SPCOR

Implementing and Operating Cisco Service Provider Network Core Technologies

40 horas | Service Provider | Cisco

Cisco Continuing Education Credits

64 CE Credits

INTRODUÇÃO

The Implementing and Operating Cisco Service Provider Network Core Technologies (SPCOR) v1.0 course teaches you how to configure, verify, troubleshoot, and optimize next-generation, Service Provider IP network infrastructures. It provides a deep dive into Service Provider technologies including core architecture, services, networking, automation, quality of services, security, and network assurance.

This course also helps you prepare to take the 350-501 Implementing and Operating Cisco® Service Provider Network Core Technologies (SPCOR) exam, which is part of the new CCNP® Service Provider certification and the Cisco Certified Specialist – Service Provider Core certification. This course also earns you 64 Continuing Education (CE) credits towards recertification.

This course will help you:

• Configure, verify, troubleshoot, and optimize next-generation, Service Provider IP network infrastructures;

• Deepen your understanding of Service Provider technologies including core architecture, services, networking, automation, quality of services, security, and network assurance;

• Prepare to take the 350-501 Implementing and Operating Cisco® Service Provider Network Core Technologies (SPCOR) exam.

OBJETIVO DO CURSO

After taking this course, you should be able to:

• Describe the Service Provider network architectures, concepts, and transport technologies;
• Describe the Cisco Internetwork Operating System (Cisco IOS®) software architectures, main IOS types, and their differences;
• Implement Open Shortest Path First (OSPF) in the Service Provider network;
• Implement Integrated Intermediate System-to-Intermediate System (IS-IS) in the Service Provider network;
• Implement Border Gateway Protocol (BGP) routing in Service Provider environments;
• Implement route maps and routing policy language;
• Describe IPv6 transition mechanisms used in the Service Provider networks;
• Implement high-availability mechanisms in Cisco IOS XR software;
• Implement traffic engineering in modern Service Provider networks for optimal resource utilization;
• Describe segment routing and segment routing traffic engineering concepts;
• Describe the VPN technologies used in the Service Provider environment;
• Configure and verify Multiprotocol Label Switching (MPLS) L2VPN in Service Provider environments;
• Configure and verify MPLS L3VPN in Service Provider environments;
• Implement IP multicast services;
• Describe the Quality of Service (QoS) architecture and QoS benefits for SP networks;
• Implement QoS in Service Provider environments;
• Implement control plane security in Cisco devices;
• Implement management plane security in Cisco devices;
• Implement data plane security in Cisco devices;
• Describe the Yet Another Next Generation (YANG) data modeling language;
• Implement automation and assurance tools and protocols;
• Describe the role of Cisco Network Services Orchestrator (NSO) in Service Provider environments;
• Implement virtualization technologies in Service Provider environments.

PÚBLICO-ALVO

• Network administrators
• Network engineers
• Network managers
• System engineers
• Project managers
• Network designers

PRÉ-REQUISITOS

• Intermediate knowledge of Cisco IOS or IOS XE;
• Familiarity with Cisco IOS or IOS XE and Cisco IOS XR Software configuration;
• Knowledge of IPv4 and IPv6 TCP/IP networking;
• Intermediate knowledge of IP routing protocols;
• Understanding of MPLS technologies;
• Familiarity with VPN technologies.

CONTEÚDO PROGRAMÁTICO

Describing Service Provider Network Architectures
Describing Cisco IOS Software Architectures
Implementing OSPF
Implementing IS-IS
Implementing BGP
Implementing Route Maps and Routing Protocol for LLN [Low-Power and Lossy Networks] (RPL)
Transitioning to IPv6
Implementing High Availability in Networking
Implementing MPLS
Implementing Cisco MPLS Traffic Engineering
Describing Segment Routing
Describing VPN Services
Configuring L2VPN Services
Configuring L3VPN Services
Implementing Multicast
Describing QoS Architecture
Implementing QoS
Implementing Control Plane Security
Implementing Management Plane Security
Implementing Data Plane Security
Introducing Network Programmability
Implementing Automation and Assurance
Introducing Cisco NSO
Implementing Virtualization in Service Provider Environments

Lab outline

Deploy Cisco IOS XR and IOS XE Basic Device Configuration
Implement OSPF Routing
Implement Integrated IS-IS Routing
Implement Basic BGP Routing
Filter BGP Prefixes Using RPL
Implement MPLS in the Service Provider Core
Implement Cisco MPLS Traffic Engineering (TE)
Implement Segment Routing
Implement Ethernet over MPLS (EoMPLS)
Implement MPLS L3VPN
Implement BGP Security
Implement Remotely Triggered Black Hole (RTBH) Filtering