

OUR LEARNING EXCLUSIVE

- Custom exam prep software and materials
- Exam delivery in the classroom, with a **98% success rate**
- Course-specific thinQtank® Learning publications to make the learning fun and engaging
- Extended hours of training, including immersive hands-on exercises
- **We do not teach the test.** We always deliver valuable hands-on experience
- All reading material and study guides sent to you when you register
- Every course taught by certified expert instructors

TRAINING CAMP FORMAT

thinQtank® Learning delivers this camp as **instructor-led training** combining three Juniper courses, with the exams sat in the classroom as part of the camp. Camps are scheduled by cohort rather than to a fixed calendar, and the balance of lecture, demonstration and hands-on lab work is set to suit the group and the delivery method. Contact us for the schedule covering your dates.

PREREQUISITES

- Basic networking knowledge
- An understanding of the OSI reference model and the TCP/IP protocol suite
- Comfort at a command line; no prior Junos experience is assumed

DELIVERY METHODS

- Instructor-led training
- Immersive live-online training
- On-site and custom delivery

THE CERTIFICATION TRACK

This camp covers the first two rungs of Juniper's Enterprise Routing and Switching track. The professional and expert levels build on the same Junos foundation.

JNCIA-Junos → **JNCIS-ENT** → JNCIP-ENT → JNCIE-ENT

COURSE OVERVIEW

thinQtank® Learning offers a unique training camp in which students learn to design, implement, operate and optimize enterprise networks running the **Juniper Junos OS**. As with all our Juniper training experiences, exams can be delivered in the classroom.

The camp combines **four Juniper courses** — IJOS, JRE, JEX and JIR — into a single progression that takes you from no Junos experience to the associate and specialist certifications in the Enterprise Routing and Switching track.

Through demonstrations and hands-on labs you gain experience configuring and monitoring the Junos OS and monitoring device operations — the CLI and J-Web, initial and secondary system configuration, interfaces, static and dynamic routing, routing policy, firewall filters and class of service.

From there the camp moves into enterprise switching — VLANs, spanning tree, port security, virtual chassis and high availability — and intermediate routing, including OSPF, BGP, load balancing, filter-based forwarding and IP tunneling.

EXAMS

JN0-106 JNCIA-Junos

Junos, Associate

Recommended first exam. 90 minutes, 65 multiple-choice questions.

JN0-351 JNCIS-ENT

Enterprise Routing and Switching, Specialist

90 minutes, 65 multiple-choice questions.

Exam codes verified against juniper.net on 31 August 2026. The retired codes JN0-102 and JN0-347 no longer exist.

TARGET AUDIENCE

- Anyone responsible for configuring and monitoring devices running the Junos OS
- Network engineers and operators moving to Juniper from another vendor's platform
- Anyone working toward **JNCIA-Junos** and then **JNCIS-ENT**
- Support and operations staff who need to read, change and troubleshoot Junos configurations

EXCLUSIVE LEARNING PACKAGE

- Additional hours of remote lab access
- Custom video recordings with deeper coverage of the course topics
- Digital courseware
- Retake any or all of the course as many times as you like, in person or live online, for **24 months**
- Six months' mentoring access to expert engineers after the course

FOUR JUNIPER COURSES IN ONE CAMP

IJOS — Introduction to the Junos Operating System

The foundational knowledge to work with the Junos operating system and configure Junos devices — the device families and key architectural components, user interface options with a heavy focus on the CLI, initial device setup, interface configuration with worked examples, secondary system configuration, and operational monitoring and maintenance.

JRE — Junos Routing Essentials

Foundational routing knowledge and configuration examples — general routing concepts, routing policy and firewall filters, with demonstrations and hands-on labs throughout.

JEX — Junos Enterprise Switching

Intermediate switching knowledge and configuration examples — switching concepts and operations, VLANs, the Spanning Tree Protocol, port and device security features, and high availability.

JIR — Junos Intermediate Routing

Intermediate routing knowledge and configuration examples — protocol-independent routing features, load balancing and filter-based forwarding, OSPF, BGP, IP tunneling and high availability features.

