



CCNA Certification Guide

Top Cisco resources to plan
and prepare for certification

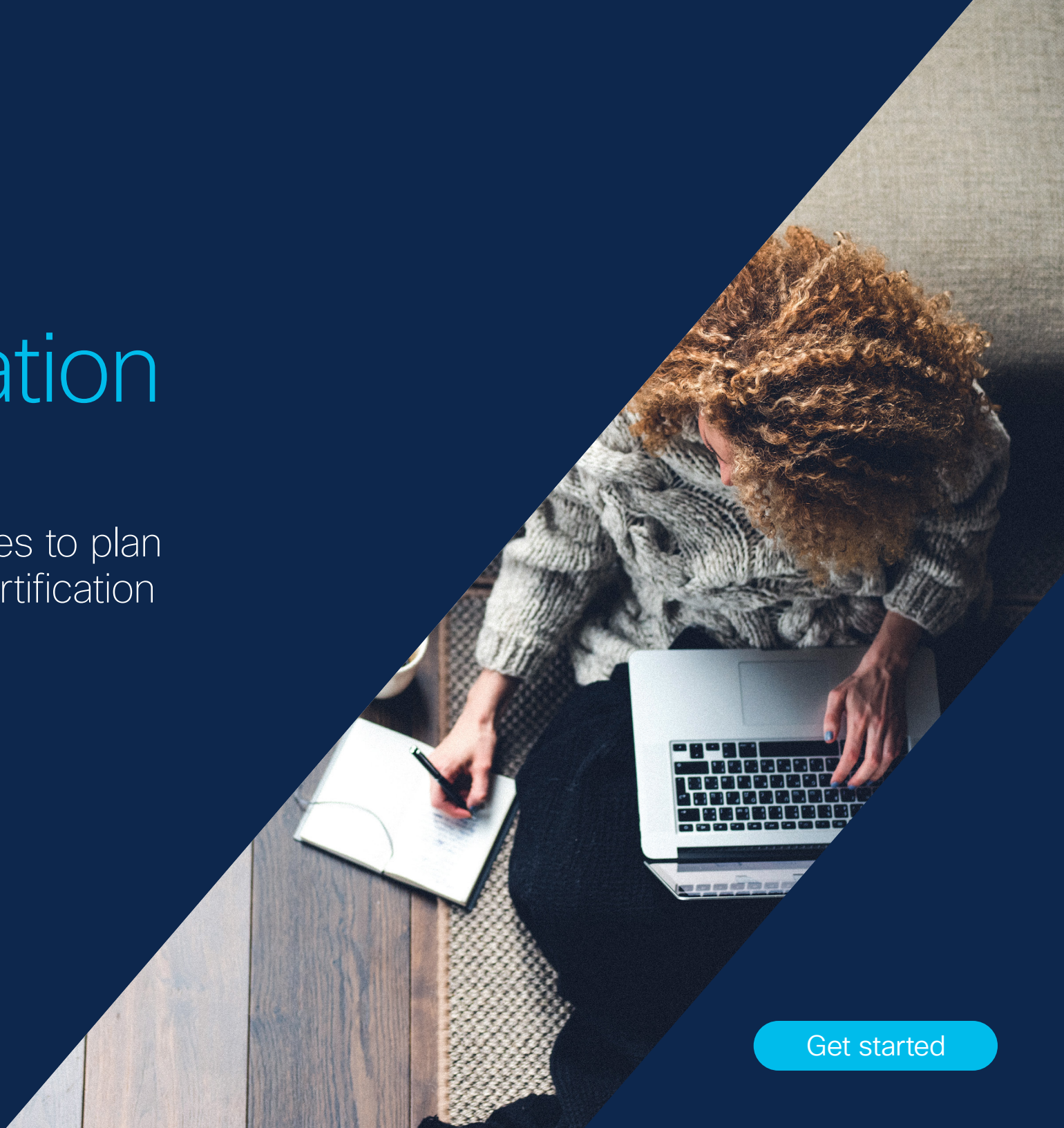


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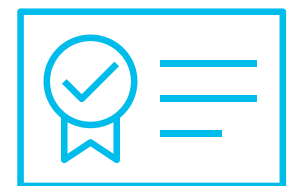
CCNA Overview

If you're looking to embark on a rewarding and lucrative information technology (IT) career, obtaining your Cisco Certified Networking Associate (CCNA) certification is a great place to start.

