

# IMTXR (IMPLEMENTING AND MAINTAINING CISCO TECHNOLOGIES USING IOS XR) 1.0

## Objetivo

Cisco IOS® XR Software platforms are seeing rapid adoption within service provider and enterprise networks. The Cisco IOS XR Specialist certification validates the training and confirms the hands-on Cisco IOS XR Software experience of network engineers on Cisco® service provider carrier-class platforms, such as the Cisco Carrier Routing System (CRS), Cisco ASR 9000 Series Aggregation Services Routers, and Cisco XR 12000 Series Router. This certification differentiates and recognizes the skills of service provider and enterprise network engineers required to implement, verification test, and maintain core and edge technologies in a Cisco IOS XR Software environment. The Implementing and Maintaining Cisco Technologies Using IOS XR (IMTXR), Version 1 instructor-led course provides the necessary training to prepare you to take the Cisco IOS XR Specialist Professional exam (exam number 644-906). The course introduces you to the features and functions of the Cisco IOS XR Software operating system. Through a combination of lecture and hands-on lab exercises, you will gain an understanding of all major aspects of the operating system, including the control plane, the data plane, and the management plane. You will also gain knowledge of pertinent Cisco IOS XR Software-related equipment, including the CRS family, ASR 9000, and XR 12000 product lines. This training is based on Cisco IOS XR Software Release 4.1.2. Upon completion of this course, you should be able to:

- List and describe the major features and benefits of Cisco CRS and ASR 9000 Series routers
- List and describe the major features and benefits of the Cisco IOS XR Software operating system
- Understand data flow through Cisco IOS XR Software operating system-related routers
- Configure Cisco IOS XR Software operating system, back out of configuration changes, and restore older versions of the configuration
- Install the Cisco IOS XR Software operating system, package information envelopes (PIEs), and software maintenance updates (SMUs)
- Configure routing protocols and Route Policy Language (RPL) in a complex multi-AS environment
- Enable multicast routing
- Configure Multiprotocol Label Switching-Traffic Engineering (MPLS-TE)
- Configure Layer 3 VPN services
- Configure VPLS with Border Gateway Protocol (BGP)
- Configure Layer 2 multicast features
- Describe basic quality of service (QoS) implementation

## Público Alvo

- System engineers
- Technical support personnel
- Channel partners, resellers

## Pré-Requisitos

- Basic knowledge of router installation and some experience with installation tools
- Routing protocol configuration experience with BGP, Intermediate System-to-Intermediate System (IS-IS), and Open Shortest Path First (OSPF)
- Knowledge of Layer 2 IEEE switching and related protocols
- Strong knowledge of MPLS configuration or multicast configuration experience
- Knowledge of Cisco router security implementation, including authentication, authorization, and accounting (AAA) and TACACS
- Experience troubleshooting Cisco routers in a large network environment

## Carga Horária

40 horas (5 dias).

## Conteúdo Programático

- Module 1: Cisco IOS XR Software Platforms
  - Lesson 1: Describing Physical Architectures
  - Lesson 2: Maintaining Reliable Power Supply
  - Lesson 3: Maintaining Operating Environment
  - Lesson 4: Maintaining Hardware Inventory
- Module 2: Cisco IOS XR Software Operating System
  - Lesson 1: Introducing Cisco IOS XR Software Operating System Architecture
  - Lesson 2: Maintaining Cisco IOS XR Software
  - Lesson 3: Understanding, Monitoring, and Troubleshooting Processes and Memory
  - Lesson 4: Configuring Cisco IOS XR Software
- Module 3: Cisco IOS XR Software Control Plane
  - Lesson 1: Maintaining Addressing and Static Routing Using Cisco IOS XR Software
  - Lesson 2: Maintaining OSPF Using Cisco IOS XR Software
  - Lesson 3: Maintaining IS-IS Using Cisco IOS XR Software
  - Lesson 4: Maintaining BGP Using Cisco IOS XR Software
  - Lesson 5: Maintaining Routing Policies
  - Lesson 6: Maintaining MPLS and LDP
  - Lesson 7: Maintaining MPLS-TE
  - Lesson 8: Implementing IP Multicast
- Module 4: Cisco IOS XR Software Data Plane
  - Lesson 1: Implementing General Forwarding
  - Lesson 2: Implementing Packet Filtering
  - Lesson 3: Implementing QoS
  - Lesson 4: Implementing NetFlow
  - Lesson 5: Monitoring and Troubleshooting IP Multicast Forwarding
- Module 5: Cisco IOS XR Software Management Plane
  - Lesson 1: Introducing Cisco IOS XR Software Management Plane
  - Lesson 2: Managing Remote Administrative Access Using Cisco IOS XR Software
  - Lesson 3: Maintaining Simple Network Management Protocol (SNMP) and Logging Using Cisco IOS XR Software
  - Lesson 4: Managing Secure Domain Routers Using Cisco IOS XR Software
- Lab 1: Inspect a Router Using Cisco IOS XR Software
- Lab 2: Maintain a Router Using Cisco IOS XR Software
- Lab 3: Configure Basic Router Configuration Using Cisco IOS XR Software
- Lab 4: Configure OSPF Routing Using Cisco IOS XR Software
- Lab 5: Configure IS-IS Routing Using Cisco IOS XR Software
- Lab 6: Configure BGP Routing Using Cisco IOS XR Software
- Lab 7: Configure Routing Policy with BGP Using Cisco IOS XR Software
- Lab 8: Configure MPLS and MPLS VPNs Using Cisco IOS XR Software
- Lab 9: Configure MPLS Traffic Engineering Using Cisco IOS XR Software

- Lab 10: Filter Configuration Using Cisco IOS XR Software
- Lab 11: Configure QoS Using Cisco IOS XR Software
- Lab 12: Configure Remote Administrative Access Using Cisco IOS XR Software
- Lab 13: Configure SNMP and Logging Using Cisco IOS XR Software