

## Programming And Automating Cisco Networks A Guide To Network Programmability And Automation In The Data Center Campus And Wan Networking Technology

Automating Cisco Security Solutions (SAUTO 300-735) training course is associated with the CCNP Security Certification and DevNet Professional Certification. It is especially useful for those leading or participating in projects. This course is ideal for: -Network engineer -Systems engineer -Wireless engineer -Consulting systems engineer -Technical solutions architect -Network administrator -Wireless design engineer -Network manager -Sales engineer -Account manager Preparing for Automating Cisco Security Solutions (SAUTO 300-735)? Here we have brought Best Exam Questions for you so that you can prepare well for this Exam of Automating Cisco Security Solutions (SAUTO 300-735). Unlike other online simulation practice tests, you get a eBook version that is easy to read & remember these questions. You can simply rely on these questions for successfully certifying this exam.

Network automation is the process of efficiently automating the management and functionality of networks. Through practical use-cases and examples, this book introduces you to the popular tools such as Python, Ansible, Chef and more, that are used to automate a network. Whether the reader is the biggest technology geek or simply a computer enthusiast, this integral reference tool can shed light on the terms that'll pop up daily in the communications industry. (Computer Books - Communications/Networking)

For more than 20 years, Network World has been the premier provider of information, intelligence and insight for network and IT executives responsible for the digital nervous systems of large organizations. Readers are responsible for designing, implementing and managing the voice, data and video systems their companies use to support everything from business critical applications to employee collaboration and electronic commerce.

The complete guide to transforming enterprise networks with Cisco DNA As networks become more complex and dynamic, organizations need better ways to manage and secure them. With the Cisco Digital Network Architecture, network operators can run entire network fabrics as a single, programmable system by defining rules that span their devices and move with their users. Using Cisco intent-based networking, you spend less time programming devices, managing configurations, and troubleshooting problems so you have more time for driving value from your network, your applications, and most of all, your users. This guide systematically introduces Cisco DNA, highlighting its business value propositions, design philosophy, tenets, blueprints, components, and solutions. Combining insider information with content previously scattered through multiple technical documents, it provides a single source for evaluation, planning, implementation, and operation. The authors bring together authoritative insights for multiple business and technical audiences. Senior executives will learn how DNA can help them drive digital transformation for competitive advantage. Technical decision-makers will discover powerful emerging solutions for their specific needs. Architects will find essential recommendations, interdependencies, and caveats for planning deployments. Finally, network operators will learn how to use DNA Center's modern interface to streamline, automate, and improve virtually any network management task.

- Accelerate the digital transformation of your business by adopting an intent-based network architecture that is open, extensible, and programmable
- Integrate virtualization, automation, analytics, and cloud services to streamline operations and create new business opportunities
- Dive deep into hardware, software, and protocol innovations that lay the programmable infrastructure foundation for DNA
- Virtualize advanced network functions for fast, easy, and flexible deployments
- Translate business intent into device configurations and

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simplify, scale, and automate network operations using controllers · Use analytics to tune performance, plan capacity, prevent threats, and simplify troubleshooting · Learn how Software-Defined Access improves network flexibility, security, mobility, visibility, and performance · Use DNA Assurance to track the health of clients, network devices, and applications to reveal hundreds of actionable insights · See how DNA Application Policy supports granular application recognition and end-to-end treatment, for even encrypted applications · Identify malware, ransomware, and other threats in encrypted traffic

The practical and conceptual knowledge you need to attain CCNP Enterprise certification From one of the most trusted study guide publishers comes CCNP Enterprise Certification Study Guide: Exam 350-401. This guide helps you develop practical knowledge and best practices for critical aspects of enterprise infrastructure so you can gain your CCNP Enterprise certification. If you're hoping to attain a broader range of skills and a solid understanding of Cisco technology, this guide will also provide fundamental concepts for learning how to implement and operate Cisco enterprise network core technologies. By focusing on real-world skills, each chapter prepares you with the knowledge you need to excel in your current role and beyond. It covers emerging and industry-specific topics, such as SD-WAN, network design, wireless, and automation. This practical guide also includes lessons on: ? Automation ? Network assurance ? Security ? Enterprise infrastructure ? Dual-stack architecture ? Virtualization In addition to helping you gain enterprise knowledge, this study guide can lead you toward your Cisco specialist certification. When you purchase this guide, you get access to the information you need to prepare yourself for advances in technology and new applications, as well as online study tools such as: ? Bonus practice exams ? Pre-made flashcards ? Glossary of key terms ? Specific focus areas Expand your skillset and take your career to the next level with CCNP Enterprise Certification Study Guide.

