OMB No. 0435969817814

Spark Architecture Distributed Systems Architecture

Apache Spark Architecture | Spark Cluster Architecture Explained | Spark Training | Edureka Spark Architecture in 3 minutes| Spark components | How spark works Spark architecture explained!! Spark Standalone Architecture Learn Apache Spark in 10 Minutes | Step by Step Guide Four Distributed Systems Architectural Patterns by Tim Berglund Spark Architecture in Depth Part1 Architecture of Distributed Systems Top 5 Most Used Architecture Patterns Top 7 Most-Used Distributed System Patterns Apache Spark Architecture : Run Time Architecture of Spark Application Apache Spark Architecture with Spark Context Driver and Executor What Is Apache Spark? 4. Spark Architecture This should be your first distributed systems design book Introduction to Spark Architecture

Distributed Computing and Artificial Intelligence, 14th International Conference
An Introduction for Data Scientists
Data-intensive Systems
Spark in Action
19th International Conference, ICA3PP 2019, Melbourne, VIC, Australia, December 9–11, 2019, Proceedings, Part I
Optimizing Databricks Workloads
BIG DATA ANALYTICS
Beginning Spark
15th International Conference, ICAISC 2016, Zakopane, Poland, June 12-16, 2016, Proceedings, Part I
A Distributed Architecture for the Monitoring and Analysis of Time Series Data
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Distributed Object-Oriented Architectures
Information Systems Design and Intelligent Applications

Spark Architecture Distributed Systems Architecture *OMB No. 0435969817814 edited by*

MOSHE NATHALIA

Distributed Computing and Artificial Intelligence, 14th International Conference

BoD – Books on Demand

The volume presents high quality papers presented at the Second International Conference on Microelectronics, Computing & Communication Systems (MCCS 2017). The book discusses recent trends in technology and advancement in MEMS and nanoelectronics, wireless communications, optical communication, instrumentation, signal processing, image processing, bioengineering, green energy, hybrid vehicles, environmental science, weather forecasting, cloud computing, renewable energy, RFID, CMOS sensors, actuators, transducers, telemetry systems, embedded systems, and sensor network applications. It includes original papers based on original theoretical, practical, experimental, simulations, development, application, measurement, and testing. The applications and solutions discussed in the book will serve as a good reference material for future works.

An Introduction for Data Scientists

Information Systems Design and Intelligent ApplicationsProceedings of Fourth International Conference INDIA 2017

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 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.

Data-intensive Systems IOS Press

This four volume set LNCS 9528, 9529, 9530 and 9531 constitutes the refereed proceedings of the 15th International Conference on Algorithms and Architectures for Parallel Processing, ICA3PP 2015, held in Zhangjiajie, China, in November 2015. The 219 revised full papers presented together with 77 workshop papers in these four volumes were carefully reviewed and selected from 807 submissions (602 full papers and 205 workshop papers). The first volume comprises the following topics: parallel and distributed architectures; distributed and network-based computing and internet of things and cyber-physical-social computing. The second volume comprises topics such as big data and its applications and parallel and distributed algorithms. The topics of the third volume are: applications of parallel and distributed computing and service dependability and security in distributed and parallel systems. The covered topics of the fourth volume are: software systems and programming models and performance modeling and evaluation.

Spark in Action

Springer

Parallel Computing Architectures and APIs: IoT Big Data Stream Processing commences from the point high-performance uniprocessors were becoming increasingly complex, expensive, and power-hungry. A basic trade-off exists between the use of one or a small number of such complex processors, at one extreme, and a moderate to very large number of simpler processors, at the other. When combined with a high-bandwidth, interprocessor communication facility leads to significant simplification of the design process. However, two major roadblocks prevent the widespread adoption of such moderately to massively parallel architectures: the interprocessor communication bottleneck, and the difficulty and high cost of

