
Advanced Routing & Switching for Field Engineers

Duration: 5 Days **Course Code: ARSFE**

Overview:

Advanced Routing and Switching for Field Engineers (ARSFE) v1.0 is a 5 day course that teaches learners how to prepare for implementing the design solution as part of a System Engineer and Field Engineer team effort. It will prepare the learner to install and configure advanced routing and switching solutions, including Border Gateway Protocol (BGP), Multiprotocol Label Switching (MPLS), Quality of Service (QoS), High Availability (HA), and IP version 6 (IPv6). The course will also prepare the learner to monitor and troubleshoot the advanced solutions implementation.

Target Audience:

Cisco Premier Channel Partner Field Engineers
Cisco Customer Network Engineers

Objectives:

- Given an implementation plan, you will be able to configure routers and multi-layer switches to enable BGP
 - Given an implementation plan, you will be able to configure routers for MPLS
 - Given an implementation plan you will be able to configure routers and switches to enable QoS
 - Given an implementation plan, you will be able to implement high availability in the network at Layer 1, Layer 2, and Layer 3
 - Given an implementation plan, you will be able to configure and troubleshoot IPv6 on Cisco routers and Cisco Layer 3 switches
 - You will be able to use appropriate show and debug commands to monitor and troubleshoot a Cisco network
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Prerequisites:

A valid Cisco Certified Network Professional (CCNP) certification

Level of knowledge equivalent to the *Implementing Cisco Quality of Service v2.1 (QoS)* course

Testing and Certification

- [642-055 ARSFE](#)
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Content:

Module 1 Implementing, Verifying and Troubleshooting a BGP Design

- Reviewing BGP
- Configuring Neighbors and Monitoring Session Establishment
- Defining BGP Path Attributes
- Influencing BGP Route Selection Using AS-Path Filters
- Implementing a BGP Filtering and Routing Policy Using Prefix-Lists and Route-Maps
- Configuring Advanced BGP Policy Selection

Module 2: Understanding and Implementing an MPLS Design

- Understanding Cisco IOS MPLS Features
- Understanding MPLS Label Distribution in Frame-mode MPLS
- Discussing MPLS VPN Implementations
- Implementing, Monitoring, and Troubleshooting MPLS
- Implementing and Monitoring MPLS VPNs
- Troubleshooting MPLS VPNs

Module 3: Implementing, Verifying and Troubleshooting a QoS Design

- Reviewing QoS Technologies
- QoS Toolset - Classification and Marking
- QoS Toolset - LAN Classification and Marking
- QoS Toolset - Congestion Management

Module 4 Implementing, Verifying and Troubleshooting a High Availability Design: Implementing, Verifying and Troubleshooting a QoS Design

- Configuring Layer 3 HA
- Configuring Layer 2 HA
- Describing Hardware and Software Redundancy on Modular Switches

Module 5: Implementing, Verifying and Troubleshooting an IPv6 Design

- Introducing IPv6 Features and Benefits
- Configuring IPv6 on Cisco Devices
- Configuring Enhanced Routing Protocols for IPv6
- Defining and Configuring Advanced IPv6 features
- Defining and Configuring IPv6 Tunnel and Migration Options

Further Information:

For More information, or to book your course, please call us on 353-1-814 8200

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