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The advancement of technology is a standard of modern daily life, whether it be the release of a new cellphone, computer, or a self-driving car. Due to this constant advancement, the networks on which these technologies operate must advance as well. Innovations in Software-Defined Networking and Network Functions Virtualization is a critical scholarly publication that observes the advances made in network infrastructure through achieving cost efficacy while maintaining maximum flexibility for the formation and operation of these networks. Featuring coverage on a broad selection of topics, such as software-defined storage, openflow controller, and storage virtualization, this publication is geared toward professionals, computer engineers, academicians, students, and researchers seeking current and relevant research on the advancements made to network infrastructures.

The entire networking industry is being pressured to automate to scale and move faster. In modern networks, you just can't manage everything by hand anymore. You need to automate relentlessly, and the most practical way to do so is with YANG and NETCONF. But existing documentation on these technologies has been poor, jargon-filled, or non-existent, so most implementers have been forced to learn by trial and error. Now, Network Programmability with YANG gives them comprehensive and reliable guidance for unlocking the power of network automation using model-driven APIs and protocols. Written by three leaders of the YANG development effort, this plain-spoken book guides networking professionals in successfully applying software practices based on YANG data models. The authors focus on the network operations layer, emphasizing model-driven APIs and underlying transports. Using their information and insights, network professionals can

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transform the way they manage large networks.

This book was conceived as a gathering place of new ideas from academia, industry, research and practice in the fields of robotics, automation and control. The aim of the book was to point out interactions among various fields of interests in spite of diversity and narrow specializations which prevail in the current research. The common denominator of all included chapters appears to be a synergy of various specializations. This synergy yields deeper understanding of the treated problems. Each new approach applied to a particular problem can enrich and inspire improvements of already established approaches to the problem.

Prepare for the evolving technology components of Cisco's revised CCIE and CCDE written exams The changes Cisco made to its expert-level CCIE and CCDE certifications allow candidates to link their core technology expertise with knowledge of evolving technologies that organizations are rapidly adopting, including cloud services, IoT networking, and network programmability. This guide will help you efficiently master and integrate the knowledge of evolving technology that you'll need to succeed on the revised CCIE and CCDE written examinations. Designed to help you efficiently focus your study, achieve mastery, and build confidence, CCIE and CCDE Evolving Technologies Study Guide focuses on conceptual insight, not mere memorization. Focused specifically on the exams' evolving technologies components, it combines with track-specific Cisco Press certification guides to offer comprehensive and authoritative preparation for advanced Cisco certification. Understand the Internet of Things (IoT) from the perspective of business transformations, connectivity, and security Review leading IoT architectural models and applications Structure edge, fog, and centralized compute to maximize processing efficiency Recognize behavioral and operational differences between IoT networks and enterprise networks Gain a holistic understanding of public, private, or hybrid cloud environments that use VMs or containers Explore cloud service models, connectivity, security, scalability, and high availability designs. Master modern API-based programmability and automation methods for interacting with diverse network applications and devices Connect with the Cisco DevNet developer community and other key resources for Cisco network programming.

Network Programmability and Automation, Volume 1, covers designing, implementing, monitoring and operating networks using programmable interfaces on network devices versus the legacy (and soon-to-be obsolete) methods and protocols such as the Command Line Interface (CLI) and Simple Network Management Protocol (SNMP). It discusses the protocols, tools, techniques and technologies upon which Network Programmability is based. Covering the fundamentals that a network engineer needs to transition to the software and programmability domains, the book opens with an introduction that lays the foundation by discussing the market trends and emerging technologies such as SDN, NFV and Cloud, and how network programmability skills are paramount for aligning oneself with these technologies. It provides network engineers with a solid foundation in Python programming and Linux in the context of network programmability and automation.

In CRM Automation, one of the world's leading CRM experts delivers hands-on guidance for every phase of your CRM initiative: goal-setting, process review, vendor selection, implementation, rollout, support, and administration. Drawing on 18 years of experience with more than 300 enterprise deployments, Barton Goldenberg offers a start-to-finish implementation blueprint covering every customer-focused business function: marketing, sales, customer service, field support, and beyond.

