

# Big Data Analytics With Microsoft Hdinsight In 24 Hours Sams Teach Yourself

Collect and analyze sensor and usage data from Internet of Things applications with Microsoft Azure IoT Suite. Internet connectivity to everyday devices such as light bulbs, thermostats, and even voice-command devices such as Google Home and Amazon.com's Alexa is exploding. These connected devices and their respective applications generate large amounts of data that can be mined to enhance user-friendliness and make predictions about what a user might be likely to do next. Microsoft's Azure IoT Suite is a cloud-based platform that is ideal for collecting data from connected devices. You'll learn in this book about data acquisition and analysis, including real-time analysis. Real-world examples are provided to teach you to detect anomalous patterns in your data that might lead to business advantage. We live in a time when the amount of data being generated and stored is growing at an exponential rate. Understanding and getting real-time insight into these data is critical to business. IoT Solutions in Microsoft's Azure IoT Suite walks you through a complete, end-to-end journey of how to collect and store data from Internet-connected devices. You'll learn to analyze the data and to apply your results to solving real-world problems. Your customers will benefit from the increasingly capable and reliable applications that you'll be able to deploy to them. You and your business will benefit from the gains in insight and knowledge that can be applied to delight your customers and increase the value from their business. What You'll Learn Go through data generation, collection, and storage from sensors and devices, both relational and non-relational Understand,

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from end to end, Microsoft's analytic services and where they fit into the analytical ecosystem Look at the Internet of your things and find ways to discover and draw on the insights your data can provide Understand Microsoft's IoT technologies and services, and stitch them together for business insight and advantage Who This Book Is For Developers and architects who plan on delivering IoT solutions, data scientists who want to understand how to get better insights into their data, and anyone needing or wanting to do real-time analysis of data from the Internet of Things Predictive Analytics with Microsoft Azure Machine Learning, Second Edition is a practical tutorial introduction to the field of data science and machine learning, with a focus on building and deploying predictive models. The book provides a thorough overview of the Microsoft Azure Machine Learning service released for general availability on February 18th, 2015 with practical guidance for building recommenders, propensity models, and churn and predictive maintenance models. The authors use task oriented descriptions and concrete end-to-end examples to ensure that the reader can immediately begin using this new service. The book describes all aspects of the service from data ingress to applying machine learning, evaluating the models, and deploying them as web services. Learn how you can quickly build and deploy sophisticated predictive models with the new Azure Machine Learning from Microsoft. What's New in the Second Edition? Five new chapters have been added with practical detailed coverage of: Python Integration – a new feature announced February 2015 Data preparation and feature selection Data visualization with Power BI Recommendation engines Selling your models on Azure Marketplace

The digital age has presented an exponential growth in the amount of data available to individuals looking to draw conclusions based on given or collected information across

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industries. Challenges associated with the analysis, security, sharing, storage, and visualization of large and complex data sets continue to plague data scientists and analysts alike as traditional data processing applications struggle to adequately manage big data. *Big Data: Concepts, Methodologies, Tools, and Applications* is a multi-volume compendium of research-based perspectives and solutions within the realm of large-scale and complex data sets. Taking a multidisciplinary approach, this publication presents exhaustive coverage of crucial topics in the field of big data including diverse applications, storage solutions, analysis techniques, and methods for searching and transferring large data sets, in addition to security issues. Emphasizing essential research in the field of data science, this publication is an ideal reference source for data analysts, IT professionals, researchers, and academics.

Microsoft Business Intelligence or Power BI is a suite of business analytics tools to analyze data and share insights. Monitor your business and get answers quickly with rich dashboards available on every device. Data Analytics field is growing exponentially! Learn Introduction to Data Analytics Using Power BI Online and Power BI Desktop Power BI (Microsoft Business Intelligence) offers basic data wrangling capabilities similar to Excel's Power Query. It also lets you create interactive visualizations, reports and dashboards with a few clicks or drag-and-drops; type natural-language questions about your data on a dashboard; and handle files that are too large for Excel. Power BI transforms your company's data into rich visuals for you to collect and organize so you can focus on what matters to you. Stay in the know, spot trends as they happen, and push your business further. It can work with dozens of data types -- not only Excel, Access and CSV files, but also Salesforce, Google Analytics, MailChimp, GitHub, QuickBooks Online and

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dozens of others. And, it will run R scripts -- meaning that any data you can pull in and massage via R you can import into Power BI We will use New York City Public Data Set as well as existing samples in Power BI So, if you are looking for new ways to seek insights and create powerful visualization on the fly, Power BI is the answer. You can transform your company's data into rich stunning easy to use visuals for you to collect and organize, so you can spot trends, collaborate in new ways, and make sense of your data. Increase your skills This course contains the following lessons: 1) Learn Data Analytics & Microsoft Business Intelligence concepts and application 2) Introduction to Power BI Online, Power BI Desktop, and the Interface 3) Be able to Import data using both Power BI Online and Power BI Desktop 4) Learn the difference between Power BI Online Vs Power BI Desktop 5) Master the skill of transforming Big Data - Real World Data Set (New York City Public data set) 6) Create stunning visualization 7) Using Quick Insights & Analytics 8) Asking Questions from your Big Data using plain English language.... and much more What you'll learn - Understand how to use Power BI Online and Power BI Desktop - Perform Big Data Analytics using Real World Scenario - Transform Big Data and customize - Create Powerful Visualization based on Big Data - Sharing Dashboard with o...