COURSE OBJECTIVES IJOS AND JRE

- Describe the basic design architecture of the Juniper Networks Junos OS
- Identify and give a brief overview of Junos devices
- Navigate within the Junos CLI
- Perform tasks within CLI operational and configuration modes
- Restore a Junos device to its factory-default state
- Perform initial configuration tasks
- Configure and monitor network interfaces
- Describe user configuration and authentication options
- Perform secondary configuration tasks for features and services such as system logging (syslog) and tracing, NTP, configuration archival and SNMP
- Monitor basic operation for the Junos OS and devices
- Identify and use network utilities
- Upgrade the Junos OS
- Perform file system maintenance and password recovery on a Junos device
- Navigate within the Junos J-Web interface
- Explain basic routing operations and concepts
- View and describe routing and forwarding tables
- Configure and monitor static routing
- Configure and monitor OSPF
- Describe the framework for routing policy and firewall filters
- Explain the evaluation of routing policy and firewall filters
- Identify instances where you might use routing policy, and write and apply one
- Identify instances where you might use firewall filters, and write and apply one
- Describe the operation and configuration of unicast reverse path forwarding (RPF)

COURSE OBJECTIVES JUNOS ENTERPRISE SWITCHING

- List the benefits of implementing switched LANs
- Describe transparent bridging concepts and operations
- Describe terms and design considerations for switched LANs
- List enterprise platforms that support Layer 2 switching
- Configure interfaces for Layer 2 switching operations
- Display and interpret the Ethernet switching table
- Explain the concept of a VLAN
- Describe access and trunk port modes
- Configure and monitor VLANs
- Describe voice VLAN and native VLAN
- Explain inter-VLAN routing operations, and configure and monitor it
- Explain when a spanning tree is required
- Describe STP and Rapid Spanning Tree Protocol (RSTP) operations
- List some advantages of using RSTP over STP, and configure and monitor RSTP
- Describe the BPDU, loop and root protection features, and configure and monitor them
- List, describe, configure and monitor the various port security features
- Describe the storm control feature, and configure and monitor it
- Describe firewall filter support for EX Series Ethernet switches
- Implement and monitor the effects of a firewall filter
- Describe the basic concepts and operational details of a virtual chassis
- Implement a virtual chassis with multiple EX Series switches
- List and describe features that promote high availability, and configure and monitor them

COURSE OBJECTIVES JUNOS INTERMEDIATE ROUTING

- Describe typical uses of static, aggregate and generated routes
- Configure and monitor static, aggregate and generated routes
- Explain the purpose of Martian routes and add new entries to the default list
- Describe typical uses of routing instances
- Configure and share routes between routing instances
- Describe load-balancing concepts and operations
- Implement and monitor Layer 3 load balancing
- Illustrate the benefits of filter-based forwarding
- Configure and monitor filter-based forwarding
- Explain the operations of OSPF and describe the role of the designated router
- List and describe OSPF area types
- Configure, monitor and troubleshoot OSPF
- Describe BGP and its basic operations
- Name and describe common BGP attributes
- List the steps in the BGP route selection algorithm
- Describe BGP peering options and the default route advertisement rules
- Configure and monitor BGP
- Describe IP tunneling concepts and applications
- Explain the basic operations of GRE and IP-over-IP tunnels
- Configure and monitor GRE and IP-IP tunnels
- Describe the high availability features supported by the Junos OS
- Configure and monitor the highlighted high availability features

COURSE OUTLINE IJOS AND JRE

1 Junos Operating System Fundamentals

- The Junos OS
- Traffic Processing
- Platforms Running the Junos OS

2 User Interface Options

- User Interface Options
- The Junos CLI: CLI Basics
- The Junos CLI: Operational Mode
- The Junos CLI: Configuration Mode
- Lab 1: The Junos CLI

3 Initial Configuration

- Factory-Default Configuration
- Initial Configuration
- Interface Configuration
- Lab 2: Initial System Configuration

4 Secondary System Configuration

- User Configuration and Authentication
- System Logging and Tracing
- Network Time Protocol
- Archiving Configurations
- SNMP
- Lab 3: Secondary System Configuration

