Network Protection Automation

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Network Protection Automation ***2023-03-31***

MORROW DAVIES

Network Programmability and Automation Wiley-Blackwell
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.
Cloud Security Automation Cisco Press
Automate security-

related tasks in a structured, modular fashion using the best open source automation tool available About This Book Leverage the agentless, push-based power of Ansible 2 to automate security tasks Learn to write playbooks that apply security to any part of your system This recipe-based guide will teach you to use Ansible 2 for various use cases such as fraud detection, network security, governance, and more Who This Book Is For If you are a system administrator or a DevOps engineer with responsibility for finding loop holes in your system or application, then this book is for you. It's also useful for security consultants looking to automate their infrastructure's security model. What You Will Learn Use Ansible playbooks, roles, modules, and templating to build generic, testable playbooks Manage Linux and Windows hosts remotely in a repeatable and predictable manner See how to perform security patch management, and security hardening with scheduling and automation Set up AWS Lambda for a serverless automated defense Run continuous security scans against your hosts and automatically fix and harden the gaps Extend Ansible to write your custom modules and use them as part of your already existing security automation

programs Perform automation security audit checks for applications using Ansible Manage secrets in Ansible using Ansible Vault In Detail Security automation is one of the most interesting skills to have nowadays. Ansible allows you to write automation procedures once and use them across your entire infrastructure. This book will teach you the best way to use Ansible for seemingly complex tasks by using the various building blocks available and creating solutions that are easy to teach others, store for later, perform version control on, and repeat. We'll start by covering various popular modules and writing simple playbooks to showcase those modules. You'll see how this can be applied over a variety of platforms and operating systems, whether they are Windows/Linux bare metal servers or containers on a cloud platform. Once the bare bones automation is in place, you'll learn how to leverage tools such as Ansible Tower or even Jenkins to create scheduled repeatable processes around security patching, security hardening, compliance reports, monitoring of systems, and so on. Moving on, you'll delve into useful security automation techniques and approaches, and learn how to extend Ansible for enhanced security. While on the way, we will tackle topics like how to manage secrets, how to manage all the

playbooks that we will create and how to enable collaboration using Ansible Galaxy. In the final stretch, we'll tackle how to extend the modules of Ansible for our use, and do all the previous tasks in a programmatic manner to get even more powerful automation frameworks and rigs. Style and approach This comprehensive guide will teach you to manage Linux and Windows hosts remotely in a repeatable and predictable manner. The book takes an in-depth approach and helps you understand how to set up complicated stacks of software with codified and easy-to-share best practices.

Skills for the Next-Generation Network Engineer Syngress

The book, in addition to the cyber threats and technology, processes cyber security from many sides as a social phenomenon and how the implementation of the cyber security strategy is carried out. The book gives a profound idea of the most spoken phenomenon of this time. The book is suitable for a wide-ranging audience from graduate to professionals/practitioners and researchers. Relevant disciplines for the book are Telecommunications / Network security, Applied mathematics / Data analysis, Mobile systems / Security, Engineering / Security of critical infrastructure and Military science / Security.

Industrial Automation

and Control System Security Principles
Packt Publishing Ltd
As the sophistication of cyber-attacks increases, understanding how to defend critical infrastructure systems—energy production, water, gas, and other vital systems—becomes more important, and heavily mandated. Industrial Network Security, Second Edition arms you with the knowledge you need to understand the vulnerabilities of these distributed supervisory and control systems. The book examines the unique protocols and applications that are the foundation of industrial control systems, and provides clear guidelines for their protection. This how-to guide gives you thorough understanding of the unique challenges facing critical infrastructures, new guidelines and security measures for critical infrastructure protection, knowledge of new and evolving security tools, and pointers on SCADA protocols and security implementation. All-new real-world examples of attacks against control systems, and more diagrams of systems Expanded coverage of protocols such as 61850, Ethernet/IP, CIP, ISA-99, and the evolution to IEC62443 Expanded coverage of Smart Grid security New coverage of signature-based detection, exploit-based vs. vulnerability-based detection, and signature reverse

engineering

Practical Security Automation and Testing Cisco Networking Academy Progr

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.

Python Network Programming Techniques Packt Publishing Ltd

"Premier reference source"-- book cover.

