

Devops Architecture And Security In A Cloud

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Mastering Azure Security - Mustafa Toroman 2022-04-28

Get to grips with artificial intelligence and cybersecurity techniques to respond to adversaries and incidents
Key Features
Learn how to secure your Azure cloud workloads across applications and networks
Protect your Azure infrastructure from cyber attacks
Discover tips and techniques for implementing, deploying, and maintaining secure cloud services using best practices
Book Description
Security is integrated into every cloud, but this makes users put their guard down as they take cloud security for granted. Although the cloud provides higher security, keeping their resources secure is one of the biggest challenges many organizations face as threats are constantly evolving. Microsoft Azure offers a shared responsibility model that can address any challenge with the right approach. Revised to cover product updates up to early 2022, this book will help you explore a variety of services and features from Microsoft Azure that can help you overcome challenges in cloud security. You'll start by learning the most important security concepts in Azure, their implementation, and then advance to understanding how to keep resources secure. The book will guide you through the tools available for monitoring Azure security and enforcing security and governance the right way. You'll also explore tools to detect threats before they can do any real damage and those that use machine learning and AI to analyze your security logs and detect anomalies. By the end of this cloud security book, you'll have understood cybersecurity in the cloud and be able to design secure solutions in Microsoft Azure. What you will learn
Become well-versed with cloud security concepts
Get the hang of managing cloud identities
Understand the zero-trust approach
Adopt the Azure security cloud infrastructure
Protect and encrypt your data
Grasp Azure network security concepts
Discover how to keep cloud resources secure
Implement cloud governance with security policies and rules
Who this book is for
This book is for Azure cloud professionals, Azure architects, and security professionals looking to implement secure cloud services using Azure Security Centre and other Azure security features. A solid understanding of fundamental security concepts and prior exposure to the Azure cloud will help you understand the key concepts covered in the book more effectively.

DevOps - Len Bass 2015-05-08

The First Complete Guide to DevOps for Software Architects
DevOps promises to accelerate the release of new software features and improve monitoring of systems in production, but its crucial implications for software architects and architecture are often ignored. In DevOps: A Software Architect's Perspective, three leading architects address these issues head-on. The authors review decisions software architects must make in order to achieve DevOps' goals and clarify how other DevOps participants are likely to impact the architect's work. They also provide the organizational, technical, and operational context needed to deploy DevOps more efficiently, and review DevOps' impact on each development phase. The authors address cross-cutting concerns that link multiple functions, offering practical insights into compliance, performance, reliability, repeatability, and security. This guide demonstrates the authors' ideas in action with three real-world case studies: datacenter replication for business continuity, management of a continuous deployment pipeline, and migration to a microservice architecture. Comprehensive coverage includes
• Why DevOps can require major changes in both system architecture and IT roles
• How virtualization and the cloud can enable DevOps practices
• Integrating operations and its service lifecycle

into DevOps
• Designing new systems to work well with DevOps practices
• Integrating DevOps with agile methods and TDD
• Handling failure detection, upgrade planning, and other key issues
• Managing consistency issues arising from DevOps' independent deployment models
• Integrating security controls, roles, and audits into DevOps
• Preparing a business plan for DevOps adoption, rollout, and measurement
Migrating to Azure - Josh Garverick 2018-10-23

Design an enterprise solution from scratch that allows the migration of a legacy application. Begin with the planning and design phase and be guided through all the stages of selecting the architecture framework that fits your enterprise. Join Microsoft MVP Josh Garverick as he addresses all major areas of design and implementation—application, infrastructure, data, security, and deployment—while leveraging the power and tools of Visual Studio Team Services (VSTS) to bring DevOps to the forefront. With an emphasis on principles and best practices of enterprise design, you will discover how to recognize existing patterns within the legacy platform and to identify potential risks, bottlenecks, and candidates for automation. What You'll Learn
Accurately and completely capture baseline information about a legacy system
Leverage enterprise patterns for constructing next-generation platforms in the cloud
Design, plan, and implement deployment pipelines to enable continuous delivery
Identify and implement cloud-based platform components to reduce total cost of ownership
Understand testing and validation: iterative component authoring, monitoring, deployment, and performance
Price and perform capacity planning for cloud-based infrastructure and workloads
Who This Book Is For
Enterprise architects and IT professionals who are required to keep legacy applications relevant in today's cloud-first world

Multi-Cloud Architecture and Governance - Jeroen Mulder 2020-12-11

A comprehensive guide to architecting, managing, implementing, and controlling multi-cloud environments
Key Features
Deliver robust multi-cloud environments and improve your business productivity
Stay in control of the cost, governance, development, security, and continuous improvement of your multi-cloud solution
Integrate different solutions, principles, and practices into one multi-cloud foundation
Book Description
Multi-cloud has emerged as one of the top cloud computing trends, with businesses wanting to reduce their reliance on only one vendor. But when organizations shift to multiple cloud services without a clear strategy, they may face certain difficulties, in terms of how to stay in control, how to keep all the different components secure, and how to execute the cross-cloud development of applications. This book combines best practices from different cloud adoption frameworks to help you find solutions to these problems. With step-by-step explanations of essential concepts and practical examples, you'll begin by planning the foundation, creating the architecture, designing the governance model, and implementing tools, processes, and technologies to manage multi-cloud environments. You'll then discover how to design workload environments using different cloud propositions, understand how to optimize the use of these cloud technologies, and automate and monitor the environments. As you advance, you'll delve into multi-cloud governance, defining clear demarcation models and management processes. Finally, you'll learn about managing identities in multi-cloud: who's doing what, why, when, and where
By the end of this book, you'll be able to create, implement, and manage multi-cloud architectures with confidence
What you will learn
Get to grips with the core functions of multiple cloud platforms
Deploy, automate, and secure different

cloud solutionsDesign network strategy and get to grips with identity and access management for multi-cloudDesign a landing zone spanning multiple cloud platformsUse automation, monitoring, and management tools for multi-cloudUnderstand multi-cloud management with the principles of BaseOps, FinOps, SecOps, and DevOpsDefine multi-cloud security policies and use cloud security toolsTest, integrate, deploy, and release using multi-cloud CI/CD pipelinesWho this book is for This book is for architects and lead engineers involved in architecting multi-cloud environments, with a focus on getting governance right to stay in control of developments in multi-cloud. Basic knowledge of different cloud platforms (Azure, AWS, GCP, VMWare, and OpenStack) and understanding of IT governance is necessary.

The DevOps Handbook - Gene Kim 2016-10-06

Increase profitability, elevate work culture, and exceed productivity goals through DevOps practices. More than ever, the effective management of technology is critical for business competitiveness. For decades, technology leaders have struggled to balance agility, reliability, and security. The consequences of failure have never been greater—whether it's the healthcare.gov debacle, cardholder data breaches, or missing the boat with Big Data in the cloud. And yet, high performers using DevOps principles, such as Google, Amazon, Facebook, Etsy, and Netflix, are routinely and reliably deploying code into production hundreds, or even thousands, of times per day. Following in the footsteps of The Phoenix Project, The DevOps Handbook shows leaders how to replicate these incredible outcomes, by showing how to integrate Product Management, Development, QA, IT Operations, and Information Security to elevate your company and win in the marketplace.

