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# Microservices With Docker On Microsoft Azure Includes Content Update Program Addison Wesley Microsoft Technology Series

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## FRANKLIN PATRICK

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Microservices and Containers Packt Publishing Ltd  
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.

Bootstrapping Microservices with Docker, Kubernetes, and Terraform Packt Publishing Ltd

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

The Docker Book Packt Publishing Ltd

One of the biggest challenges for organizations that have

adopted microservice architecture is the lack of architectural, operational, and organizational standardization. After splitting a monolithic application or building a microservice ecosystem from scratch, many engineers are left wondering what's next. In this practical book, author Susan Fowler presents a set of microservice standards in depth, drawing from her experience standardizing over a thousand microservices at Uber. You'll learn how to design microservices that are stable, reliable, scalable, fault tolerant, performant, monitored, documented, and prepared for any catastrophe. Explore production-readiness standards, including: Stability and Reliability: develop, deploy, introduce, and deprecate microservices; protect against dependency failures Scalability and Performance: learn essential components for achieving greater microservice efficiency Fault Tolerance and Catastrophe Preparedness: ensure availability by actively pushing microservices to fail in real time Monitoring: learn how to monitor, log, and display key metrics; establish alerting and on-call procedures Documentation and Understanding: mitigate tradeoffs that come with microservice adoption, including organizational sprawl and technical debt

#### **Microsoft Azure Security Center** Apress

Build, package, and deploy applications as easily manageable and shippable containers. About This Book Discover the secret to building highly portable apps that run on any machine with Windows Server 2016 anywhere, from laptops, desktop servers, and public or private clouds, without any changes to the code Build your company cost-effective, container-based apps that support large-scale, virtual cloud environments The most up-to-date help on the market, offering developers expert guidance in

building and shipping high-quality apps, and also helping admins create infrastructure that's simple to maintain Who This Book Is For This book is for application developers with a basic programming knowledge of C#, ASP.NET, and PowerShell. IT Administrators or DevOps engineers with basic PowerShell experience can benefit by extending their learning to use PowerShell to manage containers on Windows environments and use additional management tools. What You Will Learn Build and deploy ASP.NET web applications as Windows Containers on Windows 10 (Desktop) and Azure using Visual Studio 2015, Docker, and PowerShell Build and manage custom images using Windows Server Core base OS image and Docker CLI, publish images to Docker, tag images, author Docker files, and so on Create enterprise-scale, production-grade container environments using Redis Cache containers and SQL Server containers with storage volumes, set up custom container networks, continuous integration, and deployment pipelines using VSTS, Azure, and Git Deploy a composite container environment using Docker Compose on Windows Learn to build applications using Microsoft's thinnest server platform - Nano Servers. Build custom Nano Server images and Nano Containers using Windows PowerShell and configure using PowerShell Core, DSC In Detail Windows Server Containers are independent, isolated, manageable and portable application environments which are light weight and shippable. Decomposing your application into smaller manageable components or MicroServices helps in building scalable and distributed application environments. Windows Server Containers have a significant impact on application developers, development operations (DevOps) and

infrastructure management teams. Applications can be built, shipped and deployed in a fast-paced manner on an easily manageable and updatable environment. Learning Windows Server Containers teaches you to build simple to advanced production grade container based application using Asp.Net Core, Visual Studio, Azure, Docker and PowerShell technologies. The book teaches you to build and deploy simple web applications as Windows and Hyper-V containers on Windows 10 and Windows Server 2016 on Azure. You will learn to build on top of Windows Container Base OS Images, integrate with existing images from Docker Hub, create custom images and publish to Hub. You will also learn to work with storage containers built using Volumes and SQL Server as container, create and configure custom networks, integrate with Redis Cache containers, configure continuous integration and deployment pipelines using VSTS and Git Repository. Further you can also learn to manage resources for a container, setting up monitoring and diagnostics, deploy composite container environments using Docker Compose on Windows and manage container clusters using Docker Swarm. The last chapter of the book focuses on building applications using Microsoft's new and thinnest server platform – Nano Servers. Style and approach This hands-on tutorial helps you get started with Windows Server containers, the new trend in the container market. This example-driven guide is packed with real-world scenarios of Windows Server containers in production environments.

