



Cloud Architecture Patterns Using Microsoft Azure

Bill Wilder



Cloud Architecture Patterns Using Microsoft Azure:

Cloud Architecture Patterns Bill Wilder, 2012 Do you need to learn about cloud computing architecture with Microsoft s Azure quickly Read this book It gives you just enough info on the big picture and is filled with key terminology so that you can join the discussion on cloud architecture

Cloud Architecture Patterns Bill Wilder, 2012 If your team is investigating ways to design applications for the cloud this concise book introduces 11 architecture patterns that can help you take advantage of cloud platform services You u2019ll learn how each of these platform agnostic patterns work when they might be useful in the cloud and what impact they u2019ll have on your application architecture You u2019ll also see an example of each pattern applied to an application built with Windows Azure The patterns are organized into four major topics such as scalability and handling failure and primer chapters provide background on each topic With the information in this book you u2019ll be able to make informed decisions for designing effective cloud native applications that maximize the value of cloud services while also paying attention to user experience and operational efficiency Learn about architectural patterns for Scalability Discover the advantages of horizontal scaling Patterns covered include Horizontally Scaling Compute Queue Centric Workflow and Auto Scaling Big data Learn how to handle large amounts of data across a distributed system Eventual consistency is explained along with the MapReduce and Database Sharding patterns Handling failure Understand how multitenant cloud services and commodity hardware influence your applications Patterns covered include Busy Signal and Node Failure Distributed users Learn how to overcome delays due to network latency when building applications for a geographically distributed user base Patterns covered include Colocation Valet Key CDN and Multi Site Deployment

Implementing Azure Cloud Design Patterns Oliver Michalski, Stefano Demiliani, 2018-01-29 A hands on guide to mastering Azure cloud design patterns and best practices Key Features Master architectural design patterns in Azure Get hands on with implementing design patterns Implement best practices for improving efficiency and security Book Description A well designed cloud infrastructure covers factors such as consistency maintenance simplified administration and development and reusability Hence it is important to choose the right architectural pattern as it has a huge impact on the quality of cloud hosted services This book covers all Azure design patterns and functionalities to help you build your cloud infrastructure so it fits your system requirements This book initially covers design patterns that are focused on factors such as availability and data management monitoring Then the focus shifts to complex design patterns such as multitasking improving scalability valet keys and so on with practical use cases The book also supplies best practices to improve the security and performance of your cloud By the end of this book you will thoroughly be familiar with the different design and architectural patterns available with Windows Azure and capable of choosing the best pattern for your system What you will learn Learn to organize Azure access Design the core areas of the Azure Execution Model Work with storage and data management Create a health endpoint monitoring pattern Automate early detection of anomalies Identify and secure Azure features Who this book is for

This book is targeted at cloud architects and cloud solution providers who are looking for an extensive guide to implementing different patterns for the deployment and maintenance of services in Microsoft Azure. Prior experience with Azure is required as the book is completely focused on design patterns.

The Azure Cloud Native Architecture Mapbook Stephane Eyskens, Ed Price, 2021-02-17

Improve your Azure architecture practice and set out on a cloud and cloud native journey with this Azure cloud native architecture guide.

Key Features Discover the key drivers of successful Azure architecture. Implement architecture maps as a compass to tackle any challenge. Understand architecture maps in detail with the help of practical use cases.

Book Description Azure offers a wide range of services that enable a million ways to architect your solutions. Complete with original maps and expert analysis, this book will help you to explore Azure and choose the best solutions for your unique requirements. Starting with the key aspects of architecture, this book shows you how to map different architectural perspectives and covers a variety of use cases for each architectural discipline. You'll get acquainted with the basic cloud vocabulary and learn which strategic aspects to consider for a successful cloud journey. As you advance through the chapters, you'll understand technical considerations from the perspective of a solutions architect. You'll then explore infrastructure aspects such as network disaster recovery and high availability and leverage Infrastructure as Code (IaC) through ARM templates, Bicep, and Terraform. The book also guides you through cloud design patterns, distributed architecture, and ecosystem solutions such as Dapr from an application architect's perspective. You'll work with both traditional ETL and OLAP and modern data practices, big data, and advanced analytics in the cloud, and finally get to grips with cloud native security. By the end of this book, you'll have picked up best practices and more rounded knowledge of the different architectural perspectives.

