Juniper Networks Design Fundamentals

Duration: 3 Days **Course Code: JNDF** **Version: 15.b**

Overview:

This three-day course is designed to cover best practices, theory, and design principles for overall network design and will serve as the prerequisite course for other design subject areas — data center, security, and WAN.

Target Audience:

This course is targeted for Juniper Networks system engineers, partner sales engineers (including Champions), and services partners. However, the course is also applicable to a general audience of Juniper customers with a desire to learn more about network design.

Objectives:

- **After successfully completing this course, you should be able to:**
- Provide an overview of network design needs and common business requirements.
- Describe key product groups related to campus, WAN, data center, and security architectures.
- Analyze and interpret common RFP requirements.
- Scope a network design by gathering data and working with key stakeholders.
- Describe ways of processing customer data and design requests.
- Identify boundaries and scope for the design proposal.
- List some considerations when creating a design proposal.
- Provide an overview of network security design principles and common vulnerabilities.
- List high-level design considerations and best practices for securing the network.
- List the components of the campus network design.
- Describe best practices and design considerations for the campus.
- Describe architectural design options for the campus.
- List the components of the WAN.
- Describe best practices and design considerations for the WAN.
- Describe design options for the WAN.
- List the components of the data center design.
- Describe best practices and design considerations for the data center.
- Describe architectural design options for the data center.
- Define business continuity and its importance in a network design.
- Describe high availability design considerations and best practices.
- Provide an overview of high availability offerings and solutions.
- Describe Class of Service design considerations.
- Provide an overview of environmental considerations in network design.
- List design considerations and best practices for managing the network.
- Provide an overview of Juniper Networks and third party options for network management.
- List design considerations and best practices for network automation.
- Provide an overview of automation tools.
- Explain the foundational topics that have been taught throughout the course.
- Create a network design proposal that satisfies customer requirements and business needs.
- Provide an overview of the steps involved in migrating a network.
- Describe best practices used in network migration.
- List the various campus network topographies.
- Describe sample design options for the campus.

Prerequisites:

The following are the prerequisites for this course:

- 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.

Testing and Certification

- **This course is recommended training for the Juniper Networks Certified Design Associate (JNCDA) exam**

Content:

Chapter 1: Course Introduction

Chapter 2: Network Design Fundamentals

- A Need for Design
- Knowledge is King
- A Proposed Design Methodology
- A Reference Network

Chapter 3: Understanding Customer Requirements

- RFP Requirements
- Scoping the Design Project
- Analyzing the Data
- Lab: Understanding Customer Requirements

Chapter 4: Organizing the Data

- Processing the Data and Requests
- Understanding Boundaries and Scope
- Design Proposal Considerations

Chapter 5: Securing the Network

- Why Secure the Network?
- Security Design Considerations

Chapter 6: Creating the Design—Campus

- The Campus Network: An Overview
- Best Practices and Considerations
- Architectural Design Options
- Lab: Creating the Design—Campus

Chapter 7: Creating the Design—Wide Area Networks

- The WAN: An Overview
- Best Practices and Considerations
- WAN Design Examples
- Lab: Creating the Design—WAN

Chapter 8: Creating the Design—Data Center

- The Data Center: An Overview
- Best Practices and Considerations
- Data Center Design Examples
- Lab: Creating the Design—Data Center

Chapter 9: Business Continuity and Network Enhancements

- Business Continuity Planning
- High Availability Design Considerations and Best Practices
- Offerings and Solutions
- CoS and Traffic Engineering Considerations
- Environmental Design

Chapter 10: Network Management

- Designing for Network Management

Chapter 11: Automation

- Designing for Network Automation
- Lab: Enhancing the Design

Chapter 12: Putting Network Design into Practice

- Network Design Recap
- Responding to the RFP
- Final Lab Introduction
- Lab: Putting Network Design into Practice

Appendix A: Network Migration Strategies

- Migration Overview
- Migration Approaches
- Migration Examples

Appendix B: Sample Campus Designs

- Campus Topology Examples

Appendix C: Sample Response to RFP

- Example of an Actual Juniper Networks RFP Response

Further Information:

For More information, or to book your course, please call us on Head Office Tel.: +974 40316639

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