**Designing change-tolerant software** Packt Publishing Ltd  
Build, operate, and orchestrate scalable microservices applications in the cloud This book combines a comprehensive

guide to success with Microsoft Azure Service Fabric and a practical catalog of design patterns and best practices for microservices design, implementation, and operation. Haishi Bai brings together all the information you'll need to deliver scalable and reliable distributed microservices applications on Service Fabric. He thoroughly covers the crucial DevOps aspects of utilizing Service Fabric, reviews its interactions with key cloud-based services, and introduces essential service integration mechanisms such as messaging systems and reactive systems. Leading Microsoft Azure expert Haishi Bai shows how to: Set up your Service Fabric development environment Program and deploy Service Fabric applications to a local or a cloud-based cluster Compare and use stateful services, stateless services, and the actor model Design Service Fabric applications to maximize availability, reliability, and scalability Improve management efficiency via scripting Configure network security and other advanced cluster settings Collect diagnostic data, and use Azure Operational Management Suite to interpret it Integrate microservices components developed in parallel Use containers to mobilize applications for failover, replication, scaling, and load balancing Streamline containerization with Docker in Linux and Windows environments Orchestrate containers to schedule workloads and maintain services at desired states Implement proven design patterns for common cloud application workloads Balance throughput, latency, scalability, and cost  
*Clean Architecture* "O'Reilly Media, Inc."

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 domain to ensure high cohesion and to define the correct service interfaces to promote loose coupling.

[A developer's guide to building cloud-native applications using the Dapr event-driven runtime](#) Manning Publications

The major subjects of the book cover modeling, analysis and efficient management of information in Internet of Everything (IoE) applications and architectures. As the first book of its kind, it addresses the major new technological developments in the field and will reflect current research trends, as well as industry needs. It comprises of a good balance between theoretical and practical issues, covering case studies, experience and evaluation reports and best practices in utilizing IoE applications. It also provides technical/scientific information about various aspects of IoE technologies, ranging from basic concepts to research grade material, including future directions.

*Designing, Developing, and Deploying* Manning Publications

Implement microservices starting with their architecture and moving on to their deployment, manageability, security, and monitoring. This book focuses on the key scenarios where microservices architecture is preferred over a monolithic architecture. Building Microservices Applications on Microsoft Azure begins with a survey of microservices architecture compared to monolithic architecture and covers microservices implementation in detail. You'll see the key scenarios where microservices architecture is preferred over a monolithic approach. From there, you will explore the critical components and various deployment options of microservices on platforms such as Microsoft Azure (public cloud) and Azure Stack (hybrid

cloud). This includes in-depth coverage of developing, deploying, and monitoring microservices on containers and orchestrating with Azure Service Fabric and Azure Kubernetes Cluster (AKS). This book includes practical experience from large-scale enterprise deployments, therefore it can be a quick reference for solution architects and developers to understand the critical factors while designing a microservices application. What You Will Learn Explore the use cases of microservices and monolithic architecture Discover the architecture patterns to build scalable, agile, and secure microservices applications Develop and deploy microservices using Azure Service Fabric and Azure Kubernetes Service Secure microservices using the gateway pattern See the deployment options for Microservices on Azure Stack Implement database patterns to handle the complexities introduced by microservices Who This Book Is For Architects and consultants who work on Microsoft Azure and manage large-scale deployments.

*Learn Docker in a Month of Lunches* Prentice Hall

Developers often struggle when first encountering the cloud. Learning about distributed systems, becoming familiar with technologies such as containers and functions, and knowing how to put everything together can be daunting. With this practical guide, you'll get up to speed on patterns for building cloud native applications and best practices for common tasks such as messaging, eventing, and DevOps. Authors Boris Scholl, Trent Swanson, and Peter Jausovec describe the architectural building blocks for a modern cloud native application. You'll learn how to use microservices, containers, serverless computing, storage types, portability, and functions. You'll also explore the

fundamentals of cloud native applications, including how to design, develop, and operate them. Explore the technologies you need to design a cloud native application Distinguish between containers and functions, and learn when to use them Architect applications for data-related requirements Learn DevOps fundamentals and practices for developing, testing, and operating your applications Use tips, techniques, and best practices for building and managing cloud native applications Understand the costs and trade-offs necessary to make an application portable

*Windows Developer Power Tools* "O'Reilly Media, Inc."

