

Ansible From Beginner To Pro

Leverage the power of Ansible to gain complete control over your systems and automate application deployment

Key Features

- Use Ansible 2.9 to automate and control your infrastructure
- Delve into advanced functionality such as plugins and custom modules in Ansible
- Automate and orchestrate major cloud platforms such as OpenStack, AWS, and Azure using Ansible

Book Description

Ansible enables you to automate software provisioning, configuration management, and application roll-outs, and can be used as a deployment and orchestration tool. While Ansible provides simple yet powerful features to automate multi-layer environments using agentless communication, it can also solve other critical IT challenges, such as ensuring continuous integration and continuous deployment (CI/CD) with zero downtime. In this book, you'll work with Ansible 2.9 and learn to solve complex issues quickly with the help of task-oriented scenarios. You'll start by installing and configuring Ansible on Linux and macOS to automate monotonous and repetitive IT tasks and get to grips with concepts such as playbooks, inventories, and network modules. As you progress, you'll gain insight into the YAML syntax and learn how to port between Ansible versions. In addition to this, you'll also understand how Ansible enables you to orchestrate multi-layer environments such as networks, containers, and the cloud. By the end of this Ansible book, you'll be well-versed in writing playbooks and other related Ansible code to overcome just about all of your IT challenges, from infrastructure-as-code provisioning to application deployments, and even handling the mundane day-to-day maintenance tasks that take up so much valuable time. What you will learn

- Become familiar with the fundamentals of the Ansible framework
- Set up role-based variables and dependencies
- Avoid common mistakes and pitfalls when writing automation code in Ansible
- Extend Ansible by developing your own modules and plugins
- Contribute to the Ansible project by submitting your own code
- Follow best practices for working with cloud environment inventories
- Troubleshoot issues triggered during Ansible playbook runs

Who this book is for If you are a DevOps engineer, administrator, or any IT professional looking to automate IT tasks using Ansible, this book is for you. Prior knowledge of Ansible is not necessary.

Develop and build your Docker images and deploy your Docker containers securely.

Key Features

- Learn Docker installation on different types of OS
- Get started with developing Docker images
- Use Docker with your Jenkins CI/CD system

Book Description

Docker is an open source software platform that helps you with creating, deploying, and running your applications using containers. This book is your ideal introduction to Docker and containerization. You will learn how to set up a Docker development environment on a Linux, Mac, or Windows workstation, and learn your way around all the commands to run and manage your Docker images and containers. You will explore the Dockerfile and learn how to build your own enterprise-grade Docker images. Then you will learn about Docker networks, Docker swarm, and Docker volumes, and how to use these features with Docker stacks in order to define, deploy, and maintain highly-scalable, fault-tolerant multi-container applications. Finally, you will learn how to leverage Docker with Jenkins to automate the building of Docker images and the deployment of Docker containers. By the end of this book, you will be well prepared when it comes to using Docker for your next project. What you will learn

- Set up your Docker workstation on various platforms
- Utilize a number of Docker commands with parameters
- Create Docker images using Dockerfiles
- Learn how to create and use Docker volumes
- Deploy multi-node Docker swarm infrastructure
- Create and use Docker local and remote networks
- Deploy multi-container applications that are HA and FT
- Use Jenkins to build and deploy Docker images

Who this book is for This guide is for anyone who needs to make a quick decision about using Docker for their next project. It is for developers who want to get started using Docker right away.

Design, develop, and solve real world automation and orchestration needs by unlocking the automation capabilities of Ansible

About This Book Discover how Ansible works in detail

- Explore use cases for Ansible's advanced features including task delegation, fast failures, and serial task execution
- Extend Ansible with custom modules, plugins, and inventory sources

Who This Book Is For This book is intended for Ansible developers and operators who have an understanding of the core elements and applications but are now looking to enhance their skills in applying automation using Ansible. What You Will Learn

- Understand Ansible's code and logic flow
- Safeguard sensitive data within Ansible
- Access and manipulate complex variable data within Ansible playbooks
- Handle task results to manipulate change and failure definitions
- Organize Ansible content into a simple structure
- Craft a multi-tier rollout playbook utilizing load balancers and manipulating your monitoring system
- Utilize advanced Ansible features to orchestrate rolling updates with almost no service disruptions
- Troubleshoot Ansible failures to understand and resolve issues
- Extend Ansible with custom modules, plugins, or inventory sources

In Detail Automation is critical to success in the world of DevOps. How quickly and efficiently an application deployment can be automated, or a new infrastructure can be built up, can be the difference between a successful product or a failure. Ansible provides a simple yet powerful automation engine. Beyond the basics of Ansible lie a host of advanced features which are available to help you increase efficiency and accomplish complex orchestrations with ease. This book provides you with the knowledge you need to understand how Ansible works at a fundamental level and leverage its advanced capabilities. You'll learn how to encrypt Ansible content at rest and decrypt data at runtime. You will master the advanced features and capabilities required to tackle the complex automation challenges of today and beyond. You will gain detailed knowledge of Ansible workflows, explore use cases for advanced features, craft well thought out orchestrations, troubleshoot unexpected behaviour, and extend Ansible through customizations. Finally, you will discover the methods used to examine and debug Ansible operations, helping you to understand and resolve issues.

