



Cisco Certified Network Associate Guide

Top Cisco resources to plan and prepare for certification

Get started



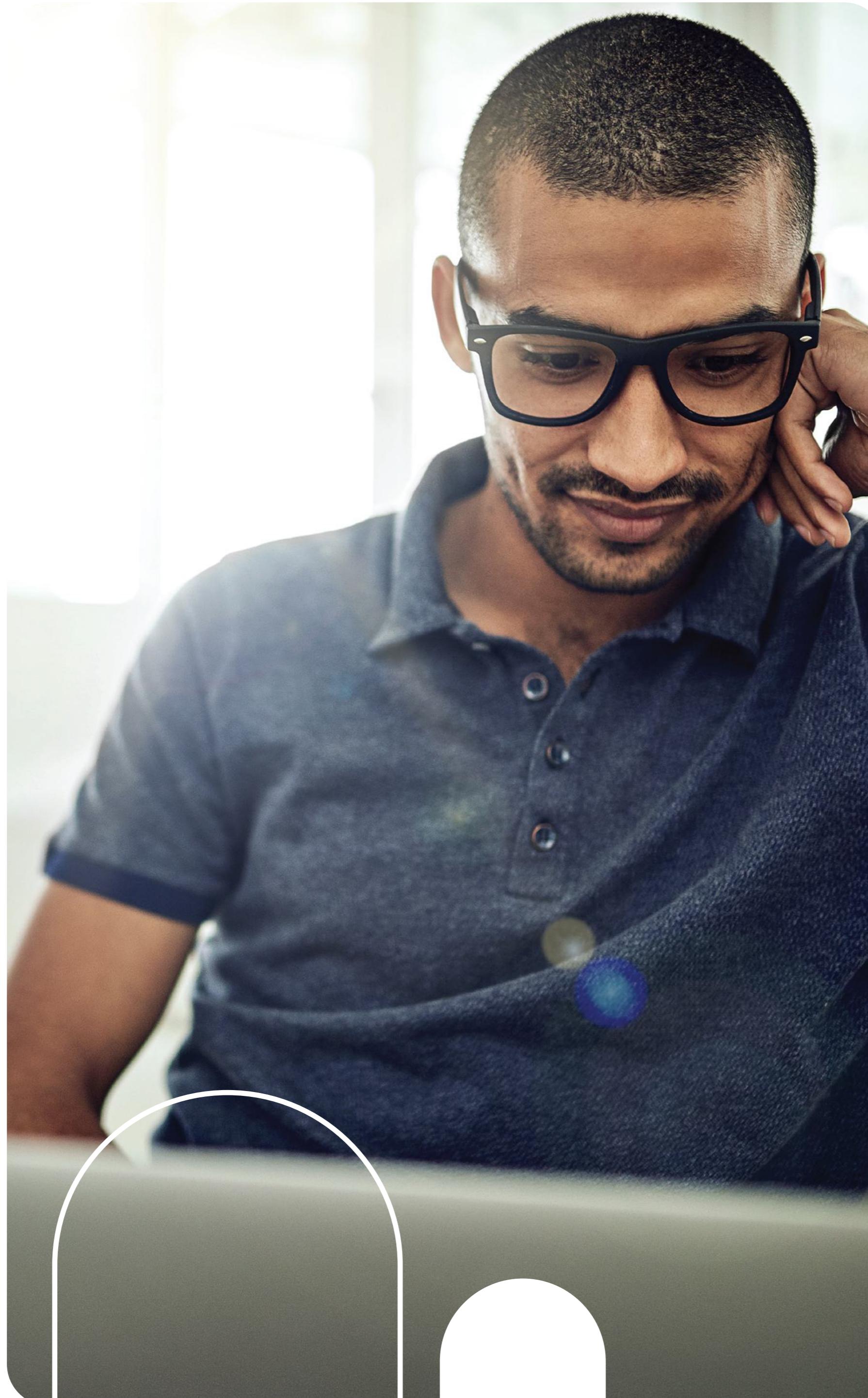


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Cisco Certified Network Associate certification overview

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, or specialty you want to pursue in IT. It covers the basics, from IP addressing to security, automation, and AI. 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:

- Network engineer
- Network support technician
- Network administrator
- Business roles in IT organizations, from sales and marketing to the management track

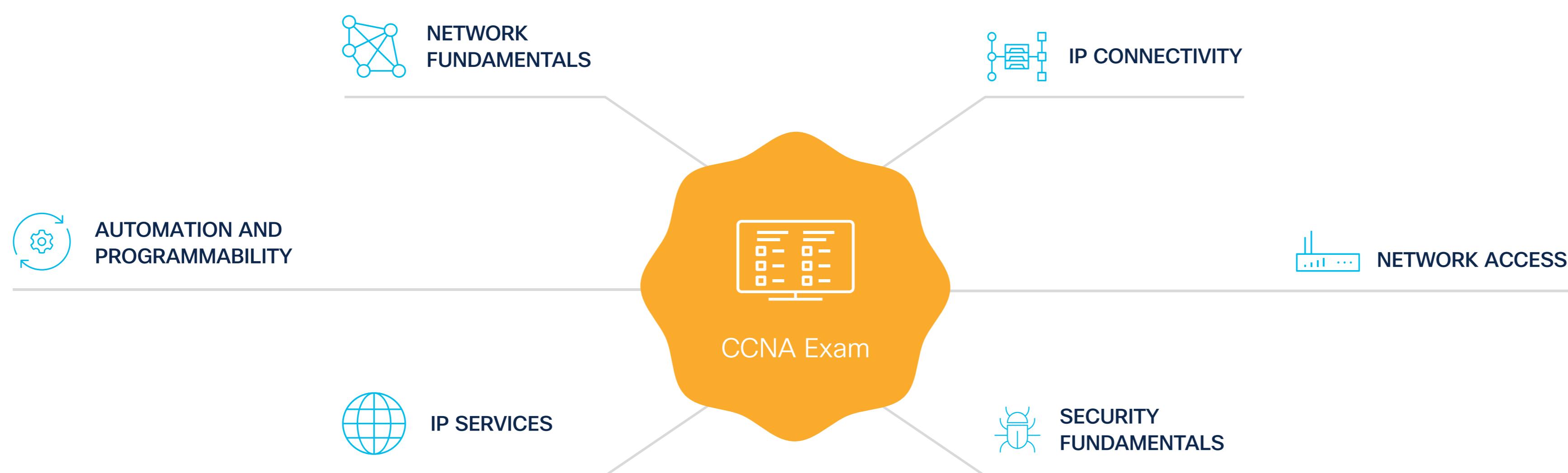
And while you build your skills, you're also building your income. Here's proof. Skillsoft's Global Knowledge 2023 IT Skills and Salary Report¹ examined data from thousands of IT professionals. Eighteen percent estimated that the annual value of being certified is \$30,000 or more.

Training and certifications pay off— and organizations know it. Over 35% of respondents listed a boost in productivity as

the top benefit of a certified staff. Even more, 34% of respondents believe that certifications close organizational skill 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.



1. Skillsoft, The 20 top-paying certifications going into 2024., <https://www.skillsoft.com/blog/top-paying-it-certifications>, November 14, 2023.



Look ahead - certification tracks

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.



Achieve your potential with Cisco Certifications

You have a goal, and Cisco Certifications get you there. Certifications get your foot in the door, put you on the road to success, and keep you learning for life. So, embrace today's dynamic technologies, find the IT job you want, and the rewarding career you dream about. It all begins with Cisco Certifications and tech learning shaped to you.

Entry-level

Validate your skills and readiness for the field.

Certification Requirements: [CCST](#)

Required Exam: Cisco Certified Support Technician (CCST) Cybersecurity Exam

Cisco Certified Support Technician (CCST) Networking Exam

CCST certifications are ideal for those seeking an entry-level IT job or pursuing higher-level certifications like CCNA and CyberOps Associate.

Associate

Master the essentials needed to launch a rewarding career.

Certification Requirements: [CCNA](#)

200-301 CCNA

Professional

Customize your professional certification by choosing a technology track and concentration exam. This will help you develop specialized skills and boost your expertise.

