Serverless Architectures With Aws Lambda

"Amazon Web Services continues its domination as the leading cloud service provider on the market. Since serverless applications are gaining a lot of traction, it is extremely important to understand the serverless architecture, to help you build, manage, and secure serverless applications. This video covers all aspects of serverless architectures in Amazon Web Services, which is necessary for working with serverless applications. This course starts with introduction to serverless architectures and then you'll delve into design considerations, followed by building a serverless application and deploying it on your serverless architecture. This video covers practical example of deploying and orchestrating a serverless application using DynamoDB, AWS Lambda, and API Gateway. Towards the end of the video, we will learn about some security considerations in protecting your serverless application. By the end of this course, you will have mastered working with serverless architectures on AWS Cloud."--Resource description page.

Learn to build, secure, deploy, and manage your serverless application in Golang with AWS Lambda Key Features Implement AWS lambda to build scalable and cost-efficient applications in Go Design and set the data flow between cloud services and custom business logic Learn to design Lambda functions using real-world examples and implementation scenarios Book Description Serverless architecture is popular in the

tech community due to AWS Lambda. Go is simple to learn, straightforward to work with, and easy to read for other developers; and now it's been heralded as a supported language for AWS Lambda. This book is your optimal guide to designing a Go serverless application and deploying it to Lambda. This book starts with a quick introduction to the world of serverless architecture and its benefits, and then delves into AWS Lambda using practical examples. You'll then learn how to design and build a production-ready application in Go using AWS serverless services with zero upfront infrastructure investment. The book will help you learn how to scale up serverless applications and handle distributed serverless systems in production. You will also learn how to log and test your application. Along the way, you'll also discover how to set up a CI/CD pipeline to automate the deployment process of your Lambda functions. Moreover, you'll learn how to troubleshoot and monitor your apps in near real-time with services such as AWS CloudWatch and X-ray. This book will also teach you how to secure the access with AWS Cognito. By the end of this book, you will have mastered designing, building, and deploying a Go serverless application. What you will learn Understand how AWS Lambda works and use it to create an application Understand how to scaleup serverless applications Design a cost-effective serverless application in AWS Build a highly scalable and fault-tolerant CI/CD pipeline Understand how to troubleshoot and monitor serverless apps in AWS Discover the working of APIs and single page applications Build a production-ready serverless application in Go Who this

book is for This book is for Go developers who would like to learn about serverless architecture. Go programming knowledge is assumed. DevOps and Solution Architects who are interested in building serverless applications in Go can also choose this book. "This course will introduce you to Serverless Architecture and lead you to build a simple image-resizing service using a Java-based AWS Lambda function. Then we'll move onto how the Spring framework supports the cloud and in particular AWS. There are a number of different services made available through Spring annotations to make your life easier. Moving on, you'll start to build your Spring-based, serverless application that will take a URL and convert it into a short URL that will be stored in DynamoDB and you'll receive a short URL. You can then use that short URL in a browser and then be redirected to the real site. To demonstrate integration with AWS' Simple Notification Service (SNS), the application will also send a notification to you whenever someone creates a new short URL. Lastly, you'll learn about monitoring your application using AWS cloud watch. By the end of the course, you'll be equipped with the knowledge to build scalable and cost-efficient Spring applications with serverless architectures."--Resource description page.

Join the serverless revolution right away to save your resources! About This Video Build efficient serverless chat web applications with AWS Lambda and JavaScript in just a week Get started with Serverless Computing and delegate your applications' is server management and security to AWS at minimal cost Skip Netflix for just half an

hour a day for a week and get a ticket to a higher paid job In Detail Serverless architecture based on AWS Lambda and JavaScript defines the future of web development and is also a "new superpower" that allows you to eliminate the issues of "traditional" web hosting. More and more enterprises are moving serverless to save time, cost, and resources and for increased security. Dive into "Serverless JavaScript with AWS Lambda in 7 days" right away to run your code without thinking about any servers and get charged only when your code actually runs. Each section is followed by hands-on, practical assignments as homework to help you in readily implementing the learnings in a functional manner. All you need to get your job done is upload your code and define when it should get executed. And, Lambda will take care of everything required to run and scale your code. Towards the end of this course, you will be able to build efficient serverless web applications with AWS Lambda and JavaScript. By deploying Lambda, you can reduce the amount of time it takes to send updates to your production system. You will also gain an edge in the Serverless Computing world and be confident to use it in your own projects or apply for some of the high-paid jobs. All the code and supporting files for this course are available on GitHub at https://github.com/PacktPublishing/Serverless-JavaScript-with-AWS-Lambda-in-7-Days Downloading the example code for this course: You can download the example code files for all Packt video courses you have purchased from your account at http://www.PacktPub.com . If you purchased this course elsewhere, you can visit

http://www.PacktPub.com/support and register to have the files e-mailed directly to you. Deploy, orchestrate, and monitor serverless applications using Kubernetes Key Features Get hands-on experience with frameworks, such as Kubeless, Apache OpenWhisk, and Funktion Master the basics of Kubernetes and prepare yourself for challenging technical assessments Learn how to launch Kubernetes both locally and in a public cloud Book Description Kubernetes has established itself as the standard platform for container management, orchestration, and deployment. By learning Kubernetes, you'll be able to design your own serverless architecture by implementing the function-as-a-service (FaaS) model. After an accelerated, hands-on overview of the serverless architecture and various Kubernetes concepts, you'll cover a wide range of real-world development challenges faced by real-world developers, and explore various techniques to overcome them. You'll learn how to create production-ready Kubernetes clusters and run serverless applications on them. You'll see how Kubernetes platforms and serverless frameworks such as Kubeless, Apache OpenWhisk and OpenFaaS provide the tooling to help you develop serverless applications on Kubernetes. You'll also learn ways to select the appropriate framework for your upcoming project. By the end of this book, you'll have the skills and confidence to design your own serverless applications using the power and flexibility of Kubernetes. What you will learn Deploy a Kubernetes cluster locally with Minikube Get familiar with AWS Lambda and Google Cloud Functions Create, build, and deploy a webpage generated by the serverless

functions in the cloud Create a Kubernetes cluster running on the virtual kubelet hardware abstraction Create, test, troubleshoot, and delete an OpenFaaS function Create a sample Slackbot with Apache OpenWhisk actions Who this book is for This book is for software developers and DevOps engineers who have basic or intermediate knowledge about Kubernetes and want to learn how to create serverless applications that run on Kubernetes. Those who want to design and create serverless applications running on the cloud, or on-premise Kubernetes clusters will also find this book useful. Serverless architectures allow you to build and run applications and services without having to manage the infrastructure. Many companies have adopted this architecture to save cost and improve scalability. This book will help you design serverless architectures for your applications with AWS and Python.

