

Build Security Into Devops

Building an Effective Security Program provides readers with a comprehensive approach to securing the IT systems in use at their organizations. This book provides information on how to structure and operate an effective cybersecurity program that includes people, processes, technologies, security awareness, and training. This program will establish and maintain effective security protections for the confidentiality, availability, and integrity of organization information. In this book, the authors take a pragmatic approach to building organization cyberdefenses that are effective while also remaining affordable. This book is intended for business leaders, IT professionals, cybersecurity personnel, educators, and students interested in deploying real-world cyberdefenses against today's persistent and sometimes devastating cyberattacks. It includes detailed explanation of the following IT security topics: IT Security Mindset—Think like an IT security professional, and consider how your IT environment can be defended against potential cyberattacks. Risk Management—Identify the assets, vulnerabilities and threats that drive IT risk, along with the controls that can be used to mitigate such risk. Effective Cyberdefense—Consider the components of an effective organization cyberdefense to successfully protect computers, devices, networks, accounts, applications and data. Cyber Operations—Operate cyberdefense capabilities and controls so that assets are protected, and intruders can be detected and repelled before significant damage can be done. IT Security Awareness and Training—Promote effective cybersecurity practices at work, on travel, and at home, among your organization's business leaders, IT professionals, and staff. Resilient IT Security—Implement, operate, monitor, assess, and improve your cybersecurity program on an ongoing basis to defend against the cyber threats of today and the future.

The development of software has expanded substantially in recent years. As these technologies continue to advance, well-known organizations have begun implementing these programs into the ways they conduct business. These large companies play a vital role in the economic environment, so understanding the software that they utilize is pertinent in many aspects. Researching and analyzing the tools that these corporations use will assist in the practice of software engineering and give other organizations an outline of how to successfully implement their own computational methods. Tools and Techniques for Software Development in Large Organizations: Emerging Research and Opportunities is an essential reference source that discusses advanced software methods that prominent companies have adopted to develop high quality products. This book will examine the various devices that organizations such as Google, Cisco, and Facebook have implemented into their production and development processes. Featuring research on topics such as database management, quality assurance, and machine learning, this book is ideally designed for software engineers, data scientists, developers, programmers, professors, researchers, and students seeking coverage on the advancement of software devices in today's major corporations.

Hands-On Security in DevOps explores how the techniques of DevOps and Security should be applied together to make cloud services safer. By the end of this book, readers will be ready to build security controls at all layers, monitor and respond to attacks on cloud services, and add security organization-wide through risk management and training.

****Get the eBook version free when you purchase the paperback version**** This book explores the synchronized approach of lean thinking, metrics, organizational and cultural changes that an organization must handle to achieve the DevOps goal of enabling faster releases and deployment cycles while improving collaboration between stakeholders, operations, and application development teams. Thus, leading to increased employee satisfaction, customer satisfaction and profitability. While adopting the DevOps software development practices, it is important to have a security-first mindset. The rising complexity of security threats facing enterprises is resulting in a shift to DevSecOps approaches, which integrates security, development and operations. Security breaches have the potential to cause serious reputational and financial damage. The author, Austin Young, explores the basic procedures needed to make sure that security is integrated into the DevOps process from the get-go. What You'll Learn: Understand how DevOps impacts your organization. Achieve optimization and creativity with minimal risk and cost. Automate continuous delivery all through the software development life cycle to eliminate the accumulation of technical debt, manual labor waste, and release bottlenecks. Find the DevOps metrics suitable to your organization and incorporate DevOps to your existing investment and best practices. Mitigate threats with DevSecOps. Establish steps to take to integrate security into the DevOps process. Build a pipeline for DevSecOps approach For the individual: transitioning to a DevOps engineer role And lots more...

