

## Apache Spark In 24 Hours Sams Teach Yourself

Discover how graph algorithms can help you leverage the relationships within your data to develop more intelligent solutions and enhance your machine learning models. You'll learn how graph analytics are uniquely suited to unfold complex structures and reveal difficult-to-find patterns lurking in your data. Whether you are trying to build dynamic network models or forecast real-world behavior, this book illustrates how graph algorithms deliver value—from finding vulnerabilities and bottlenecks to detecting communities and improving machine learning predictions. This practical book walks you through hands-on examples of how to use graph algorithms in Apache Spark and Neo4j—two of the most common choices for graph analytics. Also included: sample code and tips for over 20 practical graph algorithms that cover optimal pathfinding, importance through centrality, and community detection. Learn how graph analytics vary from conventional statistical analysis Understand how classic graph algorithms work, and how they are applied Get guidance on which algorithms to use for different types of questions Explore algorithm examples with working code and sample datasets from Spark and Neo4j See how connected feature extraction can increase machine learning accuracy and precision Walk through creating an ML workflow for link prediction combining Neo4j and Spark The professional's one-stop guide to this open-source, Java-based big data framework Professional Hadoop is the complete reference and resource for experienced developers looking to employ Apache Hadoop in real-world settings. Written by an expert team of certified Hadoop developers, committers, and Summit speakers, this book details every key aspect of Hadoop technology to enable optimal processing of large data sets. Designed expressly for the professional developer, this book skips over the basics of database development to get you acquainted with the framework's processes and capabilities right away. The discussion covers each key Hadoop component individually, culminating in a sample application that brings all of the pieces together to illustrate the cooperation and interplay that make Hadoop a major big data solution. Coverage includes everything from storage and security to computing and user experience, with expert guidance on integrating other software and more. Hadoop is quickly reaching significant market usage, and more and more developers are being called upon to develop big data solutions using the Hadoop framework. This book covers the process from beginning to end, providing a crash course for professionals needing to learn and apply Hadoop quickly. Configure storage, UE, and in-memory computing Integrate Hadoop with other programs including Kafka and Storm Master the fundamentals of Apache Big Top and Ignite Build robust data security with expert tips and advice Hadoop's popularity is largely due to its accessibility. Open-source and written in Java, the framework offers almost no barrier to entry for experienced database developers already familiar with the skills and requirements real-world programming entails. Professional Hadoop gives you the practical information and framework-specific skills you need quickly.

Frank Kane's hands-on Spark training course, based on his bestselling Taming Big Data with Apache Spark and Python video, now available in a book. Understand and analyze large data sets using Spark on a single system or on a cluster. About This Book Understand how Spark can be distributed across computing clusters Develop and run Spark jobs efficiently using Python A hands-on tutorial by Frank Kane with over 15 real-world examples teaching you Big Data processing with Spark Who This Book Is For If you are a data scientist or data analyst who wants to learn Big Data processing using Apache Spark and Python, this book is for you. If you have some programming experience in Python, and want to learn how to process large amounts of data using Apache Spark, Frank Kane's Taming Big Data with Apache Spark and Python will also help you. What You Will Learn Find out how you can identify Big Data problems as Spark problems Install and run Apache Spark on your computer or on a cluster Analyze large data sets across many CPUs using Spark's Resilient Distributed Datasets

Implement machine learning on Spark using the MLlib library Process continuous streams of data in real time using the Spark streaming module Perform complex network analysis using Spark's GraphX library Use Amazon's Elastic MapReduce service to run your Spark jobs on a cluster In Detail Frank Kane's *Taming Big Data with Apache Spark and Python* is your companion to learning Apache Spark in a hands-on manner. Frank will start you off by teaching you how to set up Spark on a single system or on a cluster, and you'll soon move on to analyzing large data sets using Spark RDD, and developing and running effective Spark jobs quickly using Python. Apache Spark has emerged as the next big thing in the Big Data domain – quickly rising from an ascending technology to an established superstar in just a matter of years. Spark allows you to quickly extract actionable insights from large amounts of data, on a real-time basis, making it an essential tool in many modern businesses. Frank has packed this book with over 15 interactive, fun-filled examples relevant to the real world, and he will empower you to understand the Spark ecosystem and implement production-grade real-time Spark projects with ease. Style and approach Frank Kane's *Taming Big Data with Apache Spark and Python* is a hands-on tutorial with over 15 real-world examples carefully explained by Frank in a step-by-step manner. The examples vary in complexity, and you can move through them at your own pace.