"AWS Lambda is one of the fastest growing services of AWS! This course is part of a series of courses on AWS solutions with Python and Boto3 and now it's time to implement serverless functions! AWS Lambda is a cornerstone service for serverless architectures on AWS. You do not manage an infrastructure like CPU, memory, OS or patches you name it! All you have to do and worry about is your implementation and code! Let's take a closer look at what we're going to cover in this course step-by-step. In this course, we will start off with what we'll build throughout the course and what you need to have on your computer to follow along with me. Don't worry; I'll explain everything you need very clearly and I'll show you what you need to install and setup on

your computer to work with AWS Lambda. There will be two different sections for Windows and MacOS users. These sections are basically identical and show how you can prepare your computer environment to be ready to work with AWS Lambda! I'll show you how to install Python, Boto3 and configure your environments for these tools. I'll also show you how you can create your own AWS account step-by-step and you'll be ready to work AWS in no time! When we're done with preparing our environment to work AWS with Python and Boto3, we'll start implementing our solutions for AWS."--Resource description page.

Work through exciting recipes to administer your AWS cloud Key Features Build secure environments using AWS components and services Explore core AWS features with real-world applications and best practices Design and build Lambda functions using real-world examples Book Description With this Learning Path, you'll explore techniques to easily manage applications on the AWS cloud. You'll begin with an introduction to serverless computing, its advantages, and the fundamentals of AWS. The following chapters will guide you on how to manage multiple accounts by setting up consolidated billing, enhancing your application delivery skills, with the latest AWS services such as CodeCommit, CodeDeploy, and CodePipeline to provide continuous delivery and deployment, while also securing and monitoring your environment's workflow. It'll also add to your understanding of the services AWS Lambda provides to developers. To refine your skills further, it demonstrates how to design, write, test, monitor, and troubleshoot Lambda functions. By the end of this Learning Path, you'll be able to create a highly secure, fault-tolerant, and scalable environment for your

applications. This Learning Path includes content from the following Packt products: AWS Administration: The Definitive Guide, Second Edition by Yohan Wadia AWS Administration Cookbook by Rowan Udell, Lucas Chan Mastering AWS Lambda by Yohan Wadia, Udita Gupta What you will learn Explore the benefits of serverless computing and applications Deploy apps with AWS Elastic Beanstalk and Amazon Elastic File System Secure environments with AWS CloudTrail, AWSConfig, and AWS Shield Run big data analytics with Amazon EMR and Amazon Redshift Back up and safeguard data using AWS Data Pipeline Create monitoring and alerting dashboards using CloudWatch Effectively monitor and troubleshoot serverless applications with AWS Design serverless apps via AWS Lambda, DynamoDB, and API Gateway Who this book is for This Learning Path is specifically designed for IT system and network administrators, AWS architects, and DevOps engineers who want to effectively implement AWS in their organization and easily manage daily activities. Familiarity with Linux, web services, cloud computing platforms, virtualization, networking, and other administration-related tasks will assist in understanding the concepts in the book. Prior hands-on experience with AWS core services such as EC2, IAM, S3, and programming languages, such as Node.Js, Java, and C#, will also prove beneficial.

Serverless revolutionizes the way organizations build and deploy software. With this hands-on guide, Java engineers will learn how to use their experience in the new world of serverless computing. You'll discover how this cloud computing execution model can drastically decrease the complexity in developing and operating applications while reducing costs and time to market. Engineering leaders John Chapin and Mike Roberts guide you through the process of developing these applications using AWS Lambda, Amazon's event-driven, serverless

computing platform. You'll learn how to prepare the development environment, program Lambda functions, and deploy and operate your serverless software. The chapters include exercises to help you through each aspect of the process. Get an introduction to serverless, functions as a service, and AWS Lambda Learn how to deploy working Lambda functions to the cloud Program Lambda functions and learn how the Lambda platform integrates with other AWS services Build and package Java-based Lambda code and dependencies Create serverless applications by building a serverless API and data pipeline Test your serverless applications using automated techniques Apply advanced techniques to build production-ready applications Understand both the gotchas and new opportunities of serverless architecture Build, deploy, test, and run cloud-native serverless applications using AWS Lambda and other popular AWS services Key Features Learn how to write, run, and deploy serverless applications in Amazon Web Services Make the most of AWS Lambda functions to build scalable and cost-efficient systems Build and deploy serverless applications with Amazon API Gateway and AWS Lambda functions Book Description Serverless computing is a way to run your code without having to provision or manage servers. Amazon Web Services provides serverless services that you can use to build and deploy cloud-native applications. Starting with the basics of AWS Lambda, this book takes you through combining Lambda with other services from AWS, such as Amazon API Gateway, Amazon DynamoDB, and Amazon Step Functions. You'll learn how to write, run, and test Lambda functions using examples in Node.js, Java, Python, and C# before you move on to developing and deploying serverless APIs efficiently using the Serverless Framework. In the concluding chapters, you'll discover tips and best practices for leveraging Serverless Framework to increase your development

productivity. By the end of this book, you'll have become well-versed in building, securing, and running serverless applications using Amazon API Gateway and AWS Lambda without having to manage any servers. What you will learn Understand the core concepts of serverless computing in AWS Create your own AWS Lambda functions and build serverless APIs using Amazon API Gateway Explore best practices for developing serverless applications at scale using Serverless Framework Discover the DevOps patterns in a modern CI/CD pipeline with AWS CodePipeline Build serverless data processing jobs to extract, transform, and load data Enforce resource tagging policies with continuous compliance and AWS Config Create chatbots with natural language understanding to perform automated tasks Who this book is for This AWS book is for cloud architects and developers who want to build and deploy serverless applications using AWS Lambda. A basic understanding of AWS is required to get the most out of this book.