Earning your CCNA gives you a solid foundation for any field/role/specialty you want to pursue in IT. It covers the basics, from IP addressing to security and automation. A CCNA certification is the perfect start if you know you want to build or support IT infrastructure. You can specialize later.

A CCNA can help you prepare for a wide variety of IT jobs, including:

- Infrastructure Engineer
- Network Engineer
- IT Specialist
- Network Technician
- Network/Systems Administrator
- Business roles in IT organizations, from sales and marketing to the management track



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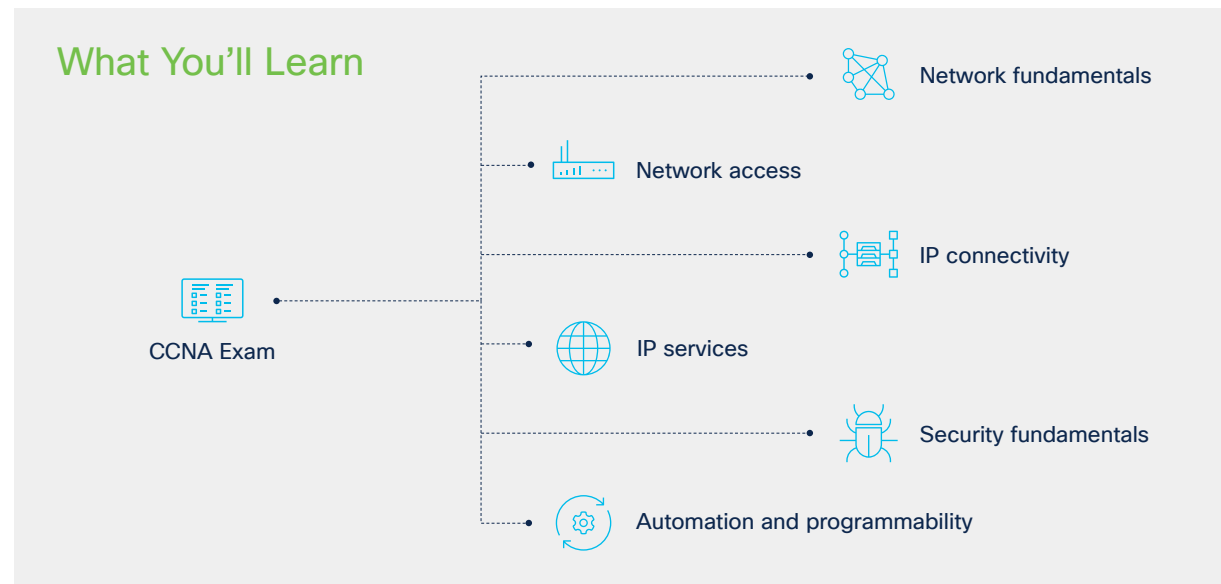
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And while you build your skills, you're also building your income. Here's proof. [Skillsoft's Global Knowledge 2021 IT Skills and Salary Report](#) examined data from over 9,300 technology professionals, with 92 percent holding at least one certification. When surveyed, the most cited benefit of certification was also the top factor attributed to salary increases: an improvement in the quality of their work.

Training and certifications pay off – and organizations know it. Three out of four IT decision-makers worldwide reported a skills shortage in their department – a 145 percent increase since 2016. Even more, almost 50 percent believe that certifications close organizational skills gaps. That makes certified candidates stand out in a pool of applicants during the hiring process.

The network needs you. The field of IT is full of rewarding, meaningful, challenging work. Earning your CCNA certification can make your resume stand out and gets your foot in the door.

The CCNA arms you with a broad range of career skills. Get started today.



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Look ahead - Certification Tracks

The bridge to possible

Cisco certifications take you where you want to go

No matter where you begin, our training and certification programs are the first step towards the IT job you want and rewarding career you envision. Cisco has redesigned the programs to address today's dynamic technologies and prepare you for success. In any technology. At any level. It's your turn now.