Build data-intensive applications locally and deploy at scale using the combined powers of Python and Spark 2.0 About This Book Learn why and how you can efficiently use Python to process data and build machine learning models in Apache Spark 2.0 Develop and deploy efficient, scalable real-time Spark solutions Take your understanding of using Spark with Python to the next level with this jump start guide Who This Book Is For If you are a Python developer who wants to learn about the Apache Spark 2.0 ecosystem, this book is for you. A firm understanding of Python is expected to get the best out of the book. Familiarity with Spark would be useful, but is not mandatory. What You Will Learn Learn about Apache Spark and the Spark 2.0 architecture Build and interact with Spark DataFrames using Spark SQL Learn how to solve graph and deep learning problems using GraphFrames and TensorFrames respectively Read, transform, and understand data and use it to train machine learning models Build machine learning models with MLlib and ML Learn how to submit your applications programmatically using spark-submit Deploy locally built applications to a cluster In Detail Apache Spark is an open source framework for efficient cluster computing with a strong interface for data parallelism and fault tolerance. This book will show you how to leverage the power of Python and put it to use in the Spark ecosystem. You will start by getting a firm understanding of the Spark 2.0 architecture and how to set up a Python environment for Spark. You will get familiar with the modules available in PySpark. You will learn how to abstract data with RDDs and DataFrames and understand the streaming capabilities of PySpark. Also, you will get a thorough overview of machine learning capabilities of PySpark using ML and MLlib, graph processing using GraphFrames, and polyglot persistence using Blaze. Finally, you will learn how to deploy your applications to the cloud using the spark-submit command. By the end of this book, you will have established a firm understanding of the Spark Python API and how it can be used to build data-intensive applications. Style and approach This book takes a very comprehensive, step-by-step approach so you understand how the Spark ecosystem can be used with Python to develop efficient, scalable solutions. Every chapter is standalone and written in a very easy-to-understand manner, with a focus on both the hows and the whys of each concept.

With this practical book, AI and machine learning practitioners will learn how to successfully build and deploy data science projects on Amazon Web Services. The Amazon AI and machine learning stack unifies data science, data engineering, and application development to help level up your skills. This guide shows you how to build and run pipelines in the cloud, then integrate the results into applications in minutes instead of days. Throughout the book, authors

Chris Fregly and Antje Barth demonstrate how to reduce cost and improve performance. Apply the Amazon AI and ML stack to real-world use cases for natural language processing, computer vision, fraud detection, conversational devices, and more Use automated machine learning to implement a specific subset of use cases with SageMaker Autopilot Dive deep into the complete model development lifecycle for a BERT-based NLP use case including data ingestion, analysis, model training, and deployment Tie everything together into a repeatable machine learning operations pipeline Explore real-time ML, anomaly detection, and streaming analytics on data streams with Amazon Kinesis and Managed Streaming for Apache Kafka Learn security best practices for data science projects and workflows including identity and access management, authentication, authorization, and more

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.

Apache Spark is a fast, scalable, and flexible open source distributed processing engine for big data systems and is one of the most active open source big data projects to date. In just 24 lessons of one hour or less, Sams Teach Yourself Apache Spark in 24 Hours helps you build practical Big Data solutions that leverage Spark's amazing speed, scalability, simplicity, and versatility. This book's straightforward, step-by-step approach shows you how to deploy, program, optimize, manage, integrate, and extend Spark—now, and for years to come. You'll discover how to create powerful solutions encompassing cloud computing, real-time stream processing, machine learning, and more. Every lesson builds on what you've already learned, giving you a rock-solid foundation for real-world success. Whether you are a data analyst, data engineer, data scientist, or data steward, learning Spark will help you to advance your career or embark on a new career in the booming area of Big Data. Learn how to

- Discover what Apache Spark does and how it fits into the Big Data landscape
- Deploy and run Spark locally or in the cloud
- Interact with Spark from the shell
- Make the most of the Spark Cluster Architecture
- Develop Spark applications with Scala and functional Python
- Program with the Spark API, including transformations and actions
- Apply practical data engineering/analysis approaches designed for Spark
- Use Resilient Distributed Datasets (RDDs) for caching, persistence, and output
- Optimize Spark solution performance
- Use Spark with SQL (via



Spark SQL) and with NoSQL (via Cassandra) • Leverage cutting-edge functional programming techniques • Extend Spark with streaming, R, and Sparkling Water • Start building Spark-based machine learning and graph-processing applications • Explore advanced messaging technologies, including Kafka • Preview and prepare for Spark's next generation of innovations Instructions walk you through common questions, issues, and tasks; Q-and-As, Quizzes, and Exercises build and test your knowledge; "Did You Know?" tips offer insider advice and shortcuts; and "Watch Out!" alerts help you avoid pitfalls. By the time you're finished, you'll be comfortable using Apache Spark to solve a wide spectrum of Big Data problems.

No need to spend hours ploughing through endless data – let Spark, one of the fastest big data processing engines available, do the hard work for you. Key Features Get up and running with Apache Spark and Python Integrate Spark with AWS for real-time analytics Apply processed data streams to machine learning APIs of Apache Spark Book Description Processing big data in real time is challenging due to scalability, information consistency, and fault-tolerance. This book teaches you how to use Spark to make your overall analytical workflow faster and more efficient. You'll explore all core concepts and tools within the Spark ecosystem, such as Spark Streaming, the Spark Streaming API, machine learning extension, and structured streaming. You'll begin by learning data processing fundamentals using Resilient Distributed Datasets (RDDs), SQL, Datasets, and Dataframes APIs. After grasping these fundamentals, you'll move on to using Spark Streaming APIs to consume data in real time from TCP sockets, and integrate Amazon Web Services (AWS) for stream consumption. By the end of this book, you'll not only have understood how to use machine learning extensions and structured streams but you'll also be able to apply Spark in your own upcoming big data projects. What you will learn Write your own Python programs that can interact with Spark Implement data stream consumption using Apache Spark Recognize common operations in Spark to process known data streams Integrate Spark streaming with Amazon Web Services (AWS) Create a collaborative filtering model with the movielens dataset Apply processed data streams to Spark machine learning APIs Who this book is for Data Processing with Apache Spark is for you if you are a software engineer, architect, or IT professional who wants to explore distributed systems and big data analytics. Although you don't need any knowledge of Spark, prior experience of working with Python is recommended.