Which AWS services is not supported as an AWS lambda event source? How can you answer the really big questions? How is cloud computing different from on-premise? Do you see patterns for building serverless solutions? How has development changed? This powerful Serverless Architectures On AWS self-assessment will make you the accepted Serverless Architectures On AWS domain veteran by revealing just what you need to know to be fluent and ready for any Serverless Architectures On AWS challenge. How do I reduce the effort in the Serverless Architectures On AWS work to be done to get problems solved? How can I ensure that plans of action include every Serverless Architectures On AWS task and that every Serverless Architectures On AWS outcome is in place? How will I save time investigating strategic and tactical options and ensuring Serverless Architectures On AWS costs are low?

How can I deliver tailored Serverless Architectures On AWS advice instantly with structured going-forward plans? There's no better guide through these mind-expanding questions than acclaimed best-selling author Gerard Blokdyk. Blokdyk ensures all Serverless Architectures On AWS essentials are covered, from every angle: the Serverless Architectures On AWS self-assessment shows succinctly and clearly that what needs to be clarified to organize the required activities and processes so that Serverless Architectures On AWS outcomes are achieved. Contains extensive criteria grounded in past and current successful projects and activities by experienced Serverless Architectures On AWS practitioners. Their mastery, combined with the easy elegance of the self-assessment, provides its superior value to you in knowing how to ensure the outcome of any efforts in Serverless Architectures On AWS are maximized with professional results. Your purchase includes access details to the Serverless Architectures On AWS self-assessment dashboard download which gives you your dynamically prioritized projects-ready tool and shows you exactly what to do next. Your exclusive instant access details can be found in your book. You will receive the following contents with New and Updated specific criteria: - The latest quick edition of the book in PDF - The latest complete edition of the book in PDF, which criteria correspond to the criteria in... - The Self-Assessment Excel Dashboard - Example pre-filled Self-Assessment Excel Dashboard to get familiar with results generation - In-depth and specific Serverless Architectures On AWS Checklists - Project management checklists and templates to assist with implementation INCLUDES LIFETIME SELF ASSESSMENT UPDATES Every self assessment comes with Lifetime Updates and Lifetime Free Updated Books. Lifetime Updates is an industry-first feature which allows you to receive verified self assessment updates, ensuring you always

have the most accurate information at your fingertips.

The benefit of serverless architectures are well-defined. Serverless helps developers focus on what they do best-building solutions-without the difficulty of managing and scaling infrastructure. However, when it comes to implementation, the instructions are much less clear. In this course, developer and AWS Community Hero Aileen Smith explores both the how and the why of serverless microservices architectures in AWS. Learn how to leverage Lambda functions and Elastic Container Service (ECS) components, choose the right integration technology, configure an API for access, and coordinate serverless workflows with Step Functions. Aileen also shows how to transition an existing application to serverless and solve common deployment and management challenges.

Data-intensive systems are software applications that process and generate Big Data. Data-intensive systems support the use of large amounts of data strategically and efficiently to provide intelligence. For example, examining industrial sensor data or business process data can enhance production, guide proactive improvements of development processes, or optimize supply chain systems. Designing data-intensive software systems is difficult because distribution of knowledge across stakeholders creates a symmetry of ignorance, because a shared vision of the future requires the development of new knowledge that extends and synthesizes existing knowledge. Knowledge Management in the Development of Data-Intensive Systems addresses new challenges arising from knowledge management in the development of data-intensive software systems. These challenges concern requirements, architectural design, detailed design, implementation and maintenance. The book covers the current state and future directions of knowledge management in development of data-intensive

software systems. The book features both academic and industrial contributions which discuss the role software engineering can play for addressing challenges that confront developing, maintaining and evolving systems;data-intensive software systems of cloud and mobile services; and the scalability requirements they imply. The book features software engineering approaches that can efficiently deal with data-intensive systems as well as applications and use cases benefiting from data-intensive systems. Providing a comprehensive reference on the notion of data-intensive systems from a technical and non-technical perspective, the book focuses uniquely on software engineering and knowledge management in the design and maintenance of data-intensive systems. The book covers constructing, deploying, and maintaining high quality software products and software engineering in and for dynamic and flexible environments. This book provides a holistic guide for those who need to understand the impact of variability on all aspects of the software life cycle. It leverages practical experience and evidence to look ahead at the challenges faced by organizations in a fast-moving world with increasingly fast-changing customer requirements and expectations. Reduce the time it takes to get up to speed with Lambda from weeks to an afternoon. This technical manual shows you everything you need to successfully develop and deploy AWS Lambda functions written in Javascript. It covers all necessary topics in one place, complete with code examples and linked projects. The AWS documentation pages are a great place to learn about services, but they are also filled with things that are not relevant, making it hard to get the big picture. This book has all the important parts, based on experience and a lot of trial-and-error. You'll know everything you need in a fraction of time. No fluff or filler text, but plenty of hands-on examples. You'll: * Understand how the Lambda execution environment works *