Bridge the big data gap with Microsoft Business Intelligence Tools for Excel Analysts The distinction between departmental reporting done by business analysts with Excel and the enterprise reporting done by IT departments with SQL Server and SharePoint tools is more blurry now than ever before. With the introduction of robust new features like PowerPivot and Power View, it is essential for business analysts to get up to speed with big data tools that in the past have been reserved for IT professionals. Written by a team of Business Intelligence experts, Microsoft Business Intelligence

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Tools for Excel Analysts introduces business analysts to the rich toolset and reporting capabilities that can be leveraged to more effectively source and incorporate large datasets in their analytics while saving them time and simplifying the reporting process. Walks you step-by-step through important BI tools like PowerPivot, SQL Server, and SharePoint and shows you how to move data back and forth between these tools and Excel Shows you how to leverage relational databases, slice data into various views to gain different visibility perspectives, create eye-catching visualizations and dashboards, automate SQL Server data retrieval and integration, and publish dashboards and reports to the web Details how you can use SQL Server's built-in functions to analyze large amounts of data, Excel pivot tables to access and report OLAP data, and PowerPivot to create powerful reporting mechanisms You'll get on top of the Microsoft BI stack and all it can do to enhance Excel data analysis with this one-of-a-kind guide written for Excel analysts just like you.

Quickly create financial forecasts using big data, predictive analytics, and Microsoft Excel.

Data Lake Analytics on Microsoft AzureA Practitioner's Guide to Big Data EngineeringApress

In Beginning Big Data with Power BI and Excel 2013, you will learn to solve business problems by tapping the power of Microsoft's Excel and Power BI to import data from NoSQL and SQL databases and other sources, create relational data models, and analyze business problems through sophisticated dashboards and data-driven maps. While Beginning Big Data with Power BI and Excel 2013 covers prominent tools such as Hadoop and the NoSQL databases, it recognizes that most small and medium-sized businesses don't have the Big Data processing needs of a Netflix, Target, or Facebook. Instead, it shows how to import data and use the self-service analytics available in Excel with

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Power BI. As you'll see through the book's numerous case examples, these tools—which you already know how to use—can perform many of the same functions as the higher-end Apache tools many people believe are required to carry out in Big Data projects. Through instruction, insight, advice, and case studies, *Beginning Big Data with Power BI and Excel 2013* will show you how to: Import and mash up data from web pages, SQL and NoSQL databases, the Azure Marketplace and other sources. Tap into the analytical power of PivotTables and PivotCharts and develop relational data models to track trends and make predictions based on a wide range of data. Understand basic statistics and use Excel with PowerBI to do sophisticated statistical analysis—including identifying trends and correlations. Use SQL within Excel to do sophisticated queries across multiple tables, including NoSQL databases. Create complex formulas to solve real-world business problems using Data Analysis Expressions (DAX).

Written for IT and business professionals, this book provides the technical and business insight needed to plan, deploy and manage the services provided by the Microsoft Azure cloud. Find out how to integrate the infrastructure-as-a-service (IaaS) and platform-as-a-service (PaaS) models with your existing business infrastructure while maximizing availability, ensuring continuity and safety of your data, and keeping costs to a minimum. The book starts with an introduction to Microsoft Azure and how it differs from Office 365—Microsoft's 'other' cloud. You'll also get a useful overview of the services available. Part II then takes you through setting up your Azure

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account, and gets you up-and-running on some of the core Azure services, including creating web sites and virtual machines, and choosing between fully cloud-based and hybrid storage solutions, depending on your needs. Part III now takes an in-depth look at how to integrate Azure with your existing infrastructure. The authors, Anthony Puca, Mike Manning, Brent Rush, Marshall Copeland and Julian Soh, bring their depth of experience in cloud technology and customer support to guide you through the whole process, through each layer of your infrastructure from networking to operations. High availability and disaster recovery are the topics on everyone's minds when considering a move to the cloud, and this book provides key insights and step-by-step guidance to help you set up and manage your resources correctly to optimize for these scenarios. You'll also get expert advice on migrating your existing VMs to Azure using InMage, mail-in and the best 3rd party tools available, helping you ensure continuity of service with minimum disruption to the business. In the book's final chapters, you'll find cutting edge examples of cloud technology in action, from machine learning to business intelligence, for a taste of some exciting ways your business could benefit from your new Microsoft Azure deployment.

This book presents a focus on proteins and their structures. The text describes various scalable

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solutions for protein structure similarity searching, carried out at main representation levels and for prediction of 3D structures of proteins. Emphasis is placed on techniques that can be used to accelerate similarity searches and protein structure modeling processes. The content of the book is divided into four parts. The first part provides background information on proteins and their representation levels, including a formal model of a 3D protein structure used in computational processes, and a brief overview of the technologies used in the solutions presented in the book. The second part of the book discusses Cloud services that are utilized in the development of scalable and reliable cloud applications for 3D protein structure similarity searching and protein structure prediction. The third part of the book shows the utilization of scalable Big Data computational frameworks, like Hadoop and Spark, in massive 3D protein structure alignments and identification of intrinsically disordered regions in protein structures. The fourth part of the book focuses on finding 3D protein structure similarities, accelerated with the use of GPUs and the use of multithreading and relational databases for efficient approximate searching on protein secondary structures. The book introduces advanced techniques and computational architectures that benefit from recent achievements in the field of computing and parallelism. Recent developments in



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computer science have allowed algorithms previously considered too time-consuming to now be efficiently used for applications in bioinformatics and the life sciences. Given its depth of coverage, the book will be of interest to researchers and software developers working in the fields of structural bioinformatics and biomedical databases.

