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Junos Layer 2 VPNs (JL2V)

CODE: **LENGTH:** **PRICE:**

JUN_JL2V 16 Hours (2 dage) kr 21,200.00

Description

This two-day course is designed to provide students with MPLS-based Layer 2 virtual private network (VPN) knowledge and configuration examples. The course includes an overview of MPLS Layer 2 VPN concepts, such as BGP Layer 2 VPNs, LDP Layer 2 circuits, FEC 129 BGP autodiscovery, virtual private LAN service (VPLS), Ethernet VPN (EVPN), and Inter-AS Layer 2 VPNs. This course also covers Junos operating system-specific implementations of Layer 2 VPN instances, VPLS, and EVPNs. This course is based on the Junos OS Release 15.1R2.9.

Through demonstrations and hands-on labs, students will gain experience in configuring and monitoring the Junos OS and in device operations.

Junos Layer 2 VPNs (JL2V) is an advanced-level course.

Objectives

After successfully completing this course, you should be able to:

- Define the term virtual private network.
- Describe the business drivers for MPLS VPNs.
- Describe the differences between Layer 2 VPNs and Layer 3 VPNs.
- List advantages for the use of MPLS Layer 3 VPNs and Layer 2 VPNs.
- Describe the roles of a CE device, PE router, and P router in a BGP Layer 2 VPN.
- Explain the flow of control traffic and data traffic for a BGP Layer 2 VPN.
- Configure a BGP Layer 2 VPN and describe the benefits and requirements of over-provisioning.
- Monitor and troubleshoot a BGP Layer 2 VPN.
- Explain the BGP Layer 2 VPN scaling mechanisms and route reflection.
- Describe the Junos OS BGP Layer 2 VPN CoS support.
- Describe the flow of control and data traffic for an LDP Layer 2 circuit.
- Configure an LDP Layer 2 circuit.
- Monitor and troubleshoot an LDP Layer 2 circuit.
- Describe the operation of FEC 129 BGP autodiscovery for Layer 2 VPNs.
- Configure a FEC 129 BGP autodiscovery Layer 2 VPN.
- Monitor and troubleshoot a FEC 129 BGP autodiscovery for Layer 2 VPNs.
- Describe the difference between Layer 2 MPLS VPNs and VPLS.
- Explain the purpose of the PE device, the CE device, and the P device.
- Explain the provisioning of CE and PE routers.
- Describe the signaling process of VPLS.
- Describe the learning and forwarding process of VPLS.
- Describe the potential loops in a VPLS environment.
- Configure BGP, LDP, and FEC 129 BGP autodiscovery VPLS.
- Troubleshoot VPLS.
- Describe the purpose and features of Ethernet VPN.
- Configure Ethernet VPN.
- Monitor and troubleshoot Ethernet VPN.
- Describe the Junos OS support for hierarchical VPN models.
- Describe the Junos OS support for Carrier-of-Carriers VPN Option C.
- Configure the interprovider VPN Option C.
- Describe the Junos OS support for multisegment pseudowire for FEC 129.
- Describe and configure circuit cross-connect (CCC).

Audience

This course benefits individuals responsible for configuring and monitoring devices running the Junos OS.

Prerequisites

Students should have intermediate-level networking knowledge and an understanding of OSPF, IS-IS, BGP, and Junos policy.

Students should have experience configuring MPLS label-switched paths using Junos.

Students should also attend the following courses prior to attending this class:

Introduction to the Junos Operating System (IJOS),

Junos Routing Essentials (JRE),

Junos Service Provider Switching (JSPX),

Junos Intermediate Routing (JIR), and

Junos MPLS Fundamentals (JMF)

Programme

Day 1

Chapter 1: Course Introduction

Chapter 2: MPLS VPNs

- MPLS VPNs

- Provider-Provisioned VPNs

Chapter 3: BGP Layer 2 VPNs

- Overview of Layer 2 Provider-Provisioned VPNs

- BGP Layer 2 VPN Operational Model: Control Plane

- BGP Layer 2 VPN Operational Model: Data Plane

- Preliminary BGP Layer 2 VPN Configuration

- BGP Layer 2 Configuration

- Monitoring and Troubleshooting BGP Layer 2 VPNs

- Lab: BGP Layer 2 VPNs

Chapter 4: Layer 2 VPN Scaling and CoS

- Review of VPN Scaling Mechanisms

- Layer 2 VPNs and CoS

- Lab: Layer 2 VPN Scaling

Chapter 5: LDP Layer 2 Circuits

- LDP Layer 2 Circuit Operation

- LDP Layer 2 Circuit Configuration

- LDP Layer 2 Circuit Monitoring and Troubleshooting

- FEC 129 BGP Autodiscovery Layer 2 Circuit Operation

- FEC 129 BGP Autodiscovery Layer 2 Circuit Configuration

- FEC 129 BGP Autodiscovery Monitoring and Troubleshooting

- Lab: LDP Layer 2 Circuit and FEC 129 BGP Autodiscovery

Day 2

Chapter 6: Virtual Private LAN Services

- Layer 2 MPLS VPNs Versus VPLS

- BGP VPLS Control Plane

- BGP VPLS Data Plane

- Learning and Forwarding Process

- Loops

Chapter 7: VPLS Configuration

- VPLS Configuration

- VPLS Troubleshooting

- Lab: VPLS

Chapter 8: Ethernet VPN (EVPN)

- EVPN Overview

- EVPN Control Plane

- EVPN Operation

- EVPN Configuration

- EVPN Troubleshooting

- Lab: EVPN

Appendix A: Interprovider Backbones for Layer 2 VPNs

- Hierarchical VPN Models

- Carrier-of-Carriers VPN Option C

- Interprovider VPN Option C

- Multisegment Pseudowires

Appendix B: Circuit Cross-Connect

- Circuit Cross-Connect

- Lab: Circuit Cross-Connect (optional)

Session Dates

På anmodning. [Kontakt os venligst](#)

Yderligere Information

Denne træning er også tilgængelig som træning på stedet. Kontakt os for at finde ud af mere.