

## Apache Kafka 1 0 Cookbook Over 100 Practical Recipes On Using Distributed Enterprise Messaging To Handle Real Time Data

Building Data Streaming Applications with Apache KafkaMastering MesosApache Spark 2.x CookbookMastering Apache SparkMachine Learning with SparkLearning Apache Spark 2Spark in Action, Second EditionStreaming ArchitectureLearning SparkSpark CookbookApache Spark for Data Science CookbookLearning Apache Kafka - Second EditionHadoop Real-World Solutions CookbookPro Spark StreamingAgile Data Science 2.0Apache Sqoop CookbookKafka Streams in ActionKafka: The Definitive GuideJava CookbookMastering Hadoop 3Effective KafkaPySpark RecipesR Data Analysis CookbookKafka Streams - Real-time Stream ProcessingThe JHipster Mini-BookApache Camel Developer's CookbookApache Kafka Quick Start GuideChef Infrastructure Automation Cookbook - Second EditionStorm Real-Time Processing CookbookSpark: The Definitive GuideApache Spark 2.x Machine Learning CookbookMicroservices Deployment CookbookBeginning Apache Spark 2Apache Kafka CookbookScala Data Analysis CookbookMachine Learning with Apache Spark Quick Start GuideNiFi Fundamentals & CookbookMastering Spark for Data ScienceApache Hive CookbookApache Kafka 1.0 Cookbook

### Building Data Streaming Applications with Apache Kafka

The software architecture landscape has evolved dramatically over the past decade. Microservices have displaced monoliths. Data and applications are increasingly becoming distributed and decentralised. But composing disparate systems is a hard problem. More recently, software practitioners have been rapidly converging on event-driven architecture as a sustainable way of dealing with complexity — integrating systems without increasing their coupling. In *Effective Kafka*, Emil Koutanov explores the fundamentals of Event-Driven Architecture — using Apache Kafka — the world's most popular and supported open-source event streaming platform. You'll learn:

- The fundamentals of event-driven architecture and event streaming platforms
- The background and rationale behind Apache Kafka, its numerous potential uses and applications
- The architecture and core concepts — the underlying software components, partitioning and parallelism, load-balancing, record ordering and consistency modes
- Installation of Kafka and related tooling — using standalone deployments, clusters, and containerised deployments with Docker
- Using CLI tools to interact with and administer Kafka classes, as well as publishing data and browsing topics
- Using third-party web-based tools for monitoring a cluster and gaining insights into the event streams
- Building stream processing applications in Java 11 using off-the-shelf client libraries
- Patterns and best-practice for organising the application architecture, with emphasis on maintainability and testability of the resulting code
- The numerous gotchas that lurk in Kafka's client and broker configuration, and how to counter them
- Theoretical background on distributed and concurrent computing, exploring factors affecting their liveness and safety
- Best-practices for running multi-tenanted clusters across diverse engineering teams, how teams collaborate to

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build complex systems at scale and equitably share the cluster with the aid of quotas • Operational aspects of running Kafka clusters at scale, performance tuning and methods for optimising network and storage utilisation • All aspects of Kafka security —including network segregation, encryption, certificates, authentication and authorization. The coverage is progressively delivered and carefully aimed at giving you a journey-like experience into becoming proficient with Apache Kafka and Event-Driven Architecture. The goal is to get you designing and building applications. And by the conclusion of this book, you will be a confident practitioner and a Kafka evangelist within your organisation — wielding the knowledge necessary to teach others.

### **Mastering Mesos**

A Cookbook with plenty of practical recipes for different uses of Storm.If you are a Java developer with basic knowledge of real-time processing and would like to learn Storm to process unbounded streams of data in real time, then this book is for you.

### **Apache Spark 2.x Cookbook**

The ultimate guide to managing, building, and deploying large-scale clusters with Apache Mesos About This Book Master the architecture of Mesos and intelligently distribute your task across clusters of machines Explore a wide range of tools and platforms that Mesos works with This real-world comprehensive and robust tutorial will help you become an expert Who This Book Is For The book aims to serve DevOps engineers and system administrators who are familiar with the basics of managing a Linux system and its tools What You Will Learn Understand the Mesos architecture Manually spin up a Mesos cluster on a distributed infrastructure Deploy a multi-node Mesos cluster using your favorite DevOps See the nuts and bolts of scheduling, service discovery, failure handling, security, monitoring, and debugging in an enterprise-grade, production cluster deployment Use Mesos to deploy big data frameworks, containerized applications, or even custom build your own applications effortlessly In Detail Apache Mesos is open source cluster management software that provides efficient resource isolations and resource sharing distributed applications or frameworks. This book will take you on a journey to enhance your knowledge from amateur to master level, showing you how to improve the efficiency, management, and development of Mesos clusters. The architecture is quite complex and this book will explore the difficulties and complexities of working with Mesos. We begin by introducing Mesos, explaining its architecture and functionality. Next, we provide a comprehensive overview of Mesos features and advanced topics such as high availability, fault tolerance, scaling, and efficiency. Furthermore, you will learn to set up multi-node Mesos clusters on private and public clouds. We will also introduce several Mesos-based scheduling and management frameworks or applications to enable the easy deployment, discovery, load balancing, and failure handling of long-running services. Next, you will find out how a Mesos cluster can be

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easily set up and monitored using the standard deployment and configuration management tools. This advanced guide will show you how to deploy important big data processing frameworks such as Hadoop, Spark, and Storm on Mesos and big data storage frameworks such as Cassandra, Elasticsearch, and Kafka. Style and approach This advanced guide provides a detailed step-by-step account of deploying a Mesos cluster. It will demystify the concepts behind Mesos.

### **Mastering Apache Spark**

This book is written in a Cookbook style with short recipes showing developers how to effectively implement EIP without breaking everything in the process. It is concise and to the point, and it helps developers get their data flowing between different components without the need to read through page upon page of theory, while also enabling the reader to learn how to create exciting new projects. Camel Enterprise Integration Cookbook is intended for developers who have some familiarity with Apache Camel and who want a quick lookup reference to practical, proven tips on how to perform common tasks. Every recipe also includes a summary and reference pointers for more details that make it easy for you to get a deeper understanding of the Apache Camel capabilities that you will use day to day.

### **Machine Learning with Spark**

Over 80 recipes to help you breeze through your data analysis projects using R About This Book Analyse your data using the popular R packages like ggplot2 with ready-to-use and customizable recipes Find meaningful insights from your data and generate dynamic reports A practical guide to help you put your data analysis skills in R to practical use Who This Book Is For This book is for data scientists, analysts and even enthusiasts who want to learn and implement the various data analysis techniques using R in a practical way. Those looking for quick, handy solutions to common tasks and challenges in data analysis will find this book to be very useful. Basic knowledge of statistics and R programming is assumed. What You Will Learn Acquire, format and visualize your data using R Using R to perform an Exploratory data analysis Introduction to machine learning algorithms such as classification and regression Get started with social network analysis Generate dynamic reporting with Shiny Get started with geospatial analysis Handling large data with R using Spark and MongoDB Build Recommendation system- Collaborative Filtering, Content based and Hybrid Learn real world dataset examples- Fraud Detection and Image Recognition In Detail Data analytics with R has emerged as a very important focus for organizations of all kinds. R enables even those with only an intuitive grasp of the underlying concepts, without a deep mathematical background, to unleash powerful and detailed examinations of their data. This book will show you how you can put your data analysis skills in R to practical use, with recipes catering to the basic as well as advanced data analysis tasks. Right from acquiring your data and preparing it for analysis to the more complex data analysis techniques, the book will show you how you can implement each technique in the best possible manner. You will also visualize your data using the popular R