Let Hadoop For Dummies help harness the power of your data and rein in the information overload Big data has become big business, and companies and organizations of all sizes are struggling to find ways to retrieve valuable information from their massive data sets with becoming overwhelmed. Enter Hadoop and this easy-to-understand For Dummies guide. Hadoop For Dummies helps readers understand the value of big data, make a business case for using Hadoop, navigate the Hadoop ecosystem, and build and manage Hadoop applications and clusters. Explains the origins of Hadoop, its economic benefits, and its functionality and practical applications Helps you find your way around the Hadoop ecosystem, program MapReduce, utilize design patterns, and get your Hadoop cluster up and running quickly and easily Details how to use Hadoop applications for data mining, web analytics and personalization, large-scale text processing, data science, and problem-solving Shows you how to improve the value of your Hadoop cluster, maximize your investment in Hadoop, and avoid common pitfalls when building your Hadoop cluster From programmers challenged with building and maintaining affordable, scaleable data systems to administrators who must deal with huge volumes of information effectively and efficiently, this how-to has something to help you with Hadoop.

Analyze vast amounts of data in record time using Apache Spark with Databricks in the Cloud. Learn the fundamentals, and more, of running analytics on large clusters in Azure and AWS, using Apache Spark with Databricks on top. Discover how to squeeze the most value out of

your data at a mere fraction of what classical analytics solutions cost, while at the same time getting the results you need, incrementally faster. This book explains how the confluence of these pivotal technologies gives you enormous power, and cheaply, when it comes to huge datasets. You will begin by learning how cloud infrastructure makes it possible to scale your code to large amounts of processing units, without having to pay for the machinery in advance. From there you will learn how Apache Spark, an open source framework, can enable all those CPUs for data analytics use. Finally, you will see how services such as Databricks provide the power of Apache Spark, without you having to know anything about configuring hardware or software. By removing the need for expensive experts and hardware, your resources can instead be allocated to actually finding business value in the data. This book guides you through some advanced topics such as analytics in the cloud, data lakes, data ingestion, architecture, machine learning, and tools, including Apache Spark, Apache Hadoop, Apache Hive, Python, and SQL. Valuable exercises help reinforce what you have learned. What You Will Learn Discover the value of big data analytics that leverage the power of the cloud Get started with Databricks using SQL and Python in either Microsoft Azure or AWS Understand the underlying technology, and how the cloud and Apache Spark fit into the bigger picture See how these tools are used in the real world Run basic analytics, including machine learning, on billions of rows at a fraction of a cost or free Who This Book Is For Data engineers, data scientists, and cloud architects who want or need to run advanced analytics in the cloud. It is assumed that the reader has data experience, but perhaps minimal exposure to Apache Spark and Azure Databricks. The book is also recommended for people who want to get started in the analytics field, as it provides a strong foundation.

Summary Hadoop in Practice, Second Edition provides over 100 tested, instantly useful techniques that will help you conquer big data, using Hadoop. This revised new edition covers changes and new features in the Hadoop core architecture, including MapReduce 2. Brand new chapters cover YARN and integrating Kafka, Impala, and Spark SQL with Hadoop. You'll also get new and updated techniques for Flume, Sqoop, and Mahout, all of which have seen major new versions recently. In short, this is the most practical, up-to-date coverage of Hadoop available anywhere. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Book It's always a good time to upgrade your Hadoop skills! Hadoop in Practice, Second Edition provides a collection of 104 tested, instantly useful techniques for analyzing real-time streams, moving data securely, machine learning, managing large-scale clusters, and taming big data using Hadoop. This completely revised edition covers changes and new features in Hadoop core, including MapReduce 2 and YARN. You'll pick up hands-on best practices for integrating Spark, Kafka, and Impala with Hadoop, and get new and updated techniques for the latest versions of Flume, Sqoop, and Mahout. In short, this is the most practical, up-to-date coverage of Hadoop available. Readers need to know a programming language like Java and have basic familiarity with Hadoop. What's Inside Thoroughly updated for Hadoop 2 How to write YARN applications Integrate real-time technologies like Storm, Impala, and Spark Predictive analytics using Mahout and RR Readers need to know a programming language like Java and have basic familiarity with Hadoop. About the Author Alex Holmes works on tough big-data problems. He is a software engineer, author, speaker, and blogger specializing in large-scale Hadoop projects. Table of Contents PART 1 BACKGROUND AND FUNDAMENTALS Hadoop in a heartbeat Introduction to YARN PART 2 DATA LOGISTICS Data serialization—working with text and beyond Organizing and optimizing data in HDFS Moving data into and out of Hadoop PART 3 BIG DATA PATTERNS Applying MapReduce patterns to big data Utilizing data structures and algorithms at scale Tuning, debugging, and testing PART 4 BEYOND MAPREDUCE SQL on Hadoop Writing a YARN application

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 two-volume set LNCS 9981 and 9982 constitutes the refereed proceedings of the 15th International Semantic Web Conference, ISWC 2016, which was held in Kobe, Japan, in October 2016. The 75 full papers presented in these proceedings were carefully reviewed and selected from 326 submissions. The International Semantic Web Conference is the premier forum for Semantic Web research, where cutting edge scientific results and technological innovations are presented, where problems and solutions are discussed, and where the future of this vision is being developed. It brings together specialists in fields such as artificial intelligence, databases, social networks, distributed computing, Web engineering, information systems, human-computer interaction, natural language processing, and the social sciences. The Research Track solicited novel and significant research contributions addressing theoretical, analytical, empirical, and practical aspects of the Semantic Web. The Applications Track solicited submissions exploring the benefits and challenges of applying semantic technologies in concrete, practical applications, in contexts ranging from industry to government and science. The newly introduced Resources Track sought submissions providing a concise and clear description of a resource and its (expected) usage. Traditional resources include ontologies, vocabularies, datasets, benchmarks and replication studies, services and software. Besides more established types of resources, the track solicited submissions of new types of resources such as ontology design patterns, crowdsourcing task designs, workflows, methodologies, and protocols and measures.

