

# How Aws Data Lake Transforms Asurion Mobile Customer

Back to Basics: Building an Efficient Data Lake Building Data Lakes on AWS: Build a simple Data Lake on AWS with AWS Glue, Amazon Athena, and S3 Database vs Data Warehouse vs Data Lake | What is the Difference? Build Your Data Lake Easily with AWS Lake Formation (Level 200) AWS Data Lake Solution | A comprehensive \u0026 complete overview in 15min. Deep Dive Into AWS Lake Formation - Level 300 (United States) Building a Data Lake on AWS with AWS Glue, Glue Studio, Amazon Athena, and S3 This is how you make money publishing books on Amazon (realistic plan for 2025) End-To-End Data Engineering Project in 40 Minutes | AWS Cloud | PySpark Fundamentals Of Data Engineering Masterclass AWS re:Invent 2023 - Building and optimizing a data lake on Amazon S3 (STG313) Building a Data Mesh Architecture with AWS Lake Formation - AWS Online Tech Talks What is Data Pipeline? | Why Is It So Popular? What Tools Should Data Engineers Know - 100 Days Of Data Engineering How I would learn Data Engineering (if I could start over) Using ChatGPT with YOUR OWN Data. This is magical. (LangChain OpenAI API) AWS re:Invent 2022 - Building and operating a data lake on Amazon S3 (STG302) Why Data Engineering is the key to success in GenAI era? Torc Robotics Transforms Autonomous Trucking with a Data Lake Built on Amazon S3 Building a Data Lake on AWS Querying your Data Lake (Level 200) AWS Tutorials - Building Federated Data Lakes with AWS Building your Data Lake on AWS with Manthan Amazon Lake Formation: Data Lake Building | AWS Solutions Architect | AWS Training | K21Academy Analytics Week | Build and Govern Your Own Data Lakes with AWS Glue Data Lake Day | Building Your Data Lake on AWS Top AWS Services A Data Engineer Should Know What is AWS Glue? | AWS Glue explained in 4 mins | Glue Catalog | Glue ETL Building Your Data Lake on AWS Cloud Native AI and Machine Learning on AWS Data Quality Fundamentals Simplify Big Data Analytics with Amazon EMR Data Wrangling on AWS AWS for Solutions Architects Data Analytics for Internet of Things Infrastructure Data Engineering with AWS AWS Ultimate Guide: From Beginners to Advanced AWS Certified Solutions Architect Study Guide with 900 Practice Test Questions Serverless ETL and Analytics with AWS Glue Cloud Architecture Demystified Digital Transformation for the Process Industries Optimizing Your Modernization Journey with AWS Data Engineering with AWS Data Science on AWS Transforming Scholarly Publishing With Blockchain Technologies and AI Data Wrangling on AWS Transforming Your Business with AWS Geospatial Data Analytics on AWS Cloud Data Architectures Demystified Actionable Insights with Amazon QuickSight AWS Certified Data Analytics Study Guide with Online Labs Perspectives on Social Welfare Applications Optimization and Enhanced Computer Applications

*How Aws Data Lake Transforms  
Asurion Mobile Customer*

*OMB No. 3864907557813 edited by*

**MATTHEWS O'DONNELL**

## **CLOUD NATIVE AI AND MACHINE LEARNING ON AWS**

Packt Publishing Ltd

A strategic guide that will help you make key decisions related to cloud-based architectures, modernize your infrastructure and applications, and transform your business using AWS with real-world case studies Key Features Learn cloud migration and modernization strategies on AWS Innovate your applications, data, architecture and networking by adopting AWS Leverage AWS technologies with real world use-cases to implement cloud operations Purchase of the print or Kindle book includes a free eBook in the PDF format Book Description AWS cloud technologies help businesses scale and innovate, however, adopting modern architecture and applications can be a real

challenge. This book is a comprehensive guide that ensures your switch to AWS services is smooth and hitch-free. It will enable you to make optimal decisions to bring out the best ROI from AWS cloud adoption. Beginning with nuances of cloud transformation on AWS, you'll be able to plan and implement the migration steps. The book will facilitate your system modernization journey by getting you acquainted with various technical domains, namely, applications, databases, big data, analytics, networking, and security. Once you've learned about the different operations, budgeting, and management best practices such as the 6 Rs of migration approaches and the AWS Well-Architected Framework, you'll be able to achieve operational excellence in cloud adoption. You'll also learn how to deploy some of the important AWS tools and services with real-life case studies and use cases. By the end of this book, you'll be able to successfully implement cloud migration and modernization on AWS and make decisions that best suit your organization. What you will learn Strategize approaches for cloud adoption and

digital transformation Understand the catalysts for business reinvention Select the right tools for cloud migration and modernization processes Leverage the potential of AWS to maximize the value of cloud investments Understand the importance of implementing secure workloads on the cloud Explore AWS services such as computation, databases, security, and networking Implement various real-life use cases and technology case studies for modernization Discover the benefits of operational excellence on the cloud Who this book is for If you are a cloud enthusiast, solutions architect, enterprise technologist, or a C-suite executive and want to learn about the strategies and AWS services to transform your IT portfolio, this book is for you. Basic knowledge of AWS services and an understanding of technologies such as computation, databases, networking, and security will be helpful.