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packages like ggplot2 and gain hidden insights from it. Starting with implementing the basic data analysis concepts like handling your data to creating basic plots, you will master the more advanced data analysis techniques like performing cluster analysis, and generating effective analysis reports and visualizations. Throughout the book, you will get to know the common problems and obstacles you might encounter while implementing each of the data analysis techniques in R, with ways to overcoming them in the easiest possible way. By the end of this book, you will have all the knowledge you need to become an expert in data analysis with R, and put your skills to test in real-world scenarios. Style and Approach Hands-on recipes to walk through data science challenges using R Your one-stop solution for common and not-so-common pain points while performing real-world problems to execute a series of tasks. Addressing your common and not-so-common pain points, this is a book that you must have on the shelf

### Learning Apache Spark 2

Summary Kafka Streams in Action teaches you everything you need to know to implement stream processing on data flowing into your Kafka platform, allowing you to focus on getting more from your data without sacrificing time or effort. Foreword by Neha Narkhede, Cocreator of Apache Kafka Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Not all stream-based applications require a dedicated processing cluster. The lightweight Kafka Streams library provides exactly the power and simplicity you need for message handling in microservices and real-time event processing. With the Kafka Streams API, you filter and transform data streams with just Kafka and your application. About the Book Kafka Streams in Action teaches you to implement stream processing within the Kafka platform. In this easy-to-follow book, you'll explore real-world examples to collect, transform, and aggregate data, work with multiple processors, and handle real-time events. You'll even dive into streaming SQL with KSQL! Practical to the very end, it finishes with testing and operational aspects, such as monitoring and debugging. What's inside Using the KStreams API Filtering, transforming, and splitting data Working with the Processor API Integrating with external systems About the Reader Assumes some experience with distributed systems. No knowledge of Kafka or streaming applications required. About the Author Bill Bejeck is a Kafka Streams contributor and Confluent engineer with over 15 years of software development experience. Table of Contents PART 1 - GETTING STARTED WITH KAFKA STREAMS Welcome to Kafka Streams Kafka quicklyPART 2 - KAFKA STREAMS DEVELOPMENT Developing Kafka Streams Streams and state The KTable API The Processor APIPART 3 - ADMINISTERING KAFKA STREAMS Monitoring and performance Testing a Kafka Streams applicationPART 4 - ADVANCED CONCEPTS WITH KAFKA STREAMS Advanced applications with Kafka StreamsAPPENDIXES Appendix A - Additional configuration information Appendix B - Exactly once semantics

### Spark in Action, Second Edition

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Design and administer fast, reliable enterprise messaging systems with Apache Kafka About This Book Build efficient real-time streaming applications in Apache Kafka to process data streams of data Master the core Kafka APIs to set up Apache Kafka clusters and start writing message producers and consumers A comprehensive guide to help you get a solid grasp of the Apache Kafka concepts in Apache Kafka with practical examples Who This Book Is For If you want to learn how to use Apache Kafka and the different tools in the Kafka ecosystem in the easiest possible manner, this book is for you. Some programming experience with Java is required to get the most out of this book What You Will Learn Learn the basics of Apache Kafka from scratch Use the basic building blocks of a streaming application Design effective streaming applications with Kafka using Spark, Storm &, and Heron Understand the importance of a low-latency, high-throughput, and fault-tolerant messaging system Make effective capacity planning while deploying your Kafka Application Understand and implement the best security practices In Detail Apache Kafka is a popular distributed streaming platform that acts as a messaging queue or an enterprise messaging system. It lets you publish and subscribe to a stream of records, and process them in a fault-tolerant way as they occur. This book is a comprehensive guide to designing and architecting enterprise-grade streaming applications using Apache Kafka and other big data tools. It includes best practices for building such applications, and tackles some common challenges such as how to use Kafka efficiently and handle high data volumes with ease. This book first takes you through understanding the type messaging system and then provides a thorough introduction to Apache Kafka and its internal details. The second part of the book takes you through designing streaming application using various frameworks and tools such as Apache Spark, Apache Storm, and more. Once you grasp the basics, we will take you through more advanced concepts in Apache Kafka such as capacity planning and security. By the end of this book, you will have all the information you need to be comfortable with using Apache Kafka, and to design efficient streaming data applications with it. Style and approach A step-by-step, comprehensive guide filled with practical and real-world examples

### **Streaming Architecture**

Combine advanced analytics including Machine Learning, Deep Learning Neural Networks and Natural Language Processing with modern scalable technologies including Apache Spark to derive actionable insights from Big Data in real-time Key Features Make a hands-on start in the fields of Big Data, Distributed Technologies and Machine Learning Learn how to design, develop and interpret the results of common Machine Learning algorithms Uncover hidden patterns in your data in order to derive real actionable insights and business value Book Description Every person and every organization in the world manages data, whether they realize it or not. Data is used to describe the world around us and can be used for almost any purpose, from analyzing consumer habits to fighting disease and serious organized crime. Ultimately, we manage data in order to derive value from it, and many organizations around the world have traditionally invested in technology to help process their data faster and more efficiently. But we now live in an interconnected world driven by

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mass data creation and consumption where data is no longer rows and columns restricted to a spreadsheet, but an organic and evolving asset in its own right. With this realization comes major challenges for organizations: how do we manage the sheer size of data being created every second (think not only spreadsheets and databases, but also social media posts, images, videos, music, blogs and so on)? And once we can manage all of this data, how do we derive real value from it? The focus of Machine Learning with Apache Spark is to help us answer these questions in a hands-on manner. We introduce the latest scalable technologies to help us manage and process big data. We then introduce advanced analytical algorithms applied to real-world use cases in order to uncover patterns, derive actionable insights, and learn from this big data. What you will learn Understand how Spark fits in the context of the big data ecosystem Understand how to deploy and configure a local development environment using Apache Spark Understand how to design supervised and unsupervised learning models Build models to perform NLP, deep learning, and cognitive services using Spark ML libraries Design real-time machine learning pipelines in Apache Spark Become familiar with advanced techniques for processing a large volume of data by applying machine learning algorithms Who this book is for This book is aimed at Business Analysts, Data Analysts and Data Scientists who wish to make a hands-on start in order to take advantage of modern Big Data technologies combined with Advanced Analytics.

### Learning Spark

More and more data-driven companies are looking to adopt stream processing and streaming analytics. With this concise ebook, you'll learn best practices for designing a reliable architecture that supports this emerging big-data paradigm. Authors Ted Dunning and Ellen Friedman (Real World Hadoop) help you explore some of the best technologies to handle stream processing and analytics, with a focus on the upstream queuing or message-passing layer. To illustrate the effectiveness of these technologies, this book also includes specific use cases. Ideal for developers and non-technical people alike, this book describes: Key elements in good design for streaming analytics, focusing on the essential characteristics of the messaging layer New messaging technologies, including Apache Kafka and MapR Streams, with links to sample code Technology choices for streaming analytics: Apache Spark Streaming, Apache Flink, Apache Storm, and Apache Apex How stream-based architectures are helpful to support microservices Specific use cases such as fraud detection and geo-distributed data streams Ted Dunning is Chief Applications Architect at MapR Technologies, and active in the open source community. He currently serves as VP for Incubator at the Apache Foundation, as a champion and mentor for a large number of projects, and as committer and PMC member of the Apache ZooKeeper and Drill projects. Ted is on Twitter as @ted\_dunning. Ellen Friedman, a committer for the Apache Drill and Apache Mahout projects, is a solutions consultant and well-known speaker and author, currently writing mainly about big data topics. With a PhD in Biochemistry, she has years of experience as a research scientist and has written about a variety of technical topics. Ellen is on Twitter as @Ellen\_Friedman.

