Building Microservices With Asp Net Core Develop Test And Deploy Cross Platform Services In The Cloud

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Pro Microservices in .NET 6 - Sean Whitesell 2022-01-16
Know the fundamentals of creating and deploying microservices using .NET 6 and gain insight from prescriptive guidance in this book on the when and why to incorporate them. The microservices architecture is a way of distributing process workloads to independent applications. This distribution allows for the independent applications to scale and evolve separately. It also enables developers to dismantle large applications into smaller, easier-to-maintain, scalable parts. While the return is valuable and the concept straightforward, applying it to an application is far more complicated. Where do you start? How do you find the optimal dividing point for your app, and strategically, how should your app be parceled out into separate services? Pro Microservices in .NET 6 will introduce you to all that and more. The authors get you started with an overview of microservices, .NET 6, event storming, and domain-driven design. You will use that foundational information to build a reference application throughout the book. From there, you will create your first microservice using .NET 6 that you can deploy into Docker and Azure Kubernetes Service. You will also learn about communication styles, decentralizing data, and testing microservices. Finally, you will learn about logging, metrics, tracing, and use that information for debugging. What You Will Learn Build a foundation of basic microservices architecture design Follow an example of using event storming and domain-driven design to understand the monolithic application modified for microservices Understand, via detailed commands, how Docker is used to containerize applications Get an overview of creating microservices from a monolithic application Call microservices using RPC and messaging communication styles with MassTransit Comprehend decentralizing data and handling distributed transactions Use Azure Kubernetes Service to host and scale your microservices Know the methods to make your microservices more robust Discover testing techniques for RPC and messaging communication styles Apply the applications you build for actual use Practice cross-cutting concerns such as logging, metrics, and tracing Who This Book Is For Developers and software architects. Readers should have basic familiarity with Visual Studio and experience with .NET, ASP.NET Core, and C#.

Microservices in .NET, Second Edition - Christian Horsdal Gammelgaard 2021-11-23
Microservices in .NET, Second Edition teaches you to build and deploy microservices using ASP.NET and Azure services. Summary In Microservices in .NET, Second Edition you will learn how to: Build scalable microservices that are reliable in production Optimize microservices for continuous delivery Design event-based collaboration between microservices Deploy microservices to Kubernetes Set up Kubernetes in Azure Microservices in .NET, Second Edition is a comprehensive guide to building microservice applications using the .NET stack. After a crystal-clear introduction to the microservices architectural style, it teaches you practical microservices development skills using ASP.NET. This second edition of the bestselling original has been revised with up-to-date tools for the .NET ecosystem, and more new coverage of scoping microservices and deploying to Kubernetes. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Microservice architectures connect independent components that must work together as a system. Integrating new technologies like Docker and Kubernetes with Microsoft's familiar ASP.NET framework and Azure cloud platform enables .NET developers to create and manage microservices efficiently. About the book Microservices in .NET, Second Edition teaches you to build and deploy microservices using ASP.NET

and Azure services. It lays out microservice architecture simply, and then guides you through several real-world projects, such as building an ecommerce shopping cart. In this fully revised edition, you'll learn about scoping microservices, deploying to Kubernetes, and operations concerns like monitoring, logging, and security. What's inside Optimize microservices for continuous delivery Design event-based collaboration between microservices Deploy microservices to Kubernetes Set up Kubernetes in Azure About the reader For C# developers. No experience with microservices required. About the author Christian Horsdal is an independent consultant with more than 20 years of experience building projects from large-scale microservice systems to tiny embedded systems. Table of Contents PART 1 GETTING STARTED WITH MICROSERVICES 1 Microservices at a glance 2 A basic shopping cart microservice 3 Deploying a microservice to Kubernetes PART 2 BUILDING MICROSERVICES 4 Identifying and scoping microservices 5 Microservice collaboration 6 Data ownership and data storage 7 Designing for robustness 8 Writing tests for microservices PART 3 HANDLING CROSS-CUTTING CONCERNS: BUILDING A REUSABLE MICROSERVICE PLATFORM 9 Cross-cutting concerns: Monitoring and logging 10 Securing microservice-to-microservice communication 11 Building a reusable microservice platform PART 4 BUILDING APPLICATIONS 12 Creating applications over microservices
Building Modern Serverless Web APIs - Tanmoy Sakar 2021-06-10
Building and hosting microservices without servers using AWS Lambda KEY FEATURES ● Learn end-to-end development of microservices using .NET Core and AWS Lambda. ● Learn a new way of hosting the .NET Core Web API on the AWS Lambda serverless platform. ● Mastering microservices using .NET Core and AWS Lambda. DESCRIPTION Building Modern Serverless Web APIs introduces you to the serverless paradigm of the Web API application, its advantages, and presents you the modern approach of developing the Web API. The book makes efficient use of AWS Lambda services to develop efficient, scalable, and cost-effective API solutions. The book begins with a quick introduction to microservices, its characteristics, and current challenges faced in developing and implementing them. The book explores core concepts of ASP.NET Core and some important AWS services that are commonly used to build microservices using AWS. It explores and provides real hands-on microservice patterns and some of the best practices used in designing the serverless architecture. Furthermore, the book covers end-to-end demonstration of an application where you will learn to develop, build, deploy, and monitor microservices on AWS Lambda using .NET Core 3.1. By the end of this book, you will be proficient in developing microservices with AWS Lambda and become a self-starter to build your own secure microservices. WHAT YOU WILL LEARN ● Learn about microservices, their characteristics, patterns, and where to use them. ● Understand popular microservice design patterns being used with the serverless architecture. ● Learn about the ASP.NET Core Web API and its hosting strategies for building serverless microservices. ● Learn about Amazon Web Services and the services commonly used to build microservices. ● Discover how to configure authorization and authentication to secure microservices in AWS. ● Learn about AWS services available for Continuous Deployment and Integration to deploy microservices. WHO THIS BOOK IS FOR This book is for a seasoned .NET developer or AWS practitioner who wants to learn about the microservices architecture, patterns, and how to deploy using AWS Lambda. TABLE OF CONTENTS 1. Microservices: Its Characteristics and Challenges 2. Introduction to the ASP.NET Core Web API 3. Introduction to AWS Services 4. Microservices Patterns 5. The Serverless Paradigm 6.

Communication Patterns and Service Discovery 7. Collaborating between Microservices 8. Distributed Monitoring 9. Security 10. Continuous Integration and Deployment 11. AWS Best Practices

Microservices Using ASP. NET Core - Akhil Mittal 2019-03-22
A handbook to get familiar with the Microservices concept and developing microservices using ASP.NET Core.This is a small book to cover the topic of microservices using a practical approach. Section 1, The Concept, makes you familiar with the concept of the Microservices. This section explains what are microservices, the architecture of microservices, the difference between monolithic and microservices. This section builds a deep understanding of microservices concept and architecture which is very important before you start development on microservices.Section 2, Docker section three of the book demonstrates the development of microservices and running microservices in separate instances at the same time. One of the instances would be running in a docker container. This section demonstrates the pre-requisites of having the microservice running in Docker and Docker installation.Section 3, Microservice using ASP.NET Core, this section will train you on how to create a microservice using ASP.NET Core. This section is a step by step guide to create a microservice using ASP.Net Core and Entity Framework Core and deploy and run the microservice.

Blazor Revealed - Peter Himschoot 2019-02-04
Build web applications in Microsoft .NET that run in any modern browser, helping you to transfer your .NET experience and skills to a new environment and build browser-based applications using a robust and type-safe language and runtime. Developing a web site with rich client-side behavior means most developers need to learn a transpiled language like JavaScript or TypeScript. But today you can also develop rich browser applications using the .NET runtime and C# using Blazor. With Blazor you can use all that experience you have amassed over the years, and can use thousands of already existing libraries, right in the browser. Blazor Revealed will allow you to create a rich web site experience in no time. You will learn how to build user interfaces, and present data to a user for display and modification, capturing the user's changes via data binding. The book shows you how to access a rich library of .NET functionality such as a component model for building a composable user interface, including how to develop reusable components that can be used across many pages and web sites. Also covered is data exchange with a server, giving you access to microservices and database services. Blazor provides a fresh take on web development by eliminating the need for you to learn different languages and frameworks for client- and server-side development. Blazor allows C# and .NET to be used on all sides, providing a robust feature set that is well suited toward scalable, enterprise-level applications. Blazor Revealed gets you started in using this important new toolkit for web application development. What You'll LearnBuild user interfaces and display data for users to edit Capture the user's changes via data binding Transfer data back and forth between server and client Communicate with microservices and database services Develop reusable components and assemble them into bigger components Use routing to build single page applications (SPAs) Build Blazor libraries that are reusable across applicationsWho This Book Is For Experienced .NET developers who want to apply their existing skills to building professional quality, client-side web applications that run in any browser. The book is for web developers who want to step away from JavaScript and its complexities, and instead use a proven technology (.NET) that is robust toward creating enterprise-quality applications that scale and are reliable and that provide good user experience. The book is for intermediate to advanced .NET web developers with no experience using Blazor.

