

## Advanced Services' Cisco ASR 1000 Series Essentials (ASR Essentials) Version 3.1.0S



This course provides technical training to Cisco enterprise and service provider customers so that they can successfully deploy the Cisco® ASR 1000 Series Aggregation Services Routers running Cisco IOS® XE Software Release 3.1.0S. We examine the major features, functions, characteristics, and connectivity options of the Cisco ASR 1000 Series routers. The course includes detailed platform-specific information on the hardware. Also included is the functional operation of high availability (HA), In-Service Software Upgrade (ISSU), quality of service (QoS), security, and multicast services in the Cisco ASR 1000 Series router.

### Duration

Five days.

### Target Audience

This course is for technical professionals who need to know how to implement Cisco ASR 1000 Series routers in their network environment.

The following are considered the primary audience for this course:

- Customer technical support personnel
- System engineers
- System integrators

### Course Objectives

Upon completion of this course, you should be able to:

- List and describe features, benefits, and functions of Cisco ASR 1000 Series routers
- List and describe the architecture, features, and functions of the hardware elements of the 1RU, 2RU, 4RU, 6RU, and 13RU chassis; route processor; embedded services processor (ESP); SPA interface processor (SIP); QuantumFlow processor (QFP); and shared port adapters (SPAs)
- Explain the Cisco ASR 1000 operating system and functionality

- Describe the way packets are processed and list the various components in this process
- Install software and successfully reboot a Cisco ASR 1000 Series router
- Initiate a failover and describe the Cisco ASR 1000 high-availability capabilities
- Install software and describe the Cisco ASR 1000 ISSU capabilities
- Explain how QoS is implemented in hardware and how QoS features provide improved and more predictable network service
- Describe and configure QoS for ingress queueing and egress shaping
- Describe and configure multicast services
- Describe and configure IP Security (IPSec) and Firewall/Network Address Translation (NAT) services

### Course Prerequisites

Following are the prerequisites for this course:

- Attend the Interconnecting Cisco Network Devices (ICND) course or equivalent experience
- Knowledge of Cisco IOS Software commands
- Understanding of principles of QoS, multicast, and IPSec services

### Course Outline

The course outline is as follows:

- Module 1: Cisco ASR 1000 System Introduction
- Module 2: Cisco ASR 1000 Hardware Architecture
- Module 3: Cisco ASR 1000 Software Architecture
- Module 4: Cisco ASR 1000 Operations
- Module 5: Cisco ASR 1000 High Availability
- Module 6: Cisco ASR 1000 In-Service Software Upgrade
- Module 7: Quality of Service
- Module 8: Multicast Services
- Module 9: Security Services
- Module 10: Cisco ASR 1000 Packet Flow and Troubleshooting

### Lab Outline

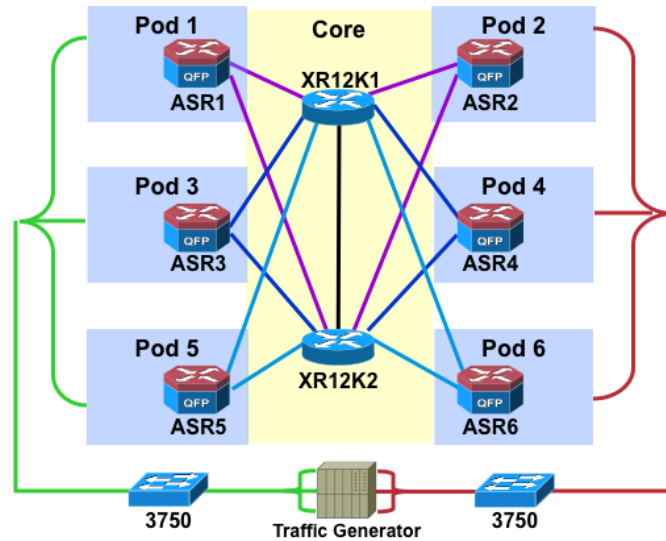
The lab outline is as follows:

- Lab 1: Lab Access and Cisco ASR 1000 Orientation
- Lab 2: Performing System Software Maintenance Functions
- Lab 3: Configuring and Testing High Availability
- Lab 4: Configuring and Testing ISSU
- Lab 5: Configuring QoS and Viewing Results
- Lab 6: Configuring and Testing Multicast
- Lab 7: Configuring and Testing Firewall and NAT
- Lab 8: Monitoring Statistics and Counters for Troubleshooting

## Lab Topology

Figure 1 shows the lab topology that is used in this course.

**Figure 1.** Lab Topology of Advanced Services' Cisco ASR 1000 Series Essentials



## Registration Information

For more information about schedules and registration for this course, contact [aeskt\\_registration@cisco.com](mailto:aeskt_registration@cisco.com).

## For More Information

For more information about Advanced Services Education course offerings, including custom training options, as well as Advanced Services Curriculum Planning Services and the Advanced Services Technical Knowledge Library (TKL), refer to the Advanced Services Education website at [www.cisco.com/go/ase](http://www.cisco.com/go/ase).



**Americas Headquarters**  
Cisco Systems, Inc.  
San Jose, CA

**Asia Pacific Headquarters**  
Cisco Systems (USA) Pte. Ltd.  
Singapore

**Europe Headquarters**  
Cisco Systems International BV  
Amsterdam, The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at [www.cisco.com/go/offices](http://www.cisco.com/go/offices).

CCDE, CCENT, CCSI, Cisco Eos, Cisco HealthPresence, the Cisco logo, Cisco Lumin, Cisco Nexus, Cisco Nurse Connect, Cisco Stackpower, Cisco StadiumVision, Cisco TelePresence, Cisco WebEx, DCE, and Welcome to the Human Network are trademarks; Changing the Way We Work, Live, Play, and Learn and Cisco Store are service marks; and Access Registrar, Aironet, AsyncOS, Bringing the Meeting To You, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, CCVP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Collaboration Without Limitation, EtherFast, EtherSwitch, Event Center, Fast Step, Follow Me Browsing, FormShare, GigaDrive, HomeLink, Internet Quotient, IOS, iPhone, iQuick Study, IronPort, the IronPort logo, LightStream, Linksys, MediaTone, MeetingPlace, MeetingPlace Chime Sound, MGX, Networkers, Networking Academy, Network Registrar, PCNow, PIX, PowerPanels, ProConnect, ScriptShare, SenderBase, SMARTnet, Spectrum Expert, StackWise, The Fastest Way to Increase Your Internet Quotient, TransPath, WebEx, and the WebEx logo are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0903R)