

Juniper Mx Series

Administer, configure, and monitor Junos in your organization About This Book Get well acquainted with security and routing policies to identify the use of firewall filters. Learn to provide end-user authentication and protect each layer in an enterprise network. A recipe-based guide that will help you configure and monitor Junos OS and basic device operations. Who This Book Is For This book targets network engineers, developers, support personals, and administrators who are working on devices running Junos OS and are looking at automating their organisation's operations. Some understanding about Junos would be necessary What You Will Learn Start using NETCONF RPC standard and understand its usefulness in programming JUNOS Write SLAX scripts to respond to events in the JUNOS environment Automate JUNOS with PyEZ Deal with events in the JUNOS environment, and writing response handlers to deal with them Make the most of automation technologies to help with maintenance and monitoring of JUNOS Use the Ansible framework to extend the automation functionality of Junos In Detail The JUNOS Automation Cookbook is a companion guide for the complex field of automating tasks on JUNOS devices. With a foundation in industry-standrd XML, JUNOS provides an ideal environment for programmatic interation, allowing you to build upon the capabilities provided by Juniper, with your own original code. You will begin by learning about, and setting up, the industry-standard NETCONF remote procedure call mechanisms on your device. After initial setup, you'll walk through SLAX - Juniper's foundation scripting language - for manipulating XML representations of JUNOS concepts and elements. You'll learn how to write your own SLAX scripts to customise the operating environment, and also how to write proactive event handlers that deal with situations as they happen. You'll then delve into PyEZ - Juniper's bridging framework to make automation accessible to Python code - allowing you to build automation applications in the popular scripting language. You'll witness some examples of how to write applications that can monitor configuration changes, implement BGP security policies and implement ad-hoc routing protocols, for those really tricky situations. You'll also leaarn how asynchronous I/O frameworks like Node.js can be used to implement automation applications that present an acceptable web interface. Along with way, you'll explore how to make use of the latest RESTful APIs that JUNOS provides, how to visualize aspects of your JUNOS network, and how to integrate your automation capabilities with enterprise-wide orchestration systems like Ansible. By the end of the book, you'll be able to tackle JUNOS automation challenges with confidence and understanding, and without hassle. Style and Approach A guide that will cover all the automation tools along with steps on leveraging these tools

Written by two experts in the field who deal with QoS predicaments every day and now in this 2nd edition give special attention to the realm of Data Centers, em style="mso-bidi-font-style: normal;"QoS Enabled Networks:Tools and Foundations, 2nd Edition provides a lucid understanding of modern QoS theory mechanisms in packet networks and how to apply them in practice. This book is focuses on the tools and foundations of QoS providing the knowledge to understand what benefits QoS offers and what can be built on top of it.

How can you make multivendor services work smoothly on today's complex networks? This practical book shows you how to deploy a large portfolio of multivendor Multiprotocol Label Switching (MPLS) services on networks, down to the configuration level. You'll learn where Juniper Network's Junos, Cisco's IOS XR, and OpenContrail, interoperate and where they don't. Two network and cloud professionals from Juniper describe how MPLS technologies and applications have rapidly evolved through services and architectures such as Ethernet VPNs, Network Function Virtualization, Seamless MPLS, Egress Protection, External Path Computation, and more. This book contains no vendor bias or corporate messages, just solid information on how to get a multivendor network to function optimally. Topics include: Introduction to MPLS and Software-Defined Networking (SDN) The four MPLS Builders (LDP, RSVP-TE, IGP SPRING, and BGP) Layer 3 unicast and multicast MPLS services, Layer 2 VPN, VPLS, and Ethernet VPN Inter-domain MPLS Services Underlay and overlay architectures: data centers, NVO, and NFV Centralized Traffic Engineering and TE bandwidth reservations Scaling MPLS transport and services Transit fast restoration based on the IGP and RSVP-TE FIB optimization and egress service for fast restoration

Discover why routers in the Juniper MX Series, with their advanced feature sets and record breaking scale, are so popular among enterprises and network service providers. Written by Juniper Network engineers, this authoritative book shows you step-by-step how to implement high-density, high-speed Layer 2 and Layer 3 Ethernet services, using Router Engine DDoS Protection, Multi-chassis LAG, Inline NAT, IPFIX/J-Flow, and many other Juniper MX features. Each chapter covers a specific Juniper MX vertical and includes review questions to help you test what you learn. You'll delve into the Juniper MX architecture, including the next generation Junos Trio chipset, and explore Juniper MX's bridging, VLAN mapping, and support for thousands of virtual switches. This book is ideal for administrators and engineers responsible for existing or new MX Series in their networks, as well as IT professionals seeking Junos resources for Juniper certifications.

