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## Cisco IOS XR Basic Troubleshooting

DURATION: 2 DAYS

COURSE CODE: IOSXR201

FORMAT: VIRUTAL

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### COURSE DESCRIPTION

The Cisco IOS XR Basic Troubleshooting (IOSXR201) v1.1 course gives you the knowledge and skills you need to perform basic troubleshooting tasks using Cisco® Internetwork Operating System (IOS) XR Software. The course covers the fundamental concepts on which the operating system is based to help you understand how to troubleshoot problems relating to process failures, stuck processes, high CPU consumption processes, and Interprocess Communication (IPC) functions. You will learn how to interpret log messages and configure exception reporting and logging. Using system commands, you will also learn how to monitor interfaces and controllers, and troubleshoot traffic flow issues through both Cisco Carrier Routing System (CRS-1) routers and the Cisco XR 12000 Series Router.

### WHO SHOULD ATTEND

This course is designed for network professionals including designers and implementers, Network Operations Center (NOC) personnel, and support staff who are involved with the deployment and troubleshooting of Cisco routers that run the Cisco IOS® XR Software operating system.

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### PREREQUISITES

Completion of the Introduction to Cisco IOS XR (IOSXR100) course, or equivalent hands-on experience configuring and supporting Cisco IOS XR-based routers

Basic knowledge of the architecture and operations of the Cisco Carrier Routing System (CRS-1), Cisco IOS XR 12000 Series Router, or Cisco Aggregation Services Routers (ASR) 9000 Series Routers

Fundamental knowledge of Cisco IOS XR configuration and operation

Basic knowledge of problem determination techniques, and experience troubleshooting Cisco IOSXR routers in a large network environment

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### LEARNING OBJECTIVES

- Cisco IOS XR software operations
- Monitoring processes
- Error messages and core dumps
- Cisco traffic flow troubleshooting

## COURSE OUTLINE

### 1. Cisco IOS XR Software Operations

- Examining Operation Basics
- Examining Configuration Operations
- Examining Configuration Rollback and Recovery
- Examining Process Management

### 2. Monitoring Processes

- Processes, Threads, and Dynamic Link Libraries
- Mandatory Processes
- CPU Hog Condition
- Process Crashes
- Stuck Processes
- Useful Commands for Debugging Processes
- Restart of Processes
- Process Monitoring
- Identifying Memory Problems
- Memory Depletion

### 3. Error Messages and Core Dumps

- System Error Messages
- Logging System Messages
- Cisco IOS XR Core Dumps

### 4. Cisco Traffic Flow Troubleshooting

- Troubleshooting Cisco IOS XR Line Card Data Packet Flow
- Troubleshooting Cisco IOS XR Switch Fabric

## DISCOVERY LABS

- 1: Making and Testing Configuration Changes
- 2: Configuration Commit and Rollback
- 3: Process Management
- 4: Monitoring Processes
- 5: Monitoring a Routing Protocol Process Restart
- 6: Monitoring Memory
- 7: Working with System Log Messages
- 8: Core Dumps
- 9: Tracing Packets on the Line Card
- 10: Tracing Cell Flow