*Data Quality Fundamentals* CRC Press

Revamp your data landscape and implement highly effective data pipelines in AWS with this hands-on guide Purchase of the print or Kindle book includes a free PDF eBook Key Features Execute extract, transform, and load (ETL) tasks on data lakes, data warehouses, and databases Implement effective Pandas data operation with data wrangler Integrate pipelines with AWS data services Book Description Data wrangling is the process of cleaning, transforming, and organizing raw, messy, or unstructured data into a structured format. It involves processes such as data cleaning, data integration, data transformation, and data enrichment to ensure that the data is accurate, consistent, and suitable for analysis. Data Wrangling on AWS equips you with the knowledge to reap the full potential of AWS data wrangling tools. First, you'll be introduced to data wrangling on AWS and will be familiarized with data wrangling services available in AWS. You'll understand how to work with AWS Glue DataBrew, AWS data wrangler, and AWS Sagemaker. Next, you'll discover other AWS services like Amazon S3, Redshift, Athena, and Quicksight. Additionally, you'll explore advanced topics such as performing Pandas data operation with AWS data wrangler, optimizing ML data with AWS SageMaker, building the data warehouse with Glue DataBrew, along with security and monitoring aspects. By the end of this book, you'll be well-equipped to perform data wrangling using AWS services. What you will learn Explore how to write simple to complex transformations using AWS data wrangler Use abstracted functions to extract and load data from and into AWS datastores Configure AWS Glue DataBrew for data wrangling Develop data pipelines using AWS data wrangler Integrate AWS security features into Data Wrangler using identity and access management (IAM) Optimize your data with AWS SageMaker Who this book is for This book is for data engineers, data scientists, and business data analysts looking to explore the capabilities, tools, and services of data wrangling on AWS for their ETL tasks. Basic knowledge of Python, Pandas, and a familiarity with AWS tools such as AWS Glue, Amazon Athena is required to get the most out of this book.

### **SIMPLIFY BIG DATA ANALYTICS WITH AMAZON EMR**

Packt Publishing Ltd

This handbook provides an authoritative and truly comprehensive overview both of the diverse applications of information and communication technologies (ICTs) within the travel and tourism industry and of e-tourism as a field of scientific inquiry that has grown and matured beyond recognition. Leading experts from around the world describe cutting-edge ideas and developments, present key concepts and theories, and discuss the full range of research methods. The coverage accordingly encompasses everything from big data and analytics to psychology, user behavior, online marketing, supply chain and operations

management, smart business networks, policy and regulatory issues – and much, much more. The goal is to provide an outstanding reference that summarizes and synthesizes current knowledge and establishes the theoretical and methodological foundations for further study of the role of ICTs in travel and tourism. The handbook will meet the needs of researchers and students in various disciplines as well as industry professionals. As with all volumes in Springer's Major Reference Works program, readers will benefit from access to a continually updated online version.

*Data Wrangling on AWS* Packt Publishing Ltd

Build efficient data lakes that can scale to virtually unlimited size using AWS Glue Key Features Learn to work with AWS Glue to overcome typical implementation challenges in data lakes Create and manage serverless ETL pipelines that can scale to manage big data Written by AWS Glue community members, this practical guide shows you how to implement AWS Glue in no time Book Description Organizations these days have gravitated toward services such as AWS Glue that undertake undifferentiated heavy lifting and provide serverless Spark, enabling you to create and manage data lakes in a serverless fashion. This guide shows you how AWS Glue can be used to solve real-world problems along with helping you learn about data processing, data integration, and building data lakes. Beginning with AWS Glue basics, this book teaches you how to perform various aspects of data analysis such as ad hoc queries, data visualization, and real-time analysis using this service. It also provides a walk-through of CI/CD for AWS Glue and how to shift left on quality using automated regression tests. You'll find out how data security aspects such as access control, encryption, auditing, and networking are implemented, as well as getting to grips with useful techniques such as picking the right file format, compression, partitioning, and bucketing. As you advance, you'll discover AWS Glue features such as crawlers, Lake Formation, governed tables, lineage, DataBrew, Glue Studio, and custom connectors. The concluding chapters help you to understand various performance tuning, troubleshooting, and monitoring options. By the end of this AWS book, you'll be able to create, manage, troubleshoot, and deploy ETL pipelines using AWS Glue. What you will learn Apply various AWS Glue features to manage and create data lakes Use Glue DataBrew and Glue Studio for data preparation Optimize data layout in cloud storage to accelerate analytics workloads Manage metadata including database, table, and schema definitions Secure your data during access control, encryption, auditing, and networking Monitor AWS Glue jobs to detect delays and loss of data Integrate Spark ML and SageMaker with AWS Glue to create machine learning models Who this book is for This book is for ETL developers, data engineers, and data analysts who want to understand how AWS Glue can help you solve your business problems. Basic knowledge of AWS data services is assumed.

