



# CCNA Exploration: Network Fundamentals

During the Cisco Networking Academy® course, administered by the undersigned instructor, the student was able to proficiently:

- Explain how communication works in data networks and the Internet
- Recognize the devices and services that are used to support communications across an Internetwork
- Explain the role of protocols in data networks
- Describe the importance of addressing and naming schemes at various layers of data networks
- Describe the protocols and services provided by the application layer in the OSI model and describe how this layer operates in sample networks
- Analyze the operations and features of the transport layer protocols and services
- Analyze the operations and features of the network layer protocols and services and explain the fundamental concepts of routing
- Design, calculate, and apply subnet masks
- Describe the operation of protocols at the OSI data link layer
- Explain the role of physical layer protocols and services
- Build a simple Ethernet network using routers and switches
- Use Cisco® CLI commands to perform basic router and switch configuration and verification

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Kierownik Lokalnej Akademii Cisco  
**dr inż. Marcin Markowski**



## CCNA Routing and Switching: Scaling Networks

During the Cisco Networking Academy® course, administered by the undersigned instructor, the student was able to proficiently:

- Understand, configure, and troubleshoot enhanced switching technologies such as VLANs, Rapid Spanning Tree Protocol (RSTP), Per VLAN Spanning Tree Plus Protocol (PVST+), and EtherChannel
- Understand, configure, and troubleshoot first hop redundancy protocols (HSRP) in a switched network
- Understand, configure, and troubleshoot wireless routers and wireless clients
- Configure and troubleshoot routers in a complex routed IPv4 or IPv6 network using single-area OSPF, multiarea OSPF, and Enhanced Interior Gateway Routing Protocol (EIGRP)
- Manage Cisco IOS® Software licensing and configuration files

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