

Microservices In Practice From Architecture To Deployment

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Design Patterns for Cloud Native Applications - Kasun Indrasiri 2021-05-17

With the immense cost savings and scalability the cloud provides, the rationale for building cloud native applications is no longer in question. The real issue is how. With this practical guide, developers will learn about the most commonly used design patterns for building cloud native applications using APIs, data, events, and streams in both greenfield and brownfield development. You'll learn how to incrementally design, develop, and deploy large and effective cloud native applications that you can manage and maintain at scale with minimal cost, time, and effort. Authors Kasun Indrasiri and Sriskandarajah Suhothayan highlight use cases that effectively demonstrate the challenges you might encounter at each step. Learn the fundamentals of cloud native applications Explore key cloud native communication, connectivity, and composition patterns Learn decentralized data management

techniques Use event-driven architecture to build distributed and scalable cloud native applications Explore the most commonly used patterns for API management and consumption Examine some of the tools and technologies you'll need for building cloud native systems Designing Microservices Using Django - Shayank Jain 2020-04-28

A step-by-step that will help you build Microservices architecture using Django and Python KEY FEATURES a- Understand in-depth the fundamentals of Microservices a- Learn how to create and use Django APIs a- Use web technology such as Nginx, Gunicorn, UWSGI, and Postgresql to deploy a Django project DESCRIPTION Microservices architectures solve the multiple problems of software architecture. Django is a full-stack development framework, written in python. This book includes everything necessary for web application development; from the user views to the information storage: model, persistence,

relationships, controllers, forms, validations, rest API and a very useful back office. Furthermore, the book will show how to build production-ready microservices. It will help you create restful APIs and get familiar with Redis and Celery. Towards the end, the book will show how to secure these services and deploy these microservices using Django. Lastly, it will show how to scale our services.

WHAT WILL YOU LEARN

- a- Understand the basics of Python, Django, and Microservices
- a- Learn how to deploy Microservices with Django
- a- Get familiar with Microservices Architecture - Designing, Principles, and Requirements
- a- Implement Asynchronous task, JWT API Authentication and AWS Serverless with Microservice architecture

WHO THIS BOOK IS FOR

This book is for those beginners who want to make their careers in software development. It starts from the basics of python and Django, takes the reader to the Microservices architecture.

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About the Author

Shayank Jain is a software developer and data analyst. He is strongly passionate about coding and architectural design. He has more than 6.5 years of professional experience in developing scalable software solutions for various organizations. He has been programming since the age of 16 and has developed software for mobile, web, hardware gaming and standalone applications. After getting his hands dirty with programming, he found many new ways to debug and deploy the code successfully with minimal time constraints.

After reading and implementing, he found out that many critical concepts can be implemented easily in programming with correct and focused thinking. His research interests include information security, cryptography, analysis, design, and implementation of algorithms. He has extensively worked with python and implemented new ideas on various projects in his free time. He is also active in the computer science and education community. Through this book, he wants to share these methodologies and tricks with the beginners. Outside work, Shayank spends his spare time helping, coaching, and mentoring young people in taking up careers in technology. Your Blog links: <https://shayankit.wixsite.com/intro25>Your LinkedIn Profile: <https://www.linkedin.com/in/shayankjain>

Cloud Native Transformation - Pini Reznik
2019-12-05

In the past few years, going cloud native has been a big advantage for many companies. But

it's a tough technique to get right, especially for enterprises with critical legacy systems. This practical hands-on guide examines effective architecture, design, and cultural patterns to help you transform your organization into a cloud native enterprise—whether you're moving from older architectures or creating new systems from scratch. By following Wealth Grid, a fictional company, you'll understand the challenges, dilemmas, and considerations that accompany a move to the cloud. Technical managers and architects will learn best practices for taking on a successful company-wide transformation. Cloud migration consultants Pini Reznik, Jamie Dobson, and Michelle Gienow draw patterns from the growing community of expert practitioners and enterprises that have successfully built cloud native systems. You'll learn what works and what doesn't when adopting cloud native—including how this transition affects not just your technology but also your organizational

structure and processes. You'll learn: What cloud native means and why enterprises are so interested in it Common barriers and pitfalls that have affected other companies (and how to avoid them) Context-specific patterns for a successful cloud native transformation How to implement a safe, evolutionary cloud native approach How companies addressed root causes and misunderstandings that hindered their progress Case studies from real-world companies that have succeeded with cloud native transformations

Microservices Patterns - Chris Richardson
2018-10-27

"A comprehensive overview of the challenges teams face when moving to microservices, with industry-tested solutions to these problems." - Tim Moore, Lightbend 44 reusable patterns to develop and deploy reliable production-quality microservices-based applications, with worked examples in Java Key Features 44 design patterns for building and deploying

microservices applications Drawing on decades of unique experience from author and microservice architecture pioneer Chris Richardson A pragmatic approach to the benefits and the drawbacks of microservices architecture Solve service decomposition, transaction management, and inter-service communication Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About The Book Microservices Patterns teaches you 44 reusable patterns to reliably develop and deploy production-quality microservices-based applications. This invaluable set of design patterns builds on decades of distributed system experience, adding new patterns for composing services into systems that scale and perform under real-world conditions. More than just a patterns catalog, this practical guide with worked examples offers industry-tested advice to help you design, implement, test, and deploy your microservices-based application. What You Will Learn How