*AWS for Solutions Architects* Packt Publishing Ltd

Bring elasticity and innovation to Machine Learning and AI operations KEY FEATURES ● Coverage includes a wide range of AWS AI and ML services to help you speedily get fully operational with ML. ● Packed with real-world examples, practical guides, and expert data science methods for improving AI/ML education on AWS. ● Includes ready-made, purpose-built models as AI services and proven methods to adopt MLOps techniques. DESCRIPTION Using machine learning and artificial intelligence (AI) in existing business processes has been successful. Even AWS's ML and AI services make it simple and economical to conduct machine learning experiments. This book will show readers how to use the complete set of AI and ML services available on AWS to streamline the management of their whole AI

operation and speed up their innovation. In this book, you'll learn how to build data lakes, build and train machine learning models, automate MLOps, ensure maximum data reusability and reproducibility, and much more. The applications presented in the book show how to make the most of several different AWS offerings, including Amazon Comprehend, Amazon Rekognition, Amazon Lookout, and AutoML. This book teaches you to manage massive data lakes, train artificial intelligence models, release these applications into production, and track their progress in real-time. You will learn how to use the pre-trained models for various tasks, including picture recognition, automated data extraction, image/video detection, and anomaly detection. Every step of your Machine Learning and AI project's development process is optimised throughout the book by utilising Amazon's pre-made, purpose-built AI services.

**WHAT YOU WILL LEARN**

- Learn how to build, deploy, and manage large-scale AI and ML applications on AWS.
- Get your hands dirty with AWS AI services like SageMaker, Comprehend, Rekognition, Lookout, and AutoML.
- Master data transformation, feature engineering, and model training with Amazon SageMaker modules.
- Use neural networks, distributed learning, and deep learning algorithms to improve ML models.
- Use AutoML, SageMaker Canvas, and Autopilot for Model Deployment and Evaluation.
- Acquire expertise with Amazon SageMaker Studio, Jupyter Server, and ML frameworks such as TensorFlow and MXNet.

**WHO THIS BOOK IS FOR** Data Engineers, Data Scientists, AWS and Cloud Professionals who are comfortable with machine learning and the fundamentals of Python will find this book powerful. Familiarity with AWS would be helpful but is not required.

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**Data Analytics for Internet of Things Infrastructure** Packt Publishing Ltd

Start your AWS data engineering journey with this easy-to-follow, hands-on guide and get to grips with foundational concepts through to building data engineering pipelines using AWS Key Features: Learn about common data architectures and modern approaches to generating value from big data Explore AWS tools for ingesting, transforming, and consuming data, and for orchestrating pipelines Learn how to architect and implement data lakes and data lakehouses for big data analytics

**Book Description:** Knowing how to architect and implement complex data pipelines is a highly sought-after skill. Data engineers are responsible for building these pipelines that ingest, transform, and join raw datasets - creating new value from the data in the process. Amazon Web Services (AWS) offers a range of tools to simplify a data engineer's job, making it the preferred platform for performing data engineering tasks. This book will take you through the services and the skills you need to architect and implement data pipelines on AWS. You'll begin by reviewing important data engineering concepts and some of the core AWS services that form a part of the data engineer's toolkit. You'll then architect a data pipeline, review raw data sources, transform the data, and learn how the transformed data is used by various data consumers. The book also teaches you about populating data marts and data warehouses along with how a data lakehouse fits into the picture. Later, you'll be introduced to AWS tools for analyzing data, including those for ad-hoc SQL queries and

creating visualizations. In the final chapters, you'll understand how the power of machine learning and artificial intelligence can be used to draw new insights from data. By the end of this AWS book, you'll be able to carry out data engineering tasks and implement a data pipeline on AWS independently.

**What You Will Learn:** Understand data engineering concepts and emerging technologies Ingest streaming data with Amazon Kinesis Data Firehose Optimize, denormalize, and join datasets with AWS Glue Studio Use Amazon S3 events to trigger a Lambda process to transform a file Run complex SQL queries on data lake data using Amazon Athena Load data into a Redshift data warehouse and run queries Create a visualization of your data using Amazon QuickSight Extract sentiment data from a dataset using Amazon Comprehend

**Who this book is for:** This book is for data engineers, data analysts, and data architects who are new to AWS and looking to extend their skills to the AWS cloud. Anyone who is new to data engineering and wants to learn about the foundational concepts while gaining practical experience with common data engineering services on AWS will also find this book useful. A basic understanding of big data-related topics and Python coding will help you get the most out of this book but is not needed. Familiarity with the AWS console and core services is also useful but not necessary.

**Data Engineering with AWS** Packt Publishing Ltd

Expert guidance on how to use Amazon Web Services to supercharge your digital services business

**In Transforming Your Business with AWS: Getting the Most Out of Using AWS to Modernize and Innovate Your Digital Services**, renowned international consultant and sought-after speaker Philippe Abdoulaye delivers a practical and accessible guide to using Amazon Web Services to modernize your business and the digital services you offer. This book provides you with a concrete action plan to build a team capable of creating world-class digital services and long-term competitive advantages. You'll discover what separates merely average digital service organizations from the truly outstanding, as well as how moving to the cloud will enable your business to deliver your services faster, better, and more efficiently. This book also includes:

- A comprehensive overview of building industry-leading digital service delivery capabilities, including discussions of the development lifecycle, best practices, and AWS-based development infrastructure
- Explanations of how to implement a digital business transformation strategy
- An exploration of key roles like DevOps
- Continuous Delivery, Continuous Deployment, Continuous Integration, Automation, and DevSecOps
- Hands-on treatments of AWS application management tools, including Elastic Beanstalk, CodeDeploy, and CodePipeline

Perfect for executives, managers, and other business leaders attempting to clarify and implement their organization's digital vision and strategy, *Transforming Your Business with AWS* is a must-read reference that answers the "why" and, most importantly, the "how," of digital transformation with Amazon Web Services.

