# JNCIA Security

JUNIPER JNCIA

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## Networking Fundamentals

1. Basic element of networking
2. Collision and broadcast domains
3. Function of routers and switches
4. Optical network basics – SONET/SDH, OTN
5. Ethernet networks
6. L2 addressing, including ARP
7. IPv4 and IPv6 basics
8. L3 IP addressing, including subnet masks
9. Subnetting and supernetting
10. Decimal to binary conversion
11. Longest match routing
12. Connection-oriented vs. connectionless protocols

## JunOS Fundamentals

1. Core elements of the JunOS
2. JunOS device families
3. Software architecture
4. Control and forwarding planes
5. Routing Engine and Packet Forwarding Engine
6. Protocol daemons
7. Transit traffic processing
8. Exception traffic

## User Interfaces

1. Concepts, operations of the JunOS user interfaces
2. CLI functionality
3. CLI modes
4. CLI navigation
5. CLI Help
6. Filtering output
7. Active vs. candidate configuration
8. Reverting to previous configurations
9. Modifying, managing, and saving configuration
10. Viewing, comparing, and loading configuration
11. J-Web – core/common functionality

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## JunOS Configuration Basics

1. Main elements for configuring JunOS devices
2. Factory-default state
3. Initial configuration
4. User accounts
5. Login classes
6. User authentication methods
7. Interface types and properties
8. Configuration groups
9. Additional initial configuration elements – NTP, SNMP, syslog, etc.
10. Configuration archival
11. Logging and tracing
12. Rescue configuration
13. Basic components of a JunOS device

## Operational Monitoring and Maintenance

1. Monitoring and maintaining JunOS devices
2. Show commands
3. Monitor commands
4. Interface statistics and errors
5. Network tools – ping, traceroute, telnet, SSH, etc.
6. Real-time performance monitoring (RPM)
7. JunOS installation
8. Software upgrades
9. Powering on and shutting down JunOS devices
10. Root password recovery
11. Describe monitoring and maintenance procedures for a JunOS device

## Routing Fundamentals

1. Basic routing concepts and functionality for JunOS devices
2. Packet forwarding concepts
3. Routing tables
4. Routing vs. forwarding tables
5. Route preference, Routing instances, Static routing
6. Advantages of / use cases for dynamic routing protocols
7. Configure and monitor basic routing elements for a JunOS device

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## Routing Policy and Firewall Filters

1. Concepts routing policy and firewall filters on JunOS devices
2. Default routing policies
3. Import and export policies
4. Routing policy flow
5. Effect of policies on routes and routing tables
6. Policy structure and terms
7. Policy match criteria, match types, and actions
8. Firewall filter concepts
9. Filter match criteria and actions
10. Effect of filters on packets
11. Unicast reverse-path-forwarding (RPF)
12. Configure and monitor routing policies and firewall filters on a JunOS device

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