*****Over a half-million sold! The sequel, The Unicorn Project, is coming Nov 26*****

“Every person involved in a failed IT project should be forced to read this book.”—TIM O'REILLY, Founder & CEO of O'Reilly Media “The Phoenix Project is a must read for business and IT executives who are struggling with the growing complexity of IT.”—JIM WHITEHURST, President and CEO, Red Hat, Inc. Five years after this sleeper hit took on the world of IT and flipped it on its head, the 5th Anniversary Edition of The Phoenix Project continues to guide IT in the DevOps revolution. In this newly updated and expanded edition of the bestselling The Phoenix Project, co-author Gene Kim includes a new afterword and a deeper delve into the Three Ways as described in The DevOps Handbook. Bill, an IT manager at Parts Unlimited, has been tasked with taking on a project critical to the future of the business, code named Phoenix Project. But the project is massively over budget and behind schedule. The CEO demands Bill must fix the mess in ninety days or else Bill's entire department will be outsourced. With the help of a prospective board member and his mysterious philosophy of The Three Ways, Bill starts to see that IT work has more in common with a manufacturing plant work than he ever imagined. With the clock ticking, Bill must organize work flow streamline interdepartmental communications, and effectively serve the other business functions at Parts Unlimited. In a fast-paced and entertaining style, three luminaries of the DevOps movement deliver a story that anyone who works in IT will recognize. Readers will not only learn how to improve their own IT organizations, they'll never view IT the same way again. “This book is a gripping read that captures brilliantly the dilemmas that face companies which depend on IT, and offers real-world solutions.”—JEZ HUMBLE, Co-author of Continuous Delivery, Lean Enterprise, Accelerate, and The DevOps Handbook ———— “I'm delighted at how The Phoenix Project has reshaped so many conversations in technology. My goal in writing The Unicorn Project was to explore and reveal the necessary but invisible structures required to make developers (and all

engineers) productive, and reveal the devastating effects of technical debt and complexity. I hope this book can create common ground for technology and business leaders to leave the past behind, and co-create a better future together.”—Gene Kim, November 2019

Use this book as your one-stop shop for architecting a world-class DevOps environment with Microsoft technologies. .NET DevOps for Azure is a synthesis of practices, tools, and process that, together, can equip a software organization to move fast and deliver the highest quality software. The book begins by discussing the most common challenges faced by developers in DevOps today and offers options and proven solutions on how to implement DevOps for your team. Daily, millions of developers use .NET to build and operate mission-critical software systems for organizations around the world. While the marketplace has scores of information about the technology, it is completely up to you to put together all the blocks in the right way for your environment. This book provides you with a model to build on. The relevant principles are covered first along with how to implement that part of the environment. And while variances in tools, language, or requirements will change the needed implementation, the DevOps model is the architecture for the working environment for your team. You can modify parts of the model to customize it to your enterprise, but the architecture will enable all of your teams and applications to accelerate in performance.

What You Will Learn

- Get your .NET applications into a DevOps environment in Azure
- Analyze and address the part of your DevOps process that causes delays or bottlenecks
- Track code using Azure Repos and conduct acceptance tests
- Apply the rules for segmenting applications into Git repositories
- Understand the different types of builds and when to use each
- Know how to think about code validation in your DevOps environment
- Provision and configure environments; deploy release candidates across the environments in Azure
- Monitor and support software that has been deployed to a production environment

Who This Book Is For .NET Developers who are using or want to use DevOps in Azure but don't know where to begin

As workloads are being offloaded to IBM® LinuxONE based cloud environments, it is important to ensure that these workloads and environments are secure. This IBM Redbooks® publication describes the necessary steps to secure your environment from the hardware level through all of the components that are involved in a LinuxONE cloud infrastructure that use Linux and IBM z/VM®. The audience for this book is IT architects, IT Specialists, and those users who plan to use LinuxONE for their cloud environments.

