

## Building Cloud Apps With Microsoft Azure Best Practices For Devops Data Storage High Availability And More Developer Reference

Microsoft Azure Essentials from Microsoft Press is a series of free ebooks designed to help you advance your technical skills with Microsoft Azure. This third ebook in the series introduces Microsoft Azure Machine Learning, a service that a developer can use to build predictive analytics models (using training datasets from a variety of data sources) and then easily deploy those models for consumption as cloud web services. The ebook presents an overview of modern data science theory and principles, the associated workflow, and then covers some of the more common machine learning algorithms in use today. It builds a variety of predictive analytics models using real world data, evaluates several different machine learning algorithms and modeling strategies, and then deploys the finished models as machine learning web services on Azure within a matter of minutes. The ebook also expands on a working Azure Machine Learning predictive model example to explore the types of client and server applications you can create to consume Azure Machine Learning web services. Watch Microsoft Press's blog and Twitter (@MicrosoftPress) to learn about other free ebooks in the Microsoft Azure Essentials series.

Get started and learn a step-by-step approach to application development using Microsoft Azure. Select the right services to solve the problem at hand in a cost-effective manner and explore the potential different services and how they can help in building enterprise applications. Azure has an ample amount of resources and tutorials, but most of them focus on specific services and explain those services on their own and in a given context. Practical Azure Application Development focuses on building complete solutions on Azure using different services. This book gives you the holistic approach to Azure as a solutions development platform. This book: Covers Azure as a solution development platform for building applications Provides real-world examples to understand why and when an Azure service is required Discusses how Azure helps to achieve continuous improvement and expansion of an application Provides application development experience from purchasing Azure to integrating with core Azure services, including an introduction to DevOps with VSTS What You'll Learn Use Azure services to solve real-world software problems Define the usage of Azure services and select the right services to solve the problem at hand Make clear and less ambiguous decisions about using different Azure services Take a holistic approach to Azure as a solution platform Understand the basics of security, data protection, and cost controls in Azure Who This Book Is For Developers, software engineers, and architects who have experience in .NET and web development, but have little or no knowledge in planning and developing an application on Azure

This ebook walks you through a patterns-based approach to building real-world cloud solutions. The patterns apply to the development process as well as to architecture and coding practices. The content is based on a presentation developed by Scott Guthrie and delivered by him at the Norwegian Developers Conference (NDC) in June of 2013 (part 1, part 2), and at Microsoft Tech Ed Australia in September 2013 (part 1, part 2). Many others updated and augmented the content while transitioning it from video to written form. Who should read this book Developers who are curious about developing for the cloud, are considering a move to the cloud, or are new to cloud development will find here a concise overview of the most important concepts and practices they need to know. The concepts are illustrated with concrete examples, and each chapter includes links to other resources that provide more in-depth information. The examples and the links to additional resources are for Microsoft frameworks and services, but the principles illustrated apply to other web development frameworks and cloud environments as well. Developers who are already developing for the cloud may find ideas here that will help make them more successful. Each chapter in the series can be read independently, so you can pick and choose topics that you're interested in. Anyone who watched Scott Guthrie's "Building Real World Cloud Apps with Windows Azure" presentation and wants more details and updated information will find that here. Assumptions This ebook expects that you have experience developing web applications by using Visual Studio and ASP.NET. Familiarity with C# would be helpful in places.

Learn Azure in a Month of Lunches, Second Edition, is a tutorial on writing, deploying, and running applications in Azure. In it, you'll work through 21 short lessons that give you real-world experience. Each lesson includes a hands-on lab so you can try out and lock in your new skills. Summary You can be incredibly productive with Azure without mastering every feature, function, and service. Learn Azure in a Month of Lunches, Second Edition gets you up and running quickly, teaching you the most important concepts and tasks in 21 practical bite-sized lessons. As you explore the examples, exercises, and labs, you'll pick up valuable skills immediately and take your first steps to Azure mastery! This fully revised new edition covers core changes to the Azure UI, new Azure features, Azure containers, and the upgraded Azure Kubernetes Service. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Microsoft Azure is vast and powerful, offering virtual servers, application templates, and prebuilt services for everything from data storage to AI. To navigate it all, you need a trustworthy guide. In this book, Microsoft engineer and Azure trainer Iain Foulds focuses on core skills for creating cloud-based applications. About the book Learn Azure in a Month of Lunches, Second Edition, is a tutorial on writing, deploying, and running applications in Azure. In it, you'll work through 21 short lessons that give you real-world experience. Each lesson includes a hands-on lab so you can try out and lock in your new skills. What's inside Understanding Azure beyond point-and-click Securing applications and data Automating your environment Azure services for machine learning, containers, and more About the reader This book is for readers who can write and deploy simple web or client/server applications. About the author Iain Foulds is an engineer and senior content developer with Microsoft. Table of Contents PART 1 - AZURE CORE SERVICES 1 Before you begin 2 Creating a virtual machine 3 Azure Web Apps 4 Introduction to Azure Storage 5 Azure Networking basics PART 2 - HIGH AVAILABILITY AND SCALE 6 Azure Resource Manager 7 High availability and redundancy 8 Load-balancing applications 9 Applications that scale 10 Global databases with Cosmos DB 11 Managing network traffic and routing 12 Monitoring and troubleshooting PART 3 - SECURE BY DEFAULT 13 Backup, recovery, and replication 14 Data encryption 15 Securing information with Azure Key Vault 16 Azure Security Center and updates PART 4 - THE COOL STUFF 17 Machine learning and artificial intelligence 18 Azure Automation 19 Azure containers 20 Azure and the Internet of Things 21 Serverless computing

