Hadoop: The Definitive Guide

Describes the features and functions of Apache Hive, the data infrastructure for Hadoop.

Ready to use statistical and machine-learning techniques across large data sets? This practical guide shows you why the Hadoop ecosystem is perfect for the job. Instead of deployment, operations, or software development usually associated with distributed

computing, you'll focus on particular analyses you can build, the data warehousing techniques that Hadoop provides, and higher order data workflows this framework can produce. Data scientists and analysts will learn how to perform a wide range of techniques, from writing MapReduce and Spark applications with Python to using advanced modeling and data management with Spark MLlib, Hive, and HBase. You'll also learn about the analytical

processes and data systems available to build and empower data products that can handle—and actually require—huge amounts of data. Understand core concepts behind Hadoop and cluster computing Use design patterns and parallel analytical algorithms to create distributed data analysis jobs Learn about data management, mining, and warehousing in a distributed context using Apache Hive and HBase Use Sqoop and Apache Flume to ingest data

from relational databases Program complex Hadoop and Spark applications with Apache Pig and Spark DataFrames Perform machine learning techniques such as classification, clustering, and collaborative filtering with Spark's MLlib

The Complete Guide to Data Science with Hadoop—For Technical Professionals, Businesspeople, and Students Demand is soaring for professionals who can solve real data science problems with Hadoop

and Spark. Practical Data Science with Hadoop® and Spark is your complete guide to doing just that. Drawing on immense experience with Hadoop and big data, three leading experts bring together everything you need: high-level concepts, deep-dive techniques, real-world use cases, practical applications, and hands-on tutorials. The authors introduce the essentials of data science and the modern Hadoop ecosystem, explaining how Hadoop and

Spark have evolved into an effective platform for solving data science problems at scale. In addition to comprehensive application coverage, the authors also provide useful guidance on the important steps of data ingestion, data munging, and visualization. Once the groundwork is in place, the authors focus on specific applications, including machine learning, predictive modeling for sentiment analysis, clustering for document analysis,

anomaly detection, and natural language processing (NLP). This guide provides a strong technical foundation for those who want to do practical data science, and also presents business-driven guidance on how to apply Hadoop and Spark to optimize ROI of data science initiatives. Learn What data science is, how it has evolved, and how to plan a data science career How data volume, variety, and velocity shape data science use cases Hadoop and its

ecosystem, including HDFS, MapReduce, YARN, and Spark Data importation with Hive and Spark Data quality, preprocessing, preparation, and modeling Visualization: surfacing insights from huge data sets Machine learning: classification, regression, clustering, and anomaly detection Algorithms and Hadoop tools for predictive modeling Cluster analysis and similarity functions Large-scale anomaly detection NLP: applying data

science to human language
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
An Introduction for Data Scientists
The Definitive Guide
Elasticsearch: The Definitive Guide
Distributed Data at Web Scale
Real-Time Data and Stream Processing at Scale

Kerberos

The go-to guidebook for deploying Big Data solutions withHadoop Today's enterprise architects need to understand how the Hadoopframeworks and APIs fit together, and how they can be integrated todeliver real-world solutions. This book is a practical, detailedguide to building and implementing those solutions, with code-levelinstruction in the popular Wrox tradition. It covers storing datawith HDFS and Hbase, processing data with MapReduce, and automatingdata processing with Oozie. Hadoop

security, running Hadoop withAmazon Web Services, best practices, and automating Hadoopprocesses in real time are also covered in depth. With in-depth code examples in Java and XML and the latest onrecent additions to the Hadoop ecosystem, this complete resourcealso covers the use of APIs, exposing their inner workings andallowing architects and developers to better leverage and customizethem. The ultimate guide for developers, designers, and architectswho need to build and deploy Hadoop applications Covers storing and processing data

with various technologies,automating data processing, Hadoop security, and deliveringreal-time solutions Includes detailed, real-world examples and code-levelguidelines Explains when, why, and how to use these tools effectively Written by a team of Hadoop experts in theprogrammer-to-programmer Wrox style Professional Hadoop Solutions is the reference enterprisearchitects and developers need to maximize the power of Hadoop.