Style and approach A clear, practical guide that covers best practise, system architecture and design aspects that will help you master Ansible with ease.

Implement a SOHO or SMB Linux infrastructure to expand your business and associated IT capabilities. Backed by the expertise and experienced guidance of the authors, this book provides everything you need to move your business forward.

Pro Linux System Administration makes it easy for small- to medium-sized businesses to enter the world of zero-cost software running on Linux and covers all the distros you might want to use, including Red Hat, Ubuntu, Debian, and CentOS. Pro Linux System Administration takes a layered, component-based approach to open source business systems, while training system administrators as the builders of business infrastructure. Completely updated for this second edition, Dennis Matotek takes you through an infrastructure-as-code approach, seamlessly taking you through steps along the journey of Linux administration with all you need to master complex systems. This edition now includes Jenkins, Ansible, Logstash and more.

What You'll Learn:

- Understand Linux architecture
- Build, back up, and recover Linux servers
- Create basic networks and network services with Linux
- Build and implement Linux infrastructure and services including mail, web, databases, and file and print
- Implement Linux security
- Resolve Linux performance and capacity planning issues

Who This Book Is For: Small to medium-sized business owners looking to run their own IT, system administrators considering migrating to Linux, and IT systems integrators looking for an extensible

Linux infrastructure management approach.

JavaScript has finally grown up. Armed with a slew of new features, JavaScript now makes writing the code that powers your applications elegant, concise, and easy to understand. This book is a pragmatic guide to the new features introduced in JavaScript, starting with Edition 6 of ECMAScript, and ending with Edition 9. Using a "compare and contrast" approach, each chapter offers a deep dive into new features, highlighting how best to use them moving forward. As you progress through the book, you'll be offered multiple opportunities to see the new features in action, and in concert with one another. Backed by an example-driven writing style, you'll learn by doing, and get ready to embrace the new world of JavaScript. What You'll Learn Provide a deep exposition of the new features introduced in ES6 through ES9 Review how JavaScript's new features by-pass any limitations of an existing approach Examine the refactoring necessary to go from old to new Demonstrate how JavaScript's new features work in unison with each other Who This Book Is For New and experienced developers who wish to keep abreast of the changes to JavaScript and deepen their understanding of the language.

If you maintain or plan to build Puppet infrastructure, this practical guide will take you a critical step further with best practices for managing the task successfully. Authors Chris Barbour and Jo Rnett present best-in-class design patterns for deploying Puppet environments and discuss the impact of each. The conceptual designs and implementation patterns in this book will help you create solutions that are easy to extend, maintain, and support. Essential for companies upgrading their Puppet deployments, this book teaches you powerful new features and implementation models that weren't available in the older versions. DevOps engineers will learn how best to deploy Puppet with long-term maintenance and future growth in mind. Explore Puppet's design philosophy and data structures Get best practices for using Puppet's declarative language Examine Puppet resources in depth—the building blocks of state management Learn to model and describe business and site-specific logic in Puppet See best-in-class models for multitiered data management with Hiera Explore available options and community experience for node classification Utilize r10k to simplify and accelerate Puppet change management Review the cost benefits of creating your own extensions to Puppet Get detailed advice for extending Puppet in a maintainable manner

A step-by-step guide to learning Flutter and Dart 2 for creating Android and iOS mobile applications Key Features Get up to speed with the basics of Dart programming and delve into Flutter development Understand native SDK and third-party libraries for building Android and iOS applications using Flutter Package and deploy your Flutter apps to achieve native-like performance Book Description Google Flutter is a cross-platform mobile framework that makes it easy to write high-performance apps for Android and iOS. This book will help you get to grips with the basics of the Flutter framework and the Dart programming language. Starting from setting up your development environment, you'll learn to design the UI and add user input functions. You'll explore the navigator widget to manage app routes and learn to add transitions between screens. The book will even guide you through developing your own plugin and later, you'll discover how to structure good plugin code. Using the Google Places API, you'll also understand how to display a map in the app and add markers and interactions to it. You'll then learn to improve the user experience with features such as map integrations, platform-specific code with native languages, and personalized animation options for designing intuitive UIs. The book follows a practical approach and gives you access to all relevant code files hosted at github.com/PacktPublishing/Flutter-for-Beginners. This will help you access a variety of examples and prepare your own bug-free apps, ready to deploy on the App Store and Google Play Store. By the end of this book, you'll be well-versed with Dart programming and have the skills to develop your own mobile apps or build a career as a Dart and Flutter app developer. What you will learn Understand the fundamentals of the Dart programming language Explore the core concepts of the Flutter UI and how it compiles for multiple platforms Develop Flutter plugins and widgets and understand how to structure plugin code appropriately Style your Android and iOS apps with widgets and learn the difference between stateful and stateless widgets Add animation to your UI using Flutter's `AnimatedBuilder` component Integrate your native code into your Flutter codebase for native app performance Who this book is for This book is for developers looking to learn Google's revolutionary framework Flutter from scratch. No prior knowledge of Flutter or Dart is required; however, basic knowledge of any programming language will be helpful. The Hitchhiker's Guide to Python takes the journeyman Pythonista to true expertise. More than any other language, Python was created with the philosophy of simplicity and parsimony. Now 25 years old, Python has become the primary or secondary language (after SQL) for many business users. With popularity comes diversity—and possibly dilution. This guide, collaboratively written by over a hundred members of the Python community, describes best practices currently used by package and application developers. Unlike other books for this audience, The Hitchhiker's Guide is light on reusable code and heavier on design philosophy, directing the reader to excellent sources that already exist.