Updated for Docker Community Edition v18.09! Docker book designed for SysAdmins, SREs, Operations staff, Developers and DevOps who are interested in deploying the open source container service Docker. In this book, we'll walk you through installing, deploying, managing, and extending Docker. We're going to do that by first introducing you to the basics of Docker and its components. Then we'll start to use Docker to build containers and services to perform a variety of tasks. We're going to take you through the development lifecycle, from testing to production, and see where Docker fits in and how it can make your life easier. We'll make use of Docker to build test environments for new projects, demonstrate how to integrate Docker with continuous integration workflow, and then how to build application services and platforms. Finally, we'll show you how to use Docker's API and how to extend Docker yourself. We'll teach you how to: \* Install Docker. \* Take your first steps with a Docker container. \* Build Docker images. \* Manage and share Docker images. \* Run and manage more complex Docker

containers. \* Deploy Docker containers as part of your testing pipeline. \* Build multi-container applications and environments. \* Learn about orchestration using Compose and Swarm for the orchestration of Docker containers and Consul for service discovery. \* Explore the Docker API. \* Getting Help and Extending Docker.

### **Turbocharge Windows Development with More Than 170 Free and Open Source Tools** Springer-Verlag

Legend has it that Google deploys over two billion application containers a week. How's that possible? Google revealed the secret through a project called Kubernetes, an open source cluster orchestrator (based on its internal Borg system) that radically simplifies the task of building, deploying, and maintaining scalable distributed systems in the cloud. This practical guide shows you how Kubernetes and container technology can help you achieve new levels of velocity, agility, reliability, and efficiency. Authors Kelsey Hightower, Brendan Burns, and Joe Beda—who've worked on Kubernetes at Google and other organizations—explain how this system fits into the lifecycle of a distributed application. You will learn how to use tools and APIs to automate scalable distributed systems, whether it is for online services, machine-learning applications, or a cluster of Raspberry Pi computers. Explore the distributed system challenges that Kubernetes addresses Dive into containerized application development, using containers such as Docker Create and run containers on Kubernetes, using the docker image format and container runtime Explore specialized objects essential for running applications in production Reliably roll out new software versions without downtime or errors Get examples of how to



develop and deploy real-world applications in Kubernetes

**Kubernetes: Up and Running** Microsoft Press  
Book + Content Update Program “Beyond just describing the basics, this book dives into best practices every aspiring microservices developer or architect should know.” —Foreword by Corey Sanders, Partner Director of Program Management, Azure Microservice-based applications enable unprecedented agility and ease of management, and Docker containers are ideal for building them. Microsoft Azure offers all the foundational technology and higher-level services you need to develop and run any microservices application. Microservices with Docker on Microsoft Azure brings together essential knowledge for creating these applications from the ground up, or incrementally deconstructing monolithic applications over time. The authors draw on their pioneering experience helping to develop Azure’s microservices features and collaborating with Microsoft product teams who’ve relied on microservices architectures for years. They illuminate the benefits and challenges of microservices development and share best practices all developers and architects should know. You’ll gain hands-on expertise through a detailed sample application, downloadable at [github.com/flakio/flakio.github.io](https://github.com/flakio/flakio.github.io). Step by step, you’ll walk through working with services written in Node.js, Go, and ASP.NET 5, using diverse data stores (mysql, elasticsearch, block storage). The authors guide you through using Docker Hub as a service registry, and Microsoft Azure Container service for cluster management and service orchestration. Coverage includes: Recognizing how microservices architectures are different, and when they make sense Understanding Docker containers in the

context of microservices architectures Building, pulling, and layering Docker images Working with Docker volumes, containers, images, tags, and logs Using Docker Swarm, Docker Compose, and Docker Networks Creating Docker hosts using the Azure portal, Azure Resource Manager, the command line, docker-machine, or locally via Docker toolbox Establishing development and DevOps environments to support microservices applications Making the most of Docker’s continuous delivery options Using Azure’s cluster and container orchestration capabilities to operate and scale containerized microservices applications with maximum resilience Monitoring microservices applications with Azure Diagnostics, Visual Studio Application Insights, and Microsoft Operations Management Suite Developing microservices applications faster and more effectively with Azure Service Fabric An extensive sample application demonstrating the microservices concepts discussed throughout the book is available online In addition, this book is part of InformIT’s exciting new Content Update Program, which provides content updates for major technology improvements! As significant updates are made to Docker and Azure, sections of this book will be updated or new sections will be added to match the updates to the technologies. As updates become available, they will be delivered to you via a free Web Edition of this book, which can be accessed with any Internet connection. To learn more, visit [informit.com/cup](https://informit.com/cup). How to access the Web Edition: Follow the instructions inside to learn how to register your book to access the FREE Web Edition.

