Juniper Training

Contents

Day1: Networking and Junos OS Fundamentals

- Collision domains and broadcast domains
- Function of routers and switches
- Ethernet networks
- Layer 2 addressing, including address resolution
- Layer 3 / IP addressing including subnet masks
- IPv4 / IPv6
- Subnetting
- Software architecture
- Control and forwarding planes
- Routing Engine and Packet Forwarding Engine
- Hands-on Lab

Day2: User Interfaces and Configuration Basics

- CLI functionality
- CLI modes

- CLI navigation
- CLI Help
- Filtering output
- Active versus candidate configuration
- Reverting to previous configurations
- Modifying, managing, and saving configuration files
- Viewing, comparing, and loading configuration files
- Factory-default state
- Initial configuration
- User accounts
- Login classes
- User authentication methods
- Interface types and properties
- Configuration groups
- Additional initial configuration elements, such as NTP, SNMP, and syslog
- Configuration archival
- Logging and tracing
- Rescue configuration
- Router / Switch Upgrade Process.
- Fetching JTAC information for TAC Troubleshooting.
- Hands-on Lab

Day3: Routing Fundamentals and Routing Policies and Firewall Filter

- Traffic forwarding concepts
- Routing tables
- Routing versus forwarding tables
- Route preference
- Routing instances
- Static routing
- Advantages of and use cases for dynamic routing protocols
- Default routing policies
- Import and export policies
- Routing policy flow
- Effect of policies on routes and routing tables
- Policy structure and terms
- Policy match criteria, match types, and actions
- Firewall filter concepts
- Filter structure and terms
- Filter match criteria and actions
- Effect of filters on packets
- Hands-on Lab

Day4: Layer 2 Switching or VLANs

- Bridging components
- Frame processing
- Ports
- Tagging
- Native VLANs and voice VLANs
- Inter-VLAN routing
- Interfaces and ports
- VLANs
- Inter-VLAN routing
- Hands-on

Day5: Spanning Tree

- STP and Rapid Spanning Tree Protocol (RSTP) concepts
- Port roles and states
- Bridge Protocol Data Units (BPDUs)
- Convergence and reconvergence
- MSTP
- Router Bridge Election Influencing
- Hands-on

Day6: OSPF

- Link-state database
- OSPF packet types
- Router ID
- Adjacencies and neighbors
- Designated router (DR) and backup designated router (BDR)
- OSPF area and router types
- Realms
- Link-state advertisement (LSA) packet types
- Areas, interfaces, and neighbors
- Additional basic options
- Routing policy application
- SHAM Link concept and configuration
- Redistributing OSPF into BGP Routing.
- Troubleshooting tools (ping, traceroute, traceoptions, show commands, logging)

Day7: IS-IS

- Link-state database
- IS-IS Protocol Data Units (PDUs)
- Type, length, and values (TLVs)

- Adjacencies and neighbors
- Levels and areas
- Designated intermediate system (DIS)
- Metrics
- Levels, interfaces, and adjacencies
- Additional basic options
- Routing policy application
- Troubleshooting tools (ping, traceroute, traceoptions, show commands, logging)

Day8: BGP

- BGP basic operation
- BGP message types
- Attributes
- Route/path selection process
- Internal and external BGP (IBGP and EBGP) functionality and interaction
- Groups and peers
- Additional basic options
- Routing policy application
- RR Concept in BGP
- Redistribution from BGP to OSPF
- Troubleshooting tools (ping, traceroute, traceoptions, show commands, logging)

Day9: Multiprotocol Label Switching (MPLS)

- MPLS terminology
- MPLS packet header
- End-to-end packet flow and forwarding
- Labels and the label information base
- MPLS and routing tables
- RSVP
- LDP
- Segment routing

Day10: High Availability

- Link aggregation groups (LAGs) and multichassis LAGs (MC- LAGs)
- Graceful restart (GR)
- Graceful Routing Engine switchover (GRES)
- Nonstop bridging (NSB)
- Nonstop active routing (NSR)
- Bidirectional Forwarding Detection (BFD)
- Virtual Router Redundancy Protocol (VRRP)

- Unified In-Service Software Upgrade (ISSU)

Day11: MIST

- Juniper Mist Cloud Fundamentals
- Juniper Mist Configuration Basics
- Juniper Mist Network Operations and Management
- Juniper Mist Monitoring and Analytics
- Marvis AI
- Juniper Location Services, driven by Mist AI
- Juniper Mist Cloud Operations

Day12: Advance Layer 2 Switching

- Layer 2 Link Aggregation Concepts and configurations
- Layer 3 Link Aggregation Concepts and configurations
- Virtual Chassis Overview for Switches and configurations /troubleshooting for both EX series and QFX series.
- Upgrading Virtual Chassis
- Virtual Chassis Fabric Overview
- Leaf and Spine Model concept and configurations
- Underlay and overlay Routing configuration in Virtual Chassis Fabric
- Upgrading Virtual Chassis Fabric Software Using Automatic or Standard Software Update Features

Day13: Advance MPLS Services

- VRF (Virtual Routing Instances) Concepts and details
- L3VPN, VPLS etc.
- VRF (Virtual Routing instances) Leaking in MPLS environment.
- RD and RTs concept and details
- MP-BGP
- RSVP Static LSP Configurations