Learn Azure in a Month of Lunches, Second Edition, is a tutorial on writing, deploying, and running applications in Azure. In it, you'll work through 21 short lessons that give you real-world experience. Each lesson includes a hands-on lab so you can try out and lock in your new skills. Summary You can be incredibly productive with Azure without mastering every feature, function, and service. Learn Azure in a Month of Lunches, Second Edition gets you up and running quickly, teaching you the most important concepts and tasks in 21 practical bite-sized lessons. As you explore the examples, exercises, and labs, you'll pick up valuable skills immediately and take your first steps to Azure mastery! This fully revised new edition covers core changes to the Azure UI, new Azure features, Azure containers, and the upgraded Azure Kubernetes Service. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Microsoft Azure is vast and powerful, offering virtual servers, application templates, and prebuilt services for everything from data storage to AI. To navigate it all, you need a trustworthy guide. In this book, Microsoft engineer and Azure trainer Iain Foulds focuses on core skills for creating cloud-based applications. About the book Learn Azure in a Month of Lunches, Second Edition, is a tutorial on writing, deploying, and running applications in Azure. In it, you'll work through 21 short lessons that give you real-world experience. Each lesson includes a hands-on lab so you can try out and lock in your new skills. What's inside Understanding Azure beyond point-and-click



Securing applications and data Automating your environment Azure services for machine learning, containers, and more About the reader This book is for readers who can write and deploy simple web or client/server applications. About the author Iain Foulds is an engineer and senior content developer with Microsoft. Table of Contents PART 1 - AZURE CORE SERVICES 1 Before you begin 2 Creating a virtual machine 3 Azure Web Apps 4 Introduction to Azure Storage 5 Azure Networking basics PART 2 - HIGH AVAILABILITY AND SCALE 6 Azure Resource Manager 7 High availability and redundancy 8 Load-balancing applications 9 Applications that scale 10 Global databases with Cosmos DB 11 Managing network traffic and routing 12 Monitoring and troubleshooting PART 3 - SECURE BY DEFAULT 13 Backup, recovery, and replication 14 Data encryption 15 Securing information with Azure Key Vault 16 Azure Security Center and updates PART 4 - THE COOL STUFF 17 Machine learning and artificial intelligence 18 Azure Automation 19 Azure containers 20 Azure and the Internet of Things 21 Serverless computing

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 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.

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.

Combine the power of Apache Spark and Python to build effective big data applications Key Features Perform effective data processing, machine learning, and analytics using PySpark Overcome challenges in developing and deploying Spark solutions using Python Explore recipes for efficiently combining Python and Apache Spark to process data Book Description Apache Spark is an open source framework for efficient cluster computing with a strong interface for data parallelism and fault tolerance. The PySpark Cookbook presents effective and time-saving recipes for leveraging the power of Python and putting it to use in the Spark ecosystem. You'll start by learning the Apache Spark architecture and how to set up a Python environment for Spark. You'll then get familiar with the modules available in PySpark and start using them effortlessly. In addition to this, you'll discover how to abstract data with RDDs and DataFrames, and understand the streaming capabilities of PySpark. You'll then move on to using ML and MLlib in order to solve any problems related to the machine learning capabilities of PySpark and use GraphFrames to solve graph-processing problems. Finally, you will explore how to deploy your applications to the cloud using the spark-submit command. By the end of this book, you will be able to use the Python API for Apache Spark to solve any problems associated with building data-intensive applications. What you will learn Configure a local instance of PySpark in a virtual environment Install and configure Jupyter in local and multi-node environments Create DataFrames from JSON and a dictionary using pyspark.sql Explore regression and clustering models available in the ML module Use DataFrames to transform data used for modeling Connect to PubNub and perform aggregations on streams Who this book is for The PySpark Cookbook is for you if you are a Python developer looking for hands-on recipes for using the Apache Spark 2.x ecosystem in the best possible way. A thorough understanding of Python (and some familiarity with Spark) will help you get the best out of the book.