What you will learn Gain overarching architectural knowledge of the Microsoft Azure cloud platform. Explore the possibilities of building a full Azure solution by considering different architectural perspectives. Implement best practices for architecting and deploying Azure infrastructure. Review different patterns for building a distributed application with ecosystem frameworks and solutions. Get to grips with cloud native concepts using containerized workloads. Work with AKS (Azure Kubernetes Service) and use it with service mesh technologies to design a microservices hosting platform.

Who this book is for This book is for aspiring Azure Architects or anyone who specializes in security, infrastructure, data, and application architecture. If you are a developer or infrastructure engineer looking to enhance your Azure knowledge, you'll find this book useful.

Engineering Scalable, Elastic, and Cost-Efficient Cloud Computing Applications Steffen Becker, Gunnar Brataas, Sebastian Lehrig, 2017-05-31

This book provides an overview of the problems involved in engineering scalable, elastic, and cost-efficient cloud computing services and describes the CloudScale method, a description of rescuing tools, and the required steps to exploit these tools. It allows readers to analyze the scalability problem in detail and identify scalability anti-patterns and bottlenecks within an application. With the CloudScale method, software architects can analyze both existing and planned IT services. The method allows readers to answer questions like "With an increasing number of users, can my service

still deliver acceptable quality of service What if each user uses the service more intensively Can my service still handle it with acceptable quality of service What if the number of users suddenly increases Will my service still be able to handle it Will my service be cost efficient First the book addresses the importance of scalability elasticity and cost efficiency as vital quality related attributes of modern cloud computing applications Following a brief overview of CloudScale cloud computing applications are then introduced in detail and the aspects that need to be captured in models of such applications are discussed In CloudScale these aspects are captured in instances of the ScaleDL modeling language Subsequently the book describes the forward engineering part of CloudScale which is applicable when developing a new service It also outlines the reverse and reengineering parts of CloudScale which come into play when an existing legacy service is modified Lastly the book directly focuses on the needs of both business oriented and technical managers by providing guidance on all steps of implementing CloudScale as well as making decisions during that implementation The demonstrators and reference projects described serve as a valuable starting point for learning from experience This book is meant for all stakeholders interested in delivering scalable elastic and cost efficient cloud computing applications managers product owners software architects and developers alike With this book they can both see the overall picture as well as dive into issues of particular interest

Azure for Architects Ritesh Modi, 2017-10-20 Your one stop guide to making the most out of Azure Cloud About This Book Get familiar with the different design patterns available in Microsoft Azure Develop Azure cloud architecture and a pipeline management system Get to know the security best practices for your Azure deployment Who This Book Is For If you are Cloud Architects DevOps Engineers or developers who want to learn key architectural aspects of the Azure Cloud platform then this book is for you Prior basic knowledge of the Azure Cloud platform is good to have What You Will Learn Familiarize yourself with the components of the Azure Cloud platform Understand the cloud design patterns Use enterprise security guidelines for your Azure deployment Design and implement Serverless solutions See Cloud architecture and the deployment pipeline Understand cost management for Azure solutions In Detail Over the years Azure cloud services has grown quickly and the number of organizations adopting Azure for their cloud services is also gradually increasing Leading industry giants are finding that Azure fulfills their extensive cloud requirements This book will guide you through all the important and tough decision making aspects involved in architecting a Azure public cloud for your organization The book starts with an extensive introduction to all the categories of designs available with Azure These design patterns focus on different aspects of cloud such as high availability data management and so on Gradually we move on to various aspects such as building your cloud structure and architecture It will also include a brief description about different types of services provided by Azure such as Azure functions and Azure Analytics which can prove beneficial for an organization This book will cover each and every aspect and function required to develop a Azure cloud based on your organizational requirements By the end of this book you will be in a position to develop a full fledged Azure cloud Style and approach This hands on guide to

the Azure Cloud platform covers different architectural concepts and implementations necessary for any enterprise scale deployment