Associate	Professional	Expert							
<p>Master the essentials needed to launch a rewarding career and expand your job possibilities with the latest technologies.</p>	<p>Select a core technology track and a focused concentration exam to customize your professional-level certification.</p>	<p>This certification is accepted worldwide as the most prestigious certification in the technology industry.</p>							
<p>Certification Requirements:</p> <p>CCNA 200-301 CCNA</p>	<p>Certification Requirements:</p> <table border="0"> <tr> <td> <p>CCNP Enterprise Core exam: 350-401 ENCOR (Choose one) Concentration exam: 300-410 ENARSI 300-415 ENSDW 300-420 ENSLD 300-430 ENWLSI 300-435 ENAUTO</p> </td> <td> <p>CCNP Service Provider Core exam: 350-501 SPCOR (Choose one) Concentration exam: 300-510 SPRI 300-515 SPI 300-535 SRAUTO</p> </td> <td> <p>CCNP Data Center Core exam: 350-601 DCCOR (Choose one) Concentration exam: 300-610 DCD 300-620 DCAI 300-625 DCSAN 300-630 DCAIA 300-635 DCAUTO</p> </td> <td> <p>CCNP Security Core exam: 350-701 SCOR (Choose one) Concentration exam: 300-710 SNCF 300-715 SISE 300-720 SESA 300-725 SWSA 300-730 SVPN 300-735 SAUTO</p> </td> <td> <p>CCNP Collaboration Core exam: 350-801 CLCOR (Choose one) Concentration exam: 300-810 CLU 300-815 CLA 300-820 CLCE 300-820 CLCNF 300-835 CLAUTO</p> </td> </tr> </table>	<p>CCNP Enterprise Core exam: 350-401 ENCOR (Choose one) Concentration exam: 300-410 ENARSI 300-415 ENSDW 300-420 ENSLD 300-430 ENWLSI 300-435 ENAUTO</p>	<p>CCNP Service Provider Core exam: 350-501 SPCOR (Choose one) Concentration exam: 300-510 SPRI 300-515 SPI 300-535 SRAUTO</p>	<p>CCNP Data Center Core exam: 350-601 DCCOR (Choose one) Concentration exam: 300-610 DCD 300-620 DCAI 300-625 DCSAN 300-630 DCAIA 300-635 DCAUTO</p>	<p>CCNP Security Core exam: 350-701 SCOR (Choose one) Concentration exam: 300-710 SNCF 300-715 SISE 300-720 SESA 300-725 SWSA 300-730 SVPN 300-735 SAUTO</p>	<p>CCNP Collaboration Core exam: 350-801 CLCOR (Choose one) Concentration exam: 300-810 CLU 300-815 CLA 300-820 CLCE 300-820 CLCNF 300-835 CLAUTO</p>	<p>Certification Requirements:</p> <table border="0"> <tr> <td> <p>CCIE Enterprise Infrastructure 350-401 ENCOR</p> </td> <td> <p>CCIE Enterprise Wireless 350-401 ENCOR</p> </td> </tr> </table>	<p>CCIE Enterprise Infrastructure 350-401 ENCOR</p>	<p>CCIE Enterprise Wireless 350-401 ENCOR</p>
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<p>Certification Requirements:</p> <p>Cisco Certified DevNet Associate 200-901 DEVASC</p>	<p>Certification Requirements:</p> <p>Cisco Certified DevNet Professional Core exam: 350-901 DEVCOR (Choose one) Concentration exam: 300-910 DEVOPS 300-915 DEVOT 300-920 DEVWEB</p>	<p>Certification Requirements:</p> <p>Cisco Certified DevNet Expert 350-901 DEVCOR DevNet Expert v1.0 lab</p>							
<p>Certification Requirements:</p> <p>Cisco Certified CyberOps Associate 200-201 CBROPS</p>	<p>Certification Requirements:</p> <p>Cisco Certified CyberOps Professional Core exam: 350-201 CBRCOR (Choose one) Concentration exam: 300-215 CBRFIR 300-220 CBTHD (Coming soon)</p>	<p>"People always want to know who they're talking to. They want to know if you're qualified. Certifications give you instant credibility."</p> <p>Kevin Brown, CyberOps Analyst CCNA & CyberOps Associate Certifications</p>							

400-007 CCDE Written Exam
CCDE v3.0 Practical Exam

Make the Next Move | www.cisco.com/go/certs

As you can see, CCNA is one of many steps you can take on your learning journey. With each step, you build your knowledge base—and your reputation—and become increasingly valuable to any IT organization.

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Cisco certifications are available in multiple levels of expertise and various professional areas.

Earning the certification you need can lead you to the career you want. It can also keep you competitive in a field where 92 percent of IT professionals hold certifications (GK). Cisco's certification portfolio offers more options than ever before, empowering you to customize your learning path to meet your career needs, interests, and aspirations. Since every Cisco exam you pass earns you a certification, each of these milestones you reach tells a new chapter in your story. Here are the different Cisco certification levels you can earn:

[→ Associate](#)

Proof that you've mastered the essentials to build your IT career

[→ Professional](#)

Focus on a core technology track to sharpen your specialized expertise

[→ Expert](#)

The most prestigious certification you can obtain

[→ Specialist](#)

Enhance your networking knowledge in tech such as security, data center, or video

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Knowing these key terms will help you on your CCNA journey.

