
Many Small Monoliths Microservices Vs Monolithic

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SHELDON HULL

**Hands-On Microservices -
Monitoring and Testing** Packt
Publishing Ltd

The Comprehensive, Proven Approach to IT Scalability—Updated with New Strategies, Technologies, and Case Studies In The Art of Scalability, Second Edition, leading scalability consultants Martin L. Abbott and Michael T. Fisher cover everything you need to know to smoothly scale products and services for any requirement. This extensively revised edition reflects new technologies, strategies, and lessons, as well as new case studies from the authors' pioneering consulting practice, AKF Partners. Writing for technical and nontechnical decision-makers, Abbott and Fisher cover everything that impacts scalability, including architecture, process, people, organization, and technology. Their insights and recommendations reflect more than thirty years of experience at companies ranging from eBay to Visa, and

Salesforce.com to Apple. You'll find updated strategies for structuring organizations to maximize agility and scalability, as well as new insights into the cloud (IaaS/PaaS) transition, NoSQL, DevOps, business metrics, and more. Using this guide's tools and advice, you can systematically clear away obstacles to scalability—and achieve unprecedented IT and business performance. Coverage includes • Why scalability problems start with organizations and people, not technology, and what to do about it • Actionable lessons from real successes and failures • Staffing, structuring, and leading the agile, scalable organization • Scaling processes for hyper-growth environments • Architecting scalability: proprietary models for clarifying needs and making choices—including 15 key success principles • Emerging technologies and challenges: data cost, datacenter planning, cloud evolution, and customer-aligned monitoring • Measuring availability, capacity, load, and performance
Foundations and Practice of Security
Packt Publishing Ltd

Most recent microservices books fully buy into the hype, starting from the premise that microservices are nearly always the best approach to developing enterprise systems. But that isn't always a safe assumption: in fact, in some cases, it can be disastrous, leading to architectures that serve nobody well. *Strategic Microservices and Monoliths* helps business decision-makers and technical team members collaborate to clearly understand their strategic problems, and identify their optimal architectural approaches, whether those turns out to be distributed microservices, well-modularized monoliths, or coarser-grade services partway between the two. Writing for executives and IT professionals alike, leading software architecture expert Vaughn Vernon and Tomasz Jaskula guide you through making balanced architecture compositional decisions based on need and purpose rather than popular opinion, so you can maximize business value and deliver systems that evolve more easily. Throughout, the authors provide realistic application examples, showing how to construct well-designed monoliths that are maintainable and extensible, and how to decompose massively tangled legacy systems into truly effective microservices.

[Hands-On Swift 5 Microservices Development](#) Addison-Wesley Professional

A practical approach to conquering the complexities of Microservices using the Python tooling ecosystem About This Book A very useful guide for Python developers who are shifting to the new microservices-based development A concise, up-to-date guide to building efficient and lightweight microservices in Python using Flask, Tox, and other tools Learn to use Docker containers, CoreOS,

and Amazon Web Services to deploy your services Who This Book Is For This book is for developers who have basic knowledge of Python, the command line, and HTTP-based application principles, and those who want to learn how to build, test, scale, and manage Python 3 microservices. No prior experience of writing microservices in Python is assumed. What You Will Learn Explore what microservices are and how to design them Use Python 3, Flask, Tox, and other tools to build your services using best practices Learn how to use a TDD approach Discover how to document your microservices Configure and package your code in the best way Interact with other services Secure, monitor, and scale your services Deploy your services in Docker containers, CoreOS, and Amazon Web Services In Detail We often deploy our web applications into the cloud, and our code needs to interact with many third-party services. An efficient way to build applications to do this is through microservices architecture. But, in practice, it's hard to get this right due to the complexity of all the pieces interacting with each other. This book will teach you how to overcome these issues and craft applications that are built as small standard units, using all the proven best practices and avoiding the usual traps. It's a practical book: you'll build everything using Python 3 and its amazing tooling ecosystem. You will understand the principles of TDD and apply them. You will use Flask, Tox, and other tools to build your services using best practices. You will learn how to secure connections between services, and how to script Nginx using Lua to build web application firewall features such as rate limiting. You will also familiarize yourself with Docker's role in

microservices, and use Docker containers, CoreOS, and Amazon Web Services to deploy your services. This book will take you on a journey, ending with the creation of a complete Python application based on microservices. By the end of the book, you will be well versed with the fundamentals of building, designing, testing, and deploying your Python microservices.