algorithm/software development. One of the most important reasons for studying parallel computing architectures is to learn how to extract the best performance from parallel systems. Specifically, you must understand its architectures so that you will be able to exploit those architectures during programming via the standardized APIs. This book would be useful for analysts, designers and developers of high-throughput computing systems essential for big data stream processing emanating from IoT-driven cyber-physical systems (CPS). This pragmatic book: Devolves uniprocessors in terms of a ladder of abstractions to ascertain (say) performance characteristics at a particular level of abstraction Explains limitations of uniprocessor high performance because of Moore's Law Introduces basics of processors, networks and distributed systems Explains characteristics of parallel systems, parallel computing models and parallel algorithms Explains the three primary categorical representatives of parallel computing architectures, namely, shared memory, message passing and stream processing Introduces the three primary categorical representatives of parallel programming APIs, namely, OpenMP, MPI and CUDA Provides an overview of Internet of Things (IoT), wireless sensor networks (WSN), sensor data processing, Big Data and stream processing Provides introduction to 5G communications, Edge and Fog computing Parallel Computing Architectures and APIs: IoT Big Data Stream Processing discusses stream processing that enables the gathering, processing and analysis of high-volume, heterogeneous, continuous Internet of Things (IoT) big data streams, to extract insights and actionable results in real time. Application domains requiring data stream management include military, homeland security, sensor networks, financial applications, network management, web site performance tracking, real-time credit card fraud detection, etc.

19th International Conference, ICA3PP 2019, Melbourne, VIC, Australia, December 9–11, 2019, Proceedings, Part I John Wiley & Sons

This book comprises select proceedings of the 4th International Conference on Innovative Computing (IC 2021) focusing on cutting-edge research carried out in the areas of information technology, science, and engineering. Some of the themes covered in this book are cloud communications and networking, high performance computing, architecture for secure and interactive IoT, satellite communication, wearable network and system, infrastructure management, etc. The essays are written by leading international experts, making it a valuable resource for researchers and practicing engineers alike.

Optimizing Databricks Workloads Ruairí O'Reilly

Information Systems Design and Intelligent ApplicationsProceedings of Fourth International Conference INDIA 2017Springer

BIG DATA ANALYTICS CRC Press

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

Beginning Spark Morgan & Claypool

Accelerate computations and make the most of your data effectively and efficiently on Databricks Key Features Understand Spark optimizations for big data workloads and maximizing performance Build efficient big data engineering pipelines with Databricks and Delta Lake Efficiently manage Spark clusters for big data processing Book Description Databricks is an industry-leading, cloud-based platform for data analytics, data science, and data engineering supporting thousands of organizations across the world in their data journey. It is a fast, easy, and collaborative Apache Spark-based big data analytics platform for data science and data engineering in the cloud. In Optimizing Databricks Workloads, you will get started with a brief introduction to Azure Databricks and quickly begin to understand the important optimization techniques. The book covers how to select the optimal Spark cluster configuration for running big data processing and workloads in Databricks, some very useful optimization techniques for Spark DataFrames, best practices for optimizing Delta Lake, and techniques to optimize Spark jobs through Spark core. It contains an opportunity to learn about some of the real-world scenarios where optimizing workloads in Databricks has helped organizations increase performance and save costs across various domains. By the end of this book, you will be prepared with the necessary toolkit to speed up your Spark jobs and process your data more efficiently. What you will learn Get to grips with Spark fundamentals and the Databricks platform Process big data using the Spark DataFrame API with Delta Lake Analyze data using graph processing in Databricks Use MLflow to manage machine learning life cycles in Databricks Find out how to choose the right cluster configuration for your workloads Explore file compaction and clustering methods to tune Delta tables Discover advanced optimization techniques to speed up Spark jobs Who this book is for This book is for data engineers, data scientists, and cloud architects who have working knowledge of Spark/Databricks and some basic understanding of data engineering principles. Readers will need to have a working knowledge of Python, and some experience of SQL in PySpark and Spark SQL is beneficial.

15th International Conference, ICAISC 2016, Zakopane, Poland, June 12-16, 2016, Proceedings, Part I Springer Nature

To provide the necessary security and quality assurance activities into Internet of Things (IoT)-based software development, innovative engineering practices are vital. They must be given an even higher level

of importance than most other events in the field. Integrating the Internet of Things Into Software Engineering Practices provides research on the integration of IoT into the software development life cycle (SDLC) in terms of requirements management, analysis, design, coding, and testing, and provides security and quality assurance activities to IoT-based software development. The content within this publication covers agile software, language specification, and collaborative software and is designed for analysts, security experts, IoT software programmers, computer and software engineers, students, professionals, and researchers.

