

Microservices

Konzeption und Design

Microservices Konzeption Design Mitp Professional

Sean Whitesell,Rob Richardson

Microservices Konzeption Design Mitp Professional:

Intelligent Systems and Applications Kohei Arai, 2021-08-03 This book presents Proceedings of the 2021 Intelligent Systems Conference which is a remarkable collection of chapters covering a wider range of topics in areas of intelligent systems and artificial intelligence and their applications to the real world. The conference attracted a total of 496 submissions from many academic pioneering researchers scientists industrial engineers and students from all around the world. These submissions underwent a double blind peer review process. Of the total submissions 180 submissions have been selected to be included in these proceedings. As we witness exponential growth of computational intelligence in several directions and use of intelligent systems in everyday applications this book is an ideal resource for reporting latest innovations and future of AI. The chapters include theory and application on all aspects of artificial intelligence from classical to intelligent scope. We hope that readers find the book interesting and valuable it provides the state of the art intelligent methods and techniques for solving real world problems along with a vision of the future research.

Architekturpatterns mit Python Harry J. W. Percival, Bob Gregory, 2021-09-04 Bewährte Patterns für komplexe Python Projekte bekannte Architekturpatterns endlich in idiomatischem Python die Komplexität anspruchsvoller Projekte erfolgreich managen den großen Nutzen aus den Testsuiten herausholen. Python's Popularität ist weiterhin und mit Python werden inzwischen komplexe Projekte realisiert. Viele Python Entwicklerinnen und Entwickler interessieren sich deshalb für High Level Design Patterns wie hexagonale Architektur, ereignisgesteuerte Architektur und die strategischen Patterns die durch das Domain Driven Design vorgegeben sind. Das bertragen dieser Patterns nach Python ist allerdings nicht immer einfach. In diesem Praxisbuch stellen Harry Percival und Bob Gregory von MADE com erprobte Architekturpatterns vor die Python Entwickler dabei unterstützen die Komplexität von Anwendungen im Griff zu behalten und den gleichen Nutzen aus den Testsuiten zu ziehen. Jedes Pattern wird durch Beispiele in schriftlichem idiomatischem Python illustriert dabei wird die Weitschweifigkeit der Java oder C Syntax vermieden.

Tagungsband des 3. Kongresses Montage Handhabung Industrieroboter Thorsten Schüppstuhl, Kirsten Tracht, Jörg Franke, 2018-04-04 Der MHI e V ist ein Netzwerk leitender Universitätsprofessoren aus dem deutschsprachigen Raum die sowohl grundlagenorientiert als auch anwendungsnah in der Montage Handhabung und Industrierobotik erfolgreich forschend tätig sind. Die Gründung der Gesellschaft erfolgte im Frühjahr 2012. Der MHI e V hat derzeit 20 Mitglieder die über ihre Institute und Lehrstühle zurzeit ca 1 000 Wissenschaftler repräsentieren. Die geordnete Zielsetzung des MHI e V ist die Förderung der Zusammenarbeit von deutschsprachigen Wissenschaftlerinnen und Wissenschaftlern untereinander sowie mit der Industrie im Bereich Montage Handhabung und Industrierobotik zur Beschleunigung der Forschung Optimierung der Lehre und zur Verbesserung der internationalen Wettbewerbsfähigkeit der deutschen Industrie in diesem Bereich. Das Kolloquium fokussiert auf einen akademischen Austausch auf hohem Niveau um die gewonnenen Forschungsergebnisse zu verteilen synergetische Effekte und Trends zu bestimmen die Akteure persönlich zu verbinden und das Forschungsfeld sowie

die MHI Gemeinschaft zu st rken **Cloud-Transformation** Roland Frank, Gregor Schumacher, Andreas Tamm, 2019-10-01