Get a solid grounding in Apache Oozie, the workflow scheduler system for managing

Hadoop jobs. With this hands-on guide, two experienced Hadoop practitioners walk you through the intricacies of this powerful and flexible platform, with numerous examples and real-world use cases. Once you set up your Oozie server, you'll dive into techniques for writing and coordinating workflows, and learn how to write complex data pipelines. Advanced topics show you how to handle shared libraries in Oozie, as well as how to implement and manage Oozie's security capabilities. Install and configure an Oozie server, and get an overview

of basic concepts Journey through the world of writing and configuring workflows Learn how the Oozie coordinator schedules and executes workflows based on triggers Understand how Oozie manages data dependencies Use Oozie bundles to package several coordinator apps into a data pipeline Learn about security features and shared library management Implement custom extensions and write your own EL functions and actions Debug workflows and manage Oozie's operational details
Whether you need full-text search or real-time

analytics of structured data—or both—the Elasticsearch distributed search engine is an ideal way to put your data to work. This practical guide not only shows you how to search, analyze, and explore data with Elasticsearch, but also helps you deal with the complexities of human language, geolocation, and relationships. If you're a newcomer to both search and distributed systems, you'll quickly learn how to integrate Elasticsearch into your application. More experienced users will pick up lots of advanced techniques. Throughout the book,

you'll follow a problem-based approach to learn why, when, and how to use Elasticsearch features. Understand how Elasticsearch interprets data in your documents Index and query your data to take advantage of search concepts such as relevance and word proximity Handle human language through the effective use of analyzers and queries Summarize and group data to show overall trends, with aggregations and analytics Use geo-points and geo-shapes—Elasticsearch's approaches to geolocation Model your data to take advantage

of Elasticsearch's horizontal scalability Learn how to configure and monitor your cluster in production

Discover how Apache Hadoop can unleash the power of your data. This comprehensive resource shows you how to build and maintain reliable, scalable, distributed systems with the Hadoop framework -- an open source implementation of MapReduce, the algorithm on which Google built its empire. Programmers will find details for analyzing datasets of any size, and administrators will learn how to set up and

run Hadoop clusters. This revised edition covers recent changes to Hadoop, including new features such as Hive, Sqoop, and Avro. It also provides illuminating case studies that illustrate how Hadoop is used to solve specific problems. Looking to get the most out of your data? This is your book. Use the Hadoop Distributed File System (HDFS) for storing large datasets, then run distributed computations over those datasets with MapReduce Become familiar with Hadoop's data and I/O building blocks for compression, data integrity, serialization, and

persistence Discover common pitfalls and advanced features for writing real-world MapReduce programs Design, build, and administer a dedicated Hadoop cluster, or run Hadoop in the cloud Use Pig, a high-level query language for large-scale data processing Analyze datasets with Hive, Hadoop's data warehousing system Take advantage of HBase, Hadoop's database for structured and semi-structured data Learn ZooKeeper, a toolkit of coordination primitives for building distributed systems "Now you have the opportunity to learn

about Hadoop from a master -- not only of the technology, but also of common sense and plain talk." --Doug Cutting, Cloudera
Cassandra: The Definitive Guide
A Guide for Developers and Administrators

Practical Hadoop Ecosystem
Time to Relax
Architecting Modern Data Platforms

If you're like most R users, you have deep knowledge and love for statistics. But as your organization continues to

collect huge amounts of data, adding tools such as Apache Spark makes a lot of sense. With this practical book, data scientists and professionals working with large-scale data applications will learn how to use Spark from R to tackle big data and big compute problems. Authors Javier Luraschi, Kevin Kuo, and Edgar Ruiz show you how to use R with Spark to solve different data analysis problems. This book covers relevant data science

topics, cluster computing, and issues that should interest even the most advanced users. Analyze, explore, transform, and visualize data in Apache Spark with R Create statistical models to extract information and predict outcomes; automate the process in production-ready workflows Perform analysis and modeling across many machines using distributed computing techniques Use large-scale data from multiple sources and different formats

with ease from within Spark Learn about alternative modeling frameworks for graph processing, geospatial analysis, and genomics at scale Dive into advanced topics including custom transformations, real-time data processing, and creating custom Spark extensions

This guide is an ideal learning tool and reference for Apache Pig, the programming language that helps programmers describe and run large data

projects on Hadoop. With Pig, they can analyze data without having to create a full-fledged application--making it easy for them to experiment with new data sets.