(and why!) to use microservices architecture
Service decomposition strategies Transaction
management and querying patterns Effective
testing strategies Deployment patterns This
Book Is Written For Written for enterprise
developers familiar with standard enterprise
application architecture. Examples are in Java.
About The Author Chris Richardson is a Java
Champion, a JavaOne rock star, author of
Manning's POJOs in Action, and creator of the
original CloudFoundry.com. Table of Contents
Escaping monolithic hell Decomposition
strategies Interprocess communication in a
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API patterns Testing microservices: part 1
Testing microservices: part 2 Developing
production-ready services Deploying
microservices Refactoring to microservices

Essentials of Microservices Architecture -

Chellammal Surianarayanan 2019-08-28

Microservices architecture (MSA) is increasingly popular with software architects and engineers as it accelerates software solution design, development, and deployment in a risk-free manner. Placing a software system into a production environment is elegantly simplified and sped up with the use of MSA development platforms, runtime environments, acceleration engines, design patterns, integrated frameworks, and related tools. The MSA ecosystem is expanding with third-party products that automate as many tasks as possible. MSA is being positioned as the enterprise-grade and agile-application design method. This book covers in-depth the features and facilities that make up the MSA ecosystem. Beginning with an overview of Service-Oriented Architecture (SOA) that covers the Common Object Request Broker Architecture (CORBA), Distributed Component Object Model (DCOM),

and Remote Method Invocation (RMI), the book explains the basic essentials of MSA and the continuous delivery of applications to customers. The book gives software developers insight into: Current and emerging communication models Key architectural elements of MSA-based applications Designing efficient APIs for microservices MSA middleware platforms such as REST, SOAP, Apache Thrift, and gRPC Microservice discovery and the API gateway Service orchestration and choreography for composing individual services to achieve a useful business process Database transactions in MSA-centric applications Design, composition, security, and deployment patterns MSA security Modernizing legacy applications The book concludes with a chapter on composing and building powerful microservices. With the exponential growth of IoT devices, microservices are being developed and deployed on resource-constrained but resource-intensive devices in order to provide people-centric applications. The

book discusses the challenges of these applications. Finally, the book looks at the role of microservices in smart environments and upcoming trends including ubiquitous yet disappearing microservices.

Implementation Patterns - Kent Beck
2007-10-23

Software Expert Kent Beck Presents a Catalog of Patterns Infinitely Useful for Everyday Programming Great code doesn't just function: it clearly and consistently communicates your intentions, allowing other programmers to understand your code, rely on it, and modify it with confidence. But great code doesn't just happen. It is the outcome of hundreds of small but critical decisions programmers make every single day. Now, legendary software innovator Kent Beck—known worldwide for creating Extreme Programming and pioneering software patterns and test-driven development—focuses on these critical decisions, unearthing powerful “implementation patterns” for writing programs

that are simpler, clearer, better organized, and more cost effective. Beck collects 77 patterns for handling everyday programming tasks and writing more readable code. This new collection of patterns addresses many aspects of development, including class, state, behavior, method, collections, frameworks, and more. He uses diagrams, stories, examples, and essays to engage the reader as he illuminates the patterns. You'll find proven solutions for handling everything from naming variables to checking exceptions.

Digital Transformation in Cloud Computing

- Alibaba Cloud Intelligence GTS 2022-05-31

With the rapid development of cloud computing and digital transformation, well-designed cloud-based architecture is always in urgent need. Illustrated by project cases from the Chinese technology company Alibaba, this book elaborates how to design a cloud-based application system and build them on the cloud. Cloud computing is far from being just a

resource provider; it offers database, storage and container services that can help to leverage key advantages for business growth. Based on this notion, authors from the Alibaba Cloud Global Technology Services introduce new concepts and cutting-edge technology in the field, including cloud-native, high-availability and disaster tolerance design on cloud, business middle office, data middle office, and enterprise digital transformation. Resting upon Alibaba's years of practice and achievements in the field of cloud technology, the volume also elucidates the methodology and practice solutions of digital construction, including methodology, product tools, technical processes, architecture design, cloud application capacity assessment and optimization, etc. The book will appeal to researchers, students, and especially IT practitioners, professionals, and managers interested in cloud computing, digital transformation, cloud migration, business middle office, data middle office, as well as the Alibaba

Cloud itself.

Microservices, IoT and Azure - Bob Familiar
2015-10-20

This book provides practical guidance for adopting a high velocity, continuous delivery process to create reliable, scalable, Software-as-a-Service (SaaS) solutions that are designed and built using a microservice architecture, deployed to the Azure cloud, and managed through automation. *Microservices, IoT, and Azure* offers software developers, architects, and operations engineers' step-by-step directions for building SaaS applications—applications that are available 24x7, work on any device, scale elastically, and are resilient to change—through code, script, exercises, and a working reference implementation. The book provides a working definition of microservices and contrasts this approach with traditional monolithic Layered Architecture. A fictitious, homebiomedical startup is used to demonstrate microservice architecture and automation capabilities for

cross-cutting and business services as well as connected device scenarios for Internet of Things (IoT). Several Azure PaaS services are detailed including Storage, SQL Database, DocumentDb, Redis Cache, Cloud Services, Web API's, API Management, IoT Hub, IoT Suite, Event Hub, and Stream Analytics. Finally the book looks to the future and examines Service Fabric to see how microservices are becoming the de facto approach to building reliable software in the cloud. In this book, you'll learn: What microservices are and why are they're a compelling architecture pattern for SaaS applications How to design, develop, and deploy microservices using Visual Studio, PowerShell, and Azure Microservice patterns for cross-cutting concerns and business capabilities Microservice patterns for Internet of Things and big data analytics solutions using IoT Hub, Event Hub, and Stream Analytics Techniques for automating microservice provisioning, building, and deployment What Service Fabric is and how

it's the future direction for microservices on Microsoft Azure
POJOs in Action - Chris Richardson 2006-02-02
The standard platform for enterprise application development has been EJB but the difficulties of working with it caused it to become unpopular. They also gave rise to lightweight technologies such as Hibernate, Spring, JDO, iBATIS and others, all of which allow the developer to work directly with the simpler POJOs. Now EJB version 3 solves the problems that gave EJB 2 a black eye-it too works with POJOs. POJOs in Action describes the new, easier ways to develop enterprise Java applications. It describes how to make key design decisions when developing business logic using POJOs, including how to organize and encapsulate the business logic, access the database, manage transactions, and handle database concurrency. This book is a new-generation Java applications guide: it enables readers to successfully build lightweight applications that are easier to develop, test, and

maintain.