In diesem Buch lernen Sie wie die Public Cloud die Kostenstrukturen von digitalen Gesch ftsmodellen und damit bestehende M rkte signifikant ver ndert Die Zusammenh nge zwischen den verwendeten Cloud Architekturen der Organisation des Unternehmens und den dadurch m glichen Preis und Gesch ftsmodellen werden bersichtlich und f r den Einsatz im eigenen Unternehmen nutzbar aufbereitet Die Autoren erl utern wie der Reihe nach immer mehr M rkte zu digitalen M rkten werden und welche Rolle die Grenzkosten dabei spielen Sie beschreiben wie die cloudbasierte IT die klassische IT disruptiert Dadurch k nnen kleine Teams mit geringen Investitionen weltweit skalierende Gesch ftsmodelle zu Null Grenzkosten aufbauen Die wirtschaftlichen Effekte werden anhand konkreter Beispiele nachvollziehbar dargestellt Zus tzlich erhalten technische Laien einen berblick welche Faktoren f r die Wettbewerbsf higkeit ihrer digitalen Gesch ftsmodelle besonders wichtig sind und wie Manager diese beeinflussen k nnen Zum Abschluss gibt das Buch Praktikern einen konkreten Leitfaden an die Hand wie die Cloud Transformation im Unternehmen durchgef hrt werden kann Das Buch richtet sich vor allem an F hrungskr fte und Mitarbeiter in den Fachbereichen und der IT die die Cloud Transformation in ihren Unternehmen vorantreiben m chten

Microservices Sam Newman, 2015-07-06 Feingranulare Systeme mit Microservices aufbauen

Design Entwicklung Deployment Testen und Monitoring Sicherheitsaspekte Authentifizierung und Autorisierung Verteilte Systeme haben sich in den letzten Jahren stark ver ndert Gro e monolithische Architekturen werden zunehmend in viele kleine eigenst ndige Microservices aufgespalten Aber die Entwicklung solcher Systeme bringt Herausforderungen ganz eigener Art mit sich Dieses Buch richtet sich an Softwareentwickler die sich ber die zielf hrenden Aspekte von Microservice Systemen wie Design Entwicklung Testen Deployment und Monitoring informieren m chten Sam Newman veranschaulicht und konkretisiert seine ganzheitliche Betrachtung der grundlegenden Konzepte von Microservice Architekturen anhand zahlreicher praktischer Beispiele und Ratschl ge Er geht auf die Themen ein mit denen sich Systemarchitekten und Administratoren bei der Einrichtung Verwaltung und Entwicklung dieser Architekturen in jedem Fall auseinandersetzen m ssen Aus dem Inhalt Vorteile von Microservices Gestaltung von Services Ausrichtung der Systemarchitektur an der Organisationsstruktur M glichkeiten zur Integration von Services Schrittweise Aufspaltung einer monolithischen Codebasis Deployment einzelner Microservices mittels Continuous Integration Testen und Monitoring verteilter Systeme Sicherheitsaspekte Authentifizierung und Autorisierung zwischen Benutzer und Service bzw zwischen Services untereinander Skalierung von Microservice Architekturen Microservice Architekturen besitzen viele interessante Eigenschaften allerdings sind bei der Umstellung so einige Fallstricke zu beachten Dieses Buch wird Ihnen helfen herauszufinden ob Microservices f r Ihre Zwecke geeignet sind und zeigt Ihnen wie Sie die Fallstricke umgehen k nnen Martin Fowler Chief Scientist ThoughtWorks **Microservices (mitp Professional)** Sam Newman, 2015 Feingranulare Systeme mit Microservices aufbauen Design Entwicklung Deployment Testen und Monitoring Sicherheitsaspekte

Authentifizierung und Autorisierung Verteilte Systeme haben sich in den letzten Jahren stark verändert. Große monolithische Architekturen werden zunehmend in viele kleine eigenständige Microservices aufgespalten. Aber die Entwicklung solcher Systeme bringt Herausforderungen ganz eigener Art mit sich. Dieses Buch richtet sich an Softwareentwickler, die sich über die zielführenden Aspekte von Microservice Systemen wie Design, Entwicklung, Testen, Deployment und Monitoring informieren möchten. Irakli Nadareishvili, Ronnie Mitra, Matt McLarty, Mike Amundsen, 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.