Cloud Database Development and Management Lee Chao,2013-07-26 Although today s job market requires IT professionals to understand cloud computing theories and have hands on skills for developing real world database systems there are few books available that integrate coverage of both Filling this void *Cloud Database Development and Management* explains how readers can take advantage of the cloud environment

Advances in Service-Oriented and Cloud Computing Guadalupe Ortiz,Cuong Tran,2015-02-27 This volume contains the technical papers presented in the four high quality workshops associated with the European Conference on Service Oriented and Cloud Computing ESOC 2014 held in Manchester UK in September 2014 4th International Workshop on Adaptive Services for the Future Internet WAS4FI 2014 2nd International Workshop on Cloud for IoT CLIoT 2014 2nd International Workshop on Cloud Service Brokerage CSB 2014 and Seamless Adaptive Multi cloud Management of Service based Applications SeaCloudS Workshop The 19 revised full papers and 3 short papers were carefully reviewed and selected from 39 submissions They focus on specific topics in service oriented and cloud computing domains as cloud computing service buses Web services service oriented architectures event driven architectures enterprise architectures business process management software selection and adaptation

Cloud Application Architecture Patterns Anubhav Kumar Gupta,2025-07-17 DESCRIPTION Cloud computing has become the foundation of modern software delivery powering everything from agile startups to global enterprises As businesses race to modernize understanding how to design cloud native applications that scale recover and evolve has never been more essential This book steps in as your go to guide for navigating the architectural challenges of today s dynamic cloud landscape This book systematically covers cloud evolution from traditional IT to IaaS PaaS and SaaS including deployment models and data concepts You will master fundamental principles like scalability and resource pooling then explore service models in depth with migration case studies Chapters detail practical scalability patterns load balancing auto scaling partitioning and resiliency patterns health monitoring circuit breakers Essential data management and crucial security patterns identity encryption compliance are covered Finally you will learn advanced messaging and integration patterns robust monitoring and observability patterns vital for DevOps and explore future trends like serverless edge and AI integration By the end you will possess comprehensive knowledge and practical understanding of cloud application design ready to confidently architect deploy and manage effective secure cloud solutions WHAT YOU WILL LEARN Design scalable cloud native applications with proven architecture patterns Apply resiliency strategies like failover and graceful degradation Understand deployment models and pick the right one for your needs Architect secure systems with encryption and API security Implement observability with metrics traces and logging Navigate hybrid integrations using event driven and messaging patterns Stay ahead with trends like serverless and sustainable cloud designs WHO THIS BOOK IS FOR This book is ideal for cloud architects software engineers DevOps professionals enterprise tech leads and computer science students

Readers should possess a foundational understanding of programming concepts and basic IT infrastructure to best leverage this guide's architectural insights

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Advances on P2P, Parallel, Grid, Cloud and Internet Computing Fatos Xhafa, Santi Caballé, Leonard Barolli, 2017-11-02