How can you create an application that has truly global reach, and can scale rapidly to meet sudden massive spikes in demand? Historically, companies had to invest in an infrastructure capable of supporting such an application themselves, and plan for peak demand-which often means that much of the capacity sits idle for much of the time. Typically, only large companies would have the available resources to risk such an enterprise. The cloud has changed the rules of the game. By making infrastructure available on a "pay as you go" basis, creating a massively scalable, global application is within the reach of both large and small companies. Yes, by moving applications to the cloud you're giving up some control and autonomy, but you're also going to benefit from reduced costs, increased flexibility, and scalable computation and storage. This guide is the third release of the second volume in a series about Windows Azure. It demonstrates how you can create from scratch a multi-tenant, Software as a Service (SaaS) application to run in the cloud by using the Windows Azure tools and the increasing range of capabilities of Windows Azure. The guide focuses on both good practice design and the practicalities of implementation for multi-tenant applications, but also contains a wealth of information on factors such as security, scalability, availability, and elasticity that are relevant to all types of cloud hosted applications. The guide is intended for any architect, developer, or information technology (IT) professional who designs, builds, or operates applications and services that run on or interact with the cloud. Although applications do not need to be based on the Windows operating system to work in Windows Azure, or be written using a .NET language, this guide is written for people who work with Windows based systems. You should be familiar with the .NET Framework, Visual Studio, ASP.NET MVC, and Visual

C#.

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 Integration capabilities using serverless architecture 7. Developing a simple IoT application 8. Developing a simple ML based application 9. Different enterprise use cases which enable digital transformation using Cloud Native Applications

If you are a developer interested in building systems for Microsoft Azure, with an understanding of efficient cloud-based application development, then this is the book for you.

Microsoft Azure Essentials from Microsoft Press is a series of free ebooks designed to help you advance your technical skills with Microsoft Azure. The first ebook in the series, Microsoft Azure Essentials: Fundamentals of Azure, introduces developers and IT professionals to the wide range of capabilities in Azure. The authors - both Microsoft MVPs in Azure - present both conceptual and how-to content for key areas, including: Azure Websites and Azure Cloud Services Azure Virtual Machines Azure Storage Azure Virtual Networks Databases Azure Active Directory Management tools Business scenarios Watch Microsoft Press's blog and Twitter (@MicrosoftPress) to learn about other free ebooks in the "Microsoft Azure Essentials" series.

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. This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. Through four complete sprints, this book takes you through every step needed to build brand new cross-platform web apps with ASP.NET Core, and make them available on the Internet. You won't just master Microsoft's revolutionary open source ASP.NET Core technology: you'll learn how to integrate the immense power of MVC, Docker, Azure Web Apps, Visual Studio and Visual Studio Code, C#, JavaScript, TypeScript, and Entity Framework. Working through the authors' carefully designed sprints, you'll start with a blank canvas, move through software architecture and design, adjusting to user feedback, recovering from mistakes, builds, testing, deployment, maintenance, refactoring, and more. Along the way, you'll learn techniques for delivering state-of-the-art software to users more rapidly and repeatably than ever before.

This updated and expanded second edition of the Building Cloud Apps with Microsoft Azure: Best Practices for DevOps, Data Storage provides a user-friendly introduction to the subject Taking a clear structural framework, it guides the reader through the subject's core elements. A flowing writing style combines with the use of illustrations and diagrams throughout the text to ensure the reader understands even the most complex of concepts. This succinct and enlightening overview is a required reading for all those interested in the subject . We hope you find this book useful in shaping your

future career & Business.