This book constitutes the refereed proceedings of the 21st International Conference on Product-Focused Software Process Improvement, PROFES 2020, held in Turin, Italy, in November 2020. Due to COVID-19 pandemic the conference was held virtually. The 19 revised full papers and 3 short papers presented were carefully reviewed and selected from 68 submissions. The papers cover a broad range of topics related to professional software development and process improvement driven by product and service quality needs. They are organized in topical sections on Agile Software Development.

Your one stop guide to automating infrastructure security using DevOps and DevSecOps

Key Features

- Secure and automate techniques to protect web, mobile or cloud services
- Automate secure code inspection in C++, Java, Python, and JavaScript
- Integrate security testing with automation frameworks like fuzz, BDD, Selenium and

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

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.

This book presents the latest research in the fields of computational intelligence, ubiquitous computing models, communication intelligence, communication security, machine learning, informatics, mobile computing, cloud computing and big data analytics. The best selected papers, presented at the International Conference on Innovative Data Communication Technologies and Application (ICIDCA 2020), are included in the book. The book focuses on the theory, design, analysis, implementation and applications of distributed systems and networks.

Virtual, hands-on learning labs allow you to apply your technical skills using live hardware and software hosted in the cloud. So Sybex has bundled CompTIA CySA+

labs from Practice Labs, the IT Competency Hub, with our popular CompTIA CySA+ Study Guide, Second Edition. Working in these labs gives you the same experience you need to prepare for the CompTIA CySA+ Exam CS0-002 that you would face in a real-life setting. Used in addition to the book, the labs are a proven way to prepare for the certification and for work in the cybersecurity field. The CompTIA CySA+ Study Guide Exam CS0-002, Second Edition provides clear and concise information on crucial security topics and verified 100% coverage of the revised CompTIA Cybersecurity Analyst+ (CySA+) exam objectives. You'll be able to gain insight from practical, real-world examples, plus chapter reviews and exam highlights. Turn to this comprehensive resource to gain authoritative coverage of a range of security subject areas. Review threat and vulnerability management topics Expand your knowledge of software and systems security Gain greater understanding of security operations and monitoring Study incident response information Get guidance on compliance and assessment The CompTIA CySA+ Study Guide, Second Edition connects you to useful study tools that help you prepare for the exam. Gain confidence by using its interactive online test bank with hundreds of bonus practice questions, electronic flashcards, and a searchable glossary of key cybersecurity terms. You also get access to hands-on labs and have the opportunity to create a cybersecurity toolkit. Leading security experts, Mike Chapple and David Seidl, wrote this valuable guide to help you prepare to be CompTIA Security+ certified. If you're an IT professional who has earned your CompTIA Security+ certification, success on the CySA+ (Cybersecurity Analyst) exam stands as an impressive addition to your professional credentials. Preparing and taking the CS0-002 exam can also help you plan for advanced certifications, such as the CompTIA Advanced Security Practitioner (CASP+). And with this edition you also get Practice Labs virtual labs that run from your browser. The registration code is included with the book and gives you 6 months unlimited access to Practice Labs CompTIA CySA+ Exam CS0-002 Labs with 30 unique lab modules to practice your skills. DevSecOps provides a clear path to building systems and protocols that promotes taking ownership of software security and supports the DevOps philosophy. This updated study guide by two security experts will help you prepare for the CompTIA CySA+ certification exam. Position yourself for success with coverage of crucial security topics! Where can you find 100% coverage of the revised CompTIA Cybersecurity Analyst+ (CySA+) exam objectives? It's all in the CompTIA CySA+ Study Guide Exam CS0-002, Second Edition! This guide provides clear and concise information on crucial security topics. You'll be able to gain insight from practical, real-world examples, plus chapter reviews and exam highlights. Turn to this comprehensive resource to gain authoritative coverage of a range of security subject areas. Review threat and vulnerability management topics Expand your knowledge of software and systems security Gain greater understanding of security operations and monitoring Study incident response information Get guidance on compliance and assessment The CompTIA CySA+ Study Guide, Second Edition connects you to useful study tools that help you prepare for the exam. Gain confidence by using its interactive online test bank with hundreds of bonus practice questions, electronic flashcards, and a searchable glossary of key cybersecurity terms. You also get access to hands-on labs and have the opportunity to create a cybersecurity toolkit. Leading security experts, Mike Chapple and David Seidl, wrote this valuable guide to help you prepare to be CompTIA

