Juniper Networks Design Fundamentals (JNDF)

Engineering Simplicity

COURSE LEVEL

JNDF is an introductory level course.

AUDIENCE

This course is targeted specifically those who have a solid understanding of operation and configuration and are looking to enhance their skill sets by learning introductory principles of network design.

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.

ASSOCIATED CERTIFICATION

JNCDA

RELEVANT JUNIPER PRODUCT

- Design
- Network Design
- ACX Series
- Appsecure
- C Series
- Contrail
- CSE Series
- CTP Series
- E Series
- EX Series
- IDP Series
- ISG Series
- J Series
- JCS1200
- JSA Series
- Junos OS
- Junos Space
- Junos Space Network Director
- Junos Space Security Director
- Junos Space Services Activation Director
- Junos SDK
- Junosphere / VJX
- LN Series
- M Series
- MAG Series
- MX Series
- NFX Series
- Odyssey Access Client
- QFabric
- Policy Enforcer
- QFX Series
- SBR Series – Software
- Sky ATP
- SRX Series
- SSG Series
- T Series
- vGW Series
- Design Track
- Instructor-Led Training

RECOMMENDED NEXT COURSE

- *Juniper Networks Design – Data Center* (JND-DC)
- *Juniper Networks Design – Service Provider* (JND-SP)
- *Juniper Networks Design – Security* (JND-SEC)

CONTACT INFORMATION

training@juniper.net

COURSE OVERVIEW

This three-day course is designed to cover introductory best practices, theory, and design principles for overall network design

OBJECTIVES

- Provide an overview of network design needs and common business requirements.
- Identify key product groups related to campus, WAN, data center, and security architectures.
- Describe and interpret common RFP requirements.
- Scope a network design by gathering data and working with key stakeholders.
- List 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.
- State 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.

COURSE CONTENT

Day 1

1 COURSE INTRODUCTION

2 Network Design Fundamentals

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

3 Understanding Customer Requirements

- RFP Requirements
- Scoping the Design Project
- Analyzing the Data

LAB: Understanding Customer Requirements

4 Organizing the Data

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

5 Securing the Network

- Why Secure the Network?
- Security Design Considerations

Day 2

6 Creating the Design—Campus

- The Campus Network: An Overview
- Best Practices and Considerations
- Architectural Design Options

LAB: Creating the Design—Campus

7 Creating the Design—Wide Area Networks

- The WAN: An Overview
- Best Practices and Considerations
- WAN Design Examples

Lab: Creating the Design—WAN

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

9 Business Continuity and Network Enhancement

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

Day 3

10 Network Management

- Designing for Network Management

11 Automation

- Designing for Network Automation

Lab: High Availability

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

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