Cisco | Networking Academy®
Mind Wide Open™

CCNP

Opportunity

The Internet is changing life as we know it—bringing new economic and social opportunities to communities throughout the world, and increasing the global demand for information and communication technology (ICT) skills. Innovations such as social networking, cloud computing, e-commerce, web conferencing, and desktop virtualization are changing the way we live, work, play, and learn. These capabilities are all powered by networks, and organizations around the world are experiencing a shortage of qualified ICT candidates to design, install, and manage these networks.

Solution

The Cisco Networking Academy® CCNP curriculum provides a career oriented, comprehensive coverage of enterprise-level networking skills, including advanced routing, switching and troubleshooting, while providing opportunities for hands-on practical experience and soft-skills development.

The curriculum equips students with the knowledge and skills necessary to design and support complex enterprise networks, and emphasizes critical thinking, problem solving, collaboration, and the practical application of skills in a real world environment.

The Cisco CCNP® curriculum helps students prepare for career opportunities, continuing education, and the globally-recognized Cisco® CCNP certification. CCNP provides a next step for Cisco CCNA® Discovery or CCNA Exploration students who want to build on their CCNA-level skill set to further a career in computer networking.

> The CCNP curriculum aligns with the Cisco CCNP certification, which validates a network professional's ability to install, configure, and troubleshoot converged local and wide area networks.

Features

The CCNP curriculum helps students develop the skills needed to succeed in networking-related degree and diploma programs and prepare for the Cisco CCNP certification. It provides a theoretically rich, hands-on learning experience covering advanced routing, switching, and troubleshooting.

The curriculum offers the following features and benefits:

- Provides an in-depth, theoretical overview of advanced routing and switching and troubleshooting complex enterprise networks
- Builds on the Cisco CCNA Discovery and CCNA Exploration courses with more complex network configurations, diagnosis, and troubleshooting
- Experience-oriented courses employ industry-relevant instructional approaches to prepare students for professional jobs in the industry
- Students gain significant hands-on interaction with networking equipment to prepare them for certification exams and career opportunities
- Hands-on labs and case studies help students apply what they learn and develop critical thinking and complex problem-solving skills

Who Should Enroll	Prerequisites
- College and university-level students seeking career-oriented, enterprise-level networking skills - IT professionals wishing to expand their core routing, switching, and network troubleshooting skills to advance their careers - CCNA certification holders who wish to build on their CCNA knowledge base - Individuals seeking Cisco CCNP certification	- CCNA-level networking concepts and skills - CCNP ROUTE and CCNP SWITCH have no course prerequisites and can be taken in any order - CCNP ROUTE and CCNP SWITCH are both prerequisites for CCNP TSHOOT ❖ Students can acquire the CCNA-level routing and switching skills needed for success in this course by completing CCNA Discovery or CCNA Exploration

21st Century Skills

CCNP integrates practical skills into the technical curriculum to help students succeed in future educational, entrepreneurial, and occupational endeavors.

In addition to learning the fundamentals of designing, building, and operating networks, students also learn about problem solving, critical thinking, collaboration, teamwork, negotiation, and entrepreneurship—skills they can apply in the 21st century global workplace.

Assessments

Innovative formative and summative assessments are integrated into the CCNP curriculum and supported by an advanced online delivery system. Assessments can be as simple as a multiple choice question or as complex as troubleshooting a simulated network.

Course Descriptions

CCNP equips students with the knowledge and skills needed to plan, implement, secure, maintain, and troubleshoot converged enterprise networks. The curriculum consists of three courses: CCNP ROUTE: Implementing IP Routing, CCNP SWITCH: Implementing IP Switching, and CCNP TSHOOT: Maintaining and Troubleshooting IP Networks.

CCNP ROUTE: Implementing IP Routing

This course teaches students how to implement, monitor, and maintain routing services in an enterprise network. Students will learn how to plan, configure, and verify the implementation of complex enterprise LAN and WAN routing solutions, using a range of routing protocols in IPv4 and IPv6 environments. The course also covers the configuration of secure routing solutions to support branch offices and mobile workers. Comprehensive labs emphasize hands-on learning and practice to reinforce configuration skills.

Course Outline	
Chapter	**Goals**
1. Routing Services	• Explain complex network requirements and design models for implementing advanced routing services in an enterprise network
2. Configuring the Enhanced Interior Gateway Routing Protocol	• Implement EIGRP in an enterprise network
3. Configuring the Open Shortest Path First Protocol	• Implement OSPF in an enterprise network
4. Manipulating Routing Updates	• Implement various mechanisms for controlling routing updates and traffic
5. Implementing Path Control	• Implement path control using IP SLA and PBR
6. Implementing a a Border Gateway Protocol Solution for ISP connectivity	• Implement BGP to allow an enterprise network to connect to an ISP
7. Implementing Routing Facilities for Branch Offices and Mobile Workers	• Describe a basic implementation for branch office and mobile worker connectivity
8. Implementing IPv6 in an Enterprise Network	• Describe and configure IPv6 in an enterprise network

CCNP SWITCH: Implementing IP Switching

This course teaches students how to implement, monitor, and maintain switching in converged enterprise campus networks. Students will learn how to plan, configure, and verify the implementation of complex enterprise switching solutions. The course also covers the secure integration of VLANs, WLANs, voice, and video into campus networks. Comprehensive labs emphasize hands-on learning and practice to reinforce configuration skills.