A Distributed Architecture for the Monitoring and Analysis of Time Series Data IGI Global

Distributed systems intertwine with our everyday lives. The benefits and current shortcomings of the underpinning technologies are experienced by a wide range of people and their smart devices. With the rise of large-scale IoT and similar distributed systems, cloud bursting technologies, and partial outsourcing solutions, private entities are encouraged to increase their efficiency and offer unparalleled availability and reliability to their users. The Research Anthology on Architectures, Frameworks, and Integration Strategies for Distributed and Cloud Computing is a vital reference source that provides valuable insight into current and emergent research occurring within the field of distributed computing. It also presents architectures and service frameworks to achieve highly integrated distributed systems and solutions to integration and efficient management challenges faced by current and future distributed systems. Highlighting a range of topics such as data sharing, wireless sensor networks, and scalability, this multi-volume book is ideally designed for system administrators, integrators, designers, developers, researchers, academicians, and students.

Creating Autonomous Vehicle Systems Springer Nature

This thesis proposes a series of multi-label learning algorithms for classification and feature selection implemented on the Apache Spark distributed computing model. Five approaches for determining the optimal architecture to speed up multi-label learning methods are presented. These approaches range from local parallelization using threads to distributed computing using independent or shared memory spaces. It is shown that the optimal approach performs hundreds of times faster than the baseline method. Three distributed multi-label k nearest neighbors methods built on top of the Spark architecture are proposed: an exact iterative method that computes pair-wise distances, an approximate tree-based method that indexes the instances across multiple nodes, and an approximate local sensitive hashing method that builds multiple hash tables to index the data. The results indicated that the predictions of the tree-based method are on par with those of an exact method while reducing the execution times in all the scenarios. The aforementioned method is then used to evaluate the quality of a selected feature subset. The optimal adaptation for a multi-label feature selection criterion is discussed and two distributed feature selection methods for multi-label problems are proposed: a method that selects the feature subset that maximizes the Euclidean norm of individual information

measures, and a method that selects the subset of features maximizing the geometric mean. The results indicate that each method excels in different scenarios depending on type of features and the number of labels. Rigorous experimental studies and statistical analyses over many multi-label metrics and datasets confirm that the proposals achieve better performances and provide better scalability to bigger data than the methods compared in the state of the art.

Data Intensive Computing Applications for Big Data CRC Press

This book constitutes the proceedings of the 20th IFIP International Conference on Distributed Applications and Interoperable Systems, DAIS 2020, which was supposed to be held in Valletta, Malta, in June 2020, as part of the 15th International Federated Conference on Distributed Computing Techniques, DisCoTec 2020. The conference was held virtually due to the COVID-19 pandemic. The 10 full papers presented together with 1 short paper and 1 invited paper were carefully reviewed and selected from 17 submissions. The papers addressed challenges in multiple application areas, such as privacy and security, cloud and systems, fault-tolerance and reproducibility, machine learning for systems, and distributed algorithms.

Covers Apache Spark 3 with Examples in Java, Python, and Scala Springer

The 14th International Symposium on Distributed Computing and Artificial Intelligence 2017 (DCAI 2017) provided a forum for presenting the application of innovative techniques to study and solve complex problems. The exchange of ideas between scientists and technicians from both the academic and industrial sector is essential to advancing the development of systems that can meet the ever-growing demands of today's society. The book brings together past experience, current work and promising future trends in distributed computing, artificial intelligence and their applications to efficiently solve real-world problems. It combines contributions in well-established and evolving areas of research, including the content of the DCAI 17 Special Sessions, which focused on multi-disciplinary and transversal aspects, such as AI-driven methods for multimodal networks and processes modeling, and secure management towards smart buildings and smart grids. The symposium was jointly organized by the Polytechnic of Porto, the Osaka Institute of Technology and the University of Salamanca. The latest event was held in Porto, Portugal, from 21st to 23rd June 2017.

