Arrow ECS Finland Oy - Education Services

TRAINING OFFERING

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Junos Multicast Routing (JMR)

CODE:	LENGTH:	PRICE:
JUN_JMR-V	16 Hours (2 days)	€1,850.00

Description

This two-day course is designed to provide students with detailed coverage of multicast protocols including Internet Group Management Protocol (IGMP), Protocol Independent Multicast-Dense Mode (PIM-DM), Protocol Independent Multicast-Sparse Mode (PIMSM), Bidirectional PIM, and Multicast Source Discovery Protocol (MSDP).
Through demonstrations and hands-on labs, students will gain experience in configuring and monitoring the Junos OS and monitoring device and protocol operations. This course utilizes Juniper Networks vMX Series devices for the hands-on component, but the lab environment does not preclude the course from being applicable to other Juniper hardware platforms running the Junos OS. The Juniper Networks vMX Series devices run Junos OS Release 16.2R1.6.
Course will be delivered using latest available course material version offered by Juniper

Objectives

- Describe IP multicast traffic flow.
- Identify the components of IP multicast.
- Explain how IP multicast addressing works.
- Describe the need for reverse path forwarding (RPF) in multicast.
- Explain the role of IGMP and describe the available IGMP versions.
- Configure and monitor IGMP.
- Identify common multicast routing protocols.
- Explain the differences between dense-mode and sparse-mode protocols.
- Describe rendezvous point (RP) discovery options.
- Describe bidirectional PIM.
- Configure and monitor rendezvous point discovery mechanisms.
- Configure bidirectional PIM sparse mode.
- Explain the purpose and operation of MSDP.
- Describe the usage of MSDP within a single PIM domain with anycast-RP.
- Describe the usage of MSDP across multiple PIM domains.
- Configure and monitor MSDP.
- Compare the any-source multicast (ASM) and source-specific multicast (SSM) service models.
- Describe the basic requirements, benefits, and caveats of SSM.
- List the address ranges used for SSM.
- Illustrate the role of IGMPv3 and PIM-SM in an SSM implementation.
- Configure and monitor SSM.
- Describe the default PIM sparse mode information distribution.
- Explain how routing policies control IGMP joins.
- Explain how routing policies alter PIM protocol message flow.
- Identify the role of a policy in controlling MSDP message advertisement.
- Explain how you can use a policy to scope multicast groups.
- Configure and monitor PIM dense mode and PIM sparse mode.
- Describe IPv6 multicast addresses.
- Describe IPv6 multicast scoping.
- Compare IPv6 Multicast Listener Discovery (MLD) versions with IPv4’s IGMP protocol versions.
- Describe IPv6 SSM.

Audience

This course benefits individuals responsible for implementing, monitoring, and troubleshooting multicast components in a service provider’s network.

Prerequisites

Students should have basic networking knowledge and an understanding of the Open Systems Interconnection (OSI) model and the TCP/IP protocol suite. Students should also have working knowledge of security policies.
Students should also attend the Introduction to the Junos Operating System (IJOS) and Junos Intermediate Routing (JIR) courses prior to attending this class.

Programme

Day 1
1 COURSE INTRODUCTION
2 Introduction to Multicast

- Overview of Multicast
- Multicast Addresses
- Reverse Path Forwarding
- Internet Group Management Protocol

LAB 1: Implementing a Baseline Network
3 Multicast Routing Protocols

- Overview of Multicast Routing Protocols
- PIM Message Types

4 PIM Sparse Mode

- PIM Sparse Mode Operation
- Bidirectional PIM Operation
- Configuring Sparse Mode
- Configuring Bidirectional PIM
- Monitoring Sparce Mode

LAB 2: PIM Sparse Mode and RP Discovery
Day 2
5 MSDP

- MSDP
- Anycast-RP

LAB 3: Implementing MSDP and Anycast-RP
6 Source-Specific Multicast

- Overview of SSM Operation
- SSM Addresses
- IGMPv3 and SSM
- PIM-SM and SSM
- SSM Case Study

LAB 4: Source-Specific Multicast
7 Multicast and Policy

- Multicast and Policy Overview
- Controlling PIM Join and Register Messages
- Controlling BSR Messages
- Controlling MSDP SA Messages
- Implementing Multicast Scoping

LAB 5: Multicast and Policy
Appendix A: PIM Dense Mode

- Dense Mode Operation
- Configuring Dense Mode
- Monitoring Dense Mode

LAB 6: PIM Dense Mode (Optional)
Appendix B: IPv6 Multicast

- IPv6 Multicast Addresses
- IPv6 MLD

- IPv6 ASM Options
- IPv6 SSM Addresses

Follow on courses

Advanced Junos Service Provider Routing (AJSPR)
Junos Layer 2 VPNs (JL2V)
Junos Layer 3 VPNs (JL3V)
Junos Class of Service (JCOS)
JNCIE-SP Bootcamp

Test and Certification

JNCIP-SP

Session Dates

Aikataulutamme kiinnostuksen mukaan. Ota yhteyttä

Additional Information

This training is also available as onsite training. Please contact us to find out more.