.NET Core 2.0 By Example - Rishabh Verma 2018-03-20
Build cross-platform solutions with .NET Core 2.0 through real-life scenarios Key Features Bridges the gap between learning and doing and improves your software development skills Covers the best practices of .NET development to improve your productivity Example-based approach to get you started quickly with software programming Book Description With the rise in the number of tools and technologies available today, developers and architects are always exploring ways to create better and smarter solutions. Before, the differences between target platforms was a major roadblock, but that's not the case now. .NET Core 2.0 By Example will take you on an exciting journey to building better software. This book provides fresh and relevant content to .NET Core 2.0 in a succinct format that's enjoyable to read. It also delivers concepts, along with the implications, design decisions, and potential pitfalls you might face when targeting Linux and Windows systems, in a logical and simple way. With the .NET framework at its center, the book comprises of five

varied projects: a multiplayer Tic-tac-toe game; a real-time chat application, Let'sChat; a chatbot; a microservice-based buying-selling application; and a movie booking application. You will start each chapter with a high-level overview of the content, followed by the above example applications described in detail. By the end of each chapter, you will not only be proficient with the concepts, but you'll also have created a tangible component in the application. By the end of the book, you will have built five solid projects using all the tools and support provided by the .NET Core 2.0 framework. What you will learn Build cross-platform applications with ASP.NET Core 2.0 and its tools Integrate, host, and deploy web apps with the cloud (Microsoft Azure) Leverage the ncurses native library to extend console capabilities in .NET Core on Linux and interop with native coden .NET Core on Linux and learn how to interop with existing native code Reuse existing .NET Framework and Mono assemblies from .NET Core 2.0 applications Develop real-time web applications using ASP.NET Core Learn the differences between SOA and microservices and get started with microservice development using ASP.NET Core 2.0 Walk through functional programming with F# and .NET Core from scratch Who this book is for If you are a developer or architect and want to learn how to build cross-platform solutions using Microsoft .NET Core, this book is for you. It is assumed that you have some knowledge of the .NET Framework, OOP, and C# (or a similar programming language).

Building Event-Driven Microservices - Adam Bellemare 2020-07-02
Organizations today often struggle to balance business requirements with ever-increasing volumes of data. Additionally, the demand for leveraging large-scale, real-time data is growing rapidly among the most competitive digital industries. Conventional system architectures may not be up to the task. With this practical guide, you'll learn how to leverage large-scale data usage across the business units in your organization using the principles of event-driven microservices. Author Adam Bellemare takes you through the process of building an event-driven microservice-powered organization. You'll reconsider how data is produced, accessed, and propagated across your organization. Learn powerful yet simple patterns for unlocking the value of this data. Incorporate event-driven design and architectural principles into your own systems. And completely rethink how your organization delivers value by unlocking near-real-time access to data at scale. You'll learn: How to leverage event-driven architectures to deliver exceptional business value The role of microservices in supporting event-driven designs Architectural patterns to ensure success both within and between teams in your organization Application patterns for developing powerful event-driven microservices Components and tooling required to get your microservice ecosystem off the ground

C# 9 and .NET 5 – Modern Cross-Platform Development - Mark J. Price 2020-11-10
Publisher's Note: Microsoft will stop supporting .NET 5 in early May 2022. A new edition of this book is available that uses .NET 6 (an LTS release with support up until November 2024), C# 10, and Visual Studio 2022, as well as Visual Studio Code. Key Features • Explore the newest additions to C# 9, the .NET 5 class library, Entity Framework Core and Blazor • Strengthen your command of ASP.NET Core 5.0 and create professional websites and services • Build cross-platform apps for Windows, macOS, Linux, iOS, and Android Book Description In C# 9 and .NET 5 – Modern Cross-Platform Development, Fifth Edition, expert teacher Mark J. Price gives you everything you need to start programming C# applications. This latest edition uses the popular Visual Studio Code editor to work across all major operating systems. It is fully updated and expanded with a new chapter on the Microsoft Blazor framework. The book's first part teaches the fundamentals of C#, including object-oriented programming and new C# 9 features such as top-level programs, target-typed new object instantiation, and immutable types using the record keyword. Part 2 covers the .NET APIs, for performing tasks like managing and querying data, monitoring and improving performance, and working with the file system, async streams, serialization, and encryption. Part 3 provides examples of cross-platform apps you can build and deploy, such as websites and services using ASP.NET Core or mobile apps using Xamarin.Forms. The best type of application for learning the C# language constructs and many of the .NET libraries is one that does not distract with unnecessary application code. For that reason, the C# and .NET topics covered in Chapters 1 to 13 feature console applications. In Chapters 14 to 20, having mastered the basics of the language and libraries, you will build practical applications using ASP.NET Core, Model-View-Controller (MVC), and Blazor. By the end of the book, you will have acquired the understanding

and skills you need to use C# 9 and .NET 5 to create websites, services, and mobile apps. What you will learn • Build your own types with object-oriented programming • Query and manipulate data using LINQ • Build websites and services using ASP.NET Core 5 • Create intelligent apps using machine learning • Use Entity Framework Core and work with relational databases • Discover Windows app development using the Universal Windows Platform and XAML • Build rich web experiences using the Blazor framework • Build mobile applications for iOS and Android using Xamarin.Forms Who this book is for This book is best for C# and .NET beginners, or programmers who have worked with C# in the past but feel left behind by the changes in the past few years. This book doesn't expect you to have any C# or .NET experience; however, you should have a general understanding of programming. Students and professionals with a science, technology, engineering, or mathematics (STEM) background can certainly benefit from this book. Table of Contents • Hello, C#! Welcome, .NET Core! • Speaking C# • Controlling Flow and Converting Types • Writing, Debugging, and Testing Functions • Building Your Own Types with Object-Oriented Programming • Implementing Interfaces and Inheriting Classes • Understanding and Packaging .NET Types • Working with Common .NET Types • Working with Files, Streams, and Serialization (N.B. Please use the Look Inside option to see further chapters) Review "Mark Price's extraordinary book covers every aspect of C# 9 and .NET 5. It is filled with step-by-step demonstrations and will be of tremendous value both to those who want to learn C# and to more experienced C# programmers making the transition to C# 9. Highly recommended!" -- Jesse Liberty - author of Programming C# and Learning C# (O'Reilly Media)

Building Microservices with ASP.NET Core - Kevin Hoffman 2017-08-31
Chapter 7. Building an ASP.NET Core Web Application; ASP.NET Core Basics; Adding ASP.NET MVC Middleware; Adding a Controller; Adding a Model; Adding a View; Invoking REST APIs from JavaScript; Building Cloud-Native Web Applications; API First; Configuration; Logging; Session State; Data Protection; Backing Services; Environment Parity; Port Binding; Telemetry; Authentication and Authorization; Summary; Chapter 8. Service Discovery; Refresher on Cloud-Native Factors; External Configuration; Backing Services; Introducing Netflix Eureka; Discovering and Advertising ASP.NET Core Services