## Spark Cookbook

Simplify machine learning model implementations with Spark About This Book Solve the day-to-day problems of data science with Spark This unique cookbook consists of exciting and intuitive numerical recipes Optimize your work by acquiring, cleaning, analyzing, predicting, and visualizing your data Who This Book Is For This book is for Scala developers with a fairly good exposure to and understanding of machine learning techniques, but lack practical implementations with Spark. A solid knowledge of machine learning algorithms is assumed, as well as hands-on experience of implementing ML algorithms with Scala. However, you do not need to be acquainted with the Spark ML libraries and ecosystem. What You Will Learn Get to know how Scala and Spark go hand-in-hand for developers when developing ML systems with Spark Build a recommendation engine that scales with Spark Find out how to build unsupervised clustering systems to classify data in Spark Build machine learning systems with the Decision Tree and Ensemble models in Spark Deal with the curse of high-dimensionality in big data using Spark Implement Text analytics for Search Engines in Spark Streaming Machine Learning System implementation using Spark In Detail Machine learning aims to extract knowledge from data, relying on fundamental concepts in computer science, statistics, probability, and optimization. Learning about algorithms enables a wide range of applications, from everyday tasks such as product recommendations and spam filtering to cutting edge applications such as self-driving cars and personalized medicine. You will gain hands-on experience of applying these principles using Apache Spark, a resilient cluster computing system well suited for large-scale machine learning tasks. This book begins with a quick overview of setting up the necessary IDEs to facilitate the execution of code examples that will be covered in various chapters. It also highlights some key issues developers face while working with machine learning algorithms on the Spark platform. We progress by uncovering the various Spark APIs and the implementation of ML algorithms with developing classification systems, recommendation engines, text analytics, clustering, and learning systems. Toward the final chapters, we'll focus on building high-end applications and explain various unsupervised methodologies and challenges to tackle when implementing with big data ML systems. Style and approach This book is packed with intuitive recipes supported with line-by-line explanations to help you understand how to optimize your work flow and resolve problems when working with complex data modeling tasks and predictive algorithms. This is a valuable resource for data scientists and those working on large scale data projects.

## Apache Spark for Data Science Cookbook

Over insightful 90 recipes to get lightning-fast analytics with Apache Spark About This Book Use Apache Spark for data processing with these hands-on recipes Implement end-to-end, large-scale data analysis better than ever before Work with powerful libraries such as MLLib, SciPy, NumPy, and Pandas to gain insights from your data Who This Book Is For This book is for novice and intermediate level data science professionals and data analysts who want to solve data science problems

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with a distributed computing framework. Basic experience with data science implementation tasks is expected. Data science professionals looking to skill up and gain an edge in the field will find this book helpful. What You Will Learn Explore the topics of data mining, text mining, Natural Language Processing, information retrieval, and machine learning. Solve real-world analytical problems with large data sets. Address data science challenges with analytical tools on a distributed system like Spark (apt for iterative algorithms), which offers in-memory processing and more flexibility for data analysis at scale. Get hands-on experience with algorithms like Classification, regression, and recommendation on real datasets using Spark MLLib package. Learn about numerical and scientific computing using NumPy and SciPy on Spark. Use Predictive Model Markup Language (PMML) in Spark for statistical data mining models. In Detail Spark has emerged as the most promising big data analytics engine for data science professionals. The true power and value of Apache Spark lies in its ability to execute data science tasks with speed and accuracy. Spark's selling point is that it combines ETL, batch analytics, real-time stream analysis, machine learning, graph processing, and visualizations. It lets you tackle the complexities that come with raw unstructured data sets with ease. This guide will get you comfortable and confident performing data science tasks with Spark. You will learn about implementations including distributed deep learning, numerical computing, and scalable machine learning. You will be shown effective solutions to problematic concepts in data science using Spark's data science libraries such as MLLib, Pandas, NumPy, SciPy, and more. These simple and efficient recipes will show you how to implement algorithms and optimize your work. Style and approach This book contains a comprehensive range of recipes designed to help you learn the fundamentals and tackle the difficulties of data science. This book outlines practical steps to produce powerful insights into Big Data through a recipe-based approach.

### **Learning Apache Kafka - Second Edition**

Over 90 hands-on recipes to help you learn and master the intricacies of Apache Hadoop 2.X, YARN, Hive, Pig, Oozie, Flume, Sqoop, Apache Spark, and Mahout About This Book Implement outstanding Machine Learning use cases on your own analytics models and processes. Solutions to common problems when working with the Hadoop ecosystem. Step-by-step implementation of end-to-end big data use cases. Who This Book Is For Readers who have a basic knowledge of big data systems and want to advance their knowledge with hands-on recipes. What You Will Learn Installing and maintaining Hadoop 2.X cluster and its ecosystem. Write advanced Map Reduce programs and understand design patterns. Advanced Data Analysis using the Hive, Pig, and Map Reduce programs. Import and export data from various sources using Sqoop and Flume. Data storage in various file formats such as Text, Sequential, Parquet, ORC, and RC Files. Machine learning principles with libraries such as Mahout Batch and Stream data processing using Apache Spark In Detail Big data is the current requirement. Most organizations produce huge amount of data every day. With the arrival of Hadoop-like tools, it has become easier for everyone to solve big data problems with great efficiency and at minimal cost. Grasping Machine Learning techniques will help you greatly in building predictive models and using this data to make the right decisions for

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your organization. Hadoop Real World Solutions Cookbook gives readers insights into learning and mastering big data via recipes. The book not only clarifies most big data tools in the market but also provides best practices for using them. The book provides recipes that are based on the latest versions of Apache Hadoop 2.X, YARN, Hive, Pig, Sqoop, Flume, Apache Spark, Mahout and many more such ecosystem tools. This real-world-solution cookbook is packed with handy recipes you can apply to your own everyday issues. Each chapter provides in-depth recipes that can be referenced easily. This book provides detailed practices on the latest technologies such as YARN and Apache Spark. Readers will be able to consider themselves as big data experts on completion of this book. This guide is an invaluable tutorial if you are planning to implement a big data warehouse for your business. Style and approach An easy-to-follow guide that walks you through world of big data. Each tool in the Hadoop ecosystem is explained in detail and the recipes are placed in such a manner that readers can implement them sequentially. Plenty of reference links are provided for advanced reading.

### **Hadoop Real-World Solutions Cookbook**

Develop applications for the big data landscape with Spark and Hadoop. This book also explains the role of Spark in developing scalable machine learning and analytics applications with Cloud technologies. Beginning Apache Spark 2 gives you an introduction to Apache Spark and shows you how to work with it. Along the way, you'll discover resilient distributed datasets (RDDs); use Spark SQL for structured data; and learn stream processing and build real-time applications with Spark Structured Streaming. Furthermore, you'll learn the fundamentals of Spark ML for machine learning and much more. After you read this book, you will have the fundamentals to become proficient in using Apache Spark and know when and how to apply it to your big data applications. What You Will Learn Understand Spark unified data processing platform How to run Spark in Spark Shell or Databricks Use and manipulate RDDs Deal with structured data using Spark SQL through its operations and advanced functions Build real-time applications using Spark Structured Streaming Develop intelligent applications with the Spark Machine Learning library Who This Book Is For Programmers and developers active in big data, Hadoop, and Java but who are new to the Apache Spark platform.

