



## CCNA Discovery

### 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® Discovery curriculum provides the experience needed to help meet the growing demand for ICT professionals. CCNA Discovery provides general networking theory, practical experience, and opportunities for career exploration 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 Discovery helps prepare students for entry-level career opportunities, continuing education, and globally-recognized Cisco certifications. In addition, the courses help provide learning pathways from secondary to postsecondary institutions.



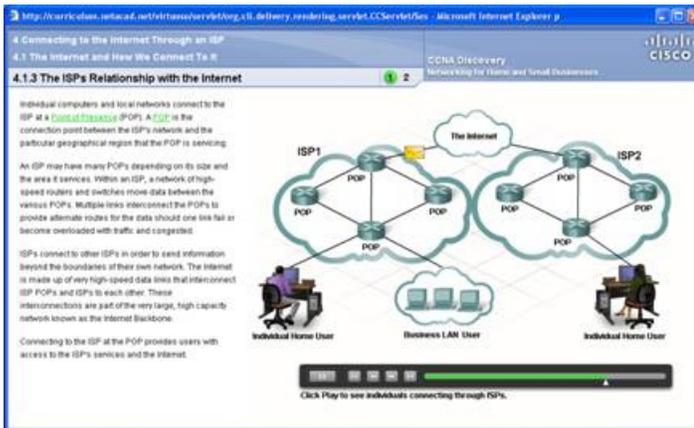
"I'm a very hands-on learner, so the interactive activities helped me to practice what I was reading and provided explanations when I was doing something wrong"

—former CCNA Discovery student

### Features

CCNA Discovery teaches networking based on application, covering networking concepts within the context of network environments students may encounter in their daily lives—from small office and home office (SOHO) networking to more complex enterprise and theoretical networking models later in the curriculum. CCNA Discovery includes the following features:

- Students learn the basics of routing, switching, and advanced technologies to prepare for Cisco CCENT and CCNA certifications and entry-level networking careers
- 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
- Networking concepts are explained using language that works well for learners at all levels and embedded interactive activities break up reading of the content and help reinforce understanding
- Case studies provide critical and strategic thinking scenarios to help students develop soft skills such as analyzing business objectives, planning timelines and resources, and delivering customer presentations



## 21st Century Skills

CCNA Discovery 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 develop problem solving, critical thinking, collaboration, teamwork, negotiation, and entrepreneurship - skills which can help them succeed in the 21st century global workplace.

## Assessments

Innovative formative and summative assessments are integrated into the CCNA Discovery 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 Discovery 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 Discovery courses.

## E-doing

E-doing is a design philosophy that applies the principle that people learn best by doing. CCNA Discovery 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 Discovery is designed for students with basic PC skills and foundational math and problem solving skills. Students are not expected to have knowledge of binary math and algorithms. The curriculum provides detailed explanations and tools such as a binary calculator

The curriculum offers an engaging learning experience for more visual and kinetic learners. Many interactive activities are embedded in all of the courses to break up the text and help reinforce student comprehension. In addition, a large number of labs encourage additional hands-on practice. Students progress from structured, easy-to-follow labs with detailed instructions to help students develop and practice their understanding, to more challenging tasks that build critical thinking and problem solving skills.

CCNA Discovery provides a pathway to success for students who plan to pursue higher education or begin their careers. The curriculum encourages students to consider additional IT education, but also emphasizes applied skills and hands-on experience early in the curriculum.

- Designed to make IT relevant and applicable to a student's daily life
- Prepares students for entry-level IT careers as early as the first two courses

## Course Description

CCNA Discovery teaches networking based on application, covering concepts based on the types of practical networks students may encounter from home and small offices, to more complex enterprise models. The curriculum consists of four courses:

- Networking for Home and Small Businesses
- Working at a Small-to-Medium Business or ISP
- Introducing Routing and Switching in the Enterprise
- Designing and Supporting Computer Networks

The courses are delivered sequentially, and each course is a prerequisite for the next course.

## Course Flow

The curriculum begins with an exploration of networks found in small office or home office (SOHO) environments, and then proceeds to medium and larger network topologies with higher levels of complexity.

The first course uses a SOHO network to introduce some basic networking concepts such as cabling, addressing, wireless, and security. It also teaches students how to plan, deploy, and troubleshoot a small network.

The second and third courses use the small and medium business and enterprise sized networks to take concepts such as IP addressing, switching, routing, WAN technologies, and security to the next level.

As the complexity and size of the network grows, associated concepts such as advanced routing protocols, enterprise switching, and network performance are introduced.

The fourth course consolidates many of the concepts and introduces elements of network design, equipment selection and configuration, and LAN and WAN addressing. An integrated case study presents critical thinking scenarios to help students develop skills such as analyzing business objectives, determining technical requirements and constraints, planning timelines and resources, and preparing and delivering customer presentations.

Each course includes a troubleshooting chapter, and advanced technologies (voice, video, wireless, and security) are introduced throughout the curriculum.

## Learning Environment

CCNA Discovery can be delivered as an independent curriculum or integrated into a broader course of study, such as technology or continuing education programs.

The curriculum is appropriate for students at many education levels and types of institutions, including high schools, secondary schools, universities, colleges, career and technical schools, community organizations, and other non-traditional learning environments.

## Industry Recognized Certification

Students learn the basics of routing, switching, and advanced technologies to help them prepare for the Cisco CCENT™ certification for entry network technicians and the industry-standard CCNA certification. CCENT and CCNA certifications are highly valued in the global networking industry and provide validation of the skills and knowledge required for entry-level networking careers.

After completing the first two courses of CCNA Discovery, a student can choose to complete the CCENT certification exam, an optional first step toward earning the CCNA certification. CCENT certifies that students have developed the practical skills required for entry-level networking support positions. In addition, this certification is designed to assess a student's aptitude and competence for working with Cisco routers, switches and IOS.

Students who complete all four CCNA Discovery courses will be prepared for the 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 Discovery 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 Discovery 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:

Networking for Home and Small Businesses	Working at a Small-to-Medium Business or ISP
Set up a personal computer system, including the operating system, interface cards, and peripheral devices	Understand the structure of the Internet and how communication occurs between hosts
Plan and install a small network connecting to the Internet	Install, configure, and troubleshoot Cisco IOS devices
Troubleshoot network and Internet connectivity	Plan a basic wired infrastructure to support network traffic
Share resources such as files and printers among multiple computers	Configure a server to share resources and provide common Web services
Recognize and mitigate security threats to a home network	Implement basic WAN connectivity using Telco services
Configure an integrated wireless access point and wireless client	Demonstrate proper disaster-recovery procedures and perform server backups

Introducing Routing and Switching in the Enterprise	Designing and Supporting Computer Networks
Implement a LAN for an approved network design	Gather customer requirements
Configure a switch with VLANs and inter-switch communication	Design a simple Internetwork using Cisco technology
Implement access lists to permit or deny specific traffic	Design an IP addressing scheme to meet LAN requirements
Implement WAN links	Create an equipment list to meet LAN design requirements
Configure routing protocols on Cisco devices	Install and configure a prototype Internetwork
Perform LAN, WAN, and VLAN troubleshooting using a structured methodology and the OSI model	Obtain and upgrade Cisco IOS software in Cisco devices

## 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 Discovery 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 Discovery is currently available in English, French, Russian, 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 Discovery 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 compre-

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

hensive 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.

## For More Information

Cisco Networking Academy  
[www.cisco.com/go/netacad](http://www.cisco.com/go/netacad)

Course Catalog  
[www.cisco.com/go/netacadcourses](http://www.cisco.com/go/netacadcourses)

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