ASP.NET Core 5 for Beginners - Andreas Helland 2020-12-18
Learn how to build web applications efficiently using ASP.NET Core 5 with the C# programming language and related frameworks Key FeaturesBuild web apps and services and cross-platform applications using .NET and C#Understand different web programming concepts with the help of real-world examplesExplore the new features and APIs in ASP.NET Core 5, EF Core, Visual Studio, and BlazorBook Description ASP.NET Core 5 for Beginners is a comprehensive introduction for those who are new to the framework. This condensed guide takes a practical and engaging approach to cover everything that you need to know to start using ASP.NET Core for building cloud-ready, modern web applications. The book starts with a brief introduction to the ASP.NET Core framework and highlights the new features in its latest release, ASP.NET Core 5. It then covers the improvements in cross-platform support, the view engines that will help you to understand web development, and the new frontend technologies available with Blazor for building interactive web UIs. As you advance, you'll learn the fundamentals of the different frameworks and capabilities that ship with ASP.NET Core. You'll also get to grips with securing web apps with identity implementation, unit testing, and the latest in containers and cloud-native to deploy them to AWS and Microsoft Azure. Throughout the book, you'll find clear and concise code samples that illustrate each concept along with the strategies and techniques that will help to develop scalable and robust web apps. By the end of this book, you'll have learned how to leverage ASP.NET Core 5 to build and deploy dynamic websites and services in a variety of real-world scenarios. What you will learnExplore the new features and APIs introduced in ASP.NET Core 5 and BlazorPut basic ASP.NET Core 5 concepts into practice with the help of clear and simple samplesWork with Entity Framework Core and its different workflows to implement your application's data accessDiscover the different web frameworks that ASP.NET Core 5 offers for building web appsGet to grips with the basics of building RESTful web APIs to work with real dataDeploy your web apps in AWS, Azure, and Docker containersWork with SignalR to add real-time notifications to your appWho this book is for This book is for developers who want to learn how to develop web-based applications using the ASP.NET Core framework. Familiarity with the C# language and a basic understanding

of HTML and CSS is required to get the most out of this book.
Microservice by examples using .NET Core - Pujarini Mohapatra, Biswa 2019-01-24
This book predominately covers Microservices architecture with real-world example which can help professionals with ease of adoption of this technology. Following the trend of modularity in real world, the idea behind Microservice by Examples is to allow developers to build their applications from various independent components which can be easily changed, removed or upgraded. Also, it is relevant now because of enterprises are moving towards DevOps/ Modernization, this book will emphasize on containers and Dockers as well.

Modern API Design with ASP.NET Core 2 - Fanie Reynders 2018-03-07
Use ASP.NET Core 2 to create durable and cross-platform web APIs through a series of applied, practical scenarios. Examples in this book help you build APIs that are fast and scalable. You'll progress from the basics of the framework through to solving the complex problems encountered in implementing secure RESTful services. The book is packed full of examples showing how Microsoft's ground-up rewrite of ASP.NET Core 2 enables native cross-platform applications that are fast and modular, allowing your cloud-ready server applications to scale as your business grows. Major topics covered in the book include the fundamentals and core concepts of ASP.NET Core 2. You'll learn about building RESTful APIs with the MVC pattern using proven best practices and following the six principles of REST. Examples in the book help in learning to develop world-class web APIs and applications that can run on any platform, including Windows, Linux, and MacOS. You can even deploy to Microsoft Azure and automate your delivery by implementing Continuous Integration and Continuous Deployment pipelines. What You Will Learn Incorporate automated API tooling such as Swagger from the OpenAPI specification Standardize query and response formats using Facebook's GraphQL query language Implement security by applying authentication and authorization using ASP.NET Identity Ensure the safe storage of sensitive data using the data protection stack Create unit and integration tests to guarantee code quality Who This Book Is For Developers who build server applications such as web sites and web APIs that need to run fast and cross platform; programmers who want to implement practical solutions for real-world problems; those who want in-depth knowledge of the latest bits of ASP.NET Core 2.0

Learning ASP.NET Core 2.0 - Jason De Oliveira 2017-12-14
Learn how web applications can be built efficiently using ASP.NET Core 2.0 and related frameworks About This Book Get to grips with the new features and APIs introduced in ASP.NET Core 2.0 Leverage the MVC framework and Entity Framework Core 2 to build efficient applications Learn to deploy your web applications in new environments such as the cloud and Docker Who This Book Is For This book is for developers who would like to build modern web applications with ASP.NET Core 2.0. No prior knowledge of ASP.NET or .NET Core is required. However, basic programming knowledge is assumed. Additionally, previous Visual Studio experience will be helpful but is not required, since detailed instructions will guide through the samples of the book.This book can also help people, who work in infrastructure engineering and operations, to monitor and diagnose problems during the runtime of ASP.NET Core 2.0 web applications. What You Will Learn Set up your development environment using Visual Studio 2017 and Visual Studio Code Create a fully automated continuous delivery pipeline using Visual Studio Team Services Get to know the basic and advanced concepts of ASP.NET Core 2.0 with detailed examples Build an MVC web application and use Entity Framework Core 2 to access data Add Web APIs to your web applications using RPC, REST, and HATEOAS Authenticate and authorize users with built-in ASP.NET Core 2.0 features Use Azure, Amazon Web Services, and Docker to deploy and monitor your applications In Detail The ability to develop web applications that are highly efficient but also easy to maintain has become imperative to many businesses. ASP.NET Core 2.0 is an open source framework from Microsoft, which makes it easy to build cross-platform web applications that are modern and dynamic. This book will take you through all of the essential concepts in ASP.NET Core 2.0, so you can learn how to build powerful web applications. The book starts with a brief introduction to the ASP.NET Core framework and the improvements made in the latest release, ASP.NET Core 2.0. You will then build, test, and debug your first web application very quickly. Once you understand the basic structure of ASP.NET Core 2.0 web applications, you'll dive deeper into more complex concepts and scenarios. Moving on, we'll explain how to take advantage of widely used frameworks such as Model View Controller and Entity Framework Core 2 and you'll learn how to secure your applications. Finally, we'll show you

how to deploy and monitor your applications using Azure, AWS, and Docker. After reading the book, you'll be able to develop efficient and robust web applications in ASP.NET Core 2.0 that have high levels of customer satisfaction and adoption. Style and approach Start an exciting journey to building high performance web applications using ASP.NET Core 2.0 and MVC

Mastering ASP.NET Web API - Mithun Pattankar 2017-08-11
Leverage ASP.Net Web API to build professional web services and create powerful applications. About This Book Get a comprehensive analysis of the latest specification of ASP.NET Core and all the changes to the underlying platform that you need to know to make the most of the web API See an advanced coverage of ASP.NET Core Web API to create robust models for your data, create controllers, and handle routing and security This book is packed with key theoretical and practical concepts that can be instantly applied to build professional applications using API with Angular 4, Ionic, and React Who This Book Is For This book is for .Net developers who wants to Master ASP.NET Core (Web API) and have played around with previous ASP.NET Web API a little, but don't have in-depth knowledge of it. You need to know Visual Studio and C#, and have some HTML, CSS, and JavaScript knowledge. What You Will Learn Acquire conceptual and hands-on knowledge of ASP.NET Core (MVC & Web API) Learn about HTTP methods, the structure of HTTP content, internet media types, and how servers respond to HTTP requests and their associated HTTP codes Explore middleware, filters, routing, and unit testing Optimize Web API implementations Develop a secure Web API interface Deploy Web API projects to various platforms Consume your web API in front end application based on Angular 4, Bootstrap, and Ionic Implement and explore the current trends in service architecture In Detail Microsoft has unified their main web development platforms. This unification will help develop web applications using various pieces of the ASP.NET platform that can be deployed on both Windows and LINUX. With ASP.NET Core (Web API), it will become easier than ever to build secure HTTP services that can be used from any client. Mastering ASP.NET Web API starts with the building blocks of the ASP.NET Core, then gradually moves on to implementing various HTTP routing strategies in the Web API. We then focus on the key components of building applications that employ the Web API, such as Kestrel, Middleware, Filters, Logging, Security, and Entity Framework.Readers will be introduced to take the TDD approach to write test cases along with the new Visual Studio 2017 live unit testing feature. They will also be introduced to integrate with the database using ORMs. Finally, we explore how the Web API can be consumed in a browser as well as by mobile applications by utilizing Angular 4, Ionic and ReactJS. By the end of this book, you will be able to apply best practices to develop complex Web API, consume them in frontend applications and deploy these applications to a modern hosting infrastructure. Style and approach Using a hands-on approach, we cover both the conceptual as well as the technical aspects of the ASP.NET Core (Web API) framework.

