Cisco 8000 Series Routers Essentials (SP8KE)

Category: Networking & Security | **Vendor:** Cisco

Duration: 40.00 hours (5 days) **32.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

The Cisco 8000 Series Routers Essentials (SP8KE) v1.0 course introduces you to the features and functions of the Cisco® 8000 Series router platforms. Through a combination of lectures and labs, you will gain an understanding of all major aspects of the platform, including hardware, software, Layer 2 and Layer 3 services, Quality of Service (QoS) features, network virtualization, and programmability.

How you'll benefit

This class will help you:

- Increase your experience with the Cisco 8000 Series system
- Describe and implement the Cisco 8000 Series system and its components
- Gain hands-on experience with the Cisco 8000 Series system in a lab setting

About This Course

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Who Should Attend

This course is designed for the following roles:

- System engineers
- Technical support personnel
- Channel partners and resellers

Prerequisites & Entry Requirements

General Prerequisites:

Before taking this course, you should have the following knowledge and skills:

- Basic knowledge of router installation and some experience with installation tools
- Routing protocol configuration experience with Border Gateway Protocol (BGP), Intermediate System-to- Intermediate System (IS-IS), and Open Shortest Path First (OSPF)
- Knowledge of Layer 2 IEEE switching and related protocols
- Strong knowledge of MPLS configuration experience
- Experience troubleshooting Cisco routers in a large network environment

Learning Outcomes

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

After taking this course, you should be able to:

- Describe the various Cisco 8000 Series hardware components
- Explain the system architecture of the Cisco 8000 Series systems
- Describe the packet flows through the Cisco 8000 Series Router and Command-Line Interface (CLI) commands for verifying packet flows through various Cisco 8000 Series router components
- Describe how the QoS features are implemented within the Cisco 8000 Series router, how to examine the Virtual Output Queueing (VOQ) QoS architecture, and describe how to implement modular VOQ, including congestion avoidance, priority flow control, and congestion management
- Describe the Software for Open Networking in the Cloud (SONiC) Operating System
- Describe Cisco Internetwork Operating System (Cisco IOS®) XR Software architecture
- Explain how to install Cisco IOS XR software packages
- Describe how to provision network devices by using Zero Touch Provisioning (ZTP)
- Implement and configure Multiprotocol Label Switching (MPLS) and describe MPLS label propagation in service provider networks
- Describe the main factors leading to the development and deployment of segment routing, describe the various types of segments that are used in segment routing, describe the Segment Routing Global Block (SRGB), and configure and verify IS-IS and OSPF segment routing operation
- Describe how to implement and verify Topology Independent Loop-Free Alternate (TI-LFA) in a segment routing environment, the benefits of Segment Routing for Traffic Engineering (SR-TE), and briefly describe the tools required for enabling it
- Describe the fundamentals of Ethernet VPN (EVPN), how to configure and verify EVPN Native, and how to configure and verify EVPN Virtual Private Wire Service (VPWS)
- Describe the operation and data flow of the Layer 3 VPN control plane, describe different Layer 3 MPLS VPN models, and describe how to configure and verify a basic Layer 3 VPN by using Cisco IOS XR 64-bit software
- Implement and configure advanced SR-TE features
- Implement and configure Segment Routing over IPv6 (SRv6)
- Implement and configure model-driven telemetry
- Describe programmable features of Cisco IOS XR software

- Describe the application hosting architecture and how to deploy a third-party application on a Cisco IOS XR router

Detailed Course Outline

- Cisco 8000 Series Hardware Fundamentals
- Cisco 8000 System Architecture
- Packet Flow Through the Cisco 8000 Series Router
- Traffic Management and QoS on Cisco 8000 Routers
- SONiC Basics
- Cisco IOS XR Software Architecture
- Cisco IOS XR Software Installation
- Automatic Provisioning
- Cisco IOS XR MPLS
- Introducing Segment Routing
- Segment Routing TI-LFA and Traffic Engineering
- EVPN Layer 2 Basics
- Layer 3 VPNs
- Advanced SR-TE Features
- SRv6
- Telemetry
- Cisco IOS XR Programmability
- Application Hosting Overview

Skills You Will Learn:

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- Describe the packet flows through the Cisco 8000 Series Router and Command-Line Interface (CLI) commands for verifying packet flows through various Cisco 8000 Series router components
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- Implement and configure Segment Routing over IPv6 (SRv6)
- Implement and configure model-driven telemetry
- Describe programmable features of Cisco IOS XR software
- Describe the application hosting architecture and how to deploy a third-party application on a Cisco IOS XR router

Frequently Asked Questions

Q: What delivery options are available for Cisco 8000 Series Routers Essentials (SP8KE)?

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

Q: How many CPD hours does this course provide?

The 5-day Cisco 8000 Series Routers Essentials (SP8KE) course provides up to 32.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Cisco 8000 Series Routers Essentials (SP8KE) training?

The training takes place over 5 day(s), with each day lasting approximately 40.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Cisco 8000 Series Routers Essentials (SP8KE)?

Yes, we provide corporate training, dedicated training, and closed classes for Cisco 8000 Series Routers Essentials (SP8KE). 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.

Q: What related terms do people search for?

Popular related searches include: Cisco 8000 Series Routers Essentials, Cisco Networking, SP8KE

Q: Why choose Nexus Human for Cisco 8000 Series Routers Essentials (SP8KE)?

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

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Cisco 8000 Series Routers Essentials (SP8KE) training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

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