[Azure for Architects](#) - Ritesh Modi 2019-01-31

Create advanced data and integrated solutions using Azure Event Grid, functions, and containers Key FeaturesGet familiar with the different design patterns available in Microsoft AzureDevelop Azure cloud architecture and a pipeline management systemGet to know the security best practices for your Azure deploymentBook Description Over the years, Azure cloud services have grown quickly, and the number of organizations adopting Azure for their cloud services is also gradually increasing. Leading industry giants are finding that Azure fulfills their extensive cloud requirements. Azure for Architects – Second Edition starts with an extensive introduction to major designing and architectural aspects available with Azure. These design patterns focus on different aspects of the cloud, such as high availability, security, and scalability. Gradually, we move on to other aspects, such as ARM template modular design and deployments. This is the age of microservices and serverless is the preferred implementation mechanism for them. This book covers the entire serverless stack available in Azure including Azure Event Grid, Azure Functions, and Azure Logic Apps. New and advance features like durable functions are discussed at length. A complete integration solution using these serverless technologies is also part of the book. A complete chapter discusses all possible options related to containers in Azure including Azure Kubernetes services, Azure Container Instances and Registry, and Web App for Containers. Data management and integration is an integral part of this book that discusses options for implementing OLTP solutions using Azure SQL, Big Data solutions using Azure Data factory and Data Lake Storage, eventing solutions using stream analytics, and Event Hubs. This book will provide insights into Azure governance features such as tagging, RBAC, cost management, and policies. By the end of this book, you will be able to develop a full-fledged Azure cloud solution that is Enterprise class and future-ready. What you will learnCreate an end-to-end integration solution using Azure Serverless StackLearn Big Data solutions and OLTP-based applications on AzureUnderstand DevOps implementations using Azure DevOpsArchitect solutions comprised of multiple resources in AzureDevelop modular ARM templatesDevelop Governance on Azure using locks, RBAC, policies, tags and costLearn ways to build data solutions on AzureUnderstand the various options related to containers including Azure Kubernetes ServicesWho this book is for If you are Cloud Architects, DevOps Engineers, or developers who want to learn key architectural aspects of the Azure Cloud platform, then this book is for you. Prior basic knowledge of the Azure Cloud platform is good to have.

AWS for Solutions Architects - Alberto Artasanchez 2021-02-19

Apply cloud design patterns to overcome real-world challenges by building scalable, secure, highly available, and cost-effective solutions Key FeaturesApply AWS Well-Architected Framework concepts to common real-world use casesUnderstand how to select AWS patterns and architectures that are best suited

to your needsEnsure the security and stability of a solution without impacting cost or performanceBook Description One of the most popular cloud platforms in the world, Amazon Web Services (AWS) offers hundreds of services with thousands of features to help you build scalable cloud solutions; however, it can be overwhelming to navigate the vast number of services and decide which ones best suit your requirements. Whether you are an application architect, enterprise architect, developer, or operations engineer, this book will take you through AWS architectural patterns and guide you in selecting the most appropriate services for your projects. AWS for Solutions Architects is a comprehensive guide that covers the essential concepts that you need to know for designing well-architected AWS solutions that solve the challenges organizations face daily. You'll get to grips with AWS architectural principles and patterns by implementing best practices and recommended techniques for real-world use cases. The book will show you how to enhance operational efficiency, security, reliability, performance, and cost-effectiveness using real-world examples. By the end of this AWS book, you'll have gained a clear understanding of how to design AWS architectures using the most appropriate services to meet your organization's technological and business requirements. What you will learnRationalize the selection of AWS as the right cloud provider for your organizationChoose the most appropriate service from AWS for a particular use case or projectImplement change and operations managementFind out the right resource type and size to balance performance and efficiencyDiscover how to mitigate risk and enforce security, authentication, and authorizationIdentify common business scenarios and select the right reference architectures for themWho this book is for This book is for application and enterprise architects, developers, and operations engineers who want to become well-versed with AWS architectural patterns, best practices, and advanced techniques to build scalable, secure, highly available, and cost-effective solutions in the cloud. Although existing AWS users will find this book most useful, it will also help potential users understand how leveraging AWS can benefit their organization.

Applied OpenStack Design Patterns - Uchit Vyas 2016-12-20

Learn practical and applied OpenStack cloud design solutions to gain maximum control over your infrastructure. You will achieve a complete controlled and customizable platform. Applied OpenStack Design Patterns teaches you how to map your application flow once you set up components and architectural design patterns. Also covered is storage management and computing to map user requests and allocations. Best practices of High Availability and Native Cluster Management are included. Solutions are presented to network components of OpenStack and to reduce latency and enable faster communication gateways between components of OpenStack and native applications. What You Will Learn: Design a modern cloud infrastructure Solve complex infrastructure application problems Understand OpenStack cloud infrastructure components Adopt a business impact analysis to support existing/new cloud infrastructure Use specific components to integrate an existing tool-chain set to gain agility and a quick, continuous delivery model Who This Book Is For: Seasoned solution architects, DevOps, and system engineers and analysts

[Python for DevOps](#) - Noah Gift 2019-12-12

Much has changed in technology over the past decade. Data is hot, the cloud is ubiquitous, and many organizations need some form of automation. Throughout these transformations, Python has become one of the most popular languages in the world. This practical resource shows you how to use Python for everyday Linux systems administration tasks with today's most useful DevOps tools, including Docker, Kubernetes, and Terraform. Learning how to interact and automate with Linux is essential for millions of professionals. Python makes it much easier. With this book, you'll learn how to develop software and solve problems using containers, as well as how to monitor, instrument, load-test, and operationalize your software. Looking for effective ways to "get stuff done" in Python? This is your guide. Python foundations, including a brief introduction to the language How to automate text, write command-line tools, and automate the filesystem Linux utilities, package management, build systems, monitoring and instrumentation, and automated testing Cloud computing, infrastructure as code, Kubernetes, and serverless Machine learning operations and data engineering from a DevOps perspective Building, deploying, and operationalizing a machine learning project

Architecting Cloud Computing Solutions - Kevin L. Jackson 2018-05-30

Accelerating Business and Mission Success with Cloud Computing. Key Features A step-by-step guide that will practically guide you through implementing Cloud computing services effectively and efficiently. Learn to choose the most ideal Cloud service model, and adopt appropriate Cloud design considerations for your organization. Leverage Cloud computing methodologies to successfully develop a cost-effective Cloud environment successfully. Book Description Cloud adoption is a core component of digital transformation. Scaling the IT environment, making it resilient, and reducing costs are what organizations want. Architecting Cloud Computing Solutions presents and explains critical Cloud solution design considerations and technology decisions required to choose and deploy the right Cloud service and deployment models, based on your business and technology service requirements. This book starts with the fundamentals of cloud computing and its architectural concepts. It then walks you through Cloud service models (IaaS, PaaS, and SaaS), deployment models (public, private, community, and hybrid) and implementation options (Enterprise, MSP, and CSP) to explain and describe the key considerations and challenges organizations face during cloud migration. Later, this book delves into how to leverage DevOps, Cloud-Native, and Serverless architectures in your Cloud environment and presents industry best practices for scaling your Cloud environment. Finally, this book addresses (in depth) managing essential cloud technology service components such as data storage, security controls, and disaster recovery. By the end of this book, you will have mastered all the design considerations and operational trades required to adopt Cloud services, no matter which cloud service provider you choose. What you will learn Manage changes in the digital transformation and cloud transition process Design and build architectures that support specific business cases Design, modify, and aggregate baseline cloud architectures Familiarize yourself with cloud application security and cloud computing security threats Design and architect small, medium, and large cloud computing solutions Who this book is for If you are an IT Administrator, Cloud Architect, or a Solution Architect keen to benefit from cloud adoption for your organization, then this book is for you. Small business owners, managers, or consultants will also find this book useful. No prior knowledge of Cloud computing is needed.