Course Outline	
Chapter	**Goals**
1. Analyzing the Cisco Enterprise Campus Architecture	• Assess the structure and components used to build or expand an enterprise campus network
2. Implementing VLANs in Campus Networks	• Implement VLANs in campus networks
3. Implementing Spanning Tree Protocol	• Implement, monitor, and maintain spanning tree protocol in an enterprise campus network
4. Implementing InterVLAN Routing	• Implement, monitor, and maintain interVLAN routing in an enterprise campus network
5. Implementing High Availability and Redundancy in a Campus Network	• Configure and optimize high availability on switches to provide Layer 3 redundancy
6. Securing the Campus Infrastructure	• Describe and implement LAN security features
7. Preparing the Campus Infrastructure for Advanced Services	• Plan and prepare for advanced services in a campus infrastructure

CCNP TSHOOT: Maintaining and Troubleshooting IP Networks

This course teaches students how to monitor and maintain complex, enterprise routed and switched IP networks. Skills learned include the planning and execution of regular network maintenance, as well as support and troubleshooting using technology-based processes and best practices, based on systematic and industry recognized approaches. Extensive labs emphasize hands-on learning and practice to reinforce troubleshooting techniques. CCNP ROUTE and CCNP SWITCH are both prerequisites for this course.

Course Outline	
Chapter	**Goals**
1. Planning Maintenance for Complex Networks	• Plan and document the most common maintenance functions in complex enterprise networks
2. Troubleshooting Processes for Complex Enterprise Networks	• Develop a troubleshooting process to identify and solve problems in complex enterprise networks
3. Using Maintenance and Troubleshooting Tools and Applications	• Select tools that best support specific troubleshooting and maintenance processes in large, complex enterprise networks
4. Maintaining and Troubleshooting Campus Switched Solutions	• Practice maintenance procedures and fault resolution in switched environments
5. Maintaining and Troubleshooting Routing Solutions	• Practice maintenance procedures and fault resolution in routing environments
6. Troubleshooting Addressing Services	• Troubleshoot NAT/PAT, DHCP, and other services
7. Troubleshooting Network Performance Issues	• Identify and troubleshoot network performance issues
8. Troubleshooting Converged Networks	• Troubleshoot wireless connectivity, VoIP, and video
9. Maintaining and Troubleshooting Network Security Implementations	• Practice maintenance procedures and fault resolution in a secure infrastructure
10. Review and Preparation for Troubleshooting Complex Enterprise Networks	• Practice maintenance procedures and fault resolution in a complex environment

Learning Environment

CCNP can be delivered as an independent curriculum or integrated into a broader course of study, such as technology or IT-related degree and diploma programs or continuing education programs. The curriculum can be offered in an in-person or a blended distance learning (BDL) environment.

The curriculum was designed to be delivered by certified Networking Academy instructors, using a blend of lectures, lab activities, case studies, and assessments. Each course uses a textbook developed and published by Cisco Press in close collaboration with Networking Academy. All course elements are tightly aligned with the textbooks.

All hands-on labs in the course can be completed on physical equipment or in conjunction with the NDG NETLAB solution.

Industry-Recognized Certification

The CCNP curriculum helps students prepare for the Cisco CCNP certification exams. The CCNP certification validates a network professional's ability to install, configure, and troubleshoot converged local and wide area networks.

CCNP offers a career development path for Cisco CCNA certified network engineers and a solid foundation for those who are interested in the Cisco CCIE® certification. The CCNP certification requires candidates to pass three 120-minute exams—ROUTE #642-902, SWITCH #642-813, and TSHOOT #642-832—that validate the key competencies of network engineers.

Careers

The CCNP curriculum also helps students develop networking skills and knowledge that extend beyond the minimum requirements for the CCNP certification. The curriculum was designed to reflect the job skills and responsibilities that are associated with professional-level job roles such as network engineer, systems engineer, network support engineer, network administrator, network consultant, and system integrator.

Cisco Networking Academy

In partnership with schools and organizations around the world, the Cisco Networking Academy program delivers a comprehensive learning experience to help students develop ICT skills for entry-level career opportunities, continuing education, and globally recognized career certifications. The curricula also help students build 21st century skills such as collaboration and problem solving by encouraging the practical application of knowledge through hands-on activities and network simulations.

Networking Academy teaches ICT skills to students from virtually every socioeconomic background and region of the world. Students gain the skills needed to pursue networking careers in a variety of industries such as healthcare, technology, financial services, fashion, entertainment, and more. Students also gain access to a global support group, career developments tools, and social networking resources to help them become architects of the human network.

For More Information

Cisco Networking Academy www.cisco.com/go/netacad

Course and Certifications www.cisco.com/go/netacadcourses

Locate an academy www.cisco.com/go/academylocator

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