

## Introduction to Cisco IOS XR (IOSXR100)

**ID** IOSXR100 **Price** US\$ 3,500.—(excl. tax) **Duration** 4 days

This is a Cisco Learning Services course and is delivered directly by Cisco.

### Course Overview

The Introduction to Cisco IOS XR (IOSXR100) v2.1 course introduces you to the features and functions of the Cisco® Internetwork Operating System (Cisco IOS®) XR Software operating system. You learn the fundamental concepts on which the operating system is based and Cisco IOS XR basic operations, system administration, and troubleshooting. Through a combination of lecture and hands-on lab exercises, you gain an understanding of all major aspects of the operating system, including the architecture, high-availability components, scalability features, configuration basics, basic software operations, configuration file overview, Authentication, Authorization, and Accounting (AAA) services, Network Time Protocol (NTP) configuration, packet filtering, and management plane protection. You also learn how to monitor the Cisco IOS XR operating system, and how to work with error messages and core dumps.

This course will help you:

- Prepare to deploy, implement, configure, operate, and maintain Cisco IOS XR routers
- Gain hands-on practice using Cisco IOS XR software
- Deepen your understanding of the Cisco IOS XR software architecture and capabilities

### Who should attend

- System installers
- System integrators
- System administrators
- Network administrators
- Solution designers

### Prerequisites

Before taking this course, you should have the following knowledge

and skills:

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

### Course Objectives

After taking this course, you should be able to:

- Describe the Cisco IOS XR software architecture, high availability components, and scalability features
- Perform basic configurations on a Cisco IOS XR router
- Describe Cisco IOS XR software operations
- Describe the configuration file system
- Perform Cisco IOS XR software installations
- Configure AAA services
- Configure NTP
- Configure Simple Network Management Protocol (SNMP), telemetry, and logging
- Configure routing protocols
- Monitor processes
- Use error messages and core dumps

### Detailed Course Outline

#### Cisco IOS XR Software Overview

- Platform Overview
- Cisco IOS XR Architecture
- Cisco IOS XR High Availability

#### Cisco IOS XR Software Configuration Basics

- Cisco IOS XR Configuration Operations
- Cisco IOS XR Initial Configuration
- Reviewing the Configuration

#### Cisco IOS XR Software Operations

- Examining Configuration Operations
- Examining Configuration Rollback and Recovery

### **Configuration File System Overview**

- Examining the Binary Configuration
- Examining the Commit Database
- Examining the ASCII Configuration
- Examining the Nonvolatile Generation (NVgen) Files
- Verifying Cisco Fabric Services (CFS) Integrity

### **Cisco IOS XR Software Installation**

- Software Package Basics
- Installing Software Packages

### **AAA Security**

- AAA Fundamentals
- Task-Based Security
- Configuring a User Security Policy
- Authentication with Remote Servers
- Configuring Router to AAA Server Communication
- Configuring Authentication
- Terminal Access Controller Access-Control System Plus (TACACS+) Command Authorization
- Configuring Accounting
- AAA Troubleshooting

### **Network Time Synchronization**

- Network Time Protocol

### **SNMP, Telemetry, and Logging**

- Examining SNMP
- Examining Telemetry
- Examining Logging

### **Basic Routing Configuration**

- Configuring Intermediate System to Intermediate System (IS-IS)
- Configuring Open Shortest Path First (OSPF)
- Configuring Border Gateway Protocol (BGP)
- Configuring Routing Protocol for LLN (RPL) Policy

### **Packet Filtering**

- Access Control Lists
- Unicast Reverse Path Forwarding
- Management Plane Protection

### **Monitoring Process**

- Examining Processes and Threads
- Process Crashes
- Commands for Debugging Processes
- Restartability of Processes
- Process Monitoring
- Identifying Memory Problems
- Memory Depletion

### **Core Dumps**

- Core Dump Fundamentals
- Using Core Dump Information

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