Style and approach This book is a linear, easy-to-follow guide on how to best design, write, test, and deploy your microservices. It includes real-world examples that will help Python developers create their own Python microservice using the most efficient methods.

The Mythical Man-month Simon and Schuster

Monolith to Microservices Evolutionary Patterns to Transform Your Monolith "O'Reilly Media, Inc."

Scalable Web Architecture, Processes, and Organizations for the Modern Enterprise "O'Reilly Media, Inc."

Transit from monolithic architectures to highly available, scalable, and fault-tolerant microservices

About This Book Build your own applications based on event-driven microservices and set them up on a production server. Successfully transform any monolithic application into a microservice. Monitor the health of your application, prevent downtime, and reduce costs.

Who This Book Is For PHP developers who want to build scalable, highly available, and secure applications will find this book useful. No knowledge of microservices is assumed.

What You Will Learn Set up a development environment using the right strategies and tools. Learn about application design and structure to start implementing your application. Transform a monolithic

application into microservices. Explore the best way to start implementing your application using testing. Understand how to monitor your microservices, handle errors, and debug the application. Deploy your finished application into a production environment and learn how to solve common problems. Know how to scale your application based on microservices once it is up-and-running.

In Detail The world is moving away from bulky, unreliable, and high-maintenance PHP applications, to small, easy-to-maintain and highly available microservices and the pressing need is for PHP developers to understand the criticalities in building effective microservices that scale at large. This book will be a reliable resource, and one that will help you to develop your skills and teach you techniques for building reliable microservices in PHP. The book begins with an introduction to the world of microservices, and quickly shows you how to set up a development environment and build a basic platform using Docker and Vagrant. You will then get into the different design aspects to be considered while building microservices in your favorite framework and you will explore topics such as testing, securing, and deploying microservices. You will also understand how to migrate a monolithic application to the microservice architecture while keeping scalability and best practices in mind. Furthermore you will get into a few important DevOps techniques that will help you progress on to more complex domains such as native cloud development, as well as some interesting design patterns. By the end of this book you will be able to develop applications based on microservices in an organized and efficient way. You will

also gain the knowledge to transform any monolithic applications into microservices. Style and approach Filled with code that you can start typing straightaway, this book will take you through building, testing, securing, and deploying microservices in the most practical way possible. The focus of the book is more inclined towards showing you how it's done, rather than with what to do, although you will get a good idea of those tools most widely used to build microservices.

Build robust and scalable software from the start IBM Redbooks

The orderly Sweet-Williams are dismayed at their son's fondness for the messy pastime of gardening.

Building Evolutionary Architectures

Springer Nature

Annotation Over the past 10 years, distributed systems have become more fine-grained. From the large multi-million line long monolithic applications, we are now seeing the benefits of smaller self-contained services. Rather than heavy-weight, hard to change Service Oriented Architectures, we are now seeing systems consisting of collaborating microservices. Easier to change, deploy, and if required retire, organizations which are in the right position to take advantage of them are yielding significant benefits. This book takes an holistic view of the things you need to be cognizant of in order to pull this off. It covers just enough understanding of technology, architecture, operations and organization to show you how to move towards finer-grained systems.

Building Micro-Frontends "O'Reilly Media, Inc."

Automating the Continuous Deployment Pipeline with Containerized

MicroservicesAbout This Book* First principles of devops, Ansible, Docker,

Kubernetes, microservices* Architect your software in a better and more efficient way with microservices packed as immutable containers* Practical guide describing an extremely modern and advanced devops toolchain that can be improved continuouslyWho This Book Is ForIf you are an intermediate-level developer who wants to master the whole microservices development and deployment lifecycle using some of the latest and greatest practices and tools, this is the book for you. Familiarity with the basics of Devops and Continuous Deployment will be useful.What You Will Learn * Get to grips with the fundamentals of Devops* Architect efficient software in a better and more efficient way with the help of microservices* Use Docker, Kubernetes, Ansible, Ubuntu, Docker Swarm and more* Implement fast, reliable and continuous deployments with zero-downtime and ability to roll-back* Learn about centralized logging and monitoring of your cluster* Design self-healing systems capable of recovery from both hardware and software failuresIn DetailBuilding a complete modern devops toolchain requires not only the whole microservices development and a complete deployment lifecycle, but also the latest and greatest practices and tools. Victor Farcic argues from first principles how to build a devops toolchain. This book shows you how to chain together Docker, Kubernetes, Ansible, Ubuntu, and other tools to build the complete devops toolkit.Style and approach This book follows a unique, hands-on approach familiarizing you to the Devops 2.0 toolkit in a very practical manner. Although there will be a lot of theory, you won't be able to complete this book by reading it in a metro on a way to work. You'll need to be in front of