Industrial Network Security Cisco Press

Improve operations and agility in any data center, campus, LAN, or WAN Today, the best way to stay in control of your network is to address devices programmatically and automate network interactions. In this book, Cisco experts Ryan Tischer and Jason Gooley show you how to do just that. You'll learn how to use programmability and automation to solve business problems, reduce costs, promote agility and innovation, handle accelerating complexity, and add value in any data center, campus, LAN, or WAN. The authors show you how to create production solutions that run on or interact with Nexus NX-OS-based switches, Cisco ACI, Campus, and WAN technologies.You'll learn how to use advanced Cisco tools together with industry-standard languages and platforms, including Python, JSON, and Linux. The authors

demonstrate how to support dynamic application environments, tighten links between apps and infrastructure, and make DevOps work better. This book will be an indispensable resource for network and cloud designers, architects, DevOps engineers, security specialists, and every professional who wants to build or operate high-efficiency networks. Drive more value through programmability and automation, freeing resources for high-value innovation Move beyond error-prone, box-by-box network management Bridge management gaps arising from current operational models Write NX-OS software to run on, access, or extend your Nexus switch Master Cisco's powerful on-box automation and operation tools Manage complex WANs with NetConf/Yang, ConfD, and Cisco SDN Controller Interact with and enhance Cisco Application Centric Infrastructure (ACI) Build self-service catalogs to accelerate application delivery Find resources for deepening your expertise in network automation

Emerging Automation Techniques for the Future Internet

Lulu.com

Throughout human history, technological advancements have been made for the ease of human labor. With our most recent advancements, it has been the work of scholars to discover ways for machines to

take over a large part of this labor and reduce human intervention. These advancements may become essential processes to nearly every industry. It is essential to be knowledgeable about automation so that it may be applied. Research Anthology on Cross-Disciplinary Designs and Applications of Automation is a comprehensive resource on the emerging designs and application of automation. This collection features a number of authors spanning multiple disciplines such as home automation, healthcare automation, government automation, and more. Covering topics such as human-machine interaction, trust calibration, and sensors, this research anthology is an excellent resource for technologists, IT specialists, computer engineers, systems and software engineers, manufacturers, engineers, government officials, professors, students, healthcare administration, managers, CEOs, researchers, and academicians.

Industrial Network Security "O'Reilly Media, Inc." Network automation is one of the hottest topics in Information Technology today. This revolutionary book aims to illustrate the transformative journey towards full enterprise network automation. This book outlines the tools, technologies and

processes required to fully automate an enterprise network. Automated network configuration management is more than converting your network configurations to code. The benefits of source control, version control, automated builds, automated testing and automated releases are realized in the world of networking using well established software development practices. The next-generation network administrative toolkit is introduced including Microsoft Team Foundation Server, Microsoft Visual Studio Code, Git, Linux, and the Ansible framework. Not only will these new technologies be covered at length, a new and continuously integrated / continuously delivered pipeline is also introduced. Starting with safe, simple, non-intrusive, non-disruptive information gathering organizations can ease into network automation while building a dynamic library of documentation and on-demand utilities for network operations. Once comfortable with the new ecosystem, administrators can begin making fully automated, orchestrated, and tactical changes to the network. The next evolutionary leap occurs when fully automated network configuration management is implemented. Important information from the network running-configurations

is abstracted into data models in a human readable format. Device configurations are dynamically templated creating a scalable, intent-based, source of truth. Much like in the world of software development, full automation of the network using a CI/CD pipeline can be realized. Automated builds, automated testing and automated scheduled releases are orchestrated and executed when changes are approved and checked into the central repository. This book is unlike any on the market today as it includes multiple Ansible playbooks, sample YAML data models and Jinja2 templates for network devices, and a whole new methodology and approach to enterprise network administration and management. The CLI no longer cuts it. Readers should take away from this book a new approach to enterprise network management and administration as well as the full knowledge and understanding of how to use TFS, VS Code, Git, and Ansible to create an automation ecosystem. Readers should have some basic understanding of modern network design, operation, and configuration. No prior programming or software development experience is required. John Capobianco has over 20 years of IT experience and is currently a Technical Advisor for the Canadian House of Commons. A graduate of St. Lawrence

College's Computer Programmer Analyst program, John is also a former Professor at St. Lawrence College in the Computer Networking and Technical Support (CNTS) program. John has achieved CCNP, CCDP, CCNA: Data Center, MCITP: EA/SA, CompTIA A+ / Network+, and ITIL Foundation certifications. Having discovered a new way to interface with the network John felt compelled to share this new methodology in hopes of revolutionizing the industry and bringing network automation to the world.