[Designing Distributed Systems](#) Simon and Schuster  
Summary Cloud Native Patterns your guide to developing

strong applications that thrive in the dynamic, distributed, virtual world of the cloud. This book presents a mental model for cloud-native applications, along with the patterns, practices, and tooling that set them apart. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Cloud platforms promise the holy grail: near-zero downtime, infinite scalability, short feedback cycles, fault-tolerance, and cost control. But how do you get there? By applying cloudnative designs, developers can build resilient, easily adaptable, web-scale distributed applications that handle massive user traffic and data loads. Learn these fundamental patterns and practices, and you'll be ready to thrive in the dynamic, distributed, virtual world of the cloud. About the Book With 25 years of experience under her belt, Cornelia Davis teaches you the practices and patterns that set cloud-native applications apart. With realistic examples and expert advice for working with apps, data, services, routing, and more, she shows you how to design and build software that functions beautifully on modern cloud platforms. As you read, you will start to appreciate that cloud-native computing is more about the how and why rather than the where. What's inside The lifecycle of cloud-native apps Cloud-scale configuration management Zero downtime upgrades, versioned services, and parallel deploys Service discovery and dynamic routing Managing interactions between services, including retries and circuit breakers About the Reader Requires basic software design skills and an ability to read Java or a similar language. About the Author Cornelia Davis is Vice President of Technology at Pivotal Software. A teacher at heart, she's spent the last 25 years making good software and

great software developers. Table of Contents PART 1 - THE CLOUD-NATIVE CONTEXT You keep using that word: Defining "cloud-native" Running cloud-native applications in production The platform for cloud-native software PART 2 - CLOUD-NATIVE PATTERNS Event-driven microservices: It's not just request/response App redundancy: Scale-out and statelessness Application configuration: Not just environment variables The application lifecycle: Accounting for constant change Accessing apps: Services, routing, and service discovery Interaction redundancy: Retries and other control loops Fronting services: Circuit breakers and API gateways Troubleshooting: Finding the needle in the haystack Cloud-native data: Breaking the data monolith

#### Designing, Developing, Deploying, and Monitoring Apress

Docker containers offer simpler, faster, and more robust methods for developing, distributing, and running software than previously available. With this hands-on guide, you'll learn why containers are so important, what you'll gain by adopting Docker, and how to make it part of your development process. Ideal for developers, operations engineers, and system administrators—especially those keen to embrace a DevOps approach—Using Docker will take you from Docker and container basics to running dozens of containers on a multi-host system with networking and scheduling. The core of the book walks you through the steps needed to develop, test, and deploy a web application with Docker. Get started with Docker by building and deploying a simple web application Use Continuous Deployment techniques to push your application to production multiple times a day Learn various options and techniques for logging and



monitoring multiple containers Examine networking and service discovery: how do containers find each other and how do you connect them? Orchestrate and cluster containers to address load-balancing, scaling, failover, and scheduling Secure your system by following the principles of defense-in-depth and least privilege

*Docker Across Microservices* Manning Publications

Discover high-value Azure security insights, tips, and operational optimizations This book presents comprehensive Azure Security Center techniques for safeguarding cloud and hybrid environments. Leading Microsoft security and cloud experts Yuri Diogenes and Dr. Thomas Shinder show how to apply Azure Security Center's full spectrum of features and capabilities to address protection, detection, and response in key operational scenarios. You'll learn how to secure any Azure workload, and optimize virtually all facets of modern security, from policies and identity to incident response and risk management. Whatever your role in Azure security, you'll learn how to save hours, days, or even weeks by solving problems in most efficient, reliable ways possible. Two of Microsoft's leading cloud security experts show how to:

- Assess the impact of cloud and hybrid environments on security, compliance, operations, data protection, and risk management
- Master a new security paradigm for a world without traditional perimeters
- Gain visibility and control to secure compute, network, storage, and application workloads
- Incorporate Azure Security Center into your security operations center
- Integrate Azure Security Center with Azure AD Identity Protection Center and third-party solutions
- Adapt Azure Security Center's built-in policies and definitions

for your organization • Perform security assessments and implement Azure Security Center recommendations • Use incident response features to detect, investigate, and address threats • Create high-fidelity fusion alerts to focus attention on your most urgent security issues • Implement application whitelisting and just-in-time VM access • Monitor user behavior and access, and investigate compromised or misused credentials

- Customize and perform operating system security baseline assessments
- Leverage integrated threat intelligence to identify known bad actors

*Build domain-driven microservice-based applications with Spring, Spring Cloud, and Angular* "O'Reilly Media, Inc."

