



*Training Course:
Advanced Data Center Networking*

*1 - 5 December 2025
London (UK)
Landmark Office Space - Portman Street*

Training Course: Advanced Data Center Networking

Training Course code: IT236223 From: 1 - 5 December 2025 Venue: London (UK) - Landmark Office Space - Portman Street Training Course Fees: 6000 € Euro

Introduction

This advanced-level training program, designed by Global Horizon Training Center, delves into the complex and high-performance networking systems that form the backbone of modern data centers. With the rapid rise of virtualization, cloud computing, software-defined networking SDN, and edge computing, data center professionals must be equipped with deep technical knowledge and strategic insights to build and manage robust networking infrastructure.

This program provides a comprehensive exploration of advanced data center networking, including spine-leaf architecture, Layer 2 and Layer 3 integration, SDN, network function virtualization NFV, overlay networks, high availability, and network automation. The training equips participants with the skills needed to design, optimize, and troubleshoot modern data center networks that are scalable, secure, and future-ready.

Objectives

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

- Design and implement scalable Layer 2 and Layer 3 data center network architectures.
- Deploy spine-leaf and fabric-based topologies for high-performance environments.
- Apply Software-Defined Networking SDN and Network Function Virtualization NFV concepts.
- Manage overlay technologies such as VXLAN, NVGRE, and Geneve.
- Optimize traffic flow, redundancy, and high availability.
- Automate network operations and apply orchestration tools e.g., Ansible, Python scripting.
- Monitor, analyze, and troubleshoot network issues using industry best practices.

Course Methodology

- Instructor-led technical sessions
- Live network simulation and lab demonstrations
- Case studies from real-world enterprise and cloud data centers
- Group-based network design exercises
- Hands-on exposure to SDN controllers and network automation tools

- Interactive discussions and peer learning

Organizational Impact

Organizations that invest in this training will benefit from:

- Robust and scalable data center networks supporting business-critical services
- Improved network performance, uptime, and resilience
- Reduced network operational costs through automation and orchestration
- Enhanced security through segmentation and programmable policies
- Future-proof infrastructure ready for cloud, AI, and edge computing demands
- Stronger internal capabilities in troubleshooting and optimizing complex network environments

Target Audience

- Data Center Network Engineers and Architects
- Senior Network Administrators
- IT Infrastructure and Operations Managers
- Cloud Engineers working with virtualized networking
- Systems Integrators and Network Consultants
- Professionals preparing for Cisco, Juniper, or other data center certifications

Course Outline

Day 1: Modern Data Center Network Architecture

- Evolution from traditional 3-tier to spine-leaf topology
- Layer 2 vs. Layer 3 design in data centers
- VLANs, Trunking, STP alternatives e.g., TRILL, SPB
- VXLAN, EVPN, and overlay network introduction
- Traffic flow patterns and segmentation requirements

Day 2: Spine-Leaf Design and Fabric Technologies

- Design principles of spine-leaf architecture
- Equal-cost multi-path ECMP routing
- Fabric management and scaling strategies
- Integration with SD-Access and network virtualization
- Network convergence, latency optimization, and scalability

Day 3: Software-Defined Networking SDN and Virtualization

- SDN architecture and components
- OpenFlow protocol and SDN controllers
- Introduction to NFV and its use in virtualized data centers
- Cisco ACI / VMware NSX overview
- Policy-based network management and segmentation

Day 4: Network Automation and Orchestration

- Introduction to network automation tools Ansible, Terraform, Python
- Automating common tasks: configuration, provisioning, validation
- Intent-based networking and model-driven telemetry
- REST APIs and programmable interfaces
- DevOps and NetDevOps principles in network operations

Day 5: Security, Monitoring, and Troubleshooting

- Securing the data center network: microsegmentation, ACLs, firewalls
- Real-time monitoring and performance metrics SNMP, NetFlow, sFlow
- Troubleshooting network bottlenecks and failures
- High availability, failover strategies, and redundancy design
- Final case study: Design and simulation of an advanced data center network

Registration form on the Training Course: Advanced Data Center Networking

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

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Payment Method

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