This book presents deep learning techniques, concepts, and algorithms to classify and analyze big data. Further, it offers an introductory level understanding of the new programming languages and tools used to analyze big data in real-time, such as Hadoop, SPARK, and GRAPHX. Big data analytics using traditional techniques face various challenges, such as fast, accurate and efficient processing of big data in real-time. In addition, the Internet of Things is progressively increasing in various fields, like smart cities, smart homes, and e-health. As the enormous number of connected devices generate huge amounts of data every day, we need sophisticated algorithms to deal, organize, and classify this data in less processing time and space. Similarly, existing techniques and algorithms for deep learning in big data field have several advantages thanks to the two main branches of the deep learning, i.e. convolution and deep belief networks. This book offers insights into these techniques and applications based on these two types of deep learning. Further, it helps students,

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researchers, and newcomers understand big data analytics based on deep learning approaches. It also discusses various machine learning techniques in concatenation with the deep learning paradigm to support high-end data processing, data classifications, and real-time data processing issues. The classification and presentation are kept quite simple to help the readers and students grasp the basics concepts of various deep learning paradigms and frameworks. It mainly focuses on theory rather than the mathematical background of the deep learning concepts. The book consists of 5 chapters, beginning with an introductory explanation of big data and deep learning techniques, followed by integration of big data and deep learning techniques and lastly the future directions.

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.

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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.

The best-selling author of Big Data is back, this time with a unique and in-depth insight into how specific companies use big data. Big data is on the tip of everyone's tongue. Everyone understands its power

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and importance, but many fail to grasp the actionable steps and resources required to utilise it effectively. This book fills the knowledge gap by showing how major companies are using big data every day, from an up-close, on-the-ground perspective. From technology, media and retail, to sport teams, government agencies and financial institutions, learn the actual strategies and processes being used to learn about customers, improve manufacturing, spur innovation, improve safety and so much more. Organised for easy dip-in navigation, each chapter follows the same structure to give you the information you need quickly. For each company profiled, learn what data was used, what problem it solved and the processes put it place to make it practical, as well as the technical details, challenges and lessons learned from each unique scenario. Learn how predictive analytics helps Amazon, Target, John Deere and Apple understand their customers Discover how big data is behind the success of Walmart, LinkedIn, Microsoft and more Learn how big data is changing medicine, law enforcement, hospitality, fashion, science and banking Develop your own big data strategy by accessing additional reading materials at the end of each chapter

Leverage the power of Azure to get efficient data insights from your big data in real time Key Features Explore the basics of cloud analytics using Azure

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Discover different ways to process and visualize your data easily Learn to use Azure Synapse Analytics (formerly known as Azure SQL Data Warehouse) to derive real-time customer insights Book Description With data being generated at an exponential speed, organizations all over the world are migrating their infrastructure to the cloud. Application management becomes much easier when you use a cloud platform to build, manage, and deploy your services and applications. Cloud Analytics with Microsoft Azure covers all that you need to extract useful insights from your data. You'll explore the power of data with big data analytics, the Internet of Things (IoT), machine learning, artificial intelligence, and DataOps. You'll also delve into data analytics by studying use cases that focus on creating actionable insights from near-real-time data. As you advance, you'll learn to build an end-to-end analytics pipeline on the cloud with machine learning and deep learning concepts. By the end of this book, you'll have developed a solid understanding of data analytics with Azure and its practical implementation. What you will learn Explore the concepts of modern data warehouses and data pipelines Discover different design considerations while applying a cloud analytics solution Design an end-to-end analytics pipeline on the cloud Differentiate between structured, semi-structured, and unstructured data Choose a cloud-based service for your data

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analytics solutions Use Azure services to ingest, store and analyze data of any scale Who this book is for If you're planning to adopt the cloud analytics model for your business, this book will help you understand the design and business considerations that you must keep in mind. Though not necessary, a basic understanding of data analytics concepts such as data streaming, data types, the machine learning life cycle, and Docker containers will help you get the most out of the book.

Leverage the power of Azure to get efficient data insights from your big data in real time Key Features

Explore the basics of cloud analytics using Azure Discover different ways to process and visualize your data easily Learn to use Azure Synapse Analytics (formerly known as Azure SQL Data Warehouse) to derive real-time customer insights

Book Description With data being generated at an exponential speed, organizations all over the world are migrating their infrastructure to the cloud.

Application management becomes much easier when you use a cloud platform to build, manage, and deploy your services and applications. Cloud Analytics with Microsoft Azure covers all that you need to extract useful insights from your data. You'll explore the power of data with big data analytics, the Internet of Things (IoT), machine learning, artificial intelligence, and DataOps. You'll also delve into data analytics by studying use cases that focus on

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creating actionable insights from near-real-time data. As you advance, you'll learn to build an end-to-end analytics pipeline on the cloud with machine learning and deep learning concepts. By the end of this book, you'll have developed a solid understanding of data analytics with Azure and its practical implementation. What you will learn Explore the concepts of modern data warehouses and data pipelines Discover different design considerations while applying a cloud analytics solution Design an end-to-end analytics pipeline on the cloud Differentiate between structured, semi-structured, and unstructured data Choose a cloud-based service for your data analytics solutions Use Azure services to ingest, store and analyze data of any scale Who this book is for If you're planning to adopt the cloud analytics model for your business, this book will help you understand the design and business considerations that you must keep in mind. Though not necessary, a basic understanding of data analytics concepts such as data streaming, data types, the machine learning life cycle, and Docker containers will help you get the most out of the book.