There's growing interest in learning how to analyze streaming data in large-scale systems such as web traffic, financial transactions, machine logs, industrial sensors, and many others. But analyzing data streams at scale has been difficult to do well—until now. This practical book delivers a deep introduction to Apache Flink, a highly innovative open source stream processor with a surprising range of capabilities. Authors Ellen Friedman and Kostas Tzoumas show technical and nontechnical readers alike how Flink is engineered to overcome significant tradeoffs that have limited the effectiveness of other approaches to stream processing. You'll also learn how Flink has the ability to handle both stream and batch data processing with one technology. Learn the consequences of not doing streaming well—in retail and marketing, IoT, telecom, and banking and finance Explore how to design data architecture to gain the best advantage from stream processing Get an overview of Flink's capabilities and features, along with examples of how companies use Flink, including in production Take a technical dive into Flink, and learn how it handles time and stateful computation



Examine how Flink processes both streaming (unbounded) and batch (bounded) data without sacrificing performance

Work with Apache Spark using Scala to deploy and set up single-node, multi-node, and high-availability clusters. This book discusses various components of Spark such as Spark Core, DataFrames, Datasets and SQL, Spark Streaming, Spark MLlib, and R on Spark with the help of practical code snippets for each topic. Practical Apache Spark also covers the integration of Apache Spark with Kafka with examples. You'll follow a learn-to-do-by-yourself approach to learning – learn the concepts, practice the code snippets in Scala, and complete the assignments given to get an overall exposure. On completion, you'll have knowledge of the functional programming aspects of Scala, and hands-on expertise in various Spark components. You'll also become familiar with machine learning algorithms with real-time usage. What You Will Learn Discover the functional programming features of Scala Understand the complete architecture of Spark and its components Integrate Apache Spark with Hive and Kafka Use Spark SQL, DataFrames, and Datasets to process data using traditional SQL queries Work with different machine learning concepts and libraries using Spark's MLlib packages Who This Book Is For Developers and professionals who deal with batch and stream data processing.

In this practical book, four Cloudera data scientists present a set of self-contained patterns for performing large-scale data analysis with Spark. The authors bring Spark, statistical methods, and real-world data sets together to teach you how to approach analytics problems by example. You'll start with an introduction to Spark and its ecosystem, and then dive into patterns that apply common techniques—classification, collaborative filtering, and anomaly detection among others—to fields such as genomics, security, and finance. If you have an entry-level understanding of machine learning and statistics, and you program in Java, Python, or Scala, you'll find these patterns useful for working on your own data applications. Patterns include: Recommending music and the Audioscrobbler data set Predicting forest cover with decision trees Anomaly detection in network traffic with K-means clustering Understanding Wikipedia with Latent Semantic Analysis Analyzing co-occurrence networks with GraphX Geospatial and temporal data analysis on the New York City Taxi Trips data Estimating financial risk through Monte Carlo simulation Analyzing genomics data and the BDG project Analyzing neuroimaging data with PySpark and Thunder

Solve Data Analytics Problems with Spark, PySpark, and Related Open Source Tools Spark is at the heart of today's Big Data revolution, helping data professionals supercharge efficiency and performance in a wide range of data processing and analytics tasks. In this guide, Big Data expert Jeffrey Aven covers all you need to know to leverage Spark, together with its extensions, subprojects, and wider ecosystem. Aven combines a language-agnostic introduction to foundational Spark concepts with extensive programming examples utilizing the popular and intuitive PySpark development environment. This guide's focus on Python makes it widely accessible to large audiences of data professionals, analysts, and developers—even those with little Hadoop or Spark experience. Aven's broad coverage ranges from basic to advanced Spark programming, and Spark SQL to machine learning. You'll learn how to efficiently manage all forms of data with Spark: streaming, structured, semi-structured, and unstructured. Throughout, concise topic overviews quickly get you up to speed, and

extensive hands-on exercises prepare you to solve real problems. Coverage includes:

- Understand Spark's evolving role in the Big Data and Hadoop ecosystems
- Create Spark clusters using various deployment modes
- Control and optimize the operation of Spark clusters and applications
- Master Spark Core RDD API programming techniques
- Extend, accelerate, and optimize Spark routines with advanced API platform constructs, including shared variables, RDD storage, and partitioning
- Efficiently integrate Spark with both SQL and nonrelational data stores
- Perform stream processing and messaging with Spark Streaming and Apache Kafka
- Implement predictive modeling with SparkR and Spark MLlib

Annotation In just 24 sessions of one hour or less, "Sams Teach Yourself Arduino Programming in 24 Hours" teaches you C programming on Arduino, so you can start creating inspired "DIY" hardware projects of your own. Using this book's straightforward, step-by-step approach, you'll walk through everything from setting up your programming environment to mastering C syntax and features, interfacing your Arduino to performing full-fledged prototyping. Every hands-on lesson and example builds on what you've already learned, giving you a rock-solid foundation for real-world success. "Step-by-step instructions carefully walk you through the most common Arduino programming tasks. Quizzes at the end of each chapter help you test your knowledge. By the Way notes present interesting information related to the discussion. Did You Know? tips offer advice or show you easier ways to perform tasks. Watch Out cautions alert you to possible problems and give you advice on how to avoid them. Learn how to ... Get the right Arduino hardware and accessories for your needs. Download the Arduino IDE, install it, and link it to your Arduino. Quickly create, compile, upload, and run your first Arduino program. Master C syntax, decision control, strings, data structures, and functions. Use pointers to work with memory--and avoid common mistakes. Store data on your Arduino's EEPROM or an external SD card. Use existing hardware libraries, or create your own. Send output and read input from analog devices or digital interfaces. Create and handle interrupts in software and hardware. Communicate with devices via the SPI interface and I2C protocol. Work with analog and digital sensors. Write Arduino C programs that control motors. Connect an LCD to your Arduino, and code the output. Install an Ethernet shield, configure an Ethernet connection, and write networking programs. Create prototyping environments, use prototyping shields, and interface electronics to your Arduino.