Today Network Automation can be used for provisioning, configurations, identifying rogue devices, mitigating security attacks, compliance, audits, capacity planning and scores of other network deployment activities. It has helped in enhancing network visibility and has empowered the network engineers to make faster, smarter network decisions, optimize uptime and performance, enhance security, and enable innovation

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instead of spending endless cycles in managing the network. This book has been written for Network Engineers and Network Managers who are starting to explore network automation. This book is a good starting point for Network Engineers who learnt Programming in their earlier academic or work career and haven't used it in a long time or those Network Engineers who are learning Programming and Automation for the first time. The book has example Python Scripts which readers can practice and improve their job potential and make the networks more resilient and scalable.

New edition of the bestselling guide to mastering Python Networking, updated to Python 3 and including the latest on network data analysis, Cloud Networking, Ansible 2.8, and new libraries Key Features Explore the power of Python libraries to tackle difficult network problems efficiently and effectively, including pyATS, Nornir, and Ansible 2.8 Use Python and Ansible for DevOps, network device automation, DevOps, and software-defined networking Become an expert in implementing advanced network-related tasks with Python 3 Book Description Networks in your infrastructure set the foundation for how your application can be deployed, maintained, and serviced. Python is the ideal language for network engineers to explore tools that were previously available to systems engineers and application developers. In Mastering Python Networking, Third edition, you'll embark on a Python-based journey to transition from traditional network engineers to network developers ready for the next-generation of networks. This new edition is completely revised and updated to work with Python 3. In addition to new chapters on network data analysis with ELK stack (Elasticsearch, Logstash, Kibana, and Beats) and Azure Cloud Networking, it includes updates on using newer libraries such as pyATS and Nornir, as well as Ansible 2.8. Each chapter is updated with the latest libraries with working examples to ensure compatibility and understanding of the concepts. Starting with a basic overview of Python, the book teaches you how it can interact with both legacy and API-enabled network devices. You will learn to leverage high-level Python packages and frameworks to perform network automation tasks, monitoring, management, and enhanced network security followed by Azure and AWS Cloud networking. Finally, you will use Jenkins for continuous integration as well as testing tools to verify your network. What you will learn Use Python libraries to interact with your network Integrate Ansible 2.8 using Python to control Cisco, Juniper, and Arista network devices Leverage existing Flask web frameworks to construct high-level APIs Learn how to build virtual networks in the AWS & Azure Cloud Learn how to use Elastic Stack for network data analysis Understand how Jenkins can be used to automatically deploy changes in your network Use PyTest and Unittest for Test-Driven Network Development in networking engineering with Python Who this book is for Mastering Python Networking, Third edition is for network engineers, developers, and SREs who want to use Python for network automation, programmability, and data analysis. Basic familiarity with Python programming and networking-related concepts such as Transmission Control Protocol/Internet Protocol (TCP/IP) will be useful.

Power up your network applications with Python programming Key Features Master Python skills to develop powerful network applications Grasp the fundamentals and functionalities of SDN Design multi-threaded, event-driven architectures for echo and chat servers Book Description This Learning Path highlights major aspects of Python network programming such as writing simple networking clients, creating and deploying SDN and NFV systems, and extending your network with Mininet. You'll also learn how to automate legacy and the latest network devices. As you progress through the chapters, you'll use Python for DevOps and open source tools to test, secure, and analyze your network. Toward the end, you'll develop client-side applications, such as web API clients, email clients, SSH, and FTP, using socket programming. By the end of this Learning Path, you will have learned how to analyze a network's security vulnerabilities using advanced network packet capture and analysis techniques. This Learning Path includes content from the following Packt products: Practical Network

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Automation by Abhishek Ratan Mastering Python Networking by Eric Chou Python Network Programming Cookbook, Second Edition by Pradeeban Kathiravelu, Dr. M. O. Faruque Sarker What you will learn Create socket-based networks with asynchronous models Develop client apps for web APIs, including S3 Amazon and Twitter Talk to email and remote network servers with different protocols Integrate Python with Cisco, Juniper, and Arista eAPI for automation Use Telnet and SSH connections for remote system monitoring Interact with websites via XML-RPC, SOAP, and REST APIs Build networks with Ryu, OpenDaylight, Floodlight, ONOS, and POX Configure virtual networks in different deployment environments Who this book is for If you are a Python developer or a system administrator who wants to start network programming, this Learning Path gets you a step closer to your goal. IT professionals and DevOps engineers who are new to managing network devices or those with minimal experience looking to expand their knowledge and skills in Python will also find this Learning Path useful. Although prior knowledge of networking is not required, some experience in Python programming will be helpful for a better understanding of the concepts in the Learning Path.