A wealth of open and free software is available today for Windows developers who want to extend the development environment, reduce development effort, and increase productivity. This encyclopedic guide explores more than 100 free and open source tools available to programmers who build applications for Windows desktops and servers.

*With C#, the Nancy Framework, and Owin Middleware* James Turnbull

"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.

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*Learning WCF* "O'Reilly Media, Inc."

Microservices in .NET, Second Edition teaches you to build and deploy microservices using ASP.NET and Azure services.

Summary In Microservices in .NET, Second Edition you will learn how to:

- Build scalable microservices that are reliable in production
- Optimize microservices for continuous delivery
- Design event-based collaboration between microservices
- Deploy microservices to Kubernetes
- Set up Kubernetes in Azure

Microservices in .NET, Second Edition is a comprehensive guide to building microservice applications using the .NET stack. After a crystal-clear introduction to the microservices architectural style, it teaches you practical microservices development skills using ASP.NET. This second edition of the bestselling original has been revised with up-to-date tools for the .NET ecosystem, and more new coverage of scoping microservices and deploying to Kubernetes. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

About the technology Microservice architectures connect independent components that must work together as a system. Integrating new technologies like Docker and Kubernetes with Microsoft's familiar ASP.NET framework and Azure cloud platform enables .NET developers to create and manage microservices efficiently.

About the book Microservices in .NET, Second Edition teaches you to build and deploy microservices using ASP.NET and Azure

services. It lays out microservice architecture simply, and then guides you through several real-world projects, such as building an ecommerce shopping cart. In this fully revised edition, you'll learn about scoping microservices, deploying to Kubernetes, and operations concerns like monitoring, logging, and security.

What's inside

- Optimize microservices for continuous delivery
- Design event-based collaboration between microservices
- Deploy microservices to Kubernetes
- Set up Kubernetes in Azure

About the reader

- For C# developers. No experience with microservices required.
- About the author Christian Horsdal is an independent consultant with more than 20 years of experience building projects from large-scale microservice systems to tiny embedded systems.

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Patterns and Paradigms for Scalable, Reliable Services Apress

Summary

- Go from zero to production readiness with Docker in 22 bite-sized lessons!

Learn Docker in a Month of Lunches is an accessible task-focused guide to Docker on Linux, Windows, or Mac systems. In it, you'll learn practical Docker skills to help you

tackle the challenges of modern IT, from cloud migration and microservices to handling legacy systems. There's no excessive theory or niche-use cases—just a quick-and-easy guide to the essentials of Docker you'll use every day. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

About the technology

The idea behind Docker is simple: package applications in lightweight virtual containers that can be easily installed. The results of this simple idea are huge! Docker makes it possible to manage applications without creating custom infrastructures. Free, open source, and battle-tested, Docker has quickly become must-know technology for developers and administrators.

About the book

Learn Docker in a Month of Lunches introduces Docker concepts through a series of brief hands-on lessons. Following a learning path perfected by author Elton Stoneman, you'll run containers by chapter 2 and package applications by chapter 3. Each lesson teaches a practical skill you can practice on Windows, macOS, and Linux systems. By the end of the month you'll know how to containerize and run any kind of application with Docker.

What's inside

- Package applications to run in containers
- Put containers into production
- Build optimized Docker images
- Run containerized apps at scale

About the reader

- For IT professionals. No previous Docker experience required.
- About the author Elton Stoneman is a consultant, a former architect at Docker, a Microsoft MVP, and a Pluralsight author.