Production-Ready Microservices - Susan J. Fowler 2016-11-30

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

Microservices, IoT and Azure - Bob Familiar
2015-11-07

This book provides practical guidance for adopting a high velocity, continuous delivery process to create reliable, scalable, Software-as-a-Service (SaaS) solutions that are designed and built using a microservice architecture, deployed to the Azure cloud, and managed through automation. Microservices, IoT, and Azure offers software developers, architects, and operations engineers' step-by-step directions for building SaaS applications—applications that are

available 24x7, work on any device, scale elastically, and are resilient to change-through code, script, exercises, and a working reference implementation. The book provides a working definition of microservices and contrasts this approach with traditional monolithic Layered Architecture. A fictitious, homebiomedical startup is used to demonstrate microservice architecture and automation capabilities for cross-cutting and business services as well as connected device scenarios for Internet of Things (IoT). Several Azure PaaS services are detailed including Storage, SQL Database, DocumentDb, Redis Cache, Cloud Services, Web API's, API Management, IoT Hub, IoT Suite, Event Hub, and Stream Analytics. Finally the book looks to the future and examines Service Fabric to see how microservices are becoming the de facto approach to building reliable software in the cloud. In this book, you'll learn: What microservices are and why are they're a compelling architecture pattern for SaaS

applications How to design, develop, and deploy microservices using Visual Studio, PowerShell, and Azure Microservice patterns for cross-cutting concerns and business capabilities Microservice patterns for Internet of Things and big data analytics solutions using IoT Hub, Event Hub, and Stream Analytics Techniques for automating microservice provisioning, building, and deployment What Service Fabric is and how it's the future direction for microservices on Microsoft Azure

Microservices - Antonio Bucchiarone 2019-12-11

This book describes in contributions by scientists and practitioners the development of scientific concepts, technologies, engineering techniques and tools for a service-based society. The focus is on microservices, i.e cohesive, independent processes deployed in isolation and equipped with dedicated memory persistence tools, which interact via messages. The book is structured in six parts. Part 1 "Opening" analyzes the new (and old) challenges including

service design and specification, data integrity, and consistency management and provides the introductory information needed to successfully digest the remaining parts. Part 2 "Migration" discusses the issue of migration from monoliths to microservices and their loosely coupled architecture. Part 3 "Modeling" introduces a catalog and a taxonomy of the most common microservices anti-patterns and identifies common problems. It also explains the concept of RESTful conversations and presents insights from studying and developing two further modeling approaches. Next, Part 4 is dedicated to various aspects of "Development and Deployment". Part 5 then covers "Applications" of microservices, presenting case studies from Industry 4.0, Netflix, and customized SaaS examples. Eventually, Part 6 focuses on "Education" and reports on experiences made in special programs, both at academic level as a master program course and for practitioners in an industrial training. As only a joint effort

between academia and industry can lead to the release of modern paradigm-based programming languages, and subsequently to the deployment of robust and scalable software systems, the book mainly targets researchers in academia and industry who develop tools and applications for microservices.

Microservices Security in Action - Wajjakkara Kankanamge Anthony Nuwan Dias 2020-07-11

"A complete guide to the challenges and solutions in securing microservices architectures." —Massimo Siani, FinDynamic

Key Features

- Secure microservices infrastructure and code
- Monitoring, access control, and microservice-to-microservice communications
- Deploy securely using Kubernetes, Docker, and the Istio service mesh.
- Hands-on examples and exercises using Java and Spring Boot

Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. *Microservices Security in Action* teaches you how to address

microservices-specific security challenges throughout the system. This practical guide includes plentiful hands-on exercises using industry-leading open-source tools and examples using Java and Spring Boot. About The Book

Design and implement security into your microservices from the start. *Microservices Security in Action* teaches you to assess and address security challenges at every level of a Microservices application, from APIs to infrastructure. You'll find effective solutions to common security problems, including throttling and monitoring, access control at the API gateway, and microservice-to-microservice communication. Detailed Java code samples, exercises, and real-world business use cases ensure you can put what you've learned into action immediately. What You Will Learn

- Microservice security concepts
- Edge services with an API gateway
- Deployments with Docker, Kubernetes, and Istio
- Security testing at the code level
- Communications with HTTP, gRPC,

and Kafka This Book Is Written For For experienced microservices developers with intermediate Java skills. About The Author Prabath Siriwardena is the vice president of security architecture at WSO2. Nuwan Dias is the director of API architecture at WSO2. They have designed secure systems for many Fortune 500 companies. Table of Contents PART 1 OVERVIEW 1 Microservices security landscape 2 First steps in securing microservices PART 2 EDGE SECURITY 3 Securing north/south traffic with an API gateway 4 Accessing a secured microservice via a single-page application 5 Engaging throttling, monitoring, and access control PART 3 SERVICE-TO-SERVICE COMMUNICATIONS 6 Securing east/west traffic with certificates 7 Securing east/west traffic with JWT 8 Securing east/west traffic over gRPC 9 Securing reactive microservices PART 4 SECURE DEPLOYMENT 10 Conquering container security with Docker 11 Securing microservices on Kubernetes 12 Securing

microservices with Istio service mesh PART 5 SECURE DEVELOPMENT 13 Secure coding practices and automation