Sams Teach Yourself SQL in 10 Minutes, Fourth Edition New full-color code examples help you see how SQL statements are structured. Whether you're an application developer, database administrator, web application designer, mobile app developer, or Microsoft Office users, a good working knowledge of SQL is an important part of interacting with databases. And Sams Teach Yourself SQL in 10 Minutes offers the straightforward, practical answers you need to help you do your job. Expert trainer and popular author Ben Forta teaches you just the parts of SQL you need to know--starting with simple data retrieval and quickly going on to more complex topics including the use of joins, subqueries, stored procedures, cursors, triggers, and table constraints. You'll learn methodically, systematically, and simply--in 22 short, quick lessons that will each take only 10 minutes or less to complete. With the Fourth Edition of this worldwide bestseller, the book has been thoroughly updated, expanded, and improved. Lessons now cover the latest versions of IBM DB2, Microsoft Access, Microsoft SQL Server,

MySQL, Oracle, PostgreSQL, SQLite, MariaDB, and Apache Open Office Base. And new full-color SQL code listings help the beginner clearly see the elements and structure of the language. 10 minutes is all you need to learn how to... Use the major SQL statements Construct complex SQL statements using multiple clauses and operators Retrieve, sort, and format database contents Pinpoint the data you need using a variety of filtering techniques Use aggregate functions to summarize data Join two or more related tables Insert, update, and delete data Create and alter database tables Work with views, stored procedures, and more Table of Contents 1 Understanding SQL 2 Retrieving Data 3 Sorting Retrieved Data 4 Filtering Data 5 Advanced Data Filtering 6 Using Wildcard Filtering 7 Creating Calculated Fields 8 Using Data Manipulation Functions 9 Summarizing Data 10 Grouping Data 11 Working with Subqueries 12 Joining Tables 13 Creating Advanced Joins 14 Combining Queries 15 Inserting Data 16 Updating and Deleting Data 17 Creating and Manipulating Tables 18 Using Views 19 Working with Stored Procedures 20 Managing Transaction Processing 21 Using Cursors 22 Understanding Advanced SQL Features Appendix A: Sample Table Scripts Appendix B: Working in Popular Applications Appendix C : SQL Statement Syntax Appendix D: Using SQL Datatypes Appendix E: SQL Reserved Words

Work with petabyte-scale datasets while building a collaborative, agile workplace in the process. This practical book is the canonical reference to Google BigQuery, the query engine that lets you conduct interactive analysis of large datasets. BigQuery enables enterprises to efficiently store, query, ingest, and learn from their data in a convenient framework. With this book, you'll examine how to analyze data at scale to derive insights from large datasets efficiently. Valliappa Lakshmanan, tech lead for Google Cloud Platform, and Jordan Tigani, engineering director for the BigQuery team, provide best practices for modern data warehousing within an autoscaled, serverless public cloud. Whether you want to explore parts of BigQuery you're not familiar with or prefer to focus on specific tasks, this reference is indispensable.

This IBM® Redbooks® publication provides topics to help the technical community take advantage of the resilience, scalability, and performance of the IBM Power Systems™ platform to implement or integrate an IBM Data Engine for Hadoop and Spark solution for analytics solutions to access, manage, and analyze data sets to improve business outcomes. This book documents topics to demonstrate and take advantage of the analytics strengths of the IBM POWER8® platform, the IBM analytics software portfolio, and selected third-party tools to help solve customer's data analytic workload requirements. This book describes how to plan, prepare, install, integrate, manage, and show how to use the IBM Data Engine for Hadoop and Spark solution to run analytic workloads on IBM POWER8. In addition, this publication delivers documentation to complement available IBM analytics solutions to help your data analytic needs. This publication strengthens the position of IBM analytics and big data solutions with a well-defined and documented deployment model within an IBM POWER8 virtualized environment so that customers have a planned foundation for security, scaling, capacity, resilience, and optimization for analytics workloads. This book is targeted at technical professionals (analytics consultants, technical support



staff, IT Architects, and IT Specialists) that are responsible for delivering analytics solutions and support on IBM Power Systems.

In this book, you'll learn to implement some practical and proven techniques to improve aspects of programming and administration in Apache Spark.

Techniques are demonstrated using practical examples and best practices. You will also learn how to use Spark and its Python API to create performant analytics with large-scale data.

Sams Teach Yourself Big Data Analytics with Microsoft HDInsight in 24 Hours In just 24 lessons of one hour or less, Sams Teach Yourself Big Data Analytics with Microsoft HDInsight in 24 Hours helps you leverage Hadoop's power on a flexible, scalable cloud platform using Microsoft's newest business intelligence, visualization, and productivity tools. This book's straightforward, step-by-step approach shows you how to provision, configure, monitor, and troubleshoot HDInsight and use Hadoop cloud services to solve real analytics problems. You'll gain more of Hadoop's benefits, with less complexity—even if you're completely new to Big Data analytics. Every lesson builds on what you've already learned, giving you a rock-solid foundation for real-world success. Practical, hands-on examples show you how to apply what you learn Quizzes and exercises help you test your knowledge and stretch your skills Notes and tips point out shortcuts and solutions Learn how to... · Master core Big Data and NoSQL concepts, value propositions, and use cases · Work with key Hadoop features, such as HDFS2 and YARN · Quickly install, configure, and monitor Hadoop (HDInsight) clusters in the cloud · Automate provisioning, customize clusters, install additional Hadoop projects, and administer clusters · Integrate, analyze, and report with Microsoft BI and Power BI · Automate workflows for data transformation, integration, and other tasks · Use Apache HBase on HDInsight · Use Sqoop or SSIS to move data to or from HDInsight · Perform R-based statistical computing on HDInsight datasets · Accelerate analytics with Apache Spark · Run real-time analytics on high-velocity data streams · Write MapReduce, Hive, and Pig programs Register your book at [informit.com/register](http://informit.com/register) for convenient access to downloads, updates, and corrections as they become available.