Get the definitive guide on designing applications on the Microsoft application platform—straight from the Microsoft patterns & practices team. Learn how to choose the most appropriate architecture and the best implementation technologies that the Microsoft application platform offers applications developers. Get critical design recommendations and guidelines organized by application type—from Web, mobile, and rich Internet applications to Office Business Applications. You’ll also get links to additional technical resources that can help with your application development. Modernize your apps with Microsoft Azure by moving web, desktop, and mobile apps to the cloud Key Features Decide which migration strategy is most suitable for your organization and create a migration roadmap Move existing infrastructure to Azure and learn strategies to reduce cost, increase storage, and improve ROI Design secure, scalable, and cost-effective solutions with the help of practical examples Book Description Whether you are trying to re-architect a legacy app or build a cloud-ready app from scratch, using the Azure ecosystem with .NET and Java technologies helps you to strategize and plan your app modernization process effectively. With this book, you’ll learn how to modernize your applications by using Azure for containerization, DevOps, microservices, and serverless solutions to reduce development time and costs, while also making your applications robust, secure, and scalable. You will delve into improving application efficiency by using container services such as Azure Container Service, Azure Kubernetes Service (AKS), and more. Next, you will learn to modernize your application by implementing DevOps throughout your application development life cycle. You will then focus on increasing the scalability and performance of your overall application with microservices, before learning how to add extra functionality to your application with Azure serverless solutions. Finally, you’ll get up to speed with monitoring and troubleshooting techniques. By the end of this book, you will have learned how to use the Azure ecosystem to refactor, re-architect, and rebuild your web, mobile, and desktop applications. What you will learn Use DevOps and containerization technologies to modernize your applications and infrastructure Build microservices using Azure Service Fabric Develop scalable applications using Azure Functions Manage and deploy your application code and database connectivity Secure and monitor your applications in Azure effectively Design for high availability and disaster recovery Who this book is for This book is for .NET and Java developers who want to modernize their applications using Azure. Solution architects and experienced developers interested in modernizing legacy applications using Azure will also find this book useful. Some prior understanding of cloud computing concepts will be beneficial.

Kubernetes radically changes the way applications are built and deployed in the cloud. Since its introduction in 2014, this container orchestrator has become one of the largest and most popular open source projects in the world. The updated edition of this practical book shows developers and ops personnel how Kubernetes and container technology can help you achieve new levels of velocity, agility, reliability, and efficiency. Kelsey Hightower, Brendan Burns, and Joe Beda—who’ve worked on Kubernetes at Google and beyond—explain how this system fits into the lifecycle of a distributed application. You’ll learn how to use tools and APIs to automate scalable distributed systems, whether it’s for online services, machine learning applications, or a cluster of Raspberry Pi computers. Create a simple cluster to learn how Kubernetes works Dive into the details of deploying an application using Kubernetes Learn specialized objects in Kubernetes, such as DaemonSets, jobs, ConfigMaps, and secrets Explore deployments that tie together the lifecycle of a complete application Get practical examples of how to develop and deploy real-world applications in Kubernetes In the race to compete in today’s fast-moving markets, large enterprises are busy adopting new technologies for creating new products, processes, and business models. But one obstacle on the road to digital transformation is placing too much emphasis on technology, and not enough on the types of processes technology enables. What if different lines of business could build their own services and applications—and decision-making was distributed rather than centralized? This report explores the concept of a digital business platform as a way of empowering individual business sectors to act on data in real time. Much innovation in a digital enterprise will increasingly happen at the edge, whether it involves business users (from marketers to data scientists) or IoT devices. To facilitate the process, your core IT team can provide these sectors with the digital tools they need to innovate quickly. This report explores: Key cultural and organizational changes for developing business capabilities through cross-functional product teams A platform for integrating applications, data sources, business partners, clients, mobile apps, social networks, and IoT devices Creating internal API programs for building innovative edge services in low-code or no-code environments Tools including Integration Platform as a Service, Application Platform as a Service, and Integration Software as a Service The challenge of integrating microservices and serverless architectures Event-driven architectures for processing and reacting to events in real time You’ll also learn about a complete pervasive integration solution as a core component of a digital business platform to serve every audience in your organization.

The “Microsoft Azure Essentials” series helps you advance your technical skills with Microsoft Azure. “Microsoft Azure Essentials: Azure Web Apps for Developers” focuses on providing essential information about developing web applications hosted on Azure Web Apps. It is written with the developer who has experience using Visual Studio and the .NET Framework in mind. If Azure Web Apps is new to you, this book is for you. If you have experience developing for Azure Web Apps, this book is for you, too, because there are features and tools discussed in this text that are new to the platform.

Discover the powerful capabilities of Dapr by implementing a sample application with microservices leveraging the actor model to foster its strengths. Find out how Dapr helps you simplify the creation of resilient and portable microservices with this book. Your guide to designing apps that extend the capabilities of your SharePoint site. Take advantage of the most important new concept in Microsoft SharePoint 2013—the app. Led by two SharePoint experts, you’ll learn development techniques such as building app lists, creating event handlers, and the major classes in the object model that provide access to content stored in

SharePoint. Get expert guidance on how to: Best design an app Develop a SharePoint-hosted app Develop a developer-hosted app Create and use lists Support notifications Program a client-side app with JavaScript Establish user security and SharePoint application security Get code samples on the Web.