Microservices in .net Core - Christian Horsdal 2016-09-28
Microservices are responsible for very tightly focused capabilities that are part of a more complex server-side software system. Microservices, when done well, are malleable, scalable, resilient, and allow a short lead time from start of implementation to deployment to production. When using microservices, the need for the technology to be lightweight and low ceremony grows, because creating new microservices needs to be quick and easy. OWIN is great for reuse of plumbing code and a lightweight web framework, like Nancy, is ideal. Microservices in .NET Core teaches readers how to build and deploy secure and operations-friendly microservices using Nancy. The book starts with an introduction to the microservices architectural style. Next, readers learn important practical aspects of developing microservices from simple core concepts to more sophisticated. Throughout the book, readers will see many code examples implementing it with lightweight .NET technologies' most prominently Nancy. By the end, they'll be able to quickly and easily build reliable and operations-friendly microservices using Nancy, OWIN and other open technologies. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

Pro ASP.NET Core 3 - Adam Freeman 2020-06-06
Now in its 8th edition, Pro ASP.NET Core has been thoroughly updated for ASP.NET Core 3 and online for ASP.NET Core 5 and .NET 5.0. This comprehensive, full-color guide is the only book you need to learn ASP.NET Core development. Professional developers get ready to produce leaner applications for the ASP.NET Core platform. This edition puts ASP.NET Core 3 into context, and takes a deep dive into the tools and techniques required to build modern, extensible web applications.

New features and capabilities such as MVC 3, Razor Pages, Blazor Server, and Blazor WebAssembly are covered, along with demonstrations of how they can be applied in practice. Following the same popular format and style found in previous editions, author Adam Freeman explains how to get the most out of ASP.NET Core 3. Starting with the nuts-and-bolts topics, he teaches readers about middleware components, built-in services, request model binding, and more. Moving along, he introduces increasingly more complex topics and advanced features, including endpoint routing and dependency injection. Written for professionals wanting to incorporate the latest functionality of ASP.NET Core 3 into their projects, this book also serves as a complete reference on ASP.NET Core. Beginners with some background in Microsoft web development will also greatly benefit from the in-depth coverage provided throughout. What You Will Learn: Build a solid foundation and skill set for working with the entire ASP.NET Core platformApply ASP.NET Core 3 and ASP.NET Core 5 features in your developer environment; plentiful reusable templatesSee how to create RESTful web services, web applications, and client-side applicationsLeverage existing knowledge to efficiently get up and running with new programming models Adam Freeman is an experienced IT professional who has held senior positions in a range of companies, most recently serving as chief technology officer and chief operating officer of a global bank. Now retired, he spends his time writing and long-distance running. "The Rolls-Royce of ASP.NET books, (or if you're American, the Cadillac). Very thorough!" Les Jackson, MCSD, DotNet Playbook "The author's instruction is direct, easy to understand and supplemented with clear code examples... Whether you are a beginner learning ASP.NET Core 3.1 app development, or an experienced professional ready to master advanced concepts, I consider this book a 'must have' for you!" Jeremy Likness, Senior Program Manager, Microsoft "...the best single resource for teaching MVC web apps using ASP.NET. " Charles Carter, MSCS, MSwE, JD, Cloud Application Development Instructor, Microsoft Software and Systems Academy

Hands-On RESTful Web Services with ASP.NET Core 3 - Samuele Resca 2019-12-27
Get up to speed with the latest features of C# 8, ASP.NET Core 3 and .NET Core 3.1 LTS to create robust and maintainable web services Key FeaturesApply design patterns and techniques to achieve a reactive, scalable web serviceDocument your web services using the OpenAPI standard and test them using PostmanExplore mechanisms to implement a secure web service using client-side SSL and token authenticationBook Description In recent times, web services have evolved to play a prominent role in web development. Applications are now designed to be compatible with any device and platform, and web services help us keep their logic and UI separate. Given its simplicity and effectiveness in creating web services, the RESTful approach has gained popularity, and this book will help you build RESTful web services using ASP.NET Core. This REST book begins by introducing you to the basics of the REST philosophy, where you'll study the different stages of designing and implementing enterprise-grade RESTful web services. You'll also gain a thorough understanding of ASP.NET Core's middleware approach and learn how to customize it. The book will later guide you through improving API resilience, securing your service, and applying different design patterns and techniques to achieve a scalable web service. In addition to this, you'll learn advanced techniques for caching, monitoring, and logging, along with implementing unit and integration testing strategies. In later chapters, you will deploy your REST web services on Azure and document APIs using Swagger and external tools such as Postman. By the end of this book, you will have learned how to design RESTful web services confidently using ASP.NET Core with a focus on code testability and maintainability. What you will learnGain a comprehensive working knowledge of ASP.NET CoreIntegrate third-party tools and frameworks to build maintainable and efficient servicesImplement patterns using dependency injection to reduce boilerplate code and improve flexibilityUse ASP.NET Core's out-of-the-box tools to test your applicationsUse Docker to run your ASP.NET Core web service in an isolated and self-contained environmentSecure your information using HTTPS and token-based authenticationIntegrate multiple web services using resiliency patterns and messaging techniquesWho this book is for This book is for anyone who wants to learn how to build RESTful web services with the ASP.NET Core framework to improve the scalability and performance of their applications. Basic knowledge of C# and .NET Core will help you make the best use of the code samples included in the book.

C# 10 and .NET 6 – Modern Cross-Platform Development - Mark J. Price

2021-11-09
A comprehensive guide for beginners to learn the key concepts, real-world applications, and latest features of C# 10 and .NET 6 with hands-on exercises using Visual Studio 2022 and Visual Studio Code. Purchase of the print or Kindle book includes a free eBook in the PDF format. Key Features Explore the newest additions to C# 10, the .NET 6 class library, and Entity Framework Core 6 Create professional websites and services with ASP.NET Core 6 and Blazor Build cross-platform apps for Windows, macOS, Linux, iOS, and Android Book Description Extensively revised to accommodate all the latest features that come with C# 10 and .NET 6, this latest edition of our comprehensive guide will get you coding in C# with confidence. You'll learn object-oriented programming, writing, testing, and debugging functions, implementing interfaces, and inheriting classes. The book covers the .NET APIs for performing tasks like managing and querying data, monitoring and improving performance, and working with the filesystem, async streams, and serialization. You'll build and deploy cross-platform apps, such as websites and services using ASP.NET Core. Instead of distracting you with unnecessary application code, the first twelve chapters will teach you about C# language constructs and many of the .NET libraries through simple console applications. In later chapters, having mastered the basics, you'll then build practical applications and services using ASP.NET Core, the Model-View-Controller (MVC) pattern, and Blazor. What you will learn Build rich web experiences using Blazor, Razor Pages, the Model-View-Controller (MVC) pattern, and other features of ASP.NET Core Build your own types with object-oriented programming Write, test, and debug functions Query and manipulate data using LINQ Integrate and update databases in your apps using Entity Framework Core, Microsoft SQL Server, and SQLite Build and consume powerful services using the latest technologies, including gRPC and GraphQL Build cross-platform apps using XAML Who this book is for Designed for both beginners and C# and .NET programmers who have worked with C# in the past and want to catch up with the changes made in the past few years, this book doesn't need you to have any C# or .NET experience. However, you should have a general understanding of programming before you jump in.

Software Architecture with C# 9 and .NET 5 - Gabriel Baptista 2020-12-28
Design scalable and high-performance enterprise applications using the latest features of C# 9 and .NET 5 Key FeaturesGain fundamental and comprehensive software architecture knowledge and the skillset to create fully modular appsDesign high-performance software systems using the latest features of .NET 5 and C# 9Solve scalability problems in web apps using enterprise architecture patternsBook Description Software architecture is the practice of implementing structures and systems that streamline the software development process and improve the quality of an app. This fully revised and expanded second edition, featuring the latest features of .NET 5 and C# 9, enables you to acquire the key skills, knowledge, and best practices required to become an effective software architect. This second edition features additional explanation of the principles of Software architecture, including new chapters on Azure Service Fabric, Kubernetes, and Blazor. It also includes more discussion on security, microservices, and DevOps, including GitHub deployments for the software development cycle. You will begin by understanding how to transform user requirements into architectural needs and exploring the differences between functional and non-functional requirements. Next, you will explore how to carefully choose a cloud solution for your infrastructure, along with the factors that will help you manage your app in a cloud-based environment. Finally, you will discover software design patterns and various software approaches that will allow you to solve common problems faced during development. By the end of this book, you will be able to build and deliver highly scalable enterprise-ready apps that meet your organization's business requirements. What you will learnUse different techniques to overcome real-world architectural challenges and solve design consideration issuesApply architectural approaches such as layered architecture, service-oriented architecture (SOA), and microservicesLeverage tools such as containers, Docker, Kubernetes, and Blazor to manage microservices effectivelyGet up to speed with Azure tools and features for delivering global solutionsProgram and maintain Azure Functions using C# 9 and its latest featuresUnderstand when it is best to use test-driven development (TDD) as an approach for software developmentWrite automated functional test casesGet the best of DevOps principles to enable CI/CD environmentsWho this book is for This book is for engineers and senior software developers aspiring to become architects or looking to build enterprise applications with the .NET Stack. Basic familiarity with C# and .NET is required to get the most out of this book.

