

Juniper Networks Design-WAN (JND-WAN)

COURSE OVERVIEW:

This five-day course is designed to cover best practices, theory, and design principles for Wide Area Networks (WAN) design including WAN interconnects, security considerations, virtualization, and management/operations. This course covers both service provider and enterprise WAN design.

WHO WILL BENEFIT FROM THIS COURSE?

This course is 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 WAN design.

Course Level: JND-WAN is an intermediate-level course.

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.
- Completion of the Juniper Networks Design Fundamentals (JNDF) course.

COURSE OBJECTIVES:

After successfully completing this course, you should be able to:

- Describe high level concepts about the different WAN architectures.
- Describe key high level considerations about securing and monitoring a WAN deployment.
- Outline key high level concepts when implementing different WAN approaches.
- Explain various methods of WAN connectivity.
- Describe basic MPLS concepts as they are related to WANs.
- Identify basic Ethernet concepts as they are related to WANs.
- Describe key concepts of network availability.
- Explain high availability features and protocols.
- Describe the key aspects of class of service.
- Describe how core WAN technologies are used to solve specific problems facing network designers.
- Describe how routing can affect core WAN design.
- Describe how MPLS can affect core WAN design.
- Describe various solutions regarding core WANs.
- Describe how edge WAN technologies are used to solve specific problems facing network designers.
- Describe various solutions regarding edge WANs.
- Describe how enterprise WAN technologies are used to solve specific problems facing network designers.
- Describe various solutions regarding campus and branch WANs.

- Describe how datacenters are interconnected through WANs.
- Describe basic security concepts regarding interconnected datacenters.
- Describe various solutions regarding datacenter interconnection.
- Describe security concepts regarding WANs.
- Explain the differences between LAN security concepts and WAN security concepts.
- Describe VPN-related concepts regarding WANs.
- Describe methods to manage WANs.
- Describe key products related to WAN management.
- Describe how virtualization and SDN can be leveraged in the WAN.
- Describe SDN-related products.
- Describe some of the Juniper products as they are related to WANs.

COURSE OUTLINE:

Day 1

Module 1: Course Introduction

Module 2: Overview of WAN Design

- WAN Design Overview
- WAN Domains
- WAN Security and Operation
- WAN Management Overview
- Software Defined WAN Overview
- Platform and Junos Selections

Module 3: WAN Connectivity

- Public (Untrusted Internet)/Private/Managed
- Service Provider
- Enterprise
- Lab: WAN Connectivity Design

Module 4: Network Availability and Traffic Prioritization

- Network Availability
- Class of Service
- Lab: Network Availability and CoS Design

Day 2

Module 5: Service Provider Core WAN

- Best Practices and Considerations
- Core Routing
- MPLS Design
- Class of Service Considerations
- Lab: WAN Core Design

Day 3

Module 6: Service Provider Edge WAN

- Provider Edge
- Access and Aggregation Edge
- Services
- Class of Service Considerations
- Multicast
- Lab: WAN Edge Design

Day 4

Module 7: Enterprise WAN

- Best Practices and Considerations
- Private WAN
- Class of Service Considerations
- Large Enterprise Designs
- Lab: Enterprise WAN Design

Module 8: Datacenter WAN

- WAN Overview
- EVPN
- Lab: Data Center WAN Design

Module 9: WAN Security

- Best Practices and Considerations
- Security Similarities and Differences Between a LAN and WAN
- WAN SP Core Security
- WAN SP Edge Security
- Enterprise WAN Security
- Lab: Security Design

Day 5

Module 10: WAN Management

- Best Practices and Considerations
- OOB Management Design
- Junos Space
- Lab: Management Design

Module 11: WAN Virtualization and SDN

- SDN Overview
- NorthStar
- Contrail
- Lab: SDN Design

Module 12: WAN Device Portfolio

- MX Series
- SRX Series
- T Series
- PTX Series
- QFX Series
- ACX Series
- vMX and vSRX
- Lab: Device Design

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