This book presents the latest innovative research findings on P2P Parallel Grid Cloud and Internet Computing. It gathers the Proceedings of the 12th International Conference on P2P Parallel Grid Cloud and Internet Computing held on November 8-10, 2017, in Barcelona, Spain. These computing technologies have rapidly established themselves as breakthrough paradigms for solving complex problems by enabling the aggregation and sharing of an increasing variety of distributed computational resources at large scale. Grid Computing originated as a paradigm for high performance computing, offering an alternative to expensive supercomputers through different forms of large scale distributed computing, while P2P Computing emerged as a new paradigm after client-server and web-based computing and has shown to be useful in the development of social networking, B2B (Business to Business), B2C (Business to Consumer), B2G (Business to Government), B2E (Business to Employee) and so on. Cloud Computing has been defined as a computing paradigm where the boundaries of computing are determined by economic rationale rather than technical limits. Cloud computing has quickly been adopted in a broad range of application domains and provides utility computing at large scale. Lastly, Internet Computing is the basis of any large scale distributed computing paradigm; it has very rapidly developed into a flourishing field with an enormous impact on today's information societies, serving as a universal platform comprising a large variety of computing forms such as Grid, P2P, Cloud and Mobile computing. The aim of the book Advances on P2P Parallel Grid Cloud and Internet Computing is to provide the latest findings, methods and development techniques from both theoretical and practical perspectives and to reveal synergies between these large scale computing paradigms.

Architecting Cloud-Native Serverless Solutions Safeer CM, 2023-06-23

Get up and running with serverless workloads across AWS, Azure, GCP, Kubernetes and virtual machines with real life examples and best practices for design, development and security of serverless applications. Purchase of the print or Kindle book includes a free PDF eBook. Key Features: Learn with DIY projects and step by step instructions for different serverless technologies and vendors. Explore detailed sections on running serverless workloads across Kubernetes and virtual machines. Discover Cloudflare Serverless Solutions to modernize your web applications. Book Description: Serverless computing has emerged as a mainstream paradigm in both cloud and on-premises computing, with AWS Lambda playing a pivotal role in shaping the Function as a Service (FaaS) landscape. However, with the explosion of serverless technologies and vendors, it has become increasingly challenging to comprehend the foundational services and their offerings. Architecting Cloud Native Serverless Solutions lays a strong foundation for understanding the

serverless landscape and technologies in a vendor agnostic manner You ll learn how to select the appropriate cloud vendors and technologies based on your specific needs In addition you ll dive deep into the serverless services across AWS GCP Azure and Cloudflare followed by open source serverless tools such as Knative OpenFaaS and OpenWhisk along with examples You ll explore serverless solutions on Kubernetes that can be deployed on both cloud hosted clusters and on premises environments with real world use cases Furthermore you ll explore development frameworks DevOps approaches best practices security considerations and design principles associated with serverless computing By the end of this serverless book you ll be well equipped to solve your business problems by using the appropriate serverless vendors and technologies to build efficient and cost effective serverless systems independently What you will learn Understand the serverless landscape and its potential Build serverless solutions across AWS Azure and GCP Develop and run serverless applications on Kubernetes Implement open source FaaS with Knative OpenFaaS and OpenWhisk Modernize web architecture with Cloudflare Serverless Discover popular serverless frameworks and DevOps for serverless Explore software design and serverless architecture patterns Acquire an understanding of serverless development and security best practices Who this book is for This book is for DevOps platform cloud site reliability engineers or application developers looking to build serverless solutions It s a valuable reference for solution architects trying to modernize a legacy application or working on a greenfield project It s also helpful for anyone trying to solve business or operational problems without wanting to manage complicated technology infrastructure using serverless technologies A basic understanding of cloud computing and some familiarity with at least one cloud vendor Python programming language and working with CLI will be helpful when reading this book

Cloud Computing Networking Lee Chao,2015-09-22 Cloud computing is the most significant technology transformation since the introduction of the Internet in the early 1990s This book covers the key networking and system administration concepts as well as the vital hands on skills you need to master cloud technology It is designed to help you quickly get started in deploying cloud services for a real world business It provides detailed step by step instructions for creating a fully functioning cloud based IT infrastructure using Microsoft Azure The book enhances your hands on skills through numerous lab activities