This IBM® Redbooks® publication is an IBM and Cisco collaboration that articulates how IBM and Cisco can bring the benefits of their respective companies to the modern data center. It documents the architectures, solutions, and benefits that can be achieved by implementing a data center based on IBM server, storage, and integrated systems, with the broader Cisco network. We describe how to design a state-of-the-art data center and networking infrastructure combining Cisco and IBM solutions. The objective is to provide a reference guide for customers looking to build an infrastructure that is optimized for virtualization, is highly available, is interoperable, and is efficient in terms of power and space consumption. It will explain the technologies used to build the infrastructure, provide use cases, and give guidance on deployments.

Learn and implement network automation within the Enterprise network using Python 3. This introductory book will be your guide to building an integrated virtual networking lab to begin your Network Automation journey and master the basics of Python Network Automation. The book features a review of the practical Python network automation scripting skills and tips learned from the production network, so you can safely test and practice in a lab environment first, various Python modules such as paramiko and netmiko, pandas, re, and much more. You'll also develop essential skills such as Python scripting, regular expressions, Linux and Windows administration, VMware virtualization, and Cisco networking from the comfort of your laptop/PC with no actual networking hardware. Finally, you will learn to write a fully automated and working Cisco IOS XE upgrade application using Python. Introduction to Python Network Automation uses a canonical order, where you begin at the bottom and by the time you have completed this book, you will at least reach the intermediate level of Python coding for enterprise networking automation using native Python tools. What You'll Learn Build a proper GNS3-based networking lab for Python network automation needs. Write the basics of Python codes in both the Windows and Linux environments. Control network devices using telnet, SSH, and SNMP protocols using Python codes. Understand virtualization and how to use VMware workstation Examine virtualization and how to use VMware Workstation Pro Develop a working Cisco IOS upgrade application Who This Book Is For IT Engineers and developers, network managers and students, who would like to learn network automation using Python.

Master the art of using Python for a diverse range of network engineering tasks Key Features Explore the power of Python libraries to tackle difficult network problems efficiently and effectively Use Python for network device automation, DevOps, and software-defined networking Become an expert in implementing advanced network-related tasks with Python Book Description Networks in your infrastructure set the foundation for how your application can be deployed, maintained, and serviced. Python is the ideal language for network engineers to explore



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network security with Python Build Flask-based web-service APIs with Python Construct a Python-based migration plan from a legacy to scalable SDN-based network. In Detail This book begins with a review of the TCP/ IP protocol suite and a refresher of the core elements of the Python language. Next, you will start using Python and supported libraries to automate network tasks from the current major network vendors. We will look at automating traditional network devices based on the command-line interface, as well as newer devices with API support, with hands-on labs. We will then learn the concepts and practical use cases of the Ansible framework in order to achieve your network goals. We will then move on to using Python for DevOps, starting with using open source tools to test, secure, and analyze your network. Then, we will focus on network monitoring and visualization. We will learn how to retrieve network information using a polling mechanism, ?ow-based monitoring, and visualizing the data programmatically. Next, we will learn how to use the Python framework to build your own customized network web services. In the last module, you will use Python for SDN, where you will use a Python-based controller with OpenFlow in a hands-on lab to learn its concepts and applications. We will compare and contrast OpenFlow, OpenStack, OpenDaylight, and NFV. Finally, you will use everything you've learned in the book to construct a migration plan to go from a legacy to a scalable SDN-based network. Style and approach An easy-to-follow guide packed with hands-on examples of using Python for network device automation, DevOps, and SDN.

- This is the latest practice test to pass the 300-435 Automating Cisco Enterprise Solutions (ENAUTO) Exam. - It contains 59 Questions and Answers. - All the questions are 100% valid and stable. - You can rely on this practice test to pass the exam with a good mark and in the first attempt.

Master the art of using Python for a diverse range of network engineering tasks Key Features Explore the power of Python libraries to tackle difficult network problems efficiently and effectively Use Python for network device automation, DevOps, and software-defined networking Become an expert in implementing advanced network-related tasks with Python Book Description Networks in your infrastructure set the foundation for how your application can be deployed, maintained, and serviced. Python is the ideal language for network engineers to explore tools that were previously available to systems engineers and application developers. In this second edition of Mastering Python Networking, you'll embark on a Python-based journey to transition from traditional network engineers to network developers ready for the next-generation of networks. This book begins by reviewing the basics of Python and teaches you how Python can interact with both legacy and API-enabled network devices. As you make your way through the chapters, you will then learn to leverage high-level Python packages and frameworks to perform network engineering tasks for automation, monitoring, management, and enhanced security. In the concluding chapters, you will use Jenkins for continuous network integration as well as testing tools to verify your network. By the end of this book, you will be able to perform all

