High-Touch Delivery Learning Services

Cisco Aggregation Services Router 9000 Series Essentials (ASR9KE)

The Cisco® Aggregation Services Routers 9000 Series Essential Version 5 instructor-led course offered by Cisco High-Touch Delivery Learning Services introduces you to the features and functions of the Cisco ASR 9000 Series Aggregation Services Routers platform. Through a combination of lecture and hands-on labs, you learn all major aspects of the platform, including hardware, software, Layer 2 and Layer 3 services, Layer 2 and Layer 3 multicast, Operation, Administration, and Maintenance (OAM), quality of service (QoS) features, and network virtualization.

Duration

5 days.

Target 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 includes:

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

Course Objectives

After completing this course, you should be able to:

- List and describe the major features and benefits of an ASR 9000 Series router
- List and describe the major features and benefits of the Cisco IOS® XR OS
- Understand data flow through the ASR 9000 Series router

- Configure the ASR 9000, back out of configuration changes, and restore older versions of the configuration
- Install the Cisco IOS XR OS, package information envelopes (PIEs), and software maintenance updates (SMUs)
- Enable multicast routing on an ASR 9000 Series router
- Configure Multiprotocol Label Switch-Traffic Engineering (MPLS-TE) on an ASR 9000 Series router
- Configure Layer 3 VPN services
- Configure Ethernet link bundles
- Configure local E-Line L2VPN
- Configure Ethernet over MPLS (EoMPLS) E-Line Layer 2 VPN
- Configure EoMPLS with pseudowire backup
- Configure local E-LAN Layer 2 VPN
- Configure link-based Ethernet Operation, Administration, and Maintenance (OAM)
- Configure virtual private LAN service (VPLS) Layer 2 VPN
- 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 router.

Course Prerequisites

The following are the prerequisites for this course:

- Basic knowledge of router installation and some experience with installation tools
- Routing protocol configuration experience with Border Gateway Protocol (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

The course outline is as follows:

- Module 1: Introduction to the Cisco ASR 9000 Series Aggregation Series Routers
- Module 2: Cisco ASR 9000 Hardware
- Module 3: Cisco IOS XR Software Overview
- Module 4: Cisco IOS XR Software Configuration Basics
- Module 5: Cisco IOS XR 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 Operation, Administration, and Maintenance
- Module 15: Cisco ASR 9000 Layer 2 Multicast
- Module 16: Cisco ASR 9000 QoS
- Module 17: Cisco ASR 9000 Network Virtualization

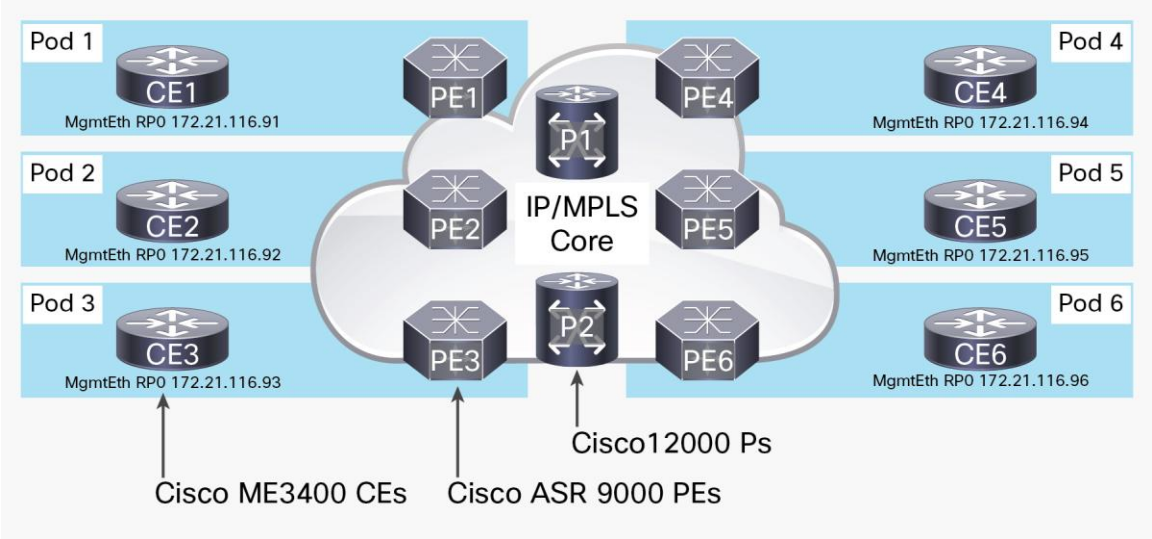
Lab Outline

The lab outline is as follows:

- 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

Lab Topology

A six-node ASR 9000 Series router network with a Cisco 12000 Series Routers core is used in the hands-on labs of the course. This topography as shown in the figure can support 12 students in six pods.



Registration Email

For more information about schedules and registration for this course, contact aeskt_registration@cisco.com.

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