Clouds are being positioned as the next-generation consolidated, centralized, yet federated IT infrastructure for hosting all kinds of IT platforms and for deploying, maintaining, and managing a wider variety of personal, as well as professional applications and services. Handbook of Research on

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Cloud Infrastructures for Big Data Analytics focuses exclusively on the topic of cloud-sponsored big data analytics for creating flexible and futuristic organizations. This book helps researchers and practitioners, as well as business entrepreneurs, to make informed decisions and consider appropriate action to simplify and streamline the arduous journey towards smarter enterprises.

Big Data is the processing and analysis of large amounts of data, the size of which makes it impossible to handle with conventional database and analytical tools. The proliferation of websites, image and video applications, social networks, mobile devices, apps, sensors and other modern devices capable of generating huge amounts of data have made it necessary to develop Big Data tools for their analysis. As for Big Data tools, there is a growing development. Oracle uses Exadata for these purposes, SAS uses Visual Analytics and other tools, Microsoft uses Windows Azure, IBM uses Modeler and other tools based in Hadoop. Oracle includes Hadoop in Oracle Big Data Appliance, Oracle Big Data Connectors and Oracle Loader for Hadoop. SAS incorporates Hadoop in its applications (SAS Base, SAS Data Integration, SAS Enterprise Guide, SAS Enterprise Miner, SAS Visual Analytics, SAS Visual Statistics and others). IBM works with Hadoop in its IBM InfoSphere BigInsights platform (BigInsights) and Microsoft incorporates Hadoop in the Windows Azure platform with its Big Data applications (HDInsight, Polybase and others).



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The Microsoft Azure cloud is an ideal platform for data-intensive applications. Designed for productivity, Azure provides pre-built services that make collection, storage, and analysis much easier to implement and manage. Azure Storage, Streaming, and Batch Analytics teaches you how to design a reliable, performant, and cost-effective data infrastructure in Azure by progressively building a complete working analytics system. Summary The Microsoft Azure cloud is an ideal platform for data-intensive applications. Designed for productivity, Azure provides pre-built services that make collection, storage, and analysis much easier to implement and manage. Azure Storage, Streaming, and Batch Analytics teaches you how to design a reliable, performant, and cost-effective data infrastructure in Azure by progressively building a complete working analytics system. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Microsoft Azure provides dozens of services that simplify storing and processing data. These services are secure, reliable, scalable, and cost efficient. About the book Azure Storage, Streaming, and Batch Analytics shows you how to build state-of-the-art data solutions with tools from the Microsoft Azure platform. Read along to construct a cloud-native data warehouse, adding features like real-time data processing. Based on the Lambda architecture for big data, the design uses scalable services such as Event Hubs, Stream Analytics, and SQL databases. Along the way, you'll cover most of the topics needed to earn an Azure data engineering certification. What's inside Configuring Azure services for

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speed and cost Constructing data pipelines with Data Factory Choosing the right data storage methods About the reader For readers familiar with database management. Examples in C# and PowerShell. About the author Richard Nuckolls is a senior developer building big data analytics and reporting systems in Azure. Table of Contents 1 What is data engineering? 2 Building an analytics system in Azure 3 General storage with Azure Storage accounts 4 Azure Data Lake Storage 5 Message handling with Event Hubs 6 Real-time queries with Azure Stream Analytics 7 Batch queries with Azure Data Lake Analytics 8 U-SQL for complex analytics 9 Integrating with Azure Data Lake Analytics 10 Service integration with Azure Data Factory 11 Managed SQL with Azure SQL Database 12 Integrating Data Factory with SQL Database 13 Where to go next Get a 360-degree view of how the journey of data analytics solutions has evolved from monolithic data stores and enterprise data warehouses to data lakes and modern data warehouses. You will This book includes comprehensive coverage of how: To architect data lake analytics solutions by choosing suitable technologies available on Microsoft Azure The advent of microservices applications covering ecommerce or modern solutions built on IoT and how real-time streaming data has completely disrupted this ecosystem These data analytics solutions have been transformed from solely understanding the trends from historical data to building predictions by infusing machine learning technologies into the solutions Data platform professionals who have been working on relational data

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stores, non-relational data stores, and big data technologies will find the content in this book useful. The book also can help you start your journey into the data engineer world as it provides an overview of advanced data analytics and touches on data science concepts and various artificial intelligence and machine learning technologies available on Microsoft Azure. What Will You Learn You will understand the: Concepts of data lake analytics, the modern data warehouse, and advanced data analytics Architecture patterns of the modern data warehouse and advanced data analytics solutions Phases—such as Data Ingestion, Store, Prep and Train, and Model and Serve—of data analytics solutions and technology choices available on Azure under each phase In-depth coverage of real-time and batch mode data analytics solutions architecture Various managed services available on Azure such as Synapse analytics, event hubs, Stream analytics, CosmosDB, and managed Hadoop services such as Databricks and HDInsight Who This Book Is For Data platform professionals, database architects, engineers, and solution architects This is the Rough Cut version of the printed book. With The world of data is changing rapidly. The growing demands of end users (Consumerization of IT) and availability of new types of data (Data explosion - 85% of this new data is coming from new data types e.g. sensors, RFIDs, WebLogs, high-definition video streaming, oil and gas exploration etc.) is causing a widening gap between our ability to store vast amounts of data and our ability to get meaningful insight and drive decision making based on this vast amount of data. This