Detailed examples and case studies make this the ideal hands-on guide to implementing Juniper Networks systems. It contains something for everyone, and covers all the basics for beginners while challenging experience users with tested configuration examples throughout the book.

Here's the book you need to prepare for the hands-on JNCIP exam, CERT-JNCIP-M, from Juniper Networks. Written by the Juniper Network trainer who helped develop the exam, this Study Guide provides the information and insights you need to approach the challenging JNCIP hands-on lab with confidence. Authoritative coverage of all test objectives, including: Monitoring and troubleshooting router operation Upgrading and backing up JUNOS Monitoring traffic loads Configuring a variety of interfaces, including Ethernet, Frame Relay, ATM, and HDLC Configuring, monitoring, and troubleshooting OSPF Working with IS-IS Manipulating IBGP routing Monitoring EBGP operation Note: CD-ROM/DVD and other supplementary materials are not included as part of eBook file.

The Juniper Networks routing platforms are becoming the go-to solution for core, edge, metro and remote office networks, and JUNOS software is behind it all. The operating system is so full of industrial-strength routing protocols and IP innovations that those treading into the world of JUNOS will need clarification, explanation, and a showcase example or two. Look no further. This JUNOS Cookbook provides it all and more. Yes, you can mine through the 5,000 pages of documentation or take a two-thousand-dollar training course, but JUNOS's

interprocess sophistication can be baffling unless you know the shortcuts and tricks, as well as those rays of illuminating comprehension that can come only from those who live with it. JUNOS Cookbook is the first comprehensive book about JUNOS software and it provides over 200 time-saving step-by-step techniques including discussions about the processes and alternative ways to perform the same task. It's been tested and tech-reviewed by field engineers who know how to take JUNOS out for a spin and it's applicable to the entire line of M-, T-, and J-series routers. JUNOS Cookbook will not only pay for itself the first few times you use it, it will make your network easier to manage and update. "Aviva Garrett has done a tremendous job of distilling the features of JUNOS software in a form that will be useful for a wide audience—students, field engineers, network architects, and other networking professionals alike will benefit from this book. For many people, this is the only book on JUNOS they will need." Pradeep Sindhu, CTO and Founder, Juniper Networks "This cookbook is superb. Aviva Garrett has masterfully assembled a complete set of practical real-world examples with step-by-step instructions. Security, management, routing: it's all here!" Stephen Gill, Research Fellow, Team Cymru "A technical time-saver for any NOC or SOC working with JUNOS. It's clear, concise, and informative recipes are an invaluable resource." Scott A. McIntyre, Security Officer, XS4ALL Internet B.V

Discover why routers in the Juniper MX Series, with their advanced feature sets and record breaking scale, are so popular among enterprises and network service providers. This authoritative book shows you step-by-step how to implement high-density, high-speed Layer 2 and Layer 3 Ethernet services, using Router Engine DDoS Protection, Multi-chassis LAG, Inline NAT, IPFIX/J-Flow, and many other Juniper MX features. Written by Juniper Network engineers, each chapter covers a specific Juniper MX vertical and includes review questions to help you test what you learn. Delve into the Juniper MX architecture, including the next generation Junos Trio chipset Explore Juniper MX's bridging, VLAN mapping, and support for thousands of virtual switches Add an extra layer of security by combining Junos DDoS protection with firewall filters Create a firewall filter framework that only applies filters specific to your network Discover the advantages of hierarchical scheduling Combine Juniper MX routers, using a virtual chassis or Multi-chassis LAG Install network services such as Network Address Translation (NAT) inside the Trio chipset Examine Junos high availability features and protocols on Juniper MX "For the no-nonsense engineer who likes to get down to it, The Juniper MX Series targets both service providers and enterprises with an illustrative style supported by diagrams, tables, code blocks, and CLI output. Readers will discover features they didn't know about before and can't resist putting them into production." —Ethan Banks, CCIE #20655, Packet Pushers Podcast Host

turn up a Juniper Network Dynamic Subscriber Management solution that consists of the MX series router, optionally the Juniper Steel Belted RADIUS (SBR) server, and optionally an external DHCP server.

Follows teams of Juniper Networks engineers as they solve specific client problems related to new and emerging network platform architectures.

