Document Generated: 11/03/2026

Learning Style: Virtual Classroom

Technology: Cisco

Difficulty: Intermediate

Course Duration: 5 Days

Cisco Aggregation Services Router 9000 Series Essentials (ASR9KE4)



About this course:

The Cisco Aggregation Services Router 9000 Series Essential (ASR9KE) v.4 instructor-led course offered by High-Touch Delivery Learning Services introduces you to the features and functions of the Cisco ASR 9000 Series platforms. This Cisco ASR9KE ILC will cover the major features and benefits of a Cisco ASR 9000 Series Router. Through a combination of lecture and hands-on labs, you will gain

an understanding of all major aspects of the platform, including hardware; software; Layer 2 and Layer 3 services; Layer 2 and Layer 3 multicast; operations, administration, and management (OAM); quality of service(QoS) features; and network virtualization. The Cisco ASR9K training course will prepare system engineers, technical support personnel, along with channel partners and reseller representatives with the tools they need to utilize course material in the real world. Learn more below.

Course Objective:

Upon completing this course, the learner will be able to meet these overall objectives:

- List and describe the major features and benefits of a Cisco ASR 9000 Series router
- List and describe the major features and benefits of the Cisco IOS XR Software operating system
- Understand data flow through the Cisco ASR 9000 Series router
- Configure the Cisco ASR 9000, back out of configuration changes, and restore older versions of the configuration
- Install the Cisco IOS XR operating system, package information envelopes (PIEs), and software maintenance updates (SMUs)
- Enable multicast routing on a Cisco ASR 9000 Series router
- Configure Multiprotocol Label Switch-Traffic Engineering (MPLS-TE) on a Cisco ASR 9000 Series router
- Configure Layer 3 VPN services
- Configure Ethernet link bundles
- Configure local E-Line L2VPN
- Configure Ethernet over MPLS E-Line L2VPN
- Configure EoMPLS with pseudowire backup
- Configure local E-LAN L2VPN
- Configure link-based Ethernet operations, administration, and maintenance (E-OAM)
- Configure virtual private LAN service (VPLS) L2VPN
- Configure VPLS with Border Gateway Protocol (BGP) autodiscovery
- Configure service-based connectivity fault management (CFM)
- Describe Multiple Spanning Tree-Access Gateway (MST-AG)
- Configure Layer 2 multicast features
- Describe basic QoS implementation
- Describe how to configure and verify network virtualization (nV) on the ASR 9000 series

Audience:

This course is designed for technical professionals who need to know how to deploy Cisco ASR 9000 Series routers in their network environment. The primary audience for this course is as follows:

- System engineers
- Technical support personnel

- Channel partners, resellers

Prerequisite:

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

- 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
- Experience troubleshooting Cisco routers in a large network environment

Course Outline:

Module 1: Introduction to the Cisco ASR 9000 Aggregation Series

Module 2: Cisco ASR 9000 Hardware

Module 3: Cisco IOS XR Software Overview

Module 4: Cisco IOS XR Software Basics

Module 5: Cisco IOS XR Software Software Installation

Module 6: Cisco IOS XR Software Operations

Module 7: Cisco IOS XR Routing Protocols

Module 8: Layer 3 Multicast

Module 9: Cisco IOS XR MPLS

Module 10: Cisco IOS XR Layer 3 VPN

Module 11: Cisco ASR 9000 Layer 2 Architecture

Module 12: Cisco ASR 9000 Point-to-Point Layer 2 Services

Module 13: Cisco ASR 9000 Multipoint Layer 2 Services

Module 14: Cisco ASR 9000 Operations, Administration, and Maintenance

Module 15: Cisco ASR 9000 Layer 2 Multicast

Module 16: Cisco ASR 9000 QoS

Module 17: Cisco ASR 9000 Network Virtualization

Lab Outline

- Lab 1: Hardware Discovery and Initial Configuration
- Lab 2: Cisco IOS XR Software Installation
- Lab 3: Cisco IOS XR Operations
- Lab 4: OSPF Routing Configuration
- Lab 5: IS-IS Routing Configuration
- Lab 6: BGP Routing Configuration
- Lab 7: Layer 3 Multicast
- Lab 8: MPLS
- Lab 9: Layer 3 VPN
- Lab 10: Local E-Line
- Lab 11: EoMPLS E-Line
- Lab 12: Local E-LAN
- Lab 13: VPLS
- Lab 14: OAM
- Lab 15: Layer 2 Multicast

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