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## Juniper Networks Design-Service Provider

**Duration: 5 Days    Course Code: JND-SP**

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### 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.

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### Target 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.

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### 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
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### Prerequisites:

- Knowledge of routing and switching architectures and protocols.
  - Knowledge of Juniper Networks products and solutions.
  - Understanding of infrastructure security principles.
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## Content:

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|-------------------------------------------------|---------------------------------------------|--------------------------------------|
| Day 1                                           | Day 3                                       | LAB: Data Center WAN Design          |
| COURSE INTRODUCTION                             | Service Provider Edge WAN                   | WAN Security                         |
| Overview of WAN Design                          | ■ Provider Edge                             | ■ Security Overview                  |
| ■ WAN Design Overview                           | Lab: Service Provider Edge—VPN Design       | ■ WAN Versus LAN                     |
| ■ WAN Domains                                   |                                             | ■ Service Provider Core WAN Security |
| ■ Management, Operations, and Security          | Access and Aggregation Edge                 | ■ Service Provider Edge WAN Security |
| ■ Implementation Considerations                 |                                             | ■ Enterprise WAN Security            |
| WAN Connectivity                                |                                             | LAB: Security Design                 |
| ■ Public and Private                            | ■ Services                                  | Day 5                                |
| ■ Service Provider                              | ■ CoS Considerations                        | WAN Management                       |
| ■ Enterprise                                    | ■ Multicast                                 | ■ Best Practices and Considerations  |
| Network Availability and Traffic Prioritization | Lab : Service Provider Edge—Services Design | ■ OoB Management Design              |
| ■ Network Availability                          | Day 4                                       | ■ Junos Space                        |
| ■ Class of Service                              | Enterprise WAN                              | ■ Juniper WAN Automation             |
| LAB: Network Availability and CoS Design        | ■ Enterprise WAN Overview                   | LAB: WAN Management Design           |
| Day 2                                           | ■ WAN Topologies                            | WAN Virtualization and SDN           |
| Service Provider Core WAN                       | ■ Campus and Branch                         | ■ SDN Overview                       |
| ■ WAN Core Overview                             | ■ CoS Considerations                        | ■ NorthStar                          |
| ■ Core Routing                                  | ■ Large Enterprise Designs                  | ■ Contrail                           |
| ■ MPLS Design                                   | LAB: Enterprise WAN Design                  | ■ SD-WAN                             |
| ■ CoS Considerations                            | Data Center WAN                             | LAB: SDN Design                      |
| Lab : WAN Core Design                           | ■ WAN Overview                              | WAN Device Portfolio                 |
|                                                 | ■ EVPN                                      | ■ Platform and Junos Overview        |
|                                                 |                                             | ■ MX Series                          |
|                                                 |                                             | ■ SRX Series                         |
|                                                 |                                             | ■ PTX and T Series                   |
|                                                 |                                             | ■ ACX Series                         |
|                                                 |                                             | ■ QFX Series                         |
|                                                 |                                             | ■ EX Series                          |
|                                                 |                                             | ■ NFX Series                         |

## Further Information:

For More information, or to book your course, please call us on 00 966 92000 9278

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