your computer and get your hands dirty. [Support Constant Change](#) Apress MVC and CRUD make software easier to write, but harder to change. Microservice-based architectures can help even the smallest of projects remain agile in the long term, but most tutorials meander in theory or completely miss the point of what it means to be microservice-based. Roll up your sleeves with real projects and learn the most important concepts of evented architectures. You'll have your own deployable, testable project and a direction for where to go next. Much ink has been spilled on the topic of microservices, but all of this writing fails to accurately identify what makes a system a monolith, define what microservices are, or give complete, practical examples, so you're probably left thinking they have nothing to offer you. You don't have to be at Google or Facebook scale to benefit from a microservice-based architecture. Microservices will keep even small and medium teams productive by keeping the pieces of your system focused and decoupled. Discover the basics of message-based architectures, render the same state in different shapes to fit the task at hand, and learn what it is that makes something a monolith (it has nothing to do with how many machines you deploy to). Conserve resources by performing background jobs with microservices. Deploy specialized microservices for registration, authentication, payment processing, e-mail, and more. Tune your services by defining appropriate service boundaries. Deploy your services effectively for continuous integration. Master debugging techniques that work across different services. You'll finish with a deployable system and skills you can

apply to your current project. Add the responsiveness and flexibility of microservices to your project, no matter what the size or complexity. [What You Need](#): While the principles of this book transcend programming language, the code examples are in Node.js because JavaScript, for better or worse, is widely read. You'll use PostgreSQL for data storage, so familiarity with it is a plus. The book does provide Docker images to make working with PostgreSQL a bit easier, but extensive Docker knowledge is not required.

[Designing Fine-Grained Services by Applying Patterns](#) Packt Publishing Ltd One of the biggest challenges for organizations that have adopted microservice architecture is the lack of architectural, operational, and organizational standardization. After splitting a monolithic application or building a microservice ecosystem from scratch, many engineers are left wondering what's next. In this practical book, author Susan Fowler presents a set of microservice standards in depth, drawing from her experience standardizing over a thousand microservices at Uber. You'll learn how to design microservices that are stable, reliable, scalable, fault tolerant, performant, monitored, documented, and prepared for any catastrophe. Explore production-readiness standards, including: Stability and Reliability: develop, deploy, introduce, and deprecate microservices; protect against dependency failures Scalability and Performance: learn essential components for achieving greater microservice efficiency Fault Tolerance and Catastrophe Preparedness: ensure availability by actively pushing microservices to fail in real time Monitoring: learn how to monitor, log,

and display key metrics; establish alerting and on-call procedures
 Documentation and Understanding: mitigate tradeoffs that come with microservice adoption, including organizational sprawl and technical debt
[Building Server-side and Microservices with Go](#) Packt Publishing Ltd

Software services are established as a programming concept, but their impact on the overall architecture of enterprise IT and business operations is not well-understood. This has led to problems in deploying SOA, and some disillusionment. The SOA Source Book adds to this a collection of reference material for SOA. It is an invaluable resource for enterprise architects working with SOA. The SOA Source Book will help enterprise architects to use SOA effectively. It explains: What SOA is How to evaluate SOA features in business terms How to model SOA How to use The Open Group Architecture Framework (TOGAF™) for SOA SOA governance This book explains how TOGAF can help to make an Enterprise Architecture. Enterprise Architecture is an approach that can help management to understand this growing complexity.