Building Microservices with .NET Core - Gaurav Kumar Aroraa 2017-06-14

Architect your .NET applications by breaking them into really small pieces—microservices—using this practical, example-based guide About This Book Start your microservices journey and understand a broader perspective of microservices development Build, deploy, and test microservices using ASP.Net MVC, Web API, and Microsoft Azure Cloud Get started with reactive microservices and understand the fundamentals behind it Who This Book Is For This book is for .NET Core developers who want to learn and understand microservices architecture and implement it in their .NET Core applications. It's ideal for developers who are completely new to microservices or have just a theoretical understanding of this architectural approach

and want to gain a practical perspective in order to better manage application complexity. What You Will Learn Compare microservices with monolithic applications and SOA Identify the appropriate service boundaries by mapping them to the relevant bounded contexts Define the service interface and implement the APIs using ASP.NET Web API Integrate the services via synchronous and asynchronous mechanisms Implement microservices security using Azure Active Directory, OpenID Connect, and OAuth 2.0 Understand the operations and scaling of microservices in .NET Core Understand the testing pyramid and implement consumer-driven contract using pact net core Understand what the key features of reactive microservices are and implement them using reactive extension In Detail Microservices is an architectural style that promotes the development of complex applications as a suite of small services based on business capabilities. This book will help you identify the appropriate service boundaries

within the business. We'll start by looking at what microservices are, and what the main characteristics are. Moving forward, you will be introduced to real-life application scenarios, and after assessing the current issues, we will begin the journey of transforming this application by splitting it into a suite of microservices. You will identify the service boundaries, split the application into multiple microservices, and define the service contracts. You will find out how to configure, deploy, and monitor microservices, and configure scaling to allow the application to quickly adapt to increased demand in the future. With an introduction to the reactive microservices, you strategically gain further value to keep your code base simple, focusing on what is more important rather than the messy asynchronous calls. Style and approach This guide serves as a stepping stone that helps .NET Core developers in their microservices architecture. This book provides just enough theory to understand the concepts

and apply the examples.

Evolve the Monolith to Microservices with Java and Node - Sandro De Santis 2016-12-05

Microservices is an architectural style in which large, complex software applications are composed of one or more smaller services. Each of these microservices focuses on completing one task that represents a small business capability. These microservices can be developed in any programming language. This IBM® Redbooks® publication shows how to break out a traditional Java EE application into separate microservices and provides a set of code projects that illustrate the various steps along the way. These code projects use the IBM WebSphere® Application Server Liberty, IBM API Connect™, IBM Bluemix®, and other Open Source Frameworks in the microservices ecosystem. The sample projects highlight the evolution of monoliths to microservices with Java and Node.

Microservices from Theory to Practice:

Creating Applications in IBM Bluemix Using the Microservices Approach - Shahir Daya

2016-04-04

Microservices is an architectural style in which large, complex software applications are composed of one or more smaller services. Each of these microservices focuses on completing one task that represents a small business capability. These microservices can be developed in any programming language. They communicate with each other using language-neutral protocols, such as Representational State Transfer (REST), or messaging applications, such as IBM® MQ Light. This IBM Redbooks® publication gives a broad understanding of this increasingly popular architectural style, and provides some real-life examples of how you can develop applications using the microservices approach with IBM Bluemix™. The source code for all of these sample scenarios can be found on GitHub (<https://github.com/>). The book also presents

some case studies from IBM products. We explain the architectural decisions made, our experiences, and lessons learned when redesigning these products using the microservices approach. Information technology (IT) professionals interested in learning about microservices and how to develop or redesign an application in Bluemix using microservices can benefit from this book.

Microservices: Up and Running - Ronnie Mitra
2020-11-25

Microservices architectures offer faster change speeds, better scalability, and cleaner, evolvable system designs. But implementing your first microservices architecture is difficult. How do you make myriad choices, educate your team on all the technical details, and navigate the organization to a successful execution to maximize your chance of success? With this book, authors Ronnie Mitra and Irakli Nadareishvili provide step-by-step guidance for building an effective microservices architecture.

Architects and engineers will follow an implementation journey based on techniques and architectures that have proven to work for microservices systems. You'll build an operating model, a microservices design, an infrastructure foundation, and two working microservices, then put those pieces together as a single implementation. For anyone tasked with building microservices or a microservices architecture, this guide is invaluable. Learn an effective and explicit end-to-end microservices system design Define teams, their responsibilities, and guidelines for working together Understand how to slice a big application into a collection of microservices Examine how to isolate and embed data into corresponding microservices Build a simple yet powerful CI/CD pipeline for infrastructure changes Write code for sample microservices Deploy a working microservices application on Amazon Web Services [Theory and Practice of Formal Methods](#) - Erika Ábrahám 2016-03-12

This Festschrift volume has been published in honor of Frank de Boer, on the occasion of his 60th birthday. Frank S. de Boer is a prominent member of the research community in formal methods and theoretical computer science. A brief look at his lengthy publication list reveals a broad area of interest and a versatile modus operandi with: logic and constraint programming; deductive proof systems, soundness, and completeness; semantics, compositionality, and full abstraction; process algebra and decidability; multithreading and actor-based concurrency; agent programming, ontologies, and modal logic; real-time systems, timed automata, and schedulability; enterprise architectures, choreography, and coordination; testing and runtime monitoring; and cloud computing and service-level agreements. For a while, he also liked failures, especially in semantics, and optimistically concluded with the failure of failures. In fact, Frank has an opportunistic approach to research. Rather than

seeing obstacles, he finds opportunities.