Ideal for network engineers involved in building a data center, this practical guide provides a comprehensive and technical deep-dive into the new Juniper QFX5100 switching family. You'll learn how the Juniper QFX5100 enables you to create simple-to-use data centers or build some of the largest IP Fabrics in the world. This book is chock-full of helpful technical illustrations and code examples to help you get started on all of the major architectures and features of Juniper QFX5100 switches, whether you're an enterprise or service provider. With this book, you'll be well on your way to becoming a Juniper QFX5100 expert. All of the examples and features are based on Junos releases 13.2X51-D20.2 and 14.1X53-D10. Fully understand the hardware and software architecture of the Juniper QFX5100 Design your own IP Fabric architecture Perform in-service software upgrades Be familiar with the performance and scaling maximums Create a data center

switching fabric with Virtual Chassis Fabric Automate networking devices with Python, Ruby, Perl, and Go Build an overlay architecture with VMware NSX and Juniper Contrail Export real-time analytics information to graph latency, jitter, bandwidth, and other features

JUNOS Enterprise Switching is the only detailed technical book on Juniper Networks' new Ethernet-switching EX product platform. With this book, you'll learn all about the hardware and ASIC design prowess of the EX platform, as well as the JUNOS Software that powers it. Not only is this extremely practical book a useful, hands-on manual to the EX platform, it also makes an excellent study guide for certification exams in the JNTCP enterprise tracks. The authors have based JUNOS Enterprise Switching on their own Juniper training practices and programs, as well as the configuration, maintenance, and troubleshooting guidelines they created for their bestselling companion book, JUNOS Enterprise Routing. Using a mix of test cases, case studies, use cases, and tangential answers to real-world problems, this book covers: Enterprise switching and virtual LANs (VLANs) The Spanning tree protocol and why it's needed Inter-VLAN routing, including route tables and preferences Routing policy and firewall filters Switching security, such as DHCP snooping Telephony integration, including VLAN voice Part of the Juniper Networks Technical Library, JUNOS Enterprise Switching provides all-inclusive coverage of the Juniper Networks EX product platform, including architecture and packet flow, management options, user interface options, and complete details on JUNOS switch deployment.

Like the popular guides The MX Series and Juniper QFX5100 Series, this practical book—written by the same author—introduces new QFX10000 concepts in switching and virtualization, specifically in the core of the data center network. The rise of cloud computing with service providers and the need to create private clouds for enterprise, government agencies, and research institutions of all shapes and sizes is creating a high demand for high-density 40GbE and 100GbE in the core of the data center network. The Juniper QFX10000 Series was introduced by Juniper Networks to solve these challenges, and it is a game-changer. This new book by Douglas Hanks is the authoritative guide. Topics include: Device Architecture Flexible Deployment Scenarios Performance and Scaling Disaggregation of Software and Hardware Data Center API Next Generation QFabric Network-Based Overlay Fabric Network Analytics

Find out what Junos can do running a security device. The SRX devices are super-charged firewalls fortified with routing and switching capabilities. So get ready because working on the SRX Series combines powerful Junos networking with a potent set of new security services. This book shows you how to get started: how to console to your SRX device, perform initial configuration, and deploy your new box in a matter of hours. There's no theory, no workarounds, no chatty diversions.

Junos® Security is the complete and authorized introduction to the new Juniper Networks SRX hardware series. This book not only provides a practical, hands-on field guide to deploying, configuring, and operating SRX, it also serves as a reference to help you prepare for any of the Junos Security Certification examinations offered by Juniper Networks. Network administrators and security professionals will learn how to use SRX Junos services gateways to address an array of enterprise data network requirements -- including IP routing, intrusion detection, attack mitigation, unified threat management, and WAN acceleration. Junos Security is a clear and detailed roadmap to the SRX platform. The author's newer book, Juniper SRX Series, covers the SRX devices themselves. Get up to speed on Juniper's multi-function SRX platforms and SRX Junos software Explore case studies and troubleshooting tips from engineers with extensive SRX experience Become familiar with SRX security policy, Network Address Translation, and IPSec VPN configuration Learn about routing fundamentals and high availability with SRX platforms Discover what sets SRX apart from typical firewalls Understand the operating system that spans the entire Juniper Networks networking hardware portfolio Learn about the more commonly deployed branch series SRX as well as the large Data

Center SRX firewalls "I know these authors well. They are out there in the field applying the SRX's industry-leading network security to real world customers everyday. You could not learn from a more talented team of security engineers." --Mark Bauhaus, EVP and General Manager, Juniper Networks

This complete field guide, authorized by Juniper Networks, is the perfect hands-on reference for deploying, configuring, and operating Juniper's SRX Series networking device. Authors Brad Woodberg and Rob Cameron provide field-tested best practices for getting the most out of SRX deployments, based on their extensive field experience. While their earlier book, Junos Security, covered the SRX platform, this book focuses on the SRX Series devices themselves. You'll learn how to use SRX gateways to address an array of network requirements—including IP routing, intrusion detection, attack mitigation, unified threat management, and WAN acceleration. Along with case studies and troubleshooting tips, each chapter provides study questions and lots of useful illustrations. Explore SRX components, platforms, and various deployment scenarios Learn best practices for configuring SRX's core networking features Leverage SRX system services to attain the best operational state Deploy SRX in transparent mode to act as a Layer 2 bridge Configure, troubleshoot, and deploy SRX in a highly available manner Design and configure an effective security policy in your network Implement and configure network address translation (NAT) types Provide security against deep threats with AppSecure, intrusion protection services, and unified threat management tools

This bestselling book serves as the go-to study guide for Juniper Networks enterprise routing certification exams. The second edition has been updated with all the services available to the Junos administrator, including the new set of flow-based security services as well as design guidelines incorporating new services and features of MX, SRX, and EX network devices.

