



TRAINING OFFERING

You can reach us at:

Arrow ECS, Nidderdale House, Beckwith Knowle, Harrogate, HG3 1SA

Email: educationteam.ecs.uk@arrow.com

Phone: 0870 251 1000



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

CODE:	LENGTH:	PRICE:
JUN_JNCIS_ENT	4 days	£2,350.00

Description

This 4-day bundle course covers the content of both the Junos Enterprise Switching (JEX) and Junos Intermediate Routing (JIR) courses.

JEX

The JEX course is designed to provide students with intermediate switching knowledge and configuration examples using Junos Enhanced Layer 2 Software.

This course includes an overview of switching concepts and operations, virtual LANs (VLANs), the Spanning Tree Protocol (STP), 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 OS and in monitoring device operations.

This course uses Juniper Networks EX4300 Series Ethernet Switches for the hands-on components, but the lab environment does not preclude the course from being applicable to other Juniper hardware platforms running the Junos OS.

Optional lab components are available allowing attendees to perform network management and troubleshooting tasks using Junos Space Network Director.

This course is based on Junos OS Release 20.1R1.11. JIR

This JIR 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 This is an intermediate-level course.

Relevant Juniper Product JEX • Switching • EX Series • Junos OS JIR • Automation • Junos OS • M Series • MX Series • PTX Series • QFX Series • SRX Series • T Series

Objectives

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.
- 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.
- 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 Ethernet Ring Protection Switching (ERPS).
- Configure and monitor ERPS.
- 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
- 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

Audience

This course benefits individuals responsible for configuring and monitoring EX Series switches running Junos ELS, and responsible for configuring and monitoring devices running the 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 prior to attending this class.

Programme

Day 1 Course Introduction Layer 2 Switching

- Ethernet Bridging Basics
- Terminology and Design Considerations
- Overview of Enterprise Switching Platforms
- Enabling and Monitoring Layer 2 Switching Operations
- EZSetup
- Junos Space Network Director Overview
- Junos Space Network Director Device Discovery

Lab 1: Implementing Layer 2 Switching Virtual Networks

- Overview of VLANs
- Configuring and Monitoring VLANs
- Configuring and Deploying Network Director VLAN and Port Profiles
- Voice VLAN
- Native VLAN
- Routed VLAN Interfaces

Lab 2: Implementing Virtual Networks Spanning Tree

- Spanning Tree Protocol
- Rapid Spanning Tree Protocol

- Configuring and Monitoring STP and RSTP
- Troubleshooting STP and RSTP
- Protection Features: BPDU Protection
- Protection Features: Loop Protection
- Protection Features: Root Protection

Lab 3: Implementing Spanning Tree Day 2 Port Security

- MAC Limiting
- Persistent MAC Learning
- DHCP Snooping
- Dynamic ARP Inspection (DAI)
- IP Source Guard
- MACsec

Lab 4: Implementing Port Security Device Security and Firewall Filters

- Storm Control
- Firewall Filters

Lab 5: Implementing Storm Control and Firewall Filters High Availability Features

- Overview of High Availability Networks
- Link Aggregation Groups
- Redundant Trunk Groups
- Graceful Routing Engine Switchover (GRES)
- Nonstop Active Routing (NSR)
- Nonstop Bridging (NSB)

Lab 7: Implementing High Availability Features Ethernet Ring Protection Switching

- Ethernet Ring Protection Switching (ERPS) Overview Configuring and Monitoring ERPS

Day 3 Course Introduction Protocol-Independent Routing

- Configure static routes
- Configure aggregate routes
- Configure generated routes
- 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

- 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 4 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
- 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

Please note that the following Appendices are not covered as standard during the training course unless requested by the customer, and agreed with Arrow, upon booking:

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) 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)

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)

Test and Certification

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:
 - Junos 18.4
 - Junos Space Network Director 3.1

The JNCIS-ENT certification is valid for three years.

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 and scheduled at <https://home.pearsonvue.com/junipernetworks/>

Session Dates

Date	Location	Time Zone	Language	Type	Guaranteed	PRICE
13 Dec 2021	Virtual Classroom	GMT	English	Instructor Led Online		£ 2,350.00 £2,115.00
21 Feb 2022	London - Dowgate Hill	GMT	English	Classroom		£2,350.00
21 Feb 2022	Virtual Classroom	GMT	English	Instructor Led Online		£2,350.00
03 May 2022	London - Dowgate Hill	BST	English	Classroom		£2,350.00
03 May 2022	Virtual Classroom	BST	English	Instructor Led Online		£2,350.00
11 Jul 2022	London - Dowgate Hill	BST	English	Classroom		£2,350.00
11 Jul 2022	Virtual Classroom	BST	English	Instructor Led Online		£2,350.00
19 Sep 2022	London - Dowgate Hill	BST	English	Classroom		£2,350.00
19 Sep 2022	Virtual Classroom	BST	English	Instructor Led Online		£2,350.00
28 Nov 2022	London - Dowgate Hill	GMT	English	Classroom		£2,350.00
28 Nov 2022	Virtual Classroom	GMT	English	Instructor Led Online		£2,350.00

Additional Information

[This training is also available as onsite training. Please contact us to find out more.](#)