Building Microservices - Sam Newman 2015-02-02
Annotation Over the past 10 years, distributed systems have become more fine-grained. From the large multi-million line long monolithic applications, we are now seeing the benefits of smaller self-contained services. Rather than heavy-weight, hard to change Service Oriented Architectures, we are now seeing systems consisting of collaborating microservices. Easier to change, deploy, and if required retire, organizations which are in the right position to take advantage of them are yielding significant benefits. This book takes an holistic view of the things you need to be cognizant of in order to pull this off. It covers just enough understanding of technology, architecture, operations and organization to show you how to move towards finer-grained systems.

Building Microservices with ASP.NET Core - Kevin Hoffman 2017-08-31
At a time when nearly every vertical, regardless of domain, seems to need software running in the cloud to make money, microservices provide the agility and drastically reduced time to market you require. This hands-on guide shows you how to create, test, compile, and deploy microservices, using the ASP.NET Core free and open-source framework. Along the way, you'll pick up good, practical habits for building powerful and robust services. Building microservices isn't about learning a specific framework or programming language; it's about building applications that thrive in elastically scaling environments that don't have host affinity, and that can start and stop at a moment's notice. This practical book guides you through the process. Learn test-driven and API-first development concepts Communicate with other services by creating and consuming backing services such as databases and queues Build a microservice that depends on an external data source Learn about event sourcing, the event-centric approach to persistence Use ASP.NET Core to build web applications designed to thrive in the cloud Build a service that consumes, or is consumed by, other services Create services and applications that accept external configuration Explore ways to secure ASP.NET Core microservices and applications

ASP.NET Core Application Development - James Chambers 2016-11-29
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.

ASP.NET Core in Action - Andrew Lock 2021-03-18
ASP.NET Core in Action, Second Edition is a comprehensive guide to creating web applications with ASP.NET Core 5.0. Go from basic HTTP concepts to advanced framework customization. Summary Fully updated to ASP.NET 5.0, ASP.NET Core in Action, Second Edition is a hands-on primer to building cross-platform web applications with your C# and .NET skills. Even if you've never worked with ASP.NET you'll start creating productive cross-platform web apps fast. And don't worry about late-breaking changes to ASP.NET Core. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Build full-stack web applications that run anywhere. Developers love ASP.NET Core for its libraries and pre-built components that maximize productivity. Version 5.0 offers new features for server-side apps, as well as background services for cross-platform development. About the book ASP.NET Core in Action, Second Edition is a comprehensive guide to creating web applications with ASP.NET Core 5.0. Go from basic HTTP concepts to advanced framework customization. Illustrations and annotated code make learning visual and easy. Master logins, dependency injection, security, and more. This updated edition covers the latest features, including Razor Pages and the new hosting paradigm. What's inside Developing apps for Windows and non-Windows servers Configuring applications Building custom components Logging, testing, and security About the reader For intermediate C# developers. About the author Andrew Lock is a

Microsoft MVP who has worked with ASP.NET Core since before its first release. Table of Contents PART 1 - GETTING STARTED WITH ASP.NET CORE 1 Getting started with ASP.NET Core 2 Your first application 3 Handling requests with the middleware pipeline 4 Creating a website with Razor Pages 5 Mapping URLs to Razor Pages using routing 6 The binding model: Retrieving and validating user input 7 Rendering HTML using Razor views 8 Building forms with Tag Helpers 9 Creating a Web API for mobile and client applications using MVC PART 2 - BUILDING COMPLETE APPLICATIONS 10 Service configuration with dependency injection 11 Configuring an ASP.NET Core application 12 Saving data with Entity Framework Core 13 The MVC and Razor Pages filter pipeline 14 Authentication: Adding users to your application with Identity 15 Authorization: Securing your application 16 Publishing and deploying your application PART 3 - EXTENDING YOUR APPLICATIONS 17 Monitoring and troubleshooting errors with logging 18 Improving your application's security 19 Building custom components 20 Building custom MVC and Razor Pages components 21 Calling remote APIs with IHttpClientFactory 22 Building background tasks and services 23 Testing your application

C# 8 and .NET Core 3 Projects Using Azure - Paul Michaels 2019-12-31 Get up to speed with using C# 8 and .NET Core 3.0 features to build real-world .NET Core applications Key FeaturesLearn the core concepts of web applications, serverless computing, and microservicesCreate an ASP.NET Core MVC application using controllers, routing, middleware and authenticationBuild modern applications using cutting-edge services from Microsoft AzureBook Description .NET Core is a general-purpose, modular, cross-platform, and opensource implementation of .NET. The latest release of .NET Core 3 comes with improved performance and security features, along with support for desktop applications. .NET Core 3 is not only useful for new developers looking to start learning the framework, but also for legacy developers interested in migrating their apps. Updated with the latest features and enhancements, this updated second edition is a step-by-step, project-based guide. The book starts with a brief introduction to the key features of C# 8 and .NET Core 3. You'll learn to work with relational data using Entity Framework Core 3, before understanding how to use ASP.NET Core. As you progress, you'll discover how you can use .NET Core to create cross-platform applications. Later, the book will show you how to upgrade your old WinForms apps to .NET Core 3. The concluding chapters will then help you use SignalR effectively to add real-time functionality to your applications, before demonstrating how to implement MongoDB in your apps. Finally, you'll delve into serverless computing and how to build microservices using Docker and Kubernetes. By the end of this book, you'll be proficient in developing applications using .NET Core 3. What you will learnUnderstand how to incorporate the Entity Framework Core 3 to build ASP.NET Core MVC applicationsCreate a real-time chat application using Azure's SignalR serviceGain hands-on experience of working with Cosmos DBDevelop an Azure Function and interface it with an Azure Logic AppExplore user authentication with Identity Server and OAuth2Understand how to use Azure Cognitive Services to add advanced functionalities with minimal codeGet to grips with running a .NET Core application with KubernetesWho this book is for This book is for developers and programmers of all levels who want to build real-world projects and explore the new features of .NET Core 3. Developers working on legacy desktop software who are looking to migrate to .NET Core 3 will also find this book useful. Basic knowledge of .NET Core and C# is assumed.

Building Microservices with .NET Core - Gaurav Kumar Aroraa 2017-06-14
Architect your .NET applications by breaking them into really small pieces—microservices—using this practical, example-based guide About This Book Start your microservices journey and understand a broader perspective of microservices development Build, deploy, and test microservices using ASP.Net MVC, Web API, and Microsoft Azure Cloud Get started with reactive microservices and understand the fundamentals behind it Who This Book Is For This book is for .NET Core developers who want to learn and understand microservices architecture and implement it in their .NET Core applications. It's ideal for developers who are completely new to microservices or have just a theoretical understanding of this architectural approach and want to gain a practical perspective in order to better manage application complexity. What You Will Learn Compare microservices with monolithic applications and SOA Identify the appropriate service boundaries by mapping them to the relevant bounded contexts Define the service interface and implement the APIs using ASP.NET Web API Integrate the services via synchronous

and asynchronous mechanisms Implement microservices security using Azure Active Directory, OpenID Connect, and OAuth 2.0 Understand the operations and scaling of microservices in .NET Core Understand the testing pyramid and implement consumer-driven contract using pact net core Understand what the key features of reactive microservices are and implement them using reactive extension In Detail Microservices is an architectural style that promotes the development of complex applications as a suite of small services based on business capabilities. This book will help you identify the appropriate service boundaries within the business. We'll start by looking at what microservices are, and what the main characteristics are. Moving forward, you will be introduced to real-life application scenarios, and after assessing the current issues, we will begin the journey of transforming this application by splitting it into a suite of microservices. You will identify the service boundaries, split the application into multiple microservices, and define the service contracts. You will find out how to configure, deploy, and monitor microservices, and configure scaling to allow the application to quickly adapt to increased demand in the future. With an introduction to the reactive microservices, you strategically gain further value to keep your code base simple, focusing on what is more important rather than the messy asynchronous calls. Style and approach This guide serves as a stepping stone that helps .NET Core developers in their microservices architecture. This book provides just enough theory to understand the concepts and apply the examples.