**AWS Ultimate Guide: From Beginners to Advanced** Gatekeeper Press

From fundamentals and design patterns to the different strategies for creating secure and reliable architectures in AWS cloud, learn everything you need to become a successful solutions architect. Purchase of the print or Kindle book includes a free eBook in the PDF format.

Endorsements "For new or existing solutions architects looking to keep their skills sharp in the cloud era, this book hits all the key areas." -Rajesh Sheth, GM, Messaging and Streaming, AWS "...the go-to guide for understanding various functions in the age of cloud computing." - Rohan Karmarkar, Director, Solutions Architecture, AWS "...you will find very important nuggets of knowledge that will help you

be a successful solutions architect, and open up a new world of infinite possibilities!" -Kamal Arora, Senior Manager, Solutions Architecture, AWS Book Description

Becoming a solutions architect requires a hands-on approach, and this edition of the Solutions Architect's Handbook brings exactly that. This handbook will teach you how to create robust, scalable, and fault-tolerant solutions and next-generation architecture designs in a cloud environment. It will also help you build effective product strategies for your business and implement them from start to finish. This new edition features additional chapters on disruptive technologies, such as Internet of Things (IoT), quantum computing, data engineering, and machine learning. It also includes updated discussions on cloud-native architecture, blockchain data storage, and mainframe modernization with public cloud. The Solutions Architect's Handbook provides an understanding of solution architecture and how it fits into an agile enterprise environment. It will take you through the journey of solution architecture design by providing detailed knowledge of design pillars, advanced design patterns, anti-patterns, and the cloud-native aspects of modern software design. By the end of this handbook, you'll have learned the techniques needed to create efficient architecture designs that meet your business requirements. What you will learn

- Explore the various roles of a solutions architect in the enterprise landscape
- Implement key design principles and patterns to build high-performance cost-effective solutions
- Choose the best strategies to secure your architectures and increase their availability
- Modernize legacy applications with the help of cloud integration
- Understand how big data processing, machine learning, and IoT fit into modern architecture
- Integrate a DevOps mindset to promote collaboration, increase operational efficiency, and streamline production

Who this book is for This book is for software developers, system engineers, DevOps engineers, architects, and team leaders who already work in the IT industry and aspire to become solutions architect professionals. Existing solutions architects who want to expand their skillset or get a better understanding of new technologies will also learn valuable new skills. To get started, you'll need a good understanding of the real-world software development process and general programming experience in any language.

### **AWS CERTIFIED SOLUTIONS ARCHITECT STUDY GUIDE WITH 900 PRACTICE TEST QUESTIONS**

Packt Publishing Ltd

This is a very comprehensive book on AWS, from beginners to advanced. The book has extensive diagrams to help understand topics much easier way. To make understanding the subject a smoother experience, the book is divided into the following sections: Cloud Computing AWS Fundamentals (What is AWS, AWS Account, AWS Free Tier, AWS Cost & Billing Management, AWS Global Cloud Infrastructure (part I)), IAM, EC2) AWS Advanced (EC2 Advanced, ELB, Advanced S3, Route 53, AWS Global Cloud Infrastructure (part II), Advanced Storage on AWS, AWS Monitoring, Audit, and Performance), AWS RDS and Databases (AWS RDS and Cache, AWS Databases) Serverless (Serverless Computing, AWS Integration, and Messaging) Container & CI/CD (Container, AWS CI/CD services) Data & Analytics (Data & Analytics) Machine Learning (AWS ML/AI Services) Security (AWS Security & Encryption, AWS Shared Responsibility Model, How to get Support on AWS, Advanced Identity) Networking (AWS Networking) Disaster Management (Backup, Recovery & Migrations) Solutions Architecture (Cloud Architecture Key Design Principles, AWS Well-Architected Framework, Classic Solutions Architecture) Practice Tests Includes AWS services/features such as IAM, S3, EC2, EC2

purchasing options, EC2 placement groups, Load Balancers, Auto Scaling, S3 Glacier, S3 Storage classes, Route 53 Routing policies, CloudFront, Global Accelerator, EFS, EBS, Instance Store, AWS Snow Family, AWS Storage Gateway, AWS Transfer Family, Amazon CloudWatch, EventBridge, CloudWatch Insights, AWS CloudTrail, AWS Config, Amazon RDS, Amazon Aurora, Amazon ElastiCache, Amazon DocumentDB, Amazon Keyspaces, Amazon Quantum Ledger Database, Amazon Timestream, Amazon Managed Blockchain, AWS Lambda, Amazon DynamoDB, Amazon API Gateway, SQS, SNS, SES, Amazon Kinesis, Amazon Kinesis Firehose, Amazon Kinesis Data Analytics, Amazon Kinesis Data Streams, Amazon Kinesis ECS, Amazon Kinesis ECR, Amazon EKS, AWS CloudFormation, AWS Elastic Beanstalk, AWS CodeBuild, AWS OpsWorks, AWS CodeGuru, AWS CodeCommit, Amazon Athena, Amazon Redshift, Amazon EMR, Amazon QuickSight, AWS Glue, AWS Lake Formation, Amazon MSK, Amazon Rekognition, Amazon Transcribe, Amazon Polly, Amazon Translate, Amazon Lex, Amazon Connect, Amazon Comprehend, Amazon Comprehend Medical, Amazon SageMaker, Amazon Forecast, Amazon Kendra, Amazon Personalize, Amazon Textract, Amazon Fraud Detector, Amazon Sumerian, AWS WAF, AWS Shield Standard, AWS Shield Advanced, AWS Firewall Manager, AWS GuardDuty, Amazon Inspector, Amazon Macie, Amazon Detective, SSM Session Manager, AWS Systems Manager, S3 Replication & Encryption, AWS Organization, AWS Control Tower, AWS SSO, Amazon Cognito, AWS VPC, NAT Gateway, VPC Endpoints, VPC Peering, AWS Transit Gateway, AWS Site-to-Site VPC, Database Management Service (DMS), and many others. In the last section, there are five practice test sets with answers, each containing 65 exam-like questions. Though these questions are more geared towards the AWS Certified Cloud Practitioner exam, the knowledge gained from them may help you in many AWS certification exams.

