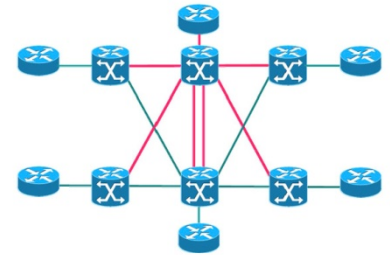


## Advanced Services' Cisco CRS-1 Carrier Routing System Essentials (CRS1E) v2

### Length: 5-day Workshop

This lab-intensive course introduces you to the Cisco® CRS-1 Carrier Routing System and its features and functions. You will learn the important theoretical concepts that the Cisco CRS-1 is based on and gain the practical knowledge and skills to successfully deploy it in your network. You will be able to determine the right Cisco CRS-1 based on the requirements of your network. In 12 hands-on labs, you will learn to install the Cisco IOS® XR Software operating system, create and configure secure domain routers (SDRs), deploy common routing protocols, implement IP Multicast, and deploy Multiprotocol Label Switching (MPLS) traffic engineering and MPLS layer 3 VPNs in the classroom environment. You will also use Route Policy Language (RPL) to deploy large-scale routing configurations and perform basic troubleshooting. This course combines lecture materials and hands-on labs throughout to ensure that you are able to successfully deploy a Cisco CRS-1 Carrier Routing System network



### You will learn to:

- List and describe the major features and benefits of the Cisco CRS-1
- List and describe the major features and benefits of a Cisco SDR
- Create and configure a Cisco SDR
- Configure the Cisco CRS-1, 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
- Configure the Cisco IOS XR security features in owner and nonowner SDRs
- Configure legacy route map configurations using the new Cisco IOS XR RPL
- Configure routing protocols in a complex multi-autonomous system (AS) environment
- Enable multicast routing on the Cisco CRS-1
- Configure MPLS on Cisco IOS XR Software
- Configure MPLS-Traffic Engineering (MPLS-TE) tunnels on the Cisco CRS-1
- Configure MPLS Layer 3 VPNs on the Cisco CRS-1
- Understand data flow through the Cisco CRS-1
- Troubleshoot basic Cisco CRS-1 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-1 Carrier Routing System.

### Prerequisites:

- Routing protocol configuration experience with Border Gateway Protocol (BGP), Intermediate System-to-Intermediate System (IS-IS), and Open Shortest Path First (OSPF)
  - [Building Scalable Cisco Internetworks \(BSCI\)](#)
  - [Building Core Networks with OSPF, BGP, and MPLS \(BCN\)](#)
- Advanced knowledge of BGP multihomed, multi-AS configurations
  - [Configuring BGP on Cisco Routers \(BGP\)](#)
  - [Building Core Networks with OSPF, BGP, and MPLS \(BCN\)](#)
- Strong knowledge of MPLS configuration
  - [Building Core Networks with OSPF, BGP, and MPLS \(BCN\)](#)
  - [Implementing Cisco MPLS \(MPLS\)](#)
- Multicast configuration experience

- Advanced knowledge of Cisco router security implementation, including authentication, authorization, and accounting (AAA) and TACAS
- [Securing Networks with PIX and ASA \(SNPA\)](#)