Proceedings of the 4th International Conference on Innovative Computing (IC 2021) Springer

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

Euro-Par 2016: Parallel Processing Workshops aPress

The past few years have seen a major change in computing systems, as growing data volumes and stalling processor speeds require more and more applications to scale out to clusters. Today, a myriad data sources, from the Internet to business operations to scientific instruments, produce large and valuable data streams. However, the processing capabilities of single machines have not kept up with the size of data. As a result, organizations increasingly need to scale out their computations over clusters. At the same time, the speed and sophistication required of data processing have grown. In addition to simple queries, complex algorithms like machine learning and graph analysis are becoming common. And in addition to batch processing, streaming analysis of real-time data is required to let organizations take timely action. Future computing platforms will need to not only scale out traditional workloads, but support these new applications too. This book, a revised version of the 2014 ACM Dissertation Award winning dissertation, proposes an architecture for cluster computing systems that can tackle emerging data processing workloads at scale. Whereas early cluster computing systems, like MapReduce, handled batch processing, our architecture

also enables streaming and interactive queries, while keeping MapReduce's scalability and fault tolerance. And whereas most deployed systems only support simple one-pass computations (e.g., SQL queries), ours also extends to the multi-pass algorithms required for complex analytics like machine learning. Finally, unlike the specialized systems proposed for some of these workloads, our architecture allows these computations to be combined, enabling rich new applications that intermix, for example, streaming and batch processing. We achieve these results through a simple extension to MapReduce that adds primitives for data sharing, called Resilient Distributed Datasets (RDDs). We show that this is enough to capture a wide range of workloads. We implement RDDs in the open source Spark system, which we evaluate using synthetic and real workloads. Spark matches or exceeds the performance of specialized systems in many domains, while offering stronger fault tolerance properties and allowing these workloads to be combined. Finally, we examine the generality of RDDs from both a theoretical modeling perspective and a systems perspective. This version of the dissertation makes corrections throughout the text and adds a new section on the evolution of Apache Spark in industry since 2014. In addition, editing, formatting, and links for the references have been added.

Distributed Object-Oriented Architectures

O'Reilly Media

If you want to build an enterprise-quality application that uses natural language text but aren’t sure where to begin or what tools to use, this practical guide will help get you started. Alex Thomas, principal data scientist at Wisecube, shows software engineers and data scientists how to build scalable natural language processing (NLP) applications using deep learning and the Apache Spark NLP library. Through concrete examples, practical and theoretical explanations, and hands-on exercises for using NLP on the Spark processing framework, this book teaches you everything from basic linguistics and writing systems to sentiment analysis and search engines. You’ll also explore special concerns for developing text-based applications, such as performance. In four sections, you’ll learn NLP basics and building blocks before diving into application and system building: Basics: Understand the fundamentals of natural language processing, NLP on Apache Stark, and deep learning Building blocks: Learn techniques for building NLP applications—including tokenization, sentence segmentation, and named-entity recognition—and discover how and why they work Applications: Explore the design, development, and experimentation process for building your own NLP applications Building NLP systems: Consider options for productionizing and deploying NLP models, including which human languages to support

Information Systems Design and Intelligent Applications

O'Reilly Media

The two-volume set LNAI 9692 and LNAI 9693 constitutes the refereed proceedings of the 15th International Conference on Artificial Intelligence and Soft Computing, ICAISC 2016, held in Zakopane, Poland in June 2016. The 134 revised full papers

presented were carefully reviewed and selected from 343 submissions. The papers included in the first volume are organized in the following topical sections: neural networks and their applications; fuzzy systems and their applications; evolutionary algorithms and their applications; agent systems, robotics and control; and pattern classification. The second volume is divided in the following parts: bioinformatics, biometrics and medical applications; data mining; artificial intelligence in modeling and simulation; visual information coding meets machine learning; and various problems of artificial intelligence.

