

DATA SHEET

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 innovative industry knowledge and skills that can launch or advance careers.

Routing and Switching Certification Associate (CRS-A)

This course is the gateway to Ciena’s routing and switching training program. It is offered in a variety of formats, including a five-day virtual session, a five-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—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.

Features and benefits

- **Technology-focused**, not equipment-specific (as compared to other industry certifications)
- Flexible and structured to match individual job requirements and career objectives
- Tailored programs based on job roles
- **Associate certification** provides a firm foundation in routing and switching standards, terminology, concepts, and applications
- **Professional certification** provides a lab-based environment for configuring and troubleshooting routing and switching networks
- **Consultant certification** uses case studies to develop skills required for designing routing and switching solutions

Course structure

The course is designed to provide candidates with the foundational knowledge and concepts to be successful with internetworking devices. There are 14 modules to learn and master before taking the final certification exam.

Module 0: Ciena Routing and Switching 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 (CRS-P)

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 13 modules to learn and master before taking the final certification exam.

Module 0: Ciena Routing and Switching 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, RSTP, MSTP, and ERPS

Module 12: Wireless Communication

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

Routing and Switching Consultant (CRS-C)

The CRS-C Ciena Routing and Switching course focuses on network capacity, topology, and features required for building routed and switched network solutions addressing service provider requirements. This course provides students instruction in designing route switch networks through lecture and case-based exercises and develops the analytic skills required for designing RS solutions. This course is prepared and delivered primarily using a vendor-neutral point of view which will allow learners to apply the concepts learned in this course to any vendor's routing and switching hardware and software.

Potential candidates for this course are Tier 3 network systems, sales, network engineers, network planners and designers.

Course structure

The course will enable you to determine, plan, and design cost-effective OC solutions using network planning and design methodologies. There are eight

modules to learn and master before taking the final certification exam:

- Module 0: Ciena Routing and Switching Consultant Program Overview
- Module 1: Design Process Overview
- Module 2: Packet Project Assessment
- Module 3: Routing and Switching Protocols
- Module 4: Packet Service Design
- Module 5: Packet Transport Design
- Module 6: Packet Infrastructure Design
- Module 7: Packet Network Deployment Planning
- Module 8: Packet Network Operations Planning

Recertification

Recertification provides the latest and updated knowledge about the industry. We ensure that Ciena’s certifications evolve continuously to stay ahead of technological advancements. Recertifications of Ciena-certified Carrier Ethernet, routing and switching, and optical communication are essential focus areas for us.

Technology Certifications

Learn more

Once you are certified with any technology (any level), your certification will last for three years. Recertifying your professional or consultant level certification will keep your associate level certification current.

Ciena Learning

Ciena Learning delivers innovative training, development, and certification opportunities supporting emerging technologies. The Ciena Learning experience boosts the productivity and potential of novices, professionals, and experts alike. More than just an information center, we are a partner who educates, enriches, and empowers. We offer the freedom and flexibility for you to learn how, when, and where you want. And we help you gain the knowledge you need to be effective—in your organization, your life, and the world around you.

To share in the experience, visit us at ciena.com/learning.

Take your learning to the next level

Contact us today

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