Microservices in Action - Morgan Bruce

2018-10-03

Summary *Microservices in Action* is a practical book about building and deploying microservice-based applications. Written for developers and architects with a solid grasp of service-oriented development, it tackles the challenge of putting microservices into production. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Invest your time in designing great applications, improving infrastructure, and making the most out of your dev teams. Microservices are easier to write, scale, and maintain than traditional enterprise applications because they're built as a system of independent components. Master a few important new patterns and processes, and you'll be ready to develop, deploy, and run production-quality microservices. About the Book *Microservices in Action* teaches you how to

write and maintain microservice-based applications. Created with day-to-day development in mind, this informative guide immerses you in real-world use cases from design to deployment. You'll discover how microservices enable an efficient continuous delivery pipeline, and explore examples using Kubernetes, Docker, and Google Container Engine. What's inside An overview of microservice architecture Building a delivery pipeline Best practices for designing multi-service transactions and queries Deploying with containers Monitoring your microservices About the Reader Written for intermediate developers familiar with enterprise architecture and cloud platforms like AWS and GCP. About the Author Morgan Bruce and Paulo A. Pereira are experienced engineering leaders. They work daily with microservices in a production environment, using the techniques detailed in this book. Table of Contents PART 1 - The lay of the land Designing and running microservices

Microservices at SimpleBank PART 2 - Design Architecture of a microservice application Designing new features Transactions and queries in microservices Designing reliable services Building a reusable microservice framework PART 3 - Deployment Deploying microservices Deployment with containers and schedulers Building a delivery pipeline for microservices PART 4 - Observability and ownership Building a monitoring system Using logs and traces to understand behavior Building microservice teams

Implementing Domain-driven Design -

Vaughn Vernon 2013

Vaughn Vernon presents concrete and realistic domain-driven design (DDD) techniques through examples from familiar domains, such as a Scrum-based project management application that integrates with a collaboration suite and security provider. Each principle is backed up by realistic Java examples, and all content is tied together by a single case study of a company

charged with delivering a set of advanced software systems with DDD.

Designing Microservices Platforms with NATS -

Chanaka Fernando 2021-11-19

A complete reference for designing and building scalable microservices platforms with NATS messaging technology for inter-service

communication with security and observability

Key Features Understand the use of a messaging

backbone for inter-service communication in

microservices architecture Design and build a

real-world microservices platform with NATS as

the messaging backbone using the Go

programming language Explore security,

observability, and best practices for building a

microservices platform with NATS Book

Description Building a scalable microservices

platform that caters to business demands is

critical to the success of that platform. In a

microservices architecture, inter-service

communication becomes a bottleneck when the

platform scales. This book provides a reference

architecture along with a practical example of

how to implement it for building microservices-

based platforms with NATS as the messaging

backbone for inter-service communication. In

Designing Microservices Platforms with NATS,

you'll learn how to build a scalable and

manageable microservices platform with NATS.

The book starts by introducing concepts relating

to microservices architecture, inter-service

communication, messaging backbones, and the

basics of NATS messaging. You'll be introduced

to a reference architecture that uses these

concepts to build a scalable microservices

platform and guided through its implementation.

Later, the book touches on important aspects of

platform securing and monitoring with the help

of the reference implementation. Finally, the

book concludes with a chapter on best practices

to follow when integrating with existing

platforms and the future direction of

microservices architecture and NATS messaging

as a whole. By the end of this microservices

book, you'll have developed the skills to design and implement microservices platforms with NATS. What you will learn Understand the concepts of microservices architecture Get to grips with NATS messaging technology Handle transactions and message delivery guarantees with microservices Implement a reference architecture for microservices using NATS Discover how to improve the platform's security and observability Explore how a NATS microservices platform integrates with an enterprise ecosystem Who this book is for This book is for enterprise software architects and developers who want to gain hands-on microservices experience for designing, implementing, and managing complex distributed systems with microservices architecture concepts. Intermediate-level experience in any programming language and software architecture is required to make the most of this book.

Building Server-side and Microservices with

Go - Dušan Stojanović 2021-09-21

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
Microservice Patterns and Best Practices - Vinicius Feitosa Pacheco 2018-01-29
Explore the concepts and tools you need to discover the world of microservices with various design patterns Key Features Get to grips with

the microservice architecture and build enterprise-ready microservice applications Learn design patterns and the best practices while building a microservice application Obtain hands-on techniques and tools to create high-performing microservices resilient to possible fails Book Description Microservices are a hot trend in the development world right now. Many enterprises have adopted this approach to achieve agility and the continuous delivery of applications to gain a competitive advantage. This book will take you through different design patterns at different stages of the microservice application development along with their best practices. Microservice Patterns and Best Practices starts with the learning of microservices key concepts and showing how to make the right choices while designing microservices. You will then move onto internal microservices application patterns, such as caching strategy, asynchronism, CQRS and event sourcing, circuit breaker, and bulkheads.

As you progress, you'll learn the design patterns of microservices. The book will guide you on where to use the perfect design pattern at the application development stage and how to break monolithic application into microservices. You will also be taken through the best practices and patterns involved while testing, securing, and deploying your microservice application. At the end of the book, you will easily be able to create interoperable microservices, which are testable and prepared for optimum performance. What you will learn How to break monolithic application into microservices Implement caching strategies, CQRS and event sourcing, and circuit breaker patterns Incorporate different microservice design patterns, such as shared data, aggregator, proxy, and chained Utilize consolidate testing patterns such as integration, signature, and monkey tests Secure microservices with JWT, API gateway, and single sign on Deploy microservices with continuous integration or delivery, Blue-Green deployment

Who this book is for This book is for architects and senior developers who would like implement microservice design patterns in their enterprise application development. The book assumes some prior programming knowledge.