Application Programming Interfaces (APIs) and REST APIs

APIs are published instructions to interface with a product or service. APIs enable developers to assemble a command or request for a service or data, to submit it, and to receive any output. They are published and maintained by the vendor.

Attack surface

A collection of all the possible paths a hacker or a malware application might follow to compromise protected data.

Authentication (Authentication, Authorization, and Accounting [AAA], Radius)

Authentication is how you control access to your network and prevent intrusions, data loss, and unauthorized users.

Continuous Integration/Continuous Development (CI/CD)

A CI/CD system provides automated builds and tests for creating software, making configuration changes, or completing other deployment tasks.

When using a CI/CD pipeline, coders can continually merge their changes to a main branch of an existing application, run integration tests on changes, keep changes small, and minimize the potential for problems due to multiple, gated test result requirements.

Data formats

(XML, JavaScript Object Notation [JSON], YAML Ain't Markup Language [YAML]) Common data formats that are both machine-readable and human-readable for providing input to programs and applications using interfaces (APIs).

DevOps

A combination of Development (Dev) and Operations (Ops), DevOps focuses on automation, regularly allowing failures that can be automatically fixed with mitigated risks, as well as connecting business outcomes to the availability goals for a given system. The DevOps movement makes developers responsible for deployment and also has teams use coding workflows and tools to manage infrastructure.

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DNS

The Domain Name Service (DNS) is like a phone book that translates IP addresses into human readable form. For example, `www.facebook.com` is `157.240.22.35` (IPv4), or `2001:558:feed::1`.

Infrastructure, containers, and virtual machines

Infrastructure is a generic term for the underlying devices, physical or virtual, that provide computing power or storage capacity or networks, used to deliver software or applications. Virtual machines can emulate a computer system and are typically built as images, providing the same functionality as the physical computer. Containers package up software and dependencies into one descriptive file that contains everything to run an application, regardless of the underlying systems.

IP address (IPv4 and IPv6, classes, Open Systems Interconnection [OSI] and TCP/IP networking stack)

IP Addresses are like street addresses. Every service or server on the internet has a unique address where it can be accessed.

Malware analysis

The process of determining the functionality, origin, and potential impact of a given malware.

Network Address Translation (NAT)

IPv4 is limited to approximately 4 billion unique addresses. NAT is a scheme that allows a single address for a network (such as a small business) to be shared by all the users and devices on your network.

Network data models (YANG, RESTCONF, NETCONF)

YANG is a data modeling language for configuration and state data for network devices. It stands for Yet Another Next Generation. RESTCONF and NETCONF are protocols defined by a standards body, so that you can manage configuration of network devices modeled with YANG.

Packet

A unit of data that can be sent from one network endpoint to another. A packet has headers, footers, and a data payload, or some other information that it carries. The headers encode details about how to route the packet.

Python

A general-purpose, interpreted programming language. Python emphasizes code readability with whitespace requirements, so it is approachable and powerful. Many network automation applications and tutorials are centered around Python.

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Role-based access control

Access to data given to a person based on their job function or role.

Router

A router connects different networks together, providing a route between two computers (or servers) in different networks. Routers build the internet.

Routing protocols such as Border Gateway Protocol (BGP), Enhanced Interior Gateway Routing Protocol (EIGRP), and Open Shortest Path First (OSPF)

Routing protocols provide the overall map and directions for a packet to find the proper destination.

Security Incident and Event Management (SIEM)

An approach to security management that gathers data from multiple sources (such as syslog, device events, and error logs), processes the data (including correlation to identify potential threats), and raises an alert or ticket for further investigation if the threat is deemed to be real.

Security Orchestration and Automation Response (SOAR)

An approach that enables SOC teams to manage tickets raised through SIEM for threat response. SOAR enables automated workflows for responding to the threats.

Software Development Kit (SDK)

A platform for writing programs and applications targeting an API. It often includes documentation, configurations, and tools (such as compilers or linkers) to write and execute the code to interface with the API.

Subnet

Subnetting is a scheme for efficiently apportioning or assigning your IP addresses to systems in your organization.

Switch

A switch is a component that is used to build a network and to connect hosts and servers within a network. A switch cannot route packets or data between networks.