Strategic Monoliths and

Microservices IBM Redbooks

Develop microservice-based enterprise applications with expert guidance to avoid failures and technological debt with the help of real-world examples Key Features Implement the right microservices adoption strategy to transition from monoliths to microservices Explore real-world use cases that explain anti-patterns and alternative practices in microservices development Discover proven recommendations for avoiding architectural mistakes when designing microservices Book Description

Microservices have been widely adopted for designing distributed enterprise apps that are flexible, robust, and fine-grained into services that are independent of each other. There has been a paradigm shift where organizations are now either building new apps on microservices or transforming existing monolithic apps into microservices-based architecture. This book explores the importance of anti-patterns and the need to address flaws in them with alternative practices and patterns. You'll identify common mistakes caused by a lack of understanding when implementing microservices and cover topics such as organizational readiness to adopt microservices, domain-driven design, and resiliency and scalability of microservices. The book further demonstrates the anti-patterns involved in re-platforming brownfield apps and designing distributed data architecture. You'll also focus on how to avoid communication and deployment pitfalls and understand cross-cutting concerns such as logging, monitoring, and security. Finally, you'll explore testing pitfalls and establish a framework to address isolation, autonomy, and standardization. By the end of this book, you'll have understood critical mistakes to avoid while building microservices and the right practices to adopt early in the product life cycle to ensure the success of a microservices initiative. What you will learn Discover the responsibilities of different individuals involved in a microservices initiative Avoid the common mistakes in architecting microservices for scalability and resiliency Understand the importance of domain-driven design when developing microservices Identify the common pitfalls involved in migrating monolithic applications to microservices Explore

communication strategies, along with their potential drawbacks and alternatives Discover the importance of adopting governance, security, and monitoring Understand the role of CI/CD and testing Who this book is for This practical microservices book is for software architects, solution architects, and developers involved in designing microservices architecture and its development, who want to gain insights into avoiding pitfalls and drawbacks in distributed applications, and save time and money that might otherwise get wasted if microservices designs fail. Working knowledge of microservices is assumed to get the most out of this book.

SOA Source Book Apress

Develop and deploy efficient server-side applications and microservice architectures. **KEY FEATURES** ● Extensive examples of the Go programming language and REST concepts. ● Includes graphical illustrations and visual explanation of the microservice architecture. ● Graphs and visual explanation for Docker and Kubernetes commands. **DESCRIPTION** 'Building Server-side and Microservices with Go' teaches you the fundamentals of Go programming languages, REST server applications, and microservices. You can develop efficient server-side applications and use modern development concepts such as microservices after reading this book. We will create simple server-side applications and add new features as and when a new topic is covered. We will begin with the fundamentals of Go programming languages, which will create simple server-side applications. During development, a layered design will be introduced, with each application layer serving a specific purpose. We will

introduce you to the microservice concept, and it is further divided into a couple of smaller microservices. Finally, we'll look at how to use Docker and Kubernetes to deploy and scale microservices. After reading this book, we will be able to successfully develop monolithic and microservice applications and identify when one approach is more appropriate than another. This book can also help improve existing applications. It is a perfect handy guide to build proficiency with Docker and Kubernetes. **WHAT YOU WILL LEARN** ● Basics of Go programming language (data types, structures, loops, functions, concurrency, etc). ● REST concept development and implementation. ● Introduction to layered server-side application designs and key roles. ● PostgreSQL database design, CRUD operations, and queries. ● Introduction to microservices, common practices, and advantages and disadvantages of microservices. ● Microservices development with Go and how to break monolithic applications into microservices. ● Understanding protocol buffers and message queuing protocols for microservice communications. **WHO THIS BOOK IS FOR** This book is intended for backend developers, software architects, and students interested in learning about the Go programming language, REST Server Applications, and Microservices. Knowing fundamental programming concepts would be an advantage but not essential. **TABLE OF CONTENTS** 1. Fundamentals of Go Programming Language 2. REST Server Applications 3. HTTP Layer and Handler 4. Core Layer 5. Data Layer and Database 6. Microservices 7. Microservices in Go 8. Microservice Communication 9. Deployment and Scaling
Evolve the Monolith to Microservices

with Java and Node Simon and Schuster
 This book constitutes the refereed thoroughly refereed post-workshop proceedings of the 17th International Conference on Web Engineering, ICWE 2017, held in Rome, Italy, in June 2017. The 24 revised full papers were selected from 34 submissions. The workshops complement the main conference, and explore new trends on core topics of Web engineering. The workshop committee accepted five workshops of which the following four contributed papers to this volume: - 2nd International Workshop on Liquid Multi-Device Software and 1st International Workshop on Engineering the Web of Things - International Workshop on The Practice Of The Open Web (practi-O-web 2017) - 3rd International Workshop on Natural Language Processing for Informal Text (NLPIT 2017) - 3rd International Workshop on Mining the Social Web (SoWeMine 2017).

