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Programming and Automating Cisco Networks

A Guide to Network Programmability and Automation in the Data Center, Campus, and WAN

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Programming Automating Cisco Networks Programmability

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Programming Automating Cisco Networks Programmability:

Programming and Automating Cisco Networks Ryan Tischer,Jason Gooley,2016-09-09 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 *Network Programmability with YANG* Benoit Claise,Joe Clarke,Jan Lindblad,2019-05-10 Today networks must evolve and scale faster than ever You can t manage everything by hand anymore You need to automate relentlessly YANG along with the NETCONF RESTCONF or gRPC gNMI protocols is the most practical solution but most implementers have had to learn by trial and error Now Network Programmability with YANG gives you complete and reliable guidance for unlocking the full power of network automation using model driven APIs and protocols Authored by three YANG pioneers this plain spoken book guides you through successfully applying software practices based on YANG data models The authors focus on the network operations layer emphasizing model driven APIs and underlying transports Whether you re a network operator DevOps engineer software developer orchestration engineer NMS OSS architect service engineer or manager this guide can help you dramatically improve value agility and manageability throughout your network Discover the value of implementing YANG and Data Model Driven Management in your network Explore the layers and components of a complete working solution Build a business case where value increases as your solution grows Drill down into transport protocols NETCONF RESTCONF and gNMI gRPC See how telemetry can establish a valuable automated feedback loop Find data models you can build on and evaluate models with similar functionality Understand models metadata and tools from several viewpoints architect operator module author and application developer

Walk through a complete automation journey business case service model service implementation device integration and operation Leverage the authors experience to design successful YANG models and avoid pitfalls *Network Programmability and Automation Fundamentals* Khaled Abuelenain,Jeff Doyle,Anton Karneliuk,Vinit Jain,2021-05-06 Modernize and optimize network management with APIs and automation Legacy network management approaches don t scale adequately and can t be automated well This guide will help meet tomorrow s challenges by adopting network programmability based on Application Programming Interfaces APIs Using these techniques you can improve efficiency reliability and flexibility simplify implementation of high value technologies automate routine administrative and security tasks and deploy services far more rapidly Four expert authors help you transition from a legacy mindset to one based on solving problems with software They explore today s emerging network programmability and automation ecosystem introduce each leading programmable interface and review the protocols tools techniques and technologies that underlie network programmability You ll master key concepts through hands on examples you can run using Linux Python Cisco DevNet sandboxes and other easily accessible tools This guide is for all network architects engineers operations and software professionals who want to integrate programmability into their networks It offers valuable background for Cisco DevNet certification and skills you can use with any platform whether you have software development experience or not Master core concepts and explore the network programmability stack Manage network software and run automation scripts in Linux environments Solve real problems with Python and its Napalm and Nornir automation frameworks Make the most of the HTTP protocol REST architectural framework and SSH Encode your data with XML JSON or YAML Understand and build data models using YANG that offer a foundation for model based network programming Leverage modern network management protocols from gRPC and gNMI to NETCONF and RESTCONF Meet stringent service provider KPIs in large scale fast changing networks Program Cisco devices running IOS XE IOS XR and NX OS as well as Meraki DNA Center and Webex platforms Program non Cisco platforms such as Cumulus Linux and Arista EOS Go from zero to hero with Ansible network automation Plan your next steps with more advanced tools and technologies **Programming and Automating Cisco Networks** Ryan Tischer. Jason Gooley,2016 Cisco Digital Network Architecture Tim Szigeti,David Zacks,Matthias Falkner,Simone Arena,2018-12-27 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 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 **Network Architect's Handbook** Alim H. Ali,2024-01-31 Follow a step by step roadmap to developing essential competencies in network architecture design relationship management systems and services coupled with certification guidance and expert tips Key Features Grasp the big picture of information technology infrastructure to become a successful network architect Overcome challenges to improve network performance and configuration management Advance your career by improving your skills using real life examples and practical advice from an industry expert Purchase of the print or Kindle book includes a free PDF eBook Book DescriptionBecoming a network architect is challenging it demands hands on engineering skills collaboration with internal teams and C Suite stakeholders as well as adeptly managing external entities like vendors and service providers The author taps into his extensive background in IT and security to help you gain a detailed understanding of the network architect s role and guide you in evolving into an effective network architect within an organization fostering seamless communication with leadership teams and other stakeholders Starting with a clear definition of the network architect s role this book lays out a roadmap and discusses the attributes and mindset for success You ll explore network architect design physical infrastructure routing and switching and network services such as DNS MLAG and service insertion You ll also gain insights into the necessary skills and typical daily challenges faced by network architects And to thoroughly prepare you to advance in your career this handbook covers certifications and associated training for maintaining relevance in an organization along with common interview questions

