Junos Subscriber Management (JSM)

Engineering Simplicity

COURSE LEVEL

JSM is an intermediate-level course.

AUDIENCE

This course is intended for network administrators who configure and administer subscriber management features on MX routers running the Junos OS.

PREREQUISITES

- A strong base of networking fundamentals;
- A high-level understanding of broadband access concepts;
- Experience and familiarity with the Junos OS;
- Familiarity with the Junos command-line interface (CLI); and
- Completion of the Introduction to the Junos Operating System (IJOS) course

RELEVANT JUNIPER PRODUCT

- Junos OS
- MX Series

CONTACT INFORMATION

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COURSE OVERVIEW

This four-day course is designed to provide students with the knowledge required to configure and manage subscriber management on devices running the Junos operating system. This course focuses on the main configuration components of subscriber management, including subscriber authentication, authorization, and accounting (AAA), Dynamic Host Configuration Protocol (DHCP) local server and DHCP relay/proxy agent, the Point-to-Point Protocol (PPP), subscriber addressing, dynamic profiles, subscriber interfaces, Layer 3 and Layer 2 wholesale services, Pseudowire Head-End Termination (PHT), L2TP, dynamic firewall services, subscriber class of service (CoS), dynamic multicast services, basic NAT and CGN functions, and Subscriber Secure Policy (SSP, or Lawful Intercept).

Through demonstrations and hands-on labs, students will gain experience in configuring, monitoring, and troubleshooting subscriber management features on MX Series Universal Edge Routers running the Junos OS.

This course is based on the Junos OS Release 20.1R1.11.

OBJECTIVES

- Describe the fundamentals of subscriber management on a device running the Junos OS, including broadband access design concepts, hardware and software requirements, and configuration components.
- Configure subscriber AAA.
- Configure, verify, and troubleshoot extended DHCP local server, extended DHCP relay agent, and DHCP relay proxy mode.
- Configure dynamic Point-to-Point Protocol over Ethernet (PPPoE) for subscriber access.
- Configure subscriber addressing.
- Configure, verify, and troubleshoot dynamic profiles.
- List predefined Junos variables used in subscriber management.
- Configure, verify, and troubleshoot static and dynamic virtual LANs (VLANs).
- Configure, verify, and troubleshoot static and dynamic subscriber interfaces.
- Describe Layer 2 and Layer 3 wholesale services.
- Configure and implement Layer 2 and Layer 3 wholesale services.
- Configure, verify, and troubleshoot dynamic firewall services.
- Configure, verify, and troubleshoot subscriber CoS.
- Configure, verify, and troubleshoot dynamic multicast services.
- Configure, verify, and troubleshoot basic NAT functions.
- Configure, verify, and troubleshoot Subscriber Secure Policy (Lawful Intercept).

Course content subject to change. See www.juniper.net/courses for the latest details.

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COURSE CONTENT

Day 1

| 1 | COURSE INTRODUCTION |

| 2 | Introduction to Subscriber Management |

- Overview and Terminology
- Broadband Access Network Design and Concepts
- Configuration and Operational Flow
- Software Licensing

| 3 | Access Management |

- Access Management Overview
- AAA Services
- Extended DHCP Local Server
- Extended DHCP Relay
- Subscriber Addressing
- L2TP Subscriber Access

LAB 1: Configuring Subscriber Access

| 4 | Subscriber Interfaces and Dynamic Profiles |

- Junos Interfaces Overview
- VLAN Types
- Dynamic Profiles
- Subscriber Interfaces
- Monitoring and Troubleshooting Tools

LAB 2: Configuring Interfaces and Dynamic Profiles

Day 2

| 5 | Dynamic PPPoE for Subscriber Access |

- PPPoE Overview
- Dynamic PPPoE Overview and Operational Flow
- Dynamic PPPoE Interface Configuration
- PPPoE Service Table Names

LAB 3: Configuring Dynamic PPPoE Subscriber Access

| 6 | Layer 3 and Layer 2 Wholesale Services |

- Wholesale Services Overview
- Layer 3 DHCP Wholesale
- Layer 3 PPPoE Wholesale
- Layer 2 Wholesale

LAB 4: Configuring Layer 3 Wholesale Services

| 7 | Layer 2 Tunneling Protocol (L2TP) |

- L2TP Overview
- LAC and LNS Functions
- LAC Tunnel Selection
- L2TP Configuration

LAB 5: Configuring L2TP for Subscriber Access

Day 3

8	**Pseudowire Head-End Termination (PHT)**

- MPLS Pseudowire for Subscribers
- Pseudowire Subscriber Interfaces
- Configuring Hierarchical CoS Pseudowire Subscriber Interfaces

LAB 6: Configuring MPLS Pseudowire for Subscribers

10	**Dynamic Firewall Services**

- Firewall Filters Overview
- Implementing Dynamic Firewall Services
- Monitoring Firewall Filters and Counters

LAB 8: Configuring Dynamic Firewall Services

9	**Subscriber Class of Service**

- Class of Service Overview
- Traffic Classification, Queuing, and Scheduling
- Implementing Subscriber Class of Service
- Monitoring and Troubleshooting Tools

LAB 7: Configuring Subscriber Class of Service

Day 4

11	**Dynamic Multicast Services**

- IGMP Overview
- Implementing Dynamic Multicast Services
- Monitoring Multicast and IGMP

LAB 9: Configuring Dynamic Multicast Services

12	**Carrier Services**

- NAT and CGNAT Services
- Subscriber Secure Policy (Lawful Intercept)

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