Successful Management of Cloud Computing and DevOps - Alka Jarvis 2022-05-20

The rapid pace of technology often catches organizations unprepared and unable to take advantage of every leading-edge benefit. Cloud technology allows forward-thinking companies to launch products and services rapidly, control costs, streamline processes, and mitigate risks—when done correctly. This book addresses technological basics, as well as practical steps for implementing and fitting the cloud into your overall business strategy—which ultimately benefits your bottom line in delivering the best possible product and services to customers quickly. Capitalizing on their collective years of experience working in Silicon Valley, authors Jarvis, Anand, and Jose share best practices for adopting the cloud, including: ■ Calculating cloud usage and crafting a cost management strategy ■ Breaking down the total cost of ownership (TCO) ■ Optimizing DevOps practices for the cloud ■ Understanding the challenges and risks involved with cloud migration and security Armed with step-by-step guidance, you can generate a plan of action to meet and exceed your cloud management goals.

Azure for Architects - Ritesh Modi 2017-10-20

Your one stop guide to making the most out of Azure Cloud About This Book* Get familiar with the different design patterns available in Microsoft Azure* Develop Azure cloud architecture and a pipeline management system* Get to know the security best practices for your Azure deployment Who This Book Is For If you are Cloud Architects, DevOps Engineers, or developers who want to learn key architectural aspects of the Azure Cloud platform, then this book is for you. Prior basic knowledge of the Azure Cloud platform is good to have. What You Will Learn* Familiarize yourself with the components of the Azure Cloud platform* Understand the cloud design patterns* Use enterprise security guidelines for your Azure deployment* Design and implement Serverless solutions* See Cloud architecture and the deployment pipeline* Understand cost management for Azure solutions In Detail Over the years, Azure cloud services has grown quickly, and the number of organizations adopting Azure for their cloud services is also gradually increasing. Leading industry giants are finding that Azure fulfills their extensive cloud requirements. This book will guide you through all the important and tough decision-making aspects involved in architecting a Azure public cloud for your organization. The book starts with an extensive introduction to all the

categories of designs available with Azure. These design patterns focus on different aspects of cloud such as high availability, data management, and so on. Gradually, we move on to various aspects such as building your cloud structure and architecture. It will also include a brief description about different types of services provided by Azure, such as Azure functions and Azure Analytics, which can prove beneficial for an organization. This book will cover each and every aspect and function required to develop a Azure cloud based on your organizational requirements. By the end of this book, you will be in a position to develop a full-fledged Azure cloud. Style and approach This hands-on guide to the Azure Cloud platform covers different architectural concepts and implementations necessary for any enterprise scale deployment.

Cloud Architecture Demystified - Keshri Asthana 2023-05-19

Design, deploy, and manage cloud-based solutions that are secure, scalable, and cost-effective KEY FEATURES ● Learn how to enable effective architectural decision-making and cloud deployment strategies within the context of Agile DevOps. ● Gain insights into unconventional principles and practices of architecture in the modern era. ● A comprehensive guide for CTOs and technology leaders to navigate the ever-evolving technology landscape. DESCRIPTION As more and more businesses move their operations to the cloud, understanding cloud architecture becomes crucial for anyone involved in IT, software development, or data management. If you want to leverage the power of the cloud to deliver efficient and resilient services, then this book is for you. This book is a comprehensive guide that will help you with the knowledge and insights to successfully navigate the challenges of Agile development and cloud computing. With its practical advice and in-depth analysis, this book offers a deep understanding of key topics such as multi-cloud adoption, cloud deployment costs, security considerations, availability and disaster recovery, and the integration of Agile methodologies with cloud architecture. It also explores the traits of a good cloud solution architect, the importance of treating data and databases separately, and the impact of public cloud on software architecture. Whether you're a seasoned architect or new to cloud solutions, this book provides valuable guidance for designing robust and effective cloud-based systems. WHAT YOU WILL LEARN ● Gain insights into assessing various aspects while designing cloud deployments. ● Understand the intersection of Agile methodologies, DevOps practices, and cloud computing. ● Understand the importance of adopting a design-first mindset. ● Understand how Agile principles and practices impact software architecture. ● Discover how architects can effectively drive positive change within organizations.

WHO THIS BOOK IS FOR The book is for CTOs who are responsible for making strategic decisions regarding cloud adoption and infrastructure. Cloud architects, infrastructure architects, and DevOps architects who are involved in designing and implementing cloud architectures will find this book helpful. TABLE OF CONTENTS 1. Ambivalence of Multi-Cloud 2. Cloud Deployment Costs 3. Security Sense of Cloud 4. Availability and Disaster Recovery 5. Cloud, Agile and Software Development Life Cycle 6. Retrofitting Cloud Services Accurately 7. Design First then Code 8. Infra Team and Apps Team Becomes DevOps Team 9. Traits of Being a Good Cloud Solution Architect 10. Treat Data and Database Separately 11. Frozen Architecture is Obsolete Architecture 12. What Exactly is Software Architecture?

Empirical Cloud Security - Aditya K. Sood 2021-04-14

This book is designed for security and risk assessment professionals, DevOps engineers, penetration testers, cloud security engineers, and cloud software developers who are interested in learning practical approaches to cloud security. It covers practical strategies for assessing the security and privacy of your cloud infrastructure and applications and shows how to make your cloud infrastructure secure to combat threats, attacks, and prevent data breaches. The chapters are designed with a granular framework, starting with the security concepts, followed by hand-on assessment techniques based on real-world studies, and concluding with recommendations including best practices. FEATURES: Includes practical strategies for assessing the security and privacy of your cloud infrastructure and applications Covers topics such as cloud architecture and security fundamentals, database and storage security, data privacy, security and risk assessments, controls related to continuous monitoring, and more Presents several case studies revealing how threat actors abuse and exploit cloud environments to spread malware

Modern DevOps Practices - Gaurav Agarwal 2021-09-13

Enhance DevOps workflows by integrating the functionalities of Docker, Kubernetes, Spinnaker, Ansible, Terraform, Flux CD, CaaS, and more with the help of practical examples and expert tips Key Features Get

up and running with containerization-as-a-service and infrastructure automation in the public cloud Learn container security techniques and secret management with Cloud KMS, Anchore Grype, and Grafeas Kritis Leverage the combination of DevOps, GitOps, and automation to continuously ship a package of software Book Description Containers have entirely changed how developers and end-users see applications as a whole. With this book, you'll learn all about containers, their architecture and benefits, and how to implement them within your development lifecycle. You'll discover how you can transition from the traditional world of virtual machines and adopt modern ways of using DevOps to ship a package of software continuously. Starting with a quick refresher on the core concepts of containers, you'll move on to study the architectural concepts to implement modern ways of application development. You'll cover topics around Docker, Kubernetes, Ansible, Terraform, Packer, and other similar tools that will help you to build a base. As you advance, the book covers the core elements of cloud integration (AWS ECS, GKE, and other CaaS services), continuous integration, and continuous delivery (GitHub actions, Jenkins, and Spinnaker) to help you understand the essence of container management and delivery. The later sections of the book will take you through container pipeline security and GitOps (Flux CD and Terraform). By the end of this DevOps book, you'll have learned best practices for automating your development lifecycle and making the most of containers, infrastructure automation, and CaaS, and be ready to develop applications using modern tools and techniques. What you will learn Become well-versed with AWS ECS, Google Cloud Run, and Knative Discover how to build and manage secure Docker images efficiently Understand continuous integration with Jenkins on Kubernetes and GitHub actions Get to grips with using Spinnaker for continuous deployment/delivery Manage immutable infrastructure on the cloud with Packer, Terraform, and Ansible Explore the world of GitOps with GitHub actions, Terraform, and Flux CD Who this book is for If you are a software engineer, system administrator, or operations engineer looking to step into the world of DevOps within public cloud platforms, this book is for you. Existing DevOps engineers will also find this book useful as it covers best practices, tips, and tricks to implement DevOps with a cloud-native mindset. Although no containerization experience is necessary, a basic understanding of the software development life cycle and delivery will help you get the most out of the book.

