

# Routing and Switching Certification

To grow and remain competitive, businesses must consider lucrative opportunities like 5G, business services, cloud, edge compute, and moving fiber deeper. To do this, businesses must shift toward a more scalable, less operationally complex network from access to metro—one that lays the foundation for the Adaptive Network™. This is an exciting time to master routing and switching skills.

With an extensive set of routing and switching products, Ciena is especially qualified as a leader in these technologies. The Ciena Routing and Switching Certification Program offers cutting-edge industry knowledge and skills that can launch or advance careers.

## Routing and Switching Certification Associate Level

This course is the gateway to Ciena's routing and switching training program. It is offered in a variety of formats, including a four-day virtual session, a four-day in-person session led by an instructor, or an entirely web-based and self-paced experience.

Upon completion, those enrolled will have the fundamental conceptual skills to work with Ciena's routing and switching hardware and software as well as Ciena's Adaptive IP™ solutions—yet the course is primarily vendor-neutral, which allows learners to apply the concepts to any vendor's routing and switching hardware and software. This course also prepares students to take the Ciena Routing and Switching Associate (Ciena RS-A) certification exam.

Enrollees will be quizzed on the concepts and fundamentals discussed in class. They will also be provided extra quizzes and exercises in their student guide to assist in learning and prepare them to take the Ciena RS-A exam.

## Course structure

The course is designed to provide candidates with the foundational knowledge and concepts to be successful working with internetworked devices. There are ten modules to learn and master before taking the final certification exam.

Module 0: Ciena Certified Internetworking Associate Program Overview

Module 1: Routing and Switching Fundamentals

Module 2: Ethernet Basics

Module 3: Foundations of the Transmission Control Protocol/Internet Protocol (TCP/IP)

Module 4: Internet Protocol Version 4 and Version 6 Addressing Concepts

Module 5: Understanding Subnetworks

Module 6: Advanced Internet Protocol Concepts

Module 7: Routing Concepts

Module 8: Static and Dynamic Routing

Module 9: Routing Algorithms, Interior and Exterior Routing Protocols

Module 10: Virtual LANs (VLANs)

Module 11: Understanding Virtual Private Networks

Module 12: Segment Routing Overview

Module 13: Security Services

Module 14: Cloud Computing

## Routing and Switching Certification Professional Level

In this course, students develop conceptual knowledge and hands-on skills to work with Ciena Adaptive IP solutions and Ciena routing and switching hardware and software. Upon completion of this course, enrollees will be prepared to take the Ciena Routing and Switching Professional (Ciena RS-P) certification exam. Like the Associate Level, this course is also delivered primarily from a vendor-neutral point of view, so students can apply the concepts they learn to any vendor's routing and switching hardware and software.

Learners will be quizzed on the concepts and fundamentals discussed in class. They will also be provided extra quizzes and exercises in their student guide to assist in learning and prepare them to take the Ciena RS-P exam.

### Course structure

There are eleven modules to learn and master before taking the final certification exam.

Module 0: Ciena Certified Internetworking Professional Program Overview

Module 1: IPv6 Routing Protocols and Transitioning from IPv4

Module 2: Open Shortest Path First (OSPF)

Module 3: Intermediate System to Intermediate System (IS-IS)

Module 4: Border Gateway Protocol

Module 5: Redistribution, Route Filtering, and Route-Maps

Module 6: Introduction to MPLS

Module 7: Quality of Service (QoS)

Module 8: Multicasting

Module 9: VPN Services Overview

Module 10: Segment Routing

Module 11: STP, MSTP, and ERPS

Module 12: Wireless Communication

Module 13: Wireless Architecture, Design, Security, and Backhaul

## Recertification

Ciena Learning is committed to evolving its certifications to keep pace with technology. Part of that process is recertification of Ciena-certified Carrier Ethernet (CE) and Optical Communication (OC) associates, and there are several options to maintain or elevate this achievement. Contact a Ciena account representative or connect with [Ciena Learning here](#) to explore available options.

This program provides training in CE technologies while enabling students to pursue the Professional or Consultant specialization path that best aligns with their needs and interests.

### Ciena Learning

Ciena Learning delivers innovative training, development, and certification opportunities supporting emerging technologies to boost the productivity and potential of novices, professionals, and experts.

More than just an information center, Ciena Learning is a partner who educates, enriches, and empowers. With the freedom and flexibility to learn how, when, and where students want, Ciena Learning aims to help students gain the knowledge needed to make a difference—in organizations, personal and professional life, and the world at large.

To share in the experience, visit [ciena.com/learning](https://ciena.com/learning).

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