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data explosion, combined with the fact that the cost of storage has practically gone to zero has landed us in a world where we need to have the ability to store all this data and get insight into it. This makes sense for companies to make better business decisions by enabling data scientists and other users to analyze huge volumes of transaction data as well as other data sources that may be left untapped by traditional business intelligence (BI) programs. On the analytics front there is a shift from traditional BI to predictive analytics as well - traditional BI helps customers to understand what has happened in past (rear view mirror) whereas predictive analysis allows customer to understand what would happen in future (forward-looking view). Predictive analysis has been effective in areas such as fraud detection, sales targeting, customer churn analysis, Ad Placement to increase revenue etc. This book is going to cover in detail about storing vast amount of data (big data) on hadoop on windows (in Windows Azure platform) and getting insight into it with familiar Microsoft BI tools. It addresses questions such as, "What is Big Data and how can Hadoop be used by an organization to tap into it? What are some of the important tools and technologies around the Hadoop ecosystem and Microsoft's partnership with Hortonworks?" From this book you will learn: Ease of installation, configuration and monitoring of Hadoop (HDInsight) cluster on cloud platform; Distributed storage and processing of unstructured data or big data; Programming to do big data analytics with MapReduce, Hive, PIG; Integration of Hadoop with Microsoft BI (MSBI) tools; Analyze and

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create visualization reports your with Microsoft Power BI. This book highlights state-of-the-art research on big data and the Internet of Things (IoT), along with related areas to ensure efficient and Internet-compatible IoT systems. It not only discusses big data security and privacy challenges, but also energy-efficient approaches to improving virtual machine placement in cloud computing environments. Big data and the Internet of Things (IoT) are ultimately two sides of the same coin, yet extracting, analyzing and managing IoT data poses a serious challenge. Accordingly, proper analytics infrastructures/platforms should be used to analyze IoT data. Information technology (IT) allows people to upload, retrieve, store and collect information, which ultimately forms big data. The use of big data analytics has grown tremendously in just the past few years. At the same time, the IoT has entered the public consciousness, sparking people's imaginations as to what a fully connected world can offer. Further, the book discusses the analysis of real-time big data to derive actionable intelligence in enterprise applications in several domains, such as in industry and agriculture. It explores possible automated solutions in daily life, including structures for smart cities and automated home systems based on IoT technology, as well as health care systems that manage large amounts of data (big data) to improve clinical decisions. The book addresses the security and privacy of the IoT and big data technologies, while also revealing the impact of IoT technologies on several scenarios in smart cities design. Intended as a comprehensive introduction, it offers in-depth analysis

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and provides scientists, engineers and professionals the latest techniques, frameworks and strategies used in IoT and big data technologies.

Develop and manage effective real-time streaming solutions by leveraging the power of Microsoft Azure About This Book Analyze your data from various sources using Microsoft Azure Stream Analytics Develop,

manage and automate your stream analytics solution

with Microsoft Azure A practical guide to real-time event processing and performing analytics on the cloud Who

This Book Is For If you are looking for a resource that teaches you how to process continuous streams of data in real-time, this book is what you need. A basic

understanding of the concepts in analytics is all you need to get started with this book What You Will Learn

Perform real-time event processing with Azure Stream

Analysis Incorporate the features of Big Data Lambda

architecture pattern in real-time data processing Design a streaming pipeline for storage and batch analysis

Implement data transformation and computation

activities over stream of events Automate your streaming pipeline using Powershell and the .NET SDK Integrate

your streaming pipeline with popular Machine Learning and Predictive Analytics modelling algorithms Monitor

and troubleshoot your Azure Streaming jobs effectively In Detail Microsoft Azure is a very popular cloud

computing service used by many organizations around the world. Its latest analytics offering, Stream Analytics,

allows you to process and get actionable insights from different kinds of data in real-time. This book is your

guide to understanding the basics of how Azure Stream

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Analytics works, and building your own analytics solution using its capabilities. You will start with understanding what Stream Analytics is, and why it is a popular choice for getting real-time insights from data. Then, you will be introduced to Azure Stream Analytics, and see how you can use the tools and functions in Azure to develop your own Streaming Analytics. Over the course of the book, you will be given comparative analytic guidance on using Azure Streaming with other Microsoft Data Platform resources such as Big Data Lambda Architecture integration for real time data analysis and differences of scenarios for architecture designing with Azure HDInsight Hadoop clusters with Storm or Stream Analytics. The book also shows you how you can manage, monitor, and scale your solution for optimal performance. By the end of this book, you will be well-versed in using Azure Stream Analytics to develop an efficient analytics solution that can work with any type of data. Style and approach A comprehensive guidance on developing real-time event processing with Azure Stream Analysis

The practice of Traditional Chinese Medicine (TCM) has been gaining a wider acceptance worldwide in recent decades. The global TCM market was estimated to be worth nearly US\$60 billion in 2012 with the China market alone projected by Helmut Kaiser Consultancy to exceed US\$121 billion in 2025. HerbMiners aims to make TCM healthcare smarter by unlocking the value of clinical data. Its research process includes the application of data mining to reveal relationships between symptoms, illnesses, herbs and prescriptions; and using artificial

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intelligence to learn about TCM diagnosis differentiation and prescriptions from TCM practitioners. It also provides TCM Advisor (TCMA), an integrated software solution that assists hospitals and clinics with TCM practice modernization and patient record digitalization. TCMA is currently used by a large number of private TCM clinics and more than 80% of non-governmental organizations in Hong Kong that provide TCM service, as well as sites in the United States, Canada, Australia, Singapore, Philippines and Macau. While the first generation TCMA system – developed in-house on the Microsoft Windows .Net framework with a data capture module running on the Windows Azure cloud platform – enabled HerbMiners to tap into clinical data streams, the hybrid application architecture was laborious to support on-site, limiting the company's ability to take on more TCM clinics and diverting staff resources from its core research activities. HerbMiners Big data analytics is the use of advanced analytic techniques against very large, diverse Integrative medicine data sets that include different types such as structured/unstructured and streaming/batch/images/data mining, and different sizes from terabytes to zettabytes. Big data is a term applied to data sets whose size or type is beyond the ability of traditional relational databases to capture, manage, and process the data with low-latency. And it has one or more of the following characteristics – high volume, high velocity, or high variety. Big data comes from sensors, devices, video/audio, networks, log files, transactional applications, web, and social media - much of it generated in real time and in a very large scale.