Threat intelligence

Evidence-based knowledge, including context, mechanisms, indicators, implications, and action-oriented advice about an existing or emerging hazard to assets.

Threat hunting

The process of proactively and iteratively searching through networks to detect and isolate advanced threats.

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Time-based access control

Temporary access to data given to a person on a need basis for a period of time.

VLAN

A Virtual Local Area Network is a simple scheme to build in access control and restrictions within a network. It allows you to keep “Sales” separate from “Engineering,” for example, and to prevent inappropriate access to data.



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This is where the real work happens. You'll need two things: the exam blueprint as well as a strategy for learning, studying, and practicing.



Keep this in mind: when the verb for a topic area is “describe,” you won’t need the same depth of knowledge for that topic as when the verbs are “configure,” “troubleshoot,” and “design.”

There are several training options to help you prepare:

- [Cisco Guided Study Groups](#) offer you a 180-day journey of certification preparation. This approach offers a best-of-all-worlds path toward certification, with the flexibility and convenience of e-learning plus the motivation and accountability of working with a live coach.
- Use the [Cisco Learning Locator](#) to find instructor-led courses—both in-person and virtual.
- If books are your thing, check out the Cisco Press [CCNA 200-301 Official Cert Guide](#), a perfect addition to your self-study plan.
- Browse available self-paced e-learning courses from the [Cisco Learning Network Store](#).
- The [CCNA Preparation Bundle](#) helps you prepare for the 200-301 Cisco Certified Network Associate (CCNA) exam. For a limited time, save 16 percent off the bundle price.



Regardless of how you prepare for the exam, it's crucial to get your hands on the gear to practice. This is called “labbing,” as in “practicing in a lab environment.” Your ability to execute critical tasks will be tested on the exam, so you need to practice. Lab early. Lab often. Then lab some more.

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CCNA certification exams are administered by our testing partner, Pearson VUE, as proctored exams. When you take the exam, you'll be in a controlled environment to ensure fairness and to give you the best, most consistent experience.

The CCNA exam is the basis for the certification exam. It defines the contents of both the exam and the official training course, and it should be your roadmap for studying. If you can successfully complete the tasks defined for each topic, you're ready for the exam.

And now you can take certification exams online, so you can stay on track, even when you can't travel to a testing center.



Visit www.cisco.com/go/onlinetesting to perform a system check.

During the exam, it will be just you, your knowledge, and experience against the test. Keep track of the time, read each question carefully, answer each one (and if you don't know the answer, try to eliminate one or more options and then guess), and keep moving to the end.



To view a walk-through demonstration of the various exam question types and how they function, check out the [Cisco Certification Exam Tutorial Videos](#) page.

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[→ CCNA Essentials](#)

Still thinking about getting certified? Click CCNA Essentials for more details about the program. It will help you make the best decision.

[→ CCNA Prep](#)

Already decided to get certified, and want to start studying? Click CCNA Prep to find the ultimate resources to develop your self-study plan.

We have many resources to help your progress. We encourage you to sign up for the Cisco Learning Network to be able to access learning resources, including videos, learning maps and more. Just as an example the CCNA Training Video learning map has over 52 hours of self-study preparation tools and content.

Other CCNA resources include:

[CCNA Certification](#)[Download 200-301 CCNA Exam: Cisco Certified Network Associate Exam Topics](#)[Cisco Learning Network CCNA Community](#)[CCNA Certification Training Videos](#)[Cisco Learning Blog](#)[Certification Blogs](#)

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These are exciting times to be working in technology. The IT landscape evolves daily, but through it all, knowledge of routing and switching remain the core foundation on which you can build your career.

So many vibrant technological developments culminating all at once can seem overwhelming. You need to be able to catch the wave of change and ride it smoothly. This is precisely why we believe right now is the best time to explore how training and certification can keep you focused and help make you a technical superstar in your organization.

Earning a CCNA is the gateway to a rewarding and lucrative IT career. With your CCNA, you'll be more knowledgeable and confident about all things IT.

Use this [email template](#) to let your manager know why training and certification is so beneficial for you—and for them. Get the help you need to transform your career, your income, and your skill set.

But beyond that, training and certification can transform your life. By learning the latest methods and skills in IT, you'll gain the self-confidence that comes from setting goals, then accomplishing them. And that self-confidence will continue to empower your career.



Ask your manager to sponsor your training. Once they understand the benefits to your organization, they will be eager to learn more and support you with next steps.



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