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networking tasks with ease using Python. What you will learn Use Python libraries to interact with your network Integrate Ansible 2.5 using Python to control Cisco, Juniper, and Arista eAPI network devices Leverage existing frameworks to construct high-level APIs Learn how to build virtual networks in the AWS Cloud Understand how Jenkins can be used to automatically deploy changes in your network Use PyTest and Unittest for Test-Driven Network Development Who this book is for Mastering Python Networking is for network engineers and programmers who want to use Python for networking. Basic familiarity with Python programming and networking-related concepts such as Transmission Control Protocol/Internet Protocol (TCP/IP) will be useful.

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Take your Python skills to the next level to develop scalable, real-world applications for local as well as cloud deployment Key Features All code examples have been tested with Python 3.7 and Python 3.8 and are expected to work with any future 3.x release Learn how to build modular and object-oriented applications in Python Discover how to use advanced Python techniques for the cloud and clusters Book Description Python is a multipurpose language that can be used for multiple use cases. Python for Geeks will teach you how to advance in your career with the help of expert tips and tricks. You'll start by exploring the different ways of using Python optimally, both from the design and implementation point of view. Next, you'll understand the life cycle of a large-scale Python project. As you advance, you'll focus on different ways of creating an elegant design by modularizing a Python project and learn best practices and design patterns for using Python. You'll also discover how to scale out Python beyond a single thread and how to implement multiprocessing and multithreading in Python. In addition to this, you'll understand how you can not only use Python to deploy on a single machine but also use clusters in private as well as in public cloud computing environments. You'll then explore data processing techniques, focus on reusable, scalable data pipelines, and learn how to use these advanced techniques for network automation, serverless functions, and machine learning. Finally, you'll focus on strategizing web development design using the techniques and best practices covered in the book. By the end of this Python book, you'll be able to do some serious Python programming for large-scale complex projects. What you will learn Understand how to design and manage complex Python projects Strategize test-driven development (TDD) in Python Explore multithreading and multiprocessing in Python Use Python for data processing with Apache Spark and Google Cloud Platform (GCP) Deploy serverless programs on public clouds such as GCP Use Python to build web applications and application programming interfaces Apply Python for network automation and serverless functions Get to grips with Python for data analysis and machine learning Who this book is for This book is for intermediate-level Python developers in any field who are looking to build their skills to develop and manage large-scale complex projects. Developers who want to create

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reusable modules and Python libraries and cloud developers building applications for cloud deployment will also find this book useful. Prior experience with Python will help you get the most out of this book.

Like sysadmins before them, network engineers are finding that they cannot do their work manually anymore. As the field faces new protocols, technologies, delivery models, and a pressing need for businesses to be more agile and flexible, network automation is becoming essential. This practical guide shows network engineers how to use a range of technologies and tools—including Linux, Python, JSON, and XML—to automate their systems through code. Network programming and automation will help you simplify tasks involved in configuring, managing, and operating network equipment, topologies, services, and connectivity. Through the course of the book, you'll learn the basic skills and tools you need to make this critical transition. This book covers: Python programming basics: data types, conditionals, loops, functions, classes, and modules Linux fundamentals to provide the foundation you need on your network automation journey Data formats and models: JSON, XML, YAML, and YANG for networking Jinja templating and its applicability for creating network device configurations The role of application programming interfaces (APIs) in network automation Source control with Git to manage code changes during the automation process How Ansible, Salt, and StackStorm open source automation tools can be used to automate network devices Key tools and technologies required for a Continuous Integration (CI) pipeline in network operations

"This course is based on Python 3. You'll master network programmability and network automation using GNS3 and Python 3. This course will show you how you can start programming Cisco networks within 20 minutes. This course is practical; we will show you how you can quickly and easily start network programming by using GNS3, Cisco IOS, and Python. You will see demonstrations showing the configuration of both Cisco routers and switches in GNS3, for example, how to configure multiple VLANs on a multiple switches, or how to configure OSPF on a router and more. This course shows you practical examples using Python to programmatically configure Cisco network devices rather than just talking about it. Learn how to automate networks using Telnet, SSH, Paramiko, Netmiko, NAPALM. Tools such as NAPALM and Netmiko make it easy to configure and interact with network devices using an API such as NETCONF or via SSH. Don't reinvent the wheel: use the tools available to you to quickly and easily automate your networks."--Resource description page.

