

Getting Started with Cisco Associate- Level Certifications

CCNA®[®], Cisco® Certified CyberOps Associate,
and Cisco Certified DevNet Associate



The network
needs you



The network needs you

The field of information technology (IT) is full of rewarding, meaningful, challenging work. From building and supporting IT infrastructure to selling, marketing, and leading, Cisco associate-level certifications can make your résumé stand out and give you a foot in the door. Here's what you need to know to get started.

Step 1: Choose your technical area

Step 2: Pick up the vocabulary

Step 3: Learn the technology

Step 4: Take the exam

Step 5: Update your résumé

Or jump straight to a certification



[CCNA is about building connections](#)

[CyberOps is about securing digital assets](#)

[DevNet is about apps and code to automate the infrastructure](#)



Step 1
Choose your
technical area



Step 1

Choose your technical area

IT infrastructure is about building connections.

[Learn about the CCNA certification](#)

Cybersecurity Operations (CyberOps) is about keeping digital assets safe.

[Learn about Cisco Certified CyberOps Associate certification](#)

Cisco DevNet is about increasing productivity, by combining IT infrastructure with programming and APIs to automate and streamline operations.

[Learn about Cisco Certified DevNet Associate certification](#)



Step 1

CCNA is about building connections

The CCNA certification is a great place to start. CCNA stands for Cisco Certified Networking Associate. The CCNA gives you a solid foundation for any direction you want to go in IT, covering the basics from IP addressing to security and automation.

CCNA might be the certification for you if

- You're not sure yet where you want to specialize
- You know you want to build or support IT infrastructure
- You're good at solving puzzles

Here are some job titles that CCNA certification can help prepare you for

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



"Having graduated college during an economic depression with a bachelor's degree in Environmental Science, finding a job was nearly impossible. Then I heard about the CCNA certification from someone in a random and coincidental encounter. After certifying, I quickly entered into a job in IT. Ten years later, I'm a solutions architect working at Cisco. The CCNA completely changed the trajectory of my life."

- Steve DiPippo, Solutions Architect

Step 1

Cisco Certified CyberOps Associate is about securing digital assets

Cybersecurity Operations (CyberOps) teams guard business-critical infrastructure and applications. In real time, they protect digital assets, defend against threats, and respond to attacks. CyberOps is an exciting, high-energy field with an urgent demand for skilled workers.

The Cisco Certified CyberOps Associate certification might be the one for you if

- You know you want to specialize in cybersecurity
- You like working in a high-stakes environment and responding to challenges in real time
- You like games where you can apply your analytical skills to stay a step ahead of your opponents

Here are some job titles that CyberOps certification can help prepare you for

- Security Operations Center (SOC) Analyst
- Cyber Security Engineer
- IT Security Operations Specialist

For some CyberOps roles, you must have a certification to qualify, no exceptions. Certification especially opens doors with state agencies and their suppliers.



Step 1

Cisco Certified DevNet Associate is about writing apps and code for the network

The Cisco Certified DevNet Associate certification blends software development with IT technologies. Writing apps and API calls based on Cisco platforms can help you pioneer the network of the future. If you already know software development and DevOps workflows, Cisco DevNet certification is a natural next step. Or, if you are a network engineer or technician, and are looking to add coding to your bag of tricks, the Cisco DevNet Associate is a great entry point.

Cisco Certified DevNet Associate might be the certification for you if

- You have a background or interest in coding
- You like to invent new, more efficient ways to get things done
- You like logic puzzles, Sudoku, Legos, or Minecraft
- You thrive in dynamic environments and love to keep learning new things

DevNet certification helps prepare you for **DevOps** roles. DevOps is an approach to software engineering that combines the “Development” and “Operation” of software into a single unified team and mindset. DevOps is a full lifecycle approach where “if you build it, you own it,” and accountability for success is forefront in everyone’s mind. DevOps is a cultural change in IT focusing on providing solutions faster, more often, more reliably, and aligned with business requirements. **NetDevOps** builds and manages a network that enables network services to be consumed in a DevOps approach.



Here are some job titles that DevNet certification can prepare you for

- NetDevOps Engineer
- Network Engineer
- Network Administrator
- SW Engineer Developer
- Automation Engineer
- Site Reliability Engineer
- DevOps Engineer (NetDevOps)
- Cloud Infrastructure Engineer

In the developer world, employers will want to see your book, your portfolio, what you have actually done. The certification is a skill verification that enhances your portfolio.

Step 2

Brush up on the vocabulary



Step 2

Brush up on the vocabulary

If you're just starting out, there are some terms you'll need to know when you explore this new world. Consider this section your phrase book for the adventure.

[CCNA vocabulary](#)

[CyberOps vocabulary](#)

[Cisco DevNet vocabulary](#)



Step 2

CCNA vocabulary

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 to access it.

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 information that it carries. The headers encode details about how to route the packet.

DNS

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

Subnet

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

Router

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



Step 2

CCNA vocabulary cont.

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.

Switch

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

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 prevent inappropriate access to 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.

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



Step 2

CyberOps vocabulary

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.

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.



Step 2

CyberOps vocabulary cont.

Attack surface

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

Malware analysis

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

Role-based access control

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

Time-based access control

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



Step 2

DevNet vocabulary

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).

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.

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.

Software Development Kit (SDK)

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



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.

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.

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.

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.



Step 3 Learn the technology



Step 3

Learn the technology

Now that you have the language down, it's time to dig in and learn the technology. This is where the real work happens. You're going to need two things: the exam blueprint, and a strategy for learning, studying, and practicing.