Whether you're deploying applications on-premise or in the cloud, this cookbook is for developers, operators, and IT professionals who need practical solutions for using Docker. The recipes in this book will help developers go from zero knowledge to distributed applications packaged and deployed within a couple of chapters. IT professionals will be able to use this cookbook to solve everyday problems, as well as create, run, share, and deploy Docker images quickly. Operators will learn and understand what developers are excited about and start to adopt the tools that will change the way they work.--

Deploy a SharePoint farm in a repeatable, predictable, and reliable fashion using Infrastructure as Code (IaC) techniques to automate provisioning. Savvy IT pros will learn how to use DevOps practices and open source tools to greatly reduce costs, and streamline management operations for SharePoint farms deployed via Amazon Web Services (AWS), Azure, or on premise. DevOps for SharePoint will help you navigate the complex challenges of deploying and managing SharePoint Server farms. You will learn how to reduce time-consuming tasks and errors when generating development, testing, or production environments. And you will benefit from learning proven methods to apply Microsoft updates with minimal downtime and productivity loss. Whether you are a SharePoint architect, IT pro, or developer helping customers with the SharePoint platform, this book will teach you the most useful DevOps practices to tackle those issues and broaden your skill set. What You'll Learn Understand the basics of the most popular open source tools—Vagrant, Packer, Terraform, and Ansible—and how to use them in the context of deploying and scaling a SharePoint farm Use Vagrant to build SharePoint development environments in less than an hour, and add automated testing Use Packer to create a "golden image" with preconfigured settings, and then use it as the base image in your Terraform configuration for both

AWS and Azure farms Use Terraform to scale your SharePoint farm topology Use Red Hat's Ansible Playbooks to perform configuration management on your farm Use Terraform to deploy immutable infrastructure environments using IaC (Infrastructure as Code) Use InSpec 2.0 to stay in compliance by testing your cloud infrastructure Use Ansible to apply Microsoft updates and patches Who This Book Is For IT pros and developers who are looking to expand their knowledge and take a modern approach by using open source technologies to work with Microsoft products. Experience installing SharePoint, and a basic understanding of either Azure or AWS, is helpful.

Puppet 5 Beginner's Guide, Third Edition is a practical guide that gets you up and running with the very latest features of Puppet 5. About This Book Develop skills to run Puppet 5 on single or multiple servers without hiccups Use Puppet to create and manage cloud resources such as Amazon EC2 instances Take full advantage of powerful new features of Puppet including loops, data types, Hieradata integration, and container management Who This Book Is For Puppet 5 Beginner's Guide, Third Edition is designed for those who are new to Puppet, including system administrators and developers who are looking to manage computer server systems for configuration management. No prior programming or system administration experience is assumed. What You Will Learn Understand the latest Puppet 5 features Install and set up Puppet and discover the latest and most advanced features Configure, build, and run containers in production using Puppet's industry-leading Docker support Deploy configuration files and templates at super-fast speeds and manage user accounts and access control Automate your IT infrastructure Use the latest features in Puppet 5 onward and its official modules Manage clouds, containers, and orchestration Get to know the best practices to make Puppet more reliable and increase its performance In Detail Puppet 5 Beginner's Guide, Third Edition gets you up and running with the very latest features of Puppet 5, including Docker containers, Hieradata, and Amazon AWS cloud orchestration. Go from beginner to confident Puppet user with a series of clear, practical examples to help you manage every aspect of your server setup. Whether you're a developer, a system administrator, or you are simply curious about Puppet, you'll learn Puppet skills that you can put into practice right away. With practical steps giving you the key concepts you need, this book teaches you how to install packages and config files, create users, set up scheduled jobs, provision cloud instances, build containers, and so much more. Every example in this book deals with something real and practical that you're likely to need in your work, and you'll see the complete Puppet code that makes it happen, along with step-by-step instructions for what to type and what output you'll see. All the examples are available in a GitHub repo for you to download and adapt for your own server setup. Style and approach This tutorial is packed with quick step-by-step instructions that are immediately applicable for beginners. This is an easy-to-read guide, to learn Puppet from scratch, that explains simply and clearly all you need to know to use this essential IT power tool, while applying these solutions to real-world scenarios.