### **Pro Spark Streaming**

Master over 60 recipes to help you deliver complete, scalable, microservice-based solutions and see the improved business results immediately About This Book Adopt microservices-based architecture and deploy it at scale Build your complete microservice architecture using different recipes for different solutions Identify specific tools for specific scenarios and deliver immediate business results, correlate use cases, and adopt them in your team and organization Who This Book Is For This book is for developers, ops, and DevOps professionals who would like to put microservices to work and improve products, services, and operations. Those looking to build and deploy microservices will find this book useful, as well as

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managers and people at CXO level looking to adopt microservices in their organization. Prior knowledge of Java is expected. No prior knowledge of microservices is assumed. What You Will Learn Build microservices using Spring Boot, Wildfly Swarm, Dropwizard, and SparkJava Containerize your microservice using Docker Deploy microservices using Mesos/Marathon and Kubernetes Implement service discovery and load balancing using Zookeeper, Consul, and Nginx Monitor microservices using Graphite and Grafana Write stream programs with Kafka Streams and Spark Aggregate and manage logs using Kafka Get introduced to DC/OS, Docker Swarm, and YARN In Detail This book will help any team or organization understand, deploy, and manage microservices at scale. It is driven by a sample application, helping you gradually build a complete microservice-based ecosystem. Rather than just focusing on writing a microservice, this book addresses various other microservice-related solutions: deployments, clustering, load balancing, logging, streaming, and monitoring. The initial chapters offer insights into how web and enterprise apps can be migrated to scalable microservices. Moving on, you'll see how to Dockerize your application so that it is ready to be shipped and deployed. We will look at how to deploy microservices on Mesos and Marathon and will also deploy microservices on Kubernetes. Next, you will implement service discovery and load balancing for your microservices. We'll also show you how to build asynchronous streaming systems using Kafka Streams and Apache Spark. Finally, we wind up by aggregating your logs in Kafka, creating your own metrics, and monitoring the metrics for the microservice. Style and approach This book follows a recipe-driven approach and shows you how to plug and play with all the various pieces, putting them together to build a complete scalable microservice ecosystem. You do not need to study the chapters in order, as you can directly refer to the content you need for your situation.

### **Agile Data Science 2.0**

Easy, hands-on recipes to help you understand Hive and its integration with frameworks that are used widely in today's big data world About This Book Grasp a complete reference of different Hive topics. Get to know the latest recipes in development in Hive including CRUD operations Understand Hive internals and integration of Hive with different frameworks used in today's world. Who This Book Is For The book is intended for those who want to start in Hive or who have basic understanding of Hive framework. Prior knowledge of basic SQL command is also required What You Will Learn Learn different features and offering on the latest Hive Understand the working and structure of the Hive internals Get an insight on the latest development in Hive framework Grasp the concepts of Hive Data Model Master the key concepts like Partition, Buckets and Statistics Know how to integrate Hive with other frameworks such as Spark, Accumulo, etc In Detail Hive was developed by Facebook and later open sourced in Apache community. Hive provides SQL like interface to run queries on Big Data frameworks. Hive provides SQL like syntax also called as HiveQL that includes all SQL capabilities like analytical functions which are the need of the hour in today's Big Data world. This book provides you easy installation steps with different types of metastores supported by Hive. This book has simple and easy to learn recipes for configuring Hive

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clients and services. You would also learn different Hive optimizations including Partitions and Bucketing. The book also covers the source code explanation of latest Hive version. Hive Query Language is being used by other frameworks including spark. Towards the end you will cover integration of Hive with these frameworks. Style and approach Starting with the basics and covering the core concepts with the practical usage, this book is a complete guide to learn and explore Hive offerings.

### **Apache Sqoop Cookbook**

The things you need to do to set up a new software project can be daunting. First, you have to select the back-end framework to create your API, choose your database, set up security, and choose your build tool. Then you have to choose the tools to create your front end: select a UI framework, configure a build tool, set up Sass processing, configure your browser to auto-refresh when you make changes, and configure the client and server so they work in unison. If you're building a new application using Spring Boot and Angular, you can save days by using JHipster. JHipster generates a complete and modern web app, unifying: - A high-performance and robust Java stack on the server side with Spring Boot - A sleek, modern, mobile-first front-end with Angular and Bootstrap - A robust microservice architecture with the JHipster Registry, Netflix OSS, the ELK stack, and Docker - A powerful workflow to build your application with Yeoman, Webpack, and Maven/Gradle

### **Kafka Streams in Action**

Summary The Spark distributed data processing platform provides an easy-to-implement tool for ingesting, streaming, and processing data from any source. In Spark in Action, Second Edition, you'll learn to take advantage of Spark's core features and incredible processing speed, with applications including real-time computation, delayed evaluation, and machine learning. Spark skills are a hot commodity in enterprises worldwide, and with Spark's powerful and flexible Java APIs, you can reap all the benefits without first learning Scala or Hadoop. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Analyzing enterprise data starts by reading, filtering, and merging files and streams from many sources. The Spark data processing engine handles this varied volume like a champ, delivering speeds 100 times faster than Hadoop systems. Thanks to SQL support, an intuitive interface, and a straightforward multilanguage API, you can use Spark without learning a complex new ecosystem. About the book Spark in Action, Second Edition, teaches you to create end-to-end analytics applications. In this entirely new book, you'll learn from interesting Java-based examples, including a complete data pipeline for processing NASA satellite data. And you'll discover Java, Python, and Scala code samples hosted on GitHub that you can explore and adapt, plus appendixes that give you a cheat sheet for installing tools and understanding Spark-specific terms. What's inside Writing Spark applications in Java

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Spark application architecture Ingestion through files, databases, streaming, and Elasticsearch Querying distributed datasets with Spark SQL About the reader This book does not assume previous experience with Spark, Scala, or Hadoop. About the author Jean-Georges Perrin is an experienced data and software architect. He is France's first IBM Champion and has been honored for 12 consecutive years. Table of Contents PART 1 - THE THEORY CRIPPLED BY AWESOME EXAMPLES 1 So, what is Spark, anyway? 2 Architecture and flow 3 The majestic role of the dataframe 4 Fundamentally lazy 5 Building a simple app for deployment 6 Deploying your simple app PART 2 - INGESTION 7 Ingestion from files 8 Ingestion from databases 9 Advanced ingestion: finding data sources and building your own 10 Ingestion through structured streaming PART 3 - TRANSFORMING YOUR DATA 11 Working with SQL 12 Transforming your data 13 Transforming entire documents 14 Extending transformations with user-defined functions 15 Aggregating your data PART 4 - GOING FURTHER 16 Cache and checkpoint: Enhancing Spark's performances 17 Exporting data and building full data pipelines 18 Exploring deployment

### **Kafka: The Definitive Guide**

By introducing in-memory persistent storage, Apache Spark eliminates the need to store intermediate data in filesystems, thereby increasing processing speed by up to 100 times. This book will focus on how to analyze large and complex sets of data. Starting with installing and configuring Apache Spark with various cluster managers, you will cover setting up development environments. You will then cover various recipes to perform interactive queries using Spark SQL and real-time streaming with various sources such as Twitter Stream and Apache Kafka. You will then focus on machine learning, including supervised learning, unsupervised learning, and recommendation engine algorithms. After mastering graph processing using GraphX, you will cover various recipes for cluster optimization and troubleshooting.