Microservices: Patterns and Applications Lucas Krause, 2015-04-01. Microservices Patterns and Applications. Microservices are the next big thing in designing scalable, easy to maintain applications. This book will explain everything you need to know about Microservices to make your next project successful. You will learn Microservice Patterns. This book goes into great detail on all of the Microservice Architecture patterns, including Monolithic Architecture, Microservice Architecture, Service Discovery, Gateway, API Orchestration, API Service Registration, CQRS and Event Sourcing, Bulk Heads, Circuit Breaker, Message Broker. The most important thing about Microservices is when and how to apply a pattern, along with explaining what choices you must make and why. Every system is different, so it is vital to understand a lot of basics before designing and developing your own Microservices. From Monolithic to Microservice, the basics here are how to decompose a Monolithic system into a Microservice and this book shows exactly how this process is completed. Service Oriented Architecture to Microservice. A more common need is to migrate your system from a SOA based architecture to Microservices; there are many advantages and the process is not as straightforward as you would expect. New Microservices. If you want to build a brand new system and leverage the power of Microservices, this book outlines the pitfalls, strategies and tactics needed to make this work for you. It is not as easy as it would seem and you will understand why after reading this book. Microservice Technologies. You'll learn about what technologies you need to use and understand for

successful Microservices Virtualization Containers Docker and Rocket Databases Security JSON Web Tokens Logging Exceptions Caching Timeouts Scalability CAP Cube Platform as a Service PaaS Cloud architecture Technology agnostic Why Microservices Isn't this just the latest buzz word While Microservices may be a recent trend and is gaining traction across the industry as a silver bullet It is not a silver bullet In this book you will learn important reasons why you cannot treat Microservices or any technology or technique as a silver bullet There are tradeoffs and advantages to every architectural decision you will understand the details by reading this book Most importantly you will understand how Microservices is what SOA had promised and never delivered Author Lucas KrauseLucas has been in the technology industry as a consultant contractor architect engineer and manager and understands and has used Microservices successfully to solve his client problems Philosophy of Microservices You'll learn about what the philosophy of Microservices is and why this is important It is critical to understand the philosophy as that is what makes Microservices work at so many other companies and solutions If you are looking to gain an understanding of Microservices along with the patterns and application around the process to implementing them than this is the book for you Ready to learn about Microservices Let's go Want To Be brought up to speed on the latest innovations and techniques with Microservices Want to Understand Why Microservices What Makes Microservices so Special What are the potential pitfalls Why Are Microservices so popular How do I make my projects successful [Embracing Microservices Design](#) Ovais Mehboob Ahmed Khan,Nabil Siddiqui,Timothy Oleson,Mark Fussell,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 replatforming 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

Hands-On Microservices with C#

Matt R. Cole,2018-06-29 Build enterprise grade microservice ecosystems with intensive case studies using C Key Features Learn to build message based microservices Packed with case studies to explain the intricacies of large scale microservices Build scalable modular and robust architectures with C Book Description C is a powerful language when it comes to building applications and software architecture using rich libraries and tools such as NET This book will harness the strength of C in developing microservices architectures and applications This book shows developers how to develop an enterprise grade event driven asynchronous message based microservice framework using C NET and various open source tools We will discuss how to send and receive messages how to design many types of microservice that are truly usable in a corporate environment We will also dissect each case and explain the code best practices pros and cons and more Through our journey we will use many open source tools and create file monitors a machine learning microservice a quantitative financial microservice that can handle bonds and credit default swaps a deployment microservice to show you how to better manage your deployments and memory health status and other microservices By the end of this book you will have a complete microservice ecosystem you can place into production or customize in no time What you will learn Explore different open source tools within the context of designing microservices Learn to provide insulation to exception prone function calls Build common messages used between microservices for communication Learn to create a microservice using our base class and interface Design a quantitative financial machine microservice Learn to design a microservice that is capable of using Blockchain technology Who this book is for C developers software architects and professionals who want to master the art of designing the microservice architecture that is scalable based on environment Developers should have a basic understanding of NET application development using C and Visual Studio