Data is getting bigger and more complex by the day, and so are your choices in handling it. Explore some of the most cutting-edge databases available - from a traditional relational database to newer NoSQL approaches - and make informed decisions about challenging data storage problems. This is the only comprehensive guide to the world of NoSQL databases, with in-depth practical and conceptual introductions to seven different technologies: Redis, Neo4J, CouchDB, MongoDB, HBase, Postgres, and DynamoDB. This second edition includes a new chapter on DynamoDB and updated content for each chapter. While relational databases such as MySQL remain as relevant as ever, the alternative, NoSQL paradigm has opened up new horizons in performance and scalability and changed the way we approach data-centric problems. This book presents the essential concepts behind each database alongside hands-on examples that make each technology come alive. With each database, tackle a real-world problem that highlights the concepts and features that make it shine. Along the way, explore five database models - relational, key/value, columnar, document, and graph - from the perspective of challenges faced by real applications. Learn how MongoDB and CouchDB are strikingly different, make your applications faster with Redis and more connected with Neo4J, build a cluster of HBase servers using cloud services such as Amazon's Elastic MapReduce, and more. This new edition brings a brand new chapter on DynamoDB, updated code samples and exercises, and a more up-to-date account of each database's feature set. Whether you're a programmer building the next big thing, a data scientist seeking solutions to thorny problems, or a technology enthusiast venturing into new territory, you will find something to inspire you in this book. What You Need: You'll need a \*nix shell (Mac OS or Linux preferred, Windows users will need Cygwin), Java 6 (or greater), and Ruby 1.8.7 (or greater). Each chapter will list the downloads required for that database.

Winner of the 2011 Jolt Excellence Award! Getting software released to users is often a painful, risky, and time-consuming process. This groundbreaking new book sets out the principles and technical practices that enable rapid, incremental delivery of high quality, valuable new functionality to users. Through automation of the build, deployment, and testing process, and improved collaboration between developers, testers, and operations, delivery teams can get changes released in a matter of hours—sometimes even minutes—no matter what the size of a project or the complexity of its code base. Jez Humble and David Farley begin by presenting the foundations of a rapid, reliable, low-risk delivery process. Next, they introduce the “deployment pipeline,” an automated process for managing all changes, from check-in to release. Finally, they discuss the “ecosystem” needed to support continuous delivery, from infrastructure, data and configuration management to governance. The authors introduce state-of-the-art techniques, including automated infrastructure management and data migration, and the use of virtualization. For each, they review key issues, identify best practices, and demonstrate how to mitigate risks. Coverage includes

- Automating all facets of building, integrating, testing, and deploying software
- Implementing deployment pipelines at team and organizational levels
- Improving collaboration between developers, testers, and operations
- Developing features incrementally on large and distributed teams
- Implementing an effective configuration management strategy
- Automating acceptance testing, from analysis to implementation
- Testing capacity and other non-functional requirements
- Implementing continuous deployment and zero-downtime releases
- Managing infrastructure, data, components and dependencies
- Navigating risk management, compliance, and auditing

Whether you're a developer, systems administrator, tester, or manager, this book will help your organization move from idea to release faster than ever—so you can deliver value to your business rapidly and reliably.

Serverless computing is radically changing the way we build and deploy applications. With cloud providers running servers and managing machine resources, companies now can focus solely on the application's business logic and functionality. This hands-on book shows experienced programmers how to build and deploy scalable machine learning and deep learning models using serverless architectures with Microsoft Azure. You'll learn step-by-step how to code machine learning into your projects using Python and pre-trained models that include tools such as image recognition, speech recognition, and classification. You'll also examine issues around deployment and continuous delivery including scaling, security, and monitoring. This book is divided into four parts: Cloud-based development: learn the basics of serverless computing with machine learning, functions as a service (FaaS), and the use of APIs Adding intelligence: create serverless applications using Azure Functions; learn how to use pre-built machine-learning and deep-learning models Deployment and continuous delivery: get up to speed with Azure Kubernetes Service, as well as Azure Security Center, and Azure Monitoring Application examples: deliver data at the edge, build conversational interfaces, and use convolutional neural networks for image classification