### **Java Cookbook**

Navigate the world of data analysis, visualization, and machine learning with over 100 hands-on Scala recipes About This Book Implement Scala in your data analysis using features from Spark, Breeze, and Zeppelin Scale up your data analytics infrastructure with practical recipes for Scala machine learning Recipes for every stage of the data analysis process, from reading and collecting data to distributed analytics Who This Book Is For This book shows data scientists and analysts how to leverage their existing knowledge of Scala for quality and scalable data analysis. What You Will Learn Familiarize and set up the Breeze and Spark libraries and use data structures Import data from a host of possible sources and create dataframes from CSV Clean, validate and transform data using Scala to pre-process numerical and string data Integrate quintessential machine learning algorithms using Scala stack Bundle and scale up Spark jobs by deploying them into a variety of cluster managers Run streaming and graph analytics in Spark to visualize data, enabling exploratory analysis In Detail This book will introduce you to the most popular Scala tools, libraries, and frameworks through practical recipes

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around loading, manipulating, and preparing your data. It will also help you explore and make sense of your data using stunning and insightful visualizations, and machine learning toolkits. Starting with introductory recipes on utilizing the Breeze and Spark libraries, get to grips with how to import data from a host of possible sources and how to pre-process numerical, string, and date data. Next, you'll get an understanding of concepts that will help you visualize data using the Apache Zeppelin and Bokeh bindings in Scala, enabling exploratory data analysis. Discover how to program quintessential machine learning algorithms using Spark ML library. Work through steps to scale your machine learning models and deploy them into a standalone cluster, EC2, YARN, and Mesos. Finally dip into the powerful options presented by Spark Streaming, and machine learning for streaming data, as well as utilizing Spark GraphX. Style and approach This book contains a rich set of recipes that covers the full spectrum of interesting data analysis tasks and will help you revolutionize your data analysis skills using Scala and Spark.

### Mastering Hadoop 3

Master the techniques and sophisticated analytics used to construct Spark-based solutions that scale to deliver production-grade data science products About This Book Develop and apply advanced analytical techniques with Spark Learn how to tell a compelling story with data science using Spark's ecosystem Explore data at scale and work with cutting edge data science methods Who This Book Is For This book is for those who have beginner-level familiarity with the Spark architecture and data science applications, especially those who are looking for a challenge and want to learn cutting edge techniques. This book assumes working knowledge of data science, common machine learning methods, and popular data science tools, and assumes you have previously run proof of concept studies and built prototypes. What You Will Learn Learn the design patterns that integrate Spark into industrialized data science pipelines See how commercial data scientists design scalable code and reusable code for data science services Explore cutting edge data science methods so that you can study trends and causality Discover advanced programming techniques using RDD and the DataFrame and Dataset APIs Find out how Spark can be used as a universal ingestion engine tool and as a web scraper Practice the implementation of advanced topics in graph processing, such as community detection and contact chaining Get to know the best practices when performing Extended Exploratory Data Analysis, commonly used in commercial data science teams Study advanced Spark concepts, solution design patterns, and integration architectures Demonstrate powerful data science pipelines In Detail Data science seeks to transform the world using data, and this is typically achieved through disrupting and changing real processes in real industries. In order to operate at this level you need to build data science solutions of substance – solutions that solve real problems. Spark has emerged as the big data platform of choice for data scientists due to its speed, scalability, and easy-to-use APIs. This book deep dives into using Spark to deliver production-grade data science solutions. This process is demonstrated by exploring the construction of a sophisticated global news analysis service that uses Spark to generate continuous geopolitical and current affairs insights. You will learn all about the core Spark APIs and take a

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comprehensive tour of advanced libraries, including Spark SQL, Spark Streaming, MLlib, and more. You will be introduced to advanced techniques and methods that will help you to construct commercial-grade data products. Focusing on a sequence of tutorials that deliver a working news intelligence service, you will learn about advanced Spark architectures, how to work with geographic data in Spark, and how to tune Spark algorithms so they scale linearly. Style and approach This is an advanced guide for those with beginner-level familiarity with the Spark architecture and working with Data Science applications. Mastering Spark for Data Science is a practical tutorial that uses core Spark APIs and takes a deep dive into advanced libraries including: Spark SQL, visual streaming, and MLlib. This book expands on titles like: Machine Learning with Spark and Learning Spark. It is the next learning curve for those comfortable with Spark and looking to improve their skills.

### **Effective Kafka**

Quickly find solutions to common programming problems encountered while processing big data. Content is presented in the popular problem-solution format. Look up the programming problem that you want to solve. Read the solution. Apply the solution directly in your own code. Problem solved! PySpark Recipes covers Hadoop and its shortcomings. The architecture of Spark, PySpark, and RDD are presented. You will learn to apply RDD to solve day-to-day big data problems. Python and NumPy are included and make it easy for new learners of PySpark to understand and adopt the model. What You Will Learn Understand the advanced features of PySpark2 and SparkSQL Optimize your code Program SparkSQL with Python Use Spark Streaming and Spark MLlib with Python Perform graph analysis with GraphFrames Who This Book Is For Data analysts, Python programmers, big data enthusiasts

### **PySpark Recipes**

Over 70 recipes to help you use Apache Spark as your single big data computing platform and master its libraries About This Book This book contains recipes on how to use Apache Spark as a unified compute engine Cover how to connect various source systems to Apache Spark Covers various parts of machine learning including supervised/unsupervised learning & recommendation engines Who This Book Is For This book is for data engineers, data scientists, and those who want to implement Spark for real-time data processing. Anyone who is using Spark (or is planning to) will benefit from this book. The book assumes you have a basic knowledge of Scala as a programming language. What You Will Learn Install and configure Apache Spark with various cluster managers & on AWS Set up a development environment for Apache Spark including Databricks Cloud notebook Find out how to operate on data in Spark with schemas Get to grips with real-time streaming analytics using Spark Streaming & Structured Streaming Master supervised learning and unsupervised learning using MLlib Build a recommendation engine using MLlib Graph processing using GraphX and GraphFrames libraries Develop

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a set of common applications or project types, and solutions that solve complex big data problems In Detail While Apache Spark 1.x gained a lot of traction and adoption in the early years, Spark 2.x delivers notable improvements in the areas of API, schema awareness, Performance, Structured Streaming, and simplifying building blocks to build better, faster, smarter, and more accessible big data applications. This book uncovers all these features in the form of structured recipes to analyze and mature large and complex sets of data. Starting with installing and configuring Apache Spark with various cluster managers, you will learn to set up development environments. Further on, you will be introduced to working with RDDs, DataFrames and Datasets to operate on schema aware data, and real-time streaming with various sources such as Twitter Stream and Apache Kafka. You will also work through recipes on machine learning, including supervised learning, unsupervised learning & recommendation engines in Spark. Last but not least, the final few chapters delve deeper into the concepts of graph processing using GraphX, securing your implementations, cluster optimization, and troubleshooting. Style and approach This book is packed with intuitive recipes supported with line-by-line explanations to help you understand Spark 2.x's real-time processing capabilities and deploy scalable big data solutions. This is a valuable resource for data scientists and those working on large-scale data projects.