Security+ certified. If you're an IT professional who has earned your CompTIA Security+ certification, success on the CySA+ (Cybersecurity Analyst) exam stands as an impressive addition to your professional credentials. Preparing and taking the CS0-002 exam can also help you plan for advanced certifications, such as the CompTIA Advanced Security Practitioner (CASP+).

Can a system be considered truly reliable if it isn't fundamentally secure? Or can it be considered secure if it's unreliable? Security is crucial to the design and operation of scalable systems in production, as it plays an important part in product quality, performance, and availability. In this book, experts from Google share best practices to help your organization design scalable and reliable systems that are fundamentally secure. Two previous O'Reilly books from Google—Site Reliability Engineering and The Site Reliability Workbook—demonstrated how and why a commitment to the entire service lifecycle enables organizations to successfully build, deploy, monitor, and maintain software systems. In this latest guide, the authors offer insights into system design, implementation, and maintenance from practitioners who specialize in security and reliability. They also discuss how building and adopting their recommended best practices requires a culture that's supportive of such change. You'll learn about secure and reliable systems through: Design strategies Recommendations for coding, testing, and debugging practices Strategies to prepare for, respond to, and recover from incidents Cultural best practices that help teams across your organization collaborate effectively

This book constitutes the refereed proceedings of the 17th International Conference on Software Process Improvement and Capability Determination, SPICE 2017, held in Palma de Mallorca, Spain, in October 2017. The 34 full papers presented together with 4 short papers were carefully reviewed and selected from 65 submissions. The papers are organized in the following topical sections: SPI in agile approaches; SPI in small settings; SPI and assessment; SPI and models; SPI and functional safety; SPI in various settings; SPI and gamification; SPI case studies; strategic and knowledge issues in SPI; education issues in SPI.

Automate core security tasks by embedding security controls and processes early in the DevOps workflow through DevSecOps. You will not only learn the various stages in the DevOps pipeline through examples of solutions developed and deployed using .NET Core, but also go through open source SDKs and toolkits that will help you to incorporate automation, security, and compliance. The book starts with an outline of modern software engineering principles and gives you an overview of DevOps in .NET Core. It further explains automation in DevOps for product development along with security principles to improve product quality. Next, you will learn how to improve your product quality and avoid code issues such as SQL injection prevention, cross-site scripting, and many more. Moving forward, you will go through the steps necessary to make security, compliance, audit, and UX automated to increase the efficiency of your organization. You'll see demonstrations of the CI phase of DevOps, on-premise and hosted, along with code analysis methods to verify product quality. Finally, you will learn network security in Docker and containers followed by compliance and security standards. After reading DevSecOps for .NET Core, you will be able to understand how automation, security, and compliance works in all the stages of the DevOps pipeline while showcasing real-world examples of solutions developed and deployed using .NET Core 3.

What You Will Learn

- Implement security for the .NET Core runtime for cross-functional workloads
- Work with code style and review guidelines to improve the security, performance, and maintenance of components
- Add to DevOps pipelines to scan code for security

vulnerabilities Deploy software on a secure infrastructure, on Docker, Kubernetes, and cloud environments Who This Book Is For Software engineers and developers who develop and maintain a secure code repository.