for a network architect s position By the end of this book you ll be armed with essential concepts techniques and newfound skills to pursue a career as a network architect What you will learn Examine the role of a network architect Understand the key design makers in an organization Choose the best strategies to meet stakeholder needs Be well versed with networking concepts Prepare for a network architect position interview Distinguish the different IT architects in an organization Identify relevant certification for network architects Understand the various de facto network fabric architect models used today Who this book is for This book is for network engineers and technicians aspiring to transition into the role of a network architect Whether you are at the beginning of your journey or seeking guidance along the path this book will support you with its deep coverage of key aspects such as design concepts architectural requirements relevant experience certifications and advanced education with a special emphasis on cloud best practices A practical understanding of IT networking is necessary to get the most out of this book   Computer Networking Problems and Solutions Russ White,Ethan Banks,2017-12-06 Master Modern Networking by Understanding and Solving Real Problems Computer Networking Problems and Solutions offers a new approach to understanding networking that not only illuminates current systems but prepares readers for whatever comes next Its problem solving approach reveals why modern computer networks and protocols are designed as they are by explaining the problems any protocol or system must overcome considering common solutions and showing how those solutions have been implemented in new and mature protocols Part I considers data transport the data plane Part II covers protocols used to discover and use topology and reachability information the control plane Part III considers several common network designs and architectures including data center fabrics MPLS cores and modern Software Defined Wide Area Networks SD WAN Principles that underlie technologies such as Software Defined Networks SDNs are considered throughout as solutions to problems faced by all networking technologies This guide is ideal for beginning network engineers students of computer networking and experienced engineers seeking a deeper understanding of the technologies they use every day Whatever your background this book will help you quickly recognize problems and solutions that constantly recur and apply this knowledge to new technologies and environments Coverage Includes Data and networking transport Lower and higher level transports and interlayer discovery Packet switching Quality of Service QoS Virtualized networks and services Network topology discovery Unicast loop free routing Reacting to topology changes Distance vector control planes link state and path vector control Control plane policies and centralization Failure domains Securing networks and transport Network design patterns Redundancy and resiliency Troubleshooting Network disaggregation Automating network management Cloud computing Networking the Internet of Things IoT Emerging trends and technologies   *Sdn And Nfv: A New Dimension To Virtualization* Brij B Gupta,Amrita Dahiya,Elhadj Benkhelifa,2024-01-08 Software defined network SDN and network function virtualization NFV are two technology trends that have revolutionized network management particularly in highly distributed networks that are used in public private or hybrid cloud services SDN and NFV technologies

