SPSDNTXP

Implementing Converged SDN Transport Solutions

32 horas | Service Provider | Cisco

Cisco Continuing Education Credits

32 CE Credits

INTRODUÇÃO

The Implementing Converged SDN Transport Solutions (SPSDNTXP) v1.0 course introduces you to Software-Defined Networking (SDN)-ready architecture. This architecture evolves traditional Metro network design into an SDN-enabled programmable network capable of delivering all services (residential, business, 5G mobile backhauling, video, and IoT) on the premise of simplicity, full programmability, and cloud integration with guaranteed service level agreements (SLAs).

You will examine the evolution of service provider design principles such as Unified Multiprotocol Label Switching, Evolved Programmable Networks, and the Cisco® Compass Metro Fabric. Additionally, you'll explore and configure individual components of the design including segment routing and its supporting features.

This course will help you:

• Describe the Converged SDN Transport solution
• Describe the basic implementation of SDN component features
• Establish a foundation to take a deeper dive into SDN solutions

OBJETIVO DO CURSO

After taking this course, you should be able to:

• Introduce and examine the evolution of service provider design principles
• Introduce and review the basic building blocks of segment routing and its place within the service provider infrastructure
• Implement various technologies within segment routing to provide additional availability or to meet the Service Level Agreements (SLAs)
• Identify and deploy an SDN controller to support a multidomain segment routing for traffic engineering (SR-TE) network
• Describe different VPNs and services
• Explain how to configure and verify Ethernet VPN (EVPN) Native and EVPN Virtual Private Wire Service (VPWS)
• Describe how to configure and verify the Layer 3 VPN
• Explain network operation simplification and automation foundation
• Describe how to automate service provider network configurations with Cisco Network Services Orchestrator (NSO)
• Describe how to automate the service provider WAN with Cisco WAN Automation Engine (WAE)
• Explore different converged SDN transport use cases

PÚBLICO-ALVO

- Network architects
- Network engineers
- Network consulting engineers
- Customer support engineers

PRÉ-REQUISITOS

To fully benefit from this course, you should have:

- Knowledge of general networking concepts
- Experience working with CLI-based network devices

CONTEÚDO PROGRAMÁTICO

Course Introduction

Objectives

Converged SDN Transport Fundamentals

1.1 Introduction

1.2 History of Metro Designs

1.3 Converged SDN Transport

1.4 Cisco IOS XR Features

1.5 Cisco Crosswork Network Controller Overview

Introducing Segment Routing

2.1 Introduction

2.2 Segment Routing Overview

2.3 SIDs

2.4 Segment Routing Configuration and Verification Basics

2.5 Lab: Configure and Verify Segment Routing

Segment Routing TI-LFA and Traffic Engineering

3.1 Introduction

3.2 Topology-Independent Loop-Free Alternate

3.3 Lab: Configure and Verify SR TI-LFA

3.4 Local SR-TE

3.5 Lab: Configure and Verify SR-TE

3.6 Advanced SR-TE Features

Multidomain SR-TE

4.1 Introduction

4.2 PCE Overview

4.3 PCE and PCC Configuration

4.4 Multidomain SR-TE Policy Configuration

4.5 Lab: Configure and Verify Multidomain SR-TE

VPN and Services Overview

5.1 Introduction

5.2 Types of VPNs

5.3 MPLS VPN Control Plane

EVPN Layer 2 Basics

6.1 Introduction

6.2 EVPN Foundation

6.3 Configuring and Verifying EVPN Native

6.4 Configuring and Verifying EVPN VPWS

6.5 Lab: Configure and Verify Basic EVPN

Layer 3 VPNs

7.1 Introduction

7.2 Layer 3 VPN Overview

7.3 Layer 3 VPN Models

7.4 Layer 3 VPN Configuration and Verification

7.5 Lab: Configure and Verify Layer 3 VPN

Quality of Service

8.1 Introduction

8.2 QoS

Operation Simplification and Automation Foundation

9.1 Introduction

9.2 Cisco IOS XR NETCONF and YANG

9.3 Model-Driven Telemetry

9.4 ZTP

Network Orchestration Using NSO

10.1 Introduction

10.2 NSO Functionality Overview

10.3 Cisco NSO Components

10.4 Cisco NSO Services

10.5 Lab: Cisco NSO Overview

Network Automation Using Cisco WAE

11.1 Introduction

11.2 Cisco WAE Functionality Overview

11.3 Cisco WAE Network Modeling

11.4 Cisco WAE Design Traffic Engineering

11.5 Lab: Cisco WAE Overview

Converged SDN Transport Use Cases

12.1 Introduction

12.2 Migration to Converged SDN Transport

12.3 Cisco 5G Converged SDN Transport Solution

12.4 Distributed Cloud Resources