Juniper JNCIS-ENT (JEX and JIR - 4 days) Bundle

Duration: 4 Days Course Code: JUN_JNCIS_ENT

Overview:

This 4-day bundle course covers the content of both the Junos Enterprise Switching (JEX) and Junos Intermediate Routing (JIR) courses.
JEX
This two-day course is designed to provide students with intermediate switching knowledge and configuration examples using Junos Enhanced Layer 2 Software (ELS).
This course includes an overview of switching concepts and operations, VLANs, the Rapid Spanning Tree Protocol (RSTP), port and device security features, and high availability (HA) features.
Through demonstrations and hands-on labs, students will gain experience in configuring and monitoring the Junos operating system (OS) and in monitoring device operations.
This course uses Juniper Networks EX4300 Series Ethernet switches for the hands-on components, but lab environment does not preclude the course from being applicable to other Juniper hardware platforms running Junos OS.
This course is based on Junos OS Release 21.4R1.12.
Course Level
Junos Enterprise Switching (JEX) is an intermediate-level course.
Relevant Juniper Product
• EX Series • QFX Series
JIR
This two-day course provides students with intermediate routing knowledge and configuration examples.
The course includes an overview of protocol-independent routing features, load balancing and filter-based forwarding, OSPF, BGP, IP tunneling, and high availability (HA) features.
Through demonstrations and hands-on labs, students will gain experience in configuring and monitoring the Junos OS and monitoring device operations.
This course uses Juniper Networks vSRX Series Services Gateways for the hands-on component, but the lab environment does not preclude the course from being applicable to other Juniper hardware platforms running the Junos OS.
This course is based on Junos OS Release 21.1R1.11.
Course Level
Junos Intermediate Routing (JIR) is an intermediate-level course.
Relevant Juniper Product
• Automation • Junos OS • M Series • MX Series • PTX Series • QFX Series • SRX Series • T Series

Target Audience:

This course benefits individuals responsible for configuring and monitoring EX Series switches running Junos Enhanced Layer 2 Software (ELS), and for configuring and monitoring devices running the Junos OS.

Objectives:

- **JEX**
- • 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.
- • List and describe some features that promote high availability.
- • Configure and monitor high availability features.
- • Describe the basic concepts and operational details of a virtual chassis.
- • Implement a virtual chassis with multiple EX4300 switches.
- • Explain the concepts of Multiple Spanning Tree Protocol (MSTP).
- • Configure and monitor MSTP.
- • Discover, configure, and troubleshoot EX Series switches using Junos Space Network Director.
- **JIR**
- • Implement static routing within Junos OS

- • Describe voice VLAN and native VLAN concepts.
- • Explain inter-VLAN routing operations.
- • Configure and monitor inter-VLAN routing.
- • Explain when a spanning tree is required.
- • Describe STP and Rapid Spanning Tree Protocol (RSTP) operations.
- • List some advantages of using RSTP over STP.
- • Configure and monitor RSTP.
- • Describe the bridge protocol data unit (BPDU), loop, and root protection features.
- • Configure and monitor the BPDU, loop, and root protection features.
- • List and describe various port security features.
- • Configure and monitor port security features.
- • Describe the storm control feature.
- • Configure and monitor storm control.
- • Describe firewall filter support for EX Series Ethernet switches.
- • Implement and monitor the effects of a firewall filter.
- • Implement routing instances within Junos OS
- • Describe routing instances
- • Configure and share routes between routing instances
- • Implement load balancing within Junos OS
- • Implement filter-based forwarding within Junos OS
- • Implement OSPF within Junos OS
- • Deploy OSPF within Junos OS
- • Implement BGP within Junos OS
- • Deploy BGP within Junos OS
- • Implement IP tunneling within Junos OS
- • Implement graceful routing and bidirectional forwarding detection within Junos OS
- • Implement high availability features—GRES, NSR, and unified ISSU within Junos OS
- • Implement VRRP within Junos OS
- • Implement IPv6 within Junos
- • Implement IS-IS within Junos OS

Prerequisites:

• Basic networking knowledge and an understanding of the Open Systems Interconnection (OSI) reference model and the TCP/IP protocol suite

• Complete the Introduction to the Junos Operating System (IJOS) course, or equivalent knowledge

Testing and Certification

JEX and JIR
JNCIS-ENT exam topics are based on the content of the recommended instructor-led training courses, as well as the additional resources.
• Exam code: JN0-348
• Written exam
• Administered by Pearson VUE
• Exam length: 90 minutes
• Exam type: 65 multiple-choice questions
• Pass/fail status is available immediately
• Software Release:
o Junos 18.4
o Junos Space Network Director 3.1
The JNCIS-ENT certification is valid for three years.
JIR
JNCIS-SP exam topics are based on the content of the recommended instructor-led training courses, as well as the additional resources.
• Exam code: JN0-362
• Written exam
• Administered by Pearson VUE
• Exam length: 90 minutes
• Exam type: 65 multiple-choice questions
• Pass/fail status is available immediately
• Junos Software Release: 19.4
The JNCIS-SP certification is valid for three years.
Exams can be purchased at an additional cost - please ask for details - and scheduled at https://home.pearsonvue.com/junipernetworks/

Follow-on-Courses:

- Advanced Junos Enterprise Switching (AJEX)
- Advanced Junos Enterprise Routing (AJER)
- Junos Multicast Routing (JMR)
- Junos Class of Service (JCOS)
- Advanced Junos Service Provider Routing (AJSPR)
- Junos Layer 3 VPNs (JL3V)
- Junos Layer 2 VPNs (JL2V)

Content:

JEX

Day 1

Course Introduction

Layer 2 Switching

•Describe Ethernet bridging basic

•Configure and monitor Layer 2 switching operations

Lab 1: Implementing Layer 2 Switching

Switching Design Considerations

•Explain switching terminologies and design considerations

•Describe various Enterprise Switching platforms

Implement VLANs

•Define VLANs

•Create VLANs

•Monitor VLANs

Implement VLAN Features

•Describe voice LAN concepts and operations

•Describe native LAN concepts and operations

•Describe and implement IRB interfaces

Lab 2: Implementing Virtual Networks

Spanning Tree Overview

•Configure DHCP snooping, dynamic ARP inspection, and IP source guard

•Monitor DHCP snooping, dynamic ARP inspection, and IP source guard

Lab 6: Implementing Port Security

High Availability—GRES, NSR, and NSB

•Overview of high availability networks

•Explain graceful Routing Engine switchover (GRES)

•Explain nonstop active routing (NSR)

•Explain nonstop bridging (NSB)

Virtual Chassis

•Describe operational details of Virtual Chassis

•Implement Virtual Chassis and verify its operation

Deploy Virtual Chassis

•Configure and monitor Virtual Chassis

Lab 7: Implementing Virtual Chassis Systems

The following Appendices can be covered if requested at the time of booking and subject to time during the course:

Appendix A: Junos Space Network Director

•Describe Junos Space Network Director

•Configure Junos Space Network Director

Appendix B: MSTP

•Illustrate benefits of filter-based forwarding

•Configure and monitor filter-based forwarding

LAB 2: Load Balancing and Filter-Based Forwarding

Fundamentals of OSPF

•Overview of OSPF

•Adjacency Formation and the Designated Router Election

•OSPF Scalability

Deploying OSPF

•Configuring and Monitoring OSPF

•Troubleshooting OSPF

LAB 3: Deploying OSPF

Day 2

Fundamentals of BGP

•Overview of BGP and BGP Attributes

Deploying BGP

•IBGP Versus EBGP

•Configuring and Monitoring BGP

LAB 4: BGP

IP Tunneling

•Overview of IP Tunneling, GRE and IP-IP Tunnels

•Explain the operations of STP

•Explain the operations of RSTP

Deploy Spanning Tree

•Configure STP and RSTP

•Monitor STP and RSTP

Spanning Tree Protection Features

•Explain and configure BPDU protection on spanning tree

•Explain and configure loop protection on spanning tree

•Explain and configure root protection on spanning tree

Lab 3: Implementing Spanning Tree

Day 2

LAGs and RTGs

•Describe link aggregation groups (LAGs) and redundant trunk groups (RTGs)

•Configure and monitor LAG and RTG

Lab 4: Implementing LAGs and RTGs

Storm Control

•Describe storm control features

•Configure and monitor storm control features

Layer 2 Firewall Filters

•Describe firewall filter support for EX Series switches

•Explain the operations of MSTP

•Configure and verify MSTP

Appendix C: Mist Integration with EX Series Switches

•Explain mist solution and supported devices

•Describe provisioning and deployment process

Appendix D: Mist Wired Assurance

•Describe the deployment options

•Explain wired assurance SLE and their classifiers

•Describe the role of Mist within campus and branch architecture

Appendix E: ELS and Non-ELS Configuration

•Configure switching options

•Understand IRB and RVI interfaces and its configuration

•Describe Q-in-Q VLAN tagging

JIR

Day 1

Course Introduction

Protocol-Independent Routing

•Configure static routes

•Configure aggregate routes

•Configure generated routes

•Deploy GRE and IP-IP Tunnels

LAB 5: IP Tunneling

GR and BFD

•Overview of High Availability Networks and Graceful Restart

•Bidirectional forwarding detection

LAB 6: GR and BFD

GRES, NSR, and Unified ISSU

•Graceful Routing Engine switchover

•Nonstop active routing

•Unified ISSU

VRRP

•Describe, configure, and monitor VRRP

The following Appendices can be covered if requested at the time of booking and subject to time during the course:

Appendix A: IPv6 (Optional)

•Describe the differences between IPv4 and IPv6

•Explain the IPv6 address format and the different address types

•Explain how IPv6 stateless and stateful autoconfigurations work

•Configure and monitor IPv6 routing

•Implement IPv6-over-IPv4 tunnels

Lab 7: IPv6 (Optional)

•Implement and monitor the effects of a firewall filter

Lab 5: Implementing Storm Control and Firewall Filters

Port Security—MAC Limiting, MAC Learning, and MACsec

•Describe MAC limiting, MAC learning, and MACsec

•Configure MAC limiting, MAC learning, and MACsec

•Monitor MAC limiting, MAC learning, and MACsec

Port Security—DHCP Snooping, Dynamic ARP Inspection, and IP Source Guard

•Describe DHCP snooping, dynamic ARP inspection, and IP source guard

•Manage martian routes

Routing Instance

•Describe routing instances

•Configure and share routes between routing instances

LAB 1: Protocol-Independent Routing and Routing Instance

Load Balancing

•Describe load-balancing concepts and operations

•Implement and monitor layer 3 load balancing

Filter-Based Forwarding

Appendix B: IS-IS (Optional)

•Overview of IS-IS and IS-IS PDUs

•Adjacency Formation and DIS Election

•Configuring and Monitoring IS-IS

•Basic IS-IS Troubleshooting

Lab 8: IS-IS (Optional)

Additional Information:

Delegates will receive an official set of e-kit courseware approximately 1 week prior to the start of the course.

Further Information:

For More information, or to book your course, please call us on Head Office 01189 123456 / Northern Office 0113 242 5931

info@globalknowledge.co.uk

www.globalknowledge.com/en-gb/

Global Knowledge, Mulberry Business Park, Fishponds Road, Wokingham Berkshire RG41 2GY UK