Winner of the Shingo Publication Award Accelerate your organization to win in the marketplace. How can we apply technology to drive business value? For years, we've been told that the performance of software delivery teams doesn't matter—that it can't provide a competitive advantage to our companies. Through four years of groundbreaking research to include data collected from the State of DevOps reports conducted with Puppet, Dr. Nicole Forsgren, Jez Humble, and Gene Kim set out to find a way to measure software delivery performance—and what drives it—using rigorous statistical methods. This book presents both the findings and the science behind that research, making the information accessible for readers to apply in their own organizations. Readers will discover how to measure the performance of their teams, and what capabilities they should invest in to drive higher performance. This book is ideal for management at every level.

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. The overwhelming majority of a software system's lifespan is spent in use, not in design or implementation. So, why does conventional wisdom insist that software engineers focus primarily on the design and development of large-scale computing systems? In this collection of essays and articles, key members of Google's Site Reliability Team explain how and why their commitment to the entire lifecycle has enabled the company to successfully build, deploy, monitor, and maintain some of the largest software systems in the world. You'll learn the principles and practices that enable Google engineers to make systems more scalable, reliable, and efficient—lessons directly applicable to your organization. This book is divided into four sections: Introduction—Learn what site reliability engineering is and why it differs from

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conventional IT industry practices Principles—Examine the patterns, behaviors, and areas of concern that influence the work of a site reliability engineer (SRE) Practices—Understand the theory and practice of an SRE's day-to-day work: building and operating large distributed computing systems Management—Explore Google's best practices for training, communication, and meetings that your organization can use

Develop faster with DevOps DevOps embraces a culture of unifying the creation and distribution of technology in a way that allows for faster release cycles and more resource-efficient product updating. DevOps For Dummies provides a guidebook for those on the development or operations side in need of a primer on this way of working. Inside, DevOps evangelist Emily Freeman provides a roadmap for adopting the management and technology tools, as well as the culture changes, needed to dive head-first into DevOps. Identify your organization's needs Create a DevOps framework Change your organizational structure Manage projects in the DevOps world DevOps For Dummies is essential reading for developers and operations professionals in the early stages of DevOps adoption.

Learn how to implement continuous security throughout your entire software development and delivery pipeline. With this hands-on book, developers, SREs, tech leads, and security engineers will learn how to combine their security process with their DevOps culture. You'll gain a thorough understanding of the best DevSecOps practices, from the construction of safer container images to the hardening of orchestrators to methods for securing your cloud environment. Michelle Ribeiro, CEO of SPIRITSEC, shows you how to introduce security into DevOps culture, methodologies and tools. You'll learn how to take advantage of contrasting security and DevOps cultures to build an effective DevSecOps program. You'll also explore the four Cs of the cloud-native security model: code, container, cloud, and cluster security by following coded examples. Get a review of the current threat environment to learn why security is becoming part of the DevOps movement Build an effective DevSecOps program by bridging the gap between the InfoSec and DevOps cultures Integrate security into the rapid-release cycles typical of modern software application development and delivery Secure your code, containers, clusters, and the cloud Avoid common DevSecOps mistakes by looking at case studies from Netflix, Facebook, and HSBC.

Agile continues to be the most adopted software development methodology among organizations worldwide, but it generally hasn't integrated well with traditional security management techniques. And most security professionals aren't up to speed in their understanding and experience of agile development. To help bridge the divide between these two worlds, this practical guide introduces several security tools and techniques adapted specifically to integrate with agile development. Written by security experts and agile veterans, this book begins by introducing security principles to agile practitioners, and agile principles to security practitioners. The authors also reveal problems they encountered in their own experiences with agile security, and how they worked to solve them. You'll learn how to: Add security practices to each stage of your existing development lifecycle Integrate security with planning, requirements, design, and at the code level Include security testing as part of your team's effort to deliver working software in each release Implement regulatory compliance in an agile or DevOps environment Build an effective security program through a culture of empathy, openness, transparency, and collaboration

- Preface - Introduction - The nature of audit - Audit methods - The role of the engineer - In Conclusion - Appendix: Contract audit

Secure your applications and development environments with Docker and Kubernetes DESCRIPTION Through this book, we will introduce the DevOps tools ecosystem and the main containers orchestration tools through an introduction to some platforms such as Kubernetes, Docker Swarm, and

