architects.
- Cloud Solutions Architects.
- IT Infrastructure Managers.
- DevOps and Site Reliability Engineers.
- Systems Administrators transitioning to cloud roles.
- Cybersecurity professionals focused on cloud infrastructure.
- IT professionals seeking to gain multi-cloud expertise.

## Target Sectors and Industries:

- Information Technology and Services.
- Financial Services and Banking.
- Healthcare and Pharmaceuticals.
- Telecommunications.
- E-commerce and Retail.
- Consulting and Professional Services.
- Government agencies and public sector organizations.
- Manufacturing and Supply Chain.

## Target Organizations Departments:

- Information Technology (IT) Infrastructure.
- Cloud Center of Excellence (CCoE).
- Network Operations Center (NOC).
- Cybersecurity and Information Security.
- DevOps and Platform Engineering.
- Research and Development (R&D).
- Application Development and Support.

## Course Offerings:

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

- Design and implement scalable and secure virtual networks in both AWS and Azure.
- Configure and manage hybrid connectivity solutions using VPNs, AWS Direct Connect, and Azure ExpressRoute.
- Implement advanced load balancing and traffic management strategies across multi-cloud environments.
- Secure cloud network resources using Network Security Groups, NACLs, and cloud-native firewalls.
- Automate network provisioning and configuration using Infrastructure as Code (IaC) tools.
- Troubleshoot common cloud networking issues and optimize for performance and cost.
- Develop a comprehensive multi-cloud network architecture that aligns with business requirements.
- Integrate third-party network virtual appliances into AWS and Azure environments.
- Manage DNS and routing effectively in a hybrid and multi-cloud context.

## Course Methodology:

The training methodology at BIG BEN Training Center is designed to be immersive, interactive, and highly practical. We believe that mastering complex topics like multi-cloud networking requires more than just theoretical lectures. Therefore, this course is built around a blended learning approach that combines expert-led instruction with hands-on labs, real-world case studies, and collaborative group exercises. Participants will engage in simulated lab environments to build and configure network architectures in both AWS and Azure, allowing them to apply concepts in a risk-free setting. Each module is reinforced with practical examples drawn from actual enterprise deployments, highlighting common challenges and proven solutions. Interactive sessions encourage open discussion, peer-to-peer learning, and direct engagement with the instructor to solve complex problems. Team-based activities will challenge participants to work together on designing a comprehensive multi-cloud network solution for a fictional organization, fostering critical thinking and collaborative skills. Continuous feedback is provided throughout the course to ensure a deep and lasting understanding of the material, preparing participants to apply their new skills immediately in their professional roles.

## Course Agenda (Course Units):

### Unit One: Foundations of Multi-Cloud Networking

- Introduction to Cloud Networking Paradigms.
- Core Networking Components in AWS (VPC, Subnets, Route Tables, IGW).
- Core Networking Components in Azure (VNet, Subnets, Route Tables, UDR).
- Comparing AWS and Azure Networking Architectures.
- IP Addressing and CIDR Planning for the Cloud.
- Understanding Regions, Availability Zones, and Network Latency.
- Lab: Building a Foundational VPC in AWS and VNet in Azure.

### Unit Two: Hybrid and Inter-Cloud Connectivity

- Site-to-Site VPN Configurations in AWS and Azure.
- Client-to-Site VPN Solutions for Remote Access.
- Deep Dive into AWS Direct Connect and its Models.
- Exploring Azure ExpressRoute and Connectivity Models.
- VPC Peering in AWS and VNet Peering in Azure.
- Implementing AWS Transit Gateway for Scalable Inter-VPC Communication.
- Leveraging Azure Virtual WAN for a Global Transit Network Architecture.

### Unit Three: Cloud Network Security and Governance

- AWS Network Security Groups (NSGs) and Network ACLs (NACLs).
- Azure Network Security Groups (NSGs) and Application Security Groups (ASGs).
- Implementing AWS WAF and Azure Application Gateway with WAF.
- Deploying and Managing Cloud-Native Firewalls (AWS Network Firewall, Azure Firewall).
- Private Connectivity with AWS Private Link and Azure Private Link.
- Identity and Access Management (IAM) for Network Resources.
- Best Practices for Securing Hybrid and Multi-Cloud Networks.

## Unit Four: Advanced Services for Scalability and Resilience

- Elastic Load Balancing (ELB) in AWS (ALB, NLB, GWLB).
- Azure Load Balancer and Application Gateway Deep Dive.
- Global Traffic Management with Amazon Route 53 and Azure Traffic Manager.
- Content Delivery Networks (CDN): Amazon CloudFront and Azure CDN.
- DNS Management in Hybrid Environments.
- Designing for High Availability and Disaster Recovery.
- Network Performance Monitoring and Latency Optimization.

## Unit Five: Network Automation, Operations, and Optimization

- Infrastructure as Code (IaC) for Networking using Terraform.
- Automating Network Deployments with AWS CloudFormation and Azure Resource Manager (ARM).
- Network Monitoring and Logging with AWS CloudWatch and Azure Monitor.
- Troubleshooting Connectivity and Performance Issues.
- Cost Management and Optimization Strategies for Cloud Networking.
- Developing a Multi-Cloud Network Governance Framework.
- Future Trends in Cloud Networking: SD-WAN Integration and SASE.

# FAQ:

### Qualifications required for registering to this course?

There are no requirements.

### How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

## Something to think about:

As network automation matures, how does the role of the traditional network engineer evolve from a hands-on implementer to a strategic architect in a multi-cloud ecosystem?

## What unique qualities does this course offer compared to other courses?

This course distinguishes itself by offering a truly integrated, dual-platform curriculum focused on both AWS and Azure, which is essential for modern enterprises adopting multi-cloud strategies. Unlike platform-specific training, this program teaches participants to think architecturally and make informed decisions based on the strengths and nuances of each provider. The emphasis is not just on feature comparison but on building cohesive, secure, and efficient networks that span both ecosystems. We move beyond basic configurations to address complex, real-world challenges such as hybrid connectivity at scale, advanced security implementations, and cross-cloud traffic management. A significant differentiator is the dedicated focus on network automation using Infrastructure as Code principles with tools like Terraform, a critical skill for achieving agility and consistency in cloud operations. Furthermore, the course integrates crucial business-level considerations, including cost optimization and governance, ensuring that technical skills are directly aligned with organizational objectives. By focusing on practical design patterns and strategic decision-making rather than just tool-specific knowledge, this training equips professionals with a versatile and future-proof skill set that is immediately applicable and highly valuable in the competitive cloud landscape.