Architecting Google Cloud Solutions - Victor Dantas 2021-05-14

Achieve your business goals and build highly available, scalable, and secure cloud infrastructure by designing robust and cost-effective solutions as a Google Cloud Architect. Key Features Gain hands-on experience in designing and managing high-performance cloud solutions Leverage Google Cloud Platform to optimize technical and business processes using cutting-edge technologies and services Use Google Cloud Big Data, AI, and ML services to design scalable and intelligent data solutions Book Description Google has been one of the top players in the public cloud domain thanks to its agility and performance capabilities. This book will help you design, develop, and manage robust, secure, and dynamic solutions to successfully meet your business needs. You'll learn how to plan and design network, compute, storage, and big data systems that incorporate security and compliance from the ground up. The chapters will cover simple to complex use cases for devising solutions to business problems, before focusing on how to leverage Google Cloud's Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS) capabilities for designing modern no-operations platforms. Throughout this book, you'll discover how to design for scalability, resiliency, and high availability. Later, you'll find out how to use Google Cloud to design modern applications using microservices architecture, automation, and Infrastructure-as-Code (IaC) practices. The concluding chapters then demonstrate how to apply machine learning and artificial intelligence (AI) to derive insights from your data. Finally, you will discover best practices for operating and monitoring your cloud solutions, as well as performing troubleshooting and quality assurance. By the end of this Google Cloud book, you'll be able to design robust enterprise-grade solutions using Google Cloud Platform. What you will learn Get to grips with compute, storage, networking, data analytics, and pricing Discover delivery models such as IaaS, PaaS, and SaaS Explore the underlying technologies and economics of cloud computing Design for scalability, business continuity, observability, and resiliency Secure Google Cloud solutions and ensure compliance Understand operational best practices and learn how to architect a monitoring solution Gain insights into modern application design with Google Cloud Leverage big data, machine learning, and AI with Google Cloud Who this book is for This book is for cloud architects who are responsible for designing and

managing cloud solutions with GCP. You'll also find the book useful if you're a system engineer or enterprise architect looking to learn how to design solutions with Google Cloud. Moreover, cloud architects who already have experience with other cloud providers and are now beginning to work with Google Cloud will benefit from the book. Although an intermediate-level understanding of cloud computing and distributed apps is required, prior experience of working in the public and hybrid cloud domain is not mandatory.

Practical Security Automation and Testing - Tony Hsiang-Chih Hsu 2019-02-04

Your one stop guide to automating infrastructure security using DevOps and DevSecOps Key Features Secure and automate techniques to protect web, mobile or cloud services Automate secure code inspection in C++, Java, Python, and JavaScript Integrate security testing with automation frameworks like fuzz, BDD, Selenium and Robot Framework Book Description Security automation is the automatic handling of software security assessments tasks. This book helps you to build your security automation framework to scan for vulnerabilities without human intervention. This book will teach you to adopt security automation techniques to continuously improve your entire software development and security testing. You will learn to use open source tools and techniques to integrate security testing tools directly into your CI/CD framework. With this book, you will see how to implement security inspection at every layer, such as secure code inspection, fuzz testing, Rest API, privacy, infrastructure security, and web UI testing. With the help of practical examples, this book will teach you to implement the combination of automation and Security in DevOps. You will learn about the integration of security testing results for an overall security status for projects. By the end of this book, you will be confident implementing automation security in all layers of your software development stages and will be able to build your own in-house security automation platform throughout your mobile and cloud releases. What you will learn Automate secure code inspection with open source tools and effective secure code scanning suggestions Apply security testing tools and automation frameworks to identify security vulnerabilities in web, mobile and cloud services Integrate security testing tools such as OWASP ZAP, NMAP, SSLyze, SQLMap, and OpenSCAPI Implement automation testing techniques with Selenium, JMeter, Robot Framework, Gauntlt, BDD, DDT, and Python unittest Execute security testing of a Rest API Implement web application security with open source tools and script templates for CI/CD integration Integrate various types of security testing tool results from a single project into one dashboard Who this book is for The book is for software developers, architects, testers and QA engineers who are looking to leverage automated security testing techniques.

Pro PowerShell for Amazon Web Services - Brian Beach 2014-01-14

Pro PowerShell for Amazon Web Services is written specifically for Windows professionals who already know PowerShell and want to learn to host Windows workloads in the Amazon Elastic Cloud Compute (EC2) cloud service. The cloud offers information technology workers significant cost savings and agility unimaginable even just a few years ago. Tasks that traditionally took weeks of work, costing thousands of dollars, can be completed in minutes for a fraction of a penny. This book is a resource for using Microsoft's powerful scripting language, PowerShell, to create, host, manage, and administer workloads using a service widely recognized as the industry leader in cloud computing. Inside, find scripts to create and manage virtual machines, provision storage, configure networks with agility, and more--all using your preferred Windows scripting language. Use your PowerShell knowledge to harness the power of Amazon EC2 today! What you'll learn Create, manage, and terminate Windows servers in the cloud Manage storage options including backup and recovery Configure a virtual network including subnets and route tables Secure your servers using security groups and access control lists Use Auto Scaling to respond to changing conditions Deploy SQL Server using Relational Database Service Use Simple Storage Service (S3) to reliably store and archive data Control access to resources using Identity and Access Management (IAM) Who this book is for Pro PowerShell for Amazon Web Services is for the intermediate to advanced Windows professional who is ready to make the leap to the Amazon cloud. Table of Contents Chapter 1 AWS Architecture Overview Chapter 2 Getting Started Chapter 3 Basic Instance Management Chapter 4 Elastic Block Storage Chapter 5 Virtual Private Cloud Chapter 6 Advanced Instance Management Chapter 7 Amazon Machine Images Chapter 8 Monitoring and High Availability Chapter 9 Relational Database Service Chapter 10 Simple Storage Service Chapter 11 Identity and Access Management Chapter 12 Glossary of

Terms Chapter 13 Metadata URL Structure Chapter 14 List of Filters by EC2 Command Chapter 15 List of API Methods by Command Chapter 16 CloudWatch Metrics and Dimensions Chapter 17 SQL Server RDS Parameters

Learn Ansible - Russ McKendrick 2018-06-28

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, ...