Gain practical skills with Azure and understand how to start developing scalable and easy-to-maintain cloud applications Key Features Get up and running with the development aspects of Azure cloud Build fault-tolerant and scalable applications on Azure A practical, developer-centric guide for Azure developers Book Description Microsoft Azure is one of the fastest growing public cloud service providers in the market currently, and also holds the second highest market share after AWS. Azure has a sophisticated set of services that will help you build fault-tolerant and scalable cloud-based applications. Hands-On Azure for Developers will take you on a journey through multiple PaaS services available in Azure, including App Services, Functions, and Service Fabric, and explain in detail how to build a complete and reliable system with ease. You will learn about how to maximize your skills when building cloud-based solutions leveraging different SQL/NoSQL databases, serverless and messaging components, and even search engines such as Azure Search. In the concluding chapters, this book covers more advanced scenarios such as scalability best practices, serving static content with Azure CDN, and distributing loads with Azure Traffic Manager. By the end of the book, you will be able to build modern applications on the Azure cloud using the most popular and promising technologies, which will help make your solutions reliable, stable, and efficient. What you will learn Implement serverless components such as Azure functions and logic apps Integrate applications with available storages and containers Understand messaging components, including Azure Event Hubs and Azure Queue Storage Gain an understanding of Application Insights and other proper monitoring solutions Store your data with services such as Azure SQL and Azure Data Lake Storage Develop fast and scalable cloud applications Who this book is for Hands-On Azure for Developers is for developers who want to build highly scalable cloud-based applications on Azure. Prior knowledge of Azure services will be an added advantage.

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!

We're thrilled to share another free ebook with you: Introducing Microsoft Azure HDInsight, by Avkash Chauhan, Valentine Fontana, Michele Hart, Wee Hyong Tok, and Buck Woody. Here are the download links: Download the PDF (6.37 MB; 130 pages) from <http://aka.ms/IntroHDInsight/PDF> Download the EPUB (8.46 MB) from <http://aka.ms/IntroHDInsight/EPUB> Download the MOBI (12.8 MB) from <http://aka.ms/IntroHDInsight/MOBI> Download the code samples (6.83 KB) from <http://aka.ms/IntroHDInsight/CompContent> Get a head start evaluating Windows Azure - with technical insights from a Microsoft MVP Mitch Tulloch. This guide introduces the latest features and capabilities, with scenario-based advice on how the platform can meet the needs of your business. Get the high-level overview you need to begin preparing your deployment now. Topics include: Understanding Windows Azure Windows Azure Compute Services Windows Azure Network Services Windows Azure Data Services Windows Azure App Services Getting Started with Windows Azure

Guide to designing and developing cloud native applications in Azure Key Featuresa- Basics of Cloud Native Applications a- Designing Microservicesa- Different cloud native options for developing Cloud Native Applications in Azurea- BOTs, Web Apps, Mobile Apps, Logic Apps, Service Bus, Azure Functionsa- Azure IOT Applicationsa- Azure Machine Learning Basicsa- Enterprise Digital JourneysDescriptionThe mainstreaming of the cloud-native architecture as an enterprise discipline is well underway. According to the Forbes report, in January 2018, 83% of enterprise workloads will be in the cloud by 2020, 41% of enterprise workloads will run on public cloud platforms while another 22% will be running on hybrid cloud platforms. Customers are embarking on enterprise digital transformation journeys. Adopting cloud, cloud-native architectures, and microservices is an important aspect of the journey. This book starts with a brief introduction to the basics of cloud-native applications and cloud-native application patterns. It covers cloud-native options available in Azure. The objective of the book is to provide practical guidelines to an architect/designer/consultant/developer who is part of the Cloud application definition team. The book articulates a methodology that the implementation team needs to follow in a systematic manner and adapt them to fulfill the requirements for enabling the cloud-native application. It emphasizes on the interpersonal skills and techniques for organizing and directing the cloud-native definition, leadership buy-in, and leading the transition from planning to implementation. It also highlights steps to be followed and the patterns for developing cloud-native applications, cloud-native options available in Azure, developing BOT, and microservices based on Azure. It also covers how to develop simple IoT applications, Machine learning-based applications, and the serverless architecture using Azure with a practical and pragmatic approach. This book embraces a structured approach around the following key themes that represent the typical phases an enterprise traverses during its cloud-native application journey. What will you learn This book aims to: a- Demonstrate the importance of cloud-native applications in elevating the effectiveness of organizational transformation programs and digital enterprise journeys using MS Azure. a- Disseminate current advancements and thought leadership in the area of cloud-native architecture in the context of digital enterprises. a- Provide initiatives with evidence-based, credible, field-tested and practical guidance in designing their respective architectures. Who this book is for The book is intended for anyone looking for a career in Cloud technology, especially all aspiring Cloud Architects who want to learn cloud-native architectures, Microservices, IoT, BOT and Microsoft Azure platform. 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 Integration capabilities using serverless architecture 7. Developing a simple IoT application 8. Developing a simple ML based application 9. Different enterprise use cases which enable digital transformation using Cloud Native Applications

Summary Cloud Native Patterns is 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