Learn how to write Javascript serverless functions * And walk away with knowledge about debuggers and HTTP APIs I'm an AWS certified security specialist and architect and I've been working with cloud environments for several years now. I've been writing about these topics since 2014 on my blog. With over 150 articles (and counting!), my writing is characterized by the depth of research and a to-the-point style. Who is this book for? Software developers who are familiar with Javascript and have some experience with the AWS cloud. The infrastructure examples are in Terraform, so it's nice to have some prior knowledge of that too. Table of contents Introduction Chapter 1: The Lambda execution model Serverless functions Limits The cost model At-least-once execution Caching in /tmp Cold start Memory Chapter 2: Setup Node versions The Lambda permission model How to define code Inline code File interpolation Adding packages with npm Handler argument Chapter 3: Programming model Async handler Async programming patterns Background tasks Input and output The event object The context object Output The AWS SDK Pagination Environment variables Timeout Cause of timeouts Mitigating timeouts AWS SDK timeouts Promise-based timeout handling Chapter 4: Debugging Logging X-Ray Custom segments Chapter 5: Other topics Storing secrets Using SSM Caching Cache time HTTP API OpenAPI backend Request parameters Special handlers Express backend

Don't waste your energy thinking about servers; use AWS to build enterprise-grade serverless applications. Key Features Learn how to quickly and easily go serverless Explore AWS and Lambda: the first building blocks of serverless applications on AWS Study different approaches to deploy and maintain serverless applications Book

Description Serverless Architecture with AWS begins with an introduction to the serverless model and helps you get started with AWS and Lambda. You'll also get to grips with other capabilities of the AWS Serverless Platform and see how AWS supports enterprise-grade serverless applications with and without Lambda. This book will guide you in deploying your first serverless project and exploring the capabilities of serverless Amazon Athena, an interactive query service that makes it easy to analyze data in Amazon Simple Storage Service (S3 Amazon) using standard SQL. You'll also learn about AWS Glue, a fully managed ETL service that makes categorizing data easy and cost-effective. You'll study how Amazon Kinesis makes it possible to unleash the potential of real-time data insights and analytics with capabilities such as video streams, data streams, data firehose, and data analytics. Last but not least, you'll be equipped to combine Amazon Kinesis capabilities with AWS Lambda to create lightweight serverless architectures. By the end of the book, you will be ready to create and run your first serverless application that takes advantage of the high availability, security, performance, and scalability of AWS. What you will learn Explore AWS services for supporting a serverless environment Set up AWS services to make applications scalable and highly available Deploy a static website with a serverless architecture Build your first serverless web application Study the changes in a deployed serverless web application Apply best practices to ensure overall security, availability, and reliability Who this book is for This book is for you if you want to develop serverless

applications and have some prior coding experience. Though no prior experience of AWS is needed, basic knowledge of Java or Node.js will be an added advantage. AWS Lambda 2019 Beginner's Guide to Serverless Microservices.The trend has been threatening to surface for long and there's no better time than now to welcome a serverless architecture into the picture. Rather than draining your energy on the architectural aspect, why not focus your strength and energy on what you Know how to do best.AWS Lambda takes the stress of having to deal with the architectural aspect of building software while saving your energy for the actual job of coding.This beginners guide on Serverless Microservice takes a complete look at what a serverless framework has to offer. Reducing your workload, increasing efficiency and cutting down production cost.To help you take advantage of what this platform has to offer, we've prepared this guide to help you explore the benefits that comes with a serverless framework. Enabling users to execute task faster and better to help you improve results. Image resize, file uploads, API integration and event creation. This guide touches every aspect of this technology that will help you perform task better with just minimum effort.With step-by-step guides, in-depth analysis and screenshot, the reader is taken by the hand and walked through every chapter. We take you from scratch, assuming you have zero knowledge about this technology. We start with a detailed introduction of what AWS is all about, before proceeding to it's features.Furthermore, we walk you through the process of creating events and assigning roles to your functions. With CloudFormation,

comes a way to assemble all details in one format to carry out a single functionality.We understand that learning a new concept is quite intimidating and hard to comprehend at the same time. We've made every concept easy to understand using everyday language familiar to our ideal users.In a nutshell, here's what this guide has to offer An introductory page that covers all you need to know about AWS Lambda and the purpose it serves. How to create events and also assign roles to a function Functions are executable actions, more like a code that indicates what action Should be carried out. In this guide, we will take you through 3 tested method on how to create a Function How to add permissions to a Role Easy ways to Access your functions via API Gateway. Adjusting to a new concept such as this one isn't always an easy idea especially if you're used to using servers. However, with serverless architecture, you get to reduce expenses since you're charged per usage.Save extra by learning all the tricks that comes with AWS lambda. If you're ready to make the move, this guide will walk you through all you need to know.Download your copy of " AWS Lambda " by scrolling up and clicking "Buy Now With 1-Click" button.

Learn the basics of serverless computing and how to develop event-driven architectures with the three major cloud platforms: Amazon Web Services, Microsoft Azure, and Google Cloud. This hands-on guide dives into the foundations of serverless computing, its use cases, and how to apply it using developer tools such as Node.js, Visual Studio Code, Postman, and Serverless Framework. You will apply the

fundamentals of serverless technology from the ground up, and come away with a greater understanding of its power and how to make it work for you. This book teaches you how to quickly and securely develop applications without the hassle of configuring and maintaining infrastructure. You will learn how to harness serverless technology to rapidly reduce production time and minimize your costs, while still having the freedom to customize your code, without hindering functionality. Upon completion, you will have the knowledge and resources to build your own serverless application hosted in AWS, Azure, or Google Cloud and will have experienced the benefits of event-driven technology for yourself. What You'll Learn Gain a deeper understanding of serverless computing and when to use it Use development tools such as Node.js, Postman, and VS code to quickly set up your serverless development environment and produce applications Apply triggers to your serverless functions that best suit the architecture for the problem the functions are solving Begin building applications across cloud providers that utilize the power of serverless technology Understand best development practices with serverless computing to maintain scalable and practical solutions Code with an agnostic approach to cloud providers to minimize provider dependency Who This Book Is For Any developer looking to expand current knowledge of serverless computing, its applications, and how to architect serverless solutions, or someone just beginning in these areas

Design, develop, build, and deliver an end-to-end serverless architecture by leveraging