Advances in Internet, Data & Web Technologies Leonard Barolli,Fatos Xhafa,Nadeem Javaid,Evjola Spaho,Vladi Kolici,2018-02-23 This book presents original contributions on the theories and practices of emerging Internet data and Web technologies and their applicability in businesses engineering and academia focusing on advances in the life cycle exploitation of data generated from the digital ecosystem data technologies that create value e g for businesses toward a collective intelligence approach The Internet has become the most proliferative platform for emerging large scale computing paradigms Among these data and web technologies are two of the most prominent paradigms and are found in a variety of forms such as data centers cloud computing mobile cloud and mobile Web services These technologies together create a digital ecosystem whose cornerstone is the data cycle from capturing to processing

analyzing and visualizing The investigation of various research and development issues in this digital ecosystem are made more pressing by the ever increasing requirements of real world applications that are based on storing and processing large amounts of data The book is a valuable resource for researchers software developers practitioners and students interested in the field of data and web technologies *Azure for Architects* Ritesh Modi,2017-10-20 Your one stop guide to making the most out of Azure Cloud About This Book Get familiar with the different design patterns available in Microsoft Azure Develop Azure cloud architecture and a pipeline management system Get to know the security best practices for your Azure deployment Who This Book Is For If you are Cloud Architects DevOps Engineers or developers who want to learn key architectural aspects of the Azure Cloud platform then this book is for you Prior basic knowledge of the Azure Cloud platform is good to have What You Will Learn Familiarize yourself with the components of the Azure Cloud platform Understand the cloud design patterns Use enterprise security guidelines for your Azure deployment Design and implement Serverless solutions See Cloud architecture and the deployment pipeline Understand cost management for Azure solutions In Detail Over the years Azure cloud services has grown quickly and the number of organizations adopting Azure for their cloud services is also gradually increasing Leading industry giants are finding that Azure fulfills their extensive cloud requirements This book will guide you through all the important and tough decision making aspects involved in architecting a Azure public cloud for your organization The book starts with an extensive introduction to all the categories of designs available with Azure These design patterns focus on different aspects of cloud such as high availability data management and so on Gradually we move on to various aspects such as building your cloud structure and architecture It will also include a brief description about different types of services provided by Azure such as Azure functions and Azure Analytics which can prove beneficial for an organization This book will cover each and every aspect and function required to develop a Azure cloud based on your organizational requirements By the end of this book you will be in a position to develop a full fledged Azure cloud Style and approach This hands on guide to the Azure Cloud platform covers different architectural concepts and implementations necessary for any enterprise scale deployment **Azure for Architects** Ritesh Modi,Jack Lee,Rithin Skaria,2020-07-17 Build and design multiple types of applications that are cross language platform and cost effective by understanding core Azure principles and foundational concepts Key FeaturesGet familiar with the different design patterns available in Microsoft AzureDevelop Azure cloud architecture and a pipeline management systemGet to know the security best practices for your Azure deploymentBook Description Thanks to its support for high availability scalability security performance and disaster recovery Azure has been widely adopted to create and deploy different types of application with ease Updated for the latest developments this third edition of *Azure for Architects* helps you get to grips with the core concepts of designing serverless architecture including containers Kubernetes deployments and big data solutions You ll learn how to architect solutions such as serverless functions you ll discover deployment patterns for containers and

Kubernetes and you'll explore large scale big data processing using Spark and Databricks As you advance you'll implement DevOps using Azure DevOps work with intelligent solutions using Azure Cognitive Services and integrate security high availability and scalability into each solution Finally you'll delve into Azure security concepts such as OAuth OpenConnect and managed identities By the end of this book you'll have gained the confidence to design intelligent Azure solutions based on containers and serverless functions What you will learn Understand the components of the Azure cloud platform Use cloud design patterns Use enterprise security guidelines for your Azure deployment Design and implement serverless and integration solutions Build efficient data solutions on Azure Understand container services on Azure Who this book is for If you are a cloud architect DevOps engineer or a developer looking to learn about the key architectural aspects of the Azure cloud platform this book is for you A basic understanding of the Azure cloud platform will help you grasp the concepts covered in this book more effectively