[CCNA blueprint and learning](#)

[Cisco Certified CyberOps Associate
blueprint and learning](#)

[Cisco Certified DevNet Associate
blueprint and learning](#)



Step 3

CCNA blueprint and learning

The CCNA exam [blueprint](#) 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 on the blueprint, you're ready for the exam.

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 also several training options to help you prepare

- If you prefer studying on your own, try the [Cisco Press Study Guide](#).
- If you prefer more step-by-step learning, we offer a [self-paced e-learning course](#) available from the Cisco Learning Network Store.
- If you learn best in a classroom setting, you can find instructor-led courses – both in-person and virtual – at the [Cisco Learning Locator](#).



Step 3

CCNA blueprint and learning cont.

Regardless of how you prepare for the exam, it is 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. One way to lab virtually is with [Cisco Modeling Labs](#).

Here are some other CCNA resources

- [CCNA landing page](#)
- [Cisco Learning Network CCNA community](#)

“For me the CCNA was the confirmation I needed to feel confident in my ability to work in networking. I had a job where I was doing well without the certification, but obtaining the cert gave me the confidence to participate more fully in conversations, network designs, and even troubleshooting. It also gave me confidence to become a team lead and share what I knew with others!”

- Julie Armaganian, CCNA Exam Program Manager



Step 3

CyberOps blueprint and learning

The Cisco Certified CyberOps Associate exam [blueprint](#) is the basis for the certification. 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 on the blueprint, you're ready for the exam.

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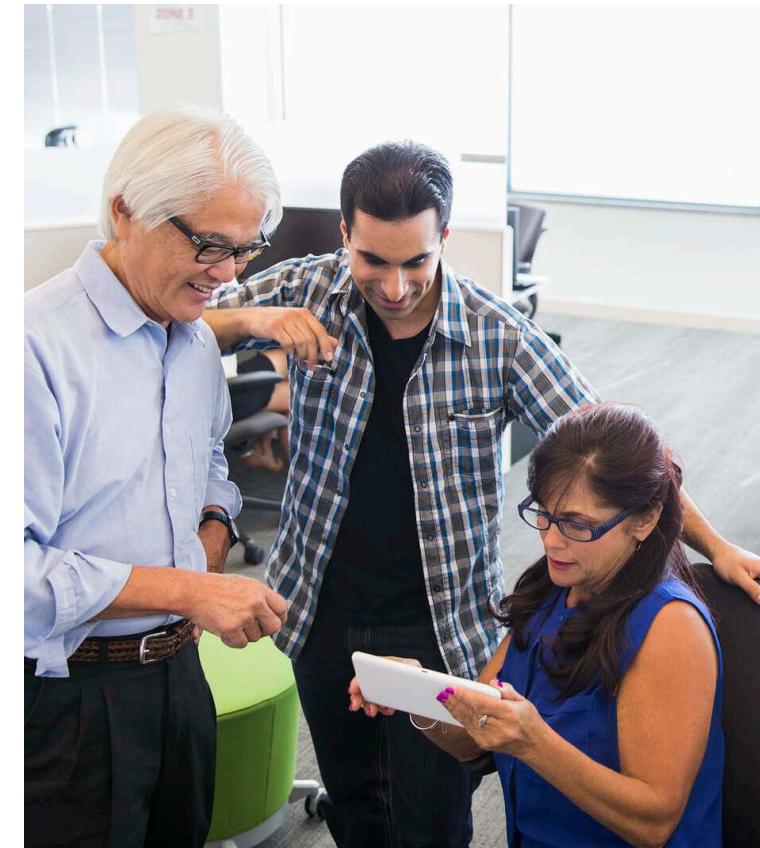
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Here are some other CyberOps Associate resources

- [CyberOps Associate landing page](#)
- [CyberOps certifications community](#)



Step 3

DevNet blueprint and learning

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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 also several training options to help you prepare:

- If you prefer studying on your own, try the [Cisco Press study guide](#).
- If you prefer more step-by-step learning, we offer a [self-paced e-learning course](#) available from the Cisco Learning Network Store, and the [DevNet Associate Fundamentals](#) e-learning on the Cisco DevNet site.
- If you learn best in a classroom setting, you can find instructor-led courses – both in-person and virtual – at the [Cisco Learning Locator](#).



Step 3

DevNet blueprint and learning cont.

Regardless of how you prepare for the exam, it is 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. One way to lab virtually is with [Cisco Modeling Labs](#).

Here are some other DevNet Associate resources

- [DevNet Associate landing page](#)
- [DevNet certifications community](#)
- [Cisco DevNet site](#)

“While we understand that things like APIs allow us to program the network, the reality for us... is that we must learn new concepts, frameworks, and tools. Lots of them. Quickly. Fortunately, the DevNet certifications provide tangible goals, structured learning, and, most of all, an opportunity to get ahead of the curve”

- Jeff Andiorio



Step 4 Take the exam



Step 4

Take the exam

Certification exams are all administered by our testing partner, [Pearson VUE](#), as proctored exams. When you take the exam, you will be in a controlled environment to ensure fairness and to give you the best, most consistent experience. And now, you can [take certification exams online](#), so you can stay on track even when you can't travel to a testing center.

During the exam, it will be just you and your knowledge and experience versus 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.



Step 5 Update your résumé



Step 5

Update your résumé

After you earn your certification, you can show off your accomplishment on social media with a digital badge and add it to your résumé or CV. Certification can make your application stand out from the crowd and help tip the balance in your favor when you apply for jobs.

Can you succeed in IT without certifications? Maybe, but hiring managers prefer certified candidates. Certification shows you have drive and follow-through as well as technical knowledge.



Are you ready?
Good luck!

[Take the next step](#)



Thank you for reading

Getting Started with Cisco Associate-Level Certifications