OpenShift. Among other topics, both good practices will be addressed when constructing the Docker images as well as best security practices to be applied at the level of the host in which those containers are executed, from Docker's own daemon to the rest of the components that make up its technological stack. We will review the topics such as static analysis of vulnerabilities on Docker images, the signing of images with Docker Content Trust and their subsequent publication in a Docker Registry will be addressed. Also, we will review the security state in Kubernetes. In the last section, we will review container management and administration open source tools for IT organizations that need to manage and monitor container-based applications, reviewing topics such as monitoring, administration, and networking in Docker.

KEY FEATURES - Introducing Container platforms (Docker, Kubernetes, Swarm, OpenShift) - Discover how to manage high availability with Docker Swarm and Kubernetes - Learn how Docker can manage the security in images and containers - Discover how Docker can be integrated into development workflows in applications - Discover vulnerabilities in the Docker containers and images with practical examples to secure your container-based applications - Discover tools for monitoring and administration Docker and Kubernetes applications

WHAT WILL YOU LEARN - Learn fundamental DevOps skills and tools, starting with the basic components and concepts of Docker. - Learn about Docker as a platform for the deployment of containers and Docker images taking into account the security of applications. - Learn about tools that allow us to audit the security of the machine where we execute Docker images, finding out how to secure your Docker host. - Learn how to secure your Docker environment and discover vulnerabilities and threats in Docker images. - Learn about creating and deploying containers in a security way with Docker and Kubernetes. - Learn about monitoring and administration in Docker with tools such as cadvisor, sysdig, portainer, and Rancher.

WHO THIS BOOK IS FOR This book covers different techniques to help developers improve DevOps and container security skills and can be useful for people who are involved in software development and want to learn how Docker works from a security point of view. It is recommended that readers have the knowledge about UNIX commands and they work with commands terminal.

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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

We learn more from failures than we do from successes. When something goes as expected, we use that process as a mental template for future projects. Success actually stunts the learning process because we think we have established a successful pattern, even after just one instance of success. It is a flawed confirmation that "This is the correct way to do it," which has a tendency to morph into "This is the only way to do it." Real learning comes through crisis. If something goes wrong, horribly wrong, we have to scramble, experiment, hack, scream and taze our way through the process. Our minds flail for new ideas, are more willing to experiment, are more open to external input when we're in crisis mode. The Genesis of an Idea That's where the idea for this book came from. When I was in Singapore for DevSecOps Days 2018. Edwin Kwan, Stefan Streichsbier and DJ Schleen were swapping war stories over a couple of beers. The conclusion of their evening of telling tales was the desire to find a way to get those stories out to the community. They spoke with me about putting together a team of authors who would tell their own stories in the hope of helping

the DevSecOps Community understand that failure is an option. Yes. You read that right. Failure is an option. Failure is part of the process of making the cultural and technological transformation that needs to happen in order to keep innovating. It is part of the journey to DevSecOps. The stories presented here aren't a roadmap. What they do is acknowledge failure as a part of the knowledge base of the DevSecOps Community. The days of stand-alone security teams isolated from the real process of development are coming to an end. Paraphrasing Caroline Wong, "Security needs to be invited to the party, not perceived as a goon standing at the front door denying admission." With DevSecOps, security is now part of the team. After reading these stories, we hope you will realize you are not alone in your journey. Not only are you not alone, there are early adopters who have gone before you, not exactly "hacking a trail through the swamp," but at least marking the booby traps, putting flags next to the quick-sandpits and holding up a 'Dragons be here' sign at perilous cave openings. 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.