AnsibleFrom Beginner to ProApress

NGINX is one of the most widely used web servers available today, in part because of its capabilities as a load balancer and reverse proxy server for HTTP and other network protocols. This cookbook provides easy-to-follow examples to real-world problems in application delivery. The practical recipes will help you set up and use either the open source or commercial offering to solve problems in various use cases. For professionals who understand modern web architectures, such as n-tier or microservice designs, and common web protocols including TCP and HTTP, these recipes provide proven solutions for security, software load balancing, and monitoring and maintaining NGINX's application delivery platform. You'll also explore advanced features of both NGINX and NGINX Plus, the free and licensed versions of this server. You'll find recipes for: High-performance load balancing with HTTP, TCP, and UDP Securing access through encrypted traffic, secure links, HTTP authentication subrequests, and more Deploying NGINX to Google Cloud, AWS, and Azure cloud computing services Setting up and configuring NGINX Controller Installing and configuring the NGINX Plus App Protect module Enabling WAF through Controller ADC

Today, software engineers need to know not only how to program effectively but also how to develop proper engineering practices to make their codebase sustainable and healthy. This book emphasizes this difference between programming and software engineering. How can software engineers manage a living codebase that evolves and responds to changing requirements and demands over the length of its life? Based on their experience at Google, software engineers Titus Winters and Hyrum Wright, along with technical writer Tom Manshreck, present a candid and insightful look at how some of the world's leading practitioners construct and maintain software. This book covers Google's unique engineering culture, processes, and tools and how these aspects contribute to the effectiveness of an engineering organization. You'll explore three fundamental principles that software organizations should keep in mind when designing, architecting, writing, and maintaining code: How time affects the sustainability of software and how to make your code resilient over time How scale affects the viability of software practices within an engineering organization What trade-offs a typical engineer needs to make when evaluating design and development decisions

Design, develop, and solve real-world automation and orchestration problems by unlocking the automation capabilities of Ansible. Key Features Tackle complex automation challenges with the newly added features in Ansible 2.7 Book Description Automation is essential for success in the modern world of DevOps. Ansible provides a simple, yet powerful, automation engine for tackling complex automation challenges. This book will take you on a journey that will help you exploit the latest version's advanced features to help you increase efficiency and accomplish complex orchestrations. This book will help you understand how Ansible 2.7 works at a fundamental level and will also teach you to leverage its advanced capabilities. Throughout this book, you will learn how to encrypt Ansible content at rest and decrypt data at runtime. Next, this book will act as an ideal resource to help you master the advanced features and capabilities required to tackle complex automation challenges. Later, it will walk you through workflows, use cases, orchestrations, troubleshooting, and Ansible extensions. Lastly, you will examine and debug Ansible operations, helping you to

understand and resolve issues. By the end of the book, you will be able to unlock the true power of the Ansible automation engine and tackle complex, real-world actions with ease. What you will learn Gain an in-depth understanding of how Ansible works under the hood Fully automate Ansible playbook executions with encrypted data Access and manipulate variable data within playbooks Use blocks to perform failure recovery or cleanup Explore the Playbook debugger and the Ansible Console Troubleshoot unexpected behavior effectively Work with cloud infrastructure providers and container systems Develop custom modules, plugins, and dynamic inventory sources Who this book is for This book is for Ansible developers and operators who have an understanding of its core elements and applications but are now looking to enhance their skills in applying automation using Ansible.

Among the many configuration management tools available, Ansible has some distinct advantages—it's minimal in nature, you don't need to install anything on your nodes, and it has an easy learning curve. This practical guide shows you how to be productive with this tool quickly, whether you're a developer deploying code to production or a system administrator looking for a better automation solution. Author Lorin Hochstein shows you how to write playbooks (Ansible's configuration management scripts), manage remote servers, and explore the tool's real power: built-in declarative modules. You'll discover that Ansible has the functionality you need and the simplicity you desire.

Understand how Ansible differs from other configuration management systems Use the YAML file format to write your own playbooks Learn Ansible's support for variables and facts Work with a complete example to deploy a non-trivial application Use roles to simplify and reuse playbooks Make playbooks run faster with ssh multiplexing, pipelining, and parallelism Deploy applications to Amazon EC2 and other cloud platforms Use Ansible to create Docker images and deploy Docker containers

Learn everything you need to manage and handle your systems with ease with Ansible 2 using this comprehensive guide About This Book Simplify the automation of applications and systems using the newest version of Ansible Get acquainted with fundamentals of Ansible such as playbooks, modules, and various testing strategies A comprehensive, learning guide that provides you with great skills to automate your organization's infrastructure using Ansible 2 Who This Book Is For The book is for sys admins who want to automate their organization's infrastructure using Ansible 2. No prior knowledge of Ansible is required. What You Will Learn Set up Ansible 2 and an Ansible 2 project in a future-proof way Perform basic operations with Ansible 2 such as creating, copying, moving, changing, and deleting files, and creating and deleting users Deploy complete cloud environments using Ansible 2 on AWS and DigitalOcean Explore complex operations with Ansible 2 (Ansible vault, e-mails, and Nagios) Develop and test Ansible playbooks Write a custom module and test it In Detail Ansible is an open source automation platform that assists organizations with tasks such as configuration management, application deployment, orchestration, and task automation. With Ansible, even complex tasks can be handled easier than before. In this book, you will learn about the fundamentals and practical aspects of Ansible 2 by diving deeply into topics such as installation (Linux, BSD, and Windows Support), playbooks, modules, various testing strategies, provisioning, deployment, and orchestration. In this book, you will get accustomed with the new features of Ansible 2 such as cleaner architecture, task blocks, playbook parsing, new execution strategy plugins, and modules. You will also learn how to integrate Ansible with cloud platforms such as AWS. The book ends with the enterprise versions of Ansible, Ansible Tower and Ansible Galaxy, where you will learn to interact Ansible with different OSES to speed up your work to previously unseen levels By the end of the book, you'll able to leverage the Ansible parameters to create expeditious tasks for your organization by implementing the Ansible 2 techniques and paradigms. Style and approach This book is a step-by-step learning guide on the all new Ansible 2, which is an ideal configuration management tool.