Pro Microservices in .NET 10

Sean Whitesell,Rob Richardson,2025-11-09 Learn how to design build test deploy and monitor microservices using NET 10 Microservices is a pattern of separating software into small reusable components to solve specific problems Each microservice can be independently built deployed and scaled This pattern provides enterprise grade durability and scale to meet complex

business goals and customer needs in enterprise systems. While the return is valuable and the concept straightforward, applying it to an enterprise development effort is far more complicated. Where do you start? How do you find the seams between the components? And once you have all the services, how do you deploy and scale them to meet the durability and performance needs of the organization? *Pro Microservices in .NET 10* will introduce you to all that and more. The authors get you started with an overview of microservices and other development patterns, event storming, domain driven design, and the options for developing in ASP.NET. You will use that foundational information to build a reference application throughout the book, exploring both synchronous messaging with HTTP and gRPC and asynchronous messaging with a service bus. From there, you will create your first microservice using C# and .NET 10, test it using unit and integration tests, and package it into a Docker container. You'll deploy the container to various Azure services, including Kubernetes, Azure Container Apps, App Service, Azure Functions, and KEDA. You will also learn about communication styles, decentralizing data, and testing microservices. Finally, you will learn how to keep services healthy using OpenTelemetry for logging, Aspire for local development, and Azure Application Insights for production. What You Will Learn

- Build a foundation of basic microservices architecture design
- Follow an example of using event storming and domain driven design to understand the monolithic application modified for microservices
- Learn about ASP.NET hosting options, including MVC, Razor Pages, Web API, and Minimal APIs
- Call microservices using RPC and messaging communication styles via HTTP and gRPC
- Learn about asynchronous communication using an enterprise service bus
- Comprehend decentralizing data and handling distributed transactions
- Understand via detailed commands how Docker is used to containerize applications
- Learn to deploy microservices to Kubernetes, Azure Container Apps, App Services, and Azure Functions
- Leverage OpenTelemetry to make your microservices more robust

Who This Book Is For

This book is for professional developers and software architects looking to level up their skills. Readers should have basic familiarity with Visual Studio or VS Code and experience with .NET, ASP.NET Core, and C#.

New to This Edition

In this new and updated volume, the authors explore new features from .NET 10 and C# 14 that launched in November 2025, making it easier than ever to design, architect, build, test, and deploy microservices. These enhancements include testing patterns, Docker, Kubernetes, Azure deployment, YARP, and Aspire.

Hands-On Microservices with C# 8 and .NET Core 3 Gaurav Arora, Ed Price, 2020-03-27

Learn the essential concepts, techniques, and design patterns that will help you build scalable and maintainable distributed systems. Key Features

- Learn to design, implement, test, and deploy your microservices
- Understand the challenges and complexities of testing and monitoring distributed services
- Build modular and robust microservice architectures with the latest features of C# 8 and .NET Core 3.1

Book Description

The microservice architectural style promotes the development of complex applications as a suite of small services based on specific business capabilities. With this book, you'll take a hands-on approach to build microservices and deploy them using ASP.NET Core and Microsoft Azure. You'll start by understanding the concept of microservices and their

fundamental characteristics This microservices book will then introduce a real world app built as a monolith currently struggling under increased demand and complexity and guide you in its transition to microservices using the latest features of C 8 and NET Core 3 You ll identify service boundaries split the application into multiple microservices and define service contracts You ll also explore how to configure deploy and monitor microservices using Docker and Kubernetes and implement autoscaling in a microservices architecture for enhanced productivity Once you ve got to grips with reactive microservices you ll discover how keeping your code base simple enables you to focus on what s important rather than on messy asynchronous calls Finally you ll delve into various design patterns and best practices for creating enterprise ready microservice applications By the end of this book you ll be able to deconstruct a monolith successfully to create well defined microservices What you will learn Package deploy and manage microservices and containers with Azure Service Fabric Use REST APIs to integrate services using a synchronous approach Protect public APIs using Azure Active Directory and OAuth 2 0 Understand the operation and scaling of microservices using Docker and Kubernetes Implement reactive microservices with Reactive Extensions Discover design patterns and best practices for building enterprise ready apps Who this book is for This book is for C and NET Core developers who want to understand microservices architecture and implement it in their NET Core applications If you re new to building microservices or have theoretical knowledge of the architectural approach this book will help you gain a practical perspective to manage application complexity efficiently **Microservices for the Enterprise** Kasun Indrasiri,Prabath Siriwardena,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

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.