Hands-On Security in DevOps: Ensure continuous security, deployment, and delivery with DevSecOps. Packt Publishing Ltd

Nowadays it is impossible to imagine a business without technology as most industries are becoming "smarter" and more tech-driven, ranging from small individual tech initiatives to complete business models with intertwined supply chains and "platform"-based business models. New ways of working, such as agile and DevOps, have been introduced, leading to new risks. These risks come in the form of new challenges for teams working together in a distributed manner, privacy concerns, human autonomy, and cybersecurity concerns. Technology is now integrated into the business discipline and is here to stay leading to the need

for a thorough understanding of how to address these risks and all the potential problems that could arise. With the advent of organized crime, such as hacks and denial-of-service attacks, all kinds of malicious actors are infiltrating the digital society in new and unique ways. Systems with poor design, implementation, and configurations are easily taken advantage of. When it comes to integrating business and technology, there needs to be approaches for assuring security against risks that can threaten both businesses and their digital platforms. Strategic Approaches to Digital Platform Security Assurance offers comprehensive design science research approaches to extensively examine risks in digital platforms and offer pragmatic solutions to these concerns and challenges. This book addresses significant problems when transforming an organization embracing API-based platform models, the use of DevOps teams, and issues in technological architectures. Each section will examine the status quo for business technologies, the current challenges, and core success factors and approaches that have been used. This book is ideal for security analysts, software engineers, computer engineers, executives, managers, IT consultants, business professionals, researchers, academicians, and students who want to gain insight and deeper knowledge of security in digital platforms and gain insight into the most important success factors and approaches utilized by businesses. Explores how the automotive industry can address the increased risks of cyberattacks and incorporate security into the software development lifecycle While increased connectivity and advanced software-based automotive systems provide tremendous benefits and improved user experiences, they also make the modern vehicle highly susceptible to cybersecurity attacks. In response, the automotive industry is investing heavily in establishing cybersecurity engineering processes. Written by a seasoned automotive expert with abundant international industry expertise, Building Secure Cars: Assuring the Software Development Lifecycle introduces readers to various types of cybersecurity activities, measures, and solutions that can be applied at each stage in the typical automotive development process. This book aims to assist auto industry insiders build more secure cars by incorporating key security measures into their software development lifecycle. Readers will learn to better understand common problems and pitfalls in the development process that lead to security vulnerabilities. To overcome such challenges, this book details how to apply and optimize various automated solutions, which allow software development and test teams to identify and fix vulnerabilities in their products quickly and efficiently. This book balances technical solutions with automotive technologies, making implementation practical. Building Secure Cars is: One of the first books to explain how the automotive industry can address the increased risks of cyberattacks, and how to incorporate security into the software development lifecycle An optimal resource to help improve software security with relevant organizational workflows and technical solutions A complete guide that covers introductory information to more advanced and practical topics Written by an

established professional working at the heart of the automotive industry Fully illustrated with tables and visuals, plus real-life problems and suggested solutions to enhance the learning experience This book is written for software development process owners, security policy owners, software developers and engineers, and cybersecurity teams in the automotive industry. All readers will be empowered to improve their organizations' security postures by understanding and applying the practical technologies and solutions inside.

Kubernetes is one of the most popular, sophisticated, and fast-evolving container orchestrators. In this book, you'll learn the essentials and find out about the advanced administration and orchestration techniques in Kubernetes. Readers will also learn to manage containers using the latest version of Kubernetes with a recipe-based approach.

Python's simplicity lets you become productive quickly, but this often means you aren't using everything it has to offer. With this hands-on guide, you'll learn how to write effective, idiomatic Python code by leveraging its best—and possibly most neglected—features. Author Luciano Ramalho takes you through Python's core language features and libraries, and shows you how to make your code shorter, faster, and more readable at the same time. Many experienced programmers try to bend Python to fit patterns they learned from other languages, and never discover Python features outside of their experience. With this book, those Python programmers will thoroughly learn how to become proficient in Python 3. This book covers: Python data model: understand how special methods are the key to the consistent behavior of objects Data structures: take full advantage of built-in types, and understand the text vs bytes duality in the Unicode age Functions as objects: view Python functions as first-class objects, and understand how this affects popular design patterns Object-oriented idioms: build classes by learning about references, mutability, interfaces, operator overloading, and multiple inheritance Control flow: leverage context managers, generators, coroutines, and concurrency with the concurrent.futures and asyncio packages Metaprogramming: understand how properties, attribute descriptors, class decorators, and metaclasses work

