

## Learning@Cisco

# Cisco IOS XR System Administration



The Cisco IOS<sup>®</sup> XR System Administration<sup>1</sup> (IOSXR200) course is an instructor-led, lab-based, hands-on course offered by Learning@Cisco. It covers the knowledge and skill sets required to perform various system administration duties using Cisco IOS XR Software in a typical network environment. The course teaches the fundamental concepts on which the operating system is based so that students understand how to carry out necessary administration functions.

In this course, students learn how to interpret log messages, configure exception reporting and logging, perform software installations, configure AAA authentication, configure secure domain routers, configure the Network Time Protocol, monitor system processes, perform packet filtering, and configure Management Plane Protection.

### Duration

Instructor-Led Training (ILT): 3 days

Virtual Instructor-Led Training (VILT): 4 days

### Target Audience

This course is intended for network professionals, Network Operations Center (NOC) personnel, and support staff who are involved with the system administration of Cisco routers that run the Cisco IOS XR Software operating system.

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<sup>1</sup> Course content is dynamic and subject to change without notice.

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## Course Prerequisites

The knowledge and skills that a learner must have before attending this course are as follows:

- Completion of the **Introduction to Cisco IOS XR (IOSXR100)** training course, or equivalent hands-on experience configuring and supporting Cisco IOS XR-based routers
- Basic knowledge of the architecture and operations of Cisco IOS XR-based routers
- Fundamental knowledge of Cisco IOS XR configuration and operation

## Recommended Prerequisites

Cisco recommends that you have the following knowledge and skills:

- Knowledge of general routing concepts
- Experience working with Command-Line Interface (CLI)-based network devices

## Course Outline

- Module 1: Configuration File System Overview
  - Configuration File System
- Module 2: Cisco IOS XR Software Installation
  - Examining the Software Packaging
  - Installing the Software
  - Recovering from a Software Installation
- Module 3: Secure Domain Routers
  - Examining an SDR
  - Physical Router
  - SDR Creation
- Module 4: AAA Security
  - AAA Fundamentals
  - Task-Based Security
  - Configuring a User Security Policy
  - Authentication with Remote Servers
  - AAA and the TACACS+ Server
  - Configuring AAA in Cisco IOS XR Software
  - Configuring the AAA Server
  - Configuring VTY User Authentication
  - TACACS+ Command Authorization
  - TACACS+ Command Accounting
  - AAA Troubleshooting
  - TACACS+ Troubleshooting
  - RADIUS Troubleshooting

- Module 5: Network Time Synchronization
  - Network Time Synchronization Overview
  - Network Time Protocol

## Lab Outline

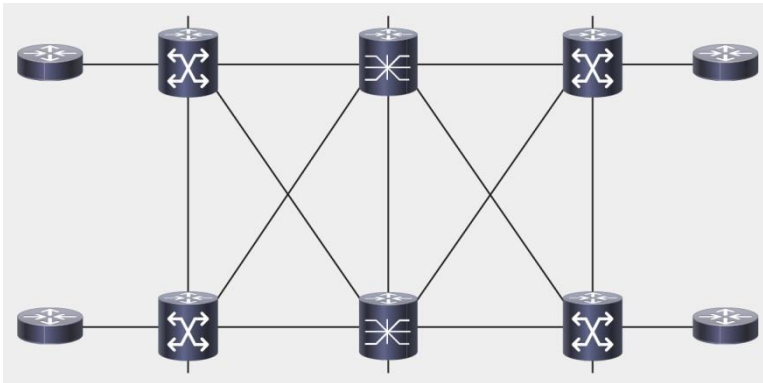
- Lab 1: Configuration File System
  - Task 1: Navigating the CFS
  - Task 2: Exploring Sysdb
  - Task 3: Exploring the Binary Files
  - Task 4: Comparing ASCII and Binary Files on the Active and Standby RPs
- Lab 2: Software Installation – Pre-Installation Checks
  - Task 1: Perform Pre-installation Checks
- Lab 3: Activating/Deactivating Software Packages
  - Task 1: Deactivate Feature Packages
- Lab 4: Configuring Non-Owner Secure Domain Router
  - Task 1: Secure Domain Router Configuration
  - Task 2: Reviewing the Configuration
- Lab 5: Configuring User Security Policies
  - Task 1: Configuring User Security Policies
- Lab 6: Configuring TACACS+ AAA Authentication on the Router
  - Task 1: Creating a TACACS+ AAA Configuration on the Router
- Lab 7: Accessing and Configuring the TACACS+ Server
  - Task 1: Accessing and Configuring the TACACS+ Server
- Lab 8: Configuring TACACS+ Authentication for VTY Users
  - Task 1: Configuring TACACS+ Authentication for VTY Users
- Lab 9: Enabling Command Accounting through the TACACS+ Server
  - Task 1: Enabling Command Accounting Through the TACACS+ Server
- Lab 10: Network Time Synchronization
  - Task 1: Configuring and Verifying a Network Time Protocol Server Association
  - Task 2: Configure and Verify an Authenticated NTP Server Association
- Lab 11: Monitoring Processes
  - Task 1: Monitoring Processes
- Lab 12: Monitoring a Routing Protocol Process Restart
  - Task 1: Monitoring a Routing Protocol Process Restart
- Lab 13: Monitoring Memory
  - Task 1: Monitoring Memory
- Lab 14: Configuring SNMP
  - Task 1: Configure SNMP

- Lab 15: Configuring Logging
  - Task 1: Configure Logging
- Lab 16: Configuring IPv4 Filtering
  - Task 1: Configure IPv4 Filtering
  - Task 2: Configure Antispoofing ACLs
- Lab 17: Using ACLs for Troubleshooting
  - Task 1: Use ACLs for Troubleshooting
- Lab 18: Implementing and Verifying uPRF
  - Task 1: Implement and Verify uPRF
- Lab 19: Configuring Management Plane Protection (MPP)
  - Task 1: Configuring Management Plane Protection

## Lab Topology

Figure 1 shows the lab topology used in this course.

**Figure 1.** Lab Topology for Cisco IOS XR Basic Troubleshooting Training



## Registration Email

For more information about schedules and registration for this course, contact [aeskt\\_registration@cisco.com](mailto:aeskt_registration@cisco.com).

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## Website Addresses for More Information

For more information, visit the following websites:

- Cisco Learning Services for Cisco products and technologies: <https://www.cisco.com/go/cls>
- Security training: <https://www.cisco.com/c/en/us/training-events/resources/learning-services/technology/security.html>
- Data center training: <https://www.cisco.com/c/en/us/training-events/resources/learning-services/technology/data-center.html>
- Network management training: <https://www.cisco.com/c/en/us/training-events/resources/learning-services/technology/network-management.html>
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- Service provider mobility training: <https://www.cisco.com/c/en/us/training-events/resources/learning-services/technology/mobile.html>
- Routing training for service providers: <https://www.cisco.com/c/en/us/training-events/resources/learning-services/technology/service-provider-routing.html>
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