### **SERVERLESS ETL AND ANALYTICS WITH AWS GLUE**

Packt Publishing Ltd

The missing expert-led manual for the AWS ecosystem — go from foundations to building data engineering pipelines effortlessly

Purchase of the print or Kindle book includes a free eBook in the PDF format.

Key Features

- Learn about common data architectures and modern approaches to generating value from big data
- Explore AWS tools for ingesting, transforming, and consuming data, and for orchestrating pipelines
- Learn how to architect and implement data lakes and data lakehouses for big data analytics from a data lakes expert

Book Description

Written by a Senior Data Architect with over twenty-five years of experience in the business, Data Engineering for AWS is a book whose sole aim is to make you proficient in using the AWS ecosystem. Using a thorough and hands-on approach to data, this book will give aspiring and new data engineers a solid theoretical and practical foundation to succeed with AWS. As you progress, you'll be taken through the services and the skills you need to architect and implement data pipelines on AWS. You'll begin by reviewing important data engineering concepts and some of the core AWS services that form a part of the data engineer's toolkit. You'll then architect a data pipeline, review raw data sources, transform the data, and learn how the transformed data is used by various data consumers. You'll also learn about populating data marts and data warehouses along with how a data lakehouse fits into the picture. Later, you'll be introduced to AWS tools for analyzing data, including those for ad-hoc SQL queries and creating visualizations. In the final chapters, you'll understand how the power of machine learning and artificial intelligence can be used to draw new insights from data. By the end of this AWS book, you'll be able to carry out data engineering

tasks and implement a data pipeline on AWS independently. What you will learn Understand data engineering concepts and emerging technologies Ingest streaming data with Amazon Kinesis Data Firehose Optimize, denormalize, and join datasets with AWS Glue Studio Use Amazon S3 events to trigger a Lambda process to transform a file Run complex SQL queries on data lake data using Amazon Athena Load data into a Redshift data warehouse and run queries Create a visualization of your data using Amazon QuickSight Extract sentiment data from a dataset using Amazon Comprehend Who this book is for This book is for data engineers, data analysts, and data architects who are new to AWS and looking to extend their skills to the AWS cloud. Anyone new to data engineering who wants to learn about the foundational concepts while gaining practical experience with common data engineering services on AWS will also find this book useful. A basic understanding of big data-related topics and Python coding will help you get the most out of this book but it's not a prerequisite. Familiarity with the AWS console and core services will also help you follow along.

*Cloud Architecture Demystified* Packt Publishing Ltd

Build efficient data lakes that can scale to virtually unlimited size using AWS Glue Key Features Learn to work with AWS Glue to overcome typical implementation challenges in data lakes Create and manage serverless ETL pipelines that can scale to manage big data Written by AWS Glue community members, this practical guide shows you how to implement AWS Glue in no time Book Description Organizations these days have gravitated toward services such as AWS Glue that undertake undifferentiated heavy lifting and provide serverless Spark, enabling you to create and manage data lakes in a serverless fashion. This guide shows you how AWS Glue can be used to solve real-world problems along with helping you learn about data processing, data integration, and building data lakes. Beginning with AWS Glue basics, this book teaches you how to perform various aspects of data analysis such as ad hoc queries, data visualization, and real-time analysis using this service. It also provides a walk-through of CI/CD for AWS Glue and how to shift left on quality using automated regression tests. You'll find out how data security aspects such as access control, encryption, auditing, and networking are implemented, as well as getting to grips with useful techniques such as picking the right file format, compression, partitioning, and bucketing. As you advance, you'll discover AWS Glue features such as crawlers, Lake Formation, governed tables, lineage, DataBrew, Glue Studio, and custom connectors. The concluding chapters help you to understand various performance tuning, troubleshooting, and monitoring options. By the end of this AWS book, you'll be able to create, manage, troubleshoot, and deploy ETL pipelines using AWS Glue. What you will learn Apply various AWS Glue features to manage and create data lakes Use Glue DataBrew and Glue Studio for data preparation Optimize data layout in cloud storage to accelerate analytics workloads Manage metadata including database, table, and schema definitions Secure your data during access control, encryption, auditing, and networking Monitor AWS Glue jobs to detect delays and loss of data Integrate Spark ML and SageMaker with AWS Glue to create machine learning models Who this book is for This book is for ETL developers, data engineers, and data analysts who want to understand how AWS Glue can help you solve your business problems. Basic knowledge of AWS data services is assumed.

*Digital Transformation for the Process Industries* "O'Reilly Media, Inc."