Microservices with Azure - Namit Tanasseri
2017-06-28

Architect enterprise-grade, Microservice-based solutions using Microsoft Azure Service Fabric. About This Book Explore architectural patterns for building modern day Microservice-based systems Learn about Microsoft Service Fabric as a platform to host distributed Microservices Discover multiple options for hosting Microservices on heterogeneous, cross-platform environments Learn to configure Azure Service Fabric clusters for enterprise-grade service deployments Who This Book Is For The book is aimed at IT architects, system administrators, and DevOps engineers who have a basic knowledge of the Microsoft Azure platform and are working on, or are curious about, the

concepts of Microservices and Microservice architecture. What You Will Learn Understand the basics of Microservices and how Microsoft Azure fits into the equation Master Azure Service Fabric architecture and services Explore Azure Service Fabric application programming models Comprehensive study of various architecture patterns for building enterprise-grade Microservices Manage and deploy Microservices on Azure Service Fabric An insight into the future of Microservices with containers and serverless computing In Detail Microsoft Azure is rapidly evolving and is widely used as a platform on which you can build Microservices that can be deployed on-premise and on-cloud heterogeneous environments through Microsoft Azure Service Fabric. This book will help you understand the concepts of Microservice application architecture and build highly maintainable and scalable enterprise-grade applications using the various services in Microsoft Azure Service Fabric. We will begin by

understanding the intricacies of the Microservices architecture and its advantages over the monolithic architecture and Service Oriented Architecture (SOA) principles. We will present various scenarios where Microservices should be used and walk you through the architectures of Microservice-based applications. Next, you will take an in-depth look at Microsoft Azure Service Fabric, which is the best-in-class platform for building Microservices. You will explore how to develop and deploy sample applications on Microsoft Azure Service Fabric to gain a thorough understanding of it. Building Microservice-based application is complicated. Therefore, we will take you through several design patterns that solve the various challenges associated with realizing the Microservices architecture in enterprise applications. Each pattern will be clearly illustrated with examples that you can keep referring to when designing applications. Finally, you will be introduced to advanced

topics such as Serverless computing and DevOps using Service Fabric, to help you undertake your next venture with confidence. Style and approach This book introduces its readers to the concept of Microservices and Microsoft Azure Service Fabric as a distributed platform to host enterprise-grade Microservices. It then addresses common architectural challenges associated with the Microservice architecture, using proven architectural patterns.

Microservices with Clojure - Anuj Kumar
2018-01-25

The common patterns and practices of the microservice architecture and their application using the Clojure programming language. Key Features Relevance of the microservice architecture and benefits of Clojure's functional and simple features to implement it. Learn best practices and common principles to avoid common pitfalls while developing microservices. Learn how to use Pedestal to build your next microservices, secure them using JWT, and

monitor them using the ELK stack Book Description The microservice architecture is sweeping the world as the de facto pattern with which to design and build scalable, easy-to-maintain web applications. This book will teach you common patterns and practices, and will show you how to apply these using the Clojure programming language. This book will teach you the fundamental concepts of architectural design and RESTful communication, and show you patterns that provide manageable code that is supportable in development and at scale in production. We will provide you with examples of how to put these concepts and patterns into practice with Clojure. This book will explain and illustrate, with practical examples, how teams of all sizes can start solving problems with microservices. You will learn the importance of writing code that is asynchronous and non-blocking and how Pedestal helps us do this. Later, the book explains how to build Reactive microservices in

Clojure that adhere to the principles underlying the Reactive Manifesto. We finish off by showing you various ways to monitor, test, and secure your microservices. By the end, you will be fully capable of setting up, modifying, and deploying a microservice with Clojure and Pedestal. What you will learn Explore the pros and cons of monolithic and microservice architectures Use Clojure to effectively build a real-life application using Microservices Gain practical knowledge of the Clojure Pedestal framework and how to use it to build Microservices Explore various persistence patterns and learn how to use Apache Kafka to build event-driven microservice architectures Secure your Microservices using JWT Monitor Microservices at scale using the ELK stack Deploy Microservices at scale using container orchestration platforms such as Kubernetes Who this book is for You should have a working knowledge of programming in Clojure. However, no knowledge of RESTful architecture, microservices, or web services is expected. If

you are looking to apply techniques to your own projects, taking your first steps into microservice architecture, this book is for you.

[Practical Microservices Architectural Patterns](#) - Binildas Christudas 2019-06-25

Take your distributed applications to the next level and see what the reference architectures associated with microservices can do for you. This book begins by showing you the distributed computing architecture landscape and provides an in-depth view of microservices architecture. Following this, you will work with CQRS, an essential pattern for microservices, and get a view of how distributed messaging works. Moving on, you will take a deep dive into Spring Boot and Spring Cloud. Coming back to CQRS, you will learn how event-driven microservices work with this pattern, using the Axon 2 framework. This takes you on to how transactions work with microservices followed by advanced architectures to address non-functional aspects such as high availability and

scalability. In the concluding part of the book you develop your own enterprise-grade microservices application using the Axon framework and true BASE transactions, while making it as secure as possible. What You Will Learn Shift from monolith architecture to microservices Work with distributed and ACID transactions Build solid architectures without two-phase commit transactions Discover the high availability principles in microservices Who This Book Is For Java developers with basic knowledge of distributed and multi-threaded application architecture, and no knowledge of Spring Boot or Spring Cloud. Knowledge of CQRS and event-driven architecture is not mandatory as this book will cover these in depth.