Data is bigger, arrives faster, and comes in a variety of formats—and it all needs to be processed at scale for analytics or machine learning. But how can you process such varied workloads efficiently? Enter Apache Spark. Updated to include Spark 3.0, this second edition shows data engineers and data scientists why structure and unification in Spark matters. Specifically, this book explains how to perform simple and complex data analytics and employ machine learning algorithms. Through step-by-step walk-throughs, code snippets, and notebooks, you'll be able to: Learn Python, SQL, Scala, or Java high-level Structured APIs Understand Spark operations and SQL Engine Inspect, tune, and debug Spark operations with Spark configurations and Spark UI Connect to data sources: JSON, Parquet, CSV, Avro, ORC, Hive, S3, or Kafka Perform analytics on batch and streaming data using Structured Streaming Build reliable data pipelines with

open source Delta Lake and Spark Develop machine learning pipelines with MLlib and productionize models using MLflow

Apache Spark in 24 Hours, Sams Teach Yourself Sams Publishing

If you've been asked to maintain large and complex Hadoop clusters, this book is a must. Demand for operations-specific material has skyrocketed now that Hadoop is becoming the de facto standard for truly large-scale data processing in the data center. Eric Sammer, Principal Solution Architect at Cloudera, shows you the particulars of running Hadoop in production, from planning, installing, and configuring the system to providing ongoing maintenance. Rather than run through all possible scenarios, this pragmatic operations guide calls out what works, as demonstrated in critical deployments. Get a high-level overview of HDFS and MapReduce: why they exist and how they work Plan a Hadoop deployment, from hardware and OS selection to network requirements Learn setup and configuration details with a list of critical properties Manage resources by sharing a cluster across multiple groups Get a runbook of the most common cluster maintenance tasks Monitor Hadoop clusters—and learn troubleshooting with the help of real-world war stories Use basic tools and techniques to handle backup and catastrophic failure

Apache Spark is amazing when everything clicks. But if you haven't seen the performance improvements you expected, or still don't feel confident enough to use Spark in production, this practical book is for you. Authors Holden Karau and Rachel Warren demonstrate performance optimizations to help your Spark queries run faster and handle larger data sizes, while using fewer resources. Ideal for software engineers, data engineers, developers, and system administrators working with large-scale data applications, this book describes techniques that can reduce data infrastructure costs and developer hours. Not only will you gain a more comprehensive understanding of Spark, you'll also learn how to make it sing. With this book, you'll explore: How Spark SQL's new interfaces improve performance over SQL's RDD data structure The choice between data joins in Core Spark and Spark SQL Techniques for getting the most out of standard RDD transformations How to work around performance issues in Spark's key/value pair paradigm Writing high-performance Spark code without Scala or the JVM How to test for functionality and performance when applying suggested improvements Using Spark MLlib and Spark ML machine learning libraries Spark's Streaming components and external community packages

Apache Hadoop is the technology at the heart of the Big Data revolution, and Hadoop skills are in enormous demand. Now, in just 24 lessons of one hour or less, you can learn all the skills and techniques you'll need to deploy each key component of a Hadoop platform in your local environment or in the cloud, building a fully functional Hadoop cluster and using it with real programs and datasets. Each short, easy lesson builds on all that's come before, helping you master all of Hadoop's essentials, and extend it to meet your unique challenges.

Apache Hadoop in 24 Hours, Sams Teach Yourself covers all this, and much more: Understanding Hadoop and the Hadoop Distributed File System (HDFS) Importing data into Hadoop, and process it there Mastering basic MapReduce Java programming, and using advanced MapReduce API concepts Making the most of Apache Pig and Apache Hive Implementing and administering YARN Taking advantage of the full Hadoop ecosystem Managing Hadoop clusters with Apache Ambari Working with the Hadoop User Environment (HUE) Scaling, securing, and troubleshooting Hadoop environments Integrating Hadoop into the enterprise Deploying Hadoop in the cloud Getting started with Apache Spark Step-by-step instructions walk you through common questions, issues, and tasks; Q-and-As, Quizzes, and Exercises build and test your knowledge; "Did You Know?" tips offer insider advice and shortcuts; and "Watch Out!" alerts help you avoid pitfalls. By the time you're finished, you'll be comfortable using Apache Hadoop to solve a wide spectrum of Big Data problems.