Systematic Cloud Migration - Taras Gleb 2021-09-29

This book is your systematic cloud migration guide. Experiences shared by the author are drawn from real-life migration projects and contain practical advice, as well as step-by-step architecture, design, and technical implementation instructions using sample application code on GitLab. Following the guidance in this book will provide much needed support to your teams, and help you successfully complete the application cloud migration journey. Systematic Cloud Migration consists of four major parts. Part one starts with a fundamental introduction of cloud computing to establish the context for migration, including paradigm changes in five important areas: software application, DevSecOps, operations, infrastructure, and security. And these are the areas that the book follows throughout. Next, it introduces a real-life migration process that your team can follow. Part two presents the migration process for the application code, including architecture diagrams and presented by demo application code and supporting infrastructure in AWS cloud. Part three dives into DevSecOps and automation. In addition to concepts, a real-life migration diagram and sample pipeline code implemented with GitLab are include. Part four deals with efficient cloud operations. Each chapter has a practical structure: objectives, roles, inputs, process/activities, outputs/deliverables, best practices, and summary. There is a wealth of cloud production-grade template style artifacts that can be used as is. What You Will Learn Design applications in the cloud, including determining the design criteria (e.g., solution cost is a design criterion, same as security, and is not an afterthought) Understand the major migration areas: software development (application code, data, integration, and configuration), software delivery (pipeline and automation), and software operations (observability) Migrate each application element: client and business components code, data, integration and services, logging, monitoring, alerting, as well as configurations Understand cloud-critical static application security testing (SAST), dynamic application security testing (DAST), containers compliance and security scanning, and open source dependency testing Know the directions and implementation details on cost-efficient, automated, cloud-native software operations Who This Book Is For Primarily designed with software developers, team leads, development managers, DevOps engineers, and software architects in mind. Their day-to-day activities include architecting, designing, developing, delivering, and operating software in the cloud environment. In addition, this book will benefit infrastructure, network, security, and operations engineers, who in turn, can provide better support for the software development product teams.

Hands-On Cloud Solutions with Azure - Greg Leonardo 2018-10-31

Design effective Azure architecture and transform your IT business solutions Key FeaturesDevelop a resilient and robust cloud environmentDeploy and manage cost-effective and highly available solutions on your public cloudDesign and implement enterprise-level cloud solutionsBook Description Azure provides cloud-based solutions to support your business demands. Building and running solutions on Azure will help your business maximize the return on investment and minimize the total cost of ownership. Hands-On Cloud Solutions with Azure focuses on addressing the architectural decisions that usually arise when you design or migrate a solution to Microsoft Azure. You will start by designing the building blocks of infrastructure solution on Azure, such as Azure compute, storage, and networking, followed by exploring the database options it offers. You will get to grips with designing scalable web and mobile solutions and understand where to host your Active Directory and Identity Solution. Moving on, you'll learn how to extend DevOps to Azure. You will also benefit from some exciting services that enable extremely smooth operations and streamlined DevOps between on-premises and cloud. The book will help you to design a secure environment for your solution, on both the Cloud and hybrid. Toward the end, you'll see how to manage and monitor cloud and hybrid solutions. By the end of this book, you will be armed with all the tools and

knowledge you need to properly plan and design your solutions on Azure, whether it's for a brand new project or migration project. What you will learnGet started with Azure by understanding tenants, subs, and resource groupsDecide whether to "lift and shift" or migrate appsPlan and architect solutions in AzureBuild ARM templates for Azure resourcesDevelop and deploy solutions in AzureUnderstand how to monitor and support your application with AzureMake your life easier with Azure best practices and tipsWho this book is for If you're an IT consultant, developer, or solutions architect looking to design effective solutions for your organization, this book is for you. Some knowledge of cloud computing will assist with understanding the key concepts covered in this book.

Continuous Architecture - Murat Erder 2015-10-21

Continuous Architecture provides a broad architectural perspective for continuous delivery, and describes a new architectural approach that supports and enables it. As the pace of innovation and software releases increases, IT departments are tasked to deliver value quickly and inexpensively to their business partners. With a focus on getting software into end-users hands faster, the ultimate goal of daily software updates is in sight to allow teams to ensure that they can release every change to the system simply and efficiently. This book presents an architectural approach to support modern application delivery methods and provide a broader architectural perspective, taking architectural concerns into account when deploying agile or continuous delivery approaches. The authors explain how to solve the challenges of implementing continuous delivery at the project and enterprise level, and the impact on IT processes including application testing, software deployment and software architecture. Covering the application of enterprise and software architecture concepts to the Agile and Continuous Delivery models Explains how to create an architecture that can evolve with applications Incorporates techniques including refactoring, architectural analysis, testing, and feedback-driven development Provides insight into incorporating modern software development when structuring teams and organizations

Hybrid Cloud Security Patterns - Sreekanth Iyer 2022-11-18

Understand unique security patterns related to identity and access management, infrastructure, data and workload protection, compliance and posture management, and zero trust for your hybrid cloud deployments Key FeaturesSecure cloud infrastructure, applications, data, and shift left security to create DevSecOpsExplore patterns for continuous security, automated threat detection and accelerated incident responseLeverage hybrid cloud security patterns for protecting critical data using a zero trust modelPurchase of the print or Kindle book includes a free eBook in the PDF formatBook Description Security is a primary concern for enterprises going through digital transformation and accelerating their journey to multi-cloud environments. This book recommends a simple pattern-based approach to architecting, designing and implementing security for workloads deployed on AWS, Microsoft Azure, Google Cloud, and IBM Cloud. The book discusses enterprise modernization trends and related security opportunities and challenges. You'll understand how to implement identity and access management for your cloud resources and applications. Later chapters discuss patterns to protect cloud infrastructure (compute, storage and network) and provide protection for data at rest, in transit and in use. You'll also learn how to shift left and include security in the early stages of application development to adopt DevSecOps. The book also deep dives into threat monitoring, configuration and vulnerability management, and automated incident response. Finally, you'll discover patterns to implement security posture management backed with intelligence and automated protection to stay ahead of threats. By the end of this book, you'll have learned all the hybrid cloud security patterns and be able to use them to create zero trust architecture that provides continuous security and compliance for your cloud workloads. What you will learnAddress hybrid cloud security challenges with a pattern-based approachManage identity and access for users, services, and applicationsUse patterns for secure compute, network isolation, protection, and connectivityProtect data at rest, in transit and in use with data security patternsUnderstand how to shift left security for applications with DevSecOpsManage security posture centrally with CSPMAutomate incident response with SOARUse hybrid cloud security patterns to build a zero trust security modelWho this book is for The book is for cloud solution architects, security professionals, cloud engineers, and DevOps engineers, providing prescriptive guidance on architecture and design patterns for protecting their data and securing applications deployed on hybrid cloud environments. Basic knowledge of different types of cloud providers, cloud deployment

models, and cloud consumption models is expected.

[DevOps for Serverless Applications](#) - Shashikant Bangera 2018-09-29

Set up complete CI and CD pipelines for your serverless applications using DevOps principles
Key Features
Understand various services for designing serverless architecture
Build CD pipelines using various cloud providers for your serverless applications
Implement DevOps best practices when building serverless applications
Book Description
Serverless applications are becoming very popular among developers and are generating a buzz in the tech market. Many organizations struggle with the effective implementation of DevOps with serverless applications. DevOps for Serverless Applications takes you through different DevOps-related scenarios to give you a solid foundation in serverless deployment. You will start by understanding the concepts of serverless architecture and development, and why they are important. Then, you will get to grips with the DevOps ideology and gain an understanding of how it fits into the Serverless Framework. You'll cover deployment framework building and deployment with CI and CD pipelines for serverless applications. You will also explore log management and issue reporting in the serverless environment. In the concluding chapters, you will learn important security tips and best practices for secure pipeline management. By the end of this book, you will be in a position to effectively build a complete CI and CD delivery pipeline with log management for serverless applications. What you will learn
Explore serverless fundamentals and effectively combine them with DevOps
Set up CI and CD with AWS Lambda and other popular Serverless service providers with the help of the Serverless Framework
Perform monitoring and logging with serverless applications
Set up a dynamic dashboard for different service providers
Discover best practices for applying DevOps to serverless architecture
Understand use cases for different serverless architectures
Who this book is for
DevOps for Serverless Applications is for DevOps engineers, architects, or anyone interested in understanding the DevOps ideology in the serverless world. You will learn to use DevOps with serverless and apply continuous integration, continuous delivery, testing, logging, and monitoring with serverless.