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. Many organizations are facing the uphill battle of modernizing their legacy IT infrastructure. Most have evolved over the years by taking lessons from traditional or legacy manufacturing: creating a production process that puts the emphasis on the process instead of the people performing the tasks, allowing the organization to treat people like resources to try to achieve high-quality outcomes. But those practices and ideas are failing modern IT, where collaboration and creativeness are required to achieve high-performing, high-quality success. Mirco Hering, a thought leader in managing IT within legacy organizations, lays out a roadmap to success for IT managers, showing them how to create the right ecosystem, how to empower people to bring their best to work every day, and how to put the right technology in the driver's seat to propel their organization to success. But just having the right methods and tools will not magically transform an organization; the cultural change that is the hardest is also the most impactful. Using principles from Agile, Lean, and DevOps as well as first-hand examples from the enterprise world, Hering addresses the different challenges that legacy organizations face as they transform into modern IT departments.

Learn application security from the very start, with this comprehensive and

approachable guide! Alice and Bob Learn Application Security is an accessible and thorough resource for anyone seeking to incorporate, from the beginning of the System Development Life Cycle, best security practices in software development. This book covers all the basic subjects such as threat modeling and security testing, but also dives deep into more complex and advanced topics for securing modern software systems and architectures. Throughout, the book offers analogies, stories of the characters Alice and Bob, real-life examples, technical explanations and diagrams to ensure maximum clarity of the many abstract and complicated subjects. Topics include: · Secure requirements, design, coding, and deployment · Security Testing (all forms) · Common Pitfalls · Application Security Programs · Securing Modern Applications · Software Developer Security Hygiene Alice and Bob Learn Application Security is perfect for aspiring application security engineers and practicing software developers, as well as software project managers, penetration testers, and chief information security officers who seek to build or improve their application security programs. Alice and Bob Learn Application Security illustrates all the included concepts with easy-to-understand examples and concrete practical applications, furthering the reader's ability to grasp and retain the foundational and advanced topics contained within.

Ben is stuck. A development lead with a strong vision for how the intersection of development and operations at his office can be improved, he can't help but feel overwhelmed and discouraged by common problems such as slow turnaround time, rushed and ineffective handover documentation, mounting technical debt, and a lagging QA process. What steps should Ben take to build the momentum needed to create positive changes within his company? In this unique business novel by Dave Harrison and Knox Lively, two DevOps professionals with years of diverse experience in the industry, you follow Ben as he solves work frustrations in order to adopt Agile, DevOps, and microservices architectures for his organization. Achieving DevOps addresses the "Now what?" moment many DevOps professionals face on their journey. The story provides you with the knowledge you need to navigate the internal political waters, build management support, show measurable results, and bring DevOps successfully into your organization. Come away with practical lessons and timeless business concepts. You'll know how to effect change in a company from the bottom up, gain support, and instill a pattern of progressively building on success. Experience Ben's progress vicariously in Achieving DevOps and bridge the gap between inspiration and the implementation of your own DevOps practices. Who This Book Is For Those serving as change agents who are working to influence and move their organizations toward a DevOps approach to software development and deployment: those working to effect change from the bottom up such as development leads, QA leads, project managers, and individual developers; and IT directors, CTOs, and others at the top of an organization who are being asked to lend their support toward DevOps implementation efforts

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For those considering Extreme Programming, this book provides no-nonsense advice on agile planning, development, delivery, and management taken from the authors' many years of experience. While plenty of books address the what and why of agile development, very few offer the information users can apply directly.

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