when combined simplify the deployment of network resources lower capital and operating expenses and offer greater network flexibility The increasing usage of NFV is one of the primary factors that make SDN adoption attractive The integration of these two technologies SDN and NFV offer a complementary service with NFV delivering many of the real services controlled in an SDN While SDN is focused on the control plane NFV optimizes the actual network services that manage the data flows Devices such as routers firewalls and VPN terminators are replaced with virtual devices that run on commodity hardware in NFV physical networking This resembles the as a service typical model of cloud services in many aspects These virtual devices can be accessed on demand by communication network or data center providers This book illustrates the fundamentals and evolution of SDN and NFV and highlights how these two technologies can be integrated to solve traditional networking problems In addition it will focus on the utilization of SDN and NFV to enhance network security which will open ways to integrate them with current technologies such as IoT edge computing and blockchain SDN based network programmability and current network orchestration technologies The basics of SDN and NFV and associated issues challenges technological advancements along with advantages and risks of shifting networking paradigm towards SDN are also discussed Detailed exercises within the book and corresponding solutions are available online as accompanying supplementary material **Deploying ACI** Frank Dagenhardt,Jose Moreno,Bill Dufresne,2018-02-28 Use ACI fabrics to drive unprecedented value from your data center environment With the Cisco Application Centric Infrastructure ACI software defined networking platform you can achieve dramatic improvements in data center performance redundancy security visibility efficiency and agility In Deploying ACI three leading Cisco experts introduce this breakthrough platform and walk network professionals through all facets of design deployment and operation The authors demonstrate how ACI changes data center networking security and management and offer multiple field proven configurations Deploying ACI is organized to follow the key decision points associated with implementing data center network fabrics After a practical introduction to ACI concepts and design the authors show how to bring your fabric online integrate virtualization and external connections and efficiently manage your ACI network You ll master new techniques for improving visibility control and availability managing multitenancy and seamlessly inserting service devices into application data flows The authors conclude with expert advice for troubleshooting and automation helping you deliver data center services with unprecedented efficiency Understand the problems ACI solves and how it solves them Design your ACI fabric build it and interface with devices to bring it to life Integrate virtualization technologieswith your ACI fabric Perform networking within an ACI fabric and understand how ACI changes data center networking Connect external networks and devices at Layer 2 Layer 3 levels Coherently manage unified ACI networks with tenants and application policies Migrate to granular policies based on applications and their functions Establish multitenancy and evolve networking security and services to support it Integrate L4 7 services device types design scenarios and implementation Use multisite designs to meet rigorous requirements for

redundancy and business continuity Troubleshoot and monitor ACI fabrics Improve operational efficiency through automation and programmability *Containers in Cisco IOS-XE, IOS-XR, and NX-OS* Yogesh Ramdoss,Nagendra Kumar Nainar,2020-08-14 Acomprehensive guide to learning container and application hosting capabilitiesin Cisco platforms and implementing them to achieve higher efficiency innetwork deployments and operations Cisco architectures offer comprehensive compute virtualizationcapabilities to accommodate both native and third party container hosting soyou can containerize and instantiate any application or network service andgain unprecedented value from your networks Direct from Cisco this is the complete guide to deploying andoperating containerized application andnetwork services on Cisco platforms First the authors review essentialvirtualization and containerization concepts for all network professionals andintroduce leading orchestration tools Next they take a deep dive intocontainer networking introducing Cisco architectural support for containerinfrastructures You ll find modular coverage of configuration activation orchestration operations and application hosting for each key Cisco softwareplatform IOS XE IOS XR and NX OS The authors explore diverse orchestration tools including LXC Docker and Kubernetes and cover both Cisco and open source tools for buildingand testing applications They conclude with multiple use cases that show howcontainerization can improve agility and efficiency in a wide range of networkenvironments Reviewthe motivation drivers and concepts of computing virtualization Learnhow Cisco platforms are achieving infrastructure virtualization Explorethe Cisco reference model for developing cloud native services and moving tocloud native network functions MasterCisco container networking fundamentals supported modes and configuration Enable install activate and orchestrate containerized applications in Cisco IOS XE IOS XR and NX OS Comparetools and methods for developing testing hosting and orchestratingcontainerized applications Discoverreal world use cases for Day 0 Day 1 and Day 2 operations with practicaldeployment examples Previewemerging trends in network containerization *Introduction to Python Network Automation Volume II* Brendan Choi,2024-08-02 Continue your Python network automation journey and delve deeper into advanced techniques and methodologies Volume 2 of this comprehensive guide takes you beyond the essentials equipping you with advanced skills and strategies crucial for success in network automation Building upon the knowledge gained in Volume 1 you ll set the stage for mastery in this dynamic field You ll start by establishing a robust lab environment for advanced automation projects tailored to your needs and use practical exercises to gain valuable insights into essential networking protocols Then automate repetitive tasks with precision and efficiency by leveraging powerful Python libraries and tools You ll also see how to streamline IP address management and data center infrastructure management tasks with Python Discover advanced techniques for network management and monitoring to optimize network performance and security Explore the development of custom tools and applications for Cisco IOS upgrade tasks in complex network environments and put your skills to the test with real world scenarios All this is designed to solidify your expertise and confidence in network automation practices Your network management capabilities will be enhanced with advanced