[The Cloud Puzzle Solved](#) Kameron Hussain, Frahaan Hussain, 2025-04-26 Unravel the complexities of cloud architecture with [The Cloud Puzzle Solved](#) Azure Design Patterns a comprehensive guide crafted for modern developers architects and tech leaders looking to master Microsoft Azure This book demystifies the vast landscape of Azure by breaking it down into proven design patterns that solve real world problems with clarity and precision Whether you're designing scalable web applications securing data across services or optimizing performance in the cloud this book provides the patterns and practices you need to succeed With a clear and engaging approach it explains the why behind each design pattern not just the how enabling you to make smarter decisions and build more resilient solutions Inside you'll discover patterns for Scalability and performance optimization High availability and disaster recovery Secure service communication and identity management Data management and storage strategies Deployment automation and CI CD pipelines Event driven and microservices architectures Each chapter is enriched with practical examples architectural diagrams and guidance for applying the patterns in your own Azure environment From seasoned professionals to those new to cloud native development readers will gain the tools to elevate their architectural thinking and drive innovation If you've ever been overwhelmed by Azure's breadth or struggled to connect the dots between services this book puts the puzzle pieces together clearly and efficiently Unlock the power of Azure with patterns that scale secure and succeed

Cloud Design Patterns Alex Homer, John Sharp, Larry Brader, Masashi Narumoto, Trent Swanson, 2014-02-17 Cloud applications have a unique set of characteristics They run on commodity hardware provide services to untrusted users and deal with unpredictable workloads These factors impose a range of problems that you as a designer or developer need to resolve Your applications must be resilient so that they can recover from failures secure to protect services from malicious attacks and elastic in order to respond to an ever changing workload This guide demonstrates design patterns that can help you to solve the problems you might encounter in many different areas of cloud application development Each pattern discusses design considerations and explains how you can implement it using the features of Windows Azure The patterns are grouped into

categories availability data management design and implementation messaging performance and scalability resilience management and monitoring and security You will also see more general guidance related to these areas of concern It explains key concepts such as data consistency and asynchronous messaging In addition there is useful guidance and explanation of the key considerations for designing features such as data partitioning telemetry and hosting in multiple datacenters These patterns and guidance can help you to improve the quality of applications and services you create and make the development process more efficient Enjoy

Developing Microservices Architecture on Microsoft Azure with Open Source Technologies Ovais Mehboob Ahmed Khan, Arvind Chandaka, 2021-06-03 Deliver microservices architecture step by step from defining business problems through development deployment and monitoring Increasingly organizations are modernizing application development by integrating open source technologies into a holistic architecture for delivering high quality workloads to the cloud This is a complete step by step guide to building flexible microservices architecture by leveraging Microsoft Azure cloud services together with key open source technologies such as Java Node JS NET Core and Angular Through a realistic case study project expert Microsoft engineers Ovais Mehboob Ahmed Khan and Arvind Chandaka guide you through every step of technical implementation required to achieve value establishing end to end infrastructure developing cloud native applications automating deployments monitoring operations and more Microsoft engineers Ovais Mehboob Ahmed Khan and Arvind Chandaka show how to Define application features and business requirements and map them onto microservices using modeling techniques Design microservices solution architecture that enables high quality workloads Develop an application front end and build microservices with open source technologies Leverage Azure Kubernetes Services for Docker container orchestration Use various patterns to build reliable and resilient microservices Enforce microservices app security and use Azure AD B2C for user authentication authorization Establish an API gateway that provides a unified front door to back end microservices Set up continuous integration and deployment with Azure DevOps Monitor microservices with Azure Monitor and Azure Application Insights About This Book For everyone interested in developing microservices including architects engineers and consultants Will help IT professionals build new applications modernize existing systems migrate workloads improve app management and more

Microservices with Azure Namit Tanasseri, Rahul Rai, 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

Developing Cloud Native Applications in Azure using .NET Core Rekha Kodali, Dr. Gopala Krishna Behara, Sankara Narayanan Govindarajulu, 2020-02-01 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

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Cloud Architecture Patterns Using Microsoft Azure Introduction

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