

Advanced Course in Network Design

Barcelona (Spain)

12 - 23 May 2025

UK Training

PARTNER



Advanced Course in Network Design

Code: IT28 From: 12 - 23 May 2025 City: Barcelona (Spain) Fees: 8600 Pound

Introduction

In today's digital age, the design of computer networks plays a crucial role in enabling organizations to achieve their business objectives efficiently and securely. The ability to design robust, scalable, and innovative network architectures is essential for meeting the evolving demands of modern enterprises. This advanced course in network designing is tailored to equip participants with the latest methodologies, technologies, and best practices in network architecture and design. Through a combination of theoretical learning and hands-on exercises, participants will gain the expertise needed to design cutting-edge networks that align with organizational goals and drive digital transformation.

Objectives

- Provide participants with a comprehensive understanding of network design principles, methodologies, and frameworks.
- Equip participants with advanced skills in assessing organizational requirements, analyzing network traffic patterns, and designing scalable and resilient network architectures.
- Explore emerging technologies and trends in networking, including cloud computing, software-defined networking SDN, network virtualization, and Internet of Things IoT, and their implications for network design.
- Foster proficiency in selecting and integrating networking technologies and protocols to optimize network performance, security, and reliability.
- Develop participants' ability to create detailed network design documentation, including network diagrams, topology maps, and configuration guidelines.
- Enhance participants' knowledge of network design best practices, standards, and compliance requirements, including considerations for regulatory compliance and data privacy.
- Provide hands-on experience with network design tools, simulation software, and real-world case studies to reinforce theoretical concepts and practical skills.
- Prepare participants for professional certifications in network design, such as Cisco Certified Design Associate CCDA or Cisco Certified Design Professional CCDP, through comprehensive coverage of exam topics and practice tests.

Course Outlines

Day 1

Introduction to Network Design Principles

- Overview of network design methodologies and frameworks
- Understanding organizational requirements and business goals
- Principles of scalable, resilient, and secure network architectures



Day 2

Assessing Organizational Requirements

- Conducting needs analysis and requirements gathering
- Identifying business-critical applications and services
- Assessing network performance, capacity, and availability requirements

Day 3

Analyzing Network Traffic Patterns

- Traffic analysis techniques and tools
- Predictive modeling for network capacity planning
- Identifying bottlenecks and optimizing network performance

Day 4

Designing Campus and Data Center Networks

- Campus network design considerations and best practices
- Data center network architectures: traditional vs. cloud-native
- Integration of virtualization and cloud technologies in network design

Day 5

Designing Wide Area Networks WANs

- WAN design principles and technologies
- Selecting appropriate WAN connectivity options
- Implementing security and Quality of Service QoS in WANs

Day 6

Network Security in Design

- Security by design principles and methodologies
- Threat modeling and risk assessment techniques
- Integration of security controls and protocols into network design

Day 7

Network Virtualization and SDN

- Concepts and benefits of network virtualization
- Software-defined networking SDN architectures and deployment models
- Application of SDN principles in network design and automation

Day 8



IoT and Emerging Technologies in Network Design

- Overview of Internet of Things IoT and its impact on network design
- Integration of IoT devices and sensors into network architectures
- Design considerations for emerging technologies such as 5G and edge computing

Day 9

Documentation and Compliance

- Creating comprehensive network design documentation
- Compliance requirements and standards for network design
- Considerations for regulatory compliance and data privacy in network design

Day 10

Hands-on Lab Exercises and Case Studies

- Practical design exercises using network simulation tools and software
- Real-world case studies and scenarios to apply design principles and troubleshoot issues



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