Azure services, frameworks, and tools. This book offers a holistic approach, guiding you through the design and development of a Twitter Bot application, while leveraging Azure Functions. Integrating Serverless Architecture begins with an overview of serverless computing and getting started with Azure Functions. Here, you will create a Twitter bot function which scans Twitter for the latest tweets and makes use of dependency injection. Further, you will learn about Azure Cosmos DB where you will cover its change feed mechanism and the repository pattern. You will create a Cosmos DB trigger-based tweet notifier function, which will broadcast the latest tweets to connected clients. You will explore the basics of Azure Service Bus and create a tweet scheduler function, which will prioritize different keywords for the Twitter bot function. Along the way, you will debug, deliver, and test the functions in the Azure environment. This book shows you how to secure your Azure Function secrets with the help of Azure Key Vault. To further your understanding of the technology, you will learn logging and exception handling in Azure Functions. Later in the book, you will build a Twitter bot web application by using ASP.NET Core and Materialize CSS, which will interact with several HTTP-based Azure Functions. The Twitter bot web application allows users to log in through the Twitter Identity Provider, subscribe to different keywords/hashtags, and browse the latest tweets based on subscriptions. You will get started with SignalR Service and integrate it with Azure Functions and web applications. Towards the end you will go through app service authentication on Azure Functions and discover how to

configure continuous integration and delivery to Azure Functions. After reading this book, you will be able to understand the steps involved in design, development, and delivery of a workflow using Azure Functions. What You Will Learn Design and develop a Twitter bot application using Azure Functions with Azure Web App Service as the front end Leverage Azure Cosmos DB as data storage and trigger notifications using its change feed mechanism Store and retrieve secrets from Azure Key Vault Integrate Azure Functions with Azure SignalR Service to broadcast real-time messages Secure Azure Functions by enabling Twitter identity authentication using built-in App Service authentication Build a continuous integration and continuous delivery pipeline for Azure Functions using Visual Studio Team Services (VSTS) Who This Book Is For Developers, software engineers, and architects who design and manage infrastructures and build applications by leveraging Microsoft cloud services.

Get started with designing your serverless application using optimum design patterns and industry standard practices Key Features Learn the details of popular software patterns and how they are applied to serverless applications Understand key concepts and components in serverless designs Walk away with a thorough understanding of architecting serverless applications Book Description Serverless applications handle many problems that developers face when running systems and servers. The serverless pay-per-invocation model can also result in drastic cost savings, contributing to its popularity. While it's simple to create a basic serverless application, it's critical to

structure your software correctly to ensure it continues to succeed as it grows. Serverless Design Patterns and Best Practices presents patterns that can be adapted to run in a serverless environment. You will learn how to develop applications that are scalable, fault tolerant, and well-tested. The book begins with an introduction to the different design pattern categories available for serverless applications. You will learn the trade-offs between GraphQL and REST and how they fare regarding overall application design in a serverless ecosystem. The book will also show you how to migrate an existing API to a serverless backend using AWS API Gateway. You will learn how to build event-driven applications using queuing and streaming systems, such as AWS Simple Queuing Service (SQS) and AWS Kinesis. Patterns for data-intensive serverless application are also explained, including the lambda architecture and MapReduce. This book will equip you with the knowledge and skills you need to develop scalable and resilient serverless applications confidently. What you will learn Comprehend the popular design patterns currently being used with serverless architectures Understand the various design options and corresponding implementations for serverless web application APIs Learn multiple patterns for data-intensive serverless systems and pipelines, including MapReduce and Lambda Architecture Learn how to leverage hosted databases, queues, streams, storage services, and notification services Understand error handling and system monitoring in a serverless architecture a serverless architecture Learn how to set up a serverless

application for continuous integration, continuous delivery, and continuous deployment Who this book is for If you're a software architect, engineer, or someone who wants to build serverless applications, which are non-trivial in complexity and scope, then this book is for you. Basic knowledge of programming and serverless computing concepts are assumed.

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

The proliferation of powerful but cheap devices, together with the availability of a plethora of wireless technologies, has pushed for the spread of the Wireless Internet of Things (WIoT), which is typically much more heterogeneous, dynamic, and general-

purpose if compared with the traditional IoT. The WIoT is characterized by the dynamic interaction of traditional infrastructure-side devices, e.g., sensors and actuators, provided by municipalities in Smart City infrastructures, and other portable and more opportunistic ones, such as mobile smartphones, opportunistically integrated to dynamically extend and enhance the WIoT environment. A key enabler of this vision is the advancement of software and middleware technologies in various mobile-related sectors, ranging from the effective synergic management of wireless communications to mobility/adaptivity support in operating systems and differentiated integration and management of devices with heterogeneous capabilities in middleware, from horizontal support to crowdsourcing in different application domains to dynamic offloading to cloud resources, only to mention a few. The book presents state-of-the-art contributions in the articulated WIoT area by providing novel insights about the development and adoption of middleware solutions to enable the WIoT vision in a wide spectrum of heterogeneous scenarios, ranging from industrial environments to educational devices. The presented solutions provide readers with differentiated point of views, by demonstrating how the WIoT vision can be applied to several aspects of our daily life in a pervasive manner. Choose the right architecture and design it using design patterns to create a serverless application that cuts costs and is easily scalable Key Features Design enterprise ready serverless applications that effortlessly meet your customers' requirements Effectively deploy, manage, monitor, and orchestrate serverless applications using AWS Use Cloud9 to provision

