
Juniper Networks Design - Data Center

Duration: 5 Days **Course Code: JND-DC** **Version: 15.a** **Delivery Method: Virtual Learning**

Overview:

This five-day course is designed to cover best practices, theory, and design principles for data center design including data center architectures, data center interconnects, security considerations, virtualization, and data center operations.

Target Audience:

Targeted specifically for those who have a solid understanding of operation and configuration and are looking to enhance their skill sets by learning the principles of design for the data center.

Objectives:

- **After you complete this course you will be able to:**
- Describe high-level concepts about different data center architectures
- Identify features used to interconnect data centers
- Describe key high-level considerations about securing and monitoring a data center deployment
- Outline key high-level concepts when implementing different data center approaches
- Describe data center cooling designs and considerations
- Explain device placement and cabling requirements
- Outline different data center use cases with basic architectures
- Describe a traditional multitier data center architecture
- Explain link aggregation and redundant trunk groups
- Explain multichassis link aggregation
- Summarize and discuss key concepts and components of a Virtual Chassis
- Summarize and discuss key concepts and components of a VCF
- Summarize and discuss key concepts and components of Junos Fusion
- Describe the reasons for the shift to IP fabrics
- Describe the design considerations for routing in an IP Fabric
- Describe how to scale an IP fabric
- Describe the design considerations for an Overlay network
- Define the term Data Center Interconnect
- Discuss the security requirements and design principles of the data center
- Identify the security elements of the data center
- Describe network security implementation options in the data center
- Discuss network security functionality in the data center
- Explain the purpose of SDN
- Explain the function of Contrail
- Describe the purpose of NFV
- Discuss the purpose and function of vSRX and vMX
- Explain how to collect analytics in the SDN data center
- Discuss the importance of understanding the baseline behaviors in our data center
- Describe the Junos Space Network Management Platform and its deployment options
- Describe the importance of analytics
- Discuss automation in the data center
- Discuss the benefits of QoS and CoS
- Describe the benefits of a converged network
- Identify general aspects of data center migration
- Describe some best practices for migration planning
- Outline some common migration scenarios
- Describe high availability design considerations in the data center
- Provide an overview of high availability offerings and solutions in the data center

- List differences between the different Layer 2 and Layer 3 DCIs
- Summarize and discuss the benefits and use cases for EVPN

Prerequisites:

Attendees should meet the following prerequisites:

- Knowledge of routing and switching architectures and protocols
- Knowledge of Juniper Networks products and solutions
- Understanding of infrastructure security principles
- Basic knowledge of hypervisors and load balancers
- Juniper Networks Design Fundamentals (JNDF)
- JNDF - Juniper Networks Design Fundamentals

Testing and Certification

- This course is recommended training for the Juniper Networks Certified Design Specialist, Data Center (JNCDS-DC) exam

Content:

Course Introduction

Overview of Data Center Design

- Initial Considerations
- Architectures and Design considerations
- Connecting Data Centers
- Security and Operation
- Implementation Considerations

Initial Design Considerations

- Physical Layout and Placement
- Environmental Conditions
- Cabling Options
- Data Center Use Cases

Traditional Data Center Architecture

- Traditional Multi-tier Architecture
- Link Aggregation and Redundant Trunk Groups
- Multichassis Link Aggregation
- Lab: Designing a Multi-tier Architecture

Ethernet Fabric Architectures

- Virtual Chassis
- Virtual Chassis Fabric
- QFabric
- Junos Fusion
- Ethernet Fabric Design Considerations
- Lab: Ethernet Fabric Architecture

IP Fabric Architecture

- The Shift To IP Fabrics
- IP Fabric Routing Design
- IP Fabric Scaling
- VXLAN
- Lab: IP Fabric Architecture

Data Center Interconnect

- DCI Overview
- Layer 2 DCI
- EVPN Use Cases
- Layer 3 DCI
- Lab: Interconnecting Data Centers

Securing the Data Center

- Overview of Data Center Security
- Security Elements
- Simplifying Security in the Data Center
- Advanced Data Center Security
- Lab: Securing the Data Center

SDN and Virtualization in the Data Center

- SDN Overview
- Using Contrail in the Data Center
- Using NFV in the Data Center
- Understanding Contrail in the Data Center
- Virtual Environments in the Data Center
- Collecting Analytics with AppFormix
- Lab: SDN and Virtualization

Data Center Operation

- Understanding Baseline Behaviors
- Deploying Junos Space and JSA
- Understanding Logging and Analytics
- Deploying Automation in the Data Center
- Lab: Operating a Data Center

Traffic Prioritization for Converged Networks

- Understanding QoS, and CoS
- Converging Networks
- Lab: Prioritizing Data in the Data Center

Migration Strategies

- Migration Overview
- Common Scenarios
- Migration Case Study

High Availability

- Data Center High Availability Overview
- Link Level and Physical Device Redundancy
- Device-Level Redundancy

Further Information:

For More information, or to book your course, please call us on 00 971 4 446 4987

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