Ansible is a simple, but powerful, server and configuration management tool. Learn to use Ansible effectively, whether you manage one server--or thousands.

Go from the basics of using Ansible to becoming proficient at implementing configuration management in your projects. This book uses a unique approach to teaching Ansible and configuration management while including realistic examples in its day-to-day use from server-based infrastructure to Amazon cloud-based deployments. Practical Ansible is separated into seven chapters that allow you to build your knowledge with each chapter, developing further as we move through the examples provided. It begins with the basics of Ansible, providing you with details on how to install and configure your environment while working with different Ansible modules from the command line. Next, it introduces you to working with Ansible tasks and organizing configuration code into playbooks. The book then shows you how to extend playbooks further, using roles and templates within the configuration code. Then, it extends your knowledge further by covering custom Ansible modules using Python and Linux shell scripts, and demonstrating how you can start to keep your secret values encrypted and secure using Ansible Vault. You'll also extend Ansible roles with the use of Ansible Galaxy to reuse existing roles other users have created. The second half of the book moves configuration management to the Amazon cloud providing an introduction on what Amazon Web Services are, and how you can start to work with Ansible roles in AWS. The AWS examples use EC2 and CloudFormation services with Ansible template functions, Ansible Pull, and Ansible Git code deployment. The final part of the book includes a demonstration on how to use the numerous tools available to both Ansible and supporting libraries and modules to allow you to troubleshoot and test your configuration code before you deploy your changes to production systems. By the end of this book, you will have the skills for managing technology configuration management. You will be ready to work on real-world projects and be able to implement Ansible in your own technology projects. What You Will Learn Understand the basics of Ansible and how to install and configure the application on your system Make changes to your system using Ansible directly in the command line using some of the more common Ansible modules Group your modules together as tasks in Ansible playbooks for more efficient deployment of configuration changes Use Ansible roles to help group and reuse configuration management

changes and deployments Search for community-created roles using Ansible Galaxy and how you can also host your own Ansible roles Deploy code to Amazon Web Services and how to utilize different AWS services in your deployment projects Use external modules and libraries such as Molecule and Ansible Lint to help test your configurations before the configuration code is deployed Who This Book Is For System administrators, DevOps engineers, software engineers, and developers wanting to extend their current knowledge of computer systems and incorporate Ansible as a configuration management tool within them.

Master the secret tools every Python programmer needs to know Professional Python goes beyond the basics to teach beginner- and intermediate-level Python programmers the little-known tools and constructs that build concise, maintainable code. Design better architecture and write easy-to-understand code using highly adoptable techniques that result in more robust and efficient applications. Coverage includes Decorators, Context Managers, Magic Methods, Class Factories, Metaclasses, Regular Expressions, and more, including advanced methods for unit testing using asyncio and CLI tools. Each topic includes an explanation of the concept and a discussion on applications, followed by hands-on tutorials based on real-world scenarios. The "Python 3 first" approach covers multiple current versions, while ensuring long-term relevance. Python offers many tools and techniques for writing better code, but often confusing documentation leaves many programmers in the dark about how to use them. This book shines a light on these incredibly useful methods, giving you clear guidance toward building stronger applications. Learn advanced Python functions, classes, and libraries Utilize better development and testing tools Understand the "what," "when," "why," and "how" More than just theory or a recipe-style walk-through, this guide helps you learn — and understand — these little-known tools and techniques. You'll streamline your workflow while improving the quality of your output, producing more robust applications with cleaner code and stronger architecture. If you're ready to take your Python skills to the next level, Professional Python is the invaluable guide that will get you there.

Presented in an easy-to-follow, step-by-step tutorial format, Puppet 3.0 Beginner's Guide will lead you through the basics of setting up your Puppet server with plenty of screenshots and real-world solutions. This book is written for system administrators and developers, and anyone else who needs to manage computer systems. You will need to be able to edit text files and run a few commands on the command line, but otherwise no system administration or programming experience is required.

Perform fast interactive analytics against different data sources using the Trino high-performance distributed SQL query engine. With this practical guide, you'll learn how to conduct analytics on data where it lives, whether it's Hive, Cassandra, a relational database, or a proprietary data store. Analysts, software engineers, and production engineers will learn how to manage, use, and even develop with Trino. Initially developed by Facebook, open source Trino is now used by Netflix, Airbnb, LinkedIn, Twitter, Uber, and many other companies. Matt Fuller, Manfred Moser, and Martin Traverso show you how a single Trino query can combine data from multiple sources to allow for analytics across your entire organization. Get started: Explore Trino's use cases and learn about tools that will help you connect to Trino and query data Go deeper: Learn Trino's internal workings, including how to connect to and query data sources with support for SQL statements, operators, functions, and more Put Trino in production: Secure Trino, monitor workloads, tune queries, and connect more applications; learn how other organizations apply Trino