a secured development environment in the cloud Book Description Serverless is a cloud computing execution model where the cloud provider dynamically manages the allocation and provisioning of servers. Many companies have started using serverless architectures to cut costs and improve scalability. Hands-On Serverless Applications with Kotlin is your one-stop guide to designing serverless architectures for your applications with AWS and Kotlin. To start with, you'll explore the fundamentals of serverless architecture and how AWS Lambda functions work. You will then learn to design, build, secure, and deploy your application to production. In addition to these activities, you'll understand how to implement non-functional requirements such as auditing and logging. Moving on, you'll discover how to scale up and orchestrate serverless applications using an open source framework and handle distributed serverless systems in production. By the end of the book, you'll have gained the knowledge needed to build scalable and cost-efficient Kotlin applications with a serverless framework. What you will learn Design a serverless architecture Use AWS Lambda to contain your serverless API Explore the various ways to keep serverless apps safe and secure Understand how a serverless API allows you to use huge infrastructure and cut costs Discover how to handle distributed systems in Kotlin Design the data flow between cloud services and custom business logic Secure your Kotlin AWS serverless application Master Kotlin design patterns for serverless applications Who this book is for Hands-On Serverless Applications with Kotlin is for you if you are a Kotlin developer who wants to learn about serverless architectures. It is assumed that you have some knowledge of Kotlin programming and AWS.
Deploy functions efficiently using different cloud-based serverless offerings Key Features Understand the concept of Function-as-a-Service Implement Serverless solutions using AWS

Lambda, Azure Functions and Google Cloud Functions Practical approach towards choosing the best tool for your serverless environment Book Description Serverless applications and architectures are gaining momentum and are increasingly being used by companies of all sizes. Serverless software takes care of many problems that developers face when running systems and servers, such as fault tolerance, centralized logging, horizontal scalability, and deployments. You will learn how to harness serverless technology to rapidly reduce production time and minimize your costs, while still having the freedom to customize your code, without hindering functionality. Upon finishing the book, you will have the knowledge and resources to build your own serverless application hosted in AWS, Microsoft Azure, or Google Cloud Platform, and will have experienced the benefits of event-driven technology for yourself. This hands-on guide dives into the basis of serverless architectures and how to build them using Node.js as a programming language, Visual Studio Code for code editing, and Postman for quickly and securely developing applications without the hassle of configuring and maintaining infrastructure on three public cloud platforms. What you will learn Understand the benefts of serverless computing and know when to use it Develop serverless applications on AWS, Azure, and Google Cloud Get to grips with Function as a Service (FaaS) Apply triggers to serverless functions Build event-driven apps using serverless frameworks Use the Node.js programming language to build serverless apps Use code editors, such as Visual Studio Code, as development environments Master the best development practices for creating scalable and practical solutions Who this book is for This book is targeted towards developers, system administrators or any stakeholder working in the Serverless environment and want to understand how functions work. Basic idea of serverless architecture can be an added

advantage

Many businesses are rapidly adopting a microservices-first approach to development, driven by the availability of new commercial services like Azure Functions and AWS Lambda. In this book, we'll show you how to quickly get up and running with your own serverless development on Microsoft Azure. We start by working through a single function, and ...

"Serverless architecture is a way to build and run applications and services without having to manage infrastructure. Lambda eliminates the problem of dealing with cloud-based servers at all levels of technology stack, and offers a pay-per-request billing model where you don't have to pay for idle computing time. Thus it becomes extremely important to understand the serverless architecture, which will help you build, manage, and secure serverless applications with AWS Lambda. In this course, you'll learn to build code and deploy it without ever needing to configure or manage underlying servers. You'll build, secure, and manage serverless architectures that can power the most demanding web and mobile apps. You won't have to provision infrastructures or worry about scale. By the end of this course, you will know how to design and implement production-ready AWS serverless solutions. You'll be able to architect and build your own serverless applications on AWS."--Resource description page.

Summary AWS Lambda in Action is an example-driven tutorial that teaches you how to build applications that use an event-driven approach on the back end. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology With AWS Lambda, you write your code and upload it to the AWS cloud. AWS Lambda responds to the events triggered by your application or your users, and automatically manages the underlying computer resources for you. Back-end tasks like analyzing a new

document or processing requests from a mobile app are easy to implement. Your application is divided into small functions, leading naturally to a reactive architecture and the adoption of microservices. About the Book AWS Lambda in Action is an example-driven tutorial that teaches you how to build applications that use an event-driven approach on the back-end. Starting with an overview of AWS Lambda, the book moves on to show you common examples and patterns that you can use to call Lambda functions from a web page or a mobile app. The second part of the book puts these smaller examples together to build larger applications. By the end, you'll be ready to create applications that take advantage of the high availability, security, performance, and scalability of AWS. What's Inside Create a simple API Create an event-driven media-sharing application Secure access to your application in the cloud Use functions from different clients like web pages or mobile apps Connect your application with external services About the Reader Requires basic knowledge of JavaScript. Some examples are also provided in Python. No AWS experience is assumed. About the Author Danilo Poccia is a technical evangelist at Amazon Web Services and a frequent speaker at public events and workshops. Table of Contents PART 1 - FIRST STEPS Running functions in the cloud Your first Lambda function Your function as a web API PART 2 - BUILDING EVENT-DRIVEN APPLICATIONS Managing security Using standalone functions Managing identities Calling functions from a client Designing an authentication service Implementing an authentication service Adding more features to the authentication service Building a media-sharing application Why event-driven? PART 3 - FROM DEVELOPMENT TO PRODUCTION Improving development and testing Automating deployment Automating infrastructure management PART 4 - USING EXTERNAL SERVICES Calling external services Receiving

events from other services

Build scalable, reliable, and cost-effective applications with a serverless architecture About This Book Design a real-world serverless application from scratch Learn about AWS Lambda function and how to use Lambda functions to glue other AWS Services Use the Java programming language and well-known design patterns. Although Java is used for the examples in this book, the concept is applicable across all languages Learn to migrate your JAX-RS application to AWS Lambda and API Gateway Who This Book Is For This book is for developers and software architects who are interested in designing on the back end. Since the book uses Java to teach concepts, knowledge of Java is required. What You Will Learn Learn to form microservices from bigger Softwares Orchestrate and scale microservices Design and set up the data flow between cloud services and custom business logic Get to grips with cloud provider's APIs, limitations, and known issues Migrate existing Java applications to a serverless architecture Acquire deployment strategies Build a highly available and scalable data persistence layer Unravel cost optimization techniques In Detail Over the past years, all kind of companies from start-ups to giant enterprises started their move to public cloud providers in order to save their costs and reduce the operation effort needed to keep their shops open. Now it is even possible to craft a complex software system consisting of many independent micro-functions that will run only when they are needed without needing to maintain individual servers. The focus of this book is to design serverless architectures, and weigh the advantages and disadvantages of this approach, along with decision factors to consider. You will learn how to design a serverless application, get to know that key points of services that serverless applications are based on, and known issues and solutions. The book