Domain-Driven Design and Microservices Nitesh Malviya, 2020-09-22 Domain Driven Design (DDD) concept was introduced by first Eric Evans in 2003. The concept of microservices did not exist at that time. So basically DDD was introduced to solve the problem of a large monolithic code base. In the monolithic world once the codebase starts growing with the growth of the business it becomes difficult to maintain the code organized and structured as it was originally designed. Monolithic applications designed using MVC architecture have good separation between the business layer and the presentation layer. But in the absence of the strict architectural guidelines the business layer does not provide specific rules to maintain.

responsibility boundaries between different modules and classes That's why as the code base grows it increases the risk of logic breakdown responsibility leakage between the different components of the application **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 **The Tao of Microservices** Richard Rodger, 2017-12-11 Summary The Tao of Microservices guides you on the path to understanding how to apply microservice architectures to your own real world projects This high level book offers a conceptual view of microservice design along with core concepts and their application Purchase of the print book includes a free eBook in PDF Kindle and ePUB formats from Manning Publications About the Technology An application even a complex one can be designed as a system of independent components each of which handles a single responsibility Individual microservices are easy for small teams without extensive knowledge of the entire system design to build and maintain Microservice applications rely on modern patterns like asynchronous message based communication and they can be optimized to work well in cloud and container centric environments About the Book The Tao of Microservices guides you on the path to understanding and building microservices Based on the invaluable experience of microservices guru Richard Rodger this book exposes the thinking behind microservice designs You'll master individual concepts like asynchronous messaging service APIs and encapsulation as you learn to apply microservices architecture to real world projects Along the way you'll dig deep into detailed case studies with source code and documentation and explore best practices for team development planning for change and tool choice What's Inside Principles of the microservice architecture Breaking down real world case studies Implementing large scale systems When not to use microservices About the Reader This book is for developers and architects Examples use JavaScript and Node.js About the Author Richard Rodger CEO of voxgig a social network for the events industry has many years of experience building microservice based systems for major global companies Table of Contents PART 1 BUILDING MICROSERVICES Brave new world Services Messages Data Deployment PART 2 RUNNING MICROSERVICES Measurement Migration People Case study Nodezoo.com

[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

Essentials of Microservices

Architecture Chellammal Surianarayanan,Gopinath Ganapathy,Raj Pethuru,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

Designing and Building Solid Microservice Ecosystems Guillermo Leo Wrba, 2023-05-12 It's not new to us that microservices are changing the way we conceive digital transformation as organizations embrace digital transformation Every day more and more companies are betting on microservice adoption and there is a strong reason for this business needs to evolve and change at a fast pace in order to adapt itself to satisfy a demanding 2.0 digital customer's experience in terms of overall service quality Ensuring that such a change occurs seamlessly and progressively is one of the goals for microservices and designing and building a solid microservice architecture is the way to guarantee that this happens from inception by observing principles best practices design patterns and reference models This book provides a comprehensive walkthrough across the different concepts frameworks methodologies and architecture building blocks that make up a microservice ecosystem and constitute a reference architecture from which you can get to multiple sub architectures and implementations Being an architect you'll learn how to better design microservice led and event centric architectures in the right way from the early beginning by showcasing learned lessons best practices do's and don'ts If you are starting your architecture career it's the right place to get introduced to concepts and methodologies that you will then grow over time as you acquire more experience If you are a developer but willing to jump into the exciting architecture world this can also be good reading however be warned that some basic architectural understandings and concepts need to be first incorporated before walking through the advanced concepts presented throughout this book This book requires you to have some minimal background around Docker and Microservices to better understand the more advanced concepts that are being explained

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