Explore and work with various Microsoft Azure services for real-time Data Analytics KEY FEATURES Understand what Azure can do with your data Understanding the analytics services

offered by Azure Understand how data can be transformed to generate more data Understand what is done after a Machine Learning model is built Go through some Data Analytics real-world use cases DESCRIPTION Data is the key input for Analytics. Building and implementing data platforms such as Data Lakes, modern Data Marts, and Analytics at scale require the right cloud platform that Azure provides through its services. The book starts by sharing how analytics has evolved and continues to evolve. Following the introduction, you will deep dive into ingestion technologies. You will learn about Data processing services in Azure. You will next learn about what is meant by a Data Lake and understand how Azure Data Lake Storage is used for analytical workloads. You will then learn about critical services that will provide actual Machine Learning capabilities in Azure. The book also talks about Azure Data Catalog for cataloging, Azure AD for Access Management, Web Apps and PowerApps for cloud web applications, Cognitive services for Speech, Vision, Search and Language, Azure VM for computing and Data Science VMs, Functions as serverless computing, Kubernetes and Containers as deployment options. Towards the end, the book discusses two use cases on Analytics. WHAT WILL YOU LEARN Explore and work with various Azure services Orchestrate and ingest data using Azure Data Factory Learn how to use Azure Stream Analytics Get to know more about Synapse Analytics and its features Learn how to use Azure Analysis Services and its functionalities WHO THIS BOOK IS FOR This book is for anyone who has basic to intermediate knowledge of cloud and analytics concepts and wants to use Microsoft Azure for Data Analytics. This book will also benefit Data Scientists who want to use Azure for Machine Learning. TABLE OF CONTENTS 1. Data and its power 2. Evolution of Analytics and its Types 3. Internet of Things 4. AI and ML 5. Why cloud 6. What are a data lake and a modern datamart 7. Introduction to Azure services 8. Types of data 9. Azure Data Factory 10. Stream Analytics 11. Azure Data Lake Store and Azure Storage 12. Cosmos DB 13. Synapse Analytics 14. Azure Databricks 15. Azure Analysis Services 16. Power BI 17. Azure Machine Learning 18. Sample Architectures and synergies - Real-Time and Batch 19. Azure Data Catalog 20. Azure Active Directory 21. Azure Webapps 22. Power apps 23. Time Series Insights 24. Azure Cognitive Services 25. Azure Logicapps 26. Azure VM 27. Azure Functions 28. Azure Containers 29. Azure Kubernetes Service 30. Use Case 1 31. Use Case 2

*Optimizing Your Modernization Journey with AWS* Packt Publishing Ltd

Build highly secure and scalable machine learning platforms to support the fast-paced adoption of machine learning solutions Key Features Explore different ML tools and frameworks to solve large-scale machine learning challenges in the cloud Build an efficient data science environment for data exploration, model building, and model training Learn how to implement bias detection, privacy, and explainability in ML model development Book Description When equipped with a highly scalable machine learning (ML) platform, organizations can quickly scale the delivery of ML products for faster business value realization. There is a huge demand for skilled ML solutions architects in different industries, and this handbook will help you master the design patterns, architectural considerations, and the latest technology insights you'll need to become one. You'll start by understanding ML fundamentals and how ML can be applied to solve real-world business problems. Once you've explored a few leading problem-solving ML algorithms, this book will help you tackle data management and get the most out of ML libraries such as TensorFlow and PyTorch. Using open source technology such as Kubernetes/Kubeflow to build a data science environment

and ML pipelines will be covered next, before moving on to building an enterprise ML architecture using Amazon Web Services (AWS). You'll also learn about security and governance considerations, advanced ML engineering techniques, and how to apply bias detection, explainability, and privacy in ML model development. And finally, you'll get acquainted with AWS AI services and their applications in real-world use cases. By the end of this book, you'll be able to design and build an ML platform to support common use cases and architecture patterns like a true professional. What you will learn

Apply ML methodologies to solve business problems  
 Design a practical enterprise ML platform architecture  
 Implement MLOps for ML workflow automation  
 Build an end-to-end data management architecture using AWS  
 Train large-scale ML models and optimize model inference latency  
 Create a business application using an AI service and a custom ML model  
 Use AWS services to detect data and model bias and explain models  
 Who this book is for  
 This book is for data scientists, data engineers, cloud architects, and machine learning enthusiasts who want to become machine learning solutions architects. You'll need basic knowledge of the Python programming language, AWS, linear algebra, probability, and networking concepts before you get started with this handbook.

## DATA ENGINEERING WITH AWS

Pearson IT Certification

Become a master Solutions Architect with this comprehensive guide, featuring cloud design patterns and real-world solutions for building scalable, secure, and highly available systems. Purchase of the print or Kindle book includes a free eBook in PDF format. Key Features Gain expertise in automating, networking, migrating, and adopting cloud technologies using AWS Use streaming analytics, big data, AI/ML, IoT, quantum computing, and blockchain to transform your business Upskill yourself as an AWS solutions architect and explore details of the new AWS certification Book Description Are you excited to harness the power of AWS and unlock endless possibilities for your business? Look no further than the second edition of AWS for Solutions Architects! Packed with all-new content, this book is a must-have guide for anyone looking to build scalable cloud solutions and drive digital transformation using AWS. This updated edition offers in-depth guidance for building cloud solutions using AWS. It provides detailed information on AWS well-architected design pillars and cloud-native design patterns. You'll learn about networking in AWS, big data and streaming data processing, CloudOps, and emerging technologies such as machine learning, IoT, and blockchain. Additionally, the book includes new sections on storage in AWS, containers with ECS and EKS, and data lake patterns, providing you with valuable insights into designing industry-standard AWS architectures that meet your organization's technological and business requirements. Whether you're an experienced solutions architect or just getting started with AWS, this book has everything you need to confidently build cloud-native workloads and enterprise solutions. What you will learn Optimize your Cloud Workload using the AWS Well-Architected Framework Learn methods to migrate your workload using the AWS Cloud Adoption Framework Apply cloud automation at various layers of application workload to increase efficiency Build a landing zone in AWS and hybrid cloud setups with deep networking techniques Select reference architectures for business scenarios, like data lakes, containers, and serverless apps Apply emerging technologies in your architecture, including AI/ML, IoT and blockchain Who this book is for This book is for application and enterprise architects, developers, and operations engineers who want to become well versed with AWS architectural patterns, best practices, and advanced techniques

