Juniper Networks Design Fundamentals

Course Summary

Description

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.

Objectives

At the end of this course, students will 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.

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Course Summary (cont'd)

Topics

- Course Introduction
- Network Design Fundamentals
- Understanding Customer Requirements
- Organizing the Data
- Securing the Network
- Creating the Design Campus
- Creating the Design Wide Area Networks

- Creating the Design Data Center
- Business Continuity and Network Enhancements
- Network Management
- Automation
- Putting Network Design into Practice

Audience

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

Prerequisites

Prior to taking this course, students should have following skills:

- 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.

Duration

Three days

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... to Your Success!"

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Course Outline

I.   Course Introduction

II.   Network Design Fundamentals
   A.   A Need for Design
   B.   Knowledge is King
   C.   A Proposed Design Methodology
   D.   A Reference Network

III. Understanding Customer Requirements
   A.   RFP Requirements
   B.   Scoping the Design Project
   C.   Analyzing the Data
Lab: Understanding Customer Requirements

IV. Organizing the Data
   A.   Processing the Data and Requests
   B.   Understanding Boundaries and Scope
   C.   Design Proposal Considerations

V.   Securing the Network
   A.   Why Secure the Network?
   B.   Security Design Considerations

VI. Creating the Design Campus
   A.   The Campus Network: An Overview
   B.   Best Practices and Considerations
   C.   Architectural Design Options
Lab: Creating the Design Campus

VII. Creating the Design Wide Area Networks
   A.   The WAN: An Overview
   B.   Best Practices and Considerations
   C.   WAN Design Examples
Lab: Creating the Design WAN

VIII. Creating the Design Data Center
   A.   The Data Center: An Overview
   B.   Best Practices and Considerations
   C.   Data Center Design Examples
Lab: Creating the Design Data Center

IX. Business Continuity and Network Enhancements
   A.   Business Continuity Planning
   B.   High Availability Design Considerations and Best Practices
   C.   Offerings and Solutions
   D.   CoS and Traffic Engineering Considerations
   E.   Environmental Design

X.   Network Management
   A.   Designing for Network Management

XI. Automation
   A.   Designing for Network Automation
Lab: Enhancing the Design

XII. Putting Network Design into Practice
   A.   Network Design Recap
   B.   Responding to the RFP
   C.   Final Lab Introduction
Lab: Putting Network Design into Practice

XIII. Appendix A: Network Migration Strategies
   A.   Migration Overview
   B.   Migration Approaches
   C.   Migration Examples

XIV. Appendix B: Sample Campus Designs
   A.   Campus Topology Examples

XV. Appendix C: Sample Response to RFP
   A.   Example of an Actual Juniper Networks RFP Response