Some companies think that adopting devops means bringing in specialists or a host of new tools. With this practical guide, you'll learn why devops is a professional and cultural movement that calls for change from inside your organization. Authors Ryn Daniels and Jennifer Davis provide several approaches for improving collaboration within teams, creating affinity among teams, promoting efficient tool usage in your company, and scaling up what works throughout your organization's inflection points. Devops stresses iterative efforts to break down information silos, monitor relationships, and repair misunderstandings that arise between and within teams in your organization. By applying the actionable strategies in this book, you can make sustainable changes in your environment regardless of your level within your organization. Explore the foundations of devops and learn the four pillars of effective devops Encourage collaboration to help individuals work together and build durable and long-lasting relationships Create affinity among teams while balancing differing goals or metrics Accelerate cultural direction by selecting tools and workflows that complement your organization Troubleshoot common problems and misunderstandings that can arise throughout the organizational lifecycle Learn from case studies from organizations and individuals to help inform your own devops journey

With a new generation of services and frameworks, frontend and mobile developers can use their existing skill set to build full stack applications by leveraging the cloud. Developers can build robust applications with production-ready features such as authentication, APIs, data layers, machine learning, chatbots, and AR scenes more easily than ever by taking advantage of these new serverless and cloud technologies. This practical guide explains how. Nader Dabit, developer advocate at Amazon Web Services, shows developers how to build full stack applications using React, AWS, GraphQL, and the Amplify Framework. You'll learn how to create and incorporate services into your client applications while exploring general best practices, deployment strategies, continuous integration and delivery, and rich media management along the way. Learn how to build applications that solve real problems Understand what is (and is not) possible when using these technologies Examine how authentication works—and learn the difference between authentication and authorization Discover how serverless functions work and why they're important Use GraphQL in your application—and learn why it's important Learn how to build full stack applications on AWS

Take your AWS skills to the next level by learning infrastructure automation techniques using CloudFormation, Terraform, and Boto3 Key Features Explore AWS automation using CloudFormation, Terraform, and Boto3 Leverage AWS to make your infrastructure flexible and highly available Discover various AWS features for building a secure and reliable environment to host

your application Book Description Amazon Web Services (AWS) is one of the most popular and efficient cloud platforms for administering and deploying your applications to make them resilient and robust. AWS for System Administrators will help you to learn several advanced cloud administration concepts for deploying, managing, and operating highly available systems on AWS. Starting with the fundamentals of identity and access management (IAM) for securing your environment, this book will gradually take you through AWS networking and monitoring tools. As you make your way through the chapters, you'll get to grips with VPC, EC2, load balancer, Auto Scaling, RDS database, and data management. The book will also show you how to initiate AWS automated backups and store and keep track of log files. Later, you'll work with AWS APIs and understand how to use them along with CloudFormation, Python Boto3 Script, and Terraform to automate infrastructure. By the end of this AWS book, you'll be ready to build your two-tier startup with all the necessary infrastructure, monitoring, and logging components in place. What you will learn Adopt a security-first approach by giving users minimum access using IAM policies Build your first Amazon Elastic Compute Cloud (EC2) instance using the AWS CLI, Boto3, and Terraform Set up your datacenter in AWS Cloud using VPC Scale your application based on demand using Auto Scaling Monitor services using CloudWatch and SNS Work with centralized logs for analysis (CloudWatch Logs) Back up your data using Amazon Simple Storage Service (Amazon S3), Data Lifecycle Manager, and AWS Backup Who this book is for This Amazon Web Services book is for system administrators and solution architects who want to build highly available and flexible AWS Cloud platforms for their applications. Software engineers and programmers looking to deploy their applications to AWS Cloud will also find this book useful. Basic knowledge of Linux and AWS is necessary to get started.

More than 50 percent new and revised content for today's Linux environment gets you up and running in no time! Linux continues to be an excellent, low-cost alternative to expensive operating systems. Whether you're new to Linux or need a reliable update and reference, this is an excellent resource. Veteran bestselling author Christopher Negus provides a complete tutorial packed with major updates, revisions, and hands-on exercises so that you can confidently start using Linux today. Offers a complete restructure, complete with exercises, to make the book a better learning tool Places a strong focus on the Linux command line tools and can be used with all distributions and versions of Linux Features in-depth coverage of the tools that a power user and a Linux administrator need to get started This practical learning tool is ideal for anyone eager to set up a new Linux desktop system at home or curious to learn how to manage Linux server systems at work.

Ansible is an IT automation and configuration management tool widely used for infrastructure, cloud, and network automation. Trends and surveys say that Ansible is the choice of tool among system administrators as it is so easy to use. In this book, you'll learn how to integrate Ansible into your day-to-day role as a system administrator, ...

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

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.