A comprehensive, easy-to-follow guide to creating complete Node apps and understanding how to build, deploy, and test your own apps. Key Features Entirely project-based and practical Explains the "Why" of Node.js features, not just the "how", providing you with a deep understanding and enabling you to easily apply concepts in your own applications Covers the full range of technologies around Node.js – NPM, version control with Git, and much more Book Description Learning Node.js Development is a practical, project-based book that provides you with all you need to get started as a Node.js developer. Node is a ubiquitous technology on the modern web, and an essential part of any web developers' toolkit. If you are looking to create real-world Node applications, or you want to switch careers or launch a side project to generate some extra income, then you're in the right place. This book has been written around a single goal—turning you into a professional Node developer capable of developing, testing, and deploying real-world production applications. Learning Node.js Development is built from the ground up around the latest version of Node.js (version 9.x.x). You'll be learning all the cutting-edge features available only in the latest software versions. This book cuts through the mass of information available around Node and delivers the essential skills that you need to become a Node developer. It takes you through creating complete apps and understanding how to build, deploy, and test your own Node apps. It maps out everything in a comprehensive, easy-to-follow package designed to get you up and running quickly. What you will learn Learn the fundamentals of Node Build apps that respond to user input Master working with servers Learn how to test and debug applications Deploy and update your apps in the real world Create responsive asynchronous web applications Who this book is for This book targets anyone looking to launch their own Node applications, switch careers, or freelance as a Node developer. You should have a basic understanding of JavaScript in order to follow this course.

Build cloud native applications in Python About This Book This is the only reliable resource that showcases the tools and techniques you need build robust and resilient cloud native applications in Python Learn how to architect your application on both, the AWS and Azure clouds for high availability Assess, monitor, and troubleshoot your applications in the cloud Who This Book Is For This book is ideal for developers with a basic knowledge of Python who want to learn to build, test, and scale their Python-based applications. No prior experience of writing microservices in Python is required. What You Will Learn Get to know "the way of the cloud", including why developing good cloud software is fundamentally about mindset and discipline Know what microservices are and how to design them Create reactive applications in the cloud with third-party messaging providers Build massive-scale, user-friendly GUIs with React and Flux Secure cloud-based web applications: the do's, don'ts, and options Plan cloud apps that support continuous delivery and deployment In Detail Businesses today are evolving so rapidly that having their own infrastructure to support their expansion is not feasible. As a result, they have been resorting to the elasticity of the cloud to provide a platform to build and deploy their highly scalable applications. This book will be the one stop for you to learn all about building cloud-native architectures in Python. It will begin by introducing you to cloud-native architecture and will help break it down for you. Then you'll learn how to build microservices in Python using REST APIs in an event driven approach and you will build the web layer. Next, you'll learn about Interacting data services and building Web views with React, after which we will take a detailed look at application security and performance. Then, you'll also learn how to Dockerize your services. And finally, you'll learn how to deploy the application on the AWS and Azure platforms. We will end the book by discussing some concepts and techniques around troubleshooting problems that might occur with your applications after you've deployed them. This book will teach you how to craft applications that are built as small standard units, using all the proven best practices and avoiding the usual traps. It's a practical book: we're going to build everything using Python 3 and its amazing tooling ecosystem. The book will take you on a journey, the destination of which, is the creation of a complete Python application based on microservices over the cloud platform Style and approach Filled with examples, this book takes a step-by-step approach to teach you each and every configuration you need to make your application highly available and fault tolerant. If you are a .NET developer who wants to develop end-to-end RESTful applications in the cloud, then this book is for you. A working knowledge of C# will help you get the most out of this book.

A practical guide to implementing a scalable and fast state-of-the-art analytical data estate Key Features Store and analyze data with enterprise-grade security and auditing Perform batch, streaming, and interactive analytics to optimize your big data solutions with ease Develop and run parallel data processing programs using real-world enterprise scenarios Book Description Azure Data Lake, the modern data warehouse architecture, and related data services on Azure enable organizations to build their own customized analytical platform to fit any analytical requirements in terms of volume, speed, and quality. This book is your guide to learning all the features and capabilities of Azure data services for storing, processing, and analyzing data (structured, unstructured, and semi-structured) of any size. You will explore key techniques for ingesting and storing data and perform batch, streaming, and interactive analytics. The book also shows you how to overcome various challenges and complexities relating to productivity and scaling. Next, you will be able to develop and run massive data workloads to perform different actions. Using a cloud-based big data-modern data warehouse-analytics setup, you will also be able to build secure, scalable data estates for enterprises. Finally, you will not only learn how to develop a data warehouse but also understand how to create enterprise-grade security and auditing big data programs. By the end of this Azure book, you will have learned how to develop a powerful and efficient analytical