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Analyzing big data allows analysts, researchers, and business users to make better and faster decisions using data that was previously inaccessible or unusable. Using advanced analytics techniques such as text analytics, machine learning, predictive analytics, data mining, statistics, and natural language processing, businesses can analyze previously untapped data sources independent or together with their existing enterprise data to gain new insights resulting in significantly better and faster decisions.

Your text simplified as the essential facts to prepare you for your exams. Over 2,000 highly probable test items. Explains how to use HDInsight along with HortonWorks Data Platform for Windows to store, manage, analyze, and share Big Data throughout the enterprise. Original. This book constitutes the refereed proceedings of the 6th International Conference on Big Data analytics, BDA 2018, held in Warangal, India, in December 2018. The 29 papers presented in this volume were carefully reviewed and selected from 93 submissions. The papers are organized in topical sections named: big data analytics: vision and perspectives; financial data analytics and data streams; web and social media data; big data systems and frameworks; predictive analytics in healthcare and agricultural domains; and machine learning and pattern mining.

Society is now completely driven by data with many industries relying on data to conduct business or basic functions within the organization. With the efficiencies that big data bring to all institutions, data is continuously being collected and analyzed. However, data sets may

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be too complex for traditional data-processing, and therefore, different strategies must evolve to solve the issue. The field of big data works as a valuable tool for many different industries. The Research Anthology on Big Data Analytics, Architectures, and Applications is a complete reference source on big data analytics that offers the latest, innovative architectures and frameworks and explores a variety of applications within various industries. Offering an international perspective, the applications discussed within this anthology feature global representation. Covering topics such as advertising curricula, driven supply chain, and smart cities, this research anthology is ideal for data scientists, data analysts, computer engineers, software engineers, technologists, government officials, managers, CEOs, professors, graduate students, researchers, and academicians.

The theoretical framework for this book was our ground-up theory of the Scope, Size, Speed, and Skill (4Ss) and Technological Situational Happenstances (TSHs) applied to Big data analytics. With in-depth research, we catechized the effects of the coalesced insights from big data influencing the architectures of incremental and radical business models. We discussed data inflation and the global impact of TSHs. We showed how deft leadership used insights gleaned from big data analytics to make strategic decisions. The big data syndrome led to Microsoft's acquisition of Nokia in our case study. Our study of APPLE Corporation's use of large datasets was explicitly analyzed. Leaderships' failure to incorporate those contextual elements afforded by insights gleaned

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from big data analytics, concomitant with the associated costs led to acute forms of irrational rationalism, groupthink, and faulty decision making. We explained the statistics used to essentially describe this paradigm shift, such as high dimensionality, incidental endogeneity, noise accumulation, spurious correlation, and computational costs. Significantly, machine learning challenged the status quo by effectively changing the existing technological landscape. To scholarly critics, how would supervised and un-supervised learning algorithms advance the trajectory of perspectives in applied knowledge under the umbrella of big data? Further, political and socio-economics tied to big data was examined. We recommended leaders should have a shared cognition on how to leverage analytics from large datasets for competitive advantages. Most significantly, leaders or managers should be cognizant of the inextricable synergies that seamlessly flow from adroitly implementing a strategy to profit from the speed, size, skill, and scope (i.e. the 4Ss) of the big data environment, conditioned by the leveraging of those transactional situational happenstances generated by increases in market volatility. We concluded the algorithmic processes of leveraging insights from big data have globally resulted in a disruption of current technological pathways.

Learn various commercial and open source products that perform SQL on Big Data platforms. You will understand the architectures of the various SQL engines being used and how the tools work internally in terms of execution, data movement, latency, scalability, performance, and

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system requirements. This book consolidates in one place solutions to the challenges associated with the requirements of speed, scalability, and the variety of operations needed for data integration and SQL operations. After discussing the history of the how and why of SQL on Big Data, the book provides in-depth insight into the products, architectures, and innovations happening in this rapidly evolving space. SQL on Big Data discusses in detail the innovations happening, the capabilities on the horizon, and how they solve the issues of performance and scalability and the ability to handle different data types. The book covers how SQL on Big Data engines are permeating the OLTP, OLAP, and Operational analytics space and the rapidly evolving HTAP systems. You will learn the details of: Batch Architectures—an understanding of the internals and how the existing Hive engine is built and how it is evolving continually to support new features and provide lower latency on queries Interactive Architectures—an understanding of how SQL engines are architected to support low latency on large data sets Streaming Architectures—an understanding of how SQL engines are architected to support queries on data in motion using in-memory and lock-free data structures Operational Architectures—an understanding of how SQL engines are architected for transactional and operational systems to support transactions on Big Data platforms Innovative Architectures—an exploration of the rapidly evolving newer SQL engines on Big Data with innovative ideas and concepts