Microservices For . NET - Soumya Mukherjee 2017-07-31
Architect your .NET applications by breaking them into really small pieces-microservices-using this practical, example-based guideAbout This Book* This book will show you the basics of microservices and when you should consider this architectural style* This book will help you understand how to implement separate services using the C#, ASP.NETMVC/Web API, and more* You'll learn to integrate services using ASP.NET Web API and Azure Service BusWho This Book Is ForThis book is for NET developers who are familiar with .NET framework and now want to learn how to implement microservices architecture in their .NET applications. It's ideal for developers who are completely new to Microservices or have just a theoretical understanding of this architectural approach and want to gain a practical perspective in order to better manage application complexityWhat You Will Learn* Compare microservices with Monolithic and SOA* Identify the appropriate service boundaries by mapping them to the relevant Bounded Contexts* Define the service interface and implement the APIs using ASP.NET Web API* Integrate the services via synchronous and asynchronous mechanisms* Implement service security policies using Azure Active Directory, OpenId Connect, and OAuth* Configure Azure Diagnostics and automatic scaling policies in AzureIn DetailMicroservices is an architectural style that promotes the development of complex applications as a suite of small services based on business capabilities.This book will help you identify the appropriate service boundaries within the business domain to ensure high cohesion and to define the correct service interfaces to promote loose coupling.We 'll start by looking at what microservices are, what the main characteristics are, and how they compare with Monolithic and SOA approaches. Next, we'll briefly go through the benefits of using this style, the challenges to consider, and the prerequisites to succeed when engaging in this approach.Moving forward, you 'll be introduced to a real-life application, implemented initially as a Monolith that is currently struggling to cope with increasing user demand and complexity. After assessing the current issues, we will begin the journey of transforming this application by splitting it into a suite of microservices.You'll identify the business domain boundaries as a reference for our service boundaries, split the application into multiple services, and define the service contracts. You'll be able to choose the appropriate integration techniques, set up an automated infrastructure to handle testing and deployment, and implement appropriate security policies to keep our services safe from unauthorized access. You'll find out how to configure and implement monitoring to ensure the health of our services, and configuring scaling to allow our application to quickly adapt to increased demand in the future.

Building RESTful Web Services with .NET Core - Gaurav Aroraa 2018-05-31
Building Complete E-commerce/Shopping Cart Application Key Features Follow best practices and explore techniques such as clustering and caching to achieve a reactive, scalable web service Leverage the .NET Framework to quickly implement RESTful endpoints. Learn to implement a client library for a RESTful web service using ASP.NET Core. Book Description REST is an architectural style that tackles the challenges of

building scalable web services. In today's connected world, APIs have taken a central role on the web. APIs provide the fabric through which systems interact, and REST has become synonymous with APIs. The depth, breadth, and ease of use of ASP.NET Core makes it a breeze for developers to work with for building robust web APIs. This book takes you through the design of RESTful web services and leverages the ASP.NET Core framework to implement these services. This book begins by introducing you to the basics of the philosophy behind REST. You'll go through the steps of designing and implementing an enterprise-grade RESTful web service. This book takes a practical approach, that you can apply to your own circumstances. This book brings forth the power of the latest .NET Core release, working with MVC. Later, you will learn about the use of the framework to explore approaches to tackle resilience, security, and scalability concerns. You will explore the steps to improve the performance of your applications. You'll also learn techniques to deal with security in web APIs and discover how to implement unit and integration test strategies. By the end of the book, you will have a complete understanding of Building a client for RESTful web services, along with some scaling techniques. What you will learn Add basic authentication to your RESTful API Create a Carts Controller and Orders Controller to manage and process Orders Intercept HTTP requests and responses by building your own middleware Test service calls using Postman and Advanced REST Client Secure your data/application using annotations Who this book is for This book is intended for those who want to learn to build RESTful web services with the latest .NET Core Framework. To make best use of the code samples included in the book, you should have a basic knowledge of C# and .NET Core.

The Complete ASP.NET Core 3 API Tutorial - Les Jackson 2020-11-02 Use this ASP.NET Core API tutorial and straightforward step-by-step guide to build, test, and deploy an ASP.NET Core API to Azure. It will help you code confidently and efficiently, and provides just what you need for context. The book starts with detailing how to set up your development environment, and then introduces a variety of tools and technologies to build, test, and deploy your API. It covers tools such as .NET Core SDK, (Version 3.1), Visual Studio Code, Git, xUnit, Docker, PostgreSQL, Postman, Azure DevOps, Azure, AutoMapper, and many more. Practical guidance is provided so you can achieve a tangible and valuable outcome, and you also are given a dose of theory on REST (Representational State Transfer), JSON, (JavaScript Object Notation), DTOs (Data Transfer Objects), and the MVC (Model View Controller) architectural pattern. What You Will Learn Build an ASP.NET Core API using C#, test it, and deploy it to Azure Understand concepts on Entity Framework Core Gain hard-earned secrets, shortcuts, and gotchas throughout the "build along" Get comfortable with ASP NET Core Environments Be introduced to unit testing, CI/CD pipelines, bearer authentication, and JSON Web Tokens (JWT) Who This Book Is For Developers using the Microsoft stack. Some basic understanding of .NET Core is assumed.

Developing Cloud Native Applications in Azure using .NET Core - Rekha Kodali 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. 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

Software Architecture with C# 10 and .NET 6 - Gabriel Baptista 2022-03-15 Design scalable and high-performance enterprise applications using the latest features of C# 10 and .NET 6 Key FeaturesGain comprehensive software architecture knowledge and the skillset to create fully modular appsSolve scalability problems in web apps using enterprise architecture patternsMaster new developments in front-end architecture and the application of AI for software architectsBook Description Software architecture is the practice of implementing structures and systems that streamline the software development process and improve the quality of an app. This fully revised and expanded third edition, featuring the latest

features of .NET 6 and C# 10, enables you to acquire the key skills, knowledge, and best practices required to become an effective software architect. Software Architecture with C# 10 and .NET 6, Third Edition features new chapters that describe the importance of the software architect, microservices with ASP.NET Core, and analyzing the architectural aspects of the front-end in the applications, including the new approach of .NET MAUI. It also includes a new chapter focused on providing a short introduction to artificial intelligence and machine learning using ML.NET, and updated chapters on Azure Kubernetes Service, EF Core, and Blazor. You will begin by understanding how to transform user requirements into architectural needs and exploring the differences between functional and non-functional requirements. Next, you will explore how to choose a cloud solution for your infrastructure, taking into account the factors that will help you manage a cloud-based app successfully. Finally, you will analyze and implement software design patterns that will allow you to solve common development problems. By the end of this book, you will be able to build and deliver highly scalable enterprise-ready apps that meet your business requirements. What you will learnUse proven techniques to overcome real-world architectural challengesApply architectural approaches such as layered architectureLeverage tools such as containers to manage microservices effectivelyGet up to speed with Azure features for delivering global solutionsProgram and maintain Azure Functions using C# 10Understand when it is best to use test-driven development (TDD)Implement microservices with ASP.NET Core in modern architecturesEnrich your application with Artificial IntelligenceGet the best of DevOps principles to enable CI/CD environmentsWho this book is for This book is for engineers and senior software developers aspiring to become architects or looking to build enterprise applications with the .NET Stack. Basic familiarity with C# and .NET is required to get the most out of this book.

