Junos Class of Service

Duration: 2 Days **Course Code: JCOS**

Overview:

This two-day course provides students with advanced class-of-service (CoS) knowledge and configuration examples. The course begins with an overview of CoS before going into classification, policing, scheduling, and rewriting. The course then covers class-based forwarding and finishes with a case study. Through demonstrations and hands-on labs, students will gain experience in configuring and verifying Junos CoS features. This course is based on the Junos operating system Release 16.2R1.6.
Junos Class of Service is an advanced level course.

Target Audience:

This course benefits individuals responsible for configuring and monitoring devices running the Junos OS, especially those in a service provider environment. It also benefits individuals responsible for designing networks containing devices running the Junos OS.

Objectives:

- **After successfully completing this course, you should be able to:**
- Understand the history and evolution of CoS.
- Identify the CoS fields in various packet headers.
- List the CoS processing stages on devices running the Junos OS.
- Identify the default CoS settings on devices running the Junos OS.
- Configure and verify behavior aggregate (BA) and multifield (MF) classification.
- Configure and verify two-color and tricolor marking policers.
- Configure and verify schedulers and their components.
- Configure and verify the multiple levels of hierarchical schedulers.
- Configure and verify packet header rewriting.
- Configure and verify class-based forwarding.
- Create a CoS configuration based on a set of design requirements.

Prerequisites:

- Students should attend the Introduction to the Junos Operating System (IJOS) course and the Junos Intermediate Routing (JIR) course, or have equivalent experience prior to attending this class. General knowledge of CoS concepts is also helpful.

Testing and Certification

- Attending this course is recommended preparation for the Juniper Networks Certified Professional Service Provider Routing and Switching (JNCIP-SP) certification exam.

Follow-on-Courses:

- The Junos Multicast Routing (JMR) is suggested follow on training to this course.

Content:

Chapter 1: Course Introduction

Chapter 2: CoS Overview

- CoS History and Evolution
- CoS and DiffServe
- CoS Fields in Packet Headers
- CoS Processing

Chapter 3:Packet Classification

- Classification Overview
- Forwarding Classes and Packet Loss Priority
- Fixed Classification
- Multifield Classification
- Behavior Aggregate Classification
- Lab 1: Configuring Packet Classification

Chapter 4: Policing

- Policing Overview
- Single-Rate Two-Color Policer
- Tricolor Marking Policers
- Hierarchical Policers
- Application—Directly on an Interface
- Application—Within a Firewall Filter
- Lab 2: Configuring Policers

Chapter 5:Scheduling

- Scheduling Overview
- Transmission Rate
- Queue Priority
- Delay Buffers
- Drop Profiles and Drop Profile Maps
- Scheduling Configuration
- Lab 3: Configuring Schedulers

Chapter 6:Hierarchical Scheduling

- Hierarchical Scheduling Overview
- Scheduler Modes
- Hierarchical Scheduling Levels
- Throughput Example
- Remaining Traffic
- Queue Properties in a Hierarchical Scheduling Context
- Putting It All Together
- Lab 4: Configuring Hierarchical Schedulers

Chapter 7:Rewrite Rules

- Packet Header Rewrite Overview
- Rewrite Rules and Tables
- Rewrite Combinations
- Lab 5: Configuring Rewrite Rules

Chapter 8:CoS-Based Forwarding

- CBF Overview
- CBF Configuration
- Lab 6: Configuring CBF

Chapter 9:Case Study

- VOIP Case Study Overview
- VOIP Case Study: Ingress Node
- VOIP Case Study: Transit and Egress Nodes

Appendix A: CoS Processing on M Series, T Series, and MX Series Devices:

- M Series and T Series Architecture
- M Series and T Series CoS Packet Handling
- IQ2 PIC CoS Packet Handling
- MX Series (DPC and MPC/MIC) Architecture and CoS Packet Handling

Further Information:

For More information, or to book your course, please call us on 00 20 (0) 2 2269 1982 or 16142

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