Junos Multicast Routing

Category: Networking & Security | **Vendor:** Juniper

Duration: 16.00 hours (2 days) **13.0 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

You will get a FREE exam voucher after finishing the course.

About This Course

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 (PIM-SM), and Multicast Source Discovery Protocol (MSDP).

Through demonstrations and hands-on labs, students will gain experience in configuring and monitoring the Junos operating system and monitoring device and protocol operations. This course uses Juniper Networks MX Series 3D Universal Edge Routers 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.

This course is based on the Junos OS Release 11.4R1.14.

Who Should Attend

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

Prerequisites & Entry Requirements

General 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.

Learning Outcomes

Upon successful completion of this course, participants will be able to:

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

- 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.
- Configure and monitor PIM dense mode and PIM sparse mode.
- Configure and monitor rendezvous point discovery mechanisms.
- 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.
- Describe IPv6 multicast addresses.
- Describe IPv6 multicast scoping.
- Compare IPv6 Multicast Listener Discovery (MLD) versions with IPv4’s IGMP protocol versions.
- Describe IPv6 SSM.

Detailed Course Outline

Day 1

Chapter 1: Course Introduction

Chapter 2: Introduction to Multicast

- Overview of Multicast
- Multicast Addresses
- Reverse Path Forwarding
- Internet Group Management Protocol
- Lab 1: Implementing a Baseline Network

Chapter 3: Multicast Routing Protocols

- Overview of Multicast Routing Protocols
- PIM Dense Mode Operation
- Lab 2: PIM Dense Mode
- PIM Sparse Mode Operation
- Lab 3: PIM Sparse Mode and RP Discovery

Day 2

Chapter 4: MSDP

- MSDP
- Anycast-RP
- Lab 4: Implementing MSDP and Anycast-RP

Chapter 5: Source-Specific Multicast

- Overview of SSM Operation

- SSM Addresses
- IGMPv3 and SSM
- PIM-SM and SSM
- SSM Case Study
- Lab 5: Source-Specific Multicast

Chapter 6: Multicast and Policy

- Multicast and Policy Overview
- Controlling PIM Join and Register Messages
- Controlling BSR Messages
- Controlling MSDP SA Messages
- Implementing Multicast Scoping
- Lab 6: Multicast and Policy

Appendix A: IPv6 Multicast

- IPv6 Multicast Addresses
- IPv6 MLD
- IPv6 ASM Options
- IPv6 SSM Addresses

Skills You Will Learn:

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

- 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.
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- Explain how you can use a policy to scope multicast groups.
- Describe IPv6 multicast addresses.
- Describe IPv6 multicast scoping.
- Compare IPv6 Multicast Listener Discovery (MLD) versions with IPv4’s IGMP protocol versions.
- Describe IPv6 SSM.

Frequently Asked Questions

Q: What delivery options are available for Junos Multicast Routing?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 2-day Junos Multicast Routing course provides up to 13.0 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Junos Multicast Routing training?

The training takes place over 2 day(s), with each day lasting approximately 16.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Junos Multicast Routing?

Yes, we provide corporate training, dedicated training, and closed classes for Junos Multicast Routing. Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Junos Multicast Routing, Service Provider Routing and Switching, JMR

Q: Why choose Nexus Human for Junos Multicast Routing?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Junos Multicast Routing training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

Nexus Human

Professional Training & Development

Email: info@nexushuman.com

Website: www.nexushuman.com

Phone: +353 1 889 8700 (Ireland) | +44 20 8142 8961 (UK)

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