### **R Data Analysis Cookbook**

Simplify real-time data processing by leveraging the power of Apache Kafka 1.0 Key Features Use Kafka 1.0 features such as Confluent platforms and Kafka streams to build efficient streaming data applications to handle and process your data Integrate Kafka with other Big Data tools such as Apache Hadoop, Apache Spark, and more Hands-on recipes to help you design, operate, maintain, and secure your Apache Kafka cluster with ease Book Description Apache Kafka provides a unified, high-throughput, low-latency platform to handle real-time data feeds. This book will show you how to use Kafka efficiently, and contains practical solutions to the common problems that developers and administrators usually face while working with it. This practical guide contains easy-to-follow recipes to help you set up, configure, and use Apache Kafka in the best possible manner. You will use Apache Kafka Consumers and Producers to build effective real-time streaming applications. The book covers the recently released Kafka version 1.0, the Confluent Platform and Kafka Streams. The programming aspect covered in the book will teach you how to perform important tasks such as message validation, enrichment and composition. Recipes focusing on optimizing the performance of your Kafka cluster, and integrate Kafka with a variety of third-party tools such as Apache Hadoop, Apache Spark, and Elasticsearch will help ease your day to day collaboration with Kafka greatly. Finally, we cover tasks related to monitoring and securing your Apache Kafka cluster using tools such as Ganglia and Graphite. If you're looking to become the go-to person in your organization when it comes to working with Apache Kafka, this book is the only resource you need to have. What you will learn -Install and configure Apache Kafka 1.0 to get optimal performance -Create and configure Kafka Producers and Consumers -Operate your Kafka clusters efficiently by implementing the mirroring technique -Work with the new Confluent platform and Kafka streams, and

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achieve high availability with Kafka -Monitor Kafka using tools such as Graphite and Ganglia -Integrate Kafka with third-party tools such as Elasticsearch, Logstash, Apache Hadoop, Apache Spark, and more Who this book is for This book is for developers and Kafka administrators who are looking for quick, practical solutions to problems encountered while operating, managing or monitoring Apache Kafka. If you are a developer, some knowledge of Scala or Java will help, while for administrators, some working knowledge of Kafka will be useful.

### **Kafka Streams - Real-time Stream Processing**

Data in all domains is getting bigger. How can you work with it efficiently? Recently updated for Spark 1.3, this book introduces Apache Spark, the open source cluster computing system that makes data analytics fast to write and fast to run. With Spark, you can tackle big datasets quickly through simple APIs in Python, Java, and Scala. This edition includes new information on Spark SQL, Spark Streaming, setup, and Maven coordinates. Written by the developers of Spark, this book will have data scientists and engineers up and running in no time. You'll learn how to express parallel jobs with just a few lines of code, and cover applications from simple batch jobs to stream processing and machine learning. Quickly dive into Spark capabilities such as distributed datasets, in-memory caching, and the interactive shell Leverage Spark's powerful built-in libraries, including Spark SQL, Spark Streaming, and MLlib Use one programming paradigm instead of mixing and matching tools like Hive, Hadoop, Mahout, and Storm Learn how to deploy interactive, batch, and streaming applications Connect to data sources including HDFS, Hive, JSON, and S3 Master advanced topics like data partitioning and shared variables

### **The JHipster Mini-Book**

Data science teams looking to turn research into useful analytics applications require not only the right tools, but also the right approach if they're to succeed. With the revised second edition of this hands-on guide, up-and-coming data scientists will learn how to use the Agile Data Science development methodology to build data applications with Python, Apache Spark, Kafka, and other tools. Author Russell Journey demonstrates how to compose a data platform for building, deploying, and refining analytics applications with Apache Kafka, MongoDB, Elasticsearch, d3.js, scikit-learn, and Apache Airflow. You'll learn an iterative approach that lets you quickly change the kind of analysis you're doing, depending on what the data is telling you. Publish data science work as a web application, and affect meaningful change in your organization. Build value from your data in a series of agile sprints, using the data-value pyramid Extract features for statistical models from a single dataset Visualize data with charts, and expose different aspects through interactive reports Use historical data to predict the future via classification and regression Translate predictions into actions Get feedback from users after each sprint to keep your project on track

## **Apache Camel Developer's Cookbook**

This book is for system engineers and administrators who have a fundamental understanding of information management systems and infrastructure. It helps if you've already played around with Chef; however, this book covers all the important topics you will need to know. If you don't want to dig through a whole book before you can get started, this book is for you, as it features a set of independent recipes you can try out immediately.

## **Apache Kafka Quick Start Guide**

This Book is published by [www.HadoopExam.com](http://www.HadoopExam.com) (HadoopExam Learning Resources). Where you can find material and training's for preparing for BigData, Cloud Computing, Analytics, Data Science and popular Programming Language. This Book will contain 14 chapters, to cover NiFi concepts and providing 9+ use cases, so that you can understand the various fine grain detail about Apache NiFi. Also, it is recommended that you go through the NiFi Hands On Training provided by HadoopExam. In training we have created concepts as well as practicals by creating simple and complex workflow. While publishing this book there are 19 modules available, which are in-line with this book. As you know, NiFi recently become very popular to solve BigData, IOT (Internet of Things) , IOAT (Internet of Anything's) etc. Having an exclusive skill will certainly give you edge with already lack of BigData resources. To help you HadoopExam.com brings full length Hands on training and this book to understand fundamental concepts of NiFi. We provide many Hands On session for creating simple to complex workflow/dataflow to process the data. As this is a continuously growing and fast paced technology. This technology not only helps in working BigData but also, wherever you need complex and simple DataFlow engine you can use this. NiFi can be integrated with existing technology e.g. Spark, HBase, Cassandra, RDBMS, HDFS and can even be customized as per your requirement. So start learning NiFi with HadoopExam.com premium training and book by getting subscription.

## **Chef Infrastructure Automation Cookbook - Second Edition**

Over 50 hands-on recipes to efficiently administer, maintain, and use your Apache Kafka installation About This Book Quickly configure and manage your Kafka cluster Learn how to use the Apache Kafka cluster and connect it with tools for big data processing A practical guide to monitor your Apache Kafka installation Who This Book Is For If you are a programmer or big data engineer using or planning to use Apache Kafka, then this book is for you. This book has several recipes which will teach you how to effectively use Apache Kafka. You need to have some basic knowledge of Java. If you don't know big data tools, this would be your stepping stone for learning how to consume the data in these kind of systems. What You Will Learn Learn how to configure Kafka brokers for better efficiency Explore how to configure producers and

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consumers for optimal performance Set up tools for maintaining and operating Apache Kafka Create producers and consumers for Apache Kafka in Java Understand how Apache Kafka can be used by several third party system for big data processing, such as Apache Storm, Apache Spark, Hadoop, and more Monitor Apache Kafka using tools like graphite and Ganglia In Detail This book will give you details about how to manage and administer your Apache Kafka Cluster. We will cover topics like how to configure your broker, producer, and consumer for maximum efficiency for your situation. Also, you will learn how to maintain and administer your cluster for fault tolerance. We will also explore tools provided with Apache Kafka to do regular maintenance operations. We shall also look at how to easily integrate Apache Kafka with big data tools like Hadoop, Apache Spark, Apache Storm, and Elasticsearch. Style and approach Easy-to-follow, step-by-step recipes explaining from start to finish how to accomplish real-world tasks.

