Cisco | Networking Academy®
Mind Wide Open™

CCNA Exploration

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 CCNA® Exploration curriculum provides an integrated and comprehensive coverage of networking topics, from fundamentals to advanced applications and services, while providing opportunities for hands-on practical experience and soft-skills development.

The curriculum emphasizes critical thinking, problem solving, collaboration, and the practical application of skills in a real world environment. All courses include embedded, highly interactive e-doing activities that stimulate learning and improve knowledge retention, hands-on labs, simulation-based learning activities, and online assessments.

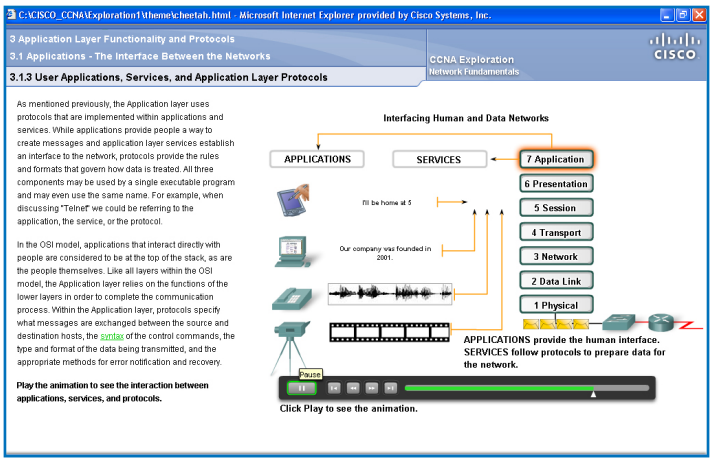
CCNA Exploration helps prepare students for entry-level career opportunities, continuing education, and the globally-recognized Cisco CCNA certification. In addition, the courses help provide learning pathways from secondary to postsecondary and higher education institutions.

> "CCNA Exploration will help you become valuable in a world that depends more and more on networks."
>
> —CCNA Exploration instructor

Features

CCNA Exploration teaches networking based on technology, covering networking concepts using a top-down, theoretical, and integrated approach – from network applications to the network protocols and services provided to those applications by the lower layers of the network. CCNA Exploration includes the following features:

- Students learn the basics of routing, switching, and advanced technologies to prepare for Cisco CCNA certification and entry-level networking careers
- The curriculum discusses networking concepts in depth and uses language that allows for integration with engineering concepts, providing a deep, theoretical understanding of networking concepts for experienced learners with advanced problem-solving and analytical skills.
- Courses emphasize critical thinking, problem solving, collaboration, and the practical application of skills
- Rich multimedia content, including Flash-based interactive activities, videos, games, and quizzes, addresses a variety of learning styles and help stimulate learning and increase knowledge retention
- Hands-on labs and Packet Tracer simulation-based learning activities help students develop critical thinking and complex problem solving skills
- Innovative assessments provide immediate feedback to support the evaluation of knowledge and acquired skills
- Provides students with the skills needed to succeed in networking-related degree programs



21st Century Skills

CCNA Exploration integrates practical skills into the technical curriculum to create a learning experience for success 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 their future education and in the 21st century global workplace.

Assessments

Innovative formative and summative assessments are integrated into the CCNA Exploration curriculum and supported by an advanced online delivery system. Immediate, rich feedback supports instructor and student evaluation of acquired knowledge and skills. Assessments can be as simple as a multiple choice question or as complex as troubleshooting a simulated network.

Packet Tracer

Packet Tracer is a powerful network simulation program developed by Networking Academy that allows students to experiment with network behavior and ask "what if" questions. As an integral part of the CCNA Exploration curriculum, Packet Tracer provides simulation, visualization, authoring, assessment, and collaboration capabilities and makes teaching and learning complex technology concepts easier.

Packet Tracer supplements physical equipment by allowing students to create a network with an almost unlimited number of devices, encouraging open practice, discovery, and troubleshooting. The simulation-based learning environment helps students develop 21st century skills such as decision making, creative and critical thinking and problem solving. Packet Tracer simulation activities are embedded in all CCNA Exploration courses.

E-doing

E-doing is a design philosophy that applies the principle that people learn best by doing. CCNA Exploration includes embedded, highly interactive e-doing activities to help stimulate learning and increase knowledge retention.

Rich multimedia content, including Flash-based interactive activities, videos, games, and quizzes, address a variety of learning styles and make the whole learning experience much richer—and that makes understanding the content much easier.

Student Focus

CCNA Exploration is designed for students with advanced problem solving and analytical skills, such as students pursuing degrees in engineering, information technology, math, or science. Students are expected to know binary math and understand the concept of algorithms.

The curriculum offers a comprehensive and theoretical learning experience for analytical students, and uses language that aligns well with engineering concepts. Interactive activities are embedded in the curriculum, along with detailed, theoretical content.

Students progress from structured, easy-to-follow labs to more advanced labs that build critical thinking and problem solving skills and encourage exploration and research. Students may need to rely on additional resources to derive final solutions for the more complex labs.