Multi-Site Network and Security Services with NSX-T

Information Gatekeepers Inc

Become an expert in implementing advanced, network-related tasks with Python. About This Book Build the skills to perform all networking tasks using Python with ease Use Python for network device automation, DevOps, and software-defined networking Get practical guidance to networking with Python Who This Book Is For If you are a network engineer or a programmer who wants to use Python for networking, then this book is for you. A basic familiarity with networking-related concepts such as TCP/IP and a familiarity with Python programming will be useful. What You Will Learn Review all the fundamentals of Python and the TCP/IP suite Use Python to

execute commands when the device does not support the API or programmatic interaction with the device Implement automation techniques by integrating Python with Cisco, Juniper, and Arista eAPI Integrate Ansible using Python to control Cisco, Juniper, and Arista networks Achieve 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. Momentum Press

Take your network automation skills to the next level with practical recipes on managing network devices from a variety of vendors like Cisco, Juniper, and Arista Key Features Use Ansible to automate network infrastructure with the help of step-by-step instructions Implement network automation best practices to save cost, avoid critical errors, and reduce downtime Deliver a robust automation framework by integrating Ansible with NAPALM, NetBox, and Batfish Book Description Network Automation Cookbook is designed to help system administrators, network engineers, and infrastructure automation engineers to centrally manage switches, routers, and

other devices in their organization's network. This book will help you gain hands-on experience in automating enterprise networks and take you through core network automation techniques using the latest version of Ansible and Python. With the help of practical recipes, you'll learn how to build a network infrastructure that can be easily managed and updated as it scales through a large number of devices. You'll also cover topics related to security automation and get to grips with essential techniques to maintain network robustness. As you make progress, the book will show you how to automate networks on public cloud providers such as AWS, Google Cloud Platform, and Azure. Finally, you will get up and running with Ansible 2.9 and discover troubleshooting techniques and network automation best practices. By the end of this book, you'll be able to use Ansible to automate modern network devices and integrate third-party tools such as NAPALM, NetBox, and Batfish easily to build robust network automation solutions. What you will learn Understand the various components of Ansible Automate network resources in AWS, GCP, and Azure cloud solutions Use IaC concepts to design and build network solutions Automate network devices such as Cisco, Juniper, Arista, and F5 Use NetBox to build network inventory and integrate it with

Ansible Validate networks using Ansible and Batfish Who this book is for This Ansible network automation book is for network and DevOps engineers interested in automating complex network tasks. Prior understanding of networking and basic Linux knowledge is required.

Proven and Actionable Recipes to Automate and Manage Network Devices Using Ansible

Springer

Your one stop guide to automating infrastructure security using DevOps and DevSecOps Key Features Secure and automate techniques to protect web, mobile or cloud services Automate secure code inspection in C++, Java, Python, and JavaScript Integrate security testing with automation frameworks like fuzz, BDD, Selenium and Robot Framework Book Description Security automation is the automatic handling of software security assessments tasks. This book helps you to build your security automation framework to scan for vulnerabilities without human intervention. This book will teach you to adopt security automation techniques to continuously improve your entire software development and security testing. You will learn to use open source tools and techniques to integrate security testing tools directly into your CI/CD framework. With this book, you will see how to implement security inspection at every

layer, such as secure code inspection, fuzz testing, Rest API, privacy, infrastructure security, and web UI testing. With the help of practical examples, this book will teach you to implement the combination of automation and Security in DevOps. You will learn about the integration of security testing results for an overall security status for projects. By the end of this book, you will be confident implementing automation security in all layers of your software development stages and will be able to build your own in-house security automation platform throughout your mobile and cloud releases. What you will learn Automate secure code inspection with open source tools and effective secure code scanning suggestions Apply security testing tools and automation frameworks to identify security vulnerabilities in web, mobile and cloud services Integrate security testing tools such as OWASP ZAP, NMAP, SSLyze, SQLMap, and OpenSCAP Implement automation testing techniques with Selenium, JMeter, Robot Framework, Gauntlt, BDD, DDT, and Python unittest Execute security testing of a Rest API Implement web application security with open source tools and script templates for CI/CD integration Integrate various types of security testing tool results from a single project into one dashboard Who this