Before you can build analytics tools to gain quick insights, you first need to know how to process data in real time. With this practical guide, developers familiar with Apache Spark will learn how to put this in-memory framework to use for streaming data. You'll discover how Spark enables you to write streaming jobs in almost the same way you write batch jobs. Authors Gerard Maas and François Garillot help you explore the theoretical underpinnings of Apache Spark. This comprehensive guide features two sections that compare and contrast the streaming APIs Spark now supports: the original Spark Streaming library and the newer Structured Streaming API. Learn fundamental stream processing concepts and examine different streaming architectures Explore Structured Streaming through practical examples; learn different aspects of stream processing in detail Create and operate streaming jobs and applications with Spark Streaming; integrate Spark Streaming with other Spark APIs Learn advanced Spark Streaming techniques, including approximation algorithms and machine learning algorithms Compare Apache Spark to other stream processing projects, including Apache Storm, Apache Flink, and Apache Kafka Streams

Big Data Analytics with Spark is a step-by-step guide for learning Spark, which is an open-source fast and general-purpose cluster computing framework for large-scale data analysis. You will learn how to use Spark for different types of big data analytics projects, including batch, interactive, graph, and stream data analysis as well as machine learning. In addition, this book will help you become a much sought-after Spark expert. Spark is one of the hottest Big Data technologies. The amount of data generated today by devices, applications and users is exploding. Therefore, there is a critical need for tools that can analyze large-scale data and unlock value from it. Spark is a powerful technology that meets that need. You can, for example, use Spark to perform low latency computations through the use of efficient caching and iterative algorithms; leverage the features of its shell for easy and interactive Data analysis; employ its fast batch processing and low latency features to process your real time data streams and so on. As a result, adoption of Spark is rapidly growing and is replacing Hadoop MapReduce as the technology of choice for big data analytics. This book provides an introduction to Spark and related big-data technologies. It covers Spark core and its add-on libraries, including Spark SQL, Spark Streaming, GraphX, and MLlib. Big Data Analytics with Spark is therefore written for busy professionals who prefer learning a new technology from a consolidated source instead of spending countless hours on the Internet trying to pick bits and pieces from different sources. The book also provides a chapter on Scala, the hottest functional programming language, and the program that underlies Spark. You'll learn the basics of functional programming in Scala, so that you can write Spark applications in it.



What's more, Big Data Analytics with Spark provides an introduction to other big data technologies that are commonly used along with Spark, like Hive, Avro, Kafka and so on. So the book is self-sufficient; all the technologies that you need to know to use Spark are covered. The only thing that you are expected to know is programming in any language. There is a critical shortage of people with big data expertise, so companies are willing to pay top dollar for people with skills in areas like Spark and Scala. So reading this book and absorbing its principles will provide a boost—possibly a big boost—to your career.

Learn the basics of analytics on big data using Java, machine learning and other big data tools  
About This Book Acquire real-world set of tools for building enterprise level data science applications  
Surpasses the barrier of other languages in data science and learn create useful object-oriented codes  
Extensive use of Java compliant big data tools like apache spark, Hadoop, etc. Who This Book Is For This book is for Java developers who are looking to perform data analysis in production environment. Those who wish to implement data analysis in their Big data applications will find this book helpful. What You Will Learn Start from simple analytic tasks on big data Get into more complex tasks with predictive analytics on big data using machine learning Learn real time analytic tasks Understand the concepts with examples and case studies Prepare and refine data for analysis Create charts in order to understand the data See various real-world datasets In Detail This book covers case studies such as sentiment analysis on a tweet dataset, recommendations on a movielens dataset, customer segmentation on an ecommerce dataset, and graph analysis on actual flights dataset. This book is an end-to-end guide to implement analytics on big data with Java. Java is the de facto language for major big data environments, including Hadoop. This book will teach you how to perform analytics on big data with production-friendly Java. This book basically divided into two sections. The first part is an introduction that will help the readers get acquainted with big data environments, whereas the second part will contain a hardcore discussion on all the concepts in analytics on big data. It will take you from data analysis and data visualization to the core concepts and advantages of machine learning, real-life usage of regression and classification using Naive Bayes, a deep discussion on the concepts of clustering, and a review of simple neural networks on big data using deepLearning4j or plain Java Spark code. This book is a must-have book for Java developers who want to start learning big data analytics and want to use it in the real world. Style and approach The approach of book is to deliver practical learning modules in manageable content. Each chapter is a self-contained unit of a concept in big data analytics. Book will step by step builds the competency in the area of big data analytics. Examples using real world case studies to give ideas of real applications and how to use the techniques mentioned. The examples and case studies will be shown using both theory and code.

If you're a business team leader, CIO, business analyst, or developer interested in how Apache Hadoop and Apache HBase-related technologies can address problems involving large-scale data in cost-effective ways, this book is for you. Using real-world stories and situations, authors Ted Dunning and Ellen Friedman show Hadoop newcomers and seasoned users alike how NoSQL databases and Hadoop can solve a variety of business and research issues. You'll learn about early decisions and pre-planning that can make the process easier and more productive. If you're already using these technologies, you'll discover ways to gain the full range of benefits possible with Hadoop. While you don't need a deep technical background to get started, this book does provide expert guidance to help managers, architects, and practitioners succeed with their Hadoop projects. Examine a day in the life of big data: India's ambitious Aadhaar project Review tools in the Hadoop ecosystem such as Apache's Spark, Storm, and Drill to learn how they can help you Pick up a collection of technical and strategic tips that have helped others succeed with Hadoop Learn from several prototypical Hadoop use cases, based on how organizations have actually applied the

technology Explore real-world stories that reveal how MapR customers combine use cases when putting Hadoop and NoSQL to work, including in production

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

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

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

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

[Copyright: c536348b2ed526b0fc83dbbd76fa5e85](https://www.sams.org/c536348b2ed526b0fc83dbbd76fa5e85)