### **Storm Real-Time Processing Cookbook**

Learn about the fastest-growing open source project in the world, and find out how it revolutionizes big data analytics About This Book Exclusive guide that covers how to get up and running with fast data processing using Apache Spark Explore and exploit various possibilities with Apache Spark using real-world use cases in this book Want to perform efficient data processing at real time? This book will be your one-stop solution. Who This Book Is For This guide appeals to big data engineers, analysts, architects, software engineers, even technical managers who need to perform efficient data processing on Hadoop at real time. Basic familiarity with Java or Scala will be helpful. The assumption is that readers will be from a mixed background, but would be typically people with background in engineering/data science with no prior Spark experience and want to understand how Spark can help them on their analytics journey. What You Will Learn Get an overview of big data analytics and its importance for organizations and data professionals Delve into Spark to see how it is different from existing processing platforms Understand the intricacies of various file formats, and how to process them with Apache Spark. Realize how to deploy Spark with YARN, MESOS or a Stand-alone cluster manager. Learn the concepts of Spark SQL, SchemaRDD, Caching and working with Hive and Parquet file formats Understand the architecture of Spark MLlib while discussing some of the off-the-shelf algorithms that come with Spark. Introduce yourself to the deployment and usage of SparkR. Walk through the importance of Graph computation and the graph processing systems available in the market Check the real world example of Spark by building a recommendation engine with Spark using ALS. Use a Telco data set, to predict customer churn using Random Forests. In Detail Spark juggernaut keeps on rolling and getting more and more momentum each day. Spark provides key capabilities in the form of Spark SQL, Spark Streaming, Spark ML and Graph X all accessible via Java, Scala, Python and R. Deploying the key capabilities is crucial whether it is on a Standalone framework or as a part of existing Hadoop installation and configuring with Yarn and Mesos. The next part of the journey after installation is using key components, APIs, Clustering, machine learning APIs, data pipelines, parallel programming. It is important to understand why each framework component is key, how widely it is being used, its stability and pertinent

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use cases. Once we understand the individual components, we will take a couple of real life advanced analytics examples such as 'Building a Recommendation system', 'Predicting customer churn' and so on. The objective of these real life examples is to give the reader confidence of using Spark for real-world problems. Style and approach With the help of practical examples and real-world use cases, this guide will take you from scratch to building efficient data applications using Apache Spark. You will learn all about this excellent data processing engine in a step-by-step manner, taking one aspect of it at a time. This highly practical guide will include how to work with data pipelines, dataframes, clustering, SparkSQL, parallel programming, and such insightful topics with the help of real-world use cases.

### **Spark: The Definitive Guide**

Gain expertise in processing and storing data by using advanced techniques with Apache Spark About This Book Explore the integration of Apache Spark with third party applications such as H2O, Databricks and Titan Evaluate how Cassandra and Hbase can be used for storage An advanced guide with a combination of instructions and practical examples to extend the most up-to date Spark functionalities Who This Book Is For If you are a developer with some experience with Spark and want to strengthen your knowledge of how to get around in the world of Spark, then this book is ideal for you. Basic knowledge of Linux, Hadoop and Spark is assumed. Reasonable knowledge of Scala is expected. What You Will Learn Extend the tools available for processing and storage Examine clustering and classification using MLlib Discover Spark stream processing via Flume, HDFS Create a schema in Spark SQL, and learn how a Spark schema can be populated with data Study Spark based graph processing using Spark GraphX Combine Spark with H2O and deep learning and learn why it is useful Evaluate how graph storage works with Apache Spark, Titan, HBase and Cassandra Use Apache Spark in the cloud with Databricks and AWS In Detail Apache Spark is an in-memory cluster based parallel processing system that provides a wide range of functionality like graph processing, machine learning, stream processing and SQL. It operates at unprecedented speeds, is easy to use and offers a rich set of data transformations. This book aims to take your limited knowledge of Spark to the next level by teaching you how to expand Spark functionality. The book commences with an overview of the Spark eco-system. You will learn how to use MLlib to create a fully working neural net for handwriting recognition. You will then discover how stream processing can be tuned for optimal performance and to ensure parallel processing. The book extends to show how to incorporate H2O for machine learning, Titan for graph based storage, Databricks for cloud-based Spark. Intermediate Scala based code examples are provided for Apache Spark module processing in a CentOS Linux and Databricks cloud environment. Style and approach This book is an extensive guide to Apache Spark modules and tools and shows how Spark's functionality can be extended for real-time processing and storage with worked examples.

### **Apache Spark 2.x Machine Learning Cookbook**

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Learn how to use, deploy, and maintain Apache Spark with this comprehensive guide, written by the creators of the open-source cluster-computing framework. With an emphasis on improvements and new features in Spark 2.0, authors Bill Chambers and Matei Zaharia break down Spark topics into distinct sections, each with unique goals. You'll explore the basic operations and common functions of Spark's structured APIs, as well as Structured Streaming, a new high-level API for building end-to-end streaming applications. Developers and system administrators will learn the fundamentals of monitoring, tuning, and debugging Spark, and explore machine learning techniques and scenarios for employing MLlib, Spark's scalable machine-learning library. Get a gentle overview of big data and Spark Learn about DataFrames, SQL, and Datasets—Spark's core APIs—through worked examples Dive into Spark's low-level APIs, RDDs, and execution of SQL and DataFrames Understand how Spark runs on a cluster Debug, monitor, and tune Spark clusters and applications Learn the power of Structured Streaming, Spark's stream-processing engine Learn how you can apply MLlib to a variety of problems, including classification or recommendation

### **Microservices Deployment Cookbook**

Process large volumes of data in real-time while building high performance and robust data stream processing pipeline using the latest Apache Kafka 2.0 Key Features Solve practical large data and processing challenges with Kafka Tackle data processing challenges like late events, windowing, and watermarking Understand real-time streaming applications processing using Schema registry, Kafka connect, Kafka streams, and KSQL Book Description Apache Kafka is a great open source platform for handling your real-time data pipeline to ensure high-speed filtering and pattern matching on the fly. In this book, you will learn how to use Apache Kafka for efficient processing of distributed applications and will get familiar with solving everyday problems in fast data and processing pipelines. This book focuses on programming rather than the configuration management of Kafka clusters or DevOps. It starts off with the installation and setting up the development environment, before quickly moving on to performing fundamental messaging operations such as validation and enrichment. Here you will learn about message composition with pure Kafka API and Kafka Streams. You will look into the transformation of messages in different formats, such as avro, binary, XML, JSON, and AVRO. Next, you will learn how to expose the schemas contained in Kafka with the Schema Registry. You will then learn how to work with all relevant connectors with Kafka Connect. While working with Kafka Streams, you will perform various interesting operations on streams, such as windowing, joins, and aggregations. Finally, through KSQL, you will learn how to retrieve, insert, modify, and delete data streams, and how to manipulate watermarks and windows. What you will learn How to validate data with Kafka Add information to existing data flows Generate new information through message composition Perform data validation and versioning with the Schema Registry How to perform message Serialization and Deserialization How to perform message Serialization and Deserialization Process data streams with Kafka Streams Understand the duality between tables and streams with KSQL Who this book is for This book is for developers who want to quickly master the

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practical concepts behind Apache Kafka. The audience need not have come across Apache Kafka previously; however, a familiarity of Java or any JVM language will be helpful in understanding the code in this book.

### **Beginning Apache Spark 2**

If you are a Scala, Java, or Python developer with an interest in machine learning and data analysis and are eager to learn how to apply common machine learning techniques at scale using the Spark framework, this is the book for you. While it may be useful to have a basic understanding of Spark, no previous experience is required.