Microservices in .NET, Second Edition - Christian Gammelgaard 2021-11-23

Microservices in .NET Core, Second Edition is a comprehensive guide to building microservice applications using the .NET stack. After a crystal-clear introduction to the microservices architectural style, it teaches you practical microservices development skills using MVC Core and ASP.NET Core. This second edition of the bestselling original has been revised with up-to-date tools for the .NET ecosystem, and more new coverage of scoping microservices and deploying to Kubernetes. about the technology Microservice applications are built by connecting single-capability, autonomous components that communicate via APIs. Microservice architectures boost productivity, support Agile workflows, and decrease the risks of catastrophic failures. However, they can be a big challenge to develop, as they demand clearly defined interfaces and reliable infrastructure. Luckily for developers, Microsoft''s own MVC Core and ASP.NET Core frameworks help manage the tricky API and simplify the task of building microservice-based applications. about the book Microservices in .NET Core, Second Edition provides a complete guide to building microservice applications. You''ll start by getting to grips with the unique architectural style of microservices, explained in a way that''s clear and accessible. You''ll move on quickly to practical development skills for building your own microservices using MVC Core and ASP.NET Core, working on real-world projects such as an ecommerce shopping cart. You''ll design and build individual services in C# and learn how to compose them into a simple but functional application back end. In brand-new coverage for the second edition, you''ll also learn about scoping microservices and how to handle the complexities of deploying to Kubernetes. Along the way, you''ll address production and operations concerns like monitoring, logging, and security. what''s inside Build scalable microservices that are reliable in production Optimized microservices for continuous delivery Design event-based collaboration between microservices Deploy microservices to Kubernetes Set up Kubernetes in Azure about the reader This book is written for C# developers. No previous experience with microservices required. about the author Christian Horsdal is an independent consultant with 20 years of experience building systems from large scale microservice systems to tiny embedded systems--and lots of stuff in between. He is a .NET expert, author of the books Microservices in .NET Core and Instant Nancy Web Development, a trainer, and an occasional open source contributor.

Clean Architecture - Robert C. Martin 2017-09-12

Practical Software Architecture Solutions from the Legendary Robert C. Martin ("Uncle Bob") By applying universal rules of software architecture, you can dramatically improve developer productivity throughout the life of any software system. Now, building upon the

success of his best-selling books Clean Code and The Clean Coder, legendary software craftsman Robert C. Martin ("Uncle Bob") reveals those rules and helps you apply them. Martin's Clean Architecture doesn't merely present options. Drawing on over a half-century of experience in software environments of every imaginable type, Martin tells you what choices to make and why they are critical to your success. As you've come to expect from Uncle Bob, this book is packed with direct, no-nonsense solutions for the real challenges you'll face–the ones that will make or break your projects. Learn what software architects need to achieve–and core disciplines and practices for achieving it Master essential software design principles for addressing function, component separation, and data management See how programming paradigms impose discipline by restricting what developers can do Understand what's critically important and what's merely a "detail" Implement optimal, high-level structures for web, database, thick-client, console, and embedded applications Define appropriate boundaries and layers, and organize components and services See why designs and architectures go wrong, and how to prevent (or fix) these failures Clean Architecture is essential reading for every current or aspiring software architect, systems analyst, system designer, and software manager–and for every programmer who must execute someone else's designs. Register your product for convenient access to downloads, updates, and/or corrections as they become available.

Enterprise Application Architecture with .NET Core - Ganesan Senthilvel 2017-04-25

Architect and design highly scalable, robust, clean and highly performant applications in .NET Core About This Book Incorporate architectural soft-skills such as DevOps and Agile methodologies to enhance program-level objectives Gain knowledge of architectural approaches on the likes of SOA architecture and microservices to provide traceability and rationale for architectural decisions Explore a variety of practical use cases and code examples to implement the tools and techniques described in the book Who This Book Is For This book is for experienced .NET developers who are aspiring to become architects of enterprise-grade applications, as well as software architects who would like to leverage .NET to create effective blueprints of applications. What You Will Learn Grasp the important aspects and best practices of application lifecycle management Leverage the popular ALM tools, application insights, and their usage to monitor performance, testability, and optimization tools in an enterprise Explore various authentication models such as social media-based authentication, 2FA and OpenID Connect, learn authorization techniques Explore Azure with various solution approaches for Microservices and Serverless architecture along with Docker containers Gain knowledge about the recent market trends and practices and how they can be achieved with .NET Core and Microsoft tools and technologies In Detail If you want to design and develop enterprise applications using .NET Core as the development framework and learn about industry-wide best practices and guidelines, then this book is for you. The book starts with a brief introduction to enterprise architecture, which will help you to understand what enterprise architecture is and what the key components are. It will then teach you about the types of patterns and the principles of software development, and explain the various aspects of distributed computing to keep your applications effective and scalable. These chapters act as a catalyst to start the practical implementation, and design and develop applications using different architectural approaches, such as layered architecture, service oriented architecture, microservices and cloud-specific solutions. Gradually, you will learn about the different approaches and models of the Security framework and explore various authentication models and authorization techniques, such as social media-based authentication and safe storage using app secrets. By the end of the book, you will get to know the concepts and usage of the emerging fields, such as DevOps, BigData, architectural practices, and Artificial Intelligence. Style and approach Filled with examples and use cases, this guide takes a no-nonsense approach to show you the best tools and techniques required to become a successful software architect.

Learn Microservices - ASP.NET Core and Docker - Arnaud Weil 2018-08-31

You're a developer who knows nothing to Microservices. Which is fine, except that you need to start coding your next Microservices-based application using ASP.NET Core and Docker. Don't worry: I have you covered. I've been training hundreds of developers like you during 16 years, and converted my experience into this book. I know from experience teaching what takes more time to learn in Microservices, and will spend time only where appropriate. Plus this book is packed with

exercises which build up into a full project: you develop two interdependent Microservices, each exposing a CRUD JSON API. You publish them in a Docker repository and run them in Docker. Read this book, and you can code your Microservices within a week.

Learning ASP.NET Core 3.0 -Second Edition - Kenneth Yamikani Fukizi 2019-12-27
A beginner's guide to building fully functioning web applications from scratch using the latest features of ASP.NET Core 3 and C# 8 Key Features Get to grips with the new features and APIs in ASP.NET Core 3, EF Core 3, and Blazor Create web APIs that integrate your applications with other systems and services Learn to deploy your web applications in new environments such as the cloud and Docker containers Book Description ASP.NET Core is an open source framework from Microsoft that makes it easy to build highly efficient and dynamic cross-platform web applications. Updated for the latest features of ASP.NET Core 3, this second edition will equip you with the skills you need to build powerful web applications. The book starts with an introduction to ASP.NET Core and its features, giving you a complete understanding of the framework. You will also learn how to set up your development environment with Visual Studio 2019 and build a fully functioning application from scratch. You'll then understand core concepts for building web applications such as Model View Controller (MVC), dependency injection, and WebSockets. As you advance, you'll discover how to use Entity Framework Core 3 to automate all database-related activities for your application. You will then build and document secure web APIs using security best practices to protect your web applications from threats and vulnerabilities. Finally, you will learn how to use Azure DevOps as a CI/CD tool to deploy and monitor your applications using Microsoft Azure, Amazon Web Services (AWS), and Docker. By the end of this book, you'll have the skills you need to develop efficient and robust web applications in ASP.NET Core 3. What you will learn Delve into basic and advanced ASP.NET Core 3 concepts with the help of examples Build an MVC web application and use Entity Framework Core 3 to access data Add web APIs to your web applications using RPC, REST, and HATEOAS Create a fully automated continuous integration and continuous delivery (CI/CD) pipeline using Azure DevOps Use Azure, Amazon Web Services, and Docker to deploy and monitor your applications Secure your web application from common attacks such as Cross-Site Scripting and SQL injection Explore client-side development using C# Razor components Who this book is for This book is for developers who want to build modern web applications with ASP.NET Core. The book will also be helpful for anyone working in infrastructure engineering and operations to monitor and diagnose problems during the runtime of ASP.NET Core 3.0 web applications. Although no prior understanding of ASP.NET or .NET Core is required, basic C# programming knowledge is assumed.

