



Course No: (TWI-JUN-IPv6-W)
Length: 2 days

About this Course

This two-day workshop is designed to provide students with an understanding of IPv6 concepts including ICMPv6 Neighbor Discovery, and IPv6 addressing and routing protocols including protocol-independent routing, RIPng, OSPFv3, and BGP. Support for IPv6 in MPLS and VPLS, and IPv6 transition methods are also covered. Through demonstrations and hands-on labs, students will gain experience configuring and monitoring device and protocol operations. This course is based on the Junos OS Release 9.6R2.1.

Objectives

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

- Describe the format and elements of an IPv6 address.
- Describe the different types of IPv6 addresses.
- Configure and verify IPv6 addressing and options on devices running the Junos operating system.
- List the characteristics of ICMPv6.
- State the process by which IPv6 hosts discover media address information for neighboring hosts.
- State the process by which IPv6 hosts obtain addressing and network configuration information.
- Configure IPv6 router advertisements using the Junos OS.
- Troubleshoot IPv6 router advertisements using the Junos OS.
- Configure IPv6 routing tables, static routes, and aggregate routes.
- Configure RIPng.
- Configure OSPFv3.
- Configure IS-IS for IPv6.
- Configure BGP with IPv4 and IPv6 peers for IPv6 traffic.
- Troubleshoot routing protocols for IPv6.
- Explain the basic concepts of MPLS.
- Describe the different options to carry IPv6 traffic across an MPLS network.
- Describe how to configure Layer 2 VPNs to carry IPv6 traffic over an MPLS network.
- Describe and configure 6PE to carry IPv6 traffic over an MPLS network.
- Describe different transition options from IPv4 to IPv6.
- Configure a dual stack Juniper Networks device.
- Describe different tunneling methods.
- Configure static tunnels using the Junos OS.
- Describe protocol translation.

Intended Audience

This course benefits individuals responsible for implementing, monitoring, and troubleshooting IPv6 networks using the Junos OS.

Course Level

This is an advanced-level course.

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Prerequisites

Students should have intermediate-level networking knowledge and should complete Introduction to the Junos Operating System (IJOS), Junos Routing Essentials (JRE), and Junos Intermediate Routing (JIR) courses, or have equivalent experience prior to attending this class.

Course Contents

Day1

Chapter 1: Course Introduction

Chapter 2: : Configuring IPv6 Addressing

Chapter 3: IPv6 Neighbor Discovery

- ICMPv6 Overview
- Neighbor Discovery
- Autoconfiguration
- Configuration of the Junos Operating System
- Lab 1: Addressing and Neighbor Discovery

Chapter 4: Routing Protocols

- Protocol-Independent Features RIPng
- Lab 2: RIPng and Static Routes OSPFv3
- Lab 3: OSPFv3 ISIS
- Lab 4: IS-IS

Day 2

Chapter 4: Routing Protocols BGP

- Lab 5: MP-BGP

Chapter 5: IPv6 Support in MPLS

- Lab 6: MPLS

Chapter 6: IPv6 Tunneling

- Lab 7: IPv6 Tunneling
- Lab 8: (Optional) Firewall Filters

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