tools such as NetBox Introduction to Python Network Automation Volume 2 Stepping up provides a comprehensive roadmap to elevate your skills and excel in the dynamic field of network automation Whether you re a seasoned professional or a newcomer to the field this guide equips you with the tools and knowledge needed to thrive in today s network automation landscape What You Will Learn Apply Python fundamentals and network automation strategies effectively Utilize Python for streamlined network administration boosting productivity Consolidate Linux fundamentals and IP network services for enhanced network management Practice implementing regular expressions in Python for network application development Develop working Cisco IOS upgrading Python application in PoC environment Explore Python s extensive applications in enterprise network automation for versatile solutions Who This Book Is For IT engineers and developers network managers and students who would like to learn network automation using Python *Study Guide 300-435 ENAUTO: Automating and Programming Cisco Enterprise Solutions Certification Exam* Anand Vemula, The Automating and Programming Cisco Enterprise Solutions 300 435 ENAUTO study guide offers a comprehensive approach to mastering network automation with Cisco solutions Covering key topics from basic network programmability to advanced automation techniques this guide equips readers with the skills needed to manage configure and automate network devices and services efficiently It begins with an overview of network programmability and automation contrasting traditional networking methods with software defined networking SDN and introduces essential tools like APIs and model driven programmability The guide then delves into Python programming emphasizing its application for network automation with practical scripts and usage of popular networking modules like Netmiko Paramiko and Requests Chapters focused on Cisco s tools such as Cisco DNA Center SD WAN vManage and Meraki explore their automation capabilities Practical exercises are included to demonstrate how to use these APIs for automating tasks such as policy configurations and troubleshooting The guide also covers telemetry NETCONF and RESTCONF providing readers with in depth knowledge of model driven telemetry and device configuration automation It concludes with a focus on troubleshooting automation workflows integration with CI CD tools like Jenkins and GitLab and version control using Git and GitHub Through detailed explanations and real world use cases the guide prepares readers for success in automating Cisco enterprise networks equipping them with the practical knowledge required to excel in the 300 435 ENAUTO exam and beyond **Study Guide for the Cisco 300-535 SPAUTO: Automating and Programming Cisco Service Provider Solutions Certification Exam** Anand Vemula, This book provides a comprehensive guide to automating and programming Cisco Service Provider solutions particularly focusing on the 300 535 SPAUTO exam It covers foundational concepts such as network programmability APIs automation protocols and Python programming designed to help professionals develop the necessary skills for managing and automating network infrastructure Key topics include the use of software defined networking SDN YANG models and protocols like NETCONF RESTCONF gRPC and gNMI which are essential for configuring and managing modern network environments In depth sections are dedicated to leveraging Cisco s

tools such as pyATS and Genie for creating automation scripts managing configurations and streamlining network management The book also covers advanced topics such as model driven telemetry network device configuration using Network Services Orchestrator NSO and integrating CI CD pipelines to automate network updates and testing Additionally the book emphasizes the importance of troubleshooting debugging and following best practices for ensuring the reliability of network automation It provides hands on guidance for automating Cisco IOS XR NX OS and IOS XE devices enabling network engineers to enhance their automation workflows and deploy solutions efficiently By blending theory and practical applications this book equips network engineers with the tools and knowledge to succeed in automation driven environments providing a crucial resource for the SPAUTO certification and real world network automation challenges   <u>Study Guide covering the Cisco 300-735 SAUTO: Automating and Programming Cisco Security Solutions Exam</u> Anand Vemula, The Automating and Programming Cisco Security Solutions 300 735 SAUTO exam study guide provides an in depth exploration of automation techniques in Cisco security environments It covers the foundational knowledge required to automate and manage Cisco security solutions including network programmability REST APIs and Python scripting The study guide delves into specific Cisco technologies such as Firepower ASA ISE Umbrella Threat Intelligence Director TID and SecureX explaining how to leverage their respective APIs for automation Each section of the guide focuses on practical automation applications For example the Cisco Firepower section explains how to automate Firepower policies query FMC APIs and deploy configurations programmatically Similarly Cisco ASA automation covers configuration changes using REST APIs and monitoring ASA status and logs Cisco ISE and Umbrella automation focus on policy management and reporting while Cisco TID automation emphasizes integrating threat intelligence into workflows Additionally the guide includes details on error handling data management and debugging automation scripts essential skills for maintaining the integrity and efficiency of automated workflows The study guide also covers advanced automation tools like Cisco pyATS Genie Ansible DevNet Sandbox and GitHub repositories providing readers with hands on practice in real world scenarios Ultimately this guide equips readers with the skills to automate various Cisco security solutions making it an essential resource for anyone preparing for the 300 735 SAUTO exam   *Network Programmability Fundamentals* Kevin Wallace,2017 Configuration of Cisco devices e g routers and switches has traditionally been performed at the command line However an industry wide paradigm shift is now underway where more and more configuration is being performed by software an approach commonly referred to as Software Defined Networking SDN SDN is an emerging architecture that is makes it easier and more cost effective to implement network policies and manage network resources It does this by decoupling the network control from the network hardware which continues to manage forwarding functions allowing network control to become directly programmable and the underlying network infrastructure to be managed by applications and network services rather than individually configured Network Programmability Fundamentals LiveLessons introduces the theory surrounding SDN

