Cisco Aggregation Services Router 9000 Series Essentials Training

Duration: **4 Day**

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The Cisco Aggregation Services Router 9000 Series Essentials (ASR9KE) v6.1 course introduces you to the features and functions of the Cisco® Aggregation Services Router (ASR) 9000 Series platforms. Through a combination of lecture and hands-on labs, you will gain an understanding of all major aspects of the platform, including hardware, Layer 2 and Layer 3 services, routing protocols including Segment Routing, Layer 2 and Layer 3 multicast, Quality of Service (QoS) features, and network virtualization. The course investigates Cisco Internetworking Operating System (IOS) XR 64-Bit Linux-based feature parity in the environment, as well as how to install Cisco IOS® XR 64-Bit software packages.

How you'll benefit

This course 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

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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What You Will Learn

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

Training Outline

- Cisco ASR 9000 Series Hardware
- Cisco IOS XR 64-Bit Software Architecture and Linux Fundamentals
- Cisco IOS XR 64-Bit Software Installation
- Cisco IOS XR 64-Bit Software Configuration Basics
- Cisco IOS XR 64-Bit Software Routing Protocols
- Multicast Routing
- Cisco Multiprotocol Label Switching
- Cisco IOS XR 64-Bit Segment Routing
- Layer 3 VPNs
- Cisco ASR 9000 Layer 2 Architecture
- Point-to-Point Layer 2 Services
- Layer 2 Multicast
- Quality of Service