

Hands-On

# Cisco ASR 9000 Aggregation Services

Router Series Essentials (ASR9k)



## Course Description

This instructor-led course introduces you to the features and functions of the Cisco 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 software Layer 2 and Layer 3 services Layer 2 and Layer 3 multicast operations, administration, and management (OAM) and quality of service (QoS) features.

## Students Will Learn

- List and describe the major features and benefits of the Cisco ASR 9000 series
- List and describe the major features and benefits of the Cisco IOS XR Software operating system
- Configure the Cisco ASR 9000 platform, back out of configuration changes, and restore older versions of a configuration
- Install the Cisco IOS XR Software operating system, package information envelopes (PIEs), and software maintenance updates (SMUs)
- Configure Cisco IOS XR Software security features
- Configure routing protocols
- Enable multicast routing
- Configure Multiprotocol Label Switching (MPLS)
- Configure Layer 2 services with resiliency and OAM functions
- Configure Layer 2 multicast features
- Configure Layer 3 services
- Configure QoS
- Understand data flow through the Cisco ASR 9000
- Troubleshoot basic Cisco ASR 9000 hardware and software problems
- And More...

## 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

## Prerequisites

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

Knowledge of Cisco router security implementation, including authentication, authorization, and accounting (AAA) and TACACS

Experience troubleshooting Cisco routers in a large network environment

## Course Outline

1. Introduction to the Cisco ASR 9000 Aggregation Series
2. Cisco ASR 9000 Hardware
3. Cisco IOS XR Software Overview
4. Cisco IOS XR Software Basics
5. Cisco IOS XR Software Installation
6. Cisco IOS XR Software Security
7. Cisco IOS XR Software Operations
8. Cisco IOS XR Routing Protocols
9. Cisco IOS XR MPLS
10. Cisco ASR 9000 Layer 2 Architecture
11. Cisco ASR 9000 Point-to-Point Layer 2 Services
12. Cisco ASR 9000 Multipoint Layer 2 Services
13. Cisco ASR 9000 Layer 2 Multicast
14. Layer 3 VPN
15. Layer 3 Multicast
16. Cisco ASR 9000 QoS

## Delivery Method

Instructor-Led with numerous Hands-On labs and exercises.

## Equipment Requirements

**(This apply's to our hands-on courses only)**

BTS always provides equipment to have a very successful Hands-On course. BTS also encourages all attendees to bring

their own equipment to the course. This will provide attendees the opportunity to incorporate their own gear into the labs and gain valuable training using their specific equipment.

### **Course Length**

5 Days