addresses key challenges such as how to slice out the core functionality of the software to be distributed in different cloud services and cloud functions. It covers basic and advanced usage of these services, testing and securing the serverless software, automating deployment, and more. By the end of the book, you will be equipped with knowledge of new tools and techniques to keep up with this evolution in the IT industry. Style and approach The book takes a pragmatic approach, showing you all the examples you need to build efficient serverless applications.

Build, deploy, test, and run cloud-native serverless applications using AWS Lambda and other popular AWS services Key Features Learn how to write, run, and deploy serverless applications in Amazon Web Services Make the most of AWS Lambda functions to build scalable and cost-efficient systems Build and deploy serverless applications with Amazon API Gateway and AWS Lambda functions Book Description Serverless computing is a way to run your code without having to provision or manage servers. Amazon Web Services provides serverless services that you can use to build and deploy cloud-native applications. Starting with the basics of AWS Lambda, this book takes you through combining Lambda with other services from AWS, such as Amazon API Gateway, Amazon DynamoDB, and Amazon Step Functions. You'll learn how to write, run, and test Lambda functions using examples in Node.js, Java, Python, and C# before you move on to developing and deploying serverless APIs efficiently using the Serverless Framework. In the concluding chapters, you'll discover tips and best practices for leveraging Serverless Framework to increase your development productivity. By the end of this book, you'll have become well-versed in building, securing, and running serverless applications using Amazon API Gateway and AWS Lambda without having to

manage any servers. What you will learn Understand the core concepts of serverless computing in AWS Create your own AWS Lambda functions and build serverless APIs using Amazon API Gateway Explore best practices for developing serverless applications at scale using Serverless Framework Discover the DevOps patterns in a modern CI/CD pipeline with AWS CodePipeline Build serverless data processing jobs to extract, transform, and load data Enforce resource tagging policies with continuous compliance and AWS Config Create chatbots with natural language understanding to perform automated tasks Who this book is for This AWS book is for cloud architects and developers who want to build and deploy serverless applications using AWS Lambda. A basic understanding of AWS is required to get the most out of this book.

Set up complete CI and CD pipelines for your serverless applications using DevOps principles Key Features Understand various services for designing serverless architecture Build CD pipelines using various cloud providers for your serverless applications Implement DevOps best practices when building serverless applications Book Description Serverless applications are becoming very popular among developers and are generating a buzz in the tech market. Many organizations struggle with the effective implementation of DevOps with serverless applications. DevOps for Serverless Applications takes you through different DevOps-related scenarios to give you a solid foundation in serverless deployment. You will start by understanding the concepts of serverless architecture and development, and why they are important. Then, you will get to grips with the DevOps ideology and gain an understanding of how

it fits into the Serverless Framework. You'll cover deployment framework building and deployment with CI and CD pipelines for serverless applications. You will also explore log management and issue reporting in the serverless environment. In the concluding chapters, you will learn important security tips and best practices for secure pipeline management. By the end of this book, you will be in a position to effectively build a complete CI and CD delivery pipeline with log management for serverless applications. What you will learn Explore serverless fundamentals and effectively combine them with DevOps Set up CI and CD with AWS Lambda and other popular Serverless service providers with the help of the Serverless Framework Perform monitoring and logging with serverless applications Set up a dynamic dashboard for different service providers Discover best practices for applying DevOps to serverless architecture Understand use cases for different serverless architectures Who this book is for DevOps for Serverless Applications is for DevOps engineers, architects, or anyone interested in understanding the DevOps ideology in the serverless world. You will learn to use DevOps with serverless and apply continuous integration, continuous delivery, testing, logging, and monitoring with serverless.

Summary Serverless Architectures on AWS teaches you how to build, secure and manage serverless architectures that can power the most demanding web and mobile apps. Forewords by Patrick Debois (Founder of devopsdays) and Dr. Donald F. Ferguson (Columbia University). Purchase of the print book includes a free eBook in

PDF, Kindle, and ePub formats from Manning Publications. About the Technology There's a shift underway toward serverless cloud architectures. With the release of serverless computer technologies such as AWS Lambda, developers are now building entirely serverless platforms at scale. In these new architectures, traditional back-end servers are replaced with cloud functions acting as discrete single-purpose services. By composing and combining these serverless cloud functions together in a loose orchestration and adopting useful third-party services, developers can create powerful yet easy-to-understand applications. About the Book Serverless Architectures on AWS teaches you how to build, secure, and manage serverless architectures that can power the most demanding web and mobile apps. You'll get going quickly with this book's ready-made real-world examples, code snippets, diagrams, and descriptions of architectures that can be readily applied. By the end, you'll be able to architect and build your own serverless applications on AWS. What's Inside First steps with serverless computing Important patterns and architectures Writing AWS Lambda functions and using the API Gateway Composing serverless applications using key services like Auth0 and Firebase Securing, deploying, and managing serverless architectures About the Reader This book is for software developers interested in back end technologies. Experience with JavaScript (node.js) and AWS is useful but not required. About the Author Dr. Peter Sbarski is a well-known AWS expert, VP of engineering at A Cloud Guru, and head of Serverlessconf. Table of Contents PART 1 -