Certification Requirements:	CCNP Enterprise	CCNP Service Provider	CCNP Data Center	CCNP Security	CCNP Collaboration
Core exam:	350-401 ENCOR	350-501 SPCOR	350-601 DCCOR	350-701 SCOR	350-801 CLCOR
(Choose one) Concentration exam:	300-410 ENARSI 300-415 ENSDWI 300-420 ENSLD 300-425 ENWLSD 300-430 ENVLSI	300-510 SPR 300-515 SPVI	300-610 DCID 300-615 DCIT	300-710 SNCF 300-715 SISS	300-810 CLICA 300-815 CLACCM 300-820 CLCEI
	300-435 ENAUTO 300-440 ENCC	300-540 SPLOUD	300-630 DCACIA	300-725 SWSA	300-835 CLAUTO
	(Coming May 2023)	(Coming September 2023)			

Expert

CCIE certification is a highly-regarded achievement in the tech industry worldwide. It requires in-depth networking knowledge, practical experience, and passing a challenging exam.

Certification Requirements:	CCIE Enterprise Infrastructure	CCIE Enterprise Wireless
Core exam:	350-401 ENCOR	350-401 ENCOR
CCIE Service Provider	CCIE Enterprise Infrastructure v1.0 lab	CCIE Enterprise Wireless v1.0 lab
CCIE Data Center	350-501 SPCOR	CCIE Data Center v3.0 lab
CCIE Security	350-701 SCOR	CCIE Security v6.0 lab
CCIE Collaboration	350-801 CLCOR	CCIE Collaboration v3.0 lab
CCDE	400-007 CCDE Written Exam CCDE v3.0 Practical Exam	

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



Kevin Brown
CyberOps Analyst
CCNA & CyberOps Associate Certifications

“People always want to know who they're talking to. They want to know if you're qualified. Certifications give you instant credibility.”

[Download poster](#)

CCNA Guide | Public

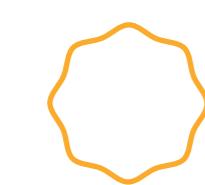
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Cisco certifications are available in multiple levels of expertise and various professional areas.

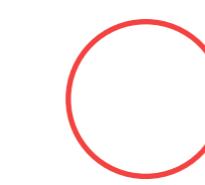
Earning the certification you need can lead you to the career you want. It can also keep you competitive in a field where 92 percent of IT professionals hold certifications. Cisco's certification portfolio offers more options than ever before, empowering you to customize your learning path to meet your 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 levels of Cisco certifications you can earn:



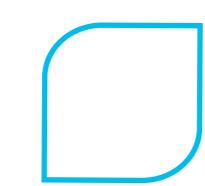
Entry →

Validate your skills and qualifications for entry-level IT roles



Expert →

The most prestigious certification you can obtain



Associate →

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



Specialist →

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



Professional →

A core technology track to sharpen your specialized expertise

Vocabulary

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 (CICD)

A CICD system provides automated builds and tests for creating software, making configuration changes, or completing other deployment tasks. When using a CICD 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.

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.

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 (Security Incident and Event Management) 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.

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.



Training options

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

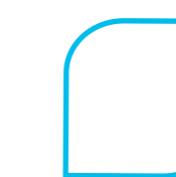
The Cisco Certified Network Associate certification exam topics are the basis for the exam. They define the contents of both the exam and the official training course, and it should be your roadmap for studying. If you can successfully complete the tasks defined for each topic, you're ready for the exam.

There are several training options to help you prepare:

- 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, Volume 2](#), a perfect addition to your self-study plan.
- 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.
- The [Implementing and Administering Cisco Solutions | CCNA](#) Learning Path will build the skills you need to install, operate, configure, and verify basic networks, while you prepare to take the 200-301 CCNA exam.
- The [Cisco Exam Review: CCNA](#) helps you prepare to take the CCNA exam. You will gain practical experience for exam topics by testing your key knowledge, skills, and abilities.



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.”



