

Juniper Networks Design-Service Provider (JND-SP)

Engineering Simplicity

COURSE LEVEL

Juniper Networks Design-Service Provider (JND-SP) is an intermediate-level course.

AUDIENCE

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.

PREREQUISITES

- 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.

ASSOCIATED CERTIFICATION

[JNCDS-SP](#)

RELEVANT JUNIPER PRODUCT

- Design
- Network Design
- ACX Series
- Contrail
- EX Series
- JCS1200
- JSA Series
- Junos OS
- Junos Space
- Junos Space Network Director
- Junos Space Security Director
- Junos Space Services Activation Director
- Junosphere / VJX
- LN Series
- M Series
- MX Series
- NFX Series
- Odyssey Access Client
- QFX Series
- SRX Series
- T Series
- Design Track

RECOMMENDED NEXT COURSE

N/A

COURSE OVERVIEW

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

OBJECTIVES

- Describe high level concepts about the different WAN architectures.
- Identify key features used to interconnect WANs.
- Describe key high level considerations about securing and monitoring a WAN deployment.
- Outline high level concepts for implementing WANs.
- 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.
- Discuss core routing requirements.
- Explain how to design a high performance MPLS WAN core.
- Define CoS requirements for the WAN core.
- Discuss BGP peering and path selection.
- Design MPLS Layer 2 and Layer 3 services.
- Design metro Ethernet networks.
- Understand role of class of service in provider edge.
- Describe Next-generation MVPNs.
- Explain how enterprise WAN technologies are used to solve specific problems facing network designers.
- Outline various solutions regarding campus and branch WANs.
- Explain how data centers are interconnected through WANs.
- Identify various solutions regarding data center WAN interconnection.
- Describe the benefits and use cases for EVPN.
- Describe security concepts regarding WANs.
- Explain the differences between LAN security concepts and WAN security concepts.
- Explain VPN-related concepts regarding WANs.
- Describe methods to manage WANs.
- Discuss key concepts related to WAN management.
- Explain how virtualization and SDN can be leveraged in the WAN.
- Describe various SDN products and how they are used in the WAN.
- Describe MX, SRX, T, PTX, ACX, QFX, EX, and NFX Series devices and the basics of how they relate to WAN solutions

CONTACT INFORMATION

[Contact Juniper Education Services](#)

COURSE CONTENT

Day 1

1	COURSE INTRODUCTION	4	Network Availability and Traffic Prioritization <ul style="list-style-type: none">• Network Availability• Class of Service LAB: Network Availability and CoS Design
2	Overview of WAN Design <ul style="list-style-type: none">• WAN Design Overview• WAN Domains• Management, Operations, and Security• Implementation Considerations		
3	WAN Connectivity <ul style="list-style-type: none">• Public and Private• Service Provider• Enterprise		

Day 2

5	Service Provider Core WAN <ul style="list-style-type: none">• WAN Core Overview• Core Routing• MPLS Design• CoS Considerations Lab : WAN Core Design
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Day 3

6	Service Provider Edge WAN <ul style="list-style-type: none">• Provider Edge• Lab: Service Provider Edge—VPN Design• Access and Aggregation Edge• Services• CoS Considerations• Multicast Lab : Service Provider Edge—Services Design
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Day 4

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Enterprise WAN

- Enterprise WAN Overview
- WAN Topologies
- Campus and Branch
- CoS Considerations
- Large Enterprise Designs

LAB: Enterprise WAN Design

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WAN Security

- Security Overview
- WAN Versus LAN
- Service Provider Core WAN Security
- Service Provider Edge WAN Security
- Enterprise WAN Security

LAB: Security Design

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Data Center WAN

- WAN Overview
- EVPN

LAB: Data Center WAN Design

Day 5

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WAN Management

- Best Practices and Considerations
- OoB Management Design
- Junos Space
- Juniper WAN Automation

LAB: WAN Management Design

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WAN Virtualization and SDN

- SDN Overview
- NorthStar
- Contrail
- SD-WAN

LAB: SDN Design

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WAN Device Portfolio

- Platform and Junos Overview
- MX Series
- SRX Series
- PTX and T Series
- ACX Series
- QFX Series
- EX Series
- NFX Series

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