Mastering Service Mesh "O'Reilly Media, Inc."

The software development ecosystem is constantly changing, providing a constant stream of new tools, frameworks, techniques, and paradigms. Over the past few years, incremental developments in core engineering practices for software development have created the foundations for rethinking how architecture changes over time, along with ways to protect important architectural characteristics as it evolves. This practical guide ties those parts together with a new way to think about architecture and time.

Building Standardized Systems Across an Engineering Organization Springer

In this book, we will show you how to report and reclaim memory, how to send and receive messages, and how to report and monitor the health of your

entire microservice ecosystem. By the end of this book, you will be confident enough to develop a sturdy microservice architecture that works in a production setting—all by using the efficiency of C#. *Designing a real-world, enterprise-grade microservice ecosystem with the efficiency of C#* 7 Addison-Wesley Professional

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.

[A performance engineer's guide to the continuous testing and monitoring of microservices](#) IT Revolution

The upcoming Java 9 module system will affect existing applications and offer new ways of creating modular and maintainable applications. With this hands-on book, Java developers will learn not only about the joys of modularity, but also about the patterns needed to create truly modular and reliable applications. Authors Sander Mak and Paul Bakker teach you the concepts behind the Java 9 module system, along with the new tools it offers. You'll also gain learn how to modularize existing code and how to build new Java applications in a modular

way. Understand Java 9 module system concepts Master the patterns and practices for building truly modular applications Migrate existing applications and libraries to Java 9 modules Use JDK 9 tools for modular development and migration

Implementation Patterns Packt Publishing Ltd

Microservices is an architecture style, in which large complex software applications are composed of one or more microservices. Each microservice focuses on doing one task representing a small business capability. These microservices can be developed in any programming language and communicate with each other using language-agnostic APIs such as REST or messaging applications such as IBM MQ Light. This IBM Redbooks Solution Guide gives a broad understanding of this increasingly popular architectural style and show how you can develop applications using the microservices approach with IBM Bluemix.

Build Event-Driven Architectures with Event Sourcing and CQRS Reading, Mass. ; Don Mills, Ont. : Addison-Wesley Publishing Company

Learn to design and deploy fully functioning microservices for your applications from scratch using Swift, Docker, and AWS Key Features Understand server-side Swift development concepts for building your first microservice Build microservices using Vapor 4 and deploy them to the cloud using Docker Learn effective techniques for enhancing maintainability and stability of your Swift applications Book Description The capabilities of the Swift programming language are extended to server-side development using popular frameworks such as Vapor. This enables Swift programmers to

implement the microservices approach to design scalable and easy-to-maintain architecture for iOS, macOS, iPadOS, and watchOS applications. This book is a complete guide to building microservices for iOS applications. You'll start by examining Swift and Vapor as backend technologies and compare them to their alternatives. The book then covers the concept of microservices to help you get started with developing your first microservice. Throughout this book, you'll work on a case study of writing an e-commerce backend as a microservice application. You'll understand each microservice as it is broken down into details and written out as code throughout the book. You'll also become familiar with various aspects of server-side development such as scalability, database options, and information flow for microservices that are unwrapped in the process. As you advance, you'll get to grips with microservices testing and see how it is different from testing a

monolith application. Along the way, you'll explore tools such as Docker, Postman, and Amazon Web Services. By the end of the book, you'll be able to build a ready-to-deploy application that can be used as a base for future applications. What you will learn Grasp server-side Swift development concepts using practical examples Understand the microservices approach and why Swift is a great choice for building microservices Design and structure mobile and web applications using microservices architecture Discover the available database options and understand which one to choose Scale and monitor your microservices Use Postman to automate testing for your microservices API Who this book is for The book is for iOS, iPadOS, and macOS developers and Swift programmers who want to understand how Swift can be used for building microservices. The book assumes familiarity with Swift programming and the fundamentals of the web, including how APIs work.