

## Cisco CRS-3 Carrier Routing System Essentials (CRS3E)

### Length: 5-day Workshop

The Cisco CRS-3 Carrier Routing System Essentials (CRS3E) Version 1 lab-intensive course introduces you to the Cisco® CRS-3 Carrier Routing System (CRS) and its features and functions. You will learn the important theoretical concepts on which the Cisco CRS-3 is based and gain the practical knowledge and skills to successfully deploy it in your network. You will be able to determine the right Cisco CRS-3 routing system based on the requirements of your network. In the hands-on labs, you will learn to install the Cisco IOS® XR Software operating system, deploy Open Shortest Path First (OSPF) and Internal Border Gateway Protocol (iBGP) routing protocols, and deploy Multiprotocol Label Switching–Label Distribution Protocol (MPLS-LDP) and MPLS Layer 3 VPNs in the classroom environment. In addition, you will be able to troubleshoot and verify proper operation of various CRS-3 hardware, including the 140-Gbps switch fabric, 140-Gbps line cards, 14- and 20-port 10 Gigabit and 1-port 100 Gigabit Ethernet Physical Layer Interface Modules (PLIMs), the Performance Route Processor (PRP), and the new modular power systems. This course combines lecture materials and hands-on labs throughout to make sure that you are able to successfully deploy a Cisco CRS-3 Carrier Routing System network

### You will learn to:

- List and describe the major features and benefits of the Cisco CRS-3
- List and describe the major features and benefits of the 140-Gbps line cards
- List and describe the major features and benefits of the 14- and 20-port 10 Gigabit and 100 Gigabit Ethernet PLIMs
- List and describe the major features and functions of the modular power systems
- List and describe the major features and functions of the Performance Route Processors
- Describe the steps to migrate the 40-Gbps switch fabric to the 140-Gbps switch fabric
- Describe the steps to migrate from a fixed power system to the modular power system and verify its proper operation
- Describe the steps to migrate from an RP-B to the Performance Route Processor and verify its proper operation
- Configure the Cisco CRS-3, back out of configuration changes, and restore older versions of a configuration
- Install the Cisco IOS XR Software operating system, package information envelopes, and software maintenance updates
- Upgrade field-programmable device (FPD) and ROMMON code
- Configure OSPF and iBGP routing protocols
- Configure MPLS-LDP in Cisco IOS XR Software
- Configure MPLS Layer 3 VPNs on the Cisco CRS-3
- Understand data flow through the Cisco CRS-3
- Troubleshoot basic Cisco CRS-3 hardware and software problems

### Recommended for:

This course is intended for network professionals, including designers, implementation staff, network operations center personnel, and support staff, who are involved with the deployment, operations, and maintenance of the Cisco CRS-3 Carrier Routing System and who have not taken the Cisco CRS-1 Essentials course. Those students who have taken the Cisco CRS-1 Essentials course should take the Cisco CRS Product Enhancements course to gain CRS-3 product knowledge.

### Prerequisites:

- Routing protocol configuration experience with Border Gateway Protocol (BGP), Intermediate System-to-Intermediate System(IS-IS), and OSPF
- Advanced knowledge of BGP multihomed, multi-AS configurations
- Strong knowledge of MPLS configuration