to build scalable, secure, highly available, highly tolerant, and cost-effective solutions in the cloud. Existing AWS users are bound to learn the most, but it will also help those curious about how leveraging AWS can benefit their organization. Prior knowledge of any computing language is not needed, and there's little to no code. Prior experience in software architecture design will prove helpful.

*Data Science on AWS* "O'Reilly Media, Inc."

Amazon Redshift powers analytic cloud data warehouses worldwide, from startups to some of the largest enterprise data warehouses available today. This practical guide thoroughly examines this managed service and demonstrates how you can use it to extract value from your data immediately, rather than go through the heavy lifting required to run a typical data warehouse. Analytic specialists Rajesh Francis, Rajiv Gupta, and Milind Oke detail Amazon Redshift's underlying mechanisms and options to help you explore out-of-the box automation. Whether you're a data engineer who wants to learn the art of the possible or a DBA looking to take advantage of machine learning-based auto-tuning, this book helps you get the most value from Amazon Redshift. By understanding Amazon Redshift features, you'll achieve excellent analytic performance at the best price, with the least effort. This book helps you: Build a cloud data strategy around Amazon Redshift as foundational data warehouse Get started with Amazon Redshift with simple-to-use data models and design best practices Understand how and when to use Redshift Serverless and Redshift provisioned clusters Take advantage of auto-tuning options inherent in Amazon Redshift and understand manual tuning options Transform your data platform for predictive analytics using Redshift ML and break silos using data sharing Learn best practices for security, monitoring, resilience, and disaster recovery Leverage Amazon Redshift integration with other AWS services to unlock additional value

## TRANSFORMING SCHOLARLY PUBLISHING WITH BLOCKCHAIN TECHNOLOGIES AND AI

IGI Global

Transforming Your Business with AWS John Wiley & Sons

**Data Wrangling on AWS** John Wiley & Sons

Design, deploy, and manage cloud-based solutions that are secure, scalable, and cost-effective KEY FEATURES ● Learn how to enable effective architectural decision-making and cloud deployment strategies within the context of Agile DevOps. ● Gain insights into unconventional principles and practices of architecture in the modern era. ● A comprehensive guide for CTOs and technology leaders to navigate the ever-evolving technology landscape. DESCRIPTION As more and more businesses move their operations to the cloud, understanding cloud architecture becomes crucial for anyone involved in IT, software development, or data management. If you want to leverage the power of the cloud to deliver efficient and resilient services, then this book is for you. This book is a comprehensive guide that will help you with the knowledge and insights to successfully navigate the challenges of Agile development and cloud computing. With its practical advice and in-depth analysis, this book offers a deep understanding of key topics such as multi-cloud adoption, cloud deployment costs, security considerations, availability and disaster recovery, and the integration of Agile methodologies with cloud architecture. It also explores the traits of a good cloud solution architect, the importance of treating data and databases separately, and the impact of public cloud on software architecture. Whether you're a seasoned architect or new to cloud solutions, this book provides valuable guidance for designing robust and effective cloud-based systems. WHAT YOU WILL LEARN ● Gain insights into assessing various aspects while

designing cloud deployments. ● Understand the intersection of Agile methodologies, DevOps practices, and cloud computing. ● Understand the importance of adopting a design-first mindset. ● Understand how Agile principles and practices impact software architecture. ● Discover how architects can effectively drive positive change within organizations. WHO THIS BOOK IS FOR The book is for CTOs who are responsible for making strategic decisions regarding cloud adoption and infrastructure. Cloud architects, infrastructure architects, and DevOps architects who are involved in designing and implementing cloud architectures will find this book helpful. TABLE OF CONTENTS 1. Ambivalence of Multi-Cloud 2. Cloud Deployment Costs 3. Security Sense of Cloud 4. Availability and Disaster Recovery 5. Cloud, Agile and Software Development Life Cycle 6. Retrofitting Cloud Services Accurately 7. Design First then Code 8. Infra Team and Apps Team Becomes DevOps Team 9. Traits of Being a Good Cloud Solution Architect 10. Treat Data and Database Separately 11. Frozen Architecture is Obsolete Architecture 12. What Exactly is Software Architecture?