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### **Developing and Deploying Software with Containers**

Microsoft Press

Guide to designing and developing cloud native applications in Azure DESCRIPTION The mainstreaming of Cloud Native Architecture as an enterprise discipline is well underway. According to the Forbes report in January 2018, 83% of the enterprise workloads will be in the cloud by 2020 and 41% of the enterprise workloads will run on public cloud platforms, while another 22% will be running on hybrid cloud platforms. Customers are embarking on the enterprise digital transformation

journeys. Adopting cloud and cloud native architectures and microservices is an important aspect of the journey. This book starts with a brief introduction on the basics of cloud native applications, cloud native application patterns. Then it covers the cloud native options available in Azure. The objective of the book is to provide practical guidelines to an architect/designer/consultant/developer, who is a part of the Cloud application definition Team. The book articulates a methodology that the implementation team needs to follow in a step-by-step manner and adopt them to fulfil the requirements for enablement of the Cloud Native application. It emphasizes on the interpersonal skills and techniques for organizing and directing the Cloud Native definition, leadership buy-in, leading the transition from planning to implementation. It also highlights the steps to be followed for performing the cloud native applications, cloud native patterns in the development of Cloud native applications, Cloud native options available in Azure, Developing BOT, Microservices based on Azure. It also covers how to develop simple IoT applications, Machine learning based applications, server less architecture, using Azure with a practical and pragmatic approach. This book embraces a structured approach organized around the following key themes, which represent the typical phases that an enterprise traverses during its Cloud Native application journey: ● Basics of Cloud Native Applications: It covers basics of cloud native applications using .NET core. ● Cloud Native Application Patterns: The reader will understand the patterns for developing Cloud Native Applications. ● Cloud Native Options available in Azure: The reader will understand the different options available in Azure. ● Developing

a Simple BOT using .NET Core: The reader will understand the Azure BOT framework basics and will learn how to develop a simple BOT. ● Developing cloud native applications leveraging Microservices: The reader will understand the concepts of developing micro services using the Azure API Gateway Manager. ● Developing Integration capabilities using serverless architecture: The reader will understand the integration capabilities and various options available in Azure ● Developing a simple IoT application: The reader will understand the basics of developing IoT applications. ● Developing a simple ML based application: The reader will understand Machine Learning basics and how to develop a simple ML application ● Different enterprise use cases, which enable digital transformation using the Cloud Native Applications: The reader will learn about different use cases that can be built using cloud native applications KEY FEATURES (Add 5-7 key features only) ● Basics of Cloud Native Applications ● Designing Microservices ● Different cloud native options for developing Cloud Native Applications in Azure ● BOTs, Web Apps, Mobile Apps, Logic Apps, Service Bus, Azure Functions ● Azure IOT Applications ● Azure Machine Learning Basics ● Enterprise Digital Journeys WHAT WILL YOU LEARN This book aims to: ● Demonstrate the importance of a Cloud Native application in elevating the effectiveness of organizational transformation programs and digital enterprise journeys, using MS Azure ● Disseminate current advancements and thought leadership in the area of Cloud Native architecture, in the context of digital enterprises ● Provide initiatives with evidence-based, credible, field tested and practical guidance in crafting their respective architectures; and

● Showcase examples and experiences of the innovative use of Cloud Native Applications in enhancing transformation initiatives. WHO THIS BOOK IS FOR The book is intended for anyone looking for a career in Cloud technology, all aspiring Cloud Architects who want to learn Cloud Native Architectures, Microservices, IoT, BoT and Microsoft Azure platform and working professionals who want to switch their career in Cloud Technology. While no prior knowledge of Azure or related technologies is assumed, it will be helpful to have some .Net programming experience. In addition, the target audience of this book are, ● Business Leaders, Chief Architects, Analysts and Designers seeking better, quicker and easier approaches to respond to needs of their internal and external customers; ● CIOs/CTOs of business software companies interested in incorporating Cloud Native architecture to differentiate their products and services offerings and increasing the value proposition to their customers; ● Consultants and practitioners desirous of new solutions and technologies to improve productivity of their clients; ● Academic and consulting researchers looking to uncover and characterize new research problems and programmes ● Practitioners and professionals involved with organizational technology strategic planning, technology procurement, management of technology projects, consulting and advising on technology issues and management of total cost of ownership. Table of Contents 1. Basics of Cloud Native Applications 2. Cloud Native Application Patterns 3. Cloud Native Options available in Azure – BOTs, Logic Apps, Service Bus, Azure Microservices, ML services 4. Developing a Simple BOT using .NET Core 5. Developing Cloud Native applications leveraging Microservices and Azure API Gateway 6. Developing

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