Enterprise Computing Solutions - Education Services

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

Advanced Junos Enterprise Routing (AJER)

CODE:	LENGTH:	PRICE:
JUN_AJER	40 Hours (5 days)	£3,495.00

Description

This five-day course is designed to provide students with the tools and methods required for implementing, monitoring, and troubleshooting Layer 3 components in an enterprise network.
This course covers OSPF, BGP, multicast, enterprise architecture, and Ethernet VPN-Virtual Extensible LAN (EVPN-VXLAN) is covered in depth.
The course also exposes students to common troubleshooting commands and tools used to diagnose various intermediate to advanced issues.
Through demonstrations and hands-on labs, students will gain experience with features of each of these devices, vSRX virtual firewalls and vQFX virtual switches.
This course is based on Junos OS Release 22.1R1.10. Course Level
Advanced Junos Enterprise Routing (AJER) is an advanced-level course.

Objectives

• Describe OSPFv2 concepts. • Describe OSPF operations. • Describe and configure OSPF area types and operations.
• Configure OSPF areas through summarization and restrictions. • Utilize commands to troubleshoot and verify OSPF operations.
• Analyze different OSPF issues. • Describe BGP operations. • Describe and configure the BGP route selection process.
• Explain the use of routing policies in BGP. • Describe BGP attributes and their usages.
• Describe and configure BGP communities. • Describe BGP troubleshooting.
• Explain how routing policies are used in an enterprise network.
• Reduce problems related to routing policy structure and configuration. • Identify commands for troubleshooting routing policy.
• Explain the fundamentals of multicast routing. • Describe and configure Internet Group Management Protocol (IGMP).
• Describe Protocol Independent Multicast (PIM). • Configure PIM. • Describe and configure route reflection.
• Explain enterprise networking. • Describe the key concepts of Evolved core and Layer 3 based campus designs.
• Explain the benefits of VXLAN. • Explain why you would use EVPN-VXLAN in a campus network.
• Describe and configure an Evolved Campus Core (ECC) network. • Describe and configure a distribution and access network.
• Describe Ethernet Virtual Private Network (EVPN) route types. • Describe EVPN troubleshooting.

Audience

Individuals responsible for configuring and monitoring devices running the Junos OS

Prerequisites

• Familiarity with the Junos Operating System (OS) • Basic understanding of the Open Systems Interconnection model
• Knowledge of basic routing and switching principles • Experience configuring and monitoring the TCP/IP protocol suite
• Basic understanding of firewall filters

Programme

Day 1 Course Introduction OSPF–Part 1 • Describe OSPFv2 operations • Differentiate link-state advertisements OSPF–Part 2
• Distinguish protocol operations • Explain OSPF authentication • Apply OSPFv3 Lab: Configuring and Monitoring OSPF
OSPF Areas–Part 1 • Identify OSPF areas • Describe stub area operations • Add a stub area configuration OSPF Areas–Part 2
• Explain NSSA operation • Add an NSSA configuration • Explain route summarization Lab: OSPF Route Summarization
Advanced OSPF Options • Explain NSSA operation • Generate a NSSA configuration • Explain route summarization
Advanced OSPF Case Studies • Interpret external reachability case studies Lab: Configuring Advanced OSPF Options Day 2
Troubleshooting OSPF • Perform troubleshooting and verification of OSPF adjacencies
• Perform troubleshooting and verification of OSPF consistencies Troubleshooting OSPF Routing Issues
• Conduct troubleshooting and verification of OSPF routing Lab: Troubleshooting OSPF BGP–Part 1 • Explain BGP concepts

• Describe BGP configuration options BGP–Part 2 • Explain BGP route options • Describe BGP path selection
Lab: Implementing BGP BGP Attributes and Policy • Explain BGP route processing • Describe BGP Attributes
Common BGP Attributes • Describe and configure common BGP attributes BGP Communities • Configure BGP communities
• Explain how to use regular expressions with BGP communities • Examine a BGP community use case Lab: BGP Attributes
Troubleshooting BGP • Examine IBGP and EBGP troubleshooting BGP Troubleshooting Case Study
• Examine troubleshooting BGP neighbor issues Lab: Troubleshooting BGP Day 3 Enterprise Routing Policies–Part 1
• Review an enterprise routing policy use case Enterprise Routing Policies–Part 2
• Examine enterprise external network deployment Lab: Implementing Enterprise Routing Policies Troubleshooting Policies–Part 1
• Examine routing policy structure • Describe regular expression matching with routing policies
• Examine routing policy troubleshooting methods Troubleshooting Policies–Part 2
• Examine the routing policy troubleshooting command usage • Review a routing policy use case
Lab: Troubleshooting Routing Policy Introduction to Multicast–Part 1 • Describe IP multicast traffic flow and multicast components
• Describe multicast addressing • Describe the need for RPF check in multicast networks • Describe multicast routing tables
Introduction to Multicast–Part 2 • Explain the role of IGMP • Describe the different versions of IGMP • Configure and monitor IGMP
Day 4 Multicast Operations–Part 1 • Describe PIM sparse mode operation Lab: Implementing PIM-SM Multicast Operations–Part 2
• Configure and monitor PIM sparse mode • Configure and monitor RP discovery mechanisms Lab: Implementing SSM
BGP Route Reflection • Describe the operation of BGP route reflection • Configure a route reflector Lab: BGP Route Reflection
Enterprise Architectures–Part 1 • Describe traditional enterprise networks • Examine new enterprise networking methods
Enterprise Architectures–Part 2 • Examine EVPN-VXLAN enterprise networks • Examine new enterprise networking methods
VXLAN Overview • Describe Layer 2 tunneling • Explain VXLAN functionality • Describe VXLAN gateways Day 5
EVPN-VXLAN Architecture • Describe EVPN features • Describe EVPN operations
• Describe EVPN with VXLAN for data plane encapsulation Configuring EVPN-VXLAN Networks–Part 1 • Examine a case study
• Configure an underlay network • Configure an overlay network • Verify an ECC network
Configuring EVPN-VXLAN Networks–Part 2 • Add leaf nodes to an ECC network • Build a full fabric EVPN-VXLAN network
Lab: Configuring an EVPN-VXLAN Network Verifying and Troubleshooting EVPN-VXLAN Architecture–Part 1
• Explain EVPN route identification Verifying and Troubleshooting EVPN-VXLAN Architecture–Part 2
• Explain EVPN troubleshooting commands

Follow on courses

Recommended Next Course: JNCIE-ENT Bootcamp

Test and Certification

Associated Certification
JNCIP-ENT exam topics are based on the content of the recommended instructor-led training courses, as well as the additional resources.

- Exam code: JN0-649
- Written exam
- Administered by Pearson VUE
- Exam length: 120 minutes
- Exam type: 65 multiple-choice questions
- Pass/fail status is available immediately
- Junos OS 21.2

The JNCIP-ENT 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
10 Jun 2024	Virtual Classroom	BST	English	Instructor Led Online		~~£ 3,495.00~~ £3,145.50
23 Sep 2024	Virtual Classroom	BST	English	Instructor Led Online		£3,495.00
16 Dec 2024	Virtual Classroom	GMT	English	Instructor Led Online		£3,495.00

Additional Information

This training is also available as onsite training. Please contact us to find out more.