### **Transforming Your Business with AWS** Transforming Your Business with AWS

Imagine if your process manufacturing plants were running so well that your production, safety, environmental, and profitability targets were being met so that your subject matter experts could focus on data-driven business improvements. Through proper use and analysis of your existing operations data, your company can become an industry leader and reward your stakeholders. Written in an engaging and easily understandable manner, this book demonstrates a step-by-step process of how an organization can effectively utilize technology and make the necessary culture changes to achieve operational excellence. You will see how several industry-leading companies have used an effective real-time data infrastructure for mission-critical business use cases. The book also addresses challenges involved, such as effectively integrating operational (OT) data with business (IT) systems to enable a more proactive, predictive management model for a fleet of process plants. Some of the things you will take away: Learn how a real-time data infrastructure enables transformation of raw sensor data into contextualized information for operational insights and business process improvement. Understand how reusing the same operational data for multiple use cases significantly impacts fleet management, profitability, and asset stewardship. See how a simple digital unit template representing production flows can be repeatedly used to identify critical inefficiencies in plant operations. Discover best practices of deploying real-time situational awareness alerts and predictive analytics. Realize how to transform your organization into a data-driven culture for continuous sustainable improvement. Find out how leading companies integrate operations data with business intelligence and predictive analytics tools in a corporate on-premises or cloud-enabled environment. Learn how industry-leading companies have imaginatively used a real-time data infrastructure to improve yields, reduce cycle times, and slash operating costs. This book is targeted for process industries production and operations leadership, senior engineers, IT management, CIOs, and service providers to those industries. Academics will benefit from latest data analysis strategies. This book guides readers to use the best, results-proven approaches to ensure operational excellence.

### **GEOSPATIAL DATA ANALYTICS ON AWS**

Packt Publishing Ltd

Work through interesting real-life business use cases to uncover valuable insights from unstructured text using AWS AI services Key Features Get to grips with AWS AI services for NLP and find

out how to use them to gain strategic insights Run Python code to use Amazon Textract and Amazon Comprehend to accelerate business outcomes Understand how you can integrate human-in-the-loop for custom NLP use cases with Amazon A2I Book Description Natural language processing (NLP) uses machine learning to extract information from unstructured data. This book will help you to move quickly from business questions to high-performance models in production. To start with, you'll understand the importance of NLP in today's business applications and learn the features of Amazon Comprehend and Amazon Textract to build NLP models using Python and Jupyter Notebooks. The book then shows you how to integrate AI in applications for accelerating business outcomes with just a few lines of code. Throughout the book, you'll cover use cases such as smart text search, setting up compliance and controls when processing confidential documents, real-time text analytics, and much more to understand various NLP scenarios. You'll deploy and monitor scalable NLP models in production for real-time and batch requirements. As you advance, you'll explore strategies for including humans in the loop for different purposes in a document processing workflow. Moreover, you'll learn best practices for auto-scaling your NLP inference for enterprise traffic. Whether you're new to ML or an experienced practitioner, by the end of this NLP book, you'll have the confidence to use AWS AI services to build powerful NLP applications. What you will learn Automate various NLP workflows on AWS to accelerate business outcomes Use Amazon Textract for text, tables, and handwriting recognition from images and PDF files Gain insights from unstructured text in the form of sentiment analysis, topic modeling, and more using Amazon Comprehend Set up end-to-end document processing pipelines to understand the role of humans in the loop Develop NLP-based intelligent search solutions with just a few lines of code Create both real-time and batch document processing pipelines using Python Who this book is for If you're an NLP developer or data scientist looking to get started with AWS AI services to implement various NLP scenarios quickly, this book is for you. It will show you how easy it is to integrate AI in applications with just a few lines of code. A basic understanding of machine learning (ML) concepts is necessary to understand the concepts covered. Experience with Jupyter notebooks and Python will be helpful.

### **Cloud Data Architectures Demystified** Packt Publishing

Revamp your data landscape and implement highly effective data pipelines in AWS with this hands-on guide Purchase of the print or Kindle book includes a free PDF eBook Key Features Execute extract, transform, and load (ETL) tasks on data lakes, data warehouses, and databases Implement effective Pandas data operation with data wrangler Integrate pipelines with AWS data services Book Description Data wrangling is the process of cleaning, transforming, and organizing raw, messy, or unstructured data into a structured format. It involves processes such as data cleaning, data integration, data transformation, and data enrichment to ensure that the data is accurate, consistent, and suitable for analysis. Data Wrangling on AWS equips you with the knowledge to reap the full potential of AWS data wrangling tools. First, you'll be introduced to data wrangling on AWS and will be familiarized with data wrangling services available in AWS. You'll understand how to work with AWS Glue DataBrew, AWS data wrangler, and AWS Sagemaker. Next, you'll discover other AWS services like Amazon S3, Redshift, Athena, and Quicksight. Additionally, you'll explore advanced topics such as performing Pandas data operation with AWS data wrangler, optimizing ML data with AWS SageMaker, building the data warehouse with Glue DataBrew, along with security and monitoring aspects. By the end of this book, you'll be well-equipped to perform data

wrangling using AWS services. What you will learn Explore how to write simple to complex transformations using AWS data wrangler Use abstracted functions to extract and load data from and into AWS datastores Configure AWS Glue DataBrew for data wrangling Develop data pipelines using AWS data wrangler Integrate AWS security features into Data Wrangler using identity and access management (IAM) Optimize your data with AWS

SageMaker Who this book is for This book is for data engineers, data scientists, and business data analysts looking to explore the capabilities, tools, and services of data wrangling on AWS for their ETL tasks. Basic knowledge of Python, Pandas, and a familiarity with AWS tools such as AWS Glue, Amazon Athena is required to get the most out of this book.

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