Get a jump start on using Azure HDInsight and Hadoop

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Ecosystem components. As most Hadoop and Big Data projects are written in either Java, Scala, or Python, this book minimizes the effort to learn another language and is written from the perspective of a .NET developer. Hadoop components are covered, including Hive, Pig, HBase, Storm, and Spark on Azure HDInsight, and code samples are written in .NET only. Processing Big Data with Azure HDInsight covers the fundamentals of big data, how businesses are using it to their advantage, and how Azure HDInsight fits into the big data world. This book introduces Hadoop and big data concepts and then dives into creating different solutions with HDInsight and the Hadoop Ecosystem. It covers concepts with real-world scenarios and code examples, making sure you get hands-on experience. The best way to utilize this book is to practice while reading. After reading this book you will be familiar with Azure HDInsight and how it can be utilized to build big data solutions, including batch processing, stream analytics, interactive processing, and storing and retrieving data in an efficient manner. What You'll Learn Understand the fundamentals of HDInsight and Hadoop Work with HDInsight cluster Query with Apache Hive and Apache Pig Store and retrieve data with Apache HBase Stream data processing using Apache Storm Work with Apache Spark Who This Book Is For Software developers, technical architects, data scientists/analysts, and Hadoop administrators who want to develop on Microsoft's managed Hadoop offering, HDInsight

Leverage the Azure analytics platform's key analytics services to deliver unmatched intelligence for your data

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Key Features Learn to ingest, prepare, manage, and serve data for immediate business requirements Bring enterprise data warehousing and big data analytics together to gain insights from your data Develop end-to-end analytics solutions using Azure Synapse Book Description Azure Synapse Analytics, which Microsoft describes as the next evolution of Azure SQL Data Warehouse, is a limitless analytics service that brings enterprise data warehousing and big data analytics together. With this book, you'll learn how to discover insights from your data effectively using this platform. The book starts with an overview of Azure Synapse Analytics, its architecture, and how it can be used to improve business intelligence and machine learning capabilities. Next, you'll go on to choose and set up the correct environment for your business problem. You'll also learn a variety of ways to ingest data from various sources and orchestrate the data using transformation techniques offered by Azure Synapse. Later, you'll explore how to handle both relational and non-relational data using the SQL language. As you progress, you'll perform real-time streaming and execute data analysis operations on your data using various languages, before going on to apply ML techniques to derive accurate and granular insights from data. Finally, you'll discover how to protect sensitive data in real time by using security and privacy features. By the end of this Azure book, you'll be able to build end-to-end analytics solutions while focusing on data prep, data management, data warehousing, and AI tasks. What you will learn Explore the necessary considerations for data ingestion and

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orchestration while building analytical pipelines

Understand pipelines and activities in Synapse pipelines and use them to construct end-to-end data-driven workflows Query data using various coding languages on Azure Synapse Focus on Synapse SQL and Synapse Spark Manage and monitor resource utilization and query activity in Azure Synapse Connect Power BI workspaces with Azure Synapse and create or modify reports directly from Synapse Studio Create and manage IP firewall rules in Azure Synapse Who this book is for This book is for data engineers, IT professionals, business analysts, data scientists, and database administrators who are looking to get up and running with the Azure Synapse Analytics platform. Basic knowledge of data warehousing will be beneficial to help you understand the concepts covered in this book more effectively.

Helps users understand the breadth of Azure services by organizing them into a reference framework they can use when crafting their own big-data analytics solution.

This book constitutes the refereed proceedings of the 18th International Conference on Data Warehousing and Knowledge Discovery, DaWaK 2016, held in Porto, Portugal, September 2016. The 25 revised full papers presented were carefully reviewed and selected from 73 submissions. The papers are organized in topical sections on Mining Big Data, Applications of Big Data Mining, Big Data Indexing and Searching, Big Data Learning and Security, Graph Databases and Data Warehousing, Data Intelligence and Technology. Develop and manage effective real-time streaming solutions by leveraging the power of Microsoft Azure About This Book\* Analyze your data from various sources using Microsoft

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Azure Stream Analytics\* Develop, manage and automate your stream analytics solution with Microsoft Azure\* A practical guide to real-time event processing and performing analytics on the cloudWho This Book Is ForIf you are looking for a resource that teaches you how to process continuous streams of data in real-time, this book is what you need. A basic understanding of the concepts in analytics is all you need to get started with this bookWhat You Will Learn\* Perform real-time event processing with Azure Stream Analysis\* Incorporate the features of Big Data Lambda architecture pattern in real-time data processing\* Design a streaming pipeline for storage and batch analysis\* Implement data transformation and computation activities over stream of events\* Automate your streaming pipeline using Powershell and the .NET SDK\* Integrate your streaming pipeline with popular Machine Learning and Predictive Analytics modelling algorithms\* Monitor and troubleshoot your Azure Streaming jobs effectivelyIn DetailMicrosoft Azure is a very popular cloud computing service used by many organizations around the world. Its latest analytics offering, Stream Analytics, allows you to process and get actionable insights from different kinds of data in real-time.This book is your guide to understanding the basics of how Azure Stream Analytics works, and building your own analytics solution using its capabilities. You will start with understanding what Stream Analytics is, and why it is a popular choice for getting real-time insights from data. Then, you will be introduced to Azure Stream Analytics, and see how you can use the tools and functions in Azure to develop your own Streaming Analytics. Over the course of the book, you will be given comparative analytic guidance on using Azure Streaming with other Microsoft Data Platform resources such as Big Data Lambda Architecture integration for real time data analysis and differences of scenarios for architecture designing with Azure