Hadoop: The Definitive Guide helps you harness the power of your data. Ideal for processing large datasets, the Apache Hadoop framework is an open source implementation of the MapReduce algorithm on which Google built its empire. This comprehensive resource

demonstrates how to use Hadoop to build reliable, scalable, distributed systems: programmers will find details for analyzing large datasets, and administrators will learn how to set up and run Hadoop clusters. Complete with case studies that illustrate how Hadoop solves specific problems, this book helps you: Use the Hadoop Distributed File System (HDFS) for storing large datasets, and run distributed computations over those datasets using

MapReduce Become familiar with Hadoop's data and I/O building blocks for compression, data integrity, serialization, and persistence Discover common pitfalls and advanced features for writing real-world MapReduce programs Design, build, and administer a dedicated Hadoop cluster, or run Hadoop in the cloud Use Pig, a high-level query language for large-scale data processing Take advantage of HBase, Hadoop's database for structured

and semi-structured data Learn ZooKeeper, a toolkit of coordination primitives for building distributed systems If you have lots of data -- whether it's gigabytes or petabytes -- Hadoop is the perfect solution. Hadoop: The Definitive Guide is the most thorough book available on the subject. "Now you have the opportunity to learn about Hadoop from a master-not only of the technology, but also of common sense and plain talk."-- Doug Cutting,

Hadoop Founder, Yahoo!
Every enterprise application creates data, whether it's log messages, metrics, user activity, outgoing messages, or something else. And how to move all of this data becomes nearly as important as the data itself. If you're an application architect, developer, or production engineer new to Apache Kafka, this practical guide shows you how to use this open source streaming platform to handle real-time data

feeds. Engineers from Confluent and LinkedIn who are responsible for developing Kafka explain how to deploy production Kafka clusters, write reliable event-driven microservices, and build scalable stream-processing applications with this platform. Through detailed examples, you'll learn Kafka's design principles, reliability guarantees, key APIs, and architecture details, including the replication protocol, the controller, and the

storage layer. Understand publish-subscribe messaging and how it fits in the big data ecosystem. Explore Kafka producers and consumers for writing and reading messages Understand Kafka patterns and use-case requirements to ensure reliable data delivery Get best practices for building data pipelines and applications with Kafka Manage Kafka in production, and learn to perform monitoring, tuning, and maintenance tasks Learn the most

critical metrics among Kafka's operational measurements Explore how Kafka's stream delivery capabilities make it a perfect source for stream processing systems

Hadoop

Hadoop For Dummies

Designing and Building Effective Analytics at Scale

Hadoop in Practice

The Workflow Scheduler for Hadoop

Programming Pig

Building distributed applications is difficult enough without having to coordinate the actions that make them work. This practical guide shows how Apache ZooKeeper helps you manage distributed systems, so you can focus mainly on application logic. Even with ZooKeeper, implementing coordination tasks is not trivial, but this book provides good practices to give you a head start, and points out caveats that developers and administrators alike need to watch for along the way. In three separate sections, ZooKeeper contributors Flavio Junqueira and Benjamin Reed introduce the

principles of distributed systems, provide ZooKeeper programming techniques, and include the information you need to administer this service. Learn how ZooKeeper solves common coordination tasks Explore the ZooKeeper API's Java and C implementations and how they differ Use methods to track and react to ZooKeeper state changes Handle failures of the network, application processes, and ZooKeeper itself Learn about ZooKeeper's trickier aspects dealing with concurrency, ordering, and configuration Use the Curator high-level interface for connection management Become familiar with ZooKeeper

internals and administration tools
Hadoop in Action teaches readers how to use Hadoop and write MapReduce programs. The intended readers are programmers, architects, and project managers who have to process large amounts of data offline. Hadoop in Action will lead the reader from obtaining a copy of Hadoop to setting it up in a cluster and writing data analytic programs. The book begins by making the basic idea of Hadoop and MapReduce easier to grasp by applying the default Hadoop installation to a few easy-to-follow tasks, such as analyzing changes in word frequency across a

body of documents. The book continues through the basic concepts of MapReduce applications developed using Hadoop, including a close look at framework components, use of Hadoop for a variety of data analysis tasks, and numerous examples of Hadoop in action. Hadoop in Action will explain how to use Hadoop and present design patterns and practices of programming MapReduce. MapReduce is a complex idea both conceptually and in its implementation, and Hadoop users are challenged to learn all the knobs and levers for running Hadoop. This book takes you beyond the mechanics of running