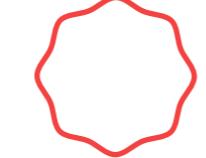
Regardless of how you prepare for the exam, it’s crucial to get your hands on the gear to practice. This is called “labbing,” as in “practicing in a lab environment.” Your ability to execute critical tasks will be tested on the exam, so you need to practice. Lab early. Lab often. Then lab some more.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

Exam overview

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 topics are the basis for the certification exam. They define the contents of both the exam and the official training course, and should be your roadmap for studying. If you can successfully complete the tasks defined for each topic, you're ready for the exam.

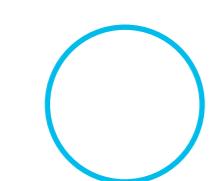
And you can take certification exams online, so you can stay on track, even when you can't travel to a testing center.

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

 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.

 [200-301 CCNA Exam Topics](#)

Resources



CCNA Essentials →

Still thinking about getting certified? Select 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? Select 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 plan and more. Just as an example the CCNA Training Video learning plan has over 52 hours of self-study preparation tools and content.

Other CCNA resources include:

[CCNA Certification](#)

[Download 200-301 CCNA Exam Topics](#)

[CCNA Certification Community](#)

[CCNA Certification Training Videos](#)

[Cisco Learning Blogs](#)

[Cisco Certification Blogs](#)

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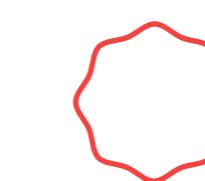
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Next steps

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.

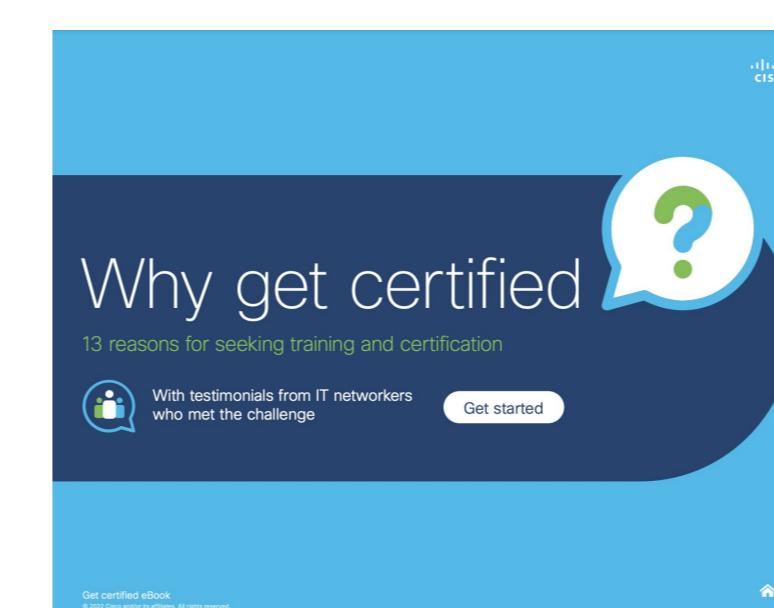
So many vibrant technological developments culminating all at once can seem overwhelming. You need to be able to catch the wave of change and ride it smoothly. This is precisely why we believe right now is the best time to explore how training and certification can keep you focused and help make you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



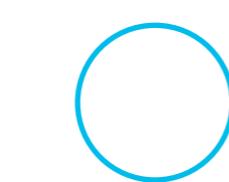
[Download e-book](#)

So many opportunities not to miss

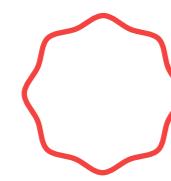
Because CCNA covers so many IT fundamentals, it's a great way to stand out no matter where your career takes you. Check out the following pages to add more reasons for getting your CCNA certification.



[Land your dream role in tech.](#) The tech industry is growing rapidly, adding hundreds of thousands of new jobs a year. It's a great time launch or expand your career, and no matter what inspires you, your dream role is out there.



Learn how earning a Cisco certification has positively changed the life and career for others. Meet the professionals who connect, secure, and automate the world while you find out the secrets to their success. Get inspired! [View certification success stories.](#)



Certifications matter. To employers they indicate the promise of higher productivity and proof of your abilities. For new and current IT professionals, they reflect far more. [Find out why.](#)