A beginner's guide to storing, managing, and analyzing data with the updated features of Elastic 7.0 Key Features Gain access to new features and updates introduced in Elastic Stack 7.0 Grasp the fundamentals of Elastic Stack including Elasticsearch, Logstash, and Kibana Explore useful tips for using Elastic Cloud and deploying Elastic Stack in production environments Book Description The Elastic Stack is a powerful combination of tools for techniques such as distributed search, analytics, logging, and visualization of data. Elastic Stack 7.0 encompasses new features and capabilities that will enable you to find unique insights into analytics using these techniques. This book will give you a fundamental understanding of what the stack is all about, and help you use it efficiently to build powerful real-time data processing applications. The first few sections of the book will help you understand how to set up the stack by installing tools, and exploring their basic configurations. You'll then get up to speed with using Elasticsearch for distributed searching and analytics, Logstash for logging, and Kibana for data visualization. As you work through the book, you will discover the technique of creating custom plugins using Kibana and Beats. This is followed by coverage of the

Elastic X-Pack, a useful extension for effective security and monitoring. You'll also find helpful tips on how to use Elastic Cloud and deploy Elastic Stack in production environments. By the end of this book, you'll be well versed with the fundamental Elastic Stack functionalities and the role of each component in the stack to solve different data processing problems. What you will learn
Install and configure an Elasticsearch architecture
Solve the full-text search problem with Elasticsearch
Discover powerful analytics capabilities through aggregations using Elasticsearch
Build a data pipeline to transfer data from a variety of sources into Elasticsearch for analysis
Create interactive dashboards for effective storytelling with your data using Kibana
Learn how to secure, monitor and use Elastic Stack's alerting and reporting capabilities
Take applications to an on-premise or cloud-based production environment with Elastic Stack
Who this book is for
This book is for entry-level data professionals, software engineers, e-commerce developers, and full-stack developers who want to learn about Elastic Stack and how the real-time processing and search engine works for business analytics and enterprise search applications. Previous experience with Elastic Stack is not required, however knowledge of data warehousing and database concepts will be helpful.

Design automation blueprints using Ansible's playbooks to orchestrate and manage your multi-tier infrastructure
About This Book
Get to grips with Ansible's features such as orchestration, automatic node discovery, and data encryption
Create data-driven, modular and reusable automation code with Ansible roles, facts, variables, and templates
A step-by-step approach to automating and managing system and application configurations effectively using Ansible's playbooks
Who This Book Is For
If you are a systems or automation engineer who intends to automate common infrastructure tasks, deploy applications, and use orchestration to configure systems in a co-ordinated manner, then this book is for you. Some understanding of the Linux/UNIX command line interface is expected.
What You Will Learn
Write simple tasks and plays
Organize code into a reusable, modular structure
Separate code from data using variables and Jinja2 templates
Run custom commands and scripts using Ansible's command modules
Control execution flow based on conditionals
Integrate nodes and discover topology information about other nodes in the cluster
Encrypt data with ansible-vault
Create environments with isolated configurations to match application development workflow
Orchestrate infrastructure and deploy applications in a coordinated manner
In Detail
Ansible combines configuration management, orchestration, and parallel command execution into a single tool. Its batteries-included approach and built-in module library makes it easy to integrate it with cloud platforms, databases, and notification services without requiring additional plugins. Playbooks in Ansible define the policies your systems under management enforce. They facilitate effective configuration management rather than running ad hoc scripts to deploy complex applications. This book will show you how to write a blueprint of your infrastructure encompassing multi-tier applications using Ansible's playbooks. Beginning with the basic concepts such as plays, tasks, handlers, inventory, and the YAML syntax that Ansible uses, you will see how to organize your code into a modular structure. Building on this, you will master techniques to create data-driven playbooks with variables, templates, logical constructs, and encrypted data. This book will also take you through advanced clustering concepts such as discovering topology information, managing multiple environments, and orchestration. By the end of this book, you will be able to design solutions to your automation and orchestration problems using playbooks quickly and efficiently.
Style and approach
This book follows a step-by-step approach, with the concepts explained in a conversational and easy-to-follow style. Each topic is explained sequentially in the process of creating a course. A comprehensive explanation of the basic and advanced features of Ansible playbooks is also included.

This book is your concise guide to Ansible, the simple way to automate apps and IT infrastructure. In less than 250 pages, this book takes you from knowing nothing about configuration management to understanding how to use Ansible in a professional setting. You will learn how to create an Ansible playbook to automatically set up an environment, ready to install an open source project. You'll extract common tasks into roles that you can reuse across all your projects, and build your infrastructure on top of existing open source roles and modules that are available for you to use. You will learn to build your own modules to perform actions specific to your business. By the end you will create an entire cluster of virtualized machines, all of which have your applications and all their dependencies installed automatically. Finally, you'll test your Ansible playbooks. Ansible can do as much or as little as you want it to. Ansible: From Beginner to Pro will teach you the key skills you need to be an Ansible professional. You'll be writing roles and modules and creating entire environments without human intervention in no time at all – add it to your library today.
What You Will Learn
Learn why Ansible is so popular and how to download and install it
Create a playbook that automatically downloads and installs a popular open source project
Use open source roles to complete common tasks, and write your own specific to your business
Extend Ansible by writing your own modules
Test your infrastructure using Test Kitchen and ServerSpec
Who This Book Is For
Developers that currently create development and production environments by hand. If you find yourself running apt-get install regularly, this book is for you. Ansible adds reproducibility and saves you time all at once. Ansible: From Beginner to Pro is great for any developer wanting to enhance their skillset and learn new tools.

If you are interested in learning how to test web applications and the web part of mobile applications using Burp, then this is the book for you. It is specifically designed to meet your needs if you have basic experience in using Burp and are now aiming to become a professional Burp user.

