

Advanced Services' Cisco IOS XR Software Fundamentals for Network Operations (XRFUND) Version 1



This course introduces the audience to the Cisco IOS® XR Software router operating system and some of its fundamental features. The course modules will introduce the available hardware configurations, operation, routing protocol implementation, security, and other topics. Hands-on lab exercises will enhance and reinforce student understanding. This course does not target a specific hardware platform.

Duration

Four days.

Target Audience

This course is for technical professionals who are:

- Network operations center personnel handling general operations and support of routers running the Cisco IOS XR Software operating system
- Customers who have purchased, but not received, Cisco IOS XR Software supported routers
- Cisco partners selling and supporting Cisco IOS XR Software routers
- Cisco engineers supporting sales of Cisco IOS XR Software routers
- New and current Cisco engineers writing and testing Cisco IOS XR Software code

Course Objectives

Upon completion of this course, you should be able to:

- Articulate an overview of Cisco IOS XR Software supported platforms and hardware
- Describe Cisco IOS XR Software features, such as high availability and scalability
- Complete a variety of Cisco IOS XR Software IPv4 operations
- Demonstrate and examine basic Cisco IOS XR Software security
- Describe In-Service Software Upgrades (ISSU) and minimum disruption restart (MDR)
- Describe a basic distributed route processor (DRP) distributed application implementation

- Discuss, implement, and operate a secure domain router (SDR)
- Implement a Cisco IOS XR Software installation
- Describe and implement a basic routing protocol implementation for Intermediate System-to-Intermediate System (IS-IS), Open Shortest Path First (OSPF), and Border Gateway Protocol (BGP)
- Complete an initial Multiprotocol Label Switching (MPLS) Label Distribution Protocol (LDP) and traffic engineering configuration
- Implement a simple multicast configuration

Course Prerequisites

The following are the prerequisites for this course:

- Interconnecting Cisco Networking Devices (Part 1) or equivalent knowledge
- Router operating system experience with basic knowledge of problem determination techniques
- Experience troubleshooting Cisco® routers in a large network environment
- Routing protocol configuration experience with IS-IS, OSPF, and BGP
- Basic knowledge of MPLS and multicast configurations
- Basic knowledge of Cisco router security implementation

To locate Cisco courses that cover the listed prerequisites, go to the Cisco Training & Events webpage at www.cisco.com/web/learning/index.html.

Course Outline

The course outline is as follows:

- **Module 1: Overview of Hardware Platforms Supporting Cisco IOS XR Software**
This module introduces students to the Cisco IOS XR Software platforms and components that currently support Cisco IOS XR Software.
- **Module 2: Cisco IOS XR Software Overview**
This module introduces the Cisco IOS XR Software architecture, including high-availability, scalability, and other features.
- **Module 3: Cisco IOS XR Software Configuration Basics**
This module shows the basics of Cisco IOS XR Software and how to create and review an initial configuration. The module demonstrates how to review redundancy.
- **Module 4: SDRs**
This module provides the student with a high-level overview of SDR creation and functionality.
- **Module 5: Cisco IOS XR Software Installation**
This module teaches the student to select, prepare, install, activate, and deactivate Cisco IOS XR Software packages.
- **Module 6: Cisco IOS XR Software Security**
This module outlines aspects of Cisco IOS XR Software AAA, along with router security administration and access control list configuration using the command-line interface (CLI).
- **Module 7: Cisco IOS XR Software Operations**

This module introduces the student to Cisco IOS XR Software configuration considerations and other operational features.

- Module 8: Cisco IOS XR Software Routing Protocols

This module covers a basic implementation of the OSPF, IS-IS, and BGP protocols and configuration of the IPv4 address family.

- Module 9: Routing Policy Language

This module teaches the student the basics of the Routing Policy Language (RPL) and illustrates a methodology to convert route maps to RPL policy.

- Module 10: Multicast

This module teaches the student the basic Cisco IOS XR Software implementation of multicast routing and associated protocols.

- Module 11: MPLS

This module teaches the student the implementation and configuration basics of MPLS in the Cisco IOS XR Software operating system software.

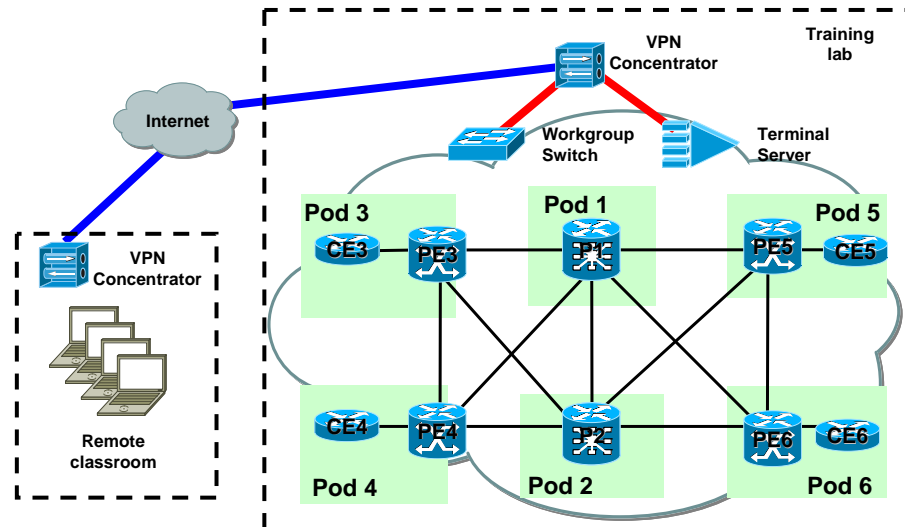
Lab Outline

The lab outline is as follows:

- Lab 1: Hardware Discovery and Initial Configuration
- Lab 2: Software Installation
- Lab 3: Security
- Lab 4: Operations
- Lab 5: IS-IS Routing Configuration
- Lab 6: OSPF Routing Configuration
- Lab 7: iBGP Routing Configuration
- Lab 8: IPv4 Multicast Configuration
- Lab 9: Multiprotocol Label Switching

Lab Topology

Figure 1. Figure 1 Lab Topology of Cisco IOS XR Software Fundamentals for Network Operations



Registration Information

For more information about schedules and registration for this course, please contact aeskt_registration@cisco.com.

For More Information

For more information about Advanced Services Education course offerings, including custom training options, as well as Advanced Services Curriculum Planning Services and the Advanced Services Technical Knowledge Library (TKL), refer to the Advanced Services Education website at www.cisco.com/go/ase.



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