Building Microservices with .NET Core 2.0 - Gaurav Arora 2017-12-22

Architect your .NET applications by breaking them into really small pieces - microservices - using this practical, example-based guide. Key Features Start your microservices journey and

get a broader perspective on microservices development using C# 7.0 with .NET Core 2.0 Build, deploy, and test microservices using ASP.Net Core, ASP.NET Core API, and Microsoft Azure Cloud Get the basics of reactive microservices Book Description The microservices architectural style promotes the development of complex applications as a suite of small services based on business capabilities. This book will help you identify the appropriate service boundaries within your business. We'll start by looking at what microservices are and their main characteristics. Moving forward, you will be introduced to real-life application scenarios; after assessing the current issues, we will begin the journey of transforming this application by splitting it into a suite of microservices using C# 7.0 with .NET Core 2.0. You will identify service boundaries, split the application into multiple microservices, and define service contracts. You will find out how to configure, deploy, and monitor microservices,

and configure scaling to allow the application to quickly adapt to increased demand in the future. With an introduction to reactive microservices, you'll strategically gain further value to keep your code base simple, focusing on what is more important rather than on messy asynchronous calls. What you will learn Get acquainted with Microsoft Azure Service Fabric Compare microservices with monolithic applications and SOA Learn Docker and Azure API management Define a service interface and implement APIs using ASP.NET Core 2.0 Integrate services using a synchronous approach via RESTful APIs with ASP.NET Core 2.0 Implement microservices security using Azure Active Directory, OpenID Connect, and OAuth 2.0 Understand the operation and scaling of microservices in .NET Core 2.0 Understand the key features of reactive microservices and implement them using reactive extensions Who this book is for This book is for .NET Core developers who want to learn and understand the microservices

architecture and implement it in their .NET Core applications. It's ideal for developers who are completely new to microservices or just have a theoretical understanding of this architectural approach and want to gain a practical perspective in order to better manage application complexities.

Architecting for Scale - Lee Atchison
2016-07-11

Every day, companies struggle to scale critical applications. As traffic volume and data demands increase, these applications become more complicated and brittle, exposing risks and compromising availability. This practical guide shows IT, devops, and system reliability managers how to prevent an application from becoming slow, inconsistent, or downright unavailable as it grows. Scaling isn't just about handling more users; it's also about managing risk and ensuring availability. Author Lee Atchison provides basic techniques for building applications that can handle huge quantities of

traffic, data, and demand without affecting the quality your customers expect. In five parts, this book explores: Availability: learn techniques for building highly available applications, and for tracking and improving availability going forward Risk management: identify, mitigate, and manage risks in your application, test your recovery/disaster plans, and build out systems that contain fewer risks Services and microservices: understand the value of services for building complicated applications that need to operate at higher scale Scaling applications: assign services to specific teams, label the criticalness of each service, and devise failure scenarios and recovery plans Cloud services: understand the structure of cloud-based services, resource allocation, and service distribution

Monolith to Microservices - Sam Newman
2019-11-14

How do you detangle a monolithic system and migrate it to a microservice architecture? How

do you do it while maintaining business-as-usual? As a companion to Sam Newman's extremely popular Building Microservices, this new book details a proven method for transitioning an existing monolithic system to a microservice architecture. With many illustrative examples, insightful migration patterns, and a bevy of practical advice to transition your monolith enterprise into a microservice operation, this practical guide covers multiple scenarios and strategies for a successful migration, from initial planning all the way through application and database decomposition. You'll learn several tried and tested patterns and techniques that you can use as you migrate your existing architecture. Ideal for organizations looking to transition to microservices, rather than rebuild Helps companies determine whether to migrate, when to migrate, and where to begin Addresses communication, integration, and the migration of legacy systems Discusses multiple migration

patterns and where they apply Provides database migration examples, along with synchronization strategies Explores application decomposition, including several architectural refactoring patterns Delves into details of database decomposition, including the impact of breaking referential and transactional integrity, new failure modes, and more

Clean Architecture - Robert C. Martin

2017-09-12

Practical Software Architecture Solutions from the Legendary Robert C. Martin ("Uncle Bob") By applying universal rules of software architecture, you can dramatically improve developer productivity throughout the life of any software system. Now, building upon the success of his best-selling books Clean Code and The Clean Coder, legendary software craftsman Robert C. Martin ("Uncle Bob") reveals those rules and helps you apply them. Martin's Clean Architecture doesn't merely present options. Drawing on over a half-century of experience in

software environments of every imaginable type, Martin tells you what choices to make and why they are critical to your success. As you've come to expect from Uncle Bob, this book is packed with direct, no-nonsense solutions for the real challenges you'll face—the ones that will make or break your projects. Learn what software architects need to achieve—and core disciplines and practices for achieving it Master essential software design principles for addressing function, component separation, and data management See how programming paradigms impose discipline by restricting what developers can do Understand what's critically important and what's merely a "detail" Implement optimal, high-level structures for web, database, thick-client, console, and embedded applications Define appropriate boundaries and layers, and organize components and services See why designs and architectures go wrong, and how to prevent (or fix) these failures Clean Architecture is essential reading for every current or aspiring

software architect, systems analyst, system designer, and software manager—and for every programmer who must execute someone else's designs. Register your product for convenient access to downloads, updates, and/or corrections as they become available.

Building Evolutionary Architectures - Neal Ford
2017-09-18

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.