CCNA Exploration helps students advance their technical knowledge and skills for academic success and career readiness. The curriculum encourages students to continue their education in networking-related degree programs and also prepares students for entry-level networking careers:

- Designed for students who want to pursue additional technology or engineering education
- Prepares students for entry-level IT careers after the completion of the four-course curriculum

Course Description

This curriculum teaches networking based on technology, using a top-down, theoretical, and integrated approach. The CCNA Exploration curriculum consists of four courses that offer flexibility in the delivery of the courses:

- Network Fundamentals
- Routing Protocols and Concepts
- LAN Switching and Wireless
- Accessing the WAN

Network Fundamentals is the first course and it has no prerequisites. It is a prerequisite for the other three courses. Routing Protocols and Concepts is the preferred second course in the sequence.

Course Flow

The curriculum explains the role and nature of the main application protocols and their relation to protocols and services provided to them by the lower layers of the network. All courses are technology focused, and students thoroughly learn each technology (routing, switching, and WANs) within a single course.

Following a top-down approach, the first course introduces applications and application services very early in the curriculum to provide a foundation. Advanced technologies (voice, video, wireless, and security) are also introduced.

Routing and switching topics and concepts are grouped to allow for a higher level of flexibility in the course delivery. All routing topics are covered in the Routing Protocols and Concepts course and all switching topics are covered in the LAN Switching and Wireless course. These courses can be taught either in sequence or simultaneously.

The last course, Accessing the Wan, thoroughly covers all WAN technologies.

All courses include advanced and challenging labs and activities that allow students to visualize and gain hands-on experience with the application protocols and services introduced in the course.

Learning Environment

CCNA Exploration can be delivered as an independent curriculum or integrated into a broader course of study, such as degree programs in IT, engineering, math, or science.

While primarily designed for postsecondary institutions, CCNA Exploration is appropriate for students at many education levels if they have the required skills, and if the instructional approach complements their learning style and educational goals.

Industry Recognized Certification

Students learn the basics of routing, switching, and advanced technologies to help them prepare for the Cisco CCNA® certification exam. The CCNA certification is highly valued in the global networking industry and provides validation of the skills and knowledge required for entry-level networking careers.

Students who complete all four CCNA Exploration courses will be prepared for the industry-standard CCNA certification exam.

Careers

The curriculum also helps students develop networking skills and knowledge that extend beyond the minimum requirements for the CCNA certification. CCNA Exploration emphasizes practical experience to help prepare students for entry-level networking and IT careers such as the following:

- Network administrator
- Network engineer
- Network installer
- Network technician
- Help desk technician

Students will be prepared to pursue IT and networking careers in a variety of industries such as healthcare, financial services, fashion, entertainment, and more. Today nearly every company in every industry relies on IT, so the skills learned in CCNA Exploration can provide a powerful foundation for a career in almost any field a student may choose to pursue.

Skills and Competencies

Here are some examples of the skills students will be able to perform after completing each course:

Network Fundamentals	Routing Protocols and Concepts
Use network protocol models to explain the layers of communications in data networks	Configure and verify router interfaces
Design, calculate, and apply subnet masks and addresses	Demonstrate comprehensive RIPv1 configuration skills
Build a simple Ethernet network using routers and switches	Design and implement a classless IP addressing scheme for a network
Employ basic cabling and network designs to connect devices	Use advanced configuration commands with routers implementing EIGRP
Use Cisco CLI commands to perform basic router and switch configuration and verification	Apply the basic RIPv2 configuration commands and evaluate RIPv2 classless routing updates
Analyze the operations and feature of the transport and network layer protocols and services	Identify the characteristics of distance vector routing protocols
LAN Switching and Wireless	**Accessing the WAN**
Troubleshoot common network problems at Layers 1, 2, 3, and 7 using a layered model approach	Describe the impact of applications (Voice Over IP and Video Over IP) on a network
Interpret network diagrams	Configure, verify, and troubleshoot DHCP and DNS operation on a router
Perform and verify initial switch configuration tasks including remote access management	Verify, monitor, and troubleshoot ACLs in a network environment
Configure, verify, and troubleshoot VLANs, interVLAN routing, VTP, trunking on Cisco switches, and RSTP operation	Configure and verify a basic WAN serial connection, a PPP connection between Cisco routers, and Frame Relay
Manage IOS configuration files	Configure and verify a PPP connection between Cisco routers, and Frame Relay on Cisco routers
Identify the basic parameters to configure a wireless network and common implementation issues	Troubleshoot WAN implementation issues

Translated and Accessible

We are committed to making our courses and documentation accessible and usable by all students to help them achieve their goals. Translation of the CCNA Exploration curricula improves student outcomes by facilitating learning success on a global scale. Our translation strategy is focused on the following United Nations (UN) languages: English, French, Russian, Simplified Chinese, and Spanish. These languages are spoken by more than 50 percent of the world's population.

CCNA Exploration is currently available in English, French, Simplified Chinese, and Spanish, and in a number of other languages through contributions by Networking Academy partners and community.

In addition to translated language versions, accessible course versions provide access to CCNA Exploration for students with accessible needs—including those with visual, auditory, and dexterity limitations

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 information and communication technology (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 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.

CCNA Exploration encourages students to explore networking concepts using tools such as Packet Tracer. Packet Tracer is a powerful network simulation program developed by Cisco that allows students to experiment with network behavior and develop critical thinking, collaboration, and problem solving skills, while gaining practical knowledge.

For More Information

Cisco Networking Academy
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Course Catalog
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