



Cisco Aggregation Services Router 9000 Series Essentials (ASR9KE)

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Cisco Aggregation Services Router 9000 Series Essentials (ASR9KE)

Course Duration

4 days

Course Price

\$3,595.00

36 CLCs

Methods of Delivery

In-Person ILT

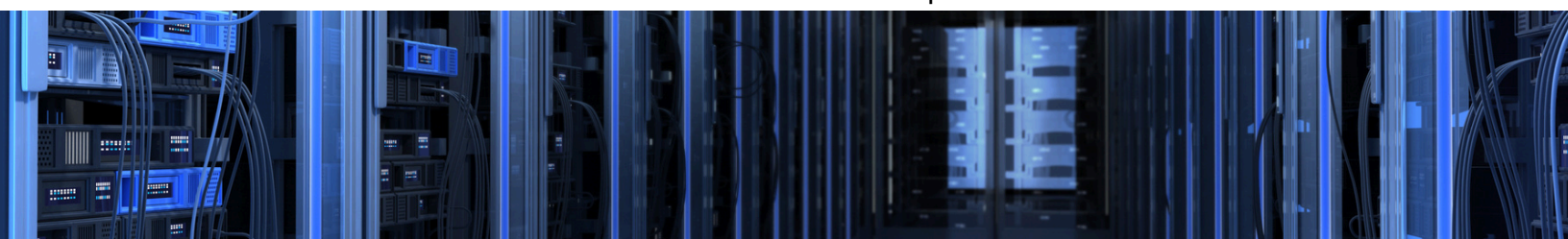
Virtual ILT

Onsite ILT

About this Class

In this Cisco Aggregation Services Router 9000 Series Essentials course provides a comprehensive, hands-on exploration of the Cisco ASR 9000 Series routers and the Cisco IOS XR 64-bit operating system, focusing on service provider-grade routing, transport, and service delivery. It is designed for network engineers responsible for deploying, operating, and troubleshooting high-performance core and edge networks built on Cisco ASR 9000 platforms. The curriculum emphasizes both hardware architecture and advanced software capabilities.

Students begin by examining Cisco ASR 9000 hardware architecture and IOS XR 64-bit software fundamentals, including Linux underpinnings, installation, and system operations. The course then progresses into configuration basics and advanced routing protocols such as IS-IS, OSPF, and iBGP, along with multicast routing and MPLS. Segment routing is introduced to demonstrate modern traffic engineering and resiliency techniques supported by IOS XR. The course also covers Layer 3 VPNs, Layer 2 architectures, point-to-point services, Layer 2 multicast, and quality of service, highlighting how the ASR 9000 platform delivers scalable, multi-service networks. Extensive hands-on labs reinforce real-world workflows such as hardware discovery, software installation, routing configuration, MPLS and segment routing deployment, VPN services, and EoMPLS, preparing learners to confidently operate Cisco ASR 9000 networks in production environments.



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How you will benefit

This class will help you:

- Understand the essential features and functions of the ASR 9000 Series routers running Cisco IOS XR 64-Bit software
- Practice Cisco IOS XR 64-Bit configurations on the ASR 9900 Series router in lab exercises
- Configure Cisco ASR 9900 configuration changes and restore older versions of the configuration
- Install the Cisco IOS XR 64-Bit Software operating system, Package Information Envelopes (PIEs), and Software Maintenance Updates (SMUs)
- Understand data flow through the Cisco ASR 9000 and ASR 9900 Series router

Why Attend with Current Technologies CLC

- Our Instructors are the top 10% rated by Cisco
- Our Lab has a dedicated 1 Gig Fiber Connection for our Labs
- Our Labs run up to Date Code for all our courses

Who Should Attend

The job roles best suited to the material in this course are:

- System engineers
- Technical support personnel
- Channel partners, resellers

Prerequisites

Before attending this course, you should have the following knowledge and skills:

- Basic IOS XR 64-Bit Software configuration commands
- 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

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Objectives

After taking this course, you should be able to:

- 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 64-Bit IOS XR operating system
- Understand data flow through the Cisco ASR 9000 Series router
- Configure Cisco ASR 9000, back out of configuration changes, and restore older versions of the configuration
- Install the Cisco IOS XR 64-Bit Software operating system, package information envelopes, and software maintenance updates
- Enable multicast routing on a Cisco ASR 9900 Series router
- Configure Layer 3 VPN services
- Configure Ethernet link bundles
- Configure local Ethernet Line (E-Line) Layer 2 VPN (L2VPN)
- Configure Ethernet over Multiprotocol Label Switching (EoMPLS) E-Line L2VPN
- Configure EoMPLS with pseudowire backup
- Configure local Ethernet LAN (E-LAN) L2VPN
- Describe Virtual Private LAN Service (VPLS) L2VPN
- Describe VPLS with Border Gateway Protocol (BGP) autodiscovery
- Configure service-based Connectivity Fault Management (CFM)
- Configure Layer 2 multicast features
- Describe basic QoS implementation
- Describe how to configure and verify network Virtualization (nV) on the ASR 9000 series

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Course Outline

Module 1: Cisco ASR 9000 Series Hardware

Module 2: Cisco IOS XR 64-Bit Software Architecture and Linux Fundamentals

Module 3: Cisco IOS XR 64-Bit Software Installation

Module 4: Cisco IOS XR 64-Bit Software Configuration Basics

Module 5: Cisco IOS XR 64-Bit Software Routing Protocols

Module 6: Multicast Routing

Module 7: Cisco Multiprotocol Label Switching

Module 8: Cisco IOS XR 64-Bit Segment Routing

Module 9: Layer 3 VPNs

Module 10: Cisco ASR 9000 Layer 2 Architecture

Module 11: Point-to-Point Layer 2 Services

Module 12: Layer 2 Multicast

Module 13: Quality of Service

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Lab Outline

- Lab 1: ASR 9904 Hardware Discovery Lab
- Lab 2: Device Discovery and Initial Configuration
- Lab 3: Installing Cisco IOS XR 64-Bit Software
- Lab 4: Cisco IOS XR 64-Bit Software Operations
- Lab 5: Configuring IS-IS Routing
- Lab 6: Configuring OSPF Routing
- Lab 7: Configuring Internal BGP (iBGP) Routing
- Lab 8: IPv4 Multicast Configuration
- Lab 9: Configuring Multiprotocol Label Switching
- Lab 10: Configuring and Verifying IGP Segment Routing
- Lab 11: Configuring Layer 3 Virtual Private Network
- Lab 12: Local E-Line Service
- Lab 13: EoMPLS Service