### **Apache Kafka Cookbook**

Integrating data from multiple sources is essential in the age of big data, but it can be a challenging and time-consuming task. This handy cookbook provides dozens of ready-to-use recipes for using Apache Sqoop, the command-line interface application that optimizes data transfers between relational databases and Hadoop. Sqoop is both powerful and bewildering, but with this cookbook's problem-solution-discussion format, you'll quickly learn how to deploy and then apply Sqoop in your environment. The authors provide MySQL, Oracle, and PostgreSQL database examples on GitHub that you can easily adapt for SQL Server, Netezza, Teradata, or other relational systems. Transfer data from a single database table into your Hadoop ecosystem Keep table data and Hadoop in sync by importing data incrementally Import data from more than one database table Customize transferred data by calling various database functions Export generated, processed, or backed-up data from Hadoop to your database Run Sqoop within Oozie, Hadoop's specialized workflow scheduler Load data into Hadoop's data warehouse (Hive) or database (HBase) Handle installation, connection, and syntax issues common to specific database vendors

### **Scala Data Analysis Cookbook**

From lambda expressions and JavaFX 8 to new support for network programming and mobile development, Java 8 brings a wealth of changes. This cookbook helps you get up to speed right away with hundreds of hands-on recipes across a broad range of Java topics. You'll learn useful techniques for everything from debugging and data structures to GUI development and functional programming. Each recipe includes self-contained code solutions that you can freely use, along with a discussion of how and why they work. If you are familiar with Java basics, this cookbook will bolster your knowledge of the language in general and Java 8's main APIs in particular. Recipes include: Methods for compiling, running, and debugging Manipulating, comparing, and rearranging text Regular expressions for string- and pattern-matching Handling numbers, dates, and times Structuring data with collections, arrays, and other types Object-oriented and functional programming

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techniques Directory and filesystem operations Working with graphics, audio, and video GUI development, including JavaFX and handlers Network programming on both client and server Database access, using JPA, Hibernate, and JDBC Processing JSON and XML for data storage Multithreading and concurrency

### **Machine Learning with Apache Spark Quick Start Guide**

Learn the right cutting-edge skills and knowledge to leverage Spark Streaming to implement a wide array of real-time, streaming applications. This book walks you through end-to-end real-time application development using real-world applications, data, and code. Taking an application-first approach, each chapter introduces use cases from a specific industry and uses publicly available datasets from that domain to unravel the intricacies of production-grade design and implementation. The domains covered in Pro Spark Streaming include social media, the sharing economy, finance, online advertising, telecommunication, and IoT. In the last few years, Spark has become synonymous with big data processing. DStreams enhance the underlying Spark processing engine to support streaming analysis with a novel micro-batch processing model. Pro Spark Streaming by Zubair Nabi will enable you to become a specialist of latency sensitive applications by leveraging the key features of DStreams, micro-batch processing, and functional programming. To this end, the book includes ready-to-deploy examples and actual code. Pro Spark Streaming will act as the bible of Spark Streaming. What You'll Learn Discover Spark Streaming application development and best practices Work with the low-level details of discretized streams Optimize production-grade deployments of Spark Streaming via configuration recipes and instrumentation using Graphite, collectd, and Nagios Ingest data from disparate sources including MQTT, Flume, Kafka, Twitter, and a custom HTTP receiver Integrate and couple with HBase, Cassandra, and Redis Take advantage of design patterns for side-effects and maintaining state across the Spark Streaming micro-batch model Implement real-time and scalable ETL using data frames, SparkSQL, Hive, and SparkR Use streaming machine learning, predictive analytics, and recommendations Mesh batch processing with stream processing via the Lambda architecture Who This Book Is For Data scientists, big data experts, BI analysts, and data architects.

### **NiFi Fundamentals & Cookbook**

This book is for readers who want to know more about Apache Kafka at a hands-on level; the key audience is those with software development experience but no prior exposure to Apache Kafka or similar technologies. It is also useful for enterprise application developers and big data enthusiasts who have worked with other publisher-subscriber-based systems and want to explore Apache Kafka as a futuristic solution.

### **Mastering Spark for Data Science**

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The book *Kafka Streams - Real-time Stream Processing* helps you understand the stream processing in general and apply that skill to Kafka streams programming. This book is focusing mainly on the new generation of the Kafka Streams library available in the Apache Kafka 2.x. The primary focus of this book is on Kafka Streams. However, the book also touches on the other Apache Kafka capabilities and concepts that are necessary to grasp the Kafka Streams programming. Who should read this book? *Kafka Streams: Real-time Stream Processing* is written for software engineers willing to develop a stream processing application using Kafka Streams library. I am also writing this book for data architects and data engineers who are responsible for designing and building the organization's data-centric infrastructure. Another group of people is the managers and architects who do not directly work with Kafka implementation, but they work with the people who implement Kafka Streams at the ground level. What should you already know? This book assumes that the reader is familiar with the basics of Java programming language. The source code and examples in this book are using Java 8, and I will be using Java 8 lambda syntax, so experience with lambda will be helpful. Kafka Streams is a library that runs on Kafka. Having a good fundamental knowledge of Kafka is essential to get the most out of Kafka Streams. I will touch base on the mandatory Kafka concepts for those who are new to Kafka. The book also assumes that you have some familiarity and experience in running and working on the Linux operating system.

### **Apache Hive Cookbook**

Every enterprise application creates data, whether it's log messages, metrics, user activity, outgoing messages, or something else. And how to move all of this data becomes nearly as important as the data itself. If you're an application architect, developer, or production engineer new to Apache Kafka, this practical guide shows you how to use this open source streaming platform to handle real-time data feeds. Engineers from Confluent and LinkedIn who are responsible for developing Kafka explain how to deploy production Kafka clusters, write reliable event-driven microservices, and build scalable stream-processing applications with this platform. Through detailed examples, you'll learn Kafka's design principles, reliability guarantees, key APIs, and architecture details, including the replication protocol, the controller, and the storage layer. Understand publish-subscribe messaging and how it fits in the big data ecosystem. Explore Kafka producers and consumers for writing and reading messages Understand Kafka patterns and use-case requirements to ensure reliable data delivery Get best practices for building data pipelines and applications with Kafka Manage Kafka in production, and learn to perform monitoring, tuning, and maintenance tasks Learn the most critical metrics among Kafka's operational measurements Explore how Kafka's stream delivery capabilities make it a perfect source for stream processing systems

### **Apache Kafka 1.0 Cookbook**

A comprehensive guide to mastering the most advanced Hadoop 3 concepts Key Features Get to grips with the newly

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introduced features and capabilities of Hadoop 3 Crunch and process data using MapReduce, YARN, and a host of tools within the Hadoop ecosystem Sharpen your Hadoop skills with real-world case studies and code Book Description Apache Hadoop is one of the most popular big data solutions for distributed storage and for processing large chunks of data. With Hadoop 3, Apache promises to provide a high-performance, more fault-tolerant, and highly efficient big data processing platform, with a focus on improved scalability and increased efficiency. With this guide, you'll understand advanced concepts of the Hadoop ecosystem tool. You'll learn how Hadoop works internally, study advanced concepts of different ecosystem tools, discover solutions to real-world use cases, and understand how to secure your cluster. It will then walk you through HDFS, YARN, MapReduce, and Hadoop 3 concepts. You'll be able to address common challenges like using Kafka efficiently, designing low latency, reliable message delivery Kafka systems, and handling high data volumes. As you advance, you'll discover how to address major challenges when building an enterprise-grade messaging system, and how to use different stream processing systems along with Kafka to fulfil your enterprise goals. By the end of this book, you'll have a complete understanding of how components in the Hadoop ecosystem are effectively integrated to implement a fast and reliable data pipeline, and you'll be equipped to tackle a range of real-world problems in data pipelines. What you will learn Gain an in-depth understanding of distributed computing using Hadoop 3 Develop enterprise-grade applications using Apache Spark, Flink, and more Build scalable and high-performance Hadoop data pipelines with security, monitoring, and data governance Explore batch data processing patterns and how to model data in Hadoop Master best practices for enterprises using, or planning to use, Hadoop 3 as a data platform Understand security aspects of Hadoop, including authorization and authentication Who this book is for If you want to become a big data professional by mastering the advanced concepts of Hadoop, this book is for you. You'll also find this book useful if you're a Hadoop professional looking to strengthen your knowledge of the Hadoop ecosystem. Fundamental knowledge of the Java programming language and basics of Hadoop is necessary to get started with this book.

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