

Network Security

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Introduction

1.0.1

First Time in This Course



Welcome to the Network Security course. This course provides an introduction to the core security concepts and skills needed for the installation, troubleshooting, and monitoring of network devices to maintain the integrity, confidentiality, and availability of enterprise data.

These course materials will assist you in developing the skills necessary to do the following:

- Describe the security threats facing modern network infrastructures.
- Secure Cisco devices.
- Secure the network infrastructure.
- Implement AAA on Cisco routers using a local router database and external AAA servers.
- Mitigate threats to Cisco routers and networks using access control lists (ACLs).
- Implement secure network design, management, and reporting.
- Implement the Cisco IOS firewall feature set.
- Mitigate common Layer 2 attacks.
- Implement a site-to-site VPN.
- Implement a remote access VPN.

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Student Resources



There are many tools and resources that are available to you that will help you in your journey as you develop your network security skills and prepare for job opportunities.

Packet Tracer

Packet Tracer simulates the internal workings of a network and is used in this course. Download and install the latest version of Packet Tracer here: [Packet Tracer Resources](#).

If you are new to Packet Tracer, take this FREE, short, online course now: [Introduction to Packet Tracer Course](#).

You can use your smartphone, tablet, or computer to access your course; however, Packet Tracer activities, as well as some other activities, quizzes, and exams are best experienced using a computer.

Join Our Communities

Connect with and get help from other Networking Academy students from around the world with our [Cisco Networking Academy Facebook page](#).

Network with your peers at our [Cisco Networking Academy LinkedIn page](#).

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Access [Career Resources](#) specifically tailored to help NetAcad students to be successful in the workplace.

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More Courses

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1.1.2 Reasons for Network Security

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Ethical Hacking Statement



The Cisco Networking Academy Program is focused on creating the global problem solvers needed to build, scale, secure, and defend the networks that are used in our businesses and daily lives. The need for well-trained network security specialists continues to grow at an exponential rate. Training to become a network security specialist requires in-depth understanding and exposure to how network attacks occur, as well as how they are detected and prevented. These skills will naturally also include learning about the techniques that threat actors use to circumvent computer and network security.

Unauthorized access to data, computer, and network systems is a crime in many jurisdictions and often is accompanied by severe consequences, regardless of the perpetrator's motivations. It is the learner's responsibility, as the user of this material, to be cognizant of and compliant with computer use laws.

1.0.4

Inclusive Language



Cisco Networking Academy's purpose is to power an inclusive future for all. With our purpose at the heart of everything we do, you can count on Cisco to be bold, brave and deliberate about our role and the actions we will take in support of social justice.

We are proud to join the technology community in evolving the language we use. Rethinking the words we use is just one of the ways to reduce barriers to equity and respect. As a matter of policy, Cisco Networking Academy content should be free of offensive or suggestive language, graphics, and scenarios. We are changing terms, as noted below, to more appropriate alternatives.

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| Term/Phrase | Replacements |
|---------------------|---|
| master/slave | primary/secondary OR primary/subordinate OR control/data (for clustering) |
| whitelist/blacklist | permit (list)/block (list) OR allow (list)/block (list) |

You may still see industry terms such as “black hat” in the course curriculum. Our team is working to modify these terms, as well.

1.0.5

Video - Download and Install Packet Tracer



This video will show you how to download and install Packet Tracer. You will use Packet Tracer to simulate creating and testing networks on your computer. Packet Tracer is a fun, take-home, flexible software program that will give you the opportunity to use the network representations and theories that you have just learned to build network models and explore relatively complex LANs and WANs.

Students commonly use Packet Tracer to:

- Prepare for a certification exam.
- Practice what they learn in networking courses.
- Sharpen their skills for a job interview.
- Examine the impact of adding new technologies into existing network designs.
- Build their skills for jobs in the Internet of Things.
- Compete in Global Design Challenges (take a look at the 2017 PT 7 Design Challenge on Facebook).

Packet Tracer is an essential learning tool used in many Cisco Networking Academy courses.

To obtain and install your copy of Cisco Packet Tracer follow these steps:

- Step 1.** Log into your Cisco Networking Academy “I’m Learning” page.
- Step 2.** Select Resources.

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Step 3. Select Download Packet Tracer.

Step 4. Select the version of Packet Tracer you require.

Step 5. Save the file to your computer.

Step 6. Launch the Packet Tracer install program.

Click Play in the video for a detailed walk-through of the Packet Tracer download and installation process.



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Video - Getting Started in Cisco Packet Tracer



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Packet Tracer is a tool that allows you to simulate real networks. It provides three main menus:

- You can add devices and connect them via cables or wireless.
- You can select, delete, inspect, label, and group components within your network.
- You can manage your network by opening an existing/sample network, saving your current network, and modifying your user profile or preferences.

If you have used any program such as a word processor or spreadsheet, you are already familiar with the File menu commands located in the top menu bar. The Open, Save, Save As, and Exit commands work as they would for any program, but there are two commands that are special to Packet Tracer.

The Open Samples command will display a directory of prebuilt examples of features and configurations of various network and Internet of Things devices included within Packet Tracer.

The Exit and Logout command will remove the registration information for this copy of Packet Tracer and require the next user of this copy of Packet Tracer to do the login procedure again.

Click Play in the video to learn how to use the menus and how to create your first Packet Tracer network.

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Why Should I Take this Module?



Networks are under attack! In this module you will learn about the current state of the network security landscape and also learn about the different types of networks that require protection.

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What Will I Learn in this Module?

Module Title: Securing Networks

Module Objective: Explain network security

| Topic Title | Topic Objective |
|---------------------------|--|
| Current State of Affairs | Describe the current network security landscape. |
| Network Topology Overview | Describe how all types of networks need to be protected. |

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