networks and examines components found in a Cisco ACI network Additionally this course covers Python programming a key skill required for network programmability Finally this course walks through multiple network programmability exercises which can be performed for free at Cisco s DevNet site Resource description page   Business Periodicals Index ,1989

Study Guide on Automating and Programming Cisco Data Center Solutions (300-635 DCAUTO) Exam Anand Vemula, The Cisco 300 635 DCAUTO certification focuses on automation and programmability within Cisco Data Center technologies particularly Cisco ACI NX OS and UCS environments The exam covers fundamental knowledge of Cisco s Unified Data Center Architecture and dives deep into key components such as the Application Policy Infrastructure Controller APIC Leaf and Spine switches in ACI and the role of Cisco UCS with its management platforms including Cisco Intersight Central to the certification is understanding the ACI policy model which uses tenants bridge domains and endpoint groups EPGs to logically segment and control network traffic Mastery of the ACI object model and REST API is essential enabling candidates to programmatically manage and automate network policies The exam also emphasizes practical skills in NX OS programmability contrasting traditional CLI with modern NX API REST and CLI methods and highlights the importance of Python scripting alongside NETCONF and RESTCONF protocols Cisco UCS programmability is explored through UCS Manager s XML APIs Cisco Intersight s cloud based device management and the use of Python SDKs and PowerTool for automation Candidates learn how to automate workflows using DevOps and Infrastructure as Code IaC tools like Ansible and Terraform integrating these with CI CD pipelines and Git for streamlined operations Advanced scripting techniques cover data extraction reporting and building automation scripts across Cisco UCS ACI and NX OS platforms Monitoring and logging with telemetry SNMP and syslog integration into tools like Splunk and Grafana complete the skill set Overall the certification equips network professionals to automate and manage modern data center infrastructures efficiently

Mastering Python Networking Eric Chou,Michael Kennedy,Mandy Whaley,2020-01-30 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 FeaturesExplore the power of Python libraries to tackle difficult network problems efficiently and effectively including pyATS Nornir and Ansible 2 8Use Python and Ansible for DevOps network device automation DevOps and software defined networkingBecome an expert in implementing advanced network related tasks with Python 3Book 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 learnUse Python libraries to interact with your networkIntegrate Ansible 2 8 using Python to control Cisco Juniper and Arista network devicesLeverage existing Flask web frameworks to construct high level APIsLearn how to build virtual networks in the AWS Azure CloudLearn how to use Elastic Stack for network data analysisUnderstand how Jenkins can be used to automatically deploy changes in your networkUse PyTest and Unittest for Test Driven Network Development in networking engineering with PythonWho 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 for Network Engineers (Python 3) David Bombal,2018 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   Cisco Network Programmability Wansoo Kim,2022-02-01 This book is for the network engineer who wants to begin the programmability The basic of Python is explained from the variable to API and then there are over 20 examples including Cisco Catalyst Nexus Meraki ISE ASA and more Also at the Youtube each example is explained in English It s time for you to start the code

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Programming Automating Cisco Networks Programmability Introduction

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