platform to meet enterprise needs. What you will learn Implement data governance with Azure services Use integrated monitoring in the Azure Portal and integrate Azure Data Lake Storage into the Azure Monitor Explore the serverless feature for ad-hoc data discovery, logical data warehousing, and data wrangling Implement networking with Synapse Analytics and Spark pools Create and run Spark jobs with Databricks clusters Implement streaming using Azure Functions, a serverless runtime environment on Azure Explore the predefined ML services in Azure and use them in your app Who this book is for This book is for data architects, ETL developers, or anyone who wants to get well-versed with Azure data services to implement an analytical data estate for their enterprise. The book will also appeal to data scientists and data analysts who want to explore all the capabilities of Azure data services, which can be used to store, process, and analyze any kind of data. A beginner-level understanding of data analysis and streaming will be required. Learn how to build key aspects of web, cloud, and mobile solutions by combining F# with various .NET and open source technologies. With helpful examples, this hands-on book shows you how to tackle concurrency, asynchrony, and other server-side challenges. You'll quickly learn how to be productive with F#, whether you want to integrate the language into your existing web application or use it to create the next Twitter. If you're a mid- to senior-level .NET programmer, you'll discover how this expressive functional-first language helps you write robust, maintainable, and reusable solutions that scale easily and target multiple devices. Use F# with ASP.NET MVC, ASP.NET Web API, WCF, Windows Azure, HTML5, CSS3, jQuery Mobile, and other tools Build next-generation ASP.NET MVC 4 web applications, using F# to do the heavy lifting on the server Create WCF SOAP and HTTP web services Develop F# web applications and services that run on Windows Azure Build scalable solutions that allow reuse by mobile and web front-ends Use F# with the WebSharper and Pit frameworks to build end-to-end web stacks

Part of a series of specialized guides on System Center - this book focuses on using AppController to manage virtual machines and services across private and public clouds. Series editor Mitch Tulloch and a team of System Center experts provide concise technical guidance as they step you through key configuration and management tasks.

A Cloud for Global Good: a book of policy recommendations for governments, industry and civil society to help ensure that the opportunities of technology are evenly shared, and that challenges facing society are identified early and practical solutions applied

Access detailed content and examples on Azure SQL, a set of cloud services that allows for SQL Server to be deployed in the cloud. This book teaches the fundamentals of deployment, configuration, security, performance, and availability of Azure SQL from the perspective of these same tasks and capabilities in SQL Server. This distinct approach makes this book an ideal learning platform for readers familiar with SQL Server on-premises who want to migrate their skills toward providing cloud solutions to an enterprise market that is increasingly cloud-focused. If you know SQL Server, you will love this book. You will be able to take your existing knowledge of SQL Server and translate that knowledge into the world of cloud services from the Microsoft Azure platform, and in particular into Azure SQL. This book provides information never seen before about the history and architecture of Azure SQL. Author Bob Ward is a leading expert with access to and support from the Microsoft engineering team that built Azure SQL and related database cloud services. He presents powerful, behind-the-scenes insights into the workings of one of the most popular database cloud services in the industry. What You Will Learn Know the history of Azure SQL Deploy, configure, and connect to Azure SQL Choose the correct way to deploy SQL Server in Azure Migrate existing SQL Server instances to Azure SQL Monitor and tune Azure SQL's performance to meet your needs Ensure your data and application are highly available Secure your data from attack and theft Who This Book Is For This book is designed to teach SQL Server in the Azure cloud to the SQL Server professional. Anyone who operates, manages, or develops applications for SQL Server will benefit from this book. Readers will be able to translate their current knowledge of SQL Server—especially of SQL Server 2019—directly to Azure. This book is ideal for database professionals looking to remain relevant as their customer base moves into the cloud.

Use this collection of best practices and tips for assessing the health of a solution. This book provides detailed techniques and instructions to quickly diagnose aspects of your Azure cloud solutions. The initial chapters of this book introduce you to the many facets of Microsoft Azure, explain why and how building for the cloud differs from on-premise development, and outline the need for a comprehensive strategy to debugging and profiling in Azure. You learn the major types of blades (FaaS, SaaS, PaaS, IaaS), how different views can be created for different scenarios, and you will become familiar with the Favorites section, Cost Management & Billing blade, support, and Cloud Shell. You also will know how to leverage Application Insights for application performance management, in order to achieve a seamless cloud development experience. Application Insights, Log Analytics, and database storage topics are covered. The authors further guide you on identity security with Azure AD and continuous delivery with CI and CD covered in detail along with the capabilities of Azure DevOps. And you are exposed to external tooling and trouble shooting in a production environment. After reading this book, you will be able to apply methods to key Azure services, including App Service (Web Apps, Function Apps, and Logic Apps), Cloud Services, Azure Container Service, Azure Active Directory, Azure Storage, Azure SQL Database, Cosmos DB, Log Analytics, and many more. What You Will Learn Debug and manage the performance of your applications Leverage Application Insights for application performance management Extend and automate CI/CD with the help of various build tools, including Azure DevOps, TeamCity, and Cake bootstrapper Who This Book Is For Application developers, designers, and DevOps personnel who want to find a one-stop shop in best practices for managing their application's performance in the cloud and for debugging the issues accordingly

How do you start? How should you build a plan for cloud migration for your entire portfolio? How will your organization be affected by these changes? This book, based on real-world cloud experiences by enterprise IT teams, seeks to provide the answers to these questions. Here, you'll see what makes the cloud so compelling to enterprises; with which applications you should start your cloud journey; how your organization will change, and how skill sets will evolve; how to measure progress; how to think about security, compliance, and business buy-in; and how to exploit the ever-growing feature set that the cloud offers to gain strategic and competitive advantage.