Hands-On Security in DevOps - Tony Hsiang-Chih Hsu 2018-07-30

Protect your organization's security at all levels by introducing the latest strategies for securing DevOps
Key Features
Integrate security at each layer of the DevOps pipeline
Discover security practices to protect your cloud services by detecting fraud and intrusion
Explore solutions to infrastructure security using DevOps principles
Book Description
DevOps has provided speed and quality benefits with continuous development and deployment methods, but it does not guarantee the security of an entire organization. Hands-On Security in DevOps shows you how to adopt DevOps techniques to continuously improve your organization's security at every level, rather than just focusing on protecting your infrastructure. This guide combines DevOps and security to help you to protect cloud services, and teaches you how to use techniques to integrate security directly in your product. You will learn how to implement security at every layer, such as for the web application, cloud infrastructure, communication, and the delivery pipeline layers. With the help of practical examples, you'll explore the core security aspects, such as blocking attacks, fraud detection, cloud forensics, and incident response. In the concluding chapters, you will cover topics on extending DevOps security, such as risk assessment, threat modeling, and continuous security. By the end of this book, you will be well-versed in implementing security in all layers of your organization and be confident in monitoring and blocking attacks throughout your cloud services. What you will learn
Understand DevSecOps culture and organization
Learn security requirements, management, and metrics
Secure your architecture design by looking at threat modeling, coding tools and practices
Handle most common security issues and explore black and white-box testing tools and practices
Work with security monitoring toolkits and online fraud detection rules
Explore GDPR and PII handling case studies to understand the DevSecOps lifecycle
Who this book is for
Hands-On Security in DevOps is for system administrators, security consultants, and DevOps engineers who want to secure their entire organization. Basic understanding of Cloud computing, automation frameworks, and programming is necessary.

[Cloud Computing For Dummies](#) - Judith S. Hurwitz 2020-07-07

Get your head—and your business—into the Cloud
Cloud computing is no longer just a clever new toy in the world of IT infrastructure. Despite the nebulous name, it's become a real and important part of our information architecture—and tech professionals who ignore it or try to skim their way through risk falling

behind rapidly. The new edition of Cloud Computing For Dummies gets you up to speed fast, clarifying your Cloud options, showing you where can save you time and money, giving you ways to frame your decisions, and helping you avoid weeks of research. In a friendly, easy-to-follow style, Cloud Computing For Dummies, 2nd Edition demystifies the Cloud's virtual landscape, breaking up a complex and multi-layered topic into simple explanations that will make the various benefits clear and ultimately guide you toward making the most appropriate choices for your organization. Know the business case for the Cloud
Understand hybrid and multi-cloud options
Develop your Cloud strategy
Get tips on best practices
The Cloud is everywhere, and it can deliver amazing benefits to our lives and businesses. Get a much clearer vision of exactly how with Cloud Computing For Dummies—and you'll begin to see that the sky really is the limit!

Azure for Architects - Third Edition - Ritesh Modi 2020-07-09

Implementing DevOps with Microsoft Azure - Mitesh Soni 2017-04-28

Accelerate and Automate Build, Deploy, and Management of applications to achieve High Availability.
About This Book
This guide highlights tools that offer development and deployment environments for application services
Secure and continuously monitor your web application in order to make it highly available
Use Visual Studio Team Services for Continuous Integration and Continuous Development to expedite your application life cycle management process
Use Microsoft Azure App Services (Azure Web Apps / Azure Websites), PaaS offering from Microsoft to deploy web application
Who This Book Is For
This book is for DevOps engineers, system administrators, and developers (.net) who want to implement DevOps for their organization. You do not need to have any knowledge of VSTS or Azure App Services (Azure Web Apps / Azure Websites).
What You Will Learn
Explore the features of PaaS and aPaaS in DevOps
Use Visual Studio Team Services (VSTS) to manage versions of code and integrating VSTS with Eclipse IDE
Understand and configure Continuous Integration in VSTS
Review Unit Test Execution for Automated Testing
Create different environments that can be used to continuous deploy a web application
Configure Roll-based Access to enable secure access for Azure Web Apps
Create and configure the App Service Environment to enhance security
Understand the execution of the end-to-end automation process
Conduct Performance Testing using JMeter
Discover the different monitoring options available in Microsoft Azure Portal
In Detail
This book will teach you all about the Visual Studio Team Services and Microsoft Azure PaaS offerings that support Continuous Integration, Continuous Delivery, Continuous Deployment, and execution in the cloud with high availability, disaster recovery, and security. You will first be given a tour of all the concepts and tools that Microsoft Azure has to offer and how these can be used in situations to cultivate the DevOps culture. You'll be taught how to use and manage Visual Studio Team Services (VSTS) and about the structure of the sample application used throughout the book. You will become familiar with the nitty gritty of Continuous Integration and Continuous Development with VSTS and Microsoft Azure Apps. You will not only learn how to create App service environments, but also how to compare Azure Web Apps and App Service Environments to deploy web applications in a more secure environment. Once you have completed Continuous Integration and created the Platform for application deployment, you will learn more about the final stepping stone in achieving end-to-end automation using approval-based Continuous Delivery and Deployment. You will then learn about Continuous Monitoring, using the monitoring and notification options provided by Microsoft Azure and Visual Studio Team Services.
Style and Approach
This book is an easy-to-follow guide filled with examples and real-world applications for gaining an in-depth understanding of Microsoft Azure and Visual Studio. This book will help you leverage Microsoft Azure and Visual Studio using real-world examples.

[Securing DevOps](#) - Julien Vehent 2018-08-24

Summary
Securing DevOps explores how the techniques of DevOps and security should be applied together to make cloud services safer. This introductory book reviews the latest practices used in securing web applications and their infrastructure and teaches you techniques to integrate security directly into your product. You'll also learn the core concepts of DevOps, such as continuous integration, continuous delivery, and infrastructure as a service. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.
About the Technology
An application running in the cloud can benefit from incredible efficiencies, but they come with unique security threats too. A DevOps team's highest

priority is understanding those risks and hardening the system against them. About the Book Securing DevOps teaches you the essential techniques to secure your cloud services. Using compelling case studies, it shows you how to build security into automated testing, continuous delivery, and other core DevOps processes. This experience-rich book is filled with mission-critical strategies to protect web applications against attacks, deter fraud attempts, and make your services safer when operating at scale. You'll also learn to identify, assess, and secure the unique vulnerabilities posed by cloud deployments and automation tools commonly used in modern infrastructures. What's inside An approach to continuous security Implementing test-driven security in DevOps Security techniques for cloud services Watching for fraud and responding to incidents Security testing and risk assessment About the Reader Readers should be comfortable with Linux and standard DevOps practices like CI, CD, and unit testing. About the Author Julien Vehent is a security architect and DevOps advocate. He leads the Firefox Operations Security team at Mozilla, and is responsible for the security of Firefox's high-traffic cloud services and public websites. Table of Contents Securing DevOps PART 1 - Case study: applying layers of security to a simple DevOps pipeline Building a barebones DevOps pipeline Security layer 1: protecting web applications Security layer 2: protecting cloud infrastructures Security layer 3: securing communications Security layer 4: securing the delivery pipeline PART 2 - Watching for anomalies and protecting services against attacks Collecting and storing logs Analyzing logs for fraud and attacks Detecting intrusions The Caribbean breach: a case study in incident response PART 3 - Maturing DevOps security Assessing risks Testing security Continuous security

Hands-on Kubernetes on Azure - Nills Franssens 2021-05-17

Kubernetes has emerged as a leader among management platforms for container orchestration. Hands-On Kubernetes on Azure enables you to strengthen your grasp of the basic and advanced functionalities of Kubernetes on Microsoft Azure.