Microservices for the Enterprise - Kasun Indrasiri
2018-11-14

Understand the key challenges and solutions around building microservices in the enterprise application environment. This book provides a comprehensive understanding of microservices architectural principles and how to use microservices in real-world scenarios. Architectural challenges using microservices with service integration and API management are presented and you learn how to eliminate the use of centralized integration products such as the enterprise service bus (ESB) through the use of composite/integration microservices. Concepts in the book are supported with use cases, and emphasis is put on the reality that most of you are implementing in a “brownfield” environment in which you must implement microservices alongside legacy applications with minimal disruption to your business. *Microservices for the Enterprise* covers state-of-the-art techniques around microservices messaging, service development and description, service discovery, governance, and data

management technologies and guides you through the microservices design process. Also included is the importance of organizing services as core versus atomic, composite versus integration, and API versus edge, and how such organization helps to eliminate the use of a central ESB and expose services through an API gateway. What You'll Learn Design and develop microservices architectures with confidence Put into practice the most modern techniques around messaging technologies Apply the Service Mesh pattern to overcome inter-service communication challenges Apply battle-tested microservices security patterns to address real-world scenarios Handle API management, decentralized data management, and observability Who This Book Is For Developers and DevOps engineers responsible for implementing applications around a microservices architecture, and architects and analysts who are designing such systems *Microservice Architecture* - Irakli Nadareishvili

2016-07-18

Have you heard about the tremendous success Amazon and Netflix have had by switching to a microservice architecture? Are you wondering how this can benefit your company? Or are you skeptical about how it might work? If you've answered yes to any of these questions, this practical book will benefit you. You'll learn how to take advantage of the microservice architectural style for building systems, and learn from the experiences of others to adopt and execute this approach most successfully.

Designing Microservices Using Django -

Shayank Jain 2020-04-15

A step-by-step that will help you build Microservices architecture using Django and Python
KEY FEATURES - Understand in-depth the fundamentals of Microservices - Learn how to create and use Django APIs - Use web technology such as Nginx, Gunicorn, UWSGI, and Postgresql to deploy a Django project
DESCRIPTION Microservices architectures solve

the multiple problems of software architecture. Django is a full-stack development framework, written in python. This book includes everything necessary for web application development; from the user views to the information storage: model, persistence, relationships, controllers, forms, validations, rest API and a very useful back office. Furthermore, the book will show how to build production-ready microservices. It will help you create restful APIs and get familiar with Redis and Celery. Towards the end, the book will show how to secure these services and deploy these microservices using Django. Lastly, it will show how to scale our services. WHAT WILL YOU LEARN - Understand the basics of Python, Django, and Microservices - Learn how to deploy Microservices with Django - Get familiar with Microservices Architecture - Designing, Principles, and Requirements - Implement Asynchronous task, JWT API Authentication and AWS Serverless with Microservice architecture WHO THIS BOOK IS

FOR This book is for those beginners who want to make their careers in software development. It starts from the basics of python and Django, takes the reader to the Microservices architecture. Table of Contents 1. Basic of Python 2. Major Pillars of OOPS with Python 3. Getting Started with Django 4. API Development with Django 5. Database Modeling with Django 6. First Django API Deployment on Web 7. Django Project Deployment on various web servers 8. What are Microservices 9. Designing Microservice Systems 10. Service Authentication 11. Microservices Deployment With Django 12. JWT Auth Service 13. Asynchronous Tasks 14. AWS Serverless 15. How to Adopt Microservices in Practice

Building Microservices - Sam Newman
2015-02-02

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.

Microservice Architecture - Irakli Nadareishvili 2016-07-18

Microservices can have a positive impact on your enterprise—just ask Amazon and Netflix—but you can fall into many traps if you don't approach them in the right way. This practical guide covers the entire microservices landscape, including the principles, technologies, and methodologies of this unique,

modular style of system building. You'll learn about the experiences of organizations around the globe that have successfully adopted microservices. In three parts, this book explains how these services work and what it means to build an application the Microservices Way. You'll explore a design-based approach to microservice architecture with guidance for implementing various elements. And you'll get a set of recipes and practices for meeting practical, organizational, and cultural challenges to microservice adoption. Learn how microservices can help you drive business objectives Examine the principles, practices, and culture that define microservice architectures Explore a model for creating complex systems and a design process for building a microservice architecture Learn the fundamental design concepts for individual microservices Delve into the operational elements of a microservices architecture, including containers and service discovery Discover how to handle the challenges

of introducing microservice architecture in your organization

The Art of Scalability - Martin L. Abbott
2015-05-23

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

Embracing Microservices Design - Ovais

Mehboob Ahmed Khan 2021-10-29

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

learnDiscover the responsibilities of different individuals involved in a microservices initiativeAvoid the common mistakes in architecting microservices for scalability and resiliencyUnderstand the importance of domain-driven design when developing microservicesIdentify the common pitfalls involved in migrating monolithic applications to microservicesExplore communication strategies, along with their potential drawbacks and alternativesDiscover the importance of adopting governance, security, and monitoringUnderstand the role of CI/CD and testingWho 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.

Python Microservices Development - Tarek
Ziade 2017-07-25

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 an 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.

Developing Microservices Architecture on Microsoft Azure with Open Source

Technologies - Arvind Chandaka 2021-01-27
Developing Microservices Architecture on Azure with Open Source Technologies is a complete, step-by-step guide to building flexible microservices architectures by leveraging services provided by the Microsoft Azure cloud platform, and key open-source technologies such as Java, Node.JS, .NET Core and Angular. Expert Microsoft consultants Ovais Mehboob and Arvind Chandaka guide students step by step through a realistic case study project that illuminates key technical implementation tasks for establishing end to end infrastructure, developing cloud-native applications, automating deployment, and realizing value.