Despite the buzz surrounding the cloud computing, only a small percentage of organizations have actually deployed this new style of IT—so far. If you're planning your long-term cloud strategy, this practical book provides insider knowledge and actionable real-world lessons regarding planning, design, operations, security, and application transformation. This book teaches business and

technology managers how to transition their organization's traditional IT to cloud computing. Rather than yet another book trying to sell or convince readers on the benefits of clouds, this book provides guidance, lessons learned, and best practices on how to design, deploy, operate, and secure an enterprise cloud based on real-world experience. Author James Bond provides useful guidance and best-practice checklists based on his field experience with real customers and cloud providers. You'll view cloud services from the perspective of a consumer and as an owner/operator of an enterprise private or hybrid cloud, and learn valuable lessons from successful and less-than-successful organization use-case scenarios. This is the information every CIO needs in order to make the business and technical decisions to finally execute on their journey to cloud computing. Get updated trends and definitions in cloud computing, deployment models, and for building or buying cloud services Discover challenges in cloud operations and management not foreseen by early adopters Use real-world lessons to plan and build an enterprise private or hybrid cloud Learn how to assess, port, and migrate legacy applications to the cloud Identify security threats and vulnerabilities unique to the cloud Employ a cloud management system for your enterprise (private or multi-provider hybrid) cloud ecosystem Understand the challenges for becoming an IT service broker leveraging the power of the cloud

If you're an experienced Java developer in the enterprise, this practical, hands-on book shows you how to use OSGi to design, develop, and deploy modular cloud applications. You'll quickly learn how to use OSGi, through concise code examples and a set of best practices derived from the authors' experiences with real-world projects. Through the course of this book, you'll learn to develop modern web applications with tools and techniques such as RESTful Web Services, NoSQL, provisioning, elasticity, Auto Scaling, hotfixes, and automatic failover. Code samples are available from GitHub. Work with dynamic OSGi services to create modular applications Explore the basics of OSGi bundles and modular application design Learn advanced topics, including semantic versioning, integration testing, and configuring components Understand OSGi pitfalls, anti-patterns, and features you should avoid Create a modular architecture for cloud-based web applications Discover how maintainability, extensibility, scalability, and testability are affected by modular design Get a look at various options for creating web applications with a modular approach Interact with persistent storage services, including relational databases and NoSQL Examine alternatives for deploying modular applications to the cloud

Thought-provoking and accessible in approach, this updated and expanded second edition of the Building Cloud Apps with Microsoft Azure: Best Practices for DevOps, Data Storage provides a user-friendly introduction to the subject, Taking a clear structural framework, it guides the reader through the subject's core elements. A flowing writing style combines with the use of illustrations and diagrams throughout the text to ensure the reader understands even the most complex of concepts. This succinct and enlightening overview is a required reading for advanced graduate-level students. We hope you find this book useful in shaping your future career. Feel free to send us your enquiries related to our publications to [info@risepress.pw](mailto:info@risepress.pw) Rise Press A single dramatic software failure can cost a company millions of dollars - but can be avoided with simple changes to design and architecture. This new edition of the best-selling industry standard shows you how to create systems that run longer, with fewer failures, and recover better when bad things happen. New coverage includes DevOps, microservices, and cloud-native architecture. Stability antipatterns have grown to include systemic problems in large-scale systems. This is a must-have pragmatic guide to engineering for production systems. If you're a software developer, and you don't want to get alerts every night for the rest of your life, help is here. With a combination of case studies about huge losses - lost revenue, lost reputation, lost time, lost opportunity - and practical, down-to-earth advice that was all gained through painful experience, this book helps you avoid the pitfalls that cost companies millions of dollars in downtime and reputation. Eighty percent of project life-cycle cost is in production, yet few books address this topic. This updated edition deals with the production of today's systems - larger, more complex, and heavily virtualized - and includes information on chaos engineering, the discipline of applying randomness and deliberate stress to reveal systematic problems. Build systems that survive the real world, avoid downtime, implement zero-downtime upgrades and continuous delivery, and make cloud-native applications resilient. Examine ways to architect, design, and build software - particularly distributed systems - that stands up to the typhoon winds of a flash mob, a Slashdotting, or a link on Reddit. Take a hard look at software that failed the test and find ways to make sure your software survives. To skip the pain and get the experience...get this book.

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