Discover why routers in the Juniper MX Series—with their advanced feature sets and record-breaking scale—are so popular among enterprises and network service providers. This revised and expanded edition shows you step-by-step how to implement high-density, high-speed Layer 2 and Layer 3 Ethernet services, using Router Engine DDoS Protection, Multi-chassis LAG, Inline NAT, IPFLOW, and many other Juniper MX features. This second edition was written by a Senior NOC engineer, whose vast experience with the MX Series is well documented. Each chapter covers a specific Juniper MX vertical and includes review questions to help you test what you've learned. This edition includes new chapters on load balancing and vMX—Juniper MX's virtual instance. Work with Juniper MX's bridging, VLAN mapping, and support for thousands of virtual switches Examine Juniper MX high-availability features and protocols Use Trio Chipset's load balancing features for different types of traffic Explore the benefits and typical use cases of vMX Add an extra layer of security with Junos DDoS protection Create a firewall filter framework that applies filters specific to your

network Discover the advantages of hierarchical scheduling Combine Juniper MX routers, using a virtual chassis or Multi-chassis LAG Install network services such as Network Address Translation (NAT)

Juniper MX SeriesA Comprehensive Guide to Trio Technologies on the MX"O'Reilly Media, Inc."

This second booklet in the Junos Fundamentals Series helps you to configure the basic settings of your device and to learn more about configuration mode. These settings are the first steps to configuring a Junos device, whether you are setting up a router, switch, or security platform. Building upon the foundation set by the first booklet, Day One: Configuring Junos Basics continues the practical tutorial for first-time users of Junos and Juniper products. It is also written as a reference or refresher for more experienced Junos administrators.

This Day One booklet advocates a process for monitoring and troubleshooting your network. The goal is to give you an idea of what to look for before ever typing a show command, so by book's end, you should know not only what to look for, but where to look. Day One: Junos Monitoring and Troubleshooting shows you how to identify the root causes of a variety of problems and advocates a common approach to isolate the problems with a best practice set of questions and tests. Moreover, it includes the instrumentation to assist in root cause identification and the configuration know-how to solve both common and severe problems before they ever begin.

Whether your network is a complex carrier or just a few machines supporting a small enterprise, JUNOS High Availability will help you build reliable and resilient networks that include Juniper Networks devices. With this book's valuable advice on software upgrades, scalability, remote network monitoring and management, high-availability protocols such as VRRP, and more, you'll have your network uptime at the five, six, or even seven nines -- or 99.99999% of the time. Rather than focus on "greenfield" designs, the authors explain how to intelligently modify multi-vendor networks. You'll learn to adapt new devices to existing protocols and platforms, and deploy continuous systems even when reporting scheduled downtime. JUNOS High Availability will help you save time and money. Manage network equipment with Best Common Practices Enhance scalability by adjusting network designs and protocols Combine the IGP and BGP networks of two merging companies Perform network audits Identify JUNOScripting techniques to maintain high availability Secure network equipment against breaches, and contain DoS attacks Automate network configuration through specific strategies and tools This book is a core part of the Juniper Networks Technical Library™.

Pick up where certification exams leave off. With this practical, in-depth guide to the entire network infrastructure, you'll learn how to deal with real Cisco networks, rather than the hypothetical situations presented on exams like the CCNA. Network Warrior takes you step by step through the world of routers, switches, firewalls, and other technologies based on the author's extensive field experience. You'll find new content for MPLS, IPv6, VoIP, and wireless in this completely

revised second edition, along with examples of Cisco Nexus 5000 and 7000 switches throughout. Topics include: An in-depth view of routers and routing Switching, using Cisco Catalyst and Nexus switches as examples SOHO VoIP and SOHO wireless access point design and configuration Introduction to IPv6 with configuration examples Telecom technologies in the data-networking world, including T1, DS3, frame relay, and MPLS Security, firewall theory, and configuration, as well as ACL and authentication Quality of Service (QoS), with an emphasis on low-latency queuing (LLQ) IP address allocation, Network Time Protocol (NTP), and device failures

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