Hadoop, teaching you to write meaningful programs in a MapReduce framework. This book assumes the reader will have a basic familiarity with Java, as most code examples will be written in Java. Familiarity with basic statistical concepts (e.g. histogram, correlation) will help the reader appreciate the more advanced data processing examples. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book.

Get expert guidance on architecting end-to-end data management solutions with Apache Hadoop.

While many sources explain how to use various components in the Hadoop ecosystem, this practical book takes you through architectural considerations necessary to tie those components together into a complete tailored application, based on your particular use case. To reinforce those lessons, the book's second section provides detailed examples of architectures used in some of the most commonly found Hadoop applications. Whether you're designing a new Hadoop application, or planning to integrate Hadoop into your existing data infrastructure, Hadoop Application Architectures will skillfully

guide you through the process. This book covers: Factors to consider when using Hadoop to store and model data Best practices for moving data in and out of the system Data processing frameworks, including MapReduce, Spark, and Hive Common Hadoop processing patterns, such as removing duplicate records and using windowing analytics Giraph, GraphX, and other tools for large graph processing on Hadoop Using workflow orchestration and scheduling tools such as Apache Oozie Near-real-time stream processing with Apache Storm, Apache Spark Streaming, and Apache Flume Architecture

examples for clickstream analysis, fraud detection, and data warehousing
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
HBase
Distributed Process Coordination
Building Effective Algorithms and Analytics for Hadoop and Other Systems
Storage and Analysis at Internet Scale
Kafka: The Definitive Guide
ZooKeeper

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
Three of CouchDB's creators show you how to use this document-oriented database as a standalone application framework or with high-volume, distributed applications. With its simple model for storing, processing, and accessing data, CouchDB is ideal for web

applications that handle huge amounts of loosely structured data. That alone would stretch the limits of a relational database, yet CouchDB offers an open source solution that's reliable, scales easily, and responds quickly. CouchDB works with self-contained data that has loose or ad-hoc connections. It's a model that fits many real-world items, such as contacts, invoices, and receipts, but you'll discover that this database can easily handle data of any kind. With this

book, you'll learn how to work with CouchDB through its RESTful web interface, and become familiar with key features such as simple document CRUD (create, read, update, delete), advanced MapReduce, deployment tuning, and more. Understand the basics of document-oriented storage and manipulation Interact with CouchDB entirely though HTTP using its RESTful interface Model data as self-contained JSON documents Handle evolving data

schemas naturally Query and aggregate data in CouchDB using MapReduce views Replicate data between nodes Tune CouchDB for increased performance and reliability

Counsels programmers and administrators for big and small organizations on how to work with large-scale application datasets using Apache Hadoop, discussing its capacity for storing and processing large amounts of data while demonstrating best practices

for building reliable and scalable distributed systems.

Kerberos, the single sign-on authentication system originally developed at MIT, deserves its name. It's a faithful watchdog that keeps intruders out of your networks. But it has been equally fierce to system administrators, for whom the complexity of Kerberos is legendary. Single sign-on is the holy grail of network administration, and Kerberos is the only game in town.

Microsoft, by integrating Kerberos into Active Directory in Windows 2000 and 2003, has extended the reach of Kerberos to all networks large or small. Kerberos makes your network more secure and more convenient for users by providing a single authentication system that works across the entire network. One username; one password; one login is all you need. Fortunately, help for administrators is on the way. Kerberos: The Definitive Guide shows you how to

implement Kerberos for secure authentication. In addition to covering the basic principles behind cryptographic authentication, it covers everything from basic installation to advanced topics like cross-realm authentication, defending against attacks on Kerberos, and troubleshooting. In addition to covering Microsoft's Active Directory implementation, Kerberos: The Definitive Guide covers both major implementations of Kerberos for Unix

and Linux: MIT and Heimdal. It shows you how to set up Mac OS X as a Kerberos client. The book also covers both versions of the Kerberos protocol that are still in use: Kerberos 4 (now obsolete) and Kerberos 5, paying special attention to the integration between the different protocols, and between Unix and Windows implementations. If you've been avoiding Kerberos because it's confusing and poorly documented, it's time to get on board! This book shows

you how to put Kerberos authentication to work on your Windows and Unix systems.