Azure for Architects - Ritesh Modi 2017-10-20

Your one stop guide to making the most out of Azure Cloud About This Book Get familiar with the different design patterns available in Microsoft Azure Develop Azure cloud architecture and a pipeline management system Get to know the security best practices for your Azure deployment Who This Book Is For If you are Cloud Architects, DevOps Engineers, or developers who want to learn key architectural aspects of the Azure Cloud platform, then this book is for you. Prior basic knowledge of the Azure Cloud platform is good to have. What You Will Learn Familiarize yourself with the components of the Azure Cloud platform Understand the cloud design patterns Use enterprise security guidelines for your Azure deployment Design and implement Serverless solutions See Cloud architecture and the deployment pipeline Understand cost management for Azure solutions In Detail Over the years, Azure cloud services has grown quickly, and the number of organizations adopting Azure for their cloud services is also gradually increasing. Leading industry giants are finding that Azure fulfills their extensive cloud requirements. This book will guide you through all the important and tough decision-making aspects involved in architecting a Azure public cloud for your organization. The book starts with an extensive introduction to all the categories of designs available with Azure. These design patterns focus on different aspects of cloud such as high availability, data management, and so on. Gradually, we move on to various aspects such as building your cloud structure and architecture. It will also include a brief description about different types of services provided by Azure, such as Azure functions and Azure Analytics, which can prove beneficial for an organization. This book will cover each and every aspect and function required to develop a Azure cloud based on your organizational requirements. By the end of this book, you will be in a position to develop a full-fledged Azure cloud. Style and approach This hands-on guide to the Azure Cloud platform covers different architectural concepts and implementations necessary for any enterprise scale deployment.

97 Things Every Cloud Engineer Should Know - Emily Freeman 2020-12-04

If you create, manage, operate, or configure systems running in the cloud, you're a cloud engineer--even if you work as a system administrator, software developer, data scientist, or site reliability engineer. With this book, professionals from around the world provide valuable insight into today's cloud engineering role. These concise articles explore the entire cloud computing experience, including fundamentals, architecture, and migration. You'll delve into security and compliance, operations and reliability, and software

development. And examine networking, organizational culture, and more. You're sure to find 1, 2, or 97 things that inspire you to dig deeper and expand your own career. "Three Keys to Making the Right Multicloud Decisions," Brendan O'Leary "Serverless Bad Practices," Manases Jesus Galindo Bello "Failing a Cloud Migration," Lee Atchison "Treat Your Cloud Environment as If It Were On Premises," Iyana Garry "What Is Toil, and Why Are SREs Obsessed with It?", Zachary Nickens "Lean QA: The QA Evolving in the DevOps World," Theresa Neate "How Economies of Scale Work in the Cloud," Jon Moore "The Cloud Is Not About the Cloud," Ken Corless "Data Gravity: The Importance of Data Management in the Cloud," Geoff Hughes "Even in the Cloud, the Network Is the Foundation," David Murray "Cloud Engineering Is About Culture, Not Containers," Holly Cummins

Effective DevOps with AWS - Nathaniel Felsen 2017-07-31

Scale gracefully and maintain outstanding performance with your AWS-based infrastructure using DevOps principles About This Book Implement DevOps principles to take full advantage of the AWS stack and services Take expert look at solving problems faced by real developers and operation teams and learn to overcome them Learn from expert insights of the author who has worked with Silicon Valley's most high-profile companies Who This Book Is For This book is for developers, DevOps engineers and teams who want to build and use AWS for their software infrastructure. Basic computer science knowledge is required for this book. What You Will Learn Find out what it means to practice DevOps and what its principles are Build repeatable infrastructures using templates and configuration management Deploy multiple times a day by implementing continuous integration and continuous deployment pipelines Use the latest technologies, including containers and serverless computing, to scale your infrastructure Collect metrics and logs and implement an alerting strategy Make your system robust and secure In Detail The DevOps movement has transformed the way modern tech companies work. AWS which has been on the forefront of the Cloud computing revolution has also been a key contributor of this DevOps movement creating a huge range of managed services that help you implement the DevOps principles. In this book, you'll see how the most successful tech start-ups launch and scale their services on AWS and how you can too. Written by a lead member of Mediums DevOps team, this book explains how to treat infrastructure as code, meaning you can bring resources online and offline as necessary with the code as easily as you control your software. You will also build a continuous integration and continuous deployment pipeline to keep your app up to date. You'll find out how to scale your applications to offer maximum performance to users anywhere in the world, even when traffic spikes with the latest technologies, such as containers and serverless computing. You will also take a deep dive into monitoring and alerting to make sure your users have the best experience when using your service. Finally, you'll get to grips with ensuring the security of your platform and data. Style and approach This is a practical, hands-on, comprehensive guide to AWS, helping readers understand AWS in a step by step manner.

Enterprise DevOps for Architects - Jeroen Mulder 2021-11-11

An architect's guide to designing, implementing, and integrating DevOps in the enterprise Key Features Design a DevOps architecture that is aligned with the overall enterprise architecture Design systems that are ready for AIOps and make the move toward NoOps Architect and implement DevSecOps pipelines, securing the DevOps enterprise Book Description Digital transformation is the new paradigm in enterprises, but the big question remains: is the enterprise ready for transformation using native technology embedded in Agile/DevOps? With this book, you'll see how to design, implement, and integrate DevOps in the enterprise architecture while keeping the Ops team on board and remaining resilient. The focus of the book is not to introduce the hundreds of different tools that are available for implementing DevOps, but instead to show you how to create a successful DevOps architecture. This book provides an architectural overview of DevOps, AIOps, and DevSecOps - the three domains that drive and accelerate digital transformation. Complete with step-by-step explanations of essential concepts, practical examples, and self-assessment questions, this DevOps book will help you to successfully integrate DevOps into enterprise architecture. You'll learn what AIOps is and what value it can bring to an enterprise. Lastly, you will learn how to integrate security principles such as zero-trust and industry security frameworks into DevOps with DevSecOps. By the end of this DevOps book, you'll be able to develop robust DevOps architectures, know which toolsets you can use for your DevOps implementation, and have a deeper

understanding of next-level DevOps by implementing Site Reliability Engineering (SRE). What you will learn Create DevOps architecture and integrate it with the enterprise architecture Discover how DevOps can add value to the quality of IT delivery Explore strategies to scale DevOps for an enterprise Architect SRE for an enterprise as next-level DevOps Understand AIOps and what value it can bring to an enterprise Create your AIOps architecture and integrate it into DevOps Create your DevSecOps architecture and integrate it with the existing DevOps setup Apply zero-trust principles and industry security frameworks to DevOps Who this book is for This book is for enterprise architects and consultants who want to design DevOps systems for the enterprise. It provides an architectural overview of DevOps, AIOps, and DevSecOps. If you're looking to learn about the implementation of various tools within the DevOps toolchain in detail, this book is not for you.