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HDInsight Hadoop clusters with Storm or Stream Analytics. The book also shows you how you can manage, monitor, and scale your solution for optimal performance. By the end of this book, you will be well-versed in using Azure Stream Analytics to develop an efficient analytics solution that can work with any type of data. Style and approach A comprehensive guidance on developing real-time event processing with Azure Stream Analysis

This book provides a comprehensive survey of techniques, technologies and applications of Big Data and its analysis. The Big Data phenomenon is increasingly impacting all sectors of business and industry, producing an emerging new information ecosystem. On the applications front, the book offers detailed descriptions of various application areas for Big Data Analytics in the important domains of Social Semantic Web Mining, Banking and Financial Services, Capital Markets, Insurance, Advertisement, Recommendation Systems, Bio-Informatics, the IoT and Fog Computing, before delving into issues of security and privacy. With regard to machine learning techniques, the book presents all the standard algorithms for learning – including supervised, semi-supervised and unsupervised techniques such as clustering and reinforcement learning techniques to perform collective Deep Learning. Multi-layered and nonlinear learning for Big Data are also covered. In turn, the book highlights real-life case studies on successful implementations of Big Data Analytics at large IT companies such as Google, Facebook, LinkedIn and Microsoft. Multi-sectorial case studies on domain-based companies such as Deutsche Bank, the power provider Opower, Delta Airlines and a Chinese City Transportation application represent a valuable addition. Given its comprehensive coverage of Big Data Analytics, the book offers a unique resource for undergraduate and graduate students, researchers, educators and IT

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professionals alike.

This book will help you learn how to build a scalable end-to-end machine learning pipeline in Azure from experimentation and training to optimization and deployment. By the end of this book, you will learn to build complex distributed systems and scalable cloud infrastructure using powerful machine learning algorithms to compute insights.

In this book written for SAP BI, big data, and IT architects, the authors expertly provide clear recommendations for building modern analytics architectures running on SAP HANA technologies. Explore integration with big data frameworks and predictive analytics components. Obtain the tools you need to assess possible architecture scenarios and get guidelines for choosing the best option for your organization. Know your options for on-premise, in the cloud, and hybrid solutions. Readers will be guided through SAP BW/4HANA and SAP HANA native data warehouse scenarios, as well as field-tested integration options with big data platforms.

Explore migration options and architecture best practices. Consider organizational and procedural changes resulting from the move to a new, up-to-date analytics architecture that supports your data-driven or data-informed organization. By using practical examples, tips, and screenshots, this book explores:

- SAP HANA and SAP BW/4HANA architecture concepts
- Predictive Analytics and Big Data component integration
- Recommendations for a sustainable, future-proof analytics solutions
- Organizational impact and change management

Learn to extract actionable insights from your big data in real time using a range of Microsoft Azure features Key Features: Updated with the latest features and new additions to Microsoft Azure Master the fundamentals of cloud analytics using Azure Learn to use Azure Synapse Analytics (formerly known as Azure SQL Data Warehouse) to derive real-time

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customer insights Book Description: Cloud Analytics with Microsoft Azure serves as a comprehensive guide for big data analysis and processing using a range of Microsoft Azure features. This book covers everything you need to build your own data warehouse and learn numerous techniques to gain useful insights by analyzing big data. The book begins by introducing you to the power of data with big data analytics, the Internet of Things (IoT), machine learning, artificial intelligence, and DataOps. You will learn about cloud-scale analytics and the services Microsoft Azure offers to empower businesses to discover insights. You will also be introduced to the new features and functionalities added to the modern data warehouse. Finally, you will look at two real-world business use cases to demonstrate high-level solutions using Microsoft Azure. The aim of these use cases will be to illustrate how real-time data can be analyzed in Azure to derive meaningful insights and make business decisions. You will learn to build an end-to-end analytics pipeline on the cloud with machine learning and deep learning concepts. By the end of this book, you will be proficient in analyzing large amounts of data with Azure and using it effectively to benefit your organization. What You Will Learn: Explore the concepts of modern data warehouses and data pipelines Discover unique design considerations while applying a cloud analytics solution Design an end-to-end analytics pipeline on the cloud Differentiate between structured, semi-structured, and unstructured data Choose a cloud-based service for your data analytics solutions Use Azure services to ingest, store, and analyze data of any scale Who this book is for: This book is designed to benefit software engineers, Azure developers, cloud consultants, and anyone who is keen to learn the process of deriving business insights from huge amounts of data using Azure. Though not necessary, a basic understanding of data analytics concepts such as data

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streaming, data types, the machine learning life cycle, and Docker containers will help you get the most out of the book. Seminar paper from the year 2017 in the subject Computer Science - Software, grade: 1,0, California Lutheran University (Business Administration), course: MBA for Executives, language: English, abstract: In this research paper, the author would like to take a look at the current Big Data vendors, and present the status quo of the leading Big Data solutions. The Big Data market has grown significantly in the last years. The offered solutions are very sophisticated and cover a broad range of user requirements, and have become more user friendly. In the recent years, several well-known IT companies released new products that specialize in Big Data analysis. The desire to analyze more and more data to gain a better understanding of e.g. customer needs, manufacturing efficiencies or e.g. to create predictive analysis based on past consumer behavior drove the need to enhance the functionality of existing business intelligence solutions towards a more open Big Data architecture, that allows the analysis of massive amounts of structured and unstructured data.

Cloud Analytics with Microsoft Azure enables you to understand the design and business considerations that you must keep in mind while planning to adopt the cloud analytics model for your business.

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