PHP is experiencing a renaissance, though it may be difficult to tell with all of the outdated PHP tutorials online. With this practical guide, you'll learn how PHP has become a full-featured, mature language with object-orientation, namespaces, and a growing collection of reusable component libraries. Author Josh Lockhart—creator of PHP The Right Way, a popular initiative to encourage PHP best practices—reveals these new language features in action. You'll learn best practices for application architecture and planning, databases, security, testing, debugging, and deployment. If you have a basic understanding of PHP and want to bolster your skills, this is your book. Learn modern PHP features, such as namespaces, traits, generators, and closures
Discover how to find, use, and create PHP components
Follow best practices for application security, working with databases, errors and exceptions, and more
Learn tools and techniques for deploying, tuning, testing, and profiling your PHP applications
Explore Facebook's HVVM and Hack language implementations—and how they affect modern PHP
Build a local development environment that closely matches your production server

A simple way to provision and manage your Amazon Cloud infrastructure
About This Book- Get started with AWS
management for infrastructure engineers- Explore techniques to set up and manage your private cloud using Ansible- A

practical guide to help you manage AWS-based applications and infrastructure using AnsibleWho This Book Is ForIf you are an infrastructure engineer, system administrator, or Dev Ops engineer, this book is for you. You will find this book helpful if you have previous experience with Linux systems administration, including familiarity with the command line, file system, and text editing. Prior basic knowledge of Amazon Web Services and some experience with Ansible is assumed.What You Will Learn- Set up your own AWS account and get started with the AWS console- Use Ansible Playbook to configure and launch EC2 instances- Delve deeper into the AWS cloud infrastructure and create and manage VPC- Provision Amazon Relational Database Service (RDS) with Ansible- Manage files in an Amazon Simple Storage Service (S3) bucket using Ansible- Extend Ansible's functionality in the AWS environment- Use Ansible to provision ELB and Auto Scaling groups- Manage IAM users, groups, roles, and keys- See how to refine and chain together AWS tools using AnsibleIn DetailLooking to get a simple and efficient way to manage your Amazon Cloud infrastructure? Ansible is exactly what you need. This book will show you how to use Ansible's cloud modules to easily provision and manage AWS resources including EC2, VPC, RDS, S3, ELB, ElastiCache, and Route 53. We'll take you beyond the basics of Ansible, showing you real-world examples of AWS infrastructure automation and management with detailed steps, complete code, and screen captures from the AWS console.The example projects inside this title will help you grasp the process leading to full AWS automation. From a single WordPress site to a highly available and scalable WordPress site, we'll demonstrate the power of using Ansible to provision and automate AWS-based infrastructure deployment.Style and approachThis hands-on guide will help you get acquainted with techniques to implement AWS for your private cloud.

Your Python code may run correctly, but you need it to run faster. Updated for Python 3, this expanded edition shows you how to locate performance bottlenecks and significantly speed up your code in high-data-volume programs. By exploring the fundamental theory behind design choices, High Performance Python helps you gain a deeper understanding of Python's implementation. How do you take advantage of multicore architectures or clusters? Or build a system that scales up and down without losing reliability? Experienced Python programmers will learn concrete solutions to many issues, along with war stories from companies that use high-performance Python for social media analytics, productionized machine learning, and more. Get a better grasp of NumPy, Cython, and profilers Learn how Python abstracts the underlying computer architecture Use profiling to find bottlenecks in CPU time and memory usage Write efficient programs by choosing appropriate data structures Speed up matrix and vector computations Use tools to compile Python down to machine code Manage multiple I/O and computational operations concurrently Convert multiprocessing code to run on local or remote clusters Deploy code faster using tools like Docker

Updated for Docker Community Edition v18.09! Docker book designed for SysAdmins, SREs, Operations staff, Developers and DevOps who are interested in deploying the open source container service Docker. In this book, we'll walk you through installing, deploying, managing, and extending Docker. We're going to do that by first introducing you to the basics of Docker and its components. Then we'll start to use Docker to build containers and services to perform a variety of tasks. We're going to take you through the development lifecycle, from testing to production, and see where Docker fits in and how it can make your life easier. We'll make use of Docker to build test environments for new projects, demonstrate how to integrate Docker with continuous integration workflow, and then how to build application services and platforms. Finally, we'll show you how to use Docker's API and how to extend Docker yourself. We'll teach you how to:

- * Install Docker.
- * Take your first steps with a Docker container.
- * Build Docker images.
- * Manage and share Docker images.
- * Run and manage more complex Docker containers.
- * Deploy Docker containers as part of your testing pipeline.
- * Build multi-container applications and environments.
- * Learn about orchestration using Compose and Swarm for the orchestration of Docker containers and Consul for service discovery.
- * Explore the Docker API.
- * Getting Help and Extending Docker.

This book is aimed at developers and devops that have a GitLab server running, and want to be sure they use it to its full potential. This book will also be useful for people looking for a great Git platform, and learn how to set it up successfully. Some system administrating experience on a UNIX-based system would be useful, but is not required.

This book is designed to help newcomers and experienced users alike learn about Kubernetes. Its chapters are designed to introduce core Kubernetes concepts and to build on them to a level where running an application on a production cluster is a familiar, repeatable, and automated process. From there, more advanced topics are introduced, like how to manage a Kubernetes cluster itself.

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.

[Copyright: 7f44a223892f298e7bd3a4f66d4f1ff2](#)