book is for The book is for software developers, architects, testers and QA engineers who are looking to leverage automated security testing techniques. Enterprise Networking, Security, and Automation Companion Guide (Ccnav7) Packt Publishing
Secure public and private cloud workloads with this comprehensive learning guide. Key Features Take your cloud security functions to the next level by automation Learn to automate your security functions on AWS and OpenStack Practical approach towards securing your workloads efficiently Book Description Security issues are still a major concern for all IT organizations. For many enterprises, the move to cloud computing has raised concerns for security, but when applications are architected with focus on security, cloud platforms can be made just as secure as on-premises platforms. Cloud instances can be kept secure by employing security automation that helps make your data meet your organization's security policy. This book starts with the basics of why cloud security is important and how automation can be the most effective way of controlling cloud security. You will then delve deeper into the AWS cloud environment and its security services by dealing with security functions such as Identity and Access

Management and will also learn how these services can be automated. Moving forward, you will come across aspects such as cloud storage and data security, automating cloud deployments, and so on. Then, you'll work with OpenStack security modules and learn how private cloud security functions can be automated for better time- and cost-effectiveness. Toward the end of the book, you will gain an understanding of the security compliance requirements for your Cloud. By the end of this book, you will have hands-on experience of automating your cloud security and governance. What you will learn Define security for public and private cloud services Address the security concerns of your cloud Understand Identity and Access Management Get acquainted with cloud storage and network security Improve and optimize public and private cloud security Automate cloud security Understand the security compliance requirements of your cloud Who this book is for This book is targeted at DevOps Engineers, Security professionals, or any stakeholders responsible for securing cloud workloads. Prior experience with AWS or OpenStack will be an advantage.

Building Secure Systems in Untrusted Networks

Packt Publishing Ltd

Nowadays one only needs to read the

newspaper headlines to appreciate the importance of Industrial Network Security. Almost daily an article comes out describing the threat to our critical infrastructure, from spies in our electrical grid to the looming threat of cyberwar. Whether we talk about process control systems that run chemical plants and refineries, supervisory control and data acquisition (SCADA) systems for utilities, or factory automation systems for discrete manufacturing, the backbone of our nationA's critical infrastructure consists of these industrial networks and is dependent on their continued operation. This easy-to-read book introduces managers, engineers, technicians, and operators on how to keep our industrial networks secure amid rising threats from hackers, disgruntled employees, and even cyberterrorists.

Zero Trust Networks

Network Protection & Automation GuideNetwork Protection and Automation GuideProtective Relays, Measurement and ControlNetwork Protection & Automation GuidePractical Electrical Network Automation and Communication Systems

Enterprise Networking, Security, and Automation (CCNA v7) Companion Guide is designed as a portable desk reference to use anytime, anywhere to reinforce the material

from the Enterprise Networking, Security, and Automation course and organize your time. The book's features help you focus on important concepts to succeed in this course: Chapter Objectives - Review core concepts by answering the focus questions listed at the beginning of each chapter. Key Terms - Refer to the lists of networking vocabulary introduced and highlighted in context in each chapter. Glossary - Consult the comprehensive Glossary with more than 250 terms. Summary of Activities and Labs - Maximize your study time with this complete list of all associated practice exercises at the end of each chapter. Check Your Understanding - Evaluate your readiness with the end-of-chapter questions that match the style of questions you see in the online course quizzes. The answer key explains each answer. How To - Look for this icon to study the steps you need to learn to perform certain tasks. Interactive Activities - Reinforce your understanding of topics with dozens of exercises from the online course identified throughout the book with this icon. Packet Tracer Activities - Explore and visualize networking concepts using Packet Tracer exercises interspersed throughout the chapters and provided in the accompanying Labs & Study Guide book. Videos - Watch the videos embedded

within the online course. Hands-on Labs - Work through all the course labs and additional Class Activities that are included in the course and published in the separate Labs & Study Guide. Part of the Cisco Networking Academy Series from Cisco Press, books in this series support and complement the Cisco Networking Academy curriculum.