Apache Hadoop YARN

Apache Oozie

Data-intensive Text Processing with MapReduce

Professional Hadoop Solutions

A Distributed Real-Time Search and Analytics Engine

HADOOP

A revised and updated edition offers

comprehensive coverage of ECMAScript 5 (the new JavaScript language standard) and also the new APIs introduced in HTML5, with chapters on functions and classes completely rewritten and updated to match current best practices and a new chapter on language extensions and subsets. Original.

"Apache Hadoop is helping drive the Big Data revolution. Now, its data processing has been completely overhauled: Apache Hadoop YARN provides resource management at data center scale and easier ways to create distributed applications that process petabytes of data. And

now in Apache HadoopTM YARN, two Hadoop technical leaders show you how to develop new applications and adapt existing code to fully leverage these revolutionary advances." -- From the Amazon

Get ready to unlock the power of your data. With the fourth edition of this comprehensive guide, you'll learn how to build and maintain reliable, scalable, distributed systems with Apache Hadoop. This book is ideal for programmers looking to analyze datasets of any size, and for administrators who want to set up and run Hadoop clusters. Using Hadoop 2 exclusively,

author Tom White presents new chapters on YARN and several Hadoop-related projects such as Parquet, Flume, Crunch, and Spark. You'll learn about recent changes to Hadoop, and explore new case studies on Hadoop's role in healthcare systems and genomics data processing. Learn fundamental components such as MapReduce, HDFS, and YARN Explore MapReduce in depth, including steps for developing applications with it Set up and maintain a Hadoop cluster running HDFS and MapReduce on YARN Learn two data formats: Avro for data serialization and Parquet for nested data Use data ingestion tools such as

Flume (for streaming data) and Sqoop (for bulk data transfer) Understand how high-level data processing tools like Pig, Hive, Crunch, and Spark work with Hadoop Learn the HBase distributed database and the ZooKeeper distributed configuration service

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

Hadoop: The Definitive Guide

Cloudera Administration Handbook

The Definitive Guide, 4th Edition

Moving Beyond MapReduce and Batch Processing with Apache Hadoop 2

Trino: The Definitive Guide

Hadoop in Action

An easy-to-follow Apache Hadoop administrator's guide filled with practical screenshots and explanations for each step and configuration. This book is great for administrators interested in setting up and managing a large Hadoop cluster. If you are an administrator, or want to be an administrator, and you are ready to build and maintain a production-level cluster running CDH5, then this book is for you. Ready to unlock the power of your data? With this comprehensive guide, you'll learn how to build and maintain reliable, scalable, distributed systems with Apache Hadoop. This book is ideal for programmers

looking to analyze datasets of any size, and for administrators who want to set up and run Hadoop clusters. You'll find illuminating case studies that demonstrate how Hadoop is used to solve specific problems. This third edition covers recent changes to Hadoop, including material on the new MapReduce API, as well as MapReduce 2 and its more flexible execution model (YARN). Store large datasets with the Hadoop Distributed File System (HDFS) Run distributed computations with MapReduce Use Hadoop's data and I/O building blocks for compression, data integrity, serialization (including

Avro), and persistence Discover common pitfalls and advanced features for writing real-world MapReduce programs Design, build, and administer a dedicated Hadoop cluster—or run Hadoop in the cloud Load data from relational databases into HDFS, using Sqoop Perform large-scale data processing with the Pig query language Analyze datasets with Hive, Hadoop's data warehousing system Take advantage of HBase for structured and semi-structured data, and ZooKeeper for building distributed systems. Perform fast interactive analytics against different data sources using the Trino high-performance