Building in Security at Agile Speed - James Ransome 2021-04-21

Today's high-speed and rapidly changing development environments demand equally high-speed security practices. Still, achieving security remains a human endeavor, a core part of designing, generating and verifying software. Dr. James Ransome and Brook S.E. Schoenfield have built upon their previous works to explain that security starts with people; ultimately, humans generate software security. People collectively act through a particular and distinct set of methodologies, processes, and technologies that the authors have brought together into a newly designed, holistic, generic software development lifecycle facilitating software security at Agile, DevOps speed. —Eric. S. Yuan, Founder and CEO, Zoom Video Communications, Inc. It is essential that we embrace a mantra that ensures security is baked in throughout any development process. Ransome and Schoenfield leverage their abundance of experience and knowledge to clearly define why and how we need to build this new model around an understanding that the human element is the ultimate key to success. —Jennifer Sunshine Steffens, CEO of IOActive Both practical and strategic, *Building in Security at Agile Speed* is an invaluable resource for change leaders committed to building secure software solutions in a world characterized by increasing threats and uncertainty. Ransome and Schoenfield brilliantly demonstrate why creating robust software is a result of not only technical, but deeply human elements of agile ways of working. —Jorgen Hesselberg, author of *Unlocking Agility* and Cofounder of Comparative Agility The proliferation of open source components and distributed software services makes the principles detailed in *Building in Security at Agile Speed* more relevant than ever. Incorporating the principles and detailed guidance in this book into your SDLC is a must for all software developers and IT organizations. —George K Tsantes, CEO of Cyberphos, former partner at Accenture and Principal at EY Detailing the people, processes, and technical aspects of software security, *Building in Security at Agile Speed* emphasizes that the people element remains critical because software is developed, managed, and exploited by humans. This book presents a step-by-step process for software security that is relevant to today's technical, operational, business, and development environments with a focus on what humans can do to control and manage the process in the form of best practices and metrics.

Cloud Native Architectures - Tom Laszewski 2018-08-31

Learn and understand the need to architect cloud applications and migrate your business to cloud efficiently Key Features Understand the core design elements required to build scalable systems Plan resources and technology stacks effectively for high security and fault tolerance Explore core architectural principles using real-world examples Book Description Cloud computing has proven to be the most revolutionary IT development since virtualization. Cloud native architectures give you the benefit of more flexibility over legacy systems. To harness this, businesses need to refresh their development models and architectures when they find they don't port to the cloud. *Cloud Native Architectures* demonstrates three essential components of deploying modern cloud native architectures: organizational transformation, deployment modernization, and cloud native architecture patterns. This book starts with a quick introduction to cloud native architectures that are used as a base to define and explain what cloud native architecture is and is not. You will learn what a cloud adoption framework looks like and develop cloud native architectures using microservices and serverless computing as design principles. You'll then explore the major pillars of cloud native design including scalability, cost optimization, security, and ways to achieve operational excellence. In the concluding chapters, you will also learn about various public cloud architectures ranging from AWS and Azure to the Google Cloud Platform. By the end of this book, you will

have learned the techniques to adopt cloud native architectures that meet your business requirements. You will also understand the future trends and expectations of cloud providers. What you will learn Learn the difference between cloud native and traditional architecture Explore the aspects of migration, when and why to use it Identify the elements to consider when selecting a technology for your architecture Automate security controls and configuration management Use infrastructure as code and CICD pipelines to run environments in a sustainable manner Understand the management and monitoring capabilities for AWS cloud native application architectures Who this book is for *Cloud Native Architectures* is for software architects who are keen on designing resilient, scalable, and highly available applications that are native to the cloud.

Solutions Architect's Handbook - Saurabh Shrivastava 2020-03-21

This book will show you how to create robust, scalable, highly available and fault-tolerant solutions by learning different aspects of Solution architecture and next-generation architecture design in the Cloud environment.

Mastering Service Mesh - Anjali Khatri 2020-03-30

Understand how to use service mesh architecture to efficiently manage and safeguard microservices-based applications with the help of examples Key Features Manage your cloud-native applications easily using service mesh architecture Learn about Istio, Linkerd, and Consul - the three primary open source service mesh providers Explore tips, techniques, and best practices for building secure, high-performance microservices Book Description Although microservices-based applications support DevOps and continuous delivery, they can also add to the complexity of testing and observability. The implementation of a service mesh architecture, however, allows you to secure, manage, and scale your microservices more efficiently. With the help of practical examples, this book demonstrates how to install, configure, and deploy an efficient service mesh for microservices in a Kubernetes environment. You'll get started with a hands-on introduction to the concepts of cloud-native application management and service mesh architecture, before learning how to build your own Kubernetes environment. While exploring later chapters, you'll get to grips with the three major service mesh providers: Istio, Linkerd, and Consul. You'll be able to identify their specific functionalities, from traffic management, security, and certificate authority through to sidecar injections and observability. By the end of this book, you will have developed the skills you need to effectively manage modern microservices-based applications. What you will learn Compare the functionalities of Istio, Linkerd, and Consul Become well-versed with service mesh control and data plane concepts Understand service mesh architecture with the help of hands-on examples Work through hands-on exercises in traffic management, security, policy, and observability Set up secure communication for microservices using a service mesh Explore service mesh features such as traffic management, service discovery, and resiliency Who this book is for This book is for solution architects and network administrators, as well as DevOps and site reliability engineers who are new to the cloud-native framework. You will also find this book useful if you're looking to build a career in DevOps, particularly in operations. Working knowledge of Kubernetes and building microservices that are cloud-native is necessary to get the most out of this book.

Cloud Security Automation - Prashant Priyam 2018-03-28

Secure public and private cloud workloads with this comprehensive learning guide. Key Features Take your cloud security functions to the next level by automation Learn to automate your security functions on AWS and OpenStack Practical approach towards securing your workloads efficiently Book Description Security issues are still a major concern for all IT organizations. For many enterprises, the move to cloud computing has raised concerns for security, but when applications are architected with focus on security, cloud platforms can be made just as secure as on-premises platforms. Cloud instances can be kept secure by employing security automation that helps make your data meet your organization's security policy. This book starts with the basics of why cloud security is important and how automation can be the most effective way of controlling cloud security. You will then delve deeper into the AWS cloud environment and its security services by dealing with security functions such as Identity and Access Management and will also learn how these services can be automated. Moving forward, you will come across aspects such as cloud storage and data security, automating cloud deployments, and so on. Then, you'll work with OpenStack

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

Azure DevOps for Web Developers - Ambily K K 2021-02-25

Explore the architecture, product offerings, and the various stages of implementation processes in Azure

DevOps. The book starts with the basic concepts of DevOps and moves on to discuss project management in Azure DevOps. Next, you will learn requirement management and version control in DevOps. Along the way, you will go through test management followed by continuous integration and build automation with more details on code quality and security implementations. Moving forward, you will learn release pipeline and infrastructure as code implementation including ARM-based environment provisioning and execution. Finally, you'll cover DevOps architecture blueprints used for deploying your web applications to different platforms . After reading this book, you will be able to understand each stage of Azure DevOps and master its implementation. What You Will Learn Understand the various concepts of Azure DevOps Apply DevOps concepts in a variety of application contexts including web applications, containers, and database Understand the implementation of end-to-end DevOps in Azure Work with the different DevOps design patterns and architectures in Azure Who Is This Book For: Developers and architects working with Azure.