FIRST STEPS Going serverless Architectures and patterns Building a serverless application Setting up your cloud PART 2 - CORE IDEAS Authentication and authorization Lambda the orchestrator API Gateway PART 3 - GROWING YOUR ARCHITECTURE Storage Database Going the last mile APPENDIXES Services for your serverless architecture Installation and setup More about authentication and authorization Lambda insider Models and mapping
Foreword by Werner Vogels, Vice President and Corporate Technology Officer, Amazon The AWS exam has been updated. Your study guide should be, too. The AWS Certified Developer Official Study Guide–Associate Exam is your ultimate preparation resource for the latest exam! Covering all exam objectives, this invaluable resource puts a team of AWS experts at your side with expert guidance, clear explanations, and the wisdom of experience with AWS best practices. You'll master core services and basic architecture, and equip yourself to develop, deploy, and debug cloud-based applications using AWS. The AWS Developer certification is earned by those who demonstrate the technical knowledge and skill associated with best practices for building secure, reliable cloud-based applications using AWS technology. This book is your official exam prep companion, providing everything you need to know to pass with flying colors. Study the AWS Certified Developer Exam objectives Gain expert insight on core AWS services and best practices Test your understanding of key concepts with challenging chapter questions Access online study tools including electronic flashcards,

a searchable glossary, practice exams, and more Cloud computing offers businesses the opportunity to replace up-front capital infrastructure expenses with low, variable costs that scale as they grow. This customized responsiveness has negated the need for far-future infrastructure planning, putting thousands of servers at their disposal as needed—and businesses have responded, propelling AWS to the number-one spot among cloud service providers. Now these businesses need qualified AWS developers, and the AWS certification validates the exact skills and knowledge they're looking for. When you're ready to get serious about your cloud credentials, the AWS Certified Developer Official Study Guide–Associate Exam is the resource you need to pass the exam with flying colors. NOTE: As of October 7, 2019, the accompanying code for hands-on exercises in the book is available for downloading from the secure Resources area in the online test bank. You'll find code for Chapters 1, 2, 11, and 12. Serverless Architectures on AWS, Second Edition teaches you how to design, secure, and manage serverless backend APIs for web and mobile applications on the AWS platform. You'll get going quickly with this book's relevant real-world examples, code listings, diagrams, and clearly-described architectures that you can readily apply to your own work. You'll master serverless systems using AWS Lambda and the myriad other services on the AWS platform. This new edition has been fully updated to reflect the newest serverless design best practices and changes to AWS. It features two entirely new chapters dedicated to DevOps, monitoring, and microservices, as well as working

with DynamoDB, GraphQL and Kinesis. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

"Serverless Architectures with AWS begins by talking about the serverless model and getting started with AWS and Lambda. You'll also discover the main advantages and disadvantages of the serverless model through various use cases. You'll also explore other capabilities of the AWS Serverless Platform and see how AWS supports enterprise-grade serverless applications, with and without Lambda. From Compute to API Gateway, from storage to database, the fully managed services for building and running serverless applications on AWS are discussed in detail. Then, you'll use your learnings to deploy your first serverless project. You'll also explore the capabilities of serverless Amazon Athena, an interactive query service that makes it easy to analyze data directly in Amazon Simple Storage Service (Amazon S3) using standard SQL. Then, you'll learn about AWS Glue, a fully managed ETL service that makes it simple and cost-effective to categorize your data. You'll study how Amazon Kinesis makes it possible to unleash the potential of real-time data insights and analytics by offering capabilities, such as Kinesis Video Streams, Kinesis Data Streams, Kinesis Data Firehose and Kinesis Data Analytics. Last but not least, you'll learn to combine Amazon Kinesis capabilities with AWS Lambda to create lightweight serverless architectures."--Resource description page.

3.5 Hours of Video Instruction on AWS Lambda and Serverless Applications Overview

More than 3.5 hours of practical video instruction on AWS Lambda--Amazon's Functions-as-a-Service technology--and how to build Serverless applications. The aim throughout this course is not to give you just cookie cutter examples but instead to give you a thorough understanding of the Lambda platform and programming model, so you'll have confidence building your own Serverless applications. Description Serverless is a new cloud computing approach to architecting and building applications. It enables faster delivery of business value and reduced operational cost and complexity, together with virtually limitless and effortless scaling. The core technology class of a Serverless architecture is Functions-as-a-Service, and the most mature Functions-as-a-Service product is Lambda, from Amazon Web Services. AWS Lambda LiveLessons is designed to give you a thorough understanding of the Lambda platform and programming model, so you'll have confidence building your own Serverless applications. Although AWS Lambda natively supports several languages, including Javascript, Python and C#, this video tutorial uses Java and its Java Virtual Machine as the development language and runtime for all examples. The video starts off by introducing Serverless and answering the question, "What is Lambda?" It explains Serverless fundamentals and compares the different Serverless technology classes of Backend-as-a-Service and Functions-as-a-Service, as well as the benefits and limitations of Serverless. Next, Roberts and Chapin review the necessary environment prerequisites before showing you how to code and execute your first Lambda function.

They then drill down into some details of the Lambda model and show you how to build a Lambda-backed web application using API Gateway. Finally, the course covers some additional theory to give you a more advanced understanding of AWS Lambda. Roberts and Chapin close by looking more holistically at Serverless architectures and providing a detailed overview of Serverless technology beyond AWS Lambda, including a range of examples of how Serverless architectures are built in the real world. AWS Lambda LiveLessons consists of seven lessons totaling more than 4 hours of instruction. The videos feature easy-to-understand explanations of key concepts, realistic examples, and demonstrations of industrial-grade deployments. View the link resources... Serverless architectures organized around loosely-coupled function invocations represent an emerging design for many applications. Recent work mostly focuses on user-facing products and event-driven processing pipelines. In this thesis, we explore a completely different part of the application space and examine the feasibility of analytical processing on big data using a serverless architecture. We present Flint, a prototype Spark execution engine that takes advantage of AWS Lambda to provide a pure pay-as-you-go cost model. With Flint, a developer uses PySpark exactly as before, but without needing a Spark cluster and only paying for the execution of individual Spark programs. We describe the design, implementation, and performance of Flint, along with the challenges associated with serverless analytics.

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