Advanced Network Infrastructure Planning and Deployment Training Course

21 - 25 Dec 2026

Geneva

5900 € (Per Person)

Ref: #NO3552_119622

Course Introduction / Overview:

In today's digitally-driven world, a robust, scalable, and secure network infrastructure is the backbone of any successful organization. This course provides a comprehensive framework for mastering the strategic planning, design, and deployment of modern network infrastructures. Moving beyond basic configurations, this program delves into the architectural principles and best practices that ensure high availability, optimal performance, and resilient security. As detailed by renowned author Andrew S. Tanenbaum in his seminal work "Computer Networks," a deep understanding of underlying principles is crucial for building effective systems. This training course bridges the gap between theoretical knowledge and practical application, covering the entire network lifecycle from initial requirements analysis and capacity planning to implementation, monitoring, and future-proofing. Participants will explore advanced topics such as software-defined networking (SDN), network security architecture, and cloud integration. At BIG BEN Training Center, we empower professionals to build network infrastructures that not only support current business needs but also provide a strategic advantage for future growth and innovation. This course is meticulously designed to equip you with the skills to manage complex network projects and make informed decisions that align with organizational goals.

Target Audience / This training course is suitable for:

- Network Engineers and Administrators.
- IT Managers and Team Leaders.
- Infrastructure Architects and Designers.
- Systems Engineers.
- IT Project Managers involved in network deployments.
- Solutions Architects.
- Technical Consultants responsible for network infrastructure.
- Cybersecurity professionals focusing on network security.
- IT professionals seeking to advance their skills in network planning.

Target Sectors and Industries:

- Telecommunications and Internet Service Providers.
- Financial Services and Banking.
- Healthcare and Medical Institutions.
- Information Technology and Software Development.
- Retail and E-commerce.
- Manufacturing and Industrial Operations.
- Government Agencies and Public Sector Organizations.
- Education and Research Institutions.
- Energy and Utilities Sector.

Target Organizations Departments:

- Information Technology (IT) Department.
- Network Operations Center (NOC).
- Infrastructure and Operations.
- Information Security (InfoSec) Department.
- Technology Planning and Strategy.
- Project Management Office (PMO).
- Data Center Management.
- Cloud Services Department.
- Research and Development.

Course Offerings:

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

- Develop a comprehensive network strategy aligned with business objectives.
- Master advanced principles of scalable and high-availability network design.
- Conduct thorough requirements gathering and network capacity planning.
- Design and implement robust multi-layered network security architectures.
- Evaluate and select appropriate network hardware and software solutions.
- Manage the full lifecycle of a network deployment project.
- Implement effective network monitoring and performance optimization techniques.
- Integrate modern technologies like SDN, NFV, and cloud networking into infrastructure plans.
- Create detailed network documentation and disaster recovery plans.
- Analyze and troubleshoot complex network infrastructure issues.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to foster a deep, practical understanding of strategic network infrastructure planning and deployment. We employ a blended learning approach that combines expert-led instruction with interactive, hands-on activities. The course emphasizes real-world application through the extensive use of case studies drawn from various industries, allowing participants to analyze complex scenarios and develop effective solutions. Collaborative group discussions and workshops encourage peer-to-peer learning and the exchange of diverse perspectives on network challenges. Participants will engage in simulated network design and deployment projects, applying the concepts learned in a controlled, practical environment. Our instructors facilitate interactive sessions that go beyond lectures, encouraging questions and in-depth exploration of advanced topics. Continuous feedback is a core component of our approach, ensuring that participants can gauge their understanding and refine their skills throughout the five-day program. This immersive and engaging methodology ensures that attendees leave not just with theoretical knowledge, but with the confidence and competence to lead complex network projects in their own organizations.

Course Agenda (Course Units):

Unit One: Foundations of Strategic Network Planning

- Introduction to the Network Infrastructure Lifecycle.
- Aligning Network Strategy with Business Goals and Objectives.
- Advanced Requirements Gathering and Stakeholder Analysis.
- Principles of Modular and Hierarchical Network Design.
- Network Modeling and Performance Baselining.
- Understanding Network Traffic Analysis and Flow Characteristics.
- Developing a Comprehensive Network Planning Document.

Unit Two: Advanced Network Architecture and Design

- Designing for Scalability and High Availability.
- Advanced Routing Protocols and BGP/OSPF Design Considerations.
- Modern Switching Technologies and VLAN Architecture.
- Data Center and Cloud-Integrated Network Design.
- Software-Defined Networking (SDN) and Network Function Virtualization (NFV) Concepts.
- Designing Wireless Network Infrastructure for Enterprise Environments.
- IP Address Management (IPAM) and Subnetting Strategies.

Unit Three: Network Security and Compliance Architecture

- Developing a Zero-Trust Network Security Model.
- Designing Firewall and Intrusion Prevention System (IPS) Topologies.
- Secure VPN Design for Remote Access and Site-to-Site Connectivity.
- Network Access Control (NAC) and Endpoint Security Integration.
- Implementing Network Segmentation and Micro-segmentation.
- Auditing Network Configurations for Security Vulnerabilities.
- Understanding Compliance Frameworks (e.g., ISO 27001, PCI DSS) in Network Design.

Unit Four: Network Deployment and Implementation Management

- Creating a Detailed Network Implementation Project Plan.
- Vendor and Technology Selection Criteria.
- Physical Infrastructure Planning including Cabling and Rack Layout.
- Configuration Management and Infrastructure as Code (IaC) for Networks.
- Staging, Testing, and Validation Methodologies.
- Change Management and Cutover Strategies for Minimal Disruption.
- Post-Deployment Verification and Documentation Best Practices.

Unit Five: Network Operations, Optimization, and Future Trends

- Implementing Proactive Network Monitoring and Alerting Systems.
- Advanced Network Troubleshooting Methodologies.
- Network Performance Optimization and Quality of Service (QoS) Design.
- Network Automation Tools and Scripting for Operations.
- Disaster Recovery and Business Continuity Planning for Networks.
- Exploring the Impact of IoT and Edge Computing on Network Design.
- Final Project. Course Review and Strategic Outlook.

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 and AI become more prevalent, how does the role of the human network architect evolve from a hands-on implementer to a strategic overseer of intelligent systems?

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

This course distinguishes itself by adopting a holistic, strategic lifecycle approach rather than focusing narrowly on vendor-specific configurations or isolated technical skills. While many programs teach the "how" of network setup, we concentrate on the "why" and "what if," empowering participants to architect infrastructures that are not only functional but also strategically aligned with long-term business goals. We emphasize the integration of emerging paradigms such as Zero-Trust architecture, Software-Defined Networking (SDN), and Infrastructure as Code (IaC), ensuring our participants are prepared for the future of networking, not just its present. The curriculum is built around real-world case studies and design challenges, forcing a practical application of knowledge that transcends theoretical learning. Unlike other courses, we dedicate significant time to the non-technical aspects crucial for success, including project management, stakeholder communication, and aligning IT initiatives with financial and operational objectives. This blend of deep technical expertise, strategic business acumen, and forward-looking content provides a uniquely comprehensive and valuable learning experience that develops true network architects and leaders.