Artificial Intelligence and Soft Computing Digitalmehmet

This document intends to offer a detailed discussion of selected distributed object-oriented architectures at conceptual level. The first part of the discussion offers a comprehensive overview of the Socket architecture in Java 2 and Berkeley UNIX and the distributed object model of Java Remote Method Invocation and the Common Object Request Broker Architecture. The second part concludes the discussion with a comparative study of selected features with emphasis on the Common Object Request Broker Architecture and Java Remote Method Invocation. Major Issues Include The TCP/IP Protocol Suite. We provide an introductory overview of the TCP/IP protocol suite and its architecture including layers and protocols. The TCP/IP architecture is based on three concepts: processes, layers and protocols. Sockets in Berkeley Unix. We present the Berkeley UNIX socket architecture in relation to the Internet communication domain and illustrate connection-oriented and a connectionless models of communication. Sockets in Java 2. We describe the Java 2 socket architecture, outline selected socket operations, introduce related packages and classes and conclude with a framework for a connection-oriented and connectionless model of communication. Remote Method Invocation in Java 2. We present a distributed object model in Java RMI, provide an overview of related interfaces, classes and packages and discuss security related issues. We conclude with the development of a framework for a distributed object application. Common Object Request Broker Architecture. We introduce a distributed object model for the Common Object Request Broker Architecture and outline design concepts including the Interface Definition Language and the Interoperable Naming Service. We conclude with the development of a framework for a distributed object application. Comparative Study of Distributed Architectures. We present a comparative study of socket architectures and distributed object models introduced in part o

Special Issue on Digital Ecosystems and Social Networks Springer

This volume of Advances in Intelligent Systems and Computing highlights papers presented at the Fifth Euro-China Conference on Intelligent Data Analysis and Applications (ECC2018), held in Xi’an, China from October 12 to 14 2018. The conference was co-sponsored by Springer, Xi’an University of Posts and Telecommunications, VSB Technical University of Ostrava (Czech Republic), Fujian University of Technology, Fujian Provincial Key Laboratory of Digital Equipment, Fujian Provincial Key Lab of Big Data Mining and Applications, and

Shandong University of Science and Technology in China. The conference was intended as an international forum for researchers and professionals engaged in all areas of computational intelligence, intelligent control, intelligent data analysis, pattern recognition, intelligent information processing, and applications.

Innovative Computing Springer

Combine the incredible powers of Spark, Mesos, Akka, Cassandra, and Kafka to build data processing platforms that can take on even the hardest of your data troubles! About This Book This highly practical guide shows you how to use the best of the big data technologies to solve your response-critical problems Learn the art of making cheap-yet-effective big data architecture without using complex Greek-letter architectures Use this easy-to-follow guide to build fast data processing systems for your organization Who This Book Is For If you are a developer, data architect, or a data scientist looking for information on how to integrate the Big Data stack architecture and how to choose the correct technology in every layer, this book is what you are looking for. What You Will Learn Design and implement a fast data Pipeline architecture Think and solve programming challenges in a functional way with Scala Learn to use Akka, the actors model implementation for the JVM Make on memory processing and data analysis with Spark to solve modern business demands Build a powerful and effective cluster infrastructure with Mesos and Docker Manage and consume unstructured and No-SQL data sources with Cassandra Consume and produce messages in a massive way with Kafka In Detail SMACK is an open source full stack for big data architecture. It is a combination of Spark, Mesos, Akka, Cassandra, and Kafka. This stack is the newest technique developers have begun to use to tackle critical real-time analytics for big data. This highly practical guide will teach you how to integrate these technologies to create a highly efficient data analysis system for fast data processing. We'll start off with an introduction to SMACK and show you when to use it. First you'll get to grips with functional thinking and problem solving using Scala. Next you'll come to understand the Akka architecture. Then you'll get to know how to improve the data structure architecture and optimize resources using Apache Spark. Moving forward, you'll learn how to perform linear scalability in databases with Apache Cassandra. You'll grasp the high throughput distributed messaging systems using Apache Kafka. We'll show you how to build a cheap but effective cluster infrastructure with Apache Mesos. Finally, you will deep dive into the different aspect of SMACK using a few case studies. By the end of the book, you will be able to integrate all the components of the SMACK stack and use them together to achieve highly effective and fast data processing. Style and approach With the help of various industry examples, you will learn about the full stack of big data architecture, taking the important aspects in every technology. You will learn how to integrate the technologies to build effective systems rather than getting incomplete information on single technologies. You will learn how various open source technologies can be used to build cheap and fast data processing systems with the help of various industry examples

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