Comprehensive Networking and Connectivity Fundamentals

21 – 25 November 2027
Cairo (Egypt)



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Why This Course

Modern networking is the backbone of today's digital organizations, connecting users, systems, applications, cloud platforms, and business services. A strong understanding of networking concepts is essential for IT professionals who need to design reliable networks, configure devices, secure connectivity, and troubleshoot issues efficiently.

This comprehensive 1-week Networking Fundamentals Training program provides participants with a practical foundation in modern networking technologies and concepts. The course covers the OSI model, network topologies, Ethernet, IP addressing, routing, switching, VLANs, wireless networking, network security, WAN technologies, VPNs, cloud networking, SDN, and troubleshooting methodologies. Through hands-on labs and real-world scenarios, participants will gain the confidence to design, implement, secure, and support small to medium-sized networks.

What You'll Learn and Practice

By joining this program, you will:

- Understand fundamental networking concepts and the OSI model.
- Identify different network types, topologies, and architectures.
- Apply Ethernet and IP addressing concepts.
- Configure basic networks using switches and routers.
- Understand the TCP/IP protocol suite and key network services.
- Configure routing, DNS, DHCP, and NAT services.
- Implement VLANs, trunking, and inter-VLAN routing.
- Understand switch operation and Spanning Tree Protocol.
- Apply network security best practices, firewalls, and access control lists.
- Configure wireless networks and apply wireless security measures.
- Understand WAN technologies, VPNs, cloud networking, and SDN concepts.
- Troubleshoot common network issues using structured methodologies.



The Program Flow

Day 1: Networking Fundamentals

- Understand the purpose and structure of computer networks.
- Explore the OSI model and how it supports network communication.
- Identify common network topologies and network types.
- Understand Ethernet fundamentals and IP addressing basics.
- Complete a hands-on lab focused on setting up a basic network.

Day 2: Network Protocols and Routing

- Explore the TCP/IP protocol suite and its role in network communication.
- Understand static and dynamic routing concepts.
- Configure routing to support communication between networks.
- Understand DNS, DHCP, and NAT services.
- Complete a hands-on lab focused on routing and IP service configuration.

Day 3: Switching and VLANs

- Understand switch operation and basic switch configuration.
- Create and manage VLANs for network segmentation.
- Configure trunking between switches.
- Understand Spanning Tree Protocol and its role in preventing loops.
- Complete a hands-on lab focused on VLANs and inter-VLAN routing.

Day 4: Network Security and Wireless

- Understand network security fundamentals and common threats.
- Apply best practices for securing network infrastructure.
- Configure firewalls and access control lists.
- Explore wireless networking standards and security methods.
- Complete a hands-on lab focused on wireless configuration and security controls.

Day 5: Advanced Topics and Troubleshooting

- Understand WAN technologies and their use in business connectivity.
- Explore VPN concepts and secure remote access.
- Understand cloud networking and software-defined networking concepts.
- Apply structured network troubleshooting methodologies.
- Complete a hands-on lab focused on diagnosing and resolving network issues.



Individual Impact

- Build confidence in understanding and applying networking concepts.
- Strengthen practical skills in routing, switching, VLANs, wireless, and security.
- Improve troubleshooting ability for common network problems.
- Gain hands-on experience with network configuration and support tasks.
- Build a strong foundation for future networking certifications and career development.

Work Impact

- Support more reliable and secure network operations.
- Improve the ability to design and implement small to medium-sized networks.
- Reduce downtime through stronger troubleshooting and problem-solving skills.
- Enhance network performance, segmentation, and security.
- Strengthen organizational readiness for cloud networking, VPNs, and modern network technologies.

Training Methodology

This program combines networking theory with practical hands-on application through:

- Instructor-led explanations of core networking concepts.
- Hands-on labs for routing, switching, VLANs, wireless, and troubleshooting.
- Practical configuration exercises using realistic network scenarios.
- Network security and access control practice activities.
- Troubleshooting workshops focused on common network issues.
- Group discussions on cloud networking, SDN, and future networking trends.

Beyond the Course

Upon completion, participants will be able to:

- Design and implement small to medium-sized networks.
- Configure and manage switches, routers, VLANs, and IP services.
- Apply network security best practices and wireless protection measures.
- Troubleshoot common connectivity, routing, switching, and performance issues.
- Understand emerging networking technologies such as SDN and cloud networking.
- Prepare for further networking certifications and professional growth.