Traditional Chinese Edition of [Sandworm: A New Era of Cyberwar and the Hunt for the Kremlin's Most Dangerous Hackers] Network Programmability and Automation, Volume 1 , covers designing, implementing, monitoring and operating networks using programmable interfaces on network devices versus the legacy (and soon-to-be obsolete) methods and protocols such as the Command Line Interface (CLI) and Simple Network Management Protocol (SNMP). It discusses the protocols, tools, techniques

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Get More from your Network with Automation tools to increase its effectiveness. About This Book Get started with network automation (and different automation tasks) with relevant use cases Apply software design principles such as Continuous Integration and DevOps to your network toolkit Guides you through some best practices in automation Who This Book Is For If you are a network engineer looking for an extensive guide to help you automate and manage your network efficiently, then this book is for you. What You Will Learn Get the detailed analysis of Network automation Trigger automations through available data factors Improve data center robustness and security through specific access and data digging Get an Access to APIs from Excel for dynamic reporting Set up a communication with SSH-based devices using netmiko Make full use of practical use cases and best practices to get accustomed with the various aspects of network automation In Detail Network automation is the use of IT controls to supervise and carry out every-day network management functions. It plays a key role in network virtualization technologies and network functions. The book starts by providing an introduction to network automation, SDN, and its applications, which include integrating DevOps tools to automate the network efficiently. It then guides you through different network automation tasks and covers various data digging and reporting methodologies such as IPv6 migration, DC relocations, and interface parsing, all the while retaining security and improving data center robustness. The book then moves on to the use of Python and the management of SSH keys for machine-to-machine (M2M) communication, all followed by practical use cases. The book also covers the importance of Ansible for network automation including best practices in automation, ways to test automated networks using different tools, and other important techniques. By the end of the book, you will be well acquainted with the various aspects of network automation. Style and approach A clear, concise, and straightforward book that will enable you to automate networks and improve performance.

Traditional approaches to network management can't handle soaring network complexity. In the future, the best way to stay in control of your networks will be to program and automate them. Programming and Automating Cisco Networks introduces powerful new Cisco technologies for doing just that. CCIEs Ryan Tischer and Jason Gooley begin by showing how network automation and programmability can bridge gaps in network management arising from modern operational models. Next, they introduce software development tools, use cases, and examples for programming the Nexus 9000 and other Cisco data center network platforms. You'll find detailed coverage of programmability for Cisco campus and WAN products, including the use of NetConf/Yang, ConfD, and Cisco SDN controller for managing complex WAN environments. Tischer and Gooley then introduce Cisco's self-service catalog, Prime Services, and techniques for orchestrating multiple automation solutions to deliver applications, using Cisco

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Process Orchestrator. They conclude with links and references for extending your network automation skills via online communities and open source projects.

Become well-versed with network programmability by solving the most commonly encountered problems using Python 3 and open-source packages

**Key Features\***

- Explore different Python packages to automate your infrastructure\*
- Leverage AWS APIs and the Python library Boto3 to administer your public cloud network efficiently\*
- Get started with infrastructure automation by enhancing your network programming knowledge

**Book Description**

Network automation offers a powerful new way of changing your infrastructure network. Gone are the days of manually logging on to different devices to type the same configuration commands over and over again. With this book, you'll find out how you can automate your network infrastructure using Python. You'll get started on your network automation journey with a hands-on introduction to the network programming basics to complement your infrastructure knowledge. You'll learn how to tackle different aspects of network automation using Python programming and a variety of open source libraries. In the book, you'll learn everything from templating, testing, and deploying your configuration on a device-by-device basis to using high-level REST APIs to manage your cloud-based infrastructure. Finally, you'll see how to automate network security with Cisco's Firepower APIs.

By the end of this Python network programming book, you'll have not only gained a holistic overview of the different methods to automate the configuration and maintenance of network devices, but also learned how to automate simple to complex networking tasks and overcome common network programming challenges.

**What you will learn\***

- Programmatically connect to network devices using SSH (secure shell) to execute commands\*
- Create complex configuration templates using Python\*
- Manage multi-vendor or multi-device environments using network controller APIs or unified interfaces\*
- Use model-driven programmability to retrieve and change device configurations\*
- Discover how to automate post modification network infrastructure tests\*
- Automate your network security using Python and Firepower APIs

**Who this book is for**

This book is for network engineers who want to make the most of Python to automate their infrastructure. A basic understanding of Python programming and common networking principles is necessary.

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