5 Operational Monitoring and Maintenance

- Monitoring Platform and Interface Operation
- Network Utilities
- Maintaining the Junos OS
- Password Recovery
- System Clean-up
- Lab 4: Operational Monitoring and Maintenance

6 Interface Configuration Examples

- Review of the Interface Configuration Hierarchy
- Interface Configuration Examples
- Using Configuration Groups

7 The J-Web Interface

- The J-Web GUI
- Configuration
- Lab 5: The J-Web Interface

8 Routing Fundamentals

- Routing Concepts: Overview of Routing
- Routing Concepts: The Routing Table
- Routing Concepts: Routing Instances
- Static Routing
- Dynamic Routing
- Lab 6: Routing Fundamentals

9 Routing Policy

- Routing Policy Overview
- Case Study: Routing Policy
- Lab 7: Routing Policy

10 Firewall Filters

- Firewall Filters Overview
- Case Study: Firewall Filters
- Unicast Reverse-Path-Forwarding Checks
- Lab 8: Firewall Filters

11 Class of Service

- CoS Overview
- Traffic Classification
- Traffic Queueing
- Traffic Scheduling
- Case Study: CoS
- Lab 9: Class of Service (optional)

COURSE OUTLINE JUNOS ENTERPRISE SWITCHING

1 Layer 2 Switching

- Ethernet Bridging Basics
- Terminology and Design Considerations
- Overview of Enterprise Switching Platforms
- Enabling and Monitoring Layer 2 Switching Operations
- Lab 1: Implementing Layer 2 Switching

2 Virtual Networks

- Overview of VLANs
- Configuring and Monitoring VLANs
- Voice VLAN
- Native VLAN
- Routed VLAN Interfaces
- Lab 2: Implementing Virtual Networks

3 Spanning Tree

- Spanning Tree Protocol
- Rapid Spanning Tree Protocol
- Configuring and Monitoring STP and RSTP
- Protection Features: BPDU Protection
- Protection Features: Loop Protection
- Protection Features: Root Protection
- Lab 3: Implementing Spanning Tree

4 Port Security

- MAC Limiting
- DHCP Snooping
- Dynamic ARP Inspection (DAI)
- IP Source Guard
- Lab 4: Implementing Port Security

5 Device Security and Firewall Filters

- Storm Control
- Firewall Filters
- Lab 5: Implementing Storm Control and Firewall Filters

6 Virtual Chassis

- Overview of Virtual Chassis
- Configuring and Monitoring a Virtual Chassis
- Lab 6: Implementing Virtual Chassis Systems

7 High Availability Features

- Overview of High Availability Networks
- Link Aggregation Groups
- Redundant Trunk Groups
- Lab 7: Implementing High Availability Features

COURSE OUTLINE JUNOS INTERMEDIATE ROUTING

1 Protocol-Independent Routing

- Static Routes
- Aggregated Routes
- Generated Routes
- Martian Addresses
- Routing Instances
- Lab 1: Protocol-Independent Routing

2 Load Balancing and Filter-Based Forwarding

- Overview of Load Balancing
- Configuring and Monitoring Load Balancing
- Overview of Filter-Based Forwarding
- Configuring and Monitoring Filter-Based Forwarding
- Lab 2: Load Balancing and Filter-Based Forwarding

3 Open Shortest Path First

- Overview of OSPF
- Adjacency Formation and the Designated Router Election
- OSPF Scalability
- Configuring and Monitoring OSPF
- Basic OSPF Troubleshooting
- Lab 3: Open Shortest Path First

4 Border Gateway Protocol

- Overview of BGP
- BGP Attributes
- IBGP Versus EBGP
- Configuring and Monitoring BGP
- Lab 4: Border Gateway Protocol

5 IP Tunneling **OPTIONAL**

- Overview of IP Tunneling
- GRE and IP-IP Tunnels
- Implementing GRE and IP-IP Tunnels
- Lab 5: IP Tunneling

6 High Availability **OPTIONAL**

- Overview of High Availability Networks
- Graceful Restart (GR)
- Graceful Routing Engine Switchover
- Nonstop Active Routing
- BFD
- VRRP
- Lab 6: High Availability

TERMS

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