AI and Machine Learning for Network and Security Management Cisco Press

Network Protection & Automation GuideNetwork Protection and Automation GuideProtective Relays, Measurement and ControlNetwork Protection & Automation GuidePractical Electrical Network Automation and Communication SystemsElsevier

Practical Electrical Network Automation and Communication Systems Packt Publishing Ltd

Enterprise Networking, Security, and Automation (CCNA v7) Companion Guide is designed as a portable desk reference to use anytime, anywhere to reinforce the material from the Enterprise Networking, Security, and Automation course and organize your time. The book's features help you focus on important concepts to succeed in this course: Chapter Objectives - Review core concepts by answering the focus questions listed at the beginning of each

chapter. Key Terms - Refer to the lists of networking vocabulary introduced and highlighted in context in each chapter. Glossary - Consult the comprehensive Glossary with more than 250 terms. Summary of Activities and Labs - Maximize your study time with this complete list of all associated practice exercises at the end of each chapter. Check Your Understanding - Evaluate your readiness with the end-of-chapter questions that match the style of questions you see in the online course quizzes. The answer key explains each answer. How To - Look for this icon to study the steps you need to learn to perform certain tasks. Interactive Activities - Reinforce your understanding of topics with dozens of exercises from the online course identified throughout the book with this icon. Packet Tracer Activities - Explore and visualize networking concepts using Packet Tracer exercises interspersed throughout the chapters and provided in the accompanying Labs & Study Guide book. Videos - Watch the videos embedded within the online course. Hands-on Labs - Work through all the course labs and additional Class Activities that are included in the course and published in the separate Labs & Study Guide. Part of the Cisco Networking Academy Series from Cisco Press, books in this series support and

complement the Cisco Networking Academy curriculum.

Cloud Security Automation

Information Science Reference

The relevance of the Internet has dramatically grown in the past decades. However, the enormous financial impact attracts many types of criminals. Setting up proper security mechanisms (e.g., Intrusion Detection Systems (IDS)) has therefore never been more important than today. To further compete with today's data transfer rates (10 to 100 Gbit/s), dedicated hardware accelerators have been proposed to offload compute intensive tasks from general purpose processors. As one key technology, reconfigurable hardware architectures, e.g., the Field Programmable Gate Array (FPGA), are of particular interest to this end. This work addresses the use of such FPGAs in the context of interactive communication applications, which goes beyond the regular packet level operations often seen in this area. To support rapid prototyping, a novel FPGA platform (NetStage) has been designed and developed, which provides a communication core for Internet communication and a flexible connection bus for attaching custom applications modules. A hardware honeypot (the MalCoBox) has been set up as a proof-

of-concept application. Furthermore, to address the ongoing issue of hardware programming complexity, the domain-specific Malacoda language for abstractly formulating honeypot packet communication dialogs is presented and discussed. An associated compiler translates Malacoda into high-performance hardware modules for NetStage. Together, NetStage and Malacoda address some of the productivity deficiencies often recognized as major hindrances for the more widespread use of reconfigurable computing in communications applications. Finally, the NetStage platform has been evaluated in a real production environment.

Automated Threat Handbook Packt Publishing Ltd

Know the basics of network security services and other stateful services such as NAT, gateway and distributed firewalls (L2-L7), virtual private networks (VPN), load balancing (LB), and IP address management. This book covers these network and security services and how NSX-T also offers integration and interoperability with various other products that are not only created by VMware, but are also referred by VMware as third-party integrated vendors. With the integration of VMware vRealize Automation, you can automate full application platforms

consisting of multiple virtual machines with network and security services orchestrated and fully automated. From the operational perspective, this book provides best practices on how to configure logging, notification, and monitoring features and teaches you how to get the required visibility of not only your NSX-T platform but also your NSX-T-enabled network infrastructure. Another key part of this book is the explanation of multi-site capabilities and how network and security services can be offered across multiple on-premises locations with a single management pane. Interface with public cloud services also is included. The current position of NSX-T operation in on-premises private clouds and the position and integration with off-premises public clouds are covered as well. This book provides a good understanding of integrations with other software to bring the best out of NSX-T and offer even more features and capabilities. What You Will Learn Understand the NSX-T security firewall and advanced security Become familiar with NAT, DNS, DHCP, and load balancing features Monitor your NSX-T environment Be aware of NSX-T authentication and authorization possibilities Understand integration with cloud automation platforms Know what multi-cloud integrations are

possible and how to integrate NSX-T with the public cloud Who This Book Is For Virtualization administrators, system integrators

Protective Relays, Measurement and Control John Wiley & Sons

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.