# Introduction to Juniper Data Center Networking

**Category:** Infrastructure & IT Operations | **Vendor:** Juniper

**Duration:** 24.00 hours (3 days) **19.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

## Course Information

**Delivery Format:** Instructor Led - Online

## Course Overview

This three-day course provides introductory instruction on data center switching using Juniper products. This course does not cover Ethernet VPN– Virtual Extensible LAN (EVPN-VXLAN) architecture, but lays the foundational knowledge necessary to understand a data center that is built upon an IP fabric. In addition, this course covers Ethernet switching, VLANs, Layer 2 security features, routing policies, link aggregation, load balancing, filterbased forwarding (FBF), routing instances, BGP, graceful restart, and bidirectional forwarding detection (BFD).

## About This Course

This three-day course provides introductory instruction on data center switching using Juniper products. This course does not cover Ethernet VPN– Virtual Extensible LAN (EVPN-VXLAN) architecture, but lays the foundational knowledge necessary to understand a data center that is built upon an IP fabric. In addition, this course covers Ethernet switching, VLANs, Layer 2 security features, routing policies, link aggregation, load balancing, filterbased forwarding (FBF), routing instances, BGP, graceful restart, and bidirectional forwarding detection (BFD).

## Who Should Attend

This course benefits individuals responsible for configuring and managing network equipment in data centers.

### Prerequisites & Entry Requirements

**General Prerequisites:**

The following are the prerequisites for this course:

- Knowledge of basic TCP/IP networking
- Understanding basic layer 2
- Familiarity with Data Center technologies
- Completion of the Introduction to the Junos Operating System (IJOS) course or equivalent Junos OS configuration experience

## Learning Outcomes

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

- Identify and describe how to configure a typical data center layout, including spine and leaf placements
- Describe an IP fabric architecture
- Explain and configure basic Ethernet switching
- Explain and configure virtual networks (VLANs)
- Describe layer 2 security
- Implement link aggregation
- Describe and implement protocol independent routing and routing instances with Junos OS
- Configure load balancing within Junos OS
- Implement FBF using Junos OS
- Describe and deploy OSPF
- Describe and deploy BGP
- Implement graceful restart and BFD using Junos OS

## Detailed Course Outline

Day 1

Chapter 1: Course Introduction

Chapter 2: Traditional Data Center Architectures

- Explain traditional multitier architecture, its benefits, and challenges
- Describe a traditional data center-based scenario

Chapter 3: Juniper’s Modern Data Center Architectures

- Describe an IP fabric environment
- Explain routing in an IP fabric environment
- Explain using Juniper Apstra as a turnkey solution

Chapter 4: Ethernet Switching Overview

- Explain the basics of Ethernet switching
- Provide an overview of enterprise switching platforms

Chapter 5: Configuring Ethernet Switching

- Manage and interpret the Ethernet switching table
- Lab 1: Implementing Ethernet Switching

Chapter 6: Virtual Networks Overview

- Describe access and trunk port modes
- Describe alternate VLAN and data VLAN concepts
- Explain native VLAN routing operations

Chapter 7: Configuring Virtual Networks

- Configure and monitor VLANs
- Configure and monitor inter-VLAN routing
- Lab 2: Implementing Virtual Networks

Day 2

Chapter 8: Port Security

- Identify MAC limiting
- Review the basics of persistent MAC learning
- Implement MACsec (QFX-centric)
- Review storm control operational parameters
- Lab 3: Implement Port Security

Chapter 9: Link Aggregation

- Describe and implement link aggregation
- Identify link aggregation groups
- Review graceful Routing Engine switchover
- Explain nonstop active routing
- Review nonstop bridging
- Lab 4: Configuring and Monitoring Link Aggregation

Chapter 10: Protocol-Independent Routing

- Describe and configure static routes
- Explain and configure aggregate routes
- Explain and configure generated routes

Chapter 11: Routing Instances

- Describe routing instances
- Configure and share routes between routing instances
- Lab 5: Configuring Protocol-Independent Routing and Routing Instances

Chapter 12: Load Balancing

- Describe load-balancing concepts and operations
- Implement and monitor Layer 3 load balancing

Day 3

Chapter 13: Filter-Based Forwarding

- Explain the benefits of filter-based forwarding
- Configure and monitor filter-based forwarding
- Lab 6: Load Balancing and FBF

Chapter 14: Fundamentals of OSPF

- Provide an overview of OSPF
- Explain OSPF scalability
- Describe adjacency formation and designated router election
- Configure and monitor OSPF
- Perform OSPF troubleshooting
- Lab 7: Configuring OSPF (Optional)

Chapter 15: Fundamentals of BGP

- Describe the basics of BGP
- Explain BGP attributes

Chapter 16: Deploying BGP.

- Compare IBGP versus EBGP

- Configure and monitor BGP

- Lab 8: Deploying BGP

Chapter 17: Graceful Restart and Bidirectional Forwarding Detection

- Configure graceful restart

- Configure bidirectional forwarding detection (BFD)

- Lab 9: Configuring Graceful Restart and BFD

**Skills You Will Learn:**

- Identify and describe how to configure a typical data center layout, including spine and leaf placements<br>- Describe an IP fabric architecture<br>- Explain and configure basic Ethernet switching<br>- Explain and configure virtual networks (VLANs)<br>- Describe layer 2 security<br>- Implement link aggregation<br>- Describe and implement protocol independent routing and routing instances with Junos OS<br>- Configure load balancing within Junos OS<br>- Implement FBF using Junos OS<br>- Describe and deploy OSPF<br>- Describe and deploy BGP<br>- Implement graceful restart and BFD using Junos OS

# Frequently Asked Questions

### Q: What delivery options are available for Introduction to Juniper Data Center Networking?

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

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### Q: How many CPD hours does this course provide?

The 3-day Introduction to Juniper Data Center Networking course provides up to 19.5 CPD hours of structured learning. CPD certificates can be provided upon request.

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### Q: What is the duration of the Introduction to Juniper Data Center Networking training?

The training takes place over 3 day(s), with each day lasting approximately 24.00 hours including breaks for lunch and refreshments.

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### Q: Do you provide corporate training for Introduction to Juniper Data Center Networking?

Yes, we provide corporate training, dedicated training, and closed classes for Introduction to Juniper Data Center Networking. 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.

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### Q: What related terms do people search for?

Popular related searches include: Introduction to Juniper Data Center Networking, Data Center, IJDC

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### Q: Why choose Nexus Human for Introduction to Juniper Data Center Networking?

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

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### Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Introduction to Juniper Data Center Networking training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.


## Nexus Human

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