distributed SQL query engine. With this practical guide, you'll learn how to conduct analytics on data where it lives, whether it's Hive, Cassandra, a relational database, or a proprietary data store. Analysts, software engineers, and production engineers will learn how to manage, use, and even develop with Trino. Initially developed by Facebook, open source Trino is now used by Netflix, Airbnb, LinkedIn, Twitter, Uber, and many other companies. Matt Fuller, Manfred Moser, and Martin Traverso show you how a single Trino query can combine data from multiple sources to allow for analytics

across your entire organization. Get started: Explore Trino's use cases and learn about tools that will help you connect to Trino and query data Go deeper: Learn Trino's internal workings, including how to connect to and query data sources with support for SQL statements, operators, functions, and more Put Trino in production: Secure Trino, monitor workloads, tune queries, and connect more applications; learn how other organizations apply Trino

There’s a lot of information about big data technologies, but splicing these technologies into an

end-to-end enterprise data platform is a daunting task not widely covered. With this practical book, you'll learn how to build big data infrastructure both on-premises and in the cloud and successfully architect a modern data platform. Ideal for enterprise architects, IT managers, application architects, and data engineers, this book shows you how to overcome the many challenges that emerge during Hadoop projects. You'll explore the vast landscape of tools available in the Hadoop and big data realm in a thorough technical primer before diving into: Infrastructure: Look at all component layers in a

modern data platform, from the server to the data center, to establish a solid foundation for data in your enterprise Platform: Understand aspects of deployment, operation, security, high availability, and disaster recovery, along with everything you need to know to integrate your platform with the rest of your enterprise IT Taking Hadoop to the cloud: Learn the important architectural aspects of running a big data platform in the cloud while maintaining enterprise security and high availability

The Complete Guide to Large-Scale Analysis and Modeling

MapReduce Design Patterns
CouchDB: The Definitive Guide
A Definitive Guide to Hadoop-Related Frameworks and Tools
JavaScript
Hadoop Operations

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.

"Get ready to unlock the power of your data. With the fourth edition of this comprehensive guide, you l learn how to build and maintain reliable, scalable, distributed systems with Apache Hadoop. This book is ideal for programmers looking to analyze datasets of any size, and for administrators who want to set up and run Hadoop clusters."--

If your organization is looking for a storage solution to accommodate a virtually endless amount of data, this book will show you how Apache HBase can fulfill your needs. As the open source implementation of Google's BigTable architecture, HBase scales to billions of rows and millions of columns, while ensuring that write and read performance remain constant.HBase: The

Definitive Guideprovides the details you require, whether you simply want to evaluate this high-performance, non-relational database, or put it into practice right away. HBase's adoption rate is beginning to climb, and several IT executives are asking pointed questions about this high-capacity database. This is the only book available to give you meaningful answers. Learn how to distribute large datasets across an inexpensive cluster of commodity servers Develop HBase clients in many programming languages, including Java, Python, and Ruby Get details on HBase's primary storage system, HDFS—Hadoop's distributed and replicated filesystem Learn how HBase's native interface to Hadoop's MapReduce framework enables easy development and execution of batch jobs that can scan entire tables Discover the integration between HBase and other facets of the Apache

Hadoop project

Imagine what you could do if scalability wasn't a problem. With this hands-on guide, you'll learn how the Cassandra database management system handles hundreds of terabytes of data while remaining highly available across multiple data centers. This expanded second edition—updated for Cassandra 3.0—provides the technical details and practical examples you need to put this database to work in a production environment. Authors Jeff Carpenter and Eben Hewitt demonstrate the advantages of Cassandra's non-relational design, with special attention to data modeling. If you're a developer, DBA, or application architect looking to solve a database scaling issue or future-proof your application, this guide helps you harness Cassandra's speed and flexibility. Understand Cassandra's distributed and decentralized

structure Use the Cassandra Query Language (CQL) and cqlsh—the CQL shell Create a working data model and compare it with an equivalent relational model Develop sample applications using client drivers for languages including Java, Python, and Node.js Explore cluster topology and learn how nodes exchange data Maintain a high level of performance in your cluster Deploy Cassandra on site, in the Cloud, or with Docker Integrate Cassandra with Spark, Hadoop, Elasticsearch, Solr, and Lucene