Building Microservices with .NET Core 2.0 - Gaurav Aroraa 2017-12-22
Architect your .NET applications by breaking them into really small pieces - microservices -using this practical, example-based guide. Key Features Start your microservices journey and get a broader perspective on microservices development using C# 7.0 with .NET Core 2.0 Build, deploy, and test microservices using ASP.Net Core, ASP.NET Core API, and Microsoft Azure Cloud Get the basics of reactive microservices Book Description The microservices architectural style promotes the development of complex applications as a suite of small services based on business capabilities. This book will help you identify the appropriate service boundaries within your business. We'll start by looking at what microservices are and their main characteristics. Moving forward, you will be introduced to real-life application scenarios; after assessing the current issues, we will begin the journey of transforming this application by splitting it into a suite of microservices using C# 7.0 with .NET Core 2.0. You will identify service boundaries, split the application into multiple microservices, and define service contracts. You will find out how to configure, deploy, and monitor microservices, and configure scaling to allow the application to quickly adapt to increased demand in the future. With an introduction to reactive microservices, you'll strategically gain further value to keep your code base simple, focusing on what is more important rather than on messy asynchronous calls. What you will learn Get acquainted with Microsoft Azure Service Fabric Compare microservices with monolithic applications and SOA Learn Docker and Azure API management Define a service interface and implement APIs using ASP.NET Core 2.0 Integrate services using a synchronous approach via RESTful APIs with ASP.NET Core 2.0 Implement microservices security using Azure Active Directory, OpenID Connect, and OAuth 2.0 Understand the operation and scaling of

microservices in .NET Core 2.0 Understand the key features of reactive microservices and implement them using reactive extensions Who this book is for This book is for .NET Core developers who want to learn and understand the microservices architecture and implement it in their .NET Core applications. It's ideal for developers who are completely new to microservices or just have a theoretical understanding of this architectural approach and want to gain a practical perspective in order to better manage application complexities.

Cloud Native Go - Kevin Hoffman 2016-12-05
The Complete Guide to Building Cloud-Based Services Cloud Native Go shows developers how to build massive cloud applications that meet the insatiable demands of today's customers, and will dynamically scale to handle virtually any volume of data, traffic, or users. Kevin Hoffman and Dan Nemeth describe the modern cloud-native application in detail, illuminating factors, disciplines, and habits associated with rapid, reliable cloud-native development. They also introduce Go, a "simply elegant" high-performance language that is especially well-suited for cloud development. You'll walk through creating microservices in Go, adding front-end web components using ReactJS and Flux, and mastering advanced Go-based cloud-native techniques. Hoffman and Nemeth show how to build a continuous delivery pipeline with tools like Wercker, Docker, and Dockerhub; automatically push apps to leading platforms; and systematically monitor app performance in production. Learn "The Way of the Cloud": why developing good cloud software is fundamentally about mindset and discipline Discover why Go is ideal for cloud-native microservices development Plan cloud apps that support continuous delivery and deployment Design service ecosystems, and then build them in a test-first manner Push work-in-progress to a cloud Use Event Sourcing and CQRS patterns to react and respond to enormous volume and throughput Secure cloud-based web applications: do's, don'ts, and options Create reactive applications in the cloud with third-party messaging providers Build massive-scale, cloud-friendly GUIs with React and Flux Monitor dynamic scaling, failover, and fault tolerance in the cloud

ASP.NET Core 5 and React - Carl Rippon 2021-01-08
Build fully functional, cloud-ready, and professional web applications using the latest features in the .NET 5 framework and React.js with Microsoft Azure Key FeaturesExplore the new features of .NET 5 with this updated edition of ASP.NET Core 5 and ReactDiscover strategies for adopting a full-stack development approach, clean architecture techniques, and development best practicesLearn how to manage data, design and package applications, and secure your web appsBook Description Microsoft's .NET framework is a robust server-side framework, now even more powerful thanks to the recent unification of the Microsoft ecosystem with the .NET 5 framework. This updated second edition addresses these changes in the .NET framework and the latest release of React. The book starts by taking you through React and TypeScript components for building an intuitive single-page application and then shows you how to design scalable REST APIs that can integrate with a React-based frontend. Next, you'll get to grips with the latest features, popular patterns, and tools available in the React ecosystem, including function-based components, React Router, and Redux. As you progress through the chapters, you'll learn how to use React with TypeScript to make the frontend robust and maintainable and cover key ASP.NET 5 features such as API controllers, attribute routing, and model binding to build a sturdy backend. In addition to this, you'll explore API security with ASP.NET 5 identity and authorization policies and write reliable unit tests using both .NET and React, before deploying your app on Azure. By the end of this book, you'll have gained the knowledge you need to enhance your C# and JavaScript skills and build full-stack, production-ready applications with ASP.NET 5 and React. What you will learnBuild RESTful APIs with .NET 5 using API controllersSecure REST APIs with identity and authorization policiesCreate strongly typed, interactive, and function-based React components using HooksUnderstand how to style React components using Emotion.jsPerform client-side state management with ReduxRun a range of automated tests on the frontend and backendImplement continuous integration and continuous delivery (CI/CD) processes in Azure using Azure DevOpsWho this book is for If you're a web developer looking to get up to speed with full-stack web application development with .NET Core and React, this book is for you. Although the book does not assume any knowledge of React, a basic understanding of .NET Core will help you to get to grips with the concepts covered.

Hands-On Microservices with C# 8 and . NET Core 3 - Gaurav Aroraa 2020-03-27

Learn the essential concepts, techniques, and design patterns that will help you build scalable and maintainable distributed systems Key Features Learn to design, implement, test, and deploy your microservices Understand the challenges and complexities of testing and monitoring distributed services Build modular and robust microservice architectures with the latest features of C# 8 and .NET Core 3.1 Book Description The microservice architectural style promotes the development of complex applications as a suite of small services based on specific business capabilities. With this book, you'll take a hands-on approach to build microservices and deploy them using ASP .NET Core and Microsoft Azure. You'll start by understanding the concept of microservices and their fundamental characteristics. This microservices book will then introduce a real-world app built as a monolith, currently struggling under increased demand and complexity, and guide you in its transition to microservices using the latest features of C# 8 and .NET Core 3. You'll identify service boundaries, split the application into multiple microservices, and define service contracts. You'll also explore how to configure, deploy, and monitor microservices using Docker and Kubernetes, and implement autoscaling in a microservices architecture for enhanced productivity. Once you've got to grips with reactive microservices, you'll discover how keeping your code base simple enables you to focus on what's important rather than on messy asynchronous calls. Finally, you'll delve into various design patterns and best practices for creating enterprise-ready microservice applications. By the end of this book, you'll be able to deconstruct a monolith successfully to create well-defined microservices. What you will learn Package, deploy, and manage microservices and containers with Azure Service Fabric Use REST APIs to integrate services using a synchronous approach Protect public APIs using Azure Active Directory and OAuth 2.0 Understand the operation and scaling of microservices using Docker and Kubernetes Implement reactive microservices with Reactive Extensions Discover design patterns and best practices for building enterprise-ready apps Who this book is for This book is for C# and .NET Core developers who want to understand microservices architecture and implement it in their .NET Core applications. If you're new to building microservices or have theoretical knowledge of the architectural approach, this book will help you gain a practical perspective to manage application complexity efficiently.

Building Microservices Applications on Microsoft Azure - Harsh Chawla 2019-07-17

Implement microservices starting with their architecture and moving on to their deployment, manageability, security, and monitoring. This book focuses on the key scenarios where microservices architecture is preferred over a monolithic architecture. Building Microservices Applications on Microsoft Azure begins with a survey of microservices architecture compared to monolithic architecture and covers microservices implementation in detail. You'll see the key scenarios where microservices architecture is preferred over a monolithic approach. From there, you will explore the critical components and various deployment options of microservices on platforms such as Microsoft Azure (public cloud) and Azure Stack (hybrid cloud). This includes in-depth coverage of developing, deploying, and monitoring microservices on containers and orchestrating with Azure Service Fabric and Azure Kubernetes Cluster (AKS). This book includes practical experience from large-scale enterprise deployments, therefore it can be a quick reference for solution architects and developers to understand the critical factors while designing a microservices application. What You Will LearnExplore the use cases of microservices and monolithic architecture Discover the architecture patterns to build scalable, agile, and secure microservices applicationsDevelop and deploy microservices using Azure Service Fabric and Azure Kubernetes Service Secure microservices using the gateway patternSee the deployment options for Microservices on Azure StackImplement database patterns to handle the complexities introduced by microservices Who This Book Is For Architects and consultants who work on Microsoft Azure and manage large-scale deployments.