Big Data Processing Made Simple

Data Analytics with Hadoop

Programming Hive

Learning Spark

A Guide to Enterprise Hadoop at Scale

Practical Data Science with Hadoop and Spark

Hadoop: The Definitive Guide"O'Reilly Media, Inc."
Learn how to use the Apache Hadoop projects, including MapReduce, HDFS, Apache Hive, Apache HBase, Apache Kafka, Apache Mahout, and Apache Solr. From setting up the environment to running sample applications each chapter in this book is a practical tutorial on using an Apache Hadoop ecosystem project. While several books on Apache Hadoop are available, most are based on the main projects, MapReduce and HDFS, and none discusses the other Apache Hadoop ecosystem projects and how they all work together as a cohesive big data development platform. What You Will Learn: Set up the environment in Linux for Hadoop projects using Cloudera Hadoop Distribution CDH

5 Run a MapReduce job Store data with Apache Hive, and Apache HBase Index data in HDFS with Apache Solr Develop a Kafka messaging system Stream Logs to HDFS with Apache Flume Transfer data from MySQL database to Hive, HDFS, and HBase with Sqoop Create a Hive table over Apache Solr Develop a Mahout User Recommender System Who This Book Is For: Apache Hadoop developers. Pre-requisite knowledge of Linux and some knowledge of Hadoop is required.

Counsels programmers and administrators for big and small organizations on how to work with large-scale application datasets using Apache Hadoop, discussing its capacity for storing and processing large amounts of data while

demonstrating best practices for building reliable and scalable distributed systems. Original.

Our world is being revolutionized by data-driven methods: access to large amounts of data has generated new insights and opened exciting new opportunities in commerce, science, and computing applications. Processing the enormous quantities of data necessary for these advances requires large clusters, making distributed computing paradigms more crucial than ever. MapReduce is a programming model for expressing distributed computations on massive datasets and an execution framework for large-scale data processing on clusters of commodity servers. The programming model provides an easy-to-understand abstraction for designing

scalable algorithms, while the execution framework transparently handles many system-level details, ranging from scheduling to synchronization to fault tolerance. This book focuses on MapReduce algorithm design, with an emphasis on text processing algorithms common in natural language processing, information retrieval, and machine learning. We introduce the notion of MapReduce design patterns, which represent general reusable solutions to commonly occurring problems across a variety of problem domains. This book not only intends to help the reader "think in MapReduce", but also discusses limitations of the programming model as well. This volume is a printed version of a work that appears in the Synthesis Digital Library of

Engineering and Computer Science. Synthesis Lectures provide concise, original presentations of important research and development topics, published quickly, in digital and print formats. For more information visit www.morganclaypool.com

Hadoop: the Definitive Guide ; Storage and Analysis at Internet Scale

Spark: The Definitive Guide

Mastering Spark with R

Lightning-Fast Big Data Analysis

Hadoop Application Architectures

Until now, design patterns for the MapReduce framework have been scattered among various research papers, blogs, and

books. This handy guide brings together a unique collection of valuable MapReduce patterns that will save you time and effort regardless of the domain, language, or development framework you're using. Each pattern is explained in context, with pitfalls and caveats clearly identified to help you avoid common design mistakes when modeling your big data architecture. This book also provides a complete overview of MapReduce that explains its origins and implementations, and why design patterns are so important. All code examples are written for Hadoop. Summarization patterns: get a top-level view by summarizing and grouping data Filtering patterns: view data subsets such as records generated from one user Data organization patterns: reorganize data to work with other

systems, or to make MapReduce analysis easier Join patterns: analyze different datasets together to discover interesting relationships Metapatterns: piece together several patterns to solve multi-stage problems, or to perform several analytics in the same job Input and output patterns: customize the way you use Hadoop to load or store data "A clear exposition of MapReduce programs for common data processing patterns—this book is indespensible for anyone using Hadoop." --Tom White, author of Hadoop: The Definitive Guide Hadoop: The Definitive Guide helps you harness the power of your data. Ideal for processing large datasets, the Apache Hadoop framework is an open source implementation of the MapReduce algorithm on which Google built its empire. This

comprehensive resource demonstrates how to use Hadoop to build reliable, scalable, distributed systems: programmers will find details for analyzing large datasets, and administrators will learn how to set up and run Hadoop clusters.